

**PROJECT SPECIAL PROVISIONS**

Roadway

7-1-95

SP1R01

**CLEARING AND GRUBBING:**

9-17-02

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

The 2002 Standard Specifications shall be revised as follows:

Page 2-3, Article 200-5

Delete the first sentence of this article and insert the following:

The property owner will have no right to use or reserve for his use any timber on the project. All timber cut during the clearing operations is to become the property of the Contractor, and shall be either removed from the project by him, or else shall be satisfactorily disposed of as hereinafter provided.

SP2R01

**FIELD OFFICE:**

1-1-02

The work covered by this provision consists of furnishing and maintaining a field office for the exclusive use of the Engineer at the construction site during construction of this project.

Provide a field office meeting the following minimum requirements:

**FRAME:**

Provide a frame consisting of twin 10" Junior-beam longitudinal members with C channel crossmembers and outriggers 48" (1220 mm) on center, tandem axles with electric brakes, four 7 x 14.5 eight ply tires and an A-frame hitch designed to receive a 2 5/16" (58.7 mm) ball.

**FLOOR:**

Provide a floor consisting of a .040 simplex bottom board with 2" x 6" (50 mm x 150 mm) joints spaced 16" (400 mm) on center and a 5/8" (16 mm) plywood subfloor. Use a service gauge vinyl asbestos tile covering as a finished floor covering throughout the office.

**WALLS:**

Provide exterior walls consisting of 0.019 gauge white prefinished aluminum siding with 2" x 4" (50 mm x 100 mm) studs 16" (400 mm) on center with 1" x 3" (25 mm x 75 mm) horizontal belt rails 24" (600 mm) on center. Provide interior walls that are 5/32" (4 mm) prefinished plywood paneling throughout.

**ROOF:**

Provide a roof that is 0.030 gauge galvanized metal one-piece covering with a 3/8" (9.5 mm) plywood subroof. Support the roof by truss type rafters placed 16" (400 mm) on center. Provide a finished ceiling of a 3/8" (9.5 mm) white, gypsum predeck with a minimum 8 foot (2.4 m) ceiling height.

**INSULATION:**

Provide a R-11 (3 1/2") fiberglass batt on the walls and ceilings. Provide a R-7 (2 1/2") fiberglass batt on the floor.

**PLUMBING:**

Provide supply lines that are polybutylene and drain lines that are ABS plastic.

**ELECTRICAL:**

Use non-metallic sheathed copper wiring (Romex) in accordance with the National Electric Code through the office. Equip the office with a 220/110 volt, single phase 60 Hertz system with a 100 AMP main service center equipped with a main breaker. Furnish duplex electrical receptacles spaced approximately 10 feet (3 m) on center through the office.

**LIGHTING:**

Provide 8 - 48" (1200 mm) twin tube undiffused fluorescent fixtures for the office.

**HVAC:**

Provide a 30,000 BTU end mount central air conditioner for the office with 10 KW's at electric strip heat. The system is to be ceiling ducted with adjustable diffusers and be thermostatically controlled.

**DOORS:**

Provide two 36" x 80" (900 mm x 2000 mm) aluminum-clad personnel entry doors with each having a lockset, safety chain and vision exterior doors. Provide interior doors that are 36" x 80" (900 mm x 2000 mm) hollow core wood doors and that are located as indicated in the accompanying sketch.

WINDOWS:

Equipped the office with seven 46" x 27" (1150 mm x 675 mm) aluminum framed operable 1 fixed window(s) equipped with screens.

EQUIPMENT:

Equip the office with the following as shown in the accompanying sketch.

- 34 Linear feet (10.4 m) of interior partitioning
- 36 Linear feet (10.4 m) of 30" (750 mm) flat table top on wood legs
- 36 Linear feet (10.4 m) of 12" (300 mm) shelving above table top
- 1 Handicapped restroom consisting of flush type toilet, lavatory with mixing faucets, a six-gallon (22.7 liter) electric hot water heater, light, mirror
- 2 Sets of steps with handrails
- 1 4-Drawer metal file cabinet with lock
- 6 Desk chairs with rollers
- 8 Metal folding chairs
- 1 Meeting table, approximately 36" x 48" (900 mm x 1200 mm)

The Contractor is responsible for providing the site for the field office, the sewer hook-up septic tank, drain field, water hook-up and electrical hook-up in accordance with the National Electrical Code. The Contractor is also responsible for obtaining any permits necessary in setting up the office. Bury the waterline a minimum of 12 inches (300 mm) below the surface of the ground. In addition, grade the area around the office to drain and spread 40 tons (36.3 metric tons) of aggregate base course, in accordance with Section 520 of the Standard Specifications, over a 30' x 60' (9.1 m x 18.3 m) area as directed by the Engineer.

Payment at the contract lump sum price for "Field Office" will be full compensation for all work covered by this provision including but not limited to furnishing, setting up and maintaining (excluding utilities and janitorial services) the field office; removing the field office when it is not longer needed, furnishing and placing aggregate base course and any other incidentals necessary to complete this work.

Payment will be made under:

Field Office .....Lump Sum

**CROSS VANE ROCK WEIR WITH FOOTER ROCK:**

05-18-04<sub>R</sub>

Description:

This work shall consist of excavating the channel and constructing cross vane weirs in accordance with the Specifications, details in the plans, and as directed by the Engineer. The purpose of the weirs is to create pools for trout stream enhancement.

**Materials:**

Materials shall conform to the following requirements:

Filter Fabric	Section 1042
Drainage Ditch Excavation	Section 240
Boulders	1100 lbs. to 2200 lbs (500 Kg to 1000 Kg)
Footer Rock	2 ft. x 2 ft. x 3 ft. (0.6 m x 0.6 m x 0.9 m).

All stone and boulders shall be sound, tough, dense, resistant to the action of air and water, and suitable for the purpose intended.

Footer rock shall not be less than 1.5 ft. (0.45 m) along a minor axis nor more than 5 ft. (1.5 m), along a major axis.

**Construction Requirements:**

Erosion control measures shall be constructed prior to any earth movement related to highway construction in channel change areas. Drainage ditch excavation shall conform to Section 240. Filter fabric for drainage shall be installed in accordance with Section 876.

**Method of Measurement:**

Filter fabric will be measured in square yards (square meters) along the surface of the ground, over which filter fabric has been acceptably placed.

Drainage ditch excavation will be measured in accordance with the *Standard Specifications*.

Footer rocks will be the actual number of tons (metric tons) of rock, which has been incorporated into the completed and accepted work. The rock will be weighed in trucks on certified platform scales or other certified weighing devices.

Boulders will be the actual number of tons (metric tons) of boulders, which have been furnished, placed and accepted.

**Basis of Payment:**

**Drainage ditch excavation** will be paid for at the contract unit price per cubic meter for *Drainage Ditch Excavation*.

**Filter fabric** will be paid for at the contract unit price per square meter for *Filter Fabric For Drainage*.

**Footer rock** will be paid for at the contract unit price per ton (metric ton) for *Boulders*. Such price and payment will be full compensation for furnishing, hauling, placing and all incidentals necessary to complete the work.

**Boulders** will be paid for at the contract unit price per ton (metric ton) for *Boulders*. Such price and payments will be full compensation for all excavation, hauling, handling, furnishing and placing of boulders, fabric and any incidentals necessary to complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Drainage Ditch Excavation	Cubic Yard (Cubic Meter)
Filter Fabric for Drainage	Square Yard (Square Meter)
Boulders	Ton (Metric Ton)

**BUILDING REMOVAL:**

**01-01-02**

Remove the buildings and appurtenances listed below in accordance with Section 215 of the Standard Specifications and the following provisions:

Prior to removal of any building, comply with the notification requirements of Title 40 Code of Federal Regulations, Part 61, Subpart M, which are applicable to asbestos. Give notification to the North Carolina Department of Health and Human Services, Division of Epidemiology, Asbestos Hazard Management Branch and/or the appropriate county agency when enforcement of the Federal Regulation is performed by the county. Submit a copy of the notification to the Engineer prior to the building removal.

The Department has performed asbestos assessments for building items identified below. Copies of this report may be obtained through the Division Right-of-Way Agent. When asbestos is discovered after the opening of bids for the project, the cost of asbestos removal and disposal will be paid for in accordance with Article 104-7 of the Standard Specifications. Perform removal and disposal of asbestos in accordance with the requirements of Title 40 Code of Federal Regulations.

When a building has had or will have asbestos removed and the Contractor elects to remove the building such that it becomes a public area, the Contractor is responsible for any additional costs incurred including final air monitoring.

Comply with all Federal, State and local regulations when performing building removal and/or asbestos removal and disposal. Any fines resulting from violations of any regulation are the sole responsibility of the Contractor and the Contractor agrees to indemnify and hold harmless the Department against any assessment of such fines.

Prior to removal of any Underground Storage Tank (UST), comply with the notification requirements of the Title 40 Code of Federal Regulations, Part 280.71(a). Give notification to the appropriate regional office of the North Carolina Department of Environment, and Natural Resources, Division of Environmental Management, Groundwater Section. Submit a copy of the notification to the Engineer prior to the removal of the underground storage tank.

Permanently close UST systems by removal and dispose of in compliance with the regulations set forth in Title 40, Code of Federal Regulations, Part 280.71 and North Carolina Administrative Code Title 15A, Chapter 2, Subchapter 2N and any applicable local regulations.

Assess Underground Storage Tank sites at closure for the presence of contamination as required in NCAC Title 15A, Chapter 2, Subchapter 2N, Section .0803 and as directed by the appropriate Regional Office of the Division of Environmental Management. Remove and dispose of UST systems and contents in a safe manner in conformance with requirements of American Petroleum Institute Bulletin 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks", Chapters 3 through 6. (Note: As an exception to these requirements, the filling of the tank with water as a means of expelling vapors from the tank as described in section 4.2.6.1 of API Bulletin 1604, will not be allowed. Where underground storage tanks are indicated below, there will be no direct payment for the closure or assessment. When the contract does not indicate the presence of storage tanks and storage tanks are discovered after the opening of bids for the project, the cost of closure, assessment and/or removal will be paid for in accordance with Article 104-7 of the Standard Specifications.

Disposition of any contaminated material associated with underground storage tanks will be made as provided in Article 107-26 of the Standard Specifications.

For R-2206C, the Contractor shall remove the buildings and appurtenances which are listed below in accordance with Section 215 of the Standard Specifications and the following provisions:

**Building Removal (Item #1)**

Parcel 021 - Left of Survey Station 198+55, Survey Line L  
Single Wide Mobile Home

**Building Removal (Item #2)**

Parcel 021 - Left of and between Survey Station 198+40 to 199+40, Survey Line L  
Three (3) Dog Kennels

**Building Removal (Item #3)**

Parcel 022 - Left of Survey Station 198+80, Survey Line L  
Double Wide Mobile Home

**Building Removal (Item #4)**

Parcel 022 - Right of Survey Station 198+60, Survey Line L  
Concrete Block Shed

**Building Removal (Item #5)**

Parcel 022 - Left of Survey Station 198+80, Survey Line L  
Metal Shed

**Building Removal (Item #6)**

Parcel 022 - Right of Survey Station 198+90, Survey Line L  
Camper with Porch

**Building Removal (Item #7)**

Parcel 026 - Left of and between Survey Station 205+20 to 205+75 Survey Line L  
One Story Frame Dwelling

## Building Removal (Item #8)

Parcel 026 - Left of and between Survey Station 205+20 to 205+75, Survey Line L  
Barn

## Building Removal (Item #9)

Parcel 026 - Right of and between Survey Station 205+20 to 205+75, Survey Line L  
Barn

## Building Removal (Item #10)

Parcel 031 - Right of and between Survey Station 11+40 to 12+60, Survey Line Y-13  
One Story Brick Dwelling

## Building Removal (Item #11)

Parcel 031 - Right of and between Survey Station 11+40 to 12+60, Survey Line Y-13  
Barn

## Building Removal (Item #12)

Parcel 031 - Right of and between Survey Station 11+40 to 12+60, Survey Line Y-13  
Shed

## Building Removal (Item #13)

Parcel 031 - Right of and between Survey Station 11+40 to 12+60, Survey Line Y-13  
Concrete Dog Kennel

## Building Removal (Item #14)

Parcel 032 - Left of Survey Station 217+20, Survey Line L  
Shed

## Building Removal (Item #15)

Parcel 032 - Left of Survey Station 217+30, Survey Line L  
Shed

## Building Removal (Item #16)

Parcel 032 - Right of Survey Station 217+20, Survey Line L  
Barn

## Building Removal (Item #17)

Parcel 032 - Right of Survey Station 217+50, Survey Line L  
Shed

## Building Removal (Item #18)

Parcel 032 - Right of Survey Station 217+50, Survey Line L  
Barn

## Building Removal (Item #19)

Parcel 048 - Left of Survey Station 15+20, Survey Line Y-1 4  
One Story Block Dwelling

## Building Removal (Item #20)

Parcel 048 - Left of Survey Station 15+30, Survey Line Y-14  
Garage

## Building Removal (Item #21)

Parcel 048 - Left of Survey Station 15+30, Survey Line Y-14  
Barn

## Building Removal (Item #22)

Parcel 049 - Left of Survey Station 15+45, Survey Line Y-14  
Garage

## Building Removal (Item #23)

Parcel 044 - Right of Survey Station 14+10, Survey Line Y-14  
One Story Block Dwelling

## Building Removal (Item #24)

Parcel 044 - Right of Survey Station 13+70, Survey Line Y-14  
One Story Frame Dwelling

## Building Removal (Item #25)

Parcel 044 - Right of Survey Station 13+40, Survey Line Y-14  
Single Wide Mobile Home

## Building Removal (Item #26)

Parcel 044 - Right of Survey Station 13+20, Survey Line Y-14  
Single Wide Mobile Home

## Building Removal (Item #27)

Parcel 050 - Right of Survey Station 12+85, Survey Line Y-14  
Block Garage

## Building Removal (Item #28)

Parcel 050 - Right of Survey Station 12+50, Survey Line Y-14  
Block Building

## Building Removal (Item #29)

Parcel 052 - Left of Survey Station 13+75, Survey Line Y-14  
One Story Block Dwelling

## Building Removal (Item #30)

Parcel 053 - Left of Survey Station 16+40, Survey Line Y-14  
One Story Frame Dwelling

## Building Removal (Item #31)

Parcel 059 - Left of Survey Station 245+60, Survey Line L  
Single Wide Mobile Home



Building Removal (Item #32)  
Parcel 060 - Right of Survey Station 245+20, Survey Line L  
Single Wide Mobile Home

Building Removal (Item #33)  
Parcel 060 - Right of Survey Station 245+60, Survey Line L  
Single Wide Mobile Home

Building Removal (Item #34)  
Parcel 060 - Right of Survey Station 245+80, Survey Line L  
Single Wide Mobile Home

Building Removal (Item #35)  
Parcel 062 - Left of Survey Station 247+70, Survey Line L  
One Story Frame Dwelling

Building Removal (Item #36)  
Parcel 062 - CL of Survey Station 247+80, Survey Line L  
Shed

Building Removal (Item #37)  
Parcel 062 - Left of Survey Station 247+90, Survey Line L  
Shed

Building Removal (Item #38)  
Parcel 062 - Left of Survey Station 248+00, Survey Line L  
Shed

Building Removal (Item #39)  
Parcel 064 - Right of Survey Station 248+20, Survey Line L  
Single Wide Mobile Home

Building Removal (Item #40)  
Parcel 065 - Right of Survey Station 263+60, Survey Line L  
Shed

Building Removal (Item #41)  
Parcel 065 - Right of Survey Station 263+70, Survey Line L  
Shed

Building Removal (Item #42)  
Parcel 078A - Right of Survey Station 269+80, Survey Line SBL  
Sign - Concrete Base

Building Removal (Item #43)  
Parcel 077 - Left of Survey Station 269+30, Survey Line SBL  
Wood Deck & Boardwalk

Building Removal (Item #44)

Parcel 077 - Left of Survey Station 270+30, Survey Line SBL  
Wood Dock

Building Removal (Item #45)

Parcel 080 - Left of Survey Station 273+00, Survey Line SBL  
Sign

Building Removal (Item #46)

Parcel 082 - Right of Survey Station 273+40, Survey Line SBL  
1½ Story Block Dwelling, Frame Dwelling and Concrete Patio

Building Removal (Item #47)

Parcel 082 - Right of Survey Station 273+40, Survey Line SBL  
One Story Frame Dwelling

Building Removal (Item #48)

Parcel 082 - Right of Survey Station 273+40, Survey Line SBL  
Shed

Building Removal (Item #49)

Parcel 083 - Right of Survey Station 273+40, Survey Line SBL  
In-ground Pool

When the description of the work for an item indicates a building partially inside and partially outside the right of way and/or construction area, but does not require the building to be cut off, the entire building shall be removed. This paragraph applies to Item Nos. 1, 11, 23, 26, 27, 28, 29, 31, 43, 44, 46, 47, 48.

**EXCAVATION OF ROCK BY USE OF EXPLOSIVES:**

**1-01-02**

The Contractor's attention is directed to Article 107-11 of the Standard Specifications.

In addition to the requirements of this Article, submit to the Engineer a written report after each blast that gives complete details of the blast procedure. Submit the blast report on forms provided by the Engineer within 24 hours after each blast.

The Engineer will, as necessary, monitor blasting operations with an engineering seismograph. In order to facilitate such work, provide to the Engineer seven days advance notice before the initial blasting is performed and 24 hours notice of subsequent blasting operations.

Cooperate with the Engineer in establishing a signal system that will allow vibrations to be effectively monitored.

The monitoring blast vibrations by the Engineer or the submission of blast reports by the Contractor in no way relieves the Contractor of his responsibilities as defined in Article 107-11.

SP2R20

**TEMPORARY DETOURS:**

7-1-95

Construct temporary detours required on this project in accordance with the typical sections in the plans or as directed.

Payment for the construction of the detours will be made at the contract unit prices for the various items involved. After the detours have served their purpose, remove the portions deemed unsuitable for use as a permanent part of the project as directed by the Engineer. Salvage within the right of way, as directed by the Engineer, for removal by State Forces. Pipe culverts and stockpile the aggregate base course removed from the detours at locations removed from the detours remain the property of the Contractor. Remove pipe culverts from the project when they are no longer needed. Place pavement and earth material removed from the detour in embankments or dispose of in waste areas furnished by the Contractor. Aggregate base course and earth material that is removed will be measured and will be paid for at the contract unit price per cubic yard (cubic meter) for "Unclassified Excavation". Pavement that is removed will be measured and will be paid for at the contract unit price per square yard (square meter) for "Removal of Existing Pavement". Pipe culverts that are removed will be measured and will be paid for at the contract unit price per linear foot (meter) for "Pipe Removal". Such prices and payments will be full compensation for the work of removing, salvaging, and stockpiling aggregate base course; placing and removing pipe culverts; and for placing earth material and pavement in embankments or disposing of earth material and pavement in waste areas.

SP2R30

**SHALLOW UNDERCUT:**

2-19-02<sub>R</sub>

Perform undercut excavation and place a combination of fabric for soil stabilization and Class IV Subgrade Stabilization at locations as directed by the Engineer. Work includes performing undercut excavation, disposing of unsuitable material, furnishing and placing fabric for soil stabilization; and furnishing, placing and compacting Class IV Subgrade Stabilization.

**MATERIALS**

Fabric for Soil Stabilization.....Section 270  
Class IV Subgrade Stabilization.....Section 1016-3, Class IV; or  
Material meeting gradation  
requirements of Table 520-1,  
Column C

**CONSTRUCTION METHODS**

Perform undercut excavation in accordance with Section 225 and/or Section 226.  
Place fabric for soil stabilization in accordance with Section 270.  
Place Class IV Subgrade Stabilization by back dumping material on previously placed fabric.  
Compact material to 95% of AASHTO T-99, Method "D" density or compact material to the highest density that can be reasonably obtained.

**METHOD OF MEASUREMENT**

Undercut Excavation will be measured in accordance with Section 225 and/or Section 226.  
Fabric for Soil Stabilization will be measured in accordance with Article 270-4.  
Class IV Subgrade Stabilization, as accepted in place, will be measured by the ton (metric ton),  
in accordance with Section 106-7.

**BASIS OF PAYMENT**

Payment will be made for quantities as measured above for the pay items listed below:  
Undercut Excavation.....Cubic Yard (Cubic Meter)  
Fabric for Soil Stabilization.....Square Yard (Square Meter)  
Class IV Subgrade Stabilization.....Ton (Metric Ton)  
SP2R35

**BORROW EXCAVATION:**

**2-19-02**

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' or 'Grading - Lump Sum' will be considered full compensation for this  
work.'

SP2R37

**FALSE SUMPS:**

**7-1-95<sub>c</sub>**

Construct false sumps in accordance with the details in the plans and at locations shown in the  
plans or at other locations as directed by the Engineer.

Payment for the work of construction of the false sumps will be made at the contract unit price  
per cubic yard (cubic meter) for "Unclassified Excavation or "Borrow Excavation" depending on  
the source of material, or included in "Grading-Lump Sum"

SP2R40

**SHOULDER AND FILL SLOPE MATERIAL:**

**5-21-02**

**General:**

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

Construct the top 6 inches (150-mm) of shoulder and fill slopes with soils capable of supporting vegetation.

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 (50 mm) 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.

**Compensation:**

When the Contractor elects to obtain material from an area located beneath a proposed fill sections which does not require excavation for any reason other than to generate acceptable shoulder and fill slope material, the work of performing the excavation will be considered incidental to the item of "Borrow Excavation" or "Shoulder Borrow". If there is no pay item for "Borrow" or "Shoulder Excavation" in the contract, this work will be considered incidental to "Unclassified Excavation". Stockpile the excavated material in a manner to facilitate measurement by the Engineer. Fill the void created by the excavation of the shoulder and fill slope material with suitable material. Payment for material used from the stockpile will be made at the contract unit price for "Borrow Excavation" or "Shoulder Borrow". If there is no pay item for "Borrow Excavation" or "Shoulder Borrow", then the material will be paid for at the contract unit price for "Unclassified Excavation". The material used to fill the void created by the excavation of the shoulder and fill slope material will be made at the contract unit price for "Unclassified Excavation", "Borrow Excavation", or "Shoulder Borrow", depending on the source of the material.

Material generated from undercut excavation, unclassified excavation or clearing and grubbing operations that is placed directly on shoulders or slope areas, will not be measured separately for payment, as payment for the work requiring the excavation will be considered adequate compensation for depositing and grading the material on the shoulders or slopes.

When undercut excavation is performed at the direction of the Engineer and the material excavated is found to be suitable for use as shoulder and fill slope material, and there is no area on the project currently prepared to receive the material generated by the undercut operation, the Contractor may construct a stockpile for use as borrow at a later date. Payment for the material used from the stockpile will be made at the contract unit price for "Borrow Excavation" or "Shoulder Borrow".

When shoulder material is obtained from borrow sources or from stockpiled material, payment for the work of shoulder construction will be made at the contract unit price per cubic yard (cubic meter) for "Borrow Excavation" or "Shoulder Borrow" in accordance with the applicable provisions of Section 230 or Section 560 of the Standard Specifications.

SP2R50

**ROCK EMBANKMENT:**

Construct the rock embankment in accordance with Section 235 of the 2002 Standard Specifications, the details shown on the plans, this provision, and as directed by the Engineer.

Rock embankments will be required at the toe of the slopes at End Bent No. 2 for the following bridges:

Dual Bridges over Killian Creek, Bridge Station 223+03.850 -L-  
Dual Bridges over Reed Creek, Bridge Station 256+91.000 -L-

Construct the rock embankment to the design elevation before beginning construction of the roadway embankment fills against the rock embankments. See roadway plans and cross sections for rock embankment placement details.

Density requirements will not apply to the rock embankment construction, but compact to the satisfaction of the Engineer.

Unless otherwise directed by the Engineer, construct the rock embankment with the slopes as indicated on the plan detail. Grade the rock so that the smaller pieces are uniformly distributed throughout the mass. The surface must be free of obstructions, debris, and segregated pockets of small pieces or groups of large pieces, which could cause large open voids within the rock mass.

Use Plain Rip Rap, Class II to construct the rock embankment. Place and compact a 300 mm thick layer of Select Material, Class VI (#57 Stone) on top of the rock embankment. Compact #57 stone backfill with at least four passes of a 7.3 - 9.1 metric ton (or heavier) vibratory roller in the vibratory mode, or as directed by the Engineer. Place filter fabric on top of the Select Material, Class VI before placing the embankment fill material.

Grade the surfaces that receive filter fabric to lines and grades shown on the plans, unless otherwise directed by the Engineer. The surface must be free of obstructions, debris, and large voids within the #57 stone.

At the time of installation, the fabric will be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation or storage.

Lay the fabric smooth and free from tension, stress, folds, wrinkles, or creases. Where a layer of fabric becomes discontinuous, such as at the end of a roll, a minimum overlap of 300 mm is required with the upper fabric placed over the lower fabric. Overlap the previous fabric layer by a minimum of 300 mm. Use wire staples as needed to hold the fabric in place until it is covered with fill material. Do not operate on the fabric until it is covered with a minimum 150 mm of embankment fill. In the event fabric is displaced or damaged, reposition or replace the fabric at no additional cost to the Department.

MATERIALS:Select Material, Class VI

The 300 mm of the material on top of the rock embankment must be Select Material, Class VI meeting the requirements of Section 1016 of the 2002 Standard Specifications.

Rock Embankment

The rock embankment must be Plain Rip Rap, Class II meeting the requirements of Section 1042 of the 2002 Standard Specifications.

Filter Fabric

For filter fabric use Type 2 Engineering Fabric meeting the requirements of Section 1056 of the 2002 Standard Specifications. Furnish a Type I Certified Mill Test Report, Type 2 Certified Mill Test Report, or Type 4 Certified Mill Test Report for the fabric in accordance with Article 106-3; however, the material will be subject to inspection, test, or rejection by the Engineer at any time.

METHOD OF MEASUREMENT:Select Material, Class VI

The quantity of Select Material, Class VI to be paid for will be the actual number of metric tons, which has been incorporated into the completed and accepted work. The material will be measured by weighing in trucks on certified platform scales or other certified weighing devices or by methods approved by the Engineer.

Plain Rip Rap, Class II

The quantity of Plain Rip Rap, Class II to be paid for will be the actual number of metric tons, which has been incorporated into the completed and accepted work. The material will be measured by weighing in trucks on certified platform scales or other certified weighing devices or by methods approved by the Engineer.

Filter Fabric

The quantity of filter fabric to be paid for will be the area in square meters, measured along the surface of the ground, over which the fabric has been acceptably placed. No separate measurement for payment will be made for the overlapping of fabric.

BASIS OF PAYMENT:

Select Material, Class VI

The quantity of select material will be paid for at the contract unit price per metric ton for "Select Material, Class VI". Payment will be full compensation for all work and materials covered by this provision, including but not limited to furnishing, hauling, handling, placing, compacting, and maintaining the select material.

Plain Rip Rap, Class II

The quantity of select material will be paid for at the contract unit price per metric ton for "Plain Rip Rap, Class II". Payment will be full compensation for all work and materials covered by this provision, including but not limited to furnishing, hauling, handling, placing, compacting and maintaining the rip rap.

Filter Fabric

The quantity of filter fabric will be paid for at the contract unit price per square meter of "Filter Fabric for Drainage". Payment will be full compensation for all work covered by this provision, including but not limited to testing, furnishing, hauling, placing, and overlapping the filter fabric.

PAY ITEM:

Select Material, Class VI.....	Metric Tons
Plain Rip Rap, Class II.....	Metric Tons
Filter Fabric for Drainage.....	Square Meters

**RESTRICTIONS ON CONSTRUCTION OF EMBANKMENT:**

**02-17-04**

For R-2206B and R-2206C, the Contractor shall construct the embankments to the finished graded roadway section for a minimum distance of 100 feet (30.48 meters) from the listed end bents, and shall not begin any work on the bridge end bents as listed below until the prescribed waiting periods have elapsed, or until notified by the Engineer that the settlement rate has stabilized and work on the end bents may proceed.

Bridge Description and Affected Bent	Waiting Period
For Project R-2206C: Structure at Station 216+.508 -L- End Bent #2	(1) One Month
For Project R-2206B: Structure at Station 123+38.105 -L- (S.B.L.) End Bents #1 & 2	(2) Two Months
For Project R-2206B: Structure at Station 123+38.105 -L- (N.B.L.) End Bent #2	(2) Two Months



The Contractor will be required to maintain the embankments at finished graded roadway section during the waiting period. Additional earth material required to maintain embankment of finished graded roadway section will be paid for at the contract unit price per cubic yard (cubic meter) for "Borrow Excavation", "Unclassified Excavation" depending on the source of the material. Where there is no pay item for Unclassified or Borrow Excavation, the furnishing of additional material will be paid for as extra work.

SP2R65

**4 STRAND BARBED WIRE WITH 1 STRAND ELECTRIC FENCE:**

Furnish and erect 4 Strand Barbed Wire Fence with 1 Strand Electric Fence in accordance with the detail in the plans, at locations shown on the plans, Section 866 of the Standard Specifications and as directed.

Method of Measurement and basis of payment will be in accordance with Section 866-4 and 866-5 of the Standard Specifications.

Payment will be made under:

“4 Strand Barbed Wire Fence with 1 Strand Electric Fence”

**REINFORCED CONCRETE TAPERED INLET:**

7-1-95

Description:

Construct tapered inlets in accordance with the details in the plans, Section 310 of the Standard Specifications, and as directed by the Engineer.

Method of Measurement:

The quantity of tapered inlets to be paid for will be the actual number of tapered inlets that have been incorporated into the completed and accepted work.

Basis of Payment:

The quantity of tapered inlets measured as provided for above will be paid for at the contract unit price each for "\_\_\_\_\_" (mm) x "\_\_\_\_\_" (mm) Reinforced Concrete Pipe Tapered Inlet, Class III". Such price and payment will be full compensation for all materials, labor, equipment, and other incidentals necessary to complete the work.

SP3R01

Payment will be made under:

\_\_\_\_" (mm) x \_\_\_\_" (mm) Reinforced Concrete Pipe Tapered Inlet, Class III.. ..... Each

**REINFORCED BRIDGE APPROACH FILLS:****03-18-03**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:

<u>Property</u>	<u>Requirements</u>	<u>Test Method</u>
Thickness	25 mils (0.6 mm) Minimum	ASTM D1593
Tensile Strength at Break	100 lb/inch (18 KN/M) Minimum	ASTM D638
Puncture Strength	40 lbs (0.2KN) Minimum	FTMS 101 C 2065
Moisture Vapor Transmission Rate	0.018 ounce/yard <sup>2</sup> (0.615 gm/ m <sup>2</sup> ) per Day Maximum	ASTM E96

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.

<u>Fabric Property</u>	<u>Requirements</u>	<u>Test Method</u>
Minimum Flow Rate	2 gallons/min/square foot (1358 cm <sup>3</sup> /sec/square meter)	ASTM 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 Standard Specifications. When select material is required under water, use select material class V only, up to one foot (300mm) above the existing water elevation.

#### 4" (100mm) Diameter Corrugated Drainage Pipe and Fittings

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

#### Construction:

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) perpendicular to the backwall face. Overlap geomembrane or fabric splices perpendicular to the backwall face a minimum of 18 inches (450 mm). 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 (250 mm) 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 (250 mm) thick with low ground pressure equipment. Use hand operated equipment to compact the fill material within three feet (0.9 m) 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 (200 mm) 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 must 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 (150 mm) of fill material. Compaction must 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 is 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 (100 mm) 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 must 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 (100-mm) 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:

Compensation:

All work covered by this provision will be paid for at the contract lump sum price for "Reinforced Bridge Approach Fills, Station \_\_\_\_". 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:  
Reinforced Bridge Approach Fills, Station \_\_\_\_\_

Lump Sum  
SP4R01

**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 <sub>des</sub>	JMF	±1.0 %	±1.5 %	±2.0 %
VMA @ N <sub>des</sub>	Min. Spec. Limit	-0.5%	-0.8%	-1.0%
P <sub>0.075</sub> / P <sub>be</sub> Ratio	Max. Spec. Limit	0.0	N/A	+0.4%
%G <sub>mm</sub> @ N <sub>ini</sub>	Max. Spec. Limit	N/A	N/A	+2.0%
TSR	Min. Spec. Limit	N/A	N/A	-15.0%

FIELD COMPACTION QUALITY CONTROL

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

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

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

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

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

LIMITED PRODUCTION PROCEDURE

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

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

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

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

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

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

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



## DOCUMENTATION (RECORDS)

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

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

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

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

Falsification of test results, documentation of observations, records of inspection, adjustments to the process, discarding of samples and/or test results, or any other deliberate misrepresentation of the facts will result in the revocation of the applicable person's QMS certification. The Engineer will determine acceptability of the mix and/or pavement represented by the falsified results or documentation. If the mix and/or pavement in question is determined to be acceptable, the Engineer may allow the mix to remain in place at no pay for the mix, asphalt binder and other mix components. If the mix and/or pavement represented by the falsified results is determined not to be acceptable, remove and replace with mix, which complies with the Specifications. Payment will be made for the actual quantities of materials required to replace the falsified quantities, not to exceed the original amounts.

## QUALITY ASSURANCE

Page 6-18, Article 609-6

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

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

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

Page 6-19, Article 609-6

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

Insert the following after Item 4 under Density Quality Assurance:

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

## LIMITS OF PRECISION

Page 6-19, Article 609-6

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

## QA retest of prepared QC Gyrotory Compacted

Volumetric Specimens	$\pm 0.015$
Retest of QC Core Sample	$\pm 1.2\%$ (% Compaction)
Comparison of QA Core Sample	$\pm 2.0\%$ (% Compaction)
QA Verification Core Sample	$\pm 2.0\%$ (% Compaction)
Nuclear Comparison of QC Test	$\pm 2.0\%$ (% Compaction)
QA Nuclear Verification Test	$\pm 2.0\%$ (% Compaction)

## ASPHALT CONCRETE PLANT MIX PAVEMENTS – DESCRIPTION

Page 6-21, 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 gyrotory 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 Sieves (mm)	Percent Passing Criteria (Control Points)											
	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	
	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**

Mix Type (f)	Design ESALs millions (a)	Binder PG Grade (b)	Compaction Levels			Volumetric Properties (c)			
			No. Gyration @			VMA % Min.	VTM %	VFA Min. - Max.	%Gmm @ N <sub>ini</sub>
			N <sub>ini</sub>	N <sub>des</sub>	N <sub>max</sub>				
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
	<b>Design Parameter</b>					<b>Design Criteria</b>			
All	1. %G <sub>mm</sub> @ N <sub>max</sub>					≤ 98.0% (d)			
Mix	2. Dust to Binder Ratio (P <sub>0.075</sub> / P <sub>be</sub> )					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<sub>des</sub> as modified by the Department.
  - (d) Based on specimens compacted to N<sub>max</sub> 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.

<b>Asphalt Concrete Mix Type</b>	<b>Minimum Air Temperature</b>	<b>Minimum Road Surface Temperature</b>
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**

<b>MIX TYPE</b>	<b>MINIMUM % of G<sub>mm</sub></b>
<b>SUPERPAVE MIXES</b>	<b>(Maximum Specific Gravity)</b>
S 4.75A	85.0 <sup>(a,b)</sup>
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<sup>2</sup>)

Page 6-34, Article 610-10

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

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

SURFACE REQUIREMENTS AND ACCEPTANCE

Page 6-35, Article 610-12

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

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

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

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

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

#### DENSITY ACCEPTANCE

Page 6-36, Article 610-13

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

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

- (6) Portions of pavement are placed in both "New" and "Other" construction categories as defined below. A lot will be established for the portion of the pavement in the "New" construction category and a separate lot for the portion of pavement in the "Other" construction category.
- (7) Pavement is placed on multiple resurfacing maps, unless otherwise approved prior to paving. A lot will be established for each individual resurfacing map or portion thereof.
- (8) Pavement is placed simultaneously by multiple paving crews. A lot will be established for the pavement placed by each paving crew.
- (9) Pavement is placed in different layers. A lot will be established for each layer.
- (10) Control strips are placed during limited production.

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



Page 6-36, Article 610-13

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

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

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

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

Page 6-36, Article 610-13

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

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

**BASIS OF PAYMENT, ASPHALT PAVEMENTS**

Page 6-37, Article 610-16

Add the following to the second paragraph:

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

Add the following to the payment item description:

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

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

ASPHALT BINDER FOR PLANT MIX - METHOD OF MEASUREMENT

Page 6-39, Article 620-4

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

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

CONSTRUCTION REQUIREMENTS

Page 6-43, Article 650-5

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

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

AGGREGATES FOR ASPHALT PLANT MIXES

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

Delete this Subarticle and substitute the following:

(4) Flat and Elongated Pieces:

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

Page 10-35, Table 1012-1

Delete Table 1012-1 and substitute the following:

**Table 1012-1**  
**AGGREGATE CONSENSUS PROPERTIES<sup>(a)</sup>**

Mix Type	Course Aggregate Angularities <sup>(b)</sup>	Fine Aggregate Angularities % Minimum	Sand Equivalent % Minimum	Flat & Elongated 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 <sup>(c)</sup>
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**

<b>Uncompacted Void Content of Fine Aggregate AASHTO T 304 Method A</b>	<b>Maximum Percent Natural Sand Included in Mix Design and/or Production*</b>
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.

SP6R01

**ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES: 11-21-00<sub>R</sub>**

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.

SP6R15

**ASPHALT PLANT MIXTURES: 7-1-95<sub>c</sub>**

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.

SP6R20

**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 \$240.37 per ton (metric ton).

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

SP6R25

**CONSTRUCTION SURVEYING: 01-20-04**

Add the following after the first sentence of Section 801-1 of the January 2002 Standard Specifications:

Provide a stakeout of areas where an environmental permit is required prior to performing any construction in or adjacent to these areas. Stake out limits of the permitted work areas according to the approved permit drawings. Provide clear delineation by use of pink or other highly visible flagging. Insure construction limits do not exceed approved permitted work areas. Immediately notify the Resident Engineer of any variations of the stakeout limits when compared to the approved permit drawings.

Replace the fifth paragraph of Section 801-4 of the January 2002 Standard Specifications with the following:

Partial payments for the item of "Construction Surveying" will be made on each particular payment estimate based upon the percentage complete of the item of "Construction Surveying" as determined by the Engineer. The Contractor is required to submit a certified statement each month indicating the percentage of "Construction Surveying" work completed. The Resident Engineer will determine if the amount indicated is reasonably correct and the Resident Engineer will pay accordingly on the next partial pay estimate.

SP8R02

**DISPOSAL OF WASTE AND DEBRIS:**

**2-19-02**

Revise the 2002 Standard Specifications as follows:

**Page 8-9, Subarticle 802-2(7. Buffer Zones:)**

At the end of the last sentence in this subarticle, add the words "unless superseded by an environmental permit."

SP8R03

**ENDWALLS:**

**6-18-02**

Revise the 2002 Standard Specifications as follows:

Page 8-24, Article 838-2

Delete the last two paragraphs of this article and insert the following:

"Use either portland concrete, brick masonry, or precast concrete for the endwall unless otherwise specified on the Drainage Summary Sheet of the Plans."

SP8R27

**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.

SP8R57

**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

**PREFORMED SCOUR HOLE WITH LEVEL SPREADER APRON: 10-15-02**

Description:

Construct and maintain preformed scour holes with spreader aprons at the locations shown on the plans and in accordance with the details in the plans. Work includes excavation, shaping and maintaining the hole and apron, furnishing and placing filter fabric, rip rap (class as specified in the plans) and permanent soil reinforcement matting.

Materials:

Materials shall meet the requirements of Division 10 and this provision:

Plain rip rap.....Article 1042

Filter Fabric.....Article 1042-2

The permanent soil reinforcement matting shall be permanent erosion control reinforcement mat and shall be constructed of 100% coconut fiber stitch bonded between a heavy duty UV stabilized cusped (crimped) netting overlaid with a heavy duty UV stabilized top net. The three nettings shall be stitched together on 1.5 inch (38 mm) centers UV stabilized polyester thread to form a permanent three dimensional structure. The mat shall have the following physical properties:

Property	Test Method	Value	Unit
Ground Cover	Image Analysis	93	%
Thickness	ASTM D1777	0.63 (16)	in (mm)
Mass Per Unit Area	ASTM D3776	0.92 (0.50)	lb/sy (kg/m <sup>2</sup> )
Tensile Strength	ASTM D5035	480 (714.2)	lb/ft (kg/m)
Elongation	ASTM D5035	49	%
Tensile Strength	ASTM D5035	960 (1428.5)	lb/ft (kg/m)
Elongation	ASTM D5035	31	%
Tensile Strength	ASTM D1682	177 (80.3)	lbs (kg)
Elongation	ASTM D1682	22	%
Resiliency	ASTM D1777	>80	%
UV Stability *	ASTM D4355	151 (68.5)	lbs (kg)
Color(Permanent Net)		UV Black	
Porosity (Permanent Net)	Calculated	>95	%
Minimum Filament Diameter (permanent net)	Measured	0.03 (0.8)	in (mm)

\*ASTM D1682 Tensile Strength and % strength retention of material after 1000 hours of exposure in a Xenon-arc weatherometer.

A certification (Type 1, 2, or 3) from the manufacturer showing:

- 1) the chemical and physical properties of the mat used, and
- 2) conformance of the mat with this specification will be required.

**Soil Preparation:**

All areas to be protected with the mat shall be brought to final grade and seeded in accordance with Section 1660. The surface of the soil shall be smooth, firm, stable and free of rocks, clods, roots or other obstructions which would prevent the mat from lying in direct contact with the soil surface. Areas where the mat is to be placed will not need to be mulched.

**Measurement:**

The quantity of "Preformed Scour Holes with Level Spreader Aprons" to be paid for shall be the actual number which have been incorporated into the completed and accepted work.

Basis of Payment:

The quantity of scour holes with spreader aprons, measured as provided above, will be paid for at the contract unit price each for "Preformed Scour Hole with Level Spreader Apron." Such price and payment will be full compensation for all work covered by this provision.

SP8R105

**AGGREGATE PRODUCTION:**

**11-20-01**

Provide aggregate from a producer who utilizes the new 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 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.

SP10R05

**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 that 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.

SP10R10

**FINE AGGREGATE:**

**11-19-02**

Revise the 2002 Standard Specifications as follows:

Page 10-17, Table 1005-2

Make the following change to the table:

For Standard Size 2MS the following gradation change applies.

The minimum percent shown for material passing the No. 8 (2.36mm) sieve has been changed from 84 to **80**.

SP10R15

**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.

SP10R17

**METAL POSTS AND RAILS:**01-21-03<sub>R</sub>

Revise the 2002 Standard Specifications as follows:

**1050-3 METAL POSTS AND RAILS.**

**Page 10-72, (A) Chain Link Fence: Delete paragraphs 2 and 3, and replace with the following:**

Steel H posts must have a minimum yield strength of 45,000 pi (310 MPa) and weigh 3.26 pounds per foot (4.85 kg/m). Galvanize steel H posts in accordance with ASTM F 1043 with a Type A coating. Aluminum H posts must weigh 1.25 pounds per foot (1.86 kg/m).

Roll formed steel line posts must be a 1.625" x 1.875" (41.3 mm x 47.6 mm) section weighing 2.40 lb/lf (3.57 kg/m) after galvanizing and be formed from 0.121" (3.1 mm) thick sheet having a minimum yield strength of 45,000 psi (310 MPa). Roll formed steel brace rails and top rails must be a 1.250" x 1.625" (31.8 mm x 41.3 mm) section weighing 1.35 lb./lf (2.01 kg/m) after galvanizing and be formed from 0.080" (2.0 mm) thick sheet steel having a minimum yield strength of 45,000 pi (310 Map). Galvanize all roll formed members after fabrication in accordance with ASTM F 1043 with a Type A coating.

**Page 10-73, (A) Chain Link Fence: Delete sentence one of paragraph four and replace with the following:**

Vinyl coated posts must be pipe posts meeting the requirements of AASHTO M 181, and have a fusion bonded vinyl coating of at least 6 mils (0.15 mm) thick.

Add the following as the penultimate paragraph:

For pipe 1.90" OD and under, the outside diameter at any point shall not vary more than 1/64" (0.4 mm) over nor more than 1/32" (0.8 mm) under the standard specified. For pipe 2.375" OD and over, the outside diameter shall not vary more than  $\pm 1\%$  from the standard specified nor shall the minimum wall thickness at any point be more than 12.5% under the nominal wall thickness specified.

**Page 10-73 (B) Woven Wire Fence:** Add the following as the penultimate paragraph:

For pipe 1.90" OD and under, the outside diameter at any point shall not vary more than 1/64" (0.4 mm) over nor more than 1/32" (0.8 mm) under the standard specified. For pipe 2.375" OD and over, the outside diameter shall not vary more than  $\pm 1\%$  from the standard specified nor shall the minimum wall thickness at any point be more than 12.5% under the nominal wall thickness specified.

### **1050-7 FITTINGS AND ACCESSORIES**

Page 10-75, delete the last sentence of the last paragraph and replace with the following:  
The vinyl coating must be at least 6 mils (0.15 mm) thick, except that the coating on tension wire, hog rings, and tie wires must be at least 20 mils (0.50 mm) thick.

SP10R20

### **COATED, PAVED AND LINED CORRUGATED STEEL CULVERT PIPE: 10-21-03**

Revise the 2002 Standard Specifications as follows:

#### **Section 1032-4(E) Optional Coatings for Bituminous Coated Pipe and Pipe Arch:**

Page 10-58. Delete Numbers 2. and 3., and substitute the following:

2. Type B: In lieu of Type B, Half Bituminous Coated and Partially Paved galvanized pipe, aluminized pipe or polymeric coated pipe without bituminous coating and paving may be used.
3. Type C: In lieu of Type C, Fully Bituminous Coated and Partially Paved galvanized pipe, aluminized pipe or polymeric coated pipe without a bituminous coating and paving may be used.

SP10R25

#### **DRUMS:**

07-16-02

Revise the 2002 Standard Specifications as follows:

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

Delete the first (1<sup>st</sup>) sentence of the first (1<sup>st</sup>) 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.”

SP11R05

**PAVEMENT MARKING GENERAL REQUIREMENTS:**

**07-16-02**

Revise the 2002 Standard Specifications as follows:

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

Delete the first (1<sup>st</sup>) sentence of the first (1<sup>st</sup>) 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/>” SP12R01

**PERMANENT SEEDING AND MULCHING:**

**07-01-95**

The Department desires that permanent seeding and mulching be established on this project as soon as practical after slopes or portions of slopes have been graded. As an incentive to obtain an early stand of vegetation on this project, the Contractor's attention is called to the following:

For all permanent seeding and mulching that is satisfactorily completed in accordance with the requirements of Section 1660, "Seeding and Mulching", and within the following percentages of elapsed contract times, an additional payment will be made to the Contractor as an incentive additive. The incentive additive will be determined by multiplying the number of acres of seeding and mulching satisfactorily completed times the contract unit bid price per acre for "Seeding and Mulching" times the appropriate percentage additive.

<u>Percentage of</u> <u>Elapsed Contract Time</u>	<u>Percentage</u> <u>Additive</u>
0% - 30%	30%
30.01% - 50%	15%

Percentage of elapsed contract time is defined as the number of calendar days from the date of availability of the contract to the date the permanent seeding and mulching is acceptably completed divided by the total original contract time. SP16R01

**150 MM PVC PIPE, SDR 80 (SPRING BOX):**

**10-19-04**

Furnish and install PVC pipe in accordance with the Specifications, plans or as otherwise directed by the Engineer.

PVC pipe shall conform to the requirements of Section 1044-5 of the *Standard Specifications* and shall be installed in accordance with Section 310 of the *Standard Specifications*.

Method of Measurement:

**PVC pipe** will be measured in accordance with Section 310-6 of the *Standard Specifications*.

Basis of Payment:

**PVC pipe** will be paid for in accordance with Section 310-7 of the *Standard Specifications*.

Payment will be made under:

150 mm PVC Pipe, SDR 80 (Spring Box).....Linear Meter