



## NATURAL RESOURCES CONSERVATION SERVICE MISSOURI CONSTRUCTION SPECIFICATION

### ROOF RUNOFF STRUCTURE CODE 558

#### **GENERAL**

This item of work shall consist of furnishing and installing the specified gutters, downspouts, outlets and appurtenances for a roof runoff structure as shown on the plans.

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field. All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used.

#### **GUTTERS AND DOWNSPOUTS**

##### **Materials**

Roof gutters and downspouts will be the type and size specified on the drawings with the following properties:

**Wood** shall be clear and free of knots. A water-repellent preservative shall be applied to the flow area of wood other than redwood, cedar, or cypress.

**Plastic** shall contain ultraviolet stabilizers.

**Aluminum** shall have a baked enamel finish and shall have a nominal thickness of 0.027 inches for the gutters and 0.020 for the downspouts.

**Steel** shall be galvanized with a minimum thickness of 28 gauge.

All gutter and downspout joints shall be made water-tight by use of mastic or caulking. Dissimilar metals shall not be in contact with each other.

##### **Supports**

Gutter supports shall be installed as recommended by the manufacturer except that spikes and ferrules shall not be used. Unless otherwise shown on the drawings, the supports shall have a maximum spacing of 48 inches for galvanized steel and 32 inches for aluminum or plastic. Wood gutters shall be mounted on fascia boards using furring blocks that are a maximum of 24 inches apart.

Downspouts shall be securely fastened at the top and bottom with intermediate supports that are a maximum of 10 feet apart. Lateral and/or diagonal downspouts shall have supports that are a maximum of 5 feet apart.

**Installation**

Gutters shall be placed below the roof slope line so ice and snow can slide clear. Unless otherwise shown on the drawings, the top outer edge of the gutter shall be at least ½ inch below the projected roof slope line on roofs with pitches steeper than 5V:12H and at least ¾ inch below on roofs with pitches of 5V:12H or flatter. Unless otherwise shown on the drawings gutter slopes shall be a minimum of ¼ inch fall per 10 feet of length.

**Outlets**

Outlet facilities shall be installed as shown on the drawings. When downspouts empty onto the ground surface, there shall be an elbow to direct water away from the building and splash blocks or other protection as shown on the drawings shall be provided to prevent erosion.

Refer to the Underground Outlet 620 (UGO) construction specification if plans include the installation of a UGO for a downspout outlet.

**DRIP TRENCHES (Ground Gutters)**

**Materials**

Gravel material used to fill the drip trench shall be washed and free of fines. Gradation shall be as shown on the drawings. Pipe used as drains shall conform to the size and material specified on the drawings. All joints shall be secure and inspected prior to placing gravel material over pipe. No compaction of the gravel material shall be required.

**Outlets**

The outlet(s) for the drip trench pipe shall be located to be free-flowing, protected from animal and equipment damage and shall have an animal guard of appropriate size and type installed. The outlet shall be located to minimize erosion and flooding. Upon completion of construction, all disturbed areas shall be graded to drain and seeded and mulched. Refer to Vegetation Establishment, Herbaceous Seeding (723) specification or equivalent for seeding and mulching requirements.

**Additional Details:** \_\_\_\_\_  
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**NATURAL RESOURCES CONSERVATION SERVICE MISSOURI  
OPERATION AND MAINTENANCE**

**ROOF RUNOFF STRUCTURE  
CODE 558**

**OPERATION AND MAINTENANCE ACTIVITIES**

**General**

Make regular inspections to ensure proper functioning of the roof runoff structure system.

Failures should be corrected as soon as possible to prevent major damages.

**Gutters and Downspouts**

Keep gutters and downspouts clean of debris and obstructions that will reduce flow.

Maintain outlet elbows, extensions and energy dissipation pads in working order and ensure that water is still being directed away from the building without erosion to the surrounding ground surface.

**Drip Trenches (Ground Gutters)**

Inspect drain surface inlet and remove any vegetation or debris that will block or divert flow entering the drain.

Inspect outlet pipe and animal guards to ensure that the outlets are flowing freely. Remove any obstructions found and repair any damage to the animal guard.

**Vegetation**

The vegetation in area of outlet shall be maintained to prevent sheet and rill erosion or gullying from roof runoff structure outlet flows.

**Additional Details:** \_\_\_\_\_  
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