Exhibit C

Supplementary Tables

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Soil Characteristics for Each Soil Map Unit within the Project Area

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Pipeline										
Campbell County										
Tonka silt loam, undrained, 0 to 1 percent slopes	C001A	577	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Parnell silty clay loam, undrained, 0 to 1 percent slopes	C008A	375	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	488	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Ludden silty clay loam, strongly saline, 0 to 1 percent slopes, occasionally flooded	C058A	168	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Max loams, 15 to 25 percent slopes	C153E	1,556	Not Prime Farmland	Yes	High	High	No	No	No	Low
Vida very stony loam, 3 to 15 percent slopes	C172D	199	Not Prime Farmland	Yes	Moderate	Low	Yes	No	No	Low
Vida-Zahl loams, 6 to 9 percent slopes	C175C	14,532	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Vida-Zahl loams, 6 to 15 percent slopes	C175D	328	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Bowbells loam, 0 to 3 percent slopes	C201A	4,696	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Williams-Bowbells loams, 0 to 3 percent slopes	C210A	9,463	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	52,691	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Vida loams, 3 to 6 percent slopes	C212B	2,303	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Vida loams, 6 to 9 percent slopes	C212C	27,013	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Hamerly loam, 0 to 3 percent slopes	C270A	970	Prime Farmland	Yes	High	Low	No	No	No	High
Farnuf loam, 0 to 2 percent slopes	C416A	897	Farmland of Statewide Importance	No	High	Low	No	No	No	High
Farnuf loam, 2 to 6 percent slopes	C416B	1,704	Farmland of Statewide Importance	No	High	Low	No	No	No	High
Straw-Fluvaquents channeled, complex, 0 to 2 percent slopes, frequently flooded	C491A	810	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ranslo-Harriet loams, 0 to 2 percent slopes, occasionally flooded	C578A	1,049	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Bryant silt loam, 2 to 6 percent slopes	C732B	1,175	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bryant-Grassna silt loams, 0 to 2 percent slopes	C745A	953	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	High
Bryant-Grassna silt loams, 2 to 6 percent slopes	C745B	1,083	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	High
Williams-Noonan loams, 0 to 6 percent slopes	C772B	567	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bowdle loam, 0 to 2 percent slopes	C810A	2,581	Farmland of Statewide Importance	No	High	Moderate	No	No	No	High
Bowdle loam, 2 to 6 percent slopes	C810B	5,755	Farmland of Statewide Importance	No	High	Moderate	No	No	No	High
Lehr loam, 0 to 2 percent slopes	C816A	3,710	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Lehr loam, 2 to 6 percent slopes	C816B	6,321	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Vida very stony loam, 3 to 15 percent slopes	C819B	8,786	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Wabek-Lehr-Appam complex, 9 to 25 percent slopes	C870E	203	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Wabek-Appam complex, 6 to 9 percent slopes	C874C	563	Not Prime Farmland	Yes	Moderate	High	No	No	No	Low
Wabek-Lehr complex, 6 to 9 percent slopes	C877C	1,993	Not Prime Farmland	Yes	Moderate	High	No	No	No	Low
Pits, gravel and sand, 0 to 60 percent slopes	C990F	243	Not Prime Farmland	No	Not Rated	High	Yes	No	No	Low
McPherson County										
Tonka-Nishon silt loams, 0 to 1 percent slopes	C004A	228	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	238	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Vallers loam, undrained, 0 to 1 percent slopes	C022A	112	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Nishon-Heil silt loams, 0 to 1 percent slopes	C031A	326	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Vida-Williams loams, 3 to 6 percent slopes	C136B	1,364	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Williams-Bowbells-Tonka, undrained complex, 0 to 6 percent slopes	C150B	1,730	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Vida-Williams-Bowbells loams, 3 to 15 percent slopes	C177D	1,294	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Moderate
Bowbells loam, 3 to 6 percent slopes	C201B	987	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Williams-Bowbells loams, 0 to 3 percent slopes	C210A	1,622	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	7821	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Niobell-Noonan loams, 3 to 6 percent slopes	C661B	1,295	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Bryant-Grassna silt loams, 0 to 2 percent slopes	C745A	5,121	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Bryant-Grassna silt loams, 2 to 6 percent slopes	C745B	7,395	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Bowdle loam, 0 to 2 percent slopes	C810A	2,317	Farmland of Statewide Importance	No	High	Low	No	No	No	Moderate
Lehr loam, 0 to 2 percent slopes	C816A	909	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Lehr loam, 2 to 6 percent slopes	C816B	617	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Lehr-Bowdle loams, 2 to 6 percent slopes	C817B	1,592	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Edmunds County										
Tonka-Nishon silt loams, 0 to 1 percent slopes	C004A	3,290	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Parnell silty clay loam, undrained, 0 to 1 percent slopes	C008A	989	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	346	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Williams-Bowbells-Tonka, undrained complex, 0 to 6 percent slopes	C150B	68,424	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

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Vida-Zahl loams, 6 to 9 percent slopes	C175C	5,016	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Moderate
Vida-Williams-Bowbells loams, 3 to 15 percent slopes	C177D	147	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Moderate
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	76,709	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 6 to 9 percent slopes	C210C	4,705	Farmland of Statewide Importance	Yes	Moderate	Moderate	No	No	No	High
Mondamin silty clay loam, 0 to 2 percent slopes	C420A	5,463	Prime Farmland if Irrigated	Yes	Low	Low	No	No	No	Moderate
Mondamin silty clay loam, 2 to 6 percent slopes	C420B	5,103	Prime Farmland if Irrigated	Yes	Low	Moderate	No	No	No	Moderate
Mondamin-Heil complex, 0 to 2 percent slopes	C430A	1,423	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Grassna silt loam, 0 to 2 percent slopes	C457A	174	Prime Farmland	Yes	High	Low	No	No	No	High
Niobell-Noonan loams, 3 to 6 percent slopes	C661B	1,379	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Bowbells-Niobell loams, 0 to 3 percent slopes	C670A	5,584	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bryant silt loam, 0 to 2 percent slopes	C732A	278	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bryant silt loam, 2 to 6 percent slopes	C732B	6,955	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

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Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Temvik-Bryant complex, 2 to 6 percent slopes	C741B	1,463	Prime Farmland if Irrigated	Yes	Moderate	Low	No	No	No	Moderate
Temvik-Grassna silt loams, 2 to 6 percent slopes	C742B	1,209	Prime Farmland if Irrigated	Yes	Moderate	Low	No	No	No	Moderate
Bryant-Grassna silt loams, 2 to 6 percent slopes	C745B	2,062	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Bowdle loam, 2 to 6 percent slopes	C810B	138	Farmland of Statewide Importance	No	High	Moderate	No	No	No	High
Faulk County										
Tonka-Nishon silt loams, 0 to 1 percent slopes	C004A	3,707	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Parnell silty clay loam, undrained, 0 to 1 percent slopes	C008A	151	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Nishon silt loam, 0 to 1 percent slopes	C030A	2,964	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Williams-Zahill complex, 6 to 9 percent slopes	C135C	538	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Vida-Williams-Bowbells loams, 3 to 9 percent slopes	C138C	3,601	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Zahill-Straw complex, 2 to 25 percent slopes	C139E	697	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Williams-Bowbells-Tonka, undrained complex, 0 to 6 percent slopes	C150B	21,122	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Max-Arnegard loams, 0 to 3 percent slopes	C167A	666	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate

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Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Max-Arnegard-Zahl loams, 0 to 6 percent slopes	C168B	13,494	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Williams-Zahill-Bowbells loams, 3 to 15 percent slopes	C173D	4,654	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Bowbells loam, 0 to 3 percent slopes	C201A	317	Prime Farmland	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 0 to 3 percent slopes	C210A	30,402	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	21,107	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Straw loam, 0 to 2 percent slopes	C490A	1,357	Prime Farmland	Yes	High	Low	No	No	No	High
Straw-Fluvaquents channeled, complex, 0 to 2 percent slopes, frequently flooded	C491A	2,050	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Noonan-Miranda loams, 0 to 6 percent slopes	C556B	4,199	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Ranslo-Harriet loams, 0 to 2 percent slopes, occasionally flooded	C578A	1,095	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Harriet loam, 0 to 2 percent slopes	C584A	426	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Niobell-Noonan-Max loams, 0 to 3 percent slopes	C650A	4,985	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Niobell-Noonan loams, 0 to 3 percent slopes	C661A	3,790	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Williams-Niobell loams, 3 to 6 percent slopes	C667B	5,076	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Max-Niobell-Noonan loams, 3 to 6 percent slope	C672B	8,195	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Bryant-Grassna silt loams, 0 to 2 percent slopes	C745A	3,180	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Tally fine sandy loam, 0 to 2 percent slopes	C769A	2,932	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Tally fine sandy loam, 2 to 6 percent slopes	C769B	203	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Williams-Bowbells-Noonan loams, 0 to 3 percent slopes	C773A	2,567	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bowdle loam, 0 to 2 percent slopes	C810A	2,814	Farmland of Statewide Importance	No	Low	Low	No	No	No	High
Lehr loam, 0 to 2 percent slopes	C816A	273	Not Prime Farmland	No	Low	Low	No	No	No	Moderate
Lehr loam, 2 to 6 percent slopes	C816B	212	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Pits, gravel and sand, 0 to 60 percent slopes	C990F	540	Not Prime Farmland	No	Not Rated	Low	Yes	No	No	Low
Spink County										
Beadle-Stickney complex, 0 to 2 percent slopes	BeA	37,914	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Beadle-Stickney complex, 0 to 2 percent slopes, very stony	BfA	3,785	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tonka silt loam, undrained, 0 to 1 percent slopes	C001A	272	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tonka-Rimlap silt loams, 0 to 1 percent slopes	C010A	477	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	274	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate

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Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Lowe loam, 0 to 2 percent slopes, occassionally flooded	C054A	2,460	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Zahill loams, 15 to 40 percent slopes	C058A	479	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Zahill complex, 15 to 40 percent slopes	C133F	164	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Williams-Niobell-Tonka complex, 0 to 6 percent slopes	C147B	6,410	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Max-Arnegard loams, 0 to 3 percent slopes	C167A	8,850	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Max-Arnegard-Zahl loams, 0 to 6 percent slopes	C168B	27,589	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Max-Zahl-Arnegard loams, 3 to 9 percent slopes	C168C	697	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Noonan-Miranda loams, 0 to 6 percent slopes	C556B	3,317	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Miranda-Heil complex, 0 to 3 percent slopes	C558A	1,150	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Ranslo loam, 0 to 2 percent slopes	C575A	610	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Niobell-Noonan loams, 0 to 3 percent slopes	C661A	2,409	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Williams-Niobell loams, 0 to 3 percent slopes	C667A	8,100	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Niobell loams, 3 to 6 percent slopes	C667B	498	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Niobell-Noonan-Heil complex, 0 to 3 percent slopes	C668A	2,647	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate

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Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Crossplain-Tetonka complex, 0 to 1 percent slopes	Ct	619	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Delmont-Enet loams, 0 to 2 percent slopes	DeA	1,854	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Dudley-Jerauld silt loams, 0 to 2 percent slopes	Du	3,827	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ethan-Hand loams, 9 to 20 percent slopes	EnD	3,203	Not Prime Farmland	Yes	High	High	No	No	No	Moderate
Cresbard-Cavour loams, 0 to 3 percent slopes	G124A	1,658	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Cavour-Ferney loams, 0 to 3 percent slopes	G129A	2,097	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ferney-Heil, till substratum complex, 0 to 3 percent slopes	G133A	1,017	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Forman-Cresbard-Tonka complex, 0 to 3 percent slopes	G136A	219	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Forman-Cresbard loams, 0 to 3 percent slopes	G139A	1,409	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Forman-Buse-Aastad loams, 1 to 6 percent slopes	G190B	5,444	Prime Farmland	Yes	High	Low	No	No	No	High
Forman-Buse-Aastad loams, 3 to 9 percent slopes	G190C	1,639	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Aastad-Forman loams, 0 to 3 percent slopes	G193A	733	Prime Farmland	Yes	High	Low	No	No	No	High
Buse-Vida, moist-Forman loams, 9 to 25 percent slopes	G193E	582	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Aastad-Tonka complex, 0 to 3 percent slopes	G195A	464	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate

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Bearden silt loam, saline, 0 to 2 percent slopes	G453A	484	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Aberdeen-Nahon-Heil silt loams, till substratum, 0 to 2 percent slopes	G476A	517	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Lowe loam, very poorly drained, 0 to 1 percent slopes, frequently flooded	G522A	238	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Lowe-Fluvaquents, channeled complex, 0 to 2 percent slopes, frequently flooded	G523A	772	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Lamoure silty clay loam, somewhat poorly drained, 0 to 1 percent slopes, frequently flooded	G533A	243	Prime Farmland if Drained	Yes	High	Moderate	No	No	No	Moderate
Playmoor silty clay loam, 0 to 2 percent slopes, frequently flooded	G543A	67	Not Prime Farmland	Yes	High	High	No	No	No	Low
Ranslo-Harriet loams, 0 to 2 percent slopes, occasionally flooded	G553A	367	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ranslo silty clay loam, 0 to 1 percent slopes, occasionally flooded	G557A	177	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Great Bend-Beotia silt loams, 0 to 2 percent slopes	G720A	1,509	Prime Farmland	Yes	High	Low	No	No	No	High
Great Bend-Beotia silt loams, till substratum, 0 to 2 percent slopes	G721A	2,642	Prime Farmland	Yes	High	Low	No	No	No	High
Great Bend-Zell silt loams, 2 to 6 percent slopes	G722B	2,538	Prime Farmland	Yes	High	Low	No	No	No	High
Kranzburg-Cresbard silt loams, 0 to 2 percent slopes	G796A	2,128	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

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Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Harmony-Beotia silt loams, till substratum, 0 to 2 percent slopes	G863A	1,955	Prime Farmland	Yes	High	Low	No	No	No	High
Harmony-Aberdeen silt loams, till substratum, 0 to 2 percent slopes	G865A	5,387	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Beotia-Rondell silt loams, 0 to 2 percent slopes	G872A	169	Prime Farmland	Yes	High	Low	No	No	No	High
Beotia-Winship silt loams, till substratum, 0 to 2 percent slopes	G874A	457	Prime Farmland	Yes	High	Low	No	No	No	High
Hand-Bonilla loams, 0 to 3 percent slopes	HcA	1,804	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Hand-Carthage fine sandy loams, 0 to 3 percent slopes	HdA	3,003	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Hand-Ethan loams, 6 to 9 percent slopes	HfC	1,296	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	High
Hand-Ethan-Bonilla loams, 1 to 6 percent slopes	HgB	6,550	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Hand-Ethan-Bonilla loams, 2 to 9 percent slopes	HgC	700	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Hand-Ethan-Carthage complex, 1 to 6 percent slopes	HhB	2,318	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Hand-Talmo complex, 2 to 6 percent slopes	HjB	6,866	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Hand-Talmo complex, 6 to 9 percent slopes	HjC	2,281	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Houdek-Ethan-Prosper loams, 1 to 6 percent slopes	HtB	1,628	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Houdek-Stickney complex, 0 to 2 percent slopes	HwA	1,497	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Stickney-Tetonka complex, 0 to 2 percent slopes	HxA	3,053	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Jerauld-Hoven silt loams, 0 to 2 percent slopes	Jh	545	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Stickney-Dudley silt loams, 0 to 2 percent slopes	St	2,314	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Stickney-Dudley-Hoven silt loams, 0 to 2 percent slopes	Su	4,499	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tetonka silt loam, 0 to 1 percent slopes	Te	308	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Beadle County										
Beadle loam, 0 to 2 percent slopes	BaA	46,942	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Beadle loam, 2 to 6 percent slopes	BaB	18,082	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Beadle loam, 6 to 9 percent slopes	BaC	3,832	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Beadle-Dudley complex, 0 to 2 percent slopes	BdA	13,192	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Betts stony loam, 6 to 40 percent slopes	BeD	2,667	Not Prime Farmland	No	High	Low	Yes	No	No	Low
Betts-Ethan loams, 9 to 21 percent slopes	BfD	3,993	Not Prime Farmland	No	High	High	Yes	No	No	Low

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Bon silt loam	Bo	1,508	Prime Farmland	Yes	High	Low	No	No	No	High
Bon silt loam, channeled	Bx	2,995	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Carthage fine sandy loam, 2 to 6 percent slopes	CaB	126	Farmland of Statewide Importance	Yes	Moderate	Moderate	No	No	No	High
Carthage fine sandy loam, 6 to 9 percent slopes	CaC	363	Farmland of Statewide Importance	Yes	Moderate	Moderate	Yes	No	No	Moderate
Carthage-Blendon fine sandy loams, 0 to 2 percent slopes	CbA	1,155	Farmland of Statewide Importance	Yes	Moderate	Moderate	No	No	No	Moderate
Davis loam, 2 to 9 percent slopes	DaB	2,881	Farmland of Statewide Importance	No	High	Low	No	No	No	High
Delmont loam, 0 to 2 percent slopes	DeA	181	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Dudley-Stickney silt loams, 0 to 3 percent slopes	DsA	10,617	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Dudley-Tetonka silt loams	DtA	2,573	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Egas silty clay loam	Eg	624	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Elsmere loamy fine sand, loamy substratum	Em	1,142	Not Prime Farmland	Yes	Moderate	Moderate	No	No	No	Moderate
Enet loam, 0 to 2 percent slopes	EnA	3,429	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Forestburg-Doger loamy fine sands, 0 to 3 percent slopes	FrA	996	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Houdek-Prosper loams, 0 to 2 percent slopes	GbA	7,025	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Bend-Edwin silt loams, 2 to 6 percent slopes	GzB	2,962	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Ethan loams, 6 to 9 percent slopes	HeC	1,801	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Houdek-Prosper loams, 0 to 2 percent slopes	HoA	8,703	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Prosper loams, 2 to 6 percent slopes	HoB	3,513	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Hoven silt loam	Hv	460	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
LaDelle silt loam	La	1,415	Prime Farmland	Yes	High	Low	No	No	No	High
Lane silt loam, 0 to 2 percent slopes	LnA	3,091	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Prosper-Davison loams, 0 to 3 percent slopes	PrA	1,570	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Shue loamy fine sand	Sh	380	Not Prime Farmland	Yes	Moderate	Moderate	No	No	No	Moderate
Spottswood loam	Sp	878	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Tetonka-Hoven silt loams	Te	721	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Edwin silt loam, 6 to 12 percent slopes	ZeC	529	Not Prime Farmland	No	High	High	Yes	No	No	Low
Kingsbury County										

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Beadle loam, 2 to 6 percent slopes	BdB	692	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Beadle-Dudley complex, 0 to 2 percent slopes	BeA	1,629	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Bon loam	Bn	991	Prime Farmland	Yes	High	Low	No	No	No	High
Bon loam, channeled	Bo	1,229	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Clarno-Bonilla loams, 0 to 2 percent slopes	CbA	19,702	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan-Bonilla loams, 1 to 6 percent slopes	CeB	19,022	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan-Bonilla loams, 2 to 9 percent slopes	CeC	385	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Crossplain-Tetonka complex	Ct	5,894	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Delmont-Talmo loams, 2 to 6 percent slopes	DtB	605	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Ethan-Bon, channeled, loams, 0 to 20 percent slopes	EoD	2,540	Not Prime Farmland	No	High	High	Yes	No	No	Low
Ethan-Clarno loams, 9 to 15 percent slopes	EtD	1,376	Not Prime Farmland	No	High	High	Yes	No	No	Low
Houdek-Prosper loams, 1 to 6 percent slopes	HpB	1,373	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Houdek-Stickney complex, 0 to 2 percent slopes	HsA	28,613	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Houdek-Stickney complex, 2 to 6 percent slopes	HsB	2,344	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Stickney-Tetonka complex	Ht	22,045	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Stickney-Dudley silt loams	St	368	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Stickney-Dudley-Hoven silt loams	Sv	6,524	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Miner County										
Arlo clay loam	Ar	265	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Baltic silty clay loam	Ba	597	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Bon silt loam	Bo	1,002	Prime Farmland	Yes	High	Low	No	No	No	High
Clarno-Bonilla loams, 0 to 3 percent slopes	CfA	17,587	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Bonilla loams, 1 to 6 percent slopes	CfB	8,985	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Crossplain loams, 0 to 2 percent slopes	CgA	30,699	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan complex, 2 to 6 percent slopes	CkB	1,159	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Stickney-Tetonka complex, 0 to 2 percent slopes	CnA	152	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Crossplain-Tetonka complex	Ct	10,595	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Enet-Delmont loams, 0 to 4 percent slopes	EdA	2,439	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Ethan-Clarno complex, 6 to 9 percent slopes	EgC	331	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Clarno-Stickney-Tetonka complex, 0 to 2 percent slopes	La	411	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Tetonka silt loam	Te	504	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Lake County										
Badus silty clay loam	Ba	974	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan loams, 9 to 16 percent slopes	Bc	346	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Beadle-Dudley complex, 0 to 2 percent slopes	BdA	144	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Clarno loam, 0 to 2 percent slopes	CaA	778	Prime Farmland	Yes	High	Low	No	No	No	High
Clarno loam, 2 to 6 percent slopes	CaB	6,891	Prime Farmland	Yes	High	Low	No	No	No	High
Clarno loam, 6 to 9 percent slopes	CaC	1,817	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Clarno-Ethan loams, 2 to 6 percent slopes	CeB	649	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Clarno-Ethan loams, 6 to 9 percent slopes	CeC	7,462	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Clarno-Ethan loams, 9 to 16 percent slopes	CeD	3,138	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Egan silty clay loam, 6 to 9 percent slopes	EaC	3,206	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Egan-Beadle complex, 0 to 2 percent slopes	EbA	969	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Beadle complex, 2 to 6 percent slopes	EbB	10,790	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Beadle complex, 6 to 9 percent slopes	EbC	3,995	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Egan-Ethan complex, 2 to 6 percent slopes	Eeb	1,985	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Ethan complex, 6 to 9 percent slopes, eroded	EeC2	4,220	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Egan-Viborg silty clay loams, 0 to 3 percent slopes	EgA	1,306	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Wentworth silty clay loams, 2 to 6 percent slopes	EhB	13,703	Prime Farmland	Yes	High	Low	No	No	No	High
Ethan-Betts loams, 21 to 40 percent slopes	EoF	249	Not Prime Farmland	No	High	High	Yes	No	No	Low
Ethan-Clarno loams, 16 to 21 percent slopes	ErE	652	Not Prime Farmland	No	High	High	Yes	No	No	Low
Ethan-Davis stony complex, 3 to 21 percent slopes	EsE	3,708	Not Prime Farmland	Yes	High	Low	Yes	No	No	Low
Ethan-Davis stony complex, 3 to 21 percent slopes	EtD	1,033	Not Prime Farmland	Yes	High	Low	Yes	No	No	Low
Houdek-Prosper loams, 0 to 3 percent slopes	HpA	2,050	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Lamo silty clay loam	La	407	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam, ponded	Mar	302	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Prosper loam, 0 to 2 percent slopes	PrA	2,209	Prime Farmland	Yes	High	Low	No	No	No	High
Rauville silty clay loam	Ra	753	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Huntimer silty clay loam, 0 to 2 percent slopes	ScA	3,781	Prime Farmland	Yes	High	Low	No	No	No	High
Huntimer silty clay loam, 2 to 6 percent slopes	SdB	5,537	Prime Farmland	Yes	High	Low	No	No	No	High
Stickney-Tetonka complex, 0 to 2 percent slopes	StA	503	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Talmo-Delmont loams, 6 to 21 percent slopes	TdE	205	Not Prime Farmland	Yes	High	High	Yes	No	No	Moderate
Tetonka silt loam	Te	1,505	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Viborg silty clay loam, 0 to 2 percent slopes	VbA	2,825	Prime Farmland	Yes	High	Low	No	No	No	High
Viborg-Egan silty clay loams, 2 to 6 percent slopes	VgB	1,984	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth-Egan silty clay loams, 0 to 2 percent slopes	WeA	406	Prime Farmland	Yes	High	Low	No	No	No	High
Whitewood silty clay loam	Wh	5,997	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam	Wo	2,130	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
McCook County										

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Egan-Ethan complex, 5 to 9 percent slopes	EaC	2,041	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	560	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth silty clay loam, 0 to 2 percent slopes	WaA	1,081	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth silty clay loam, 2 to 5 percent slopes	WbB	1,067	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth-Ethan complex, 2 to 5 percent slopes	WcB	1,190	Prime Farmland	Yes	High	Low	No	No	No	High
Whitewood silt loam	Wh	393	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam	Wo	2,746	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Minnehaha County										
Alcester silty clay loam, 2 to 6 percent slopes	AcB	400	Prime Farmland	No	High	Low	No	No	No	High
Baltic silty clay loam, 0 to 1 percent slopes	Ba	1,191	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Betts-Ethan loams, 15 to 40 percent slopes	BeE	140	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Chancellor silty clay loam, 0 to 1 percent slopes	Cb	621	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Chancellor-Tetonka complex, 0 to 1 percent slopes	Cc	6,775	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Davison-Crossplain clay loams, 0 to 2 percent slopes	Dd	4,335	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Egan-Ethan complex, 2 to 6 percent slopes	EaB	1,400	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Egan-Ethan-Trent complex, 1 to 6 percent slopes	EeB	52,056	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Trent silty clay loams, 0 to 2 percent slopes	EfA	1,243	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Wentworth-Trent silty clay loams, 1 to 6 percent slopes	EgB	9,562	Prime Farmland	Yes	High	Low	No	No	No	High
Ethan-Betts loams, 9 to 15 percent slopes	EpD	688	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Ethan-Clarno loams, 6 to 25 percent slopes, very stony	EsE	1,302	Not Prime Farmland	Yes	High	Low	Yes	No	No	Low
Ethan-Clarno loams, 9 to 15 percent slopes	EtD	7,427	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Ethan-Egan complex, 6 to 9 percent slopes	EuC	25,140	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Ethan, very stony-Egan complex, 2 to 9 percent slopes	ExC	915	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	5,483	Prime Farmland	Yes	High	Low	No	No	No	High
Huntimer silty clay loam, 2 to 6 percent slopes	HuB	2,576	Prime Farmland	Yes	High	Low	No	No	No	High
Lamo silty clay loam, 0 to 1 percent slopes	La	174	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Obert silty clay loam, 0 to 1 percent slopes	Ob	350	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Salmo silty clay loam, 0 to 1 percent slopes	Sa	1,139	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tetonka silt loam, 0 to 1 percent slopes	Te	209	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Wakonda-Chancellor silty clay loams, 0 to 2 percent slopes	Wa	2,824	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Wentworth-Chancellor-Wakonda silty clay loams, 0 to 2 percent slopes	WcA	1947	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth-Trent silty clay loams, 0 to 2 percent slopes	WhA	862	Prime Farmland	Yes	High	Low	No	No	No	High
Whitewood silty clay loam, 0 to 2 percent slopes	Wk	462	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam, 0 to 1 percent slopes	Wo	1,482	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Worthing-Davison complex, 0 to 2 percent slopes	Wr	4,981	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Turner County										
Baltic silty clay loam, 0 to 1 percent slopes	Ba	1,320	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Chancellor-Tetonka silty clay loams	Ca	375	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Delmont-Enet loams, 2 to 6 percent slopes	DeB	347	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Dempster-Graceville silty clay loams, 1 to 5 percent slopes	DgB	794	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Ethan complex, 2 to 6 percent slopes	EeB	2,705	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Trent silty clay loams, 0 to 2 percent slopes	EfA	69	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Wentworth-Trent silty clay loams, 1 to 6 percent slopes	EgB	383	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Ethan-Egan complex, 5 to 9 percent slopes	EtC	890	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	73	Prime Farmland	Yes	High	Low	No	No	No	High
Lincoln County										
Alcester silty clay loam, 0 to 2 percent slopes	AcA	616	Prime Farmland	Yes	High	Low	No	No	No	High
Bon soils, frequently flooded	Bo	957	Not Prime Farmland	No	High	Low	No	No	No	Moderate
Chancellor-Tetonka silty clay loams	Ca	10,526	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Chancellor-Viborg silty clay loams	Cd	11,443	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Chancellor-Wakonda-Tetonka complex	Ch	751	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Davis loam	Da	868	Prime Farmland	Yes	High	Low	No	No	No	High
Delmont loam, 2 to 6 percent slopes	DeB	358	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Delmont and Talmo soils, 2 to 9 percent slopes	DkB	585	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Egan silty clay loam, 3 to 6 percent slopes	EaB	5,269	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Chancellor silty clay loams, 0 to 4 percent slopes	EcB	6,271	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Egan-Shindler complex, 2 to 6 percent slopes	EsB	1,233	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Egan-Shindler complex, 6 to 9 percent slopes	EsC	2,251	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Egan-Worthing complex, 0 to 6 percent slopes	EwB	12,365	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Graceville silty clay loam	Gr	3,590	Prime Farmland	Yes	High	Low	No	No	No	High
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	8,830	Prime Farmland	Yes	High	Low	No	No	No	High
Lamo silty clay loam	La	472	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Shindler and Talmo soils, 6 to 30 percent slopes	StD	263	Not Prime Farmland	Yes	High	High	No	No	No	Low
Tetonka silty clay loam	Te	15,745	Prime Farmland if Drained	No	High	Low	No	No	No	Moderate
Wentworth silty clay loam, 0 to 2 percent slopes	WeA	31,301	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth silty clay loam, 0 to 2 percent slopes	WhA	7,911	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay	Ws	15,745	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Pump Station										
Spink County										
Houdek-Stickney complex, 0 to 2 percent slopes	HwA	4.3	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Jerauld-Hoven silt loams, 0 to 2 percent slopes	Jh	4.7	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Stickney-Dudley-Hoven silt loams, 0 to 2 percent slopes	Su	<0.1	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate

Exhibit C
Soil Characteristics for Each Soil Map Unit within the Project area

Map Unit Name	Map Unit Symbol [a]	Pipeline Crossing Length (feet)	Prime Farmland [a]	Hydric Soils [a]	Compaction Potential [a]	Erosion Potential [a, c]	Steep Slopes [a, d]	Shallow Bedrock [a, e]	Shallow Natric Layer [a,f]	Re-vegetation Potential

[a] As designated by the Natural Resources Conservation Service.
[b] Represents total length (in feet) crossed by the pipeline facilities.
[c] Erosion Potential – Based on land capability class and subclass: High (subclass Ve-VIIIe), Moderate (subclass IIIe-IVe), and Low (remaining subclasses).
[d] Steep Slopes - Represents soils with slopes greater than 8 percent.
[e] Shallow bedrock – Represents soils with unconsolidated rock 60 inches or less from the surface.
[e] Shallow Natric layers – Represents subsoil layers with a large accumulation of sodium salts that can reduce plant growth within 18 inches or less from the surface.

Waterbodies Crossed by the Project

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
Campbell County					
210.6	Unnamed Tributary of Lake Pocasse	Ephemeral	-	-	Yes
211.0	Unnamed Tributary of Lake Pocasse	Ephemeral	-	-	Yes
211.7	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
212.6	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
212.8	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
212.9	Unnamed Tributary of Spring Creek	Intermittent	-	-	Yes
213.6	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
214.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
214.3	Unnamed Pond	Open water	-	-	No
215.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
215.8	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
216.1	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
216.1	Unnamed Pond	Open water	-	-	No
216.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
216.8	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
217.6	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
218.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
218.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
219.0	Spring Creek	Perennial	-	-	Yes
219.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
219.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
222.0	Unnamed Pond	Open water	-	-	Yes
222.2	Unnamed Tributary of McClarem Lake	Ephemeral	-	-	Yes
223.7	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
224.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
226.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
228.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
229.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
232.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
234.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
238.8	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
McPherson County					
243.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
Edmunds County					
247.1	Unnamed Pond	Open water	-	-	No
251.4	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
254.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
255.4	Unnamed Tributary of Unnamed Pond	Ephemeral	-	c	Yes
257.6	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
257.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
267.9	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
276.1	Unnamed Tributary of Stafford Dam	Ephemeral	-	-	Yes
277.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
280.6	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
281.5	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
Faulk County					
283.5	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
287.3	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
288.9	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
291.0	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
292.3	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
292.7	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
293.0	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
293.8	Unnamed Pond	Intermittent	-	-	No
293.9	North Fork Snake Creek	Perennial	-	-	Yes
300.3	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	Yes
301.7	Unnamed Pond	Open water	-	-	No
302.1	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	No
302.6	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	Yes
303.3	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	Yes
305.0	Unnamed Tributary of South Fork Snake Creek	Ephemeral	-	-	Yes
305.0	Unnamed Pond	Open water	-	-	No
305.9	South Fork Snake Creek	Perennial	-	-	Yes
305.9	Unnamed Tributary of South Fork Snake Creek	Ephemeral	-	-	Yes
Spink County					
315.9	Dove Creek	Perennial	-	-	Yes
321.2	Agricultural Ditch	Ephemeral	-	-	Yes
322.4	Turtle Creek	Perennial	Fish/Wildlife Prop, Rec, Stock; Irrigation Waters; Limited Contract Recreation; Warmwater Marginal Fish Life	Full Support; Full Support; Nonsupport; Non Support	HDD[a]
324.5	Unnamed Tributary of Turtle Creek	Intermittent	-	-	Yes
328.7	Unnamed Pond	Open water	-	-	No
335.7	Unnamed Tributary of James River	Intermittent	-	-	Yes
337.1	Unnamed Tributary of James River	Intermittent	-	-	Yes
338.2	Unnamed Tributary of James River	Intermittent	-	-	Yes
342.4	Unnamed Tributary of Lake Dudley	Intermittent	-	-	Yes
342.7	Unnamed Tributary of Lake Dudley	Intermittent	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
Beadle County					
348.0	James River	Perennial	Fish/Wildlife Prop, Red, Stock; Irrigation Waters; Limited Contact Recreation; Warmwater Semipermanent Fish Life	Full Support; Full Support Nonsupport Nonsupport	HDD[a]
348.2	Unnamed Tributary of James River	Intermittent	-	-	Yes
349.4	Unnamed Tributary of James River	Intermittent	-	-	Yes
351.1	Unnamed Tributary of James River	Ephemeral	-	-	Yes
352.1	Agicultural Ditch	Ephemeral	-	-	Yes
352.5	Foster Creek	Perennial	-	-	Yes
353.2	Unnamed Tributary of Foster Creek	Intermittent	-	-	Yes
353.8	Unnamed Tributary of Foster Creek	Intermittent	-	-	Yes
356.1	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
357.8	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
358.4	Unnamed Tributary of Lake Byron	Ephemeral	-	-	Yes
358.7	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
359.0	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
360.2	Unnamed Pond	Open water	-	-	No
361.9	Unnamed Tributary of Unnamed lake	Intermittent	-	-	Yes
363.0	Shue Creek	Perennial	-	-	Yes
363.7	Unnamed Tributary of Shue Creek	Ephemeral	-	-	No
364.7	Unnamed Tributary of Shue Creek	Ephemeral	-	-	Yes
364.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
365.1	Unnamed Tributary of Shue Creek	Intermittent	-	-	Yes
366.5	Unnamed Tributary of Shue Creek	Intermittent	-	-	Yes
367.9	Pearl Creek	Intermittent	-	-	Yes
369.0	Unnamed Pond	Open water	-	-	No

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
371.0	Middle Pearl Creek	Intermittent	-	-	Yes
372.2	Unnamed Tributary of Middle Pearl Creak	Intermittent	-	-	Yes
373.2	Unnamed Tributary of Middle Pearl Creek	Intermittent	-	-	Yes
373.8	Unnamed Tributary of Middle Pearl Creek	Intermittent	-	-	Yes
374.0	Unnamed Pond	Open water	-	-	No
Kingsbury County					
375.3	South Fork Pearl Creek	Intermittent	-	-	Yes
375.4	South Fork Pearl Creak	Intermittent	-	-	No
375.5	Unnamed Tributary of South Fork Pearl Creek	Intermittent	-	-	Yes
377.2	Unnamed Tributary of South Fork Pearl Creek	Intermittent	-	-	Yes
378.4	Unnamed Pond	Open water	-	-	No
378.8	Unnamed Tributary of Lake Iroquois	Intermittent	-	-	Yes
379.7	Unnamed Tributary of Lake Iroquois	Intermittent	-	-	Yes
385.8	Red Sofne Creek	Intermittent	-	-	Yes
387.5	Unnamed Tributary of Redsofne Creek	Intermittent	-	-	Yes
388.6	Unnamed Tributary of Redsofne Creek	Intermittent	-	-	Yes
389.3	Unnamed Pond	Open water	-	-	No
391.5	Rock Creek	Intermittent	-	-	No
391.7	Rock Creek	Intermittent	-	-	Yes
392.4	Unnamed Tributary of Unnamed Pond	Intermittent	-	-	Yes
393.3	Unnamed Pond	Open water	-	-	Yes
395.0	West Fork Vermillion River	Intermittent	-	-	Yes
Miner County					
396.7	Unnamed Tributary of West Fork Vermillion River	Intermittent	-	-	Yes
398.6	Unnamed Tributary of West Fork Vermillion River	Intermittent	-	-	Yes
399.2	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
399.7	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
400.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
400.9	Unnamed Tributary of West Fork Vermillion River	Intermittent	-	-	Yes
401.6	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
401.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
402.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
402.5	Unnamed Stream	Intermittent	-	-	Yes
403.3	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
403.5	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
403.7	Unnamed Pond	Open water	-	-	No
403.9	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
404.0	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
404.5	Unnamed Tributary West Fork Vermillion River	Intermittent	-	-	Yes
404.8	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
407.6	Agricultural Irrigation ditch	Ephemeral	-	-	Yes
408.2	Unnamed Tributary of Otter Lake	Ephemeral	-	-	Yes
409.3	Unnamed Pond	Open water	-	-	No
409.6	Unnamed Tributary of Otter Lake	Ephemeral	-	-	Yes
410.4	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
Lake County					
410.7	Unnamed Pond	Open water	-	-	No
410.7	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
410.9	Unnamed Pond	Open water	-	-	No
410.9	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
411.0	Unnamed Pond	Open water	-	-	No
411.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
411.1	Unnamed Pond	Open water	-	-	No
412.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
412.3	Unnamed Pond	Open water	-	-	No
412.6	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
412.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
412.9	Agricultural Irrigation Ditch	Ephemeral	-	-	No
413.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
413.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
413.3	Unnamed Pond	Open water	-	-	No
413.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.2	Agricultural Irrigation Ditch	Ephemeral		-	Yes
414.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.0	Unnamed Pond	Open water	-	-	No
415.0	Roadside Ditch	Ephemeral	-	-	Yes
415.2	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.6	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
415.6	Unnamed Pond	Open water	-	-	No
415.7	East Fork Vermillion River	Perennial	-	-	Yes
415.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
416.2	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
416.4	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
416.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
416.7	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
416.9	Unnamed Tributary of Unnamed Pond	Intermittent	-	-	Yes
417.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
417.1	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
417.3	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
417.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
417.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
417.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
417.9	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
418.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
418.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
418.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
419.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
419.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
419.4	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
419.8	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
419.9	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
420.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
420.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
420.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
421.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
421.6	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
421.8	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
422.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
424.0	Agricultural Irrigation Ditch	Ephemeral	-	-	No
424.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
424.8	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
425.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
426.2	Unnamed Tributary of North Buffalo Creek	Ephemeral	-	-	Yes
426.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
427.6	Unnamed Tributary of North Buffalo Creek	Intermittent	-	-	Yes
427.7	Unnamed Tributary of North Buffalo Creek	Intermittent	-	-	Yes
428.9	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
429.1	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
McCook County					
430.1	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
430.8	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
Minnehaha County					
431.2	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
431.8	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
432.3	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
433.3	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
433.7	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
434.2	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
434.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
435.2	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
435.4	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
435.8	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
435.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
436.2	West Branch Skunk Creek	Intermittent	-	-	Yes
436.2	Unnamed Pond	Open water	-	-	No
436.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
437.2	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
439.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
439.5	Aqricultural Irrigation Dtich	Ephemeral	-	-	Yes
439.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
440.7	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
442.0	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
442.3	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
445.4	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
446.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
446.3	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
446.4	Unnamed Pond	Open water	-	-	No
447.1	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
447.8	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
448.1	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
448.8	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
449.0	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
449.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
449.7	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
450.8	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
452.1	Unnamed Tributary of Wall Lake	Intermittent	-	-	Yes
452.4	Unnamed Tributary ofo Wall Lake	Intermittent	-	-	Yes
453.5	Unnamed Tributary of Wall Lake	Intermittent	-	-	Yes
453.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
454.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
454.6	Unnamed Tributary of Unnamed Pond	Intermittent	-	-	Yes
455.4	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
455.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
Turner County					
456.9	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
457.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
457.9	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
458.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
Lincoln County					
458.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
460.0	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
460.3	Unnamed Tributary of Beaver Creek	Ephemeral	-	-	Yes
460.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
460.6	Unnamed Tributary of Beaver Creek	Ephemeral	-	-	Yes
461.0	Unnamed Tributary of Beaver Creek	Intermittent	-	-	No

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
461.2	Unnamed Tributary of Beaver Creek	Ephemeral	-	-	Yes
461.5	Unnamed Tributary of Beaver Creek	Intermittent	-	-	No
461.7	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
461.9	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
462.2	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
463.4	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
463.5	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	No
463.7	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
465.4	Unnamed Tributary of Nine Mile Creek	Ephemeral	-	-	Yes
465.5	Agricultural Irrigaiofn Ditch	Ephemeral	-	-	Yes
466.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
466.6	Agricultural irrigation Ditch	Ephemeral	-	-	Yes
467.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
468.4	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
468.6	Unnamed Tributary of Nine Mile Creek	Ephemeral	-	-	Yes
469.7	Nine Mile Creek	Intermittent	-	-	Yes
471.1	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	No
471.4	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	No
471.5	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
472.2	Unnamed Tributary of Nine Mile Creek	Ephemeral	-	-	No
473.0	Agricultural Irrigaiofn Ditch	Ephemeral	-	-	No
473.7	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
474.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
474.6	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
475.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
476.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
477.0	Unnamed Tributary of Big Sioux River	Intermittent	-	-	Yes
478.7	Agricultural Irrigation Ditch	Ephemeral	-	-	No
478.9	Unnamed Tributary of Big Sioux River	Intermittent	-	-	No
480.3	Unnamed Tributary of Big Sioux River	Intermittent	-	-	Yes
481.5	Unnamed Tributary of Big Sioux River	Ephemeral	-	-	Yes
481.6	Big Sioux River	Perennial	Fish/Wildlife Prop, Rec, Stock; Immersion Recreation; Irrigation Waters; Limited Contact Recreation, Warmwater Semipermanent fish life	Full Support; Nonsupport; Full Support; Nonsupport; Nonsupport	HDD[a]
[a] HDD= Waterbody will be crossed via horizontal directional drill (HDD).					

Federal and State Listed Threatened and Endangered Species in South Dakota

Federally Listed Threatened and Endangered Species in South Dakota						
Common Name	**Scientific Name**	**Federal Status**	**Federal County Listing**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Mammals						
Northern long-eared bat	*Myotis septentrionalis*	PE	Beadle, Campbell, Edmunds, Faulk, Kingsbury, Lake, Lincoln, McCook, McPherson, Miner, Minnehaha, Spink, Turner	No effect	Summer roosting habitat underneath bark or in crevices of live and dead trees. Winter habitat includes caves and mines with large entrances.	The range of this species is located at the eastern border of the state (NatureServe, 2014). Forested areas within this part of the Project are limited to the Big Sioux River crossing. The Big Sioux River will be crossed via HDD, therefore no impacts to forested areas are anticipated.
Birds						
Interior least tern	*Sterna antillarum athalassos*	E	Campbell	No effect	Interior least tern nesting habitat includes open shorelines, riverine sandbars, and mudflats along Missouri and Mississippi Rivers drainages.	The Project does not cross the Missouri River within South Dakota. No suitable habitat within the Project area.
Piping plover	*Charadrius melodus*	T	Campbell, Kingsbury	No effect	Sandy or gravelly beaches and sandbars or alkaline wetlands.	No suitable nesting habitat was identified during Project field surveys. Critical habitat for the piping plover is along the Missouri River; the Project does not cross the Missouri River within South Dakota. This species is highly mobile and would likely avoid the construction area.
Red knot	*Calidris canutus rufa*	PT	Beadle, Campbell, Edmunds, Faulk, Kingsbury, Lake, Lincoln, McCook, McPherson, Miner, Minnehaha, Spink, Turner	No effect	Breeds in the Arctic tundra areas, such as sparsely vegetated habitat. When non-breeding they prefer primarily intertidal, marine habitats, coastal inlets, estuaries, and bays.	No suitable habitat within the Project area.
Sprague's pipit	*Anthus spragueii*	C	Campbell, McPherson	No effect	Prefer native grasslands of intermediate height and sparse to intermediate vegetation density, low forb density, and little bare ground but low litter depth. Introduced grasslands may be utilized, but to a much lesser extent. Nests on the ground from early May to mid-October.	Breeding habitat range is in the northern part of the state. Some of the of the Project area may be within this range; however, there are no occurrences documented within the Project area (SDNHP, 2014 and eBird, 2014)

Federally Listed Threatened and Endangered Species in South Dakota						
Common Name	**Scientific Name**	**Federal Status**	**Federal County Listing**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Whooping crane	*Grus americana*	E	Beadle, Campbell, Clark, Edmunds, Faulk, Kingsbury, McCook, McPherson, Miner, Spink, Turner	No effect	During migration, this species utilizes wetlands and cropland ponds for feeding and roosting. Seasonal and semi-permanent wetlands are the most commonly used.	The Project area is within the migratory range of this species (Cornell Lab of Ornithology, 2014). Only one whooping crane occurrence record is located in Kingsbury County within one mile of the Project (SDNHP, 2014). This species is highly mobile and would likely avoid construction.
Fishes						
Pallid sturgeon	*Scaphirhynchus albus*	E	Campbell, Lincoln	No effect	Prefer a fast flowing turbid river with a firm sand or gravel bottom. Areas at the end of chutes or sandbars are commonly used for feeding.	The Missouri River (Campbell County) will not be crossed in South Dakota, and the Big Sioux River (Lincoln County) will be crossed via HDD, therefore no impacts will occur to this species.
Topeka shiner	*Notropis topeka*	E	Beadle, Kingsbury, Lake, Lincoln, McCook, Miner, Minnehaha, Spink, Turner	Not likely to adversely effect	Found in small prairie streams that exhibit perennial or nearly perennial flow. Substrate usually is clean gravel, cobble, or sand.	Nine streams crossed by the Project may contain this species as identified by the USFWS. Two of these streams (James and Big Sioux Rivers) will be crossed via HDD. Consultation with the U.S. Fish and Wildlife Service is necessary. Mitigation measures to be used during construction of the pipeline within identified streams are under development.
Invertebrates						
Dakota skipper	*Hesperia dacotae*	T	Edmunds, McPherson	No effect	Dakota skippers only utilize high quality undisturbed (i.e., remnant, uncultivated) prairie; including, wet tallgrass prairie and dry mixed grass prairie.	No native grasslands were identified within Edmunds and McPherson County during field surveys.
Vascular Plants						
Western prairie fringed orchid	*Platanthera praeclara*	T	Lake, Lincoln, McCook, Miner, Minnehaha, Turner	No effect	Prefers moist tallgrass prairie and sedge meadows are appropriate habitat for the western prairie fringed orchid.	Suitable habitat present within Project area, however the species seems to have been extirpated from South Dakota.

E= Endangered
T= Threatened
PE=Proposed Endangered
PT= Proposed Threatened
C= Candidate

State Listed Threatened and Endangered Species in South Dakota					
Common Name	**Scientific Name**	**State Status[a]**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Mammals					
Black-footed ferret	*Mustela nigripes*	E	No impact anticipated	Associated exclusively with large (10,000 acres or more) prairie dog towns. Use burrows for shelter and feed on prairie dogs and other species within the habitat.	Historically, the species was present within the state; however, large prairie dog complexes needed to support a black-footed ferret population do not currently exist within the Project area.
Northern river otter	*Lontra canadensis*	T	No impact anticipated	Rivers with high quality water and an abundant food supply.	Within the Project area, this species has been documented within the Big Sioux River and James River watersheds (South Dakota Game, Fish, and Parks [SDGFP], 2014a and South Dakota Natural Heritage Program [SDNHP], 2014). However, both of these rivers will be crossed via HDD, therefore avoiding impacts to the riverine habitats utilized by the otter.
Swift fox	*Vulpes velox*	T	No impact anticipated	Prefer short or mixed grass prairies with flat to gently rolling terrain and sparse vegetation that allows for good mobility and visibility.	Although historically the range of this species was within the Project area, the species does not currently reside within the Project area (NatureServe, 2014).
Birds					
American dipper	*Cinclus mexicanus*	T	No impact anticipated	Cold and clear, fast-moving streams with gravel, stone, or sand bottoms which support invertebrates. Streams with structures over the water such as waterfalls, rocks and boulders are needed for nesting.	The range of this species is not within the Project area (Cornell Lab of Ornithology, 2014).
Bald eagle	*Haliaeetus leucocephalus*	T	No impact anticipated	Breeds and winters in areas close to a coast, river or lake. Prefers conifers for nesting and roosting and tends to avoid areas with high human traffic.	There are few forested areas along the pipeline route for nesting. Occurrence data from the SDNHP documented a nest approximately one mile from the Project area. Field surveys did not identify bald eagles within the Project area. This species is highly mobile and would likely avoid construction.
Eskimo curlew	*Numenius borealis*	E	No impact anticipated	Variety of grassland habitats.	The Project area is within the migratory range of this species (NatureServe, 2014). This species is highly mobile and would likely avoid construction.
Interior least tern	*Sterna antillarum athalassos*	E	No impact anticipated	Interior least tern nesting habitat includes open shorelines, riverine sandbars, and mudflats along Missouri and Mississippi Rivers drainages.	The Project does not cross the Missouri River within South Dakota. No suitable habitat within the Project area.
Osprey	*Pandion haliaetus*	T	No impact anticipated	Prefer habitat near water including, saltmarshes, rivers, ponds, and reservoirs. Osprey places their nest in open areas on poles, channel markers, and dead trees, often over water.	The Project area is within the migratory range of this species (Cornell Lab of Ornithology, 2014). This species is highly mobile and would likely avoid construction.

State Listed Threatened and Endangered Species in South Dakota					
Common Name	**Scientific Name**	**State Status[a]**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Peregrine falcon	*Falco peregrines*	E	No impact anticipated	Inhabits any open habitat with a wide view of the surrounding area, close proximity to water and rocky cliffs or even tall buildings available for nesting.	No nesting habitat is within the Project area (NatureServe, 2014). This species is highly mobile and would likely avoid the construction area.
Piping plover	*Charadrius melodus*	T	No impact anticipated	Sandy or gravelly beaches and sandbars or alkaline wetlands.	No suitable nesting habitat was identified during Project field surveys. Critical habitat for the piping plover is along the Missouri River; the Project does not cross the Missouri River within South Dakota. This species is highly mobile and would likely avoid the construction area.
Whooping crane	*Grus americana*	E	No impact anticipated	During migration, this species utilizes wetlands and cropland ponds for feeding and roosting. Seasonal and semi-permanent wetlands are the most commonly used.	The Project area is within the migratory range of this species (Cornell Lab of Ornithology, 2014). Only one whooping crane occurrence record is located in Kingsbury County within one mile of the Project (SDNHP, 2014). This species is highly mobile and would likely avoid construction.
Reptiles					
Eastern hognose snake	*Heterodon platirhinos*	T	No impact anticipated	Prefer woodlands with sandy soil, fields, farmland and coastal areas.	The range of this species is not located within the Project area (NatureServe, 2014).
False map turtle	*Graptemys pseudogeographica*	T	No impact anticipated	Inhabits slow moving rivers, river sloughs, oxbow lakes, lakes and reservoirs containing abundant aquatic vegetation and basking sites.	The range of this species within South Dakota is limited to the Missouri River area. The Project enters South Dakota east of the Missouri River (NatureServe, 2014).
Lined snake	*Tropidoclonion lineatum*	E	No impact anticipated	Prefers open prairie hillsides and rocky, woodland areas	The range of this species within South Dakota is limited to the southeast corner of the state. Suitable habitat may be present within the Project area; however, this species is highly mobile and would likely avoid construction.
Fishes					
Banded killifish	*Fundulus diaphanous*	E	No impact anticipated	Habitat ranges from quiet waters of lakes and ponds with ample vegetation to muddy streams without vegetation.	The current species habitat range is not located within the Project area (SDGFP, 2014b).

State Listed Threatened and Endangered Species in South Dakota					
Common Name	**Scientific Name**	**State Status[a]**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Blacknose shiner	*Notropis heterolepis*	E	No impact anticipated	Prefers clear, cool streams with sand and gravel beds, and deep pools with abundant vegetation both in the water and on lands bordering the streams. This species has only been found in two pristine streams located in south-central South Dakota.	No suitable habitat within the Project area.
Finescale dace	*Chrosomus neogaeus*	E	No impact anticipated	Occur most often in cool, clear mountain streams and less often in lakes, reservoirs, or large rivers. Prefer moderate water velocities, associate with a variety of substrates.	The Project area is outside of the current species range (NatureServe, 2014).
Longnose sucker	*Catostomus catostomus*	T	No impact anticipated	Found in cool, spring-fed streams where it feeds on the bottom on crustaceans, snails, insect larvae, and larvae.	The Project area is outside of the current species range (NatureServe, 2014).
Northern pearl dace	*Margariscus nachtriebi*	T	No impact anticipated	Occurs in cool bogs, ponds, lakes, and clear streams.	The species distribution is not located within the Project area. Limited to Counties within southwestern South Dakota (U.S. Geological Survey, 2014)
Northern redbelly dace	*Chrosomus eos*	T	No impact anticipated	Prefers areas with beds of aquatic vegetation in spring-fed streams.	Believed to be extirpated from the Big Sioux drainage (SDGFP, 2014c)
Pallid sturgeon	*Scaphirhynchus albus*	E	No impact anticipated	Prefer a fast flowing turbid river with a firm sand or gravel bottom. Areas at the end of chutes or sandbars are commonly used for feeding.	The Missouri River (Campbell County) will not be crossed in South Dakota, and the Big Sioux River (Lincoln County) will be crossed via HDD, therefore no impacts will occur to this species.
Sicklefin chub	*Macrhybopsis meeki*	E	No impact anticipated	Prefer large, turbid rivers with a diversity of depths and velocities forming braided channels, sand bars, sand flats, and gravel bars.	No suitable habitat within the Project area.
Sturgeon chub	*Macrhybopsis gelida*	T	No impact anticipated	Prefer large, turbid rivers with a range of depths and velocities forming braided channels, gravel bars, and sand flats and bars.	No suitable habitat within the Project area.

E= Endangered
T= Threatened
[a] South Dakota state listed species do not have county listings, they are listed state-wide.

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Soil Characteristics for Each Soil Map Unit within the Project Area

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Pipeline										
Campbell County										
Tonka silt loam, undrained, 0 to 1 percent slopes	C001A	577	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Parnell silty clay loam, undrained, 0 to 1 percent slopes	C008A	375	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	488	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Ludden silty clay loam, strongly saline, 0 to 1 percent slopes, occasionally flooded	C058A	168	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Max loams, 15 to 25 percent slopes	C153E	1,556	Not Prime Farmland	Yes	High	High	No	No	No	Low
Vida very stony loam, 3 to 15 percent slopes	C172D	199	Not Prime Farmland	Yes	Moderate	Low	Yes	No	No	Low
Vida-Zahl loams, 6 to 9 percent slopes	C175C	14,532	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Vida-Zahl loams, 6 to 15 percent slopes	C175D	328	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Bowbells loam, 0 to 3 percent slopes	C201A	4,696	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Williams-Bowbells loams, 0 to 3 percent slopes	C210A	9,463	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	52,691	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Vida loams, 3 to 6 percent slopes	C212B	2,303	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Vida loams, 6 to 9 percent slopes	C212C	27,013	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Hamerly loam, 0 to 3 percent slopes	C270A	970	Prime Farmland	Yes	High	Low	No	No	No	High
Farnuf loam, 0 to 2 percent slopes	C416A	897	Farmland of Statewide Importance	No	High	Low	No	No	No	High
Farnuf loam, 2 to 6 percent slopes	C416B	1,704	Farmland of Statewide Importance	No	High	Low	No	No	No	High
Straw-Fluvaquents channeled, complex, 0 to 2 percent slopes, frequently flooded	C491A	810	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ranslo-Harriet loams, 0 to 2 percent slopes, occasionally flooded	C578A	1,049	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Bryant silt loam, 2 to 6 percent slopes	C732B	1,175	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bryant-Grassna silt loams, 0 to 2 percent slopes	C745A	953	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	High
Bryant-Grassna silt loams, 2 to 6 percent slopes	C745B	1,083	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	High
Williams-Noonan loams, 0 to 6 percent slopes	C772B	567	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bowdle loam, 0 to 2 percent slopes	C810A	2,581	Farmland of Statewide Importance	No	High	Moderate	No	No	No	High
Bowdle loam, 2 to 6 percent slopes	C810B	5,755	Farmland of Statewide Importance	No	High	Moderate	No	No	No	High
Lehr loam, 0 to 2 percent slopes	C816A	3,710	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Lehr loam, 2 to 6 percent slopes	C816B	6,321	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Vida very stony loam, 3 to 15 percent slopes	C819B	8,786	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Wabek-Lehr-Appam complex, 9 to 25 percent slopes	C870E	203	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Wabek-Appam complex, 6 to 9 percent slopes	C874C	563	Not Prime Farmland	Yes	Moderate	High	No	No	No	Low
Wabek-Lehr complex, 6 to 9 percent slopes	C877C	1,993	Not Prime Farmland	Yes	Moderate	High	No	No	No	Low
Pits, gravel and sand, 0 to 60 percent slopes	C990F	243	Not Prime Farmland	No	Not Rated	High	Yes	No	No	Low
McPherson County										
Tonka-Nishon silt loams, 0 to 1 percent slopes	C004A	228	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	238	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Vallers loam, undrained, 0 to 1 percent slopes	C022A	112	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Nishon-Heil silt loams, 0 to 1 percent slopes	C031A	326	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Vida-Williams loams, 3 to 6 percent slopes	C136B	1,364	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Williams-Bowbells-Tonka, undrained complex, 0 to 6 percent slopes	C150B	1,730	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Vida-Williams-Bowbells loams, 3 to 15 percent slopes	C177D	1,294	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Moderate
Bowbells loam, 3 to 6 percent slopes	C201B	987	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Williams-Bowbells loams, 0 to 3 percent slopes	C210A	1,622	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	7821	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Niobell-Noonan loams, 3 to 6 percent slopes	C661B	1,295	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Bryant-Grassna silt loams, 0 to 2 percent slopes	C745A	5,121	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Bryant-Grassna silt loams, 2 to 6 percent slopes	C745B	7,395	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Bowdle loam, 0 to 2 percent slopes	C810A	2,317	Farmland of Statewide Importance	No	High	Low	No	No	No	Moderate
Lehr loam, 0 to 2 percent slopes	C816A	909	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Lehr loam, 2 to 6 percent slopes	C816B	617	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Lehr-Bowdle loams, 2 to 6 percent slopes	C817B	1,592	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Edmunds County										
Tonka-Nishon silt loams, 0 to 1 percent slopes	C004A	3,290	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Parnell silty clay loam, undrained, 0 to 1 percent slopes	C008A	989	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	346	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Williams-Bowbells-Tonka, undrained complex, 0 to 6 percent slopes	C150B	68,424	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Vida-Zahl loams, 6 to 9 percent slopes	C175C	5,016	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Moderate
Vida-Williams-Bowbells loams, 3 to 15 percent slopes	C177D	147	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Moderate
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	76,709	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 6 to 9 percent slopes	C210C	4,705	Farmland of Statewide Importance	Yes	Moderate	Moderate	No	No	No	High
Mondamin silty clay loam, 0 to 2 percent slopes	C420A	5,463	Prime Farmland if Irrigated	Yes	Low	Low	No	No	No	Moderate
Mondamin silty clay loam, 2 to 6 percent slopes	C420B	5,103	Prime Farmland if Irrigated	Yes	Low	Moderate	No	No	No	Moderate
Mondamin-Heil complex, 0 to 2 percent slopes	C430A	1,423	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Grassna silt loam, 0 to 2 percent slopes	C457A	174	Prime Farmland	Yes	High	Low	No	No	No	High
Niobell-Noonan loams, 3 to 6 percent slopes	C661B	1,379	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Bowbells-Niobell loams, 0 to 3 percent slopes	C670A	5,584	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bryant silt loam, 0 to 2 percent slopes	C732A	278	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bryant silt loam, 2 to 6 percent slopes	C732B	6,955	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Temvik-Bryant complex, 2 to 6 percent slopes	C741B	1,463	Prime Farmland if Irrigated	Yes	Moderate	Low	No	No	No	Moderate
Temvik-Grassna silt loams, 2 to 6 percent slopes	C742B	1,209	Prime Farmland if Irrigated	Yes	Moderate	Low	No	No	No	Moderate
Bryant-Grassna silt loams, 2 to 6 percent slopes	C745B	2,062	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Bowdle loam, 2 to 6 percent slopes	C810B	138	Farmland of Statewide Importance	No	High	Moderate	No	No	No	High
Faulk County										
Tonka-Nishon silt loams, 0 to 1 percent slopes	C004A	3,707	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Parnell silty clay loam, undrained, 0 to 1 percent slopes	C008A	151	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Nishon silt loam, 0 to 1 percent slopes	C030A	2,964	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Williams-Zahill complex, 6 to 9 percent slopes	C135C	538	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Vida-Williams-Bowbells loams, 3 to 9 percent slopes	C138C	3,601	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Zahill-Straw complex, 2 to 25 percent slopes	C139E	697	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Williams-Bowbells-Tonka, undrained complex, 0 to 6 percent slopes	C150B	21,122	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Max-Arnegard loams, 0 to 3 percent slopes	C167A	666	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Max-Arnegard-Zahl loams, 0 to 6 percent slopes	C168B	13,494	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Williams-Zahill-Bowbells loams, 3 to 15 percent slopes	C173D	4,654	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Bowbells loam, 0 to 3 percent slopes	C201A	317	Prime Farmland	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 0 to 3 percent slopes	C210A	30,402	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Bowbells loams, 3 to 6 percent slopes	C210B	21,107	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Straw loam, 0 to 2 percent slopes	C490A	1,357	Prime Farmland	Yes	High	Low	No	No	No	High
Straw-Fluvaquents channeled, complex, 0 to 2 percent slopes, frequently flooded	C491A	2,050	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Noonan-Miranda loams, 0 to 6 percent slopes	C556B	4,199	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Ranslo-Harriet loams, 0 to 2 percent slopes, occasionally flooded	C578A	1,095	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Harriet loam, 0 to 2 percent slopes	C584A	426	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Niobell-Noonan-Max loams, 0 to 3 percent slopes	C650A	4,985	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Niobell-Noonan loams, 0 to 3 percent slopes	C661A	3,790	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Williams-Niobell loams, 3 to 6 percent slopes	C667B	5,076	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Max-Niobell-Noonan loams, 3 to 6 percent slope	C672B	8,195	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Bryant-Grassna silt loams, 0 to 2 percent slopes	C745A	3,180	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Tally fine sandy loam, 0 to 2 percent slopes	C769A	2,932	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Tally fine sandy loam, 2 to 6 percent slopes	C769B	203	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Williams-Bowbells-Noonan loams, 0 to 3 percent slopes	C773A	2,567	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Bowdle loam, 0 to 2 percent slopes	C810A	2,814	Farmland of Statewide Importance	No	Low	Low	No	No	No	High
Lehr loam, 0 to 2 percent slopes	C816A	273	Not Prime Farmland	No	Low	Low	No	No	No	Moderate
Lehr loam, 2 to 6 percent slopes	C816B	212	Not Prime Farmland	No	High	Moderate	No	No	No	Moderate
Pits, gravel and sand, 0 to 60 percent slopes	C990F	540	Not Prime Farmland	No	Not Rated	Low	Yes	No	No	Low
Spink County										
Beadle-Stickney complex, 0 to 2 percent slopes	BeA	37,914	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Beadle-Stickney complex, 0 to 2 percent slopes, very stony	BfA	3,785	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tonka silt loam, undrained, 0 to 1 percent slopes	C001A	272	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tonka-Rimlap silt loams, 0 to 1 percent slopes	C010A	477	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Heil silt loam, undrained, 0 to 1 percent slopes	C020A	274	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Lowe loam, 0 to 2 percent slopes, occassionally flooded	C054A	2,460	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Zahill loams, 15 to 40 percent slopes	C058A	479	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Zahl-Zahill complex, 15 to 40 percent slopes	C133F	164	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Williams-Niobell-Tonka complex, 0 to 6 percent slopes	C147B	6,410	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Max-Arnegard loams, 0 to 3 percent slopes	C167A	8,850	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Max-Arnegard-Zahl loams, 0 to 6 percent slopes	C168B	27,589	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Max-Zahl-Arnegard loams, 3 to 9 percent slopes	C168C	697	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Noonan-Miranda loams, 0 to 6 percent slopes	C556B	3,317	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Miranda-Heil complex, 0 to 3 percent slopes	C558A	1,150	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Ranslo loam, 0 to 2 percent slopes	C575A	610	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Niobell-Noonan loams, 0 to 3 percent slopes	C661A	2,409	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Williams-Niobell loams, 0 to 3 percent slopes	C667A	8,100	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Williams-Niobell loams, 3 to 6 percent slopes	C667B	498	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Niobell-Noonan-Heil complex, 0 to 3 percent slopes	C668A	2,647	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Crossplain-Tetonka complex, 0 to 1 percent slopes	Ct	619	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Delmont-Enet loams, 0 to 2 percent slopes	DeA	1,854	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Dudley-Jerauld silt loams, 0 to 2 percent slopes	Du	3,827	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ethan-Hand loams, 9 to 20 percent slopes	EnD	3,203	Not Prime Farmland	Yes	High	High	No	No	No	Moderate
Cresbard-Cavour loams, 0 to 3 percent slopes	G124A	1,658	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Cavour-Ferney loams, 0 to 3 percent slopes	G129A	2,097	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ferney-Heil, till substratum complex, 0 to 3 percent slopes	G133A	1,017	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Forman-Cresbard-Tonka complex, 0 to 3 percent slopes	G136A	219	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Forman-Cresbard loams, 0 to 3 percent slopes	G139A	1,409	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Forman-Buse-Aastad loams, 1 to 6 percent slopes	G190B	5,444	Prime Farmland	Yes	High	Low	No	No	No	High
Forman-Buse-Aastad loams, 3 to 9 percent slopes	G190C	1,639	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Aastad-Forman loams, 0 to 3 percent slopes	G193A	733	Prime Farmland	Yes	High	Low	No	No	No	High
Buse-Vida, moist-Forman loams, 9 to 25 percent slopes	G193E	582	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Aastad-Tonka complex, 0 to 3 percent slopes	G195A	464	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Bearden silt loam, saline, 0 to 2 percent slopes	G453A	484	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Aberdeen-Nahon-Heil silt loams, till substratum, 0 to 2 percent slopes	G476A	517	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Lowe loam, very poorly drained, 0 to 1 percent slopes, frequently flooded	G522A	238	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Lowe-Fluvaquents, channeled complex, 0 to 2 percent slopes, frequently flooded	G523A	772	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Lamoure silty clay loam, somewhat poorly drained, 0 to 1 percent slopes, frequently flooded	G533A	243	Prime Farmland if Drained	Yes	High	Moderate	No	No	No	Moderate
Playmoor silty clay loam, 0 to 2 percent slopes, frequently flooded	G543A	67	Not Prime Farmland	Yes	High	High	No	No	No	Low
Ranslo-Harriet loams, 0 to 2 percent slopes, occasionally flooded	G553A	367	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Ranslo silty clay loam, 0 to 1 percent slopes, occasionally flooded	G557A	177	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Great Bend-Beotia silt loams, 0 to 2 percent slopes	G720A	1,509	Prime Farmland	Yes	High	Low	No	No	No	High
Great Bend-Beotia silt loams, till substratum, 0 to 2 percent slopes	G721A	2,642	Prime Farmland	Yes	High	Low	No	No	No	High
Great Bend-Zell silt loams, 2 to 6 percent slopes	G722B	2,538	Prime Farmland	Yes	High	Low	No	No	No	High
Kranzburg-Cresbard silt loams, 0 to 2 percent slopes	G796A	2,128	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Harmony-Beotia silt loams, till substratum, 0 to 2 percent slopes	G863A	1,955	Prime Farmland	Yes	High	Low	No	No	No	High
Harmony-Aberdeen silt loams, till substratum, 0 to 2 percent slopes	G865A	5,387	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Beotia-Rondell silt loams, 0 to 2 percent slopes	G872A	169	Prime Farmland	Yes	High	Low	No	No	No	High
Beotia-Winship silt loams, till substratum, 0 to 2 percent slopes	G874A	457	Prime Farmland	Yes	High	Low	No	No	No	High
Hand-Bonilla loams, 0 to 3 percent slopes	HcA	1,804	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Hand-Carthage fine sandy loams, 0 to 3 percent slopes	HdA	3,003	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Hand-Ethan loams, 6 to 9 percent slopes	HfC	1,296	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	High
Hand-Ethan-Bonilla loams, 1 to 6 percent slopes	HgB	6,550	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Hand-Ethan-Bonilla loams, 2 to 9 percent slopes	HgC	700	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Hand-Ethan-Carthage complex, 1 to 6 percent slopes	HhB	2,318	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Hand-Talmo complex, 2 to 6 percent slopes	HjB	6,866	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Hand-Talmo complex, 6 to 9 percent slopes	HjC	2,281	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Houdek-Ethan-Prosper loams, 1 to 6 percent slopes	HtB	1,628	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Houdek-Stickney complex, 0 to 2 percent slopes	HwA	1,497	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Stickney-Tetonka complex, 0 to 2 percent slopes	HxA	3,053	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Jerauld-Hoven silt loams, 0 to 2 percent slopes	Jh	545	Not Prime Farmland	Yes	High	Low	No	No	Yes	Low
Stickney-Dudley silt loams, 0 to 2 percent slopes	St	2,314	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Stickney-Dudley-Hoven silt loams, 0 to 2 percent slopes	Su	4,499	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tetonka silt loam, 0 to 1 percent slopes	Te	308	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Beadle County										
Beadle loam, 0 to 2 percent slopes	BaA	46,942	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Beadle loam, 2 to 6 percent slopes	BaB	18,082	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Beadle loam, 6 to 9 percent slopes	BaC	3,832	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Beadle-Dudley complex, 0 to 2 percent slopes	BdA	13,192	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Betts stony loam, 6 to 40 percent slopes	BeD	2,667	Not Prime Farmland	No	High	Low	Yes	No	No	Low
Betts-Ethan loams, 9 to 21 percent slopes	BfD	3,993	Not Prime Farmland	No	High	High	Yes	No	No	Low

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Bon silt loam	Bo	1,508	Prime Farmland	Yes	High	Low	No	No	No	High
Bon silt loam, channeled	Bx	2,995	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Carthage fine sandy loam, 2 to 6 percent slopes	CaB	126	Farmland of Statewide Importance	Yes	Moderate	Moderate	No	No	No	High
Carthage fine sandy loam, 6 to 9 percent slopes	CaC	363	Farmland of Statewide Importance	Yes	Moderate	Moderate	Yes	No	No	Moderate
Carthage-Blendon fine sandy loams, 0 to 2 percent slopes	CbA	1,155	Farmland of Statewide Importance	Yes	Moderate	Moderate	No	No	No	Moderate
Davis loam, 2 to 9 percent slopes	DaB	2,881	Farmland of Statewide Importance	No	High	Low	No	No	No	High
Delmont loam, 0 to 2 percent slopes	DeA	181	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Dudley-Stickney silt loams, 0 to 3 percent slopes	DsA	10,617	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Dudley-Tetonka silt loams	DtA	2,573	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Egas silty clay loam	Eg	624	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Elsmere loamy fine sand, loamy substratum	Em	1,142	Not Prime Farmland	Yes	Moderate	Moderate	No	No	No	Moderate
Enet loam, 0 to 2 percent slopes	EnA	3,429	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Forestburg-Doger loamy fine sands, 0 to 3 percent slopes	FrA	996	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Houdek-Prosper loams, 0 to 2 percent slopes	GbA	7,025	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Bend-Edwin silt loams, 2 to 6 percent slopes	GzB	2,962	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Ethan loams, 6 to 9 percent slopes	HeC	1,801	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Houdek-Prosper loams, 0 to 2 percent slopes	HoA	8,703	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Prosper loams, 2 to 6 percent slopes	HoB	3,513	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Hoven silt loam	Hv	460	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
LaDelle silt loam	La	1,415	Prime Farmland	Yes	High	Low	No	No	No	High
Lane silt loam, 0 to 2 percent slopes	LnA	3,091	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Prosper-Davison loams, 0 to 3 percent slopes	PrA	1,570	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Shue loamy fine sand	Sh	380	Not Prime Farmland	Yes	Moderate	Moderate	No	No	No	Moderate
Spottswood loam	Sp	878	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Tetonka-Hoven silt loams	Te	721	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Edwin silt loam, 6 to 12 percent slopes	ZeC	529	Not Prime Farmland	No	High	High	Yes	No	No	Low
Kingsbury County										

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Beadle loam, 2 to 6 percent slopes	BdB	692	Prime Farmland if Irrigated	Yes	High	Moderate	No	No	No	Moderate
Beadle-Dudley complex, 0 to 2 percent slopes	BeA	1,629	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Bon loam	Bn	991	Prime Farmland	Yes	High	Low	No	No	No	High
Bon loam, channeled	Bo	1,229	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Clarno-Bonilla loams, 0 to 2 percent slopes	CbA	19,702	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan-Bonilla loams, 1 to 6 percent slopes	CeB	19,022	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan-Bonilla loams, 2 to 9 percent slopes	CeC	385	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Crossplain-Tetonka complex	Ct	5,894	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Delmont-Talmo loams, 2 to 6 percent slopes	DtB	605	Not Prime Farmland	Yes	High	Moderate	No	No	No	Moderate
Ethan-Bon, channeled, loams, 0 to 20 percent slopes	EoD	2,540	Not Prime Farmland	No	High	High	Yes	No	No	Low
Ethan-Clarno loams, 9 to 15 percent slopes	EtD	1,376	Not Prime Farmland	No	High	High	Yes	No	No	Low
Houdek-Prosper loams, 1 to 6 percent slopes	HpB	1,373	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Houdek-Stickney complex, 0 to 2 percent slopes	HsA	28,613	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Houdek-Stickney complex, 2 to 6 percent slopes	HsB	2,344	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Houdek-Stickney-Tetonka complex	Ht	22,045	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Stickney-Dudley silt loams	St	368	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Stickney-Dudley-Hoven silt loams	Sv	6,524	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Miner County										
Arlo clay loam	Ar	265	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Baltic silty clay loam	Ba	597	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Bon silt loam	Bo	1,002	Prime Farmland	Yes	High	Low	No	No	No	High
Clarno-Bonilla loams, 0 to 3 percent slopes	CfA	17,587	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Bonilla loams, 1 to 6 percent slopes	CfB	8,985	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Crossplain loams, 0 to 2 percent slopes	CgA	30,699	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan complex, 2 to 6 percent slopes	CkB	1,159	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Clarno-Stickney-Tetonka complex, 0 to 2 percent slopes	CnA	152	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Crossplain-Tetonka complex	Ct	10,595	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Enet-Delmont loams, 0 to 4 percent slopes	EdA	2,439	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Ethan-Clarno complex, 6 to 9 percent slopes	EgC	331	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Clarno-Stickney-Tetonka complex, 0 to 2 percent slopes	La	411	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Tetonka silt loam	Te	504	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Lake County										
Badus silty clay loam	Ba	974	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Clarno-Ethan loams, 9 to 16 percent slopes	Bc	346	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Beadle-Dudley complex, 0 to 2 percent slopes	BdA	144	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Clarno loam, 0 to 2 percent slopes	CaA	778	Prime Farmland	Yes	High	Low	No	No	No	High
Clarno loam, 2 to 6 percent slopes	CaB	6,891	Prime Farmland	Yes	High	Low	No	No	No	High
Clarno loam, 6 to 9 percent slopes	CaC	1,817	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Clarno-Ethan loams, 2 to 6 percent slopes	CeB	649	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Clarno-Ethan loams, 6 to 9 percent slopes	CeC	7,462	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Clarno-Ethan loams, 9 to 16 percent slopes	CeD	3,138	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Egan silty clay loam, 6 to 9 percent slopes	EaC	3,206	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Egan-Beadle complex, 0 to 2 percent slopes	EbA	969	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Beadle complex, 2 to 6 percent slopes	EbB	10,790	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Beadle complex, 6 to 9 percent slopes	EbC	3,995	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Egan-Ethan complex, 2 to 6 percent slopes	Eeb	1,985	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Ethan complex, 6 to 9 percent slopes, eroded	EeC2	4,220	Not Prime Farmland	Yes	High	Moderate	Yes	No	No	Low
Egan-Viborg silty clay loams, 0 to 3 percent slopes	EgA	1,306	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Wentworth silty clay loams, 2 to 6 percent slopes	EhB	13,703	Prime Farmland	Yes	High	Low	No	No	No	High
Ethan-Betts loams, 21 to 40 percent slopes	EoF	249	Not Prime Farmland	No	High	High	Yes	No	No	Low
Ethan-Clarno loams, 16 to 21 percent slopes	ErE	652	Not Prime Farmland	No	High	High	Yes	No	No	Low
Ethan-Davis stony complex, 3 to 21 percent slopes	EsE	3,708	Not Prime Farmland	Yes	High	Low	Yes	No	No	Low
Ethan-Davis stony complex, 3 to 21 percent slopes	EtD	1,033	Not Prime Farmland	Yes	High	Low	Yes	No	No	Low
Houdek-Prosper loams, 0 to 3 percent slopes	HpA	2,050	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Lamo silty clay loam	La	407	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam, ponded	Mar	302	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Prosper loam, 0 to 2 percent slopes	PrA	2,209	Prime Farmland	Yes	High	Low	No	No	No	High
Rauville silty clay loam	Ra	753	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Huntimer silty clay loam, 0 to 2 percent slopes	ScA	3,781	Prime Farmland	Yes	High	Low	No	No	No	High
Huntimer silty clay loam, 2 to 6 percent slopes	SdB	5,537	Prime Farmland	Yes	High	Low	No	No	No	High
Stickney-Tetonka complex, 0 to 2 percent slopes	StA	503	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Talmo-Delmont loams, 6 to 21 percent slopes	TdE	205	Not Prime Farmland	Yes	High	High	Yes	No	No	Moderate
Tetonka silt loam	Te	1,505	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Viborg silty clay loam, 0 to 2 percent slopes	VbA	2,825	Prime Farmland	Yes	High	Low	No	No	No	High
Viborg-Egan silty clay loams, 2 to 6 percent slopes	VgB	1,984	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth-Egan silty clay loams, 0 to 2 percent slopes	WeA	406	Prime Farmland	Yes	High	Low	No	No	No	High
Whitewood silty clay loam	Wh	5,997	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam	Wo	2,130	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
McCook County										

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Egan-Ethan complex, 5 to 9 percent slopes	EaC	2,041	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	560	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth silty clay loam, 0 to 2 percent slopes	WaA	1,081	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth silty clay loam, 2 to 5 percent slopes	WbB	1,067	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth-Ethan complex, 2 to 5 percent slopes	WcB	1,190	Prime Farmland	Yes	High	Low	No	No	No	High
Whitewood silt loam	Wh	393	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam	Wo	2,746	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Minnehaha County										
Alcester silty clay loam, 2 to 6 percent slopes	AcB	400	Prime Farmland	No	High	Low	No	No	No	High
Baltic silty clay loam, 0 to 1 percent slopes	Ba	1,191	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Betts-Ethan loams, 15 to 40 percent slopes	BeE	140	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Chancellor silty clay loam, 0 to 1 percent slopes	Cb	621	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Chancellor-Tetonka complex, 0 to 1 percent slopes	Cc	6,775	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Davison-Crossplain clay loams, 0 to 2 percent slopes	Dd	4,335	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Egan-Ethan complex, 2 to 6 percent slopes	EaB	1,400	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Egan-Ethan-Trent complex, 1 to 6 percent slopes	EeB	52,056	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Trent silty clay loams, 0 to 2 percent slopes	EfA	1,243	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Wentworth-Trent silty clay loams, 1 to 6 percent slopes	EgB	9,562	Prime Farmland	Yes	High	Low	No	No	No	High
Ethan-Betts loams, 9 to 15 percent slopes	EpD	688	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Ethan-Clarno loams, 6 to 25 percent slopes, very stony	EsE	1,302	Not Prime Farmland	Yes	High	Low	Yes	No	No	Low
Ethan-Clarno loams, 9 to 15 percent slopes	EtD	7,427	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Ethan-Egan complex, 6 to 9 percent slopes	EuC	25,140	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Ethan, very stony-Egan complex, 2 to 9 percent slopes	ExC	915	Not Prime Farmland	Yes	High	High	Yes	No	No	Low
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	5,483	Prime Farmland	Yes	High	Low	No	No	No	High
Huntimer silty clay loam, 2 to 6 percent slopes	HuB	2,576	Prime Farmland	Yes	High	Low	No	No	No	High
Lamo silty clay loam, 0 to 1 percent slopes	La	174	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Obert silty clay loam, 0 to 1 percent slopes	Ob	350	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Salmo silty clay loam, 0 to 1 percent slopes	Sa	1,139	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Tetonka silt loam, 0 to 1 percent slopes	Te	209	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Wakonda-Chancellor silty clay loams, 0 to 2 percent slopes	Wa	2,824	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Wentworth-Chancellor-Wakonda silty clay loams, 0 to 2 percent slopes	WcA	1947	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth-Trent silty clay loams, 0 to 2 percent slopes	WhA	862	Prime Farmland	Yes	High	Low	No	No	No	High
Whitewood silty clay loam, 0 to 2 percent slopes	Wk	462	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay loam, 0 to 1 percent slopes	Wo	1,482	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Worthing-Davison complex, 0 to 2 percent slopes	Wr	4,981	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Turner County										
Baltic silty clay loam, 0 to 1 percent slopes	Ba	1,320	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Chancellor-Tetonka silty clay loams	Ca	375	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Delmont-Enet loams, 2 to 6 percent slopes	DeB	347	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Dempster-Graceville silty clay loams, 1 to 5 percent slopes	DgB	794	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Ethan complex, 2 to 6 percent slopes	EeB	2,705	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Trent silty clay loams, 0 to 2 percent slopes	EfA	69	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Wentworth-Trent silty clay loams, 1 to 6 percent slopes	EgB	383	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol** [a]	**Pipeline Crossing Length (feet)**	**Prime Farmland** [a]	**Hydric Soils** [a]	**Compaction Potential** [a]	**Erosion Potential** [a, c]	**Steep Slopes** [a, d]	**Shallow Bedrock** [a, e]	**Shallow Natric Layer** [a,f]	**Re-vegetation Potential**
Ethan-Egan complex, 5 to 9 percent slopes	EtC	890	Farmland of Statewide Importance	Yes	High	Moderate	No	No	No	High
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	73	Prime Farmland	Yes	High	Low	No	No	No	High
Lincoln County										
Alcester silty clay loam, 0 to 2 percent slopes	AcA	616	Prime Farmland	Yes	High	Low	No	No	No	High
Bon soils, frequently flooded	Bo	957	Not Prime Farmland	No	High	Low	No	No	No	Moderate
Chancellor-Tetonka silty clay loams	Ca	10,526	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Chancellor-Viborg silty clay loams	Cd	11,443	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Chancellor-Wakonda-Tetonka complex	Ch	751	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Davis loam	Da	868	Prime Farmland	Yes	High	Low	No	No	No	High
Delmont loam, 2 to 6 percent slopes	DeB	358	Prime Farmland if Irrigated	Yes	High	Low	No	No	No	Moderate
Delmont and Talmo soils, 2 to 9 percent slopes	DkB	585	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Egan silty clay loam, 3 to 6 percent slopes	EaB	5,269	Prime Farmland	Yes	High	Low	No	No	No	High
Egan-Chancellor silty clay loams, 0 to 4 percent slopes	EcB	6,271	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Egan-Shindler complex, 2 to 6 percent slopes	EsB	1,233	Prime Farmland	Yes	High	Low	No	No	No	High

Exhibit C Soil Characteristics for Each Soil Map Unit within the Project area										
Map Unit Name	**Map Unit Symbol [a]**	**Pipeline Crossing Length (feet)**	**Prime Farmland [a]**	**Hydric Soils [a]**	**Compaction Potential [a]**	**Erosion Potential [a, c]**	**Steep Slopes [a, d]**	**Shallow Bedrock [a, e]**	**Shallow Natric Layer [a,f]**	**Re-vegetation Potential**
Egan-Shindler complex, 6 to 9 percent slopes	EsC	2,251	Farmland of Statewide Importance	Yes	High	Moderate	Yes	No	No	Moderate
Egan-Worthing complex, 0 to 6 percent slopes	EwB	12,365	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Graceville silty clay loam	Gr	3,590	Prime Farmland	Yes	High	Low	No	No	No	High
Huntimer silty clay loam, 0 to 2 percent slopes	HuA	8,830	Prime Farmland	Yes	High	Low	No	No	No	High
Lamo silty clay loam	La	472	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Shindler and Talmo soils, 6 to 30 percent slopes	StD	263	Not Prime Farmland	Yes	High	High	No	No	No	Low
Tetonka silty clay loam	Te	15,745	Prime Farmland if Drained	No	High	Low	No	No	No	Moderate
Wentworth silty clay loam, 0 to 2 percent slopes	WeA	31,301	Prime Farmland	Yes	High	Low	No	No	No	High
Wentworth silty clay loam, 0 to 2 percent slopes	WhA	7,911	Prime Farmland if Drained	Yes	High	Low	No	No	No	Moderate
Worthing silty clay	Ws	15,745	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate
Pump Station										
Spink County										
Houdek-Stickney complex, 0 to 2 percent slopes	HwA	4.3	Farmland of Statewide Importance	Yes	High	Low	No	No	No	High
Jerauld-Hoven silt loams, 0 to 2 percent slopes	Jh	4.7	Not Prime Farmland	Yes	High	Low	No	No	Yes	Moderate
Stickney-Dudley-Hoven silt loams, 0 to 2 percent slopes	Su	<0.1	Not Prime Farmland	Yes	High	Low	No	No	No	Moderate

Exhibit C
Soil Characteristics for Each Soil Map Unit within the Project area

Map Unit Name	Map Unit Symbol [a]	Pipeline Crossing Length (feet)	Prime Farmland [a]	Hydric Soils [a]	Compaction Potential [a]	Erosion Potential [a, c]	Steep Slopes [a, d]	Shallow Bedrock [a, e]	Shallow Natric Layer [a,f]	Re-vegetation Potential

[a] As designated by the Natural Resources Conservation Service.
[b] Represents total length (in feet) crossed by the pipeline facilities.
[c] Erosion Potential – Based on land capability class and subclass: High (subclass Ve-VIIIe), Moderate (subclass IIIe-IVe), and Low (remaining subclasses).
[d] Steep Slopes - Represents soils with slopes greater than 8 percent.
[e] Shallow bedrock – Represents soils with unconsolidated rock 60 inches or less from the surface.
[e] Shallow Natric layers – Represents subsoil layers with a large accumulation of sodium salts that can reduce plant growth within 18 inches or less from the surface.

Waterbodies Crossed by the Project

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
Campbell County					
210.6	Unnamed Tributary of Lake Pocasse	Ephemeral	-	-	Yes
211.0	Unnamed Tributary of Lake Pocasse	Ephemeral	-	-	Yes
211.7	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
212.6	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
212.8	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
212.9	Unnamed Tributary of Spring Creek	Intermittent	-	-	Yes
213.6	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
214.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
214.3	Unnamed Pond	Open water	-	-	No
215.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
215.8	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
216.1	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
216.1	Unnamed Pond	Open water	-	-	No
216.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
216.8	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
217.6	Unnamed Tributary of Spring Creek	Ephemeral	-	-	Yes
218.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
218.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
219.0	Spring Creek	Perennial	-	-	Yes
219.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
219.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
222.0	Unnamed Pond	Open water	-	-	Yes
222.2	Unnamed Tributary of McClarem Lake	Ephemeral	-	-	Yes
223.7	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
224.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
226.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
228.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
229.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
232.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
234.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
238.8	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
McPherson County					
243.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
Edmunds County					
247.1	Unnamed Pond	Open water	-	-	No
251.4	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
254.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
255.4	Unnamed Tributary of Unnamed Pond	Ephemeral	-	c	Yes
257.6	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
257.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
267.9	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
276.1	Unnamed Tributary of Stafford Dam	Ephemeral	-	-	Yes
277.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
280.6	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
281.5	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
Faulk County					
283.5	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
287.3	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
288.9	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
291.0	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
292.3	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
292.7	Unnamed Tributary of North Fork Snake Creek	Intermittent	-	-	Yes
293.0	Unnamed Tributary of North Fork Snake Creek	Ephemeral	-	-	Yes
293.8	Unnamed Pond	Intermittent	-	-	No
293.9	North Fork Snake Creek	Perennial	-	-	Yes
300.3	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	Yes
301.7	Unnamed Pond	Open water	-	-	No
302.1	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	No
302.6	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	Yes
303.3	Unnamed Tributary of South Fork Snake Creek	Intermittent	-	-	Yes
305.0	Unnamed Tributary of South Fork Snake Creek	Ephemeral	-	-	Yes
305.0	Unnamed Pond	Open water	-	-	No
305.9	South Fork Snake Creek	Perennial	-	-	Yes
305.9	Unnamed Tributary of South Fork Snake Creek	Ephemeral	-	-	Yes
Spink County					
315.9	Dove Creek	Perennial	-	-	Yes
321.2	Agricultural Ditch	Ephemeral	-	-	Yes
322.4	Turtle Creek	Perennial	Fish/Wildlife Prop, Rec, Stock; Irrigation Waters; Limited Contract Recreation; Warmwater Marginal Fish Life	Full Support; Full Support; Nonsupport; Non Support	HDD[a]
324.5	Unnamed Tributary of Turtle Creek	Intermittent	-	-	Yes
328.7	Unnamed Pond	Open water	-	-	No
335.7	Unnamed Tributary of James River	Intermittent	-	-	Yes
337.1	Unnamed Tributary of James River	Intermittent	-	-	Yes
338.2	Unnamed Tributary of James River	Intermittent	-	-	Yes
342.4	Unnamed Tributary of Lake Dudley	Intermittent	-	-	Yes
342.7	Unnamed Tributary of Lake Dudley	Intermittent	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
Beadle County					
348.0	James River	Perennial	Fish/Wildlife Prop, Red, Stock; Irrigation Waters; Limited Contact Recreation; Warmwater Semipermanent Fish Life	Full Support; Full Support Nonsupport Nonsupport	HDD[a]
348.2	Unnamed Tributary of James River	Intermittent	-	-	Yes
349.4	Unnamed Tributary of James River	Intermittent	-	-	Yes
351.1	Unnamed Tributary of James River	Ephemeral	-	-	Yes
352.1	Agicultural Ditch	Ephemeral	-	-	Yes
352.5	Foster Creek	Perennial	-	-	Yes
353.2	Unnamed Tributary of Foster Creek	Intermittent	-	-	Yes
353.8	Unnamed Tributary of Foster Creek	Intermittent	-	-	Yes
356.1	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
357.8	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
358.4	Unnamed Tributary of Lake Byron	Ephemeral	-	-	Yes
358.7	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
359.0	Unnamed Tributary of Lake Byron	Intermittent	-	-	Yes
360.2	Unnamed Pond	Open water	-	-	No
361.9	Unnamed Tributary of Unnamed lake	Intermittent	-	-	Yes
363.0	Shue Creek	Perennial	-	-	Yes
363.7	Unnamed Tributary of Shue Creek	Ephemeral	-	-	No
364.7	Unnamed Tributary of Shue Creek	Ephemeral	-	-	Yes
364.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
365.1	Unnamed Tributary of Shue Creek	Intermittent	-	-	Yes
366.5	Unnamed Tributary of Shue Creek	Intermittent	-	-	Yes
367.9	Pearl Creek	Intermittent	-	-	Yes
369.0	Unnamed Pond	Open water	-	-	No

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
371.0	Middle Pearl Creek	Intermittent	-	-	Yes
372.2	Unnamed Tributary of Middle Pearl Creak	Intermittent	-	-	Yes
373.2	Unnamed Tributary of Middle Pearl Creek	Intermittent	-	-	Yes
373.8	Unnamed Tributary of Middle Pearl Creek	Intermittent	-	-	Yes
374.0	Unnamed Pond	Open water	-	-	No
Kingsbury County					
375.3	South Fork Pearl Creek	Intermittent	-	-	Yes
375.4	South Fork Pearl Creak	Intermittent	-	-	No
375.5	Unnamed Tributary of South Fork Pearl Creek	Intermittent	-	-	Yes
377.2	Unnamed Tributary of South Fork Pearl Creek	Intermittent	-	-	Yes
378.4	Unnamed Pond	Open water	-	-	No
378.8	Unnamed Tributary of Lake Iroquois	Intermittent	-	-	Yes
379.7	Unnamed Tributary of Lake Iroquois	Intermittent	-	-	Yes
385.8	Red Sofne Creek	Intermittent	-	-	Yes
387.5	Unnamed Tributary of Redsofne Creek	Intermittent	-	-	Yes
388.6	Unnamed Tributary of Redsofne Creek	Intermittent	-	-	Yes
389.3	Unnamed Pond	Open water	-	-	No
391.5	Rock Creek	Intermittent	-	-	No
391.7	Rock Creek	Intermittent	-	-	Yes
392.4	Unnamed Tributary of Unnamed Pond	Intermittent	-	-	Yes
393.3	Unnamed Pond	Open water	-	-	Yes
395.0	West Fork Vermillion River	Intermittent	-	-	Yes
Miner County					
396.7	Unnamed Tributary of West Fork Vermillion River	Intermittent	-	-	Yes
398.6	Unnamed Tributary of West Fork Vermillion River	Intermittent	-	-	Yes
399.2	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
399.7	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
400.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
400.9	Unnamed Tributary of West Fork Vermillion River	Intermittent	-	-	Yes
401.6	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
401.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
402.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
402.5	Unnamed Stream	Intermittent	-	-	Yes
403.3	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
403.5	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
403.7	Unnamed Pond	Open water	-	-	No
403.9	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
404.0	Unnamed Tributary of West Fork Vermillion River	Ephemeral	-	-	Yes
404.5	Unnamed Tributary West Fork Vermillion River	Intermittent	-	-	Yes
404.8	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
407.6	Agricultural Irrigation ditch	Ephemeral	-	-	Yes
408.2	Unnamed Tributary of Otter Lake	Ephemeral	-	-	Yes
409.3	Unnamed Pond	Open water	-	-	No
409.6	Unnamed Tributary of Otter Lake	Ephemeral	-	-	Yes
410.4	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
Lake County					
410.7	Unnamed Pond	Open water	-	-	No
410.7	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
410.9	Unnamed Pond	Open water	-	-	No
410.9	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
411.0	Unnamed Pond	Open water	-	-	No
411.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
411.1	Unnamed Pond	Open water	-	-	No
412.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
412.3	Unnamed Pond	Open water	-	-	No
412.6	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
412.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
412.9	Agricultural Irrigation Ditch	Ephemeral	-	-	No
413.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
413.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
413.3	Unnamed Pond	Open water	-	-	No
413.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.2	Agricultural Irrigation Ditch	Ephemeral		-	Yes
414.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
414.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.0	Unnamed Pond	Open water	-	-	No
415.0	Roadside Ditch	Ephemeral	-	-	Yes
415.2	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
415.6	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
415.6	Unnamed Pond	Open water	-	-	No
415.7	East Fork Vermillion River	Perennial	-	-	Yes
415.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
416.2	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
416.4	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
416.5	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
416.7	Unnamed Tributary of East Fork Vermillion River	Intermittent	-	-	Yes
416.9	Unnamed Tributary of Unnamed Pond	Intermittent	-	-	Yes
417.0	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
417.1	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
417.3	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
417.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
417.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
417.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
417.9	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
418.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
418.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
418.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
419.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
419.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
419.4	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
419.8	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
419.9	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
420.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
420.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
420.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
421.5	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
421.6	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
421.8	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
422.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
424.0	Agricultural Irrigation Ditch	Ephemeral	-	-	No
424.2	Unnamed Tributary of Unnamed East Fork Vermillion River	Intermittent	-	-	Yes
424.8	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
425.1	Unnamed Tributary of Unnamed East Fork Vermillion River	Ephemeral	-	-	Yes
426.2	Unnamed Tributary of North Buffalo Creek	Ephemeral	-	-	Yes
426.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
427.6	Unnamed Tributary of North Buffalo Creek	Intermittent	-	-	Yes
427.7	Unnamed Tributary of North Buffalo Creek	Intermittent	-	-	Yes
428.9	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
429.1	Unnamed Tributary of Unnamed Pond	Ephemeral	-	-	Yes
McCook County					
430.1	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
430.8	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
Minnehaha County					
431.2	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
431.8	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
432.3	Unnamed Tributary of Buffalo Lake	Intermittent	-	-	Yes
433.3	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
433.7	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
434.2	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
434.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
435.2	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
435.4	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
435.8	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
435.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
436.2	West Branch Skunk Creek	Intermittent	-	-	Yes
436.2	Unnamed Pond	Open water	-	-	No
436.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
437.2	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
439.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
439.5	Aqricultural Irrigation Dtich	Ephemeral	-	-	Yes
439.7	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
440.7	Unnamed Tributary of West Branch Skunk Creek	Ephemeral	-	-	Yes
442.0	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
442.3	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
445.4	Unnamed Tributary of West Branch Skunk Creek	Intermittent	-	-	Yes
446.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
446.3	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
446.4	Unnamed Pond	Open water	-	-	No
447.1	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
447.8	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
448.1	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
448.8	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
449.0	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
449.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
449.7	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
450.8	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
452.1	Unnamed Tributary of Wall Lake	Intermittent	-	-	Yes
452.4	Unnamed Tributary ofo Wall Lake	Intermittent	-	-	Yes
453.5	Unnamed Tributary of Wall Lake	Intermittent	-	-	Yes
453.9	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
454.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
454.6	Unnamed Tributary of Unnamed Pond	Intermittent	-	-	Yes
455.4	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
455.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
Turner County					
456.9	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
457.8	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
457.9	Unnamed Tributary of Skunk Creek	Intermittent	-	-	Yes
458.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
Lincoln County					
458.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
460.0	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
460.3	Unnamed Tributary of Beaver Creek	Ephemeral	-	-	Yes
460.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
460.6	Unnamed Tributary of Beaver Creek	Ephemeral	-	-	Yes
461.0	Unnamed Tributary of Beaver Creek	Intermittent	-	-	No

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
461.2	Unnamed Tributary of Beaver Creek	Ephemeral	-	-	Yes
461.5	Unnamed Tributary of Beaver Creek	Intermittent	-	-	No
461.7	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
461.9	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
462.2	Unnamed Tributary of Beaver Creek	Intermittent	-	-	Yes
463.4	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
463.5	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	No
463.7	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
465.4	Unnamed Tributary of Nine Mile Creek	Ephemeral	-	-	Yes
465.5	Agricultural Irrigaiofn Ditch	Ephemeral	-	-	Yes
466.3	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
466.6	Agricultural irrigation Ditch	Ephemeral	-	-	Yes
467.1	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
468.4	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
468.6	Unnamed Tributary of Nine Mile Creek	Ephemeral	-	-	Yes
469.7	Nine Mile Creek	Intermittent	-	-	Yes
471.1	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	No
471.4	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	No
471.5	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
472.2	Unnamed Tributary of Nine Mile Creek	Ephemeral	-	-	No
473.0	Agricultural Irrigaiofn Ditch	Ephemeral	-	-	No
473.7	Unnamed Tributary of Nine Mile Creek	Intermittent	-	-	Yes
474.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
474.6	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
475.0	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes
476.4	Agricultural Irrigation Ditch	Ephemeral	-	-	Yes

Exhibit C Waterbodies Crossed by the Dakota Access Project					
Approximate Milepost	**Waterbody Name**	**Flow Regime**	**State Classification**	**Supports Use Designation**	**Crosses Centerline**
477.0	Unnamed Tributary of Big Sioux River	Intermittent	-	-	Yes
478.7	Agricultural Irrigation Ditch	Ephemeral	-	-	No
478.9	Unnamed Tributary of Big Sioux River	Intermittent	-	-	No
480.3	Unnamed Tributary of Big Sioux River	Intermittent	-	-	Yes
481.5	Unnamed Tributary of Big Sioux River	Ephemeral	-	-	Yes
481.6	Big Sioux River	Perennial	Fish/Wildlife Prop, Rec, Stock; Immersion Recreation; Irrigation Waters; Limited Contact Recreation, Warmwater Semipermanent fish life	Full Support; Nonsupport; Full Support; Nonsupport; Nonsupport	HDD[a]
[a] HDD= Waterbody will be crossed via horizontal directional drill (HDD).					

Federal and State Listed Threatened and Endangered Species in South Dakota

Federally Listed Threatened and Endangered Species in South Dakota						
Common Name	**Scientific Name**	**Federal Status**	**Federal County Listing**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Mammals						
Northern long-eared bat	*Myotis septentrionalis*	PE	Beadle, Campbell, Edmunds, Faulk, Kingsbury, Lake, Lincoln, McCook, McPherson, Miner, Minnehaha, Spink, Turner	No effect	Summer roosting habitat underneath bark or in crevices of live and dead trees. Winter habitat includes caves and mines with large entrances.	The range of this species is located at the eastern border of the state (NatureServe, 2014). Forested areas within this part of the Project are limited to the Big Sioux River crossing. The Big Sioux River will be crossed via HDD, therefore no impacts to forested areas are anticipated.
Birds						
Interior least tern	*Sterna antillarum athalassos*	E	Campbell	No effect	Interior least tern nesting habitat includes open shorelines, riverine sandbars, and mudflats along Missouri and Mississippi Rivers drainages.	The Project does not cross the Missouri River within South Dakota. No suitable habitat within the Project area.
Piping plover	*Charadrius melodus*	T	Campbell, Kingsbury	No effect	Sandy or gravelly beaches and sandbars or alkaline wetlands.	No suitable nesting habitat was identified during Project field surveys. Critical habitat for the piping plover is along the Missouri River; the Project does not cross the Missouri River within South Dakota. This species is highly mobile and would likely avoid the construction area.
Red knot	*Calidris canutus rufa*	PT	Beadle, Campbell, Edmunds, Faulk, Kingsbury, Lake, Lincoln, McCook, McPherson, Miner, Minnehaha, Spink, Turner	No effect	Breeds in the Arctic tundra areas, such as sparsely vegetated habitat. When non-breeding they prefer primarily intertidal, marine habitats, coastal inlets, estuaries, and bays.	No suitable habitat within the Project area.
Sprague's pipit	*Anthus spragueii*	C	Campbell, McPherson	No effect	Prefer native grasslands of intermediate height and sparse to intermediate vegetation density, low forb density, and little bare ground but low litter depth. Introduced grasslands may be utilized, but to a much lesser extent. Nests on the ground from early May to mid-October.	Breeding habitat range is in the northern part of the state. Some of the of the Project area may be within this range; however, there are no occurrences documented within the Project area (SDNHP, 2014 and eBird, 2014)

Federally Listed Threatened and Endangered Species in South Dakota						
Common Name	**Scientific Name**	**Federal Status**	**Federal County Listing**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Whooping crane	*Grus americana*	E	Beadle, Campbell, Clark, Edmunds, Faulk, Kingsbury, McCook, McPherson, Miner, Spink, Turner	No effect	During migration, this species utilizes wetlands and cropland ponds for feeding and roosting. Seasonal and semi-permanent wetlands are the most commonly used.	The Project area is within the migratory range of this species (Cornell Lab of Ornithology, 2014). Only one whooping crane occurrence record is located in Kingsbury County within one mile of the Project (SDNHP, 2014). This species is highly mobile and would likely avoid construction.
Fishes						
Pallid sturgeon	*Scaphirhynchus albus*	E	Campbell, Lincoln	No effect	Prefer a fast flowing turbid river with a firm sand or gravel bottom. Areas at the end of chutes or sandbars are commonly used for feeding.	The Missouri River (Campbell County) will not be crossed in South Dakota, and the Big Sioux River (Lincoln County) will be crossed via HDD, therefore no impacts will occur to this species.
Topeka shiner	*Notropis topeka*	E	Beadle, Kingsbury, Lake, Lincoln, McCook, Miner, Minnehaha, Spink, Turner	Not likely to adversely effect	Found in small prairie streams that exhibit perennial or nearly perennial flow. Substrate usually is clean gravel, cobble, or sand.	Nine streams crossed by the Project may contain this species as identified by the USFWS. Two of these streams (James and Big Sioux Rivers) will be crossed via HDD. Consultation with the U.S. Fish and Wildlife Service is necessary. Mitigation measures to be used during construction of the pipeline within identified streams are under development.
Invertebrates						
Dakota skipper	*Hesperia dacotae*	T	Edmunds, McPherson	No effect	Dakota skippers only utilize high quality undisturbed (i.e., remnant, uncultivated) prairie; including, wet tallgrass prairie and dry mixed grass prairie.	No native grasslands were identified within Edmunds and McPherson County during field surveys.
Vascular Plants						
Western prairie fringed orchid	*Platanthera praeclara*	T	Lake, Lincoln, McCook, Miner, Minnehaha, Turner	No effect	Prefers moist tallgrass prairie and sedge meadows are appropriate habitat for the western prairie fringed orchid.	Suitable habitat present within Project area, however the species seems to have been extirpated from South Dakota.

E= Endangered
T= Threatened
PE=Proposed Endangered
PT= Proposed Threatened
C= Candidate

State Listed Threatened and Endangered Species in South Dakota					
Common Name	**Scientific Name**	**State Status[a]**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Mammals					
Black-footed ferret	*Mustela nigripes*	E	No impact anticipated	Associated exclusively with large (10,000 acres or more) prairie dog towns. Use burrows for shelter and feed on prairie dogs and other species within the habitat.	Historically, the species was present within the state; however, large prairie dog complexes needed to support a black-footed ferret population do not currently exist within the Project area.
Northern river otter	*Lontra canadensis*	T	No impact anticipated	Rivers with high quality water and an abundant food supply.	Within the Project area, this species has been documented within the Big Sioux River and James River watersheds (South Dakota Game, Fish, and Parks [SDGFP], 2014a and South Dakota Natural Heritage Program [SDNHP], 2014). However, both of these rivers will be crossed via HDD, therefore avoiding impacts to the riverine habitats utilized by the otter.
Swift fox	*Vulpes velox*	T	No impact anticipated	Prefer short or mixed grass prairies with flat to gently rolling terrain and sparse vegetation that allows for good mobility and visibility.	Although historically the range of this species was within the Project area, the species does not currently reside within the Project area (NatureServe, 2014).
Birds					
American dipper	*Cinclus mexicanus*	T	No impact anticipated	Cold and clear, fast-moving streams with gravel, stone, or sand bottoms which support invertebrates. Streams with structures over the water such as waterfalls, rocks and boulders are needed for nesting.	The range of this species is not within the Project area (Cornell Lab of Ornithology, 2014).
Bald eagle	*Haliaeetus leucocephalus*	T	No impact anticipated	Breeds and winters in areas close to a coast, river or lake. Prefers conifers for nesting and roosting and tends to avoid areas with high human traffic.	There are few forested areas along the pipeline route for nesting. Occurrence data from the SDNHP documented a nest approximately one mile from the Project area. Field surveys did not identify bald eagles within the Project area. This species is highly mobile and would likely avoid construction.
Eskimo curlew	*Numenius borealis*	E	No impact anticipated	Variety of grassland habitats.	The Project area is within the migratory range of this species (NatureServe, 2014). This species is highly mobile and would likely avoid construction.
Interior least tern	*Sterna antillarum athalassos*	E	No impact anticipated	Interior least tern nesting habitat includes open shorelines, riverine sandbars, and mudflats along Missouri and Mississippi Rivers drainages.	The Project does not cross the Missouri River within South Dakota. No suitable habitat within the Project area.
Osprey	*Pandion haliaetus*	T	No impact anticipated	Prefer habitat near water including, saltmarshes, rivers, ponds, and reservoirs. Osprey places their nest in open areas on poles, channel markers, and dead trees, often over water.	The Project area is within the migratory range of this species (Cornell Lab of Ornithology, 2014). This species is highly mobile and would likely avoid construction.

State Listed Threatened and Endangered Species in South Dakota					
Common Name	**Scientific Name**	**State Status[a]**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Peregrine falcon	*Falco peregrines*	E	No impact anticipated	Inhabits any open habitat with a wide view of the surrounding area, close proximity to water and rocky cliffs or even tall buildings available for nesting.	No nesting habitat is within the Project area (NatureServe, 2014). This species is highly mobile and would likely avoid the construction area.
Piping plover	*Charadrius melodus*	T	No impact anticipated	Sandy or gravelly beaches and sandbars or alkaline wetlands.	No suitable nesting habitat was identified during Project field surveys. Critical habitat for the piping plover is along the Missouri River; the Project does not cross the Missouri River within South Dakota. This species is highly mobile and would likely avoid the construction area.
Whooping crane	*Grus americana*	E	No impact anticipated	During migration, this species utilizes wetlands and cropland ponds for feeding and roosting. Seasonal and semi-permanent wetlands are the most commonly used.	The Project area is within the migratory range of this species (Cornell Lab of Ornithology, 2014). Only one whooping crane occurrence record is located in Kingsbury County within one mile of the Project (SDNHP, 2014). This species is highly mobile and would likely avoid construction.
Reptiles					
Eastern hognose snake	*Heterodon platirhinos*	T	No impact anticipated	Prefer woodlands with sandy soil, fields, farmland and coastal areas.	The range of this species is not located within the Project area (NatureServe, 2014).
False map turtle	*Graptemys pseudogeographica*	T	No impact anticipated	Inhabits slow moving rivers, river sloughs, oxbow lakes, lakes and reservoirs containing abundant aquatic vegetation and basking sites.	The range of this species within South Dakota is limited to the Missouri River area. The Project enters South Dakota east of the Missouri River (NatureServe, 2014).
Lined snake	*Tropidoclonion lineatum*	E	No impact anticipated	Prefers open prairie hillsides and rocky, woodland areas	The range of this species within South Dakota is limited to the southeast corner of the state. Suitable habitat may be present within the Project area; however, this species is highly mobile and would likely avoid construction.
Fishes					
Banded killifish	*Fundulus diaphanous*	E	No impact anticipated	Habitat ranges from quiet waters of lakes and ponds with ample vegetation to muddy streams without vegetation.	The current species habitat range is not located within the Project area (SDGFP, 2014b).

State Listed Threatened and Endangered Species in South Dakota					
Common Name	**Scientific Name**	**State Status[a]**	**Potential Impact**	**Habitat Requirement**	**Determination of Effect**
Blacknose shiner	*Notropis heterolepis*	E	No impact anticipated	Prefers clear, cool streams with sand and gravel beds, and deep pools with abundant vegetation both in the water and on lands bordering the streams. This species has only been found in two pristine streams located in south-central South Dakota.	No suitable habitat within the Project area.
Finescale dace	*Chrosomus neogaeus*	E	No impact anticipated	Occur most often in cool, clear mountain streams and less often in lakes, reservoirs, or large rivers. Prefer moderate water velocities, associate with a variety of substrates.	The Project area is outside of the current species range (NatureServe, 2014).
Longnose sucker	*Catostomus catostomus*	T	No impact anticipated	Found in cool, spring-fed streams where it feeds on the bottom on crustaceans, snails, insect larvae, and larvae.	The Project area is outside of the current species range (NatureServe, 2014).
Northern pearl dace	*Margariscus nachtriebi*	T	No impact anticipated	Occurs in cool bogs, ponds, lakes, and clear streams.	The species distribution is not located within the Project area. Limited to Counties within southwestern South Dakota (U.S. Geological Survey, 2014)
Northern redbelly dace	*Chrosomus eos*	T	No impact anticipated	Prefers areas with beds of aquatic vegetation in spring-fed streams.	Believed to be extirpated from the Big Sioux drainage (SDGFP, 2014c)
Pallid sturgeon	*Scaphirhynchus albus*	E	No impact anticipated	Prefer a fast flowing turbid river with a firm sand or gravel bottom. Areas at the end of chutes or sandbars are commonly used for feeding.	The Missouri River (Campbell County) will not be crossed in South Dakota, and the Big Sioux River (Lincoln County) will be crossed via HDD, therefore no impacts will occur to this species.
Sicklefin chub	*Macrhybopsis meeki*	E	No impact anticipated	Prefer large, turbid rivers with a diversity of depths and velocities forming braided channels, sand bars, sand flats, and gravel bars.	No suitable habitat within the Project area.
Sturgeon chub	*Macrhybopsis gelida*	T	No impact anticipated	Prefer large, turbid rivers with a range of depths and velocities forming braided channels, gravel bars, and sand flats and bars.	No suitable habitat within the Project area.

E= Endangered
T= Threatened
[a] South Dakota state listed species do not have county listings, they are listed state-wide.

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DAKOTA ACCESS, LLC

Exhibit D

Dakota Access Project Plans

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1.0 INTRODUCTION

Dakota Access, LLC and Energy Transfer Crude Oil Company, LLC (COMPANY) will implement this Stormwater Pollution Prevention Plan (SWPPP) during construction of the Dakota Access Pipeline (DAPL) Project and the Energy Transfer Crude Oil Pipeline (ETCOP) Project (Project). The primary purpose of the SWPPP is to minimize the impacts of stormwater runoff during Project construction activities through the implementation of Best Management Practices (BMP).

1.1 RESPONSIBILITY FOR IMPLEMENTATION

The Construction Manager is responsible for implementation of the SWPPP. As stated in the construction contract or as otherwise agreed, the Contractor may be responsible for all or part of the implementation of the SWPPP. Where Environmental Inspectors (EI) or Chief Inspectors (CI) are utilized, they will fulfill the responsibilities as described herein. If neither an EI nor CI is utilized for the Project, those responsibilities will be assumed by the Construction Manager (CM) or a designee.

2.0 SITE DESCRIPTION

2.1 PROJECT NAME, LOCATION, AND PURPOSE

Project Name: Dakota Access Pipeline (DAPL) Project and Energy Transfer Crude Oil Pipeline (ETCOP) Project.

Project Purpose: ETC's primary objective for the proposed Project is to allow for transport of approximately 400,000BPD of crude oil between Stanley, ND and Nederland, TX. The crude oil transported will provide supplemental crude oil supply for markets in the United States. In addition, the proposed project will open railroad transport for other products produced locally that otherwise would not be accessible to other markets.

Project Location: The DAPL and ETCOP projects consist of a Gathering Area, a Mainline Transmission Pipeline, and the Conversion of an existing natural gas transmission line to crude oil. The Gathering System commences at Stanley, North Dakota and ends at Johnson Corner, North Dakota. There are six proposed pump stations along the Gathering System, namely Stanley, Ramberg, Epping, Trenton, Watford City, and Johnson Corner. The Mainline Transmission Pipeline begins at Johnson Corner, North Dakota and ends southeast of the proposed Illinois Patoka Custody Transfer and Metering Station. Approximately 992 miles of mainline make up the DAPL project. The ETCOP project begins at the Patoka Custody

Transfer and Metering Station and consists of approximately 24 miles of new Mainline Transmission Pipeline. This will eventually tie into the future expansion of 757 miles of conversion pipeline that extends from Johnsonville, Illinois to Nederland, Texas.

There will be tanks constructed at the six pump stations along the Gathering System. There will be one 50,000 barrel tank at Stanley, one 200,000 barrel tank and one 100,000 barrel tank at Ramberg, one 100,000 barrel tank at Epping, one 100,000 barrel tank at Trenton, two 100,000 barrel tanks at Watford City, and one 200,000 barrel tank at Johnson Corner.

There will be mainline valve sites on both sides of major water body and major highway crossings for isolation in the event of emergency shutdown. In addition to the mainline valves, multiple pump stations and one custody transfer metering station will also be installed along the Mainline Transmission Pipeline. The proposed custody transfer station will be located near Patoka, Illinois. Launcher and Receiver traps will also be installed along the Mainline Transmission Pipeline at locations less than 100 miles apart.

A proposed rail yard and rail loading facility will also potentially be integrated into the DAPL project. The location of the rail yard will be on the east side of Historical Route 66 and on the west side of Niemanville Trail / Co Rd 225E in Litchfield, Illinois.

2.2 NATURE OF THE CONSTRUCTION ACTIVITY

ETC proposes to install the new pipeline within a variable-width construction right-of-way. Actual workspace width will depend on site engineering and available workspace constraints. In general, the pipeline will be constructed using an approximate 150-foot-wide construction right-of-way, which includes a new proposed 50-foot-wide permanent easement and 100-foot-wide temporary easement. The temporary easement will be allowed to revert to its original land use following construction. All pump stations and mainline valve sites to be constructed will be located on tracts of sufficient size to accommodate all aboveground appurtenances along the right-of-way.

2.3 SEQUENCE OF MAJOR SOIL-DISTURBING EVENTS

The following represents a typical sequence of major soil-disturbing events during the Project:

- Installation of stabilized construction entrances and surface water (including wetlands) protection BMPs.

- Clearing of the Project Right-Of-Way area as necessary. This may include clearing of brush and trees to create right-of-way needed for temporary workspace, soil storage, construction activities, and areas needed for access to particular construction sites within the Project area.
- Installation of additional BMPs for erosion and stormwater management, as needed.
- Pipe stringing, bending, welding, and testing.
- Excavation of ditch (trackhoes or similar equipment will be used to excavate the ditch to the required depth).
- Installation of pipe in ditch.
- Tie-ins of the sections of pipeline which will be welded together in the ditch.
- Backfilling the ditch line (excavated soil will be used to cover the pipe).
- Hydrostatic testing of the pipeline as necessary.
- Removal of temporary erosion/sediment controls when other construction activity is completed and final stabilization is achieved.

3.0 CONTROLS

This section describes controls used to prevent or control stormwater pollution. The COMPANY BMPs are based on the current best accepted practices endorsed by the American Gas Association, Gas Research Institute, Association of Pipeline Contractors, EPA, and USACE. Appendix A contains diagrams showing typical installation of BMPs.

The Project's EI is responsible for determining the schedule and placement of BMPs. This plan will be updated by the Contractor, EI, and/or CI to identify the location and schedule of planned or installed controls as the need for these controls is determined.

When used from this point forward in this Plan, "EI" will refer to the responsible person, whether it is the EI, CI, Health, Safety and Environmental (HSE) Coordinator, or Project Manager or other responsible person.

The following represents a typical sequence of major soil-disturbing events during the Project and the control measures that will be implemented.

- Clearing of the Project area as necessary. This may include clearing of brush and trees in the right-of-way, in areas adjacent to the right-of-way needed for soil storage, and/or in areas needed for access to particular construction sites within the Project area. The Project's EI will implement such measures as temporary slope breakers, silt fencing, and hay/straw bales prior to any soil-disturbing activities, and will install additional BMPs for erosion and stormwater management, as needed based on existing site conditions.

- Excavation of ditch (trackhoes or similar equipment will be used to excavate the ditch to the required depth). The Project's EI will implement such measures as temporary slope breakers, silt fencing, and hay/straw bales prior to excavation activities, and will install additional BMPs for erosion and stormwater management, as needed based on existing site conditions.

- Backfilling the ditch line (excavated soil will be used to cover the pipe). The Project's EI will implement such measures as temporary slope breakers, silt fencing, and hay/straw bales prior to backfilling, and will install additional BMPs for erosion and stormwater management, as needed based on existing site conditions.

- Performing cleanup and stabilization. This phase will begin after backfilling and will continue throughout the remainder of the Project's construction. This phase will include minor grading to level small areas, and revegetation. Project areas to be stabilized by vegetation will be seeded and mulched.

- The Project's EI will remove temporary erosion/sediment controls when other construction activity is completed and final stabilization is achieved.

3.1 EROSION AND SEDIMENT CONTROLS

3.1.1 Short- and Long-Term Goals and Criteria (as applicable)

(a) The construction phase erosion and sediment controls are designed to retain sediment on-site to the greatest extent practicable.

(b) Control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or

other information indicate that a control has been installed and/or used inappropriately and/or incorrectly, the control shall be replaced and/or modified as needed.

(c) If sediment escapes the Project area, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impact (e.g., fugitive sediment in street could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).

(d) Sediment must be removed from sediment traps when capacity has been reduced by 50 percent.

(e) Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

3.1.2 Temporary Erosion Control Measures

The following temporary erosion and sediment controls will be utilized as necessary:

Temporary Slope Breakers: Temporary slope breakers (water bars/terraces) will be installed as necessary (at the EI's discretion) diagonally across the right-of-way on slopes to control erosion by reducing and shortening the velocity, length and concentration of runoff according to the figures provided in Appendix A. These breakers will divert water to a well-vegetated area. If a vegetated area is not available, erosion control barriers will be installed to filter the runoff at the outlet of the slope breakers and off of the construction right-of-way. Silt fence, hay/straw bales, or sandbags may be used in place of temporary slope breakers at the discretion of the EI.

Natural vegetation acts as an effective filter medium for silt removal from surface runoff. Its use as a sediment barrier results in less disturbance to the land than other methods. In areas where natural vegetation is not present or does not constitute a suitable barrier, temporary sediment and/or erosion control barriers will be installed. Temporary sediment barriers, typically hay/straw bale filters or silt fences, dissipate the energy of flowing water to allow settlement of sediment from surface water runoff.

Silt Fence/Hay/Straw Bales: Silt fences and hay/straw bales will be installed in accordance with figures provided in Appendix A. The silt fences and/or hay/straw bales will be installed as necessary to prevent erosion and sediment laden runoff from stormwater discharges. These measures will remain in place until permanent revegetation measures have been judged

successful. Silt fence and hay bale structures are also used to control erosion and sedimentation for hydrostatic test water discharges. Bale filters are effective for small rills that can be spanned by one or two bales. Bales are constructed of hay (or straw) that is securely bound to form a berm, which is held in place by two stakes driven through each bale. The first stake is driven at an angle toward the previously positioned bale, and the second stake is driven perpendicular to ground surface. The bindings of the bales will be horizontal. Filter fabric fences (silt fences) perform the same function as hay bale berms, but have the advantage of ease of installation, versatility, and light weight.

A silt fence is a geotextile fabric with fence posts spaced no more than 10 feet apart. Both silt fences and hay/straw bales will be installed according to the manufacturer's instructions where site conditions allow. Otherwise, the silt fence will be imbedded in the ground a minimum of 6 inches. Where two sections are joined, they will be overlapped a minimum of 6 inches. Accumulated sediment will be removed regularly and the silt fencing inspected to ensure the bottom of the silt fence remains imbedded in the ground. A sufficient stockpile of silt fence will be maintained on-site for emergency use.

Hay bales may be left in place. These barriers are required after the initial disturbance of the soil and are typically installed at the following locations:

- At the outlet of a temporary slope breaker when vegetation is not enough to control erosion.
- Along banks of waterbodies between the graded right-of-way and the waterbody after clearing.
- Downslope of any stockpiled soil in the vicinity of waterbodies and wetlands.
- At the base of slopes adjacent to road crossings where vegetation has been disturbed.
- At sideslope and downslope boundaries of the construction where runoff is not otherwise directed by temporary slope breakers.
- In the right-of-way at boundaries between wetlands and adjacent disturbed upland areas to prevent flow of sediment into the wetland where runoff is not otherwise directed by a temporary slope breaker.

- At the edge of the right-of-way to prevent siltation of ponds, wetlands, or other waterbodies adjacent to the downslope of the right-of-way or as necessary to contain spoil and sediment within the right-of-way.

- For hydrostatic test water discharges, the water should be released directly into the silt fence/hay bale structures in conjunction with other approved velocity dissipating devices.

Temporary Trench Plugs: Temporary trench plugs prevent water diversion from waterbodies or drainage tiles into upland portions of the pipeline trench during construction and prevent silt-laden stormwater from flowing down the trench into waterbodies. The EI or CI will determine the need for and spacing of trench plugs. Otherwise, the Contractor will install hard trench plugs (undisturbed soil) on either side of waterbody crossings or drain tiles. Topsoil will not be used for trench plugs.

3.1.3 Stabilization Practices

The stabilization measures of the pipeline right-of-way incorporate permanent erosion and sedimentation measures. However, in the event that final restoration cannot be implemented immediately post-construction, temporary erosion and sedimentation control measures will be employed as specified by the Contractor until the weather is suitable for final cleanup.

For pipeline construction in areas with sloping terrain, COMPANY will use permanent trench plugs for soil stabilization.

3.1.3.1 Upland Areas

Temporary Stabilization:

- Temporary stabilization measures will be initiated as soon as practicable in portions of the right-of-way where construction activities have temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day is precluded by weather, stabilization measures will be initiated as soon as machinery is able to access the right-of-way. If activities resume within 21 days from when the activities ceased, stabilization measures do not have to be initiated by the 14th day following cessation of the activity. These guidelines are based on National Pollutant Discharge Elimination System (NPDES) requirements and may be modified based on state-specific PDES regulations.

- In the event that construction is completed more than 30 days before the seeding season for perennial vegetation, areas adjacent to waterbodies will be mulched with

3 tons/acre of straw, or its equivalent, to a minimum of 100 feet on either side of the waterbody. These guidelines are based on NPDES requirements and may be modified based on state-specific PDES regulations.

- Temporary sediment barriers may be removed from an area when that area is successfully revegetated (i.e., if the right-of-way surface condition is similar to adjacent undisturbed lands). These guidelines are based on NPDES requirements and may be modified based on state-specific PDES regulations.

Permanent Stabilization:

- Erosion and sedimentation control practices (installation of structures, revegetation, and maintenance practices) will be implemented to minimize the potential for soil erosion or sedimentation of streams and to restore the right-of-way and any other disturbed areas. Final grading will be completed within 10 days of construction completion (including the installation of permanent erosion control measures in the areas of steep slopes only), weather permitting. Construction debris will be removed from the right-of-way and the right-of-way will be graded so that the soil is left in proper condition for planting.

- The right-of-way on off-road sections will be graded to preconstruction contours, as practical, with a small crown of soil left over the ditch to compensate for settling, as approved by the CM, EI, and/or CI. Openings will be left in the completed crown to restore lateral surface drainage to preconstruction patterns.

- Where topsoil has been segregated, the topsoil will be spread back along the right-of-way in an even layer.

- Fences that were cut and replaced by gaps during construction will be repaired to at least their equivalent state during preconstruction activities.

- Permanent slope breakers will be constructed after final grading and prior to seeding in accordance with the applicable regulations to replace temporary barriers at pedestrian, trail, road, waterbody, and wetland crossings.

3.1.3.2 **Revegetation and Seeding**

Seed, fertilizer, and agricultural lime application will be accomplished at the following rates and mixtures unless otherwise instructed by applicable permits or land managing agency requirements:

- Seed Mixture: German Foxtail Millet "hulled" at a rate of 20 pounds per acre, with "hulled" Bermuda grass at a rate of 10 pounds per acre.
- Fertilizer: 5-19-19 at a rate of 300 pounds per acre.
- Agricultural Lime: at a rate of 2,000 pounds per acre.
- Final revegetation standards that will be used by COMPANY for stabilization of the right-of-way will be determined through discussions with the individual state and local agencies and through the permit process.
- The right-of-way will be seeded after final grading in accordance with recommended seeding dates, weather and soil conditions permitting.
- Turf, ornamental shrubs, and other landscaping materials will be restored in accordance with landowner agreements. Selection is based on adaptation of plants to the soils and climate, ease of establishment, suitability for specific use, longevity or ability to re-seed, maintenance required, aesthetic values, and landowner agreement. Personnel familiar with local horticultural and turf establishment practices must perform the restoration work.
- Where broadcast or hydro seeding is to be done, the seedbed will be prepared as necessary to ensure sites for seeds to lodge and germinate.
- Where hand broadcast seeding is used, the seed will be applied at one-half the rate in each of two separate passes.
- The seedbed will be prepared to a depth of 3 to 4 inches using appropriate equipment to provide a firm, smooth seedbed that is free of debris.
- The Project area should be seeded as deemed appropriate by the CM and/or EI. If seeding cannot be done soon after final grading, temporary erosion and sediment controls will be used and seeding of permanent cover will be done at the beginning of

the next seeding season. Meanwhile, temporary stabilization measures will be implemented as appropriate.

- Slopes steeper than 3:1 will be seeded immediately after final grading in accordance with recommended seeding dates, weather permitting.
- Seed will be purchased in accordance with the Pure Live Seed (PLS) specifications for seed mixes and used within 12 months of testing.
- Legume seed will be treated with an inoculant specific to the species. The manufacturer's recommended inoculant rates will be used.
- The seed will be uniformly applied and covered 0.5 to 1 inch deep, depending on seed size. A seed drill equipped with cultipacker is preferred, but broadcast or hydro seeding can be used at double the recommended seeding rates. Where broadcast seeding is used, the seedbed will be firmed with a cultipacker, roller, or similar method after seeding.
- Other alternative seed mixes specifically requested by the landowner or land-managing agency may be used.
- Areas that are seeded after the recommended seeding date should be mulched if permitted.

3.1.3.3 Wetland Restoration

- COMPANY's approach to wetland mitigation and restoration involves a combination of impact minimization during construction, substrate and hydrology restoration, and vegetation establishment involving successful natural processes as a key component.
- The construction workspace for the Project will be been designed to limit impacts to wetlands.
- During the restoration phase, segregated topsoil will be replaced over the trenchline and wetland contours and drainage patterns will be restored to approximate original condition. Surface rocks and boulders that had been windrowed during the construction phase will be distributed in a natural pre-construction configuration in the temporary work

areas. Following restoration of the substrate, wetlands will typically be seeded with annual ryegrass or other seed mixture as directed by regulatory agencies.

3.1.3.4 Riparian Areas

Riparian areas are defined as "on or pertaining to the bank of a natural course of water" (stream, pond, lake, or wetland). The EPA defines "riparian areas" as areas adjacent to streams and lakes where the high water table creates distinct soil and vegetative characteristics from the *adjacent* uplands.

- Following installation of the pipeline, stream banks and riparian areas will be re-contoured and stabilized. Banks will typically be stabilized with an herbaceous mixture and erosion control fabric such as jute netting. Rock riprap may be used to stabilize particularly erosive or unstable areas at the recommendation/approval of the state agencies and by the USACE.

3.1.4 Other Surface Applications

Other surface applications will be applied as outlined below unless otherwise instructed by applicable permits or land managing agency requirements:

(a) Mulch: After seeding, mulch may be applied as determined necessary by the EI at a rate of approximately 2 tons/acre on the entire right-of-way except on wetlands, lawns, agricultural crop areas, and areas where hydro-mulch is used. Mulching before seeding may be done if construction or restoration activity is interrupted for an extended period, such as when seeding cannot be completed due to seeding period restrictions. Except for site-specific locations that may be identified during construction, mulch before seeding if final cleanup (including final grading and installation of permanent erosion controls in the areas of steep slopes) is not completed in an area within approximately 10 days after construction completion.

If mulching occurs before seeding, the Contractor shall increase mulch application on slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre. Up to 1 ton/acre of wood chips may be added to mulch if areas are top-dressed with 11 pounds/acre available nitrogen (at least 50 percent of which is slow release).

If a mulch blower is used, the strands will not be shredded to less than 8 inches in length to allow anchoring. The mulch will be anchored immediately after placement to minimize

loss by wind and water. When anchoring by mechanical means, the Contractor shall use a mulch-anchoring tool to properly crimp the mulch to a depth of 2 to 3 inches.

When anchoring with liquid mulch binders, the Contractor shall use the rates recommended by the manufacturer. The Contractor shall not use liquid mulch binders within 100 feet of wetlands or waterbodies.

(b) Matting/Netting: Matting or netting consists of jute, wood excelsior, or similar materials, and will be installed by the Contractor to anchor mulch and stabilize the surface of the soil during the critical period of vegetative establishment, where directed by the EI.

Matting or netting will be applied to critical, sensitive areas (e.g., steep slopes, banks of waterbodies, bar ditches) as specified by the EI. On waterbody banks, the matting or netting will be installed at the time of the final bank re-contouring. In the event that erosion control fabric is not readily available, COMPANY will temporarily use mulch anchored via crimping (or some other means) or hydromulch until the erosion control fabric material becomes available. Matting or netting will be anchored with pegs or staples as recommended by the manufacturer.

3.2 STORMWATER MANAGEMENT

Stormwater management will be conducted through stormwater flow attenuation, velocity dissipation devices, and water filtration. COMPANY's construction procedures describe the criteria for placement and use of stormwater control methods/devices. The EI will have the authority to determine the location of these controls.

If herbicides or pesticides are to be used for vegetation maintenance, the applications of those substances will be in accordance with applicable landowner and land management or state agency specifications. COMPANY will not use herbicides or pesticides in or within 100 feet of any waterbody except as specified by the appropriate land management or state agency.

3.3 OTHER CONTROLS

3.3.1 Waste Materials

(a) Trash, litter, and debris will be collected for off-site disposal; it will not be discarded along the right-of-way. Refuse will be disposed of according to state and local regulations.

(b) Solid waste that contains (or at any time contained) oil, grease, solvents, or other petroleum products, falls within the scope of the oil and hazardous substances control, cleanup,

and disposal procedures of COMPANY's Spill Prevention Control and Countermeasures (SPCC) plan. This material shall be segregated for handling and disposal as hazardous waste under the provisions of the plan.

3.3.2 Offsite Vehicle Tracking

(a) A stabilized construction entrance will be used, if appropriate, to reduce vehicle tracking of soil and sediments. Access to the right-of-way will normally be from existing public roads. Attempts will be made to locate roadway crossings/access points to ensure that safe and accessible conditions exist throughout the construction phase. Use of 50-foot-long crushed stone access pads, sweeping, culvert installation, matting, and other forms of rutting protection may be used subject to local permit conditions. Periodic sweeping and scraping will remove sediment tracked onto public roads. If crushed stone access pads are used in active agricultural areas, the stone will be placed on a synthetic fabric to facilitate later removal.

(b) The stabilized construction entrances will be installed before clearing and grading. Once other construction activities permanently cease in an area, that area will be stabilized by reseeding and/or mulching as needed. Once revegetation has been judged successful, temporary erosion/sediment control structures will be removed.

4.0 MAINTENANCE

Erosion and sediment control measures and other protective measures identified in this SWPPP must be maintained in effective operating condition. If site inspections required by Section 5 of this SWPPP identify erosion control devices that are not operating properly, maintenance shall be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of erosion controls. If maintenance prior to the next anticipated storm event is impractical, maintenance must be scheduled and accomplished as soon as practicable. Temporary sediment barriers will remain in place until permanent revegetation measures have been judged successful.

5.0 INSPECTIONS

The EI will inspect disturbed areas of the Project area that have not been finally stabilized (including areas used for storage of materials that are exposed to precipitation, staging areas, temporary contractor yards, access roads, structural control measures, and locations where vehicles enter or exit the site). The Project area should be considered stabilized when construction activity ceases and a uniform vegetative cover (see below) has been established.

Areas that are not revegetated should be considered to have achieved final stabilization when they have a permanent cover that will prevent erosion of soil by wind or water. At that time, activity under this plan, including inspections, will cease. Inspections shall be conducted as follows and/or in accordance with the applicable National or State-Specific Pollution Discharge Elimination System guidelines:

- Conduct **daily inspections and following any storm event of 0.5 inch of precipitation or greater**, except those portions of the site that have been finally or temporarily stabilized, for which inspections will be conducted at least weekly. Inspections should continue until disturbed areas are completely stabilized (for areas to be revegetated, this means that perennial vegetation cover has reached a uniform cover of at least 70 percent of the preconstruction cover).

- **Inspect control measures** daily in areas of active construction or equipment operation and on a weekly basis in areas with no construction. Inspect within 24 hours of the end of a storm event that is 0.5 inch of rainfall or greater. Control measures will be maintained in good working order; if repair is necessary, it should be initiated within 24 hours of report.

- **Inspect disturbed areas** for evidence of or potential for pollutants entering the drainage system. Sediment from silt fences should be removed regularly and the fence inspected to ensure that the bottom of the fence remains imbedded in ground. Damaged hay/straw bales will be replaced with new bales as necessary.

- **Inspect material storage areas** where materials are exposed to precipitation for evidence of potential for pollutants entering the drainage system.

- **Inspect vehicle entrances** for evidence of off-site sediment tracking.

- **Inspect discharge points**, if accessible, to determine if erosion control measures are effective in preventing significant impacts to receiving waters. If these points are inaccessible, inspectors should inspect nearby downstream locations.

- **Inspect vegetation** after the first and second growing season after seeding to determine the success of revegetation. Wetland revegetation is considered successful if at least 80 percent of the total cover is native species and the level of diversity of the native species present after construction is at least 50 percent of the level originally found in

the wetland. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands.

- **Complete an inspection report** of each inspection. Inspection forms and form instructions provided in Appendix C provide additional guidance.

See Section 7 for additional detail on requirements for construction activity and inspection documentation and record keeping.

6.0 PLAN MODIFICATION

This plan may need to be modified and/or updated based on information and experience gathered during actual construction activities (e.g., include or modify BMPs designed to correct problems, etc.). If changes to the design, construction, or maintenance that can have significant effect on the potential for discharging pollutants in stormwater at the site occur, this plan should be modified accordingly by the Contractor, EI, and/or CI. In addition, if the plan proves to be ineffective in controlling pollutants, any necessary modifications to the application of the practices presented in this plan should be made by the Contractor, EI, and/or CI in order to prevent the discharge of pollutants into stormwater.

7.0 REQUIRED REPORTS, DOCUMENTATION, AND RECORDKEEPING

7.1 RECORDS RETENTION

All permit-related documents will be retained as part of the SWPPP for at least three years from the date that the site is finally stabilized as required by COMPANY's document retention policies. The following documentation will be kept on file at the construction site:

- A copy of this SWPPP and referenced attachment(s)
- Inspection reports
- Log of construction and BMP installation/maintenance activities and/or construction alignment sheets/construction plans showing the placement of BMPs.
- Notice of Intent and Notice of Termination

7.2 INSPECTION REPORTS

A separate report will be developed for each inspection. Inspection reports will identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report will contain a certification that the facility is in compliance with this SWPPP. In addition, inspection reports should:

- Summarize the scope of the inspection.
- Provide the name(s), title(s), and qualifications of personnel making the inspection.
- Indicate the date(s) of the inspection.
- Provide weather information and a description of any discharges occurring at the time of the inspection.
- Provide weather information for the period since the last inspection (or since commencement of construction activity if first inspection), including:
    - A best-estimate of the beginning of each storm event
    - Duration of each storm event
    - Approximate amount of rainfall for each storm event (in inches)
    - If any discharges occurred
- Indicate the location(s) of discharges of sediment or other pollutants from the site.
- Indicate the location(s) of BMPs that need to be maintained.
- Indicate the location(s) of BMPs that failed to operate as designed or proved inadequate for that particular location and plans for correction of the problem (including implementation dates of corrective action).
- Indicate location(s) where additional BMPs are needed that did not exist at the time of inspection.

7.3 LOG OF CONSTRUCTION AND BMP INSTALLATION AND MAINTENANCE ACTIVITIES

In addition to inspection and maintenance reports, keep a record of construction activity on the site with this SWPPP. In particular, keep record of the following:

- The dates when major grading activities occur in a particular area.
- The date when construction activities cease in an area, temporarily or permanently.
- The date when an area is stabilized, temporarily or permanently.
- Erosion control maintenance activities.

8.0 SWPPP CERTIFICATION

8.1 COMPANY'S CERTIFICATION

I certify under penalty of law that this document and its appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____ Date: _____

Print Name: _____

Title: _____

Company: _____

8.2 CONTRACTOR'S/SUBCONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the governing PDES permit that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signed: _____ Date: _____

Print Name: _____

Title: _____

Company: _____

I certify under penalty of law that I understand the terms and conditions of the governing PDES permit that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signed: _____ Date: _____

Print Name: _____

Title: _____

Company: _____

I certify under penalty of law that I understand the terms and conditions of the governing PDES permit that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signed: _____ Date: _____

Print Name: _____

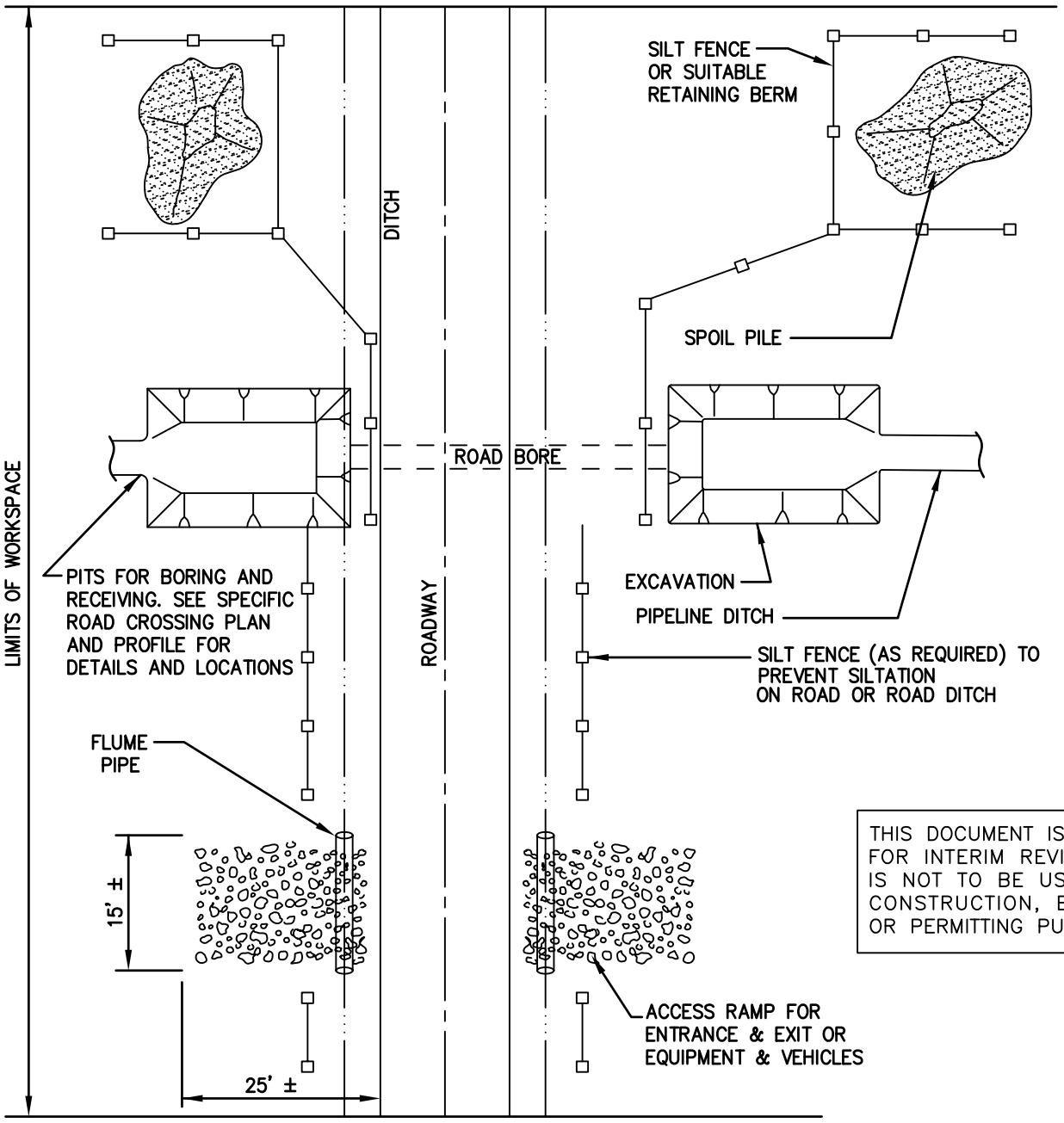
Title: _____

Company: _____

APPENDIX A

BEST MANAGEMENT PRACTICES FIGURES

TYPICAL BORED CROSSINGS CONTROL DETAILS



THIS DOCUMENT IS ISSUED FOR INTERIM REVIEW AND IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMITTING PURPOSES.

NOTES:

1. SEE DRAWING FOR EQUIPMENT CROSSING DETAILS.
2. SEE ALIGNMENT SHEETS FOR EXTRA WORKSPACE REQUIREMENTS FOR EACH SPECIFIC ROAD.

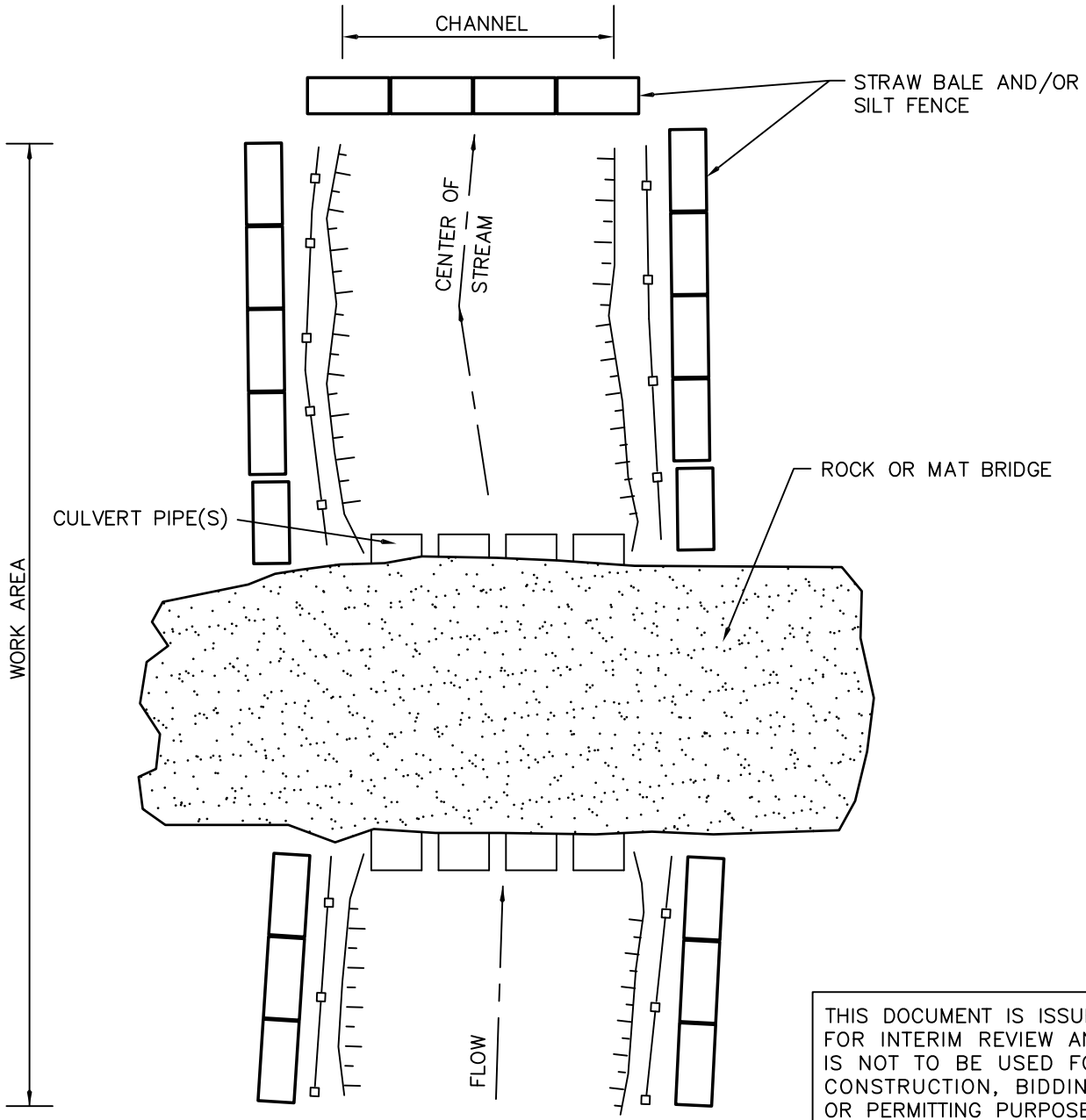
REV.	DATE	BY	DESCRIPTION	CHK.
A	08/14	DAH	ISSUED FOR REVIEW	

PROJECT NO. 10395700

DAPL/ETCOP

TYPICAL BORED CROSSING CONTROL DETAILS

DRAWN BY: DAH	DATE: 08/05/14	DWG. NO. P12–1	REV. A
CHECKED BY: DAH	DATE: 08/05/14		
SCALE: N.T.S.	APP.:		



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NOTE:
1. USE AS MANY CULVERT PIPE(S) AS REQUIRED TO ENSURE NORMAL STREAM FLOW IS NOT OBSTRUCTED BY ROCK OR MAT BRIDGE.

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TYPICAL ROCK OR MAT BRIDGE WITH CULVERTS

DRAWN BY: DAH	DATE: 08/05/14	DWG. NO. P12–2	REV. A
CHECKED BY: DAH	DATE: 08/05/14		
SCALE: N.T.S.	APP.:		

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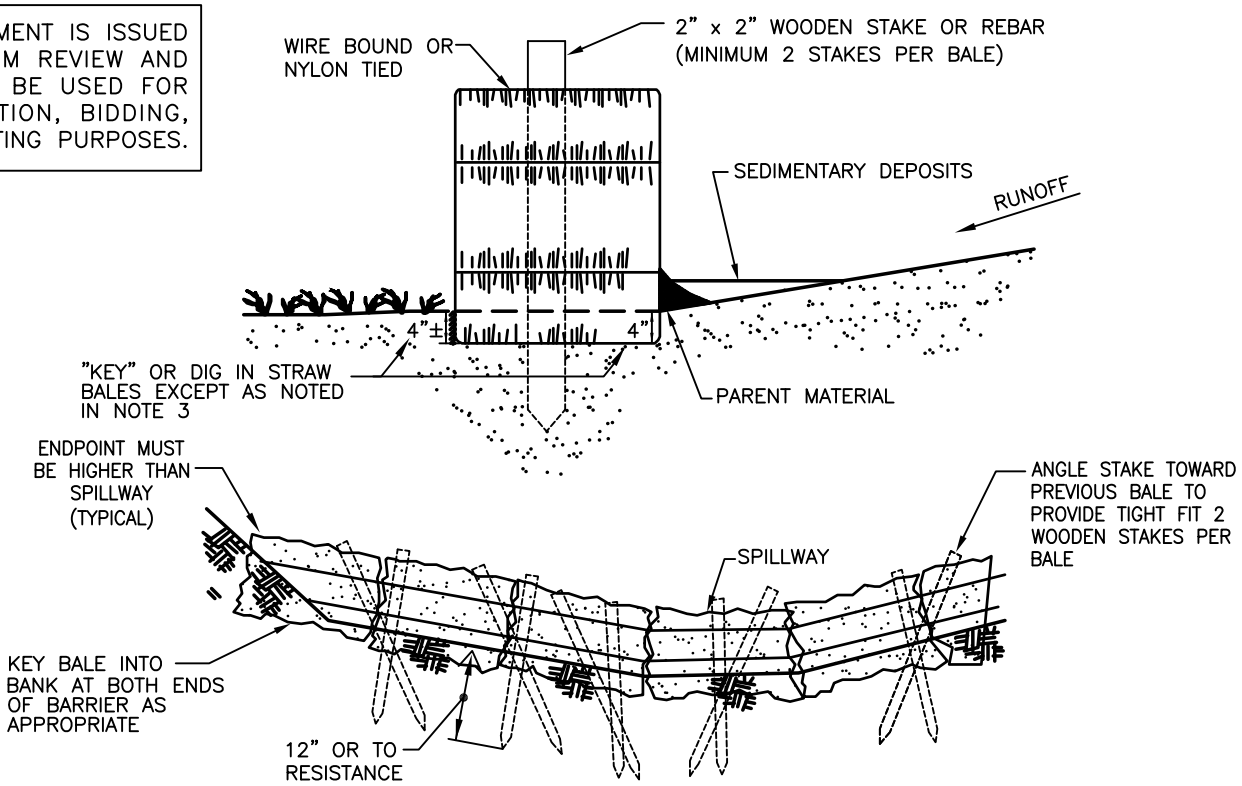

PROFILE

NOTES:

1. STRAW BALE SEDIMENT BARRIERS MAY BE INSTALLED AT THE FOLLOWING LOCATIONS:
   - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND STREAMS;
   - THE DOWNSLOPE RIGHT-OF-WAY EDGE WHERE ANY OF THE ABOVE-MENTIONED LOCATIONS ARE ADJACENT TO THE RIGHT-OF-WAY;
   - BETWEEN TOPSOIL/SPOIL STOCKPILES AND STREAMS OR WETLANDS AS NEEDED;
   - ALONG R.O.W. BOUNDARIES IN WETLAND CONSTRUCTION;
   - ACROSS CONSTRUCTION R.O.W. AT ALL WATERBODY CROSSINGS;
   - AS SPECIFIED IN THE SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN;
   - AS DIRECTED BY THE INSPECTOR.
2. STRAW BALE SEDIMENT BARRIERS SHALL CONSIST OF A ROW OF STRAW BALES, PLACED ON THE FIBER-CUT EDGE (TIES NOT IN CONTACT WITH THE GROUND). BALES SHALL BE TIGHTLY ABUTTED TO ONE ANOTHER. THE BARRIER SHALL BE ONE BALE HIGH. ONLY CERTIFIED "NOXIOUS WEED-FREE" STRAW SHALL BE USED WHENEVER POSSIBLE.
3. ENTRENCH ("KEY") STRAW BALES INTO THE GROUND TO A DEPTH OF 4" EXCEPT IN FROZEN, SATURATED, OR EXTREMELY ROCKY SOILS. PLACE PARENT MATERIAL ON UPSTREAM SIDE OF STRAW BALES TO PREVENT UNDERMINING.
4. WALK ON STRAW BALES TO INSURE ADEQUATE BALE-TO-SOIL CONTACT.
5. ANCHOR STRAW BALES SECURELY IN PLACE WITH TWO WOODEN OR STEEL REBAR STAKES DRIVEN THROUGH THE TOPS OF THE BALES. THE STAKES SHALL PENETRATE THE GROUND A DISTANCE OF 12" UNLESS ROCK OR AN IMPERMEABLE LAYER IS ENCOUNTERED:
   - THE FIRST, CENTER AND END BALES OF THE BARRIER SHALL HAVE STAKES DRIVEN VERTICALLY THROUGH THE BALE;
   - BALES, OTHER THAN THOSE LOCATED AT THE ENDS OR CENTER OF THE BARRIER, SHALL HAVE THE FIRST STAKE DRIVEN THROUGH THE TOP OF THE BALE AT AN ANGLE SO THAT THE STAKE PASSES THROUGH THE PREVIOUSLY PLACED BALE, IN ORDER TO PROVIDE TIGHT CONTACT BETWEEN BALES. THE SECOND STAKE SHALL BE DRIVEN VERTICALLY THROUGH THE TOP OF THE BALE.

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PROJECT NO. 10395700

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EROSION CONTROL STRAW BALE SEDIMENT BARRIER

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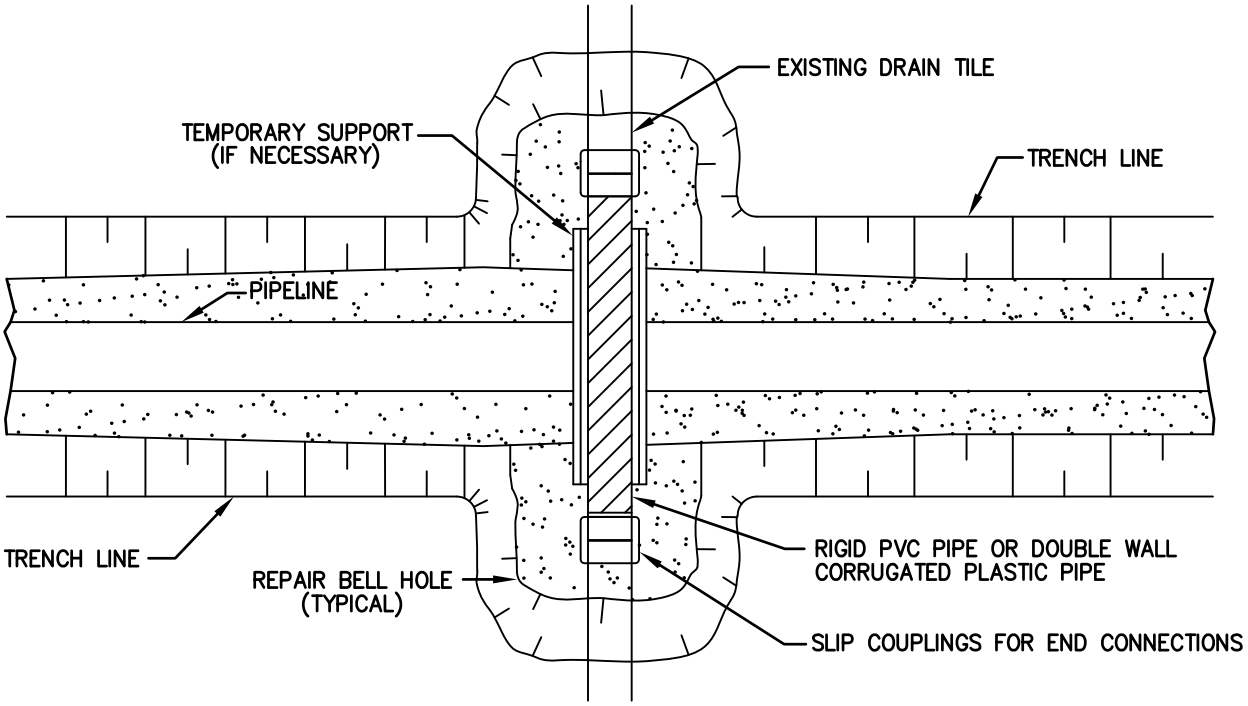
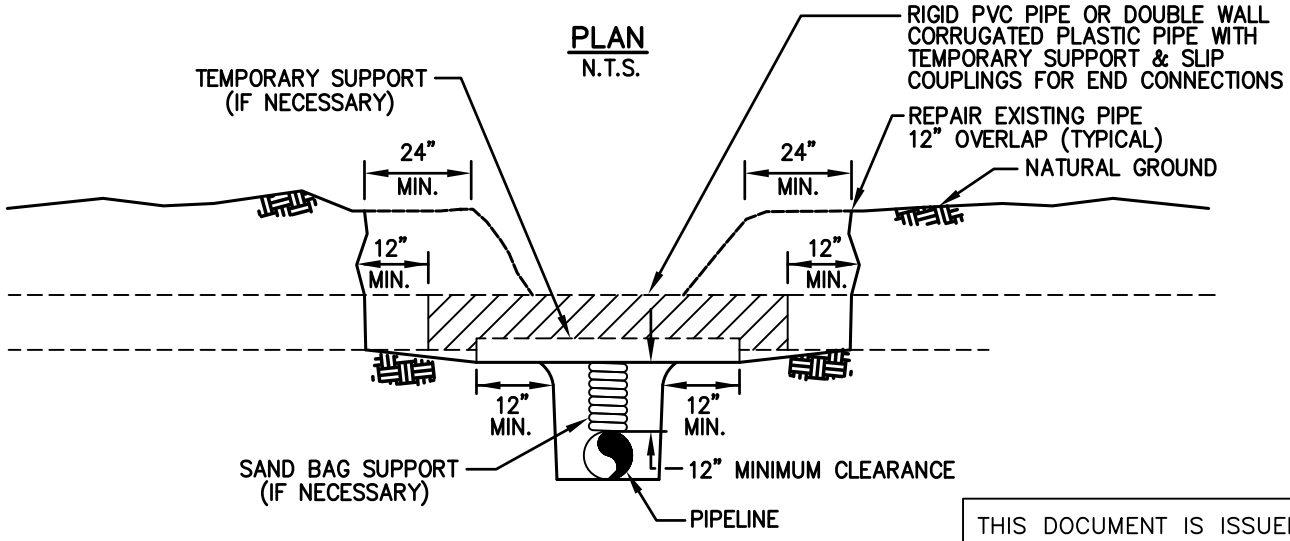


PLAN
N.T.S.



CROSS SECTION
N.T.S.

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NOTES:

1. IMMEDIATELY REPAIR TILE IF WATER IS FLOWING THROUGH TILE AT TIME OF TRENCHING.
2. SCREEN ALL EXPOSED ENDS OF TILE LINES.

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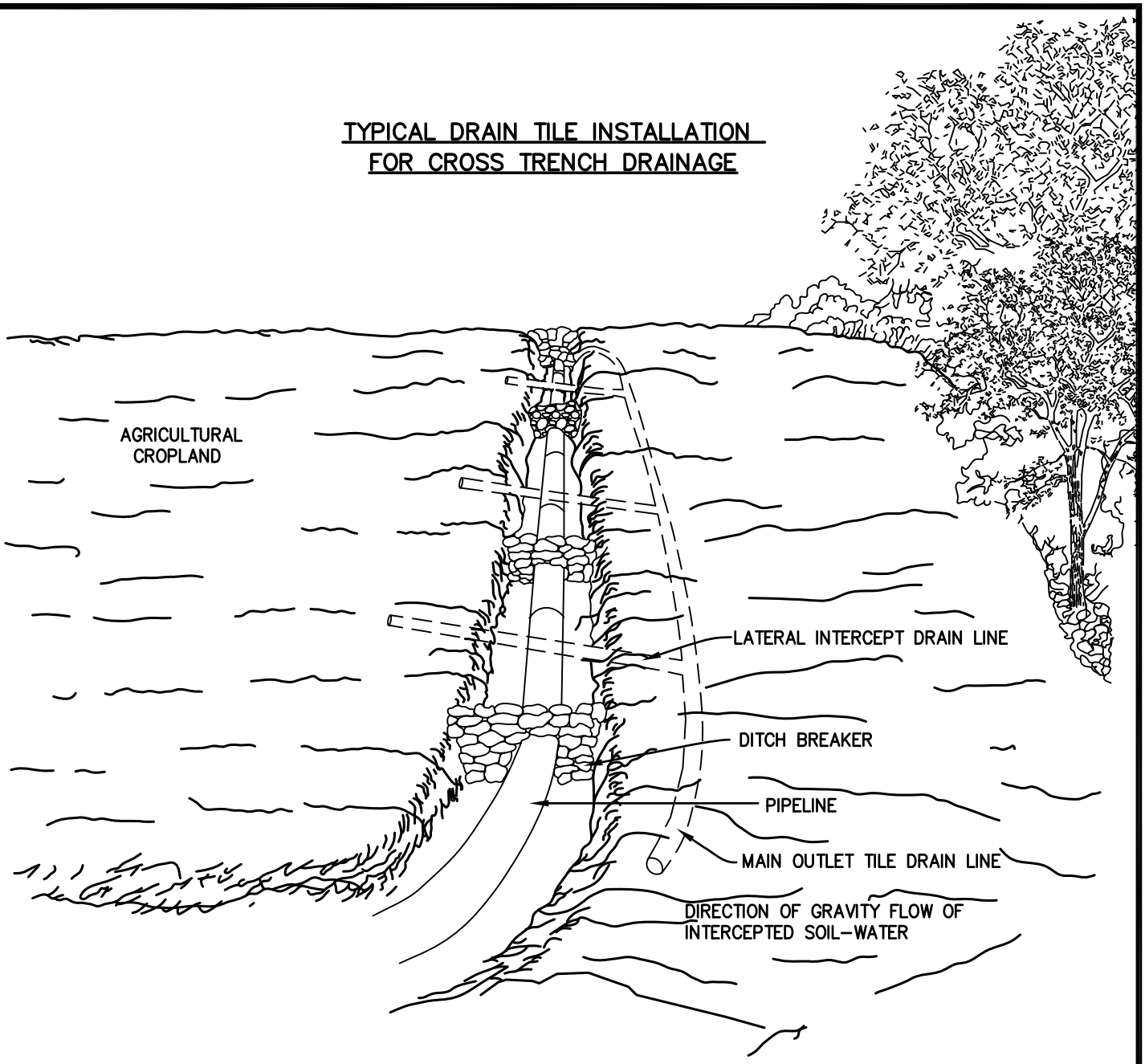
PROJECT NO. 10395700

DAPL/ETCOP

DRAINAGE AND IRRIGATION
TEMPORARY DRAIN TILE REPAIR (TDR)

DRAWN BY: DAH	DATE: 08/05/14	DWG. NO.	REV.
CHECKED BY: DAH	DATE: 08/05/14	P12–4	A
SCALE: N.T.S.	APP.:		

TYPICAL DRAIN TILE INSTALLATION FOR CROSS TRENCH DRAINAGE



NOTES:

1. CROSS TRENCH DRAINAGE MAY BE UTILIZED IN SLOPING AREAS OR IN AGRICULTURAL CROPLAND AREAS WHERE REQUIRED.
2. FINAL ALIGNMENT OF TILE LINES TO BE BASED ON OUTLETTING FOR GRAVITY FLOW.

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TYPICAL DRAIN TILE INSTALLATION FOR CROSS TRENCH DRAINAGE

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CHECKED BY: DAH	DATE: 08/07/14		
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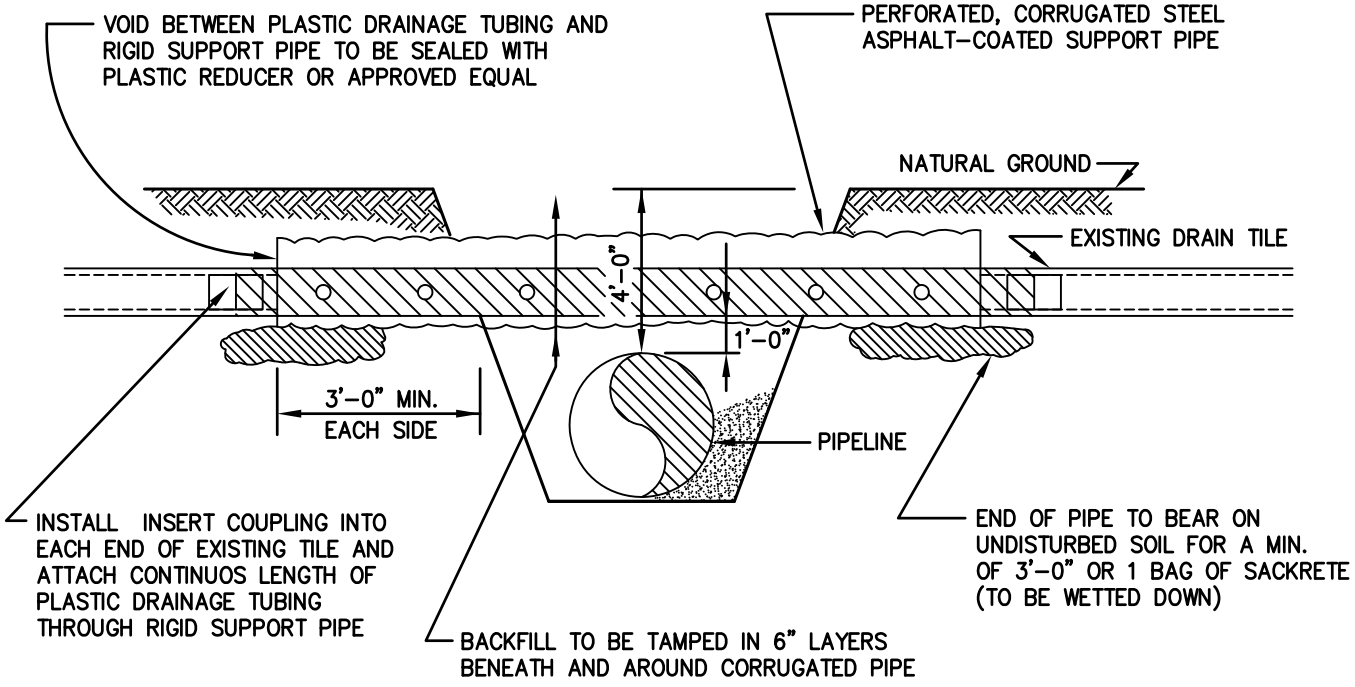
DRAIN TILE RESTORATION



TUBING SIZE	CORRUGATED PIPE SIZE
4"	6"
6"	8"
8"	10"
10"	12"
12"	16"
16"	20"

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NOTES:

1. ALL CORRUGATED PIPE TO BE OF 16 GAUGE GALVANIZED STEEL
2. PLASTIC DRAINAGE TUBING AND CORRUGATED PIPE TO BE INSTALLED SO THAT THE HOLES ARE CENTERED ON EACH SIDE OF THE BOTTOM OF PIPE
3. ALL MATERIAL TO BE CONTRACTOR SUPPLIED.

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PROJECT NO. 10395700

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DRAIN TILE RESTORATION

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CHECKED BY: DAH	DATE: 08/07/14		
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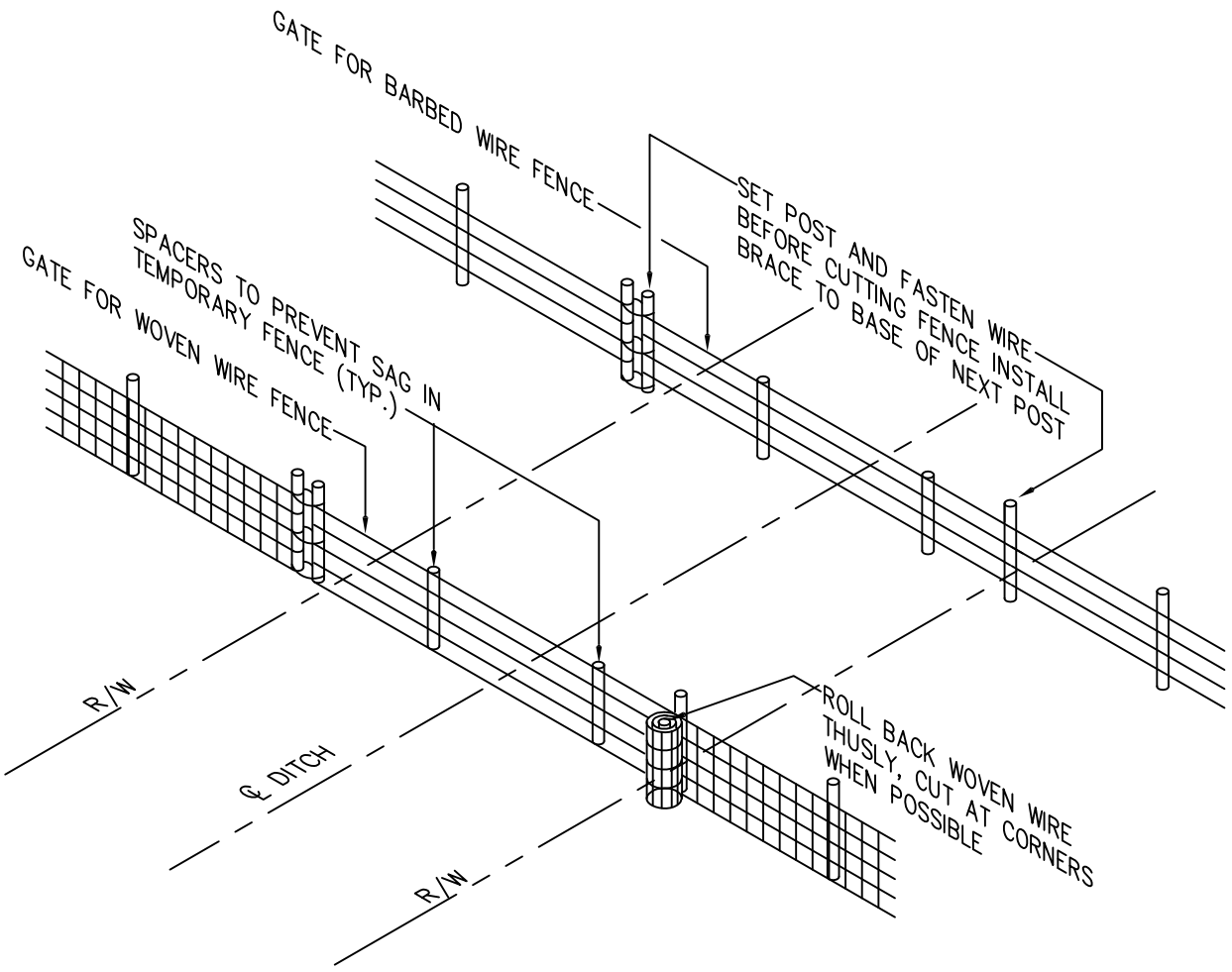

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PROJECT NO. 10395700

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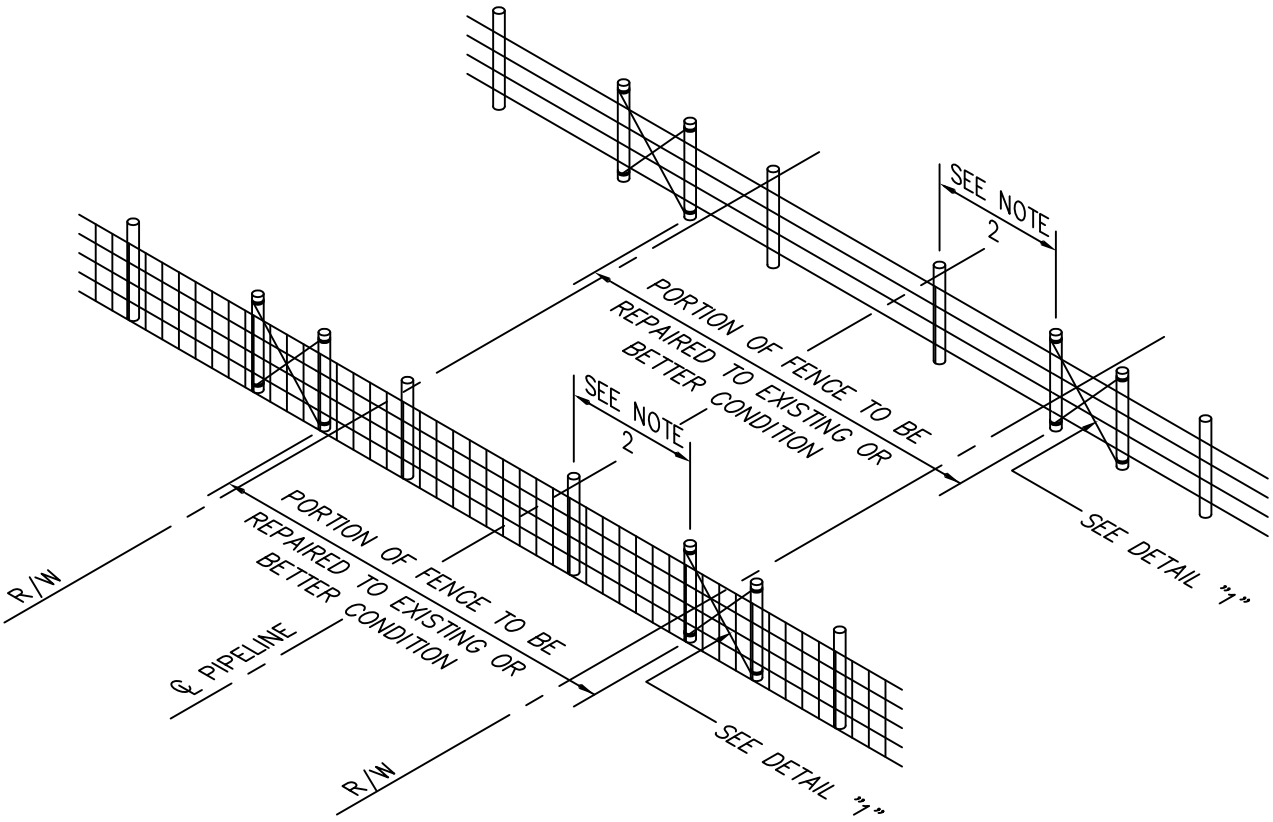
TEMPORARY FENCE DETAIL FOR WOVEN WIRE & BARBED WIRE FENCES

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO.	REV.
CHECKED BY: DAH	DATE: 08/07/14	P12–7	A
SCALE: N.T.S.	APP.:		



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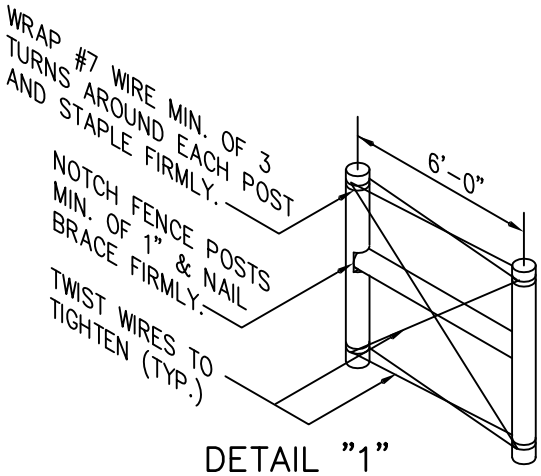

DETAIL "1"
N.T.S.

NOTES:

1. ALL NEW FENCE POSTS MUST EXTEND A MINIMUM OF 2' BELOW GRADE & HAVE A HEIGHT EQUAL TO EXISTING POSTS.
2. POST TO BE A MAXIMUM OF 10' CENTER TO CENTER.
3. POST AT EACH END OF REPAIRED SECTION TO BE H BRACED TO THE ADJOINING POSTS.
4. ALL FENCES SHALL BE REPAIRED WITH NEW WIRE OF LIKE MESH AS EXISTING FENCE , OR WIRE MATCHING EXISTING GAUGE AND SPECIFICATIONS & OF THE SAME NUMBER OF STRANDS & NUMBER OF WIRES EXISTING ON THE FENCE PRIOR TO CONSTRUCTION OF THE PIPELINE.
5. ALL POST ON PERMANENT RIGHT OF WAY TO BE PAINTED PER COMPANY PAINTING SPECIFICATIONS.

REV.	DATE	BY	DESCRIPTION	CHK.
A	08/14	DAH	ISSUED FOR REVIEW	

PROJECT NO. 10395700

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WOVEN WIRE & BARBED WIRE FENCE REPLACEMENT FENCE DETAIL

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO. P12-8	REV. A
CHECKED BY: DAH	DATE: 08/07/14		
SCALE: N.T.S.	APP.:		

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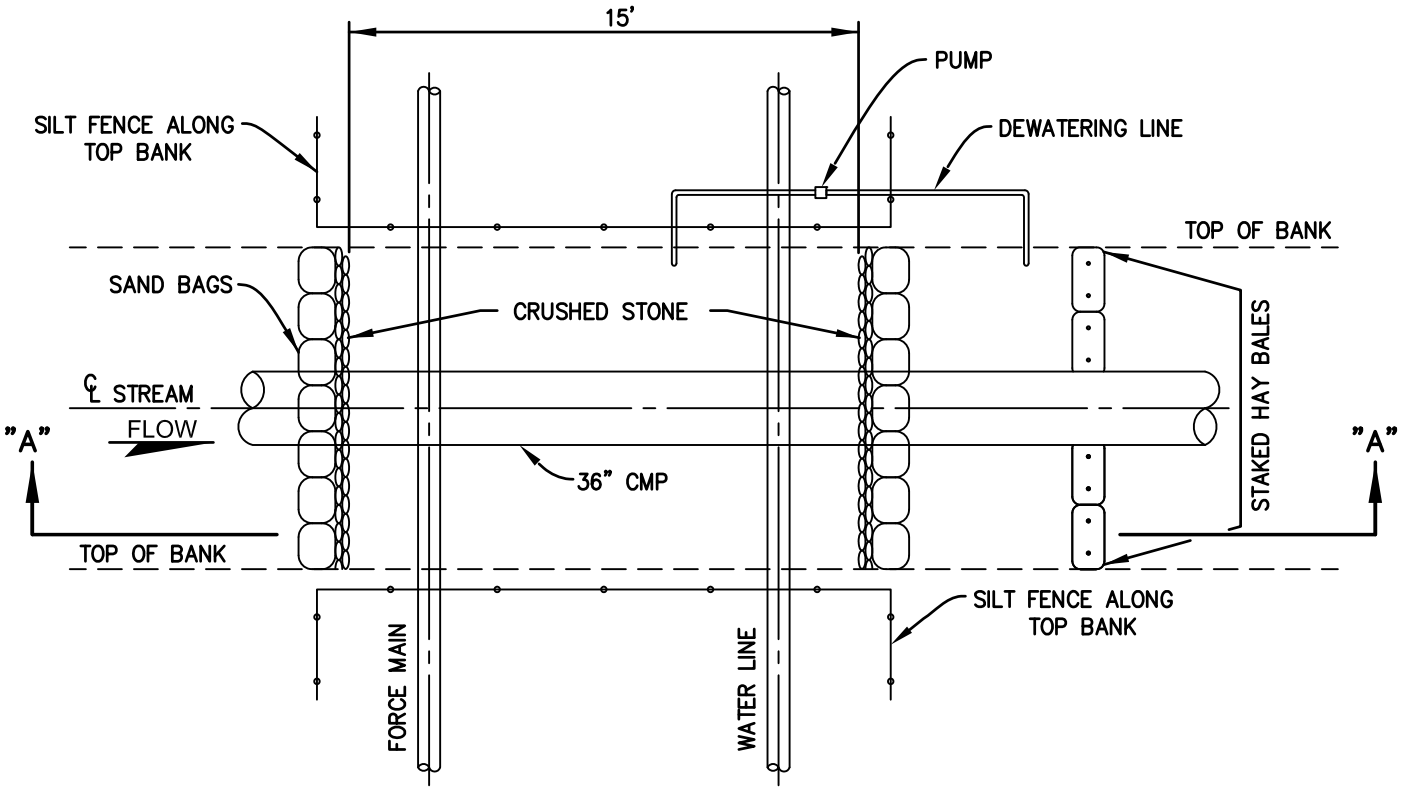
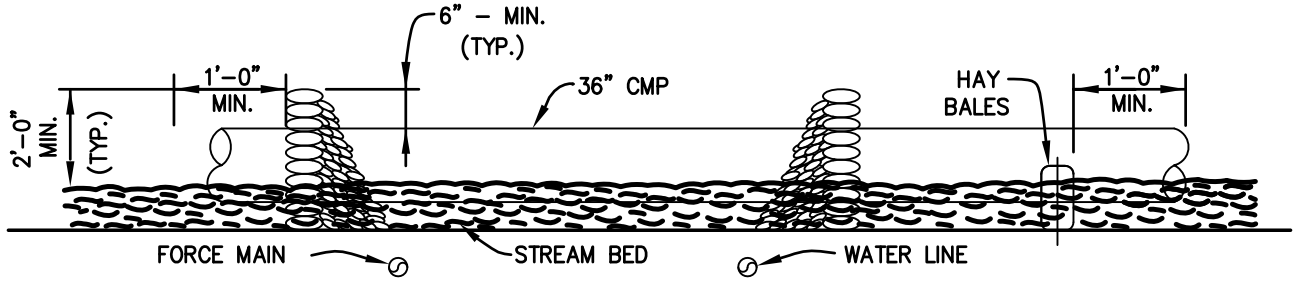
FILE: R:\Projects\10395?\DISCIPLINE\CAD\DRAWINGS\99-TYPICAL\10395700-P12-8.dwg PLOT DATE: 8/7/2014 BY: ROBLEDO, RAMON



PLAN – TEMPORARY STREAM DIVERSION
N.T.S.



SECTION "A–A"
N.T.S.

NOTES:

1. CONTRACTOR SHALL MAINTAIN STREAM FLOW AT ALL TIMES.
2. ALL SANDBAGS, CRUSHED STONE AND FILL SHALL BE REMOVED AFTER INSTALLATION OF CROSSING AND STREAM BED AND BANKS SHALL BE RESTORED TO ORIGINAL SHAPE AND ELEVATION.
3. LIMIT OF DISTURBANCE TO BE 30' LONG x 15' WIDE (450 S.F. TOTAL).
4. STAGING AREAS: MATERIALS AND EQUIPMENT TO BE STAGED ALONG ABANDONED ROAD BED IN THE UPLANDS.
5. USE WET MEADOW SEED MIX AS SPECIFIED IN LANDSCAPING DETAILS TO RESEED ALL DISTURBED AREAS.

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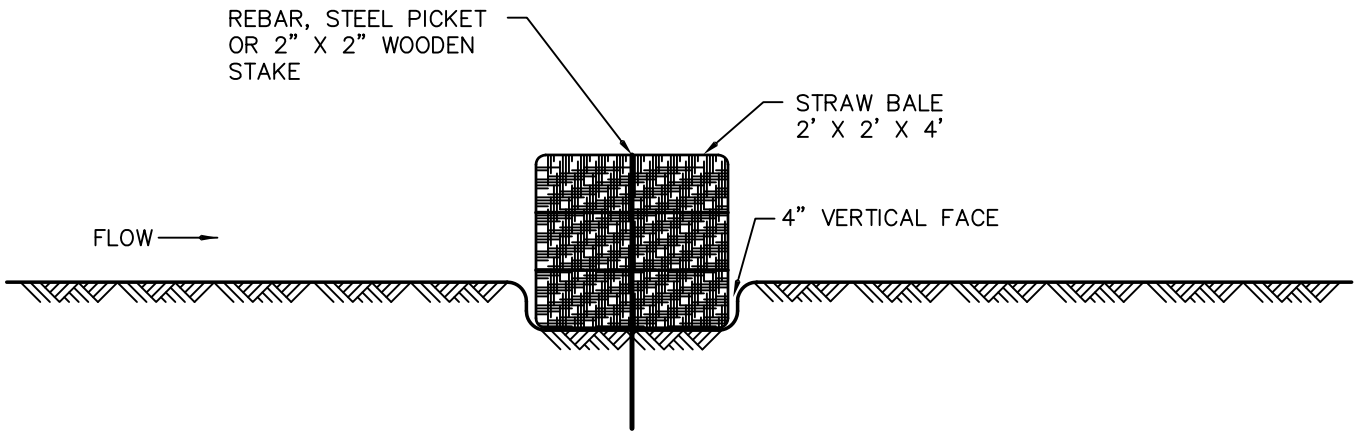
PROJECT NO. 10395700

DAPL/ETCOP

PROPOSED PIPELINE
TEMPORARY STREAM DIVERSION

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO. P12–9	REV. A
CHECKED BY: DAH	DATE: 08/07/14		
SCALE: N.T.S.	APP.:		



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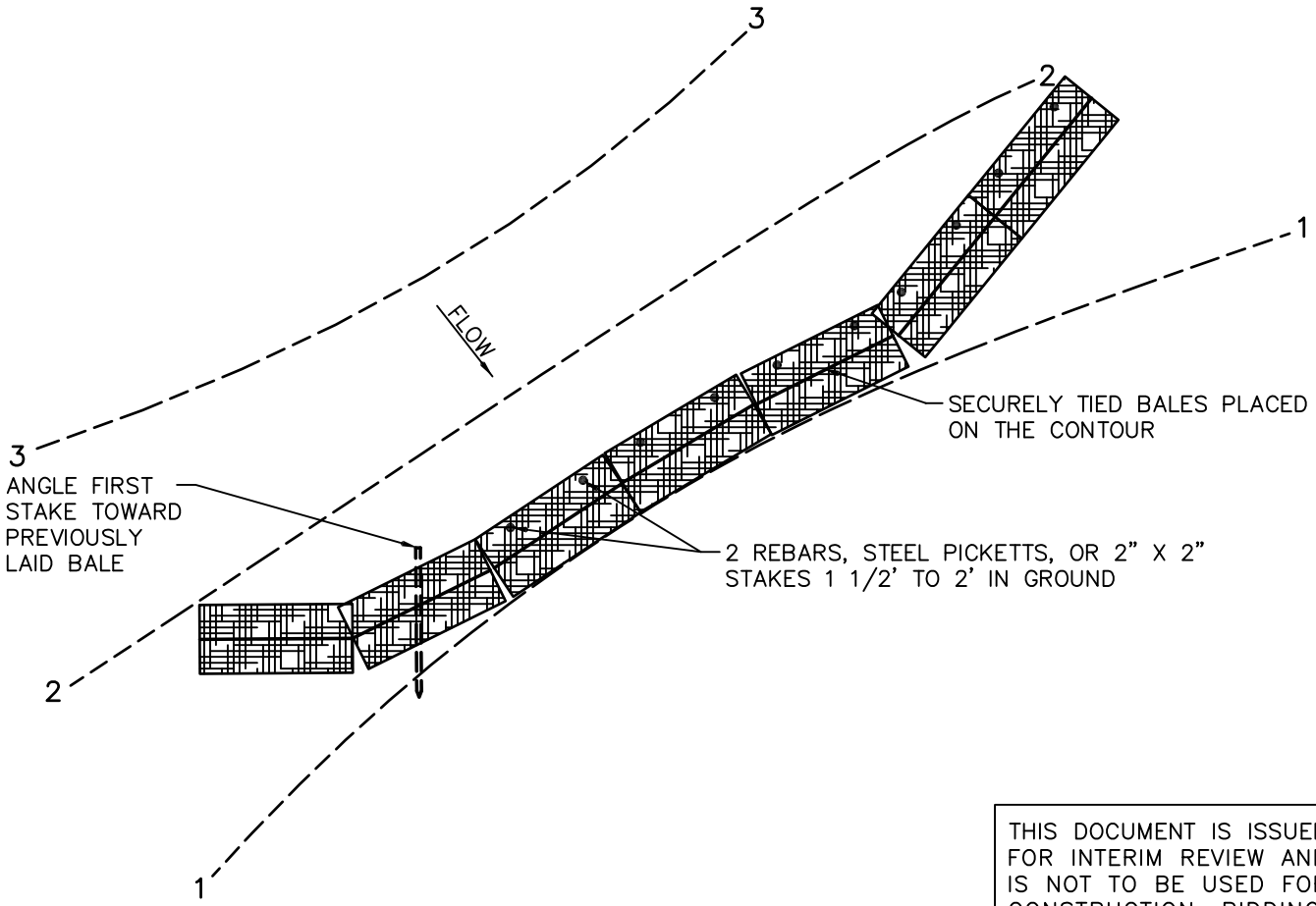

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PROJECT NO. 10395700

DAPL/ETCOP

TYPICAL STRAW BALE FILTER

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO. P12-010	REV. A
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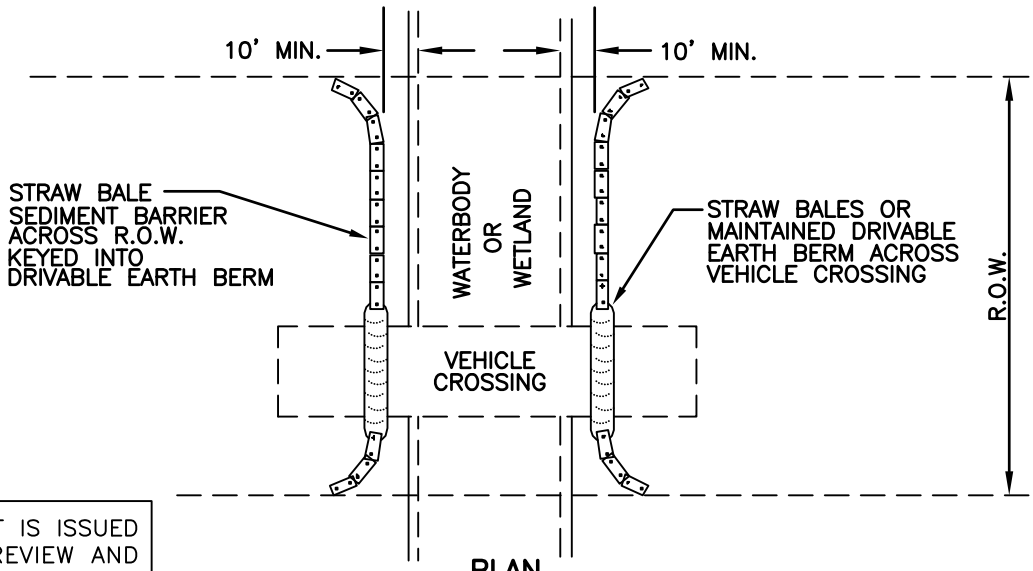
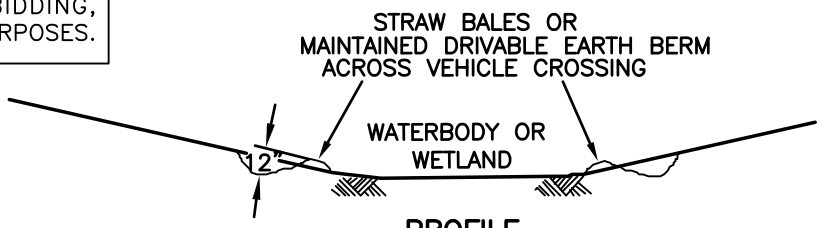
INSTALLATIONS AT VEHICLE CROSSINGS OF WATERBODIES AND WETLANDS



PLAN



PROFILE

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NOTES:

1. PLACE STRAW BALES SO THEY ARE EFFECTIVE BUT DO NOT HINDER CONSTRUCTION. IF NECESSARY, A 15' GAP IN STRAW BALE BARRIERS SHALL BE PROVIDED, AS NEEDED, TO ACCOMMODATE TRAFFIC ON TEMPORARY CONSTRUCTION ROADS. THE GAP SHALL BE CLOSED AT THE END OF EACH WORK DAY USING STRAW BALE BARRIERS, OR A DRIVABLE EARTH BERM TIED INTO ADJACENT STRAW BALES. THE BALES USED TO CLOSE THE GAP SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE BARRIER, THE END BALES OF THE GAP SEGMENT SHALL OVERLAP A MINIMUM OF 12".
2. A MAINTAINED DRIVABLE EARTH BERM MAY BE INSTALLED ACROSS VEHICLE CROSSING IN LIEU OF STRAW BALES DURING ACTIVE CONSTRUCTION.
3. BERM MUST BE TIED INTO STRAW BALES.
4. BERM MUST BE MAINTAINED TO ENSURE SEDIMENT TRAPPING CAPACITY.
5. WHEN ACTIVE CONSTRUCTION IS COMPLETE, INSTALL STRAW BALES ACROSS ENTIRE R.O.W.
6. MONITOR FOR UNDERMINING OR FLOW-AROUND. INSPECT BALE POSITION TO ASSURE THAT THEY REMAIN CLOSE TOGETHER. MAINTAIN STRAW BALE BARRIERS BY REPLACING DAMAGED BALES AND REMOVING SEDIMENT LOAD. WHEN SEDIMENT LOAD IS GREATER THAN 40% BEHIND THE BARRIER, SEDIMENT SHALL BE REMOVED AND PLACED IN AN AREA WHERE IT SHALL NOT REENTER THE BARRIER OR A WATERWAY. IF SEDIMENT BEHIND STRAW BALE BARRIERS CANNOT BE REMOVED, A SECOND ROW OF BALES SHALL BE INSTALLED UPSLOPE OF THE BARRIER.
7. WHERE STRAW BALES AND SILT FENCE ARE INSTALLED AS A UNIT, THE STRAW BALES SHALL BE INSTALLED ON THE DOWN SLOPE SIDE OF THE SILT FENCE.
8. EROSION CONTROL STRUCTURES SHALL BE INSPECTED DAILY IN AREAS OF ACTIVE CONSTRUCTION. STRUCTURES SHALL BE INSPECTED WEEKLY AT INACTIVE CONSTRUCTION AREAS AND WITHIN 24 HOURS OF EACH RAINFALL EVENT WITH 0.5 INCH OR MORE. STRUCTURES SHALL BE REPAIRED AS NECESSARY.
9. STRAW BALE BARRIERS SHALL BE REMOVED ONLY AS DIRECTED BY THE PIPELINE INSPECTOR.

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EROSION CONTROL
STRAW BALE SEDIMENT BARRIER

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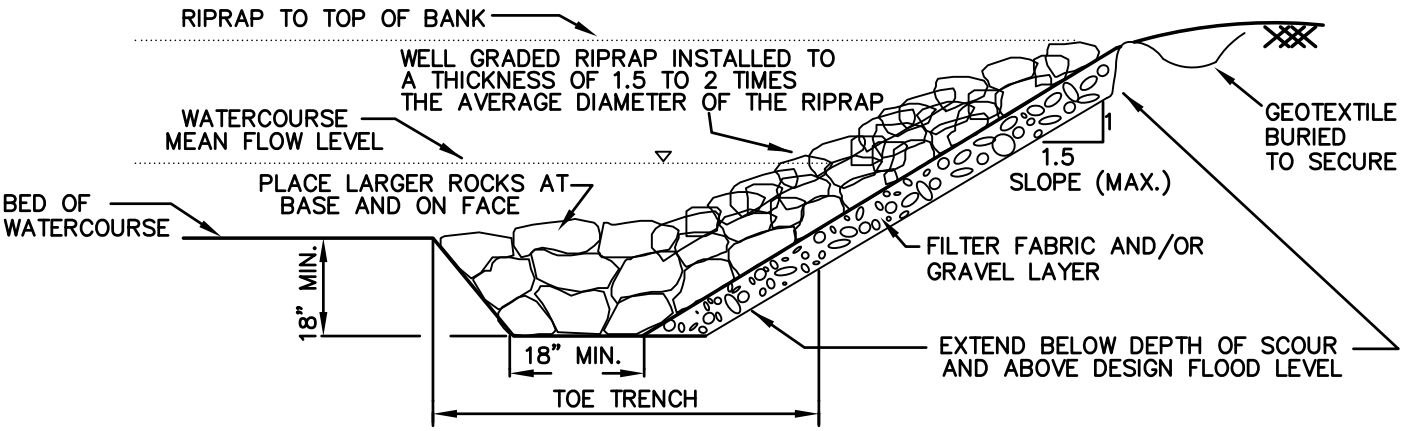
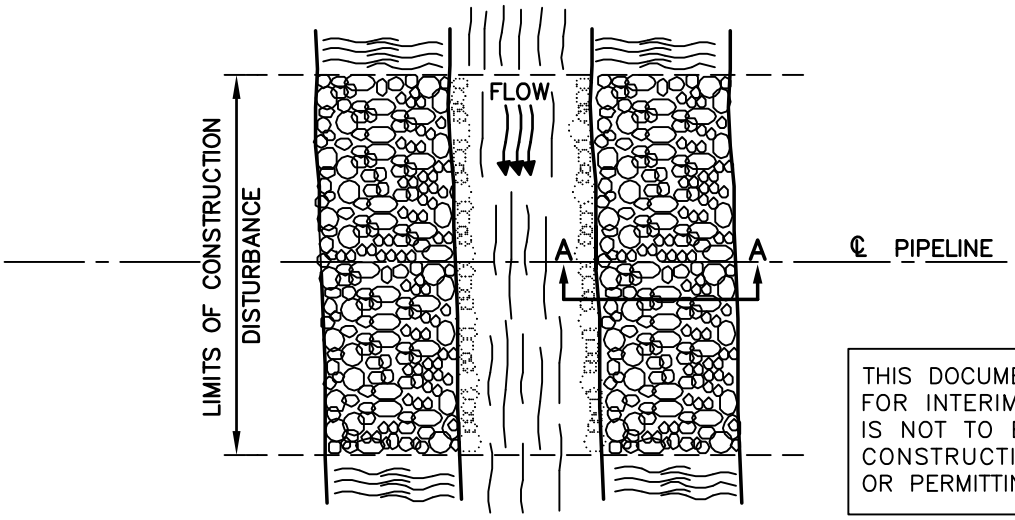


SECTION A–A



PLAN VIEW

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NOTES:

1. STREAM BANK RIPRAP STRUCTURES SHALL CONSIST OF A LAYER OF STONE UNDERLAIN WITH APPROVED GEOTEXTILE FILTER FABRIC OR A GRAVEL FILTER BLANKET DESIGNED TO PROTECT AND STABILIZE AREAS PRONE TO EROSION.
2. GRAVEL FILTER BLANKET SHALL MEET THE FOLLOWING SPECIFICATIONS:
   - HAVE A PERMEABILITY GREATER THAN THAT OF THE SUBGRADE SOIL;
   - IF A WELL–GRADED GRAVEL OR SAND–GRAVEL LAYER IS USED, THE LAYER SHALL BE A MINIMUM OF 6" THICK AND SPREAD IN A UNIFORM LAYER OVER THE SUBGRADE;
   - IF WATER TURBULENCE COULD RESULT IN EROSION OF BANK MATERIAL BETWEEN LARGE ROCKS (AS DETERMINED BY THE REPRESENTATIVE ENVIRONMENTAL INSPECTOR), A GEOTEXTILE FILTER FABRIC SHALL BE USED BETWEEN THE GRAVEL LAYER AND THE RIPRAP.
3. THE GEOTEXTILE FILTER FABRIC SHALL BE PERMATEX 4000 SERIES OR AN APPROVED EQUIVALENT MEETING THE FOLLOWING SPECIFICATIONS:
   (A) BE COMMERCIAL QUALITY NONWOVEN FABRIC DESIGNED FOR RIPRAP UNDERLAYMENT;
   (B) BE A MINIMUM OF 20 MILS IN THICKNESS;
   (C) HAVE A GRAB STRENGTH BETWEEN 90 TO 120 POUNDS;
   (D) HAVE A GREATER THAN 4% OPEN AREA (U.S. STANDARD SIEVE NUMBER 100 (0.15 MM.);
   (E) HAVE A DENSITY OF 8 oz. PER SQUARE YARD.
4. THE USE OF RIPRAP SHALL BE LIMITED TO AREAS WHERE FLOWING CONDITIONS PREVENT EFFECTIVE VEGETATIVE STABILIZATION TECHNIQUES.

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EROSION CONTROL RIPRAP AT WATERBODY BANKS

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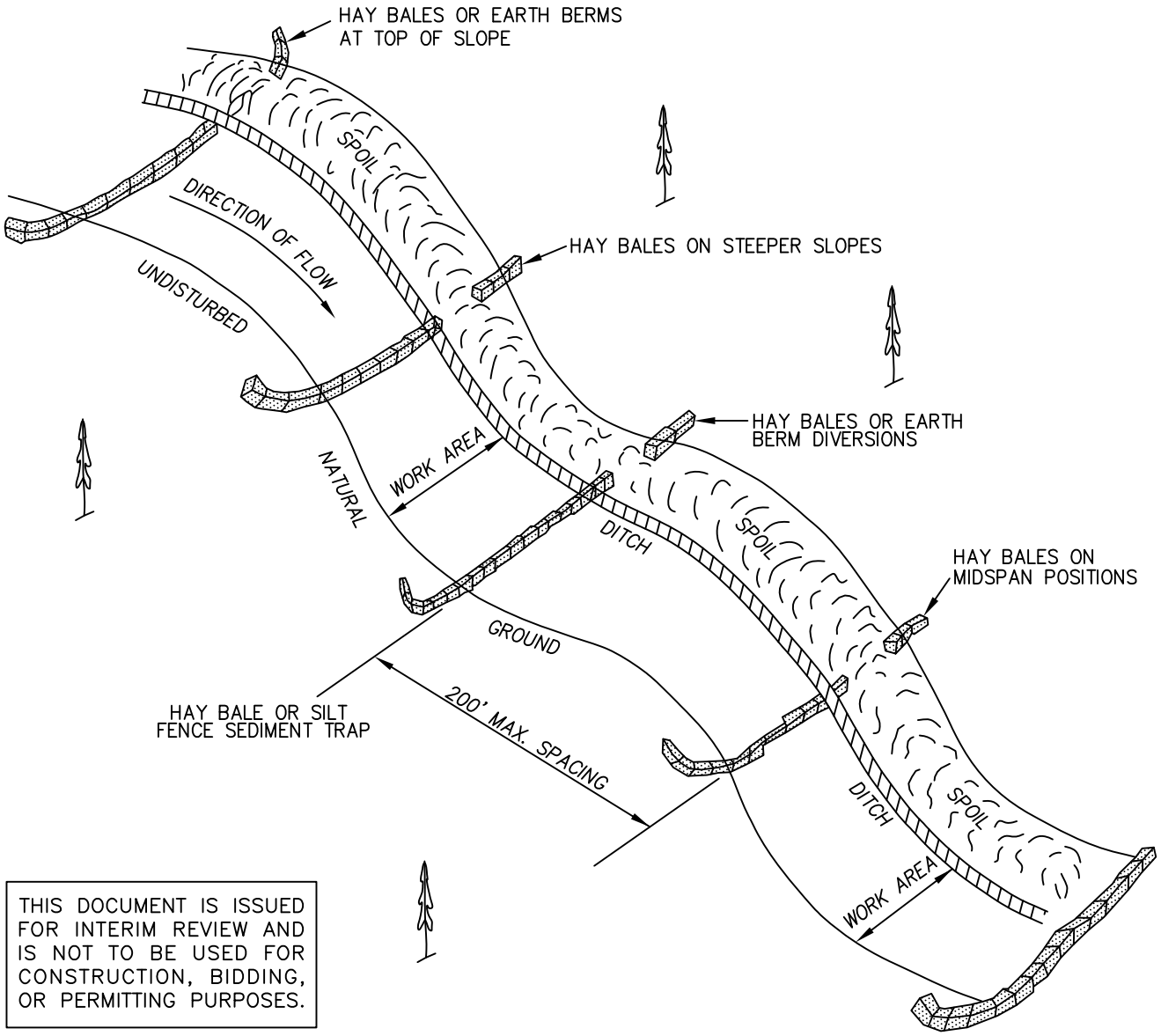

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DAPL/ETCOP

TEMPORARY S&E CONTROL MEASURES
SLOPE DIRECTION WITH SLOPE
SLOPE PERCENT >15%

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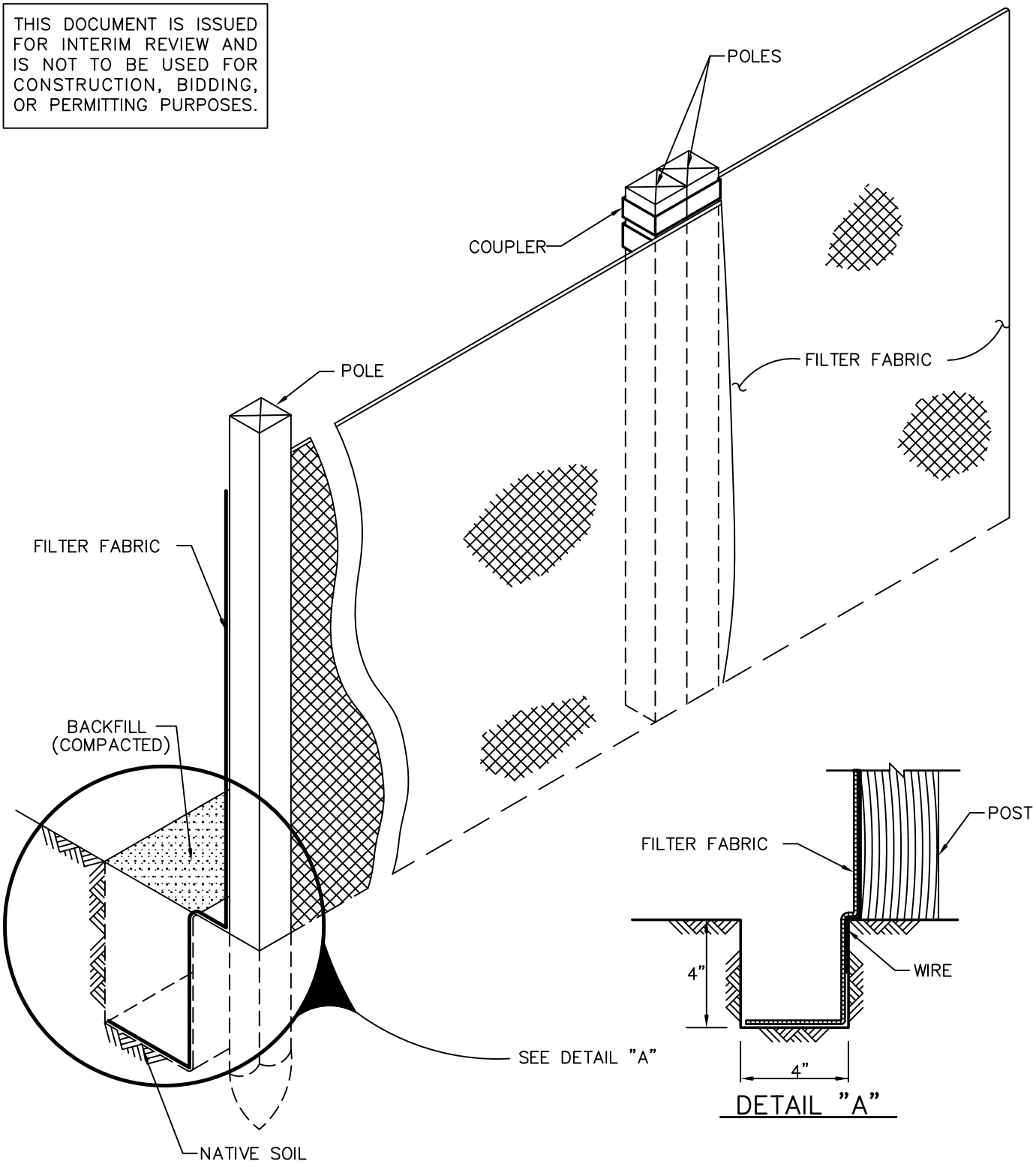

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DAPL/ETCOP

TYPICAL SILT FENCE

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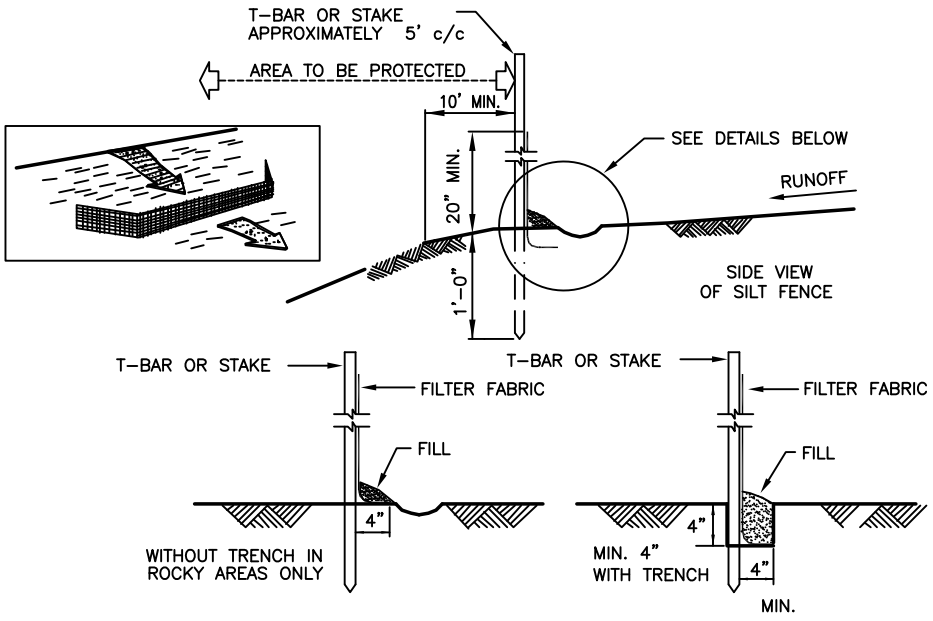

NOTE:

1. GENERALLY WHEN A LONG SEDIMENT BARRIER IS REQUIRED, SILT FENCE WILL BE UTILIZED RATHER THAN STRAW BALES AT:

- THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND PERENNIAL AND INTERMITTENT STREAMS.
- THE DOWN SLOPE RIGHT-OF-WAY EDGE WHERE ANY OF THE ABOVE MENTIONED LOCATIONS ARE ADJACENT TO THE RIGHT-OF-WAY.
- BETWEEN TOPSOIL/SPOIL STOCKPILES AND PERENNIAL OR INTERMITTENT STREAMS OR WETLANDS WHERE BUFFER ZONE REQUIREMENTS CANNOT BE MET.
- ALONG R.O.W. BOUNDARIES OF WETLAND CONSTRUCTION.
- ACROSS CONSTRUCTION R.O.W. AT ALL WATERBODY CROSSINGS.
- AS SPECIFIED IN THE SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN.
- AS DIRECTED BY THE INSPECTOR.

2. THE SILT FENCE SHALL BE CONSTRUCTED AS FOLLOWS:

- FABRIC USED FOR THE SILT FENCE SHALL BE A "STANDARD STRENGTH" GEOTEXTILE, SUCH AS MIRAFI 100X OR AN APPROVED EQUIVALENT.
- THE FABRIC SHALL BE CUT FROM A CONTINUOUS FABRIC ROLL.
- THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36".
- SPLICES SHALL ONLY BE DONE AT POSTS AND SHALL CONSIST OF A MINIMUM OF 6" OF OVERLAP WITH BOTH ENDS SECURED TO THE POST.
- POSTS SHALL BE POSITIONED A MAXIMUM OF 5' APART.
- POSTS SHALL CONSIST OF 2"X2" WOODEN STAKES OF SUFFICIENT LENGTH TO EXTEND A MINIMUM OF 12" INTO THE GROUND.
- FABRIC SHALL BE STAPLED OR WIRED TO POSTS A MAXIMUM OF EVERY 9".

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3. THE SILT FENCE SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER OR AS FOLLOWS:

- A TRENCH, 4" WIDE AND 4" DEEP, SHALL BE EXCAVATED ALONG THE CONTOUR. THE POST SHALL BE DRIVEN INTO THE BOTTOM OF THE TRENCH ON THE DOWSTREAM SIDE OF THE FILTER FABRIC. THE TRENCH SHALL BE BACK FILLED AND COMPACTED, ENSURING 4" OF FENCE IS BURIED WITHIN THE TRENCH.
- IN AREAS WHERE THE TERRAIN IS TOO ROCKY FOR TRENCHING, A 4" GROUND FLAP WITH ROCK FILL TO HOLD IT IN PLACE SHALL BE USED.

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EROSION CONTROL SILT FENCE SEDIMENT BARRIER

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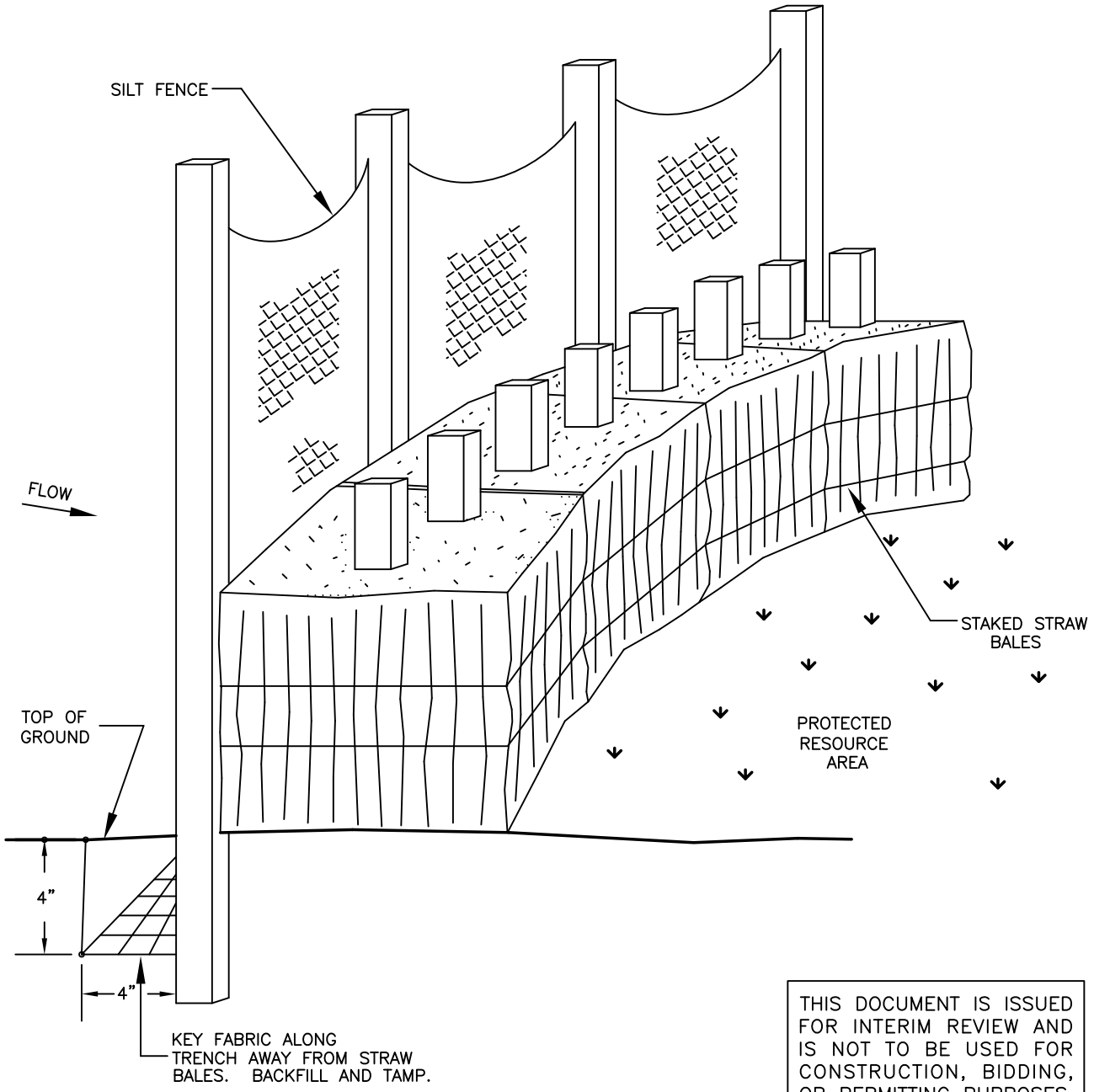

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NOTE:

1. WHERE EXTREMELY ERODIBLE SOIL CONDITIONS EXIST AND AT THE DIRECTION OF THE INSPECTOR, A COMBINED STRAW BALE AND SILT FENCE SEDIMENT CONTROL BARRIER SHALL BE INSTALLED.

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EROSION CONTROL STRAW BALE AND SILT FENCE

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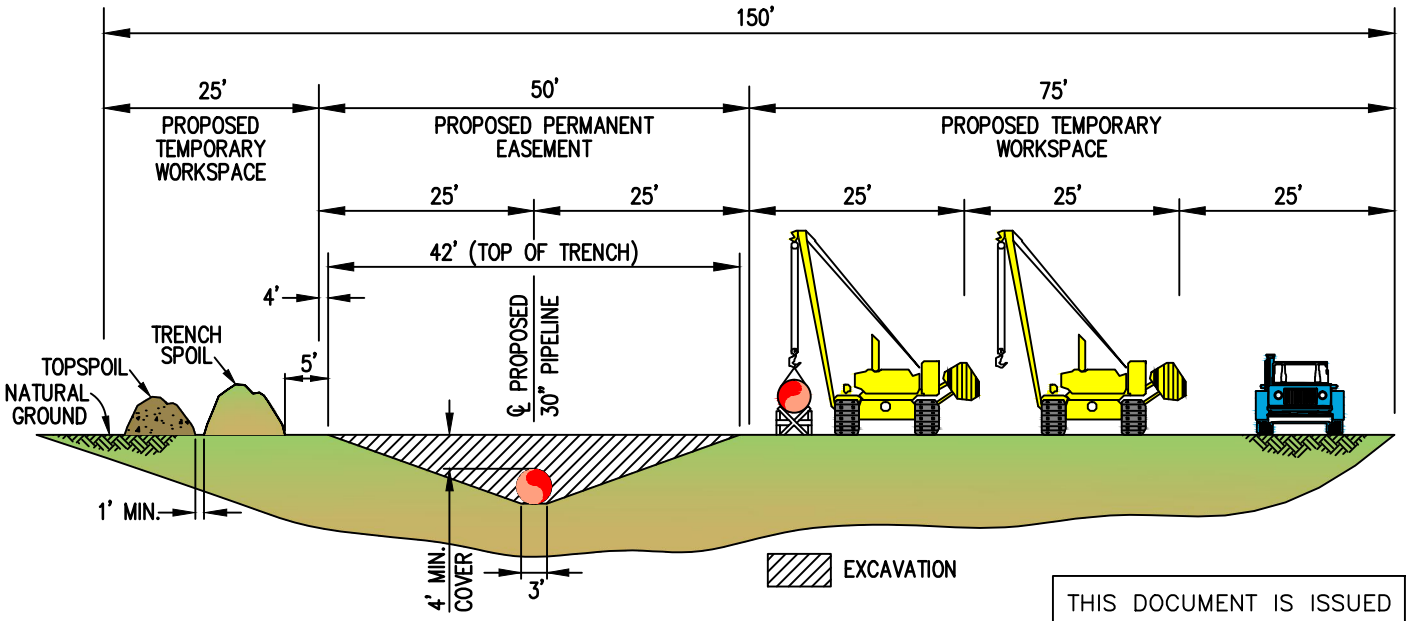

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NOTES:

1. CONSTRUCTION RIGHT–OF–WAY WILL TYPICALLY BE 150 FEET WIDE CONSISTING OF 50 FEET PERMANENT EASEMENT AND UP TO 100 FEET OF TEMPORARY WORKSPACE. EXTRA TEMPORARY WORK SPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL AND RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
2. UTILIZE THE "TRENCH ONLY" TOPSOIL SALVAGE METHOD AT LOCATIONS SUCH AS RIPARIAN AREAS OR UNMANAGED WOODLAND, WHERE IDENTIFIED ON THE CONSTRUCTION DRAWINGS, OR AS DIRECTED BY THE PIPELINE INSPECTOR.
3. THE TRENCH ONLY METHOD IS NOT TO BE USED ON AGRICULTURAL LAND EXCEPT AS DIRECTED BY THE INSPECTOR (PER LANDOWNER REQUEST).
4. FOR TRENCH ONLY STRIPPING, THE STRIPPED AREA SHALL BE WIDE ENOUGH TO ACCOMMODATE TRENCHING EQUIPMENT.
5. DEPTH OF TOPSOIL STRIPPING IS A MINIMUM OF 12 INCHES.
6. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE PIPELINE INSPECTOR. KEEP TOPSOIL AND SPOIL PILES CLEAN OF ALL CONSTRUCTION DEBRIS. MAINTAIN A MINIMUM 12 INCHES OF SEPERATION BETWEEN TOPSOIL AND TRENCH SPOIL PILES.
7. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH UPLAND SOILS INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING.
8. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING SPOIL AND TOPSOIL PILES.
9. SAME LAYOUT APPLIES WHERE CONSTRUCTION R.O.W. DOES NOT ABUT EXISTING R.O.W.
10. TEMPORARILY SUSPEND TOPSOIL HANDLING OPERATIONS DURING INORDINATELY WINDY CONDITIONS UNTIL MITIGATIVE MEASURES TO MINIMIZE WIND EROSION CAN BE IMPLEMENTED.
11. TOPSOIL AND TRENCH SPOIL RELATIVE POSITIONS CAN, AS DIRECTED BY THE PIPELINE INSPECTOR, BE REVERSED.

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CONSTRUCTION RIGHT–OF–WAY ARRANGEMENT

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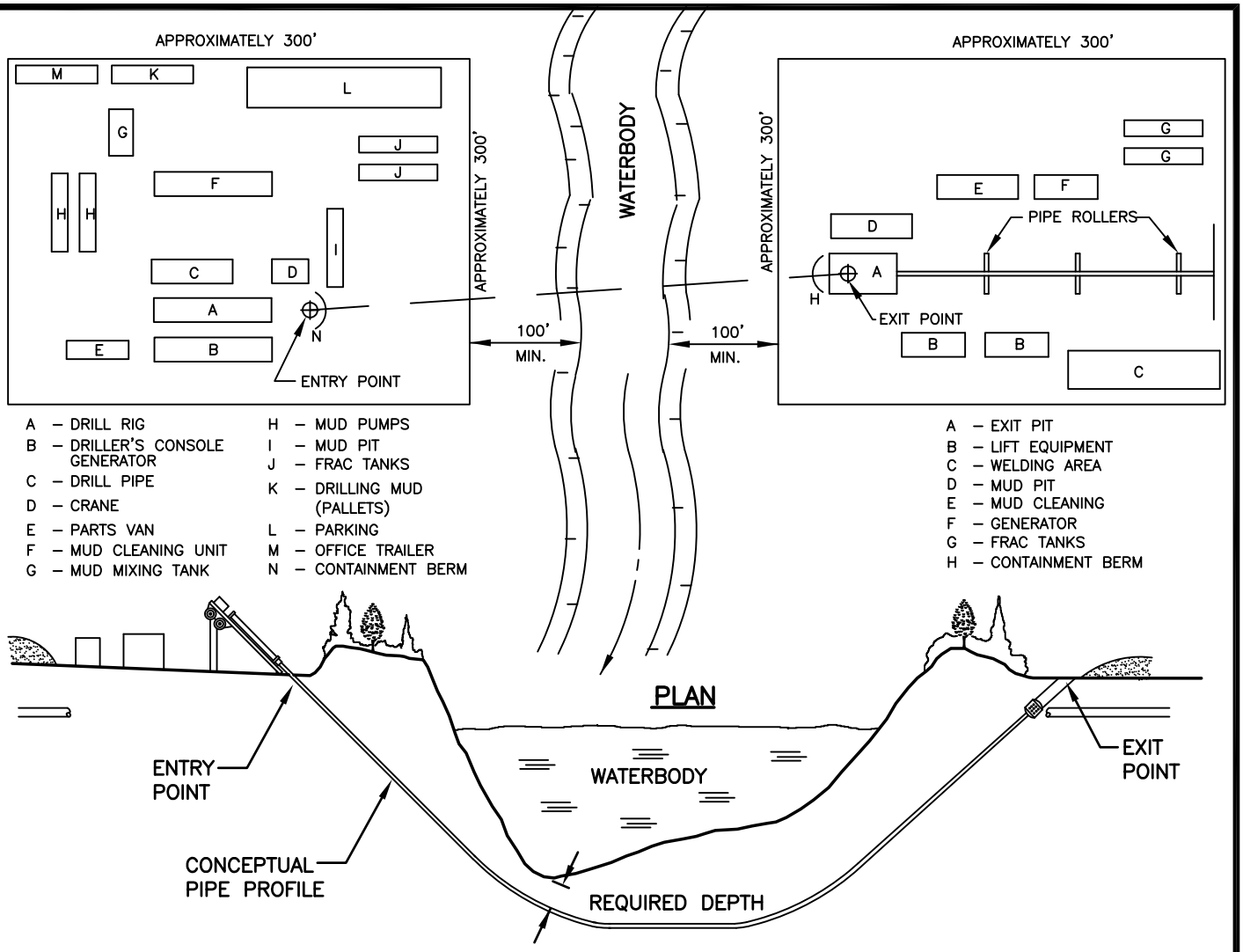

NOTES:

1. SET UP DRILLING EQUIPMENT A MINIMUM OF 300 FEET FROM THE EDGE OF THE WATERCOURSE. DO NOT CLEAR OR GRADE WITHIN THE 100 FOOT ZONE.
2. ENSURE THAT ONLY BENTONITE BASED DRILLING MUD IS USED. DO NOT ALLOW THE USE OF ANY ADDITIVES TO THE DRILLING MUD WITHOUT THE APPROVAL OF THE APPROPRIATE REGULATORY AUTHORITIES AND CLIENTS REPRESENTATIVE.
3. INSTALL SUITABLE DRILLING MUD TANKS OR SUMPS TO PREVENT CONTAMINATION OF WATERCOURSE.
4. INSTALL BERMS DOWNSLOPE FROM THE DRILL ENTRY AND ANTICIPATED EXIT POINTS TO CONTAIN ANY RELEASE OF DRILLING MUD.
5. DISPOSE OF DRILLING MUD IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AUTHORITY REQUIREMENTS.

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WATERBODY CROSSING HORIZANTAL DIRECTIONAL DRILL

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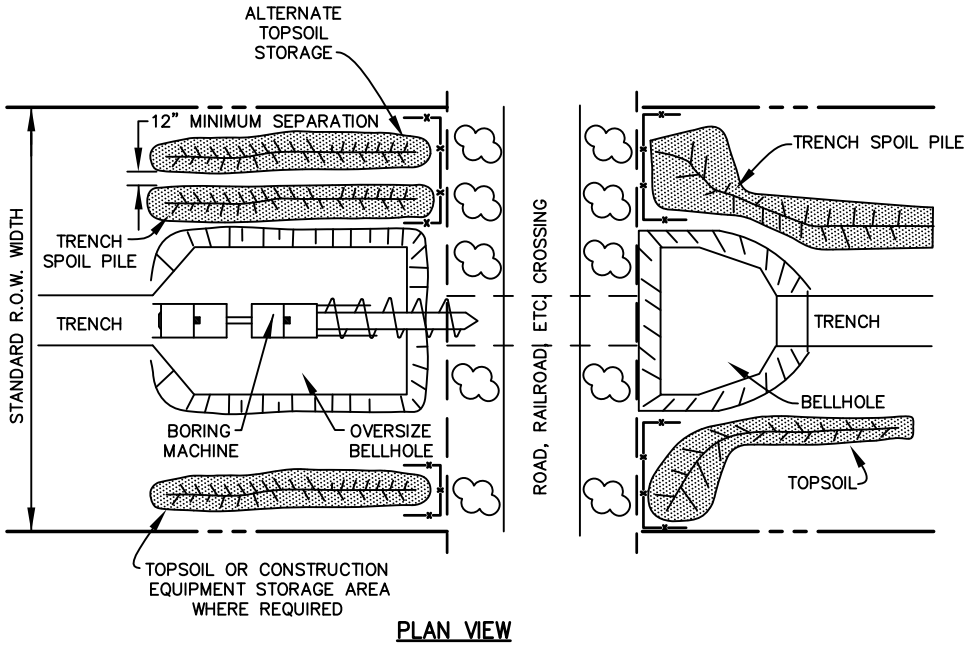

PLAN VIEW
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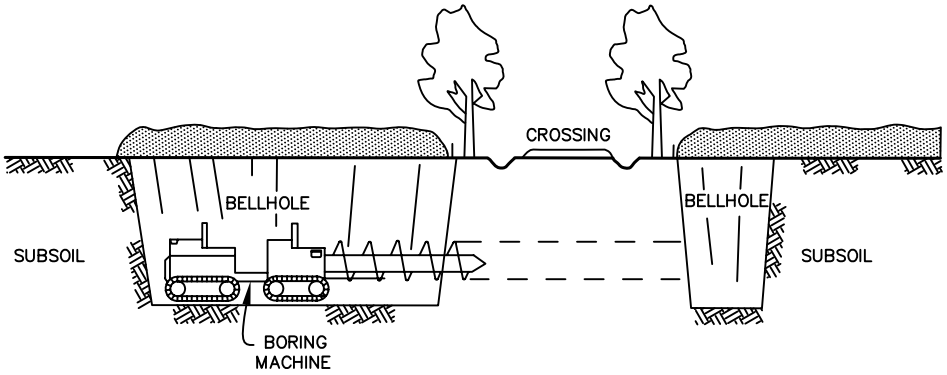

PROFILE
N.T.S.

NOTES:

1. STRIP TOPSOIL FROM BELLHOLE AREA IN UNMANAGED WOODLANDS. STRIP TOPSOIL FROM THE BELLHOLE AND SPOIL STORAGE AREA ON AGRICULTURAL LAND.
2. EXCAVATE BELLHOLE, STORING TRENCH SPOIL ON OPPOSITE SIDE OF RIGHT-OF-WAY FROM TOPSOIL, OR ADJACENT TO TOPSOIL MAINTAINING A 12" MINIMUM SEPARATION TO AVOID MIXING TOPSOIL AND TRENCH SPOIL.
3. AFTER COMPLETION OF PIPE TIE-INS, BACKFILL AND COMPACT. LEAVE A CROWN TO ALLOW FOR SUBSIDENCE.
4. INSTALL TEMPORARY EROSION CONTROL PROCEDURES AS SPECIFIED BY THE PIPELINE INSPECTOR.

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TOPSOIL SALVAGE CROSSING BORE (CB)

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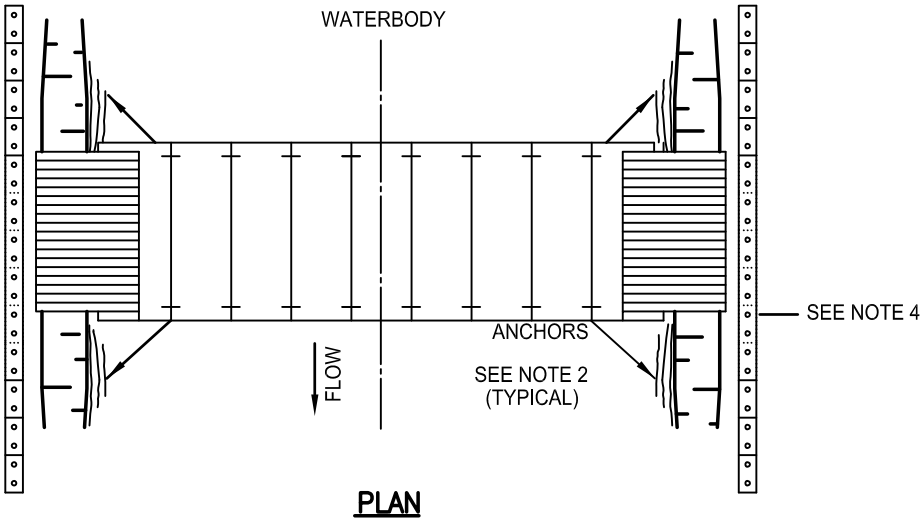

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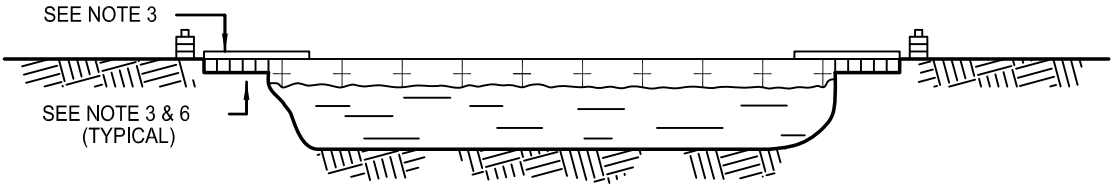

PROFILE

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NOTES:

1. THIS TYPE OF BRIDGE IS GENERALLY USED ON WIDE, CROSSINGS.
2. BRIDGE SHALL BE ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
3. IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN ROCK MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE.
4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FORM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE, STRAW BALES OR SANDBAGS MAY BE USED INTERCHANGEABLY.
5. REMOVE FLOATING BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
6. DISPOSE OF A ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

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PROPOSED PIPELINE
WATERBODY BRIDGE FLEXI FLOAT TYPE (FF)

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO. P12-20	REV. A
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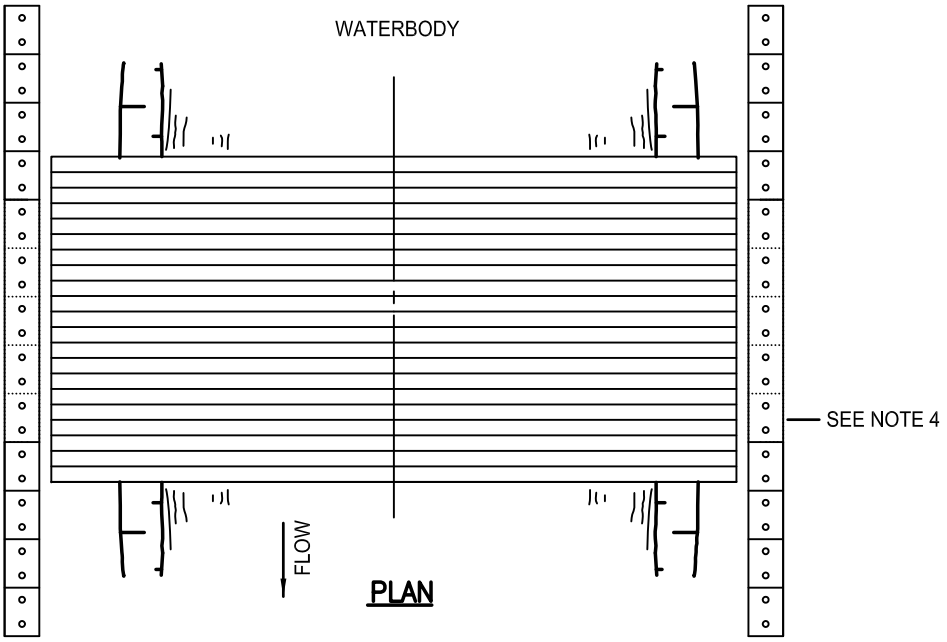

PLAN

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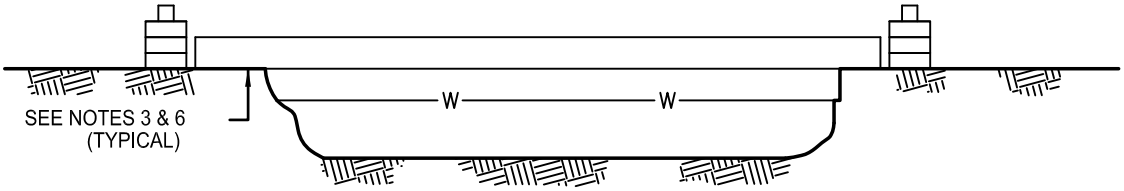

PROFILE

NOTES:

1. THIS TYPE OF BRIDGE IS GENERALLY USED ON NARROW CROSSINGS, LESS THAN 20 FEET WIDE WITH APPROPRIATE BANK CONFIGURATION. MULTIPLE MATS MAY BE LAYERED FOR HEAVIER EQUIPMENT CROSSINGS.

2. BRIDGE SHALL BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE TO USE.

3. IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN ROCK MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE INCLUDING REMOVAL OF DIRT FROM DECK DURING OPERATION.

4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FORM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE, STRAW BALES OR SANDBAGS MAY BE USED INTERCHANGEABLY.

5. REMOVE TIMBER MATS AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.

6. DISPOSE OF A ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.

7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

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PROPOSED PIPELINE
WATERBODY BRIDGE TIMBER MAT (TM)

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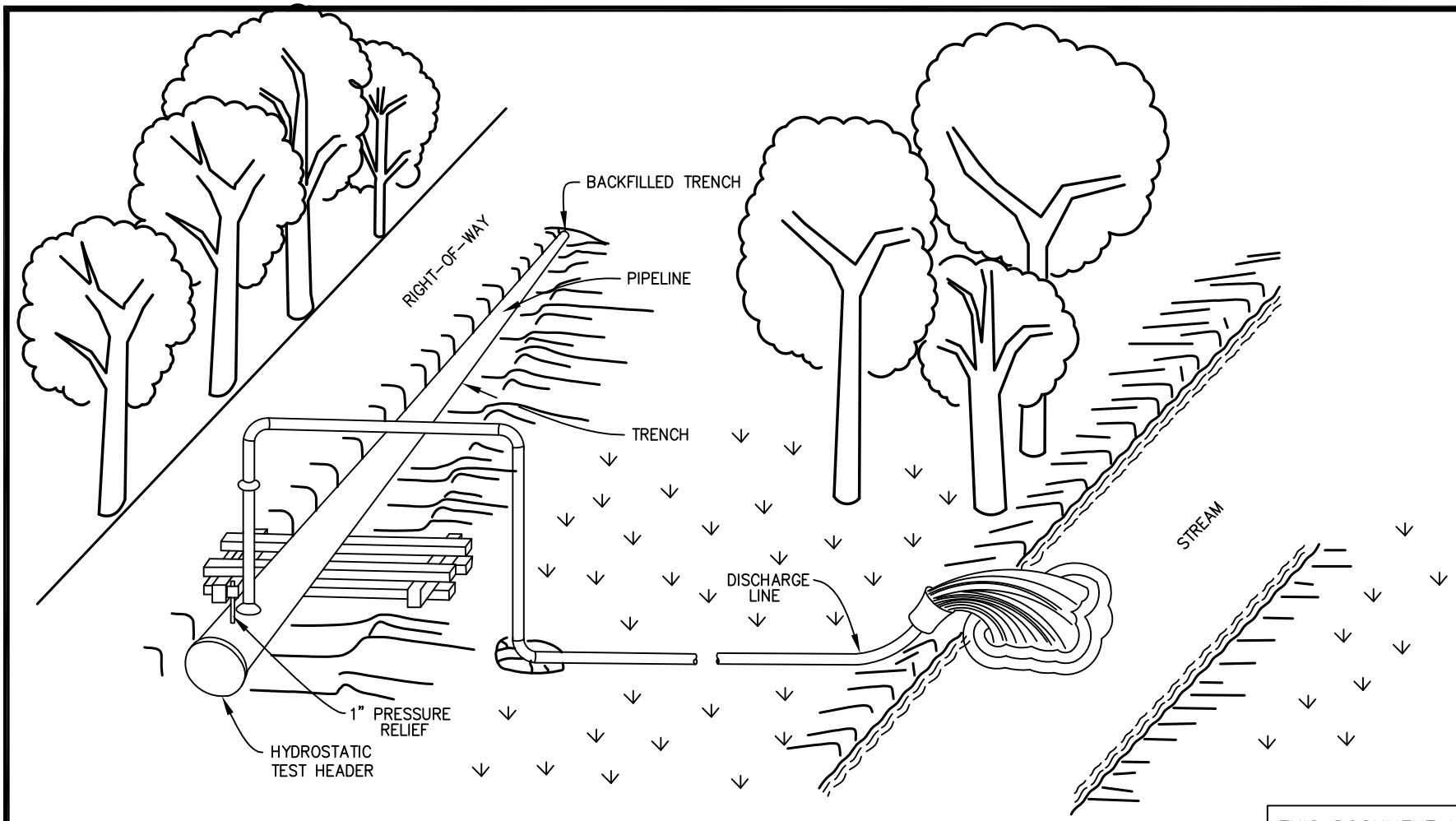

TYPICAL HYDROSTATIC TEST DEWATERING INTO STREAM

N.T.S.

NOTES:

1. PRESSURE IS RELEASED INITIALLY THROUGH 1" PRESSURE RELIEF. WATER IS THEN RELEASED THROUGH DISCHARGE LINE TO COMPANY APPROVED METHOD OF DISSIPATION WATER.
2. COMPANY MAY ALSO APPROVE OTHER METHODS OF DISSIPATING WATER.
3. THIS METHOD MAY ALSO BE INITIATED WHEN PUMPING WATER FROM DITCH.

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TYPICAL HYDROSTATIC TEST DEWATERING INTO STREAM

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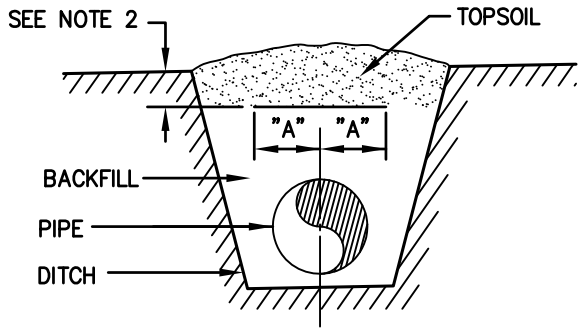
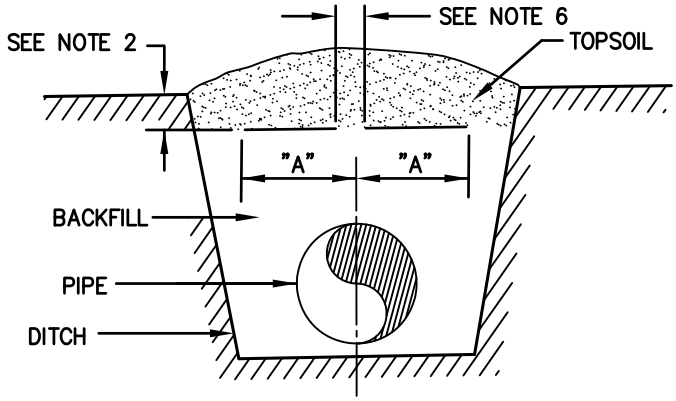
PIPELINE MARKING TAPE INSTALLATION

SINGLE R.O.W.



PIPE DIA.	TAPE WIDTH	"A"
6"	24"	12"
8"	24"	12"
10"	24"	12"
12"	24"	12"
14"	24"	12"
16"	24"	12"

DOUBLE R.O.W.



PIPE DIA.	TAPE WIDTH	"A"
20"	24"	25"
24"	24"	25"
30"	24"	25"
34"	24"	25"
36"	24"	25"
42"	24"	26"
48"	24"	36"

NOTES:

1. PIPELINE MARKING TAPE SHALL BE INSTALLED AT OPEN CUT ROAD AND IN-GROUND UTILITY CROSSINGS AND AT ALL CLASS 2, 3 & 4 LOCATIONS, OR AS DIRECTED BY COMPANY.
2. TAPE IS TO BE INSTALLED 1 FOOT (1') BELOW GRADE EXCEPT IN AGRICULTURAL AREAS, WHERE IT SHALL BE LAID 1'-8" BELOW GRADE. FOR CONVENIENCE, TAPE CAN BE INSTALLED LEVEL AT ROAD CROSSINGS, 1 FOOT (1') BELOW ROAD DITCHES.
3. TAPE IS TO BE INSTALLED ACROSS AND 15 FEET (15') UPSTREAM AND DOWNSTREAM OR ROAD OR UTILITY RIGHT'S-OF-WAY, INCLUDING EXPOSED PORTION OF BORED CROSSINGS.
4. TAPE IS TO BE INSTALLED 15 FEET (15') UPSTREAM AND DOWNSTREAM OF UTILITY CROSSING IF NO RIGHT-OF-WAY EXISTS.
5. TOP OF BACKFILL SHALL BE AS LEVEL AS POSSIBLE PRIOR TO INSTALLATION OF TAPE.
6. GAP BETWEEN ADJACENT TAPES SHALL BE 2".

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PIPELINE MARKING TAPE INSTALLATION

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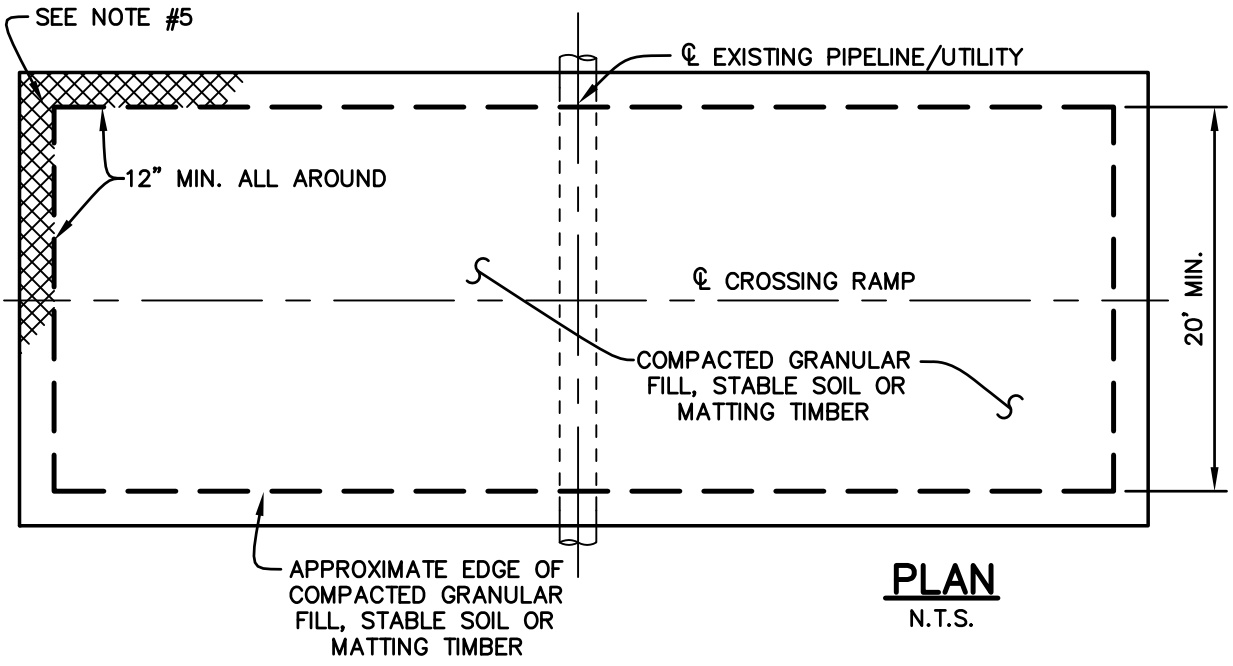

PLAN
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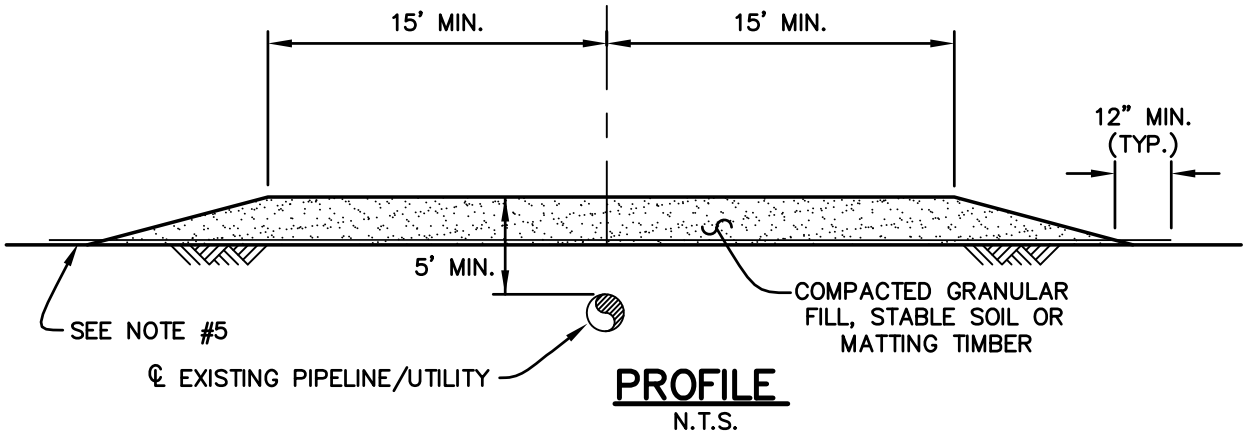

PROFILE
N.T.S.

NOTES:

1. CONTRACTOR TO NOTIFY EXISTING PIPELINE/UTILITY COMPANY PRIOR TO INSTALLATION OF CROSSING RAMP.
2. LENGTH OF RAMP TO VARY IN ACCORDANCE WITH CROSSING ANGLE. MINIMUM CROSSING ANGLE TO BE 45 DEGREES.
3. VEHICLES OR EQUIPMENT USING CROSSINGS SHALL PROCEED SLOWLY & WITH CAUTION TO MINIMIZE IMPACT LOADING & REDUCTION ON DEPTH OF COVER OVER PIPELINE/UTILITY.
4. ON COMPLETION OF CONSTRUCTION, CONTRACTOR TO REMOVE COMPLETE RAMP & RESTORE AREA TO THE SATISFACTION OF THE EXISTING PIPELINE/UTILITY COMPANY & THE CLIENT INSPECTOR.
5. GEOTEXTILE FABRIC (& GEOTEXTILE GRID WHERE REQUIRED) SHALL BE INSTALLED TO PROTECT NATIVE TOP SOIL AS DIRECTED BY THE CLIENT INSPECTOR WHEN IMPORTED GRANULAR FILL, NATIVE SUBSOIL FILL OR MATTING TIMBER MATERIAL IS UTILIZED. IMPORTED GRANULAR FILL MATERIAL OR NATIVE SUBSOIL FILL MATERIAL TO BE REMOVED & DISPOSED OF AS DIRECTED BY THE CLIENT INSPECTOR.

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TYPICAL TEMPORARY CROSSING RAMP OVER EXISTING PIPELINE/UTILITY

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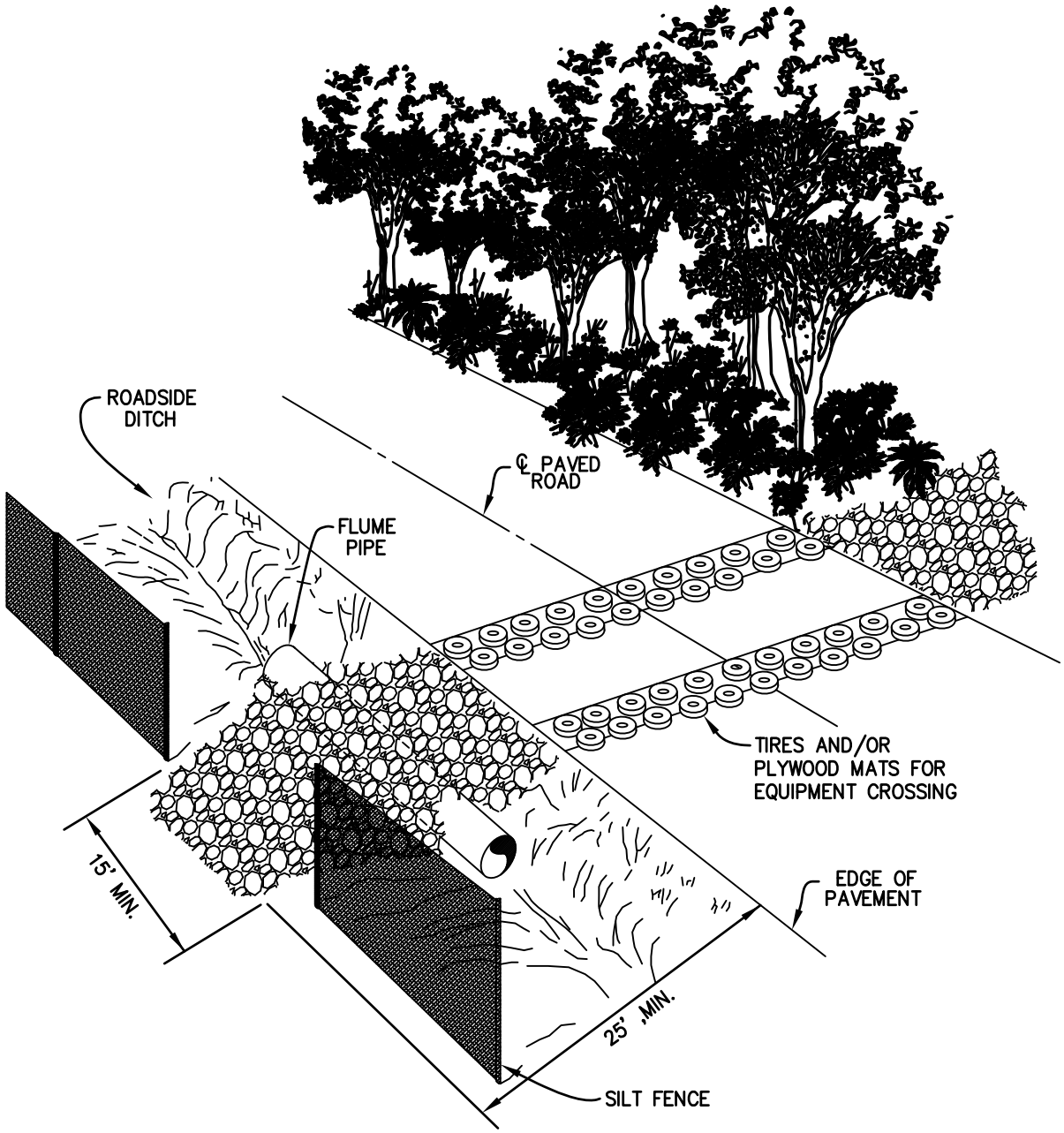
TYPICAL PAVED ROAD CROSSING CONTROL DETAILS



NOTES:

CRUSHED STONE RAMP (WITH FABRIC MAT IN AGRICULTURAL AREAS) TO CONSTRUCTED FOR ENTRANCE AND EXIT OF VEHICLES AND EQUIPMENT.

ALL VEHICLES SHALL TRAVEL ON ACCESS RAMP WHEN ENTERING OR EXITING THE RIGHT-OF-WAY.

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TYPICAL PAVED ROAD CROSSING CONTROL DETAILS

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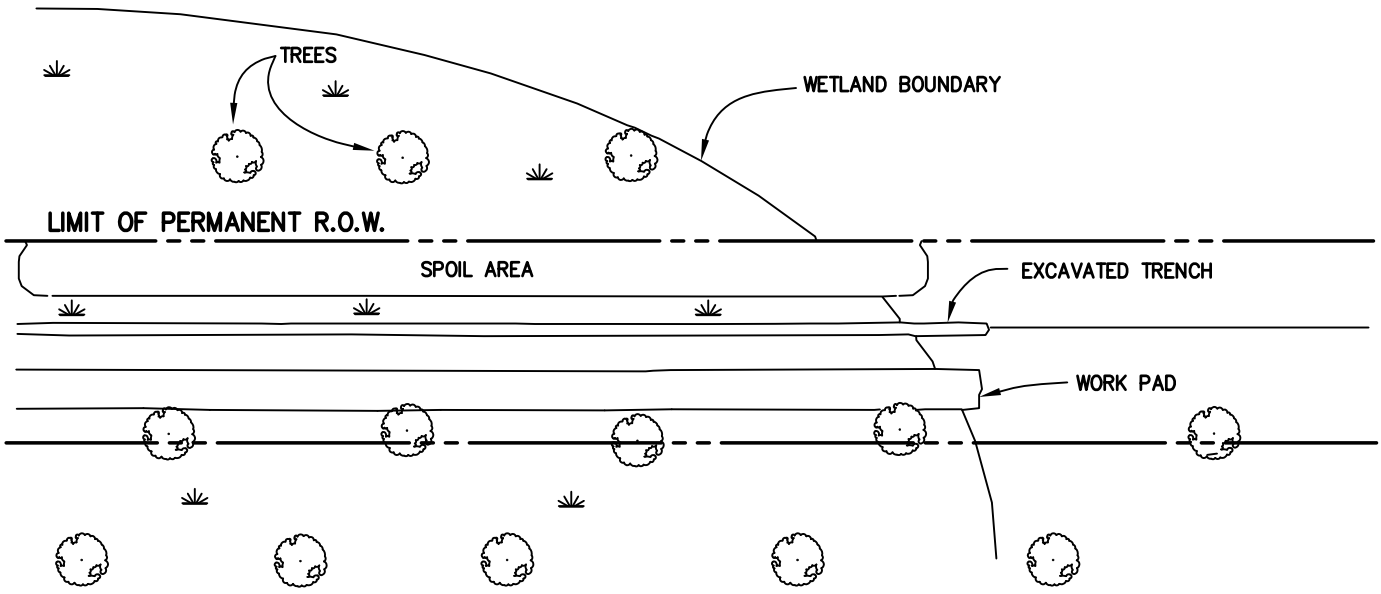

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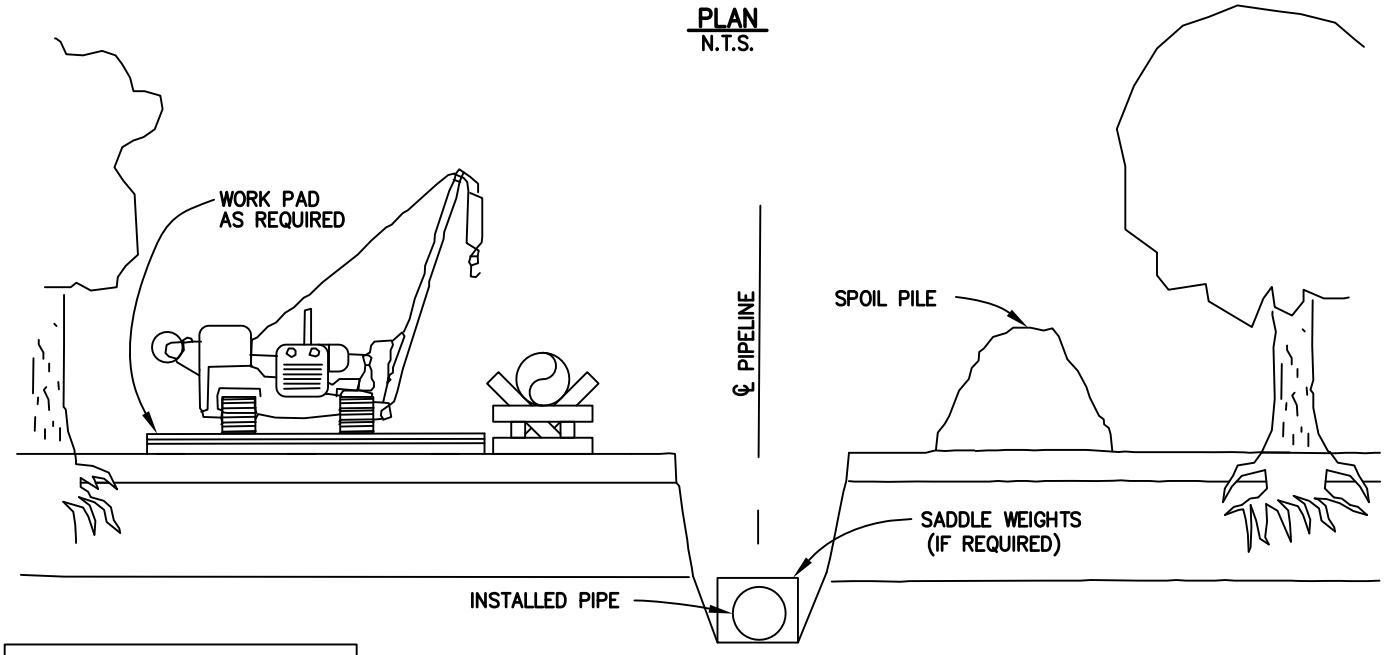

CROSS SECTION THROUGH RIGHT-OF-WAY

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NOTES

1. WORK PAD AND / OR EQUIPMENT MATS TO BE INSTALLED AS REQUIRED.
2. STUMPS TO BE REMOVED FROM WORKING RIGHT-OF-WAY.

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FORESTED WETLAND

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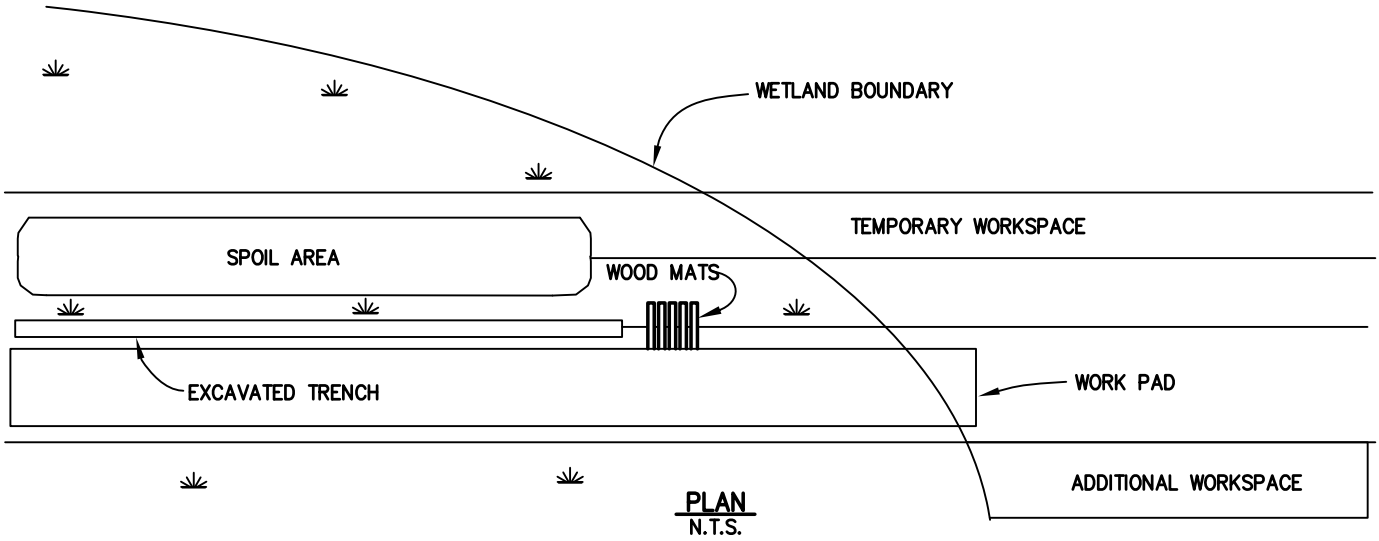

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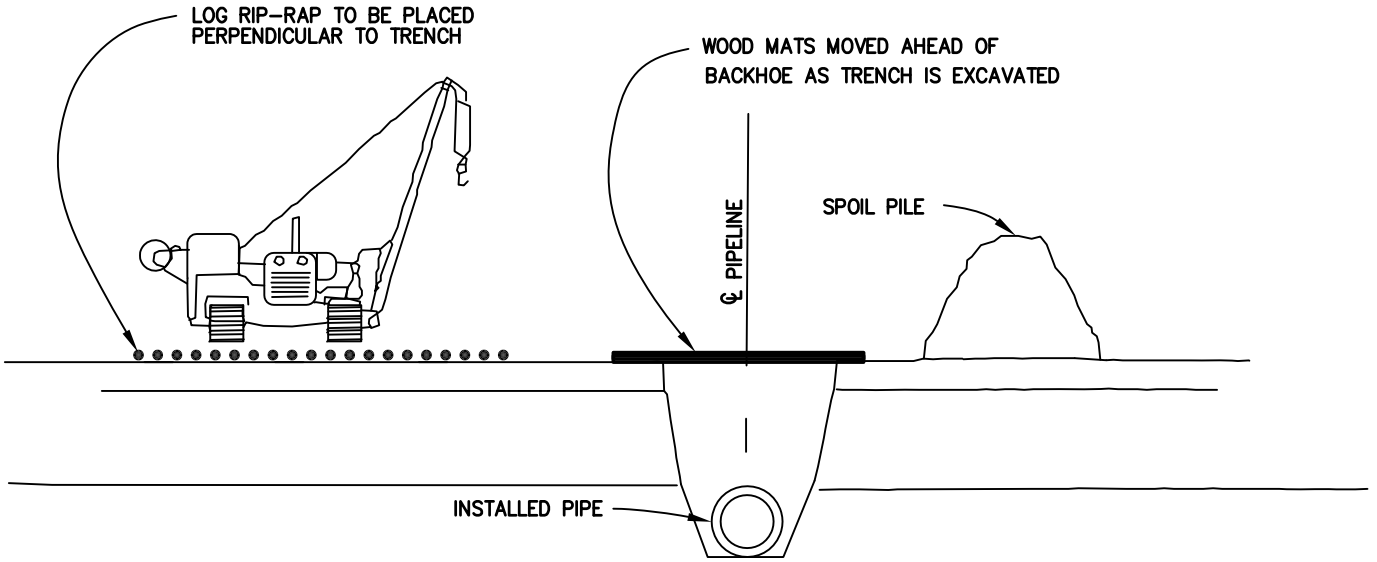

CROSS SECTION THROUGH RIGHT-OF-WAY

NOTES

1. WORK PAD OF RIP-RAP CONSTRUCTED FOR ACCESS OF TRACKED EQUIPMENT ONLY.
2. PIPE SECTION TO BE FABRICATED IN WORK AREA AND CARRIED INTO WETLAND.
3. ACCESS FOR VEHICLES AROUND WETLAND.
4. TRENCH TO BE EXCAVATED BY BACKHOE POSITIONED ON WOOD MATS.

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SATURATED WETLAND

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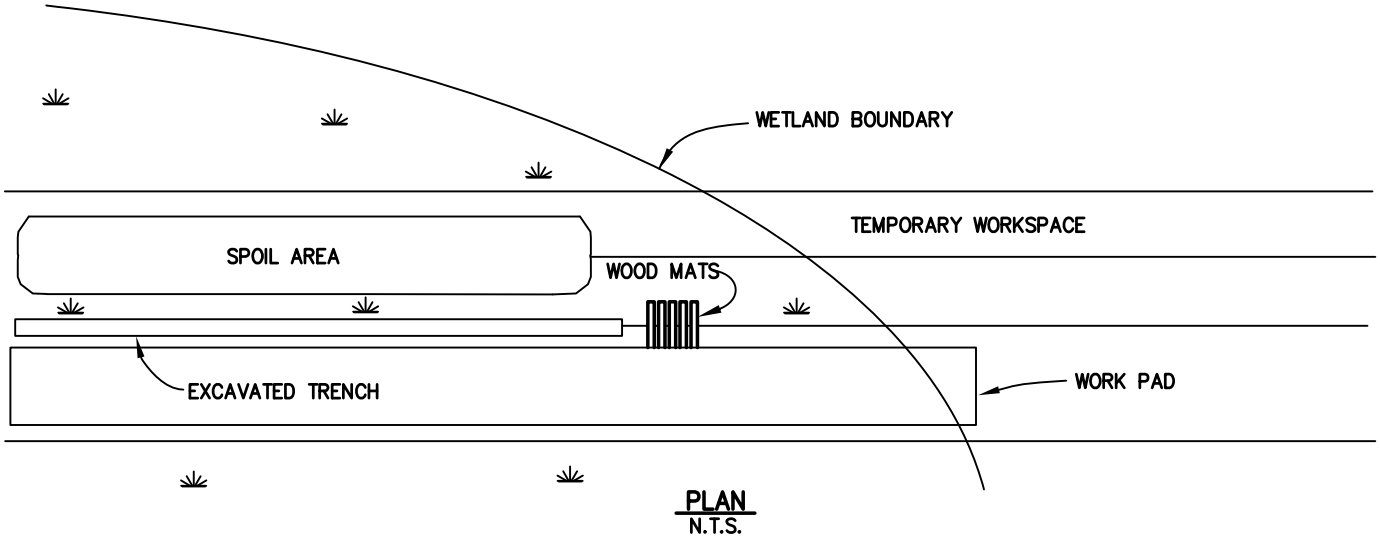

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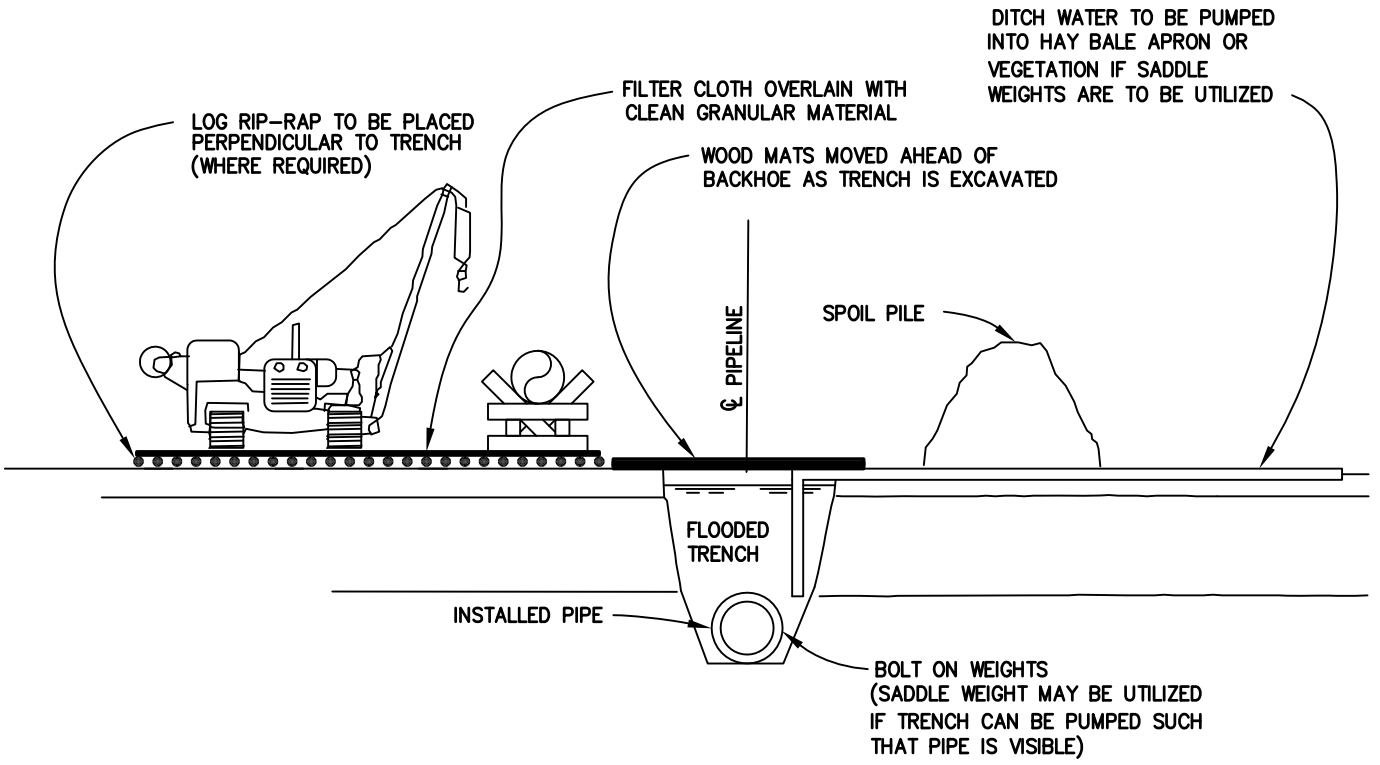

CROSS SECTION THROUGH RIGHT-OF-WAY

NOTES

1. WORK PAD OF LOG RIP-RAP AND / OR FILTER CLOTH WITH GRANULAR MATERIAL TO BE CONSTRUCTED FOR ACCESS FOR ALL EQUIPMENT.
2. TRENCH TO BE EXCAVATED BY BACKHOE POSITIONED ON WOOD MATS.
3. PIPE TO BE FABRICATED ON WORK PAD WITHIN WETLAND.

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SATURATED WETLAND

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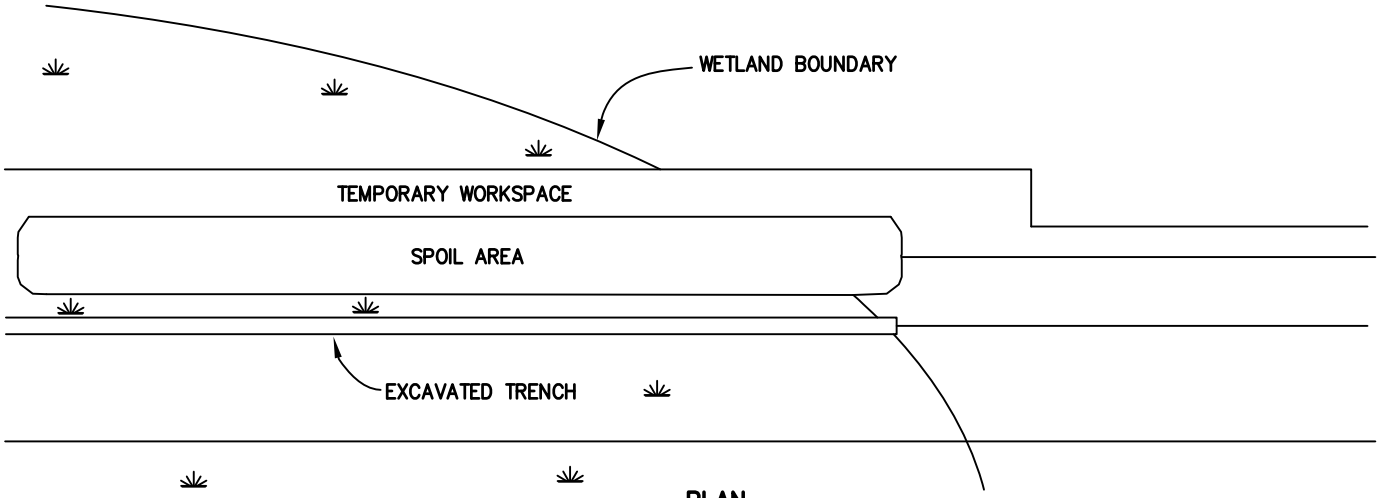

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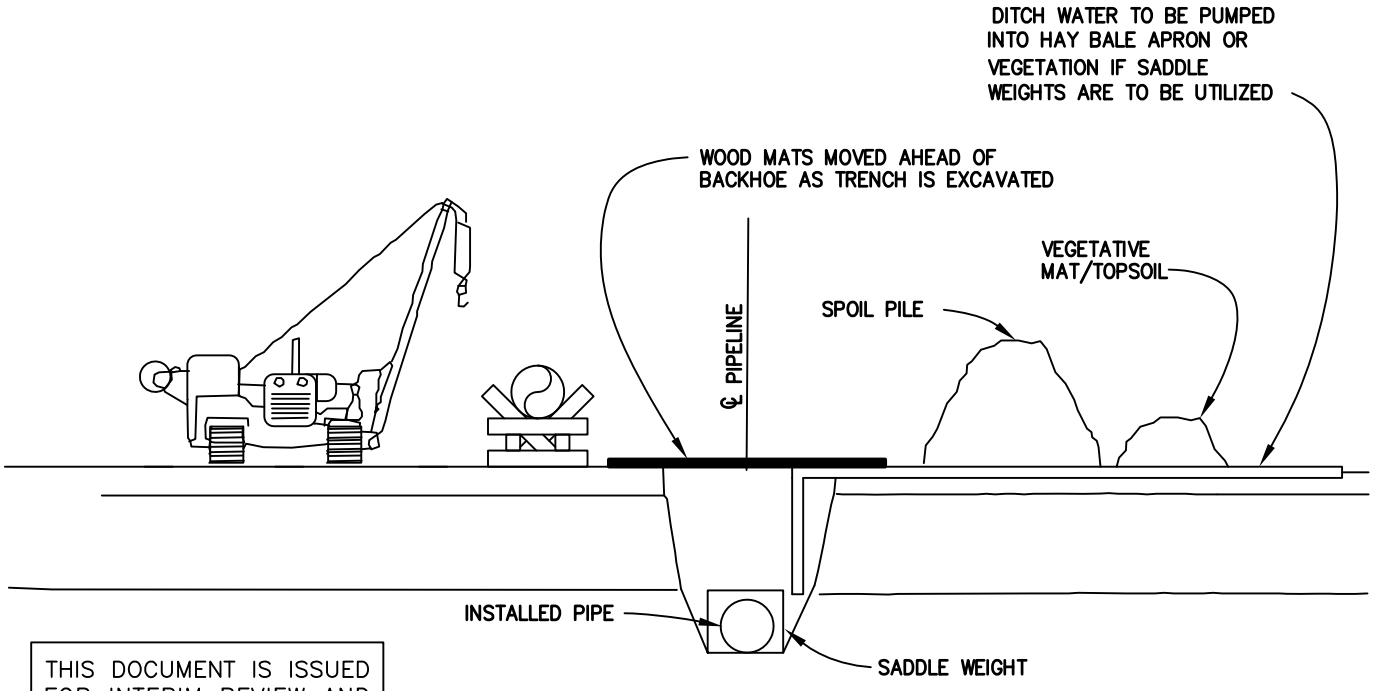

CROSS SECTION THROUGH RIGHT-OF-WAY

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NOTES

1. NO-WORK PAD NECESSARY. ACCESS FOR ALL EQUIPMENT AND VEHICLES THROUGH WETLANDS.
2. PIPE SECTION FABRICATED WITHIN WETLAND.
3. TOPSOIL/VEGETATIVE MAT STRIPPED INTO SPOIL PILE AND IN VICINITY OF TRENCH.

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NON-SATURATED WETLAND

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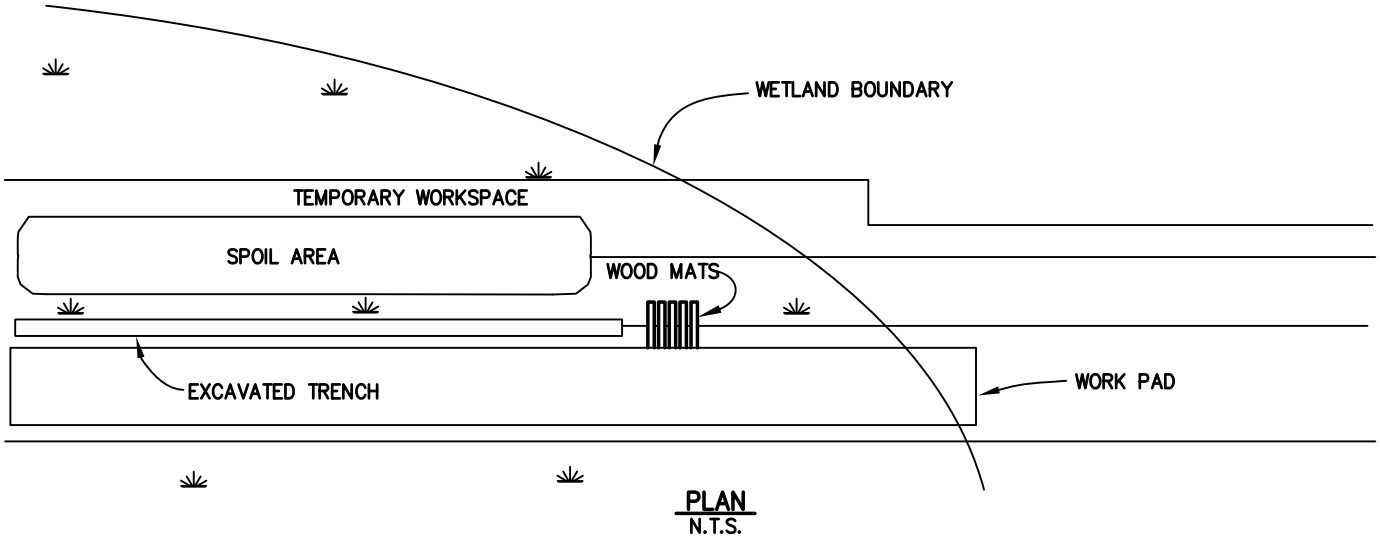

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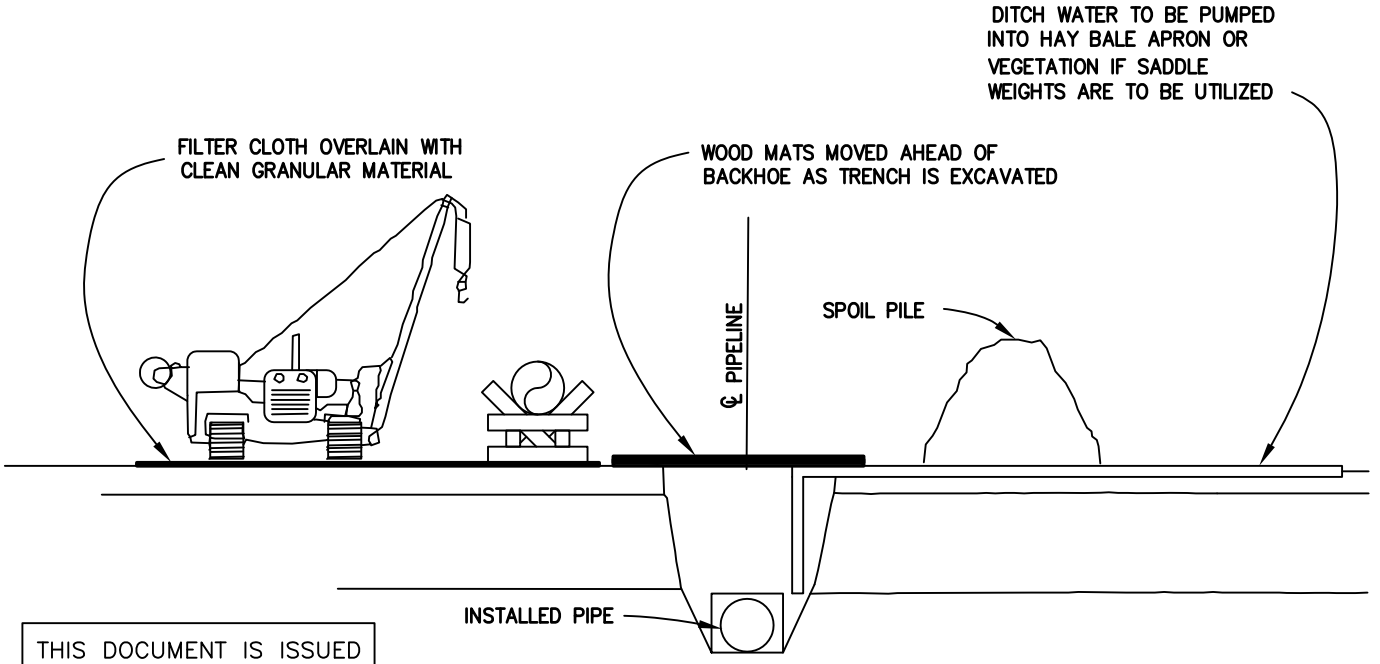

CROSS SECTION THROUGH RIGHT-OF-WAY

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NOTES

1. WORK PAD OF FILTER CLOTH WITH GRANULAR MATERIAL TO BE CONSTRUCTED FOR ACCESS OF ALL EQUIPMENT AND VEHICLES.
2. PIPE TO BE FABRICATED ON WORK PAD WITHIN WETLAND.
3. TRENCH TO BE EXCAVATED BY BACKHOE POSITIONED ON WOOD MATS.

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NON-SATURATED WETLAND

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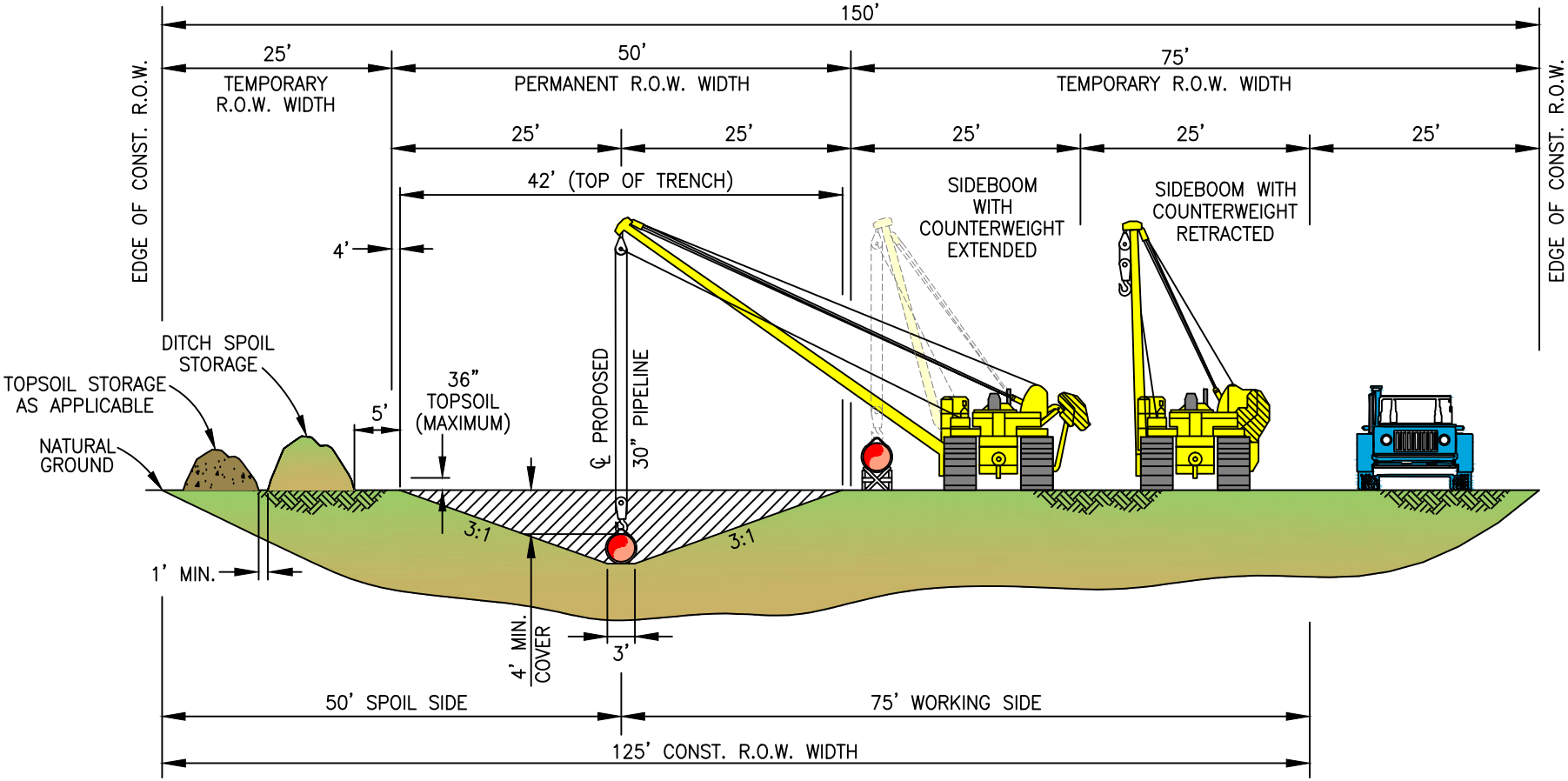

NOTE:
DEPTH OF TOPSOIL STRIPPING IS A MINIMUM OF 12 INCHES.

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CONSTRUCTION RIGHT-OF-WAY ARRANGEMENT

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Dakota Access Pipeline

Draft Spill Prevention, Containment, and Countermeasures Plan

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

ETC has developed this Spill Prevention, Containment, and Countermeasures (SPCC) Plan for the ETC Dakota Access Pipeline Project (Project) to provide preventative and mitigative measures to minimize the environmental impact associated with inadvertent spills or releases of fuel, lubricant, or hazardous materials during construction of the Project. These measures will be implemented by the construction contractor or ETC inspection staff (unless otherwise indicated) during construction of the Project. Each construction contractor (Contractor) on the Project will be required to prepare a job-specific SPCC Plan which will be submitted to ETC prior to commencement of construction.

2.0 PLANNING AND PREVENTION

ETC requires its Contractors to implement proper planning and preventive measures to minimize the likelihood of spills, and to quickly and successfully clean up a spill, should one occur. ETC has developed this SPCC Plan to set forth minimum standards for handling and storing regulated substances and for cleaning up spills. Potential sources of construction-related spills include storage tank leaks, machinery and equipment failure, and fuel handling and transfer accidents. The Contractor will be responsible for implementing, at a minimum, the following planning and prevention measures.

2.1 ROLES AND RESPONSIBILITIES

2.1.1 Spill Coordinator

- A Spill Coordinator shall be designated and employed by the Contractor, subject to approval by ETC.
- The Spill Coordinator shall mobilize on-site personnel, equipment, and materials for containment and/or cleanup commensurate with the extent of the spill.
- The Spill Coordinator shall assist the appropriate Emergency Response Contractor (Appendix H) and monitor containment activities to ensure that the actions are consistent with the requirements of this SPCC Plan.
- The Spill Coordinator and/or Chief Environmental Inspector or the Field Construction Manager, in consultation with appropriate agencies, shall determine when it is necessary to evacuate spill sites to safeguard human health.
- The Spill Coordinator shall notify the Environmental Manager and Chief Environmental Inspector immediately of any spill.
- The Spill Coordinator will assist the Chief Environmental Inspector in completion of a spill report form.

- The Spill Coordinator will identify available Emergency Response Contractors, who are subject to ETC approval.
- The Spill Coordinator should not contact an agency regarding a spill without authorization from the Environmental Manager and/or Chief Environmental Inspector.

2.1.2 Environmental Manager

- The "Environmental Manager" referred to in this SPCC Plan will be a designated ETC employee or a third-party Designee.
- The Environmental Manager will have a Chief Inspector located at the construction sites. The Chief Inspector may act on the behalf of the Environmental Manager on certain issues that will be defined before construction is started.
- The Chief Inspector will monitor the Contractor's compliance with the provisions of this SPCC Plan.
- All "reportable spills" must be reported immediately to the Construction Manager, Environmental Manager, and Chief Inspector ("reportable spills" will be defined by state-specific guidelines. See Appendix C). The Chief Inspector, with assistance from the Spill Coordinator, is responsible for completing a Spill Report Form (Appendix A) within 24 hours of the occurrence of a reportable spill.
- The Spill Coordinator and/or Environmental Manager or the Project Manager, in consultation with appropriate agencies, shall determine when it is necessary to evacuate spill sites to safeguard human health.
- The Environmental Manager will promptly report spills to the appropriate federal, state, and local agencies as required and coordinate with these agencies regarding contacting additional parties or agencies.

2.1.3 Field Construction Manager

- The "Field Construction Manager" referred to in this SPCC Plan will be the Chief Inspector, a designated ETC employee, or a third-party designee who is responsible for the management of construction activities on this Project (representing the Construction Manager for ETC).
- The Field Construction Manager is the initial point of contact of the Spill Coordinator when a spill occurs, and determines the containment measures that may be required.
- The Field Construction Manager is responsible for documenting the general information regarding any spills such as work stoppages, injuries, fires, and the extent of exposure to workers on the site.

- The Field Construction Manager is responsible for coordinating any emergency response services that may be required such as the Fire Department, the Sheriff Department, or for contacting Emergency Response Contractors.

2.1.4 Authorized Personnel

- Authorized Personnel are representatives of the Contractor who are designated to handle fuel, lubricants, or other regulated substances.
- Authorized Personnel shall be familiar with the requirements of the SPCC Plan and the consequences of non-compliance.

2.1.5 Construction Superintendent

The Contractor's Construction Superintendent or representative must immediately notify the Environmental Manager and Chief Inspector of any spill of a petroleum product or hazardous liquid, regardless of volume.

2.1.6 Construction Personnel

- Construction Personnel are representatives of the Contractor involved with installation of the Project.
- Construction Personnel shall notify the Construction Superintendent or Spill Coordinator immediately of any spill of a petroleum product or hazardous liquid, regardless of volume.

2.1.7 Responsibility of Administration

The Contractor is responsible for the administration of its SPCC Plan.

3.0 GENERAL BEST MANAGEMENT PRACTICES

3.1 TYPICAL FUELS, LUBRICANTS AND HAZARDOUS MATERIALS

The table in Appendix G identifies fuels, lubricants and coolants generally present on pipeline construction spreads and identifies typical total volumes, storage, and transportation methods. Contractors will have appropriate Material Safety Data Sheets (MSDS) on-site as required by the Occupational Safety and Health Administration (OSHA).

3.2 PREVENTIVE ACTIONS

The following preventive actions and procedures will be accomplished prior to construction.

3.2.1 Storage, Refueling, and Lubrication Areas

Contractors will designate and establish storage, refueling, and lubrication areas prior to construction which will minimize the environmental and safety impacts associated with inadvertent releases of fuel, lubricants, or hazardous substances, as per the following guidelines.

- Refueling and storing potentially hazardous materials will not occur within a 150-foot radius of any private wells or within a 400-foot radius of any municipal or community water supply wells.
- Storage of fuel, lubricants, or hazardous materials within 100 feet of perennial waterbodies, wetland boundaries, or within a municipal watershed will not be conducted.
- No hazardous or potentially hazardous materials, other than essential equipment fuel (*e.g.*, gasoline and diesel fuel) or standard lubricants (*e.g.,* engine oils and grease) will be transported into the right-of-way or construction area without Environmental Manager coordination and approval.
- All petroleum products used by the Contractor necessary for fueling and maintenance of construction equipment shall be stored at a well-maintained and supervised location. Diesel fuel, gasoline, and lubricating oils shall be stored in bermed and lined containment structures or other approved fabricated containment reservoirs.
- All vehicle maintenance waste (oils and lubricants) shall be collected in proper containers within the designated storage, refueling, and lubrication areas. Vehicle washing will be conducted in an area that will ensure that none of the wash water enters any waterbody or wetland. All vehicle wastes will be properly disposed of at facilities permitted to receive hydrocarbon vehicle waste.

3.2.2 Special Refueling Activities

When unique conditions require refueling within 100 feet of the banks of a waterbody, a wetland boundary, or within any municipal watersheds, this activity must be approved in advance by the Environmental Inspector following a review that no reasonable alternatives exist and incorporation of any necessary additional emergency response measures. At a minimum, the review will consider the environmental risks of relocating equipment to an authorized refuel/lubrication area verses risks involved with refuel/lubrication in-place. Additional emergency response measures include availability absorbent materials or other secondary spill containment materials for immediate application prior to commencing refueling activities.

3.2.3 Contingency Supplies

Each construction crew shall have on-hand sufficient supplies of absorbent materials, barrier material, and DOT-approved containers to allow for rapid containment and recovery of any potential spill.

3.2.4 Waste Removal

Standing procedures and individual responsibilities regarding excavation, transport, and off-site disposal of any soil material contaminated by a spill will be established prior to construction.

3.3 NOTIFICATIONS

Whenever any spill of a hazardous or potentially hazardous substance occurs, the Environmental Manager will be notified. The Environmental Manager will help direct further response actions in accordance with EPA guidelines and assist throughout the cleanup and disposal of wastes.

3.4 HAZARDOUS MATERIALS SPILL RESPONSE TRAINING

The Contractor shall instruct construction personnel in the operation and maintenance of equipment to prevent an accidental discharge or spill of fuel, oil, and lubricants. Personnel shall also be made aware of the pollution control laws, rules, and regulations applicable to their work.

A spill prevention briefing shall be scheduled and conducted by the Contractor prior to the initiation of construction to assure adequate understanding of this SPCC Plan. The topics to be addressed at the briefing shall include the following:

- SPCC Plan contents;
- Possible equipment failure and malfunction;
- Precautionary measures;
- Standard operating procedures in case of a spill;
- Equipment, materials, and supplies to be maintained by the Contractor and made available for cleanup of a spill.

3.5 CONTRACTOR'S WASTE DISPOSAL

All wastes generated during construction shall be stored at the Contractor's Field Warehouse, or other approved collection site, in DOT-approved containers.

3.6 MITIGATION ACTIONS

The following guidelines specify the procedures used to control a release, notify appropriate officials, clean up waste, and document corrective actions.

3.6.1 Control of Spills or Releases

Controlling spills and releases shall be accomplished by stopping or segregating the source of the release, using the required stockpiled materials to contain the spill and, if warranted, stopping operations within the affected areas.

3.6.2 Notifications

The Contractor shall first notify the Environmental Manager and Chief Inspector of any spill. If the spill is of a reportable quantity, the Environmental Manager shall notify the required agencies, and, if the situation warrants, the Field Construction Manager shall notify the appropriate local police, fire department, and/or area residents.

The Contractor shall have designated employees on-call 24-hours-per-day for notification of the emergency response companies referenced in Appendix H.

3.6.3 Cleanup and Disposal Actions

The Contractor's Spill Coordinator will direct cleanup of all releases. Contaminated soils, absorbent materials, and other waste generated by the spill/release will be placed in DOT-approved storage/shipping containers (see Appendix E). The containers will be labeled indicating the contents and placed in a designated accumulation point for disposal. Depending on the type of waste generated, the containers shall be transported and disposed of in accordance with appropriate EPA disposal criteria by permitted transporters and disposers.

In the event that a fuel spill occurs within a controlled containment dike, in lieu of a pump/valve drainage system, the Contractor shall immediately engage a certified vacuum cleanup service in the vicinity.

Arrangements shall be made for spill cleanup vacuum services within various vicinities. These companies will be on-call 24-hours-per-day to provide emergency cleanup services, as required by the Contractor.

3.6.4 Records

The Contractor shall maintain written records of all actions taken during the course of a spill event.

4.0 SPILL PROCEDURE

4.1 REPORTABLE QUANTITY SPILLS

Unless otherwise directed, the reporting, disposal, and pre-cleanup sampling requirements in this section apply to all spills of reportable quantities (Appendix C).

4.2 IMMEDIATE SPILL RESPONSE ACTIONS

The Contractor shall implement this SPCC Plan using the following steps in response to a spill of hazardous materials:

Immediate Safeguards

- Evacuate the area of personnel, if warranted.
- Stop operation of affected equipment/area, if warranted.
- Turn off utilities to the area, if necessary.
- Cordon the area to prevent entry of unnecessary personnel or equipment. Establish a single point of ingress and egress to control access to the spill area.
- Take whatever steps possible to eliminate the source of the leak or spill (e.g., shut off valves, upright containers, stop pumps).
- Accumulate as much information as possible as to the nature and size of the spill. Use the Construction Spill Report Form (see Appendix A) for the type of information required.

Spill Event Log Establishment

Documentation of all spill-related activities will include the following information in the log:

- Time and date of initial notification of spill and approximate time the spill occurred.
- Start and completion time of all key activities.
- A detailed description of all activities undertaken and identification of personnel accomplishing these activities.
- Note time of all correspondence, personnel involved with the correspondence, and nature of the correspondence.
- The log shall be maintained until initial actions to clean up the spill are complete (approximately 24 hours, unless conditions extend the response to the emergency).

Notifications

All notifications shall be accomplished at the direction of the Spill Coordinator or Construction Director.

- Notify the Environmental Manager of any spill and provide the necessary information by using the Construction Spill Report Form (Appendix A).
- Make other Contractor and Company and agency notifications per the SPCC Plan, or as instructed by the Environmental Manager and Section 4.3, Reporting Requirements, of this Plan.
- Notify local police, fire department or hazardous material units, if assistance is necessary.
- Notify local residents, if necessary.

Spill Control

For spills on land or pavement:

- Plug all storm drains the spill may gain access to.
- Construct terrace dam or ditch to stop the spill's flow.
- Scatter hay, straw, sand, absorbent pads, or other similar materials to absorb the spill.
- If free-standing fluid is present, actions can be taken to skim fluids and place into DOT-approved containers.

For spills on water:

- Ensure that all possible efforts are made to limit the migration of the surface spill until properly equipped cleanup teams can arrive.
- Create a back current to limit out-flow of material.
- Use absorbent floats and/or booms, if available.
- Create shoreline earth berms to prevent spill from reaching surface waters. Use skimmers, pumps or available absorbent materials to remove spill from water, should spill breach berms.

Area Spill Cleanup

- Follow site cleanup and decontamination requirements which are provided in this SPCC Plan.
- Remove cleanup debris from spill area. Basic guidance is provided in Section 4.4, Disposal of Cleanup Debris and Materials.

Spill Materials Disposal

All spill material shall be disposed of in accordance with EPA Regulations. General guidance is provided in Section 4.6, Cleanup Requirements.

4.3 REPORTING REQUIREMENTS

The following reporting requirements by the Contractor are required in addition to applicable reporting requirements under the Clean Water Act (CWA), Toxic Substances Control Act (TSCA), or the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and other documents which establish the SPCC reporting requirements.

Notify the Environmental Manager and Chief Inspector in the event of any leaks or spills. Use the Construction Spill Report Form (see Appendix A) for providing necessary information. The Chief Inspector will provide guidance based on the potential impact of the spill.

4.4 DISPOSAL OF CLEANUP DEBRIS AND MATERIALS

All contaminated soils, solvents, rags, and other materials resulting from the cleanup actions will be properly stored, labeled, and disposed of in accordance with the appropriate EPA regulations. Some general guidance follows:

- Soils and/or other contaminated materials shall be placed in DOT-approved sealed containers.
- Containers shall be labeled with required waste label(s), dated, and inventoried.
- Containers may be stored at the construction site in the identified staging areas for up to 90 days.
- All containers shall be disposed of in accordance with EPA Regulations using permitted transporters and permitted disposal facilities.
- All hazardous waste containers shall be properly manifested prior to departure from the construction area. The Contractor and ETC will maintain all manifest records with the Project file for at least three years after the containers were shipped for disposal.

4.5 DETERMINATION OF SPILL BOUNDARIES IN THE ABSENCE OF VISIBLE TRACES

For spills where there are insufficient visible traces, yet there is evidence of a leak or spill, the boundaries of the spill shall be determined using a statistically based sampling scheme. The Environmental Manager will provide sampling assistance.

4.6 CLEANUP REQUIREMENTS

4.6.1 General Requirements:

- All soil within the spill area (i.e., visible traces of soil and a buffer of one lateral foot around the visible traces) must be excavated.
- All excavation material shall be disposed of as mentioned in Section 4.4, Disposal of Cleanup Debris and Materials, and the appropriate EPA Regulations.
- All cleanup soil and wastes shall be collected in DOT-approved containers. See Appendix E for a listing of approved containers.
- Appendix D contains guidance on how to manage the area used to temporarily store waste containers.
- Appendix F contains guidance on inspection procedures for stored waste containers required by EPA Regulations.
- The ground shall be restored to its original configuration by back-filling with clean soil.
- Cleanup requirements of a spill area shall be completed within 48 hours after notification or knowledge of the spill.

4.6.2 Effect of Emergency or Adverse Weather

Completion of cleanup may be delayed beyond 48 hours in case of circumstances including, but not limited to:

- Civil emergency;
- Adverse weather conditions;
- Lack of access to the site;
- Emergency operating conditions.
- The occurrence of a spill on a weekend or after-hours. Overtime costs are not acceptable reasons to delay response.
- Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergencies, have left insufficient visible traces, a statistically based sampling scheme to determine the spill boundaries will be developed and implemented.

4.7 RECORDS

All records that document spill events and corrective actions taken will be maintained in the project files for three years from the date the corrective actions were completed. Documentation and certification of area decontamination shall be conducted upon completion of and during all cleanup operations. The records and certifications shall be completed, as follows:

- Identification of the source of the spill (e.g., type of equipment or container).
- Estimated or actual date and time of the spill occurrence.
- The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather, the nature and duration of the delay).
- A brief description of the spill location.
- Pre-cleanup sampling data used to establish the spill boundaries if required due to insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.
- A brief description of the solid surfaces cleaned and of the wash/rinse method used.
- Approximate depth of soil excavation and the amount of soil removed.
- A certification statement signed by the Construction Director, Spill Coordinator, and the Environmental Manager stating the cleanup requirements have been met and the information contained in the record is true to the best of his/her knowledge.
- The estimated cost of pre- or post-cleanup and sampling by man-hours, dollars, or both.

4.8 RESPONSIBILITY FOR PROCEDURE

Address any questions to the ETC Environmental Manager (name and address to be announced).

APPENDIX A
CONSTRUCTION SPILL REPORT FORM

Date of Spill:_____ Date of Spill Discovery:_____
Time of Spill:_____ Time of Spill Discovery:_____
Location Name:_____ Region:_____
Name and Title of Discoverer:_____
Type of material spilled and manufacturer's name:_____
Legal Description of spill location:_____
Directions from nearest community:_____
Estimated volume of spill:_____ Estimated Material Recovered:_____
Weather Conditions:_____
Topography and surface conditions of spill site:_____
Spill medium (pavement, sandy soil, water, etc.):_____
Proximity of spill to surface waters: _____
Did the spill reach a waterbody? _____ Yes _____ No
If so, was a sheen present? _____ Yes _____ No
Describe the causes and circumstances resulting in the spill:_____

_____

_____

Describe the extent of observed contamination, both horizontal and vertical (i.e., spill-stained soil in a 5-foot radius to a depth of 1 inch): _____

_____

_____

Describe immediate spill control and/or cleanup methods used and implementation schedule:

_____

Current status of cleanup actions:_____

Name/Company/Address/Phone Number for the following:
Construction Superintendent:_____

_____

Spill Coordinator:_____

_____

Environmental Manager:_____

_____

Person Who Reported the Spill:_____

_____

Environmental Inspector:_____

_____

Form completed by:_____ Date:_____

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the ETC Environmental Manager and Chief Environmental Inspector within 24 hours of the occurrence.

APPENDIX B
REPORTABLE QUANTITIES

PURPOSE:

This procedure identifies reportable quantities for releases of oil or hazardous substances in accordance with the CERCLA of 1980, the CWA, the Oil Pollution Act of 1990 (OPA 90) and the TSCA.

RESPONSIBILITY FOR ADMINISTRATION:

Contractor's Spill Coordinator is responsible for administration of this procedure.

GENERAL:

I. Reportable quantity is the quantity of a release which requires notification of an agency.

II. Any amount of oil spill into navigable waters is reportable. Oil spills onto land may be required to be reported, depending upon quantity spilled and state regulations. Refer to Appendix C.

III. Appendix C lists Reportable Quantities (RQs) specified by the EPA.

IV. RQs for Toxic Hazardous Wastes are based on the toxic contaminant. The RQ means the quantity of the waste, not the quantity of the toxic contaminant. If toxic waste has two or more contaminants, the RQ is based on the lowest RQ for those contaminants.

PROCEDURES:

I. If oil is discharged into or upon the navigable waters of the United States, or adjoining shorelines:

   A. Report the spill to the National Response Center (800) 424-8802.

   B. Submit a written report within 60 days to the EPA Regional Administrator and the state agency, if the project has discharged quantities of oil into or upon the navigable waters of the United States or adjoining shorelines, which:

      1. Is more than 1,000 gallons of oil in a single spill event; or

      2. Is in harmful quantities as defined by 40 CFR Part 110, Oil Pollution Prevention regulations, in two spill events occurring within a twelve month period. Harmful quantity includes a film or sheen or discoloration of the surface of the water of adjoining shorelines or a sludge or emulsion deposited beneath the surface of the water or upon adjoining shorelines.

   C. The report to the EPA Regional Administrator and the state agency will include:

      1. Name of facility;

      2. Name(s) of the owner or operator of the facility;

      3. Location of the facility;

      4. Date and year of initial facility operation;

      5. Maximum storage or handling capacity of the facility and normal daily throughput;

6. Description of facility, including maps, flow diagrams and topographical maps;
7. A complete copy of the SPCC Plan with amendments;
8. The cause of the spill, including a failure analysis of the system or subsystem in which the failure occurred;
9. The corrective actions and/or countermeasures taken, including description of equipment repairs and replacements;
10. Additional preventive measures taken or contemplated to minimize the possibility of recurrence; and,
11. Any additional information the EPA Regional Administrator may require pertinent to the SPCC Plan or spill event.

II. If a hazardous waste or hazardous substance has been released into the environment in quantities equal to or in excess of reportable quantities listed in 40 CFR 302, the NRC must be notified.

A. Contact the required agencies with the pertinent spill information.

B. Provide verbal notification of the following information:

1. Name and telephone number of reporter;
2. Name and address of facility;
3. Type of substance discharged;
4. Quantity of substance discharged;
5. Location of discharge;
6. Actions the person reporting the discharge proposes to take to contain, cleanup and remove the substances, if any; and,
7. Any other information concerning the discharge which may be requested by the Agency at the time of notification.

III.

A. If a hazardous waste, hazardous substance or extremely hazardous substance has been released in quantities equal to or in excess of reportable quantities the State Emergency Planning Commission and Local Emergency Planning Committee must be notified. Contact the required agencies with the pertinent spill information as soon as possible.

B. Submit a written report on the incident to the appropriate state and local agency. The report will include the following:

1. Name, address and telephone number of the owner or operator;
2. Name, address and telephone number of the facility;
3. Date, time and type of incident;
4. Name and quantity of material(s) involved;
5. The extent of injuries, if any;
6. An assessment of actual or potential hazards to human health or the environment, where this is applicable;
7. Assessment of the scope and magnitude of the spill;

8. Description of the immediate actions that have been taken and the estimated quantity and disposition of recovered material that resulted from the incident; and,
9. Provide an implementation schedule for undertaking suggested measures to eliminate the spill.

Spill incident reports will be maintained in the project files for a minimum period of three years.

APPENDIX C
STATE REQUIREMENTS

These guidelines are intended to help the Environmental Manager determine what is a reportable spill. In addition to the guidelines listed below, any substantial natural gas release which could cause an agency to initiate an unneeded emergency response should be considered reportable. The Environmental Manager and Spill Coordinator shall maintain a copy of federal reportable quantities (RQs) established under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). A complete list of CERCLA-regulated hazardous substances and associated RQs are listed in Table 302.4 in 40 CFR § 302.4. This list can also be found online at: http://www.epa.gov/ceppo/pubs/title3.pdf.

State Specific Reporting Requirements

The state-specific reporting requirements will be determined during the development of the project and upon identification of hazardous materials which might be present within the proposed areas of construction. The requirements will include any initial and follow-up reporting requirements and any additional Regulatory Agencies which need notification in the event of a release.

APPENDIX D
HANDLING CONTAINERS AND DRUMS

PURPOSE:

This procedure provides general requirements for the design of areas used to store containers and drums, in accordance with EPA regulations 40 CFR Part 112 and 40 CFR Part 265.170.

RESPONSIBILITY FOR ADMINISTRATION:

The Contractor's Spill Coordinator will be responsible for this procedure.

GENERAL:

I. This procedure covers container and drum storage areas storing oils and petroleum distillates and non-permitted Hazardous Waste container and drum storage areas.

II. It is not necessary to permit Hazardous Waste container and storage areas if the waste is stored for less than 90 days. Secondary containment is not required for non-permitted Hazardous Waste container and drum storage areas.

PROCEDURE:

I. All containers and drums must be stored to avoid contact with the ground and standing water and protected to prevent rupture or leakage and to facilitate inspection.

II. The areas with containers and drums in which oil and petroleum distillate are stored and have the potential to be spilled off site must be designed to contain spills and releases. Appropriate secondary containment may include dikes, berms or retaining walls sufficiently impermeable (10^{-5} centimeters per second) to contain spill oils.

III. The following applies to hazardous waste containers and drums:

A. Containers and drums holding ignitable or reactive Hazardous Waste must be stored at least 50 feet from the property line of boundary. Follow manufacturers' instructions regarding appropriate storage of product containers and drums.

B. Hazardous Waste containers and drums must be separated and protected from incompatible materials by means of dike, berm, retaining wall or other approved means. Incompatible materials are wastes which, when mixed, can produce effects which are harmful to human health and the environment, such as (1) heat and pressure, (2) fire or explosion, (3) violent reaction, (4) toxic fumes or, (5) flammable fumes.

C. Hazardous Waste containers and drums must be inspected weekly. That inspection shall be documented, as per requirements listed in Appendix F.

IV. The Contractor shall comply with all rules for Hazardous Waste Generators for satellite accumulation under 40 CFR 262.24(c)(1)(ii):
   A. Mark each container with the words “Hazardous Waste.”
   B. Containers must be in good condition and kept closed except when adding or emptying waste. In addition, containers must not contain waste that is incompatible with the containers.

V. Conditionally Exempt Small Quantity Generators and Small Quantity Generators of Hazardous Waste must comply with the following:
   A. Meet all conditions outlined in Procedure Section II.
   B. Mark each drum or container with the words “Hazardous Waste.”
   C. Label each drum or container with the date it is first used and the date it is last used.

RECORDS:

Storage area inspection records must be kept with the project files for a minimum period of three (3) years.

RESPONSIBILITY FOR PROCEDURE:

Address any questions to the Environmental Manager (Name and address to be announced.)

APPENDIX E
DOT-APPROVED CONTAINERS

PURPOSE:

This procedure provides a listing of containers which have been approved by the EPA for storage of contaminated materials or wastes. These drums may be ordered from drum suppliers by specification number:

I. Specification 5 - steel barrel or drum with removable head:
   - A. Body seams welded;
   - B. Chime (reinforced rim) reinforced;
   - C. Heads closed by 12 gauge bolted ring with drop forged lugs;
   - D. Marked “DOT-5.”

II. Specification 5B - steel barrel or drum with removable head:
   - A. Body seams welded;
   - B. Chime (reinforced rim) reinforced;
   - C. Heads closed by 12 gauge bolted ring with drop forged lugs;
   - D. Marked “DOT-5B.”

III. Specification 6D Overpack; cylindrical steel overpack, straight sided, for inside plastic container. Specification 6D Overpack must be used with the specification 2S of 2SL plastic container.

IV. Specification 2S - polyethylene container:
   - A. No removable heads;
   - B. Constructed with new polyethylene resin;
   - C. Marked “DOT-2S;”
   - D. Must fit snugly in overpack container (Spec. 6D).

V. Specification 2SL - molded or thermoformed polyethylene container:
   - A. No removable heads;
   - B. Constructed with new polyethylene resin;
   - C. Marked “DOT-2SL;”
   - D. Must fit snugly in overpack container (Spec. 6D).

VI. Specification 17C - single trip container, steel drum:
   - A. Removable heads are authorized;
   - B. Crowned head;
   - C. Heads closed by 12 gauge bolted ring with drop forged lugs;
   - D. Marked “DOT-17C.”

APPENDIX F
INSPECTION OF WASTE DRUMS AND CONTAINERS

PURPOSE:

This procedure outlines inspection requirements for waste drums and containers as required by Federal Regulations 40 CFR 262 - 265 and 40 CFR 761.

RESPONSIBILITY:

The Contractor's Spill Coordinator is responsible for implementation of this procedure.

GENERAL:

I. Drums and containers used to store hazardous substances and wastes shall be inspected for leaks, malfunctions, deterioration, operator errors and discharges which may lead to a release into the environment or a threat to human health.

II. If problems are discovered during the inspection, remedial action shall be taken immediately. The action taken will be noted on the inspection report form.

PROCEDURE:

I. Each waste drum and container shall be inspected and records maintained on a Waste Container Inspection Form. Inspection records shall include the date and time of the inspection, the name of the inspector, observations and the date and nature of any problems, repairs and remedial action.

   A. Waste drum and container storage areas shall be inspected weekly for the following:

      1. Leaking containers, deterioration of containers and deterioration of the spill containment system.
      2. Drums and containers shall be properly labeled and dated.
      3. Drums and containers shall be stored on pallets or drum racks.

   B. If a drum or container is leaking, the incident shall be recorded on the inspection form and immediately cleaned up according to the SPCC Plan.

RECORDS:

I. Inspection records shall be maintained in the project files for three (3) years from the date of inspection.

II. A report of the remedial action taken for leaks shall be prepared and kept with either the original inspection forms, inspection log or in the records of the project. These records shall be maintained for three (3) years with the project files.

RESPONSIBILITY FOR PROCEDURE:

Address any questions to the Company Environmental Manager (Name and address to be announced.)

WASTE CONTAINER INSPECTION FORM		
Facility:_____ Type of Container:_____ _		
Date	Deficiencies Noted	Inspected By

APPENDIX G
TYPICAL PETROLEUM STORAGE AND HANDLING VOLUMES ON CONSTRUCTION SPREAD

	Fluids	Typical Amounts	Storage	Typical Transport Mode
Fuels	Diesel	6,000-12,000 Gallons	1-3 Tanks or Tankers stored at Contractor locations 5 gallon cans, 100 gallon storage in pickups, etc.	1-3 Fuel Trucks, 1-3 "Fuel Skids"
	Military Aviation Kerosene [1]	6,000-12,000 Gallons		
	Kerosene [1]	6,000-12,000 Gallons		
	Gasoline	5,000 Gallons		
Lubricant	Engine Oil	< 500 Gallons	Bulk Storage or Retail Packaging at Contractor Yard Warehouse	1-3 "Grease" Trucks
	Transmission/ Drive Train Oil	< 500 Gallons		
	Hydraulic Oil	< 500 Gallons		
	Gear Oil	< 500 Gallons		
	Lubricating Grease	20-30 cases of 24 cans per case		
Coolants	Ethylene Glycol	100 Gallons		
	Propylene Glycol	100 Gallons		

[1] Used straight or as additives only in extremely cold weather.

APPENDIX H
EMERGENCY RESPONSE CONTRACTORS; DISPOSAL AND TREATMENT FACILITIES

The Contractor must dispose of all wastes according to applicable state and local requirements. A listing of potential Emergency Spill Response Contractors and waste disposal facilities is provided below. This list was developed from state-wide databases. This list represents firms operating at the time the data base was produced. These firms are not necessarily endorsed by ETC. The Contractor is responsible for verifying if a contractor or facility is currently operating under appropriate permits or licenses. Selection of an Emergency Response Contractor or disposal facility is subject to approval by ETC. The Contractor is responsible for ensuring wastes are disposed of properly.

Spill Response Contractors located along the proposed route will be determined during project planning.

APPENDIX C

INSPECTION FORMS AND INSTRUCTIONS

PROJECT
STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

Signature of Inspector: _____

Printed Name of Inspector: _____

Title of Inspector: _____

Qualifications of Inspector: _____

Date: _____

Current Weather Information: _____

Weather Information Since Last Inspection:

Beginning Date/Time of Last

Storm Event: _____

Duration of Last Storm Event: _____

Amount of Rainfall: _____ Inches

Discharges Since Last

Inspection/Storm Event: _____

NOTE: Inspection documents are to be maintained for a minimum of 3 years.

PROJECT
STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

Earth Dikes/Berms

Is the dike stabilized? _____

Is there evidence of washout or over-topping? _____

If water is present in the drainage ports, does it:

- Have a sheen on it? _____
- Have an acceptable TDS? _____
- Show excessive turbidity? _____

Maintenance required for Earthen Dike: _____

To be performed by: _____ On or before: _____

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

PROJECT
STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

Roads and Locations Where Vehicles Enter or Exit the Construction Site

Are sediment traps or barriers along road construction zones preventing runoff into adjacent wetlands, lakes, etc.? _____

At locations where construction equipment exits onto paved roads, are the existing best management practices successfully minimizing off site tracking of sediments? _____

Maintenance Required: _____

To be performed by: _____ On or before: _____

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

PROJECT
STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

Straw Bale and Filter Fence Barriers

Do the barriers have tears or holes in them? _____

Are there any missing barriers? _____

Are the barriers properly aligned? _____
Where sediment has reached one-third the height of the barrier, has it been removed? _____

Have straw bales with excessive sediment saturation been replaced? _____

Maintenance required for barriers: _____

To be performed by: _____ On or before: _____

SWPPP Upgrades:

If any deficiencies in pollution control structures or procedures were identified above, have those deficiencies been corrected and the Storm Water Management Plan modified, if appropriate? Explain.

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

PROJECT
STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

General

Have there been any uncontrolled releases of mud or muddy water or measurable quantities of sediment found off site? _____ Yes _____No

If Yes, describe measures taken to clean up fugitive sediment: _____

If Yes, describe measures taken to prevent a future occurrence: _____

PROJECT
STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

Location	Diversion Structure	Sediment Trap	Date Excavated	Date Filled	Date Dressed	Signs of Erosion	Stabilized ?	Ground Covered?	Date of Inspection

NOTE: If signs of erosion become apparent, stabilize by backfilling and leveling and use of mulch, sod, seeding, or other means of preventing further erosion.

Date: _____ Inspector's Name (Print and Initial) _____

PROJECT
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT

Maintenance required for:

_____

_____

_____

To be performed by: _____ On or before: _____

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

NOTE: Inspection documents are to be retained for a minimum of 3 years.

NOTE: Check flowline trenches for the following:

Settlement below natural grade

Washouts of spoil along excavated trenches

Muddy/contaminated rainwater

Placement of spoil upslope of trench

Agricultural Impact Mitigation Plan

AGRICULTURAL IMPACT MITIGATION PLAN

Dakota Access Pipeline Project (DAPL)

Final Draft

State of South Dakota

Energy Transfer

September 2014

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Appendices

Acronyms and Abbreviations

DAPL	Dakota Access Pipeline, LLC (Project Sponsor)
EI/AI	Environmental Inspector/Agricultural Inspector

1 INTRODUCTION

Dakota Access Pipeline, LLC (DAPL) is planning a new 30-inch pipeline to transport crude oil from the Bakken Shale region of North Dakota to Illinois. The eastern terminus of the pipeline will connect with an existing pipeline that will transport the crude oil to the Gulf Coast for processing.

The South Dakota section of the pipeline comprises a 277-mile corridor that will run from north central South Dakota to southeast South Dakota. The proposed pipeline will enter South Dakota in Campbell County and diagonally traverse the state, exiting at the crossing of the Big Sioux River in Lincoln County, South Dakota.

The purpose of this document is to present the proposed measures for minimizing impacts to and restoring agricultural lands during and after pipeline construction.

2 PLAN LIMITATIONS

Mitigation measures identified in this plan apply only to agricultural land and do not apply to urban land, road and railroad right-of-way, interstate natural gas pipelines, mined and disturbed land not used for agriculture. The identified mitigation measures will be implemented as long as they do not conflict with federal, state, and local permits, approvals and regulations.

3 SEQUENCE OF CONSTRUCTION EVENTS AND SCHEDULE

Pipeline construction is anticipated to commence January of 2016 following the receipt of required permits and approvals. Pipeline construction will take approximately 9 months to complete.

The sequence of events for pipeline construction will begin with advance notification of landowners and governmental agencies. Following notification, activities will be undertaken in the following sequence:

- Complete final surveys, stake centerline and workspace;
- Access road installation;
- Grubbing and clearing of the construction corridor;
- Installation of stormwater and erosion control measures;
- Placement of pipe and other supplies along the construction corridor;
- Pipeline welding and bending where necessary
- Excavation of the pipeline trench;
- Temporary repairs to tile lines, if encountered;
- Placement of the pipeline with the trench;
- Permanent repairs to tile lines damaged during construction activities;
- Backfill of the trench and rough grading,
- Hydrostatic testing of the pipeline;
- Final grading and restoration;
- Revegetation and post restoration monitoring; and
- Removal of erosion control measures.

4 POINTS OF CONTACT

Each landowner will be provided the name, telephone number and mailing address of the DAPL landowner representative two weeks prior to construction. This DAPL representative will be the primary contact person for the landowner throughout construction for easement issues. Landowner representatives will be assigned to that geographic area and be responsible for the liaison activities on behalf of DAPL.

In addition to the landowner representative, a team of experienced Environmental and/or Agricultural Inspectors (EIs/AIs), will be involved in project construction, the initial restoration, and the post-construction monitoring and follow-up restoration. For agriculture construction related issues, the name and telephone number of the EI/AI will also be provided as a secondary contact during construction.

5 DEFINITIONS

Agricultural Land	Land that is actively managed for cropland, hayland or pasture and land in government set-aside programs.
Cropland	Land actively managed for growing row crops, small grains or hay.
Drainage Structures or Underground Improvements	Any permanent structure used for draining agricultural lands, including tile systems and buried terrace outlets.
Easements	The agreement(s) and/or interest in privately owned Agricultural Land held by DAPL by virtue of which it has the right to construct, operate and maintain the pipeline together with such other rights and obligations as may be set forth in such agreement.
Environmental Construction Plan (ECP)	Document to present basic environmental construction techniques will be implemented to protect the environment and to minimize potential effects of pipeline and related facilities construction and maintenance.
Pipeline	Any pipe, pipes, or pipelines used for the transportation or transmission of any solid, liquid, or gaseous substance, except water, in intrastate or interstate commerce.
Landowner	Person listed on the tax assessment rolls as responsible for the payment of real estate taxes

	imposed on the property.
Non-Agricultural Land	Any land that is not “Agricultural Land” as defined above.
Pipeline Construction	A substantial disturbance to agricultural land associated with installation, replacement, removal, operation or maintenance of a pipeline.
Soil Conservation Practices	Any land conservation practice recognized by federal or state soil conservation agencies including, but not limited to, grasslands and grassed waterways, hay land planting, pasture, and tree plantings.
Soil Conservation Structures	Any permanent structure recognized by federal or state soil conservation agencies including but not limited to toe walls, drop inlets, grade control works, terraces, levees, and farm ponds.
Right-of-Way (ROW)	Includes the permanent and temporary easements that DAPL acquires for the purpose of constructing and operating the Pipeline.
Tenant	Any person lawfully residing on or in possession of the land, which makes up the "Right-of-Way" (ROW) as defined in this Plan.
Tile	Any artificial subsurface drainage system including clay and concrete, tile, vitrified sewer tile, corrugated plastic tubing and stone drains.
Till	Till is to loosen the soil in preparation for planting or seeding by plowing, chiseling, disking, or similar means. Agricultural land planted using no-till planting practices is also considered tilled.
Topsoil	The upper part of the soil which is the most favorable material for plant growth and which can ordinarily be distinguished from subsoil by its higher organic content and darker color.
Surface Drains	Any surface drainage system such as shallow surface field drains, grassed waterways, open ditches, or any other constructed facilities for the conveyance of surface water.

6 AGRICULTURAL MITIGATION MEASURES

The following describes how DAPL proposes to minimize and repair impacts to agricultural lands.

a. CLEARING BRUSH AND TREES ALONG THE EASEMENT

DAPL will be responsible for negotiating compensation related to cutting of any brush and timber for construction of the pipeline with the landowner. Options for removal include: the landowner harvesting any marketable timber/vegetation, the contractor cutting and windrowing along the ROW for Landowner's use, chipped, burned, or hauled off for proper disposal. Unless otherwise restricted by federal, state or local regulations and to the extent that the requests are deemed reasonable, DAPL will follow Landowner's easement agreement regarding the removal of tree stumps and disposal of trees, brush, and stumps of no value to the landowner. Methods of disposal can include, but are not limited to, burning, chipping, or removal from the property and be approved by the DAPL representative and coordinated with the landowner prior to implementation.

Unless otherwise restricted by federal, state of local regulations and to the extent that the requests are deemed reasonable, DAPL will follow Landowner's easement agreement regarding the removal of tree stumps and disposal of trees, brush, and stumps of no value to the landowner. Methods of disposal can include, but not limited to burning, chipping or completed removal from the property and be approved by the DAPL Chief Inspector & Lead Environmental Inspector prior to implementation.

b. TOPSOIL SEPARATION AND REPLACEMENT

Topsoil and subsoil excavated for pipeline installation will be separated and segregated in separate stockpiles, and returned to the excavation in reverse order to restore the site to pre-construction condition. The depth of the topsoil to be stripped will be a maximum depth of 12 inches or actual depth of top soil if less than 12 inches or as agreed upon with the landowner. Upon request from the landowner, DAPL will measure topsoil depth at selected locations before and after construction.

The stored topsoil and subsoil will have sufficient separation to prevent mixing during the storage period. Topsoil will not be used to construct field entrances or drives, will not be stored or stockpiled at locations that will be used as a traveled way by construction, or be removed from the property, without the written consent of the landowner. Drainage gaps in the topsoil and subsoil piles will be left to avoid blocking drainage across the right of way.

Topsoil will not be removed where the pipeline is installed by plowing, jacking, boring, or other methods that do not require the opening of a trench.

The topsoil will be replaced so the upper portion of the pipeline excavation and the crowned surface, and the cover layer of the area used for subsoil storage, contains only the topsoil originally removed.

In most areas, ditch-line crowns will be installed to allow for and counter-act ditch settling. In the event the landowner will not allow a ditch-line crown, DAPL may have to regrade the right of way in subsequent growing season. In this situation, DAPL may regrade the construction right of way and till down to 12 inches to manipulate the soil such that the original contours and elevation are restored. The depth of the replaced topsoil will conform as nearly as possible to the depth removed. Where excavations are made for road, stream, drainage ditch, or other crossings, the original depth of topsoil will be replaced as nearly as possible.

c. Prevention of Erosion

DAPL will follow best management practices and industry standards for erosion and sedimentation control during construction and post-construction. DAPL will develop a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will detail the project specific stormwater and soil erosion prevention measures. In addition to the SWPPP stipulations, all of the regulations and conditions associated with the required South Dakota DNR NPDES permit will require the Contractor's full compliance. An approved SWPPP and South Dakota DNR NPDES permit will be required before any earth disturbing construction activities can take place.

d. Aboveground Facilities

The location for any aboveground structures will be selected in coordination with respective landowners. If use of agricultural land use is appropriate and/or necessary, aboveground structures will be located in a manner to minimize interference with agricultural operations. Compensation for aboveground structures will be negotiated as part of landowner compensation.

e. Pumping Water from Open Trenches

Trench and/or pit dewatering is necessary due to accumulation of precipitation and/or groundwater in open trenches; the Contractor will pump the water in a manner that will avoid damaging adjacent agricultural land, crops, and/or pasture. Erosion and sedimentation control measures will be implemented and may include the use of dewatering structures, splash plates, sediment bags, haybales, and silt fence. The removal and disposal of trench water will comply with applicable drainage laws and local ordinances relating to such activities as well as provisions of the federal Clean Water Act.

Prior to initiating dewatering activities, the EI must check the water discharge situation to ensure that the best management practices are applied in such a way to avoid erosion and sedimentation offsite.

At each location where dewatering is to be conducted, the contractor must consider the following conditions in planning the dewatering event.

a. **Water Discharge Setting** – The contractor shall assess each water discharge situation to include:

(1) Soil Type - The soil type the discharged water would flow over. The management of discharged water traveling over sandy soil is more likely to soak into the ground as compared to clay soils.

(2) Ground Surface - The topography in the area that would influence the surface flow of the discharged water.

(3) Adjustable Discharge Rate - The flow rate of the discharged water (which may need to vary) can be managed based on the site conditions to minimize instances of water from reaching a sensitive resource area such as a wetland or waterbody. (Example - Water discharged at 500 gallons per minute may soak into the ground while if discharged at a higher flow rate would cause water to flow via overland runoff into a sensitive resource area)

(4) Discharge Outfall - The amount of hose and number/size of pumps needed to attempt to discharge water at a location, which drains away from waterbodies or wetlands.

b. **Pump Intake -** Use floating suction hose or other similar measures to prevent sediment from being sucked from bottom of trench.

c. **Overwhelming Existing Drainage -** If the discharge (assumed to be clean) does enter a stream, the flow added to the stream cannot exceed 50 percent of the peak storm event flow (to prevent adding high water volumes to a small stream channel that causes erosion due to imposing high flow conditions on the stream.

d. **Filtering Mechanism**

(1) All dewatering discharges will be directed through a filtering device as indicated below.

i) Well-Vegetated Upland Area – Water can be directed to a well-vegetated upland area through a geotextile filter bag. Geotextile bags need to be sized appropriately for the discharge flow and suspended sediment particle size.

ii) Straw Bale Dewatering Structure – Where the dewatering discharge point cannot be located in an upland area due to site conditions and/or distance, the discharge should be directed into a straw bale dewatering structure. The size of the straw bale dewatering structure is dependent on the maximum water discharge rate. A straw bale dewatering structure should be used in conjunction with a geotextile filter bag to provide additional filtration near sensitive resource areas.

iii) Alternative dewatering methods (e.g., use of water cannons) may be approved by DAPL on a site-specific basis.

f. Temporary and Permanent Repair of Drain Tiles

The following methods for repair of drain tiles are proposed:

a. **Movement of Drain Tiles before Construction**: DAPL will install with landowner consent parallel tile drains along the proposed right-of-way in advance of pipeline construction to maintain the drainage of the field tile drain system. After construction, the parallel tile drains will be connected across the pipeline right-of-way to facilitate a re-united overall tile drain system in the agricultural field.

b. **Pipeline Clearance from Drain Tile:** Where underground drain tile is encountered within in the project profile, the pipeline will be installed in such a manner that the permanent tile repair can be installed with at least 24 inches of clearance from the pipeline or as agreed upon with landowner.

c. **Temporary Repair:** The following standards will be used to determine if temporary repair of agricultural drainage tile lines encountered during pipeline construction is required.

(1) Any underground drain tile damaged, cut, or removed and found to be flowing or which subsequently begins to flow will be temporarily repaired as soon as practicable, and the repair will be maintained as necessary to allow for its proper function during construction of the pipeline. The temporary repairs will be maintained in good condition until permanent repairs are made.

(2) If tile lines are dry and water is not flowing, temporary repairs are not required if the permanent repair is made within ten days of the time the damage occurred.

(3) Temporary repair is not required if the angle between the trench and the tile lines places the tile end points too far apart for temporary repair to be practical.

(4) If temporary repair of the line is not made, the upstream exposed tile line will not be obstructed but will nonetheless be screened or otherwise protected to prevent the entry of foreign materials and small animals into the tile line system, and the downstream tile line entrance will be capped or filtered to prevent entry of mud or foreign material into the line if the water level rises in the trench.

d. **Marking:** Any underground drain tile damaged, cut, or removed will be marked by placing a highly visible flag in the trench spoil bank directly over or opposite such tile. This marker will not be removed until the tile has been permanently repaired.

e. **Permanent Repairs:** Tile disturbed or damaged by pipeline construction will be repaired to its original or better condition. Permanent repairs will be completed as soon as is practical after the pipeline is installed in the trench and prior to backfilling of the trench over the tile line. Permanent repair and replacement of damaged drain tile will be performed in accordance with the following requirements:

(1) All damaged, broken, or cracked tile will be removed.

(2) Only unobstructed tile will be used for replacement.

(3) The tile furnished for replacement purposes will be of a quality, size and flow capacity at least equal to that of the tile being replaced.

(4) Tile will be replaced so that its original gradient and alignment are restored, except where relocation or rerouting is required for angled crossings. Tile lines at a sharp angle to the trench will be repaired in the manner shown in Appendix A.

(5) The replaced tile will be firmly supported to prevent loss of gradient or alignment due to soil settlement. The method used will be comparable to that shown in Appendix A.

(6) Before completing permanent tile repairs, all tile lines will be examined visually, by probing, or by other appropriate means on both sides of the trench within any work area to check for tile that might have been damaged by construction equipment. If tile lines are found to be damaged, they must be repaired to operate as well after construction as before construction began.

f. **Inspection:** Prior to backfilling of the applicable trench area, each permanent tile repair will be inspected for compliance by the DAPL Tile Inspector.

g. **Backfilling:** The backfill surrounding the permanently repaired drain tile will be completed at the time of the repair and in a manner that ensures that any further backfilling will not damage or misalign the repaired section of the tile line.

h. **Subsurface Drainage:** Subsequent to pipeline construction and permanent repair, if it becomes apparent the tile line in the area disturbed by construction is not functioning correctly or that the land adjacent to the pipeline is not draining properly, which can reasonably be attributed to

the pipeline construction, DAPL will make further repairs or install additional tile as necessary to restore subsurface drainage.

g. Removal of Rocks and Debris from the Right-of-Way

Excess rocks will be removed from the right-of-way. On completion, the topsoil in the easement area will be free of all rocks larger than three inches in average diameter that are not native to the topsoil prior to excavation, and similar to adjacent soil not disturbed by construction. The top 24 inches of the trench backfill will not contain rocks in any greater concentration or size than exist in the adjacent natural soils. Consolidated rock removed by blasting or mechanical means shall not be placed in the backfill above the natural bedrock profile or above the frost line. In addition, DAPL will examine areas adjacent to the easement and along access roads and will remove any large rocks or debris that may have rolled or blown from the right-of-way or fallen from vehicles.

Rock that cannot remain in or be used as backfill will be disposed of at locations and in a manner mutually satisfactory to the company's environmental inspector and the landowner. All debris attributable to the pipeline construction and related activities will be removed and disposed of properly; such debris includes spilled oil, grease, fuel, or other petroleum or chemical products. Such products and any contaminated soil will be removed for proper disposal or treated by appropriate in situ remediation.

h. Restoration after Soil Compaction and Rutting

Agricultural land compacted by heavy project equipment, including off right-of-way access roads, will be deep tilled to alleviate soil compaction upon completion of construction on the property. In areas where topsoil was removed, tillage will precede replacement of topsoil. At least three passes with the deep tillage equipment shall be made. Tillage shall be at least 18 inches deep in land used for crop production and 12 inches deep on other lands,(except where shallow tile systems are encountered), and shall be performed under soil moisture conditions which permits effective working of the soil. If agreed in advance, this tillage may be performed by the landowners or tenants using their own equipment.

Rutted land will be graded and tilled until restored as near as practical to its preconstruction condition. On lands where topsoil was removed, rutting will be remedied before topsoil is replaced.

i. Restoration of Terraces, Waterways and other Erosion Control Structures

Existing soil conservation practices and structures damaged by pipeline construction, such as surface drains, embankments and terraces, grass waterways will be restored to pre-construction elevation, grade and condition. Any drain lines or flow diversion devices impacted by pipeline construction will be repaired or modified as needed. Soil used to repair embankments intended to retain water shall be well compacted. Disturbed vegetation will be reestablished, including a cover crop when appropriate. Restoration of terraces will be in accordance with Standard Drawings in Appendix A.

j. Revegetation of Untilled Land

Agricultural land not in row crop or small grain production at the time of construction, such as hay fields and land in conservation or set-aside programs, will be reseeded following completion of deep tillage

and replacement of the topsoil. The seed mix used will restore the original or a comparable ground cover unless otherwise requested by the landowner.

Land that is normally used for crops that will not be planted due to pipeline construction will be seeded with an appropriate cover crop following replacement of the topsoil and completion of deep tillage, unless otherwise agreed to with the landowner. Cover crop seeding may be delayed if construction is completed too late in the year for a cover crop to establish and in such instances is not required if the landowner or tenant proposed to till the land the following year.

k. Future Drain Tiles and Soil Conservation Structure Installation

At locations where future drain tile or soil conservation practices and structures are made known to DAPL in writing prior to securing the easement on the property, the pipeline will be installed at a depth that will permit proper clearance between the pipeline and the proposed tile installation, or allow for proper installation of the conservation practices. DAPL will consult with the landowner concerning the landowner's plans for these future actions.

l. Restoration of Land Slope and Contour

The slope, contour, grade, and drainage pattern of the disturbed area will be restored as nearly as possible to its preconstruction condition. However, the trench may be crowned to allow for anticipated settlement of the backfill. DAPL will remediate areas of excessive or insufficient settlement in the trench area where it visibly affects land contour or alters surface drainage. Disturbed areas where erosion causes excessive rills or channels or areas of heavy sediment deposition, will be regraded as needed. On steep slopes, methods such as sediment barriers, slope breakers, or mulching will be used as necessary to control erosion until vegetation can be reestablished.

m. Siting and Restoration of Areas Used for Field Entrances and Temporary Roads

The location of temporary roads to be used for construction purposes will be negotiated with the landowner and the Tenant. The temporary roads will be designed to not impede proper drainage and will be built to minimize soil erosion on or near the temporary roads.

Post construction and restoration temporary field entrances or access roads will be removed and the land made suitable for its previous use, in agreement with the landowner. Areas affected will be regraded and deep tilled as required. If by agreement or at landowner request, and approved by local public road authorities, a field entrance or road is left in place, it will be left in a graded and serviceable condition.

n. Construction in Wet Conditions

Construction in wet soil conditions will not commence or continue at times when or locations where the passage of heavy construction equipment may cause rutting to the extent that the topsoil and subsoil are mixed, or underground drainage structures may be damaged. To facilitate construction in soft soils, DAPL may elect to remove and stockpile the topsoil from the traveled way, install mats or padding, or use other methods.

7 COMPENSATION FOR DAMAGES

DAPL will be responsible for compensating the landowner for damages during construction. For crops, value of the loss will be established based on current crop values in the area of the impact per South Dakota Department of Agriculture statistics. DAPL will also compensate the landowner for loss of use of agricultural land, if attributable to pipeline construction. Supplemental soil sampling, testing and additional restoration activities to restore agricultural land to its pre-construction conditions will be undertaken by DAPL upon request of the landowner.

DAPL will also be responsible to compensate landowners for other physical property damage attributable to pipeline construction, such as fences, driveways and other structures.

Appendix A

Tile Repair Drawings

Pending Final Approval

Horizontal Directional Drill Contingency Plan

DAKOTA ACCESS, LLC
An ENERGY TRANSFER Company

HORIZONTAL DIRECTIONAL DRILL CONTINGENCY PLAN

Dakota Access, LLC
Dakota Access Pipeline Project (DAPL)

1.0 INTRODUCTION

Portions of the proposed DAPL Project will be installed using horizontal directional drilling (HDD) technology. This baseline directional drill contingency plan provides specific procedures and steps to detect and respond to any inadvertent release of drilling fluids for the above-described canal crossings. A site specific HDD contingency plan may be provided by the contractor selected to perform the HDD, that plan would meet or exceed the standards established in this document.

Elements of this plan include:

- Preparation;
- Monitoring Procedures;
- Notification Procedures;
- Corrective Action and Cleanup; and
- Abandonment.

2.0 PREPARATION

An Environmental Inspector will be employed throughout construction and restoration of this Project. All work will be performed in compliance with environmental permits, laws, and regulations. The Pipeline Construction Contractor – supervisory personnel will be provided environmental training prior to commencing work, and the Contractors will be provided a Project specific Environmental Clearance Package including copies of all environmental permits secured for the Project in advance of commencing activities.

Best management practices employed during this Project include the use of erosion control devices and turbidity control measures to protect sensitive resources (e.g. wetlands and waterbodies). Furthermore, containment equipment including earth-moving equipment, portable pumps, hand tools, sand, hay bales, silt fencing, turbidity screens, and/or lumber will be readily available at the project site in the event of a frac-out and vacuum truck will be employed as necessary.

3.0 MONITORING PROCEDURES

The Drilling Contractor personnel will monitor operations during drilling activities. Monitoring will include:

- Inspection along the drill path, including surface waters along the path for evidence of a release.
- Continuous examination of drilling fluid pressures and return flows.
- The Drilling Contractor will provide information regarding drilling conditions to the company representative and the Pipeline Construction Contractor during the course of drilling activities.
- Monitoring will be documented by the Pipeline Construction Contractor.

4.0 NOTIFICATION PROCEDURES

If an inadvertent release is discovered, steps will be taken by Drilling Contractor to contain the release as described below in the Corrective Action and Cleanup Section below (Section 5.0).

If monitoring indicates an in-stream or wetland release has occurred, the Drilling Contractor will immediately notify DAPL's construction management and environmental management personnel. The Drilling Contractor's crew will take immediate corrective action to contain the release and to prevent or minimize impacts. DAPL will notify the U.S. Army Corps of Engineers (USACE), and County Environmental Department as soon as possible (within 24 hours), and provide details of the nature of the release and corrective actions being taken, completed, and/or planned. DAPL will work with the respective agencies regarding additional measures that may be warranted. If it is determined that the release cannot be remedied without causing additional negative environmental impacts, DAPL will request that drilling operations continue.

5.0 CORRECTIVE ACTION AND CLEANUP

By monitoring drilling operations continuously, DAPL intends to correct problems before they occur. However, if a release does occur, the following measures will be implemented to stop or minimize the release and to clean it up:

- The Drilling Contractor will decide what modifications to make to the drilling technique or composition of drilling fluid (i.e., thickening of fluid by increasing bentonite content) to reduce or stop minor losses of drilling fluid.
- If a minor bore path void is encountered during drilling, making a slight change in the direction of the bore path may avoid loss of circulation.
- If the borehead becomes lodged resulting in loss of drilling pressure, the borehole may be sized by moving the borehead back and forth to dislodge the stuck materials.
- If public health and safety are threatened, drilling fluid circulation pumps will be turned off. This measure will be taken as a last resort because of the potential for drill-hole collapse resulting from loss of down-hole pressure.

Land Release:

- If a land release is detected, the drilling crew will take immediate corrective action to contain the release and to prevent or minimize migration off site.
- Steps will be taken (such as installing berms, silt fence and/or hay bales) to prevent silt-laden water from flowing into protected resources.
- The contractor will construct pits and/or berms around the frac-out point to contain inadvertent releases onto the ground.
- Vacuum trucks may be called in as necessary to assist in the removal of released material.
- If the amount of an on-land release does not allow practical collection, the affected area will be diluted with fresh water and allowed to dry.
- If hand tools cannot contain a small on-land release, small collection sumps (less than 5 cubic yards) may be constructed to pump the release material into the mud-processing system.

- Once the release is contained and materials are removed, it will be disposed of properly.

Wetland or Waterbody Release:

- If a release occurs within a waterbody, USACE will be contacted as soon as possible (within 24 hours) by DAPL. DAPL will inform USACE about any threat to public health and safety and explain whether or not the release can be corrected without incurring additional environment impact. If necessary, drilling operations will be reduced or suspended to assess the extent of the release and to implement corrective actions.
  - Temporary dams (e.g. sand bags) may be installed to isolate the fluid from a frac-within a protected feature.
  - Vacuum trucks will be called in as necessary to assist in timely, effective removal of released drilling mud.
  - Once the release is contained and materials are removed, it will be properly disposed of.

6.0 ABANDONMENT

If corrective actions do not prevent or control releases from occurring into a protected feature, DAPL may opt to re-drill the hole along a different alignment within their easement rights or suspend the installation altogether. Other issues may require abandoning the hole, such as refusal or misalignment. In any case, the following procedures will be implemented to abandon the drill hole:

- The method for sealing the abandoned drill hole is to pump thickened drilling fluid into the hole as the drill assembly is extracted and using cement grout to make a cap.
- Closer to the surface (within approximately 10 feet of the surface), a soil cap will be installed by filling with soil extracted during construction of the pit and berms.
- The borehole entry location will be graded and seeded by the contractor to its original grade and condition after the drill hole has been abandoned.

Blast Plan

Blast Plan
Dakota Access Pipeline
North & South Dakota, Iowa, Illinois

A. Scope of Blasting Project

Blasting will take place along the ***Dakota Access Pipeline*** right-of-way. The Blasting Contractor will blast only in the areas where the rock cannot be economically excavated by conventional means. It is anticipated that this may occur anywhere along the right-of-way, site-specific locations will be determined as project progresses. As much as possible due to safety reasons, drilling and blasting will occur through the natural dirt overburden. Blasting activities will take place during daylight hours Monday through Saturday.

B. Types of Blasting

Primary type of blasting will be for ditch excavation. Blasting may also be required during the right-of-way grading operation.

If any streams and wetland areas require blasting to perform the ditch excavation, the streams and wetland areas will be tested for rock and shot by the mainline blasting crew. Once blasted, the creeks will be fixed back to original condition and all ECD's replaced until the time of the tie ins.

C. Location of Shots and Proximity to Existing Facilities

No blasting will occur within 15 feet of existing loaded pipelines or within 10 feet of other structures that may be of concern. All blasting located along adjacent power line rights-of-way shall be conducted in a manner that will not cause damage to the power company property and facilities. The blast be drilled through natural dirt overburden or covered by blasting mats and/or other material as needed to protect nearby existing facilities, structures, highways, railroads or significant natural resources from thrown rock fragments.

D. Method to be Used to Minimize Hole-to-Hole Propagation

Hole-to-hole propagation problems are not anticipated with the proposed product and pattern for the following reasons:

1. Only cartridge explosives will be used.

2. The amount and type of explosives anticipated does not lend to the likelihood of propagation issues.

E. Types of Explosives / Initiation System to be Used

1. Dyno Nobel Unimax®: An extra gelatin dynamite with a specific gravity of 1.51 g/cc, a detonation rate of 17,400 f/s (unconfined) and a calculated energy of 1,055 c/g.
2. D-GEL 1000 is a desensitized, nitroglycerin-based dynamite formulated to reduce sensitivity to sympathetic detonation (hole-to-hole propagation) with

superior water resistance. The product has a specific gravity of 1.36 g/cc and a detonation rate of 16,900 f/s (unconfined) and a calculated energy of 1045 c/g.

3. DYNOMAX PRO is desensitized extra gelatin dynamite designed to satisfy the majority of explosive application requirements consistently delivering delivering high detonation velocity and excellent water resistance while reducing cartridge to cartridge gap sensitivity and hole-to-hole propagation problems. The product has a specific gravity of 1.45g/cc and a detonation rate of 19,700 f/s (unconfined) and a calculated energy of 1055 c/g.

4. Dyno Nobel TX: A cap sensitive high explosive with a specific gravity of 1.17 g/cc and a detonation rate of 16,400 f/s (unconfined) and a calculated energy of 1170 c/g.

5. Dyno Nobel Blastex TX: A cast booster sensitive, water resistant, packaged emulsion explosive specifically formulated to provide increased resistance to hydrostatic and/or dynamic transitory shock pressures which can result when used in wet and/or water saturated geologies. The product has a specific gravity of 1.26g/cc and a detonation rate of 15,400 f/s (unconfined) and a calculated energy of 808 c/g.

6. Orica Senatel Pulsar : The premier, packaged, detonator-sensitive emulsion explosive for pipeline, trenching and site preparation projects is Senatel™Pulsar™ energized emulsion. This product is packaged in a semi-rigid, film cartridge for loading into ragged holes in surface rock. Senatel™Pulsar™ will not propagate yet it has energetic additives to give added breaking power and heave with excellent pre-compression resistance. The product has a specific gravity of 1.23g/cc and a detonation rate of 14,740 f/s (unconfined) and a calculated energy of 950 c/g.

7. Dyno Nobel NONEL® 25 Millisecond Delay Connectors or Dyno Nobel NONEL EZ Det® (nonelectric) 25/350 millisecond delay.

8. A Dyno Nobel NONEL nonelectric shock tube system detonator will initiate all shots. This NONEL will be attached at one point only for initiation of the entire shot and will not be used for down hole priming.

F. Drill and Blast Pattern

The drilling program will be based on 2 rows of 3 inch diameter holes drilled with a grid spacing of approximately 4 feet wide by 5-7 feet along the ditch line. If rock breakage is not optimum a third row of holes will be added to the blast pattern (dice "5" pattern). The drill pattern will be established using a powder factor between 2.0 and 4.0 pounds per cubic yard to achieve the desired explosive energy ratio needed to break the rock and pull the ditch. This shot pattern may be adjusted on a site-specific basis to compensate for different geology, nearby structures, utilities or other sensitive areas.

G. Charge Weight and Delays

Delays will be used accordingly to control the vibration as well as limiting the transmission of energy below the damaging levels at any existing structure. The delay pattern will be created to provide the energy relief immediately down the ditch in preference to a horizontal direction. The main type of delays will be NONEL® EZ-Det 25/350 or 25/500 which are color-coded for easy identification of delay length. The amount of dynamite used in each hole will be limited to the manufacturer's recommendations and specifications. The Blasting Contractor will also use multiple caps per hole (decking) as needed to meet maximum charge per delay requirements as necessary.

H. Flyrock Control Plan

All shots will be carefully designed by the Licensed Blaster to control flyrock. All hole loading activity will be supervised by the Licensed Blaster. The Licensed Blaster will communicate with the drillers to obtain geological information for each shot.

A good quality, non-bridging stemming material that completely fills any voids in the drill hole will also be used to reduce the amount of flyrock. A minus 3/8" crushed rock is typically used for this purpose. This stemming size has been a standard for U.S. Corps of Engineers for decades.

I. Selection of Blasting Products and Methods

These blasting products were chosen because of many years of dependable use and positive results on pipeline projects throughout the world which are demonstrated by the:

- quality, safety and reliability of the product
- support offered by the manufacturer
- availability
- price

A nonelectric detonator will initiate all shots. A completely nonelectric system (including initiation) for several important reasons:

1. Due to the proximity of the high voltage power lines, stray current may be an issue that could result in the premature firing of an electric detonator.

2. The numerous radio equipped trucks belonging to all personnel (surveyors, inspectors and other subcontractors) on the project mandate that all shots be totally nonelectric to eliminate accidental detonation of electric caps. Furthermore, there may be other commercial and/or non-commercial radio users in the area not associated with the project (logging operations, quarry sites, etc.) who could compromise the safety of the blasting operations.

3. The nonelectric detonator shock tube system works instantaneously (like electric blasting caps). This allows for precise and reliable initiation of shots in congested areas, adjacent to highways or in other locations where blast initiation control is an issue.

J. Monitoring, Reporting and Controlling Ground Cracking and Displacement

It is not expected that this type of rock will fracture in such a way as to cause any kind of ground displacement. Following each blast, the area will be examined for signs of ground cracking. Any indication of overbreak (cracks greater than half the distance to the existing pipeline) will be brought to the attention of the Company Inspector and noted on the blast report. The shot pattern and/or loading will be adjusted to minimize or eliminate overbreak.

K. Explosives Storage and Transportation Procedures

Explosives storage and transportation will follow the guidelines and regulations of all federal, state and local agencies.

L. Peak Particle Velocity Monitoring and Control

Each blast will be monitored by a licensed blaster or other person experienced in monitoring blasts using a seismograph. The seismograph will be placed at the "point of interest". In most cases, this will be next to the foundation of the closest building, power line foundation, utility or well. In all cases, both the sensor and seismograph will be protected from flyrock.

This recorder gives a direct peak particle velocity (PPV) reading that is indicated on a tape as well as decibel reading to capture sound levels.

The industry standard for many years has been 12 inches per second maximum PPV on any underground structures. ***DAPL*** expects the PPV's to be kept under 6 inches per second or lower on any underground structures & 2 inches per second or lower on wells and above ground inhabited structures.

After each blast, a blast report with a print out of the seismograph readings will be will be compiled and a copy presented to the Company inspector for Company records.

M. Fire Prevention

Following the required waiting period after each shot, the blast area will be inspected for any indication of fire or fire hazard. Particular attention will be paid to the vegetated areas outside of the R.O.W. Normally, the explosives vaporize at the instant of detonation and there is no fiber or other material left to smolder or be a source of concern.

1. The blasting operation will generally take place after the grading operation has graded the right-of-way to bare mineral soil. The blaster shall ensure that the

initiating detonator is placed on bare mineral soil and that there is no vegetation within a 20-foot radius.

2. The shock tube initiating system will be initiated a minimum of 250 feet from the nearest loaded hole.

3. When fire danger is high due to forest conditions, a 2-man fire watch team will patrol each blast area for a period of 1hour after the required waiting period.

N. Environmental Concerns

All residents within 300 feet of the blast will be notified of blasting activity and offered a pre-blast survey of their residence or structure of concern. In any case, communications with property owners will be maintained.

All necessary measures will be taken to exclude livestock from the blasting area. During the normal safety check prior to blasting, the area will be checked for both livestock and wildlife. The blast will not be initiated until the area is clear.

EXPLOSIVES SAFETY PROGRAM

1. ***The Blasting Contractor*** will follow all Federal and State regulations.

   A. Bureau of Alcohol, Tobacco and Firearms – 27CFR 181 (Commerce in Explosives).

   B. Occupational Safety and Health Administration – 29CFR 1926.90 (Safety and Health Regulations for Construction Blasting and Use of Explosives).

   C. Carriage by Public Highway – 49CFR 177 (self-explanatory).

   D. Explosives and Blasting Agents – OSHA, 29CFR 1910.109 (Safety in the Workplace When Using Explosives).

   E. Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Locating, Clearing and Maintenance of Right-of-Way and the Construction of Above Ground Facilities – 18CFR 2.69.

2. General Regulations

   A. Only authorized and qualified personnel shall handle explosives and shall always be under the direct supervision of a blaster licensed, if required, by the state of use.

   B. No flame, heat, radio transmitter or spark-producing device shall be permitted in or near explosives during handling, transport or use.

   C. No person shall be allowed to handle, use or work in the area while under the influence of liquor, narcotic or dangerous drugs.

   D. Explosives shall be accounted for at all times. Explosives not in use shall be kept in locked, approved storage magazines. A running inventory shall be maintained at all times. Appropriate authorities shall be notified of any loss, theft or unauthorized entry into a magazine.

   E. No explosives shall be abandoned.

   F. No fires shall be fought where contact with explosives is imminent. All personnel shall be cleared and area guarded against other intruders.

   G. Separate Class I and II magazines shall be used for transport of detonators and explosives from magazine storage area to blast site. Magazines shall be kept locked except for removal of material for use. In addition, explosives will be loaded directly to each shot point from the magazines on approved ground transportation equipment.

H. When blasting in areas of congestion or in close proximity of other structures or services, special precaution will be taken to avoid damage or personal injury.

I. Every reasonable precaution shall be used to notify others of use of explosives (visual, audible, flags, barricades, etc.). No onlookers or unauthorized personnel will be permitted within 500 feet during loading or blasting. Flaggers shall be stationed on roadways that pass through the danger zone to stop traffic during blasting operations.

J. All necessary precautions shall be taken to prevent accidental current discharge from any possible source. The exclusive use of a nonelectric initiation system will eliminate this possibility in nearly every situation with the possible exception of lightning strikes.

1. Electrical storms

a. All blasting operations shall be suspended and all persons shall be removed from the blasting areas during the approach and progress of an electrical storm. The following rules must be followed:

1. A lightning detector should be used to monitor the proximity of lightning to the shot. When the storm is 10 miles distant as identified by the lightning detector, notify all persons in the blasting crew of approaching storm. Stop all loading of holes and evacuate all personnel, except blaster and assistant, to a safe distance (500 feet) from the blast area.

2. If the blast cannot be initiated before the storm arrives (within 10 miles as indicated by the lightning detector), the blaster shall evacuate the site to a safe distance.

3. Personnel may return to worksite when the storm has passed and is 10 miles distant as determined by the lightning detector or after the completion of blast which allows for inspection of site and/or misfire.

4. If no lightning detector is available, the “1 second per mile” rule of thumb may be used. This rule of thumb is used to estimate the distance of the storm between sight and sound. When lightning is sighted the sound wave typically travels at approximately 1 mile per second. So, if the lightning is spotted and 10 seconds elapses it is about 10 miles away.

K. Empty packing material shall not be used again for any purpose. It shall be burned at an approved location. Typically, this will be in the excavated trench or other designated area.

L. Damaged or deteriorated blasting supplies shall not be used.

M. Delivery and issue of explosives shall only be under, by and to authorized persons and into authorized magazine or temporary storage handling areas.

N. Blasting operations shall not be carried out in the proximity of other utilities or property owners without prior approval. "ONE CALL" notification requirements shall be followed.

O. All loading and firing shall be directed and supervised by a competent and experienced person.

P. No loaded holes shall be left unattended or unprotected. No explosives or blasting agents shall be abandoned on the right-of-way. Explosives shall not be primed until immediately before use and shall not be allowed to lay overnight in drilled holes.

Q. All jurisdictional authorities shall be granted unrestricted access to all explosive records as well as site access for procedural inspections. All personnel not involved with the current blasting operation must check in with the blaster before entering the blasting zone.

R. Warning signs, indicating the blast area, shall be erected and maintained at all approaches to the blast area. Warning sign lettering shall be readable from a reasonable distance and on a contrasting background.

S. The warning signs will be erected and maintained at all approaches to the blast area. Flaggers will be stationed on all roadways passing within 500 feet of the blast area and be responsible to stop all traffic during blasting operations. All personnel not involved in the actual blast shall stand back at least 500 feet from the time the blast signal is given until the "All Clear" has been sounded. An audible blasting signal (air horn or siren) shall be used. The following blast signals will be used during blasting.

1. Warning Signal A series of two long horn or siren sounds will be made 2 minutes prior to the blast.

2. Blast Signal One prolonged horn or siren sound will be sounded one minute prior to the blast.

3. All Clear Signal Two short blasts on the horn or siren sound will be sounded following the blast once the blast area has been inspected and deemed safe.

T. All blasting will be performed with a nonelectric initiation system and shall follow standard industry guidelines in regard to use and safety.

U. Blaster qualifications shall meet all federal, state and local standards.

V. Misfires

1. If there are any misfires, all employees shall remain away from the suspected misfire area for at least 15 minutes. Misfires shall be handled under the direction of the blaster in charge. All leads shall be carefully traced and a search made for unexploded charges.
2. If a misfire is found, the blaster shall provide proper safeguards for excluding all employees from the danger zone.
3. No other work shall be done except that necessary to remove the hazard of the misfire and only those employees necessary to do the work shall remain in the danger zone.
4. No attempt shall be made to extract explosives from any charged or misfired hole! A new primer shall be inserted into the hole and the hole shall be reshot. If re-firing of the misfired hole presents a hazard, the explosives may be removed by washing out with water or, where the misfire is underwater, blown out with air.
5. No drilling, digging or picking shall be permitted until all missed holes have been detonated or the authorized representative has approved that work can proceed.
6. Prior to the end of the working day, any misfires shall be located and rendered safe.