ITEM VI - SIDEWALKS, PAVEMENT AND SURFACING

6.01 Scope

(a) The work covered by this item shall consist of the construction of new streets, roads, driveways, pavement, and surfacing, or the replacement of streets, roads, concrete sidewalks, driveways, curbs and gutters, and surfacing of whatever nature which have been removed to permit the construction of pipelines or other work, all at the locations and to the lines and grades shown on the plans or designated by the Engineer. All replacements shall be of the same materials of construction as was removed. All permits for cutting pavement shall be the responsibility of the Contractor.

(b) Where sidewalks, driveways, curbs and gutters, or surfacing of whatever nature have been removed by the Contractor beyond the limits called for in the plans and specifications or as set by the Engineer, or have been damaged through negligence or carelessness of the Contractor's forces, they shall be replaced in accordance with these specifications at the Contractor's expense.

(c) Unless otherwise approved or required, concrete pavement shall be removed to the nearest expansion or contraction joint. The Contractor will contact the SCDOT's District Engineer for a determination of the limits of concrete replacement and location of joints. Where sawed joints are allowed, the depth of the sawed cut shall be at least 2 1/2 inches and shall extend at least 1/5 of the depth of the concrete. More depth may be required if necessary to prevent damage to or under breakage of surrounding pavement.

(d) Bituminous pavement shall be cut in a smooth and straight line. Sawing is required on asphaltic concrete. The width of pavement left between the edge of the ditch and the existing edge of the pavement or the front line of the gutter, shall be at least two (2) feet. Residual strips of pavement less than 2 feet in width must be removed and replaced. Existing pavement shall be removed on each side of the trench for at least 12 inches beyond top of trench.

6.02 Materials

(a) Materials for the construction or replacement of bituminous pavements shall be furnished in accordance with the current applicable Standard Specifications for Highway Construction of the South Carolina Department of Transportation (SCDOT) for each type or kind of pavement to be constructed or replaced.

(b) Concrete work in the construction or replacement of sidewalks, driveways, curbs

and gutters, and road pavement shall be constructed of Class "A" Concrete, meeting all of the applicable requirements of these specifications. Concrete forms shall be of wood or metal, shall be straight and free from warp, and shall be of sufficient strength, when in place, to hold the concrete true to line and grade without springing or distortion, and shall conform to all applicable requirements of these specifications. The quality and suitability of steel forms shall be accepted by the Engineer prior to their use in the work. Bituminous pre-formed joints 1/2 inch thick shall be furnished and installed at points herein specified or shown on the plans. Pre-formed expansion joints shall conform to the requirements of AASHTO Specification Designation M33 and M153.

(c) Surfacing of graveled or similarly unpaved driveways or roads for construction or replacement shall consist of hard, durable pit run gravel or crushed stone of suitable gradation for road surfacing, meeting SCDOT specifications and shall be accepted by the Engineer prior to being delivered to the site of the work.

(d) Aggregate base course shall be hot laid asphalt aggregate base course (3.5 to 5.5 percent of asphalt cement by weight in mixture) in accordance with SCDOT Standards Section 310.

(e) Bituminous Binder course shall be hot laid asphalt concrete base course (3.5 to 5.5 percent of asphalt cement by weight in mixture) in accordance with SCDOT Standards Section 402.

(f) Bituminous tack coat shall be emulsified asphalt in accordance with SCDOT standards. Acceptable grades of emulsified asphalt are RS-1, MS-1, MS-2, HFMS-1, HFMS-2, SS-1, CRS-1, CMS-2, and CSS-1.

(g) Bituminous surface course shall be Type 1 (unless otherwise approved) – Hot laid asphalt concrete surface course 5.0 to 7.0 percent of asphalt cement by weight in mixture in accordance with SCDOT Standards Section 403.

6.03 Highway Crossings

(a) Where it is necessary to cross, cut, destroy or replace sections across or along highways owned or maintained by the South Carolina Department of Transportation the Contractor shall provide all bonds or deposits. The Contractor shall comply with all rules and regulations of SCDOT applicable to the work, and shall furnish materials and perform all work in accordance with any specifications which may be furnished to the Contractor by the SCDOT.

6.04 Street Crossings

(a) Where pipe trenches are cut across or along existing streets or alleys they shall be backfilled and resurfaced in accordance with the requirements of the regulatory agency but as a minimum to the requirements of these specifications.

(b) Where pipe trenches are cut across or along existing street or alley pavement or surfacing, backfill and resurfacing operations shall be of manner specified in these specifications and traffic restored as quickly as possible. The Contractor shall maintain such surfaces under traffic until the permanent surfacing has been placed. Replacement bituminous pavement shall have a thickness equal to that removed but shall in no case be less than 4 inches in thickness. Replacement concrete pavement shall have a thickness equal to that removed but shall in no case be less than 8 inches in thickness. A minimum of two (2) 4-inch lifts of aggregate base course compacted to 100% standard proctor are required under the replacement pavement.

(c) Where pipelines cut across or along existing unimproved or graveled streets or alleys, they shall be backfilled in a manner (conforming with applicable sections of these specifications and traffic restored as quickly as possible by placing at least 8-inches of aggregate base coarse on the surface. A minimum of two (2) 4-inch lifts of aggregate base course compacted to 100% standard proctor are required for final repair to the surface. The Contractor shall maintain the surfacing in good condition until acceptance of the work.

(d) All excess materials and debris shall be removed from the site of the work and the areas left in a neat workmanlike condition.

6.05 New Unpaved Access Roads and Driveways

(a) New unpaved access roads and driveways shall be constructed with a surfacing of aggregate base course compacted to 100% proctor, minimum thickness of 4 inches, unless otherwise shown on the plans. It shall be spread, leveled, compacted, and maintained in good condition until final acceptance of the work.

6.06 Pavement Line Striping

(a) When pavement replacement destroys existing line striping, new line striping shall be performed in accordance with the requirements of the controlling agency.

6.07 Removing and Resetting Existing Work

(a) When allowed by the regulatory agency, sections of existing curb, gutter or sidewalks or combination curb and gutter may be removed in lengths of 4 feet or

more and reset provided they are not injured or damaged in the process. Any section found unsuitable for resetting after removal shall be removed from the work. Any section damaged shall be replaced with a new section at the Contractor's

expense.

(b) After removal, all sidewalks, curb and gutter found by the Engineer to be suitable for resetting shall be carefully stored until the pipeline or other work has been completed. It shall then be cleaned and readjusted upon a firm, compacted subgrade prepared as specified herein for new work and set to the proper line and grade, after which the joints shall be filled with an approved bituminous filler. All joints and tops shall be redressed when necessary to provide a smooth even surface with the old work. After the joints have set, the replaced sections shall be backfilled, tamped and given a finished, even surface in the manner specified for new work.

6.08 Bituminous Pavement Removal, Replacement and Resurfacing

(a) Pavement to be removed shall be marked with chalk lines parallel to the proposed sewer line and the pavement shall be cut neatly along these lines prior to excavating. No pavement shall be pulled or removed by the excavation equipment until after the pavement has been completely cut along the lines. The Contractor shall establish appropriate horizontal and vertical controls so that the replacement pavement will be to the same width, crown, and elevation as the original pavement.

(b) The trench in open-cut highways shall be backfilled in accordance with Item-I of the Technical Specifications except as modified in the Special Conditions or on the Trench Details. Crushed stone, bituminous materials, and construction methods used on highways shall conform to the requirements of Standard Specifications for Highway Construction of the South Carolina Department of Transportation (SCDOT).

(c) All types of bituminous pavement replacement and resurfacing shall be performed in two phases as described below. (1) Bituminous Pavement Replacement and (2) Bituminous Pavement Resurfacing.

(d) Bituminous Pavement Replacement shall consist of the following items:

(1) Removal and disposal of existing pavement, including saw cutting of edges. The width of pavement cuts shall be the minimum required to accomplish the work. However, the maximum allowable width shall be four, (4)-feet, unless additional width is specifically authorized, by the engineer or his representative, due to circumstances beyond the control of the Contractor.

(2) Crushed aggregate based course, compacted to 100% Standard Proctor Density, placed to the depth specified on the pavement replacement and resurfacing details.

(3) A thorough application of tack coat applied to the edges of the existing pavement.

(4) Bituminous concrete binder course placed flush with the existing roadway pavement surface and rolled smooth so as to conform to the lines and grades on the adjacent pavement surfaces.

(5) The Contractor may place the aggregate base course all the way up to flush with the existing pavement surface to provide a temporary safe surface but shall place the binder course within 3 days of completing the trench backfill unless specified or instructed otherwise by the Engineer or his representative.

(6) The binder course shall be left open to traffic for a period of at least 30 days to allow for settlement before pavement resurfacing can be started. The Contractor shall maintain a safe travel way at all times.

(7) In the event poor soil conditions cause undermining of sawed pavement cuts, extra trench width will be allowed in computing pavement repair quantities, on a case by case basis, when specifically authorized in writing by the Engineer.

(e) Bituminous Pavement Resurfacing shall consist of the following items:

(1) Thoroughly clean the surface of the Binder Course.

(2) Repair of all areas in which settlement or damage of the pavement has occurred with Bituminous Concrete. Settled areas may require removal of binder and stone, and replacement or stabilization of the subgrade. Cracked and pumping areas shall be repaired by removing the binder, stone and stabilizing the subgrade.

(3) Apply a tack coat to the entire width of paving surface.

(4) Apply bituminous Concrete Surface Course to the width and thickness specified herein, or shown on the pavement replacement details in the plans, or as instructed by the Engineer or his representative.

(5) Generally, in longitudinal pavement cuts, resurfacing shall extend from edge of pavement to centerline of roadway if the allowed edge of pavement cut is three (3)-feet or more from the roadway centerline. Where the allowed edge of pavement cut is closer than three (3)-feet to the roadway centerline the pavement resurfacing shall extend from the edge to edge of the existing roadway. The resurfacing width, (one lane or full width), for each street is specified on the detail drawings in the plans. Streets specified to receive one lane resurfacing may require full width resurfacing, at the Engineer's discretion, if it is determined that the crown cannot be maintained.

In transverse cuts, pavement resurfacing shall be tapered as shown on the Details. One lane and full width resurfacing shall not be tapered at the edges. The full specified thickness shall extend to the road edges.

(6) Pavement requiring replacement and/or resurfacing as a result of scarring or damage, by equipment movement or travel, material or equipment storage, over excavation, or other actions by the Contractor, other than specifically cutting pavement for sewer installation, shall not be included in the pavement replacement or pavement resurfacing pay items.

(7) Private drives and parking lots shall be repaired and resurfaced in accordance with the specifications and the details.

(8) Pavement resurfacing is not required for pavement cuts in private parking lots and drives, unless specifically directed by the Engineer.

(9) Centerline and Edgeline Pavement Striping in accordance with current SCDOT Specifications, Standard Specifications for Highway Construction. No extra payment shall be made for centerline or edgeline paint striping.

(10) Shoulder treatment with same materials as existing shoulder, i.e., ABC Stone, or grass surface, to bring the shoulder flush with new pavement surface and prevent a low shoulder. All shoulder treatments shall be considered incidental to pavement resurfacing and no extra payment will be made therefore.

(f) If required by SCDOT or other controlling agency, the Contractor shall be required to post a bond certifying completion of pavement repair and resurfacing, to the satisfaction of the SCDOT or other controlling agency.

6.09 Concrete Construction

(a) Concrete surfaces, driveways, walks and parking areas shall be replaced to match the existing concrete pavement thickness, (but not less than 6-inches thick), and existing concrete surface texture. Removal shall be made to the nearest expansion or construction joint within 10 feet of the sewerline. The Contractor shall saw new construction joints at intervals as approved by the Engineer when total replacement widths exceed 10-feet. Expansion joints shall be in lieu of construction joints as required by the Engineer. All work shall be performed in accordance with Item– V, Concrete Construction of the Specifications and to the detail shown on the drawings. Concrete shall be Class A.

(b) New concrete sidewalks and curb and gutter shall be Class A concrete, unreinforced, as specified in Item III of these specifications; constructed to the width, thickness and length shown on the plans. New sidewalks shall be 4-feet in width and 4-inches in thickness unless otherwise shown on the plans.

(c) Concrete sidewalks, driveways, curb and gutter being replaced shall be Class A Concrete, unreinforced, as specified in Item III of these specifications 6-inches thick and of the same width, length, shape and grade as the section removed. Concrete pavement in streets and roads shall be replaced to the original size, shape and grade with Class A concrete pavement 8-inches thick.

(d) Concrete side forms shall be carefully set with their top true to line and grade of the finished work and shall be rigidly held in place by stakes or braces. Forms shall be cleaned and oiled before they are set in place. Subgrade and forms shall be approved by the Engineer just prior to concrete placement, after which the subgrade shall be dampened, if necessary, and the freshly mixed concrete placed in the amount required to fill the area within the forms to the proper finished grade in one course. The concrete shall be thoroughly tamped or vibrated, struck off with an approved straightedge and floated with a wooden float true to the required grade and slope. The finished surface shall match existing surface and shall have a surface tolerance of not more than 1/8 inch in 10 feet. Curb and gutter shall be constructed in ten (10) foot sections. Pre-formed bituminous expansion joints shall be placed in curb and gutter and sidewalk construction at intervals specified herein. Sidewalks shall be deep marked at four (4) foot intervals or match existing patterns.

(e) All completed concrete surfaces shall be immediately covered with wet burlap or other approved material and kept continuously damp for a period of not less than 5 days, and shall be protected from damage during the curing process and thereafter until finally accepted. Any section that is damaged during construction or before final acceptance shall be replaced in a satisfactory manner by the Contractor at his own expense. No pedestrian or vehicular traffic shall be allowed on concrete walks or paving during the curing period and in no case less than 5 days after placement.

(f) All work required by this section of specifications shall be in strict accordance with the applicable section of the South Carolina Department of Transportation Standard Specifications for Highway Construction.