Pipe shall conform to ASTM A53 Gr B, A500 Gr B, or A501. Galvanize according to ASTM A123 after all fabrication is completed. Finished components shall be permanently marked to indicate manufacturer. Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

Pipe shall conform to ASTM A53 Gr B, A500 Gr B, or A501. Bolt-down plate shall conform to the same material requirements specified for the slip plate. Galvanize according to ASTM A123 after all fabrication is completed. Finished components shall be permanently marked to indicate manufacturer. Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

Pipe shall conform to ASTM A53 Gr B, A500 Gr B, or A501. Bolt-down plate shall conform to the same material requirements specified for the slip plate. Galvanize according to ASTM A123 after all fabrication is completed. Finished components shall be permanently marked to indicate manufacturer. Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

* Hole in slip plate and bolt-down plate is for galvanizing venting and drainage. Exact hole placement may vary as needed.

**STUB**

**BOLT-DOWN ANCHOR**

**BOLT Keeper PLATE**

**SLIP PLATE DETAIL**
Steel Slipbase fabrication shall conform to ASTM A36 or A572, if fabrication consists of ductile iron casting it shall conform to ASTM A536 Grade 65-45-12 and be galvanized per ASTM a153 Class A.

Finished components shall be permanently marked to indicate manufacturer. Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

A list of approved Triangular Slip bases can be found at http://www.txdot.gov/business/producer_list.htm

**SLIPBASE DETAIL**
14 BWG Tubing (2.375" outside diameter)
0.083" nominal wall thickness
Electric-resistance welded galvanized steel tubing
Steel shall be SS Gr 40 per ASTM A653
Galvanization per ASTM A653 G210. Reccoat tube outside diameter weld seam by
metallizing with zinc wire per ASTM B833.
Outside diameter (coated) shall be within the range of 2.369" to 2.381"
Tapered swage to provide snug fit in 2.375" 13 BWG to 10 BWG tubing.

Finished components shall be permanently marked to indicate manufacturer. Method, design and
location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

EXTENDER

10 BWG Tubing (2.875" outside diameter)
0.134" nominal wall thickness
Seamless or electric-resistance welded steel tubing or pipe
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steels may be used if they meet the following:
55,000 PSI minimum yield strength
70,000 PSI minimum tensile strength
20% minimum elongation in 2"
Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653),
recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

Schedule 80 Pipe (2.875" outside diameter)
0.276" nominal wall thickness
Steel tubing per ASTM A500 Gr C
Other seamless or electric-resistance welded steel tubing or pipe with equivalent
outside diameter and wall thickness may be used if they meet the following:
46,000 PSI minimum yield strength
62,000 PSI minimum tensile strength
21% minimum elongation in 2"
Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
Galvanization per ASTM A123.

POST

11.25.02
"U" CROSS PIECE

10 BWG Tubing (2.375" outside diameter)
0.134" nominal wall thickness
Seamless or electric-resistance welded steel tubing or pipe
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steels may be used if they meet the following:
55,000 PSI minimum yield strength
70,000 PSI minimum tensile strength
20% minimum elongation in 2"
Wall thickness (uncoated) shall be within the range of 0.121" to 0.147"
Outside diameter (uncoated) shall be within the range of 2.355" to 2.395"

NIPPLE

11 BWG or greater Tubing (3.25" outside diameter)
Seamless or electric-resistance welded steel tubing
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steels may be used if they meet the following:
55,000 PSI minimum yield strength
70,000 PSI minimum tensile strength
20% minimum elongation in 2"
Outside diameter (uncoated) shall be within the range of 3.241" to 3.259"
Inside diameter (uncoated) shall be a minimum of 2.93"
Wall thickness shall be a minimum of 0.108"
Cut length shall be 8.000" ± 0.250". Notched and coped to provide snug fit with cross piece.
Drilled or punched as shown. Nipple shall provide snug fit with 2.875" post.
Nipple may be dimpled to provide snug fit.

FABRICATED "U" BRACKET

Galvanize according to ASTM A123 after all fabrication is completed.

Finished components shall be permanently marked to indicate manufacturer. Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

PREFABRICATED "U" BRACKET-TEXAS UNIVERSAL TRIANGULAR SLIPBASE SYSTEM
"T" CROSS PIECE

13 BWG Tubing (2.375" outside diameter)
0.095" nominal wall thickness
Seamless or electric-resistance welded steel tubing
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steels may be used if they meet the following:
55,000 PSI minimum yield strength
70,000 PSI minimum tensile strength
18% minimum elongation in 2'
Wall thickness (uncoated) shall be within the range of 0.085" to 0.105".
Outside diameter (uncoated) shall be within the range of 2.355" to 2.395".

NIPPLE

11 BWG or greater Tubing (3.25" outside diameter)
Seamless or electric-resistance welded steel tubing
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steels may be used if they meet the following:
55,000 PSI minimum yield strength
70,000 PSI minimum tensile strength
20% minimum elongation in 2'
Outside diameter (uncoated) shall be within the range of 3.241" to 3.259"
Inside diameter (uncoated) shall be a minimum of 2.93"
Wall thickness shall be a minimum of 0.108"
Cut length shall be 8.000" ± 0.250". Notched and coped to provide snug fit with cross piece.
Drilled or punched as shown. Nipple shall provide snug fit with 2.875" post.
Nipple may be dimpled to provide snug fit.

FABRICATED "T" BRACKET

Galvanize according to ASTM A123 after all fabrication is completed.

Finished components shall be permanently marked to indicate manufacturer, Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

PREFABRICATED "T" BRACKET-TEXAS UNIVERSAL TRIANGULAR SLIPBASE SYSTEM
UNLESS NOTED:

X. XXX ± 0.005"  
X. XX ± 0.010"

Sign clamp casting shall meet ASTM B85 Alloy 360.0 or A360.0, ASTM B26 Alloy 356.0-F,  
or ASTM B108 Alloy 356.0-F or A444.0-T4.

UNIVERSAL SIGN CLAMP
**DIMENSIONS**

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<th>PIPE DIAMETER (NOMINAL)</th>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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Sign clamp casting shall meet ASTM B85 Alloy 360.0 or A360.0, ASTM B26 Alloy 356.0-F, or ASTM B108 Alloy 356.0-F or A444.0-T4.

**SPECIFIC SIGN CLAMP**
American National Standard Hex Nut and Helical Spring Lock Washer

U-bolt, nut and washers shall be manufactured according to ASTM A307 Grade C and galvanized according to Item 445, "Galvanizing."

9/32" diameter stock is permissible.

<table>
<thead>
<tr>
<th>Standard Pipe Size</th>
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</tbody>
</table>

SIGN CLAMP U-BOLT

Lifting spacer shall be manufactured from 100% recycled ABS or polycarbonate plastic. Sides may be slightly tapered to facilitate release of part from the mold.

LIFTING SPACER
POST - 13 BWG Tubing (2.375" outside diameter)

0.095" nominal wall thickness
Seamless or electric-resistance welded steel tubing
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steel may be used if they meet the following:
  55,000 PSI minimum yield strength
  70,000 PSI minimum tensile strength
  18% minimum elongation in 2"
Wall thickness (uncoated) shall be within the range of 0.083" to 0.099"
Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallocizing with zinc wire per ASTM B833

SOCKET

Tubular socket prefabricated from 12 BWG seamless or electric-resistance welded steel tubing
2.875" outside dia. x 0.109" nominal wall thickness
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steel may be used if they meet the following:
  55,000 PSI minimum yield strength
  70,000 PSI minimum tensile strength
  20% minimum elongation in 2"
Wall thickness (uncoated) shall be within the range of 0.097" to 0.113"
Galvanization per ASTM A123 after fabrication, or per ASTM A653 G210. For precoated steel tubing (ASTM A653) recoat tube outside diameter weld seam by metallocizing with zinc wire per ASTM B833.

WEDGE ANCHOR SYSTEM
"T" CROSS PIECE

13 BWG Tubing (2.375" outside diameter)
0.095" nominal wall thickness
Seamless or electric-resistance welded steel tubing
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
Other steels may be used if they meet the following:
55,000 PSI minimum yield strength
70,000 PSI minimum tensile strength
18% minimum elongation in 2"
Wall thickness (uncoated) shall be within the range of 0.085" to 0.105"
Outside diameter (uncoated) shall be within the range of 2.355" to 2.395"

NIPPLE

12 BWG or greater Tubing (2.625" outside diameter)
0.109" nominal wall thickness. Wall thickness shall be a minimum of 0.097".
Seamless or electric-resistance welded steel tubing
Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
OR
ASTM A53 Gr A Schedule 40 Pipe (2.875" outside diameter)
Inside diameter (uncoated) shall be a minimum of 2.416"
Cut length shall be 8.000" ± 0.250". Notched and coped to provide snug fit with cross piece.
Drilled or punched as shown. Nipple shall provide snug fit with 2.375" post.
Nipple may be dimpled to provide snug fit.

FABRICATED 'T' BRACKET

Galvanize according to ASTM A123 after all fabrication is completed

Finished components shall be permanently marked to indicate manufacturer. Method, design and location of markings are subject to the approval of the TxDOT Traffic Standards Engineer.

PREFabricated "T" Bracket For Thin-Wall Tubing Post