NOTE TO CONSULTANTS: This specification section shall be used for asphalt paving of tennis courts only. Edit with Track Changes turned on, any text in this section that appears in bold and italics then turn off the bold and italics for the final approved version. (Remove this Note).

PART 1 - GENERAL

1.01 Description: Furnish all material, labor, services and related items required to complete work indicated on drawings and/or specifications. The items of work to be performed shall include but may not be limited to; asphalt patching, installation of tack coat and fabric, and the import, placement, and compaction of asphalt pavement.

1.02 Related Sections:

Section 01 56 39 - Temporary Tree & Plant Protection
Section 01 57 13 - Temporary Erosion & Sediment Control
Section 02 41 13 - Selective Site Demolition
Section 31 00 00 - Earthwork
Section 32 11 23 - Mineral Aggregates
Section 32 12 19.16 - Tennis Court Surfacing
Section 32 23 26 -Sub-grade Preparation for Asphalt Paving
Section 32 31 13 - Chain-link Fencing for Tennis Courts
Section 32 41 00 - Site Furnishings

1.03 References: This section references the latest revisions of the following documents:

A. American Sports Builders Association (ASBA) Tennis Court Construction Guidelines Section I – General Guidelines, and Section II – Tennis Court Guidelines, applicable sections including but not limited to:
   A. Tennis Court Orientation
   B. Tennis Court Dimensions and Related Measurements
   C. Standard Classification for Tennis Court Surfacing Systems
   I. Hot Mix Asphalt Tennis Courts
   J. PVC-Coated, Aluminized or Galvanized Chain Link Fencing and Accessories
   O. Acrylic Color Finish Systems for Tennis Courts
   P. Resurfacing Asphalt Tennis Courts
   Q. Maintenance and Repair of Asphalt Tennis Courts

B. The City of Seattle Standard Plans & Specifications for Road, Bridge and Municipal Construction (most recent edition).

C. AASHTO M17 - Mineral Filler for Bituminous Paving Mixtures: These references are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

1.04 Quality Assurance: The Contractor must have five (5) years experience in work of this nature and have the equipment and personnel required for the work specified. The

Contractor must acquaint themselves with all work related to site improvements and other work. Payment for testing under this section shall be as follows:

A. Payment for testing under this section shall be as follows:

1. The first run of any test of a given sample of workmanship will be paid for by the Owner. Where possible, the Engineer will perform the initial test. In the event that the Engineer's capabilities are insufficient to perform the test in a timely manner, the test will be performed by the Contractor at a reasonable cost to the Owner.
2. In the event the sample of workmanship is found to be deficient in some way as a result of the initial test, the contractor shall remove from the project site(s) that work or material, and provide work or material as specified and with satisfactory test results at no additional cost to the Owner.

B. Test Reports shall be done under the supervision of the Contractor and in accordance with the Contract. Tests must be performed by a certified testing agency or licensed laboratory. The Engineer may require execution of tests described below, at the Contractors expense. Two copies of the results of each test shall be submitted to the Engineer for approval prior to continuation of the work to be tested, unless otherwise directed. Testing shall be performed according to the City of Seattle Standard Specifications (most recent edition).

1. ASTM C131 - Test Method for Resistance to Degradation of Small Size Course Aggregate.
2. ASTM D1557 - Test Method for Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54 kg) Rammer and 18-in (457 mm) Drop.
3. WSDOT Test - Method of test for Determination of Method 705 Degradation Value.
4. WSDOT Test - Maximum Specific Gravity of Bituminous Paving Mixtures Method 113.
5. Other tests as may be referenced elsewhere in this Section.

1.05 Submittals:

A. The Contractor shall submit to the Engineer written materials containing the following information:

1. Reference list from the installer of at least five (5) projects of similar scope done in the past three (3) years. The list shall include dates, dollar value of Contractor's work, locations and project owner with current contact information.
2. Procedures to be used in construction of Tennis Court(s) with regard to the division of labor and responsibility of the Contractor and all sub-contractors involved.
3. Materials to be used and the proposed method of application and procedures

to be followed.

B. Fabrics: Submit manufacturer's product specifications and recommended installation procedures to the Engineer for approval prior to delivery to the project site(s).

C. Aggregate for HMA - Class 3/8": The Contractor shall submit to the Engineer, for approval prior to delivery to the project site(s), a single 1/2 cubic foot sample in a secure container. Affix to the container the supplier name, address, and telephone number, batch number (if applicable), date, and sieve analysis.

PART 2 - PRODUCTS

2.01 Tack Coat:

A. The sealant material used to impregnate and seal the geo-textile, as well as bond it to both the base pavement and overlay, shall be a paving grade asphalt recommended by the geo-textile manufacturer and approved by the Engineer.

B. Uncut asphalt cements are the preferred sealants; however, cationic and anionic emulsions may be used. Cutbacks and emulsions, which contain solvents, shall not be used.

C. The grade of asphalt cement specified for hot-mix design in each geographic location is generally the most acceptable material.

2.02 Equipment:

A. The asphalt distributor shall be capable of spraying the asphalt sealant at the prescribed uniform application rate. No streaking, skipping, or dripping will be permitted. The distributor shall also be equipped with a hand spray having a single nozzle and positive shut-off valve.

B. Mechanical or manual lay down equipment shall be capable of laying the geo-textile smoothly.

C. The following miscellaneous equipment shall be provided: stiff bristle brooms or squeegees to smooth the geo-textile; scissors or blades to cut the geo-textile; brushes for applying asphalt sealant to geo-textile overlaps.

D. Pneumatic rolling equipment to smooth the geo-textile into the sealant, and sanding equipment may be required for certain jobs. Rolling is especially required on jobs where thin lifts or chip seals are being placed. Rolling helps ensure the geo-textile bond to the adjoining pavement layers in the absence of heat and weight associated with thicker lifts of asphalt pavement.

2.03 Hot Mix Asphalt Wearing Course:

A. General: HMA, having a maximum aggregate size of three quarter inch (3/8") in accordance with the specifications of the Asphalt Institute, shall conform with or exceed the standards of the American Sports Builders Association (ASBA) Tennis Court Construction Guidelines for hot plant mix tennis court construction, except for Aggregate sieve analysis as noted below.

B. Aggregate:

1. Mineral Aggregate shall meet the requirements of the Seattle Standard Specifications (most recent edition). Aggregates for HMA - Class 3/8" shall meet the following requirements for partial gradation:

Sieve Size	% Passing
1/2" Square	100
3/8" Square	90 - 100
U.S. #4	90 Max.
U.S. #8	32 - 67
U.S. #200	2.0 - 7.0

2. **The aggregate used in the mix shall be free from mineral pyrite, marcasite, ferrous compound, wood particles, clay or dust "balls" or other deleterious materials which may cause staining/discoloration or interfere with the planarity, structural stability or aesthetics of the playing surface.**

C. Bituminous Materials: Bituminous Materials shall comply with applicable sections of Seattle Standard Specifications (most recent edition), for Medium Curing Liquid Asphalt. Material furnished under these specifications shall not have been distilled at a temperature high enough to injure by burning or to produce flecks of carbonaceous matter, and upon arrival at the work, shall show no signs of separation into lighter and heavier components.

PART 3 - EXECUTION

3.01 Barriers: The Contractor shall erect and maintain barricades, canopies, guards, and warning signs to the extent required by law and as is prudent for the protection of the public and protection of the work.

3.02 Surface Preparation for HMA Overlay shall be accomplished according to the following excerpts from the City of Seattle Standard Specifications. It is the Contractor's responsibility to comply with the most recent edition of those standards.

5-04.3(5) B, SURFACE PREPARATION - TREATED SURFACES:

5-04.3(5) B1, GENERAL: When an existing treated surface is to be used as a base for one or more courses of new asphalt concrete or other surfacing, the treated surface shall first be swept, cleaned, and patched as follows:

1. Treated surfaces shall be swept with a power broom until free from dirt and other foreign matter. Hand brooms shall be used to clean omissions of the power broom. Fatty asphalt patches, grease drippings and other objectionable Material shall be removed from the existing pavement.
2. Excess asphalt joint filler shall be completely removed and premolded joint filler shall be removed to at least 1/2-inch below the surface of the existing pavement.
3. In order to obtain a base having uniform grade and cross section, all surface irregularities in the existing treated surface shall be corrected prior to placement of the new asphalt concrete or other bituminous surface treatment. Correction shall be by patching and if necessary, preleveling.

5-04.3(5) B2, PRELEVELING:

When a surface of the existing pavement or old base is irregular, it shall be brought to a uniform grade and cross section by preleveling. As soon as the existing surface has been thoroughly cleaned, holes and discontinuities in the surface and edges and edge breaks shall be patched.

Asphalt used for patching shall be HMA - Class 3/8", heated to the temperature specified in the City of Seattle Standard Specifications (most recent edition). Before placing the premixed patch Material in the hole, the bottom and edges of the hole shall be tack coated. The patch Material shall be thoroughly compacted.

Patching shall be accomplished prior to preleveling or installation of the first asphalt course, whichever is applicable Preleveling of uneven or broken surfaces shall be accomplished by placing asphalt concrete of the class specified with a motor patrol grader, by hand-raking, by Miller box, or by such other method acceptable to the Engineer.

After placement, the HMA shall be thoroughly compacted. In some cases spot planeing to remove high areas caused by rutting, etc., shall be performed prior to preleveling.

5-04.3(5) B4, TACK COAT:

A tack coat of asphalt, applied at the rate of 0.02 to 0.08 gallons per square yard of retained asphalt, shall be applied by a mechanical distributor meeting the requirements of the City of Seattle Standard Specifications (most recent edition), to all surfaces on which any course of asphalt concrete is to be placed or abutted including prior to preleveling.

The Contractor's Equipment shall be capable of distributing asphalt uniformly over an area in controlled amounts and shall be equipped with hand operated spray Equipment for use only on inaccessible and irregularly shaped areas.

Where the new asphalt concrete abuts a curb or gutter, cold pavement joint, trimmed meet line, or any metal surface, a thin tack coat of asphalt shall be applied on the

vertical face of the abutting surface by hand painting prior to paving. The application on the contact surfaces shall be thin and uniform in order to avoid an accumulation of excess asphalt in puddles.

The Contractor shall not apply the tack coat on vertical contact surfaces above the finished height of the asphalt concrete being placed.

3.03 Hot Mix Asphalt:

A. Placement: A course of HMA shall be installed to the lines and grades as indicated on the drawings. The hot plant mix shall have an installation temperature of 275-300 degrees. Compaction thickness shall be as shown on Drawings but in no case shall the compacted thickness be less than two inches (2"). Compaction shall be by rolling with a powered steel wheel tandem roller weighing not less than three (3) and not more than five (5) tons; the finish roller weighing not less than one (1) ton. The hot plant mix shall be spread by methods and in a manner to produce a uniform density and thickness to meet a tolerance of one-quarter inch (1/4") in ten feet (10') measured in any direction.

B. Curing and Cleaning: New HMA pavement must be completely cured (minimum of fourteen days of warm, dry weather, longer if cold or damp), prior to application of any materials. Pavement needs to be clean and free of all foreign matter. A high-pressure washer, air broom or hand sweeper shall be used; removal of grease and oil requires the use of a strong detergent. After using detergents the surface must be thoroughly flushed with water. The Contractor must obtain approval of the Engineer prior to using detergent if there is any chance it could enter the City's storm drainage system.

C. Water Testing: Check the finished surface of the asphalt for puddling by flooding the entire paved area with water. Any puddle holding water deeper than a five cent piece should be outlined with chalk and filled in accordance with the specification of the Tennis Court Acrylic Color Surfacing per Section 32 12 19.16. It is the Contractor's responsibility to provide water for this test, which may include use of a City hydrant through the Hydrant Use Permit process, a water truck with sufficient volume to perform the test, or Parks irrigation if available at this location.

D. Corrective work for puddling areas, or "Birdbaths":

1. Any areas holding enough water to cover a five cent piece (American coin) after draining a minimum of one hour at a minimum of 70 degrees Fahrenheit in sunlight should be outlined with chalk and the water swept out. After the area is cleaned and dried, a tack coat of suitable material must be applied to the entire area within the chalk-line.
2. Estimate the required quantity of the thin patching mixture to fill such "birdbaths." Apply it to the area, and strike it off with a straight-edge the length of which is in excess of the dimensions of the "birdbath." A proper strike-off will level such a birdbath to the same elevation as the surrounding

surface. After the leveling operation, the patch should be allowed to cure properly.

3. The patch material should be compatible with the surfacing material and should be used in accordance with the surfacing manufacturer's directions.

END OF SECTION