**PROJECT SPECIAL PROVISIONS**
**ROADWAY** **1-15-02**

RR01

**BORROW EXCAVATION:** **1-15-02$_R$**

Revise the 2002 Standard Specifications as follows:

Page 2-20, Article 230-6

After the first paragraph, insert the following paragraph:

"No direct payment will be made for the work of Evaluation of Potential Wetlands and Endangered Species as outlined above. Payment at the contract unit price for the pay item 'Borrow Excavation', 'Grading – Lump Sum', or 'Shoulder Reconstruction' will be considered full compensation for this work.'

RR02

**SHOULDER CONSTRUCTION:**

The work covered by this provision consists of constructing earth shoulders (including median shoulder) in accordance with NC Highway Design Branch Roadway Standard Drawings Nos. 560.01 and 560.02 and may also include realigning ditches in order to construct the typical section as shown in the contract. **Shoulder Construction shall be used when the construction of a new shoulder occurs due to widening on the existing roadway**. Perform this work immediately after the resurfacing operations are completed as directed by the Engineer.

In any area that contains widening, use all suitable material generated from the widening and the ditch realignment operation to construct the shoulder. Furnish any other earth material necessary for the construction of the shoulders. Any unsuitable or surplus material shall be taken to an approved waste pit. Provide earth material meeting the approval of the Engineer. No testing will be necessary.

Perform shoulder construction in the following order: scarify the existing shoulder to provide the proper bond; add the earth material to the shoulder; and compact the shoulder to the satisfaction of the Engineer.

This work is defined as "Shoulder Construction" and the quantity of such work to be paid for will be the actual number of shoulder miles, which have been constructed. Measurement will be made along the edge of each shoulder. Measurement will be made to the nearest 0.01 of a mile.

The quantity of shoulder construction measured as provided above, will be paid for at the contract unit price per shoulder mile for "Shoulder Construction".

Seeding and Mulching will be paid for as provided elsewhere in this contract.

Such price and payment will be full compensation for furnishing earth material, hauling, placing, compaction, excavating for ditch realignment, removal and disposal of undesirable material, removal and disposal of any excess material and all incidentals necessary to complete construction of the shoulders and ditches.

Payment will be made under:

Shoulder Construction .....Shoulder Mile

**SHOULDER RECONSTRUCTION:**

The work covered by this provision consists of reconstructing earth shoulders (including median shoulder) in accordance with NC Highway Design Branch Roadway Standard Drawings Nos. 560.01 and 560.02 from the edge of pavement to the existing shoulder point as directed by the Engineer. Perform this work immediately after the resurfacing operations are completed as directed by the Engineer.

Shoulder reconstruction will be required as follows:

1) Where there is a drop off of 2 inches or greater.
2) Where the asphalt is at the edge of the existing ditch.
3) Where the existing earth shoulder is higher than the asphalt. In these areas, the existing shoulder shall be clipped off, scarified and then seeded and mulched.

On any map that contains widening, use all suitable material generated from the widening operation to construct the shoulder. Furnish any other earth material necessary for the construction of the shoulders. Provide earth material meeting the approval of the Engineer. No testing will be necessary.

Perform shoulder reconstruction in the following order: scarify the existing shoulder to provide the proper bond; add the earth material to the shoulder; and compact the reconstructed shoulder to the satisfaction of the Engineer.

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

This work is defined as "Shoulder Reconstruction" and the quantity of such work to be paid for will be the actual number of shoulder miles which have been constructed. Measurement will be made along the edge of each shoulder. Measurement will be made to the nearest 0.01 of a mile.

The quantity of shoulder reconstruction measured as provided above, will be paid for at the contract unit price per shoulder mile for "Shoulder Reconstruction".

Seeding and Mulching will be paid for as provided elsewhere in this contract.

Such price and payment will be full compensation for furnishing earth material, hauling, placing, compaction, and all incidentals necessary to complete construction of the shoulders.

RR07

Payment will be made under:

Shoulder Reconstruction.....Shoulder Mile

**PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:** **11-21-00**

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

The base price index for asphalt binder for plant mix is $218.06 per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on September 1, 2004. RR19

**FINAL SURFACE TESTING - ASPHALT PAVEMENTS:** **05-18-04**

Perform acceptance testing of the longitudinal profile of the finished pavement surface in accordance with these provisions using a North Carolina Hearne Straightedge (Model No. 1). Furnish and operate the straightedge to determine and record the longitudinal profile of the pavement on a continuous graph. Final surface testing is an integral part of the paving operation and is subject to observation and inspection by the Engineer as deemed necessary.

Push the straightedge manually over the pavement at a speed not exceeding 2 miles per hour (3 kilometers per hour). For all lanes, take profiles in the right wheel path approximately 3 ft (1 m) from the right edge of pavement in the same direction as the paving operation, unless otherwise approved due to traffic control or safety considerations. Make one pass of the straightedge in each full width travel lane. The full lane width should be comparable in ride quality to the area evaluated with the Hearne Straightedge. If deviations exist at other locations across the lane width, utilize a 10 foot non-mobile straightedge or the Hearne Straightedge to evaluate which areas may require corrective action. Take profiles as soon as practical after the pavement has been rolled and compacted but in no event later than 24 hours following placement of the pavement, unless otherwise authorized by the Engineer. Take profiles over the entire length of final surface travel lane pavement exclusive of -Y- line travel lanes less than or equal to 300 feet (90 meters) in length, turn lanes less than or equal to 300 feet (90 meters) in length, structures, approach slabs, paved shoulders, loops, and tapers or other irregular shaped areas of pavement, unless otherwise approved by the Engineer. Test in accordance with this provision all mainline travel lanes, full width acceleration or deceleration lanes, -Y- line travel lanes greater than 300 feet (90 meters) in length, ramps, full width turn lanes greater than 300 feet (90 meters) in length, and collector lanes.

At the beginning and end of each day's testing operations, and at such other times as determined necessary by the Engineer, operate the straightedge over a calibration strip so that the Engineer can verify correct operation of the straightedge. The calibration strip must be a 100 ft (30 m) section of pavement that is reasonably level and smooth. Submit each day's calibration graphs with that day's test section graphs to the Engineer. Calibrate the straightedge in accordance with the current NCDOT procedure titled "North Carolina Hearne Straightedge - Calibration and Determination of Cumulative Straightedge Index". Copies of this procedure may be obtained from the Department's Pavement Construction Section.

Plot the straightedge graph at a horizontal scale of approximately 25 ft per inch (3 m per cm) with the vertical scale plotted at a true scale. Record station numbers and references (bridges, approach slabs, culverts, etc.) on the graphs, and distances between references/stations must not exceed 100 ft (30 m). Have the operator record the Date, Project No., Lane Location, Wheel Path Location, Type Mix, and Operator's Name on the graph.

Upon completion of each day's testing, evaluate the graph, calculate the Cumulative Straightedge Index (CSI), and determine which lots, if any, require corrective action. Document the evaluation of each lot on a QA/QC-7 form. Submit the graphs along with the completed QA/QC-7 forms to the Engineer, within 24 hours after profiles are completed, for verification of the results. The Engineer will furnish results of their acceptance evaluation to the Contractor within 48 hours of receiving the graphs. In the event of discrepancies, the Engineer's evaluation of the graphs will prevail for acceptance purposes. The Engineer will retain all graphs and forms.

Use blanking bands of 0.2 inches, 0.3 inches, and 0.4 inches (5 mm, 7.5 mm, and 10 mm) to evaluate the graph for acceptance. The 0.2 inch and 0.3 inch (5 mm and 7.5 mm) blanking bands are used to determine the Straightedge Index (SEI), which is a number that indicates the deviations that exceed each of the 0.2 inch and 0.3 inch (5 mm and 7.5 mm) bands within a 100 ft (30 m) test section. The Cumulative Straightedge Index (CSI) is a number representing the total of the SEIs for one lot, which consist of not more than 25 consecutive test sections. In addition, the 0.4 inch (10 mm) blanking band is used to further evaluate deviations on an individual basis. The Cumulative Straightedge Index (CSI) will be determined by the Engineer in accordance with the current procedure titled "North Carolina Hearne Straightedge - Calibration and Determination of Cumulative Straightedge Index".

The pavement will be accepted for surface smoothness on a lot by lot basis. A test section represents pavement one travel lane wide not more than 100 ft (30 m) in length. A lot will consist of 25 consecutive test sections, except that separate lots will be established for each travel lane, unless otherwise approved by the Engineer. In addition, full width acceleration or deceleration lanes, ramps, turn lanes, and collector lanes, will be evaluated as separate lots. For any lot which is less than 2500 feet (750 m) in length, the applicable pay adjustment incentive will be prorated on the basis of the actual lot length. For any lot which is less than 2500 feet (750 m) in length, the applicable pay adjustment disincentive will be the full amount for a lot, regardless of the lot length.

If during the evaluation of the graphs, more than 5 lots within the contract limits (mainline travel lanes and full width -Y- line travel lanes greater than 300 feet in length only) require corrective action, then proceed on limited production for unsatisfactory laydown in accordance with Article 610-12. Proceeding on limited production is based upon the Contractor's initial evaluation of the straightedge test results and must begin immediately upon obtaining those results. Additionally, the Engineer may direct the Contractor to proceed on limited production in accordance with Article 610-12 due to unsatisfactory laydown or workmanship.

Limited production for unsatisfactory laydown is defined as being restricted to the production, placement, compaction, and final surface testing of a sufficient quantity of mix necessary to construct only 2500 feet (750 meter) of pavement at the laydown width. Once this lot is complete, the final surface testing graphs will be evaluated jointly by the Contractor and the

Engineer. Remain on limited production until such time as satisfactory laydown results are obtained or until three consecutive 2500 foot (750 meter) sections have been attempted without achieving satisfactory laydown results. The Engineer will determine if normal production may resume based upon the CSI for the limited production lot and any adjustments to the equipment, placement methods, and/or personnel performing the work. Once on limited production, the Engineer may require the Contractor to evaluate the smoothness of the previous asphalt layer and take appropriate action to reduce and/or eliminate corrective measures on the final surface course. Additionally, the Contractor may be required to demonstrate acceptable laydown techniques off the project limits prior to proceeding on the project.

If the Contractor fails to achieve satisfactory laydown results after three consecutive 2500 foot (750 meter) sections have been attempted, cease production of that mix type until such time as the cause of the unsatisfactory laydown results can be determined.

As an exception, the Engineer may grant approval to produce a different mix design of the same mix type if the cause is related to mix problem(s) rather than laydown procedures. If production of a new mix design is allowed, proceed under the limited production procedures detailed above.

If the Contractor does not operate by the limited production procedures as specified above, the 5 lots, which require corrective action, will be considered unacceptable and may be subject to removal and replacement. Mix placed under the limited production procedures for unsatisfactory laydown will be evaluated for acceptance in accordance with Article 105-3.

After initially proceeding under limited production, the Contractor shall immediately notify the Engineer if any additional lot on the project requires corrective action. The Engineer will determine if limited production procedures are warranted for continued production.

The pay adjustment schedule for the Cumulative Straightedge Index (CSI) test results per lot is as follows:

**Pay Adjustment Schedule for Cumulative Straightedge Index (CSI)**
(Obtained by adding SE Index of up to 25 consecutive 100 ft. (30m) sections)

| *CSI | ACCEPTANCE CATEGORY | CORRECTIVE ACTION | PAY ADJUSTMENT | |
|---|---|---|---|---|
| | | | Before Corrective Action | After Corrective Action |
| 0-0 | Acceptable | None | $300 incentive | None |
| 1-0 or 2-0 | Acceptable | None | $100 incentive | None |
| 3-0 or 4-0 | Acceptable | None | No Adjustment | No Adjustment |
| 1-1, 2-1, 5-0 or 6-0 | Acceptable | Allowed | $300 disincentive | $300 disincentive |
| 3-1, 4-1, 5-1 or 6-1 | Acceptable | Allowed | $600 disincentive | $600 disincentive |
| Any other Number | Unacceptable | Required | Per CSI after Correction(s) (not to exceed 100% Pay) | |

***Either Before or After Corrective Actions**

Correct any deviation that exceeds a 0.4 inch (10 mm) blanking band such that the deviation is reduced to 0.3 inches (7.5 mm) or less.

Corrective actions shall be performed at the Contractor's expense and shall be presented for evaluation and approval by the Engineer prior to proceeding. Any corrective action performed shall not reduce the integrity or durability of the pavement which is to remain in place. Corrective action for deviation repair may consist of overlaying, removing and replacing, indirect heating and rerolling. Scraping of the pavement with any blade type device will not be allowed as a corrective action. Provide overlays of the same type mix, full roadway width, and to the length and depth established by the Engineer. Tapering of the longitudinal edges of the overlay will not be allowed.

Corrective actions will not be allowed for lots having a CSI of 40 or better. If the CSI indicates "Allowed" corrective action, the Contractor may elect to take necessary measures to reduce the CSI in lieu of accepting the disincentive. Take corrective actions as specified if the CSI indicates "Required" corrective action. The CSI after corrective action should meet or exceed "Acceptable" requirements.

Where corrective action is allowed or required, the test section(s) requiring corrective action will be retested, unless the Engineer directs the retesting of the of the entire lot. No disincentive will apply after corrective action if the CSI is 40 or better. If the retested lot after corrective action has a CSI indicating a disincentive, the appropriate disincentive will be applied.

Incentive pay adjustments will be based only on the initially measured CSI, as determined by the Engineer, prior to any corrective work. Where corrective actions have been taken, payment will be based on the CSI determined after correction, not to exceed 100 percent payment.

Areas excluded from testing by the N.C. Hearne Straightedge will be tested by using a non-mobile 10-foot (3 m) straightedge. Assure that the variation of the surface from the testing edge of the straightedge between any two contact points with the surface is not more than 1/8 inch (3 mm). Correct deviations exceeding the allowable tolerance in accordance with the corrective actions specified above, unless the Engineer permits other corrective actions.

Furnish the North Carolina Hearne Straightedge(s) necessary to perform this work. Maintain responsibility for all costs relating to the procurement, handling, and maintenance of these devices. The Department has entered into a license agreement with a manufacturer to fabricate, sell, and distribute the N.C. Hearne Straightedge. The Department's Pavement Construction Section may be contacted for the name of the current manufacturer and the approximate price of the straightedge.

No direct payment will be made for the work covered by this section. Payment at the contract unit prices for the various items covered by those sections of the specifications directly applicable to the work constructed will be full compensation for all work covered by this section including, but not limited to, performing testing in accordance with this specification, any corrective work required as a result of this testing and any additional traffic control as may be necessary.

RR20

**INCIDENTAL STONE BASE:** **7-1-95**

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 the requirements of Section 545 of the Standard Specifications.

Method of Measurement:

Measurement will be in accordance with Article 545-6 of the Standard Specifications.

Basis of Payment:

Payment will be in accordance with Article 545-7 of the Standard Specification at the contract unit price per ton for "Incidental Stone Base".

RR28

Payment will be made under:

Incidental Stone Base..... Ton

**ASPHALT PAVEMENTS - SUPERPAVE** **02-17-04**

Revise the 2002 Standard Specifications as follows:

PRIME COAT

Page 6-2, Article 600-9

Delete the first paragraph under this Article and substitute the following:

The quantity of prime coat to be paid will be the number of gallons (liters) of prime coat material that has been satisfactorily placed on the roadway. Each distributor load of prime coat material delivered and utilized on the project will be measured.

ASPHALT TACK COAT

Page 6-4, Article 605-8

Insert the following after paragraph one in this Article:

Take necessary precautions to limit the tracking and/or accumulation of tack coat material on either existing or newly constructed pavements. Excessive accumulation of tack may require corrective measures.

FIELD VERIFICATION AND JOB MIX FORMULA ADJUSTMENTS

Page 6-7, Article 609-4

Delete the first paragraph under this Article and substitute the following:

Conduct field verification of the mix at each plant within 30 calendar days prior to initial production of each mix design, when required by the Allowable Mix Adjustment Policy and when directed as deemed necessary.

Page 6-8, Article 609-4

Delete the first paragraph on this page and substitute the following:

Retain records of these calibrations and mix verification tests, including Superpave Gyratory Compactor (SGC) printouts, at the QC laboratory. In addition, furnish copies, including SGC printouts, to the Engineer for review and approval within one working day after beginning production of the mix.

Page 6-8, Article 609-4

Add the following sentence to the end of the last paragraph in this Article:

Any mix produced that is not verified may be assessed a price reduction at the Engineer's discretion in addition to any reduction in pay due to mix and/or density deficiencies.

Quality control minimum sampling and testing schedule:

Page 6-9, Subarticle 609-5(C)1

Delete the second sentence in the second paragraph of this Article and substitute the following:

Retain the QC compacted volumetric test specimens for 5 calendar days, commencing the day the specimens are prepared.

Page 6-9, Subarticle 609-5(C)2

At the bottom of this page, delete the sentence directly above the Accumulative Production Increment and substitute the following:

Sample and test the completed mixture from each mix design at the following minimum frequency during mix production:

Page 6-10, Subarticle 609-5(C)2

Revise Items B, C, D and E on this page as follows:

B. Gradation on Recovered Blended Aggregate from Mix Sample (AASHTO T 30 Modified) Grade on all sieves specified on JMF
C. Maximum Specific Gravity (AASHTO T 209 or ASTM D 2041), optional (ASTM D 6857)
D. Bulk Specific Gravity of Compacted Specimens (AASHTO T166), optional (ASTM D 6752), Average of 3 specimens at $N_{des}$ gyrations (AASHTO T 312)
E. Air Voids (VTM) (AASHTO T 269), Average of 3 specimens at $N_{des}$ gyrations

Page 6-11, Subarticle 609-5(C)2

At the top of this page, delete Item B.," Reclaimed Asphalt Pavement..." and substitute the following:

B. Reclaimed Asphalt Pavement (RAP) Binder Content and Gradation (AASHTO T 308 Modified or T 164 and AASHTO T 30 Modified) (sampled from stockpiles or cold feed system at beginning of production and weekly thereafter). Have RAP approved for use in accordance with Article 1012-1(G). (Split Sample Required)

Page 6-11, Subarticle 609-5(C)2

Insert the following sampling and testing at the end of this Subarticle

F. Uncompacted Void Content of Fine Aggregate, AASHTO T 304, Method A (natural sand only). Performed at Mix Design and when directed as deemed necessary. (Split Sample Required)
G. Reclaimed Asphalt Shingle Material (RAS) Binder Content and Gradation (AASHTO T 308 Modified or T 164 and AASHTO T 30 Modified) (sampled from stockpiles or cold feed system at beginning of production and weekly thereafter). Have RAS approved for use in accordance with Article 1012-1(F). (Split Sample Required)

CONTROL CHARTS

Page 6-11, Subarticle 609-5(C)3

Delete the second sentence of the first paragraph in this Subarticle and substitute the following:

Record all regularly scheduled random sample or directed sample full test series results for mix incorporated into the project on control charts the same day the test results are obtained.

Page 6-12, Subarticle 609-5(C)3

Delete item 3 in the list below the second full paragraph on this page.

CONTROL LIMITS

Page 6-12, Subarticle 609-5(C) 4

At the bottom of this page, delete the table and substitute the following:

**CONTROL LIMITS**

| Mix Control Criteria | Target Source | Warning Limit | Moving Average Limit | Individual Limit |
|---|---|---|---|---|
| 2.36mm Sieve | JMF | ±4.0 % | ±5.0 % | ±8.0 % |
| 0.075mm Sieve | JMF | ±1.5 % | ±2.0 % | ±2.5 % |
| Binder Content | JMF | ±0.3 % | ±0.5 % | ±0.7 % |
| VTM @ $N_{des}$ | JMF | ±1.0 % | ±1.5 % | ±2.0 % |
| VMA @ $N_{des}$ | Min. Spec. Limit | -0.5% | -0.8% | -1.0% |
| $P_{0.075}$/ $P_{be}$ Ratio | Max. Spec. Limit | 0.0 | N/A | +0.4% |
| $\%G_{mm}$ @ $N_{ini}$ | Max. Spec. Limit | N/A | N/A | +2.0% |
| TSR | Min. Spec. Limit | N/A | N/A | -15.0% |

FIELD COMPACTION QUALITY CONTROL

Page 6-15, Subarticle 609-5(D)1

Delete the first and second sentences in the fourth paragraph on this page and substitute the following:

Base and intermediate mix types (surface mixes not included) utilized for pavement widening of less than 4.0 feet and all mix types used in tapers, irregular areas and intersections (excluding full width travel lanes of uniform thickness), will not be subject to the sampling and testing frequency specified above provided the pavement is compacted using approved equipment and procedures. However, the Engineer may require occasional density sampling and testing to evaluate the compaction process.

Page 6-16, Subarticle 609-5(D)1

Delete item number 2 at the top of this page. Item number 3 should be re-numbered as 2 after the specified deletion.

LIMITED PRODUCTION PROCEDURE

Page 6-17, Subarticle 609-5(D) 5

Delete the first paragraph in this Subarticle and substitute the following:

Proceed on limited production when, for the same mix type, one of the following items occur:

(1) Two consecutive failing lots, excluding lots representing an individual resurfacing map or portion thereof.
(2) Three consecutive failing lots, with each lot representing an individual resurfacing map or portion thereof.
(3) Two consecutive failing nuclear control strips.

Pavement within each construction category (New and Other), as defined in Article 610-13, and pavement placed simultaneously by multiple paving crews will be evaluated independently for limited production purposes.

Delete the first sentence in the last paragraph in this Subarticle and substitute the following:

If the Contractor does not operate by the limited production procedures as specified above, the two consecutive failing density lots, three consecutive failing lots with each lot representing an individual resurfacing map or portion thereof, or two consecutive failing nuclear control strips, whichever is applicable, and all mix produced thereafter will be considered unacceptable.

DOCUMENTATION (RECORDS)

Page 6-18, Subarticle 609-5(E)

Delete the third and fourth sentence in the first full paragraph on this page and substitute the following:

Maintain all QC records, forms and equipment calibrations for a minimum of 3 years from their completion date.

Delete the second full paragraph on this page and substitute the following:

Falsification of test results, documentation of observations, records of inspection, adjustments to the process, discarding of samples and/or test results, or any other deliberate misrepresentation of the facts will result in the revocation of the applicable person's QMS certification. The Engineer will determine acceptability of the mix and/or pavement represented by the falsified results or documentation. If the mix and/or pavement in question is determined to be acceptable, the Engineer may allow the mix to remain in place at no pay for the mix, asphalt binder and other

mix components. If the mix and/or pavement represented by the falsified results is determined not to be acceptable, remove and replace with mix, which complies with the Specifications. Payment will be made for the actual quantities of materials required to replace the falsified quantities, not to exceed the original amounts.

QUALITY ASSURANCE

Page 6-18, Article 609-6

In Item 5 under Plant Mix Quality Assurance, add "at a frequency equal to or greater than 5% of the QC sample frequency".

In the first sentence within the paragraph below Plant Mix Quality Assurance, delete the words "of mix".

In Item 1 under Density Quality Assurance, delete the wording at the end of the sentence "at a frequency equal to or greater than 10% of the frequency required of the Contractor".

Page 6-19, Article 609-6

In Item 4 under Density Quality Assurance, add "at a frequency equal to or greater than 5% of the QC sample frequency."

Insert the following after Item 4 under Density Quality Assurance:

6. By periodically directing the recalculation of random numbers for the Quality Control core or nuclear density test locations. The original QC test locations may be tested by QA and evaluated as verification tests.

LIMITS OF PRECISION

Page 6-19, Article 609-6

In the limits of precision table, delete the last three rows and substitute the following:

| | |
|---|---|
| QA retest of prepared QC Gyratory Compacted Volumetric Specimens | ± 0.015 |
| Retest of QC Core Sample | ± 1.2% (% Compaction) |
| Comparison of QA Core Sample | ± 2.0% (% Compaction) |
| QA Verification Core Sample | ± 2.0% (% Compaction) |
| Nuclear Comparison of QC Test | ± 2.0% (% Compaction) |
| QA Nuclear Verification Test | ± 2.0% (% Compaction) |

ASPHALT CONCRETE PLANT MIX PAVEMENTS – DESCRIPTION

Page 6-20, Article 610-1

Insert the following after the last paragraph in this Article:

A high frequency of asphalt plant mix, density, or mix and density deficiencies occurring over an extended duration of time may result in future asphalt, which is represented by mix and/or density test results not in compliance with minimum specification requirements, being excluded from acceptance at an adjusted contract unit price in accordance with Article 105-3. This acceptance process may apply to all asphalt produced and /or placed and may continue until the Engineer determines a history of quality asphalt production and placement is reestablished.

MATERIALS

Page 6-21, Article 610-2

Delete reference of Anti-strip additive (chemical) to Article 1020-2 and substitute Article 1020-8.

COMPOSITION OF MIXTURES (MIX DESIGN AND JOB MIX FORMULA)

Page 6-21, Subarticle 610-3(A)

At the end of the second paragraph under this Subarticle, add the following sentence:

In addition, submit Superpave gyratory compactor printouts for all specimens compacted at $N_{des}$ and $N_{max}$ during the mix design process.

Insert the following paragraph after the second paragraph under this Subarticle:

For the final surface layer of the specified mix type, use a mix design with an aggregate blend gradation above the maximum density line on the 2.36 mm and larger sieves.

Insert the following at the end of the third paragraph under this Article:

When the percent of binder contributed from RAS or a combination of RAS and RAP exceeds 20 percent of the total binder in the completed mix, the virgin binder PG grade must be one grade below (both high and low temperature grade) the binder grade specified in Table 610-2 for the mix type.

Delete the fourth paragraph in this Subarticle and substitute the following:

For Type S 12.5D mixes, the maximum percentage of reclaimed asphalt material is limited to 15% and must be produced using virgin asphalt binder grade PG 76-22. For all other recycled mix types, when the percentage of RAP is 15 percent or less of the total mixture, the virgin binder PG grade must be as specified in Table 610-2 for the specified mix type. When the percentage of RAP is greater than 15 but not more than 25 percent of the total mixture, the virgin binder PG grade must be one grade below (both high and low temperature grade) the specified grade for the mix type. When the percentage of RAP is greater than 25 percent of the total mixture, the Engineer will establish and approve the asphalt binder grade.

Page 6-22, Subarticle 610-3(A)

Insert the following sentence at the end of the Item 4:

If natural sand is utilized in the proposed mix design, determine and report the Uncompacted Void Content of the natural sand in accordance with AASHTO T-304, Method A.

Page 6-23, Subarticle 610-3(A)

Under the quantities of mix components insert the following sentence:

When requested by the Engineer, submit to the Department's Materials and Tests Unit, in Raleigh, six (6) Superpave Gyratory Compactor specimens compacted to a height of 75 mm and to a void content (VTM) of 4.0% +/- 0.5% for performance rut testing with the Asphalt Pavement Analyzer.

JOB MIX FORMULA

Page 6-24, Subarticle 610-3(C)

Delete Table 610-1 and associated notes. Substitute the following:

**TABLE 610-1**
**SUPERPAVE AGGREGATE GRADATION DESIGN CRITERIA**

| **Standard** | **Percent Passing Criteria (Control Points)** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sieves** | **Mix Type (Nominal Maximum Aggregate Size)** | | | | | | | | | | | |
| | **4.75 mm (a)** | | **9.5 mm (c)** | | **12.5 mm (c)** | | **19.0 mm** | | **25.0 mm** | | **37.5 mm** | |
| **(mm)** | **Min.** | **Max.** | **Min.** | **Max.** | **Min.** | **Max.** | **Min.** | **Max.** | **Min.** | **Max.** | **Min.** | **Max.** |
| 50.0 | | | | | | | | | | | | 100.0 |
| 37.5 | | | | | | | | | | 100.0 | 90.0 | 100.0 |
| 25.0 | | | | | | | | 100.0 | 90.0 | 100.0 | | 90.0 |
| 19.0 | | | | | | 100.0 | 90.0 | 100.0 | | 90.0 | | |
| 12.5 | | | | 100.0 | 90.0 | 100.0 | | 90.0 | | | | |
| 9.5 | | 100.0 | 90.0 | 100.0 | | 90.0 | | | | | | |
| 4.75 | 90.0 | 100.0 | | 90.0 | | | | | | | | |
| 2.36 | 65.0 | 90.0 | 32.0**(b)** | 67.0**(b)** | 28.0 | 58.0 | 23.0 | 49.0 | 19.0 | 45.0 | 15.0 | 41.0 |
| 1.18 | | | | | | | | | | | | |
| 0.600 | | | | | | | | | | | | |
| 0.300 | | | | | | | | | | | | |
| 0.150 | | | | | | | | | | | | |
| 0.075 | 4.0 | 8.0 | 4.0 | 8.0 | 4.0 | 8.0 | 3.0 | 8.0 | 3.0 | 7.0 | 3.0 | 6.0 |

(a) For Type S 4.75A, a minimum of 50% of the aggregate components shall be manufactured material from the crushing of stone.

(b) For Type SF 9.5A, the percent passing the 2.36mm sieve shall be a minimum of 60% and a maximum of 70%.

(c) For the final surface layer of the specified mix type, use a mix design with an aggregate blend gradation above the maximum density line on the 2.36 mm and larger sieves.

Page 6-25, Subarticle 610-3(C),

Delete Table 610-2 and associated notes. Substitute the following:

**TABLE 610-2**
**SUPERPAVE MIX DESIGN CRITERIA**

| | Design | Binder | Compaction Levels | | | Volumetric Properties (c) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mix | ESALs | PG | | | | | | | |
| Type | millions | Grade | No. Gyrations @ | | | VMA | VTM | VFA | %Gmm |
| (f) | (a) | (b) | $N_{ini}$ | $N_{des}$ | $N_{max}$ | % Min. | % | Min. - Max. | @ $N_{ini}$ |
| S-4.75A | <0.3 | 64 -22 | 6 | 50 | 75 | 20.0 | 7.0-15.0 | | |
| SF-9.5A | <0.3 | 64 -22 | 6 | 50 | 75 | 16.0 | 3.0 - 5.0 | 70 - 80 | ≤ 91.5 |
| S-9.5B | 0.3 - 3 | 64 -22 | 7 | 75 | 115 | 15.0 | 3.0 - 5.0 | 65 - 80 | ≤ 90.5 |
| S-9.5C | 3 - 30 | 70 -22 | 8 | 100 | 160 | 15.0 | 3.0 - 5.0 | 65 - 76 | ≤ 90.0 |
| S-12.5C | 3 - 30 | 70 -22 | 8 | 100 | 160 | 14.0 | 3.0 - 5.0 | 65 - 75 | ≤ 90.0 |
| S-12.5D | > 30 | 76 -22 | 9 | 125 | 205 | 14.0 | 3.0 - 5.0 | 65 - 75 | ≤ 90.0 |
| I-19.0B | < 3 | 64 -22 | 7 | 75 | 115 | 13.0 | 3.0 - 5.0 | 65 - 78 | ≤90.5 |
| I-19.0C | 3 - 30 | 64 -22 | 8 | 100 | 160 | 13.0 | 3.0 - 5.0 | 65 - 75 | ≤ 90.0 |
| I-19.0D | > 30 | 70 -22 | 9 | 125 | 205 | 13.0 | 3.0 - 5.0 | 65 - 75 | ≤ 90.0 |
| B-25.0B | < 3 | 64 -22 | 7 | 75 | 115 | 12.0 | 3.0 - 5.0 | 65 - 78 | ≤ 90.5 |
| B-25.0C | > 3 | 64 -22 | 8 | 100 | 160 | 12.0 | 3.0 - 5.0 | 65 - 75 | ≤ 90.0 |
| B-37.5C | > 3 | 64 -22 | 8 | 100 | 160 | 11.0 | 3.0 - 5.0 | 63 - 75 | ≤ 90.0 |
| | | | | | | | | | |
| | Design Parameter | | | | | Design Criteria | | | |
| All | 1. $\%G_{mm}$ @ $N_{max}$ | | | | | ≤ 98.0% **(d)** | | | |
| Mix | 2. Dust to Binder Ratio ($P_{0.075}$ / $P_{be}$) | | | | | 0.6 - 1.4 | | | |
| Types | 3. Retained Tensile Strength (TSR) (AASHTO T 283 Modified) | | | | | 85 % Min. **(e)** | | | |

**Notes:**
(a) Based on 20 year design traffic.
(b) When Recycled Mixes are used, select the binder grade to be added in accordance with Subarticle 610-3(A).
(c) Volumetric Properties based on specimens compacted to $N_{des}$ as modified by the Department.
(d) Based on specimens compacted to $N_{max}$ at selected optimum asphalt content.
(e) AASHTO T 283 Modified (No Freeze-Thaw cycle required). TSR for Type S 4.75A, Type B 25.0 and Type B 37.5 mixes is 80% minimum.
(f) Mix Design Criteria for Type S 4.75A may be modified subject to the approval of the Engineer

WEATHER, TEMPERATURE, AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES

Page 6-26, Article 610-4, Table 610-3

Delete the title of Table 610-3 and substitute the following title:

**ASPHALT PLACEMENT- MINIMUM TEMPERATURE REQUIREMENTS**

In the first column, third row; delete reference to the ACSC Types S 9.5A and S 12.5B mix.

Add the following minimum placing temperatures for mix types S 4.75A and SF 9.5A.

| Asphalt Concrete Mix Type | Minimum Air Temperature | Minimum Road Surface Temperature |
|---|---|---|
| ACSC, Type S 4.75A, SF 9.5A | 40°F (5°C) | 50°F (10°C) |

SPREADING AND FINISHING

Page 6-32, Article 610-8

Insert the following after the second sentence within the sixth paragraph in this Article,

Take necessary precautions during production, loading of trucks, transportation, truck exchanges with paver, folding of the paver hopper wings, and conveying material in front of the screed to prevent segregation of the asphalt mixtures.

Page 6-33, Article 610-8

At the end of the third full paragraph on this page, add the following sentence:

Waiver of the use of automatic screed controls does not relieve the Contractor of achieving plan grades and cross-slopes.

DENSITY REQUIREMENTS

Page 6-34, Article 610-10,

Delete Table 610-4 and substitute the following table and associated notes:

**Table 610-4**
**MINIMUM DENSITY REQUIREMENTS**

| MIX TYPE | MINIMUM % of $G_{mm}$ |
|---|---|
| **SUPERPAVE MIXES** | **(Maximum Specific Gravity)** |
| S 4.75A | 85.0[(a,b)] |
| SF 9.5A | 90.0 |
| S 9.5X, S 12.5X, I 19.0X, B 25.0X, B 37.5X | 92.0 |

(a) All S 4.75A pavement will be accepted for density in accordance with Article 105-3

(b) Compaction to the above specified density will be required when the S 4.75 A mix is applied at a rate of 100 lbs/sy (55 kg/m$^2$)

Page 6-34, Article 610-10

Delete the second paragraph in this Article and substitute the following:

Compact base and intermediate mix types (surface mixes not included) utilized for pavement widening of less than 4.0 feet (1.2 meters) and all mix types used in tapers, irregular areas and intersections (excluding full width travel lanes of uniform thickness), using equipment and procedures appropriate for the pavement area width and/or shape. Compaction with equipment other than conventional steel drum rollers may be necessary to achieve adequate compaction. Occasional density sampling and testing to evaluate the compaction process may be required. Densities lower than that specified in Table 610-4 will be accepted, in accordance with Article 105-3, for the specific mix types and areas listed directly above.

SURFACE REQUIREMENTS AND ACCEPTANCE

Page 6-35, Article 610-12

Delete the first paragraph in this Article and substitute the following:

Construct pavements using quality paving practices as detailed herein. Construct the pavement surface smooth and true to the plan grade and cross slope. Immediately correct any defective areas with satisfactory material compacted to conform with the surrounding area. Pavement imperfections resulting from unsatisfactory workmanship such as segregation, improper longitudinal joint placement or alignment, non-uniform edge alignment and excessive pavement repairs will be considered unsatisfactory and if allowed to remain in place will be accepted in accordance with Article 105-3.

When directed due to unsatisfactory laydown or workmanship, operate under the limited production procedures. Limited production for unsatisfactory laydown is defined as being restricted to the production, placement, compaction, and final surface testing (if applicable) of a sufficient quantity of mix necessary to construct only 2500 feet (750 meter) of pavement at the laydown width.

Remain on limited production until such time as satisfactory laydown results are obtained or until three consecutive 2500 foot (750 meter) sections have been attempted without achieving satisfactory laydown results. If the Contractor fails to achieve satisfactory laydown results after three consecutive 2500 foot (750 meter) sections have been attempted, cease production of that mix type until such time as the cause of the unsatisfactory laydown results can be determined. As an exception, the Engineer may grant approval to produce a different mix design of the same mix type if the cause is related to mix problem(s) rather than laydown procedures.

Mix placed under the limited production procedures for unsatisfactory laydown or workmanship will be evaluated for acceptance in accordance with Article 105-3.

DENSITY ACCEPTANCE

Page 6-36, Article 610-13

Delete the second paragraph on this page and substitute the following:

The pavement will be accepted for density on a lot by lot basis. A lot will consist of one day's production of a given job mix formula on a contract. As an exception, separate lots will be established when the one of the following occurs:

(6) Portions of pavement are placed in both "New" and "Other" construction categories as defined below. A lot will be established for the portion of the pavement in the "New" construction category and a separate lot for the portion of pavement in the "Other" construction category.

(7) Pavement is placed on multiple resurfacing maps, unless otherwise approved prior to paving. A lot will be established for each individual resurfacing map or portion thereof.

(8) Pavement is placed simultaneously by multiple paving crews. A lot will be established for the pavement placed by each paving crew.

(9) Pavement is placed in different layers. A lot will be established for each layer.

(10) Control strips are placed during limited production.

The Engineer will determine the final category and quantity of each lot for acceptance purposes.

Page 6-36, Article 610-13

Delete the first sentence in the third paragraph on this page and insert the following:

The "New" construction category will be defined as pavements of uniform thickness, exclusive of irregular areas, meeting all three of the following criteria:

Delete the sixth paragraph in this Article and substitute the following:

A failing lot for density acceptance purposes is defined as a lot for which the average of all test sections, and portions thereof, fails to meet the minimum specification requirement. If additional density sampling and testing, beyond the minimum requirement, is performed and additional test sections are thereby created, then all test results shall be included in the lot average. In addition, any lot or portion of a lot that is obviously unacceptable will be rejected for use in the work.

Page 6-36, Article 610-13

Delete the last paragraph on this page and substitute the following:

Any density lot not meeting minimum density requirements detailed in Table 610-4 will be evaluated for acceptance by the Engineer. If the lot is determined to be reasonably acceptable, the mix will be paid at an adjusted contract price in accordance with Article 105-3. If the lot is determined not to be acceptable, the mix will be removed and replaced with mix meeting and compacted to the requirement of these specifications.

BASIS OF PAYMENT, ASPHALT PAVEMENTS

Page 6-37, Article 610-16

Add the following to the second paragraph:

The quantity of hot mix asphalt pavement, measured as provided in Article 610-15, will be paid for at the contract unit prices per ton (metric ton) for "Asphalt Concrete Surface Course, Type S 4.75A, and SF 9.5A".

Add the following to the payment item description:

Asphalt Concrete Surface Course, Type S 4.75A..... Ton (Metric Ton)
Asphalt Concrete Surface Course, Type SF 9.5A..... Ton (Metric Ton)

Delete reference to the Asphalt Concrete Surface Course, Types S 9.5A and S 12.5B in both the second paragraph and in the payment description.

ASPHALT BINDER FOR PLANT MIX - METHOD OF MEASUREMENT

Page 6-39, Article 620-4

Delete the first sentence of the second paragraph on this page and substitute the following:

Where recycled plant mix is being produced, the grade of asphalt binder to be paid for will be the grade for the specified mix type as required in Table 610-2 unless otherwise approved.

CONSTRUCTION REQUIREMENTS

Page 6-43, Article 650-5

Add the following paragraph after the first paragraph under this Article:

Do not place open-graded asphalt friction course between October 31 and April 1 of the next year, unless otherwise approved. Place friction course, Type FC-1 mixes, only when the road surface temperature is 50°F (10°C) or higher and the air temperature is 50°F (10°C) or higher. The minimum air temperature for Type FC-1 Modified and FC-2 Modified mixes will be 60°F (15°C).

AGGREGATES FOR ASPHALT PLANT MIXES

Page 10-34, Subarticle 1012-1(B)4

Delete this Subarticle and substitute the following:

(4) Flat and Elongated Pieces:

Use coarse aggregate meeting the requirements of Table 1012-1 for flat and elongated pieces when tested in accordance with ASTM D 4791 (Section 8.4) on the No. 4 (4.75 mm) sieve and larger with a 5:1 aspect ratio (maximum to minimum) for all pavement types, except there is no requirement for Types S 4.75A, SF 9.5A, and S 9.5B.

Page 10-35, Table 1012-1

Delete Table 1012-1 and substitute the following:

**Table 1012-1**
**AGGREGATE CONSENSUS PROPERTIES[a]**

| Mix Type | Course Aggregate Angularity[b] | Fine Aggregate Angularity | Sand Equivalent | Flat & Elongated |
|---|---|---|---|---|
| | | % Minimum | % Minimum | % Maximum |
| | ASTM D 5821 | AASHTO T 304 Method A | AASHTO T 176 | ASTM D 4791 Section 8.4 |
| S 4.75 A | | 40 | 40 | |
| SF 9.5 A<br>S 9.5 B<br>I 19.0 B<br>B 25.0 B | 75 / - | 40 | 40 | 10[c] |
| S 9.5 C<br>S 12.5 C<br>I 19.0 C<br>B 25.0 C<br>B 37.5 C | 95 / 90 | 45 | 45 | 10 |
| S 12.5 D<br>I 19.0 D | 100 / 100 | 45 | 50 | 10 |
| OGAFC | 100 / 100 | N/A | N/A | 10 |

(a) Requirements apply to the course aggregate blend and/or fine aggregate blend
(b) 95/90 denotes that 95% of the course aggregate (+No.4 or + 4.75mm sieve)has one fractured face and 90% has two or more fractured faces.
(c) Does not apply to Mix Types SF 9.5 A or S 9.5 B

Page 10-36, Subarticle 1012-1(C)1

Insert the following after the fourth paragraph on this page:

When natural sand is utilized in "C" or "D" level asphalt mixes, do not exceed the maximum natural sand percentage in the mix design and/or production aggregate blend detailed in Table 1012-1A.

**Table 1012-1A**

| Uncompacted Void Content of Fine Aggregate AASHTO T 304 Method A | Maximum Percent Natural Sand Included in Mix Design and/or Production* |
|---|---|
| Less than 42.0 | 10 |
| Equal to 42.0 to 44.9 | 15 |
| Equal to 45.0 and greater | 20 |

*Maximum percent natural sand may be exceeded with approval from Pavement Construction Engineer upon satisfactory evaluation of pavement performance testing

FINE AGGREGATE ANGULARITY

Page 10-36, Subarticle 1012-1(C)6

Delete reference to AASHTO TP 33 Method A and substitute AASHTO T 304, Method A.

Page 10-37, Subarticle 1012-1(H)

Delete this Subarticle. It is a duplicate of Subarticle 1012-1(F) located on Page 10-36.

ASPHALT BINDER

Page 10-46, Article 1020-2

Delete the first paragraph under this Article and substitute the following:

Use Performance Graded Asphalt Binder meeting the requirements of AASHTO M 320. See Article 610-3 for the specified grades. Submit a Quality Control Plan for asphalt binder production in conformance with the requirements of AASHTO R 26 to the Materials and Tests Unit.

RR31

**CONSTRUCTION SEQUENCE:** **7-1-95**

Pave each section of roadway begun in a continuous operation. Do not begin work on another section of roadway unless satisfactory progress is being made toward completion of intersections and all other required incidental work by satisfactorily furnishing additional paving equipment and personnel, except for milling and patching operations.

RR34

**ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:** **1-01-02$_R$**

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_ | 4.3% |
| Asphalt Concrete Intermediate Course, Type I 19.0_ | 4.7% |
| Asphalt Concrete Surface Course, Type S 4.75A | 7.0% |
| Asphalt Concrete Surface Course, Type SF 9.5A | 6.5% |
| 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 Standard Specifications or Project Special Provisions.

RR43

**ASPHALT PLANT MIXTURES:** **7-1-95**

Place asphalt concrete base course material in trench sections with asphalt pavement spreaders made for the purpose, or with other equipment approved by the Engineer.

RR46

**BORROW MATERIAL** **02-17-04**

Revise the 2002 Standard Specifications as follows:

Page 10-44

Section 1018-2 II (b) Delete the last sentence in its entirety.

RR51

**RESURFACING EXISTING BRIDGES:** **7-1-95**

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 which 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.

RR61

**PAVING INTERSECTIONS:** **7-1-95**

Condition, prime, and surface all unpaved intersections back from the edge of the pavement on the main line of the project a minimum distance of 50 feet. The pavement placed in the intersections must be of the same material and thickness placed on the mainline 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 by State Forces.

Widen the pavement on curves as directed by the Engineer.

RR64

**TRENCHING FOR BASE COURSE:** **7-1-95**

The Contractor shall do all the trenching necessary to place the asphalt concrete base course widening in accordance with the typical sections, at locations shown on the plans, and as directed by the Engineer. Prior to the trenching operation, the Contractor shall strip and dispose of sod from the existing shoulders.

**Trenching shall be done with a milling machine. The trench shall be the width noted on the Typical Sections +/- 0.1'. If the trench excavation exceeds the 0.1' tolerance, the Contractor will be required to backfill the trench with approved earth material at no cost to the Department and retrench to the proper width.**

This requirement is being added for the following reasons:

1) To increase efficiency, thereby lessening the time we inconvenience the traveling public.
2) To minimize shoulder reconstruction and seeding & mulching.
3) To be good environmental stewards – by lessening the erodible area.

**Where Shoulder Reconstruction is not required, the excavated material shall be placed directly into dump trucks & stock piled and/or hauled to an approved waste pit.**

The trenching for the base course shall be done on the same day that the base course is to be placed. If the base course cannot be placed on the same day the trench section is excavated, the Contractor shall backfill the trench with earth material and compact same to the satisfaction of the Engineer. Once the trench is open, backfill and reopening the trench shall be done at no cost to the Department.

The Contractor will be restricted to widening one side of the project at a time unless otherwise permitted by the Engineer. In widening, the Contractor shall operate his equipment and conduct his operations in the same direction as the flow of traffic.

Density tests may be taken every 2000 feet in the widened areas as directed by the Engineer. The Contractor shall shape and compact the subgrade in the widened areas to the satisfaction of the Engineer. The Contractor shall compact the asphalt concrete base course in the widened areas in accordance with the provisions of Article 630-4 of the 2002 Standard Specifications.

The Contractor shall place the excavated material from trenching operation on the adjacent shoulder for use in shoulder construction areas as directed by the Engineer. Adequate weepholes are to be cut in the excavated material to provide for adequate drainage as directed by the Engineer. All excavated material is to be removed from all drives to provide ingress and egress to abutting properties. The Contractor shall also cut along a neat edge and remove all asphalt and concrete driveways to the width of the widening.

No direct payment will be made for this work, as the cost of this work shall be included in various other items in the contract.

RR79

**AGGREGATE PRODUCTION:** **11-20-01**

Provide aggregate from a producer who utilizes the new Aggregate Quality Control/Quality Assurance Program which is in effect at the time of shipment.

No price adjustment is allowed to contractors or producers who utilize the new program. Participation in the new program does not relieve the producer of the responsibility of complying with all requirements of the Standard Specifications. Copies of this procedure are available upon request from the Materials and Test Unit.

RR109

**CONCRETE BRICK AND BLOCK PRODUCTION:** **11-20-01**

Provide concrete brick and block from a producer who utilizes the new Solid Concrete Masonry Brick/Unit Quality Control/Quality Assurance Program which is in effect on the date that material is received on the project.

No price adjustment is allowed to contractors or producers who utilize the new program. Participation in the new program does not relieve the producer of the responsibility of complying with all requirements of the Standard Specifications. Copies of this procedure are available upon request from the Materials and Test Unit.

RR112

**DRUMS:** **07-16-02**

Revise the 2002 Standard Specifications as follows:

Page 10-195, Subarticle 1089-5(C)

Delete the first (1st) sentence of the first (1st) paragraph and insert the following:

"Provide a minimum of three orange and two white alternating horizontal circumferential stripes covering the entire outside with each drum."

RR116

**REMOVAL OF EXISTING PAVEMENT MARKERS:** **7-1-95**

The Contractor's attention is directed to the fact that there are pavement markers on this project.

Remove existing pavement markers in preparation for paving. Repair any pavement damage due to removal of existing pavement marker **prior to the end of the work day.** Dispose of existing pavement markers as directed by the Engineer.

**No direct payment will be made for this work, as it will be incidental to the paving operation and payment at the contract unit price for the various asphalt items in the contract will be full compensation for such work.**

RR118

**PAVEMENT MARKING GENERAL REQUIREMENTS:** **07-16-02**

Revise the 2002 Standard Specifications as follows:

Page 12-10, Subarticle 1205-3(J)

Delete the first (1st) sentence of the first (1st) paragraph and insert the following:

"Have at least one member of every pavement marking crew working on a project certified through the NCDOT Pavement Marking Technician Certification Process. For more information contact the Traffic Control, Marking and Delineation Section of the North Carolina Department of Transportation at 919-250-4151 or http://www.doh.dot.state.nc.us/preconstruct/traffic/congestion/TC/"

RR119