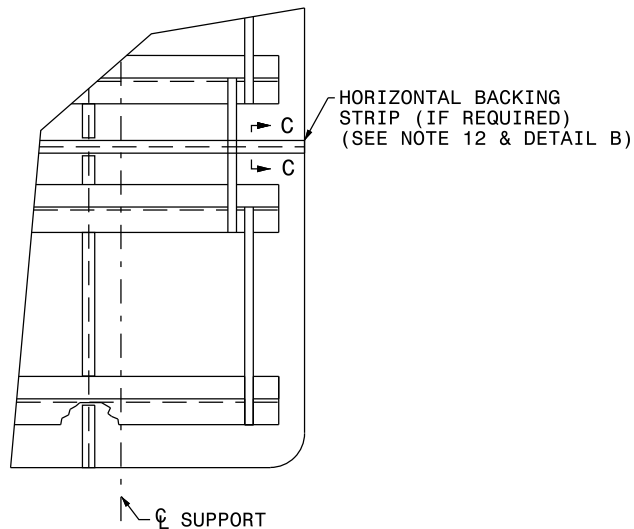


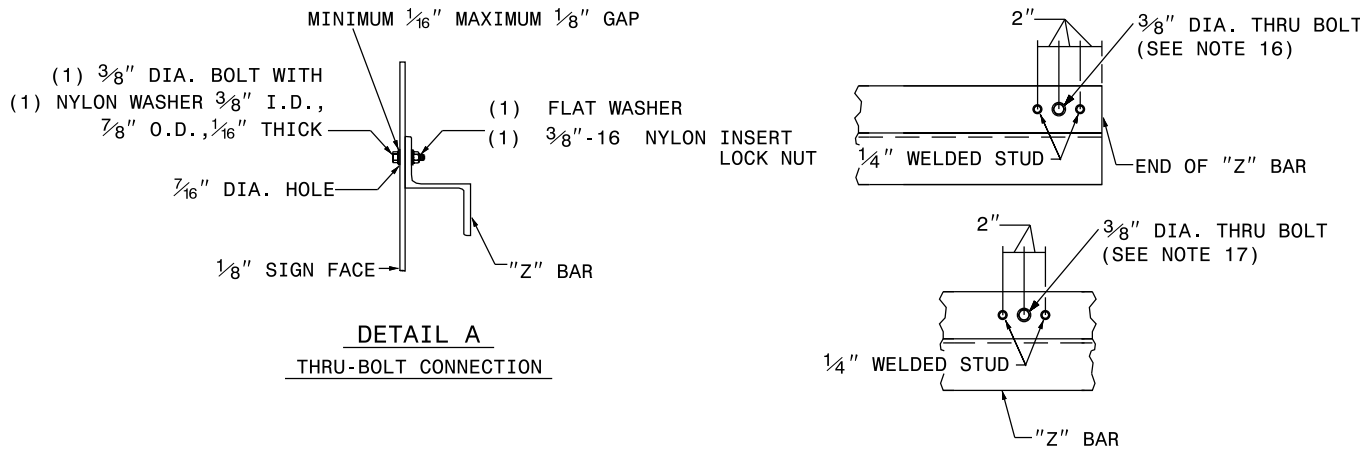
1 1/2" X 3/8"
ALUM. STIFFENER BAR
3 REQ'D. (SEE NOTE 8)

HORIZONTAL BACKING STRIP

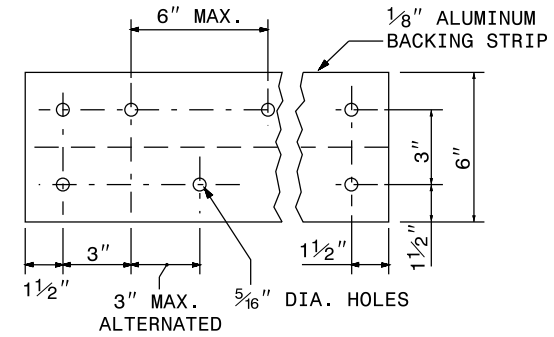


NOTES

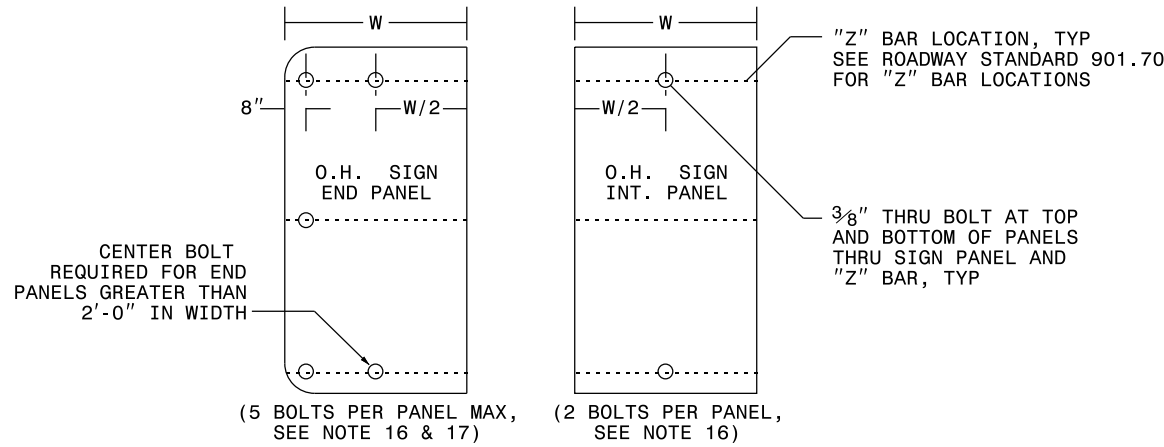
1. USE THE NUMBER AND SIZE OF SUPPORTS SHOWN ON THE SUPPORT CHART IN PROJECT PLANS.
2. FABRICATE SIGN PANEL SECTIONS WITH SHEETS 4'-0" WIDE. WHEN FABRICATING SIGNS WHICH ARE NOT MULTIPLES OF 4'-0" IN WIDTH, DO NOT CUT MORE THAN TWO SHEETS TO LESS THAN 4'-0" IN WIDTH. THESE PANELS SHALL NOT BE LESS THAN 1'-0" IN WIDTH.
3. SEE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, FOR TYPE OF MATERIAL TO BE USED FOR SIGN PANELS, HANGER ASSEMBLIES, AND SUPPORTS.
4. USE GALVANIZED STEEL FOR BACKING PLATES AND MOUNTING BOLTS.
5. SEE ROADWAY STANDARD 904.20 WHEN TYPE "B" SECONDARY SIGN MOUNTING IS REQUIRED.
6. DETAILS FOR TYPE "A" SECONDARY SIGNS SHALL BE THE SAME AS FOR TYPE "A" SIGNS.
7. THE VERTICAL DIMENSION BETWEEN PRIMARY AND SECONDARY SIGNS IS TWO (2) INCHES.
8. ADJUST STIFFENERS TO AVOID CONFLICT WITH SUPPORTS.
9. SEE ROADWAY STANDARD 901.70 FOR SUPPORT AND "Z" BAR SPACING.
10. FABRICATE SIGNS TALLER THAN 12'-0" AS TWO SEPARATE SIGNS WITH A HORIZONTAL SPLICE. LOCATE STRINGERS ON EACH SECTION OF THE SIGN BY THE SIGN STRINGER CHART. (SEE ROADWAY STANDARD 901.70)
11. FABRICATE SIGNS TALLER THAN 12'-0" BUT SHORTER THAN 14'-6" WITH A HORIZONTAL SPLICE LOCATED 7'-0" FROM BOTTOM OF SIGN.
12. FABRICATE SIGNS 14'-6" TALL AND TALLER WITH A HORIZONTAL SPLICE. LOCATE THE SPLICE AT LEAST HALF OF THE SIGN HEIGHT FROM THE BOTTOM AND AT LEAST 7'-0" FROM THE TOP.
13. THERE SHALL ONLY BE A 1/8" GAP BETWEEN THE VERTICAL BACKING STRIP AND THE "Z" BAR.
14. SEE ROADWAY STANDARD 901.80 FOR DETAILS SHOWING SIGN MOUNTING TO SUPPORTS.
15. PLACE NYLON WASHER UNDER HEAD OF 3/8" THRU BOLTS.
16. FABRICATE EACH SIGN WITH 3/8" DIA. THRU BOLT, 4" FROM EACH END OF EACH "Z" BAR THRU SIGN PANEL AND "Z" BAR. SEE DETAILS A & C.
17. FABRICATE EACH SIGN WITH 3/8" DIA. THRU BOLT CENTERED IN EACH PANEL THRU THE TOP AND BOTTOM "Z" BAR. CENTERED THRU BOLT REQUIRED IN END PANELS GREATER THAN 2'-0" WIDE. SEE DETAILS A & C.
18. THRU BOLTS WILL HAVE A MINIMUM 1/16" TO MAXIMUM 1/8" GAP



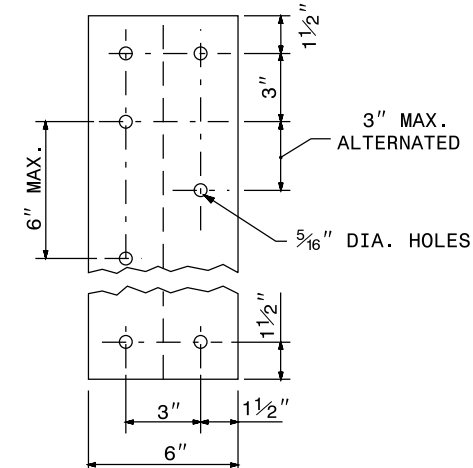
DETAIL A
THRU-BOLT CONNECTION



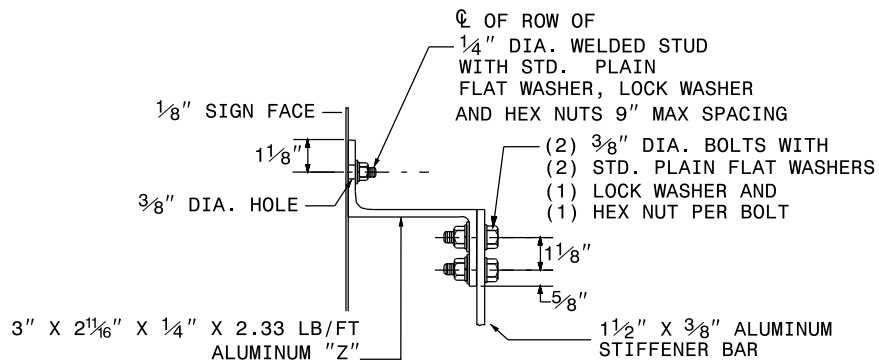
DETAIL B
TYPICAL HORIZ. JOINT HOLE PATTERN



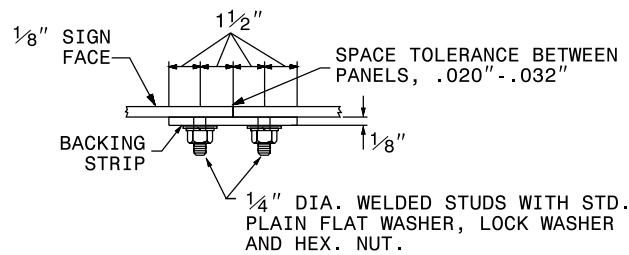
DETAIL C
THRU-BOLT LOCATIONS



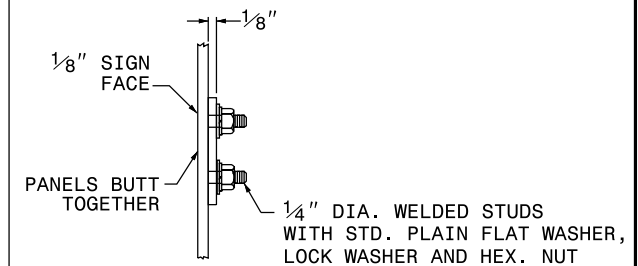
DETAIL D
BACKING STRIP HOLE PATTERN



SECTION A-A

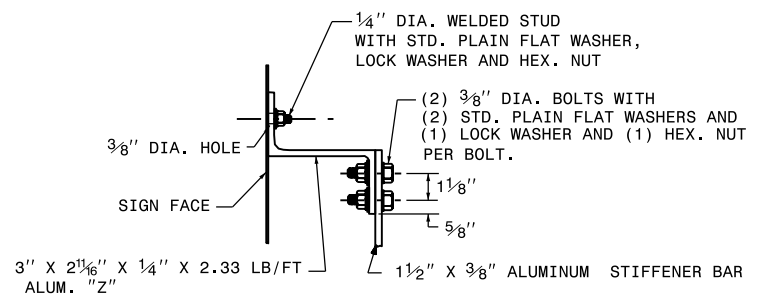
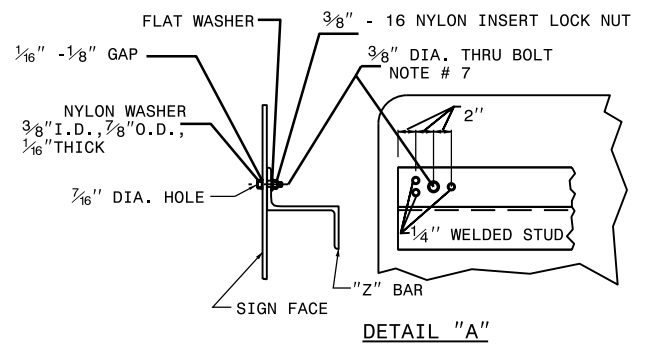


SECTION B-B

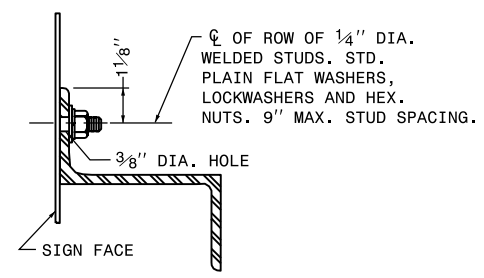


SECTION C-C

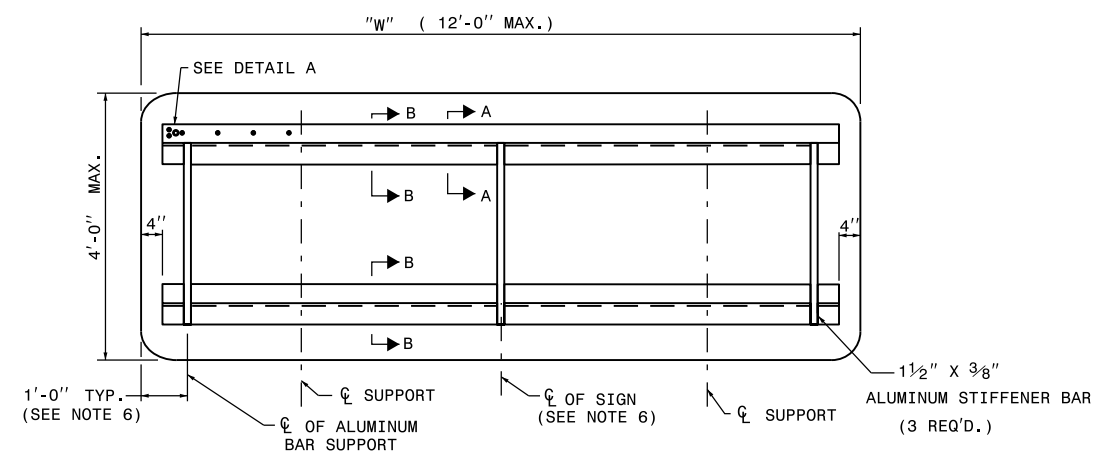
1-12



SECTION A-A
 STIFFENER DETAIL



SECTION B-B

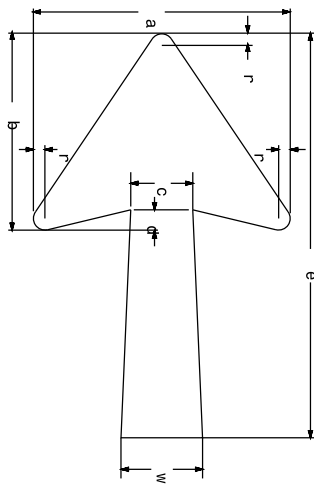


NOTES

1. USE NUMBER AND SIZE OF SUPPORTS SHOWN ON SUPPORT CHART IN PROJECT PLAN SHEETS.
2. SEE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR THE TYPE OF MATERIAL TO BE USED FOR SIGN PANELS, HANGER ASSEMBLIES AND SUPPORTS.
3. FURNISH ALL MOUNTING HARDWARE.
4. USE GALVANIZED STEEL FOR BACKING PLATES AND MOUNTING BOLTS.
5. THE VERTICAL DIMENSION BETWEEN PRIMARY AND SECONDARY SIGNS IS TWO (2) INCHES.
6. ADJUST STIFFENERS TO AVOID CONFLICT WITH SUPPORTS.
7. FABRICATE EACH SIGN WITH A $\frac{3}{8}$ " DIA. BOLT 4" FROM EACH END OF EACH "Z" BAR THRU SIGN PANEL AND "Z" BAR.
8. SEE ROADWAY STANDARD 901.70 FOR SUPPORT AND "Z" BAR SPACING.
9. SEE ROADWAY STANDARD 901.80 FOR DETAILS SHOWING SIGN MOUNTING TO SUPPORTS.
10. PLACE NYLON WASHER UNDER HEAD OF $\frac{3}{8}$ " THRU BOLT.
11. THRU BOLTS WILL HAVE A MINIMUM $\frac{1}{16}$ " TO MAXIMUM $\frac{1}{8}$ " GAP.

1-12

DETAIL OF INTERSTATE ARROW

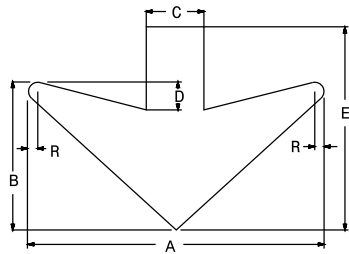


INTERSTATE TYPE "A" ARROW

| LETTER SIZE (upper-case) | Arrow Dimensions in Inches | | | | | | |
|-----------------------------|----------------------------|--------|-------|-------|-----|------|-------|
| | a | b | c | d | e | r | w |
| 8" | 15.13" | 11.56" | 3.75" | 1.31" | 25" | .81" | 5" |
| 10"-13.33" | 18.25" | 14" | 4.50" | 1.50" | 30" | .75" | 6" |
| 15"CAPS-20"UC | 22.25" | 17" | 5.38" | 1.75" | 35" | 1" | 7.06" |

INTERSTATE TYPE "B" ARROW

| LETTER SIZE (upper-case) | Arrow Dimensions in Inches | | | | | | |
|-----------------------------|----------------------------|--------|-------|-------|-----|------|-------|
| | a | b | c | d | e | r | w |
| 8" | 15.13" | 11.56" | 3.75" | 1.31" | 17" | .81" | 4.31" |
| 10"-13.33" | 18.25" | 14" | 4.50" | 1.50" | 20" | .75" | 5.13" |
| 15"CAPS-20"UC | 22.25" | 17" | 5.38" | 1.75" | 25" | 1" | 6.19" |

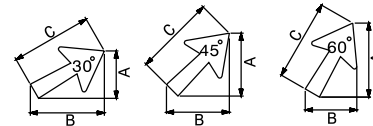


DETAIL OF TYPE "C" ARROW

TYPE "C" ARROWS

| ARROW SIZE | Arrow Dimensions in Inches | | | | | |
|---------------|----------------------------|--------|-------|-------|--------|------|
| | A | B | C | D | E | R |
| 1/2 "C" | 16" | 8" | 3.25" | 1.50" | 11" | .50" |
| 2/3 "C" | 21.31" | 10.69" | 4.31" | 2" | 14.69" | .69" |
| 3/4 "C" | 24" | 12" | 4.88" | 2.25" | 16.50" | .75" |
| STANDARD "C" | 32" | 16" | 6.50" | 3" | 22" | 1" |

DETAIL OF DIAGONAL INTERSTATE ARROWS
FOR TYPE "A" & "B" SIGNS



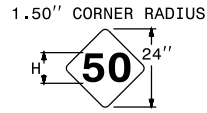
INTERSTATE TYPE "A" ARROW

| ANGLE Δ | ARROW SIZE TYPE "A" | A | B | C |
|------------|------------------------------|--------|--------|-----|
| 30° | 8" CAPS | 15.88" | 23" | 25" |
| | 10.67"-13.33"U.C.10"-12"CAPS | 19" | 27.50" | 30" |
| | 15" CAPS - 20" U.C. | 22.38" | 32.25" | 35" |
| 45° | 8" CAPS | 19.63" | 19.63" | 25" |
| | 10.67"-13.33"U.C.10"-12"CAPS | 23.50" | 23.50" | 30" |
| | 15" CAPS - 20" U.C. | 27.50" | 27.50" | 35" |
| 60° | 8" CAPS | 23" | 15.88" | 25" |
| | 10.67"-13.33"U.C.10"-12"CAPS | 27.50" | 19" | 30" |
| | 15" CAPS - 20" U.C. | 32.25" | 22.38" | 35" |

INTERSTATE TYPE "B" ARROW

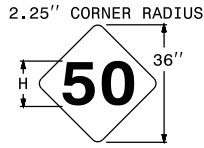
| ANGLE Δ | ARROW SIZE TYPE "B" | A | B | C |
|------------|------------------------------|--------|--------|-----|
| 30° | 8" CAPS | 13.25" | 15.88" | 17" |
| | 10.67"-13.33"U.C.10"-12"CAPS | 16" | 18.63" | 20" |
| | 15" CAPS - 20" U.C. | 19.50" | 23.25" | 25" |
| 45° | 8" CAPS | 13.75" | 13.75" | 17" |
| | 10.67"-13.33"U.C.10"-12"CAPS | 16.25" | 16.25" | 20" |
| | 15" CAPS - 20" U.C. | 20.13" | 20.13" | 25" |
| 60° | 8" CAPS | 15.88" | 13.25" | 17" |
| | 10.67"-13.33"U.C.10"-12"CAPS | 18.63" | 16" | 20" |
| | 15" CAPS - 20" U.C. | 23.25" | 19.50" | 25" |

DETAIL OF STATE SHIELDS



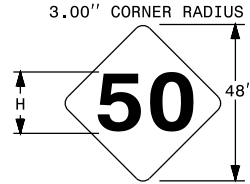
24" N.C. SHIELDS

| NO. DIGITS | LETTER SERIES | LETTER HIGHT "H" |
|------------|---------------|------------------|
| 1 | "D" | 12" |
| 2 | "C" OR "D" | 10" |
| 3 | "C" OR "D" | 7" |
| 3 | "C" OR "D" | 8" |



36" N.C. SHIELDS

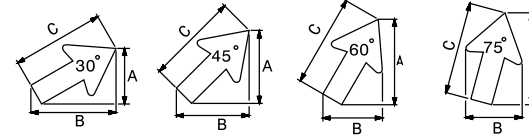
| NO. DIGITS | LETTER SERIES | LETTER HIGHT "H" |
|------------|---------------|------------------|
| 1 | "D" | 18" |
| 2 | "C" OR "D" | 15" |
| 3 | "C" OR "D" | 12" |
| 3 | "D" | 10" |



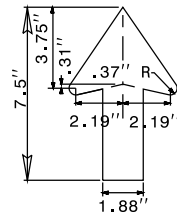
48" N.C. SHIELDS

| NO. DIGITS | LETTER SERIES | LETTER HIGHT "H" |
|------------|---------------|------------------|
| 1 | "D" | 24" |
| 2 | "D" | 20" |
| 2 | "D" | 18" |
| 3 | "C" OR "D" | 14" |

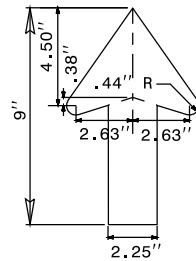
DETAIL OF DIAGONAL ARROWS FOR TYPE "D" SIGNS



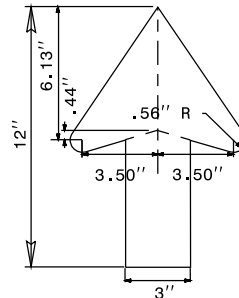
| 5" ARROW | | | | 6" ARROW | | | | 8" ARROW | | | | 10" ARROW | | | |
|----------|-------|-------|------|----------|-------|-------|----|----------|--------|--------|-----|-----------|--------|--------|-----|
| ANGLE Δ | A | B | C | ANGLE Δ | A | B | C | ANGLE Δ | A | B | C | ANGLE Δ | A | B | C |
| 30° | 4.95" | 6.96" | 7.5" | 30° | 5.94" | 8.36" | 9" | 30° | 7.83" | 11.14" | 12" | 30° | 9.79" | 13.93" | 15" |
| 45° | 5.97" | 5.97" | 7.5" | 45° | 7.16" | 7.16" | 9" | 45° | 9.55" | 9.55" | 12" | 45° | 11.93" | 11.93" | 15" |
| 60° | 6.96" | 4.95" | 7.5" | 60° | 8.36" | 5.94" | 9" | 60° | 11.14" | 7.83" | 12" | 60° | 13.93" | 9.79" | 15" |
| 75° | 7.49" | 4.95" | 7.5" | 75° | 8.98" | 5.95" | 9" | 75° | 11.98" | 7.88" | 12" | 75° | 14.97" | 9.83" | 15" |



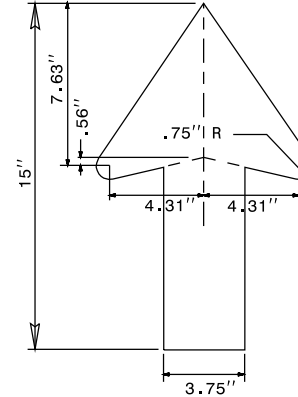
DETAIL OF 5" ARROW



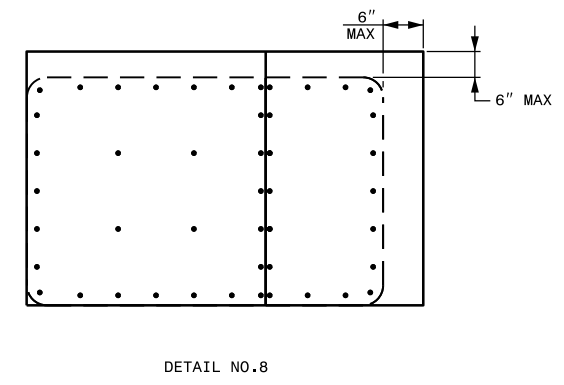
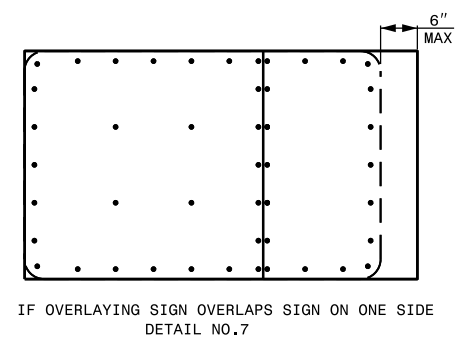
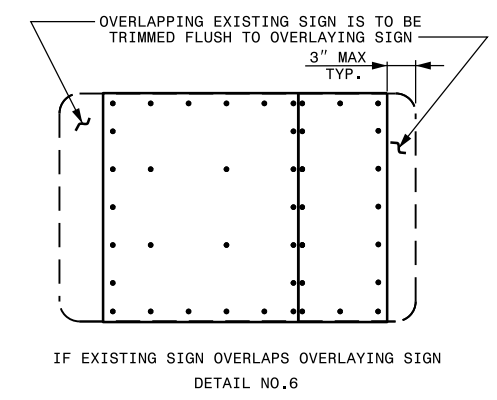
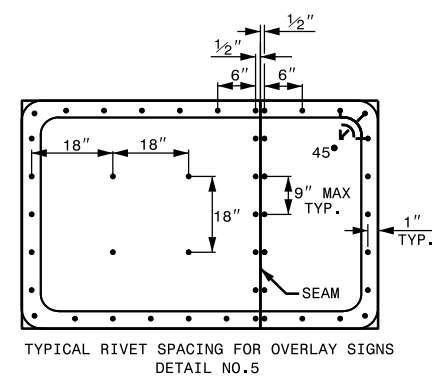
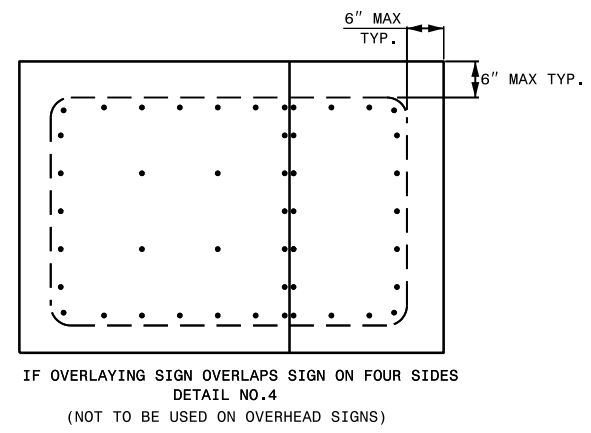
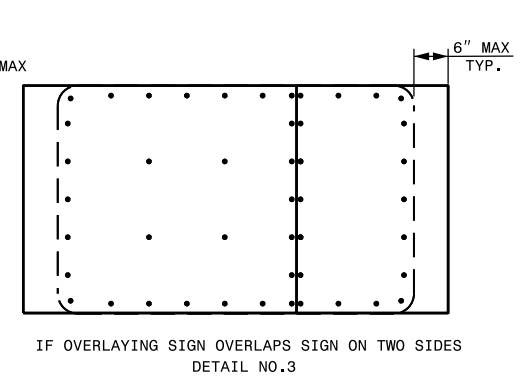
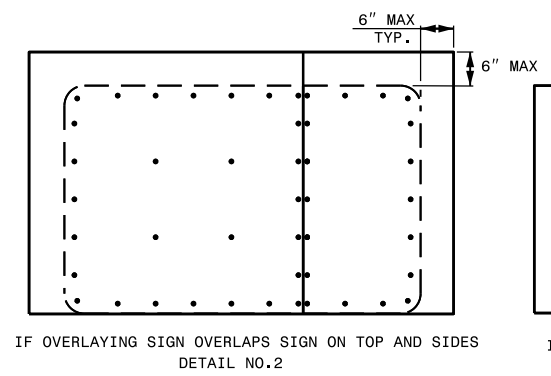
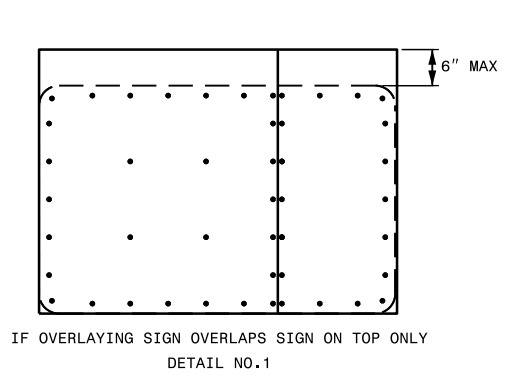
DETAIL OF 6" ARROW



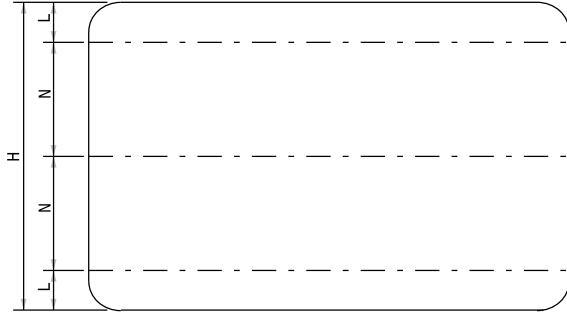
DETAIL OF 8" ARROW



DETAIL OF 10" ARROW



1. A COMPLETE OVERLAY OF AN EXISTING O.H. SIGN IS NOT PERMISSIBLE



| HEIGHT (H) | △ 2 STRINGERS L= .207H N= .586H | | △ 3 STRINGERS L= .145H N= .355H | | △ 4 STRINGERS L= .107H N= .262H | | △ 5 STRINGERS L= .100H N= .200H | | |
|-----------------|------------------------------------|----------|------------------------------------|----------|------------------------------------|----------|------------------------------------|---------|---------|
| | IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | |
| 24 | 2 - 0 | 0 - 6 | 1 - 0 | | | | | | |
| 30 | 2 - 6 | 0 - 8 | 1 - 2 | | | | | | |
| 36 | 3 - 0 | 0 - 8 | 1 - 8 | | | | | | |
| 42 | 3 - 6 | 0 - 8.5 | 2 - 1 | | | | | | |
| 48 | 4 - 0 | 0 - 10.0 | 2 - 4 | | | | | | |
| 54 | 4 - 6 | 0 - 11.0 | 2 - 8 | | | | | | |
| 60 | 5 - 0 | 1 - 0.5 | 2 - 11 | 0 - 9.0 | 1 - 9.0 | | | | |
| 66 | 5 - 6 | 1 - 1.5 | 3 - 3 | 0 - 10.0 | 1 - 11.0 | | | | |
| 72 | 6 - 0 | 1 - 3.0 | 3 - 6 | 0 - 10.5 | 2 - 1.5 | | | | |
| 78 | 6 - 6 | 1 - 4.0 | 3 - 10 | 0 - 11.5 | 2 - 3.5 | | | | |
| 84 | 7 - 0 | 1 - 5.5 | 4 - 1 | 1 - 0.0 | 2 - 6.0 | 0 - 9.0 | 1 - 10.0 | | |
| 90 | 7 - 6 | | | 1 - 1.0 | 2 - 8.0 | 0 - 9.0 | 2 - 0.0 | | |
| 96 | 8 - 0 | | | 1 - 2.0 | 2 - 10.0 | 0 - 10.5 | 2 - 1.0 | | |
| 102 | 8 - 6 | | | 1 - 3.0 | 3 - 0.0 | 0 - 10.5 | 2 - 3.0 | | |
| 108 | 9 - 0 | | | 1 - 3.5 | 3 - 2.5 | 1 - 0.0 | 2 - 4.0 | | |
| 114 | 9 - 6 | | | 1 - 4.5 | 3 - 4.5 | 1 - 0.0 | 2 - 6.0 | | |
| 120 | 10 - 0 | | | 1 - 5.5 | 3 - 6.5 | 1 - 1.5 | 2 - 7.0 | 1 - 0.0 | 2 - 0.0 |
| 126 | 10 - 6 | | | 1 - 6.5 | 3 - 8.5 | | | 1 - 1.0 | 2 - 1.0 |
| 132 | 11 - 0 | | | 1 - 7.0 | 3 - 11.0 | | | 1 - 1.0 | 2 - 2.5 |
| 138 | 11 - 6 | | | 1 - 8.0 | 4 - 1.0 | | | 1 - 2.0 | 2 - 3.5 |
| 144 | 12 - 0 | | | 1 - 9.0 | 4 - 3.0 | | | 1 - 2.0 | 2 - 5.0 |

STRINGER SPACING

NOTES:

- FABRICATE SIGNS TALLER THAN 12'-0" AS TWO SEPARATE SIGNS WITH A HORIZONTAL SPLICE.
 - FABRICATE SIGNS TALLER THAN 12'-0" BUT SHORTER THAN 14'-6" WITH A HORIZONTAL SPLICE LOCATED 7'-0" FROM BOTTOM OF SIGN.
 - FABRICATE SIGNS TALLER THAN 14'-6" WITH A HORIZONTAL SPLICE. LOCATE THE SPLICE AT LEAST HALF THE SIGN HEIGHT FROM THE BOTTOM AND AT LEAST 7'-0" FROM THE TOP.
- △ SUPPORT SPACING NOT APPLICABLE TO OVERHEAD SIGNS.

SECTION HEIGHTS FOR
SIGNS TALLER THAN 12' - 0"

| HEIGHT | BOTTOM SECTION | HEIGHT | BOTTOM SECTION |
|----------|----------------|----------|----------------|
| 14' - 6" | 7' - 6" | 19' - 6" | 10' - 0" |
| 15' - 0" | 7' - 6" | 20' - 0" | 10' - 0" |
| 15' - 6" | 8' - 0" | 20' - 6" | 10' - 6" |
| 16' - 0" | 8' - 0" | 21' - 0 | 10' - 6" |
| 16' - 6" | 8' - 6" | 21' - 6" | 11' - 0" |
| 17' - 0" | 8' - 6" | 22' - 0" | 11' - 0" |
| 17' - 6" | 9' - 0" | 22' - 6" | 11' - 6" |
| 18' - 0" | 9' - 0" | 23' - 0" | 11' - 6" |
| 18' - 6" | 9' - 6" | 23' - 6" | 12' - 0" |
| 19' - 0" | 9' - 6" | 24' - 0" | 12' - 0" |

NUMBER OF STRINGERS REQUIRED

0.080 AND 0.125 SIGN FACES

| NUMBER OF STRINGERS | MAXIMUM SIGN HEIGHT | |
|---------------------|---------------------|------------|
| | 0.080 FACE | 0.125 FACE |
| 2 | 4' 6" | 7' 0" |
| 3 | 7' 0" | 12' 0" |
| 4 | 10' 0" | 14' 0" |
| 5 | 12' 0" | 14' 6" |
| 6 | 14' 0" | 24' 0" |
| 7 | 17' 0" | |
| 8 | 20' 0" | |
| 9 | 22' 0" | |
| 10 | 24' 0" | |

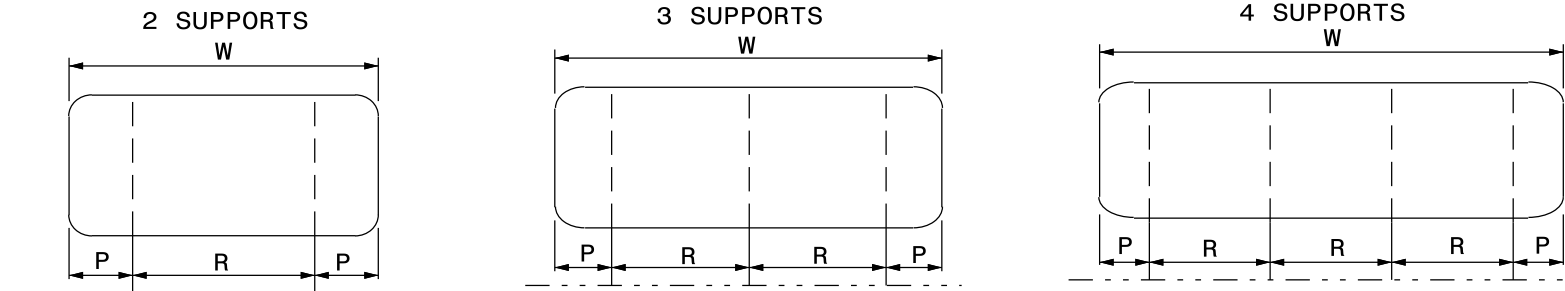
| WIDTH (W) | △ 2 SUPPORTS P= .207W R= .586W | | △ 3 SUPPORTS P= .145W R= .355W | | △ 4 SUPPORTS P= .107W R= .262W | | WIDTH (W) | △ 2 SUPPORTS P= .207W R= .586W | | △ 3 SUPPORTS P= .145W R= .355W | | △ 4 SUPPORTS P= .107W R= .262W | | |
|----------------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|-----------|----------------|-----------------------------------|---------|-----------------------------------|----------|-----------------------------------|-----------|-----------|
| | IN. FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | | IN. FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. | FT.-IN. |
| 24 | 2 - 0 | 0 - 6 * | 1 - 0 * | | | | 210 | 17 - 6 | 3 - 7.5 | 10 - 3 | 2 - 6.5 | 6 - 2.5 | 1 - 10.5 | 4 - 7.0 |
| 30 | 2 - 6 | 0 - 8 * | 1 - 2 * | | | | # 216 | 18 - 0 | 3 - 8.5 | 10 - 7 * | 2 - 7.5 | 6 - 4.5 | 1 - 10.5* | 4 - 9.0* |
| 36 | 3 - 0 | 0 - 8 | 1 - 8 | | | | 222 | 18 - 6 | | | 2 - 8.0 | 6 - 7.0 | 2 - 0.0 | 4 - 10.0 |
| 42 | 3 - 6 | 0 - 8.5 | 2 - 1 * | | | | 228 | 19 - 0 | | | 2 - 9.0 | 6 - 9.0 | 2 - 0.0* | 5 - 0.0* |
| 48 | 4 - 0 | 0 - 10.0 | 2 - 4 | | | | 234 | 19 - 6 | | | 2 - 10.0 | 6 - 11.0 | 2 - 1.5* | 5 - 1.0* |
| 54 | 4 - 6 | 0 - 11.0 | 2 - 8 * | | | | 240 | 20 - 0 | | | 2 - 11.0 | 7 - 1.0 | 2 - 1.5 | 5 - 3.0 |
| 60 | 5 - 0 | 1 - 0.5 | 2 - 11 | | | | 246 | 20 - 6 | | | 2 - 11.5 | 7 - 3.5 | 2 - 3.0* | 5 - 4.0* |
| 66 | 5 - 6 | 1 - 1.5 | 3 - 3 * | | | | 252 | 21 - 0 | | | 3 - 0.5 | 7 - 5.5 | 2 - 3.0 | 5 - 6.0 |
| 72 | 6 - 0 | 1 - 3.0 | 3 - 6 | | | | 258 | 21 - 6 | | | 3 - 1.5 | 7 - 7.5 | 2 - 3.0* | 5 - 8.0* |
| 78 | 6 - 6 | 1 - 4.0 | 3 - 10 * | | | | 264 | 22 - 0 | | | 3 - 2.5 | 7 - 9.5 | 2 - 4.5* | 5 - 9.0 |
| 84 | 7 - 0 | 1 - 5.5 | 4 - 1 | | | | 270 | 22 - 6 | | | 3 - 3.0 | 8 - 0.0 | 2 - 4.5* | 5 - 11.0* |
| 90 | 7 - 6 | 1 - 6.5 | 4 - 5 * | 1 - 1.0 | 2 - 8.0 | | 276 | 23 - 0 | | | 3 - 4.0 | 8 - 2.0 | 2 - 6.0* | 6 - 0.0* |
| 96 | 8 - 0 | 1 - 8.0 | 4 - 8 * | 1 - 2.0 | 2 - 10.0 | | 282 | 23 - 6 | | | 3 - 5.0 | 8 - 4.0 | 2 - 6.0 | 6 - 2.0 |
| 102 | 8 - 6 | 1 - 9.0 | 5 - 0 | 1 - 3.0 | 3 - 0.0 | | 288 | 24 - 0 | | | 3 - 6.0 | 8 - 6.0 | 2 - 7.5* | 6 - 3.0* |
| 108 | 9 - 0 | 1 - 10.5 | 5 - 3 * | 1 - 3.5 | 3 - 2.5 | | 294 | 24 - 6 | | | 3 - 6.5 | 8 - 8.5 | 2 - 7.5 | 6 - 5.0 |
| 114 | 9 - 6 | 1 - 11.5 | 5 - 7 | 1 - 4.5 | 3 - 4.5 | | 300 | 25 - 0 | | | 3 - 7.5 | 8 - 10.5 | 2 - 7.5* | 6 - 7.0* |
| 120 | 10 - 0 | 2 - 1.0 | 5 - 10 * | 1 - 5.5 | 3 - 6.5 | | 306 | 25 - 6 | | | 3 - 8.5 | 9 - 0.5 | 2 - 9.0* | 6 - 8.0 |
| 126 | 10 - 6 | 2 - 2.0 | 6 - 2 | 1 - 6.5 | 3 - 8.5 | | 312 | 26 - 0 | | | 3 - 9.0 | 9 - 3.0 | 2 - 9.0* | 6 - 10.0* |
| 132 | 11 - 0 | 2 - 3.5 | 6 - 5 * | 1 - 7.0 | 3 - 11.0 | | 318 | 26 - 6 | | | 3 - 10.0 | 9 - 5.0 | 2 - 10.5* | 6 - 11.0* |
| 138 | 11 - 6 | 2 - 4.5 | 6 - 9 | 1 - 8.0 | 4 - 1.0 | | 324 | 27 - 0 | | | 3 - 11.0 | 9 - 7.0 | 2 - 10.5 | 7 - 1.0 |
| 144 | 12 - 0 | 2 - 6.0 | 7 - 0 * | 1 - 9.0 | 4 - 3.0 | 1 - 3.0* | 330 | 27 - 6 | | | 4 - 0.0 | 9 - 9.0 | 3 - 0.0* | 7 - 2.0* |
| 150 | 12 - 6 | 2 - 7.0 | 7 - 4 | 1 - 10.0 | 4 - 5.0* | 1 - 4.5* | 336 | 28 - 0 | | | 4 - 0.5 | 9 - 11.5 | 3 - 0.0 | 7 - 4.0 |
| 156 | 13 - 0 | 2 - 8.5 | 7 - 7 * | 1 - 10.5 | 4 - 7.5 | 1 - 4.5 | 342 | 28 - 6 | | | 4 - 1.5 | 10 - 1.5 | 3 - 0.0* | 7 - 6.0* |
| 162 | 13 - 6 | 2 - 9.5 | 7 - 11 | 1 - 11.5 | 4 - 9.5 | 1 - 6.0* | 348 | 29 - 0 | | | 4 - 2.5 | 10 - 3.5 | 3 - 1.5* | 7 - 7.0 |
| 168 | 14 - 0 | 2 - 11.0 | 8 - 2 * | 2 - 0.5 | 4 - 11.5 | 1 - 6.0 | 354 | 29 - 6 | | | 4 - 3.5 | 10 - 5.5 | 3 - 1.5* | 7 - 9.0* |
| 174 | 14 - 6 | 3 - 0.0 | 8 - 6 | 2 - 1.0 | 5 - 2.0 | 1 - 6.0* | 360 | 30 - 0 | | | 4 - 4.0 | 10 - 8.0 | 3 - 3.0* | 7 - 10.0* |
| 180 | 15 - 0 | 3 - 1.5 | 8 - 9 * | 2 - 2.0 | 5 - 4.0 | 1 - 7.5 | 366 | 30 - 6 | | | 4 - 5.0 | 10 - 10.0 | 3 - 3.0 | 8 - 0.0 |
| 186 | 15 - 6 | 3 - 2.5 | 9 - 1 | 2 - 3.0 | 5 - 6.0 | 1 - 7.5* | 372 | 31 - 0 | | | 4 - 6.0 | 11 - 0.0 | 3 - 4.5* | 8 - 1.0* |
| 192 | 16 - 0 | 3 - 3.5 | 9 - 5 * | 2 - 4.0 | 5 - 8.0 | 1 - 9.0* | 378 | 31 - 6 | | | 4 - 7.0 | 11 - 2.0 | 3 - 4.5 | 8 - 3.0 |
| 198 | 16 - 6 | 3 - 5.0 | 9 - 8 | 2 - 4.5 | 5 - 10.5 | 1 - 9.0 | 384 | 32 - 0 | | | 4 - 7.5 | 11 - 4.5 | 3 - 4.5* | 8 - 5.0* |
| 204 | 17 - 0 | 3 - 6.0 | 10 - 0 * | 2 - 5.5 | 6 - 0.5 | 1 - 10.5* | | | | | | | | |

VALUES HAVE BEEN ROUNDED TO NEAREST 1/2 INCH.

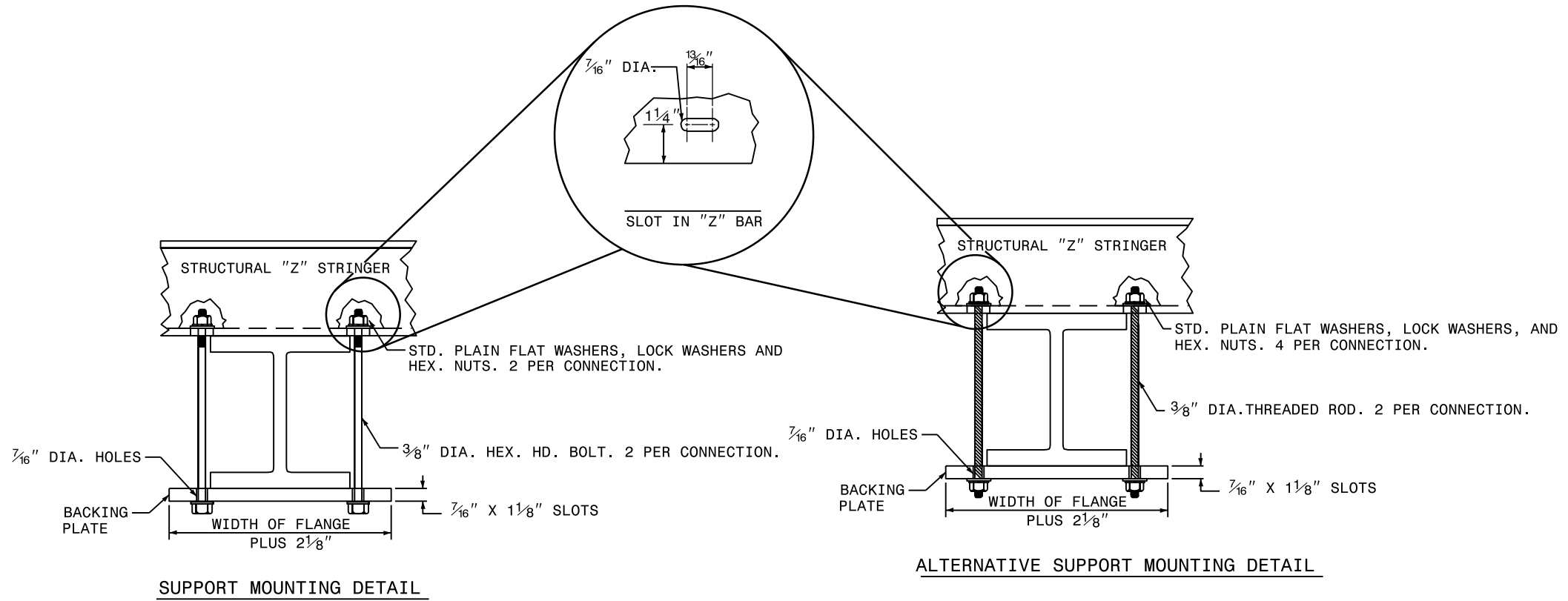
* THESE VALUES HAVE BEEN ADJUSTED TO BALANCE SPACING.

MAXIMUM WIDTH FOR 2 SUPPORTS. 250 SQ. FT. MAX. AREA FOR 2 SUPPORTS.

△ SUPPORTS SPACING NOT APPLICABLE TO OVERHEAD SIGNS.



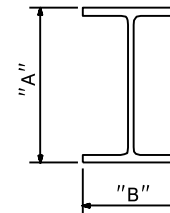
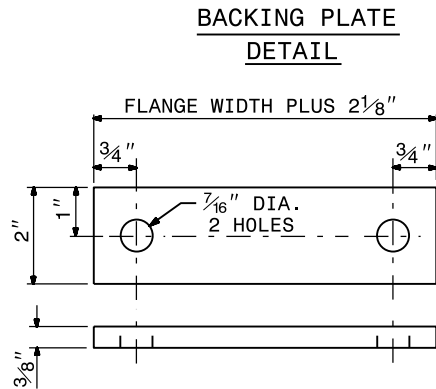
SIGN SUPPORT SPACING



SUPPORT MOUNTING DETAIL

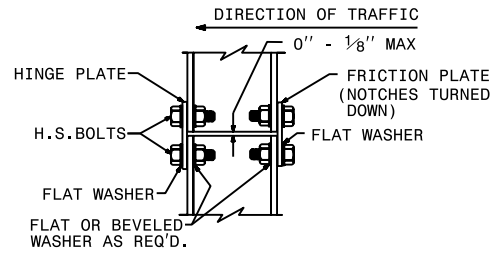
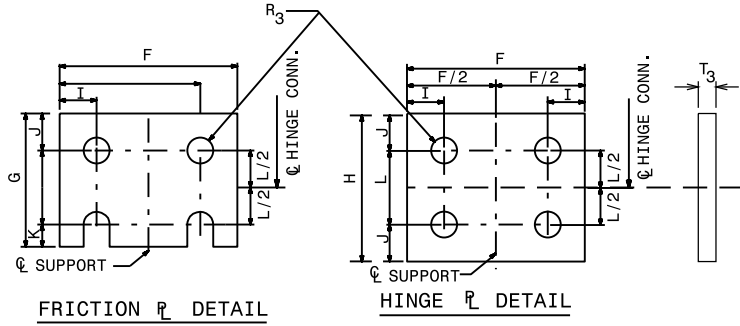
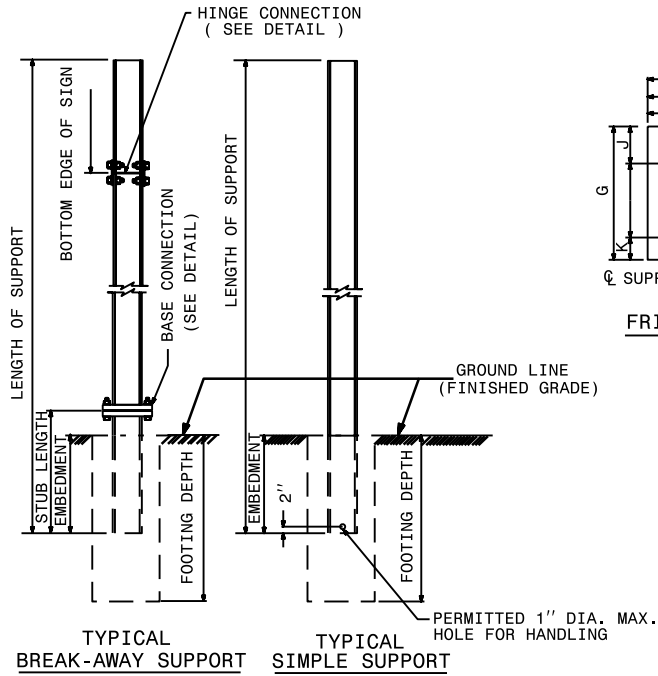
ALTERNATIVE SUPPORT MOUNTING DETAIL

SIGN SUPPORTS SECTION DIMENSIONS

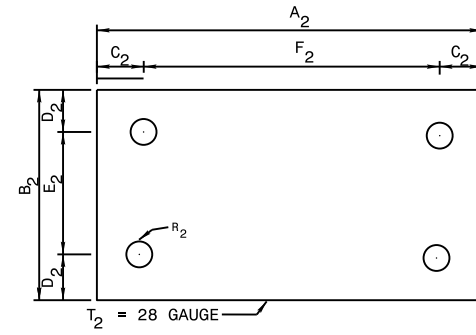
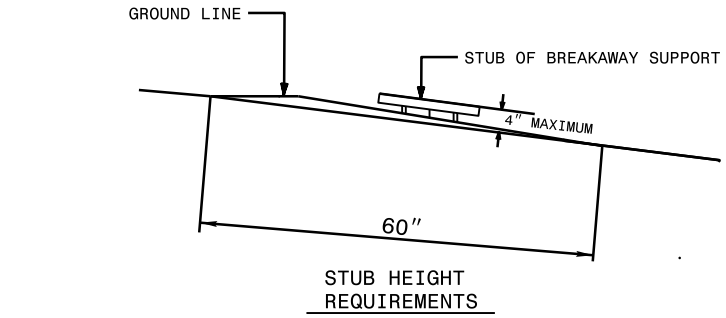


| SECTION | A | B |
|----------|---------|--------|
| S3 X 5.7 | 3" | 2 3/8" |
| S4 X 7.7 | 4" | 2 5/8" |
| W6 X 9 | 6" | 4" |
| W6 X 12 | 6" | 4" |
| W6 X 16 | 6 1/4" | 4" |
| W8 X 18 | 8 1/8" | 5 1/4" |
| W8 X 21 | 8 1/4" | 5 1/4" |
| W10 X 22 | 10 1/8" | 5 3/4" |
| W10 X 26 | 10 3/8" | 5 3/4" |
| W12 X 26 | 12 1/4" | 6 1/2" |
| W14 X 30 | 13 7/8" | 6 3/4" |
| W16 X 31 | 15 7/8" | 5 1/2" |
| W18 X 35 | 17 3/4" | 6" |
| W18 X 40 | 17 7/8" | 6" |
| W21 X 44 | 20 5/8" | 6 1/2" |

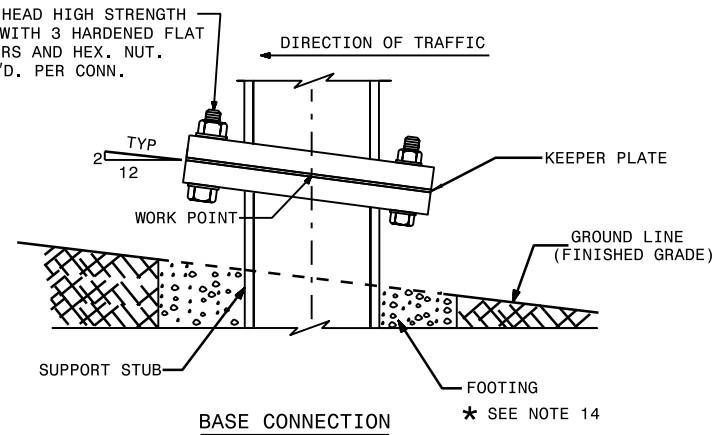
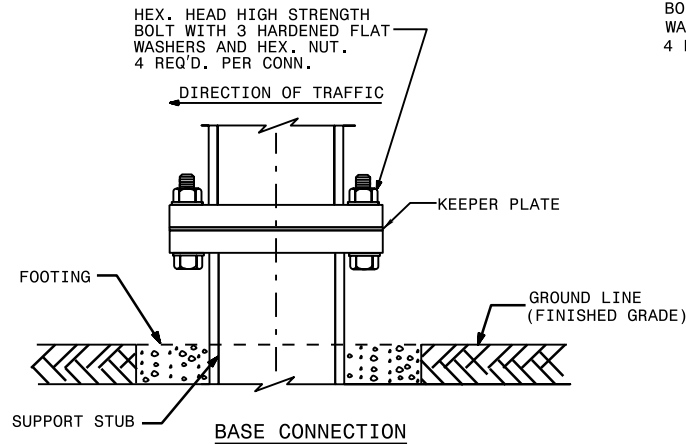
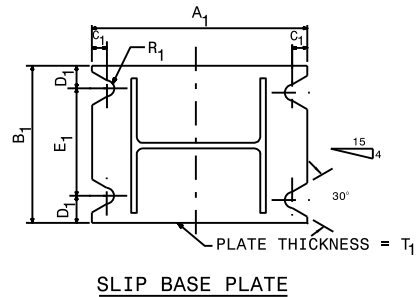
1. THE SUPPORT MOUNTING DETAIL SHOWS A "W" OR "S" BEAM. THIS DETAIL IS ALSO USED FOR MOUNTING SIGNS TO WOOD OR SQUARE TUBE SUPPORTS.
2. USE A36 STEEL FOR BACKING PLATES GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. SEE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR TYPE OF MATERIAL TO BE USED FOR SIGN HANGER ASSEMBLIES AND SUPPORTS.
4. USE GALVANIZED STEEL FOR MOUNTING BOLTS AND THREADED RODS IN COMPLIANCE WITH ASTM A307 AND ASTM F2329.



HINGE CONNECTION

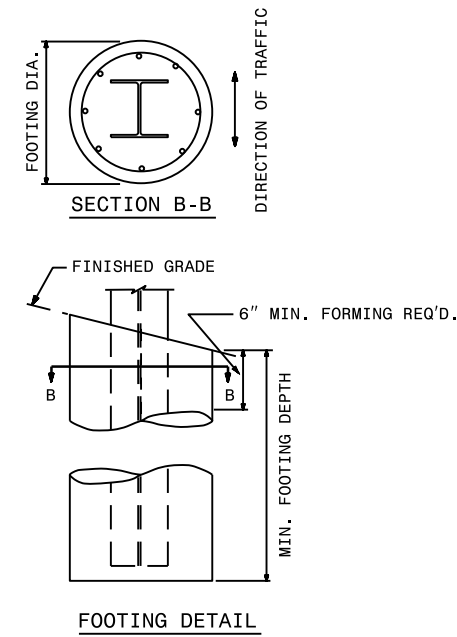
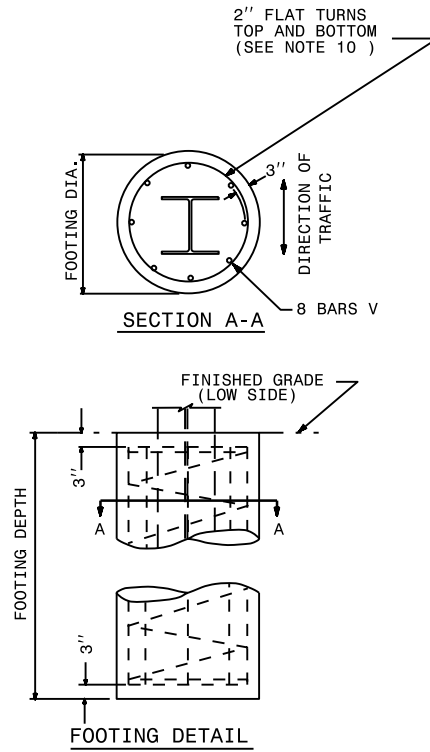


KEEPER PLATE



SEE SHEET 2 OF 3 FOR
BASE CONNECTION DATA
HINGE CONNECTION DATA
& FOUNDATION DATA.
SEE SHEET 3 OF 3 FOR
GENERAL NOTES.

| BEAM SHAPE | SLIP BASE PLATE DATA | | | | | | | | KEEPER PLATE DATA | | | | | | HINGE CONNECTION DATA | | | | | | | BREAK AWAY SUPPORT WEIGHT CONSTANT LBS. | | | | |
|------------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|----------------|----------------|----------------|----------------|----------------|-----------------------|--------------------|--------|--------|--------|--------|--------|---|--------|---------|----------------|----------------|
| | BOLT SIZE | A ₁ | B ₁ | C ₁ | D ₁ | E ₁ | T ₁ | R ₁ | A ₂ | B ₂ | C ₂ | D ₂ | E ₂ | R ₂ | T ₂ | BOLT SIZE | F | G | H | I | J | | K | L | R ₃ | T ₃ |
| S3X5.7 | 1/2" DIA. X 3" | 7" | 4" | 1" | 3/4" | 2 1/2" | 1" | 9/32" | 7" | 4" | 1" | 3/4" | 2 1/2" | 9/32" | 28 GAUGE | 1/2" DIA. X 1 1/4" | 2 1/4" | 3 1/2" | 4" | 1 1/2" | 1" | 1/2" | 2" | 9/32" | 3/8" | 18 |
| S4X7.7 | 1/2" DIA. X 3" | 8" | 4" | 1" | 3/4" | 2 1/2" | 1" | 9/32" | 8" | 4" | 1" | 3/4" | 2 1/2" | 9/32" | 28 GAUGE | 1/2" DIA. X 1 1/4" | 2 5/8" | 3 1/2" | 4" | 1 1/2" | 1" | 1/2" | 2" | 9/32" | 3/8" | 20 |
| W6X9 | 1/2" DIA. X 3" | 10" | 5" | 1" | 3/4" | 3 1/2" | 1" | 9/32" | 10" | 5" | 1" | 3/4" | 3 1/2" | 9/32" | 28 GAUGE | 1/2" DIA. X 1 1/4" | 4" | 3 1/2" | 4" | 3/4" | 1" | 1/2" | 2" | 9/32" | 3/8" | 32 |
| W6X12 | 5/8" DIA. X 3 3/4" | 11" | 5" | 1 1/4" | 7/8" | 3 1/4" | 1 1/4" | 1 1/32" | 11" | 5" | 1 1/4" | 7/8" | 3 1/4" | 1 1/32" | 28 GAUGE | 5/8" DIA. X 2 1/4" | 4" | 4" | 4 1/2" | 3/4" | 1 1/8" | 5/8" | 2 1/4" | 1 1/32" | 3/8" | 39 |
| W6X16 | 5/8" DIA. X 3 3/4" | 12" | 6" | 1 1/4" | 7/8" | 4 1/4" | 1 1/2" | 1 1/32" | 12" | 6" | 1 1/4" | 7/8" | 4 1/4" | 1 1/32" | 28 GAUGE | 5/8" DIA. X 2 1/2" | 4" | 4" | 4 1/2" | 3/4" | 1 1/8" | 5/8" | 2 1/4" | 1 1/32" | 1/2" | 47 |
| W8X18 | 5/8" DIA. X 4 1/4" | 13 1/2" | 6 1/2" | 1 1/4" | 7/8" | 4 3/4" | 1 1/2" | 1 1/32" | 13 1/2" | 6 1/2" | 1 1/4" | 7/8" | 4 3/4" | 1 1/32" | 28 GAUGE | 5/8" DIA. X 2 1/2" | 5 1/4" | 4" | 4 1/2" | 1" | 1 1/8" | 5/8" | 2 1/4" | 1 1/32" | 1/2" | 70 |
| W8X21 | 3/4" DIA. X 4 1/4" | 14" | 7" | 1 1/2" | 1" | 5" | 1 1/2" | 1 3/32" | 14" | 7" | 1 1/2" | 1" | 5" | 1 3/32" | 28 GAUGE | 3/4" DIA. X 2 3/4" | 5 1/4" | 6" | 7" | 1" | 1 3/4" | 3/4" | 3 1/2" | 1 3/32" | 1/2" | 73 |
| W10X22 | 3/4" DIA. X 4 1/4" | 16" | 8" | 1 1/2" | 1" | 6" | 1 1/2" | 1 3/32" | 16" | 8" | 1 1/2" | 1" | 6" | 1 3/32" | 28 GAUGE | 3/4" DIA. X 2 3/4" | 5 3/4" | 6" | 7" | 1" | 1 3/4" | 3/4" | 3 1/2" | 1 3/32" | 1/2" | 119 |
| W10X26 | 3/4" DIA. X 4 3/4" | 16 1/2" | 8" | 1 1/2" | 1" | 6" | 1 3/4" | 1 3/32" | 16 1/2" | 8" | 1 1/2" | 1" | 6" | 1 3/32" | 28 GAUGE | 3/4" DIA. X 2 3/4" | 5 3/4" | 6" | 7" | 1" | 1 3/4" | 3/4" | 3 1/2" | 1 3/32" | 5/8" | 140 |
| W12X26 | 3/4" DIA. X 4 3/4" | 18 1/2" | 9" | 1 1/2" | 1" | 7" | 1 3/4" | 1 3/32" | 18 1/2" | 9" | 1 1/2" | 1" | 7" | 1 3/32" | 28 GAUGE | 3/4" DIA. X 2 3/4" | 6 1/2" | 6" | 7" | 1" | 1 3/4" | 3/4" | 3 1/2" | 1 3/32" | 5/8" | 176 |
| W14X30 | 1" DIA. X 5" | 22" | 9" | 2" | 1 1/2" | 6" | 2" | 1 7/32" | 22" | 9" | 2" | 1 1/2" | 6" | 1 7/32" | 28 GAUGE | 1" DIA. X 3" | 6 3/4" | 7" | 8" | 1 1/4" | 2" | 1" | 4" | 1 7/32" | 5/8" | 205 |
| W16X31 | 1" DIA. X 5" | 24" | 9" | 2" | 1 1/2" | 6" | 2" | 1 7/32" | 24" | 9" | 2" | 1 1/2" | 6" | 1 7/32" | 28 GAUGE | 1" DIA. X 3 1/4" | 5 1/2" | 7" | 8" | 1 1/4" | 2" | 1" | 4" | 1 7/32" | 3/4" | 223 |
| W18X35 | 1" DIA. X 5" | 25" | 9" | 2" | 1 1/2" | 6" | 2" | 1 7/32" | 25" | 9" | 2" | 1 1/2" | 6" | 1 7/32" | 28 GAUGE | 1" DIA. X 3 1/4" | 6" | 7" | 8" | 1 1/4" | 2" | 1" | 4" | 1 7/32" | 3/4" | 243 |
| W18X40 | 1" DIA. X 5 1/2" | 26" | 9" | 2" | 1 1/2" | 6" | 2 1/4" | 1 7/32" | 26" | 9" | 2" | 1 1/2" | 6" | 1 7/32" | 28 GAUGE | 1" DIA. X 3 3/4" | 6" | 7" | 8" | 1 1/4" | 2" | 1" | 4" | 1 7/32" | 7/8" | 278 |
| W21X44 | 1" DIA. X 5 1/2" | 29" | 9" | 2" | 1 1/2" | 6" | 2 1/2" | 1 7/32" | 29" | 9" | 2" | 1 1/2" | 6" | 1 7/32" | 28 GAUGE | 1" DIA. X 3 3/4" | 6 1/2" | 7" | 8" | 1 1/4" | 2" | 1" | 4" | 1 7/32" | 7/8" | 310 |



| FOUNDATION DATA * | | |
|-------------------|---------------|------------------|
| FOOTING DIAMETER | REINFORCEMENT | SPIRAL BAR |
| 1' 6" | 8 # 6 BARS | #3 BAR, 3" PITCH |
| 2' | 8 # 7 BARS | #3 BAR, 3" PITCH |
| 2' 6" | 8 # 9 BARS | #3 BAR, 3" PITCH |
| 3' | 8 # 11 BARS | #3 BAR, 3" PITCH |
| 3' 6" | 8 # 12 BARS | #3 BAR, 3" PITCH |
| 4' | 8 # 14 BARS | #3 BAR, 3" PITCH |

* FOUNDATION DIMENSIONS ARE SHOWN IN PLANS

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
GROUND MOUNTED SIGN SUPPORTS

NOTES:

1. DESIGN CONFORMS WITH THE SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS - AASHTO.
2. USE MATERIALS, FABRICATE AND ERECT SIGNS AND SUPPORTS THAT CONFORM TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
3. USE HIGH STRENGTH BOLTS, NUTS AND WASHERS THAT CONFORM TO ASTM A-325 AND THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM F2329 OR B695 CLASS 55.
4. USE BACKING PLATES, SLIP BASE PLATES, FRICTION PLATES, AND HINGE PLATES THAT CONFORM TO ASTM A-36 AND THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM A-123 PRIOR TO GALVANIZING, GRIND SMOOTH ANY METAL PROJECTION BEYOND THE PLATE FACE. KEEPER PLATES SHALL BE MANUFACTURED FROM 28 GAUGE SHEET STEEL THAT CONFORMS TO ASTM A-36 AND IS GALVANIZED IN ACCORDANCE WITH ASTM A-123
5. ASSEMBLE HINGE CONNECTIONS IN THE SHOP. THE SHOP SHALL TIGHTEN BOLTS BY USE OF EITHER A CALIBRATED POWER WRENCH OR A MANUAL TORQUE WRENCH. TIGHTEN EACH HINGE CONNECTION BOLT TO 1/3 PAST SNUG.
6. BASE PLATES DETAILS ARE FOR INSTALLATIONS ON THE RIGHT SHOULDER AND IN GORE AREAS.
7. ASSEMBLE UPPER SUPPORT TO STUB AS SHOWN IN DETAIL. SLIP BASE PLATES SHALL BE FILLET WELDED ONTO POSTS ALL AROUND THE STRUCTURAL SHAPE SO AS TO INSURE NO LOSS OF STRENGTH. ASSEMBLE IN EITHER SHOP OR FIELD. 28 GAUGE KEEPER PLATE IS PLACED BETWEEN SLIP BASE PLATES TO PREVENT BOLT SLIPPING. TIGHTEN BOLTS TO THE FOLLOWING PRESCRIBED TORQUE:

| BOLT DIAMETER | TORQUE (LB. FT.) |
|---------------|------------------|
| 1/2" | 9 |
| 5/8" | 22 |
| 3/8" | 37 |
| 1" | 48 |

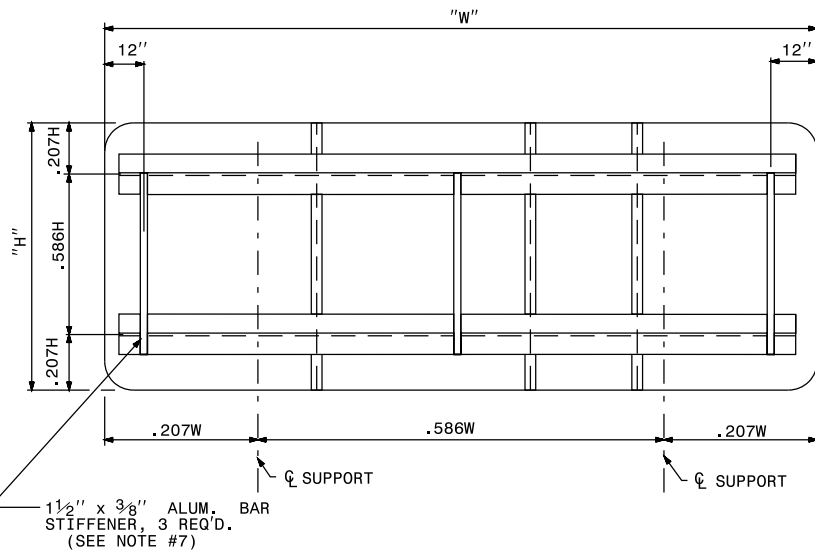
COMPLETELY ASSEMBLE B/A POSTS PRIOR TO ERECTION. B/A POST TO BE SET IN ONE PIECE. AFTER SUPPORT HAS BEEN ERECTED AND THE CONCRETE FOOTINGS HAS CURED AT LEAST 48 HR'S., CLEAN CONCRETE FROM BASE CONNECTION BOLTS THEN LOOSEN AND RE TIGHTEN EACH BOLT IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. DO NOT OVER TIGHTEN. BURR ALL BOLT THREADS OF BASE CONNECTIONS TO PREVENT LOOSENING.

8. USE REINFORCED FOOTINGS WITH DIMENSIONS AS SHOWN IN PLANS. WHERE SOLID ROCK IS ENCOUNTERED, THE ENGINEER DIRECTS WHETHER TO PLACE THE FOOTING AT THE PRESCRIBED DEPTH OR EXTEND IT AT LEAST TWO FEET INTO THE ROCK. CONSTRUCT ALL FOOTINGS OF CLASS A CONCRETE.
9. FORM TOP 6" OF FOOTINGS. ENGINEER APPROVES THE METHOD USED.
10. THE FINAL FLAT TURN OF SPIRAL OR HOOPS NO. 3 OR LARGER PLACED 3" FROM TOP AND BOTTOM OF FOOTING MAY BE WELDED TO VERTICAL REINFORCING BARS. NO OTHER WELDING WILL BE PERMITTED.
11. ELIMINATE HINGE CONNECTION FOR ALL SINGLE SUPPORT SIGNS.
12. DETAIL IS FOR ONE DIRECTION BREAKAWAY. WHEN PLANS REQUIRE A TWO DIRECTION BREAKAWAY, TWO FRICTION PLATES SHALL BE USED IN LIEU OF ONE FRICTION PLATE AND ONE HINGE PLATE.
13. SHAPE THE TOPS OF THE FOOTINGS TO CONFORM WITH FINISHED GROUND ELEVATIONS SUCH THAT WATER WILL NOT COLLECT AGAINST THE SUPPORTS.
14. IF THE GROUNDWATER IS ENCOUNTERED AT AN DEPTH SHALLOWER THAN 7 FEET, THE SIGN FOUNDATION MUST BE REDESIGNED BASED UPON THE ACTUAL FIELD CONDITIONS. THE FOUNDATION DESIGN DOES NOT APPLY TO VERY SOFT OR LOOSE SOIL, MUCK, WEATHERED ROCK, OR HARD ROCK.

STATE OF
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RALEIGH, N.C.

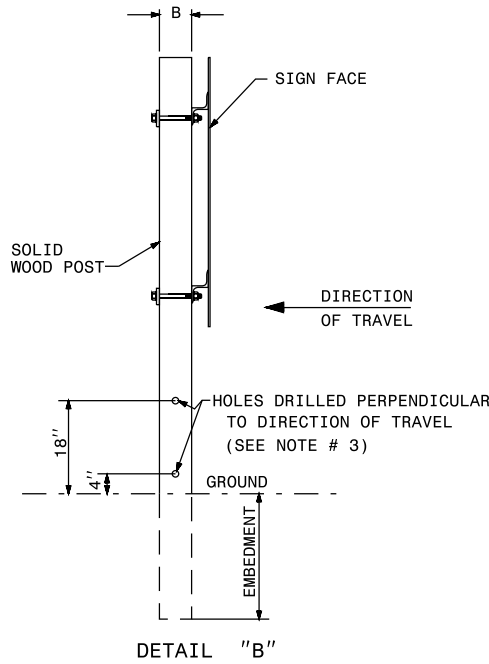
1-12

ENGLISH STANDARD DRAWING FOR
GROUND MOUNTED SIGN SUPPORTS

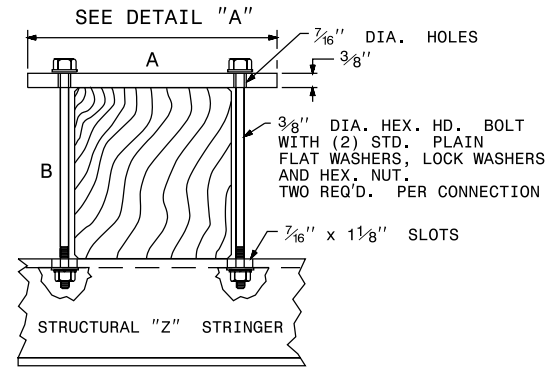


POST SIZE AND DRILLED HOLE SIZE

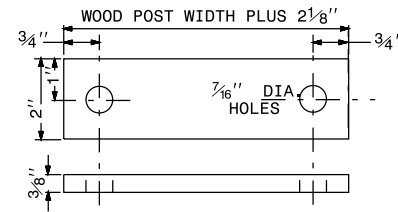
| A | | B | | HOLE SIZE | EMBEDMENT |
|------|------|-------|------------|-----------|-----------|
| A | B | A | B | | |
| 4.0" | 4.0" | N/A | | 3.5 FT. | |
| 4.0" | 6.0" | 1.5" | | 4.5 FT. | |
| 6.0" | 6.0" | 2.0" | | 5.25 FT. | |
| 6.0" | 8.0" | 3.0" | | 6.0 FT. | |
| 8.0" | 8.0" | N/A | | 6.5 FT. | |
| M | 8.0" | 8.0" | SEE DETAIL | 6.5 FT. | |
| L | 8.0" | 15.0" | SEE DETAIL | 6.5 FT. | |



DETAIL "B"



WOOD SUPPORT MOUNTING DETAIL



DETAIL "A"

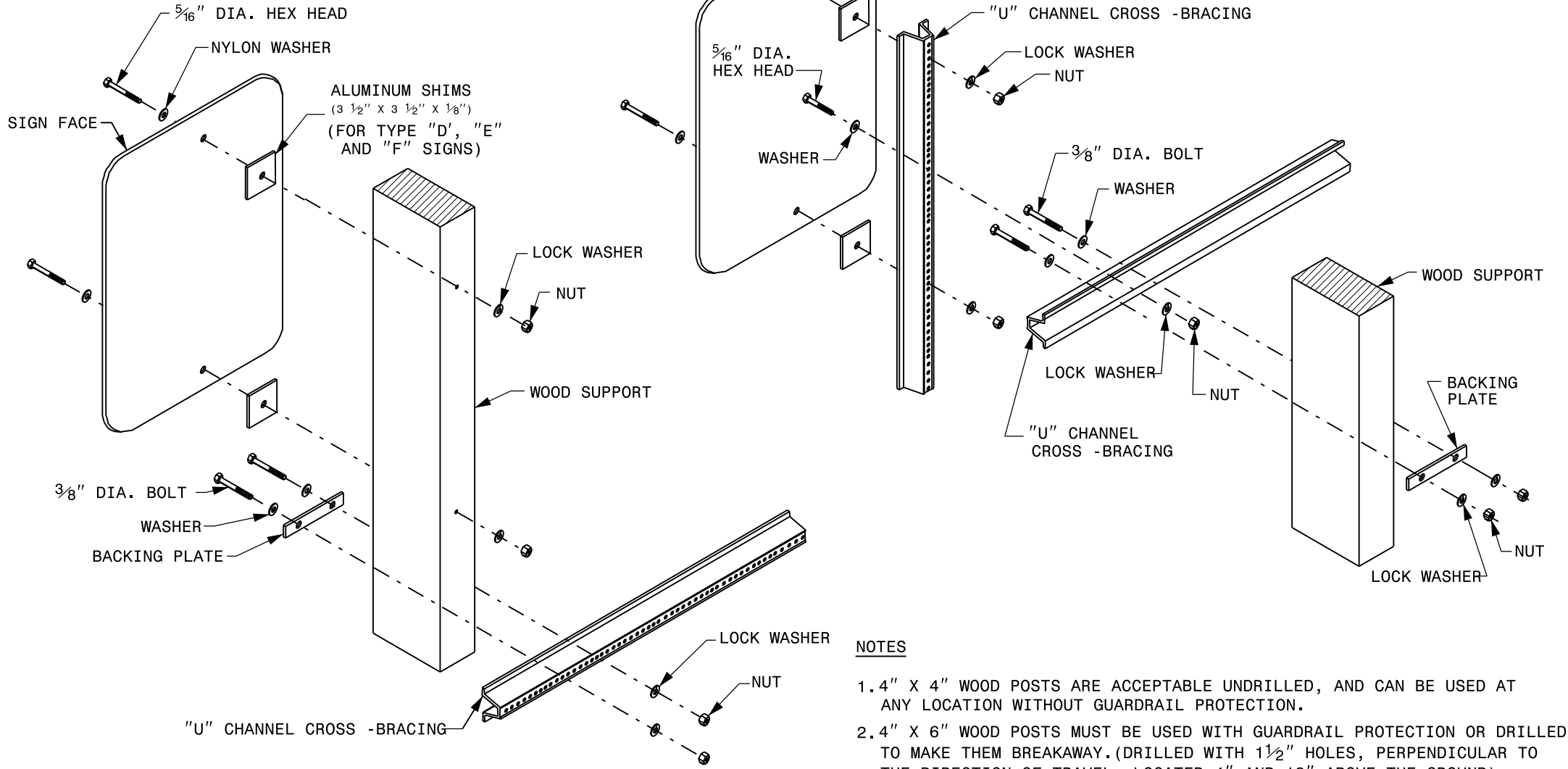
NOTES:

- USE THE SIZE, NUMBER, LENGTH AND TYPE OF SUPPORTS SHOWN IN THE PLANS. USE WOOD POSTS THAT CONFORM TO SECTIONS 1082-2 AND 1082-3 OF THE 2002 NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- MOUNT ALL WOOD POSTS THAT DO NOT HAVE DRILLED HOLES BEHIND GUARDRAIL, EXCEPT THE 4" X 4" WOOD POSTS.
- FOR WOOD POSTS, DRILL THE BOTTOM HOLE 4" ABOVE THE GROUND AND THE TOP HOLE 18" ABOVE THE GROUND (SEE DETAIL "B"). SEE CHART FOR POST SIZES AND DRILLED HOLE SIZES. DRILL HOLES PERPENDICULAR TO THE DIRECTION OF TRAVEL. DUAL SUPPORTS MUST BE AT LEAST 7 FEET APART.
- LOCATE ALL WOOD POSTS THAT ARE 8" X 8" EITHER BEHIND GUARDRAIL OR LOCATED SO THAT THE POSTS COULD NOT BE HIT BY TRAFFIC.
- FURNISH ALL MOUNTING HARDWARE.
- USE GALVANIZED STEEL BACKING PLATES AND MOUNTING BOLTS.
- ADJUST STIFFENERS TO AVOID CONFLICTS WITH SUPPORTS.
- DRILL HOLES IN THE CENTER OF THE SUPPORTS

ATTACHMENT METHODS

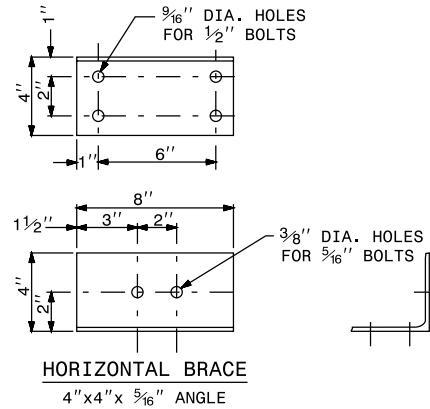
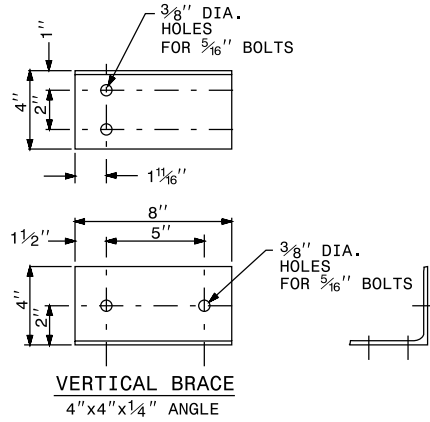
POST SIZE AND DRILLED HOLE SIZE

| A | B | HOLE SIZE | EMBEDMENT |
|------|------|-----------|-----------|
| 4.0" | 4.0" | N/A | 3.5 FT. |
| 4.0" | 6.0" | 1.5" | 4.5 FT. |



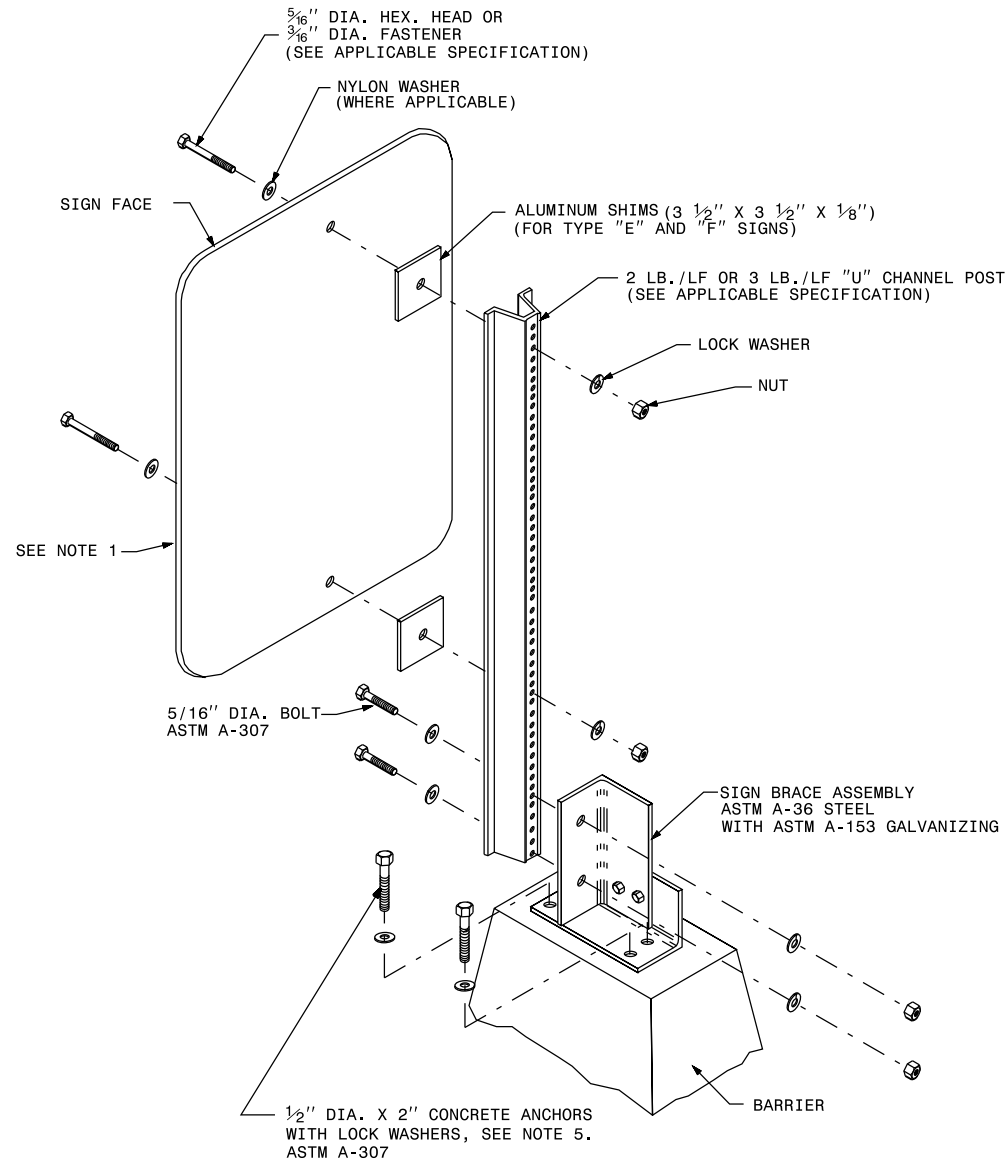
NOTES

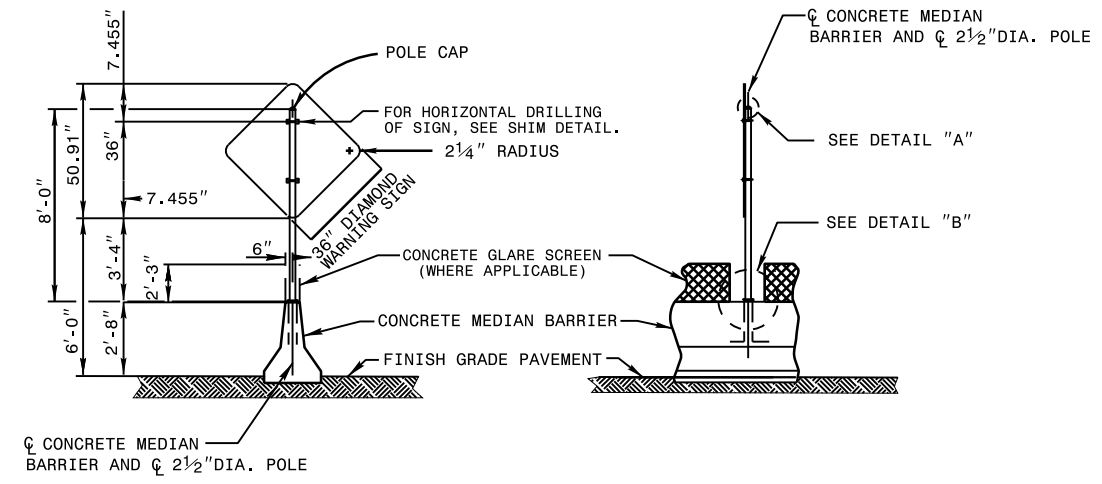
1. 4" X 4" WOOD POSTS ARE ACCEPTABLE UNDRILLED, AND CAN BE USED AT ANY LOCATION WITHOUT GUARDRAIL PROTECTION.
2. 4" X 6" WOOD POSTS MUST BE USED WITH GUARDRAIL PROTECTION OR DRILLED TO MAKE THEM BREAKAWAY. (DRILLED WITH 1 1/2" HOLES, PERPENDICULAR TO THE DIRECTION OF TRAVEL, LOCATED 4" AND 18" ABOVE THE GROUND)
3. USE "U" CHANNEL POSTS FOR CROSS -BRACING SIGNS SUPPORTED BY DUAL WOOD POSTS.



NOTES

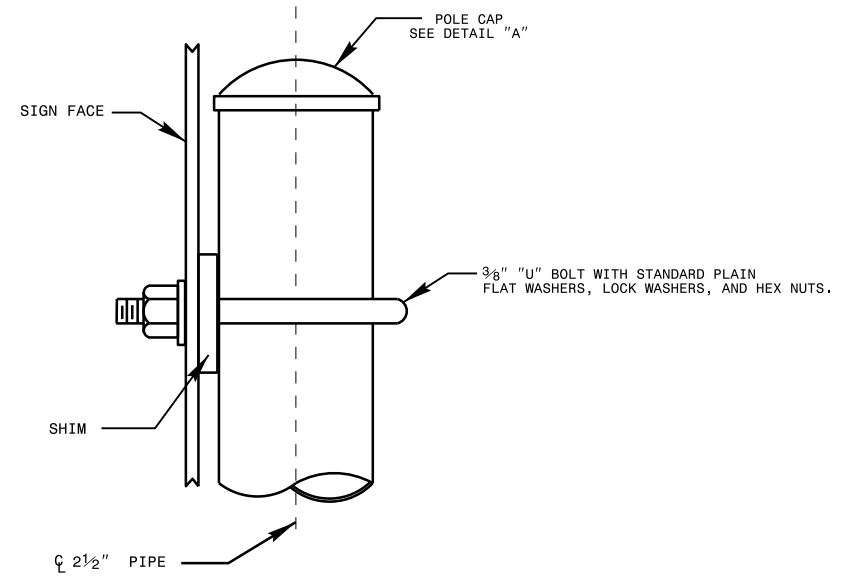
1. MAXIMUM SIGN SIZE IS 9.0 SQUARE FEET IN MAXIMUM WIND VELOCITY OF 80 MPH.
2. ERECT TYPE "E" AND "F" SIGNS WITH THE SAME SPECIFICATIONS AS "TYPICAL INSTALLATION OF SIGNS MOUNTED ON "U" CHANNEL POSTS.
3. ERECT MILE MARKERS WITH THE SAME SPECIFICATIONS AS "MILEPOST DETAILS AND PLACEMENT". SEE ROADWAY STANDARD NUMBER 904.40.
4. APPLICABLE SECTIONS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SHALL BE IN EFFECT.
5. ATTACH THE BRACE TO THE BARRIER BY MEANS OF 1/2" DIAMETER, 2" LONG CONCRETE ANCHORS WITH LOCK WASHERS. USE CONCRETE ANCHORS THAT ARE STAINLESS STEEL OR GALVANIZED IN ACCORDANCE WITH ASTM A-152. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



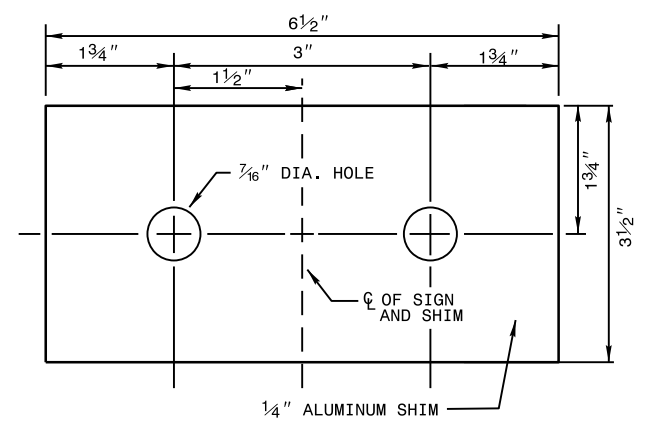


ELEVATION OF REAR VIEW OF WARNING SIGN

ELEVATION OF SIDE VIEW OF WARNING SIGN



PIPE SUPPORT

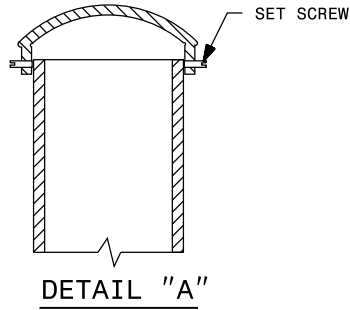


ALUMINUM SHIM DETAIL

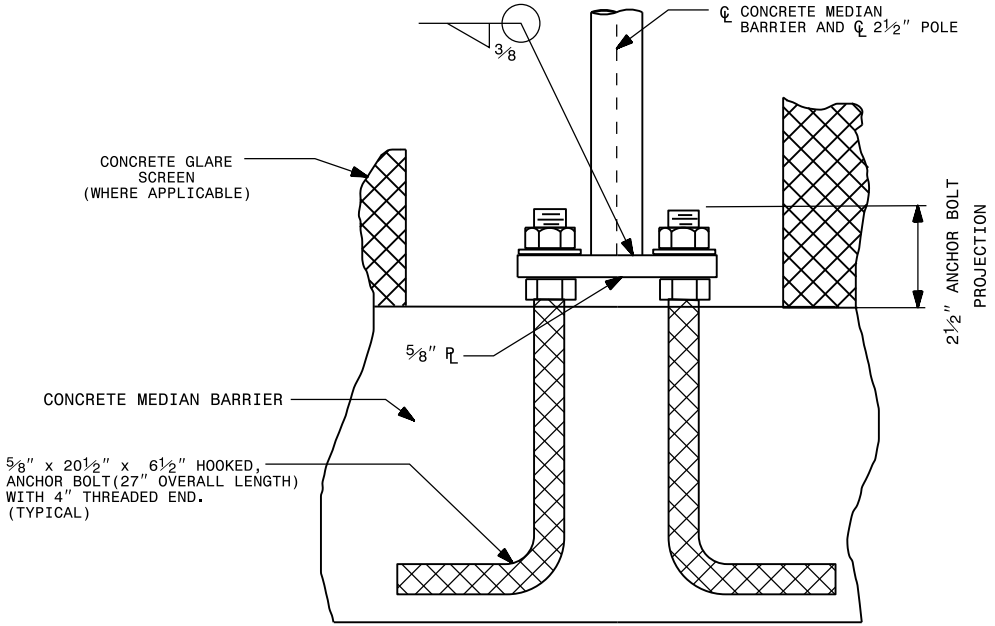
NOTES:

1. FURNISH ONE SET OF SIGN SUPPORTS FOR EACH SIGN.
2. SEE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SIGN SPECIFICATION SUPPLEMENT FOR THE TYPE OF MATERIAL TO BE USED FOR SIGN SUPPORTS.
3. FURNISH ALL MOUNTING HARDWARE.
4. THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WILL FURNISH SIGNS.
5. USE ASTM A-36 STEEL GALVANIZED "U" BOLTS AND NUTS IN ACCORDANCE WITH ASTM A-153.
6. USE ASTM A-36 ANCHOR BOLTS, GALVANIZED IN ACCORDANCE WITH ASTM A-153. OVERALL LENGTH OF ANCHOR BOLTS IS 27". ANCHOR BOLT PROJECTION, EMBEDMENT, AND HOOK TO BE AS SHOWN ON PLANS.
OR,
USE 9/8" x 7-5/8" DRILLED ADHESIVE ANCHOR GALVANIZED TO ASTM A-153. EACH ANCHOR SHALL BE PROVIDED WITH TWO (2) NUTS, ONE (1) FLAT WASHER, AND ONE (1) LOCK WASHER.

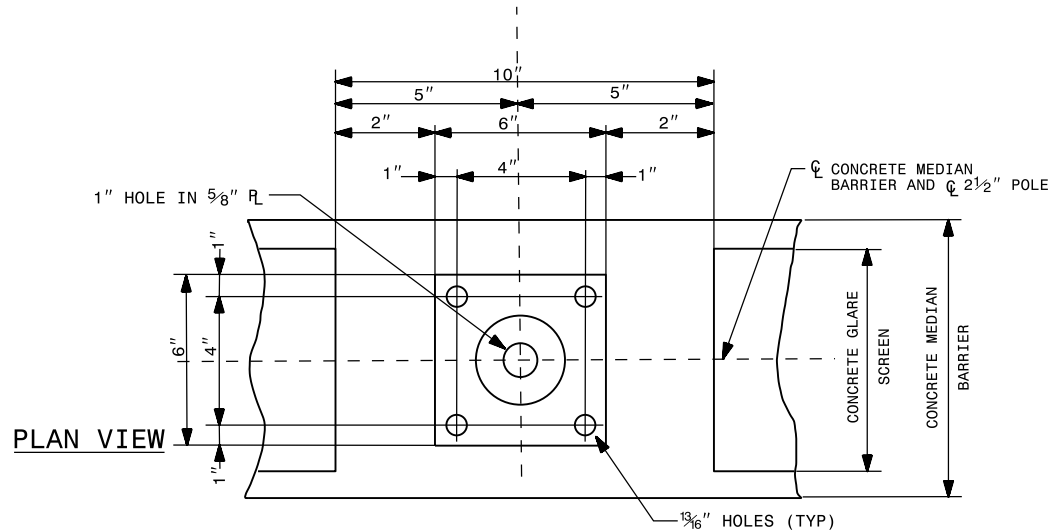
ENGLISH STANDARD DRAWING FOR
**MEDIAN BARRIER SIGN SUPPORT
AND ANCHORAGE**



FURNISH ALL TUBE OR PIPE SUPPORTS WITH A CAP.
USE EITHER GALVANIZED STEEL OR A CAST ALUMINUM
CAP TO MATCH THE MATERIAL OF THE POLE. USE FOUR
SET SCREWS FOR ATTACHMENT TO SUPPORT.

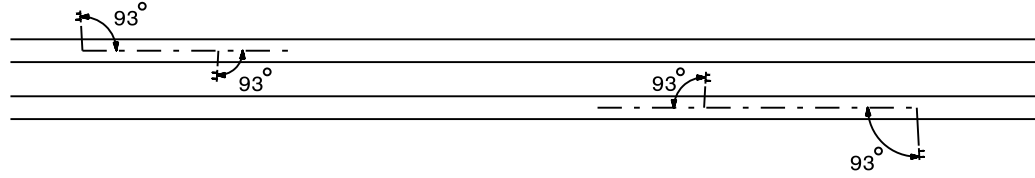


5/8" x 20 1/2" x 6 1/2" HOOKED,
ANCHOR BOLT (27" OVERALL LENGTH)
WITH 4" THREADED END.
(TYPICAL)

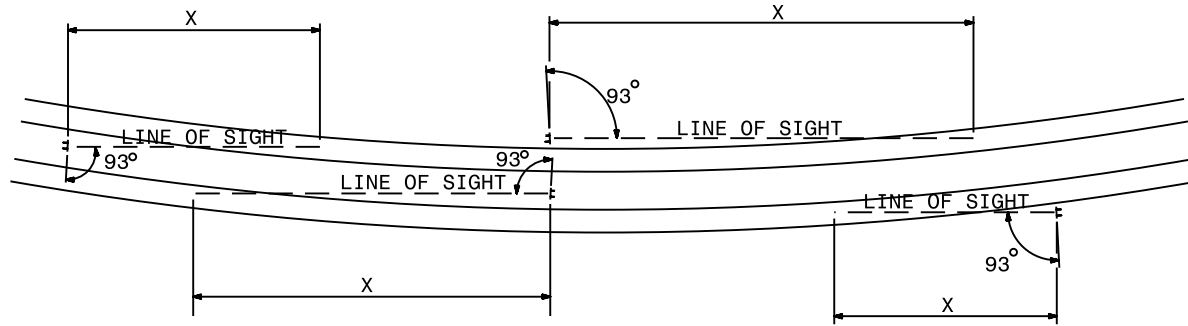


ENGLISH STANDARD DRAWING FOR
**MEDIAN BARRIER SIGN SUPPORT
AND ANCHORAGE**

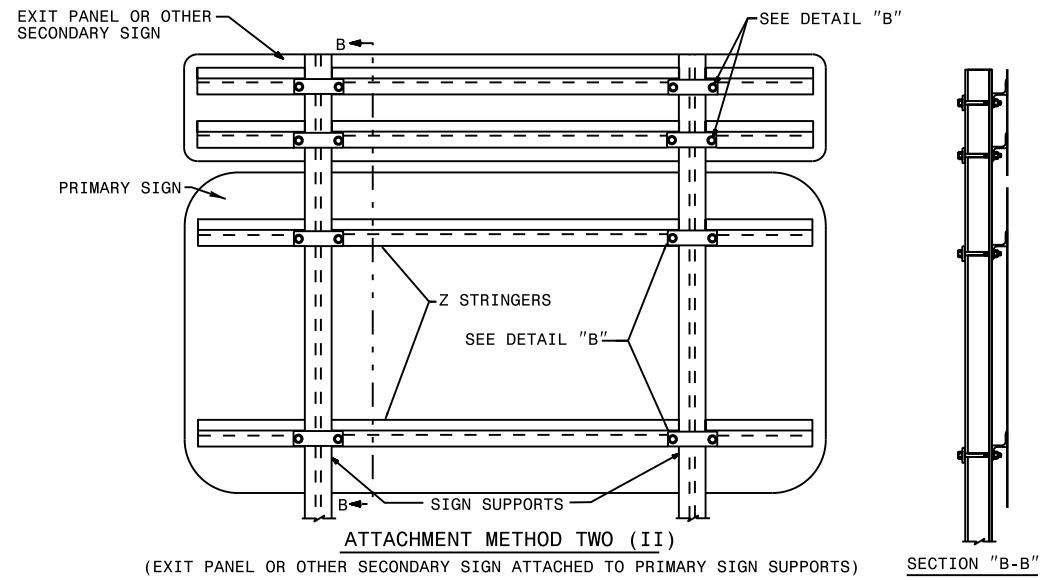
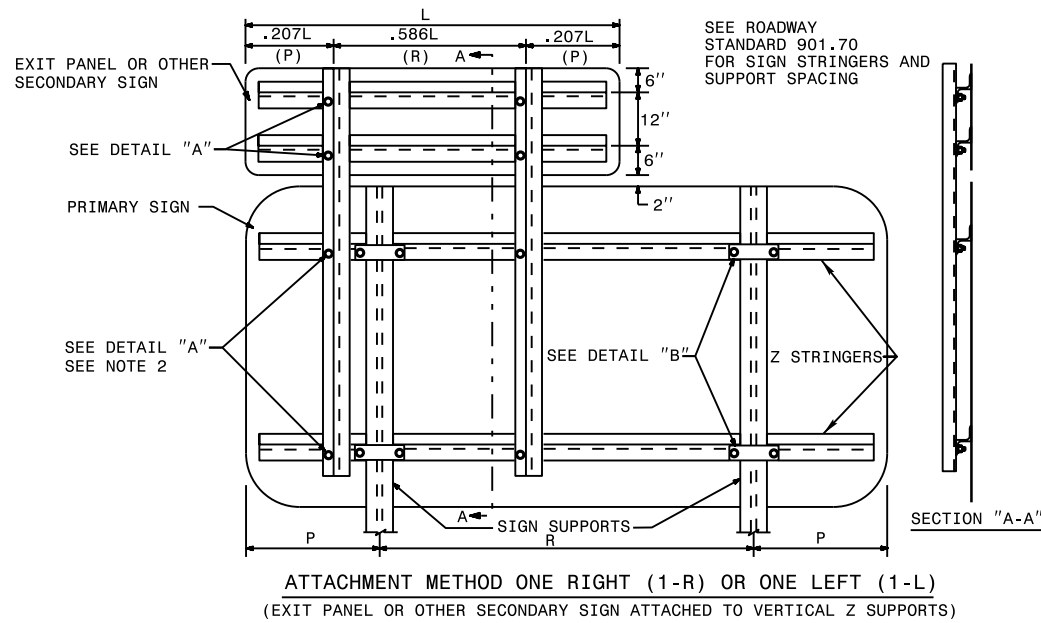
ENGLISH STANDARD DRAWING FOR
ORIENTATION OF GROUND MOUNTED SIGNS



X = (60 FT. PER IN.) (HEIGHT OF LOWER CASE LETTER IN INCHES)
IF SIGN HAS NO LOWER CASE LETTERS, USE HEIGHT OF
UPPER CASE OR CAPITAL LETTERS IN MAJOR LINE OF COPY.

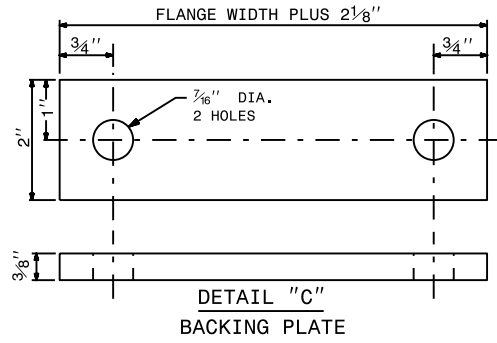
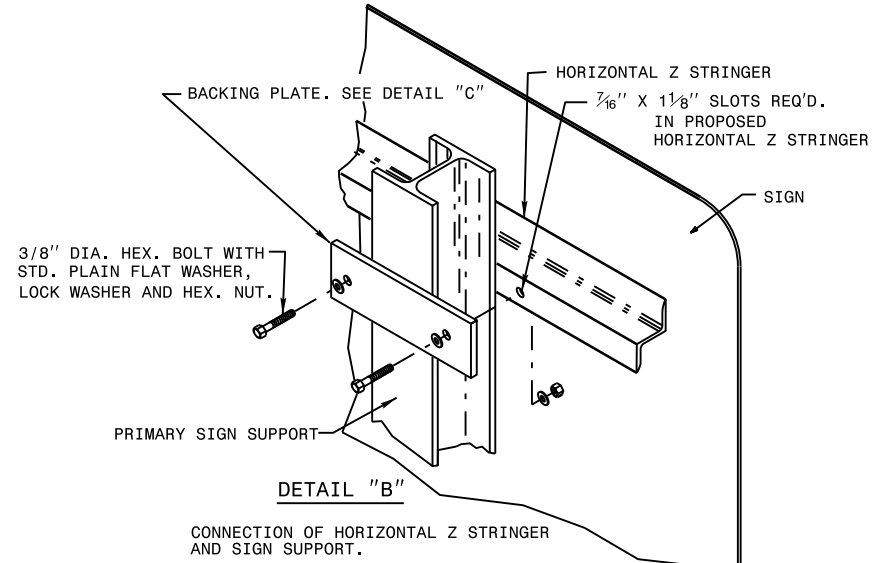
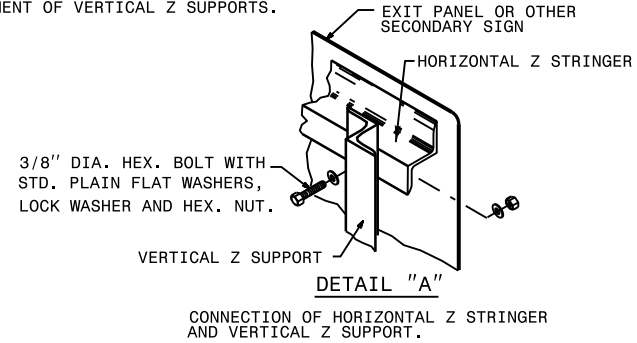


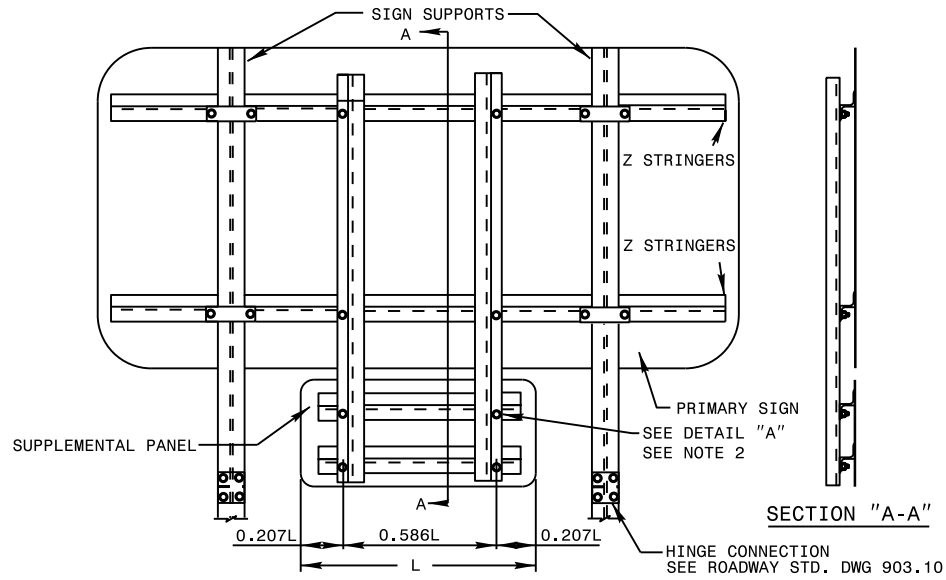
ENGLISH STANDARD DRAWING FOR
ORIENTATION OF GROUND MOUNTED SIGNS



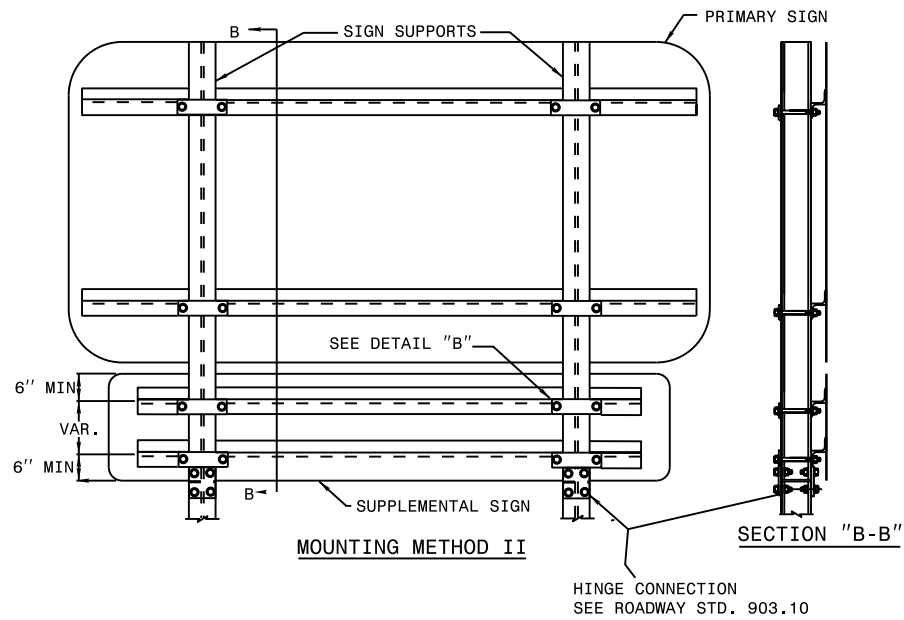
NOTES:

1. FABRICATE VERTICAL AND HORIZONTAL Z'S OF ALUM. Z 3" X 2 1/16" X 1/4" X 2.33 LB/FT.
2. ATTACH VERTICAL Z SUPPORT TO TOP TWO HORIZONTAL STRINGERS ON BACK OF PRIMARY SIGN.
3. DO NOT PERMIT SLOTS IN HORIZONTAL STRINGERS FOR ATTACHMENT OF VERTICAL Z SUPPORTS.

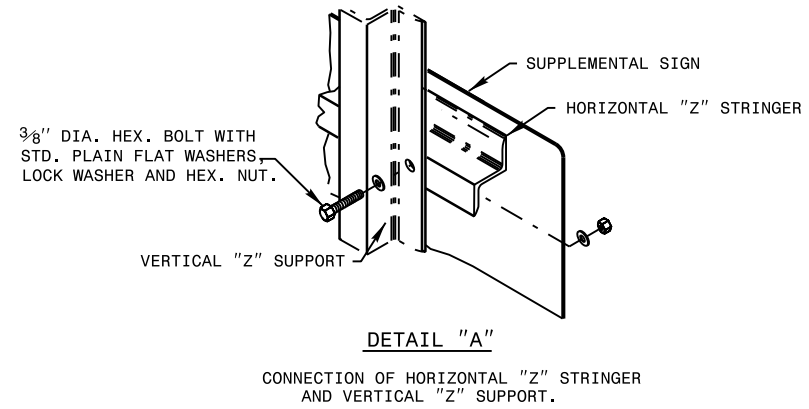




MOUNTING METHOD I

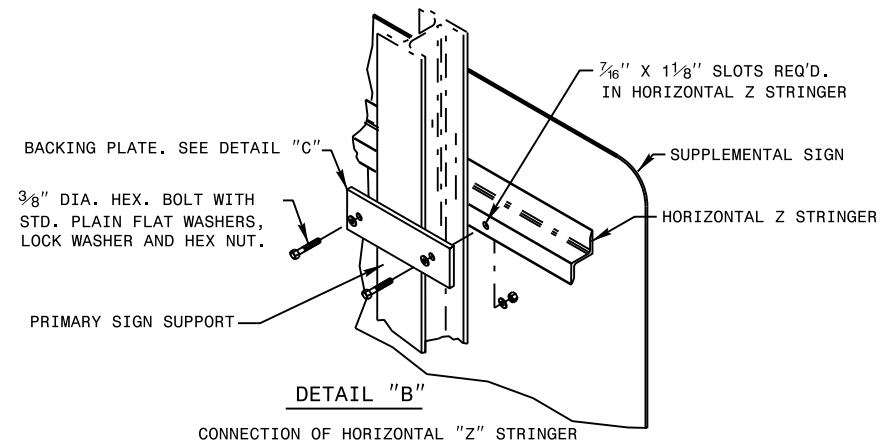


MOUNTING METHOD II



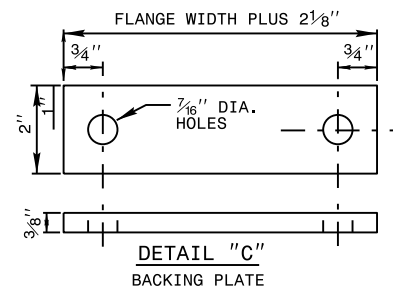
DETAIL "A"

CONNECTION OF HORIZONTAL "Z" STRINGER AND VERTICAL "Z" SUPPORT.



DETAIL "B"

CONNECTION OF HORIZONTAL "Z" STRINGER

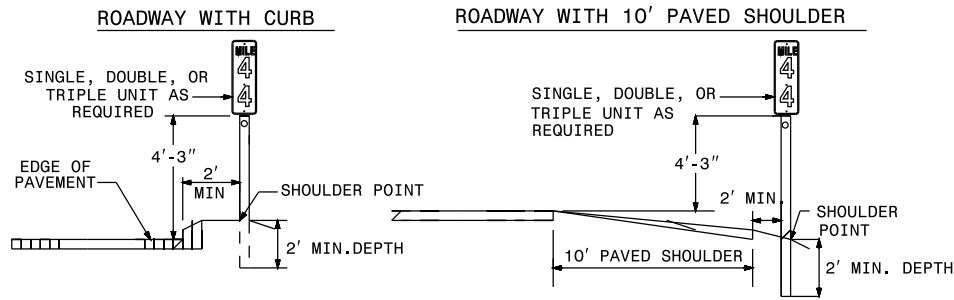


DETAIL "C"
BACKING PLATE

NOTES:

1. FABRICATE VERTICAL AND HORIZONTAL "Z'S" OF ALUM. Z 3"x 2-1/16" x 1/4" x 2.33 LB/FT.
2. ATTACH VERTICAL "Z" SUPPORT TO BOTTOM TWO HORIZONTAL STRINGERS ON BACK OF PRIMARY SIGN.
3. SLOTS ARE NOT ALLOWED IN HORIZONTAL STRINGERS FOR ATTACHMENT OF VERTICAL "Z" SUPPORTS.
4. THE HINGE CONNECTION IS LOCATED AT THE BOTTOM OF THE SUPPLEMENTAL PANEL FOR BREAKAWAY SUPPORTS.

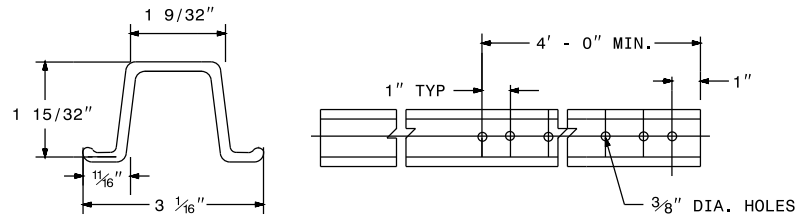
MILEPOST PLACEMENT



NOTES:

1. A MILEPOST SHALL CONSIST OF ONE (1) 12" X 24", 12" X 36", OR 12" X 48" MARKER. A ENHANCE REFERENCE LOCATION SIGN SHALL CONSIST OF ONE (1) 12" X 36" OR 12" X 42". MILEPOST AND ENHANCE REFERENCE LOCATION SIGNS REQUIRED ONE (1) GALVANIZED STEEL "U" CHANNEL POST WEIGHT TWO (2) POUNDS PER LINEAR FOOT.
2. FABRICATE MARKERS FROM .080" SHEET ALUMINUM. EACH MARKER SHALL HAVE SILVER STUCK-ON MESSAGE AND BORDER ON GREEN BACKGROUND. MESSAGE, BORDER, AND BACKGROUND TO BE REFLECTORIZED.
3. USE GALVANIZED STEEL "U" SHAPED CHANNEL POSTS. THE POST'S LENGTH MUST MEET THE REQUIREMENTS SHOWN IN THESE STANDARDS.
4. POSTS SHALL BE DRIVEN. THE TOP OF POST SHALL NOT PROJECT ABOVE THE TOP OF MARKER.
5. ATTACH EACH MARKER TO THE WIDE FACE (FLANGES) OF THE POST BY MEANS OF 5/16" HEX HEAD BOLT, NYLON WASHER, SHIM, FLAT WASHER, LOCK WASHER, HEX NUT. FULL CONTACT BETWEEN THE MARKER AND THE POST SHALL BE ACHIEVED. NO BUCKLING OF THE MARKER WILL BE PERMITTED.
6. PLACE MILEPOSTS AT THE SHOULDER POINT UNLESS THE ENGINEER DIRECTS OTHERWISE.
7. ENHANCED REFERENCE LOCATION SIGNS SHALL BE PLACED EVERY 2 TENTHS OF A MILE OR AS SHOWN IN THE PLANS.

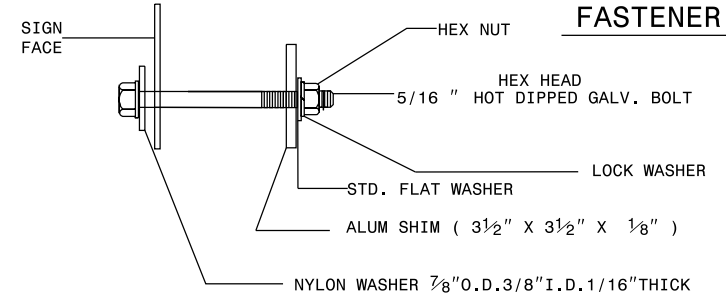
POST DETAILS



2# U CHANNEL

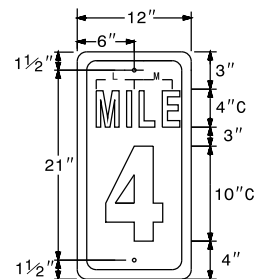
MARKER DETAILS

- 1/2" FLUSH BORDER (TYP.)
- 1 1/2" CORNER RADII (TYP.)
- 1/4" DIA. MOUNTING HOLES (TYP.)
- 4 5/8" L DIMENSION (TYP.)
- 4 7/8" M DIMENSION (TYP.)

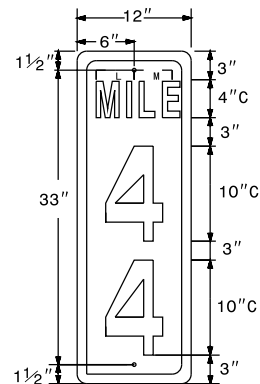


ENHANCED REFERENCE LOCATION SIGNS

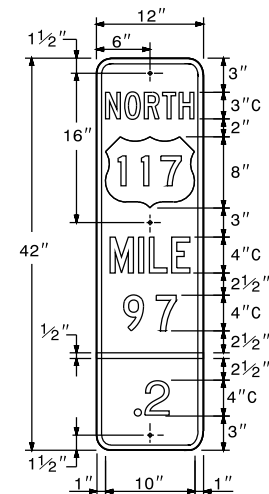
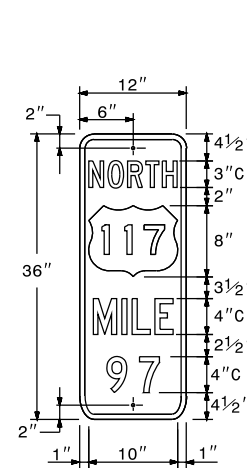
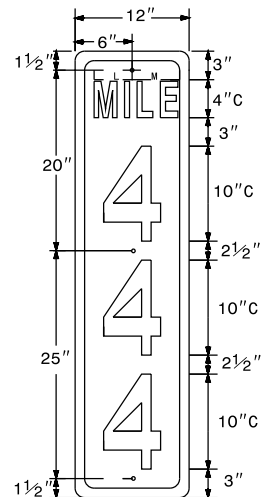
SINGLE UNIT 12" X 24"

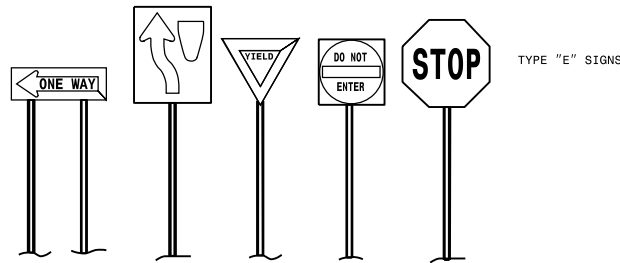
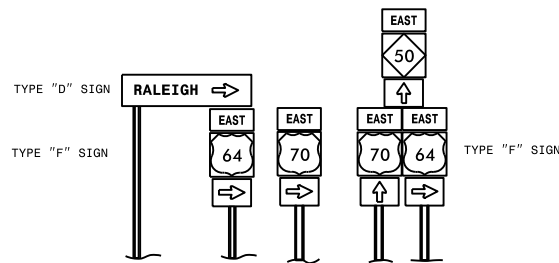
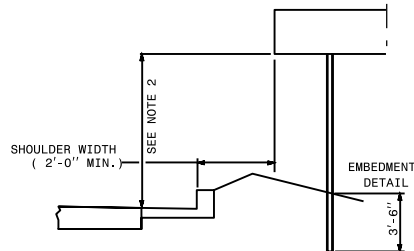
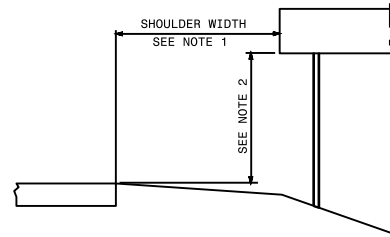


DOUBLE UNIT 12" X 36"

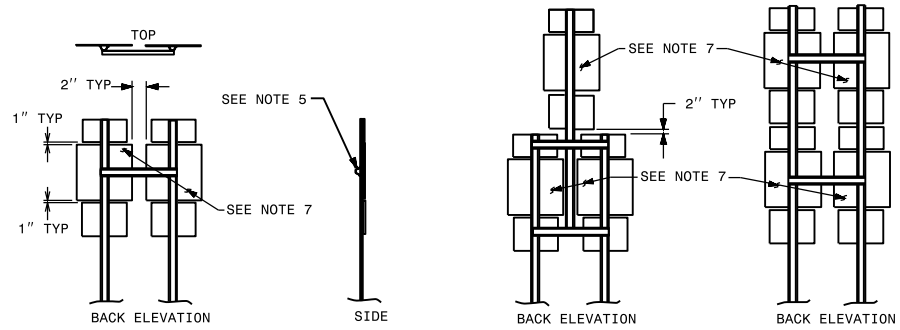


TRIPLE UNIT 12" X 48"

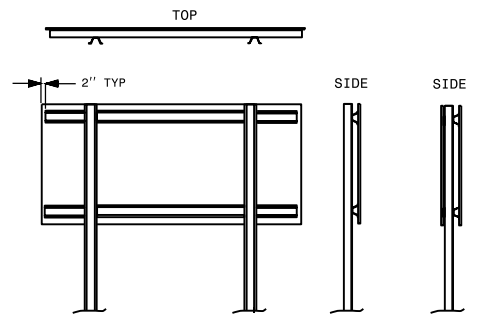




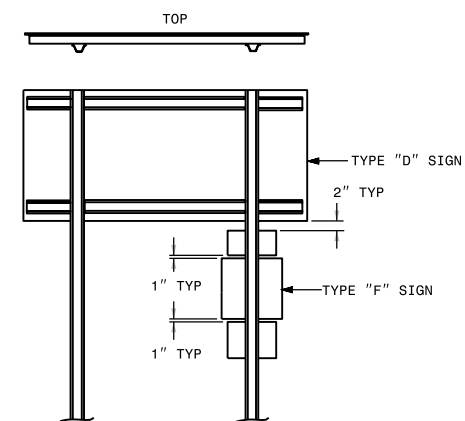
TYPICAL SIGN SHAPES AND COMBINATIONS



FRAMING AND CROSS-BRACING DETAILS
TYPE "F" SIGNS



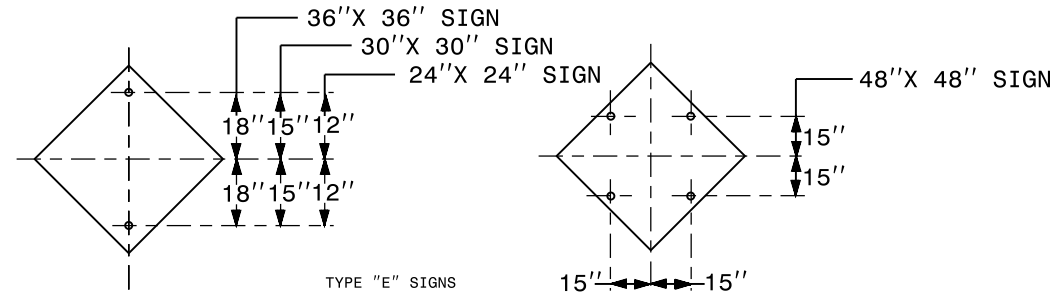
TYPE "D" & "E" SIGN
CROSS BRACING
FRAMING AND CROSS BRACE DETAILS
FOR COMBINATION TYPE "D" & "E" SIGNS
WIDE SIDE OF CROSS BRACE GOES TO BACK OF SIGN



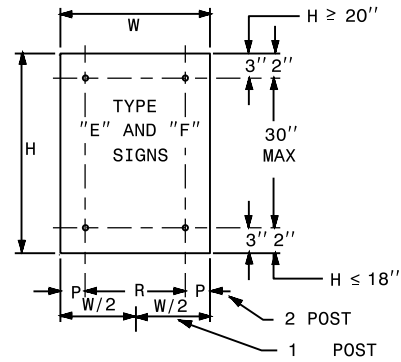
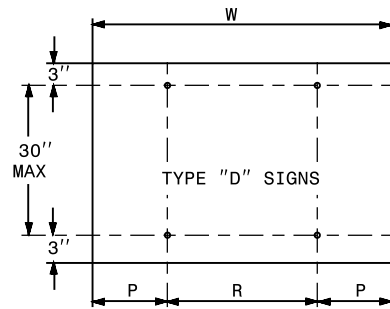
FRAMING AND CROSS BRACE DETAILS
FOR COMBINATION TYPE "D" & "F" SIGNS
WIDE SIDE OF FLANGE TO BACK OF "F" SIGN

NOTES:

1. ERECT TYPE "D", "E", AND "F" SIGNS ON FREEWAYS WITH THE NEAR EDGE OF THE SIGN 20 FT. FROM THE TRAVEL LANE. ERECT ALL OTHER "D", "E", AND "F" SIGNS WITH THE NEAR EDGE OF THE SIGN AT THE EDGE OF THE SHOULDER BREAK (6 FT. MINIMUM CLEARANCE, 12 FT. DESIRABLE, FROM THE EDGE OF TRAVEL LANE), OR AS DIMENSIONED ON PLAN SHEETS.
2. ERECT TYPE "D", "E", AND "F" SIGNS WITH THE BOTTOM OF SIGN ASSEMBLY AT LEAST 7 FT. ABOVE THE EDGE OF THE TRAVEL LANE ON ROADS WITH 2 OR MORE LANES AND AT LEAST 5 FT. ON OTHER ROUTES. THE VERTICAL CLEARANCE IS 7 FT. WHERE REQUIRED FOR PEDESTRIAN TRAFFIC AND/OR PARKED VEHICLES.
3. THE VERTICAL DIMENSION BETWEEN MOUNTING HOLE CENTERS ON ALL TYPES "D", "E", AND "F" SIGNS IS 30" MAXIMUM. THE VERTICAL AND HORIZONTAL DIMENSIONS BETWEEN MOUNTING HOLES IS TO THE WHOLE INCH. EACH SIGN PANEL HAS A MINIMUM OF 2 BOLTS PER SUPPORT.
4. ATTACH SIGN W/ 5/16" HEX HEAD BOLT, NYLON WASHER, SHIM, FLAT WASHER, LOCK WASHER, HEX NUT NO BUCKLING OF THE SIGN WILL BE PERMITTED. SEE ASSEMBLY DETAIL SHEET# 2 OF 904.50.
5. FURNISH AND INSTALL CROSS-BRACING AS SHOWN IN DETAIL. PAINT ENDS OF CROSS BRACES W/ APPROVED. ZINC PAINT
6. INSTALL POST AND CROSS-BRACING WITH THE WIDE SIDE OF THE FLANGE TOWARD THE BACK OF SIGN(S) FOR COMBINATION TYPE "D" AND "F" SIGNS.
7. THE SHIELD HEIGHTS IN THESE ASSEMBLIES CAN NOT BE LARGER THAN 24".



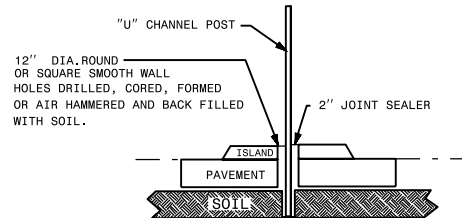
TYPE "E" SIGNS



| | NO. SUPPORTS | | |
|---|--------------|-------|-------|
| | 2 | 3 * | 4 |
| P | .207W | .145W | .107W |
| R | .586W | .355W | .262W |

UNITS ON ATTACHED SHEET
* MINIMUM 4 FT. BETWEEN CHANNEL POSTS

HOLE PUNCHING DETAIL



DETAIL FOR INSTALLATION OF
CHANNEL POST IN CONCRETE

