CADD Update

2014 Design Update Training

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Topics Covered

- What's Coming in 2014
- 3D Design
- Digital Delivery
- Plan Summary Boxes

FDOT Software Updates

- FDOTSS2 MR1 is coming soon:

  http://www.dot.state.fl.us/ecso/downloads/software/FDOTSS2CaddSoftware.shtm

- FDOTSS2 MR1 contains many updates

  - ✓ A complete list of changes will be available in the Release Notes on the downloads page.

- FDOT2014.C3D update coming late 1st quarter 2014

- FDOTSS3 coming this summer

Why You Should Be Modeling

All new projects should be utilizing 3D design techniques.

- *Easier to evaluate design alternatives*
- *Better quality control, identify conflicts early*
- *Immediate visualization*
- *Good for public understanding*
- *Generate Automated Machine Guidance (AMG) information for construction*
- *Virtual computer model helps determine constructability*
- *Modeling and modern software tools enable agile Construction Integrated Management (CIM) where 4D (Schedule) and 5D (Cost) can also be integrated and managed*

Why You Must Start Modeling

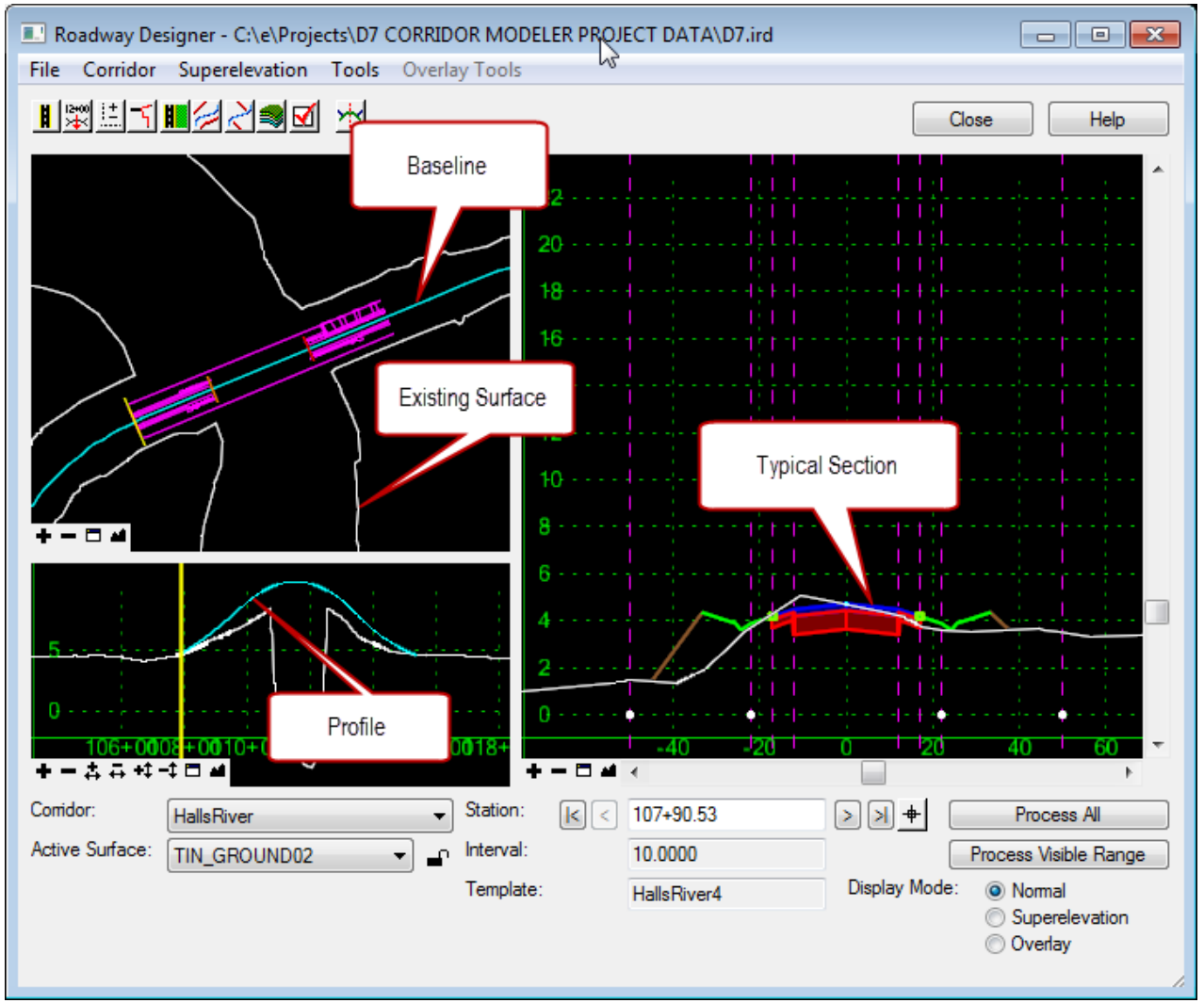
All new projects should be utilizing 3D design techniques.

- CADD software vendors no longer support the older 2D methods and tools. Autodesk currently only supports modeling, and all future Bentley releases will not run Criteria and only support Roadway Modeler.
- Contractor's increasing requests for 3D models to support Automated Machine Guidance (AMG).
- The FHWA's "Every Day Counts" initiative encouraging Agencies to utilize the newer 3D technology, and the efficiencies it brings to the entire road design/construction effort

FDOT will sunset support for the legacy 2D Design tools. The next major update, in July 2014, will be the last FDOT release to include Criteria.

What do I Need to Get Started?

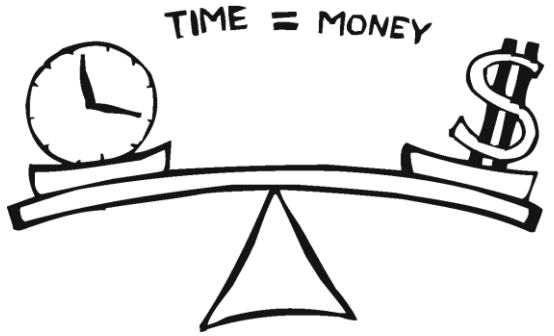
- Existing Surface (DTM)
- Baseline
- Proposed Profile
- Typical Section



Keys to 3D Modeling Success

- Start with best 3D survey data available (DTM Required)
- Plan the work – (limits, participants, namespace, etc.)
- Build the design from the simple concept, then add to and refine the design over the design lifecycle
- Keep model and 2D plans coordinated and updated
- Checks between model, plans, and the real world

Benefits for Construction



- Significant productivity increases
  - ✓ Productivity improved by up to 50%
  - ✓ Survey costs cut up to 75%
    - Automation decreases the need for staking and stringing lines
    - Reduced equipment, idle time and Less rework
  - ✓ Reduced fuel consumption and greenhouse gas emissions by up to 40 percent
- Increased precision results in smoother surfaces.

3D Deliverables

- ✓ 2D Proposed Planimetrics – DWG
  - (AutoCAD DWG is consumable by all know AMG pre-processing software and is also easily exported from MicroStation/GEOPAK)
- ✓ 2D existing Topographics and proposed Design –DWG format
- ✓ Alignments and profiles- in LandXML
- ✓ 3D proposed break lines – DWG format
- ✓ 3D existing surface TIN – LandXML or DWG format
- ✓ 3D proposed surface TIN (Top of design only) – LandXML or DWG format

All of these files are easily extracted from the files created in the design process.

3D Design Learning Resources

- FDOT Course Guide

  http://www.dot.state.fl.us/ecso/downloads/documentation/FDOTCorridorModeling/FDOTCorridorModeling.shtm

- Webinars

  http://www.dot.state.fl.us/ecso/downloads/GoToMeetingTraining/PostedWebinars.shtm

- FDOT Design Expo

  http://www.dot.state.fl.us/structures/DesignExpo2012/

  http://www.dot.state.fl.us/structures/DesignExpo2013/

- FHWA Every Day Counts Webinar Series

  http://www.fhwa.dot.gov/everydaycounts/edctwo/2012/3d_webinars.cfm

Digital Delivery

- ✓ An emphasis on transitioning to Digital Delivery should be made
- ✓ Classical Electronic Delivery software is being sunset
  - PEDDS, EDI, and the other applications associated with Electronic Delivery may not be delivered in future FDOT software releases.
- ✓ District 2 has fully transitioned to Digital Delivery.

Acquiring Digital Certificates

ACES Digital Certificate:

FDOT Staff

- Certificate voucher can be requested using Automated Access Request Form (AARF)

Consultants

- Certificate can be purchased from Identrust

  http://www.identrust.com/fdot/index.html

Digital Delivery Learning Resources

- Webinars

http://www.dot.state.fl.us/ecso/downloads/GoToMeetingTraining/PostedWebinars.shtm

FDOT Digital Delivery 4					
Obtain and Trust a Digital Certificate Trust Root Certificates	This video shows how FDOT employees will obtain and install a Digital Certificate, however portions of this video will benefit consultants who will need to obtain their own Digital Certificate (consultants should watch the video after time mark 0:04:15).	30.7 MB	0:12:28	11/04/2013	Quinton Tillman
Digital Delivery Project Structure and Standards	This webinar will cover recently published and developing standards on digital delivery. Specific items to be discussed are file naming conventions, revisions, newly created "Signature Sheet" and the digital signature appearance.	51.5 MB	0:27:42	08/07/2013	Quinton Tillman
Digital Signature Basics	Webinar video about Digital Signature Basics.	18.7 MB	0:09:44	12/06/2012	Quinton Tillman
Streamlined Electronic Delivery Stre. Elec. Deli. Stre. Elec. Deliv. Q & A	This webinar will contrast Streamlined Electronic Delivery with the current Classical Electronic Delivery and discuss the changes to the process with updates to the CADD Production Criteria Handbook and the Electronic Delivery software applications used.	68.5 MB	0:55:35	03/06/2013	Bruce Dana

Plan Summary Boxes

- Overview
  - ✓ Quantity Documentation – Roadway and Structures
    - Summary Boxes
    - Summary of Quantities Sheets
      - Sheet Number Prefixes
    - Area Shapes in CAD Drawings (QTDSRD File)
    - Backup Documentation – Calculations Folder
  - ✓ No changes to workflow for Drainage or other component sets that use Tabulation of Quantities Sheets.

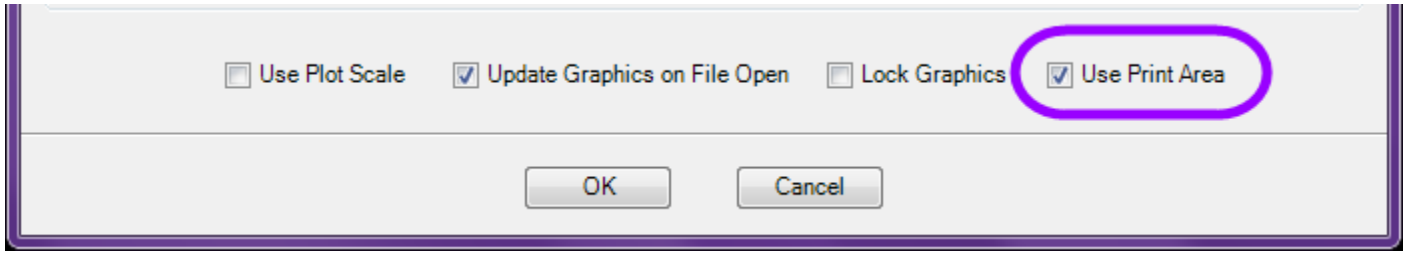
Plan Summary Boxes

- CADD Software
  - ✓ FDOTSS2 includes the new tool enhancements to support the new requirements
- Training
  - ✓ Posted Webinars – FDOT Quantities/Summary Boxes

  http://www.dot.state.fl.us/ecso/downloads/GoToMeetingTraining/PostedWebinars.shtm
  - ✓ Design EXPO
  - ✓ FLUG

Plan Summary Boxes

- Coming Enhancements – FDOTSS2 MR1
  - ✓ Print Area support enabled



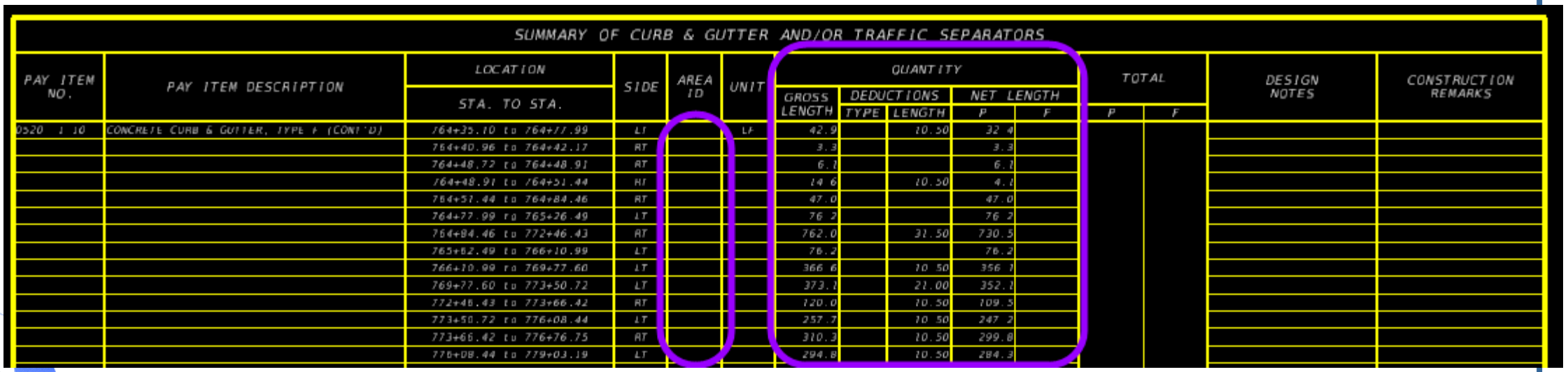
  - ✓ Various tweaks to the template formatting
  - ✓ Automation will default to the Calculations folder to save Excel files
  - ✓ Worksheet protection settings have been set up for all templates

Plan Summary Boxes

- Coming Enhancements – FDOTSS2 MR1
  - ✓ New Sorting Adhocs are available
    - Sorts quantities in the database to place on specific table
      - Addressed the Summary of Permanent Driveways with Summary of Pavement and Summary of Sidewalk
    - Adds a sort function to the way the items are ordered in the summary boxes
  - ✓ Added Automation
    - Miscellaneous Asphalt, Temporary Crash Cushions, Utility Adjustments

Plan Summary Boxes

- Coming Enhancements – FDOTSS2 MR1
  - ✓ Deduction column added to Summary of Curb & Gutter and Traffic Separators
  - ✓ Area ID will no longer be filled in for LF items when automating from quantities



SUMMARY OF CURB & GUTTER AND/OR TRAFFIC SEPARATORS

PAY ITEM NO.	PAY ITEM DESCRIPTION	LOCATION STA. TO STA.	SIDE	AREA ID	UNIT	QUANTITY GROSS LENGTH	DEDUCTIONS TYPE	DEDUCTIONS LENGTH	NET LENGTH P	NET LENGTH F	TOTAL P	TOTAL F	DESIGN NOTES	CONSTRUCTION REMARKS
0520 1 10	CONCRETE CURB & GUTTER, TYPE F (CONT'D)	764+35.10 to 764+77.99	LT		LF	42.9		10.50	32.4					
		764+40.96 to 764+42.17	RT			3.3			3.3					
		764+48.72 to 764+48.91	RT			6.1			6.1					
		764+48.91 to 764+51.44	RT			14.6		10.50	4.1					
		764+51.44 to 764+84.46	RT			47.0			47.0					
		764+77.99 to 765+26.49	LT			76.2			76.2					
		764+84.46 to 772+46.43	RT			762.0		31.50	730.5					
		765+82.49 to 766+10.99	LT			76.2			76.2					
		766+10.99 to 769+77.60	LT			366.6		10.50	356.1					
		769+77.60 to 773+50.72	LT			373.1		21.00	352.1					
		772+48.43 to 773+66.42	RT			120.0		10.50	109.5					
		773+50.72 to 776+08.44	LT			257.7		10.50	247.2					
		773+66.42 to 776+76.75	RT			310.3		10.50	299.8					
		776+08.44 to 779+03.19	LT			294.8		10.50	284.3					

Plan Summary Boxes

- Look for Upcoming Weekly Wednesday Webinars

http://www.dot.state.fl.us/ecso/downloads/GoToMeetingTraining/ScheduledWebinars.shtm

Engineering/CADD System Office

Engineering/CADD System Office / Scheduled Webinars

Live On-Line Training Sessions

The Engineering / CADD Systems Office (ECSO) offers monthly and weekly GOTO Webinars, generally held from 9:00am to 11:00am (Eastern Daylight Time), addressing the hottest topics and most frequently asked questions.

Topic suggestions are more than welcome and there is no cost associated with participation in these training sessions. Participants may obtain the required session information and links to join meetings from the table below just by clicking on the links provided.

Feel free to send any comments, suggestions, and questions to **ecso.support@dot.state.fl.us**. To suggest topics for future webinar sessions contact: **Jimmie Prow**.

Scheduled Webinars Training Sessions

This is a list of upcoming webinar sessions. Please register early and remember to login at least 15 minutes prior to the webinar to ensure a timely session.

Search:

Title	Date	Description	Time	Presenter
NOTICE ECSO Weekly Webinars for MicroStation will be on hold until after January 2014.				
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NOTICE There are no Autodesk Webinars scheduled at this time.				
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