

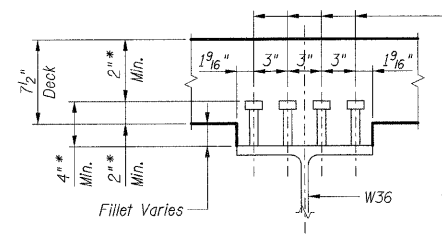
- Notes:**
- For diaphragm details see Sheet S-014.
 - Diaphragms labeled D3 are to be removed and replaced as shown on Sheet S-014.

INTERIOR GIRDER MOMENT TABLE

	0.4 Span 1 or 0.6 Span 2	Pier	
I_s	(in ⁴)	12100	19830
I_c (n)	(in ⁴)	28065	
I_c (3n)	(in ⁴)	20202	
S_s	(in ³)	664	1030
S_c (n)	(in ³)	923	
S_c (3n)	(in ³)	825	
Z	(in ³)		
DL	(k/ft)	0.846	1.350
M DL	(k-ft)	416	1261
sDL	(k/ft)	0.429	
M sDL	(k-ft)	230	
M LL	(k-ft)	613	457
M (Imp)	(k-ft)	145	108
5/3 [M LL + M (Imp)]	(k-ft)	1263	943
M_a	(k-ft)	2481	2865
M_u	(k-ft)	2809	
f_s DL (non-comp)	(ksi)	7.5	14.7
f_s DL (comp)	(ksi)	3.3	
f_s 5/3 [M LL + M (Imp)]	(ksi)	16.4	11.0
f_s (Overload)	(ksi)	27.3	25.7
f_s (Total)	(ksi)		33.4
VR	(k)	54.0	

INTERIOR GIRDER REACTION TABLE

	Abutments	Pier	
R DL	(k)	40.8	140.0
R LL	(k)	40.4	53.9
Imp.	(k)	9.6	12.7
R (Total)	(k)	90.8	206.6



EXISTING SHEAR CONNECTOR DETAIL

* Stud heights and vertical clearances apply to replacement studs (if required).

Existing 7/8" ϕ stud shear connectors to remain. (total number of existing studs = 7168)
 Shear connectors damaged during deck removal shall be replaced by the Contractor at the Contractor's expense with 7/8" ϕ granular or solid flux filled studs automatically end welded to flange.

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 and S_c are the moment of inertia and section modulus of the composite section used in computing f_s (Total and Overload).
 VR is the maximum Live Load + Impact shear range within the composite portion of the span.
 Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
 M_a (Applied Moment) = 1.3 [M DL + M sDL + 5/3 (M LL + M (Imp))].
 M_u is the maximum bending strength. (compact, braced section)
 f_s (Overload) is the sum of the stresses due to M DL + M sDL + 5/3 (M LL + M (Imp)).
 f_s (Total) is the sum of the stresses due to 1.3 [M DL + M sDL + 5/3 (M LL + M (Imp))]. (non-compact section)

SHT. S-013

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. ROUTE 57 (INTERSTATE 57)
 112TH PLACE BRIDGE DECK REPLACEMENT
 112TH PLACE OVER I-57
 SN 016-0988 STA. 546+15.56
 COOK COUNTY

STEEL FRAMING PLAN

DATE: 01/16/09

DRAWN BY: CCE
 CHECKED BY: JLR

TENG
 TENG & ASSOCIATES, INC.
 ENGINEERS ARCHITECTS PLANNERS
 205 N. MICHIGAN AVE., CHICAGO, IL 60601
 TELEPHONE: 312.616.0000

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