How to Supplement a DOT OpenBridge WorkSpace

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FLUG 10TH ANNIVERSARY

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Let’s have a conversation…

Questions:

Who only uses one of our delivered workspaces?

Who only does work for a single client using their workspace?

Who currently works on OBM Workspaces within their company?

Who wants to know how supplement a WorkSpace for their Projects?

Who knows what CFG means?

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Let’s have a conversation…

Questions:

Who thinks they know what they are doing with Workspaces/Configurations but they are just “faking it until they make it”?

Who is terrified to work on configurations or in configuration files?

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What is a Configuration/WorkSpace?

Configurations are the resources used to develop standards for creating design and contract plans. They include configuration files (.cfg), which combine resources like

Seed Files

DGNLibs

Cell Libraries

Interfaces (GUI)

Fonts

Printing Elements (PenTables/Plot Configs)

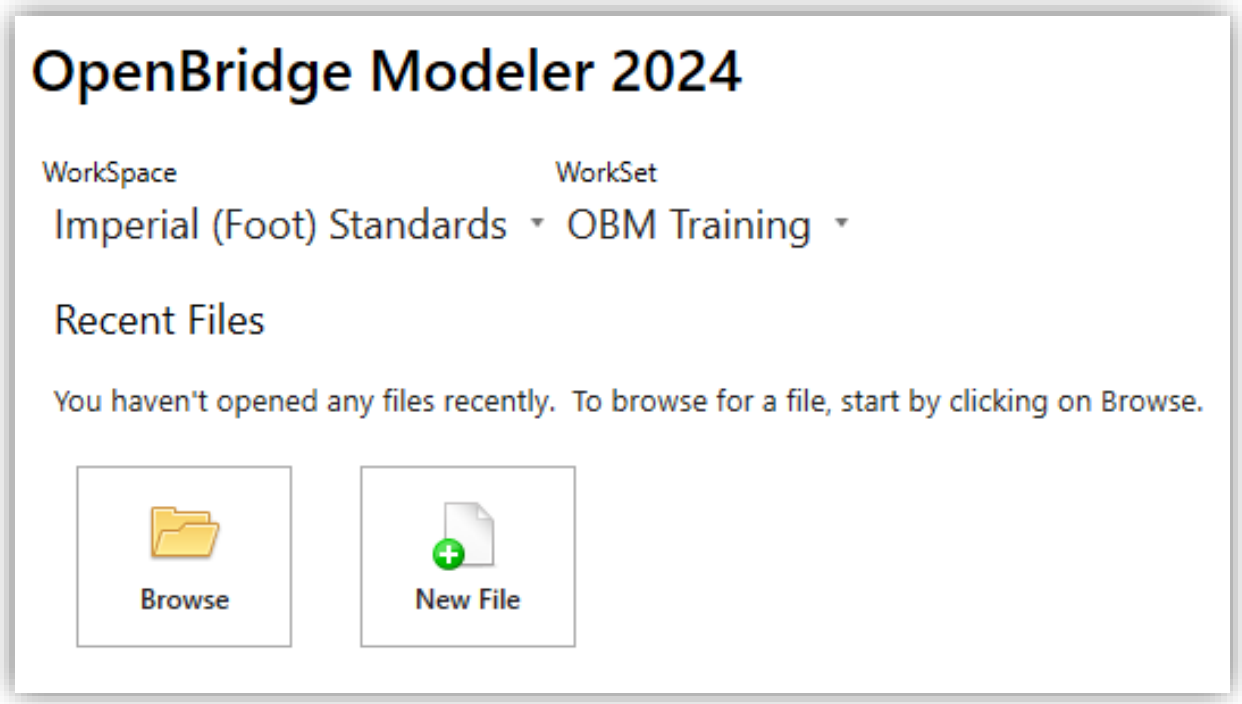
Materials

Custom Apps

Scales

Sheet Sizes

ANYTHING IS POSSIBLE! ☺



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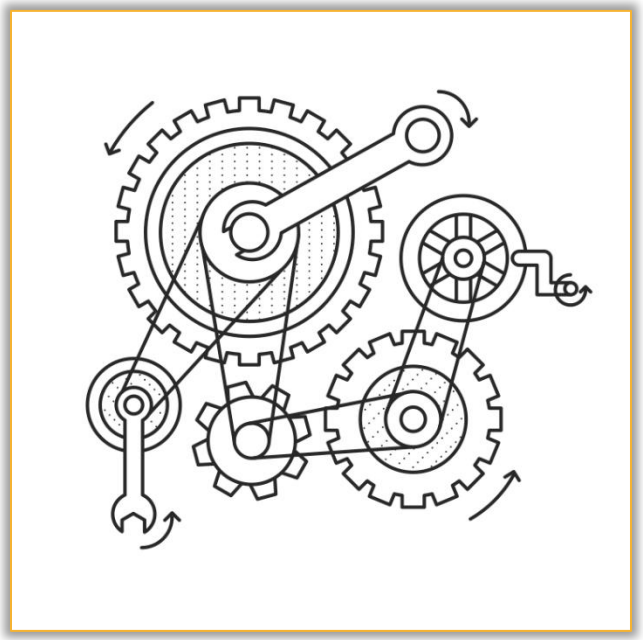
What are Configuration Files?

Configuration Files ***(.cfg)*** are text files that include configuration variables, directives, statements and expressions that control the behavior of the OpenX product(s).



Name	Date modified	Type
applicationload.cfg	5/11/2024 2:48 AM	CFG File
BaseRibbon.cfg	5/11/2024 2:48 AM	CFG File
capability.list	5/11/2024 2:11 AM	LIST File
Cif.cfg	5/11/2024 2:27 AM	CFG File
dockingprefseed.cfg	5/11/2024 2:48 AM	CFG File
ecbrowser.cfg	5/11/2024 2:11 AM	CFG File
ecom.cfg	5/11/2024 2:11 AM	CFG File
grouppanelprefseed.cfg	5/11/2024 2:48 AM	CFG File
gui.cfg	5/11/2024 2:11 AM	CFG File
level.cfg	5/11/2024 2:11 AM	CFG File
markup.cfg	5/11/2024 2:23 AM	CFG File
msdirs.cfg	5/11/2024 2:11 AM	CFG File
msfiles.cfg	5/11/2024 2:11 AM	CFG File
msgeocoord.cfg	5/11/2024 2:11 AM	CFG File
mslocale.cfg	5/11/2024 2:11 AM	CFG File
mstrans.cfg	5/11/2024 2:11 AM	CFG File
msweb.cfg	5/11/2024 2:11 AM	CFG File
OpenRoads.cfg	5/11/2024 2:27 AM	CFG File
OpenSite.cfg	5/11/2024 2:28 AM	CFG File
pointcloud.cfg	5/11/2024 2:11 AM	CFG File
PositionMapping.cfg	5/11/2024 2:11 AM	CFG File
preferences.cfg	5/11/2024 2:11 AM	CFG File
printserver.cfg	5/11/2024 2:11 AM	CFG File
publishdgn.cfg	5/11/2024 2:11 AM	CFG File
raster.cfg	5/11/2024 2:11 AM	CFG File
regression.cfg	5/11/2024 2:28 AM	CFG File
security.cfg	5/11/2024 2:11 AM	CFG File
spdocmgmt.cfg	5/11/2024 2:11 AM	CFG File
spellchecker.cfg	5/11/2024 2:11 AM	CFG File
subsurface.cfg	5/11/2024 2:28 AM	CFG File
Survey.cfg	5/11/2024 2:28 AM	CFG File
taskdialogprefseed.cfg	5/11/2024 2:48 AM	CFG File
TaskNavigation.cfg	5/11/2024 2:11 AM	CFG File
workmode.cfg	5/11/2024 2:11 AM	CFG File

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What are Configuration Variables?

Configuration Variables define *paths, specific files, pre-defined values, or binary values*.

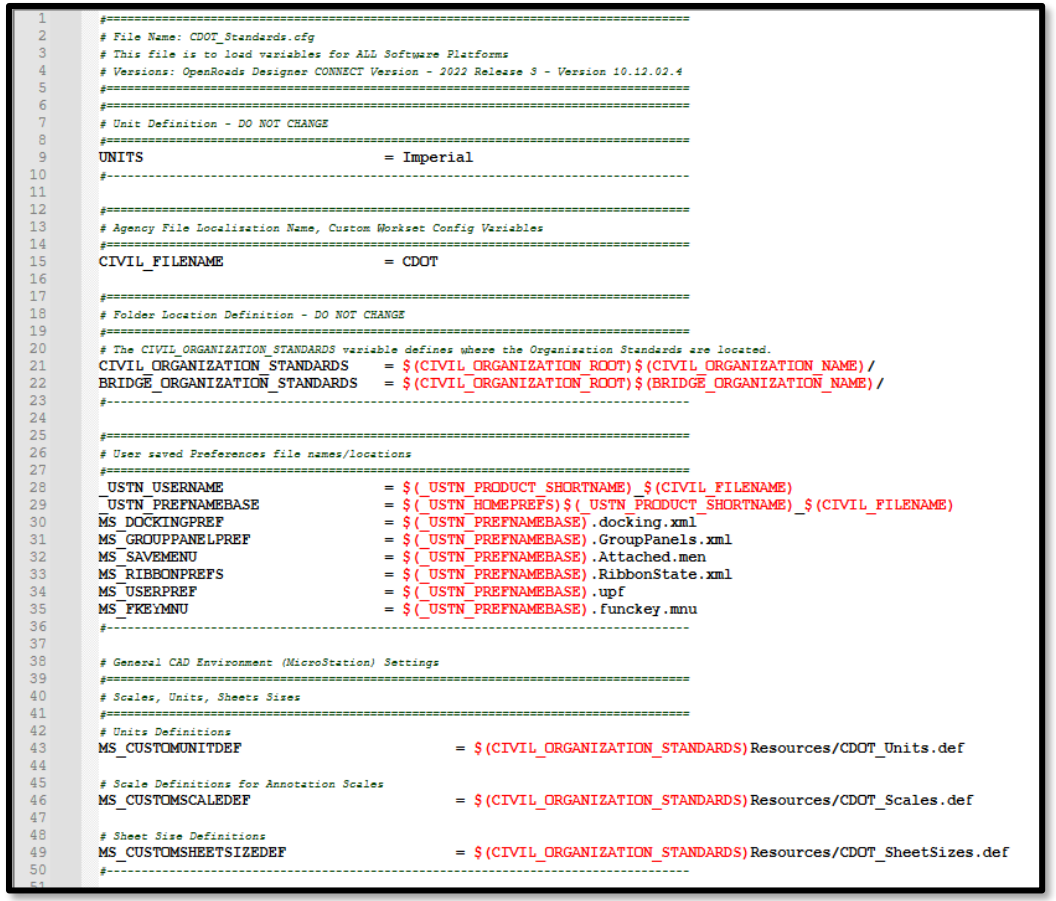
Examples:

PATH_VARIABLE = ...\\AnyFolder\

BINARY_VARIABLE = 1

There are a set of predefined and/ or preset Variables defined for each product.

Custom Configuration variables can also be created.



```
#=============================================================================
# File Name: CDOT_Standards.cfg
# This file is to load variables for ALL Software Platforms
# Versions: OpenRoads Designer CONNECT Version - 2022 Release 3 - Version 10.12.02.4
#=============================================================================
#=============================================================================
# Unit Definition - DO NOT CHANGE
#=============================================================================
UNITS                           = Imperial
#-----------------------------------------------------------------------------

#=============================================================================
# Agency File Localization Name, Custom Workset Config Variables
#=============================================================================
CIVIL_FILENAME                  = CDOT

#=============================================================================
# Folder Location Definition - DO NOT CHANGE
#=============================================================================
# The CIVIL_ORGANIZATION_STANDARDS variable defines where the Organization Standards are located.
CIVIL_ORGANIZATION_STANDARDS    = $(CIVIL_ORGANIZATION_ROOT)$(CIVIL_ORGANIZATION_NAME)/
BRIDGE_ORGANIZATION_STANDARDS   = $(CIVIL_ORGANIZATION_ROOT)$(BRIDGE_ORGANIZATION_NAME)/
#-----------------------------------------------------------------------------

#=============================================================================
# User saved Preferences file names/locations
#=============================================================================
_USTN_USERNAME                  = $(_USTN_PRODUCT_SHORTNAME)_$(CIVIL_FILENAME)
_USTN_PREFNAMEBASE              = $(_USTN_HOMEPREFS)$(_USTN_PRODUCT_SHORTNAME)_$(CIVIL_FILENAME)
MS_DOCKINGPREF                  = $(_USTN_PREFNAMEBASE).docking.xml
MS_GROUPPANELPREF               = $(_USTN_PREFNAMEBASE).GroupPanels.xml
MS_SAVEMENU                     = $(_USTN_PREFNAMEBASE).Attached.men
MS_RIBBONPREFS                  = $(_USTN_PREFNAMEBASE).RibbonState.xml
MS_USERPREF                     = $(_USTN_PREFNAMEBASE).upf
MS_FKEYMNU                      = $(_USTN_PREFNAMEBASE).funckey.mnu
#-----------------------------------------------------------------------------

# General CAD Environment (MicroStation) Settings
#=============================================================================
# Scales, Units, Sheets Sizes
#=============================================================================
# Units Definitions
MS_CUSTOMUNITDEF                        = $(CIVIL_ORGANIZATION_STANDARDS)Resources/CDOT_Units.def

# Scale Definitions for Annotation Scales
MS_CUSTOMSCALEDEF                       = $(CIVIL_ORGANIZATION_STANDARDS)Resources/CDOT_Scales.def

# Sheet Size Definitions
MS_CUSTOMSHEETSIZEDEF                   = $(CIVIL_ORGANIZATION_STANDARDS)Resources/CDOT_SheetSizes.def
#-----------------------------------------------------------------------------
```

Example 1: MY_DESKTOP_PATH = C:/Users/Steve.Willoughby/OneDrive - Bentley Systems, Inc/Desktop/

Example 2: MY_DOCUMENTS_PATH = $(MY_DESKTOP_PATH)Documents/

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What are Configuration Variables?

A list of the predefined (preset) MicroStation, OpenRoads and OpenBridge configuration variables and their uses can be found in the **Help**: docs.Bentley.com

MicroStation Variables:

OpenRoads Variables:

OpenBridge Variables:

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Configuration Syntax: Assignment Statements

Assignment Operator	Definition
Equals (=)	Assign the Configuration Variable at the current level, canceling any previous defined values. **Example: MS_SHEETMODELSEED = ...//path/to/Seeds/SheetModelSeed.dgn**
Conditional Equals (:)	Assign the Configuration Variable at the current level, but only if it is not already defined. **Example: MS_USERPREF : $(_USTN_PREFNAMEBASE).upf**
Append (>)	Appends the operand to the existing definition of the variable, separating the existing value and the operand by semicolons (treating the variable as a path). **Example: MS_RFDIR > $(_USTN_WORKSETROOT)Borders/**
Prepend (<)	Prepends the operand to the existing definition of the variable, separating the existing value and the operand by semicolons (treating the variable as a path). **Example: MS_RFDIR < $(_USTN_WORKSETROOT)Borders/**
Append (+)	Appends the operand to the existing definition of the variable without separator. For example: **_USTN_WORKSETDESCR + In Development**

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OBM WorkSpace Structure

Configurations have levels.

1. System

OBM System Configuration files. These are installed with OpenBridge.

2. Application

OBM specific Configuration files. These are installed with OpenBridge.

3. Organization

Company wide standards that apply to every WorkSpace

4. WorkSpace

Company wide standards that apply to a specific WorkSpace

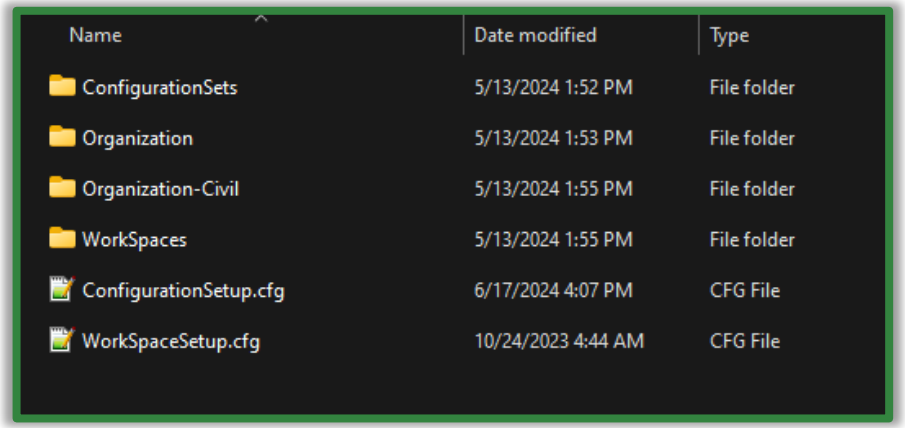
Includes Organization-Civil level

Intended for Agency Standards

Bentley Default Location: *C:\ProgramData\Bentley\OpenBridge Modeler XXXXX\Configuration\Organization-Civil\<Org-CivilFolderName>*

Configuration Variable for the Path: *BRIDGE_ORGANIZATION_STANDARDS*

CFG FILE: *<Org-CivilFolderName>.cfg*



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OBM WorkSpace Structure

5. WorkSet

Project specific standards

6. Roles

Discipline specific standards

Bentley Default Location: *C:\ProgramData\Bentley\OpenBridge Modeler XXXX\Configuration\WorkSpaces\<WorkSpaceName>\Roles\<RoleFolderName>*

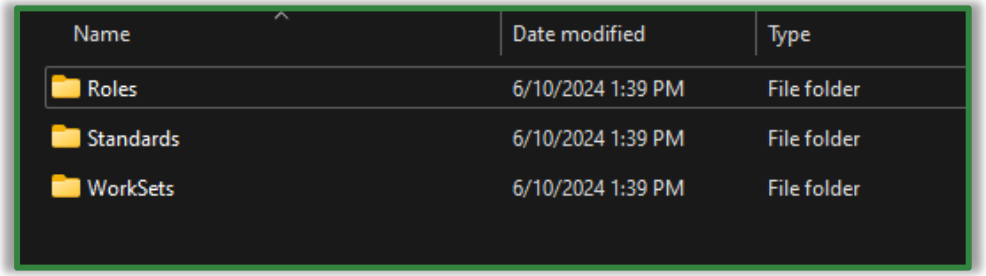
Configuration Variable for the Path: *_USTN_ROLESDIR, _USTN_ROLESCFG*

CFG FILE: *<RoleFolderName>.cfg*

7. User

C:\Users\<Windows.UserName>\AppData\Local\Bentley\OpenBridge Modeler\10.0.0 (or 23.0.0)

CFG FILE: *<Personal>.ucf*



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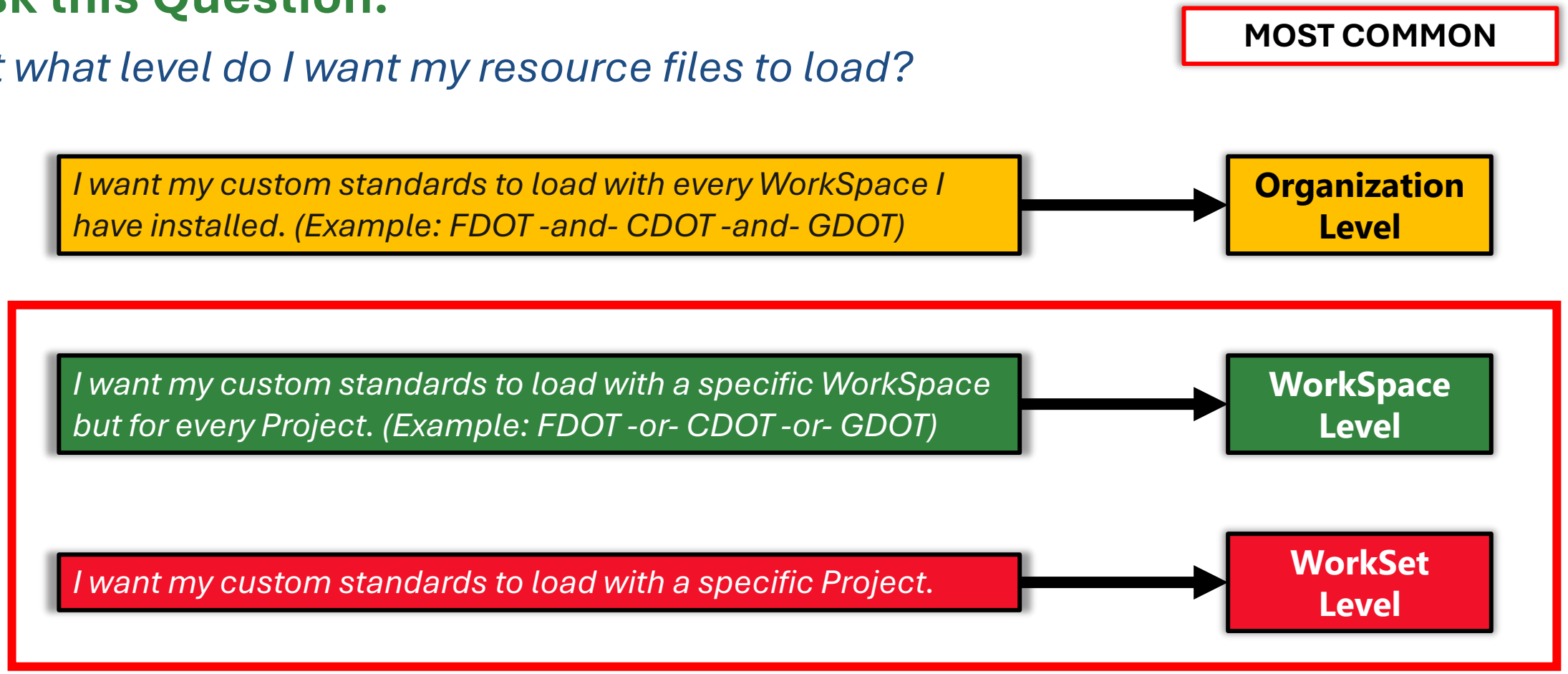
Supplementing a WorkSpace

Ask this Question:

At what level do I want my resource files to load?



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Organization Level

Answer: *I want my custom standards to load with every WorkSpace I have installed. (Example: FDOT -and- CDOT -and- GDOT)*

Loads first after the system configuration files.

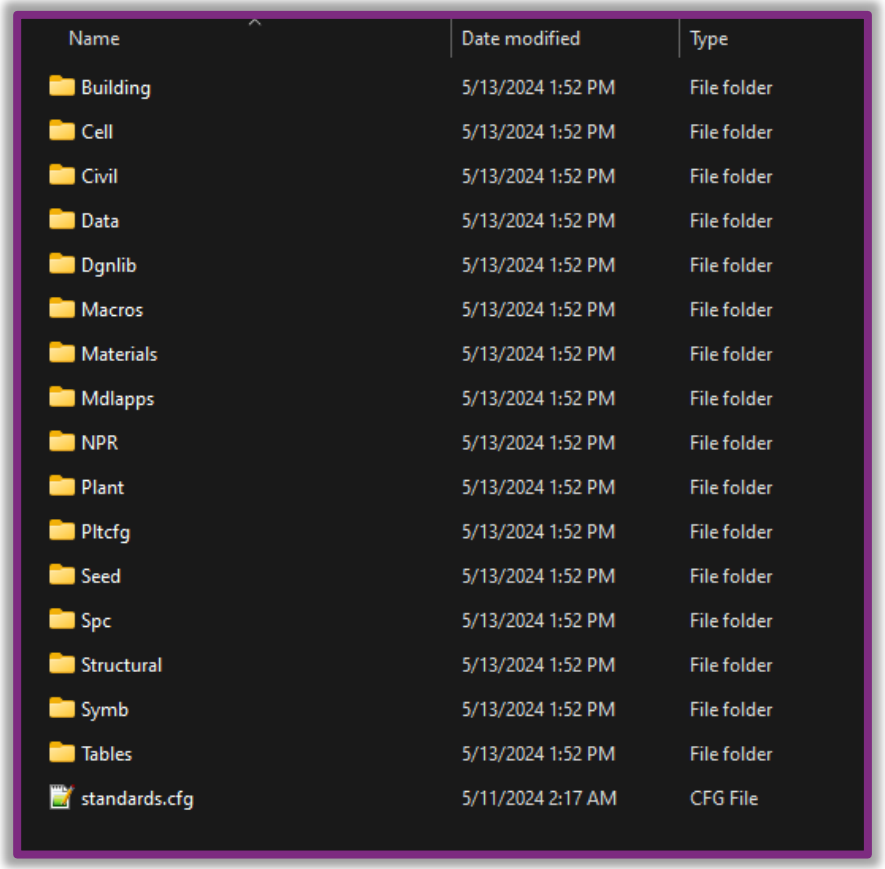
Company wide standards that apply to every WorkSpace and Project.

Bentley Default Location: *C:\ProgramData\Bentley\OpenBridge Modeler XXXX\Configuration\Organization*

Configuration Variable for the Organization Path:

_USTN_ORGANIZATION

CFG FILE: *standards.cfg*



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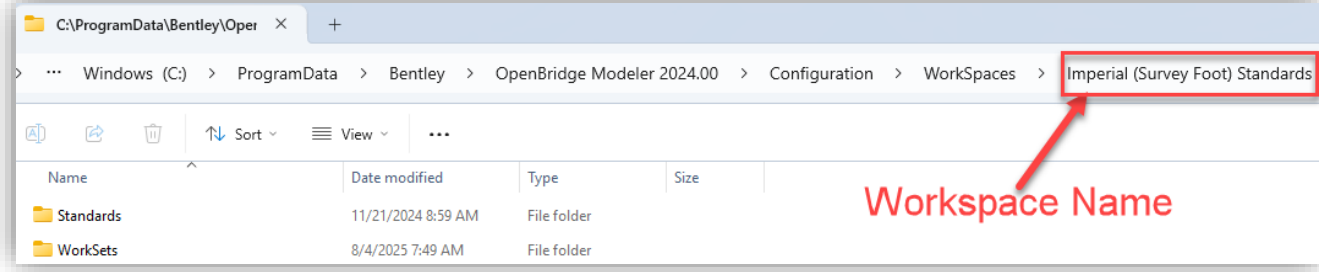
WorkSpace Level



Answer: *I want my custom standards to load with a specific WorkSpace I have installed. (Example: FDOT -or CDOT -or GDOT)*

Loads after the Organization configuration files.

Company wide standards that apply to a specific WorkSpace

Bentley Default Location: *C:\ProgramData\Bentley\OpenBridge Modeler XXXX\Configuration\WorkSpaces\<WorkSpaceName>*

Configuration Variable for the WorkSpace Path:
_USTN_WORKSPACEROOT

CFG FILE: *<WorkSpaceName>.cfg*

Other Important WorkSpace Configuration Variables
_USTN_WORKSPACESTANDARDS • Defines the path to the WorkSpace Standards folder.
_USTN_WORKSPACECFG • Defines the path to the WorkSpace Configuration (.cfg) file.

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WorkSet Level

Answer: *I want my custom standards to load with a specific Project.*

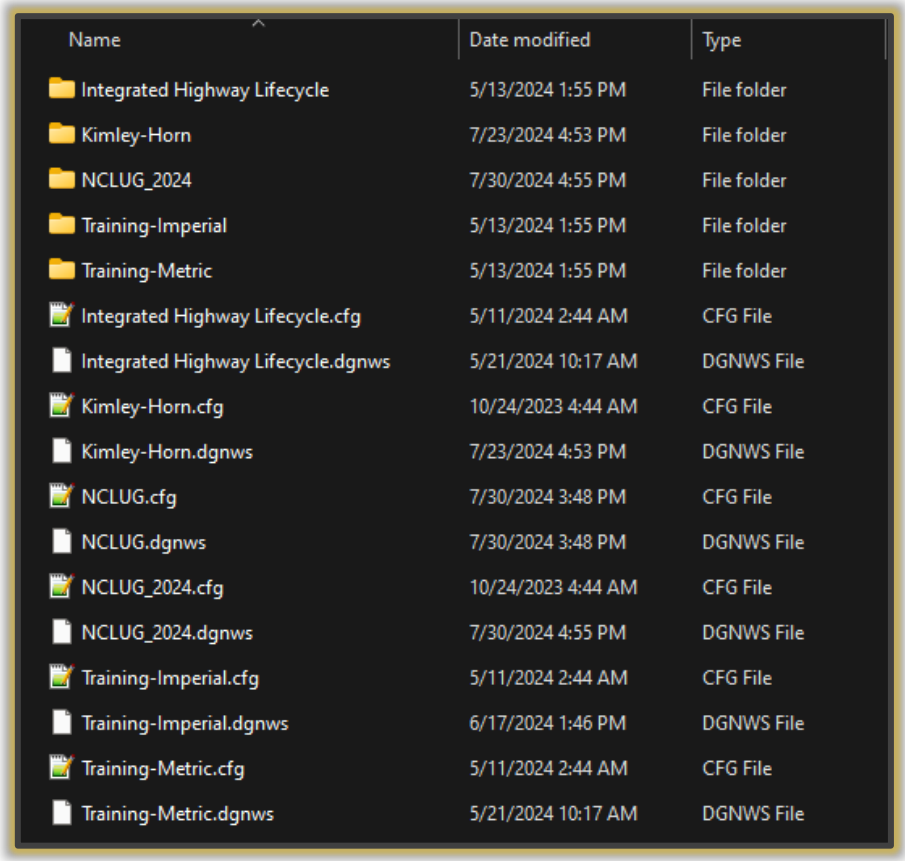
Loads after the WorkSpace and Organization-Civil configuration files.

Standards that apply to a specific Project

Bentley Default Location: *C:\ProgramData\Bentley\OpenBridge Modeler XXXX\Configuration\WorkSpaces\<WorkSpaceName>\WorkSets\<WorkSetName>*

Configuration Variable for the WorkSet Path:
_USTN_WORKSETROOT

CFG FILE: *<WorkSetName>.cfg*



Name	Date modified	Type
Integrated Highway Lifecycle	5/13/2024 1:55 PM	File folder
Kimley-Horn	7/23/2024 4:53 PM	File folder
NCLUG_2024	7/30/2024 4:55 PM	File folder
Training-Imperial	5/13/2024 1:55 PM	File folder
Training-Metric	5/13/2024 1:55 PM	File folder
Integrated Highway Lifecycle.cfg	5/11/2024 2:44 AM	CFG File
Integrated Highway Lifecycle.dgnws	5/21/2024 10:17 AM	DGNWS File
Kimley-Horn.cfg	10/24/2023 4:44 AM	CFG File
Kimley-Horn.dgnws	7/23/2024 4:53 PM	DGNWS File
NCLUG.cfg	7/30/2024 3:48 PM	CFG File
NCLUG.dgnws	7/30/2024 3:48 PM	DGNWS File
NCLUG_2024.cfg	10/24/2023 4:44 AM	CFG File
NCLUG_2024.dgnws	7/30/2024 4:55 PM	DGNWS File
Training-Imperial.cfg	5/11/2024 2:44 AM	CFG File
Training-Imperial.dgnws	6/17/2024 1:46 PM	DGNWS File
Training-Metric.cfg	5/11/2024 2:44 AM	CFG File
Training-Metric.dgnws	5/21/2024 10:17 AM	DGNWS File

Other Important WorkSet Configuration Variables
_USTN_WORKSETSTANDARDS • Defines the path to the WorkSet Standards folder.
_USTN_WORKSETCFG • Defines the path to the WorkSet Configuration (.cfg) file.

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WorkSpace Builder Game

- Seed Files
- Feature Definitions with Annotation
- Cell Libraries
- Drawing (Sheet) Seeds
- Template Library

WHAT LEVEL?

ORGANIZATION

WORKSPACE

WORKSET

Common Resources to Supplement a WorkSpace

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Seed Files

Seed Files: are *"template files"* that are used to create new files with a CONSISTENT format.

What can be stored in the seed file?

Working Units

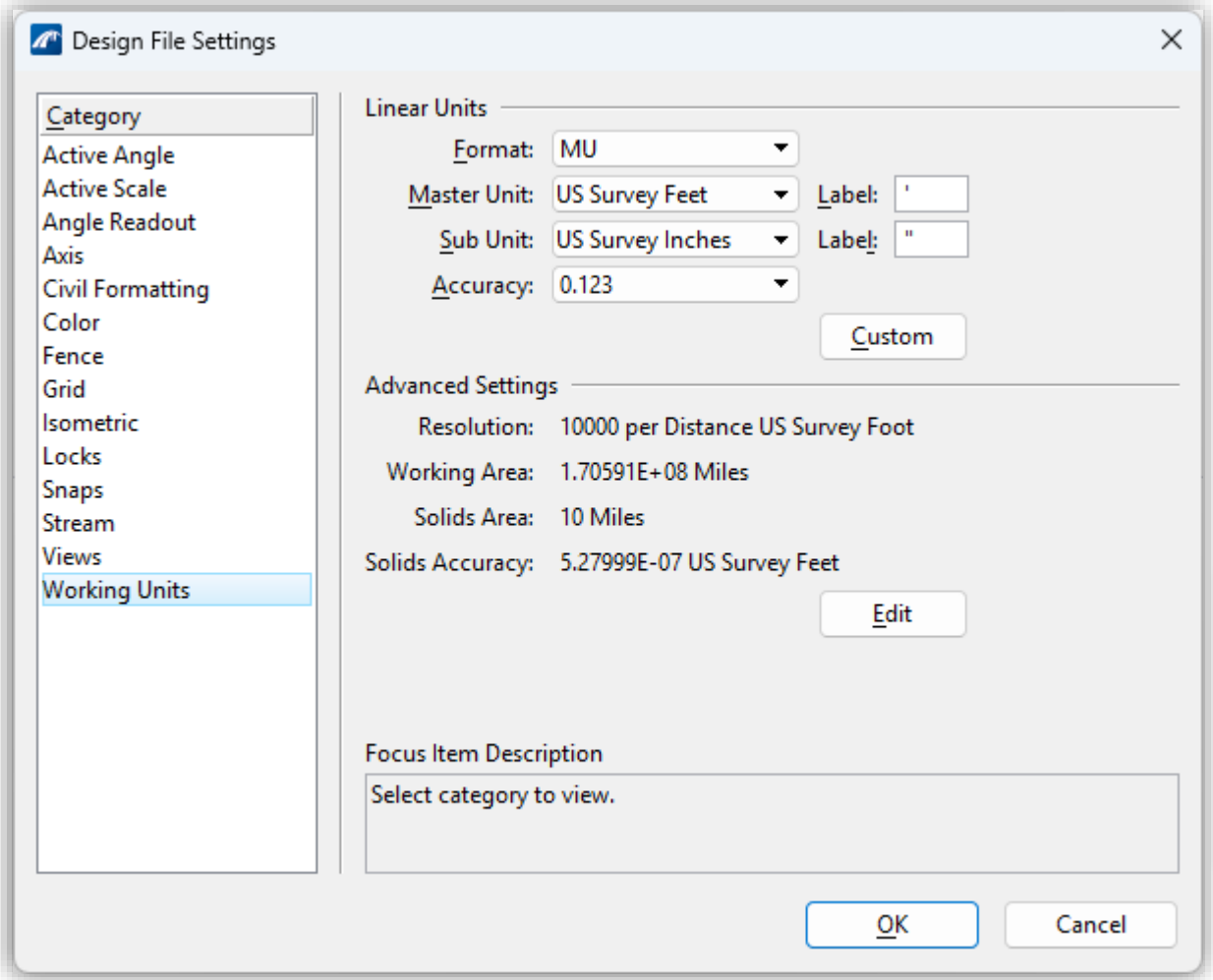
Civil Formatting

GCS

Default tool settings

Color table

Views/Display Styles/View Attributes



INFO: https://bentleysystems.service-now.com/community?id=kb_article&sysparm_article=KB0018651

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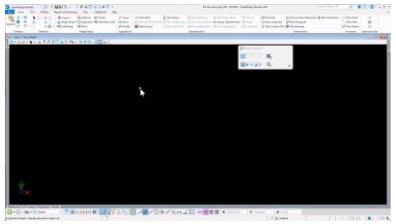
Seed Files

Configuration Variables	Use
MS_SEEDFILES	Path (folder) to where *Seed* files can be found for the WorkSpace/WorkSet.
MS_DESIGNSEED	File used for *Design Seed* when creating new files.
MS_DESIGNMODELSEED	File used for *Design Models* when creating new Models from a seed.
MS_DESIGNMODELSEEDNAME	Name of the *Design Model* in the *MS_DESIGNMODELSEED* file.
MS_DRAWINGMODELSEED	File used for *Drawing Models* when creating new Models from a seed.
MS_DRAWINGMODELSEEDNAME	Name of the *Drawing Model* in the *MS_DRAWINGMODELSEED* file.
MS_SHEETMODELSEED	File used for *Sheet Models* when creating new Sheet Models from a seed.
MS_SHEETMODELSEEDNAME	Name of the *Sheet Model* in the MS_*SHEETMODELSEED* file.



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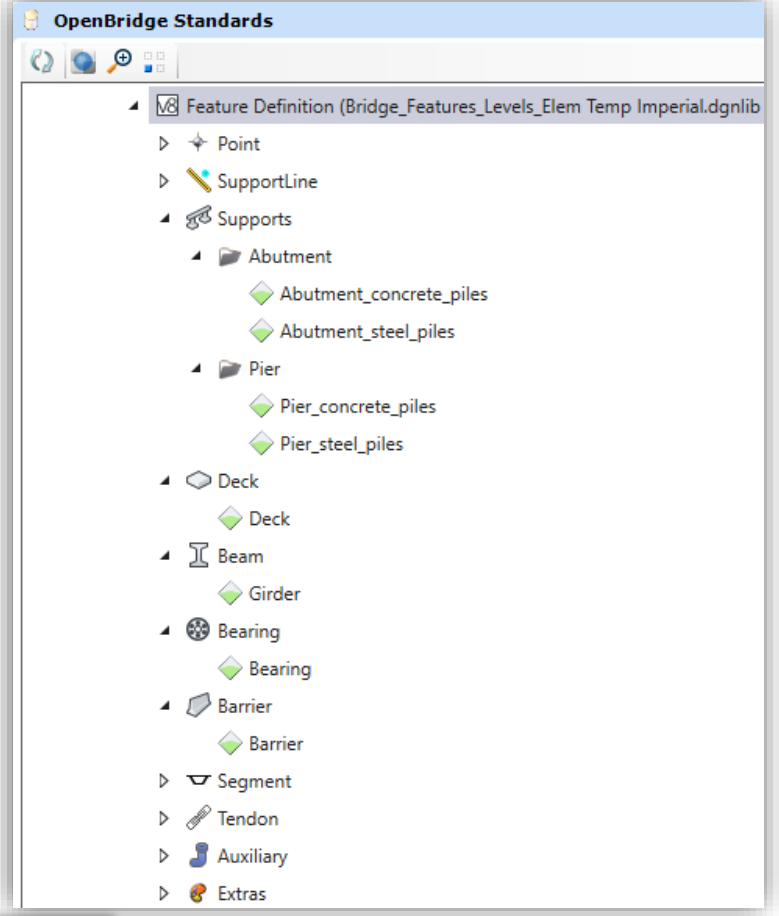
Feature Definitions with Annotation

A **Feature Definition** is a group of attributes that set the Level, Symbology (color, line style, weight), annotation, behavior, and functionality of an element.

Feature Definitions are assigned to OBM solids, OBM Decorators, Terrain Models and many other element types.

Feature Definitions are used to organize elements based on their type or function in 3D modeling and drafting.



Configuration Variables	Use
MS_DGNLIBLIST_ELEMENTTEMPLATES	Path(s) to the library files for Element Templates.
MS_DGNLIBLIST_LEVELS	Path(s) to the library files for Levels.
CIVIL_CONTENTMANAGEMENTDGNLIBLIST	Path(s) to the library files for Feature Definitions, Feature Symbologies, Annotation Groups, Annotation Definitions, and Label Definitions.

INFO:
https://bentleysystems.service-now.com/community?id=kb_article_view&sysparm_article=KB0018602

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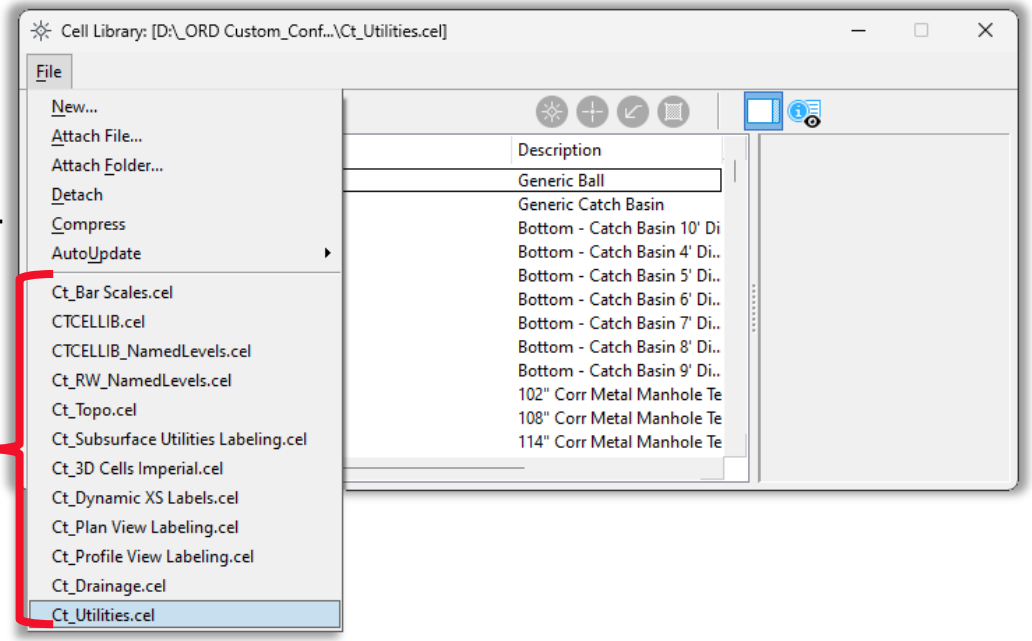
Cell Libraries

Cell libraries are files that contain cells which represent symbols, patterns details, terminators, etc.

Cell libraries are dgn files with a .cel extension. Each cell is a model within the file.

The origin of the cell is (0,0,0).



Configuration Variables	Use
MS_CELL	Path(s) to where cell library files can be found for the WorkSpace/Workset.
MS_CELLLIST	Points to the cell libraries that show up in the drop-down list on the Cell Library dialog.

INFO:
https://bentleysystems.service-now.com/community?id=kb_article&sysparm_article=KB0112302

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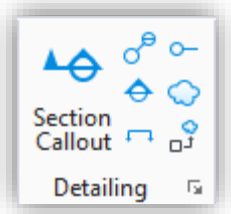
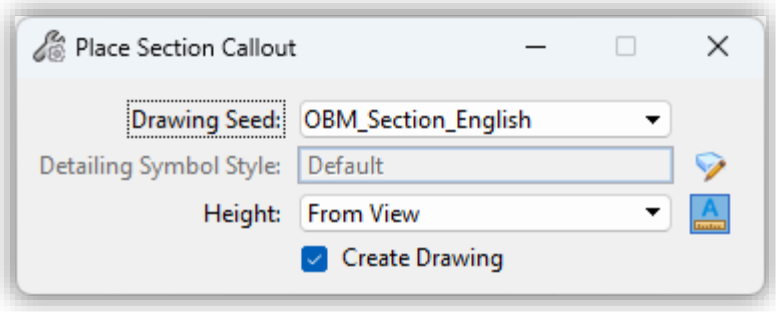
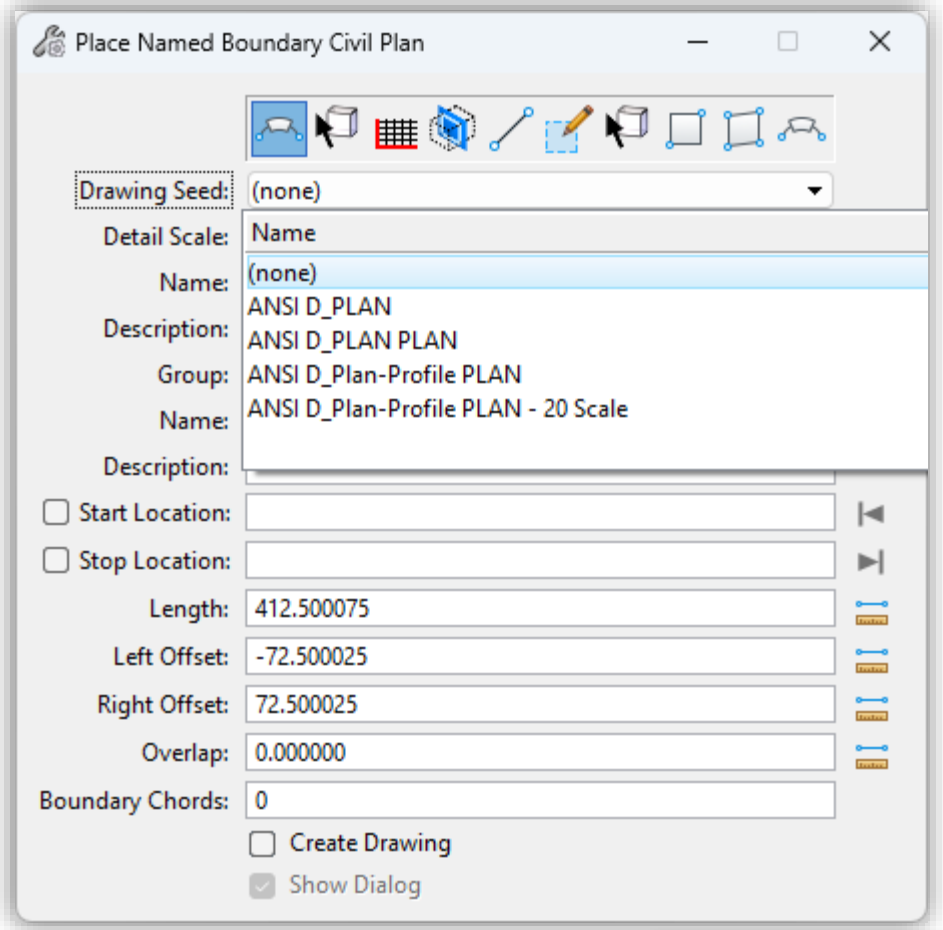
Drawing (Sheet) Seeds

Drawing Seeds are sheet definition files that set the default options for the Place Named Boundary and MS Callout tools.

Drawing seeds are stored in .dgnlib files.







Configuration Variable	Use
MS_DGNLIBLIST_DRAWINGSEEDS	Path(s) to the library files for Drawing Seeds.

INFO:
https://www.youtube.com/playlist?list=PLnJUnxLwu_N4IBHgQyCX_hqpiV-hC1Tfv

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Configuration Syntax: Flow Directives

Flow directive	Syntax	Meaning
%include	%include<filespec>	Includes one or more configuration files before proceeding with the next line in this configuration file. <filespec> can specify a single file or can include wildcard characters to include many files. <filespec> can contain a Configuration Variable. **Example: %include $(_USTN_WORKSETSTANDARDS)AdditionalVariables.cfg**
%if	%if <expression>	If <expression> evaluates to true, continue on to the next line, otherwise skip to the matching %else, %elif, or %endif statement. See Operators for the syntax of <expression>. **Example: %if $(PHASE)=="Final"**
%ifdef	%ifdef<cfgvar>	If <cfgvar> is defined, continue on to the next line, otherwise skip to the matching %else, %elif, or %endif statement. **Example: %ifdef _USTN_ROLECFG**
%ifndef	%ifndef<cfgvar>	If <cfgvar> is not defined, continue on to the next line, otherwise skip to the matching %else, %elif, or %endif statement. **Example: %ifndef MS_DEF**

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Configuration Syntax: Flow Directives

Flow directive	Syntax	Meaning
%else	%else	An %if, %ifdef, or %ifndef statement that evaluates to false continues at the line following a matched %else statement, if there is one.
%elif	%elif <expression>	An %if, %ifdef, or %ifndef statement that evaluates to false continues by evaluating <expression> at the first matched %elif statement, and then either continues processing at the line following if expression evaluates to true, or skips to the next %elif, %else, or %endif statement. **Example: %elif defined (MS_RFDIR)**
%endif	%endif	The statement that indicates the end of the conditional block for an %if, %ifdef, or %ifndef statement.
%echo	%echo<message>	Shows the contents of <message> in the MicroStation message window and continues processing. **Example: %echo $(MS_DEF)**
%error	%error<message>	Causes processing to stop, reporting the contents of <message> as the error. **Example: %error unexpected value**

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Configuration Syntax: Variable Directives

Operators	Syntax	Meaning
%lock	%lock<cfgvar>	Locks the Configuration Variable <cfgvar> so that it cannot be changed.
%undef	%undef<cfgvar>	Discards the value of the Configuration Variable and sets it to undefined.
%level	%level<newLevel>	Specifies the level at which any following Configuration Variable definitions are to be applied. The <newlevel> argument should be one of the following: • System • Application • Organization • WorkSpace • WorkSet • Role • User

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Configuration Syntax: Operators

In the examples below, assume that **$(USTN_WORKSETCFG)** is defined as **g:/Clients/DeptOfTransportation/WorkSets/Highway131.cfg**

Operator	Syntax	Meaning
basename	basename(<expression>)	Returns the filename of <expression> without directory or extension. **Example: WORKSETNAME = basename ($(_USTN_WORKSETCFG)) gives Highway131**
concat	concat(<arg1>,<arg2>...)	Returns the concatenation of the arguments, similar to the + operator, but allows multiple arguments. **Example: LIST = concat (CFG1,CFG2,CFG3)**
devdir	devdir(<expression>)	Returns the device and directory of <expression>, including a trailing directory separator. **Example: WORKSETDIR = devdir ($(_USTN_WORKSETCFG)) gives g:\Clients\DeptOfTransportation\WorkSets**
dev	dev(<expression>)	Returns the device (for example, c:) of <expression>. **Example: WORKSETDEV = dev ($(_USTN_WORKSETCFG)) gives g:**

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Configuration Syntax: Operators

In the examples below, assume that **$(USTN_WORKSETCFG)** is defined as **g:/Clients/DeptOfTransportation/WorkSets/Highway131.cfg**

Operator	Syntax	Meaning
dir	dir(<expression>)	Returns the directory (without the device) of <expression>. **Example: WORKSETDIR = dir ($(_USTN_WORKSETCFG)) gives \Clients\DeptOfTransportation\WorkSets**
ext	ext(<expression>)	Returns the file extension of <expression>. **Example: WORKSETEXT = ext ($(_USTN_WORKSETCFG)) gives .cfg**
filename	filename(<expression>)	Returns the filename and extension of <expression>. **Example: WORKSETFILE = filename ($(_USTN_WORKSETCFG)) gives Highway131.cfg**
first	first(<expression>)	Returns the first portion of an expression (that is, the part preceding the first semicolon). **Example: FIRSTREFDIR = first ($(MS_RFDIR))**

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Configuration Syntax: Operators

In the examples below, assume that **$(USTN_WORKSETCFG)** is defined as **g:/Clients/DeptOfTransportation/WorkSets/Highway131.cfg**

Operators	Syntax	Meaning
firstdirpiece	firstdirpiece(<expression>)	Returns the root directory (without device) of <expression>. **Example: WORKSETROOT = firstdirpiece ($(_USTN_WORKSETCFG)) gives Clients**
lastdirpiece	lastdirpiece(<expression>)	Returns the portion of the directory closest to the file in <expression>. **Example: WORKSETPAR = lastdirpiece ($(_USTN_WORKSETCFG)) gives WorkSets**
noext	noext(<expression>)	Returns the full path of <expression>, omitting the extension. **Example: WORKSETFILEROOT = noext ($(_USTN_WORKSETCFG)) gives g:\Clients\DeptOfTransportation\WorkSets\Highway131**

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Configuration Syntax: Operators

In the examples below, assume that **$(USTN_WORKSETCFG)** is defined as **g:/Clients/DeptOfTransportation/WorkSets/Highway131.cfg**

Operators	Syntax	Meaning
parentdevdir	parentdevdir(<expression>)	Returns the parent directory, including the device, of <expression>. **Example: WORKSETPDD = parentdevdir ($(_USTN_WORKSETCFG)) gives g:\Clients\DeptOfTransportation**
parentdir	parentdir(<expression>)	Returns the parent directory, excluding the device, of <expression> **Example: WORKSETPD = parentdir ($(_USTN_WORKSETCFG)) gives \Clients\DeptOfTransportation**
registryread	registryread(regvar)	Returns the contents of the registry variable regvar. **Example: PWDIR=registryread("HKEY_CURRENT_USER\SOFTWARE\Bentley\ProjectWise\Path")**

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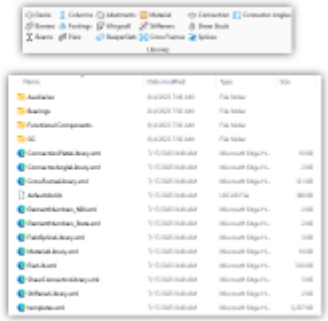
OpenBridge Specific Variables

Template Libraries

Local Workspace – Can reside at Organization, Workspace or Workset level

Network Workspace – Assume Organization and Workspace are read-only – Need to be in Workset

ProjectWise Managed Workspace – Must be at Workset level



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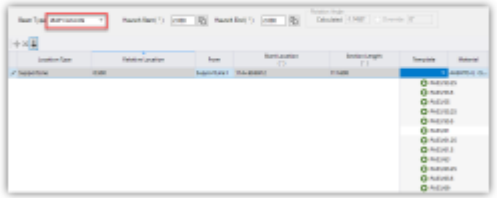
LBC/CONSPAN Beam Section Library

OBM_LEAP_BEAMS_TEMPLATE_FILE = *Bridge Templates/default.lbclib*

Latest LBC lib is delivered with each release

Can use an agencies .LBClib file instead



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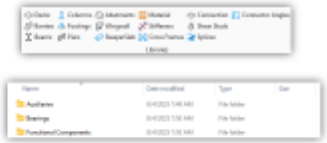
OBM Cell Libraries

Local Workspace – Can reside at Organization, Workspace or Workset level

Network Workspace – Assume Organization and Workspace are read-only – Need to be in Workset

ProjectWise Managed Workspace – Must be at Workset level



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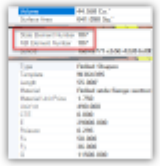
NBI Element Numbers

OBM_ELEMENTNUMBERS_NBI_FILE = *Bridge Templates/ElementNumbers_NBI.xml*

OBM_ELEMENTNUMBERS_STATE_FILE = *Bridge Templates/ElementNumbers_State.xml*



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SPC Filters

Defined in the ***OpenBridgeModeler.cfg*** *file (can be in your organization, workspace or workset CFG)*

```
# United States - AISC, US units
OBM_SPC_ORGANIZATION=AISC
OBM_SPC_VERSION=14
OBM_SPC_FILTER=(\-WS|\-SS)
OBM_SPC_CROSSFRAME_FILTER=(\-LS|\-CS|\-MCS|\-WS|\-SS|\-WTS)
OBM_SPC_HPILE_FILTER=(\-HPS)
OBM_SPC_CONNECTOR_FILTER=(\-LS|\-WTS)

# United Kingdom - BSI
#OBM_SPC_ORGANIZATION=BSI
#OBM_SPC_VERSION=4-1:2005
#OBM_SPC_FILTER=(\-UBS|\-UCS|\-UBPS)
#OBM_SPC_CROSSFRAME_FILTER=(\-UBS|\-UCS|\-UBPS|\-EAS|\-UAS|\-PFCS)
#OBM_SPC_HPILE_FILTER=(\-UBS|\-UCS|\-UBPS)
#OBM_SPC_CONNECTOR_FILTER=(\-LS|\-WTS)
Multiple country codes (maximum 9) by adding an index like _1, _2 after
the variable name. Different codes for the same country can't be loaded.
```

Bentley

New variables in the ***OpenBridgeModeler.cfg*** file v10.11

OBM_SKIP_REFERENCE_SCHEMA_CHECK = TRUE

OBM_BEARINGLINE_TO_SUPPORTLINE_RATIO = 0.7

CIVIL_TOOL_SETTINGS_OMIT_ITEMTYPES = TRUE

CIVIL_QUICK_PROPERTIES_OMIT_ITEMTYPES = TRUE

OBM_SPC_HPILE_FILTER = (\-HPS)

OBM_SPC_CONNECTOR_FILTER = (\-LS|\-WTS)

All are commented out by default

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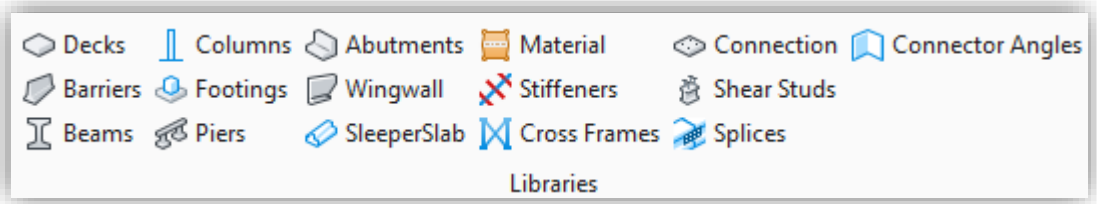
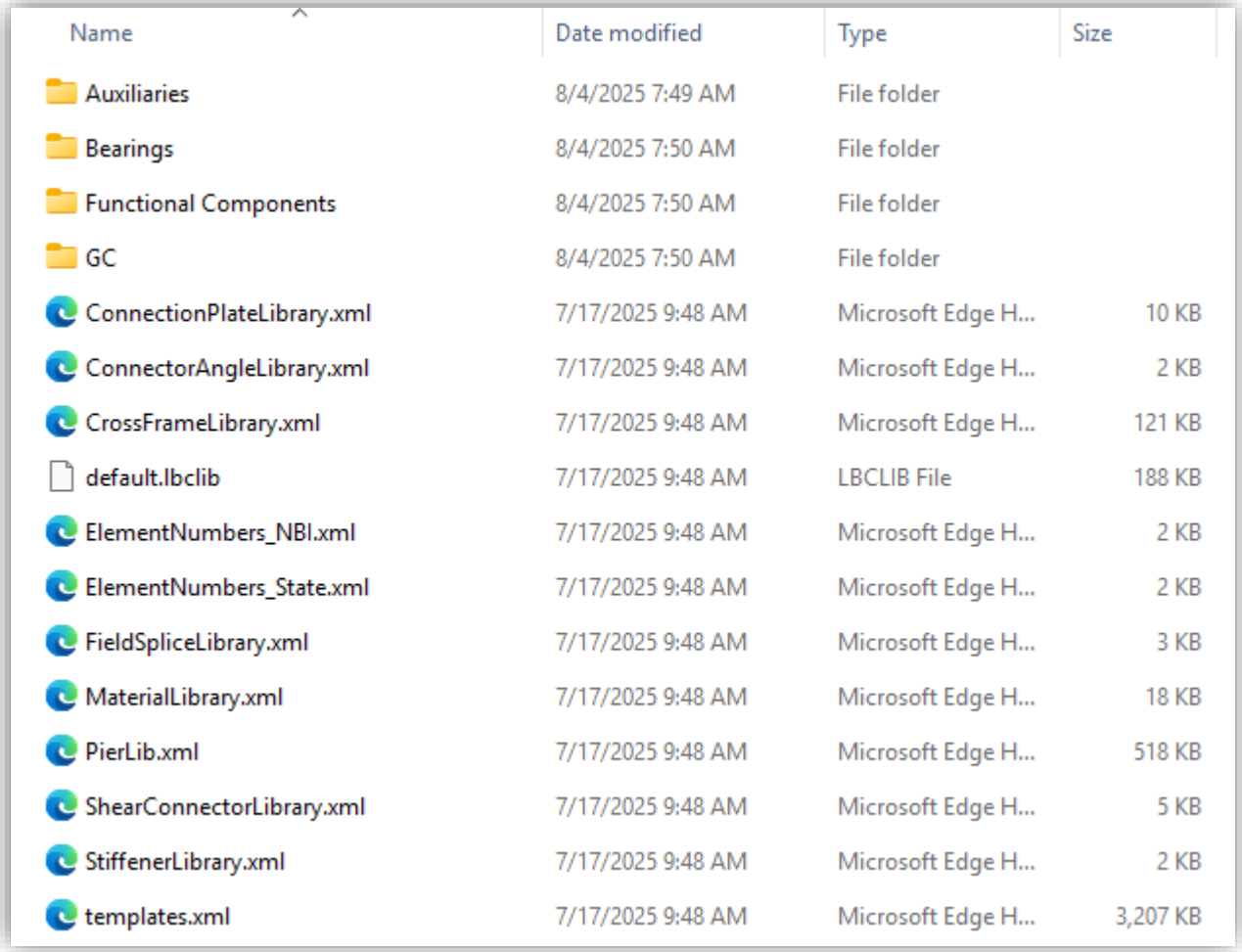
Template Libraries

Local Workspace – Can reside at Organization, Workspace or Workset level

Network Workspace – Assume Organization and Workspace are read-only – Need to be in Workset

ProjectWise Managed Workspace – Must be at Workset level





Name	Date modified	Type	Size
Auxiliaries	8/4/2025 7:49 AM	File folder	
Bearings	8/4/2025 7:50 AM	File folder	
Functional Components	8/4/2025 7:50 AM	File folder	
GC	8/4/2025 7:50 AM	File folder	
ConnectionPlateLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	10 KB
ConnectorAngleLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	2 KB
CrossFrameLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	121 KB
default.lbclib	7/17/2025 9:48 AM	LBCLIB File	188 KB
ElementNumbers_NBI.xml	7/17/2025 9:48 AM	Microsoft Edge H...	2 KB
ElementNumbers_State.xml	7/17/2025 9:48 AM	Microsoft Edge H...	2 KB
FieldSpliceLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	3 KB
MaterialLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	18 KB
PierLib.xml	7/17/2025 9:48 AM	Microsoft Edge H...	518 KB
ShearConnectorLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	5 KB
StiffenerLibrary.xml	7/17/2025 9:48 AM	Microsoft Edge H...	2 KB
templates.xml	7/17/2025 9:48 AM	Microsoft Edge H...	3,207 KB

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Template Libraries

XML libraries are defined using the “=“ Assignment Operator

.CFG file would look like this:

```
OBM_TEMPLATE_FILE            = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/templates.xml
OBM_PIER_TEMPLATE_FILE       = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/PierLib.xml
OBM_STIFFENER_FILE           = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/StiffenerLibrary.xml
OBM_CONNECTIONPLATE_FILE     = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/ConnectionPlateLibrary.xml
OBM_CROSSFRAME_FILE          = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/CrossFrameLibrary.xml
OBM_FIELDSPLICE_FILE         = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/FieldSpliceLibrary.xml
OBM_SHEARCONNECTOR_FILE      = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/ShearConnectorLibrary.xml
OBM_MATERIAL_FILE            = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/MaterialLibrary.xml
OBM_LEAP_BEAMS_TEMPLATE_FILE = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/default.lbclib
OBM_CONNECTORANGLE_FILE      = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/ConnectorAngleLibrary.xml
```


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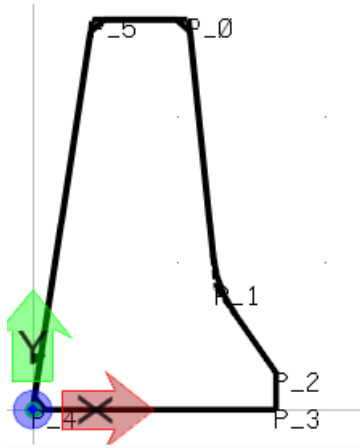
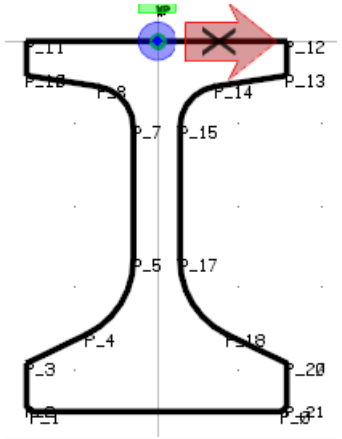
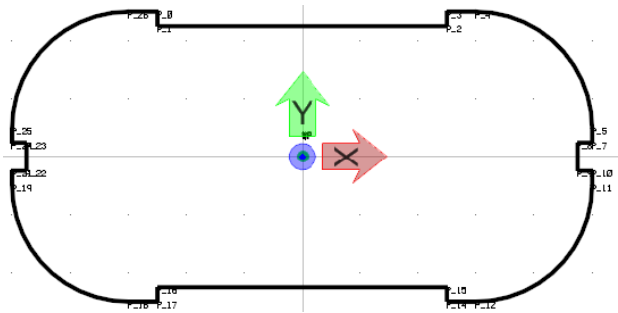
Templates

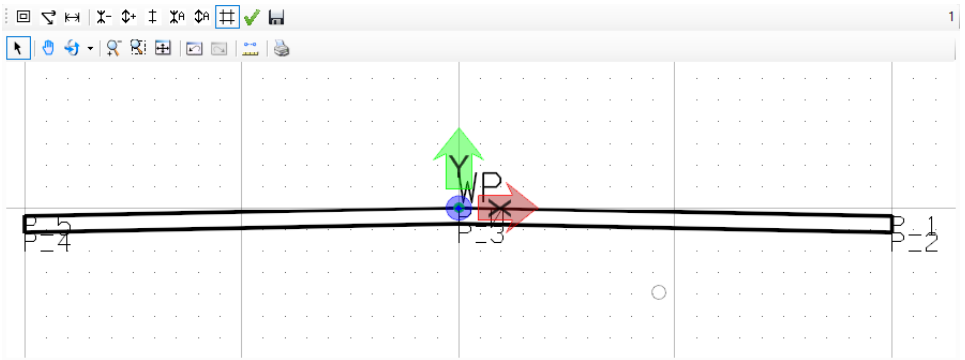
OBM_TEMPLATE_FILE = *Bridge Templates/templates.xml*

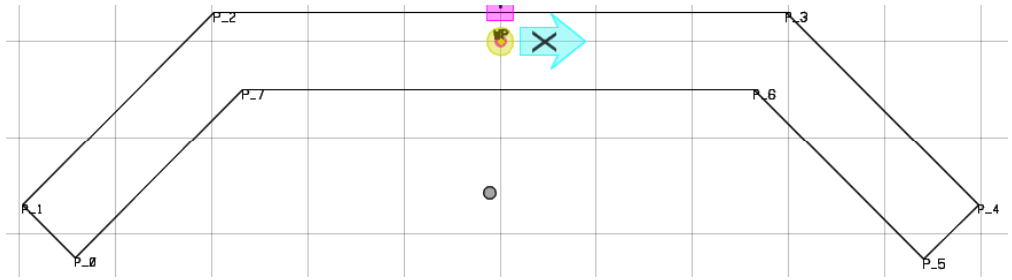
Decks
Barriers
Precast Beams
Columns
Footing Templates











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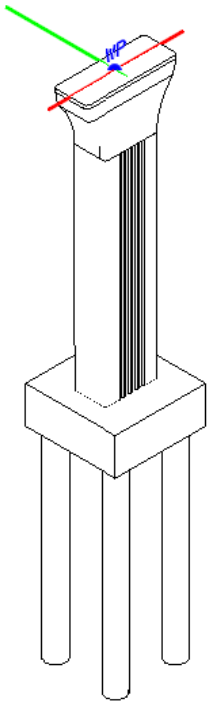
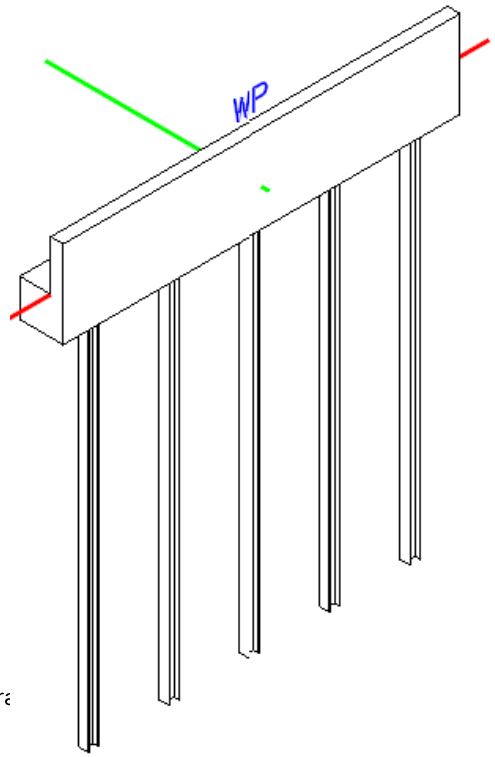
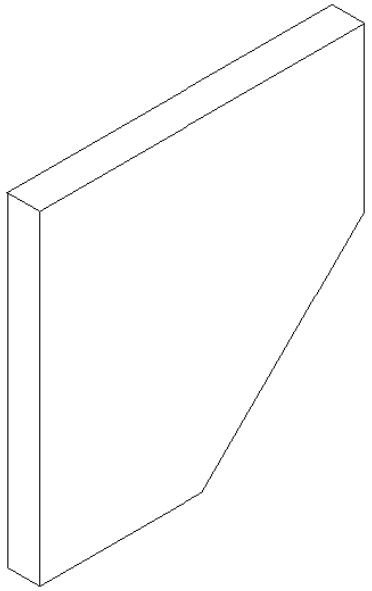
Templates

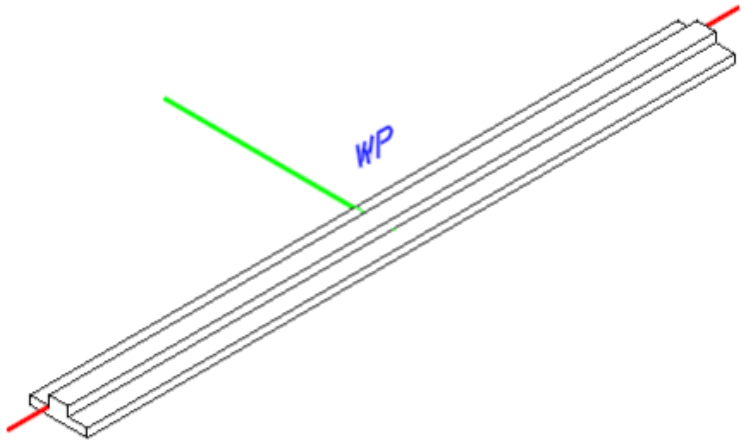
OBM_PIER_TEMPLATE_FILE = *Bridge Templates/PierLib.xml*

Piers
Abutments
Wingwalls
Sleeper Slabs









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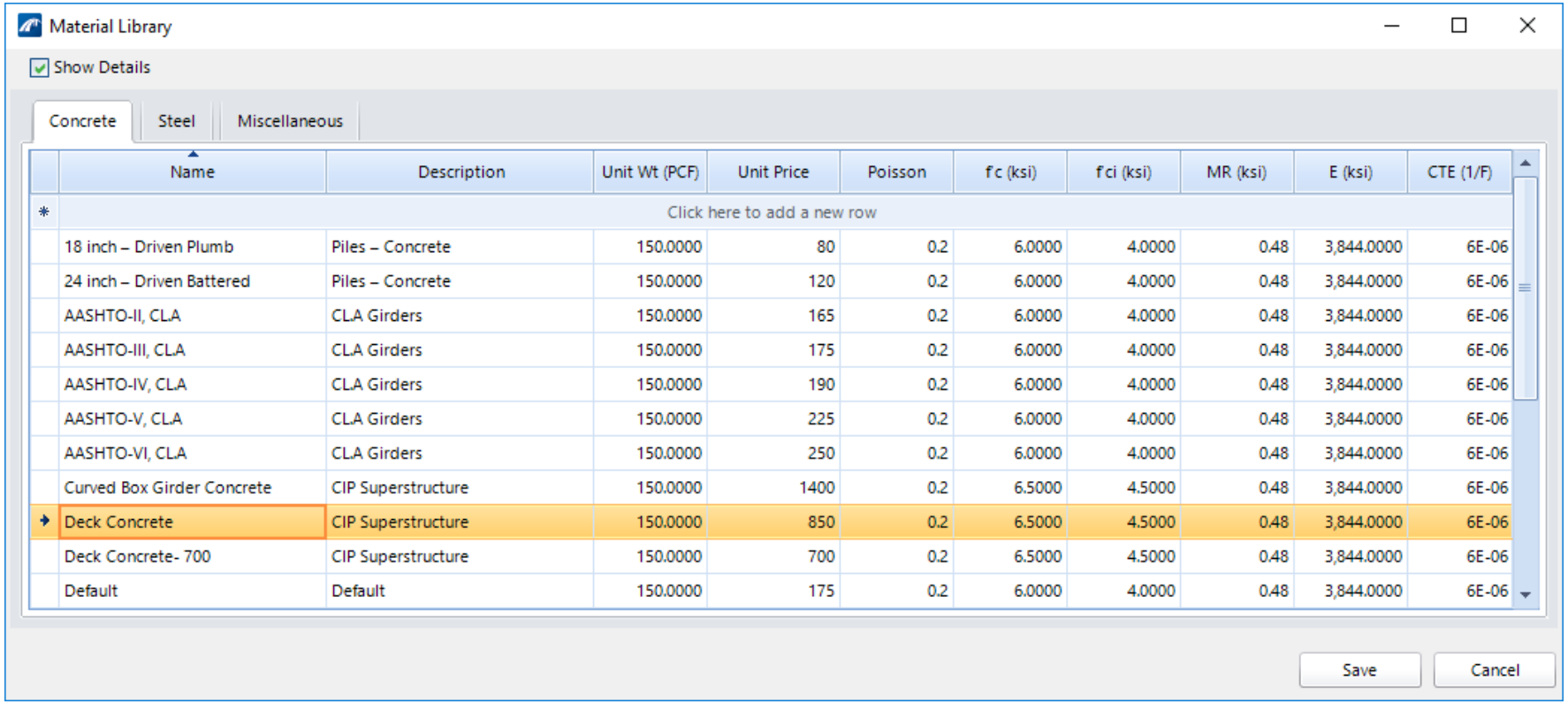
Materials

OBM_MATERIAL_FILE = *Bridge Templates/MaterialLibrary.xml*

Can copy/paste to and from Excel to modify/update



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Steel Superstructure Specific Libraries

OBM_STIFFENER_FILE =

Bridge Templates/StiffenerLibrary.xml

OBM_CROSSFRAME_FILE =

Bridge Templates /CrossFrameLibrary.xml

OBM_CONNECTIONPLATE_FILE =

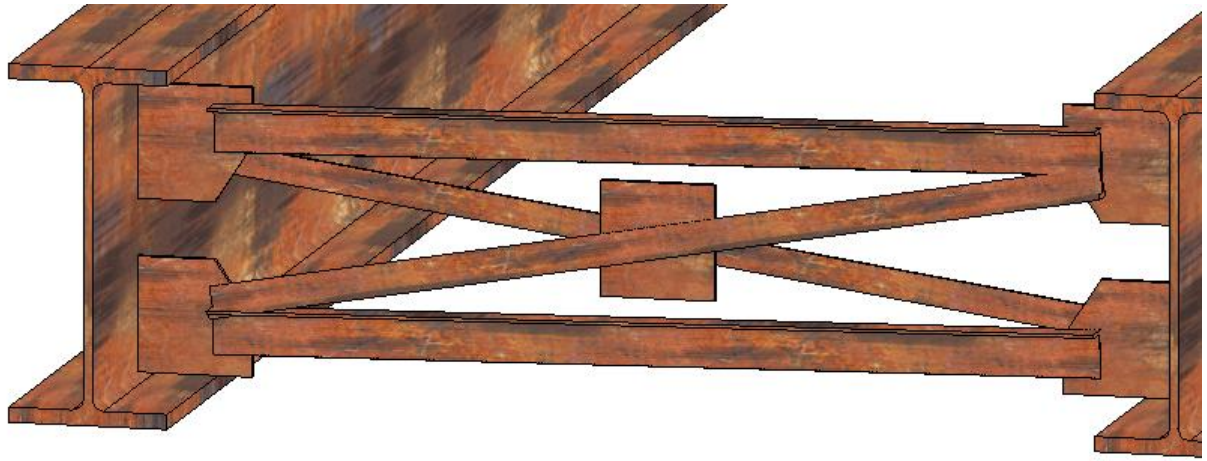
Bridge Templates/ConnectionPlateLibrary.xml

OBM_FIELDSPLICE_FILE =

Bridge Templates/FieldSpliceLibrary.xml

OBM_SHEARCONNECTOR_FILE =

Bridge Templates/ShearConnectorLibrary.xml



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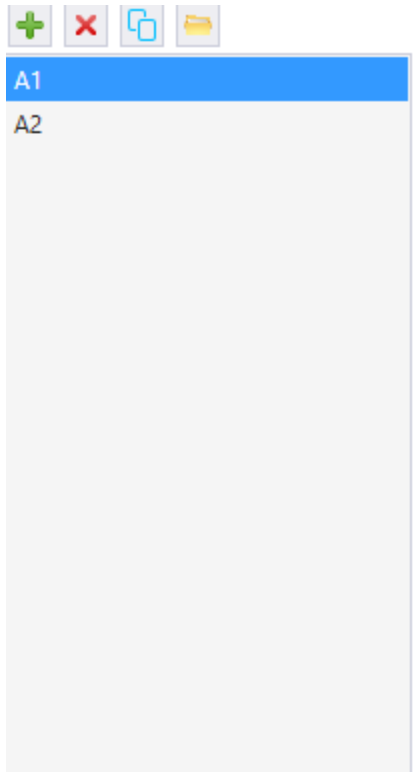
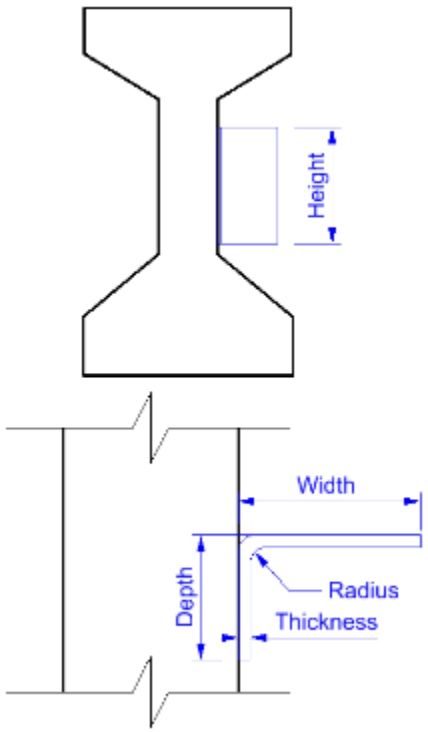
Connector Angles

OBM_CONNECTORANGLE_FILE = *Bridge Templates/ConnectorAngleLibrary.xml*





Template Name	A1
Plate Thickness (")	0.500
Default Height (")	42.000
Depth (")	6.000
Width (")	9.000
Corner Radius (")	1.000
Material	Grade 36

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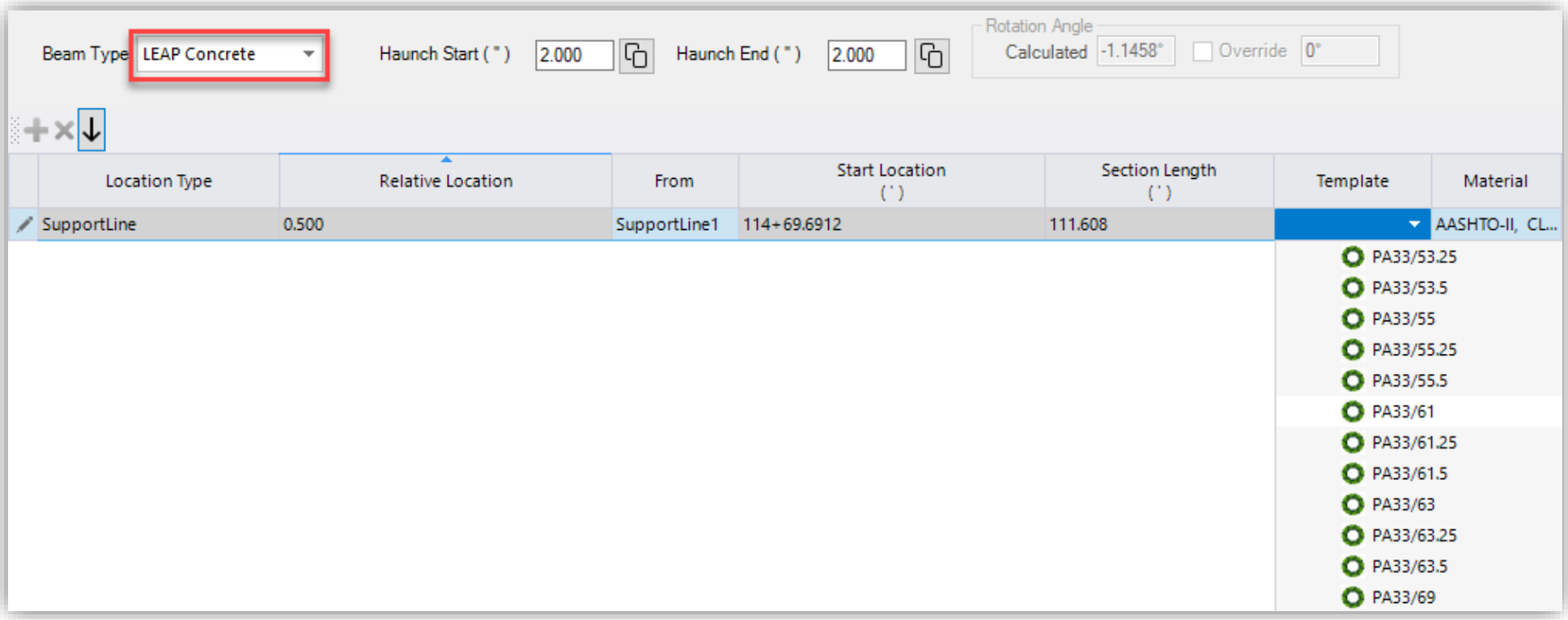
LBC/CONSPAN Beam Section Library

OBM_LEAP_BEAMS_TEMPLATE_FILE = *Bridge Templates/default.lbclib*

Latest LBC lib is delivered with each release

Can use an agencies .LBClib file instead



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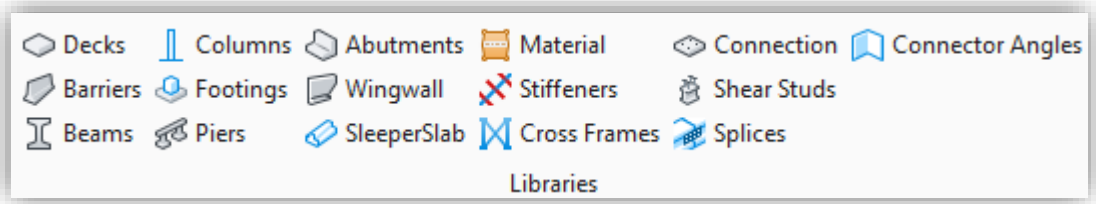
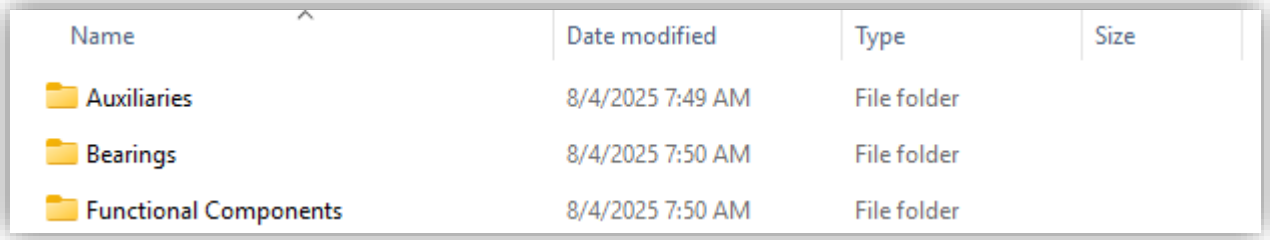
OBM Cell Libraries

Local Workspace – Can reside at Organization, Workspace or Workset level

Network Workspace – Assume Organization and Workspace are read-only – Need to be in Workset

ProjectWise Managed Workspace – Must be at Workset level





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OBM Cell Libraries

Delivered Workspaces – Work fine locally

_Bridge Default Standards - Imperial.cfg

```
112 OBM_AUX_CELLLIST                    = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/Auxiliaries/*.cel;
113 OBM_AUX_CELLLIST                    > $(_USTN_WORKSPACESTANDARDS)Bridge Templates/Auxiliaries/*.cel;
114 OBM_AUX_CELLLIST                    > $(_USTN_WORKSETSTANDARDS)Bridge Templates/Auxiliaries/*.cel
115
116 OBM_BEARING_CELLLIST                = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/Bearings/*.cel;
117 OBM_BEARING_CELLLIST                > $(_USTN_WORKSPACESTANDARDS)Bridge Templates/Bearings/*.cel;
118 OBM_BEARING_CELLLIST                > $(_USTN_WORKSETSTANDARDS)Bridge Templates/Bearings/*.cel
119
120 OBM_PIER_CELLLIST                   = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/Functional Components/*.cel;
121 OBM_PIER_CELLLIST                   > $(_USTN_WORKSPACESTANDARDS)Bridge Templates/Functional Components/*.cel;
122 OBM_PIER_CELLLIST                   > $(_USTN_WORKSETSTANDARDS)Bridge Templates/Functional Components/*.cel
```


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OBM Cell Libraries

Delivered Workspaces – Modify as shown for a PWMW

_Bridge Default Standards - Imperial.cfg

```
112 OBM_AUX_CELLLIST                = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/Auxiliaries/*.cel;
113 #OBM_AUX_CELLLIST                > $(_USTN_WORKSPACESTANDARDS)Bridge Templates/Auxiliaries/*.cel;
114 #OBM_AUX_CELLLIST                > $(_USTN_WORKSETSTANDARDS)Bridge Templates/Auxiliaries/*.cel
115
116 OBM_BEARING_CELLLIST            = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/Bearings/*.cel;
117 #OBM_BEARING_CELLLIST            > $(_USTN_WORKSPACESTANDARDS)Bridge Templates/Bearings/*.cel;
118 #OBM_BEARING_CELLLIST            > $(_USTN_WORKSETSTANDARDS)Bridge Templates/Bearings/*.cel
119
120 OBM_PIER_CELLLIST               = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/Bridge Templates/Functional Components/*.cel;
121 #OBM_PIER_CELLLIST               > $(_USTN_WORKSPACESTANDARDS)Bridge Templates/Functional Components/*.cel;
122 #OBM_PIER_CELLLIST               > $(_USTN_WORKSETSTANDARDS)Bridge Templates/Functional Components/*.cel
```

Why??????? – If those folders in PW are empty or do not exist, the tools for cell placement do not work

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Cell Libraries

OBM_AUX_CELLLIST =

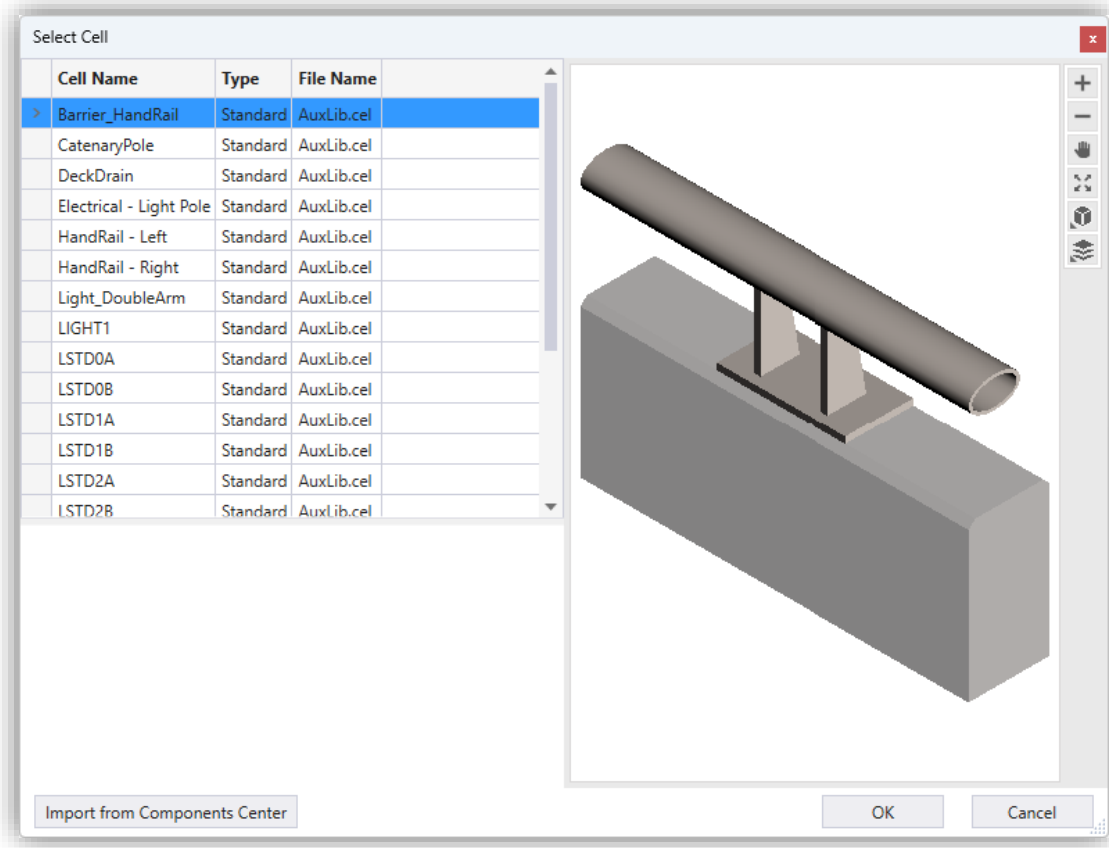
Bridge Templates/Auxiliaries/AuxLib.cel

3D Cells to enhance model – light poles, signs, scuppers, etc

Folder used when importing cells from the Component Center:

OBM_COMPONENTSCENTER_IMPORTED_AUXCELLS_PATH = [your writable path here]

Default location if not defined:
C:\Users\user.name\AppData\Local\Temp\Bentley\OpenBridgeModeler\x.x.x\ComponentsCenterImportedCells\Auxiliaries



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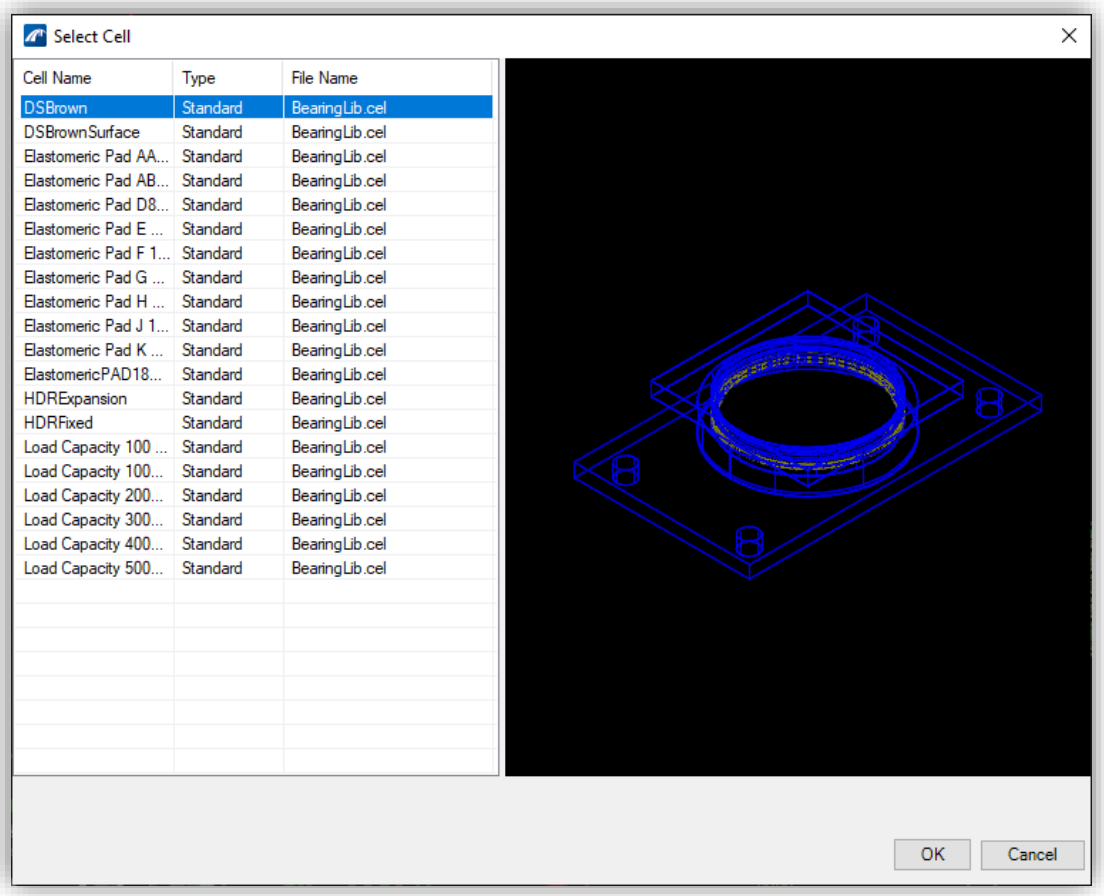
Cell Libraries

OBM_BEARING_CELLLIST = Bridge Templates/Bearings/BearingLib.cel



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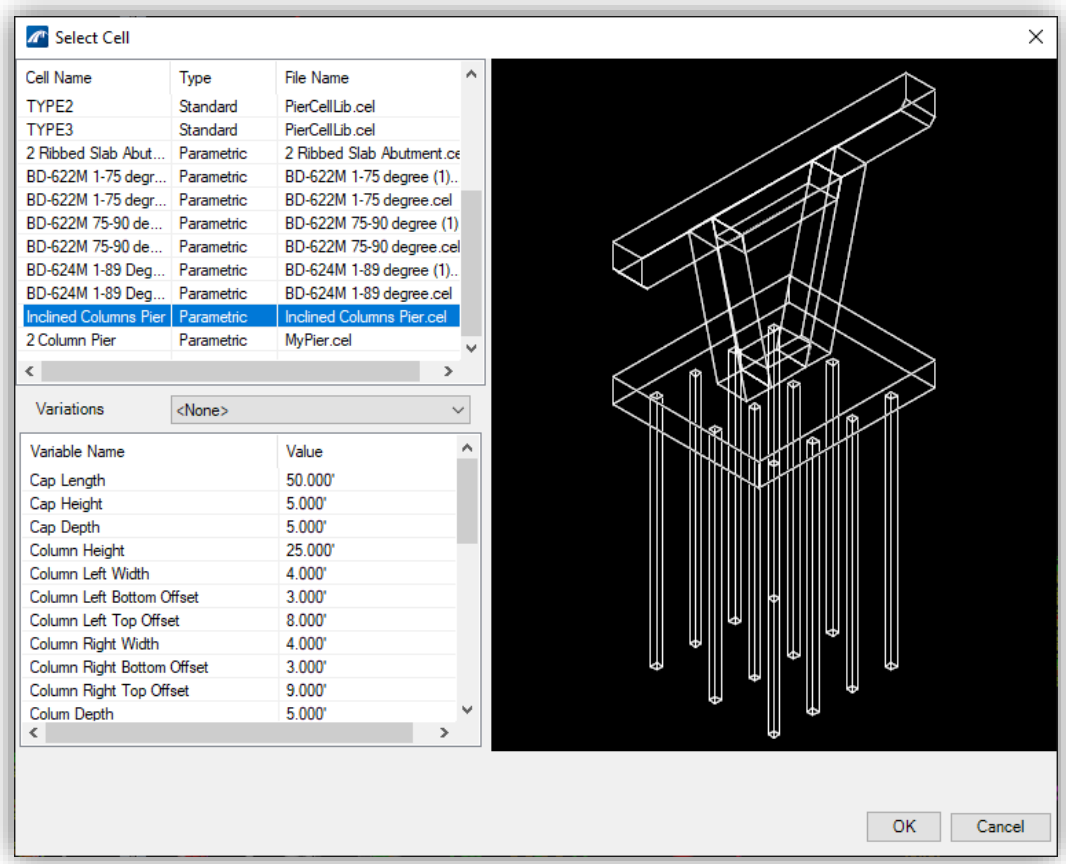
Cell Libraries

OBM_PIER_CELLLIST = *Bridge Templates/Functional Components/PierLib.cel*

Piers and abutments that OBM can not model today

Can be solids models or functional components or generative components



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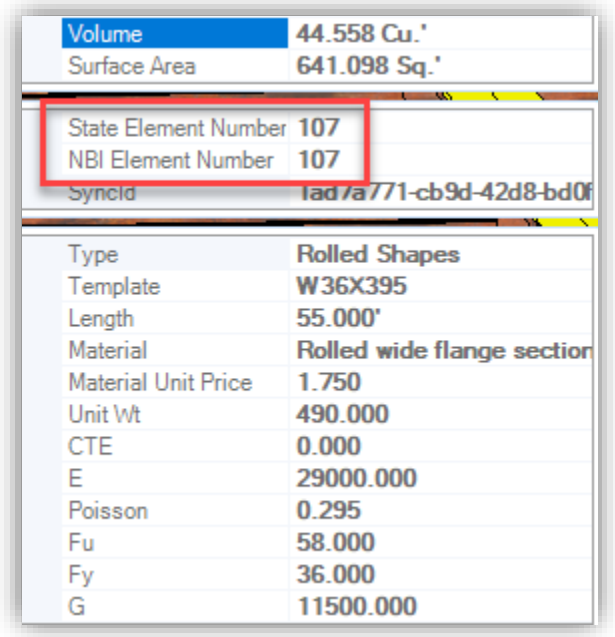
NBI Element Numbers

OBM_ELEMENTNUMBERS_NBI_FILE = *Bridge Templates/ElementNumbers_NBI.xml*

OBM_ELEMENTNUMBERS_STATE_FILE = *Bridge Templates/ElementNumbers_State.xml*



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SPC Filters

Defined in the ***OpenBridgeModeler.cfg*** *file (can be in your organization, workspace or workset CFG)*

```
# United States - AISC, US units
OBM_SPC_ORGANIZATION=AISC
OBM_SPC_VERSION=14
OBM_SPC_FILTER=(\-W$|\-S$)
OBM_SPC_CROSSFRAME_FILTER=(\-L$|\-C$|\-MC$|\-W$|\-S$|\-WT$)
OBM_SPC_HPILE_FILTER=(\-HP$)
OBM_SPC_CONNECTOR_FILTER=(\-L$|\-WT$)

# United Kingdom - BSI
#OBM_SPC_ORGANIZATION=BSI
#OBM_SPC_VERSION=4-1:2005
#OBM_SPC_FILTER=(\-UB$|\-UC$|\-UBP$)
#OBM_SPC_CROSSFRAME_FILTER=(\-UB$|\-UC$|\-UBP$|\-EA$|\-UA$|\-PFC$)
#OBM_SPC_HPILE_FILTER=(\-UB$|\-UC$|\-UBP$)
#OBM_SPC_CONNECTOR_FILTER=(\-L$|\-WT$)
```

Multiple country codes (maximum 9) by adding an index (like _1, _2) after the variable name. Different codes for the same country can't be loaded.

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New variables in the ***OpenBridgeModeler.cfg*** file v10.11

OBM_SKIP_REFERENCE_SCHEMA_CHECK = TRUE

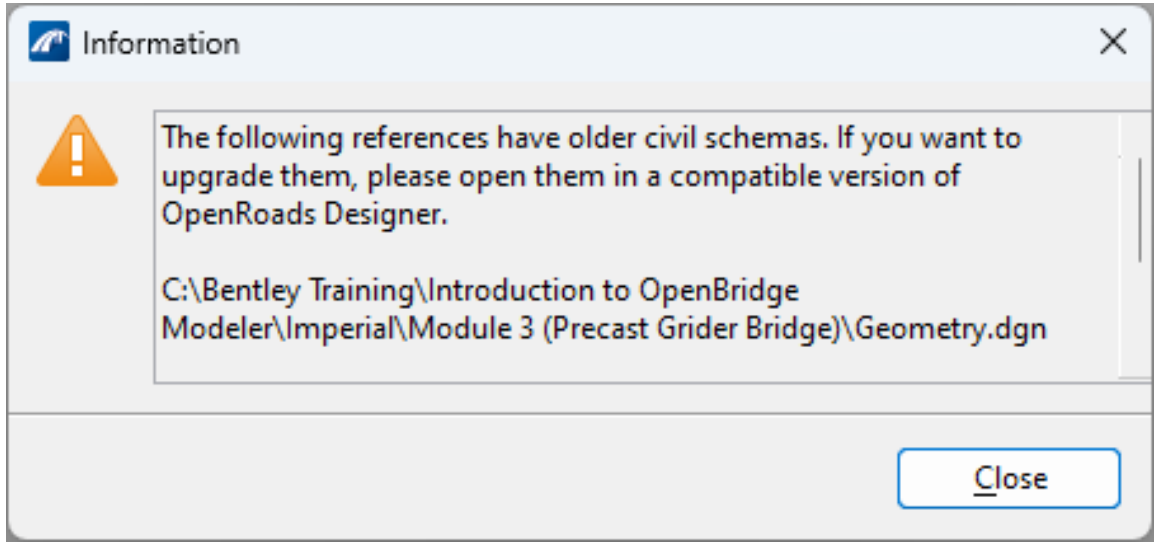
OBM_BEARINGLINE_TO_SUPPORTLINE_RATIO = 0.7

CIVIL_TOOL_SETTINGS_OMIT_ITEMTYPES = TRUE

CIVIL_QUICK_PROPERTIES_OMIT_ITEMTYPES = TRUE

OBM_SPC_HPILE_FILTER = (\-HP$)

OBM_SPC_CONNECTOR_FILTER = (\-L$|\-WT$)



All are commented out by default

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New variables in the ***OpenBridgeModeler.cfg*** file v10.12

[This page intentionally left blank]

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New variables in the ***OpenBridgeModeler.cfg*** file v23.00

OBM_PLACE_DECORATION_IN_SEPARATE_2D_MODEL = FALSE

OBM_REPORT_HIDE_FILEPATHNAME = TRUE

OBM_REPORT_HIDE_DATETIME = TRUE

MS_SUPPRESS_PRODUCT_BRANDING_PROMPT= 1

Added for *OpenBridge 2023 Update 1*:

OBM_USE_ADVANCED_DECK_VARIATION_ALGORITHM = TRUE

For improved modeling of sharp variations in decks and barriers

OBM_GCP_DIR = $(BRIDGE_ORGANIZATION_STANDARDS)OpenBridge Modeler/GC

Folder for GC's

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New variables in the ***OpenBridgeModeler.cfg*** file v24.00

#OBM_GENERATE_TOP_SURFACE_MODEL = 1

Uncomment to generate Top Surface Model for Decks and Approach Slabs

OBM_STEPCAP_BEARING_SEAT_WIDTH_OFFSET=

OBM computes by default the bearing seat width to half the beam spacing.

To specify a desired bearing seat width offset, uncomment

OBM_DONOT_CREATE_STEEL_BEAM_ELEVATION_DRAWINGS = 1

OBM_CLIP_BEAM_SEATS = 1

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Best Practices for WorkSpaces

ALWAYS START WITH THE WORKSPACE SEED FILE.

USE GOOD NAMING CONVENTIONS FOR FILES AND ELEMENTS WITHIN THE LIBRARY FILES

KEEP THE LIBRARY/RESOURCE FILES CLEAN!!

DO NOT HARD-CODE PATH IF POSSIBLE.

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How to Supplement a DOT OpenBridge WorkSpace

Steve Willoughby, Bridge Services Manager

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