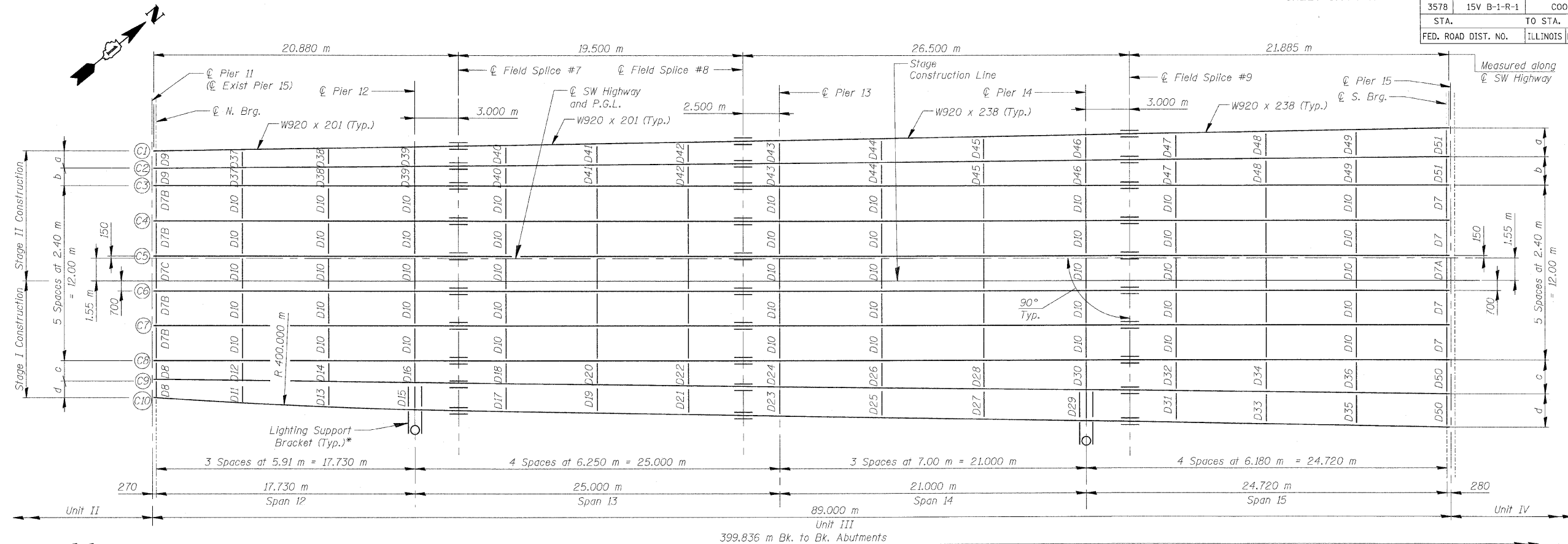


F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	128
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT
				CONTRACT NO. 62388



	Pier 11	Pier 12	Pier 13	Pier 14	Pier 15
R _ℓ (kN)	126.9	493.5	463.4	543.4	217.4
R _r (kN)	209.1	248.1	254.2	262.2	220.5
Imp. (kN)	56.3	62.7	62.5	64.6	52.7
R (Total) (kN)	392.3	804.3	780.1	870.1	490.6

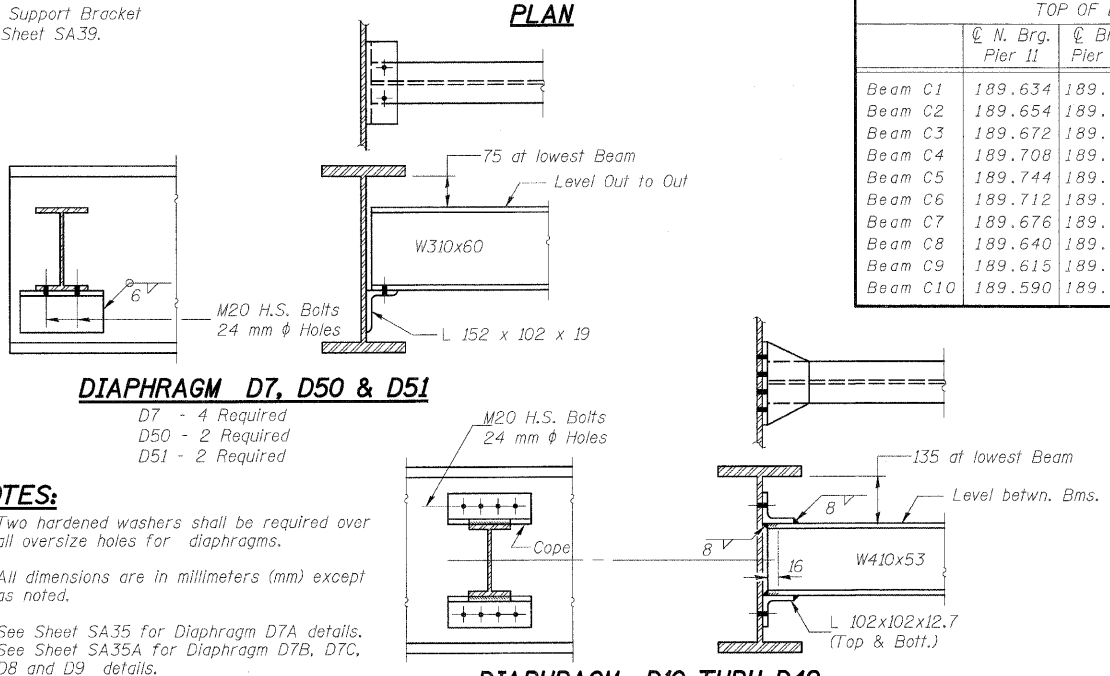
* For Lighting Support Bracket details, see Sheet SA39.

	0.4 Sp. 12	Pier 12	0.5 Sp. 13	Pier 13	0.5 Sp. 14	Pier 14	0.6 Sp. 15
I _s (10 ⁶ mm ⁴)	3,250	3,250	3,250	4,060	4,060	4,060	4,060
I _c (n) (10 ⁶ mm ⁴)	8,727		8,727		10,160		10,160
I _c (sn) (10 ⁶ mm ⁴)	6,490		6,490		7,512		7,512
S _s (10 ³ mm ³)	7,198	7,198	7,198	8,874	8,874	8,874	8,874
S _c (n) (10 ³ mm ³)	10,600		10,600		12,590		12,590
S _c (sn) (10 ³ mm ³)	9,623		9,623		11,420		11,420
Z (10 ³ mm ³)							
M _ℓ (kN-m)	13.56	20.44	13.56	20.82	13.96	21.21	13.96
M _r (kN-m)	244	947	429	875	74	1136	707
M _{sℓ} (kN-m)	6.79		6.97		7.16		7.35
M _{s_r} (kN-m)	144		267		85		401
M _t (kN-m)	644	436	836	492	650	516	987
M (Imp) (kN-m)	173	110	199	121	165	127	236
S ₃ [M _t + M(Imp)] (kN-m)	1,361	910	1,726	1,021	1,358	1,072	2,039
M _a (kN-m)	2,275	2,414	3,147	2,464	1,972	2,869	4,091
M _u (kN-m)	3,685		3,726		4,535		4,420
f _{sℓ} (non-comp) (MPa)	33.93	131.51	59.54	98.59	8.30	127.96	79.64
f _{sℓ} (comp) (MPa)	14.99		27.72		7.45		35.13
f _{s₃} (ℓ + Imp) (MPa)	128.42	126.42	162.81	115.01	107.88	120.77	161.92
f _s (Overload) (MPa)	177.34	257.93	250.07	213.60	123.63	248.73	276.70
f _s (Total) (MPa)		335.3		277.7		323.3	
VR (kN)	288		228		212		288

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 I_c(n) and S_c(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 I_c(sn) and S_c(sn) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.3B)
 VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
 M_a (Applied Moment) = 1.3[M_ℓ + M_{sℓ} + 5₃(M_t + M(Imp))].
 The Plastic Live Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to M_ℓ + M_{sℓ} + 5₃(M_t + M(Imp)).
 f_s (Total) (Non-compact section) is the sum of the stresses due to 1.3[M_ℓ + M_{sℓ} + 5₃(M_t + M(Imp))].

	ℓ N. Brg. Pier 11	ℓ Brg. Pier 12	ℓ Field Splice #7	ℓ Field Splice #8	ℓ Brg. Pier 13	ℓ Brg. Pier 14	ℓ Field Splice #9	ℓ S. Brg. Pier 15
Beam C1	189.634	189.056	188.958	188.135	188.022	187.073	186.937	185.972
Beam C2	189.654	189.078	188.981	188.161	188.049	187.102	186.967	186.003
Beam C3	189.672	189.098	189.001	188.185	188.072	187.129	186.994	186.033
Beam C4	189.708	189.135	189.038	188.221	188.109	187.165	187.030	186.069
Beam C5	189.744	189.171	189.074	188.257	188.145	187.201	187.066	186.105
Beam C6	189.712	189.140	189.043	188.225	188.113	187.169	187.034	186.073
Beam C7	189.676	189.104	189.007	188.189	188.077	187.133	186.998	186.037
Beam C8	189.640	189.067	188.970	188.153	188.040	187.097	186.962	186.001
Beam C9	189.615	189.040	188.942	188.123	188.010	187.063	186.927	185.963
Beam C10	189.590	189.002	188.902	188.080	187.967	187.017	186.881	185.917



- NOTES:**
- Two hardened washers shall be required over all oversize holes for diaphragms.
 - All dimensions are in millimeters (mm) except as noted.
 - See Sheet SA35 for Diaphragm D7A details. See Sheet SA35A for Diaphragm D7B, D7C, D8 and D9 details.

	ℓ N. Brg. Pier 11	ℓ Brg. Pier 12	ℓ Brg. Pier 13	ℓ Brg. Pier 14	ℓ S. Brg. Pier 15
a	1.205	1.359	1.576	1.759	1.974
b	1.200	1.355	1.574	1.758	1.974
c	1.259	1.467	1.761	2.008	2.298
d	1.259	1.886	2.040	2.159	2.300

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		FRAMING PLAN - UNIT III SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DRAWN BY: E. Mroozek DATE: 6/17/09 CHECKED BY: G. Hattestad

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