

5/12/2016: Pen & Ink to update contact info and web links.

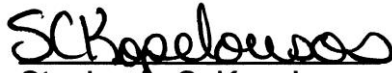
8/15/2013: Pen & Ink to Change the PQ concept page in *Section 2.3.1* to Signing & Sealing the *Computation Book* in *Section 5*.

Approved:

Effective: July 21, 2008

Office: Construction

Topic No.: 700-050-001-f



Stephanie C. Kopelousos

Secretary

## COMPUTATION METHODS FOR DESIGN, CONSTRUCTION, AND FINAL ESTIMATES HANDBOOK

### PURPOSE

The purpose of the *Computation Methods for Design, Construction and Final Estimates (CMDCFE) Handbook* is to establish requirements and guidelines for the preparation and completion of the *Computation Book*. The instructions and illustrations will help those charged with this responsibility. The information contained herein applies to Design, Construction Engineering and Inspection (CEI) and Final Estimates Staff, both internal and consultant.

### AUTHORITY

Sections 20.23(4)(a), 334.048(3), Florida Statutes (F.S)

### REFERENCES

Chapters 337.141, and 471.025, F.S.

Rule 61G 15-23.003 F.A.C

CADD Manual, Topic No. 625-050-001

Construction Project Administration Manual (CPAM), Topic No. 700-000-000

Basis of Estimates Handbook (BOE)

Plans Preparation Manual (PPM), Topic No. 625-000-006

CADD Production Criteria Handbook

### SCOPE

This procedure and referenced *Handbook* will affect personnel preparing roadway and

structures computation books for the Department. This procedure also provides guidelines, and required documentation for submitted contract pay items. Other affected offices include Specifications, Traffic Operations, Maintenance, Utilities, CADD Support Application and State Surveying and Mapping.

This **Handbook** will support and provide examples for the **Automated Computation Book**, SiteManager, and the conventional **Computation Book**. The **Handbook** provides examples and illustrations with information needed to support the original plan quantity submitted by design and the documentation needed to support construction final pay quantity.

## GENERAL INFORMATION

The process establishes the **Computation Book** format, along with the deliverables that design must provide for planning and developing of the Final Estimate. The supporting documentation, Final Measured, Plan Quantity and Lump Sum concepts are shown in the **Construction Project Administration Manual (CPAM), Topic No. 700-000-000**. The process outlines specific requirements for the final payment resolution for each contract pay item. These procedures are not to supersede or circumvent project specific specifications, Special Provisions, Plan and/or Plan notes or Florida Statutes. The **CPAM** and the **Plans and Preparation Manual (PPM), Topic No. 625-000-007, Chapter 17, 2014 edition**, establish requirements for preparation of the **Computation Book**.

### 1. THE CMDCFE HANDBOOK

#### 1.1 AVAILABILITY, REVISIONS AND ADDITIONS

This **Handbook** is produced and made available by the State Construction Office (SCO). All revisions and additions will be available only electronically on the Department's Internet & Intranet sites. This **Handbook** can also be accessed on the SCO's website.

A **Suggestions and Comments** page is included in the **Handbook**, soliciting recommendations from users. These may be submitted to the SCO at:

**Mailing Address:**

605 Suwannee Street  
Tallahassee, FL 32399-0450  
Mail Station 31  
ATTN: Kristin Brown

**Fax Address:**

FAX (850) 414-4874

**E-mail Address**

Intranet/Internet:

<http://www.dot.state.fl.us/construction/Manuals/finalest/newcompbook/HandbookMenu.shtm>

Comments are collected throughout the year. Suggestions received shall be reviewed by the SCO. A written or an electronic response explaining each suggestion and comment will be made by the State Final Estimates Office (SFEO) in a timely manner. Items warranting immediate action shall be made with the approval of the State Final Estimates Manager (SFEM).

## 1.2 ADOPTED SUGGESTIONS FOR HANDBOOK REVISIONS

Periodically, it may be necessary to include a new subject or make essential revisions that are not adequately addressed within the contents of the current **Handbook**. When this occurs, it will be necessary to produce new sections or chapters and/or delete sections or chapters in the **Handbook**. These changes will also be placed on the Internet & Intranet site.

All **Handbook** users are encouraged to suggest modifications and improvements to the **CMDCFE Handbook** (see **Suggestion and Comment** page). Some modifications to the **Handbook** that become necessary are the direct result of changes in specifications along with the Department's technology as it continues to change.

All major revisions and/or additions to the **CMDCFE Handbook** shall be reviewed by the District Final Estimates Managers (DFEMs) prior to implementation. Final approval is obtained from the SFEM. New sections or revisions that result in policy or substantive procedural change as determined by the DFEMs, shall be processed in accordance with **Standard Operating System, Procedure No. 025-020-002**.

## 2. METHOD OF MEASUREMENT CONCEPTS

### 2.1 FINAL MEASURE CONCEPT

This concept is based on measurements of items paid for on the basis of area of finished work, where the pay quantity is determined by calculation. These calculations are accomplished by using either lengths, and widths based on station-to-station dimensions, or the final dimensions measured along the surface of the completed work within the neat lines shown on the plans or designated by the Engineer/Administrator. One method or a combination of methods will be used to reflect the measurement, of the actual surface of the finished work as the Engineer/Administrator determines. (If a pay item refers to **Standard Specification, Subarticle 9-1.3.1** in the contract or **Special Provisions**, this indicates that this item is a final measured pay item.) It is also recommended that you refer to the **CPAM** for more information on final measurements. For an example of a final measured pay item, see **Section II, Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Page 10**.

### 2.1.1 Requirements

The taking and recording of the final measurements will be the responsibility of the Construction Engineering Inspection (CEI) personnel.

**Allowing final measurements on these items does not relieve the designer from calculating the quantities as accurately as possible.** Field reviews and design surveys are still required when necessary to define or establish scope and/or essential topography.

## 2.2 LUMP SUM CONCEPT

Where a pay item is paid for under a Lump Sum Concept, the quantity can be changed by either a supplemental agreement or by secondary units provided in the Plans.

Secondary Units means that the verification of the lump sum quantity is provided in the plans and the designer shows the calculations in the computation book. A lump sum quantity with secondary units may increase or decrease only in percentage of the lump sum quantity (refer to the ***Standard Specification, Subarticle 9-3.3.1***). For an example of a Lump Sum Concept pay item, see ***Section II, Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Page 6***.

## 2.3 PLAN QUANTITY CONCEPT

This concept is based on pay items paid for on the basis of area of finished work, where the pay quantity is designated to be the plan quantity. The final pay quantity is based on the plan quantity subject to the provisions of the ***Standard Specification, Subarticle 9-3*** (payment based on Plan Quantity). Generally, the calculations are based on area, volume or linear measurement items, calculated from the design file with the output based on station-to-station dimensions.

**Note:** Refer to the Contract, the ***Standard Specifications***, and the ***BOE Handbook***, for items that are Plan Quantity and refer to the ***CPAM*** for more requirements on Plan Quantity. For an example of a Plan Quantity item in this booklet, see ***Section II, Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Page 45***.

### 2.3.1 Requirements

A large percentage of the pay items are now under the Plan Quantity Concept. The new criteria for supporting calculations or documentation provided with the ***Computation Book*** shall be the ***Computation Sheet*** in the ***Computation Book*** or Matrix in the Plans showing the location, quantity, and traverse chain name. This will include a location sketch that identifies the area, the quantity and the reference baseline / centerline name. This

information should be contained in the Computer Aided Drafting and Design (CADD) files submitted to the Department. (**Note:** Labeling of the chain points and curves are not required.) The naming convention for these files should be in accordance with the Department's ***CADD Production Criteria Handbook, Chapter 4.***

If a question arises involving quantities for one or more of the plan quantity items, Construction will request in writing, that the designer provide detailed documentation or verify the concern of the plan quantity item(s) in question. The designer SHALL produce the backup documentation within five (5) working days of the request from construction.

Many computer programs, such as CAICE, BOX CULVERT, GEOPAK, MATHCADD, etc., are available for designers to use in computing quantities. The printouts of these programs provide the valuable criteria for Construction's use as well as supply the backup computations to accompany the ***Computation Book.***

Simple geometric areas can be calculated by computer/calculator or by hand, along with the proper computation forms, which have been recorded, with the calculated quantities. The most preferred method of documentation for complex or irregular geometric shapes is through the use of computer programs. When computer programs are used, the designers SHALL keep all supporting information in their files until the project is paid off. (See ***Section II Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Pages 45 & 45A*** for an example of a computation page with proper back up calculations to support the Plan Quantity item.)

**DOT design personnel and consultants are responsible for the accuracy of their quantities.** The Department in the past has experienced claims from contractors and/or additional costs resulting from inaccurate plan quantities.

Under the current requirements, the Designer is required to sign, by hand, the front page of the ***Computation Book***, or sign and then scan the page when the ***Computation Book*** is sent electronically. The language that is used on the first page of each ***Computation Book*** is as follows:

#### **Plan Quantity Concept Signature**

**The Design Engineer Responsible for Calculations: All support measurements and computations have been included for all Plan Quantity Items within this Computation Book.**

**Signature:** \_\_\_\_\_ **Print Name:** \_\_\_\_\_

**This signature certifies that the Designer is responsible for all measurements and computations for the Plan Quantity Item throughout the Computation Book.** The exception to this requirement is when the Designer provides the ***Summary of Drainage***

Sheets or **Tabulation of Quantities** Sheets, etc., in the plans. In this case **Computation Book** forms are not required. However, when Plan Quantity items are provided on these summary sheets, the quantities SHALL be clearly represented in the plans.

Henceforth, the **NEW** requirement for submitting the **Computation Book** is stated under **Section 5** of this Procedure.

### 3. PREPARATION OF THE ROADWAY COMPUTATION BOOK

#### 3.1 FORMAT

The new methods of compiling calculations and supplying backup data will make reviewing process less time consuming. All summaries, and area plots, must be referenced on the estimate form and cross-referenced to a traverse or location where the area is plotted.

##### 3.1.1 Acceptable Electronic Files

The Department requires that all engineering data files used or produced in conjunction with a project be delivered in the native format of the system used to produce it, in addition to the standard format required in the **CADD Manual, Chapter 3, Section 3.8.1.1**.

The standard format required is the **American Standard Code for Information Interchange (ASCII)** text file. Information on ASCII text files is located in the **CADD Production Criteria Handbook, Chapter 6**.

All survey data generated for construction must adhere to the Department's surveying standards. The surveying standards are defined in the Department's **Surveying Handbook** at:

<http://www.dot.state.fl.us/surveyingandmapping/documentsandpubs/surveyhandbook.pdf>.

Also, refer to the **CPAM**.

#### 3.2 COMPUTATION BOOK CONTENTS

- A) All computations shall be shown in the **Computation Book** unless the quantity is either arrived at by the **Basis of Estimates Handbook (BOE)** or in an acceptable tabulated form included in the plans. Sometimes these are shown in the same book and, at times, in separate books. Arrange each book in pay item number order with backup calculations directly behind the summary or total quantity if applicable.
- (B) Special calculations or plots that the designer must do, but are not shown on the plans, shall be filed in the **Computation Book**. They shall be properly referenced for the benefit of construction personnel such as curb-return profiles, contour plots,

etc. Sketches of bridge components used to calculate areas and volumes shall be included. Area calculations, such as surface, base, stabilization, sidewalk, etc., shall be tabulated by individual location. The station / location, length, width and area are also calculated and summarized. The total is then transferred to the **Summary of Pay Items Sheet**. The individual lengths of linear measured items that require tabulation should be shown on a standard form in the Computation Book and/or tabulated on the plans.

- (C) All Plan Quantity items with respect to the **Standard Specification, Article 9-3**, are proposed as final pay quantities by the designer. **The Designer is the responsible author of the Plan Quantity**. Appropriate backup measurements are required in the **Computation Book** behind the computation page.
1. Should the designer not use a computer to determine a plan quantity item's surface area or volume, appropriate drawings and/or plotted cross-sections are required that clearly reflect each area or cross-sectional end area used to arrive at the proposed quantities. Diagrams allowing others to follow the designer's calculations of the areas for both earthwork and surface areas are required.
  2. If the designer uses a computer, the resulting earthwork and surface computations must be provided in the project's **Computation Book**, with these areas' coordinates bounded (i.e., offset and elevation or offset and station tied to a baseline). Appropriate diagrams that clearly inscribe the individual areas must also be included. The areas shall be labeled according to the corresponding backup data (see **Section II, Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Pages 45, and 45A.**) If multiple baselines are used for referencing the stations and offsets, then the baselines shall also be referenced on the **Comp Book** forms but the quantities shall not be separated.
  3. The Summaries of Guardrail, Ditch Pavement, Turnouts, Side Drains, Mitered End Sections, Underdrain and Sodding will be a part of the contract plans for the contractor's information. The format blocks should conform to the standard sheets as shown in **Section I** of the **Handbook**, and should be utilized. In all cases, there should be a place for the design quantity and the final quantity. This will allow Construction to utilize the summary if adjustments are required. Other summaries, at the option of the designer, may be shown, likewise.
  4. The Summary of Drainage Structures is not required in the **Computation Book**, but it is used as a final estimates source record. If properly utilized, this sheet can replace many sheets and entries in the **Computation Book**. Adjustments during construction can be shown directly on these final plan

sheets and no additional entries will be required in the **Computation Book**. Of course, the Project Administrator (PA) must still justify any differences by an Explanation of Overrun or Underrun if applicable. Some items (that are bid lump sum) such as Structural Steel, Structure Removal, require an estimated quantity for cost estimating (a secondary unit quantity). This is to ensure that the Department receives a reasonable bid on these lump sum items. These quantities, and the basis of each, must be shown in the **Computation Book** and the Designer must also show quantities and structures in the plans.

5. The **Joint Participation Agreement (JPA)** or **Utility Agreement Computation Book** is no longer required for the Designer to furnish. However, it is recommended that all utility plans provide a **Tabulation of Quantities Sheet** showing all contract pay items,

**Note:** Regardless of where the backup information is added, it shall be thoroughly cross-referenced.

### 3.3 ENGINEERING PROGRAMS

The Engineering/CADD System Design Office supports quality Engineering Programs. For further information on these programs contact:

1. **The District Estimates Specialist**
2. **Kristin Brown, Central Office Construction**  
[Kristin.Brown@dot.state.fl.us](mailto:Kristin.Brown@dot.state.fl.us)
3. **Quinton Tillman, Engineering/CADD Systems**  
[Quinton.tillman@dot.state.fl.us](mailto:Quinton.tillman@dot.state.fl.us)

Documentation will be accomplished by attaching an area name , a quantity, and number referenced to a baseline/centerline in the back of the **Computation Book** (see an example provided in **Section II, Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Pages 45 and 45A.**).

Calculations for quantities must be shown by one of the following methods:

- (A) Standard Mathematical Expressions - i.e.: Length X Width = Area
- (B) Computer Coded Geometry - i.e.: CAICE, GEOPAK
- (C) Graphically Generated Geometry - i.e.: CADD

**Note:** CADD designs must be referenced, and the quantity must be shown in the **Computation Book**. The CADD shape shall be labeled, the quantity it refers to must also be reference to the same shape it represents, as defined by the Department's **CADD Manual, Topic No. 625-050-001**.



When designers choose to use CADD shapes to define and document areas, they must consider the practicality of the shapes they select. A typical project may be broken down into mainline, median crossovers, auxiliary lanes, tapers, fillets for curb returns, and side streets. The Designer can choose to develop areas by sheets or other logical break points, such as intersections, changes in typical section, etc. programs and project files that the designer uses to develop areas. That is why it is critical that the designer creates shapes that can be calculated by hand if a field change occurs. Large complex shapes should be broken into several smaller geometric shapes, when possible.

The Designer should use sound engineering practices when choosing CADD to develop areas. Some areas can be calculated and documented quicker by hand on a standard computation form than by using CADD. Remember all areas developed using CADD must be supported by a plot with all station/offsets, chains, etc. labeled. (See an example provided in **Section II, Comp Book Model for New/Resurfacing and Widening Roadway Construction Project, Pages 45 and 45A.**)

For information on preparing this computation sheet (such as levels and naming convention), contact the District CADD Production Coordinator. (See the **CADD Production Criteria Handbook** published by the Engineering/CADD Systems Office.)

## 4. PREPARATION OF STRUCTURE COMPUTATION BOOK

### 4.1 FORMAT

The following procedures shall be adhered to as closely as possible:

- (A) Book covers should be Accopress binder. Spiral binders shall not be used, as they do not facilitate the addition of new sheets. A gummed label with the name of the project, county, bridge number and financial project ID shall be affixed to the front of the binder.
- (B) The first sheet shall be an index sheet listing the sheets in the **Computation Book** or plan matrix sheet number. **Computation Books** will normally require one sheet only for quantities. If more than one quantity sheet is required, they will be numbered, (i.e. 11, 12, 13, etc.). For multiple structure projects the quantities shall be grouped by structures and numbered appropriately.

Following the index sheet shall be a copy of the project estimating system (PES) in TRNS\*PORT. Consultants shall include a summary of quantities (not part of the book) with their quantity book submittal. Design or Consultant personnel shall load the quantities into the PES and the Summary of Bridge Pay Items will be included in the book.

- (C) The next sheet should be a legal size copy of the Plan and Elevation sheet. For

multiple structure projects the Plan and Elevation sheets should precede the quantity sheets for that particular structure.

- (D) The next sheet shall be the appropriate form to record the quantity for the first pay item on the Summary of Bridge Pay Items sheet. It should be used as a summary sheet for that pay item.
- (E) The sheet(s) following the form should be the backup calculations for the pay item's reference on the form.

**Note:** (Computer output printouts are not required to be turned in with the **Computation Book**. The designer will keep this information until the project is paid off.) The calculations shall be completed in a neat and orderly manner and shall be recorded on the left side of each form. Ample room for designer's comments or additional calculations has been provided in these forms. Do not write or comment in construction's side of the form, which is the right side. The sheets to be used should be legal size.

- (F) **Steps E and F** shall be repeated until the appropriate form and backup calculations have been included for each pay item on the PES.

The format should be as follows:

**1) SINGLE STRUCTURE PROJECTS:**

Computation Index  
PES in TRNS\*PORT Output (Summary of Bridge Pay Items)  
Plan and Elevation  
Forms 700-050-01 through 09  
Backup Calculations  
Forms 700-050- 01 through 09  
Backup Calculations  
(Repeat the above step for each bid item)

**2) MULTIPLE STRUCTURE PROJECTS:**

Computation Index  
PES in TRNS\*PORT Output (Summary of Bridge Pay Items)  
Plan and Elevation Structure "A"  
Forms 700-050- 01 through 09  
Backup Calculations  
Forms 700-050- 01 through 09  
Backup Calculations  
(Repeat the above step for each bid item)  
Additional output sheets and/or sketches

Plan and Elevation Structure "B"  
(Repeat steps as shown for Structure "A")

Additional sheets, such as COGO, GEOPAK, and MATHCADD sketches and elevations may need to be added to the **Computation Book** for the appropriate structure. No computer outputs are added with these computations. The outputs are to be kept with the designer in case of a question or error. Construction may request for full backup to support designer's quantity. Computer outputs shall always stay with the Designer until the project is paid off. Designer has up to five (5) days to respond to questions from Construction.

## 5. DESIGNER SIGNATURE/SEAL

As of April 1, 2013 and per **Estimates Bulletin No. 13-02**, the Designer SHALL Sign and Seal each **Computation Book** in accordance with **Chapter 471.025, F.S.** and **Rule 61G 15-23.003, F.A.C.**

Per **Estimates Bulletin 13-02**, "the original **Computation Books** as completed by the design functions will be submitted with the Plans, Specifications, and Estimates (PS &E) package in accordance with District procedures. This process will begin in July 2013". This will apply to all projects. Since the Comp Book will be provided to the Contractor upon bid, Designers for Lump Sum contracts will provide the Trns•port Project Edit Report.

**Note: Lump Sum and Design Build Projects are not required to have a Computation Book.**

## 6. CONSTRUCTION RESPONSIBILITY

### 6.1 CONSTRUCTION UTILIZATION

The **Computation Book** is provided primarily for use by Construction. Its use, along with plan details, is intended to clearly define the parameters to which construction pay items are to be accomplished.

The remarks column, on the right-hand side of most forms, is reserved for Construction's comments to explain changes, etc. in quantities. Designers shall enter their notes, remarks and headings on the left side in the remarks column reserved for Design.

The Project Administrator (PA) will have to add forms and calculations for some items on which adjustments are required. A complete index to the **Computation Book** should be made. The index must show page numbers for backup material on all pay items. If a form or matrix is not used for an item (lump sum, drainage items, etc.) the location of the backup material shall be indicated so those reviewing will know that the item was not

inadvertently left out.

The **Computation Book** records from design and construction are transmitted to Final Estimates upon completion of the project. They are used in conjunction with other records to verify the final payment to the contractor.

This new concept of the **Computation Book** changes many of the procedures and instructions previously distributed. These instructions, and the specified degree of accuracy shown in the **Basis of Estimates (BOE) Handbook**, will supersede all prior procedures in cases of conflict.

The PA should communicate with the District Design Project Manager (DDPM) whenever there is a question regarding a **Computation Book**. A review of the overruns and underruns of quantities between the PA and the DDPM when a project is completed will help to improve the **Computation Book** on future projects. However, District administrators must approve this, as they see fit.

All comments and suggestions to improve the effectiveness of these procedures should be directed to the State Final Estimates Office (SFEO).

## 7. DISTRICT DESIGN PROJECT MANAGER (DDPM) RESPONSIBILITY

### 7.1 DDPM UTILIZATION

The **Computation Books** are a collection of records that substantiate the original quantities and final quantities. As such, they should accompany the plans throughout the design and construction phases of every project. Corrections and revisions will occur on every project and these will be handled just like the plan revisions and/or updates. The person, section or function responsible for changing the plans will also be responsible for changing the **Computation Book**, if changes affect the quantities.

The **Computation Book** will change every time the summary of pay items changes. The responsible DDPM shall insure that:

- (A) The quantities detailed in the plans agree with the **Computation Book** and the Project Estimating System (PES) in TRNS\*PORT.
- (B) Calculations are in accordance with the **Basis of Estimates Handbook (BOE)** guidelines and the **CPAM**.
- (C) **Computation Books** are prepared by each design function - Roadway, Structures, Traffic Operation, etc., as necessary.
- (D) All revisions or updates to the contract plans, that affect quantities, are reflected in

the **Computation Book**.

- (E) All **Computation Books** (Roadway, Structures, etc.) are transmitted to Construction.

The District Design Project Manager (DDPM) will not be responsible for the actual work involved in the corrections and revisions, but for all liaison, communication, etc., necessary to provide complete and reliable **Computation Books** for all plans developed internally and externally.

**Computation Books** for projects designed by consultants will be sent to the project manager as soon as possible upon completion. The District project manager will be responsible for all coordination regarding any revisions, contract breakdown, etc. On these and other specialty projects until such time as they are let. Structures shall submit their **Computation Books** to Roadway Design as they are completed.

If a **Computation Book** is not provided for a project that requires one, the DDPM will advise the District Designer and steps will be taken to avoid future occurrences of this nature.

## 8. THE AUTOMATED COMPUTATION BOOK

### 8.1 GENERAL INFORMATION

The **Automated Computation Book** is a process created software that offers a set of tools to help automate the **Computation Book** and its contents of all measurements, computations and tabulations required to substantiate each pay item quantity used on a project. The quantities are generated from a plan view of the proposed Microstation design file, except for the earthwork quantities.

There are three types of quantity elements:

- (A) Each (points, cells)
- (B) Linear (chains, lines, line-strings, arcs, etc.)
- (C) Areas (shapes)

Although the method used to generate and calculate the quantities for an **Automated Computation Book** has changed, the basic steps remain the same. Pay item calculations generated by the software shall adhere to the guidelines set forth in the **Plans & Preparation Manual, Basis of Estimates Handbook** and this **Handbook**. Plan estimated quantities are to be calculated, documented and referenced in the project's **Computation Book**, in a format that serves the needs of both Construction and Final Estimates. The Designer shall calculate preliminary quantities with regard to the proposed construction of the road and/or bridge. The Designer shall show these quantities on the computation forms

and reference any necessary backup calculations to support the estimated quantity.

**NOTE:** See “note” in **Section 2.3** of this procedure regarding Designers signature for Plan Quantity pay Items in each **Computation Book**.

## 8.2 GEOPAK QUANTITIES MANAGER

The GEOPAK **Computation Book** program is called Quantities Manager and was implemented in July 1, 2002.

This version is a standalone database application for managing quantities. It Interfaces to the GEOPAK Design and Computation Manager, and allows entry of non-graphic quantities, like Mobilization and Lump Sum. It provides for manual modifications of graphical element quantities, such as applying manual deductions and manual additions. It interfaces with Trns\*port to provide quantities to Trns\*port PES, and provides custom report capabilities. It provides import function from GEOPAK, In-Roads and possibly CAICE (the 3 main Civil design packages), and exports XML files (see the **CADD Production Criteria Handbook, Chapter 9** for more information).

**Note:** When the Designer utilizes the Department's Quantity Manager Tool within MicroStation/GEOPAK, the data that is depicted on the Computation Sheets may not utilize the whole form. This data shown on the **Computation Sheets** may only fill a portion of the actual form and not display the whole form with blank lines. This will be an acceptable format as the data depicted on the **Computation Sheets** should be complete. The first page will continue to provide a signature block for plan quantity items as well as the area of notes for over/under runs and the extra notes below that. The remainder of the sheets will provide quantities for the individual sheets. By utilizing the Quantity Manager tool in GEOPAK, the Designer will eliminate potential errors in data transfer and transposition of numbers by being automated.

## 9. SITEMANAGER

### 9.1 GENERAL INFORMATION

SiteManager is one of the software modules in the Trns\*port system. It is a product of the American Association of State Highway and Transportation Officials (AASHTO). SiteManager is designed to accommodate the needs of the State Highway and Transportation agencies in managing projects and for decision-making.

SiteManager is a system that is used for managing projects during the construction phase. Periodic pay estimates can be generated based on completed work quantities. Materials used in the construction phase can be sampled and tested for documentation of compliance to standard and project specifications. Subcontracts, trainee programs, civil

rights and payroll compliance are also tracked and maintained within SiteManager to ensure all federal and state regulations pertaining to these are met.

For more information contact your district's Office of Information System (OIS) or your SiteManager representative for the available software.

## 10. TRAINING

Training in the preparation of Final Estimates is provided through the Construction Training and Qualification Program (CTQP). This information will be placed on the CTQP website at: <http://www.ctqpflorida.com/>

## 11. FORMS

Refer to **Section I** of the **CMDCFE** for more information regarding the computation book forms. This section will be divided into four parts:

- PART 1      Plan Forms**  
List of forms - Description and sample of each form
  
- PART 2      Miscellaneous Forms**  
List of forms - Description and sample of each form
  
- PART 3      Computation Book Forms**  
List of forms - Description and sample of each form
  
- PART 4      Site Source Records Forms**  
List of forms - Description and sample of each form