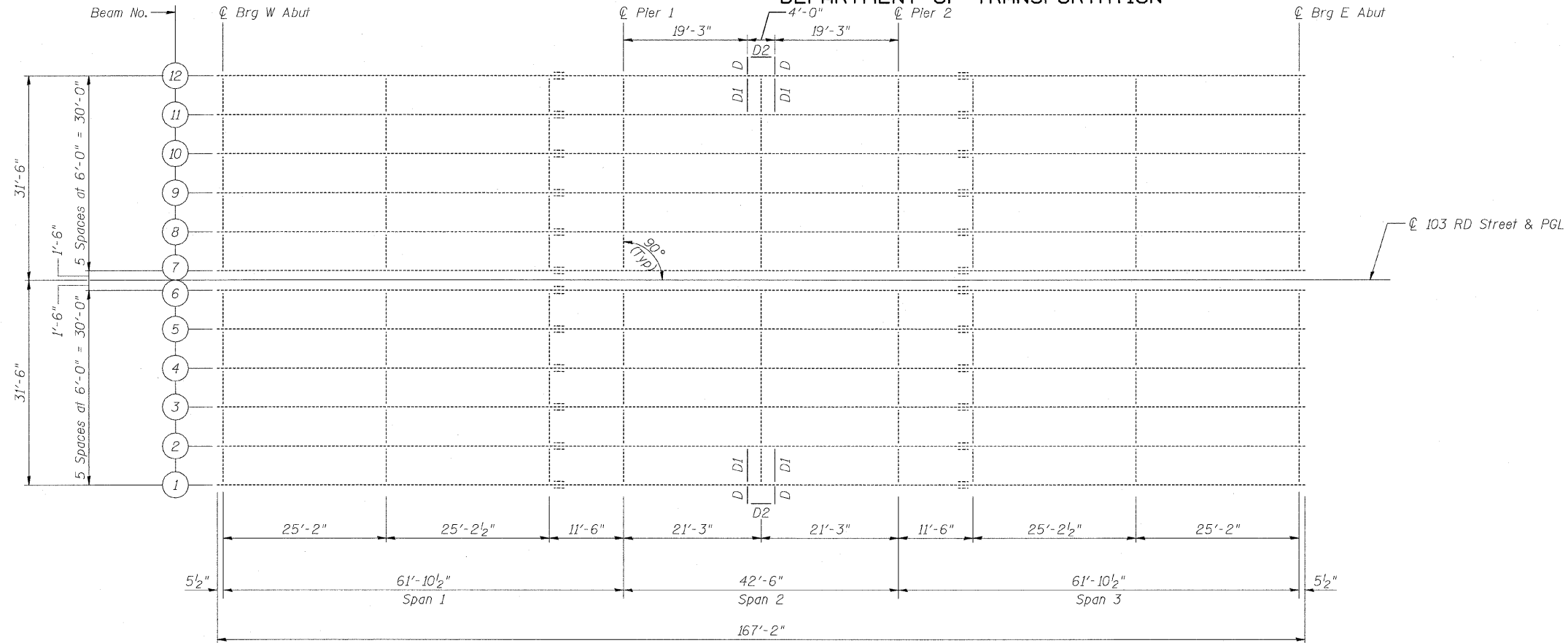


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 17 32 SHEETS
F.A.I. 57	★	COOK	75	43	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
Contract 60366 ★ 2122B					



PLAN

	0.4 Sp. 1 & 0.6 Sp. 3	Piers	0.5 Sp. 2
I_s (in ⁴)	9040	9040	9040
I_c (in ⁴)	21949		
I_c (3n) (in ⁴)	16070		
S_s (in ³)	504	504	504
S_c (in ³)	710		
S_c (3n) (in ³)	641		
Z (in ³)			
\bar{D} (k/ft.)	0.87	1.43	1.43
$M\bar{D}$ (k)	273	409	77
$s\bar{D}$ (k/ft.)	0.56		
$M_s\bar{D}$ (k)	194		
$M\bar{L}$ (k)	384	187	87
M (Imp) (k)	103	41	26
$^5_3[M\bar{L} + M(\text{Imp})]$ (k)	812	380	188
M_a (k)	1663	1026	345
M_u (k)	2130		
$f_s\bar{D}$ non-comp (k.s.i.)	6.5	9.7	1.8
$f_s\bar{D}$ (comp) (k.s.i.)	3.6		
$f_s^5_3(\bar{L} + \text{Imp})$ (k.s.i.)	13.7	9.0	4.5
f_s (Overload) (k.s.i.)	23.8	18.7	6.3
f_s (Total) (k.s.i.)		24.3	8.2
VR (k)	50.5		

Notes for Interior Girder Moment Table:

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 and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

I_c and S_c 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_a (Applied Moment) = $1.3[M\bar{D} + M_s\bar{D} + ^5_3(M\bar{L} + M(\text{Imp}))]$.

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 $M\bar{D} + M_s\bar{D} + ^5_3(M\bar{L} + M(\text{Imp}))$.

f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\bar{D} + M_s\bar{D} + ^5_3(M\bar{L} + M(\text{Imp}))]$.

Notes:

See Sheet 18 of 32 for new Monotube Support Diaphragms.

DESIGNED	NDR
CHECKED	DSE
DRAWN	RTT
CHECKED	DSE
DATE	JAN 16, 2009

	Abutments	Piers
$R\bar{D}$ (k)	35.8	80.2
$R\bar{L}$ (k)	36.2	41.5
Imp. (k)	9.7	9.0
R (Total) (k)	81.7	130.7



FRAMING PLAN AND DESIGN DATA
103RD STREET OVER
FAI 57 (DAN RYAN-WEST LEG)
FAI RTE 57 SECTION 2122B
COOK COUNTY
STA 5+47.40
STRUCTURE NO 016-2127