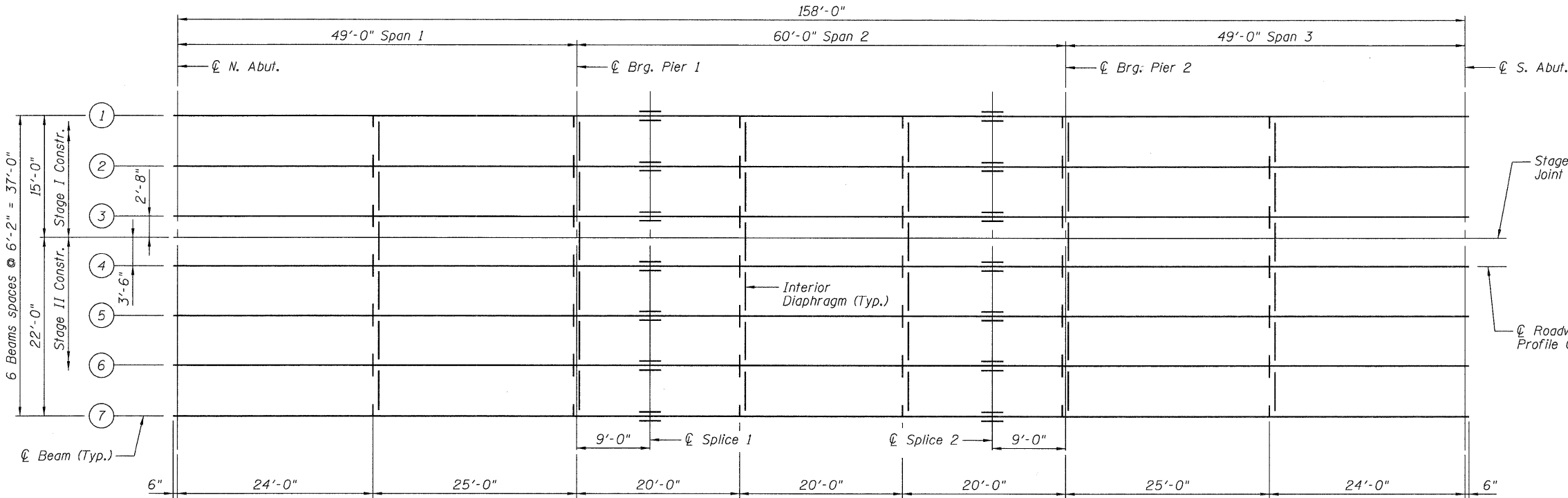


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

Note:
For Beam Elevation, Field Splice and Interior Diaphragm Details, See Sheet No. 17 of 29.
For Details of Diaphragms at the Abutments, see Sheet No. 13 of 29.

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f (Total-Strength I, and Service II) due to non-composite dead loads (in. and in.).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f (Total-Strength I, and Service II) due to short-term composite live loads (in. and in.).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
- Z : Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in.³).
- $DC1$: Un-factored non-composite dead load (kips/ft.).
- M_{DC1} : Un-factored moment due to non-composite dead load (kip-ft.).
- $DC2$: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- M_{DC2} : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW : Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- M_{DW} : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- $M_k + IM$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M_u (Strength I): Factored design moment (kip-ft.).
- $\phi_r M_n$: $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k + IM$
- $\phi_r M_{nc}$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- f_s (Service II): Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
- f_s (Service II): Sum of stresses as computed from the moments below (ksi). $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_k + IM$
- V_r : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Span 2
I_s	(in ⁴)	4,470	4,470	4,470
$I_c(n)$	(in ⁴)	12,856	-	12,856
$I_c(3n)$	(in ⁴)	9,389	-	9,389
S_s	(in ³)	299	299	299
$S_c(n)$	(in ³)	461	-	461
$S_c(3n)$	(in ³)	414	-	414
Z	(in ³)	-	-	-
$DC1$	(k/')	0.763	0.763	0.763
M_{DC1}	(k)	129.0	228.4	114.9
$DC2$	(k/')	0.129	0.129	0.129
M_{DC2}	(k)	21.7	38.5	19.4
DW	(k/')	0.309	0.309	0.309
M_{DW}	(k)	52.2	92.4	46.5
$M_k + IM$	(k)	446.5	388.0	447.7
M_u (Strength I)	(k)	1048.1	1151.2	1021.1
* $\phi_r M_n, \phi_r M_{nc}$	(k)	2368.0	1176.1	2368.0
f_s DC1	(ksi)	5.177	9.167	4.611
f_s DC2	(ksi)	0.629	1.545	0.562
f_s DW	(ksi)	1.513	3.708	1.348
f_s 1.3($M_k + IM$)	(ksi)	15.109	20.243	15.150
f_s (Service II)	(ksi)	22.428	34.663	21.671
V_r	(k)	20.4	-	16.7

* Compact sections

INTERIOR GIRDER REACTION TABLE			
	N. Abut. or S. Abut.	Pier 1 or Pier 2	
R_{DC1}	(k)	14.0	46.2
R_{DC2}	(k)	2.4	7.8
R_{DW}	(k)	5.7	18.7
$R_k + IM$	(k)	58.5	88.7
R_{Total}	(k)	80.6	161.4

FRAMING PLAN AND DESIGN DATA
SN 028-0078

DESIGNED	RLM
CHECKED	AMS
DRAWN	PRC
CHECKED	RLM



09/25/09

SHEET NO. 16	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9481	12B1-1	FRANKLIN	304	142
29 SHEETS	SN 028-0078		CONTRACT NO. 98823		
	FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				