

Tangent Quantity - Alternative #1		
Height - "L"	Class	Quantity
110	H7	7
110	H8	1
110	H9	44
115	H7	1
115	H9	7
120	H9	4
125	H9	2
130	H9	1
135	H9	2
TOTAL		69

Tangent Quantity - Alternative #2		
Height - "L"	Class	Quantity
110	H7	3
110	H8	4
110	H9	44
115	H9	8
120	H9	3
125	H9	1
130	H9	1
135	H9	1
TOTAL		65

ITEM #	QTY	DESCRIPTION	MFG	MFG ITEM#	UNIT
OPGW ASSEMBLY					
18142	AS REQ	48 FIBER OPGW, 0.646" DIA.	AFL	DNO-8720	FT
SHIELD WIRE ASSEMBLY					
18137	AS REQ	3/8" EHS STEEL, GALVANIZED, 0.36" DIAMETER	OPEN MARKET	PER DESCRIPTION	EA
CONDUCTOR ASSEMBLY					
18069	AS REQ'D	WIRE, CONDUCTOR, BARE, ACSR, 795 KCMIL 26/7, 1.108" DIA. "DRAKE"	OPEN MARKET	PER DESCRIPTION	FT
10176	3	BRACED POST INSULATOR ASSEMBLY, VERTICAL BUNDLE, MAXIMUM WORKING VERTICAL LOAD 8,620 LBS. H315142VB03 HORIZONTAL POST, S14090171VBSS029 SUSPENSION	MACLEAN	B311F149B14140VB	EA

BITTER ROOT WIND PROJECT
 DEUEL COUNTY, SOUTH DAKOTA

Rev.	Date	Description	By
A	05/29/18	FEASIBILITY STUDY	UEI



PRELIMINARY
 NOT FOR CONSTRUCTION

THIS DRAWING IS PRELIMINARY AND IS NOT TO BE USED FOR CONSTRUCTION. FOR REVIEW PURPOSES ONLY.

Ulteig 3350 38th Avenue South
 Fargo, North Dakota 58104
 Phone: 701.280.8500
 Fax: 701.237.3191
 www.ulteig.com

Stanrock - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul
 Design By: K. LOMBARDI
 Drawn By: B. MAYHAK
 Approved By: G. PARENT
 Project Number: 18.00651

**STRUCTURE FRAMING
 DRAWING TANGENT
 STRUCTURE**

REVISION:
 A
 DWG #: BRW-TRN-S1

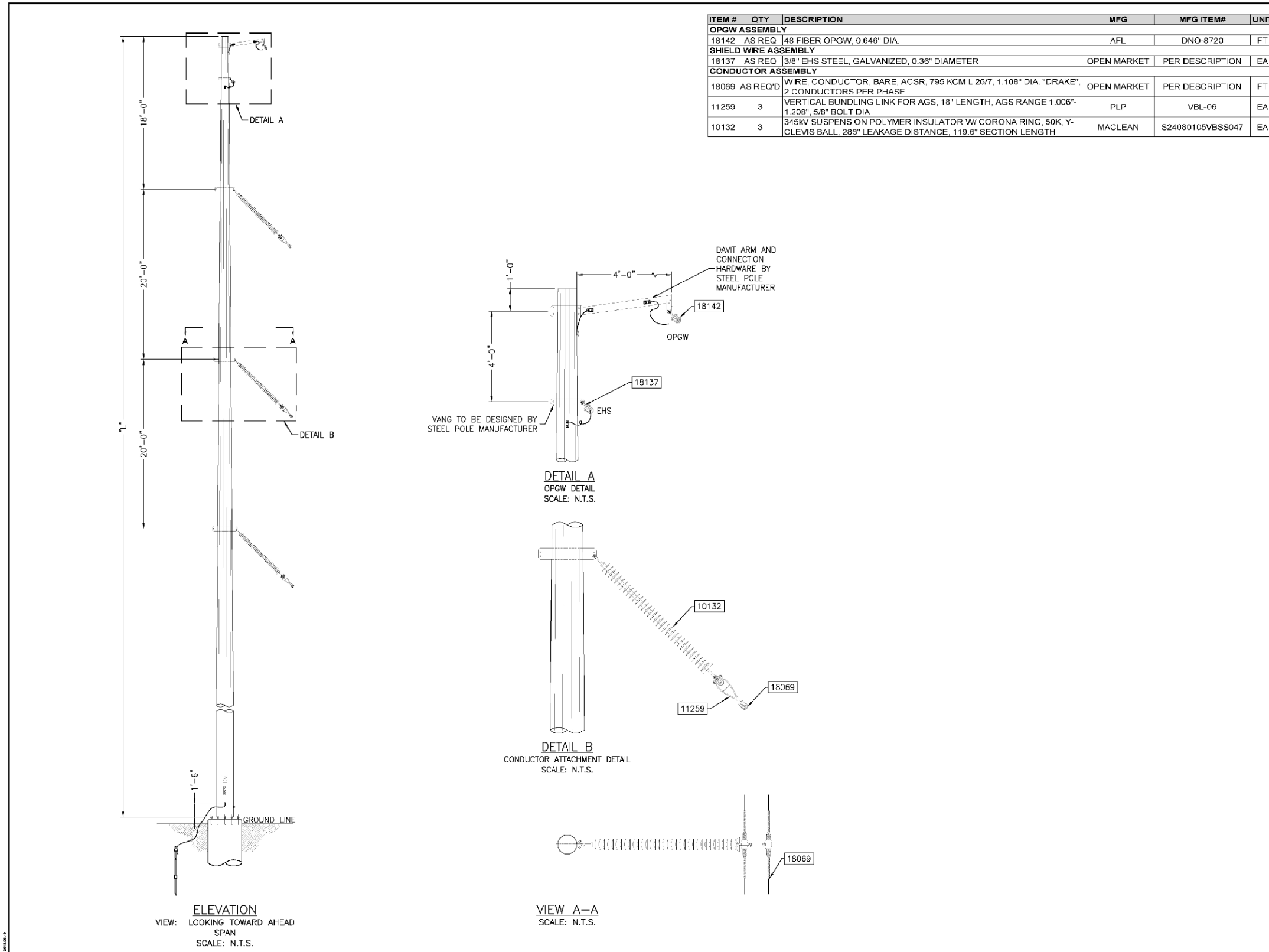
BITTER ROOT 345 KV TRANSMISSION LINE AND SUBSTATION

Proposed Structure Schematics - Tangent Structure BRW-TRN-S1



SEPT 2018

Exhibit 11a



ITEM #	QTY	DESCRIPTION	MFG	MFG ITEM#	UNIT
OPGW ASSEMBLY					
18142	AS REQ	48 FIBER OPGW, 0.646" DIA.	AFL	DNO-8720	FT
SHIELD WIRE ASSEMBLY					
18137	AS REQ	3/8" EHS STEEL, GALVANIZED, 0.36" DIAMETER	OPEN MARKET	PER DESCRIPTION	EA
CONDUCTOR ASSEMBLY					
18069	AS REQ'D	WIRE, CONDUCTOR, BARE, ACSR, 795 KCMIL 26/7, 1.108" DIA. "DRAKE", 2 CONDUCTORS PER PHASE	OPEN MARKET	PER DESCRIPTION	FT
11259	3	VERTICAL BUNDLING LINK FOR AGS, 18" LENGTH, AGS RANGE 1.006"-1.208", 5/8" BOLT DIA	PLP	VBL-06	EA
10132	3	345KV SUSPENSION POLYMER INSULATOR W/ CORONA RING, 50K, Y-CLEVIS BALL, 28" LEAKAGE DISTANCE, 119.6" SECTION LENGTH	MACLEAN	S24080105VBS047	EA

BITTER ROOT WIND PROJECT
 DEUEL COUNTY, SOUTH DAKOTA

Rev.	Date	Description	By
A	7/10/18	FEASIBILITY STUDY	UEI
B	9/19/18	REVISED STRUCTURE	UEI



PRELIMINARY
 NOT FOR CONSTRUCTION

THIS DRAWING IS PRELIMINARY AND IS NOT TO BE USED FOR CONSTRUCTION. FOR REVIEW PURPOSES ONLY.

Ulteig 3350 38th Avenue South
 Fargo, North Dakota 58104
 Phone: 701.280.8500
 Fax: 701.237.3191
 www.ulteig.com

Wetland Watch
 Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul
 Design By: K. LOMBARDI
 Drawn By: B. MAYHAK
 Approved By: G. PARENT
 Project Number: 18.00651

STRUCTURE FRAMING DRAWING
 SELF-SUPPORTING LIGHT ANGLE STRUCTURE

REVISION:
 B
 DWG #: BRW-TRN-S2

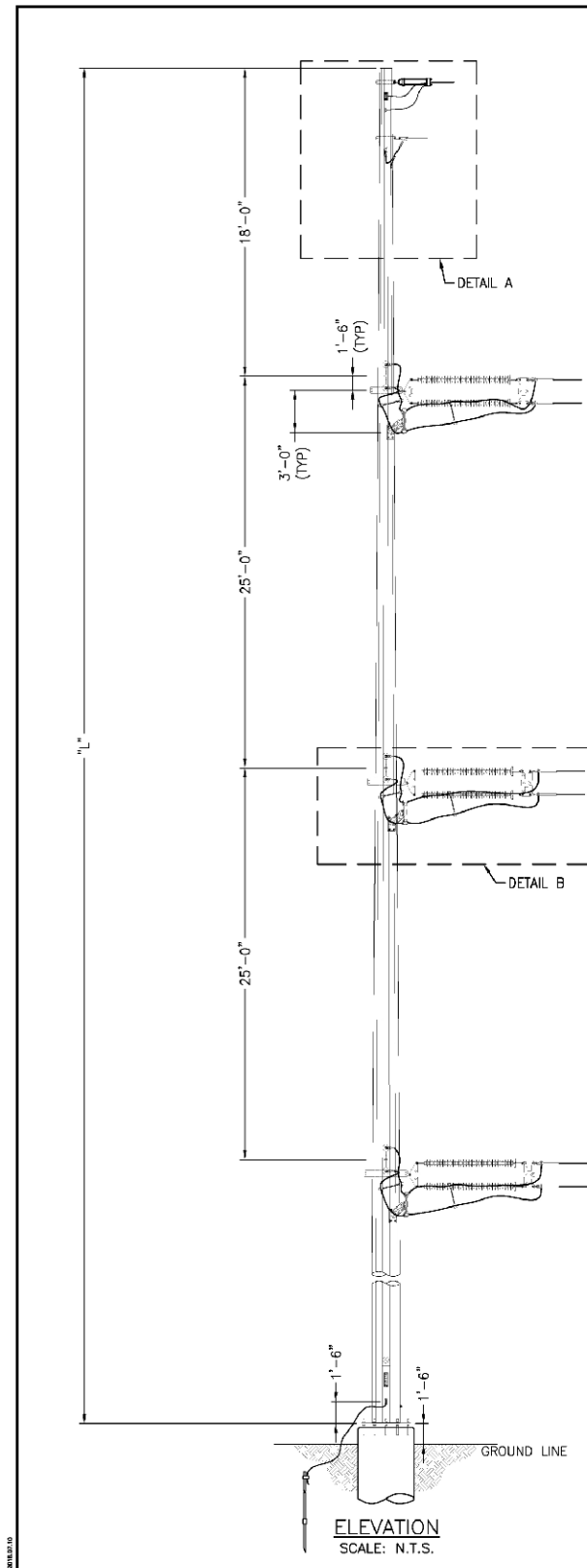
BITTER ROOT 345 KV TRANSMISSION LINE AND SUBSTATION

Proposed Structure Schematics - Self-Supporting Light Angle Structure BRW-TRN-S2

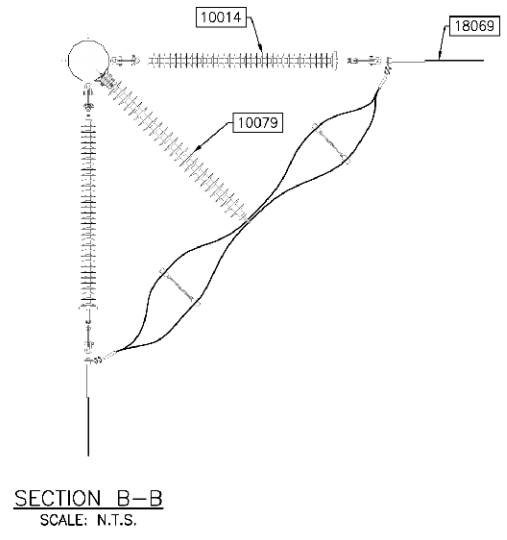
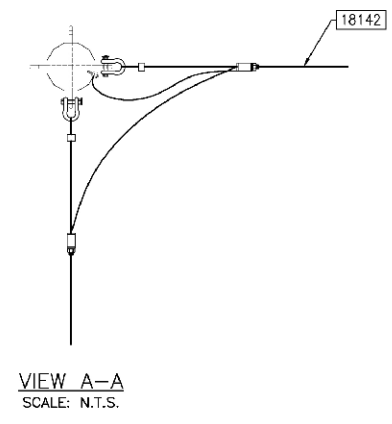
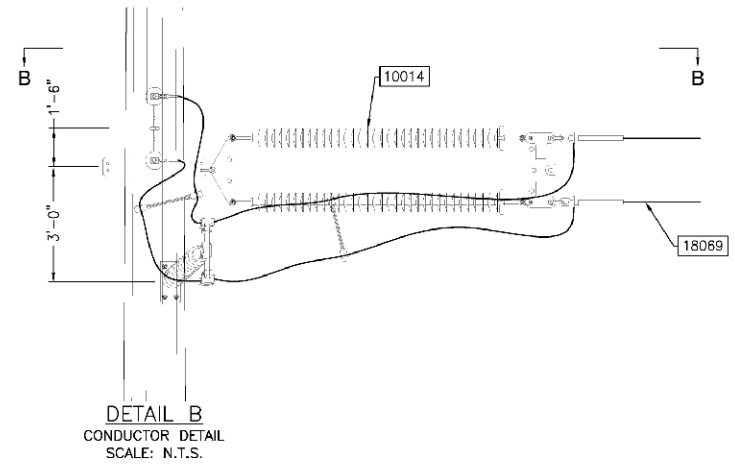
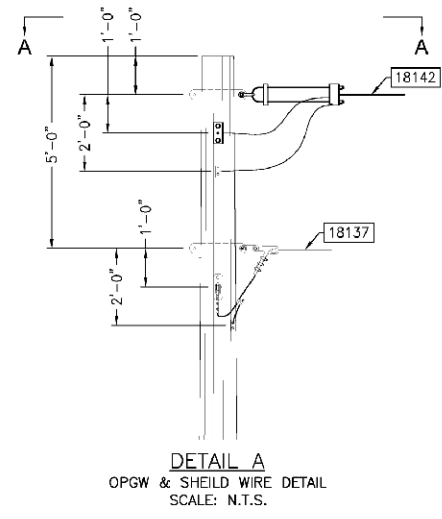


SEPT 2018

Exhibit 11b



ITEM #	QTY	DESCRIPTION	MFG	MFG ITEM#	UNIT
OPGW ASSEMBLY					
18142	AS REQ	148 FIBER OPGW, 0.646" DIA.	AFL	DNO-8720	FT
SHIELD WIRE ASSEMBLY					
18137	AS REQ	3/8" EHS STEEL, GALVANIZED, 0.36" DIAMETER	OPEN MARKET	PER DESCRIPTION	EA
CONDUCTOR ASSEMBLY					
18069	AS REQ'D	WIRE, CONDUCTOR, BARE, ACSR, 795 KCML 26/7, 1.108" DIA. "DRAKE"	OPEN MARKET	PER DESCRIPTION	FT
10014	12	345KV SUSPENSION POLYMER INSULATOR w/CORONA RING, 50K, Y CLEVIS BALL, 118" LONG, 410" LEAKAGE DISTANCE	HUBBELL	S050118H201B	EA
10079	3	INSULATOR, 345 KV, JUMPER POST, FLAT BASE, TWO HOLE BLADE	HUBBELL	523020-M003	EA



BITTER ROOT WIND PROJECT
DEUEL COUNTY, SOUTH DAKOTA

Rev.	Date	Description	By
A	7/10/18	FEASIBILITY STUDY	UE



PRELIMINARY
NOT FOR CONSTRUCTION

THIS DRAWING IS PRELIMINARY AND IS NOT TO BE USED FOR CONSTRUCTION. FOR REVIEW PURPOSES ONLY.

Ulteig 3350 38th Avenue South
Fargo, North Dakota 58104
Phone: 701.280.8500
Fax: 701.237.3191
www.ulteig.com

Stanrock - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul
Design By: K. LOMBARDI
Drawn By: B. MAYHAK
Approved By: M. PADULA
Project Number: 18.00651

STRUCTURE FRAMING
DRAWING SELF
SUPPORTING DEAD-END
STRUCTURE

REVISION:
A
DWG #: BRW-TRN-S3

BITTER ROOT 345 KV TRANSMISSION LINE AND SUBSTATION

Proposed Structure Schematics - Self-Supporting Dead-End Structure BRW-TRN-S3



SEPT 2018

Exhibit 11c