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CHAPTER 9
ASPHALTIC CONCRETE PRODUCTION,
OPTIONAL BASE,
AND PLACEMENT RECORDS

9.1   PURPOSE

The purpose of this procedure is Tto establish uniform and decisive instructions for keeping accurate records of final final pay records for aAsphalt pPay litems with liquid included, and Optional Base Pay Items.

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9.2   SCOPE

This procedure provides explanations of the forms used to document the quantities of bituminous material in the daily production of asphaltic concrete mixes for FDOT the Department's construction projects. 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 (CPF) adjustments.

9.3   ASPHALT PLANT OPERATIONS

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

All asphalt plants shall have eElectronic wWeight sSystems with aAutomatic tTicket Pprintouts.

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*):

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9.3.1 **Automatic batch plant with printout** (according tosee *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.**

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1 Include at a minimum, tThe following information shall be included on the
2 printed delivery tickets:

3 • Sequential load number

4 • Financial Project ID Number

5 • Date

6 • Name and location of plant

7 • Type of mix

8 • Place for hand recording mix temperature

9 • Truck number

10 • Gross, tare, and net weights (as applicable)

11 • Accumulated total of mix*
12 •
13 • Tons or Square Yards

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

19 9.4 AUTOMATED PLANTS WITH BATCH WEIGHT PRINTER
20   SYSTEM

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

25 9.4.1   Operating Without Storage Bins
26 There are two methods of maintaining proper pay records for this type
27 plant:

28 (A)   Accept tThe weight of asphalt shown on the automatically printed
29   tickets for the material used on the project is accepted.

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

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

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

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

19   (4)   Regardless of the method of documentation, tThe **original**
20   **weight tickets**, tapes, or digital records shall become the
21   property of the
22   Department. Regardless of the method of documentation.
23   including tThe records of all project mixes furnished during
24   production runs for the Department shall be included.

25   (5)   Preprinted tickets shall be bound in sets for each day's run.
26   A cover sheet shall be prepared for each set (See
27   ***Attachment 9-24a***) showing the financial project ID
28   number, pay item numbers, date, book number, design mix
29   number, type of material, ticket numbers included, and total
30   quantity. Material of different types, pay items, waste, or
31   private work for each day's run shall be identified. These
32   packets shall be available for review by the Department's
33   Verification Technician one day after production and shall
34   become part of the Lot Submittal Package. (See
35   ***aAttachments 9-55 & 9-45a thru 9-45k***d).

36   (6)   Unless the number of weight tickets justifies the use of the
37   computer to summarize the material, a manual summary

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1   shall be made by weight ticket totals in the final estimates
2   computation book.

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

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

10   (B)   For those plants with the automatic printer system, (if all
11   Department Department tickets used are properly numbered in
12   sequence by the plant inspector including all void and waste
13   tickets), it will be necessary for the contractor to furnish the
14   Department Department only those tickets showing Department
15   production when printed weights are accepted and converted to
16   volume for pay purposes.

17   **9.4.2.**   **9.4.2.**   **Operation with storage bins**
18
19   The record keeping procedures for this type of plant are similar to an
20   automated plant without a printer system, and using storage bins:

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

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

30 **9.5 REQUIREMENTS FOR ACCURACY CONDITIONS AND**
31 **TOLERANCE**

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

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

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

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

7   (D)   The maximum permissible deviation is 8 pounds per ton of load.
8   *(per Subarticle 320-2 of the Specifications)*

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9 9.6   METHOD OF MEASUREMENT

10 **9.6.1.**   **9.6.1.**   **Tonnage Items (Bit Included)**
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12 Automatic printer tickets showing weights along with the cover sheet, will
13 become part of the *Lot Submittal Package*, and shall be submitted with
14 the final estimate for each job on the contract.

15 **9.6.2.**   **Square Yard Items (Bit Included) (Optional Base Only)**
16

17 When the pavement is to be paid for on an area basis, the area to be
18 paid for shall be Plan Quantity subject to the provisions of *Subarticle 9-3*
19 *of the Standard Specifications*, omitting any areas not allowed for
20 payment under the provisions of *Subarticle 330-12* of the *Standard*
21 *Specifications* and adjusted as follows:

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

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

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

32 (CD) If plan quantity is changed, aAutomatic printer tickets showing
33   weights, field records, and measurements if plan quantity is

1   changed, shall be submitted with the final estimate for each job on
2   the contract along with the Lot submittal Package. (See
3   *Attachments 9-45 & 9-54a thru 9-45kd*).

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

7   **9.6.3. Surface Deficiencies –**
8   Deficiencies are determined by the Engineer with a 15-foot rolling
9   straightedge. Deviations from the straightedge in excess of 3/16 of an
10   inch shall be corrected in accordance with *Subarticle 330-132.3.45* of
11   the *Standard Specifications* unless such corrections are waived by the
12   District Construction Engineer (DCE). Deficient areas where the
13   Engineer has waived corrections will be deducted as follows:

14   (A)   **Friction Course: Tonnage Item**

15   (1)Square Yard Item: The distance used will be the length of 50
16   feet either side of the deficiency times the lane width. Lane width
17   is defined as the lane width shown on the typical section. This
18   area will be considered as 100% pay reduction and should be
19   reflected on the estimate as minus s.y. at full unit price.

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20   (2)   Tonnage Item: The Department will base the reduction on
21   the volume that would have been removed (100 feet plus
22   deficiency by lane width by layer thickness) multiplied by
23   the laboratory density for the mix and divided by 2,000
24   lbs/ton. Lane width is defined as the lane width shown on
25   the typical section.

26   **Tonnage Example:**   Deficiency Length = 5 feet
27   Layer thickness = 1.5"
28   Lab Density = 146.6

29   **Calculation:** (100 + 5) X 12 (lane width) X .125* X 146.6 ÷ 2,000
30   = 11.54 tons.

31   Deduction for Straightedge penalty = 11.50 tons

32   * 1.5" ÷ 12" = .125'
33
34   **Note:** This example may be used for material other than friction
35   course also.

The Department will base the reduction under Subarticle *330-12.5.2* of the *Specifications* when the standard reduction is based on removing a quantity of material that is 100 Foot by the lane width by layer thickness as determined through the following equation:

Quantity (tons) = t X Gmm X w X 0.24

When a deficiency length that is greater or less than 100 feet, the following equation will be used.

EXAMPLE:

The deficiency is ten (10) feet, the length will be 110 feet. The equation is as follows:
1.5 X 2.417 x 12' X 0.24 X 1.1 = 11.48 – 11.5 Tons Deduct
1.1 Ft = 110 ft. ÷ 100

If the deficiency is less than 100 foot, for example 85 feet?
1.5 X2.417 X 12 X 0.24 X 0.85 = 8.88 = 8.9 Tons Deduct
Where 0.85 = 85 ft ÷ 100 = 0.85

    (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 aAsphaltic cConcrete shall be reduced by the equivalent quantity of materials, which would have been removed and replaced if the correction had been made.

        (2)(2)   The reduction in tons [metric tons] is based on the volume, which would have been removedSame as in (A) above, and example. (100 feet plus deficiency X lane width X layer thickness) multiplied by the laboratory density for the mix and divided by 2,000 lbs/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*.

1 Should the rejected surface area not be corrected to the satisfaction of
2 the Project Engineer (PE) or Project Administrator (PA), no pay for the
3 rejected area should be made in accordance with **Subarticle 9-5.3** *of the*
4 *Standard Specifications.*

5 9.7   CORE OUT ADJUSTMENT (OPTIONAL BASE ONLY)

6 Adjustment according to Specifications and Special Provisions.

7   9.7.1   Square Yard Items (Bit Included) –
8

9 When the pavement is to be paid for on an area basis, the area to be
10 paid for shall be Plan Quantity subject to the provisions of **Subarticle 9-**
11 **3.2** *of the* **Standard** *Specifications*, and adjusted as follows:

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

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

20 **Example Core Out Adjustment**   Formatted: No underline

21   Type Limerock   7.00″
22
23   Plan Quantity   8,000 S.Y.'s

24   Specifications allow 1/2″ per Subarticle 285-7

25   Actual core out = 7.50″

26   Therefore = $\frac{7.50″ - 7.00″}{7.00″}$ = .071428571 X 100 = 7.1428571 % > 5%*
27
28
29   *Optional Base shall not exceed 105% of the surface area per **Article**
30   **285-8** *of*
31   *the* **Standard** *Specifications*

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

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

5 **Example Spread Rate Adjustment**

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6 Project Specified Spread Rate = 450 lbs/SY

7 Project Average Spread Rate = 469 lbs/SY

8
9

$$\frac{469 - 450}{450} = .042222222 \quad X\ 100 = 4.2\% < 5\%$$

10 Plan Quantity = 20,000 SY

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So, iIf 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.

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(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 AdministratorPA shall use reasonable investigation to see if plan quantity is in error and warrants an adjustment.

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(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* of the *Specifications* —— 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* of the *Specifications* 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

1 surface area, as specified in **Article 285-8**. (.See attached
2 example below.)
3 For Bituminous Adjustments on Composite base, refer to **Chapter**
4 **6, Section 6-8** of this manual. *Section 234* of the *Specifications,*
5 *Basis of Payment*, refers to *Section 334* of the *Specifications,*
6 which determines requirements of mixture, and CPF.

7 **Example : Thickness Adjustment**

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

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

11 43.3* X inches X Gmm**.

12 *43.3 is a constant derived by the State Materials Office.

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

16 43.3 X 4 X 2.358 = 408 lbs/sy

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

19 ***Convert lbs to inches based on reverse formula in *Article 234-9.1*
20 426 ÷ 43.3 ÷ 2.358 = 4.17"

21 4.25" (Limerock) + 4.17" (Asphalt) = 8.42" average thickness for
22 composite base.

23 Thickness adjustment = $\dfrac{(8.42" - 8.00")}{8.00"}$ = .053**** (>5%) X Surface Area
24

25 **** Pay will be limited to a maximum of 105% X Surface Area
26 Therefore: Thickness Adjustment = 0.05 X Surface Area
27

28 **9.8   SALVAGE OF MATERIALS**

1 When material is salvaged from the project and delivered to a Maintenance
2 Yard, a signed *"Receipt of Goods from Vendor"* must be submitted with the
3 final estimate. The "vendor" is actually the Construction Office from which the
4 materials were received and the vendor number is the Financial Project ID
5 Number. (*See Attachment 9-23*).

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6 9.9 SUPERIOR PERFORMING ASPHALT PAVEMENT
7   (SUPERPAVE)

8 Description (*Section 334* of the ~~Standard~~ *Specifications*) (Each contract shall
9 be reviewed for the governing Specification)

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

13 ~~They~~ Superpave Design Mixes shall meet the requirements of *Section 320* of
14 the ~~Standard~~ *Specifications* for plant and equipment and the general
15 construction requirements of *Section 330 of the Specifications*, with the
16 exception of the density requirements as per *Subarticle 334-5 of the*
17 *Specifications*.

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

23   9.9.1 Compensation

24 Tonnage Item: Compensation shall be by Aautomatic printer tickets
25 showing weights, along with the *Lot Submittal Package* shall be
26 submitted with the Final Estimate for each job on the contract.

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27 9-10 ASPHALTIC CONCRETE FRICTION COURSE
28   (105% ADJUSTMENT)

29   9-10.1   Thickness of Friction Courses (*Article 337-9*)

30 The thickness of the friction courses will be plan thickness as shown in
31 the cContract documents. For construction purposes, the plan thickness
32 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. 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/yd². (*See Attachment 9-68*).

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Note: 40.5 lbs/yd² is a constant derived by the State Materials Office.

Note: Per *Specification 337-11*, the pay quantity of Friction Course will be based on the average spread rate for the project, limited to 105% of the spread rate set by the Engineer in accordance with *337-8* of the *Specifications*. However, under *Specification 337-8*; for FC12.5, FC-9.5 and FC-5; it states that the thickness of friction course layer will be the plan thickness as shown in the contract documents, and that for construction purposes, the plan thickness will be converted to spread rate.

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For construction purposes, the plan thickness is converted to an average spread rate and documented. However, for pay purposes, the average of the two design mixes should be taken and then multiplied by 1.05% or 5% to come up with the maximum pay limited to 105%.

Example: Design mix 1 = 80#/SY; Design Mix 2 = 82#/SY
Average Design Mix = 81#/SY
81#/SY X 1.05 = 85#/SY Maximum thickness that can be paid.

9-10.3   Spread Rate for FC-9.5 and FC-12.5 (*Article 337-8*)

Original plan quantities will be based on a spread rate of 110 Lbs/Yd²-in. as defined in *Article 334-1* of the *Specifications1*. Construction spread rates will be calculated by multiplying the plan thickness by the maximum specific gravity of the mix being placed and then multiplied by 43.3 Lbs/Yd². (*See Attachment 9-79*).

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Note: 43.3 Lbs/Yd² 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, as determined in accordance with *Article 320-2* of the *Specifications* (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

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1 of 105% of the construction spread rate calculated by the above formulas
2 in accordance with ***Article 337-9*** of the ***Specifications***.

3 **Note:** The spread rate should be monitored during production and
4 placement to ensure the Contractor is within 5 percent. After all asphalt
5 for friction course has been placed and the average spread rate exceeds
6 5 percent as allowed by the ***Specifications***, a deduction for the overage
7 will be applied at the original bid price. A note will be added in remarks
8 explaining that this deduction has been applied due to exceeding the
9 spread rate by more than 5 percent allowed by the Specifications.

10 ## 9-11 MISCELLANEOUS ASPHALT

11 ### 9-11.1   Method of Measurement (*Article 339-7*)

12 The quantity to be paid for will be the weight in tons determined by
13 weighing in trucks on scales meeting the requirements of ***Article 320-2.2***
14 of the or from the total weight of batches placed in trucks as determined
15 by an automatic printer system meeting the requirements of ***Article 320-***
16 ***4*** of the ***Specifications***. The pay quantity will be based on the average
17 spread rate or dimensions for the project, limited to a maximum of 105%.
18 For calculation, a weight of 100 lbs/yd² per inch thickness of asphalt will
19 be used.

20 ### 9-11.2   Basis of Payment (*Article 339-8*)

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

25 **Example**

26 Original Square Yards = 800
27 Original Tons = 80.00
28 Final Square Yards = 800
29 Final Tons = 90.50
30 90.50 X 2,000 = 181,000 LBS.
31 181,000 Lbs. ÷ 800 S.Y. = 226.25 Lbs. /S.Y.
32 226.25 Lbs. ÷ *200 Lbs. X 100 = 113 %
33 113 % > 105 %
34 200 Lbs. /S.Y. X 1.05 = 210 Lbs. /S.Y. maximum Lbs. Per S.Y.
35 payable

1   210 Lbs. X 800 S.Y.'s ÷ 2,000 = 84 Tons Final Pay Quantity

2   * 2" X 100 Lbs/S.Y. = 200 Lbs/yd²

3

4   **9-12 CONTRACTOR'S QUALITY CONTROL (CQC)**

5   **9-12.1   ——Contractor's Responsibility for all Asphalt**
6   **Produced and Accepted**

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7   The Contractor or Sub-Contractor is will be responsible for all asphalt
8   produced and accepted. The Contractor is responsible for quality control
9   at the plant and on the roadway. The Contractor or Sub-Contractor will
10   run asphalt content and gradation tests at the plant and density tests on
11   the roadway. The contractor or Sub-Contractor is responsible for
12   determining quantities of asphalt produced and recording tack
13   measurements placed on the roadway. The Department has developed a
14   Powerpoint presentation labeled "**Asphalt Construction Information**
15   **for CQC Specifications**". It is recommended that Project Administrators
16   inform Contractors and Sub-Contractors at the Preconstruction
17   Conference that this presentation is available. for them to view along
18   withIt is recommended that all personnel responsible for asphalt
19   production, reporting, and documentation view the presentation. It is also
20   recommended that all Departmental Department personnel responsible
21   for asphalt inspection view this presentation. The presentation is
22   available for viewing or downloading at the following URL:
23   **http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qual**
24   **itycontrol/guidelines/contractor/asphaltoutline/asphaltconstructioni**
25   **nfo.pdf**

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26   **9-12.2   Quality Control Documentation Verification**

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

34   When an error is detected that will require correcting reports for more
35   than one (1) Lot, the correction will be shown on the latest report for that
36   specific item., and rReference will be made to the report with the
37   corrected information. The report where the error first occurred will show

1 the correction by striking through the error, and writeing the correct
2 information, with place initials and date. Reports following the error will
3 not require correction.

4 **9-12.3**   **Resolution Reports for A.C. Content, Gradation and**
5   **Density Cores**

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

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

13 If the Resolution Technician's results favor the Verification Technician's
14 results, then use the Resolution Technician's results.
15
16 **Note:** The cost of the resolution testing, if performed by the Department
17 Department and which favors the results of the Verification Technicians
18 results, will be deducted from the Contractor on the next progress
19 estimate (*See attachment 9-911a & 9-191b*). The cost of the testing can
20 be found at the following URL.
    http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycon
    trol/qcindex.htm

21 **9-12.4**   **Composite Pay Factor - Excel Spreadsheet**

22 The Verification Technician is responsible for entering the CQC
23 Technician's test results in the Composite Pay Factor (CPF) spreadsheet
24 to calculate the pay adjustments. These entries shall be done at the
25 closing of a Lot during the life of the contract. It is the responsibility of the
26 Project Engineer or designee to verify that the test results entered by the
27 Verification Technician are correct. Also, allAll reports shall be affixed to
28 the Composite Pay FactorCPF spreadsheet representing that Lot. See
29 example of Lot Submittal Package (*See Attachment No. 99-45 and 99-*
30 *45a thru 99-45kd*). These reports along with the asphalt ticket packets
31 shall be collected two working days after the closing of a Lot. The *Lot*
32 *Submittal Package* shall be submitted with the Final Estimates
33 Package.

34 **9-12.5**   **Composite Pay Factor Adjustments**

1   All Contracts shall have a unit price adjustment calculated. The
2   eEngineer or designee shall calculate the unit price adjustment and enter
3   the revised unit price adjustment on the monthly/progress estimate along
4   with the tons represented by each lot produced.

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

7   **Example:** Lots 2, 3, and 5 were at 101 percent: show the tons
8   represented by these lots on the monthly/progress at the revised unit
9   price for a 101 per cent adjustment and place a brief comment)
10 explaining which lots received the adjustment(s). Composite Pay
11 FactorCPF adjustments in Sitemanager will be handled by adjusting the
12 unit price by the variance percent of the Composite Pay FactorCPF. (*See*
13 *Attachment No 9-910a & 9-910b*). Also place a new **Computation**
14 **Sheet** in the **Computation Booklet** or break out the percentage
15 adjustments on the original **Computation Sheet** for the adjusted item(s)
16 (*See Attachment No. 9-34*).

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

19 **9-12.6   Low Pay Factor Material Documentation**

20 (A)   Composite Pay Factors < 80 or ≥ 75

21   (1)   Remove and replace the tonnage in thisthe Lot and pay the
22   Composite Pay FactorCPF represented by the replacement
23   Lot. The original *Lot Submittal Package* will be explained
                with remarks as "No Pay".
25   (2)   Obtain an Engineering Analysis, if agreed on to by the
26   Project Administrator, to determine if material may remain
27   in place. If material is to remain in place and if so, pay the
28   original Composite Pay FactorCPF. If the material is to be
29   removed and replaced, or remove and replace and pay the
30   Composite Pay FactorCPF represented by the replacement
31   Lot. The original *Lot Submittal Package* will be explained
32   with remarks as "No Pay" with reference to the new
33   replacement Lot Submittal Package.

34   **Note:** The Engineer, at his/her sole option, may perform an
35   evaluation and leave this material in place, apply the Composite

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1 Pay FactorCPF for this Lot, or have this material removed and
2 replaced as identified in *No. 1* above.

3 (B) Composite Pay Factor < 75

4 Remove and replace the tonnage in this Lot and pay the
5 Composite Pay FactorCPF represented by the replacement Lot.
6 The original *Lot Submittal Package* will be explained with
7 remarks as "No Pay".

8 (C) Independent Verification Test (VT) Failure

9 This shall be handled as stated above. or iIn some instances, the
10 Project Manager/Administrator will require removal and
11 replacement of tonnage within a Lot. For this caseIf removal and
12 replacement is required, **DO NOT CORRECT THE REPORTS.**
13 tThe reports themselves are reportingshould reflect what actually
14 happened. This defective asphalt may be a partial sublot, an entire
15 sublot, or even an entire Lot. The Contractor's Quality Control
16 CQC Technician should catch identify thies problem before an
17 entire Lot is placed. The defective asphalt will then be milled and
18 replaced with asphalt within another Lot. This is documented in
19 the "Remarks" area. The Technician will document the tonnage of
20 "acceptable asphalt" that is replacing the defective one that was
21 previously placed. The previous report number and date will also
22 be identified in the "Remarks". The new asphalt will be analyzed in
23 the new Lot and paid for accordingly. The previous *Lot Submittal*
24 *Package* will also be identified in the "Remarks" area showing a
25 deduction of the asphalt in this Lot, and it will be referenced to the
26 new *Lot Submittal Package* and to where this material was
27 actually produced.

Example

29 Lot 3 had has defective asphalt that for which the Project
30 AdministratorPA, after concurrence from the District
31 Construction/Bituminous Engineer, required removal and
32 replacement. The Project Manager will identifyies the area in
33 writing to the Contractor. The Contractor will mill up this defective
34 asphalt at their expense and replace with asphalt from a later Lot.
35 This asphalt will be analyzed in this later Lot and be paid based on
36 this later Lot's Composite Pay FactorCPF with remarks identifying
37 the area and replacement tonnage represented. For example, the
38 replacement tonnage equalesd 249 tons. The previous *Lot*

1   ***submittal package*** ~~would~~ will have a deduction of 249 tons
2   handled in the remarks column and payment deducted at the
3   previous Lot's ~~composite pay factor~~CPF and referenced to the
4   new ***Lot Submittal Package*** in which the replacement tonnage

5   was produced ~~(See attachment 9-6 & 9-6a)~~. The new Lot submittal
6   package ~~in the remarks column~~ will clearly identify that 249 tons
7   produced was needed to replace defective asphalt produced in Lot
8   3, with references and remarks.~~.~~

9   (D)   Individual Quality Control Test

10   In some instances an individual QC test will bring the ~~Composite~~
11   ~~Pay Factor~~CPF down to either (<80 or ≥75) or <75. The original
12   lot ~~will~~ is then ~~be~~ paid based on the outcome of the ~~Composite~~
13   ~~Pay Factor~~CPF. The Contractor may perform an Engineering
14   Analysis Report (EAR), if approved by the ~~Project~~
15   ~~Administrator~~PA, to isolate the tonnage that needs to be
16   remov~~ined~~ed~~g~~ and the effected material will be deducted from the
17   original Lot Submittal Package with remarks explaining its removal
18   and replacement. The replacement material is to be paid in the
19   Lot Submittal Package at the appropriate ~~Composite Pay~~
20   ~~Factor~~CPF for that lots production.

21   **Note:** If all material in a sublot is removed and replaced, the QC
22   test for that sublot will be thrown out and the CPF will be based on
23   the remaining QC test results. The VT is to compile a new CPF
24   worksheet based on the remaining tests results, place it in the ***Lot***

25   ***Submittal Package*** and "VOID" the original CPF worksheet.

26   **Note:** When isolating ~~the~~ tonnage where removal is required ~~that~~
27   ~~requires removal~~, the ~~Project Administrator~~PA must evaluate the
28   material between the previous QC test and the QC test that
29   caused the Lot to fall into the Low Pay Factor and evaluate the
30   material placed after ~~this~~ previous or current QC test.

31   **Example of documenting Low Pay Factor Material due to Quality**

32   **Control Test Failure**

34   ## LOT # 3

SUBLOT # 1	SUBLOT # 2	SUBLOT # 3	SUBLOT # 4
1,000 Tons	1,000 Tons	1,000 Tons	700 Tons

400 Tons

Asphaltic Concrete, Production and Placement Record   9-18

QC	QC	QC	QC
1	2	3	4

EAR

2
4
6
8
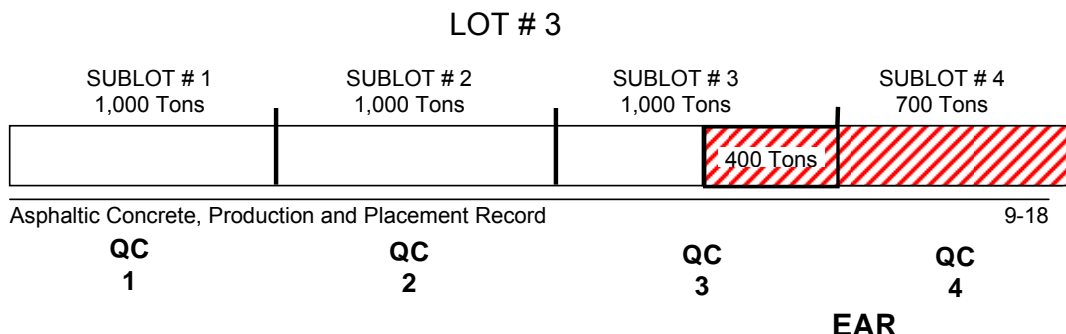
9 The production was shut down at 700 tons production in Sublot #4
10 due to a QC failure. After an EAR was performed it was
11 determined that 400 tons in Sublot #3 was also affected.

12 All of Sublot #4 was removed so usetherefore the remaining 3 QC
13 test results are utilized to determine the CPF. The 3 QC test
14 results represent the remainder of the Lot.

15 Total production for pay will be: 2,600 tons in Lot #3 based on the
16 3QC tests. The 1,100 tons (400 tons Sublot #3 & 700 tons in
17 Sublot #4) will be removed and replaced. The deduction will be
18 handled in the remarks column of the *Lot Submittal Package* for
19 Lot #3 with reference to the *Lot Submittal Package* where the
20 replacement tonnage occurred. The replacement tonnage (1100
21 tons) will be paid at the Composite Pay FactorCPF for the Lot that
22 produced the replacement tonnage with explanation in the
23 remarks column referencing this material to Lot #3.
24

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25 **9-13 DOCUMENTATION FOR MULTIPLE FINANCIAL**
26 **IDENTIFICATION NUMBERS (FIN) UNDER ONE**
27 **CONTRACT**

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

1
2
3
4
5 **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.

6 Example

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

10 Tons placed this month = 4,359 tons

11 Project "A" would be determined by dividing 10,000 by 30,000 and
12 multiplying by 4,359.
13 10,000 ÷ 30,000 = .33 X 4,359 = 1,438.47 or 1,438.50 tons

14 Project "B" would be determined by dividing 20,000 by 30,000 and
15 multiplying by 4,359.
16 20,000 ÷ 30,000 = .67 X 4,359 = 2,920.53 or 2,920.50 tons

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

18 Exception

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

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

24 All asphalt produced and accepted for a particular item shall be
25 reported under the lead FIN project number including NFA
26 participating (See exception below). The quantities for each FIN
27 number will beare determined by the Project Administrator, as the
28 prorated amount is determined from the Trns*port Estimated
29 System (TES) pay item breakout. This will be done by taking the
30 total tons shown on the TES for each FIN number and dividing it
31 by the total tons for the contract, then multiplying this amount by
32 the total tons placed. This shall be done **monthly** after the
33 estimate cutoff day based on the Contractor's Certification of

1   Quantities, if asphalt has been placed during the month and paid
2   accordingly on the monthly progress estimate.

3   **Example**

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

8   Tons placed this month = 4,359 tons

9   Project "A" (FA) would be determined by dividing 6,000 (FA) by
10 30,000 and multiplying by 4,359.
11 (FA) 6,000 ÷ 30,000 = .20 X 4,359 = 871.80

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

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

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

19 **Exception**

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

22 **9-15 CPF DOCUMENTATION FOR MULTIPLE (FIN) UNDER ONE**
23 **CONTRACT**

24 All CPF's for asphalt produced and accepted for a particular item
25 shall be reported under the lead FIN project number (See
26 exception below). The quantities for each FIN number will be
27 determined by the Project Administrator, as the prorated amount
28 determined from the Trns*port Estimated System (TES) pay item
29 breakout. This will be done by taking the total tons shown on the
30 TES for each FIN number and dividing it by the total tons for the
31 contract, then multiplying this amount by the total tons placed for

1　　　each CPF. This shall be done during the month the Lot is closed
2　　　out and paid accordingly on the monthly progress estimate.

3　　　**Example**　　　　　　　　　　　　　　　　　　Formatted: No underline

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

7　　　Tons placed = 31,500 tons*

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

11　　Project "A" would beis determined by dividing 10,000 by 30,000
12　　and multiplied by the total tons for each CPF.
13　　10,000 ÷ 30,000 = .33
14　　CPF @ 105% = 8,000 X .33 = 2,640.00 tons
15　　CPF @ 102% = 20,000 X .33 = 6,600.00 tons
16　　CPF @ 98% = 3,500 X .33 = 1,155.00

17　　Project "B" would beis determined by dividing 20,000 by 30,000
18　　and multiplied by the total tons for each CPF.
19　　20,000 ÷ 30,000 = .67
20　　CPF @ 105% = 8,000 X .67 = 5,360.00 tons
21　　CPF @ 102% = 20,000 X .67 = 13,400.00 tons
22　　CPF @ 98% = 3,500 X .67 = 2,345.00 tons
23
24　　**Total CPF @ 105%** = 2,640 + 5,360 = 8,000 tons
25　　**Total CPF @ 102%** = 6,600 + 13,400 = 20,000 tons
26　　**Total CPF @ 98%** = 1,155 + 2,345 = 3,500 tons

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

30　　**Note:** for this example, 31.500 Tons placed by Contractor is 105%
31　　maximum of the original Contract quantity, which is allowed per
32　　Specifications. See next example for the maximum pay.

33　　**Exception**

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

9-16 OVERALL SPREAD RATE ADJUSTMENT FOR MULTIPLE
3
4   (FIN) UNDER ONE CONTRACT (105% MAX PAY)

5   This shows an example of a105% Overall Adjustment Spread Rate on a multi
6   fin project, how to calculate and separate quantities under the two projects.

7   Example:

8   Project "A" TES shows 13,754.2 Tons and 172,559 SY
9
10   Project "B" TES shows 91.1 Tons and 1,063 SY
11   Total TES for Contract = 13,845.3 Tons
12   Total TES for Contract = 173,622 SY Area
13   Design Spread Rate = 167.3 Lbs/SY
14
15   The Specification shows that the Friction Course gets a maximum of   Formatted: Indent: First line: 0"
16   105% from design spread rate which = 175.7 Lbs/SY (max. allowed)

17   Project "A" overall adjustment would be determined by:
18   (13,754.2 ÷13,845.3) = 0.99 out of total Contract, and
19   Project "B" overall adjustment would be determined by:
20   (91.1   ÷13,845.3) = 0.01 out of total Contract

21   However, 15,281.2 Tons is are the total Tons placed by Contractor on
22   the road. ,
23   But we need to calculateHowever the maximum Tons that could be placed
24   should be calculated, as follows:

25   (175.7 Lbs/SY X 173,622 SY) ÷ 2000 Lbs/Tons = 15,252.7 Tons
26   So 15,252.7 Tons is maximum that could be placed

27   Now we can calculateThen the total deduction and the deduction on each
28   project (because we couldcan be calculated. The Department can only
29   pay up to 105% maximum. and sSince the contractor placed more
30   tonnage than what the maximum tonnage should be, there will be a
31   deduction)., and thisThe deduction is done as follows:

32   15,252.7 Tons – 15,281.2 Tons = - 28.5 Tons Total deduct

33   Therefore:

1   For Project "A" -28.5 X 0.99 = -28.2 Tons is deducted– and
2   For project "B" -28.5 X 0.01 = - 0.3 Tons is deducted.

3   The deduction under each project is from the original contract amount
4   and unit price at 100%.

5   **Also,** if you hadthere is a CPF Adjustment, you wouldthere is either a
6   deduction or addition (depending on the factor) from the last CPF
7   adjustment. Example: if the CPF =102% (or 0.02) and the last lot was
8   4000 Tons; unit price = $ 5.00;

9   0.02 X $ 5.00 = + $ 0.10   (New Unit Price)

10   For project A: + $ 0.10 X - 28.2 = - $ 2.82 deduct, and
11   For project B: + $ 0.10 X   -0.3 = - $ 0.03 deduct

12   ## 9-17 CERTIFICATION OF QUANTITIES SUBMITTAL

13   The Contractor is required to fill out, sign and submit a ***Certification of***
14   ***Quantities*** (Asphalt and Bituminous Materials, Conventional Projects)
15   form No. 700-050-66 to the Project AdministratorPA for payment. This
16   form is furnished by the Department Department (Form No. 700-050-66
17   (***See Attachment 9-75***). and is required to be turned in by the Contractor
18   on a monthly basis. This form will shows all the asphalt that was
19   produced, accepted and will be reported on the lead FIN project number.
20   The Contractor will only shows the tons that were accepted for the
21   Contract. The Department Department will apply the Composite Pay
22   FactorCPF adjustment as defined above, after the Lot is closed out, and
23   the Lot Submittal Package is received and verified. The Project
24   Administrator will shall keep a running total of each item's tonnage for the
25   period represented and compare these to the ***Certification***. Any
26   discrepancies shall be resolved before authorizing payment on the
27   progress estimate. These ***Certifications*** are to accompany the ***Final***
28   ***Estimate Package***. The QC Manager needs toshall handle
29   discrepancies appropriately. If a ***Certification of Quantities*** has been
30   determined to show tonnage that wasn't accepted on the project, notify
31   the QC Manager must be notified for justification. and A copy of the
32   submittal should be provided to the in the State Construction Office.

33   **Note:** In some instances, the certifications will not match the
34   asphalt quantity payable in at the end of the project. This is due to
35   removal and replacement for low Composite Pay FactorsCPFs.
36   This can be handled withWhen this occurs, there should be notes

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1 on the summary, running totals and on the ***Lot Submittal***
2 ***Packages***. The Contractor shall not be required to revisit adjust
3 previous certifications due to removal and replacement.

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4 LIST OF ATTACHMENTS FOLLOWING THIS CHAPTER

Eagle Asphalt Company
Somewhere FL
1-800-555-5555

SOLD TO:

FIN. PROJECT ID: *123456-1-52-01*

DESIGN NO.: *QA-96-1234*   TICKET NO.: *1111*

ACCOUNT	MIX	TRUCK	TONS
15	S-I	573	22.46

Tons

GROSS: *35.75*

TARE   :   *13.29*

NET   :   *22.46*

MIX TEMPERATURE : 325º

LOAD NO.: 10

ACC. TOTAL: 196.11 TONS

DATE/TIME: 07/01/06 12:00 PM   _____

Received by

ATTACHMENT 9-2
RECEIPT/INVOICE FOR EXCESS MATERIALS DELIVERED TO WAREHOUSE

```
MSIB034                    FLORIDA DEPARTMENT OF TRANSPORTATION              08/28/98         10.55.24
TCKT      :                     RECIEPT OF GOODS FROM VENDOR                                  08/28/98
WHSE      :                08/28/98   TYPE:   REGULAR RECIPT STAT:
VENDOR #  :                                                  P. O. :
NAME      :

                                                      ***** TOTAL COST *****
                                                              .000

          COMM          DESCRIPTION                  QTY RECVD   UM    UNIT PRICE
                                                                 RE

RESERVED:           .000      AVAILABLE:        .000     TOT ONHAND :      .000
BACKORDER:          .000                                 WHSE ORDER :      .000


RECVD BY :                                                  VERIFIED BY :


PF-1-MENU,   PF-2-VERIFY,  PF5-RECEIVE,  PF-6-ANOTHER,        PF-8-ANOTHER (SAME VEND #  & PO #)
```

ATTACHMENT 9-3
COMPUTATION SHEET FOR SUPERPAVE ASPHALTIC CONCRETE (TRAFFIC B)

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION
WEIGHT MEASURE OR LIQUID VOLUME COMPUTATIONS

Page No. 36-a

FORM 700-050-06
CONSTRUCTION
06/02

PAY ITEM NO. 334-1-12A

PAY ITEM DESCRIPTION Superpave Asphaltic Conc. (Traffic B)

TYPE CONSTRUCTION OR STATION TO STATION	TYPE OF MATERIAL	% SPREAD	QUANTITY BY SPREAD RATE LENGTH	WIDTH	AREA MEASURE	DESIGN ORIGINAL WEIGHT MEASURE #N/A	VOLUME MEASURE #N/A	REMARKS	WEIGHT MEASURE #N/A	VOLUME MEASURE #N/A	CONSTRUCTION FINAL OVER/UNDER RUN	REFERENCE	REMARKS
						-0-			6,000.0				See Superpave
													Asphalt Folder
													Lot Submittal
													Package for Lots
													2, 3, & 5.
						-0-		< PAGE TOTAL >	6,000.00				
						-0-		< PROJECT GRAND TOTAL >	6,000.06				

If the above item is under the Plan Quantity Concept then the block below must be appropriately filled out.

Plan Quantity Concept Signature Block
<u>Design Engineers Responsible for Calculations:</u> All support measurements and computations have been included for this <u>Plan Quantity item</u>

Signature: _____ Print Name: _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN See page 36 in the comp. book for explanation of over/underrun of the original item.

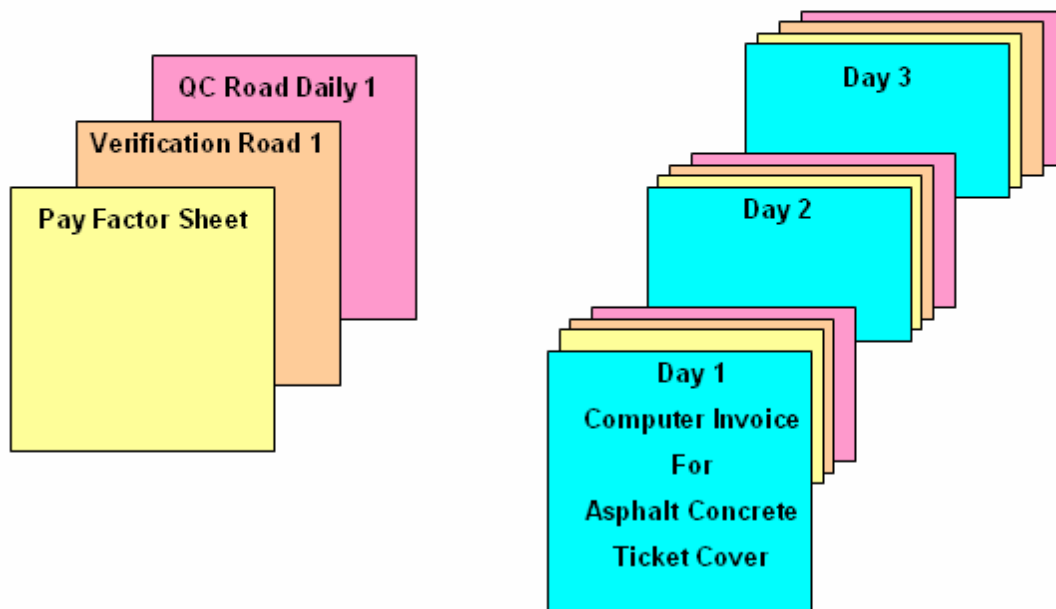Asphaltic Concrete, Production and Placement Record

Page 9-26

ATTACHMENT 9-4
LOT SUBMITTAL PACKAGE

Lot Submittal Package

**To be compiled by <u>Verification Technician</u> at the end
Of each lot and Submitted to the Engineer**

QC Road Daily 1

Verification Road 1

Pay Factor Sheet

Day 3

Day 2

Day 1
Computer Invoice
For
Asphalt Concrete
Ticket Cover

ATTACHMENT 9-4a
COMPUTER INVOICES FOR ASPHALTIC CONCRETE

700-050-69
DEPARTMENT OF TRANSPORTATION
CONSTRUCTION
COMPUTER SUMMARY OF QUANTITIES FOR ASPHALTIC CONCRETE
05/04

Fin. Project ID: _____ Date: _____

Design Mix #: _____ Type of Material: _____

Total No. of Invoices for this bundle: _____ Total No. of Tons/MTs for this bundle: _____

Basis of Payment

Sample No.:	Pay Item No.:	Lot:	Tons / MT:	Waste:
Sample No.:	Pay Item No.:	Lot:	Tons / MT:	Waste:
Sample No.:	Pay Item No.:	Lot:	Tons / MT:	Waste:
Sample No.:	Pay Item No.:	Lot:	Tons / MT:	Waste:

Total: _____ Total: _____

Plant Inspector: _____

Remarks: _____
_____
_____

MATERIAL DISPOSITION
Rejected: _____
Waste: _____
No Pay: _____
Total @ No Pay: _____

ATTACHMENT 9-4b
PAY FACTOR WORKSHEET

675-030-21
MATERIALS
07/02

Florida Department of Transportation
Asphalt Plant - Lot Verification and Pay Factor Worksheet for Superpave Mixtures

Project Information

Specification Version
07/01/02

Contractor: **ABC Paving Company**		Fin. Project ID: **123456-1-52-01**	
Mix Type: **9.5**	Design No.: **02-1324A**	Plant No.: **A0987**	Reported By: **A123-45-678**
LOT #: **4**	Lot Size: **2000**	Tons/sublot: **500**	Date Reported: **6/18/2002**
Verification sublot: **3**	Start Date: **6/14**	End Date: **6/16**	Tons in this lot requiring no density: **0** **0.0%**

Proj. Description **Main Street to Dead End Road**

Lot Verification

Property	P_{-8}	P_{-200}	P_b	Rice G_{mm}	Lab G_{mb}
QC	55.52	4.86	7.33	2.311	2.245
Verification	56.10	5.02	7.35	2.308	2.247
Tolerance	IN	IN	IN	IN	IN
Property	Core 1 G_{mb}	Core 2 G_{mb}	Core 3 G_{mb}	Core 4 G_{mb}	Core 5 G_{mb}
QC	2.158	2.178	2.168	2.163	2.145
Verification	2.158	2.178	2.168	2.163	2.145
Tolerance	IN	IN	IN	IN	IN

Lot Pay Factor Calculations

Property	P_{-8}	P_{-200}	P_b	Va	Density
Sublot 1	57.46	5.02	7.34	2.20	93.50
Sublot 2	55.52	4.86	7.33	2.90	93.40
Sublot 3	56.35	5.21	7.25	2.30	93.60
Sublot 4	57.15	5.18	7.35	3.00	93.50
Sublot 5					
Sublot 6					
Target	**57.0**	**5.4**	**7.10**	**4.0**	**93.0**
n=	4.00	4.00	4.00	4.00	4.00
Mean	**56.62**	**5.07**	**7.32**	**2.60**	**93.50**
SD	0.870	0.162	0.046	0.408	0.082
Qu	4.00	8.23	3.94	6.86	18.37
Pu	100.00	100.00	100.00	100.00	100.00
Ql	3.13	4.15	13.56	0.00	18.37
Pl	100.00	100.00	100.00	50.00	100.00
PWL	100.00	100.00	100.00	50.00	100.00
PF	**1.05**	**1.05**	**1.05**	**0.80**	**1.05**

Note: Sublot values which appear in RED are outside of the Master Production Range as specified in Table 334-5, refer to 334-7.	Composite Pay Factor **0.99**

Va PF is below 0.90, see 334-9

Comments. Adjusted A/C content within allowable tolerance to bring Va up.

ATTACHMENT 9-4c
ASPHALT ROADWAY – VERIFICATION REPORT

675-030-21
MATERIALS
04/05

State Of Florida Department Of Transportation

Asphalt Roadway - Verification Report

Page No. __1__ of __1__

Fin. Project ID: **123456-1-52-01**   Material No.: **123-D**   Type of Mix: **9.5mm**   Mix Design No.: **SP-02-1324A**

Intended use: **Structural**   Plant No.: **A0123**   Lot No.: **4**   Intended Lot Size: **2000**   Lot Quantity: **2000**

Verification of Spread Rate / Verification Results Y/N

Date	Sub.	Sample No.:	L / C	Station To Station		Loads	Linear Ft.	Width	SY / SM	Tons	Spread	
6/14/2002	1	P1001V	R-1	1466+05	1482+44	5	1639.20	12.0	2185.60	104.9	95.99	Y
"	2	"	L1	1529+85	1546+18	5	1633.00	12.0	2177.33	104.3	95.81	Y
"	3	"	L1	1496+76	1479+95	5	1680.30	12.0	2240.40	105.39	94.08	Y
6/16/2002	4	P1002V	R2	1457+50	1546+20	30	8670.00	12.0	11560.00	610	105.54	Y

Verification of Tack

Record Of Bituminous Materials

Verification of Established Temperature __300__

Verification Results Y/N

Record Of Bituminous Materials					Date	Sub.	Load No.	Temp.	
Date	6/14/2002	6/16/2002			6/14/2002	1	3	303	Y
Sublot	1-3	4			6/14/2002	1	10	302	Y
Pay Item No.	300-1-3	300-1-3			6/14/2002	2	15	300	Y
Grade Of Asphalt	RS-1	RS-1			6/14/2002	3	20	306	Y
FDOT Calibration Tank No.	27665	27665			6/16/2002	4	18	297	Y
Beginning Inch / MM	10/2	11/3							
Gallons / Liters	1353	1331							
Ending Inch / MM	33/11	36/9							
Gallons / Liters	692	602							
Time of Day after Unloading	4:00 AM/PM	3:00 AM/PM	AM/PM	AM/PM					
Temperature °C / °F	160	151							
Net (HOT) Gallons / Liters	661.0	729.0							
Correction Factor	0.9756	0.9773							
Gallons / Liters @ 60°F / 15°C	644.9	712.5							
SY / SM Covered	25786	28512							
Spread Rate Gal/SY L/SM	0.025	0.025							
Verification Results	Y	Y							

Technician Signature   V12345678

Qualified Technician   Qualified Technician ID# (TIN)

Remarks:

ATTACHMENT 9-4d
ASPHALT ROADWAY – DAILY REPORT OF QUALITY CONTROL

675-030-20
MATERIALS
04/05

State Of Florida Department Of Transportation

Asphalt Roadway - Daily Report of Quality Control

Date ___6-14-02___ Page No. __1__ of __1__

Fin. Project ID: **123456-1-52-01** Material No.: **123-D** Type of Mix: **9.5mm** Sample No.: **P1001Q** Mix Design No.: **SP-02-1324A**

Intended use: **Structural** Plant No.: **A0123** Lot No.: **4** Intended Lot Size: **2000** Lot Quantity: **-**

Sublot	Lane / Crossovers	Station To Station		Loads	Linear Ft. / M	Width	SY / SM	Tons / MT	Spread
1	R1	1449+34	1466+05	5	1670.56	12.0	2227.41	104.41	93.75
"	"	1466+05	1482+44	5 (10)	1639.20	12.0	2185.60	104.91	96.00
"	"	1482+44	1498+22	5 (15)	1578.45	12.0	2104.60	105.23	100.00
"	"	1498+22	1513+87	5 (20)	1564.86	12.0	2086.48	104.20	99.88
1 / 2	"	1513+87	1529+82	5 (25)	1595.74	12.0	2127.65	105.00	98.70
2	"	1529+82	1546+20	5 (30)	1638.00	12.0	2184.00	104.80	95.97
"	L1	1546+20	1529+77	5 (35)	1642.74	12.0	2190.32	104.15	95.10
"	"	1529+77	1513+25	5 (40)	1651.89	12.0	2202.52	104.62	95.00
"	"	1513+25	1496+76	5 (45)	1648.89	12.0	2198.52	104.43	95.00
2 / 3	"	1496+76	1479+95	5 (50)	1680.80	12.0	2241.07	105.33	94.00
3	"	1479+95	1462+40	5 (55)	1755.00	12.0	2340.00	105.30	90.00
"	"	1462+40	1449+34	5 (60)	1306.00	12.0	1741.33	90.32	103.74

Record Of Bituminous Materials			
Pay Item No.	**1-300--1--3**		
Grade Of Asphalt	**RS1**		
FDOT Calibration Tank No.	**27665**		
Beginning Inch / MM	**10/2**		
Gallons / Liters	**1353**		
Ending Inch / MM	**33/11**		
Gallons / Liters	**692**		
Time of Day after Unloading	**4:00** AM/PM	AM/PM	AM/PM
Temperature °C / °F	**160**		
Net (HOT) Gallons / Liters	**661.0**		
Correction Factor	**0.9756**		
Prev. Gallons / Liters @ 60°F / 15°C	**3918.8**		
Today's Gallons / Liters @ 60°F / 15°C	**644.9**		
Accum Gallons / Liters @ 60°F / 15°C	**4563.6**		
SY / SM Covered	**25786**		
Spread Rate Gal/SY L/SM	**0.025**		

Average Spread Rate = **96.43**

Paving Completed							
Pay Item	1	3 3 4		1	1 3		
Measured In	Tons / MT		SY / SM		This Lot		
Prev. Adj. Tot.	4233.80		50642.38		0.00		
Todays	1244.64		25786.55		1244.64		
Total	5478.44		76428.93		1244.64		
Waste	0.00		N/A		0.00		
Adj. Total	5478.44		N/A		1244.64		

LOT Density Calculations		Temperature °F / °C	
Density Required		Established	300
Prev. Tons	0.00	Average	298
Todays	1244.64	Maximum	305
Total	1244.64	Minimum	295
No Density Required		Average of 1st 5	294
Prev. Tons	0.00		
Todays	0.00		
Total	0.00		

Technician Signature

_____ R12345678
Qualified Technician   Qualified Technician ID# (TIN)

Remarks: _____

_____

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_____

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ATTACHMENT 9-5
CERTIFICATION OF QUANTITIES

**CONTRACTOR'S CERTIFICATION OF QUANTITIES
BITUMINOUS AND POLYMER MATERIAL
(CONVENTIONAL PROJECTS)**

CERTIFICATION NO. _____

FINANCIAL PROJECT ID. _____

CONTRACTOR _____

CONTRACT NO. _____

PERIOD REPRESENTED BY CERTIFICATION:

FROM (MO/DAY/YR) _____ TO (MO/DAY/YR) _____

ASPHALT MATERIAL

PAY ITEM NUMBER: _____ TONNAGE: _____

PAY ITEM NUMBER: _____ TONNAGE: _____

PAY ITEM NUMBER: _____ TONNAGE: _____

GALLONS OF ASPHALT CEMENT USED IN MIX * _____

ADDITIONAL GALLONS (IF ANY) _____

TOTAL GALLONS _____

TOTAL MONTHLY PAYMENT _____

POLYMER MATERIAL

PAY ITEM NUMBER: _____ TONNAGE: _____

PAY ITEM NUMBER: _____ TONNAGE: _____

PAY ITEM NUMBER: _____ TONNAGE: _____

GALLONS OF POLYMER CEMENT USED IN MIX * _____

TOTAL GALLONS _____

TOTAL MONTHLY PAYMENT _____

I certify that, based on my personal knowledge and well-founded belief following my own reasonable investigation, the tons and gallons (metric tons and liters) represented by this Certification are true and correct.

Contractor's Authorized Agent (Print Name & Co.) _____
_____

Contractor's Authorized Agent (Signature) _____ Date _____

* Calculations based on Specifications.

ATTACHMENT 9-6
SPREAD RATE CALCULATION
FC-5 (0.75") (20mm)

English Formula = Thickness X Gsb X 40.5

Thickness = (Inch) Plan Thickness
Gsb   = Combined Aggregate Bulk Specific Gravity from
             Design Mix

0.75"X 2.718 X 40.5 = 82.6 (round to 83 Lbs/sy)

Note: 40.5 lbs/yd² is a constant derived by the State Materials
Office.

Metric Formula = Thickness X Gsb X 0.83

Thickness = (mm) Plan Thickness
Gsb   = Combined Aggregate Bulk Specific Gravity from
             Design Mix

20 mm X 2.718 X 0.83 = 45.1 (round to 45 kg/m²)

Note: 0.83 kg/m² is a constant derived by the State Materials
Office.

ATTACHMENT 9-7
SPREAD RATE CALCULATION
FC-9.5 (1.5") (40mm)

English Formula = Thickness X Gmm X 43.3

Thickness = (Inch) Plan Thickness or Individual Layer Thickness
Gmm   = Maximum Specific Gravity from Design Mix

1.5"X 2.424 X 43.3 = 157.4 (round to 157 Lbs/sy)

Note: 43.3 lbs/yd² is a constant derived by the State Materials Office.

Metric Formula = Thickness X Gmm X 0.928

Thickness = (mm) Plan Thickness or Individual Layer Thickness
Gmm   = Maximum Specific Gravity from Design Mix

40 mm X 2.424 X 0.928 = 89.9 (round to 90 kg/m²)

Note: 0.928 kg/m² is a constant derived by the State Materials Office.

ATTACHMENT 9-8a
REPORTING COMPOSITE PAY FACTORS IN SITEMANAGER

Pay for all asphalt by reporting the full tonnage on a Daily Work Report.

Handle all Composite Pay Factors as a Line Item Adjustment reflecting only the variance in unit price from the full contract bid price.

Example: Lot no. 4 for 4000 tons has a composite pay factor or 98%

The contract bid price in $49.85.

The Line Item Adjustment would be entered as the total tons in the lot times the variance from the full contract bid price: 2%.

Asphaltic Concrete, Production and Placement Record **9- 35**

ATTACHMENT 9-8b
REPORTING COMPOSITE PAY FACTORS IN SITEMANAGER

Appropriate remarks should be made in a manner that reflects how the unit price was arrived at.

Lot 4 = 4000 tons
Composite Pay Factor for Lot 4 = 98%
Unit Price = $49.85
Adjustment Unit Price: $49.85 X -,02 = - $0.9970

4000 tons X -$0.9970 = -$3988.00

ATTACHMENT 9-9 a
REPORTING COST OF RESOLUTION TESTING IN SITEMANAGER

ATTACHMENT 9-9 b
REPORTING COST OF RESOLUTION TESTING IN SITEMANAGER

```
AASHTO SiteManager                                                      _ | 8 | X |
File  Edit  Services  Window  Help

[toolbar icons]

Line Item Adjustments                                                   _ | □ | X |
  Contract ID :  [T7063]        Estimate Nbr:  [0002]

  Catg   Prj        Remarks (General Remarks) :                              Supp
  Nbr    Nbr
  0300  40723315201  Coarse aggregate gradation resolution tests for Lots 4 &
                     5.





  ◄ │                 │                                                    ► │

  Project Number: [40723315201            ▼]        Line Item Number: [0040]

  Line Item Adjmnt Detail Information :
        Type: [Resolution Testing Costs           ▼]    Entered By: [cn982ks]
      Amount: [               .00]                     Entered Date: [05/10/05]
    Quantity: [           .00000]        ┌─ Stockpiled Information ──────────┐
  Unit Price: [       -82.80000]         │ Stockpiled Sn: [0]   Replenish Sn: [0] │
                                         └──────────────────────────────────┘

Ready                                        Server    Systest SMADMIN  cn982ks
```