AASHTOWare BrD/BrR 7.5.0

Report Tool 2.0 Tutorial

This example describes the use of the new Report Tool 2.0 feature in BrDR. *Note: The Report Tool 2.0 will be included in BrDR for versions 7.5 and later and will be implemented in phases. At the time of this writing, Phase 1 of the Report Tool 2.0 is complete which supports only Bridge Workspace input reports for prestressed girder line and prestressed girder system structure types. Other bridge types and engine reports will be implemented in future phases.*

Topics covered:

- [Bridge Workspace Reports](#)
- [Template Editor Window Overview](#)
- [Creating Custom BWS Report Tool Templates Using the Template Editor](#)
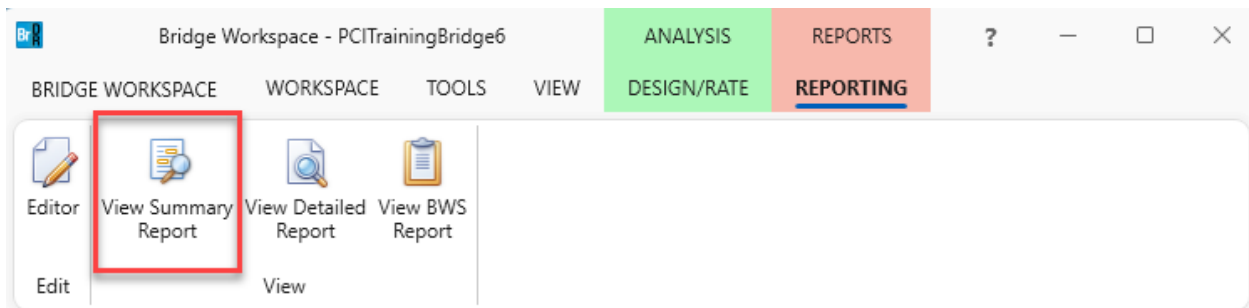- [Opening Custom Templates from the Bridge Workspace](#)

RT2 – Report Tool 2.0

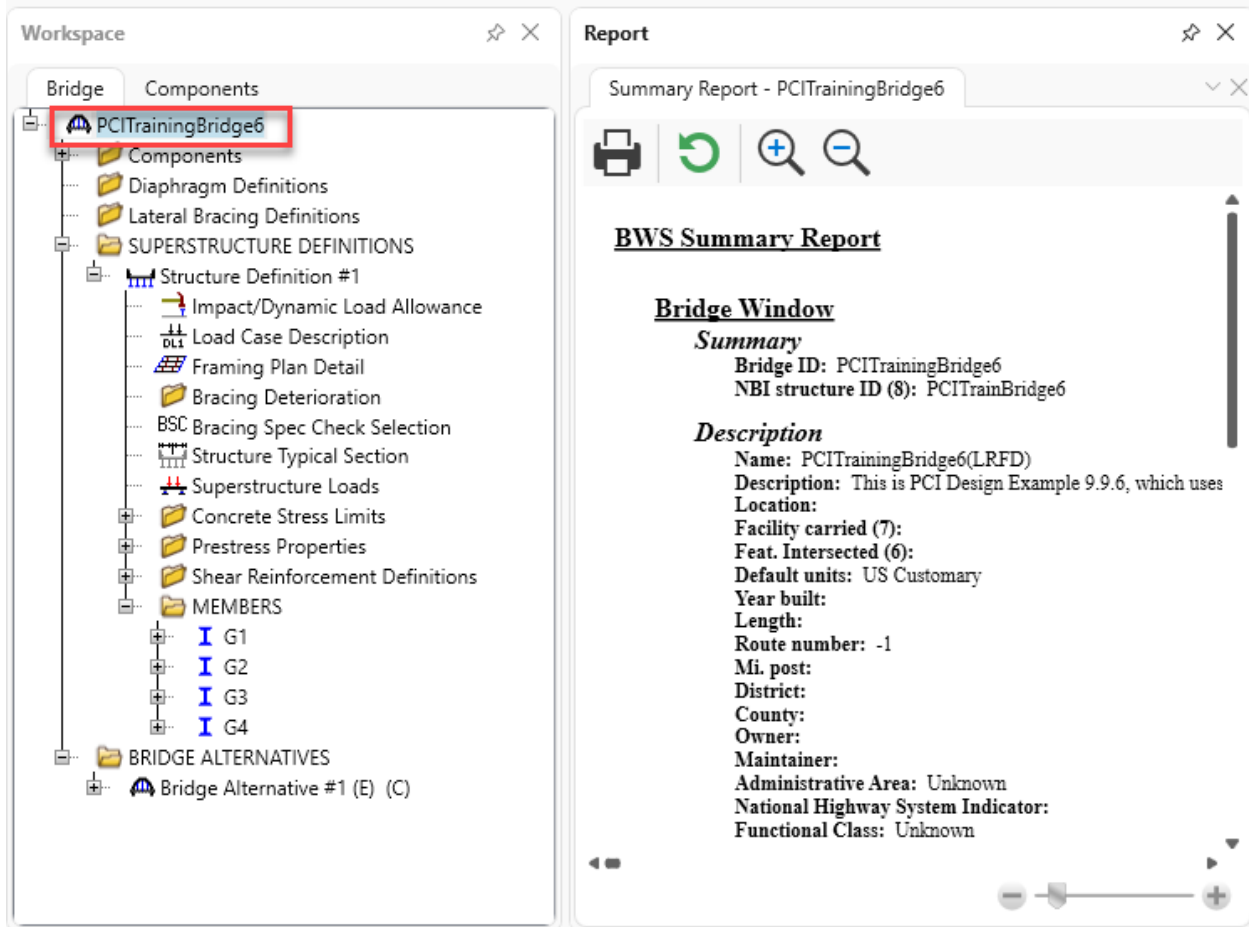## Bridge Workspace Reports

BWS Summary Reports

From the **Bridge Explorer** open sample bridge **PCITrainingBridge6** (BID 9).

Click on the **Reporting Tab** in the **Bridge Workspace Ribbon**.

Select the bridge item from the **Bridge Workspace Tree** and click **View Summary Report** in the **Ribbon**.
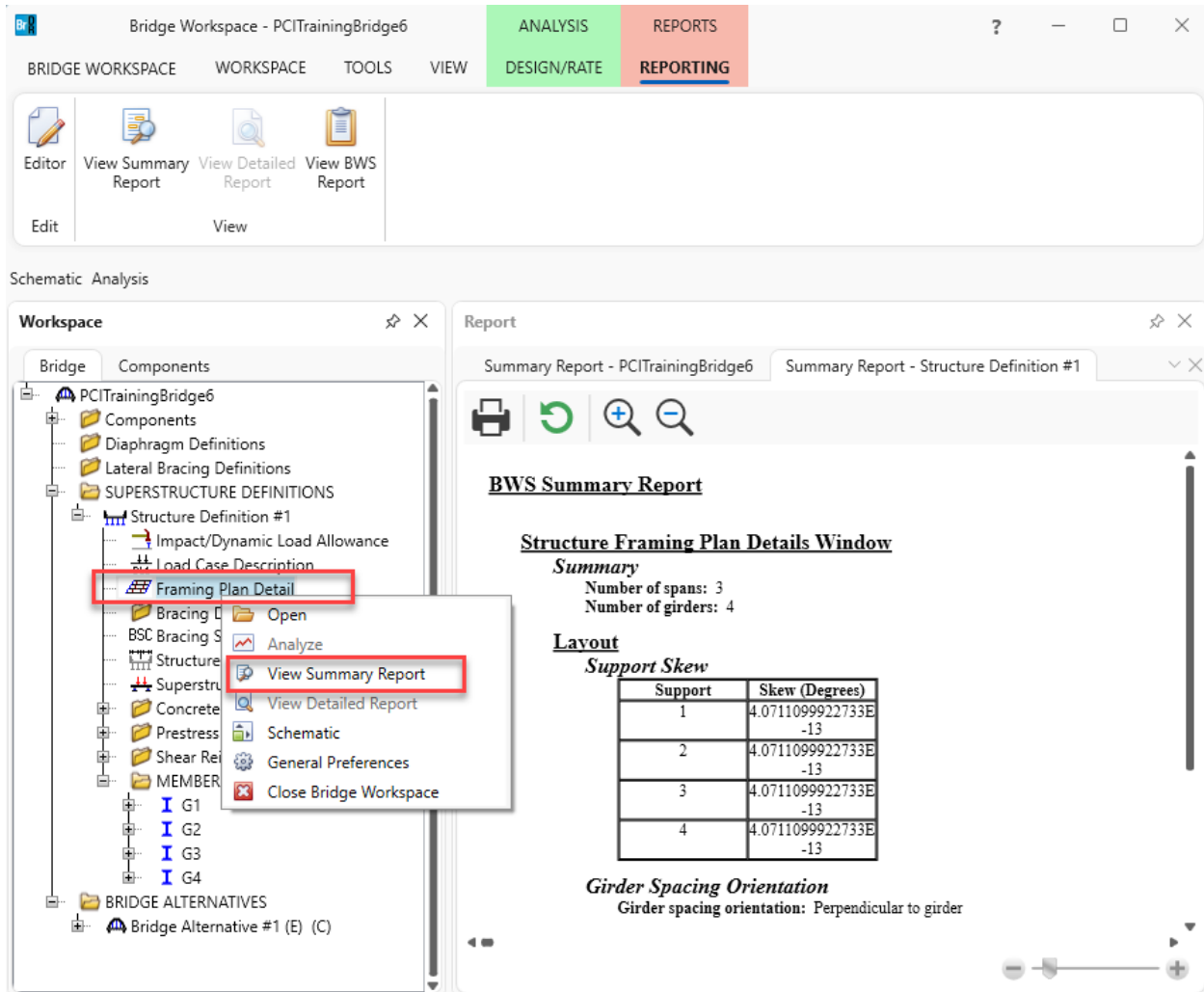

A summary report of the bridge will be generated and displayed in the **Report Panel**.

Expand the **Structure Definition #1** item in the tree. **Right click** on the **Framing Plan Detail** item from **Bridge Workspace tree** and select **View Summary Report.**

The **Framing Plan Details Summary Report** will be generated and will open as a new tab in the **Report Panel**.

The summary reports will only include data from the window associated with the selected Bridge Workspace tree node item. Only Bridge Workspace Tree nodes that have a BrDR window associated with them will have the Summary Report option enabled.

BWS Detailed Reports

Now select **Structure Definition #1** from the **Bridge Workspace tree** and click **View Detailed Report** in the **Ribbon**.

A **Detailed Report** of the Superstructure Definition will be generated and displayed as a new tab in the **Report Panel**.

Expand the **Members** folder in the tree. **Right click** on the **G2** item and select **View Detailed Report.**

The **G2 Detailed Report** will be generated and will open as a new tab in the **Report Panel**.

Detailed Reports will include data from the window associated with the selected Bridge Workspace tree node item and all data from child nodes of that tree item. Only Bridge Workspace Tree nodes that have child nodes will have the Detailed Report option enabled.

Template Editor Window Overview

The Report Tool 2.0 also includes a **Template Editor** that allows for creating templates that can be used to customize Bridge Workspace reports. The templates can be used to customize styling, content, and the order of items in the report. Below is a brief overview of the window's functionality.
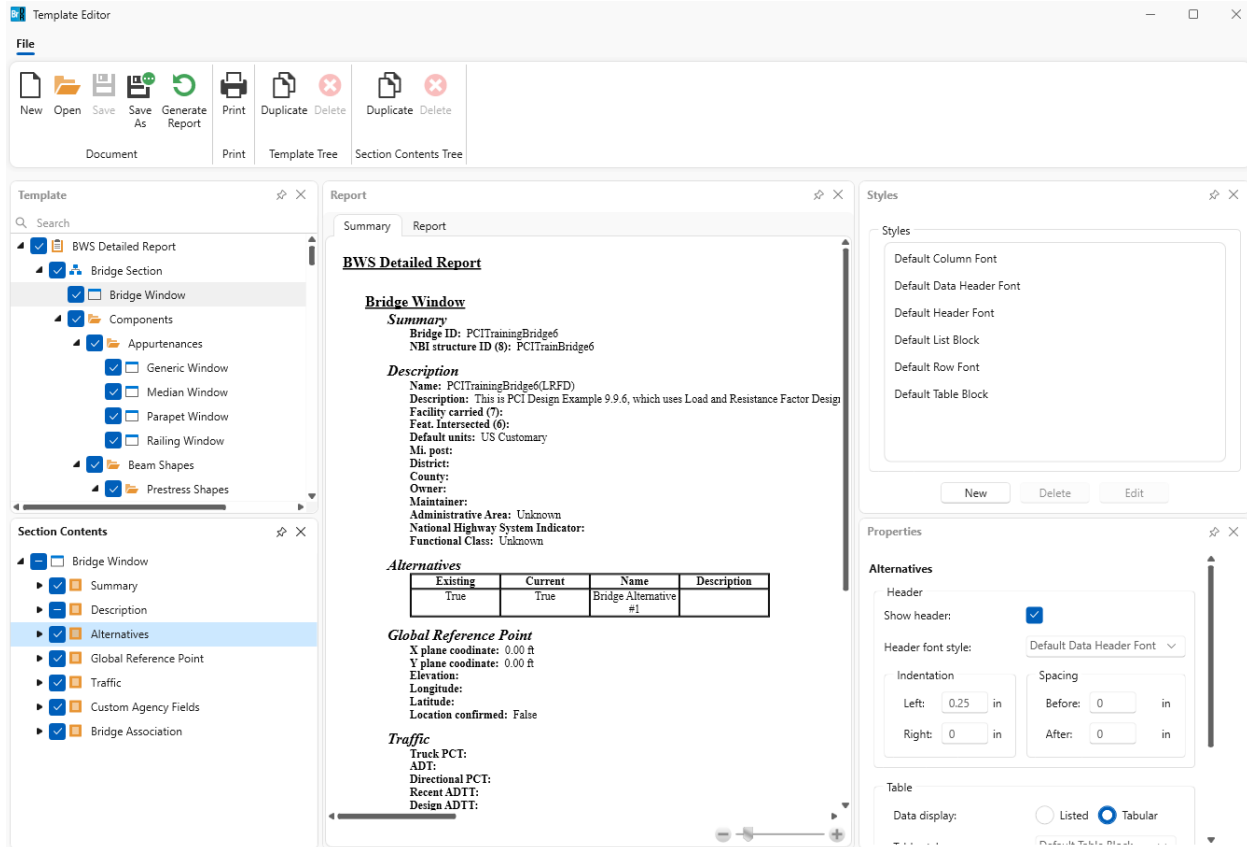
Template Editor Ribbon

    Document

        New button

        Creates a new template and populates the Template Editor with the default selections.

        Open button

        Opens a File Dialog that can be used to open an existing template (.rttx) file. Once a template is selected, the Template Editor will be populated with the contents of the template.

        Save button

        Saves a previously opened or saved template.

        Save as button

        Opens a File Dialog that can be used to save the current template.

        Generate Report button

        Generates a complete report using the current template and displays the contents in the Report tab of the Report panel.

    Print

        Print button

Prints the contents of the selected tab in the Report panel.

Template Tree

Duplicate button

Duplicates the selected item in the Template Tree panel. The root node of the tree cannot be duplicated.

Delete button

Deletes the selected item in the Template Tree panel. Only duplicate tree items can be deleted.

Section Contents Tree

Duplicate button

Duplicates the selected item in the Section Contents Tree panel. The root node of the tree cannot be duplicated.

Delete button

Deletes the selected item in the Section Contents Tree panel. Only duplicate tree items can be deleted.

Template Tree Panel

The Template Tree roughly coincides with the Bridge Workspace Tree. Check an item in the Template Tree to include the contents of the associated Bridge Workspace window in the report.

Section Contents Tree

The Section Contents Tree includes data from the Bridge Workspace window associated with the selected Template Tree item. If no Template Tree items are selected, the Section Contents Tree will be empty. Check items in the Section Contents Tree to include them in the report.

Report Panel

Summary Tab

The Summary Tab displays the report contents associated with the selected Template Tree item only. Any customizations made to the associated Section Contents item and styles will be reflected in the Summary Report instantaneously.

Report Tab

The Report Tab displays the contents of the entire report generated with the current template. Click Generate Report in the ribbon to update the contents of this tab.

Styles Panel

Displays a list of current styles available for use throughout the report.

New button

Opens a window that can be used to create a new style.

Delete button

Deletes the selected style. A style cannot be deleted if it is in use in the report.

Edit button

Opens a window that can be used to edit the selected style.

Properties Panel

Displays the style and formatting properties of the selected item in the Section Contents Tree.

Creating Custom BWS Report Tool Template Using the Template Editor

The Report Tool 2.0 also includes a **Template Editor** that allows for creating templates that can be used to customize Bridge Workspace reports. The templates can be used to customize styling, content, and the order of items in the report.

Customize Report Content

Click on **Editor** in the **Bridge Workspace Ribbon Reporting** tab to open the **Template Editor**.

Uncheck **BWS Detailed Report** in the **Template Tree**. This will cascade down to the child tree nodes and uncheck them.

Check **Bridge Window** in the **Template Tree** then select it. The **Section Contents Tree** below will now be populated with the different sections of the **Bridge Window**.

Expand **Description** in the **Section Contents Tree**. Uncheck **Location**, **Year built**, **Length**, and **Route number**.
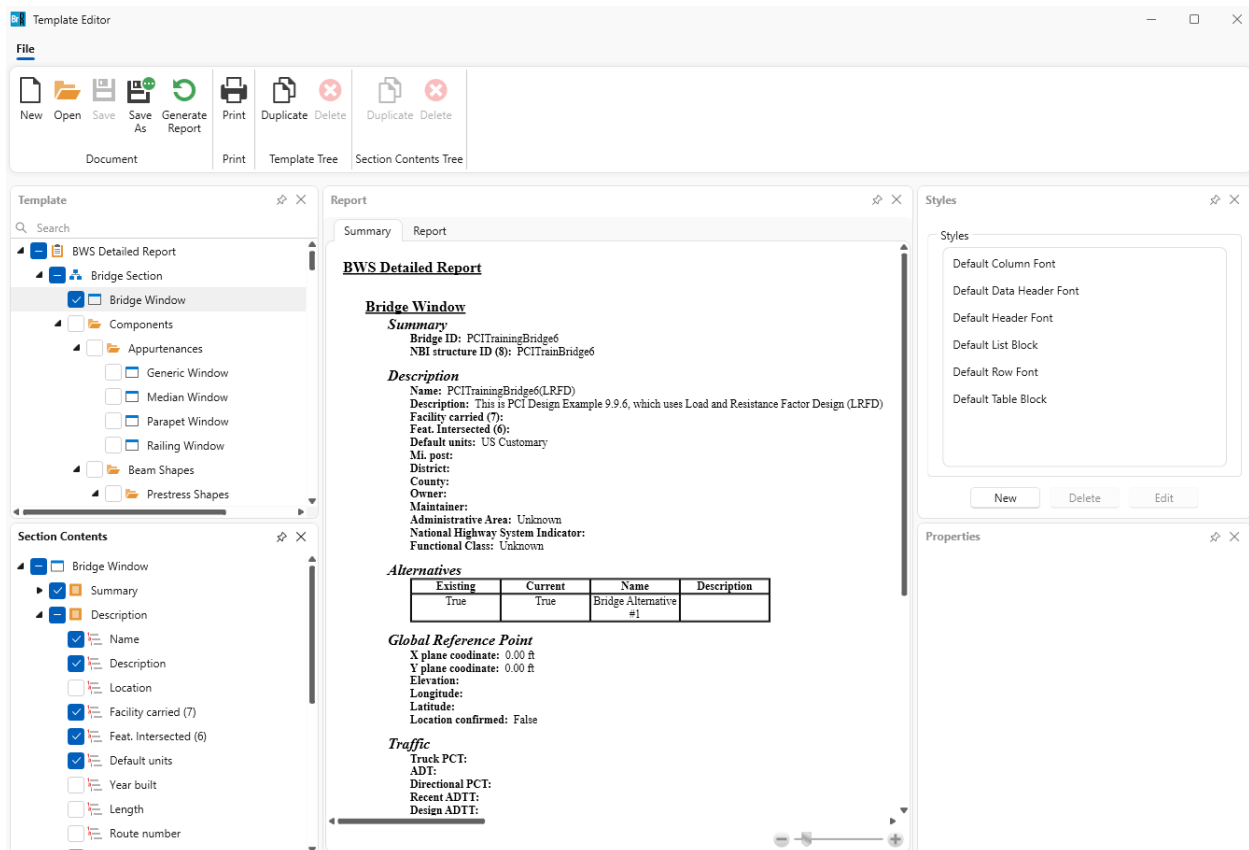
The **Summary Tab** in the **Report Panel** will update instantaneously, removing these items from the report.

Check the **Parapet Window** in the **Template Tree** and select the item to load the **Section Contents Tree.** Uncheck **Description**, **Distance to additional load**, and **Additional load** in the **Section Contents Tree**.

Drag the **Parapet unit load** item in the **Section Contents Tree** and drop it after **Name**. Drag the **Top height** item in the **Section Contents Tree** and drop it after **Top width**.
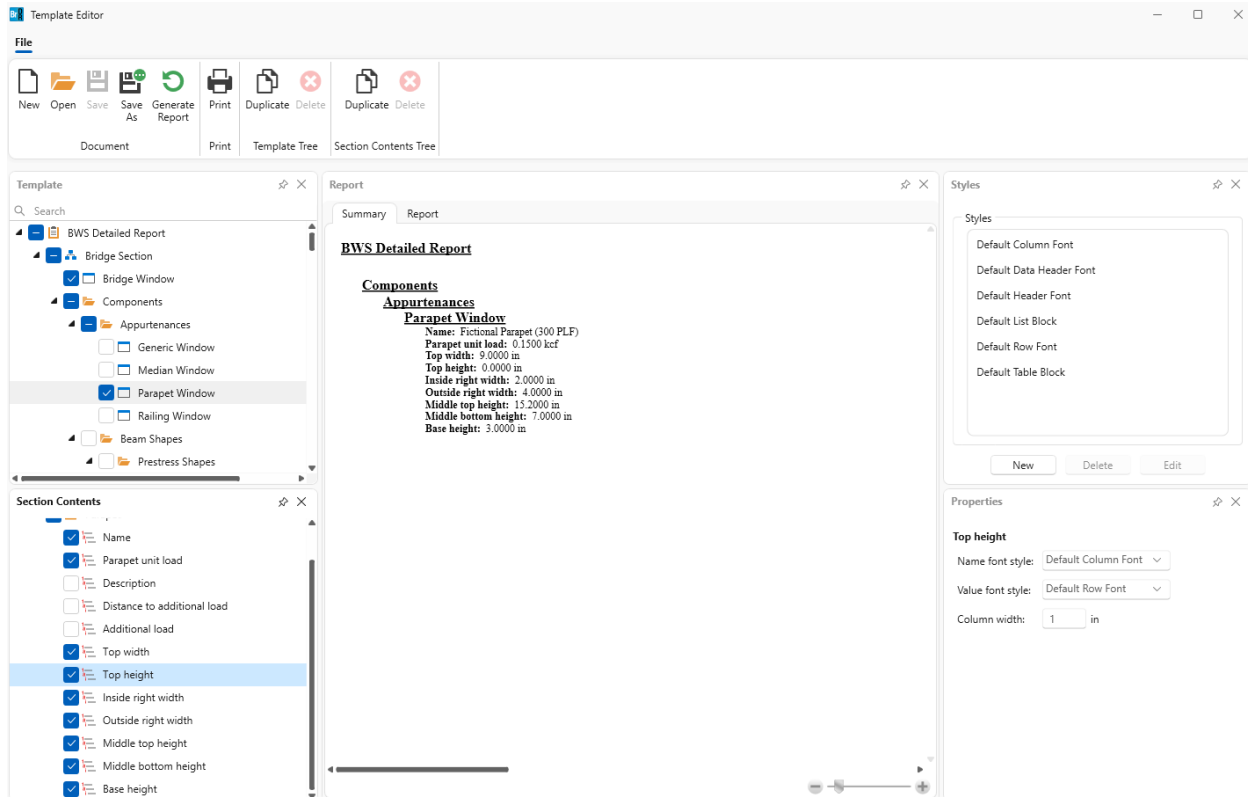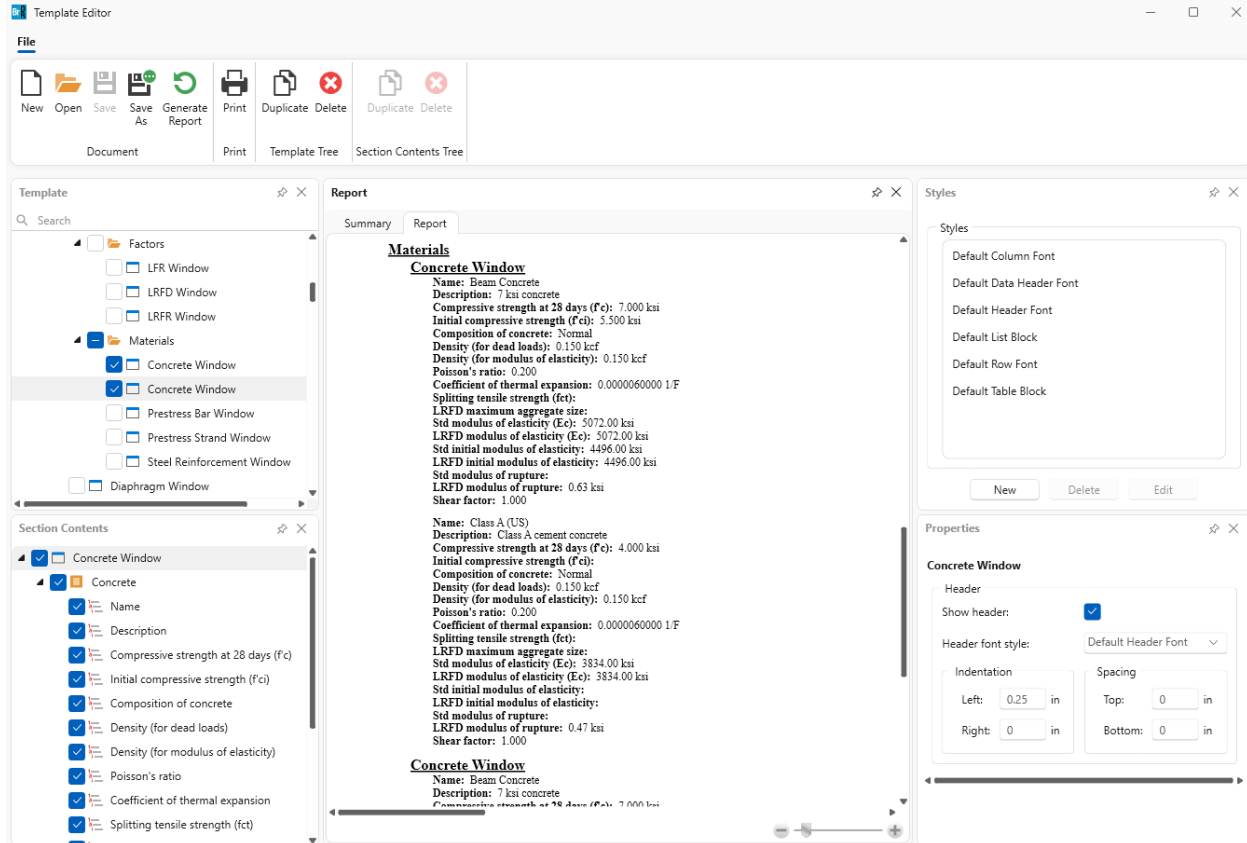

The ordering of the items in **Summary Tab** report will update instantaneously to match the ordering in the **Section Contents Tree**.

In the **Template Tree**, scroll down to **Materials**. Check the **Concrete Window** item. Select the **Concrete Window** item then click **Duplicate** in the **Template Tree** section of the **Ribbon**.

Click **Generate Report** in the **Ribbon**.

A complete report with all the selected items will be generated and displayed in the **Report Tab** of the of **Report Panel**. Scroll towards the bottom the report and notice that the **Concrete Window** item appears in the report twice since it was duplicated.
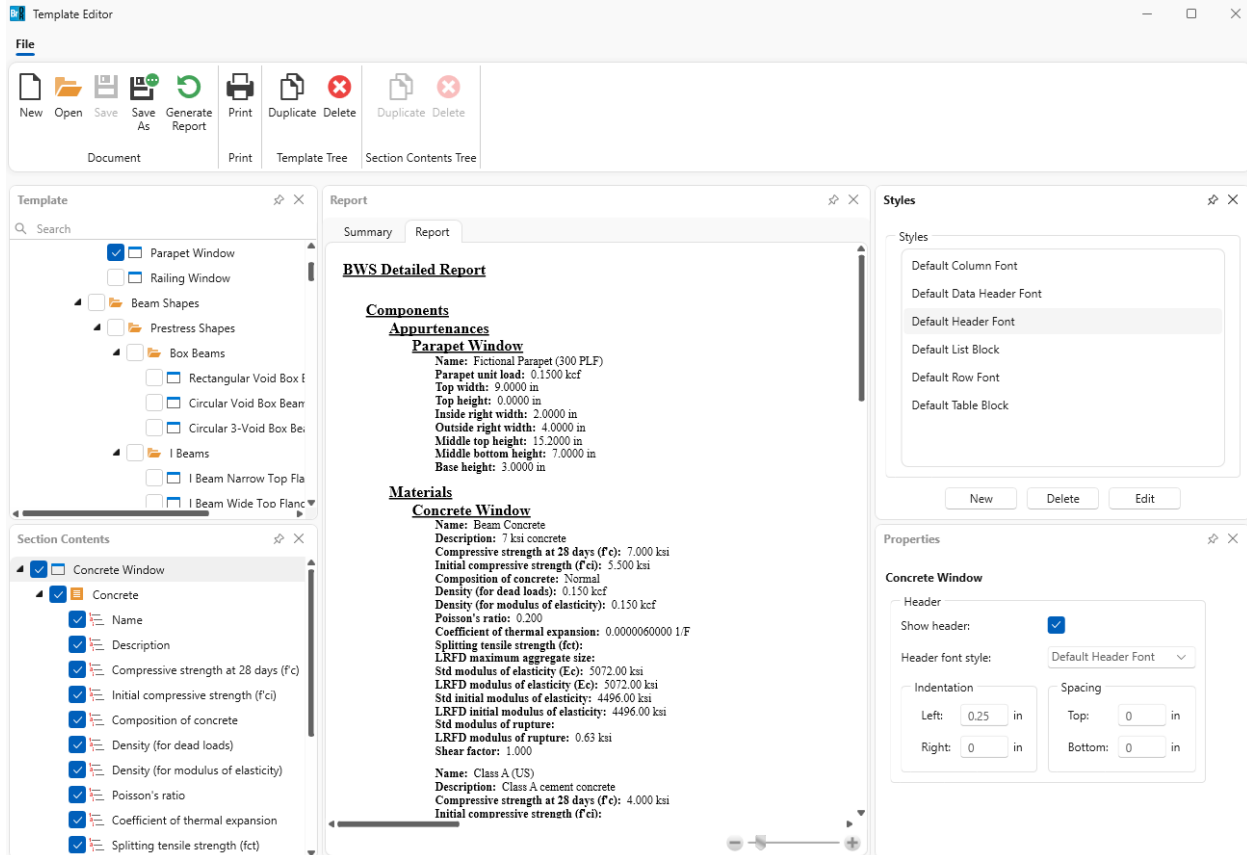
Drag the **Components** folder item in the **Template Tree** and drop it after **Bridge Section**.

Click **Generate Report** in the **Ribbon**.

The ordering of the items in report generated in the **Report Tab** will update to match the ordering in the **Template Tree**.
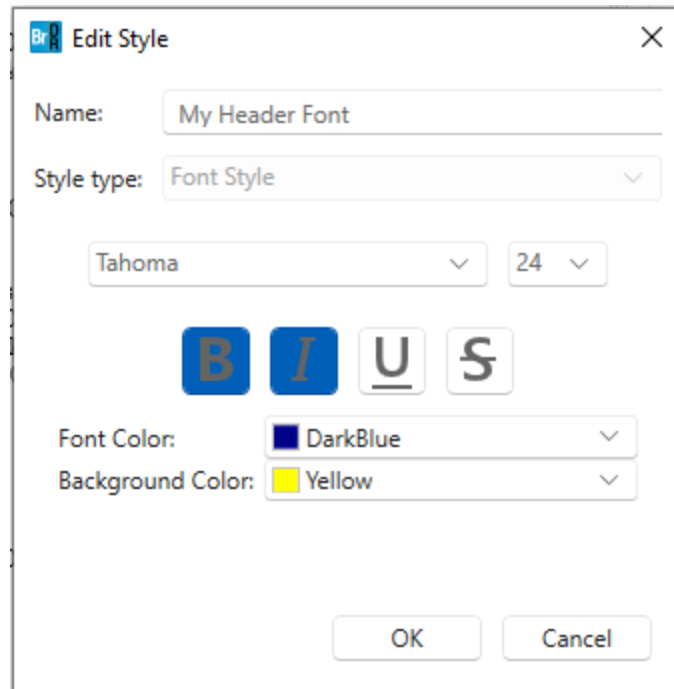
Styles

There are two types of styles that can be used throughout a report, **Block Styles** and **Font Styles**. A **Block Style** can be used to create and customize borders for **Data Block** sections throughout a report. A **Font Style** can be used to create and customize fonts throughout the report.

Styles can be created, updated, and deleted using the **Styles Panel** in the **Template Editor**.
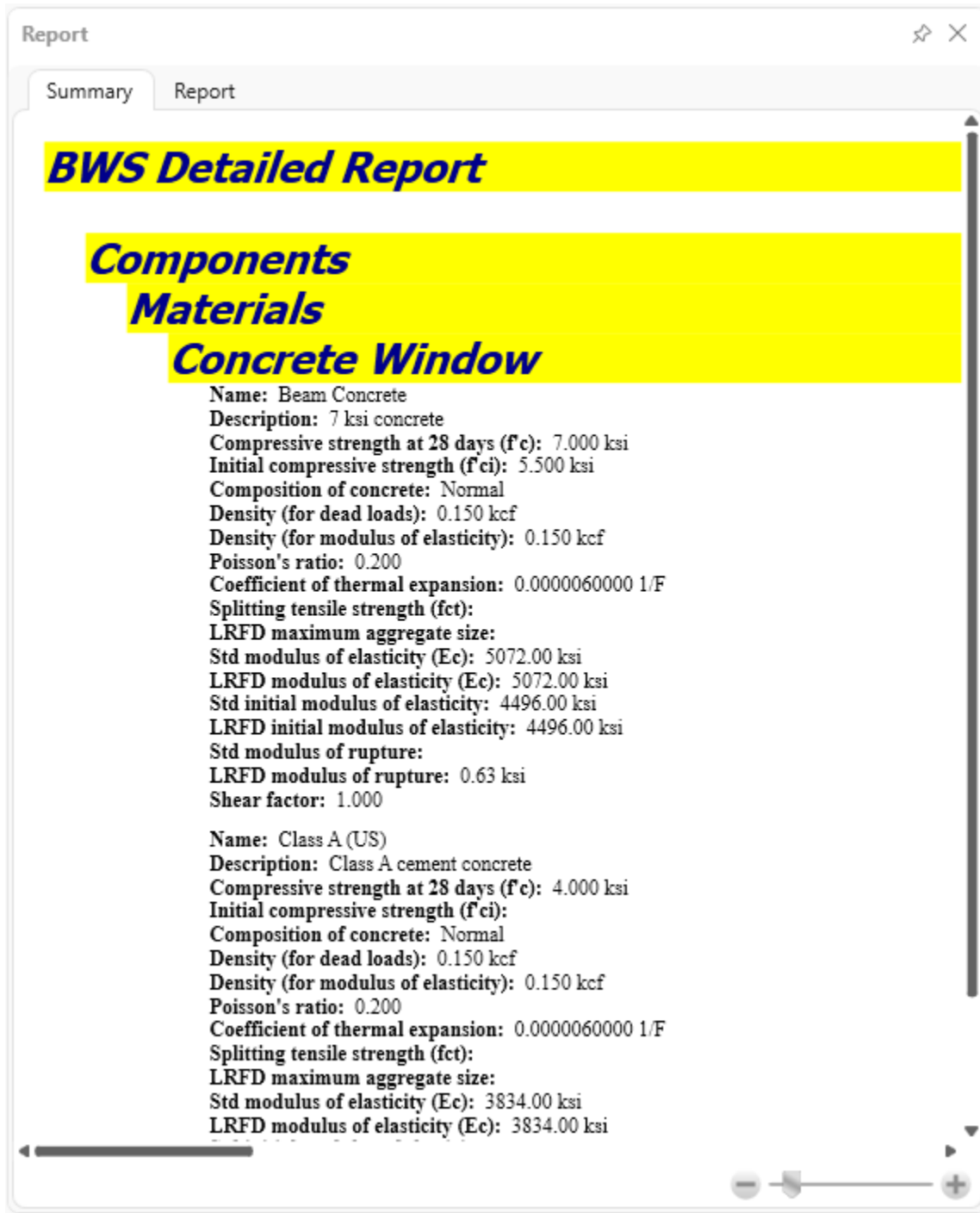
Customize Styles

Select **Default Header Font** from the list of styles in the **Styles Panel** and click **Edit**. The **Edit Style Window** will open populated with the current style's fields.

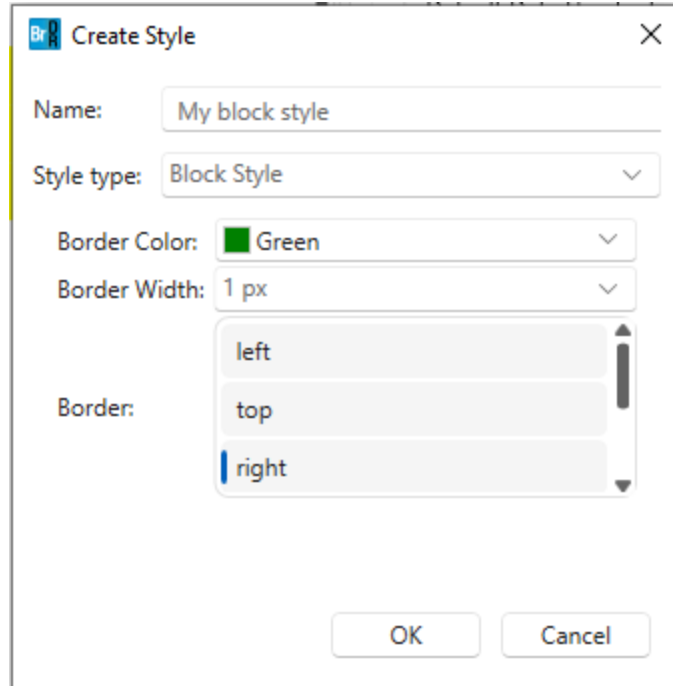Change the fields in the window to match the options below.

Click **OK**.

The style for the header fields will now be updated in the **Summary Tab** report.
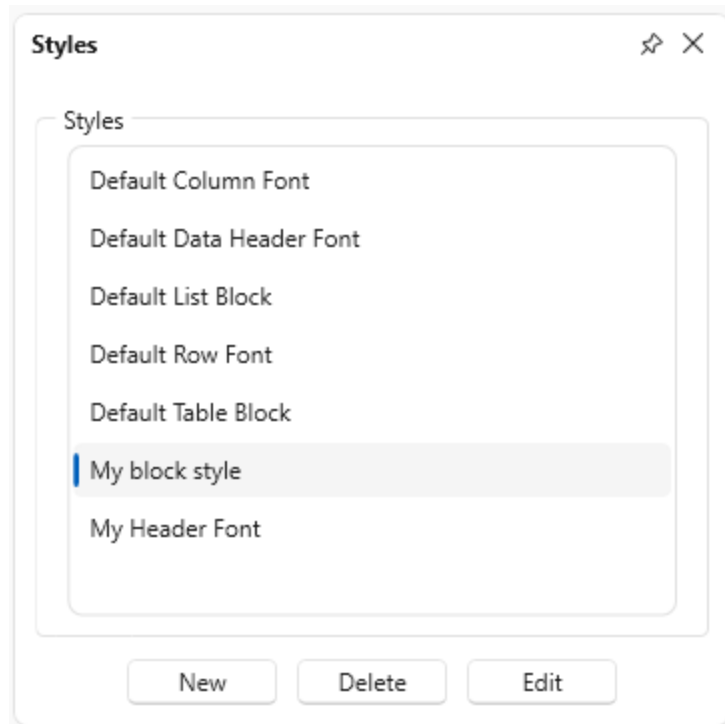
Report 📌 ✕

| Summary | Report |

BWS Detailed Report

Components
Materials
Concrete Window

Name: Beam Concrete
Description: 7 ksi concrete
Compressive strength at 28 days (f'c): 7.000 ksi
Initial compressive strength (f'ci): 5.500 ksi
Composition of concrete: Normal
Density (for dead loads): 0.150 kcf
Density (for modulus of elasticity): 0.150 kcf
Poisson's ratio: 0.200
Coefficient of thermal expansion: 0.0000060000 1/F
Splitting tensile strength (fct):
LRFD maximum aggregate size:
Std modulus of elasticity (Ec): 5072.00 ksi
LRFD modulus of elasticity (Ec): 5072.00 ksi
Std initial modulus of elasticity: 4496.00 ksi
LRFD initial modulus of elasticity: 4496.00 ksi
Std modulus of rupture:
LRFD modulus of rupture: 0.63 ksi
Shear factor: 1.000

Name: Class A (US)
Description: Class A cement concrete
Compressive strength at 28 days (f'c): 4.000 ksi
Initial compressive strength (f'ci):
Composition of concrete: Normal
Density (for dead loads): 0.150 kcf
Density (for modulus of elasticity): 0.150 kcf
Poisson's ratio: 0.200
Coefficient of thermal expansion: 0.0000060000 1/F
Splitting tensile strength (fct):
LRFD maximum aggregate size:
Std modulus of elasticity (Ec): 3834.00 ksi
LRFD modulus of elasticity (Ec): 3834.00 ksi

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Click **New** in the **Styles Panel** and enter the information below.

Click **OK**.

The new style should now appear in the list of styles in the **Styles Panel**.

The new style will not result in any changes to the report in the **Summary Tab** report since it is not currently assigned to any sections of the report.

Select **My block style** in the list of styles and click **Delete**. When prompted, 'Are you sure you want to delete style My block style?', click **Yes**. The style will now be removed from the list of styles.

Styles can only be deleted if they are not in use anywhere throughout the report.

Properties

Each section in a report has Properties associated with it that can be modified to customize the report style and formatting. To view Properties for a particular report item, select the item in the Template Tree then select the desired item in the Section Contents Tree. The Properties Panel will update instantaneously to display that item's Properties.

The different types of Properties are as follows:

Root Properties

Root Properties are associated with the root node of the Template Tree, BWS Detailed Report, and there is only one of these per report. The Root Properties can be updated to change the way that empty sections are displayed throughout the report. The BWS Detailed Report header style and formatting can also be customized by updating the Root Properties.

Section Properties

A Section is an item in the report that only has a header associated with it such as Bridge Section, Bridge Window, or Components. The header style and formatting for each of these items can be customized by updating the Section Properties.
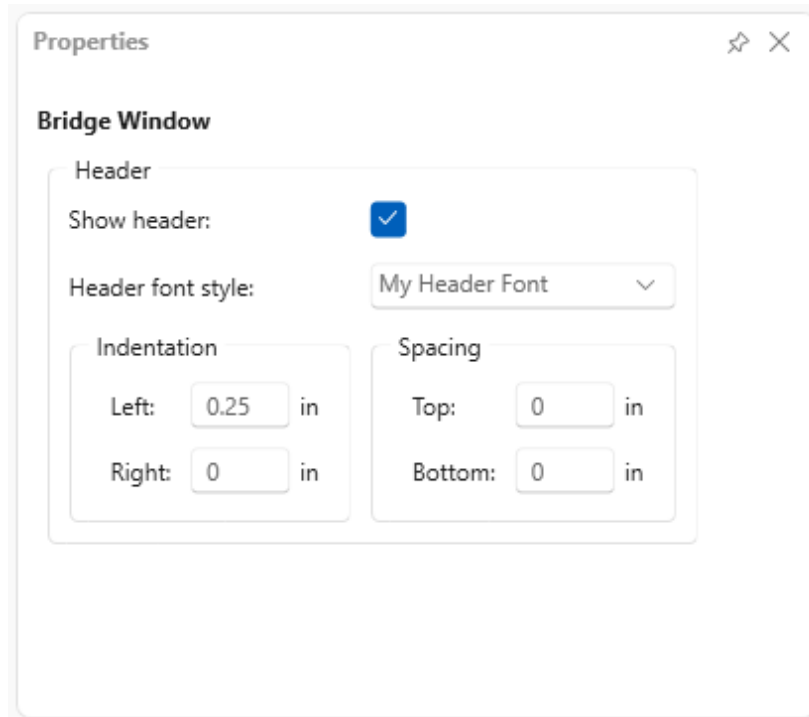
Data Block Properties

A Data Block is an item in the report that contains both a header and a block of data such as the Summary item nested within the Bridge Window. The Font Style and formatting for each Data Block's header can be customized by updating in the Properties Panel. The Block Style and formatting for the Data Block's table can also be customized here.

Column Properties

Column Properties in a report are the name/value pairs that contain the actual report data such as the Bridge ID nested within the Bridge Window, Summary item. The Font Styles can be updated for a Column Property's name/label and its data value. The Column Width can also be adjusted for items displayed in Tabular form.
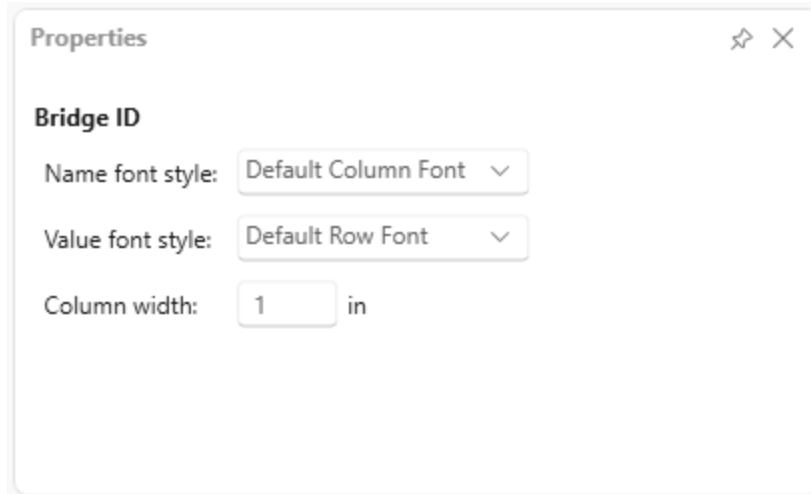
Customize Root Properties

Check the **Generic Window** and **Median Window** boxes in the **Template Tree**.

Click **Generate Report** in the **Ribbon**.

Notice in the **Report Tab** report that headers for these items are displayed even though there is no data associated with them.
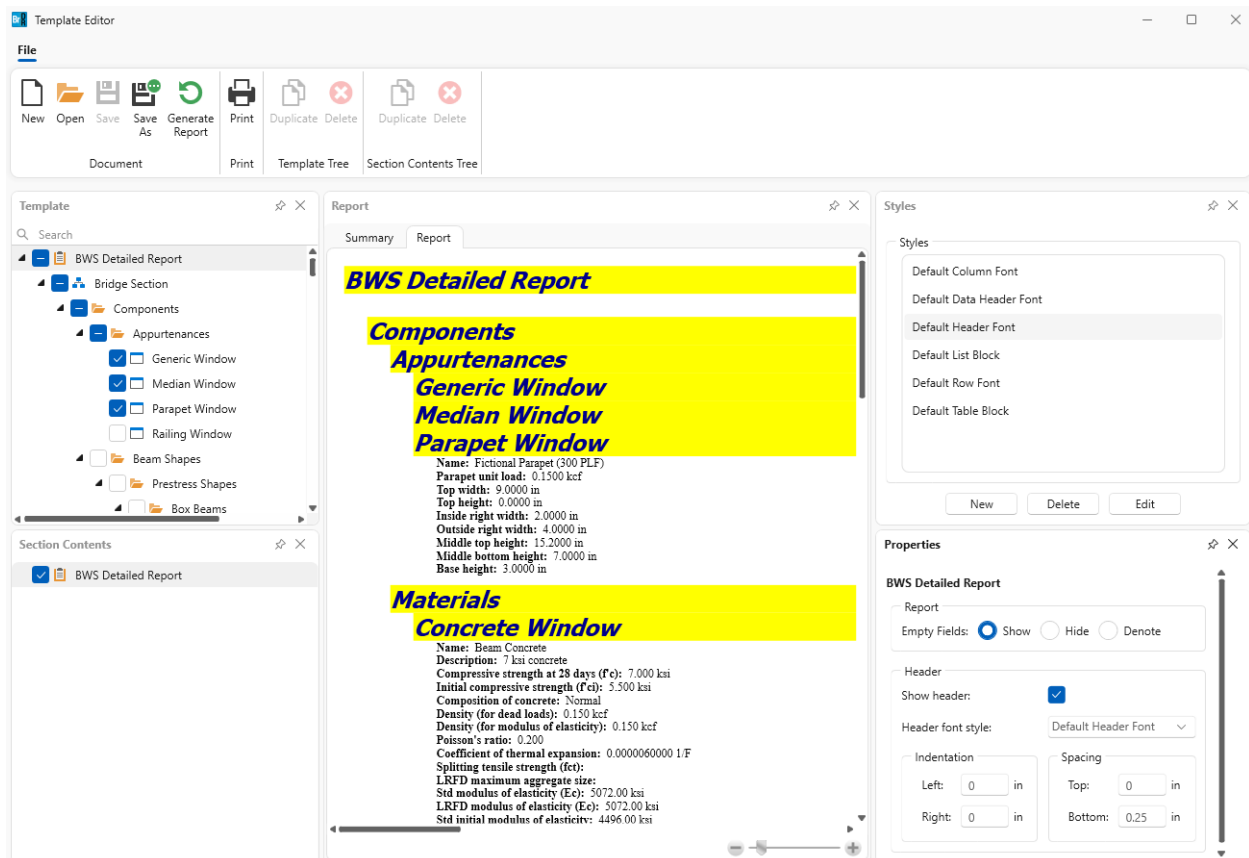
Select the **BWS Detailed Report** item in the **Template Tree** then select the **BWS Detailed Report** item in the **Section Contents Tree** below.

In the **Properties Panel**, toggle **Empty Fields** to **Hide** then click **Generate Report** again in the **Ribbon**.
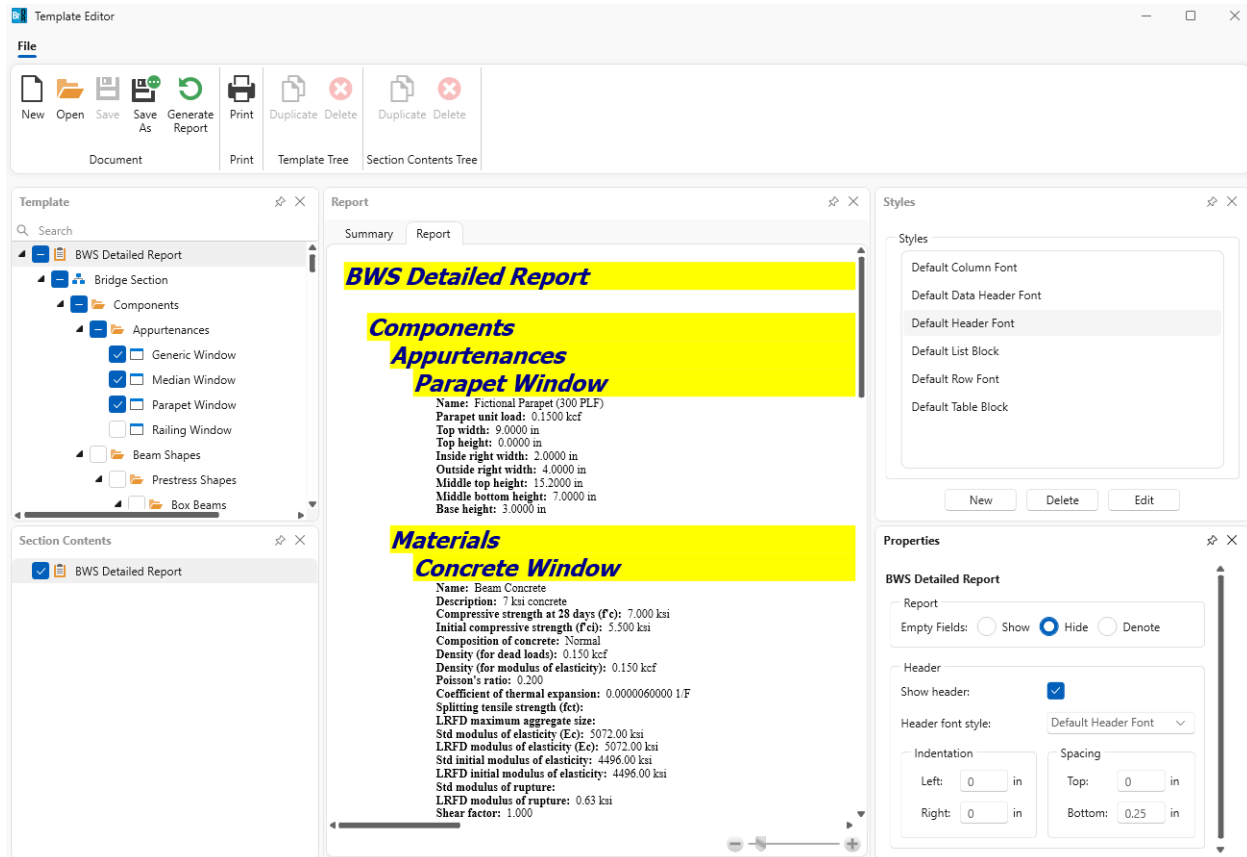
The **Report Tab** report will now hide all items in the report that do not have data associated with them. The **Denote** option can also be used to denote a section as empty rather than hiding it completely.

Customizing Section Properties

In the **Styles Panel**, click **New** and enter the information below into the **Create Style Window**.
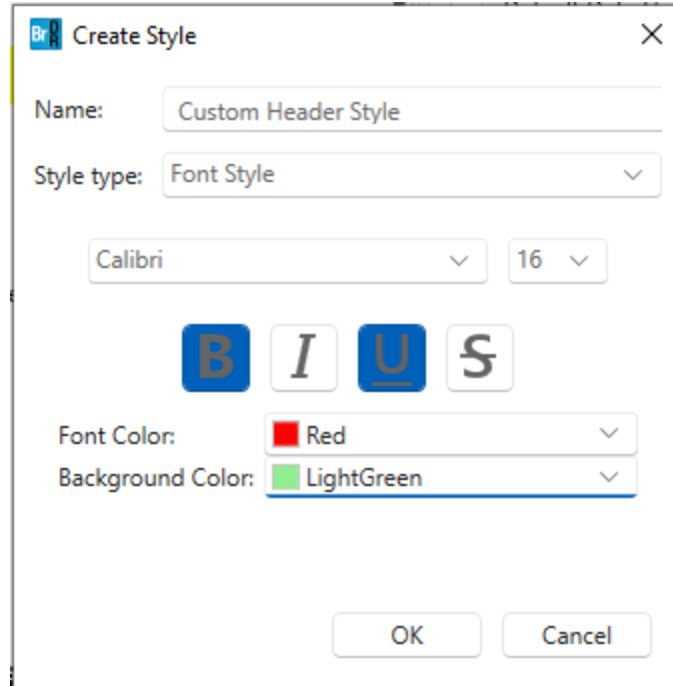
Click **OK**.

Now select **Bridge Window** in the **Template Tree** then select **Bridge Window** in the **Section Contents Tree**. The **Properties Panel** should now be populated with the current Bridge Window's properties.

Expand the **Header font style** dropdown and select **Custom Header Style**.
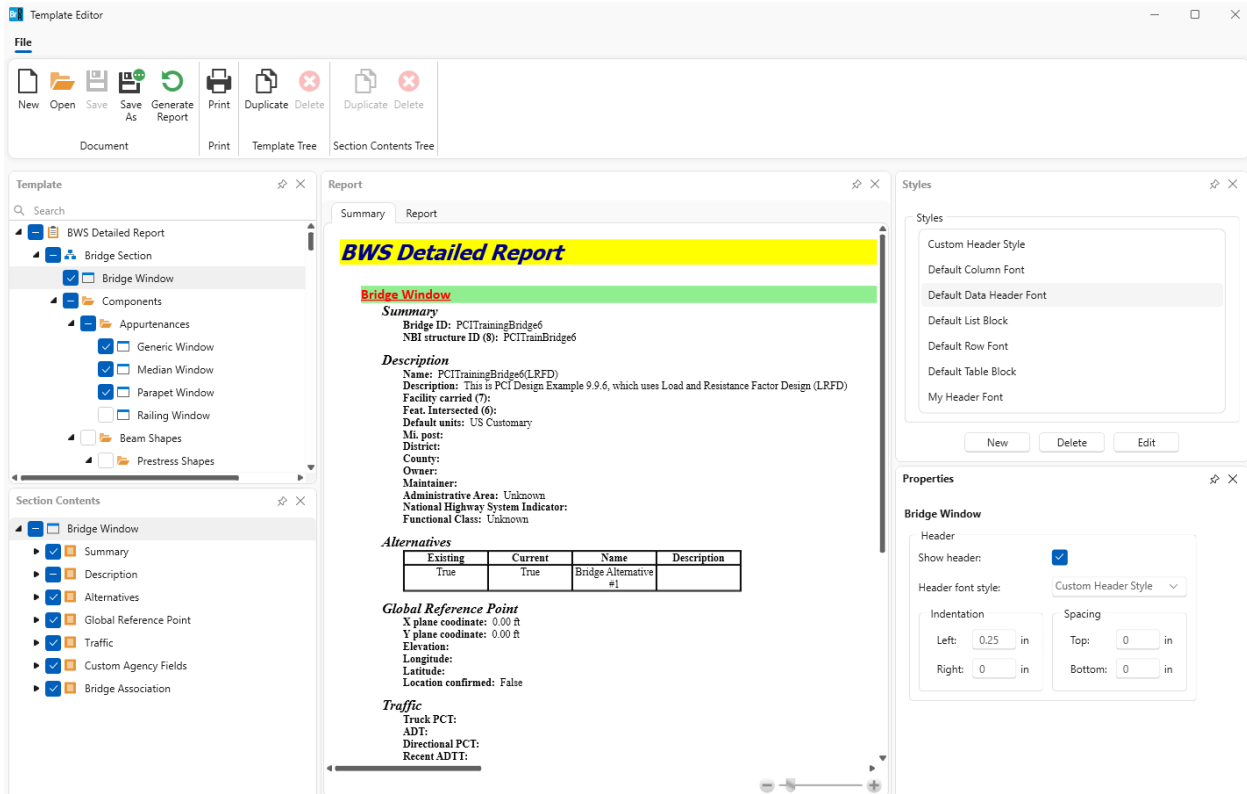
The header's style will now be updated in the **Summary Tab**.

Customizing Data Block Properties

In the **Template Tree** select the first **Concrete Window** item then select **Concrete** in the **Section Contents Tree**.

In the **Properties Panel**, toggle **Data display** to **Tabular** and select **Default Table Block** from the **Table style** dropdown.
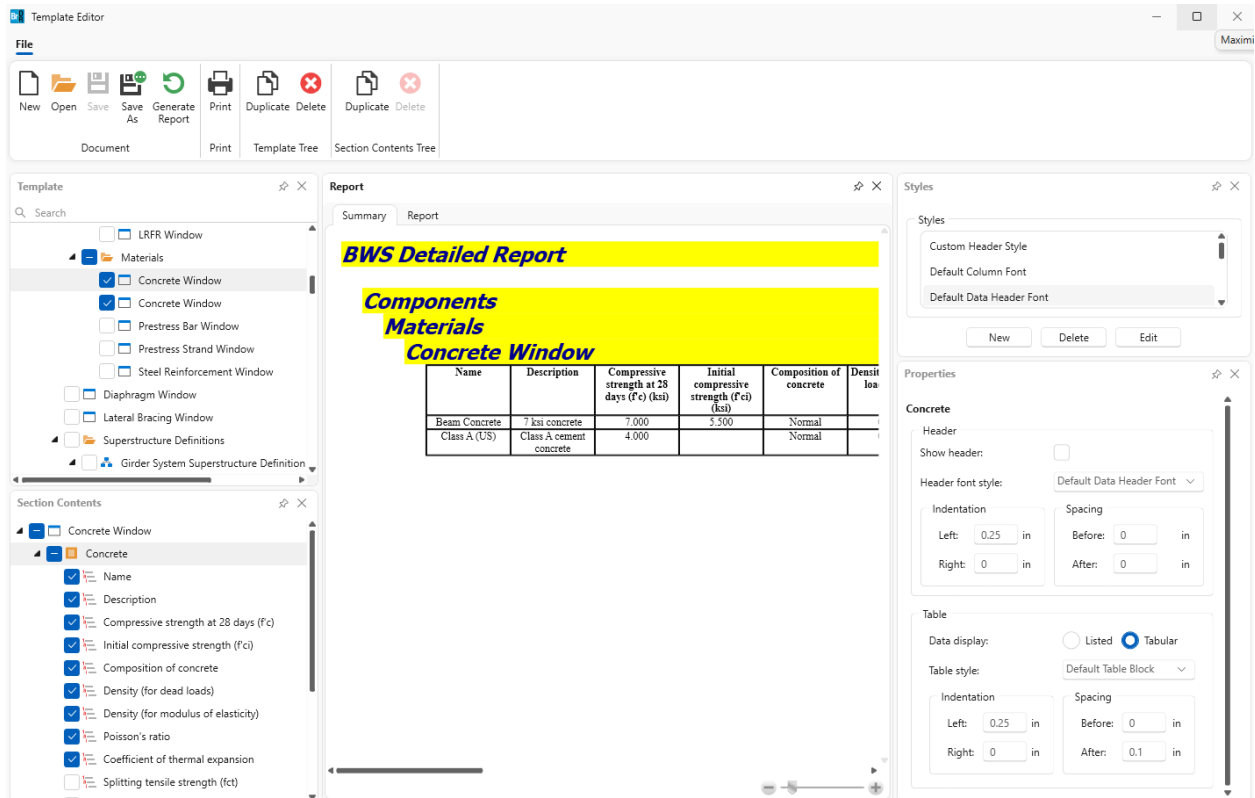
In the **Section Contents Tree**, uncheck the second half of the items below **Concrete** starting with **Splitting tensile strength (fct).**
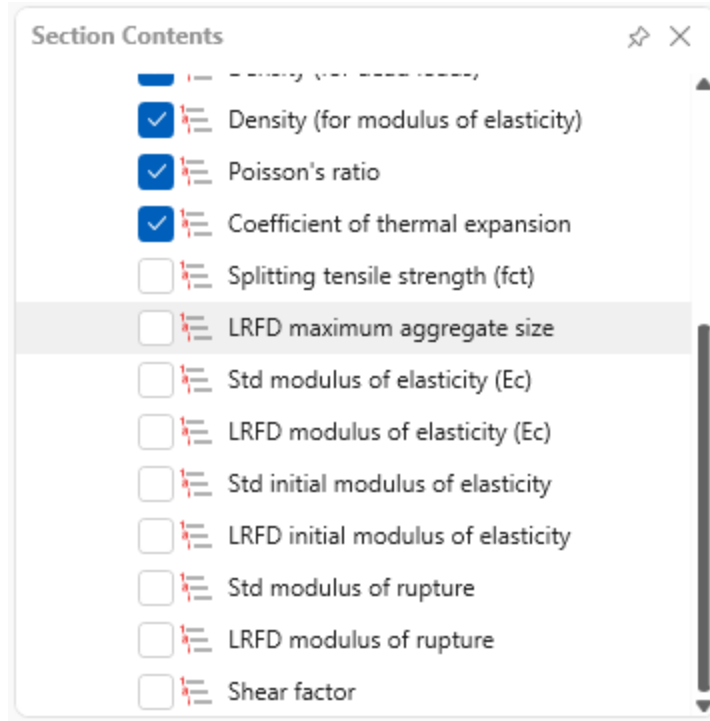
Now navigate back to the **Template Tree** and select the second **Concrete Window** item. Select **Concrete Window** in the **Section Contents Tree** then in the **Properties Panel** uncheck **Show header**.
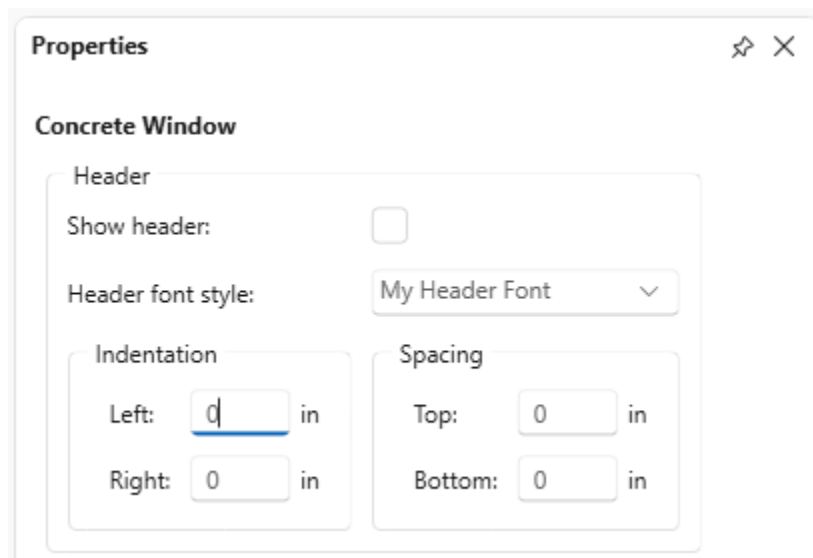
Select **Concrete** in the **Section Contents Tree**. Toggle **Data display** to **Tabular** and select **Default Table Block** from the **Table style** dropdown menu. Also, adjust the **Table Left Indentation** to **0.5 in**.

In the **Section Contents Tree**, uncheck the first half of the items below **Concrete** ending with **Coefficient of thermal expansion**.
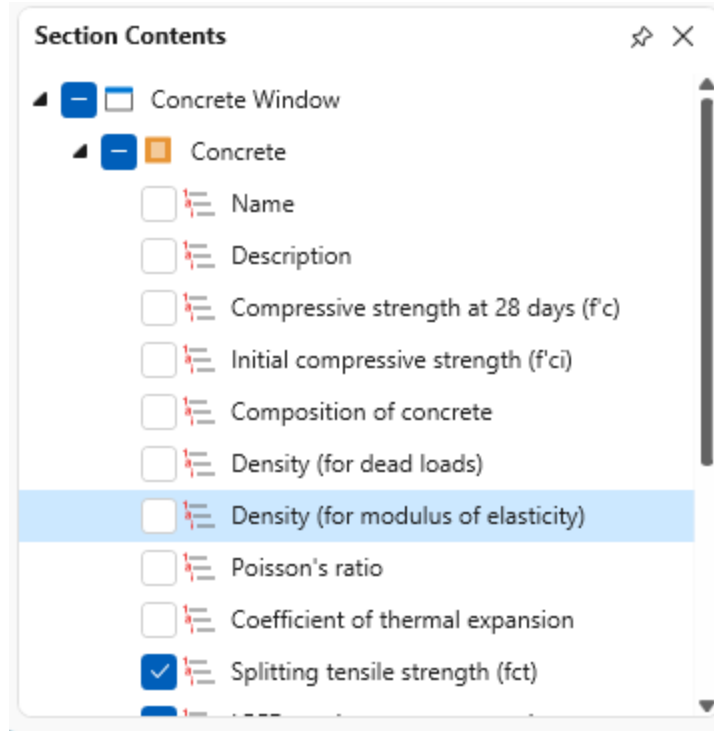
Click **Generate Report** in the **Ribbon**.

BWS Detailed Report

Components
Appurtenances
Parapet Window

Name: Fictional Parapet (300 PLF)
Parapet unit load: 0.1500 kcf
Top width: 9.0000 in
Top height: 0.0000 in
Inside right width: 2.0000 in
Outside right width: 4.0000 in
Middle top height: 15.2000 in
Middle bottom height: 7.0000 in
Base height: 3.0000 in

Materials
Concrete Window

Name	Description	Compressive strength at 28 days (f'c) (ksi)	Initial compressive strength (f'ci) (ksi)	Composition of concrete	Density (for dead loads) (kcf)	Density (for modulus of elasticity) (kcf)	Poisson's ratio	Coefficient of thermal expansion (1/F)
Beam Concrete	7 ksi concrete	7.000	5.500	Normal	0.150	0.150	0.200	0.0000060000
Class A (US)	Class A cement concrete	4.000		Normal	0.150	0.150	0.200	0.0000060000

Splitting tensile strength (fct) (ksi)	LRFD maximum aggregate size (in)	Std modulus of elasticity (Ec) (ksi)	LRFD modulus of elasticity (Ec) (ksi)	Std initial modulus of elasticity (ksi)	LRFD initial modulus of elasticity (ksi)	Std modulus of rupture (ksi)	LRFD modulus of rupture (ksi)	Shear factor
		5072.00	5072.00	4496.00	4496.00		0.63	1.000
		3834.00	3834.00				0.47	1.000

Bridge Window
Summary
Bridge ID: PCITrainingBridge6
NBI structure ID (8): PCITrainBridge6

Notice the data is now displayed in table form in the report and by duplicating the item the table columns can be wrapped to fit the desired width.

Customizing Column Properties

Select **Parapet Window** in the **Template Tree** and select **Name** in the **Section Contents Tree**.
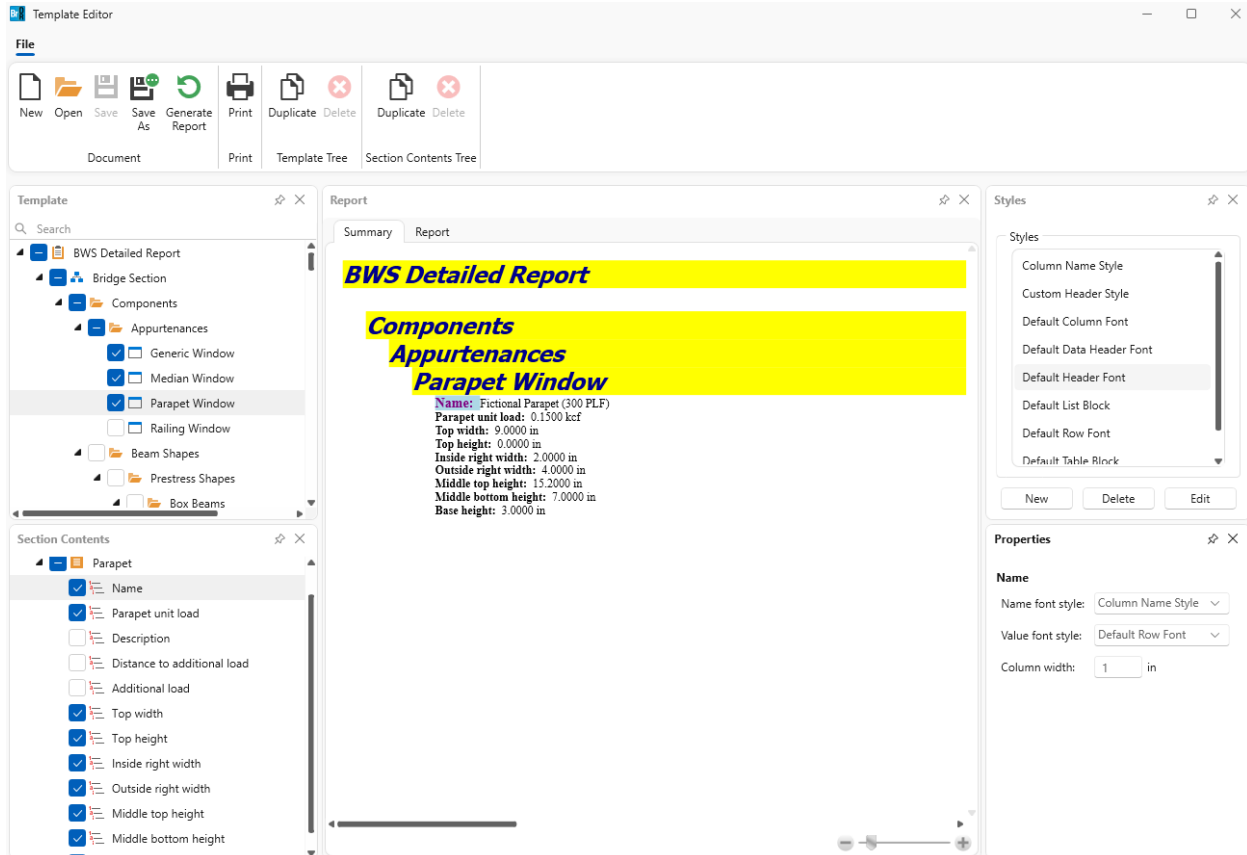
Click **New** in the **Style Panel** and create the new **Font Style** below.
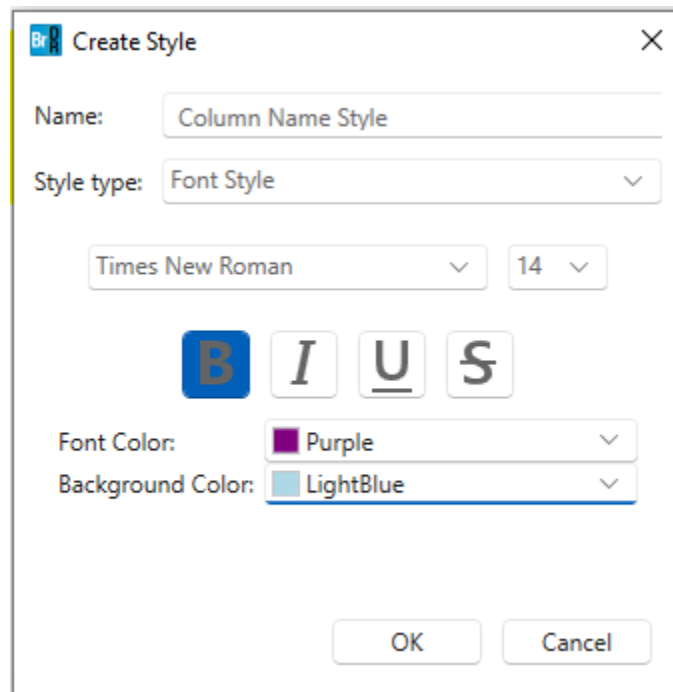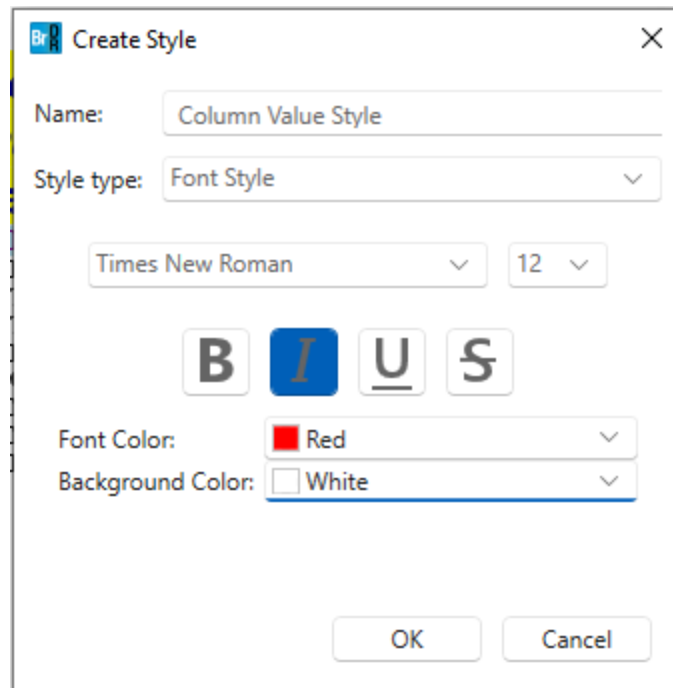

Click **OK**.

In the **Properties Panel**, expand the **Name font style** dropdown and select the new **Column Name Style Font**.

The label for **Name** will be updated instantaneously in the **Summary Tab** to use the new style.

Click **New** in the **Style Panel** and create the new **Font Style** below.

Click **OK**.

In the **Properties Panel**, expand the **Value font style** dropdown and select the new **Column Value Style Font**.
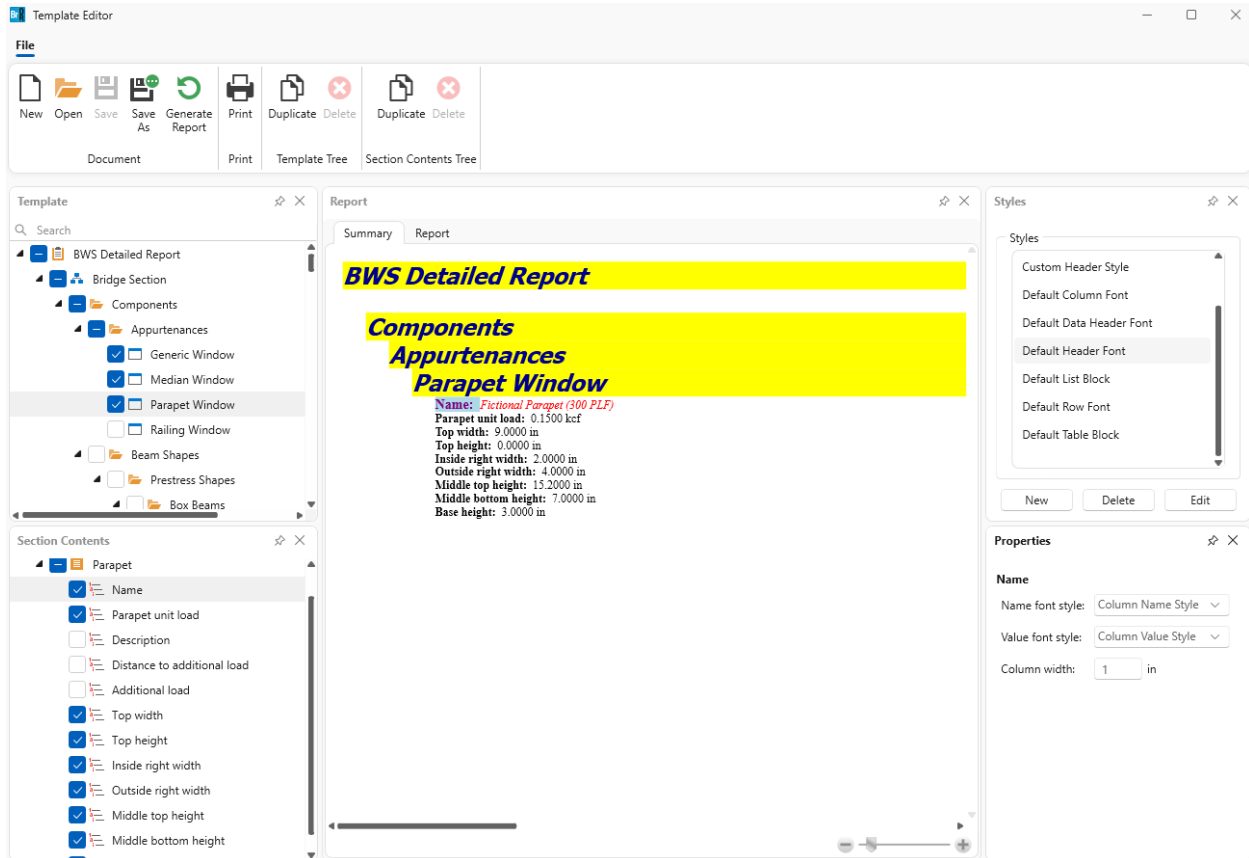
The data value for **Name** will be updated instantaneously in the **Summary Tab** to use the new style.

Saving Report Templates

Click **Save As** in the **Ribbon** and enter a name and save location for the template file.
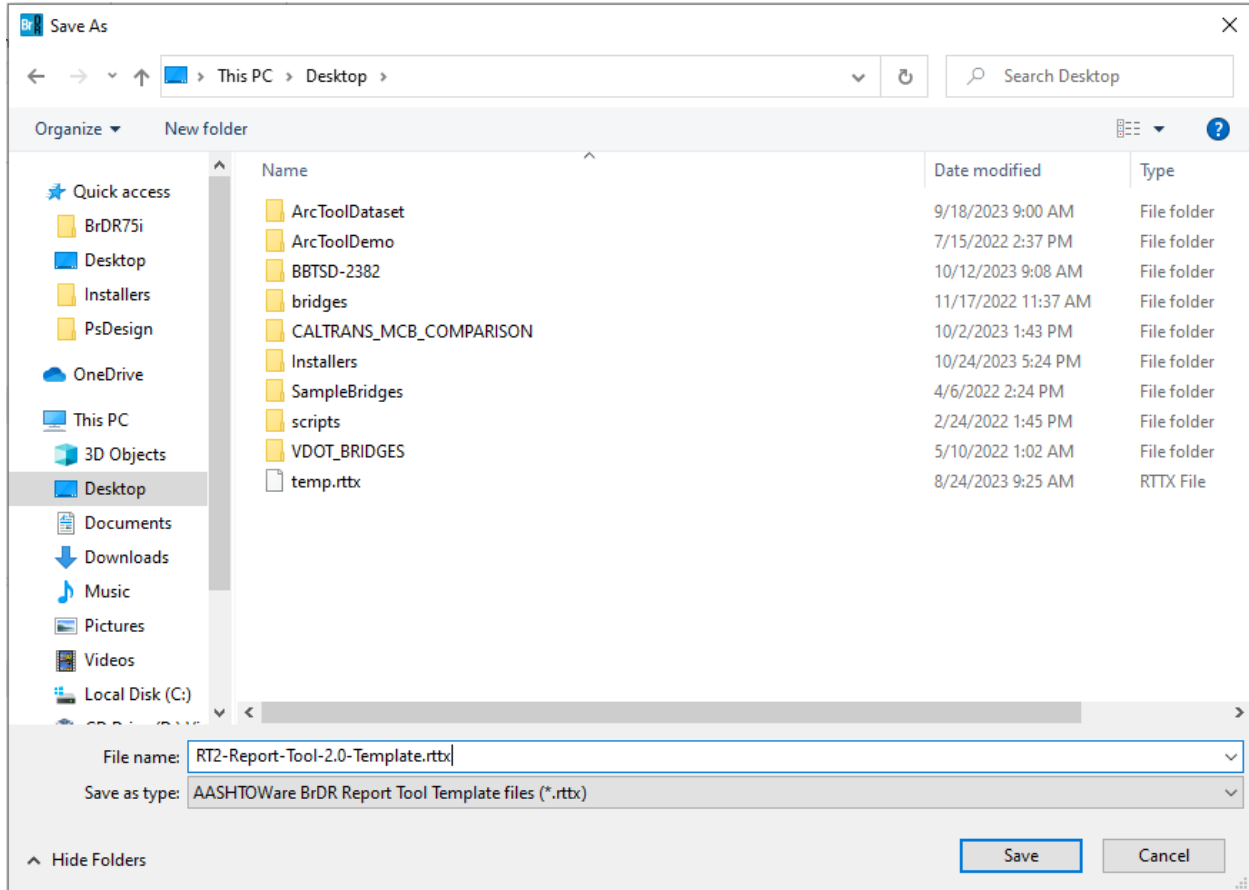
Click **Save** then exit out of the **Template Editor Window**.

Opening Custom Templates from the Bridge Workspace

In the **Bridge Workspace** for sample bridge **PCITrainingBridge6 (BID 9)**, navigate to the **Reporting Tab**.

Click **View BWS Report**.

Select the template created in the last section of the tutorial from the File Dialog.
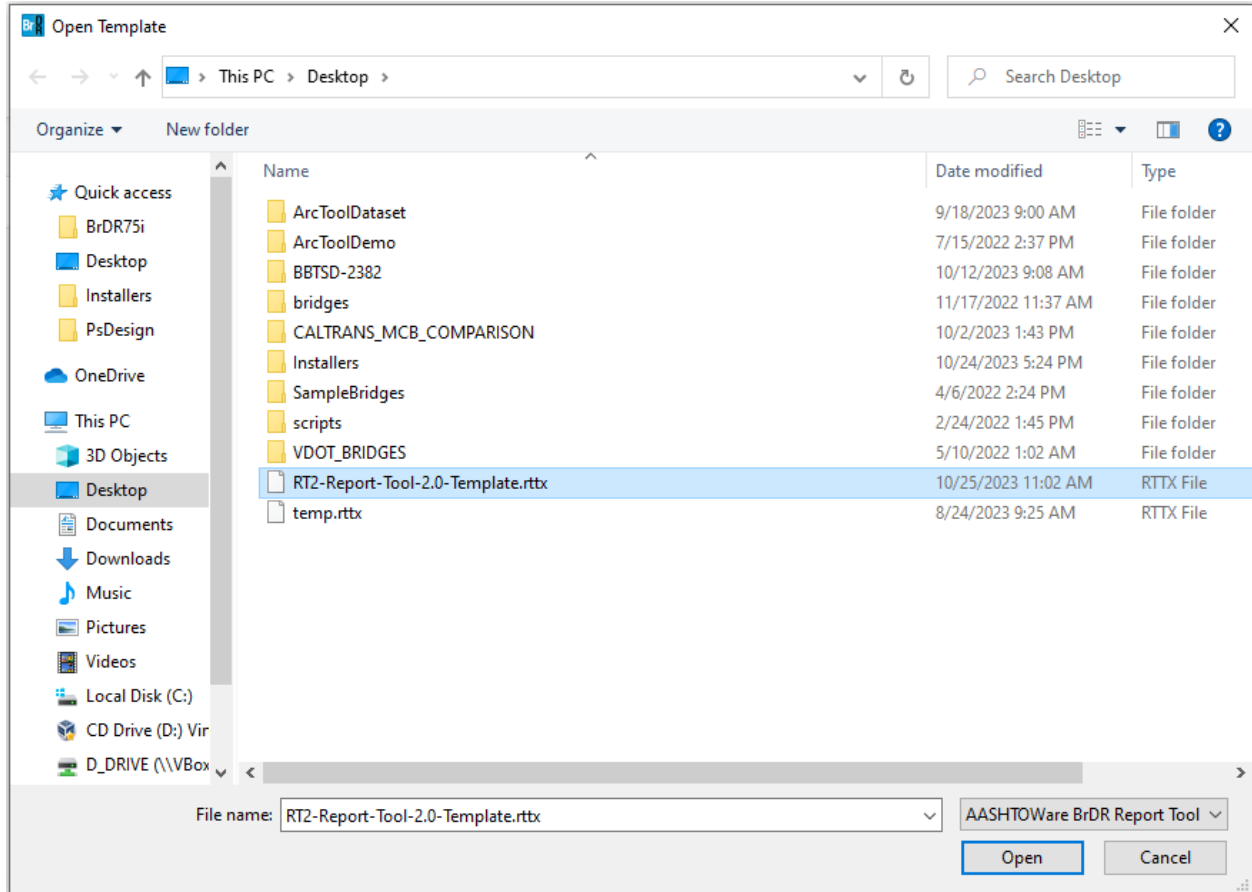
Click **Open**.

A new Bridge Workspace report will be generated and opened in the **Report Panel** using the selected template.

RT2 – Report Tool 2.0