U.S.Department
of Transportation
**Federal Aviation
Administration**

**Detroit Airports District Office
11677 South Wayne Road
Suite 107
Romulus, MI 48174**

August 18, 2015

Mr. Larry Bowron, Transportation Director
City of Battle Creek
Aviation, Rail and Transit
15551 South Airport Road
Battle Creek, Michigan 49015

Dear Mr. Bowron:

W. K. Kellogg Airport, Battle Creek, MI
Approval of use of local MDOT highway Hot Mix Asphalt mix for perimeter road paving
Modification of Design Standard

Enclosed is one approved copy of the use of the local MDOT highway Hot Mix Asphalt mix for perimeter road paving Modification of Design Standard.

This approval is unconditional.

Please be aware this approval only applies to the subject project.

Sincerely,

ORIGINAL SIGNED BY

John L. Mayfield, Jr.
Manager, Detroit Airports District Office

Enclosure

cc: MDOT – Ms. Betsy Steudle w/enclosure

FAA GREAT LAKES REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS
COMPLETE FORM IN CONJUNCTION WITH THE USER GUIDE

BACKGROUND

1. AIRPORT:	2. LOCATION (CITY, STATE):	3. LOC ID:
W.K. Kellogg Airport	Battle Creek, MI	BTL

4. EFFECTED RUNWAY/TAXIWAY:	5. APPROACH (EACH RUNWAY):	6. AIRPORT REF. CODE (ARC):
N/A	___ PIR N/A ___ NPI ___ VISUAL	D-III

7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):
N/A

MODIFICATION OF STANDARDS

8. TITLE OF STANDARD(S) BEING MODIFIED (CITE REFERENCE DOCUMENT):
Advisory Circular 150/5370-10G

9. STANDARD/REQUIREMENT:
P-401 Hot Mix Asphalt (HMA) Pavements

10. DESCRIPTION OF PROPOSED MODIFICATION:
Inclusion of State HMA mix for perimeter road.

11. EXPLAIN WHY STANDARD(S) CANNOT BE MET:
Per AC 150/5370-10G, state highway HMA mixes may be used on pavements not subject to aircraft loading. The perimeter road will is not subjected to aircraft loading. MDOT highway HMA mixes are appropriate for use base on the anticipated low use frequency and light loading.

12. DISCUSS ALL VIABLE ALTERNATIVES:

Alternative 1 (preferred) includes the use of a local MDOT highway HMA mix. This provides a cost saving due to familiarity and material cost of the mix.

Alternative 2 includes requiring the use of a P-401 HMA mix. This would add unnecessary cost to the project, as the local contractors are familiar with MDOT highway HMA mixes and they are readily available.

13. ASSURANCE THAT MTS WILL PROVIDE AS OUTLINED IN THE "USER GUIDE":
The MTS will not affect the quality of the project, but will provide a cost savings by using locally available materials.

ATTACH ADDITIONAL SHEETS AS NECESSARY – INCLUDE SKETCH/PLAN

FAA GREAT LAKES REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

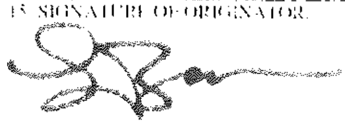
14. Skip to Question 15 if not requesting a Modification to Material Standards or Construction Methods

CHECK WHEN APPLICABLE

- [ ] Modifications to materials standards is requested because locally available materials cannot meet the requirements of that standard.
- [x] Modifications to construction methods standards will result in cost savings and/or greater efficiency.
- [x] Bids have already been received for this project.

IF ANY OF THE ABOVE IS CHECKED PLEASE PROVIDE ADDITIONAL DETAILS

This modification will allow for the use of local materials to pave the perimeter road. This will provide a cost savings and greater efficiency to the project by not having to import materials to meet FAA specifications. The difference in costs is approximately $12.50 per ton. There are 1,100 tons of asphalt required to pave the perimeter road.

15. SIGNATURE OF ORIGINATOR	16. PRINTED NAME OF ORIGINATOR	17. DATE
	Lawrence Bowron, Airport Manager	7/6/15
18. ORIGINATOR'S ORGANIZATION	**19. TELEPHONE**	**20. E-MAIL**
W.K. Kellogg Airport City of Battle Creek	(269) 966-3470	lcbowron@battlecreekmi.gov

21. DATE OF LATEST FAA SIGNED ALP

September 18, 2003 (Construction As-built 2012)

BELOW IS TO BE COMPLETED BY FAA

22. ADO RECOMMENDATION:	23. SIGNATURE:	24. DATE:

25. FAA DIVISIONAL REVIEW (AT, AF, ES, etc.):

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR	NON CONCUR
AGL-622		8/11/15	✓	

COMMENTS:

26. AIRPORTS' DIVISION FINAL ACTION:

☒ [redacted]	☐ CONDITIONAL APPROVAL	☐ [redacted]

DATE:	SIGNATURE:	TITLE:
8-18-2015	[signature]	MANAGER, DETROIT ADO

CONDITIONS OF APPROVAL:

APPLIES ONLY TO SUBJECT PROJECT - PERIMETER ROAD

ITEM P-801 HMA 13A

DESCRIPTION

801-1.1 This item shall consist of MDOT hot mix asphalt (HMA), 13A as specified and detailed.

EQUIPMENT AND MATERIALS

801-2.1 General.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when so requested by the Engineer.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the Engineer) and replaced with materials that comply with these specifications at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Engineer reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

801-2.2 HMA. Shall be in accordance with MDOT 2012 Standard Specifications for Construction and applicable special provisions for 13A.

801-2.3 Tack Coat. Shall be in accordance specifications P-603 and shall be incidental to this item.

CONSTRUCTION METHODS

801-3.1 HMA. Construct bituminous aggregate surface course lifts as shown on the plans. Physical properties and acceptance shall be based on the 2012 MDOT standard specifications for construction, MDOT special provision for acceptance of HMA mixture on local agency projects and the following:

Coarse Aggregate	13A

Asphalt Cement	PG 64-28 (include binder certification with mix design)
VMA Min.	14.0%

The required in place density shall be 92%-96% of the density control target per the job mix formula (JMF).

METHOD OF MEASUREMENT

801-4.1 Measurement. HMA shall be measured by the number of tons of HMA used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage. Incidental to this item is P-603 tack coat.

BASIS OF PAYMENT

801-5.1 Payment for a lot of HMA meeting all acceptance criteria as specified in MDOT special provision for acceptance of HMA mixture on local agency projects per ton.

Payment will be made under:

Item 8007031	HMA, 13A – per ton

END OF ITEM P-801

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SAMPLING ASPHALT BINDER ON LOCAL AGENCY PROJECTS

C&T:MF 1 of 1 C&T:APPR:JAR:JTL:12-19-01
FHWA:CON. APPR:06-06-11

For informational purposes, original samples of asphalt binder will be taken by the Contractor and delivered to the Engineer prior to incorporation into the mixture. The frequency of sampling shall be determined by the Engineer. The cost of obtaining and delivering the samples to the Engineer will be included in the hot mix asphalt (HMA) pay items.

The Contractor must certify in writing that the materials used in the HMA mixture are from the same source as the materials used in developing the HMA mixture design and the bond coat is from an approved supplier as stated in MDOT's Material Quality Assurance Procedures Manual.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MARSHALL HOT MIX ASPHALT MIXTURE

C&T:JWB 1 of 2 C&T:APPR:EHR:CJB:09-25-06
FHWA:APPR:06-06-11

a. **Description.** Furnish hot mix asphalt (HMA) mixture, designed using Marshall Mixture Design Methods, in accordance with the standard specifications except as modified by this special provision.

b. **Mix Design.** Submit the mix design for evaluation in accordance with the Department's HMA Production Manual. Use a 50 blow Marshall hammer when compacting mixtures for developing Marshall mix designs.

c. **Recycled Mixtures.** Substituting reclaimed asphalt pavement (RAP) for a portion of the new material required to produce HMA mixture is allowed provided that the mixture is designed and produced to meet all criteria specified herein, unless otherwise prohibited. RAP materials must be in accordance with the standard specifications.

d. **Materials.** Table 1 provides the mix design criteria and volumetric properties. Table 2 provides the required aggregate properties. Use aggregates of the highest quality available to meet the minimum specifications. Use the mixture designation number shown in the contract item name when determining mix design properties from Tables 1 and 2.

e. **Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
HMA, (type)	Ton

Table 1: Mix Design Criteria and Volumetric Properties

	Mixture No.				
	2C	3C	4C	13A	36A
Target Air Void, % (a)	3.00	4.00	4.00	4.00	4.00
VMA (min) (b)	11.00	13.00	14.00	14.00	15.00
VFA	65-78	65-78	65-78	65-78	65-78
Fines to Binder Ratio (max) (c)	1.2	1.2	1.2	1.2	1.2
Flow (0.01 inch)	8-16	8-16	8-16	8-16	8-16
Stability (min), lbs	1200	1200	1200	900	900

a Lower target air voids by 1.00% if used in a separate shoulder paving operation. Consider reducing air void targets to 3.00% for lower traffic volume roadways when designing 13A and 36A mixtures for local agency use
b VMA calculated using Gsb of the combined aggregates
c Ratio of the weight of aggregate passing the No. 200 sieve to total asphalt binder content by weight, including fines and binder contributed by RAP

Table 2: Aggregate Properties

	Mixture No.				
	2C	3C	4C	13A	36A
	Percent Passing Indicated Sieve or Property Limit				
1 1/2 inch	100				
1 inch	91-100	100			
3/4 inch	90 max.	91-100	100	100	
1/2 inch	78 max.	90 max.	91-100	75-95	100
3/8 inch	70 max.	77 max.	90 max.	60-90	92-100
No. 4	52 max.	57 max.	67 max.	45-80	65-90
No. 8	15-40	15-45	15-52	30-65	55-75
No. 16	30 max.	33 max.	37 max.	20-50	
No. 30	22 max.	25 max.	27 max.	15-40	25-45
No. 50	17 max.	19 max.	20 max.	10-25	
No. 100	15 max.	15 max.	15 max.	5-15	
No. 200	3-6	3-6	3-6	3-6	3-10
Crushed (min), % (MTM 117)	90	90	90	25	60
Soft Particle (max), % (a)	12.0	12.0	8.0	8.0	8.0
Angularity Index (min) (b)	4.0	4.0	4.0	2.5	3.0
L.A. Abrasion (max), % loss (c)	40	40	40	40	40
Sand Ratio (max) (d)	-	-	-	50	50

a. The sum of the shale, siltstone, structurally weak, and clay-ironstone particles must not exceed 8.0 percent for aggregates used in top course. The sum of the shale, siltstone, structurally weak, and clay-ironstone particles must not exceed 12.0 percent for aggregates used in base and leveling courses.

b. The fine aggregate angularity of blended aggregates, determined by MTM 118, must meet the minimum requirement. In mixtures containing RAP, the required minimum fine aggregate angularity must be met by the virgin material. NAA fine aggregate angularity must be reported for information only and must include the fine material contributed by RAP if present in the mixture.

c Los Angeles abrasion maximum loss must be met for the composite mixture, however, each individual aggregate must be less than 50

d. Sand ratio for 13A and 36A no more than 50% of the material passing the No. 4 sieve is allowed to pass the No. 30 Sieve.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK 1 of 7 APPR:JWB:CJB:02-05-15
FHWA:APPR:02-04-15

a. Description. This special provision provides sampling and testing requirements for local agency projects using the roller method and the nuclear density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications, except where modified herein.

b. Materials. Provide aggregates, mineral filler (if required), and asphalt binder to produce a mixture proportioned within the master gradation limits shown in the contract, and meeting the uniformity tolerance limits in Table 1.

Table 1: Uniformity Tolerance Limits for HMA Mixtures

Parameter			Top and Leveling Course		Base Course	
Number	Description		Range 1 (a)	Range 2	Range 1 (a)	Range 2
1	% Binder Content		-0.30 to +0.40	±0.50	-0.30 to +0.40	±0.50
2	% Passing	# 8 and Larger Sieves	±5.0	±8.0	±7.0	±9.0
		# 30 Sieve	±4.0	±6.0	±6.0	±9.0
		# 200 Sieve	±1.0	±2.0	±2.0	±3.0
3	Crushed Particle Content (b)		Below 10%	Below 15%	Below 10%	Below 15%

a. This range allows for normal mixture and testing variations. The mixture must be proportioned to test as closely as possible to the Job-Mix-Formula.
b. Deviation from Job-Mix-Formula.

Parameter number 2 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding range 1 or range 2 tolerances, only the one with the largest exceedance will be counted as the gradation parameter.

The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1. Aggregates which are to be used in plant-mixed HMA mixtures must not contain topsoil, clay, or loam.

c. Construction. Submit a Mix Design and a Job-Mix-Formula to the Engineer. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the Job-

Mix-Formula. Maintain the binder content, aggregate gradation, and the crushed particle content of the HMA mixture within the Range 1 uniformity tolerance limits in Table 1. For all mixtures, field regress air void content to 3.5 percent with liquid asphalt cement unless specified otherwise on HMA application estimate.

All persons performing QC and QA HMA field sampling must be "Local Agency HMA Sampling Qualified" samplers. At the Pre-Production or Pre-Construction meeting, the Engineer will determine the method of sampling to be used. Ensure all sampling is done in accordance with MTM 313 (Sampling HMA Paving Mixtures) or MTM 324 (Sampling HMA Paving Mixtures Behind the Paver). Samples are to be taken from separate hauling loads.

For production/mainline type paving, obtain a minimum of two samples, each being 20,000 grams, each day of production, for each mix type. The Engineer will sample and maintain possession of the sample. Sampling from the paver hopper is prohibited. Each sample will be divided into two 10,000 gram parts with one part being for initial testing and the other part being held for possible dispute resolution testing. Obtain a minimum of three samples for each mix type regardless of the number of days of production.

Obtain samples that are representative of the day's paving. Sample collection is to be spaced throughout the planned tonnage. One sample will be obtained in the first half of the tonnage and the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

All persons performing testing must be Bit Level One certified or Bit Quality Assurance/Quality Control (QA/QC) Technician certified.

Daily test samples must be obtained, except, if the first test results show that the HMA mixture is in specification, the Engineer has the option of not testing additional samples from that day.

At the Pre-Production or Pre-Construction meeting, the Engineer and Contractor will collectively determine the test method for measuring AC content using MTM 319 (Determination of Asphalt Content from Asphalt Paving Mixtures by the Ignition Method) or MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures). Back calculation will not be allowed for determining asphalt content.

Ensure all labs performing local agency acceptance testing are qualified labs per the *HMA Production Manual* and participate in the MDOT round robin process, or they must be AASHTO Materials Reference Laboratory (AMRL) accredited for AASHTO T 30 or T 27, and AASHTO T 164 or T 308. On non-NHS routes, Contractor labs must be made available, and may be used, but they must be qualified labs as previously stated. Contractor labs may not be used on NHS routes. Material acceptance testing will be completed by the Engineer within 14 calendar days for projects with less than 5,000 tons (plan quantity) of HMA and within 7 calendars days for projects with 5,000 tons (plan quantity) or more of HMA, after the Engineer has obtained the samples. Quality Assurance test results will be provided to the Contractor after the Engineer receives the Quality Control test results.

The correlation procedure for ignition oven will be established as follows. Asphalt binder content based on ignition method from MTM 319. Gradation (ASTM D 5444) and Crushed particle content (MTM 117) based on aggregate from MTM 319. The incineration temperature will be established at the Pre-Production Meeting. The Contractor will provide a laboratory

mixture sample to the acceptance laboratory to establish the correction factor for each mix. This sample must be provided to the Engineer a minimum of 14 calendar days prior to production.

For production/mainline type paving, the mixture may be accepted by visual inspection up to a quantity of 500 tons per mixture type, per project (not per day). For non-production type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

The mixture will be considered out-of-specification, as determined by the acceptance tests, if for any one mixture, two consecutive tests per parameter, (for Parameter 2, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. Consecutive refers to the production order and not necessarily the testing order. Out-of-Specification mixtures are subject to a price adjustment per the Measurement and Payment section.

Contractor operations will be suspended when the mixture is determined to be out-of-specification, but contract time will continue to run. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. Submit a revised Job-Mix-Formula or proposed alterations to the plant and/or materials to achieve the Job-Mix-Formula to the Engineer. Effects on the AWI and mix design properties will be taken into consideration. Production and placement cannot resume until receipt of the Engineer's approval to proceed.

Pavement in-place density will be measured using one of two approved methods. The method used for measuring in-place density will be agreed upon at a pre-production or pre-construction meeting.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to paving of subsequent lifts and being open to traffic.

Option 1 – Direct Density Method

Use of a nuclear density gauge requires measuring the pavement density using the Gmm from the JMF for the density control target. The required in-place density of the HMA mixture must be 92.0 to 98.0 percent of the density control target. Nuclear density testing and frequency will be in accordance with the *MDOT Density Testing and Inspection Manual*.

Option 2 – Roller Method

The Engineer may use the Roller Method with a nuclear or non-nuclear density gauge to document achieving optimal density as discussed below.

Use of the density gauge requires establishing a rolling pattern that will achieve the required in-place density. The Engineer will measure pavement density with a density gauge using the Gmm from the JMF for the density control target.

Use of the Roller Method requires developing and establishing density frequency curves, and

meeting the requirements of Table 2. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in-place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Contractor is responsible for establishing and documenting an initial or Quality Control rolling pattern that achieves the optimal in-place density. When the density frequency curve is used, the Engineer will run and document the density frequency curve for each half day of production to determine the number of passes to achieve the maximum density. Table 5, located at the end of this special provision, can be used as an aid in developing the density frequency curve. The Engineer will perform density tests using an approved nuclear or non-nuclear gauge per the manufacturer's recommended procedures.

Table 2: Minimum Number of Rollers Recommended Based on Placement Rate

Average Laydown Rate, Square Yards per Hour	Number of Rollers Required (a)	
	Compaction	Finish
Less than 600	1	1 (b)
601 - 1200	1	1
1201 - 2400	2	1
2401 - 3600	3	1
3601 and More	4	1

a. Number of rollers may increase based on density frequency curve.
b. The compaction roller may be used as the finish roller also.

After placement, roll the HMA mixture as soon after placement as the roller is able to bear without undue displacement or cracking. Start rolling longitudinally at the sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drum. Each required roller must be 8 tons minimum in weight unless otherwise approved by the Engineer.

The initial breakdown roller must be capable of vibratory compaction and must be a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 mph or 4.5 feet/second. All compaction rollers must complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been adhered to. The Engineer can stop production when the roller pattern is not adhered to.

d. Measurement and Payment. The completed work, as described, will be measured and paid for using applicable pay items as described in section 501.04 of the Standard Specifications for Construction, or other contract documents, except as modified below.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractors QC test results for the corresponding

QA test results must result in an overall payment greater than QA test results otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the lab once dispute resolution testing is requested. The dispute resolution sample will be sent to an independent lab selected by the Local Agency, and the resultant dispute test results will be used to determine the penalty per parameter, if any. The independent lab must be a MDOT QA/QC qualified lab or an AMRL HMA qualified lab. The independent lab must not have conflicts of interest with the Contractor or Local Agency. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract unit price for the material will be adjusted, based on all test result parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 2 tolerance limits, the 10,000 gram sample part retained for possible dispute resolution testing will be sent, within 4 calendar days, to the MDOT Central Laboratory for further testing. The MDOT Central Laboratory's test results will be used to determine the penalty per mixture parameter, if any. If the MDOT Central Laboratory's results do not confirm the mixture parameter is out-of-specification, then no price adjustment is required. If the MDOT Central Laboratory's results show that the mixture is out-of-specification and the Engineer approves leaving the out-of-specification mixture in place, the contract unit price for the material will be adjusted, based on all parameters, as shown in Table 3 and Table 4.

In the case that the Contractor disputes the results of the test of the second sample obtained for a particular day of production, the test turn-around time frames given would apply to the second test and there would be no time frame on the first test.

The laboratory (MDOT Central Laboratory or independent lab) will complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the contractor, within 13 calendar days upon receiving the Dispute Resolution samples.

In all cases, when penalties are assessed, the penalty applies to each parameter, up to two parameters, that is out of specification.

Table 3: Penalty Per Parameter

<table>
<tr><th>Mixture Parameter out-of-Specification per Acceptance Tests</th><th>Mixture Parameter out-of-Specification per Dispute Resolution Test Lab</th><th>Price Adjustment per Parameter</th></tr>
<tr><td>NO</td><td>N/A</td><td>None</td></tr>
<tr><td rowspan="3">YES</td><td>NO</td><td>None</td></tr>
<tr><td rowspan="2">YES</td><td>Outside Range 1 but not Range 2: decrease by 10%</td></tr>
<tr><td>Outside Range 2: decrease by 25%</td></tr>
</table>

The quantity of material receiving a price adjustment is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

Each parameter of Table 1 is evaluated with the total price adjustment applied to the contract unit price based on a sum of the two parameter penalties resulting in the highest total price adjustment as per Table 4. For example, if three parameters are out-of-specification, with two parameters outside Range 1 of Table 1 tolerance limits, but within Range 2 of Table 1 limits and one parameter outside of Range 2 of Table 1 tolerance limits and the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material is 35 percent.

Table 4: Calculating Total Price Adjustment

Cost Adjustment as a Sum of the Two Highest Parameter Penalties		
Number of Parameters Out-of-Specification	Range(s) Outside of Tolerance Limits of Table 1 per Parameter	Total Price Adjustment
One	Range 1	10%
	Range 2	25%
Two	Range 1 & Range 1	20%
	Range 1 & Range 2	35%
	Range 2 & Range 2	50%
Three	Range 1, Range 1 & Range 1	20%
	Range 1, Range 1 & Range 2	35%
	Range 1, Range 2 & Range 2	50%
	Range 2, Range 2 & Range 2	50%

Table 5: Density Frequency Curve Development

Tested by: _____ Date/Time: _____

Route/Location:		Air Temp:
Control Section/Job Number:		Weather:
Mix Type:	Tonnage:	Gauge:
Producer:	Depth:	Gmm:

Roller #1 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #2 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #3 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Summary: _____