CONTRACT NO.: 98881
ROUTE: VARIOUS
COUNTY: VARIOUS
SECTION: D-9 CONTRACT MAINTENANCE 05-7

SHEET NO.: 17 OF 31

ROUTE SEC.				
F.A.S. 932	LIVB-D	POPE	51	40
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

21 SHEET

SPLICE INSTALLATION PROCEDURE

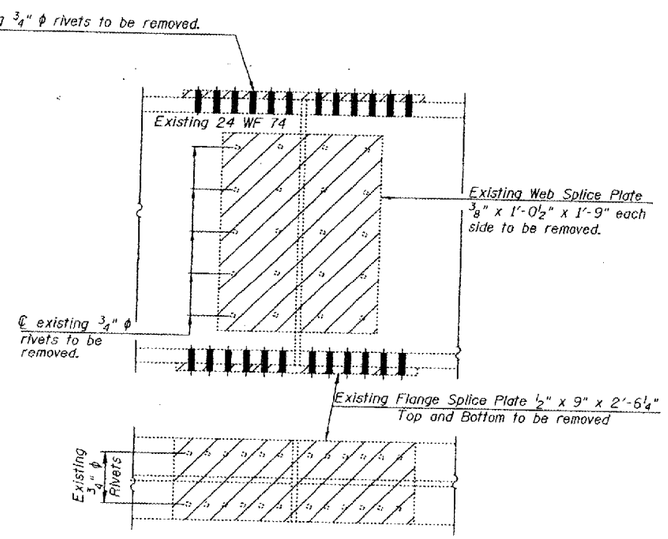
1. For each stage, after removal of the existing deck and after jacking and raising the existing beams to the final position, provide support near splice location. All work associated with support shall be paid for as Temporary Shoring and Cribbing. The maximum dead load reaction with deck removed (per beam) at each splice location is 1.3 k. The support system shall provide a factor of safety of 2.

2. Remove the existing $\frac{3}{4}$" ϕ rivets in the existing web splice and remove the existing web splice plates. Field drill 20 $\frac{13}{16}$" ϕ holes in new web splice plates using the existing holes as a template. Field drill 8 $\frac{13}{16}$" ϕ holes in the existing beam web using the holes in the new web splice plate as a template.

3. Remove the existing $\frac{3}{4}$" ϕ rivets in the existing top flange splice and remove the existing top flange splice plate. Field drill 24 $\frac{13}{16}$" ϕ holes in new flange splice plate using the existing holes as a template. Field drill 8 $\frac{13}{16}$" ϕ holes in the existing beam flange using the holes in the new flange splice plate as a template.

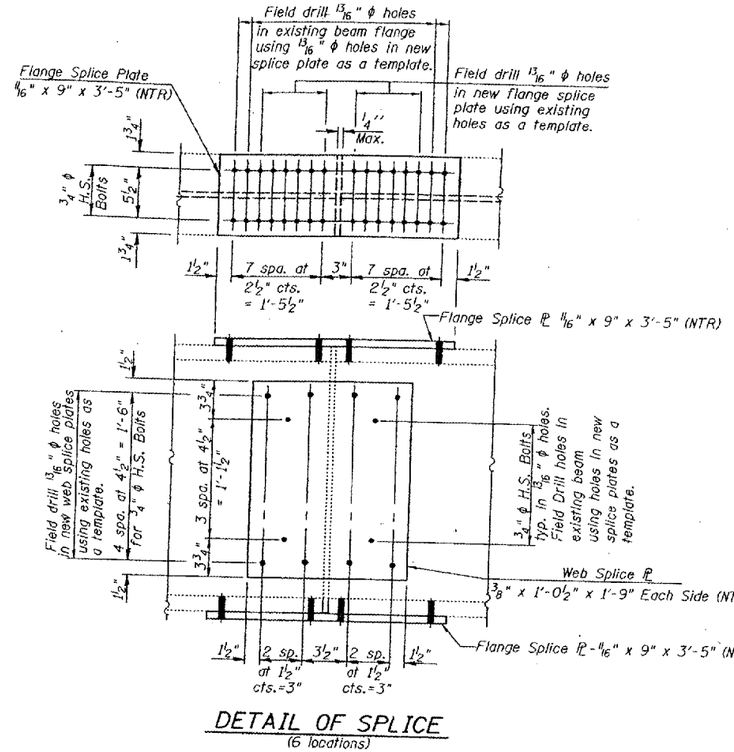
4. Repeat step 3 for bottom flange.

5. Core-type bits shall be used for field drilling. Cost of field drilling, plates, bolts, nuts and washers is included with Furnishing and Erecting Structural Steel. Cost of removing rivets and plates is included with Structural Steel Removal. Bolts shall be finger tightened, snug tightened and then fully tightened according to the Standard Specifications. The contact areas of the existing structural steel shall be cleaned according to the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Care shall be taken so there is no damage to any steel that is to be reused.



EXISTING SPLICE REMOVAL DETAIL
(6 Locations)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL OF SPLICE
(6 locations)

Notes: "NTR" denotes members to which Notch Toughness Requirements are applicable.
Hatched area indicates portion of existing steel to be removed.

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. #1 & 0.6 Sp. #3	Piers 1 & 2	0.5 Sp. #2
Is	(in^4)	2034	3534	2034
Ic (n)	(in^4)	6500		6500
Ic (3n)	(in^4)	4858		4861
Ss	(in^3)	170	281	170
Sc (n)	(in^3)	273		273
Sc (3n)	(in^3)	247		247
℘	(k/')	0.657	0.943	0.657
M℘	('k)	56	175	55
S℘	(k/')	0.287		0.287
MS℘	('k)	30		37
M℄	('k)	182	119	216
M (Imp)	('k)	54	35	62
5_3[M ℄+M(Imp)]	('k)	393	257	463
Ma	('k)	623	560	720
Mu	('k)	781		799
fs ℘ (non-comp)	(ksi)	4	7.5	3.9
fs ℘ (comp)	(ksi)	1.4		1.8
fs 5_3[M ℄+M(Imp)]	(ksi)	17.3	11.0	20.4
fs (Overload)	(ksi)	22.7	18.5	26.1
fs (Total)	(ksi)		24.0	
VR	(k)	40.4	-	44.1

INTERIOR BEAM REACTION TABLE			
		Abut.	Piers 1 & 2
R℘	(k)	*34.7	44.6
R℄	(k)	28.1	36.0
Imp.	(k)	8.4	10.8
R (Total)	(k)	*71.2	91.4

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 load. (See AASHTO 10.38)

VR is the maximum Live Load + Impact shear range within the composite portion of the span.

Ma (Applied Moment)=1.3[M℘ + MS℘ + 5_3(M℄ + 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℘ + MS℘ + 5_3(M℄ + M(Imp)).

fs (Total) is the sum of the stresses due to 1.3[M℘ + MS℘ + ($M5_3$ + M℄(Imp))].

*R℘ & *R (Total) for abutment includes load due to approach slab and concrete diaphragm.

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June 26, 2003
EXAMINED Thomas J. Domagalski
DIVISION OF BRIDGE DESIGN
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FOR INFORMATION ONLY:

BRIDGE NO. 2 STRUCTURE 076-0021