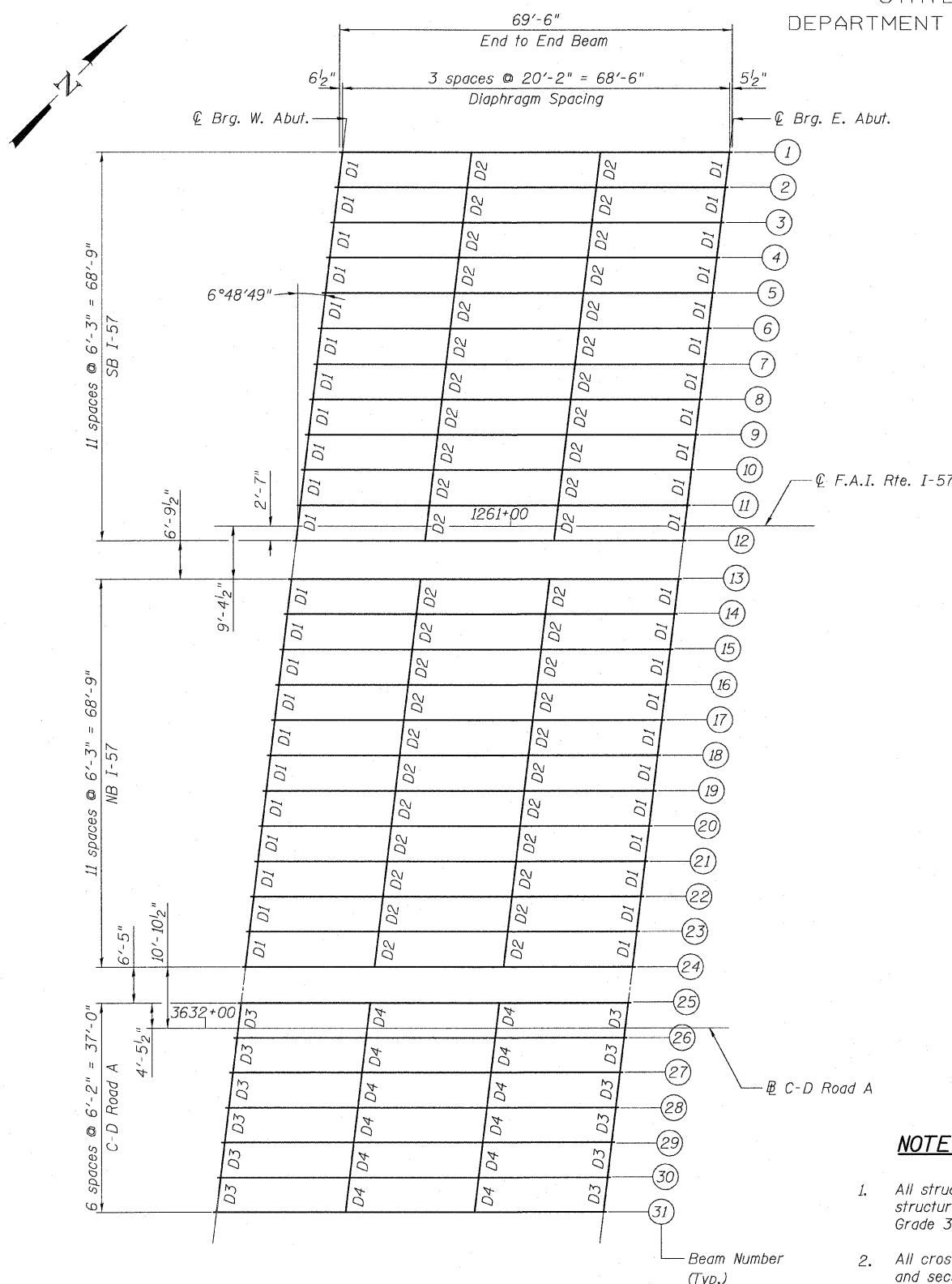


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

	Abutment
R_{DC1}	(k) 28.5
R_{DC2}	(k) 4.4
R_{DW}	(k) 10.6
$R_{\xi + IM}$	(k) 73.1
R_{Total}	(k) 116.6

(Controlling case are beams over C-D Road A)

		0.5 Sp.
I_s	(in ⁴)	9,040
$I_c(n)$	(in ⁴)	22,430
$I_c(3n)$	(in ⁴)	16,488
S_s	(in ³)	504
$S_c(n)$	(in ³)	715
$S_c(3n)$	(in ³)	647
$DC1$	(k/ft)	0.809
M_{DC1}	(k)	475
$DC2$	(k/ft)	0.128
M_{DC2}	(k)	75
DW	(k/ft)	0.308
M_{DW}	(k)	181
$M_{\xi + IM}$	(k)	922
M_u (Strength I)	(k)	2,573
$\phi_f M_n$	(k)	3,614
f_s DC1	(ksi)	11.3
f_s DC2	(ksi)	1.4
f_s DW	(ksi)	3.4
f_s 1.3($\xi + IM$)	(ksi)	20.1
f_s (Service II)	(ksi)	35.8
V_r	(k)	23.3

(Controlling case are beams over C-D Road A)

TOP OF BEAM ELEVATIONS
For Fabrication Only.

Beam	℄ Brg. W. Abut	℄ Brg. E. Abut
1	634.04	633.61
2	634.17	633.75
3	634.30	633.87
4	634.40	633.98
5	634.40	633.98
6	634.32	633.90
7	634.21	633.79
8	634.08	633.66
9	633.95	633.54
10	633.83	633.41
11	633.70	633.29
12	633.58	633.16
13	633.72	633.30
14	633.86	633.45
15	634.00	633.58
16	634.13	633.72
17	634.25	633.84
18	634.36	633.95
19	634.36	633.95
20	634.27	633.86
21	634.16	633.75
22	634.03	633.63
23	633.91	633.50
24	633.78	633.38
25	634.19	633.78
26	634.31	633.90
27	634.41	634.00
28	634.41	634.00
29	634.33	633.93
30	634.25	633.85
31	634.12	633.72

NOTES

- All structural steel for beams shall be AASHTO M 270 Grade 50. All other structural steel shall conform to the requirements of AASHTO M270, Grade 36.
- 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.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in⁴ and in³).

$DC1$: Un-factored non-composite dead load (kips/ft.).

M_{DC1} : Un-factored moment due to non-composite dead load (kip-ft.).

$DC2$: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2} : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW : Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW} : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

$M_{\xi + IM}$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M (Strength I): Factored design moment (kip-ft.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\xi + IM}$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{\xi + IM}$

V_r : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

FRAMING PLAN
SN. 016-1252

TYLIN INTERNATIONAL	DESIGNED - DY	REVISIONS		SHEET NO. 40	F.A.I. RTE. 57	SECTION 1414.2B	COUNTY COOK	TOTAL SHEETS	SHEET NO.
	CHECKED - AD,LS	NAME	DATE					516	353
	DRAWN - DY,EI							CONTRACT NO. 60J27	
	CHECKED - LS,SP,PDF							FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	
	DATE - 03/18/10								

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