

DOUBLE WING DEFLECTOR:

Description

This work consists of the construction and maintenance of physical barriers placed in and along the stream at locations designated on the plans to direct the stream flow (thalweg) toward the center of the channel.

The quantity of double wing deflectors to be installed will be affected by the actual conditions that occur during the construction of the project. The quantity of double wing deflectors may be increased, decreased, or eliminated entirely as directed. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

Materials

Refer to Division 10 of NCDOT 2018 Standard Specifications for Roads and Structures

Item	Section
Boulder	1042 and SP for Structure Stone
No. 57 Stone	1005
Riprap, Class A	1042
Geotextile for Drainage, Type 2	1056

Boulders shall be used as header and footer rocks for this device.

Construction Methods

Double wing deflectors shall be constructed according to the Double Wing Deflector Detail shown on the plans or as directed. Two vanes each approximately 1/3 of the stream channel's bankfull width will form a 20°- 30° angle out from the streambank toward upstream. The top elevation of both vanes will decrease from one half of bankfull elevation down to the streambed elevation and toward the center of the channel at a slope of 4 to 10 percent. Two vanes running parallel to the stream's flow along the center third of the stream channel will connect to each of these two outside vanes on the upstream end. The top elevation of both of these parallel vanes will be at the stream bed elevation at zero percent slope. At the upstream ends of these two vanes running parallel to the stream's flow, two vanes each approximately 1/3 of the stream channel's width will form a 20°- 30° angle back toward the streambank and toward upstream. The top elevation of both of these vanes will be at the stream bed elevation at zero percent slope. Install header and footer rocks according to the detail and plate the upstream side with Geotextile, Type 2 and No. 57 stone. Voids between the header and footer rocks can be filled with hand-placed Class A Riprap at the direction of the Engineer. Footer rocks shall be placed such that the header rock is at streambed elevation. The double wing deflector vane shall be keyed into the bank at the downstream end as shown on the Double Wing Deflector Detail.

Measurement and Payment

Boulders will be measured and paid for as provided in the Structure Stone Special Provision.

No. 57 Stone will be measured and paid for as provided in the Structure Stone Special Provision.

Riprap, Class A will be measured and paid for as provided in the Structure Stone Special Provision.

Geotextile for Drainage, Type 2 will be measured and paid for as provided in the Structure Stone Special Provision.

Such price and payment will be full compensation for all work covered by this section, including, but not limited to furnishing all materials, labor, equipment, and incidentals necessary to construct the double wing deflectors.