

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

(1-18-00) (Rev. 1-17-12)

R1 R07 C (Revised)

**Description**

This work consists of reconstructing each shoulder (including median shoulders as applicable) in accordance with Standard Drawing No. 560.01 and 560.02 of the *2012 Roadway Standard Drawings*, from the existing edge of pavement out to a width of 6', except that the rate of slope 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 when completed, seeding and mulching. This work shall be performed immediately after the resurfacing operations are complete as directed by the Engineer.

**Materials**

The Contractor shall furnish all earth material necessary for the construction of the shoulders in accordance with Section 1019 of the *2012 Standard Specifications*. All soil is subject to test and acceptance or rejection by the Engineer.

The Contractor shall obtain any additional material which may be required from NCDOT approved borrow pits or from NCDOT stockpiles. Contractor shall be responsible for loading, hauling and placement of material. A list of current stockpile locations may be obtained by contacting the Columbus County Maintenance Yard at 910-642-7597.

**Construction Methods**

Obtain material from within the project limits or approved borrow source. Prior to adding borrow material, the existing shoulder shall be scarified to provide the proper bond and shall be compacted to the satisfaction of the Engineer. Material shall be placed using a widening machine or similar device.

A vegetative buffer shall be maintained between the disturbed area along the edge of the pavement and the ditch shoulder point to minimize erosion. The Contractor will not be allowed to cut the existing shoulders, or pull the existing ditches, to generate material for the shoulder reconstruction operation.

The vegetative buffer must be maintained at all times. If it cannot be maintained, proper erosion control features must be used. Windrowed material may be spread with a motor grader.

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

**Measurement and Payment**

*Shoulder Reconstruction* will be measured and paid 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, and for all labor, tools, equipment, and incidentals necessary to complete the work.

*Borrow Excavation* will be paid in accordance with Section 230 of the *2012 Standard Specifications* for earth material furnished by the Contractor. The requirements of Article 104-5 of the *2012 Standard Specifications* pertaining to revised contract prices for overrunning minor items will not apply to the item of *Borrow Excavation*.

*Seeding and Mulching* will be measured and paid as shown elsewhere in the contract documents.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Shoulder Reconstruction	Shoulder Mile
Borrow Excavation	Cubic Yard

**SHOULDER WEDGE:**

(9-20-11) (Rev. 1-17-12)

610

R6 R03

Revise the *2012 Standard Specifications* as follows:

**Page 6-26, Section 610-8**, add the following after line 43:

Attach a device, mounted on screed of paving equipment, capable of constructing a shoulder wedge with an angle of not more than 30 degrees along the outside edge of the roadway, measured from the horizontal plane in place after final compaction on the final surface course. Use an approved mechanical device or a device provided by the Department which will form the asphalt mixture to produce a wedge with uniform texture, shape and density while automatically adjusting to varying heights. If the device is provided by the Department, then the Contractor shall return the device to the Engineer after completion of all shoulder wedge construction.

Payment for use of this device will be incidental to the other pay items in the contract.

**ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A:**

(2-21-12)

610, 1012

SPI 6-09

Revise the 2012 Standard Specifications as follows:

**Page 6-21, Table 610-2, SUPERPAVE AGGREGATE GRADATION CRITERIA**, add the following:

Standard Sieves (mm)	Mix Type (Nominal Max. Aggregate Size)	
	4.75 mm (C)	
	Min.	Max.
50.0	-	-
37.5	-	-
25.0	-	-
19.0	-	-
12.5	-	-
9.50	100.0	
4.75	90.0	100.0
2.36	65.0	90.0
1.18	-	-
0.600	-	-
0.300	-	-
0.150	-	-
0.075	4.0	8.0

C. For Type S4.75A, a minimum of 50% of the aggregate components shall be material manufactured from the crushing of stone.

**Page 6-22, Table 610-3, SUPERPAVE MIX DESIGN CRITERIA**, add the following:

Mix Type	Design ESALS millions	Binder PG Grade	Compaction Levels		Max. Rut Depth (mm)	Volumetric Properties			
			G <sub>mm</sub> @			VMA	VTM	VFA	%G <sub>mm</sub>
			N <sub>ini</sub>	N <sub>des</sub>		% Min.	%	Min. - Max.	@ N <sub>ini</sub>
S4.75A(E)	<0.3	64 -22	6	50	-	20.0	7.0 - 15.0	-	-

E. Mix Design Criteria for Type S4.75A may be modified subject to the approval of the Engineer

**Page 6-22, Table 610-3, SUPERPAVE MIX DESIGN CRITERIA**, replace line 4, note C, with the following:

C. TSR for Type S4.75A, Type B25.0 and Type B25.0C mixes is 80% minimum.

**Page 6-23, Table 610-5, PLACEMENT TEMPERATURES FOR ASPHALT**, replace "SF9.5A, S9.5B" in the "Asphalt Concrete Mix Type" column with "S4.75A, SF9.5A and S9.5B".

Page 6-28, Table 610-6, SUPERPAVE DENSITY REQUIREMENTS, add the following:

Superpave Mix Type	Minimum % of G <sub>mm</sub> (Maximum Specific Gravity)
S4.75A	85.0(a,b)

- (a) All S4.75A pavement will be accepted for density in accordance with Article 105-3.
- (b) Compaction to the above specified density will be required when the S4.75A mix is applied at a rate of 100 lb/sy or greater.

Page 6-37, Article 610-16, MEASUREMENT AND PAYMENT, add the following:

Payment will be made under:

Pay Item	Pay Unit
Asphalt Concrete Surface Course, Type S4.75A	Ton

Page 10-26, Subarticle 1012-1(B)(4), FLAT AND ELONGATED PIECES, replace line 44, “for Types SF9.5A and S9.5B.”, with the following:

“for Types S4.75A, SF9.5A and S9.5B.”

Page 10-27, Table 1012-1, AGGREGATE CONSENSUS PROPERTIES, add the following:

Mix Type	Coarse Aggregate Angularity	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat & Elongated 5 : 1 Ratio % Maximum
<i>Test Method</i>	<i>ASTM D 5821</i>	<i>AASHTO T 304</i>	<i>AASHTO T 176</i>	<i>ASTM D 4791</i>
S4.75A	-	40	40	-

**ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:**

(11-21-00) (Rev. 7-19-11)

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 SF 9.5A	6.7%
Asphalt Concrete Surface Course	Type S 9.5	6.0%
Asphalt Concrete Surface Course	Type S 12.5	5.5%

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

**MATERIAL TRANSFER VEHICLE:**

The Contractor shall utilize a Material Transfer Vehicle (MTV) for the placement of the asphalt concrete intermediate course and asphalt concrete surface course on US 74, unless otherwise approved by the Engineer.

The requirements of Section 610 of the *Standard Specifications* shall apply.

**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 \$ **615.00** per ton.

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

**FINAL SURFACE TESTING (Not Required):**

(5-18-04) (Rev. 1-17-12)

610

R6 R45

Final surface testing is not required on this project.

**WEDGE COURSE:**

(7-1-95)

R6 R52

Place a wedge course at locations ahead of the paving operation as required by the Engineer.

**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.

**PAVING INTERSECTIONS:**

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

610

R6 R67A

Surface all unpaved intersections back from the edge of the pavement on the main line of the project at least 50 feet. The pavement placed in the intersection shall be of the same material and thickness placed on the main line of the project.

Resurface all paved intersections back to the ends of the radii, or as directed by the Engineer.

The base on the unpaved intersections will be placed and prepared for surfacing by State Forces.

Widen the pavement on curves as directed by the Engineer.

**PATCHING EXISTING PAVEMENT:**

(1-15-02) (Rev.11-29-10)

610

R6 R88

**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.

**Materials**

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.

**Construction Methods**

Remove existing pavement at locations directed by the Engineer in accordance with Section 250 of the *2012 Standard Specifications*.

Place Asphalt Concrete Base Course, in lifts not exceeding 5.5 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, use Asphalt Surface Course in the top 1.25 inches of the patch.

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.

**Measurement and Payment**

*Patching Existing Pavement* will be measured and paid as the actual number of tons of asphalt plant mix complete in place that 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. 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 all types 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.

Patching Existing Pavement will be considered 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 of the *2012 Standard Specifications* pertaining to revised contract unit price for overrunning minor items will not apply to this item. Any provisions included in the contract that provides 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.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Patching Existing Pavement	Ton

**AGGREGATE GRADATION FOR COARSE AGGREGATE:**

(2-21-12)

1005

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	90-100	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	4-12B	A	Aggregate Base Course, Aggregate Stabilization	
ABC (M)	-	100	75-100	-	45-79	-	20-40	0-25	-	-	0-12B	A	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).



**TEMPORARY TRAFFIC CONTROL DEVICES:**

(1-17-12)

1105

R11 R05

Revise the *2012 Standard Specifications* as follows:

**Page 11-5, Article 1105-6 Measurement and Payment**, add the following paragraph after line 24:

Partial payments will be made on each payment estimate based on the following: 50% of the contract lump sum price bid will be paid on the first monthly estimate and the remaining 50% of the contract lump sum price bid will be paid on each subsequent estimate based on the percent of the project completed.

**EROSION AND STORMWATER CONTROL FOR SHOULDER CONSTRUCTION AND RECONSTRUCTION:**

(11-16-10)

105-16, 225-2, Division 16

R16 R03

Land disturbing operations associated with shoulder construction/reconstruction may require erosion and sediment control/stormwater measure installation. National Pollutant Discharge Elimination System (NPDES) inspection and reporting may be required.

Erosion control measures shall be installed per the erosion control detail in any area where the vegetated buffer between the disturbed area and surface waters (streams, wetlands, or open waters) or drainage inlet is less than 10 feet. The Engineer may reduce the vegetated buffer threshold for this requirement to a value between 5 and 10 feet. Erosion control measures shall be spot checked every 14 days until permanent vegetative establishment.

In areas where shoulder construction/reconstruction includes disturbance or grading on the front slope or to the toe of fill, relocating ditch line or backslope, or removing vegetation from the ditch line or swale, NPDES inspection and monitoring are required every 14 days or within 24 hours of a rainfall event of 0.5" or greater. Maintain daily rainfall records. Install erosion control measures per detail.

In areas where the vegetated buffer is less than 10 feet between the disturbed area and waters of the State classified as High Quality Water (HQW), Outstanding Resource Water (ORW), Critical Areas, or Unique Wetlands, NPDES inspection and monitoring are required every 14 days or within 24 hours of a rainfall event of 0.5" or greater. The Engineer may reduce the vegetated buffer threshold for this requirement to a value between 5 and 10 feet. The plans or provisions will indicate the presence of these water classifications. Maintain daily rainfall records. Install erosion control measures per detail.

Land disturbances hardened with aggregate materials receiving sheet flow are considered non-erodible.

Sites that require lengthy sections of silt fence may substitute with rapid permanent seeding and mulching as directed by the Engineer.

NPDES documentation shall be performed by a Level II Erosion and Sediment Control/Stormwater certificate holder.

Materials used for erosion control will be measured and paid as stated in the contract.