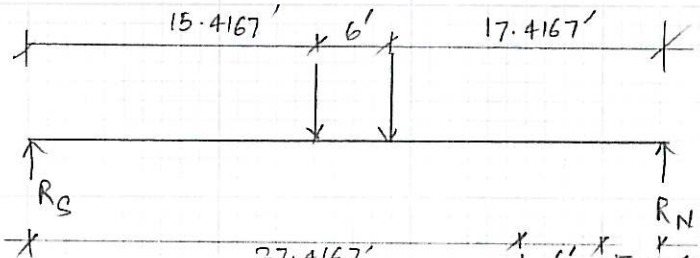
DISTRIBUTION FACTOR NOTE :

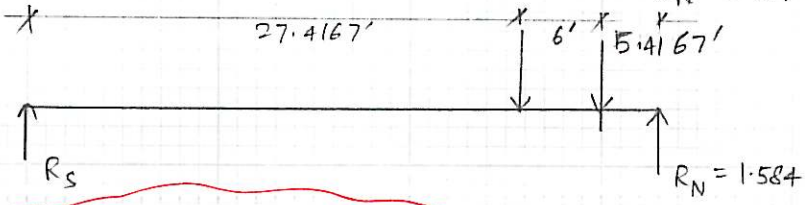
For Trusses

NORTH TRUSS

(I) 5C1 ON LEFT LANE



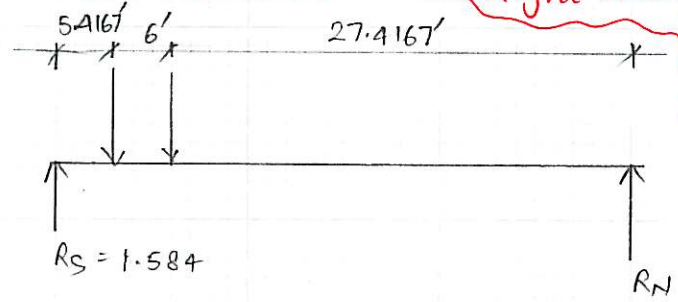
(II) 5C1 TRAIN ON RIGHT



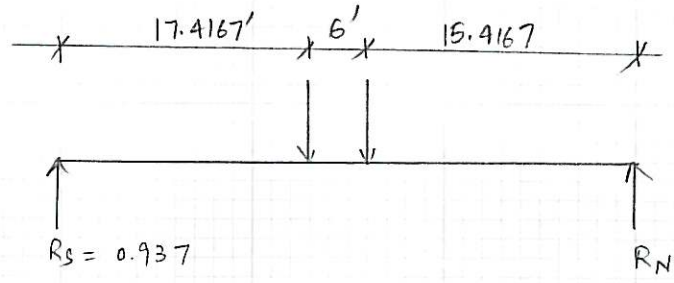
When rating South Truss, use 1.584=DF for Right Lane, 0.937=DF for Left Lane (5C1 train in Right, 5C1 single truck in left)

SOUTH TRUSS

(I) 5C1 ON LEFT LANE



(II) 5C1 TRAIN ON RIGHT



FOR FURTHER INFO CHECK PAGE 6 OF DISTRIBUTION FACTOR FOR EITHER 191' OR 250' TRUSS

DISTRIBUTION FACTOR NOTE :

NOTE: S01 → UPSTREAM (NORTH) STRINGER

S05 → DOWNSTREAM (SOUTH) STRINGER

FOR STRINGERS →

* SPAN 1, 4

→ Main analysis — Ext. Girder — 1.143

Int. Girder — 1.2727

→ Rt analysis — Ext Girder S01 — 1.143

First Int. Girder S02 — 1.143

MIDDLE Girder S03 — 1.143

(Since no losses on these girders S01 & S05 are same, S02 & S04 are same)

→ Lt. lane analysis —

Ext. Girder S01 — 0

First Int. S02 — 0.143

Middle Girder S03 — 0.143

* SPAN 3 → (There are losses on girder 5)

→ MAIN analysis — Ext. girder — 1.143

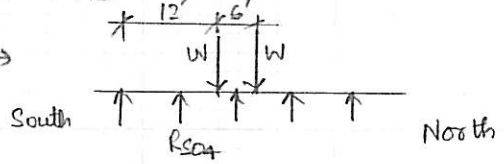
Int. Girder — 1.2727

→ Rt. Analysis — Ext, S01 — 1.143

S02 — 1.143

S03 → 1.143

S04 →

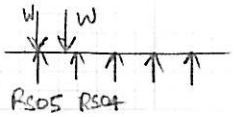


$$R_{S04} = \frac{2W}{7}$$

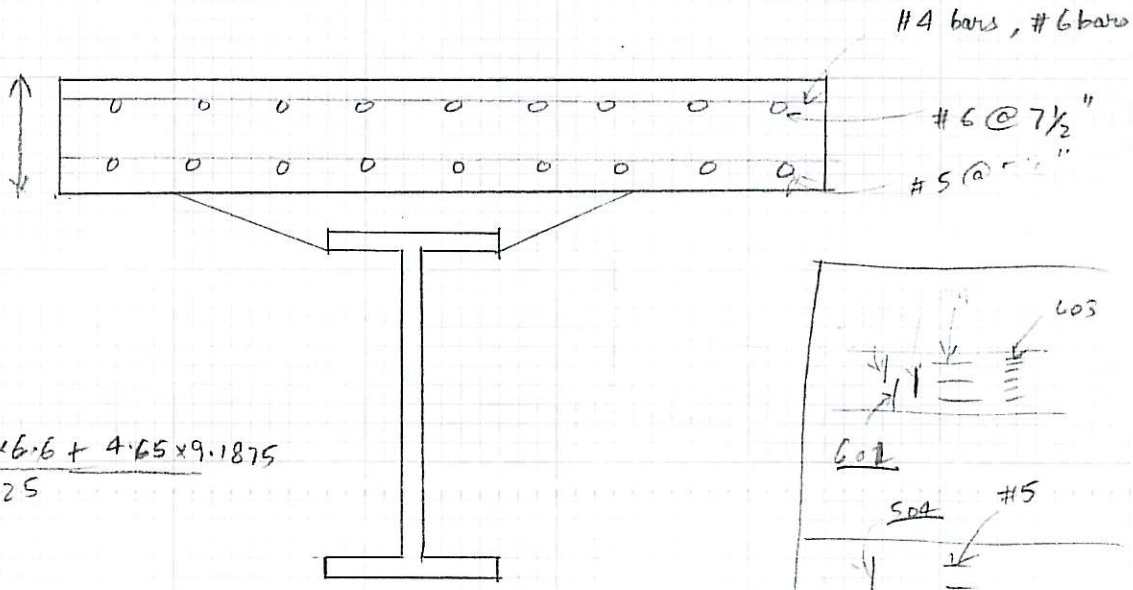
S05 → 0

→ Lt lane Analysis — S01 — 0, S02 — 0.143, S03 — 0.143

S04 — $\frac{6W}{7}$, S05 — $\frac{8}{7}W$



COMPOSITE SECTION PROPERTIES FOR FLOOR BEAMS →



$\frac{3.375 \times 6.6 + 4.65 \times 9.1875}{11.25}$

$= 5.77$

SECTION PROPERTIES:

LIVE load + Impact stress — carried by composite section (modular ratio n)

Superimposed Dead Load stress — carried by composite section (modular ratio 3n) (AASHTO 10.38.1)

f_y = 33000 psi

f_c' = 4500 psi

n = 8 (MCEB 6.6.2.4)

Effective flange width → (AASHTO 10.38.3.1)

$\frac{1}{4}$ (Span) = $\frac{1}{4}$ (38.833' × 12) = 116.5" ⟸ Governs.

C/C of floor beams = (23.9167' × 12) = 287"

12 (Thickness of Slab) = 12 (10.5" (avg.)) = 126"

For end floorbeams Span 1 & 4

A. Composite Behavior

AASHTO 10.38.3.2: $\frac{1}{12} \times (38.833' \times 12'') = 38.833''$

$6 \times (\text{slab } t) = (6)(10.5'') = 63''$

$\frac{1}{2} (23.9167' \times 12'') = 143.5''$

→ For B01 & B09, effective flange width = 38.833"

For As-inspected B01 & B09 | B01 for As-built

∴ For end floorbeams B01 & B09, use 38.8333" + 15" = 53.333" as effective flange width (15" = 1'-3" = slab extension past end floorbeams)

Interior floorbeams Spans 1+4

— For B02 through B08 (As-inspected)
B02 & B03 for As-built

AASHTO 10.38.3.1: $\frac{1}{4} (38.833' \times 12'') = 116.5''$ ←

$23.9167' = 287''$

$12 \times 10.5'' = 126''$

use effective flange width = 116.5" for B02 through B08 in As-inspected ratings, and for B02 & B03 in As-built ratings

End Floorbeams Spans 2+3

slab extension beyond end floor beam

Use 38.833" + 15" = 53.833" ←

→ Composite Behavior →

AASHTO 10.38.3.2 → $\frac{1}{12} (38.833' \times 12''/ft) = 38.833$ ← Governs

$6 (\text{Slab thickness}) = 6 (10.5'') = 63''$

$\frac{1}{2} (25' \times 12''/ft) = 150''$

For INTERIOR FLOOR BEAMS

AASHTO 10.38.3.1 $\longrightarrow$ $\frac{1}{4}(38.833' \times 12'') = \boxed{116.5''}$ $\Longleftarrow$ Governs.

$(25' \times 12'') = 300''$

$10.5'' \times 12 = 126''$