Design, Drawing and Sheet Composition

Tools, Technologies and Concepts

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Advancing Infrastructure

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This session is built with the CAD Manager in mind. A step through the various tools, technologies and concepts that generate drawings and sheets in MicroStation. Begin with an overview of the Dynamic Views workflow, and with it a close look at the various components that are used and required. Detailing Symbol Styles are discussed, in an overview, and in depth.

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What is a Model?

- A container for elements
- Can be 2D or 3D
- Each model has it’s own set of 8 views
- Think of a model as a drawer within a file cabinet

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Model Types

- Design Model – Consists of design geometry
  - Can be 2D or 3D
  - Typically has a black background
- Drawing Model – Used to apply annotation
  - Can only be 2D
  - Typically has a gray background
- Sheet Model – Serves as an electronic drawing sheet
  - Normally 2D but can be 3D
  - Typically has a white background

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Determine How Deep You Want To Go

- Design and Sheet Models

- Design, Drawing and Sheet Models (Dynamic Views/Hyper Models)

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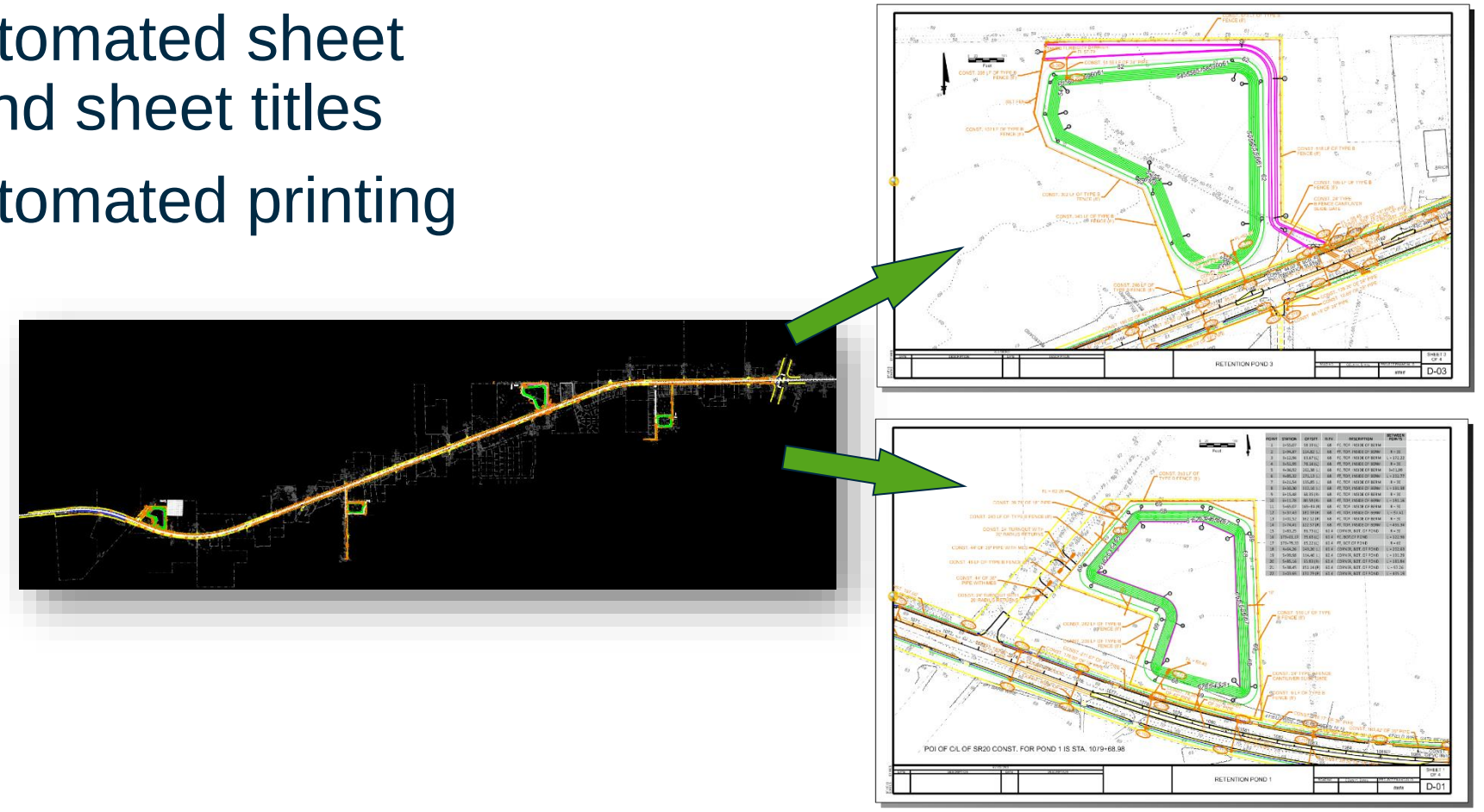
Design and Sheet Models

- Simplifies sheet setup
- Allows for automated sheet numbering and sheet titles
- Allows for automated printing



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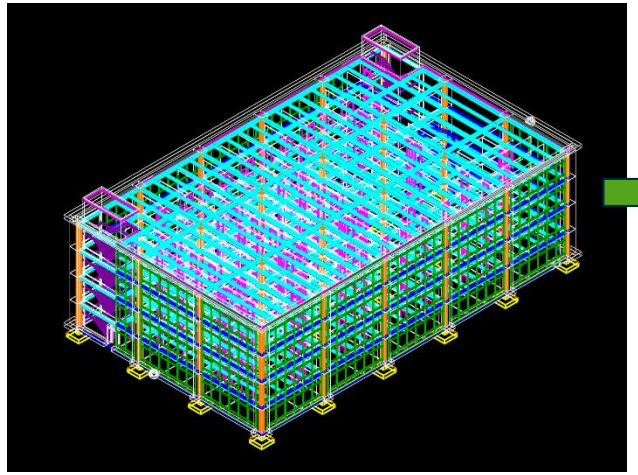
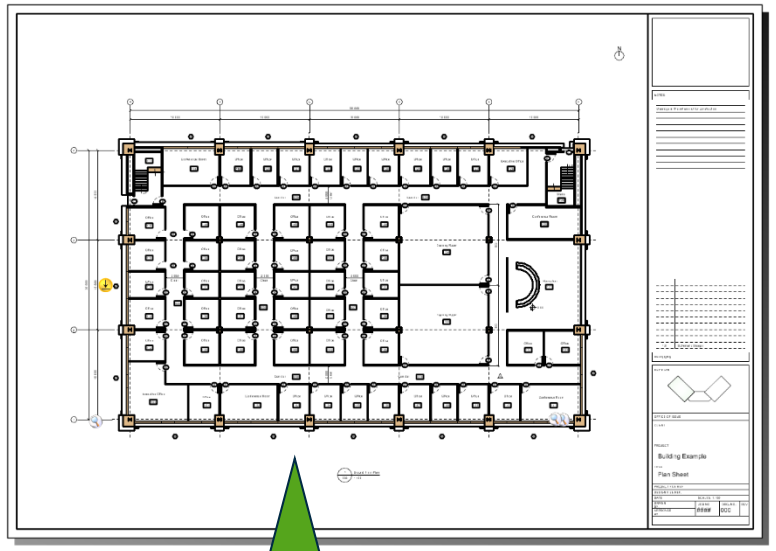
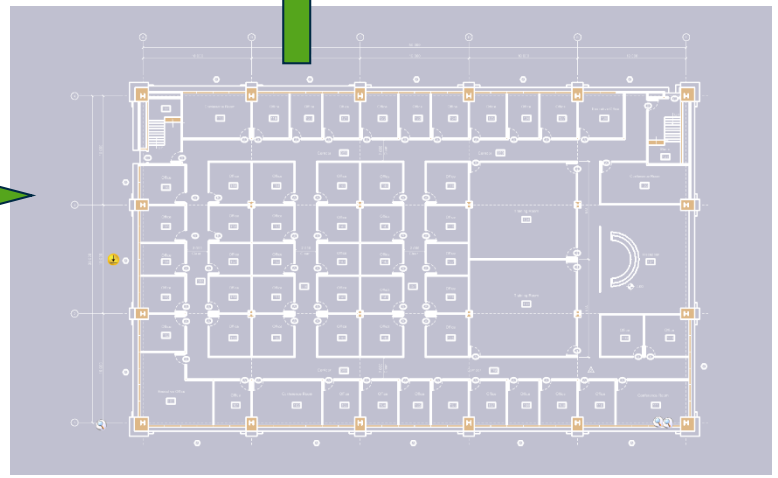
Design, Drawing, and Sheet Models

- Shared annotation
- Simplifies sheet setup
- Allows for automated sheet numbering and sheet titles
- Allows for automated printing







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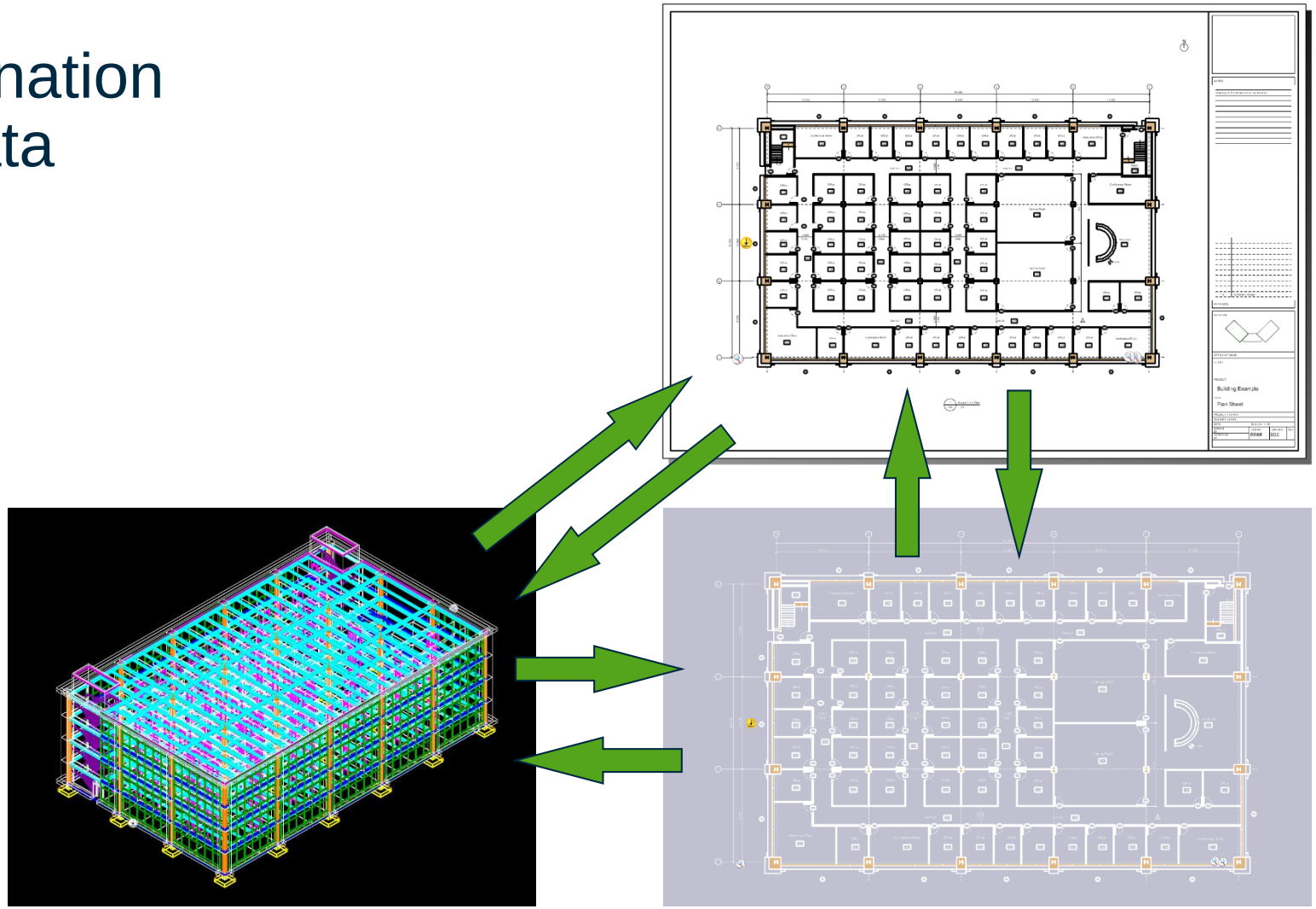
Design, Drawing, and Sheet Models

- Hyperlinks to origination of details/sheet data



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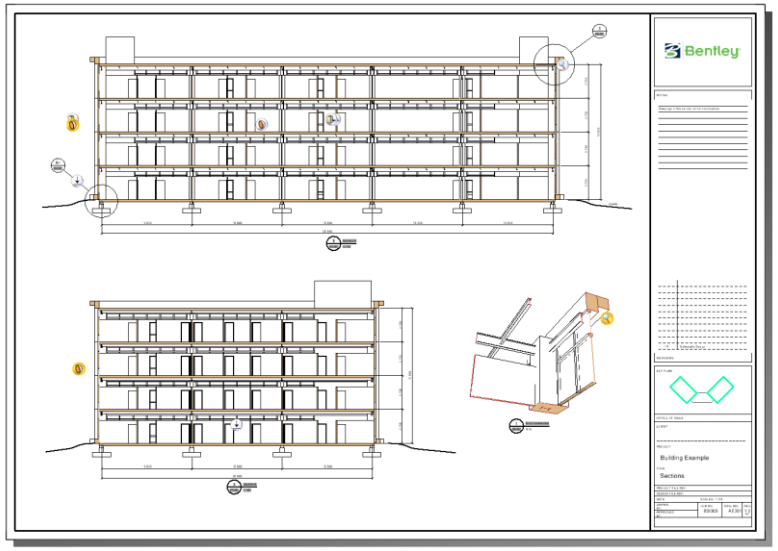
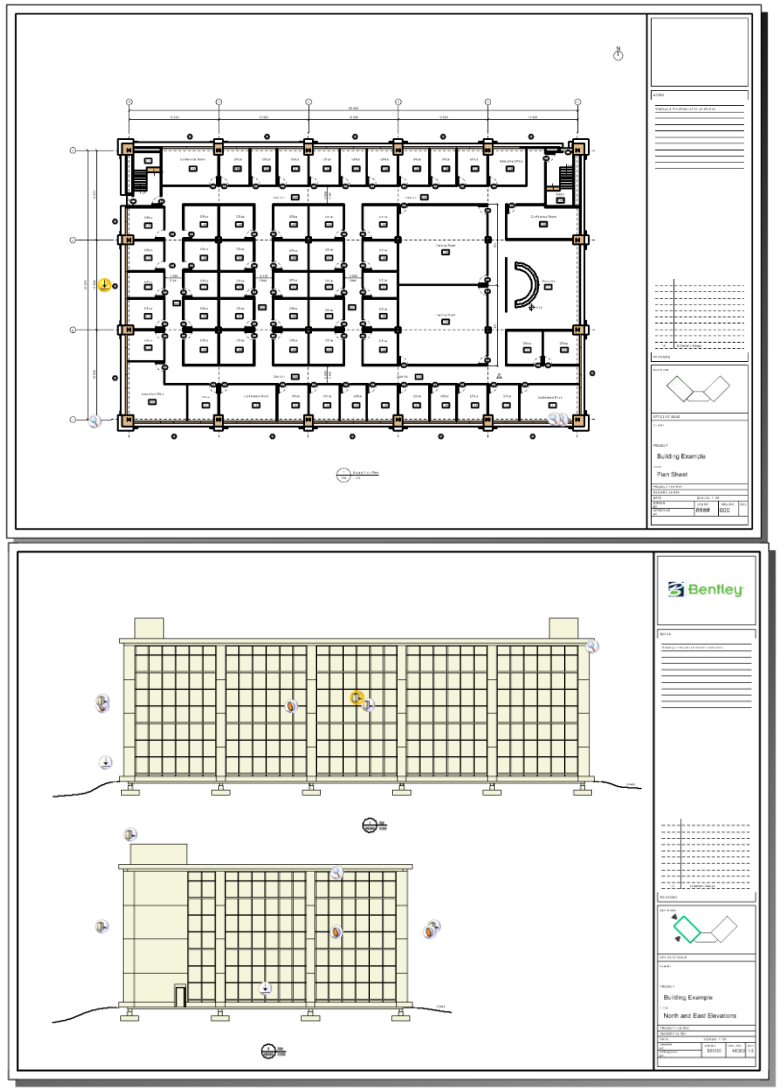
Design, Drawing, and Sheet Models

- Hyperlinks to origination of details/sheet data
- Automated plan views, elevations sections, and details





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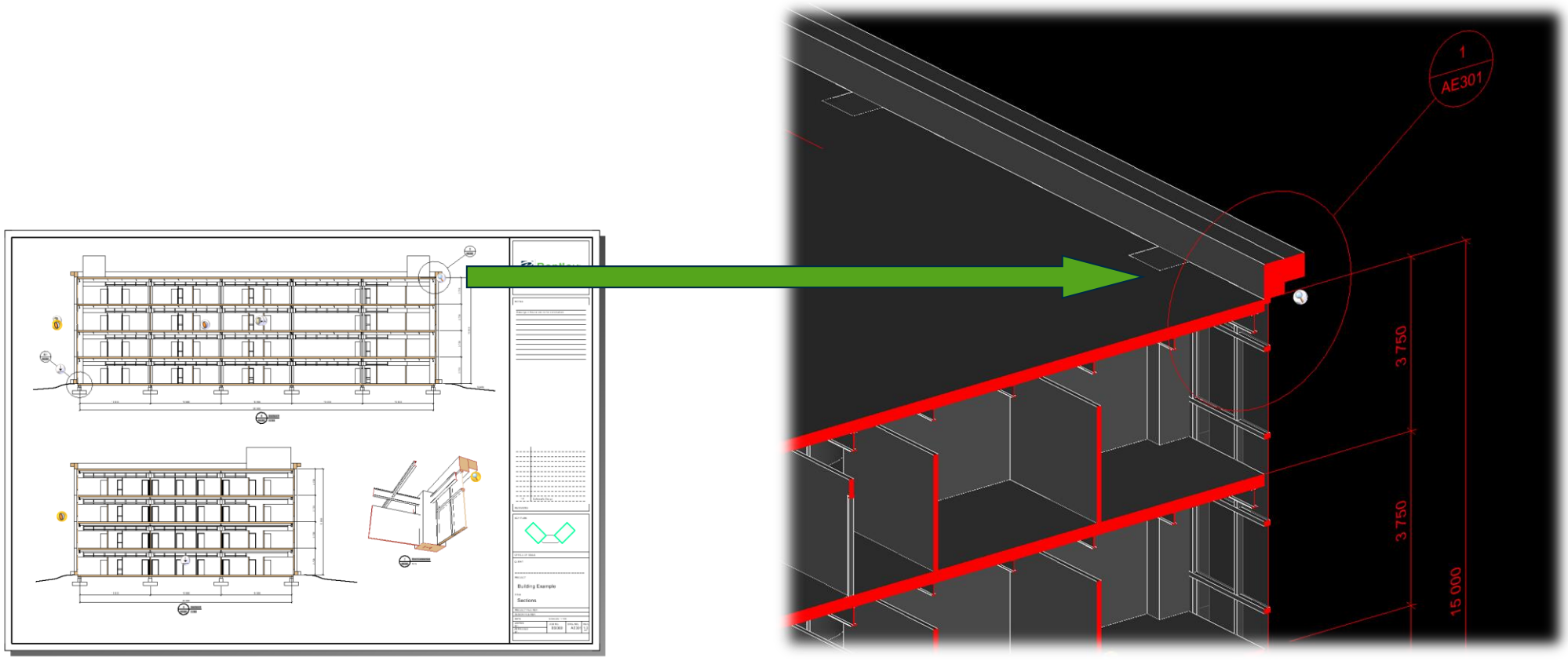
Dynamic Views/HyperModels

- Ability of viewing 2D annotation in 3D models



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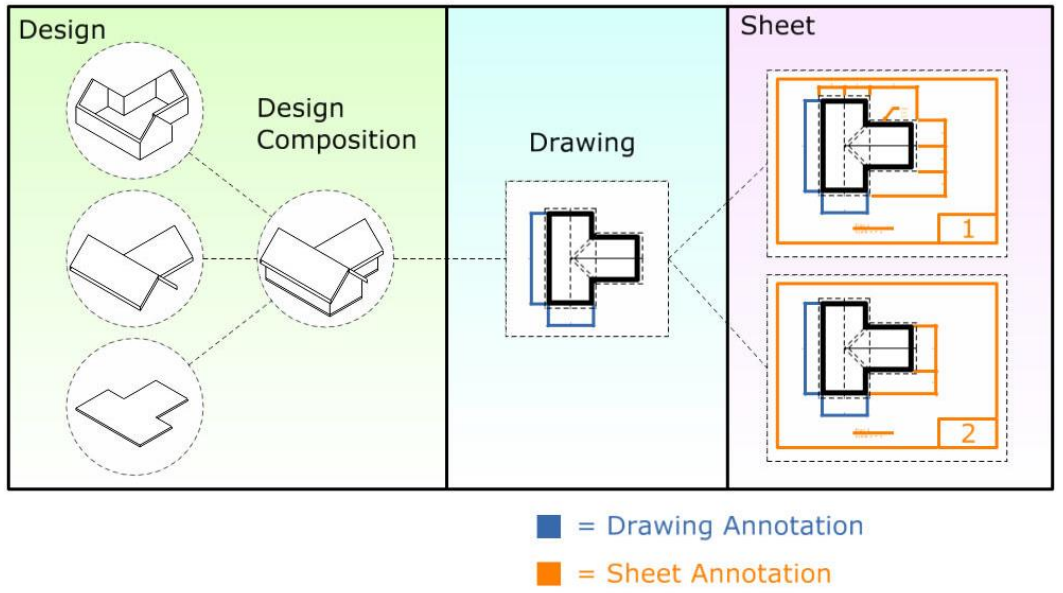
Why use a Drawing Model?

Drawing Model

- Using drawing models is optional.
- The drawing model is an intermediate stage between the 2D or 3D design and the printable sheet model.
- It is the first place one would start thinking about annotation and output scale, to get the data ready for presentation.
- A drawing model allows you to separate annotations from the design.



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Creating Sheets

- When creating a new sheet, you can specify your sheet name, sheet number and other desired settings
- If properly configured, when you create a new sheet model your project sheet boundary and title block will automatically appear
- Drag and drop your desired data from Explorer onto your sheet
- Use the define sheet boundary tool to move and rotate your sheet boundary and title block

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Creating Models, Sections and Details

- Detailing symbol tools automatically create sections, details, elevations, and plan views
- All the data you create will be hyperlinked
- When your hyper-model is created you'll be prompted to select predefined seeds and settings
- Detailing symbol styles can predefined to match your company standard
- When combined with element templates you can force what detailing symbol styles your users access

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Workset Folder Structure

- General project data
  - Documentation and specifications
  - Plan grids and site layouts
  - Cover sheets
- Discipline specific data
- Shared resources
  - Borders and seed files
  - Cell libraries and DGNLIBs
- Save your setup as a template for future use

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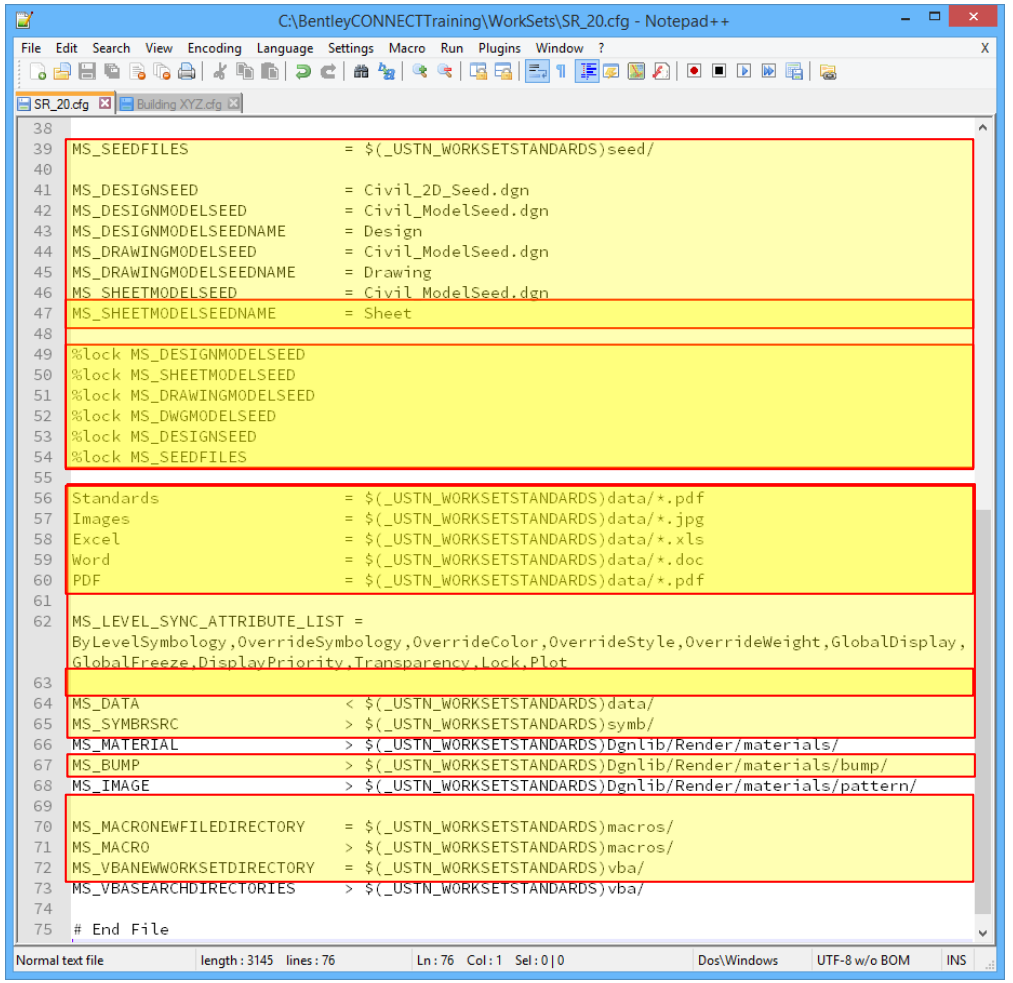
Workset Configuration

- DGN search paths
- Reference file search paths
- DGNLIB search paths
- Project Cell Libraries
- Print specific settings
- Seed file search paths and names
- Custom variables



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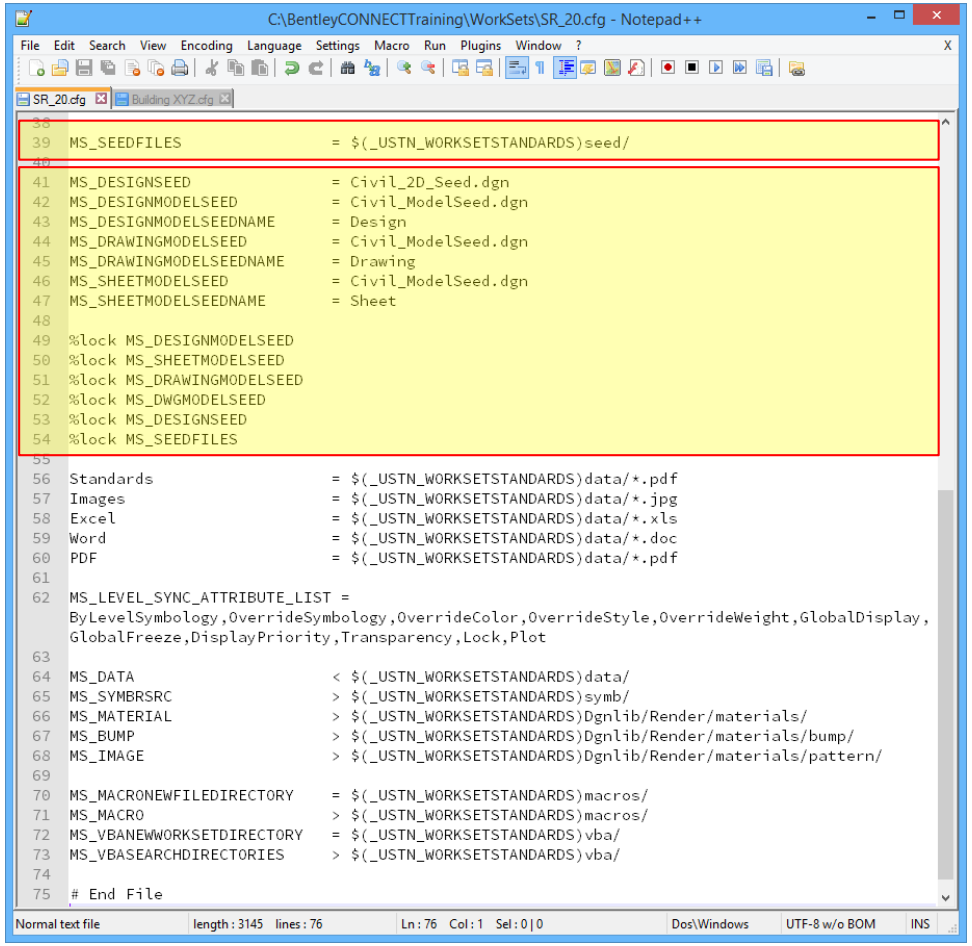
Working With Seed Files

- Decide how you want your seed files structured
  - Single seed file with multiple models
  - Separate seed files for all models
  - A hybrid to accommodate your workflow
- Define your search paths
- Define which models will be used
- Use custom variables and logic statements to make your life easier



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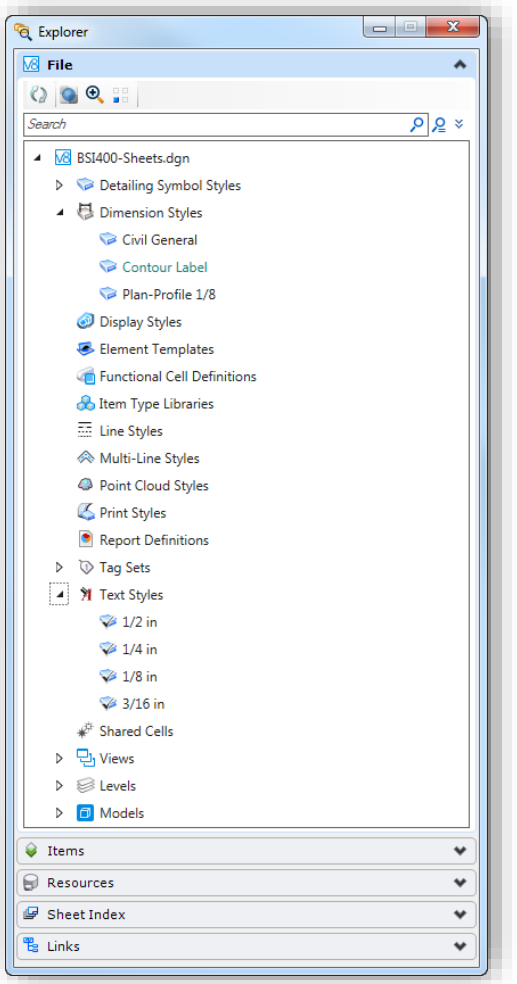
Explorer

- Works like a web browser for your design data
- Automatically mines project data
  - CAD files (DGN and DWG)
  - Office Documents
  - PDFs
- Sheet Indexes
- Link to URLs, folders and configuration variables
- Link data to elements in your design file
- Drag and drop data directly into MicroStation
- Allows you to browse data in your current file
- Integrates with Print Organizer and other dialogs



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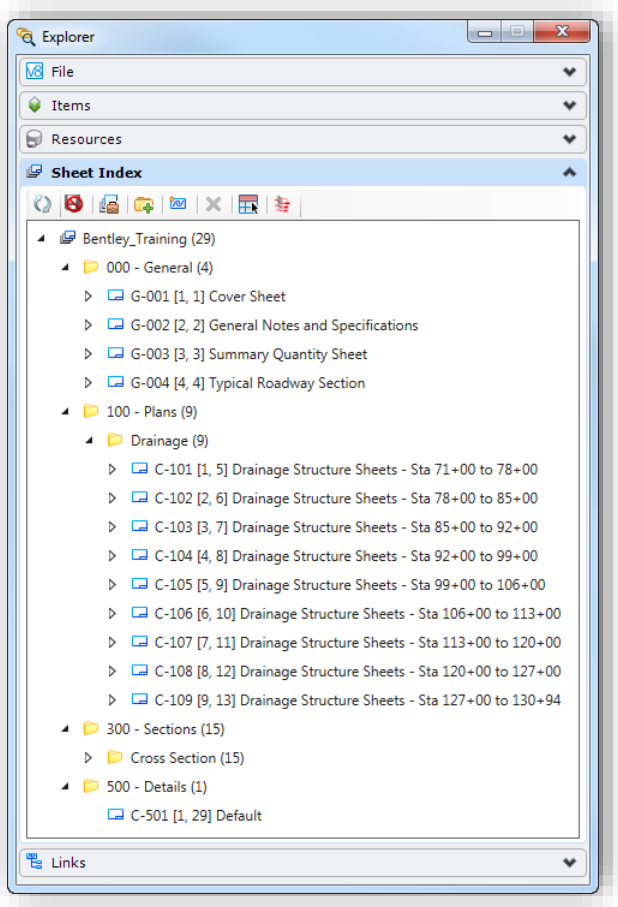
Explorer: Sheet Index

- Add sheet models automatically to the sheet index
- Sheet index is a table of contents for your projects deliverables



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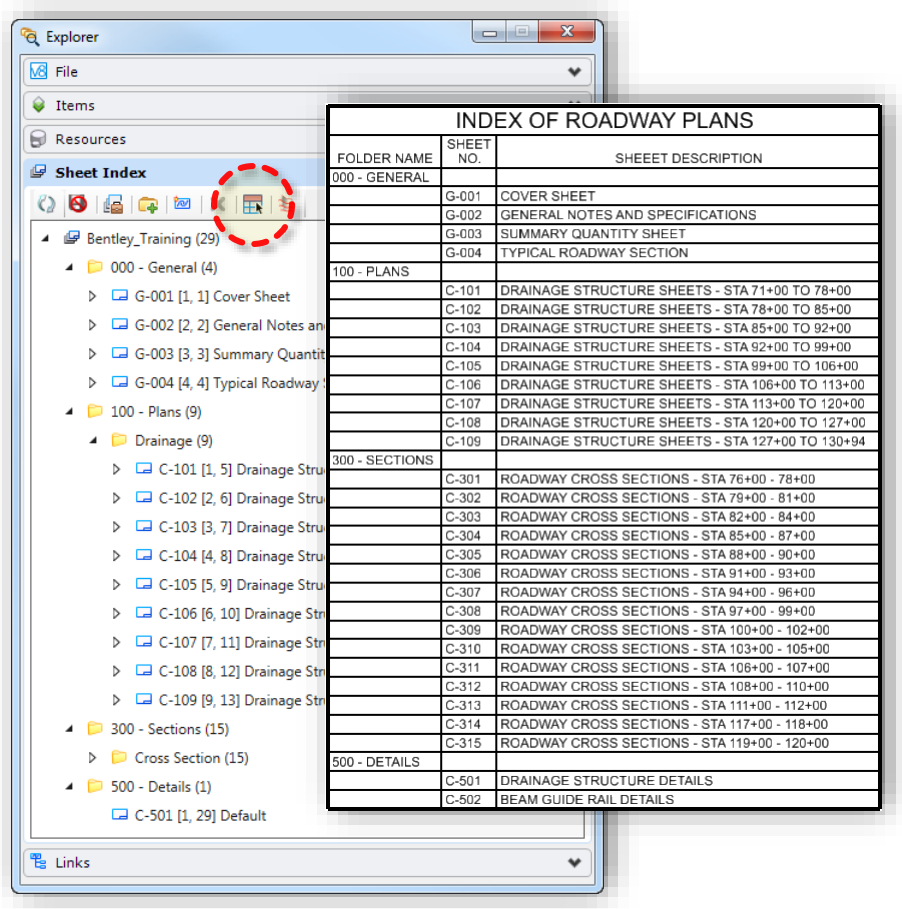
Explorer: Sheet Index

Place the Index Sheet as a Table



INDEX OF ROADWAY PLANS

FOLDER NAME	SHEET NO.	SHEEET DESCRIPTION
000 - GENERAL		
	G-001	COVER SHEET
	G-002	GENERAL NOTES AND SPECIFICATIONS
	G-003	SUMMARY QUANTITY SHEET
	G-004	TYPICAL ROADWAY SECTION
100 - PLANS		
	C-101	DRAINAGE STRUCTURE SHEETS - STA 71+00 TO 78+00
	C-102	DRAINAGE STRUCTURE SHEETS - STA 78+00 TO 85+00
	C-103	DRAINAGE STRUCTURE SHEETS - STA 85+00 TO 92+00
	C-104	DRAINAGE STRUCTURE SHEETS - STA 92+00 TO 99+00
	C-105	DRAINAGE STRUCTURE SHEETS - STA 99+00 TO 106+00
	C-106	DRAINAGE STRUCTURE SHEETS - STA 106+00 TO 113+00
	C-107	DRAINAGE STRUCTURE SHEETS - STA 113+00 TO 120+00
	C-108	DRAINAGE STRUCTURE SHEETS - STA 120+00 TO 127+00
	C-109	DRAINAGE STRUCTURE SHEETS - STA 127+00 TO 130+94
300 - SECTIONS		
	C-301	ROADWAY CROSS SECTIONS - STA 76+00 - 78+00
	C-302	ROADWAY CROSS SECTIONS - STA 79+00 - 81+00
	C-303	ROADWAY CROSS SECTIONS - STA 82+00 - 84+00
	C-304	ROADWAY CROSS SECTIONS - STA 85+00 - 87+00
	C-305	ROADWAY CROSS SECTIONS - STA 88+00 - 90+00
	C-306	ROADWAY CROSS SECTIONS - STA 91+00 - 93+00
	C-307	ROADWAY CROSS SECTIONS - STA 94+00 - 96+00
	C-308	ROADWAY CROSS SECTIONS - STA 97+00 - 99+00
	C-309	ROADWAY CROSS SECTIONS - STA 100+00 - 102+00
	C-310	ROADWAY CROSS SECTIONS - STA 103+00 - 105+00
	C-311	ROADWAY CROSS SECTIONS - STA 106+00 - 107+00
	C-312	ROADWAY CROSS SECTIONS - STA 108+00 - 110+00
	C-313	ROADWAY CROSS SECTIONS - STA 111+00 - 112+00
	C-314	ROADWAY CROSS SECTIONS - STA 117+00 - 118+00
	C-315	ROADWAY CROSS SECTIONS - STA 119+00 - 120+00
500 - DETAILS		
	C-501	DRAINAGE STRUCTURE DETAILS
	C-502	BEAM GUIDE RAIL DETAILS

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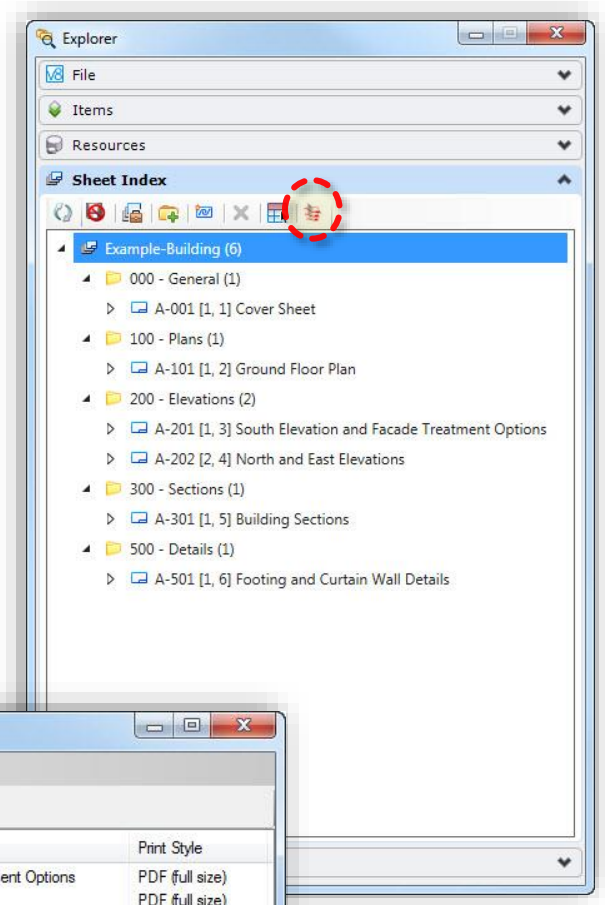
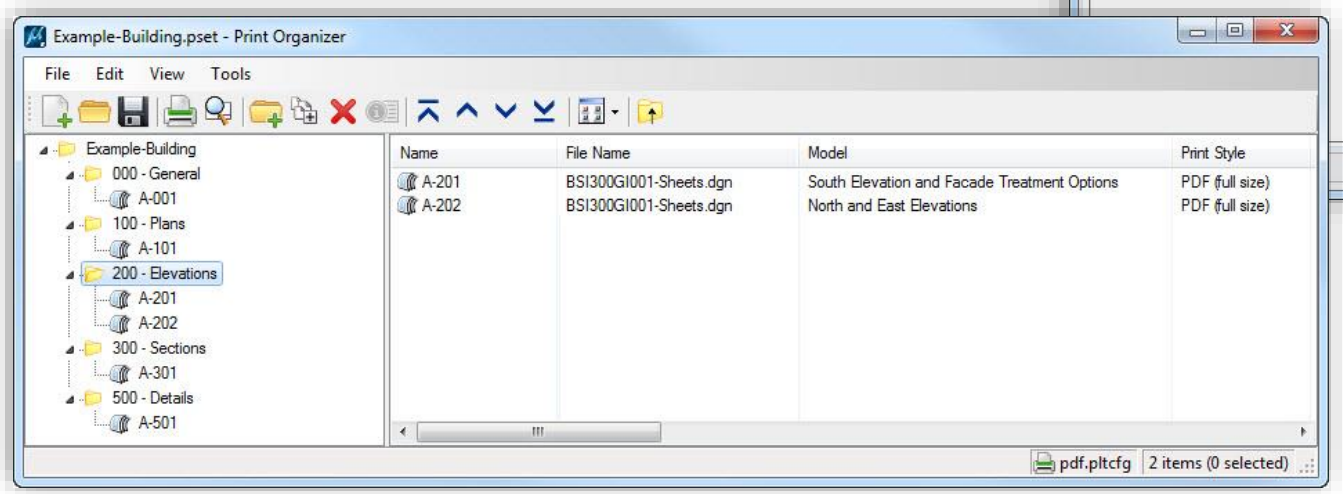
Explorer: Sheet Index

Printing Sheets and Links

- Open Print Organizer from the Sheet Index tab to print all or a subset of the sheets in a project
- Open a print set file in Print Organizer from Explorer's Links tab
- Drag-and-drop file links from Explorer's Links tab to Print Organizer





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Printing Setup

- Create print styles to take the guess work out of printing
- Both print/plot and print organizer can take advantage of print styles
- Make sure your sheet size definitions and page sizes in your plot configuration match
- For simplicity sake, name your seed models to correspond to your sheet sizes

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Print/Plot

- If properly configured, you should never have to…
  - Select a plot configuration or pen table
  - Define your printing area or sheet size
  - Select a scale factor for your output
- Just click print

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Print Organizer

- If properly configured, you should never have to…
  - Select a plot configuration or pen table
  - Define your printing area or sheet size
  - Select a scale factor for your output
- Just add your files to Print Organizer
  - Apply a print style
  - Let them scan
  - And click print

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