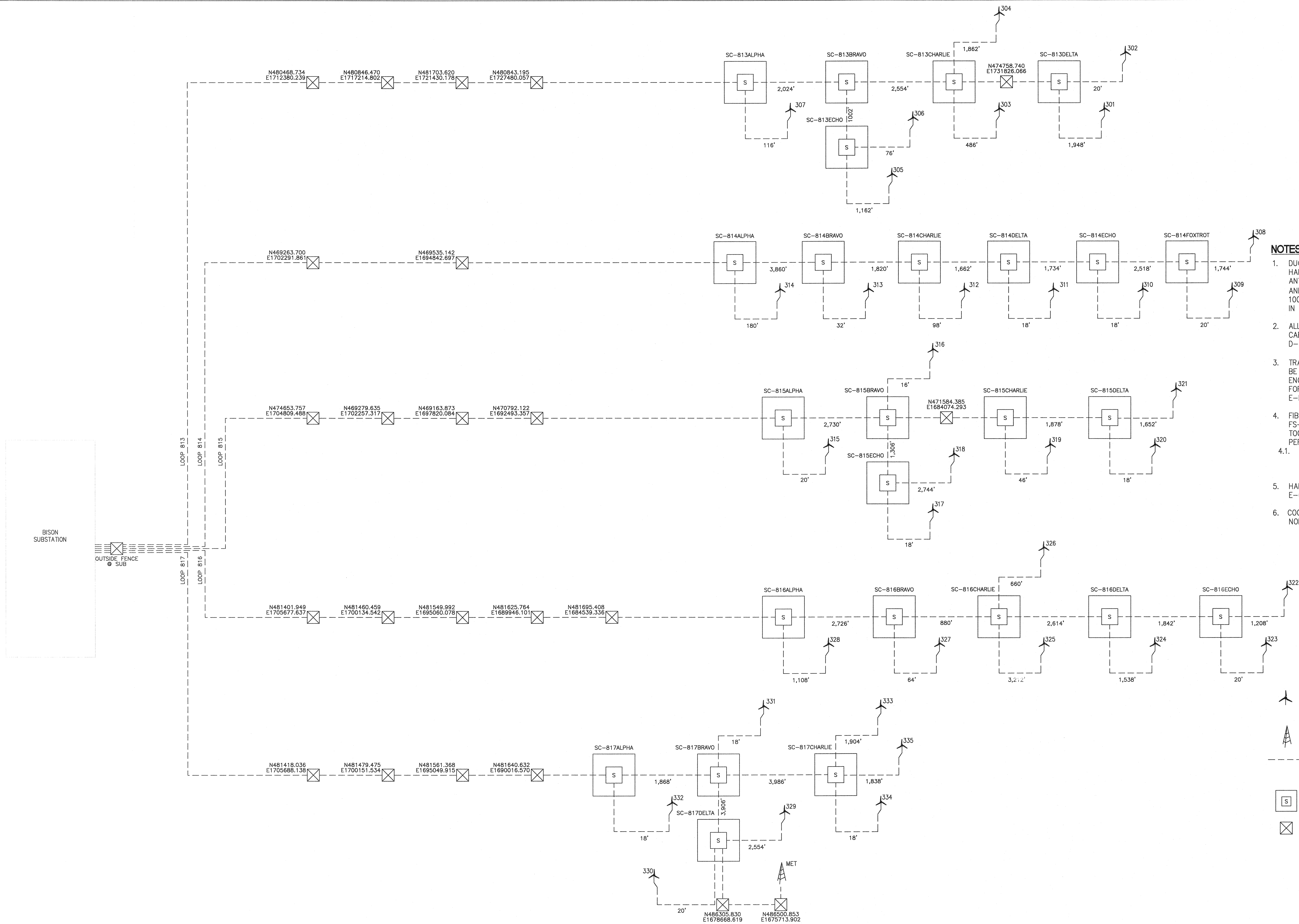




NOTES

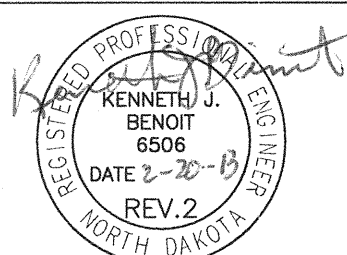
1. DUCT RUNS NOT TO EXCEED 6,000 FT. HANDHOLE SHALL BE LOCATED IN THE MIDDLE OF ANY RUN EXCEEDING APPROXIMATELY 6,000 FT. AND/OR ANY TURN OVER 30". A MINIMUM OF 100 FEET OF FIBER OPTIC CABLE MUST BE LEFT IN EACH HANDHOLE.
2. ALL FIBER IS 24 COUNT SINGLE MODE BREAKOUT CABLE. COMMSCOPE PART NUMBER D-024-LN-8W-F12NS.
3. TRACER WIRE (#12, THHN, GRAY SOLID) SHOULD BE PULLED IN EACH RUN. SEE FIBER ENCLOSURE AND FIBER PATCH PANEL DRAWINGS FOR DETAILS: E-FD-31, E-FS-31, E-FS-32, & E-FS-33.
4. FIBER CABLES FROM FS-817D TO WTG 229 & FS-817D TO MET 229 WILL BE INSTALLED TOGETHER IN THE POWER CONDUCTOR TRENCH PER E-CA-31.
- 4.1. FIBER FOR MET WILL CONTINUE PAST WTG 229 TO MET 229 IN A SINGLE, FIBER ONLY TRENCH.
5. HANDHOLE LOCATIONS ARE SHOWN ON E-GA30~E-GA36.
6. COORDINATE SYSTEM FOR HANDHOLE POINTS ARE NORTH DAKOTA SOUTH NAD83.

LEGEND

- WIND TURBINE GENERATOR
SIEMENS SWT-3.0-101
3.0MW
- METEOROLOGICAL TOWER
- FIBER OPTIC CABLE
24 STRAND, SINGLE MODE LOOSE
TUBE IN 2" HDPE INNERDUCT
- SWITCH CABINET
WITH FIBER SPLICE
ENCLOSURE
- HANDHOLE *SEE NOTE 6

Images in Drawing

B	RJG	CSF	CSF	7/12/11	DESIGN CHANGES
C	BNK	CSF	CSF	8/16/11	85% DELIVERABLE
D	BNK	CSF	CSF	9/20/11	90% DELIVERABLE
0	BNK	CSF	JLM	10/4/11	ISSUED FOR CONSTRUCTION
1	BNK	CSF	JLM	10/7/11	REVISED QUANTITIES PER COMMENTS
2	NJG	CSF	JLM	11/28/12	CONSTRUCTION REVISIONS
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

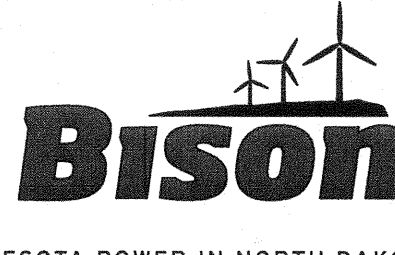


CLIENT	7/12/11	8/16/11	9/20/11	10/4/11	10/7/11	
BID						
CONSTRUCTION						
PERMITTING						
RELEASED TO/FOR	B	C	D	0	1	2
						3



Project Office:
BARR ENGINEERING CO.
4700 WEST 77TH STREET
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Ph: 1-800-632-2277
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www.barr.com

Scale	N.T.S
Date	07/08/11
Drawn	RJG
Checked	CSF
Designed	RJG
Approved	JLM



A WIND ENERGY INITIATIVE OF MINNESOTA POWER IN NORTH DAKOTA

BISON 3 WIND PROJECT
MORTON & OLIVER COUNTIES, NORTH DAKOTA
COLLECTOR SYSTEM
FIBER OPTIC CABLE LAYOUT

BARR PROJECT No.	34/33-1006
CLIENT PROJECT No.	
DWG. No.	E-FL-30
REV. No.	2