

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

Notes:

Two hardened washers required for each set of oversized holes.

All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

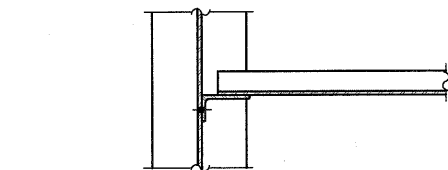
All diaphragms and connecting angles shall conform to the requirements of AASHTO M270, Grade 36. Splice plates shall conform to the requirements of AASHTO M270, Grade 50.

Bolts in slots shall be finger tight until the second stage pour is complete. Position slots so bolts start at one end with no concrete load and finish near the opposite end under deck load allowing maximum displacement without laterally stressing main members. All holes shall have appropriate hardened or plate washers.

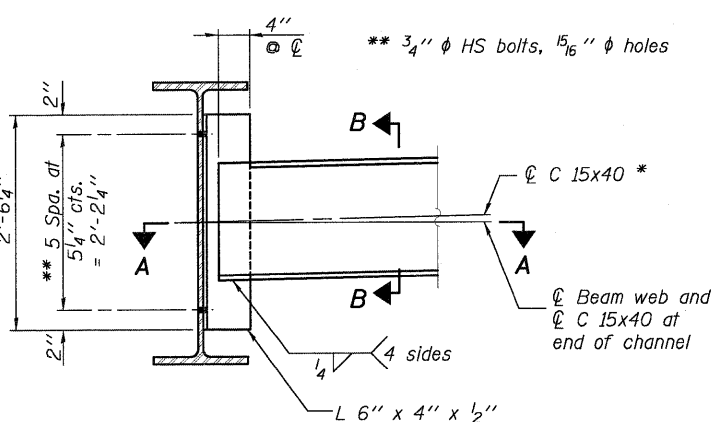
TOP OF BEAM ELEVATIONS

(For Fabrication Only)

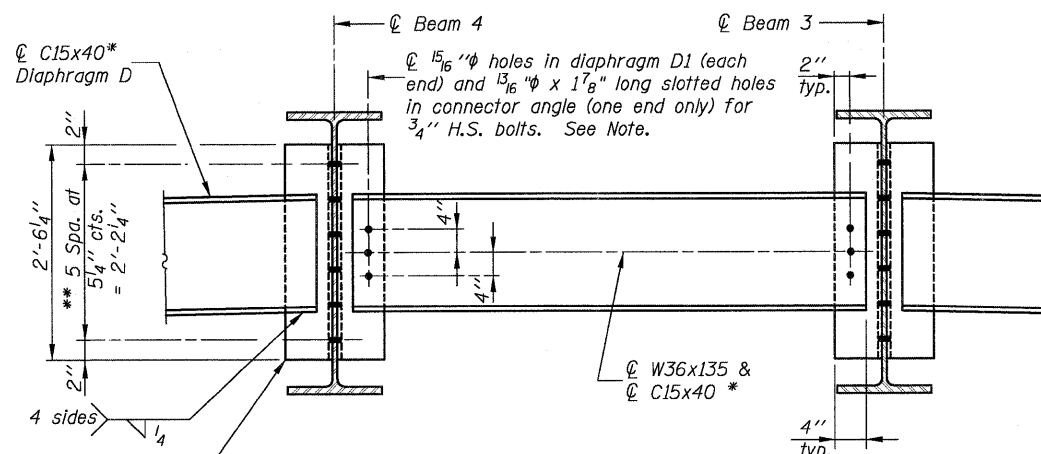
Beam No.	W. Abut.	Pier 1	Splice 1	Pier 2	Splice 2	Splice 3	Pier 3	Splice 4	Pier 4	E. Abut.
1	427.958	428.053	428.070	427.997	427.984	427.748	427.658	427.157	427.068	426.581
2	428.084	428.179	428.196	428.123	428.110	427.874	427.784	427.283	427.194	426.707
3	428.187	428.282	428.299	428.226	428.213	427.977	427.887	427.386	427.297	426.810
4	428.187	428.282	428.299	428.226	428.213	427.977	427.887	427.386	427.297	426.810
5	428.084	428.179	428.196	428.123	428.110	427.874	427.784	427.283	427.194	426.707
6	427.958	428.053	428.070	427.997	427.984	427.748	427.658	427.157	427.068	426.581



SECTION A-A

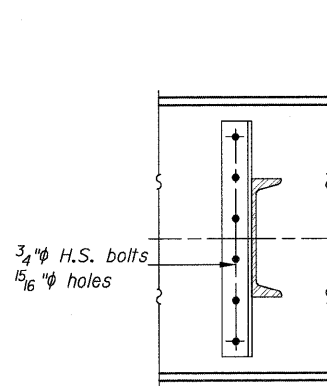


DIAPHRAGM D
(76 Required)

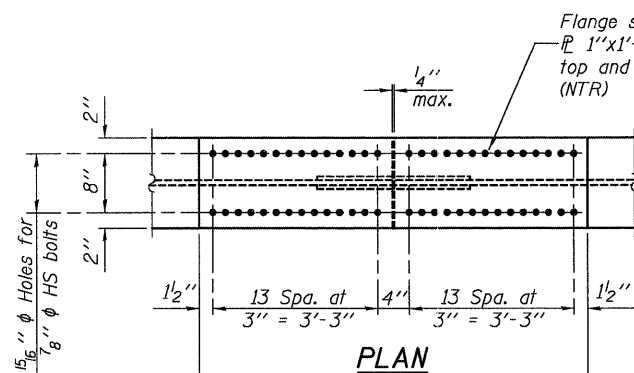


DIAPHRAGM D1
(19 Required)

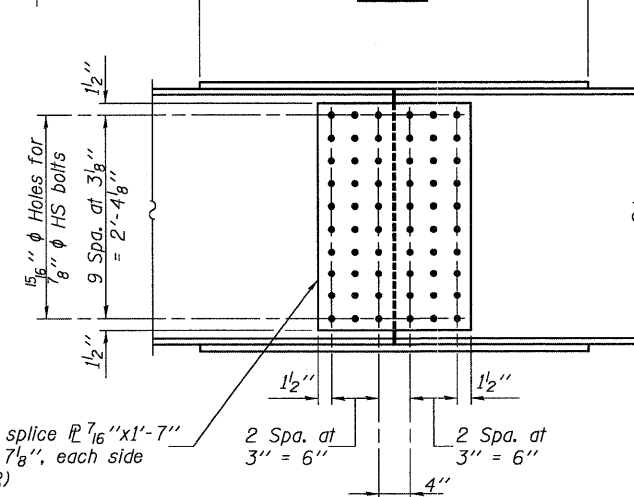
* Alternate channel C 15x50 is permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



SECTION B-B



PLAN



ELEVATION

SPLICE DETAIL
(24 Required)

Note:

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

		0.4 Sp. 1 or 0.6 Sp. 5	Pier 1 or Pier 4	0.5 Sp. 2 or 0.5 Sp. 4	Pier 2 or Pier 3	0.5 Sp. 3
I_s	(in ⁴)	7,800	7,800	7,800	7,800	7,800
$I_c(n)$	(in ⁴)	20,200	---	20,200	---	20,200
$I_c(3n)$	(in ⁴)	14,907	---	14,907	---	14,907
S_s	(in ³)	439	439	439	439	439
$S_c(n)$	(in ³)	638	---	638	---	638
$S_c(3n)$	(in ³)	577	---	577	---	577
DC1	(k/ft)	0.83	0.83	0.83	0.83	0.83
M_{DC1}	(k)	210	394	205	405	200
DC2	(k/ft)	0.15	0.15	0.15	0.15	0.15
M_{DC2}	(k)	42	60	47	64	45
DW	(k/ft)	0.30	0.30	0.30	0.30	0.30
M_{DW}	(k)	85	120	94	128	90
$M_k + IM$	(k)	714	523	827	590	833
M_u (Strength I)	(k)	1,692	1,663	1,903	1,811	1,899
$\phi_f M_n, \phi_f M_{nc}$	(k)	3,335	1,829	3,335	1,829	3,335
f_s DC1	(ksi)	5.7	10.8	5.6	11.1	5.5
f_s DC2	(ksi)	0.9	1.6	1.0	1.7	0.9
f_s DW	(ksi)	1.8	3.3	2.0	3.5	1.9
f_s (1.3(I+IM))	(ksi)	17.5	18.6	20.2	21.0	20.4
f_s (Service II)	(ksi)	25.9	34.3	28.8	37.3	28.7
V_f	(k)	23.5	---	20.8	---	20.7

		W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.
R_{DC1}	(k)	18.7	63.2	63.5	63.5	63.2	18.7
R_{DC2}	(k)	3.6	11.2	11.5	11.5	11.2	3.6
R_{DW}	(k)	7.1	22.4	23.0	23.0	22.4	7.1
$R_k + IM$	(k)	78.0	121.0	124.1	124.1	121.0	78.0
R_{Total}	(k)	107.4	217.8	222.1	222.1	217.8	107.4

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).

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 (kip-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.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k + IM$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_f M_{nc}$: 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).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_k + IM$

f_s (Total) (Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k + IM$

V_f : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

DESIGNED	B.G.H.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

STEEL DETAILS

SHEET NO. 18	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	805	126-BR-1	CLINTON	85	49
34 SHEETS	S.N. 014-0078		CONTRACT NO. 76976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		