LIGHTING SCHEDULE (1 OF 4)

ROADWAY	REFERENCE ALIGNMENT	STATION	OFFSET	LIGHT POLE NUMBER	X8210007 LUM LED RDWY ROD H	83600200 LIGHT POLE FDN 24D	84400105 RELOC EX LT UNIT	83800105 BKWY DEV TR B 11.5BC
			FT		EACH	FOOT	EACH	EACH
Mainline I-94	Ex_CL_I-94	448+94.2900 R1	-60.29	XB14	1			
Mainline I-94	Ex_CL_I-94	448+94.5200 R1	58.5	XA10	1			
Mainline I-94	Ex_CL_I-94	450+93.3975 R1	-59.6494	XA14	1			
Mainline I-94	Ex_CL_I-94	450+93.6286 R1	59.1214	XB10	1			
Mainline I-94	Ex_CL_I-94	452+58.0148 R1	59.5273	XA11	1			
Mainline I-94	Ex_CL_I-94	452+58.0148 R1	-59.3111	XB15	1			
Mainline I-94	Ex_CL_I-94	453+98.5153 R1	-59.3111	XA15	1			
Mainline I-94	Ex_CL_I-94	453+98.9458 R1	59.5273	XB11	1			
Mainline I-94	Ex_CL_I-94	455+39.8734 R1	59.5273	XA12	1			
Mainline I-94	Ex_CL_I-94	455+39.8734 R1	-59.3111	XB16	1			
Mainline I-94	Ex_CL_I-94	457+01.4870 R1	59.5273	XB12	1			
Mainline I-94	Ex_CL_I-94	457+05.0979 R1	-59.3111	XA16	1			
Mainline I-94	Ex_CL_I-94	460+04.4912 R1	0.388	HA10 & HB10	2			
Mainline I-94	Ex_CL_I-94	462+11.8942 R1	0.6207	HA9 & HB9	2			
Mainline I-94	Ex_CL_I-94	464+23.0248 R1	0.9115	HA8 & HB8	2			
Mainline I-94	Ex_CL_I-94	466+32.9976 R1	0.8135	HA7 & HB7	2			
Mainline I-94	Ex_CL_I-94	468+27.9106 R1	0.8955	HA6 & HB6	2			
Mainline I-94	Ex_CL_I-94	470+40.4869 R1	1.3143	HA5 & HB5	2			
Mainline I-94	Ex_CL_I-94	472+54.6510 R1	1.3925	HA4 & HB4	2			
Mainline I-94	Ex_CL_I-94	474+64.2189 R1	1.558	HA3 & HB3	2			
Mainline I-94	Ex_CL_I-94	476+64.9444 R1	1.8001	HA2 & HB2	2			
Mainline I-94	Ex_CL_I-94	478+76.8554 R1	1.6095	HA1 & HB1	2			
Mainline I-94	Ex_CL_I-94	480+78.0269 R1	1.4955	HC1 & HD1	2			
Mainline I-94	Ex_CL_I-94	482+77.7944 R1	1.185	HC2 & HD2	2			
Mainline I-94	Ex_CL_I-94	484+82.3205 R1	0.759	HC3 & HD3	2			
Mainline I-94	Ex_CL_I-94	485+67.6912 R1	-64.7823	HG19	1			
Mainline I-94	Ex_CL_I-94	485+71.2346 R1	67.75	HH15	1			
Mainline I-94	Ex_CL_I-94	487+65.8977 R1	64.2687	HG15	1			
Mainline I-94	Ex_CL_I-94	487+66.8281 R1	-61.5379	HH19	1			
Mainline I-94	Ex_CL_I-94	489+63.0839 R1	63.5562	HH16	1			
Mainline I-94	Ex_CL_I-94	489+64.5533 R1	-60.7613	HG18	1			
Mainline I-94	Ex_CL_I-94	491+44.2755 R1	65.3487	HG16	1			
Mainline I-94	Ex_CL_I-94	491+45.7500 R1	-62.1518	HH18	1			
Mainline I-94	Ex_CL_I-94	493+38.9399 R1	-63.4733	HG17	1			
Mainline I-94	Ex_CL_I-94	493+39.5548 R1	66.4145	HH17	1			
Mainline I-94	Ex_CL_I-94	494+16.4657 R1	0.0135	HG9 & HH9	2			
Mainline I-94	Ex_CL_I-94	496+93.5008 R1	0.915	HG10 & HH10	2			
Mainline I-94	Ex_CL_I-94	499+67.9035 R1	0.7844	HG11 & HH11	2			
Mainline I-94	Ex_CL_I-94	502+50.7669 R1	0.5317	HG12 & HH12	2			
Mainline I-94	Ex_CL_I-94	505+16.4267 R1	-0.0553	HG13 & HH13	2			
Mainline I-94	Ex_CL_I-94	508+01.9091 R1	-0.5582	HG14 & HH14	2			
Mainline I-94	Ex_CL_I-94	532+10.5547 R1	0.0585	GA1 & GB1	2			
Mainline I-94	Ex_CL_I-94	534+87.8071 R1	0.2438	GA2 & GB2	2			
Mainline I-94	Ex_CL_I-94	537+67.6014 R1	-0.1454	GA3 & GB3	2			
Mainline I-94	Ex_CL_I-94	540+46.4899 R1	0.179	GA4 & GB4	2			
Mainline I-94	Ex_CL_I-94	543+26.6573 R1	0.3243	GA5 & GB5	2			
Mainline I-94	Ex_CL_I-94	546+06.4109 R1	0.7186	GA6 & GB6	2			
Mainline I-94	Ex_CL_I-94	549+17.2545 R1	-0.2146	GA11 & GB11	2			
Mainline I-94	Ex_CL_I-94	552+20.4858 R1	-0.2747	GA12 & GB12	2			
Mainline I-94	Ex_CL_I-94	554+89.0452 R1	0.6484	GA13 & GB13	2			
SUBTOTAL 1					78	0	0	0

LIGHTING SCHEDULE (2 OF 4)

ROADWAY	REFERENCE ALIGNMENT	STATION	OFFSET	LIGHT POLE NUMBER	X8210007 LUM LED RDWY ROD H	83600200 LIGHT POLE FDN 24D	84400105 RELOC EX LT UNIT	83800105 BKWY DEV TR B 11.5BC
			FT		EACH	FOOT	EACH	EACH
Mainline I-94	Ex_CL_I-94	557+73.7878 R1	0.425	GA14 & GB14	2			
Mainline I-94	Ex_CL_I-94	560+59.9927 R1	-0.0064	GA15 & GB15	2			
Mainline I-94	Ex_CL_I-94	562+89.0177 R1	-0.406	GA16 & GB16	2			
Mainline I-94	Ex_CL_I-94	565+19.7464 R1	0.3006	GA17 & GB17	2			
Mainline I-94	Ex_CL_I-94	567+31.4991 R1	0.067	GA18 & GB18	2			
Mainline I-94	Ex_CL_I-94	569+62.6883 R1	-0.2755	FC14 & FD14	2			
Mainline I-94	Ex_CL_I-94	571+92.2151 R1	-0.0927	FC13 & FD13	2			
Mainline I-94	Ex_CL_I-94	574+20.1609 R1	0.0439	FC12 & FD12	2			
Mainline I-94	Ex_CL_I-94	576+44.1737 R1	0.0248	FC11 & FD11	2			
Mainline I-94	Ex_CL_I-94	578+77.5104 R1	0.3953	FC10 & FD10	2			
Mainline I-94	Ex_CL_I-94	581+02.3879 R1	0.8169	FC9 & FD9	2			
Mainline I-94	Ex_CL_I-94	583+28.1615 R1	0.9811	FC8 & FD8	2			
Mainline I-94	Ex_CL_I-94	585+56.1258 R1	0.1779	FC7 & FD7	2			
Mainline I-94	Ex_CL_I-94	587+91.4776 R1	-0.113	FC6 & FD6	2			
Mainline I-94	Ex_CL_I-94	590+16.1179 R1	-0.8268	FC5 & FD5	2			
Mainline I-94	Ex_CL_I-94	592+47.6464 R1	1.2496	FC4 & FD4	2			
Mainline I-94	Ex_CL_I-94	594+83.8032 R1	-0.3622	FC3 & FD3	2			
Mainline I-94	Ex_CL_I-94	597+81.8433 R1	-0.298	FC2 & FD2	2			
Mainline I-94	Ex_CL_I-94	600+81.8458 R1	0.0269	FC1 & FD1	2			
Mainline I-94	Ex_CL_I-94	603+76.1771 R1	66.883	FL7	1			
Mainline I-94	Ex_CL_I-94	603+77.5539 R1	-70.1935	FJ1	1			
Mainline I-94	Ex_CL_I-94	606+26.0935 R1	-0.1634	EA12 & EB12	2			
Mainline I-94	Ex_CL_I-94	608+55.7011 R1	-0.274	EA11 & EB11	2			
Ramp W3	ExBL1	100+17.7993 R1	21.6684	HJ5	1			
Ramp W3	ExBL1	102+18.7026 R1	19.8383	HI5	1			
Ramp W3	ExBL1	104+20.7833 R1	19.7033	HJ4	1			
Ramp W3	ExBL1	106+21.5798 R1	19.9482	HI4	1			
Ramp W3	ExBL1	108+22.3894 R1	19.6896	HJ3	1			
Ramp W3	ExBL1	108+86.5500 R1	-60.33	HE1	1			
Ramp W3	ExBL1	109+04.9200 R1	-138.5	HI1	1			
Ramp W3	ExBL1	110+52.4500 R1	-94.8	HJ1	1			
Ramp W3	ExBL1	112+27.5800 R1	-79.7	HI2	1			
Ramp W3	ExBL1	110+30.4994 R1	20.2215	HI3	1			
Ramp W3	ExBL1	112+25.4551 R1	21.295	HJ2	1			
Ramp W1	W1	10+12.5451 R1	23.5304	HF4	1			
Ramp W1	W1	10+91.6200 R1	-81.54	HG20	1			
Ramp W1	W1	11+40.4902 R1	19.0985	HE4	1			
DOLTON RD	-	-	-	HF3	1			
Ramp W1	W1	13+02.3400 R1	-56.3	HE3	1			
Ramp W1	W1	13+40.2331 R1	20.0438	HE5	1			
Ramp W1	W1	15+40.2507 R1	20.4404	HF5	1			
Ramp W1	W1	17+40.0112 R1	20.2662	HE6	1			
Ramp W1	W1	19+11.4524 R1	26.463	HF6	1			
Ramp W1	W1	21+21.4563 R1	16.251	HE7	1			
Ramp W4	W4	50+63.4900 R1	-74.2	HF2	1			
Ramp W2	W2	51+32.8352 R1	23.8928	HG5	1			
Ramp W2	W2	52+60.3800 R1	-65.3	HH20	1			
Ramp W2	W2	53+02.0110 R1	19.2191	HH6	1			
Ramp W2	W2	54+46.5452 R1	18.7596	HG6	1			
Ramp W2	W2	55+99.3955 R1	20.3481	HH7	1			
Ramp W2	W2	57+51.9833 R1	19.6742	HG7	1			
SUBTOTAL 2					72	0	0	0

LIGHTING SCHEDULE (3 OF 4)

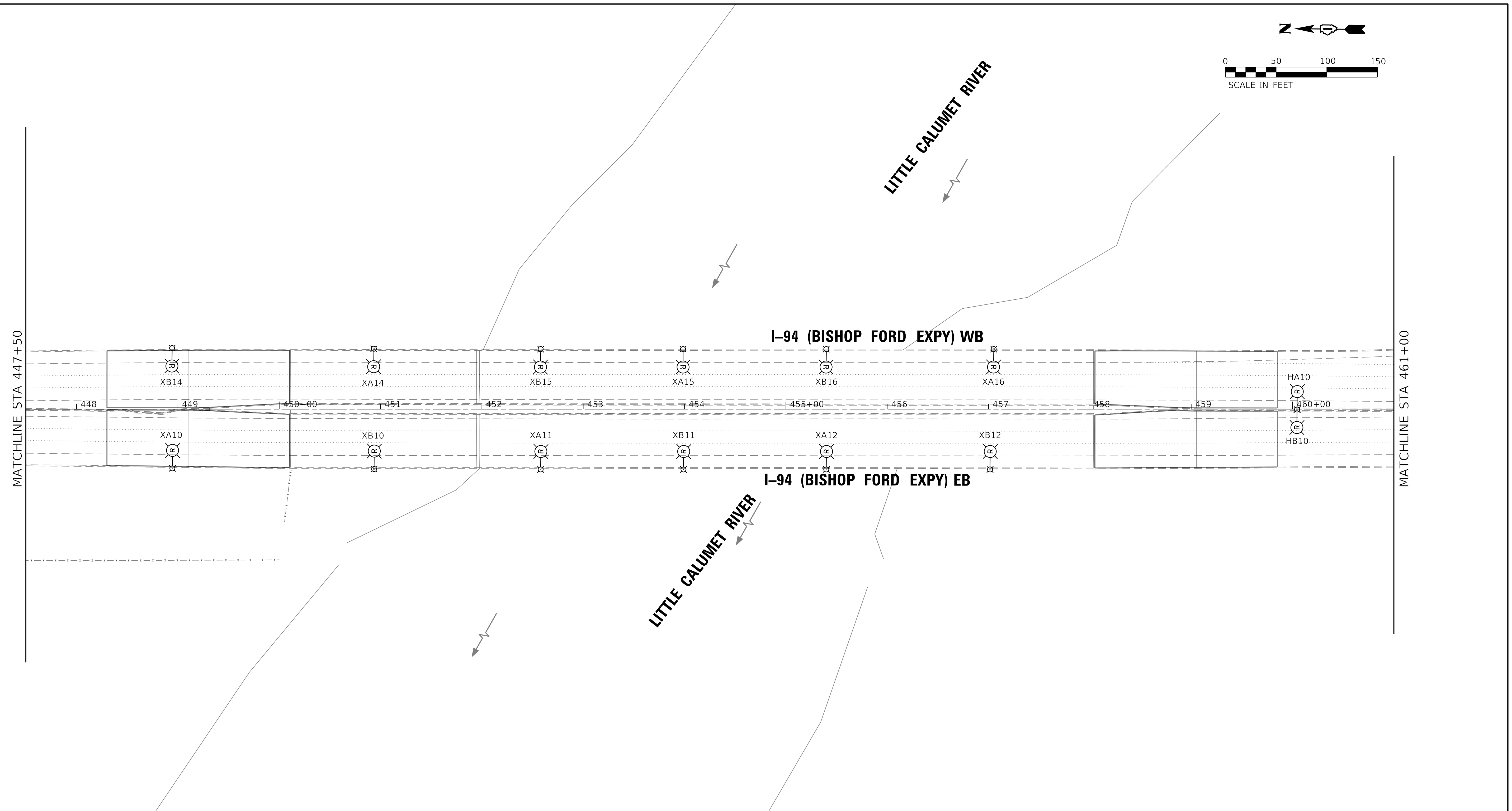
					X8210007	83600200	84400105	83800105
ROADWAY	REFERENCE ALIGNMENT	STATION	OFFSET	LIGHT POLE NUMBER	LUM LED RDWY ROD H	LIGHT POLE FDN 24D	RELOC EX LT UNIT	BKWY DEV TR B 11.5BC
			FT		EACH	FOOT	EACH	EACH
Ramp W2	W2	59+02.8293 R1	19.8894	HH8	1			
Ramp W2	W2	482+58.0998 R1	78.0439	HG8	1			
Ramp W4	W4	150+44.6058 R1	23.0317	HH4	1			
Ramp W4	W4	152+30.6333 R1	20.8217	HG4	1			
Ramp W4	W4	154+26.2983 R1	20.3023	HH3	1			
Ramp W4	W4	156+10.8917 R1	20.1142	HG3	1			
Ramp W4	W4	157+92.1426 R1	20.2158	HH2	1			
Ramp W4	W4	160+01.0910 R1	20.2509	HG2	1			
Ramp W4	W4	162+08.6800 R1	-38.6	HG1	1			
Ramp W4	W4	162+39.6700 R1	-110.8	HF1	1			
Ramp W4	W4	163+85.5200 R1	-77.9	HE2	1			
Ramp W4	W4	162+07.3998 R1	20.2246	HH1	1			
Ramp W4	W4	163+79.0346 R1	23.8134	HH5	1			
Ramp Y1	Y1	657+64.3882 R1	10.1942	FH10	1			
Ramp Y1	Y1	659+19.4667 R1	9.8603	FG10	1			
Ramp Y1	Y1	660+78.0402 R1	10.889	FH9	1			
Ramp Y1	Y1	662+30.8016 R1	10.6185	FG9	1			
Ramp Y1	Y1	663+88.1009 R1	10.1983	FH8	1			
Ramp Y1	PR_CENTERLINE	103+77.3947 R1	11.5047	FG8	1	6	1	4
Ramp Y1	PR_CENTERLINE	105+38.6252 R1	10.9222	FH7	1	6	1	4
Ramp Y2	Y2	700+20.3431 R1	15.1149	FG1	1			
Ramp Y2	Y2	701+41.1652 R1	17.0593	FH1	1			
Ramp Y2	Y2	702+85.5674 R1	10.1287	FG2	1			
Ramp Y2	Y2	704+35.4132 R1	-25.1826	FH2	1			
Ramp Y2	Y2	705+85.9965 R1	-24.8905	FG3	1			
Ramp Y2	Y2	707+36.9135 R1	-24.9631	FH3	1			
Ramp Y2	Y2	709+06.6113 R1	-25.7121	FG4	1			
Ramp Y2	Y2	710+36.3071 R1	9.9025	FH5	1			
Ramp Y2	Y2	711+91.7710 R1	12.9338	FG6	1			
Ramp Y3	Y3	751+00.2297 R1	11.1271	FI5	1			
Ramp Y3	Y3	752+64.5634 R1	9.4113	FJ5	1			
Ramp Y3	Y3	754+31.1988 R1	-26.7488	FI3	1			
Ramp Y3	Y3	755+71.8110 R1	-25.1896	FJ3	1			
Ramp Y3	Y3	757+28.2855 R1	-26.103	FI2	1			
Ramp Y3	Y3	758+84.3940 R1	9.8387	FJ2	1			
Ramp Y3	Y3	760+39.3600 R1	12.9583	FI1	1			
Ramp Y4	Y4	804+96.6596 R1	15.1193	FJ11	1			
Ramp Y4	Y4	806+51.5039 R1	21.0651	FI10	1			
Ramp Y4	Y4	808+24.4168 R1	16.011	FJ9	1			
Ramp Y4	Y4	809+89.6734 R1	8.7762	FI9	1			
Ramp Y4	Y4	811+55.2201 R1	-32.8977	FJ8	1			
Ramp Y4	Y4	813+19.8155 R1	9.4992	FI8	1			
Ramp Y5	Y5	851+76.7331 R1	11.8127	FB5	1			
Ramp Y5	Y5	853+40.0910 R1	11.4779	FA5	1			
Ramp Y5	Y5	855+08.4018 R1	11.8488	FB4	1			
Ramp Y5	Y5	856+71.9365 R1	11.5602	FA4	1			
Ramp Y5	Y5	858+37.5785 R1	11.7196	FB3	1			
Ramp Y5	Y5	860+01.1688 R1	11.2054	FA3	1			
SUBTOTAL 3					48	12	2	8

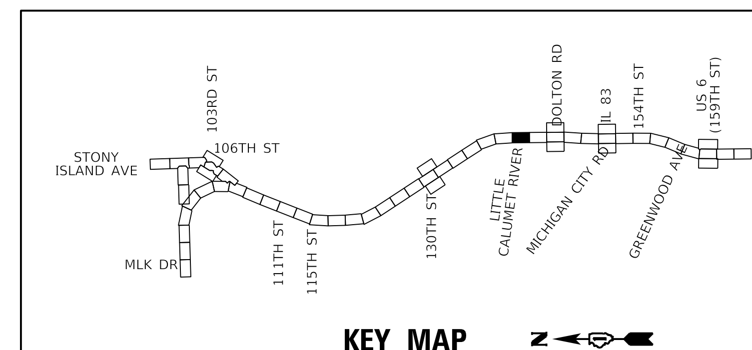
LIGHTING SCHEDULE (4 OF 4)

					X8210007	83600200	84400105	83800105
ROADWAY	REFERENCE ALIGNMENT	STATION	OFFSET	LIGHT POLE NUMBER	LUM LED RDWY ROD H	LIGHT POLE FDN 24D	RELOC EX LT UNIT	BKWY DEV TR B 11.5BC
			FT		EACH	FOOT	EACH	EACH
Ramp Y5	Y5	861+57.2930 R1	11.499	FB2	1			
Ramp Y5	Y5	863+31.6515 R1	11.3344	FA2	1			
Ramp Y5	Y5	865+08.1822 R1	17.0452	FB1	1			
Ramp Y5	Y5	866+82.2115 R1	4.1252	FA1	1			
Ramp Y6	Y6	900+96.2470 R1	6.5168	FB10	1			
Ramp Y6	Y6	902+41.7199 R1	9.8842	FA9	1			
Ramp Y6	Y6	903+86.6278 R1	-25.0143	FB9	1			
Ramp Y6	Y6	905+31.1447 R1	-24.9752	FA6	1			
Ramp Y6	Y6	906+76.3730 R1	-25.3408	FB6	1			
Ramp Y6	Y6	908+19.2696 R1	-25.1486	FA7	1			
Ramp Y6	Y6	909+65.5403 R1	10.546	FB7	1			
Ramp Y6	Y6	911+10.9626 R1	9.9576	FA8	1			
Ramp Y7	Y7	950+86.5173 R1	12.2599	FK6	1			
Ramp Y7	Y7	952+45.8900 R1	10.5423	FL6	1			
Ramp Y7	Y7	953+93.8506 R1	-26.068	FK5	1			
Ramp Y7	Y7	955+43.1388 R1	-25.245	FL5	1			
Ramp Y7	Y7	956+93.1737 R1	-26.6122	FK4	1			
Ramp Y7	Y7	958+44.1102 R1	-22.4122	FL4	1			
Ramp Y7	Y7	959+78.8785 R1	14.6466	FK2	1			
Ramp Y7	Y7	961+30.8618 R1	10.8465	FL2	1			
Ramp Y8	Y8	1001+02.1920 R1	11.4353	FK7	1			
Ramp Y8	Y8	1002+54.3737 R1	10.7376	FL9	1			
Ramp Y8	Y8	1004+19.8857 R1	10.8018	FK8	1			
Ramp Y8	Y8	1005+83.3160 R1	11.2618	FL10	1			
Ramp Y8	Y8	1007+38.8754 R1	9.4374	FK9	1			
Ramp Y8	Y8	1009+12.9827 R1	15.5408	FL11	1			
Ramp Y8	Y8	1010+95.3784 R1	16.6483	FK10	1			
Ramp Y8	Y8	1012+62.7297 R1	21.3835	FL12	1			
Ramp Y8	Y8	1013+81.3362 R1	19.1221	FK11	1			
US 6	Y4	815+46.8379	-41.4135	FI14	1			
US 6	Y1	656+07.1266	-133.848	FH4	1			
US 6	Y8	1002+12.6057	-77.7583	FL1	1			
US 6	Y5	864+04.6186	-56.4376	FB11	1			
US 6	Y7	960+83.9582	-80.3026	FK1	1			
US 6	EXISTING CENTERLINE	338+97.1349	-37.8684	FA11	1			
US 6	EXISTING CENTERLINE	340+34.4556	48.9695	FK3	1			
US 6	EXISTING CENTERLINE	341+74.2789	49.1869	FL3	1			
US 6	EXISTING CENTERLINE	342+05.2589	-48.0872	FA10	1			
US 6	EXISTING CENTERLINE	345+24.8554	49.5557	FI6	1			
US 6	EXISTING CENTERLINE	345+81.0765	-48.8481	FH6	1			
US 6	EXISTING CENTERLINE	346+49.9435	49.0366	FJ6	1			
US 6	EXISTING CENTERLINE	348+72.0430	-37.2376	FG5	1			
US 6	EXISTING CENTERLINE	349+84.0229	38.7504	FJ14	1			
SUBTOTAL 4					43	0	0	0
TOTAL					241	12	2	8

LIGHTING SCHEDULE

			81100320	81702110	81702450	81800330	81028350	82200609	82200606	82600106	81300220	81300310	81300420	81300830	82110026	82110022	81603081
ROADWAY	FROM STA	TO STA	CON AT ST 1 PVC GS	EC C XLP USE 1C 10	EC C XLP USE 3-1C 10	A CBL 3-1C6 MESS WIRE	UNDRGRD C PVC 2	WWOWL LED 360 D G	WWOWL LED 180 R PM	OBSTRUCT WARN LT CONT	JUN BX SS AS 6X6X4	JUN BX SS AS 8X6X4	JUN BX SS AS 10X8X6	JUN BX SS AP 18X18X8	LUM LED UP SUS D	LUM LED UP WM E	UD 3#2#4GXLP USE 1.5 P
			FOOT	FOOT	FOOT	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FOOT
I-94 Over Dolton	478+47.356	479+21.9413	400	900							8		4	2	8	-	-
WB US 6 - WB I-94	663+88.10 R1	665+40.34 R1	-	-							-		-	-	-	-	152.4
WB US 6 - WB I-94	665+40.34 R1	666+97.48 R1	-	-							-		-	-	-	-	147
I-94 AND 154TH ST	547+32.13	547+94.02	350	790							8		2	1	8	-	-
I-94 AND 159TH ST	602+42.43	603+32.58	400	1200							6		3	1	-	8	-
I-94 STELL BRIDGE	451+65.97	458+00	1331	4366	435	100	24	2	6	1		11					
TOTAL			2481	7256	435	100	24	2	6	1	22	11	9	4	16	8	300





MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2449\1468_80\D162K53-sht-light026.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com

USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

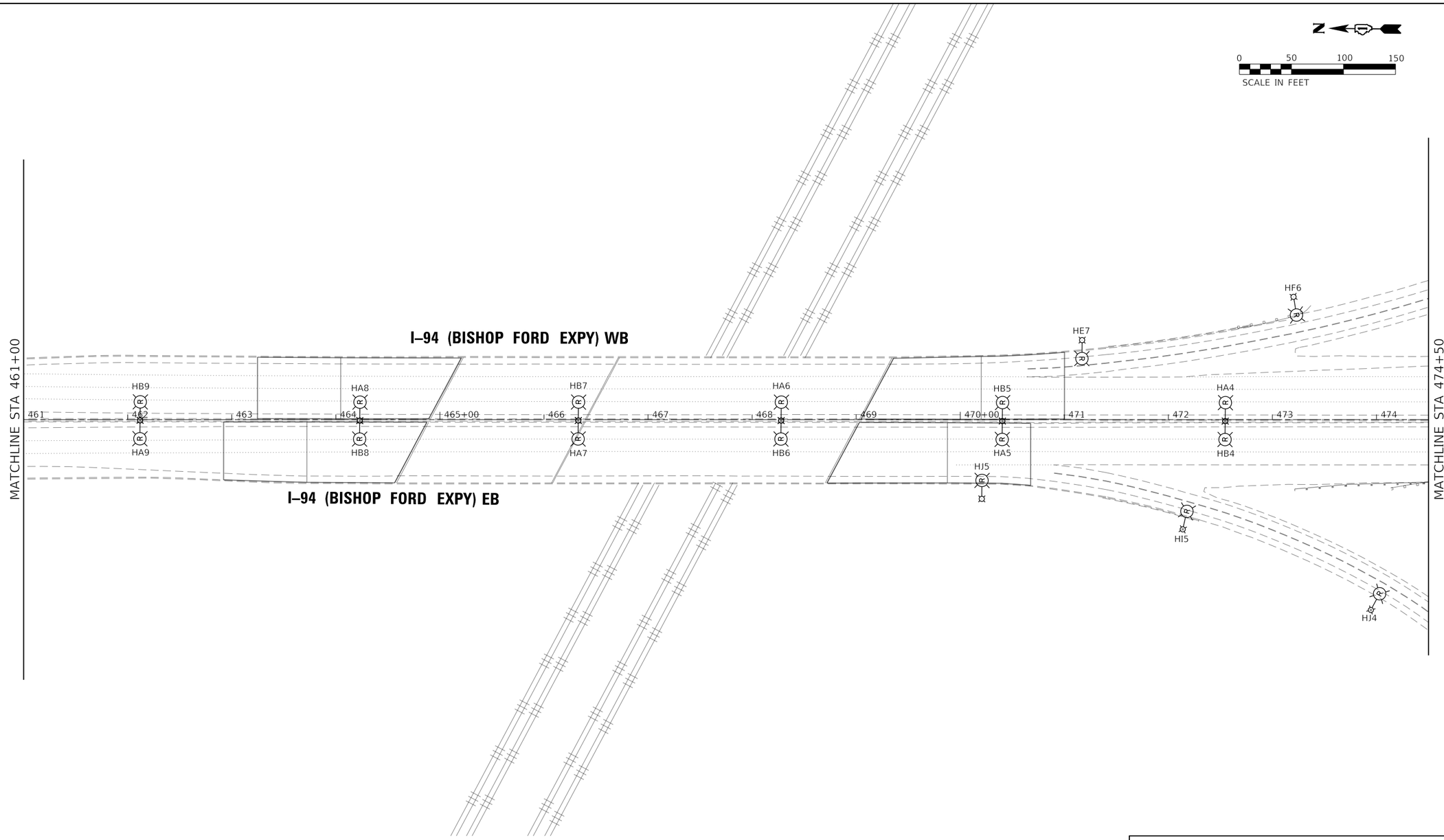
LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

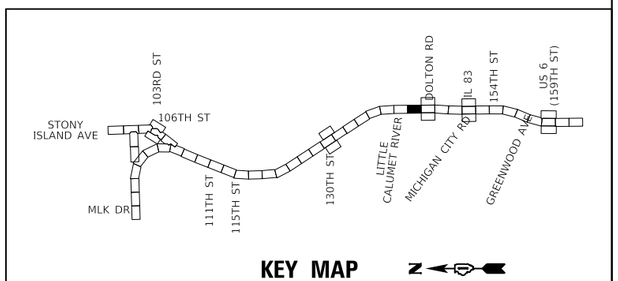
SCALE: | SHEET 1 OF 22 SHEETS | STA. 447+50 TO STA. 461+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	403

CONTRACT NO. 62W87

ILLINOIS | FED. AID PROJECT





KEY MAP

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

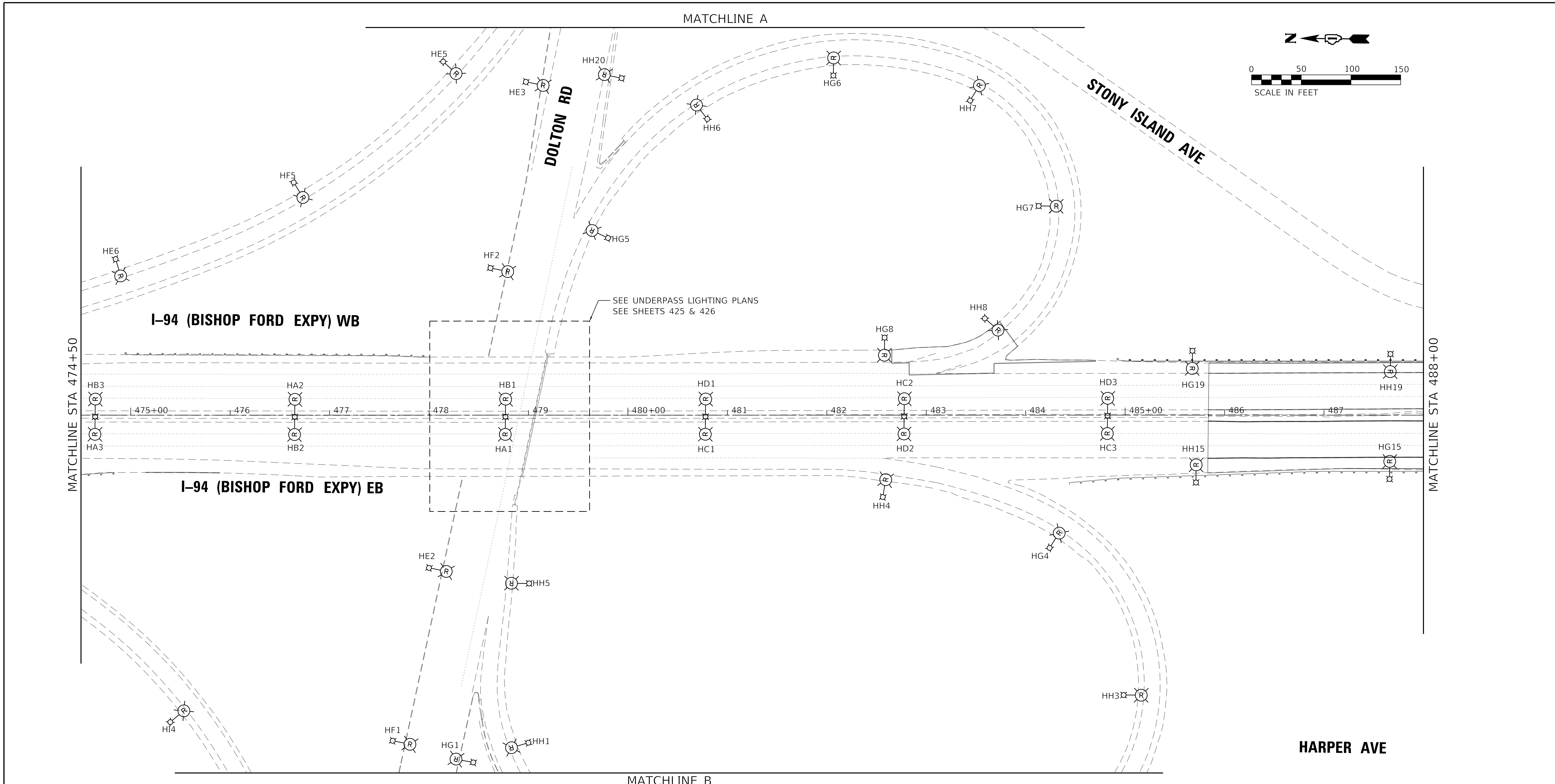
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

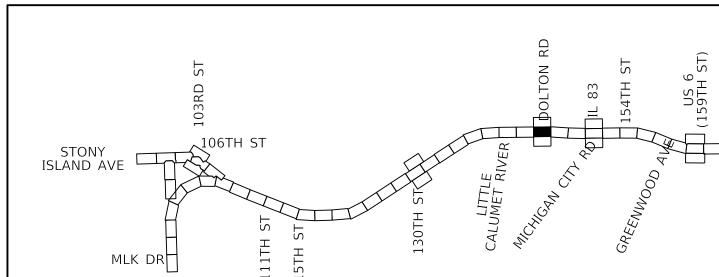
LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 2 OF 22 SHEETS | STA. 461+00 | TO STA. 474+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	404
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\244911468_811D162K53-tnt-illgh027.dgn





KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2449\1468_71\D162K53-sht-light028.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

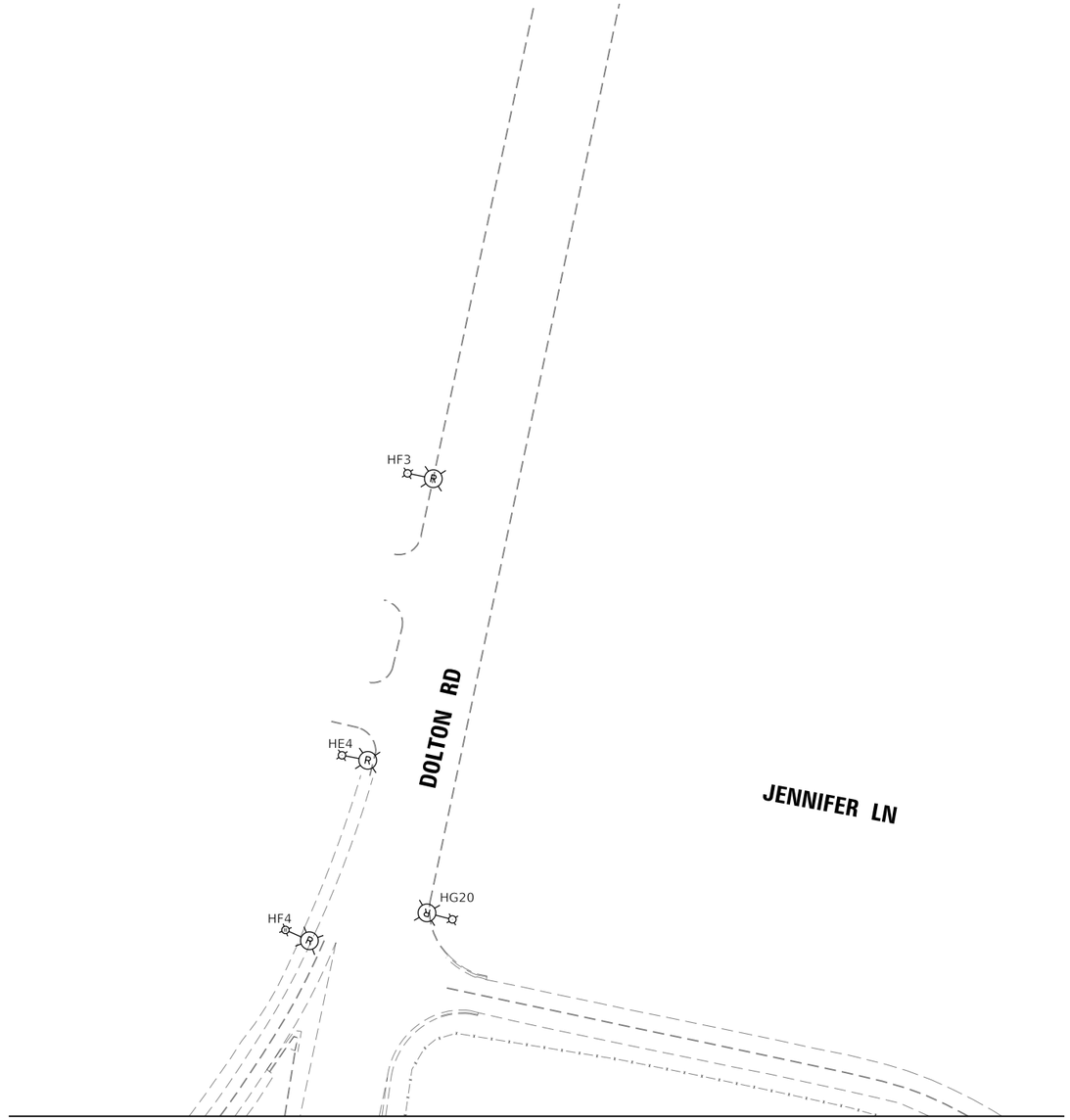
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

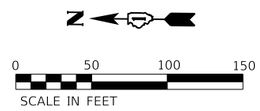
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

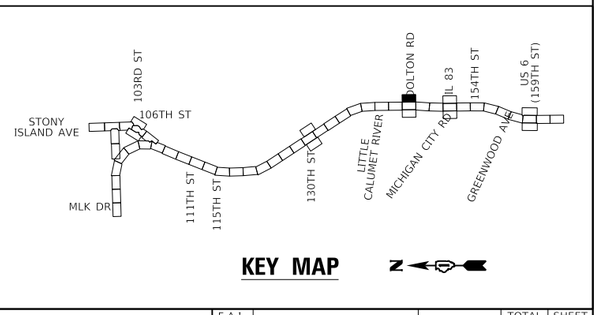
SCALE: | SHEET 3 OF 22 SHEETS | STA. 474+50 TO STA. 488+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	405
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		





DAWN LN



MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\24491468_72\D1623453-tit-light028-1.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

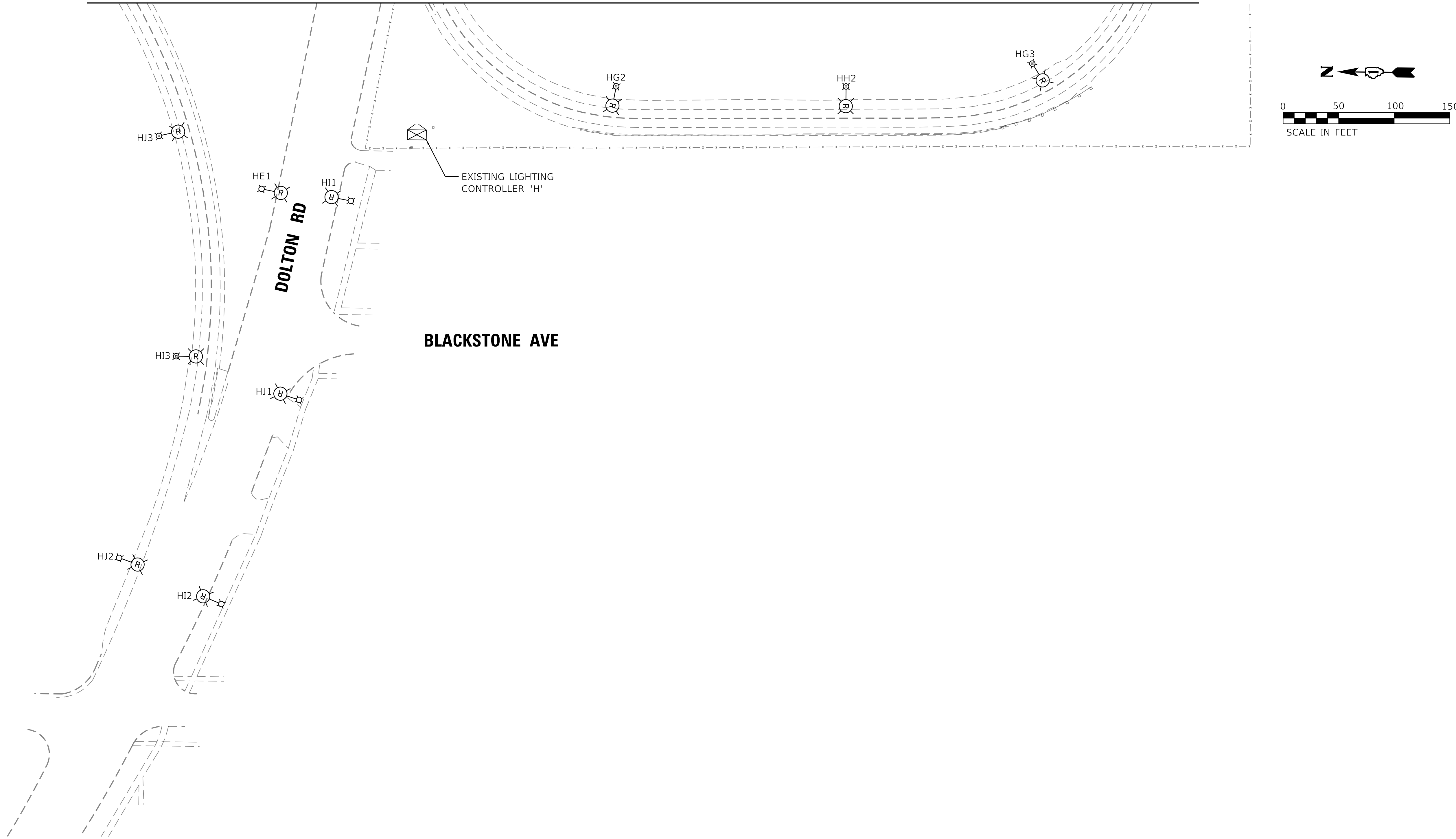
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

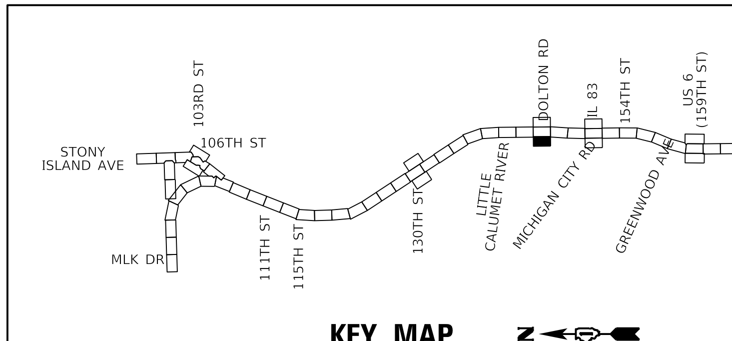
LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 4 OF 22 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	406
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MATCHLINE B





MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2449\1468_73\D162K53-sht-light028-2.dgn

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

SCALE: SHEET 5 OF 22 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	407
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

CORNELL AVE

0 50 100 150
SCALE IN FEET

STATE ST

STONY ISLAND AVE

I–94 (BISHOP FORD EXPY) WB

MATCHLINE STA 488+00

MATCHLINE STA 501+50

HG18 HH18 HG17 HH9 HG10 HH11

488 489 490+00 491 492 493 494 495+00 496 497 498 499 500+00 501

HH16 HG16 HH17 HG9 HH10 HG11

I–94 (BISHOP FORD EXPY) EB

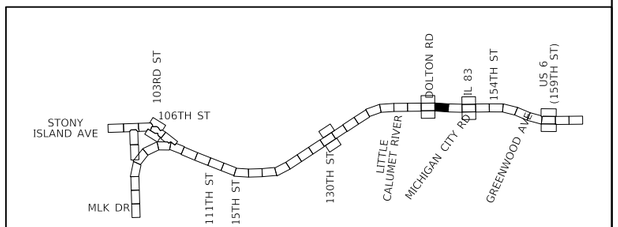
HARPER AVE

E 145TH ST

KASTEN DR

146TH ST

KEY MAP



MODEL: Default
FILE NAME: \\hbmepw11fcs01\CS_pdf_work_dir\2449\1468_82\D162K53-sht-Hght029.dgn

ABNA DESIGN FRM REG, 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-481-4788
www.abnacorp.com

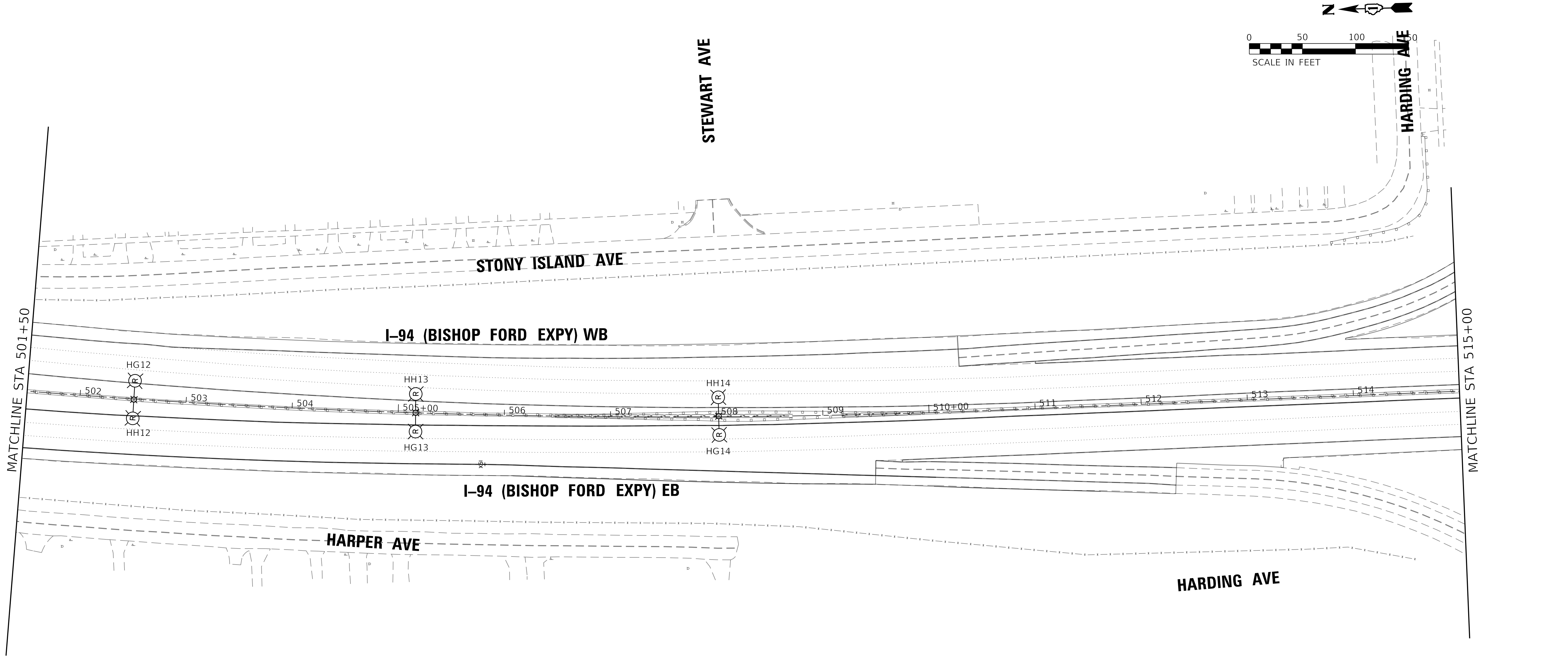
USER NAME = hbmepw11fcs01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

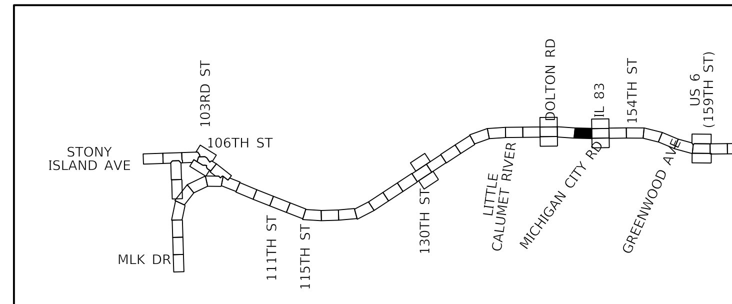
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 6 OF 22 SHEETS | STA. 488+00 | TO STA. 501+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	408
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			





KEY MAP

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-681-4788
www.abnacorp.com

USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

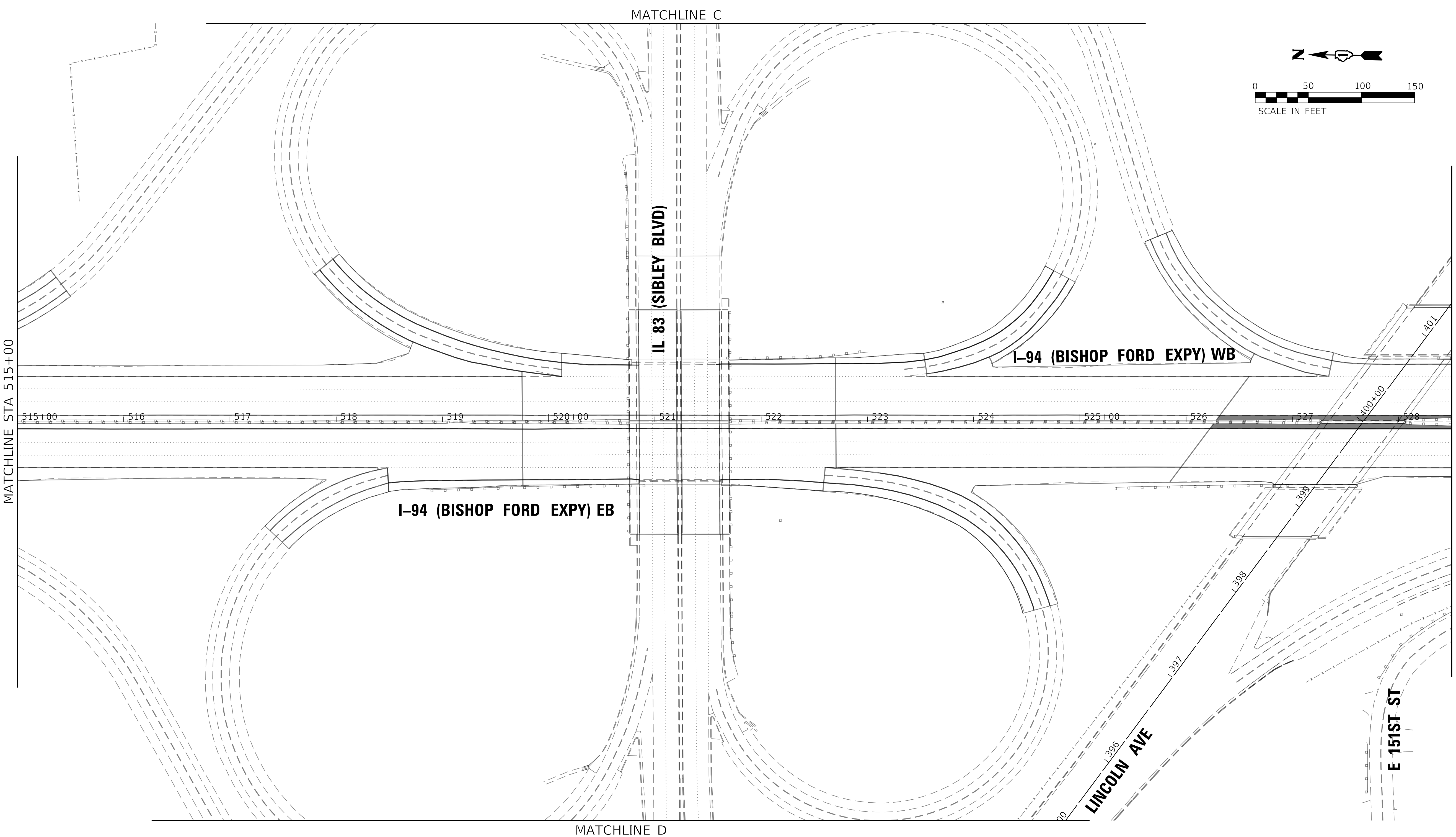
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

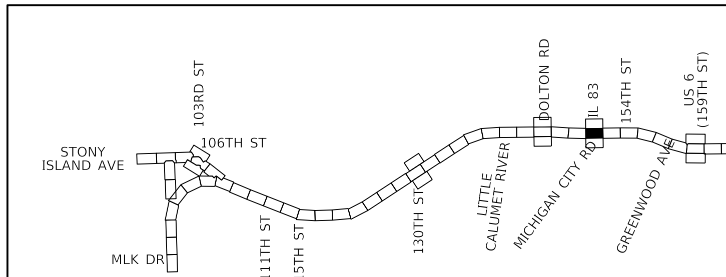
LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 7 OF 22 SHEETS | STA. 501+50 TO STA. 515+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	409
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2449\1468_83\D162K53-sht-light030.dgn





KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2449\1468_74\D162K53-sht-light031.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

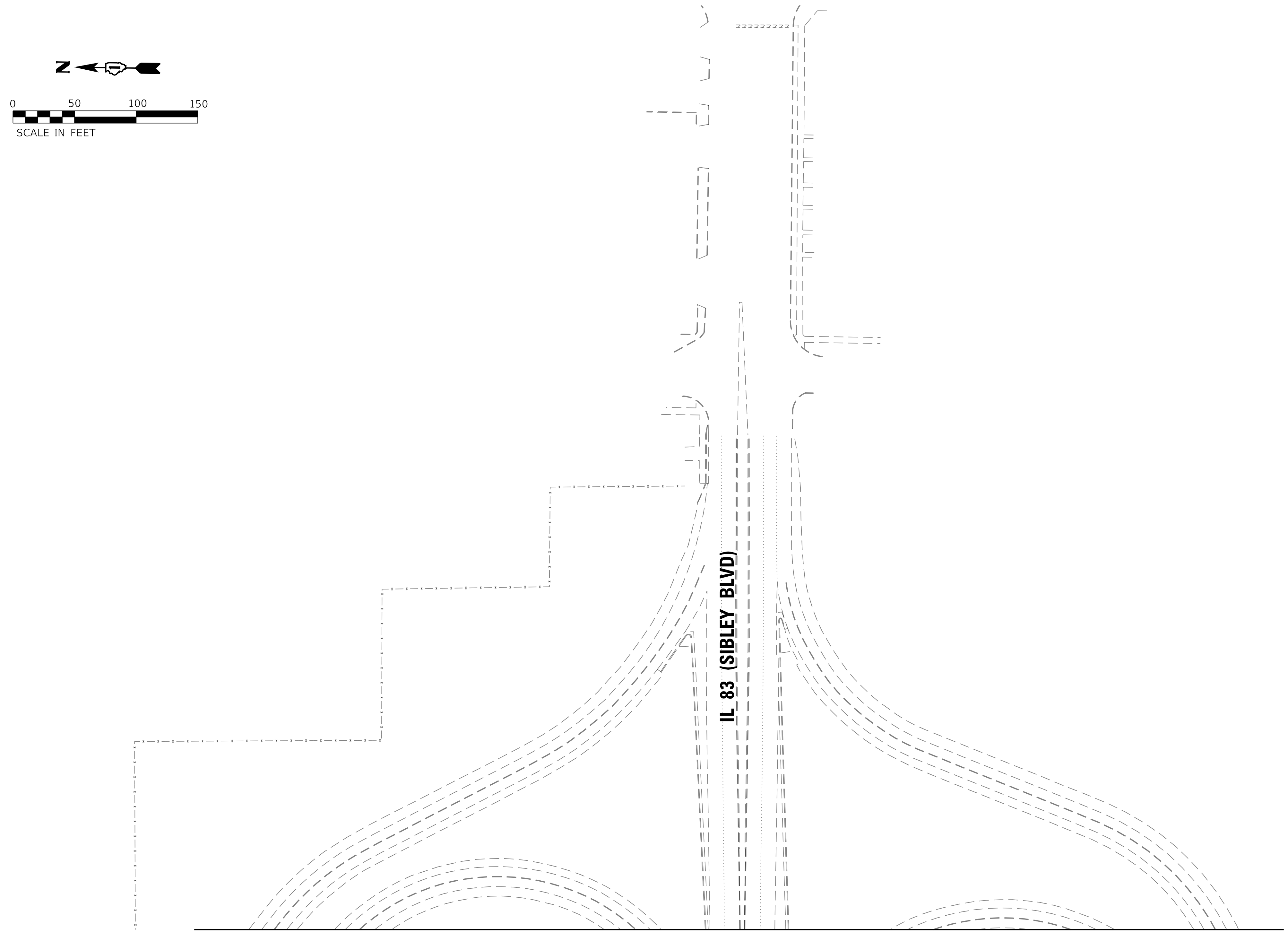
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

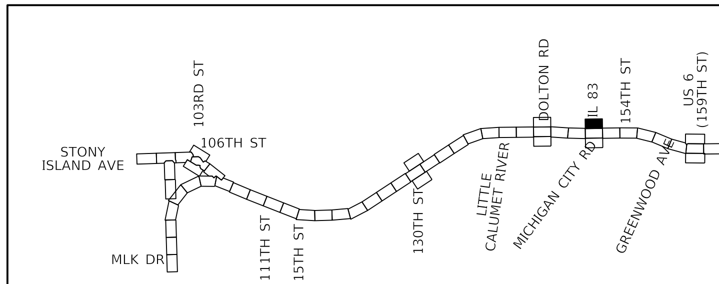
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 8 OF 22 SHEETS | STA. 515+00 TO STA. 528+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	410
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		





KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2449\1468.75\D162K53-sht-light031-1.dgn

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

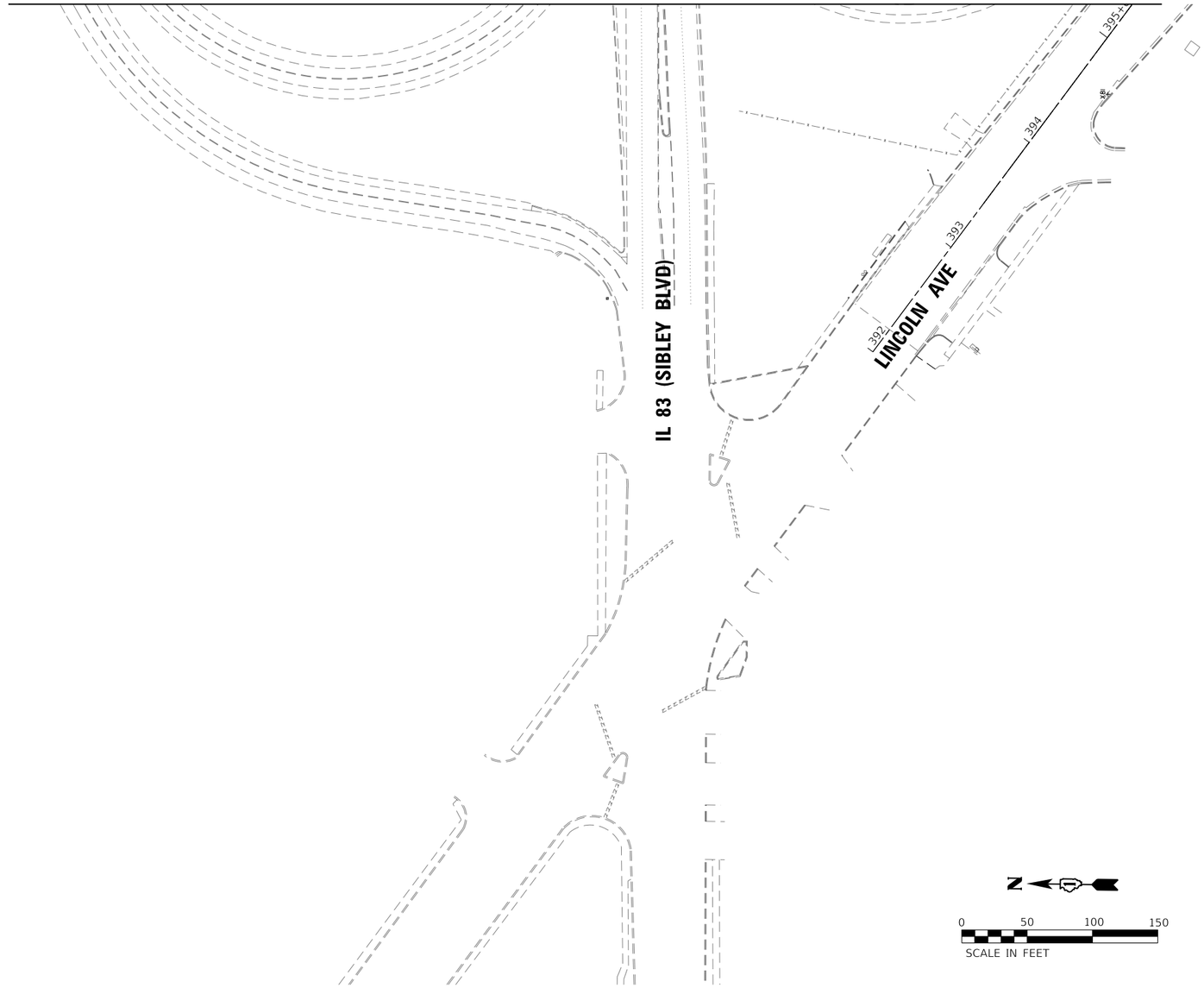
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

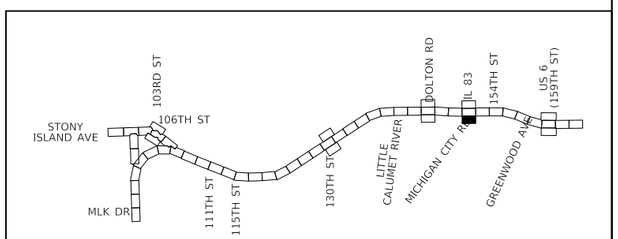
LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 9 OF 22 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	411
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MATCHLINE D





KEY MAP

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

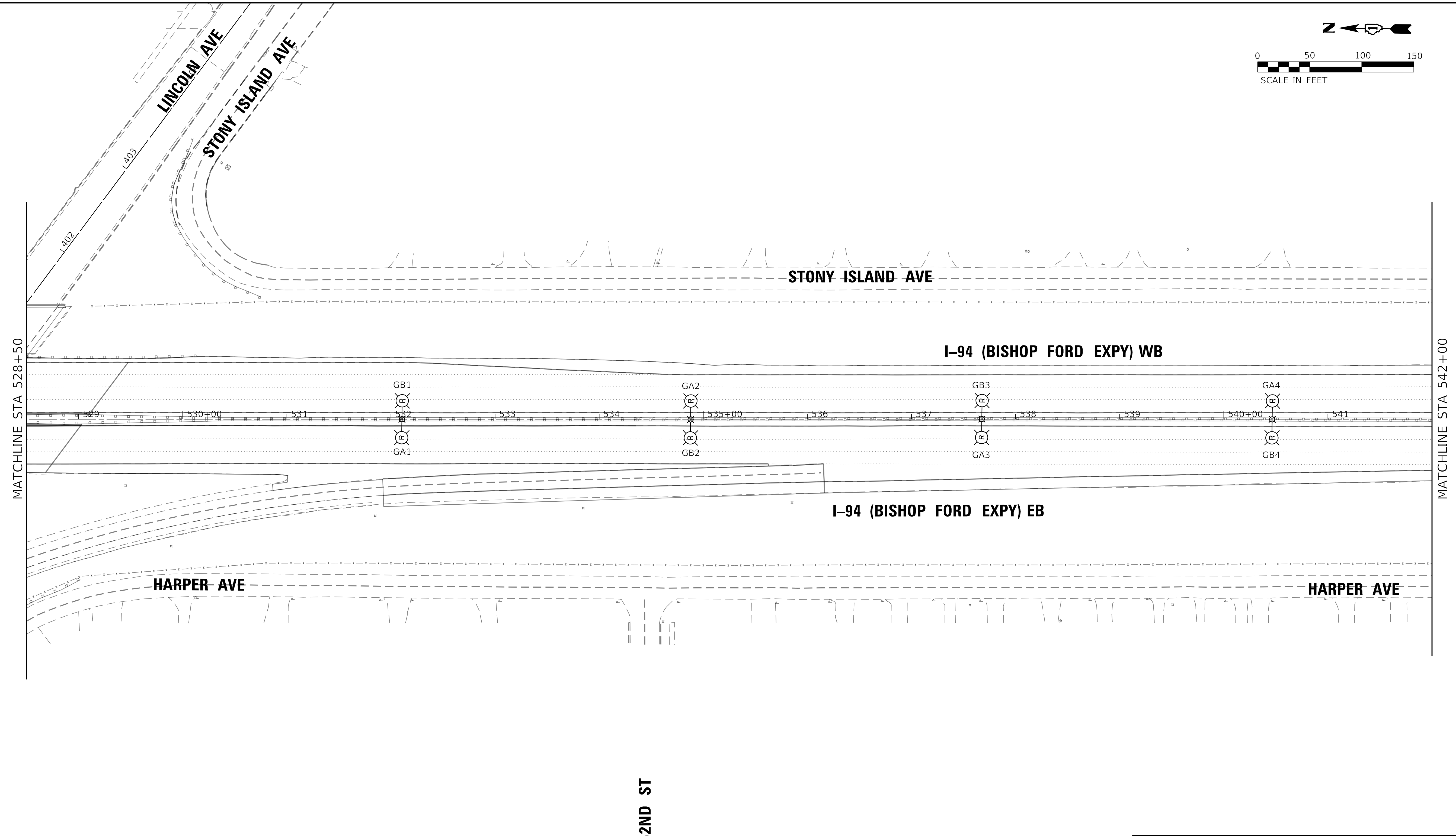
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

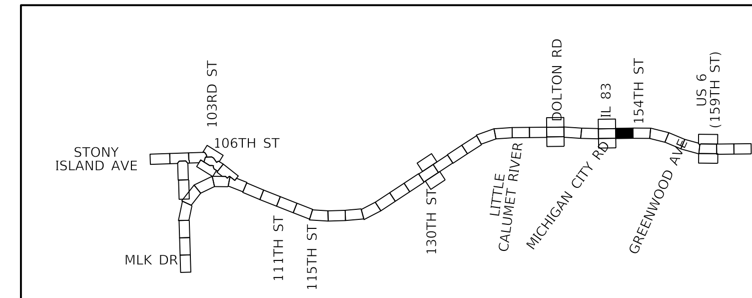
LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 10 OF 22 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	412
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2449\1468_76\D1162K53-sht-hlgh1031-2.dgn





KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\24491468_84\D162K53-sht-light032.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com

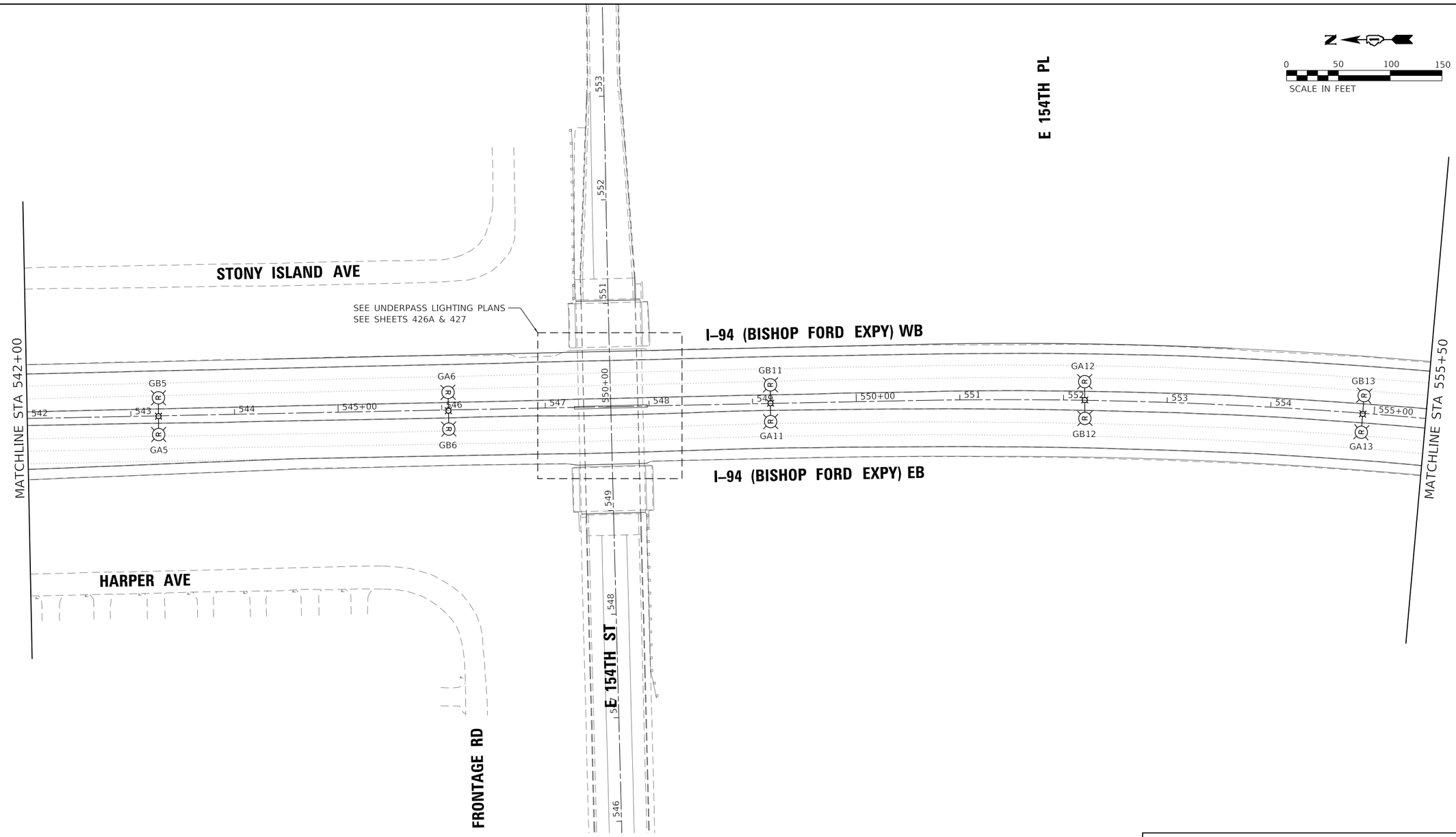
USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

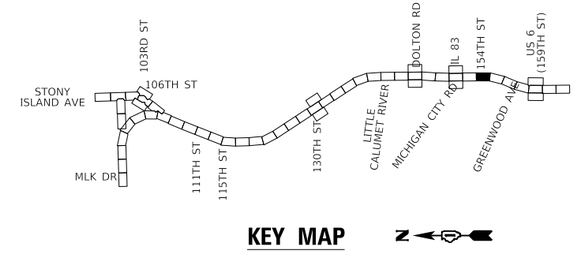
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 11 OF 22 SHEETS | STA. 528+50 TO STA. 542+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	413
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	





KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2449\1468_85\D162453-sht-ltgh003.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

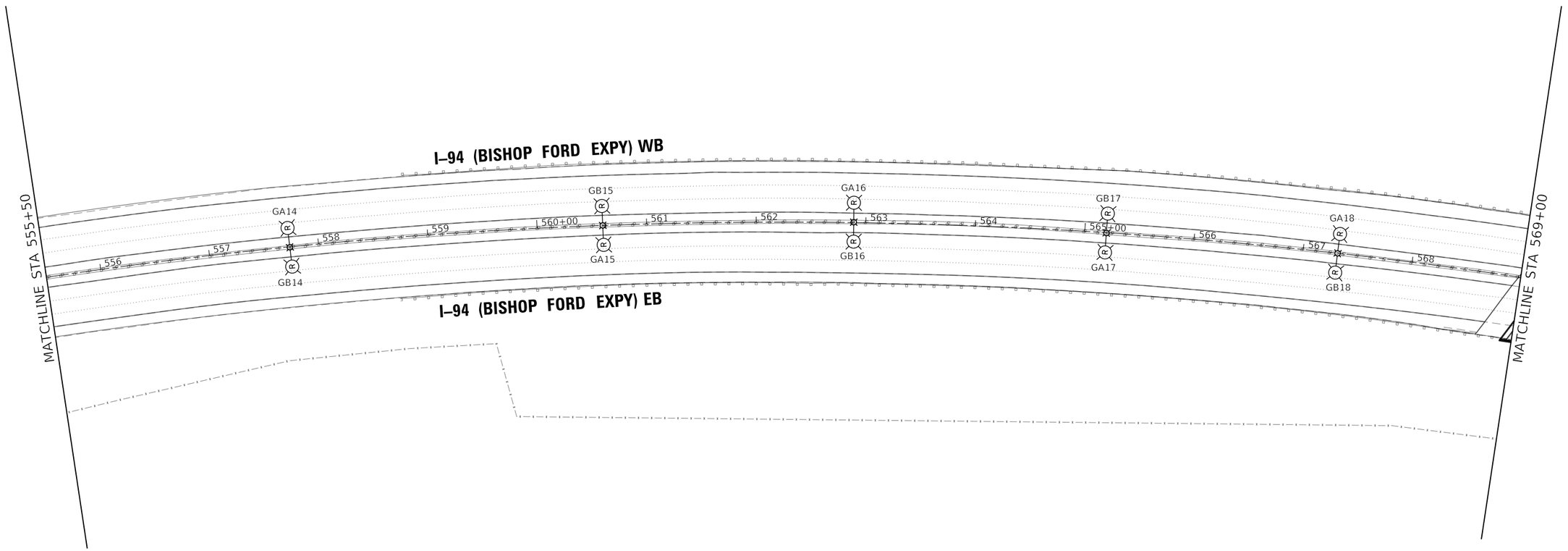
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

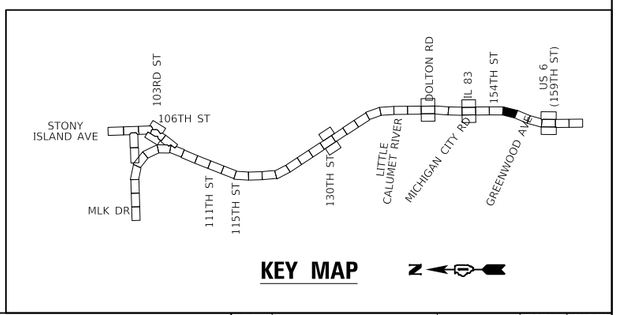
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 12 OF 22 SHEETS | STA. 542+00 | TO STA. 555+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	414
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		





ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11lcs01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

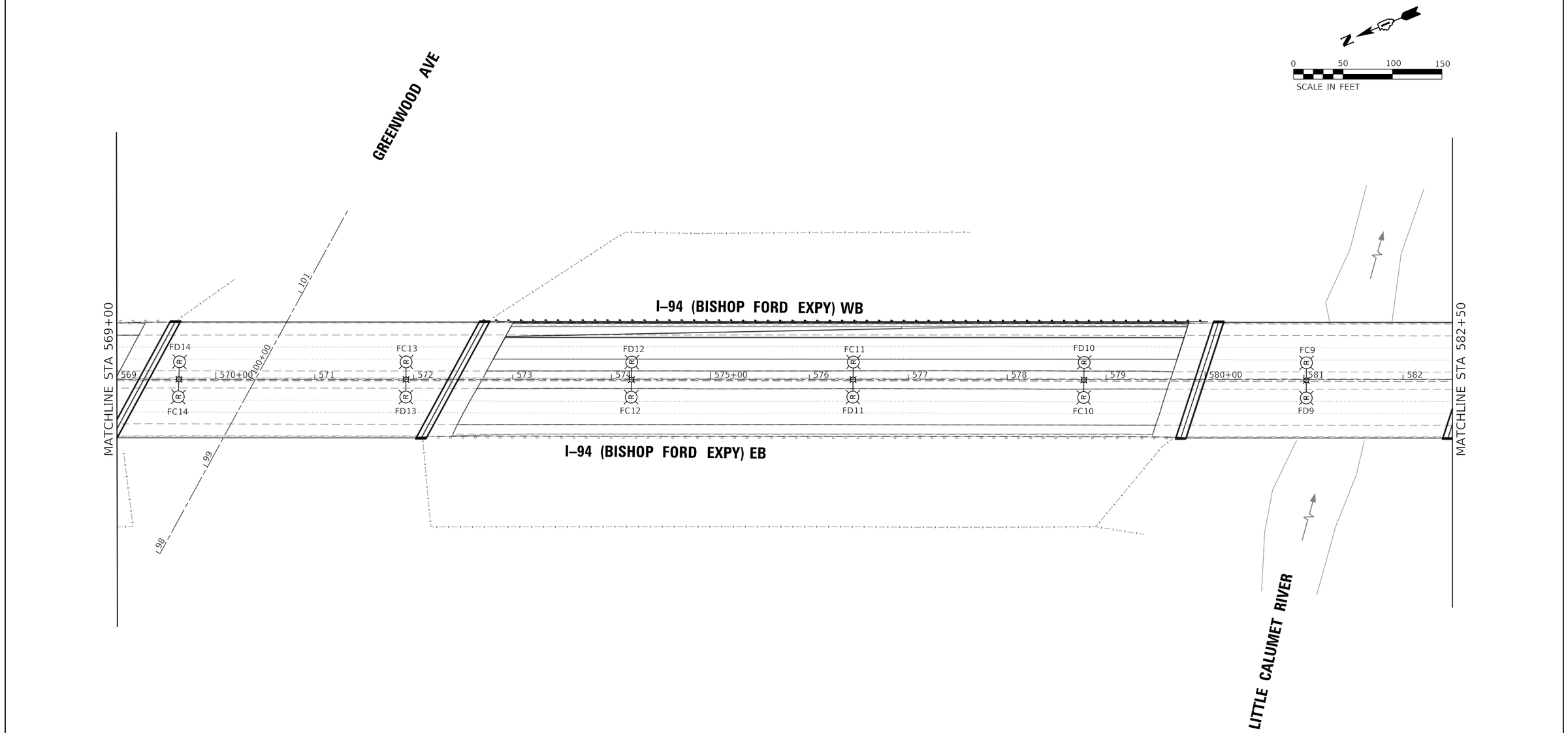
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

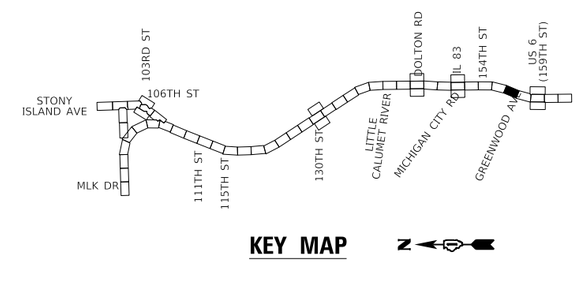
LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 13 OF 22 SHEETS | STA. 555+50 | TO STA. 569+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	415
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11lcs01\ICS_pdf_work_dir\24401468_86D162K53-sht-light034.dgn





KEY MAP

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11lcs01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

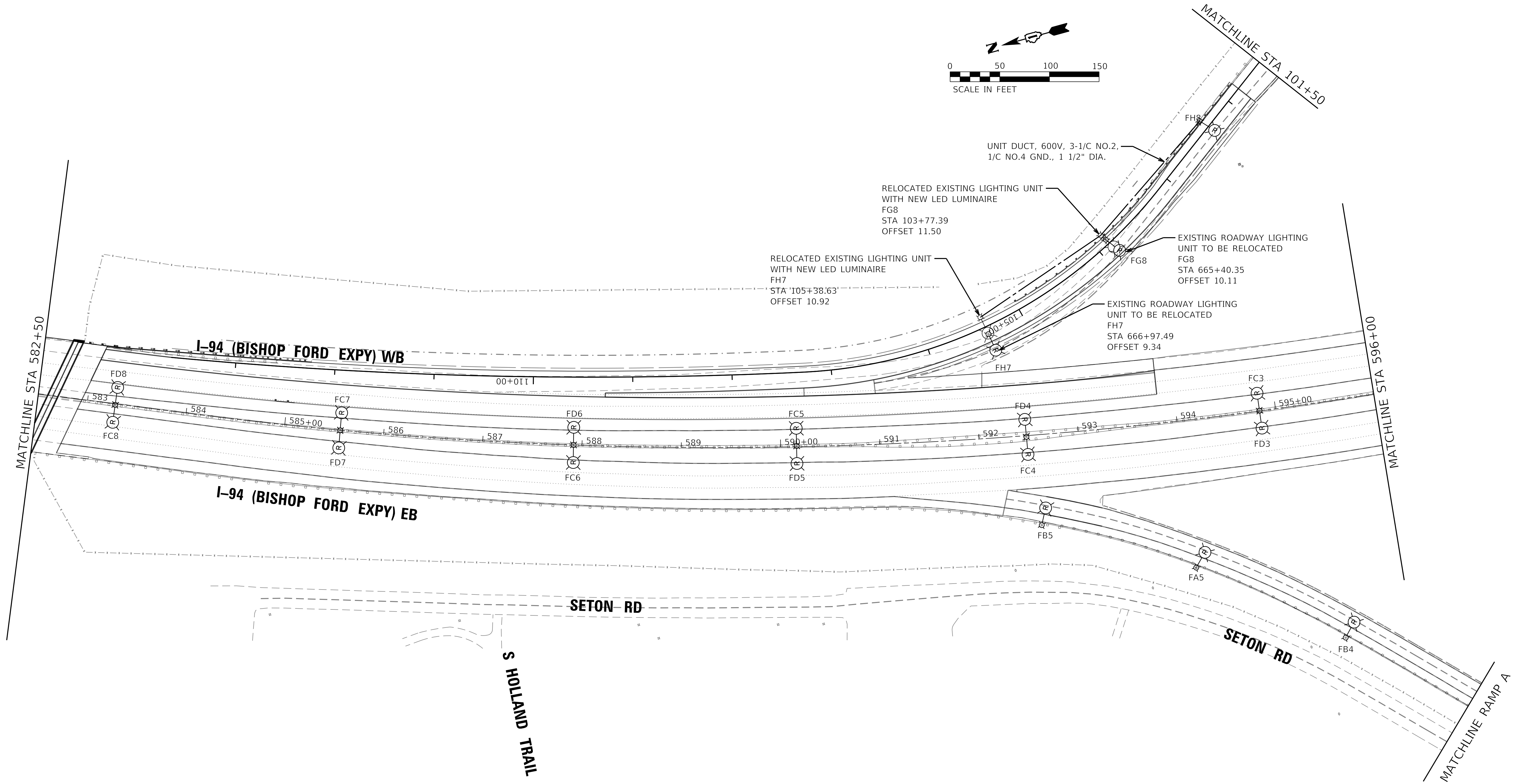
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

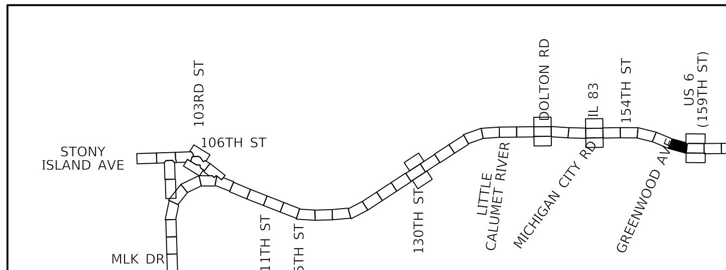
LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 14 OF 22 SHEETS | STA. 569+00 | TO STA. 582+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	416
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bhmepw11lcs01\ICS_pdf_work_dir\24401468_87D162K53-sht-Hgh1035.dgn





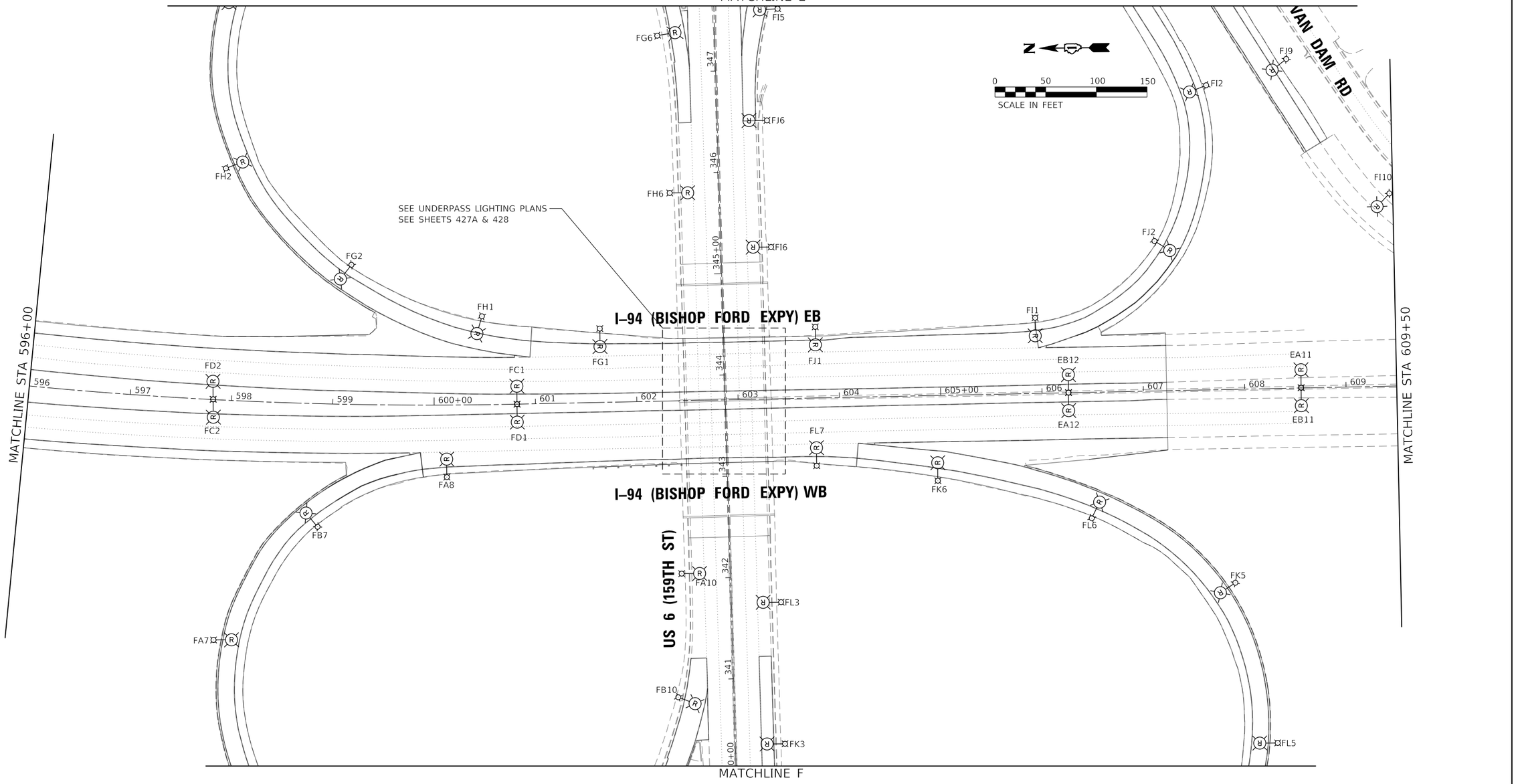
KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2449\1468 88\D162KS3-sht-lighti036.dgn

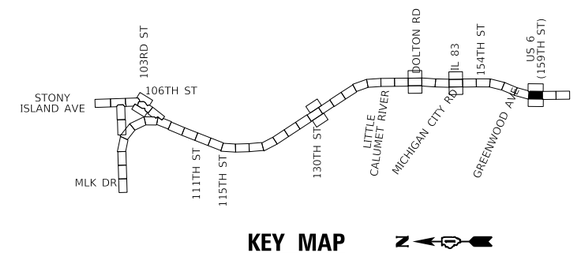
ABNA DESIGN FIRM REG. 184.002117 745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com	USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING PLAN I-94 (BISHOP FORD EXPY)
		DRAWN - LNK	REVISED -		
	PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -		
	PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -		SCALE: SHEET 15 OF 22 SHEETS STA. 582+50 TO STA. 596+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	417
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

MATCHLINE E



MATCHLINE F



KEY MAP

MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\2449\1468_77D162K53-sht-ltgh037.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

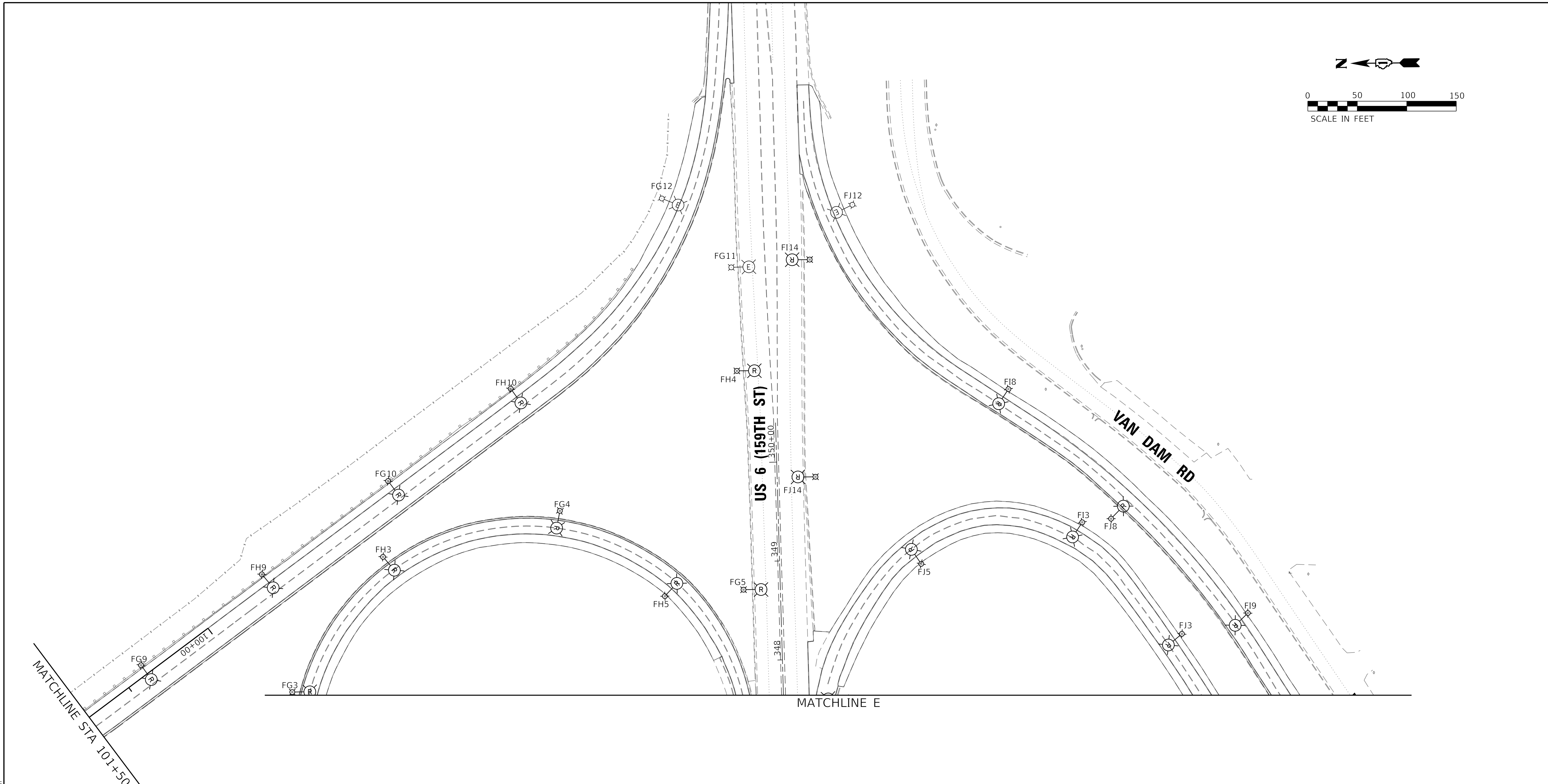
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

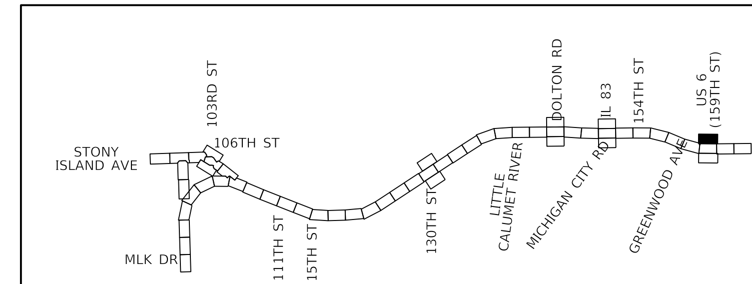
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 16 OF 22 SHEETS | STA. 596+00 | TO STA. 609+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	418
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		





KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2449\1468_89\D162K53-sht-light037-1.dgn

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

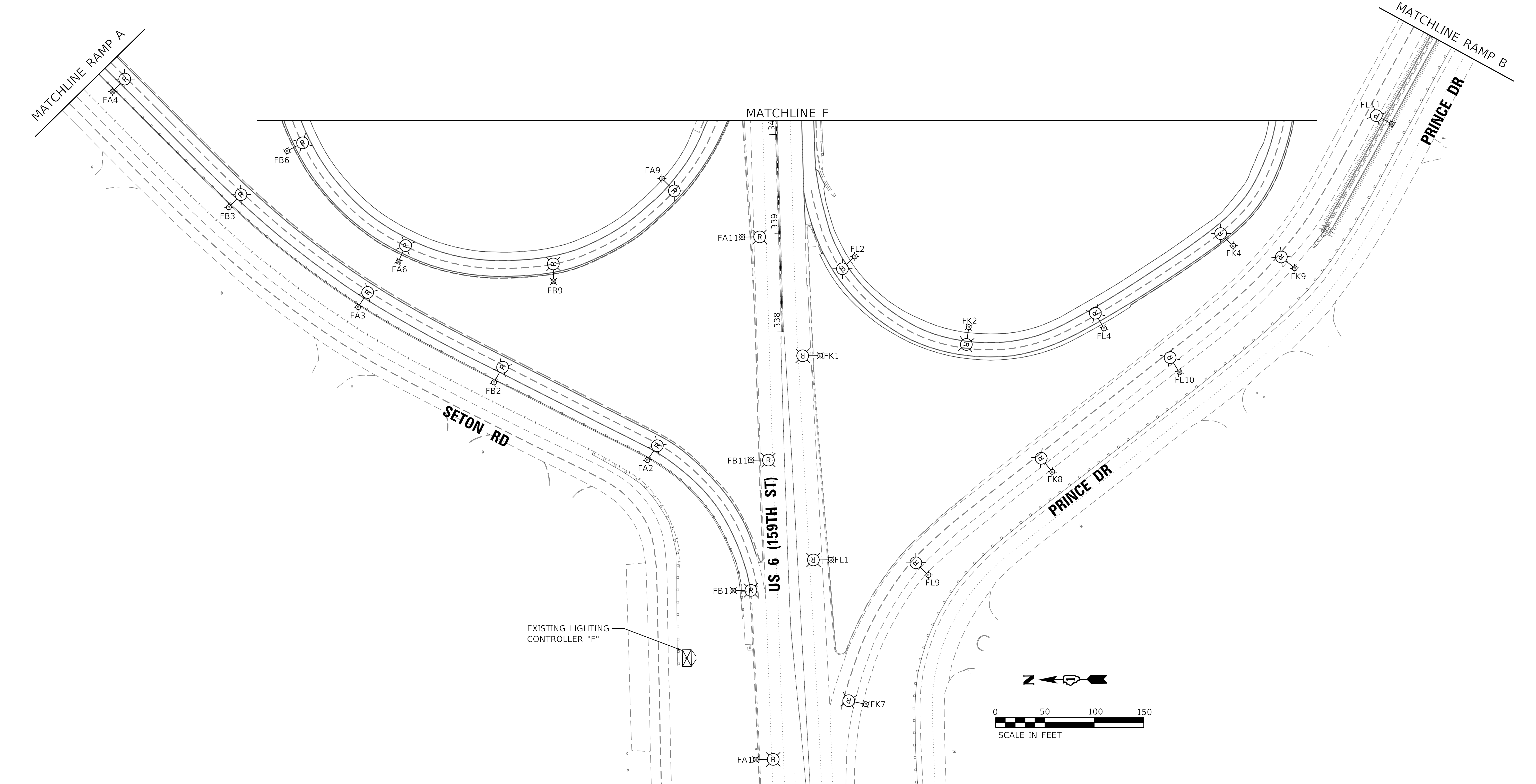
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

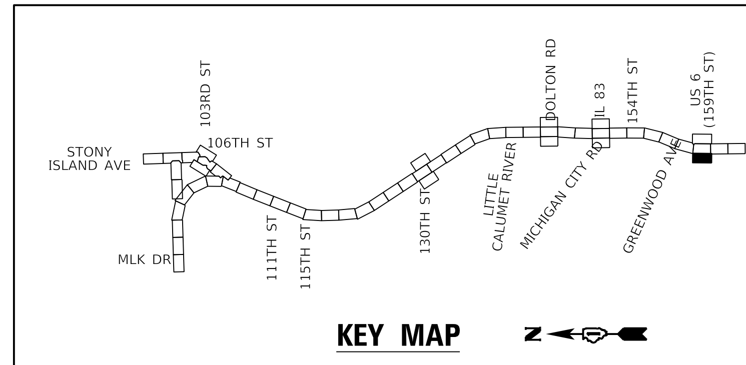
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 17 OF 22 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	419
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	





MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2449\1468_90\D162K53-sht-light037-2.dgn

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

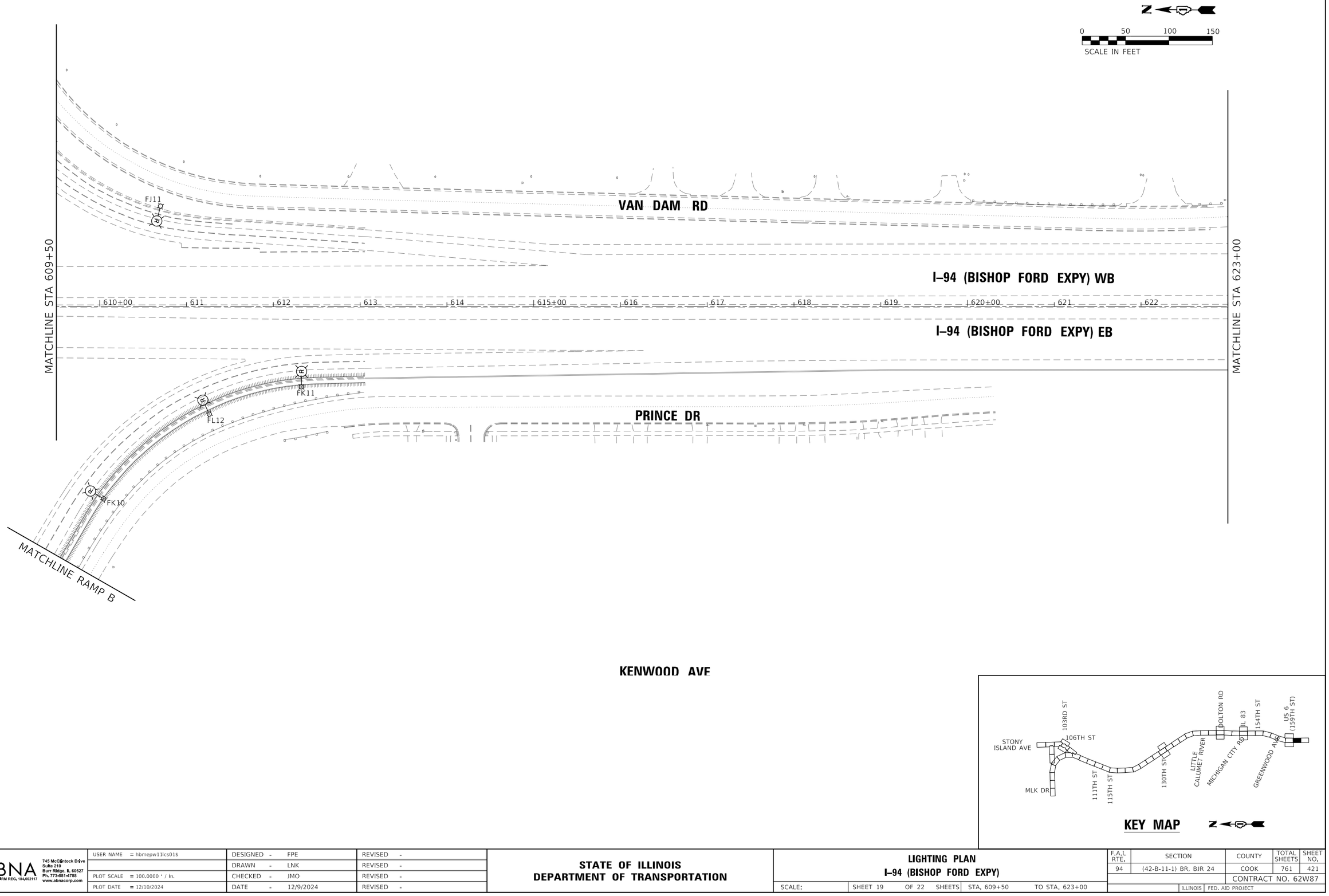
USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I-94 (BISHOP FORD EXPY)

SCALE: SHEET 18 OF 22 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	420
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		



KEY MAP

MODEL: Default
FILE NAME: \\bhmepw11\cs01\ICS_pdf_work_dir\2449\1468_78D162K53-sht-hjnt038.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

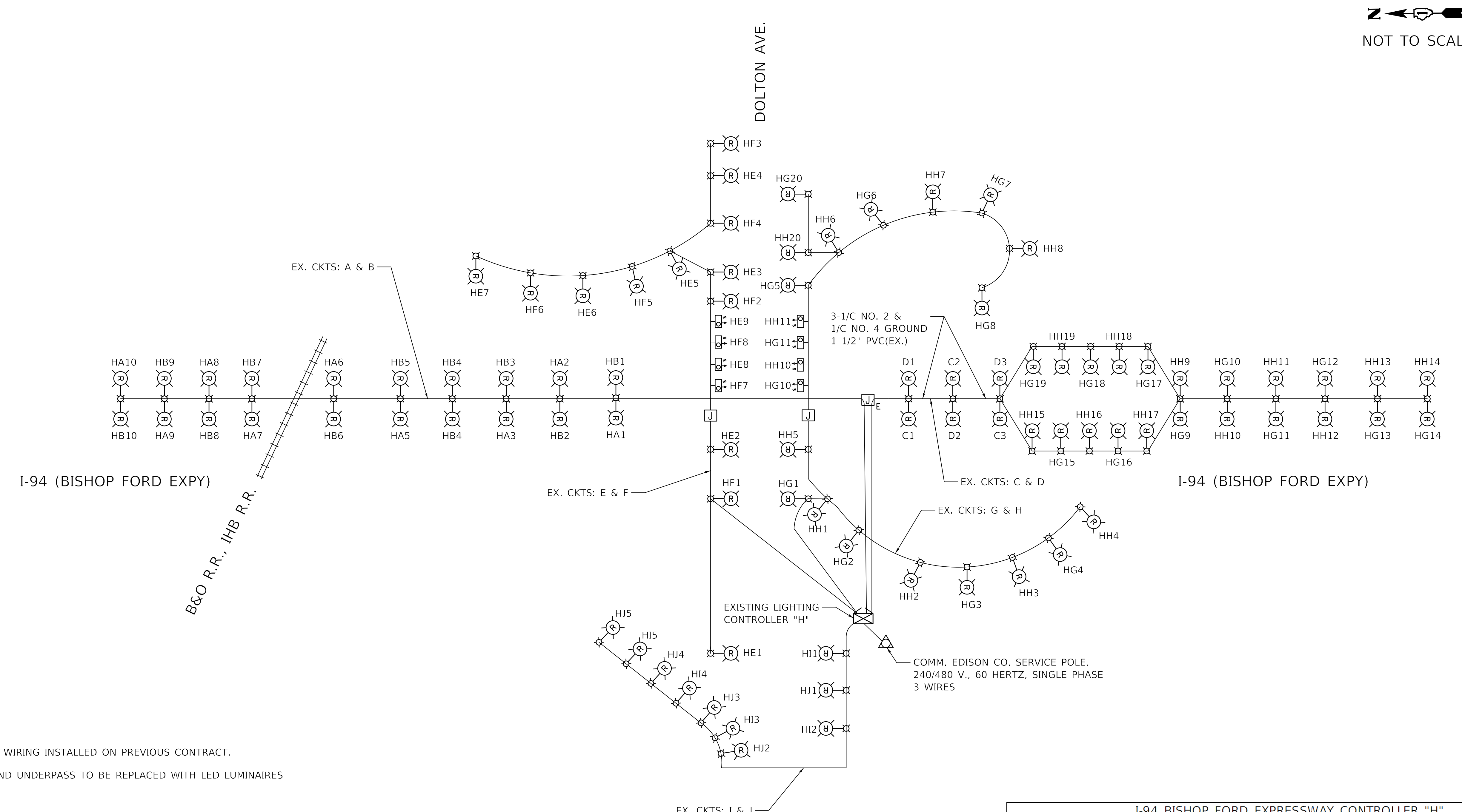
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 19 OF 22 SHEETS | STA. 609+50 | TO STA. 623+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	421
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. LIGHTING SYSTEM, INCLUDING WIRING INSTALLED ON PREVIOUS CONTRACT.
2. LUMINAIRES FOR ROADWAY AND UNDERPASS TO BE REPLACED WITH LED LUMINAIRES

I-94 BISHOP FORD EXPRESSWAY CONTROLLER "H"							
PHASE A				PHASE B			
CIRCUIT	LUMINAIRE COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS	CIRCUIT	LUMINAIRE COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS
A	10	9.6A	2200W	B	10	9.6A	2200W
C	14	13.5A	3080W	D	14	13.5A	3080W
E	9	7.3A	1667W	F	8	6.3A	1447W
G	11	9.2A	2107W	H	11	9.2A	2107W
I	5	4.8A	1100W	J	5	4.8A	1100W
TOTAL:	49	44.5A	10155W	TOTAL:	48	43.6A	9935W

CONTROLLER "H" TOTALS
AT 480: 41.9A 20090W

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2923\1468_79\D162K53-sht-light-one line diagram-01.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com

USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN ONE LINE DIAGRAM CONTROLLER "H"
I-94 (BISHOP FORD EXPY)

SCALE: SHEET 20 OF 22 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	422

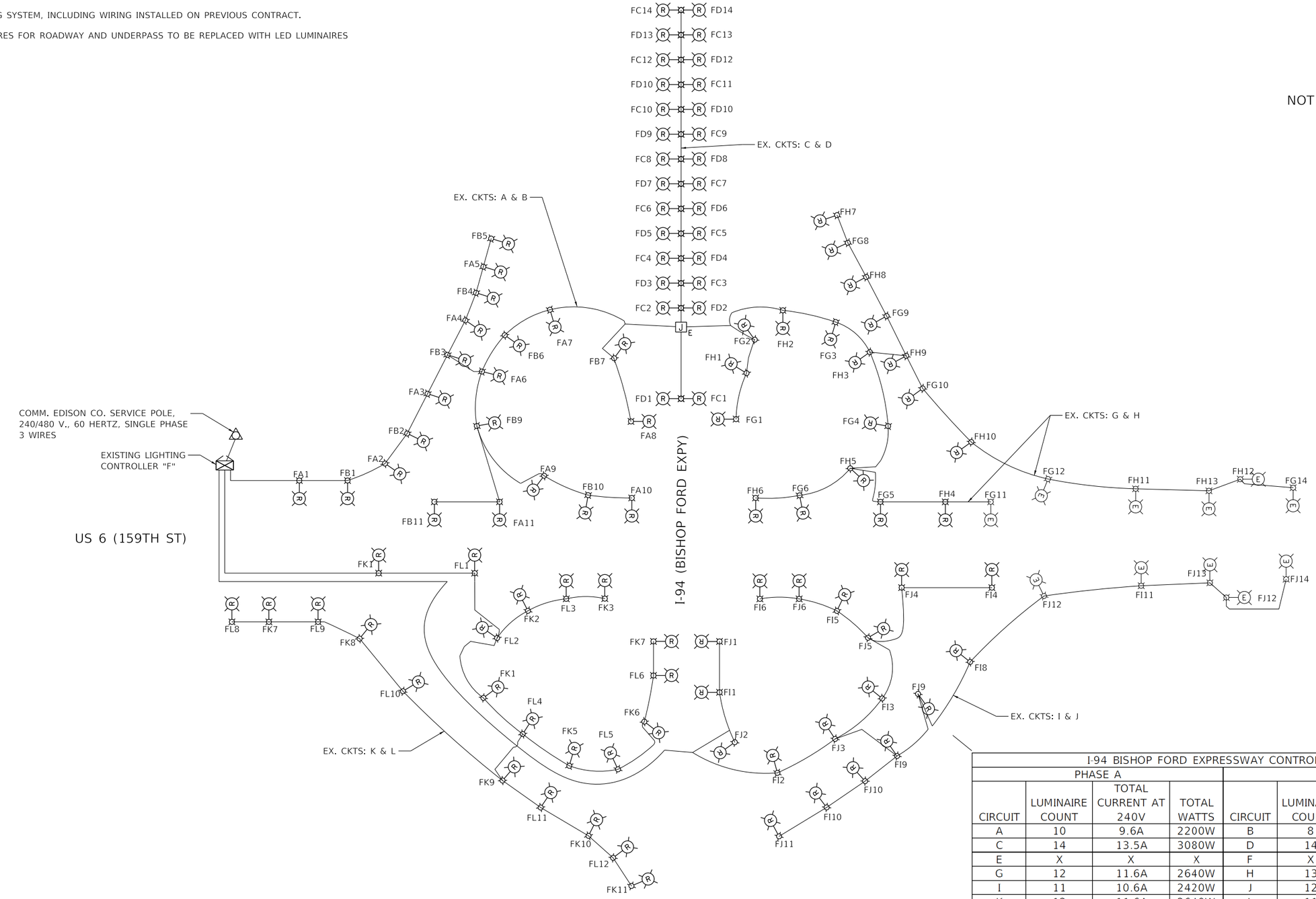
CONTRACT NO. 62W87
ILLINOIS FED. AID PROJECT

NOTES:

1. LIGHTING SYSTEM, INCLUDING WIRING INSTALLED ON PREVIOUS CONTRACT.
2. LUMINAIRES FOR ROADWAY AND UNDERPASS TO BE REPLACED WITH LED LUMINAIRES

N

NOT TO SCALE



I-94 BISHOP FORD EXPRESSWAY CONTROLLER "F"							
PHASE A				PHASE B			
CIRCUIT	LUMINAIRE COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS	CIRCUIT	LUMINAIRE COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS
A	10	9.6A	2200W	B	8	7.7A	1760W
C	14	13.5A	3080W	D	14	13.5A	3080W
E	X	X	X	F	X	X	X
G	12	11.6A	2640W	H	13	12.5A	2860W
I	11	10.6A	2420W	J	12	11.6A	2640W
K	12	11.6A	2640W	L	11	10.6A	2420W
TOTAL:	59	56.9A	12980W	TOTAL:	58	56.0A	12760W

CONTROLLER "F" TOTALS
AT 480: 53.6A 25740W

ABNA DESIGN FRM REG, 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-681-4788
www.abnacorp.com

USER NAME = hbmepw11lcs01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

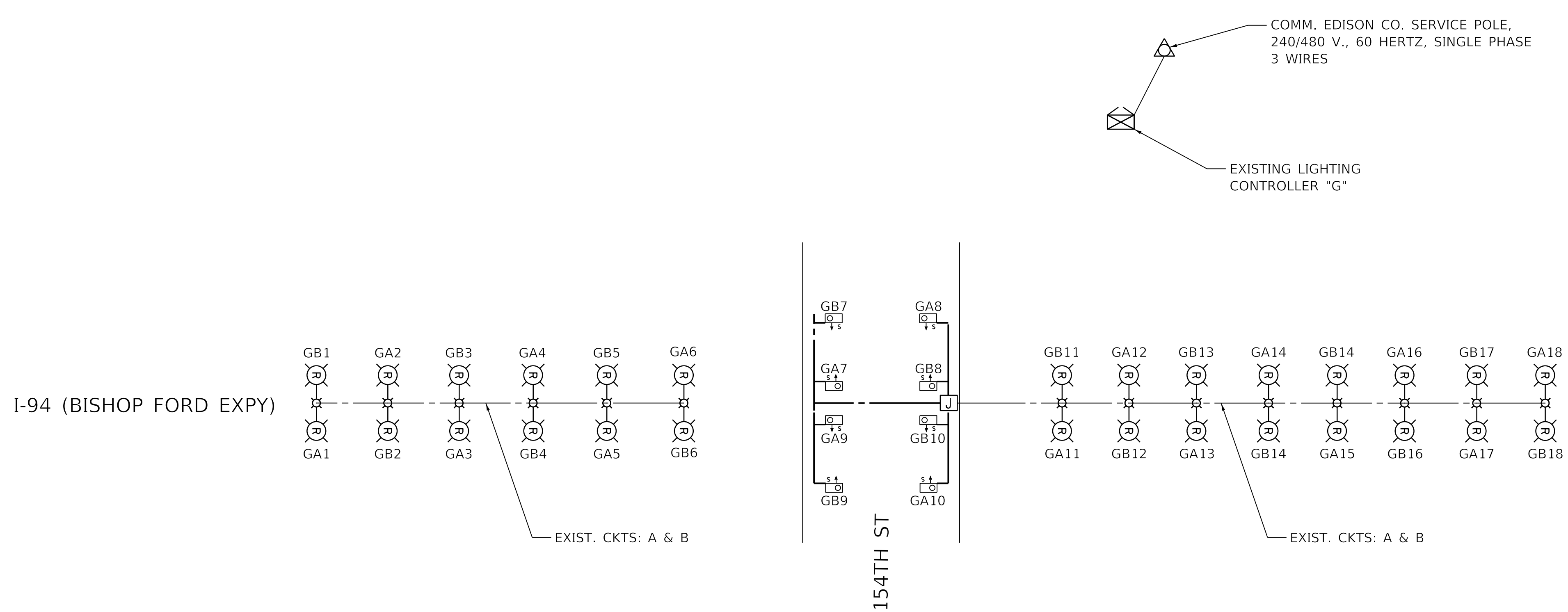
LIGHTING PLAN ONE LINE DIAGRAM CONTROLLER "F
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 21 OF 22 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	423
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: \\hbmepw11lcs01\ICS_pdf_work_dir\29231468_20110162453-stnl-light-one line diagram-02.dgn

NOT TO SCALE



NOTES:

1. LIGHTING SYSTEM, INCLUDING WIRING INSTALLED ON PREVIOUS CONTRACT.
2. LUMINAIRES FOR ROADWAY AND UNDERPASS TO BE REPLACED WITH LED LUMINAIRES

I-94 BISHOP FORD EXPRESSWAY CONTROLLER "G"							
PHASE A				PHASE B			
CIRCUIT	LUMINAIRE COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS	CIRCUIT	LUMINAIRE COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS
A	18	14.6A	3335W	B	18	14.6A	3335W
C	X	X	X	D	X	X	0W
E	X	X	X	F	X	X	0W
G	X	X	X	H	X	X	0W
I	X	X	X	J	X	X	0W
K	X	X	X	L	X	X	0W
TOTAL:	18	14.6A	3335W	TOTAL:	18	14.6A	3335W

CONTROLLER "G" TOTALS
AT 480: 13.9A 6670W

MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2923\1468_259\D162K53-sht-light-one line diagram-03.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

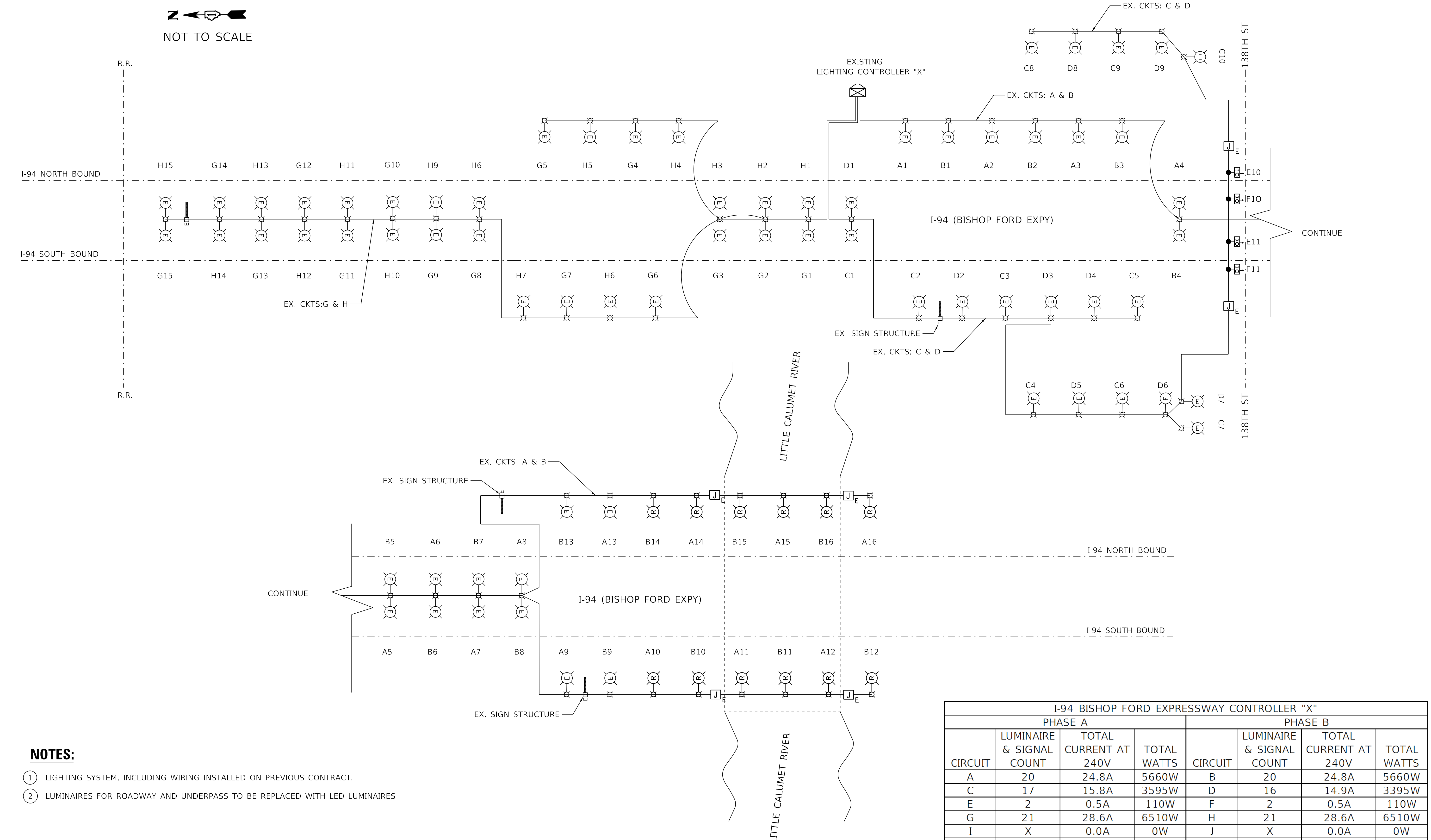
LIGHTING PLAN ONE LINE DIAGRAM CONTROLLER "G"
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 22 OF 22 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	424

CONTRACT NO. 62W87

ILLINOIS | FED. AID PROJECT

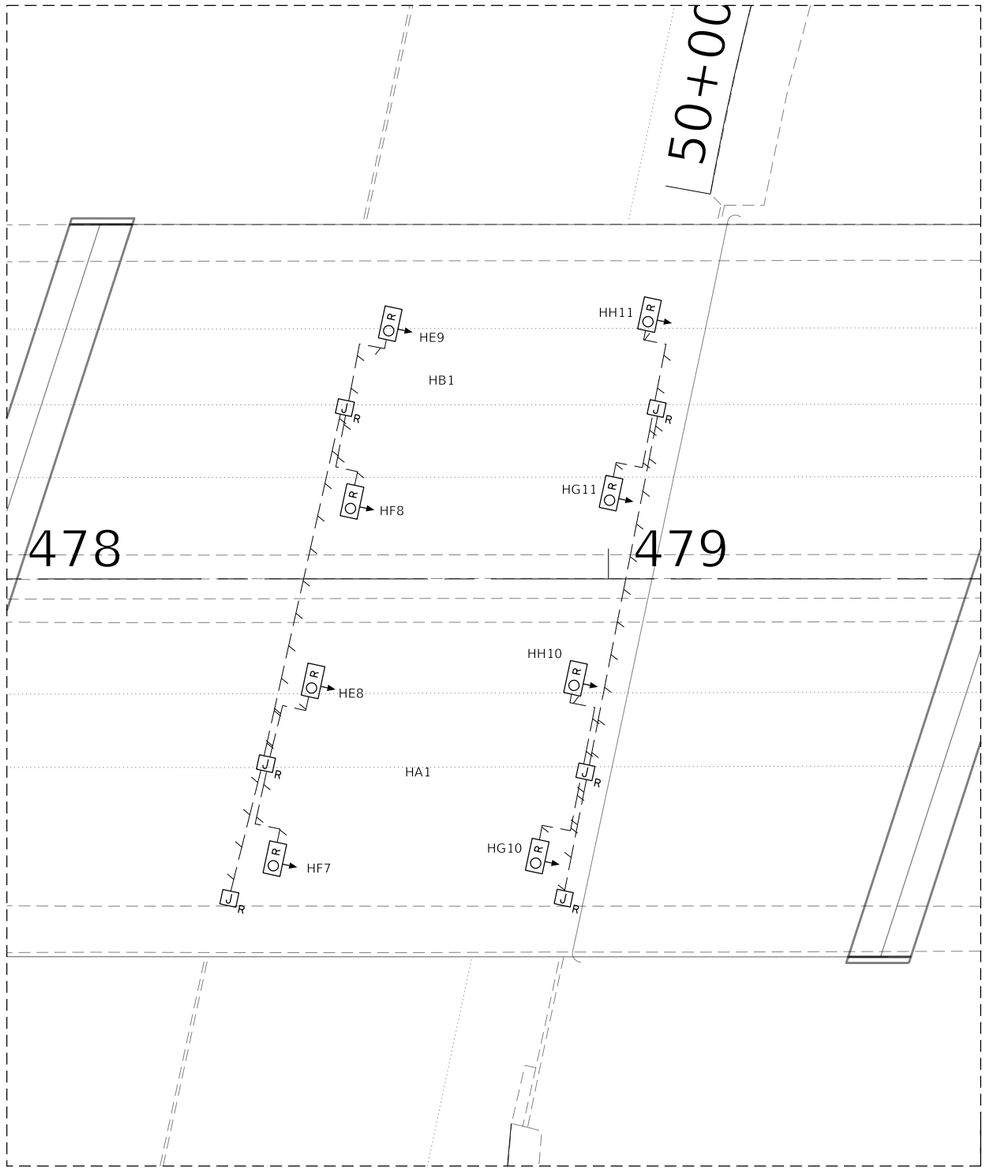

NOT TO SCALE
R.R.
I-94 NORTH BOUND
I-94 SOUTH BOUND
H15 G14 H13 G12 H11 G10 H9 H6 G5 H5 G4 H4 H3 H2 H1 D1 A1 B1 A2 B2 A3 B3 A4
G15 H14 G13 H12 G11 H10 G9 G8 H7 G7 H6 G6 G3 G2 G1 C1 C2 D2 C3 D3 D4 C5 B4
EX. CKTS:G & H
EXISTING
LIGHTING CONTROLLER "X"
EX. CKTS: A & B
EX. CKTS: C & D
C8 D8 C9 D9 C10
138TH ST
E10
F10
E11
F11
CONTINUE
I-94 (BISHOP FORD EXPY)
EX. SIGN STRUCTURE
C4 D5 C6 D6 D7 C7
LITTLE CALUMET RIVER
EX. CKTS: A & B
EX. SIGN STRUCTURE
B5 A6 B7 A8 B13 A13 B14 A14 B15 A15 B16 A16
I-94 NORTH BOUND
CONTINUE
I-94 (BISHOP FORD EXPY)
I-94 SOUTH BOUND
A5 B6 A7 B8 A9 B9 A10 B10 A11 B11 A12 B12
EX. SIGN STRUCTURE
LITTLE CALUMET RIVER

I-94 BISHOP FORD EXPRESSWAY CONTROLLER "X"							
PHASE A				PHASE B			
CIRCUIT	LUMINAIRE & SIGNAL COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS	CIRCUIT	LUMINAIRE & SIGNAL COUNT	TOTAL CURRENT AT 240V	TOTAL WATTS
A	20	24.8A	5660W	B	20	24.8A	5660W
C	17	15.8A	3595W	D	16	14.9A	3395W
E	2	0.5A	110W	F	2	0.5A	110W
G	21	28.6A	6510W	H	21	28.6A	6510W
I	X	0.0A	0W	J	X	0.0A	0W
TOTAL:	60	69.6A	15875W	TOTAL:	59	68.8A	15675W

CONTROLLER "X" TOTALS
AT 480: 65.7A 31550W

NOTES:

1. LIGHTING SYSTEM, INCLUDING WIRING INSTALLED ON PREVIOUS CONTRACT.
2. LUMINAIRES FOR ROADWAY AND UNDERPASS TO BE REPLACED WITH LED LUMINAIRES



NOT TO SCALE

NOTE:

1. THE EXISTING CABLE, CONDUIT, AND JUNCTION BOXES SHALL BE REPLACED WITH NEW CABLE, CONDUIT AND JUNCTION BOXES.

I-94 (BISHOP FORD EXPY) OVER DOLTON AVE.
UNDERPASS LIGHTING

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED - 2 02/18/2025 LNK	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -	

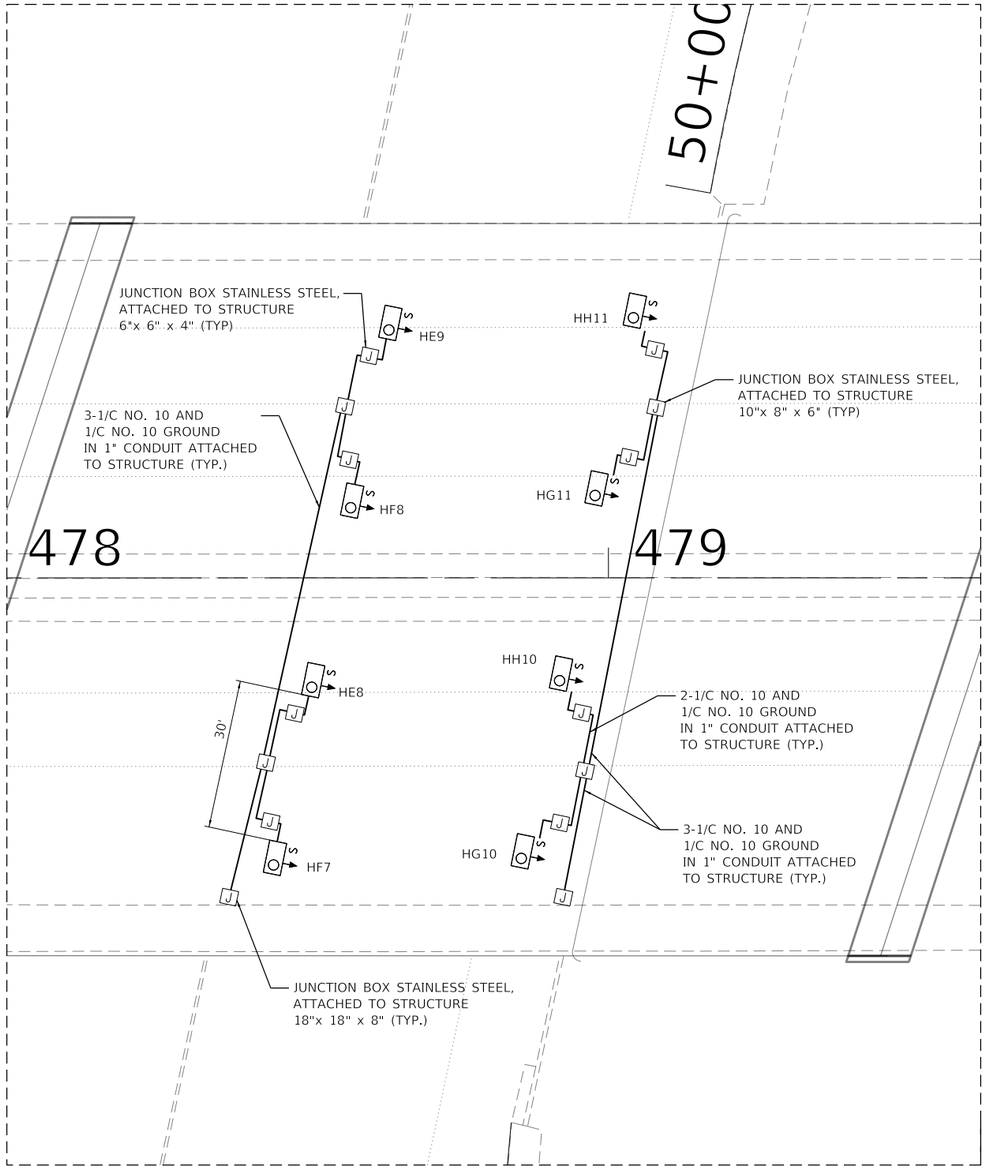
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN EXISTING UNDERPASS
I–94 (BISHOP FORD EXPY) OVER DOLTON AVE.

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	425
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2923\1468_200\D162K53-sht-Hlght028-3.dgn



NOT TO SCALE

NOTES:

1. THE EXISTING CABLE, CONDUIT, AND JUNCTION BOXES SHALL BE REPLACED WITH NEW CABLE, CONDUIT AND JUNCTION BOXES.
2. THE PROPOSED LED LUMINAIRES SHALL BE INSTALLED PER IDOT DISTRICT 1 STANDARDS (SUSPENDED MOUNT LED UNDERPASS LUMINAIRE INSTALLATION DETAILS, STANDARD BE-901).
3. THE PROPOSED UNDERPASS LIGHTING UNIT LOCATIONS AND SPACING SHALL MATCH THE EXISTING. CONTRACTOR SHALL FIELD VERIFY EXISTING LOCATIONS.

I-94 (BISHOP FORD EXPY) OVER DOLTON AVE.
UNDERPASS LIGHTING

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-681-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED - 2 02/18/2025 LNK	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -	

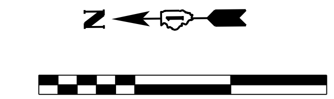
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

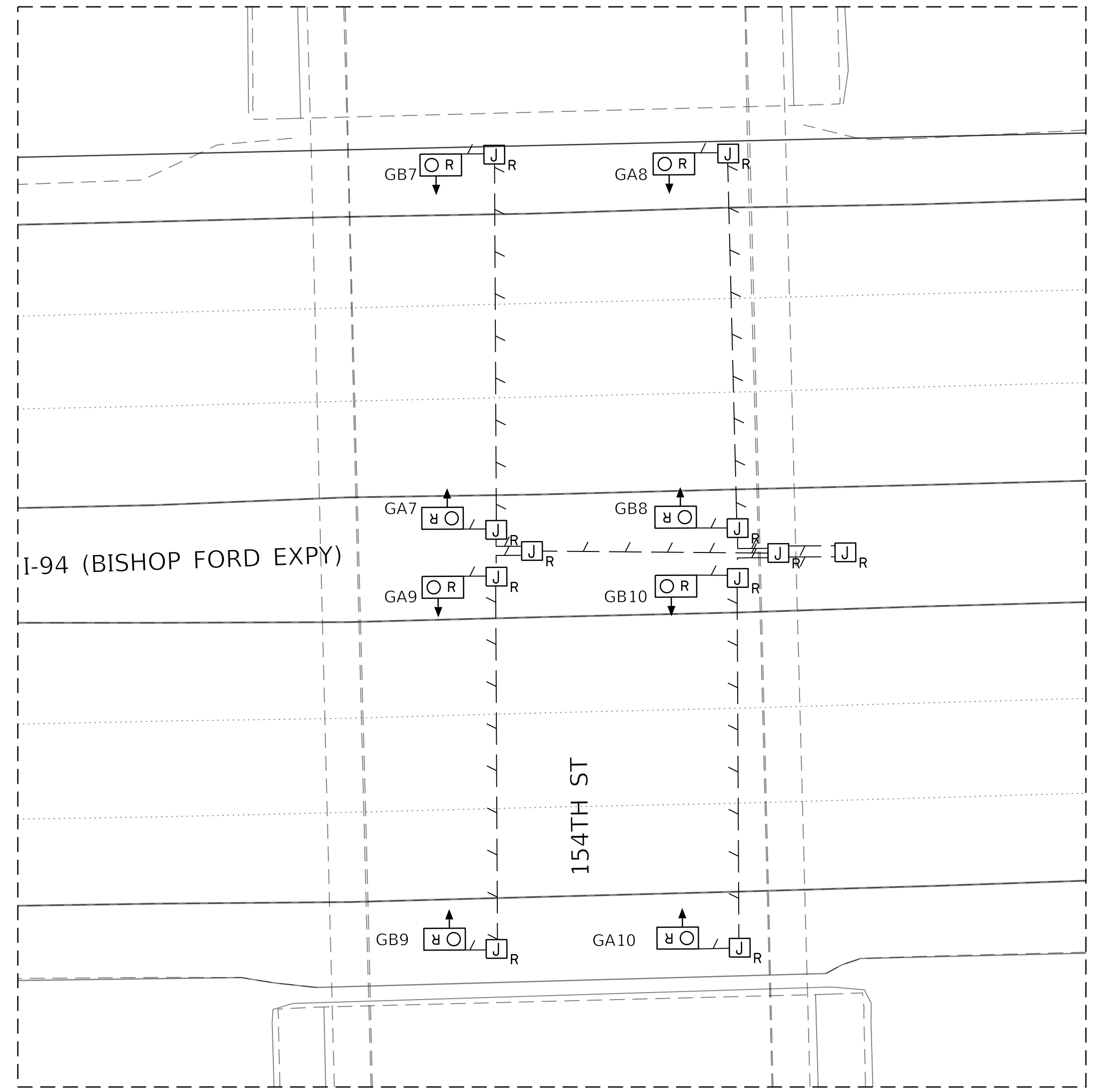
LIGHTING PLAN PROPOSED UNDERPASS
I–94 (BISHOP FORD EXPY) OVER DOLTON AVE.

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	426
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\29231468_135D162K53-sht-lightt028-4.dgn





I-94 (BISHOP FORD EXPY) AND 154TH ST UNDERPASS LIGHTING

NOTE:

(1) THE EXISTING CABLE, CONDUIT, AND JUNCTION BOXES SHALL BE REPLACED WITH NEW CABLE, CONDUIT AND JUNCTION BOXES.

MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2923\1468_273\D162K53-sht-light033-2.dgn

ABNA DESIGN FIRM REG. 184.002117 745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com	USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED - (2) 02/18/2025 LNK
		DRAWN - LNK	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
	PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -

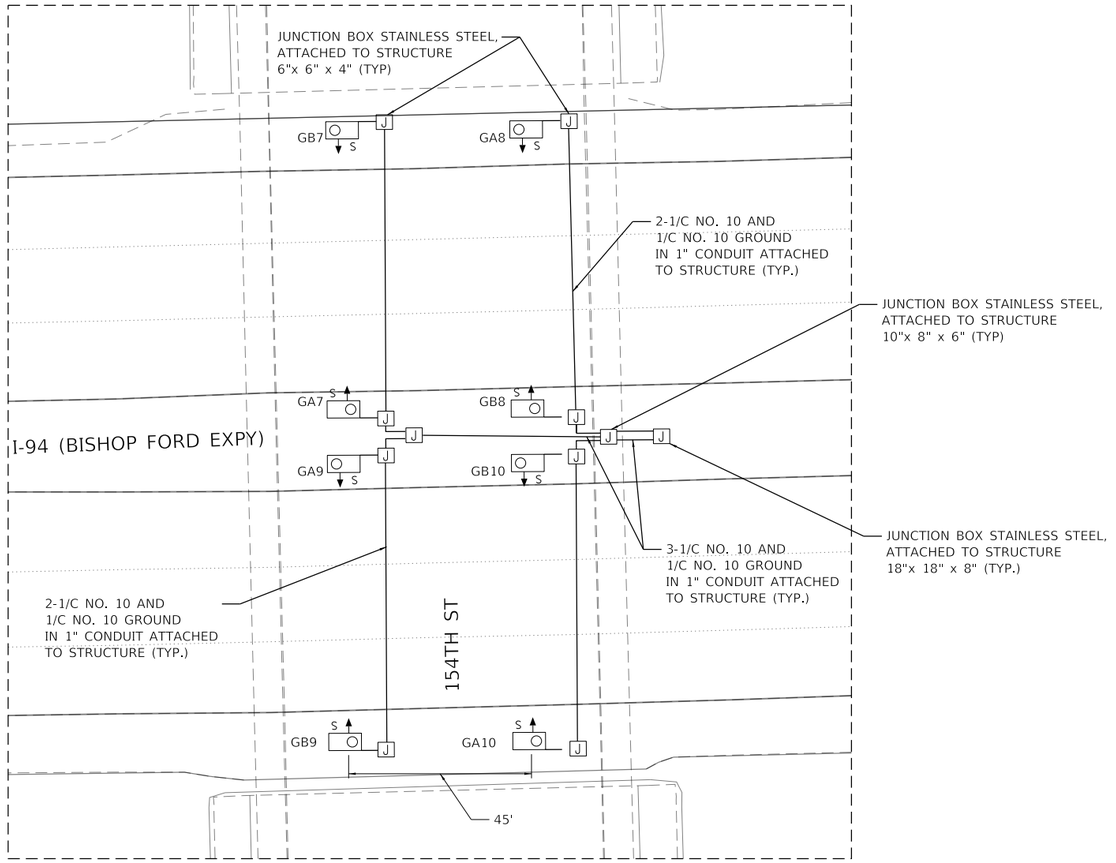
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN EXISTING UNDERPASS
I–94 (BISHOP FORD EXPY) AND 154TH ST

SCALE: | SHEET 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	426A
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

NOT TO SCALE



I-94 (BISHOP FORD EXPY) AND 154TH ST UNDERPASS LIGHTING

NOTES:

1. THE EXISTING CABLE, CONDUIT, AND JUNCTION BOXES SHALL BE REPLACED WITH NEW CABLE, CONDUIT AND JUNCTION BOXES.
2. THE PROPOSED LED LUMINAIRES SHALL BE INSTALLED PER IDOT DISTRICT 1 STANDARDS (SUSPENDED MOUNT LED UNDERPASS LUMINAIRE INSTALLATION DETAILS, STANDARD BE-901).
3. THE PROPOSED UNDERPASS LIGHTING UNIT LOCATIONS AND SPACING SHALL MATCH THE EXISTING. CONTRACTOR SHALL FIELD VERIFY EXISTING LOCATIONS.

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED - 2 02/18/2025 LNK	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/18/2025	DATE - 12/9/2024	REVISED -	

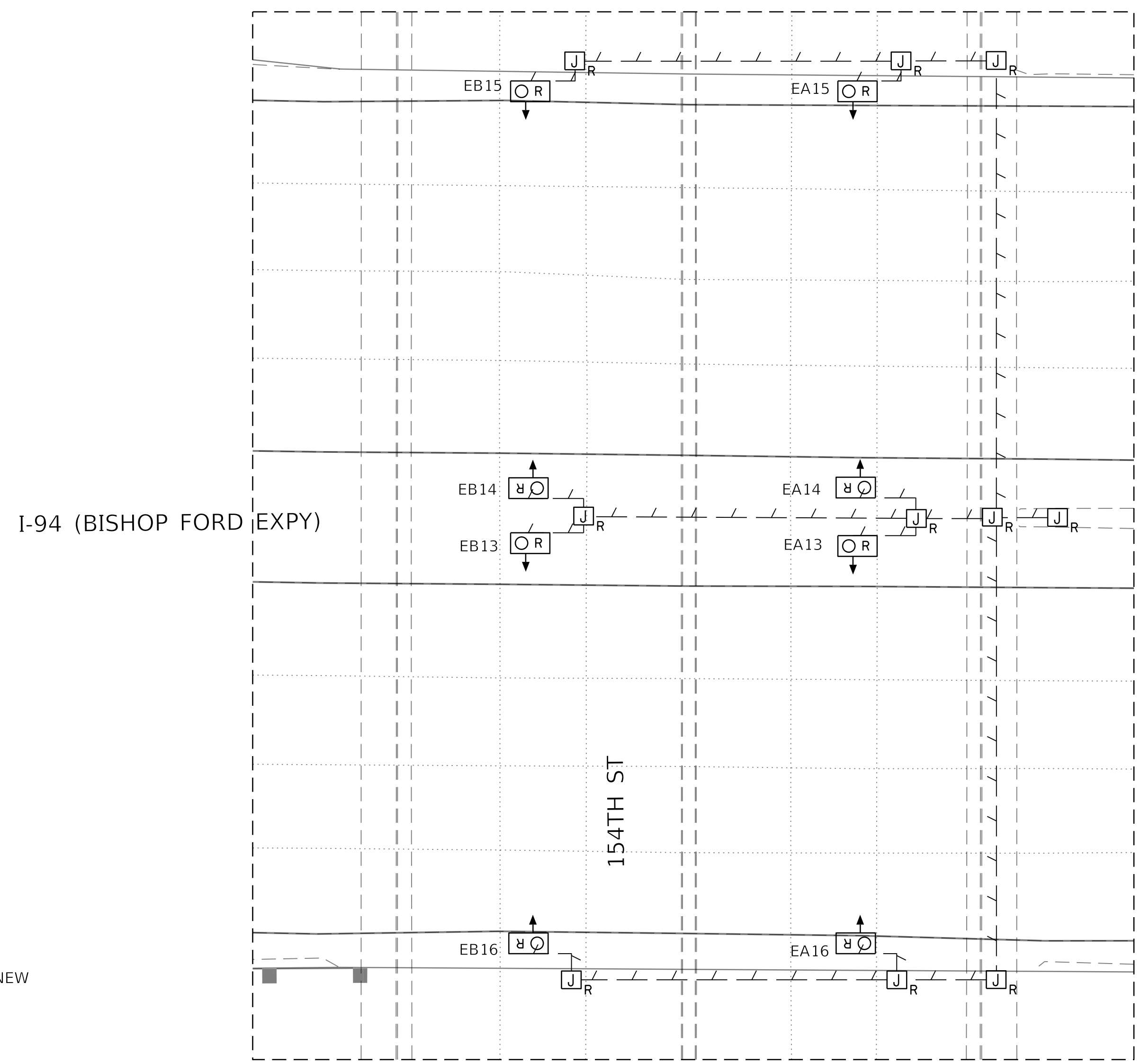
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN PROPOSED UNDERPASS
I-94 (BISHOP FORD EXPY) AND 154TH ST

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	427
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

NOT TO SCALE



I-94 (BISHOP FORD EXPY) AND US 6 (159TH ST) UNDERPASS LIGHTING

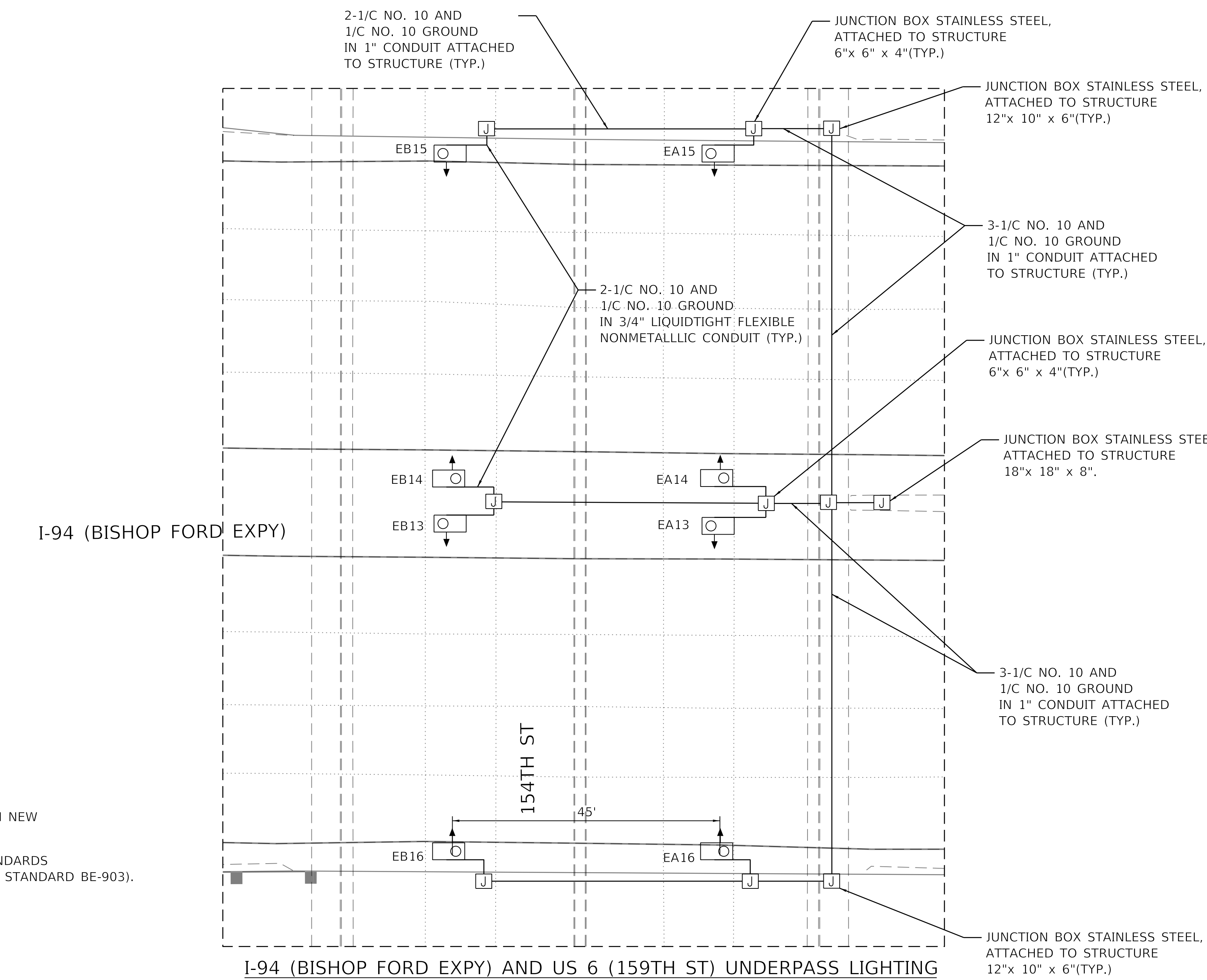
NOTE:

(1) THE EXISTING CABLE, CONDUIT, AND JUNCTION BOXES SHALL BE REPLACED WITH NEW CABLE, CONDUIT AND JUNCTION BOXES.

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2887\1468_274\D162K53-sht-light037-4.dgn

ABNA DESIGN FIRM REG. 184.002117 745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com	USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED - 2 02/18/2025 LNK	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING PLAN EXISTING UNDERPASS I-94 (BISHOP FORD EXPY) AND US 6 (159TH ST)
		DRAWN - LNK	REVISED -		
	PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -		
	PLOT DATE = 3/14/2025	DATE - 12/6/2024	REVISED -		SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	756	427A
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		



I-94 (BISHOP FORD EXPY) AND US 6 (159TH ST) UNDERPASS LIGHTING

NOT TO SCALE

NOTES:

1. THE EXISTING CABLE, CONDUIT, AND JUNCTION BOXES SHALL BE REPLACED WITH NEW CABLE, CONDUIT AND JUNCTION BOXES.
2. THE PROPOSED LED LUMINAIRES SHALL BE INSTALLED PER IDOT DISTRICT 1 STANDARDS (PIER / ABUTMENT MOUNTED LED UNDERPASS LUMINAIRE INSTALLATION DETAILS, STANDARD BE-903).
3. THE PROPOSED UNDERPASS LIGHTING UNIT LOCATIONS AND SPACING SHALL MATCH THE EXISTING. CONTRACTOR SHALL FIELD VERIFY EXISTING LOCATIONS.

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED - 2 02/18/2025 LNK	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/14/2025	DATE - 12/6/2024	REVISED -	

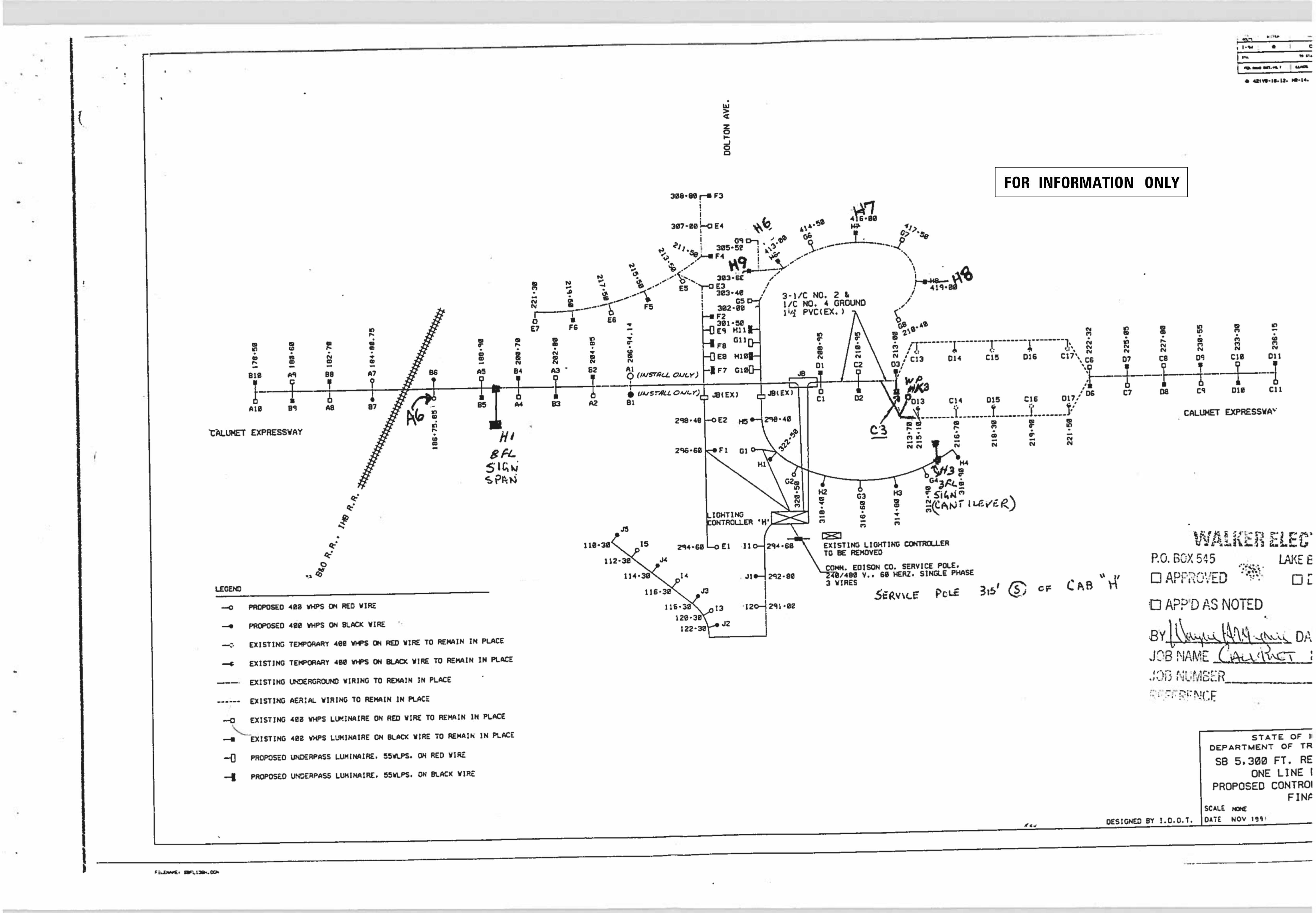
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN PROPOSED UNDERPASS
I–94 (BISHOP FORD EXPY) AND US 6 (159TH ST)

SCALE: | SHEET 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	756	428
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

FOR INFORMATION ONLY



MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2452\1468_281\D162K53-sht-existing one line diagram 01.dgn

ABNA DESIGN FIRM REG. 184.002117 — 745 McClintock Drive, Suite 210, Burr Ridge, IL 60527, Ph. 773-881-4788, www.abnacorp.com	USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -
		DRAWN - LNK	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
	PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING ONE LINE DIAGRAM CONTROLLER "H"
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 1 OF 3 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428A
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

LEGEND

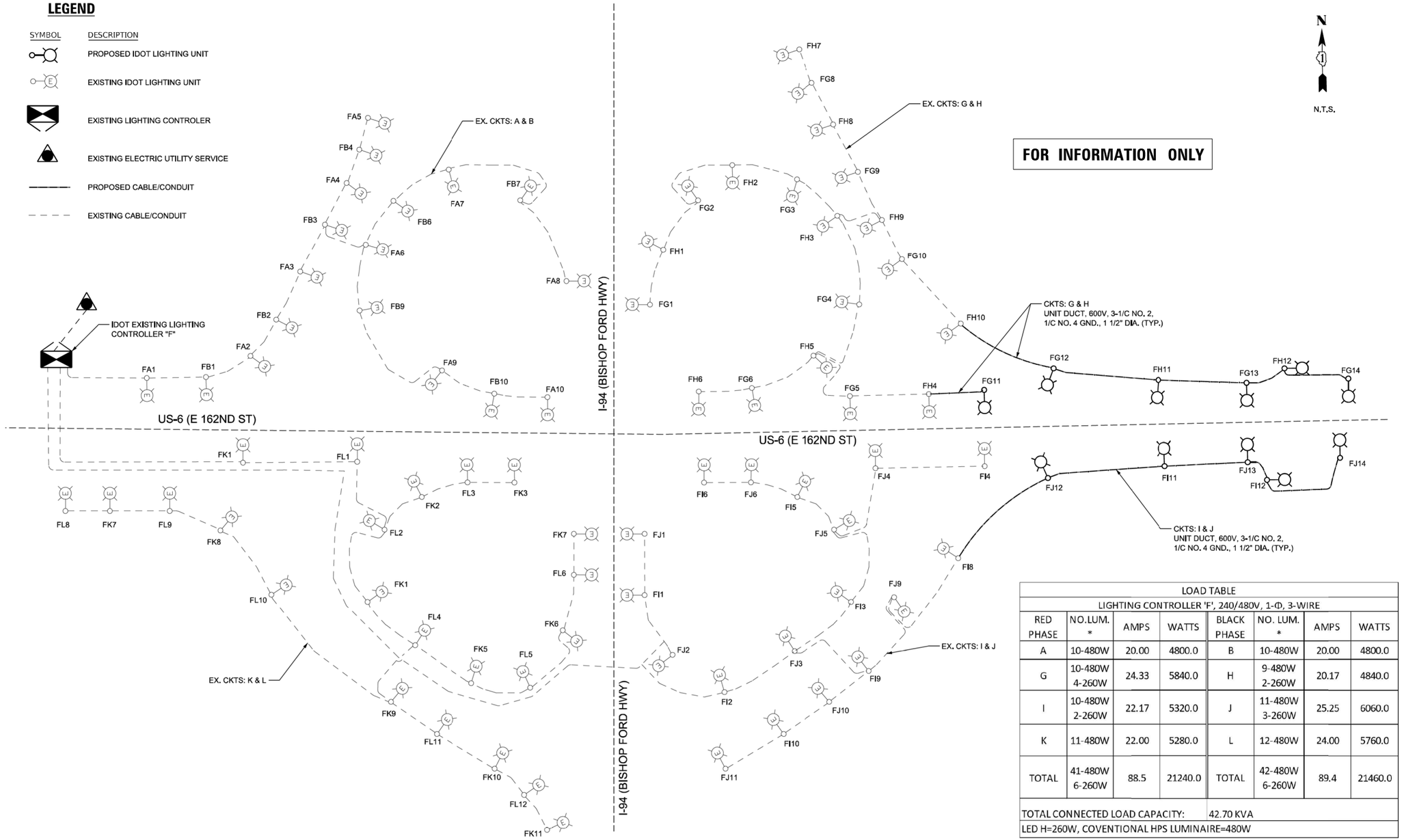
SYMBOL	DESCRIPTION
	PROPOSED IDOT LIGHTING UNIT
E	EXISTING IDOT LIGHTING UNIT
	EXISTING LIGHTING CONTROLER
	EXISTING ELECTRIC UTILITY SERVICE
	PROPOSED CABLE/CONDUIT
	EXISTING CABLE/CONDUIT

N

1

N.T.S.

FOR INFORMATION ONLY



LOAD TABLE							
LIGHTING CONTROLLER 'F', 240/480V, 1-Φ, 3-WIRE							
RED PHASE	NO.LUM. *	AMPS	WATTS	BLACK PHASE	NO. LUM. *	AMPS	WATTS
A	10-480W	20.00	4800.0	B	10-480W	20.00	4800.0
G	10-480W 4-260W	24.33	5840.0	H	9-480W 2-260W	20.17	4840.0
I	10-480W 2-260W	22.17	5320.0	J	11-480W 3-260W	25.25	6060.0
K	11-480W	22.00	5280.0	L	12-480W	24.00	5760.0
TOTAL	41-480W 6-260W	88.5	21240.0	TOTAL	42-480W 6-260W	89.4	21460.0
TOTAL CONNECTED LOAD CAPACITY:			42.70 KVA				
LED H=260W, COVENTIONAL HPS LUMINAIRE=480W							

LT–04

MODEL: Default
FILE NAME: \\dc101\Projects\14060\Task_Order_13\62W93\04_CADD\CADD_Sheets\D162W93-int-light-04.dgn

SINGH + ASSOCIATES, INC.
CONSULTING ENGINEERS

USER NAME = vnunez	DESIGNED - HP	REVISED -	
	DRAWN - HP	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP/MG	REVISED -	
PLOT DATE = 8/13/2021	DATE - 08/13/2021	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER "F" WIRING DIAGRAM

SCALE: NTS | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2020-217-L	COOK	23	9
		CONTRACT NO. 62M93		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\24521\14468_280\D162K53-int-existing one line diagram 02.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -	

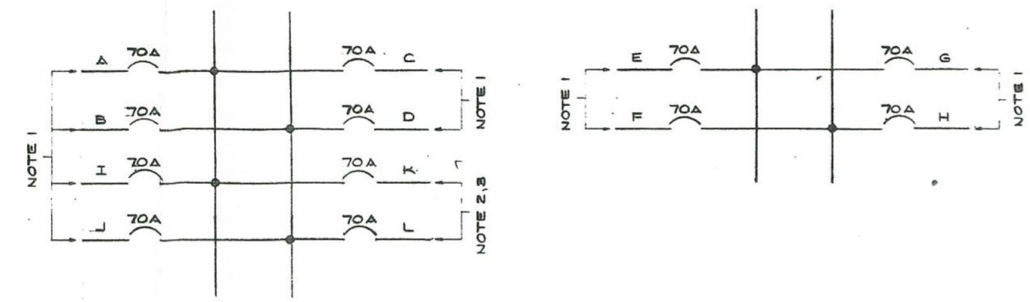
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING ONE LINE DIAGRAM CONTROLLER "F"
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428B
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

F.A. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	141	68



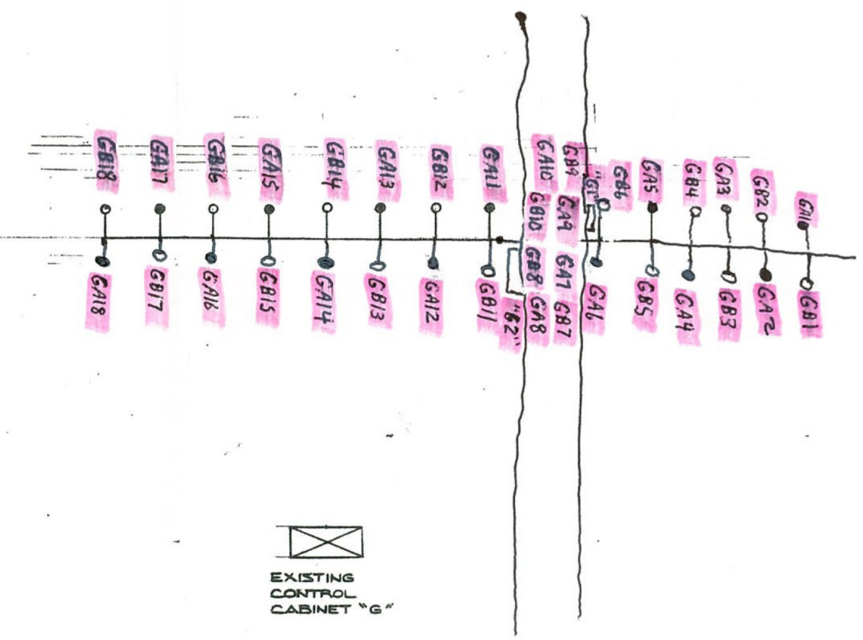
NOTES:

1. EXISTING CIRCUITS.
2. PROVIDE NEW CIRCUIT BREAKERS.
3. EXTEND #2 CABLES TO TEMPORARY LIGHTING POLES.

N →

EXISTING LIGHTING CONTROL CABINET "G"

FOR INFORMATION ONLY



O LUMINAIRE, HPS, 400 WATT ON RED WIRE

● LUMINAIRE, HPS, 400 WATT ON BLACK WIRE

1999-E6 3-21-89

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SINGLE LINE DIAGRAM
CONTROL CABINET "G"
SIBLEY

SCALE DRAWN BY
DATE CHECKED BY

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\2452\1468_282\D162K53-sht-existing one line diagram 03.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com

USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

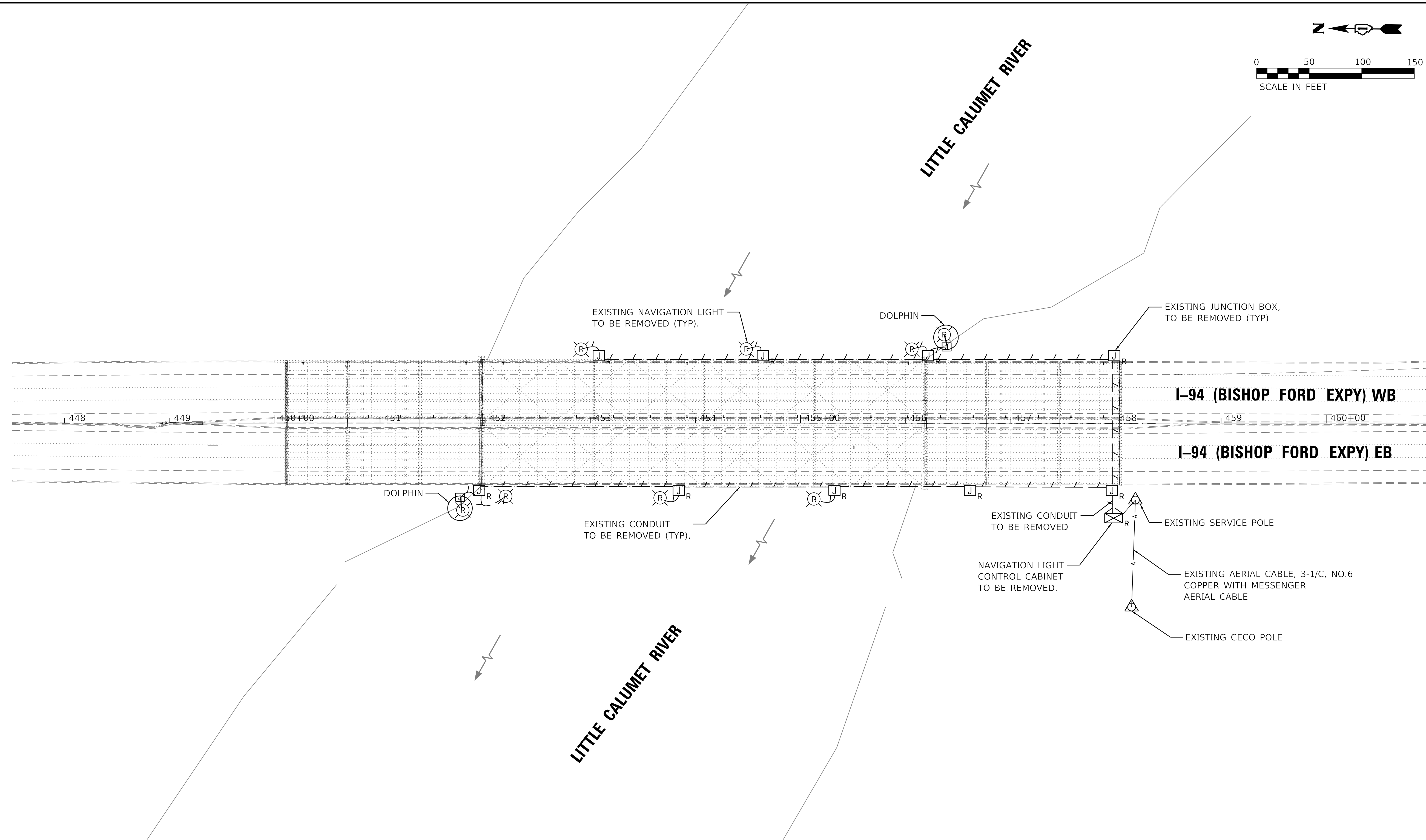
EXISTING ONE LINE DIAGRAM CONTROLLER "G"
I-94 (BISHOP FORD EXPY)

SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428C

CONTRACT NO. 62W87

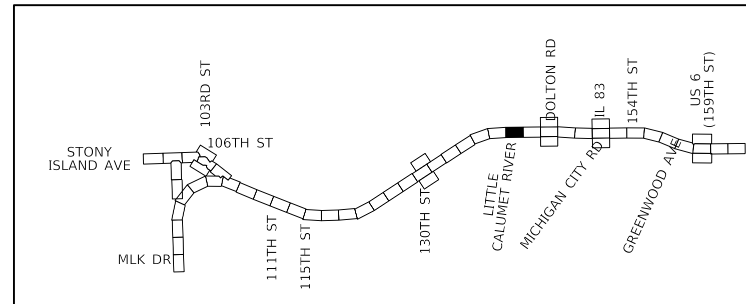
ILLINOIS FED. AID PROJECT



NOTES:

1. EXISTING NAVIGATION LIGHTING UNIT TO BE REMOVED AND ALL ASSOCIATED CONDUIT, CABLE, JUNCTION BOXES.
2. THE CONTRACTOR SHALL OBTAIN COAST GUARD APPROVAL FOR ANY WORK THAT MAY INTERFERE WITH NAVIGATION OPERATIONS OF THE NAVIGABLE WATERS
3. A WORK PLAN SHALL BE PREPARED BY THE CONTRACTOR, REVIEWED AND APPROVED BY THE ENGINEER AND BE SUBMITTED BY THE ENGINEER TO THE COAST GUARD AT THE ADDRESS LISTED BELOW FOR APPROVAL.

   BRIDGE ADMINISTRATOR
   US COAST GUARD
   NINTH COAST GUARD DISTRICT
   1240 E. NINTH ST.
   CLEVELAND, OH 441199-2060



KEY MAP

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2624\1468_269\D162K53-sht-navlight-00.dgn

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

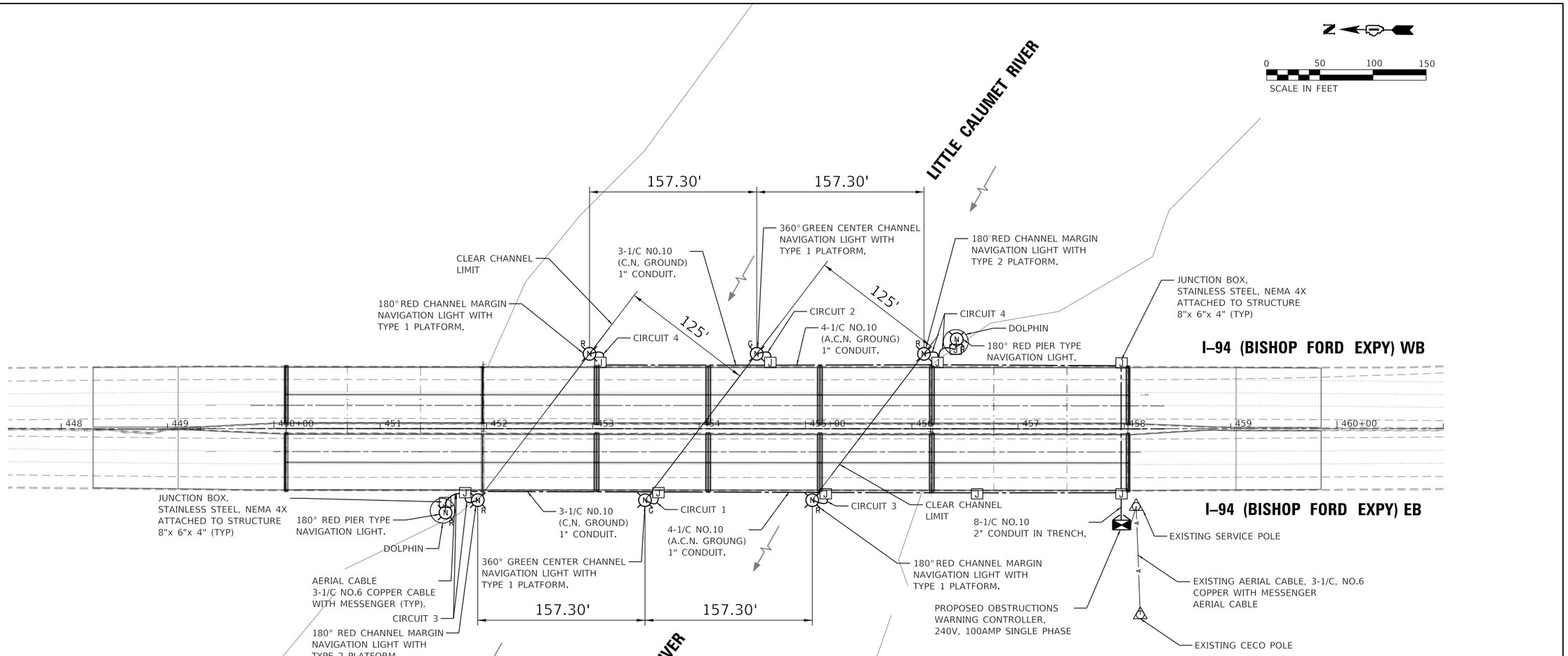
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - FPE	REVISED -	
PLOT DATE = 1/22/2025	DATE - 01/22/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN EXISITNG NAVIGATION LIGHTING
I-94 (BISHOP FORD EXPY)

SCALE: | SHEET 1 OF 7 SHEETS | STA. | TO STA.

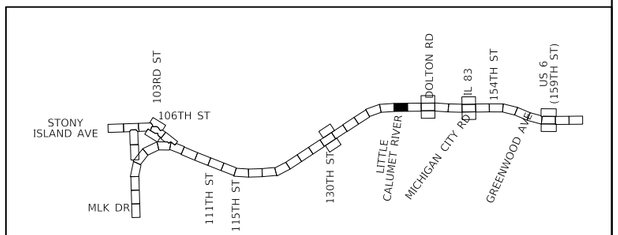
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428D
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. THE EXISTING NAVIGATION LIGHTING SHALL REMAIN OPERATIONAL UNTIL THE PROPOSED NAVIGATION LIGHTING ARE INSTALLED AND OPERATIONAL.
2. THE PROPOSED NAVIGATION LIGHTING UNIT LOCATIONS AND SPACING SHALL MATCH THE EXISTING. CONTRACTOR SHALL FIELD VERIFY EXISTING LOCATIONS.
3. FOR MAINTENANCE OF THE NAVIGATION LIGHTING SYSTEM SEE THE SPECIAL PROVISION "MAINTENANCE OF LIGHTING SYSTEMS".
4. RECONNECT PROPOSED OBSTRUCTIONS WARNING CONTROLLER TO EXISTING SERVICE POLE.
5. THE CONTRACTOR SHALL OBTAIN COAST GUARD APPROVAL FOR ANY WORK THAT MAY INTERFERE WITH NAVIGATION OPERATIONS OF THE NAVIGABLE WATERS
6. A WORK PLAN SHALL BE PREPARED BY THE CONTRACTOR, REVIEWED AND APPROVED BY THE ENGINEER AND BE SUBMITTED BY THE ENGINEER TO THE COAST GUARD AT THE ADDRESS LISTED BELOW FOR APPROVAL.

BRIDGE ADMINISTRATOR
US COAST GUARD
NINTH COAST GUARD DISTRICT
1240 E. NINTH ST.
CLEVELAND, OH 441199-2060



KEY MAP

ABNA DESIGN FRM REG. 184.002117
745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - FPE	REVISED -	
PLOT DATE = 3/19/2025	DATE - 01/22/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

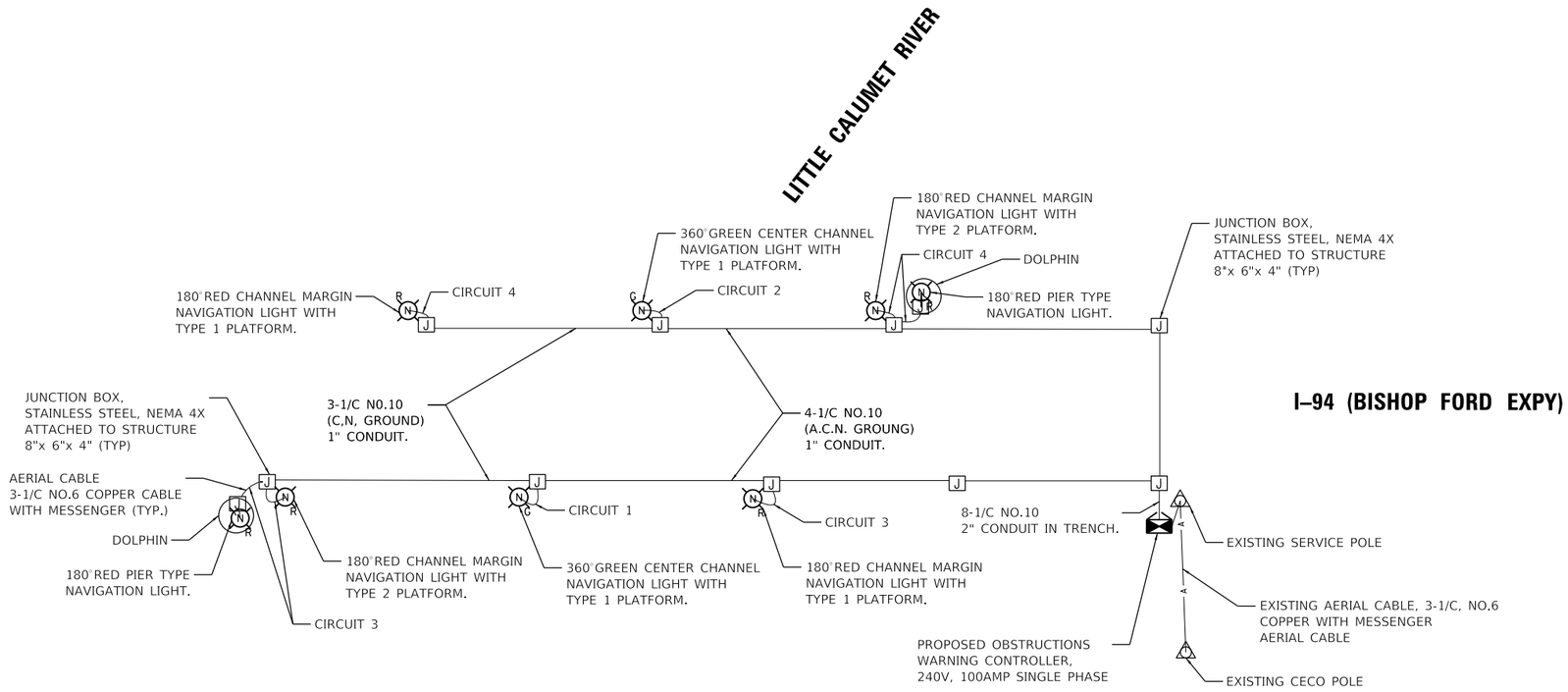
LIGHTING PLAN PROPOSED NAVIGATION LIGHTING
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 2 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428E
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: \\bhomepw11ics01\ICS_pdf_work_dir\2945\1468_263\D1624S3-sht-navlight-01.dgn

NOT TO SCALE



MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\26241\1468_264\D162K53-sht-navlight-02.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

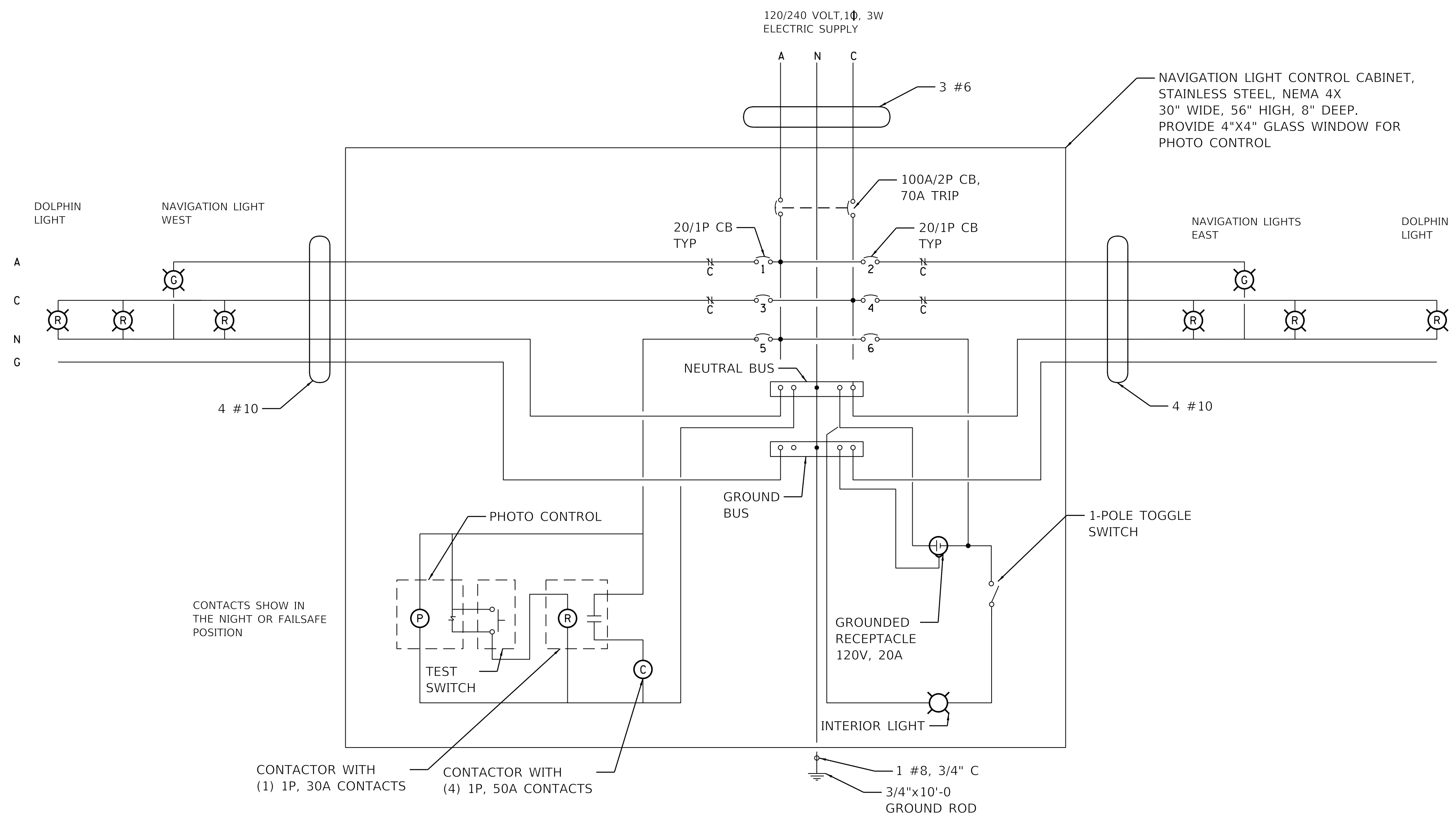
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - FPE	REVISED -
PLOT DATE = 1/22/2025	DATE - 01/22/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN PROPOSED NAVIGATION ONE LINE DIADRAM
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 3 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428F
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



MODEL: Default
FILE NAME: \\hbmepw11ics01\iCS_pdf_work_dir\2624\1468_265\D162K53-sht-navlight-03.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED -
	DRAWN - LNK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - FPE	REVISED -
PLOT DATE = 1/22/2025	DATE - 01/22/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN PROPOSED NAVIGATION CONTROL CABINET
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 4 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428G

CONTRACT NO. 62W87

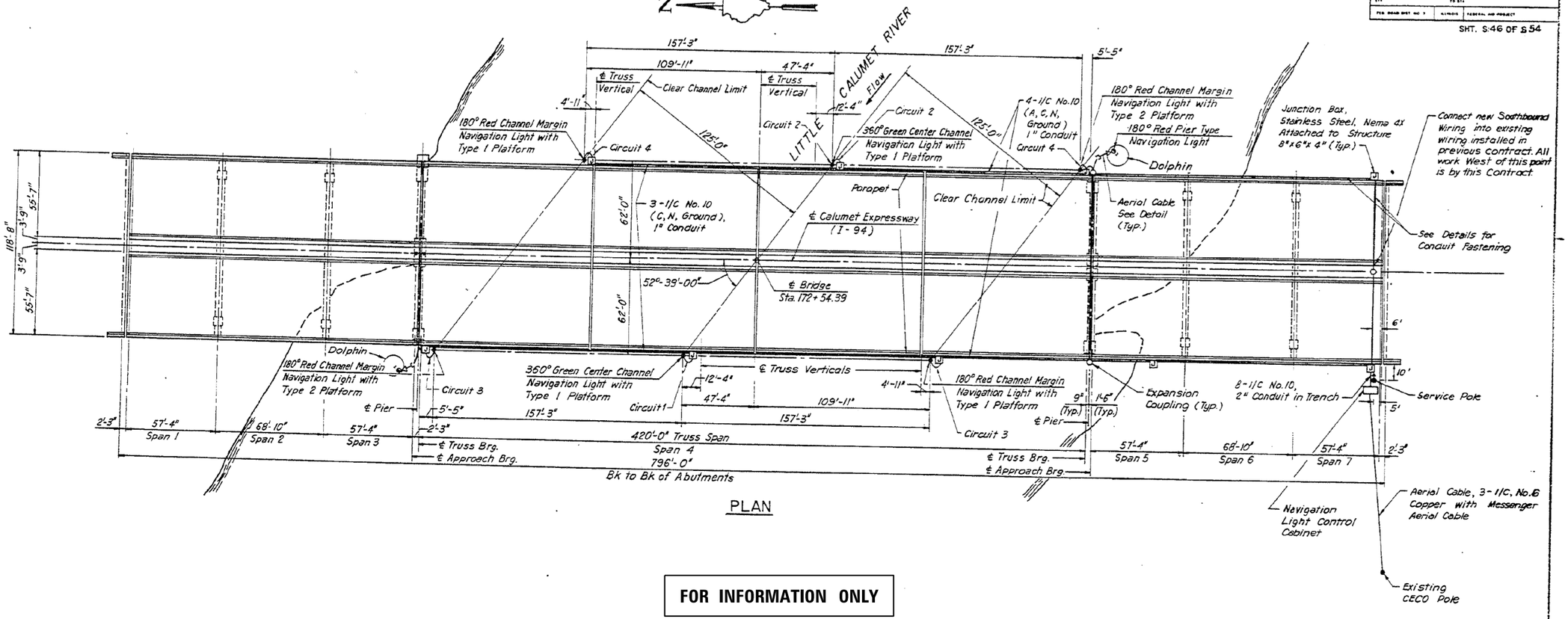
ILLINOIS | FED. AID PROJECT

* 42 (YD-10, 12, HD-14, B-11) & 0707.1 HB(R-3)90

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	-	COOK	318	219
ST.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT		

SHT. S-46 OF S-54

Z



PLAN

FOR INFORMATION ONLY

NOTES:

1. For Platform Details See Sht No.S-47
2. For Electrical Details, See Sht Nos. 118 - 119.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
NAVIGATION LIGHTS – PLAN
F.A.I.-94 OVER LITTLE CALUMET RIVER
COOK COUNTY
STA. 172 + 54.39
SN 016-0158 (S. BOUND)
SN 016-0159 (N. BOUND)
SCALE 1" = 30'
DRAWN BY P.G.
DATE JUNE 1991
CHECKED BY J.M.

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

USER NAME = hbmepw11lcs01$	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - FPE	REVISED -	
PLOT DATE = 1/22/2025	DATE - 01/22/2025	REVISED -	

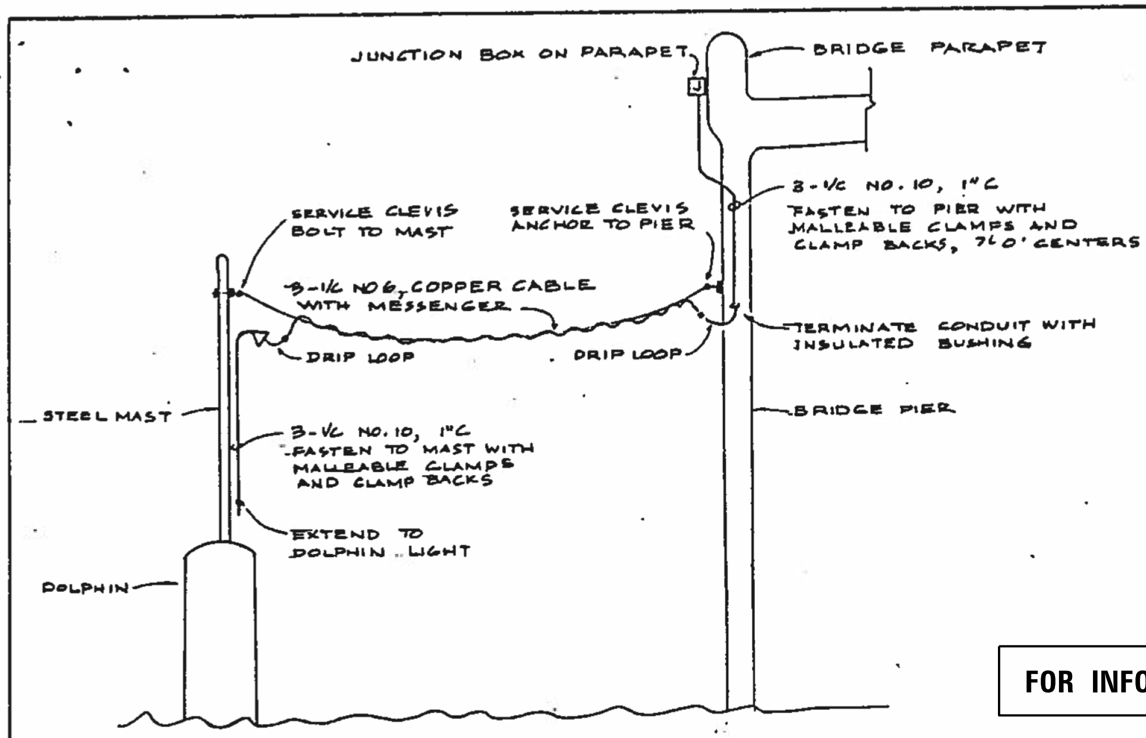
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN EXISITNG NAVIGATION DETAILS–01
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 5 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428H
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

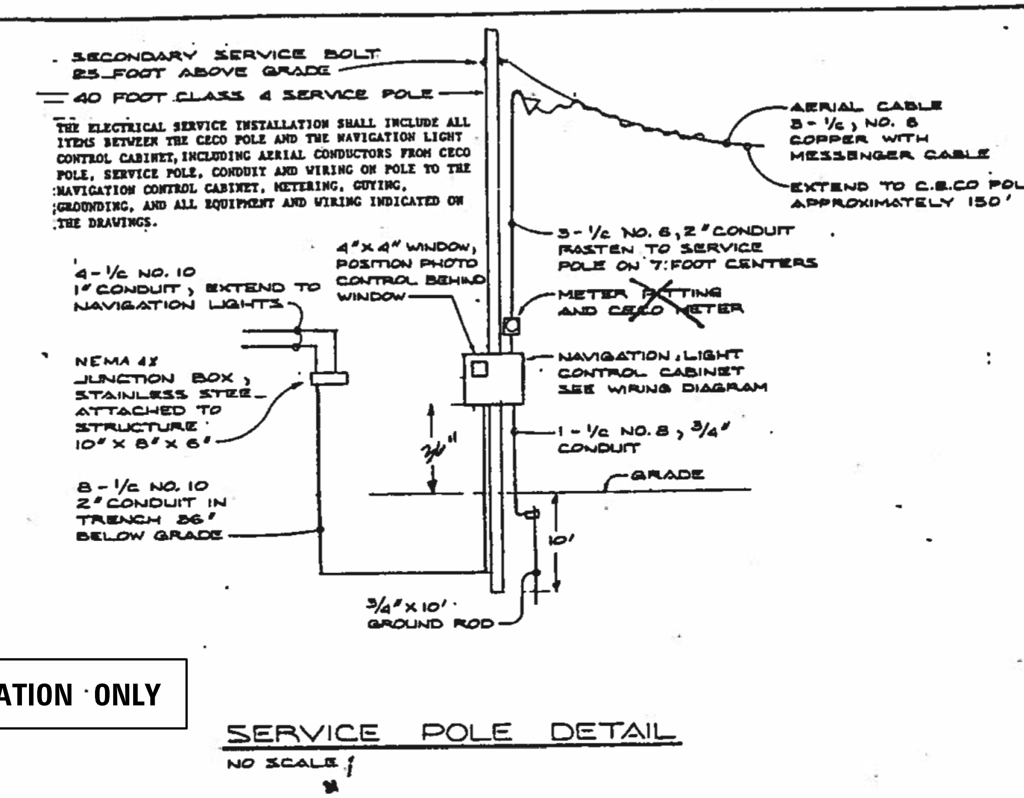
MODEL: Default
FILE NAME: \\bhmepw11lcs01\ICS_pdf_work_dir\26241468_28B0D162K53-sht-navlight-det-01.dgn



JUNCTION BOX ON PARAPET
BRIDGE PARAPET
SERVICE CLEVIS BOLT TO MAST
SERVICE CLEVIS ANCHOR TO PIER
3-1/C NO. 10, 1"C FASTEN TO PIER WITH MALLEABLE CLAMPS AND CLAMP BACKS, 7'-0" CENTERS
3-1/C NO 6, COPPER CABLE WITH MESSENGER
TERMINATE CONDUIT WITH INSULATED BUSHING
DRIP LOOP
DRIP LOOP
STEEL MAST
BRIDGE PIER
3-1/C NO. 10, 1"C FASTEN TO MAST WITH MALLEABLE CLAMPS AND CLAMP BACKS
EXTEND TO DOLPHIN LIGHT
DOLPHIN

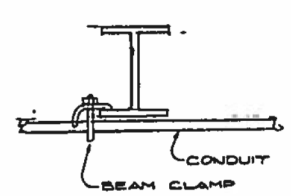
FOR INFORMATION ONLY

ELECTRIC SERVICE FOR DOLPHIN LIGHTS DETAIL
NO SCALE

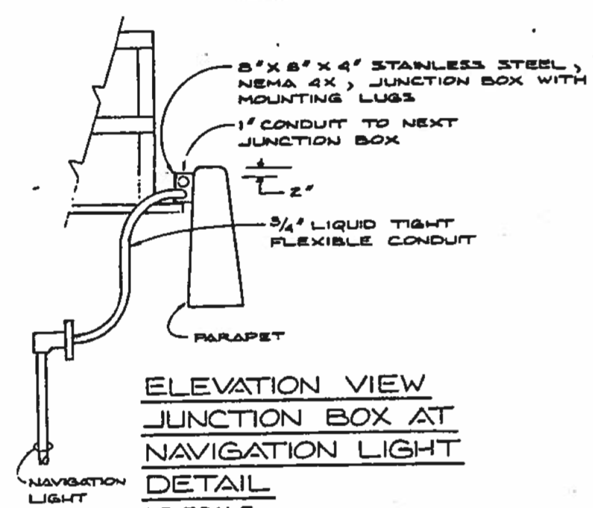


SECONDARY SERVICE BOLT 25 FOOT ABOVE GRADE
40 FOOT CLASS 4 SERVICE POLE
THE ELECTRICAL SERVICE INSTALLATION SHALL INCLUDE ALL ITEMS BETWEEN THE CECO POLE AND THE NAVIGATION LIGHT CONTROL CABINET, INCLUDING AERIAL CONDUCTORS FROM CECO POLE, SERVICE POLE, CONDUIT AND WIRING ON POLE TO THE NAVIGATION CONTROL CABINET, METERING, GUYING, GROUNDING, AND ALL EQUIPMENT AND WIRING INDICATED ON THE DRAWINGS.
AERIAL CABLE 3 - 1/C, NO. 6 COPPER WITH MESSENGER CABLE
EXTEND TO C.E.CO POLE APPROXIMATELY 150'
3 - 1/C NO. 6, 2" CONDUIT FASTEN TO SERVICE POLE ON 7 FOOT CENTERS
4 - 1/C NO. 10 1" CONDUIT, EXTEND TO NAVIGATION LIGHTS
4"X4" WINDOW, POSITION PHOTO CONTROL BEHIND WINDOW
METER FITTING AND CECO METER
NEMA 4X JUNCTION BOX, STAINLESS STEEL ATTACHED TO STRUCTURE 10" X 8" X 6"
NAVIGATION LIGHT CONTROL CABINET SEE WIRING DIAGRAM
1 - 1/C NO. 8, 3/4" CONDUIT
36"
GRADE
8 - 1/C NO. 10 2" CONDUIT IN TRENCH 36" BELOW GRADE
10'
3/4" X 10' GROUND ROD

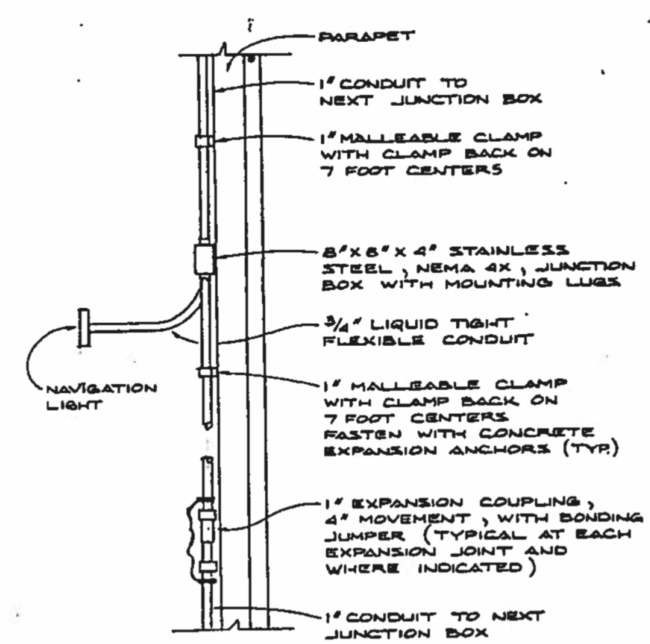
SERVICE POLE DETAIL
NO SCALE



CONDUIT FASTENED TO APPROACH BRIDGE DETAIL
NO SCALE



ELEVATION VIEW JUNCTION BOX AT NAVIGATION LIGHT DETAIL
NO SCALE



PARAPET
1" CONDUIT TO NEXT JUNCTION BOX
1" MALLEABLE CLAMP WITH CLAMP BACK ON 7 FOOT CENTERS
8"X 8"X 4" STAINLESS STEEL, NEMA 4X, JUNCTION BOX WITH MOUNTING LUGS
3/4" LIQUID TIGHT FLEXIBLE CONDUIT
NAVIGATION LIGHT
1" MALLEABLE CLAMP WITH CLAMP BACK ON 7 FOOT CENTERS FASTEN WITH CONCRETE EXPANSION ANCHORS (TYP.)
1" EXPANSION COUPLING, 4" MOVEMENT, WITH BONDING JUMPER (TYPICAL AT EACH EXPANSION JOINT AND WHERE INDICATED)
1" CONDUIT TO NEXT JUNCTION BOX

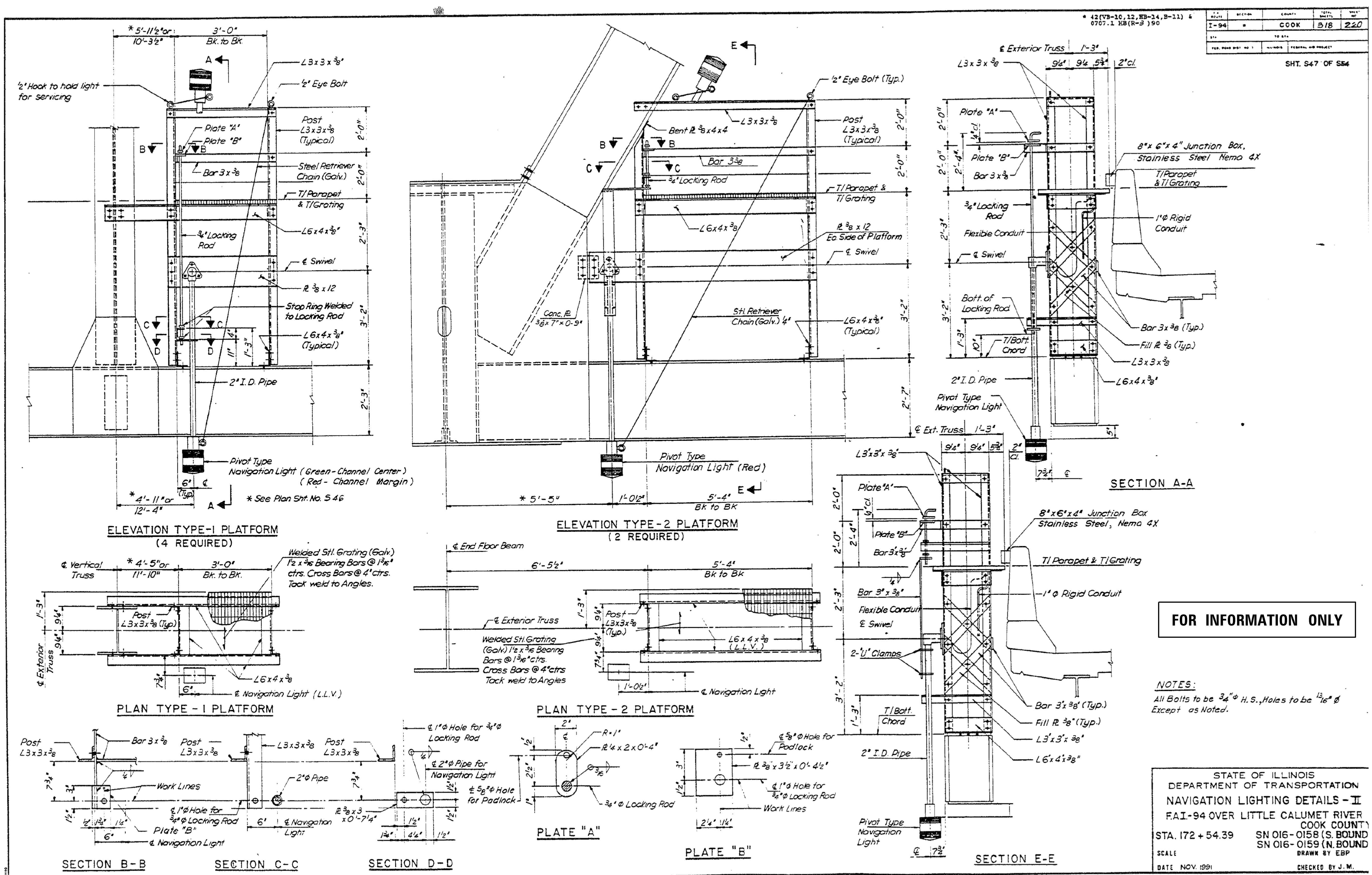
PLAN VIEW CONDUIT INSTALLED ON PARAPET DETAIL
NO SCALE

WALKER ELECTRIC
P.O. BOX 545 LAKE BLUFF, IL 60
☐ APPROVED ☐ DISAPPROV
☐ APP'D AS NOTED
BY [signature] DATE 10/30/
JOB NAME CALUMET EXP
JOB NUMBER
REFERENCE

I-94	#	COOK	318

*42(VB-10, 12, HB-14, B-11) & 0707.1 HB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORT.
F.A.I.-94
NAVIGATION LIGHTING DETAILS
SCALE NONE
DATE NOV. 1991
DRAWN BY
CHECKED B



ELEVATION TYPE-1 PLATFORM
(4 REQUIRED)
ELEVATION TYPE-2 PLATFORM
(2 REQUIRED)
SECTION A-A
PLAN TYPE - I PLATFORM
PLAN TYPE - 2 PLATFORM
SECTION B-B
SECTION C-C
SECTION D-D
PLATE "A"
PLATE "B"
SECTION E-E
Pivot Type Navigation Light (Green - Channel Center) (Red - Channel Margin)
Pivot Type Navigation Light (Red)
* See Plan Sht. No. S46
FOR INFORMATION ONLY
NOTES:
All Bolts to be 3/4"φ H.S., Holes to be 13/16"φ Except as Noted.
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
NAVIGATION LIGHTING DETAILS - II
F.A.I-94 OVER LITTLE CALUMET RIVER
COOK COUNTY
STA. 172 + 54.39
SN 016-0158 (S. BOUND)
SN 016-0159 (N. BOUND)
DRAWN BY EBP
DATE NOV. 1991
CHECKED BY J.M.
SHT. S47 OF S54

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\26241468_27\D162K53-sht-navlight-det-03.dgn

ABNA DESIGN FIRM REG. 184.002117
745 McClintock Drive Suite 210 Burr Ridge, IL 60527 Ph. 773-881-4788 www.abnacorp.com

USER NAME = hbmepw11ics01S	DESIGNED - FPE	REVISED -	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - FPE	REVISED -	
PLOT DATE = 1/22/2025	DATE - 01/22/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

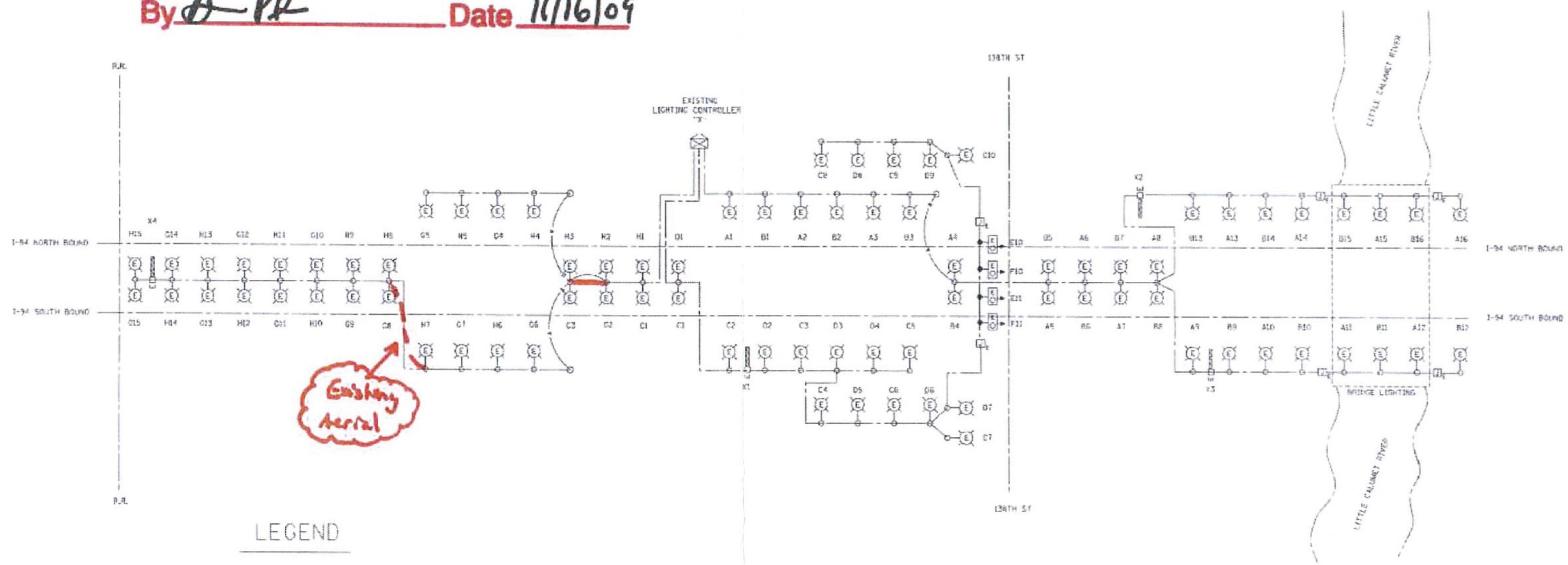
LIGHTING PLAN EXISITNG NAVIGATION DETAILS–03
I–94 (BISHOP FORD EXPY)

SCALE: | SHEET 7 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428J
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

RECORD DRAWING
MEADE ELECTRIC COMPANY, INC

By ________ Date 11/16/09



LEGEND

	EXISTING UNIT DUCT
	EXISTING UNIT DUCT
	PROPOSED UNIT DUCT 3-1/C NO. 4 AND 1-1/C NO. 6 GND. (EPR-TYP RHW), 1 1/4" DIA POLYETHYLENE
	EXISTING LIGHTING UNIT
	EXISTING LIGHTING CONTROLLER "X"
	EXISTING JUNCTION BOX
	EXISTING SIGN STRUCTURE
	EXISTING UNDERPASS LIGHTING UNIT
•	SPLICE

FOR INFORMATION ONLY

GENERAL NOTES:

1. ALL WORK MUST MEET CURRENT NATIONAL ELECTRIC CODE AND DISTRICT ONE GENERAL GUIDELINES
2. A MAINTENANCE TRANSFER MUST TAKE PLACE BEFORE ANY WORK CAN BE DONE.
3. UNDERGROUND SPLICING OF CABLES IS NOT PERMITTED. SPLICING SHALL BE ACCOMPLISHED IN THE LIGHT POLES.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ONE-LINE DIAGRAM & GENERAL NOTES
I-94 (BISHOP FORD EXPRESSWAY)
W OF MLK DR. TO S OF DOLTON AVE

60C08

MODEL: Default
FILE NAME: \\hbmepw11ics01\CS_pdf_work_dir\28871\1468_307\D162K53-sht-existing one line diagram 04.dgn

ABNA
DESIGN FIRM REG. 184.002117
745 McClintock Drive
Suite 210
Burr Ridge, IL 60527
Ph. 773-881-4788
www.abnacorp.com

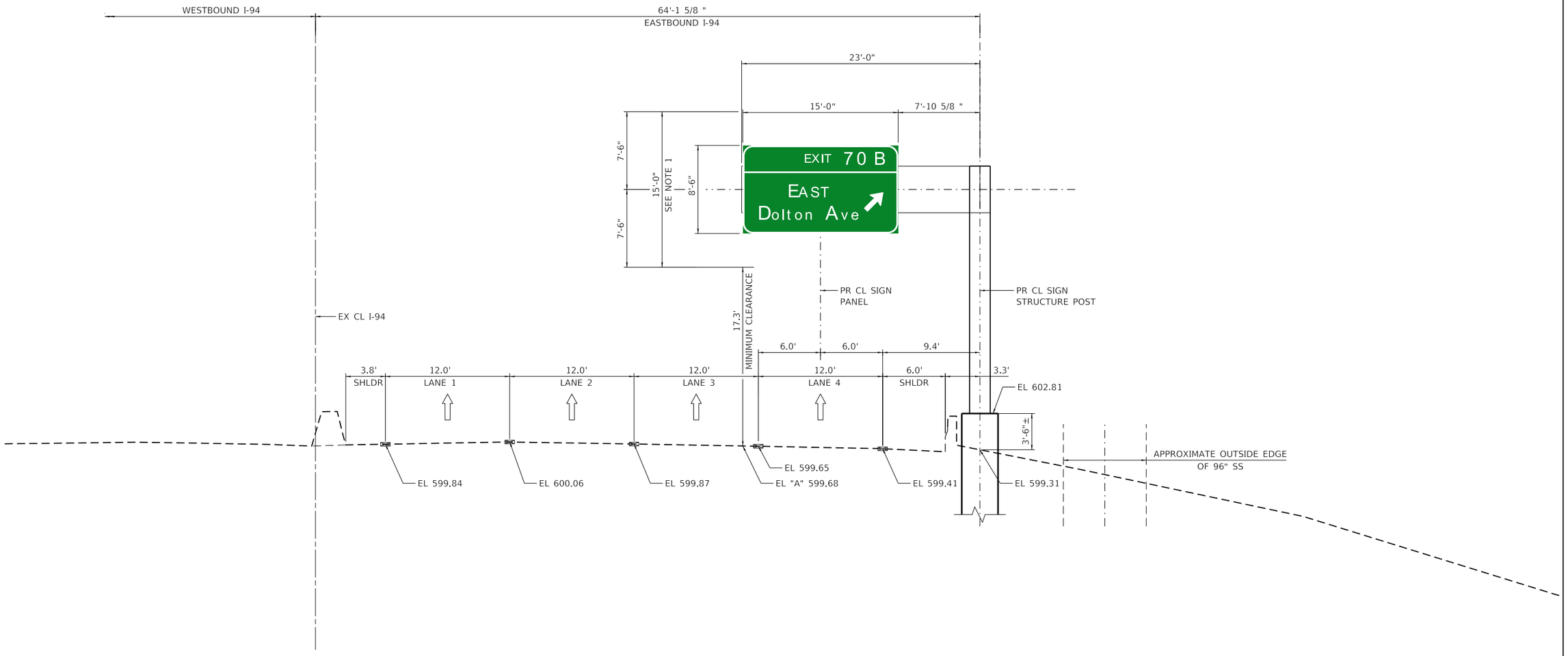
USER NAME = hbmepw11ics01$	DESIGNED - FPE	REVISED - 2 02/18/2025 LNK	
	DRAWN - LNK	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - JMO	REVISED -	
PLOT DATE = 3/14/2025	DATE - 02/17/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING ONE LINE DIAGRAM CONTROLLER "X"
I-94 (BISHOP FORD EXPY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	428K
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		



SIGN_7_STA_481+82.03_-_PROPOSED_SIGN_TRUSS_MOUNT

STRUCTURE NO. 1C016I094R070.7

LOOKING UPSTATION (EAST)

NOTES:

1. THEORETICAL SIGN DESIGN HEIGHT (15')
2. THE LOCATION OF THE CL OF EXISTING 96" SS IS APPROXIMATE BASED ON HISTORICAL DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION PRIOR TO CONSTRUCTION OF DRILLED SHAFT.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2462\1472_162K53-sht-OHSS1-001.dgn
12/10/2024 6:19:58 AM

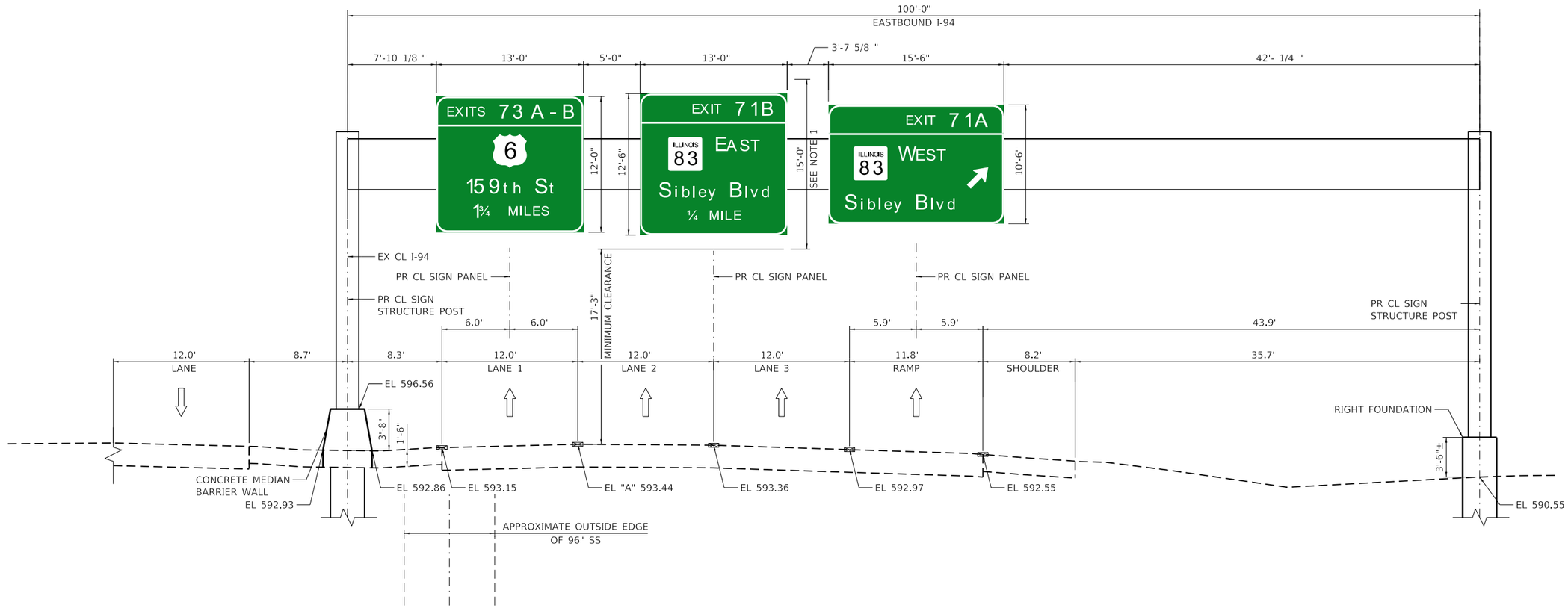
HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - ADS	REVISED -
	DRAWN - ADS	REVISED -
PLOT SCALE =	CHECKED - JMG	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - SIGN PANEL ELEVATIONS
SIGN 7 (1C016I094R070.7)
SHEET 1 OF 2 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	429
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



SIGN_8_STA_508+94.88_-_PROPOSED_SIGN_TRUSS_MOUNT

STRUCTURE NO. 1S016I094R071.2
LOOKING UPSTATION (EAST)

NOTE

1. THEORETICAL SIGN DESIGN HEIGHT (15')
2. THE LOCATION OF THE CL OF EXISTING 96" SS IS APPROXIMATE BASED ON HISTORICAL DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION PRIOR TO CONSTRUCTION OF DRILLED SHAFT.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2462\1472_2\62X53-sht-OHSS2-001.dgn
12/10/2024 6:20:13 AM

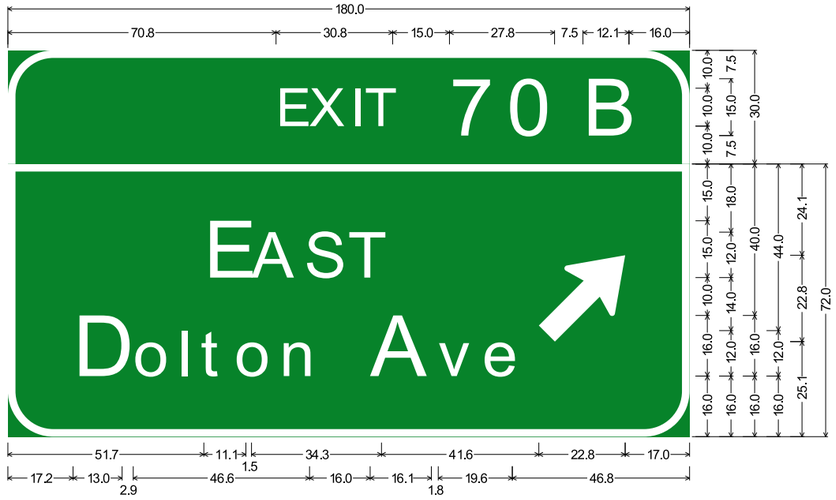
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - ADS	REVISED -
	DRAWN - ADS	REVISED -
PLOT SCALE = 10.0000 ' / in.	CHECKED - JMG	REVISED -
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - SIGN PANEL ELEVATIONS
SIGN 8 (1S016I094R071.2)
SHEET 2 OF 2 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	430
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



12.0" Radius, 2.0" Border, White on Green;
"EXIT 70 B", E Mod 2K;

12.0" Radius, 2.0" Border, White on Green;
"EAST", E Mod 2K; "Dolton Ave", E Mod 2K; Standard Arrow Custom 29.3" X 18.3" 45°;
Table of letter and object lefts

E 70.8	X 79.6	I 90.4	T 94.2	7 116.6	0 131.8	B 151.9

E 51.7	A 64.3	S 78.2	T 89.8	↗ 140.2

D 17.2	o 33.1	I 45.0	t 50.9	o 59.9	n 71.7	A 95.7	v 113.6	e 125.3

STRUCTURE	1C016I094R070.7
WIDTH x HEIGHT	15'-0" x 8'-6"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE - ZZ
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE - ZZ
	COLOR: WHITE

SIGN_7_STA_481+82.03_-_PROPOSED_SIGN_TRUSS_MOUNT

1C016I094R070.7

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\24621\1472_4162K53-sht-OHSS1-002.dgn
12/10/2024 6:19:56 AM

HBM ENGINEERING GROUP, LLC

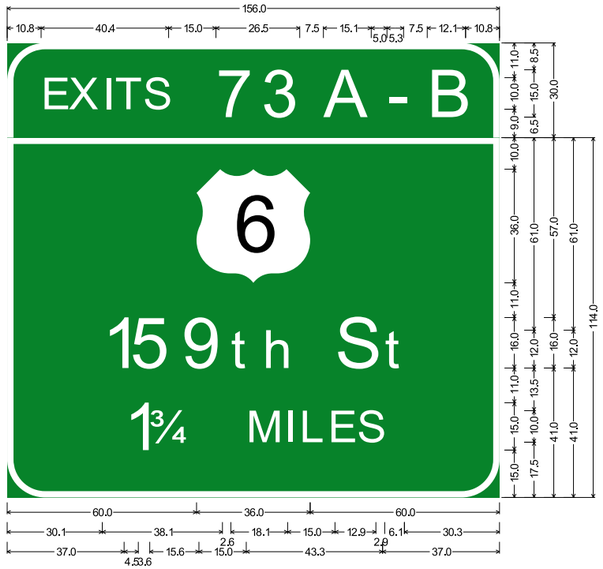
USER NAME = hbmepw11ics01$		DESIGNED - ADS		REVISED -	
		DRAWN - ADS		REVISED -	
PLOT SCALE = 10.0000 ' / in.		CHECKED - JMG		REVISED -	
PLOT DATE = 12/10/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - SIGN PANEL DETAILS
SIGN 7 (1C016I094R070.7)

SHEET 1 OF 2 SHEETS

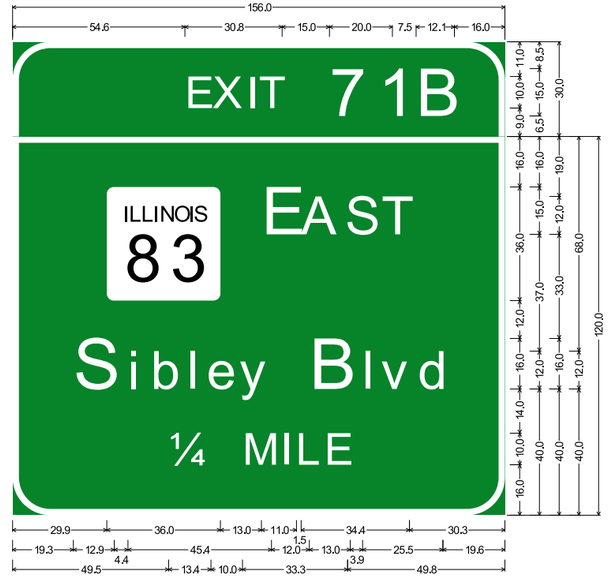
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	431
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



12.0" Radius, 2.0" Border, White on Green;
"EXITS 73 A - B", E Mod 2K;

12.0" Radius, 2.0" Border, White on Green;
"159th St", E Mod 2K; "1¾ MILES", E Mod 2K;
Table of letter and object lefts

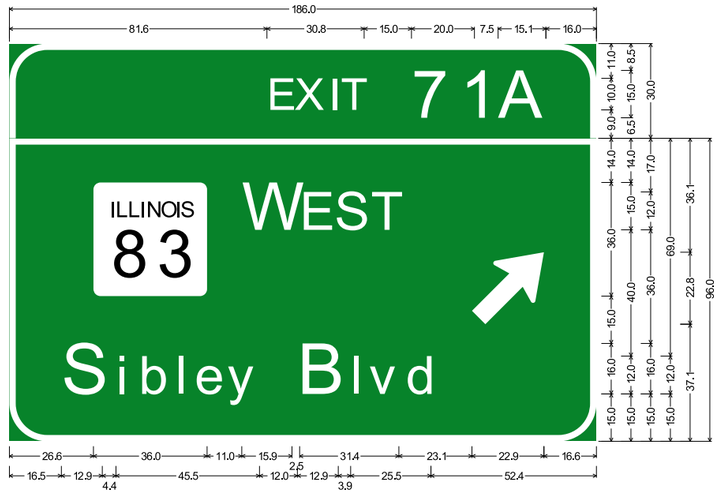
E 10.8	X 19.5	I 30.4	T 34.1	S 43.0	7 66.1	3 80.5	A 100.3	- 120.4	B 133.1	
■ 60.0										
1 30.1	5 38.9	9 55.3	t 70.9	h 81.0	S 103.9	t 119.6				
1 37.0	¾ 45.1	M 75.8	I 87.9	L 92.6	E 101.6	S 110.9				



12.0" Radius, 2.0" Border, White on Green;
"EXIT 71B", E Mod 2K;

12.0" Radius, 2.0" Border, White on Green;
"EAST", E Mod 2K; "Sibley Blvd", E Mod 2K; "¼ MILE", E Mod 2K;
Table of letter and object lefts

E 54.6	X 63.4	I 74.3	T 78.0	7 100.4	1 115.9	B 127.9				
■ 29.9	E 78.9	A 91.4	S 105.4	T 116.9						
S 19.3	I 36.5	b 43.8	I 55.4	e 61.5	y 71.9	B 94.0	I 110.9	v 116.8	d 128.4	
¼ 49.5	M 72.9	I 85.0	L 89.8	E 98.8						



12.0" Radius, 2.0" Border, White on Green;
"EXIT 71A", E Mod 2K;

12.0" Radius, 2.0" Border, White on Green;
"WEST", E Mod 2K; "Sibley Blvd", E Mod 2K; Standard Arrow Custom 29.3" X 18.3" 45°;
Table of letter and object lefts

E 81.6	X 90.4	I 101.3	T 105.0	7 127.4	1 142.9	A 154.9	
■ 26.6	W 73.6	E 92.0	S 103.0	T 114.5	↗ 146.6		
S 16.5	I 33.8	b 41.0	I 52.6	e 58.8	y 69.0	B 91.3	I 108.1	v 114.0	d 125.6

STRUCTURE	1S016I094R071.1
WIDTH x HEIGHT	13'-0" x 12'-0"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE - ZZ
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE - ZZ
	COLOR: WHITE

STRUCTURE	1S016I094R071.1
WIDTH x HEIGHT	13'-0" x 12'-6"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE - ZZ
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE - ZZ
	COLOR: WHITE

STRUCTURE	1S016I094R071.1
WIDTH x HEIGHT	15'-6" x 10'-6"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE - ZZ
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE - ZZ
	COLOR: WHITE

SIGN_2_STA_508+94.88_-_PROPOSED_SIGN_TRUSS_MOUNT

STRUCTURE NO. 1S016I094R071.1

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2462\1472_362K53-sht-OHSS2-002.dgn
12/10/2024 6:20:36 AM

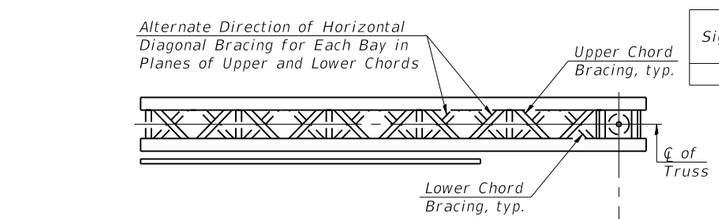
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - ADS	REVISED -		
	DRAWN - ADS	REVISED -		
PLOT SCALE = 10.0000 ' / in.	CHECKED - JMG	REVISED -		
PLOT DATE = 12/10/2024	DATE - 12/9/2024	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - SIGN PANEL DETAILS
SIGN 8 (1S016I094R071.2)
SHEET 2 OF 2 SHEETS

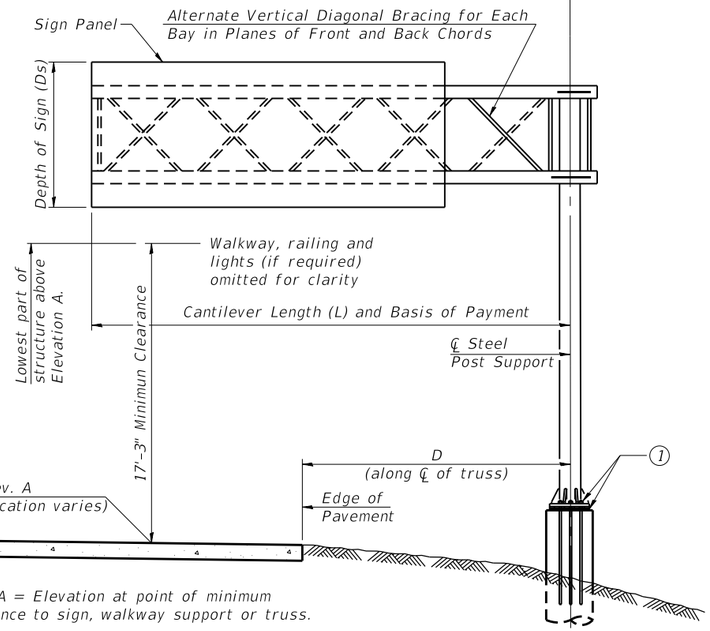
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	432
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



TYPICAL PLAN

(Walkway not shown)

Sign #	Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	Ds	Total Sign Area
7	1C016I094R070.7	481+82.03	I-C-A	23' - 0"	599.68	9' - 4 5/8"	8' - 6"	127.5



Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

TYPICAL ELEVATION

Looking in Direction of Traffic

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

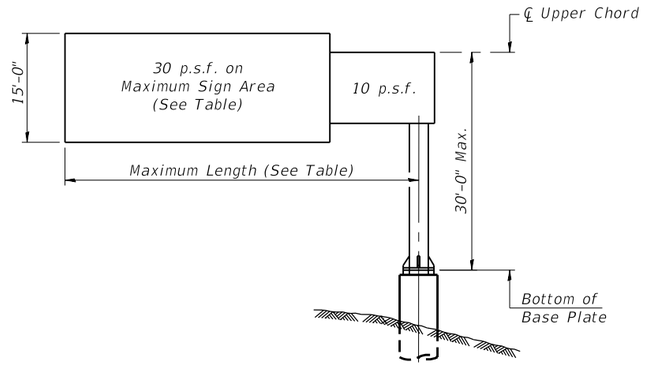
STATE OF ILLINOIS
MOUSSA A ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa

Dr. Moussa A. Issa, S.E. IL. Lic. No. 081-005738
Expires 11-30-2026

Date 12-06-2024 For Sheets OHSS1-01 thru OHSS1-09.

Truss Type	Maximum Sign Area	Maximum Length
I-C-A	170 Sq. Ft.	25 Ft.
II-C-A	340 Sq. Ft.	30 Ft.
III-C-A	400 Sq. Ft.	40 Ft.



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards Installations not within dimensional limits shown require special analysis for all components.

Note:
Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

(1) After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 200 lb.-ft. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

WALKWAY: Walkway grating, walkway brackets, handrails, lighting, and associated components shown in these plans on the traffic side of the sign structure/sign panel will not be installed with Contract 62W87. The truss grating and maintenance walkway behind the sign panel will be included with Overhead Sign Structure - Cantilever, Type II-C-A (36" X 5'-6")

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

Existing sign foundation shall be removed to a depth of 1'-0" below existing grade. Cost included with Remove Concrete Foundation - Overhead.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Overhead Sign Structure - Cantilever, Type I-C-A (24" X 4'-6")	Foot	23
Drilled Shaft Concrete Foundations	Cu Yd	5.2
Remove Overhead Sign Structure - Cantilever	Each	1
Remove Concrete Foundation - Overhead	Each	1

OSC-A-1 5-15-2023

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - JMI	REVISED -
		DRAWN - JMI	REVISED -
	PLOT SCALE =	CHECKED - MI, LAB	REVISED -
	PLOT DATE =	DATE - 12/9/2024	REVISED -

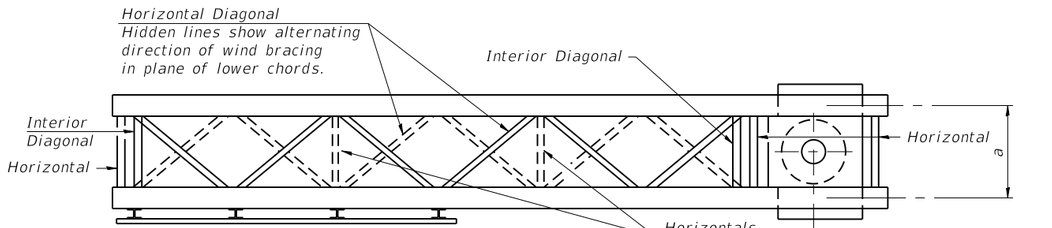
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - GEN. PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST

SHEET OHSS1-01 OF OHSS1-09 SHEETS

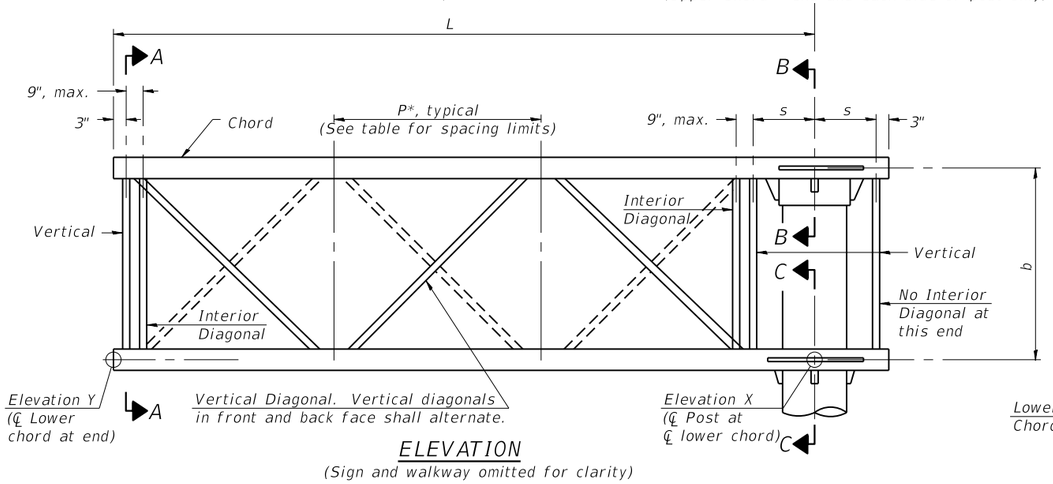
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	433
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bmepw11ics01\ICS_pdf_work_dir\24101436_3\1C016I094R070.7-62K53-SHT-SignDet01.dgn
12/9/2024 8:21:57 PM



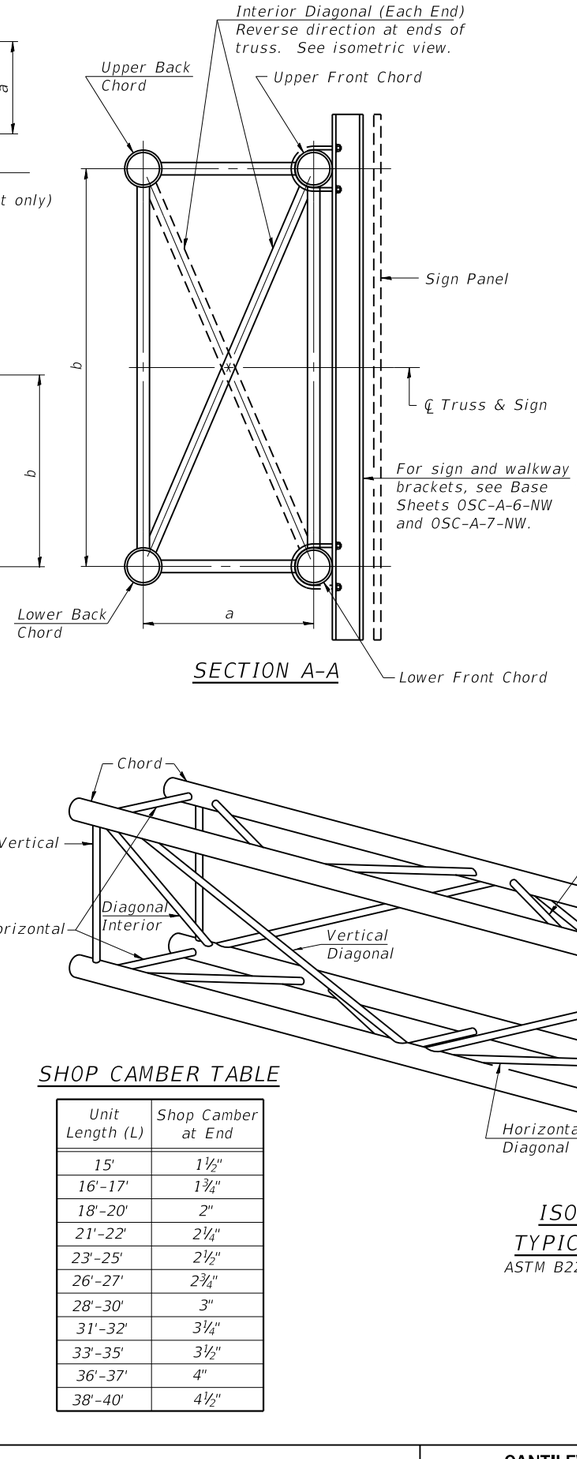
PLAN

(Walkway not shown)



ELEVATION

(Sign and walkway omitted for clarity)



SECTION A-A

TYPICAL TRUSS UNIT

For Section B-B and Section C-C, see Base Sheet 0SC-A-3.

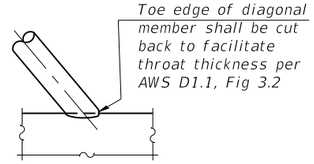
Note:
There are twice as many horizontal diagonals as there are vertical diagonals.

TRUSS UNIT TABLE

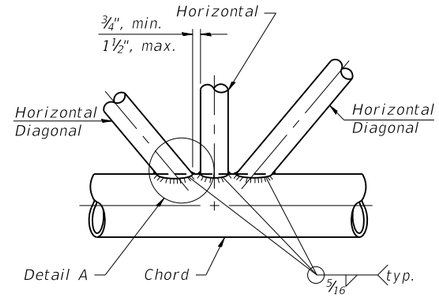
Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals	
					O.D.	Wall	O.D.	Wall
I-C-A	24"	54"	16"	36" min. to 48" max.	5"	5/16"	2½"	5/16"
II-C-A	36"	66"	21"	42" min. to 54" max.	6½"	5/16"	3¼"	5/16"
III-C-A (35' Max.)	36"	84"	21"	48" min. to 66" max.	7"	3/8"	3½"	3/8"
III-C-A (>35' to 40')	36"	84"	21"	48" min. to 66" max.	8"	3/8"	3½"	3/8"

$$*P = \frac{L - s - 3"}{\#\ Panels}$$

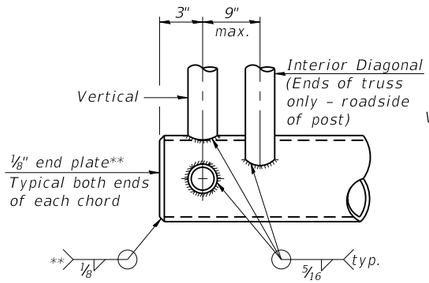
Sign #	Structure Number	Station	Truss Type	Design Length (L)	Number of Panels Per Unit	Panel Length (P)*
7	1C016I094R070.7	481+82.03	I-C-A	23' - 0"	6	3' - 6 7/8"



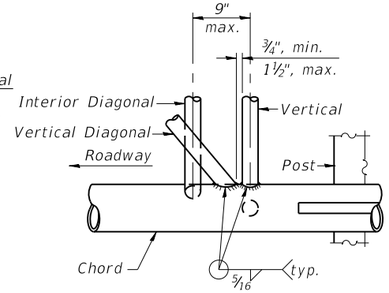
DETAIL A



TRUSS INTERIOR JOIN DETAIL

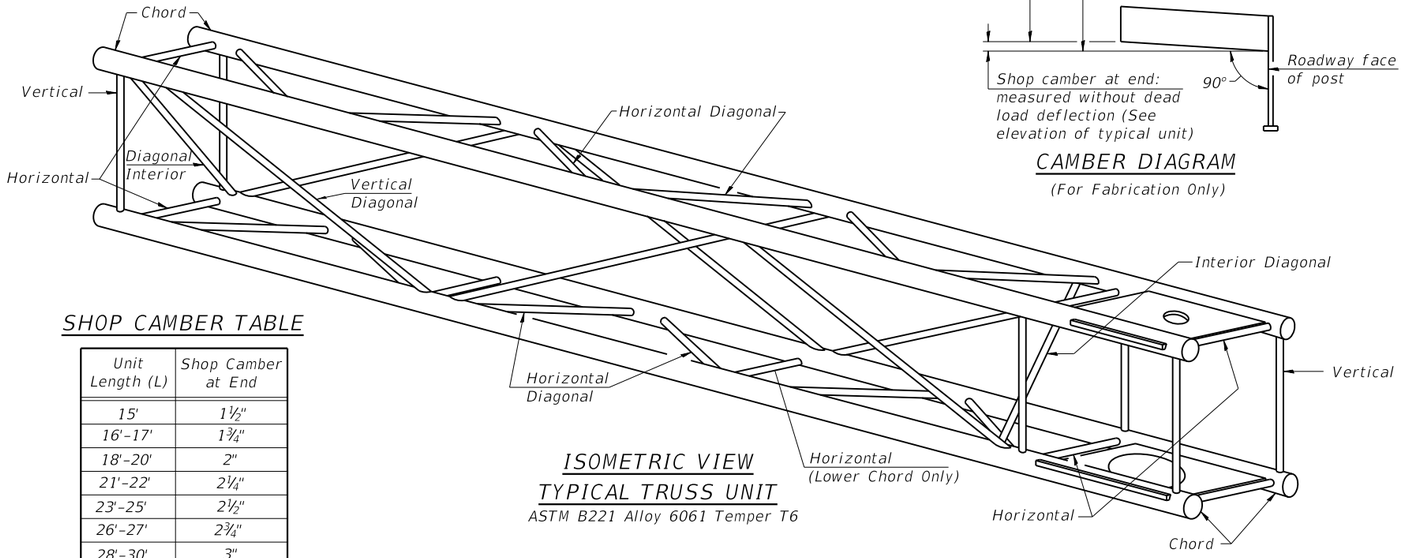


CANTILEVER END JOINT DETAIL



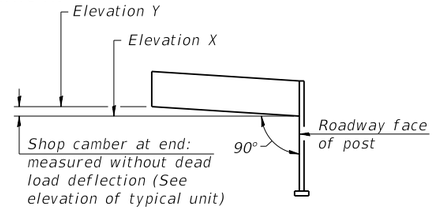
POST END JOINT DETAIL

** Contractor may alternatively use standard aluminum drive-fit cap to close ends. ½" Ø Drain hole in end plate / drive-fit cap.



ISOMETRIC VIEW
TYPICAL TRUSS UNIT

ASTM B221 Alloy 6061 Temper T6



CAMBER DIAGRAM

(For Fabrication Only)

SHOP CAMBER TABLE

Unit Length (L)	Shop Camber at End
15'	1½"
16'-17'	1¾"
18'-20'	2"
21'-22'	2¼"
23'-25'	2½"
26'-27'	2¾"
28'-30'	3"
31'-32'	3¼"
33'-35'	3½"
36'-37'	4"
38'-40'	4½"

0SC-A-2

5-15-2023

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

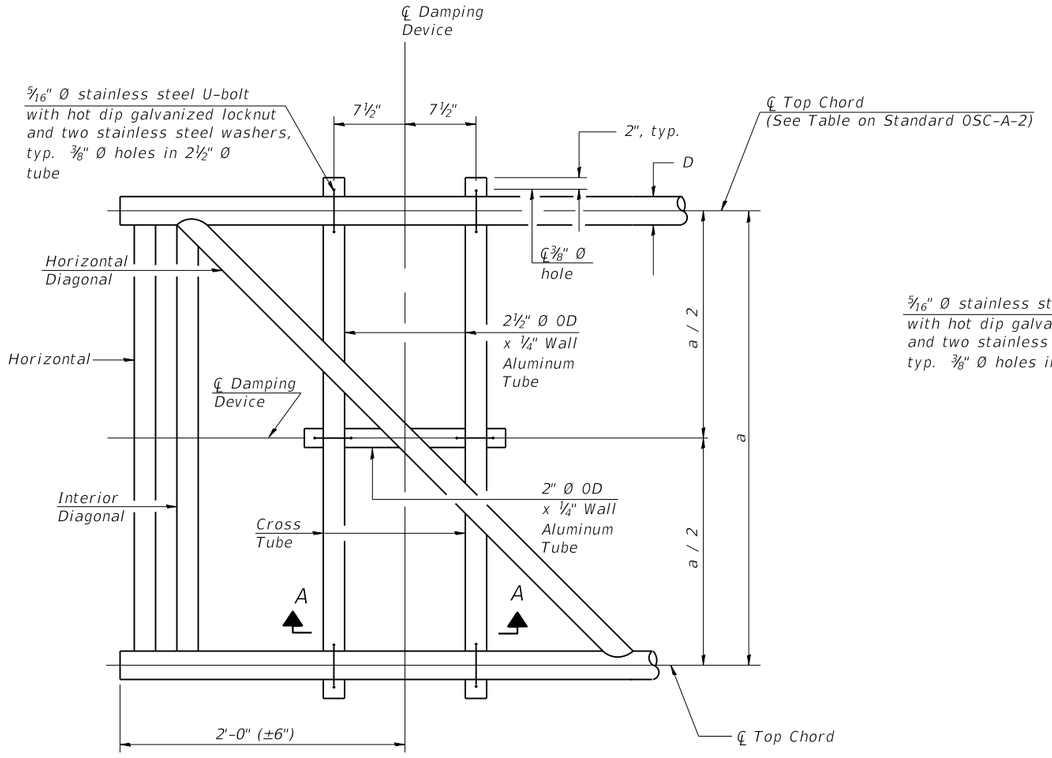
CANTILEVER SIGN STRUCTURES - TRUSS DETAILS
ALUMINUM TRUSS & STEEL POST

SHEET OHSS1-02 OF OHSS1-09 SHEETS

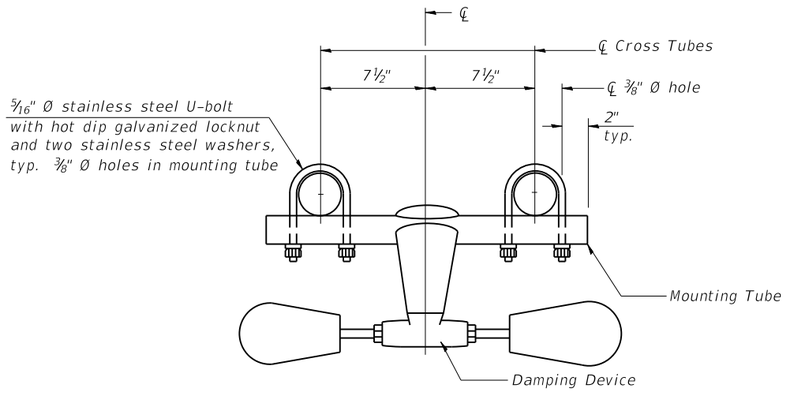
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	434
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bbmepw11lcs01\ICS_pdf_work_dir\2378\1436_4\1C016I094R070.7-62K53-SHT-SignDet02.dgn

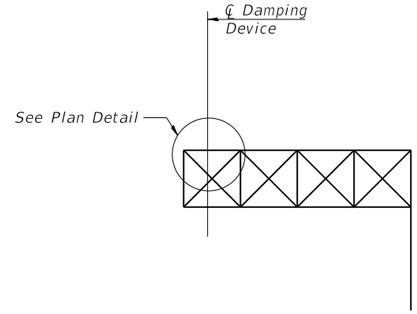
12/6/2024 8:48:04 PM



PLAN DETAIL



TRUSS DAMPING DEVICE CONNECTION DETAIL



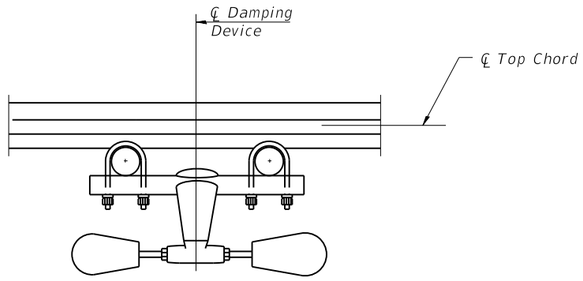
ELEVATION

Aluminum Cantilever Sign Structure

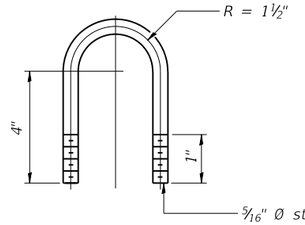
GENERAL NOTES

Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum-29" minimum between ends of weights)

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6

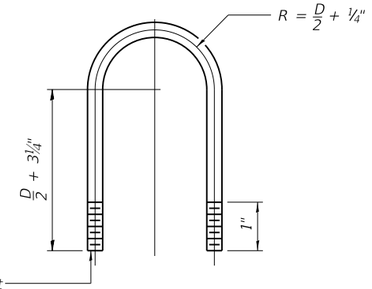


SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL

(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL

(Typical)

0SC-A-D 5-15-2023

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - JMI	REVISED -
		DRAWN - JMI	REVISED -
	PLOT SCALE =	CHECKED - MI, LAB	REVISED -
	PLOT DATE =	DATE - 12/9/2024	REVISED -

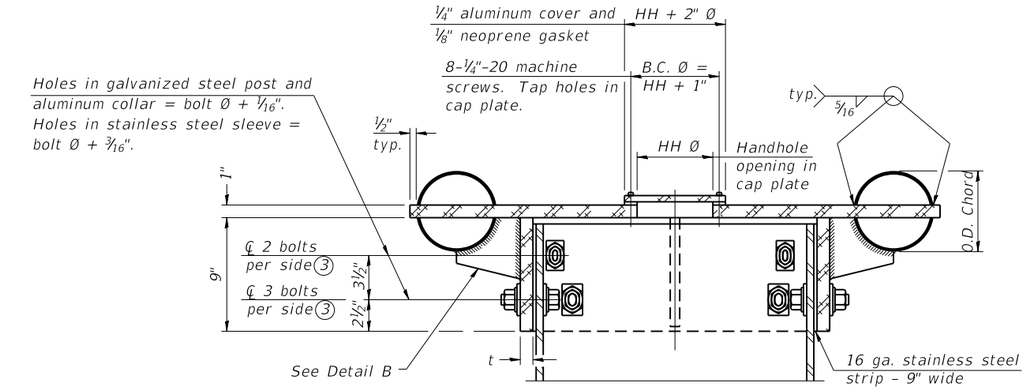
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURE
DAMPING DEVICE

SHEET OHSS1-03 OF OHSS1-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	435
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

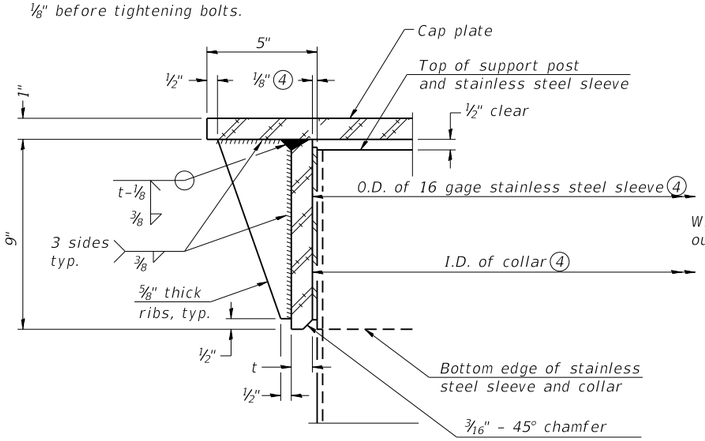
MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\23781\1436_51\C016l094R070_7-62K53-SHT-SignDet03.dgn
12/6/2024 8:51:34 PM



SECTION B–B

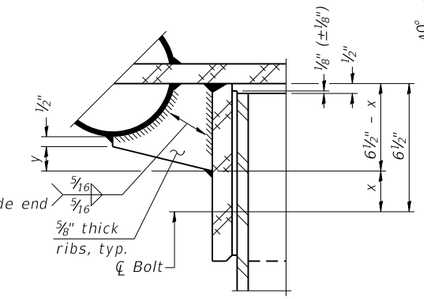
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.

④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus ⅛" (±1/16"). Maximum gap between post and collar at any location equals ⅛" before tightening bolts.



DETAIL A

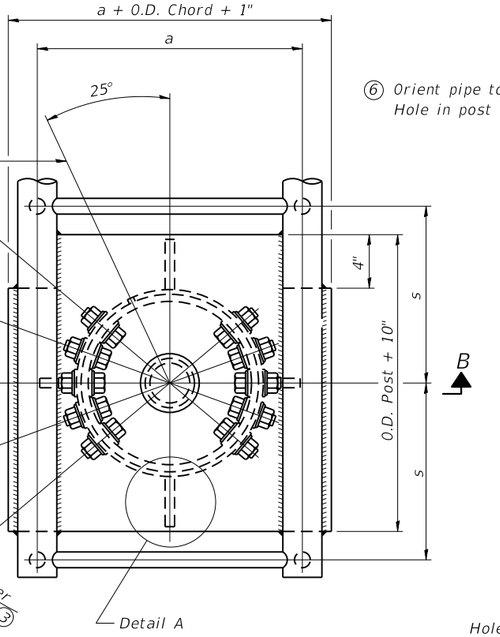
(Two locations)



DETAIL B

Two locations

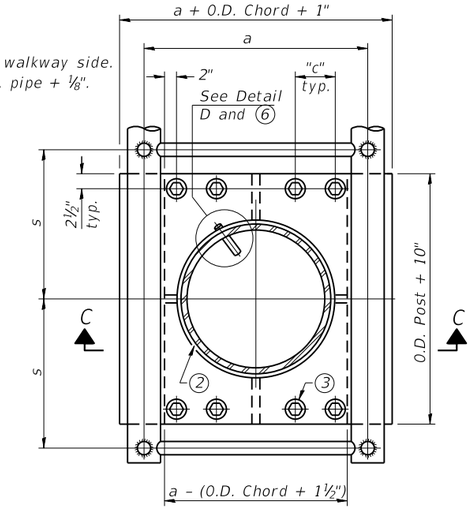
(For details not shown, see Detail C)



PLAN VIEW – TOP OF COLUMN

⑤ Optional full penetration weld in collar. (Two locations maximum....(180° apart)....X-ray or UT 100%)

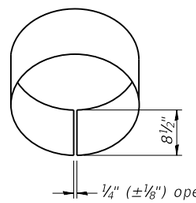
⑥ Orient pipe toward walkway side. Hole in post = O.D. pipe + ⅛".



SECTION THRU POST ABOVE LOWER CHORDS

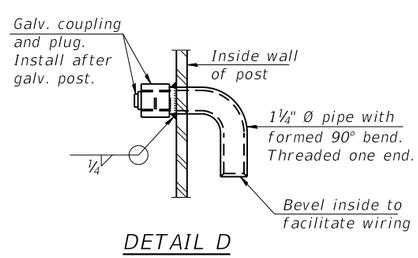
CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
⅞"	1"	2½"
1"	1⅛"	3"
1¼"	1⅜"	3¼"

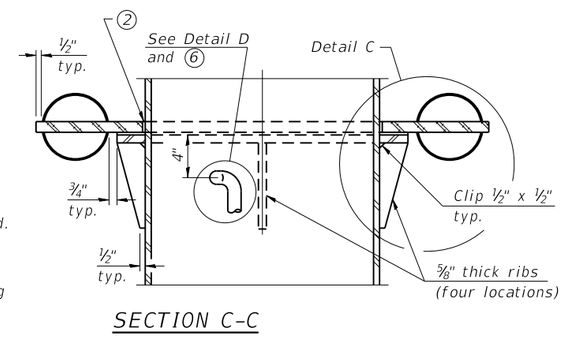


DETAIL OF STAINLESS STEEL SLEEVE

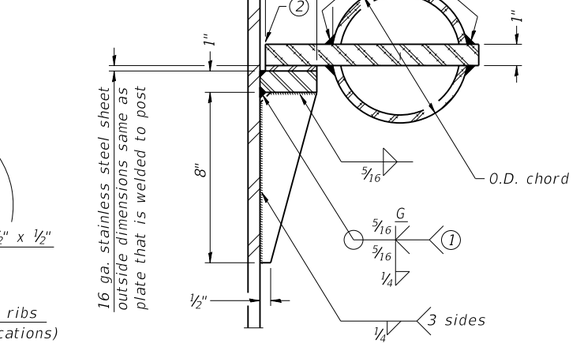
Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 1½" long at 6" cts. along top edge and at ¼" opening.



DETAIL D



SECTION C–C



DETAIL C

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I–C–A	16" Ø (83#/')	⅞"	3¼"	8"	⅝"	1¾"	2¼"
II–C–A	24" Ø (125#/')	1"	3½"	12"	⅞"	2"	1¼"
III–C–A (35' max.)	24" Ø (125#/')	1¼"	3½"	12"	⅞"	2"	1"
III–C–A (>35' to 40')	24" Ø (171#/')	1¼"	3½"	12"	⅞"	2"	1"

① Grind top if required to fully seat aluminum plate and stainless steel sheet.

② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.

③ Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

OSC–A–3 5-15-2023

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

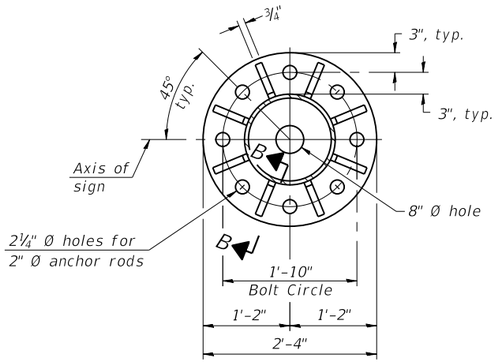
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST

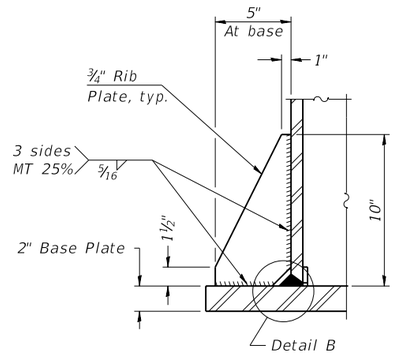
SHEET OHSS1-04 OF OHSS1-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	436
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

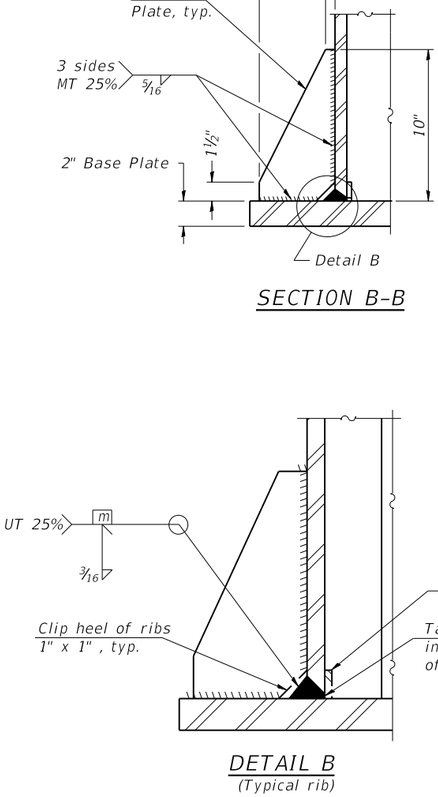
MODEL: Default
FILE NAME: \\bmepw11\ics01\ICS_pdf_work_dir\2378\1436_6\1C016I094R070,7-62K53-SHT-SignDet04.dgn
12/6/2024 8:48:00 PM



SECTION A-A

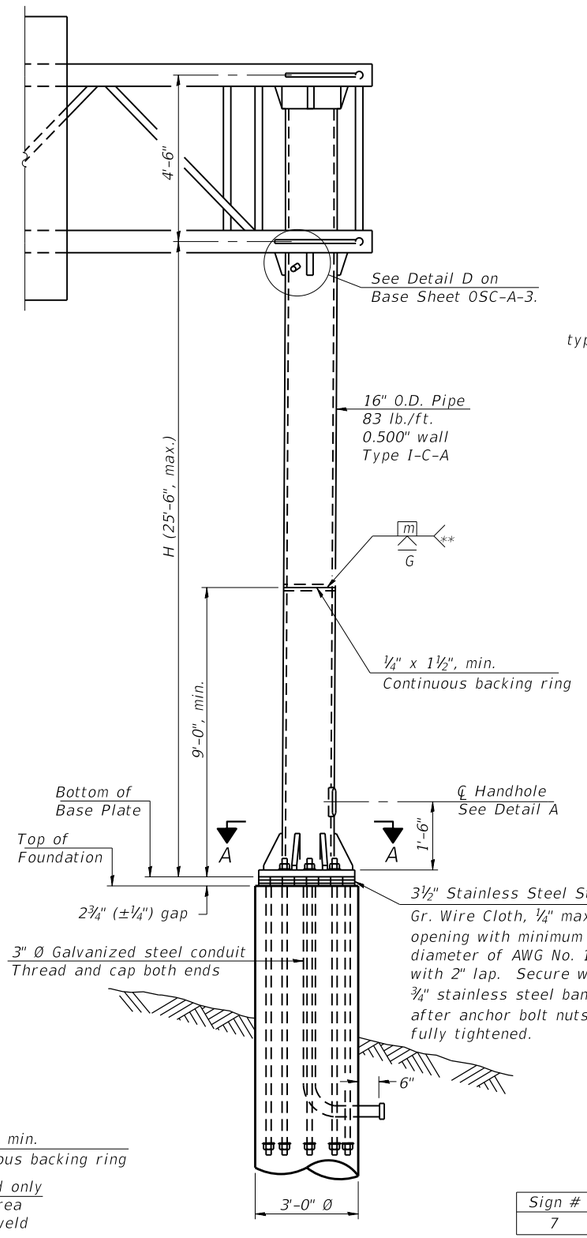


SECTION B-B



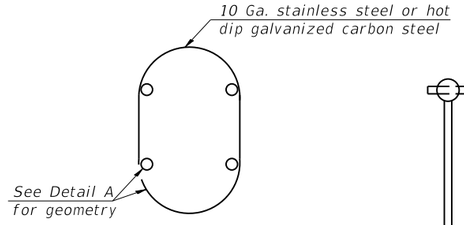
DETAIL B

(Typical rib)

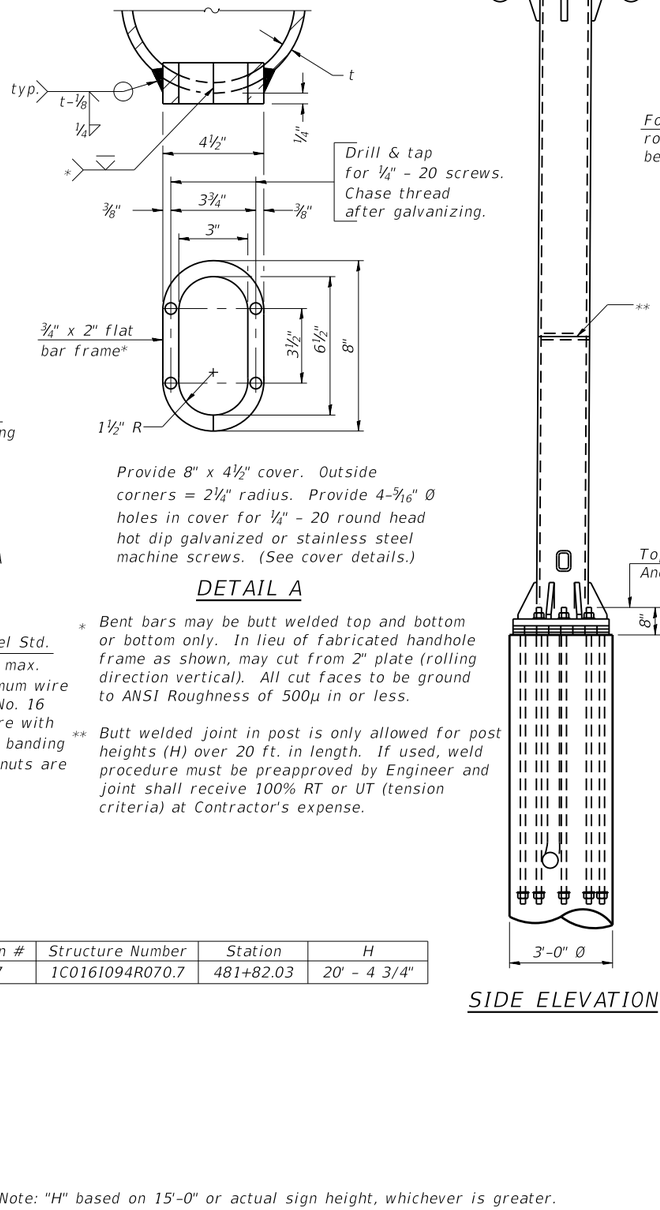


FRONT ELEVATION

For Foundation Details see Base Sheet 0SC-A-9.



HANDHOLE COVER

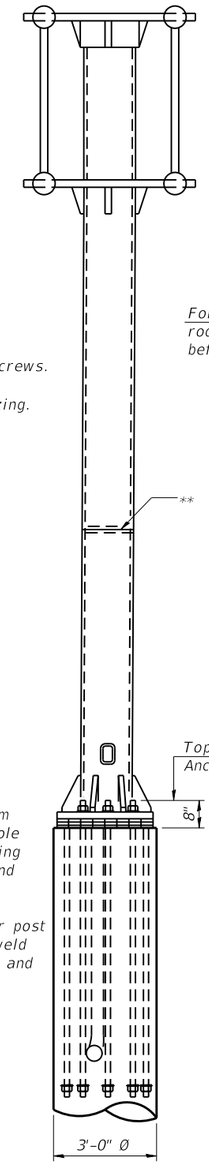


Provide 8" x 4½" cover. Outside corners = 2¼" radius. Provide 4-5/16" Ø holes in cover for ¼" - 20 round head hot dip galvanized or stainless steel machine screws. (See cover details.)

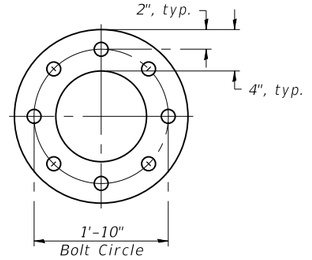
DETAIL A

* Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500μ in or less.

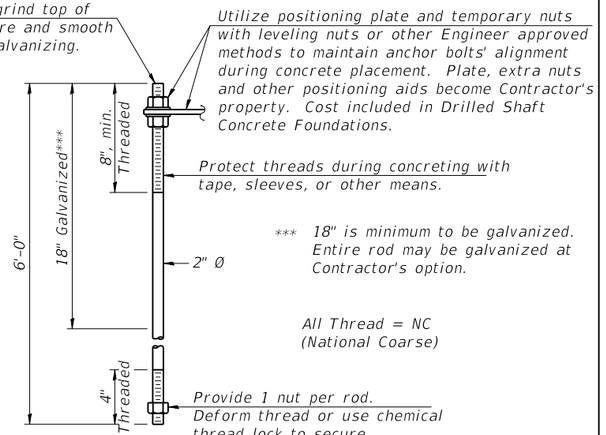
** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE

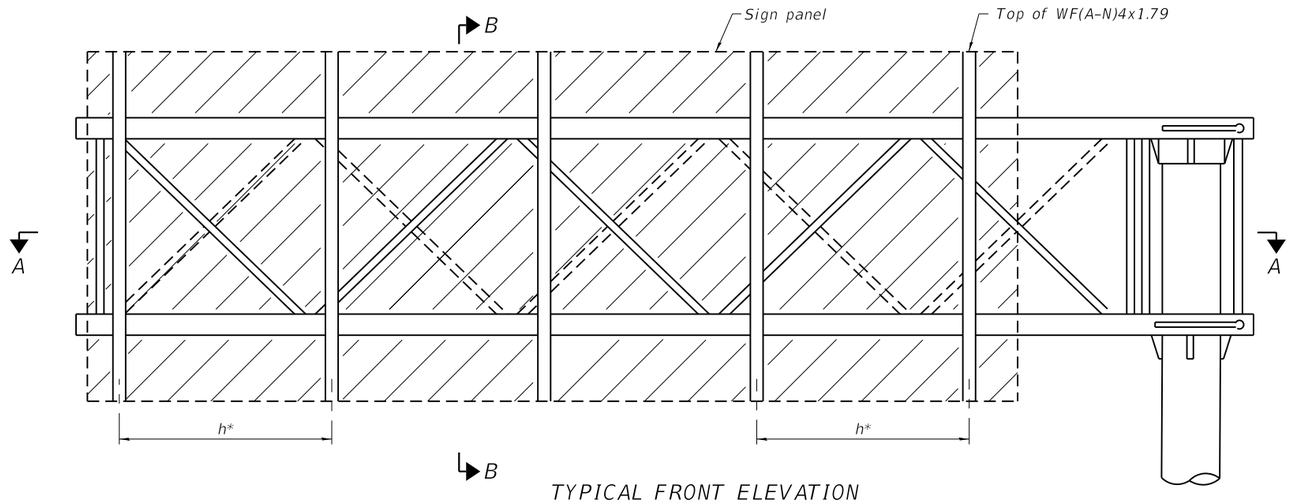


ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize the upper 18" (minimum***) and associated AASHTO M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide a nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

Sign #	Structure Number	Station	H
7	1C016I094R070.7	481+82.03	20' - 4 3/4"

Note: "H" based on 15'-0" or actual sign height, whichever is greater.

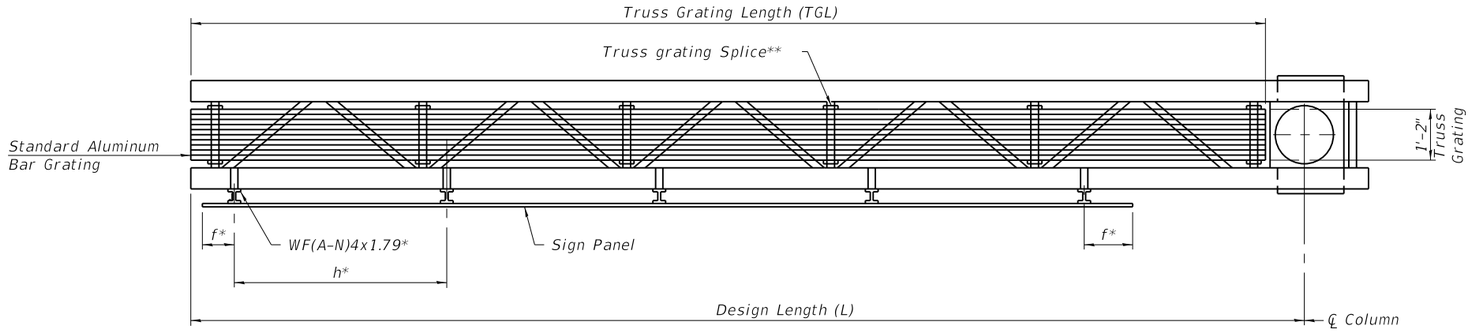


TYPICAL FRONT ELEVATION

BRACKET TABLE

WF(A-N)4x1.79 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

Sign #	Structure Number	Station	TGL
7	1C016I094R070.7	481+82.03	21' - 10"



SECTION A-A

$$TGL = L - \left(\frac{Post\ O.D.}{2} + 6'' \right)$$

* Space sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
h = 6'-0" maximum (℄ to ℄ sign support brackets, WF(A-N)4x1.79

** Use and location of grating splices are optional, based on lengths needed and material availability.

Notes:
For details of sign placement, sign brackets, truss gratings, grating splices, and Section B-B, see Base Sheet OSC-A-7-NW.
Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in Overhaed Sign Structure Cantilever.
Truss grating dimensions are nominal and may vary (width ½"±, depth ½"±) based on available standard widths.

OSC-A-6-NW 5-15-2023

HBM ENGINEERING GROUP, LLC

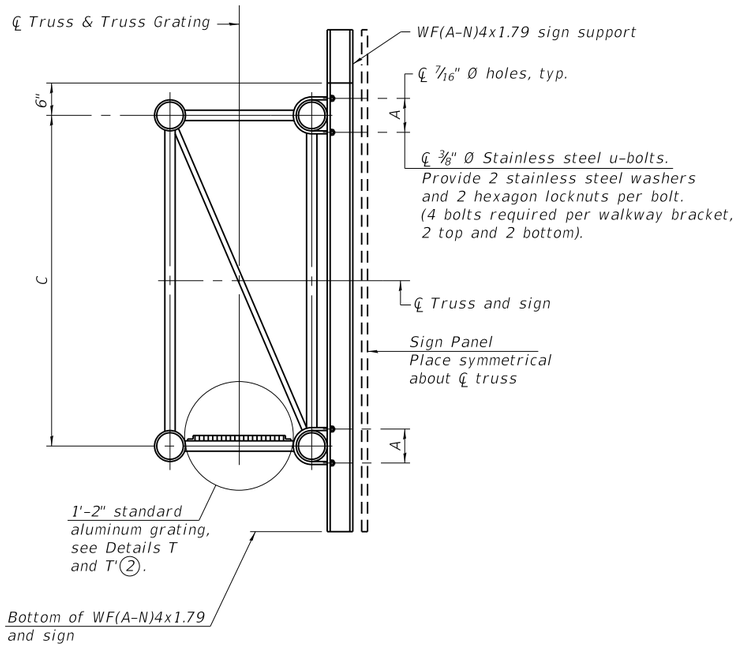
USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

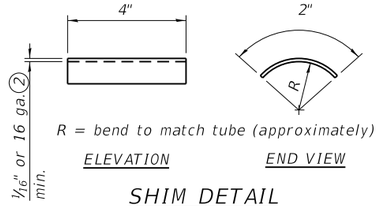
CANTILEVER SIGN STRUCTURES - ALUMINUM WALKWAY
DETAILS - ALUMINUM TRUSS & STEEL POST
SHEET OHSS1-06 OF OHSS1-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	438
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bmepw11ics01\ICS_pdf_work_dir\23781\1436_81\C016I094R070.7-62K53-SHT-SignDet06.dgn
12/6/2024 8:48:27 PM

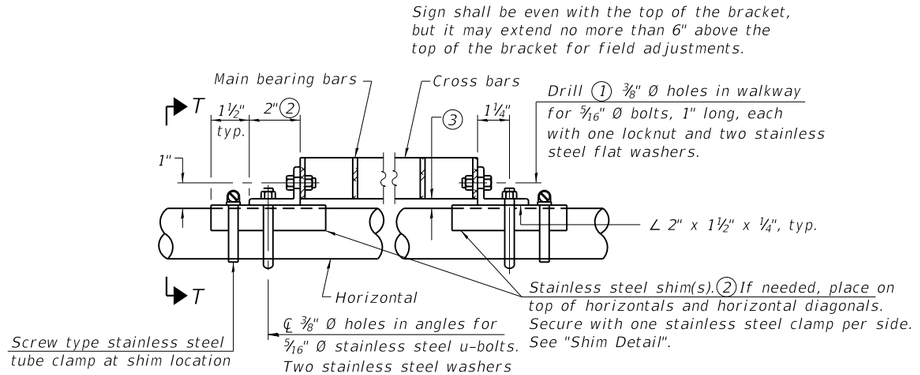


SECTION B–B



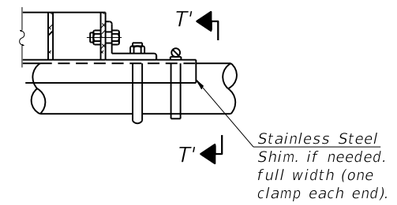
SHIM DETAIL

1. Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
2. Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
3. Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.



DETAIL T

(Continuous Truss grating)



DETAIL T'

(Truss grating splice)

Details not shown same as Detail T.
Alternate materials may be used subject to the Engineer's review and approval.

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars (MBB) shall be 3/16" x 1½" on 1 3/16" centers and conform to ASTM B211 Alloy 6061–T6.

Cross bars (CB) shall be 3/16" x 1½" on 4" centers and conform to ASTM B221 Alloy 6063–T5 or 6061–T6.

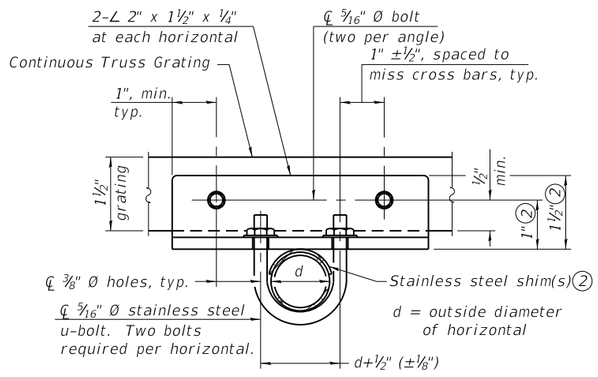
OR

Aluminum Grating with modified "t" sections for main bearing bars shall meet the following requirements:

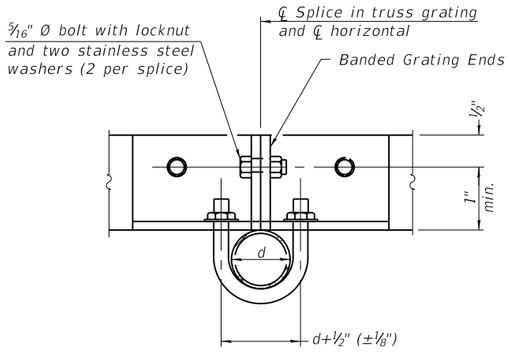
Main bars shall conform to ASTM B221 Alloy 6061–T6 and have a minimum section modulus equal to 0.0705 $in.^3$ per bar, a depth of 1½", spaced on 1 3/16" centers.

Cross bars shall conform to ASTM B221 Alloy 6063–T5 or T–42 and spaced on 4" centers.

Sign #	Structure Number	Station	A	C
7	1C016I094R070.7	481+82.03	5 1/2"	4' – 6"



SECTION T–T



SECTION T'–T'

OSC–A–7–NW 5–15–2023

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

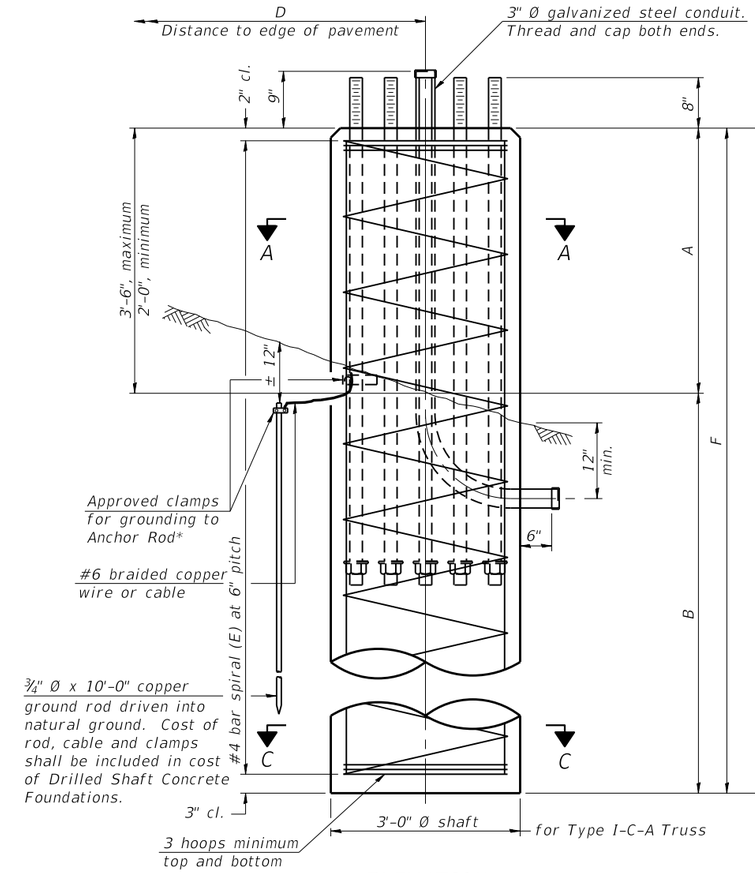
CANTILEVER SIGN STRUCTURES - WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST

SHEET OHSS1-07 OF OHSS1-09 SHEETS

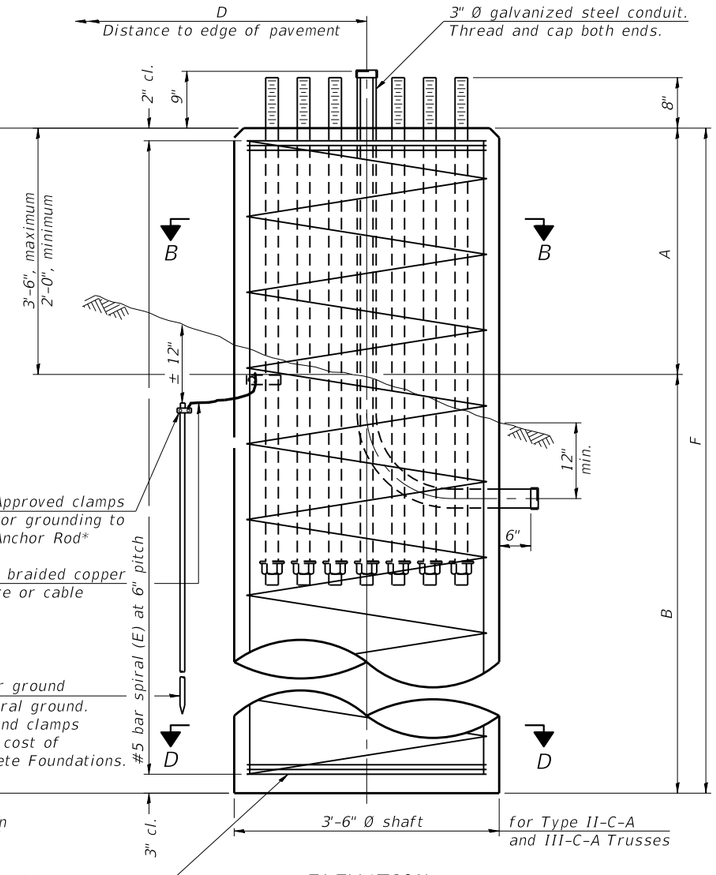
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	439
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2378\1436_9\1C016I094R070.7-62KS3-SHT-SignDet07.dgn
12/6/2024 8:48:23 PM

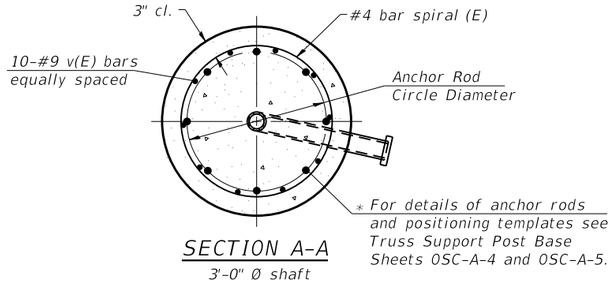
* Grind anchor rod to bright finish at ground clamp location before installing clamp.



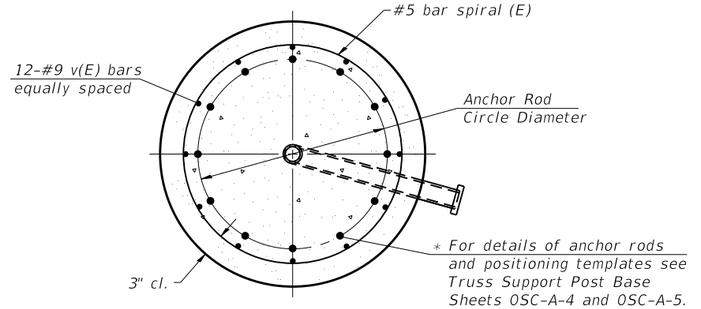
ELEVATION



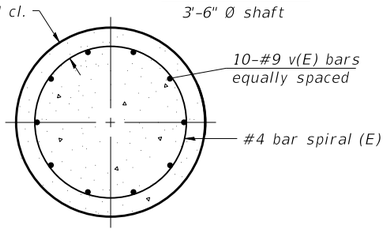
ELEVATION



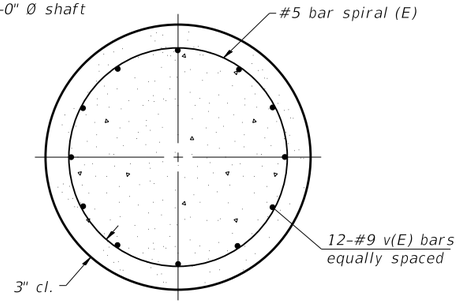
SECTION A-A
3'-0" Ø shaft



SECTION B-B
3'-6" Ø shaft



SECTION C-C
3'-0" Ø shaft



SECTION D-D
3'-6" Ø shaft

NOTES:

The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

FOUNDATION DESIGN TABLE

Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	"B" Depth (ft)	Anchor Rods		Anchor Rod Circle Diameter (in)
						No.	Diameter (in)	
I-C-A	0SC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	0SC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	0SC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	0SC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	0SC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	0SC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	0SC-A-5	40	400	3.5	32.0	12	2	30

Sign #	Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Qu	A	B	F	Class DS Concrete Cubic Yards
7	1C016I094R070.7	481+82.03	I-C-A	3' - 0"	602.81	583.31	1.7 tsf	3' - 6"	16' - 0"	19' - 6"	5.2

0SC-A-9 5-15-2023

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST

SHEET OHSS1-08 OF OHSS1-09SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	440
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bbmepw11\cs01\iCS_pdf_work_dir\2378\1436_10\1C016I094R070_7-62K53-SHT-SignDet08.dgn
12/6/2024 8:48:23 PM

Illinois Department of Transportation
Division of Highways
Chicago Testing Laboratory, Inc

SOIL BORING LOG

Date 10/10/24

FAI RTE 94 (I-94 Bishop Ford Expy)

ROUTE Ford Expy) **DESCRIPTION** Overhead Sign 7 **LOGGED BY** KL

SECTION 2019-180-RS&T **LOCATION** NE 1/4, **SEC.** 11, **TWP.** 36N, **RNG.** 25E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. Sign 7
Station 481+82.03

BORING NO. OSB-7-1
Station 482+55
Offset 90.00ft RT
Ground Surface Elev. 597.00 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter None ft
Upon Completion N/A ft
After N/A **Hrs.** N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
3 inches of Topsoil 596.75				
Brown and Gray, Moist FILL: SILTY SAND		9		
595.00		13		8.8
Brown and Gray, Moist FILL: SILTY CLAY		15		
		3		
		3	2.0	13.5
	-5	3	P	
591.00				
Brown, Moist FILL: LOAM		2		
		3		12.1
		4		
589.00				
Brown and Gray, Moist FILL: SILTY CLAY		4		
		7	1.9	14.4
	-10	4	B	
		6		
585.00		7		9.2
Very Loose Brown, Moist SANDY LOAM (SM)		4		
583.00		1		
Stiff Gray, Moist SILTY CLAY (CL/ML)		1	1.5	21.5
	-15	1	P	
581.00				
Very Loose Gray, Wet LOAM (SC-SM) 580.00		0		
		0		22.8
		2		
Stiff to Very Stiff Gray, Moist SILTY CLAY trace gravel (CL/ML)		2		
		3	1.7	23.0
	-20	4	B	
Stiff to Very Stiff Gray, Moist SILTY CLAY trace gravel (CL/ML) *(continued)*		3		
		5	1.7	14.8
		6	B	
		2		
		5	1.3	20.5
	-25	5	B	
		3		
		5	1.7	20.9
		7	B	
		3		
		6	1.7	21.0
	-30	6	B	
		3		
		5	1.7	20.4
	-35	7	B	
		4		
		8	2.1	19.0
557.00	-40	9	B	

End of Boring

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

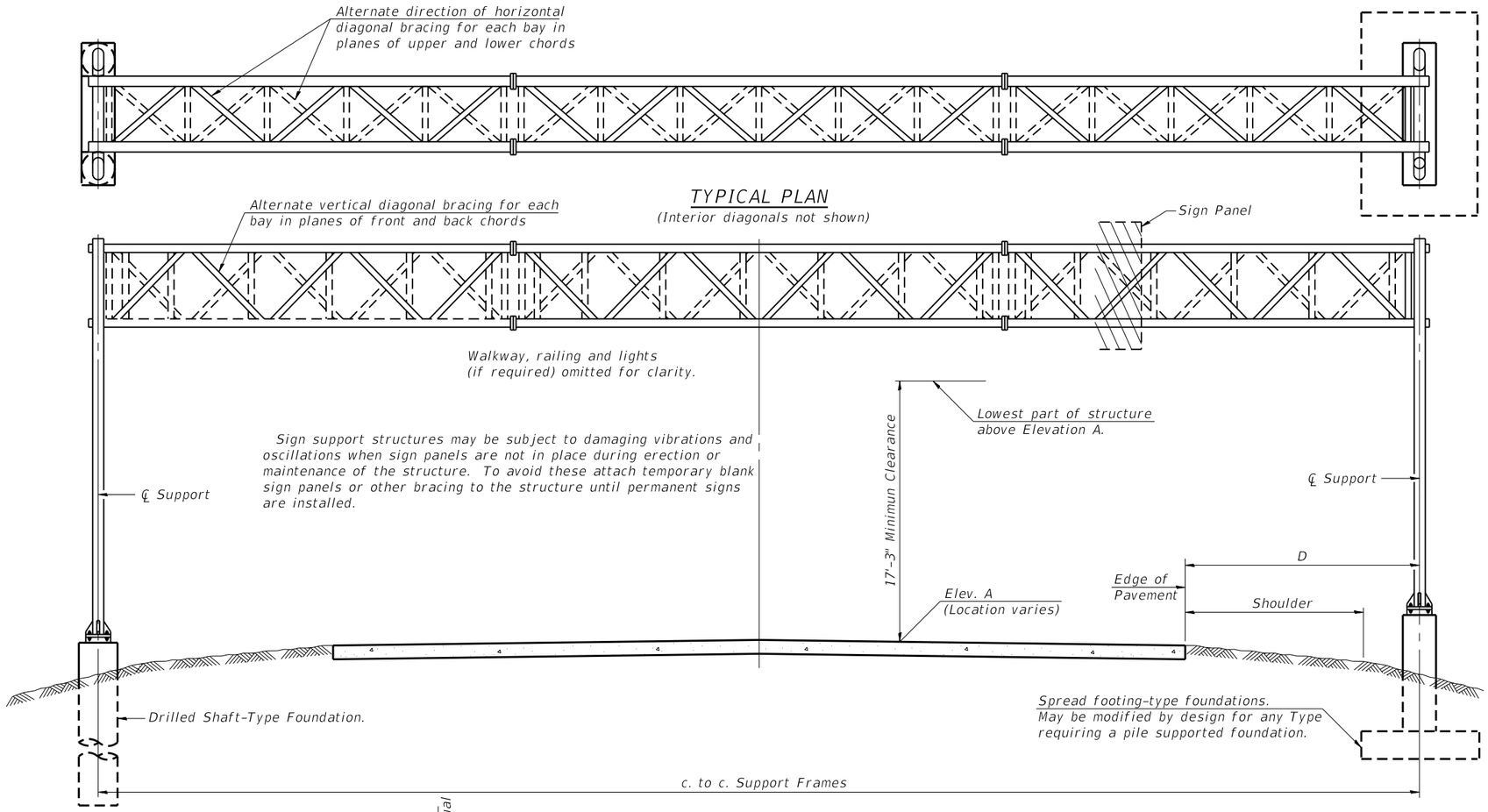
HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

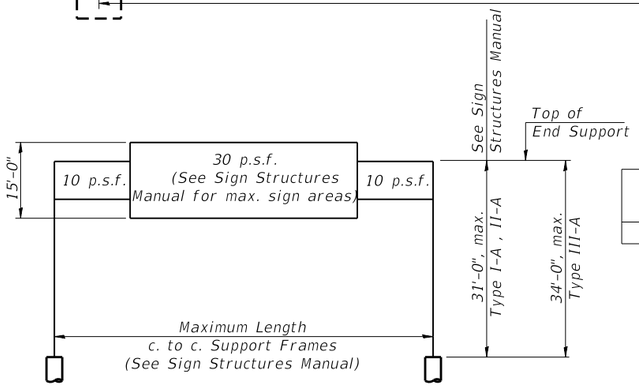
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES
BORING LOGS
SHEET OHSS1-09 OF OHSS1-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	441
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



TYPICAL PLAN
(Interior diagonals not shown)



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

TYPICAL ELEVATION
(Looking at Face of Signs**)

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

Sign #	Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area (Sq. Ft.)
8	1S016I094R071.2	508+94.88	Type I-A	100' - 0"	593.44	43' - 10 1/2"	12'-6"	481.25

**Looking upstation for structures with signs both sides.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

Existing sign foundation shall be removed to a depth of 1'-0" below existing grade. Cost included with Remove Concrete Foundation - Overhead.

STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E. IL. Lic. No. 081-005738
Expires 11-30-2026

Date 12/06/2024 For Sheets 0HSS2-01 thru 0HSS2-13.

WALKWAY: Walkway grating, walkway brackets, handrails, lighting, and associated components shown in these plans on the traffic side of the sign structure/sign panel will not be installed with Contract 62W87. The truss grating and maintenance walkway behind the sign panel will be included with Overhead Sign Structure - Span, Type I-A (4'-0" X 4'-6")

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.*
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Overhead Sign Structure - Span, Type I-A (4'-0" X 4'-6")	Foot	100
Drilled Shaft Concrete Foundations	Cu Yd	31.2
Remove Overhead Sign Structure - Span	Each	1
Remove Concrete Foundation - Overhead	Each	1

0S-A-1 5-15-2023

HBM ENGINEERING GROUP, LLC

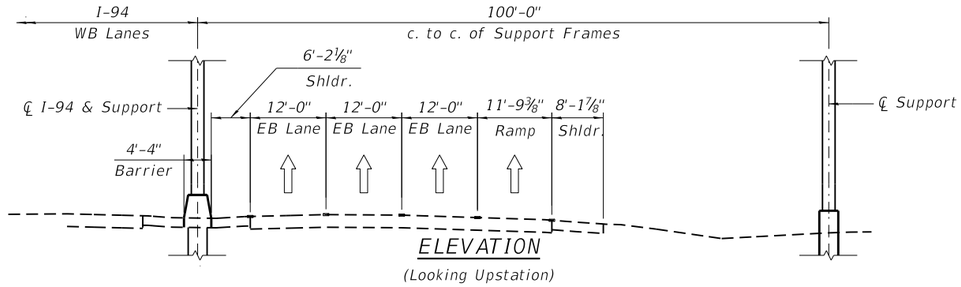
USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - GEN. PLAN & ELEVATION
ALUMINUM TRUSS & STEEL SUPPORTS
SHEET OHSS2-01 OF OHSS2-13 SHEETS

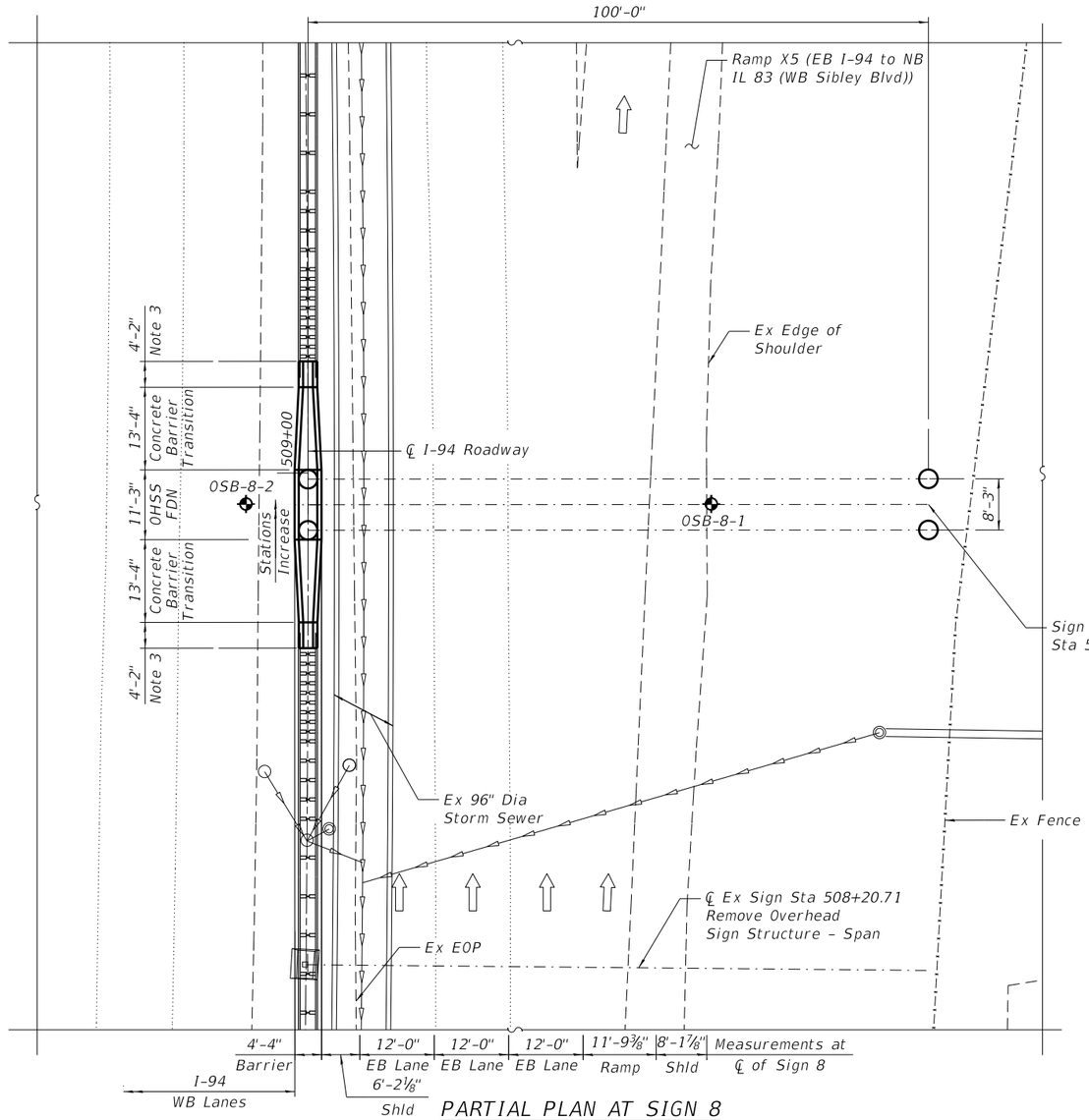
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	442
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bmepw11ics01\ICS_pdf_work_dir\2406\1440_2\1S016I094R071.1-62K53-SHT-SignDet01.dgn
12/9/2024 6:38:51 PM



ELEVATION

(Looking Upstation)



PARTIAL PLAN AT SIGN 8

NOTES:

1. Stations that are shown are with respect to the I-94 centerline.
2. The Contractor shall locate ℄ and top of existing storm sewer in the vicinity of the proposed foundation prior to drilling or pouring the proposed foundation. The Contractor shall inform the Engineer of any discrepancy between the plans and existing conditions.
3. 4'-2" concrete barrier double face - 44" high. See standard 637006.

LEGEND

- Ex Storm Sewer
- Ex Catch Basin
- Ex Manhole
- Soil Boring

MODEL: Default
FILE NAME: \\bmepw11ics01\ICS_pdf_work_dir\2406\1440_27\1S016I094R071.1-62X53-SHT-SignDet01A.dgn

12/9/2024 6:42:09 PM

HBM ENGINEERING GROUP, LLC

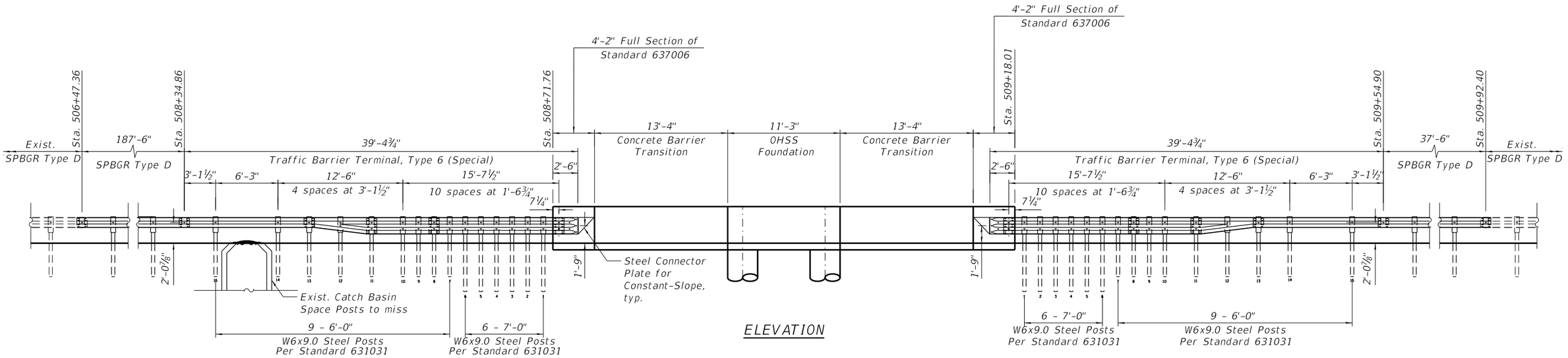
USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

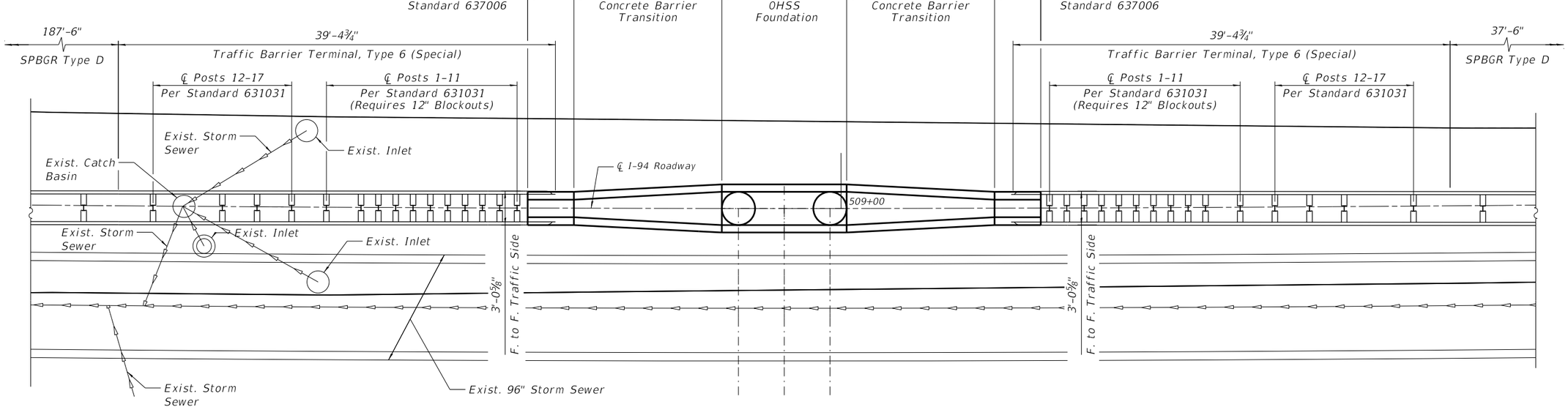
OVERHEAD SIGN STRUCTURES
PLAN & ELEVATION

SHEET OHSS2-02 OF OHSS2-13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	443
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



ELEVATION



PARTIAL PLAN FOR MEDIAN GUARDRAIL AT SIGN 8

N

MODEL: Default
FILE NAME: \\hbmeapw11\cs01\ICS_pdf_work_dir\24061473_1\D162K53-sht-TBT65Detail.dgn
12/9/2024 6:40:51 PM

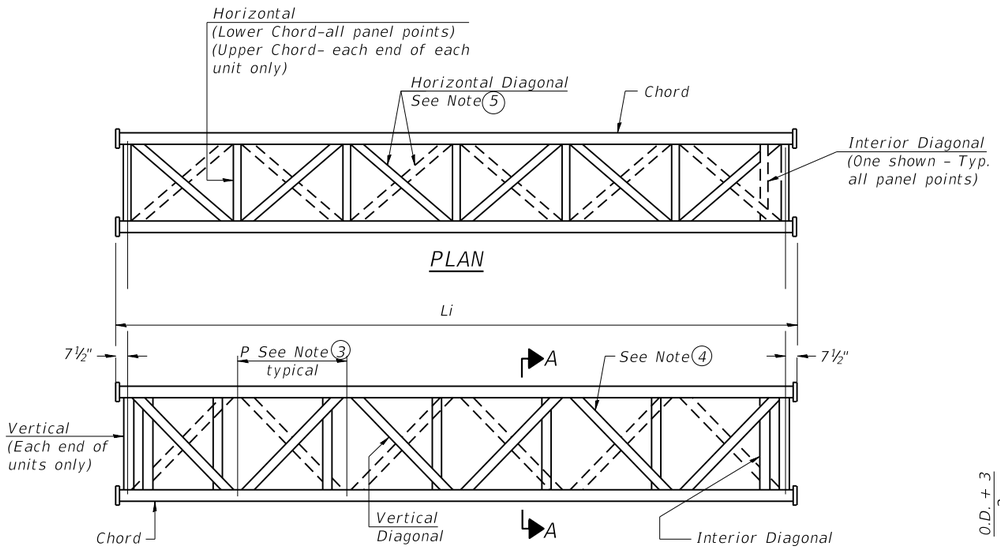
HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - KJD	REVISED -
	DRAWN - KJD	REVISED -
PLOT SCALE =	CHECKED - MI, JMG	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
PARTIAL PLAN FOR MEDIAN GUARDRAIL
SHEET OHSS2-03 OF OHSS2-13 SHEETS

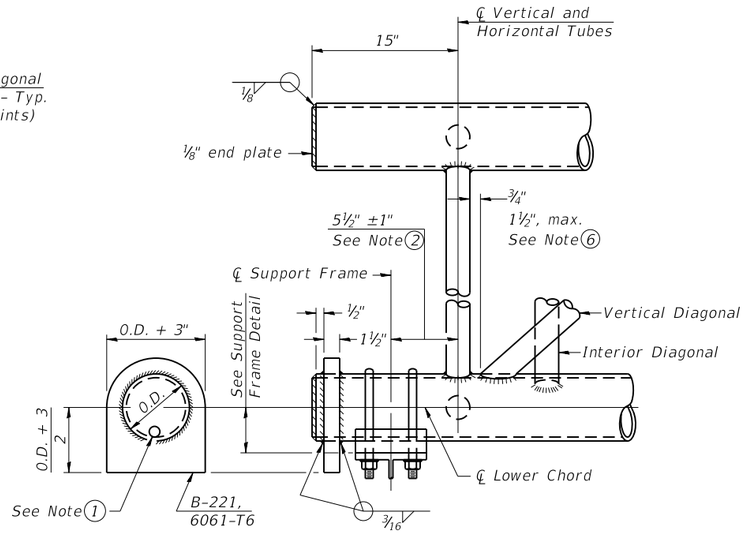
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	444
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



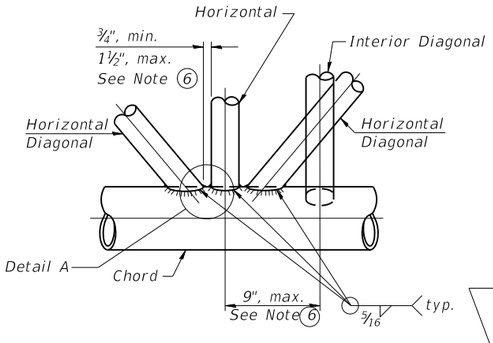
ELEVATION

TYPICAL INTERIOR UNIT

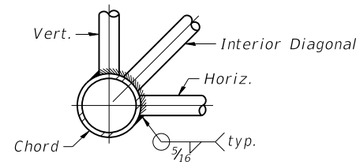
Even number of panels/interior unit required.

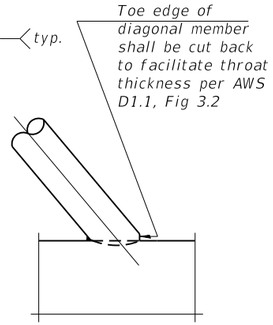


SUPPORT END DETAIL FOR EXTERIOR UNIT

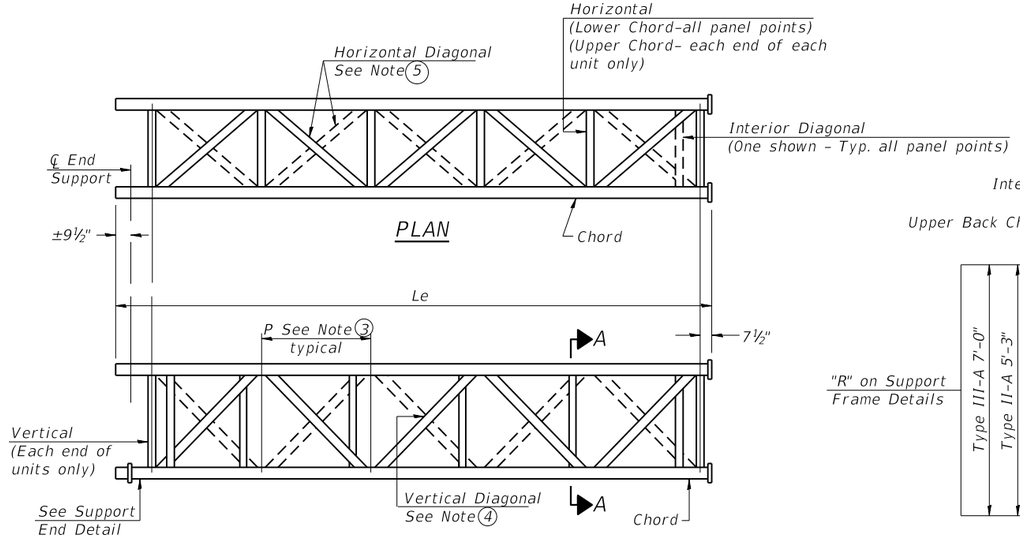


TYPICAL JOINT DETAILS





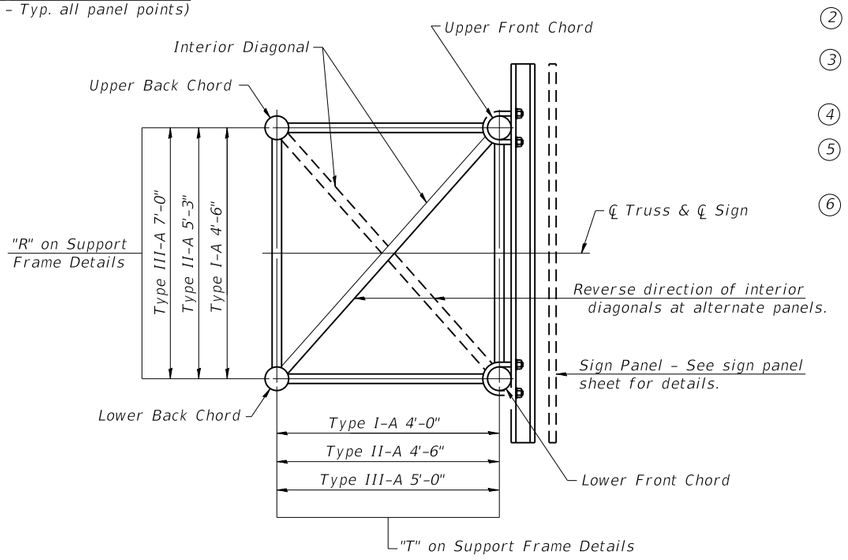
DETAIL A



ELEVATION

TYPICAL EXTERIOR UNIT

Even or odd number of panels/exterior units allowed.



SECTION A-A

(1) Contractor may alternatively use standard aluminum drive-fit cap to close end. ½" Ø drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)

(2) 5½" end dimension may vary by ±1" to provide uniform panel spacing (P).

(3) Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.

(4) Vertical Diagonals in front and back face shall alternate.

(5) Hidden lines show wind bracing alternates direction between planes of top and bottom chords.

(6) All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a ¾" minimum to 1½" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\2406\1440_4\1501616094R071.1-62K53-SHT-SignDet02.dgn
12/9/2024 6:38:50 PM

OS-A-2 5-15-2023

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

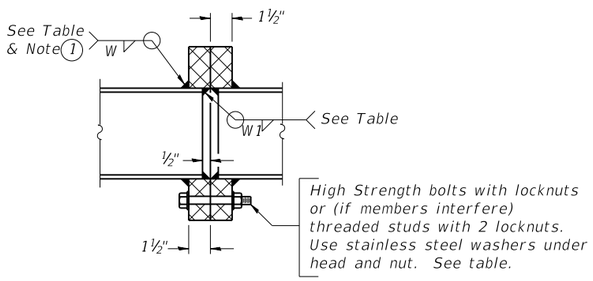
OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS
DETAILS FOR TRUSS TYPES I-A, II-A AND III-A

SHEET OHSS2-04 OF OHSS2-13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	445
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

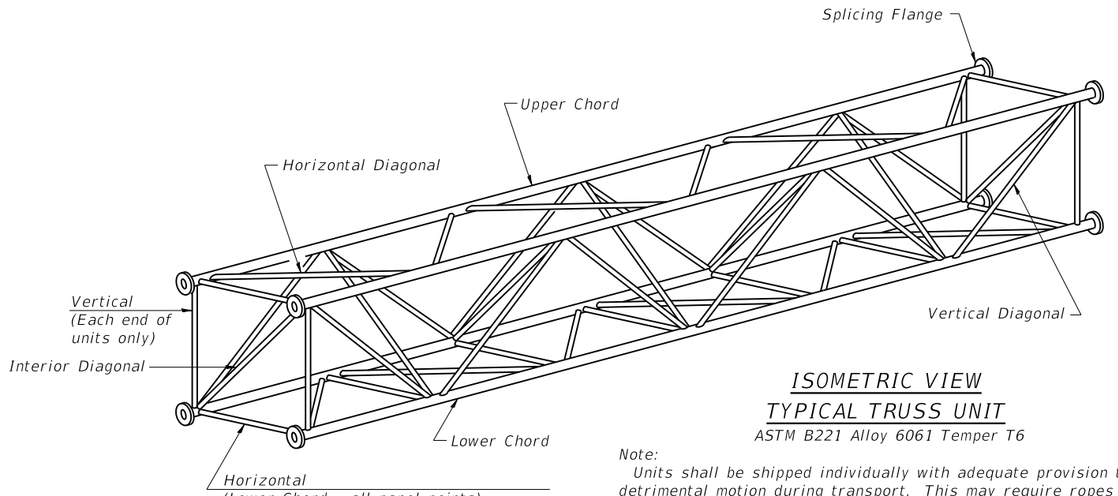
TRUSS UNIT TABLE

Sign #	Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
																Bolts		Weld Sizes		A	B
				No. Panels Per Unit	Unit Lgth. (Le)	Panel Lgth.(P)	No. Req'd	No. Panels per Unit	Unit Lgth. (Li)	Panel Lgth. (P)	O.D.	Wall	O.D.	Wall		No./Splice	Dia.	W	W1		
8	1S016I094R071.2	508+94.88	Type I-A	7	35' - 8 1/2"	4' - 10"	1	6	30' - 3"	4' - 10"	5 1/2"	5/16"	2 1/2"	5/16"	3 1/4"	6	7/8"	3/8"	1/4"	9 1/4"	12 1/4"



SECTION B-B

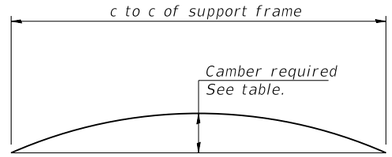
(1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.



ISOMETRIC VIEW
TYPICAL TRUSS UNIT

ASTM B221 Alloy 6061 Temper T6

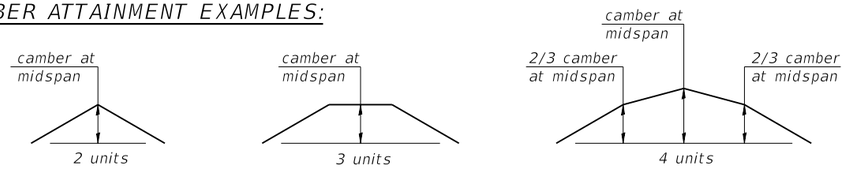
Note:
Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



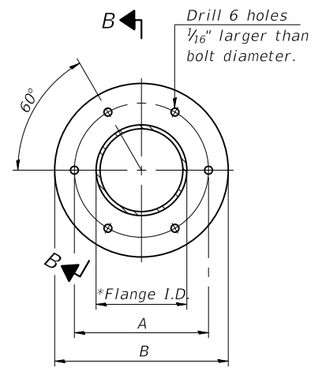
CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

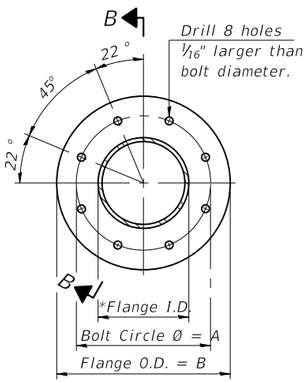
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

SPLICING FLANGES

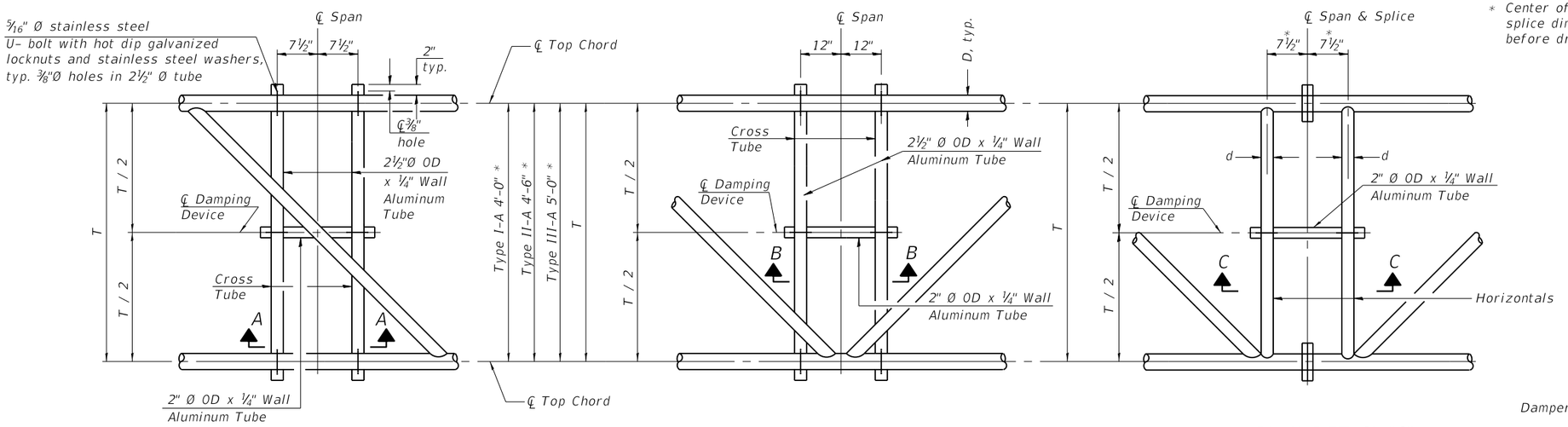
ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

OS4-A-2 5-15-2023

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - JMI	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A
		DRAWN - JMI	REVISED -		
	PLOT SCALE =	CHECKED - MI, LAB	REVISED -		SHEET OHSS2-05 OF OHSS2-13SHEETS
	PLOT DATE =	DATE - 12/9/2024	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	446
		CONTRACT NO.62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\24061440_5\1S016I094R071.1-62K53-SHT-SignDet03.dgn
12/9/2024 6:38:50 PM



* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

PLAN DETAIL "A"
℄ Span between Panel Points

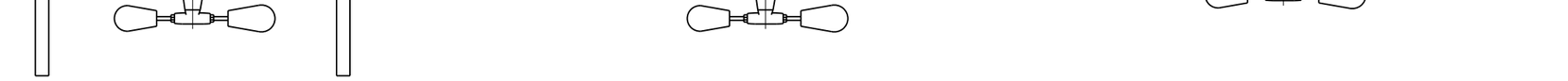
PLAN DETAIL "B"
℄ Span at Panel Point

PLAN DETAIL "C"
℄ Span at ℄ Chord Splice

NOTES

Damper: One damper per truss. (31 lbs. minimum Stockbridge–Type Aluminum – 29" minimum between ends of weights) Cost included in Overhead Sign Structure...

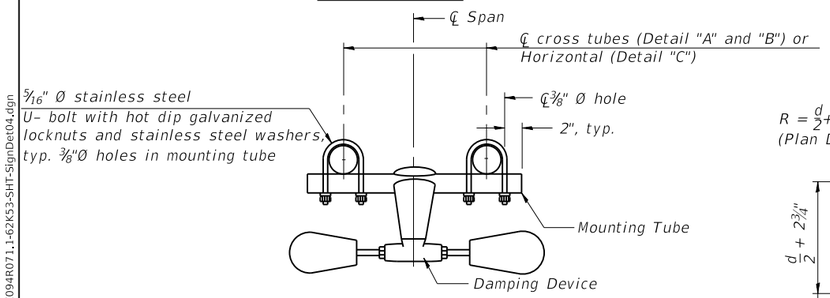
Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...



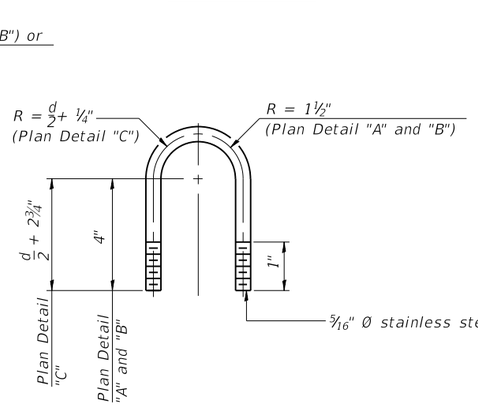
SECTION A-A

SECTION B-B

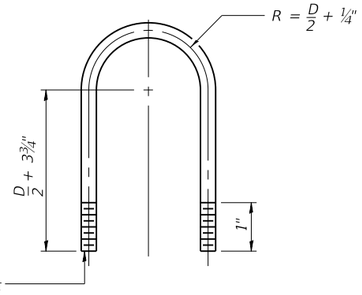
SECTION C-C



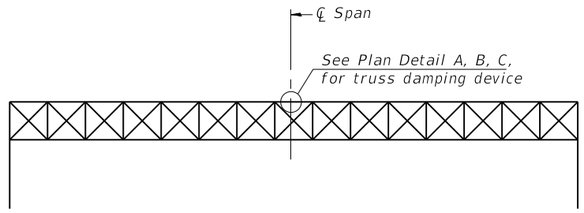
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical – Detail "A" and "B")



ELEVATION
Aluminum Overhead Sign Truss

OS-A-D 5-15-2023

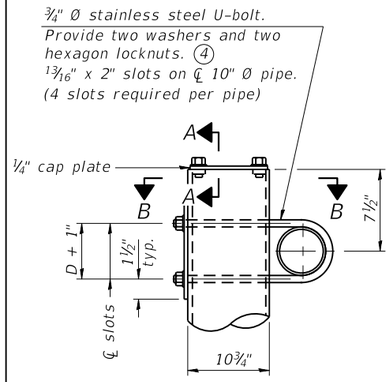
HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - JMI	REVISED -
		DRAWN - JMI	REVISED -
	PLOT SCALE =	CHECKED - MI, LAB	REVISED -
	PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

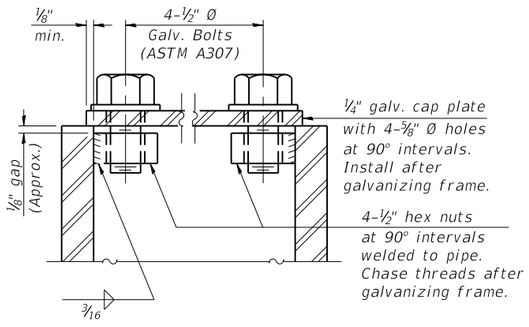
OVERHEAD SIGN STRUCTURE
DAMPING DEVICE
SHEET OHSS2-06 OF OHSS2-13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	447
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\24061440_6\1S016l094R071.1-62KS3-SHT-SignDet04.dgn
12/9/2024 6:39:36 PM

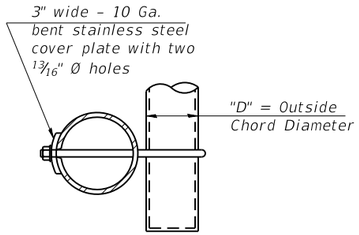


DETAIL A

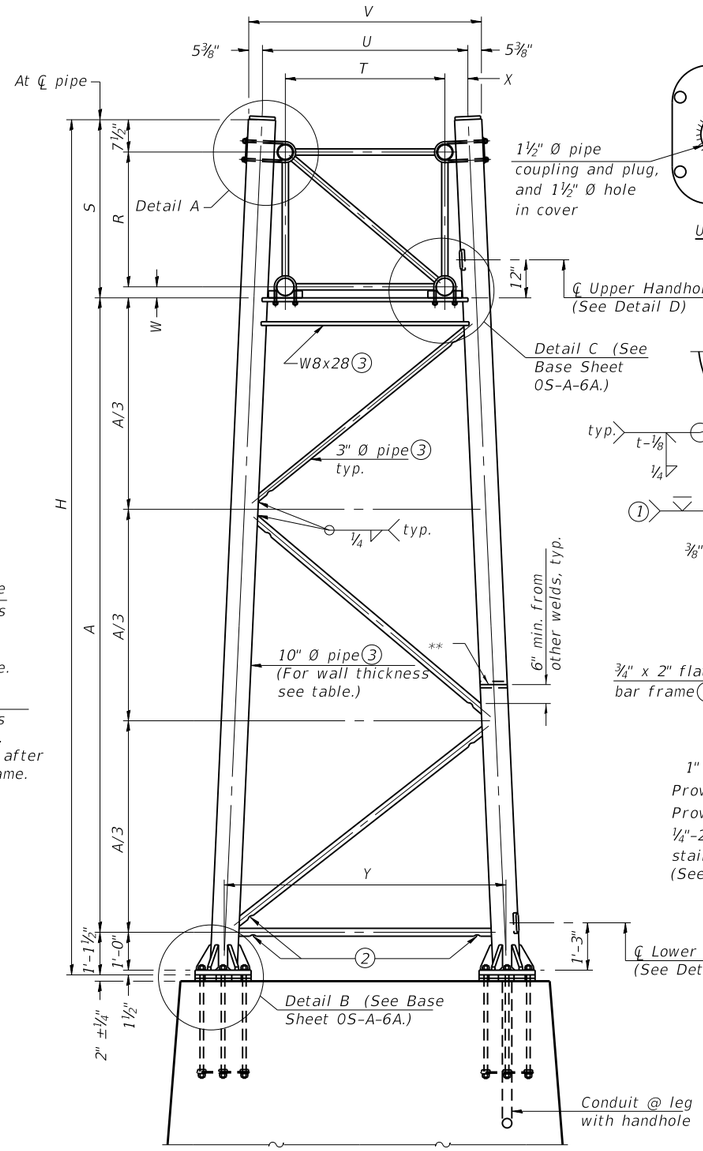


SECTION A-A

As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

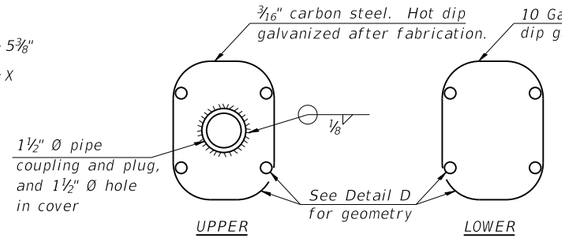


SECTION B-B

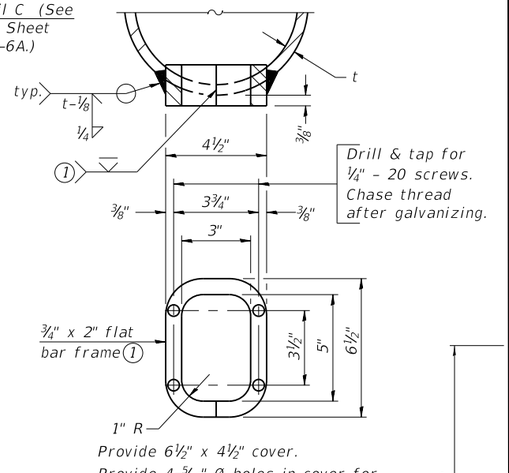


For Foundation Details, see base sheet 0S-F3 (Spread Footing) or 0S4-F3 (Drilled Shaft).

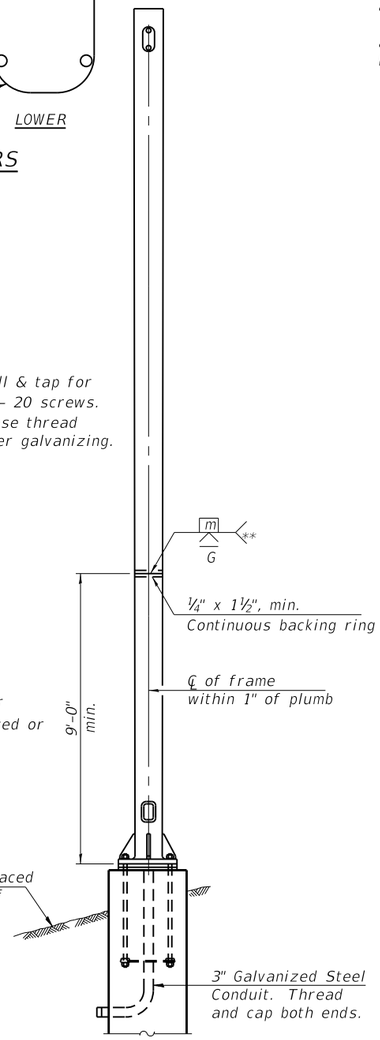
SIDE ELEVATION



HANDHOLE COVERS



DETAIL D



END ELEVATION

10" Ø PIPE TRUSS SUPPORT FRAME

** One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

Truss Type	Dimensions							
	R	S	T	U	V	W	X	Y
I-A	4'-6"	5'-5½"	4'-0"	5'-6"	6'-4¾"	4"	9"	8'-3"
II-A (5)	5'-3"	6'-3¼"	4'-6"	6'-1"	6'-11¾"	4¾"	9½"	8'-3"

Sign #	Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H (6)	A
			Left	Right				
8	1S016I094R071.2	508+94.88	X		Type I-A	0.279	25' - 7"	19' - 0"
				X		0.279	28' - 1 1/8"	21' - 6 1/8"

Support Design Loads: See Base Sheet 0S-A-1 for design and loading criteria.

Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

(1) In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500µ in or less.

(2) Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.

(3) Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet 0S-A-1.

(4) See General Notes for fasteners.

(5) Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

(6) "H" based on 15'-0" or actual sign height, whichever is greater.

0S-A-6 5-15-2023

HBM ENGINEERING GROUP, LLC

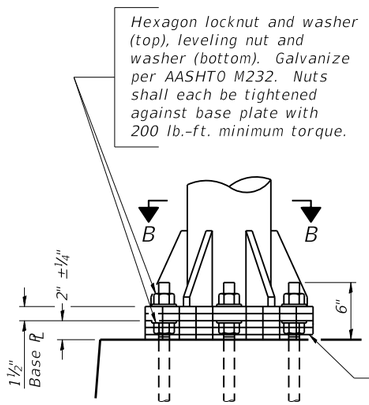
USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR ALUMINUM TRUSS
SHEET OHSS2-07 OF OHSS2-13 SHEETS

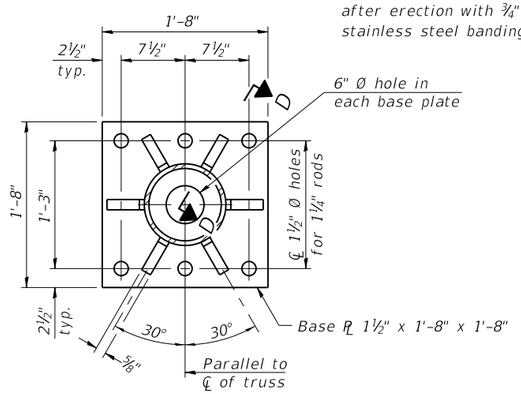
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	448
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11fcs01\ICS_pdf_work_dir\2406\1440_3\1S016I094R071.1-62KS3-SHT-SignDet05.dgn
12/9/2024 6:38:50 PM

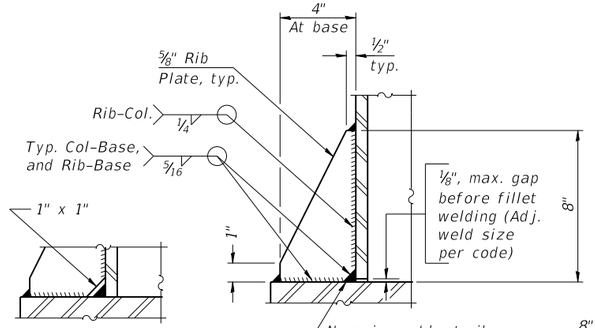


DETAIL B

Ribs shall be cut to fit slope of pipe.

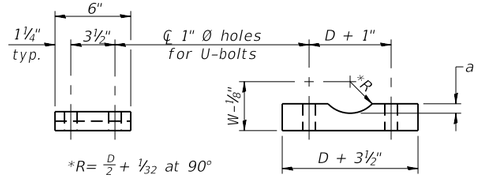


SECTION B-B



** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib ¼" from snip.

SECTION D-D



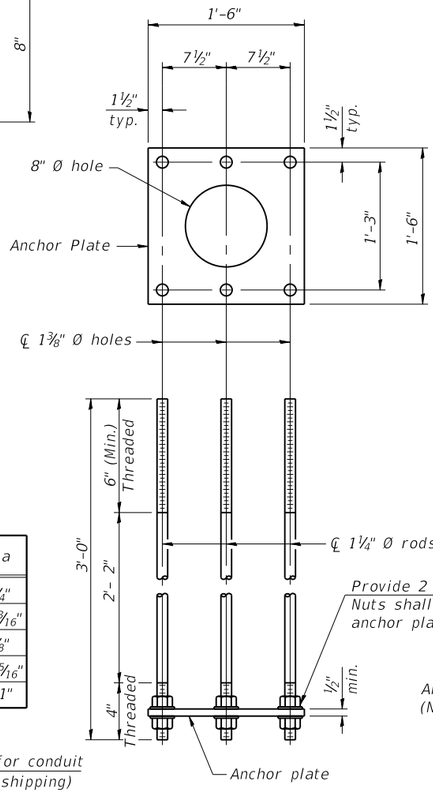
*R= $\frac{D}{2}$ + 1/32 at 90°

D = Outside Diameter of Chord.
For W, see Base Sheet OS-A-6.

SADDLE SHIM DETAIL

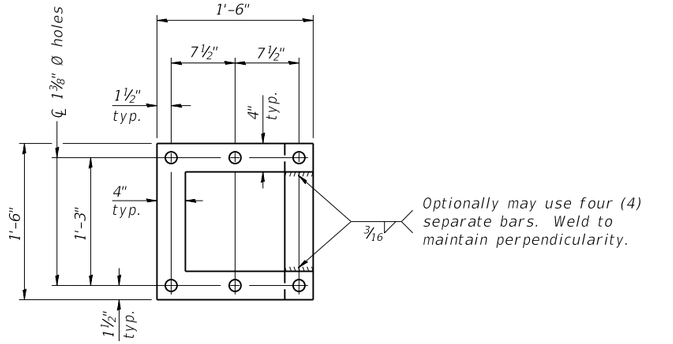
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
5"	¾"
5½"	13/16"
6"	⅞"
6½"	15/16"
7"	1"

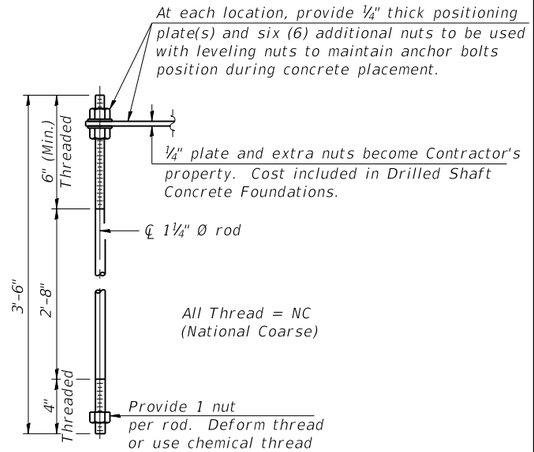


ANCHOR ROD DETAIL

Spread Footing Foundation



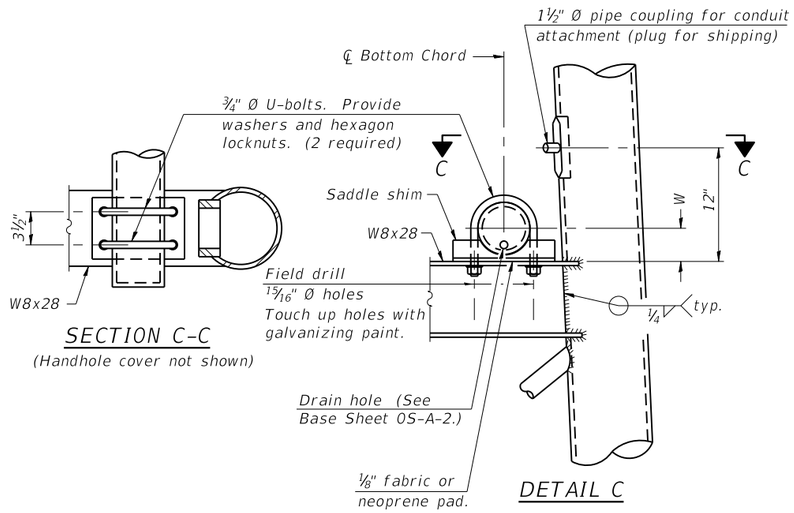
POSITIONING PLATE(S)



ANCHOR ROD DETAIL

Drilled Shaft Foundation

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.



SECTION C-C

(Handhole cover not shown)

DETAIL C

10" Ø PIPE SUPPORT FRAME DETAILS

OS-A-6A 5-15-2023

USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

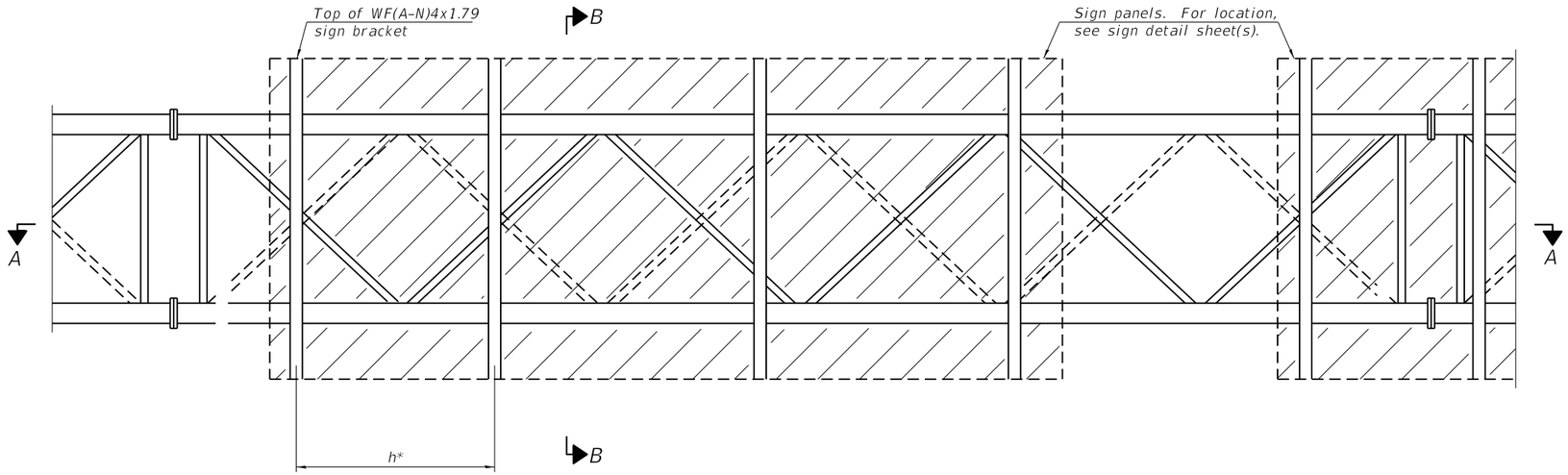
HBM ENGINEERING GROUP, LLC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

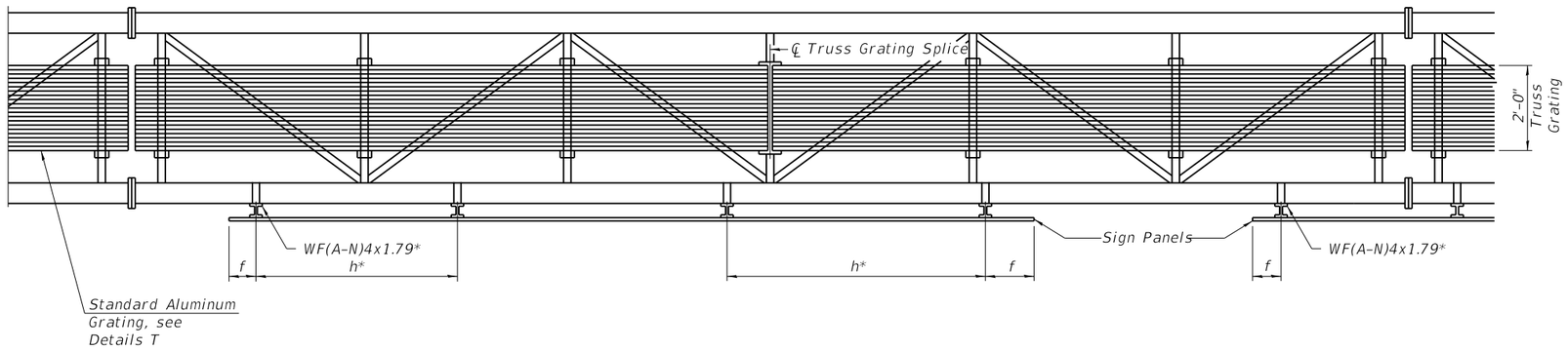
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS - ALUMINUM TRUSS
SHEET OHSS2-08 OF OHSS2-13SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	449
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bhmepw11ics01\ICS_pdf_work_dir\2406\1440_7\15016094R071.1-62K53-SHT-SignDet06.dgn
12/9/2024 6:39:24 PM



TYPICAL FRONT ELEVATION



SECTION A-A

Place all sign brackets as close to panel points as practical.

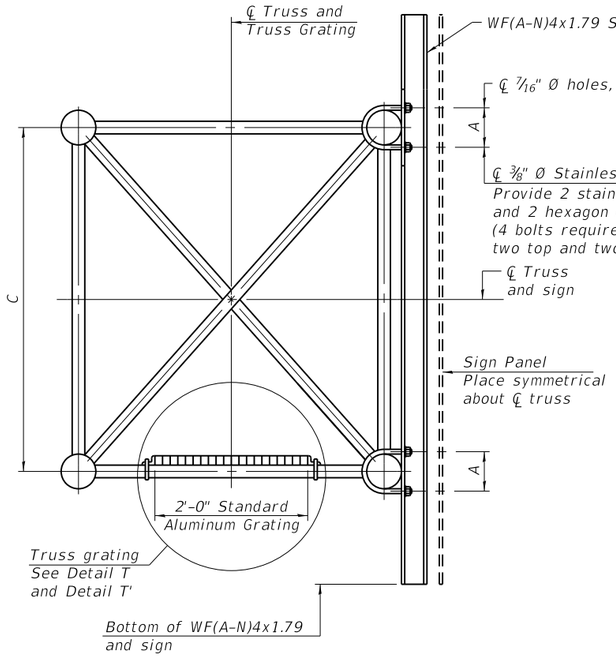
BRACKET TABLE

WF(A-N)4x1.79 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

* Space sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

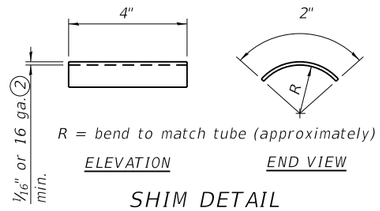
f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
h = 6'-0" maximum (℄ to ℄ sign support brackets, WF(A-N)4x1.7

Notes:
For Detail T and Section B-B, see Base Sheet 0S-A-10-NW.
Truss grating to facilitate inspection shall run full length (center to center of support frames) 12"± on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".
Truss Grating width dimensions are nominal and may vary ½"± based on available standard widths.



Sign shall be even with the top of the bracket, but it may extend no more than 6" above the top of the bracket for field adjustments.

SECTION B–B



SHIM DETAIL

1. Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
2. Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
3. Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16" x 1½" on 1 3/16" centers and conform to ASTM B221 Alloy 6061–T6.

Cross bars shall be 3/16" x 1½" on 4" centers and conform to ASTM B221 Alloy 6063–T5 or 6061–T6.

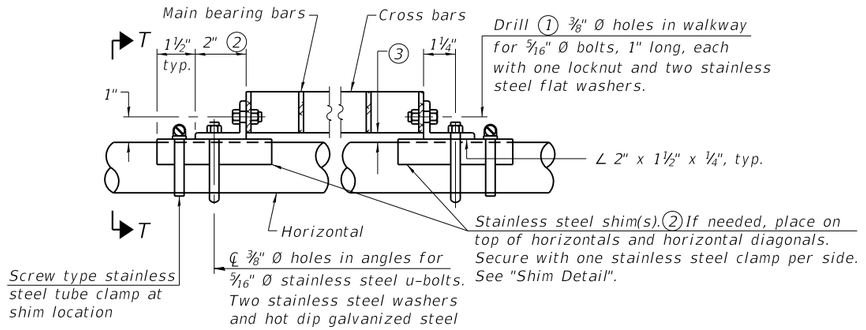
OR

Aluminum Grating with modified "t" sections for main bearing bars shall meet the following requirements:

Main bars shall conform to ASTM B221 Alloy 6061–T6 and have a minimum section modulus equal to 0.0705 $in.^3$ per bar, a depth of 1½", spaced on 1 3/16" centers.

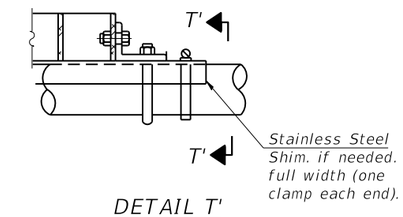
Cross bars shall conform to ASTM B221 Alloy 6063–T5 or T–42 and spaced on 4" centers.

Sign #	Structure Number	Station	A	C
8	1S016I094R071.2	508+94.88	6 1/2"	4' – 6"



DETAIL T

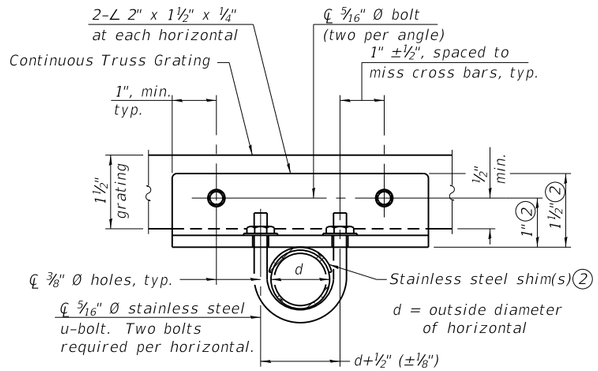
(Continuous Truss grating)



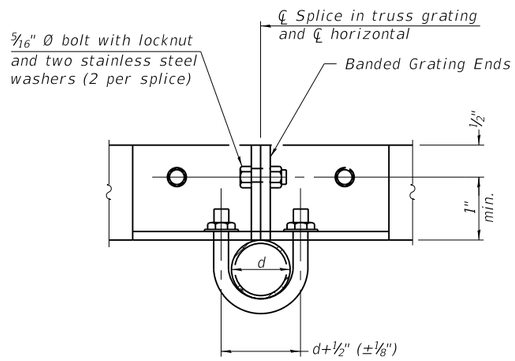
DETAIL T'

(Truss grating splice)

Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



SECTION T–T



SECTION T'–T'

OS–A–10–NW 5–15–2023

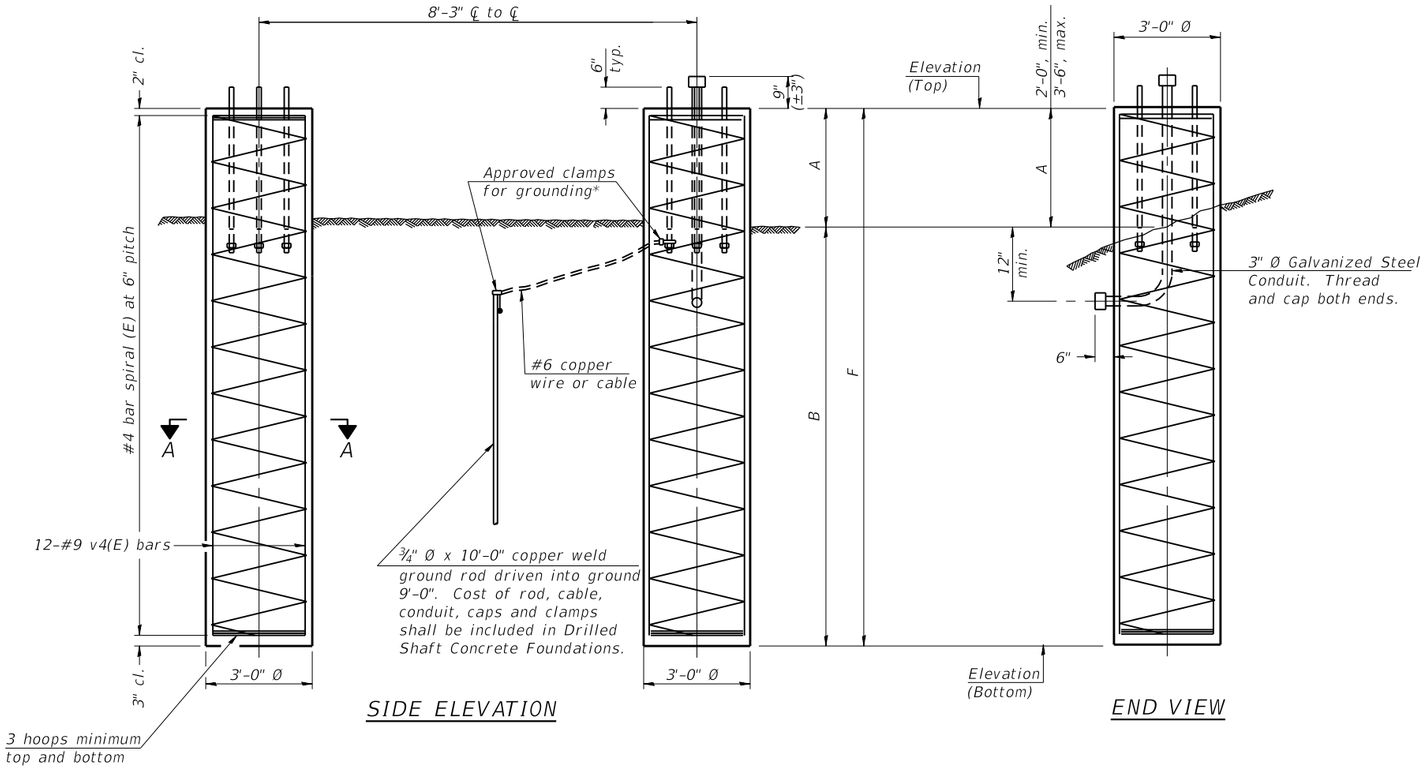
HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - JMI	REVISED -
		DRAWN - JMI	REVISED -
	PLOT SCALE =	CHECKED - MI, LAB	REVISED -
	PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS
SHEET OHSS2-10 OF OHSS2-13 SHEETS

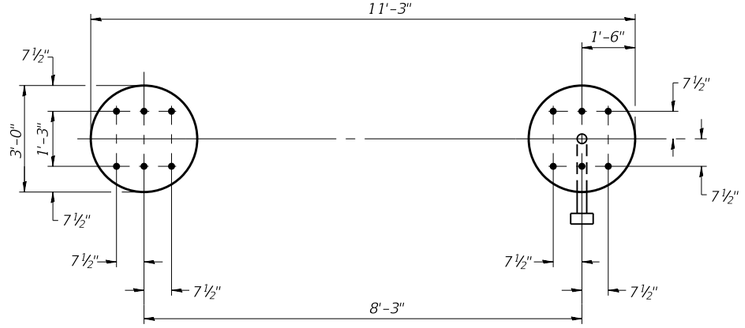
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	451
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\bmepw11ics01\ICS_pdf_work_dir\24061440_101S016I094R071,1-62XS3-SHT-SignDet08.dgn
12/9/2024 6:39:32 PM



SIDE ELEVATION

END VIEW



PLAN

For anchor rod size and placement, see Support Frame Detail Sheet.

* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

Wet method (516.06b), temporary casing method (516.060c), or a combination of the two may need to be used to maintain the sidewalls of the drilled shaft while excavating to the design depth and placing concrete for the foundation. Cost included with Drilled Shaft Concrete Foundations.

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	24	#9	F less 5"	——
#4 bar spiral (E) - see Side Elevation				

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

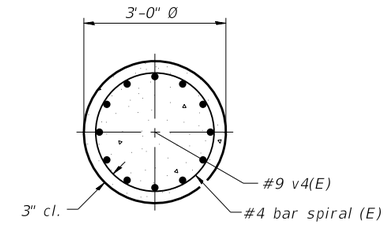
No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



SECTION A-A

DETAILS FOR 10" Ø SUPPORT FRAME TYPE I-A or II-A TRUSS

Sign #	Structure Number	Station	Left Foundation					Right Foundation					Class DS Concrete (Cu. Yds.)
			Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	
8	1S0161094R071.2	508+94.88	-	-	-	-	-	594.05	570.55	3' - 6"	20' - 0"	23' - 6"	12.4

0S4-F3

5-15-2023

USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

HBM ENGINEERING GROUP, LLC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

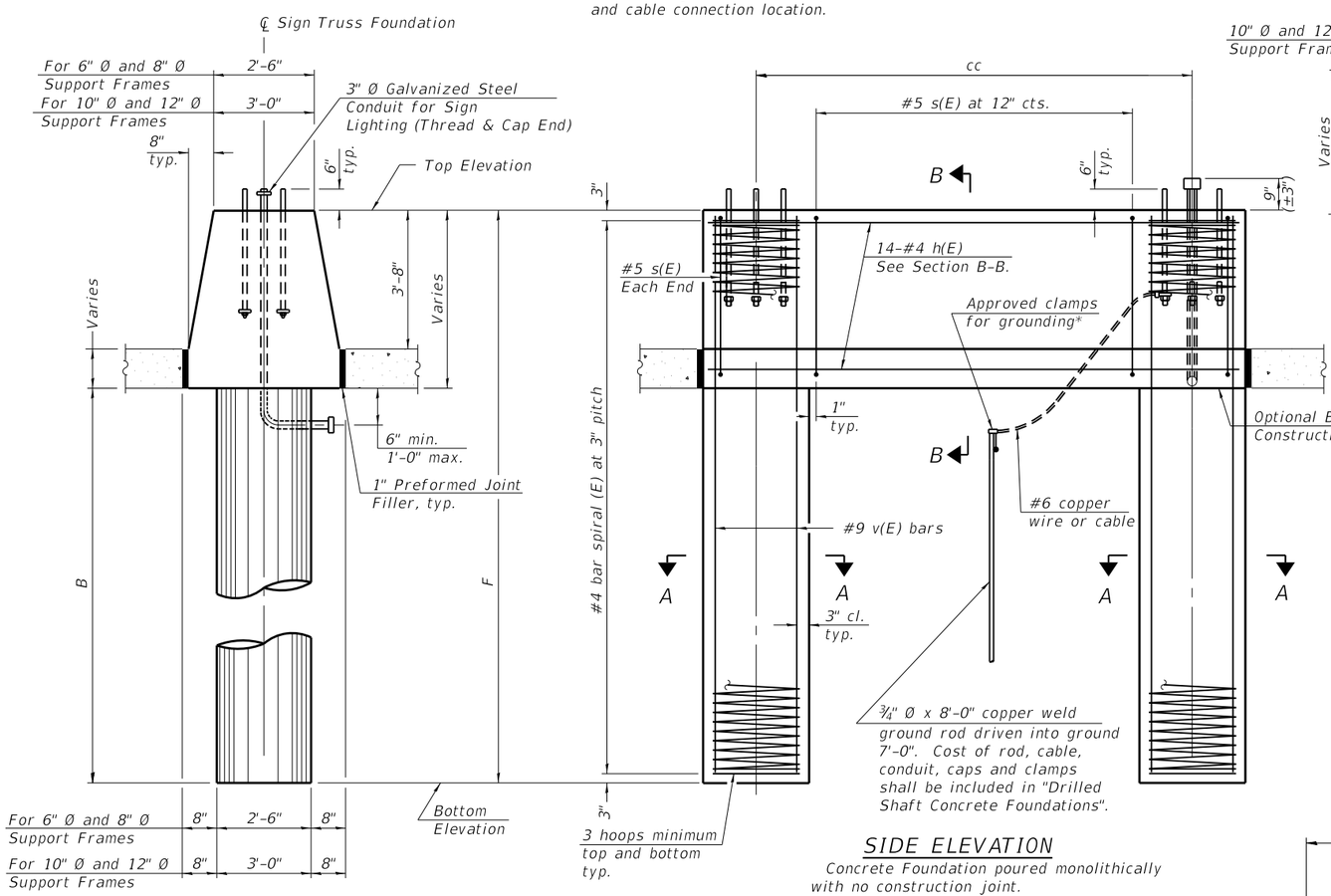
OVERHEAD SIGN STRUCTURES
DRILLED SHAFT DETAILS

SHEET OHSS2-11 OF OHSS2-13SHEETS

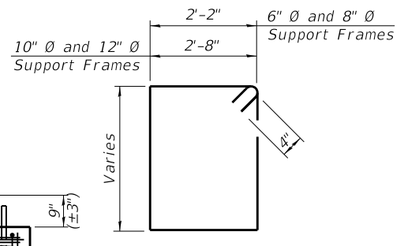
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	452
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11lcs01\ICS_pdf_work_dir\2406\1440_1\1S0161094R071-62KS3-SHT-SignDet09.dgn
12/9/2024 6:40:17 PM

* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.



END VIEW



BAR s(E)

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
h(E)	14	#4	M less 4"	——
s(E)	Varies	#5	Varies	□
v(E)	16	#9	F less 0'-5"	——
v(E)	24	#9	F less 0'-5"	——
#4(E) bar spiral. See Side Elevation				

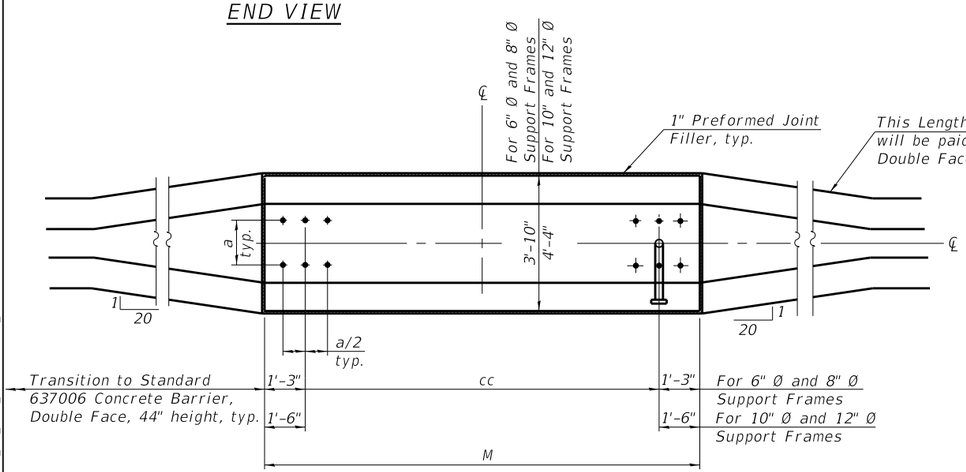
6" Ø and 8" Ø Support Frame

10" Ø and 12" Ø Support Frame

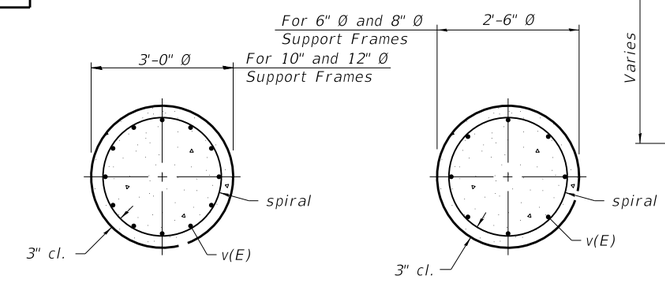
Pipe Support Frames	cc	M	a	a/2
6" Ø	7'-0"	9'-6"	0'-11"	5½"
8" Ø	7'-6"	10'-0"	1'-1½"	6¾"
10" Ø	8'-3"	11'-3"	1'-3"	7½"
12" Ø	9'-0"	12'-0"	1'-6"	9"

SIDE ELEVATION

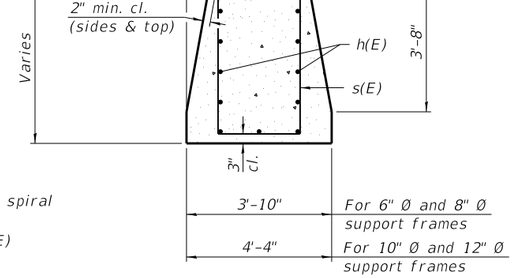
Concrete Foundation poured monolithically with no construction joint.



PLAN



SECTION A-A



SECTION B-B

Wet method (516.06b), temporary casing method (516.060c), or a combination of the two may need to be used to maintain the sidewalls of the drilled shaft while excavating to the design depth and placing concrete for the foundation. Cost included with Drilled Shaft Concrete Foundations.

Sign #	Structure Number	Station	Left Foundation				Right Foundation				Class DS Concrete (Cu. Yds.)
			Elevation Top	Elevation Bottom	B	F	Elevation Top	Elevation Bottom	B	F	
8	1S016I094R071.2	508+94.88	596.56	571.39	20' - 0"	25' - 2"	–	–	–	–	18.8

0S4-MED 5-15-2023

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -	
	DRAWN - JMI	REVISED -	
PLOT SCALE =	CHECKED - MI, LAB	REVISED -	
PLOT DATE =	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
MEDIAN SUPPORT FOUNDATION DETAILS

SHEET OHSS2-12 OF OHSS2-13SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	453
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11fcs01\ICS_pdf_work_dir\2406\1440_13\1S016I094R071.1-62XS3-SHT-SignDet10.dgn

12/9/2024 6:40:03 PM

Illinois Department of Transportation
Division of Highways
Chicago Testing Laboratory, Inc

SOIL BORING LOG

Date 10/10/24

FAI RTE 94 (I-94 Bishop Ford Expy) **ROUTE** | **DESCRIPTION** Overhead Sign 8 | **LOGGED BY** KL

SECTION 2019-180-RS&T **LOCATION** NE 1/4, **SEC.** 11, **TWP.** 36N, **RNG.** 25E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. Sign 8
Station 508+94.88

BORING NO. OSB-8-1
Station 508+95
Offset 65.00ft RT
Ground Surface Elev. 592.00 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter 584.0 ft ▼
Upon Completion None ft
After N/A **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12 inches of Topsoil			
591.00			
Loose to Medium Dense Brown, Moist SANDY LOAM (SM)	5		
	4 4		17.3
	3		
	6 6		21.6
-5			
586.00			
Very Loose Gary, Wet LOAM (SC-SM)	5		
	4 1		24.9
▼			
	0		
	0 1		67.8
-10			
	0		
580.00			
Stiff to Very Stiff Gray, Moist SILTY CLAY trace gravel (CL/ML)	1 1		22.1
	4		
	5 5	2.5 B	17.2
-15			
	3		
	4 4	1.7 B	18.6
	3		
	3 4	1.5 B	18.8
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff to Very Stiff Gray, Moist SILTY CLAY trace gravel (CL/ML) *(continued)*	3		
	4 6	1.3 B	21.6
	3		
	5 5	1.3 B	20.2
-25			
	3		
	4 5	1.7 B	20.6
	3		
	5 6	1.3 B	19.5
-30			
	4		
	7 8	1.9 B	15.5
-35			
	8		
554.00			
Hard Gray, Moist SILTY CLAY LOAM trace gravel	13 15	4.2 B	13.6
552.00 -40			

End of Boring

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Chicago Testing Laboratory, Inc

SOIL BORING LOG

Date 10/1/24

FAI RTE 94 (I-94 Bishop Ford Expy) **ROUTE** | **DESCRIPTION** Overhead Sign 8 | **LOGGED BY** JAR

SECTION 2019-180-RS&T **LOCATION** NE 1/4, **SEC.** 11, **TWP.** 36N, **RNG.** 25E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. Sign 8
Station 508+94.88

BORING NO. OSB-8-2
Station 508+95
Offset 10.00ft LT
Ground Surface Elev. 593.00 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter 585.0 ft ▼
Upon Completion None ft
After N/A **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
5 inches of Asphalt Pavement 592.58 10 inches of Concrete Pavement			
591.75	5		
Loose to Medium Dense Brown and Gray, Wet SANDY LOAM (SM)	9 9		22.7
	5		
589.00			
Loose to Medium Dense Gray, Wet SANDY LOAM (SM)	4 5		21.0
-5			
	6		
	9 7		27.1
585.00 ▼			
Very Loose Gray, Wet LOAM (SC-SM)	1		
	1 1		67.3
-10			
	1		
	1 1		70.1
	0		
	0 0		42.5
-15			
	0		
576.00			
Stiff Gray, Moist SILTY CLAY trace gravel (CL/ML)	0 3	1.0 B	38.5
	3		
	4 5	1.7 B	22.1
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff Gray, Moist SILTY CLAY trace gravel (CL/ML) *(continued)*	3		
	4 5	1.7 B	20.7
	3		
	4 6	1.9 B	21.4
-25			
	2		
	4 6	1.7 B	21.0
	3		
	4 6	1.9 B	20.7
-30			
	5		
560.00			
Very Stiff to Hard Gray, Moist SILTY CLAY LOAM trace gravel (CL/ML)	8 11	3.3 B	13.4
-35			
	8		
	17 27	5.0 B	12.9
553.00 -40			

End of Boring

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

MODEL: Default
FILE NAME: \\hbmepw11lcs01\ICS_pdf_work_dir\2406\1440_121501616094R071.1-62K53-SHT-SignDet11.dgn
12/9/2024 6:39:57 PM

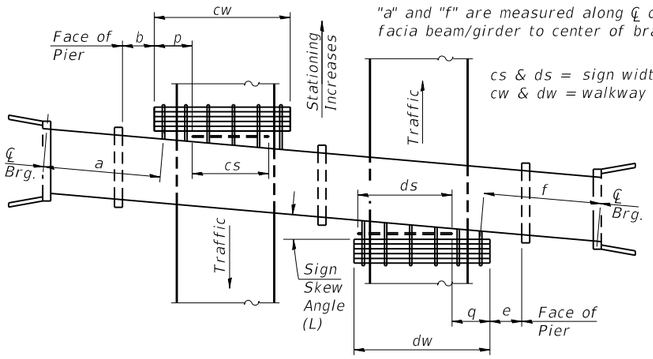
HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JMI	REVISED -
	DRAWN - JMI	REVISED -
PLOT SCALE =	CHECKED - MI, LAB	REVISED -
PLOT DATE =	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
BORING LOGS
SHEET OHSS2-13 OF OHSS2-13SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	454
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

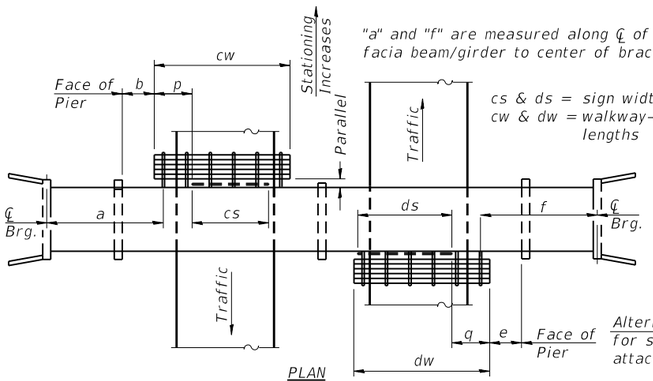


PLAN

(Left Sign Skew > 15°)

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)

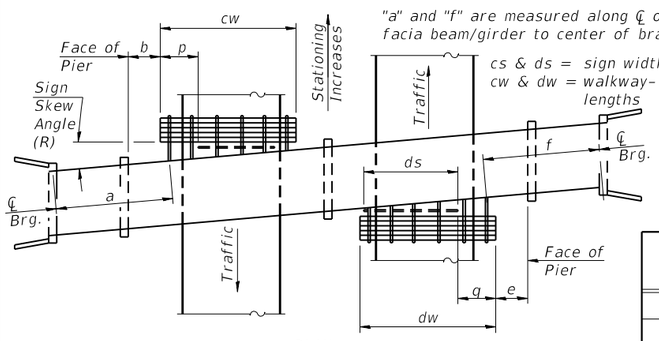


PLAN

(For Sign Skew ≤ 15°, all brackets constant)

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)

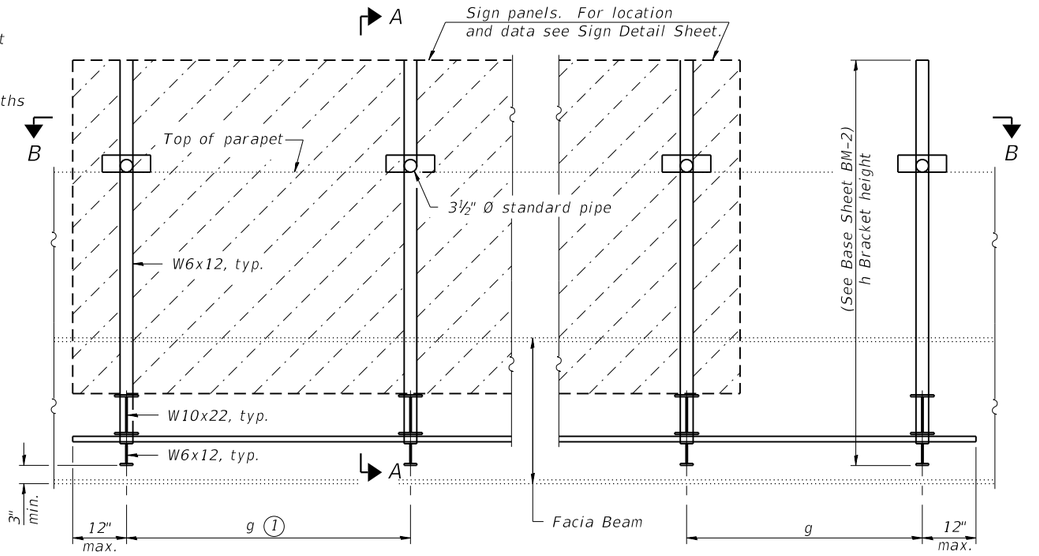


PLAN

(Right Sign Skew > 15°)

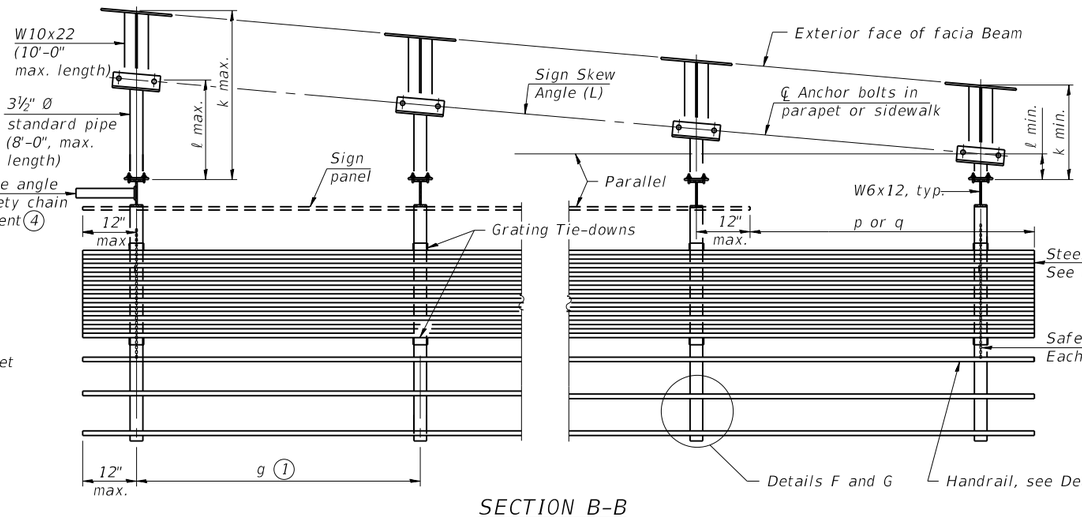
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION

(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B

(Shown: Left Sign Skew >15°)

Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	cs	cw	ds	dw	e	f	g	No. of Brackets (Total)	p	q	Total Grating/ Hndrl. Lengths (cw + dw)
	N/A	343+26	016-0388	62W87					14'	18'	9"	56.88"	5'-4"	4	4'	4'	18'
	N/A	344+24	016-0388	62W87	56.88"	9"	14'	18'					5'-4"	4	4'	4'	18'

Dimensions a, b, e, f & g may vary as approved by the Engineer, see (1).
When cw < cs and/or dw < ds, use alternate brackets without walkway supports where applicable, see (3).

GENERAL NOTES

SPECIFICATIONS:

DESIGN: AASHTO Standard Specifications for Structural Supports for (2) Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

MINIMUM CLEARANCE: 3" greater than bridge members at all locations. (All Obstructions)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code (Steel) and the Standard Specificiations.

MATERIALS: All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 (M183, M223 Gr. 50,).

HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: All-threaded rod shall conform to ASTM F1554 Grade 105, ¾" Ø x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

(1) Bracket spacing g ≤ 6'-0", max. Spacing shall be uniform if possible but may vary ±6" to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.

(2) Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.

(3) Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (cw, dw) unless otherwise specified. For Safety Chain Details and Details D, F and G, see Base Sheet BM-4.

(4) If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.

LICENSED STRUCTURAL ENGINEER
WILLIAM P. MALINOWSKI
081-006059
STATE OF ILLINOIS

William P. Malinowski S.E.
Licensed Structural Engineer
State of Illinois No. 081-006059
Registration Expires 11/30/2026

TOTAL BILL OF MATERIAL

(3) OVERHEAD SIGN STRUCTURE-BRIDGE MOUNTED	Foot	36

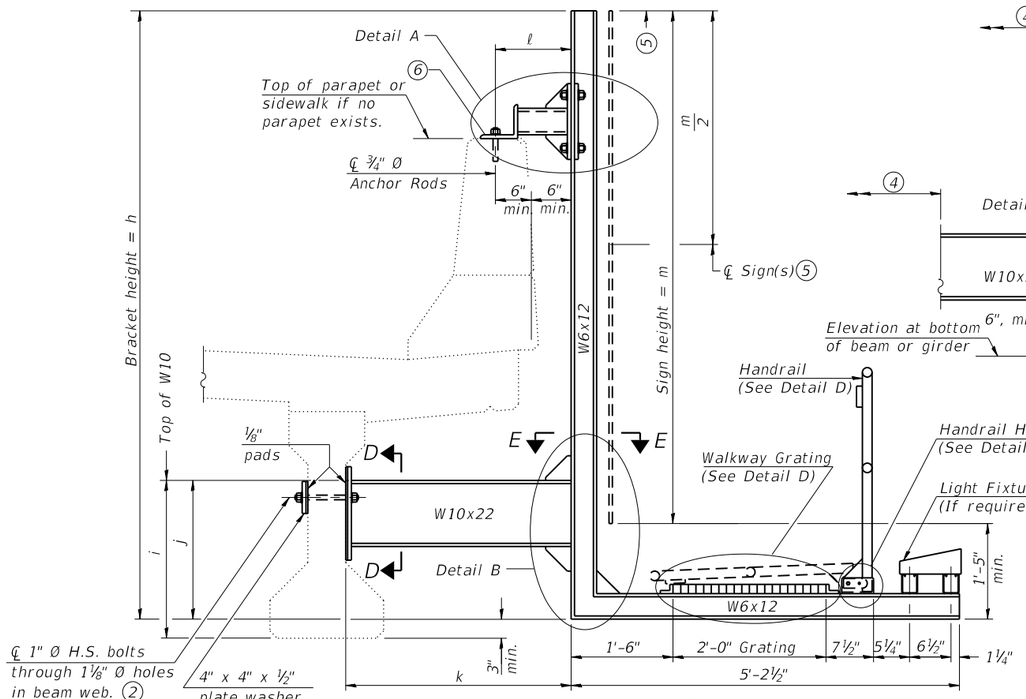
BM-1 5-15-2023

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

BRIDGE MOUNT SIGN STRUCTURES GENERAL PLAN AND ELEVATION
STRUCTURE NO. 016-0388
SHEET BM-1 OF BM-4 SHEETS

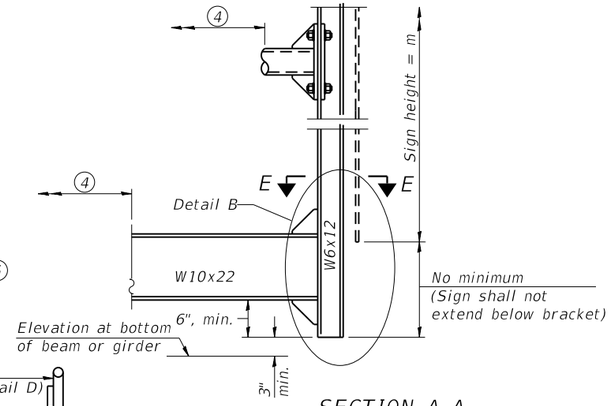
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	455
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-ILLDocuments\Project IDOT 2050082201 - IDOT District 1 VarbousStructuresWork Order 10\016-0388 - 159th over I-94\Sheets\38_016-0388_ Bridge Mount Sign Structures BM-1.dgn
12/9/2024 8:43:24 AM



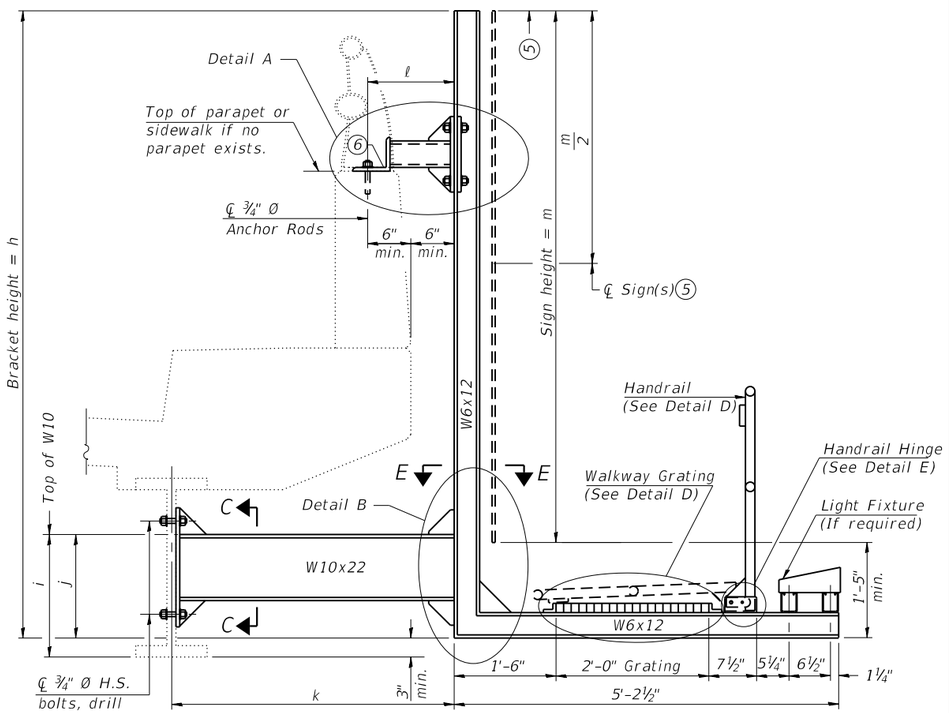
SECTION A-A

Details for mounting to PPC I Beam or Bulb "T" & Details for mounting to parapet w/o rail



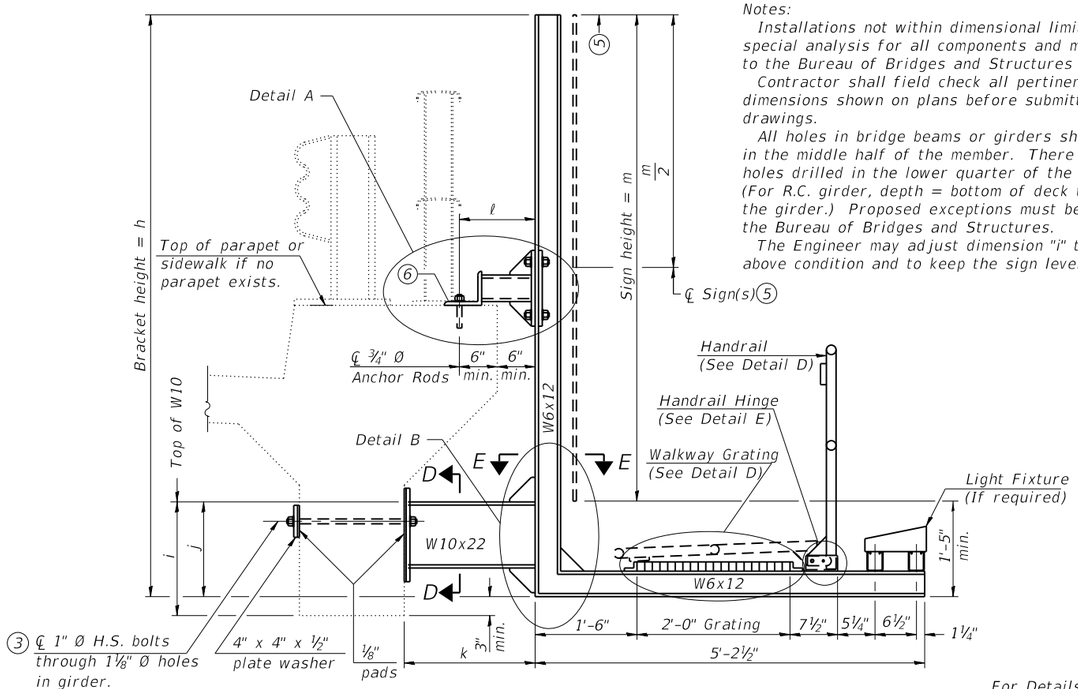
SECTION A-A

Alternate with no lights or walkways



SECTION A-A

Details for mounting to steel beam or girder & Details for mounting with existing parapet mounted rail



SECTION A-A

Details for mounting to integral reinforced concrete girder & Details for mounting on safety curb with surface-mount bridge rail

Notes:

Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval.

Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.

All holes in bridge beams or girders should be located in the middle half of the member. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.

The Engineer may adjust dimension "i" to meet the above condition and to keep the sign level.

1. Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
2. For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6", min. Minimize spalling during field drilling of existing beams.
3. For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6", min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over ¼" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.
4. For attachment details of 3½" pipe and W10x22, see other sections as applicable.
5. Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x12 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)
6. For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.

Structure Number	Station	h	i	j	k max. (10'-0" max.)	ℓ max. (8'-0" max.)	m (15'-0" max.)
	343+26				3.71'	1.0'	
	344+24				3.71'	1.0'	

For Details A & B, Sections C-C, D-D and E-E, see Base Sheet BM-3.
For Details D & E, see Base Sheet BM-4.

BM-2 5-15-2023

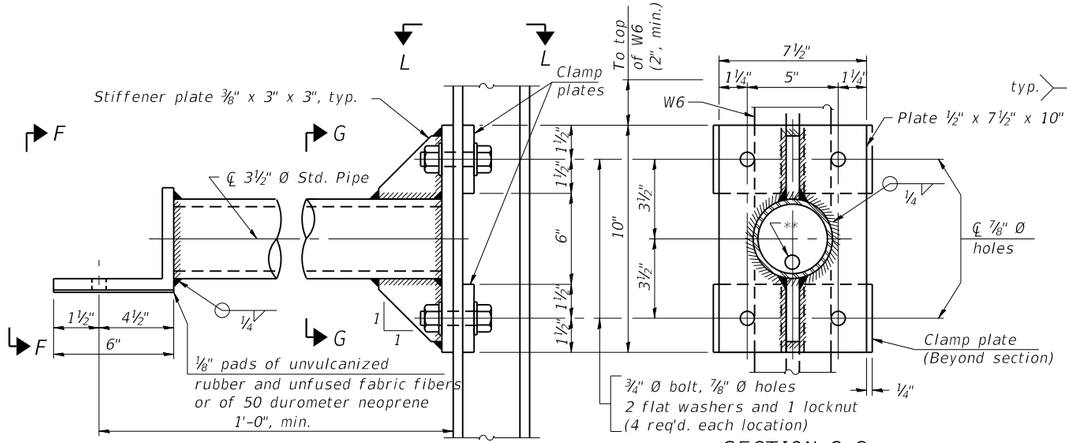
USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES WALKWAY AND CONNECTION DETAILS
STRUCTURE NO. 016-0388
SHEET BM-2 OF BM-4 SHEETS

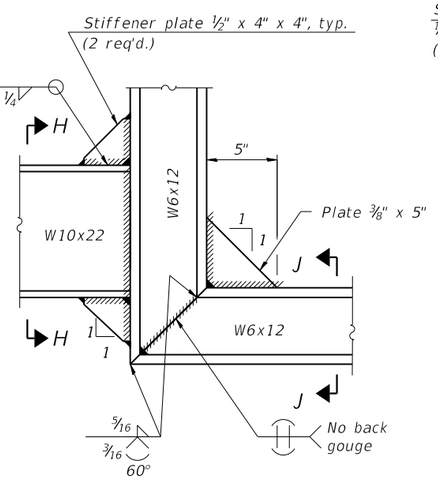
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	456
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-IL\Documents\Project IDOT 2050082201 - IDOT District 1 Various Structures\Work Order 1\016-0388 - 159th over I-94\Sheets\39_016-0388_ Bridge Mount Sign Structures BM-2.dgn
12/9/2024 8:43:27 AM

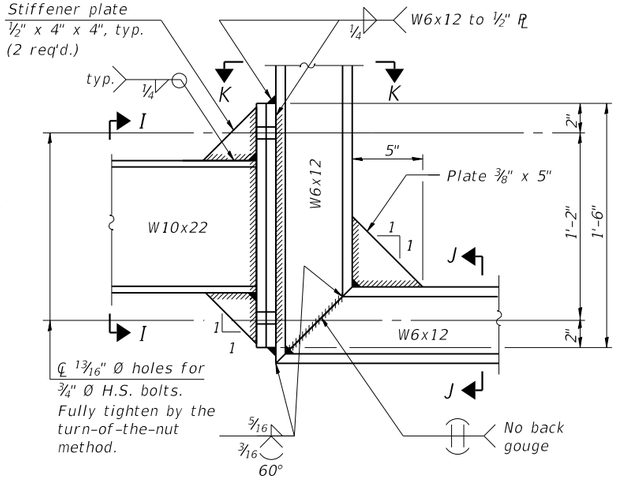


DETAIL A

SECTION G-G

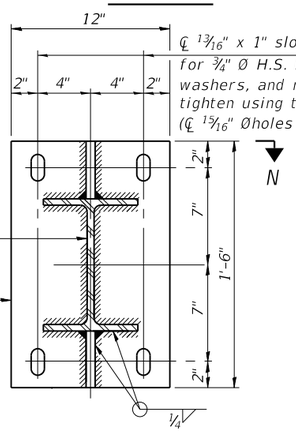


DETAIL B – WELDED W10x22 TO W6x12 CONNECTION



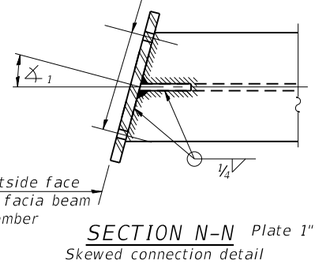
DETAIL B – ALTERNATE BOLTED W10x22 TO W6x12 CONNECTION

Alternate may be substituted by contractor to facilitate construction or galvanizing, especially on long struts for skewed bridges.



SECTION C-C

Steel beam or girder connection plate details



SECTION N-N

Skewed connection detail for W10x22 to facia beam.

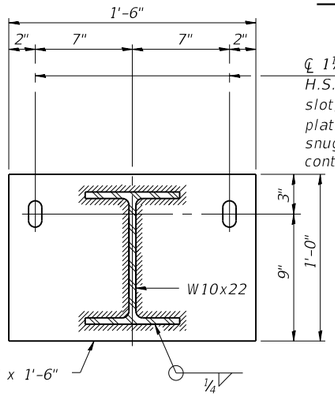
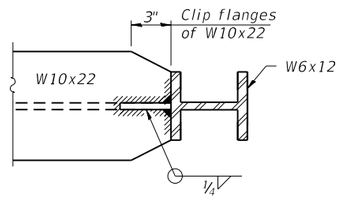


Plate 1" x 12" x 1'-6"

SECTION D-D

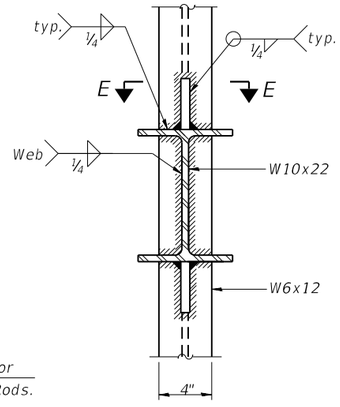
Concrete beam or girder connection plate details.



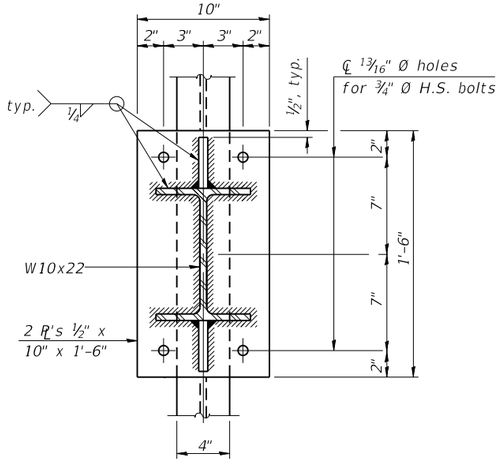
SECTION E-E

VIEW F-F

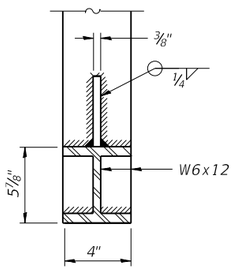
** 13⁄16" Ø holes for galvanizing. After galvanizing, install ⅞" Ø A307 hot-dip galvanized bolt to close hole in angle. (No bolt required in ½" plate.)



SECTION H-H

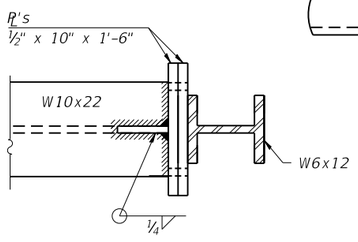


SECTION I-I

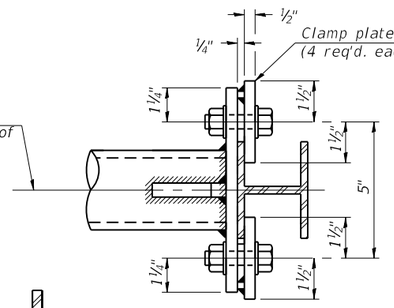


SECTION J-J

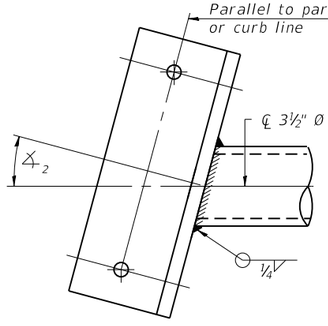
Note: For constant slab overhang at facia beam, ∠1 = ∠2 = sign angle. For flared beams or other special cases where ∠1 ≠ ∠2, ∠1 = sign angle.



SECTION K-K

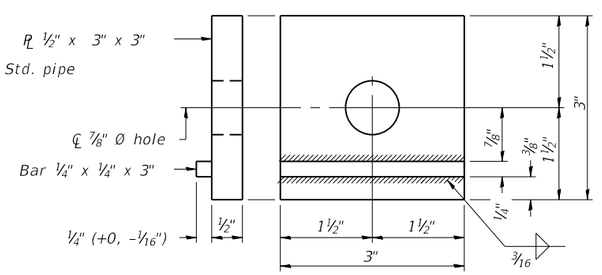


SECTION L-L



SECTION M-M

Skewed connection detail for 3½" Ø pipe to parapet.



CLAMP PLATE DETAILS

BM-3

5-15-2023

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

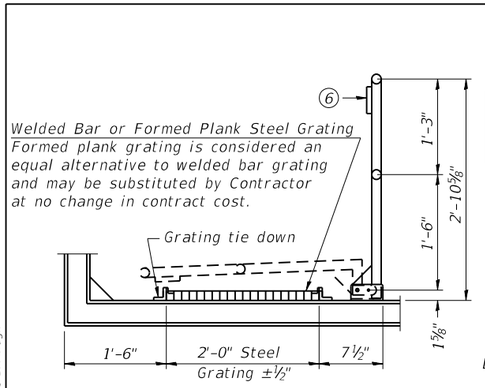
BRIDGE MOUNT SIGN STRUCTURES CONNECTION DETAILS
STRUCTURE NO. 016-0388

SHEET BM-3 OF BM-4 SHEETS

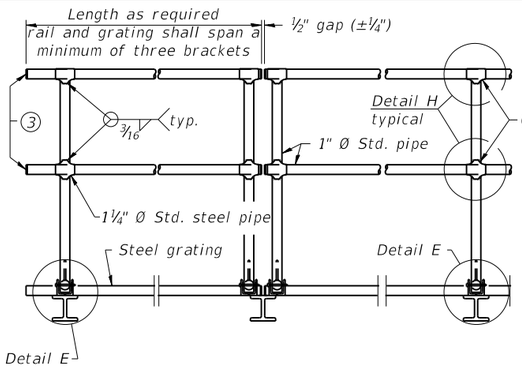
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	457
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-ILLDocuments\Project IDOT 2050082201 - IDOT District 1 VarbousStructuresWork Order 1\016-0388 - 159th over I-94\Sheets\40_016-0388_ Bridge Mount Sign Structures BM-3.dgn

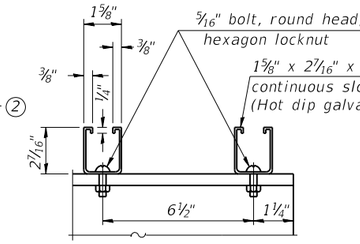
12/9/2024 8:43:31 AM



SIDE ELEVATION



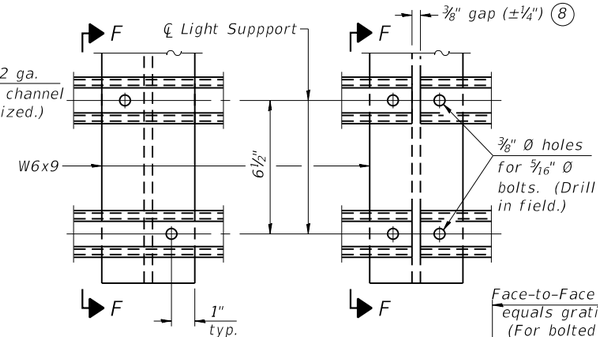
DETAIL D HANDRAIL



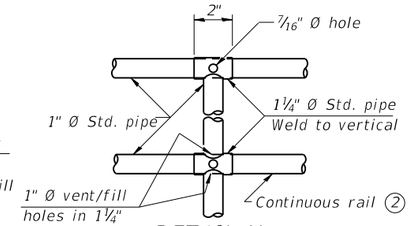
SECTION F-F

LIGHTING FIXTURE MOUNTS

(If required)

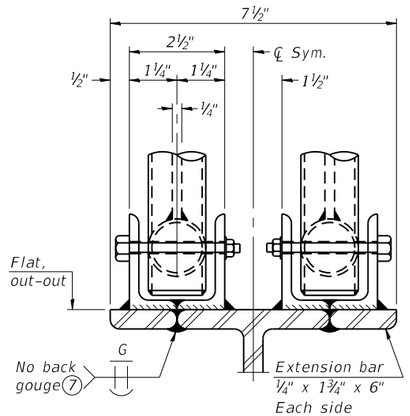


DETAIL F



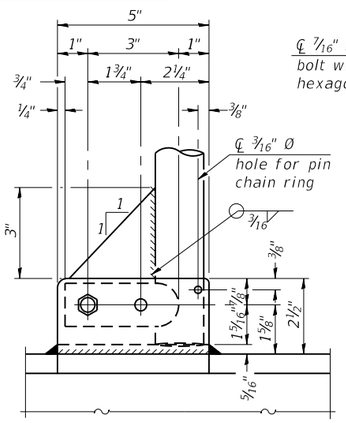
DETAIL H

Welds 3⁄16" continuous

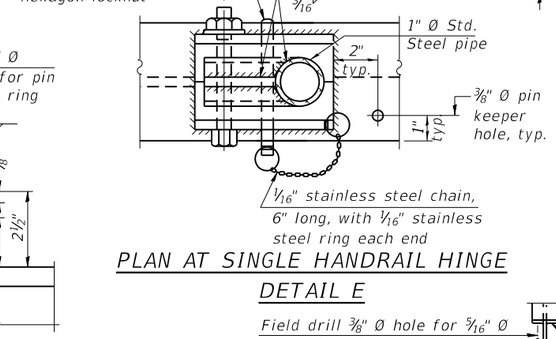


ELEVATION AT HANDRAIL JOINT

(Details not shown same as "FRONT ELEVATION")

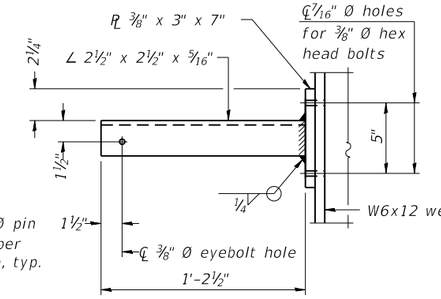


SIDE ELEVATION

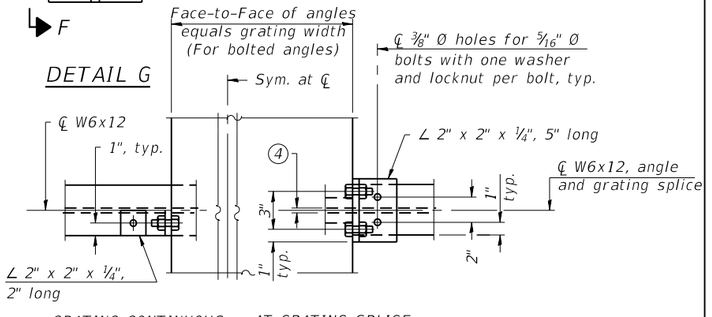


PLAN AT SINGLE HANDRAIL HINGE

DETAIL E

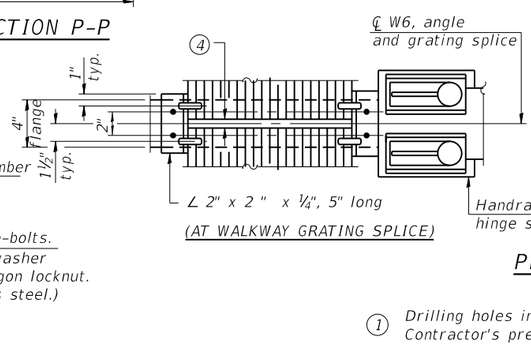


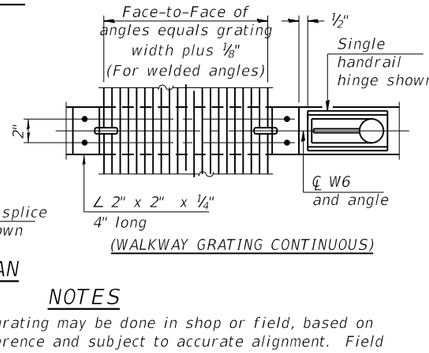
SECTION P-P



GRATING CONTINUOUS AT GRATING SPLICE

VIEW W-W



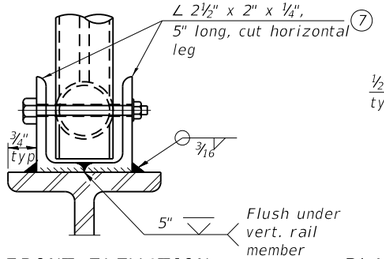


PLAN

No Sign at Bracket

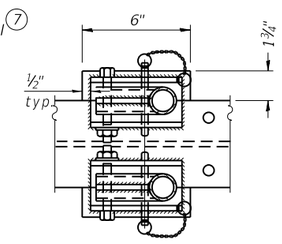
SAFETY CHAIN

One (1) required for each end of each walkway.



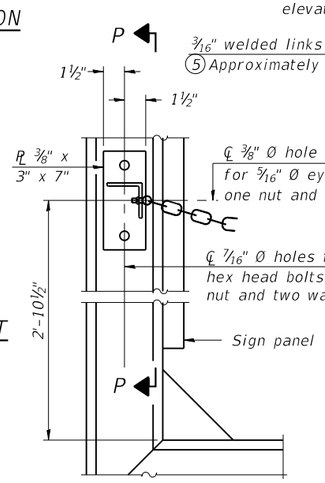
FRONT ELEVATION

(See above Elevations for dimensions.)



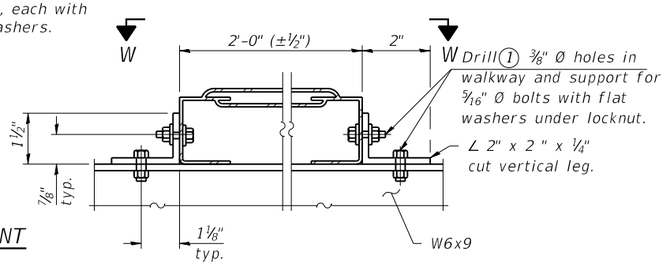
PLAN AT HANDRAIL JOINT

(For Details, see Elevations.)



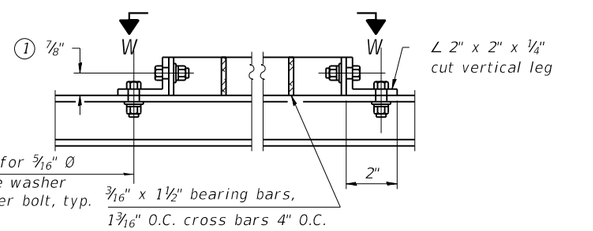
SAFETY CHAIN ATTACHMENT

(With Sign Present)
Items not shown same as "SIDE ELEVATION" and "SAFETY CHAIN"



ALTERNATE FORMED PLANK GRATING DETAILS

Plank Grating: nominal depth = 2½" (±½"); perforated or expanded steel sheet with a non-skid surface (non-serrated) concentrated load capacity = 500 lbs. with 6'-0" clear span.



WELDED BAR GRATING DETAILS

NOTES

1. Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment. Field drilled holes must be touched up with galvanized paint.
2. Horizontal rail member shall be continuous thru 1¼" Ø pipe. Provide 7⁄16" Ø hole in 1¼"Ø pipe for ⅜" Ø bolt. Field drill 7⁄16" Ø hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5⁄16" eyebolts in 7⁄16" Ø holes on top rail at ends only.)
3. Install standard force-fit end caps or weld ⅛" end plates with ⅛" c.f.w. and grind smooth. (All rail ends.)
4. ⅜" (±¼") gap between grating panels at splice.
5. Chain to be type 304L stainless steel suitable for prolonged exterior exposure. Approximately 3'-6" long chain per location. Maximum sag with handrail erected = 4".
6. PL ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.
7. Extrusions may be used in lieu of details shown, with approval by Engineer.
8. Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

BM-4

5-15-2023

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

BRIDGE MOUNT SIGN STRUCTURES WALKWAY DETAILS
STRUCTURE NO. 016-0388
SHEET BM-4 OF BM-4 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	458
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

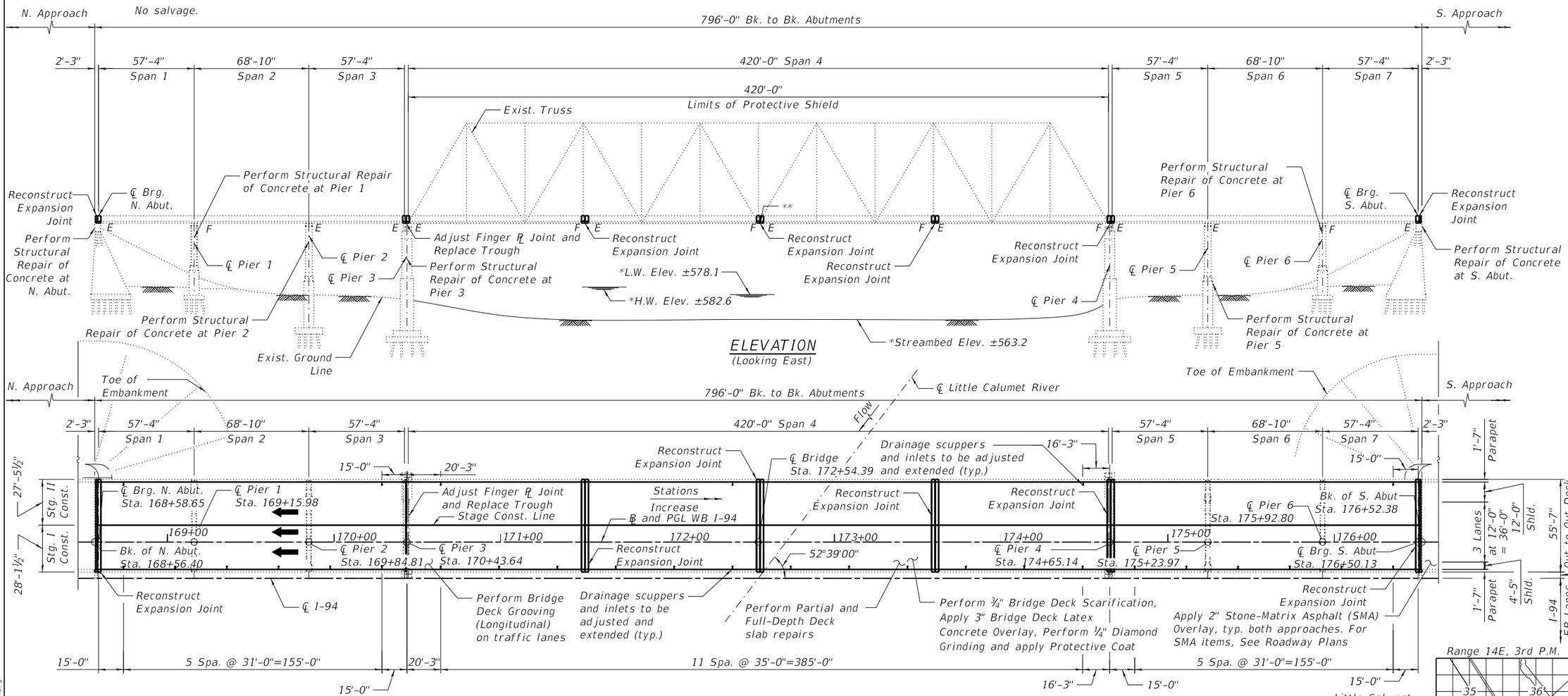
Existing Structure: S.N. 016-0159 was originally built in 1949 and was reconstructed in 1993. Structural steel repairs were performed in 2022. The bridge is a seven-span structure (six rolled beam approach spans and one steel truss main span) carrying three lanes of WB I-94 over the Little Calumet River. The structure has a back-to-back abutment length of 796'-0" and an out-to-out deck width of 55'-7". The approach span superstructures consist of a 7½"-thick reinforced concrete deck supported on noncomposite W30x173 beams at 7'-4" spacing. The main span superstructure is a 420'-0" long built-up steel truss with a floor system consisting of a 7½"-thick reinforced concrete slab on W27x94 steel stringers and 46" web floor beams. The substructure consists of reinforced concrete abutments and multi-column piers on steel piles.

Traffic is to be maintained utilizing staged construction.

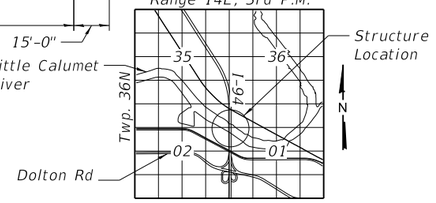
No salvage.

NOTES:

1. *All stations are to the I-94 WB PGL and taken from existing plans.*
2. *No Future wearing surface is allowed.*



PLAN



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges (17th Edition)

RECONSTRUCTION (1993)

1989 AASHTO Standard Specifications for Highway Bridges
1983 AASHTO Guide Specifications for Seismic Design of Highway Bridges

LEGEND

L.W.	Low Water
H.W.	High Water

*High Water Elevation, Low Water Elevation and Streambed Elevation taken from Existing Plans dated November 1991.

**Perform Structural Steel Repair for Stringer 9, and perform cleaning and painting of structural steel for Stringers 9 and 16, at Floorbeam FB6.

STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E. IL. Lic. No. 081-005738
Expires 11-30-2026
Date 12-06-2024 For Sheets S01-01 thru S01-38.

GENERAL PLAN AND ELEVATION
WB I-94 OVER LITTLE CALUMET RIVER
F.A.I. ROUTE 94
SECTION 2019-180-RS&T
COOK COUNTY
STATION 172+54.39
S.N. 016-0159

HBM ENGINEERING GROUP, LLC

USER NAME =	hbmepw11ics01$	DESIGNED -	LR, AWD	REVISED -	
		DRAWN -	LR, AWD	REVISED -	
PLOT SCALE =	64:0.0000 ':' / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	1/21/2025	DATE -	12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-0159
SHEET S01-01 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	459
		CONTRACT NO.	62W87	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2609\1426_20160159-62K53-01-WB-GPE.dgn
1/21/2025 10:14:08 PM

GENERAL NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.

2. Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. The Contractor shall field-verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work; however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

3. The Contractor may request copies of existing construction plans that are currently on file with the Illinois Department of Transportation (IDOT). The request shall be in writing with the understanding that any reproduction cost will be at the Contractor's expense and at no additional cost to the Department.

4. All exposed concrete edges shall have a ¾" x 45° chamfer except where shown otherwise.

5. Protective coat shall be applied to the top of reconstructed transverse joint areas, top of new latex concrete overlay, and top and inside faces of parapets.

6. Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

7. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPC-SP3 standards). Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be paid for according to Article 109.04 of the Standard Specifications. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding ¼ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

8. The Contractor shall take all necessary precautions for the protection of passing vessels from falling objects and/or materials until completion of the work.

9. It shall be the Contractor's responsibility to locate and protect any utilities or facilities on, within or under the bridge deck including, but not limited to, under deck lighting, traffic signals or signs attached to the structure. Any damage to existing utilities/facilities caused by the Contractor in the performance of the work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

10. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the steel beams, stringers, floor beams, truss elements and diaphragms to remain. Any damage to existing elements to remain caused by the Contractor in the performance of the work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no additional cost to the Department.

11. For SMA overlay on Approach Slabs, see Roadway Plans.

12. Adjacent I-94 EB bridge is not shown throughout the plans for clarity.

13. The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor, to the satisfaction of the Engineer at no additional cost to the Department.

14. Concrete Sealer shall be applied to the designated areas of the abutments and piers (beneath expansion joints only).

15. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment and pier seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. See Special Provision for Debris Removal.

16. The Engineer shall show actual locations and sizes of deck repairs on As-built Plans.

17. The Contractor shall obtain Coast Guard approval for any work that may interfere with navigational operations of the navigable waters. A work plan shall be prepared by the Contractor, reviewed and approved by the Engineer and be submitted by the Engineer to Lee Soule (216-902-6085) of the US Coast Guard at Lee.d.soule@uscg.mil for approval at least 2 weeks in advance prior to starting work.

GENERAL NOTES (CONT.):

18. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

INDEX OF SHEETS

PROPOSED SCOPE OF WORK

1. Provide protective shield within limits indicated on the plans.
2. Perform Deck Slab Repairs and adjust/extend existing scuppers and inlets as required.
3. Clean Drainage System and perform Bridge Washing.
4. Perform ¾" Bridge Deck scarification.
5. Reconstruct Expansion Joints at the North and South Abutments, Pier 4, and Span 4 Panel Points 3, 6, and 3'.
6. Adjust finger plate joint and replace trough at Pier 3.
7. Apply a 3" bridge deck latex concrete overlay on bridge deck.
8. Perform ¼" diamond grinding to top of bridge deck and abutment hatch block.
9. Perform bridge deck grooving (longitudinal) on traffic lanes.
10. Apply protective coat to the top of reconstructed transverse joint areas, top of new latex concrete overlay and top and inside faces of parapets.
11. Clean existing stringers, bearings, and support/bearing stiffeners at the locations shown on the Plans.
12. Coordinate with IDOT District 1 Bridge Maintenance to have section loss measurements performed at the newly cleaned stringers and support/bearing stiffeners.
13. Perform painting of stringer ends, bearings and support/bearing stiffeners after section loss measurements have been obtained as directed by the Department.
14. Perform diaphragm removal/replacement and structural steel repairs at the locations indicated on the Plans and as directed by the Engineer.
15. Perform structural repair of concrete to all spalled and delaminated areas of the Abutments, Wingwalls and Piers as noted in the plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	52.0	–	52.0
Protective Shield	Sq Yd	2,859	–	2,859
Concrete Superstructure	Cu Yd	50.0	–	50.0
Protective Coat	Sq Yd	5,532	–	5,532
Furnishing And Erecting Structural Steel	Pound	9,300	–	9,300
Cleaning And Painting Structural Steel, Location 2	L Sum	1	–	1
Reinforcement Bars, Epoxy Coated	Pound	9,560	–	9,560
Bar Splicers	Each	114	–	114
Preformed Joint Strip Seal	Foot	330	–	330
Fabric Reinforced Elastomeric Trough	Foot	56	–	56
Concrete Sealer	Sq Ft	–	4378	4,378
Bridge Washing No. 2	Each	1	–	1
Bridge Deck Grooving (Longitudinal)	Sq Yd	3,172	–	3,172
Structural Steel Removal	Pound	280	–	280
Structural Steel Repair	Pound	410	–	410
Containment And Disposal Of Non-Lead Paint Cleaning Residues No. 2	L Sum	1	–	1
Cleaning Drainage System	L Sum	0.33	–	0.33
Deck Drain Extensions	Each	28	–	28
Drainage Scuppers To Be Adjusted	Each	28	–	28
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	4,471	–	4,471
Bridge Deck Scarification 3/4"	Sq Yd	4,471	–	4,471
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	–	140	140
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.5	–	0.5
Deck Slab Repair (Full Depth, Type II)	Sq Yd	12	–	12
Diamond Grinding (Bridge Section)	Sq Yd	4,262	–	4,262
Temporary Shoring And Cribbing	Each	–	2	2

PAINT NOTES:

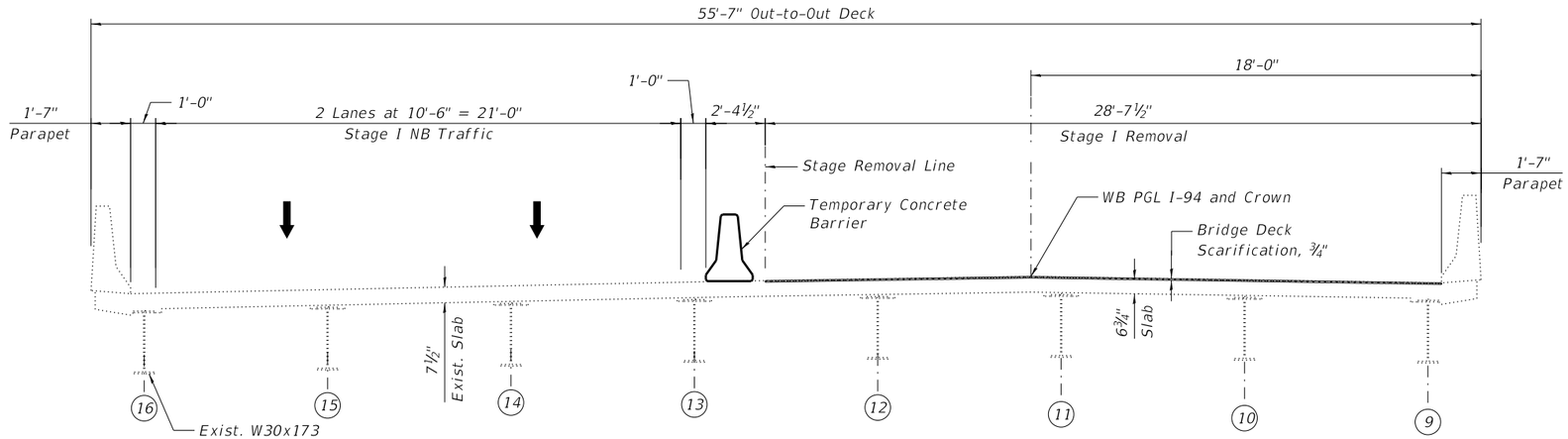
1. Existing Structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures," and the Standard Specifications. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1. Cost included with Structural Steel Repair.

2. Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures" and as shown in the Plans. All beams, bearings and other structural steel within 5 ft (measured along the beam) of the south side of the deck joint shall be cleaned per Near-White Blast Cleaning (SSPC-SP10).

3. The designated areas cleaned per Near-White Blast Cleaning (SSPC-SP10) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Top Coat (OZ/E/U) Paint System. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1.

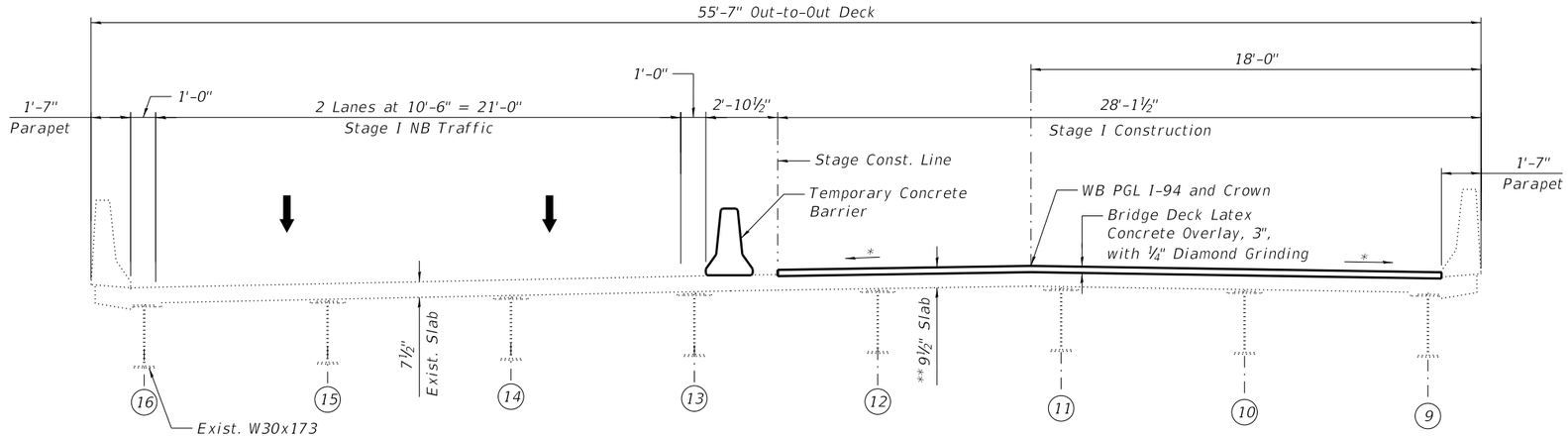
4. Containment of cleaning residue is required to control nuisance dust. See Special Provisions.

5. SSPC QP1 Certification is required for this contract.



*** STAGE I REMOVAL

(Looking South)



*** STAGE I CONSTRUCTION

(Looking South)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge deck/approach slab adjacent to expansion joints at the North and South Abutments and remove portions of bridge deck slab adjacent to expansion joints at Pier 4 and truss Panel Points 3, 6 and 3'.
5. Remove Pier 3 finger plate joint trough within the limits of Stage I Removal.

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip seals within the limits of Stage I Construction.
3. Adjust finger plate joint, and replace trough, at Pier 3 within the limits of Stage I Construction.
4. Adjust existing drainage scuppers/inlets and extend downspouts per the details shown in the plans.
5. Perform temporary shoring and cribbing at the locations shown on the Plans (and as directed by the Engineer) and perform structural repair of concrete for the abutments and piers.
6. Apply 3" bridge deck latex concrete overlay.
7. Perform ¼" diamond grinding to bridge deck and abutment hatch block.
8. Perform Bridge Deck Grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed expansion joint areas.
9. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
10. Apply protective coat to top and inside faces of parapets, reconstructed transverse expansion joint areas and to the surface of the new overlay.

NOTES:

1. For Temporary Concrete Barrier details, see Sheet S01-05.
2. For quantity of Temporary Concrete Barrier, see Roadway Plans.

* Match existing cross-slopes
** After grinding
*** Approach span cross-section shown, truss span stage dimensions and sequence similar

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_300\0160159-62K53-03-WB-StageCon1.dgn
12/6/2024 9:49:37 PM

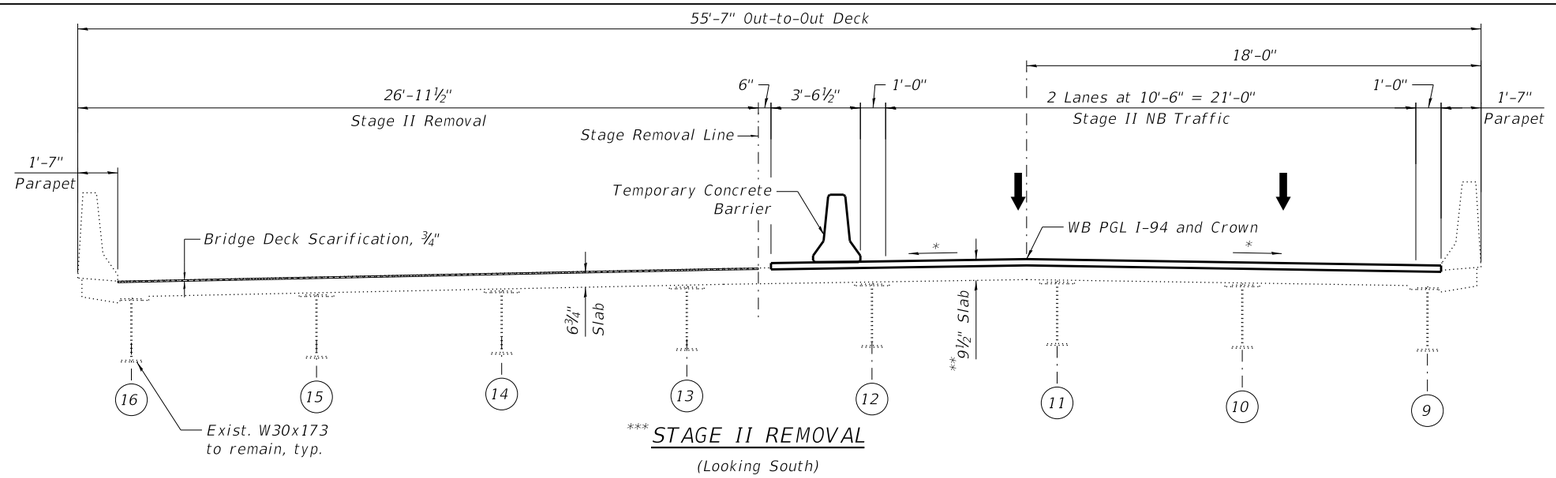
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - LR, AWD	REVISED -
	DRAWN - LR, AWD	REVISED -
PLOT SCALE = 6:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

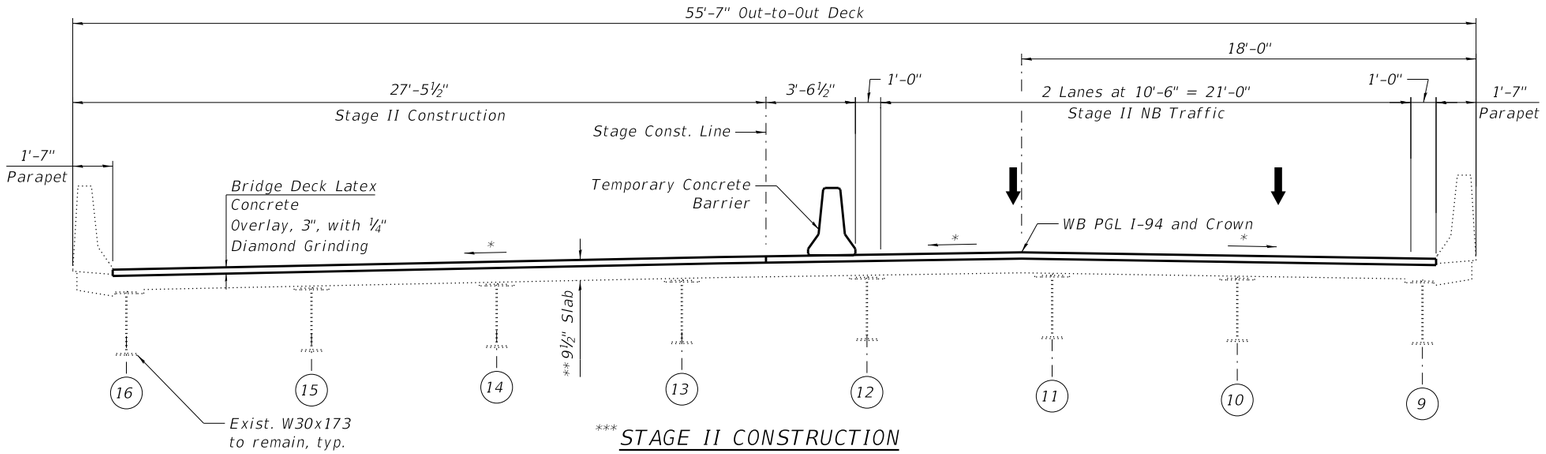
STAGE CONSTRUCTION (SHEET 1 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-03 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	461
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		



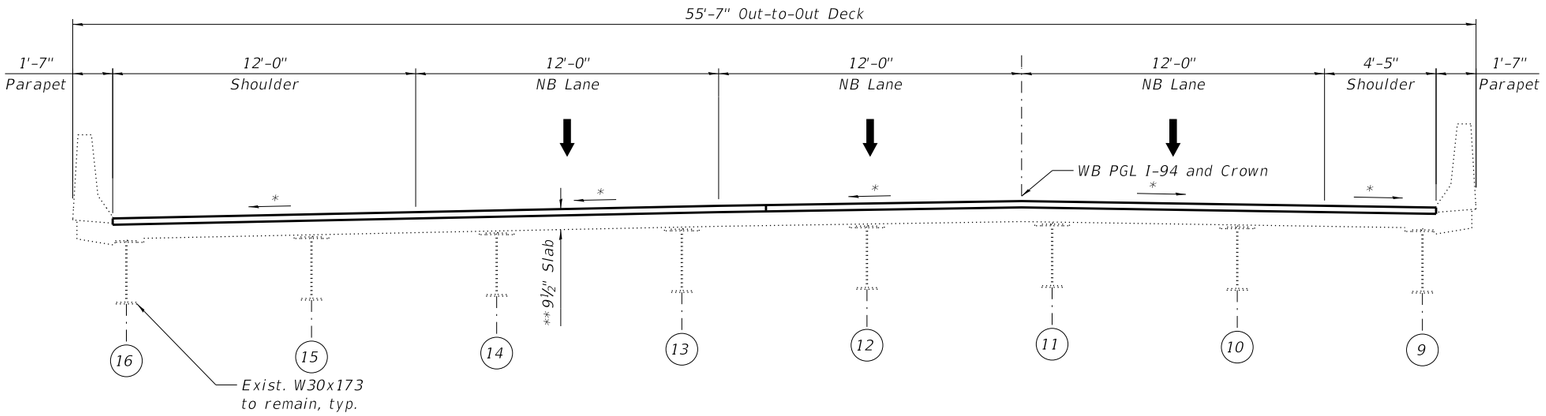
*** STAGE II REMOVAL

(Looking South)



*** STAGE II CONSTRUCTION

(Looking South)



*** FINAL DECK CROSS SECTION

(Looking South)

STAGE II REMOVAL

1. Relocate temporary concrete barrier as shown to locate traffic on the west side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge deck/approach slab adjacent to expansion joints at the North and South Abutments and remove portions of bridge deck slab adjacent to expansion joints at Pier 4 and truss Panel Points 3, 6 and 3'.
5. Remove Pier 3 finger plate joint trough within the limits of Stage II Removal.

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip seals within the limits of Stage II Construction.
3. Adjust finger plate joint, and replace trough, at Pier 3 within the limits of Stage II Construction.
4. Adjust existing drainage scuppers/inlets and extend downspouts per the details shown in the plans.
5. Perform temporary shoring and cribbing at the locations shown on the Plans (and as directed by the Engineer) and perform structural repair of concrete for the abutments and piers.
6. Apply 3" bridge deck latex concrete overlay.
7. Perform ¼" diamond grinding to bridge deck and abutment hatch block.
8. Perform Bridge Deck Grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed expansion joint areas.
9. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
10. Apply protective coat to top and inside faces of parapets, reconstructed transverse expansion joint areas, and to the surface of the new overlay.

NOTES:

1. For temporary concrete barrier details, see Sheet S01-05.
2. For quantity of temporary concrete barrier, see Roadway Plans.

* Match Existing Cross-slopes

** After grinding

*** Approach span cross-section shown, truss span stage dimensions and sequence similar.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\14426_I5\01160159-62KS3-04-WB-StageCon2.dgn
12/6/2024 9:47:54 PM

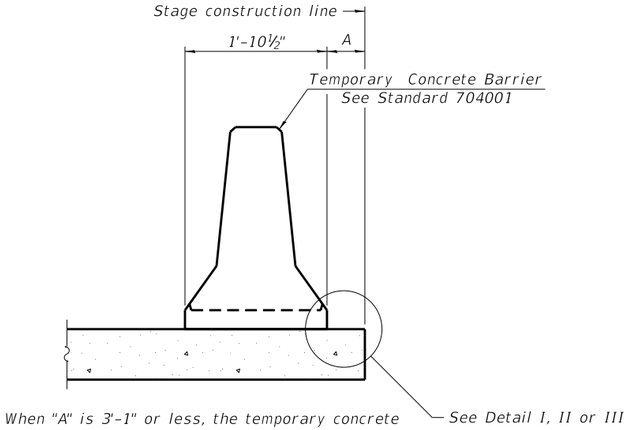
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 6:0.0000 ':' / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

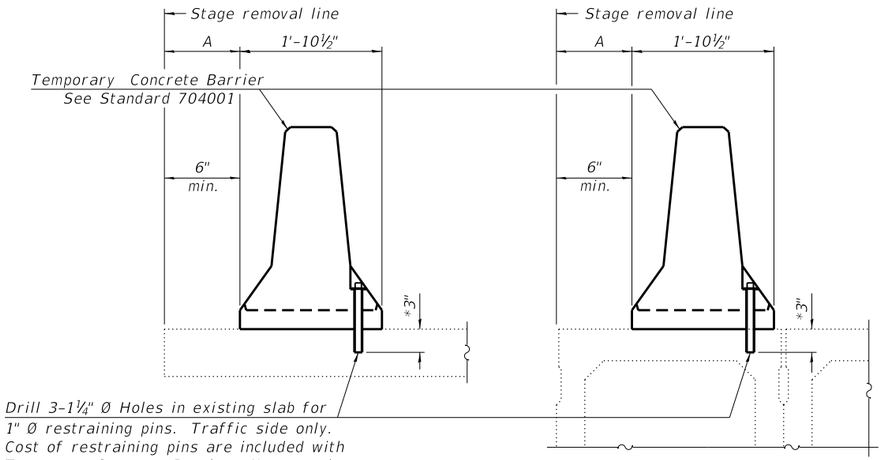
STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-04 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	462
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



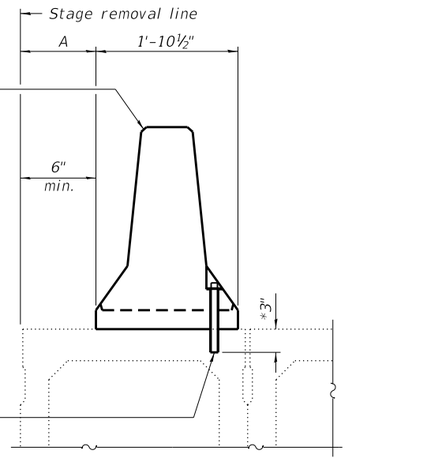
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

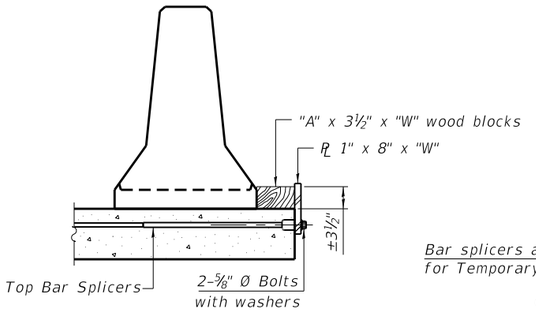
EXISTING SLAB



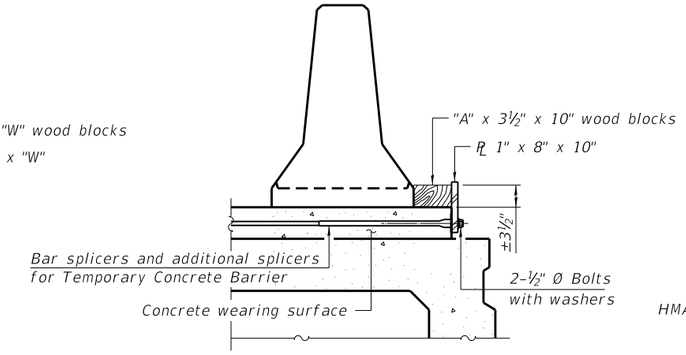
*When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

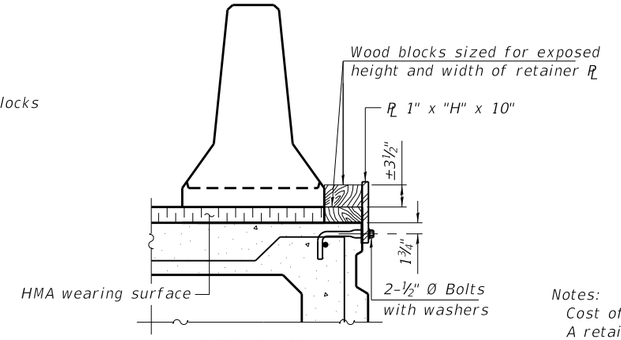
SECTIONS THRU SLAB OR DECK BEAM



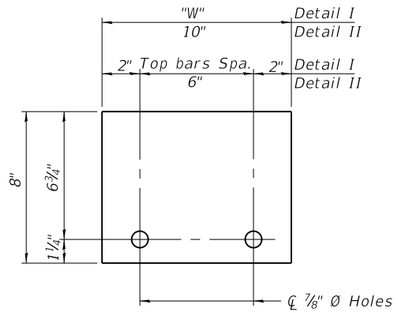
DETAIL I



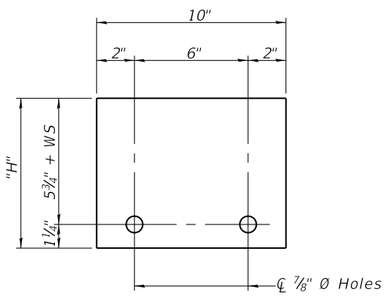
DETAIL II



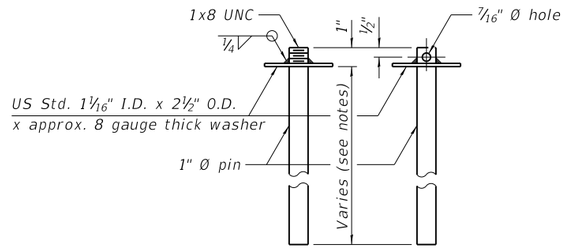
DETAIL III



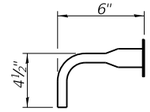
STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER ℄ 1" x "H" x 10"
(Detail III)



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 5-15-2023

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_16\0160159-62K53-05-WB-TCB.dgn
12/6/2024 9:48:37 PM

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

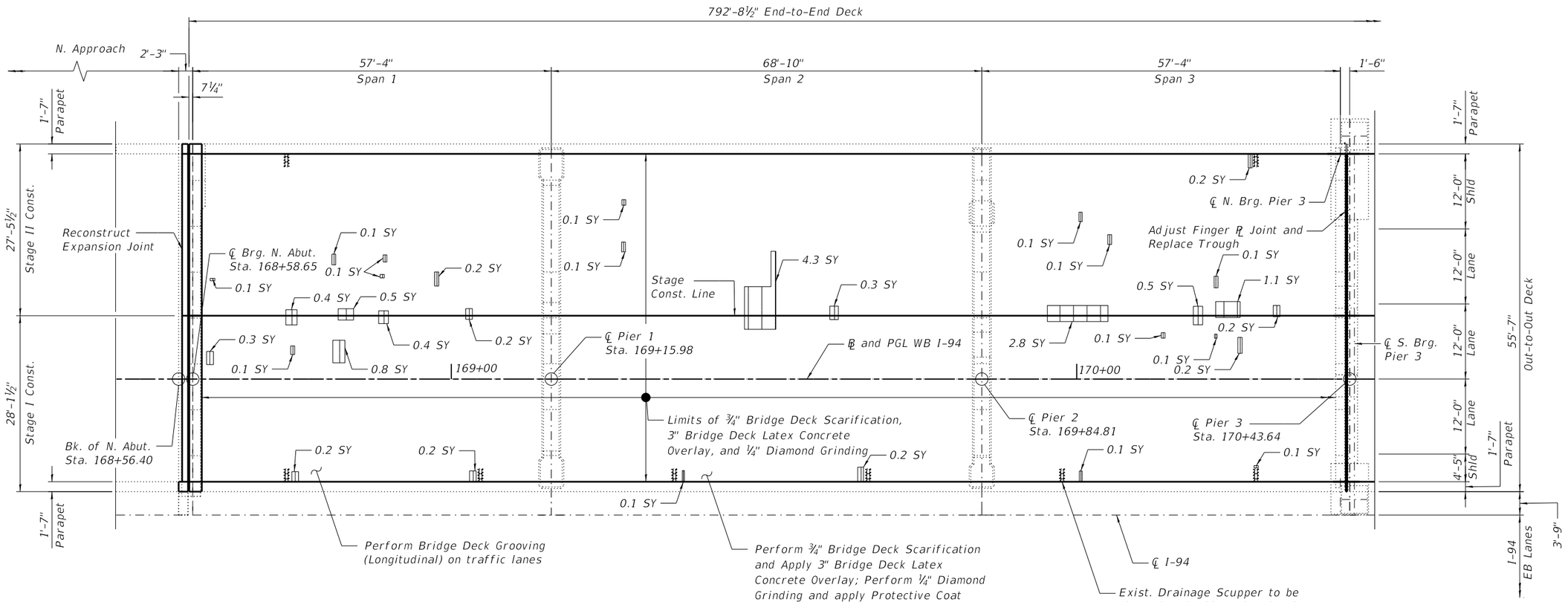
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-0159
SHEET S01-05 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	463
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

BILL OF MATERIAL

Protective Coat	Sq Yd	1,319
Bridge Deck Grooving (Longitudinal)	Sq Yd	743
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,054
Bridge Deck Scarification 3/4"	Sq Yd	1,054
Diamond Grinding (Bridge Section)	Sq Yd	995



DECK PLAN — Z

NOTES:

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S01-04.
3. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatch block.
4. For North Abutment expansion joint removal and reconstruction, see Sheets S01-11 thru S01-13.
5. For Pier 3 finger plate joint adjustment and trough replacement details, see Sheets S01-14 and S01-15.
6. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.

LEGEND

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type I)

Deck Slab Repair (Full Depth, Type II)

SY Square Yard

*Areas of Deck Slab Repair (Partial) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3"

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_9\0160159-62K53-06-WB-DeckPlan1.dgn
12/6/2024 9:48:06 PM

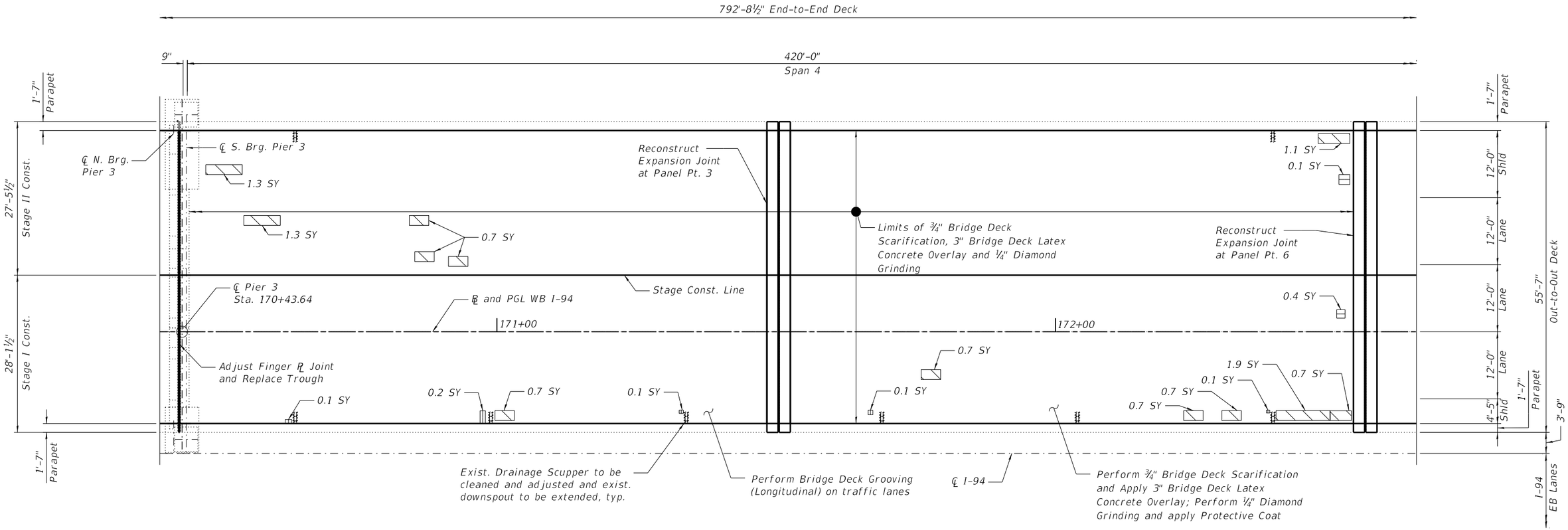
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 18:0.0000 ':' / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN (SHEET 1 OF 4)
STRUCTURE NO. 016-0159
SHEET S01-06 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	464
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



DECK PLAN

NOTES:

1. For expansion joint removal and reconstruction at truss Panel Point 3, see Sheets S01-16 and S01-17.
2. For expansion joint removal and reconstruction at truss Panel Point 6, see Sheets S01-18 and S01-19.
3. For Bill of Material, see Sheet S01-08.
4. For additional notes, see Sheet S01-06.

LEGEND

	*Deck Slab Repair (Partial Depth)
	Deck Slab Repair (Full Depth, Type I)
	Deck Slab Repair (Full Depth, Type II)
SY	Square Yard

*Areas of Deck Slab Repair (Partial) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3"

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_10\00160159-62KS3-07-WB-DeckPlan2.dgn
12/6/2024 9:47:29 PM

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 18:0.0000 ':' / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

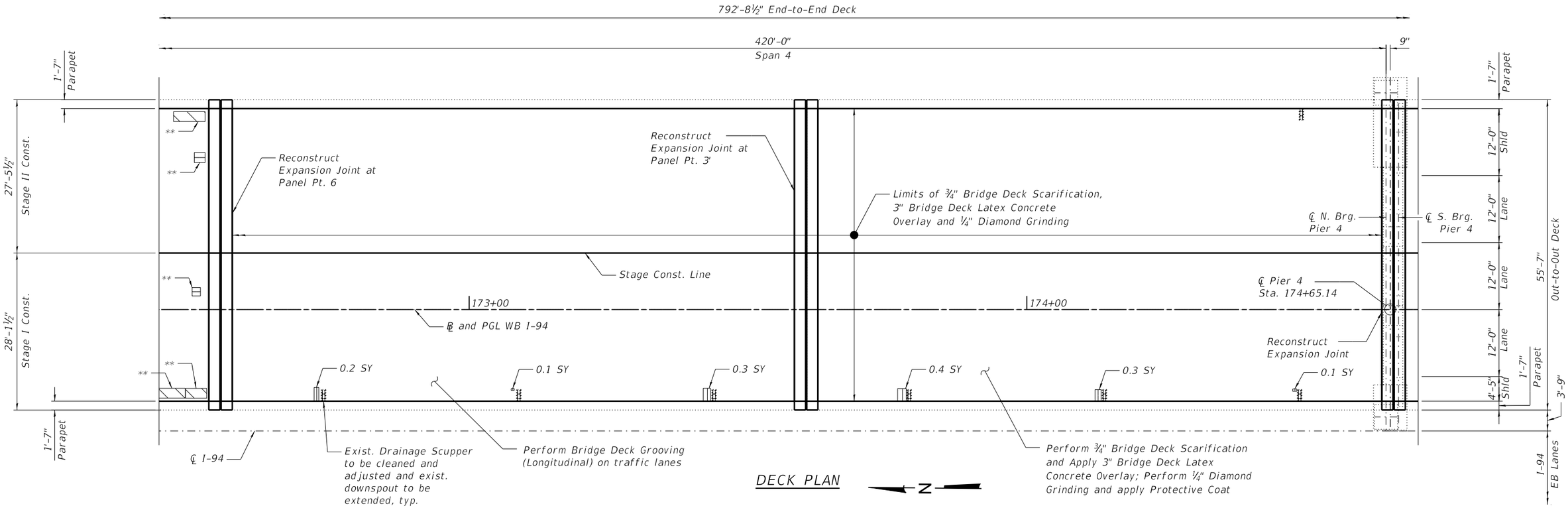
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN (SHEET 2 OF 4)
STRUCTURE NO. 016-0159
SHEET S01-07 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	465
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	2,859
Protective Coat	Sq Yd	2,746
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,686
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,363
Bridge Deck Scarification 3/4"	Sq Yd	2,363
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.5
Deck Slab Repair (Full Depth, Type II)	Sq Yd	12
Diamond Grinding (Bridge Section)	Sq Yd	2,272



DECK PLAN

**For size of repair, see Sheet S01-07.

NOTES:

1. For expansion joint removal and reconstruction at truss Panel Point 6, see Sheets S01-18 and S01-19.
2. For expansion joint removal and reconstruction at truss Panel Point 3', see Sheets S01-20 and S01-21.
3. For expansion joint removal and reconstruction at Pier 4, see Sheets S01-22 and S01-23.
4. For additional notes, see Sheet S01-06.

LEGEND

- *Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- SY Square Yard

*Areas of Deck Slab Repair (Partial) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3"

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_19\0160159-62K53-08-WB-DeckPlan3.dgn
12/6/2024 9:50:37 PM

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - LR, AWD	REVISED -
	DRAWN - LR, AWD	REVISED -
PLOT SCALE = 18:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -

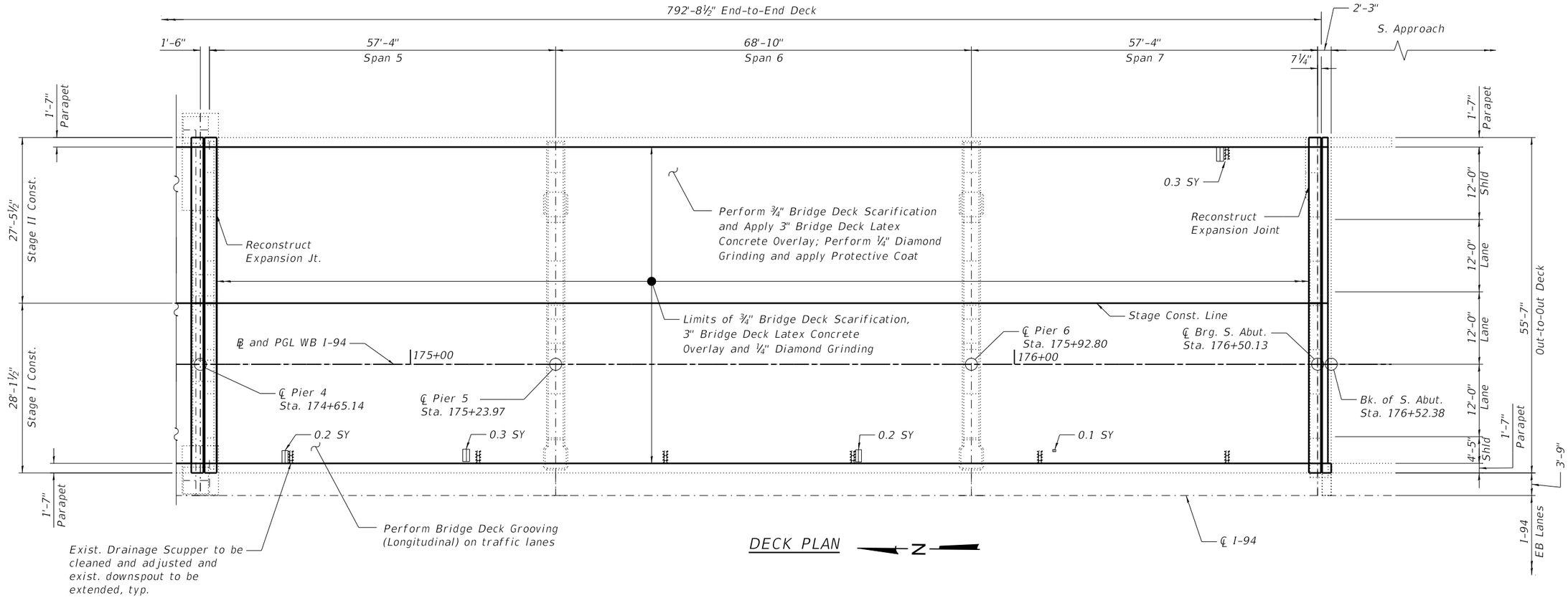
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN (SHEET 3 OF 4)
STRUCTURE NO. 016-0159
SHEET S01-08 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	466
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Coat	Sq Yd	1,319
Bridge Deck Grooving (Longitudinal)	Sq Yd	743
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,054
Bridge Deck Scarification 3/4"	Sq Yd	1,054
Diamond Grinding (Bridge Section)	Sq Yd	995



DECK PLAN

N

NOTES:

1. For expansion joint removal and reconstruction at Pier 4, see Sheets S01-22 and S01-23.
2. For South Abutment expansion joint removal and reconstruction, see Sheets S01-24 thru S01-26.
3. For additional notes, see Sheet S01-06.

LEGEND

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type I)

Deck Slab Repair (Full Depth, Type II)

SY Square Yard

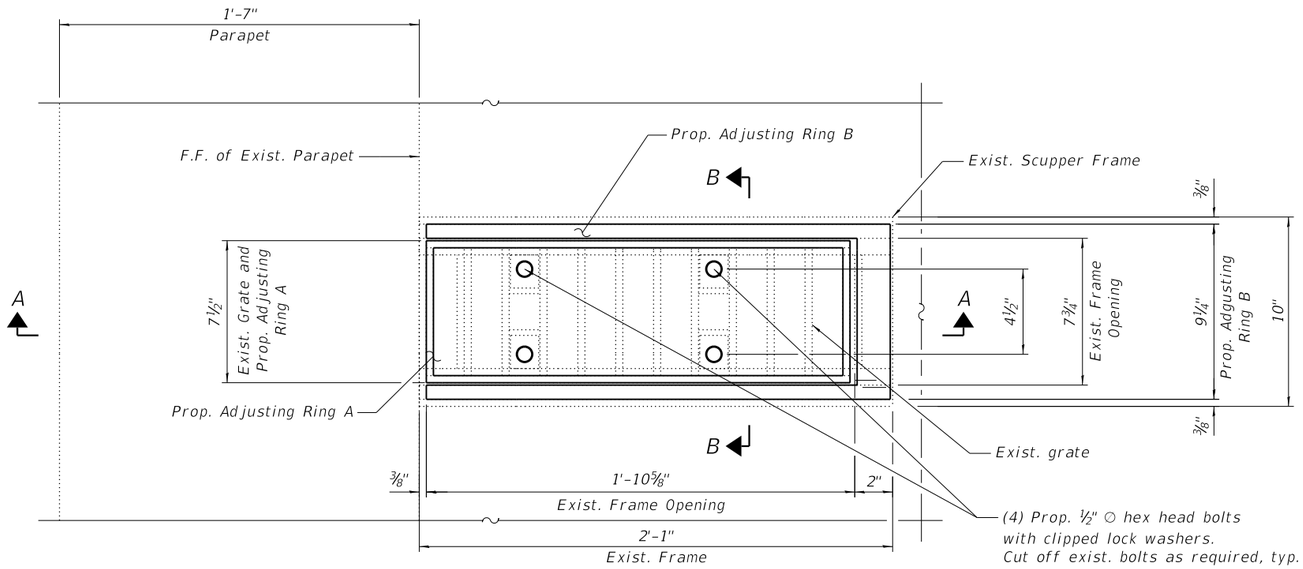
*Areas of Deck Slab Repair (Partial) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3"

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_11\0160159-62X53-09-WB-DeckPlan4.dgn
12/6/2024 9:48:03 PM

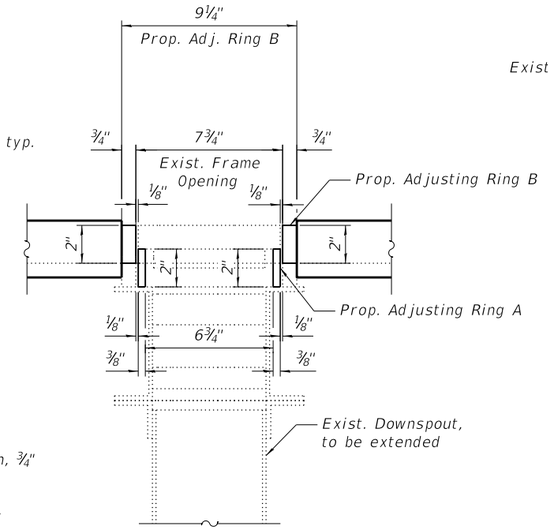
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - LR, AWD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK REPAIR PLAN (SHEET 4 OF 4) STRUCTURE NO. 016-0159	
	DRAWN - LR, AWD	REVISED -			
PLOT SCALE = 18:0.0000 ':' / in.	CHECKED - MI, JJS	REVISED -			
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -		SHEET S01-09 OF S01-38 SHEETS	

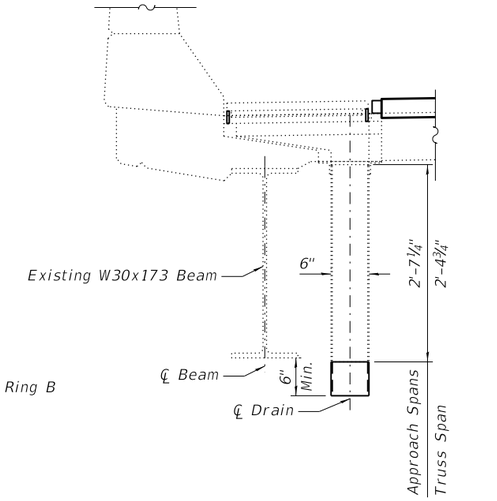
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	467
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



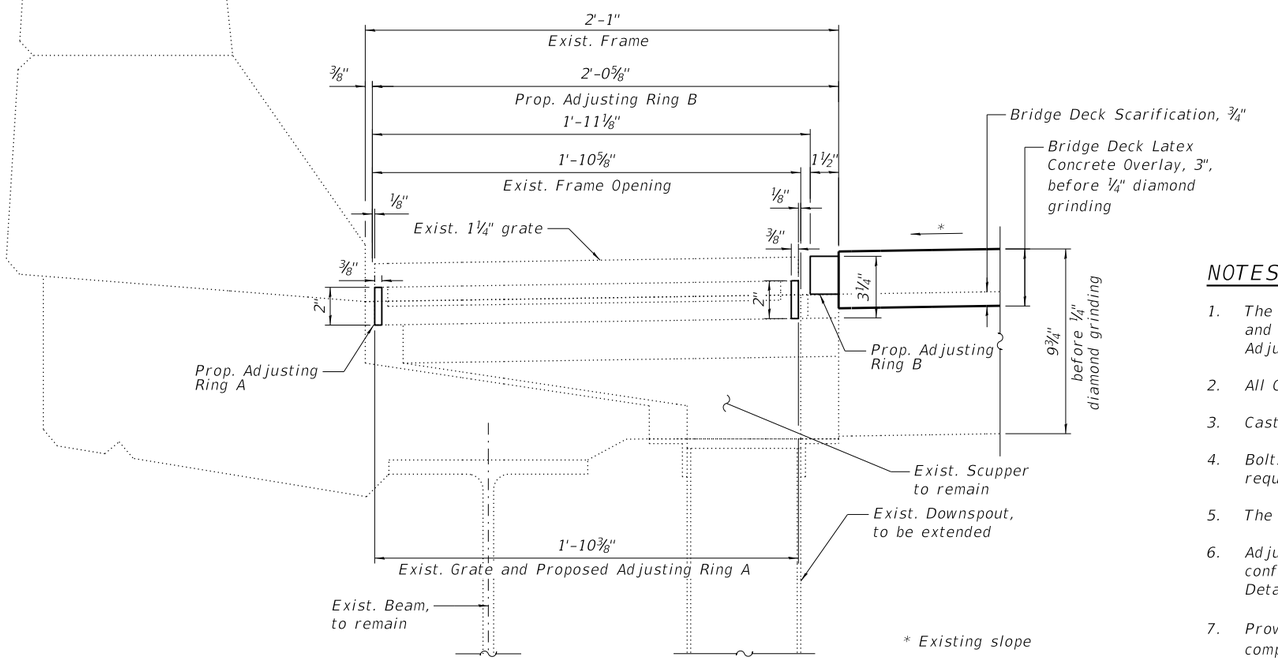
TYPICAL SCUPPER PLAN



SECTION B-B



DRAIN EXTENSION DETAIL



SECTION A-A

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Deck Drain Extensions	Each	28
Drainage Scuppers To Be Adjusted	Each	28

NOTES:

1. The Contractor shall field-verify Existing Dimensions and Details of the Existing Scuppers, grates and downspouts, and make necessary approved adjustments, prior to construction or ordering of material for Drainage Scuppers to be Adjusted and downspout extensions.
2. All Cast Iron Parts shall be Grey Iron conforming to the requirements of AASHTO M 105, Class 30.
3. Cast Iron Parts shall be unfinished.
4. Bolts, washers and nuts shall conform to the requirements of ASTM A307 and be galvanized according to the requirements of AASHTO M232.
5. The Contractor shall take appropriate measures to ensure that Protective Coat is not applied to the scuppers.
6. Adjusting Rings shall be from Neenah or approved equal. Structural steel weldments or equal sections and of the same configuration may be submitted in place of Cast Iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
7. Provide ⅛" Fillet Weld around perimeter of new Adjusting Rings to secure to existing Scupper. Electrode shall be compatible with cast iron if existing scupper elements are cast iron construction.
8. Cost of all labor and materials necessary to clean all existing floor drains and scuppers, fabricate and install adjusting scupper rings, remove and reinstall grates is included in the cost of Drainage Scuppers to be Adjusted.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_23\0160159-62K53-10-WB-DrainageScupper.dgn

12/6/2024 9:48:45 PM

HBM ENGINEERING GROUP, LLC

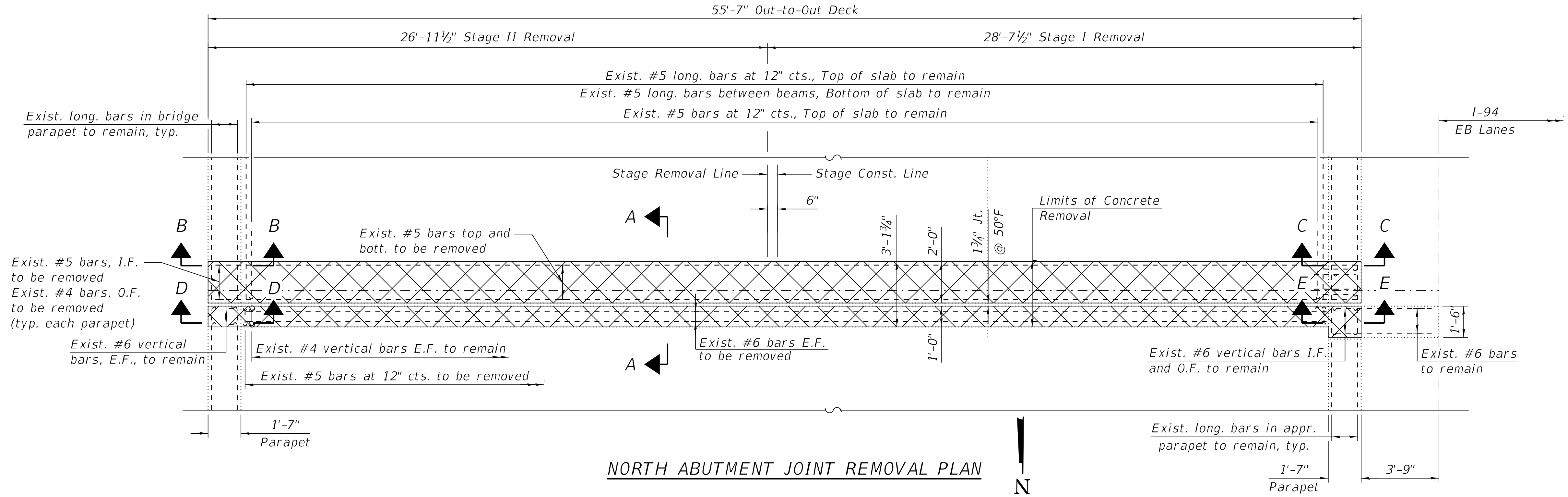
USER NAME =	hbmepw11ics01$	DESIGNED -	LR	REVISED -	
		DRAWN -	LR	REVISED -	
PLOT SCALE =	2:0.0000 ':' / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	12/6/2024	DATE -	12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

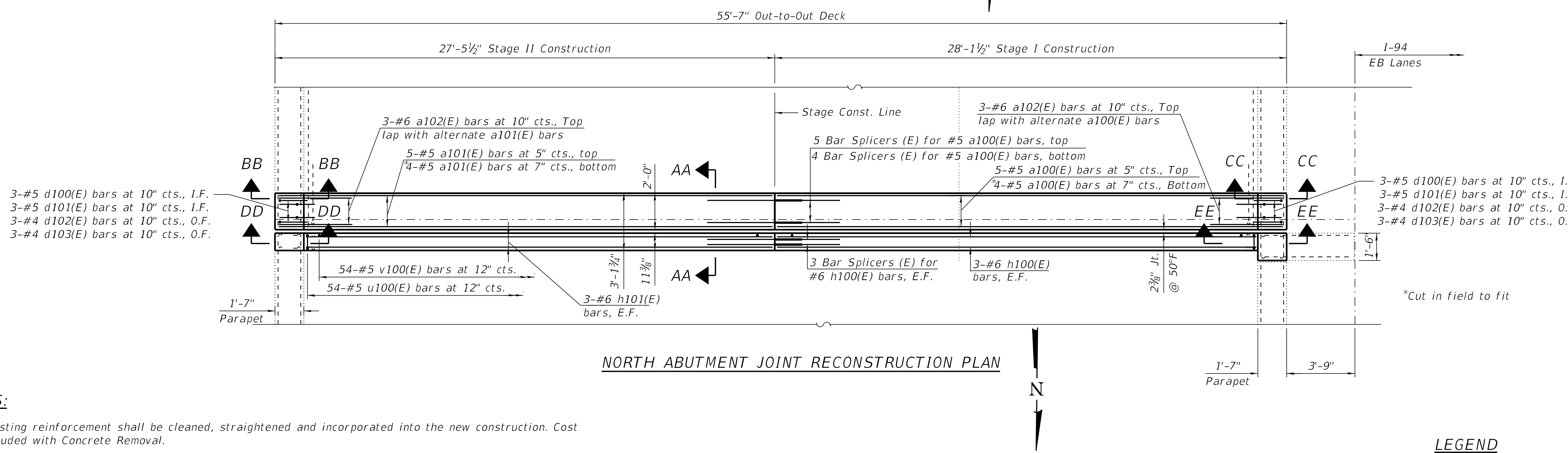
DRAINAGE SCUPPER ADJUSTMENT DETAILS
STRUCTURE NO. 016-0159

SHEET S01-10 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	468
		CONTRACT NO.	62W87	
		ILLINOIS	FED. AID PROJECT	



NORTH ABUTMENT JOINT REMOVAL PLAN



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.

2. Any reinforcement bars that are damaged during Concrete Removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".

3. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S01-27.

4. For Sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S01-12.

5. For Sections D-D, E-E, DD-DD and EE-EE, Bar Diagrams, additional Notes and Bill of Material, see Sheet S01-13.

6. For preformed joint strip seal details, see Sheet S01-27.

7. For bar splicer assembly details, see Sheet S01-38.

8. Removal and disposal of existing expansion joint shall be included with Concrete Removal.

9. Epoxy grout v100(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

LEGEND

(hatch)	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face

MODEL: Default
FILE NAME: pw:\\hbmeng-pw.bentley.com:hbmeng-pw-01\Documents\2200\2207-909\04-SOUTH_CONTRACT\01-DGN\12-SHT\16-Structures\016-0159\0160159-62K53-11-WB-NorthAbutJoint(Sht. 1 of 3).dgn

HBM ENGINEERING GROUP, LLC

USER NAME = adam.daoud	DESIGNED - HMI	REVISED -	
	DRAWN - HMI	REVISED -	
PLOT SCALE = 6:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -	
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -	

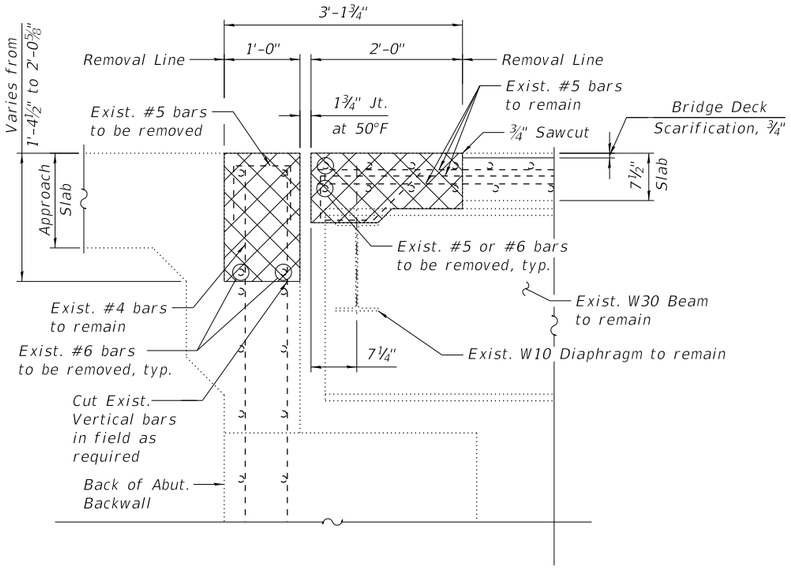
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 1 OF 3)
STRUCTURE NO. 016-0159

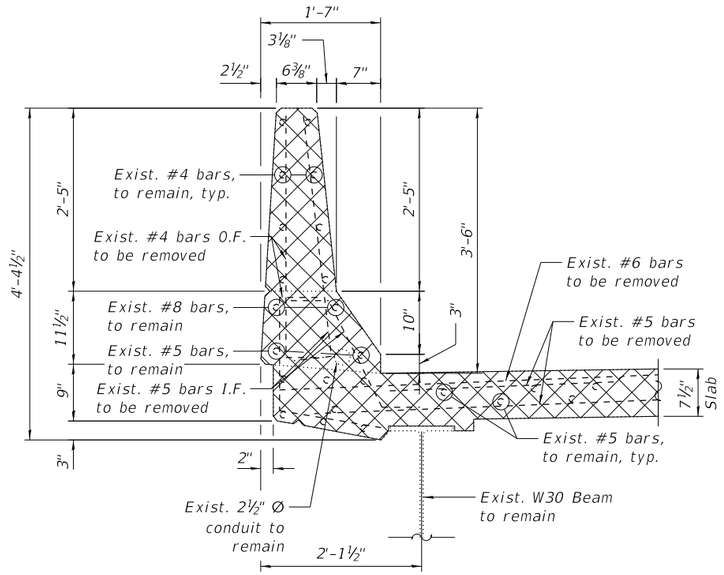
SHEET S01-11 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	469
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

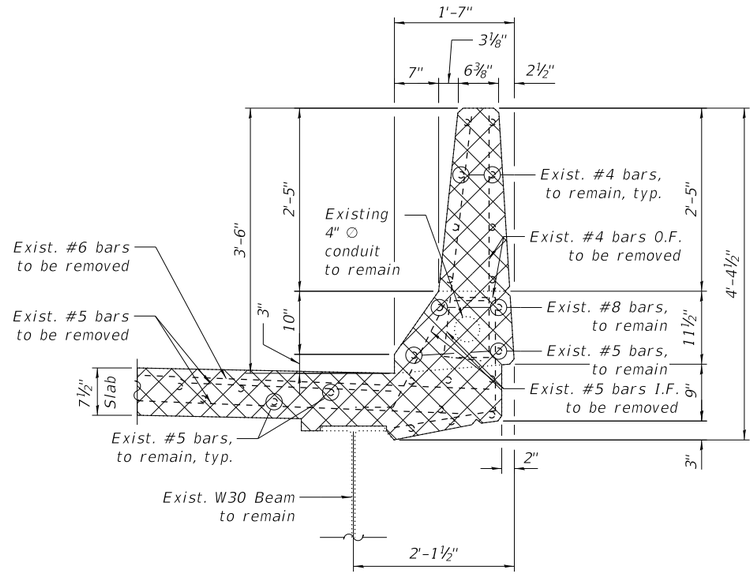
12/6/2024 3:22:03 PM



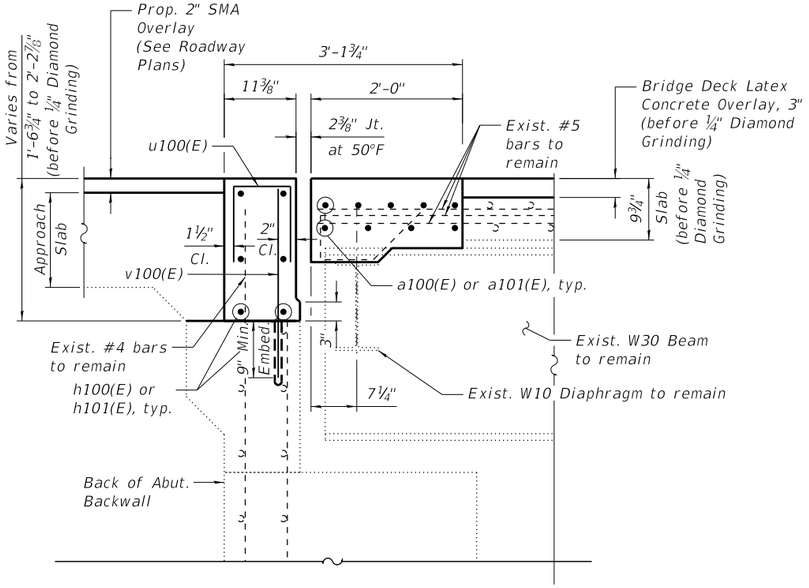
SECTION A-A



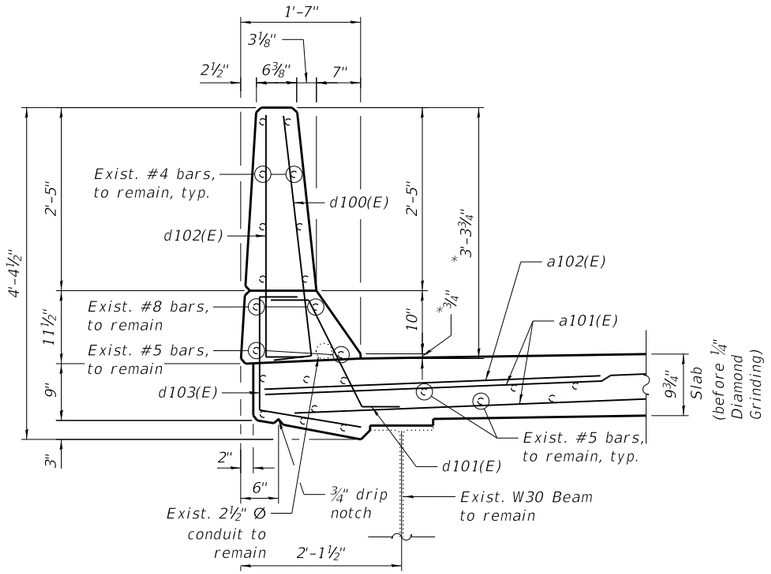
SECTION B-B



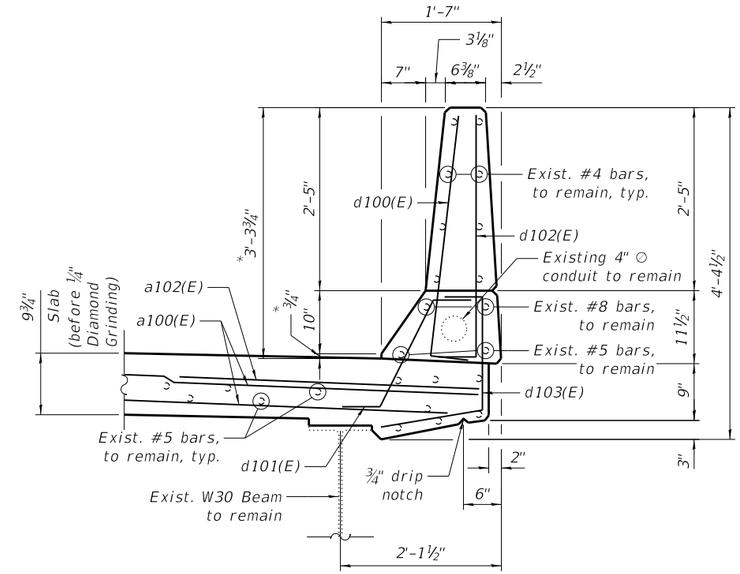
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

*Before ¼" Diamond Grinding

NOTES:

1. For Legend and additional Notes, see Sheet S01-11.
2. For Bar Diagrams and Bill of Material, see Sheet S01-13.
3. It shall be the Contractor's responsibility to provide adequate temporary support for existing conduits during joint reconstruction. Cost included with Concrete Superstructure.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_49\0160159-62K53-12-WB-NorthAbutJoint\Sht. 2 of 3.dgn
12/6/2024 9:49:41 PM

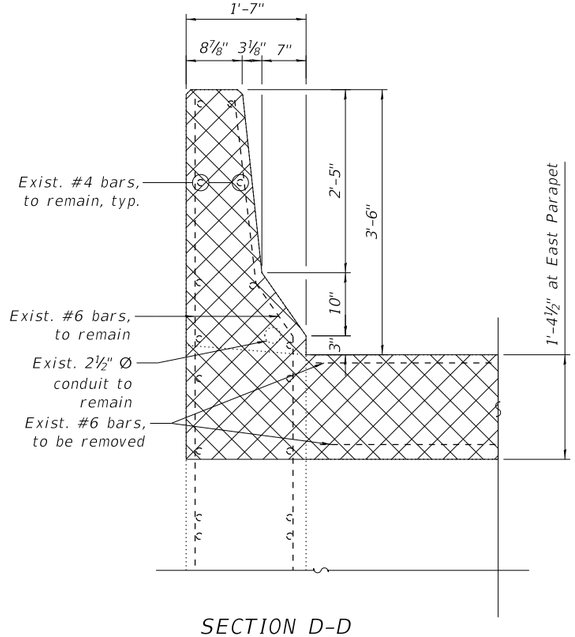
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - HMI	REVISED -
	DRAWN - HMI	REVISED -
PLOT SCALE = 2:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

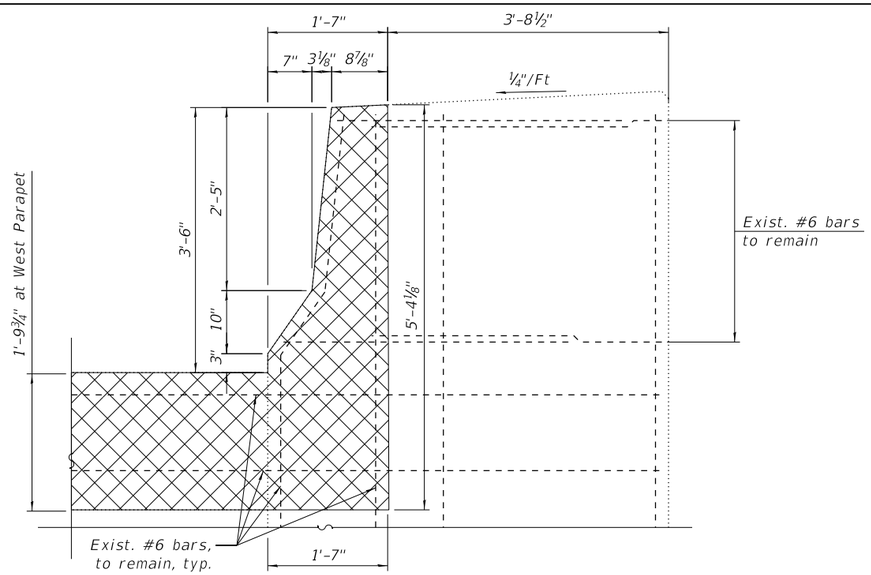
N. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 2 OF 3)
STRUCTURE NO. 016-0159
SHEET S01-12 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	470
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		



SECTION D-D

(Reinforcement in abutment hatch block is not shown for clarity)

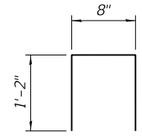


SECTION E-E

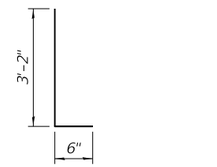
(Reinforcement in abutment hatch block is not shown for clarity)

BILL OF MATERIAL

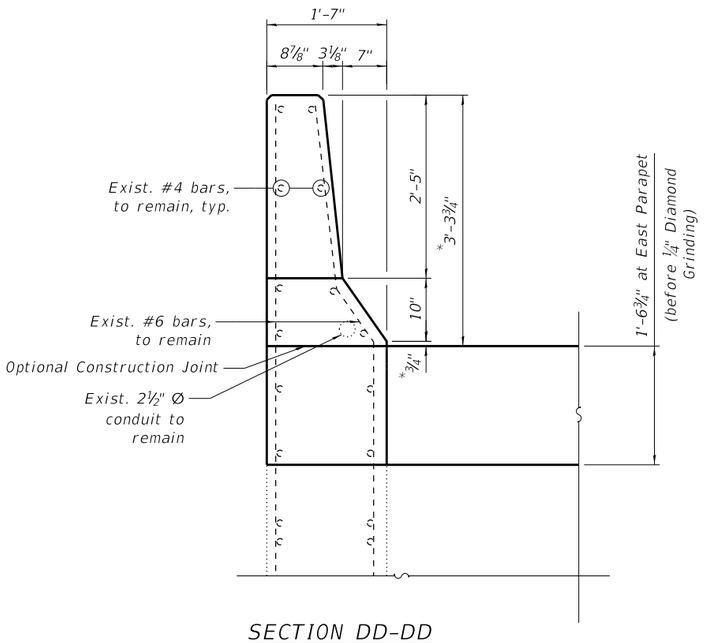
Bar	No.	Size	Length	Shape
a100(E)	9	#5	27'-10"	
a101(E)	9	#5	27'-1"	
a102(E)	6	#6	6'-0"	
d100(E)	6	#5	3'-8"	L
d101(E)	6	#5	2'-7"	
d102(E)	6	#4	3'-8"	L
d103(E)	6	#4	3'-5"	
h100(E)	6	#6	26'-3"	
h101(E)	6	#6	25'-9"	
u100(E)	54	#5	3'-0"	
v100(E)	54	#5	2'-1"	
Concrete Removal			Cu Yd	8.0
Concrete Superstructure			Cu Yd	5.0
Protective Coat			Sq Yd	20
Reinforcement Bars, Epoxy Coated			Pound	1,400



Bar u100(E)

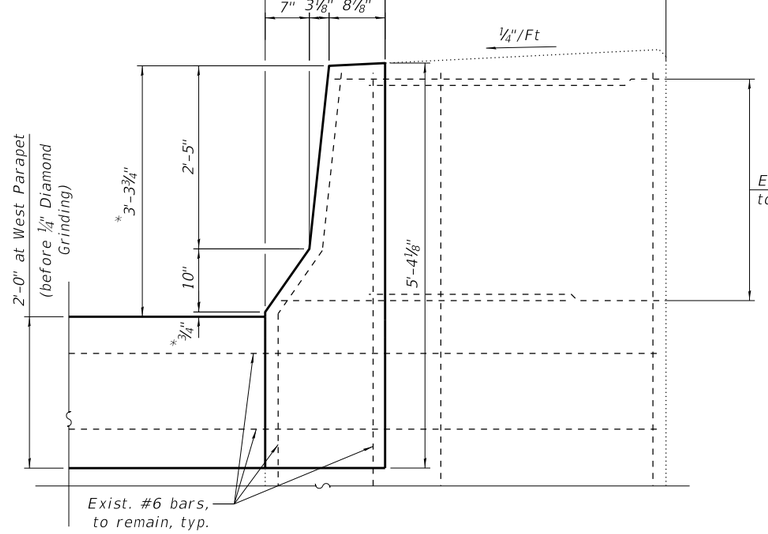


BAR d100(E) & d102(E)



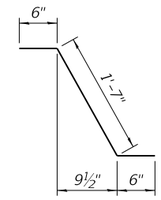
SECTION DD-DD

(Reinforcement in abutment hatch block is not shown for clarity)

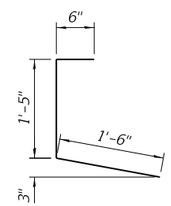


SECTION EE-EE

(Reinforcement in abutment hatch block is not shown for clarity)



BAR d101(E)



BAR d103(E)

NOTE:

1. For legend and additional notes, see Sheet S01-11.

*Before ¼" Diamond Grinding

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_50\0160159-62X53-13-WB-NorthAbutJoint\Sht. 3 of 3\.dgn

12/6/2024 9:51:55 PM

HBM ENGINEERING GROUP, LLC

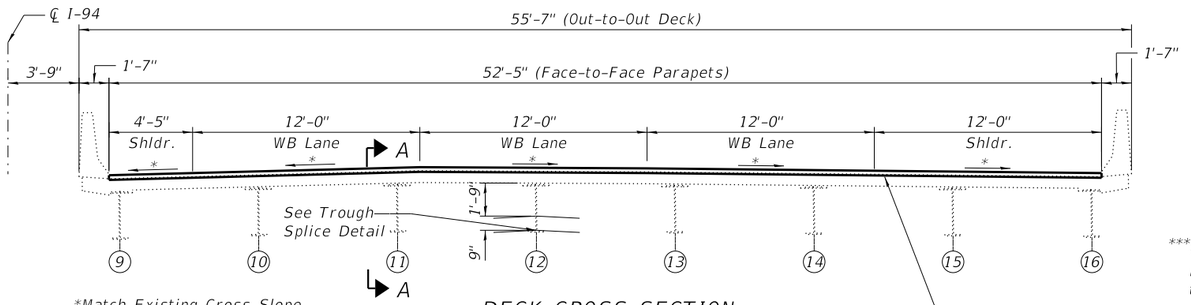
USER NAME = hbmepw11ics01$		DESIGNED - HMI		REVISED -	
		DRAWN - HMI		REVISED -	
PLOT SCALE = 2:0.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 3 OF 3)
STRUCTURE NO. 016-0159

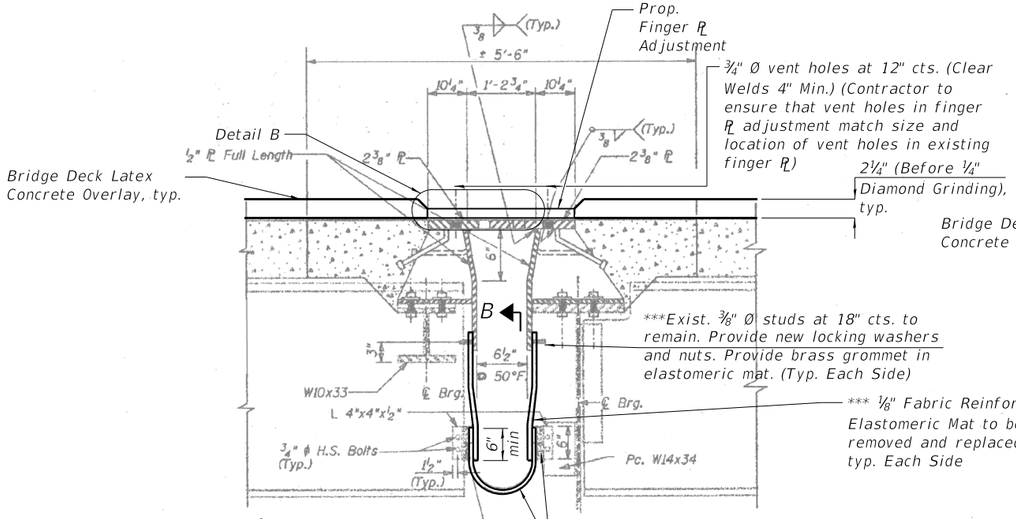
SHEET S01-13 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	471
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		

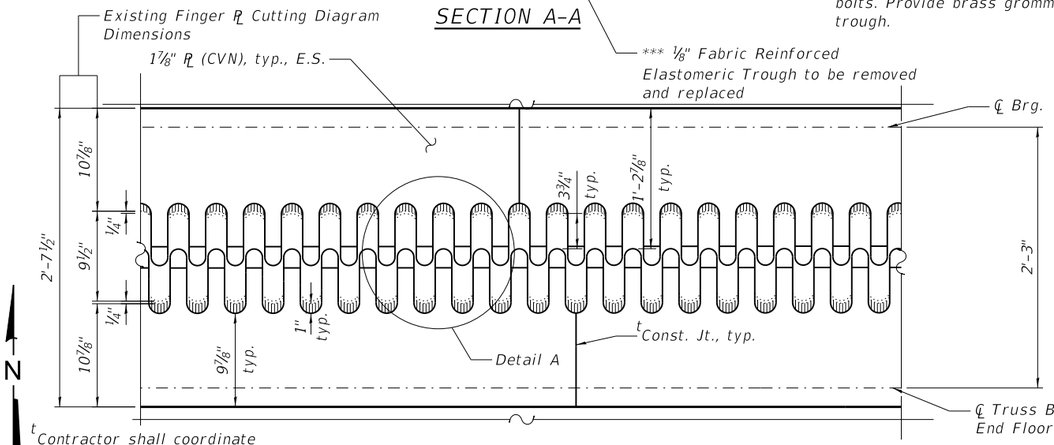


DECK CROSS SECTION

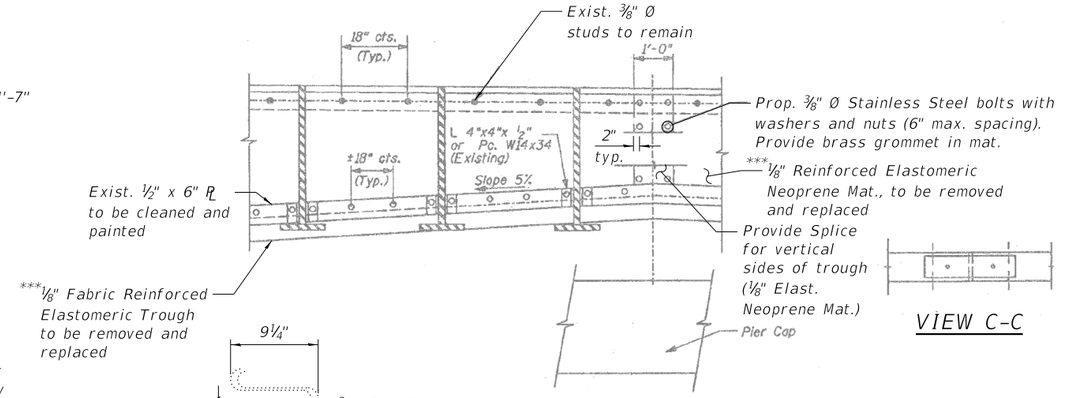
(Looking North)
(Floor Beam not shown for clarity)



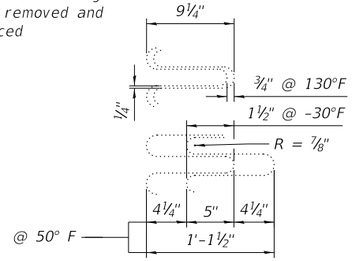
SECTION A-A



FINGER PLATE JOINT ADJUSTMENT PARTIAL PLAN

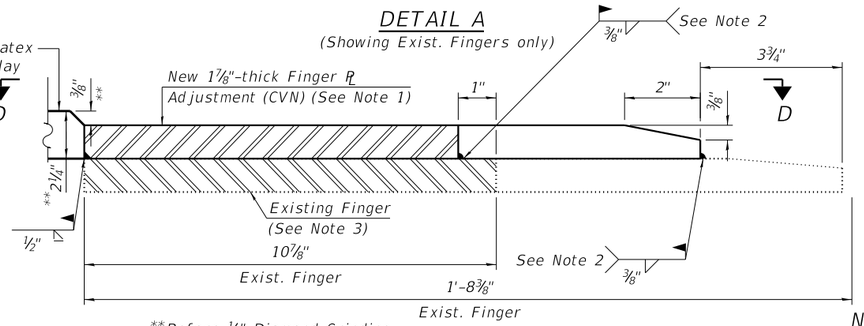


SECTION B-B

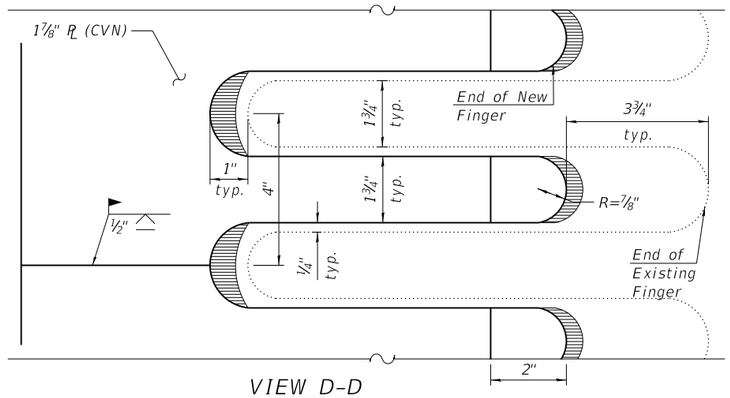


DETAIL A

(Showing Exist. Fingers only)



DETAIL B



VIEW D-D

TROUGH SPLICE DETAIL

(@ Crown of trough)

NOTES:

1. New Finger shall be blast cleaned to SSPC SP 10 and shop painted with the inorganic zinc rich primer.
2. Fillet weld sizes at ends (tips) and crotches of fingers shall vary from ⅜" near centers to 3/16" minimum near edges as new and existing plates converge.
3. Existing Finger widths and exact locations must be field-verified. A template shall be made to ensure alignment. Remove foreign material that would prevent uniform contact between new and existing plates by method approved by the Engineer.
4. All steel for the finger ℄ joint adjustment shall conform to AASHTO M270 Grade 50 (CVN).
5. "CVN" denotes Charpy V-Notch Impact Energy Requirements, Zone 2.
6. All steel components of the finger plate adjustment, including hardware assembled with the trough system, shall be galvanized after fabrication according to Section 520.03 of the Standard Specifications, unless noted otherwise.
7. For Fabric Reinforced Elastomeric Trough sections, details and Bill of Material, see sheet S01-15.

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - AWD		REVISED -	
		DRAWN - AWD		REVISED -	
PLOT SCALE = 8:0.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

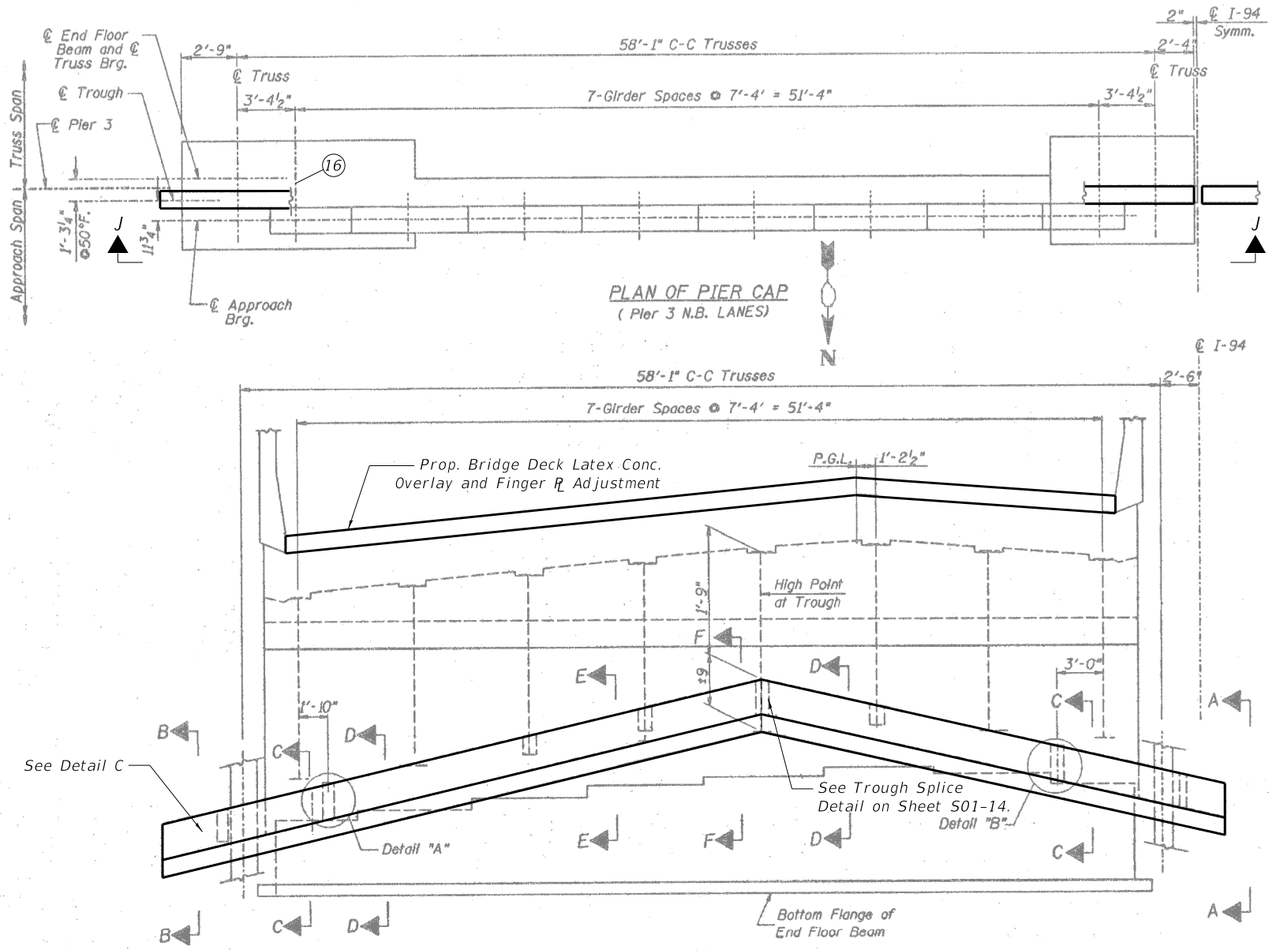
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

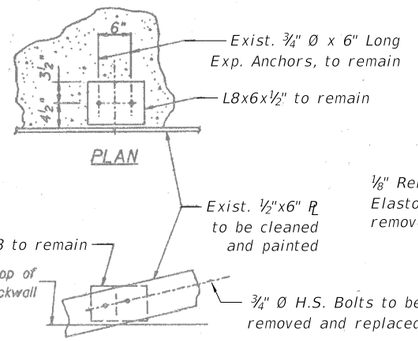
PIER 3 FINGER PLATE JOINT ADJUSTMENT (SHT. 1 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-14 OF S01-38 SHEETS

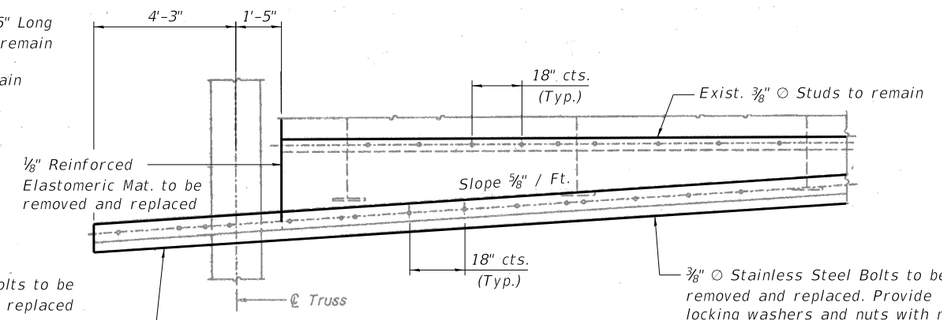
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	472
		CONTRACT NO.	62W87	
		ILLINOIS	FED. AID PROJECT	

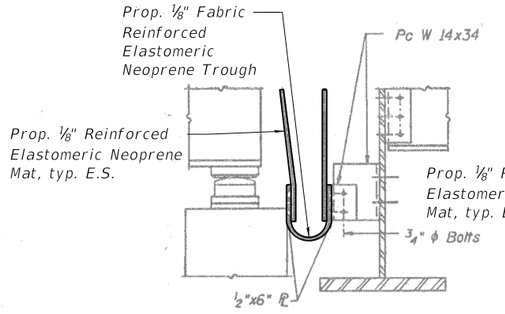
MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\14426_630160159-62K53-14-WB-FingerPlateJoint(Sht. 1 of 2).dgn
12/6/2024 9:50:33 PM

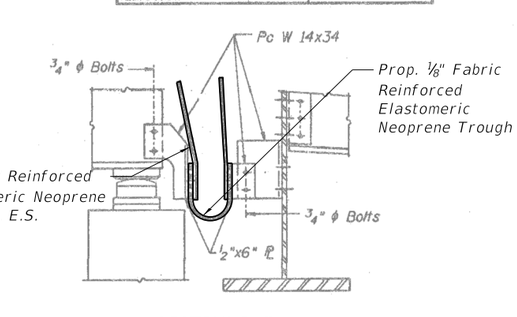
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	428...	COOK	18	7
FED.ROAD DIST.NO.		ILLINOIS	PROJECT	

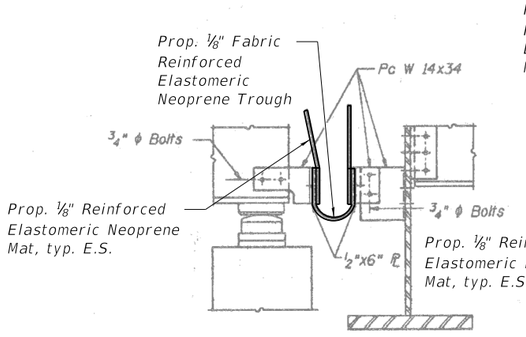


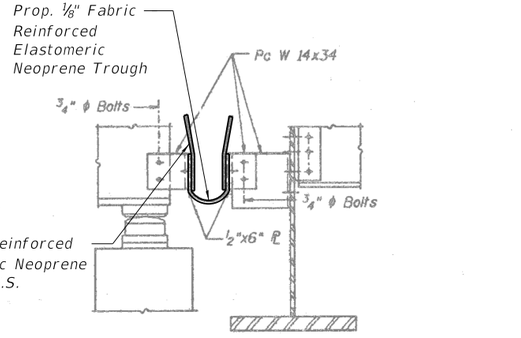


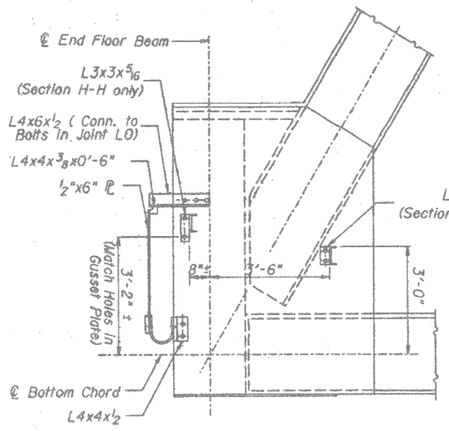












NOTES:

1. The Contractor shall replace the Fabric Reinforced Elastomeric Trough and associated hardware according to Section 520 of the Standard Specifications, unless otherwise specified on this sheet. Removal and replacement of the elastomeric trough, elastomeric mat and all associated hardware, as well as removal of existing debris within the trough, shall be included in the cost of "Fabric Reinforced Elastomeric Trough."
2. For additional notes, see Sheet S01-14.
3. Sections A-A thru F-F provided for information only.
4. Re-use existing holes in existing steel members to remain.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing And Erecting Structural Steel	Pound	10120
Fabric Reinforced Elastomeric Trough	Foot	56

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_6401601S9-62K53-15-WB-FingerPlateJoint(Sht. 2 of 2).dgn

12/6/2024 9:50:13 PM

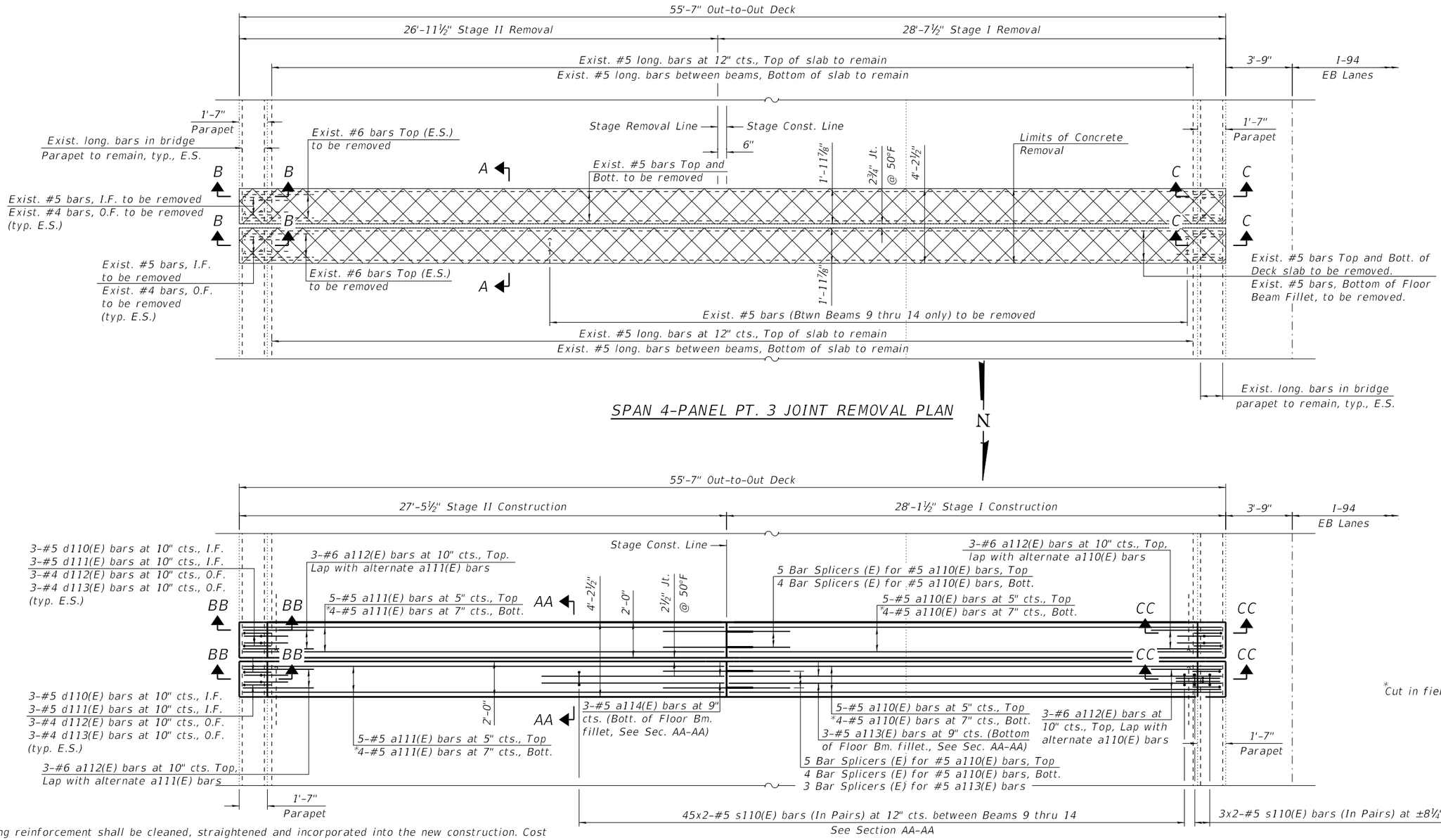
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - AWD		REVISED -
		DRAWN - AWD		REVISED -
PLOT SCALE = 0:2.0000 '=' / in.		CHECKED - MI, JJS		REVISED -
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 FINGER PLATE JOINT ADJUSTMENT (SHT. 2 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-15 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	473
		CONTRACT NO.		62W87
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
2. Any reinforcement bars that are damaged during Concrete Removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".
3. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S01-27.
4. For Sections A-A, B-B, C-C, AA-AA, BB-BB, and CC-CC, Bar Diagrams and Bill of Material, see Sheet S01-17.
5. For preformed joint strip seal details, see Sheet S01-27.
6. For bar splicer assembly details, see Sheet S01-38.
7. Removal and disposal of existing expansion joint shall be included with Concrete Removal.

LEGEND

	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
E.S.	Each Side
E.E.	Each End

MODEL: Default
FILE NAME: pw:\\hbmeng-pw.bentley.com:hbmeng-pw-011\Documents\22002207-909\04-SOUTH_CONTRACT\01-DGN\12-SHT\16-Structures\016-0159\016015 9-62XS3-16-WB-SpanInfoJnt1(Sht. 1 of 2).dgn
12/6/2024 2:46:55 PM

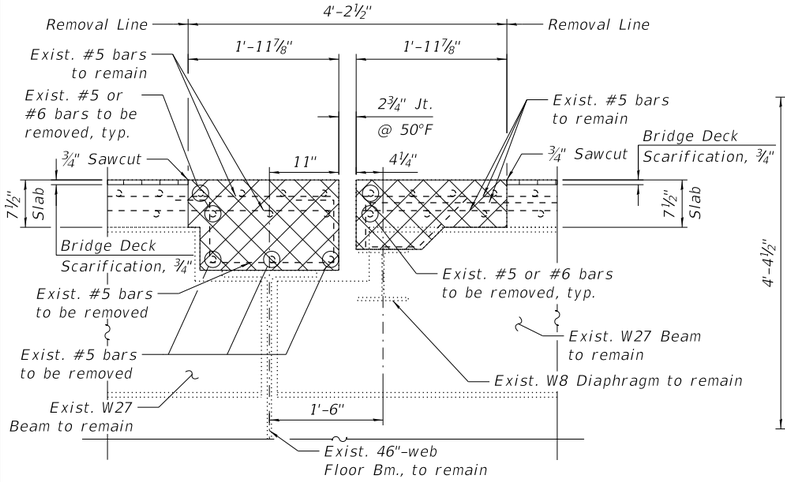
HBM ENGINEERING GROUP, LLC

USER NAME = adam.daoud		DESIGNED - LR		REVISED -			
		DRAWN - LR		REVISED -			
PLOT SCALE = 6:0.0000 ':' / in.		CHECKED - MI, JJS		REVISED -			
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -			

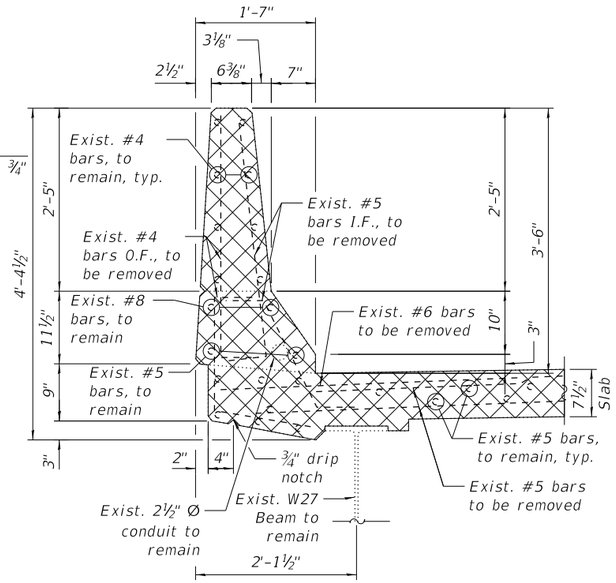
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPAN 4 PANEL PT. 3 JT. REM. & REPL. (SHT. 1 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-16 OF S01-38 SHEETS

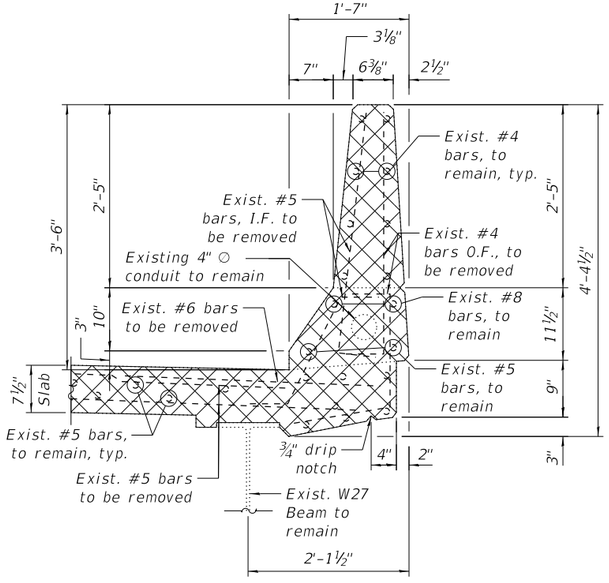
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	474
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		



SECTION A-A



SECTION B-B

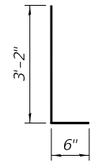


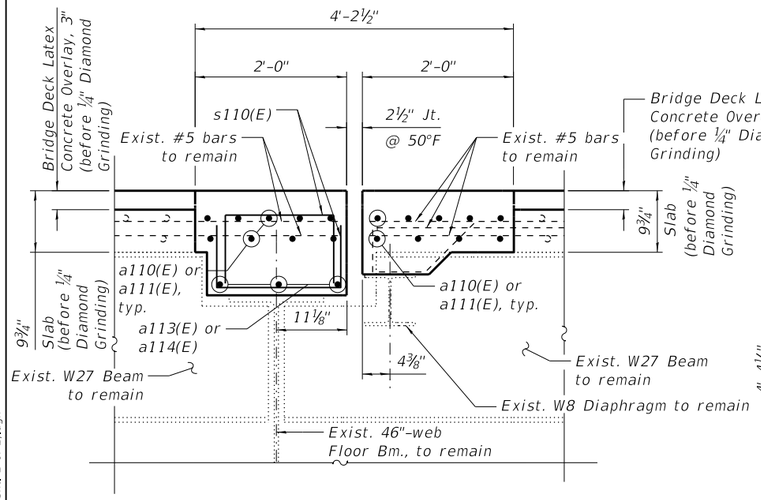
SECTION C-C

BILL OF MATERIAL

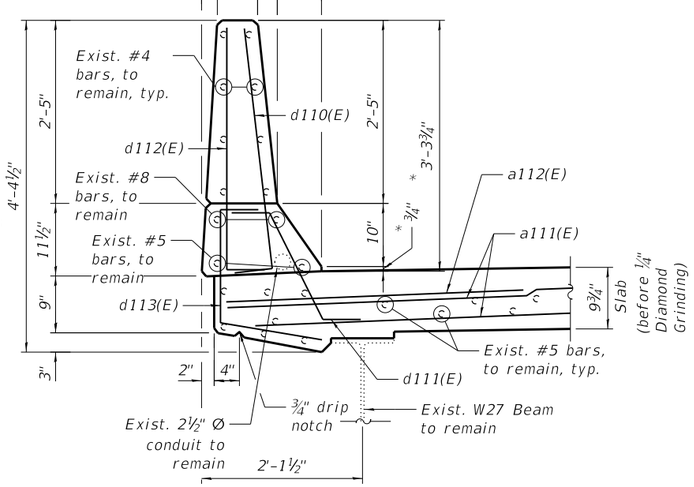
Bar	No.	Size	Length	Shape
a110(E)	18	#5	27'-10"	——
a111(E)	18	#5	27'-1"	——
a112(E)	12	#6	6'-0"	——
a113(E)	3	#5	27'-10"	——
a114(E)	3	#5	11'-0"	——
d110(E)	12	#5	3'-8"	L
d111(E)	12	#5	2'-7"	⌐
d112(E)	12	#4	3'-8"	L
d113(E)	12	#4	3'-5"	⌐
s110(E)	96	#5	2'-10"	⊓

Concrete Removal	Cu Yd	9.0
Concrete Superstructure	Cu Yd	10.0
Protective Coat	Sq Yd	27
Reinforcement Bars, Epoxy Coated	Pound	1,680

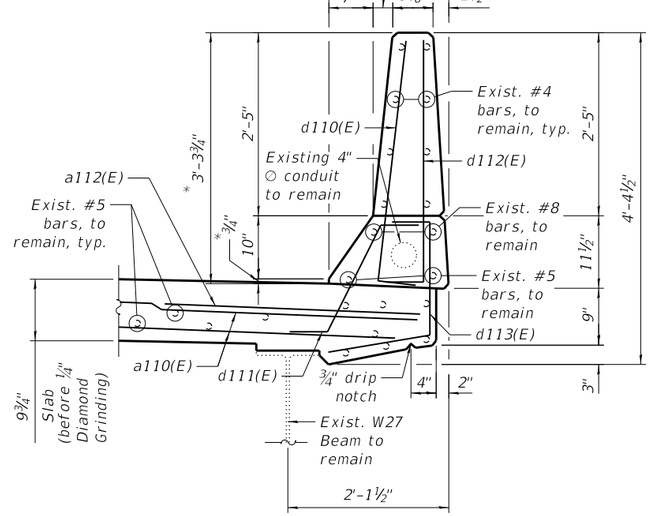




SECTION AA-AA



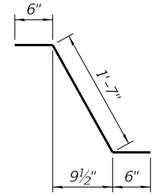
SECTION BB-BB



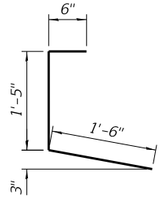
SECTION CC-CC

* Before ¼" Diamond Grinding

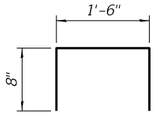
BAR d110(E) & d112(E)



BAR d111(E)



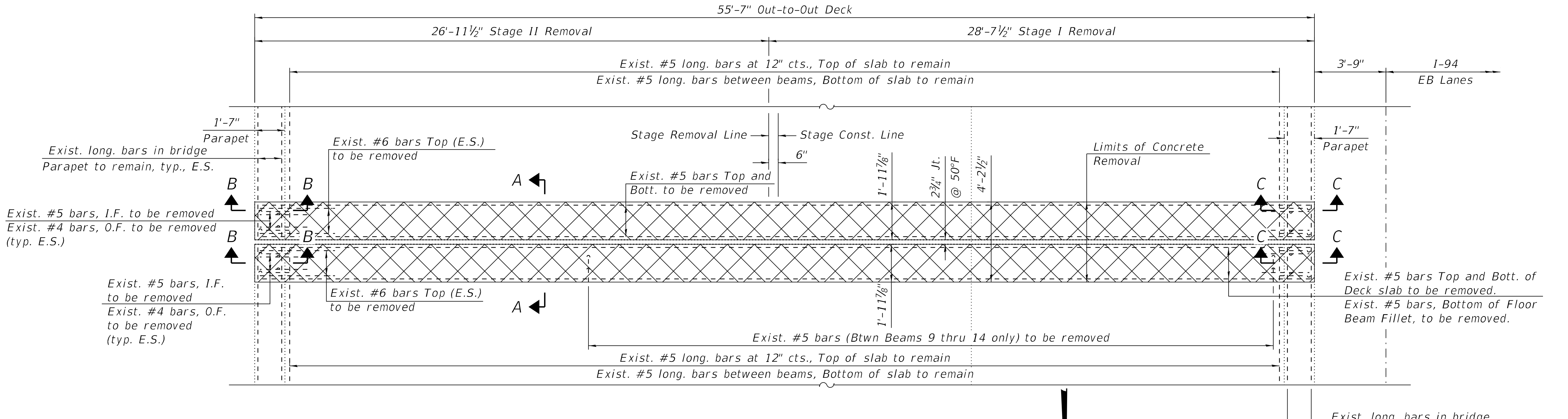
BAR d113(E)



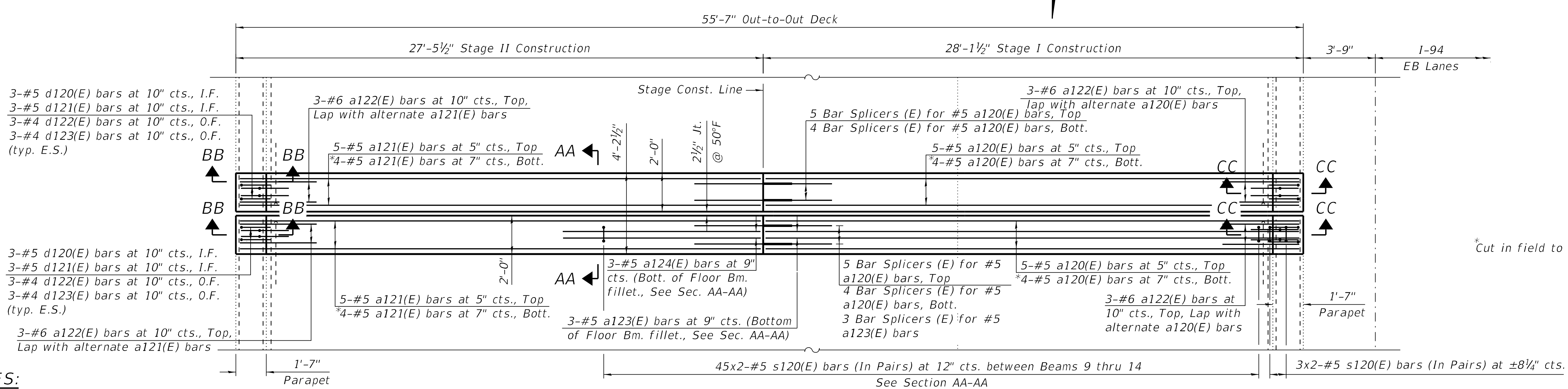
BAR s110(E)

NOTE:

1. For legend and additional Notes, see Sheet S01-16.



SPAN 4-PANEL PT. 6 JOINT REMOVAL PLAN



SPAN 4-PANEL PT. 6 JOINT RECONSTRUCTION PLAN

N

NOTES:

1. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
2. Any reinforcement bars that are damaged during Concrete Removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".
3. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S01-27.
4. For Sections A-A, B-B, C-C, AA-AA, BB-BB, and CC-CC, Bar Diagrams and Bill of Material, see Sheet S01-19.
5. For preformed joint strip seal details, see Sheet S01-27.
6. For bar splicer assembly details, see Sheet S01-38.
7. Removal and disposal of existing expansion joint shall be included with Concrete Removal.

LEGEND

(hatched)	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
E.S.	Each Side
E.E.	Each End

HBM ENGINEERING GROUP, LLC

USER NAME = adam.daoud	DESIGNED - LR	REVISED -	
	DRAWN - LR	REVISED -	
PLOT SCALE = 6:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -	
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -	

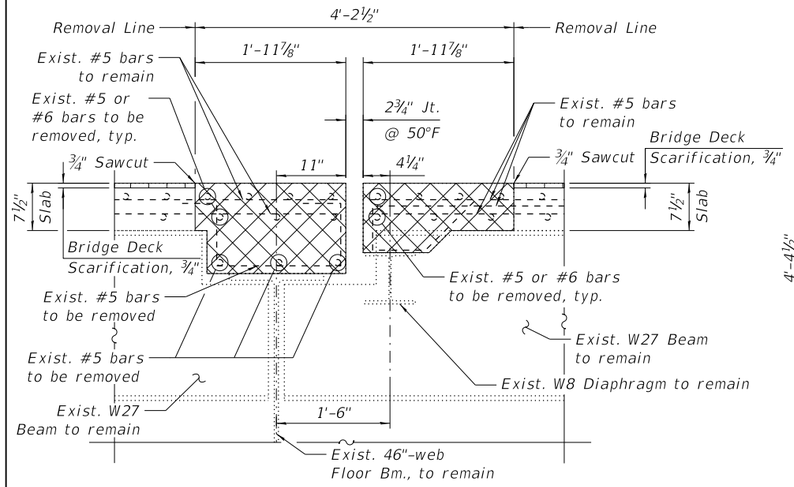
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPAN 4 PANEL PT. 6 JT. REM. & REPL. (SHT. 1 OF 2)
STRUCTURE NO. 016-0159

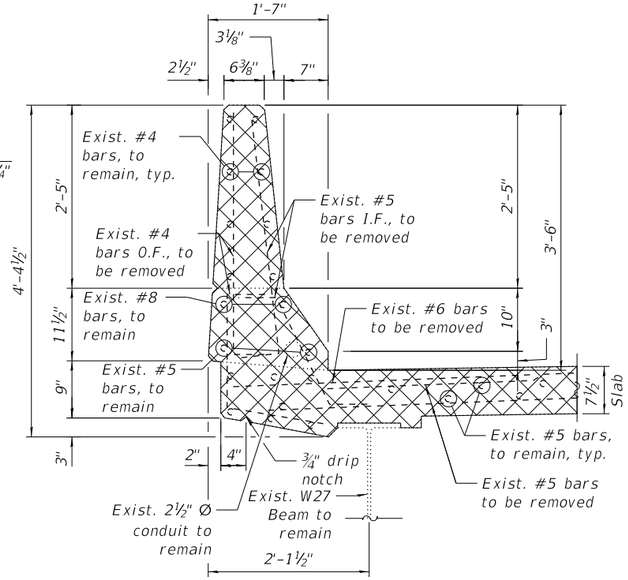
SHEET S01-18 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	476
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

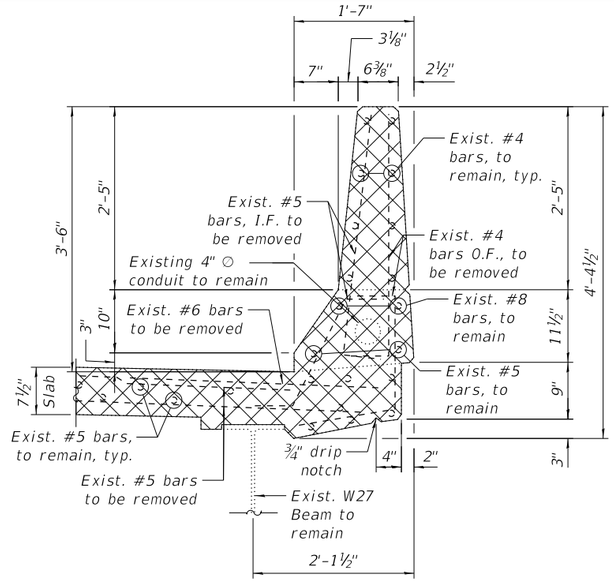
12/6/2024 2:44:42 PM



SECTION A–A



SECTION B–B

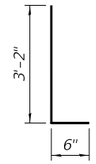


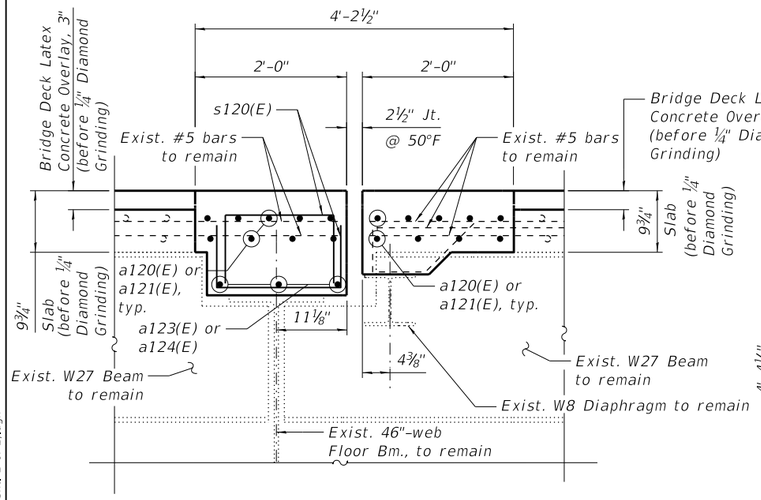
SECTION C–C

BILL OF MATERIAL

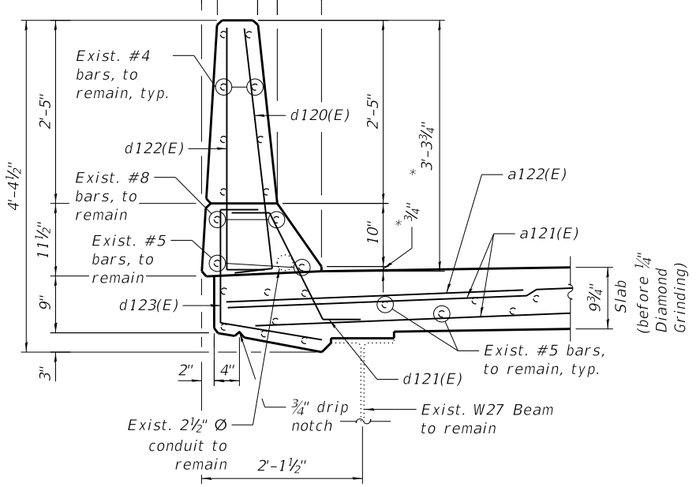
Bar	No.	Size	Length	Shape
a120(E)	18	#5	27'-10"	—
a121(E)	18	#5	27'-1"	—
a122(E)	12	#6	6'-0"	—
a123(E)	3	#5	27'-10"	—
a124(E)	3	#5	11'-0"	—
d120(E)	12	#5	3'-8"	L
d121(E)	12	#5	2'-7"	⌐
d122(E)	12	#4	3'-8"	L
d123(E)	12	#4	3'-5"	⊏
s120(E)	96	#5	2'-10"	⊓

Concrete Removal	Cu Yd	9.0
Concrete Superstructure	Cu Yd	10.0
Protective Coat	Sq Yd	27
Reinforcement Bars, Epoxy Coated	Pound	1,680

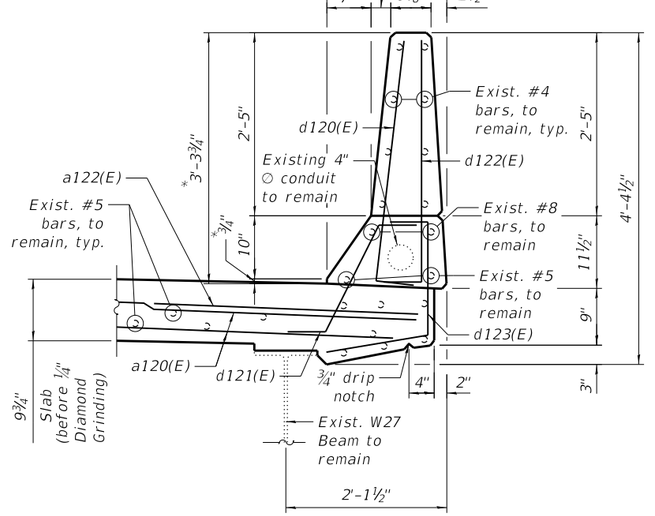




SECTION AA–AA



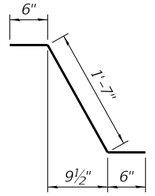
SECTION BB–BB



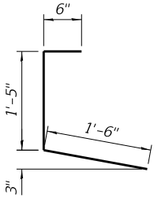
SECTION CC–CC

*Before ¼" Diamond Grinding

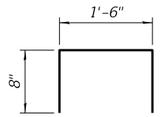
BAR d120(E) & d122(E)



BAR d121(E)



BAR d123(E)



BAR s120(E)

NOTE:

1. For legend and additional Notes, see Sheet S01-18.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_58\0160159-62K53-19-WB-Span4Joint2\Sht. 2 of 2).dgn
12/6/2024 9:49:59 PM

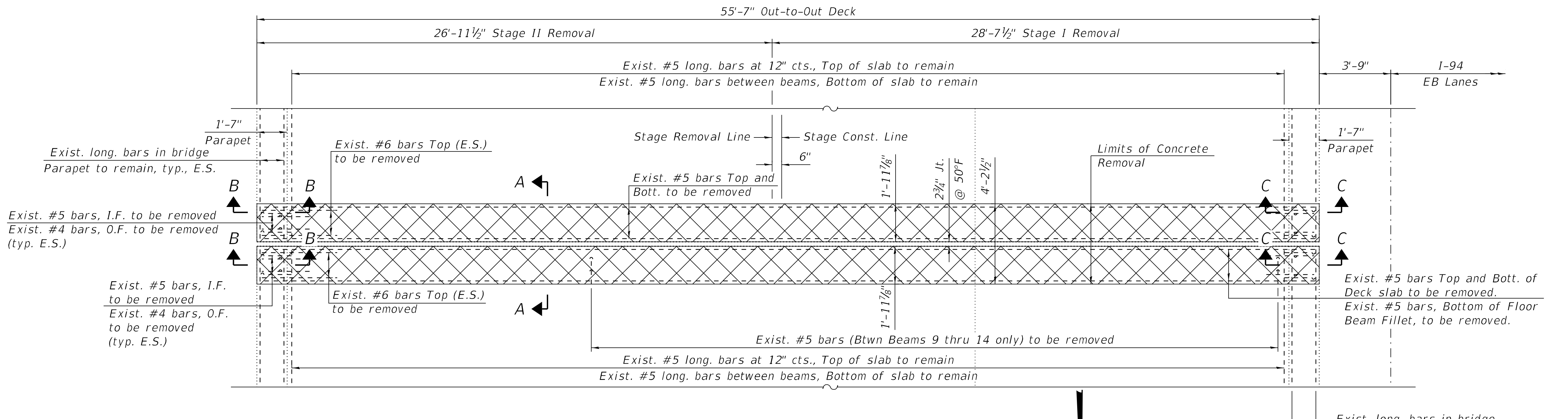
HBM ENGINEERING GROUP, LLC

USER NAME =	hbmepw11ics01$	DESIGNED -	LR	REVISED -	
		DRAWN -	LR	REVISED -	
PLOT SCALE =	2:0.0000 ':" / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	12/6/2024	DATE -	12/9/2024	REVISED -	

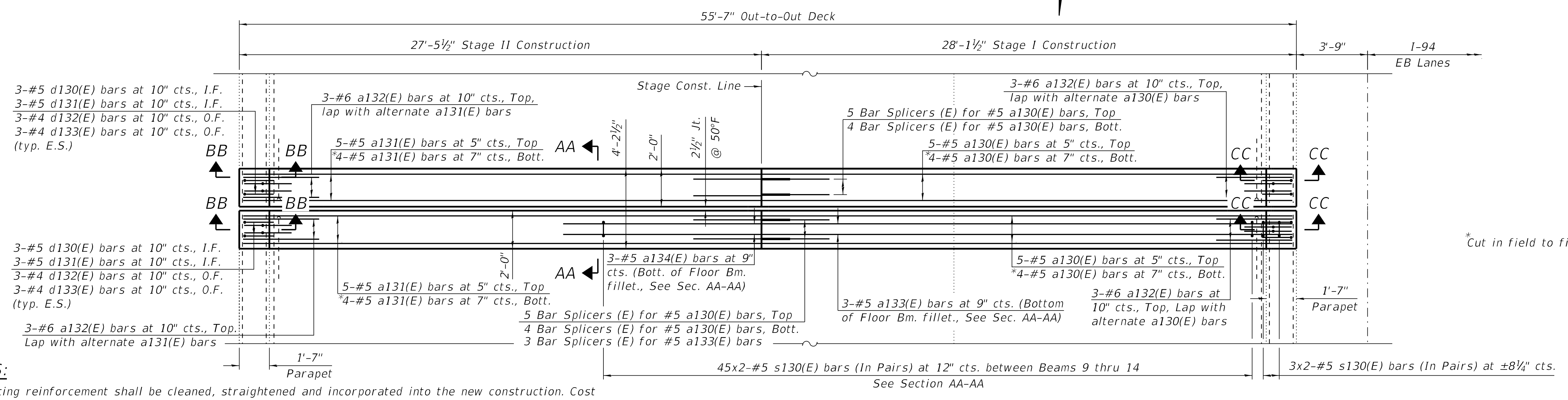
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPAN 4 PANEL PT. 6 JT. REM. & REPL. (SHT. 2 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-19 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	477
		CONTRACT NO.	62W87	
		ILLINOIS	FED. AID PROJECT	



SPAN 4-PANEL PT. 3' JOINT REMOVAL PLAN



SPAN 4-PANEL PT. 3' JOINT RECONSTRUCTION PLAN

NOTES:

1. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
2. Any reinforcement bars that are damaged during Concrete Removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".
3. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S01-27.
4. For Sections A-A, B-B, C-C, AA-AA, BB-BB, and CC-CC, Bar Diagrams and Bill of Material, see Sheet S01-21.
5. For preformed joint strip seal details, see Sheet S01-27.
6. For bar splicer assembly details, see Sheet S01-38.
7. Removal and disposal of existing expansion joint shall be included with Concrete Removal.

LEGEND

(crosshatch)	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
E.S.	Each Side
E.E.	Each End

MODEL: Default
FILE NAME: pw:\\hbmeng-pw.bentley.com:hbmeng-pw-01\Documents\2200\2207-909\04-SOUTH_CONTRACT\01-DGN\12-SHT\16-Structures\016-0159\016159-62K53-20-WB-Span4Joint3(Sht. 1 of 2).dgn

HBM ENGINEERING GROUP, LLC

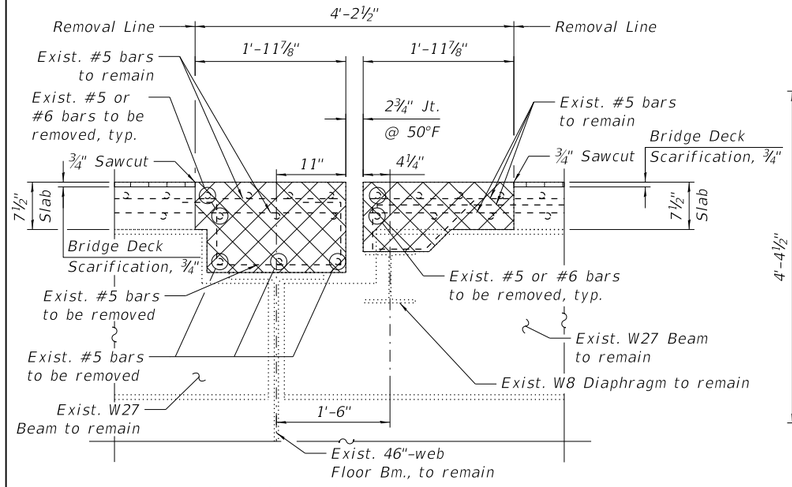
USER NAME = adam.daoud	DESIGNED - LR	REVISED -	
	DRAWN - LR	REVISED -	
PLOT SCALE = 6:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -	
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

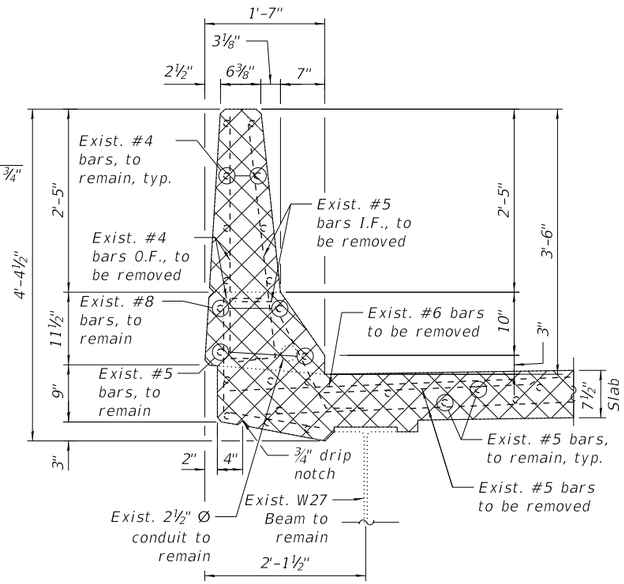
SPAN 4 PANEL PT. 3' JT. REM. & REPL. (SHT. 1 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-20 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	478
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

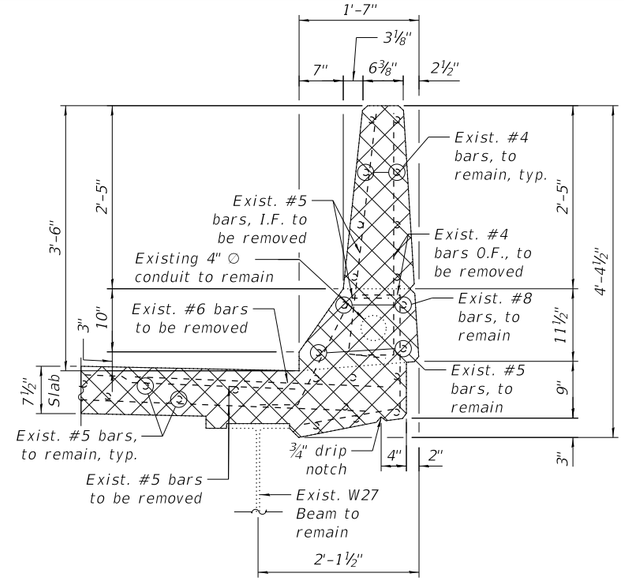
12/6/2024 2:41:45 PM



SECTION A–A



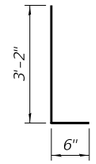
SECTION B–B

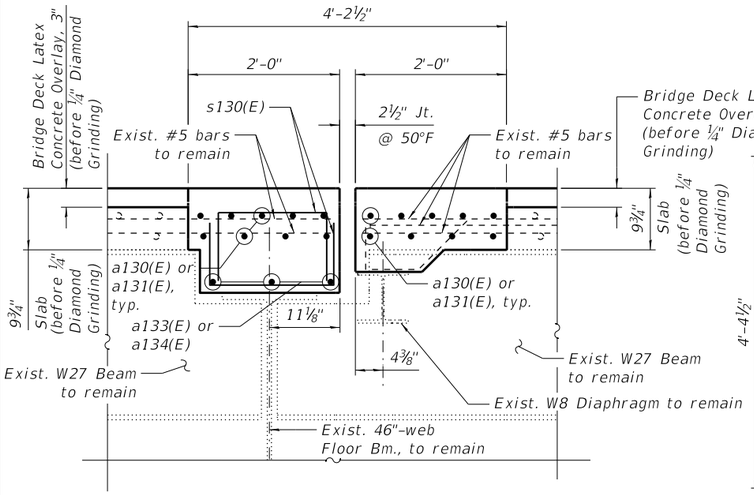


SECTION C–C

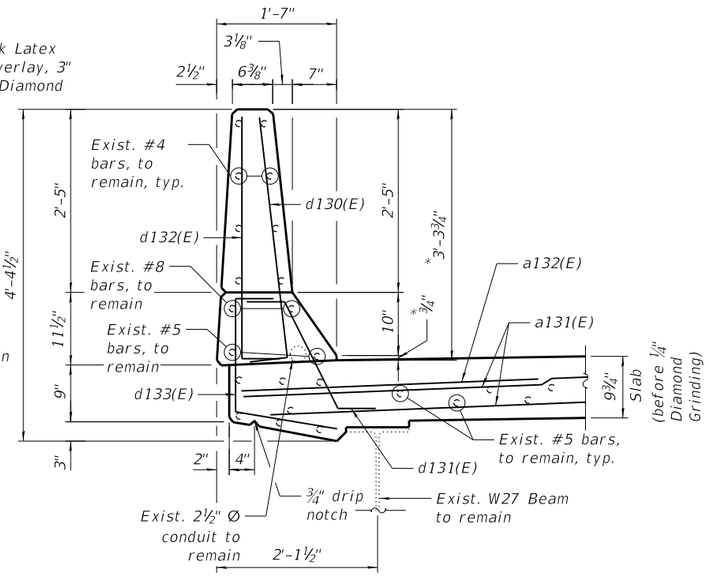
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a130(E)	18	#5	27'-10"	——
a131(E)	18	#5	27'-1"	——
a132(E)	12	#6	6'-0"	——
a133(E)	3	#5	27'-10"	——
a134(E)	3	#5	11'-0"	——
d130(E)	12	#5	3'-8"	L
d131(E)	12	#5	2'-7"	⌐
d132(E)	12	#4	3'-8"	L
d133(E)	12	#4	3'-5"	⌐
s130(E)	96	#5	2'-10"	⌐
Concrete Removal		Cu Yd	9.0	
Concrete Superstructure		Cu Yd	10.0	
Protective Coat		Sq Yd	27	
Reinforcement Bars, Epoxy Coated		Pound	1,680	

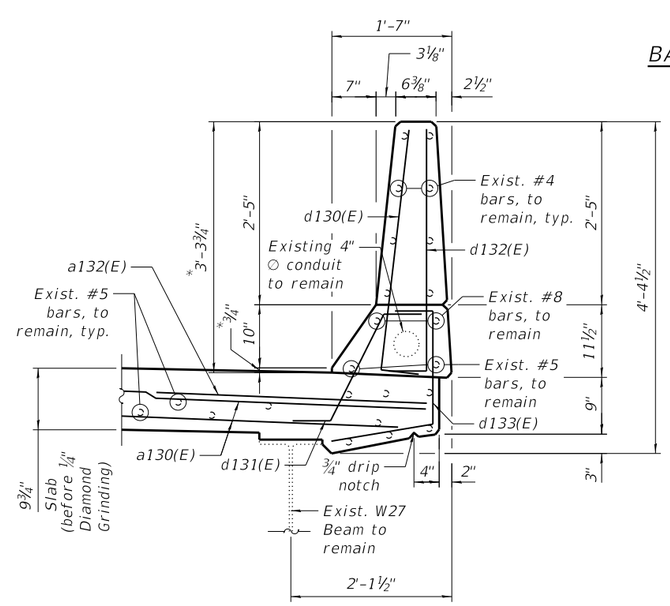




SECTION AA–AA

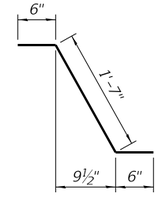


SECTION BB–BB

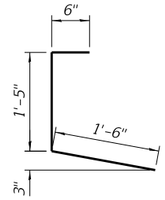


SECTION CC–CC

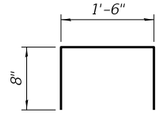
BAR d130(E) & d132(E)



BAR d131(E)



BAR d133(E)

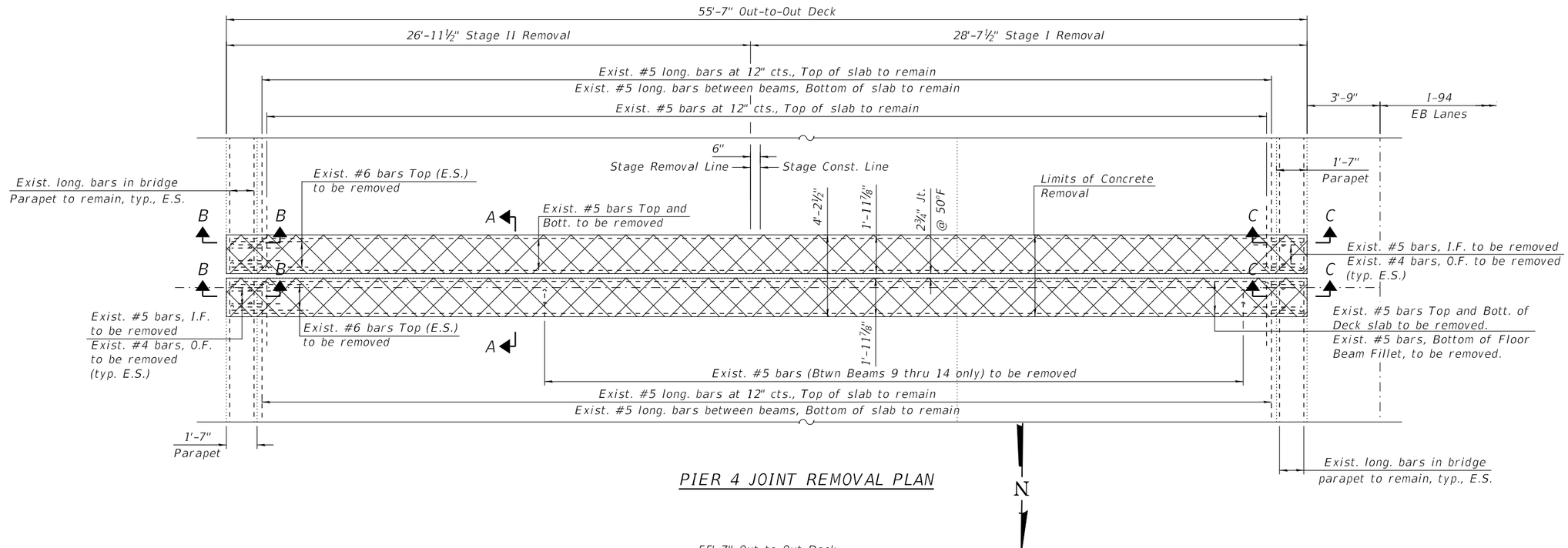


BAR s130(E)

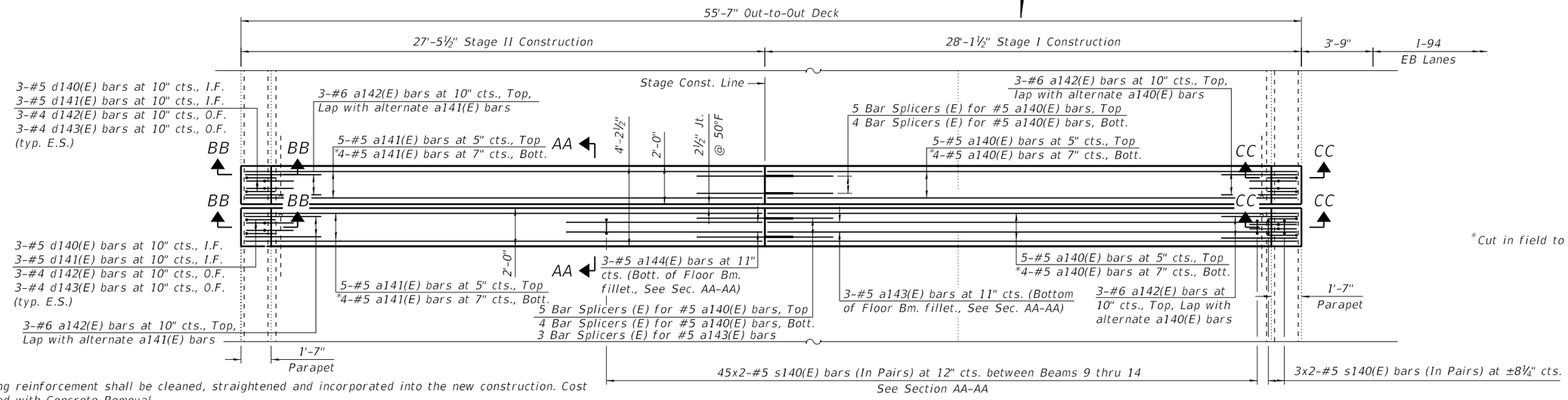
NOTE:

1. For legend and additional Notes, see Sheet S01-20.

*Before ¼" Diamond Grinding



PIER 4 JOINT REMOVAL PLAN



*Cut in field to fit

PIER 4 JOINT RECONSTRUCTION PLAN

NOTES:

1. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
2. Any reinforcement bars that are damaged during Concrete Removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".
3. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S01-27.
4. For Sections A-A, B-B, C-C, AA-AA, BB-BB, and CC-CC, Bar Diagrams and Bill of Material, see Sheet S01-23.
5. For preformed joint strip seal details, see Sheet S01-27.
6. For bar splicer assembly details, see Sheet S01-38.
7. Removal and disposal of existing expansion joint shall be included with Concrete Removal.

LEGEND

	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
E.S.	Each Side
E.E.	Each End

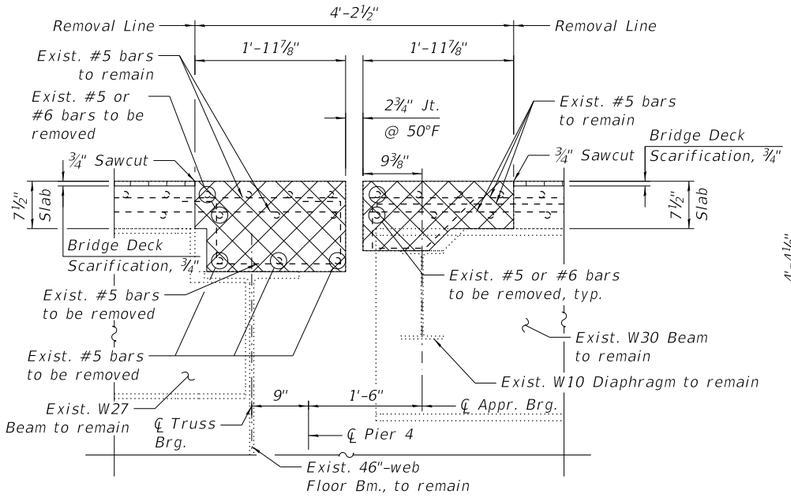
HBM ENGINEERING GROUP, LLC

USER NAME = lisa.buntin		DESIGNED - LR		REVISED -	
		DRAWN - LR		REVISED -	
PLOT SCALE = 6:0.0000 ':' / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 3/13/2025		DATE - 12/9/2024		REVISED -	

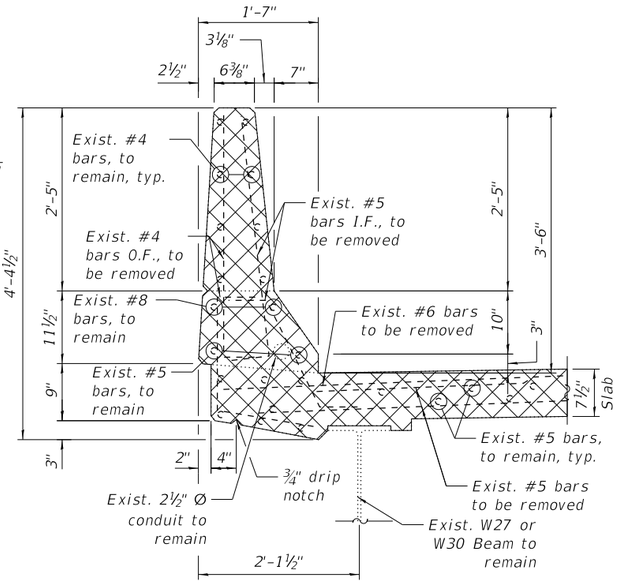
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 JOINT REMOVAL & REPLACEMENT (SHT. 1 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-22 OF S01-38 SHEETS

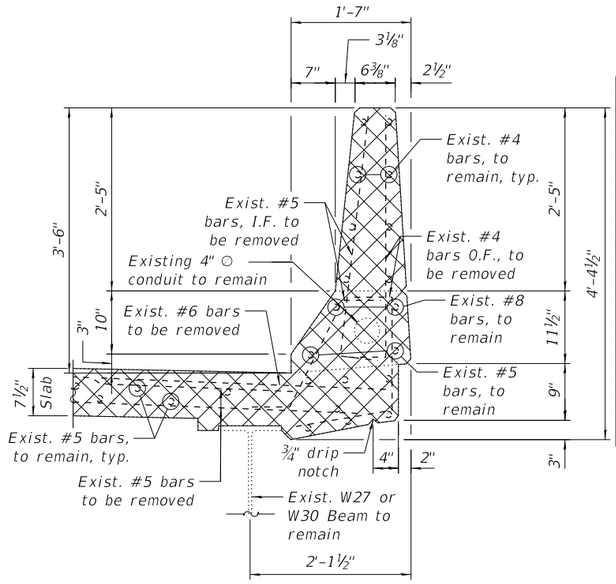
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	480
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



SECTION A-A



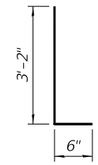
SECTION B-B



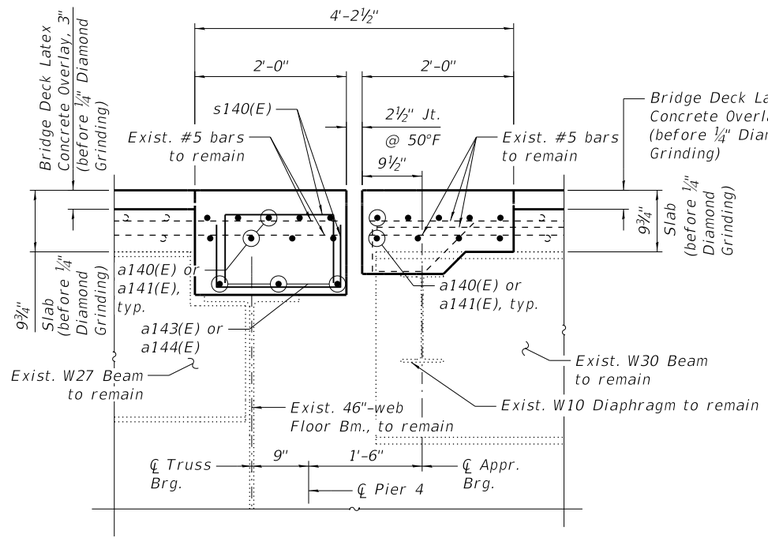
SECTION C-C

BILL OF MATERIAL

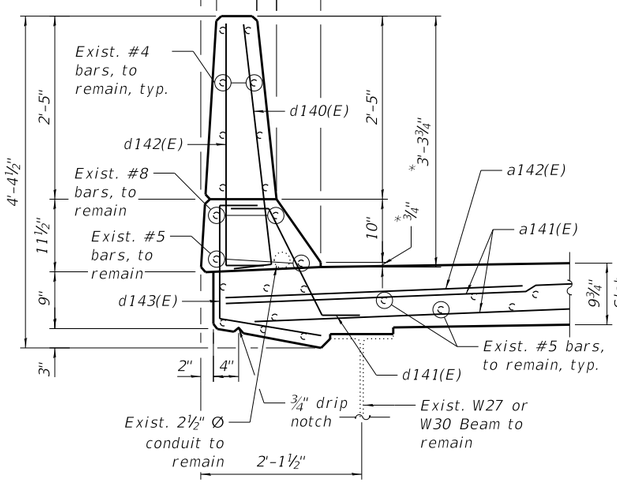
Bar	No.	Size	Length	Shape
a140(E)	18	#5	27'-10"	—
a141(E)	18	#5	27'-1"	—
a142(E)	12	#6	6'-0"	—
a143(E)	3	#5	27'-10"	—
a144(E)	3	#5	11'-0"	—
d140(E)	12	#5	3'-8"	L
d141(E)	12	#5	2'-7"	⌐
d142(E)	12	#4	3'-8"	L
d143(E)	12	#4	3'-5"	⊏
s140(E)	96	#5	3'-2"	⊓
Concrete Removal		Cu Yd	9	
Concrete Superstructure		Cu Yd	10.0	
Protective Coat		Sq Yd	27	
Reinforcement Bars, Epoxy Coated		Pound	1,720	



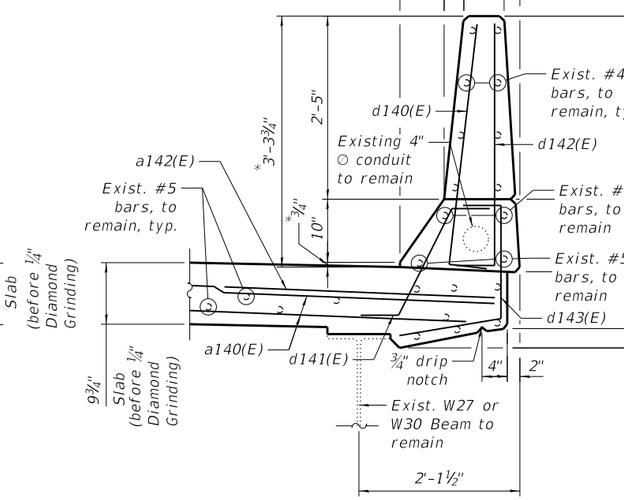
BAR d140(E) & d142(E)



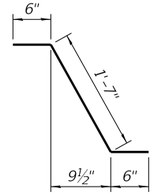
SECTION AA-AA



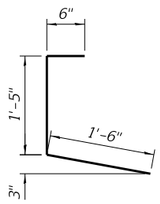
SECTION BB-BB



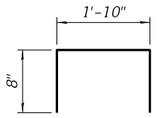
SECTION CC-CC



BAR d141(E)



BAR d143(E)



BAR s140(E)

*Before ¼" Diamond Grinding

NOTE:

1. For legend and additional Notes, see Sheet S01-22.

HBM ENGINEERING GROUP, LLC

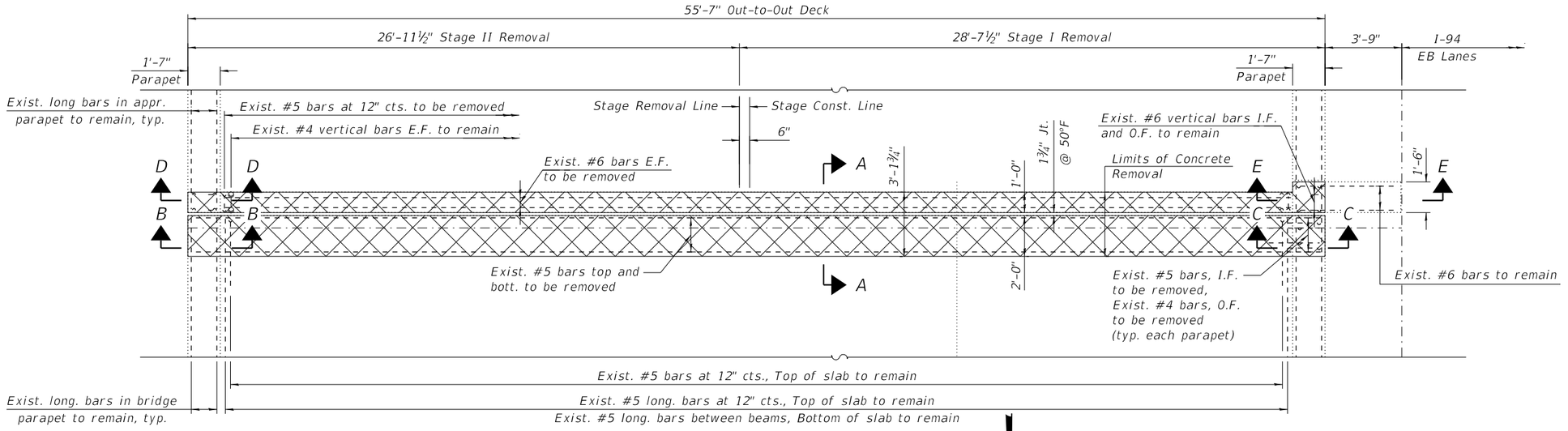
USER NAME = hbmepw11ics01$		DESIGNED - LR		REVISED -	
		DRAWN - LR		REVISED -	
PLOT SCALE = 2:0.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 JOINT REMOVAL & REPLACEMENT (SHT. 2 OF 2)
STRUCTURE NO. 016-0159
SHEET S01-23 OF S01-38 SHEETS

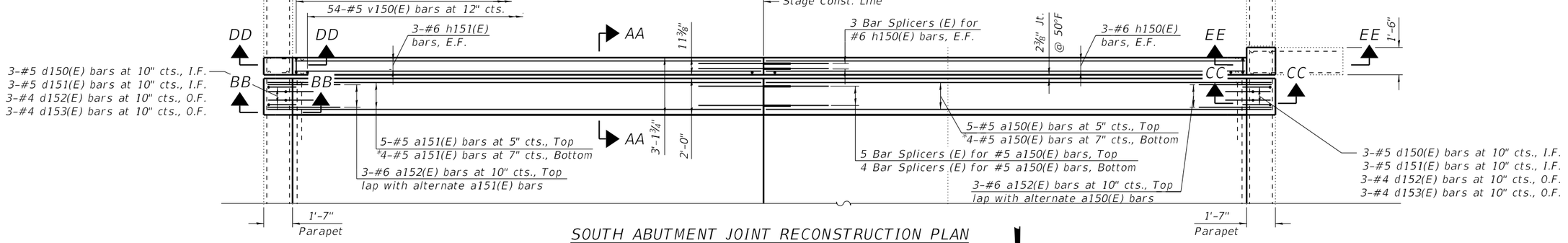
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	481
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_56\0160159-62K53-23-WB-Pier4Joint(Sht. 2 of 2).dgn
12/6/2024 9:52:15 PM



SOUTH ABUTMENT JOINT REMOVAL PLAN

N



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

N

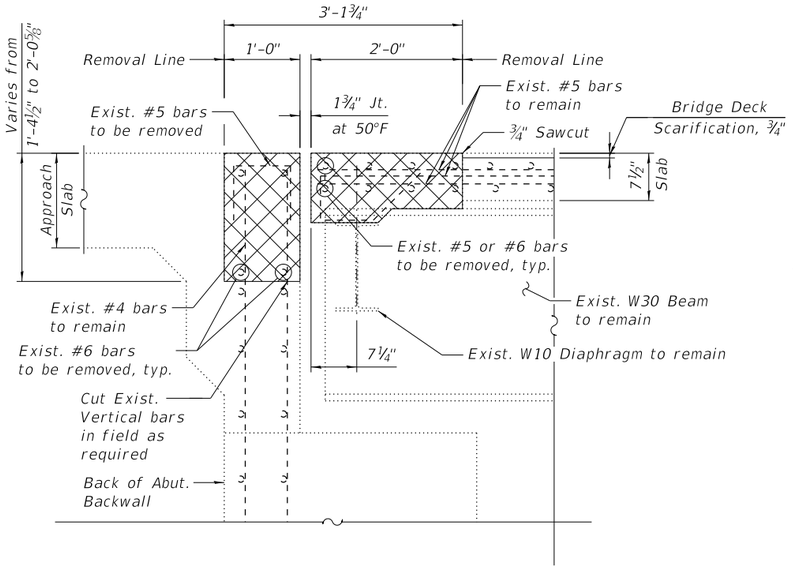
*Cut in field to fit

NOTES:

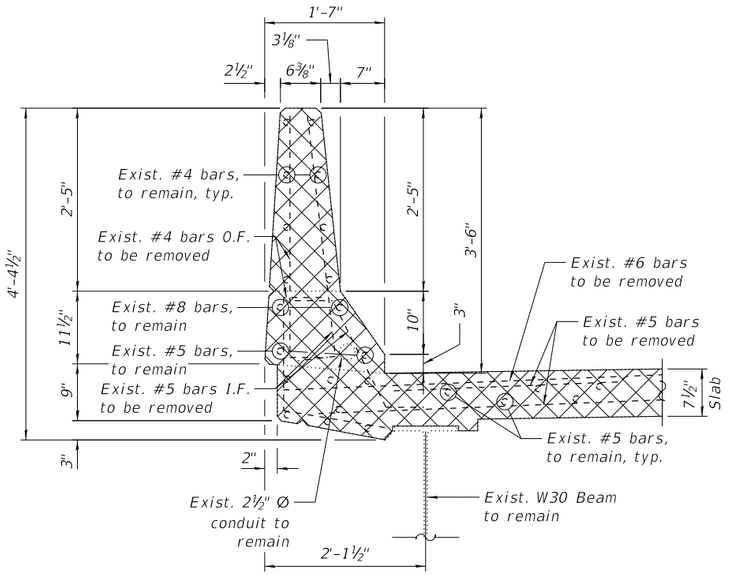
1. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
2. Any reinforcement bars that are damaged during Concrete Removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".
3. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S01-27.
4. For Sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S01-25.
5. For Sections D-D, E-E, DD-DD and EE-EE, Bar Diagrams, and Bill of Material, see Sheet S01-26.
6. For preformed joint strip seal details, see Sheet S01-27.
7. For bar splicer assembly details, see Sheet S01-38.
8. Removal and disposal of existing expansion joint shall be included with Concrete Removal.
9. Epoxy grout v150(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

LEGEND

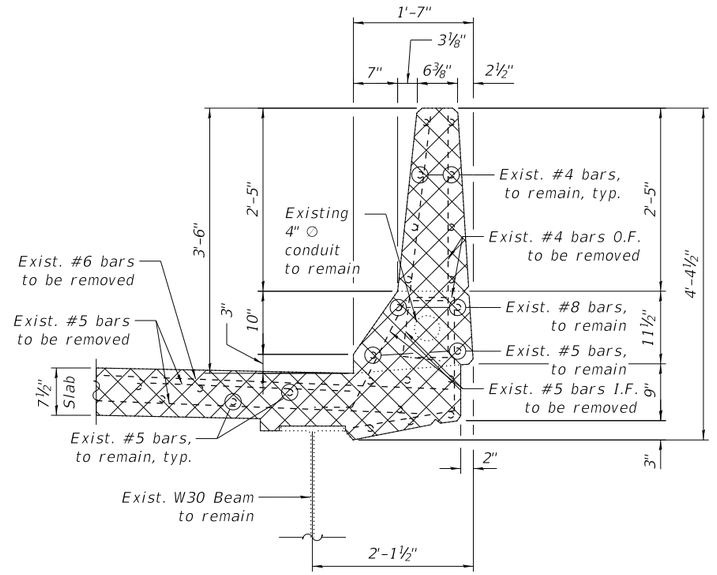
	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face



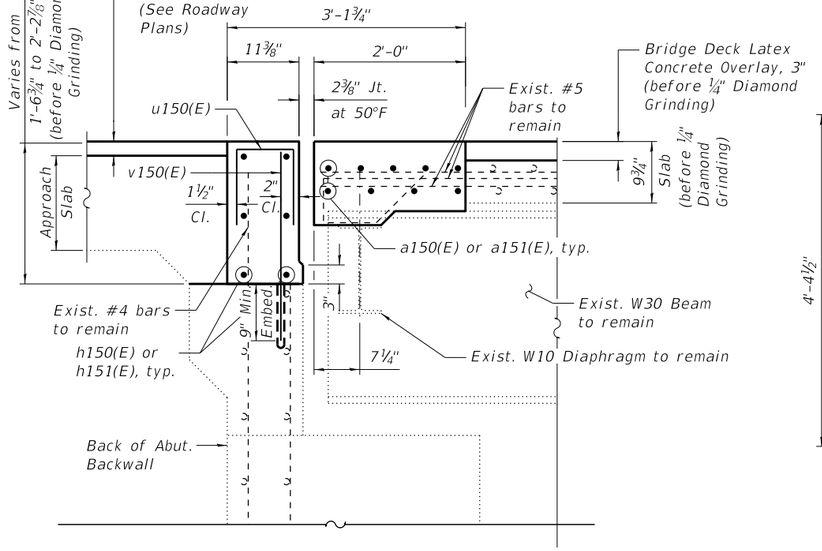
SECTION A-A



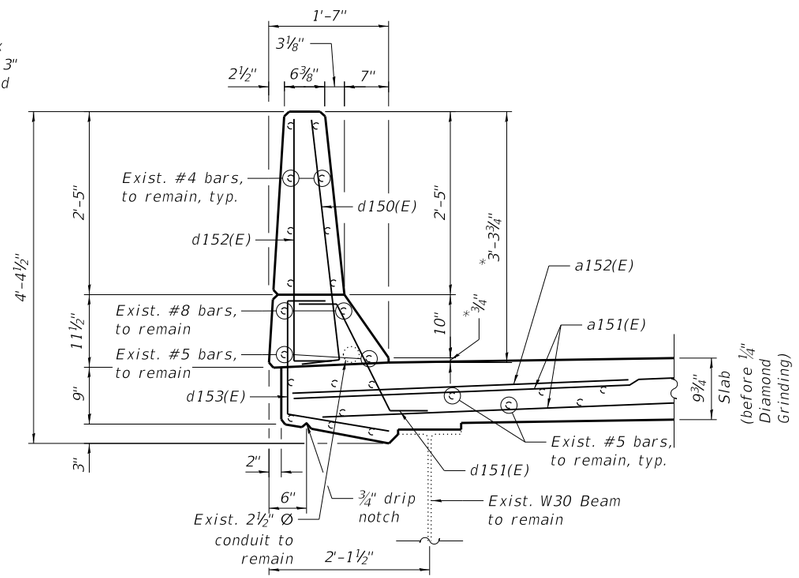
SECTION B-B



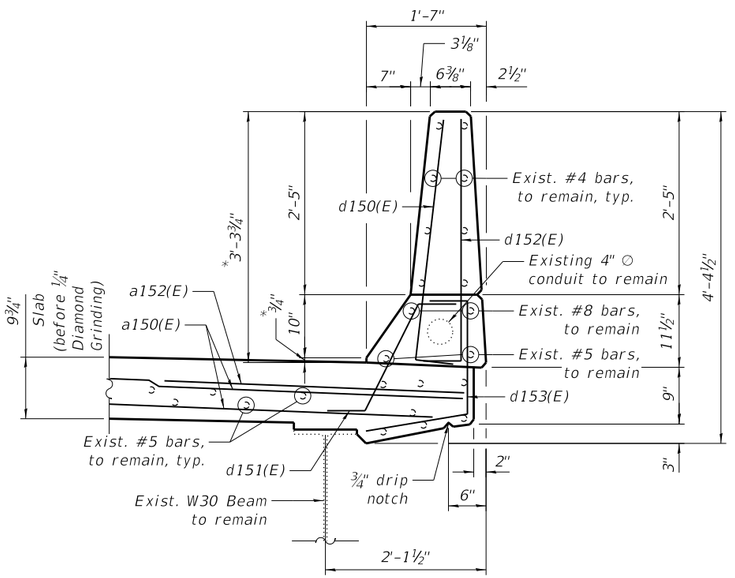
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

*Before ¼" Diamond Grinding

NOTES:

1. For Legend and additional Notes, see Sheet S01-24.
2. For Bar Diagrams and Bill of Material, see Sheet S01-26.
3. It shall be the Contractor's responsibility to provide adequate temporary support for existing conduits during joint reconstruction. Cost included with Concrete Superstructure.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_51\0160159-62K53-25-WB-SouthAbutJoint(Sht. 2 of 3).dgn
12/6/2024 9:51:35 PM

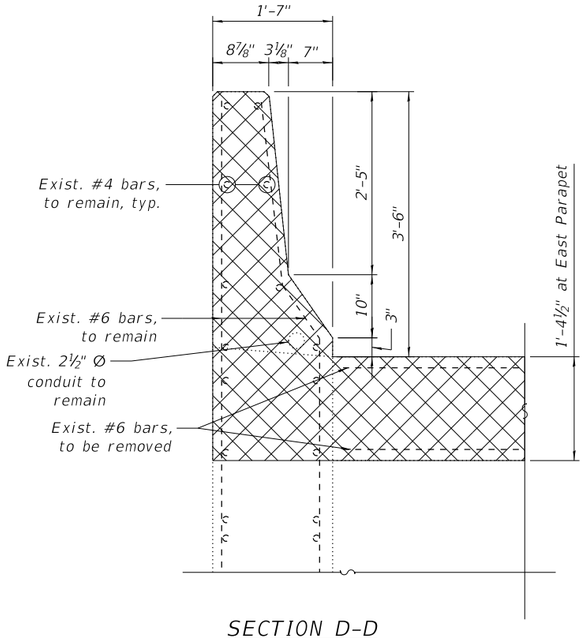
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - HMI	REVISED -
	DRAWN - HMI	REVISED -
PLOT SCALE = 2:0.0000 '=' / in.	CHECKED - MI, JJS	REVISED -
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

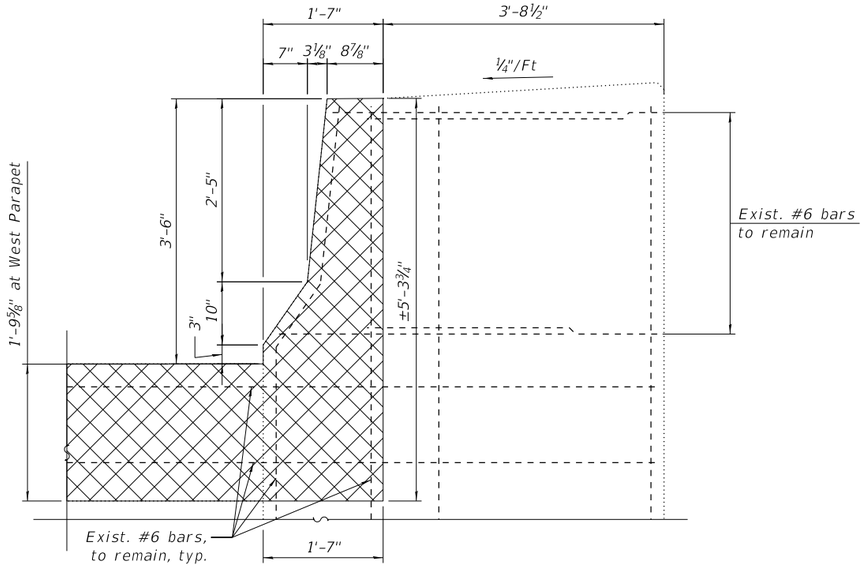
S. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 2 OF 3)
STRUCTURE NO. 016-0159
SHEET S01-25 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	483
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		



SECTION D-D

(Reinforcement in abutment hatch block is not shown for clarity)

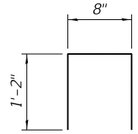


SECTION E-E

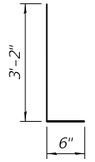
(Reinforcement in abutment hatch block is not shown for clarity)

BILL OF MATERIAL

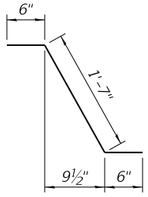
Bar	No.	Size	Length	Shape
a150(E)	9	#5	27'-10"	
a151(E)	9	#5	27'-1"	
a152(E)	6	#6	6'-0"	
d150(E)	6	#5	3'-8"	
d151(E)	6	#5	2'-7"	
d152(E)	6	#4	3'-8"	
d153(E)	6	#4	3'-5"	
h150(E)	6	#6	26'-3"	
h151(E)	6	#6	25'-9"	
u150(E)	54	#5	3'-0"	
v150(E)	54	#5	2'-1"	
Concrete Removal			Cu Yd	8.0
Concrete Superstructure			Cu Yd	5.0
Protective Coat			Sq Yd	20
Reinforcement Bars, Epoxy Coated			Pound	1,400



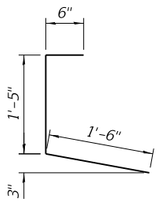
BAR u150(E)



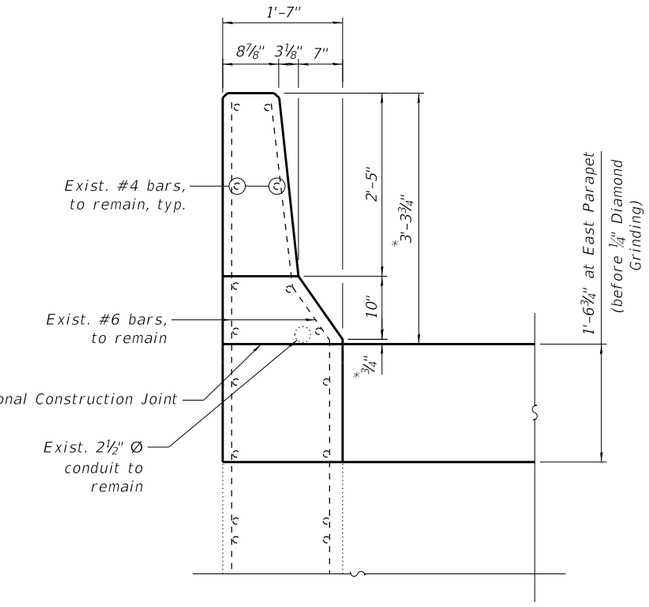
BAR d150(E) & d152(E)



BAR d151(E)

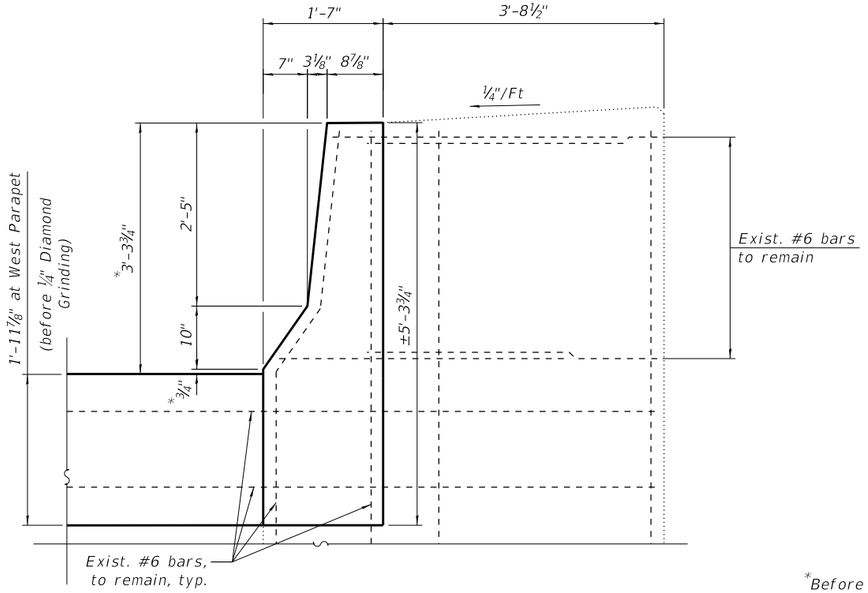


BAR d153(E)



SECTION DD-DD

(Reinforcement in abutment hatch block is not shown for clarity)



SECTION EE-EE

(Reinforcement in abutment hatch block is not shown for clarity)

*Before ¼" Diamond Grinding

NOTE:

1. For legend and additional Notes, see Sheet S01-24.

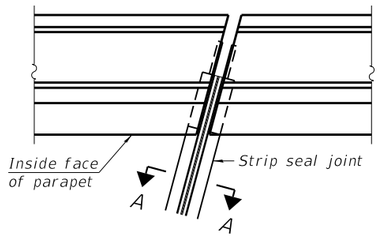
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - HMI		REVISED -	
		DRAWN - HMI		REVISED -	
PLOT SCALE = 2:0.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

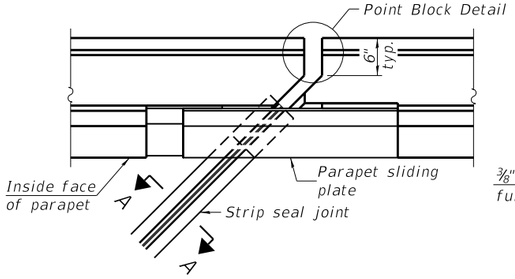
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 3 OF 3)
STRUCTURE NO. 016-0159
SHEET S01-26 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	484
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

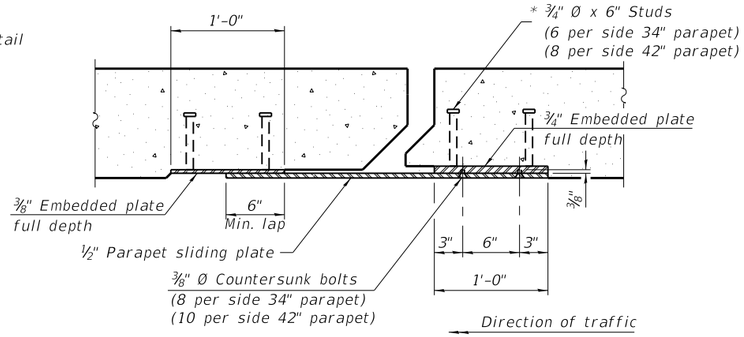


FOR SKEWS ≤ 30°

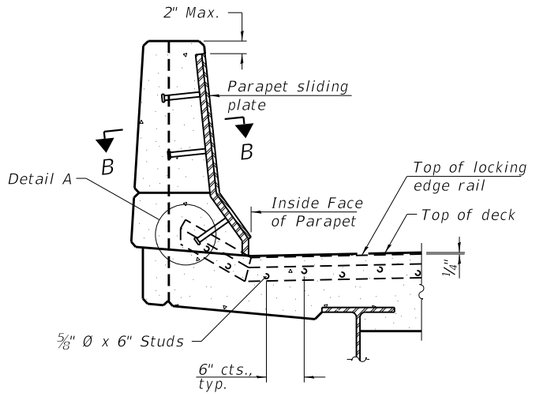


FOR SKEWS > 30°

PLAN AT PARAPET

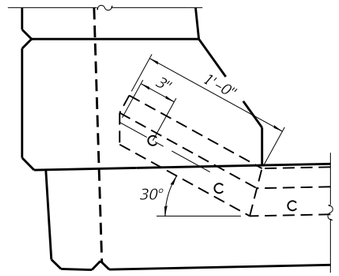


SECTION B-B

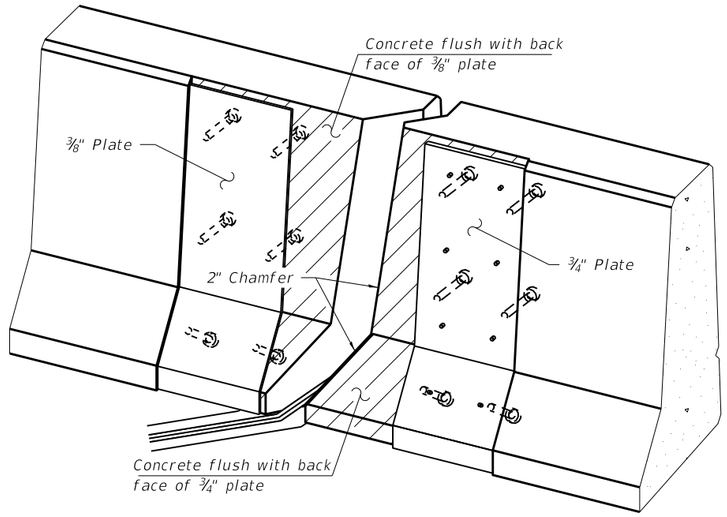


ELEVATION AT PARAPET

(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)



DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

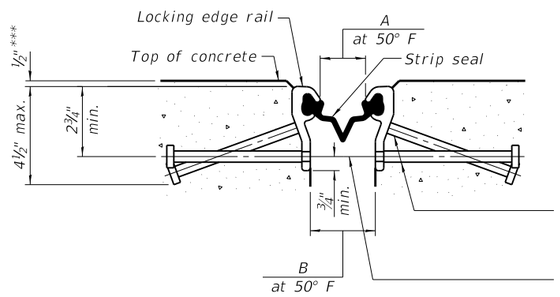
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

Cost of parapet sliding plates, embedded plates, anchorage studs, and expansion anchors included with Preformed Joint Strip Seal.

34" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.



SHOWING ROLLED RAIL JOINT

Joint	A	B	C
North Abut.	1½"	2⅜"	3"
Span 4 P.P. 3 Jt.	1⅝"	2½"	3⅛"
Span 4 P.P. 6 Jt.	1⅜"	2½"	3⅛"
Span 4 P.P. 3' Jt.	1⅜"	2½"	3⅛"
Pier 4	1⅜"	2½"	3⅛"
South Abut.	1½"	2⅜"	3"

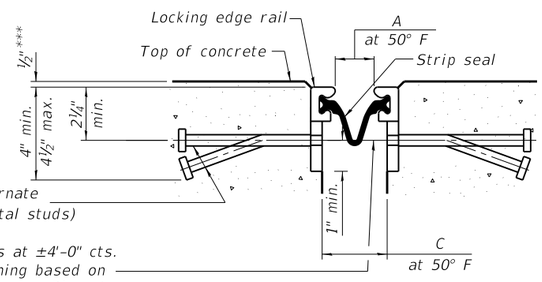
* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

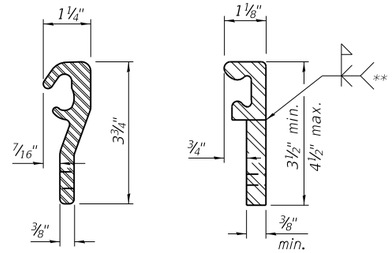
SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

*** Before ¼" Diamond Grinding



SHOWING WELDED RAIL JOINT



ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Preformed Joint Strip Seal	Foot	330

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_div\2386\14426_2\10160159-62KS3-27A-WB-PreformedJTSeal.dgn
12/6/2024 9:48:21 PM

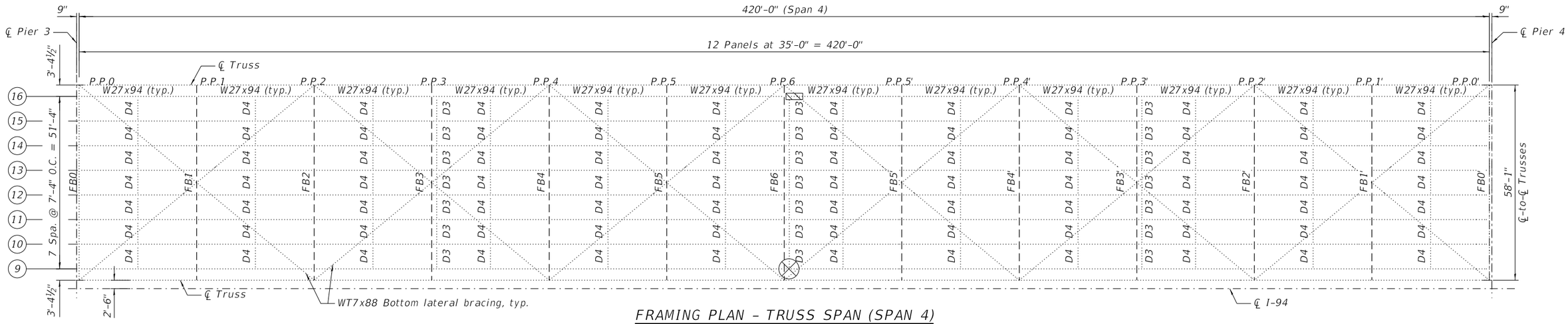
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR	REVISED -	
		DRAWN - LR	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.		CHECKED - MI, JJS	REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0159
SHEET S01-27 OF S01-38 SHEETS

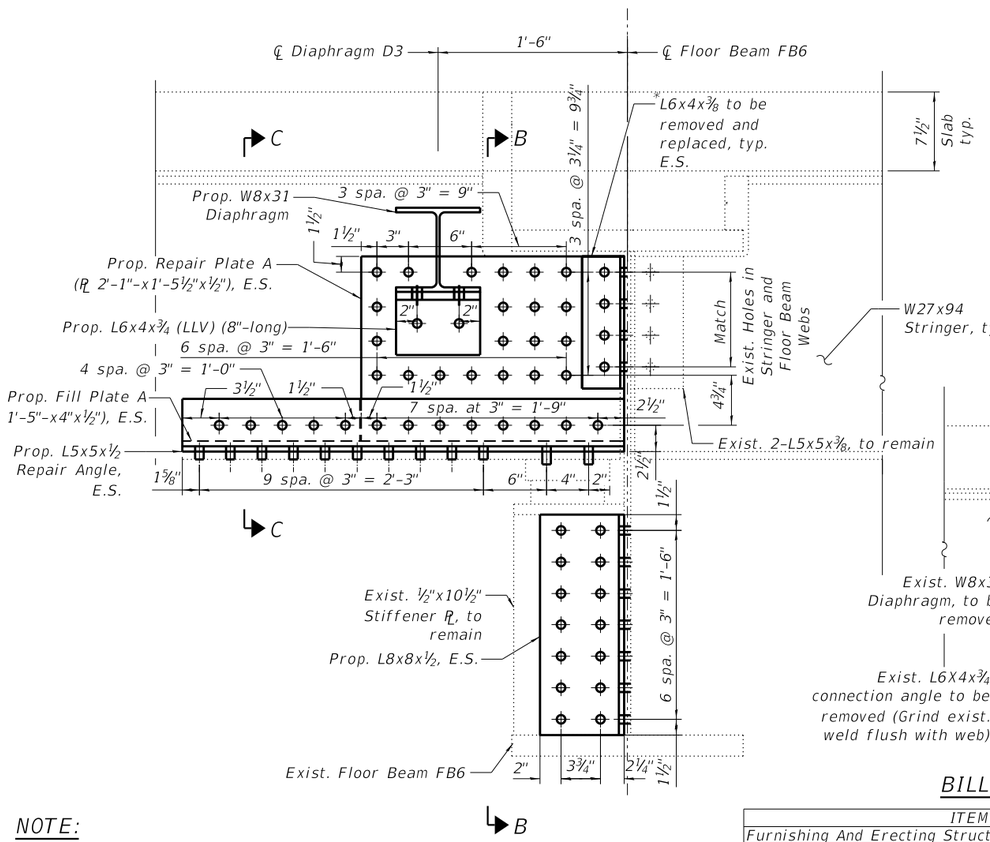
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	485
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



FRAMING PLAN – TRUSS SPAN (SPAN 4)

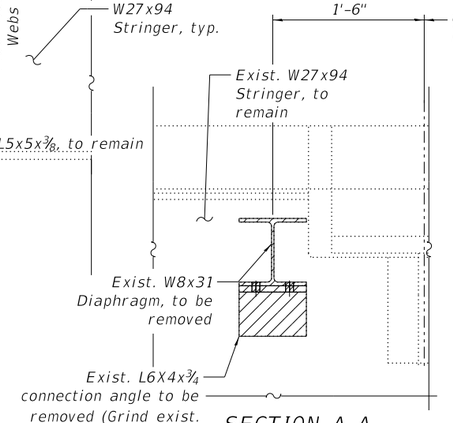
Diaphragm D3 = W8x31
Diaphragm D4 = W10x26

N



STRINGER 9 STEEL REPAIRS

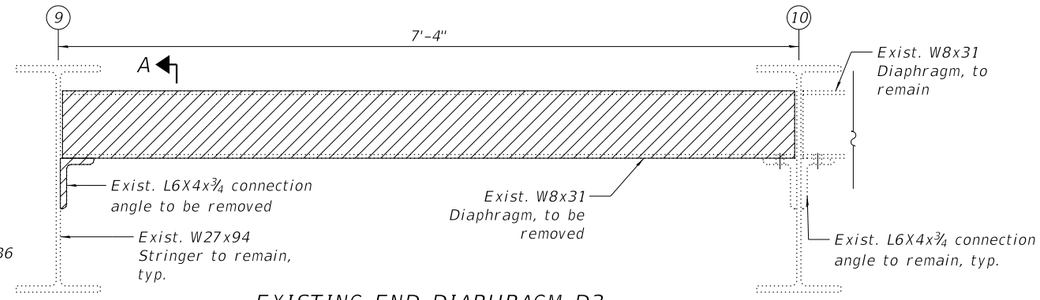
(At Floor Beam FB6)



SECTION A-A

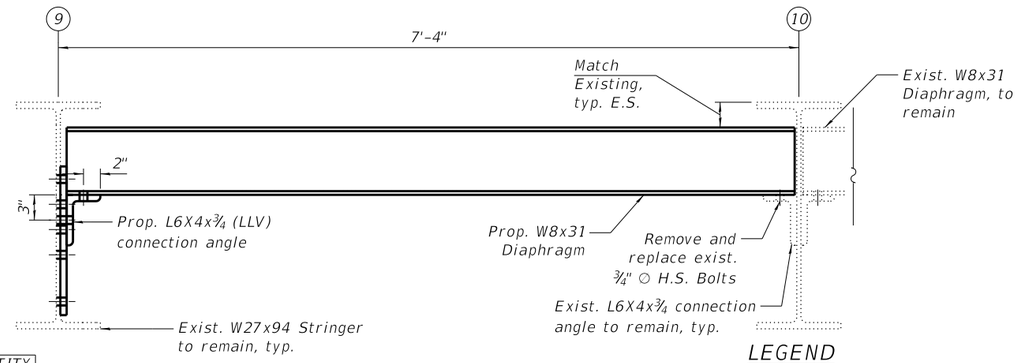
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing And Erecting Structural Steel	Pound	9300
Cleaning And Painting Structural Steel, Location 2	L Sum	1
Structural Steel Removal	Pound	280
Structural Steel Repair	Pound	410
Containment And Disposal Of Non-Lead Paint Cleaning Residues No. 2	L Sum	1



EXISTING END DIAPHRAGM D3

(Floor Beam not shown for clarity)



PROPOSED END DIAPHRAGM D3

(Floor Beam not shown for clarity)

*Use existing holes in Floor Beam FB6 and Stringer 9 as template

NOTE:

1. For Sections B-B, C-C, Stringer 16 Partial Elevation at Floor Beam FB6 and additional notes, see Sheet S01-29.

LEGEND

- Structural Steel Repair
- Structural Steel Removal
- Cleaning and Painting Structural Steel

HBM ENGINEERING GROUP, LLC

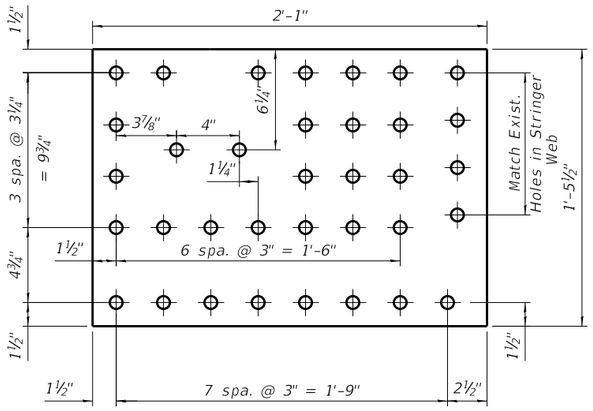
USER NAME = hbmepw11ics01$	DESIGNED - EN	REVISED -
	DRAWN - EN	REVISED -
PLOT SCALE = 30:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -
PLOT DATE = 1/21/2025	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARTIAL FRAMING PLAN AND STRUCTURAL STEEL REPAIRS
STRUCTURE NO. 016-0159

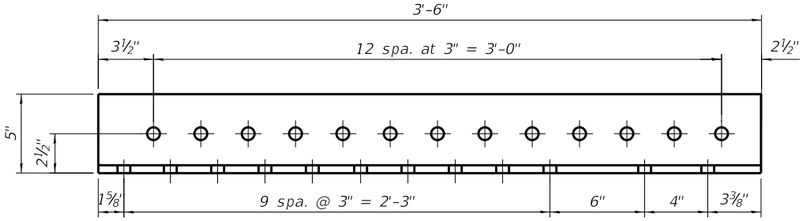
SHEET S01-28 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	486
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		



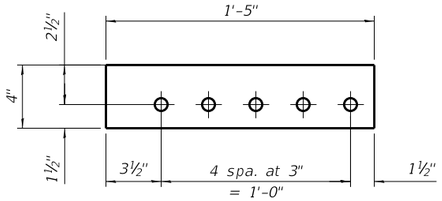
REPAIR PLATE A

(PL 2'-1"-x1'-5½"x½")



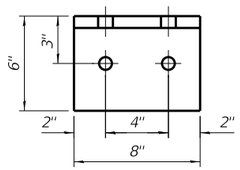
REPAIR ANGLE 1

(L5x5x½) (CVN)



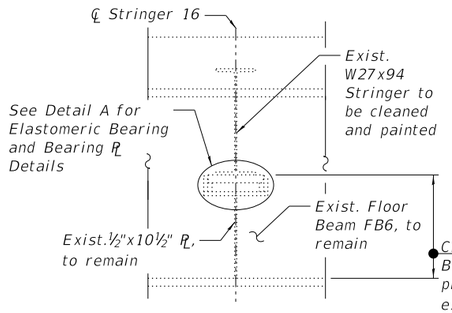
FILL PLATE A

(PL 1'-5"-x4"x½")

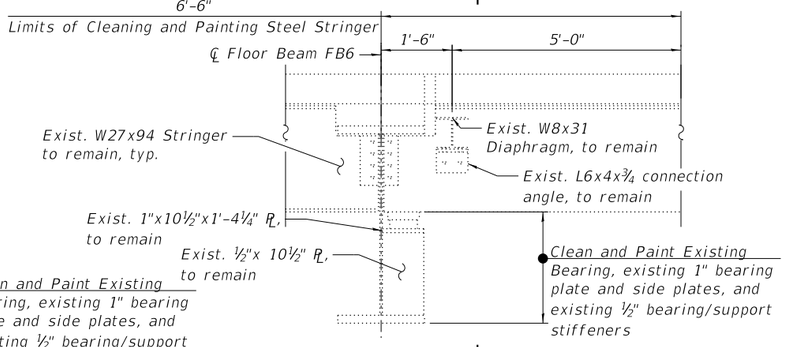


DIAPHRAGM CONNECTION ANGLE

(L6x4x¾)

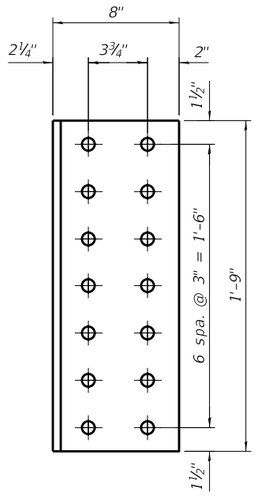


SECTION D-D



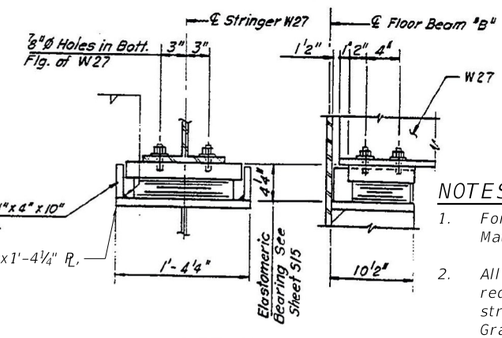
PARTIAL ELEVATION - STRINGER 16

(At Floor Beam FB6)
(Looking East)



REPAIR ANGLE 2

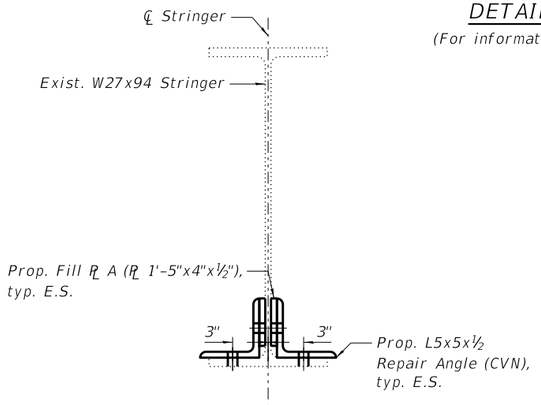
(L8x8x½)



DETAIL A

(For information only)

SECTION B-B



SECTION C-C

NOTES:

1. For Span 4 Framing Plan, Diaphragm Removal/Replacement, Stringer 9 Steel Repair, and Bill of Material, see Sheet S01-28.
2. All proposed beam end repair plates and bottom flange repair angles shall conform to the requirements of AASHTO M270 Grade 50. All proposed diaphragms, diaphragm connection angles, stringer connection angles, and fill plates shall conform to the requirements of AASHTO M270 Grade 36.
3. Diaphragm connection holes shall be $^{15}/_{16}$" Ø for ¾" Ø bolts. Two hardened washers shall be required at all diaphragm connections and all oversized holes.
4. Existing diaphragm, diaphragm connection angle and stringer connection angle removal shall be paid for as Structural Steel Removal.
5. All proposed beam end repair plates, bottom flange repair angles, fill plates, and associated bolts and fasteners shall be paid for as Structural Steel Repair. All proposed diaphragms, connection angles, and associated bolts and fasteners shall be paid for as Furnishing and Erecting Structural Steel.
6. Load carrying components designated "CVN" shall conform to the Impact Testing Requirements, Zone 2.
7. After cleaning of the Stringer 16 end, bearing and support/bearing stiffeners has been completed, and prior to the start of paint operations, the Resident Engineer shall contact IDOT District 1 Bridge Maintenance and request field measurements be performed for recently cleaned areas with section loss. Upon completion of field measurements, painting may only begin after approval is received from IDOT District 1 Bridge Maintenance.
8. For additional Paint Notes, see Sheet S01-02.
9. Existing steel bearing and cradle shall be cleaned and painted according to the Special Provision "Cleaning and Painting Existing Bearings".

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2650\1426_113\0160159-62KS3-27C-WB-StructuralSteelRepairDetails.dgn
1/24/2025 4:14:39 PM

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - EN	REVISED -	
	DRAWN - EN	REVISED -	
PLOT SCALE = 16:0.0000 ':" / in.	CHECKED - MI, JJS	REVISED -	
PLOT DATE = 1/24/2025	DATE - 12/9/2024	REVISED -	

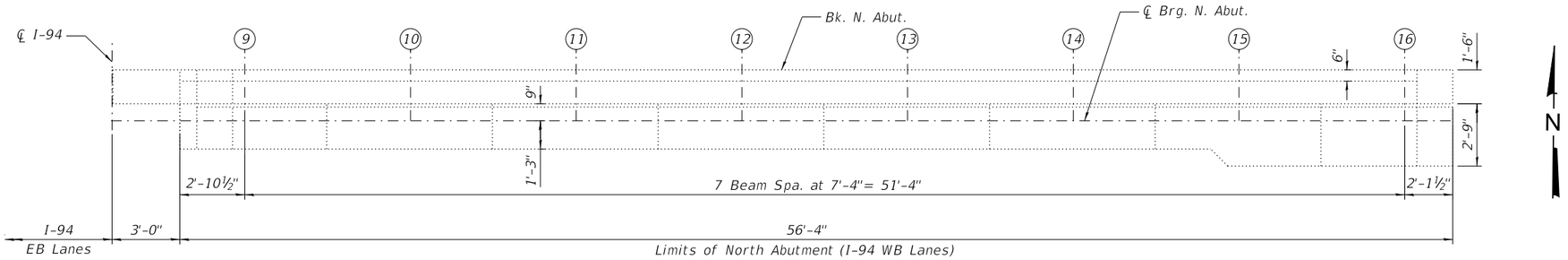
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS
STRUCTURE NO. 016-0159
SHEET S01-29 OF S01-38 SHEETS

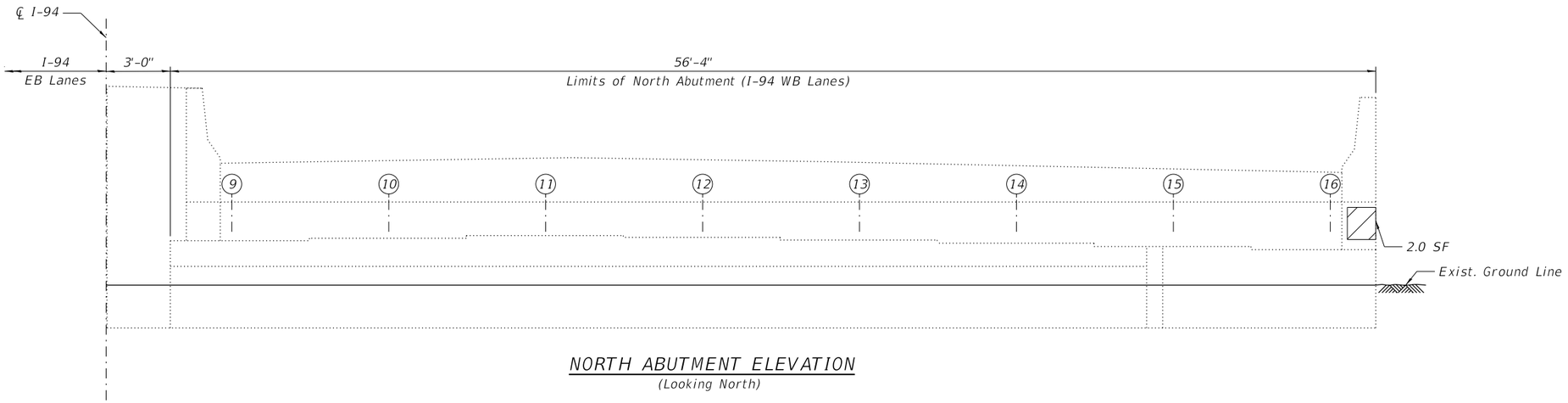
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	487
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	232
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	2

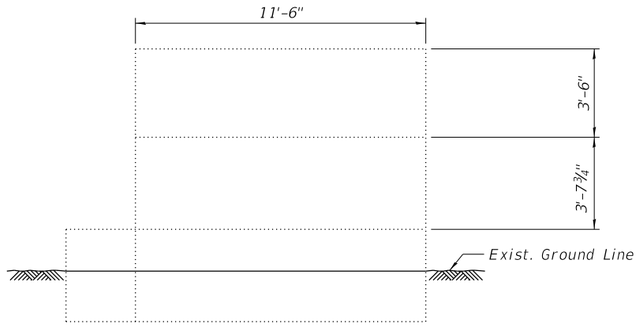


NORTH ABUTMENT PLAN



NORTH ABUTMENT ELEVATION

(Looking North)



NORTHEAST WING WALL ELEVATION

(Looking West)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

2. Concrete Sealer is to be applied to the abutment seats and the bottom 2 ft. of the abutment backwall.

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

SF Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\14426_120160159-62KS3-28-WB-NAbut.dgn
12/6/2024 9:49:47 PM

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - LR, AWD	REVISED -	
	DRAWN - LR, AWD	REVISED -	
PLOT SCALE = 6:0.0000 ':' / in.	CHECKED - MI, JJS	REVISED -	
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -	

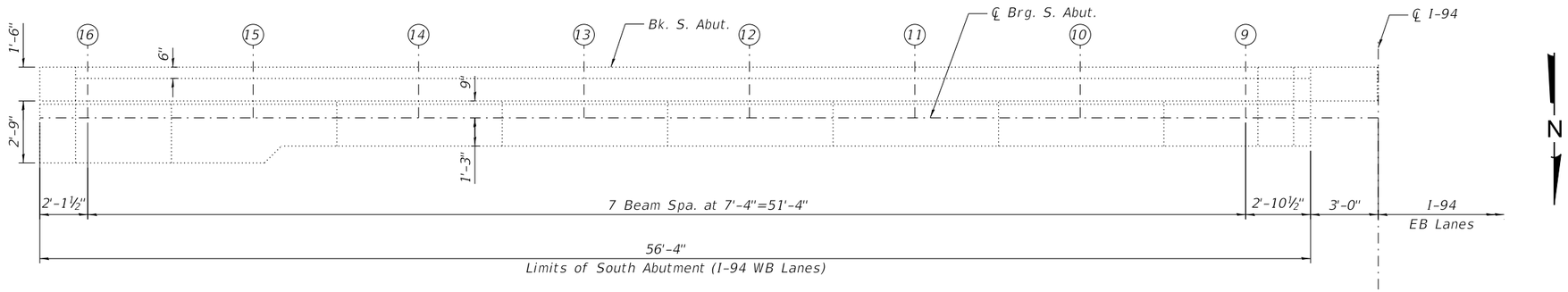
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-30 OF S01-38 SHEETS

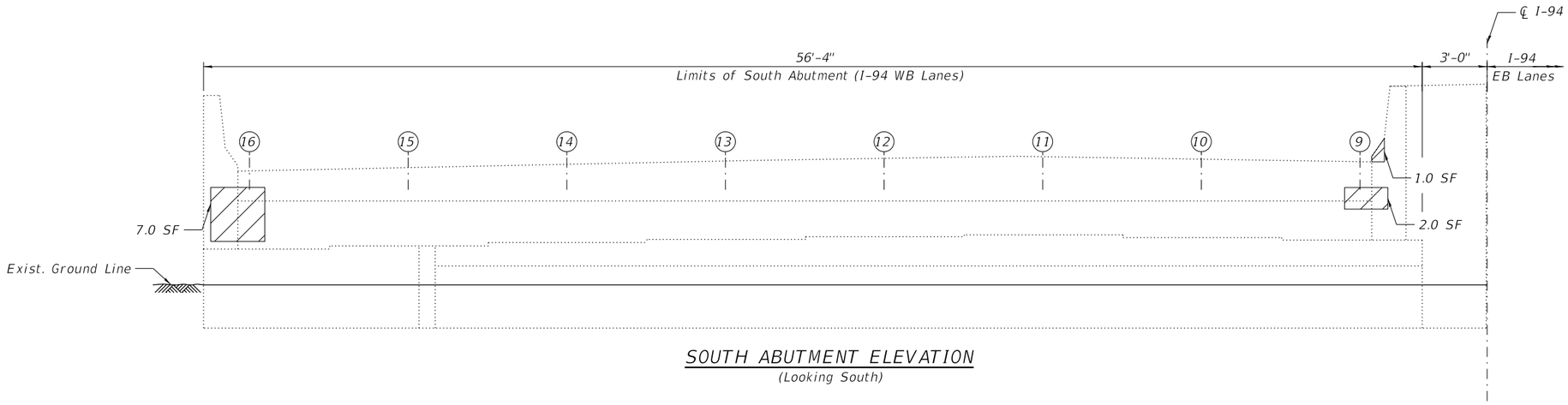
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	488
		CONTRACT NO.		62W87
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	232
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	10

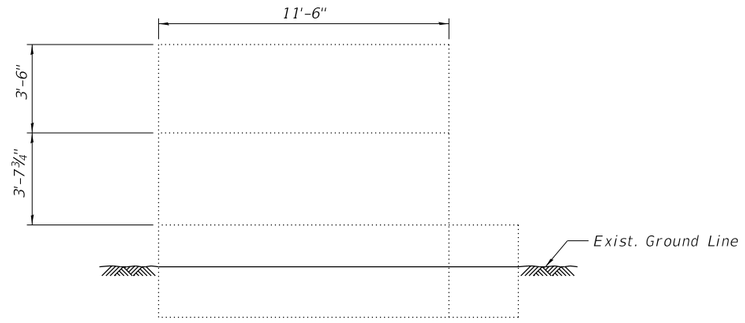


SOUTH ABUTMENT PLAN



SOUTH ABUTMENT ELEVATION

(Looking South)



SOUTHEAST WING WALL ELEVATION

(Looking West)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

2. Concrete Sealer is to be applied to the abutment seats and the bottom 2 ft. of the abutment backwall.

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

SF Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_13\0160159-62KS3-29-WB-SAbut.dgn
12/6/2024 9:50:09 PM

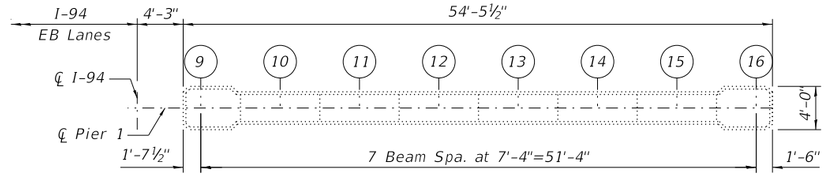
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 6;0.0000 ':' / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

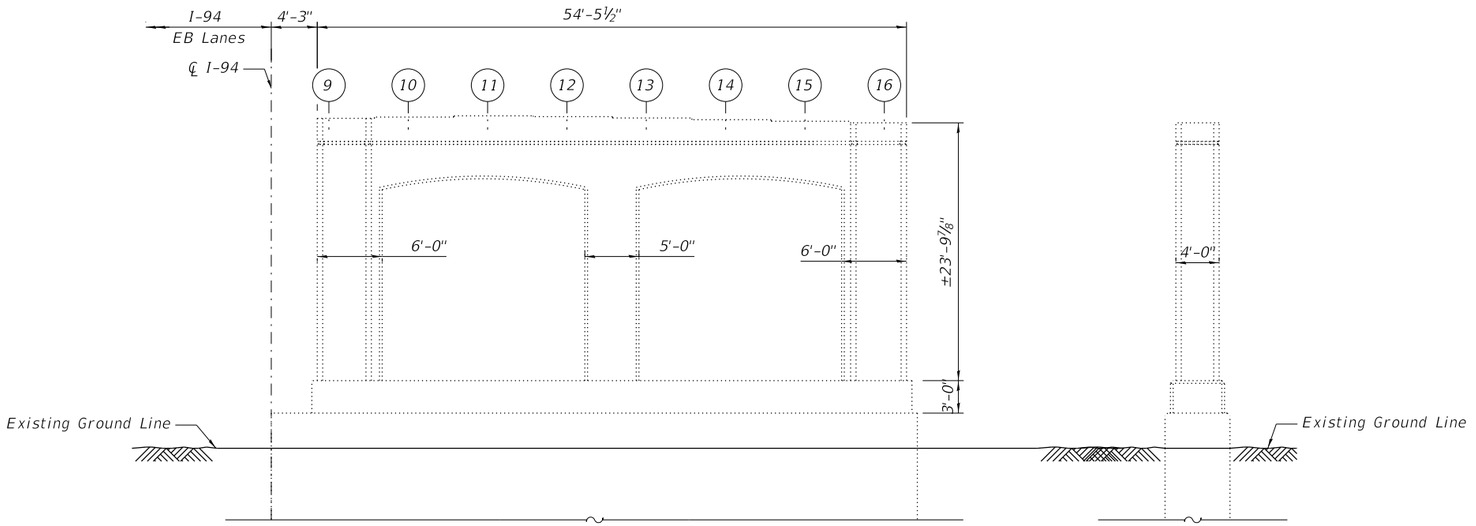
SOUTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-31 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	489
		CONTRACT NO.		62W87
	ILLINOIS FED. AID PROJECT			



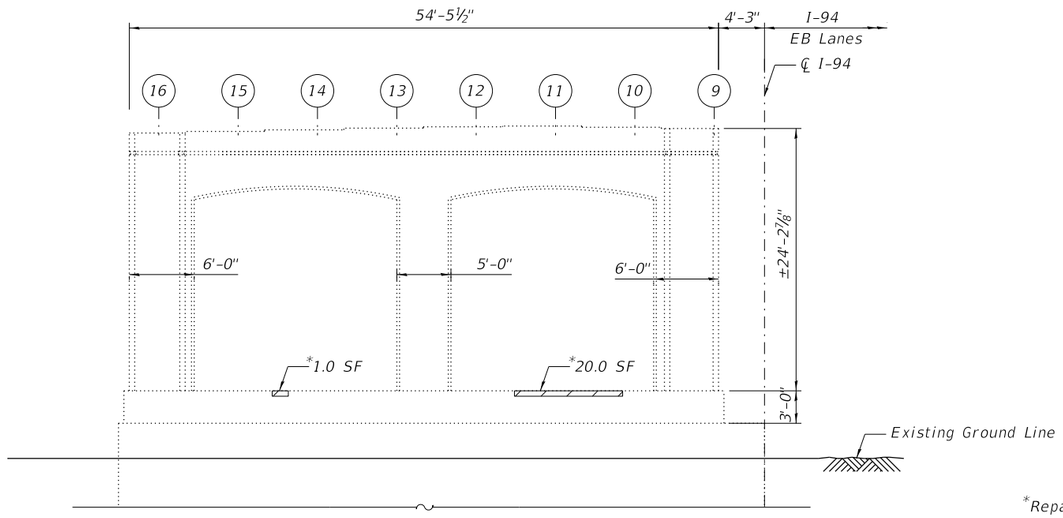
PIER 1 PLAN

N



PIER 1 ELEVATION
(Looking North)

END VIEW



PIER 1 ELEVATION
(Looking South)

*Repairs are on top face of crashwall

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	21

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. The Contractor is responsible to remove, support, and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal To or Less Than 5").

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

SF Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_3\0160159-62K53-30-WB-Pier1.dgn
12/6/2024 9:45:59 PM

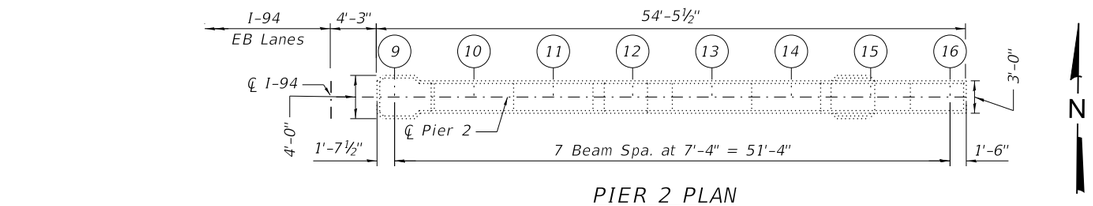
HBM ENGINEERING GROUP, LLC

USER NAME =	hbmepw11ics01$	DESIGNED -	LR, AWD	REVISED -	
		DRAWN -	LR, AWD	REVISED -	
PLOT SCALE =	14:0.0000 ':" / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	12/6/2024	DATE -	12/9/2024	REVISED -	

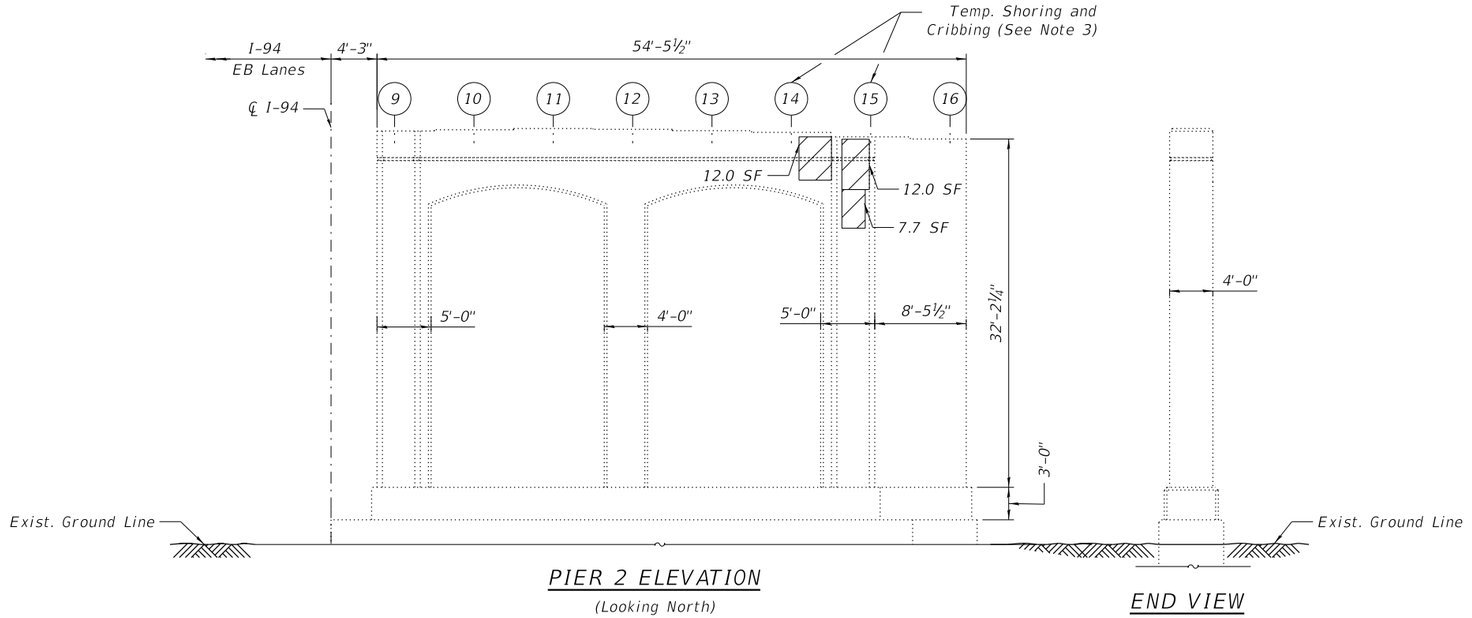
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-32 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	490
		CONTRACT NO.		62W87
		ILLINOIS	FED. AID PROJECT	



PIER 2 PLAN



PIER 2 ELEVATION

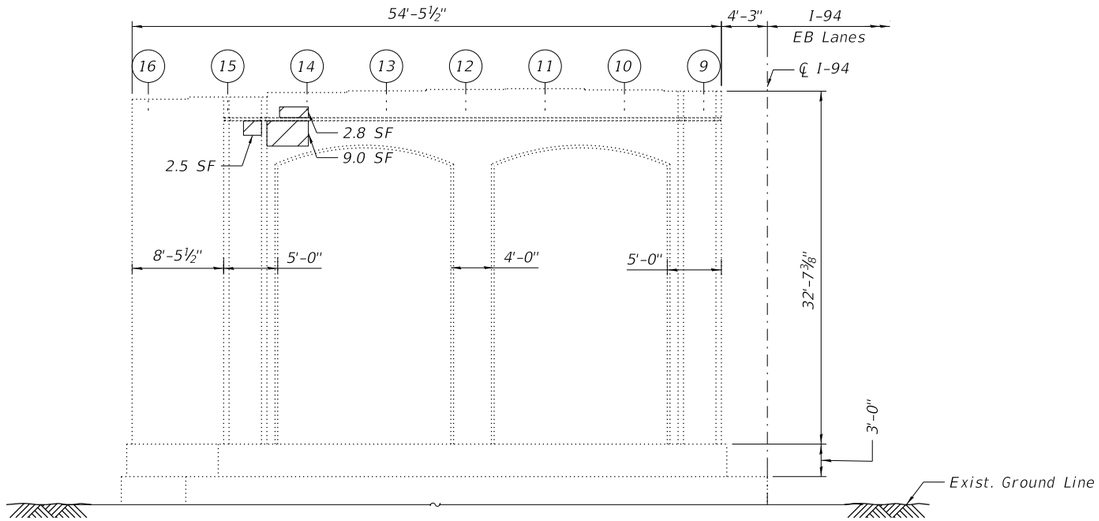
(Looking North)

END VIEW

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	46
Temporary Shoring And Cribbing	Each	2

SUMMARY OF REACTIONS		
		Pier 2, Beams 14 & 15
R DL	(k)	91.0
R LL	(k)	54.0
R IM	(k)	14.6
R Total	(k)	159.6



PIER 2 ELEVATION

(Looking South)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. The Contractor is responsible to remove, support, and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal To or Less Than 5").
3. Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

SF Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_7\01160159-62X53-31-WB-Pier2.dgn
12/6/2024 9:47:28 PM

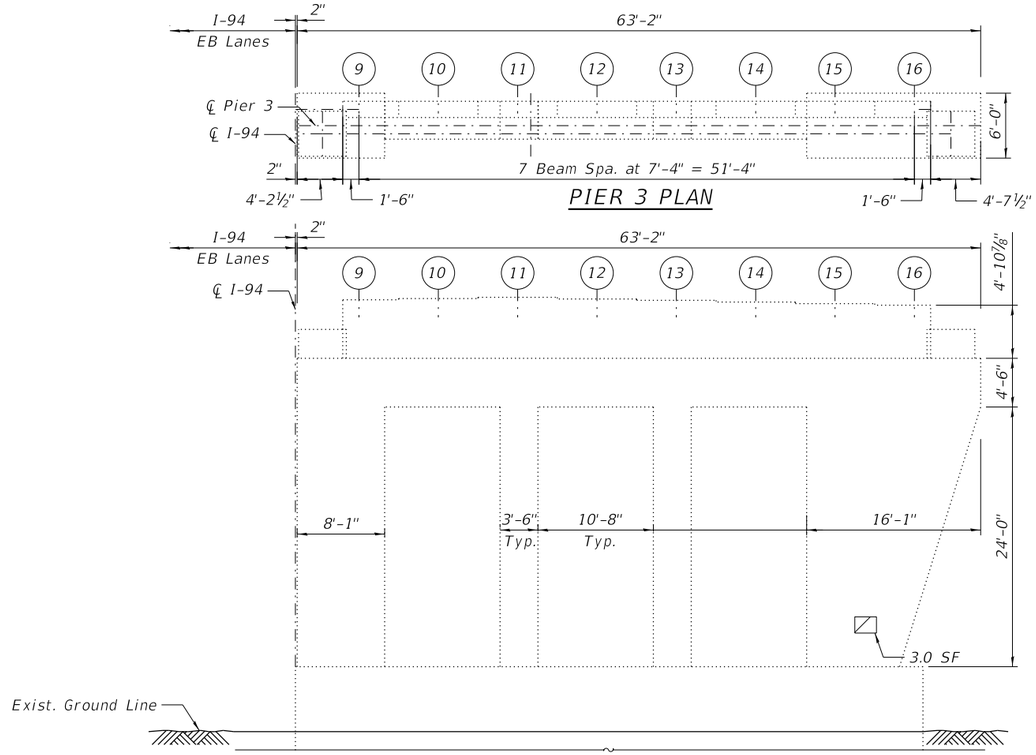
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 14:0.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-33 OF S01-38 SHEETS

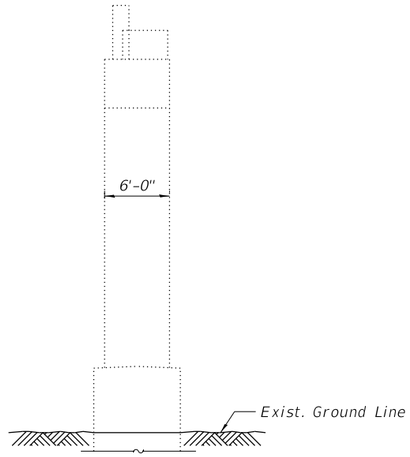
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	491
		CONTRACT NO.		62W87
	ILLINOIS FED. AID PROJECT			



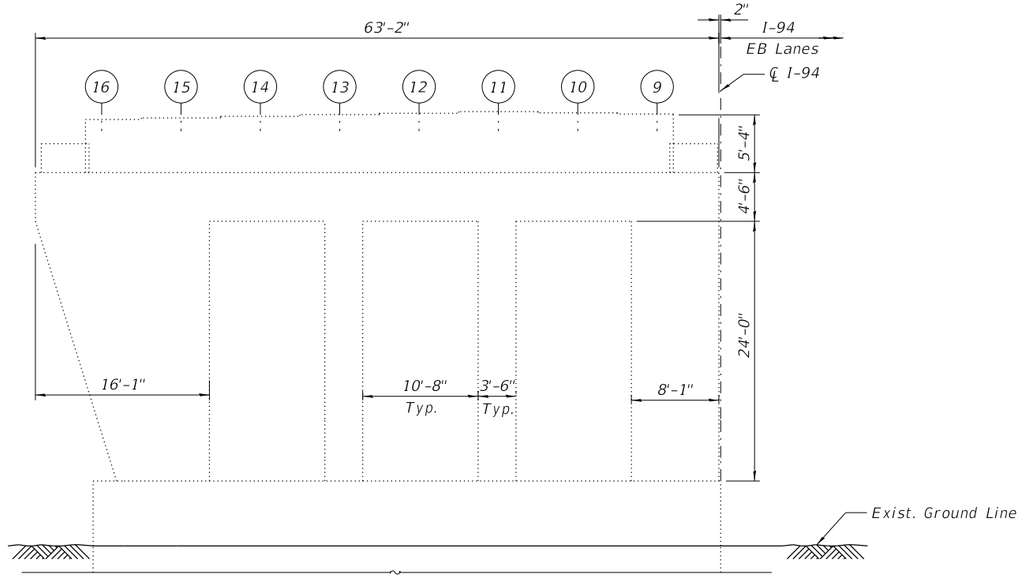
PIER 3 PLAN

PIER 3 ELEVATION
(Looking North)

N



END VIEW



PIER 3 ELEVATION
(Looking South)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	1,957
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	3

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. The Contractor is responsible to remove, support, and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal To or Less Than 5").
3. Concrete Sealer shall be applied to the beam seats and the faces of the pier cap.

LEGEND

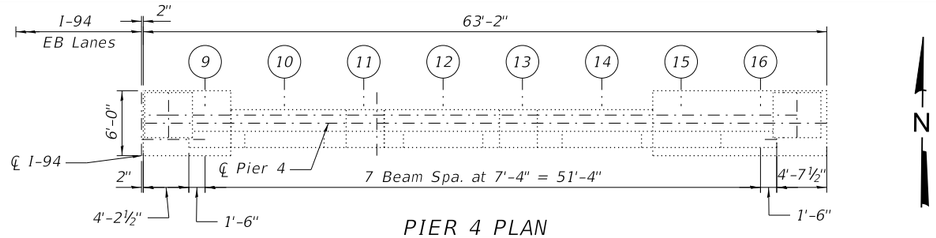
▨	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
SF	Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_510160159-62K53-32-WB-Pier3.dgn
12/6/2024 9:49:05 PM

HBM ENGINEERING GROUP, LLC

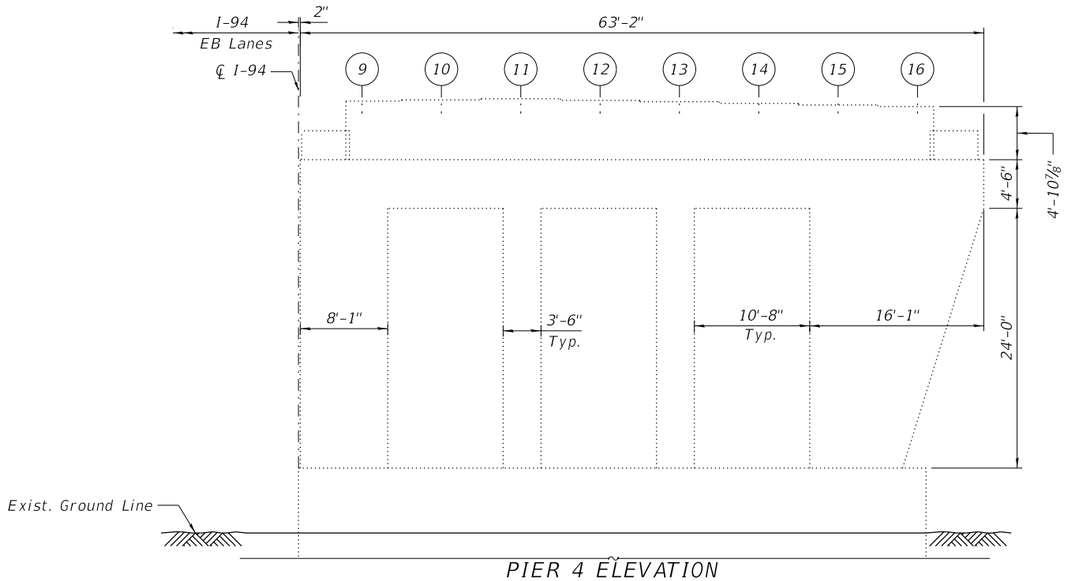
USER NAME = hbmepw11ics01$	DESIGNED - LR, AWD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 3 REPAIRS STRUCTURE NO. 016-0159	SHEET S01-34 OF S01-38 SHEETS
	DRAWN - LR, AWD	REVISED -			
PLOT SCALE = 14:0.0000 ':' / in.	CHECKED - MI, JJS	REVISED -			
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	492
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

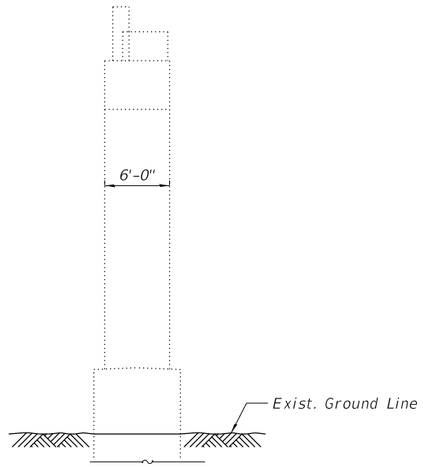


PIER 4 PLAN

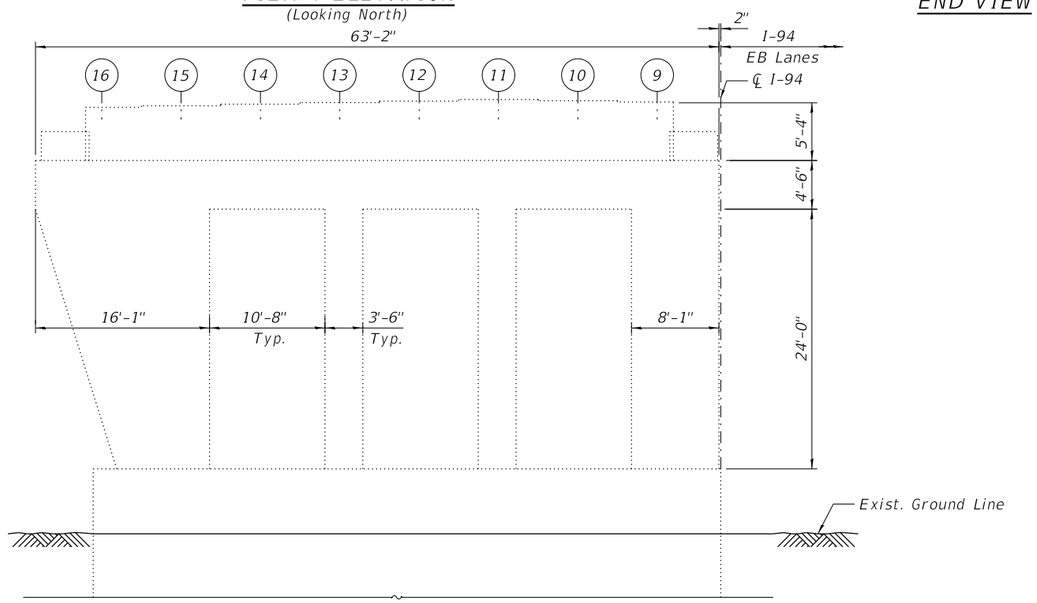
N



PIER 4 ELEVATION
(Looking North)



END VIEW



PIER 4 ELEVATION
(Looking South)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	1957

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. The Contractor is responsible to remove, support, and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal To or Less Than 5").
3. Concrete Sealer shall be applied to the beam seats and the faces of the pier cap.

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

SF Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\14426_6\0160159-62K53-33-WB-Pier4.dgn
12/6/2024 9:46:52 PM

HBM ENGINEERING GROUP, LLC

USER NAME =	hbmepw11ics01$	DESIGNED -	LR, AWD	REVISED -	
		DRAWN -	LR, AWD	REVISED -	
PLOT SCALE =	14:0.0000 ':" / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	12/6/2024	DATE -	12/9/2024	REVISED -	

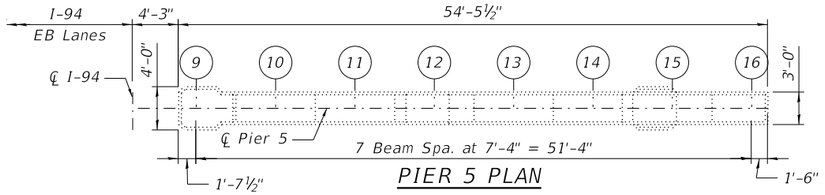
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-35 OF S01-38 SHEETS

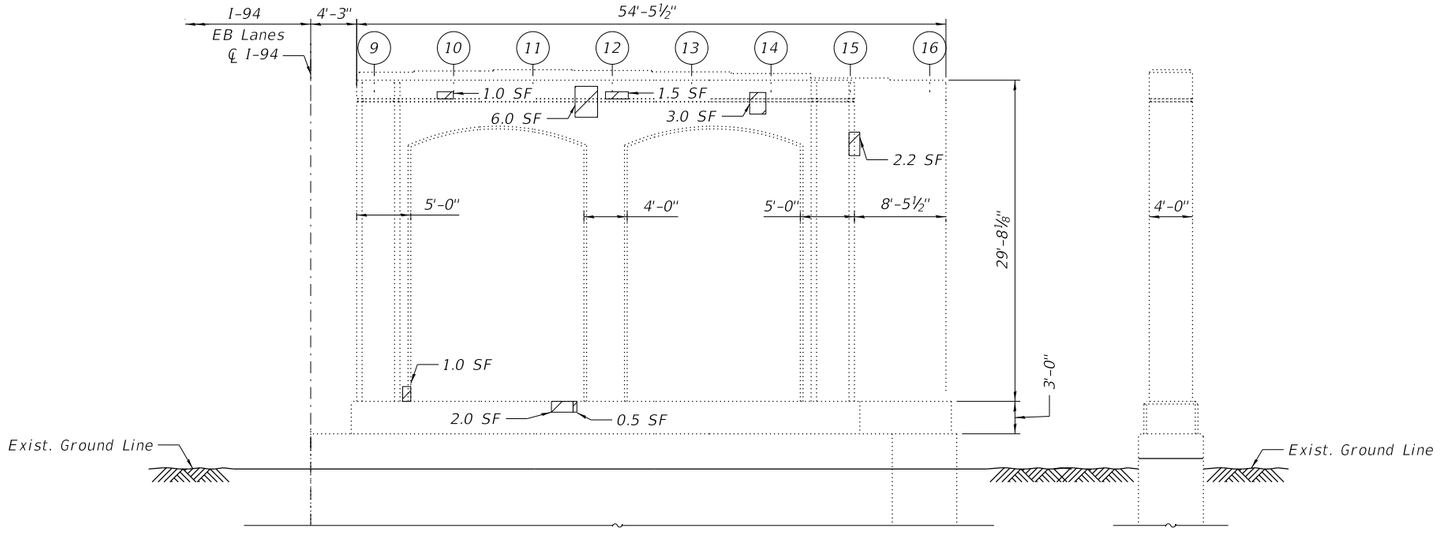
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	493
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	25

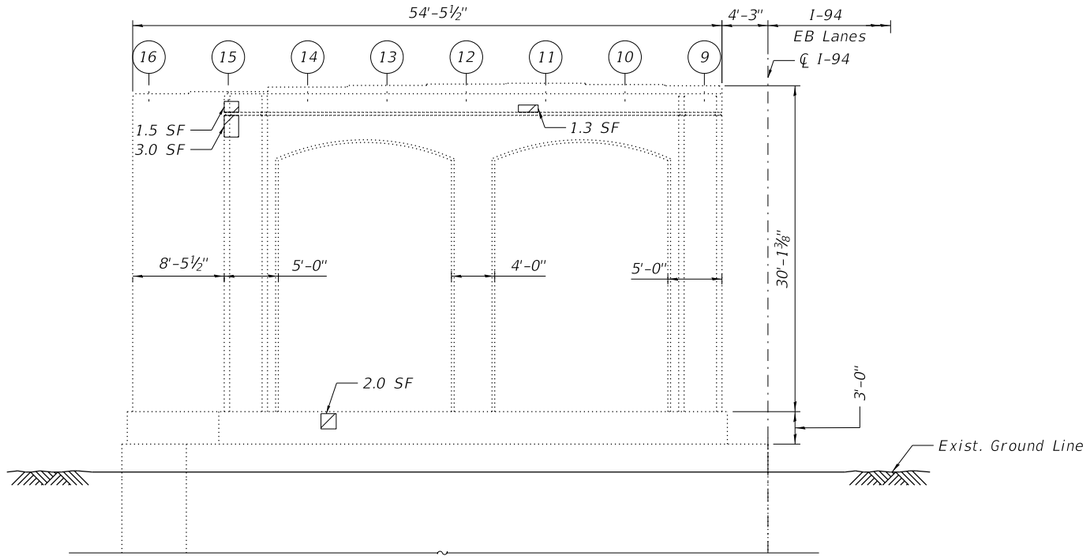


PIER 5 PLAN



PIER 5 ELEVATION
(Looking North)

END VIEW



PIER 5 ELEVATION
(Looking South)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

2. The Contractor is responsible to remove, support, and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal To or Less Than 5").

LEGEND

▨	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
SF	Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_8\0160159-62X53-34-WB-Pier5.dgn
12/6/2024 9:49:25 PM

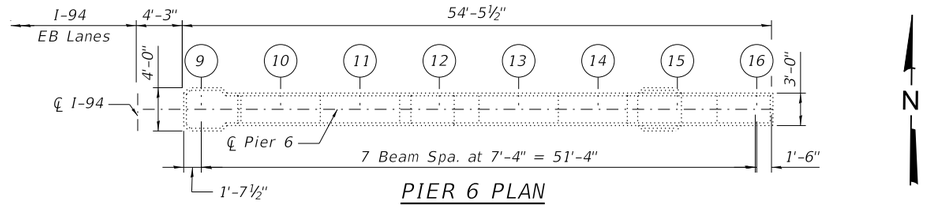
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 14:0.0000 ":" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

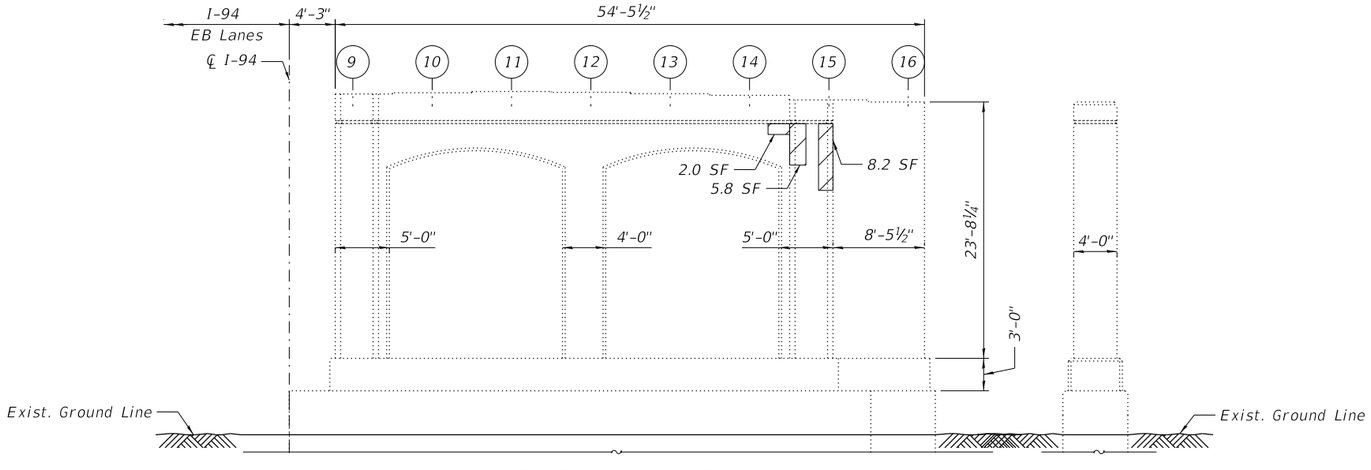
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 5 REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-36 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	494
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

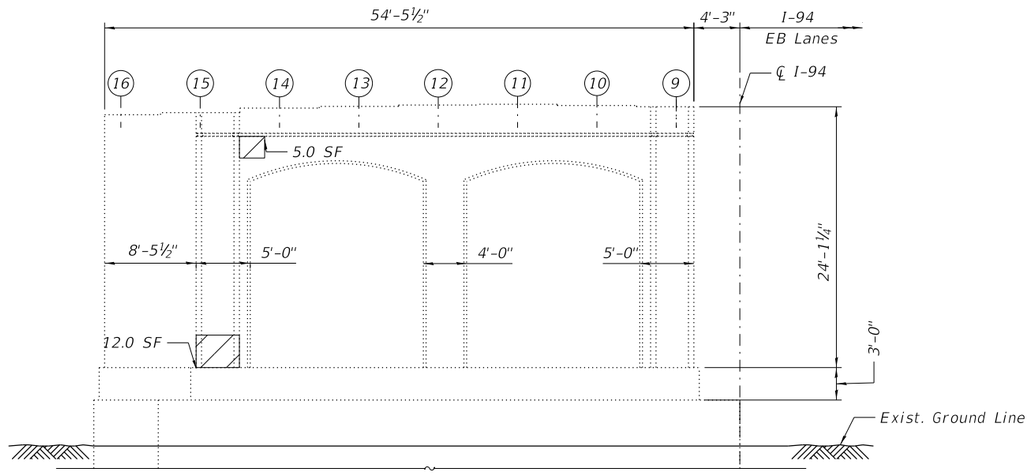


PIER 6 PLAN



PIER 6 ELEVATION
(Looking North)

END VIEW



PIER 6 ELEVATION
(Looking South)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	33

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. The Contractor is responsible to remove, support, and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal To or Less Than 5").

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
SF	Square Foot

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_40160159-62K53-35-WB-Pier6.dgn
12/6/2024 9:47:30 PM

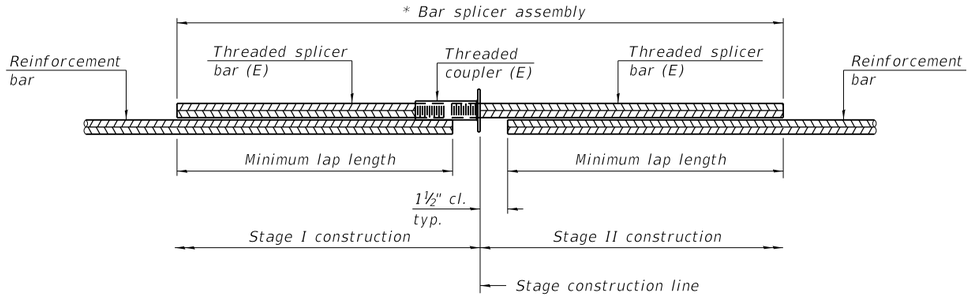
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD	REVISED -	
		DRAWN - LR, AWD	REVISED -	
PLOT SCALE = 14:0.0000 ':" / in.		CHECKED - MI, JJS	REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 6 REPAIRS
STRUCTURE NO. 016-0159
SHEET S01-37 OF S01-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	495
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



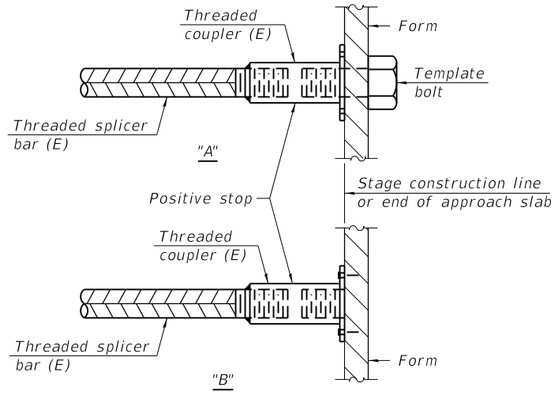
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

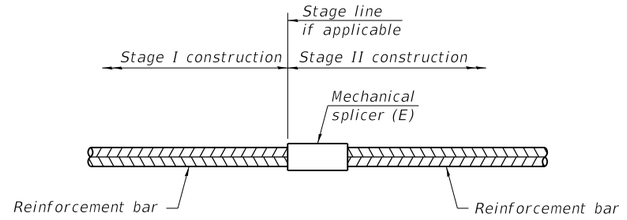
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar Size	No. assemblies required	Minimum lap length
North Abut.	#5	9	3'-6"
	#6	6	5'-6"
Span 4 P.P. 3 Jt.	#5	21	3'-6"
Span 4 P.P. 6 Jt.	#5	21	3'-6"
Span 4 P.P. 3' Jt.	#5	21	3'-6"
Pier 4	#5	21	3'-6"
South Abut.	#5	9	3'-6"
	#6	6	5'-6"



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Notes:
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

5-15-2023

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - LR, AWD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAIL STRUCTURE NO. 016-0159	
	DRAWN - LR, AWD	REVISED -			
PLOT SCALE = 0:2.0000 ':' / in.	CHECKED - MI, JJS	REVISED -			
PLOT DATE = 12/6/2024	DATE - 12/9/2024	REVISED -		SHEET S01-38 OF S01-38 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	496
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2386\1426_20\0160159-62K53-36-WB-BarSplicer.dgn
12/6/2024 9:48:26 PM

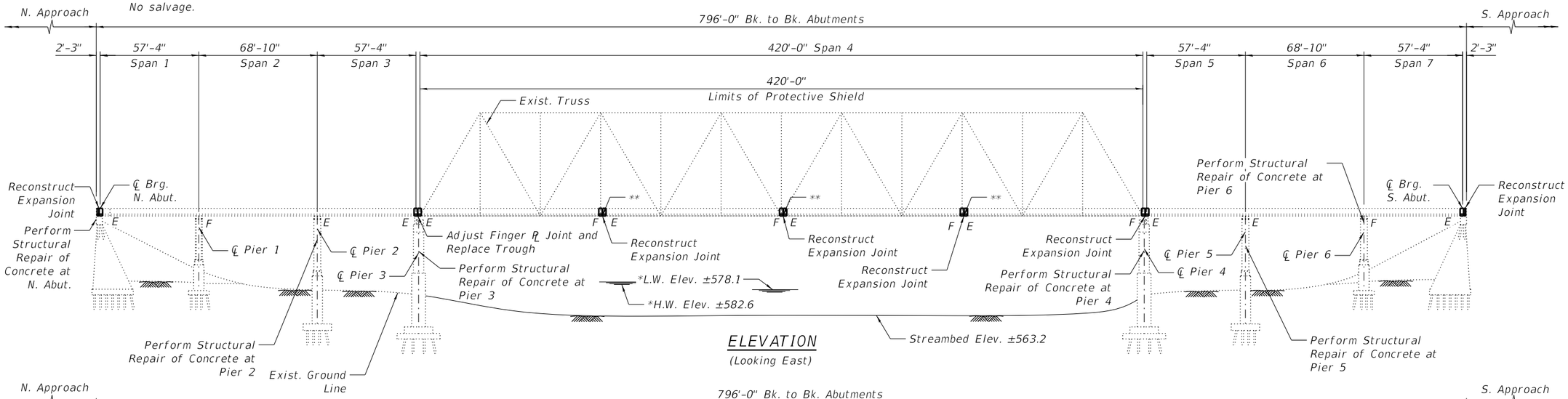
Existing Structure: *S.N. 016-0158 was originally built in 1949 and was reconstructed in 1993. Structural steel repairs were performed in 2022. The bridge is a seven-span structure (six rolled beam approach spans and one steel truss main span) carrying three lanes of EB I-94 over the Little Calumet River. The structure has a back-to-back abutment length of 796'-0" and an out-to-out deck width of 55'-7". The approach span superstructures consist of a 7½"-thick reinforced concrete deck supported on noncomposite W30x173 beams at 7'-4" spacing. The main span superstructure is a 420'-0" long built-up steel truss with a floor system consisting of a 7½"-thick reinforced concrete slab on W27x94 steel stringers and 46" web floor beams. The substructure consists of reinforced concrete abutments and multi-column piers on steel piles.*

Traffic is to be maintained utilizing staged construction.

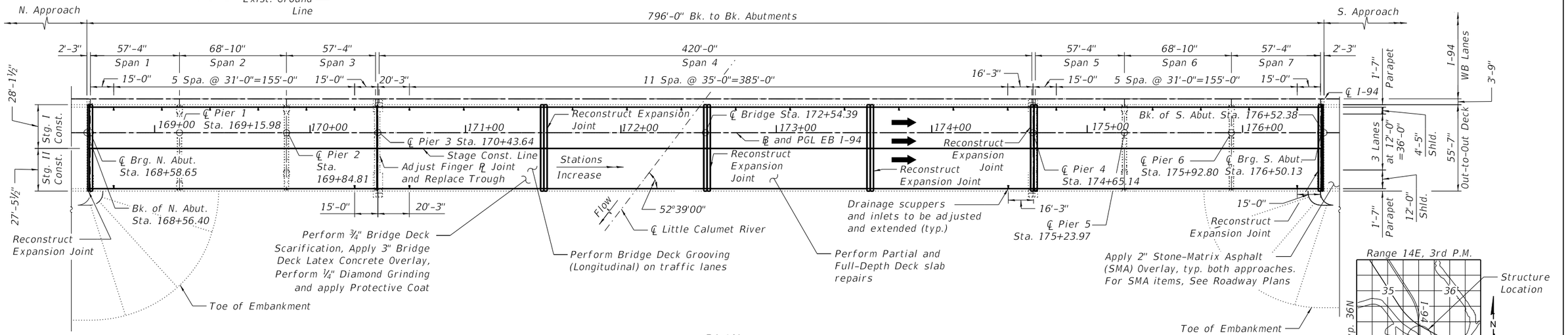
No salvage.

NOTES:

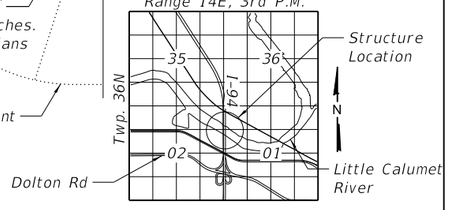
1. *All stations are to the I-94 EB PGL and taken from existing plans.*
2. *No future wearing surface is allowed.*



ELEVATION
(Looking East)



PLAN



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges (17th Edition)

RECONSTRUCTION (1993)

1989 AASHTO Standard Specifications for Highway Bridges
1983 AASHTO Guide Specifications for Seismic Design of Highway Bridges

LEGEND

L.W.	Low Water
H.W.	High Water

***Perform cleaning and painting of structural steel for Stringers 4 and 8 at Floorbeam FB3, Stringer 1 at Floorbeam FB6, and Stringers 1 and 4 at Floorbeam FB3'.*

**High Water Elevation, Low Water Elevation and Streambed Elevation taken from Existing Plans dated November 1991.*

STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E. IL. Lic. No. 081-005738
Expires 11-30-2026
Date 12-06-2024 For Sheets S02-01 thru S02-36.

GENERAL PLAN AND ELEVATION
EB I-94 OVER LITTLE CALUMET RIVER
F.A.I. ROUTE 94
SECTION 2019-180-RS&T
COOK COUNTY
STATION 172+54.39
S.N. 016-0158

HBM ENGINEERING GROUP, LLC

USER NAME =	hbmepw11ics01$	DESIGNED -	LR, AWD	REVISED -	
		DRAWN -	LR, AWD	REVISED -	
PLOT SCALE =	64:0,0000 ':" / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	1/21/2025	DATE -	12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-0158
SHEET S02-01 OF S02-36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	497
		CONTRACT NO.	62W87	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\26061427_30160158-62XS3-01-EB-GPE.dgn
1/21/2025 9:01:14 PM

GENERAL NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.

2. Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. The Contractor shall field-verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work; however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

3. The Contractor may request copies of existing construction plans that are currently on file with the Illinois Department of Transportation (IDOT). The request shall be in writing with the understanding that any reproduction cost will be at the Contractor's expense and at no additional cost to the Department.

4. All exposed concrete edges shall have a ¾" x 45° chamfer except where shown otherwise.

5. Protective coat shall be applied to the top of reconstructed transverse joint areas, top of new latex concrete overlay, and top and inside faces of parapets.

6. Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

7. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPC-SP3 standards). Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be paid for according to Article 109.04 of the Standard Specifications. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding ¼ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

8. The Contractor shall take all necessary precautions for the protection of passing vessels from falling objects and/or materials until completion of the work.

9. It shall be the Contractor's responsibility to locate and protect any utilities or facilities on, within or under the bridge deck including, but not limited to, under deck lighting, traffic signals or signs attached to the structure. Any damage to existing utilities/facilities caused by the Contractor in the performance of the work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

10. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the steel beams, stringers, floor beams, truss elements and diaphragms to remain. Any damage to existing elements to remain caused by the Contractor in the performance of the work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

11. For SMA overlay on Approach Slabs, see Roadway Plans.

12. Adjacent I-94 WB bridge is not shown throughout the plans for clarity.

13. The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor, to the satisfaction of the Engineer, at no additional cost to the Department.

14. Concrete Sealer shall be applied to the designated areas of the abutments and piers (beneath expansion joints only).

15. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment and pier seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. See Special Provision for Debris Removal.

16. The Engineer shall show actual locations and sizes of deck repairs on As-built Plans.

17. The Contractor shall obtain Coast Guard approval for any work that may interfere with navigational operations of the navigable waters. A work plan shall be prepared by the Contractor, reviewed and approved by the Engineer and be submitted by the Engineer to Lee Soule (216-902-6085) of the US Coast Guard at Lee.d.soule@uscg.mil for approval at least 2 weeks in advance prior to starting work.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	52.0	-	52.0
Protective Shield	Sq Yd	2,594	-	2,594
Concrete Superstructure	Cu Yd	58.0	-	58.0
Protective Coat	Sq Yd	5,532	-	5,532
Furnishing And Erecting Structural Steel	Pound	10,120	-	10,120
Cleaning And Painting Structural Steel, Location 1	L Sum	1	-	1
Reinforcement Bars, Epoxy Coated	Pound	9,560	-	9,560
Bar Splicers	Each	114	-	114
Preformed Joint Strip Seal	Foot	330	-	330
Fabric Reinforced Elastomeric Trough	Foot	56	-	56
Concrete Sealer	Sq Ft	-	3,636	3,636
Bridge Washing No. 1	Each	1	-	1
Bridge Deck Grooving (Longitudinal)	Sq Yd	3,172	-	3,172
Containment And Disposal Of Non-Lead Paint Cleaning Residues No. 1	L Sum	1	-	1
Cleaning Drainage System	L Sum	0.33	-	0.33
Deck Drain Extensions	Each	28	-	28
Drainage Scuppers To Be Adjusted	Each	28	-	28
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	4,472	-	4,472
Bridge Deck Scarification 3/4"	Sq Yd	4,472	-	4,472
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	-	847	847
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.5	-	0.5
Diamond Grinding (Bridge Section)	Sq Yd	4,263	-	4,263
Temporary Shoring And Cribbing	Each	-	4	4

PAINT NOTES:

1. Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures" and as shown in the Plans. All beams, bearings and other structural steel within 5 ft (measured along the beam) of the south side of the deck joints shall be cleaned per Near-White Blast Cleaning (SSPC-SP10).

2. The designated areas cleaned per Near-White Blast Cleaning (SSPC-SP10) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Top Coat (OZ/E/U) Paint System. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1.

3. Containment of cleaning residue is required to control nuisance dust. See Special Provisions.

4. SSPC QP1 Certification is required for this contract.

5. After cleaning of the specified stringer ends, bearing and support/bearing stiffeners has been completed, and prior to the start of paint operations, field measurements documenting section loss shall be taken by the Resident Engineer and forwarded to the IDOT District 1 Bridge Maintenance Engineer. Painting may not start until after approval of the field measurements by IDOT District 1 Bridge Maintenance.

PROPOSED SCOPE OF WORK

1. Provide protective shield within limits indicated on the plans.
2. Perform Deck Slab Repairs and adjust/extend existing scuppers and inlets as required.
3. Clean Drainage System and perform Bridge Washing.
4. Perform ¾" Bridge Deck scarification.
5. Reconstruct Expansion Joints at the North and South Abutments, Pier 4, and Span 4 Panel Points 3, 6, and 3'.
6. Adjust finger plate joint and replace trough at Pier 3.
7. Apply a 3" bridge deck latex concrete overlay on bridge deck.
8. Perform ¼" diamond grinding to top of bridge deck and abutment hatch block.
9. Perform bridge deck grooving (longitudinal) on traffic lanes.
10. Apply protective coat to the top of reconstructed transverse joint areas, top of new latex concrete overlay and top and inside faces of parapets.
11. Clean existing stringers, bearings, and support/bearing stiffeners at the locations shown on the Plans.
12. Coordinate with IDOT District 1 Bridge Maintenance to have section loss measurements performed at the newly cleaned stringers and support/bearing stiffeners.
13. Perform painting of stringer ends, bearings and support/bearing stiffeners after section loss measurements have been obtained as directed by the Department.
14. Perform structural repair of concrete to all spalled and delaminated areas of the Abutments, Wingwalls and Piers as noted in the plans.

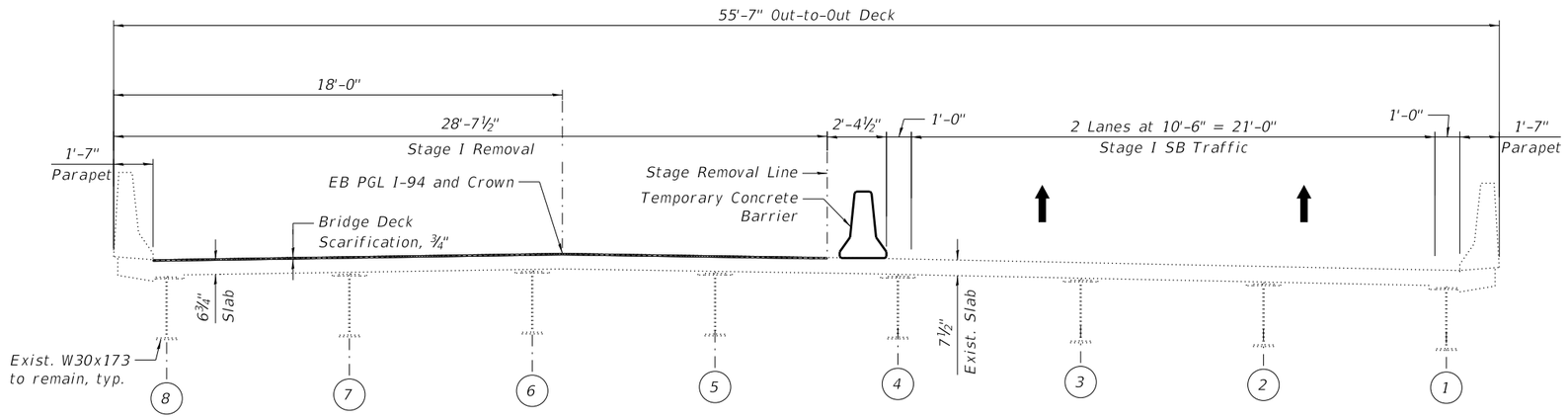
HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 3/13/2025		DATE - 12/9/2024		REVISED -	

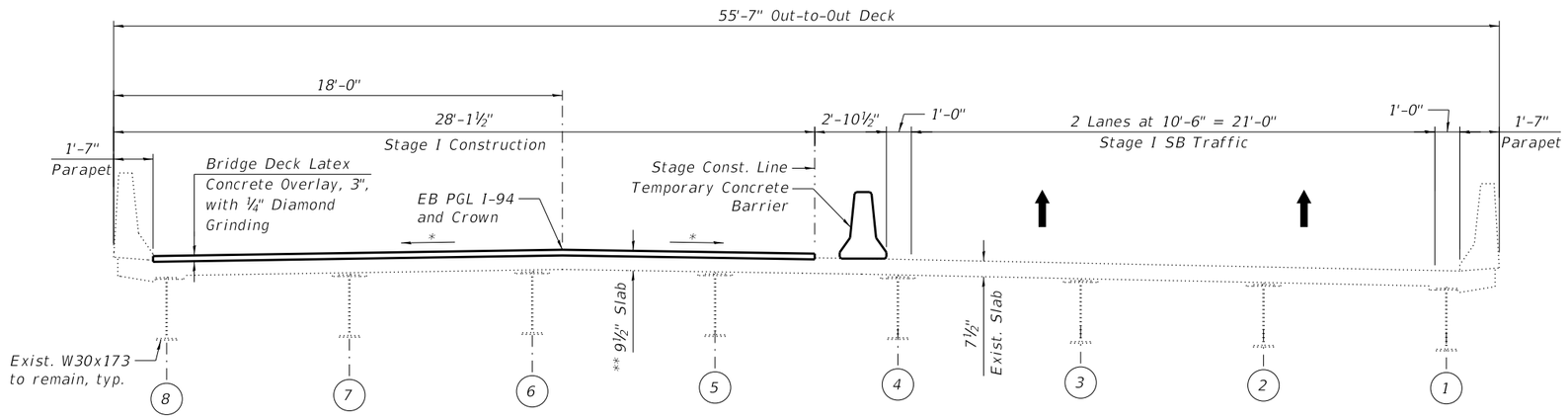
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS & TBOM
STRUCTURE NO. 016-0158
SHEET S02-02 OF S02-36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	498
		CONTRACT NO.	62W87	
	ILLINOIS	FED. AID PROJECT		



*** STAGE I REMOVAL
(Looking South)



***STAGE I CONSTRUCTION
(Looking South)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the west side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge deck/approach slab adjacent to expansion joints at the North and South Abutments and remove portions of bridge deck slab adjacent to expansion joints at Pier 4 and truss Panel Points 3, 6 and 3'.
5. Remove Pier 3 finger plate joint trough within the limits of Stage I Removal.

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip seals within the limits of Stage I Construction.
3. Adjust finger plate joint, and replace trough, at Pier 3 within the limits of Stage I Construction.
4. Adjust existing drainage scuppers/inlets and extend downspouts per the details shown in the plans.
5. Perform temporary shoring and cribbing at the locations shown on the Plans (and as directed by the Engineer), and perform structural repair of concrete for the abutments and piers.
6. Apply 3" bridge deck latex concrete overlay.
7. Perform ¼" diamond grinding to bridge deck and abutment hatch block.
8. Perform Bridge Deck Grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed expansion joint areas.
9. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
10. Apply protective coat to top and inside faces of parapets, reconstructed transverse expansion joint areas and to the surface of the new overlay.

NOTES:

1. For Temporary Concrete Barrier details, see Sheet S02-05.
2. For quantity of Temporary Concrete Barrier, see Roadway Plans.

* Match existing cross-slopes
** After grinding
*** Approach span cross-section shown, truss span stage dimensions and sequence similar

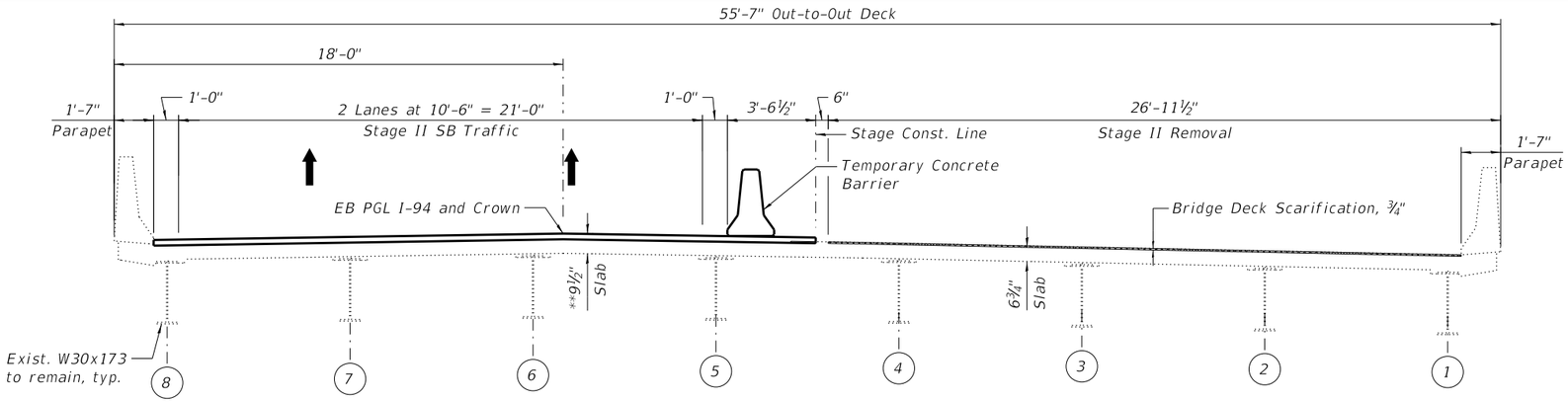
HBM ENGINEERING GROUP, LLC

USER NAME =	hbmepw11ics01$	DESIGNED -	LR, AWD	REVISED -	
		DRAWN -	LR, AWD	REVISED -	
PLOT SCALE =	6:0.0000 ':" / in.	CHECKED -	MI, JJS	REVISED -	
PLOT DATE =	12/6/2024	DATE -	12/9/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

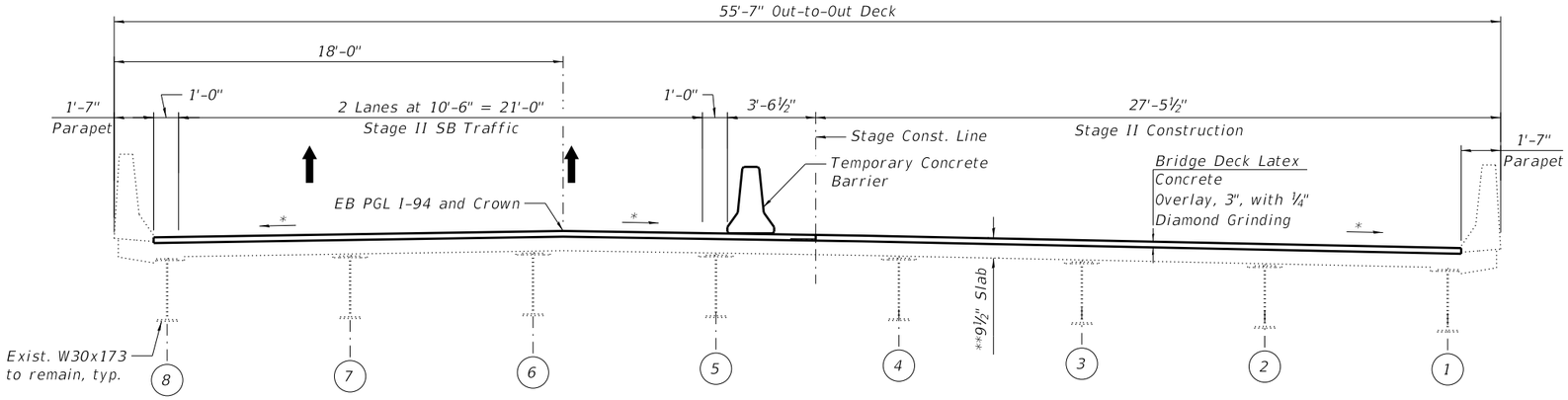
STAGE CONSTRUCTION (SHEET 1 OF 2)
STRUCTURE NO. 016-0158
SHEET S02-03 OF S02-36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	499
		CONTRACT NO.	62W87	
		ILLINOIS	FED. AID PROJECT	



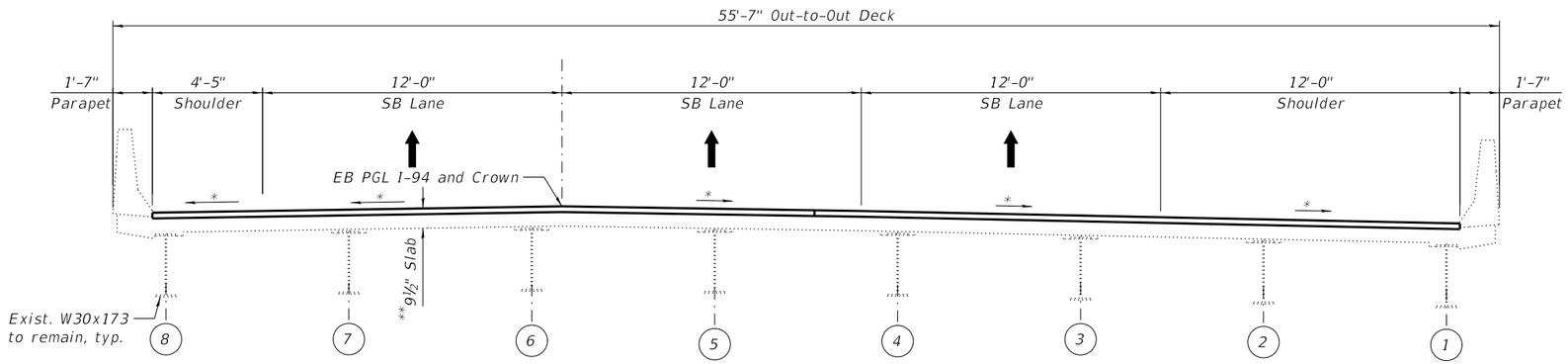
*** STAGE II REMOVAL

(Looking South)



*** STAGE II CONSTRUCTION

(Looking South)



*** FINAL DECK CROSS SECTION

(Looking South)

STAGE II REMOVAL

1. Relocate temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge deck/approach slab adjacent to expansion joints at the North and South Abutments and remove portions of bridge deck slab adjacent to expansion joints at Pier 4 and truss Panel Points 3, 6 and 3'.
5. Remove Pier 3 finger plate joint trough within the limits of Stage II Removal.

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip seals within the limits of Stage II Construction.
3. Adjust finger plate joint, and replace trough, at Pier 3 within the limits of Stage II Construction.
4. Adjust existing drainage scuppers/inlets and extend downspouts per the details shown in the plans.
5. Perform temporary shoring and cribbing at the locations shown on the Plans (and as directed by the Engineer), and perform structural repair of concrete for the abutments and piers.
6. Apply 3" bridge deck latex concrete overlay.
7. Perform ¼" diamond grinding to bridge deck and abutment hatch block.
8. Perform Bridge Deck Grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed expansion joint areas.
9. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
10. Apply protective coat to top and inside faces of parapets, reconstructed transverse expansion joint areas, and to the surface of the new overlay.

NOTES:

1. For temporary concrete barrier details, see Sheet S02-05.
2. For quantity of temporary concrete barrier, see Roadway Plans.

* Match Existing Cross-slopes

** After grinding

*** Approach span cross-section shown, truss span stage dimensions and sequence similar.

MODEL: Default
FILE NAME: \\hbmepw11ics01\ICS_pdf_work_dir\2384\1427_20\0160158-62K53-04-EB-StageCon2.dgn

12/6/2024 9:43:34 PM

HBM ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$		DESIGNED - LR, AWD		REVISED -	
		DRAWN - LR, AWD		REVISED -	
PLOT SCALE = 6:0.0000 ':" / in.		CHECKED - MI, JJS		REVISED -	
PLOT DATE = 12/6/2024		DATE - 12/9/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NO. 016-0158
SHEET S02-04 OF S02-36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	500
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	