

**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**

- SPAN "A" AND SPAN "B" ARE IDENTICAL.
- LEFT AND RIGHT EXTERIOR GIRDER ARE IDENTICAL.

| 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 |                 |                                     |    |
|--------------------|-----------------------------------|-------------------|-----------------------------|-----------------------------|---------------|-------------------------------------|---------------------------|---------------|-------|-----------------|-------------------------------------|---------------------------|---------------|------|-----------------|-------------------------------------|-------------------------------------|---------------------------|---------------|-------|----------------|-----------------|-------------------------------------|----|
|                    |                                   |                   |                             |                             |               | LIVE-LOAD FACTORS ( $\gamma_{LL}$ ) | MOMENT                    |               |       |                 |                                     | SHEAR                     |               |      |                 |                                     | LIVE-LOAD FACTORS ( $\gamma_{LL}$ ) | MOMENT                    |               |       |                |                 |                                     |    |
|                    |                                   |                   |                             |                             |               |                                     | DISTRIBUTION FACTORS (DF) | RATING FACTOR | SPANS | 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 | SPANS |                | GIRDER LOCATION | DISTANCE FROM LEFT END OF SPAN (ft) |    |
| DESIGN LOAD RATING | HL-93 (INVENTORY)                 | N/A               | 1                           | 1.19                        | --            | 1.75                                | 0.910                     | 1.35          | A     | EL              | 59.4                                | 1.005                     | 1.64          | A    | I               | 11.3                                | 0.80                                | 0.910                     | 1.19          | A     | EL             | 59.4            | --                                  |    |
|                    | HL-93 (OPERATING)                 | N/A               |                             | 1.75                        | --            | 1.35                                | 0.910                     | 1.75          | A     | EL              | 59.4                                | 1.005                     | 2.16          | A    | I               | 11.3                                | N/A                                 | --                        | --            | --    | --             | --              | --                                  | -- |
|                    | HS-20 (INVENTORY)                 | 36.000            | 2                           | 1.87                        | 67.32         | 1.75                                | 0.910                     | 1.97          | A     | EL              | 59.4                                | 1.005                     | 2.32          | A    | I               | 11.3                                | 0.80                                | 0.910                     | 1.87          | A     | EL             | 59.4            | --                                  |    |
|                    | HS-20 (OPERATING)                 | 36.000            |                             | 2.55                        | 91.80         | 1.35                                | 0.910                     | 2.55          | A     | EL              | 59.4                                | 1.005                     | 3.05          | A    | I               | 11.3                                | N/A                                 | --                        | --            | --    | --             | --              | --                                  | -- |
| LEGAL LOAD RATING  | SINGLE VEHICLE (SV)               | SNSH              | 13.500                      |                             | 4.19          | 56.57                               | 1.40                      | 0.910         | 5.96  | A               | EL                                  | 59.4                      | 1.005         | 7.50 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 4.19  | A              | EL              | 59.4                                | -- |
|                    |                                   | SNGARBS2          | 20.000                      |                             | 2.99          | 59.80                               | 1.40                      | 0.910         | 4.26  | A               | EL                                  | 59.4                      | 1.005         | 5.19 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 2.99  | A              | EL              | 59.4                                | -- |
|                    |                                   | SNAGRIS2          | 22.000                      |                             | 2.79          | 61.38                               | 1.40                      | 0.910         | 3.97  | A               | EL                                  | 59.4                      | 1.005         | 4.76 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 2.79  | A              | EL              | 59.4                                | -- |
|                    |                                   | SNCOTTS3          | 27.250                      |                             | 1.51          | 41.15                               | 1.40                      | 0.910         | 2.96  | A               | EL                                  | 59.4                      | 1.005         | 3.67 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.51  | A              | EL              | 59.4                                | -- |
|                    |                                   | SNAGGRS4          | 34.925                      |                             | 1.69          | 59.02                               | 1.40                      | 0.910         | 2.41  | A               | EL                                  | 59.4                      | 1.005         | 2.95 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.69  | A              | EL              | 59.4                                | -- |
|                    |                                   | SNS5A             | 35.550                      |                             | 1.66          | 59.01                               | 1.40                      | 0.910         | 2.36  | A               | EL                                  | 59.4                      | 1.005         | 2.95 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.66  | A              | EL              | 59.4                                | -- |
|                    |                                   | SNS6A             | 39.950                      |                             | 1.50          | 59.93                               | 1.40                      | 0.910         | 2.13  | A               | EL                                  | 59.4                      | 1.005         | 2.65 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.50  | A              | EL              | 59.4                                | -- |
|                    | TRUCK TRACTOR SEMI-TRAILER (TTST) | TNAGRIT3          | 33.000                      |                             | 1.82          | 60.06                               | 1.40                      | 0.910         | 2.59  | A               | EL                                  | 59.4                      | 1.005         | 3.20 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.82  | A              | EL              | 59.4                                | -- |
|                    |                                   | TNT4A             | 33.075                      |                             | 1.83          | 60.53                               | 1.40                      | 0.910         | 2.60  | A               | EL                                  | 59.4                      | 1.005         | 3.15 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.83  | A              | EL              | 59.4                                | -- |
|                    |                                   | TNT6A             | 41.600                      |                             | 1.47          | 61.15                               | 1.40                      | 0.910         | 2.10  | A               | EL                                  | 59.4                      | 1.005         | 2.67 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.47  | A              | EL              | 59.4                                | -- |
|                    |                                   | TNT7A             | 42.000                      |                             | 1.47          | 61.74                               | 1.40                      | 0.910         | 2.10  | A               | EL                                  | 59.4                      | 1.005         | 2.63 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.47  | A              | EL              | 59.4                                | -- |
|                    |                                   | TNT7B             | 42.000                      |                             | 1.50          | 63.00                               | 1.40                      | 0.910         | 2.14  | A               | EL                                  | 59.4                      | 1.005         | 2.53 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.50  | A              | EL              | 59.4                                | -- |
|                    |                                   | TNAGRIT4          | 43.000                      |                             | 1.44          | 61.92                               | 1.40                      | 0.910         | 2.06  | A               | EL                                  | 59.4                      | 1.005         | 2.45 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.44  | A              | EL              | 59.4                                | -- |
|                    |                                   | TNAGT5A           | 45.000                      |                             | 1.37          | 61.65                               | 1.40                      | 0.910         | 1.95  | A               | EL                                  | 59.4                      | 1.005         | 2.40 | A               | I                                   | 11.3                                | 0.80                      | 0.910         | 1.37  | A              | EL              | 59.4                                | -- |
| TNAGT5B            | 45.000                            | 3                 | 1.36                        | 61.20                       | 1.40          | 0.910                               | 1.94                      | A             | EL    | 59.4            | 1.005                               | 2.33                      | A             | I    | 11.3            | 0.80                                | 0.910                               | 1.36                      | A             | EL    | 59.4           | --              |                                     |    |

# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

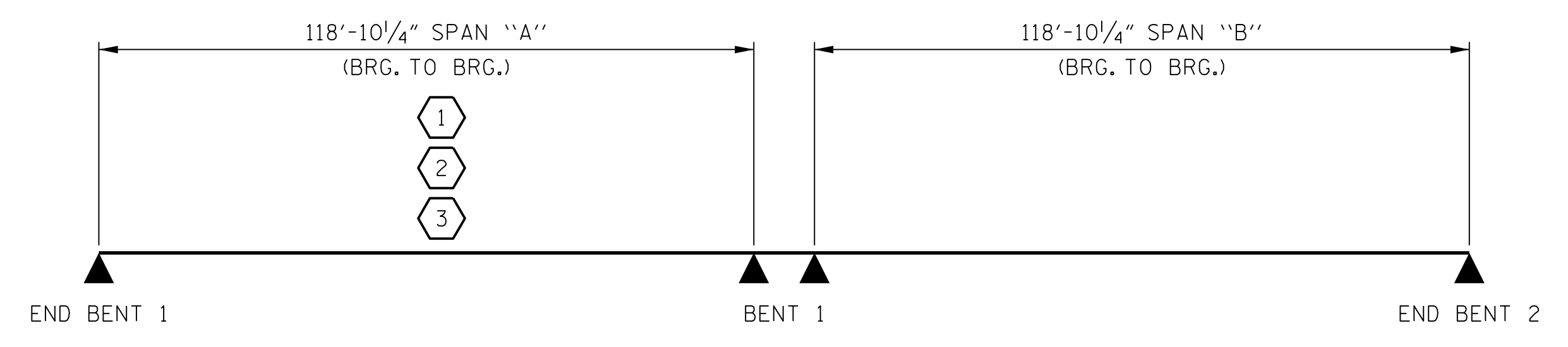
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

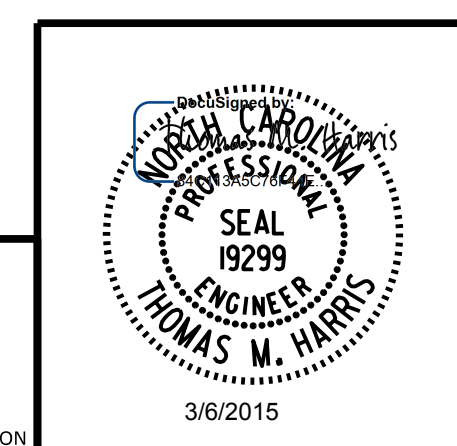
I - INTERIOR GIRDER  
EL - EXTERIOR LEFT GIRDER  
ER - EXTERIOR RIGHT GIRDER



**LRFR SUMMARY**

PROJECT NO. U-2524BC  
GUILFORD COUNTY  
 STATION: 27 + 40.75 -L-

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



PLANS PREPARED BY:  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : K. E. LOFTON DATE : 12-14  
 CHECKED BY : T. M. HARRIS DATE : 1-15  
 DESIGN ENGINEER : T. M. HARRIS DATE : 2-15

| REVISIONS |     |       |     |     |       | SHEET No.    |
|-----------|-----|-------|-----|-----|-------|--------------|
| No.       | BY: | DATE: | No. | BY: | DATE: | S01-4        |
| 1         |     |       | 3   |     |       | TOTAL SHEETS |
| 2         |     |       | 4   |     |       | 27           |

FILE: I:\2015\Projects\LRFR\Drawings\LRFR\S01\U2524BC\_S01.dgn  
 DATE: 3/2/2015 9:18:46 AM

ASSEMBLED BY : K. E. LOFTON DATE : 12-14  
 CHECKED BY : T. M. HARRIS DATE : 1-15  
 DRAWN BY : MAA 1/08 REV. 11/2/08RR MAA/GM  
 CHECKED BY : GM/DI 2/08 REV. 10/1/11 MAA/GM