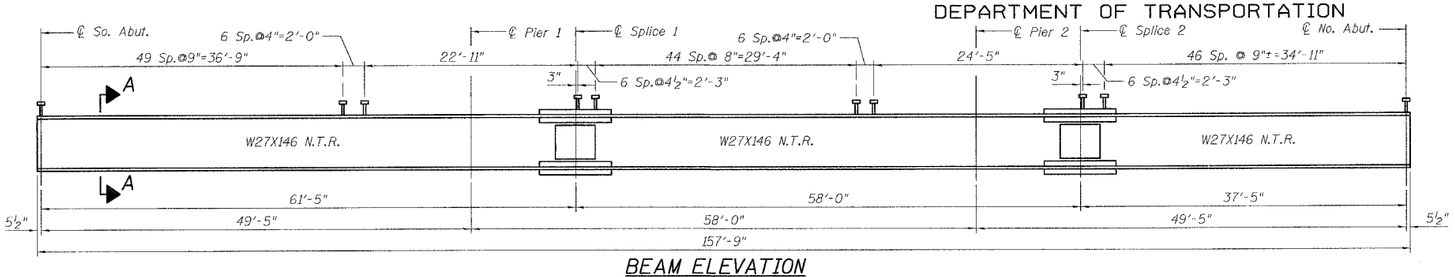
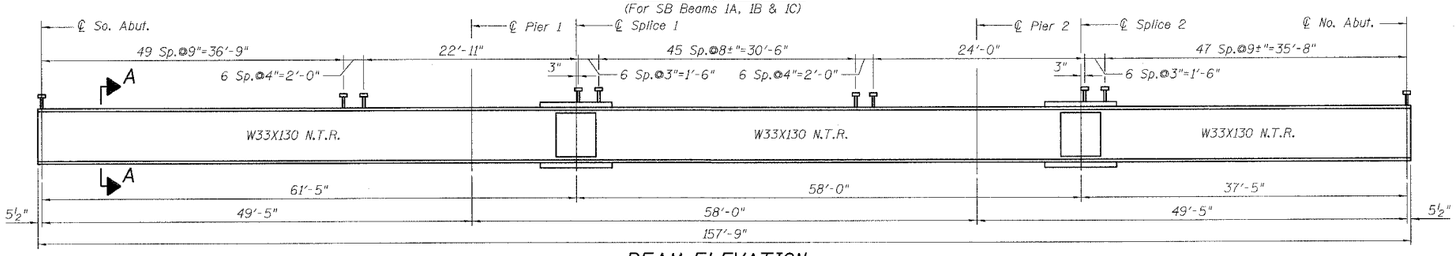
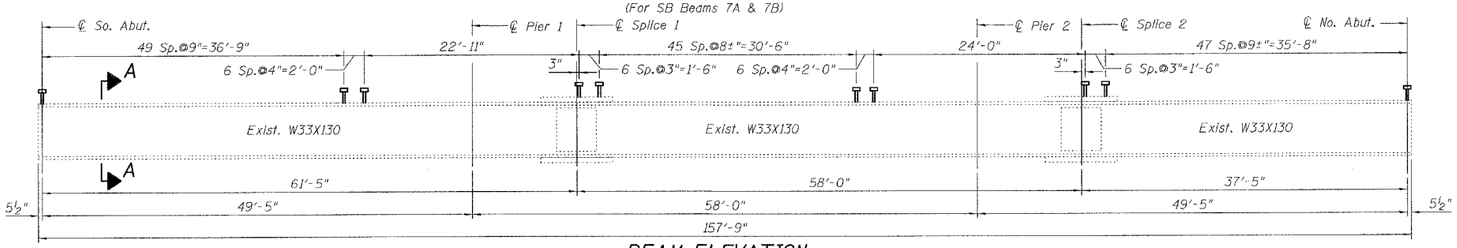
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



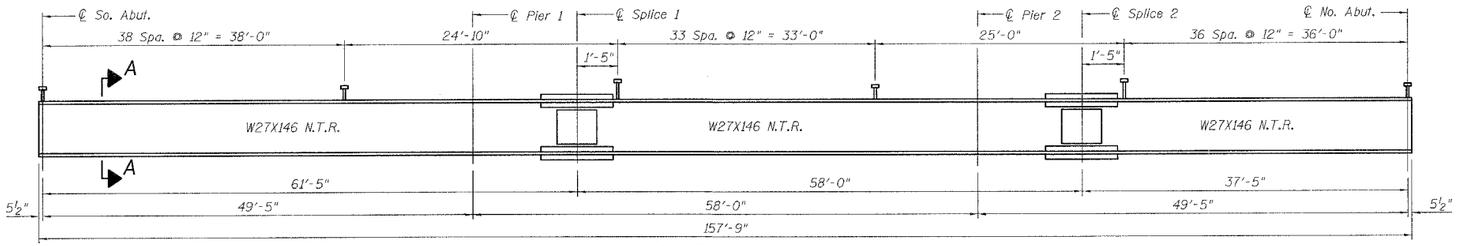
BEAM ELEVATION
(For SB Beams 1A, 1B & 1C)



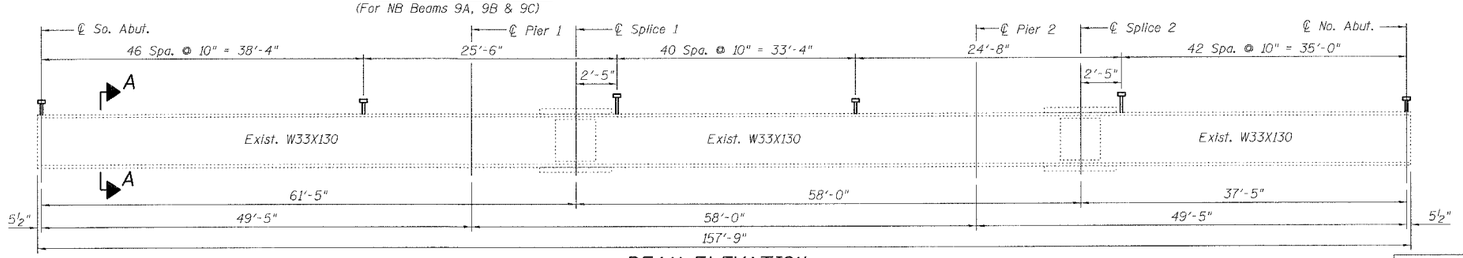
BEAM ELEVATION
(For SB Beams 7A & 7B)



BEAM ELEVATION
(For SB Existing Beams 1 thru 7)



BEAM ELEVATION
(For NB Beams 9A, 9B & 9C)



BEAM ELEVATION
(For NB Existing Beam 9)

DESIGNED	J. ZUO
CHECKED	A.HAMMAD
DRAWN	J. ZUO
CHECKED	J.GRAINAWI

Date: 5/15/2006

INTERIOR GIRDER MOMENT TABLE
(SB PROPOSED BEAMS 1A & 1B, COMPOSITE)

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
Is	(in^4)	5630	5630	5630
Ic (n)	(in^4)	14996		14996
Ic (3n)	(in^4)	10570		10570
Ss	(in^3)	411	411	411
Sc (n)	(in^3)	609		609
Sc (3n)	(in^3)	542		542
Z	(in^3)			
℘	(k/ft.)	0.710	1.090	0.710
M℘	('k)	128	299	96
s℘	(k/ft.)	0.380		0.380
Ms℘	('k)	73		65
M℄	('k)	264	145	269
M (Imp)	('k)	76	41	73
$5/3[M℄+M(Imp)]$	('k)	567	309	571
Ma	('k)	998	790	951
Mu	('k)	1901		2193
fs℘ non-comp	(k.s.i.)	3.7	8.7	2.8
fs℘ (comp)	(k.s.i.)	1.6		1.4
$fs5/3(℄+Imp)$	(k.s.i.)	11.2	9.0	11.3
fs (Overload)	(k.s.i.)	16.5	17.8	15.5
fs (Total)	(k.s.i.)		23.1	
VR	(k)	45.5		34.2

INTERIOR GIRDER REACTION TABLE
(SB PROPOSED BEAMS 1A & 1B, COMPOSITE)

		Abut.	Pier
R℘	(k)	21.0	64.8
R℄	(k)	32.6	37.9
Imp.	(k)	9.4	10.5
R (Total)	(k)	63.0	113.2

INTERIOR GIRDER MOMENT TABLE
(SB EXISTING BEAMS, COMPOSITE)

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
Is	(in^4)	6710	6710	6710
Ic (n)	(in^4)	18994		18994
Ic (3n)	(in^4)	13690		13690
Ss	(in^3)	406	406	406
Sc (n)	(in^3)	621		621
Sc (3n)	(in^3)	557		557
Z	(in^3)			
℘	(k/ft.)	0.790	1.170	0.790
M℘	('k)	140	318	105
s℘	(k/ft.)	0.380		0.380
Ms℘	('k)	74		67
M℄	('k)	313	168	319
M (Imp)	('k)	90	47	87
$5/3[M℄+M(Imp)]$	('k)	671	359	677
Ma	('k)	1151	881	1104
Mu	('k)	1854		2038
fs℘ non-comp	(k.s.i.)	4.2	9.4	3.1
fs℘ (comp)	(k.s.i.)	1.6		1.4
$fs5/3(℄+Imp)$	(k.s.i.)	13.0	10.6	13.1
fs (Overload)	(k.s.i.)	18.7	20.0	17.7
fs (Total)	(k.s.i.)		26.0	
VR	(k)	52.9		39.3

INTERIOR GIRDER REACTION TABLE
(SB EXISTING BEAMS, COMPOSITE)

		Abut.	Pier
R℘	(k)	22.4	69.0
R℄	(k)	37.9	44.1
Imp.	(k)	10.9	12.3
R (Total)	(k)	71.1	125.4

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-55	**	WILL	50	30
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8
15 SHEETS

** SECTION 2005-063 I
CONTRACT NO. 60A67

INTERIOR GIRDER MOMENT TABLE
(SB PROPOSED BEAM 7A, COMPOSITE)

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
Is	(in^4)	6710	6710	6710
Ic (n)	(in^4)	18645		18645
Ic (3n)	(in^4)	13365		13365
Ss	(in^3)	406	406	406
Sc (n)	(in^3)	617		617
Sc (3n)	(in^3)	552		552
Z	(in^3)			
℘	(k/ft.)	0.740	1.120	0.740
M℘	('k)	133	306	100
s℘	(k/ft.)	0.380		0.380
Ms℘	('k)	74		66
M℄	('k)	291	158	297
M (Imp)	('k)	84	44	81
$5/3[M℄+M(Imp)]$	('k)	625	336	630
Ma	('k)	1081	835	1035
Mu	('k)	1903		2169
fs℘ non-comp	(k.s.i.)	3.9	9.0	3.0
fs℘ (comp)	(k.s.i.)	1.6		1.4
$fs5/3(℄+Imp)$	(k.s.i.)	12.2	10.0	12.3
fs (Overload)	(k.s.i.)	17.7	19.0	16.7
fs (Total)	(k.s.i.)		24.7	
VR	(k)	48.9		37.7

INTERIOR GIRDER REACTION TABLE
(SB PROPOSED BEAMS 7A, COMPOSITE)

		Abut.	Pier
R℘	(k)	21.5	66.5
R℄	(k)	35.0	40.8
Imp.	(k)	10.0	11.3
R (Total)	(k)	66.6	118.6

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.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

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) (Non-compact section) is the sum of the stresses due to 1.3[M℘ + Ms℘ + $5/3$(M℄ + M(Imp))].

Notes:

1. N.T.R. denotes members subject to the supplemental requirements for notch toughness (Zone 2).
2. Verify all existing dimensions in field prior to fabrication.
3. Work this Sheet with Sheet Nos. 7 & 9.
4. For section A-A, See Sheet No. 7.

PB PARSONS BRINCKERHOFF

STRUCTURAL STEEL DETAILS I
I-55 OVER EJ&E R.R.
FAI ROUTE 55-SEC. 2005-063 I
WILL COUNTY
STA. 609+29.37
STRUCTURE NO. 009-0018 (NB)
STRUCTURE NO. 009-0019 (SB)