Section 5.14

FIELD RECORDS AND CONTRACTOR'S CERTIFICATIONS

5.14.1 Purpose

This procedure describes the methods of maintaining the various field records required by the Department to substantiate final estimates quantities. The methods outlined are generally applicable to any field notes, but they are particularly pertinent to those used in the calculation or verification of final pay quantities.

The Contractor's Certification of Quantities forms are also described herein. These Certification forms are required by the Department for the Contractor to document and certify the quantities of specific installed items for which payment is included in a monthly estimate.

5.14.2 Authority

Sections 20.23(3)(a) and 334.048(3), Florida Statutes (F.S.)

5.14.3 References

Standard Plans

Construction Automated Reporting System (CARS) Menu – Internal Link

National Institute of Standards and Technology (NIST) Handbook-44

5.14.4 Field Records

Field Records should be prepared assuming that the user has no familiarity with the work being recorded. The Field Records are important site source records for establishing pay quantities. They may be required as evidence in any arbitration or lawsuit. All Field Records shall be submitted as part of the Final Estimates Package. Below is the allowed type of Field Records:

(A) Standard Bound Field Book

A Surveying/Engineering field book that is typically hard covered. Most have gridlines, table, or graph paper. Its pages are typically waxed or specially coated to withstand moisture from ruining its contents. These book covers are typically bright orange or yellow in color.
(B) **Site Source Records/Forms**

Any supporting documentation (spreadsheet, electronic tabulation, etc.) or Department form use to substantiate final quantities.

(C) **Form 700-050-61, Final Measurement Miscellaneous**

This form simulates a *Field Book* page and is preferred over standard field books, since it results in savings to the Department and it can be maintained electronically.

5.14.5 **General Instructions**

(A) Identify the front cover of each *Standard Field Book* used by including the Federal Aid Project Number, Financial Project Identification Number, Contract Number, Field Book Number, State Road Number, and the general contents of that book in bold letters. On the back binding (spine) of each *Field Book*, show the Field Book Number and the Financial Project Identification Number. (See Attachment 5.14-1 for Sample Field Book Identification.)

(B) When the *Final Measurement Miscellaneous Form* is utilized, include the same project information listed in (A) above at the top of each form used. It is recommended to maintain these forms electronically; therefore, it is unnecessary to bind these forms together and provide Field Book Numbers.

(C) Each *Field Book* shall be clearly indexed with a complete list of the contents beginning on the first lined page, which is to be numbered page one. All following pages that are used to record notes shall be numbered sequentially in the upper right corner of each page.

(D) The date, weather conditions, and the name(s) of the field party shall be shown on the *Field Records* and at the beginning of each day’s notes. Well documented *Field Records* are indispensable in the event of litigation.

(E) Corrections shall be made by striking through the incorrect data and inserting the correct data. All corrections shall be initialed and dated by the person making the correction.

(F) Do not cut or otherwise remove pages from any *Field Book*. If an entire page is found in error, mark the original page as VOID, initial, date, and make a note referring to the page where that item of work was corrected.

(G) Keeping notes on loose-leaf or scratch pads and transferring them to the *Field Books* or *Final Measurement Miscellaneous Form* is prohibited.
Field notes shall be entered directly into the field book or the Department’s form as the site source document.

(H) **Field Records** shall always be legible (especially when inputted into EDMS), and include sufficient sketches and explanatory notes to convey the intent to a person who is not familiar with the job. Pay item numbers, original/final x-sections, and other relevant information shall be included. Good sketches are most important when recording final measurements. The details of the sketches shall be sufficient to clearly show the extent of the work as well as any exceptions.

(I) Use standard symbols and abbreviations. Keep the notes simple and avoid making ambiguous statements.

(J) Show all pertinent measurements and observations. Use a degree of accuracy that is consistent with operations. If there is any doubt about the need for data, record it. Review the data for accuracy and completeness before leaving the field.

**Note:** Ensure that Plan Quantity Pay Items are not field measured. Only measure field changes or plan errors for Plan Quantity Pay Items.

(K) A complete summary shall be made for each item at the end of its field notes. The summary total for each item will then be checked by the personnel doing the final estimate and entered on the Summary of Quantity Sheet(s). The summary, and the **Field Record** shall be properly cross-referenced.

(L) Keep the calculations and measurements for Federal Aid participating and non-participating items separated. This also applies to **Utility Work by Highway Contractor Agreements (UWHCA)** and **Locally Funded Agreements (LFAs).**

(M) When more than one project (state or federal) is constructed under the same Contract, separate **Field Records** shall be kept for each project, keeping measurements and other data separate for each project.

(N) **Field Records** for projects let under separate contracts shall never be recorded in the same **Final Measurement Miscellaneous Form** or **Field Book.**

(O) All **Field Books** shall be scanned into EDMS for submittal with the Final Estimates Package. The original **Field Book** may be destroyed.
When documenting any data on the grid sheets, neatness, and legibility give credence to the accuracy of field notes and the calculations which they support.

Field Records containing alignment data shall contain all the necessary information for horizontal control for new construction projects and major widening projects.

Form 700-010-60, Pile Driving Record:
(1) Individual pile record data is entered on the Pile Driving Record forms by bent or pier numbers.
(2) Data for alignment and pile driving shall be entered on the Pile Driving Records forms. These are permanent records and will be retained until the structure is removed.

Form 700-050-53, Final Measurements Site Source Record: This form is used to document quantities using the Latitude and Departure method. A Technician may use as many pages as needed for individual pay items.

Tabulation Forms are site source records for establishing pay quantities.

Form 700-050-54, Daily Report of Truck-Measured Material Site Source Record

This form is used to record truck quantities. When the final quantities are determined by certification/measurements of loose volume in truck bodies, the following procedures will satisfy the requirements for final pay records:

(1) All trucks shall have an assigned unique number, along with the manufacturer's certification, or permanent decal, showing the truck capacity rounded to the nearest tenth of a cubic yard and placed on both sides of the truck. This includes the truck body capacity only, and any sideboards added will not be included in the certified truck body capacity provided by the contractor. The Project Administrator (PA) will randomly check the certified capacity on a selective number of trucks for accuracy by using Form 700-050-54A, Truck Measured Sketch (Regular Bed) and/or Form 700-050-54B, Truck Measured Sketch (Irregular Shape Bed). This will not require the field personnel to climb into the body of the truck. When applicable, sideboard measurements will be transposed on these sheets and added to the certified capacity.
(2) Using the trucks unique identification number and capacity, this form is used to record the quantity for each truck as it delivers a load of the material to the project.

(3) The volume entered on this form for borrow material shall reflect the struck-measured volume (the dry measure having the contents leveled off and not heaped). The use of the struck-measured capacity shall apply to trucks, pans, or any other means of transport used. Documentation on loose volume bases, as measured in other hauling equipment, shall be made at the point of dumping on the construction site.

(4) The PA shall request, at the Preconstruction Conference, that the Contractor provide a list of trucks to be used on Department's projects, along with their assigned numbers and their certified capacities. This list shall be submitted with the Final Estimates Package.

(5) A separate line on the form will be used for each truck showing:

(a) Hauling company
(b) Truck number
(c) Capacity certified
(d) Load count & time recorded
(e) Total volume for that truck that day
(f) Inspector's signature and title at the bottom of the page

(6) Typical materials paid for by volume and recorded on the form include:

(a) Borrow material
(b) Stabilizing material
(c) Cover material

(B) Form 700-050-56, Daily Log Sheet Miscellaneous Tabulation Form Site Source Record

This form is used when material is paid by weight. The Field Records are also kept for each truck load of material hauled each day and signed by the Inspector. This form is only used for Riprap and Sand-Cement Riprap. The Department's Engineering Quantities Program is available to verify quantities for payment and Plan Summary Boxes.
(1) **Riprap**: quantities used and approved in each day’s operation shall be recorded in this form. In the Remarks column, include the station, offset, and structure number of the placement location.

(a) Measure in tons, in surface dry natural state, by railroad scales, truck scales, or barge displacement. See Attachment 5.14-2 for Barge Displacement Calculation example.

(b) Ensure concrete removed from an existing structure (per plans) and paid for as Removal of Existing Structures is not paid for again as Riprap.

(c) For a toe wall, only the volume of sand-cement riprap, concrete blocks, or poured-in-place concrete placed within the neat lines shown in the plans shall be included in the volume calculation of the final toe-wall quantities. See Attachment 5.14-3 for Toe Wall Calculations example.

(2) **Sand-Cement Riprap**: Document the volume (in cubic yards) of sand used in the sand-cement mixture per day or for each location. If the sand cement is proportioned by weight, use the conversion factor for sand of 85 lbs/ft$^3$, per Specifications Section 530-4.1. Delivery tickets showing the batch weights of sand and cement used shall be submitted. (See Attachment 5.14-4 for a Delivery Ticket sample.)

(a) When the pay quantity for sand cement is determined by the volume of sand, calculations from sketches and dimensions of the batch box capacity (or other approved measure) should be verified.

Payment for riprap shall not be made solely on the quantity delivered by truck and placed by the Contractor. For example, the quantity of riprap for a triple concrete pipe 84" in diameter is 31.1 CY and this quantity shall be adhered to as maximum payment. No compensation will be made for material placed that is beyond the neat lines shown in the plans. A sketch of the riprap structure must be submitted with authorized dimensions and volume calculations if not constructed according to Plans. This sketch must be included in the **Field Records**. (See Attachments 5.14-5 and 5.14-6 for an example of a Riprap Sketch and Sand Cement Riprap Pay Analysis.)

To achieve this objective, the PA must maintain and exercise control of the riprap placement operation as follows:
If during the course of riprap placement, the PA determines that the Contractor is placing the material too thick or beyond required limits, the PA must submit written notification to the Contractor. In addition, the Inspector shall include the station, offset structure, and the words "Partial Pay" or "No Pay" on the form collected for materials which are either partially or completely placed outside the limits authorized by the PA.

**Note:** When box beam scales are used and the net weight is given automatically, only the net weight is required to be recorded.

1. **Resident Office Responsibility**

   The material quantities represented in the forms shall be reconciled. Multiple trucks may be recorded on one form as long as each individual truck is identified by number and company name.

   Department forms shall be cross-checked with the Contractor or subcontractor’s records on a regular basis (daily or weekly). Any differences that may exist in pay quantities will be reconciled immediately. This systematic comparison of source records will avoid misinterpretations concerning final pay quantities.

   A summary shall be made from the form totals in the **Plan Summary Boxes**. Additional summary boxes can be created from the Excel spreadsheets included in the **CADD_[FPID].zip file**, in the **Calculations** directory. (See figure below.)
The output shall be submitted with the final estimate and shall be cross-referenced in the Plan Summary Boxes. Contractor's Certification of Quantities

(C) **Form 700-050-62, Contractor's Certification of Quantities (MOT, Signs, etc.)**

This form is currently provided in the *Construction Forms* application located on the CARS Menu. The Contractor will document and certify all 102 pay items. This form will be sent to the Department’s collaboration site by the PA, once the project is awarded and before Contractor begins work, for the Contractor’s use. All MOT pay items within a Contract will be listed on the form.

The form shall be signed by both the Contractor’s Authorized Agent (such as a Superintendent or Subcontractor) and the Prime Contractor’s Work Site Traffic Supervisor, then submitted monthly to the PA for payment. The PA will submit these certifications with the *Final Estimates Package*.

**Note:** The Work Site Traffic Supervisor must be an employee of the Prime Contractor. This responsibility cannot be delegated to a subcontractor.

(D) **Form 700-050-67, MOT Painted Pavement Markings, Daily Worksheet and Form 700-050-68, Contractor’s Monthly Certifications of Quantities**

These forms are to be used by the Contractor for all the Traffic Striping and Marking pay items. These forms include the following pay items: 701, 702, 705, 706, 709, 710, 711, 713, and 102 striping items. The 102 striping pay items are also listed in this worksheet to eliminate the need for filling out two different forms.

The Contractor is responsible for the measurements/counts for these items and payment for the certified quantities shall be approved by the Engineer. If the Engineer disputes a quantity certified by the Contractor, the Engineer must request justification for the disputed quantity from the Contractor. The Engineer must document in great detail if the quantity certified is not approved.

The form shall be signed by both the Contractor’s Authorized Agent (such as a Superintendent or Subcontractor) and the Prime Contractor’s Work Site Traffic Supervisor, then submitted monthly to the PA for payment. The PA will submit these certifications with the *Final Estimates Package*.

**Note 1:** For the Lump Sum Pay Item 710-90, the Contractor should document the quantity as a percentage (in decimal form) on the daily worksheet, so when monthly certified sheet is tabulated the cumulative
quantity is reported. The total quantity should be 1 Lump Sum (LS) once the Contractor completes this pay item.

**Note 2:** Payment under the Lump Sum Pay Item 710-90 shall only be made when the final lift of asphalt placement is complete. All intermediate stages of asphalt placement requiring striping are paid under the appropriate pay items.

**Note 3:** The Department’s representative is not required to check or record MOT Signs and Striping quantities on a daily basis. During the estimate period, random spot checks shall be made and documented. These checks can be achieved in a combined effort with the Contractor. This approach should minimize disputed quantities. The Contractor is responsible for supplying the Department with accurate documentation of quantities.

**Note 4:** The Work Site Traffic Supervisor must be an employee of the Prime Contractor. This responsibility cannot be delegated to a subcontractor.

This form is not used on Lump Sum and Design-Build contracts. See **CPAM Section 6.2** for more information.

(E) **Form 700-050-70, Traffic Marking Certification (Worksheet)**

This form is used for recording Initial Retroreflectivity Reading of White/Yellow Pavement Markings, Thickness, and Wet Weather in accordance with *Florida Method FM 5-541*, per *Specifications Section 710*.

The Contractor has the responsibility of measuring, recording, and certifying the Retroreflectivity on the Department’s approved form and submitting to the PA. This form is signed by the Contractor or his representative and the Work Site Supervisor. The Department reserves the right to test the markings after three (3) days of receipt of the *Contractor’s Certification*. Failure to allow the Department to complete this task will result in non-payment to the Contractor.

This form is also utilized on Lump Sum and Design-Build Projects. See **CPAM Section 6.2** for more information.

5.14.7 **Notifying the District Materials Office of Rock Base Measurements**

(A) **Resident Office Responsibilities**

The PA shall notify the District Earthwork Coordinator or designee of the anticipated date and time of base measurements, whenever there is a measurement that requires Construction Training and Qualification Program (CTQP) qualified Earthwork Technicians
to perform field measurements of base thickness. This notification process is the only efficient way the District Materials Office Staff can learn of upcoming base depth measurements.

5.14.8 Bulk-Weight Final Pay Records

Certified weight tickets for certain bulk weight shipments are acceptable as final payment records under the following conditions:

(A) All weighing is done on state certified scales. The ticket must indicate gross, tare, and net weight.

(B) The State of Florida will recognize any scale that has been certified by a state agency outside Florida using traceable standards. All 50 states have adopted and use the same laws as Florida NIST Handbook-44.

(C) Project personnel will record each truck number and time of loading, on Form 700-050-56, Daily Log Sheet Miscellaneous Tabulation Form Site Source Record at the rail head site.

(D) All rail cars are visually inspected to ensure all material has been unloaded.

(E) Material remaining in cars after job completion is to be hauled by truck to state certified scales and determine gross, tare, and net weights to make appropriate deductions from the car weights.

(F) Hauling will be done in covered trucks to minimize loss of material. The single car weight is more accurate than weighing numerous trucks and with the Form 700-050-56, Miscellaneous Tabulation system as outlined above.

5.14.9 Fuel and Bituminous Adjustments

(A) Fuel Adjustments

On Contracts with an original Contract Time in excess of 120 calendar days, the Department will make price adjustments on each applicable progress estimate to reflect increases or decreases in the price of gasoline or diesel from those in effect for the month in which bids were received. (See Specifications Section 9-2.1.1.) When an estimate is generated, Fuel Adjustments will be automatically calculated per the Specifications using pre-determined fuel factors for applicable pay items and the Price Index Tables. A complete list of Items that require fuel adjustments can be found on the Department's Construction Web site at: https://www.fdot.gov/construction/fuel-bit/fuelforms.shtm.

Note: Fuel adjustments for this list of pay items will be generated automatically in SiteManager.
Fuel adjustment for the following pay items will be calculated in the **Fuel Adjustment Report**:  
- Clearing and grubbing  
- Structural steel  
- Black base option  
- Composite base option  

(1) **Fuel Adjustment Report**

To access the **Fuel Adjustment Report**, follow the steps below:

- Access the [Construction Infonet](#) – Internal Link  
- Select Ad-Hoc Report System  
- Select Statewide Construction Dashboard  
- Select the Estimates tab  
- Select Fuel Adjustment Report – With NEW Base Options

The steps below explain how to create the **Fuel Adjustment Report**:

Enter the Contract ID and the estimate number the Adjustment Report is being created for. The estimate number is a four-digit field. Reports can only be created for one estimate at a time.

If the Fuel Adjustment "flag" was not set in SiteManager, select the "Over Ride Index Flag" option and generate the report.

If there is not an All Black Base Option or Composite Base Option included in the Contract, select the "None" radio button on the main screen, then click Submit to generate the report.

Enter the adjustments manually in SiteManager as a line item adjustment as required. The report cannot write the adjustments back to SiteManager.
(2) Using the Black Base or Composite Base Option

If there is an All Black Base or Composite Base Option, select the "Other" radio button. After selecting the "Other" radio button, the FIN Project ID and the Base Items fields will be populated with any associated pay items to the contract.

Select the FIN Project ID and Optional Base Item to calculate the fuel adjustment for the Black Asphalt quantity. If paying for a mixture of optional bases on this estimate, the Daily Work Report (DWR) quantity will be the total of Asphalt and Limerock pay areas. Only enter the quantity of Black Base (or Composite Base) and select Add Selected. Repeat as needed, then select Submit.

In this example, the DWR quantity is 192.24 SY, of which, only 50.0 SY is Asphalt Base.

(3) Sample Fuel Adjustment Report

Below is an example of the report showing the adjustment amount for diesel for the Asphalt Base. The adjustment amount generated in this report ($38.38) needs to be added to SiteManager as a manual line item adjustment.
However, if all of the DWR quantity (192.24 SY) is Asphalt Base, enter this amount into the quantity field. This will make the adjustment on all of the DWR quantity.

(4)  Using the Clearing & Grubbing or Steel LS overrun

To use the Clearing and Grubbing Overrun part of the Fuel Adjustment Report, the Acres that this LS pay item is to be adjusted by must be known. The Steel overrun portion will work in a similar way.

Note: The report will allow overrun adjustments on estimates regardless of whether a payment on the Clearing and Grubbing pay item or the Steel Item was made. A $0.00 Work Item on a DWR for Clearing and Grubbing or the Steel LS pay item will be required. The FIN Project ID list will automatically be populated when the "Over Runs" box is checked.

After selecting the project to which the adjustment will be made, enter the quantity (in Acres) of the overrun adjustment. Then select the "Add Selected" button to add the quantity to the "New Quantities" box. (See below.)
By selecting the "Submit" button, the report will be generated. The overrun of Clearing and Grubbing can be found under the Diesel and Gasoline adjustment for this pay item. The project personnel will need to make individual line item adjustments for each dollar amount associated with Clearing and Grubbing in SiteManager.

The report will automatically add the total dollar amount for all Diesel adjustments.

**Example:**

- $259.15
- $496.45
+ $755.60

(B) **Bituminous Adjustment**

Contracts will receive a bituminous adjustment if the Contract has an original contract time of more than 365 calendar days or more than 5,000 tons of asphalt concrete. The Department will adjust the price for bituminous material, excluding cutback and emulsified asphalt to reflect either increases or decreases in the Asphalt Price Index (API) of bituminous material from that in effect during the month in which bids were received. (See Specifications Section 9-2.1.2.) The Department will determine the API for each month and post it on the Construction website. When an estimate is generated, Bituminous Adjustments must be calculated per the Specifications using the Asphalt Price Index and adding a line item adjustment to the estimate. Asphalt Price Indexes can be found on the Department’s Construction website at:

https://www.fdot.gov/construction/fuel-bit/fuel-bit.shtm

For each monthly progress estimate, the Contractor will prepare, sign, and submit to the PA a Contractor’s Certification of Quantities using the Department’s current approved Form 700-050-66, which can be found at:

https://www.fdot.gov/construction/fuel-bit/fuelforms.shtm

This form will include the tonnage placed and accepted for the asphalt items that will receive a bituminous adjustment during the progress estimate. Adjustments will only be
made on work accepted by the Department. If an adjustment is made and the work is later determined to be unacceptable, a deduction to the adjustment will be made on the next progress estimate. The asphalt items will be reported on the lead FIN Project ID in order to receive payment. (See Attachment 5.14-7 for a sample Contractor’s Certification of Quantities.)

**Note:** For Push Button Renewable Contracts, see **CPAM Section 6.2.** The Department will make a Bituminous Adjustment for Polymer PG76-22 Binder on all Contracts. The Criteria for Polymer PG76-22 will be as stated above. When a Composite Base item is specified in the Plans, a price adjustment for bituminous material will apply to that asphalt portion of the base *only*, according to the **Specifications Section 9-2.1.2.**

(C) **Resident Office Responsibility**

The Resident Office (RO) personnel will verify monthly the fuel and bituminous material on projects that meet the criteria specified in **Specifications Section 9.** Fuel and bituminous adjustments will be based on the index of the estimate period the work was completed, not the estimate period of payment. This is especially important for adjustments made after final acceptance.

Example 1: After final acceptance, the project personnel found that fuel adjustments for black base were not applied during the contract. The project personnel would manually calculate the fuel adjustments based on the index for each estimate period the asphalt was completed, not the fuel index for the month of the final estimate.

Example 2: Asphalt was placed on the mainline for payment during the May estimate period, but 50 feet required removal and replacement for straightedge correction. The contractor performed the removal and replacement during the July estimate period. When the bituminous adjustment corrections are made, the removal correction will be made at the May index, and the placement will be at the July index.

The PA shall ensure the running total of each item’s tonnage in the **QCRR** for the period represented and compare to the **Certification of Quantities** submitted. Any discrepancies shall be resolved with the Quality Control (QC) Manager before authorizing payment on the progress estimate. If a **Certification of Quantities** has been determined to show tonnage that wasn’t accepted on the project, the QC Manager must be notified for justification and/or correction. The **Certification of Quantities** must be inputted into EDMS for reference as **Final Estimates Package** backup.

**Note:** In some instances, the **Certification of Quantities** will not match the asphalt quantity payable at the end of the project. This is due to removal and replacement for low Composite Pay Factors. When this occurs, there should be a note on the **QCRR.** The Contractor shall not be required to adjust previous **Certification of Quantities** due to removal and replacement.
Note: For Fuel and Bituminous Material Adjustments on Lump Sum and Design-Build Projects, refer to CPAM Section 6.2.

5.14.10 Cutoff Period

All Certifications of Quantities worksheets submitted by the Contractor need to represent the amount of material placed on the project and accepted by the Department for the estimate cutoff period. The estimates cutoff dates are provided on the State Construction Office website:

http://www.fdot.gov/construction/CONSTADM/EstimatesCutOff.shtm

The Contractor must request payment by submitting a Certification of Quantities no later than twelve o’clock noon Monday after the estimate cut-off or as directed by the PA. This is in accordance with Specifications. The Contractor’s submitted quantities must be approved by the PA. Any disputed quantities need to be reconciled as soon as possible.

All digital signatures must be verified prior to acceptance by the Department. The RO must ensure each digital signature is from an approved digital signature authority and valid at the time the document was signed. The RO must also verify the document was not altered after the digital signature was applied.

5.14.11 Forms

The forms referenced in this manual can be found on the Department’s website: https://fms.fdot.gov/. Official forms provided by the Department shall be used without alteration or modification.

5.14.12 Attachments

Attachment 5.14-1 ................................................................. Field Book Identification
Attachment 5.14-2 ............................................................... Barge Displacement Calculation
Attachment 5.14-3 ............................................................... Toe Wall Calculation
Attachment 5.14-4 ............................................................... Delivery Ticket
Attachment 5.14-5 ............................................................... Sketch of Riprap Structure
Attachment 5.14-6 ............................................................... Sand Cement Riprap Pay Analysis
Attachment 5.14-7 ............................................................... Contractor’s Certification of Quantities
Attachment 5.14-1
FIELD BOOK IDENTIFICATION

Fed. Aid No. I-95-2 (6) 150

FIN Proj. ID: 123456-1-52-01

Contract No. T1234

Book No. 123412

Road No. SR 9
Attachment 5.14-2
BARGE DISPLACEMENT CALCULATION

BARGE WEIGHT CALCULATION EXAMPLE

Barge Material Delivery

IN. Dec. 11, 1989

OUT. Dec. 12, 1989

MATERIAL 300 - 5000
rubble rip rap

LOADED DRAFT
Port Forward 6.6
Port Aft 6.7
Starboard Forward 7.0
Starboard Aft 7.1
Average 6.85

LIGHT DRAFT
Port Forward 2.3
Port Aft 2.6
Starboard Forward 2.3
Starboard Aft 2.5
Average 2.43

Water line length at average loaded draft 126.36
Water line length at average light draft 115.51
Net average water line length 120.94
Shape correction -0-
Average water line length 120.94

Bilge Correction -0-
Average 2.43

Average Difference in Light and Loaded Draft 4.42

Tonnage Computations: = 120.94' x 34' x 4.42' x [64(lb/cf)/2000(lb/ton)] =
= 581.6 Tons

Note for unit weight of water: Sea Water = 64.0 lb/cf and Fresh Water = 62.4 lb/cf
Attachment 5.14-3
TOE WALL CALCULATION

Field Records and Contractor's Certifications 5.14-19
## Attachment 5.14-4
**DELIVERY TICKET**

### FLORIDA MINING & MATERIALS
**CONCRETE PRODUCTS**
**LEE DIVISION**
P.O. BOX 2378, 2858 FORD STREET, FT. MYERS, FLORIDA 33902, PHONE (813)6334-4651

<table>
<thead>
<tr>
<th>Plant No.</th>
<th>Del. Ticket</th>
<th>Serial No.</th>
<th>Date: 19</th>
</tr>
</thead>
</table>

Delivered To:
Address: ____________________________

F.D.O.T. Fin. Proj. ID. ____________________________

<table>
<thead>
<tr>
<th>Truck No.</th>
<th>DOT Class</th>
<th>DOT Mix NO.</th>
<th>Cubic Yards This Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Loaded</td>
<td>Arrived</td>
<td>Discharged</td>
<td>Cubic Yards Total Today</td>
</tr>
</tbody>
</table>

Allowable Jobsite Water Addition:
gals./cu. yd. | Mixing Revolutions: At Plant: | At Jobsite: |

FILL OUT ON FIRST DELIVERY AND ON EACH CHANGE OF AGGREGATE WEIGHTS

<table>
<thead>
<tr>
<th>Cement</th>
<th>Air</th>
<th>MSVR</th>
<th>Cubic Yards This Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand</td>
<td>MSVR</td>
<td>Amount</td>
<td>oz.</td>
</tr>
<tr>
<td>Course Agg.</td>
<td>% Moisture</td>
<td>Amount</td>
<td>oz.</td>
</tr>
<tr>
<td>Fine Agg.</td>
<td>% Moisture</td>
<td>Amount</td>
<td>oz.</td>
</tr>
<tr>
<td>Batch Water (Gals.)</td>
<td></td>
<td>Amount</td>
<td>oz.</td>
</tr>
</tbody>
</table>

Issuance of this ticket constitutes certification to the accuracy of the above recorded information

Signature of Plant Operator or Company Rep.

WATER ADDED ON JOBSITE ____________________________ GALLONS
ADDITIONAL MIXING REVOLUTIONS ____________________________
Attachment 5.14-5
SAMPLE SKETCH OF RIPRAP STRUCTURE

Note: Sketches must be submitted when pay is authorized outside limits as shown on the indexes. (No sketches will be required if built as per index).

Example:  
(1) Index No. 258 shows 31.1 cubic yards.  
Delivery Tickets show 36.0 cubic yards.  
We will pay ________ 31.1 cubic yards.

(2) Index No. 258 shows 31.1 cubic yards.  
Delivery Tickets show 25.0 cubic yards.  
We will pay ________ 25.0 cubic yards.
Attachment 5.14-6
SAND CEMENT RIPRAP PAY ANALYSIS

Step 1
STRUCTURE QUANTITY DETERMINATION

Approved Quantity Dimension = 31.1 cu. yds.

Step 2
DELIVERY QUANTITY DETERMINATION

<table>
<thead>
<tr>
<th>Prebag ticket</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery tickets</td>
<td>Tally Book Summary</td>
</tr>
</tbody>
</table>

Delivery tickets must be submitted showing the weights of sand & cement actually used for each delivery Ticket.

Jan. 9, 1990 = 8 cy = sand = 18,360 lbs. = cement = 4,064 lbs.
Jan.10,1990 = 8 cy = sand = 18,360 lbs. = cement = 4,064 lbs.
Jan.11,1990 = 8 cy = sand = 18,360 lbs. = cement = 4,064 lbs.
Jan.12,1990 = 8 cy = sand = 18,360 lbs. = cement = 4,064 lbs.

32 cu. yds.

Note: Whichever is the lesser of Step 1 or Step 2 above, shall be paid.
In the above example the structure quantity should be paid. If the delivery ticket quantity had been less than the structure quantity, the actual quantity delivered would have been paid.

Step 3
5:1 DETERMINATION

I. Computations to check for the actual ratio of the 5:1 mix:
18,360 lbs sand + 85 lbs/cf = 216 cf
4,064 lbs cement + 94 lbs/cf = 43.2 cf
216 + 43.2 = 5.0 , therefore this is a 5:1 mix, as required.

II. CONSIDER: If the 5:1 mix had not been achieved, and the mix was allowed to be placed on the project, the following documentation is required:
A. C-165 with negotiated pay reduction.
B. Supplemental Agreement revising the unit price.
Attachment 5.14-7  
CONTRACTOR’S CERTIFICATIONS OF QUANTITIES  
(FORM 700-050-66)

Contractor’s Certification of Quantities  
Asphalt Mixes with Modified and Unmodified Binders  
(Conventional Projects)  
Certification No. 9

<table>
<thead>
<tr>
<th>Financial Project ID:</th>
<th>054301-52-01</th>
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</thead>
<tbody>
<tr>
<td>Contractor:</td>
<td>West Coast, Inc.</td>
</tr>
<tr>
<td>Contract Number:</td>
<td>X1234</td>
</tr>
<tr>
<td>From (Mo/Day/Yr):</td>
<td>01/10/17</td>
</tr>
<tr>
<td>To (Mo/Day/Yr):</td>
<td>02/19/17</td>
</tr>
</tbody>
</table>

**Asphalt Mixes with Unmodified Binders (PG 67 & Lower)**

<table>
<thead>
<tr>
<th>Pay Item Number</th>
<th>Tonnage Placed</th>
</tr>
</thead>
<tbody>
<tr>
<td>334-1-13</td>
<td>341.4</td>
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</tbody>
</table>

**Asphalt Mixes with Modified Binders (PG 78 & Higher)**

<table>
<thead>
<tr>
<th>Pay Item Number</th>
<th>Tonnage Placed</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

**Asphalt Material**  
(ASPHALT TREATED PERMEABLE BASE)

<table>
<thead>
<tr>
<th>Pay Item Number</th>
<th>Tonnage Placed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Navigation and Printing Functions**

- Go To Main Sheet
- Go To Last Month Sheet
- Save As Month Sheet
- Remove Last Month Sheet

Effective: January 2007 Letting
FORM: 700-050-66 (7/21/2015)
EXAMPLE OF A CONTRACTOR'S CERTIFICATION OF QUANTITIES (FORM 700-050-66) Continued

| STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION |  
| CONTRACTOR'S CERTIFICATION OF QUANTITIES  |  
| ASPHALT MIXES WITH MODIFIED AND UNMODIFIED BINDERS (CONVENTIONAL PROJECTS) |  
| CERTIFICATION NO. |  
| FINANCIAL PROJECT ID: | 05A02150-01 |  
| CONTRACTOR: | I-95 Get Asphalt, Inc. |  
| CONTRACT NO: | K1234 |  

PERIOD REPRESENTED BY CERTIFICATION:

FROM (M/O/D/Y/Y) | 03/01/17 |  
TO (M/O/D/Y/Y) | 02/19/17 |

ASPHALT MIXES WITH UNMODIFIED BINDERS (PG 67 & LOWER)

BASE PRICE INDEX: 139.85  
CURRENT PRICE INDEX: 182.30  
INDEX DIFFERENCE: -0.0167

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<thead>
<tr>
<th>PAY ITEM NUMBER</th>
<th>TONNAGE</th>
<th>GALLONS</th>
<th>MONTHLY PAYMENT</th>
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<tbody>
<tr>
<td>234-1-12</td>
<td>341.4</td>
<td>4,374</td>
<td>$83.07</td>
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<tr>
<td>GALLONS OF ASPHALT CEMENT USED IN MIX:*</td>
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<tr>
<td>ADDITIONAL GALLONS (ARMI):</td>
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<td>TOTAL GALLONS:</td>
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<tr>
<td>TOTAL MONTHLY PAYMENT:</td>
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ASPHALT MIXES WITH MODIFIED BINDERS (PG 76 & HIGHER)

BASE PRICE INDEX:  
CURRENT PRICE INDEX:  
INDEX DIFFERENCE:  

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<tr>
<th>PAY ITEM NUMBER</th>
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<tr>
<td>TOTAL GALLONS OF POLYMER USED IN MIX:*</td>
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<td>TOTAL MONTHLY PAYMENT:</td>
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ASPHALT MATERIAL (ASPHALT TREATED PERMEABLE BASE)

BASE PRICE INDEX:  
CURRENT PRICE INDEX:  
INDEX DIFFERENCE:  

<table>
<thead>
<tr>
<th>PAY ITEM NUMBER</th>
<th>TONNAGE</th>
<th>GALLONS</th>
<th>MONTHLY PAYMENT</th>
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<tr>
<td>TOTAL MONTHLY PAYMENT:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

X  
Contractor's Authorized Agent  

Name of Company and email address