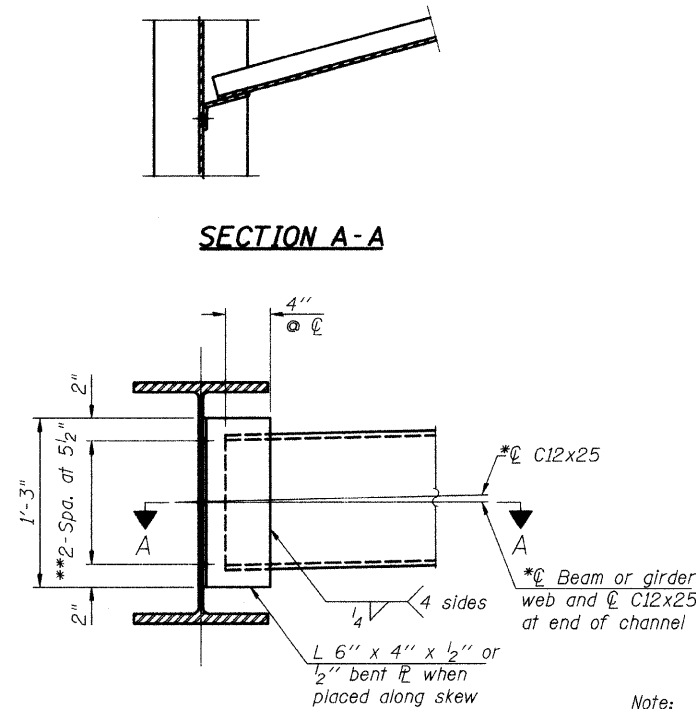


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

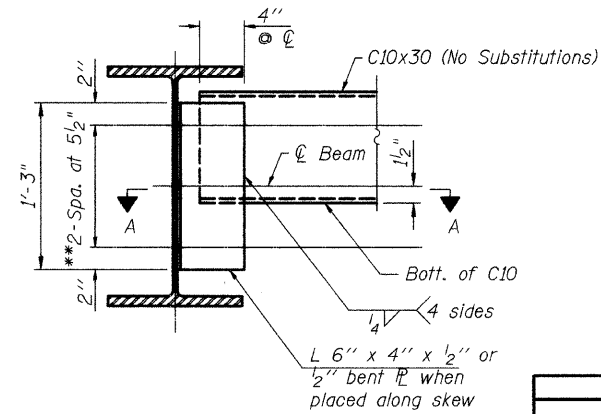
ROUTE NO. 83827

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	DUPAGE	106	37	SHEET NO. S16
of S34 SHEETS				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

* 00-00116-00-BR



DIAPHRAGM D
Btwn. Beams ② - ③



DIAPHRAGM D1
Btwn. Beams ① - ②

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels (C12x30) are 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.
**3/4" φ HS bolts, 1 5/16" φ holes
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.

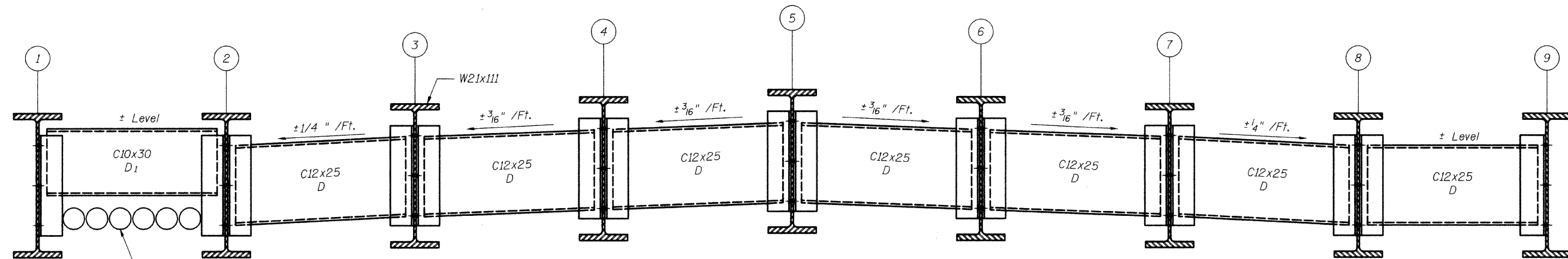
	Abutments	Piers
R _l * (K)	40.7	66.7
R _t (K)	35.9	36.6
Imp. (K)	10.8	11.0
R (Total) (K)	87.4	114.3

* Reaction at abutments includes weight of diaphragm and approach pavement.
I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s (Total & Overload).
VR is the maximum live Load + Impact shear range in span.
Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.
M_a (Applied Moment) = 1.3[M_l + M_s + 5₃(M_t + I)].
M_u is the Full Plastic Moment Capacity for Compact, Braced section.
f_s (Overload) is the sum of the stresses due to M_l + M_s + 5₃(M_t + I).
f_s (Total) is the sum of the stresses due to 1.3[M_l + M_s + 5₃(M_t + I)].
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.

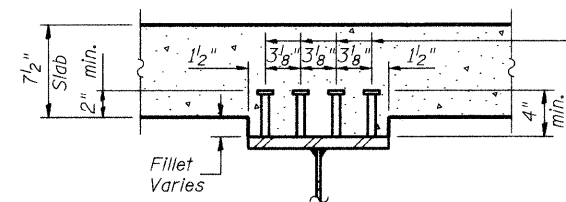
	0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I _s (in ⁴)	2654	2654	2654
I _c (n) (in ⁴)	7831	-	7831
I _c (3n) (in ⁴)	5624	-	5624
S _s (in ³)	247	247	247
S _c (n) (in ³)	379	-	379
S _c (3n) (in ³)	339	-	339
Z (in ³)	-	-	-
l _p (K/ft.)	0.694	1.12	0.705
M _l (K)	77	305	139
s _l (K/ft.)	0.42	-	0.42
M _s (K)	59	-	112
M _t (K)	235	156	347
M (Imp) (K)	71	47	93
5 ₃ (M _t + I) (K)	510	338	733
M _a (K)	840	836	1279
M _u (K)	1518	-	1466
f _s non-comp (k.s.i.)	3.7	14.8	6.8
f _s (comp) (k.s.i.)	2.1	-	4.0
f _s 5 ₃ (I + J) (k.s.i.)	16.1	16.4	23.2
f _s (Overload) (k.s.i.)	21.9	31.2	34.0
f _s (Total) (k.s.i.)	-	40.6	-
VR (K)	43	-	46

Beam No.	℄ Brg. W. Abut.	℄ Brg. Pier 1	℄ Field Splice 1	℄ Field Splice 2	℄ Brg. Pier 2	℄ Brg. E. Abut.
①	679.54	680.64	680.79	682.28	682.49	684.01
②	679.56	680.66	680.81	682.30	682.51	684.03
③	679.70	680.80	680.95	682.45	682.66	684.18
④	679.80	680.90	681.06	682.56	682.78	684.31
⑤	679.91	681.00	681.15	682.67	682.88	684.43
⑥	679.84	680.92	681.07	682.59	682.81	684.38
⑦	679.76	680.84	680.99	682.52	682.74	684.32
⑧	679.65	680.73	680.88	682.42	682.64	684.23
⑨	679.67	680.75	680.90	682.44	682.66	684.25

* For fabrication use only.



CROSS SECTION
(Looking East)



SECTION A-A

3/4" φ Granular or solid flux filled headed studs. Conforming to the requirements of Art. 1006.32 of the Standard Specifications. Automatically end welded to flange. (No. Req'd.=504 per beam)

STRUCTURAL STEEL DETAILS

JEFFERSON AVENUE OVER
WEST BRANCH DUPAGE RIVER
FAU 3570 SECTION 00-00116-00-BR
DUPAGE COUNTY
STA. 7+64.45
STRUCTURE NUMBER 022-6756

DESIGNED	SRT
CHECKED	JJI
DRAWN	GM
CHECKED	SRT

B Bollinger, Lech & Associates, Inc.