PAVEMENT DESIGN INFORMATION

DRIVEWAY APRONS SHALL BE LOCATED SUCH THAT HIGHWAY DRAINAGE STRUCTURES ARE 5' MINIMUM OUTSIDE THE DRIVEWAY OPENING LIMIT

ROADWAY PAVEMENT FOR HIGHWAY WIDENING, SHOULDERS, MAJOR COMMERCIAL DRIVEWAYS AND SUBDIVISION STREETS:

TOP: 1½" Item 402.098203, 9.5 F2 Top Course HMA, 80 Series Compaction or 1.0" Item 402.068203, 6.3 F2 Top Course HMA, 80 Series Compaction
BINDER: 3" Item 402.198903, 19.0 F9 Binder Course HMA, 80 Series Compaction
BASE: 5" Item 402.378903, 37.5 F9 Base Course HMA, 80 Series Compaction (one single Lift)
SUBBASE: 12" Item 304.12, Subbase Course, Type 2 (Two 6" Lifts)

(Note to match existing pavement depths when widening or use an open graded subbase- Item 304.01970608- Crushed Stone Aggregate Subbase Course- Consult Regional Materials Engineer (RME) if necessary.

Notes on Plan:

1. HMA items are based on PG 64S-22 binder, ESALs less than 30,000,000 (75 Gyrrations). When the calculated ESALs are less than 3 million, the designer can choose a mixture design level of <0.3 million (50 Gyration), with the concurrence of the RME. In addition, on High Volume roadways- 64V-22 (Polymer Modified) can be specified as the PG Binder Graded, RME should be consulted for its use. Use of polyphosphoric acid (PPA) to modify the PG binder properties is prohibited for mixtures on this contract. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification. Diluted Tack Coat (Item 407.0102) is required between all lifts of asphalt. If 6.3 mixture is used for top course, it requires the use of straight Tack Coat (Item 407.0103). The application rates for both diluted and straight tack coat for the surface type (e.g. new surface, milled or existing surface, PCC Pavement) is indicated in the Item 407 specification- gallons/sy.

2. Butt joints, created by a full-depth sawcut, shall be used between new and existing pavements. The asphalt top course shall be laid such that it uniformly overlaps the adjacent cold mat by ½” to 1”. The thickness of the overlap material shall be 25% the compacted thickness of the course, so as to result in a smooth and well compacted joint after rolling. Broadcasting of the overlap material onto the lane is not allowed. If the overlap is excessive, the excess material shall be trimmed off so that the material along the joint is uniform. The coarse particles of aggregate in the overlap material shall be removed and wasted if deemed necessary by the inspector. Asphalt pavement joint adhesive shall be used on vertical faces for all of the joints on the surface course such as longitudinal, transverse and other joints butting against the new asphalt pavement. Tapered Wedge Joint will be allowed on top course only for pavement thickness of 2.0” of less. The HMA mixture for the first pass shall be placed with an attachment to the paver to provide a sloping wedge with a vertical step-down of 1 inch at the longitudinal pavement joint. A wedge of material that is from the bottom of the step-down to the existing surface at a slope of 1 on 8 or flatter. This wedge joint for the top course with a thickness of 2 inches or less may be exposed to traffic for no more than 24 hours with the following conditions:

   - Tapered Wedge Joint should be used for 12.5 HMA and 9.5 HMA. A Butt shall be used 6.3 HMA
• The UNEVEN LANES warning signs shall be posted in advance of the tapered wedge joint.
• If the exposed longitudinal joint becomes damage due to rounding of the notched wedge, the joint shall be saw-cut prior to placing the adjacent lane.
• Joint adhesive shall be applied to the exposed joint prior to placement of the adjacent lane.

This exposure of longitudinal joints is not allowed over weekends, holidays, or when there are other concerns, such as pending wet weather.

For the Pavement Joint Adhesive, use a product which appears on the NYSDOT Approved List under Asphalt Pavement Joint Adhesive (705-19) meeting the requirements of 715-19. Application shall be the following:

• Wedge Joint- Apply the joint adhesive to the entire vertical face and the upper 2 inches of the wedge joint.
• Butt Joint- Apply the joint adhesive to the entire vertical face of the butt joint.

3. Design PGB Content Selection
The Producer selects the design PGB content at the binder content that results in a compacted density of 96.5% Gmm at the design number of gyrations (Ndesign). Under no circumstances shall the Performance Graded Binder content in the HMA mixture be less than 6.0% for a 6.3 design, 5.8% for a 9.5 design, 5.2% for a 12.5 design, 4.5% for a 19.0 design, 4.2% for a 25.0 design, or 3.7% for a 37.5 design. All volumetric and mechanical properties are checked at this PGB content to ensure that all requirements are met. If the Producer is adding RAP, the following is required:

**RAP PG BINDER CONTRIBUTION:**
If 10% or greater of Recycled Asphalt Pavement (RAP) is utilized in the production of hot mix asphalt (HMA) or warm mix asphalt (WMA) Top Course, Binder Course, and Base Course for this contract, the following minimum asphalt content will be utilized in the final mixture design calculation for the optimum asphalt content:

<table>
<thead>
<tr>
<th>HMA/WMA Mixture</th>
<th>Minimum Asphalt Content</th>
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</thead>
<tbody>
<tr>
<td>9.5 HMA/WMA</td>
<td>6.0</td>
</tr>
<tr>
<td>12.5 HMA/WMA</td>
<td>5.4</td>
</tr>
<tr>
<td>19.0 HMA/WMA</td>
<td>4.7</td>
</tr>
<tr>
<td>25.0 HMA/WMA</td>
<td>4.4</td>
</tr>
<tr>
<td>37.5 HMA/WMA</td>
<td>3.9</td>
</tr>
</tbody>
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The mixture design will be formulated such that all the volumetric properties are within the criteria specified in the latest Material Method 5.16. The total targeted asphalt content of virgin

4. Top course shall be placed between April 15 and October 31. When placing Top Course HMA outside the seasonal limitations one is to provide a limited warranty against defects in such work. Performance of the warranty shall work in accordance with Materials Procedure (MP) 402-01, Warranty Requirements for Hot Mix Asphalt (HMA) Top Course.

5. All HMA Produced for Highway Permit Production will meet the requirements of
Section 401- Plant Production. As per Standard Specification Section 401-3
Construction Details- Highway Permit Production, production meeting the
specification requirements will be assigned a QAF of 1.00 only. There is no allowed
incentive payable QAFs under the Highway Permit Production. Production failing to
meet the specification requirements will be subject to evaluation according to section
401-3.10 Evaluation of Lots Represented by 0.85 QAF. When any material results in a
QAF of 0.85, the Engineer and RME will evaluate the subject material to determine if
it will be left in place.

6. For 80 series compaction, the Contractor shall place and compact HMA mixture using
either static compaction or vibratory compaction method. Both methods require the
contractor to complete all breakdown roller passes before the mat temperatures falls
below 250 F.

Designer Notes: 1. The above pavement design is applicable to most projects; the exception is high volume roads
with a high percentage of trucks. Consult RME for HMA thicknesses, Items, and required PG
Binder for High Volume Roadways with high % of trucks.

With the exception of widening the high side of a superelevation, the top of the proposed subbase shall be placed at or
below the top of the existing subbase. Permeable base, open graded subbase course, or additional base course asphalt
shall be used to set the proper elevation of the top of subbase. Underdrain shall be placed at the outside edge of shoulder,
Item 605.0901, Underdrain Filter Type 1.

MINOR COMMERCIAL DRIVEWAY PROJECTS (INCLUDING ADJACENT SHOULDER
PAVEMENT AS REQUESTED BY THE ASSISTANT RESIDENT ENGINEER):

ASPHALT CONCRETE: 4" Item 608.020102, Hot Mix Asphalt (HMA) Sidewalks, Driveways,
ASPHALT CONCRETE: 4" Item 608.020102, Hot Mix Asphalt (HMA) Sidewalks, Driveways,
Bicycle Paths and Vegetation Control Strips; Comprised of: 1½" of 9.5 HMA and 2½" of 19 HMA.
The mix design is based on PG 64-22 binder, ESALs less than 0.3 million and produced in
accordance with Section 401 and Materials Procedures using Coarse Aggregate Type F9.

Note on Plan: Tack Coat is required between all lifts of asphalt.

SUBBASE: 8" Item 304.12, Subbase Course, Type 2, (Two 4" Lifts)

Revised September 2019