STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

January 31, 2011

Addendum No. 1
RE: Contract ID C202707
WBS # 5C.092131, 5CR.20921.30
Wake County
6 Sections of Secondary Roads

February 15, 2011

To Whom It May Concern:

Reference is made to the Sketch Maps (plans) and proposal furnished to you on this project.

The following revisions have been made to the Sketch Maps:

On Sheet Nos. 1 and 4, Map #7 was added. Please void Sheet Nos. 1 and 4 in your plans and staple the revised Sheet Nos. 1 and 4 thereto.

New Sheet No. 7-A has been added to include a new "Typical Section No. 4". Please staple new Sheet No. 7-A after Sheet No. 7 in your plans.

Sheet No. 8 has been revised to reflect the below noted pay item quantity changes and additions. Please void Sheet No. 8 in your plans and staple the revised Sheet No. 8 thereto.

New Sheet No. PM-1 has been added to show the pavement marking plan for Map #7. Please staple new Sheet No. PM-1 after Sheet No. TCP-2 in your plans.

The following revisions have been made to the Proposal:

Page No. 67 has been modified and New Page Nos. 67a thru 67n have been added to include the project special provisions entitled "Open Graded Asphalt Friction Course" and "Quality Management System For Asphalt Pavements". Please void Page No. 67 in your proposal and staple revised Page No. 67 and New Page Nos. 67a thru 67n thereto.

The Table of Contents has been revised to reflect the above noted change. Please void the Table of Contents in your proposal and staple the revised page thereto.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND DEVELOPMENT UNIT
1591 MAIL SERVICE CENTER
RALEIGH NC 27699-1591

TELEPHONE: 919-250-4128
FAX: 919-250-4119
WEBSITE: WWW.NCDOT.ORG

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

On Page Nos. 1, 2 and 3 of the item sheets the following pay item quantities have been revised and new pay items added.

Item	Description	Old Quantity	New Quantity
11-1560000000-E-620	Asphalt Binder For Plant Mix, Grade PG 64-22	1,759 TON	1,765 TON
17-4685000000-E-1205	Thermoplastic Pavement Marking Lines (4", 90 MILS)	133,127 LF	134,696 LF
18-4686000000-E-1205	Thermoplastic Pavement Marking Lines (4", 120 MILS)	162,827 LF	163,733 LF
29-4900000000-N-1251	Permanent Raised Pavement Markers	1,874 EA	1,894 EA
36-1661000000-E-650	Open Graded Asphalt Friction Course, Type FC-1	**NEW ITEM**	88 TONS
37-4825000000-E-1205	Paint Pavement Marking Lines (12")	**NEW ITEM**	165 LF

The Contractor's bid must be based on these revised pay item quantities and must include the new pay items. The contract will be prepared accordingly.

The Expedite File has been updated to reflect these revisions. Please download the Expedite Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the addendum has been applied.

Sincerely,

R. A. Garris, PE
Contract Officer

RAG/jag

Attachments
cc: Mr. Jon Nance, PE
Mr. Ron Hancock, PE
Mr. W.A. Bowman, PE
Ms. D. M. Barbour, PE
Mr. Art McMillan, PE
Mr. J. V. Barbour, PE
Ms. Lori Strickland
Project File (2)
Mr. R.E. Davenport, PE
Ms. Natalie Roskam, PE
Mr. Ronnie Higgins
Mr. Larry Strickland
Ms. Marsha Sample

Erosion control measures shall be installed per the erosion control detail in any area where the vegetated buffer between the disturbed area and surface waters (streams, wetlands, or open waters) or drainage inlet is less than 10 feet. The Engineer may reduce the vegetated buffer threshold for this requirement to a value between 5 and 10 feet. Erosion control measures shall be spot checked every 14 days until permanent vegetative establishment.

In areas where shoulder construction/reconstruction includes disturbance or grading on the front slope or to the toe of fill, relocating ditch line or backslope, or removing vegetation from the ditch line or swale, NPDES inspection and monitoring are required every 14 days or within 24 hours of a rainfall event of 0.5" or greater. Maintain daily rainfall records. Install erosion control measures per detail.

In areas where the vegetated buffer is less than 10 feet between the disturbed area and waters of the State classified as High Quality Water (HQW), Outstanding Resource Water (ORW), Critical Areas, or Unique Wetlands, NPDES inspection and monitoring are required every 14 days or within 24 hours of a rainfall event of 0.5" or greater. The Engineer may reduce the vegetated buffer threshold for this requirement to a value between 5 and 10 feet. The plans or provisions will indicate the presence of these water classifications. Maintain daily rainfall records. Install erosion control measures per detail.

Land disturbances hardened with aggregate materials receiving sheet flow are considered non-erodible.

Sites that require lengthy sections of silt fence may substitute with rapid permanent seeding and mulching as directed by the Engineer.

NPDES documentation shall be performed by a Level II Erosion and Sediment Control/Stormwater certificate holder.

Materials used for erosion control will be measured and paid as stated in the contract.

OPEN GRADED ASPHALT FRICTION COURSE:
(10-20-09) R6 R04

Revise the *2006 Standard Specifications* as follows:

Page 6-55, Article 650-2 Materials, insert the following at the end of the list of items.

Reclaimed asphalt shingles	1012-1(F)

Page 6-57, Subarticle 650-3(B), Mix Design Criteria, insert the following as the fourth paragraph.

Reclaimed asphalt shingle (RAS) material may constitute up to 6% by weight of total mixture. The maximum percentage of binder contributed from reclaimed asphalt material will be 20% of the total binder in the completed mix.

QUALITY MANAGEMENT SYSTEM FOR ASPHALT PAVEMENTS:
(OGAFC, PADL, and ULTRA-THIN HMA Version)
(3-20-07)(Rev 4-20-10) R6 R62

Description

Produce and construct Open Graded Asphalt Friction Course, Permeable Asphalt Drainage Course, and Ultra-thin Hot Mix Asphalt Concrete Wearing Surface asphalt mixtures and pavements in accordance with a Quality Management System described herein. All materials and work shall conform to Division 6 of the *2006 Standard Specifications* except as modified herein. Perform all applicable quality control activities in accordance with the Department's *Hot Mix Asphalt Quality Management System (HMA/QMS) Manual* in effect on the date of contract advertisement, unless otherwise approved.

Description of Responsibilities

(A) Quality Control (QC)

Provide and conduct a quality control program. A quality control program is defined as all activities, including mix design, process control inspection, plant and equipment calibration, sampling and testing, and necessary adjustments in the process that are related to production of a pavement which meets all requirements of the Specifications.

(B) Quality Assurance (QA)

The Department will conduct a quality assurance program in accordance with Article 609-6 of the *Standard Specifications* and this provision. A quality assurance program is defined as all activities, including inspection, sampling, and testing related to determining that the quality of the completed pavement conforms to specification requirements.

Mix Design/Job Mix Formula Requirements

All applicable mix design and job mix formula requirements of Article 650-3, Article 652.3, or Article 661-2 of the *2006 Standard Specifications* and the contract documents shall apply. In addition, submit Superpave gyratory compactor printouts for all specimens required to be compacted during the mix design process.

Field Verification Of Mixture And Job Mix Formula Adjustments

Conduct field verification of the mix at each plant within 30 calendar days prior to initial production of each mix design, when required by the Allowable Mix Adjustment Policy, and when directed as deemed necessary.

Field verification testing consists of performing a minimum of 1 test series on mix sampled and tested in accordance *Required Sampling and Testing Frequencies*. Mix obtained from NCDOT or non-NCDOT work may be used for this purpose provided it is sampled, tested, and the test data handled in accordance with current procedures in the Department's *HMA/QMS Manual* and

New 1-31-11

the following provisions. Obtain the mix verification sample and split in accordance with the Department's *HMA/QMS Manual.* Do not begin normal plant production until all field verification test results have been completed and the Contractor's Level II Technician has satisfactorily verified the mix. Verification is considered satisfactory when the mix meets all applicable individual test control limits as specified elsewhere in these provisions, except that the drain down test shall meet the requirements as specified in Section 661 of the *2006 Standard Specifications* for the applicable mix type.

In addition to the required sampling and testing for field verification, perform all preliminary inspections and plant calibrations as shown in the *HMA/QMS Manual.*

Retain records of these calibrations and mix verification tests, including Superpave Gyratory Compactor (SGC) printouts, at the QC laboratory. In addition, furnish copies, including SGC printouts, to the Engineer for review and approval within one (1) working day after beginning production of the mix.

Conduct the initial mix verification of all new mix designs with the plant set up to produce the aggregate blend and binder content in accordance with the initially approved job mix formula (JMF). If the Contractor and/or the Engineer determine from results of quality control tests conducted during mix verification that adjustments to the job mix formula are necessary to achieve specified mix properties, adjustments to the JMF may be made within tolerances permitted by specifications for the mix type being produced, subject to approval. All JMF adjustments will be approved and documented in writing by the Engineer.

Failure by the Contractor to fully comply with the above mix verification requirements will result in immediate production stoppage by the Engineer. Do not resume normal production until all mix verification sampling, testing, calibrations, and plant inspections have been performed and approved. Any mix produced that is not verified may be assessed a price reduction at the Engineer's discretion in addition to any reduction in pay due to mix and/or surface deficiencies.

Contractor's Quality Control System

(A) Personnel Requirements

Obtain all certifications in accordance with the Department's QMS Asphalt Technician Certification Program as shown in the *HMA/QMS M*anual. Perform all sampling, testing, data analysis and data posting by or under the direct supervision of a certified QMS Asphalt Plant Technician.

Provide a certified Asphalt Plant Technician Level I to perform quality control operations and activities at each plant site at all times during production of material for the project. A plant operator who is a certified Asphalt Plant Technician Level I may be utilized to meet this requirement when daily production for each mix design is less than 100 tons provided the randomly scheduled increment sample is not within that tonnage. When performing in this capacity, the plant operator shall be responsible for all quality control

activities that are necessary and required. Absences of the Level I Technician, other than those for normal breaks and emergencies, shall be pre-approved by the appropriate QA Supervisor or his designated representative. Any extended absence of the Technician that has not been approved will result in immediate suspension of production by the Engineer. All mix produced during this absence will be accepted in accordance with Article 105-3 of the *2006 Standard Specifications*.

Provide and have readily available a certified Asphalt Plant Technician Level II to supervise, coordinate, and make any necessary adjustments in the mix quality control process in a timely manner. The Level II Technician may serve in a dual capacity and fulfill the Level I Technician requirements specified.

Provide a certified QMS Roadway Technician with each paving operation at all times during placement of asphalt. This person is responsible for monitoring all roadway paving operations and all quality control processes and activities, to include stopping production or implementing corrective measures when warranted.

Post in the quality control laboratory an organizational chart, including names, telephone numbers and current certification numbers of all personnel responsible for the quality control program while asphalt paving work is in progress.

(B) Field Laboratory Requirements

Furnish and maintain a Department certified laboratory at the plant site. A minimum of 320 square feet of floor space (exclusive of toilet facilities), equipment, and supplies necessary for performing Contractor quality control testing is required. Provide convenient telephone and fax machine access for QMS personnel at the plant site.

Provide testing equipment meeting the requirements of the test methods identified herein. Provide equipment that is properly calibrated and maintained. Allow all measuring and testing devices to be inspected to confirm both calibration and condition. If at any time the Engineer determines that the equipment is not operating properly or is not within the limits of dimensions or calibration described in the applicable test method, the Engineer may stop production until corrective action is taken. Maintain and have available a record of all calibration results at the laboratory.

(C) Plant Mix Quality Control

(1) General

Include in the quality control process the preliminary inspections, plant calibrations and field verification of the mix and JMF. In addition, conduct at a minimum but not limited to, the sampling, testing, and determination of all parameters outlined in these provisions using test methods and minimum frequencies as specified herein. Perform additional sampling and testing when conditions dictate. Obtain, split, and retain all scheduled samples at randomly

New 1-31-11

selected locations in accordance with the Department's *HMA/QMS Manual*, except as modified below. Log all samples taken on forms provided by the Department. Provide documentation in accordance with Subarticle 609-5(E) of the *Standard Specifications*. Identify any additional quality control samples taken and tested at times other than the regularly scheduled random samples or directed samples that take the place of regularly scheduled as process control (PC) samples on the appropriate forms. Process Control test results shall not be plotted on control charts nor reported to Quality Assurance Laboratory.

Split and retain samples in accordance with procedures in the Department's *HMA/QMS Manual*. Obtain at least 2000 grams of mix for each QC, QA, and retained sample. QC samples shall be tested immediately. Place QA samples and retained samples in silicone-lined sample boxes and store for possible testing in accordance with the procedures established below.

Retain the untested split portion of quality control aggregate and mix samples and the tested TSR specimens for 5 calendar days at the plant site, commencing the day the samples are tested. Quality Assurance personnel may give permission for disposal prior to these minimum storage periods. Retain the split portion of the Contractor's mix verification and referee mix samples until either procured by or permission for disposal is given by QA. Store all retained samples in a dry and protected location.

(2) Required Sampling and Testing Frequencies

All mix sampling, testing, data analysis and data posting shall be performed or directly supervised by a certified QMS Asphalt Plant Technician.

Maintain minimum test frequencies as established in the schedule below. Complete all tests within 24 hours of the time the sample is taken, unless specified otherwise within these provisions. Should the specified tests not be completed within the required time frame, cease production at that point until such time the tests are completed.

Should the Contractor's testing frequency fail to meet the minimum frequency requirements as specified, all mix without the specified test representation will be considered unsatisfactory. If the Engineer allows the mix to remain in place, payment will be made in accordance with Article 105-3 of the *2006 Standard Specifications*.

If desired, innovative equipment or techniques not addressed by these specifications to produce or monitor the production of mix may be utilized, subject to approval.

Quality Control Minimum Sampling and Testing Schedule

Sample and test the completed mixture from each mix design per plant per year at the following minimum frequency during mix production:

Accumulative Production Increment	Number of Samples per Increment
500 tons	1

If production is discontinued or interrupted before the accumulative production increment tonnage is completed, continue the increment on the next production day(s) until the increment tonnage is completed. Obtain a random sample within the specified increment at the location determined in accordance with the current edition of the Department's *HMA/QMS Manual.* Conduct quality control sampling and testing on each random sample as scheduled below. When daily production of each mix design exceeds 100 tons and a regularly scheduled test series random sample location for that mix design does not occur during that day's production, perform a partial test series consisting of Items (a) and (b) in the schedule below. This partial test series does not substitute for the regularly scheduled random sample for that increment.

Perform the following test series on all regularly scheduled random samples:

Asphalt Mixture - Sampled From Truck at Plant (AASHTO T-168 Modified) (Split Sample Required)

(a) Asphalt Binder Content, % (Contractor may select either option below)

1. Ignition Furnace (AASHTO T 308 Modified)
2. Other (Contractor may request and use other means of determining percent asphalt binder subject to approval)

(b) Gradation on Recovered Blended Aggregate from Mix Sample (AASHTO T-30 Modified) (Graded on all sieves specified on the job mix formula.)

In addition to the above schedule, conduct the following sampling and testing as indicated:

(a) Aggregate Stockpile Gradations (AASHTO T 27 and T 11) (Sampled from stockpiles or cold feed system as follows; split samples not required)

1. Coarse Aggregates (Approved Standard Sizes)
   a. At beginning of production*
   b. Weekly thereafter*
2. Fine Aggregates (Stone Screenings, Natural Sands, Etc.)
   a. At or within 1 week prior to mix verification (Gradations valid for multiple mix designs).

b. Weekly after mix verification *
c. Anytime production is stopped due to plant mix gradation related problems.

*In lieu of the aggregate stockpile gradations performed by QC personnel, gradation quality control data conducted by the aggregate producer, which is representative of the Contractor's current stockpiles, may be furnished.

(b) Reclaimed Asphalt Shingle Material (RAS) Binder Content and Gradation (AASHTO T 308 Modified or T 164 and AASHTO T 30 Modified) (sample from stockpiles or cold feed system at beginning of production and weekly thereafter). Have RAS approved for use in accordance with Article 1012-1 (F) of the *Standard Specifications*. (Split Sample Required)

(c) Combined Aggregate Moisture Content (AASHTO T 255) Drum Plant Only (sampled from stockpiles or cold feed system a minimum of once daily).

(d) Asphalt Drain Down Test Procedure, AASHTO T 305; Copy of procedure may be obtained from the M & T Asphalt Design Engineer. Mix sampled from truck at plant within the first day's production and weekly thereafter. **Note**: Drain Down Test not required for Permeable Asphalt Drainage Course.

(e) Retained Tensile Strength (TSR) - (AASHTO T 283 Modified)
Note: TSR only required for Ultra-thin HMA.

1. Option 1
Mix sampled from truck at plant, tested, and results furnished to the Engineer within seven (7) calendar days after beginning production of each new mix design. From the split sample, QC will prepare and submit within 5 calendar days of the sample date, an additional set of specimens to the QA Lab for TSR testing (Split Sample Required).
2. Option 2
Mix sampled from truck at plant with one set of specimens prepared by the Contractor and then tested jointly by QA and QC at a mutually agreed upon lab site within the first seven (7) calendar days after beginning production of each new mix design.

Test all TSR specimens required by either option noted above on either a recording test press or a test press that maintains the peak load reading after the specimen has broken.

Additional TSR testing required prior to mix production in accordance with above procedures is required when a change is made in anti-strip additive dosage or when a new anti-strip additive source or grade is utilized, unless otherwise approved. Other TSR test(s) may be directed as deemed necessary. TSR testing not required for mix verification, but may be performed at that time.

(3) Control Charts

Maintain standardized control charts furnished by the Department at the field laboratory. For mix incorporated into the project, record test data from all regularly scheduled random samples or directed samples that replace regularly scheduled random samples, on control charts the same day the tests results are obtained. Process Control (PC) test results shall not be plotted on control charts nor reported to Quality Assurance Laboratory.

In addition, partial test series results obtained due to reasons outlined above will be reported to Quality Assurance personnel on the proper forms, but will not be plotted on the control charts.

Results of quality assurance tests performed by the Engineer will be posted on the Contractor's control charts as data becomes available.

Record the following data on the standardized control charts:

(a) Aggregate Gradation Test Results:

1. 12.5 mm (Types P57 & FC-2 Mod. Only)
2. 9.5 mm (Excluding Type P57)
3. 4.75 mm
4. 2.36 mm
5. 0.075 mm Sieves

(b) Binder Content, %, P_b

Both the individual test values and the moving average of the last four (4) data points shall be plotted on each chart. The Contractor's test data shall be shown in black and the moving average in red. The Engineer's assurance data will be plotted in blue. Denote the moving average limits with a dash green line and individual test limits with a dash red line. Maintain a continuous moving average with the following exceptions. Re-establish a new moving average only when:

1. A change in the binder percentage or aggregate blend is made in the JMF, or,
2. When the Contractor elects to stop or is required to stop production after one or two moving average values, respectively, fall outside the moving average limits or,

New 1-31-11

3. If failure to stop production after two consecutive moving averages exceed the moving average limits occurs, but production does stop at a subsequent time, re-establish a new moving average beginning at the actual production stop point.

In addition, re-establish the moving averages for all mix properties. Moving averages will not be re-established when production stoppage occurs due to an individual test result exceeding the individual test limits and/or specifications.

All individual test results for regularly scheduled samples or directed samples that replace regularly scheduled samples are part of the plant quality control record and shall be included in moving average calculations with the following exception. When the Contractor's testing data has been proven incorrect, use the correct data as determined by the Engineer in lieu of the Contractor's data.

(4) Control Limits

The following are established as control limits for mix production. Apply the individual limits to the individual test results. Control limits for the moving average limits are based on a moving average of the last four (4) data points. Apply all control limits to the applicable target on the job mix formula.

Mix Control Criteria	**Control Limits, %**	
	Moving Average	**Individual Test**
Asphalt Binder Content	+/-0.3	+/-0.7
12.5 mm Sieve (Types P57 & FC-2 Mod)	+/-4.0	+/-8.0
9.5 mm Sieve (Excluding Type P57)	+/-4.0	+/-8.0
4.75 mm Sieve	+/-4.0	+/-8.0
2.36 mm Sieve	+/-4.0	+/-8.0
0.075 mm Sieve	+/-1.5	+/-2.5
TSR (Ultra-thin Only)	N/A	15%

(5) Corrective Actions

All required corrective actions are based upon initial test results and shall be taken immediately upon obtaining those results. In the event situations occur which warrant more than one corrective action and/or adjustment, give precedence to the more severe of these actions. Stopping production when required takes precedence over all other corrective actions. Document all corrective actions.

(a) Immediately cease production and immediately notify the Engineer when any of the following occur:

1. When an individual test result for a mix control criteria exceeds both the individual test control limits and the applicable specification design criteria, or,

2. When two consecutive field TSR values fail to meet the minimum specification requirement, or,

3. When two consecutive binder content test results exceed the individual limits.

(b) Do not resume normal plant production until one of the following has occurred:

1. Option 1 - Approval has been granted by the appropriate QA Supervisor.

2. Option 2 - The mix in question has been satisfactorily verified. Normal production may resume based on the approval of the contractor's Level II technician, provided notification and the verification test results have been furnished to the QA Laboratory.

Failure to comply fully with one of the above provisions will result in immediate production stoppage by the Engineer. Normal production shall not then resume until a complete verification process has been performed and approved by the Engineer.

Acceptance of all mix failing to meet the individual test control or minimum TSR requirements as described above will be determined in accordance with Article 105-3 of the *Standard Specifications*. In addition, any mix, which is deemed unacceptable, will be rejected for use in the work.

Failure to stop production when required due to an individual mix test not meeting the specified requirements shall subject all mix from the stop point tonnage to the point when the next individual test is back on or within the moving average limits, or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable.

Failure to stop production when required due to two consecutive TSR tests failing to meet the specification requirements will subject all mix from the stop point tonnage to the point when the next TSR test meets or exceeds the specification requirement, or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable.

In either case, remove and replace this mix with materials that comply with the specifications at no additional costs to the Department, unless otherwise approved. Payment will be made for the actual quantities of materials required to replace the removed quantities, not to exceed the original amounts.

Immediately notify the Engineer when any moving average value exceeds the moving average limit. If two consecutive moving average values for any one of the mix control criteria fall outside the moving average limits, cease production of that mix, immediately

notify the Engineer of the stoppage, and make adjustments. The Contractor may elect to stop production after only one moving average value falls outside the moving average limits. In either case, do not determine a new moving average until the fourth test after the elective or mandatory stop in production.

Do not resume normal plant production until one of the following has occurred:

(a) Option 1 - Approval has been granted by the appropriate QA Supervisor.

(b) Option 2 - The mix in question has been satisfactorily verified. Normal production may resume based on the approval of the contractor's Level II technician, provided notification and the verification test results have been furnished to the QA Laboratory.

Failure to comply fully with one of the above provisions will result in immediate production stoppage by the Engineer. Normal production shall not then resume until a complete verification process has been performed and approved by the Engineer.

If the process adjustment improves the property in question such that the moving average after four additional tests is on or within the moving average limits, the Contractor may continue production with no reduction in payment.

If the adjustment does not improve the property in question such that the moving average after four (4) individual tests is outside the moving average control limits, the mix will be evaluated for acceptance. If the Engineer determines the mix is reasonably acceptable based on the test data and an inspection of the completed pavement, the mix will be accepted in accordance with Article 105-3 of the *Standard Specifications*. If the mix is determined to be unacceptable, the mix will be removed and replaced with materials that comply with the specifications. In either case, the adjustment or removal, respectively, for the mix in question will be applied starting from the plant sample tonnage at the stop point to the sample tonnage when the moving average is on or within the moving average limit. In addition, any mix that is obviously unacceptable will be rejected for use in the work.

Failure to stop production and make adjustments when required due to two consecutive moving average values falling outside the moving average limits will subject all mix produced from the stop point tonnage to the tonnage point when the moving average is back on or within the moving average limits or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable. Remove this material and replace with materials that comply with the specifications at no additional costs to the Department, unless otherwise approved. Payment will be made for the actual quantities of materials required to replace the removed quantities, not to exceed the original amounts.

New- 1-31-11

(6) Allowable Retesting for Mix Deficiencies

The Contractor may elect to resample and retest for plant mix deficiencies when individual QC test(s) exceed one or more mix property target(s) by more than the tolerances indicated below. Perform the retesting within 10 days after initial test results are determined. Retesting shall be approved prior to being performed and in accordance with the Department's Guidelines for Retests of Plant Mix Deficiencies as shown in the *HMA/QMS Manual.* The Contractor, under the supervision of the Department's QA personnel will perform these retests. Retests for any mix deficiency other than as listed below will not be allowed unless otherwise permitted. Acceptance of the mix in question will be based on the retest data in accordance with Article 105-3 of the *Standard Specifications*.

The Department reserves the right to require the Contractor to resample and retest at any time or location as directed.

(a)	% Binder Content		by more than +/- 1.0%
(b)	12.5 mm Sieve (Types P 57 & FC-2 Mod)		by more than +/- 9.0%
(c)	9.5 mm Sieve (Excluding Type P 57)		by more than +/- 9.0%
(d)	4.75 mm sieve		by more than +/- 9.0%
(e)	2.36 mm sieve		by more than +/- 9.0%
(f)	0.075 mm sieve		by more than +/- 3.0%
(g)	TSR (Ultra-thin only)		by more by more than -15% from Specification limit

(7) Documentation (Records)

Document all quality control observations, records of inspection, samples taken, adjustments to the mix, and test results on a daily basis. Note the results of observations and records of inspection as they occur in a permanent field record. Record adjustment to mix production and test results on forms provided.

Identify any additional quality control samples taken and tested at times other than the regularly scheduled random samples or directed samples that take the place of regularly scheduled as process control (PC) samples on the appropriate forms. Process Control test results shall not be plotted on control charts nor reported to Quality Assurance Laboratory. Process control sample test results are for the Contractor's informational purposes only.

Make all such records available to the Engineer, upon request, at any time during project construction. Complete all QC records and forms and distribute in accordance with the most current edition of the Department's *HMA/QMS Manual.* Maintain all QC records, forms and equipment calibrations for a minimum of 3 years from their completion date. Failure to maintain QC records and forms as required, or to provide these records and forms to the Engineer upon request, may result in production and/or placement stoppage until the problem is resolved.

Falsification of test results, documentation of observations, records of inspection, adjustments to the process, discarding of samples and/or test results, or any other deliberate misrepresentation of the facts will result in the revocation of the applicable person's QMS certification. The Engineer will determine acceptability of the mix and/or pavement represented by the falsified results or documentation. If the mix or pavement in question is determined to be acceptable, the Engineer may allow the mix to remain in place at no pay for the mix, asphalt binder and other mix components. If the mix and/or pavement represented by the falsified results are determined not to be acceptable, remove and replace with mix that complies with the Specifications. Payment will be made for the actual quantities of materials required to replace the falsified quantities, not to exceed the original amounts.

Quality Assurance

The Department's quality assurance program will be conducted by a certified QMS technician(s) and will be accomplished in the following ways:

Plant Mix Quality Assurance

(A) By conducting assurance testing of split samples obtained by the Contractor at a frequency equal to or greater than 5% of the frequency required of the Contractor;

(B) By periodically observing sampling and testing procedures performed by the Contractor;

(C) By monitoring required control charts exhibiting test results of control parameters;

(D) By directing the Contractor to take additional samples at any time and any location during production (in lieu of the next scheduled random sample for that increment);

(E) By conducting verification sampling and testing on samples taken independently of the Contractor's quality control samples at a frequency equal to or greater than 10% of the QC sample frequency; or

(F) By any combination of the above

The Engineer will periodically obtain quality assurance and verification samples for testing independently of the Contractor's quality control process. The Engineer will conduct assurance

tests on both split QC samples taken by the Contractor and verification samples taken by the Department. These samples may be the regular quality control samples or a sample selected by the Engineer from any location in the process, or verification samples taken at random by the Department. The Engineer may select any or all split samples for assurance testing.

Results of quality assurance tests will be provided to the Contractor within 3 working days after the sample has been obtained, except for verification TSR test results that will be provided within 7 calendar days.

Limits of Precision

Differences between the Contractor's and the Department's split sample test results will be considered acceptable if within the following limits of precision:

Mix Property	**Acceptable Limits of Precision**
Asphalt Binder Content	±0.5 %
12.5 mm Sieve (Types P 57 & FC-2 Mod. Only)	±6.0 %
9.5 mm Sieve (Excluding Type P 57)	±5.0 %
4.75 mm Sieve	±5.0 %
2.36 mm Sieve	±5.0 %
0.075 mm Sieve	±2.0 %
TSR (Ultra-thin HMA Only)	±15.0 %

The Engineer will immediately investigate the reason for differences if any of the following occur:

(A) QA test results of QC split sample does not meet above limits of precision, or

(B) QA test results of QC split sample does not meet the individual test control limits or the specification requirements, or

(C) QA verification sample test results exceed the allowable retesting tolerances.

If the potential for a pavement failure exists, the Engineer may suspend production, wholly or in part, in accordance with Article 108-7 of the *Standard Specifications* while the investigation is in progress. The Engineer's investigation may include, but not be limited to the following:

(A) Joint testing of any remaining split samples,

(B) Review and observation of the QC technician's sampling and testing procedures,

(C) Evaluation and calibration of QC testing equipment, and/or

(D) Comparison testing of other retained quality control samples

If additional mix samples or core samples are necessary to resolve the difference, these samples will be taken as directed and tested jointly by the Contractor's quality control and Department's quality assurance personnel. If reasons for the difference cannot be determined, payment for the mix in question will be determined in accordance with Article 105-3 of the *Standard Specifications*. If the reason for the difference is determined to be an error or other discrepancy in the quality control test results, the applicable quality assurance test results or verification test results will be used to determine compliance with the applicable mix specification requirements.

The Engineer will periodically witness the sampling and testing being performed by the Contractor. If the Engineer observes that the sampling and quality control tests are not being performed in accordance with the applicable test procedures, the Engineer may stop production until corrective action is taken. The Engineer will promptly notify the Contractor of observed deficiencies, both verbally and in writing. The Engineer will document all witnessed samples and tests.

Acceptance

The Engineer will base final acceptance of the mix on the results of random testing made on split samples during the assurance process and validation of the Contractor's quality control process.

Measurement and Payment

Produce and construct all asphalt mixtures and pavements in accordance with these Specifications. There will be no direct payment for work covered by this specification. Payment at the contract unit prices for the various asphalt items will be full compensation for all work covered by these specifications.

TABLE OF CONTENTS

COVER SHEET
PROPOSAL SHEETS

PROJECT SPECIAL PROVISIONS (WHITE SHEETS) *PAGE No.*

Contract Time and Liquidated Damages..... 1
Intermediate Contract Time (s)..... 1-3
Prosecution of Work..... 3
Railroad Grade Crossing..... 3
Major Contract Items..... 4
Specialty Items..... 4
Fuel Price Adjustment..... 4-5
Schedule of Estimated Completion Progress..... 5
Minority Business Enterprises and Women Business Enterprise..... 5-16
Progress Schedule..... 17-18
Liability Insurance..... 18-19
Contractor Licenses Requirements..... 19
Contractor Claim Submittal Form..... 19
Outsourcing Outside U.S.A..... 19
Legal Relations and Responsibility to Public..... 19
Gifts from Vendors and Contractors..... 19-20
Erosion & Sediment Control / Storm Water Certification..... 20-25
Erosion & Storm Water Certification..... 25-27
Roadway..... 28-67n
Traffic Control..... 68-76
Erosion Control..... 77-81
Signals and Intelligent Transportation Systems..... 82-84
Sketch Map

STANDARD SPECIAL PROVISIONS (YELLOW SHEETS)

Availability of Funds – Termination of Contracts..... 1
General Seed Specification for Seed Quality..... 2-4
Errata..... 5-8
Plant and Pest Quarantines..... 9
Minimum Wages..... 10
On the Job Training..... 11-13

PROPOSAL ITEM SHEET AND SIGNATURE SHEET
Item Sheet (s)
Signature Sheet (Bid Acceptance by Department)