

OVERHANG BRACKET CALCULATION INSTRUCTIONS

AASHTO SHAPES - TYPES III, IV, V, AND VI

- RECORD KNOWN INFORMATION ON "BRIDGE OVERHANG BRACKET SUMMARY" ON SHEET 2
- CALCULATE THE MAXIMUM SCREED LOAD PER BRACKET (SLPB) WITH AN ESTIMATED $R = 1.5$. $SLPB = R \times W$. ROUND VALUE UP TO NEAREST SLPB VALUE INDICATED ON APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4.
- WITH THE ESTIMATED SLPB, OVERHANG SLAB THICKNESS, "K" VALUE, AND 45° HANGER SAFE WORKING LOAD (SWL), ENTER THE APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4 (BASED ON OVERHANG DIMENSION) AND DETERMINE THE BRACKET SPACING, S.
- CALCULATE S/D1 AND S/D2, ROUNDING UP TO NEAREST VALUE IN TABLE 2. ENTER TABLE 2 AND DETERMINE R VALUE.
- CALCULATE REVISED SLPB. ROUND VALUE UP TO NEAREST SLPB VALUE INDICATED ON APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4.
- WITH THE REVISED SLPB, OVERHANG SLAB THICKNESS, "K" VALUE AND 45° HANGER SAFE WORKING LOAD (SWL), ENTER THE APPROPRIATE TABLE 1-1, 1-2, 1-3 OR 1-4 (BASED ON OVERHANG DIMENSION) AND DETERMINE REVISED BRACKET SPACING, S.
- CONTINUE ITERATIONS OF STEPS 4-6 UNTIL THE REVISED BRACKET SPACING, S, IS THE SAME AS THE PREVIOUS S VALUE.
- CHECK LUMBER JOIST SPACING: WITH BRACKET SPACING VALUE, S, ROUND THIS VALUE UP TO THE NEAREST VALUE OF ALLOWABLE SPAN LENGTH OF JOIST OF TABLE 3. USING THIS VALUE, ALONG WITH THE AVERAGE OVERHANG SLAB THICKNESS AND THE LUMBER JOIST SIZE, DETERMINE JOIST SPACING FROM TABLE 3. IF NECESSARY, ADJUST LUMBER JOIST SIZE AND/OR JOIST SPACING TO MEET ALLOWABLE SPAN LENGTH OF JOIST.
- CONVERSELY, IF THE DESIRED JOIST SPACING IS KNOWN, USE THIS ALONG WITH THE AVERAGE OVERHANG SLAB THICKNESS AND THE LUMBER JOIST SIZE TO DETERMINE IF ALLOWABLE SPAN LENGTH OF JOIST IS GREATER THAN THE BRACKET SPACING, S. IF NECESSARY, ADJUST LUMBER JOIST SIZE TO MEET REQUIREMENTS OF ALLOWABLE SPAN LENGTH OF JOIST AND JOIST SPACING.
- RECORD REMAINING INFORMATION ON "BRIDGE OVERHANG BRACKET SUMMARY" FORM.
- SUBMIT FORM AND CALCULATIONS FOR REVIEW AND APPROVAL.

TABLE 1-1 (FOR USE ON UP TO 2'-0" OVERHANG & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

| AVG. SLAB THICKNESS (in) | BRACKET DIMENSION (in) | SCREED LOAD PER BRACKET | | | | | | | | | 45° HANGER SWL (lbs) |
|--------------------------|------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------|----------------------|
| | | 2500 lbs. | 2250 lbs. | 2000 lbs. | 1750 lbs. | 1500 lbs. | 1250 lbs. | 1000 lbs. | 750 lbs. | 0 lbs. | |
| | | BRACKET SPACING | | | | | | | | | |
| 10 | 30 | 3'-6" | 4'-0" | 4'-5" | 4'-9" | 5'-1" | 5'-3" | 5'-5" | 5'-7" | 6'-7" | 4000 |
| | 40 | 3'-6" | 4'-0" | 4'-5" | 4'-9" | 5'-1" | 5'-3" | 5'-5" | 5'-7" | 6'-7" | 4000 |
| | 50 | 3'-6" | 4'-0" | 4'-5" | 4'-9" | 5'-1" | 5'-3" | 5'-5" | 5'-7" | 6'-7" | 4000 |
| 12 | 30 | 3'-2" | 3'-7" | 4'-1" | 4'-7" | 5'-0" | 5'-2" | 5'-4" | 5'-7" | 6'-5" | 4000 |
| | 40 | 3'-2" | 3'-7" | 4'-1" | 4'-7" | 5'-0" | 5'-2" | 5'-4" | 5'-7" | 6'-5" | 4000 |
| | 50 | 3'-2" | 3'-7" | 4'-1" | 4'-7" | 5'-0" | 5'-2" | 5'-4" | 5'-7" | 6'-5" | 4000 |
| 14 | 30 | 2'-10" | 3'-4" | 3'-9" | 4'-2" | 4'-7" | 5'-0" | 5'-4" | 5'-7" | 6'-4" | 4000 |
| | 40 | 2'-10" | 3'-4" | 3'-9" | 4'-2" | 4'-7" | 5'-0" | 5'-4" | 5'-7" | 6'-4" | 4000 |
| | 50 | 2'-10" | 3'-4" | 3'-9" | 4'-2" | 4'-7" | 5'-0" | 5'-4" | 5'-7" | 6'-4" | 4000 |
| 16 | 30 | 2'-8" | 3'-0" | 3'-5" | 3'-10" | 4'-3" | 4'-7" | 5'-0" | 5'-5" | 6'-3" | 4000 |
| | 40 | 2'-8" | 3'-0" | 3'-5" | 3'-10" | 4'-3" | 4'-7" | 5'-0" | 5'-5" | 6'-3" | 4000 |
| | 50 | 2'-8" | 3'-0" | 3'-5" | 3'-10" | 4'-3" | 4'-7" | 5'-0" | 5'-5" | 6'-3" | 4000 |

TABLE 1-2 (FOR USE ON OVER 2'-0" TO 2'-6" OVERHANG & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

| AVG. SLAB THICKNESS (in) | BRACKET DIMENSION (in) | SCREED LOAD PER BRACKET | | | | | | | | | 45° HANGER SWL (lbs) |
|--------------------------|------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------|----------------------|
| | | 2500 lbs. | 2250 lbs. | 2000 lbs. | 1750 lbs. | 1500 lbs. | 1250 lbs. | 1000 lbs. | 750 lbs. | 0 lbs. | |
| | | BRACKET SPACING | | | | | | | | | |
| 10 | 30 | 3'-1" | 3'-6" | 4'-0" | 4'-5" | 4'-11" | 5'-3" | 5'-5" | 5'-7" | 6'-7" | 4000 |
| | 40 | 3'-1" | 3'-6" | 4'-0" | 4'-5" | 4'-11" | 5'-3" | 5'-5" | 5'-7" | 6'-7" | 4000 |
| | 50 | 3'-1" | 3'-6" | 4'-0" | 4'-5" | 4'-11" | 5'-3" | 5'-5" | 5'-7" | 6'-7" | 4000 |
| 12 | 30 | 2'-9" | 3'-2" | 3'-7" | 4'-0" | 4'-5" | 4'-10" | 5'-3" | 5'-7" | 6'-5" | 4000 |
| | 40 | 2'-9" | 3'-2" | 3'-7" | 4'-0" | 4'-5" | 4'-10" | 5'-3" | 5'-7" | 6'-5" | 4000 |
| | 50 | 2'-9" | 3'-2" | 3'-7" | 4'-0" | 4'-5" | 4'-10" | 5'-3" | 5'-7" | 6'-5" | 4000 |
| 14 | 30 | 2'-6" | 2'-10" | 3'-3" | 3'-7" | 4'-0" | 4'-4" | 4'-9" | 5'-1" | 6'-3" | 4000 |
| | 40 | 2'-6" | 2'-10" | 3'-3" | 3'-7" | 4'-0" | 4'-4" | 4'-9" | 5'-1" | 6'-3" | 4000 |
| | 50 | 2'-6" | 2'-10" | 3'-3" | 3'-7" | 4'-0" | 4'-4" | 4'-9" | 5'-1" | 6'-3" | 4000 |
| 16 | 30 | 2'-3" | 2'-7" | 2'-11" | 3'-4" | 3'-8" | 4'-0" | 4'-4" | 4'-8" | 5'-8" | 4000 |
| | 40 | 2'-3" | 2'-7" | 2'-11" | 3'-4" | 3'-8" | 4'-0" | 4'-4" | 4'-8" | 5'-8" | 4000 |
| | 50 | 2'-3" | 2'-7" | 2'-11" | 3'-4" | 3'-8" | 4'-0" | 4'-4" | 4'-8" | 5'-8" | 4000 |

TABLE 1-3 (FOR USE ON OVER 2'-6" TO 3'-0" OVERHANG & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

| AVG. SLAB THICKNESS (in) | BRACKET DIMENSION (in) | SCREED LOAD PER BRACKET | | | | | | | | | 45° HANGER SWL (lbs) |
|--------------------------|------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------|----------------------|
| | | 2500 lbs. | 2250 lbs. | 2000 lbs. | 1750 lbs. | 1500 lbs. | 1250 lbs. | 1000 lbs. | 750 lbs. | 0 lbs. | |
| | | BRACKET SPACING | | | | | | | | | |
| 10 | 30 | | | | | 2'-1" | 2'-6" | 2'-11" | 3'-4" | 4'-6" | 4000 |
| | 40 | | | | | 2'-1" | 2'-6" | 2'-11" | 3'-4" | 4'-6" | 4000 |
| | 50 | 2'-9" | 3'-2" | 3'-7" | 4'-0" | 4'-5" | 4'-10" | 5'-3" | 5'-7" | 6'-7" | 4000 |
| 12 | 30 | | | | | 2'-2" | 2'-7" | 2'-11" | 3'-4" | 4'-0" | 4000 |
| | 40 | | | | | 2'-2" | 2'-7" | 2'-11" | 3'-4" | 4'-0" | 4000 |
| | 50 | 2'-5" | 2'-10" | 3'-2" | 3'-6" | 3'-11" | 4'-3" | 4'-8" | 5'-0" | 6'-1" | 4000 |
| 14 | 30 | | | | | 2'-0" | 2'-4" | 2'-8" | 3'-8" | 4000 | |
| | 40 | | | | | 2'-0" | 2'-4" | 2'-8" | 3'-8" | 4000 | |
| | 50 | 2'-2" | 2'-6" | 2'-10" | 3'-2" | 3'-6" | 3'-10" | 4'-2" | 4'-6" | 5'-6" | 4000 |
| 16 | 30 | | | | | 2'-11" | 3'-2" | 3'-6" | 3'-10" | 4'-1" | 4000 |
| | 40 | | | | | 2'-11" | 3'-2" | 3'-6" | 3'-10" | 4'-1" | 4000 |
| | 50 | 2'-0" | 2'-4" | 2'-7" | 2'-11" | 3'-2" | 3'-6" | 3'-10" | 4'-1" | 5'-0" | 4000 |

TABLE 1-4 (FOR USE ON OVER 3'-0" TO 3'-6" OVERHANG & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

| AVG. SLAB THICKNESS (in) | BRACKET DIMENSION (in) | SCREED LOAD PER BRACKET | | | | | | | | | 45° HANGER SWL (lbs) |
|--------------------------|------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------|----------------------|
| | | 2500 lbs. | 2250 lbs. | 2000 lbs. | 1750 lbs. | 1500 lbs. | 1250 lbs. | 1000 lbs. | 750 lbs. | 0 lbs. | |
| | | BRACKET SPACING | | | | | | | | | |
| 10 | 30 | | | | | 2'-3" | 2'-1" | 2'-5" | 2'-9" | 3'-10" | 4000 |
| | 40 | | | | | 2'-3" | 2'-1" | 2'-5" | 2'-9" | 3'-10" | 4000 |
| | 50 | | | | | 2'-4" | 2'-8" | 3'-0" | 3'-4" | 3'-7" | 4000 |
| 12 | 30 | | | | | 2'-1" | 2'-8" | 3'-4" | 3'-7" | 3'-10" | 4000 |
| | 40 | | | | | 2'-1" | 2'-8" | 3'-4" | 3'-7" | 3'-10" | 4000 |
| | 50 | 2'-4" | 2'-8" | 3'-0" | 3'-4" | 3'-8" | 4'-1" | 4'-5" | 4'-9" | 5'-9" | 4000 |
| 14 | 30 | | | | | 2'-2" | 2'-6" | 3'-5" | 3'-5" | 4000 | |
| | 40 | | | | | 2'-2" | 2'-6" | 3'-5" | 3'-5" | 4000 | |
| | 50 | | | | | 2'-2" | 2'-6" | 3'-5" | 3'-5" | 4000 | |
| 16 | 30 | | | | | 2'-2" | 2'-6" | 3'-5" | 3'-5" | 4000 | |
| | 40 | | | | | 2'-2" | 2'-6" | 3'-5" | 3'-5" | 4000 | |
| | 50 | 2'-1" | 2'-4" | 2'-8" | 3'-0" | 3'-4" | 3'-7" | 3'-11" | 4'-3" | 5'-2" | 4000 |

DEFINITIONS

- SLPB = SCREED LOAD PER BRACKET (R x W)
- R = SCREED LOAD FACTOR, OBTAINED FROM TABLE 2
- W = WHEEL LOAD
- S = BRACKET SPACING
- T = AVERAGE SLAB THICKNESS
- SWL = SAFE WORKING LOAD
- K = DIMENSION DEFINED ON "BRIDGE OVERHANG BRACKET SUMMARY" ON SHEET 2
- L = OVERHANG MEASURED FROM EDGE OF TOP FLANGE TO EDGE OF SUPERSTRUCTURE

PROJECT NO. B-3714
 WILKES COUNTY
 STATION: 17+05.50 -L-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD OVERHANG FALSEWORK
 AASHTO TYPES
 III, IV, V, AND VI

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-33 |
| 1 | | | 3 | | | TOTAL SHEETS 35 |
| 2 | | | 4 | | | |

| | |
|---------------------------|-------|
| ASSEMBLED BY: | DATE: |
| CHECKED BY: | DATE: |
| DRAWN BY: R. WRIGHT 06/04 | REV. |
| CHECKED BY: V. CHAO 06/04 | |