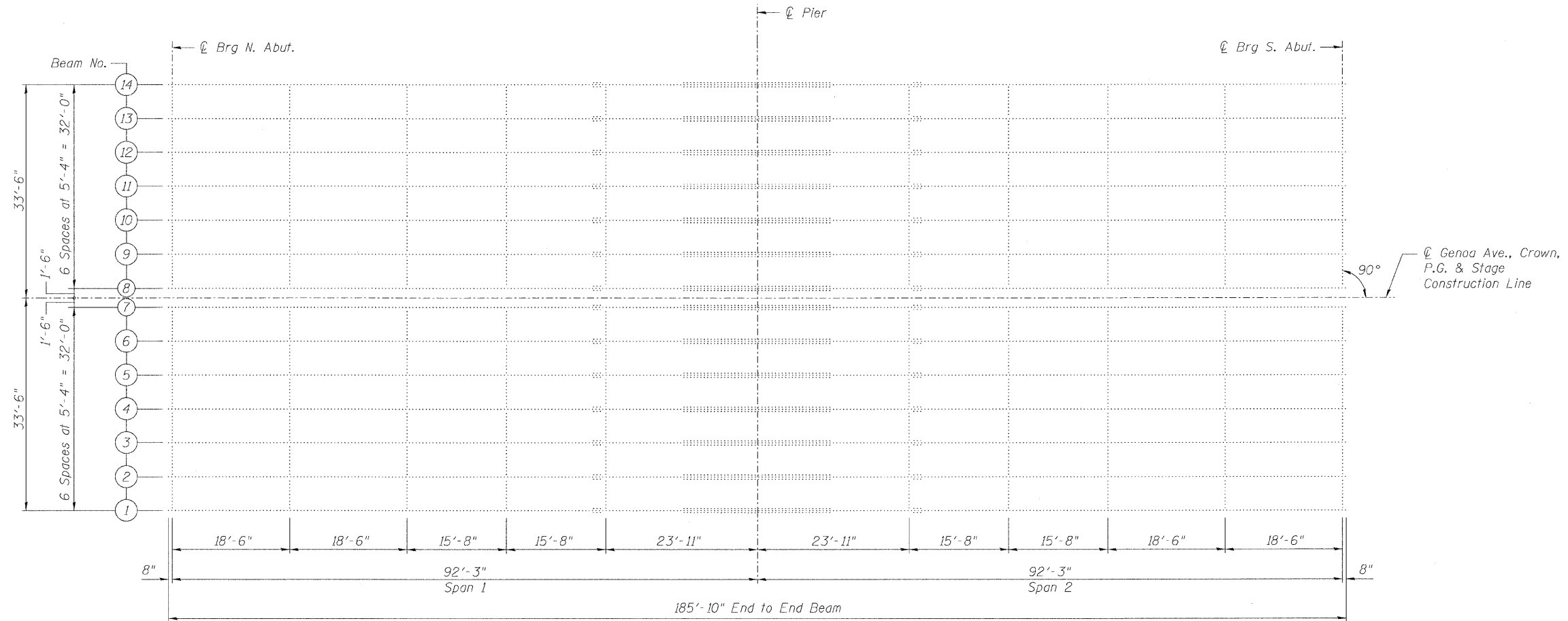
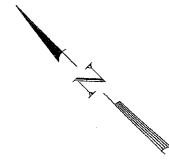


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL SHEETS 77
SHEET NO. 49



PLAN

		0.4 Sp. 1 or 0.6 Sp. 2	Pier
I_s	(in ⁴)	15,000	25,555
$I_c(n)$	(in ⁴)	35,721	-
$I_c(3n)$	(in ⁴)	24,889	-
S_s	(in ³)	836	1349
$S_c(n)$	(in ³)	1203	-
$S_c(3n)$	(in ³)	1056	-
ρ	(k/')	0.83	0.88
$M \rho$	(k)	464	1020
$s \rho$	(k/')	0.43	0.43
$M_s \rho$	(k)	264	466
$M \ddagger$	(k)	563	441
M_{IM}	(k)	129	101
$\frac{5}{3} [M \ddagger + i]$	(k)	1153	903
M_o	(k)	2445	3106
M_u	(k)	4118	4512
$f_s \rho$ non-comp	(ksi)	6.7	9.1
$f_s \rho$ (comp)	(ksi)	3.0	4.1
$f_s \frac{5}{3} [M \ddagger + M_I]$	(ksi)	11.5	8.0
f_s (Overload)	(ksi)	21.2	21.2
f_s (Total)	(ksi)	-	-
VR	(k)	45.4	-

* Compact section

		Abut.	Pier
$R \rho$	(k)	44.2	154.2
$R \ddagger$	(k)	33.2	47.7
R_I	(k)	7.6	7.7
R_{Total}	(k)	85.0	209.6

- 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 (in⁴ and in³).
- $I_c(n), S_c(n)$: 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 (in⁴ and in³).
- $I_c(3n), S_c(3n)$: 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 (in⁴ and in³).
- ρ : Un-factored non-composite dead load (kips/ft.).
- $M \rho$: Un-factored moment due to non-composite dead load (kip-ft.).
- $s \rho$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
- $M_s \rho$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- $M \ddagger$: Un-factored live load moment (kip-ft.).
- M_I : Un-factored moment due to impact (kip-ft.).
- M_o : Factored design moment (kip-ft.).
 $1.3 [M \rho + M_s \rho + \frac{5}{3} (M \ddagger + M_I)]$
- 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).
 $M \rho + M_s \rho + \frac{5}{3} (M \ddagger + M_I)$
- f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M \rho + M_s \rho + \frac{5}{3} (M \ddagger + M_I)]$
- VR: Maximum \ddagger + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

FRAMING PLAN & DESIGN DATA
STRUCTURE NO. 016-2030

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 19	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	32 SHEETS	57	2222.3B	COOK	77	49
Designed By: ESH Checked By: MTH Drawn By: ESH Date: 7/2009 File: 016-2030.dwg			CONTRACT NO. 62119			
		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				