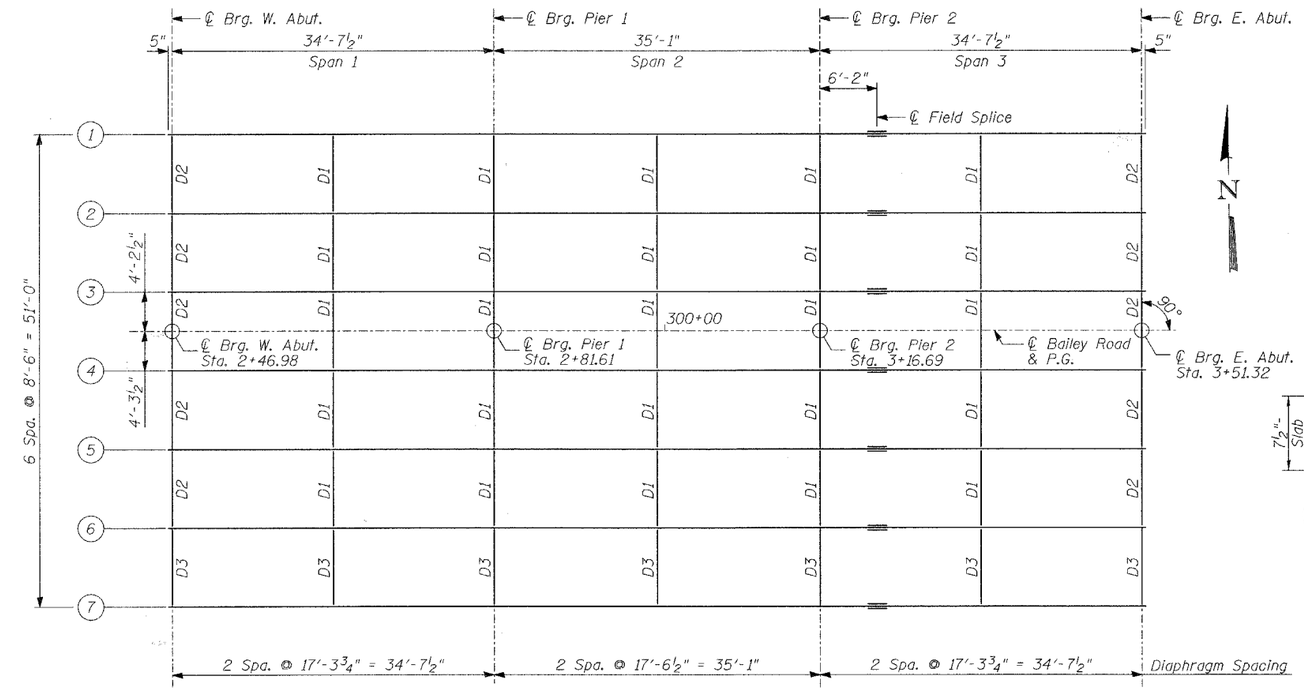
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

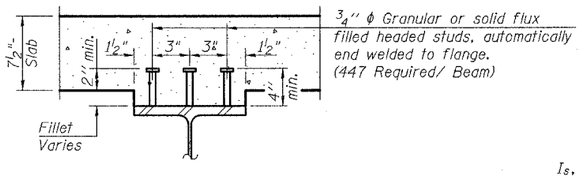
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1545	•	DUPAGE	97	40
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJ.	

SHEET NO. - 19
39 - SHEETS

• 00-00115-00-BR
CONTRACT NO. 83961



FRAMING PLAN



¾" ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (447 Required/ Beam)

SECTION A-A

INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
R_{DL}	(k)	21.9	59.0
R_{LL}	(k)	39.0	48.2
Imp.	(k)	11.7	12.4
R_{Total}	(k)	72.6	119.6

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I_s	(in^4)	2,370	2,370	2,370
$I_c(n)$	(in^4)	7,361	--	7,361
$I_c(3n)$	(in^4)	5,589	--	5,589
S_s	(in^3)	197	197	197
$S_c(n)$	(in^3)	307	--	307
$S_c(3n)$	(in^3)	279	--	279
Z	(in^3)	--	224	--
w_{DL}	(k/')	0.92	1.55	0.92
M_{DL}	('k)	88	173	31
s_{DL}	(k/')	0.63	--	0.63
M_{sDL}	('k)	66	--	35
M_{LL}	('k)	235	121	193
M_{Imp}	('k)	70	36	58
$\frac{5}{3}[M_{LL}+M_{Imp}]$	('k)	508	262	418
M_a	('k)	861	565	630
* M_u	('k)	1,411	--	1,607
f_s DL non-comp	(ksi)	5.36	10.54	1.89
f_s DL (comp)	(ksi)	2.84	--	1.51
f_s $\frac{5}{3}[M_{LL}+M_{Imp}]$	(ksi)	19.86	15.96	16.34
f_s (Overload)	(ksi)	28.06	26.50	19.74
** f_s (Total)	(ksi)	--	34.45	--
VR	(k)	54.3	--	44.5

* Compact section
** Braced non-compact

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 ($in.^3$).

w_{DL}: Un-factored non-composite dead load (kips/ft.).

M_{DL}: Un-factored moment due to non-composite dead load (kip-ft.).

s_{DL}: Un-factored long-term composite (superimposed) dead load (kips/ft.)

M_{sDL}: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_{LL}: Un-factored live load moment (kip-ft.).

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

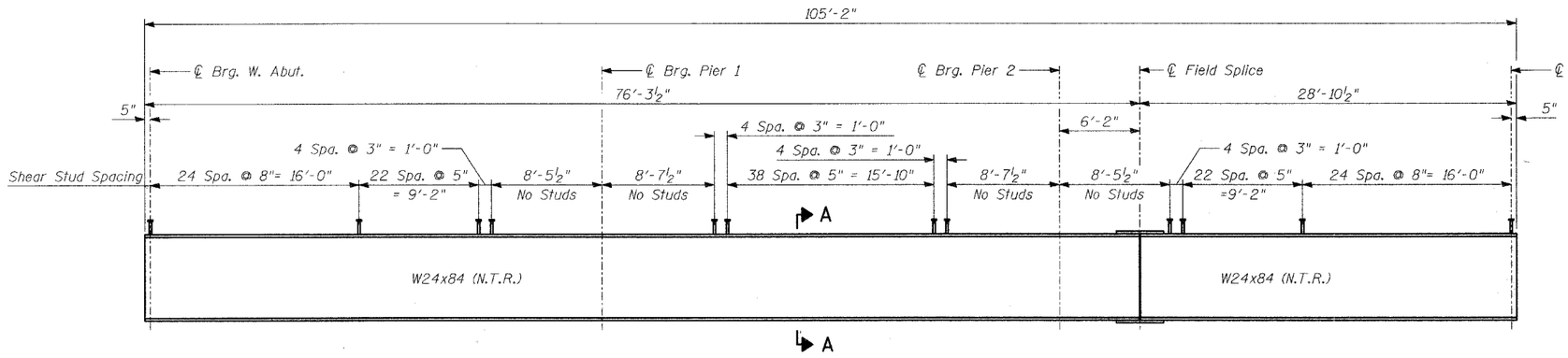
M_a: Factored design moment (kip-ft.).
$1.3\ [M_{DL} + M_{sDL} + \frac{5}{3}(M_{LL} + M_{Imp})]$

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).
$M_{DL} + M_{sDL} + \frac{5}{3}(M_{LL} + M_{Imp})$

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

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



BEAM ELEVATION

NOTES:

1. All structural steel for stringers and splice plates shall conform to the requirements of AASHTO M270, Grade 50W. All other structural steel shall conform to the requirements of AASHTO M270, Grade 36W.
2. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
3. All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Stuctural Steel	L SUM	1
Stud Shear Connectors	EACH	3,129

TYLIN INTERNATIONAL

DESIGNED	-	PL
CHECKED	-	SP
DRAWN	-	PL
CHECKED	-	SP

FRAMING PLAN

BAILEY ROAD OVER THE
WEST BRANCH OF THE DUPAGE RIVER
FAU 1545
SECTION 00-00115-00-BR STA. 2+99.15
DUPAGE COUNTY
S.N. 022-3028