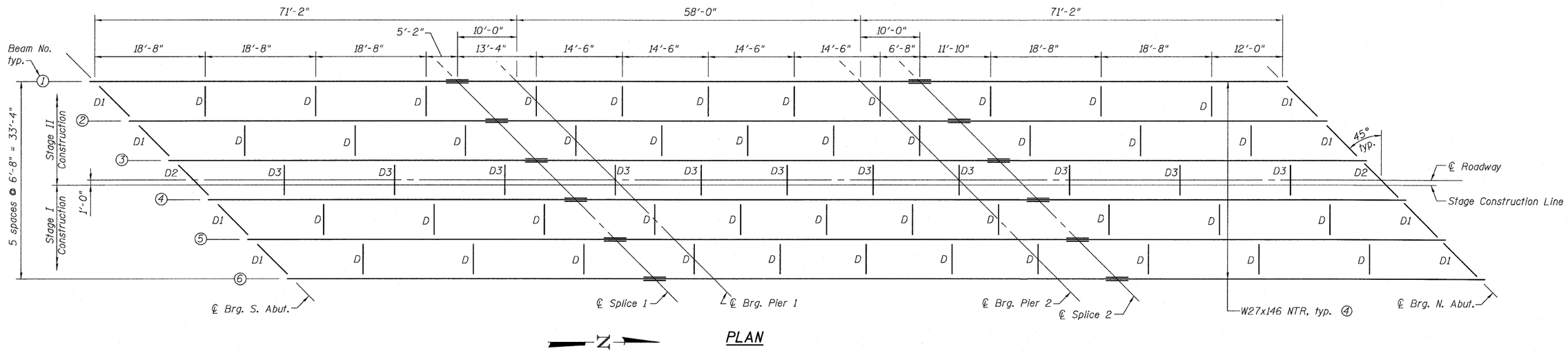
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| FAP 326 | 119BR | GRUNDY | 68 | 33 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

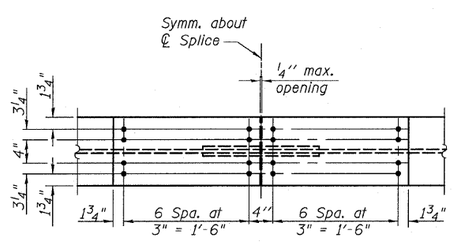
SHEET NO. 13
27 SHEETS

Contract #66687

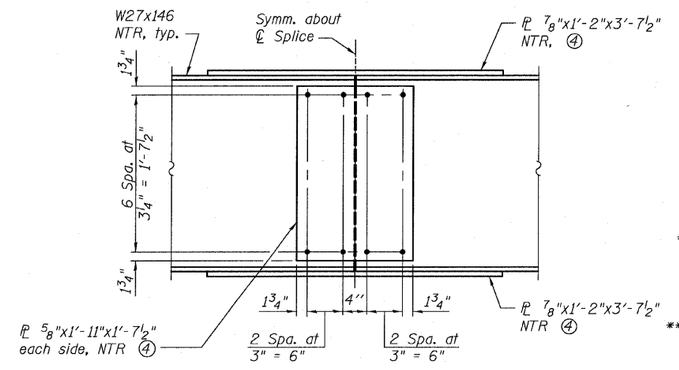
# STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION




PLAN




TOP & BOTTOM PLAN




ELEVATION

SPLICE DETAIL
(12 Required)

| | |
|---|---|
| DESIGNED | MJP |
| CHECKED | JGS |
| DRAWN | MJP |
| CHECKED | JGS |

| INTERIOR BEAM MOMENT TABLE | | | | |
|---|---|---|---|---|
| | | 0.4 Span 1 & 3 | Pier 1 & 2 | 0.5 Span 2 |
| $I_s$ | ($in^4$) | 5660 | 5660 | 5660 |
| $I_c(n)$ | ($in^4$) | 14446 | ——— | 14446 |
| $I_c(3n)$ | ($in^4$) | 10577 | ——— | 10577 |
| $S_s$ | ($in^3$) | 414 | 414 | 414 |
| $S_c(n)$ | ($in^3$) | 584 | ——— | 584 |
| $S_c(3n)$ | ($in^3$) | 530 | ——— | 530 |
| $Z$ | ($in^3$) | ——— | 464 | ——— |
| $\wp$ | (k/') | 0.864 | 1.314 | 0.864 |
| $M\wp$ | ('k) | 373.4 | 547.0 | -16.0 |
| $s\wp$ | (k/') | 0.450 | ——— | 0.450 |
| $M_s\wp$ | ('k) | 206.4 | ——— | 21.5 |
| $M_L$ | ('k) | 510.9 | 243.5 | 349.8 |
| $M_I$ | ('k) | 130.3 | 64.3 | 95.5 |
| $5/3\,[M_L + M_I]$ | ('k) | 1068.7 | 513.0 | 742.3 |
| $M_a$ | ('k) | 2143.0 | 1377.9 | 972.1 |
| * $M_u$ | ('k) | 2703.8 | 1911.1 | 2703.8 |
| $f_s$ ℄ non-comp | (ksi) | 10.82 | 15.85 | -0.46 |
| $f_s$ ℄ (comp) | (ksi) | 4.67 | ——— | 0.49 |
| $f_s\ 5/3\,[M_L + M_I]$ | (ksi) | 21.96 | 14.87 | 15.25 |
| $f_s$ (Overload) | (ksi) | 37.46 | 30.72 | 15.27 |
| ** $f_s$ (Total) | (ksi) | ——— | ——— | ——— |
| VR | (k) | 54.2 | ——— | 47.7 |

*Compact section
**Braced non-compact and partially braced section

| INTERIOR BEAM REACTION TABLE | | | |
|---|---|---|---|
| | | N. & S. Abut. | Pier 1 & 2 |
| $R\wp$ | (k) | 39.1 | 92.5 |
| $R_L$ | (k) | 41.5 | 45.1 |
| $R_I$ | (k) | 10.6 | 8.9 |
| $R_{Total}$ | (k) | 91.2 | 146.5 |

$I_s$, $S_s$: 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 ($in^4$ 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 and Overload) due to short-term composite live loads ($in^4$ and $in^3$).

$I$ (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 ($in^4$ and $in^3$).

$Z$: Plastic Section Modulus of the steel section in non-composite areas ($in^3$).

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

$M\wp$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\wp$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\wp$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M_L$: Un-factored live load moment (kip-ft.).

$M_I$: Un-factored moment due to impact (kip-ft.).

$M_a$: Factored design moment (kip-ft.). $1.3\,[M\wp + M_s\wp + \frac{5}{3}(M_L + M_I)]$

$M_u$: 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). $M\wp + M_s\wp + \frac{5}{3}(M_L + M_I)$

$f_s$ (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3\,[M\wp + M_s\wp + \frac{5}{3}(M_L + M_I)]$

VR: Maximum $M_L$ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

Notes:
1. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
2. For beam elevation and details, see sheet 14 of 27.
3. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
4. AASHTO M 270 Grade 50W steel.

## FRAMING PLAN
## IL 47 OVER JOHNNY RUN
## FAP ROUTE 326 - SECTION 119BR
## GRUNDY COUNTY
## STATION 582+65.75
## STRUCTURE NO. 032-0112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