

# Enviro-Cone<sup>®</sup> Specification

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## **1.0 Scope**

This specification details the requirements for traffic cones.

## **2.0 Application**

This specification applies to use of traffic cones as channelizing devices in work areas in accordance with the latest revision of the Manual on Uniform Traffic Control Devices (MUTCD).

## **3.0 References**

- 3.1 Manual on Uniform Traffic Control Devices, (MUTCD), 2009 with revision numbers 1 & 2, dated 2012.
- 3.2 National Cooperative Highway Research Program, NCHRP Report 350, Recommended procedures for the safety performance evaluation of highway features.
- 3.3 American Society for Testing and Materials, ASTM Spec. D4956-16, Standard specification for Retroreflective Sheeting for Traffic Control

## **4.0 General Requirements**

### **4.1 Design**

Cones shall consist of an upper conical section connected to a weighted base section. The base shall have the ability to separate from the conical section when impacted, and the base can be re-attached using positive locking lugs molded into the lower portion of the conical section.

### **4.2 Materials**

The conical portion of the cone shall be constructed of blow molded Low Density Polyethylene, (LDPE) and manufactured

in the USA. The conical section shall have the same color, (orange or lime) throughout the wall of the cone. Color shall be fluorescent orange/lime or an approved equal. The base shall be constructed of 100% post-consumer rubber, black, and manufactured in the USA.

#### 4.3 Physical Properties- See Table Below:

Property	18" Enviro-Cone	28" Enviro-Cone	36" Enviro-Cone	28" Slimline Enviro-Cone
Height	18" +/- 1/8"	28" +/- 1/8"	36" +/- 1/8"	28" +/- 1/8"
Conical Weight	0.7 lb.	1.5 lb.	1.5 lb.	1.5 lb.
Base Weight	2.3 lb.	5.5 lb., 8.5 lb., 10.2 lb.	5.5 lb., 8.5 lb., 10.2 lb.	8.5 lb.
Total Weight	3 lb.	7 lb., 10 lb., 12 lb.	7 lb., 10 lb., 12 lb.	10 lb.
Base Dimension	11 1/8" x 11 1/8"	15 3/4" x 15 3/4"	15 3/4" x 15 3/4"	14 1/4" x 14 1/4"
Conical ID Base	7 3/4"	11"	11"	7 1/2"
Conical OD Top	2"	2"	2"	2"
Wall Thickness-Top	0.093"	0.093"	0.093"	0.093"
Wall Thickness-Bottom	0.106"	0.106"	0.106"	0.106"
Tensile Strength ASTM D882 (min.)	7900 psi	7900 psi	7900 psi	7900 psi
Elongation of Wall ASTM D882 (min.)	310%	310%	310%	310%
Hardness of Wall ASTM D2240 (Durometer/Scale)	55/D	55/D	55/D	55/D
Tipping Angle	76°	76°	76°	76°

## 5.0 Performance Tests

Cones shall be capable of meeting the requirements of the following tests:

### 5.1 Heat Resistance

When exposed to 180° F (82°C), cones shall be capable of being folded so the tip of the cone touches the base at its junction with the conical surface. The cone shall then be

released, after which it shall return to its initial configuration within 15 seconds.

### **5.2 Cold Resistance**

Cones shall be exposed to -40° F (-40°C) for one hour. Cones shall then be impacted at approximately the center of the conical portion of the cone. The cone shall not crack or break as a result from the impact.

### **5.3 Cold Drop**

Cones shall be held at a temperature of -40°F (-40°C) for one hour and shall be dropped from a height of 5 ft. (1.5 m) onto a flat surface, allowing the cone to land flat on its base. This procedure shall then be repeated using the same cone, only this instance the cone shall be dropped in an orientation that will allow the cone base and cone top to strike the flat surface at approximately the same time. No evidence of cracking or breaking shall appear.

### **5.4 UV Resistance**

Cone material shall show no evidence of color deterioration when exposed to 500 hours in a Ci3000+ Series Atlas Weather-Ometer.

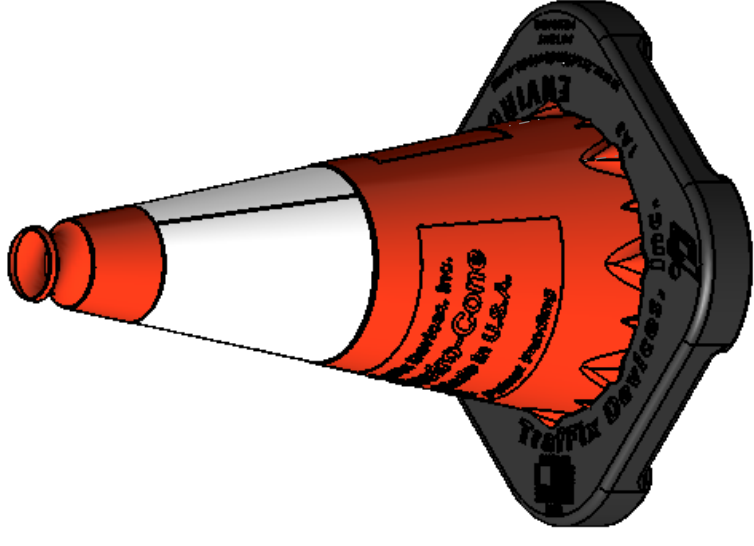
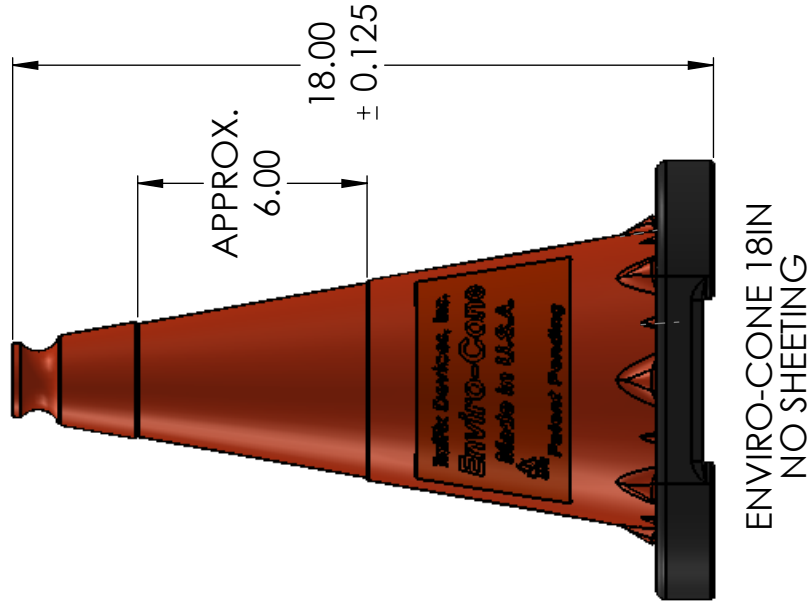
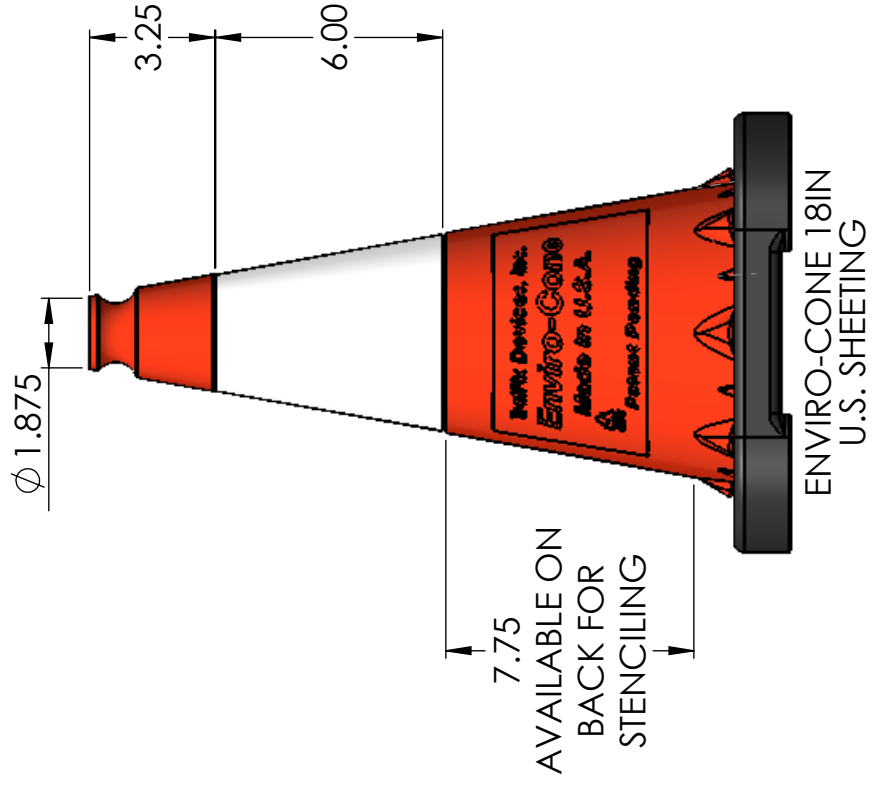
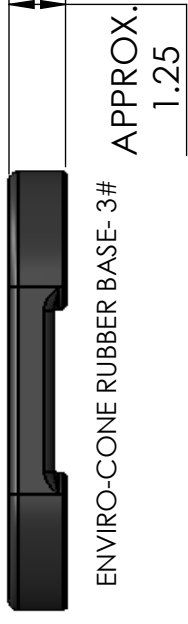
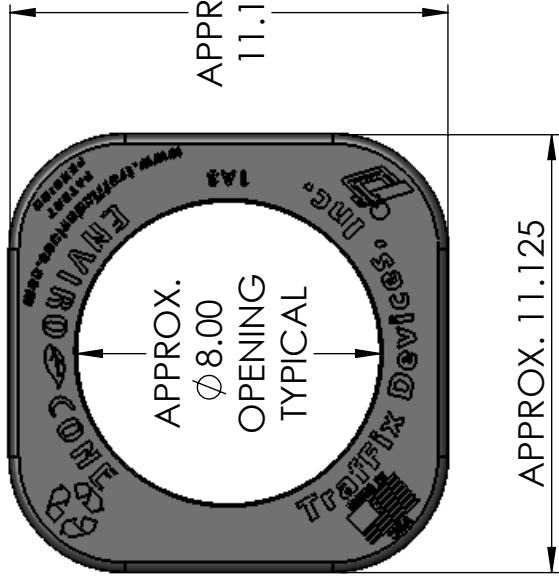
### **5.5 Crashworthiness**

Cones shall meet the crash worthy requirements as specified in NCHRP 350, Work Zones Category 1, or MASH.

## **6.0 Retroreflective Requirements**

Cones shall be reflectorized with retroreflective material meeting the performance requirements of ASTM D4956-16, in the pattern(s) shown in Appendix A.

# Appendix A: Specification Drawings



UNLESS OTHERWISE SPECIFIED:  
ALL DIMENSIONS ARE IN INCHES(mm).  
TOLERANCES: FRACTIONAL: X/16" (1.6mm)  
DECIMAL: .XX  $\pm$  .0625"  
          .XXX  $\pm$  .032"  
          .XXXX  $\pm$  .015"  
DEGREES:  $\pm$  0.5°

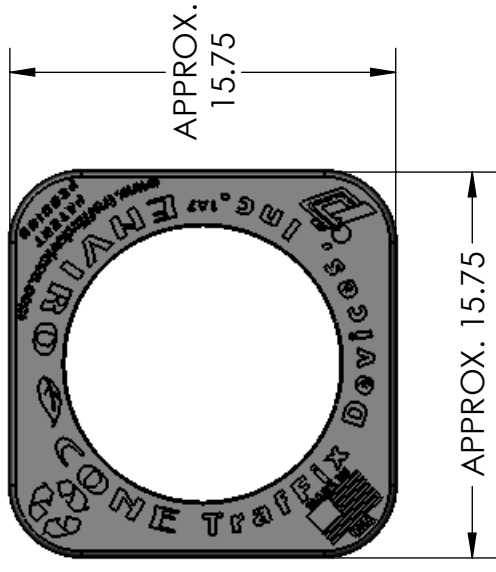
**Traffix**  
**Devices Inc.**

160 Avenida La Pata  
San Clemente, CA 92673  
(949) 361-5663  
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DRAWN BY: CHRIS JAIME	DATE: 11/21/14
CHECKED BY: FA	DATE: 11/21/14
APPROVED BY: FA	DATE: 11/21/14

TITLE: ENVIRO-CONE 18IN SPECIFICATIONS	
SIZE <b>B</b>	DWG. NO. 16018-SPEC
REV	<b>A</b>
SHEET 1 OF 1	

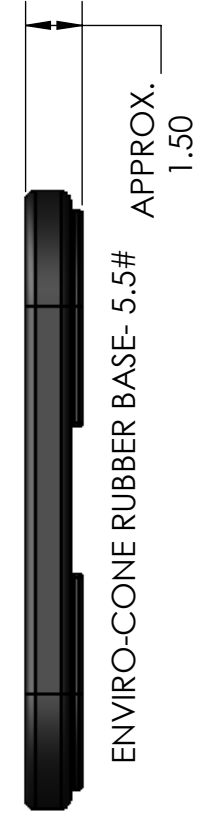
3. Operating Temperature Range: -40 to +180 degrees Fahrenheit
  2. All dimensions are in inches
  1. Colors available in Orange and Lime Green
- NOTE: UNLESS OTHERWISE SPECIFIED**



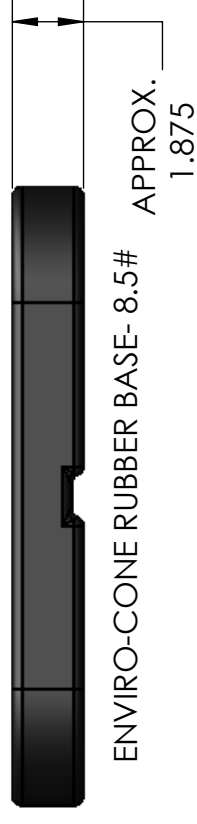
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15.75

APPROX. 15.75

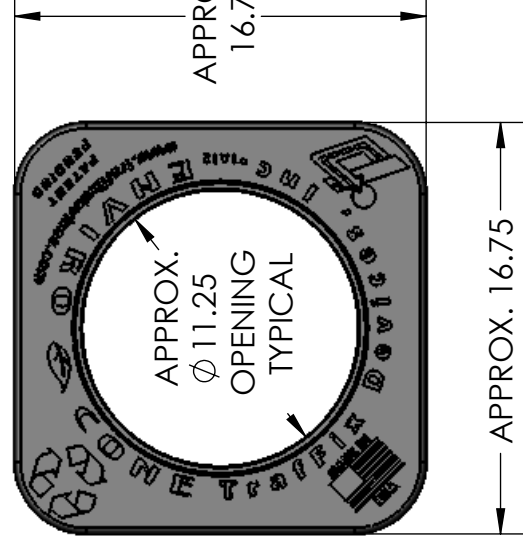
5.5# AND 8.5# RUBBER BASE



ENVIRO-CONE RUBBER BASE- 5.5#  
APPROX. 1.50



ENVIRO-CONE RUBBER BASE- 8.5#  
APPROX. 1.875

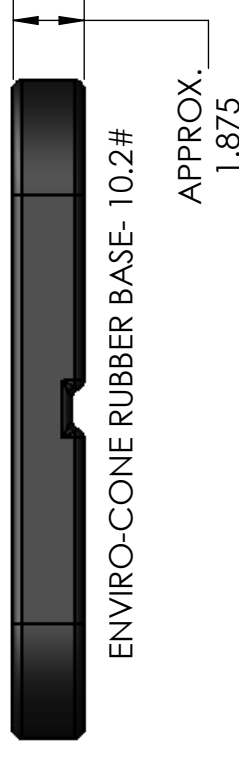


APPROX.  
Ø 11.25  
OPENING  
TYPICAL

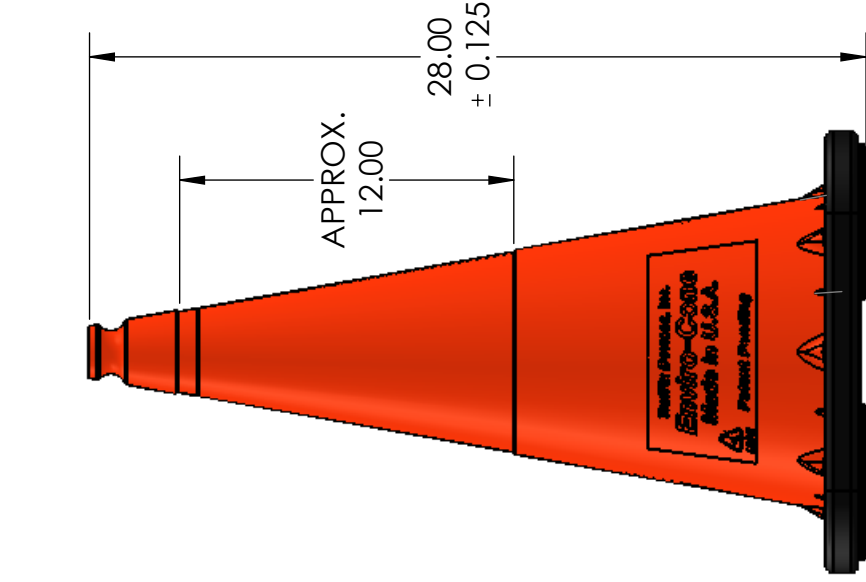
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16.75

APPROX. 16.75

10.2# RUBBER BASE



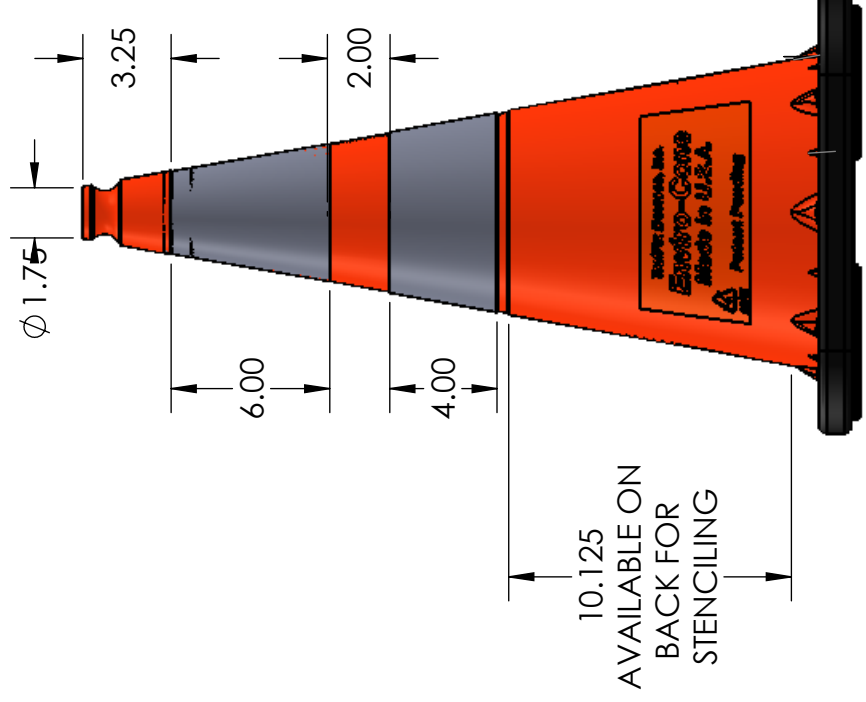
ENVIRO-CONE RUBBER BASE- 10.2#  
APPROX. 1.875



APPROX.  
12.00

28.00  
± 0.125

ENVIRO-CONE 28IN  
NO SHEETING



Ø 1.75

3.25

6.00


4.00

2.00

10.125  
AVAILABLE ON  
BACK FOR  
STENCILING

ENVIRO-CONE 28IN  
U.S. SHEETING

UNLESS OTHERWISE SPECIFIED:  
ALL DIMENSIONS ARE IN INCHES(mm).  
TOLERANCES: FRACTIONAL: XIX + 1/16" (1.6mm)  
DECIMAL: XX + 0.025"  
XXX + 0.032"  
XXXX + 0.015"  
DEGREES: ± 0.5°

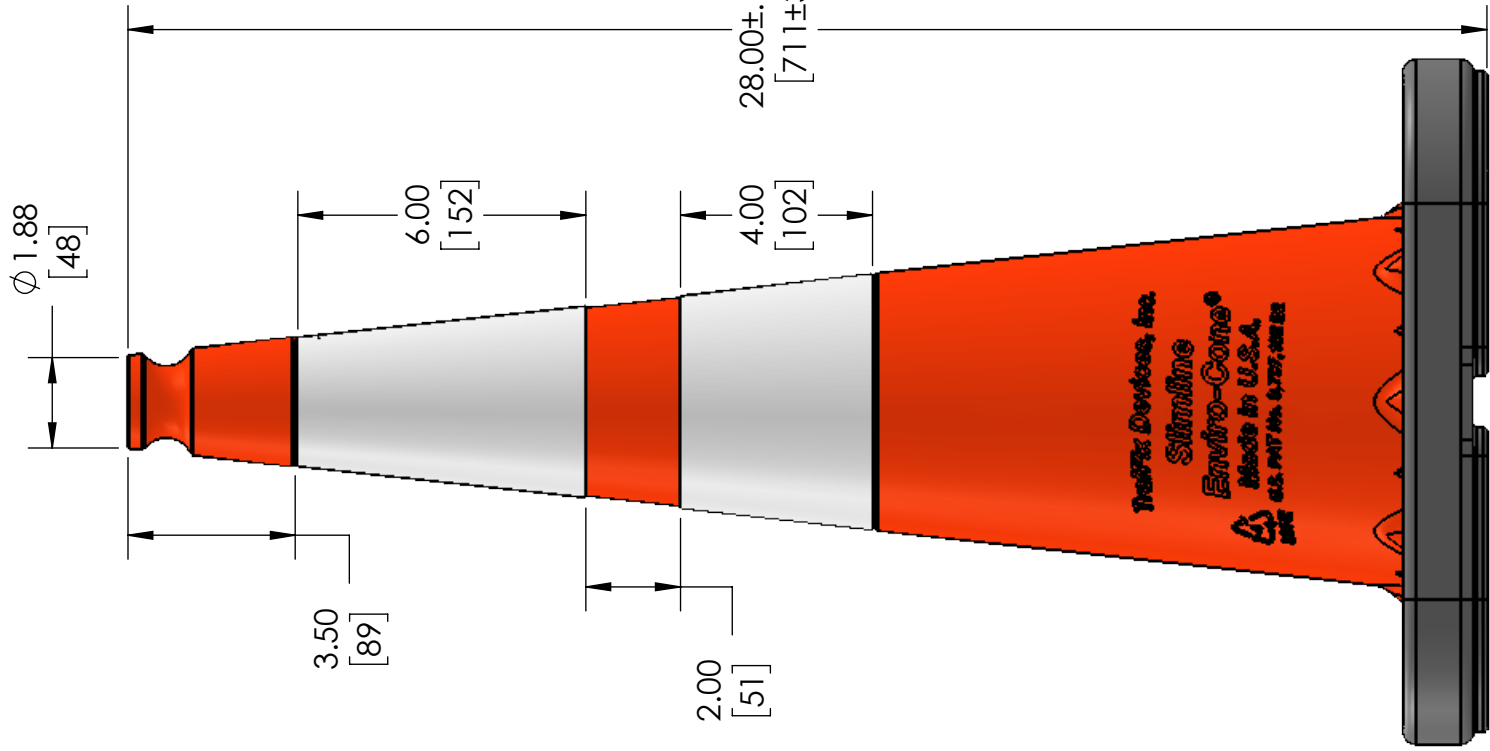
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TITLE:

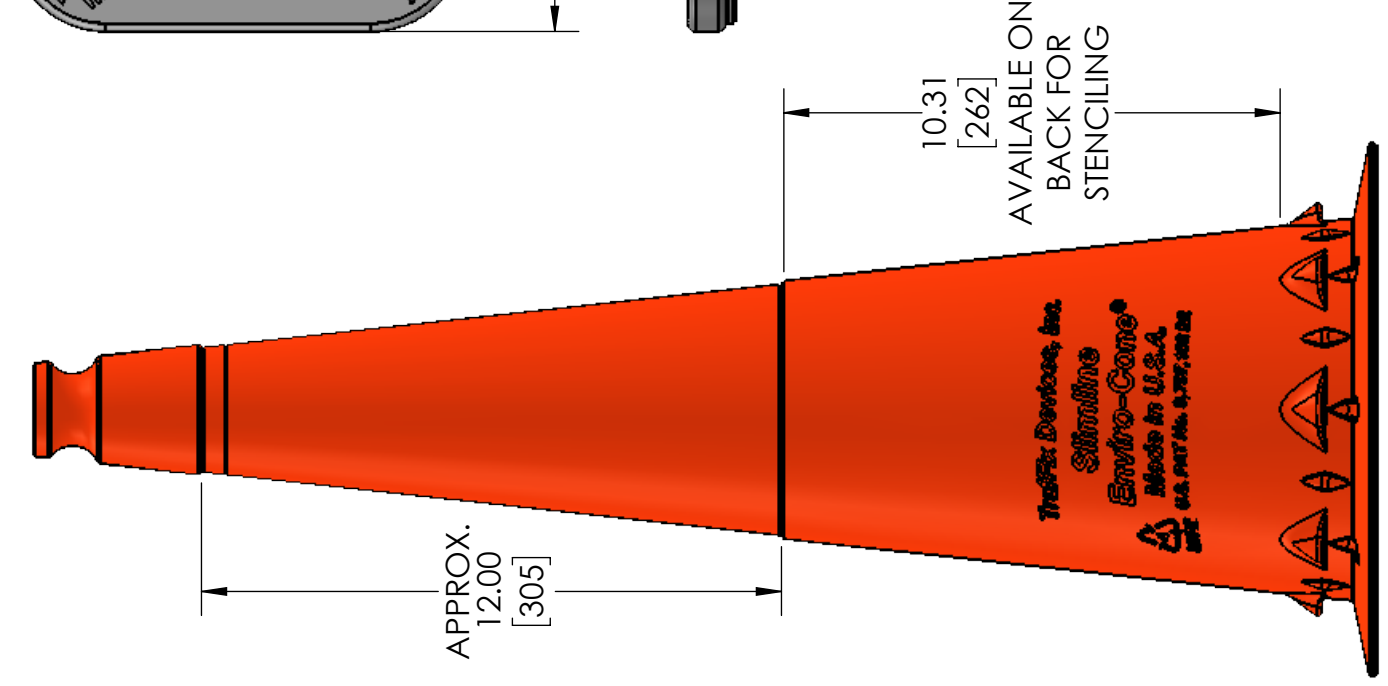
ENVIRO-CONE 28IN  
SPECIFICATIONS

DRAWN BY: CHRIS JAIME	DATE: 11/19/14	SIZE <b>B</b>	DWG. NO. 16028-SPEC	REV <b>B</b>
CHECKED BY: GM	DATE: 11/19/14			SHEET 1 OF 1
APPROVED BY: GM	DATE: 11/19/14			

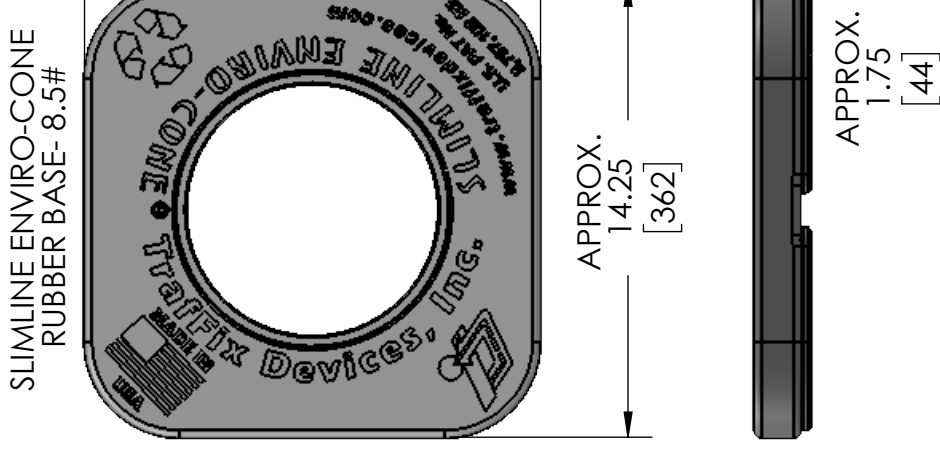
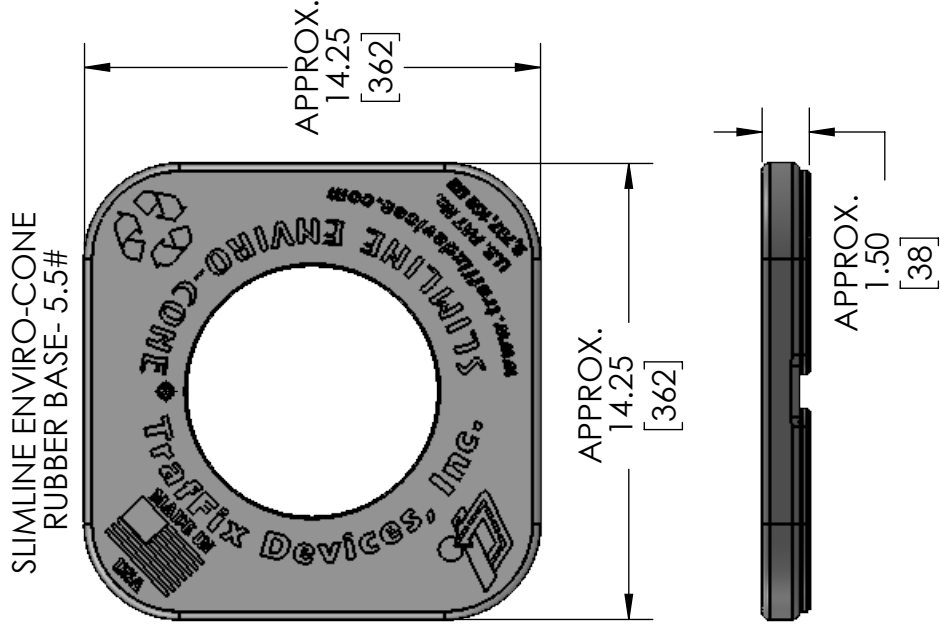
3. Operating Temperature Range: -40 TO +180 degrees Fahrenheit
  2. All dimensions are in inches
  1. Colors available in Orange and Lime Green
- NOTES: UNLESS OTHERWISE SPECIFIED**



10 LB., 28" SLIMLINE ENVIRO CONE W/ SHEETING



SLIMLINE ENVIRO-CONE STEM  
MANUFACTURED FROM  
100% RECYCLABLE PLASTIC



RUBBER BASES  
MANUFACTURED FROM  
100% POST INDUSTRIAL  
RECYCLED RUBBER

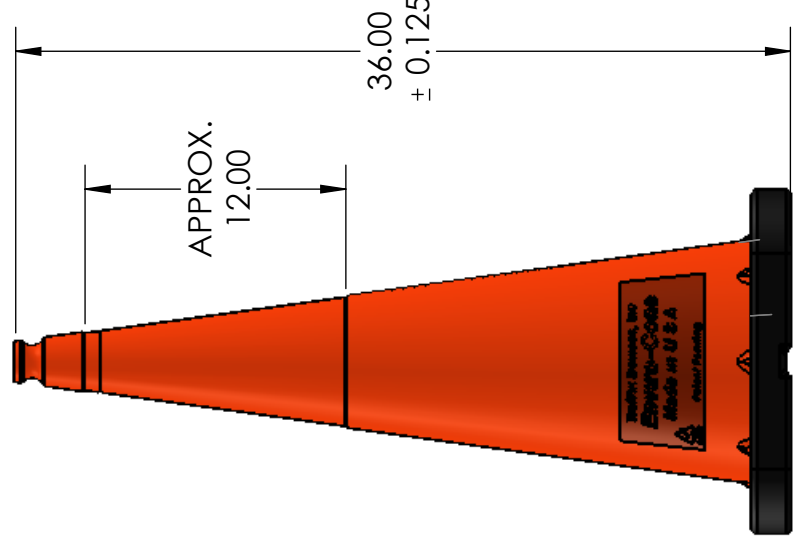
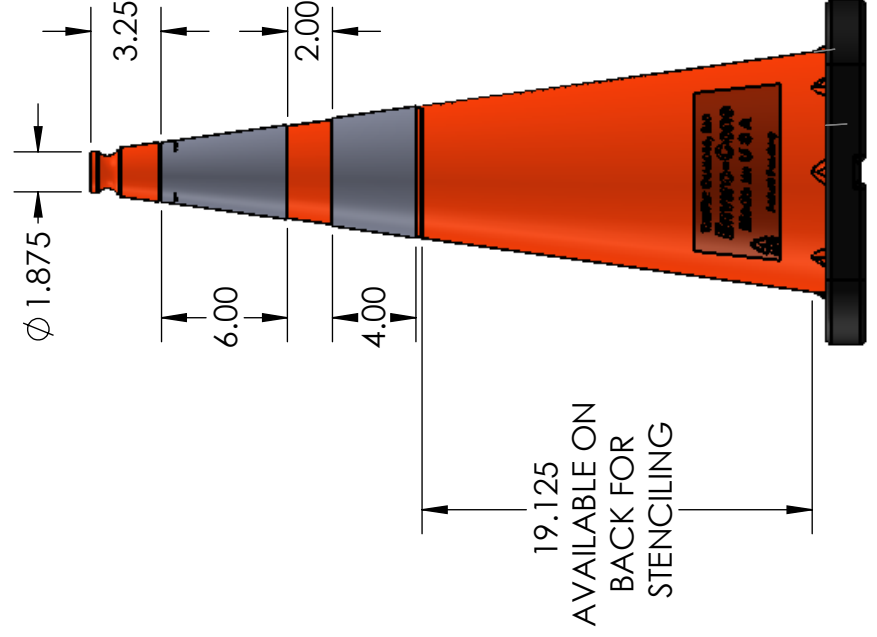
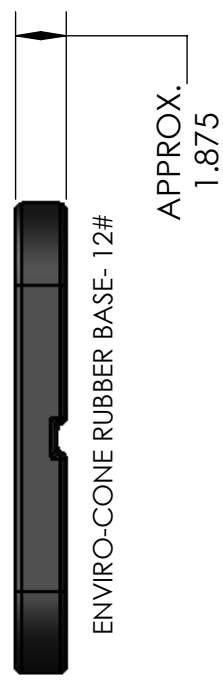
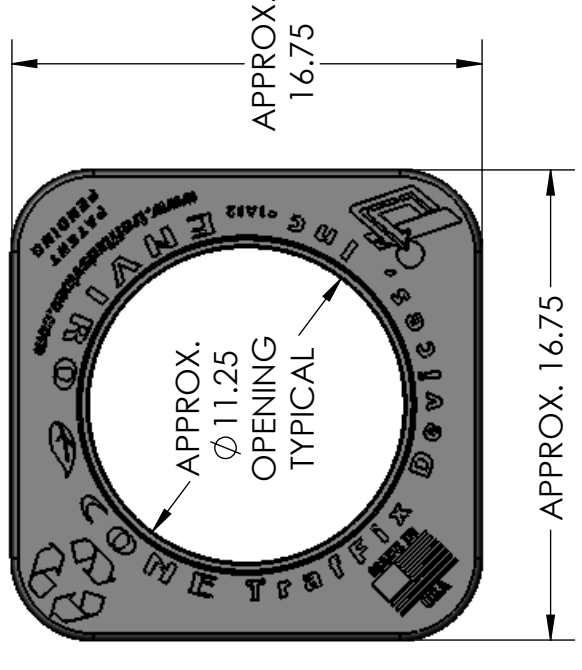
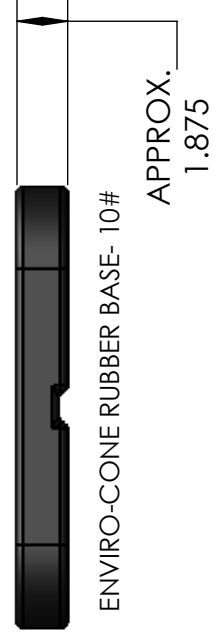
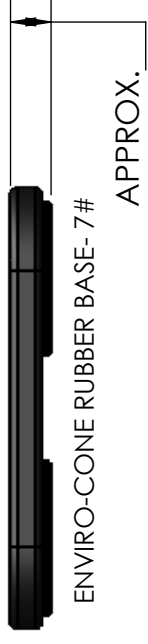
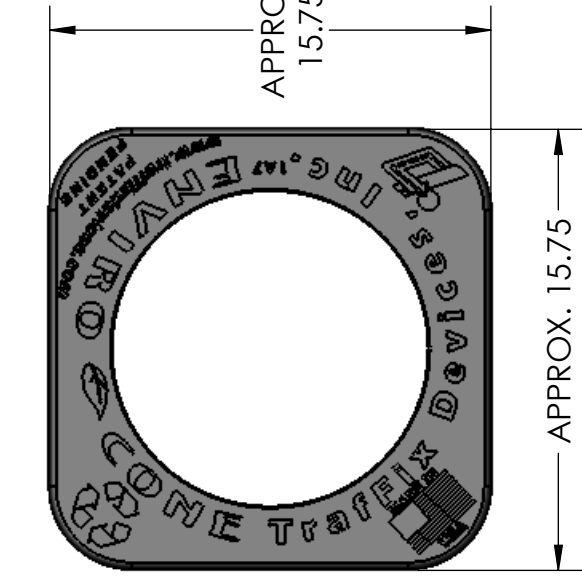
3. Operating Temperature Range: -40 TO +180 degrees Fahrenheit
  2. All Dimensions are in Inches [mm]
  1. Cone Stem Color: Orange
- NOTES: UNLESS OTHERWISE SPECIFIED**

UNLESS OTHERWISE SPECIFIED:  
ALL DIMENSIONS ARE IN INCHES[mm].  
TOLERANCES: FRACTIONAL: XX + 1/16" [1.6mm]  
DECIMAL: XX + 0.025"  
XXX + 0.02"  
XXXX + 0.015"  
DEGREES: ± 0.5°

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TITLE: SLIMLINE ENVIRO-CONE 28IN SPECIFICATIONS		SIZE <b>B</b>	DWG. NO. <b>16028-SL-SPEC</b>	REV <b>A</b>
DRAWN BY: Christopher Jaime	DATE: 1/8/18			
CHECKED BY: FA	DATE: 1/8/18			
APPROVED BY: FA	DATE: 1/8/18			





3. Operating Temperature Range: -40 to +180 degrees Fahrenheit
  2. All dimensions are in inches
  1. Colors available in Orange and Lime Green
- NOTE: UNLESS OTHERWISE SPECIFIED**

UNLESS OTHERWISE SPECIFIED:  
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CHECKED BY: FA	DATE: 11/21/14			
APPROVED BY: FA	DATE: 11/21/14			