

PROJECT SPECIAL PROVISIONS**ROADWAY****SHOULDER RECONSTRUCTION PER SHOULDER MILE**

(1-18-00) (Rev 11-16-10)

R1 R07 B(Rev.)

Description

This work consists of reconstructing each shoulder (including median shoulders as applicable) in accordance with Roadway Standard Nos. 560.01 and 560.02 except that the rate of slope and width will be as shown on typical section, or to the existing shoulder point, whichever is nearer, as long as the desired typical is achieved and upon completion, seeding and mulching. This work shall be performed immediately after the resurfacing operations are complete as directed by the Engineer.

Materials

The Contractor shall use Aggregate Shoulder Borrow (ASB) which meets the following gradation on all maps unless otherwise directed by the Engineer.

<u>Sieve</u>	<u>Percent Passing</u>
1 1/2"	100
1/2"	55 – 95
#4	35 – 74

Construction Methods

Material shall be compacted to the satisfaction of the Engineer.

Any excess material generated by the shoulder reconstruction shall be disposed of by the Contractor in an approved disposal site.

Measurement and Payment

Shoulder Reconstruction will be measured and paid for as the actual number of miles of shoulders that have been reconstructed. Measurement will be made along the surface of each shoulder to the nearest 0.01 of a mile. Such price will include disposing of any excess material in an approved disposal site, **seeding and mulching** and for all labor, tools, equipment, and incidentals necessary to complete the work.

Incidental Stone Base will be measured and paid for as provided in Article 545-6 of the *Standard Specifications*. If ASB is used for Incidental Stone Base, payment will be made for Aggregate Shoulder Borrow as referenced above.

Payment will be made under:

Pay Item	Pay Unit
Shoulder Reconstruction	Shoulder Mile
Aggregate Shoulder Borrow	Ton

INCIDENTAL STONE BASE:

(7-1-95) (Rev.7-18-06)

545

R5 R28

Description

Place incidental stone base on driveways, mailboxes, etc. immediately after paving and do not have the paving operations exceed stone base placement by more than one week without written permission of the Engineer.

Materials and Construction

Provide and place incidental stone base in accordance with Section 545 of the *2012 Standard Specifications*.

Measurement and Payment

Incidental Stone Base will be measured and paid in accordance with Article 545-6 of the *2012 Standard Specifications*.

ASPHALT PAVEMENTS - SUPERPAVE:

(6-19-12)

605

R6 R01

Revise the *2012 Standard Specifications* as follows:

Page 6-3, Article 605-7 APPLICATION RATES AND TEMPERATURES, replace this article, including Table 601-1, with the following:

Apply tack coat uniformly across the existing surface at target application rates shown in Table 605-1.

**TABLE 605-1
APPLICATION RATES FOR TACK COAT**

Existing Surface	Target Rate (gal/sy)
	Emulsified Asphalt
New Asphalt	0.04 ± 0.01
Oxidized or Milled Asphalt	0.06 ± 0.01
Concrete	0.08 ± 0.01

Apply tack coat at a temperature within the ranges shown in Table 605-2. Tack coat shall not be overheated during storage, transport or at application.

**TABLE 605-2
APPLICATION TEMPERATURE FOR TACK COAT**

Asphalt Material	Temperature Range
Asphalt Binder, Grade PG 64-22	350 - 400°F
Emulsified Asphalt, Grade RS-1H	130 - 160°F
Emulsified Asphalt, Grade CRS-1	130 - 160°F
Emulsified Asphalt, Grade CRS-1H	130 - 160°F
Emulsified Asphalt, Grade HFMS-1	130 - 160°F
Emulsified Asphalt, Grade CRS-2	130 - 160°F

Page 6-18, Article 610-1 DESCRIPTION, lines 40-41, delete the last sentence of the last paragraph.

Page 6-19, Subarticle 610-3(A) Mix Design-General, line 5, add the following as the first paragraph:

Warm mix asphalt (WMA) is allowed for use at the Contractor's option in accordance with the NCDOT Approved Products List for WMA Technologies available at:

<http://www.ncdot.org/doh/operations/materials/pdf/wma.pdf>.

ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:

(11-21-00) (Rev. 7-17-12)

609

R6 R15

The approximate asphalt binder content of the asphalt concrete plant mixtures used on this project will be as follows:

Asphalt Concrete Base Course	Type B 25.0	4.4%
Asphalt Concrete Intermediate Course	Type I 19.0	4.8%
Asphalt Concrete Surface Course	Type S 4.75A	6.8%
Asphalt Concrete Surface Course	Type SA-1	6.8%
Asphalt Concrete Surface Course	Type SF 9.5A	6.7%
Asphalt Concrete Surface Course	Type S 9.5	6.0%
Asphalt Concrete Surface Course	Type S 12.5	5.6%

The actual asphalt binder content will be established during construction by the Engineer within the limits established in the *2012 Standard Specifications*.

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

(11-21-00)

620

R6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the *2012 Standard Specifications*.

The base price index for asphalt binder for plant mix is **\$639.00** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **June 1, 2012**.

FINAL SURFACE TESTING NOT REQUIRED:

(5-18-04) (Rev. 5-15-12)

610

R6 R45

Final surface testing is not required on this project.

ASPHALT CONCRETE SURFACE COURSE COMPACTION:

(7-1-95)

R6 R49

Compact the asphalt surface course on this project in accordance with Subarticle 610-9 of the *2012 Standard Specifications* and the following provision:

Perform the first rolling with a steel wheel roller followed by rolling with a self-propelled pneumatic tired roller with the final rolling by a steel wheel roller.

RESURFACING EXISTING BRIDGES:

(7-1-95) (Rev. 3-20-12)

R6 R61A

The Contractor's attention is directed to the fact that he will be required to resurface the bridges on this project if directed by the Engineer.

Place the surface so as to follow a grade line set by the Engineer with the minimum thickness as shown on the sketch herein or as directed by the Engineer. State Forces will make all necessary repairs to the bridge floors prior to the time that the Contractor places the proposed surfacing. Give the Engineer at least 15 days notice prior to the expected time to begin operations so that State Forces will have sufficient time to complete their work.

At all bridges that are not to be resurfaced, taper out the proposed resurfacing layer adjacent to the bridges to insure a proper tie-in with the bridge surface.

ASPHALT CONCRETE SURFACE COURSE, TYPE xxx (Leveling Course):

(7-1-95)

610

R6 R85

Place a leveling course of *Asphalt Concrete Surface Course, Type ___* at locations shown on the sketch maps and as directed by the Engineer. The rate of this leveling course is not established but will be determined by allowing the screed to *drag* the high points of the section. It is anticipated that some map numbers will be leveled from beginning to end while others may only require a leveling course for short sections.

The Asphalt Concrete Surface Course, Type __ (Leveling Course) shall meet the requirements of Section 610 of the *2012 Standard Specifications* except payment will be made at the contract unit price per ton for *Asphalt Concrete Surface Course, Type __ (Leveling Course)*.

PATCHING EXISTING PAVEMENT (Div. 12 SP)

1-15-02

Description

The Contractor's attention is directed to the fact that there are areas of existing pavement on this project that will require repair prior to resurfacing.

Patch the areas that, in the opinion of the Engineer, need repairing. The areas to be patched will be delineated by the Engineer prior to the Contractor performing repairs.

Construction Methods

The patching consists of Asphalt Concrete Base Course, Asphalt Concrete Intermediate Course, Asphalt Concrete Surface Course, or a combination of base, binder and surface course, and pavement removal, as directed by the Engineer.

The Contractor's attention is directed to the fact that all patching of existing pavement performed under this contract shall be performed with the use of a milling machine. This machine shall have a minimum cutting width of 36", be of sufficient size and capacity to

perform the work. The machine shall have been designed and built exclusively for pavement milling operations and shall have sufficient power, traction and stability to accurately maintain depth of cut and slope. Multiple passes may be required to remove deteriorated pavement.

Milling width and depth will be varied by Engineer's representative to accomplish desired results. Payment will be made for the area delineated by the Engineer. Any overages resulting from equipment limitations will not be compensated.

Patching of existing pavement includes but is not limited to the **milling** of the existing pavement to a neat vertical joint and uniform line; the removal and disposal of pavement, base, and subgrade material as approved or directed by the Engineer; the coating of the area to be repaired with a tack coat; and the replacement of the removed material with asphalt plant mix.

Place Asphalt Concrete Base Course, in lifts not exceeding 5 1/2 inches. Utilize compaction equipment suitable for compacting patches as small as 3.5 feet by 6 feet on each lift. Use an approved compaction pattern to achieve proper compaction. If patched pavement is to be open to traffic for more than 48 hours prior to overlay, then use Asphalt Surface Course in the top 1.25 inches of the patch.

Remove existing pavement at locations directed by the Engineer in accordance with Section 250 of the Standard Specifications.

Schedule operations so that all areas where pavement has been removed will be repaired on the same day of the pavement removal, and all lanes of traffic restored.

Method of Measurement

The quantity of patching existing pavement to be paid for will be the actual number of tons of asphalt plant mix, complete in place, which has been used to make completed and accepted repairs. The asphalt plant mixed material will be measured by being weighed in trucks on certified platform scales or other certified weighing devices.

Basis of Payment

The quantity of patching existing pavement, measured as provided above, will be paid for at the contract unit price per ton for "Patching Existing Pavement".

The above price and payment will be full compensation for all work covered by this provision, including but not limited to removal and disposal of pavement; furnishing and applying tack coat; furnishing, placing, and compacting of asphalt plant mix; furnishing of asphalt binder for the asphalt plant mix; and furnishing scales.

Any provisions included in the contract in the form of project special provisions or in any other form which provide for adjustments in compensation due to variations in the price of asphalt binder will not be applicable to payment for the work covered by this provision.

The item of "Patching Existing Pavement" will be considered to be a minor item. In the event that the item of "Patching Existing Pavement" overruns the original bid quantity by more than 100 percent, the provisions of Article 104-5 pertaining to revised contract unit price for overrunning minor items will not apply to this item.

RR88

Payment will be made under:

Pay Item	Pay Unit
Patching Existing Pavement	Ton

ADJUSTMENT OF MANHOLES, METER BOXES, AND VALVE BOXES:
(7-1-95) REV

The Contractor's attention is directed to Article 858-3 of the *Standard Specifications*. Cast iron or steel fittings (rings) will not be permitted for the adjustment of manholes, meter boxes, and valve boxes on this project.

Make adjustments to manholes on this project using rapid set (grout, mortar, or concrete) that is black in color as approved by the Engineer.

When milling roadway all existing manhole frames, rings, valve boxes, and meter boxes shall be removed and those areas covered with steel plates capable of carrying traffic. Once the asphalt surface course has been placed, the steel plate shall be removed and all manholes, meter boxes, and valve boxes shall be adjusted to finish grade of the new pavement. No separate measurement or payment will be made for steel plates as the cost of such shall be included in the contract unit price bid for Adjustment of Manholes or Adjustment of Meter Boxes or Valve Boxes.

All manhole adjustments shall be completed within fourteen (14) calendar days from the time the paving is completed.

DETECTABLE WARNINGS TO RETROFIT EXISTING CURB RAMPS:

(10-21-03) (Rev. 8-16-11)

848

R8 R125

Description

Construct detectable warnings consisting of raised truncated domes to retrofit existing curb ramps in accordance with the plan details, Section 848 of the *2012 Standard Specifications*, the requirements of the *28 CFR Part 36 ADA Standards for Accessible Design* and these provisions.

Materials

Detectable warning for retrofitting existing curb ramps shall consist of raised truncated domes. The description, size and spacing shall conform to Section 848 of the *2012 Standard Specifications*.

Use material for detectable warning systems as shown herein. Material and coating specifications must be stated in the Manufacturers Type 3 Certification and all Detectable Warning systems must be on the NCDOT Approved Products List.

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

- (A) Detectable Warnings shall consist of a base with integrated raised truncated domes, and when constructed of precast concrete they shall conform to the material requirements of Article 848-2 of the *2012 Standard Specifications*.
- (B) Detectable Warnings shall consist of a base with integrated raised truncated domes, and may be comprised of other materials including, but not limited to, clay paving brick, gray iron or ductile iron castings, mild steel, stainless steel, and engineered plastics, rubber or composite tile, which are applied directly to the curb ramps by incorporating into or attaching to the existing ramp floor. The material shall have an integral color throughout the thickness of the material. The detectable warning shall include fasteners, anchors, or adhesives for attachment in the existing ramp and shall be furnished as a system from the manufacturer.

Prior to installation, the Contractor shall submit to the Engineer assembling instructions from the manufacturer for each type of system used in accordance with Article 105-2 of the *2012 Standard Specifications*. The system shall be furnished as a kit containing all consumable materials and consumable tools, required for the application. They shall be capable of being affixed to or anchored in the concrete curb ramp, including green concrete (concrete that has set but not appreciably hardened). The system shall be solvent free and contain no volatile organic compounds (VOC). The static coefficient of friction shall be 0.8 or greater when measured on top of the truncated domes and when measured between the domes in accordance with ASTM C1028 (dry and wet). The system shall be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to degradation by motor fuels, lubricants and antifreeze.

- (C) When steel or gray iron or ductile iron casting products are provided, only products that meet the requirements of Subarticle 106-1(B) of the *2012 Standard Specifications* may be used. Submit to the Engineer a Type 6 Certification, catalog cuts and installation procedures at least 30 days prior to installation for all.

Construction Methods

- (A) Prior to placing detectable warnings in existing concrete curb ramps, saw cut to the full depth of the concrete, for other material remove as necessary, and adjust the existing subgrade to the proper grade and in accordance with Article 848-3 of the *2012 Standard Specifications*.
- (B) Install all detectable warning to retrofit existing curb ramps in accordance with the manufacturer's recommendations.

Measurement and Payment

Retrofit Existing Curb Ramps with detectable warnings constructed of any type material will be paid as the actual number of retrofitted curb ramps, completed and accepted. Such price and payment will be full compensation for excavating and backfilling; sawing, repairing and replacing portions of the existing curb ramp within the pay limits for retrofit shown on the detail; pavement repairs; furnishing and placing detectable warnings, construction joints and removing and disposing of portions of the existing curb ramp when required and for all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Retrofit Existing Curb Ramp	Each

DETECTABLE WARNINGS FOR PROPOSED CURB RAMPS:

(6-15-10) (Rev. 8-16-11)

848

R8 R126

Description

Construct detectable warnings consisting of integrated raised truncated domes on proposed concrete curb ramps in accordance with the *2012 Standard Specifications*, plan details, the requirements of the *28 CFR Part 36 ADA Standards for Accessible Design* and this provision.

Materials

Detectable warning for proposed curb ramps shall consist of integrated raised truncated domes. The description, size and spacing shall conform to Section 848 of the *2012 Standard Specifications*.

Use material for detectable warning systems as shown herein. Material and coating specifications must be stated in the Manufacturers Type 3 Certification and all Detectable Warning systems must be on the NCDOT Approved Products List.

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

- (A) Detectable Warnings shall consist of a base with integrated raised truncated domes, and when constructed of precast concrete they shall conform to the material requirements of Article 848-2 of the *2012 Standard Specifications*.
- (B) Detectable Warnings shall consist of a base with integrated raised truncated domes, and may be comprised of other materials including, but not limited, to clay paving brick, gray iron or ductile iron castings, mild steel, stainless steel, and engineered plastics, rubber or composite tile, which are cast into the concrete of the curb ramps. The material shall

have an integral color throughout the thickness of the material. The detectable warning shall include fasteners or anchors for attachment in the concrete and shall be furnished as a system from the manufacturer.

Prior to installation, the Contractor shall submit to the Engineer assembling instructions from the manufacturer for each type of system used in accordance with Article 105-2 of the *2012 Standard Specifications*. The system shall be furnished as a kit containing all consumable materials and consumable tools, required for the application. They shall be capable of being affixed to or anchored in the concrete curb ramp, including green concrete (concrete that has set but not appreciably hardened). The system shall be solvent free and contain no volatile organic compounds (VOC). The static coefficient of friction shall be 0.8 or greater when measured on top of the truncated domes and when measured between the domes in accordance with ASTM C1028 (dry and wet). The system shall be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to degradation by motor fuels, lubricants and antifreeze.

- (C) When steel or gray iron or ductile iron casting products are provided, only products that meet the requirements of Subarticle 106-1(B) of the *2012 Standard Specifications* may be used. Submit to the Engineer a Type 6 Certification, catalog cuts and installation procedures at least 30 days prior to installation for all.

Construction Methods

- (A) Prior to placing detectable warnings in proposed concrete curb ramps, adjust the existing subgrade to the proper grade and in accordance with Article 848-3 of the *2012 Standard Specifications*.
- (B) Install all detectable warning in proposed concrete curb ramps in accordance with the manufacturer's recommendations.

Measurement and Payment

Detectable Warnings installed for construction of proposed curb ramps will not be paid for separately. Such payment will be included in the price bid for *Concrete Curb Ramps*.

MATERIALS:
(2-21-12) (Rev. 6-19-12)

1005, 1081, 1092

R10 R01

Revise the 2012 Standard Specifications as follows:

Page 10-23, Table 1005-1, AGGREGATE GRADATION-COARSE AGGREGATE, replace with the following:

Std. Size #	Percentage of Total by Weight Passing													Remarks
	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#10	#16	#40	#200		
4	100	90-100	20-55	0-15	-	0-5	-	-	-	-	-	A	Asphalt Plant Mix	
467M	100	95-100	-	35-70	-	0-30	0-5	-	-	-	-	A	Asphalt Plant Mix	
5	-	100	100	20-55	0-10	0-5	-	-	-	-	-	A	AST, Sediment Control Stone	
57	-	100	95-100	-	25-60	-	0-10	0-5	-	-	-	A	AST, Str. Concrete, Shoulder Drain, Sediment Control Stone	
57M	-	100	95-100	-	25-45	-	0-10	0-5	-	-	-	A	AST, Concrete Pavement	
6M	-	-	100	90-100	20-55	0-20	0-8	-	-	-	-	A	AST	
67	-	-	100	90-100	-	20-55	0-10	0-5	-	-	-	A	AST, Str. Concrete, Asphalt Plant Mix	
78M	-	-	-	100	98-100	75-100	20-45	0-15	-	-	-	A	Asphalt Plant Mix, AST, Str. Conc, Weep Hole Drains	
14M	-	-	-	-	-	100	35-70	5-20	-	0-8	-	A	Asphalt Plant Mix, AST, Weep Hole Drains, Str. Concrete	
9	-	-	-	-	-	100	85-100	10-40	-	0-10	-	A	AST	
ABC	-	100	75-97	-	55-80	-	35-55	-	25-45	-	14-30	4-12 ^B	Aggregate Base Course, Aggregate Stabilization	
ABC (M)	-	100	75-100	-	45-79	-	20-40	-	0-25	-	-	0-12 ^B	Maintenance Stabilization	
Light-weight C	-	-	-	-	100	80-100	5-40	0-20	-	0-10	-	0-2.5	AST	

- A. See Subarticle 1005-4(A).
- B. See Subarticle 1005-4(B).
- C. For Lightweight Aggregate used in Structural Concrete, see Subarticle 1014-2(E)(6).

Page 10-162, Subarticle 1081-1(A) Classifications, lines 4-7, delete the second and third sentences of the description for Type 3A.

Page 10-162, Subarticle 1081-1(B) Requirements, lines 26-30, replace the second paragraph with the following:

For epoxy resin systems used for embedding dowel bars, threaded rods, rebar, anchor bolts and other fixtures in hardened concrete, the manufacturer shall submit test results showing that the bonding system will obtain 125% of the specified required yield strength of the fixture. Furnish certification that, for the particular bolt grade, diameter and embedment depth required, the anchor system will not fail by adhesive failure and that there is no movement of the anchor bolt. For certification and anchorage, use 3,000 psi as the minimum Portland cement concrete compressive strength used in this test. Use adhesives that meet Section 1081.

List the properties of the adhesive on the container and include density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength and compressive strength.

Page 10-169, Subarticle 1081-3(G) Anchor Bolt Adhesives, delete this subarticle.

Page 10-204, Subarticle 1092-2(A) Performance and Test Requirements, replace **Table 1092-3 Minimum Coefficient of Retroreflection for NC Grade A** with the following:

**TABLE 1092-3
MINIMUM COEFFICIENT OF RETROREFLECTION FOR NC GRADE A
(Candelas Per Lux Per Square Meter)**

Observation Angle, degrees	Entrance Angle, degrees	White	Yellow	Green	Red	Blue	Fluorescent Yellow Green	Fluorescent Yellow
0.2	-4.0	525	395	52	95	30	420	315
0.2	30.0	215	162	22	43	10	170	130
0.5	-4.0	310	230	31	56	18	245	185
0.5	30.0	135	100	14	27	6	110	81
1.0	-4.0	120	60	8	16	3.6	64	48
1.0	30.0	45	34	4.5	9	2	36	27