

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD FACTORS:

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

| LEVEL | 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 | | | |
|--------------------------|------------|----------------------|----------------------------|-----------------------------------|---------------|------------------------|------------------------------|---------------|------|-----------------|---|------------------------------|---------------|------|-----------------|---|---------------------|------------------------------|---------------|------|----------------|-----------------|---|--|
| | | | | | | LIVELOAD FACTORS | MOMENT | | | | | SHEAR | | | | | LIVELOAD FACTORS | 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 RATING | HL-93(Inv) | N/A | ① | 1.13 | -- | 1.75 | 0.87 | 1.45 | A | I | 26.646 | 0.968 | 1.18 | A | I | 31.975 | 0.80 | 0.968 | 1.13 | B | I | 33.417 | | |
| | HL-93(Opr) | N/A | -- | 1.54 | -- | 1.35 | 0.87 | 1.88 | A | I | 26.646 | 0.968 | 1.54 | A | I | 31.975 | N/A | -- | -- | -- | -- | -- | | |
| | HS-20(Inv) | 36.000 | ② | 1.41 | 50.889 | 1.75 | 0.87 | 1.90 | A | I | 26.646 | 0.968 | 1.41 | A | I | 31.975 | 0.80 | 0.818 | 1.54 | B | I | 33.417 | | |
| | HS-20(Opr) | 36.000 | -- | 1.83 | 65.967 | 1.35 | 0.87 | 2.47 | A | I | 26.646 | 0.968 | 1.83 | A | I | 31.975 | N/A | -- | -- | -- | -- | -- | | |
| LEGAL LOAD RATING | SV | SNSH | 13.500 | -- | 3.43 | 46.263 | 1.40 | 0.87 | 4.98 | A | I | 26.646 | 0.968 | 3.63 | A | I | 31.975 | 0.80 | 0.818 | 3.43 | B | I | 33.417 | |
| | | SNGARBS2 | 20.000 | -- | 2.58 | 51.589 | 1.40 | 0.87 | 3.87 | A | I | 26.646 | 0.968 | 2.75 | A | I | 31.975 | 0.80 | 0.818 | 2.58 | B | I | 33.417 | |
| | | SNAGRIS2 | 22.000 | -- | 2.45 | 53.981 | 1.40 | 0.87 | 3.74 | A | I | 21.317 | 0.968 | 2.62 | A | I | 31.975 | 0.80 | 0.818 | 2.45 | B | I | 33.417 | |
| | | SNCOTTS3 | 27.250 | -- | 1.71 | 46.490 | 1.40 | 0.87 | 2.48 | A | I | 26.646 | 0.968 | 1.83 | A | I | 31.975 | 0.80 | 0.818 | 1.71 | B | I | 33.417 | |
| | | SNAGGRS4 | 34.925 | -- | 1.44 | 50.135 | 1.40 | 0.87 | 2.13 | A | I | 26.646 | 0.968 | 1.64 | A | I | 31.975 | 0.80 | 0.818 | 1.44 | B | I | 33.417 | |
| | | SNS5A | 35.550 | -- | 1.40 | 49.881 | 1.40 | 0.87 | 2.08 | A | I | 26.646 | 0.968 | 1.73 | A | I | 31.975 | 0.80 | 0.818 | 1.40 | B | I | 33.417 | |
| | | SNS6A | 39.950 | -- | 1.29 | 51.595 | 1.40 | 0.87 | 1.94 | A | I | 26.646 | 0.968 | 1.64 | A | I | 31.975 | 0.80 | 0.818 | 1.29 | B | I | 33.417 | |
| | SNS7B | 42.000 | -- | 1.23 | 51.662 | 1.40 | 0.87 | 1.85 | A | I | 26.646 | 0.968 | 1.69 | A | I | 31.975 | 0.80 | 0.818 | 1.23 | B | I | 33.417 | | |
| | TTST | TNAGRIT3 | 33.000 | -- | 1.58 | 52.012 | 1.40 | 0.87 | 2.37 | A | I | 26.646 | 0.968 | 1.90 | A | I | 31.975 | 0.80 | 0.818 | 1.58 | B | I | 33.417 | |
| | | TNT4A | 33.075 | -- | 1.58 | 52.398 | 1.40 | 0.87 | 2.39 | A | I | 26.646 | 0.968 | 1.79 | A | I | 31.975 | 0.80 | 0.818 | 1.58 | B | I | 33.417 | |
| | | TNT6A | 41.600 | -- | 1.30 | 54.050 | 1.40 | 0.87 | 1.98 | A | I | 26.646 | 0.968 | 1.95 | A | I | 31.975 | 0.80 | 0.818 | 1.30 | B | I | 33.417 | |
| | | TNT7A | 42.000 | -- | 1.31 | 54.932 | 1.40 | 0.87 | 2.00 | A | I | 26.646 | 0.968 | 1.73 | A | I | 31.975 | 0.80 | 0.818 | 1.31 | B | I | 33.417 | |
| | | TNT7B | 42.000 | -- | 1.36 | 57.051 | 1.40 | 0.87 | 2.09 | A | I | 26.646 | 0.968 | 1.58 | A | I | 31.975 | 0.80 | 0.818 | 1.36 | B | I | 33.417 | |
| TNAGRIT4 | | 43.000 | -- | 1.29 | 55.395 | 1.40 | 0.87 | 1.98 | A | I | 26.646 | 0.968 | 1.52 | A | I | 31.975 | 0.80 | 0.818 | 1.29 | B | I | 33.417 | | |
| TNACT5A | 45.000 | -- | 1.21 | 54.578 | 1.40 | 0.87 | 1.85 | A | I | 26.646 | 0.968 | 1.61 | A | I | 31.975 | 0.80 | 0.818 | 1.21 | B | I | 33.417 | | | |
| TNACT5B | 45.000 | ③ | 1.20 | 53.845 | 1.40 | 0.87 | 1.82 | A | I | 26.646 | 0.968 | 1.43 | A | I | 31.975 | 0.80 | 0.818 | 1.20 | B | I | 33.417 | | | |

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.

⊠ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

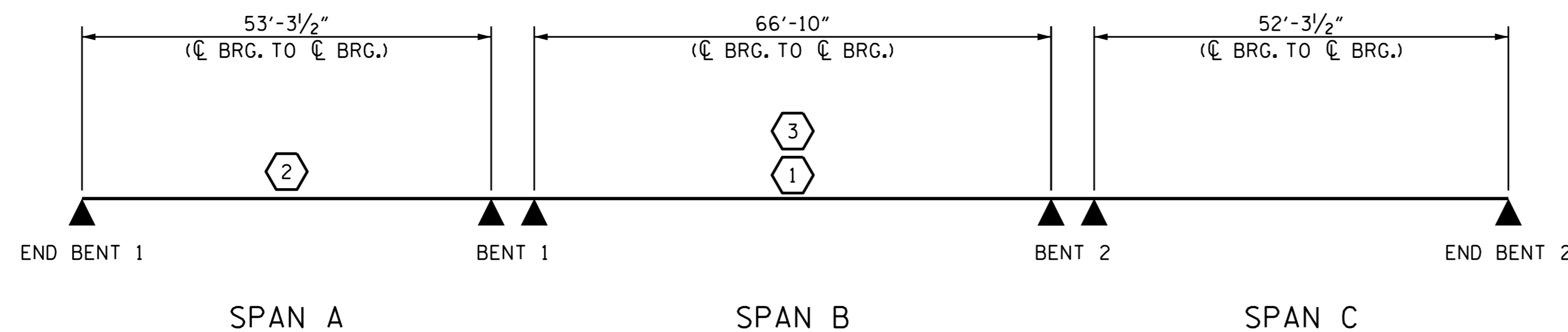
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

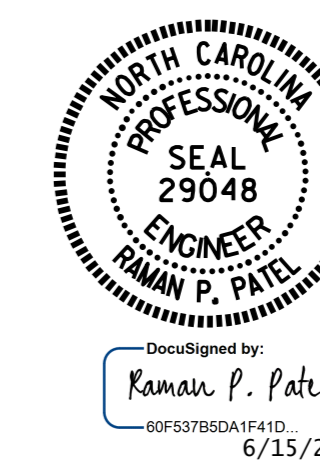
GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. B-5105
MECKLENBURG COUNTY
 STATION: 20+08.00 -L-

LRFR SUMMARY



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-4 |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | TOTAL SHEETS 38 |

ASSEMBLED BY : R. P. PATEL DATE : 9-13-13
 CHECKED BY : J. P. MCCARTHA DATE : 9-26-13
 DRAWN BY : MAA 1/08
 CHECKED BY : GM/DI 2/08
 REV. 11/2/08RR MAA/GM
 REV. 10/1/11 MAA/GM
 DESIGN ENGINEER OF RECORD:
 R. P. PATEL DATE : 5-4-15