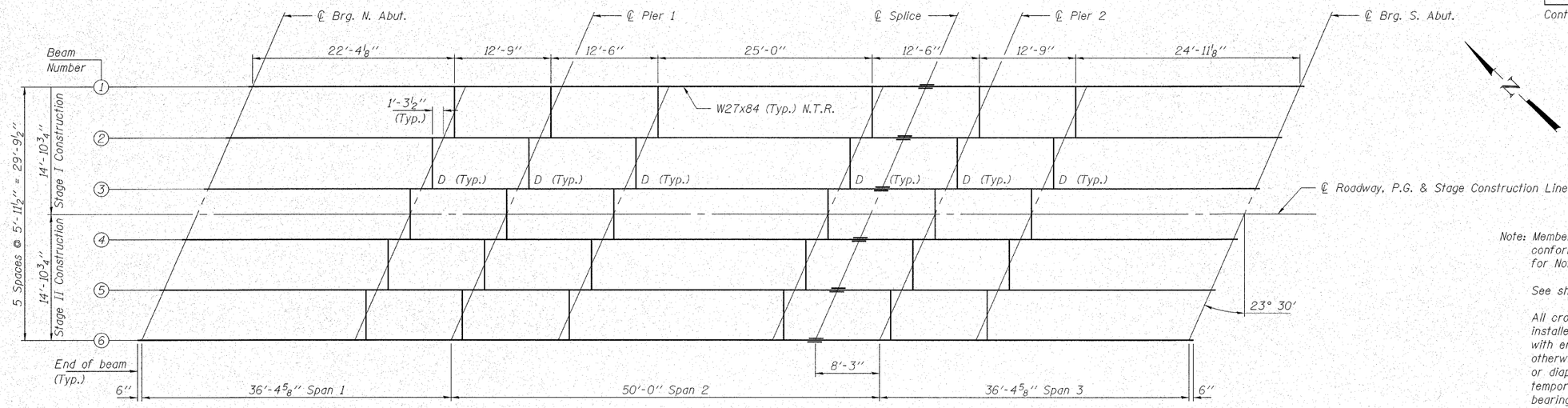
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 776	(116BR-1)B-1	HAMILTON	140	33
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

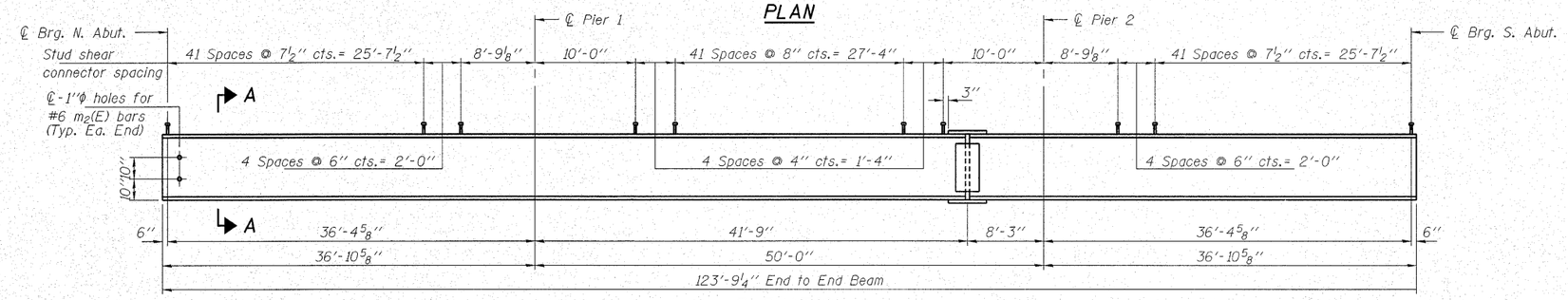
SHEET NO. 14
25 SHEETS

Contract #78006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



ELEVATION

INTERIOR BEAM MOMENT TABLE						
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
I_s	(in^4)	2850	2850	2850	2850	2850
$I_c(n)$	(in^4)	8542		8542		8542
$I_c(3n)$	(in^4)	6353		6353		6353
S_s	(in^3)	213	213	213	213	213
$S_c(n)$	(in^3)	331		331		331
$S_c(3n)$	(in^3)	300		300		300
ϱ	(k/')	0.665	1.113	0.665	1.113	0.665
$M\varrho$	('k)	54	195	79	195	54
$s\varrho$	(k/')	0.448		0.448		0.448
$M_s\varrho$	('k)	45		74		45
M_L	('k)	178	109	240	109	178
M_{Imp}	('k)	54	33	70	33	54
$\frac{5}{3}[M_L + _{Imp}]$	('k)	386	237	517	237	386
M_a	('k)	631	561	871	561	631
* M_u	('k)	1504		1504		1504
f_s ϱ non-comp	(ksi)	3.0	11.0	4.5	11.0	3.0
f_s ϱ (comp)	(ksi)	1.8		2.7		1.8
f_s $\frac{5}{3}[M_L + M_{Imp}]$	(ksi)	14.0	13.4	20.7	13.4	14.0
f_s (Overload)	(ksi)	18.8	24.4	27.9	24.4	18.8
** f_s (Total)	(ksi)		31.7		31.7	
VR	(k)	40.0		34.4		40.0

* Compact section
** Braced non-compact and partially braced section

INTERIOR BEAM REACTION TABLE			
		Abut.	Pier
$R\varrho$	(k)	14.9	53.5
R_L	(k)	27.9	35.4
Imp.	(k)	8.4	10.6
R_{Total}	(k)	51.2	99.5

Note: Members designated N.T.R. shall conform to supplemental requirements for Notch Toughness (Zone 2).

See sheet 15 of 25 for section A-A.

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frams or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

Z: Plastic Section Modulus of the steel section in non-composite areas ($in.^3$).

ϱ: Un-factored non-composite dead load (kips/ft.).

$M\varrho$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\varrho$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\varrho$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L: Un-factored live load moment (kip-ft.).

M_{Imp}: Un-factored moment due to impact (kip-ft.).

M_a: Factored design moment (kip-ft.).
$1.3\ [M\varrho + M_s\varrho + \frac{5}{3}(M_L + M_{Imp})]$

M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
$M\varrho + M_s\varrho + \frac{5}{3}(M_L + M_{Imp})$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M\varrho + M_s\varrho + \frac{5}{3}(M_L + M_{Imp})]$

VR: Maximum $_L$ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

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CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-41-0021-i	DATE: 10/25/07
DESIGNED: P.L.	CHECKED: S.W.M.	DRAWN: D.T.M.

STRUCTURAL STEEL

IL ROUTE 142 OVER CONTRARY CREEK
F.A.P. ROUTE 776 - SECTION (116BR-1)B-1
HAMILTON COUNTY
STRUCTURE NO. 033-0050 / STATION 516+75

PLOT DATE = $DATE$ FILE NAME = $FILE1$