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

RR01

GRADING PER SHOULDER MILE:

The Division of Highways will set all construction stakes necessary to complete the work including, but not limited to, grade and alignment stakes, slope stakes, and pipe culvert stakes.

Grading Per Shoulder Mile will include all clearing and grubbing, all disposal of waste and debris, all excavation within the limits of the typical section including front and back slopes of roadway ditches, all grading necessary for suitable connections with intersecting roads to the limits shown on the plans, and all grading necessary for suitable connections with existing drives. Grading Per Shoulder Mile will also include all work covered by Section 200, for "Clearing and Grubbing"; Section 802, "Disposal of Waste and Debris"; Section 225, "Roadway Excavation"; Section 235, "Embankments"; Section 500, "Subgrade"; and Section 560, Shoulder Construction"; except that the provisions of the above referenced sections pertaining to measurement, payment, or compensation will not apply. A tolerance of 0.2 foot above or below grade will be allowed, provided that the deviation from the required grade is sufficiently regular to provide a visibly uniform surface. Waste material shall be disposed of wherever practical by widening or flattening fill slopes, as directed by the Engineer.

Where this method of disposal is not considered practical by the Engineer, waste material shall be disposed of in disposal areas furnished by the Contractor. No payment will be made for hauling waste material to disposal areas nor for clearing and grubbing disposal areas.

The quantity of Grading Per Shoulder Mile to be paid for will be the length in miles of those portions of the project where this work has been performed. Measurement will be made horizontally along the center line of the project to the nearest thousandth of a mile, with deductions being made for bridges. Measurement will not be made along any intersecting roads and streets.

The quantity of Grading Per Shoulder Mile, measured as provided above, will be paid for at the contract unit price per mile for "Grading Per Shoulder Mile". Such price and payment will be full compensation for all work covered by Section 200, for "Clearing and Grubbing; Section 802, "Disposal of Waste and Debris"; Section 225, "Roadway Excavation"; Section 235, "Embankment"; Section 500, "Subgrade"; and Section 560, "Shoulder Construction". The above price and payment will also be full compensation for the required grading for connections at intersections and drives, for all hauling of materials, for disposal of all waste materials, and for furnishing any disposal areas that may be necessary.

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 RECONSTRUCTION PER SHOULDER MILE:

The work covered by this provision 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. This work shall be performed immediately after the resurfacing operations are complete as directed by the Engineer. As a part of this work, the Contractor will be required to tie from the Typical Section Shoulder Point to the existing slope at a minimum slope of 4:1 or as directed by the Engineer. **All Shoulder Reconstruction shall be completed prior to placing the Final Surface Layer, unless the Final Surface Layer exceeds 1½", or as directed by the Engineer.**

The Contractor shall furnish all earth material necessary for the construction of the shoulders. The earth material will meet the approval of the Engineer and no testing will be necessary. 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.

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

This work shall be defined as "Shoulder Reconstruction" and the quantity of such work to paid for will be the actual number of miles of shoulders which have been constructed. Measurement will be made along the surface 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". Any additional earth material furnished by the Contractor will be paid for in accordance with Section 230 of the Standard Specifications for "Shoulder Borrow".

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 $219.17 per ton.

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

RR19

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

MILLING:

Mill to the end of the radii on all intersecting streets unless otherwise directed by the Engineer.

In curb and gutter section, the gutter and drainage structures will be cleaned of milled material at the end of each day's operation.

The area to be milled in the gutter is not included in the quantity shown for the milling item. There will be no direct payment for milling in the gutter as payment for this portion of the work will be incidental to the various milling items bid.

Maps 32, 33, 34, 36, 37 and 41, any centerline monument frame and cover, manhole and valve adjustment required will require a grout mix that reaches minimum strength requirement in sixty (60) minutes.

The Contractor must mill the entire width of a roadway section in one day's operation or mill longitudinal joints on a 6:1 taper.

Maps 36 and 41 require milling and replacement with Intermediate Course in same day's operation.

Map 41 shall he milled 3 inches from 1.16 miles West of SR 1513 to 0.67 mile East of SR 1518.

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 Davidson'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 l05-3.

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	5 : 1 Ratio % 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 S 9.5 B I 19.0 B B 25.0 B	75 / -	40	40	10[c]
S 9.5 C S 12.5 C I 19.0 C B 25.0 C B 37.5 C	95 / 90	45	45	10
S 12.5 D 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

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

ASPHALT SURFACE TREATMENT MAT COAT:

The Asphalt Surface Treatment, Mat Coat will be placed in accordance with Section 660 of the 1995 Standard Specifications with the following Amendments:

The aggregate shall meet the following gradations: % passing screens, 1" = 100%, ¾" = 90 - 100%, 3/8" = 15 - 35%, #4 = 0 - 10%.

The coarse aggregate shall be in accordance with the Standard Specifications Section 1012-2, Coarse Aggregate, except as follows:

(B) Soundness:

When subjected to 5 cycles of the sodium sulfate soundness test, the weighted average loss shall be not more than 8%.

(D) Resistance to Abrasion:

Crushed stone or gravel shall have a percentage of wear of not more than 40%. Article 660-8 will be amended such that the application rate for the No. 6 stone will be 20-25 Lbs./Sq.Yd.

Article 660-9 will be amended such that traffic will not be allowed on the mat coat. The Contractor will be required to resurface over the mat coat immediately behind the mat operation. All mat coat placed must be covered by the resurfacing layer at the end of each day's operation.

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

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

Perform all trenching necessary to place the asphalt concrete base course widening in accordance with the typical sections, at locations shown on the sketch maps, and as directed by the Engineer.

Perform the trenching for the base course 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, backfill the trench with earth material and compact same to the satisfaction of the Engineer. Once the trench is open, perform backfilling and re-opening of the trench 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, operate equipment and conduct 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. Shape and compact the subgrade in the widened areas to the satisfaction of the Engineer. Compact the asphalt concrete base course in the widened areas in accordance with the provisions of Article 610-9 of the Standard Specifications.

Place the excavated material from trenching operation on the adjacent shoulder area as directed by the Engineer. Cut adequate weep holes in the excavated material to provide for adequate drainage as directed by the Engineer. Remove all excavated material from all drives to provide ingress and egress to abutting properties and from in front of mailboxes and paper boxes. Saw a neat edge and remove all asphalt and/or concrete driveways, and existing asphalt widening, as directed by the Engineer, to the width of the widening and dispose of any excavated concrete or asphalt materials. Properly reconnect driveways.

Upon completion of the paving operation, backfill the trench to the satisfaction of the Engineer. Dispose of any excess material remaining after this operation.

No direct payment will be made for trenching, sawing, and removal of driveways, depositing material on shoulder area, backfilling trench, or removal of spoil material, as the cost of this work shall be included in the contract unit price per ton for "Asphalt Concrete Base Course, Type __".

RR79

ASPHALT CONCRETE SURFACE COURSE, TYPE -- (LEVELING COURSE): **7-1-95**

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 Standard Specifications except payment will be made at the contract unit price per ton for "Asphalt Concrete Surface Course, Type __ (Leveling Course)".

RR85

PATCHING EXISTING PAVEMENT (MILL FULL DEPTH):

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.

The Contractor shall 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 shall consist of Asphalt Concrete Base Course, Asphalt Concrete Intermediate Course, or Asphalt Concrete Surface Course or a combination of base, intermediate and surface course, and pavement removal, as directed by the Engineer.

Patching of existing pavement shall include but not be limited to the cutting 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.

Asphalt Concrete Base Course shall be placed in lifts not exceeding 5½ inches. Compaction equipment suitable for compacting patches as small as 4 feet by 6 feet shall be utilized on each lift. Compaction pattern to achieve proper compaction shall be approved by the Engineer.

The Contractor shall remove existing pavement at location directed by the Engineer. The pavement shall be removed in accordance with Section 607 of the Standard Specifications.

'The Contractor may be required to make multiple passes with the milling machine to achieve additional depth of the patch at the direction of the engineer. There will be no additional payment for additional passes as all work will be compensated at the unit price for mill patching. The contractor will utilize a maximum milling head width of 4 feet unless otherwise allowed by the Engineer.

The Contractor shall schedule his 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 shall be 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 weighted in trucks on certified platform scales or other certified weighing devices.

Basis of Pavement:

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 (Full Depth)".

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 work covered by this provision.

The item of "Patching Existing Pavement (Full Depth)" will be considered to be a minor item. In the event that the item of "Patching Existing Pavement (Full Depth) 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.

RR09

Payment will be made under:

Patching Existing Pavement (Full Depth).....Ton

PATCHING EXISTING PAVEMENT (MILL):

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.

The Contractor shall 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 shall consist of Asphalt Concrete Base Course, Asphalt Concrete Intermediate Course, or Asphalt Concrete Surface Course or a combination of base, intermediate and surface course, and milling, as directed by the Engineer.

Patching of existing pavement shall include but not be limited to the milling of the existing pavement in accordance with the typical sections; the removal and disposal of pavement, 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.

Asphalt Concrete Base Course, shall be placed in lifts not exceeding 5½ inches. Compaction equipment suitable for compacting patches as small as 4 feet by 6 feet shall be utilized on each lift. Compaction pattern to achieve proper compaction shall be approved by the Engineer.

The Contractor shall mill the existing pavement at locations directed by the Engineer. The pavement shall be milled in accordance with Section 607 of the Standard Specifications.

The Contractor may be required to make multiple passes with the milling machine to achieve additional depth of the patch at the direction of the engineer. There will be no additional payment for additional passes as all work will be compensated at the unit price for mill patching. The Contractor will utilize a maximum milling head width of 4 feet unless otherwise allowed by the Engineer.

The Contractor shall schedule his operations so that all areas where pavement has been milled will be repaired on the same day the pavement is milled, and all lanes of traffic shall be 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 weighted in trucks on certified platform scales or other certified weighing devices.

Basis of Payment:

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

The above price and payment will be full compensation for all work covered by this provision, including but not limited to milling, 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 (Mill)" 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 that 100 percent, the provisions of Article 104-5 pertaining to revised contract unit price for overrunning minor items will not apply to this item.

RR09

Payment will be made under:

Patching Existing Pavement (Mill).....Ton

CONVERT EXISTING DROP INLET TO OPEN THROAT CATCH BASIN: **1-01-02**

At the proper phase of construction, convert the existing drop inlet at locations indicated in the plans or where directed, to open throat catch basin in accordance with the details in the plans and the applicable requirements of Sections 840 and 859 of the Standard Specifications.

The quantity of converting existing drop inlet to open throat catch basin to be paid for will be the actual number of existing drop inlet converted to open throat catch basin, completed and accepted.

The quantity of converting existing drop inlet to open throat catch basin, measured as provided above, will be paid for at the contract unit price each for "Convert Existing Drop Inlet to Open Throat Catch Basin". Such price and payment is considered full compensation for all equipment, materials, labor, tools, and incidentals necessary to complete each conversion satisfactorily.

SP8R50

Payment will be made under:

Convert Existing Drop Inlet to Open Throat Catch Basin.....Each

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

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

RR103

ADJUSTMENT OF MONUMENTS:

The Contractor shall adjust centerline monument frames and covers in accordance with Section 858 of the Standard Specifications and as directed by the Engineer.

The quantity of adjusted monuments to be paid for shall be the actual number of monuments satisfactorily adjusted.

The quantity of adjusted monuments, measured as provided for above, shall be paid for at the contract unit price each for "Adjust Monuments".

Payment will be made under:

Adjust Monuments.....Each

WHEELCHAIR RAMPS FOR RESURFACING PROJECTS: 08-19-03

DESCRIPTION

The work covered by this provision consists of the construction of Portland cement concrete wheelchair ramps with detectable warnings on resurfacing projects and includes but is not limited to the removal and disposal of any existing sidewalk, curb and/or gutter, and pavement which is necessary for construction of wheelchair ramps as well as the repair of the existing curb and/or gutter after construction of the wheelchair ramp.

MATERIALS

Provide materials meeting the requirements of Division 10 of the Standard Specification shown below:

Portland Cement Concrete.....Section 1000
Curing Agents.....Section 1026
Joint Fillers.....Article 1028-1
Joint Sealers.....Article 1028-2

Detectable warnings may be either truncated dome concrete paving blocks or stamped concrete. Use Class B concrete in accordance with the Standard Specifications. Raised Truncated Domes shall conform to the following:

Truncated Domes shall have a base diameter of no less than 0.9 inches to no more than 1.4 inches, a top diameter of no less than 50% to no more than 65% of the base diameter, and a height of 0.2 inches. Truncated domes shall have center-to-center spacing of no less than 1.6 inches to no more than 2.4 inches, and a base to base spacing of 0.65 inches minimum, measured between the most adjacent domes on square grid.

CONSTRUCTION REQUIREMENTS

Construct wheelchair ramps in accordance with details in the plans and make all repairs prior to the resurfacing operation.

Construct wheelchair ramps at all locations that contain curb and gutter. Retrofit existing sidewalks only. Connect the ramp to the existing sidewalk when the sidewalk is in the right of way. Where it is necessary to remove a portion of existing sidewalks, curb and/or gutter and pavement, furnish a neat edge along the surface to be retained by sawing a neat cut approximately 2 inches deep with a concrete saw prior to removing the existing materials.

Construct concrete in accordance with Section 825 of the Standard Specifications and give it a sidewalk finish, except as otherwise provided. Perform brooming of the concrete surface transverse to the direction of traffic. Use a minimum joint spacing of 5 feet. Where existing sidewalks are being connected to the ramp, locate transverse joints so as to line up with existing joints in the adjacent sidewalk. Do not seal grooved joints.

Obtain 70 percent contrast visibility with adjoining surfaces, either light-on-dark, or dark-on-light sequence covering the entire surface of the ramp.

Do not place backfill adjacent to the constructed sidewalk, or wheelchair ramp until at least 3 curing days have elapsed as defined in Article 825-9 of the Standard Specifications. Place backfill no later than 4 calendar days after the completion of this 3 curing day time period. Compact backfill to a degree comparable to the adjacent undisturbed material.

METHOD OF MEASUREMENT

The quantity of wheelchair ramps to be paid for will be the actual number of wheelchair ramps installed, which have been completed and accepted. No separate measurement will be made for the removal and disposal or repair of existing curb and gutter, sidewalk and pavement or the connection to existing sidewalk in the right of way.

BASIS OF PAYMENT

The quantity of wheelchair ramps, measured as provided for above, will be paid for at the contract unit price each for Wheelchair Ramps. Such price and payment will be full compensation for all work covered by this provision including but not limited to excavation and backfilling; sawing, repairing and/or replacing the existing sidewalk or curbs within the pay limits for retrofit shown on the detail; pavement repairs; furnishing and placing concrete; furnishing and placing detectable warnings, construction joints and removal and disposal of existing sidewalk and curb and gutter when required and for all materials labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Wheelchair Ramps.....Each

Payment for and construction of sidewalk necessary outside the pay limits shown on the detail will be in accordance with Section 848.

RR107

RETROFITTING WHEELCHAIR RAMPS WITH DETECTABLE WARNINGS (RAISED TRUNCATED DOMES) **10-21-03**

DESCRIPTION

This work shall consist of retrofitting existing concrete wheelchair ramps with detectable warnings in accordance with the details, Standard Specifications and these provisions.

MATERIALS

Detectable warnings may be either truncated dome concrete paving blocks or stamped concrete. Use Class B concrete in accordance with the Standard Specifications.

Truncated Domes shall have a base diameter of no less than 0.9 inches (23 mm) to no more than 1.4 inches (36 mm), a top diameter of no less than 50 % to no more than 65% of the base diameter, and a height of 0.2 inches (5 mm). Truncated domes shall have center-to-center spacing of no less than 1.6 inches (41 mm) to no more than 2.4 inches (61 mm), and a base to base spacing of 0.65 inches (16 mm) minimum, measured between the most adjacent domes on square grid.

CONSTRUCTION METHODS

Place detectable warnings in accordance with Section 825-4 of the Standard Specifications. Sawcut to the full depth of the concrete and adjust the existing subgrade to the proper grade prior to placing concrete to be stamped or installing paving blocks. Truncated domes shall be installed 24 inches (600 mm) in length of along the bottom of the curb ramps in accordance with the details and plans.

Obtain 70 percent contrast visibility with adjoining surfaces, either light-on-dark, or dark-on-light sequence covering the entire ramp. The detectable warnings shall have the same or nearly the same contrast as the existing ramp.

METHOD OF MEASUREMENT

The quantity of detectable warning domes to be paid for will be the actual number of retrofitted wheelchair ramps, which have been completed and accepted.

BASIS OF PAYMENT

When detectable warning domes are installed on existing concrete wheelchair ramps, they will be paid for at the contract unit price per each for "Retrofit existing wheelchair ramps". Such price and payment will be full compensation for excavation and backfilling; sawing, repairing and/or replacing the existing sidewalk or curbs within the pay limits for retrofit shown on the detail; pavement repairs; furnishing and placing detectable warnings, construction joints and removal and disposal of existing sidewalk and curb and gutter 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 Wheelchair Ramps	Each

SP8R125

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 and dispose of these markers prior to the paving operation.

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

GUARDRAIL POSTS AND OFFSET BLOCKS: **06-22-04**

Revise the *2002 Standard Specifications* as follows:

Page 10-69, Subarticle 1046-3

Delete this sub-article in its entirety and replace with the following:

1046-3 POSTS AND OFFSET BLOCKS.

(A) General:

The Contractor may at his option furnish either of the following types of steel guardrail posts. Only one type of post will be permitted at any one continuous installation. Use structural steel posts throughout the project, unless otherwise directed or detailed in the plans.

1. Steel W6 x 8.5 or W6 x 9.0 posts
2. Steel 4.5" x 6.0" "C" shape posts (C150 x 12.2 kg/m)

The Contractor may at his option furnish either of the following types of treated timber posts if specifically directed or detailed in the plans. Only one type of post will be permitted at any one continuous installation.

1. Timber 6" x 8" (152 mm x 203 mm) posts.
2. Timber 8" x 8" (203 mm x 203 mm) posts.

(B) Structural Steel Posts:

Fabricate steel posts for guardrail of the size and weight shown on the plans from structural steel complying with the requirements of Section 1072. Metal from which C shape posts are fabricated shall meet the requirements of ASTM A570 for any grade of steel, except that mechanical requirements shall meet the requirements of ASTM A36. Punch or drill the holes for connecting bolts. Burning will not be permitted. After fabrication, the posts shall be galvanized in accordance with Section 1076.

(C) Treated Timber Posts:

Timber guardrail posts shall be of treated southern pine meeting the requirements of Article 1082-2 and 1082-3.

Bore bolt holes to a driving fit for the bolts. A minus tolerance of 1 percent will be allowed in the length of the post. Perform all framing and boring before the posts receive preservative treatment.

(D) Offset Blocks:

Provide 8-inch deep recycled plastic or composite offset blocks that have been approved for use with the guardrail shown in the standard drawings and/or plans. Only one type of offset block will be permitted at any one continuous installation. Prior to beginning the installation of recycled offset block, submit the FHWA acceptance letter for each type of block to the Engineer for approval.

Treated timber offset blocks with steel beam guardrail will not be allowed unless required by Specifications, directed by the Engineer or detailed in the plans. Steel offset blocks with steel beam guardrail will not be allowed.

Recycled plastic or composite offset blocks shall be made from no less than 50% recycled plastic or composite, and shall meet the following minimum requirements:

- Specific Gravity: 0.950
- Compressive Strength in Lateral Direction: .....1600 psi (11 MPa)
- Maximum Water Absorption: .....10% by weight
- Maximum Termite and Ant Infestation: 10%
- Testing.....Shall pass NCHRP Report 350, Test Level 3 by CRASH TESTING

Revise the *2002 Standard Roadway Drawings* as follows:

Sheet 4 of 6, Standard 862.03, delete the note and substitute the following:

Note: The midpost and offset block of the WTR section will require special bolt hole drilling in the thrie beam offset block and line post.

RR120

GUARDRAIL ANCHOR UNITS, TYPE 350: **04-20-04**

DESCRIPTION

Furnish and install guardrail anchor units in accordance with the details in the plans, the applicable requirements of Section 862 of the Standard Specifications, and at locations shown in the plans.

MATERIALS

The Contractor may at his option, furnish any one of the guardrail anchor units.

Guardrail anchor unit (ET-2000) as manufactured by:

TRINITY INDUSTRIES, INC.
2525 N. STEMMONS FREEWAY
DALLAS, TEXAS 75207
TELEPHONE: 1-800-644-7976

The guardrail anchor unit (SKT 350) as manufactured by:

ROAD SYSTEMS, INC.
3616 OLD HOWARD COUNTY AIRPORT
BIG SPRING, TEXAS 79720
TELEPHONE: (915) 263-2435

Prior to installation the Contractor shall submit to the Engineer:

1. FHWA acceptance letter for each guardrail anchor unit certifying it meets the requirements of NCHRP Report 350, Test Level 3, in accordance with Section 106-2 of the Standard Specifications.

2. Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Section 105-2 of the Specifications.

No modifications shall be made to the guardrail anchor unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans, and details and assembling instructions furnished by the manufacturer.

CONSTRUCTION

Guardrail end delineation is required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation consists of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Section 1088-3 of the Standard Specifications and is incidental to the cost of the guardrail anchor unit.

MEASUREMENT AND PAYMENT

Measurement and payment will be made in accordance with Articles 862.5 and 862-6 of the Standard Specifications.

Payment will be made under:

Guardrail Anchor Units, Type 350 .....Each

SP8R65