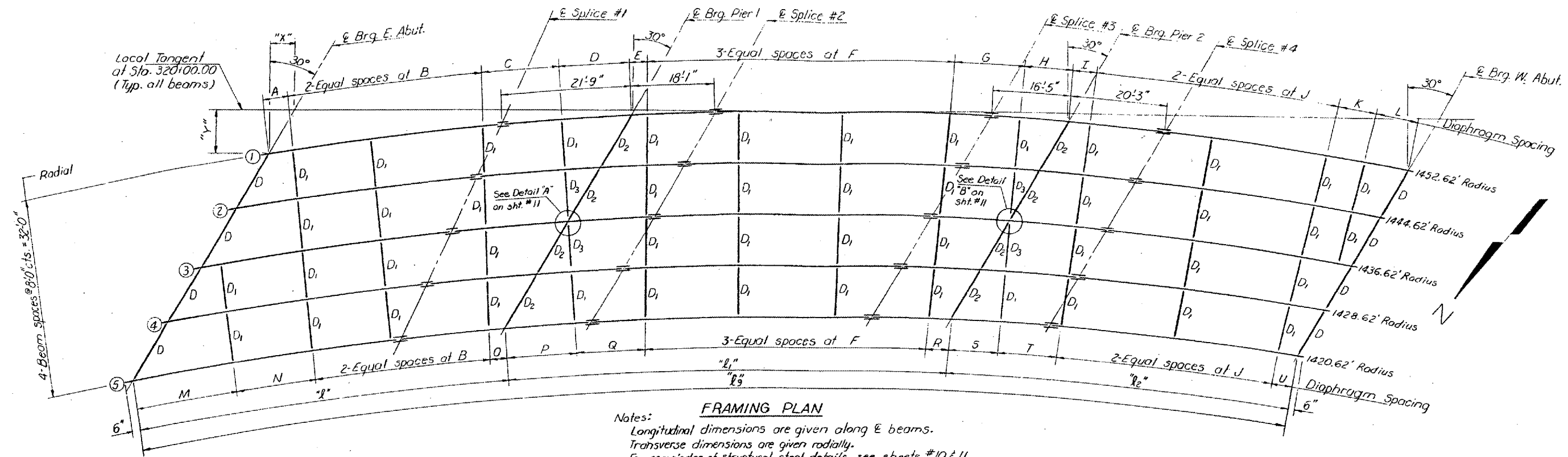


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTRACT NO.: 98880
ROUTE: VARIOUS
COUNTY: VARIOUS
SECTION: D-9 CONTRACT
MAINTENANCE 05-7
SHEET NO.: 14 OF 37

ROUTE NO.	SECTION
101-1	101.6
FED. ROAD DIST. NO. 7	



FRAMING PLAN

Notes:
Longitudinal dimensions are given along E beams.
Transverse dimensions are given radially.
For remainder of structural steel details see sheets #10 & 11.
See sheet #11 for table of "x" and "y" dimensions.
Skew angle for each splice is variable and not equal to 30°.

TABLE OF DIAPHRAGM SPACING DIMENSIONS A THRU U

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
Beam #1	5'-0"	20'-2 1/2"	14'-11 1/4"	9'-11 1/4"	5'-0"	21'-1 1/2"	13'-11 1/8"	8'-7"	5'-4 1/2"	22'-3 1/4"	7'-10 1/4"	12'-7 1/8"										
Beam #2	10'-5 1/8"	20'-1 1/8"	14'-10 1/4"	4'-11 3/4"	9'-10 1/8"	21'-0"	13'-10 1/8"	4'-3 3/8"	9'-7 1/8"	22'-1 1/8"	7'-9 3/4"	8'-10"										
Beam #3	15'-10 1/2"	19'-11 1/2"	14'-9 1/4"		14'-9 1/4"	20'-10 1/2"	13'-9 1/4"		13'-9 3/4"	22'-0 1/2"	7'-9 1/2"	5'-0"	5'-0"	10'-10 1/2"	14'-9 1/4"		14'-9 1/4"	13'-9 1/4"		13'-9 3/4"	12'-9 1/2"	
Beam #4		19'-10 1/2"				20'-9 1/4"				21'-10 1/2"			10'-6 1/4"	10'-9 1/8"	9'-8 1/8"	4'-11 1/8"	14'-8 1/4"	9'-4 3/8"	4'-3 3/8"	13'-8 1/8"	8'-10 1/2"	
Beam #5		19'-9 1/8"				20'-7 1/8"				21'-9 3/8"			16'-0 3/4"	10'-9 1/8"	4'-7 1/2"	9'-11 1/8"	14'-7 1/4"	5'-0"	8'-7 1/8"	13'-8"	5'-0"	

INTERIOR BEAM REACTION TABLE**

	E & W. Abuts.	Piers 1 & 2
R _Q (K)	35.5	124.9
R _L (K)	55.3	78.2
Imp. (K)	11.5	15.3
TOTAL (K)	102.3	218.4

**Lateral flange bending effects are included in all reactions.

TABLE OF "L" DIMENSIONS

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
"L"	70'-3 1/2"	70'-5 1/2"	70'-7 1/2"	70'-9 1/2"	70'-11 1/2"
"L1"	90'-10 1/8"	91'-0 3/8"	91'-2 3/8"	91'-4 3/8"	91'-6 3/8"
"L2"	70'-5 1/4"	70'-6 3/8"	70'-7 3/8"	70'-8 3/8"	70'-10 1/8"
"L3"	47'-5 1/2"	47'-6 1/2"	47'-7 1/2"	47'-8 1/2"	47'-9 1/2"
"L4"	56'-4 3/8"	56'-6 3/8"	56'-8 3/8"	56'-10 3/8"	57'-0 3/8"
"L5"	50'-2 1/4"	50'-3 3/8"	50'-4 3/8"	50'-5 3/8"	50'-7 3/8"
"L6"	2'-2 1/2"	2'-4 1/2"	2'-6 1/2"	2'-8 1/2"	2'-10 1/2"
"L7"	1'-11 1/8"	2'-1 1/8"	2'-3 1/8"	2'-5 1/8"	2'-7 1/8"
"L8"	2'-2 1/4"	2'-3 3/8"	2'-4 3/8"	2'-5 3/8"	2'-7 3/8"
"L9"	231'-7 1/8"	232'-0 1/4"	232'-5 1/2"	232'-10 1/2"	233'-4 3/8"

Note: For locations of "L3" thru "L8" see sheet #10.

INTERIOR BEAM MOMENT TABLE

	0.4 Sp. 1 to 6 Sp. 3	Piers 1 & 2	0.5 Sp. 2
I _s (in ⁴)	9040	13200	9040
I _c (in ⁴)	22457		22457
S _s (in ³)	504	719	504
S _c (in ³)	711.5		711.5
Q (K)	.942	1.014	.942
M _Q (K)	300.9	716.5	314.0
S _Q (K)	.405	.405	.405
M _{SQ} (K)	151.1	244.3	189.0
M _L (K)	763.8	580.5	855.3
M _{Imp.} (K)	155.8	112.5	158.1
1/2 (M _Q +I) (K)	1532.7	1155.5	1689.0
M _Q (K)	2580.1	2751.2	2849.6
f _s P _{non-comp} (ksi)	7.16	16.04	7.48
f _s P _{comp} (ksi)	2.55		3.19
f _s 1/2 (L+I) (ksi)	25.85	19.29	28.49
f _s overload (ksi)	35.56	33.33	39.16
f _s total (ksi)	46.23	45.93	50.91
F _{bu} (ksi)	50	47.43	50
VR (K)	61.5		52.9

*The Maximum Allowable Stress (F_{bu}) is computed according to AASHTO (Guide Specifications for Horizontally Curved Highway Bridges, Section 2.12 (B)).

All moments except M_{imp} include secondary moments due to interior flange bending.

M_{applied} (Moment) = 1.3 [M_Q + I_s + 1/2 (M_L+I)].

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total and Overload).

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s (Total and Overload).

VR is the maximum V_l+Impact shear range in span.

f_s total is the sum of the stresses due to 1.3 [M_Q+M_{SQ}+1/2 (M_L+I)].

f_s overload is the sum of the stresses due to M_Q+M_{SQ}+1/2 (M_L+I).

***TOP OF FLANGE ELEVATIONS
(Before any deflection)

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
E Brq. E. Abut.	384.48	384.05	383.63	383.22	382.81
E Splice #1 (W36x150)	382.65	382.19	381.73	381.28	380.83
E Splice #1 (W36x210)	382.68	382.22	381.76	381.31	380.86
E Brq. Pier 1	381.95	381.47	381.00	380.53	380.07
E Splice #2 (W36x210)	381.33	380.85	380.36	379.88	379.41
E Splice #2 (W36x150)	381.30	380.81	380.33	379.85	379.37
E Splice #3 (W36x150)	379.67	379.15	378.63	378.11	377.60
E Splice #3 (W36x210)	379.71	379.18	378.66	378.14	377.63
E Brq. Pier 2	379.30	378.77	378.24	377.72	377.20
E Splice #4 (W36x210)	378.81	378.27	377.73	377.19	376.66
E Splice #4 (W36x150)	378.77	378.23	377.69	377.16	376.62
E Brq. W. Abut.	377.74	377.18	376.61	376.05	375.49

***For fabrication only.

FOR INFORMATION ONLY:

BRIDGE NO. 3 STRUCTURE 039-0056

DESIGNED	Rick Brunette
CHECKED	JIM KOHOUT
DRAWN	R. Doty
CHECKED	JK

July 10, 1994
EXAMINED
PASSED
APPROVED

STRUCTURAL STEEL
F.A.P. RT. 107 SEC. 101 BS-1
JACKSON COUNTY
STA. 320+00.00