1		SECTION 401 – HOT MIX ASPHALT (HMA) PAVEMENT	
2 3 4	Make	the following amendments to said Sections:	
5 6	(I)	Amend Section 401.02 Materials, by adding the following after line 14:	
7 8		"Warm Mix Asphalt Additive 702.06"	
9 10	(II) Amend Section 401.02(A) General , by adding the following paragraph after line 24:		
11 12 13 14 15 16		"The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these specifications. WMA processes include combinations of organic additives, chemical additives, and foaming."	
17 18 19	(III) follow	Amend Section 401.02(A) General , by replacing lines 36 - 37 to read as /s:	
20 21 22		"In surface and binder courses, aggregate for HMA may include RAP quantities up to 20 percent of total mix weight."	
23 24 25	(IV) parag	Amend Section 401.02(C) Submittals , by adding the following graph after line 89:	
23 26 27 28 29 30 31		"The Contractor may use warm mix asphalt (WMA) processes in the production of HMA. The Contractor shall submit to the Engineer for approval, the proposed process and how it will be used in the manufacture of HMA. The process submittal shall include the temperature range of the WMA."	
32 33 34	(V) the fo	Amend Section 401.03(B)(3) Asphalt Pavers , from line 200 to include Illowing:	
34 35 36 37 38 39 40 41 42 43 44 45		"(h) Equipped with a mean of preventing the segregation of the coarse aggregate particles from the remainder of the bituminous plant mix when that mix is carried from the paver hopper back to the paver augers. The means and methods used shall be approved by the paver manufacturer and may consist of chain curtains, deflector plates, or other such devices and any combination of these. The following specific requirements shall apply to the identified bituminous pavers:	

46	(1) Blaw-Knox bituminous pavers shall be
47	equipped with the Blaw-Knox Materials
48	Management Kit (MMK).
49	Managomont (At (Minity)
50	(2) Cedarapids bituminous pavers shall be those
51	that were manufactured in 1989 or later.
52	
53	(3) Barber-Green/Caterpillar bituminous pavers
54	shall be equipped with deflector plates as
55	identified in the December 2000 Service
56	Magazine entitled "New Asphalt Deflector Kit
57	{6630, 6631, 6640}".
58	
59	Prior to the start of using the paver for placing plant
60	mix, the Contractor shall submit for approval a full
61	description in writing of the means and methodologies that
62	will be used to prevent bituminous paver segregation. Use of
63	the paver shall not commence prior to receiving approval
64 65	from the Engineer.
66	The Contractor shall supply a Certificate of
67	Compliance that verifies that the approved means and
68	methods used to prevent bituminous paver segregation have
69	been implemented on all pavers used on the project and is
70	working in accordance with the manufacturer's
71	requirements."
72	
73	(VI) Amend Section 401.03(F)(1) HMA Pavement Courses One and a
74	(VI) Amend Section 401.03(F)(1) HMA Pavement Courses One and a Half Inches Thick Or Greater, from lines 501 to 507 to read as follows:
74 75	Half Inches Thick Or Greater, from lines 501 to 507 to read as follows:
74 75 76	Half Inches Thick Or Greater, from lines 501 to 507 to read as follows:"(1) HMA Pavement Courses One and a Half Inches Thick Or
74 75 76 77	Half Inches Thick Or Greater, from lines 501 to 507 to read as follows:"(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated
74 75 76 77 78	Half Inches Thick Or Greater, from lines 501 to 507 to read as follows:"(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not
74 75 76 77 78 79	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the
74 75 76 77 78 79 80	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO
74 75 76 77 78 79 80 81	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures
74 75 76 77 78 79 80	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO
74 75 76 77 78 79 80 81 82	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures
74 75 76 77 78 79 80 81 82 83	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a
74 75 76 77 78 79 80 81 82 83 84 85 86	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular
74 75 76 77 78 79 80 81 82 83 84 85 86 87	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic, from lines 530 to 538 to read as follows:
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic, from lines 530 to 538 to read as follows:
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic, from lines 530 to 538 to read as follows: "(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic.
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89	 Half Inches Thick Or Greater, from lines 501 to 507 to read as follows: "(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate." (VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic, from lines 530 to 538 to read as follows:

92 areas not subjected to vehicular traffic, compact to not less that 93 90.0 percent of maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental 94 95 Procedure for Mixtures Containing Porous Aggregate. Increase asphalt content by at least 0.5 percent above that used for HMA 96 97 pavements designed for vehicular traffic." 98 99 100 (VIII) Amend Section 401.04 Measurement, from lines 599 to 605 to read as 101 follows: 102 103 **"401.04 Measurement.** The Engineer will measure asphalt concrete pavement 104 per ton in accordance with the contract documents." 105 106 Amend Section 401.05 **Payment**, from lines 605 to 635, to read as (IX) 107 follows: 108 109 "401.05 The Engineer will pay for the accepted pay items Payment. listed below at the contract price per pay unit, as shown in the proposal schedule. 110 Payment will be full compensation for the work prescribed in this section and the 111 112 contract documents. 113 114 The Engineer will pay for each of the following pay items when included in 115 the proposal schedule: 116 117 Pay Item Pay Unit 118 119 HMA Pavement, Mix No. Ton 120 121 80% of the contract unit price upon completion of submitting (1) a job-mix formula acceptable to the Engineer; preparing the 122 123 surface, spreading, and finishing the mixture; and compacting the 124 mixture; 125 126 20% of the contract unit price upon completion of cutting (2) samples from the compacted pavement for testing; placing and 127 compacting the sampled area with new material conforming to the 128 129 surrounding area; protecting the pavement; and final analysis. 130 131 The Engineer will pay for cold planing in accordance with and under 132 Section 415 – Cold Planing of Existing Pavement. 133 134 The Engineer will pay for adjusting existing frames and covers and valve 135 boxes in accordance with and under Section 604 – Manholes, Inlets and Catch Basins and Section 626 - Manholes and Valve Boxes for Water and Sewer 136 137 Systems.

The Engineer may, in lieu of requiring removal and replacement, use the sliding scale factor to accept HMA pavements compacted below 92.0 percent and above 97.0 percent. The Engineer will make payment for the material in that the production day at a reduced price arrived at by multiplying the contract unit price by the pay factor shown in Table 401.05-1.

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Table 401.05-1 – Sliding Scale Pay Factor for Compaction		
Percent Compaction	Percent of Quantity Paid	
> 98.0	Removal	
> 97.0 - 98.0	95	
93.0 - 97.0	100	
90.0 - < 93.0	80	
<90.0	Removal	

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END OF SECTION 401