SECTION 120

NEW AND REPLACEMENT PAVEMENT, CURBS, AND SIDEWALKS

PART 1 - GENERAL

1.01 SCOPE

The work to be performed under this section shall include replacing existing sidewalks, curbing and pavement in paved streets, driveways and parking areas where such sidewalks, curbing and pavement have been removed for constructing water pipelines, fire hydrants, sewers, manholes and all other water and sewer appurtenances and structures. It shall also include temporary paving, curbing, new sidewalks and pavements shown on the Drawings. All utility valves and manholes covered over by paving operations shall be raised to grade after paving is completed.

1.02 GUARANTEE

The Contractor shall provide a guarantee against defective equipment and workmanship in accordance with the requirements of the section entitled "Guarantees and Warranties" of these Specifications.

PART 2 - PRODUCTS

2.01 TYPES OF PAVEMENT

A. All existing pavement in streets or driveways which is removed, destroyed or damaged by construction of sewerage or water works shall be replaced as shown on the drawings with the same type of pavement surface as that which existed before construction work was started. Materials, equipment and construction methods used for paving work shall conform to the specifications applicable to the particular type required for replacement, repair or new pavements.

1. Portland cement concrete pavement or base courses shall be replaced with Class "A" concrete in accordance with Section 30, Cast-In-Place Concrete, of these specifications. The surface finish of the concrete pavement replaced shall conform to that of the existing pavement. The surface of the replaced concrete base course shall be left rough. The slab shall be of depth equivalent to the existing concrete pavement, or base course, but in no case less than 7 inches thick. Expansion joints removed shall be replaced. Concrete pavements or concrete base courses where required or where shown on the drawings shall be

reinforced and shall conform to details shown on the drawings and applicable specifications of Section 306, Portland Cement Concrete Base, and Section 501, Portland Cement Concrete Pavement, Tennessee Department of Highways, Standard Specifications for Road and Bridge Construction, latest edition.

2. Type 1 asphalt concrete surface mix shall be used when conditions require replacing existing asphalt concrete surface mix pavement. With this condition a 2" layer of bituminous binder (Hot-Mix, 307-B) shall be applied followed by a 2" layer of asphalt concrete surface (Hot-Mix, 411-D) as shown on the Drawings of these specifications. Both mixes shall conform to either the Asphalt Concrete Surface (Hot Mix), Section 411, or the Bituminous Plant Mix Base (Hot-Mix), Section 307, Tennessee Department of Highways, Standard Specifications for Road and Bridge Construction, latest edition. The pavement mixture shall not be spread until the designated surface has been previously cleaned and prepared, is intact, firm, properly cured, dry, and the tack coat has been applied.

3. Type 2 asphalt concrete binder mix shall be used when conditions require replacing existing asphalt concrete binder mix pavement or any other paving surface not described in Section 2.01A(2) above. When this condition occurs a 4" layer of bituminous binder (Hot-Mix, 307-B) shall be placed as shown on the Drawings of these specifications. This mix shall conform to the Bituminous Plant Mix Base (Hot-Mix), Section 307, Tennessee Department of Highways, Standard Specifications for Road and Bridge Construction, latest edition. The pavement mixture shall not be spread until the designated surface has been previously cleaned and prepared, is intact, firm, properly cured, dry, and the tack coat has been applied.

4. Where sewerage or water lines and appurtenances are constructed in or across unpaved, chert, or crushed stone surfaced streets, roadways or driveways, the surface removed or damaged shall be repaired or replaced with crushed stone in accordance with Section 401, Mineral Aggregate Surface, of the Tennessee Department of Highways, Standard Specifications for Road and Bridge Construction, latest edition. This surfacing must be authorized by the Engineer.

5. Temporary patching of street cuts or any other damaged areas may require the placement of crushed stone as specified in item 2.01-A(4) above or colmix to depth of 4 inches. These areas will be specified in the Contract Documents as well as shown on the Contract Drawings.

PART 3 - EXECUTION

3.01 REPLACING PAVEMENT

A. Pavements removed or damaged shall be replaced in accordance with the following procedures:

1. The existing street pavement or surface shall be removed along the line of work for the allowable width specified for the trench or structure. All edges of the existing pavement shall be cut to straight, vertical edge and care shall be used to get a smooth joint between old and new pavement and to produce an even surface on the completed street. Cement concrete base slabs and crushed stone bases, if required, shall be placed and the concrete allowed to cure for three days before asphalt concrete surface courses are applied. Expansion joints where applicable shall be replaced in a manner equal to the original joint.

2. After the installation of the sewer and water lines the trench shall be backfilled with thoroughly compacted crushed stone as specified on the Drawings. Backfill shall be placed as specified in the Section 20 entitled "Earthwork", Paragraph 2.06, of these Specifications.

3. Trench backfill along streets shall be covered with a temporary paving as specified above. This temporary paving shall be applied level with the existing paved surface at a time directed by the Engineer. Prior to the application of the temporary paving the crushed stone backfill shall be maintained carefully at grade and dust free. Additionally, immediately prior to the application of permanent paving by the Contractor or acceptance by the City, The Contractor shall again compact the top of all trench backfill in the streets with a hydrotamper and add sufficient crushed stone to bring surface back to bottom of permanent paving as shown on the Drawings.

4. Unless otherwise shown or specified all paved surfaces shall be replaced with pavement of like kind as specified in Paragraph 2.01. The pavement shall be the specified full trench width as shown in the Bid Schedule.

5. Where pavement is specified for trench width, the temporary surface shall be compacted and finished to the base grade compatible with the type of pavement to be applied before pavement is placed. Additional width of pavement to be removed, if any, as shown on the Drawings shall be done immediately prior to replacing the pavement. Any additional pavement or street surface removed or damaged beyond the limits shown on the

   Drawings shall be replaced or repaired by the Contractor at the Contractor's expense.

6. Wherever sewer or water lines are constructed across state highways, the Contractor shall comply with all requirements and provisions of the Standard Method of the Tennessee Department of Transportation for opening trenches through highways and replacing pavements as shown on the Drawings and specified herein. All such work shall be subject to inspection and approval by the Tennessee Department of Transportation.

7. Contractor shall remove all surplus excavation materials and debris from the street surfaces and right-of-way and shall restore street, roadway or sidewalk surfacing to its original condition. This work shall be considered as cleanup and no separate payment will be made for this item.

8. All new and existing utility valves and manholes covered over by paving operations shall be raised to grade after paving is completed. This shall be done by excavating around and raising the item to grade. The excavation shall be circular and of such dimension that a concrete collar a minimum of 8 inches thick and 8 inches deep can be poured around the item that is raised to grade. Sanitary sewer manholes shall have the top of the frame set at a height to prevent surface water from running into the manhole.

3.02 NEW PAVEMENTS FOR ACCESS ROADS AND PARKING AREAS

A. Access roads to treatment plant sites, parking areas and roadways shall be surfaced wherever called for on the plans with crushed stone which shall be placed sufficiently thick to produce a road surface of uniform thickness shown in the drawings after compaction and shaped to required line and grade. Such roadway surfaces shall be constructed in accordance with the requirements of Section 303, Mineral Aggregate Base, of the Tennessee Department of Highways, Standard Specifications for Road and Bridge Construction, latest edition.

B. The completed crushed stone road base shall be maintained by the Contractor in a smooth, first-class condition to required line, grade and cross section until the entire surface area has become stabilized and compacted.

C. After the surface has become stabilized to the satisfaction of the Engineer the entire surface shall be covered with a asphaltic concrete pavement (plant mix) as herein before described in Paragraph 2.01. Surfaces shall conform to the lines, grades, cross sections and thickness indicated on the contract drawings.

D. The bituminous concrete pavement shall not be placed until all other items of construction have been completed. Roadway materials shall not be placed upon wet foundations nor on frozen subgrade.

3.03 MAINTENANCE

The Contractor shall maintain the surfaces of roadways built and pavements replaced until the acceptance of the project. Maintenance shall include such dragging, reshaping, wetting and rerolling as are necessary to prevent raveling of the road material, the preservation of reasonably smooth surfaces and repair of damaged or unsatisfactory surfaces to the satisfaction of the Engineer. Maintenance shall also include sprinkling as may be necessary to abate dust from the gravel surface.

3.04 SIDEWALK REPLACEMENT

A. Materials

1. All concrete sidewalks shall be built and/or replaced with Class "A" concrete which shall conform with requirements of the section "Cast-In-Place Concrete" of these specifications.

2. Preformed joints shall be 1/2-inch thick conforming to the latest edition of AASHO Standard Specifications, M59, for preformed bituminous fiber joints.

3. Concrete forms shall be of wood or metal, shall be straight and free form warp, and shall be of sufficient strength when in place to hold the concrete true to line and grade without springing or distortion.

B. When a section of sidewalk is removed the existing sidewalk shall be cut to a near line perpendicular to both the centerline and the surface of the concrete slab. Existing concrete shall be cut along the nearest existing contraction joints unless such joints do not exist in which case the cut shall be made at minimum distances shown on the plans.

C. Existing concrete sidewalks that have been cut and removed for construction purposes shall be replaced with sidewalks of the same width and surface as the portion removed and shall have a minimum uniform thickness of 4 inches. The new work shall be neatly joined to the old concrete so that the surface of the new work shall form an even unbroken plane with the old sidewalk.

D. The subgrade for concrete sidewalks shall be formed by excavating to a depth equal to the thickness of the concrete. Subgrade shall be of such width as to

permit the proper installation and bracing of the forms. Subgrade shall be compacted by hand tamping or rolling. Soft, yielding or unstable material

shall be removed and unyielding surface at proper line, grade and cross section.

E. Expansion joints shall be required to replace any existing expansion joints that are removed with the sidewalk or in new construction wherever shown on the plans. Expansion joints shall be true and even, shall present a satisfactory appearance, and shall extend to within 1/2 inch of the top of finished concrete surface.

F. Concrete shall be suitably protected from freezing and excessive heat. It shall be kept covered with burlap or other suitable material and kept wet until cured.

3.05 REPLACING CURBS

A. All existing curbs which are removed, damaged, or destroyed during construction of the sewerage and water works shall be replaced in accordance with the following:

1. Asphaltic concrete curbs shall be constructed with the same dimensions as the existing curb using concrete pavement Grading E, conforming to Paragraph 2.01 of these specifications. Prior to constructing curbs on pavement, the pavement shall be dry and cleaned of all loose material and a tack coat of RS-2 asphalt shall be applied to the curb area of the pavement at the rate of 0.08 to 0.20 gallons per 15 linear feet of curb area.

2. Portland cement concrete curbs shall be constructed with the same dimensions as the existing curb using Class A concrete in accordance with the sections entitled "Cast- In-Place Concrete" and with Section 702, "Cement Concrete Curb", Tennessee Department of Transportation, Standard Specifications for Road and Bridge Construction, latest edition.

** END OF SECTION **