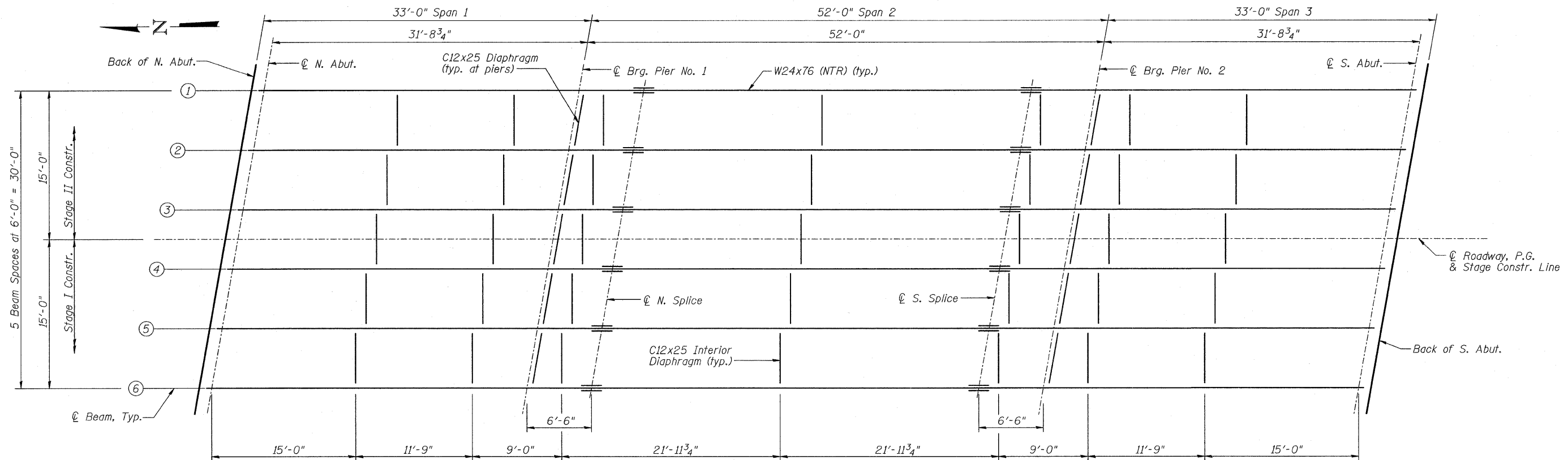


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

INTERIOR GIRDER MOMENT TABLE			
	0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in ⁴) 2100	2100	2100
$I_c(n)$	(in ⁴) 6658	-	6658
$I_c(3n)$	(in ⁴) 4931	-	4931
S_s	(in ³) 176	176	176
$S_c(n)$	(in ³) 280.9	-	280.9
$S_c(3n)$	(in ³) 253.8	-	253.8
Z	(in ³) -	-	-
$DC1$	(k/ft) 0.71	0.71	0.71
M_{DC1}	(k) 30	137	99
$DC2$	(k/ft) 0.15	0.15	0.15
M_{DC2}	(k) 4	29	22
DW	(k/ft) 0.27	0.27	0.27
M_{DW}	(k) 7	51	39
M_{LL+IM}	(k) 282	327	346
M_u (Strength I)	(k) 547	856	815
$\phi_r M_n, \phi_r M_{nc}$	(k) 1492	1101	1420
f_s DC1	(ksi) 2.4	11.1	8.0
f_s DC2	(ksi) 0.2	1.1	1.2
f_s DW	(ksi) 0.5	2.4	2.6
f_s 1.3(LL+IM)	(ksi) 15.7	13.9	19.2
f_s (Service II)	(ksi) 18.2	25.9	28.9
f_s (Total)(Strength I)	(ksi) 13.8	33.3	35.6
V_r	(k) 13.6	17.9	17.7

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) due to short-term composite live loads (in⁴ and in³).
- $I_c(3n), S_c(3n)$: 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 (in⁴ and in³).
- Z : Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).
- $DC1$: 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_{LL+IM} : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M_u (Strength I): Factored design moment (kip-ft.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$
- $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- $\phi_r M_{nc}$: 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).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{LL+IM}$
- f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$
- V_r : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

Notes:

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Diaphragms and connecting plates and angles shall be Grade 36.

DESIGNED - CJW
CHECKED - DRS
DRAWN - JLR
CHECKED - CJW

INTERIOR GIRDER REACTION TABLE HL93 Loading (Unfactored)			
		Abut.	Pier
R_{DC1}	(k)	7.8	33.1
R_{DC2}	(k)	1.6	7.0
R_{DW}	(k)	2.9	12.5
R_{LL+IM}	(k)	55.6	80.5
R_{Total}	(k)	67.9	133.1

FRAMING PLAN & DESIGN DATA
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

SHEET NO. 16	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	43
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					

