

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	2006-032 BY	WILL	505	279
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

GIRDER E.2 & W.2 MOMENT TABLE
(Composite in Positive Moment Areas Only)

	0.4 Span 1 & 4	Pier 1 & 3	0.5 Span 2 & 3	Pier 2
I_s	(in ⁴) 4,760	4,760	4,760	4,760
I_c (n)	(in ⁴) 12,620	-	12,620	-
I_c (sn)	(in ⁴) 9,317	-	9,317	-
S_s	(in ³) 345	345	345	345
Sc (n)	(in ³) 500	-	500	-
Sc (sn)	(in ³) 453	-	453	-
Z	(in ³) -	395	-	395
\bar{p}	(k/ft.) 0.75	1.17	0.75	1.17
$M\bar{p}$	(k) 76	241	94	279
$s\bar{p}$	(k/ft.) 0.42	-	0.42	-
$Ms\bar{p}$	(k) 49	-	67	-
$M\bar{k}$	(k) 218	135	281	153
M (Imp)	(k) 66	39	79	43
$S_3[M\bar{k} + M$ (Imp)]	(k) 474	292	601	328
Ma	(k) 778	693	990	789
Mu	(k) 2,459	-	2,688	-
$fs\bar{p}$ non-comp (k.s.i.)	2.7	8.4	3.3	9.7
$fs\bar{p}$ (comp) (k.s.i.)	1.3	-	1.8	-
$fs^{S_3}(\bar{k} + Imp)$ (k.s.i.)	11.4	10.2	14.4	11.4
fs (Overload) (k.s.i.)	15.4	18.6	19.5	21.1
fs (Total) (k.s.i.)	-	24.2	-	27.4
VR	(k) 50.0	-	51.0	-

TOP OF BEAM ELEVATIONS
(For Fabrication use only)

Beam	℄ Brg. S. Abut.	℄ Pier 1	℄ Field Splice 1	℄ Pier 2	℄ Field Splice 2	℄ Pier 3	℄ Field Splice 3	℄ Brg. N. Abut.
W.2	628.81	629.03	629.09	629.26	629.32	629.44	629.47	629.52
W.1	628.69	628.91	628.97	629.14	629.19	629.31	629.34	629.39
E.1	628.71	628.92	628.98	629.15	629.20	629.31	629.35	629.40
E.2	628.85	629.06	629.12	629.29	629.34	629.45	629.48	629.53

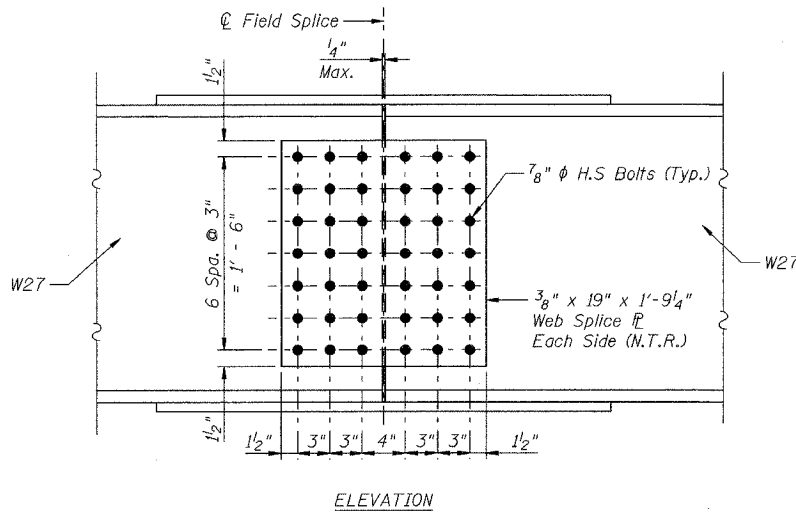
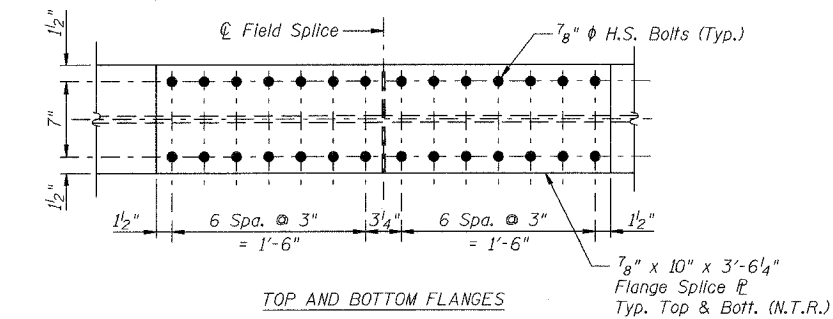
BEARING SEAT ELEVATIONS
(For Information Only)

Beam	S. Abut.	Pier 1	Pier 2	Pier 3	N. Abut.
W.2	626.06	626.33	626.75	626.73	626.77
W.1	625.94	626.20	626.63	626.61	626.64
E.1	625.95	626.21	626.64	626.61	626.64
E.2	626.09	626.35	626.78	626.75	626.78

GIRDER E.2 & W.2 REACTION TABLE

	Abut.	Pier 1 & 3	Pier 2
$R\bar{p}$	(k) 17.1	59.9	64.1
$R\bar{k}$	(k) 34.8	41.1	42.1
$Imp.$	(k) 10.4	12.0	11.8
R (Total)	(k) 62.4	113.0	117.9

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
 $I_{c(n)}$ and $Sc_{(n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 $I_{c(sn)}$ and $Sc_{(sn)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)
 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.
 Ma (Applied Moment) = $1.3[M\bar{p} + Ms\bar{p} + S_3(M\bar{k} + M(imp))]$.
 The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 fs (Overload) is the sum of the stresses due to $M\bar{p} + Ms\bar{p} + S_3(M\bar{k} + M(imp))$.
 fs (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\bar{p} + Ms\bar{p} + S_3(M\bar{k} + M(imp))]$.



SPLICE DETAILS

- Notes:**
1. Work this Sheet with Sht. SC-19.
 2. N.T.R. denotes steel is subject to Supplemental Requirements for Notch Toughness (Zone 2).
 3. H.S. bolts shall be AASHTO M 164 (ASTM A 325).

SHT. SC-20 OF 38

REVISIONS	
NAME	DATE

MORCOM, N.V., INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAI ROUTE 55
US 30 (PLAINFIELD ROAD) TO LILY CACHE SLOUGH
SB & NB I-55 OVER US RTE. 30, S.N. 099-0016 & 099-0017
STA. 587+80.82, SECTION 2006-032 BY
WILL COUNTY

**SPLICE DETAILS,
MOMENT & REACTION TABLES,
TOP OF BEAM ELEVATIONS**

SCALE: DATE: 07/05/06 DRAWN BY PA CHECKED BY MJK

TENG TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
CHICAGO, ILLINOIS

PLOT DATE = #DATE# FILE NAME = #FILE# PLOT SCALE = #SCALE# USER NAME = #USER#
 S:\DOCUMENT\2006\587+80.82\STRUCT\CON\SP120081.SHT
 6-28-2006 10:06:23 GRC\JAHZ