SECTION 02510 - PAVING, WALKS AND CURBS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

A. Provide labor, materials, equipment and services necessary for proper and complete installation of all paving, walks, curbing and related items, as indicated on the Drawings and herein specified:

1. Bituminous concrete pavement for entrance road and parking.

2. Bituminous curbing (vertical and Cape Cod).

3. Sidewalk paving.

4. Pavement markings.

5. Testing as required.

6. Pavement repair.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

Temporary Erosion Control	-Section 02210
Earthwork	-Section 02200
Granite Curbing	-Section 02520
Lawns and Grasses	-Section 02930

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Section 01300, SUBMITTALS and 01400-QUALITY CONTROL.

B. Codes and Standards: The Work under this Section shall conform to the following, except as may be modified herein:

1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.

1.04 SUBMITTALS:

A. Furnish samples of manufacturer's product data, test reports, aggregate testing, and materials certifications for bituminous concrete mixes.

B. Test Result:

1. Mechanical analysis (ASTM D421), asphalt content (ASTM D2172), and in-place density (ASTM D2041 & D2726) test results for bituminous concrete pavement.

1.05 PRODUCT HANDLING:

A. Store materials properly to prevent damage, deterioration and inclusion of foreign matter. Aggregates shall be stockpiled in a well-drained location.

B. All asphalt materials and mixes shall be applied at temperatures within their optimum range as defined by MDOT Standard Specifications.

1.06 JOB CONDITIONS:

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for normal activities and other construction activities.

B. Utilize flagmen, barricades, warning signs and warning lights as may be required. Two uniformed flaggers require when working in Route 125 Right of Way.

C. Weather Limitations for Bituminous Placement: Apply asphalt prime and tack coats when ambient temperature is above 50 degrees F (10 degrees C), and when temperature has not been below 40 degrees F (1 degree C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

D. Construct asphalt concrete surface course or leveling course when atmospheric temperature is above 50 degrees F (4 degrees C) and when base is dry. Base course may be placed when air temperature is above 40 degrees F (4 degrees C) and rising. Do not place pavement on frozen gravel base.

E. Grade Control: Contractor shall be responsible for establishment and maintenance of required lines, grades, and surface tolerances.

1.07 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

A. The Work under this Section shall conform to the following , except as modified herein:

1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Hot Mix Asphalt; Superpave:

1. General: Comply with materials requirements, MDOT Special Provision 401, Hot Mix Asphalt pavement.

Desc. of Course	Grad. Design	Item Number	Bit. Cont. % of Mix	Comp. Notes
wearing	9.5mm		N/A	1,5,7
road	12.5mm		N/A	1,5,7
binder	19.0mm		N/A	

Complementary Notes:

1. The bituminous binder material for the mixture shall be PG 64-28.

2. The bituminous binder material for the mixture shall be either PG 64-28 or PG 64-22.

3. The density requirements are waived.

4. The design traffic level for mix places shall be <0.3 million ESALS.

5. The design traffic level for mix places shall be <3 million ESALS.

6. Item 106.032 Acceptance, (1) Method A

7. Item 106.032 Acceptance, (2) Method B

8. A “FINE” 9.5mm mix with the gradation above the restricted zone shall be used for this item.

B. Bituminous Curbing: Bituminous material shall conform to Maine SOT specifications, Section 712.36, viscosity grade AC-20. Nominal Asphalt content shall be 6%. Aggregates shall conform to MDOT specifications, Section 703.09 grading D.

C. Pavement Markings: Traffic paint conforming to MDOT Specifications, Section 708.03 (Type F). Color: White (w/o glass beads); Blue (w/non-skid aggregate) for handicapped drop-off strips only.

D. Bituminous Tack Coat: Shall conform to MDOT Specifications Section 702.04, PGAB 64-28.

PART 3 - EXECUTION

3.01 TESTING:

A. See Item 1.04 of this Section for required tests and test reports.

B. The Owner or Project Representative will designate test frequencies and locations.

3.02 BITUMINOUS CONCRETE PAVEMENT:

A. Scope:

1. Construct base course of bituminous concrete pavement on prepared gravel base, to lines, grades and sections shown on the Drawings for each specific area.

2. Construct top course of bituminous concrete pavement on prepared bituminous base, to lines, grades and sections shown on the Drawings for each specific area.

B. Construction Methods:

1. Conform to MDOT Specifications, Section 401.16, 401.17, 401.18 and 401.20.

2. Submit certificate of compliance to the Specifications from the pavement vendor to the Project Representative (see Item 1.04 D.1.).

3. Edge of pavement shall be clean and true. Raveled edges not accepted. Hand-tamp edges and bevel if forms or screed strips are not used.

4. Place asphalt concrete mixture on prepared surface, spread and strike-off, by means of self-propelled paver. Spread mixture at minimum temperature of 225 degrees F (107 degrees C). Place inaccessible and small areas by hand. Place each course to required grade, cross-section, compacted thickness, and surface tolerance (see Item 3.07).

5. Make joints between old and new pavements, or between successive days Work, to ensure continuous bond between adjoining Work. Construct joints

to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

6. Rolling:

   a) After the mix has been spread, struck off, and surface irregularities adjusted on each course, it shall be thoroughly compacted by rolling with a powered steel wheel tandem roller weighing not less than 2 or more than 10 tons. Begin rolling as soon as mixture will bear roller weight without excessive displacement.

   b) Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

   c) Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

   d) Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

   e) Any displacement or irregularities occurring as the result of the reversing of the direction of a roller, or from other causes, shall be corrected once by the use of rakes or lutes and addition of fresh mixture when required. Care shall be exercised in rolling not to displace the line and grade of the edges of the bituminous mixture.

   f) Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

   g) Compaction Tests: After construction, the Project Representative will designate locations for removal of pavement cores to determine compaction and thickness. Remove and properly replace pavement in any areas showing deficiencies in required compaction or thickness, with new material properly laid.

   h) Patching: Remove and replace paving areas that become loose, broken or mixed with foreign materials, and any defective or substandard areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

i) Protections: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.03 CURBING:

A. Curbing to be installed in conformance with MDOT specifications, Section 609.04.

3.04 PAVEMENT MARKING:

A. Cleaning: Sweep and clean surface to eliminate loose material and dust.

B. Apply paint in accordance with MDOT Standard Specifications, Section 627.04, 627.05, and 627.06. (Delete references to glass beads.)

C. Stripe parking lot spaces and any other pavement graphics shown/detailed on Drawings with 4" wide striping. Fire lanes, crosswalks, etc. to be marked as shown on Drawings. The Universal Handicap Symbol, as detailed on Plans, shall be painted at the designated handicapped stalls. The drop-off strips between the handicapped stalls shall be painted solid blue with non-skid surfaces.

D. Apply paint with mechanical equipment to produce uniform straight edges. Apply in 2 coats at manufacturer's recommended rates.

3.05 FIELD QUALITY CONTROL:

A. General: Test in-place asphalt concrete courses for compliance with requirements for compaction, thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by the Project Representative.

B. Thickness: After construction, the Project Representative will designate locations for removal of pavement cores to determine compaction and thickness. In-place compaction will not be acceptable if less than 93% of theoretical maximum density as determined by ASTM D-2041 and D-2726. In-place compacted thickness will not be acceptable if less than the required thickness, shown on Drawings for that particular Section, within a tolerance of minus ¼ inch, as determined by ASTM D-3549.

C. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using a 10-foot straightedge applied parallel with and at right angles to centerline of paved area, or alternately by flooding. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:

Any irregularities which vary ¼ of an inch from a true surface in the finished surface course shall be corrected. Any irregularities which vary 3/8 of an inch from a true

surface in base or binder course shall be corrected. Irregularities which may develop before the completion of rolling and while the material is still workable, may be remedied by loosening the surface mixture and removing or adding material as necessary. Any unsatisfactory irregularities or defects remaining after final compaction shall be corrected by removing and replacing with new materials, as specified, to form a true and even surface. All minor surface projections, joints and minor honeycombed surfaces shall be ironed out smoothly to grade, as directed. Adequate and approval straight edges shall be furnished and used by the Contractor. The owner or Project Representative shall inspect and approve compacted surfaces.

If, at any time before the final acceptance of the Work, any damaged, soft, or imperfect places, or spots shall develop in the surface, all such places shall be removed and replaced with new materials and then compacted until the edges at which the new Work connects with the old become invisible.

3.06 PAVEMENT REPAIR:

A. Repair any existing bituminous pavement damaged during construction activities, including pavement on abutting public streets and highways.

B. Meet the original subgrade, gravel base and finished grade specifications and elevations.

C. Match the existing pavement in materials, course thickness, and finishes.

END OF SECTION 02510