

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SPECIFICATIONS**

**2-7/8" O.D. ROUND STEEL SIGN POSTS,
BREAKAWAY SIGN SUPPORT ASSEMBLIES AND RELATED HARDWARE**

GENERAL:

This specification is divided into two (2) parts:

PART 1 sets forth the requirements for 2-7/8" O.D. round steel sign posts.

PART 2 sets forth the requirements for three (3) multi-directional breakaway sign support assemblies and related hardware.

PART 1: 2-7/8" O.D. ROUND STEEL SIGN POSTS

12' Post (SAP # 12257, Stock # 32-62-5010)

14' Post (SAP # 12258, Stock # 32-62-5012)

DESCRIPTION:

12' and 14' 2-7/8" O.D. round steel sign posts are to be used with a multi-directional breakaway sign support assembly. Posts shall be galvanized round tubular sections with minimum cross-sectional dimensions and weights stated in this specification. The posts shall have a 2-7/8" galvanized removable cap on one end.

MATERIAL:

12' and 14' O.D. round steel sign posts shall have a nominal O.D. of 2-7/8". Posts shall conform to the requirements of ASTM A53 (for 2-1/2" pipe) or ASTM A500 grade B (for 2-7/8" O.D. structural tube). Wall thickness shall be a minimum of SCH 40 (0.203") for A53 pipe and 10 gauge (0.135") for A500 grade B tube. Other steel posts may be used if they meet the following criteria and are galvanized by one of the methods noted in PART 1 of this specification:

- 55,000 psi minimum yield strength
- 70,000 psi minimum tensile strength
- 20% minimum elongation in 2" wall thickness (uncoated) must be within the range of 0.148" to 0.160"
- Outside diameter (uncoated) must be within the range of 2.867" to 2.883"

GALVANIZING:

ASTM A53 pipe shall be hot-dipped galvanized in accordance with ASTM A123 (minimum of 2.0 oz/square foot). ASTM A500 grade B tube shall be inline galvanized per ASTM A787 Type III (minimum of 0.6 oz/square foot), ASTM A1011, ASTM 1008, ASTM 123, or ASTM A653 G210. For pre-coated steel tubing (ASTM A653 G210), the tube outside weld seam must be recoated by re-metallizing the seam with zinc wire per ASTM B833.

MANUFACTURING:

Weld flash will not be allowed on outside diameter of post. If weld flash is scarfed after zinc is applied, weld scarf must be re-metallized. Standard Industry tolerances shall apply to pipe and tube dimensions.

PART 2: BREAKAWAY SIGN SUPPORT ASSEMBLIES AND RELATED HARDWARE

SECTION A: Multi-Directional, Concrete Surface Mounted Slip Base Unit Assembly for 2-7/8" O.D. Round Steel Sign Posts (SAP # 12255, Stock # 32-62-5000)

SECTION B: Adaptable Multi-Directional, Slip Base for Existing Base Mounted Support for 2-7/8" O.D. Round Steel Sign Posts (SAP # 12256, Stock # 32-62-5005)

SECTION C: Multi-Directional, Ground Mounted Slip Base Unit Assembly for 2-7/8" O.D. Round Steel Sign Posts (SAP # 12259, Stock # 32-62-5115)

PERFORMANCE CRITERIA: All breakaway sign support assemblies and related hardware must meet or exceed NCHRP 350 or MASH criteria and be found acceptable by the FHWA. Each unit matrix shall be designed in accordance with the AASHTO Standards and Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, current edition, must meet or exceed the requirements set forth in NCHRP 350 or MASH and be found acceptable by the FHWA.

SECTION A: Multi-Directional, Concrete Surface Mounted Slip Base Unit Assembly for 2-7/8" O.D. Round Steel Sign Posts (SAP # 12255, Stock # 32-62-5000)

DESCRIPTION:

The concrete surface mounted slip base unit assembly shall contain a lower slip plate and an upper slip plate that will allow a 2-7/8" O.D. round steel sign post to be installed. Upper and lower triangular slip plates must have the same dimensions. See Figure 1.

LOWER PART:

MATERIAL:

The surface mount base plate and triangular lower slip plate shall be fabricated from ASTM A36, or A572 steel plate.

GALVANIZING:

After fabrication, the surface mount base plate and triangular lower slip plate must be hot dip galvanized per ASTM A123/153. Slip plate to be clear of galvanizing runs or irregularities that would impede the slip-away characteristics.

MANUFACTURING:

The surface mount base plate shall be 10" to 12" square x 1/2" to 1" thick and shall have a minimum of four (4) 3/4" mounting holes with locations to be recommended by the manufacturer.

The triangular lower slip plate shall have a minimum thickness of 5/8" with a maximum thickness of 1" and shall measure 10-3/8" on each side, before notching. Each point of the slip plate shall be notched with a radius of 11/32" flaring out 30 degrees from each side. The center of each notch radius shall create a 7" diameter bolt circle.

The center connection between the surface mount base plate and the triangular lower slip plate shall be welded in the center using a minimum 1/4" fillet weld around entire perimeter, top and bottom.

The overall height of the fabricated surface mount base plate and triangular lower slip plate shall not to exceed 3" from the concrete surface.

HARDWARE:

Concrete anchor bolts with nuts and washers shall be included. Anchor bolts shall be a minimum of 5/8" diameter x 6" in length. Bolts, nuts and washers must have a galvanized coating with a minimum of ASTM B633 zinc plate.

UPPER PART:

MATERIAL:

Ductile Iron Casting shall be fabricated per ASTM A536 Gr. 65-45-12.

GALVANIZING:

After fabrication, the upper triangular slip plate must be hot dip galvanize per ASTM A153. Slip plate to be clear of galvanizing runs or irregularities that would impede the slip-away characteristics.

MANUFACTURING:

The triangular upper slip plate shall have a minimum thickness of 5/8" with a maximum thickness of 1" and shall measure 10-3/8" on each side, before notching. Each point of the slip plate shall be notched with a radius of 11/32" flaring out 30 degrees from each side. The center of each notch radius shall create a 7" diameter bolt circle.

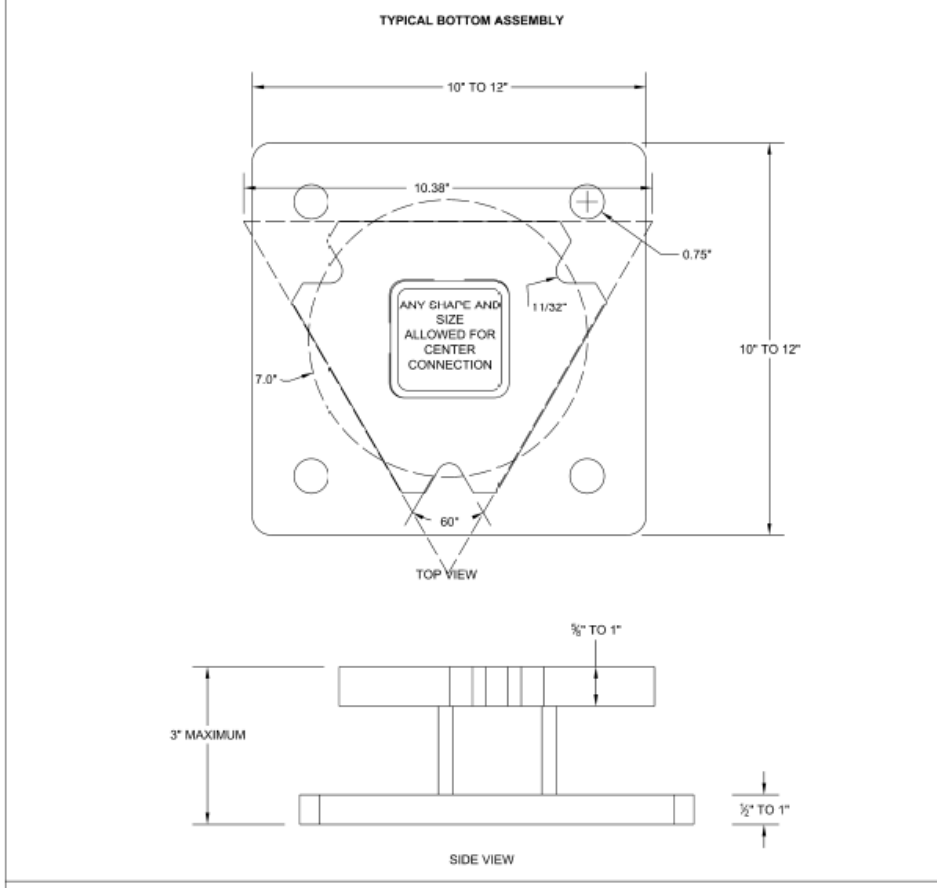
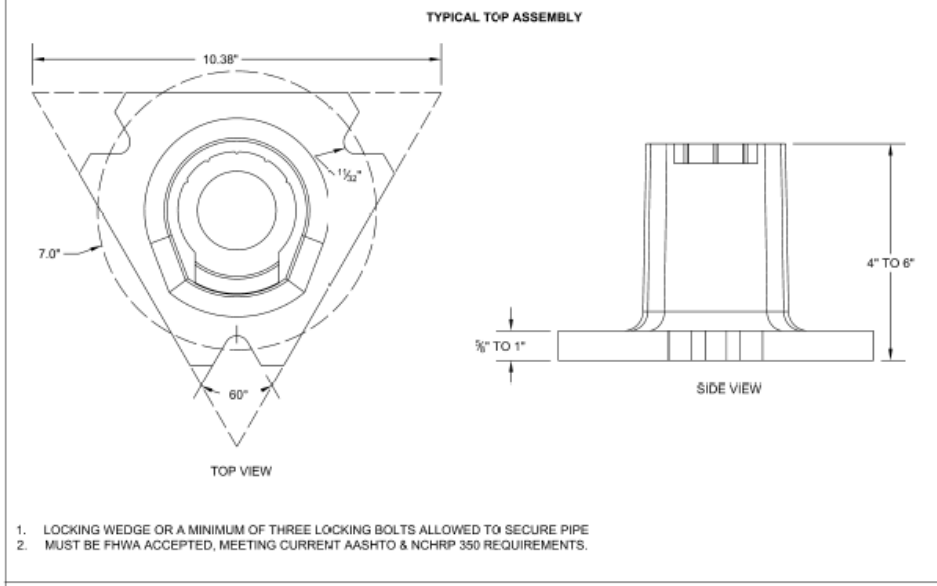
The receiver shall be a minimum of 3-3/4" tall and shall be constructed to fit a 2-7/8" O.D. round steel sign post. The structural integrity of the receiver must exceed the strength of the round steel sign post. The receiver shall have a minimum of three (3) locking bolt areas or a locking wedge to keep the mounting post from turning. No set screws or allen screws will be allowed..

Round sign support receiver shall fasten so that there is no tolerance between the inside of the support receiver and the outside of the post. The whole assembly, when installed, shall not allow for any rotation of the sign support due to effects of wind.

HARDWARE:

High strength bolts with nuts and washers shall be included Bolts, nuts, and washers shall be galvanized. Bolt lengths, sizes, and quantities to be recommended by manufacturer.

FIGURE 1: MULTI-DIRECTIONAL, CONCRETE SURFACE MOUNTED SLIP BASE UNIT ASSEMBLY FOR 2-7/8" O.D. ROUND STEEL POSTS



SECTION B: Adaptable Multi-Directional, Slip Base for Existing Base Mounted Support for 2-7/8" O.D. Round Steel Sign Posts (SAP # 12256, Stock # 32-62-5005)

DESCRIPTION:

The adaptable multi-directional slip base must fit an existing steel multi-directional base mounted support. See Figure 2.

MATERIAL:

Ductile Iron Casting fabricated per ASTM A536 Gr. 65-45-12.

GALVANIZING:

After fabrication, slip base must be hot dip galvanized per ASTM A153. The adaptable, multi-directional slip base is to be clear of galvanizing runs or irregularities that would impede the slip-away characteristics.

MANUFACTURING:

The triangular slip plate shall have a minimum thickness of 5/8" with a maximum thickness of 1" and shall measure 10-3/8" on each side, before notching. Each point of the slip plate shall be notched with a radius of 11/32" flaring out 30 degrees from each side. The center of each notch radius shall create a 7" diameter bolt circle.

The bottom of the slip plate shall have a beveled 2" to 2-1/2" ID hole in the center. The outside measurement of the beveled edge shall be 3-1/4" to 3-5/8".

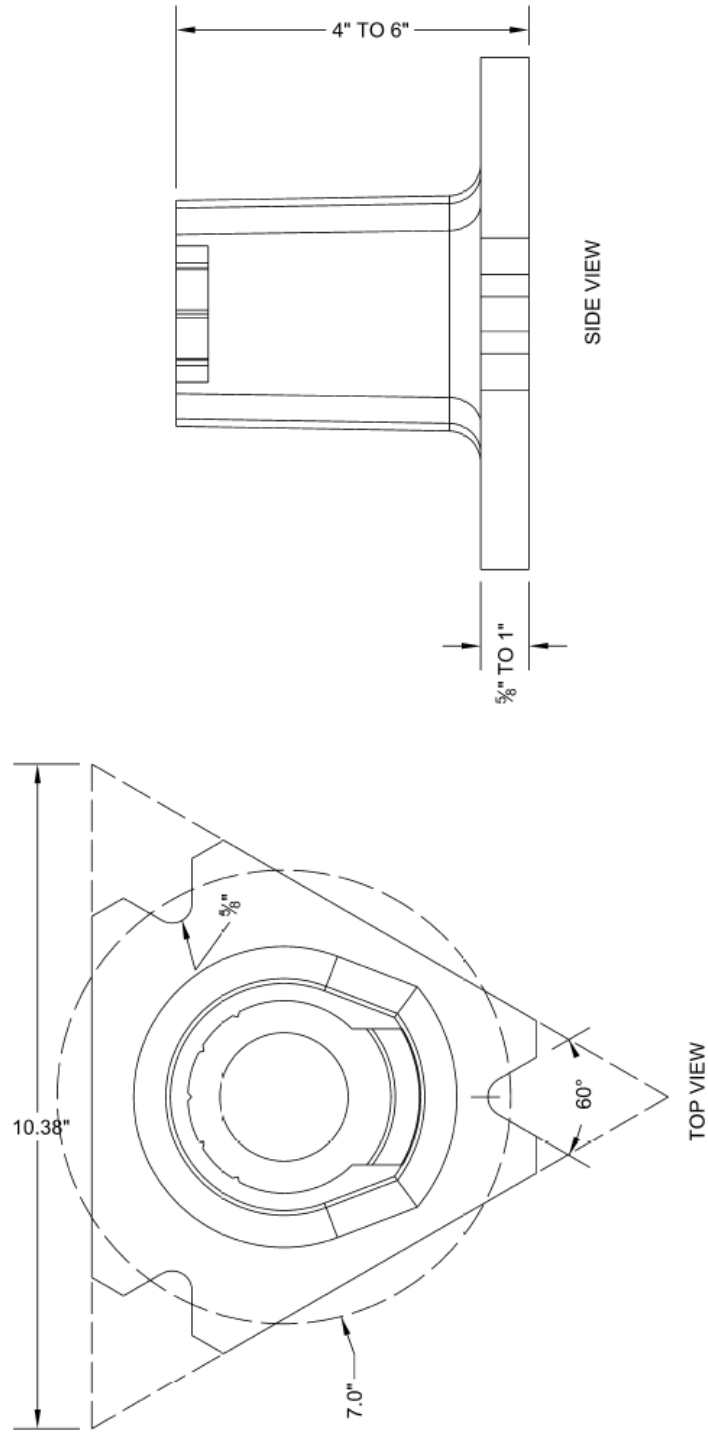
Receiver shall be a minimum of 3-3/4" tall and shall be constructed to fit a 2-7/8" O.D. round steel sign post. The structural integrity of the receiver must exceed the strength of the round steel sign post. The receiver shall have a minimum of three (3) locking bolts or a locking wedge to keep the mounting post from turning. No set screws or allen screws will be allowed.

Receiver shall fasten so that there is no tolerance between the inside of the support receiver and the outside of the post. The whole assembly, when installed, shall not allow for any rotation of the sign support due to effects of wind.

HARDWARE:

High strength bolts with nuts and washers shall be included. Bolts, nuts, and washers shall be galvanized. Bolt lengths, sizes, and quantities to be recommended by manufacturer.

FIGURE 2: MULTI-DIRECTIONAL, SLIP BASE FOR EXISTING BASE MOUNTED SUPPORT FOR 2-7/8" O.D. ROUND STEEL POSTS



1. LOCKING WEDGE OR A MINIMUM OF THREE LOCKING BOLTS ALLOWED TO SECURE PIPE
2. MUST BE FHWA ACCEPTED, MEETING CURRENT AASHTO & NCHRP 350 REQUIREMENTS.

SECTION C: Multi-Directional, Ground Mounted Slip Base Unit Assembly for 2-7/8" O.D. Round Steel Sign Posts (SAP # 12259, Stock # 32-62-5115)

DESCRIPTION:

The ground mounted slip base unit assembly shall contain a lower slip plate welded to either a pipe or square tubing and an upper slip plate that will allow a 2-7/8" O.D. round steel sign post to be installed. Upper and lower triangular slip plates must have the same dimensions. See Figure 3.

HARDWARE:

High strength bolts with nuts and washers for the lower and upper part shall be included. Bolts, nuts, and washers shall be galvanized. Bolt lengths, sizes, and quantities to be recommended by manufacturer.

LOWER PART:

MATERIAL:

The triangular lower slip plate shall be fabricated from ASTM A36 or A572 steel plate and be welded to either a pipe which must be fabricated from ASTM A 53 GR B or A500 or square tubing which must be fabricated by ASTM A500, Grade B.

If a pipe is used, an 8"x 3/4" galvanized steel rod must be supplied to keep the unit from turning after installed.

GALVANIZING:

After fabrication, the complete lower part of the assembly must be hot dip galvanized per ASTM A123/153. Slip plate to be clear of galvanizing runs or irregularities that would impede the slip-away characteristics.

MANUFACTURING:

The ground mount assembly shall be fabricated with a minimum 3" x 36" pipe or a 3" x 3" x 36" – 7 gage square tubing welded to the triangular slip plate, in the center, using a minimum 1/4" fillet weld around entire perimeter of pipe or square tubing.

If a pipe is used, a 3/4" hole through the center of the pipe a minimum of 12" to a maximum of 24" from the bottom of the pipe must be provided to fit the 8"x 3/4" galvanized steel rod that must be supplied.

The triangular lower slip plate shall have a minimum thickness of 5/8" with a maximum thickness of 1" and shall measure 10-3/8" on each side, before notching. Each point of the slip plate shall be notched with a radius of 11/32" flaring out 30 degrees from each side. The center of each notch radius shall create a 7" diameter bolt circle.

UPPER PART:

MATERIAL:

Ductile Iron Casting shall be fabricated per ASTM A536 Gr. 65-45-12.

GALVANIZING:

After fabrication, the upper triangular slip plate must be hot dip galvanize per ASTM A153. Slip plate to be clear of galvanizing runs or irregularities that would impede the slip-away characteristics.

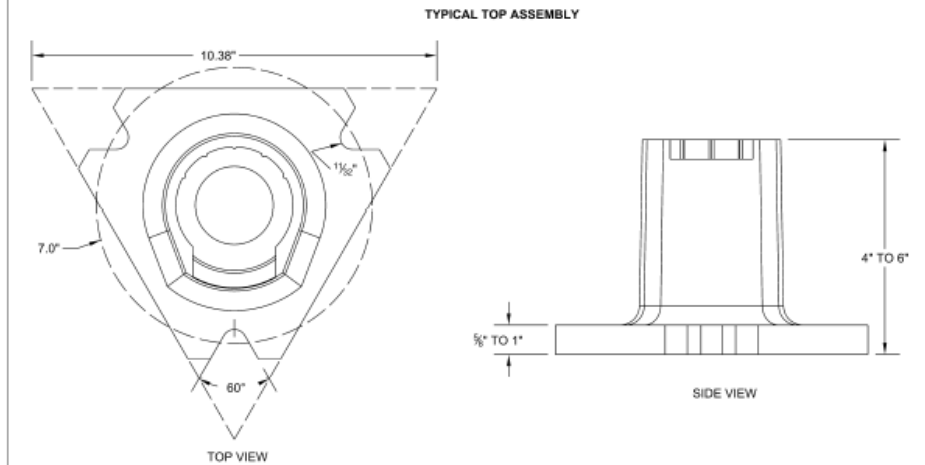
MANUFACTURING:

The triangular upper slip plate shall have a minimum thickness of 5/8" with a maximum thickness of 1" and shall measure 10-3/8" on each side, before notching. Each point of the slip plate shall be notched with a radius of 11/32" flaring out 30 degrees from each side. The center of each notch radius shall create a 7" diameter bolt circle.

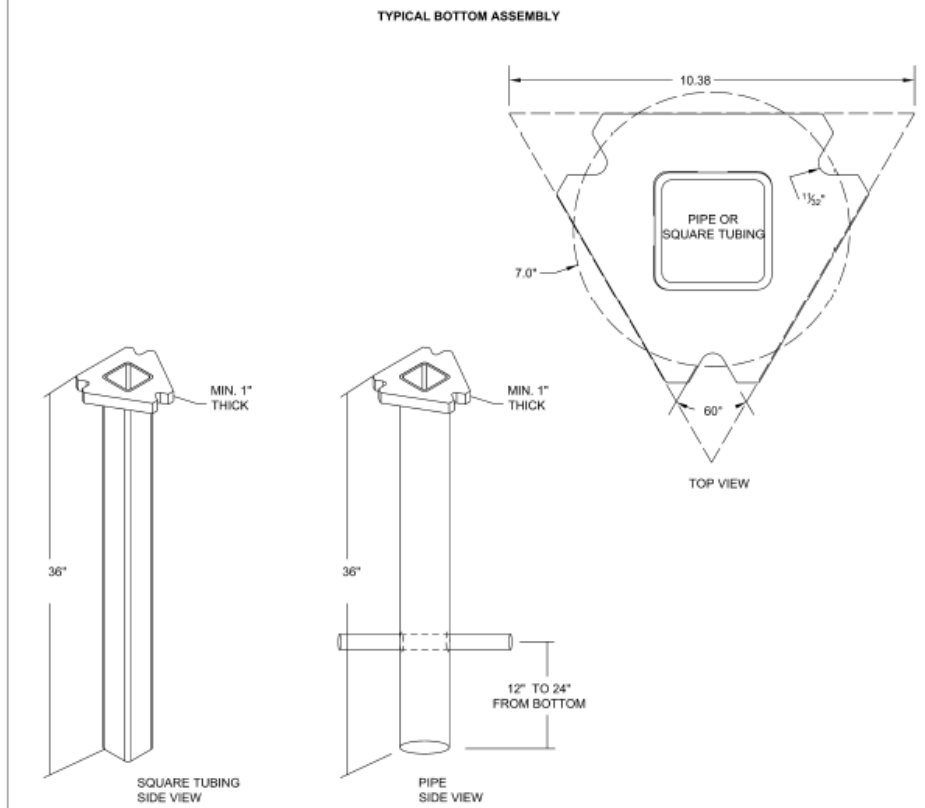
The receiver shall be a minimum of 3-3/4" tall and shall be constructed to fit a 2-7/8" O.D. round steel sign post. The structural integrity of the receiver must exceed the strength of the round steel sign post. The receiver shall have a minimum of three (3) locking bolt areas or a locking wedge to keep the mounting pipe from turning. No set screws or allen screws will be allowed.

Round sign support receiver shall fasten so that there is no tolerance between the inside of the support receiver and the outside of the post. The whole assembly, when installed, shall not allow for any rotation of the sign support due to effects of wind.

FIGURE 3: MULTI-DIRECTIONAL, GROUND MOUNTED SLIP BASE UNIT ASSEMBLY
FOR 2-7/8" O.D. ROUND STEEL POSTS



1. LOCKING WEDGE OR A MINIMUM OF THREE LOCKING BOLTS ALLOWED TO SECURE PIPE
2. MUST BE FHWA ACCEPTED, MEETING CURRENT AASHTO & NCHRP 350 REQUIREMENTS.



1. A 8" X 3/8" GALVANIZED STEEL ROD SHALL BE REQUIRED THROUGH PIPE
2. MUST BE FHWA ACCEPTED, MEETING CURRENT AASHTO & NCHRP 350 REQUIREMENTS.

MATERIAL CERTIFICATION:

Certification from an independent test laboratory that all materials, meet the requirements of this specification may be required.

PACKAGING:

2-7/8" O.D. ROUND STEEL SIGN POSTS:

Each post shall be labeled with the Company Name, DOTD's Product ID Number and Quantity. Posts shall be banded and palletized. Pallets shall not exceed 2000 lbs.

BREAKAWAY SIGN SUPPORTS AND RELATED HARDWARE:

Each assembly must be fully assembled, individually boxed, and include all the mounting hardware. Each box shall be labeled with the Company Name, Purchase Order Number, and DOTD's Product ID Number. Individual boxes may be palletized and secured with bands or stretch wrap. Pallets shall not exceed 2000 lbs.