

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	474
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 10
26 SHEETS

		0.5 Span 1	0.5 Span 2
I	(in ⁴)	13,200	25,700
S	(in ³)	719	1,350
Q	(k/ft.)	1.46	1.68
M _D	(k)	273.5	595.3
M _L	(k)	633.2	962.8
M _{Impact}	(k)	315.4	458
M _{Total}	(k)	1222	2016
f _b	(k.s.i.)	20.4	17.9
F _b	(k.s.i.)	27.5	27.5
(± +I) Deflection	(in.)	0.68	0.97
Allowable (± +I) Deflection	(in.)	0.73	1.00

		Span 1	Span 2
R _P	(k)	28.2	44.7
R _L	(k)	66.7	81.7
R _{Impact}	(k)	33.2	38.9
R _{Total}	(k)	128.0	165.3

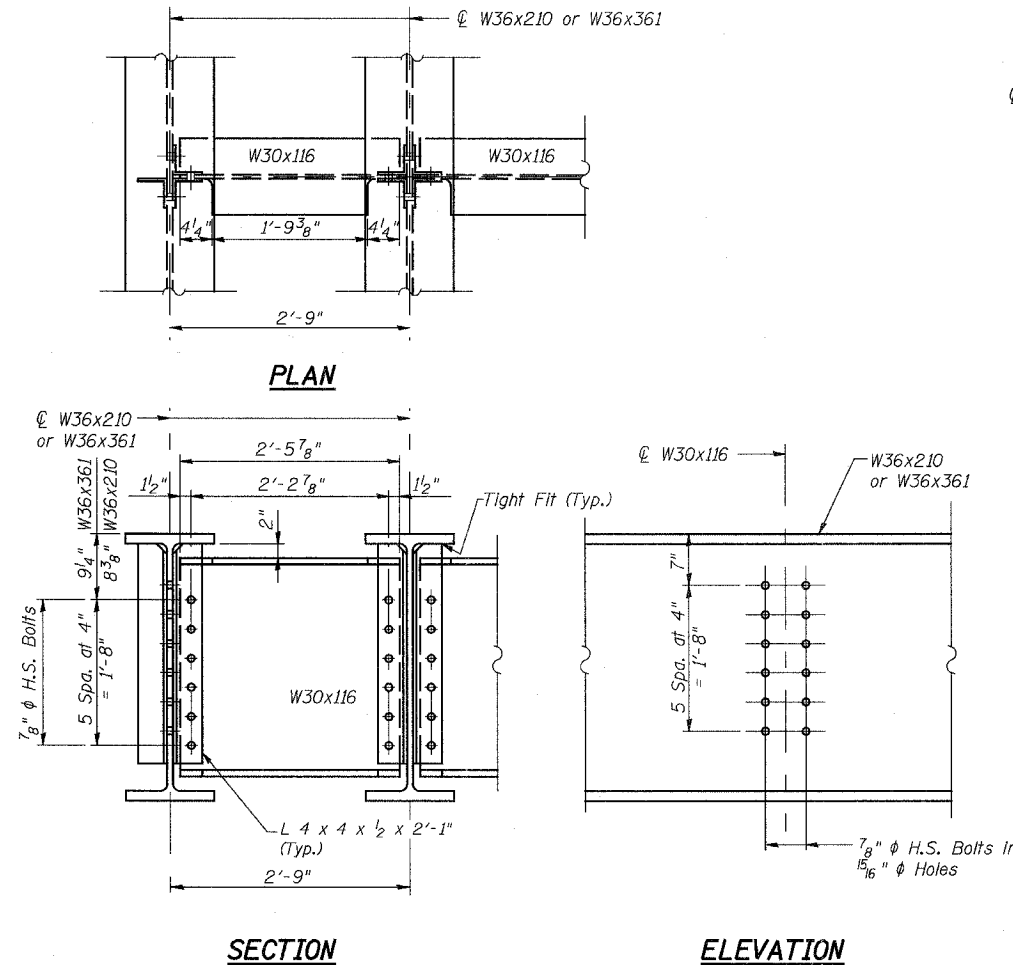
I and S are the moment of inertia and section modulus of the steel section used in computing bending stress, f_b.

M_L is the live load moment due to the Cooper E90 loading or the Alternate loading.

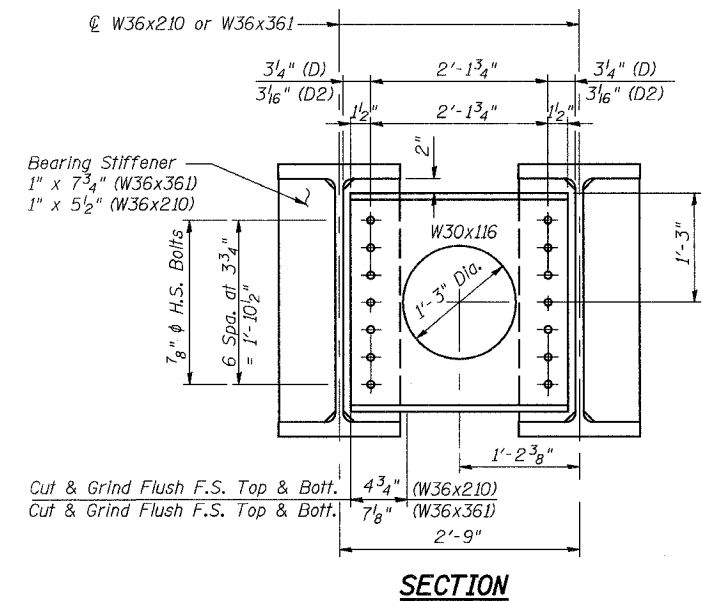
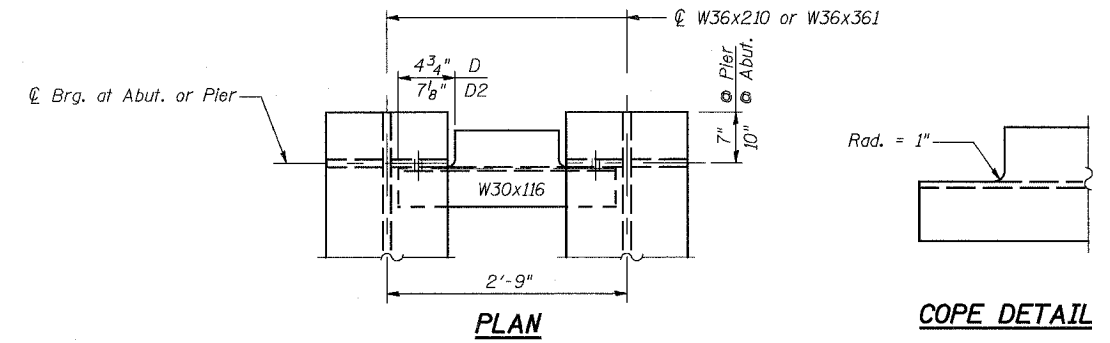
M_{Impact} is the impact moment due to equipment without hammer blow.

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

F_b is the maximum allowable bending stress computed according to AREMA.



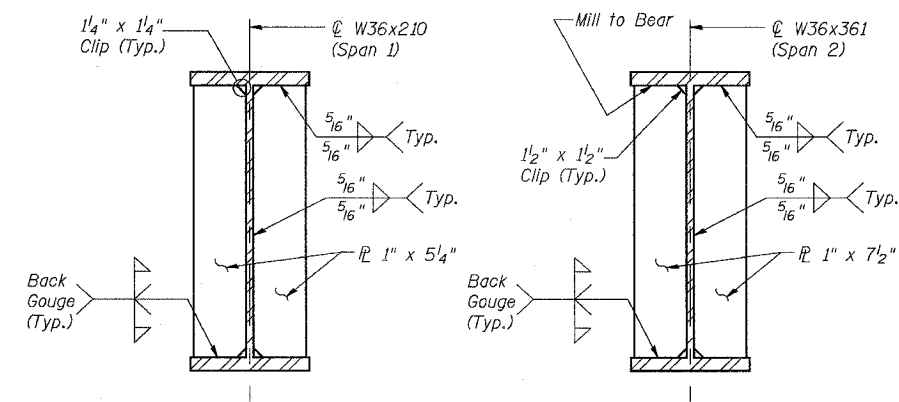
DIAPHRAGM D1
160 Required
(Diaphragms: ASTM A709 Gr. 50)



DIAPHRAGMS D & D2
32 Ea. Required
(Diaphragms: ASTM A709 Gr. 50)

Location	Beams 1 Thru 17
Q Brg. N. Abut.	617.44
Q N. Brg. Pier	617.83
Q S. Brg. Pier	617.83
Q Brg. S. Abut.	617.30

* For Fabrication only



BEARING STIFFENER DETAILS

Notes:
Work this Sheet with Sheet 9
Beams W36x210 or W36x361 are ASTM A709 Gr. 50.
F.S. = Far Side

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
BEAM DETAILS
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1"=1'-0" DATE: 2/21/2008

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

3/13/2008 1:26:46 PM
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DESIGNED MDS
CHECKED JPB
DRAWN MDS
CHECKED JPB