

| LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------------|----------------------|----------------------------|-----------------------------------|---------------|------------------------------|------------------------------|---------------|------|--------------------|---|------------------------------|---------------|------|--------------------|---|------------------------------|------------------------------|---------------|------|--------------------|----------------|---|
| LOAD TYPE | | VEHICLE | WEIGHT (W) (TONS) | CONTROLLING LOAD RATING | MINIMUM RATING FACTORS (RF) | TONS = W x RF | STRENGTH I LIMIT STATE | | | | | | | | | | SERVICE III LIMIT STATE | | | | | | COMMENT NUMBER | |
| | | | | | | | LIVE-LOAD FACTORS (γ LL) | MOMENT | | | | | SHEAR | | | | | LIVE-LOAD FACTORS (γ LL) | MOMENT | | | | | |
| | | | | | | | | DISTRIBUTION FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION | DISTANCE FROM LEFT END OF SPAN (ft) | DISTRIBUTION FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION | DISTANCE FROM LEFT END OF SPAN (ft) | | DISTRIBUTION FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION | | DISTANCE FROM LEFT END OF SPAN (ft) |
| DESIGN LOAD | | HL-93 (INVENTORY) | N/A | Ⓜ1 | 1.249 | -- | 1.75 | 0.248 | 1.61 | 45' | EL | 21.92 | 0.658 | 1.37 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.25 | 45' | EL | 21.92 | |
| | | HL-93 (OPERATING) | N/A | | 1.772 | -- | 1.35 | 0.248 | 2.08 | 45' | EL | 21.92 | 0.658 | 1.77 | 45' | EL | 8.77 | N/A | -- | -- | -- | -- | -- | |
| | | HS-20 (INVENTORY) | 36.000 | Ⓜ2 | 1.532 | 55.166 | 1.75 | 0.248 | 1.97 | 45' | EL | 21.92 | 0.658 | 1.58 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.53 | 45' | EL | 21.92 | |
| | | HS-20 (OPERATING) | 36.000 | | 2.044 | 73.602 | 1.35 | 0.248 | 2.56 | 45' | EL | 21.92 | 0.658 | 2.04 | 45' | EL | 8.77 | N/A | -- | -- | -- | -- | -- | |
| LEGAL LOAD | SINGLE VEHICLE (SV) | SNSH | 13.500 | | 2.990 | 40.368 | 1.40 | 0.248 | 4.81 | 45' | EL | 21.92 | 0.658 | 4.17 | 45' | EL | 8.77 | 0.80 | 0.248 | 2.99 | 45' | EL | 21.92 | |
| | | SNGARBS2 | 20.000 | | 2.416 | 48.323 | 1.40 | 0.248 | 3.89 | 45' | EL | 26.31 | 0.658 | 3.12 | 45' | EL | 8.77 | 0.80 | 0.248 | 2.42 | 45' | EL | 26.31 | |
| | | SNAGRIS2 | 22.000 | | 2.377 | 52.290 | 1.40 | 0.248 | 3.76 | 45' | EL | 26.31 | 0.658 | 2.96 | 45' | EL | 8.77 | 0.80 | 0.248 | 2.38 | 45' | EL | 26.31 | |
| | | SNCOTTS3 | 27.250 | | 1.493 | 40.685 | 1.40 | 0.248 | 2.40 | 45' | EL | 21.92 | 0.658 | 2.09 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.49 | 45' | EL | 21.92 | |
| | | SNAGGRS4 | 34.925 | | 1.318 | 46.039 | 1.40 | 0.248 | 2.12 | 45' | EL | 21.92 | 0.658 | 1.85 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.32 | 45' | EL | 21.92 | |
| | | SNS5A | 35.550 | | 1.284 | 45.648 | 1.40 | 0.248 | 2.06 | 45' | EL | 21.92 | 0.658 | 1.94 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.28 | 45' | EL | 21.92 | |
| | | SNS6A | 39.950 | | 1.210 | 48.334 | 1.40 | 0.248 | 1.95 | 45' | EL | 21.92 | 0.658 | 1.82 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.21 | 45' | EL | 21.92 | |
| | | SNS7B | 42.000 | Ⓜ3 | 1.153 | 48.442 | 1.40 | 0.248 | 1.85 | 45' | EL | 21.92 | 0.658 | 1.86 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.15 | 45' | EL | 21.92 | |
| | TRUCK TRACTOR SEMI-TRAILER (TTST) | TNAGRIT3 | 33.000 | | 1.485 | 49.007 | 1.40 | 0.248 | 2.39 | 45' | EL | 21.92 | 0.658 | 2.12 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.48 | 45' | EL | 21.92 | |
| | | TNT4A | 33.075 | | 1.501 | 49.636 | 1.40 | 0.248 | 2.41 | 45' | EL | 21.92 | 0.658 | 2.01 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.50 | 45' | EL | 21.92 | |
| | | TNT6A | 41.600 | | 1.260 | 52.409 | 1.40 | 0.248 | 2.03 | 45' | EL | 21.92 | 0.658 | 1.98 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.26 | 45' | EL | 21.92 | |
| | | TNT7A | 42.000 | | 1.284 | 53.943 | 1.40 | 0.248 | 2.07 | 45' | EL | 21.92 | 0.658 | 1.84 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.28 | 45' | EL | 21.92 | |
| | | TNT7B | 42.000 | | 1.337 | 56.156 | 1.40 | 0.248 | 2.15 | 45' | EL | 21.92 | 0.658 | 1.76 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.34 | 45' | EL | 21.92 | |
| | | TNAGRIT4 | 43.000 | | 1.274 | 54.766 | 1.40 | 0.248 | 2.05 | 45' | EL | 21.92 | 0.658 | 1.69 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.27 | 45' | EL | 21.92 | |
| | | TNAGT5A | 45.000 | | 1.185 | 53.323 | 1.40 | 0.248 | 1.91 | 45' | EL | 21.92 | 0.658 | 1.76 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.18 | 45' | EL | 21.92 | |
| | | TNAGT5B | 45.000 | | 1.157 | 52.058 | 1.40 | 0.248 | 1.86 | 45' | EL | 21.92 | 0.658 | 1.60 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.16 | 45' | EL | 21.92 | |
| EMERGENCY VEHICLE (EV) | | EV2 | 28.750 | | 1.733 | 49.823 | 1.30 | 0.248 | 2.99 | 45' | EL | 21.92 | 0.658 | 2.37 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.73 | 45' | EL | 21.92 | |
| | | EV3 | 43.000 | Ⓜ4 | 1.114 | 47.887 | 1.30 | 0.248 | 1.93 | 45' | EL | 21.92 | 0.658 | 1.61 | 45' | EL | 8.77 | 0.80 | 0.248 | 1.11 | 45' | EL | 21.92 | |

LOAD FACTORS:

| DESIGN LOAD RATING FACTORS | LIMIT STATE | γ DC | γ DW |
|-------------------------------------|-------------|------|------|
| | STRENGTH I | 1.25 | 1.50 |
| | SERVICE III | 1.00 | 1.00 |

NOTES:

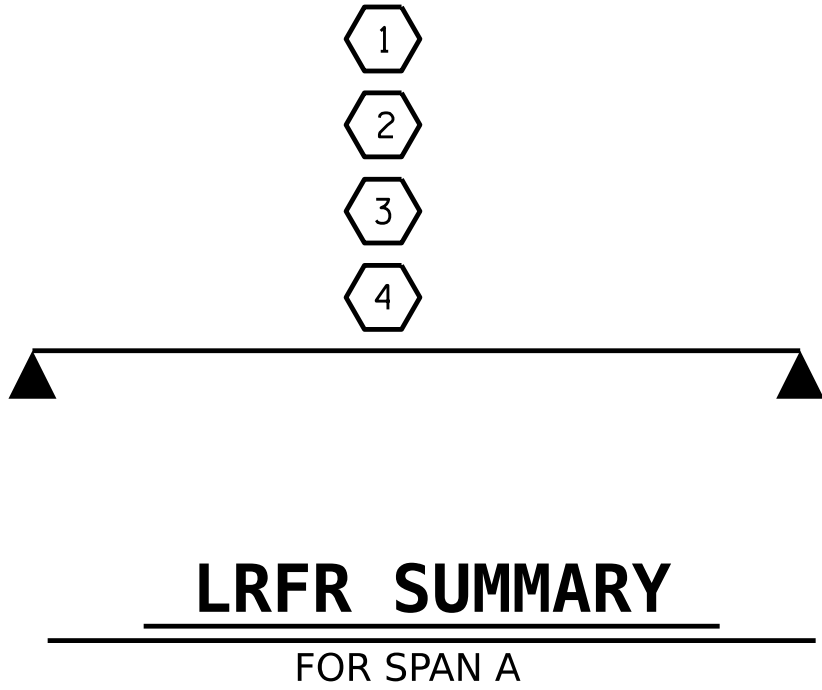
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

| Ⓢ | CONTROLLING LOAD RATING |
|--|----------------------------------|
| Ⓜ1 | DESIGN LOAD RATING (HL-93) |
| Ⓜ2 | DESIGN LOAD RATING (HS-20) |
| Ⓜ3 | LEGAL LOAD RATING ** |
| Ⓜ4 | EMERGENCY VEHICLE LOAD RATING ** |
| * * SEE CHART FOR VEHICLE TYPE | |
| GIRDER LOCATION | |
| I - INTERIOR GIRDER EL - EXTERIOR LEFT GIRDER ER - EXTERIOR RIGHT GIRDER | |



PROJECT NO. HB-0030
MACON COUNTY
STATION: 16+10.49 -L-

SHEET 5 OF 7

DRAWN BY : G.DWIGHT LOFLIN DATE : 01-2025
CHECKED BY : LOGAN C. YARBROUGH DATE : 01-2025
DESIGN ENGINEER OF RECORD: LOGAN C. YARBROUGH DATE : 08-2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DRMP

8210 UNIVERSITY EXECUTIVE
PARK DRIVE SUITE 220,
CHARLOTTE, NC 28262
(704) 549-4260

NC LICENSE NO. F-1524

SEAL

LOGAN C. YARBROUGH

9/29/2025

| | | | | | | |
|--|-----|-------|-----|-----|-------|-----------------------|
| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | | |
| SPAN A | | | | | | |
| LRFR SUMMARY FOR | | | | | | |
| 45' CORED SLAB UNIT | | | | | | |
| 60° SKEW | | | | | | |
| (NON-INTERSTATE TRAFFIC) | | | | | | |
| REVISIONS | | | | | | SHEET NO. S-05 |
| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS 26 |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |