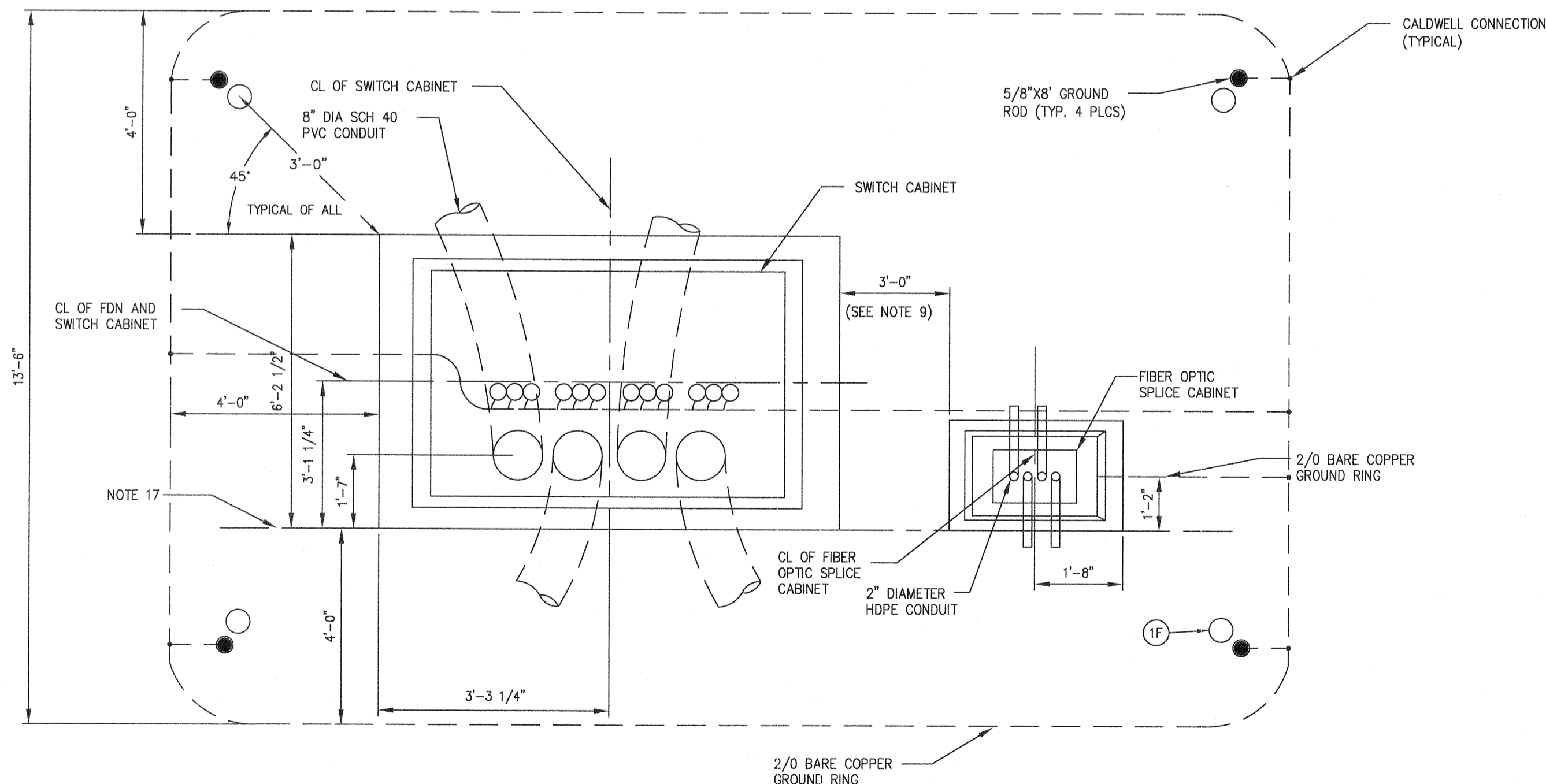
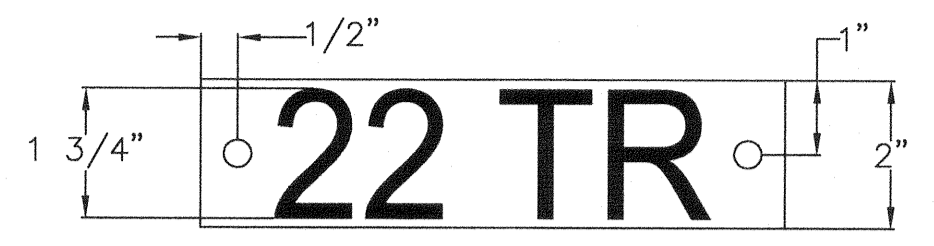


PROFILE VIEW
N.T.S.
(TYPICAL OF ALL)



PLAN VIEW
N.T.S.
(TYPICAL OF ALL)



PC-11

- NOTES:**
- SIGN BACKING FOR EXTERIOR SIGNS SHALL BE 1/8 IN ALUMINUM OR EQUAL.
 - USE SELF TAPPING SCREWS TO MOUNT SIGNAGE ON TRANSFORMER AND SWITCH DOORS.

CABLE TAG DETAIL

TRANSFORMER TAG DETAIL

BILL OF MATERIALS - SWITCH CABINET, 4-WAY, 35 KV, 600A					
ITEM	QUANTITY	UNIT	DESCRIPTION	MANUFACTURER	CATALOG
1F	4	EA	BOLLARD 5 1/2" O.D. X 6'-0", CONCRETE FILLED, PAINTED YELLOW OR PROVIDE YELLOW COVERS		
14A	*	EA	ELBOW ASSEMBLY KIT, 600 AMP, 35KV, 1/0 AWG AL, 345 MILS	COOPER	TP635G13CCS1
14B	*	EA	ELBOW ASSEMBLY KIT, 600 AMP, 35KV, 350KCMIL AL, 345 MILS	COOPER	TP635M19CCS2
15	*	EA	ELBOW ASSEMBLY KIT, 600 AMP, 35KV, 4/0 AWG AL, 345 MILS	COOPER	TP635K16CCS1
16	*	EA	ELBOW ASSEMBLY KIT, 600 AMP, 35KV, 750 KCMIL AL, 345 MILS	COOPER	TP635R25CCS1
17	*	EA	ELBOW ASSEMBLY KIT, 600 AMP, 35KV, 1000 KCMIL AL, 345 MILS	COOPER	TP635T27CCS1
18	2	EA	LUG, COMPRESSION, COPPER, 2 HOLE, 2/0 AWG FOR GROUND CONNECTION	BURNDY	YGHA26-2N
19	90	FT	WIRE, 2/0 COPPER BARE, STR		
20	16	EA	CONNECTOR, COPPER COMPRESSION #6-1/0 TO #6-1/0		
26	9	EA	FLT IND, 3 PH, TST PT MTD, 600 AMP, W/ RMT IND, 800 A TRIP	POWER DELIVERY PRODUCTS	40-3115-000-08
31	4	EA	GROUND ROD, 5/8" x 8'	BLACKBURN - OE	6258
32	4	EA	CONNECTOR, COPPER, 1/2"-5/8" ROD TO 1/0-2/0	HUBBELL/ ANDERSON	GC103-02
64	4	FT	8" SCH 40 PVC 90 DEGREE ELBOW, 48" RADIUS		

OWNER FURNISHED EQUIPMENT					
ITEM	QUANTITY	UNIT	DESCRIPTION	MANUFACTURER	CATALOG
1C	1	EA	SWITCHGEAR, PADMOUNT, 38KV PUFFER GAS, 4-WAY W/ 2/0" CABLE COMPARTMENT	G&W ELECTRIC	SPRAM-44-396F-40P1
25B	1	EA	PAD/VAULT, 4-WAY SWITCH		

- * SEE SINGLE LINE DRAWING E-SL-10 FOR PROPER ELBOW SIZING
** SEE FIBER TOPOLOGY DRAWING E-FL-10 FOR SWITCH CABINETS WITH FIBER CABINETS

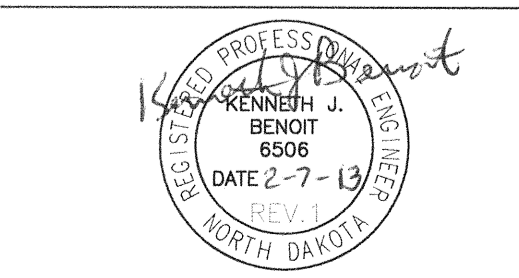
NOTES:

- INDICATE DESTINATION FOR EACH CIRCUIT.
- NOT USED.
- BOND GROUND RODS TO ALL APPLICABLE GROUNDING LUGS ON SWITCH CABINET.
- EACH SET OF MV CABLES WILL BE TERMINATED ONTO A SINGLE SET OF BUSHINGS. NO PIGGYBACKING OF ELBOWS.
- SWITCH CABINET ENCLOSURE OVERALL DIMENSIONS ARE SHOWN ONLY. SEE MANUFACTURER SPECIFICATIONS FOR DETAILED DIMENSIONS.
- FOR ANCHOR SIZING AND LOCATION, REFER TO SWITCH CABINET MANUFACTURER'S DRAWINGS.
- FLOWABLE THERMAL BACKFILL/LEAN CONCRETE BASE SHALL HAVE A MAXIMUM THERMAL RESISTIVITY OF 60 RHO.
- MINIMUM BENDING RADIUS FOR 2" HDPE CONDUIT IS 24". MINIMUM BENDING RADIUS FOR 8" SCH 40 PVC IS 48". CONTRACTOR TO VERIFY MINIMUM BENDING RADIUS FOR POWER CABLE.
- A MINIMUM SEPARATION BETWEEN SWITCH CABINET AND FIBER ENCLOSURE OF 3' IS REQUIRED TO ALLOW FOR 180 DEGREE OPENING OF BOTH ENCLOSURE DOORS.
- AREA UNDER PAD SHALL BE EXCAVATED TO A DEPTH NECESSARY TO REACH FIRM, UNDISTURBED MATERIAL, WHICHEVER IS DEEPER. IF FIRM MATERIAL HAS NOT BEEN REACHED WITHIN A DEPTH OF 5 FEET, EXCAVATE 1 FOOT BEYOND THE PERIMETER OF THE PAD AND BACKFILL THE ENTIRE EXCAVATED AREA WITH CLEAN, NON-EXPANSIVE SOIL, COMPACTED TO 90% OF MAXIMUM DENSITY. SOIL SHALL BE PLACED IN LAYERS NOT MORE THAN 6" THICK BEFORE COMPACTION. MAXIMUM DENSITY AND IN PLACE DENSITY TO BE DETERMINED PER ASTM D-1556 AND ASTM D-1557.
- BACKFILL AROUND GROUND CONDUCTOR WITH 4" OF WELL COMPACTED SELECT NATIVE WILL WITH NO ROCKS LARGER THAN WHAT WOULD PASS THROUGH A #4 SCREEN.
- MINIMUM DISTANCE BETWEEN GROUND RODS IS 10 FEET.
- SEAL CONDUIT AFTER CABLE INSTALLATION.
- DIRECTIONAL FAULT INDICATORS TO BE LOCATED AT BASE OF EACH DEAD BREAK CONNECTOR ELBOW. FAULT INDICATORS ARE TO BE INSTALLED ON ANY GENERATOR CABLES. REFER TO E-SL-10 FOR LOCATIONS.
- SEE E-FS-02 FIBER OPTIC SPLICE CABINET FOR DETAILS AND BILL OF MATERIAL FOR FIBER CABINET.
- INSTALL TAG ON FRONT OF CABINET. SEE DETAILS.
- FRONT OF SWITCH CABINET TO BE INSTALLED IN LINE WITH FRONT OF FIBER CABINET.



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ND License No. 954PE

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
A	RJG	SGP	CSF	5/27/11	60% DELIVERABLE
B	BNK	RJG	CSF	7/8/11	90% DELIVERABLE
C	BNK	RJG	CSF	7/21/11	REVISED PER CLIENTS COMMENTS
O	BNK	RJG	CSF	8/4/11	ISSUED FOR CONSTRUCTION
1	NJG	KGC	KJG	11/6/12	CONSTRUCTION REVISIONS



CLIENT	5/27/11/7/8/11/7/21/11/8/4/11
BID	
CONSTRUCTION PERMITTING	
RELEASED TO/FOR	A B C O 1 2 3
DATE RELEASED	

BARR ENGINEERING CO.
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MINNEAPOLIS, MN.
55435-4803
Corporate Headquarters: Minneapolis, Minnesota
Ph: 1-800-632-2277
Ph: (952) 832-2601
www.barr.com

Scale	N.T.S.
Date	05/27/11
Drawn	RJG
Checked	CEG
Designed	RJG
Approved	JLM



BISON 2 WIND PROJECT
MORTON & OLIVER COUNTIES, NORTH DAKOTA
34.5KV COLLECTOR SYSTEM
4-WAY SWITCH CABINET DETAIL

BARR PROJECT No.	34/33-1007
CLIENT PROJECT No.	
DWG. No.	E-SD-04
REV. No.	1