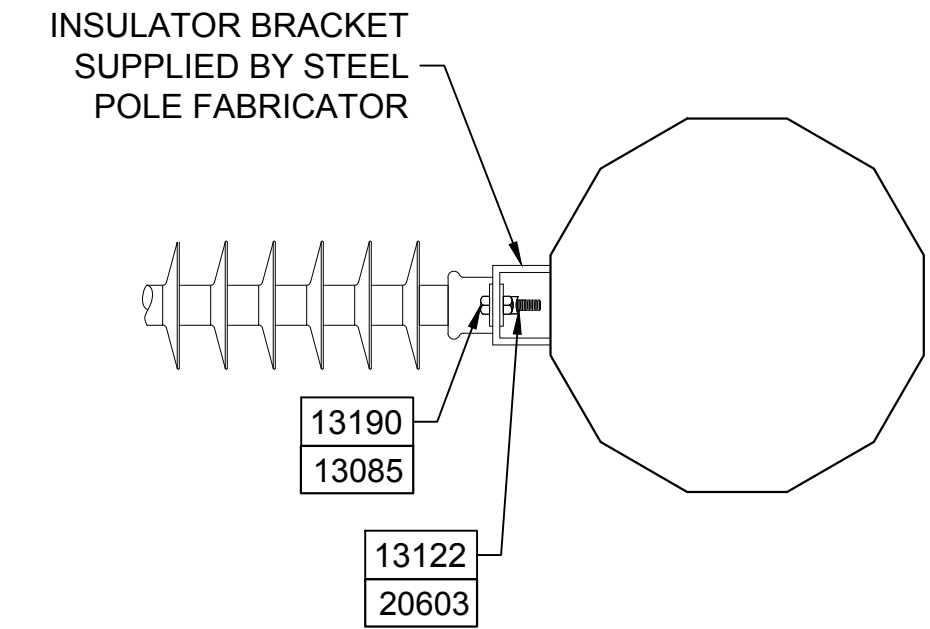
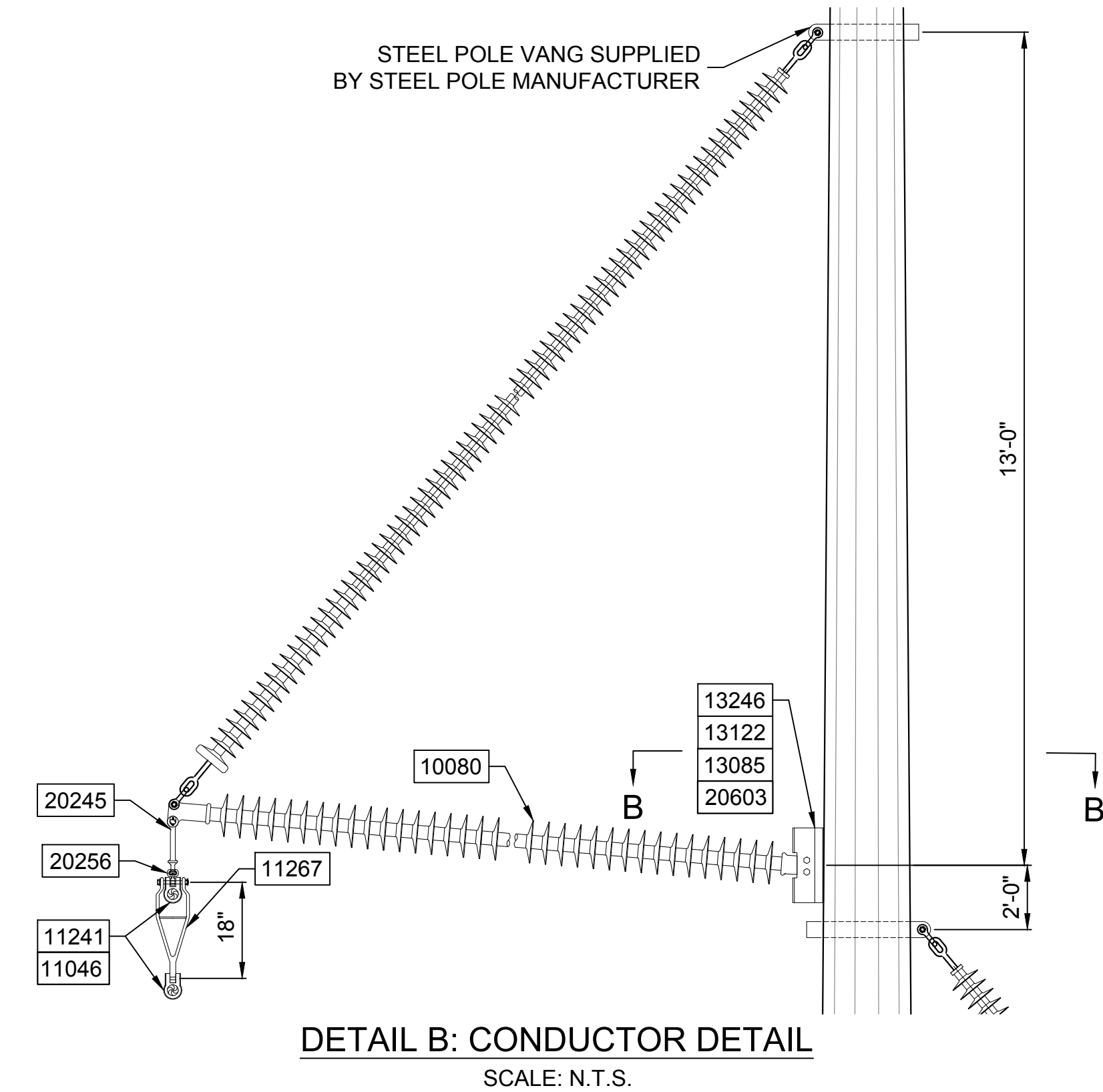
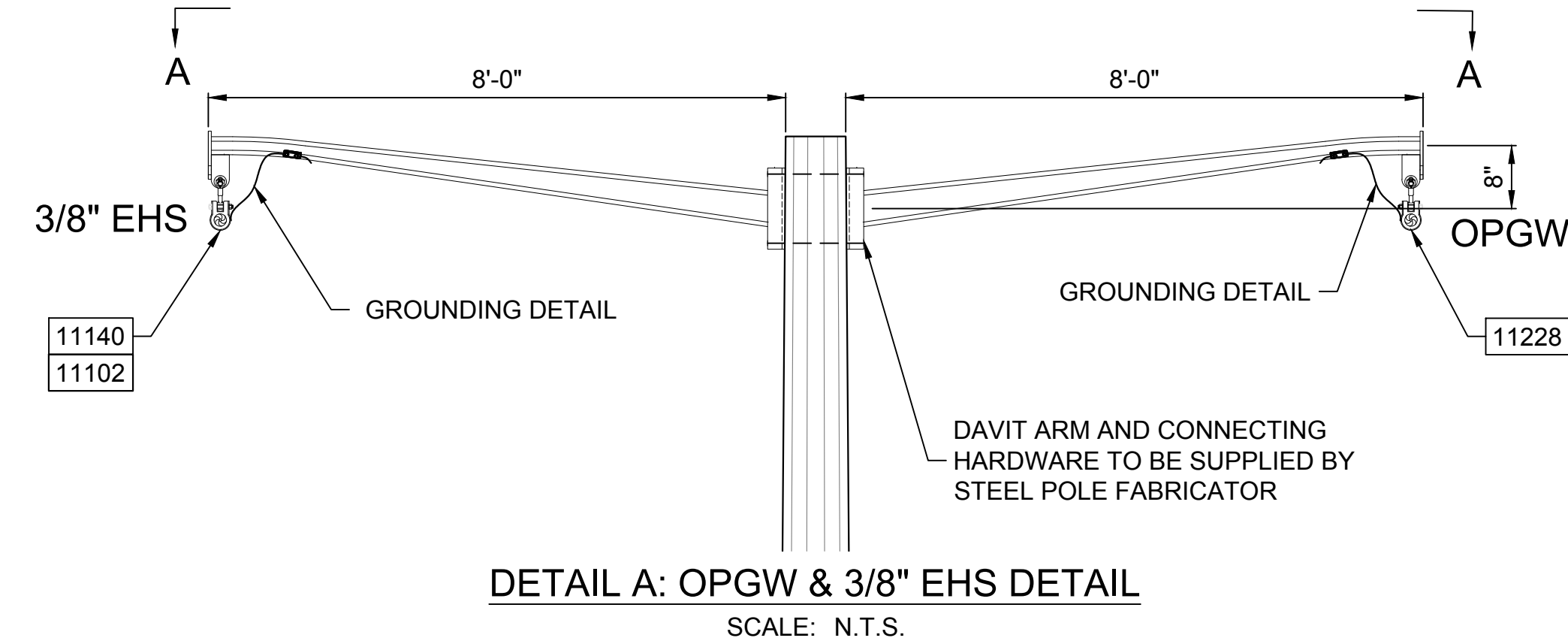
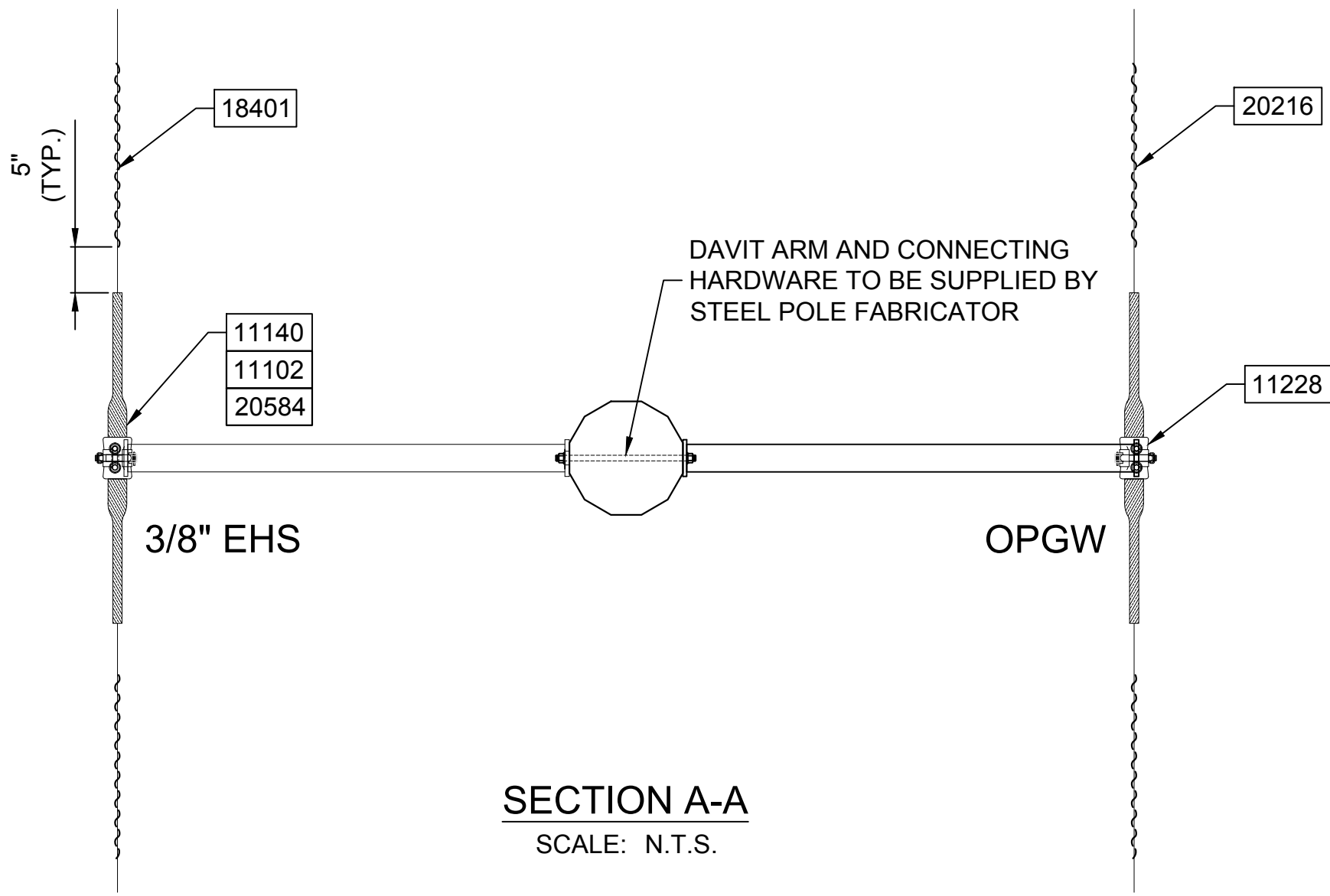
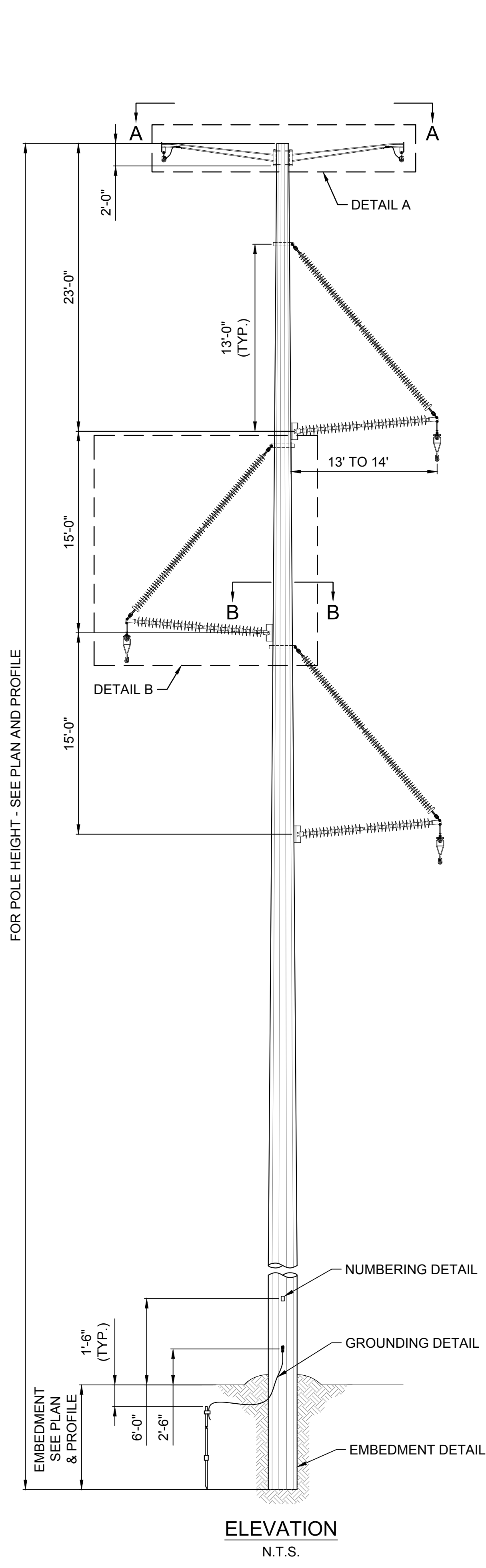


Appendix J – Typical Transmission Structure Drawings

ITEM #	QTY	DESCRIPTION	MFG	MFG ITEM#
10080	3	INSULATOR, 345KV, BRACED POST, FLAT BASE, W/CORONA RING AND ANCHOR SHACKLE. 12.5K WORKING LOAD, 15 DEGREE UPSWEEP ANGLE. 164.8" SECTION LENGTH	HUBBELL	BLP754F15001
11102	1	Y-CLEVIS, CLEVIS, 30K	HUBBELL	YCC30
11140	1	CLAMP, SUSPENSION, ARMOR GRIP, SINGLE, FOR 3/8" EHS, W/ 26" LONG ARMOR RODS	PLP	AGS-7104S
11017	6	ARMOR GRIP, SUSPENSION, EHV w/ PARROT-BILL END RODS, FOR 954 54/7 "CARDINAL" ACSR	PLP	AGS-5513
11228	1	SUSPENSION CLAMP, SINGLE AGS, FOR OPGW DIA RANGE 0.512" TO 0.536", W/ Y-CLEVIS FOR CLAMP, INCL #4 COPPER GROUND WIRE	PLP	4300109GYC
11267	3	VERTICAL BUNDLING LINK FOR CGS, 18" LENGTH, FITS ALL CGS CLAMPS, 5/8" BOLT DIA.	PLP	VBL-MS-11302
13085	6	WASHER, ROUND, FLAT, FOR 1" BOLTS, GALVANIZED	HUGHES	RW3-100
13122	6	NUT, LOCK, MF, SQUARE, FOR 1 IN BOLT	HUGHES	MF100
13246	6	BOLT, MACHINE, SQ HEAD, 1" W/ 4" THREAD AND NUT, 10" LONG	HUGHES	B1010-4
18401	2	DAMPER, SPIRAL, FOR 3/8" EHS	PLP	5050104
20216	2	DAMPER, VIBRATION, SPIRAL, FOR 0.462" TO 0.563" DIA WIRE	PLP	5050105
20245	3	Y-CLEVIS, BALL, HOT LINE, 30K ULT, 9-5/16" LONG, ANSI 52-3 AND 52-5 BALL, 3/4" Y-CLEVIS PIN DIA	HUBBELL	HYBC30
20256	3	SOCKET EYE, 30K ULT, FOR ANSI 52-3 AND 52-5 BALL	PLP	SE-5157
20584	1	CHAIN LINK, 30K, 2-1/4" LONG, 1" OPENING	HUBBELL	LK30
20603	6	SQUARE WASHER, 3" X 3" X 1/4", FOR 1" DIA BOLT	HUGHES	SW3-100



FOR POLE HEIGHT - SEE PLAN AND PROFILE



CROCKER WIND

Clark County, South Dakota

Rev.	Date	Description	By
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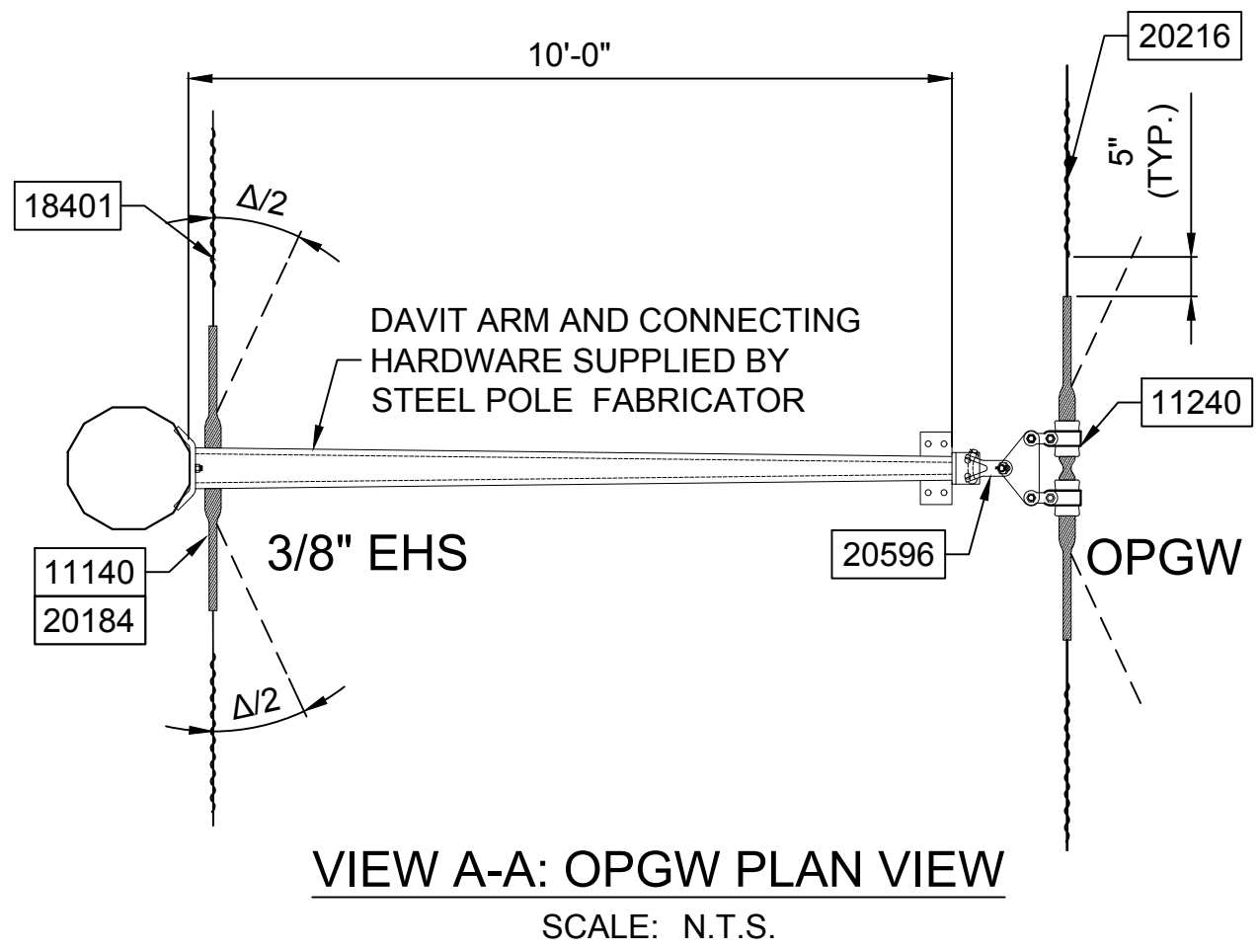
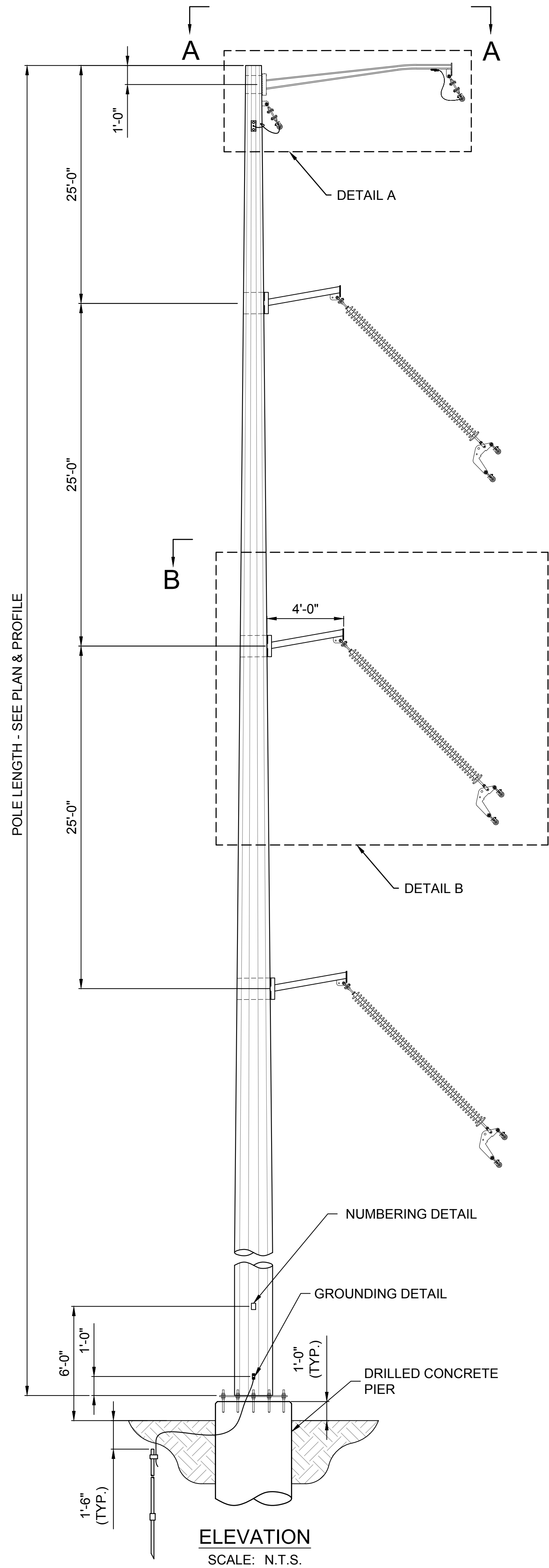
Design By: ZPB
Drawn By: HL
Approved By: SSF
Project Number: 16.01147

TRANSMISSION LINE
SINGLE CIRUIT,
TANGENT BRACED LINE
POST, SINGLE POLE STEEL

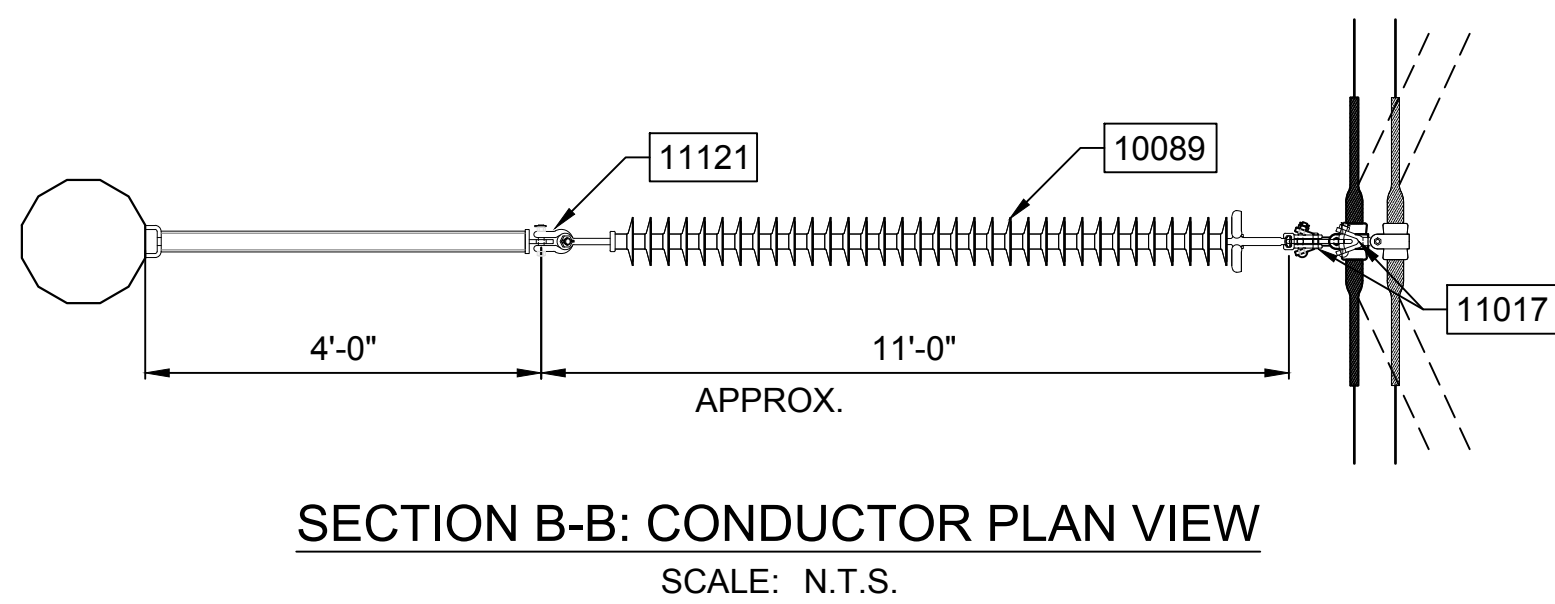
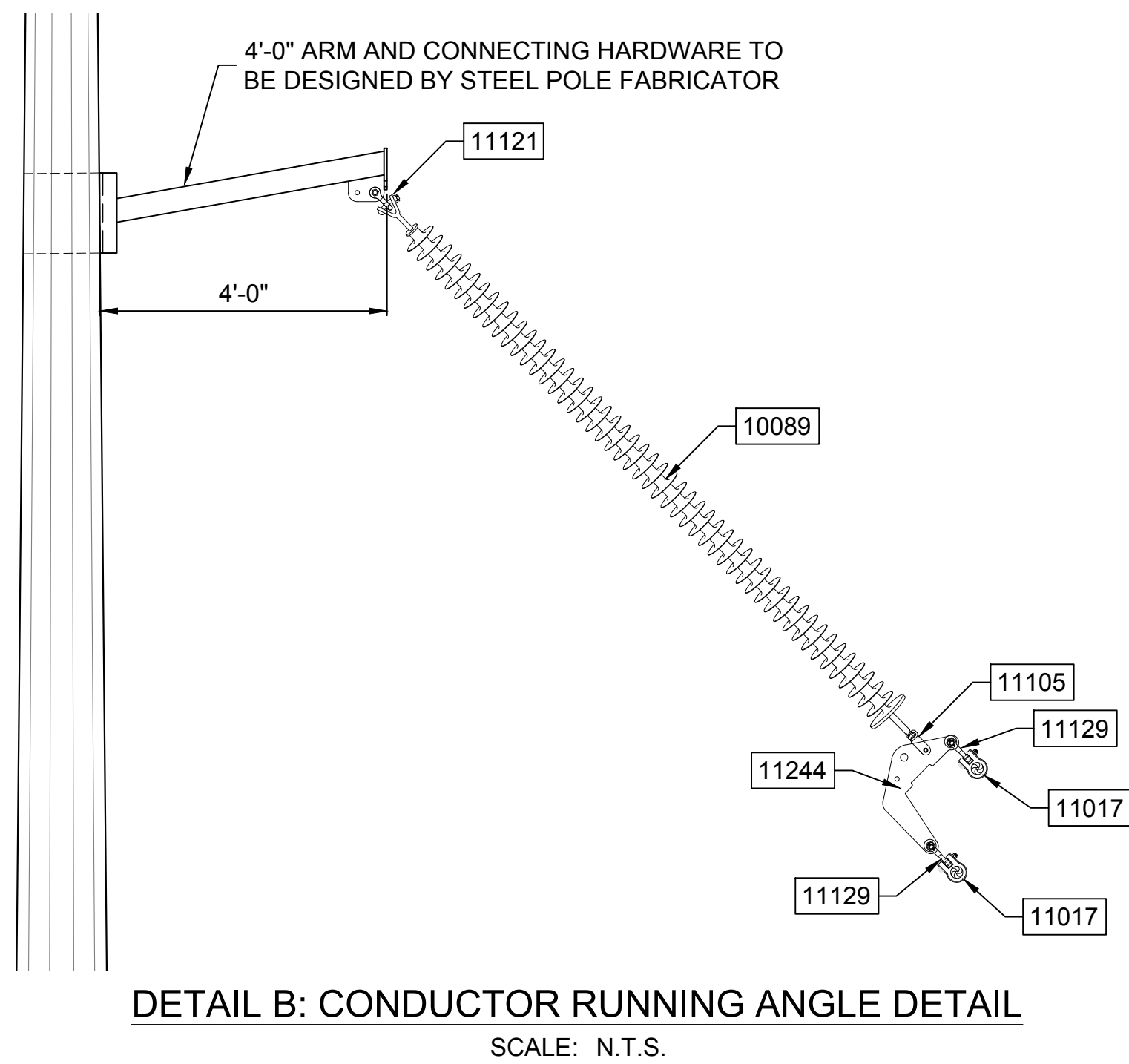
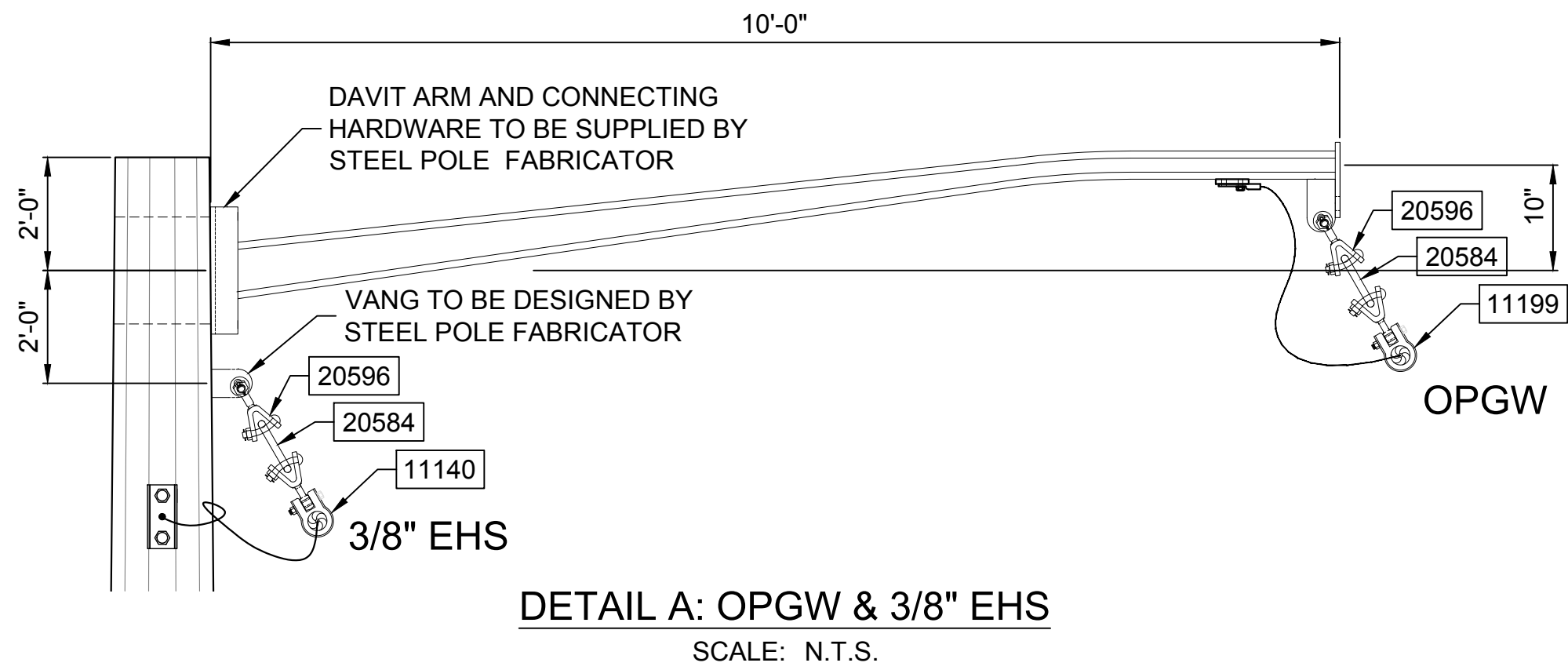
DWG #: SD149W.UEI.DWG
ST.TRAN.400

REVISION: AA

WE CONSULTING ENGINEERS PROJECT NO. 16-01-0147 TRANSMISSION LINE ELECTRICAL DESIGN SHEET 1 OF 10



ITEM #	QTY	DESCRIPTION	MFG	MFG ITEM#
10089	3	345kV SUSPENSION POLYMER INSULATOR w/CORONA RING, 50K, Y CLEVIS BALL, 403" LEAKAGE DISTANCE	HUBBELL	S050116H201B
11105	3	SOCKET,Y-CLEVIS, 50K, W/SPHERICAL NUT	HUBBELL	SYC50SN
11121	3	ANCHOR SHACKLE, 60K, WIDE THROAT, 7/8" COTTER PIN DIA	HUBBELL	AS50WBNK
11129	6	Y-CLEVIS EYE, 25K ULT, 13/16" EYE HOLE, 1-1/16" EYE WIDTH	PLP	YC-5209
11140	1	CLAMP, SUSPENSION, ARMOR GRIP, SINGLE, FOR 3/8" EHS, W/ 26" LONG ARMOR RODS	PLP	AGS-7104S
11017	6	ARMOR GRIP, SUSPENSION, EHV w/ PARROT-BILL END RODS, FOR 954 54/7 "CARDINAL" ACSR	PLP	AGS-5513
11199	2	CUSHION CLAMP, DOUBLE SUSPENSION FOR OPGW DIA RANGE 0.508"-0.537" W/(2) CLEVIS EYES AND YOKE PLATE, 40,000 LB ULT.	PLP	4700205CEYP
11240	1	SUSPENSION CLAMP, DOUBLE AGS, FOR OPGW DIA RANGE 0.512" TO 0.536", W/ (2) CLEVIS EYES AND YOKE PLATE, INCL #4 COPPER GROUND WIRE	PLP	4300209GCEYP
11244	3	YOKE PLATE, CRESCENT, 50K ULT., DOUBLE CONDUCTOR, 345KV	HUBBELL	YPC5026001
18401	2	DAMPER, SPIRAL, FOR 3/8" EHS	PLP	5050104
20216	2	DAMPER, VIBRATION, SPIRAL, FOR 0.462" TO 0.563" DIA WIRE	PLP	5050105
20584	1	CHAIN LINK, 30K, 2-1/4" LONG, 1" OPENING	HUBBELL	LK30
20596	2	Y-CLEVIS, CLEVIS, 90 DEG, 30K, 5/8" PIN, 7/8" CLEVIS OPENING.	HUBBELL	YCC3090



CROCKER WIND

Clark County, South Dakota



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Design By: ZPB

Drawn By: HL

Approved By: SSF

Project Number: 16.01147

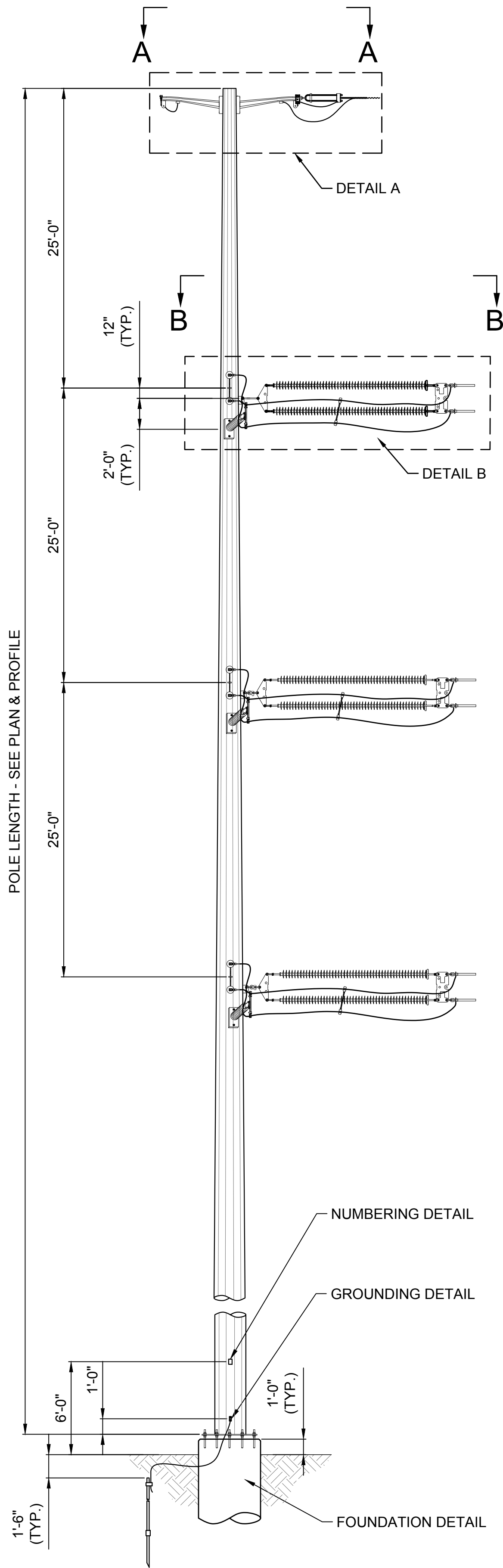
TRANSMISSION LINE
RUNNING ANGLE
SINGLE POLE

DWG #:
SD149W.UEI.DWG

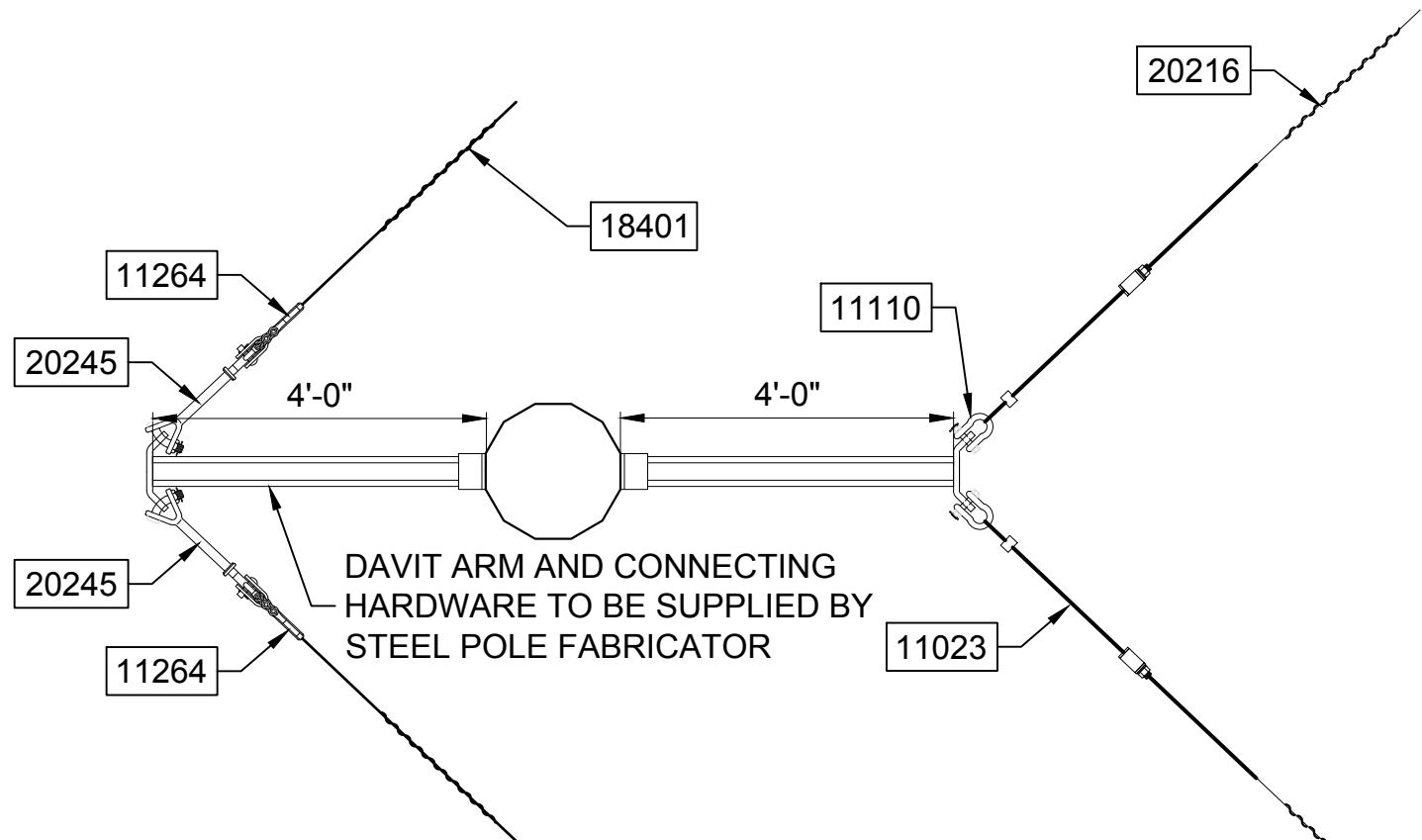
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REVISION:
AA

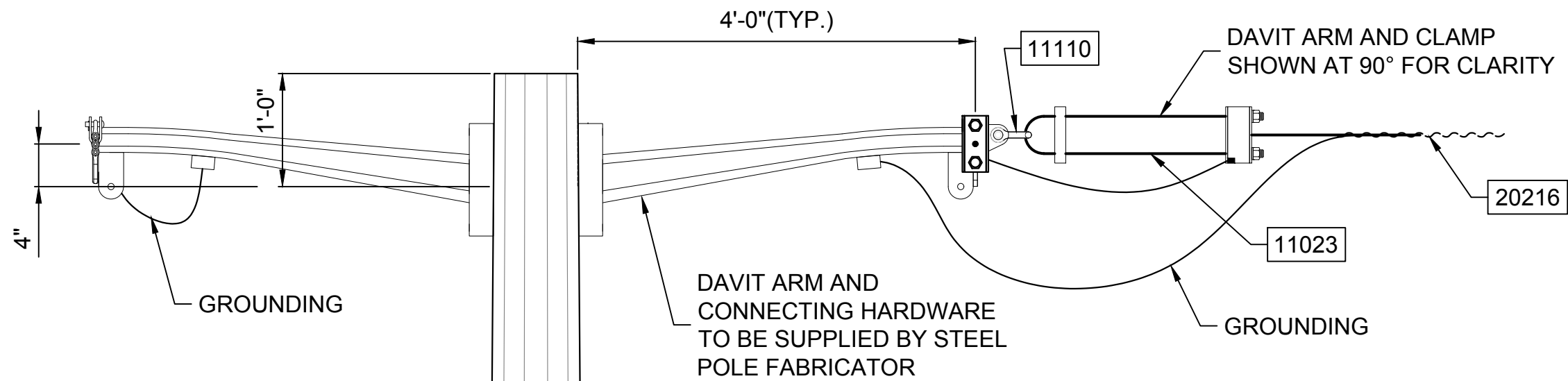
ULTEIG CONSULTING ENGINEERS PROJECT NO. 16-01147 TRANSMISSION LINE DEADEND SINGLE POLE, STEEL



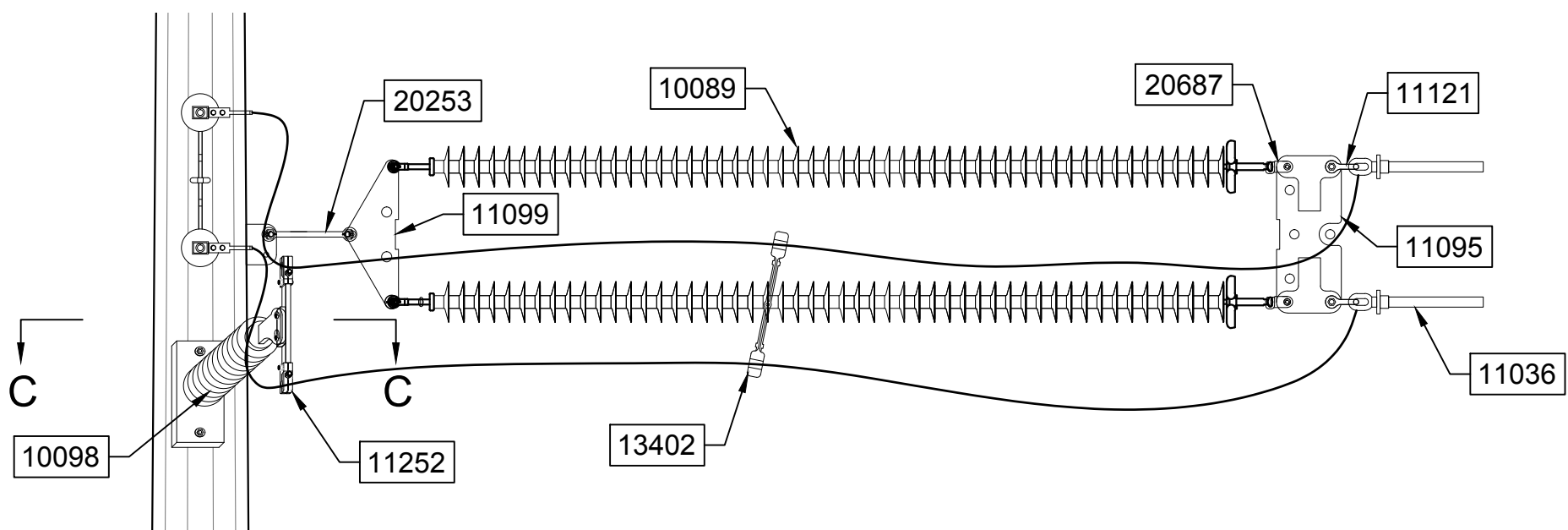
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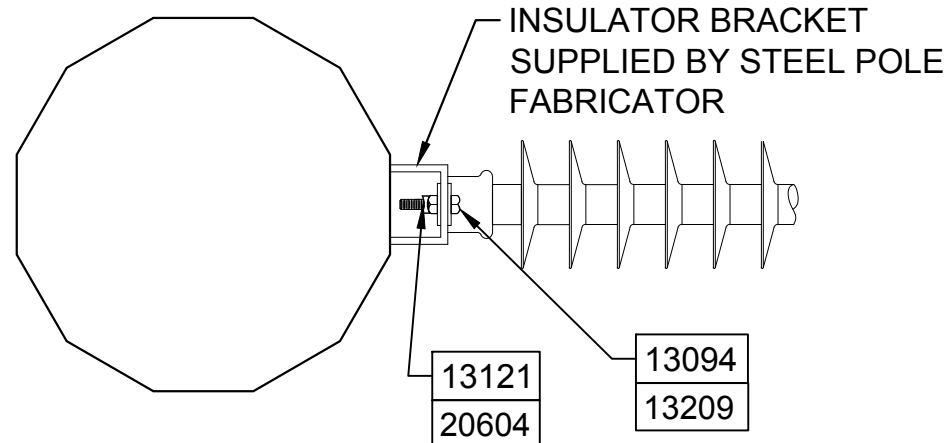
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SCALE: N.T.S.



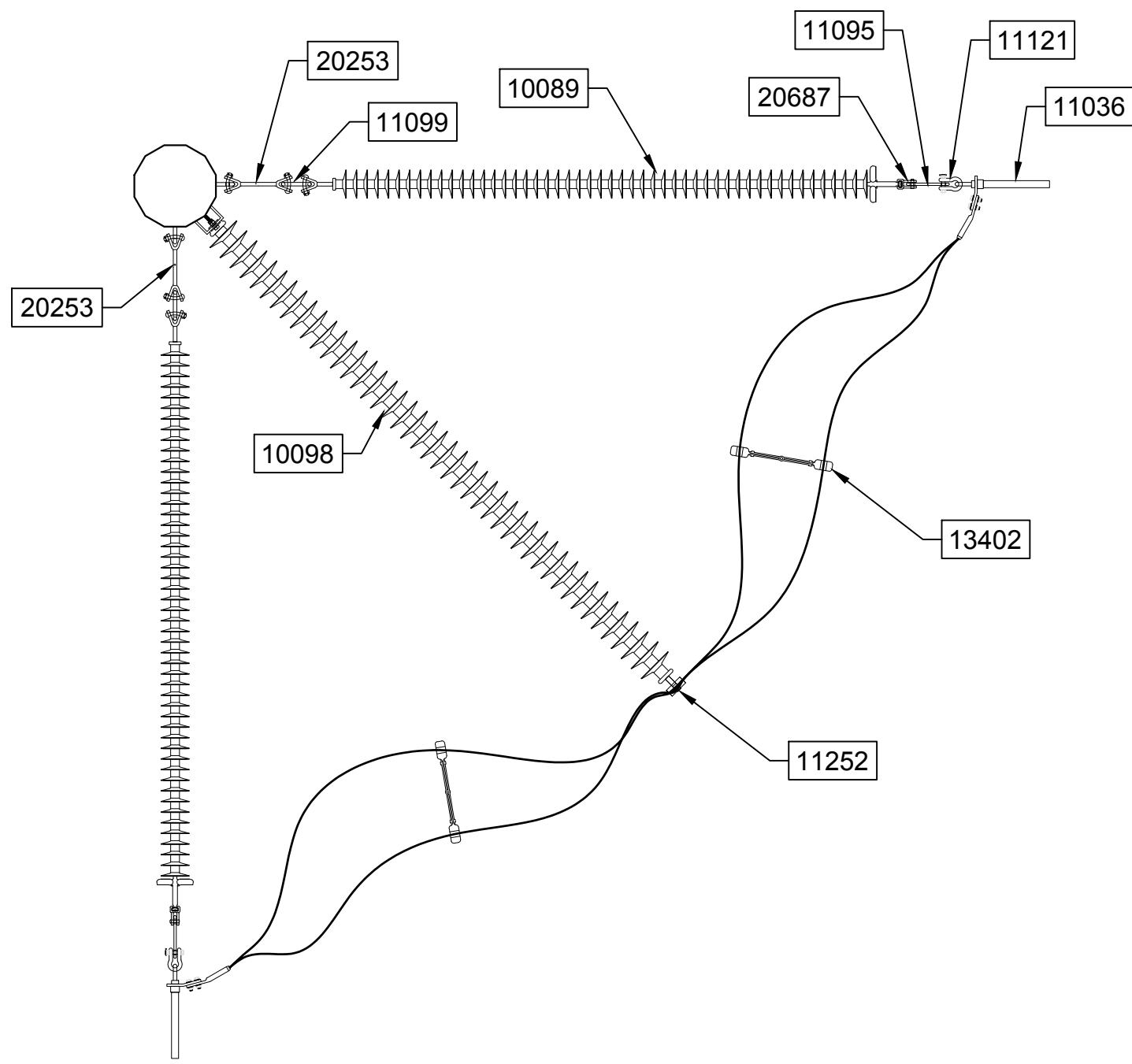
DETAIL A: OPGW & 3/8" EHS DEADEND
SCALE: N.T.S.



DETAIL B: CONDUCTOR DEADEND
SCALE: N.T.S.



SECTION C-C: JUMPER POST MOUNTING
SCALE: N.T.S.



SECTION B-B: CONDUCTOR PLAN VIEW
SCALE: N.T.S.

ITEM #	QTY	DESCRIPTION	MFG	MFG ITEM#
10089	12	345kV SUSPENSION POLYMER INSULATOR w/CORONA RING, 50K, Y CLEVIS BALL, 403" LEAKAGE DISTANCE	HUBBELL	S050116H201B
10098	3	INSULATOR, JUMPER POST, FOR 345kV CONDUCTOR, W/CORONA RING. 163.4" SECT. LENGTH. 2 HOLE BLADE END FITTING. FLAT MOUNTING BASE.	HUBBELL	P350152S003A
11023	2	FIBERLIGN DEAD-END, RANGE 0.512"-0.528", w/4' #4 COPPER GROUND WIRE	PLP	2801308G
11036	12	DEAD END FITTING, 0954 KCMIL 54/7 ACSR, 15 DEG JUMPER TERMINAL AND PAD w/ STD NEMA HOLE SPACING, SINGLE TONGUE HORIZONTAL EYE	HUBBELL	A031351
11095	6	YOKE PLATE, RECTANGULAR, 60K, 18" HOLE SPACING, 0.938" DIA HOLES	HUBBELL	YPR6019401
11099	6	YOKE PLATE, TRIANGULAR, 3/4 IN THICK, 1 1/4 IN HOLES	HUBBELL	YPD5018549-1
11110	2	ANCHOR SHACKLE, 0.656" THROAT, 5/8" PIN, 30K	HUBBELL	AS25LBNK
11121	12	ANCHOR SHACKLE, 60K, WIDE THROAT, 7/8" COTTER PIN DIA	HUBBELL	AS50WBNK
13402	6	SPACER, 18" OC, FOR 954 KCMIL 54/7 ACSR	PREFORMED	CGTS-0113
11252	3	POST INSULATOR JUMPER ASSEMBLY FOR BUNDLED CONDUCTOR, 1.00" - 1.40" CLAMP DIA RANGE	HUBBELL	27172430015D73
11264	2	CLAMP, DEAD END SHOE, 3/8 IN SHW, W/SOCKET EYE, 8" LONG	HUBBELL	SWDE55S
13094	6	BOLT, MACHINE, SQUARE HEAD, W/ 1 NUT GALV 7/8" X 8"	HUGHES	B88-3
13121	6	NUT, LOCK, MF, SQUARE, FOR 7/8 IN BOLT	HUGHES	MF80
13209	6	WASHER, FLAT, ROUND, 2" DIA, GALV, FOR 7/8" BOLTS	HUGHES	RW2-80
18401	2	DAMPER, SPIRAL, FOR 3/8" EHS	PLP	5050104
20216	2	DAMPER, VIBRATION, SPIRAL, FOR 0.462" TO 0.563" DIA WIRE	PLP	5050105
20245	2	Y-CLEVIS, BALL, HOT LINE, 30K ULT, 9-5/16" LONG, ANSI 52-3 AND 52-5 BALL, 3/4" Y-CLEVIS PIN DIA	HUBBELL	HYBC30
20253	6	HOT LINE Y-CLEVIS Y-CLEVIS, 50K ULT, 15" LENGTH	HUBBELL	HYYC50157
20604	6	SQUARE WASHER, 3" X 3" X 1/4", FOR 7/8" DIA BOLT	HUGHES	SW3-80
20687	12	SOCKET CLEVIS, 7/8" CLEVIS PIN, 2-1/16" THROAT, 50K	HUBBELL	SC501

NOTE:
SEE OPGW SPLICE BOX DETAIL ON D.24.US.W.40173.14.004.01
FOR STRUCTURE #43

CROCKER WIND

Clark County, South Dakota



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Drawn By: HL
Approved By: SSF
Project Number: 16.01147

TRANSMISSION LINE
DEADEND
SINGLE POLE, STEEL

DWG #:
SD149W.UEI.DWG
ST.TRAN. 402

REVISION:
AA