Division 32 Exterior Improvements
SECTION 32 12 13
ASPHALT PAVING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. The Contractor is referred to the Instructions to Bidders and General Conditions, NYCHA Contracts; the Special Notice to Contractors; the Form of Proposal; the Form of Bid Bond; Division 01 - General Requirements of the Contract Specifications; the Contract Drawings and all Amendments and Addenda thereto; all of which govern the Work of this Section.

1.02 SCOPE OF WORK

A. Provision and installation of asphalt paving as noted on the Drawing and specified herein.

1.03 RELATED WORK

A. 31 30 00 Earthwork

B. 03 30 53 Cast In Place Concrete

PART 2.00 - MATERIALS

A. Asphalt paving mixtures shall consist of coarse aggregate, fine aggregate and mineral filler thoroughly coated with asphalt cement. The coarse aggregate shall be sound, angular crushed stone, crushed gravel, or crushed slag. Uncrushed coarse aggregate may be used in base course mixtures if the mixture meets all design criteria. The fine aggregate shall be well graded, moderately sharp to sharp sands. All fine aggregate shall consist of hard, strong, durable particles, which are free from a coating or any injurious materials and injurious amounts of clay, loam, or other deleterious substances. Paving mixtures shall meet the following requirements for grading and composition:

PERCENT OF MIXTURE BY WEIGHT PASSING SIEVE:

SIEVE SIZE	TYPE 7-F	TYPE 6-F	TYPE 3 DENSE BINDER
1 ½ INCH	1003		
1 INCH	100	90-100	
½ INCH	100	95-100	70-90
¼ INCH	90-100	65-85	48-74
1/8 INCH	45-70	36-65	32-62
No. 20	15-40	15-39	15-39
No. 40	8-27	8-27	8-27
No. 80	4-16	4-16	4-16
No. 200	2-6	2-6	2-8
Asphaltic Cement	6.8-8.0	5.8-7.0	4.5-6.5

1. All Type 7-F Top Course asphalt, Type 6-F Top Course asphalt and Type 3 Dense Binder shall be in accordance with the New York State Department of Transportation (NYSDOT) 1991 Specifications.

2. Asphalt cement shall be 100% soluble in Trichloroethylene. Viscosity of the asphalt cement shall be AC 20. The mix shall have a minimum Marshall Method Mix Criteria of 500 lbs. Stability, Flow of 8 to 16, and percent of air voids three to five percent. The asphalt shall be prepared by refining crude petroleum by suitable methods. It shall be homogeneous, free from water and shall not foam when heated to 347° F.

B. The tack coat can be either a diluted, emulsified asphalt for tack coats, such as types SS-1, RS-1 or RS-2, diluted with equal parts of water added to the emulsion, or type RC 70 rapid curing liquid asphalt without dilution, mechanically sprayed in a uniform, thin coat over the entire area. The spray should be applied with an application rate of 0.10 to 0.15 gal/sq. yd.

C. Stone screenings for sub-base shall be either limestone or trap rock of hard, durable sharp angled fragments, free from dirt or other deleterious material and graded within the following limits:

SIEVE SIZE	PERCENT PASSING SIEVE
½ INCH	100
¼ INCH	90-100
No. 200	5-15

1. Base course shall be a minimum of 4 inches deep.

D. Sampling and testing of paving mixtures; examination of production methods, apparatus and mixing plant if required shall be made in accordance with the latest Specifications of The American Society for Testing Materials.

E. Forms shall be steel or standard nominal 2-inch thick wood planks, free from bends and warps, and shall be cleaned thoroughly and oiled before pavement is placed against them; this cleaning and oiling must be repeated daily as forms are re-used. The forms shall rest firmly upon the thoroughly compacted sub-grade throughout their entire length, shall be joined neatly and tightly, and staked securely to line and grade.

F. Permanent concrete curbs, if used for delineating the pavement, may act as forms for the asphalt pavement. Concrete for curbs shall conform to the Concrete Sections of these Specifications.

PART 3 - CONSTRUCTION

A. The Contractor shall accept the conditions and grades as they exist and shall do all excavating including removals and furnish all clean fill as may be required to establish the compacted sub-grade at the required levels, below and parallel with the finished surface of the pavement.

B. Sub-grade to receive pavement shall be free of soft or spongy material. Material in soft spots shall be removed to the depth required to provide a firm foundation and shall be replaced with clean fill. The sub-grade shall be shaped and compacted with a five (5) to eight (8) ton self-propelled roller. Areas inaccessible to the roller shall be thoroughly compacted with other approved compaction tools. Any work to be constructed below grade must be satisfactorily back-filled before preparation of sub-grade is begun. Rolling and compaction of the sub-grade shall continue until the surface is hard, uniform, smooth, even bearing, unyielding and true to grade and cross-section.

C. Paved areas where new full depth asphalt paving is called for shall be excavated to the required depth and old pavements removed from the site.

D. Planted areas where new asphalt paving is called for shall be stripped of existing topsoil to the required depth for the paving. The topsoil shall be stockpiled on the site in areas designated by the Project Superintendent. No topsoil shall be removed from the site without permission of the Authority. All debris, vegetation, or other perishable materials shall be removed from the area, except for trees or shrubs designated for preservation.

E. The Contractor shall adjust frames and covers of drainage and other flush surface structures in the construction area to the new finished grades. Walls of these structures shall be cut or extended as required. Extensions shall be of brick and mortar, the same thickness as the existing wall. Inside and outside of extension shall be parged with 1:3 cement mortar 1/2 inch thick. Frames of all adjusted structures shall be set on a full bed of mortar. The Contractor shall properly align the frames and covers. He/she shall provide all safety and protective barricades around open structures.

F. The surface of curbs, vertical faces of existing pavements and all structures that are to be in actual contact with the asphalt pavement shall be given a thin, even coating of a hot, asphaltic cement, such as RC7O. All curb, pavement, walls, fences, manholes, drain inlet basins and other structures that will not be in contact with the asphalt pavement shall be fully protected against painting, splattering, staining, or other defacement. Drain inlets, catch basins, manholes and other openings shall be protected against intrusion of any materials. The protection shall be continued and maintained until completion of the paving.

G. STONE SCREENINGS: Where called for on the Drawings, stone screenings shall be evenly spread and compacted on the prepared sub-grade into a uniform layer of the thickness shown on the Drawings. It shall be consolidated and compressed with a self-propelled five (5) to eight (8) ton roller until the surface is even bearing and unyielding. Locations inaccessible to the roller shall be thoroughly compressed with proper tools to a compacted density equal to the rolled area. Contractor shall maintain and repair the stone screenings base course until the surface course has been placed.

H. TACK COAT: A tack coat shall be used on all pavement surfaces that are to receive an overlying course of new asphalt. A very light tack coat should be applied after brooming, between layers of new pavement. The tack coat shall be applied on only as much pavement as can be covered with asphalt pavement in the same day.

I. TYPE 3 DENSE BINDER: Where called for on the Drawings, a plant mixed binder in accordance with the Materials Section of these Specifications, shall be spread and struck off by means of a mechanical paver of approved design. The binder mix shall be laid to a depth, which after final compaction shall be equal to the specified depth shown on the Drawings. The binder course shall not be laid when the surface temperature is lower than 45° F. Any irregularities in the surface of the pavement course shall be corrected directly behind the paver. After surface irregularities have been adjusted, the mix shall be thoroughly and uniformly compacted by rolling with approved power-driven rollers weighing not less than five (5) to eight (8) tons.

   1. Areas inaccessible to spreaders and rollers shall be prepared by other approved means.

   2. After final compaction, the base course shall have a density of not less than 95 percent of the theoretical maximum density as calculated in accordance with Appendix B of the Asphalt Institute Manual, MS-2. Final rolling shall eliminate marks from previous rolling. After the compaction of the binder course, and before the placing of the surface course, the binder course shall be checked for depressions. The Contractor shall check the

entire area using a ten-foot wood or metal straight edge. Any depression greater than 3/16 of an inch shall be corrected before the placing of the surface course.

J. TYPE 6-F or TYPE 7-F, FINE ASPHALTIC CONCRETE: Where called for on the Drawings, a plant mixed surface course of fine asphaltic concrete in accordance with the Materials Section of these Specifications, shall be spread and struck off by means of a mechanical paver of approved design. The fine asphaltic concrete mix shall be laid to a depth, which after final compaction shall be equal to the specified depth shown on the Drawings. The surface course shall be laid hot, upon the dry and properly prepared base, when the weather conditions, in the opinion of the Authority Inspector, are suitable. The surface course shall not be laid when the surface temperature is lower than 45 degrees F. Placing of the surface course shall be a continuous operation. If any irregularities occur, they shall be corrected before final compaction.

1. After surface irregularities have been adjusted, the surface course shall be thoroughly and uniformly compacted by rolling with approved power-driven rollers weighing not less than five (5) to eight (8) tons.

2. Areas inaccessible to spreaders and rollers shall be prepared by other approved means.

3. After compaction the surface course shall have a density not less than 97 percent of the theoretical maximum density as determined by Appendix B of the Asphalt Institute Manual MS-2. Final rolling shall eliminate marks from previous rolling, leaving the finished surface smooth, true to line and grade, properly pitched for surface drainage and free from honeycomb, depressions, bumps, unevenness, waves, and overlapping seams. After the compaction of the surface course, the Contractor shall check the entire paved area for depressions using a ten-foot wood or metal straight edge. Any depression greater than 3/16" shall be corrected be removing the surface course of the affected areas, and replacing with new material to form a true and even surface.

K. Rollers shall not pass over the unprotected edges or ends of a freshly laid mixture unless authorized by the Engineer or the Authority Inspector. When the operation of placing the mixture is interrupted, the end of the laid material shall be left unrolled until such time as work is resumed, in order that there may be no joints throughout the project. If it is necessary to roll the end of the laid mixture, the joint made shall be cut back to expose the full depth of the course before re-commencing the operation of placing the mixture. The edges of such joints shall be painted with liquefied asphalt (RC-70) to insure a positive bond with the new mixture. Longitudinal joints caused by the mechanical paver shall be made in a careful manner, parallel to the edge of the pavement and with a continuous, thorough bond. The surface course shall be continuous, homogeneous and smooth.

L. Where defects in composition, compression, or finish appear in the completed work, the defective work will be removed to the full depth of the defective course or courses and the defective material replaced with new material, correctly installed, at the Contractor's expense.

M. Unless otherwise specified, tests of materials shall be made in accordance with the latest specifications of the American Society for Testing Materials. Equipment, materials, and preparation of the mixtures will be subject to inspection and approval at the refineries and plant as may be directed. The Contractor shall furnish for test, when required by the Engineer or Authority Inspector, samples of the completed work. The areas of pavement so removed shall be replaced by new mixture and refinished without additional compensation.

N. Shipments of material shall be made in watertight vehicles previously cleaned of all foreign material, and delivered to the job site, so that it will not become contaminated in any way.

O. The Contractor shall provide suitable means for keeping tools free and clean of bituminous accumulations. He/she shall not store tools, equipment, materials or vehicles on the Project grounds after working hours or on Saturdays, Sundays, or Holidays.

P. The Contractor shall provide and have ready for use at all times sufficient tarpaulins or covers as may be directed by the Inspector for use in any emergency such as rain, unavoidable delay, chilling winds, etc. for covering and protecting any material not spread.

END OF SECTION