

RED RIVER DIVERSION

**FARGO – MOORHEAD METRO FLOOD RISK
MANAGEMENT PROJECT,
FEASIBILITY STUDY, PHASE 4**

**APPENDIX G – COST ESTIMATES
EXHIBIT D – QUANTITY SUMMARY FOR COST
ESTIMATE – LPP NORTH DAKOTA DIVERSION**

**Report for the US Army Corps of Engineers, and the cities of Fargo, ND &
Moorhead, MN**

By: Barr Engineering Co.

FINAL – February 28, 2011

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G-D1.0 Quantity Summary for Cost Estimate – LPP NORTH DAKOTA DIVERSION

**APPENDIX G
COST ESTIMATES**

**EXHIBIT D – QUANTITY SUMMARY FOR COST ESTIMATE – LPP NORTH
DAKOTA DIVERSION**

**G-D1.0 QUANTITY SUMMARY FOR COST ESTIMATE -
LPP NORTH DAKOTA DIVERSION**

Attachment G-D1.0 of this Exhibit D presents the quantity summary for cost estimates for the LPP North Dakota Diversion.

Barr Engineering Company

Project: Fargo-Moorhead Metro Flood Risk Management Project

Computed: MRM

Date: 2/28/2011

Subject: Phase 4 - Feasibility Cost Estimate

Task: **Cost Estimate - Quantity Summary - LPP NORTH DAKOTA DIVERSION**

Sheet: 1

of

Status: draft

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

Quantities used to develop the LPP North Dakota Diversion MII cost estimate files are shown below.

Item	Item Description	Work Task Group	Folder Item (Work Task)	Project Item Description (Work Task Crew)	QTY	UNIT	Quantity Source
1	Lands and Damages	(Corps of Engineers)					
2	Relocations	(Corps of Engineers)					
6	Fish and Wildlife Facilities	(Corps of Engineers)					
8	Roads, Railroads and Bridges	(Corps of Engineers)					
9	Channels and Canals						
Diversion Channel - Region 2012							
			Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
			Clearing and Grubbing	Clearing and Grubbing	13	AC	
			Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	1,189	LF	
				Erosion Control Blanket - Furnish and Install	1,833	SY	
				Temporary Sedimentation Basins	1,733	BCY	
				Rock Checks	3	EA	
			Dewatering and Control of Water	Dewatering	4	DAY	
				Temporary Storm Sewer Pipe	19	LF	
				Control of Water	1	LS	
			Strip and Stockpile Topsoil - Channel	Topsoil - Strip	8,107	BCY	
				Topsoil - Stockpile	8,107	BCY	
			Strip and Stockpile Topsoil - Spoil Berm	Topsoil - Strip and Stockpile	13,215	BCY	
			Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	34,231	BCY	
				Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	34,231	BCY	
				Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	34,231	BCY	
				Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY	
			Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	67,075	BCY	
				Earthwork - Type 2 Saturated Non-Brenna - Spoil	67,075	BCY	
				Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	67,075	BCY	
				Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
			Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	0	BCY	
				Earthwork - Type 3 Oxidized Brenna - Haul	0	BCY	
				Earthwork - Type 3 Oxidized Brenna - Spoil	0	BCY	
				Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	0	BCY	
			Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	0	BCY	
				Earthwork - Type 4 Brenna - Haul	0	BCY	
				Earthwork - Type 4 Brenna - Spoil	0	BCY	
				Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
			Excavation and Embankment - Channel	Earthwork - Haul From No-Spoil Areas	0	BCY	
			Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	593	BCY	
				Aggregate Base - Class V - Furnish and Install	333	ECY	
				Haul Road Maintenance	2	DAY	
			Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
				Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
				Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
				Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	1,259	BCY	
				Earthwork - Type 2 Saturated Non-Brenna - Spoil	1,259	BCY	
				Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	1,259	BCY	
				Earthwork - Type 3 Oxidized Brenna - Excavate	0	BCY	
				Earthwork - Type 3 Oxidized Brenna - Haul	0	BCY	
				Earthwork - Type 3 Oxidized Brenna - Spoil	0	BCY	
				Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	0	BCY	
				Earthwork - Type 4 Brenna - Excavate	0	BCY	
				Earthwork - Type 4 Brenna - Haul	0	BCY	
				Earthwork - Type 4 Brenna - Spoil	0	BCY	
				Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
			Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	815	CY	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Lower Bank Protection Geotextile - Furnish and Install	2,778	SY	
		Grade Control Riprap - Furnish and Install	38	CY	
		Grade Control Geotextile - Furnish and Install	34	SY	
		Topssoil Placement - Channel	2,702	BCY	
		Topssoil Placement - Spoil Berm	18,620	BCY	
		Dust Control	6	DAY	
		Restore Local Roadways	0.1	Mile	
		Restore Local Haul Roadways - Aggregate Surfacing	0.0	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.0	Mile	
		Site Restoration	13	AC	
		Seeding	13	AC	
		Straw Mulch and Disk Anchoring	13	AC	
		Vegetation Establishment and Maintenance	13	AC	
		Snow Removal	23	HOURS	
		Miscellaneous	1	LS	
		Monuments and Markers	1	LS	
		Diversion Channel - Region 2013			
		Site Preparation and Traffic Control	1	LS	
		Clearing and Grubbing	6	AC	
		Temporary Erosion and Sedimentation Control	4,520	LF	
		Erosion Control Blanket - Furnish and Install	6,967	SY	
		Temporary Sedimentation Basins	7,733	BCY	
		Rock Checks	10	EA	
		Dewatering	16	DAY	
		Temporary Storm Sewer Pipe	72	LF	
		Control of Water	1	LS	
		Strip and Stockpile Topssoil - Channel	38,473	BCY	
		Topssoil - Stockpile	38,473	BCY	
		Strip and Stockpile Topssoil - Spoil Berm	55,232	BCY	
		Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna			
		Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	161,848	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	161,848	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	161,848	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY	
		Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna			
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	192,083	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	192,083	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	192,083	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
		Excavation and Embankment - Channel - Type 3 Oxidized Brenna			
		Earthwork - Type 3 Oxidized Brenna - Excavate	199,411	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	199,411	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	199,411	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	199,411	BCY	
		Excavation and Embankment - Channel - Type 4 Brenna			
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Excavation and Embankment - Channel			
		Earthwork - Haul From No-Spoil Areas	0	BCY	
		Temporary Haul Roads	2,252	BCY	
		Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation			
		Aggregate Base - Class V - Furnish and Install	1,267	ECY	
		Haul Road Maintenance	9	DAY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	4,786	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	4,786	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	4,786	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	4,786	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Low Flow Channel and Lower Bank Protection			
		Lower Bank Protection Riprap - Furnish and Install	3,096	CY	
		Lower Bank Protection Geotextile - Furnish and Install	10,556	SY	
		Grade Control Riprap - Furnish and Install	145	CY	
		Grade Control Geotextile - Furnish and Install	131	SY	
		Topssoil Placement - Channel	12,824	BCY	
		Topssoil Placement - Spoil Berm	80,881	BCY	
		Dust Control	24	DAY	
		Restore Local Roadways	0.4	Mile	
		Restore Local Haul Roadways - Aggregate Surfacing	0.1	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.1	Mile	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Site Restoration	Seeding	58	AC		
			Straw Mulch and Disk Anchoring	58	AC		
			Vegetation Establishment and Maintenance	58	AC		
		Snow Removal	Snow Removal	86	HOURS		
		Miscellaneous	Monuments and Markers	1	LS		
		Diversion Channel - Region 2014					
		Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
		Clearing and Grubbing	Clearing and Grubbing	47	AC		
		Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	31,400	LF		
			Erosion Control Blanket - Furnish and Install	48,400	SY		
			Temporary Sedimentation Basins	62,267	BCY		
			Rock Checks	68	EA		
		Dewatering and Control of Water	Dewatering	132	DAY		
			Temporary Storm Sewer Pipe	500	LF		
			Control of Water	1	LS		
		Strip and Stockpile Topsoil - Channel	Topsoil - Strip	269,902	BCY		
			Topsoil - Stockpile	269,902	BCY		
		Strip and Stockpile Topsoil - Spoil Berm	Topsoil - Strip and Stockpile	484,835	BCY		
		Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	1,042,050	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	1,042,050	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	1,042,050	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY		
		Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	1,638,021	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Spoil	1,638,021	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	1,638,021	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
		Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	1,447,138	BCY		
			Earthwork - Type 3 Oxidized Brenna - Haul	1,447,138	BCY		
			Earthwork - Type 3 Oxidized Brenna - Spoil	1,447,138	BCY		
			Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	1,447,138	BCY		
		Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	20,465	BCY		
			Earthwork - Type 4 Brenna - Haul	20,465	BCY		
			Earthwork - Type 4 Brenna - Spoil	20,465	BCY		
			Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	20,465	BCY		
		Excavation and Embankment - Channel	Earthwork - Haul From No-Spoil Areas	0	BCY		
		Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	15,644	BCY		
			Aggregate Base - Class V - Furnish and Install	8,800	ECY		
			Haul Road Maintenance	63	DAY		
		Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
			Earthwork - Type 3 Oxidized Brenna - Excavate	26,222	BCY		
			Earthwork - Type 3 Oxidized Brenna - Haul	26,222	BCY		
			Earthwork - Type 3 Oxidized Brenna - Spoil	26,222	BCY		
			Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	26,222	BCY		
			Earthwork - Type 4 Brenna - Excavate	7,025	BCY		
			Earthwork - Type 4 Brenna - Haul	7,025	BCY		
			Earthwork - Type 4 Brenna - Spoil	7,025	BCY		
			Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	7,025	BCY		
		Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	21,511	CY		
			Lower Bank Protection Geotextile - Furnish and Install	73,333	SY		
			Grade Control Riprap - Furnish and Install	1,009	CY		
			Grade Control Geotextile - Furnish and Install	909	SY		
		Topsoil Placement - Channel	Topsoil - Install from Stockpile	89,967	BCY		
		Topsoil Placement - Spoil Berm	Topsoil - Install from Stockpile	664,769	BCY		
		Dust Control	Dust Control	169	DAY		
		Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.5	Mile		
			Restore Local Haul Roadways - Bituminous Surfacing	0.8	Mile		
		Site Restoration	Seeding	467	AC		
			Straw Mulch and Disk Anchoring	467	AC		
			Vegetation Establishment and Maintenance	467	AC		
		Snow Removal	Snow Removal	600	HOURS		
		Miscellaneous	Monuments and Markers	1	LS		
		Diversion Channel - Region 2015					
		Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
		Clearing and Grubbing	Clearing and Grubbing	186	AC		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	121,318	LF		
		Erosion Control Blanket - Furnish and Install	187,000	SY		
		Temporary Sedimentation Basins	247,333	BCY		
		Rock Checks	261	EA		
	Dewatering and Control of Water	Dewatering	524	DAY		
		Temporary Storm Sewer Pipe	1,932	LF		
		Control of Water	1	LS		
	Strip and Stockpile Topsoil - Channel	Topsoil - Strip	935,824	BCY		
		Topsoil - Stockpile	935,824	BCY		
	Strip and Stockpile Topsoil - Spoil Berm	Topsoil - Strip and Stockpile	2,056,550	BCY		
	Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	3,111,316	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	3,111,316	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	3,111,316	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY		
	Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	3,886,425	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	3,886,425	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	3,886,425	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
	Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	5,549,873	BCY		
		Earthwork - Type 3 Oxidized Brenna - Haul	5,549,873	BCY		
		Earthwork - Type 3 Oxidized Brenna - Spoil	5,549,873	BCY		
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	5,549,873	BCY		
	Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	235,478	BCY		
		Earthwork - Type 4 Brenna - Haul	235,478	BCY		
		Earthwork - Type 4 Brenna - Spoil	235,478	BCY		
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	235,478	BCY		
	Excavation and Embankment - Channel	Earthwork - Haul From No-Spoil Areas	0	BCY		
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	60,444	BCY		
		Aggregate Base - Class V - Furnish and Install	34,000	ECY		
		Haul Road Maintenance	241	DAY		
	Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	12,346	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	12,346	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	12,346	BCY		
		Earthwork - Type 3 Oxidized Brenna - Excavate	72,923	BCY		
		Earthwork - Type 3 Oxidized Brenna - Haul	72,923	BCY		
		Earthwork - Type 3 Oxidized Brenna - Spoil	72,923	BCY		
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	72,923	BCY		
		Earthwork - Type 4 Brenna - Excavate	43,190	BCY		
		Earthwork - Type 4 Brenna - Haul	43,190	BCY		
		Earthwork - Type 4 Brenna - Spoil	43,190	BCY		
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	43,190	BCY		
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	83,111	CY		
		Lower Bank Protection Geotextile - Furnish and Install	283,333	SY		
		Grade Control Riprap - Furnish and Install	3,899	CY		
		Grade Control Geotextile - Furnish and Install	3,512	SY		
	Topsoil Placement - Channel	Topsoil - Install from Stockpile	311,941	BCY		
	Topsoil Placement - Spoil Berm	Topsoil - Install from Stockpile	2,680,432	BCY		
	Dust Control	Dust Control	652	DAY		
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	9.7	Mile		
		Restore Local Haul Roadways - Bituminous Surfacing	2.9	Mile		
	Site Restoration	Seeding	1,855	AC		
		Straw Mulch and Disk Anchoring	1,855	AC		
		Vegetation Establishment and Maintenance	1,855	AC		
	Snow Removal	Snow Removal	2,318	HOURS		
	Miscellaneous	Monuments and Markers	1	LS		
	Diversion Channel - Region 2016					
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
	Clearing and Grubbing	Clearing and Grubbing	52	AC		
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	33,541	LF		
		Erosion Control Blanket - Furnish and Install	51,700	SY		
		Temporary Sedimentation Basins	68,933	BCY		
		Rock Checks	72	EA		
	Dewatering and Control of Water	Dewatering	146	DAY		
		Temporary Storm Sewer Pipe	534	LF		
		Control of Water	1	LS		
	Strip and Stockpile Topsoil - Channel	Topsoil - Strip	227,696	BCY		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Strip and Stockpile Topsoil - Spoil Berm	Topsoli - Stockpile	227,696	BCY		
		Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Topsoli - Strip and Stockpile	607,229	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	881,257	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	881,257	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	881,257	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY		
		Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	1,397,536	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Spoil	1,397,536	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	1,397,536	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
		Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	549,283	BCY		
			Earthwork - Type 3 Oxidized Brenna - Haul	549,283	BCY		
			Earthwork - Type 3 Oxidized Brenna - Spoil	549,283	BCY		
			Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	549,283	BCY		
		Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	0	BCY		
			Earthwork - Type 4 Brenna - Haul	0	BCY		
			Earthwork - Type 4 Brenna - Spoil	0	BCY		
			Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY		
		Excavation and Embankment - Channel Temporary Haul Roads	Earthwork - Haul From No-Spoil Areas	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	16,711	BCY		
			Aggregate Base - Class V - Furnish and Install	9,400	ECY		
			Haul Road Maintenance	67	DAY		
		Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	9,353	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Spoil	9,353	BCY		
			Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	9,353	BCY		
			Earthwork - Type 3 Oxidized Brenna - Excavate	26,164	BCY		
			Earthwork - Type 3 Oxidized Brenna - Haul	26,164	BCY		
			Earthwork - Type 3 Oxidized Brenna - Spoil	26,164	BCY		
			Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	26,164	BCY		
			Earthwork - Type 4 Brenna - Excavate	0	BCY		
			Earthwork - Type 4 Brenna - Haul	0	BCY		
			Earthwork - Type 4 Brenna - Spoil	0	BCY		
			Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	22,978	CY		
			Lower Bank Protection Geotextile - Furnish and Install	78,333	SY		
			Grade Control Riprap - Furnish and Install	1,078	CY		
			Grade Control Geotextile - Furnish and Install	971	SY		
		Topsoli Placement - Channel	Topsoli - Install from Stockpile	75,899	BCY		
		Topsoli Placement - Spoil Berm	Topsoli - Install from Stockpile	759,026	BCY		
		Dust Control	Dust Control	180	DAY		
		Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.7	Mile		
			Restore Local Haul Roadways - Bituminous Surfacing	0.8	Mile		
		Site Restoration	Seeding	517	AC		
			Straw Mulch and Disk Anchoring	517	AC		
			Vegetation Establishment and Maintenance	517	AC		
		Snow Removal	Snow Removal	641	HOURS		
		Miscellaneous	Monuments and Markers	1	LS		
		Diversion Channel - Region 2017					
		Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
		Clearing and Grubbing	Clearing and Grubbing	247	AC		
		Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	160,687	LF		
			Erosion Control Blanket - Furnish and Install	247,683	SY		
			Temporary Sedimentation Basins	329,067	BCY		
			Rock Checks	345	EA		
		Dewatering and Control of Water	Dewatering	697	DAY		
			Temporary Storm Sewer Pipe	2,559	LF		
			Control of Water	1	LS		
		Strip and Stockpile Topsoil - Channel	Topsoli - Strip	1,460,107	BCY		
			Topsoli - Stockpile	1,460,107	BCY		
		Strip and Stockpile Topsoil - Spoil Berm	Topsoli - Strip and Stockpile	2,520,332	BCY		
		Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	5,204,698	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	4,504,698	BCY		Haul from DC to SA1
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	4,504,698	BCY		Haul from DC to SA1
			Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY		

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	Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	5,405,183	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	4,705,183	BCY	Haul from DC to SA1
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	4,705,183	BCY	Haul from DC to SA1
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
	Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	9,472,267	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	9,472,267	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	9,472,267	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	9,472,267	BCY	
	Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	3,404,472	BCY	
		Earthwork - Type 4 Brenna - Haul	3,404,472	BCY	
		Earthwork - Type 4 Brenna - Spoil	3,404,472	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	3,404,472	BCY	
	Excavation and Embankment - Channel	Earthwork - Haul From No-Spoil Areas	0	BCY	
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	80,059	BCY	
		Aggregate Base - Class V - Furnish and Install	45,033	ECY	
		Haul Road Maintenance	320	DAY	
	Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	42,185	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	42,185	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	42,185	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	42,185	BCY	
		Earthwork - Type 4 Brenna - Excavate	116,634	BCY	
		Earthwork - Type 4 Brenna - Haul	116,634	BCY	
		Earthwork - Type 4 Brenna - Spoil	116,634	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	116,634	BCY	
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	110,081	CY	
		Lower Bank Protection Geotextile - Furnish and Install	375,278	SY	
		Grade Control Riprap - Furnish and Install	5,164	CY	
		Grade Control Geotextile - Furnish and Install	4,652	SY	
	Topsoil Placement - Channel	Topsoil - Install from Stockpile	486,703	BCY	
	Topsoil Placement - Spoil Berm	Topsoil - Install from Stockpile	3,461,308	BCY	
	Dust Control	Dust Control	864	DAY	
	Restore Local Haul Roadways	Restore Local Haul Roadways - Aggregate Surfacing	12.8	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	3.8	Mile	
	Site Restoration	Seeding	2,468	AC	
		Straw Mulch and Disk Anchoring	2,468	AC	
		Vegetation Establishment and Maintenance	2,468	AC	
	Snow Removal	Snow Removal	3,070	HOURS	
	Miscellaneous	Monuments and Markers	1	LS	
	Diversion Channel - Region 2018				
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
	Clearing and Grubbing	Clearing and Grubbing	13	AC	
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	34,849	LF	
		Erosion Control Blanket - Furnish and Install	53,717	SY	
		Temporary Sedimentation Basins	17,067	BCY	
		Rock Checks	75	EA	
	Dewatering and Control of Water	Dewatering	36	DAY	
		Temporary Storm Sewer Pipe	555	LF	
		Control of Water	1	LS	
	Strip and Stockpile Topsoil - Channel	Topsoil - Strip	156,731	BCY	
		Topsoil - Stockpile	156,731	BCY	
	Strip and Stockpile Topsoil - Spoil Berm	Topsoil - Strip and Stockpile	50,527	BCY	
	Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	538,140	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	538,140	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	538,140	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY	
	Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	253,002	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	253,002	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	253,002	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
	Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	289,488	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	289,488	BCY	

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		Earthwork - Type 3 Oxidized Brenna - Spoil	289,488	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	289,488	BCY	
	Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY	
	Excavation and Embankment - Channel	Earthwork - Haul From No-Spoil Areas	0	BCY	
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	17,363	BCY	
		Aggregate Base - Class V - Furnish and Install	9,767	ECY	
		Haul Road Maintenance	69	DAY	
	Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	428	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	428	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	428	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	3,703	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	3,703	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	3,703	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	908	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	908	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	908	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	908	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	23,874	CY	
		Lower Bank Protection Geotextile - Furnish and Install	81,389	SY	
		Grade Control Riprap - Furnish and Install	1,120	CY	
		Grade Control Geotextile - Furnish and Install	1,009	SY	
	Topsoil Placement - Channel	Topsoil - Install from Stockpile	52,244	BCY	
	Topsoil Placement - Spoil Berm	Topsoil - Install from Stockpile	58,838	BCY	
	Dust Control	Dust Control	187	DAY	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.8	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.8	Mile	
	Site Restoration	Seeding	128	AC	
		Straw Mulch and Disk Anchoring	128	AC	
		Vegetation Establishment and Maintenance	128	AC	
	Snow Removal	Snow Removal	666	HOURS	
	Miscellaneous	Monuments and Markers	1	LS	
	<i>Note: Quantities for Levee included under 11 Levees and Floodproofing</i>				
Diversion Channel - Region 2019					
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
	Clearing and Grubbing	Clearing and Grubbing	16	AC	
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	19,506	LF	
		Erosion Control Blanket - Furnish and Install	30,067	SY	
		Temporary Sedimentation Basins	20,933	BCY	
		Rock Checks	42	EA	
	Dewatering and Control of Water	Dewatering	44	DAY	
		Temporary Storm Sewer Pipe	311	LF	
		Control of Water	1	LS	
	Strip and Stockpile Topsoil - Channel	Topsoil - Strip	100,479	BCY	
		Topsoil - Stockpile	100,479	BCY	
	Strip and Stockpile Topsoil - Spoil Berm	Topsoil - Strip and Stockpile	153,638	BCY	
	Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	100,000	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	100,000CY to tieback levee
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY	
	Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	30,605	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	30,605	BCY	142,000CY to Levee 2019
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	30,605	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
	Excavation and Embankment - Channel - Type 3 Oxidized Brenna	Earthwork - Type 3 Oxidized Brenna - Excavate	115,140	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	115,140	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	115,140	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	115,140	BCY	
	Excavation and Embankment - Channel - Type 4 Brenna	Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY	
	Excavation and Embankment - Channel	Earthwork - Haul From No-Spoil Areas	0	BCY	

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	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	9,719	BCY	
		Aggregate Base - Class V - Furnish and Install	5,467	ECY	
		Haul Road Maintenance	39	DAY	
	Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	279	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	279	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	279	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	20,376	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	20,376	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	20,376	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	20,376	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	13,363	CY	
		Lower Bank Protection Geotextile - Furnish and Install	45,556	SY	
		Grade Control Riprap - Furnish and Install	627	CY	
		Grade Control Geotextile - Furnish and Install	565	SY	
	Topsoil Placement - Channel	Topsoil - Install from Stockpile	33,493	BCY	
	Topsoil Placement - Spoil Berm	Topsoil - Install from Stockpile	220,624	BCY	
	Dust Control	Dust Control	105	DAY	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	1.6	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.5	Mile	
	Site Restoration	Seeding	157	AC	
		Straw Mulch and Disk Anchoring	157	AC	
		Vegetation Establishment and Maintenance	157	AC	
	Snow Removal	Snow Removal	373	HOURS	
	Miscellaneous	Monuments and Markers	1	LS	

	Hydraulic Structure - Red River Control Structure - Site Work				
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	15,000	LF	
		Erosion Control Blanket - Furnish and Install	38,720	SY	
		Temporary Sedimentation Basins	10,667	BCY	
		Floating Silt Curtain	600	LF	
	Clearing and Grubbing	Clearing and Grubbing	35	AC	
	Strip and Stockpile Topsoil	Topsoil - Strip	121,133	BCY	
		Topsoil - Stockpile	121,133	BCY	
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	2,267	BCY	
		Aggregate Base - Class V - Furnish and Install	7,120	ECY	
		Haul Road Maintenance	60	DAY	
	Coffering - Steel Sheet pile	Sheet Piling - Furnish Material	9,000	SF	
		Sheet Piling - Unload Sheeting	7	EA	
		Sheet Piling - Set up Rig	2	EA	
		Sheet Piling - Drive Sheets	200	EA	
		Sheet Piling - Cut Sheets	400	EA	
		Control of Water	1	LS	
	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	3,768	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	3,768	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	3,768	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	3,768	BCY	
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	643,955	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	643,955	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	101,904	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	542,051	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	464,000	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	464,000	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	464,000	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	137,000	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	137,000	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	137,000	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	137,000	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	

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		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY	
		Earthwork - Haul From No-Spoil Areas	121,133	BCY	
	Dewatering and Control of Water	Dewatering and Control of Water	50	DAY	
		Temporary Storm Sewer Pipe	300	LF	
		Control of Water	1	LS	
	Electrical Utilities	Electrical Utilities	5,000	LF	
	Channel Grade Control System	Channel Grade Control System	0	LS	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.0	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	1.0	Mile	
		Dust Control	60	DAY	
		Topsail Placement	121,133	BCY	
	Site Restoration	Seeding	80	AC	
		Straw Mulch and Disk Anchoring	80	AC	
		Vegetation Establishment and Maintenance	80	AC	
	Miscellaneous Features	Signage	1	LS	
		Chain Link Fence	3,000	LF	
		Fence Vehicle Gates	4	EA	
	Snow Removal	Snow Removal	640	HOURS	
	Excavation and Embankment - Channel - Lower Bank Protection	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
	Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	3,071	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	3,071	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	3,071	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	3,071	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	2,933	CY	
		Lower Bank Protection Geotextile - Furnish and Install	10,000	SY	
		Grade Control Riprap - Furnish and Install	138	CY	
		Grade Control Geotextile - Furnish and Install	124	SY	
	Hydraulic Structure - Red River Control Structure - Structure				use MN subcontractors for RRN Control Structure
	Earthwork - Structural	Earthwork - Structural Excavation	49,809	BCY	
		Earthwork - Structural Haul	49,809	BCY	
		Earthwork - Structural Embankment	49,809	BCY	
	Gated Control Structure		structure length 182	LF	number of piles 318
	Steel Piles	Steel Piles - Furnish Material	11,037	LF	
		Steel Piles - Set up Rig	2	EA	
		Steel Piles - Unload Piles	21	EA	
		Steel Piles - Weld Splices	80	EA	
		Steel Piles - Drive Piling	11,037	LF	
		Steel Piles - Cut Offs	318	EA	
		Steel Piles - Pile Test	8	EA	
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	1,793	SF	
		Concrete - Footing - Pour	2,273	CY	
		Concrete - Footing - 5% Waste	114	CY	
	Concrete - Piers	Concrete - Pier - Build Forms	2,560	SF	
		Concrete - Pier - Assemble and Modify Forms	4	EA	
		Concrete - Pier - Form, Strip and Cure	37,007	SF	
		Concrete - Pier - Pour	3,759	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	188	CY	
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	2,689	SF	
		Concrete - Elevated Deck - Pour	128	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	6	CY	
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	467,450	LB	
		Steel Reinforcement Bars - Hoist	467,450	LB	
	Hydraulic Gates - Steel	Hydraulic Gates - Steel - Furnish	7,500	SF	
		Hydraulic Gates - Steel - Install	3	EA	
		Hydraulic Gate Hoist - Furnish and Install	3	EA	
	Bulkheads - Steel	Bulkheads - Steel - Furnish	1	LS	
	Bridge Railing	Bridge Railing - Furnish and Install	364	LF	
	Sheet Piling	Sheet Piling - Furnish	3,640	SF	
		Sheet Piling - Unload Sheeting	3	EA	
		Sheet Piling - Set up Rig	2	EA	
		Sheet Piling - Drive Sheets	122	EA	
		Sheet Piling - Cut Sheets	244	EA	

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	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	6,667	ECY	
	Walls		structure length 674		number of piles 756
	Steel Piles	Steel Piles - Furnish Material	36,972	LF	
		Steel Piles - Set up Rig	2	EA	
		Steel Piles - Unload Piles	67	EA	
		Steel Piles - Weld Splices	302	EA	
		Steel Piles - Drive Piling	36,972	LF	
		Steel Piles - Cut Sheets	756	EA	
		Steel Piles - Pile Test	5	EA	
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	9,231	SF	
		Concrete - Footing - Pour	3,062	CY	
		Concrete - Footing - 5% Waste	153	CY	
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	13,378	SF	
		Concrete - Elevated Deck - Pour	746	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	37	CY	
	Concrete - Walls	Concrete - Walls - Build Forms	2,560	SF	
		Concrete - Walls - Assemble and Modify Forms	4	EA	
		Concrete - Walls - Form, Strip and Cure	53,670	SF	
		Concrete - Walls - Pour	8,774	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	439	CY	
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	1,336,337	LB	
		Steel Reinforcement Bars - Hoist	1,336,337	LB	
	Bridge Railing	Bridge Railing - Furnish and Install	1,520	LF	
	Sheet Piling	Sheet Piling - Furnish Material	7,600	SF	
		Sheet Piling - Unload Sheeting	5	EA	
		Sheet Piling - Set up Rig	2	EA	
		Sheet Piling - Drive Sheets	507	EA	
		Sheet Piling - Cut Sheets	1,014	EA	
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	2,462	ECY	
	Riprap	Select Granular Aggregate - Furnish and Install	11,894	CY	
		Riprap - Furnish and Install	23,787	CY	
	Fish Passage System	Fish Passage System - Furnish and Install	294,000	SF	
		Hydraulic Gates - Steel - Furnish	300	SF	
		Hydraulic Gates - Steel - Install	2	EA	
		Hydraulic Gate Hoist - Furnish and Install	2	EA	
		Steel Bulkhead	1	LS	
	Miscellaneous Features	Wall Extension	1	LS	
		Mechanical - Miscellaneous	1	LS	
		Electrical - Miscellaneous	1	LS	
		Safety Features - Miscellaneous	1	LS	
		SCADA (Supervisory Control and Data Acquisition) System	1	LS	
		Ice Control Measure - Furnish and Install	0	LF	
		Debris Control Measure - Furnish and Install	0	LF	
		Debris Maintenance Equipment	1	LS	
		Equipment Storage Shed	5,000	SF	
	Hydraulic Structure - Wolverton Creek Closure/Drainage Structure				
	Hydraulic Structure - Wolverton Creek Closure/Drainage Structure - Site Work				
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	6,100	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	6,100	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	6,100	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY	
	Dewatering and Control of Water	Control of Water	1	LS	
	Electrical Utilities	Electrical Utilities	2,500	LF	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	1.0	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.0	Mile	
	Site Restoration	Seeding	3	AC	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Straw Mulch and Disk Anchoring	3	AC		
		Vegetation Establishment and Maintenance	3	AC		
	Miscellaneous Features	Signage	1	LS		
		Chain link Fence	500	LF		
		Fence Vehicle Gates	2	EA		
		Hydraulic Structure - Wolverton Creek Closure/Drainage Structure (North) - Structure				
	Earthwork - Structural	Earthwork - Structural Excavation	1,000	BCY		
		Earthwork - Structural Haul	1,000	BCY		
		Earthwork - Structural Embankment	1,000	BCY		
		Structure and Walls				
	Steel Piles	Steel Piles - Furnish Material	10,844	LF		
		Steel Piles - Set up Rig	2	EA		
		Steel Piles - Unload Piles	80	EA		
		Steel Piles - Weld Splices	300	EA		
		Steel Piles - Drive Piling	10,844	LF		
		Steel Piles - Cut Sheets	200	EA		
		Steel Piles - Pile Test	5	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	3,120	SF		
		Concrete - Footing - Pour	1,920	CY		
		Concrete - Footing - 5% Waste	96	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	2,000	SF		
		Concrete - Walls - Assemble and Modify Forms	4	EA		
		Concrete - Walls - Form, Strip and Cure	13,700	SF		
		Concrete - Walls - Pour	1,200	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	60	CY		
	Concrete - Piers	Concrete - Pier - Build Forms	2,693	SF		
		Concrete - Pier - Assemble and Modify Forms	1	EA		
		Concrete - Pier - Form, Strip and Cure	2,693	SF		
		Concrete - Pier - Pour	147	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	7	CY		
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	2,355	SF		
		Concrete - Elevated Deck - Pour	85	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	4	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	493,000	LB		
		Steel Reinforcement Bars - Hoist	493,000	LB		
	Hydraulic Gates - Steel	Hydraulic Gates - Steel - Furnish	200	SF		
		Hydraulic Gates - Steel - Install	2	EA		
		Hydraulic Gate Hoist - Furnish and Install	2	EA		
	Bulkheads - Steel	Bulkheads - Steel - Furnish	1	LS		
	Bridge Railing	Bridge Railing - Furnish and Install	500	LF		
	Sheet Piling	Sheet Piling - Furnish	600	SF		
		Sheet Piling - Unload Sheetting	1	EA		
		Sheet Piling - Set up Rig	1	EA		
		Sheet Piling - Drive Sheets	40	EA		
		Sheet Piling - Cut Sheets	40	EA		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	600	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	200	CY		
		Riprap - Furnish and Install	400	CY		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Equipment Storage Shed	2,000	SF		
		Hydraulic Structure - Wild Rice River - Site Work				
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	16,100	LF		
		Erosion Control Blanket - Furnish and Install	43,560	SY		
		Temporary Sedimentation Basins	12,000	BCY		
		Floating Silt Curtain	100	LF		
	Clearing and Grubbing	Clearing and Grubbing	29	AC		
	Strip and Stockpile Topsoil	Topsoil - Strip	120,000	BCY		
		Topsoil - Stockpile	120,000	BCY		
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	45,222	BCY		
		Aggregate Base - Class V - Furnish and Install	17,315	ECY		
		Haul Road Maintenance	60	DAY		
	Coffering - Steel Sheet pile	Sheet Piling - Furnish Material	4,200	SF		
		Sheet Piling - Unload Sheetting	3	EA		
		Sheet Piling - Set up Rig	2	EA		
		Sheet Piling - Drive Sheets	94	EA		
		Sheet Piling - Cut Sheets	188	EA		
		Control of Water	1	LS		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	6,908	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	6,908	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	6,908	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	6,908	BCY		
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	433,484	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	433,484	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	275,075	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	158,409	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	50,126	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	50,126	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	50,126	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Excavate	5,744	BCY		
		Earthwork - Type 3 Oxidized Brenna - Haul	5,744	BCY		
		Earthwork - Type 3 Oxidized Brenna - Spoil	5,744	BCY		
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	5,744	BCY		
		Earthwork - Type 4 Brenna - Excavate	0	BCY		
		Earthwork - Type 4 Brenna - Haul	0	BCY		
		Earthwork - Type 4 Brenna - Spoil	0	BCY		
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY		
		Earthwork - Haul From No-Spoil Areas	330,945	BCY		
	Dewatering and Control of Water	Dewatering and Control of Water	30	DAY		
		Temporary Storm Sewer Pipe	300	LF		
		Control of Water	1	LS		
	Electrical Utilities	Electrical Utilities	2,000	LF		
	Channel Grade Control System	Channel Grade Control System	1	LS		
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.0	Mile		
		Restore Local Haul Roadways - Bituminous Surfacing	1.0	Mile		
	Dust Control	Dust Control	60	DAY		
	Topsoil Placement	Topsoil - Install from Stockpile	120,000	BCY		
	Site Restoration	Seeding	90	AC		
		Straw Mulch and Disk Anchoring	90	AC		
		Vegetation Establishment and Maintenance	90	AC		
	Miscellaneous Features	Signage	1	LS		
		Chain link Fence	2,000	LF		
		Fence Vehicle Gates	4	EA		
	Snow Removal	Snow Removal	640	HOURS		
	Excavation and Embankment - Channel - Lower Bank Protection Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Excavate	6,142	BCY		
		Earthwork - Type 3 Oxidized Brenna - Haul	6,142	BCY		
		Earthwork - Type 3 Oxidized Brenna - Spoil	6,142	BCY		
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	6,142	BCY		
		Earthwork - Type 4 Brenna - Excavate	0	BCY		
		Earthwork - Type 4 Brenna - Haul	0	BCY		
		Earthwork - Type 4 Brenna - Spoil	0	BCY		
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY		
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	5,867	CY		
		Lower Bank Protection Geotextile - Furnish and Install	20,000	SY		
		Grade Control Riprap - Furnish and Install	275	CY		
		Grade Control Geotextile - Furnish and Install	248	SY		
	Hydraulic Structure - Wild Rice River - Structure					
	Earthwork - Structural	Earthwork - Structural Excavation	27,411	BCY		
		Earthwork - Structural Haul	27,411	BCY		
		Earthwork - Structural Embankment	27,411	BCY		
	Gated Control Structure	structure length 84		LF	number of piles 100	
	Steel Piles	Steel Piles - Furnish Material	5,100	LF		
		Steel Piles - Set up Rig	2	EA		
		Steel Piles - Unload Piles	10	EA		
		Steel Piles - Weld Splices	25	EA		
		Steel Piles - Drive Piling	5,100	LF		
		Steel Piles - Cut Offs	100	EA		
		Steel Piles - Pile Test	8	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	939	SF		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Concrete - Footing - Pour	832	CY		
		Concrete - Footing - 5% Waste	42	CY		
	Concrete - Piers	Concrete - Pier - Build Forms	2,560	SF		
		Concrete - Pier - Assemble and Modify Forms	4	EA		
		Concrete - Pier - Form, Strip and Cure	15,922	SF		
		Concrete - Pier - Pour	1,604	CY		
	Concrete - Elevated Deck	Concrete - Walls, Piers and Elevated Deck - 5% Waste	80	CY		
		Concrete - Elevated Deck - Form Strip and Cure	1,143	SF		
		Concrete - Elevated Deck - Pour	59	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	3	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	192,447	LB		
		Steel Reinforcement Bars - Hoist	192,447	LB		
	Hydraulic Gates - Steel	Hydraulic Gates - Steel - Furnish	1,800	SF		
		Hydraulic Gates - Steel - Install	2	EA		
		Hydraulic Gate Hoist - Furnish and Install	2	EA		
	Bulkheads - Steel	Bulkheads - Steel - Furnish	1	LS		
	Bridge Railing	Bridge Railing - Furnish and Install	168	LF		
	Sheet Piling	Sheet Piling - Furnish	1,680	SF		
		Sheet Piling - Unload Sheeting	2	EA		
		Sheet Piling - Set up Rig	2	EA		
		Sheet Piling - Drive Sheets	56	EA		
		Sheet Piling - Cut Sheets	112	EA		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	3,889	ECY		
	Wingwalls		structure length 520		number of piles 294	
	Steel Piles	Steel Piles - Furnish Material	17,476	LF		
		Steel Piles - Set up Rig	2	EA		
		Steel Piles - Unload Piles	32	EA		
		Steel Piles - Weld Splices	140	EA		
		Steel Piles - Drive Piling	17,476	LF		
		Steel Piles - Cut Offs	294	EA		
		Steel Piles - Pile Test	4	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	5,772	SF		
		Concrete - Footing - Pour	1,478	CY		
		Concrete - Footing - 5% Waste	74	CY		
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	9,388	SF		
		Concrete - Elevated Deck - Pour	508	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	25	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	2,560	SF		
		Concrete - Walls - Assemble and Modify Forms	4	EA		
		Concrete - Walls - Form, Strip and Cure	24,312	SF		
		Concrete - Walls - Pour	3,576	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	179	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	638,422	LB		
		Steel Reinforcement Bars - Hoist	638,422	LB		
	Bridge Railing	Bridge Railing - Furnish and Install	1,040	LF		
	Sheet Piling	Sheet Piling - Furnish Material	5,200	SF		
		Sheet Piling - Unload Sheeting	4	EA		
		Sheet Piling - Set up Rig	2	EA		
		Sheet Piling - Drive Sheets	173	EA		
		Sheet Piling - Cut Sheets	346	EA		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	1,369	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	5,718	CY		
		Riprap - Furnish and Install	11,435	CY		
	Fish Passage System	Fish Passage System - Furnish and Install	210,000	SF		
		Hydraulic Gates - Steel - Furnish	300	SF		
		Hydraulic Gates - Steel - Install	2	EA		
		Hydraulic Gate Hoist - Furnish and Install	2	EA		
		Steel Bulkhead	1	LS		
		Wall Extension	1	LS		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Ice Control Measure - Furnish and Install	2,000	LF		
		Debris Control Measure - Furnish and Install	200	LF		
		Debris Maintenance Equipment	1	LS		
		Equipment Storage Shed	5,000	SF		
	Hydraulic Structure - East Weir (at Connecting Channel)					
	Earthwork - Structural	Earthwork - Structural Excavation	3,000	BCY		
		Earthwork - Structural Haul	3,000	BCY		
		Earthwork - Structural Levee Embankment	3,000	BCY		
	Sheet Piling	Sheet Piling - Furnish	1,500	SF		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Sheet Piling - Unload Sheeting	9	EA	
		Sheet Piling - Set up Rig	4	EA	
		Sheet Piling - Drive Sheets	30	EA	
		Sheet Piling - Cut Sheets	60	EA	
	Riprap	Select Granular Aggregate - Furnish and Install	167	CY	
		Riprap - Furnish and Install	333	CY	
	Miscellaneous	SCADA (Supervisory Control and Data Acquisition) System	1	LS	
		Hydraulic Structure - Inlet Weir to Diversion			
		Hydraulic Structure - Inlet Weir to Diversion - Site Work			
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	1,500	LF	
		Erosion Control Blanket - Furnish and Install	5,000	SY	
		Temporary Sedimentation Basins	1,400	BCY	
	Clearing and Grubbing	Clearing and Grubbing	1	AC	
	Strip and Stockpile Topsoil	Topsoil - Strip	14,626	BCY	
		Topsoil - Stockpile	14,626	BCY	
	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	2,000	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	2,000	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	2,000	BCY	
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	30,317	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	30,317	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	14,175	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	16,142	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	14,551	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	14,551	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	14,551	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	51,548	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	51,548	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	51,548	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	51,548	BCY	
		Earthwork - Type 4 Brenna - Excavate	8,087	BCY	
		Earthwork - Type 4 Brenna - Haul	8,087	BCY	
		Earthwork - Type 4 Brenna - Spoil	8,087	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	8,087	BCY	
		Earthwork - Haul From No-Spoil Areas	88,361	BCY	
	Dewatering and Control of Water	Dewatering and Control of Water	30	DAY	
		Temporary Storm Sewer Pipe	100	LF	
		Control of Water	1	LS	
	Electrical Utilities	Electrical Utilities	5,000	LF	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	1.0	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	1.0	Mile	
	Dust Control	Dust Control	30	DAY	
	Topsoil Placement	Topsoil - Install from Stockpile	14,626	BCY	
	Site Restoration	Seeding	10	AC	
		Straw Mulch and Disk Anchoring	10	AC	
		Vegetation Establishment and Maintenance	10	AC	
	Miscellaneous Features	Signage	1	LS	
		Chain link Fence	600	LF	
		Fence Vehicle Gates	2	EA	
	Snow Removal	Snow Removal	320	HOURS	
	Earthwork - Structural	Earthwork - Structural Excavation	5,000	BCY	
		Earthwork - Structural Haul	5,000	BCY	
		Earthwork - Structural Levee Embankment	5,000	BCY	
	Excavation and Embankment - Channel - Lower Bank Protection	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
	Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	860	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	860	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	860	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	860	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Earthwork - Type 4 Brenna - Spoil	0	BCY		
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY		
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	860	CY		
		Lower Bank Protection Geotextile - Furnish and Install	300	SY		
		Grade Control Riprap - Furnish and Install	0	CY		
		Grade Control Geotextile - Furnish and Install	0	SY		
	Concrete Rollway Structure					
	Steel Piles	Steel Piles - Furnish Material	9,234	LF		
		Steel Piles - Set up Rig	1	EA		
		Steel Piles - Unload Piles	16	EA		
		Steel Piles - Weld Splices	0	EA		
		Steel Piles - Drive Piling	9,234	LF		
		Steel Piles - Cut Offs	0	EA		
		Steel Piles - Pile Test	0	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	1,229	SF		
		Concrete - Footing - Pour	990	CY		
		Concrete - Footing - 5% Waste	50	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	2,500	SF		
		Concrete - Walls - Assemble and Modify Forms	2	EA		
		Concrete - Walls - Form, Strip and Cure	9,234	SF		
		Concrete - Walls - Pour	1,691	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	85	CY		
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	0	SF		
		Concrete - Elevated Deck - Pour	0	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	0	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	235,463	LB		
		Steel Reinforcement Bars - Hoist	235,463	LB		
	Bridge Railing	Bridge Railing - Furnish and Install	900	LF		
	Sheet Piling	Sheet Piling - Furnish	900	SF		
		Sheet Piling - Unload Sheeting	1	EA		
		Sheet Piling - Set up Rig	1	EA		
		Sheet Piling - Drive Sheets	33	EA		
		Sheet Piling - Cut Sheets	66	EA		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	500	ECY		
	Wingwalls					
	Steel Piles	Steel Piles - Furnish Material	12,100	LF		
		Steel Piles - Set up Rig	1	EA		
		Steel Piles - Unload Piles	23	EA		
		Steel Piles - Weld Splices	0	EA		
		Steel Piles - Drive Piling	12,100	LF		
		Steel Piles - Cut Offs	0	EA		
		Steel Piles - Pile Test	0	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	1,229	SF		
		Concrete - Footing - Pour	990	CY		
		Concrete - Footing - 5% Waste	50	CY		
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	0	SF		
		Concrete - Elevated Deck - Pour	0	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	0	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	2,500	SF		
		Concrete - Walls - Assemble and Modify Forms	4	EA		
		Concrete - Walls - Form, Strip and Cure	50,000	SF		
		Concrete - Walls - Pour	3,000	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	150	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	354,000	LB		
		Steel Reinforcement Bars - Hoist	354,000	LB		
	Bridge Railing	Bridge Railing - Furnish and Install	700	LF		
	Sheet Piling	Sheet Piling - Furnish Material	7,000	SF		
		Sheet Piling - Unload Sheeting	5	EA		
		Sheet Piling - Set up Rig	1	EA		
		Sheet Piling - Drive Sheets	293	EA		
		Sheet Piling - Cut Sheets	586	EA		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	300	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	600	CY		
		Riprap - Furnish and Install	1,200	CY		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Ice Control Measure - Furnish and Install	1,200	LF		
		Debris Maintenance Equipment	1	LS		
		Equipment Storage Shed	5,000	SF		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

Hydraulic Structure - Drain 14 - Large Drain Structure					
	Earthwork - Structural	Earthwork - Structural Excavation	1,000	BCY	
		Earthwork - Structural Haul	1,000	BCY	
		Earthwork - Structural Embankment	1,000	BCY	
	Dewatering and Control of Water	Control of Water	1	LS	
	Steel Piles	Steel Piles - Furnish Material	58,177	LF	
		Steel Piles - Set up Rig	4	EA	
		Steel Piles - Unload Piles	110	EA	
		Steel Piles - Weld Splices	430	EA	
		Steel Piles - Drive Piling	58,000	LF	
		Steel Piles - Cut Sheets	430	EA	
		Steel Piles - Pile Test	12	EA	
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	12,000	SF	
		Concrete - Footing - Pour	5,000	CY	
		Concrete - Footing - 5% Waste	250	CY	
	Concrete - Walls	Concrete - Walls - Build Forms	1,000	SF	
		Concrete - Walls - Assemble and Modify Forms	2	EA	
		Concrete - Walls - Form, Strip and Cure	40,000	SF	
		Concrete - Walls - Pour	2,000	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	100	CY	
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	1,000,000	LB	
		Steel Reinforcement Bars - Hoist	1,000,000	LB	
	Bridge Railing	Bridge Railing - Furnish and Install	1,000	LF	
	Sheet Piling	Sheet Piling - Furnish	0	SF	
		Sheet Piling - Unload Sheeting	0	EA	
		Sheet Piling - Set up Rig	0	EA	
		Sheet Piling - Drive Sheets	0	EA	
		Sheet Piling - Cut Sheets	0	EA	
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	1,000	ECY	
	Riprap	Select Granular Aggregate - Furnish and Install	500	CY	
		Riprap - Furnish and Install	1,000	CY	
	Miscellaneous Features	Safety Features - Miscellaneous	1	LS	
		SCADA (Supervisory Control and Data Acquisition) System	1	LS	
Hydraulic Structure - Sheyenne River - Site Work					
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	12,000	LF	
		Erosion Control Blanket - Furnish and Install	48,400	SY	
		Temporary Sedimentation Basins	13,333	BCY	
		Floating Silt Curtain	100	LF	
	Clearing and Grubbing	Clearing and Grubbing	15	AC	
	Strip and Stockpile Topsoil	Topsoil - Strip	160,957	BCY	
		Topsoil - Stockpile	160,957	BCY	
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	25,900	BCY	
		Aggregate Base - Class V - Furnish and Install	9,217	ECY	
		Haul Road Maintenance	60	DAY	
	Coffering - Steel Sheet pile	Sheet Piling - Furnish Material	2,400	SF	
		Sheet Piling - Unload Sheeting	2	EA	
		Sheet Piling - Set up Rig	2	EA	
		Sheet Piling - Drive Sheets	107	EA	
		Sheet Piling - Cut Sheets	214	EA	
		Control of Water	1	LS	
	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	12,095	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	12,095	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	12,095	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	12,095	BCY	
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	1,172,333	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	1,172,333	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	1,156,640	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	15,693	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	260,189	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	260,189	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	260,189	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	464,378	BCY	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	4,246,926	LB		
		Steel Reinforcement Bars - Hoist	4,246,926	LB		
	Bridge Railing	Bridge Railing - Furnish and Install	2,400	LF		
	Sheet Piling	Sheet Piling - Furnish	16,196	SF		
		Sheet Piling - Unload Sheeting	11	EA		
		Sheet Piling - Set up Rig	8	EA		
		Sheet Piling - Drive Sheets	718	EA		
		Sheet Piling - Cut Sheets	1,436	EA		
	Structural Aggregate Backfill	Structural Aggregate Backfill - Furnish and Install	10,718	ECY		
		Aggregate Base - Class V - Furnish and Install	11,461	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	5,500	CY		
		Riprap - Furnish and Install	11,000	CY		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Ice Control Measure - Furnish and Install	1,000	LF		
		Debris Control Measure - Furnish and Install	200	LF		
		Debris Maintenance Equipment	1	LS		
		Equipment Storage Shed	5,000	SF		
	Hydraulic Structure - Sheyenne River - Weir to Diversion					
	Earthwork - Structural	Earthwork - Structural Excavation	28,667	BCY		
		Earthwork - Structural Haul	28,667	BCY		
		Earthwork - Structural Levee Embankment	28,667	BCY		
	Sheet Piling	Sheet Piling - Furnish	98,880	SF		
		Sheet Piling - Unload Sheeting	180	EA		
		Sheet Piling - Set up Rig	6	EA		
		Sheet Piling - Drive Sheets	453	EA		
		Sheet Piling - Cut Sheets	907	EA		
	Riprap	Select Granular Aggregate - Furnish and Install	9,556	CY		
		Riprap - Furnish and Install	19,111	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	500	SF		
		Concrete - Walls - Assemble and Modify Forms	2	EA		
		Concrete - Walls - Form, Strip and Cure	1,000	SF		
		Concrete - Walls - Pour	1,200	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	60	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	60,000	LB		
		Steel Reinforcement Bars - Hoist	60,000	LB		
	Hydraulic Structure - Maple River - Site Work					
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	14,000	LF		
		Erosion Control Blanket - Furnish and Install	55,660	SY		
		Temporary Sedimentation Basins	15,333	BCY		
		Floating Silt Curtain	115	LF		
	Clearing and Grubbing	Clearing and Grubbing	15	AC		
	Strip and Stockpile Topsoil	Topsoil - Strip	183,802	BCY		
		Topsoil - Stockpile	183,802	BCY		
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	10,278	BCY		
		Aggregate Base - Class V - Furnish and Install	9,509	ECY		
		Haul Road Maintenance	60	DAY		
	Coffering - Steel Sheet pile	Sheet Piling - Furnish Material	4,800	SF		
		Sheet Piling - Unload Sheeting	4	EA		
		Sheet Piling - Set up Rig	2	EA		
		Sheet Piling - Drive Sheets	107	EA		
		Sheet Piling - Cut Sheets	214	EA		
		Control of Water	1	LS		
	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	4,187	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	4,187	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	4,187	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	4,187	BCY		
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	1,168,454	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	1,168,454	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	1,148,454	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	20,000	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	216,898	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	216,898	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	216,898	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Excavate	247,986	BCY		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Earthwork - Type 3 Oxidized Brenna - Haul	247,986	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	247,986	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	247,986	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	0	BCY	
		Earthwork - Haul From No-Spoil Areas	1,613,338	BCY	
	Dewatering and Control of Water	Dewatering and Control of Water	30	DAY	
		Temporary Storm Sewer Pipe	300	LF	
		Control of Water	1	LS	
	Electrical Utilities	Electrical Utilities	4,500	LF	
	Channel Grade Control System	Channel Grade Control System	1	LS	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.0	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	1.0	Mile	
	Dust Control	Dust Control	60	DAY	
	Topsoil Placement	Topsoil - Install from Stockpile	183,802	BCY	
	Site Restoration	Seeding	115	AC	
		Straw Mulch and Disk Anchoring	115	AC	
		Vegetation Establishment and Maintenance	115	AC	
	Miscellaneous Features	Signage	1	LS	
		Chain link Fence	2,000	LF	
		Fence Vehicle Gates	4	EA	
	Snow Removal	Snow Removal	640	HOURS	
	Excavation and Embankment - Channel - Lower Bank Protection	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
	Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	6,824	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	6,824	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	6,824	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	6,824	BCY	
		Earthwork - Type 4 Brenna - Excavate	0	BCY	
		Earthwork - Type 4 Brenna - Haul	0	BCY	
		Earthwork - Type 4 Brenna - Spoil	0	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	0	BCY	
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	6,519	CY	
		Lower Bank Protection Geotextile - Furnish and Install	22,222	SY	
		Grade Control Riprap - Furnish and Install	306	CY	
		Grade Control Geotextile - Furnish and Install	275	SY	
		Hydraulic Structure - Maple River - Structure			
	Earthwork - Structural	Earthwork - Structural Excavation	23,417	BCY	
		Earthwork - Structural Haul	23,417	BCY	
		Earthwork - Structural Embankment	23,417	BCY	
		Aqueduct Structure and Wingwalls	262	LF	number of piles 2149
	Steel Piles	Steel Piles - Furnish Material	80,802	LF	
		Steel Piles - Set up Rig	6	EA	
		Steel Piles - Unload Piles	148	EA	
		Steel Piles - Weld Splices	218	EA	
		Steel Piles - Drive Piling	80,802	LF	
		Steel Piles - Cut Offs	871	EA	
		Steel Piles - Pile Test	24	EA	
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	24,808	SF	
		Concrete - Footing - Pour	10,260	CY	
		Concrete - Footing - 5% Waste	513	CY	
	Concrete - Walls	Concrete - Walls - Build Forms	4,000	SF	
		Concrete - Walls - Assemble and Modify Forms	6	EA	
		Concrete - Walls - Form, Strip and Cure	131,021	SF	
		Concrete - Walls - Pour	8,068	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	403	CY	
	Concrete - Piers	Concrete - Pier - Build Forms	2,000	SF	
		Concrete - Pier - Assemble and Modify Forms	2	EA	
		Concrete - Pier - Form, Strip and Cure	11,650	SF	
		Concrete - Pier - Pour	561	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	28	CY	
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	22,270	SF	
		Concrete - Elevated Deck - Pour	1,932	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	97	CY	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	4,361,982	LB		
		Steel Reinforcement Bars - Hoist	4,361,982	LB		
	Bridge Railing	Bridge Railing - Furnish and Install	2,400	LF		
	Sheet Piling	Sheet Piling - Furnish	16,740	SF		
		Sheet Piling - Unload Sheeting	12	EA		
		Sheet Piling - Set up Rig	8	EA		
		Sheet Piling - Drive Sheets	718	EA		
		Sheet Piling - Cut Sheets	0	EA		
	Structural Aggregate Backfill	Structural Aggregate Backfill - Furnish and Install	10,290	ECY		
		Aggregate Base - Class V - Furnish and Install	11,461	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	4,944	CY		
		Riprap - Furnish and Install	9,889	CY		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Ice Control Measure - Furnish and Install	1,000	LF		
		Debris Control Measure - Furnish and Install	200	LF		
		Debris Maintenance Equipment	1	LS		
		Equipment Storage Shed	5,000	SF		
		Winter Channel Heating Coil System	1	LS		
	Hydraulic Structure - Maple River - Weir to Diversion					
	Earthwork - Structural	Earthwork - Structural Excavation	24,833	BCY		
		Earthwork - Structural Haul	24,833	BCY		
		Earthwork - Structural Levee Embankment	24,833	BCY		
	Sheet Piling	Sheet Piling - Furnish	74,160	SF		
		Sheet Piling - Unload Sheeting	100	EA		
		Sheet Piling - Set up Rig	5	EA		
		Sheet Piling - Drive Sheets	680	EA		
		Sheet Piling - Cut Sheets	340	EA		
	Riprap	Select Granular Aggregate - Furnish and Install	8,278	CY		
		Riprap - Furnish and Install	16,556	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	400	SF		
		Concrete - Walls - Assemble and Modify Forms	1	EA		
		Concrete - Walls - Form, Strip and Cure	800	SF		
		Concrete - Walls - Pour	440	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	22	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	22,000	LB		
		Steel Reinforcement Bars - Hoist	22,000	LB		
	Hydraulic Structure - Lower Rush River - Site Work					
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	1,500	LF		
		Erosion Control Blanket - Furnish and Install	12,100	SY		
		Temporary Sedimentation Basins	6,700	BCY		
		Floating Silt Curtain	0	LF		
	Clearing and Grubbing	Clearing and Grubbing	7	AC		
	Strip and Stockpile Topsoil	Topsoil - Strip	185,214	BCY		
		Topsoil - Stockpile	185,214	BCY		
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	3,289	BCY		
		Aggregate Base - Class V - Furnish and Install	1,170	ECY		
		Haul Road Maintenance	30	DAY		
	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	2,667	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	2,667	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	2,667	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	2,667	BCY		
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	178,630	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	178,630	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	158,630	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	20,000	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	155,500	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	155,500	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	155,500	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Excavate	390,749	BCY		
		Earthwork - Type 3 Oxidized Brenna - Haul	390,749	BCY		
		Earthwork - Type 3 Oxidized Brenna - Spoil	390,749	BCY		
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	390,749	BCY		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Earthwork - Type 4 Brenna - Excavate	2,364	BCY	
		Earthwork - Type 4 Brenna - Haul	2,364	BCY	
		Earthwork - Type 4 Brenna - Spoil	2,364	BCY	
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	2,364	BCY	
		Earthwork - Haul From No-Spoil Areas	707,243	BCY	
	Dewatering and Control of Water	Dewatering and Control of Water	15	DAY	
		Temporary Storm Sewer Pipe	150	LF	
		Control of Water	1	LS	
	Electrical Utilities	Electrical Utilities	1,600	LF	
	Channel Grade Control System	Channel Grade Control System	0	LS	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	0.5	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.3	Mile	
	Dust Control	Dust Control	30	DAY	
	Topsail Placement	Topsail - Install from Stockpile	185,214	BCY	
	Site Restoration	Seeding	115	AC	
		Straw Mulch and Disk Anchoring	115	AC	
		Vegetation Establishment and Maintenance	115	AC	
	Miscellaneous Features	Signage	1	LS	
		Chain link Fence	1,000	LF	
		Fence Vehicle Gates	2	EA	
	Snow Removal	Snow Removal	320	HOURS	
	Excavation and Embankment - Channel - Lower Bank Protection	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY	
	Riprap Excavation	Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Excavate	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Haul	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Spoil	0	BCY	
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 4 Brenna - Excavate	3,412	BCY	
		Earthwork - Type 4 Brenna - Haul	3,412	BCY	
		Earthwork - Type 4 Brenna - Spoil	3,412	BCY	
		Earthwork - Type 4 Brenna - Semi Compact and Manage Moisture Content	3,412	BCY	
	Low Flow Channel and Lower Bank Protection	Lower Bank Protection Riprap - Furnish and Install	3,259	CY	
		Lower Bank Protection Geotextile - Furnish and Install	11,111	SY	
		Grade Control Riprap - Furnish and Install	153	CY	
		Grade Control Geotextile - Furnish and Install	138	SY	
		Hydraulic Structure - Lower Rush - Structure			
	Earthwork - Structural	Earthwork - Structural Excavation	6,600	BCY	
		Earthwork - Structural Haul	6,600	BCY	
		Earthwork - Structural Embankment	6,600	BCY	
		Drop Structure and Walls			
	Steel Piles	Steel Piles - Furnish Material	59,804	LF	
		Steel Piles - Set up Rig	4	EA	
		Steel Piles - Unload Piles	110	EA	
		Steel Piles - Weld Splices	430	EA	
		Steel Piles - Drive Piling	59,804	LF	
		Steel Piles - Cut Offs	430	EA	
		Steel Piles - Pile Test	12	EA	
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	12,000	SF	
		Concrete - Footing - Pour	5,890	CY	
		Concrete - Footing - 5% Waste	295	CY	
	Concrete - Walls	Concrete - Walls - Build Forms	18,677	SF	
		Concrete - Walls - Assemble and Modify Forms	4	EA	
		Concrete - Walls - Form, Strip and Cure	37,353	SF	
		Concrete - Walls - Pour	2,057	CY	
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	103	CY	
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	1,029,960	LB	
		Steel Reinforcement Bars - Hoist	1,029,960	LB	
	Bridge Railing	Bridge Railing - Furnish and Install	0	LF	
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	2,081	FCY	
	Riprap	Select Granular Aggregate - Furnish and Install	1,500	CY	
		Riprap - Furnish and Install	3,000	CY	
	Fish Passage System	Fish Passage System - Furnish and Install	104,000	SF	
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS	
		Electrical - Miscellaneous	1	LS	
		Safety Features - Miscellaneous	1	LS	
		SCADA (Supervisory Control and Data Acquisition) System	1	LS	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Grade Control Riprap - Furnish and Install	153	CY		
		Grade Control Geotextile - Furnish and Install	138	SY		
		Hydraulic Structure - Rush - Structure				
	Earthwork - Structural	Earthwork - Structural Excavation	7,300	BCY		
		Earthwork - Structural Haul	7,300	BCY		
		Earthwork - Structural Embankment	7,300	BCY		
		Drop Structure and Walls				
	Steel Piles	Steel Piles - Furnish Material	58,177	LF		
		Steel Piles - Set up Rig	4	EA		
		Steel Piles - Unload Piles	107	EA		
		Steel Piles - Weld Splices	436	EA		
		Steel Piles - Drive Piling	58,177	LF		
		Steel Piles - Cut Sheets	436	EA		
		Steel Piles - Pile Test	12	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	11,932	SF		
		Concrete - Footing - Pour	6,335	CY		
		Concrete - Footing - 5% Waste	317	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	2,000	SF		
		Concrete - Walls - Assemble and Modify Forms	4	EA		
		Concrete - Walls - Form, Strip and Cure	46,742	SF		
		Concrete - Walls - Pour	2,578	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	129	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	1,153,781	LB		
		Steel Reinforcement Bars - Hoist	1,153,781	LB		
	Bridge Railing	Bridge Railing - Furnish and Install	0	LF		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	2,500	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	1,700	CY		
		Riprap - Furnish and Install	3,300	CY		
	Fish Passage System	Fish Passage System - Furnish and Install	71,000	SF		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Debris Maintenance Equipment	0	LS		
		Equipment Storage Shed	2,000	SF		
		Hydraulic Structure - Large Drain Structure (1)				
	Excavation and Embankment - Channel	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	12,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	12,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	12,000	BCY		
	Concrete - Walls	Concrete - Walls - Build Forms	5,625	SF		
		Concrete - Walls - Assemble and Modify Forms	1	EA		
		Concrete - Walls - Form, Strip and Cure	5,625	SF		
		Concrete - Walls - Pour	375	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	19	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	56,250	LBS		
		Steel Reinforcement Bars - Hoist	56,250	LBS		
	Erosion Protection	Geotextile Fabric - Furnish and Install	1,195	SY		
		Riprap - Furnish and Install	796	CY		
		Hydraulic Structure - Small Drain Structure (2)				
		<i>Also includes 1 new small drain structure at RRN Control Structure</i>				
	Excavation and Embankment - Channel	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	12,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	12,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	12,000	BCY		
	Concrete - Walls	Concrete - Walls - Build Forms	3,000	SF		
		Concrete - Walls - Assemble and Modify Forms	1	EA		
		Concrete - Walls - Form, Strip and Cure	3,000	SF		
		Concrete - Walls - Pour	200	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	10	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	30,000	LBS		
		Steel Reinforcement Bars - Hoist	30,000	LBS		
	Erosion Protection	Geotextile Fabric - Furnish and Install	590	SY		
		Riprap - Furnish and Install	395	CY		
		Hydraulic Structure - Side Channel Inlet 1X72" (19)				
	Excavation and Embankment - Channel	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	228,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	228,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	228,000	BCY		

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	Manhole	96" Reinforced Concrete Manhole	589	LF		
		72" Reinforced Concrete Pipe	4,750	LF		
	Concrete - Walls	Concrete - Walls - Build Forms	22,800	SF		
		Concrete - Walls - Assemble and Modify Forms	19	EA		
		Concrete - Walls - Form, Strip and Cure	22,800	SF		
		Concrete - Walls - Pour	1,520	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	76	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	228,000	LBS		
		Steel Reinforcement Bars - Hoist	228,000	LBS		
	Erosion Protection	Geotextile Fabric - Furnish and Install	2,071	SY		
		Riprap - Furnish and Install	1,026	CY		
	Gates	72" Flap Gates	19	EA		
	Hydraulic Structure - Side Channel Inlet 2X72" (7)					
	Excavation and Embankment - Channel	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	84,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	84,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	84,000	BCY		
	Manhole	96" Reinforced Concrete Manhole	434	LF		
		72" Reinforced Concrete Pipe	3,640	LF		
	Concrete - Walls	Concrete - Walls - Build Forms	11,025	SF		
		Concrete - Walls - Assemble and Modify Forms	7	EA		
		Concrete - Walls - Form, Strip and Cure	11,025	SF		
		Concrete - Walls - Pour	735	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	37	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	110,250	LBS		
		Steel Reinforcement Bars - Hoist	110,250	LBS		
	Erosion Protection	Geotextile Fabric - Furnish and Install	805	SY		
		Riprap - Furnish and Install	406	CY		
	Gates	72" Flap Gates	14	EA		
	Hydraulic Structure - Outlet to Red River of the North - Site Work					
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS		
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	3,000	LF		
		Erosion Control Blanket - Furnish and Install	24,000	SY		
		Temporary Sedimentation Basins	6,700	BCY		
		Floating Silt Curtain	1,000	LF		
	Clearing and Grubbing	Clearing and Grubbing	25	AC		
	Strip and Stockpile Topsoil	Topsoil - Strip	81,172	BCY		
		Topsoil - Stockpile	81,172	BCY		
	Temporary Haul Roads	Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY		
		Aggregate Base - Class V - Furnish and Install	0	ECY		
		Haul Road Maintenance	0	DAY		
	Embankment - Temporary Levee	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	0	BCY		
	Excavation and Embankment - Channel Realignment	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	461,716	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	461,716	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	441,716	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	20,000	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	88,117	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	88,117	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	88,117	BCY		
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Excavate	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Haul	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Spoil	0	BCY		
		Earthwork - Type 3 Oxidized Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Earthwork - Type 4 Brenna - Excavate	72,915	BCY		
		Earthwork - Type 4 Brenna - Haul	72,915	BCY		
		Earthwork - Type 4 Brenna - Spoil	72,915	BCY		
		Earthwork - Type 4 Brenna - Compact and Manage Moisture Content	72,915	BCY		
		Earthwork - Haul From No-Spoil Areas	602,748	BCY		
	Dewatering and Control of Water	Dewatering and Control of Water	120	DAY		
		Temporary Storm Sewer Pipe	100	LF		
		Control of Water	1	LS		
	Electrical Utilities	Electrical Utilities	5,000	LF		
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2.0	Mile		

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		Restore Local Haul Roadways - Bituminous Surfacing	1.0	Mile		
		Dust Control	30	DAY		
		Topsail Placement	81,172	BCY		
		Site Restoration	50	AC		
		Seeding	50	AC		
		Straw Mulch and Disk Anchoring	50	AC		
		Vegetation Establishment and Maintenance	50	AC		
		Miscellaneous Features	1	LS		
		Chain link Fence	1,000	LF		
		Fence Vehicle Gates	2	EA		
		Snow Removal	1,000	HOURS		
		Hydraulic Structure - Outlet to Red River of the North - Structure				
		Earthwork - Structural Excavation	7,000	BCY		
		Earthwork - Structural Haul	7,000	BCY		
		Earthwork - Structural Embankment	7,000	BCY		
		Embankment - Temporary Levee	4,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	4,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	4,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	4,000	BCY		
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	2,000	BCY		
		Aggregate Base - Class V - Furnish and Install	3,400	ECY		
		Haul Road Maintenance	60	DAY		
		Concrete Rollway Structure				
		Steel Piles	35,456	LF		
		Steel Piles - Furnish Material	35,456	LF		
		Steel Piles - Set up Rig	3	EA		
		Steel Piles - Unload Piles	65	EA		
		Steel Piles - Weld Splices	554	EA		
		Steel Piles - Drive Piling	35,456	LF		
		Steel Piles - Cut Offs	0	EA		
		Steel Piles - Pile Test	0	EA		
		Concrete - Footing	2,080	SF		
		Concrete - Footing - Form Strip and Cure	2,080	SF		
		Concrete - Footing - Pour	1,944	CY		
		Concrete - Footing - 5% Waste	97	CY		
		Concrete - Piers	2,500	SF		
		Concrete - Pier - Build Forms	2,500	SF		
		Concrete - Pier - Assemble and Modify Forms	4	EA		
		Concrete - Pier - Form, Strip and Cure	16,110	SF		
		Concrete - Pier - Pour	6,769	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	338	CY		
		Steel Reinforcement Bars	585,851	LB		
		Steel Reinforcement Bars - Furnish and Install	585,851	LB		
		Steel Reinforcement Bars - Hoist	585,851	LB		
		Bridge Railing	0	LF		
		Bridge Railing - Furnish and Install	0	LF		
		Sheet Piling	2,500	SF		
		Sheet Piling - Furnish	2,500	SF		
		Sheet Piling - Unload Sheeting	2	EA		
		Sheet Piling - Set up Rig	1	EA		
		Sheet Piling - Drive Sheets	83	EA		
		Sheet Piling - Cut Sheets	166	EA		
		Structural Aggregate Backfill	2,500	ECY		
		Aggregate Base - Class V - Furnish and Install	2,500	ECY		
		Wingwalls				
		Steel Piles	36,214	LF		
		Steel Piles - Furnish Material	36,214	LF		
		Steel Piles - Set up Rig	1	EA		
		Steel Piles - Unload Piles	68	EA		
		Steel Piles - Weld Splices	140	EA		
		Steel Piles - Drive Piling	36,214	LF		
		Steel Piles - Cut Offs	0	EA		
		Steel Piles - Pile Test	0	EA		
		Concrete - Footing	10,094	SF		
		Concrete - Footing - Form Strip and Cure	10,094	SF		
		Concrete - Footing - Pour	1,618	CY		
		Concrete - Footing - 5% Waste	81	CY		
		Concrete - Walls	2,500	SF		
		Concrete - Walls - Build Forms	2,500	SF		
		Concrete - Walls - Assemble and Modify Forms	4	EA		
		Concrete - Walls - Form, Strip and Cure	70,391	SF		
		Concrete - Walls - Pour	4,600	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	230	CY		
		Steel Reinforcement Bars	475,419	LB		
		Steel Reinforcement Bars - Furnish and Install	475,419	LB		
		Steel Reinforcement Bars - Hoist	475,419	LB		
		Bridge Railing	1,400	LF		
		Bridge Railing - Furnish and Install	1,400	LF		
		Sheet Piling	10,900	SF		
		Sheet Piling - Furnish Material	10,900	SF		
		Sheet Piling - Unload Sheeting	9	EA		
		Sheet Piling - Set up Rig	2	EA		
		Sheet Piling - Drive Sheets	370	EA		
		Sheet Piling - Cut Sheets	740	EA		
		Structural Aggregate Backfill	800	ECY		
		Aggregate Base - Class V - Furnish and Install	800	ECY		
		Riprap				
		Select Granular Aggregate - Furnish and Install	1,200	CY		

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		Miscellaneous Features	Riprap - Furnish and Install	2,400	CY		
			Mechanical - Miscellaneous	1	LS		
			Electrical - Miscellaneous	1	LS		
			Safety Features - Miscellaneous	1	LS		
			SCADA (Supervisory Control and Data Acquisition) System	1	LS		
			Equipment Storage Shed	2,500	SF		
		Fish Passage System	Fish Passage System - Furnish and Install	50,000	SF		
			Hydraulic Gates - Steel - Furnish	150	SF		
			Hydraulic Gates - Steel - Install	2	EA		
			Hydraulic Gate Hoist - Furnish and Install	2	EA		
			Steel Bulkhead	1	LS		
11	Levees and Floodwalls and Floodproofing						
		Tie-Back Levee - TBL East 2B (constructed in MN)					
	Tie-Back Levee	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	17,000	LF		
			Temporary Sedimentation Basins	15,000	BCY		
		Strip and Stockpile Topsoil - Channel	Topsoil - Strip	110,024	BCY		
			Topsoil - Stockpile	110,024	BCY		
		Excavation and Embankment - Tie-Back Levee	Inspection Trench	35,250	LF		
			Earthwork - Tie Back Levee - Haul from diversion excavation	100,000	BCY	From 2019 - ND-26	
			Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	735,320	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	835,320	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	835,320	BCY		
		Topsoil Placement	Topsoil - Install from Stockpile	110,024	BCY		
		Access Surfacing	Aggregate Base - Class V - Furnish and Install	7,000	ECY		
		Site Restoration	Seeding	113	AC		
			Straw Mulching and Disk Anchoring	113	AC		
			Vegetation Establishment and Maintenance	113	AC		
		Embankment Erosion Control	Embankment Erosion Control	1	LS		
		Tie-Back Levee - TBL Cass 17 (constructed in ND)					
	Tie-Back Levee	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	11,000	LF		
			Temporary Sedimentation Basins	10,000	BCY		
		Strip and Stockpile Topsoil - Channel	Topsoil - Strip	68,739	BCY		
			Topsoil - Stockpile	68,739	BCY		
		Excavation and Embankment - Tie-Back Levee	Inspection Trench	22,320	LF		
			Earthwork - Tie Back Levee - Haul from diversion excavation	100,000	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	192,080	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	292,080	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY		
			Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	292,080	BCY		
		Topsoil Placement	Topsoil - Install from Stockpile	68,739	BCY		
		Site Restoration	Seeding	74	AC		
			Straw Mulching and Disk Anchoring	74	AC		
			Vegetation Establishment and Maintenance	74	AC		
		Embankment Erosion Control	Embankment Erosion Control	1	LS		
		Levee - Connecting Channel - Reach 2018 (ND-23, 26)					
		<i>Note: Quantities for a portion of the work included w/ Reach 2018 Diversion Channel Construction</i>					
	Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	105,000	BCY		Subtract From Reach 2018 HEI dirtwork	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	105,000	BCY			
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY			
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	105,000	BCY			
			Inspection Trench	2,000	LF		
			Instrumentation	2,000	LF		
			Monuments and Markers	1	LS		
		Embankment Erosion Control	Embankment Erosion Control	1	LS		
		Levee - Connecting Channel - Reach 2019 (ND-25)					
		<i>Note: Quantities for a portion of the work included w/ Reach 2019 of Diversion Channel Construction</i>					
	Excavation and Embankment - Channel - Type 1 Non-Saturated Non-Brenna	Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	288,863	BCY		Subtract From Reach 2019 HEI dirtwork	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	288,863	BCY			
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY			
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	288,863	BCY			
	Excavation and Embankment - Channel - Type 2 Saturated Non-Brenna	Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	142,000	BCY		Subtract From Reach 2019 HEI dirtwork	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	142,000	BCY			
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY			

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		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	142,000	BCY	
		Inspection Trench	8,200	LF	
	Miscellaneous Features	Instrumentation	8,200	LF	
		Monuments and Markers	1	LS	
	Embankment Erosion Control	Embankment Erosion Control	1	LS	
	Storage Area 1				
	Storage Area 1 - Embankments				
	Site Preparation and Traffic Control	Site Preparation and Traffic Control	1	LS	
	Temporary Erosion and Sedimentation Control	Silt Fence - Furnish and Install	60,000	LF	
		Erosion Control Blanket - Furnish and Install	4,000	SY	
		Temporary Sedimentation Basins	83,000	BCY	
	Clearing and Grubbing	Clearing and Grubbing	60	AC	
	Strip and Stockpile Topsoil	Topsoil - Strip	1,000,000	BCY	
		Topsoil - Stockpile	1,000,000	BCY	
	Excavation and Embankment	Inspection Trench	59,000	LF	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Excavate and Haul	900,000	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Spoil	1,600,000	BCY	From DC
		Earthwork - Type 1 Non-Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 1 Non-Saturated Non-Brenna - Levee Embankment	1,600,000	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Excavate and Haul	900,000	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Spoil	1,600,000	BCY	From DC
		Earthwork - Type 2 Saturated Non-Brenna - Semi Compact and Manage Moisture Content	0	BCY	
		Earthwork - Type 2 Saturated Non-Brenna - Levee Embankment	1,600,000	BCY	
		Earthwork - Haul From Channel	551,500	BCY	
	Dewatering and Control of Water	Control of Water	1	LS	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	2	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	1	Mile	
	Topsoil Placement	Topsoil - Install from Stockpile	1,000,000	BCY	
	Site Restoration	Seeding	620	AC	
		Straw Mulch and Disk Anchoring	620	AC	
		Vegetation Establishment and Maintenance	620	AC	
	Miscellaneous Features	Signage	1	LS	
		Chain link Fence	1,000	LF	
		Fence Vehicle Gates	6	EA	
		Instrumentation	59,000	LF	
	Miscellaneous	Monuments and Markers	1	LS	
	Embankment Erosion Control	Embankment Erosion Control	1	LS	
	Storage Area 1 - Inlet				
	Embankment Erosion Control	Embankment Erosion Control	1	LS	
	Hydraulic Structure - Storage Area 1 - Closure/Drainage Structure (North)				
	Hydraulic Structure - Storage Area 1 - Closure/Drainage Structure (North) - Site Work				
		<i>Note: Most Sitework is included under the Storage Area 1 Embankment</i>			
	Dewatering and Control of Water	Control of Water	1	LS	
	Electrical Utilities	Electrical Utilities	2,500	LF	
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	1.0	Mile	
		Restore Local Haul Roadways - Bituminous Surfacing	0.0	Mile	
	Site Restoration	Seeding	4	AC	
		Straw Mulch and Disk Anchoring	4	AC	
		Vegetation Establishment and Maintenance	4	AC	
	Miscellaneous Features	Signage	1	LS	
		Chain link Fence	400	LF	
		Fence Vehicle Gates	2	EA	
	Hydraulic Structure - Storage Area 1 - Closure/Drainage Structure (North) - Structure				
	Earthwork - Structural	Earthwork - Structural Excavation	1,000	BCY	
		Earthwork - Structural Haul	1,000	BCY	
		Earthwork - Structural Embankment	1,000	BCY	
	Structure and Walls				
	Steel Piles	Steel Piles - Furnish Material	14,000	LF	
		Steel Piles - Set up Rig	1	EA	
		Steel Piles - Unload Piles	26	EA	
		Steel Piles - Weld Splices	100	EA	
		Steel Piles - Drive Piling	14,000	LF	
		Steel Piles - Cut Sheets	98	EA	
		Steel Piles - Pile Test	3	EA	
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	800	SF	
		Concrete - Footing - Pour	705	CY	
		Concrete - Footing - 5% Waste	35	CY	

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

	Concrete - Walls	Concrete - Walls - Build Forms	2,000	SF		
		Concrete - Walls - Assemble and Modify Forms	2	EA		
		Concrete - Walls - Form, Strip and Cure	150,000	SF		
		Concrete - Walls - Pour	752	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	38	CY		
	Concrete - Piers	Concrete - Pier - Build Forms	0	SF		
		Concrete - Pier - Assemble and Modify Forms	0	EA		
		Concrete - Pier - Form, Strip and Cure	0	SF		
		Concrete - Pier - Pour	0	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	0	CY		
	Concrete - Elevated Deck	Concrete - Elevated Deck - Form Strip and Cure	0	SF		
		Concrete - Elevated Deck - Pour	85	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	4	CY		
	Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	233,000	LB		
		Steel Reinforcement Bars - Hoist	233,000	LB		
	Hydraulic Gates - Steel	Hydraulic Gates - Steel - Furnish	100	SF		
		Hydraulic Gates - Steel - Install	1	EA		
		Hydraulic Gate Hoist - Furnish and Install	1	EA		
	Bulkheads - Steel	Bulkheads - Steel - Furnish	1	LS		
	Bridge Railing	Bridge Railing - Furnish and Install	100	LF		
	Sheet Piling	Sheet Piling - Furnish	900	SF		
		Sheet Piling - Unload Sheeting	1	EA		
		Sheet Piling - Set up Rig	1	EA		
		Sheet Piling - Drive Sheets	61	EA		
		Sheet Piling - Cut Sheets	30	EA		
	Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	1,000	ECY		
	Riprap	Select Granular Aggregate - Furnish and Install	200	CY		
		Riprap - Furnish and Install	400	CY		
	Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
		Electrical - Miscellaneous	1	LS		
		Safety Features - Miscellaneous	1	LS		
		SCADA (Supervisory Control and Data Acquisition) System	1	LS		
		Equipment Storage Shed	2,000	SF		
	Hydraulic Structure - Storage Area 1 - Closure/Drainage Structure (East)					
	Hydraulic Structure - Storage Area 1 - Closure/Drainage Structure (East) - Site Work					
		<i>Note: Most Sitework is included under the Storage Area 1 Embankment</i>				
	Dewatering and Control of Water	Control of Water	1	LS		
	Electrical Utilities	Electrical Utilities	2,500	LF		
	Restore Local Roadways	Restore Local Haul Roadways - Aggregate Surfacing	1.0	Mile		
		Restore Local Haul Roadways - Bituminous Surfacing	0.0	Mile		
	Site Restoration	Seeding	4	AC		
		Straw Mulch and Disk Anchoring	4	AC		
		Vegetation Establishment and Maintenance	4	AC		
	Miscellaneous Features	Signage	1	LS		
		Chain link Fence	400	LF		
		Fence Vehicle Gates	2	EA		
	Hydraulic Structure - Storage Area 1 - Closure/Drainage Structure (East) - Structure					
	Earthwork - Structural	Earthwork - Structural Excavation	1,000	BCY		
		Earthwork - Structural Haul	1,000	BCY		
		Earthwork - Structural Embankment	1,000	BCY		
	Structure and Walls					
	Steel Piles	Steel Piles - Furnish Material	14,000	LF		
		Steel Piles - Set up Rig	1	EA		
		Steel Piles - Unload Piles	26	EA		
		Steel Piles - Weld Splices	100	EA		
		Steel Piles - Drive Piling	14,000	LF		
		Steel Piles - Cut Sheets	98	EA		
		Steel Piles - Pile Test	3	EA		
	Concrete - Footing	Concrete - Footing - Form Strip and Cure	800	SF		
		Concrete - Footing - Pour	705	CY		
		Concrete - Footing - 5% Waste	35	CY		
	Concrete - Walls	Concrete - Walls - Build Forms	2,000	SF		
		Concrete - Walls - Assemble and Modify Forms	2	EA		
		Concrete - Walls - Form, Strip and Cure	150,000	SF		
		Concrete - Walls - Pour	752	CY		
		Concrete - Walls, Piers and Elevated Deck - 5% Waste	38	CY		
	Concrete - Piers	Concrete - Pier - Build Forms	0	SF		
		Concrete - Pier - Assemble and Modify Forms	0	EA		
		Concrete - Pier - Form, Strip and Cure	0	SF		
		Concrete - Pier - Pour	0	CY		

Exhibit - Construction Cost Estimate Framework and Quantities - LPP NORTH DAKOTA DIVERSION

		Concrete - Elevated Deck	Concrete - Walls, Piers and Elevated Deck - 5% Waste	0	CY		
			Concrete - Elevated Deck - Form Strip and Cure	0	SF		
			Concrete - Elevated Deck - Pour	85	CY		
			Concrete - Walls, Piers and Elevated Deck - 5% Waste	4	CY		
		Steel Reinforcement Bars	Steel Reinforcement Bars - Furnish and Install	233,000	LB		
			Steel Reinforcement Bars - Hoist	233,000	LB		
		Hydraulic Gates - Steel	Hydraulic Gates - Steel - Furnish	100	SF		
			Hydraulic Gates - Steel - Install	1	EA		
			Hydraulic Gate Hoist - Furnish and Install	1	EA		
		Bulkheads - Steel	Bulkheads - Steel - Furnish	1	LS		
		Bridge Railing	Bridge Railing - Furnish and Install	100	LF		
		Sheet Piling	Sheet Piling - Furnish	900	SF		
			Sheet Piling - Unload Sheeting	1	EA		
			Sheet Piling - Set up Rig	1	EA		
			Sheet Piling - Drive Sheets	61	EA		
			Sheet Piling - Cut Sheets	30	EA		
		Structural Aggregate Backfill	Aggregate Base - Class V - Furnish and Install	1,000	ECY		
		Riprap	Select Granular Aggregate - Furnish and Install	200	CY		
			Riprap - Furnish and Install	400	CY		
		Miscellaneous Features	Mechanical - Miscellaneous	1	LS		
			Electrical - Miscellaneous	1	LS		
			Safety Features - Miscellaneous	1	LS		
			SCADA (Supervisory Control and Data Acquisition) System	1	LS		
			Equipment Storage Shed	2,000	SF		
14	Recreation Facilities	(Corps of Engineers)					
30	Planning, Engineering and Design	(Corps of Engineers)					
31	Construction Management	(Corps of Engineers)					