

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	359
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

***TOP OF BEAM ELEVATIONS**

Location	Beams 1 Thru 26
℄ Brg. N. Abut.	619.04
℄ N. Brg. Pier	619.58
℄ S. Brg. Pier	619.58
℄ Brg. S. Abut.	619.12

INTERIOR BEAM MOMENT TABLE

	0.5 Span 1	0.5 Span 2
I	(in ⁴) 25600	19600
S	(in ³) 1280	993
℄	(k/ft.) 1.75	1.65
M℄	(k) 633.41	434.06
M℄	(k) 865.83	702.26
M _{impact}	(k) 479.67	398.88
M _{ecc}	(k) 585.56	479.22
M _{walkway}	(k) 3.54	2.59
M _{Total}	(k) 2568.01	2017.01
F _b	(k.s.i.) 24.08	24.37
F _b	(k.s.i.) 27.50	27.50
(℄ + 1) Deflection	(in.) 0.942	0.735
Allowable (℄ + 1) Deflection	(in.) 1.008	0.861

NOTES FOR BEAM TABLE

I and S are the moment of inertia and section modulus of the steel section used in computing bending stress, f_b .

M_L is the live load moment due to the Cooper E80 loading or the Alternate loading.

M_{impact} is the impact moment due to equipment with hammer blow.

M_{ecc} is the moment due to the eccentricity of the track relative to the beam group.

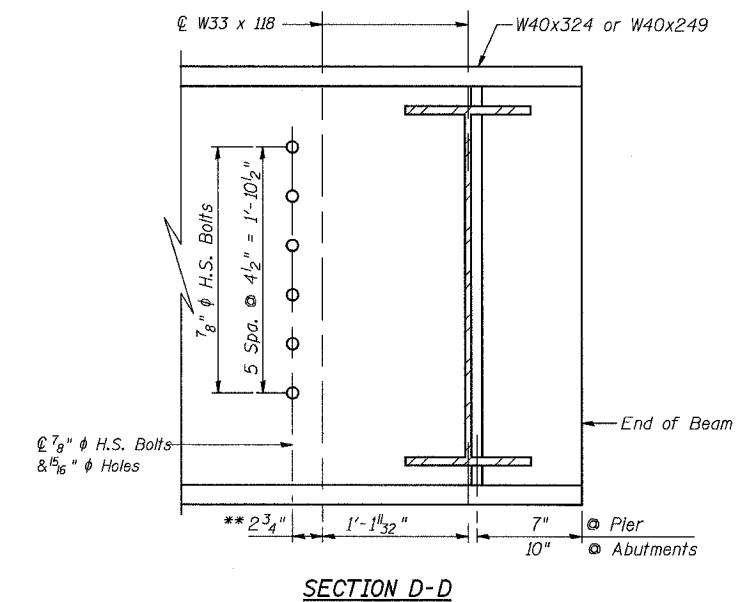
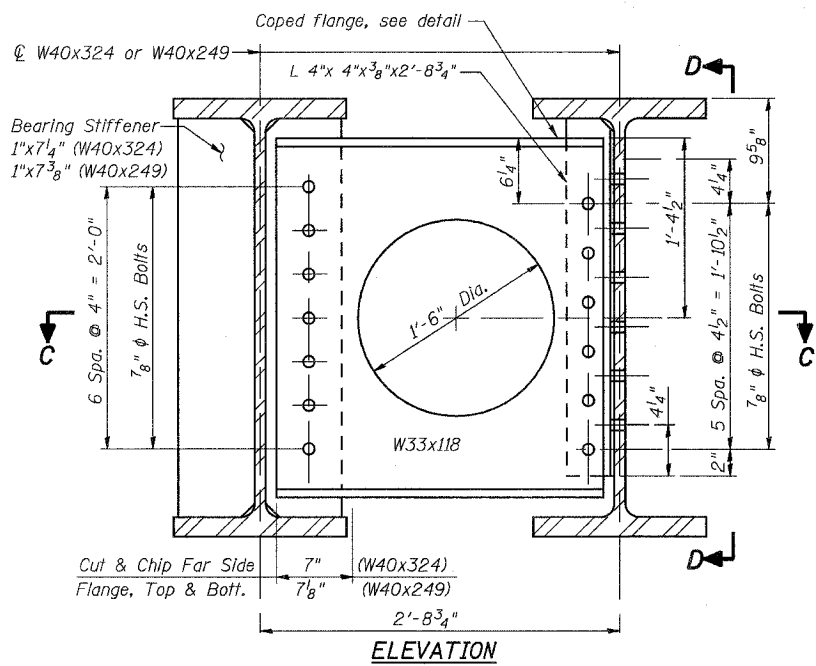
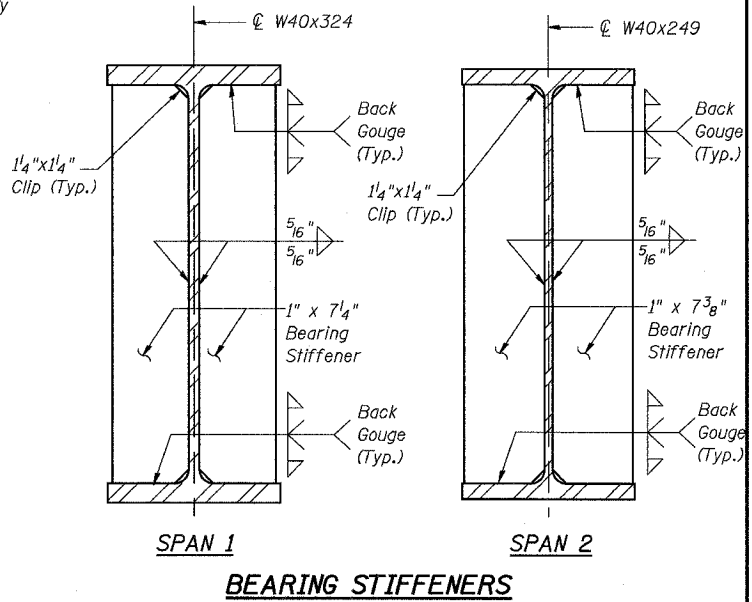
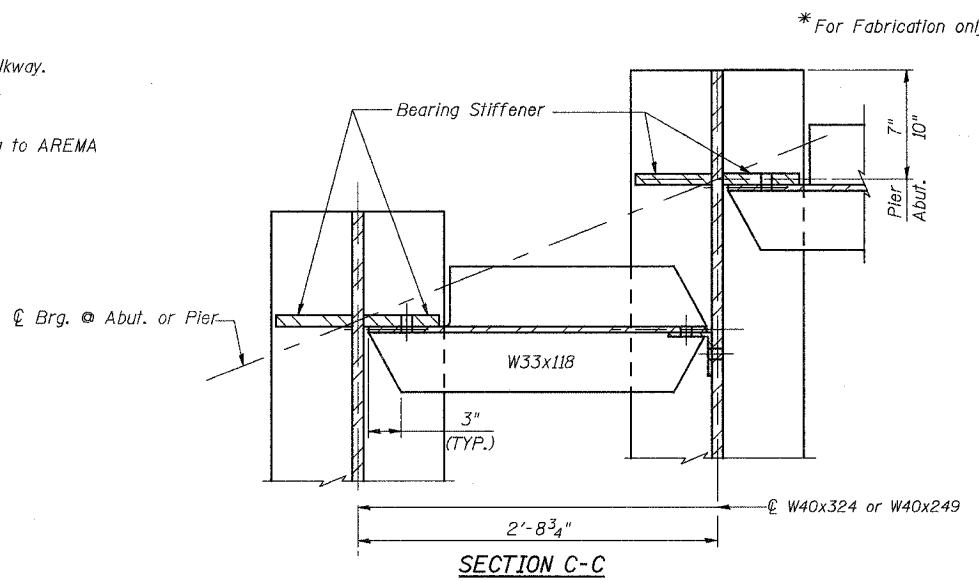
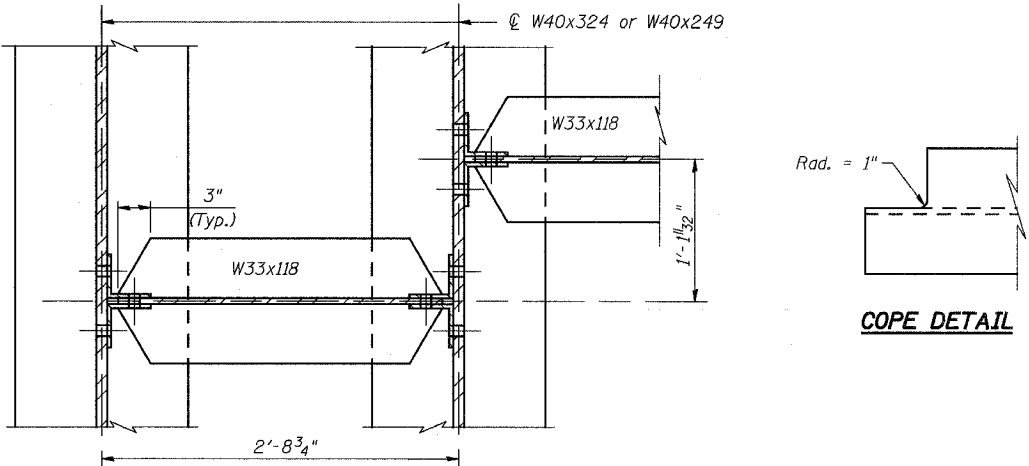
$M_{walkway}$ is the moment due to the live load on the one side walkway.

f_b is the total bending stress due to M_{Total}

F_b is the maximum allowable bending stress computed according to AREMA

REACTION TABLE

	Span 1	Span 2
R℄	(k) 47.14	37.81
R℄	(k) 73.03	66.51
R _{impact}	(k) 40.46	37.78
R _{ecc}	(k) 49.39	45.39
R _{walkway}	(k) 0.26	0.23
R _{Total}	(k) 210.28	187.72



3/13/2008 9:15:27 AM

DESIGNED DRS
CHECKED JGG
DRAWN SOI
CHECKED JGG

ELEVATION
* At High Beam of Pair

DIAPHRAGM D1
275 Required
(Diaphragms: M270 Gr. 36)

SECTION B-B

Notes:

- Beams W40x324 and W40x249 are M270 Gr. 50.
- ** Fabricator to verify dimension.
- Bolts shall be 7/8" ϕ placed in 1 5/16" ϕ holes.
- For the 11 diaphragms D1 between Beam Lines 12 & 13 under stage construction line only, provide 1 1/16" diameter holes in both ends of the W33 with two hardened washers for each bolt (one under the bolt head and one under the washer). Provide standard size holes within the transverse stiffeners attached to the beams to which this row of diaphragms will connect. The bolts for these diaphragms shall be final-tightened before the Stage II concrete deck pour is made. All other D1 diaphragms shall have 1 5/16" holes.

DIAPHRAGM D
100 Required
(Diaphragms: M270 Gr. 36)

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
BEAM DETAILS

METRA & CN BRIDGE 20.6
OVER U.S. RTE. 6 (159TH STREET)
STATION 91+24.94 STRUCTURE NO. 016-2755
SCALE: DATE: 2/21/2008