MOMENT TABLE

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. #1	Pier	0.5 Sp. #2
Is	(in^4)	4,020	4,020	4,020
Ic (n)	(in^4)	10,574		10,574
Ic (3n)	(in^4)	7,728		7,728
Ss	(in^3)	329	329	329
Sc (n)	(in^3)	473		473
Sc (3n)	(in^3)	427		427
Z	(in^3)		370	
DL	(k/')	0.803	1.244	0.803
M DL	('k)	255	409	26
s DL	(k/')	0.442		0.442
Ms DL	('k)	151		40
M LL	('k)	433	203	309
M (Imp)	('k)	116	56	86
5/3(M LL +M(Imp))	('k)	915	431	657
Ma	('k)	1717	1092	940
* Mu	('k)	1958		2186
fs DL (non-comp)	(ksi)	9.3	14.9	0.9
fs DL (comp)	(ksi)	4.2		1.1
fs 5/3(M LL +M(Imp)	(ksi)	23.2	15.7	16.7
fs (Overload)	(ksi)	36.8	30.6	18.8
** fs (Total)	(ksi)		39.8	
VR	(k)	48.4		38.0

* Compact, Braced section.
** Non-Compact Section

I_S and S_S are the moment of inertia and section modulus of the steel section used in computing f_S (Total and Overload)

$I_{c(n)}$ and $S_{c(n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_{c(3n)}$ and $S_{c(3n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads.

VR is the maximum LL + impact shear range in span.

Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.

The Plastic Moment capacity (M_U) is computed according to AASHTO 10.48.1 & 10.50.1.1.

f_S (Total) is the sum of the stresses due to

$$1.3\ (M\ DL + M_S DL + \tfrac{5}{3}(M\ LL + M\ (Imp)))$$

f_S (Overload) is the sum of the stresses due to

$$M\ DL + M_S DL + \tfrac{5}{3}(M\ LL + M\ (Imp))$$

M DL - moment due to dead loads on non-composite section

M_S DL - moment due to dead loads on composite section

M LL - moment due to live loads on non-composite or composite section

M (Imp) - moment due to live load impact on non-composite or composite section

M_a (applied moment) = $1.3\ (M\ DL + M_S DL + \tfrac{5}{3}(M\ LL + M\ (Imp)))$

M_U is the maximum bending strength of the section

INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
R DL	(k)	31.9	79.4
R LL	(k)	36.1	41.9
Imp.	(k)	9.7	11.2
R (Total)	(k)	77.6	132.5

TOP OF BEAM ELEVATIONS BEFORE DEFLECTIONS ***

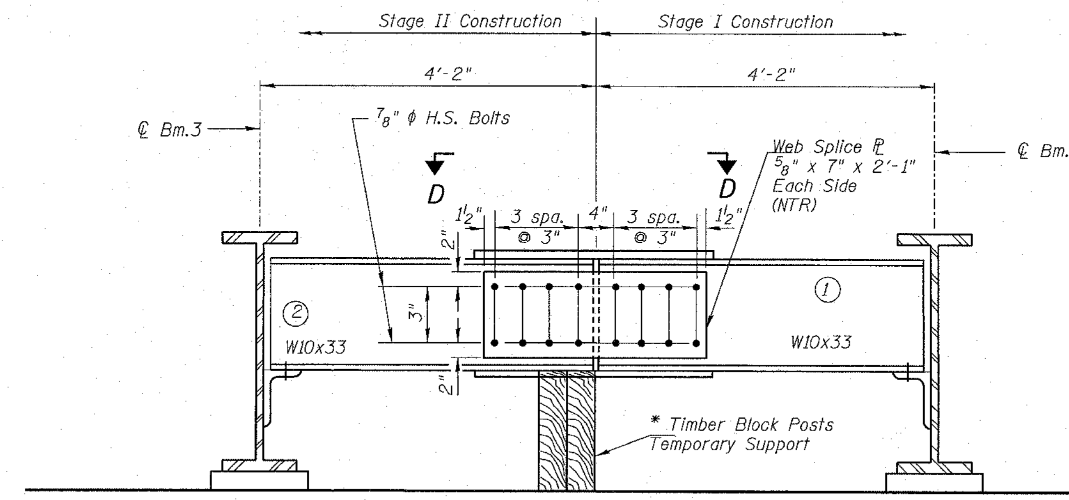
	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg. N. Abut	646.180	646.330	646.460	646.490	646.400	646.300
℄ Splice 1	646.350	646.490	646.600	646.610	646.520	646.390
℄ Brg. Pier 1	646.355	646.493	646.601	646.609	646.517	646.385
℄ Brg. Pier 2	646.395	646.517	646.609	646.601	646.493	646.345
℄ Splice 2	646.400	646.520	646.610	646.600	646.490	646.340
℄ Brg. S. Abut	646.300	646.400	646.490	646.460	646.330	646.170

*** For Fabrication Only

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A. 646	(102) BR-2	Whiteside	69	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
25 SHEETS
CONTRACT NO. 64427



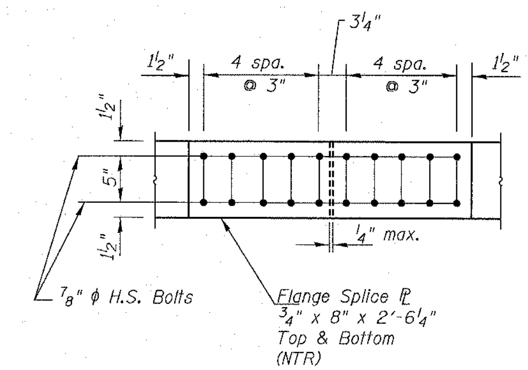
DIAPHRAGM D2

2 Required
(looking South)
For details of connections to beams see diaphragm D

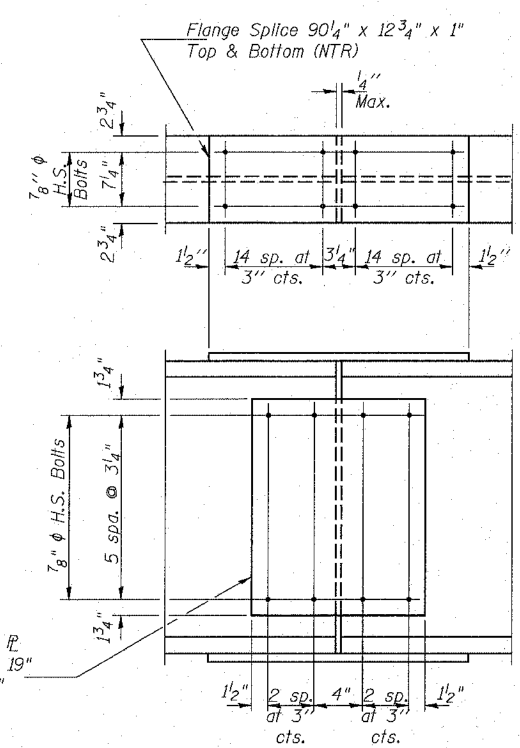
* Cost of Timber Block Posts included with "Furnishing and Erecting Structural Steel".

DIAPHRAGM D2 CONSTRUCTION SEQUENCE

1.) Order Diaphragm D2 in two sections with lengths of 4'-1½" and 4'-1½".
2.) Attach section ① of Diaphragm to Beam 4 and top flange splice ℙ during Stage I Construction.
3.) Place Timber Block Posts between section ① of diaphragm and abutment bearing seat.
4.) Attach section ② of diaphragm to both Beam 3 and section ① of diaphragm during Stage II Construction.
5.) Attach web splice plates to sections ① and ② of diaphragms.
6.) Remove Timber Block Posts.
7.) Attach bottom flange splice plate to sections ① and ② of diaphragms.

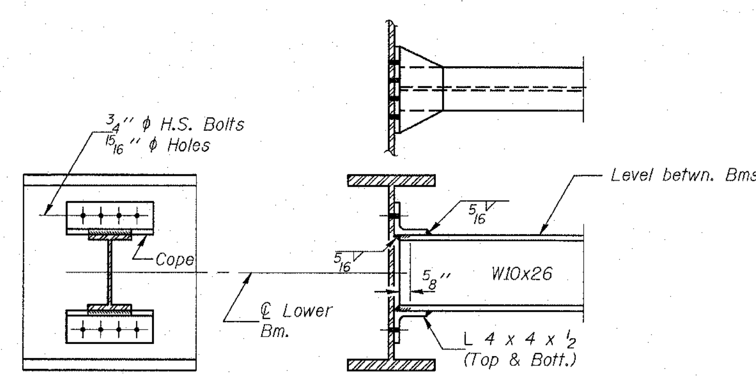


VIEW D-D



SPLICE

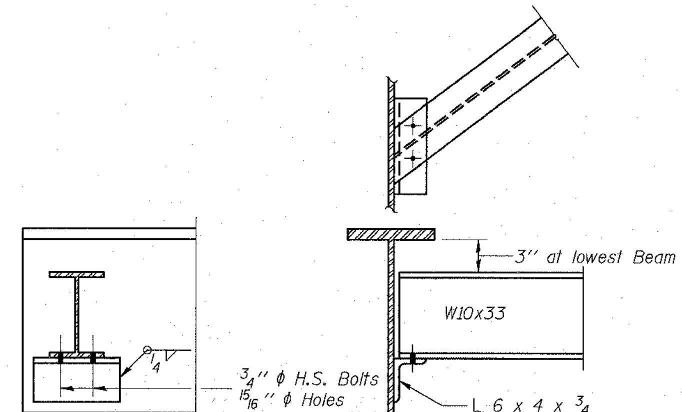
12 required



DIAPHRAGM D1

40 Required

Note:
Two hardened washers shall be required over all oversize holes for diaphragms.



DIAPHRAGM D

8 Required

DIAPHRAGM & SPLICE DETAILS
IL RTE 40 OVER GREEN RIVER
F.A.P. 646 SECTION (102)BR-2
WHITESIDE COUNTY
STATION 674+77.63
S.N. 098-0018

DESIGNED DDB
CHECKED JFJ
DRAWN JDB
CHECKED DDB
RANDOLPH & ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
FILE NUMBER 136.111
DATE Aug. 2005

I-2-D 2-26-93

Note: NTR denotes Notch Toughness Requirements