

ITEM IV - SIDEWALKS, PAVEMENT AND SURFACING

4.01 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, unless directed otherwise by the ENGINEER. All permits for cutting pavement shall be the responsibility of the CONTRACTOR, and no extra payment will be made for this requirement.
- (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 control joint. The CONTRACTOR will contact the Superintendent of Streets and/or NCDOT'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 1/5 of the depth of the concrete.
- (d) Bituminous pavement to be removed shall be saw-cut in a smooth and straight line. 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 3 feet. Residual strips of pavement less than 3 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.

4.02 Materials

- (a) Materials for the construction or replacement of bituminous pavements shall be furnished in accordance with the current applicable NCDOT Standard Specifications for Roads and Structures and the NCDOT Superpave, HMA/QMS, Manual (latest edition), hereinafter referred to as the Superpave Manual. All references to the Superpave Manual shall mean the latest edition.
- (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

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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 approved 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 NCDOT specifications and shall be approved by the ENGINEER prior to being delivered to the site of the work.
- (d) Aggregate base course (ABC) shall be either type "A" or "B" which meets all requirements of Section 1010 of the NCDOT Standard Specifications for Roads and Structures.
- (e) Asphalt Intermediate Course shall be Type I 19.0B, meeting the requirements of the NCDOT Superpave Manual, latest edition.
- (f) Asphalt Surface Course shall be S4.75A or SF 9.5B, as specified, meeting the requirements of the NCDOT Superpave Manual, latest edition.
- (g) Bituminous tack coat shall be applied to all existing asphalt or concrete surfaces in accordance with DISTRICT's standard Details and Specifications and shall be of a material as set forth in Section 205-2 of the NCDOT Standard Specifications for Roads and Structures (latest edition). Bituminous tack coat shall comply with Section 605 and paragraphs 1020-2, 1020-6, and 1020-7 of Section 1020 of the above referenced NCDOT Standards.
- (h) The CONTRACTOR shall submit an asphalt mix design, for each mix type specified in the Schedule of Estimated Quantities and/or the Plans and Specifications, to the ENGINEER for review. The mix design shall be submitted as a part of the shop drawing submittal process. In lieu of performing a mix design specifically for a particular pavement repair project, the CONTRACTOR may submit a mix design, for each mix type specified, that has been reviewed and approved by NCDOT within the last six months, and will be produced at the same asphalt plant.

4.03 NCDOT Roadways

- (a) Where it is necessary to cross, cut, destroy or replace sections across or along roadways owned or maintained by the North Carolina Department of Transportation, the CONTRACTOR shall provide all bonds or deposits. The CONTRACTOR shall comply with all rules and regulations of NCDOT, including the Encroachment Agreement, and shall furnish materials and perform

all work in accordance with NCDOT Specifications.

4.04 Street Crossings

- (a) When 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 the 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 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 course on the surface. A minimum of two 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.

4.05 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 8 inches, unless otherwise shown on the Plans. It shall be spread, leveled, compacted, and maintained in good condition until final acceptance of the work.

4.06 Pavement Line Striping

- (a) When pavement replacement destroys existing line striping, new line striping of the same kind shall be provided in accordance with the requirements of the controlling agency. Pavement striping shall be incidental, and no extra payment will be made therefore.

4.07 Bituminous Pavement Removal, Replacement and Resurfacing

- (a) Pavement to be removed shall be marked with chalk lines parallel to the proposed

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sewer line and the pavement shall be saw-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 Roads and Structures of the North Carolina Department of Transportation (NCDOT) and the Superpave Manual.
- (c) All types of bituminous pavement replacement and resurfacing shall be performed in two phases as described below.
 - (1) Bituminous Pavement Replacement shall consist of the following items:
 - (a) 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 4 feet, unless additional width is specifically authorized, by the ENGINEER, due to circumstances beyond the control of the CONTRACTOR.
 - (b) Crushed aggregate base course, compacted to 100% Standard Proctor Density, placed to the depth specified on the pavement replacement and resurfacing details.
 - (c) A thorough application of tack coat applied to the edges of the existing pavement.
 - (d) Bituminous concrete intermediate or base 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.
 - (e) The CONTRACTOR may place the aggregate base course all the way flush with the existing pavement surface to provide a temporary safe surface but shall place the Asphalt 19.0B Intermediate Course within 3 days of completing the trench backfill unless specified or instructed otherwise by the ENGINEER.
 - (f) The Asphalt 19.0B Intermediate 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.

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(g) 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 by the ENGINEER.

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

(a) Thoroughly clean the surface of the intermediate or base course previously applied.

(b) Repair all areas in which settlement or damage of the pavement have occurred with intermediate or base course, as applicable. Settled areas may require removal of asphalt 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.

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

(d) 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.

(e) Generally, in longitudinal pavement cuts, resurfacing shall extend from edge of pavement to center line of roadway if the allowed edge of pavement cut is 3 feet or more from the roadway centerline. Where the allowed edge of pavement cut is closer than 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.

(f) In transverse cuts, pavement resurfacing shall not 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.

(g) 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, and shall be paid for at the CONTRACTOR's expense.

(h) Private drives and parking lots shall be repaired and resurfaced in

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accordance with the Specifications and the Details.

(i) Total pavement resurfacing is not required for pavement cuts in private parking lots and drives, unless specifically directed by the ENGINEER.

(j) Centerline and Edgeline Pavement Striping shall be in accordance with current NCDOT Specifications, Standard Specifications for Roads and Structures. No extra payment will be made for centerline or edgeline striping.

(k) 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.

4.08 Bituminous Curb Replacement

- (a) The shape of the bituminous curb profile shall be field-verified, and matched to the existing curb section, or shall be as shown on the Plans. Curb shall be saw-cut before removing any section. Asphalt used shall be Type SF or RSF conforming to NCDOT Standards and Specifications and with all requirements of DISTRICT's Technical Specifications.

4.09 Bonds

- (a) If required by NCDOT or other controlling agency, the CONTRACTOR shall be required to post a bond guaranteeing completion of pavement repair and resurfacing, to the satisfaction of the NCDOT or other controlling agency.

4.10 Concrete Drives and Walks

- (a) Concrete 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 control joint within 10 feet of the sewerline. The CONTRACTOR shall saw new control 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 III Concrete Construction of the Specifications and to the Standard Detail shown on the Plans. Concrete shall be Class A.
- (b) New concrete sidewalks and curb and gutter shall be Class A unreinforced concrete as specified in Item III of these Specifications and 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.

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- (c) Replacement concrete sidewalks, driveways, curb and gutter shall be Class A unreinforced concrete as specified in Item III of these Specifications with a minimum thickness of 6 inches 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 8 inches thick.
- (d) The shape of the curb and gutter profile shall be field-verified, and matched to the existing curb section, or shall be as shown on the Plans. Curb shall be saw-cut before removing any section and replaced to the nearest expansion joint. Concrete used shall be a minimum of 4000 psi Class A and shall comply with all requirements of the Technical Specifications.
- (e) 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 deviation of not more than 1/8 inch. Curb and gutter shall have control joints every 10 feet or match existing. Pre-formed bituminous expansion joints shall be placed in curb and gutter and sidewalk construction at intervals specified herein, but no greater than 40 feet. Sidewalks shall have control joints at 4 foot intervals or match existing patterns.
- (f) All completed concrete surfaces shall be immediately covered with a pre-approved material or curing agent. The concrete shall be 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.
- (g) Unless otherwise specified by the Controlling Agency, all concrete work required by this section of the Specifications shall be in strict accordance with all applicable sections of the latest edition of the North Carolina Department of Transportation's Standard Specifications for Roads and Structures and NCDOT Standard Roadway Drawings.