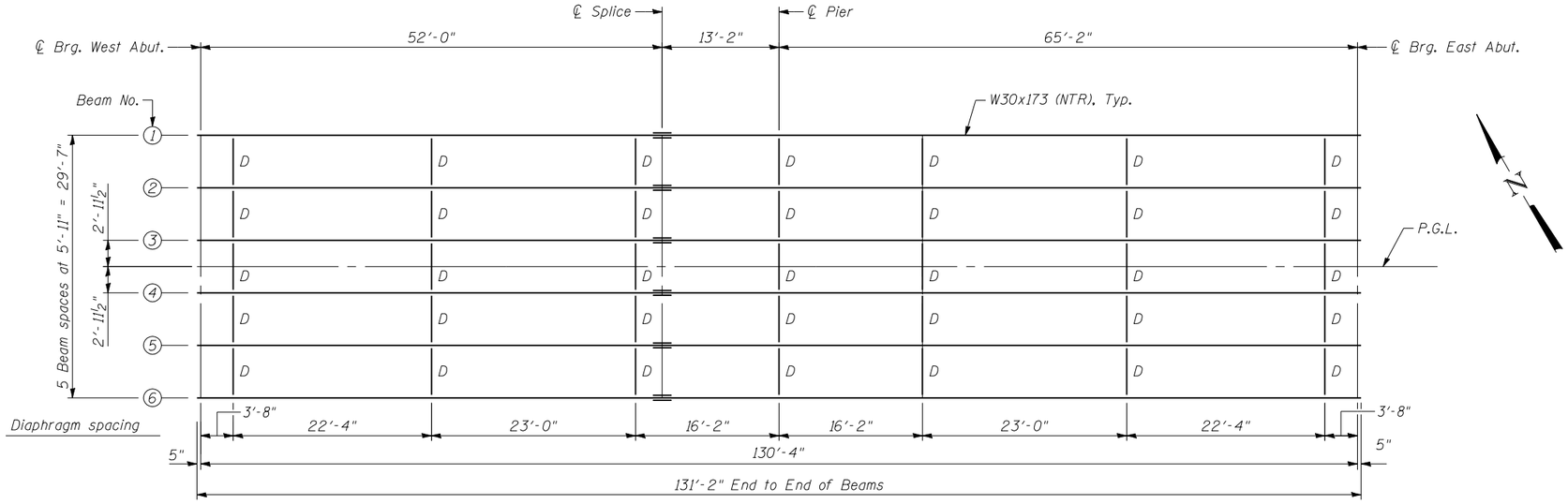


## FRAMING PLAN

## TOP OF BEAM ELEVATIONS

| Location | Beam 1 | Beam 2 | Beam 3 | Beam 4 | Beam 5 | Beam 6 |
|---|---|---|---|---|---|---|
| ℄ W. Abutment | 543.85 | 543.96 | 544.05 | 544.05 | 543.96 | 543.85 |
| ℄ Splice | 543.66 | 543.76 | 543.85 | 543.85 | 543.76 | 543.66 |
| ℄ Pier | 543.62 | 543.73 | 543.82 | 543.82 | 543.73 | 543.62 |
| ℄ E. Abutment | 543.46 | 543.57 | 543.66 | 543.66 | 543.57 | 543.46 |

For Fabrication Only

| INTERIOR BEAM MOMENT TABLE | | | |
|---|---|---|---|
| | | 0.4 Sp. 1 or 0.6 Span 2 | Pier |
| $I_s$ | ($in^4$) | 8230 | 8230 |
| $I_c(n)$ | ($in^4$) | 18,953 | 18,953 |
| $I_c(3n)$ | ($in^4$) | 13,829 | 13,829 |
| $I_c(cr)$ | ($in^4$) | - | 10,190 |
| $S_s$ | ($in^3$) | 541 | 541 |
| $S_c(n)$ | ($in^3$) | 734 | 734 |
| $S_c(3n)$ | ($in^3$) | 664 | 664 |
| $S_c(cr)$ | ($in^3$) | - | 589 |
| DC1 | (k/') | 0.813 | 0.813 |
| $M_{DC1}$ | ('k) | 243.5 | 427.4 |
| DC2 | (k/') | 0.150 | 0.150 |
| $M_{DC2}$ | ('k) | 44.9 | 78.8 |
| DW | (k/') | 0.267 | 0.267 |
| $M_{DW}$ | ('k) | 79.9 | 140.2 |
| $M_{L+IM}$ | ('k) | 670.1 | 646 |
| $M_u$ (Strength I) | ('k) | 1653 | 1974 |
| $\phi_f M_n$ | ('k) | 3415 | |
| $f_s$ DC1 | (ksi) | 5.4 | 9.5 |
| $f_s$ DC2 | (ksi) | 0.8 | 1.6 |
| $f_s$ DW | (ksi) | 1.3 | 2.9 |
| $f_s$ (L+IM) | (ksi) | 11.0 | 13.2 |
| $f_s$ (Service II) | (ksi) | 21.8 | 31.2 |
| $0.95R_hF_{yf}$ | (ksi) | 47.5 | 47.5 |
| $f_s$ (Total)(Strength I) | (ksi) | 29.0 | 41.3 |
| $\phi_f F_n$ | (ksi) | - | 50.0 |
| $V_f$ | (k) | 23 | 24 |

| INTERIOR BEAM REACTION TABLE | | | |
|---|---|---|---|
| | | Abut. | Pier |
| $R_{DC1}$ | (k) | 19.9 | 66.1 |
| $R_{DC2}$ | (k) | 3.7 | 12.2 |
| $R_{DW}$ | (k) | 6.5 | 21.7 |
| $R_{L+IM}$ | (k) | 64.7 | 109.0 |
| $R_{Total}$ | (k) | 94.8 | 209.0 |

Notes:

All 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 Impact Testing Requirement, 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 ($in.^4$ 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-Strength I, and Service II) in uncracked sections 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-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing $f_s$ (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

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.).

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

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

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft).

$f_s$ DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
$M_{DC1} / S_{nc}$

$f_s$ DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

$f_s$ DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

$f_s$ (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
$M_{L+IM} / S_c(n)$ or $M_{L+IM} / S_c(cr)$ as applicable.

$f_s$ (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

$0.95R_hF_yf$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_s(L+IM)$

$\phi_f F_n$: Non-Compact composite or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

$V_f$: Maximum factored shear range in span computed according to Article 6.10.10.

FILE NAME = ...\05405115-72B82-012-framing-plan.dgn
CB PROJECT NO 07084-8

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

| | | | |
|---|---|---|---|
| USER NAME = _MML_ | DESIGNED - AMC | REVISED - | |
| | CHECKED - MCB | REVISED - | |
| PLOT SCALE = 16:0.000000 '' / IN. | DRAWN - CFC | REVISED - | |
| PLOT DATE = 10/23/2013 | CHECKED - MCB | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN**
**STRUCTURE NO. 054-0515**
SHEET NO. 12 OF 23 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 717 | (102B-1, 102CR, 102BR-2)RS-5 | LOGAN | 218 | 66 |
| | | CONTRACT NO. 72B82 | | |
| | ILLINOIS FED. AID PROJECT | | | |