



FDOT Automated Quantities Part 2

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Objectives

- Explore and learn how to use the tools in the Quantity Workflow to develop Plan Summary Boxes and Summary of Quantity Sheets, get the data to Designer Interface, and create the Summary of Pay Items Sheet.
 - Review Plan Summary Box Requirements
 - Create Summary Boxes through Linked Data Manager
 - Automated
 - Non-Automated
 - Generate Reports in Quantity Manager to use to fill in Summary Box information
 - Get quantity information to Designer Interface
 - Access AASHTOWare Project Reporting to get Project Summary Reports for the Summary of Pay Items
 - Create Summary of Pay Items Sheet

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- ALL quantities are to be documented by location on Plan Summary Boxes for Roadway & Structures components.
- Plan Summary Boxes are to be located on the Summary of Quantities sheets.
 - Plan Set Location
 - Roadway – keep in same order sequence behind the Typical Section sheets
 - Structures – Directly behind the Summary of Pay Items in the General Bridge section (or behind the Key Sheet if no Summary of Pay Items sheet)
 - File Name
 - Roadway – SUMQRD**
 - Structures – B#SumofQuantities*
 - Sheet Prefix
 - Roadway – SQ-
 - Structures – BQ#-

Each Bridge will have a separate Summary of Structural Quantities sheet (or sheets). Number the Summary of Structural Quantities sheets BQ#-#. Example: if there are general bridge pay items (mobilization MOT etc) the sheet will be the first summary of structural quantities sheet and the sheet number will be BQ-1. The summary of quantities for bridge one will follow; sheet number(s) BQ1-1, BQ1-2 etc., followed by bridge 2; sheet number BQ2-1, BQ2-2 etc..

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- All other components (i.e. Signing & Pavement Markings, Signalization, Lighting, etc.) are to use Tabulation of Quantities sheets.
- Drainage systems are to be documented on the Summary of Drainage Structures sheets same as they have always been handled.
 - Do NOT add pay item numbers.
 - Incidental drainage items to a project can be documented on the Summary of Miscellaneous Drainage Items.
 - Intended for projects with Miscellaneous Drainage Items or on projects with minimal drainage work, i.e. replacing broken inlet tops or moving structures to accommodate added turn lanes, etc.
 - Do NOT include items on this box that are included on the Summary of Drainage Structures sheets.

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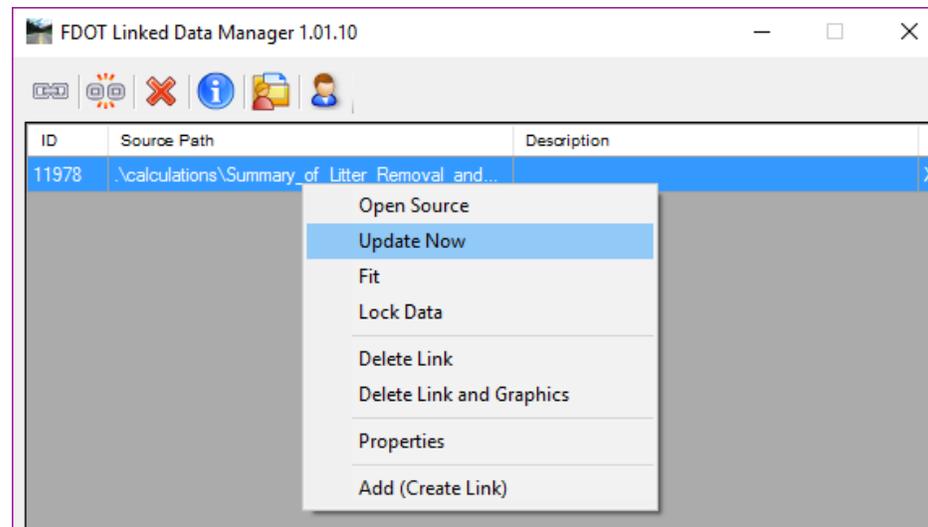


- A listing of standard summary boxes is located in Chapter 8 of the BOE.
<http://www.dot.state.fl.us/programmanagement/Estimates/BasisofEstimates/BOEManual/Files/Chapter08SummaryBoxes.pdf>
- Do NOT create non-standard boxes or modify current summary boxes with Non-Standard columns or rows.
- Formatting in MicroStation is controlled through Excel files.
 - FDOT templates have already been formatted for use.
 - Columns and rows may be adjusted or hidden in Excel and change is reflected in MicroStation when link is updated.
 - Columns may be deleted when not used. However do NOT delete the Construction Remarks or “F” columns.
 - When copying data into the template files, make sure to use the “Values Only” option to paste.

Linked Data Manager (LDM)

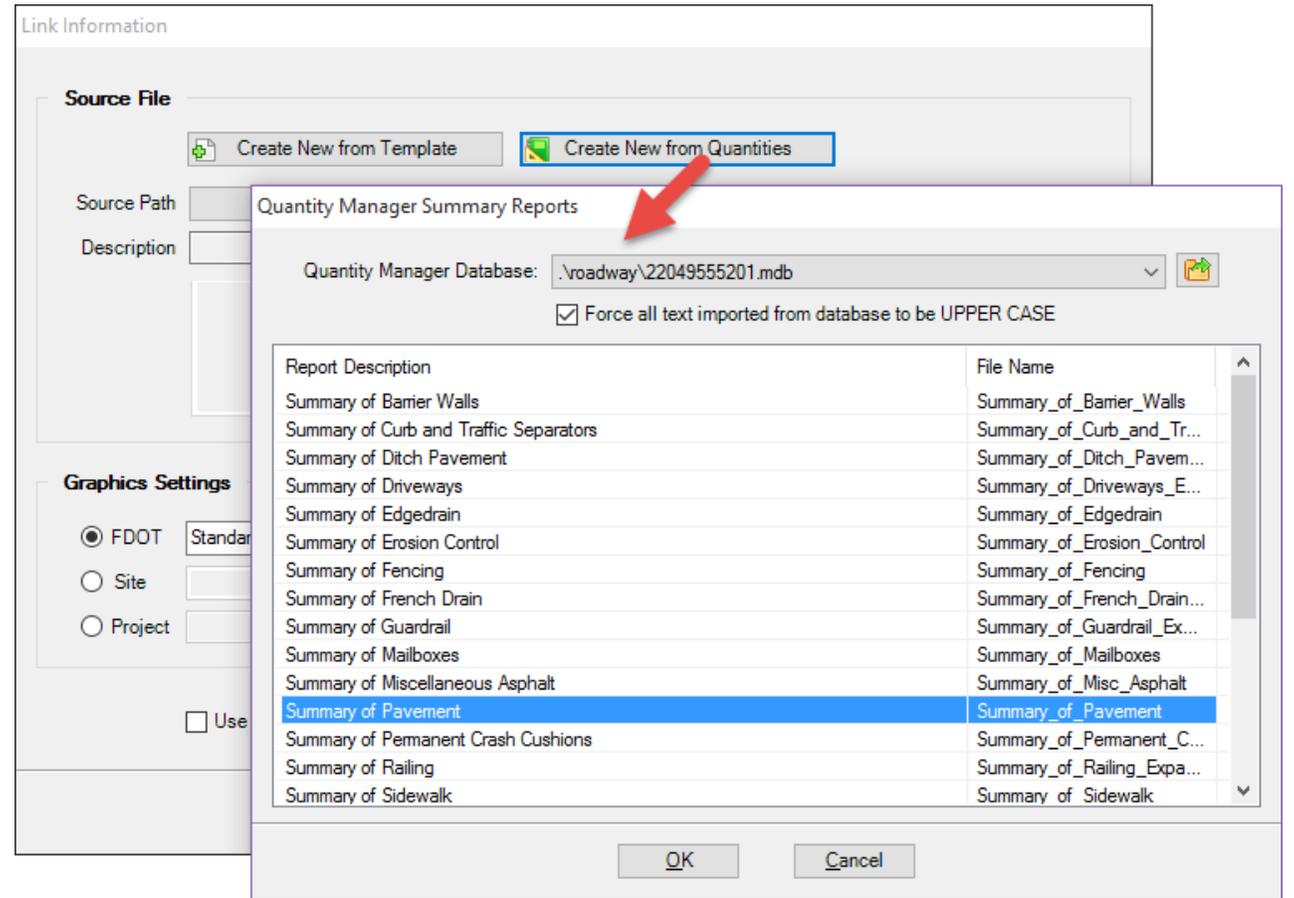
- FDOT tool that uses Excel templates to generate Plan Summary Boxes.
- Creates a link between the Excel file and the MicroStation dgn file for easy updates.
- Always make changes to spreadsheet, save and then right click on the link in the list and choose Update Now.

Note: this is a ONE WAY process. Changes made in MicroStation cannot be updated to Excel.



Linked Data Manager (LDM)

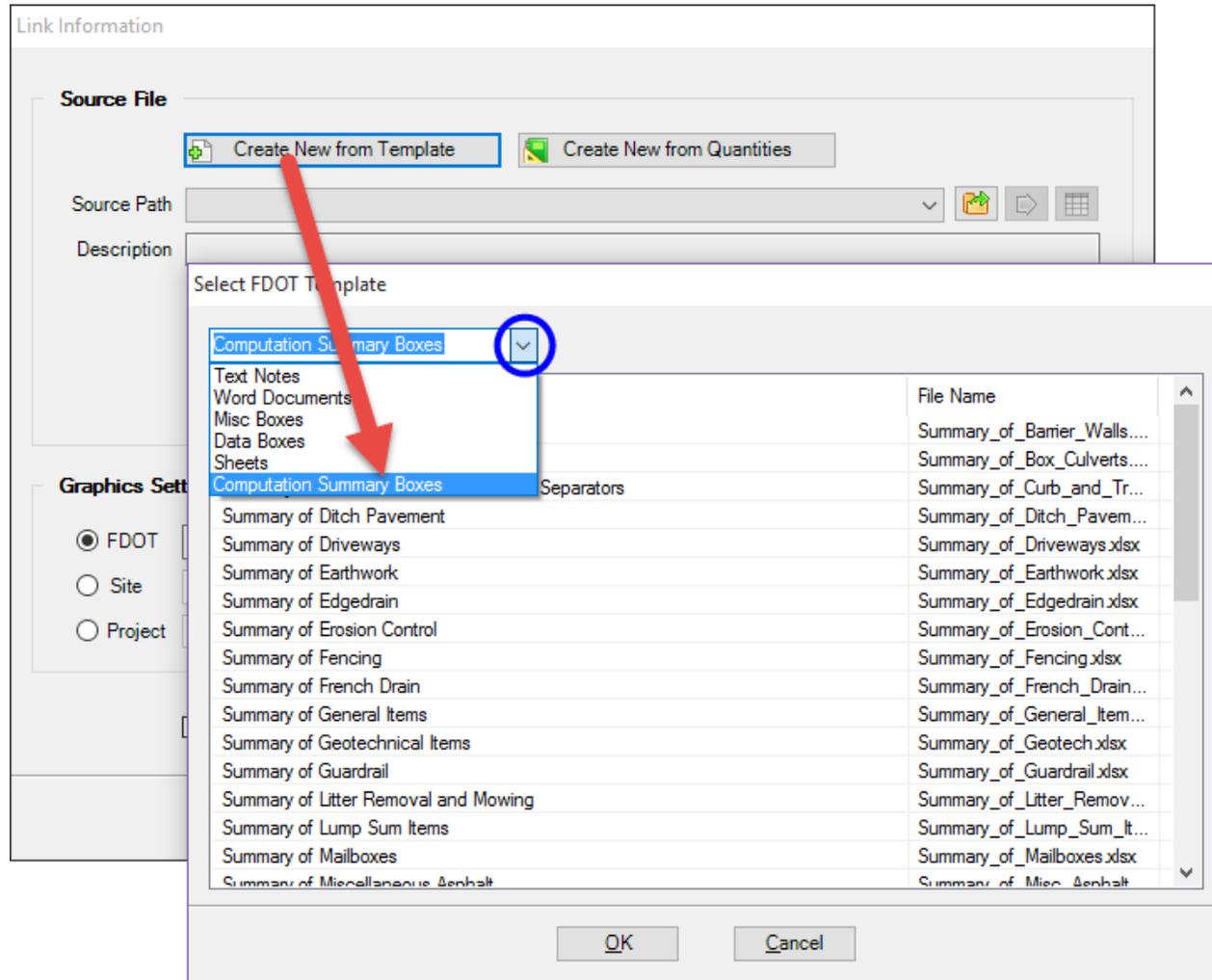
- Automating Plan Summary Boxes
 - When creating a link use the Create New from Quantities option.
 - Select the QM database (*.mdb)
 - Select the Summary to be created
 - Save the file to the Calculations directory of the project



Linked Data Manager (LDM)

- Automating Plan Summary Boxes
 - Once placed, the plan sheet borders are not linked and can be moved/deleted as needed. Summary boxes can also be moved. There will be a separate link for each summary box placed.
 - If a quantity changes and the boxes need to be updated, the same process can be used. Overwrite the existing file in the Calculations folder and then cancel the placement of the links. Update the existing links for the summary boxes.
 - Note: If there are any customizations in the Excel file (i.e. columns hidden or widened) they will need to be redone in the newly created Excel file.

Linked Data Manager (LDM)



- Creating Plan Summary Boxes from Templates
 - When creating a link, select Create New From Template for summary boxes that are not included in the automated list.
 - Note: The templates are available for ALL summary boxes in the drop down for designers who do not use D&C Manager or Quantity Manager.

Linked Data Manager (LDM)

- Creating Plan Summary Boxes from Templates
 - Save the Excel file to the Calculations folder in the project directory.
 - Once saved, the Link Information dialog will come back up, select the Box1 worksheet from the dropdown.
 - Select the Graphic Settings.
 - Select desired link settings.
 - Click OK and click in the MicroStation file to place the link and graphics.

Link Information

Source File

Create New from Template Create New from Quantities

Source Path .calculations\Summary_of_Litter_Removal_and_Mowing.xlsx

Description

Excel Settings

Worksheet Box1 Header Rows 2

Width / Height Offset X / Y Use Title Cell

Graphics Settings

FDOT Standard

Site

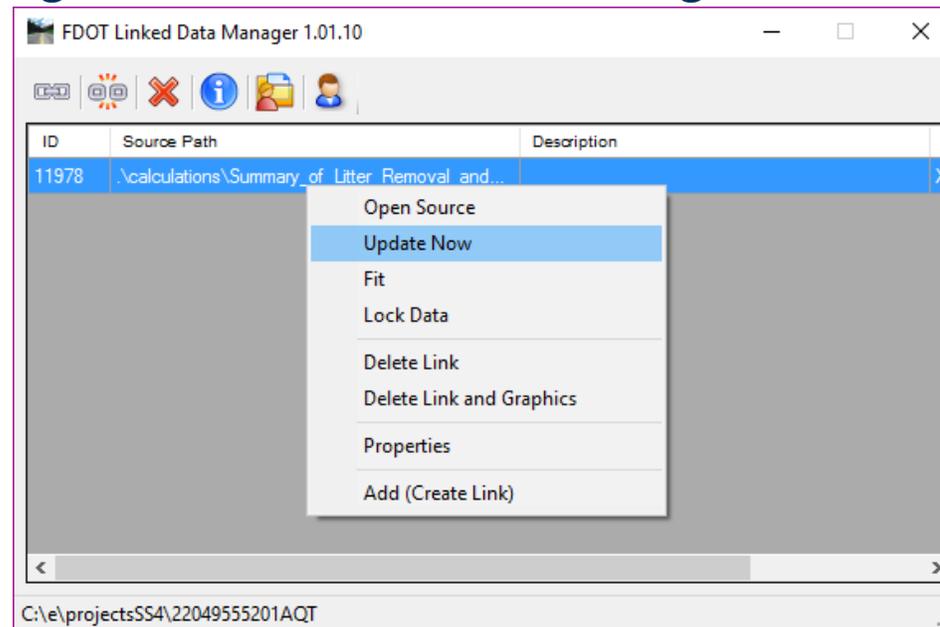
Project

Use Drawing Scale Update Graphics on File Open Lock Graphics Use Print Area

OK Cancel

Linked Data Manager (LDM)

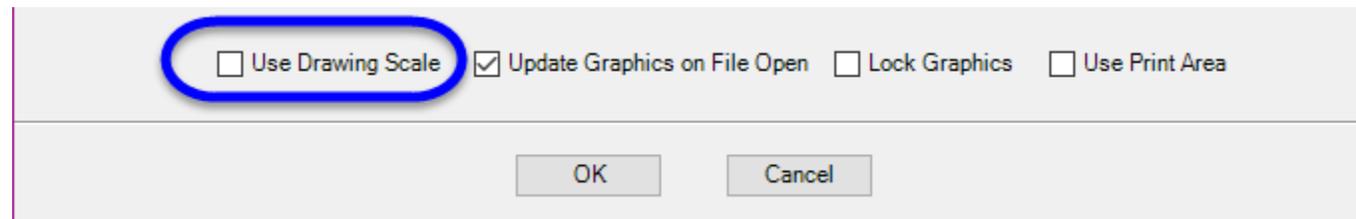
- Creating Plan Summary Boxes from Templates
 - Right click on the link in the LDM tool box to get the option Open Source.
 - Once open, make the necessary changes to the file and save.
 - In MicroStation, right click on the link in LDM again and select Update Now.



- Note: Reports generated from QM will help to speed up this process.

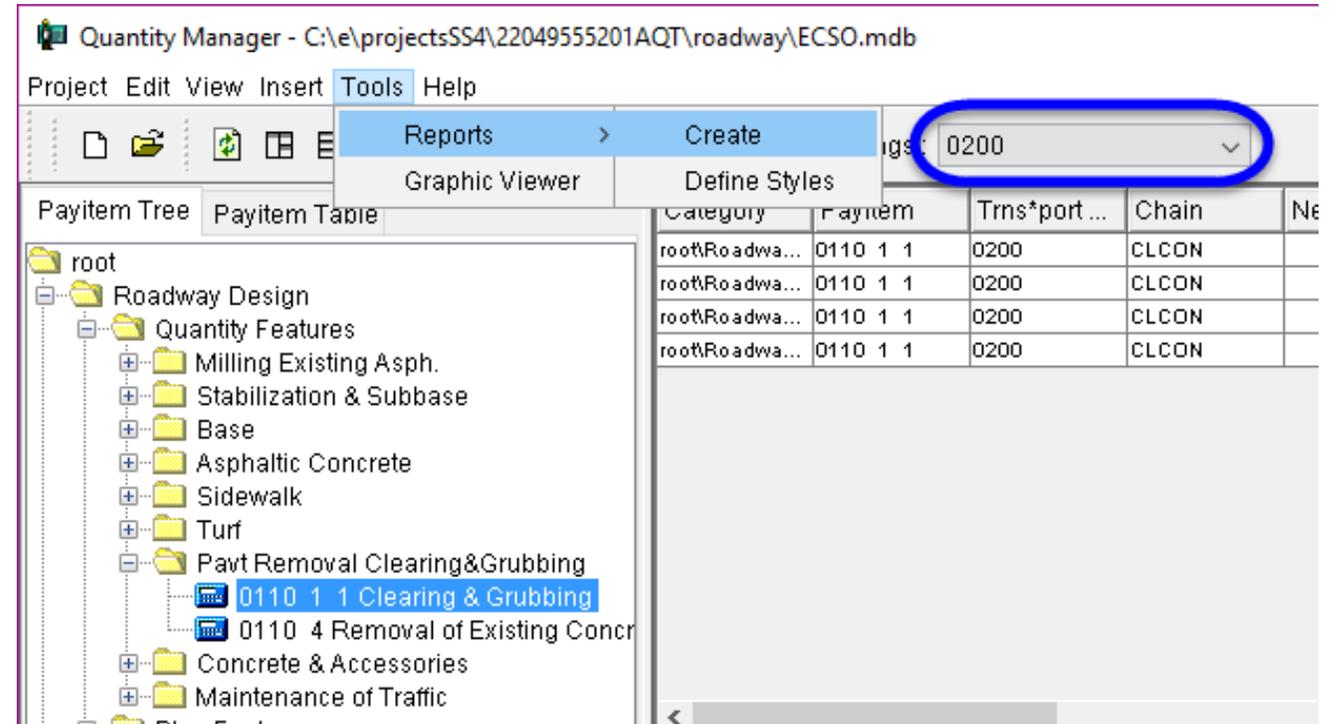
Linked Data Manager (LDM)

- Creating Plan Summary Boxes from Templates
 - Summary of Structures Quantities
 - Place the Plan Sheet at a scale of 12
 - Do not turn on the option to use the Drawing Scale



Quantity Manager (QM)

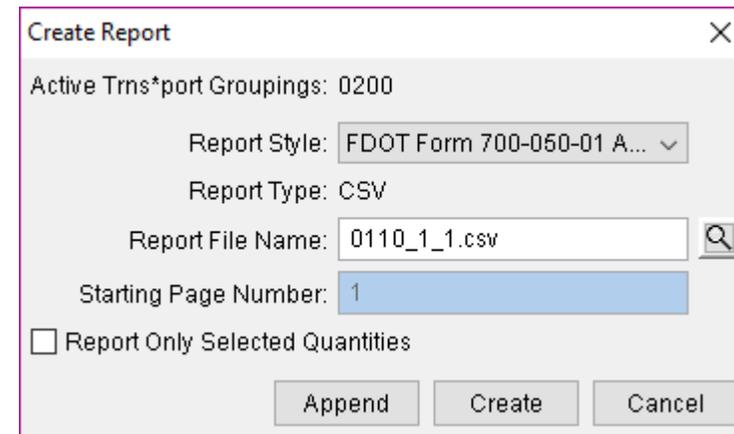
- Generating Reports
 - In QM, set the Trnsport Grouping setting to the appropriate category (Roadway = 0200)
 - Select the desired Pay Item in the Pay Item Pane.
 - Select Tools > Reports > Create from the QM menu.



Quantity Manager (QM)

- Generating Reports

- On the report menu, select the report for the Area CSV file.
- Type in a name for the output.
- Click Create. The file will open in Excel.



The screenshot shows a 'Create Report' dialog box with the following fields and options:

- Active Transport Groupings: 0200
- Report Style: FDOT Form 700-050-01 A... (dropdown menu)
- Report Type: CSV
- Report File Name: 0110_1_1.csv (text input with search icon)
- Starting Page Number: 1 (text input)
- Report Only Selected Quantities
- Buttons: Append, Create, Cancel

- This file can be used to copy and paste the information into the template file generated through LDM.
 - When pasting the information into the template, make sure to use the option for Values Only so that the formatting doesn't change.

Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
3. Export the quantities report from QM (xml file)
4. Import the quantities to the project in DI

Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
 - This can be done in 2 locations...
 - Project List
 - Project Details
 - (Click Update in the Project column to get to the Project Details)
 - On either screen, select Export Header.

FDOT Designer Interface Web Trns*port Preconstruction
Logged in as: rd964db Logout Webgate Reporting Home Help

Project List

Project...	Project Number	aecXML Pro...	Description	Letting D...	Unit Sy...	Proposal	Dist
Update	0000000000000	Export Header Import	CADD office testing		English	T8888	0

FDOT Designer Interface Web Trns*port Preconstruction
Logged in as: rd964db Logout Webgate Reporting Home Help

Project List >> Project Details 00000000000000 [CADD FTP Site](#)

Federal #: N/A **Letting Date:** **District:** 00 **Spec Year:** 13 **County:** 55 - LEON **Proposal:** T8888
Class: 7 - Class 7 **Type:** C - Construction **Urban/Rural:** **Work Type:** X1 - New Construction **Work Mix:**

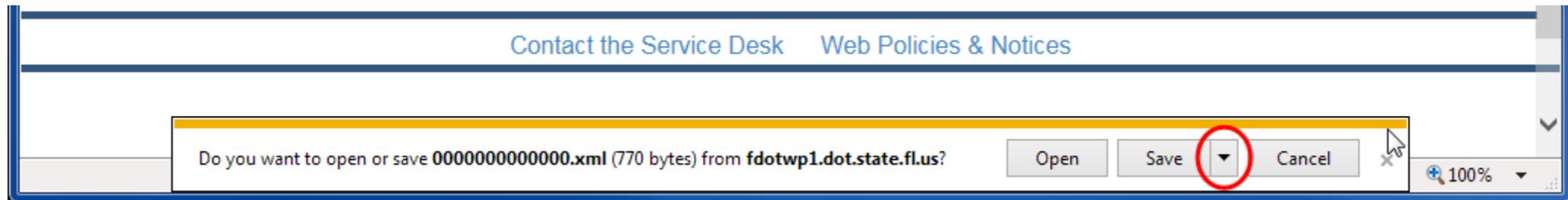
Categories

[Delete Selected](#) [Export Header](#) [Import](#) [Add Category](#) [Copy Selected Category](#) (none)

Delete	Number	Description	Alternate...	Bridge ID	Update	Ite...	View
<input type="checkbox"/>	0100	Structures		991234	Update	Ite...	View
<input type="checkbox"/>	0200	Roadway			Update	Ite...	View

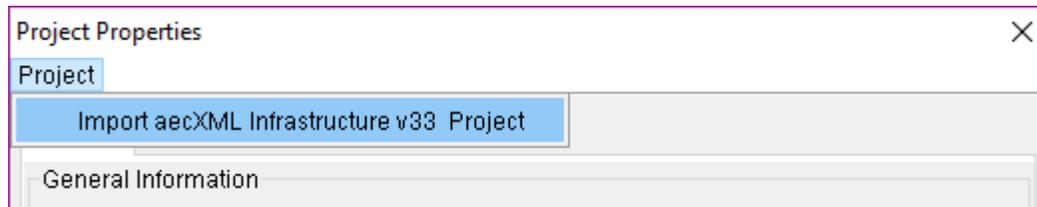
Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
 - Select the drop down option beside the Save option and choose Save As.
 - Save the xml to the project discipline directory (i.e. Roadway).

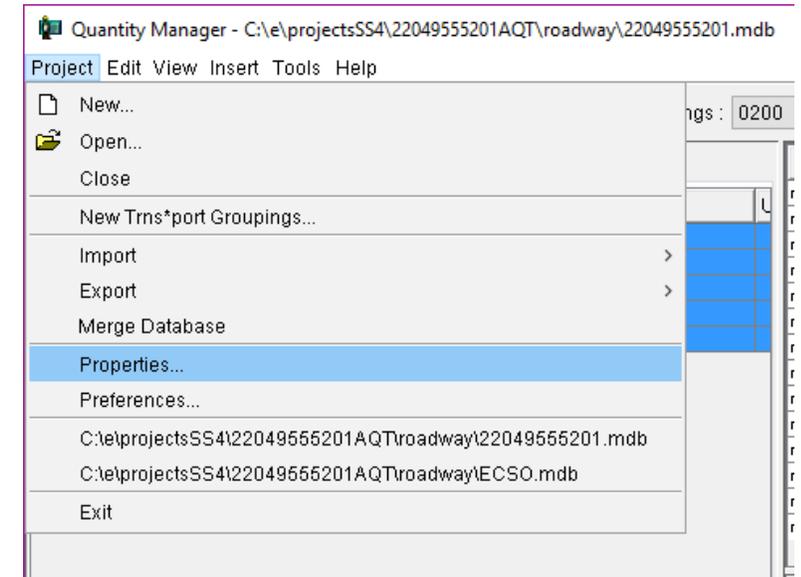


Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
 - In QM, select Project > Properties.
 - On Project Properties, select Project > Import aecXML Infrastructure v33 Project

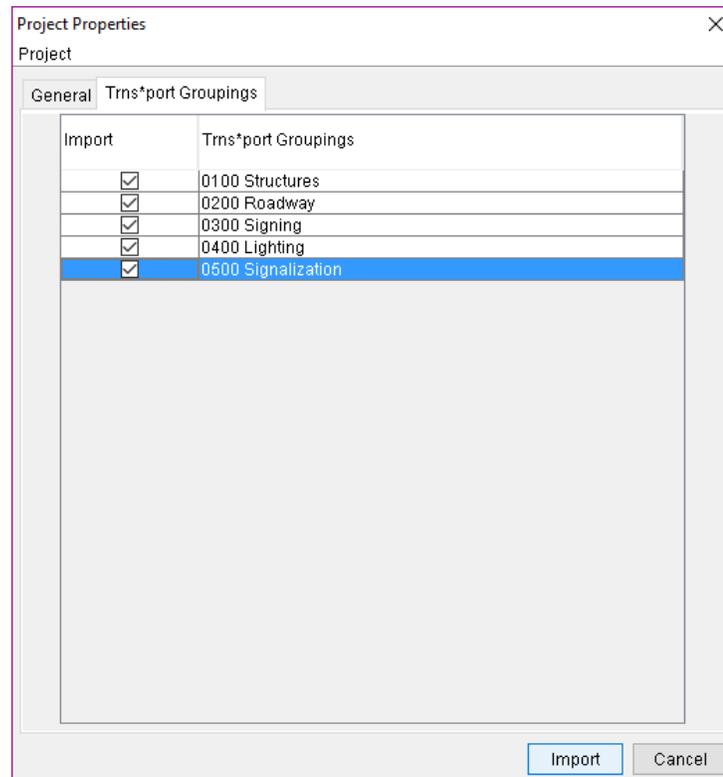


- Select the downloaded file select Open.



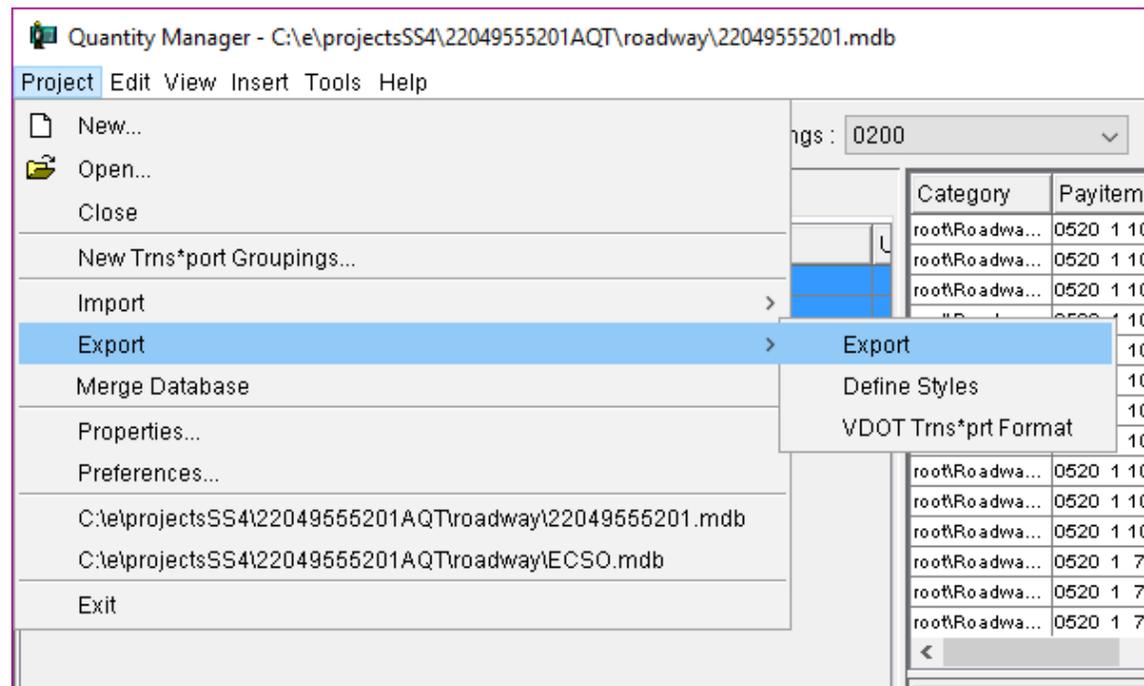
Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
 - The Project Properties dialog opens with a new tab for the Trns*port Groupings.
 - Select the desired options and then click Import.



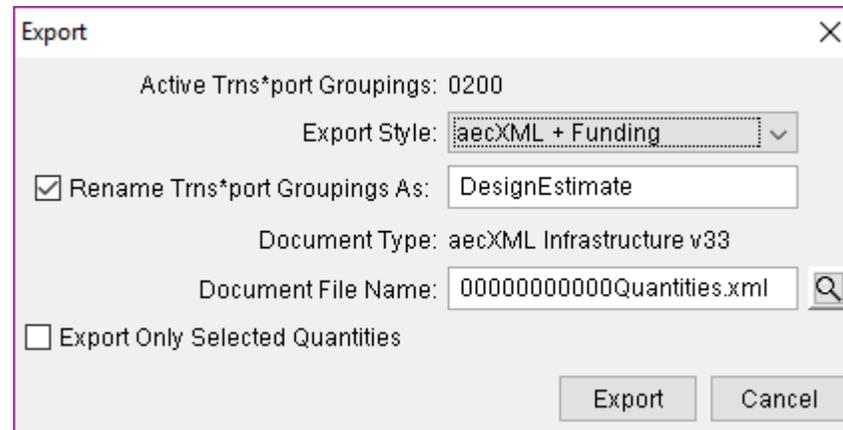
Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
3. Export the quantities report from QM (xml file)
 - In the Payitem Table view of the Pay Item Pane, select all of the pay items desired to be exported.
 - Make sure the Trns*port Grouping is set correctly.



Quantities – QM to DI – Workflow

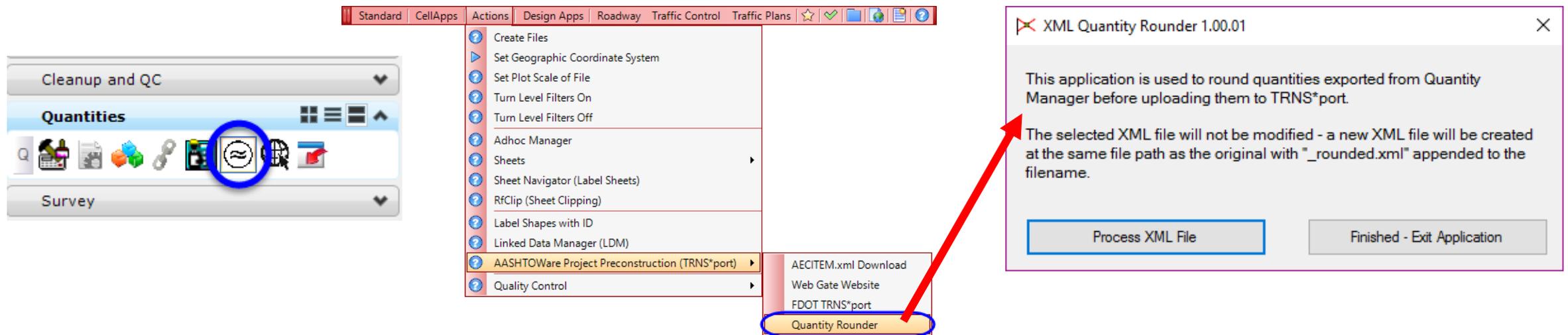
1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
3. Export the quantities report from QM (xml file)
 - On the Export dialog, select the Export Style, aecXML + Funding
 - Toggle ON the Rename option and leave as the default “DesignEstimate”.
 - Type in a name for the xml file generated.
 - Click Export.



- Click OK on the information dialog about Properties missing. This is normal. The file generated will have all the necessary information.
- Click OK on the Export Complete information dialog.

Quantities – QM to DI – Workflow

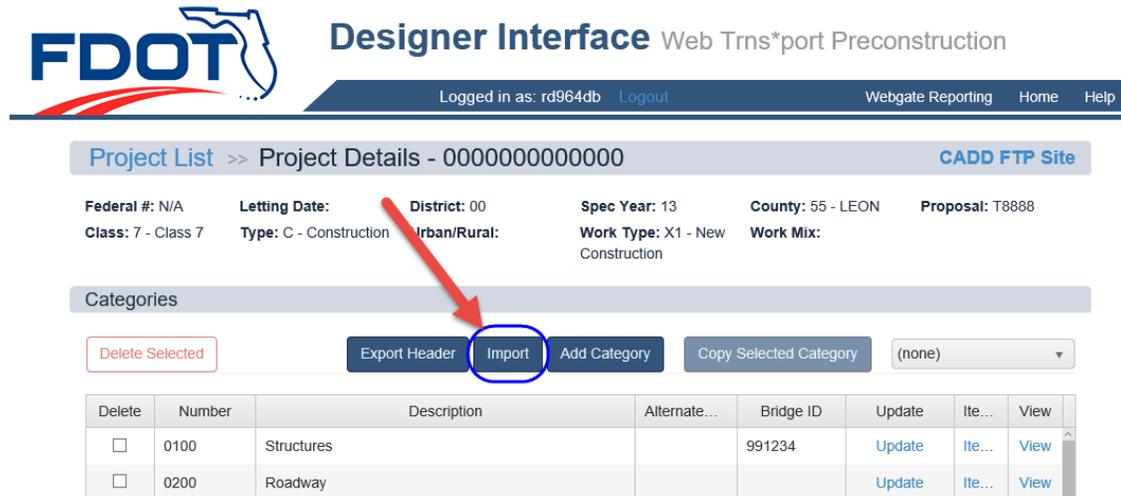
1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
3. Export the quantities report from QM (xml file)
 - In MicroStation, open the XML Quantity Rounder tool.
 - Located on the FDOT Plans Development task menu > Quantities
 - OR – on the FDOT Actions Menu under Trns*port



- Click Process XML File and navigate to and select the file exported from QM.
- Click OK on the Created file dialog and then click Finished – Exit Application.

Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
3. Export the quantities report from QM (xml file)
4. Import the quantities to the project in DI
 - On either the Project List or Project Details view, click on Import.



The screenshot shows the FDOT Designer Interface for a project. The header includes the FDOT logo, the text "Designer Interface", and "Web Trns*port Preconstruction". Below the header, it shows the user is logged in as "rd964db" with options for "Logout", "Webgate Reporting", "Home", and "Help". The main content area displays "Project List >> Project Details - 0000000000000" and a "CADD FTP Site" link. Project details include: Federal #: N/A, Letting Date: District: 00, Spec Year: 13, County: 55 - LEON, Proposal: T8888, Class: 7 - Class 7, Type: C - Construction, Urban/Rural: Work Type: X1 - New Construction, and Work Mix: Construction. Below this is a "Categories" section with buttons for "Delete Selected", "Export Header", "Import", "Add Category", and "Copy Selected Category", along with a dropdown menu set to "(none)". A table lists categories with columns for Delete, Number, Description, Alternate..., Bridge ID, Update, Ite..., and View. The table contains two rows: one for "Structures" (Number 0100, Bridge ID 991234) and one for "Roadway" (Number 0200).

- Click on Select Files... and then navigate to the file exported and then rounded from the project directory. (It will have _Rounded appended to the file name.)
- Once selected click on Upload file.

Quantities – QM to DI – Workflow

1. Export the Project Header information (xml file) from DI
2. Import the project header info into QM Project Preferences
3. Export the quantities report from QM (xml file)
4. Import the quantities to the project in DI
 - The results will show up on the screen. This is ALL or nothing.
 - Green – Load Successful

Project Load Log Messages

	Data validation successful.	Project successfully loaded.
INSERT Project Item	Project: 0000000000000 Category: 0200 Item: 0110 4 2	
INSERT Project Item	Project: 0000000000000 Category: 0200 Item: 0425 5 1	
INSERT Project Item	Project: 0000000000000 Category: 0200 Item: 0425 5 1	
UPDATE Project Item	Project: 0000000000000 Category: 0200 Item: 0327 70 1	
UPDATE Project Item	Project: 0000000000000 Category: 0200 Item: 0327 70 1	

Page 1 of 3 10 items per page 1 - 10 of 29 items

- Red – Errors (nothing loaded)

Type	Info	Data Validation Errors
Project Category	Project: Category: DesignEstimate Item: Quantity:	Invalid category number. Must be numeric (E16)

Summary of Pay Items – Workflow

- Access Webgate Reporting
 - From DI
 - From Webgate site
- Select Designers, Estimators, and Reviewers > Project Edit Report
 - This report should be run first to identify any errors with the pay items loaded on the project.



Summary of Pay Items – Workflow

- Access Webgate Reporting
 - From DI
 - From Webgate site
- Select General Reports > Summary of Pay Items Report



FDOT Florida Department of Transportation Session Time remaining: 00:18:43
AASHTOWare Project Webgate Reporting Denise Broom | [Help](#) | [Logout](#)

Summary of Pay Items

► Construction Sitemanager
► Designers, Estimators, and Reviewers
► Equal Opportunity
▼ **General Reports**
 ► Item Average Unit Cost by Item Number Report
 ► Item Average Unit Cost by Item Range Report
 ► Contract Project Directory Report
 ► Crosswalk Report
 ► Master PayItem List Report
 ► Proposal Section and Line Numbers Report
 ► **Summary of Pay Items Report**
► Landscape Reports
► Maintenance Sitemanager

This report produces a summary of pay items and quantities for a selected project. If proposal exist the report will be of the proposal level, if no proposal the report will be of the project level. Either level, project or proposal, may be used for phase reviews; the proposal summary must be used for final plans. Identifies the participating and non-participating quantity for each pay item. Use the button "Auto-Generate Proposal Sections" to assign proposal section numbers and proposal item line numbers if some items are not ordered correctly in report or XML file.

[Click to view video for the CADD Workflow for Quantities with Designer Interface.](#)
Note: Scroll to the bottom of the table of contents for how to create the Summary of Pay Items Sheets.

Select/Enter Parameter Information: Required fields marked with asterisk(*)

Select Project: 0000000000000 Auto-Generate Proposal Sections

Report Type: Report File CADD File

Summary of Pay Items – Workflow

- Select the Project
- Select Report Type: CADD File
- Click Submit
- Select the Save As option
 - Rename the file if the Project Header file is named the same as the default.
- Note: The Auto-Generate Proposal Sections is now available for Designers to run.
 - If a proposal has been generated for a project, run this report before creating the Summary of Pay Items if pay items have been added or modified.

FDOT Florida Department of Transportation Session Time remaining: 00:18:43
AASHTOWare Project Webgate Reporting Denise Broom | Help | Logout

Summary of Pay Items

This report produces a summary of pay items and quantities for a selected project. If proposal exist the report will be of the proposal level, if no proposal the report will be of the project level. Either level, project or proposal, may be used for phase reviews; the proposal summary must be used for final plans. Identifies the participating and non-participating quantity for each pay item. Use the button "Auto-Generate Proposal Sections" to assign proposal section numbers and proposal item line numbers if some items are not ordered correctly in report or XML file.

[Click to view video for the CADD Workflow for Quantities with Designer Interface.](#)
Note: Scroll to the bottom of the table of contents for how to create the Summary of Pay Items Sheets.

Select/Enter Parameter Information: Required fields marked with asterisk(*)

Select Project: 00000000000000 Auto-Generate Proposal Sections

Report Type: Report File CADD File

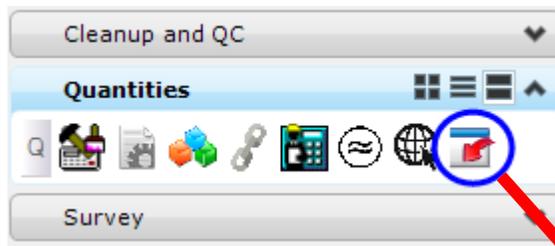
Submit Reset

Do you want to open or save 00000000000000.xml from fdotwp1.dot.state.fl.us?

Open Save Cancel

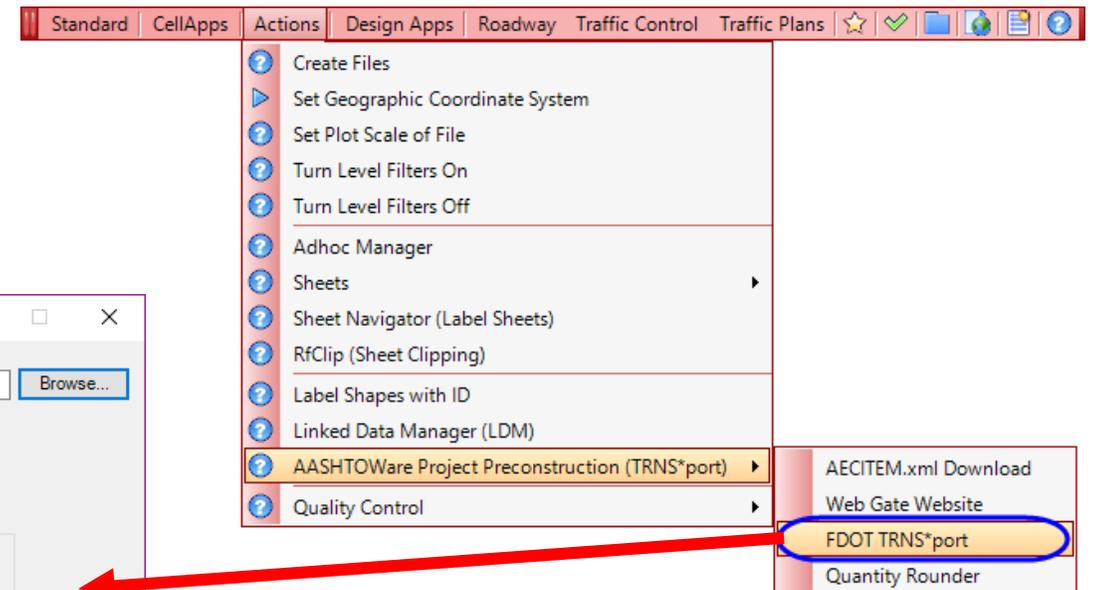
Summary of Pay Items – Workflow

- In MicroStation, select the FDOT Trnsport tool



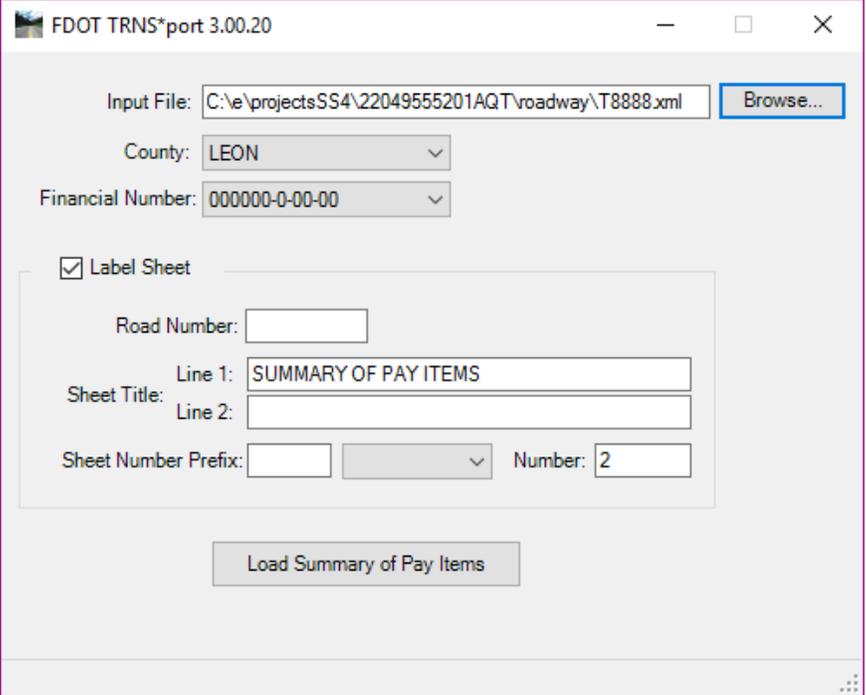
The screenshot shows the 'FDOT TRNS*port 3.00.20' dialog box. It contains the following fields and options:

- Input File: C:\e\projects\SS4\22049555201AQT\roadway\T8888.xml (with a 'Browse...' button)
- County: LEON (dropdown menu)
- Financial Number: 000000-0-00-00 (dropdown menu)
- Label Sheet
- Road Number: [text input field]
- Sheet Title: Line 1: SUMMARY OF PAY ITEMS, Line 2: [text input field]
- Sheet Number Prefix: [text input field] [dropdown menu] Number: 2
- Load Summary of Pay Items (button)



Summary of Pay Items – Workflow

- Select the Browse button and navigate to the save Summary of Pay Items report xml file.
- County and Financial Number are pulled in from the XML file.
- Label Sheet is toggled on by default.
 - Optional
- Click Load Summary of Pay Items



The screenshot shows a software window titled "FDOT TRNS*port 3.00.20". The interface includes the following fields and controls:

- Input File:** A text box containing the path "C:\e\projectsSS4\22049555201AQT\roadway\T8888.xml" and a "Browse..." button to its right.
- County:** A dropdown menu with "LEON" selected.
- Financial Number:** A dropdown menu with "000000-0-00-00" selected.
- Label Sheet:** A checkbox that is checked.
- Road Number:** An empty text box.
- Sheet Title:** Two stacked text boxes. The top one contains "SUMMARY OF PAY ITEMS" and the bottom one is empty.
- Sheet Number Prefix:** A text box, a dropdown menu, and a "Number:" label followed by a text box containing the value "2".
- Load Summary of Pay Items:** A button at the bottom of the dialog.

Questions???

Thank-you for joining today's session.

Need some HELP? Contact me...

(850) 414-4751

E-mail: Denise.Broom@dot.state.fl.us

OR: ecso.support@dot.state.fl.us

<http://www.dot.state.fl.us/ecso>

FDOT CADD Support Forum On-line

http://communities.bentley.com/communities/user_communities/fdot_cadd_support/default.aspx