



88771\_QSG\_TRA\_LED-Enhanced-Sign\_RevA

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## 1.1 Safety Precautions

**ELECTRICAL SHOCK HAZARD. DO NOT LET THE BATTERY TERMINALS COME INTO CONTACT WITH ANY EXPOSED METAL.**

Before lifting any heavy or bulky equipment, ensure the load is secured so moving parts do not shift, and that it can be lifted as far as needed without back strain or loss of grip. Installation may require more than one person.



Ensure the equipment is not powered during installation and wiring of the system. Recheck all completed wiring for proper polarity prior to energizing the system.

Perform all installation, wiring, grounding and maintenance in conformance with local building and electrical codes. Adherence to the National Electrical Code (NEC) is mandatory to comply with any certification markings. Non-adherence to code may void the warranty.

Only use approved Carmanah Energy Management System to power Carmanah LED Enhanced Signs. Do not exceed maximum current settings as shown in 6.1.

Changes or modifications to Carmanah equipment not expressly approved by Carmanah could void both the user's authority to operate the equipment and the warranty.

**NOTE**

**This quick start guide is not a replacement for the complete system user manual.**  
Visit [carmanah.com](http://carmanah.com) to download the complete system user manual.

## 2.1 Tools and Materials Required

The following tools and materials may be required to mount your Carmanah LED Enhanced Sign depending on the exact model and mounting configuration:

<ul style="list-style-type: none"> <li>a. Imperial socket set</li> <li>b. Crescent wrench</li> <li>c. Fish tape</li> <li>d. Drill and drill bits (including 3/4")</li> <li>e. Cable tie gun</li> </ul>	<ul style="list-style-type: none"> <li>f. Tape measure</li> <li>g. Fine-tip felt marker</li> <li>h. Phillips #2 screwdriver</li> <li>i. Ladder or lift device</li> </ul>
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**NOTE**

Depending on sign mounting configuration and hardware kits ordered, customer may need to supply some mounting hardware such as 3/4" banding, 1/2" U-bolts, or 5/16" bolts/nuts.

## 3.1 Commissioning

After installing the LED Enhanced Sign, the following commissioning verification checklist helps ensure that everything is working as it should be and that your system is ready to serve the public for many years of reliable and sustained operation.

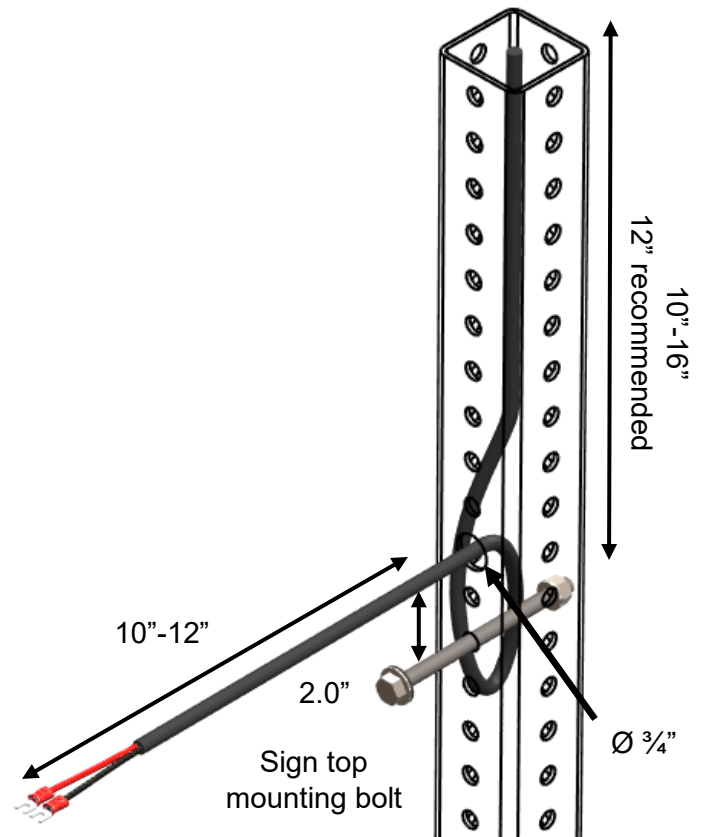
- Sign is securely mounted to the post and pointed in the correct direction toward oncoming traffic lanes.
- Terminal block screws are tight and junction box cover is secure.

## 4.1 Sign Installation

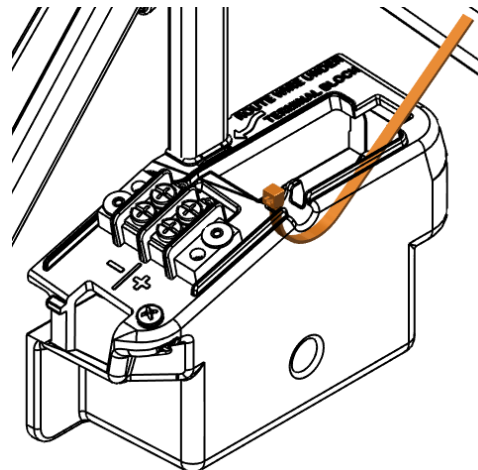
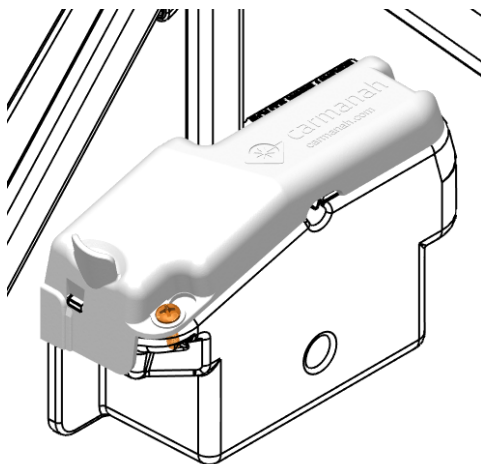
1. Mark top mounting hardware location and cable exit point on post.

**NOTE:** For through-bolting to non-perforated post, drill top and bottom mounting holes at the correct spacing per 5.1.

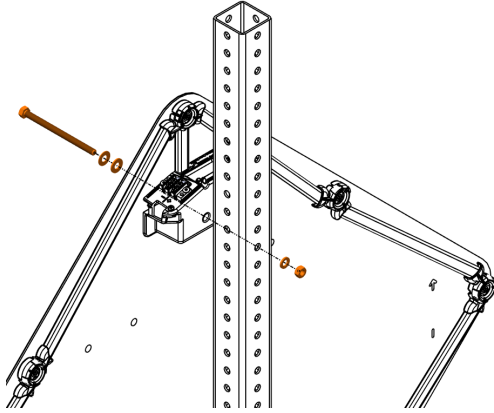
2. Drill or enlarge and deburr cable exit hole to  $\frac{3}{4}$ " at marked location.
3. Fish wire through hole in post, exposing 10" to 12". Create a drip loop inside the post as shown.



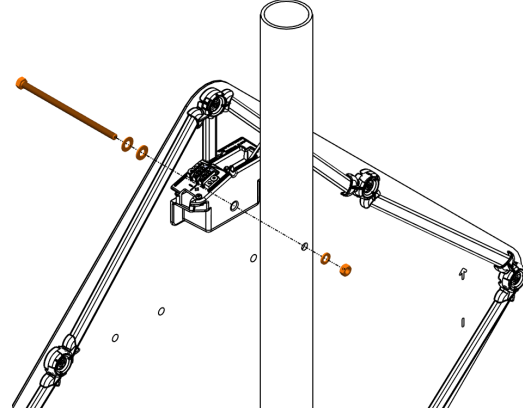
4. Loosen screw, remove junction box cover, and prepare cable tie for installation.



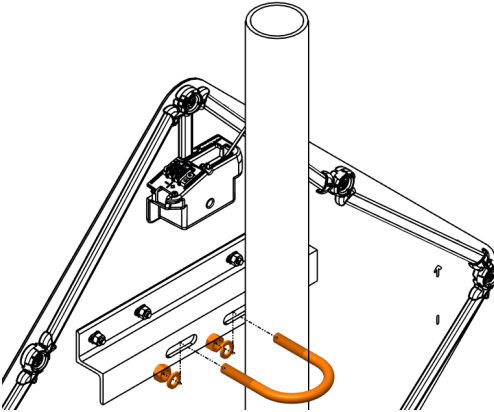
5. Mount sign to post using appropriate hardware as shown below. Ensure hardware is in correct order—starting with bolt, flat washer, nylon washer—so that the nylon washer is directly against the sign sheeting. Ensure the junction box cable entry point is aligned with the cable exit hole on the post.



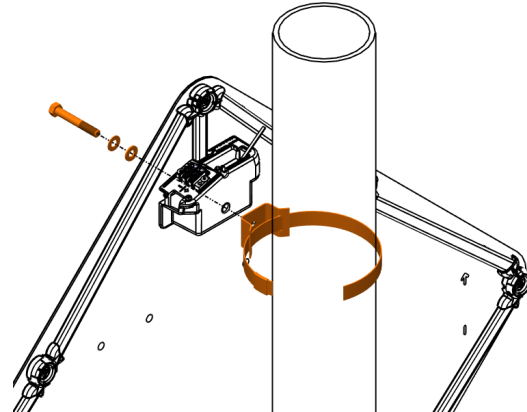
Through-bolted to square post



Through-bolted to round post (drilling required)

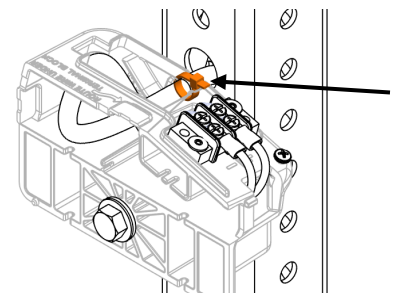
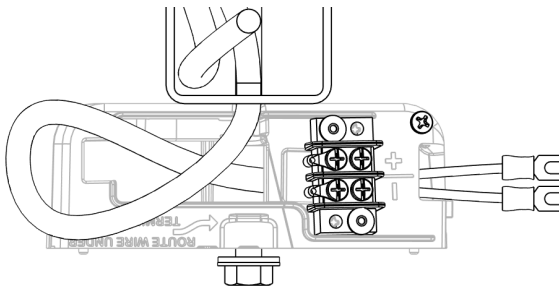


Z-bracket sign U-bolted to post



Banded to post

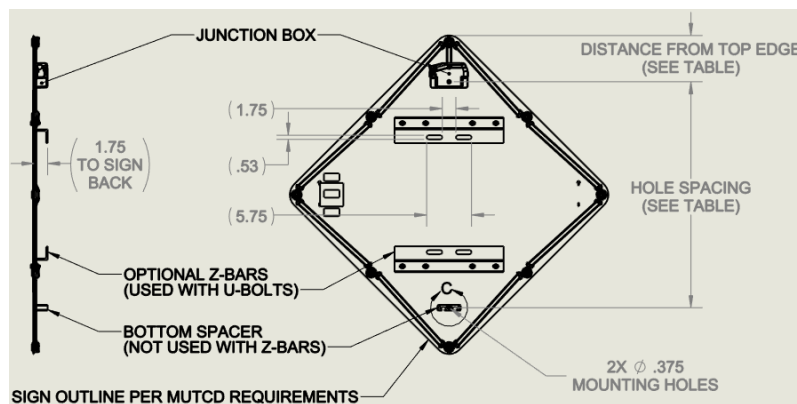
6. Route cable in junction box as shown and connect wires respecting polarity: red to “+” and black to “-”. Tighten and trim supplied cable tie to secure cable (sign hidden for clarity).



7. Re-install junction box cover and secure by tightening screw. Do not over-tighten.

## 5.1 Mounting Hole Spacing

Sign Size and Shape	Hole Spacing	Distance from Top Edge
24" DIAMOND	21"	5.85"
30" DIAMOND	29"	5.94"
36" DIAMOND	37"	6.02"
48" DIAMOND	48"	8.7"
24" STOP	18"	2.2"
30" STOP	24"	2.33"
36" STOP	30"	2.45"
48" STOP	40"	2.83"
30" YIELD	15"	2.63"
36" YIELD	20"	2.76"
48" YIELD	28"	3"
60" YIELD	36"	3.5"
30" SCHOOL ZONE	20"	6.22"
36" SCHOOL ZONE	25"	7.07"
48" SCHOOL ZONE	34"	8.76"
30X18" WRONG WAY	13"	2.63"
36X24" WRONG WAY	18"	2.88"
42X30" WRONG WAY	23"	3.13"
24x48" School Speed Limit	42"	1.9"



## 6.1 Maximum Intensity Settings

Do not exceed the following Carmanah Energy Management System intensity settings for the LED Enhanced Sign:

Maximum Intensity Setting (mA)			
Flash Pattern and Fixture layout		Yellow or White LEDs	Red LEDs
Steady-on	Single or Series	260	340
	Single or Alternating	520	700
0.5s on 0.5s off	Dual Unison	1040	1400
	Single	1040	1040
0.1s on 0.9s off	Dual Unison	1400	1400

Consult complete system user manual or contact Carmanah for other flash pattern and fixture combinations.

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