

## CHAPTER 9 ROADWAY, BASE, STABILIZING AND PAVEMENT ITEMS REVIEW

### 9.1 PURPOSE

To set forth the guidelines and instructions for a Resident Office to use and prepare the Final Estimates Package and make offer of final payment. Also guide the District Final Estimates Office (DFEO) in the final review of the construction categories specified as subgrade, subbase, base, pavement, and friction course.

### 9.2 PROCEDURE

#### 9.2.1 FINAL REVIEWING - ITEMS GROUPED BY COMMON PROCEDURE

- (A) Square yard /Plan Quantity Concept Items: The items shown below are paid on an area basis (usually square yards). The area to be paid for shall be plan quantity subject to the applicable edition of **Section 9-3.2** of the **Specifications** which defines tolerances or deviations for plan errors and plan revisions before adjustments are to be made. Thickness and penalty adjustments are not considered tolerances. In other words, only plan revisions or plan errors qualify for tolerance. Below are examples of these square yard items:

Stabilization - **Section 160** of the **Specifications**  
Predesigned Stabilized Subgrade – **Section 161** of the **Specifications**  
Prepared Soil Layer – **Section 162** of the **Specifications**  
Subgrade – Pay Item 165- 70  
Cracking & Reseating Existing Concrete Pavement – Pay Item 175- 1  
Reworking Limerock Base – Pay Item 210- 1  
Limerock Stabilized Base- Pay Item 230- 1  
Optional Base – **Section 285** of the **Specifications**  
Compacting and Finishing Rock Base – **Section 285** of the **Specifications**  
Turnout Construction (limerock, etc.) - **Section 286** of the **Specifications**  
Plain Cement Concrete Pavement – Pay Item 350- 1  
Reinforced Cement Concrete Pavement – Pay Item 350- 2

- (B) Cubic Yard /Certified Truck Capacity Items such as:  
Limerock, New Material (in reworking limerock base) - **Section 210** of the **Specifications** – Plan Quantity (PQ)  
Limerock Material (in limerock stabilized base) - **Section 230** of the **Specifications** - (PQ)  
Asphalt Treated Permeable Base – **Section 287** of the **Specifications** - (PQ)  
Cement Treated Permeable Base – **Section 288** of the **Specifications** - (PQ)  
Borrow Excavation – **Section 120** of the **Specifications** – Final Measure
- (1) Each truck capacity must be certified. If sideboards are added, then the Project Administrator (PA) must provide sketches for sideboard dimensions and calculations verified by DFEO.
- (2) Tabulation forms must be submitted with each entry showing time, date placed, truck number, capacity, and if applicable, weights and void tickets. Quantity summaries and transfers to computation books must be verified.
- C) Tonnage/Truck Weights or Automatic Batch Weight Items such as the pay items below have quantities determined by weighing. These individual truck weights or automatic printer tickets showing the accumulation of batched components must be verified for correctness. The spread rate (Lbs/SY) in the area of placement for each item must be within five (5) percent of the spread rate for that item shown in the plans, or the discrepancy shall be properly explained in the overrun/underrun explanation section of the appropriate computation book page by project personnel. Quantity transfers to computation book must also be verified for each of these items:
- Turnout Construction (Asphalt) - **Section 286** of the **Specifications**  
Miscellaneous Asphalt Pavement – **Section 339** of the **Specifications**  
Superpave – **Section 334** of the **Specifications**  
Friction Course – **Section 337** of the **Specifications**

## 9.2.2 FINAL REVIEWING - INDIVIDUAL ITEM PROCEDURES

In addition to the above general instructions, the following specific points are to be checked when applicable:

- (A) Plan Quantity- Square Yard pay items:

- (1) Stabilization: **Section 160** of the **Specifications**
  - (a) Commercial & Local Material – meet the requirements of **Section 914** of the **Specifications**.
  - (b) Truck capacities shall be certified.
  - (c) Spot check the tabulation forms, truck numbers, and calculated total volumes.
  - (d) Summaries and transfers to the Computation Book shall be verified.
  - (e) If the item of Borrow Excavation is included in the contract, any stabilizing materials obtained from designated borrow areas shall be included in the pay quantity for Borrow Excavation (per **Section 160-6** of the **Specifications**).
  - (f) Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
  
- (2) Predesigned Stabilized Subgrade – **Section 161** of the **Specifications**
  - (a) Used for construction of shoulder only, sidewalk, and bike/shared path . Meet the requirements of **Section 120-8.1.2** of the **Specifications**, except replace “Embankment” with “Subgrade”. Material to meet the requirements of **Section 914** of the **Specifications**.
  - (b) Review to ensure designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
  
- (3) Subgrade (Limerock Treated) – **Section 165** of the **Specifications**
  - (a) Review to make sure designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
  
- (4) Cracking and Reseating Existing Concrete Pavement – **Section 175** of the **Specifications**.
  - (a) Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.

- (5) Reworking Limerock Base
- (a) Rework (or rework and widen) the existing rock base, by adding new limerock material as required by the plans and **Section 210** of the **Specifications**. Construct adjacent turnouts, entirely with new limerock.
  - (b) For new limerock material only, check the total cubic yards using the final measurement books and the Tabulation forms.
  - (c) Review to make sure designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
- (6) Limerock Stabilized Base – **Section 230** of the **Specifications**
- (a) Where extra limerock is placed at culverts, etc., as detailed in the plans, the volume of such material shall be included in the quantity of limerock material to be paid for, but the area of base to be paid for shall not be adjusted.
  - (b) Review to make sure designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
- (7) Optional Base Courses: This item consists of base construction of one of the optional base materials (15 base groups) shown in the plans typical cross section. The surface area to be paid for shall be plan quantity.
- (a) Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
  - (b) Thickness **in excess of** 1/2 inch greater than specified **shall not be considered** in payment.
  - (c) Thickness adjustments within prescribed **Standard Specifications** are payable and are not considered as plan errors or revisions. The pay area **shall not exceed 105 percent of surface area**.
  - (d) The square yard or square meter unit price and payment shall be full compensation for tack coat, prime coat, cover material for prime coat, and bituminous material in plant mix.
  - (e) Price adjustment for bituminous material as provided in **Section 9-2.1.2** of the **Specifications** shall not apply, unless the plans specify a black base option only (**see Chapter 6** of

this **Manual**).

(7-A) Limerock Base: The final pay requirements are verified as follows:

- (a) Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
- (b) Check limits of deficient thickness areas left in place without pay.
- (c) Average thickness shall be calculated for the entire contract as a unit. Check that the thickness does not exceed the normal specified thickness plus 1/2 inch. Maximum pay is 105 percent of surface area, if bid under Optional Base item. **(Note: See *Special Provisions* for any changes).**
- (d) Deficient thickness area(s) not included for pay shall appear on the final estimate with the following statement:  
Square yards have been deducted due to deficient thickness.
- (e) Core measurements in areas of deficient thickness (no pay) shall not be used to determine average thickness of base material.
- (f) Areas and thickness for connection to back of sidewalks shall not be included in average thickness calculations of square yard or square meter pay area.
- (g) Authorized variable thickness base shall be calculated separately. The area shall not be included when adjusting for depths over or under normal thickness.
- (h) The mathematics of the adjustment shall be checked. The formula used is as follows:  
Adjusted Pay Area =  $\frac{\text{Pay Average Thickness} \times \text{Plan Area}}{\text{Plan Thickness}}$
- (i) Formulas for converting variable depth base to normal thickness area Where T = Plan Thickness:

$$SY = CY \left( \frac{36 \text{ inches /Yard}}{T \text{ (inches)}} \right)$$

SY= Square Yard

CY= Cubic Yard

1 Yard = 36 inches

T = Thickness in inches

- (7-B) Superpave Base: Black Base, plan quantity pay item
  - (a) Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
  - (b) Check to see that each Composite Pay Factor unit price adjustment has a Lot Submittal Package representing this adjustment.
  - (c) Check to see that the maximum allowable pay for thickness adjustment does not exceed 105 percent of the surface area.
  
- (8) Plain Cement Concrete Pavement (PCCP) and Reinforced Cement Concrete Pavement (RCCP): The final area shall be subject to adjustment for over-thickness or under-thickness in accordance with the **Section 350** of the **Specifications**.
  - (a) Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.
  - (b) Check core-out report for representative interval and PA's explanation of deficient areas removed and replaced or left in place without pay.
  - (c) Criteria for thickness calculations: Cores measured and greater than specified thickness shall be considered in the average thickness calculations plus 1/2".
  - (d) Criteria for payment thickness: The maximum average over-thickness upon which payment will be made shall be normal thickness plus 1/4".
  - (e) When the plans call for cement concrete pavement which is to be covered with asphaltic concrete surface course, the total thickness of the entire combination shall be measured and paid for as plain cement concrete pavement.
  - (f) Toe bars and dowel bars shall not be included in final pay quantities as reinforcing steel.
  
- (B) Cubic Yard Pay Items with Certified Truck Capacity
  - 1. Limerock, New Material (in Reworking Limerock Base)
    - (a) Spot check Truck Tabulation Forms with certified truck quantities. This is a Final Measure Pay Item
    - (b) The quantity is determined by measuring loose volume, in truck bodies, at the point of dumping on the road, with proper

deduction for all materials wasted, left in truck, or otherwise not actually used on the road. For this purpose, make sure that truck material is leveled to facilitate accurate measurements. See **Section 210** of the **Specifications**.

2. Limerock Material (in Limerock Stabilized Base)
  - (a) Spot check Truck Tabulation Forms with certified truck quantities. This is a Final Measure Pay Item.
  - (b) The quantity is determined by measuring loose volume, in truck bodies, at the point of dumping on the road, with proper deduction for all materials wasted, left in truck, or otherwise not actually used on the road. For this purpose, make sure that truck material is leveled to facilitate accurate measurements. See **Section 230** of the **Specifications**.
3. Asphalt Treated Permeable Base and Cement Treated Permeable Base: **Sections 287** and **288** of the **Specifications**. The quantities to be paid for shall be the plan quantity in cubic yards, completed and accepted.

Review to ensure that the Designer has provided the required supporting documentation for plan quantity and any additions or deletions are supported with backup documentation.

4. Borrow Excavation – Is a Final Measure Pay Item. See **Section 120** of the **Specifications** and **Chapter 8** of this **Manual** for more details.

C. Tonnage/Truck Weights or Automatic Batch Weight Items.

1. Turnout Construction (Asphalt): Pay Item No. 286- 2.
  - (a) See **Chapter 9** of the **Preparation & Documentation Manual, Topic No. 700-050-010** for more information
  - (b) No density is required for this pay item and therefore it does not qualify to get a composite pay factor.
  - (c) Keep track of tickets used on this pay item.
2. Superpave Asphaltic Concrete: The quantity in tons as provided in the **Section 334** of the **Specifications**. (Refer to the **Final Estimates Preparation and Documentation Manual -Topic No. 700-050-010 Chapter 9**) for more information.

Check to ensure each Composite Pay Factor unit price adjustment has a Lot Submittal Package representing this adjustment.

3. Asphaltic Concrete Friction Course: Pay Items 337- 7: The quantity to be paid for will be the weight in tons, as determined in accordance with **Section 320-2** of the **Specifications**.
    - (a) Check to ensure that each Composite Pay Factor unit price adjustment has a **Lot Submittal Package** representing this adjustment
    - (b) Check to ensure that the pay quantity was based on the spread rate limited to 105 percent of the target spread rate based on plan thickness.
  4. Miscellaneous Asphalt (**Pay Item No. 339-1**)
    - (a) This is not a pay item which may be used for convenience in resolving leveling and other asphalt roadway problems. Should the DFEO encounter an improper use of this pay item on the roadway, a **Supplemental Agreement** shall be required to pay for the improperly used quantity.
    - (b) Check to ensure that the pay quantity was based on the spread rate limited to a maximum of 105 percent of the plan thickness quantity.
- D. Certification of Quantities: All asphalt produced and accepted will have a Certification of Quantities provided by the Contractor each month.
- (1) Check to ensure that for every month asphalt was produced and accepted, a Certification of Quantities has been submitted.
  - (2) Check to ensure that all discrepancies have been resolved.