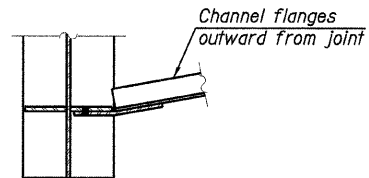
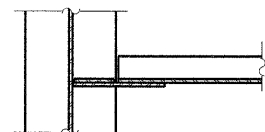


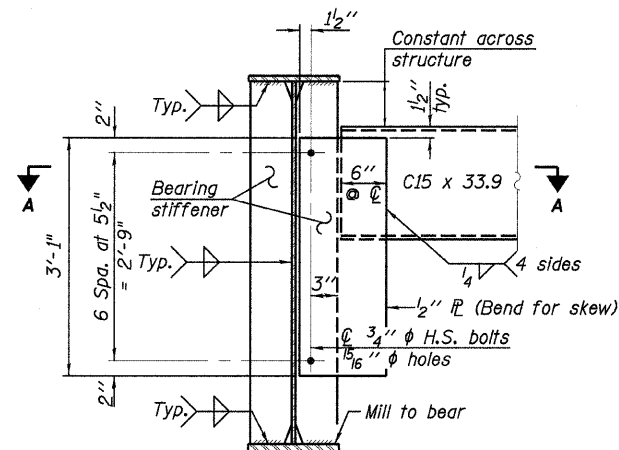
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A

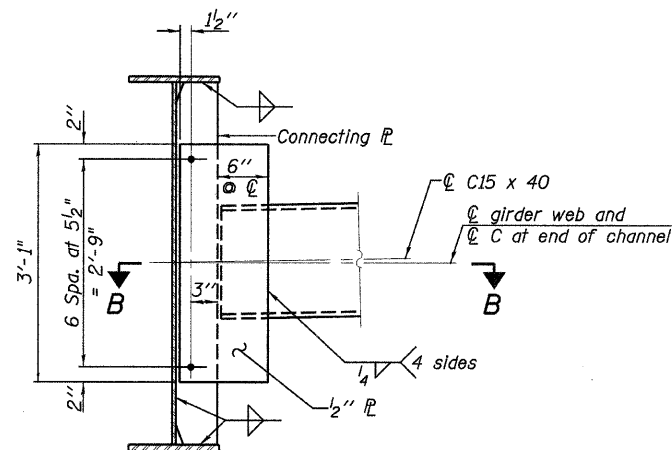


SECTION B-B



END DIAPHRAGM - D1

Note
Two hardened washers required for each set of oversized holes.



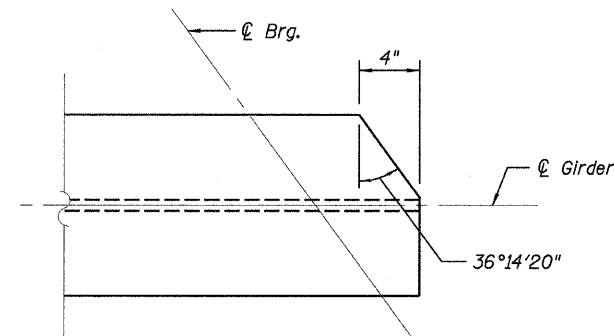
INTERIOR DIAPHRAGM - D2

Note
Two hardened washers required for each set of oversized holes.
* 3/4" φ HS bolts, 15/16" φ holes

Note
Diaphragms and connection plates shall be in accordance with AASHTO M270 Grade 36.

INTERIOR GIRDER MOMENT TABLE			
	0.4 Sp. 1 or 0.6 Sp. 2	Pier	
I_s	(in ⁴)	24415	46498
$I_c(n)$	(in ⁴)	57512	-
$I_c(3n)$	(in ⁴)	42748	-
S_s	(in ³)	1076	1842
$S_c(n)$	(in ³)	1420	-
$S_c(3n)$	(in ³)	1310	-
DC1	(k/')	1.11	1.23
M_{DC1}	(k)	997	2467
DC2	(k/')	0.16	0.16
M_{DC2}	(k)	160	299
DW	(k/')	0.36	0.36
M_{DW}	(k)	365	681
$M_L + IM$	(k)	1895	1769
M_u (Strength I)	(k)	5310	7575
$\phi_r M_n$, $\phi_r M_{nc}$	(k)	7111	-
f_s DC1	(ksi)	11.1	16.1
f_s DC2	(ksi)	1.5	1.9
f_s DW	(ksi)	3.3	4.4
f_s 1.3(L+IM)	(ksi)	20.8	15.0
f_s (Service II)	(ksi)	36.7	37.4
f_s (Total)(Strength I)	(ksi)	-	49.4
V_r	(k)	36.8	-

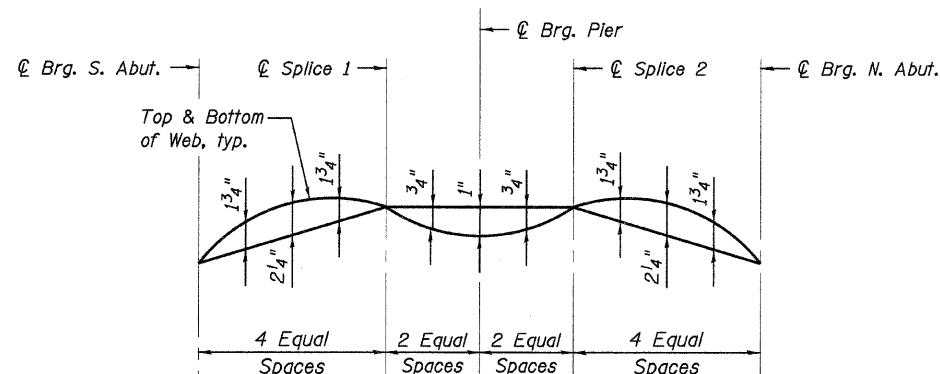
INTERIOR GIRDER REACTION TABLE			
	Abut.	Pier	
R_{DC1}	(k)	48.5	181.6
R_{DC2}	(k)	7.1	24.1
R_{DW}	(k)	16.3	55.0
$R_L + IM$	(k)	116.3	194.4
R_{Total}	(k)	188.2	455.1



DETAIL A

(North end shown, South end similar by rotation)

Note
See Sheet 19 for beam end flange clipping locations.



CAMBER DIAGRAM

DESIGNED - DWH
CHECKED - CMM
DRAWN - GJS
CHECKED - CMM

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 (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.).

$M_L + IM$: 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 $M_L + IM$

$\phi_r M_n$: 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).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_L + IM$

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 $M_L + IM$

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

TOP OF WEB ELEVATIONS					
Girder	φ Brg. S. Abut.	φ Splice 1	φ Brg. Pier	φ Splice 2	φ Brg. N. Abut.
1	568.26	568.76	568.73	568.86	568.66
2	568.49	569.05	568.91	569.03	568.80
3	568.71	569.25	569.09	569.20	568.94
4	568.94	569.44	569.27	569.37	569.07
5	569.16	569.62	569.44	569.53	569.30
6	569.25	569.64	569.44	569.52	569.16
7	569.07	569.47	569.27	569.33	568.94
8	568.94	569.31	569.09	569.14	568.71
9	568.80	569.14	568.91	568.95	568.49
10	568.66	568.97	568.73	568.76	568.26

Note: For Fabrication Only.

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 032-0115

LOCHNER

H.W. LOCHNER, INC.
CONSULTING ENGINEERS & PLANNERS
20 NORTH WACKER DRIVE SUITE 1200
CHICAGO, IL 60606

SHEET NO. 20 OF 31 SHEETS	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	(32, 47-4) HBK-4 & (G)N	GRUNDY	351	302
CONTRACT NO. 66408					
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			
* FAI 80 & FAS 297 / FAU 392					