

Section 846

1 No separate payment will be made for concrete aprons shown in *Roadway Standard Drawings*
2 No. 840.17, 840.18, 840.19, 840.26, 840.27 and 840.28, as this work will be incidental to the
3 other work in this section.

4 *Foundation Conditioning Material, Minor Structures* will be paid as provided in Article
5 300-9.

6 The above prices and payments will be full compensation for all work covered by this section.

7 Payment will be made under:

Pay Item	Pay Unit
Masonry Drainage Structures	Each
Masonry Drainage Structures	Linear Foot
Masonry Drainage Structures	Cubic Yard
Pipe Collars	Cubic Yard
Pipe Plugs	Cubic Yard
Frame with Grate and Hood, Std. _____	Each
Frame with Grate, Std. _____	Each
Frame with Two Grates, Std. _____	Each
Frame with Cover, Std. _____	Each
Steel Frame with Two Grates, Std. _____	Each

8 **SECTION 846**
9 **CONCRETE CURB, CURB AND GUTTER, CONCRETE**
10 **GUTTER, SHOULDER BERM GUTTER, CONCRETE EXPRESSWAY**
11 **GUTTER AND CONCRETE VALLEY GUTTER**

12 **846-1 DESCRIPTION**

13 Construct Portland cement concrete curb, concrete curb and gutter, concrete gutter, shoulder
14 berm gutter, concrete expressway gutter and 4 inch concrete valley gutter as shown in the
15 contract.

16 **846-2 MATERIALS**

17 Refer to Division 10.

Item	Section
Curing Agents	1026
Joint Fillers	1028-1
Joint Sealers	1028-2, 1028-3
Portland Cement Concrete, Class B	1000

18 **846-3 CONSTRUCTION METHODS**

19 **(A) General**

20 Construct concrete in accordance with Section 825, except as provided herein.

21 Give surface a light broom finish with brush marks parallel to the curb line or gutter line.

22 Prepare foundation and compact base or subgrade to the degree required by the
23 applicable section of the *Standard Specifications* before placing forms.

24 **(B) Forms**

25 Use forms that have no more than 1/8 inch in 10 feet deflection from true line
26 horizontally and vertically to adequately support the concrete and construction
27 equipment.

28 Obtain approval before placing concrete.

(C) Joints

Locate joints as shown in the plans except as provided herein.

Space joints no closer than 5 feet.

Locate joints to line up with the joints in concrete pavement when placed adjacent to concrete pavement.

Form grooved contraction joints as required by Subarticle 825-10(B).

Construct grooved butt joint between the work and adjacent pavement except where expansion joints are required by the plans. Form butt joints as required by Subarticle 825-10(B) for grooved contraction joints and seal.

Seal all joints except for joints in curb sections not having an integral gutter.

Fill joints in gutter with joint sealer to the top surface of the gutter.

Seal joints before backfilling or performing adjacent operations.

(D) Surface Tolerances

Finish surface within 1/4 inch when checked longitudinally with a 10 foot straightedge.

(E) Backfilling

Do not place backfill or pavement adjacent to the curb, curb and gutter, gutter, shoulder berm gutter, expressway gutter or concrete valley gutter until at least 3 curing days, as defined in Article 825-9, have elapsed.

Complete backfill within 4 calendar days after the completion of the 3 day curing period unless otherwise approved.

Compact backfill to an approved density.

(F) Opening to Traffic

Vehicles may be permitted on the completed work after the following curing days, as defined in Article 825-9, have elapsed. For regular strength concrete, cure for at least 7 curing days. For high early strength concrete, cure for at least 3 curing days.

846-4 MEASUREMENT AND PAYMENT

 " x " *Concrete Curb* will be measured and paid in linear feet, accepted in place, along the surface of the top of the curb.

 ' " *Concrete Curb and Gutter* will be measured and paid in linear feet, accepted in place. Measurement will be made along the surface of the top of the curb.

 ' *Concrete Gutter* will be measured and paid in linear feet accepted in place. Measurement will be made along the surface of the top of the curb.

Shoulder Berm Gutter will be measured and paid in linear feet, accepted in place. Measurement will be made along the surface of the top of the curb.

Concrete Expressway Gutter will be measured and paid in linear feet, accepted in place. Measurement will be made along the surface of the top of the curb.

Concrete Valley Gutter will be measured and paid in linear feet, accepted in place. Measurement will be made along the surface of the top of the curb.

Work includes providing all materials, placing all concrete, excavating and backfilling, forming, finishing, constructing and sealing joints, and all incidentals necessary to complete the work.

Section 848

1 Payment will be made under:

Pay Item	Pay Unit
___" x ___" Concrete Curb	Linear Foot
___' ___" Concrete Curb and Gutter	Linear Foot
___' Concrete Gutter	Linear Foot
Shoulder Berm Gutter	Linear Foot
Concrete Expressway Gutter	Linear Foot
Concrete Valley Gutter	Linear Foot

2 **SECTION 848**
3 **CONCRETE SIDEWALKS, DRIVEWAYS AND CURB RAMPS**

4 **848-1 DESCRIPTION**

5 Construct Portland cement concrete sidewalks, driveways and curb ramps in accordance with
6 the contract.

7 **848-2 MATERIALS**

8 Refer to Division 10.

Item	Section
Curing Agents	1026
Joint Fillers	1028-1
Joint Sealers	1028-2, 1028-3
Portland Cement Concrete, Class B	1000

9 Detectable warning for curb ramps shall consist of raised truncated domes. Use material for
10 detectable warning systems as shown herein. Material and coating specifications must be
11 stated in the Manufacturers Type 3 Certification and all Detectable Warning systems must be
12 on the NCDOT APL.

13 Install detectable warnings created from one of the following materials: precast concrete
14 blocks or bricks, clay paving brick, gray or ductile iron castings, mild steel, stainless steel,
15 and engineered plastics, rubber or composite tile. Only one material type for detectable
16 warning will be permitted per project, unless otherwise approved by the Engineer.

17 Detectable Warnings shall consist of a base with integrated raised truncated domes, and when
18 constructed of precast concrete they shall conform to the material requirements.

19 Detectable Warnings shall consist of a base with integrated raised truncated domes, and may
20 be comprised of other materials including, but not limited to, clay paving brick, gray iron or
21 ductile iron castings, mild steel, stainless steel, and engineered plastics, rubber or composite
22 tile, which are applied directly to the curb ramps by incorporating into or attaching to the
23 existing ramp floor. The material shall have an integral color throughout the thickness of the
24 material. The detectable warning shall include fasteners, anchors, or adhesives for attachment
25 in the existing ramp and shall be furnished as a system from the manufacturer.

26 Prior to installation, the Contractor shall submit to the Engineer assembling instructions from
27 the manufacturer for each type of system used. The system shall be furnished as a kit
28 containing all consumable materials and consumable tools, required for the application. They
29 shall be capable of being affixed to or anchored in the concrete curb ramp, including green
30 concrete (concrete that has set but not appreciably hardened). The system shall be solvent
31 free and contain no volatile organic compounds (VOC). The static coefficient of friction shall
32 be 0.8 or greater when measured on top of the truncated domes and when measured between
33 the domes in accordance with ASTM C1028 (dry and wet). The system shall be resistant to
34 deterioration due to exposure to sunlight, water, salt or adverse weather conditions and
35 impervious to degradation by motor fuels, lubricants and antifreeze.