1. Furnish slip base casting fabricated from ductile iron conforming to ASTM A 395 Grade 60, 45, 21, and galvanized according to ASTM A 933, Class A.

2. Furnish locking collar machined from steel bar conforming to ASTM A 576 Grade 21, 12, steel bar conforming to ASTM A 574 Grade 83, or steel tubing conforming to ASTM A 53 Grade 83, or 83, and electroplated zinc coated and supplemental chromate conversion coated to ASTM B 633 Class Fe/2h U Type II.

3. Furnish hex socket cap screw manufactured according to ASTM A 994 with electroplated zinc coating and supplemental chromate conversion coating to ASTM B 633 Class Fe/2h U Type II.

4. Center holes in the slip base and bolt-down anchor are for galvanizing and drainage. Exact hole placement may vary as needed.

5. Use bolt-down anchor for installations in existing concrete.

6. Tighten hex socket cap screws to 60-foot-pounds. Do not overtighten.

7. Tighten slip base bolts to between 40 and 80 foot-pounds. Tighten all bolts evenly by working around the support in approximately 10 foot-pound increments to assure balanced tension in the bolts. Tighten all three bolts to the same torque. Do not overtighten.

8. After tightening slip base bolts, drill a 3/8" diameter hole in the pipe through the hole in the slip base casting, and drive in the coiled pin, to prevent pipe twisting in the slip base. Drive the coiled pin in such a manner that approximately 1 1/4" to 1 3/4" of the pin remains protruding beyond the outside diameter of the slip base casting. The coiled pin shall be standard duty, stainless steel.

9. For signs less than 60" high, reduce the U-bracket height accordingly, such that the top of the U-bracket aligns with the top of the sign. For 60" high signs, use the U-bracket as shown. For signs over 60" high, use extenders of appropriate length such that the tops of the extenders align with the top of the sign.

10. For extrusheet sign attachment, use two no. 2 or no. 3 I-channel posts equal in length to the sign height. Clamp the I-channel posts vertically to the horizontal arms of the U-bracket land extenders, when used with the sign pipe clamp 6" from each end and at a maximum vertical spacing of 8", fasten the extrusheet sign to each I-channel support with mounting clips, per Standard Construction Drawing (SCD) TC-41.15.

11. For flat sheet sign attachment, use two no. 2 or no. 3 I-channel posts equal in length to the sign width, and in the quantity required in accordance with SCD TC-41.15, and TC-50.20. Clamp the I-channel posts horizontally to the vertical arms of the U-bracket land extenders, when used with the sign pipe clamp, fasten the flat sheet sign to each I-channel support as per SCD TC-41.20.

12. Refer to SCD TC-41.20 for I-channel post details.
**LOCKING COLLAR**

- Bottom of post should not extend beyond bottom of collar.
- 4 1/4" dia.
- 0.600" C. Bore
- 2.885" dia.
- Top hole for 3/8" fine thread
- 0.075" (D) + 0.025" - 0.030"-

**U-BRACKET**

- 3/8" x 4" Steel Hex Head Bolt with Hex Nut, Lockwasher, and Two Flat Washers
- M-BWG Steel Tubing 3 1/4" OD 0.083" Wall Thickness
- Extender

**EXTENDER**

- Swaged Chamfer (Typ.)
- 13/16" x 0.082"

**COILED PIN**

- 3/8" x 3 1/4" Steel Hex Head Bolt with Hex Nut, Lockwasher, and Two Flat Washers

**SIGN PIPE CLAMP**

- 5/16" dia. min.
- Drain Hole
- Screw for..." x 1/4" Fine Thread
- Gap 0.125 max.
- 0.120 min.
- 0.875" (+0.02", -0)

**SECTION F-F**

- 5/8" dia.
- 1 3/4" dia. min.

**SECTION L-L**

- 0.337 max.
- 0.324 min.
- 2 3/16"

- 0.060 R (Typ.)
- 0.060 R

**NOTES**

- See Note 2
- See Note 3
- See Note 6
- See Note 9
BOLT-DOWN ANCHOR
(See Note 5)

\[ \begin{align*}
5" & \quad 5" \\
6" & \quad 6" \\
3\" Sch. 40 Steel Pipe \\
6" min. to Edge or Joint
\end{align*} \]

\[ \frac{3}{16}\" \text{ dia. (Typ.)} \]

\[ \frac{1}{6}\" \text{ dia. New Hole (See Note 4)} \]

\[ \frac{3}{4} \times \frac{1}{4}\" \text{ Stainless Steel Expansion Double Wedge Anchor Bolts} \]

SIP Plate (See Detail 8)

\[ \frac{3}{4} \times \frac{1}{4}\" \text{ dia. (Typ.)} \]

\[ \text{See Note 4} \]

Thru Hole

Steel Pipe

5"

5"

6"

6"

12"

\[ \begin{align*}
\frac{3}{4} \times \frac{1}{4}\" \text{ dia. (Typ.)} \\
\text{See Note 4} \\
\text{Thru Hole} \\
\frac{3}{4} \times \frac{1}{4}\" \text{ dia. (Typ.)} \\
\text{See Note 4} \\
\end{align*} \]

BOLT-DOWN ANCHOR
(See Note 5)

3" Sch. 40 Steel Pipe

6" min. to Edge or Joint

\[ \frac{3}{16}\" \text{ dia. (Typ.)} \]

\[ \text{See Note 4} \]

Thru Hole

Steel Pipe

5"

5"

6"

6"

12"

\[ \begin{align*}
\frac{3}{4} \times \frac{1}{4}\" \text{ Stainless Steel Expansion Double Wedge Anchor Bolts} \\
\text{See Note 4} \\
\end{align*} \]

SIGN ATTACHMENT
EXTRUSHEET
(See Note 10)

SIGN ATTACHMENT
FLAT SHEET
(See Note 11)

\[ \begin{align*}
\frac{3}{16} \times \frac{3}{4}\" \text{ Steel U-Bolt} \\
\text{with Two Hex Nuts and Two Lock Washers} \\
\end{align*} \]

\[ \begin{align*}
\frac{3}{16} \times \frac{3}{4}\" \text{ Steel U-Bolt} \\
\text{with Two Hex Nuts and Two Lock Washers} \\
\end{align*} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]

\[ \text{Sign Pipe Clamp (See Detail L)} \]

\[ \text{U-Channel Post No. 2 or No. 3} \]

\[ \text{No. 2 or No. 3 U-Channel Post} \]

\[ \frac{3}{16} \times \frac{3}{4}\" \text{ Square Head Bolt with Hex Nut and Lock Washer} \]