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

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | MOMENT | | | | | SHEAR | | | | | | MOMENT | | | | | |
| | | | | | | | LIVELOAD FACTORS | 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) | LIVELOAD FACTORS | DISTRIBUTION FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION | DISTANCE FROM LEFT END OF SPAN (ft) | |
| DESIGN LOAD RATING | | HL-93(Inv) | N/A | 1 | 1.202 | -- | 1.75 | 0.256 | 2.04 | 30' | EL | 14.423 | 0.655 | 1.2 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.75 | 30' | EL | 14.423 | |
| | | HL-93(Opr) | N/A | -- | 1.558 | -- | 1.35 | 0.256 | 2.64 | 30' | EL | 14.423 | 0.655 | 1.56 | 30' | EL | 1.442 | N/A | -- | -- | -- | -- | -- | |
| | | HS-20(Inv) | 36.000 | 2 | 1.365 | 49.124 | 1.75 | 0.256 | 2.82 | 30' | EL | 11.538 | 0.655 | 1.36 | 30' | EL | 1.442 | 0.80 | 0.256 | 2.45 | 30' | EL | 11.538 | |
| | | HS-20(Opr) | 36.000 | -- | 1.769 | 63.679 | 1.35 | 0.256 | 3.65 | 30' | EL | 11.538 | 0.655 | 1.77 | 30' | EL | 1.442 | N/A | -- | -- | -- | -- | -- | |
| LEGAL LOAD RATING | SV | SNSH | 13.500 | -- | 3.333 | 45.002 | 1.4 | 0.256 | 5.76 | 30' | EL | 14.423 | 0.655 | 3.33 | 30' | EL | 1.442 | 0.80 | 0.256 | 3.95 | 30' | EL | 14.423 | |
| | | SNGARBS2 | 20.000 | -- | 2.581 | 51.624 | 1.4 | 0.256 | 5.04 | 30' | EL | 11.538 | 0.655 | 2.58 | 30' | EL | 1.442 | 0.80 | 0.256 | 3.50 | 30' | EL | 11.538 | |
| | | SNAGRIS2 | 22.000 | -- | 2.487 | 54.723 | 1.4 | 0.256 | 5.13 | 30' | EL | 11.538 | 0.655 | 2.49 | 30' | EL | 1.442 | 0.80 | 0.256 | 3.56 | 30' | EL | 11.538 | |
| | | SNCOTTS3 | 27.250 | -- | 1.684 | 45.891 | 1.4 | 0.256 | 2.89 | 30' | EL | 14.423 | 0.655 | 1.68 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.99 | 30' | EL | 14.423 | |
| | | SNAGGRS4 | 34.925 | -- | 1.551 | 54.185 | 1.4 | 0.256 | 2.79 | 30' | EL | 14.423 | 0.655 | 1.55 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.91 | 30' | EL | 14.423 | |
| | | SNS5A | 35.550 | -- | 1.645 | 58.469 | 1.4 | 0.256 | 2.7 | 30' | EL | 14.423 | 0.655 | 1.64 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.85 | 30' | EL | 14.423 | |
| | | SNS6A | 39.950 | -- | 1.547 | 61.791 | 1.4 | 0.256 | 2.55 | 30' | EL | 14.423 | 0.655 | 1.55 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.75 | 30' | EL | 14.423 | |
| | | SNS7B | 42.000 | -- | 1.578 | 66.285 | 1.4 | 0.256 | 2.48 | 30' | EL | 14.423 | 0.655 | 1.58 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.70 | 30' | EL | 14.423 | |
| | TTST | TNAGRIT3 | 33.000 | -- | 1.838 | 60.67 | 1.4 | 0.256 | 3.31 | 30' | EL | 14.423 | 0.655 | 1.84 | 30' | EL | 1.442 | 0.80 | 0.256 | 2.27 | 30' | EL | 14.423 | |
| | | TNT4A | 33.075 | -- | 1.71 | 56.559 | 1.4 | 0.256 | 3.13 | 30' | EL | 14.423 | 0.655 | 1.71 | 30' | EL | 1.442 | 0.80 | 0.256 | 2.15 | 30' | EL | 14.423 | |
| | | TNT6A | 41.600 | -- | 1.652 | 68.714 | 1.4 | 0.256 | 2.85 | 30' | EL | 14.423 | 0.655 | 1.65 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.96 | 30' | EL | 14.423 | |
| | | TNT7A | 42.000 | -- | 1.573 | 66.067 | 1.4 | 0.256 | 2.94 | 30' | EL | 14.423 | 0.655 | 1.57 | 30' | EL | 1.442 | 0.80 | 0.256 | 2.02 | 30' | EL | 14.423 | |
| | | TNT7B | 42.000 | -- | 1.536 | 64.525 | 1.4 | 0.256 | 2.77 | 30' | EL | 14.423 | 0.655 | 1.54 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.90 | 30' | EL | 14.423 | |
| | | TNAGRIT4 | 43.000 | -- | 1.486 | 63.9 | 1.4 | 0.256 | 2.87 | 30' | EL | 14.423 | 0.655 | 1.49 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.97 | 30' | EL | 14.423 | |
| | | TNAGT5A | 45.000 | -- | 1.594 | 71.736 | 1.4 | 0.256 | 2.79 | 30' | EL | 14.423 | 0.655 | 1.59 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.92 | 30' | EL | 14.423 | |
| | | TNAGT5B | 45.000 | 3 | 1.399 | 62.946 | 1.4 | 0.256 | 2.68 | 30' | EL | 11.538 | 0.655 | 1.4 | 30' | EL | 1.442 | 0.80 | 0.256 | 1.85 | 30' | EL | 11.538 | |

## LOAD FACTORS:

| DESIGN LOAD RATING FACTORS | LIMIT STATE | $\gamma_{DC}$ | $\gamma_{DW}$ |
|---|---|---|---|
| | 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.

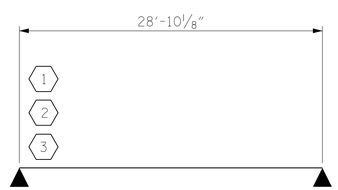
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

## COMMENTS:

1.
2.
3.
4.

| ⟨#⟩ CONTROLLING LOAD RATING |
|---|
| ⟨1⟩ DESIGN LOAD RATING (HL-93) |
| ⟨2⟩ DESIGN LOAD RATING (HS-20) |
| ⟨3⟩ LEGAL LOAD RATING ** |
| ** SEE CHART FOR VEHICLE TYPE |

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




LRFR SUMMARY

FOR SPAN A

PROJECT NO. 17BP.14.R.183

TRANSYLVANIA COUNTY

STATION: 13+38.92 -L-

SHEET 1 OF 3

RS&H Architects-Engineers-Planners, Inc.
8521 Six Forks Road, Suite 400
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR 30' CORED SLAB UNIT 60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-4 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| | | |
|---|---|---|
| ASSEMBLED BY : | PDS | DATE : 06/2017 |
| CHECKED BY : | TLC | DATE : 09/2017 |
| DRAWN BY : CVC | 6/10 | |
| CHECKED BY : DNS | 6/10 | |

4/27/2021
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STD. NO. 21LRFR1_60&120S_30L