

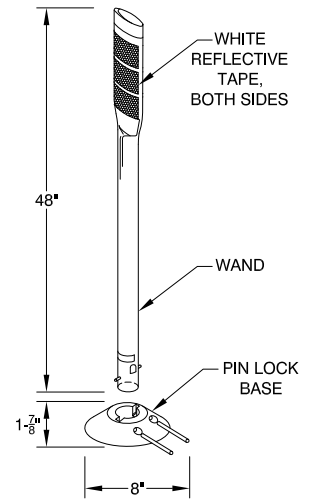
# DELINEATOR (Safe-Hit Flexible Channelizer Tubular Marker, SH148SMA-WS, or Equivalent )

## TOOLS/MATERIALS REQUIRED

- Two part, 1011 concrete epoxy, or equivalent
- Delineator (wand, pin-lock base, and locking pins)
- 5" x 3/8" lag bolts
- Masonry drill bit, 6" x 11/32"
- Hammer-drill, hammer, wrench, vacuum-cleaner

## INSTALLATION INSTRUCTIONS

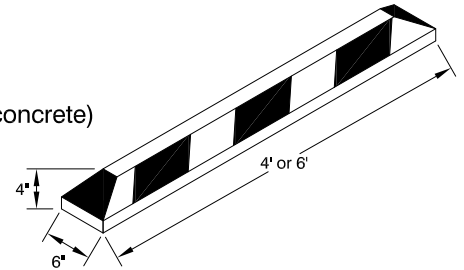
1. Clean and dry surface.
2. Mix 5 oz. part "A" and 5 oz. part "B" of 1011 concrete epoxy or equivalent.
3. Apply epoxy evenly to bottom of base.
4. Press base down firmly on surface until a bead of epoxy appears around edge.
5. Allow to cure approximately one hour before installing wand (allow extra time for cold weather).
6. Drill two 5" holes where holes in base are, using 11/32" drill bit.
7. Dip 5" x 3/8" lag bolts into epoxy and insert into base; screw in bolt.
8. Install wand so that flat side faces the direction of traffic.
9. Insert wand and drive locking pins in place with hammer.



## WHEEL STOP

### TOOLS/MATERIALS REQUIRED

- Recycled rubber wheel stop, 4' or 6' long, 4" high, black with white reflective tape
- Mounting hardware (18" steel spikes for asphalt, 8" lag bolts and lag anchors for concrete)
- Masonry drill bit (7/16" for asphalt, 3/4" for concrete)
- Hammer-drill, hammer, wrench, vacuum-cleaner



### ASPHALT INSTALLATION INSTRUCTIONS

1. Position the wheel stop (block). Using the holes molded in the block as templates, mark the location of each hole on the asphalt surface.
2. Remove the block. Using a high-speed hammer drill with a 7/16" masonry bit, drill a pilot hole at each marked location: a) to avoid fracturing the asphalt with the spike and b) to ease installation. Note: If layer of asphalt is thin, coat each spike with a small amount of activated epoxy resin immediately before driving the spike in place. This will help hold the block flat.
3. Reposition the block so that the molded in holes line up vertically with the drilled pilot holes. Starting with the center hole, hammer the spikes through the block until the head of the spike is snug against the counter bored holes in the parking block. DO NOT DRIVE BEYOND "SNUG"! If driven too far, the spikes or hammer may damage the parking block and will void the warranty.

### CONCRETE INSTALLATION INSTRUCTIONS

1. Position the block. Using the holes molded in the block as templates, mark the location of each hole on the concrete surface.
2. Remove the block. Using a high-speed hammer drill with 3/4" masonry bit, drill a 4" to 4 1/2" deep hole at each marked location.
3. Insert a lag anchor (with the large round hole in the anchor facing up) into each hole. Tap the anchor into the holes with a hammer so that the top of each anchor is flush with the surface.
4. Reposition the block so that the molded in holes line up vertically with the drilled pilot holes. Begin with the center hole, applying firm hand pressure.
5. Slip a washer onto a lag bolt, insert the bolt through the hole in the parking block and tighten the bolt about three quarters of the way with a 3/4" socket. Repeat for each hole.
6. Finish tightening each bolt until just snug. DO NOT OVER TIGHTEN! Excessive tightening may damage the parking block and will void the warranty.



**CITY OF OAKLAND**

BUREAU OF ENGINEERING AND CONSTRUCTION  
BICYCLE FACILITIES PROGRAM  
250 FRANK H. OGAWA PLAZA, SUITE 4344 \* OAKLAND CA, 94612  
(510) 238-3466 \* FAX (510) 238-7415

**DELINEATOR AND WHEEL STOP  
INSTALLATION AND HARDWARE**

**SHEET 5 OF 6**

**BIKE CORRAL  
DETAILS**

SCALE: NTS

DWG. NO.

DATE: JUL 2016

**RC-5**