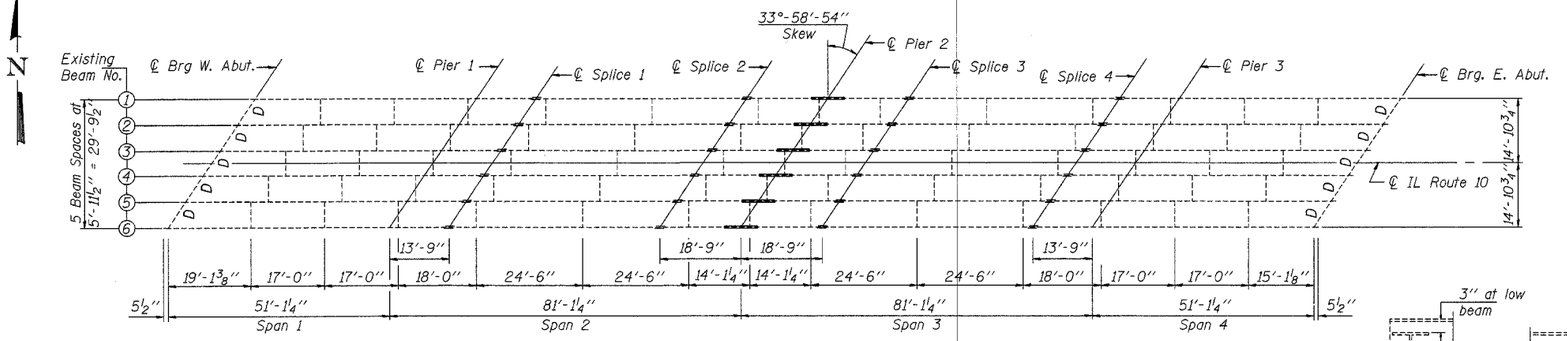
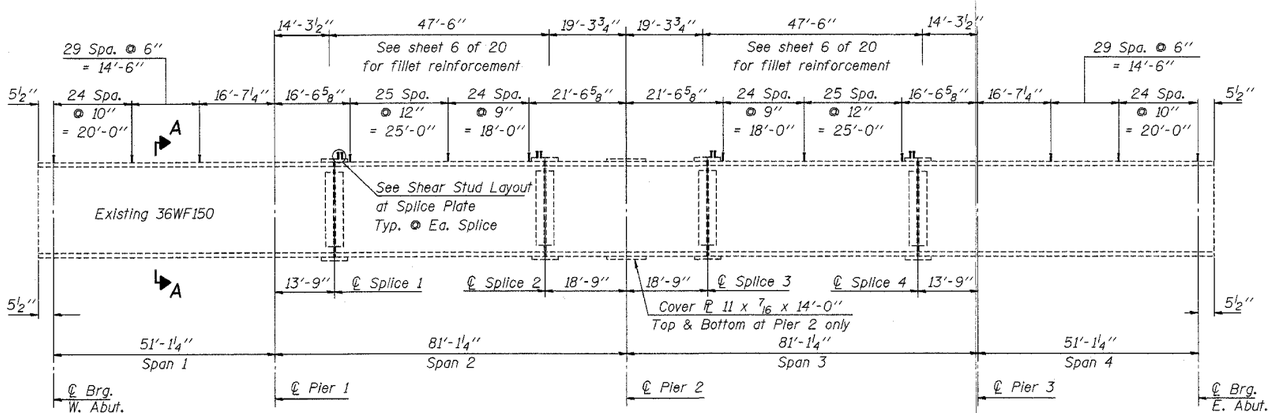
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 72	74-7OHBR	PIATT	41	26
FED. ROAD DIST. NO. 5	ILLINOIS	PROJECT		

Sheet 10 of 20 CONTRACT #90957

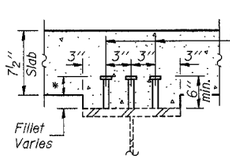


FRAMING PLAN



BEAM ELEVATION

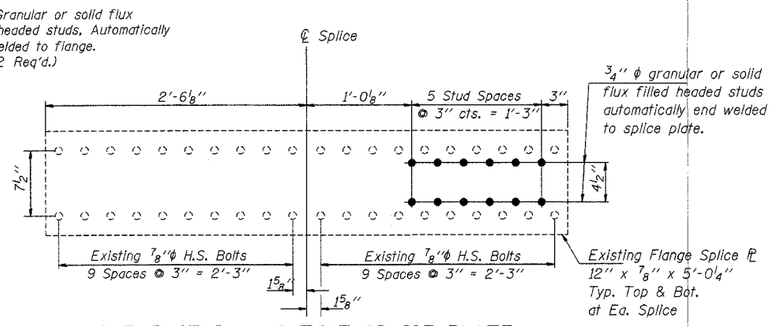
(Looking North - Showing Shear Connectors to be Added)



SECTION A-A

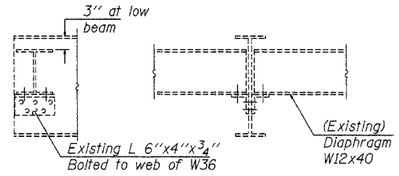
* Spans 1 & 4 - 2" min.
Spans 2 & 3 - See Detail "B" on sheet 6 of 20

DESIGNED	A.J.E. & T.S.H.
CHECKED	M.D.C.
DRAWN	A.J.E. & T.S.H.
CHECKED	M.D.C.



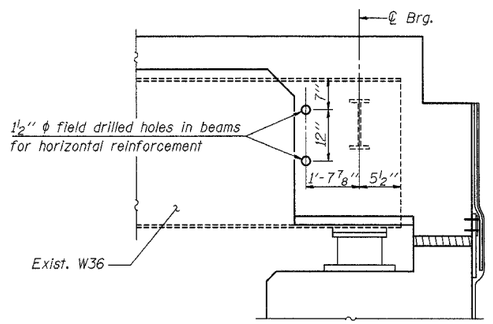
SHEAR STUD LAYOUT AT SPLICE PLATE

Showing location of new ¾"ϕ granular or solid flux filled headed studs automatically end welded to splice plate. Locate studs as shown at splices 1 & 3. Rotate layout 180° at Splices 2 & 4.



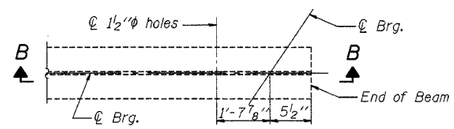
DIAPHRAGM D

(For Information Only)



SECTION B-B

(Dimensions Along ℄ Beams)



END OF BEAM DETAILS

TOP OF EXISTING BEAM ELEVATIONS AFTER JACKING

(For Information Only)

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg. W. Abut.	750.49	750.61	750.71	750.72	750.63	750.53
℄ Pier 1	750.49	750.61	750.71	750.72	750.63	750.53
℄ Pier 2	750.24	750.36	750.46	750.47	750.38	750.28
℄ Pier 3	749.71	749.83	749.93	749.94	749.85	749.75
℄ Brg. E. Abut.	749.29	749.41	749.51	749.52	749.43	749.33

Note: Elevations have been taken from the existing plans and reduced by 0.25' to match the new bench mark datum, and have been increased by 1.06' to bring them to their final position after jacking. Elevations at Pier 2 are to top of beam (not to top of cover plate).

INTERIOR GIRDER REACTION TABLE

		Abuts.	Piers 1 & 3	Pier 2
RDL	(k)	43.4	77.6	92.9
RL	(k)	30.8	40.6	45.2
Imp.	(k)	8.7	10.6	11.0
R (Total)	(k)	82.9	128.8	149.1

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1 0.6 Sp. 4	Piers 1 & 3	0.5 Sp. 2 0.5 Sp. 3	Pier 2
Is	(in⁴)	9040	9040	9040	12209
Ic (n)	(in⁴)	21798	——	21798	——
Ic (3n)	(in⁴)	15872	——	15872	——
Ss	(in³)	504	504	504	665
Sc (n)	(in³)	711	——	711	——
Sc (3n)	(in³)	640	——	640	——
wDL	(k/ft.)	0.793	1.081	0.793	1.081
MDL	('k)	111	448	226	661
sDL	(k/ft.)	0.288	——	0.288	——
MsDL	('k)	49	——	109	——
ML	('k)	296	237	451	311
M (Imp)	('k)	84	62	110	76
5/3[ML+M(Imp)]	('k)	633	498	935	645
Ma	('k)	1031	1230	1651	1697
Mu	('k)	2840	——	2840	——
fsDL non-comp	(k.s.i.)	2.6	10.7	5.4	11.9
fsDL (comp)	(k.s.i.)	0.9	——	2.0	——
fs 5/3(L+Imp)	(k.s.i.)	10.6	11.8	15.8	11.6
fs (Overload)	(k.s.i.)	14.2	22.5	23.2	23.5
fs (Total)	(k.s.i.)	——	29.3	——	30.6
VR	(k)	44.7	——	47.5	——

Is and *Ss* are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

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

$Ic_{(3n)}$ and $Sc_{(3n)}$ 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.

The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.

fs (Total) (Non-compact section) is the sum of the stresses due to $1.3[M_{DL} + M_{sDL} + \frac{5}{3}(M_L + M(Imp))]$.

fs (Overload) is the sum of the stresses due to $M_{DL} + M_{sDL} + \frac{5}{3}(M_L + M(Imp))$.

M_{DL} - Moment due to dead loads on non-composite section.

M_{sDL} - Moment due to dead loads on composite section.

M_L - 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.

Ma (Applied Moment)$=1.3[M_{DL} + M_{sDL} + \frac{5}{9}M_L + M(Imp))]$.

STRUCTURAL STEEL

IL ROUTE 10 OVER I-72
F.A.I. ROUTE 72 SECTION 74-7OHBR
PIATT COUNTY
STA. 1421+61.77
S.N. 074-0007

CUMMINS ENGINEERING CORPORATION

JOB #: 2088
FILE: 088SS
DATE: 6/30/04