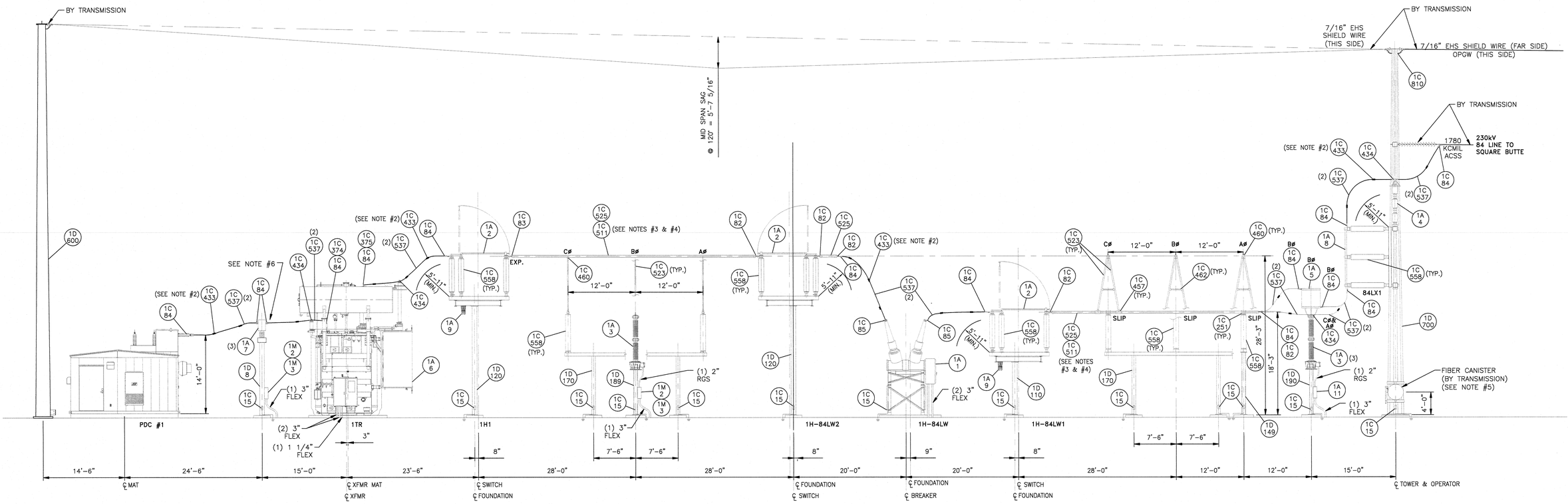
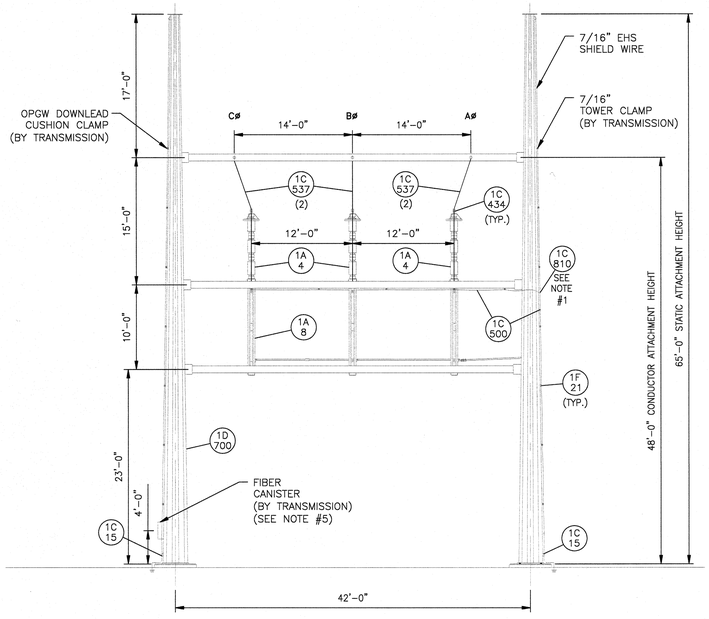
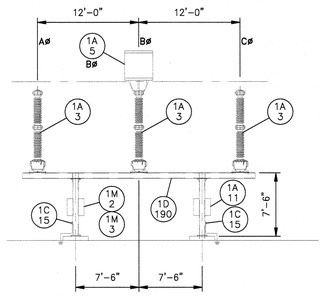


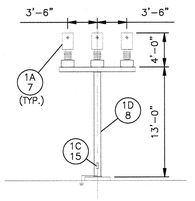
SECTION A–A



SECTION B–B



SECTION C–C



SECTION F–F

CHRIS NAGARAH — REGISTERED PROFESSIONAL ENGINEER — NORTH DAKOTA — LICENSE NO. 6478 — DATE: 03-08-12 — REV. 2

GENERAL NOTES:

1. RUN CONTINUOUS #4/0 BARE COPPER CONDUCTOR FROM H-FRAME GROUND PAD TO SURGE ARRESTORS. SECURE CONDUCTOR TO STRUCTURE WITH ITEM #F21 ON INTEGRATED MOUNTING PLATES. CONNECT 7/16" STEEL CABLE FROM THE SHIELD WIRE DEAD END ASSEMBLY TO #4/0 CU CONDUCTOR USING ITEM #C810.
2. USE CABLE SPACERS FOR 1590 AAC CONDUCTORS EVERY 5'.
3. INSTALL 336 KCMIL ACSR DAMPER WIRE IN 4" ALUMINUM BUS.
4. INSTALL CAMBER ON 4" ALUMINUM BUS.
5. RUN OPGW FIBER CABLE FROM OPT-GW DEAD END ASSEMBLY DOWN THE H-FRAME LEG TO SPLICE CANISTER. SECURE FIBER CABLE TO STRUCTURE WITH ITEM #M1 ON INTEGRATED MOUNTING PLATES.
6. FIELD TO OBSERVE POLARITY OF METERING CT'S. H1 TERMINAL SHALL BE INSTALLED TOWARDS TRANSFORMER 1TR.

NO.	DATE	REVISION DESCRIPTION	BY	APPROVED
.	.	.	.	.
.	.	.	.	.
3	3-4-13	CONSTRUCTION REVISIONS, NO CHANGES	NJG	KJB

NO.	DATE	REVISION DESCRIPTION	BY	APPROVED
2	03-08-12	ISSUED FOR CONSTRUCTION	NTC/B&V	CLN/B&V
1	6-15-11	CONSTRUCTION REVISION WO-17400	AJW	CLN/B&V
0	05-03-10	ISSUED FOR CONSTRUCTION	CLN/B&V	CLN/B&V

BLACK & VEATCH CORPORATION
ENGINEER RA DRAWN LMCQ
CHECKED CLN DATE
B&V PROJECT DRAWING NUMBER

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH DAKOTA.
SIGNED CHRIS NAGARAH (REV. 0)
DATE 05-03-10 REG. NO. 6478

minnesota power

BISON WIND GENERATING FACILITY NEW SALEM, ND

BISON 230kV SUBSTATION ELECTRICAL PLAN & ELEVATIONS SECTIONS A-A, B-B, C-C & F-F

SHEET 3 REV. 3

ME-32815-17

CADD DRAWING – FOR REPRODUCTION ONLY

SCALE: 1/8"=1'-0"

MICROFILMED / /

CODE BIS 3500 3010

ImageSite: WIND_PROJECTS