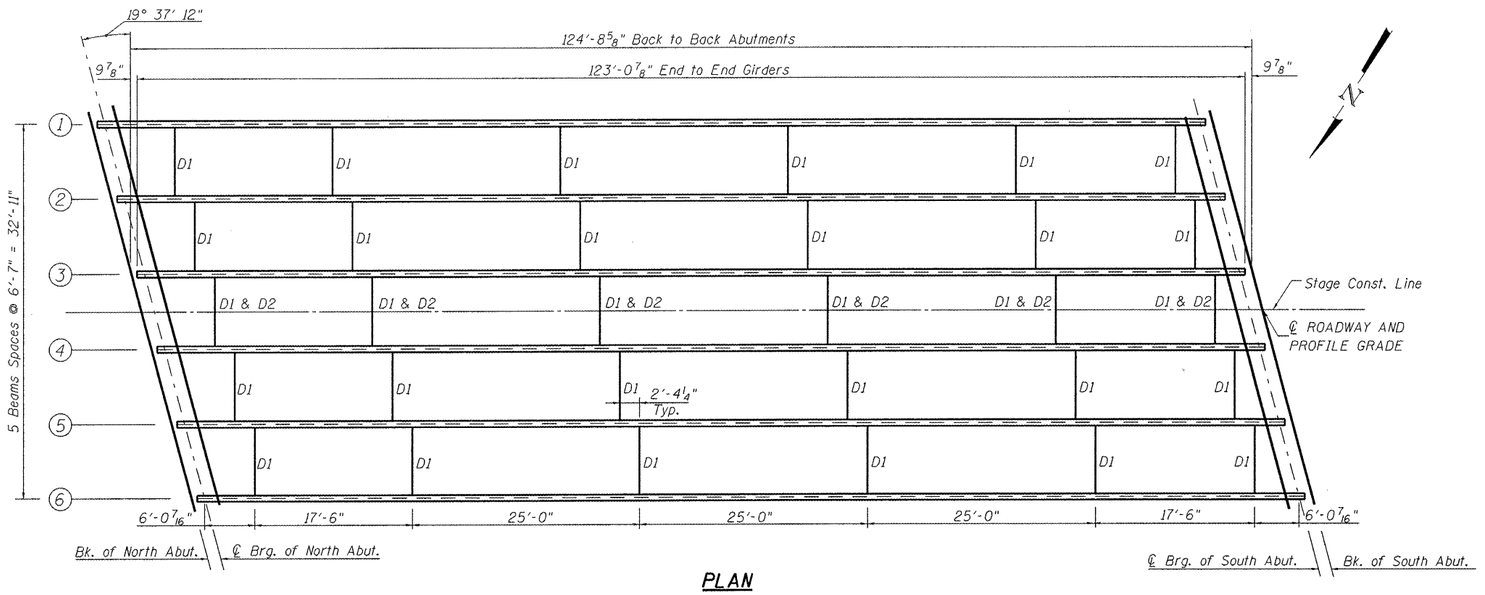
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION




**PLAN**

| INTERIOR GIRDER REACTION TABLE | | |
|---|---|---|
| | | Abut. |
| $R_{DC1}$ | (k) | 60 |
| $R_{DC2}$ | (k) | 9.2 |
| $R_{DW}$ | (k) | 20 |
| $R_{L+IM}$ | (k) | 90.1 |
| $R_{Total}$ | (k) | 179.3 |

| INTERIOR GIRDER MOMENT TABLE | | |
|---|---|---|
| | | 0.5 Sp. 1 |
| $I_s$ | ($in^4$) | 54,355 |
| $I_c(n)$ | ($in^4$) | 107,559 |
| $I_c(3n)$ | ($in^4$) | 80,022 |
| | | |
| $S_s$ | ($in^3$) | 1,907.9 |
| $S_c(n)$ | ($in^3$) | 2,363.9 |
| $S_c(3n)$ | ($in^3$) | 2,179.8 |
| | | |
| DC1 | (k/') | 0.96 |
| $M_{DC1}$ | ('k) | 1,815 |
| DC2 | (k/') | 0.150 |
| $M_{DC2}$ | ('k) | 279 |
| DW | (k/') | 0.33 |
| $M_{DW}$ | ('k) | 614 |
| $M_{L+IM}$ | ('k) | 2,250 |
| $M_u$ (Strength I) | ('k) | 7,365 |
| $\phi_f M_n$ | ('k) | 11,096 |
| $f_s$ DC1 | (ksi) | 11.42 |
| $f_s$ DC2 | (ksi) | 1.54 |
| $f_s$ DW | (ksi) | 3.38 |
| $f_s$ 1.3($L$+IM) | (ksi) | 14.85 |
| $f_s$ (Service II) | (ksi) | 31.19 |
| | | |
| | | |
| | | |
| $V_r$ | ('k) | 55 |

$I_s$, $S_s$: 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.$^3$).

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 (kip-ft.) 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).
$M_{DC1} / S_{nc}$

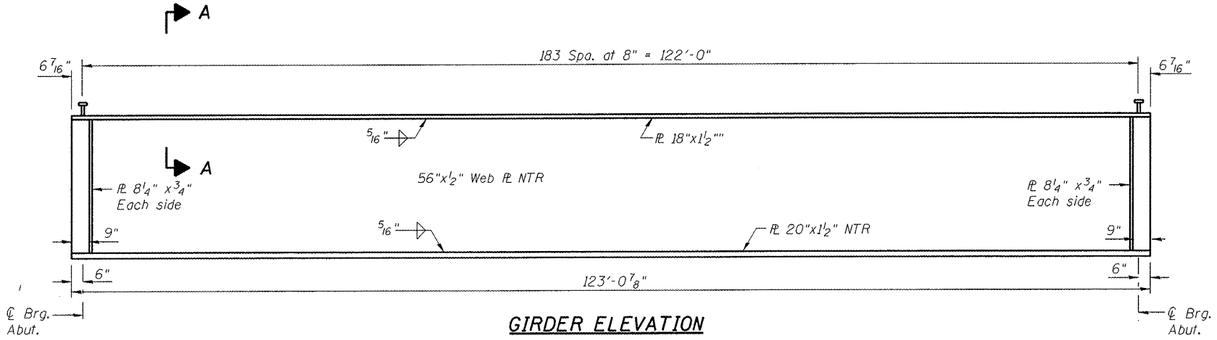
$f_s$ DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ as applicable.

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

$f_s$ 1.3(L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).
$1.3M_{L+IM} / S_c(n)$ as applicable.

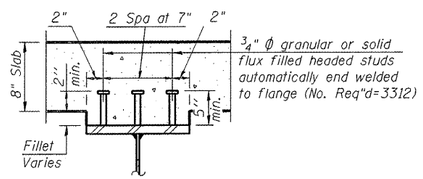
$f_s$ (Service II): Sum of stresses as computed below from the moments below (ksi)
$MDC1 + MDC2 + MDW + 1.3M_L + IM$

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

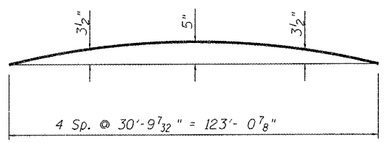



**GIRDER ELEVATION**
(M270 GR 50W)

Load carrying components designated "NTR" shall conform to the Impact testing Requirements, zone 2




**SECTION A-A**




**CAMBER DIAGRAM**

| TOP OF WEB ELEVATIONS (FOR FABRICATORS ONLY) | | | | | |
|---|---|---|---|---|---|
| Beam Number | ℄ Brg. North Abutment | 0.25 Pt. | 0.50 Pt. | 0.75 Pt. | ℄ Brg. South Abutment |
| 1 | 470.25 | 470.55 | 470.67 | 470.56 | 470.26 |
| 2 | 470.38 | 470.68 | 470.79 | 470.67 | 470.37 |
| 3 | 470.50 | 470.79 | 470.89 | 470.77 | 470.45 |
| 4 | 470.51 | 470.79 | 470.89 | 470.76 | 470.43 |
| 5 | 470.42 | 470.70 | 470.79 | 470.65 | 470.32 |
| 6 | 470.31 | 470.58 | 470.66 | 470.52 | 470.19 |

| | | | |
|---|---|---|---|
| The VOLKERT/DMA Joint Venture | USER NAME = | DESIGNED - JR | REVISED - |
| | | CHECKED - JEK | REVISED - |
| | PLOT SCALE = | DRAWN - WJG | REVISED - |
| | PLOT DATE = | CHECKED - JEK | REVISED - |

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

**STRUCTURAL STEEL**
**STRUCTURE 009-0512**
SHEET NO. 14 OF 20 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 614 | 144(B-5) | CASS | 97 | 67 |
| | | CONTRACT NO. 72B55 | | |
| | | ILLINOIS FED. AID PROJECT | | |