

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY PORTABLE RUMBLE STRIPS

COS:CRB

1 of 2

APPR:LLR:MRB:01-22-21
FHWA:APPR:01-28-21

a. Description. This work consists of furnishing, installing, maintaining, relocating, and removing temporary portable rumble strips.

b. Materials. Provide temporary portable rumble strips in accordance with the following:

1. Construct the rumble strip from engineered polymers designed to maintain integrity for at least the 0 degree to 180 degree Fahrenheit (F) temperature range. Ensure polymers do not degrade due to weather or traffic conditions for the duration of use. The unit is to be colored white, black, or orange. The bottom side of the rumble strip must include a design feature that allows liquid drainage underneath without causing displacement of the unit. The leading and tail edges of the rumble strip are to be beveled, designed to allow the safe passage of motorcycles over the unit. The rumble strip must provide an auditory and tactile response to vehicle crossing events, while minimizing any displacement. The rumble strip must provide a minimum coverage of 11 feet across the lane and be a minimum of 12 inches wide. The rumble strip is not to require adhesives, nails, or any other "affixing" materials for installation.

2. The rumble strip must maintain acceptable performance when subjected to a variety of traffic conditions including roadways with normally posted speed limits up to 65 miles per hour (mph), and commercial heavy trucks.

3. Ensure the rumble strip is in an acceptable condition and is free of any defects prior to installation.

4. Use RoadQuake 2F, manufactured by Plastic Safety Systems Inc., 2444 Baldwin Rd, Cleveland, Ohio, 44104, (800)-662-6338.

c. Construction. Install the rumble strips in accordance with the manufacturer's recommendations, and the following:

1. Ensure the pavement surface is clear of all foreign material such as gravel, sand, or other debris. Place each rumble strip on a uniform paved surface free of defects including, potholes, excessive rutting, separated transverse joints, and utility structures. Do not install rumble strips on horizontal curves or steep vertical curves.

2. Install each rumble strip perpendicular to the travel direction and ensure the strip is in complete contact with the road surface. Center the strip in the lane to maximize contact with traffic and minimize opportunities for motorists to maneuver around the rumble strips.

3. A rumble strip array consists of three rumble strips installed with spacing as described

in Table 1, plus or minus 6-inch tolerance for adjusting due to inadequacies with the roadway, unless otherwise approved by the Engineer. Place two rumble strip arrays on the mainline in each direction of approach to the work zone.

Table 1: Rumble Strip Spacing

Normally Posted Speed Limit	On Center Spacing
40 mph or Less	10 feet
45 to 55 mph	15 feet
60 to 65 mph	20 feet

4. Locate the arrays based on the following recommendations, unless field conditions prohibit or otherwise shown on the plans or as directed by the Engineer:

A. The first rumble strip array is recommended to be placed approximately 200 feet in advance of the Road Work Ahead (W20-1) sign.

B. The second rumble strip array is recommended to be placed approximately 200 feet in advance of the Traffic Regulator (W20-7a) sign.

5. Once properly installed, maintain the rumble strips as necessary throughout deployment. Re-adjustment is required if a rumble strip displaces such that: it is no longer perpendicular to the direction of travel, it is skewed by at least 6 inches, will not remain flat on the paved surface for any reason, or no longer satisfies the above conditions. Replace rumble strips with faulty connections, worn rubber, exposed metal, or torn material as directed by the Engineer.

6. Remove the temporary rumble strips from the roadway simultaneously with the rest of the temporary traffic control devices (TTCD) on the project during all inactive periods or when no longer needed as directed by the Engineer. Rumble strips are to be placed flat on the ground, and not stacked, when stored on the roadside. Once removed, rumble strips may be stored on the jobsite outside of the clear zone.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

Pay Item	Pay Unit
Rumble Strip, Temp, Portable, Furn	Each
Rumble Strip, Temp, Portable, Oper.....	Each

1. **Rumble Strip, Temp, Portable, Furn** will be measured by counting as a total quantity each rumble strip furnished and installed. Replacement of rumble strips damaged by vehicular traffic other than the Contractor's vehicles and equipment will be paid for as **Rumble Strip, Temp, Portable, Furn**.

2. **Rumble Strip, Temp, Portable, Oper** will be counted as a total quantity and includes operating, inspecting, maintaining, cleaning, relocating, and removing each rumble strip.