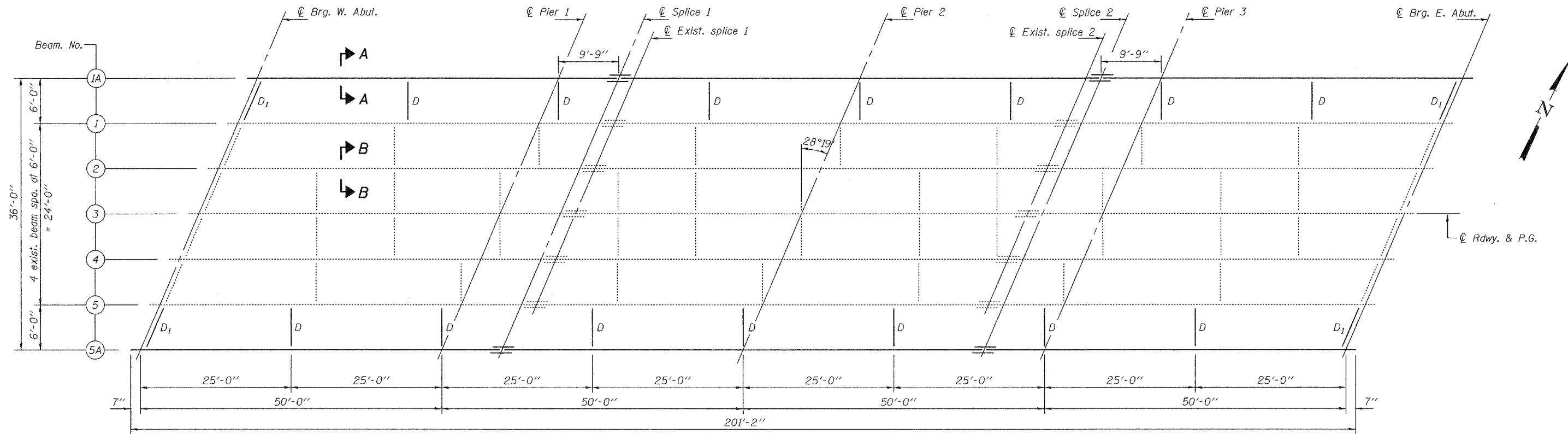


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO.
F.A.P. 309	7HBR-1	WHITESIDE	146	46	23 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #84883

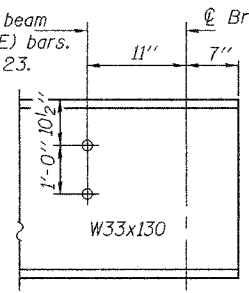


FRAMING PLAN

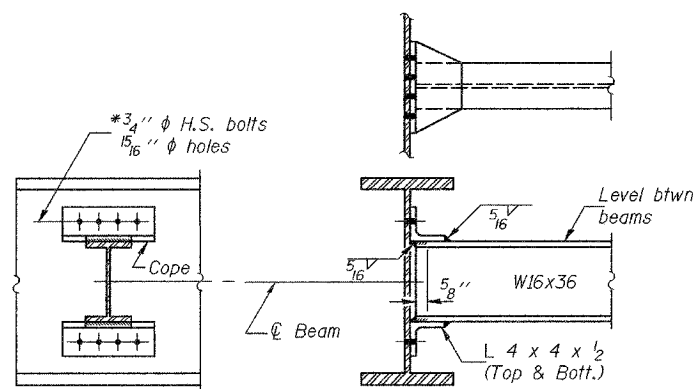
Beams 1A & 5A (W33x130) and splice plates shall be AASHTO M270, Grade 36 (NTR).

- * For location where L 4x4x1/2 is to be attached to existing W33x130. Use holes vertically on L 4x4x1/2 as template to drill 15/16" φ holes in existing web of W33x130. Cost included with Furnishing and Erecting Structural Steel.
- ** For existing beams, field drill 1" φ holes in each end of beam. Cost included with Furnishing and Erecting Structural Steel.

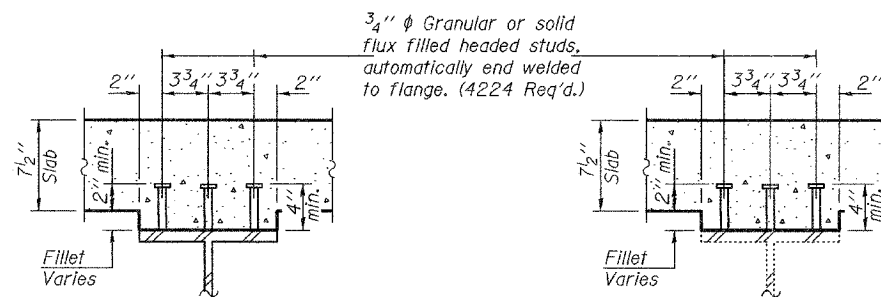
** 1" φ holes in beam ea. end for m (E) bars. See sheet 7 of 23.



TYP. END OF BEAM ELEVATION



DIAPHRAGM D
14 Required



SECTION A-A

SECTION B-B

(Except at existing splices)
See sheet 10 of 23 for stud shear connector spacings and Detail B at existing splices.

	INTERIOR GIRDER MOMENT TABLE			
	0.4 Sp. 1 & 0.6 Sp. 4	Piers 1 & 3	0.5 Sp. 2 & Sp. 3	Pier 2
I_s (in ⁴)	6710	6710	6710	6710
I_c (n) (in ⁴)	17105	---	17105	---
I_c (sn) (in ⁴)	12488	---	12488	---
S_s (in ³)	406	406	406	406
S_c (n) (in ³)	585	---	585	---
S_c (sn) (in ³)	527	---	527	---
ϕ (k/ft.)	0.77	1.20	0.77	1.20
$M\phi$ (k)	148.9	293.30	68.9	205.50
$s\phi$ (k/ft.)	0.43	---	0.43	---
$Ms\phi$ (k)	94.4	---	57.3	---
$M\phi$ (k)	291.1	141.4	241.1	133.6
M (Imp) (k)	83.3	40.5	68.9	38.2
$S_2[M\phi + M(imp)]$ (k)	624.0	303.2	516.7	286.3
M_u (k)	1127.5	775.4	835.7	639.4
M_u (k)	1652.6	1116.5	1900	1116.5
$f_s\phi$ non-comp (k.s.i.)	4.40	8.7	2.04	6.1
$f_s\phi$ (comp) (k.s.i.)	2.15	---	1.30	---
$f_s S_2(\phi + imp)$ (k.s.i.)	12.80	9.0	10.60	8.5
f_s (Overload) (k.s.i.)	19.35	17.7	13.94	14.6
f_s (Total) (k.s.i.)	---	---	---	---
VR (k)	43.3	---	45.2	---

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & 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.
 $I_c(sn)$ and $S_c(sn)$ 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.
 M_u (Applied Moment) = $1.3[M\phi + Ms\phi + S_2(M\phi + M(imp))]$.
 The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to $M\phi + Ms\phi + S_2(M\phi + M(imp))$.
 f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\phi + Ms\phi + S_2(M\phi + M(imp))]$.

	INTERIOR GIRDER REACTION TABLE		
	Abuts.	Piers 1 & 3	Pier 2
$R\phi$ (k)	24.2	67.7	56.5
$R\phi$ (k)	30.9	36.4	36.1
$Imp.$ (k)	8.8	10.4	10.3
R (Total) (k)	63.9	114.5	102.9

STRUCTURAL STEEL
F.A.P. RTE. 309 - SEC. 7HBR-1
WHITESIDE COUNTY
STATION 51+17.83
STRUCTURE NO. 098-6000

DESIGNED	CCC
CHECKED	DPN
DRAWN	h.t. duong
CHECKED	CCC/DPN

Oct. 11, 2005
 EXAMINED *Thomas J. Damagala*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES