



**US Army Corps
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Engineer Research and
Development Center

*The CAD/BIM Technology Center
for Facilities, Infrastructure, and Environment*

US ARMY CORPS OF ENGINEERS BUILDING INFORMATION MODELING TEMPLATES FOR REVIT

Templates based on the 2019 Autodesk Revit Software

Master Guide : Structural Template v4.3

Authors: Matt Dillon, Director AETG Services, / Lou Verenini,
Solutions Specialist, Applied Software Technologies, Inc.

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USACE: Hai K. Le - Mobile District, Kevin Russ, David Carulli -
Sacramento District, David Dawson - Honolulu District, Van
Woods, James Snyder- Seattle District, David M. Johnson -
ERDC Vicksburg

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1 Overview

The intent of this guide for the Revit STRUC Template is to provide a framework to facilitate design using Revit Building Information Modeling (BIM) software. This template was developed based on Revit 2019.

This guide is NOT intended to be a Revit tutorial, but rather assumes the user has a sufficient level of proficiency to comprehend the template descriptions outlined in this guide.

Questions and comments may be submitted to the [USACE Revit Template Team](#).

2 Browser and View Organization

The default browser schema in the template (View Purpose_USACE) is organized by:

- Discipline
- then "ViewPurpose_USACE"
- then Family and Type
- Sorted by View Name

There are no pre-defined sub-disciplines in the STRUC template.

A full list of View browser schemas for the STRUC template is in the following table:

Table 1 Browser View Schema

Browser View Schema	Grouping	Filter
all	Group by: • Family and Type Sort by: • View name (Ascending)	<None>
Discipline_USACE	Group by: • Discipline • Family and Type Sort by: • View Name (Ascending)	<None>
Not on Sheets_USACE	Group by: • Family and Type Sort by: • View Name (Ascending)	Filter by: Sheet Name = <None>

Phase_USACE	Group by: - Phase - Family and Type Sort by: - View Name (Ascending)	<None>
Type/Discipline_USACE	Group by: - Family and Type - Discipline Sort by: - View Name	<None>
View Purpose_USACE	Group by: - Discipline - ViewPurpose_USACE - Family and Type Sort by: - View Name	<None>

Table 2 Schedule Sorting Schema

Browser Schedule Schema	Grouping	Filter
all	Sort by: View Name (Ascending)	<None>
Plotted Schedule_USACE	Group by: - PlottedSchedule_USACE Sort by: - View Name (Ascending)	<None>
Schedule Purpose_USACE	Group by: - ViewPurpose_USACE Sort by: - View Name (Ascending)	<None>

Table 3 Sheet Sorting Schema

Browser Sheet Schema	Grouping	Filter
all	Sort by: Sheet Number	<None>
Sheet Prefix_USACE	Group by: - Sheet Number (1st Character) Sort by: - Sheet Number	<None>
Sheet Publish Order_USACE	Group by: - PublishOrder_USACE Sort by: - Sheet Number (1st Character) - Sheet Number	

3 View Purpose

In previous versions of the template, the “View Purpose” parameter was used to separate the purposes of the views and make the creation of sheets easier. These view purposes are Working Views (where the main modeling is done), Documentation Views (where the views are set up and annotated for placement on sheets for the official model Documents), Presentation Views (for required or accessory presentation purposes), Coordination and Analysis views (for coordinating between the different disciplines on BIM project) and Export views (for exporting data to other BIM and CAD platforms). Each view that is created will have the “ViewPurpose_USACE” parameter under the “Other” group of parameters to hold this value.

Standard View Purposes:

Table 4 Standard View Purposes

View Purpose Classification	View Type/View Name Extension
1 Working	_WRK
2 Analysis	_ANL
3 Documentation	_DOC
4 Presentation	_PRS
5 Export	_EXP

As stated above, the “View Purpose” parameters is a legacy parameter from earlier versions and is included with the 4.3 version of the STRUC

template, along with the corresponding “View Purpose_USACE” browser sorting schema to accommodate legacy workflows and standards. New in this template is the use of view templates and view types, which, while referencing and leveraging the view purpose classifications, do not need to use the “ViewPurpose_USACE” parameter value. Either the “all” or “View Purpose_USACE” project browser schemas may be used to group views by purpose – one uses the new view types and the other uses the legacy “ViewPurpose_USACE” parameter.

4 View Templates and View Types

View templates store preset values for selected view properties. Properties stored in a view template can either be applied to a view but remain editable after application, or views can be made dependent on a view template. When a view is dependent on a template, properties that are stored in the template cannot be edited in the view. Changes to a template upon which views are dependent will update all dependent views to those changes.

The “ViewPurpose_USACE” property, among several others, is automatically applied to a view when it is made dependent on a template or when a template’s properties are applied to the view.

New to the USACE_Revit2019_Template_STRUC_v4.3.rte template is the use of view types to further automate the application of view template properties or the making of views to be dependent on templates, depending upon the purpose of the view. When a working view is created that does not get plotted or exported for use in other applications, placing it on a view type will apply a template’s properties. When a view is created that will ultimately be plotted or potentially exported for use in other applications, it is made dependent on a view template. In all cases, placing a view on a view type will also perform the same purpose as the legacy “ViewPurpose_USACE” property, because the view type will indicate the purpose of the view, and is used for sorting and grouping in the project browser.

Note: Due to limitations in Revit, 3D views and drafting views cannot have a specific view type assigned to them at the time of creation; the view must be manually placed on the correct type after creation, for proper sorting in the project browser, and the view template must manually have its properties either applied to the view, or the view made dependent on the template.

View Templates included in the STRUC project template:

- 3D Views
 - 3D_ANL_USACE
 - 3D_Coordination_USACE
 - 3D_Navisworks_Clash Detection_EXP_USACE
 - 3D_Navisworks_Quantity Takeoff_EXP_USACE
 - 3D_Presentation_PRS_USACE
 - 3D_WRK_USACE
 - Export to Civil Engineering_EXP_USACE
- Floor and Structural Plans
 - Enlarged Foundation Plan_DOC_USACE
 - Enlarged Framing Plan_DOC_USACE
 - Floor Plan_Coordination_ANL_USACE
 - Floor Plan_WRK_USACE
 - Foundation Plan_DOC_USACE
 - Framing Plan_DOC_USACE
 - Key Plan_WRK_USACE
 - Load Diagram_ANL_USACE
 - Site Plan_Project North_DOC_USACE
 - Site Plan_Project North_WRK_USACE
 - Site Plan_True North_DOC_USACE
 - Site Plan_True North_WRK_USACE
 - Structural Plan_DOC_USACE
 - Structural Plan_EXP_USACE
 - Structural Plan_WRK_USACE
- Elevations
 - Exterior Elevation_WRK_USACE
 - Exterior Elevation_DOC_USACE
 - Framing Elevation_DOC_USACE
- Sections
 - Building Section_WRK_USACE
 - Wall Section_WRK_USACE
 - Building Section_DOC_USACE
 - Wall Section_DOC_USACE
- Detail Views
 - Detail Plan_WRK_USACE
 - Detail Section_WRK_USACE
 - Detail Plan_DOC_USACE
 - Detail Section_DOC_USACE

- Drafting Views
 - Drafting View_WRK_USACE
 - Drafting View_DOC_USACE
- Schedules
 - Schedule_USACE
 - Notes_USACE

Table 5 : View Types

Family	View Type	View Template	Template Status
Floor Plan	Floor Plans_Coordination_ANL_USACE	Floor Plan_Coordination_ANL_USACE	Dependent
	Floor Plans_WRK_USACE	Floor Plan_WRK_USACE	Applied
	Key Plans_WRK_USACE	Key Plan_WRK_USACE	Applied
	Site Plans_Project North_DOC_USACE	Site Plan_Project North_DOC_USACE	Dependent
	Site Plans_Project North_WRK_USACE	Site Plan_Project North_WRK_USACE	Applied
	Site Plans_True North_DOC_USACE	Site Plan_True North_DOC_USACE	Dependent
	Site Plans_True North_WRK_USACE	Site Plan_True North_WRK_USACE	Applied
Structural Plan	Enlarged Foundation Plans_DOC_USACE	Enlarged Foundation Plan_DOC_USACE	Dependent
	Enlarged Framing Plans_DOC_USACE	Enlarged Framing Plan_DOC_USACE	Dependent
	Foundation Plans_DOC_USACE	Foundation Plan_DOC_USACE	Dependent
	Framing Plans_DOC_USACE	Framing Plan_DOC_USACE	Dependent
	Load Diagrams_ANL_USACE	Load Diagram_ANL_USACE	Dependent
	Structural Plans_DOC_USACE	Structural Plan_DOC_USACE	Dependent
	Structural Plans_EXP_USACE	Structural Plan_EXP_USACE	Dependent
	Structural Plans_WRK_USACE	Structural Plan_WRK_USACE	Applied
Elevation	Exterior Elevations_DOC_USACE	Exterior Elevation_DOC_USACE	Dependent
	Exterior Elevations_WRK_USACE	Exterior Elevation_WRK_USACE	Applied
	Framing Elevations_DOC_USACE	Framing Elevation_DOC_USACE	Dependent
Sections	Building Sections_Full_DOC_USACE	Building Section_DOC_USACE	Dependent
	Building Sections_Partial_DOC_USACE	Building Section_DOC_USACE	Dependent
	Building Sections_WRK_USACE	Building Section_WRK_USACE	Applied
	Wall Sections_DOC_USACE	Wall Section_DOC_USACE	Dependent
	Wall Sections_WRK_USACE	Wall Section_WRK_USACE	Applied
Detail Views	Detail Plans_DOC_USACE	Detail Plan_DOC_USACE	Dependent
	Detail Plans_WRK_USACE	Detail Plan_WRK_USACE	Applied
	Detail Sections_DOC_USACE	Detail Section_DOC_USACE	Dependent

	Detail Sections_WRK_USACE	Detail Section_WRK_USACE	Applied
Drafting Views	Cold Formed Details_DOC_USACE	Drafting View_DOC_USACE	Make Dependent
	Concrete Details_DOC_USACE	Drafting View_DOC_USACE	Make Dependent
	Decking Details_DOC_USACE	Drafting View_DOC_USACE	Make Dependent
	Detail Component Palette_WRK_USACE	Drafting View_WRK_USACE	Apply
	Drafting Views_WRK_USACE	Drafting View_WRK_USACE	Apply
	Joist Details_DOC_USACE	Drafting View_DOC_USACE	Make Dependent
	Masonry Details_DOC_USACE	Drafting View_DOC_USACE	Make Dependent
	Steel Details_DOC_USACE	Drafting View_DOC_USACE	Make Dependent

5 View Naming

Naming of views is to follow the standard set in the template and is divided into categories by: [Floor Level]_[View Type]_[Region]_[Function]_View Purpose

- **Floor Number** (Only used for plan views)
- **View Type** (Required)
- **Region** (Optional – user defined – indicates the area of the building)
- **Function** – (Optional – user defined – indicates the specific function of the view when it is not obvious)
- **View Purpose** (Required – must be one of the five view purposes listed above)

Examples:

- Example A: **02_SP_EAST_DOC**
 - 2nd Floor Structural Plan – East region – 3 Documentation view purpose
- Example B: **EL_EAST_WRK**
 - Elevation – East – 1 Working view purpose
- Example C: **03_SP_WEST_FRAMING PLAN_WRK**
 - 3rd floor Framing Plan – West region – 1 Working view purpose

6 Working Views

This set of views (with the “WRK” suffix) are for the main design and layout of the building. These views are not intended for the final documents and are used to support the modeling process (although a View Purpose may be changed to a Documentation – “DOC” view). As views are created they should be placed on the appropriate view type. Doing so will ensure that the proper view template is applied or assigned. Working views will have a working view template applied, however they will not be

made dependent on the template, to enable ease of view modification for facilitation of modeling. The “ViewPurpose_USACE” parameter will also automatically be assigned to “1 – Working”.

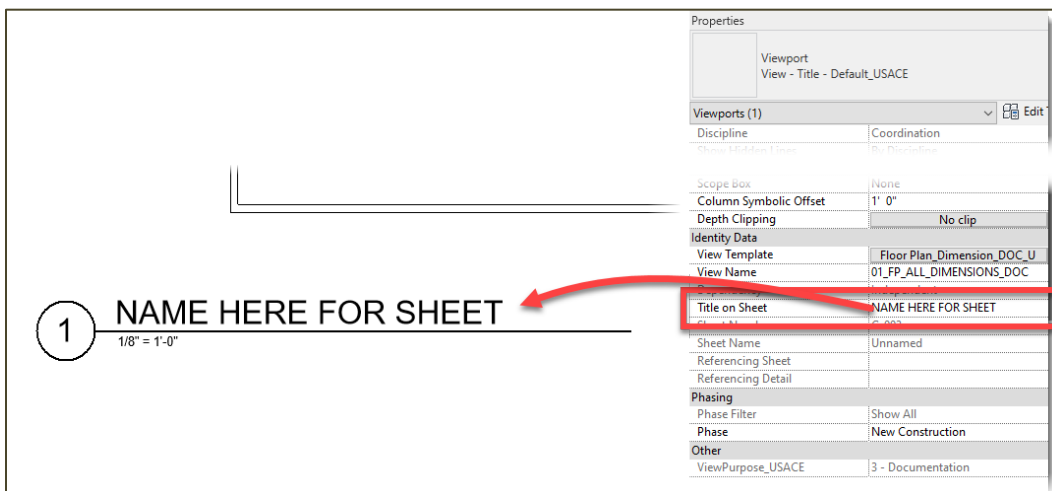
Note: While a view can be renamed to become a Documentation view by changing the suffix to “DOC”, it should be placed on the appropriate documentation view type and have the appropriate view template assigned to it to ensure proper view properties and correct assignment of the “ViewPurpose_USACE” parameter. View templates are NOT automatically assigned when changing a view from one type to the other – only when initially creating a view on a given type.

7 Documentation Views

These views are finished and intended to be placed on sheets. Documentation views may have scope boxes for larger projects. Appropriate visibility and/or filter settings are applied to display only relevant categories and objects. Documentation views, by default, are dependent on view templates. If view properties need adjustment for specific project needs, the view template should be modified to ensure consistency – adjusting the view template will cause all views that are dependent on the template to update accordingly.

To maintain view naming standards for Documentation views that have been added to sheets, utilize the “Title on Sheet” view property to provide an appropriate view title on the sheet.

Table 6 : "Title on Sheet" property



8 View Filters

View filters are used to group elements in Revit based on specific criteria (category, property values, etc.) and are frequently used to further control visibility at a level not provided for in the standard Visibility/Graphics overrides settings at the category level.

The STRUC template includes three custom filters that control the visibility of view callout symbols:

- Plotted_USACE
- Presentation_USACE
- Working_USACE

These are intended to group sections, elevations and callouts belonging to view types ending in “DOC”, “PRS” or “WRK” to allow them to be suppressed in cases where their display would not be appropriate. For example, callout tags for working elevations (“WRK”) should not be displayed in a documentation plan view (“DOC”). The view templates controlling documentation plan view settings include turning off all the elevation and section callouts belonging to the “Working_USACE” filter group while allowing those belonging to the “Plotted_USACE” filter group to be displayed.

There are also filters to control the visibility of model elements. The following filters are used to group elements with specific "Fire Rating" properties, primarily for display purposes.

- 0 Hr Smoke Wall_USACE
- 1 Hr Smoke Wall_USACE
- 1 Hr Smoke Wall_USACE
- 2 Hr Fire Smoke Wall_USACE
- 2 Hr Fire Wall_USACE
- 3 Hr Fire Wall_USACE
- 4 Hr Fire Wall_USACE
- Fire Rated Wall (less than 1 hr)_USACE

The following filter is used to identify the Egress Path element in plan views.

- Egress Path_USACE

The following filters are used to identify Structural Connections that are approved or rejected:

- Approved Connections_USACE
- Rejected Connections_USACE

The following filters are used to identify connected and unconnected analytical nodes

- Connected Analytical Nodes_USACE
- Unconnected Analytical Nodes_USACE

9 Schedules

USACE Schedules are dependent on a view template, “Schedules_USACE”, which controls their appearance on sheets, whose settings are shown below.

Table 7 : Schedule Properties

The screenshot shows the 'Schedule Properties' dialog box with the 'Appearance' tab selected. The 'Graphics' section contains the following settings:

- Grid lines: ☒ Thin Lines (dropdown menu)
- Grid in headers/footers/spacers: ☐
- Outline: ☒ Wide Lines (dropdown menu)
- Blank row before data: ☐

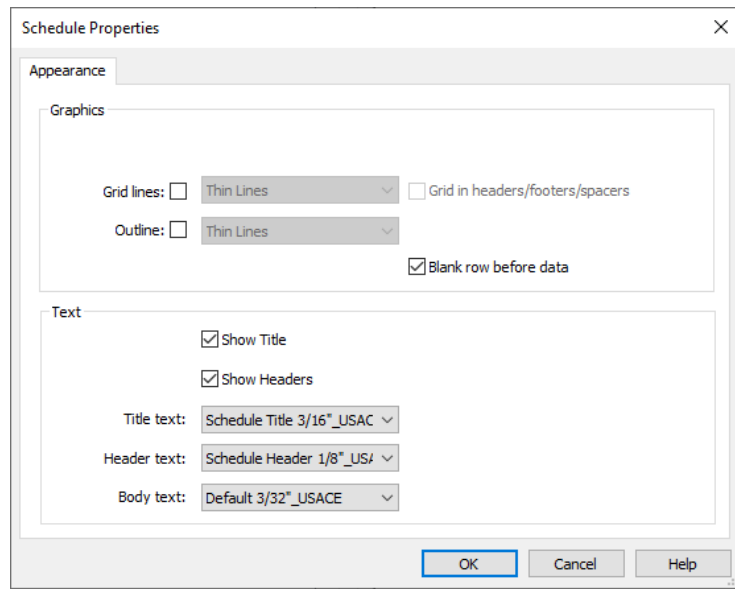
The 'Text' section contains the following settings:

- Show Title: ☒
- Show Headers: ☒
- Title text: Schedule Title 3/16" _USAC (dropdown menu)
- Header text: Schedule Header 1/8" _USAC (dropdown menu)
- Body text: Default 3/32" _USACE (dropdown menu)

At the bottom of the dialog are the 'OK', 'Cancel', and 'Help' buttons.

Additionally, Key Schedules used for keyed notes are dependent on the "Notes_USACE" view template, which controls their appearance on sheets, whose settings are shown below.

Table 8 : Schedule Properties



Some schedules are intended for use on plotted sheets, while others are intended as working schedules or for project management purposes and are not to be placed on plotted sheets. Non-plotted schedules will be prefixed with “Z-“ and will be named in sentence case. Plotted schedules will be named with all capitalized letters. Schedules that are plotted should have the “PlottedSchedule_USACE” parameter checked on in the view properties for the schedule. Schedules that are not plotted should have checked off.

There are thirteen schedules provided with the STRUC template. The following plotted or Documentation schedules are included:

- **SHEET LIST**
 - This is a schedule intended for plotting and will include all sheets whose “Appears in Sheet List” property is turned on. It uses hidden fields for sorting and grouping of sheets. These fields are exposed for editing in the working “Z-Sheet Information List” schedule, which is described below.
 - *This schedule should not be edited directly* – instead use the “Z-Sheet Information List” schedule to make any changes. These will be reflected in the “SHEET LIST” schedule as well.

Table 9 : Sheet List Schedule

<SHEET LIST>	
A	B
SHEET NUMBER	SHEET TITLE

- COLUMN FOOTING SCHEDULE**

Table 10 : Column Footing Schedule

<COLUMN FOOTING SCHEDULE>									
A	B	C	D	E	F	G	H	I	J
MARK	TOP OF FOOTING	DIMENSIONS			REINFORCEMENT				REMARKS
		LENGTH (L)	WIDTH (W)	THICKNESS (T)	LONGITUDINAL		TRANSVERSE		
					QTY	SIZE	QTY	SIZE	

- CONCRETE BEAM SCHEDULE**

Table 11 : Concrete Beam Schedule

<CONCRETE BEAM SCHEDULE>																	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
MARK	DIMENSIONS		"A" BARS		"B" BARS		"C" BARS		REINFORCEMENT		"D" BARS		"E" BARS		STIRRUPS		REMARKS
	WIDTH	DEPTH	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	SIZE	SPACING	

- FOUNDATION PLAN NOTES**

- This is a key schedule for keyed foundation notes.

Table 12 : Foundation Plan Notes

<FOUNDATION PLAN NOTES>	
A	B
NO.	FOUNDATION NOTE DESCRIPTION
1	
2	
3	

- FRAMING PLAN NOTES**

- This is a key schedule for keyed framing plan notes.

Table 13 : Framing Plan Notes

<FRAMING PLAN NOTES>	
A	B
NO.	FRAMING PLAN NOTE DESCRIPTION
1	
2	
3	

- **GENERAL NOTES**

- This is a key schedule for keyed general notes.

Table 14 : General Notes

<GENERAL NOTES>	
A	B
NO.	GENERAL NOTES DESCRIPTION
1	THE PROJECT SPECIFICATIONS ARE A PART OF THE CONTRACT DOCUMENTS.
2	THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH
3	THE DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL
4	NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE. REFER
5	ALL WORK NOT DETAILED OR NOTED SHALL BE CONSTRUCTED IN ACCORDANCE WITH OTHER SIMILAR WORK SHOWN ON THE DRAWINGS AND TYPICAL DETAILS. DIS
6	NO PIPES OR DUCTS SHALL BE PLACED IN OR PENETRATE STRUCTURAL MEMBERS UNLESS SPECIFICALLY DESIGNED AND DETAILED.
7	REFER TO ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
8	REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
9	CONTRACTOR/JOIST MANUFACTURER TO COORDINATE EXACT WEIGHT, WEIGHT DISTRIBUTION, SIZE AND LOCATION OF ROOF MECHANICAL UNITS/DUCTS AND VENT
10	ASTM REFERENCES ARE FOR LATEST REVISIONS AND ISSUE, UNLESS
11	CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING AND EXCAVATION FOR UNSUITABLE CONDITIONS. UNCONSOLIDATED AND UNDOCUMENTED FILLS,
12	CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON STRUCTURAL FRAME SUCH THAT THE LOADING DOES NOT EXCEED THE DESIGN LIVE LOADS. PR
13	THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN AREAS TO BE EXCAVATED BEFORE BEGINNING EXCAVATION. EXERCISE CAUTION IN E
14	STRUCTURE DRAWINGS TO BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS HEREIN.
15	*****ENTER NEW NOTES HERE AND DISTRICTS TO CREATE NEW NOTES BY CREATING ROWS*****

- **GRADE BEAM SCHEDULE**

Table 15 : Grade Beam Schedule

<GRADE BEAM SCHEDULE>														
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
MARK	WIDTH	DEPTH	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE	SIZE	SPACING

- **RECTANGULAR CONCRETE COLUMN SCHEDULE**

Table 16 : Rectangular Concrete Column Schedule

<RECTANGULAR CONCRETE COLUMN SCHEDULE>							
A	B	C	D	E	F	G	H
MARK	WIDTH	DEPTH	QUANTITY	SIZE	SIZE	SPACING	REMARKS

- **ROUND CONCRETE COLUMN SCHEDULE**

Table 17 : Round Concrete Column Schedule

<ROUND CONCRETE COLUMN SCHEDULE>						
A	B	C	D	E	F	G
MARK	DIAMETER	QUANTITY	SIZE	SIZE	SPACING	REMARKS

- **STRUCTURAL ABBREVIATIONS**

- This is a key schedule for structural abbreviations.

Table 18 : Structural Abbreviations

<STRUCTURAL ABBREVIATIONS>	
A	B
ABBREVIATION	ABBREVIATION NAME
#	NUMBER
&	AND
=	EQUAL, EQUALS
@	AT
A/C	AIR CONDITIONING
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AH, AHU	AIR HANDLING UNIT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
APA	AMERICAN PLYWOOD ASSOCIATION

- **WALL FOOTING SCHEDULE**

Table 19 : Wall Footing Schedule

<WALL FOOTING SCHEDULE>							
A	B	C	D	E	F	G	H
MARK	DIMENSIONS		REINFORCEMENT				NOTES
	WIDTH	DEPTH	LONGITUDINAL QUANTITY	TRANSVERSE SIZE	SIZE	SPACING	

The following non-plotted schedules are included:

- 1. Z-Sheet Information List**

- This is a working schedule to facilitate the creation of the plotted "SHEET LIST" schedule. It includes three fields to control sorting and grouping in the "SHEET LIST" schedule:
 - Sheet Discipline
 - Discipline Group
 - Publish Order

Table 20 : Z-Sheet Information List

Sheet Information List								
A	B	C	D	E	F	G	H	I
SHEET NUMBER	SHEET TITLE	SHEET DISCIPLINE	DISCIPLINE GROUP	PUBLISH ORDER	DESIGNED BY	DRAWN BY	CHECKED BY	SUBMITTED BY

2. Z-View List

- Shows all views in the project with critical view settings for project management purposes. This can be used to simply review the project views or to make changes where necessary.

Table 21 : Z-View List

View List									
A	B	C	D	E	F	G	H	I	J
View Name	View Template	Discipline	Phase	Scale Value 1:	Detail Level	Associated Level	Sheet Number	Sheet Name	Title on Sheet

Note: The View List will also group views by View Family, then by View Type.

3. Z-USACE abbreviations

- This is a key schedule for abbreviations for all disciplines, and may be used in place of the abbreviations included in the "ABBREVIATIONS AND PROJECT INFORMATION" legend view on the Cover Sheet.
- If used for plotting purposes, rename to "USACE ABBREVIATIONS" to maintain compliance with schedule naming standards, and change the following view properties:
 - USACE_ViewPurpose: "3 - Documentation"
 - PlottedSchedule_USACE: "On"

Table 22 : USACE Abbreviations

<z-USACE abbreviations>			
A	B	C	D
No.	ABB	DEF	DISC
1	A	-----	-
2	A LABEL	CLASS 'A' DOOR	G
3	A/C	AIR CONDITION	G
4	A/C UNIT	AIR CONDITIONING UNIT	G
5	A/E	ARCHITECT/ENGINEER	G
6	AB	ANCHOR BOLT	G
7	ACC	ACCESSIBLE	G
8	ACS	AUTOMATIC CONTROL SYSTEM	G
9	ACS DR	ACCESS DOOR	G

10 NCS – A/E/C CAD Symbols

Symbol families have been loaded and are in compliance with the current release of the National CAD Standards version 6.0. Refer to Appendix “A” for examples of the symbols used in the project.

11 Annotation/Dimensions

USACE text types are included with the template that are based upon the National CAD Standards version 6.0. Only USACE standard fonts are included in the template. Fonts that do not include the “_USACE” suffix are not USACE standard or approved and should not be used.

Specific text types included are:

4. Default 3/32”_USACE
5. Label 1/8”_USACE
6. Schedule Header 1/8”_USACE
7. Schedule Title 3/16”_USACE
8. Sub-Title 3/16”_USACE
9. Title 1/4”_USACE
10. Title Bold 1/4”_USACE

As with text, NCS 6.0 compliant dimension types are provided with the template, all suffixed with “_USACE” to indicate that they are approved for use. Only USACE standard dimension types are included in the template.

Specific dimension types included are:

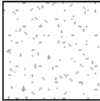
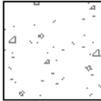
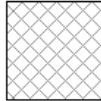
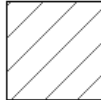
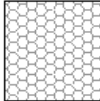
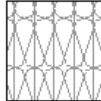
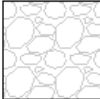
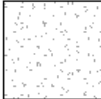
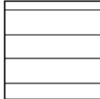
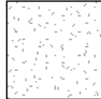
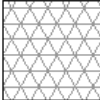
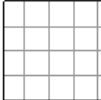
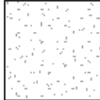
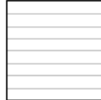
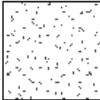
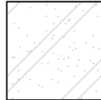
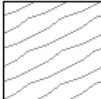
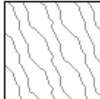
- Linear Dimensions
 - Continuous_USACE
 - ARCHline_USACE
- Angular Dimensions
 - Arrow Line-Leader_USACE
- Radial Dimensions
 - Horizontal_USACE
 - Rotated_USACE
- Diameter Dimensions
 - Horizontal_USACE
 - Rotated_USACE
- Spot Elevations
 - Beam Elevation (Project)_USACE
 - Beam Elevation (Relative)_USACE
 - No Symbol (Project)_USACE
 - No Symbol (Relative)_USACE
 - Target (Project)_USACE
 - Target (Relative)_USACE
- Spot Coordinates
 - Horizontal_USACE
 - Horizontal (w-Elevations)_USACE

- Spot Slopes
 - Spot Slope_USACE

12 Filled Region Types

The following pre-defined Filled Region types are provided in the STRUC template.

Table 23 : Filled Region Types

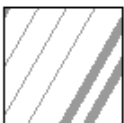
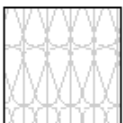
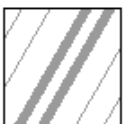
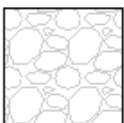
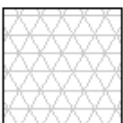
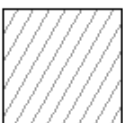
	CONCRETE _PRECAST		CONCRETE		DIAGONAL CROSSHATCH_ TRANSPARENT		DIAGONAL CROSSHATCH_ SMALL
	DIAGONAL CROSSHATCH		DIAGONAL DOWN_ TRANSPARENT		DIAGONAL DOWN		DIAGONAL UP
	EARTH_45		EARTH		EIFS		FIBERGLASS_ SEMI-RIGID
	GRAVEL		GROUT		HORIZONTAL LINES		MASONRY MORTAR
	NET3		ORTHO CROSSHATCH		POROUS FILL		PREMOLDED JOINT MATERIAL
	SAND-DENSE		SOLID BLACK		SOLID GREY		STONE
	VERTICAL LINES		WOOD 1		WOOD 2		

13 Fill Patterns

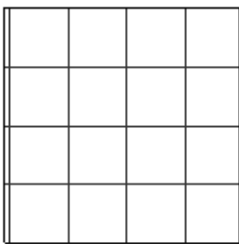
The Following Fill Patterns are also included in the STRUC template, in addition to the patterns provided from the default template provided with Revit out of the box and can be used to create additional Filled Region types as needed.

Table 24 : Fill Patterns

DRAFTING FILL PATTERNS

	EIFS_USACE		EARTH45_USACE		FIBERGLASS SEMI-RIGID_USACE
	FIRE (1-HR)_USACE		FIRE (2-HR)_USACE		FIRE (3-HR)_USACE
	FIRE (4-HR)_USACE		FIRE AND SMOKE (1-HR)_USACE		FIRE AND SMOKE (2-HR)_USACE
	GRAVEL_USACE		NET3_USACE		SHAFT (1-HR)_USACE
	SHAFT (2-HR)_USACE		SMOKE (0-HR)_USACE		STONE_USACE

MODEL FILL PATTERNS

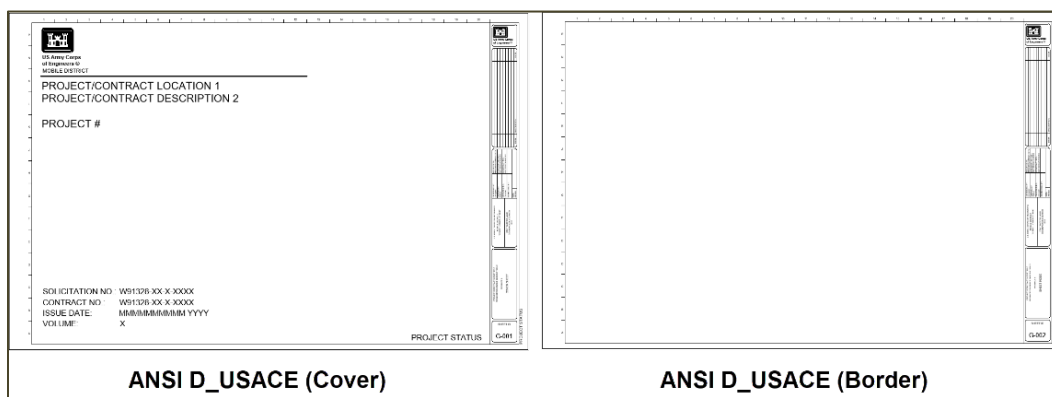
	CEILING 12 X 12_USACE
---	-----------------------

14 Title block/Border Types

There are two title block families loaded into the template.

- **StartupScreen_Border_USACE** – for use with the starting view. *This should not be used for anything else.*
- **ANSI D_USACE** – includes two types:
 - **Cover** – for use as a cover sheet
 - **Border** – for use with standard plotted sheets.

Table 25 : Border Types



Refer to Appendix B for more details on Title blocks and Borders.

15 Pre-Defined Sheets

There are Several pre-defined sheets in the STRUC template:

- **0 – Starting View_USACE** – not a plotted sheet. Used as the Revit startup view with critical information about the current project and various USACE standards. Uses the StartupScreen_Border_USACE title block.
- **0.1 - Change Request** - not a plotted sheet. Used for submitting comments, questions, and template change requests to the USACE template team. For instructions, see Appendix F.
- **G-001 – Cover Sheet** – uses the ANSI D_USACE (Cover) title block.

The following sheets use the ANSI D_USACE (Border) title block.

- G-001 - COVER SHEET
- G-002 – SHEET INDEX
- S-001 - GENERAL STRUCTURAL NOTES, DESIGN LOADS & ABBREVIATIONS
- S-002 - GENERAL STRUCTURAL NOTES
- S-003 - GENERAL STRUCTURAL NOTES
- S-100 - PROJECT REFERENCE PLAN

- S-101 - FOUNDATION PLAN
- S-102 - FIRST FLOOR FRAMING PLAN
- S-103 - SECOND FLOOR FRAMING PLAN
- S-104 - ROOF FRAMING PLAN
- S-201 - FRAMING ELEVATIONS
- S-301 - FOUNDATION SECTIONS
- S-302 - FLOOR FRAMING SECTIONS
- S-303 - ROOF FRAMING SECTIONS
- S-401 - ENLARGED PLANS
- S-402 - ENLARGED PLANS
- S-501 - TYPICAL STRUCTURAL DETAILS
- S-502 - TYPICAL STRUCTURAL DETAILS
- S-503 - TYPICAL STRUCTURAL DETAILS
- S-510 - FOUNDATION DETAILS
- S-512 - ROOF FRAMING DETAILS
- S-601 - FRAMING SCHEDULES
- S-602 - COLUMN SCHEDULES
- S-603 - FOOTING SCHEDULES
- S-701 - DIAGRAMS
- S-801 - USER DEFINED
- S-901 - 3D REPRESENTATIONS

16 Starting View

The startup view is a sheet set up to allow users/managers to review/edit project information as well as to refer to additional standards information (browser organization, view naming, sheet naming, sheet disciplines and publish order, etc.) Project information in the startup view is linked to the data in the “Project Information” dialog which is accessible from the “Manage” tab of the ribbon. This information will also populate critical fields in the plot sheets.

Table 26 : Starting View



US Army Corps of Engineers®

REVIT STARTING VIEW

Read Me

Template Version: Architectural Template v4.3

SHEET PUBLISH ORDER

Discipline	Discipline Group	Publish Order
General	1	10
Hazardous Materials	2	20
Survey/Mapping	3	30
Geotechnical	4	40
Civil	5	50
Landscape	6	60
Structural	7	70
Architectural	8	80
Interiors	9	90
Equipment	11	110
Fire Protection	12	120
Plumbing	13	130
Process	14	140
Mechanical	15	150
Electrical	16	160
Telecommunications	17	170
Resource	18	180
Other Disciplines	19	190
Contractor/Shop Drawings	20	200
Operations	21	210

PROJECT INFORMATION:

USACE District:

Project Number:

Issue Date:

Project Name:

Contractor Name and ID Number:

Project Address:

Contractor Address:

Contract Number:

Solicit Number:

File Number:

TEMPLATE INFORMATION:

Browser Organization:

Browser organization is sorted by view purpose. The view purposes are 1 Working (WRK), 2 Analysis (ANA), 3 Documentation (DOC), 4 Presentation (PRS), 5 Export (EXP). The abbreviation shown enclosed in parenthesis is to be appended to the view name as appropriate. With new created views a purpose is needed to keep views organized. Please select the appropriate purpose for each of your views (See template guides for further definitions on view purpose).

View Naming:

Naming of views is to follow the standard set in the template and is divided into categories.

View Name Examples:

Level	View Type	Function	Region	View Purpose
02_	FP_FLOOR PLAN_	DIMENSIONS_		DOC
	EL_EAST			WRK
03_	MP_MECHANICAL PLAN_	HW PIPING_	West	PRS

Working Schedules:

Working Schedules are schedules that are to be used for analyzing model information but are not intended to be put on a sheet. To separate these working schedules the letter Z is to precede the schedule name so that it filters to the bottom in the schedule list in your project browser.

Schedule Name Examples:

Z-Working Door Schedule

Z-Working Structural Framing Schedule

Sheet Naming and Organization:

Typical naming standards still apply following AEC CAD and NCS Standards.

Sheet Examples:

S-101 - ROOF FRAMING PLAN

M-101 - MECHANICAL PIPING PLAN

For More Information: USACE CAD/BIM Technology Center

TEMPLATE NOTES

Building ID: This parameter information (BldgID_USACE) is included on a sheet for situations that involve multiple buildings (Building A, Building B, ..., or multiple parts for the building (West Wing, Central Wing, East Wing, ...)). This value is a sheet parameter that will be appear when the value is filled out in the sheet properties.

View Purpose: This classification (ViewPurpose_USACE) is a parameter assigned to the view category and allows view to be organized in a way to group them and make them quickly accessible. Having all views with a single purpose makes it more difficult to find views that are used on sheets, views used for creating hardworks exports, or for presentation views for clients. New views are automatically assigned the view purpose that is assigned to their view type, as defined by the view template that is used by that view.

Sheet Naming: We have included the NCS standard sheet type abbreviation for model view names as part of the standard view naming. These are recommended (refer to template manual for more information):

- FP - Floor Plan
- CP - Ceiling Plan
- EP - Elevation Plan
- EL - Elevation
- SP - Site Plan
- QP - Equipment Plan

USACE Starting View - Version 4.3

In addition to the fields in the startup view title block itself, there are two additional “hidden” fields that are accessible by selecting the title block itself and editing the title block properties. After selecting the title block, in the Properties Palette under “Other” are two properties:

- **Email Contact** – selecting this will launch the default email client with an email addressed to the USACE Revit Template Team.
- **USACE Revit Template Contact** – Selecting this will launch a web browser and navigate to the CAD-BIM Technology Center’s home page.

Table 27 : Email Link

Other	
Email Contact	mailto:USACE-Revit-Template-Team@erdc.dren.mil?subject=USA...
USACE Revit Template Contact	https://cadbimcenter.erd.dren.mil/revit%20templates
File Path	

17 Levels

The following levels have been defined in the template:

Table 28 : Levels (Floors)

Level Name	Elevation from Project Datum	Building Story (Y/N)	Structural (Y/N)
00 LEVEL TOF	-3'-0"	No	Yes
01 LEVEL	0'-0"	Yes	Yes
02 LEVEL	11'-6 1/2"	No	Yes
03 LEVEL ROOF	23'-6 1/2"	No	Yes

Levels should be moved up or down as required to accommodate individual project needs.

18 Pre-loaded Families

Annotation Families

The following pre-loaded annotation families have been pre-loaded into the STRUC template in addition to the families found in the "out of the box" template:

Table 29 : Preloaded Annotation Families

Family Name	Source	NCS 6 Compliant
ANSI D_USACE	USACE	Yes
Callout Head_USACE	USACE	Yes
Centerline_USACE	USACE	Yes
Elevation Mark Exterior_USACE	USACE	Yes
Elevation Mark Interior_USACE	USACE	Yes
Elevation Mark Pointer Exterior_USACE	USACE	Yes
Elevation Mark Pointer Interior_USACE	USACE	Yes
Graphic Scales_USACE	USACE	Yes
Grid Head – Circle_USACE	USACE	Yes

Keynote Tag_USACE	USACE	Yes
Level Head – Circle_USACE	USACE	Yes
Material Tag_USACE	USACE	No
North Arrow_USACE	USACE	Yes
Plumbing Fixture Tag_USACE	USACE	Yes
Revision Tag_USACE	USACE	Yes
Room Tag_USACE	USACE	Yes
Room Occupancy Classification Tag_USACE	USACE	No
Section Head – no arrow_USACE	USACE	Yes
Section Head_USACE	USACE	Yes
Section Tail – Filled_USACE	USACE	Yes
Space Tag_USACE	USACE	Yes
Spot Elevation – Target Filled_USACE	USACE	Yes
Spot Elevation - Crosshair_USACE	USACE	Yes
StartupScreen_Border_USACE	USACE	N/A
Structural Foundation Tag_USACE	USACE	N/A
Structural Framing Tag_Mark_USACE	USACE	Yes
Structural Framing Tag_Preliminary Size_USACE	USACE	Yes
View Reference_USACE	USACE	Yes
View Title_USACE	USACE	Yes
Wall Tag - Square_USACE	USACE	N/A

Detail Items

The following Detail Item families have been preloaded into the STRUC template in addition to the standard Out of the Box preloaded families:

Table 30 : Preloaded Detail Item Families

Family Name	Source	Type Definitions
A307 Bolts-Head	Imperial Library	3/4"
A307 Bolts-Nut	Imperial Library	3/4"
A307 Bolts-Side	Imperial Library	3/4"
A325 Bolts-Head	Imperial Library	3/4"
A325 Bolts-Nut	Imperial Library	3/4"
A325 Bolts-Side	Imperial Library	1"
		3/4"
A490 Bolts-Head	Imperial Library	3/4"
A490 Bolts-Nut	Imperial Library	3/4"

A490 Bolts-Side	Imperial Library	3/4"
AISC Wide Flange Shapes-Section	Imperial Library	W12X26
		W14X68
		W16X36
		W24X84
AISC Wide Flange Shapes-Top	Imperial Library	W12X26
		W14X68
		W24X84
Anchor Bolts-Nut	Imperial Library	1"
		3/4"
Anchor Bolts-Nut	Imperial Library	1"
		3/4"
Anchor Bolts-Side w-Nut and Thread Only_USACE	USACE	3/4"
Break Line	Imperial Library	Break Line
Brick Standard	Imperial Library	Running Section
CMU Standard	Imperial Library	8" x 8"
Expansion Bolts-Head	Imperial Library	1"
		3/4"
Expansion Bolts-Side	Imperial Library	1"
		3/4"
KeyPlan_Areas_USACE	USACE	KeyPlan_Areas
L-Angle-Bolted Connection-Elevation	Imperial Library	L3X3X1/4
		L4X4X5/16
		L5X5X3/8
		L6X6X1/2
L-Angle-Bolted Connection-Section	Imperial Library	L3X3X1/4
		L4X4X5/16
		L5X5X3/8
		L6X6X1/2
L-Angle-Welded Connection-Elevation	Imperial Library	L3X3X1/4
		L4X4X5/16
		L5X5X3/8
		L6X6X1/2
L-Angle-Welded Connection-Section	Imperial Library	L3X3X1/4
		L4X4X5/16
		L5X5X3/8
		L6X6X1/2

Masonry Bond Beam Unit_USACE	USACE	6"x8"x8"
		8"x8"x8"
		10"x8"x8"
		12"x8"x8"
Masonry CMU Grouted_USACE	USACE	6"x8"x8"
		8"x8"x8"
		10"x8"x8"
		12"x8"x8"
Masonry CMU UngROUTED_USACE	USACE	6"x8"x8"
		8"x8"x8"
		10"x8"x8"
		12"x8"x8"
Masonry Lintel Units_USACE	USACE	6"x8"x16"
		8"x8"x16"
		10"x8"x16"
		12"x8"x16"
Masonry Mortar-Section_USACE	USACE	Mortar
Metal Deck	Imperial Library	1 1/2"
		3"
Reinf Bar Bend 3-8 - 90 Degrees Each End_USACE	USACE	#_8
Reinf Bar Bend 3-8_USACE	USACE	#_4
Reinf Bar Bend 9-11_USACE	USACE	#_9
Reinf Bar Elevation - with 180-degree Hooks_USACE	USACE	#_6
Reinf Bar Elevation_USACE	USACE	#_4
Reinf Bar Section_USACE	USACE	#_6
Reinf Bar Stirrup Edge_USACE	USACE	#_4
Reinforcing Bar Section_USACE	USACE	#_4
Reinforcing Bend Type S3_USACE	USACE	#3
Reinforcing Bend Type T1_USACE	USACE	#3
Reinforcing Bend Type T2_USACE	USACE	#3
Reinforcing Bend Type T3_USACE	USACE	#3
Reinforcing Bend Type T6_USACE	USACE	#3
Reinforcing Bend Type T9_USACE	USACE	#3
Reinforcing Concrete Beam Stirrup_USACE	USACE	Reinf Beam Stirrup #4
Reinforcing Stirrup Tie_USACE	USACE	Reinf Stirrup Tie
Shear Connectors-Side	Imperial Library	1"

		3/4"
Steel Base Plate-Side-Length	Imperial Library	3/4"
Steel Base Plate-Side-Length wo-Holes_USACE	Imperial Library	3/4"
Steel Base Plate-Top	Imperial Library	3/4"
Steel Plate-Plain-Side-Length	Imperial Library	3/4"
Steel Plate-Plain-Side-Width	Imperial Library	3/4"
Steel Plate-Plain-Top	Imperial Library	3/4"
Steel Shear Plate-Edge	Imperial Library	3/4"
Steel Shear Plate-Face_USACE	USACE	With Bolt Heads
Steel Shear Plate-Top	Imperial Library	3/4"
Trench Drain-Section	Imperial Library	5 5/16" Trench Drain
		7 5/16" Trench Drain
		9 5/16" Trench Drain
		11 5/16" Trench Drain
		12 1/2" Trench Drain
W Shapes-Section	Imperial Library	W12X26
Water Stop-Dumbbell-Section	Imperial Library	Dumbbell
Welded Wire Fabric_USACE	USACE	Welded Wire Fabric

Profiles

The following Profile families have been preloaded into the STRUC template in addition to the families that are typically found in the Out of the Box structural template:

Table 31 : Preloaded Profile Families

Family Name	Source	Type Definitions
Circular Handrail_USACE	USACE	1 1/2"
		1"
Elliptical Handrail_USACE	USACE	1 1/2" x 1 1/8"
Fascia-Flat_USACE	USACE	1x12
Gutter Profile-Bevel_USACE	USACE	5" x 5"
Slab Edge-Thickened_USACE	USACE	24" x 12"
		36" x 12"
		36" x 18"

Square Handrail_USACE	USACE	1"
-----------------------	-------	----

Specialty Equipment

The following Specialty Equipment families have been preloaded into the STRUC template:

Table 32 : Preloaded Specialty Equipment Families

Family Name	Source	Type Definitions
Alternating Tread Device	Imperial Library	Standard

Structural Columns

The following Structural Column families have been preloaded into the STRUC template:

Table 33 : Preloaded Structural Column Families

Family Name	Source	Type Definitions
Concrete-Rectangular-Column_USACE	Legacy V2.2 Template	CC16x16
		CC16x18
		CC18x18
		CC18x24
		CC24x24
		CC24x30
Concrete-Round-Column_USACE	Legacy V2.2 Template	CC12R
		CC18R
		CC24R
		CC30R
W-Wide Flange-Column_USACE	Legacy V2.2 Template	W8X10
		W10X33
		W10X49
		W12X40
		W14X43

Structural Connections

The following Structural Connection families have been preloaded into the STRUC template:

Table 34 : Preloaded Structural Connection Families

Family Name	Source	Type Definitions
Base Plate	Imperial Library	Base Plate
Clip Angle	Imperial Library	Clip Angle
Corner Base Plate	Imperial Library	Corner Base Plate
Splice Joint	Imperial Library	Splice Joint
Stiffened seated beam connection	Imperial Library	Stiffened seated beam connection
Tube base plate	Imperial Library	Tube base plate

Structural Foundations

The following Structural Foundation families have been preloaded into the STRUC template:

Table 35 : Preloaded Structural Foundation Families

Family Name	Source	Type Definitions
Footing_Square_USACE	Legacy V2.2 Template	CF2.0
		CF3.0
		CF4.0
		CF5.0
Stepped Footing_Sloped Bottom_USACE	Legacy V2.2 Template	WF2.0
		WF3.0
Stepped Footing_Stepped Bottom_USACE		WF2.0
		WF3.0

19 Model System Family Types

Floors

The following Floor and Slab Edge System Family Types have been created in the STRUC Template in place of or in addition to the default types that are found in the Out of the Box structural template:

Table 36 : Floor and Slab Edge System Family Types

Family Name	Type Definitions																																																														
Floor	Generic 12" Filled																																																														
	<table><tr><td colspan="3">Parameter</td><td colspan="4">Value</td></tr><tr><td colspan="7">Construction</td></tr><tr><td colspan="3">Structure</td><td colspan="4">Edit...</td></tr><tr><td colspan="3">Default Thickness</td><td colspan="4">1' 0"</td></tr><tr><td colspan="3">Function</td><td colspan="4">Interior</td></tr><tr><td colspan="7">Graphics</td></tr><tr><td colspan="3">Coarse Scale Fill Pattern</td><td colspan="4"><Solid fill></td></tr><tr><td colspan="3">Coarse Scale Fill Color</td><td colspan="4">RGB 192-192-192</td></tr></table>							Parameter			Value				Construction							Structure			Edit...				Default Thickness			1' 0"				Function			Interior				Graphics							Coarse Scale Fill Pattern			<Solid fill>				Coarse Scale Fill Color			RGB 192-192-192			
	Parameter			Value																																																											
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	Structure			Edit...																																																											
	Default Thickness			1' 0"																																																											
	Function			Interior																																																											
	Graphics																																																														
	Coarse Scale Fill Pattern			<Solid fill>																																																											
	Coarse Scale Fill Color			RGB 192-192-192																																																											
Layers																																																															
	Function	Material	Thickness	Wraps	Structural Material	Variable																																																									
1	Core Bounda	Layers Above	0' 0"																																																												
2	Structure [1]	<By Catego	1' 0"	☐	☒	☐																																																									
3	Core Bounda	Layers Below	0' 0"																																																												
Slab Edge	Thickened 24" x 12" _USACE																																																														
	<table><tr><td colspan="3">Parameter</td><td colspan="4">Value</td></tr><tr><td colspan="7">Construction</td></tr><tr><td colspan="3">Profile</td><td colspan="4">Slab Edge-Thickened_USACE : 24" x 12" ▾</td></tr><tr><td colspan="7">Materials and Finishes</td></tr><tr><td colspan="3">Material</td><td colspan="4"><By Category></td></tr></table>							Parameter			Value				Construction							Profile			Slab Edge-Thickened_USACE : 24" x 12" ▾				Materials and Finishes							Material			<By Category>																								
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Material			<By Category>																																																												
Thickened 36" x 18" _USACE																																																															

Parameter	Value
Construction	
Profile	Slab Edge-Thickened_USACE : 36
Materials and Finishes	
Material	<By Category>

Railings

The following Baluster, Handrail and Top Rail Families and Types have been created in the STRUC Template in place of or in addition to the default types that are found in the Out of the Box structural template:

Table 37 : Baluster, Handrail and Top Rail Families and Types

Balusters																	
Family	Type Definitions																
Baluster - Round	1"																
	<table><tr><th>Parameter</th><th>Value</th></tr><tr><td colspan="2">Construction</td></tr><tr><td>Post</td><td>☐</td></tr><tr><td colspan="2">Materials and Finishes</td></tr><tr><td>Baluster Material</td><td><By Category></td></tr><tr><td colspan="2">Dimensions</td></tr><tr><td>Diameter</td><td>0' 1"</td></tr></table>	Parameter	Value	Construction		Post	☐	Materials and Finishes		Baluster Material	<By Category>	Dimensions		Diameter	0' 1"		
	Parameter	Value															
	Construction																
	Post	☐															
	Materials and Finishes																
	Baluster Material	<By Category>															
Dimensions																	
Diameter	0' 1"																
Baluster - Square	3/4"																
	<table><tr><th>Parameter</th><th>Value</th></tr><tr><td colspan="2">Construction</td></tr><tr><td>Post</td><td>☐</td></tr><tr><td colspan="2">Materials and Finishes</td></tr><tr><td>Baluster Material</td><td><By Category></td></tr><tr><td colspan="2">Dimensions</td></tr><tr><td>w1</td><td>0' 2 3/4"</td></tr><tr><td>Width</td><td>0' 0 3/4"</td></tr></table>	Parameter	Value	Construction		Post	☐	Materials and Finishes		Baluster Material	<By Category>	Dimensions		w1	0' 2 3/4"	Width	0' 0 3/4"
	Parameter	Value															
	Construction																
	Post	☐															
	Materials and Finishes																
	Baluster Material	<By Category>															
Dimensions																	
w1	0' 2 3/4"																
Width	0' 0 3/4"																
Baluster -Steel Flat	2 x 1/2"																

Upright	<table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th></tr> </thead> <tbody> <tr><td colspan="2">Construction</td></tr> <tr> <td>Post</td><td>☐</td></tr> <tr><td colspan="2">Materials and Finishes</td></tr> <tr> <td>Baluster Material</td><td><By Category></td></tr> <tr><td colspan="2">Dimensions</td></tr> <tr> <td>Width</td><td>0' 2"</td></tr> <tr> <td>Thickness</td><td>0' 0 1/2"</td></tr> </tbody> </table>	Parameter	Value	Construction		Post	☐	Materials and Finishes		Baluster Material	<By Category>	Dimensions		Width	0' 2"	Thickness	0' 0 1/2"																																						
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Dimensions																																																							
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Thickness	0' 0 1/2"																																																						
Panel - Glass	2' 8" <table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th></tr> </thead> <tbody> <tr><td colspan="2">Construction</td></tr> <tr> <td>Post</td><td>☐</td></tr> <tr><td colspan="2">Materials and Finishes</td></tr> <tr> <td>Glass</td><td>Glass</td></tr> <tr><td colspan="2">Dimensions</td></tr> <tr> <td>Width</td><td>2' 8"</td></tr> <tr> <td>Thickness</td><td>0' 0 1/4"</td></tr> </tbody> </table>	Parameter	Value	Construction		Post	☐	Materials and Finishes		Glass	Glass	Dimensions		Width	2' 8"	Thickness	0' 0 1/4"																																						
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Elliptical - 1 1/2" x 1 1/8"		
	Parameter	Value
	Construction	
	Default Join	Miter
	Fillet Radius	0' 0"
	Hand Clearance	-0' 1 67/128"
	Profile	Elliptical Handrail_USACE : 1 1/2" x
	Projection	0' 1 67/128"
	Transitions	Simple
	Materials and Finishes	
	Material	<By Category>
	Extension (Beginning/Bottom)	
	Extension Style	None
	Length	0' 0"
	Plus Tread Depth	☐
	Extension (End/Top)	
	Extension Style	None
	Length	0' 0"
	Terminations	
	Beginning/Bottom Termination	None
	End/Top Termination	None
Rectangular - 2" x 2"		
	Parameter	Value
	Construction	
	Default Join	Miter
	Fillet Radius	0' 0"
	Hand Clearance	-0' 1"
	Profile	Rectangular Handrail : 2" x 2"
	Projection	0' 1"
	Transitions	Gooseneck
	Materials and Finishes	
	Material	<By Category>
	Extension (Beginning/Bottom)	
	Extension Style	None
	Length	0' 0"
	Plus Tread Depth	☐
	Extension (End/Top)	
	Extension Style	None
	Length	0' 0"
	Terminations	
	Beginning/Bottom Termination	None
	End/Top Termination	None

Rectangular - 2"x2" - Wall Extension	<table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th></tr> </thead> <tbody> <tr><td colspan="2">Construction</td></tr> <tr><td>Default Join</td><td>Miter</td></tr> <tr><td>Fillet Radius</td><td>0' 0"</td></tr> <tr><td>Hand Clearance</td><td>-0' 1"</td></tr> <tr><td>Profile</td><td>Rectangular Handrail : 2" x 2"</td></tr> <tr><td>Projection</td><td>0' 1"</td></tr> <tr><td>Transitions</td><td>Gooseneck</td></tr> <tr><td colspan="2">Materials and Finishes</td></tr> <tr><td>Material</td><td><By Category></td></tr> <tr><td colspan="2">Extension (Beginning/Bottom)</td></tr> <tr><td>Extension Style</td><td>Wall</td></tr> <tr><td>Length</td><td>0' 0"</td></tr> <tr><td>Plus Tread Depth</td><td>☐</td></tr> <tr><td colspan="2">Extension (End/Top)</td></tr> <tr><td>Extension Style</td><td>Wall</td></tr> <tr><td>Length</td><td>0' 0"</td></tr> <tr><td colspan="2">Terminations</td></tr> <tr><td>Beginning/Bottom Termination</td><td>None</td></tr> <tr><td>End/Top Termination</td><td>None</td></tr> </tbody> </table>	Parameter	Value	Construction		Default Join	Miter	Fillet Radius	0' 0"	Hand Clearance	-0' 1"	Profile	Rectangular Handrail : 2" x 2"	Projection	0' 1"	Transitions	Gooseneck	Materials and Finishes		Material	<By Category>	Extension (Beginning/Bottom)		Extension Style	Wall	Length	0' 0"	Plus Tread Depth	☐	Extension (End/Top)		Extension Style	Wall	Length	0' 0"	Terminations		Beginning/Bottom Termination	None	End/Top Termination	None
Parameter	Value																																								
Construction																																									
Default Join	Miter																																								
Fillet Radius	0' 0"																																								
Hand Clearance	-0' 1"																																								
Profile	Rectangular Handrail : 2" x 2"																																								
Projection	0' 1"																																								
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Materials and Finishes																																									
Material	<By Category>																																								
Extension (Beginning/Bottom)																																									
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Extension Style	Wall																																								
Length	0' 0"																																								
Terminations																																									
Beginning/Bottom Termination	None																																								
End/Top Termination	None																																								
Supports																																									
Family	Type Definitions																																								
Support - Metal - Circular	Support - Metal - Circular <table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th></tr> </thead> <tbody> <tr><td colspan="2">Construction</td></tr> <tr><td>Height</td><td>0' 3"</td></tr> <tr><td colspan="2">Materials and Finishes</td></tr> <tr><td>Support Material</td><td>Aluminum</td></tr> <tr><td colspan="2">Dimensions</td></tr> <tr><td>Radius 1</td><td>0' 1"</td></tr> <tr><td>Radius 2</td><td>0' 0 1/4"</td></tr> <tr><td colspan="2">Other</td></tr> <tr><td>T1</td><td>0' 0 1/2"</td></tr> <tr><td>Bend Radius</td><td>0' 0 1/2"</td></tr> </tbody> </table>	Parameter	Value	Construction		Height	0' 3"	Materials and Finishes		Support Material	Aluminum	Dimensions		Radius 1	0' 1"	Radius 2	0' 0 1/4"	Other		T1	0' 0 1/2"	Bend Radius	0' 0 1/2"																		
Parameter	Value																																								
Construction																																									
Height	0' 3"																																								
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Radius 2	0' 0 1/4"																																								
Other																																									
T1	0' 0 1/2"																																								
Bend Radius	0' 0 1/2"																																								

The following Railing Types have been created in the STRUC Template in place of or in addition to the default types that are found in the Out of the Box structural template:

Table 38 : Railing Types

Railing Type

Glass Panel - Bottom Fill

Settings

Parameter	Value
Construction	
Railing Height	3' 0"
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	0' 0"
Use Landing Height Adjustment	☐
Landing Height Adjustment	0' 0"
Angled Joins	Add Vertical/Horizontal Segments
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim
Top Rail	
Use Top Rail	☒
Height	3' 0"
Type	Elliptical - 1 1/2" x 1 1/8"
Handrail 1	
Lateral Offset	
Height	
Position	None
Type	<None>
Handrail 2	
Lateral Offset	
Height	
Position	None
Type	<None>

Rails

	Name	Height	Offset	Profile	Material
1	Rail 1	2' 8"	0' 0"	Square Handrail_USACE : 1	<By Category>
2	Rail 2	2' 4"	0' 0"	Square Handrail_USACE : 1	<By Category>

Guardrail - Pipe

Rails					
	Name	Height	Offset	Profile	Material
1	Rail 1	3' 0"	0' 0"	Circular Handrail_USACE :	<By Category>
2	Rail 2	2' 7"	0' 0"	Circular Handrail_USACE :	<By Category>
3	Rail 3	2' 2"	0' 0"	Circular Handrail_USACE :	<By Category>
4	Rail 4	1' 9"	0' 0"	Circular Handrail_USACE :	<By Category>
5	Rail 5	1' 4"	0' 0"	Circular Handrail_USACE :	<By Category>
6	Rail 6	0' 11"	0' 0"	Circular Handrail_USACE :	<By Category>
7	Rail 7	0' 6"	0' 0"	Circular Handrail_USACE :	<By Category>

Main pattern

	Name	Baluster Family	Base	Base offset	Top	Top offset	Dist. from previous	Offset
1	Pattern start	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Regular bal	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	4' 0"	0' 0"
3	Pattern end	N/A	N/A	N/A	N/A	N/A	0' 0"	N/A

Break Pattern at: Each Segment End Angle: 0.00° Pattern Length: 4' 0"

Justify: Beginning Excess Length Fill: None Spacing: 0' 0"

☐ Use Baluster Per Tread On Stairs Balusters Per Tread: 1 Baluster Family: Baluster - Round : 1"

Posts

	Name	Baluster Family	Base	Base offset	Top	Top offset	Space	Offset
1	Start Post	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0 1/2"	0' 0"
2	Corner Pos	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0"	0' 0"
3	End Post	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	-0' 0 1/2"	0' 0"

Corner Posts At: Each Segment End Angle: 0.00°

Guardrail - Rectangular

Parameter	Value
Construction	
Railing Height	3' 6"
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	0' 0"
Use Landing Height Adjustment	☐
Landing Height Adjustment	0' 0"
Angled Joins	Add Vertical/Horizontal Segments
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim
Top Rail	
Use Top Rail	☒
Height	3' 6"
Type	Rectangular - 2" x 2"
Handrail 1	
Lateral Offset	0' 3"
Height	3' 0"
Position	Left
Type	Circular - 1 1/2"
Handrail 2	
Lateral Offset	
Height	
Position	None
Type	<None>

(No Rails)

Main pattern

	Name	Baluster Family	Base	Base offset	Top	Top offset	Dist. from previous	Offset
1	Pattern start	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Regular bal	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	0' 4"	0' 0"
3	Pattern end	N/A	N/A	N/A	N/A	N/A	0' 0"	N/A

Delete

Duplicate

Up

Break Pattern at:

Each Segment End

Angle: 0.00°

Pattern Length: 0' 4"

Justify:

Beginning

Excess Length Fill:

None

Spacing: 0' 0"

☐ Use Baluster Per Tread On Stairs

Balusters Per Tread: 1

Baluster Family: Baluster - Square : 3/4"

Posts

	Name	Baluster Family	Base	Base offset	Top	Top offset	Space	Offset
1	Start Post	Baluster - Square : 3	Host	0' 0"	Top Rail Ele	0' 0"	0' 0 3/8"	0' 0"
2	Corner Post	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0"	0' 0"
3	End Post	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	-0' 0 3/8"	0' 0"

Corner Posts At:

Each Segment End

Angle: 0.00°

Handrail

Parameter	Value
Construction	
Railing Height	3' 0"
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	0' 0"
Use Landing Height Adjustment	☐
Landing Height Adjustment	0' 0"
Angled Joins	Add Vertical/Horizontal Segments
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim
Top Rail	
Use Top Rail	☒
Height	3' 0"
Type	Rectangular - 2"x2"
Handrail 1	
Lateral Offset	
Height	
Position	None
Type	<None>
Handrail 2	
Lateral Offset	
Height	
Position	None
Type	<None>

(No Rails)

Main pattern

	Name	Baluster Family	Base	Base offset	Top	Top offset	Dist. from previous	Offset
1	Pattern start	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Regular bal	None	Host	0' 0"	Top Rail Ele	0' 0"	0' 4"	0' 0"
3	Pattern end	N/A	N/A	N/A	N/A	N/A	0' 0"	N/A

Break Pattern at: Each Segment End Angle: 0.00° Pattern Length: 0' 4"

Justify: Beginning Excess Length Fill: None Spacing: 0' 0"

☐ Use Baluster Per Tread On Stairs Balusters Per Tread: 2 Baluster Family: Baluster - Square : 3/4"

Posts

	Name	Baluster Family	Base	Base offset	Top	Top offset	Space	Offset
1	Start Post	None	Host	0' 0"	Top Rail Ele	0' 0"	0' 0 3/8"	0' 0"
2	Corner Post	None	Host	0' 0"	Top Rail Ele	0' 0"	0' 0"	0' 0"
3	End Post	None	Host	0' 0"	Top Rail Ele	0' 0"	-0' 0 3/8"	0' 0"

Corner Posts At: Each Segment End Angle: 0.00°

Handrail - Pipe

Parameter	Value
Construction	
Railing Height	3' 0"
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	0' 0"
Use Landing Height Adjustment	☐
Landing Height Adjustment	0' 0"
Angled Joins	Add Vertical/Horizontal Segments
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim
Top Rail	
Use Top Rail	☒
Height	3' 0"
Type	Circular - 1 1/2"
Handrail 1	
Lateral Offset	
Height	
Position	None
Type	<None>
Handrail 2	
Lateral Offset	
Height	
Position	None
Type	<None>

Rails

	Name	Height	Offset	Profile	Material
1	Rail 1	2' 6"	0' 0"	Circular Handrail_USACE :	<By Category>
2	Rail 2	2' 0"	0' 0"	Circular Handrail_USACE :	<By Category>
3	Rail 3	1' 6"	0' 0"	Circular Handrail_USACE :	<By Category>
4	Rail 4	1' 0"	0' 0"	Circular Handrail_USACE :	<By Category>
5	Rail 5	0' 6"	0' 0"	Circular Handrail_USACE :	<By Category>

Main pattern

	Name	Baluster Family	Base	Base offset	Top	Top offset	Dist. from previous	Offset
1	Pattern start	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Regular bal	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	4' 0"	0' 0"
3	Pattern end	N/A	N/A	N/A	N/A	N/A	0' 0"	N/A

Break Pattern at: Each Segment End Angle: 0.00° Pattern Length: 4' 0"

Justify: Beginning Excess Length Fill: None Spacing: 0' 0"

☐ Use Baluster Per Tread On Stairs Balusters Per Tread: 1 Baluster Family: Baluster - Round : 1"

Posts

	Name	Baluster Family	Base	Base offset	Top	Top offset	Space	Offset
1	Start Post	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0 1/2"	0' 0"
2	Corner Pos	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0"	0' 0"
3	End Post	Baluster - Round : 1"	Host	0' 0"	Top Rail Ele	0' 0"	-0' 0 1/2"	0' 0"

Corner Posts At: Each Segment End Angle: 0.00°

Handrail - Rectangular

Parameter	Value
Construction	
Railing Height	3' 0"
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	0' 0"
Use Landing Height Adjustment	☐
Landing Height Adjustment	0' 0"
Angled Joins	Add Vertical/Horizontal Segments
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim
Top Rail	
Use Top Rail	☒
Height	3' 0"
Type	Rectangular - 2" x 2"
Handrail 1	
Lateral Offset	
Height	
Position	None
Type	<None>
Handrail 2	
Lateral Offset	
Height	
Position	None
Type	<None>

(No Rails)

	Name	Baluster Family	Base	Base offset	Top	Top offset	Dist. from previous	Offset
1	Pattern star	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Regular bal	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	0' 4"	0' 0"
3	Pattern en	N/A	N/A	N/A	N/A	N/A	0' 0"	N/A

Break Pattern at: Each Segment End Angle: 0.00° Pattern Length: 0' 4"

Justify: Beginning Excess Length Fill: None Spacing: 0' 0"

☐ Use Baluster Per Tread On Stairs Balusters Per Tread: 2 Baluster Family: Baluster - Square : 3/4"

	Name	Baluster Family	Base	Base offset	Top	Top offset	Space	Offset
1	Start Post	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0 3/8"	0' 0"
2	Corner Pos	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	0' 0"	0' 0"
3	End Post	Baluster - Square : 3/4"	Host	0' 0"	Top Rail Ele	0' 0"	-0' 0 3/8"	0' 0"

Corner Posts At: Each Segment End Angle: 0.00°

Ramps

The following Ramp System Family Types have been created in the STRUC Template in place of or in addition to the default types that are found in the Out of the Box structural template:

Table 39 : Ramp System Family Types

Type Name	Settings																										
Ramp 1	<table> <tr> <th>Parameter</th><th>Value</th></tr> <tr> <td colspan="2">Construction</td></tr> <tr> <td>Shape</td><td>Thick</td></tr> <tr> <td>Thickness</td><td>0' 3"</td></tr> <tr> <td>Function</td><td>Interior</td></tr> <tr> <td colspan="2">Graphics</td></tr> <tr> <td>Text Size</td><td>3/32"</td></tr> <tr> <td>Text Font</td><td>Arial</td></tr> <tr> <td colspan="2">Materials and Finishes</td></tr> <tr> <td>Ramp Material</td><td>Concrete, Normal Weight - 5 ksi</td></tr> <tr> <td colspan="2">Dimensions</td></tr> <tr> <td>Maximum Incline Length</td><td>30' 0"</td></tr> <tr> <td>Ramp Max Slope (1/x)</td><td>12.000000</td></tr> </table>	Parameter	Value	Construction		Shape	Thick	Thickness	0' 3"	Function	Interior	Graphics		Text Size	3/32"	Text Font	Arial	Materials and Finishes		Ramp Material	Concrete, Normal Weight - 5 ksi	Dimensions		Maximum Incline Length	30' 0"	Ramp Max Slope (1/x)	12.000000
Parameter	Value																										
Construction																											
Shape	Thick																										
Thickness	0' 3"																										
Function	Interior																										
Graphics																											
Text Size	3/32"																										
Text Font	Arial																										
Materials and Finishes																											
Ramp Material	Concrete, Normal Weight - 5 ksi																										
Dimensions																											
Maximum Incline Length	30' 0"																										
Ramp Max Slope (1/x)	12.000000																										

Ramp 2		Parameter	Value
		Construction	
		Shape	Thick
		Thickness	0' 3"
		Function	Interior
		Graphics	
		Text Size	3/32"
		Text Font	Arial
		Materials and Finishes	
		Ramp Material	<By Category>
		Dimensions	
		Maximum Incline Length	30' 0"
		Ramp Max Slope (1/x)	12.000000

Repeating Details

The following Repeating Detail Types have been created in the STRUC Template:

Table 40 : Repeating Detail Types

Family Name	Source
Brick	USACE
CMU	USACE
CMU - 6" Grouted	USACE
CMU - 6" UngROUTed	USACE
CMU - 8" Grouted	USACE
CMU - 8" Grouted	USACE
CMU - 10" Grouted	USACE
CMU - 10" Grouted	USACE
CMU - 12" Grouted	USACE
CMU - 12" Grouted	USACE
Metal Deck 1 1/2"	USACE
Metal Deck 3"	USACE

Roofs

The following Roof, Fascia and Gutter System Family Types have been created in the STRUC Template in place of or in addition to the default types that are found in the Out of the Box structural template:

Table 41 : Roof, Fascia and Gutter System Family Types

Family Name	Type Definitions																																									
Roof	Generic 9"																																									
	<table><tr><th colspan="3">Parameter</th><th colspan="3">Value</th></tr><tr><td colspan="6">Graphics</td></tr><tr><td colspan="3">Coarse Scale Fill Pattern</td><td colspan="3"></td></tr><tr><td colspan="3">Coarse Scale Fill Color</td><td colspan="3"> Black</td></tr></table>						Parameter			Value			Graphics						Coarse Scale Fill Pattern						Coarse Scale Fill Color			 Black														
Parameter			Value																																							
Graphics																																										
Coarse Scale Fill Pattern																																										
Coarse Scale Fill Color			 Black																																							
	<table><tr><th colspan="6">Layers</th></tr><tr><th></th><th>Function</th><th>Material</th><th>Thickness</th><th>Wraps</th><th>Variable</th></tr><tr><td>1</td><td>Core Boundary</td><td>Layers Above</td><td>0' 0"</td><td></td><td></td></tr><tr><td>2</td><td>Structure [1]</td><td><By Categor</td><td>0' 9"</td><td>☐</td><td>☐</td></tr><tr><td>3</td><td>Core Boundary</td><td>Layers Below</td><td>0' 0"</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>						Layers							Function	Material	Thickness	Wraps	Variable	1	Core Boundary	Layers Above	0' 0"			2	Structure [1]	<By Categor	0' 9"	☐	☐	3	Core Boundary	Layers Below	0' 0"								
Layers																																										
	Function	Material	Thickness	Wraps	Variable																																					
1	Core Boundary	Layers Above	0' 0"																																							
2	Structure [1]	<By Categor	0' 9"	☐	☐																																					
3	Core Boundary	Layers Below	0' 0"																																							
	Generic - 12" - Filled																																									
	<table><tr><th colspan="3">Parameter</th><th colspan="3">Value</th></tr><tr><td colspan="6">Graphics</td></tr><tr><td colspan="3">Coarse Scale Fill Pattern</td><td colspan="3"><Solid fill></td></tr><tr><td colspan="3">Coarse Scale Fill Color</td><td colspan="3"> RGB 192-192-192</td></tr></table>						Parameter			Value			Graphics						Coarse Scale Fill Pattern			<Solid fill>			Coarse Scale Fill Color			 RGB 192-192-192														
Parameter			Value																																							
Graphics																																										
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Layers																																										
	Function	Material	Thickness	Wraps	Variable																																					
1	Core Boundary	Layers Above	0' 0"																																							
2	Structure [1]	<By Categor	1' 0"	☐	☐																																					
3	Core Boundary	Layers Below	0' 0"																																							
	Generic - 18"																																									
	<table><tr><th colspan="3">Parameter</th><th colspan="3">Value</th></tr><tr><td colspan="6">Graphics</td></tr><tr><td colspan="3">Coarse Scale Fill Pattern</td><td colspan="3"></td></tr><tr><td colspan="3">Coarse Scale Fill Color</td><td colspan="3"> Black</td></tr></table>						Parameter			Value			Graphics						Coarse Scale Fill Pattern						Coarse Scale Fill Color			 Black														
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Layers																																										
	Function	Material	Thickness	Wraps	Variable																																					
1	Core Boundary	Layers Above	0' 0"																																							
2	Structure [1]	<By Categor	1' 6"	☐	☐																																					
3	Core Boundary	Layers Below	0' 0"																																							

	Steel Truss - Insulation on Metal Deck - EPDM																																																
	<table><tr><th>Parameter</th><th>Value</th></tr><tr><td colspan="2">Graphics</td></tr><tr><td>Coarse Scale Fill Pattern</td><td></td></tr><tr><td>Coarse Scale Fill Color</td><td> Black</td></tr></table>	Parameter	Value	Graphics		Coarse Scale Fill Pattern		Coarse Scale Fill Color	 Black																																								
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Coarse Scale Fill Pattern																																																	
Coarse Scale Fill Color	 Black																																																
	<table><tr><th colspan="6">Layers</th></tr><tr><th></th><th>Function</th><th>Material</th><th>Thickness</th><th>Wraps</th><th>Variable</th></tr><tr><td>1</td><td>Finish 1 [4]</td><td>Roofing, EPDM Membrane</td><td>0' 0 1/4"</td><td></td><td>☐</td></tr><tr><td>2</td><td>Thermal/Air Layer [</td><td>Rigid insulation</td><td>0' 5"</td><td></td><td>☐</td></tr><tr><td>3</td><td>Core Boundary</td><td>Layers Above Wrap</td><td>0' 0"</td><td></td><td></td></tr><tr><td>4</td><td>Structure [1]</td><td>Metal Deck</td><td>0' 0 1/4"</td><td></td><td>☐</td></tr><tr><td>5</td><td>Structure [1]</td><td>Structure, Steel Bar Joist Layer</td><td>1' 4"</td><td></td><td>☐</td></tr><tr><td>6</td><td>Core Boundary</td><td>Layers Below Wrap</td><td>0' 0"</td><td></td><td></td></tr></table>	Layers							Function	Material	Thickness	Wraps	Variable	1	Finish 1 [4]	Roofing, EPDM Membrane	0' 0 1/4"		☐	2	Thermal/Air Layer [	Rigid insulation	0' 5"		☐	3	Core Boundary	Layers Above Wrap	0' 0"			4	Structure [1]	Metal Deck	0' 0 1/4"		☐	5	Structure [1]	Structure, Steel Bar Joist Layer	1' 4"		☐	6	Core Boundary	Layers Below Wrap	0' 0"		
Layers																																																	
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1	Finish 1 [4]	Roofing, EPDM Membrane	0' 0 1/4"		☐																																												
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4	Structure [1]	Metal Deck	0' 0 1/4"		☐																																												
5	Structure [1]	Structure, Steel Bar Joist Layer	1' 4"		☐																																												
6	Core Boundary	Layers Below Wrap	0' 0"																																														
	Wood Rafter 8" - Asphalt Shingle - Insulated																																																
	<table><tr><th>Parameter</th><th>Value</th></tr><tr><td colspan="2">Graphics</td></tr><tr><td>Coarse Scale Fill Pattern</td><td></td></tr><tr><td>Coarse Scale Fill Color</td><td> Black</td></tr></table>	Parameter	Value	Graphics		Coarse Scale Fill Pattern		Coarse Scale Fill Color	 Black																																								
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3	Substrate [2]	Plywood, Sheathing	0' 0 5/8"		☐																																												
4	Structure [1]	Structure, Wood Joist/Rafter Layer,	0' 7 1/2"		☐																																												
5	Core Boundary	Layers Below Wrap	0' 0"																																														
Fascia	Fascia-Flat 1 x 12																																																
Gutter	Gutter - Bevel 5" x 5"																																																

Wall Foundations

The following Repeating Wall Foundation Types have been included in the STRUC Template:

Table 42 : Wall Foundation Types

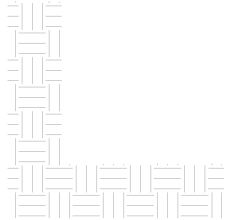
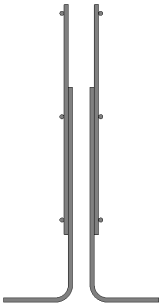
Type Name	Definition																				
WF1.5	<table> <tr> <th>Parameter</th><th>Value</th></tr> <tr> <td colspan="2">Materials and Finishes</td></tr> <tr> <td>Structural Material</td><td>Concrete - Cast-in-Place Concrete</td></tr> <tr> <td colspan="2">Structural</td></tr> <tr> <td>Structural Usage</td><td>Bearing</td></tr> <tr> <td colspan="2">Dimensions</td></tr> <tr> <td>Width</td><td>1' 6"</td></tr> <tr> <td>Foundation Thickness</td><td>1' 0"</td></tr> <tr> <td>Default End Extension Length</td><td>0' 0"</td></tr> <tr> <td>Do Not Break At Inserts</td><td>☐</td></tr> </table>	Parameter	Value	Materials and Finishes		Structural Material	Concrete - Cast-in-Place Concrete	Structural		Structural Usage	Bearing	Dimensions		Width	1' 6"	Foundation Thickness	1' 0"	Default End Extension Length	0' 0"	Do Not Break At Inserts	☐
Parameter	Value																				
Materials and Finishes																					
Structural Material	Concrete - Cast-in-Place Concrete																				
Structural																					
Structural Usage	Bearing																				
Dimensions																					
Width	1' 6"																				
Foundation Thickness	1' 0"																				
Default End Extension Length	0' 0"																				
Do Not Break At Inserts	☐																				

WF2.0		Parameter	Value
		Materials and Finishes	
		Structural Material	Concrete - Cast-in-Place Concrete
		Structural	
		Structural Usage	Bearing
		Dimensions	
		Width	2' 0"
		Foundation Thickness	1' 0"
		Default End Extension Length	0' 0"
		Do Not Break At Inserts	☐
WF2.5		Parameter	Value
		Materials and Finishes	
		Structural Material	Concrete - Cast-in-Place Concrete
		Structural	
		Structural Usage	Bearing
		Dimensions	
		Width	2' 6"
		Foundation Thickness	1' 0"
		Default End Extension Length	0' 0"
		Do Not Break At Inserts	☐
WF3.0		Parameter	Value
		Materials and Finishes	
		Structural Material	Concrete - Cast-in-Place Concrete
		Structural	
		Structural Usage	Bearing
		Dimensions	
		Width	3' 0"
		Foundation Thickness	1' 0"
		Default End Extension Length	0' 0"
		Do Not Break At Inserts	☐
WF3.5		Parameter	Value
		Materials and Finishes	
		Structural Material	Concrete - Cast-in-Place Concrete
		Structural	
		Structural Usage	Bearing
		Dimensions	
		Width	3' 6"
		Foundation Thickness	1' 0"
		Default End Extension Length	0' 0"
		Do Not Break At Inserts	☐
WF4.0		Parameter	Value
		Materials and Finishes	
		Structural Material	Concrete - Cast-in-Place Concrete
		Structural	
		Structural Usage	Bearing
		Dimensions	
		Width	4' 0"
		Foundation Thickness	1' 0"
		Default End Extension Length	0' 0"
		Do Not Break At Inserts	☐

20 Groups

The following Detail Groups are included in the STRUC template:

Table 43 : Detail Groups

Group Name	Definition
Earth - Subgrade Lower Left	
Reinforcing - Wall #4	
Reinforcing - Wall Footing WF1-5	
Reinforcing - Wall Footing WF2-0	

21 References

The location for downloading the templates is <https://cadbim.usace.army.mil/BIM>. Links to documentation, Q&A and a review form is also available on this site.

National CAD Standards (NCS) <https://www.nationalcadstandard.org/ncs6/>

A/E/C Graphics Standard – Release 2.1

August 2019

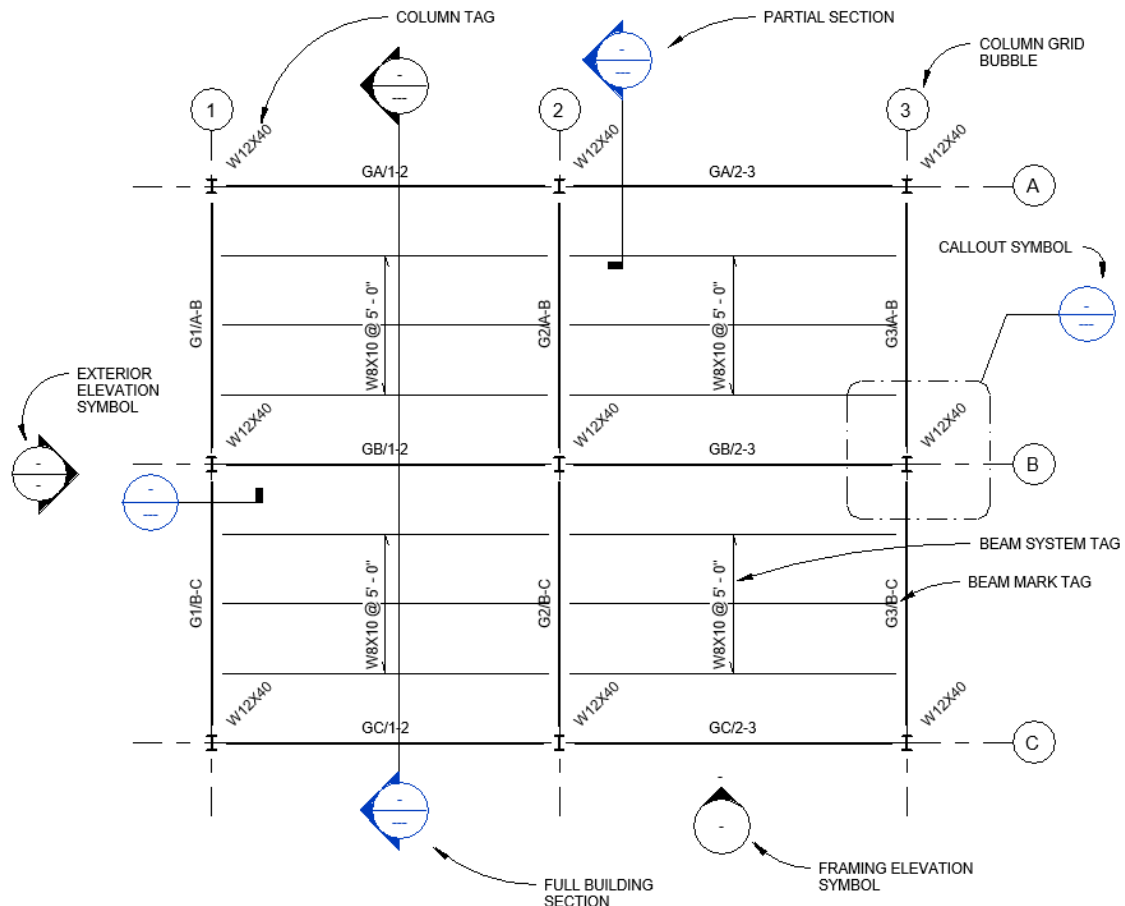
Please direct questions or comments about the templates to: [USACE Revit Template Team](#)

Appendix A: Annotation Symbols and the NCS 6.0

General Symbols

The symbols shown below are based upon the requirements of the NCS 6.1. Images are not to scale.

Table 44 : General Symbols



View Title – Viewports

The following viewport types and their associated titles are in the template:

Table 45 : Viewport Types

View – Title – Default_USACE (default viewport type)		
	Title: ¼" Other text: 3/32"	 01 FLOOR PLAN 1/8" = 1'-0"
	Title:	View Title_USACE: Default
	Show Title:	Yes
	Show Line:	Yes
View – Title – No Number or Line_USACE		
	Title: ¼" Other text: 3/32"	01 FLOOR PLAN 1/8" = 1'-0"
	Title:	View Title_USACE: No Number
	Show Title:	Yes
	Show Line:	No
View – Title – No Number_USACE		
	Title: ¼" Other text: 3/32"	01 FLOOR PLAN 1/8" = 1'-0"
	Title:	View Title_USACE: No Number
	Show Title:	Yes
	Show Line:	Yes
View – Title – No Title, Number or Line_USACE		
	Title: N/A Other text: N/A	
	Title:	<none>
	Show Title:	No
	Show Line:	No
View – Title – Reference Sheet_USACE		
	Title: ¼" Other Text: 3/32"	 01 FLOOR PLAN 1/8" = 1'-0"
	Title:	View Title_USACE: Reference Number
	Show Title:	Yes
	Show Line:	Yes

View - Title - Not to Scale_USACE		
	Title: 1/4" Other Text: 3/32"	 01 FLOOR PLAN
	Title:	View Title_USACE: Not to Scale
	Show Title:	Yes
	Show Line:	Yes

Symbol Component Families

Annotation Families

- Family: Callout_Head_USACE
 - Type: 1/8" Radius
- Family: Centerline_USACE
 - Type: Centerline
- Family: Elevation Mark Exterior_USACE
 - Type: Detail Number and View Name
- Family: Elevation Mark Interior_USACE
 - Type: Filled Arrow and View Name
- Family: Elevation Mark Pointer Exterior_USACE
 - Type: Detail Number
- Family: Elevation Mark Pointer Interior_USACE
 - Type: Filled Arrow
- Family: Graphic Scales_USACE
 - Type: Arch Scale 1"-1'-0" Scale
 - Type: Arch Scale 1-1/2"=1'- 0" Scale
 - Type: Arch Scale 1/2"=1'- 0" Scale
 - Type: Arch Scale 1/4"=1'- 0" Scale
 - Type: Arch Scale 1/8"=1'- 0" Scale
 - Type: Arch Scale 1/16"=1'- 0" Scale
 - Type: Arch Scale 1/32"=1'- 0" Scale
 - Type: Arch Scale 1/64"=1'- 0" Scale
 - Type: Arch Scale 3"=1'- 0" Scale
 - Type: Arch Scale 3/4"=1'- 0" Scale
 - Type: Arch Scale 3/8"=1'- 0" Scale
 - Type: Arch Scale 3/16"=1'- 0" Scale
 - Type: Arch Scale 6"=1'- 0" Scale
 - Type: Arch Scale 12"=1'- 0" Scale
 - Type: Civil Scale 1 to 1 Scale
 - Type: Civil Scale 1 to 2 Scale
 - Type: Civil Scale 1 to 5 Scale
 - Type: Civil Scale 1 to 5 Scale
 - Type: Civil Scale 1"=20' Scale
 - Type: Civil Scale 1"=30' Scale
 - Type: Civil Scale 1"=40' Scale
 - Type: Civil Scale 1"=50' Scale
 - Type: Civil Scale 1"=60' Scale

- Type: Civil Scale 1"=80' Scale
 - Type: Civil Scale 1"=100' Scale
 - Type: Civil Scale 1"=200' Scale
 - Type: Civil Scale 1"=300' Scale
 - Type: Civil Scale 1"=400' Scale
- Family: Grid Head – Circle_USACE
 - Type: Circle 3/8"
- Family: Keynote Tag_USACE
 - Type: Keynote Number – Boxed – Large
 - Type: Keynote Number – Boxed – Small
 - Type: Keynote Number – Sheet Keynote
- Family: Level Head – Circle_USACE
 - Type: Circle
- Family: Material Tag_USACE
 - Type: Material Tag
- Family: North Arrow_USACE
 - Type: Plan North
- Family: Revision Tag_USACE
 - Type: Revision Tag
- Family: Room Tag_USACE
 - Type: Room No. with Area
 - Type: Room No. with Volume
 - Type: Room Tag
- Family: Section Head -no arrow_USACE
 - Type: Section Head – no arrow
- Family: Section Head_USACE
 - Type: Section Head_Filled
- Family: Section Tail – Filled_USACE
 - Type: 1/16" x 1/8"
- Family: Space Tag_USACE
 - Type: Space Tag
 - Type: Space Tag with Area
 - Type: Space Tag with Volume
- Family: Spot Elevation – Target Filled_USACE
 - Type: Spot Elevation – Target Filled
- Family: StartupScreen_Border_USACE
 - Type: Revit Starting View
- Family: Structural Foundation Tag_USACE
 - Type
 - Mark
- Family: Structural Framing Tag_Mark_USACE
 - Boxed
 - Standard
- Family: Structural Framing Tag_Preliminary_USACE
 - Standard
- Family: View Reference_USACE
 - Type: View Reference

- Family: View Title_USACE
 - Type: Default
- Family: Wall Tag - Square_USACE
 - 1/2"
 - 1/4"

Appendix B: Border Sheets

The ANSI D_USACE title block “Cover” and “Border” types meet the USACE A/E/C CAD Standards for 22” x 34” title blocks.

Table 46 : Cover Title Block

 US Army Corps of Engineers DISTRICT		PROJECT/CONTRACT LOCATION 1 PROJECT/CONTRACT DESCRIPTION 2 PROJECT #	
SOLICITATION NO.: W91328-XX-X-XXXX CONTRACT NO.: W91328-XX-X-XXXX ISSUE DATE: MMMMMMMM YYYY VOLUME: X		PROJECT STATUS G-001	

Table 47 : Border Title Block

 US Army Corps of Engineers DISTRICT		PROJECT/CONTRACT LOCATION 1 PROJECT/CONTRACT DESCRIPTION 2 PROJECT #	
SOLICITATION NO.: W91328-XX-X-XXXX CONTRACT NO.: W91328-XX-X-XXXX ISSUE DATE: MMMMMMMM YYYY VOLUME: X		PROJECT STATUS G-001	

Text Box:

Most font sizes are 3/32". There is not an "Approved By:" field however there is a "Submitted By:" field. The "ISSUE DATE" field is the Project Issue Date, which is linked to the "Project Issue Date" property in the "Project Information" dialog box, accessible from the "Manage" tab of the ribbon.

Some fields in past versions of the template that might require multiple lines of text have now been converted to multiline text values. Selecting the field to edit it will bring up a dialog box for entering text and allows carriage returns.

The "Sheet Name" property of the sheet is used by the "SHEET NAME" field. This is a single-line text parameter. The "SHEET NAME" field is linked to the "SheetTitle_USACE" property of the sheet. This is a multi-line text parameter and must be edited from the Properties Palette when in the sheet view.

Building ID:

The "BldgID_USACE" sheet property is optional for use in cases where a project is to be segmented into multiple buildings (UNIT "A", UNIT "B", etc.) or separate parts ("EAST", "WEST", etc.). Each sheet may be identified with a specific Building ID label. This label is blank by default. Additionally it can be turned on and off by editing the properties of the title block on the sheet and checking its display on or off.

Revision Box:

There are only seven lines of revisions that will be visible since that will be a USACE standard requirement. The font is set at 3/32" to match the standards. For more revisions than the eight shown, Revit will keep the top 8 most current revisions in the list but will keep the previous ones in memory as part of the Project Information.

Guide Grid

There is a guide grid available for all sheets, with spacing set to 1 1/2" to match the sheet grid. It can be enabled for a sheet by setting the "Guide Grid" property of the sheet to "22x34_USACE".

Project Status

The “PROJECT STATUS” field on the title block is linked to the “Project Status” property in the Project Information dialog box.

Optional Fields

There are two optional fields and associated optional title fields that are invisible by default but that can be turned on by editing the title block border type properties. These fields are linked to the following properties in the Project Information dialog box:

- OPTION TITLE 1 – corresponds to the “AlternateInfoTitle1_USACE” property
- OPTION FIELD 1 – corresponds to the “AlternateInfo1_USACE” property
- OPTION TITLE 2 – corresponds to the “AlternateInfoTitle2_USACE” property
- OPTION FIELD 2 – corresponds to the “AlternateInfo2_USACE” property

Appendix C: Project Parameters

There are several Project and Sheet Parameters defined in the STRUC template that will apply to all disciplines. Each discipline will have additional parameters that apply only to that discipline, which will be addressed in the discipline-specific templates and associated documentation.

Many of these parameters are “Shared Parameters” and are dependent upon the existence of the Shared Parameter File:

USACE_SharedParameters_Common_v4.3.txt which should accompany the *USACE_Revit2019_Template_STRUC_v4.3.rte* template. These shared parameters allow the custom fields in the title block to be edited. In the case where the fields cannot be edited directly or don’t update when parameters in the project are edited, it is most likely because the connection to the shared parameter file has been lost or was never established. This can be addressed by first locating the file, then establishing it as the current shared parameter file using the “Shared Parameters” tool on the “Manage” tab of the ribbon.

Note: Some custom applications that are available for Revit from a variety of sources will use their own shared parameter file and will replace the default file with their own without warning. That will also cause the title block fields to become non-functional as well.

Project Parameters on Border Title Block

The mapping below shows the Revit Project Information dialog box with the location of the parameters in the list and the corresponding field in the title block of the border sheet. These project level values will be common to all sheets in the project. A change to them in one sheet will affect all sheets.

Table 48 : Title Block - Project Parameters

Parameter	Value
Title Text	
ContractNo_USACE	W91328-XX-X-XXXX
ContractorID_USACE	ID #
ContractorName_USACE	CONTRACTOR NAME
Filename_USACE	USACE_Revit2019_Template_BASE_v4.3.rte
FileNo_USACE	FILE NUMBER
ContractorAddress_USACE	ADDRESS
SolicitNo_USACE	W91328-XX-X-XXXX
ContractorLocation_USACE	CONTRACTOR LOCATION
AlternateInfoTitle1_USACE	OPTION TITLE 1
AlternateInfo1_USACE	OPTION FIELD 1
AlternateInfoTitle2_USACE	OPTION TITLE 2
AlternateInfo2_USACE	OPTION FIELD 2
General	
DistrictName_USACE	DISTRICT
DistrictLocation_USACE	19 SAINT JOSEPH STREET
Other	
Project Issue Date	MMMMMMMMMM YYYY
Project Status	PROJECT STATUS
Client Name	CLIENT NAME
Project Address	PROJECT/CONTRACT LOCATION 1
Project Name	PROJECT/CONTRACT DESCRIPTION 2
Project Number	PROJECT #
ProjectDescriptor_USACE	PROJECT/CONTRACT DESCRIPTION/IDENTI
Volume_USACE	X
ProjectCode_USACE	
ProjectLocation_USACE	
Spec#_USACE	

ISSUE DATE: MMMMMMMMMM YY	DESIGNED BY: Designer	CONTRACT NO.: W91328-XX-X-XXXX	OPTION TITLE 1 OPTION FIELD 1
SOLICITATION NO.: W91328-XX-X-XXXX	DRAWN BY: Author	CONTRACT NO.: W91328-XX-X-XXXX	OPTION TITLE 2 OPTION FIELD 2
CHECKED BY: Checker	SUBMITTED BY:	SIZE: ANSI D	

US ARMY CORPS OF ENGINEERS	CONTRACTOR NAME CONTRACTOR LOCATION ID #
DISTRICT 19 SAINT JOSEPH STREET	

Sheet Parameters and Additional Project Parameters on Border Title Block

The mapping below shows Revit Sheet Properties and additional Project Properties with the location of the corresponding fields in the Border title block.

Table 49 : Title Block - Sheet Parameters

Parameter	Value
Other	
Project Issue Date	MMMMMMMMMM YYYY
Project Status	PROJECT STATUS
Client Name	CLIENT NAME
Project Address	PROJECT/CONTRACT LOCATION
Project Name	PROJECT/CONTRACT DESCRIPTION
Project Number	PROJECT #
Project/Contract Description	PROJECT/CONTRACT DESCRIPTION

Current Revision	Value
Approved By	Approver
Designed By	Designer
Checked By	Checker
Drawn By	Author
Sheet Number	G-002
Sheet Name	SHEET INDEX
Sheet Issue Date	10/05/20
PlotDate_USACE	
SheetPublishOrder_USACE	
ProductionData_USACE	
BldgID_USACE	BLDG ID
SubmittedBy_USACE	
SheetDiscipline_USACE	GENERAL
Level2Designator_USACE	
SheetTitle_USACE	SheetTitle_USACE
Appears In Sheet List	☒
Revisions on Sheet	Edit...
Other	
File Path	C:\Users\mdillon\Doc...
UserDefined_USACE	
ProjectStatusVisibility_USACE	☒
PublishOrder_USACE	10.000000
DisciplineGroup_USACE	1
PrintSheet_USACE	☒
Guide Grid	<None>

DESIGNED BY:	ISSUE DATE	SOLICITATION	CONTRACT	OPTION TITLE 1	OPTION FIELD 1	OPTION TITLE 2	OPTION FIELD 2
DESIGNER	MM/YY/YY	W91328-XX	W91328-XX				
DRAWN BY:							
AUTHOR							
CHECKED BY:							
CHECKER							
SUBMITTED BY:							
SIZE:	ANSI D						

PROJECT/CONTRACT LOCATION	PROJECT/CONTRACT DESCRIPTION	PROJECT #	SHEET INDEX	SheetTitle_USACE

Sheet Parameters on Both the Border and Cover Title Blocks

The mapping below shows Revit Sheet Properties that occur on both the Border title block and Cover title block:

Table 50 : Title Block - Sheet Parameters

Drawn By	Author
Sheet Number	G-001
Sheet Name	COVER SHEET
Sheet Issue Date	10/05/20
PlotDate_USACE	
SheetPublishOrder_USACE	
ProductionData_USACE	
BldgID_USACE	
SubmittedBy_USACE	
SheetDiscipline_USACE	GENERAL
Level2Designator_USACE	
SheetTitle_USACE	
Appears In Sheet List	☒
Revisions on Sheet	Edit...
Other	

PROJECT/CONTRACT LOCATION
 PROJECT/CONTRACT DESCRIPTION
 PROJECT #
 COVER SHEET

SHEET ID
 BLDG_ID
 G-001

Project Parameters on the Cover Sheet Title Block

The project parameter mappings for the cover sheet title block are shown below.

Table 51 : Cover Sheet - Parameters

Parameter	Value
Title Text	
ContractNo_USACE	W91328-XX-X-XXXX
ContractorID_USACE	ID #
ContractorName_USACE	CONTRACTOR NAME
Filename_USACE	USACE_Revit2019_Template_BASE_v4.3.rte
FileNo_USACE	FILE NUMBER
ContractorAddress_USACE	ADDRESS
SolicitNo_USACE	W91328-XX-X-XXXX
ContractorLocation_USACE	CONTRACTOR LOCATION
AlternateInfoTitle1_USACE	OPTION TITLE 1
AlternateInfo1_USACE	OPTION FIELD 1
AlternateInfoTitle2_USACE	OPTION TITLE 2
AlternateInfo2_USACE	OPTION FIELD 2
General	
DistrictName_USACE	DISTRICT
DistrictLocation_USACE	19 SAINT JOSEPH STREET
Other	
Project Issue Date	MMMMMMMMMM YYYY
Project Status	PROJECT STATUS
Client Name	CLIENT NAME
Project Address	PROJECT/CONTRACT LOCATION
Project Name	PROJECT/CONTRACT DESCRIPTION
Project Number	PROJECT #
ProjectDescriptor_USACE	PROJECT/CONTRACT DESCRIPTION/IDENTI
Volume_USACE	X
ProjectCode_USACE	
ProjectLocation_USACE	
Spec#_USACE	

US Army Corps of Engineers
 DISTRICT

PROJECT/CONTRACT LOCATION
 PROJECT/CONTRACT DESCRIPTION
 PROJECT #

SOLICITATION NO.: W91328-XX-X-XXXX
 CONTRACT NO.: W91328-XX-X-XXXX
 ISSUE DATE: MMMMMMMMMMMM YYYY
 VOLUME: X

PROJECT STATUS
 G-001

Multiline Text for Parameters

Custom parameters that may need to have multiple lines of text have been supplied as multi-line text parameters. However, some default parameters that are defined as single-line text parameters cannot be made multi-line as a default property of the parameter. To create multiple lines of text in these types of parameters, such as the “Project Name” parameter in the Project Information dialog box:

- Open Notepad and create multiline text.
- Use “hard returns” to divide lines
- Copy the text to the clipboard
- In Revit, paste the text from the clipboard into the parameter value box.
- Take care not to use more lines of text than the space available on the title block allows.

Sheet Parameters Visibility Settings

There are both Instance and Type parameter title block settings for all title blocks to set visibility of certain fields on the sheet. Type parameter changes will affect the visibility of fields on all sheets of that type. Instance parameter changes will only affect the fields on the current sheet.

Table 52 : Sheet Parameters - Visibility Settings

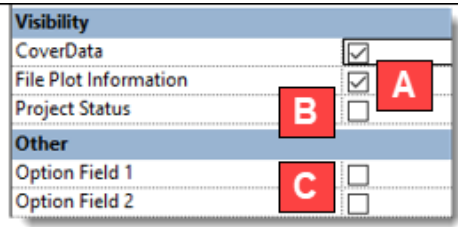
Visibilty Settings: Project Level (Type Parameters)		Default Value	
File Plot Information	A	On	
Project Status	B	Off	
Option Field 1		Off	
Option Field 2	C	Off	
Visibility Settings: Sheet Level (Instance Parameter)		Default Value	
Building_ID_Visibility	D	Off	

Table 53 : Project Status, Optional Fields Parameters

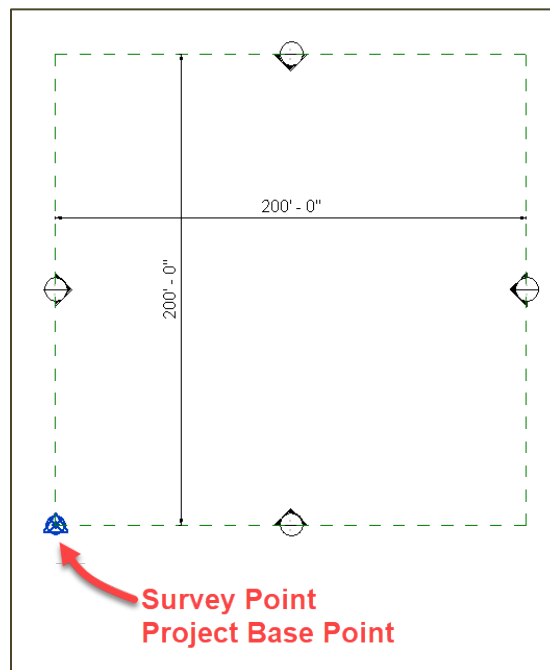
Project Status and Building_ID		Option Fields and File Plot Information																													
SHEET ID BLDG ID G-002 PROJECT STATUS	<table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; padding: 5px;">DESIGNED BY: Designer</td><td style="width: 50%; padding: 5px;">ISSUE DATE: MMMMMMMMMM YYYY</td></tr><tr><td style="padding: 5px;">DRAWN BY: Author</td><td style="padding: 5px;">SOLICITATION NO.: W91328-XX-X-XXXX</td></tr><tr><td style="padding: 5px;">CHECKED BY: Checker</td><td style="padding: 5px;">CONTRACT NO.: W91328-XX-X-XXXX</td></tr><tr><td style="padding: 5px;">SUBMITTED BY:</td><td style="padding: 5px;">OPTION TITLE 1 OPTION FIELD 1</td></tr><tr><td style="padding: 5px;">SIZE: ANSI D</td><td style="padding: 5px;">OPTION TITLE 2 OPTION FIELD 2</td></tr></table> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"><tr><th style="width: 70%; padding: 5px;">MARK</th><th style="width: 30%; padding: 5px;">DESCRIPTION</th></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr><tr><td style="height: 20px;"></td><td></td></tr></table> Plot Date: 10/16/2020 4:55:14 PM File Path: C:\Users\mduffy\Documents\Drawings\	DESIGNED BY: Designer	ISSUE DATE: MMMMMMMMMM YYYY	DRAWN BY: Author	SOLICITATION NO.: W91328-XX-X-XXXX	CHECKED BY: Checker	CONTRACT NO.: W91328-XX-X-XXXX	SUBMITTED BY:	OPTION TITLE 1 OPTION FIELD 1	SIZE: ANSI D	OPTION TITLE 2 OPTION FIELD 2	MARK	DESCRIPTION																		
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Appendix D: Coordination of Template

The template has been set up with the elevation views placed around a 200' grid

A square starting from the Project Base Point/Survey Point has been established as the modeling space. This will provide a consistent starting environment for the models and also facilitates having the model located fully within the positive X,Y quadrant.

Table 54 : Project Location



Appendix E: Special Schedules

Z-Sheet Information Lists and Z-View List

These schedules allow review of information contained in the views (such as view scale, name, associated level, template assignment, sheet number and name, and phase, etc.) and sheets (such as sheet number and name, designer, creator and revision information. These schedules should not be plotted and are intended for internal project management use. The Z-Sheet Information list also includes exposed fields for reviewing and editing sheet disciplines, discipline group and publish order settings.

Note: In general, any schedule whose name begins with "Z-" and is in sentence case is not intended for plotting purposes.

Appendix F: Method for Submitting Comments and Change Requests

Questions and change requests to the template may be submitted using the Sheet: 0.1 - Change Request, shown below. Supply the data requested in the title block using the *Default 3/32" _USACE* Text Type, print to PDF and submit to the USACE Revit Template Team following the instructions included in the title block.

Table 55 : Change Request Sheet

U.S. Army Corps of Engineers REVIT TEMPLATE CHANGE REQUEST The proponent agency ERDC.	
Complete the form below to submit questions, comments, suggestions, and recommendations for the USACE Revit Template. Your request will be sent to the technical proponent and will be reviewed with the proper personnel. PDF this page and email to "USACE-Revit-Template-Team@erdc.dren.mil"	
1. Which Revit Template Discipline Architectural	
2. Submitters Name	
3. Submitters Email	
4. Submitters District or Company	
5. Technical ☐ Non-technical (spelling or grammar) ☐	
6. Issue or problem	
7. Proposed Solution:	
USACE Revit Template Change Request Page 1 of 2	

U.S. Army Corps of Engineers REVIT TEMPLATE CHANGE REQUEST The proponent agency ERDC.	
If needed to better describe your request submit a drawing, component, graphic, blomap, etc of the description on page ones issue and any recommendations for the USACE Revit Template. PDF this page and email to "USACE-Revit-Template-Team@erdc.dren.mil" with page one.	
6. Drawing of issue or problem	
7. Drawing of Proposed Solution	
USACE Revit Template Change Request Page 2 of 2	

Appendix G: Change Notes

Version	Changes Made	Effect	Category of Change	Change Date	Purpose
4.3					