# PROJECT SPECIAL PROVISIONS

#### **ROADWAY**

# **LUMP SUM GRADING:**

Lump sum grading shall be performed in accordance with Section 226 Comprehensive Grading of the 2006 Standard Specifications except as follows:

Delete all references to Section 230, Borrow Excavation.

# **CLEARING AND GRUBBING – METHOD III:**

(4-6-06)

SP2 R02

Perform clearing on this project to the limits established by Method "III" shown on Standard No. 200.03 of the 2006 Roadway Standard Drawings.

# **DISPOSAL OF CONTAMINATED SOIL:**

This Contract Provision is included for contingency purposes only.

The Contractor's attention is directed to the fact that soils containing petroleum hydrocarbon compounds may exist within the project limits. Please note that only non-hazardous levels of contaminants would be expected on this project.

Any excavation advanced within Parcel 3 may impact contaminated soils. If any excavation occurs in this area, the Contractor should only excavate those soils that the Engineer determines must be removed to complete a particular task. The Contractor must transport and properly dispose of all contaminated media excavated within the above-mentioned limits at a licensed facility. It shall be the Contractor's responsibility to locate such a facility. NCDOT Departmental approval of the specific facility identified for use by the Contractor shall occur prior to disposal of any contaminated media from the project limits. The Contractor is required to present all disposal manifests to the Engineer within twenty (20) days of completion of the excavation. The Contractor must provide Certificates of Remediation to the Department within sixty (60) days of completion of the excavation.

The Contractor is entirely responsible for compliance with all OSHA, EPA, DOT, DENR and local rules and regulations pertaining to excavation and transportation of the contaminated soil. Examples of such rules and regulations include, but are not limited to, 29 CFR 1910 and 1926, 40 CFR 260 - 265, 49 CFR 173 and 178, 15A NCAC 13A North Carolina Hazardous Waste Management Rules, NCGS 130A - 310 Inactive Hazardous Sites, the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Federal Resource Conservation and Recovery Act (RCRA). It must be noted that inclusion of this paragraph is meant to highlight the Contractor's responsibility for regulatory compliance in all phases of work on this project.

### Measurement:

The quantities of contaminated soil disposal to be paid for will be the actual number of tons of material, which have been acceptably excavated, transported and received at the disposal facility, determined through weighing the loaded material with certified scales, documented by a certified weight certificate issued by a North Carolina public weighmaster, licensed in accordance with Chapter 81A of the General Statutes of North Carolina. The certificate shall be in the form of a ticket furnished by the Contractor and shall contain the following information:

- 1. Division of Highways project number
- 2. Date
- 3. Time issued
- 4. Gross weight
- 6. Tare weight
- 7. Net weight of material
- 8. Scale location
- 9. Truck number
- 10. Contractor's name
- 11. Public weighmaster's stamp or number
- 12. Public weighmaster's signature in ink or initials in ink

# Payment:

The quantities of disposal of contaminated soil, measured as provided above, will be paid for at the contract unit price per ton for "Disposal of Contaminated Soil".

The above prices and payments will be full compensation for all loading, transportation, weighing and disposal of contaminated materials, equipment, decontamination of equipment, labor, and personal protective equipment.

| Payment will be made under:   |    |   |
|-------------------------------|----|---|
| Disposal of Contaminated Soil | To | n |

# **ROCK PLATING:**

Rock plating will be required to stabilize the proposed embankment slope on the left side from the bridge end bent forward, as needed, and at locations as directed by the Engineer.

After compacting the slopes to a degree satisfactory to the Engineer, the fabric shall be placed by unrolling down the slope in a direction perpendicular to the centerline. Fabric shall be buried at the top of the fill slope and embedded at the bottom using the dimensions and orientation shown on the detail. It is preferable that the length of fabric down the slope be continuous. If the length of fabric is not sufficient, such as at the end of a roll, an overlap of 1.5 meters (5 feet) is required with the upper fabric placed over the lower as shown on the detail.

In placing the rock, the Contractor shall take care not to tear or damage the fabric and in any circumstance shall the rock be allowed to fall from a height greater than 0.9 meters (3 feet).

### **MATERIALS**

### Filter Fabric

The filter fabric shall meet the requirements of Section 1056 of the Standard Specifications for Type 2 fabric.

### Rock

The rock shall be plain rip rap meeting the requirements of the Standard Specifications for Class B rip rap.

# **MEASUREMENT AND PAYMENT**

The quantity of rock plating to be paid for will be the actual number of square yards of rock plating measured along the surface of the slopes which has been completed and accepted.

The quantity of rock plating will be paid for at the contract unit price per square yards for "Rock Plating". Such price and payment shall be full compensation for all work and materials covered by this provision including Class B rip rap and filter fabric.

Payment item:

Rock Plating.....Square Meters (Square Yards)

### **SHALLOW UNDERCUT:**

(9-18-07)

SP2R35

### **Description**

Undercut to a depth of 6 to 24 inches and place fabric for soil stabilization and Class IV Subgrade Stabilization at locations shown on the plans or as directed by the Engineer.

### **Materials**

Refer to Division 10 of the Standard Specifications:

| Item                                  | Section |
|---------------------------------------|---------|
| Select Material, Class IV             | 1016    |
| Fabric for Soil Stabilization, Type 4 | 1056    |

Use Class IV Select Material for Class IV Subgrade Stabilization. If Class IV Subgrade Stabilization does not meet the requirements of Article 1010-2 of the Standard Specifications,

the Engineer, at his discretion, may consider the material reasonably acceptable in accordance with Article 105-3 of the *Standard Specifications*.

#### **Construction Methods**

Perform undercut excavation in accordance with Section 225 of the *Standard Specifications*. Place fabric for soil stabilization in accordance with Article 270-3 of the *Standard Specifications* before backfilling. Backfill with Class IV Subgrade Stabilization by end dumping subgrade stabilization material on the fabric. Do not operate heavy equipment on the fabric until it is covered with Class IV Subgrade Stabilization. Compact subgrade stabilization material to 92% of AASHTO T180 as modified by the Department or to the highest density that can be reasonably obtained.

Maintain Class IV Subgrade Stabilization in an acceptable condition and minimize the use of heavy equipment on subgrade stabilization material in order to avoid damaging the backfill. Provide and maintain drainage ditches and drains as required to prevent entrapment of water in backfill.

# Measurement and Payment

Class IV Subgrade Stabilization will be measured and paid for at the contract unit price per ton. The quantity to be paid for will be the actual number of tons of subgrade stabilization material that has been incorporated into the completed and accepted work. The material will be measured by being weighed in trucks on certified platform scales or other certified weighing devices. This work includes but is not limited to furnishing, hauling, handling, placing, compacting and maintaining the subgrade stabilization material.

*Undercut Excavation* will be measured and paid for in accordance with Section 225 and/or 226 of the *Standard Specifications*.

Fabric for Soil Stabilization will be measured and paid for in accordance with Section 270 of the Standard Specifications.

Payment will be made under:

**Pay Item**Class IV Subgrade Stabilization

Pay Unit Ton

# SHOULDER AND FILL SLOPE MATERIAL

(5-21-02)

SP2 R45

# **Description**

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 560 and Section 235 Standard Specifications except as follows:

Construct the top 6 inches of shoulder and fill slopes with soils capable of supporting vegetation.

# 28

Provide soil with a P.I. greater than 6 and less than 25 and with a pH ranging from 5.5 to 6.8. Remove stones and other foreign material 2 inches or larger in diameter. All soil is subject to test and acceptance or rejection by the Engineer.

Obtain material from within the project limits or approved borrow source.

# **Measurement and Payment**

Where the material has been obtained from an authorized stockpile or from a borrow source, measurement and payment will be made as provided in Section 230 of the Specifications for "Borrow Excavation".

# **PIPE TESTING:**

4 17 07

SP3R33

Revise the 2006 Standard Specifications as follows:

Page 3-3, Article 300-6, add the following:

The Department reserves the right to perform forensic testing on any installed pipe.

# REINFORCED BRIDGE APPROACH FILL:

(3-18-03) (Rev.7-18-06)

SP4 R01

### **Description**

This work consists of all work necessary to construct reinforced bridge approach fills in accordance with these provisions and the plans, and as directed by the Engineer.

#### **Materials**

#### Geomembrane

Provide geomembrane that is impermeable, composed of polyethylene polymers or polyvinyl chloride, and meets the following physical requirements:

| Property                  | Requirements                     | <b>Test Method</b> |
|---------------------------|----------------------------------|--------------------|
| Thickness                 | 25 mils Minimum                  | ASTM D1593         |
| Tensile Strength at Break | 100 lb/inch Minimum              | ASTM D638          |
| Puncture Strength         | 40 lbs Minimum                   | <b>ASTM D 4833</b> |
| Moisture Vapor            | 0.018 ounce/yard per Day Maximum | ASTM E96           |
| Transmission Rate         | 0.018 ounce/yard per Day Maximum |                    |

Fabric

Refer to Section 1056 for Type 2 Engineering Fabric and the following:

Use a woven fabric consisting of strong rot-proof synthetic fibers such as polypropylene, polyethylene, or polyester formed into a stable network such that the filaments or yarns retain their relative positions to each other.

Fabric PropertyRequirementsTest MethodMinimum Flow Rate2 gallons/min/square footASTM D 4491

Lamination of fabric sheets to produce the physical requirements of a fabric layer will not be accepted. Furnish letters of certification from the manufacturer with each shipment of the fabric and geomembrane attesting that the material meets the requirements of this provision; however, the material is subject to inspection, test, or rejection by the Engineer at any time.

During all periods of shipment and storage, wrap the geomembrane and fabric in a heavy-duty protective covering to protect the material from ultraviolet rays. After the protective wrapping has been removed, do not leave the material uncovered under any circumstances for longer than 4 days.

#### Select Material

Provide select material meeting the requirements of Class III, Type 1 or Type 2, or Class V select material of Section 1016 of the 2006 Standard Specifications. When select material is required under water, use select material class V only, up to one foot above the existing water elevation.

4 inch Diameter Corrugated Drainage Pipe and Fittings

Provide pipe and fittings that meet all the applicable requirements of Section 815 or 816 of the 2006 Standard Specifications.

## **Construction Methods**

Place the geomembrane and fabric as shown on the plans or as directed by the Engineer. Perform the excavation for the fabric reinforced fill to the limits shown on the plans. Provide an excavated surface free of obstructions, debris, pockets, stumps, and cleared of all vegetation. The geomembrane or fabric will be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation, handling or storage. Lay all layers smooth, and free from tension, stress, folds, wrinkles or creases. Place all the fabric layers with the machine direction (roll direction) parallel to the centerline of the roadway. A minimum roll width of 10.0 feet for the fabric is required. Overlap geomembrane or fabric splices parallel to the centerline of the roadway a minimum of 18 inches. Geomembrane or fabric splices parallel to the backwall face will not be allowed.

Deposit and spread select material in successive, uniform, approximately horizontal layers of not more than 10 inches in depth, loose measurement, for the full width of the cross section, and keep each layer approximately level. Place and compact each layer of select material fill no more than 10 inches thick with low ground pressure equipment. Use hand operated equipment to compact the fill material within three feet of the backwall and wingwalls as directed by the Engineer. Compact select material to a density equal to at least 95% of that obtained by compacting a sample of the material in accordance with AASHTO T99 as modified by the Department. Compact the top eight inches of select material to a density to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T99 as modified by the Department. Density requirements are not applicable to select material, class V; however compact the fill with at least four passes of low ground pressure equipment on the entire surface as directed by the Engineer. The compaction of each layer of select material shall be inspected and approved by the Department prior to the placement of the next fill layer. No equipment will be allowed to operate on the drainage pipe or any geomembrane/fabric layer until it is covered with at least six inches of fill material. Compaction shall not damage the drainage pipe, geomembrane, or fabric under the fill. Cover the geomembrane/fabric with a layer of fill material within four days after placement of the geomembrane/fabric. Geomembrane and fabric that are damaged as a result of installation will be replaced as directed by the Department at no additional cost.

Place the geomembrane on the ground, and attach and secure it tightly to the vertical face of the backwall and wingwalls with adhesives, duct-tape, nails or any other method approved by the Engineer. Place the first fabric layer on the surface of the geomembrane with the same dimensions of the geomembrane. No material or void is allowed between the geomembrane and the first fabric layer. Place and fold the remaining fabric layers on the edges as shown on the plans or as directed by the Engineer. Provide vertical separation between fabric layers as specified on the plans. The number of fabric layers will be shown in the plans.

Place four inch diameter perforated drainage pipe along the base of the backwall and sloped to drain as shown on the plans. Completely wrap perforated drainage pipe and #78M stone with Type 2 Engineering Fabric as shown on the plan detail. Install a pipe sleeve through the bottom of or under the wing wall prior to placing concrete for the wing wall. The pipe sleeve shall be of adequate strength to withstand the wingwall load. Place the pipe sleeve in position to allow the drainage pipe to go through the wing wall with a proper slope. Connect four-inch diameter nonperforated (plain) drainage pipe with a coupling to the perforated pipe near the inside face of the wingwall. Place the nonperforated drainage pipe through the pipe sleeve, extend down to the toe of the slope and connect, to a ditch or other drainage systems as directed by the Engineer. For bridge approaches in cut sections where no side slope is available, direct the drainage pipe outlet to the end slope down to the toe using elbows as directed by the Engineer.

# Measurement and Payment

Reinforced Bridge Approach Fill, Station \_\_\_\_\_ will be paid for at the contract lump sum price. Such price and payment will be full compensation for both approach fills at each bridge installation, including but not limited to furnishing, placing and compacting select material, furnishing and placing geomembrane and woven fabric, furnishing and placing pipe sleeve,

drainage pipe, and stone, furnishing and installing concrete pads at the end of outlet pipes, excavation and any other items necessary to complete the work.

Payment will be made under:

Pay Item

Pay Unit

Reinforced Bridge Approach Fill, Station

Lump Sum

# **ASPHALT PAVEMENTS - SUPERPAVE:**

(7-18-06) (Rev 9-19-06)

SP6 R01

Revise the 2006 Standard Specifications as follows:

Page 6-2, Article 600-9 Measurement and Payment

Delete the second paragraph.

Page 6-12, 609-5(C)2(c) add after (AASHTO T 209):

or ASTM D 2041

Page 6-13, last line on page & Page 6-14, Subarticle 609-5(C)(2)(e), delete and substitute the following:

- (e) Retained Tensile Strength (TSR) (AASHTO T 283 Modified), add subarticle (1) Option 1 before the first paragraph.
  - (1) Option 1

Add subarticle (2) Option 2 and the following sentence as the first sentence of the second paragraph:

(2) Option 2

Mix sampled from truck at plant with one set of specimens prepared by the Contractor and then tested jointly by QA and QC at a mutually agreed upon lab site within the first 7 calendar days after beginning production of each new mix design.

Page 6-28, 610-3(A) Mix Design-General, third sentence of the fourth paragraph:

Substitute 20% for 15%

First, second and third sentences of the fifth paragraph:

Substitute 20% for 15%

Page 6-44, 610-8, third full paragraph, replace the first sentence with the following:

Use the 30 foot minimum length mobile grade reference system or the non-contacting laser or sonar type ski with at least four referencing stations mounted on the paver at a minimum length of 24 feet to control the longitudinal profile when placing the initial lanes and all adjacent lanes of all layers, including resurfacing and asphalt in-lays, unless otherwise specified or approved.

Page 6-54, Article 620-4, add the following pay item:

| Pay Item                                     | <b>Pay Unit</b> |
|--|-----------------|
| Asphalt Binder for Plant Mix, Grade PG 70-28 | Ton             |

Page 6-69, Table 660-1 Material Application Rates and Temperatures, add the following:

| Type of Coat | Grade of Asphalt | Asphalt Rate gal/yd <sup>2</sup> | Application<br>Temperature <sup>o</sup> F | Aggregate Size | Aggregate Rate lb./sq. yd. Total |
|--------------|------------------|----------------------------------|---|----------------|----------------------------------|
| Sand Seal    | CRS-2 or CRS-2P  | 0.22-0.30                        | 150-175                                   | Blotting Sand  | 12-15                            |

Page 6-75, 660-9(B), add the following as sub-item (5)

## (5) Sand Seal

Place the fully required amount of asphalt material in one application and immediately cover with the seal coat aggregate. Uniformly spread the fully required amount of aggregate in one application and correct all non-uniform areas prior to rolling.

Immediately after the aggregate has been uniformly spread, perform rolling.

When directed, broom excess aggregate material from the surface of the seal coat.

When the sand seal is to be constructed for temporary sealing purposes only and will not be used by traffic, other grades of asphalt material meeting the requirements of Articles 1020-6 and 1020-7 may be used in lieu of the grade of asphalt required by Table 660-1 when approved.

Page 10-41, Table 1012-1, add the following:

| Mix     | Course Aggregate    | Fine Aggregate Angularity | Sand Equivalent | Flat & Elongated 5:1 Ratio |
|---------|---------------------|---------------------------|-----------------|----------------------------|
| Type    | Angularity (b) ASTM | % Minimum AASHTO          | % Minimum       | % Maximum ASTM             |
|         | D5821               | T304 Method A             | AASHTO T176     | D4791 Section 8.4          |
| S 9.5 D | 100/100             | 45                        | 50              | 10                         |

Page 10-45, Replace Table 1012-2 with the following:

TABLE 1012-2
NEW SOURCE RAP GRADATION and BINDER TOLERANCES

(Apply Tolerances to Mix Design Data) 0-20% RAP 21-25% RAP 26%+ RAP Mix **Type** Base Surf. Surf. Inter. Surf. Base Inter. **Sieve Base** Inter. (mm) P<sub>b.</sub> %  $\pm 0.7\%$  $\pm 0.4\%$  $\pm 0.3\%$ 1 1/2"  $\pm 5$ ±10 ±7 (37.5)3/4" ±10 ±10 ±7 ±7 ±5 ±5 (19.0)1/2" ±2 ±10 ±6 ±7  $\pm 3$  $\pm 5$ (12.5)3/8"  $\pm 8$ ±5 ±4 (9.5)No. 4 ±5  $\pm 10$ ±10 ±7 ±7 ±5 -(4.75)No. 8  $\pm 8$  $\pm 8$  $\pm 5$  $\pm 5$ ±4 ±4 ±4  $\pm 8$  $\pm 5$ (2.36)No.16  $\pm 8$ ±8 ±5  $\pm 5$ ±5 ±4 ±4 ±4 ±8 (1.18)No. 30 ±4  $\pm 8$  $\pm 8$ ±8 ±5  $\pm 5$ ±5 ±4 ±4 (0.600)No. 50 ±8  $\pm 5$ ±4 (0.300)No. 200  $\pm 1.5$  $\pm 2$  $\pm 2$  $\pm 1.5$ ±1.5 ±4 ±4 ±4  $\pm 2$ 

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

(0.075)

(11-21-00) SP6 R15

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

| Asphalt Concrete Base Course         | Type B 25.0  | 4.3% |
|--------------------------------------|--------------|------|
| 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 2006 Standard Specifications.

## **ASPHALT PLANT MIXTURES:**

(7-1-95) SP6 R20

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.

# **PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:**

(11-21-00)

SP6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the 2006 Standard Specifications.

The base price index for asphalt binder for plant mix is \$340.71 per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **August 1, 2007**.

# **GUARDRAIL ANCHOR UNITS, TYPE 350:**

(4-20-04)

SP8 R65

# Description

Furnish and install guardrail anchor units in accordance with the details in the plans, the applicable requirements of Section 862 of the 2006 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: 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:

- (A) 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 2006 Standard Specifications.
- (B) Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Section 105-2 of the 2006 Standard 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 Methods**

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 2006 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 862-6 of the 2006 Standard Specifications.

Payment will be made under:

Pay Item Pay Unit Guardrail Anchor Units, Type 350 Each

# **AGGREGATE PRODUCTION:**

(11-20-01) SP10 R05

Provide aggregate from a producer who uses the current Aggregate Quality Control/Quality Assurance Program that is in effect at the time of shipment.

No price adjustment is allowed to contractors or producers who use the program. Participation in the program does not relieve the producer of the responsibility of complying with all requirements of the 2006 Standard Specifications. Copies of this procedure are available upon request from the Materials and Test Unit.

# **CONCRETE BRICK AND BLOCK PRODUCTION:**

(11-20-01) SP10 R10

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

No price adjustment is allowed to contractors or producers who use the program. Participation in the program does not relieve the producer of the responsibility of complying with all requirements of the 2006 Standard Specifications. Copies of this procedure are available upon request from the Materials and Test Unit.

# PORTLAND CEMENT CONCRETE (Alkali-Silica Reaction):

2-20-07

SP10 R16

Revise the 2006 Standard Specifications as follows:

Article 1024-1(A), replace the 2nd paragraph with the following:

Certain combinations of cement and aggregate exhibit an adverse alkali-silica reaction. The alkalinity of any cement, expressed as sodium-oxide equivalent, shall not exceed 1.0 percent. For mix designs that contain non-reactive aggregates and cement with an alkali content less than 0.6%, straight cement or a combination of cement and fly ash, cement and ground granulated blast furnace slag or cement and microsilica may be used. The pozzolan quantity shall not exceed the amount shown in Table 1024-1. For mixes that contain cement with an alkali content between 0.6% and 1.0%, and for mixes that contain a reactive aggregate documented by the Department, regardless of the alkali content of the cement, use a pozzolan in the amount shown in Table 1024-1.

Obtain the list of reactive aggregates documented by the Department at: <a href="http://www.ncdot.org/doh/operations/materials/pdf/quarryasrprob.pdf">http://www.ncdot.org/doh/operations/materials/pdf/quarryasrprob.pdf</a>

| Table 1024-1 Pozzolans for Use in Portland Cement Concrete |  |  |  |
|--|--|--|--|
|  |  |  |  |
| Class F Fly Ash  | 20% by weight of required cement content, with 1.2 lbs Class F fly ash per lb of cement replaced |  |  |
| Ground Granulated Blast Furnace Slag                       | 35%-50% by weight of required cement content with 1 lb slag per lb of cement replaced            |  |  |
| Microsilica  | 4%-8% by weight of required cement content, with 1 lb microsilica per lb of cement replaced      |  |  |

# **GLASS BEADS:**

(7-18-06)

SP10 R35

Revise the 2006 Standard Specifications as follows:

Page 10-223, 1087-4(C) Gradation & Roundness

Replace the second sentence of the first paragraph with the following:

All Drop-On and Intermixed Glass Beads shall be tested in accordance with ASTM D1155.

Delete the last paragraph.

# **ENGINEERING FABRICS TABLE 1056-1:**

(7-18-06)

SP10 R40

Revise the 2006 Standard Specifications as follows:

Page 10-100, Table 1056-1, replace the values for Trapezoidal Tear Strength with the following:

| Physical Property         | ASTM<br>Test<br>Method | Type 1         | Type 2       | Type 3                  | Type 4                |
|---------------------------|------------------------|----------------|--------------|-------------------------|-----------------------|
|                           |                        |                |              | Class Class<br>A B      |                       |
| Typical Applications      |                        | Shoulder Drain | Under Riprap | Temporary Silt<br>Fence | Soil<br>Stabilization |
| Trapezoidal Tear Strength | D4533                  | <i>45</i> lb   | 75 lb        |                         | 75 lb                 |

# **PAVEMENT MARKING LINES:**

(11-21-06) (Rev. 9-18-07)

SP 12 R01

Revise the 2006 Standard Specifications as follows:

Page 12-2, 1205-3(D) Time Limitations for Replacement, add the following at the beginning of the chart:

| Facility Type  | Marking Type | Replacement Deadline  |
|--|--------------|---|
| Full-control-of-access multi-lane roadway (4 or more total lanes) and ramps, including Interstates | including    | By the end of each workday's operation if the lane is opened to traffic |

Page 12-14, Subarticle 1205-10, Measurement and Payment, delete the first sentence of the first paragraph and replace with the following:

Pavement Marking Lines will be measured and paid for as the actual number of linear feet of pavement marking lines per application that has been satisfactorily placed and accepted by the Engineer.