

Maintenance Innovation State of the Practice

Maintenance Innovation: MASH Guardrail End Terminal Installation

Description: AASHTO’s MASH (Manual for Assessing Safety Hardware) guidelines ensure consistent crash safety for highway safety hardware. Guardrail and end terminal designs must pass evaluation under MASH guidelines and state department of transportation (DOT) maintenance programs may need to amend installation procedures.



(Source: Federal Highway Administration.)

Requester Name/Agency: Matt Pratt, Michigan Department of Transportation

Date of Request: April 16, 2024

Query: How does your agency install guardrail post for new MASH guardrail end terminals, as some posts are required to be installed 6’ into the ground?

1. Use a post driver/pounder to install post?
 - a. Truck mounted? If yes, please provide make and model number.
 - b. Skid steer mounted? If yes, please provide make and model number.
2. Use a vibratory post driver to install post?
 - a. Truck mounted? If yes, please provide make and model number.
 - b. Skid steer mounted? If yes, please provide make and model number.
3. Auger a hole and install the post?
4. Other methods (beat them in with a backhoe bucket)?

Summary of Responses:

As summarized in the table below, three states install guardrail posts in-house (*Connecticut, North Dakota and Texas*); the remaining nine responding states use contractors for this installation. Of the states using contractors, some commented on performing related work themselves (*Idaho and Virginia*) while others reported on contractor methods (*Maine, Maryland, South Carolina and Utah*).

State	In-House Guardrail Post Installation	Contractor Guardrail Post Installation	Comments
California		X	None provided
Connecticut	X		<ul style="list-style-type: none"> • GRT Utilicorp, Inc. post pounder (model GRT UTHDLPD1512) is mounted on a 10-wheel truck chassis. • An auger or skid steer is used with the pounder unit, as needed. • The agency is testing a Viking trailer-mounted unit.
Idaho		X	Truck-mounted post pounders are mainly used for maintenance and repairs.

State	In-House Guardrail Post Installation	Contractor Guardrail Post Installation	Comments
Indiana		X	None provided
Maine		X	Guardrail post pounders, similar to a forklift with a hydraulic pounder on the front, have been used.
Maryland		X	Both installation and life cycle maintenance are contracted. Contractors use hammer/pounder-style post drivers mounted on 1-ton trucks.
North Dakota	X		An auger is used to install posts.
Ohio		X	None provided
South Carolina		X	Contractors use truck-mounted post pounders.
Texas	X		<ul style="list-style-type: none"> • Different guardrail styles across the state necessitate variations in repair methods. • Recently formed regional crews perform guardrail repair around the state using skid steer augers. • The agency is purchasing two GRT Utilicorp, Inc. zero tail swing post driver/drill trucks.
Utah		X	<ul style="list-style-type: none"> • One contractor method involves punching a hole in the ground and assembling the top post to the lower post with a soil tube attached. The hole is backfilled and compacted. Remaining posts are installed using a punch truck. This is the faster method. • Alternative installation method: Lower post is installed with a soil tube and a special head protecting the post's top as the punch truck drives the post into the ground before the upper post is installed.
Virginia		X	While the agency performs minor beam maintenance, work involving posts is contracted.

Reference

[GRT Utilicorp, Inc.](#), 2017.

Manufacturer of post driving and drilling equipment for a wide array of industries and applications.