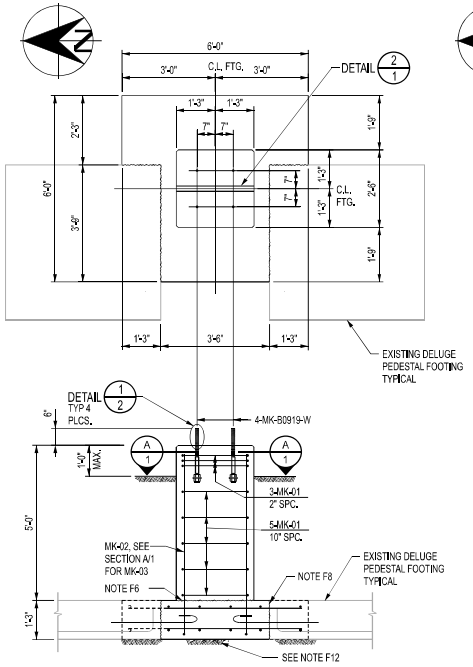
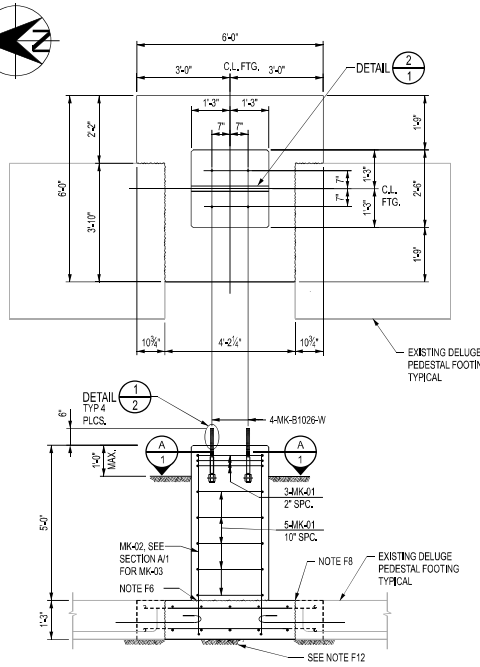
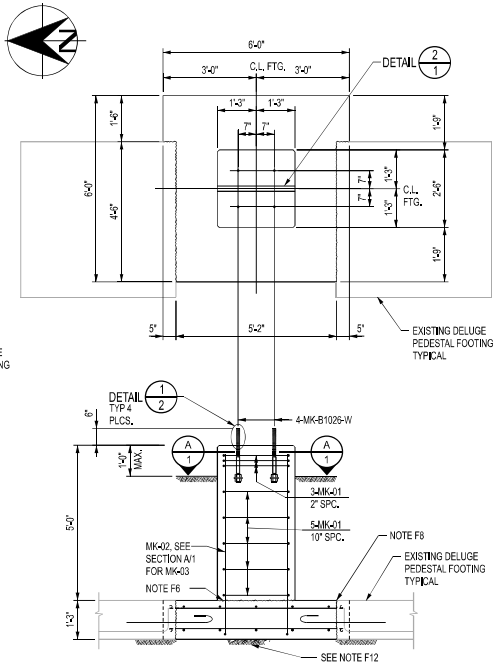


500KV INSULATOR PEDESTAL (MID) FOOTING
MK-IP3



500KV INSULATOR PEDESTAL (MID) FOOTING
MK-IP2



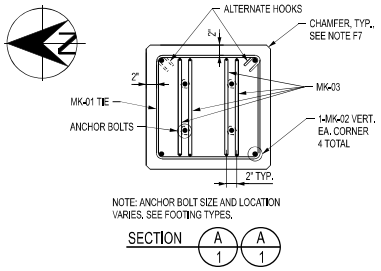
500KV INSULATOR PEDESTAL (MID) FOOTING
MK-IP1

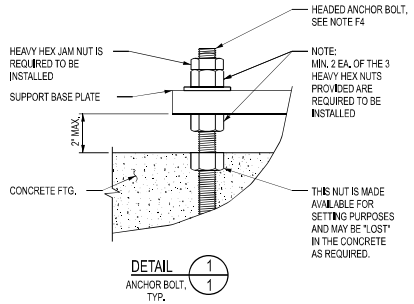
MATERIAL SCHEDULE

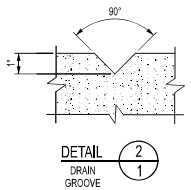
MARK	TYPE OF FOOTING	MATERIAL REQUIRED FOR ONE FOOTING		
		MARK	QTY.	DESCRIPTION
IP1	500KV INSULATOR PEDESTAL (MID)	--	2.65	CU. YDS. CONCRETE
		01	8	#3x9-4½"
		02	4	#6x6-6"
		03	4	#8x15'-0¾"
		04	14	#5x5-6" STR.
		05	12	#5x3-9"
		06	4	#5x1'-0" STR.
		07	10	#5x4'-8" STR.
		B1026-W	4	1¼" DIAx1'-9" ANCHOR BOLTS
		--	19	SQ. FT. CONCRETE BONDING AGENT (PER BPA CONSTRUCTION SPEC 03 30 00)
		--	5	HILTI HIT-HY 200-R V3 11.16 OZ CARTRIDGE (PART NO. 2334276)
IP2	500KV INSULATOR PEDESTAL (MID)	--	2.50	CU. YDS. CONCRETE
		01	8	#3x9-4½"
		02	4	#6x6-6"
		03	4	#8x15'-9¾"
		04	16	#5x5-6" STR.
		05	10	#5x3-9"
		06	4	#5x1'-8" STR.
		09	8	#5x3-8½" STR.
		B1026-W	4	1¼" DIAx1'-9" ANCHOR BOLTS
		--	18	SQ. FT. CONCRETE BONDING AGENT (PER BPA CONSTRUCTION SPEC 03 30 00)
		--	4	HILTI HIT-HY 200-R V3 11.16 OZ CARTRIDGE (PART NO. 2334276)
IP3	500KV INSULATOR PEDESTAL (MID)	--	2.39	CU. YDS. CONCRETE
		01	8	#3x9-4½"
		02	4	#6x6-6"
		03	4	#8x15'-9¾"
		04	14	#5x5-6" STR.
		05	10	#5x3-9"
		10	4	#5x1'-9" STR.
		11	8	#5x3-0" STR.
		B1026-W	4	1¼" DIAx1'-9" ANCHOR BOLTS
		--	19	SQ. FT. CONCRETE BONDING AGENT (PER BPA CONSTRUCTION SPEC 03 30 00)
		--	4	HILTI HIT-HY 200-R V3 11.16 OZ CARTRIDGE (PART NO. 2334276)

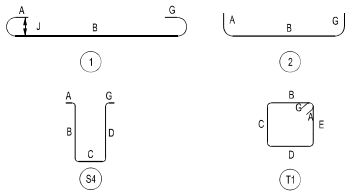
REINFORCING SCHEDULE

MARK	BAR SIZE	TYPE	A	B	C	D	E	G	J
01	#3	T1	0'-4¾"	2'-2"	2'-2"	2'-2"	2'-2"	0'-4¾"	--
02	#6	2	1'-0"	5'-6"	--	--	--	0'-0"	--
03	#6	S4	1'-4"	5'-6"	2'-1¾"	5'-6"	--	1'-4"	--
05	#5	1	0'-7"	2'-9"	--	--	--	--	0'-5"









DESIGN NOTES:

D1. REFERENCES INCLUDE THE FOLLOWING:
"BPA SUBSTATION OUTDOOR EQUIPMENT STEEL SUPPORT AND FOOTINGS - LOADING AND DESIGN CRITERIA, STD-DS-000030-03" "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318) AND COMMENTARY (ACI 318R). AMERICAN CONCRETE INSTITUTE" "MANUAL OF STEEL CONSTRUCTION - AMERICAN INSTITUTE OF STEEL CONSTRUCTION."

D2. DESIGN CRITERIA:
EXTREME WIND: 80 MPH WITH A 1.2 GUST FACTOR.
GLAZE ICE AND WIND: 1" RADIAL ICE (57 PCF), 56 MPH WIND.
RIME ICE AND WIND: 2" RADIAL ICE (15 PCF), 40 MPH WIND.
SEISMIC: 0.4G WITH A 3.24 DYNAMIC AMPLIFICATIONFACTOR APPLIED TO EQUIPMENT.
EQUIPMENT CANTILEVER: 2.5 KIPS.
SOIL: 24" FROST DEPTH, 6400 PSF BEARING PRESSURE.

D3. DESIGN EQUIPMENT:
BUS: 5" DIA. (5.563 O.D., 5.057 LB/FT WT.), 19' SPAN .
INSULATOR: TAPERED STATION POST (128" HT., 863 LB. WT., 11" AVG. DIA.).
SUPPORT: SEE DRAWING 264386 SHT. 1.

FABRICATION NOTES:

F1. CONCRETE f'c = 4500 PSI INSTALLED. (3000 PSI ASSUMED FOR DESIGN)
F2. REINFORCING STEEL fy = 60000 PSI.
F3. REFER TO DRAWING 263940 SHT. 1 FOR REINF. DETAILING AND COVER.
F4. REFER TO DRAWING 263939 SHT. 1 FOR ANCHOR BOLT DETAILS.
F5. FOR OTHER GENERAL REINFORCED CONCRETE CONSIDERATIONS SEE ACI-318 AND BPA CONSTRUCTION SPECIFICATION 03 30 00.
F6. CONSTRUCTION JOINT. PREPARE SURFACE AND APPLY BONDING AGENT AS REQUIRED PER BPA CONSTRUCTION SPECIFICATION 03 30 00 AND MANUFACTURER'S SPECIFICATIONS.
F7. CHAMFER EXPOSED EDGES ¾" PER BPA CONSTRUCTION SPECIFICATION 03 10 00.
F8. SURFACE TO BE JOINED SHALL BE MECHANICALLY ROUGHENED TO ¼" AMPLITUDE AND CLEANED WITH HIGH-PRESSURE WASH PRIOR TO APPLYING BONDING AGENT. BONDING AGENT SHALL BE APPLIED AT JOINT PER THE INSTRUCTIONS OF THE MANUFACTURER USING BRUSH, ROLLER OR SPRAY. EXISTING CONCRETE SURFACE TO BE JOINED MUST BE CLEAN, FREE FROM ANY LOOSE MATERIAL, OIL, LAITANCE OR EFFLORESCENCE. BONDING AGENT TO CONFORM TO BPA CONSTRUCTION SPECIFICATION 03 30 00.
F9. HAMMER DRILL INTO EXISTING CONCRETE AND INSTALL #5 REBAR DOWELS A MINIMUM OF 19" WITH HILTI HIT-HY 200 V3 PER MANUFACTURER RECOMMENDATIONS.
F10. DO NOT EXCAVATE BELOW EXISTING FOOTINGS. COMPACT SUBGRADE TO MINIMUM 95% OF MAXIMUM DRY DENSITY PER ASTM D 1557.
F11. LOCATE EXISTING REBAR PRIOR TO DRILLING INTO EXISTING FOOTING. ADJUST DOWELS AS NEEDED TO MISS THE EXISTING REBAR.
F12. INSTALL ON UNDISTURBED SOIL OR COMPACTED GRANULAR BACKFILL AS REQUIRED BY THE GEOTECHNICAL REPORT. SUBBASE TO BE PREPARED BASED ON REQUIREMENTS FROM THE GEOTECHNICAL REPORT.
F13. TORQUE ANCHOR BOLT NUTS PER BPA CONSTRUCTION SPECIFICATION 01 73 10.
F14. REFER TO SHEET 2 FOR ADDITIONAL REINFORCING INFORMATION AND REQUIREMENTS.

264386	1	STD. SUBST. STRUCT. 500KV SUPPORT DETAILS (MK-500M)
263939	1	HEADED ANCHOR BOLTS
263940	1	HOOK AND BEND DIMENSIONS FOR REINFORCING BARS
DRAWING NO.	SHEET	TITLE
REFERENCE DRAWINGS		

NO.	FA	W.O. 629712	DESCRIPTION	BY	DATE	PDC/APPROVED BY

DESIGNED BY: DSGN: BPA PLANS/VERMAN
DRWN: BPA PLANS/HAMLIN
CHKD: BPA P.C./WEHRGREN
REVW:
CNCR:
APPROVED BY: TELO
DATE: 05/12/2026

BONNEVILLE POWER ADMINISTRATION
UNITED STATES DEPARTMENT OF ENERGY

COLUMBIA GENERATION STATION
FOOTING DETAILS
500KV INSULATOR PEDESTAL (MID)
MK-IP1, MK-IP2 & MK-IP3

SOURCE	SIZE	SERIAL	SHEET	REVISION
SFS	ANSI D	362627	1 OF 2	0

NOT APPROVED UNTIL DIGITALLY SIGNED & CERTIFIED ICON APPEARS BELOW TITLE BLOCK