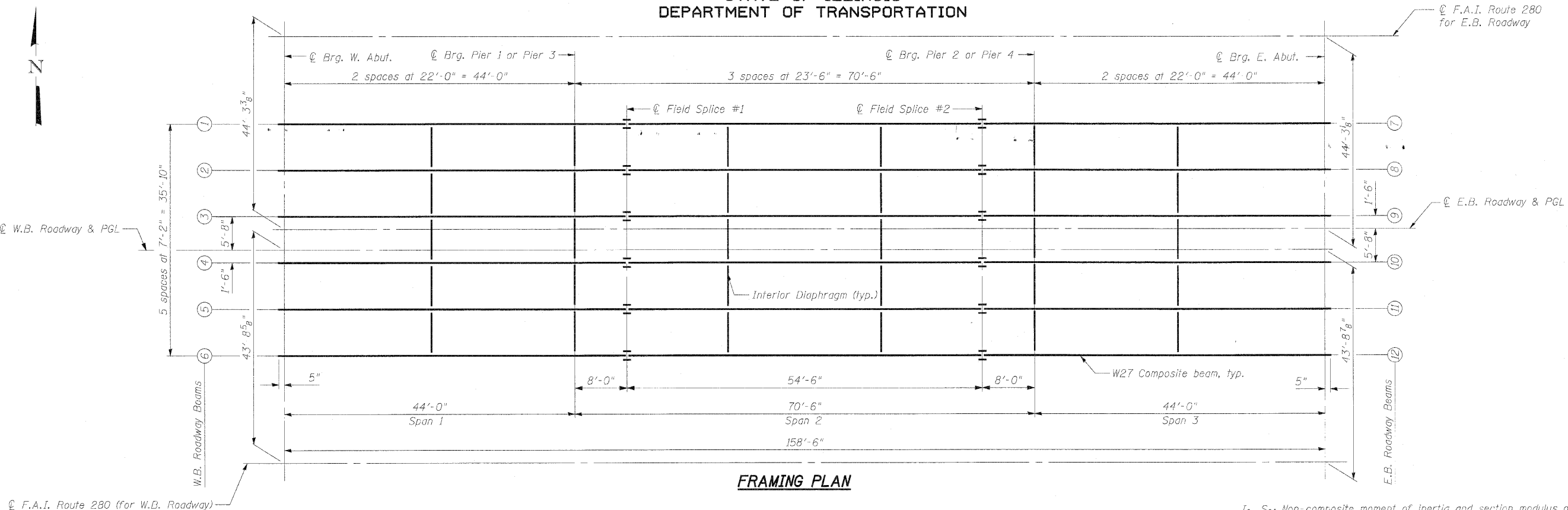
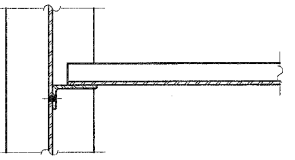


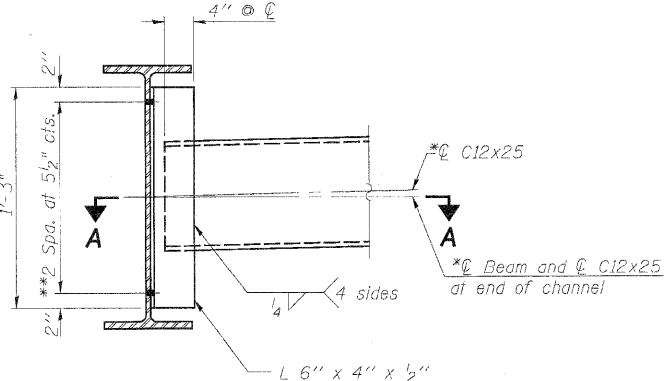
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN



SECTION A-A



INTERIOR DIAPHRAGM

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier	0.5 Sp. 2
I_s	(in ⁴)	4,760	4,760	4,760
$I_c(n)$	(in ⁴)	13,182	-	13,182
$I_c(3n)$	(in ⁴)	9,719	-	9,719
S_s	(in ³)	345	345	345
$S_c(n)$	(in ³)	513	-	513
$S_c(3n)$	(in ³)	463	-	463
$\bar{Q}$	(k/')	0.867	1.408	0.867
$M\bar{Q}$	(k')	77	479	226
$s\bar{Q}$	(k/')	0.541	-	0.541
$M_s\bar{Q}$	(k')	59	-	169
$M\bar{L}$	(k')	288	223	448
$M\bar{I}$	(k')	86	61	115
$\bar{Q}_3 [M\bar{L} + \bar{I}]$	(k)	623	473	938
M_a	(k)	987	1,238	1,733
M_u	(k)	2,214	-	2,522
$f_s \bar{Q}$ non-comp	(ksi)	2.7	16.7	7.9
$f_s \bar{Q}$ (comp)	(ksi)	1.5	-	4.4
$f_s \bar{Q}_3 [M\bar{L} + M\bar{I}]$	(ksi)	14.6	16.5	21.9
f_s (Overload)	(ksi)	18.8	33.2	34.2
f_s (Total)	(ksi)	-	43.2	-
VR	(k)	59.2	-	48.4

*** Compact section
**** Braced non-compact and partially braced section

INTERIOR BEAM REACTION TABLE		
	Abut.	Pier
$R\bar{Q}$	(k)	56.7
$R\bar{L}$	(k)	42.5
$R\bar{I}$	(k)	10.8
R_{Total}	(k)	110.0

Note:
The interior beam reaction at the abutment includes dead and live loads from both the superstructure and the approach slab.

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) 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 and Overload) 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
 $\bar{Q}$: Un-factored non-composite dead load (kips/ft.).
 $M\bar{Q}$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\bar{Q}$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\bar{Q}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M\bar{L}$: Un-factored live load moment (kip-ft.).
 $M\bar{I}$: Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\bar{Q} + M_s\bar{Q} + \frac{1}{3} (M\bar{L} + M\bar{I})]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\bar{Q} + M_s\bar{Q} + \frac{1}{3} (M\bar{L} + M\bar{I})$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\bar{Q} + M_s\bar{Q} + \frac{1}{3} (M\bar{L} + M\bar{I})]$
VR: Maximum $\bar{L} +$ impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

FRAMING PLAN

STRUCTURE NO. 081-0022 (E.B.)
STRUCTURE NO. 081-0023 (W.B.)

DESIGNED	SST
CHECKED	SPK
DRAWN	ASJ
CHECKED	SPK

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channel C12x30 is permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
** $\frac{3}{4}$ " ϕ HS bolts, $\frac{5}{16}$ " ϕ holes

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SHEET NO. 20	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	280	81-1(HB-2)R	ROCK ISLAND	503	302
CONTRACT NO. 64815					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					