

Appendix H

Substation and Breaker Station Drawings

**Boswell Substation
Cass Lake Substation
Nary Switching Station
Wilton Substation**

FOUNDATION LEGEND

1982	EXIST	ITEM	DESCRIPTION	DWG. NO.	SH./TYPE	1982	EXIST	ITEM	DESCRIPTION	DWG. NO.	SH./TYPE
		1	TAKE OFF TOWER NO.1	G-203796	TYPE F-1			2	230KV BREAKER SLAB	MB+26011	SH.4
		2	TAKE OFF TOWER NO.2	G-203796	TYPE F-2			3	230KV FULL TEN. TOWER WITH DISC. SW. FDN.	MD+25288	SH.1
		3	230KV CIRCUIT BKR. SLAB	G-203796	TYPE F-4			14	TOWER FDN'S.	MINN 5159, M3910	
		4	230KV DISC. SW. SUPPORT	G-203796	TYPE F-5			15	TRENWA CABLE TRENCH CROSSING DETAIL	ME-25298	SH.2
		5	230KV RT. SUPPORT FDN.	G-203796	TYPE F-6			5	230 KV BREAKER SLAB	MB+26011	SH.6
		6	230KV BUS SUPPORT FDN.	G-203796	TYPE F-6			17	LITE POLE FOUNDATION	ME-26994	SH.1
		7	230KV CONTROL HSE FDN.	G-203797				18	230 KV BUS SUPPORT FDN.	MD+25290	SH.2
28		8	230KV DISC. SW. SUPPORT	MD+25289	SH.1			19	SANITARY PRIVY (ALT. NO.1)	MB+28021	SH.1
34		9	230KV BUS SUPPORT FDN.	MD+25290	SH.1						
6		10	230KV RT. SUPPORT FDN.	MD+25290	SH.1						
1		11	230KV MED. TEN. TOWER	MD+23301	SH.1						
1		11A	230 KV MED. TEN. TOWER ALTERNATE	MD+23301	SH.1						

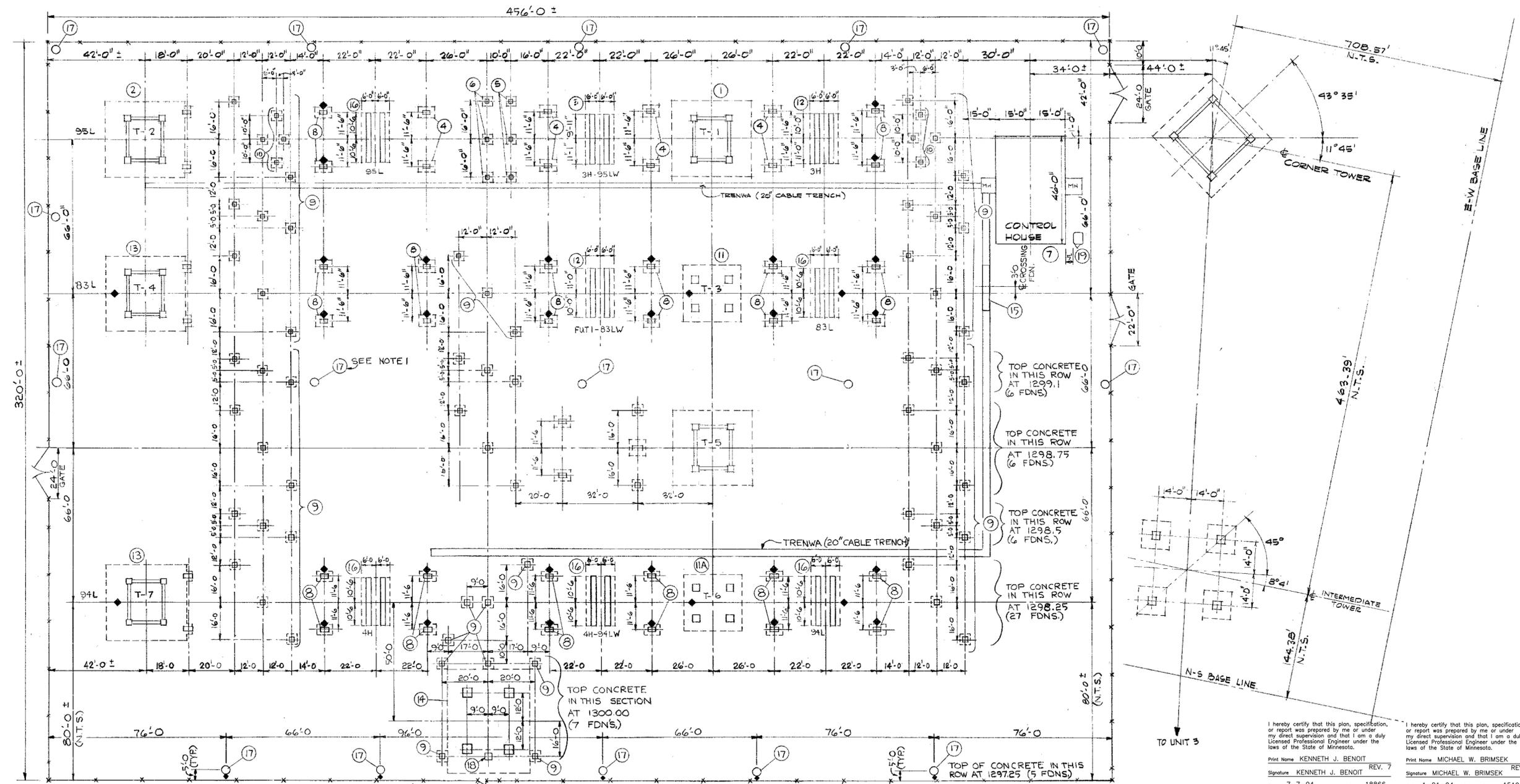
REFERENCE DRAWINGS

LIST OF DRAWINGS	
230KV SWYD. & TOWER FDN. DET. M&R	A-203578
230KV SWYD. CONTROL HSE. FDN. - M&R	G-203796
OPERATING AREA - GRADING & DRAINAGE SECT. & DETAILS	G-203797
MAIN & AUX. TRANSFER FDN. M&R	G-203696
230KV SWYD. PLAN - SECT. & DETAILS (ELEC.)	G-203766
230KV TIE - LINE ELEVATIONS & DETAILS (ELEC.)	G-204028
230KV SWYD. - YARD STR. LOCATION PLAN	G-203947
ELECTRICAL DUCT BANK (TRENWA)	G-203875
230 KV SWYD. GROUNDING PLAN SH.1	G-204025
230 KV SWYD. ELECTRICAL PLAN SH.1	ME-25297
	MF+25291

GENERAL NOTES

1. REMOVE LITE POLE FOUNDATION WHEN IT INTERFERES WITH CONSTRUCTION.

◆ - FOUNDATION ORIENTATION MARK



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: KENNETH J. BENOIT
Signature: KENNETH J. BENOIT
Date: 7-7-04
License No.: 18866

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: MICHAEL W. BRIMSEK
Signature: MICHAEL W. BRIMSEK
Date: 1-21-04
License No.: 15190

NO.	DATE	REVISION DESCRIPTION	BY	APPROVED	NO.	DATE	REVISION DESCRIPTION	BY	APPROVED	DRAWN BY	MK
7	4-1-04	REPLACE 94L OCB W.O. 16020	BAF	ZAC	4	6-23-97	SUB LINE NUMBER CHANGES	MDC	KJB	APPROVED	RWB/REH
8	8-11-04	REPLACE 94L OCB, REMOVE BACK CIRCLES NO CHANGES	BAF	ZAC	5	1-20-04	REPLACED 83L OCB WITH SF6 BREAKER	LAG	MWB	DATE	4-23-75
3	6-21-82	ADDED SANITARY PRIVY	MEP	CJT	6	3-25-04	REMOVED BACK CIRCLES W.O.15144	LAG	KJB	SCALE	1" = 20'-0"



BOSWELL ENERGY CENTER 230KV SUBSTATION
230KV SWYD.
FENCE AND FOUNDATIONS

SHEET 1 OF 1 REV. 8
ME-25727

Cass County MN
WebFusion

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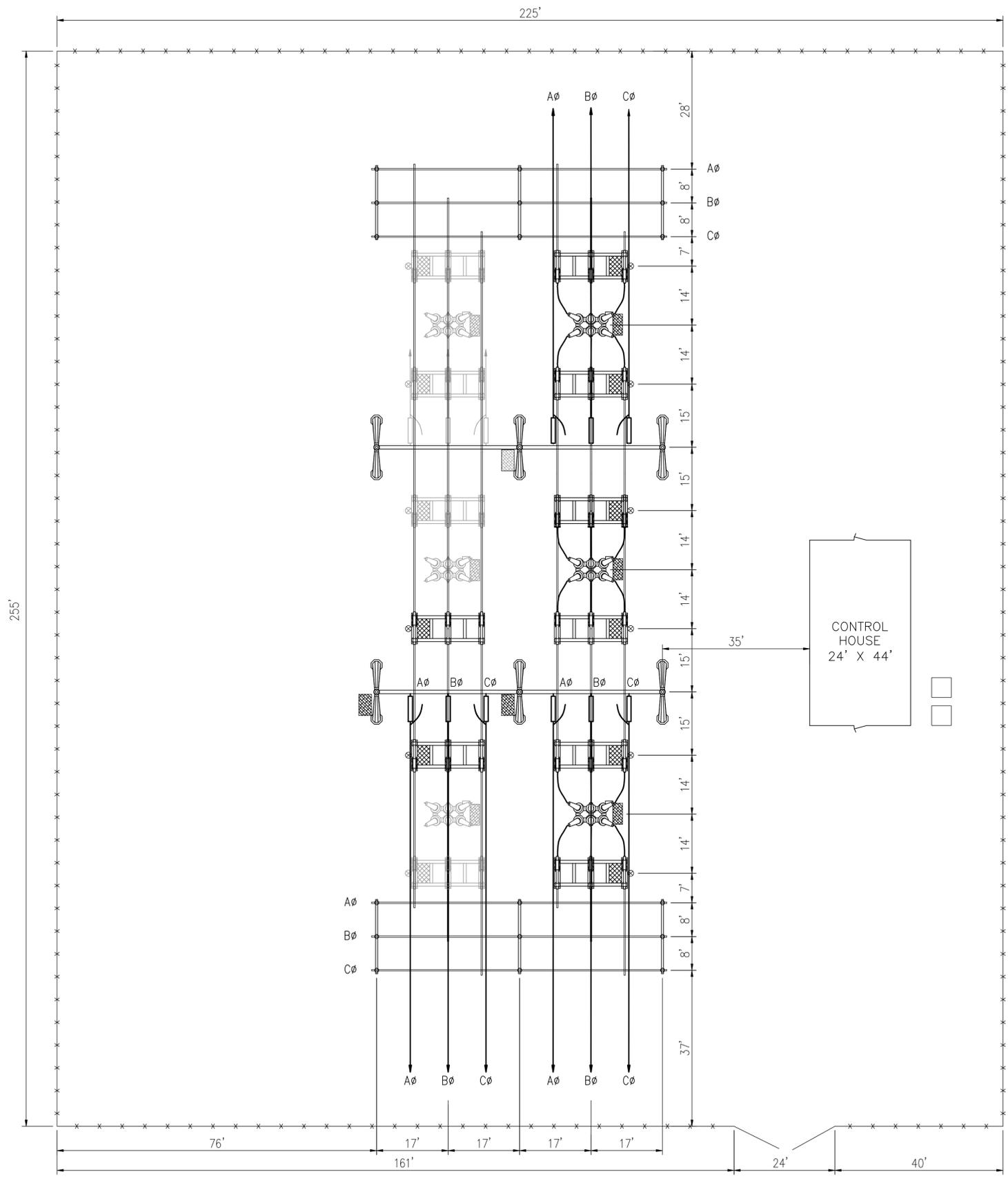
Map Layers

- Address Info
- Driveway
- Recycling/Solid Waste
- Road Information
- Township
- Townhalls
- Sections
- Parcel Features
- Parcels
- Parcel Polygon
- Annotation
- Corners
- Commissioner District
- Cities
- Plats
- Twp-Rng
- 1/4-1/4's
- Census Tract
- Contour lines (10')
- Misc Boundaries
- Nat'l Wetlands Inventory
- ESD
- MHB
- Private Stand Type
- Forestry
- Zoning
- Fire Departments
- Ambulance
- E911
- Counties
- Water Resources
- Protected Water Buffer

Scale 1:5118

Parcels: Records 1 to 1 (of 1 records selected)

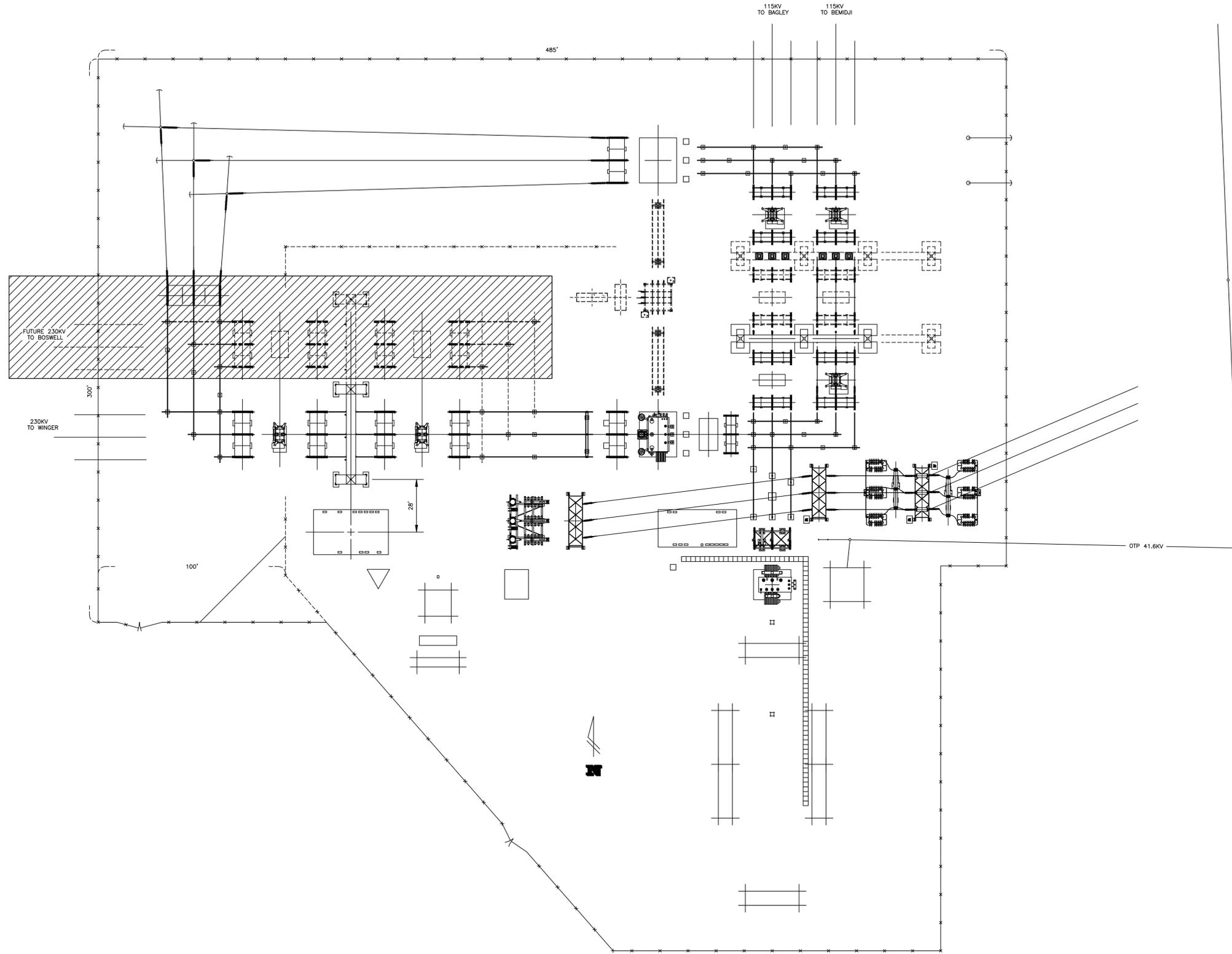
Click on the map to move the view area



					DRAWN WRL
6/11/07			ISSUED FOR CONSTRUCTION	HDR	DATE 1/7/10
4/30/07			ISSUED FOR BID (CONSTRUCTION)	HDR	APPROVED
3/23/07			ISSUED FOR BID	HDR	PROJECT #
DATE	PROJECT #	WO #	REVISIONS	BY	WO #

NARY SWITCHING STATION
PRELIMINARY YARD LAYOUT

	SCALE 1"=15'	SHEET 1 OF 1
	DWG.NO.	



				DRAWN MATEJCEK	WILTON SUBSTATION OVERALL SUBSTATION PLAN VIEW	
				DATE 3/25/04		
				APPROVED	 SCALE 1"=30'	
5/19/09			DWG. W160-46 UPDATED TO NEW FORMAT	KDM		
DATE	PROJECT #	WO #	REVISIONS	BY	WO #	DWG.NO. W160-CIV-PTPLN-002