

DATE: April 1, 2001

TO: Basis of Estimate Handbook Holders

FROM: David Duncan, CES Coordinator

COPY: Ken Morefield, Freddie Simmons, Billy Hattaway, Bill Albaugh, Greg Xanders, Lex Chance, William Nickas, Duane Brautigam, Brian Blanchard, Jack Brown, Shawn McLemore, District Design Engineers, District Project Management Engineers, District Structures Design Engineers, District Construction Engineers, District Traffic Operations Engineers, District Drainage Engineers and District Specifications Engineers

SUBJECT: **2001 Mid-Year Update - Basis of Estimate Handbook Summary of Major Changes**

The Coordination Team has made recommendations to the implementation of changes to pay items and specifications that have been developed within the last six months. The implementation plan for each issue has been approved by the appropriate office and concurred in by the Directors for the Offices of Design and Highway Operations. A detailed description of each of these changes and their implementation dates is attached. The following is a summary of issues addressed in this update:

Group	Issue Description	Effective Letting	Page No.
Comp Books	Plan Quantity Documentation	Immediately	3 - 4
MOT	Temporary Traffic Detection	January 2002	5 - 6
Drainage	Pipe Culvert Optional Material	July 2002	7 - 11
Roadway	Concrete Traffic Separator	January 2002	12
Roadway	Impact Attenuator	January 2002	13 - 14
Signal	Signal Pole Removal	January 2002	15 - 16
Signing	Internally Illuminated Street Name Sign	January 2000	17
Pavement Markings	Pavement Markings (greater than 8")	January 2002	18 - 19

Additional Information for the Handbook Holders:

Have you registered on-line to be automatically notified when the Basis of Estimate Handbook is updated?

By registering at the Estimates Web Page, with an e-mail address (FDOT, Lotus Notes, or internet), users can customize the types of update notices they want to receive. These announcements will be distributed every 3-6 months or as necessary. Users will have the option to add/delete their address for future updates.

Multiple formats for on-line use are available. In addition to .html (normal web viewing files), .pdf files (Adobe acrobat) are available for easier printing. Each type has their advantages; by offering both file types, we hope to serve the greatest number of users.

For comments, suggestions, or to request a different format, please send an e-mail message to Melissa.Hollis@dot.state.fl.us.

Issue: Plan Quantity Concept

History: The Designer is responsible for the pay quantity for all Plan Quantity Items. Generally, plan quantity items are calculated using lengths based on station- to-station dimensions and widths based on neat lines shown in the plans. With the neat lines shown in the plans, this allows the Designer to utilize the computer to generate accurate quantities. Computer generated areas are accurate, when care is taken during the drafting of each element that is used to identify and create an area. Because many of our plan quantity items use CADD to generate quantities, the paper output reports supporting the quantities are getting larger and larger. Construction has requested that designers not include computer-generated reports in the computation book that they provide to Construction when the project is let. Under the current standards, Construction would utilize this information only if there is a dispute over the plan quantity shown in the plans.

The approved changes are as follows:

- The documentation required with the computation book provided to Construction when the project is let will be:
 - The computation sheet in the computation book or matrix in the plans shall show the location, quantity and the traverse/chain name.
 - A location sketch that identifies the area, the quantity and the reference baseline/centerline name. (Note: labeling of the chain points and curves are not required)
 - The location sketch that identifies the area, the quantity and the reference baseline/centerline name should be contained in the CADD files submitted to the Department. The naming convention for these files should be in accordance with the Department's "CADD Production Criteria Handbook" Chapter 4.
- Designer must keep all supporting information in their files until the project is paid off.
- If a dispute 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 for the plan quantity item(s) in question.
- Designer must produce the backup documentation within 5 working days of the request from construction.

Implementation Plan:

Effective as soon as practical without impacting production.

Central Office Design: Update the Introduction Section of the 2002 Edition of the Basis of Estimate Handbook to comply with the above change.

Central Office Construction: Update Computation Methods Handbook and Procedures to comply with this change.

District Design: Prepare and submit documentation of plan quantity items for the computation book as described in this memo.

Central Office Contact Person - David Duncan 850-414-4323 SC 994-4323

Approved: Brian Blanchard _____ Date _____
State Roadway Design Engineer

Approved: William N. Nickas _____ Date _____
State Structures Design Engineer

Approved: Greg Xanders _____ Date _____
State Construction Engineer

Approved: Lex Chance _____ Date _____
State Estimates Engineer

Effective with the January 2002 letting

Issue: Temporary Traffic Detection

History: The Department recognized the need to maintain all existing actuated or traffic responsive mode signal operations for main and side street movements for the duration of the Contract. Pay items and specifications have been developed to require restoration of any loss of detection within 12 hours. The contractor shall select only detection technology listed on the Department's Approved Products List (APL) and approved by the Engineer to restore detection capabilities.

Compensation will begin the day Temporary Traffic Detection technology is placed into operation and approved by the Engineer and will end the day permanent detection is operational and approved by the Engineer.

The quantity of Temporary Traffic Detection technology paid for will be the number of completed and accepted intersections utilizing Temporary Traffic Detection technology, authorized by the Engineer on any calendar day or portion thereof within the original contract time including any extensions which may be granted.

The Contract unit price per intersection/per day will constitute full compensation for furnishing, installing, operating, maintaining and removing Temporary Traffic Detection technology including all equipment and components necessary to provide an acceptable signalized intersection.

The plans should identify the intersections where Temporary Traffic Detection is required.

The Basis of Estimate for Design should be the number of existing actuated or traffic responsive mode intersections times the number of contract days for the project. Do not include "new" signalized intersections. The designer's quantity is an estimated quantity, even though actual time may be less. Construction will pay for the actual days Temporary Traffic Detection is used on the project.

Implementation Plan:

Central Office Design:

Establish the following Items April 2001:

102-107	Temporary Traffic Detection -	DA
2102-107	Temporary Traffic Detection -	DA

District Design: Update plans to include the new pay item on applicable projects beginning with the January 2002 letting.

Specifications: Specifications will be available for the January 2002 letting.

Central Office Contact Person - David Duncan 850-414-4323 SC 994-4323

Approved: Brian Blanchard _____ Date _____
State Roadway Design Engineer

Approved: Greg Xanders _____ Date _____
State Construction Engineer

Approved: Lex Chance _____ Date _____
State Estimates Engineer

Approved: Duane F. Brautigam _____ Date _____
State Specifications Engineer

Approved: Jack A. Brown _____ Date _____
State Traffic Operations Engineer

Effective with the July 2002 letting

Issue: *Pipe Culvert Optional Material*

History: The Department has decided to pay for all drainage pipe culvert as Pipe Culvert Optional Material. The “new” Pipe Culvert Optional Materials pay item allows for shapes other than round (Elliptical/Arch) to be paid for as Optional Pipe using the equivalent round size found in the Design Standards Index 205. This applies to both English and Metric projects.

This change will result in the reduction of 1365 existing items, or approximately 15% of the valid master pay item list. Due to the large number of pay items impacted by this change, a longer than usual implementation plan has been set for this issue. Because this change impacts plans, pay items and specifications, which all must agree at letting, it is important that the designer does not vary from the established implementation date:

- ❑ Use existing specifications and pay item numbers thru the June 2002 letting
- ❑ Use new specifications and pay items starting with July 2002 letting

Existing specifications, pay items and design procedures require that the designer evaluate the different pipe materials for environmental and structural adequacy and show those allowed in the plans. With the current method, a designer tabulates all allowable material options, with payment being made as optional pipe. Or, the designer may elect to pay for each material type by its specific pay item, which requires the designer to prepare additional tabulation sheets for each alternate material and separate pay items for each set of alternates.

New specifications, pay items and design procedures require the designer to evaluate the different pipe materials for environmental and structural adequacy and show those allowed in the plans. The designer must tabulate all allowable options with payment as optional pipe.

Implementation Plan:

Central Office Design:

Update the Plans Preparation Manual with the July 2001 revisions to include exhibits that reflect how to tabulate quantities for the new optional pipe:

Summary of Drainage Structures

(Minor change to existing sheet, add column with heading “other shape”)

Optional Materials Tabulation Sheet

(Minor change to existing sheet; add new general note # 6. “Pipe shapes other than round (Elliptical/Arch) are summarized and paid for using equivalent round pipe diameter.”)

Establish the following new pay item April 2001:

430-17a-bcc	Pipe Culvert Optional Materials	LF
2430-17a-bcc	<i>Pipe Culvert Optional Materials</i>	<i>MI</i>

a = Application
1 = Storm Sewer
2 = Cross Drain
3 = Gutter Drain
4 = Side Drain

b = Shape
1 = Round
2 = Other (Elliptical/Arch)

cc = Standard Pipe Sizes

21(12")	21(300mm)
23(15")	23(375mm)
25(18")	25(450mm)
29(24")	29(600mm)
33(30")	33(750mm)
38(36")	38(900mm)
40(42")	40(1050mm)
41(48")	41(1200mm)
42(54")	42(1350mm)
43(60")	43(1500mm)
44(66")	44(1650mm)
45(72")	45(1800mm)
46(78")	46(1950mm)
47(84")	47(2100mm)
48(90")	48(2250mm)
49(96")	49(2400mm)
50(102")	50(2550mm)
51(108")	51(2700mm)
52(120")	52(3000mm)
53(132")	53(3300mm)
54(144")	54(3600mm)
55(156")	55(3900mm)
56(168")	56(4200mm)
57(180")	57(4500mm)

Permanently block the following pay items June 30, 2002:

430-1a-bcc	Concrete Pipe Culvert
2430-1a-bcc	<i>Concrete Pipe Culvert</i>

430-2a-bcc Corrugated Steel Pipe Culvert
2430-2a-bcc *Corrugated Steel Pipe Culvert*

430-3a-bcc Bituminous Coated Corrugated Steel Pipe Culvert
2430-3a-bcc *Bituminous Coated Corrugated Steel Pipe Culvert*

430-4a-bcc Bituminous Coated and Paved Steel Pipe Culvert
2430-4a-bcc *Bituminous Coated and Paved Steel Pipe Culvert*

430-5a-bcc Corrugated Steel Pipe Arch Culvert
2430-5a-bcc *Corrugated Steel Pipe Arch Culvert*

430-6a-bcc Bituminous Coated Steel Pipe Arch Culvert
2430-3a-bcc *Bituminous Coated Steel Pipe Arch Culvert*

430-7a-bcc Bituminous Coated and Paved Pipe Arch Culvert
2430-4a-bcc *Bituminous Coated and Paved Pipe Arch Culvert*

430-8a-bcc Corrugated Aluminum Pipe Culvert
2430-8a-bcc *Corrugated Aluminum Pipe Culvert*

430-9a-bcc Bituminous Coated Corrugated Aluminum Pipe Culvert
2430-9a-bcc *Bituminous Coated Corrugated Aluminum Pipe Culvert*

430-10a-bcc Bit Coated & Paved Corrugated Alum Pipe Culvert
2430-10a-bcc *Bit Coated & Paved Corrugated Alum Pipe Culvert*

430-11a-bcc Corrugated Aluminum Pipe Arch Culvert
2430-11a-bcc *Corrugated Aluminum Pipe Arch Culvert*

430-12a-bcc Aluminized Corrugated Steel Pipe Culvert
2430-12a-bcc *Aluminized Corrugated Steel Pipe Culvert*

430-13a-bcc Aluminized Corrugated Steel Pipe Arch Culvert
2430-13a-bcc *Aluminized Corrugated Steel Pipe Arch Culvert*

430-14a-bcc Elliptical Concrete Pipe Culvert
2430-14a-bcc *Elliptical Concrete Pipe Culvert*

430-17a-xbb Pipe Culvert Optional Material
2430-17a-xbb *Pipe Culvert Optional Material*

430-99a-xbb Polyethylene Pipe Culvert
2430-99a-xbb *Polyethylene Pipe Culvert*

Modify the following pay items June 30, 2002:

430-72a-bcc Slotted or Perforated Pipe Culvert

2430-72a-bcc *Slotted or Perforated Pipe Culvert*

Permanent block only the following:

b = 1 Concrete
2 Corrugated Aluminum
3 Corrugated Steel
5 Concrete Elliptical

cc= Standard Elliptical Pipe Sizes

430-96a-bcc Polyvinyl-Chloride Pipe ~~Culvert~~ (Modify name)

2430-96a-bcc *Polyvinyl-Chloride Pipe ~~Culvert~~* (Modify name)

Permanent block only the following:

a = 3 Cell Class 12454c or 12364c

b 3 Cross Drain
4 Gutter Drain
5 Side Drain

430-98a-bcc Mitered End Section

2430-98a-bcc *Mitered End Section*

Permanent block only the following:

b = 2 Concrete Pipe Round
3 Corrugated Pipe Round
4 Concrete Elliptical Pipe
5 Corrugated Pipe Arch

cc= Standard Elliptical Pipe Sizes (All)
Standard Arch Pipe Sizes (All)

Central Office Engineering/CADD Systems Office:

Keep existing cells (SDS2 and SDS3) and include 2 new cells in the next software release (planned for April 2001) for the following sheet:

Optional Materials Tabulation Sheet

(Add general note # 6. "Pipe shapes other than round (Elliptical/Arch) are summarized and paid for using equivalent round pipe diameter.")

District Design: Update plans and CES to indicate the use of the valid pay item on applicable projects beginning with the July 2002 letting.

Specifications: Specifications will be available for the July 2002 letting.

Central Office Contact Person - Paul Harkins 850-414-4353 SC 994-4353

Approved: Brian Blanchard _____ Date _____
State Roadway Design Engineer

Approved: William N. Nickas _____ Date _____
State Structures Design Engineer

Approved: Greg Xanders _____ Date _____
State Construction Engineer

Approved: Lex Chance _____ Date _____
State Estimates Engineer

Approved: Duane F. Brautigam _____ Date _____
State Specifications Engineer

Approved: Shawn McLemore _____ Date _____
State Drainage Engineer

Effective with the January 2002 letting

Issue: *Impact Attenuator Relocate Existing Vehicular and Impact Attenuator Vehicular*

History: Several new attenuators have been added on the Qualified Products List (QPL) for limited use. These devices are shipped with assembly instructions from the manufacturer.

The pay items for several attenuators are being blocked because the attenuators no longer meet NCHRP 350 TL3, or are no longer produced by the manufacturer.

Implementation Plan:

Central Office Design:

Establish the following new pay item April 2001:

544-75-xaa	Impact Attenuator Vehicular	EA
2544-75-xaa	<i>Impact Attenuator Vehicular</i>	<i>EA</i>

aa = 17 (QuadGuard Elite)
18 (QuadGuard LMC)
19 (QuadGuard LMA)
20 (QuadTrend)

Permanently block the following pay items December 31, 2001:

544-74-xaa	Impact Attenuator Relocate Existing Vehicular	EA
2544-74-xaa	<i>Impact Attenuator Relocate Existing Vehicular</i>	<i>EA</i>

aa = 2 (Hi-Dro)
3 (Hi-Dri)
4 (Steel Drum)
5 (Great)
6 (Hex-Foam Sandwich)
7 (Trend)
12 (Sentre System)

544-75-xaa Impact Attenuator Vehicular EA
2544-75-xaa Impact Attenuator Vehicular EA

- aa = 2 (Hi-Dro)
- 3 (Hi-Dri)
- 4 (Steel Drum)
- 5 (Great)
- 6 (Hex-Foam Sandwich)
- 7 (Trend)
- 12 (Sentre System)

District Design: Update plans and CES to indicate the use of the valid pay item on applicable projects beginning with the January 2002 letting.

Central Office Contact Person - David Duncan 850-414-4323 SC 994-4323

Approved: Brian Blanchard _____ Date _____
State Roadway Design Engineer

Approved: William N. Nickas _____ Date _____
State Structures Design Engineer

Approved: Greg Xanders _____ Date _____
State Construction Engineer

Approved: Lex Chance _____ Date _____
State Estimates Engineer

Effective with the January 2002 letting

Issue: *Signal Foundation Removal*

History: The Department has been paying for all traffic signal pole removal on a per each basis including the complete removal of the pole foundation with the proviso that, with the Engineer's approval, the foundation could be cut off 3' below final grade, leaving the remaining foundation in place. Concrete strain poles are now being replaced with drilled shaft foundations for traffic signals mast arms. The Department is also doing increased amounts of directional drilling at intersections. The foundations are becoming harder to remove and the department's needs for foundation removal have increased. With the increasing size and depth of pole foundations, a contractor that bid, assuming he would be allowed to cut off pole foundations would be badly penalized if forced to completely remove them. Conversely, he would be at a competitive disadvantage if he bid on the complete removal of every one. Finally, the industry wanted the Department to recognize the difference in effort required to remove direct burial poles and poles with a bolt on connection to a drilled shaft or spread footing. The Department has created two new pay items for the designer to use:

690-32-xxa Pole Removal (Shallow) EA
Shallow pole removal will include complete removal of the above ground portion of the pole and it's attachments and removal of the pole foundation and any of its buried attachments to a depth of 4 feet (1.2 meters) below existing grade. Shallow removal will be measured and paid on a per each basis.

690-33-xxa Pole Removal (Deep) LF
Deep pole removal will include complete removal of the above ground portion of the pole and it's attachments and the complete removal of the pole foundation. Measurement for pay will be made on a per foot/meter basis measuring from the existing grade to the deepest portion of the pole foundation actually removed.

The Basis of Estimate for this item is an estimated quantity of 20 feet (6 meters) per deep pole removal. **Note to Designers:** These pay items should not be used on poles used for highway lighting, unless they are jointly used to support traffic signal mast arms or span wire assemblies.

Implementation Plan:

Central Office Design:

Establish the following new pay items April 2001:

690-32-xxa	Pole Removal (Shallow)	EA
2690-32-xxa	<i>Pole Removal (Shallow)</i>	<i>EA</i>

a = 1 (Direct Burial)
 2 (Bolt on Connection)

690-33-xxa	Pole Removal (Deep)	LF
2690-33-xxa	<i>Pole Removal (Deep)</i>	<i>MI</i>

a = 1 (Direct Burial)
 2 (Bolt on Connection)

Permanently Block the following pay items December 31, 2001:

690-30	Remove Poles	EA
2690-30	<i>Remove Poles</i>	<i>EA</i>
690-40	Remove Mast Arm Assembly	EA
2690-40	<i>Remove Mast Arm Assembly</i>	<i>EA</i>

District Design: Update plans to identify locations for pole removal and type of pole to be removed at each location. Update CES to indicate the use of the valid pay item on applicable projects beginning with the January 2002 letting.

Specifications: Specifications will be available for the January 2002 letting.

Central Office Contact Person Randy Borgersen (850) 385-0243 SunCom 994-4168

Approved: Brian Blanchard _____ Date _____
 State Roadway Design Engineer

Approved: William N. Nickas _____ Date _____
 State Structures Design Engineer

Approved: Greg Xanders _____ Date _____
 State Construction Engineer

Approved: Lex Chance _____ Date _____
 State Estimates Engineer

Approved: Duane F. Brautigam _____ Date _____
 State Specifications Engineer

Effective with the January 2002 letting

Issue: Internally Illuminated Street Name Sign

History: The Department has developed a pay item and specification for the use of internally illuminated street name sign assemblies. The sign and associated mounting hardware must meet the requirements of the Minimum Specifications for Traffic Control Signal Devices (MSTCSD) and be listed on the Department's Approved Product List (APL). This item should be used when requested by maintaining agency.

Implementation Plan:

Central Office Design:

Establish the following new pay items April 2001:

699-1	Internally Illuminated Street Name Sign	EA
2699-1	<i>Internally Illuminated Street Name Sign</i>	<i>EA</i>

Permanently Block PART of the following pay item December 31, 2001:

700-89-xaa	Sign Electronically Powered	EA
2700-89-xaa	<i>Sign Electronically Powered</i>	<i>EA</i>

aa = 1 Internally Illuminated

District Design: Update CES to indicate the use of the valid pay item on applicable projects beginning with the January 2002 letting.

Specifications: Specifications will be available for the January 2002 letting.

Central Office Contact Person Jeffrey Morgan (850) 413-7685 SunCom 293-7685

Approved: Brian Blanchard _____ Date _____
State Roadway Design Engineer

Approved: Greg Xanders _____ Date _____
State Construction Engineer

Approved: Lex Chance _____ Date _____
State Estimates Engineer

Approved: Duane F. Brautigam _____ Date _____
State Specifications Engineer

Approved: Jack A. Brown _____ Date _____
State Traffic Operations Engineer

Effective with the January 2002 letting

Issue: *Pavement Markings*

History: The Department has determined that traffic stripes wider than 8” should not be paid for by the net miles/kilometers. Use linear foot/meter.

Implementation Plan:

Central Office Design:

Permanently block the following pay items December 31,2001:

709-31-AAA	Solid Traffic Stripe, Two Reactive Components (White/Black)	NM
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2709-31-AAA	<i>Solid Traffic Stripe, Two Reactive Components (White/Black)</i>	<i>NK</i>
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AAA =

121 (12”) (300mm)

161 (16”) (400mm)

181 (18”) (450mm)

241 (24”) (500mm)

709-32-AAA	Solid Traffic Stripe, Two Reactive Components (Yellow)	NM
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2709-32-AAA	<i>Solid Traffic Stripe, Two Reactive Components (Yellow)</i>	<i>NK</i>
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AAA =

121 (12”) (300mm)

161 (16”) (400mm)

181 (18”) (450mm)

241 (24”) (500mm)

710-23-AAA	Solid Traffic Stripe (White/Black)	NM
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2710-23-AAA	<i>Solid Traffic Stripe (White/Black)</i>	<i>NK</i>
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AAA =

121 (12”) (300mm)

161 (16”) (400mm)

181 (18”) (450mm)

241 (24”) (500mm)

