CHAPTER 9
ASPHALTIC CONCRETE PRODUCTION AND PLACEMENT RECORD

9.1 PURPOSE

To establish uniform and decisive instructions for keeping accurate final pay records for asphalt pay items with liquid included.

9.2 SCOPE

This procedure provides explanations of forms used to document the quantities of bituminous material in the daily production of asphaltic concrete mixes for FDOT construction. It also establishes guidelines to control those asphalt plant operations that relate to the daily measurement and documentation of bituminous quantities. Also included are instructions for assessing Composite Pay Factor adjustments.

9.3 ASPHALT PLANT OPERATIONS

The specifications include the requirements for the asphalt plant operation. This procedure will reiterate and expand on some of these, especially those that have a bearing on the measurement and recording of final pay quantities.

All asphalt plants shall have Electronic Weight Systems with Automatic Ticket Printouts.

All asphalt plants must be equipped with one of the following three electronic weigh systems capable of automatically printing a delivery ticket. (See Attachment 9-1):

9.3.1 Automatic batch plant with printout (according to ***Subarticle 320-2** of the **Standard Specifications***).

9.3.2 Electronic weight system on hopper beneath a surge or storage bin

9.3.3 Electronic weigh system on the truck scales

Include at a minimum, the following information on the printed delivery tickets:

- Sequential load number
- Financial Project ID Number

- Date
- Name and location of plant
- Type of mix
- Place for hand recording mix temperature
- Truck number
- Gross, tare, and net weights (as applicable)
- Accumulated total of mix*

Tons ~~[Metric Tons]~~ or Square Yards ~~[Square meters]~~**
~~*(May be hand recorded)~~

In the event of a malfunction of the automatic printer and the plant is equipped with an electronic display a contractor blank automatic ticket may be written (by a Department representative) from the electronic display until the printer can be repaired, for a period not to exceed 48 hours.

9.4 AUTOMATED PLANTS WITH BATCH WEIGHT PRINTER SYSTEM

Plants of this type are set up to automatically control the batching operations and have an automatic printer system which will print the individual or accumulative weights of aggregate and liquid asphalt delivered to the pugmill and the total weight of the batches contained in a truck load.

9.4.1 Operating Without Storage Bins- There are two methods of maintaining proper pay records for this type plant:

(A) Accept the weight of asphalt shown on the automatically printed tickets for the material used on the project.

NOTE: These automatically printed tickets are acceptable and the total weight of mix shown may be used as the tonnage, if the following conditions are fulfilled:

(1) The printer tickets weights must be checked across certified truck scales and be within the 0.4% tolerance allowed by the specifications.

(2) Consists of an original and at least three clear copies. The original is retained by the Contractor's Quality Control (CQC) Plant Technician and becomes part of the Lot Submittal Package, one copy is retained by the producer at the plant, one copy goes to the CQC Road Technician, and one copy goes to the paving contractor.

(3) Since preprinted ticket numbers do not normally occur without breaks in order, they cause excessive "page order" messages on the computer output listing. To avoid this problem the plant assigned numbers shall be in sequence regardless of the numerical order of the preprinted number on the ticket.

(4) Regardless of the method of documentation, the **original weight tickets**, tapes, or digital records shall become the property of the Department, including the records of all project mixes furnished during production runs for the Department.

(5) Preprinted tickets shall be bound in sets for each day's run. A cover sheet shall be prepared for each set (See Attachment 9-2) showing the financial project ID number, pay item numbers, date, book number, design mix number, type of material, ticket numbers included, and total quantity... Material of different types, pay items, waste, or private work for each day's run shall be identified. These packets shall be available for review by the Department's Verification Technician one day after production and shall become part of the Lot Submittal Package. (See attachments 9-5 & 9-5a thru 9-5k).

(6) Unless the number of weight tickets justifies the use of the computer to summarize the material, a manual summary shall be made by weight ticket totals in the final estimates computation book.

(7) When the computer is used, the output shall be included as part of the estimate computations and shall be cross-referenced in the computation book.

(8) A complete tabulation, as packing list, of all weight tickets for each type of material or each different pay item shall be shown in the transmittal data when the final estimates package is submitted.

(B) For those plants with the automatic printer system, if all Department

tickets used are properly numbered in sequence by the plant inspector including all void and waste tickets, it will be necessary for the contractor to furnish the Department only those tickets showing Department production when printed weights are accepted and converted to volume for pay purposes.

9.4.2. Operation with storage bins - The record keeping procedures for this type of plant are similar to an automated plant without a printer system and using storage bins:

(A) Record the exact weight of all material placed in storage bins.

(B) Record the exact weight of all material used out of the storage bins and at the end of the day or run. Calculate the amount of mix remaining in the bins. If the producer elects to use any of the mix remaining in the storage bin after the Department completes its work for this date, the tonnage used must be recorded under Department supervision and deducted in order to establish the tonnage in storage at the beginning of the next day's work.

9.5 REQUIREMENTS FOR ACCURACY CONDITIONS AND TOLERANCE

The specifications state the following requirements that relate to asphalt plant operations:

(A) Truck scales shall be recertified every six months.

(B) Batch scales and the accuracy of the automatic printer shall be certified at least once every six months.

(C) The accuracy of the batch scales and the printer system shall be checked at the commencement of production and thereafter at least once a week during production for the Department.

(D) The maximum permissible deviation is 8 pounds per ton ~~[4 kg per metric ton]~~ of load. ***(per Subarticle 320-2)***

9.6 METHOD OF MEASUREMENT

9.6.1. Tonnage ~~[Metric Tonnage]~~ Items (Bit Included) - Automatic printer tickets showing weights along with the cover sheet, will become part of the Lot Submittal Package and shall be submitted with the final estimate for each job on the

contract.

9.6.2. Square Yard ~~[Square Meter]~~ Items (Bit Included) (Optional Base Only) - When the pavement is to be paid for on an area basis, the area to be paid for shall be Plan Quantity subject to the provisions of ***Subarticle 9-3*** *of the* ***Standard Specifications***, omitting any areas not allowed for payment under the provisions of ***Subarticle 330-12*** *of the* ***Standard Specifications*** and adjusted as follows:

(A) The volume of pavement represented by the difference between the average thickness (determined as specified in ***Article 330-12*** *of the* ***Standard Specifications***), and specified thickness shall be converted into equivalent square yards ~~[square meters]~~ of pavement of specified thickness and the quantity thereby obtained shall be added to, or deducted, from the pay areas as appropriate.

(B) The pay area shall not exceed 105% of the surface area.

(C) There will be no adjustment of the pay area on the basis of thickness for base courses constructed utilizing mixed-in-place operations.

(D) Automatic printer tickets showing weights, field records, and measurements if plan quantity is changed, shall be submitted with the final estimate for each job on the contract along with the Lot submittal Package. (See Attachments 9-5 & 9-5a thru 9-5k).

NOTE: If a plan quantity error exceeds the limitations established in ***Article 9-3*** *of the* ***Standard Specifications***, record documentation in field books, computer forms, or computation book forms.

9.6.3. Surface Deficiencies - Deficiencies determined by the Engineer with a 15-foot rolling straightedge. Deviations from the straightedge in excess of 3/16 of an inch shall be corrected in accordance with ***Subarticle 330-13.3.4*** *of the* ***Standard Specifications*** unless such corrections are waived by the DCE. Deficient areas where the Engineer has waived corrections will be deducted as follows:

(A**)** **Friction Course:**

(1) Square Yard ~~[square meter]~~ Item: The distance used will be the length of 50 feet ~~[15 meters]~~ either side of the deficiency times the lane width. Lane width is defined as the lane width shown on the typical section. This area will be considered as 100% pay reduction and should be reflected on the estimate as minus s.y. ~~[s.m.]~~ at full

unit price.

(2) Tonnage ~~[metric tonnage]~~ Item: The Department will base the reduction on the volume that would have been removed (100 feet plus deficiency by lane width by layer thickness) ~~[30 meters plus deficiency by lane width by layer thickness]~~ multiplied by the laboratory density for the mix and divided by 2,000 lbs/ton ~~(1,000kg/metric ton)~~. Lane width is defined as the lane width shown on the typical section.

Tonnage Example: Deficiency Length = 5 feet
Layer thickness = 1.5”
Lab Density = 146.6

Calculation: (100 + 5) X 12 (lane width) X .125* X 146.6 ÷ 2,000 = 11.54 tons.

Deduction for Straightedge penalty = 11.50 tons

* 1.5" ÷ 12" = .125'

Note: This example may be used for material other than friction course also.

(B) **Other Than Friction Course:**

(1) Where the Engineer elects to waive a correction and the finished pavement surface is other than friction course, the appropriate pay quantity for Asphaltic Concrete shall be reduced by the equivalent quantity of materials, which would have been removed and replaced if the correction had been made.

(2) The reduction in tons [metric tons] is based on the volume, which would have been removed (100 feet plus deficiency X lane width X layer thickness) ~~[30 meters plus deficiency X lane width X layer thickness]~~ multiplied by the laboratory density for the mix and divided by 2,000 lbs/ton ~~(1,000kg/metric ton)~~. Lane width is defined as the lane width shown on the typical section.

9.6.4. Rejected Surface - Defective surface will be rejected and will be replaced with a satisfactory surface at no compensation for the replaced area in accordance with ***Article 330-12*** *of the* ***Standard Specifications*****.**

Should the rejected surface area not be corrected to the satisfaction of the PE, no pay for the rejected area should be made in accordance with ***Subarticle 9-5.3*** *of the* ***Standard Specifications*****.**

9.7 CORE OUT ADJUSTMENT (OPTIONAL BASE ONLY)

Adjustment according to Specifications and Special Provisions.

9.7.1 Square Yard ~~[Square Meter]~~ Items (Bit Included) - When the pavement is to be paid for on an area basis, the area to be paid for shall be Plan Quantity subject to the provisions of ***Subarticle 9-3.2*** *of the* ***Standard Specifications***, and adjusted as follows:

(A) The volume of pavement represented by the difference between the average thickness (determined as specified in ***Article 330-16*** *of the* ***Standard Specifications***), and specified thickness shall be converted into equivalent square yards ~~[square meters]~~ of pavement of specified thickness and the quantity thereby obtained shall be added to, or deducted, from the pay areas as appropriate.

The maximum average thickness of pavement upon which payment will be made shall be limited as follows:

Example Core Out Adjustment

Type Limerock	7.00″
Plan Quantity	8,000 S.Y.'s

Specifications allow 1/2″ per Subarticle 285-7

Actual core out = 7.50″

Therefore = $\frac{7.50'' - 7.00''}{7.00''}$ = .071428571 X 100 = 7.1428571 % > 5%*****

*****Optional Base shall not exceed 105% of the surface area per ***Article 285-8*** *of the* ***Standard Specifications***

Therefore: .05 X 8,000 S.Y.s = 400 S.Y.s Thickness Adjustment

(B) Superpave base shall be adjusted based on the spread of the mixture. ~~The spread rate shall be established by the Engineer.~~ The pay area shall be based on the project average spread rate divided by the specified rate. The adjustment shall not exceed 105%.

Example Spread Rate Adjustment

Project Specified Spread Rate = 450 lbs/SY

Project Average Spread Rate = 469 lbs/SY

$$\frac{469 - 450}{450} = .042222222 < 5\%$$

Plan Quantity = 20,000 SY

So, if the unit price for the Superpave base was $15.00 a SY, multiply .042222222 by $15.00. This equals a revised unit price of $0.6333/SY. An adjustment will be shown by multiplying 20,000 SY's by the revised unit price of $0.6333.

(C) In some instances, the CQC road report will show either more or less square yards than plan quantity. The contractor should use due care when reporting square yards to accurately report the length and width of area being placed. Should the square yards in the end not match plan quantity, the yardage will be adjusted to pay plan quantity and paid on the last composite pay factor adjustment. The Project Administrator shall use reasonable investigation to see if plan quantity is in error and warrants an adjustment.

(D) Composite base is a combination of granular material and asphalt. The Subbase (granular) will be cored prior to placing asphalt. All areas over 1/2" or under 1/4" will be corrected prior to placing asphalt. The asphalt is based on a spread converting inches to pounds according to ***Article 234-9*** and will be controlled within +/-5% of the specified spread rate. The average spread rate of the asphalt shall be converted back to inches by reversing the formula specified in ***Article 234-9.1*** and added to the average thickness of the Subbase. The thickness adjustment will then be applied for the composite base pay item limited to a maximum 105% of the surface area as specified in ***Article 285-8***.

Example

Composite base = 4" Limerock and 4" Type B-12.5 asphalt

Convert 4" of asphalt to lbs/sy by the following formula as specified in ***Article 234-9.1***

.

43.3* X inches X Gmm**.

**43.3 is a constant derived by the State Materials Office.*

**Gmm is taken from the approved design mix for the specified project.
**Gmm (maximum specific gravity) = 2.358

43.3 X 4 X 2.358 = 408 lbs/sy

Core-out report for Limerock = 4.25"
Average spread rate for asphalt = 426 lbs/sy***

Convert lbs to inches based on reverse formula in ***Article 234-9.1
426 ÷ 43.3 ÷ 2.358 = 4.17"

4.25" (Limerock) + 4.17" (Asphalt) = 8.42" average thickness for composite base.

Thickness adjustment = $\frac{(8.42" - 8.00")}{8.00"}$ = .053**** (>5%) X Surface Area

**** Pay will be limited to a maximum of 105% X Surface Area

9.8 SALVAGE OF MATERIALS

When material is salvaged from the project and delivered to a Maintenance Yard, a signed ***"Receipt of Goods from Vendor"*** must be submitted with the final estimate. The "vendor" is actually the Construction Office from which the materials were received and the vendor number is the Financial Project ID Number. (See Attachment 9-3).

9.9 SUPERIOR PERFORMING ASPHALT PAVEMENT (Superpave)

Description (***Section 334*** *of the* ***Standard Specifications***) (Each contract shall be reviewed for governing Specification's)

Superpave Asphalt Concrete shall be constructed using the type of mixture specified in the contract, or when offered as alternates, as selected. Superpave mixes are identified as Type SP-9.5, Type SP-12.5, or Type SP-19.0.

They shall meet the requirements of ***Section 320*** *of the* ***Standard Specifications*** for plant and equipment and the general construction requirements of ***Section 330***, with the exception that the density requirements of ***Subarticle 334-5.***

The Superpave mixes are categorized as either “coarse” or “fine”, depending on the overall gradation of the mixture. Coarse mixes are defined as having a gradation that passes below the restricted zone, as defined in ***Subarticle 334-2***. Fine mixes are defined as having a gradation that passes above the restricted zone.

9.9.1 Compensation

Tonnage ~~[metric tonnage]~~ Item: Automatic printer tickets showing weights, along with the Lot Submittal Package shall be submitted with the Final Estimate for each job on the contract.

9-10 ASPHALTIC CONCRETE FRICTION COURSE (105% ADJUSTMENT)

9-10.1Thickness of Friction Courses (*Article 337-9*)

The thickness of the friction courses will be plan thickness as shown in the Contract documents. For construction purposes, the plan thickness will be converted to a spread rate as defined below for various mixes.

9-10.2 Spread Rate for FC-5 (*Article 337-9*)

Original plan quantities will be based on a spread rate of 80 lbs/yd/^{2} ~~(44 kg/m^2)~~. Construction spread rates will be calculated by multiplying the plan thickness by the bulk specific gravity of the mix being placed and then multiply by 40.5 lbs/yd^2 ~~(0.83 kg/m^2)~~. (See Attachment 9-8).

Note: 40.5 lbs/yd^2 ~~(0.83 kg/m^2)~~ is a constant derived by the State Materials Office.

9-10.3 Spread Rate for FC-9.5 and FC-12.5 (*Article 337-9*)

Original plan quantities will be based on a spread rate of 110 lbs/yd/^{2}-in. ~~(23.6 kg//m^2/10mm)~~ as defined in ***Article 334-1***. Construction spread rates will be calculated by multiplying the plan thickness by the bulk specific gravity of the mix being placed and then multiply by 43.3 lbs/yd^2 ~~(0.928 kg/m^2)~~. (See Attachment 9-9).

Note: 43.3 lbs/yd² ~~(0.928 kg/m²)~~ is a constant derived by the State Materials Office.

9-10.4 Method of Measurement (*Article 337-10*)

The quantity to be paid for will be the weight, in tons ~~[metric tons]~~, as determined in accordance with ***Article 320-2*** (including provisions for the automatic recordation system). The pay quantity will be based on the average spread rate for the project, limited to a maximum of 105% of the construction spread rate calculated by the above formulas in accordance with ***Article 337-9***.

Note: The spread rate should be monitored during production and placement to ensure the Contractor is within 5 percent. After all asphalt for friction course has been placed and the average spread rate exceeds 5 percent as allowed by the Specifications, a deduction for the overage will be applied at the original bid price. A note will be added in remarks explaining that this deduction has been applied due to exceeding the spread rate by more than 5 percent allowed by the Specifications.

9-11 MISCELLANEOUS ASPHALT

9-11.1 Method of Measurement (*Article 339-7*)

The quantity to be paid for will be the weight in tons ~~[metric tons],~~ determined by weighing in trucks on scales meeting the requirements of ***Article 320-2.2*** or from the total weight of batches placed in trucks as determined by an automatic printer system meeting the requirements of ***Article 320-4***. The pay quantity will be based on the average spread rate or dimensions for the project, limited to a maximum of 105%. For calculation, a weight of 100 lbs/yd² per inch ~~[22kg/m² per 10 mm]~~ thickness of asphalt will be used.

9-11.2 Basis of Payment (*Article 339-8*)

Price and payment will be full compensation for all work specified in this section, including shaping and compacting the foundation, soil sterilization treatment, furnishing of the bituminous material used in the mixture, and shaping of the adjacent earth surfaces.

Example

Original Square Yards = 800
Original Tons = 80.00

Final Square Yards = 800
Final Tons = 90.50
90.50 X 2,000 = 181,000 LBS.
181,000 LBS. ÷ 800 S.Y. = 226.25 LBS. /S.Y.
226.25 LBS. ÷ *200 LBS. X 100 = 113 %
113 % > 105 %
200 LBS. /S.Y. X 1.05 = 210 LBS. /S.Y. maximum lbs. Per S.Y. payable
210 LBS. X 800 S.Y.'s ÷ 2,000 = 84 Tons Final Pay Quantity

* 2" X 100 lbs/S.Y. = 200 lbs/yd²

9-12 CONTRACTOR'S QUALITY CONTROL (CQC)

9-12.1Responsibility for all Asphalt Produced and Accepted

The Contractor or Sub-Contractor is responsible for quality control at the plant and on the roadway. The Contractor or Sub-Contractor will run asphalt content and gradation tests at the plant and density tests on the roadway. The contractor or Sub-Contractor is responsible for determining quantities of asphalt produced and recording tack measurements placed on the roadway. The Department has developed a Powerpoint presentation labeled "**Asphalt Construction Information for CQC Specifications"**. It is recommended that Project Administrators inform Contractors and Sub-Contractors at the Preconstruction Conference that this presentation is available and it is recommended for them to view this presentation along with all personnel responsible for asphalt production, reporting, and documentation. It is also recommended that all Departmental personnel responsible for asphalt inspection view this presentation. The presentation is available for viewing or downloading at the following URL: **~~http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycontrol/guidelines/contractor/asphaltoutline/ASPHALT%20INFO%20OUTLINE_files/frame.htm~~http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycontrol/guidelines/contractor/asphaltoutline/asphaltconstructioninfo.pdf**

9-12.2 Quality Control Documentation Verification

The Engineer or designee is responsible for reviewing and randomly checking the quantities submitted by the CQC Technician. The Engineer shall collect a copy of the Quality Control Technician's Report for both the asphalt plant and the asphalt road. In addition the Engineer shall collect all asphalt ticket packets associated with these reports. The Engineer is to ensure that the ticket packets for each day's production match these reports.

When an error is detected that will require correcting reports for more than one ~~two~~ (~~2~~1) Lot~~s~~, the correction will be shown on the latest report for that specific item, and reference will be made to the report with the corrected information. The report where the error first occurred will show the correction by striking through the error, write the correct information, place initials and date. Reports following the error will not require correction.

9-12.3 Resolution Reports for A.C. Content, Gradation and Density Cores

In some instances when the CQC Technician's results and the Verification Technician's results do not compare for a specified test, then a Resolution report must be accomplished. The tests results of the Resolution Technician will be compared to the results of the Quality Control Technician and the Verification Technician.

If the Resolution results favor the CQC Technician's results, then use the CQC Technician's results.

If the Resolution Technician's results favor the Verification Technician's results, then use the Resolution Technician's results.

Note: The cost of the resolution testing, if performed by the Department and favors the Verification Technicians results, will be deducted from the Contractor on the next progress estimate (See attachment 9-11a & 9-11b). The cost of the testing can be found at the following URL.

~~http://materials.dot.state.fl.us/smo/quality/programs/qualitycontrol/resources/resolutioncosts.pdf~~
http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycontrol/qcindex.htm

9-12.4 Composite Pay Factor - Excel Spreadsheet

The Verification Technician is responsible for entering the CQC Technician's test results in the Composite Pay Factor spreadsheet to calculate the pay adjustments. These entries shall be done at the closing of a Lot during the life of the contract. It is the responsibility of the Project Engineer or designee to verify that the test results entered by the Verification Technician are correct. Also, all reports shall be affixed to the Composite Pay Factor spreadsheet representing that Lot. See example of Lot Submittal Package (See Attachment No. 9-5 and 9-5a thru 9-5k). These reports along with the asphalt ticket packets shall be collected two working days after the closing of a Lot. The Lot Submittal Package shall be submitted with the Final Estimates Package.

9-12.5 Composite Pay Factor Adjustments

All Contracts shall have a unit price adjustment calculated. The Engineer or designee shall calculate the unit price adjustment and enter the revised unit price adjustment on the monthly/progress estimate along with the tons ~~(metric tons)~~ represented by each lot produced.

These revised unit price adjustments range from 75 per cent to 105 per cent. All lots shall be grouped together for each unit price adjustment.

Example: Lots 2, 3, and 5 were at 101 percent: show the tons ~~(metric tons)~~ represented by these lots on the monthly/progress at the revised unit price for a 101 per cent adjustment and place a brief comment) explaining which lots received the adjustment(s). Composite Pay Factor adjustments in Sitemanager will be handled by adjusting the unit price by the variance percent of the Composite Pay Factor. (See Attachment No 9-10a & 9-10b). Also place a new ***Computation Sheet*** in the ***Computation Booklet*** or break out the percentage adjustments on the original ***Computation Sheet*** for the adjusted item(s) (See Attachment No. 9-4).

Note: Always carry the revised unit price adjustment calculations to four (4) decimal places.

9-12.~~-~~6 Low Pay Factor Material Documentation

(A) Composite Pay Factors < 80 or ≥ 75

(1) Remove and replace the tonnage in this Lot and pay the Composite Pay Factor represented by the replacement Lot. The original Lot Submittal Package will be explained with remarks as “No Pay”.

(2) Obtain an Engineering Analysis, if agreed on by Project Administrator, to determine if material may remain in place and if so, pay the original Composite Pay Factor or remove and replace and pay the Composite Pay Factor represented by the replacement Lot. The original Lot Submittal Package will be explained with remarks as “No Pay” with reference to the new replacement Lot Submittal Package.

Note: The Engineer, at his/her sole option, may perform an evaluation and leave this material in place, apply the Composite Pay Factor for this Lot, or have this material removed and replaced as identified in No. 1 above.

(B) Composite Pay Factor < 75

Remove and replace the tonnage in this Lot and pay the Composite Pay Factor represented by the replacement Lot. The original Lot Submittal Package will be explained with remarks as “No Pay”.

(C) Independent Verification Test Failure

This shall be handled as stated above, or in some instances, the Project Manager/Administrator will require removal and replacement of tonnage within a Lot. For this case, **DO NOT CORRECT THE REPORTS**, the reports themselves are reporting what actually happened. This defective asphalt may be a partial sublot, an entire sublot, or even an entire Lot. The Contractor's Quality Control Technician should catch this problem before an entire Lot is placed. The defective asphalt will then be milled and replaced with asphalt within another Lot. This is documented in the "Remarks" area. The Technician will document the tonnage of "acceptable asphalt" that is replacing the defective one that was previously placed. The previous report number and date will also be identified in the "Remarks". The new asphalt will be analyzed in the new Lot and paid for accordingly. The previous Lot Submittal Package will also be identified in the "Remarks" area showing a deduction of the asphalt in this Lot, and it will be referenced to the new Lot Submittal Package and to where this material was actually produced.

Example

Lot 3 had defective asphalt that the Project Administrator, after concurrence from the District Construction/Bituminous Engineer, required removal and replacement. The Project Manager will identify the area in writing to the Contractor. The Contractor will mill up this defective asphalt at their expense and replace with asphalt from a later Lot. This asphalt will be analyzed in this later Lot and paid based on this later Lot's Composite Pay Factor with remarks identifying the area and replacement tonnage represented. For example, the replacement tonnage equaled 249 tons. The previous Lot submittal package would have a deduction of 249 tons handled in the remarks column and payment deducted at the previous Lot's composite pay factor and referenced to the new Lot Submittal Package in which the replacement tonnage was produced (See attachment 9-6 & 9-6a). The new Lot submittal package in the remarks column will clearly identify that 249 tons produced was needed to replace defective asphalt produced in Lot 3.

(D) Individual Quality Control Test

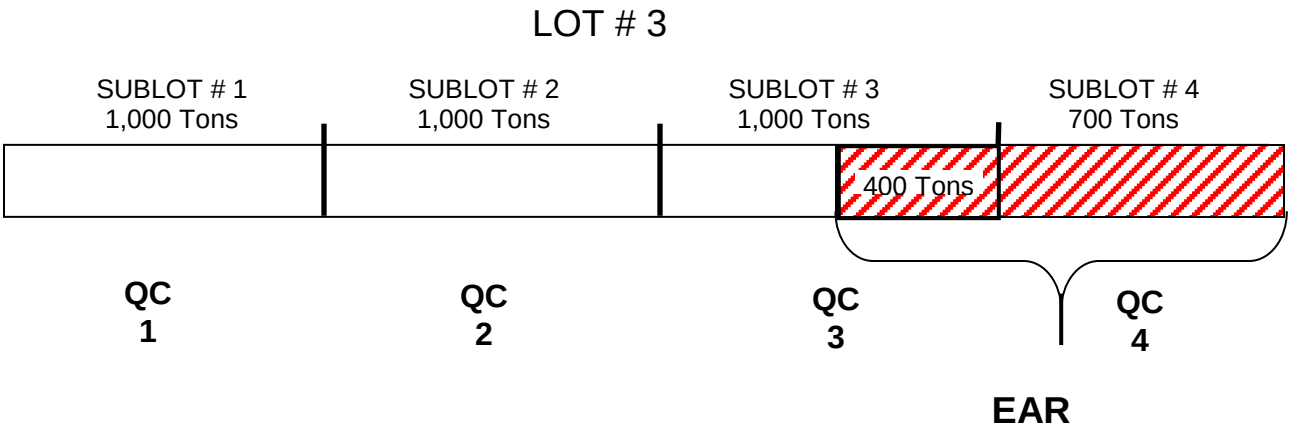
In some instances an individual QC test will bring the Composite Pay Factor down to either (<80 or ≥75) or <75. The original lot will be paid based on the outcome of the Composite Pay Factor. The Contractor may perform an EAR, if approved by the Project Administrator, to isolate the tonnage that needs removing and the effected material will be deducted from the original Lot Submittal Package with remarks explaining its

removal and replacement. The replacement material is to be paid in the Lot Submittal Package at the appropriate Composite Pay Factor for that lots production.

Note: If all material in a sublot is removed and replaced, the QC test for that sublot will be thrown out and the CPF will be based on the remaining QC test results. The VT is to compile a new CPF worksheet based on the remaining tests results, place it in the Lot Submittal Package and "VOID" the original CPF worksheet.

Note: When isolating the tonnage that requires removal, the Project Administrator must evaluate the material between the previous QC test and the QC test that caused the Lot to fall into the Low Pay Factor and evaluate the material placed after this QC test.

Example of documenting Low Pay Factor Material due to Quality Control Test Failure



The production was shut down at 700 tons production in Sublot #4 due to a QC failure. After an EAR was performed it was determined that 400 tons in Sublot #3 was also affected.

All of Sublot #4 was removed so use the remaining 3 QC test results to determine the CPF. The 3 QC test results represent the remainder of the Lot.

Total production for pay will be: 2,600 tons in Lot #3 based on the 3QC tests. The 1,100 tons (400 tons Sublot #3 & 700 tons in Sublot #4) will be

removed and replaced. The deduction will be handled in the remarks column of the Lot Submittal Package for Lot #3 with reference to the Lot Submittal Package where the replacement tonnage occurred. The replacement tonnage (1100 tons) will be paid at the Composite Pay Factor for the Lot that produced the replacement tonnage with explanation in the remarks column referencing this material to Lot #3.

9-13 DOCUMENTATION FOR MULTIPLE FINANCIAL IDENTIFICATION NUMBERS (FIN) UNDER ONE CONTRACT

All asphalt produced and accepted for a particular item shall be reported under the lead FIN project number (See exception below). The quantities for each FIN number will be determined by the Project Administrator, as the prorated amount determined from the Trns*port Estimated System (TES) pay item breakout. This will be done by taking the total tons shown on the TES for each FIN number and dividing it by the total tons for the contract, then multiplying this amount by the total tons placed. This shall be done **monthly** after the estimate cutoff day based on the Contractor's Certification of Quantities, if asphalt has been placed during the month and paid accordingly on the monthly progress estimate.

Note: This breakout is done monthly to ensure the fuel and bituminous adjustments are correctly adjusted for the period the asphalt was produced and accepted. The CPF breakout adjustments shall be done during the month when the Lot is closed out.

Example

Project "A" TES shows 10,000 tons
Project "B" TES shows 20,000 tons
Total TES for contract = 30,000 tons

Tons placed this month = 4,359 tons

Project "A" would be determined by dividing 10,000 by 30,000 and multiplying by 4,359.
10,000 ÷ 30,000 = .33 X 4,359 = 1,438.47 or 1,438.50 tons

Project "B" would be determined by dividing 20,000 by 30,000 and multiplying by 4,359.
20,000 ÷ 30,000 = .67 X 4,359 = 2,920.53 or 2,920.50 tons

Total = 1,438.5 + 2,920.5 = 4,359 tons.

1
2

Exception

When an item is shown only on one FIN number, those tons will be reported on that FIN number.

9-14 DOCUMENTATION FOR MULTIPLE FINANCIAL IDENTIFICATION NUMBERS (FIN) UNDER ONE CONTRACT INCLUDING NON-FEDERAL AID (NFA) PARTICIPATING

All asphalt produced and accepted for a particular item shall be reported under the lead FIN project number including NFA participating (See exception below). The quantities for each FIN number will be determined by the Project Administrator, as the prorated amount determined from the Trns*port Estimated System (TES) pay item breakout. This will be done by taking the total tons shown on the TES for each FIN number and dividing it by the total tons for the contract, then multiplying this amount by the total tons placed. This shall be done **monthly** after the estimate cutoff day based on the Contractor's Certification of Quantities, if asphalt has been placed during the month and paid accordingly on the monthly progress estimate.

Example

Project "A" TES shows 6,000 tons Federal Aid (FA) participating and 4,000 tons NFA participating
Project "B" TES shows 20,000 tons Federal Aid participating
Total TES for contract = 30,000 tons

Tons placed this month = 4,359 tons

Project "A" (FA) would be determined by dividing 6,000 (FA) by 30,000 and multiplying by 4,359.
(FA) 6,000 ÷ 30,000 = .20 X 4,359 = 871.80

Project "A" (NFA) would be determined by dividing 4,000 (NFA) by 30,000 and multiplying by 4,359.
(NFA) 4,000 ÷ 30,000 = .13 X 4,359 = 566.67 or 566.70 tons

Project "B" would be determined by dividing 20,000 by 30,000 and multiplying by 4,359.
(FA) 20,000 ÷ 30,000 = .67 X 4,359 = 2,920.53 or 2,920.50 tons

Total = 871.8 + 566.7 + 2,920.5 = 4,359 tons.

Exception

When an item is shown only on one FIN number, those tons will be reported on that FIN number.

9-15 CPF DOCUMENTATION FOR MULTIPLE (FIN) UNDER ONE CONTRACT

All CPF's for asphalt produced and accepted for a particular item shall be reported under the lead FIN project number (See exception below). The quantities for each FIN number will be determined by the Project Administrator, as the prorated amount determined from the Trns*port Estimated System (TES) pay item breakout. This will be done by taking the total tons shown on the TES for each FIN number and dividing it by the total tons for the contract, then multiplying this amount by the total tons placed for each CPF. This shall be done during the month the Lot is closed out and paid accordingly on the monthly progress estimate.

Example

Project "A" TES shows 10,000 tons
Project "B" TES shows 20,000 tons
Total TES for contract = 30,000 tons

Tons placed = 31,500 tons

CPF @ 105% = 8,000 tons
CPF @ 102% = 20,000 tons
CPF @ 98% = 3,500 tons

Project "A" would be determined by dividing 10,000 by 30,000 and multiplied by the total tons for each CPF.
10,000 ÷ 30,000 = .33
CPF @ 105% = 8,000 X .33 = 2,640.00 tons
CPF @ 102% = 20,000 X .33 = 6,600.00 tons
CPF @ 98% = 3,500 X .33 = 1,155.00

Project "B" would be determined by dividing 20,000 by 30,000 and multiplied by the total tons for each CPF.
20,000 ÷ 30,000 = .67
CPF @ 105% = 8,000 X .67 = 5,360.00 tons
CPF @ 102% = 20,000 X .67 = 13,400.00 tons

CPF @ 98% = 3,500 X .67 = 2,345.00 tons

Total CPF @ 105% = 2,640 + 5,360 = 8,000 tons
Total CPF @ 102% = 6,600 + 13,400 = 20,000 tons
Total CPF @ 98% = 1,155 + 2,345 = 3,500 tons

Note: This may be done on Federal Aid participating and Non Federal Aid participating projects. These pro-rated amounts shall be shown in the computation booklet along with the calculations.

Exception

When an item is shown only on one FIN number, those tons will be reported on that FIN number.

9-~~13~~16 CERTIFICATION OF QUANTITIES SUBMITTAL

The Contractor is required to fill out, sign and submit a ***Certification of Quantities*** form to the Project Administrator for payment. This form is furnished by the Department (Form No. 700-050-66 See Attachment 9-7) and is required to be turned in by the Contractor on a monthly basis. This form will show all the asphalt that was produced, ~~and~~ accepted ~~on the project~~ and will be reported on the lead FIN project number. ~~.~~ The Contractor will only show the tons that were accepted for ~~that~~the ~~particular project~~contract. The Department will apply the Composite Pay Factor adjustment as defined above, after the Lot is closed out and the Lot Submittal Package is received and verified. The Project Administrator will keep a running total of each item's tonnage for the period represented and compare these to the ***Certification***. Any discrepancies shall be resolved before authorizing payment on the progress estimate. These ***Certifications*** are to accompany the Final Estimate Package. The QC Manager needs to handle discrepancies appropriately. If a ***Certification of Quantities*** has been determined to show tonnage that wasn't accepted on the project, notify the QC Manager for justification and copy in the State Construction Office.

Note: In some instances, the certifications will not match the asphalt quantity payable in the end. This is due to removal and replacement for low Composite Pay Factors. This can be handled with notes on the summary, running totals and the Lot Submittal Packages. The Contractor shall not be required to revisit previous certifications due to removal and replacement.

LIST OF ATTACHMENTS FOLLOWING THIS CHAPTER