



**US Army Corps
of Engineers®**
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 : Electrical Template v4.3

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1 Overview

The intent of this guide for the Revit ELEC 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

A full list of View browser schemas for the ELEC template is in the following tables:

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” parameter is a legacy parameter from earlier versions and is included with the 4.3 version of the ELEC template, renamed to “View Purpose_USACE” 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_ELEC_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 ELEC project template:

- 3D Views
 - 3D_Coordination_ANL_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
- Ceiling Plans
 - Lighting Ceiling Plan_WRK_USACE
 - Lighting Ceiling Plan_DOC_USACE
 - Fire Alarm Ceiling Plan_WRK_USACE
 - Fire Alarm Ceiling Plan_DOC_USACE
- Floor, Area and Site Plans
 - Floor Plan_Coordination_ANL_USACE
 - Floor Plan_Coordination_WRK_USACE
 - Key Plan_WRK_USACE
 - HVAC Duct Plan_DOC_USACE
 - Power Plan_DOC_USACE
 - Power Plan_WRK_USACE
 - Enlarged Power Plan_DOC_USACE
 - Telecommunication Plan_WRK_USACE
 - Telecommunication Plan_DOC_USACE
 - Fire Alarm Plan_WRK_USACE
 - Fire Alarm Plan_DOC_USACE
 - Site Plan Project North_WRK_USACE
 - Site Plan True North_WRK_USACE
 - Site Plan Project North_DOC_USACE
 - Site Plan True North_DOC_USACE
 - Site Plan_Power_DOC_USACE

- Elevations
 - Exterior Elevation_Coordination_WRK_USACE
 - Exterior Elevation_WRK_USACE
 - Exterior Elevation_DOC_USACE
- Sections
 - Building Section_WRK_USACE
 - Building Section_DOC_USACE
 - Section_Coordination_WRK_USACE
 - Site Section_DOC_USACE
- Detail Views
 - Detail Plan_WRK_USACE
 - Detail Plan_DOC_USACE
 - Detail Section_WRK_USACE
 - Detail Section_DOC_USACE
- Drafting Views
 - Drafting View_WRK_USACE
 - Drafting View_DOC_USACE
- Schedules
 - Schedule_USACE

View Types included in the ELEC template:

Table 5 : View Types

View Type	View Template	Template Status
Floor Plans_Coordination_ANL_USACE	Floor Plan_Coordination_ANL_USACE	Dependent
Floor Plans_Coordination_WRK_USACE	Floor Plan_Coordination_WRK_USACE	Applied
Key Plans_WRK_USACE	Key Plan_WRK_USACE	Applied
Power Plans_DOC_USACE	Power Plan_DOC_USACE	Dependent
Power Plans_WRK_USACE	Power Plan_WRK_USACE	Applied
Enlarged Power Plans_DOC_USACE	Enlarged Power Plan_DOC_USACE	Dependent
Site Plans_Power_DOC_USACE	Site Plan_Power_DOC_USACE	Dependent
Site Plans_Project North_WRK_USACE	Site Plan_Project North_WRK_USACE	Applied
Site Plan_True North_WRK_USACE	Site Plan_True North_WRK_USACE	Applied
Site Plans_Project North_DOC_USACE	Site Plan_Project North_DOC_USACE	Dependent
Site Plans_True North_DOC_USACE	Site Plan_True North_DOC_USACE	Dependent
Telecommunications Plans_WRK_USACE	Telecommunication Plan_WRK_USACE	Applied
Telecommunications Plans_DOC_USACE	Telecommunication Plan_DOC_USACE	Dependent
Fire Alarm Plans_WRK_USACE	Fire Alarm Plan_WRK_USACE	Applied
Fire Alarm Plans_DOC_USACE	Fire Alarm Plan_DOC_USACE	Dependent
Fire Alarm Ceiling Plans_WRK_USACE	Fire Alarm Ceiling Plan_WRK_USACE	Applied
Fire Alarm Ceiling Plans_DOC_USACE	Fire Alarm Ceiling Plan_DOC_USACE	Dependent
Lighting Ceiling Plans_WRK_USACE	Lighting Ceiling Plan_WRK_USACE	Applied
Lighting Ceiling Plans_DOC_USACE	Lighting Ceiling Plan_DOC_USACE	Dependent

Exterior Elevations_WRK_USACE	Exterior Elevation_WRK_USACE	Applied
Exterior Elevations_DOC_USACE	Exterior Elevation_DOC_USACE	Dependent
Exterior Elevations_Coordination_WRK_USACE	Exterior Elevation_Coordination_WRK_USACE	Applied
Building Sections_WRK_USACE	Building Section_WRK_USACE	Applied
Building Sections_Full_DOC_USACE	Building Section_DOC_USACE	Dependent
Building Sections_Partial_DOC_USACE	Building Section_DOC_USACE	Dependent
Sections_Coordinations_WRK_USACE	Section_Coordination_WRK_USACE	Applied
Site Sections_DOC_USACE	Site Section_DOC_USACE	Dependent
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_WRK_USACE	Drafting View_WRK_USACE	Apply after Creation
Drafting Views_DOC_USACE	Drafting View_DOC_USACE	Make Dependent after Creation

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_FP_EAST_DOC**
 - 2nd Floor Plan – East region – 3 Documentation view purpose
- Example B: **EL_EAST_WRK**
 - Elevation – East – 1 Working view purpose
- Example C: **03_FP_WEST_HVAC_WRK**
 - 3rd floor Life Safety 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”.

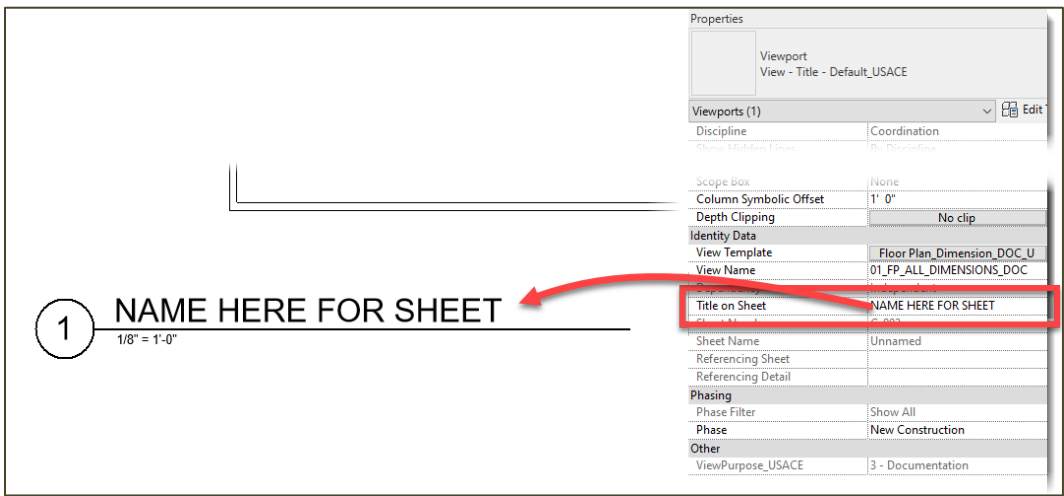
Note: While a view can be renamed to become a Documentation view by changing the suffix to “DOC”, it should be placed on the appropriate documentation view type and have the appropriate view template assigned to it to ensure proper view properties and correct assignment of the “ViewPurpose_USACE” parameter. 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 ELEC 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 control visibility of Mechanical, Electrical and Plumbing elements:

- ALL MEP_USACE
- Components - Interior_USACE (captures all non-site electrical components)
- Components - nonGrounding_USACE
- Components - Site_USACE
- HVAC Ducts_USACE
- Piping - ALL Fire Protection_USACE
- Piping - Domestic Hot Water Return_USACE
- Piping - Natural Gas_USACE
- Wires - Grounding_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 two tabs: 'Appearance' and 'Text'. The 'Appearance' tab is active, showing options for 'Grid lines' (checked, Thin Lines), 'Outline' (checked, Wide Lines), and 'Grid in headers/footers/spacers' (unchecked). There is also a checkbox for 'Blank row before data' (unchecked). The 'Text' tab is also visible, showing options for 'Show Title' (checked), 'Show Headers' (checked), and dropdown menus for 'Title text' (Schedule Title 3/16"_USAC), 'Header text' (Schedule Header 1/8"_USA), and 'Body text' (Default 3/32"_USACE). The dialog box has 'OK', 'Cancel', and 'Help' buttons at the bottom.

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 several schedules provided with the ELEC template. The following plotted or Documentation schedule is 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 8 : Sheet List Schedule

<SHEET LIST>	
A	B
SHEET NUMBER	SHEET TITLE

- **LUMINAIRE SCHEDULE**

Table 9 : Luminaire Schedule

<LUMINAIRE SCHEDULE>											
A	B	C	D	E	F	G	H	I	J	K	L
MARK	MOUNTING TYPE	MOUNTING LOCATION	SHAPE	SIZE	LAMP	LUMINOUS FLUX	INITIAL COLOR TEMPERATURE	FIXTURE VOLTS	FIXTURE WATTS	COMMENTS	COUNT

- **MOTOR SCHEDULE**

Table 10 : Motor Schedule

<MOTOR SCHEDULE>										
A	B	C	D	E	F	G	H	I	J	K
NAME	VOLTAGE	NUMBER OF POLES	HORSEPOWER	MINIMUM CIRCUIT AMPACITY	CURRENT CARRYING CONDUCTOR SIZE	EQUIPMENT GROUNDING CONDUCTOR SIZE	CONDUITS SIZE/TYPE	SHORT CIRCUIT PROTECTION RATING (AMPERE)	DISCONNECT RATING	COMMENTS

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 11 : 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 12 : 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-Space Schedule

- Shows all spaces defined in the project.

Table 13 : Z-Space Schedule

<Z-Space Schedule>				
A	B	C	D	E
Name	Number	Perimeter	Zone	Area

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:

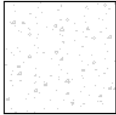
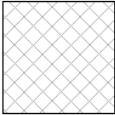
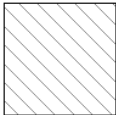
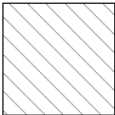
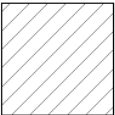
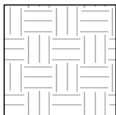
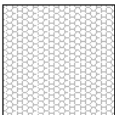
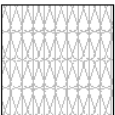
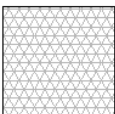
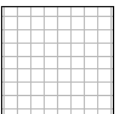
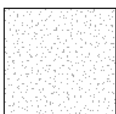
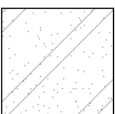
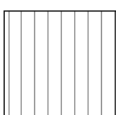
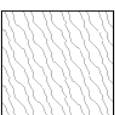
- Linear Dimensions
 - Continuous_USACE
 - ARCHline_USACE
- Angular Dimensions
 - Arrow Line-Leader_USACE
- Radial Dimensions
 - Horizontal_USACE
 - Rotated_USACE
- Diameter Dimensions
 - Horizontal_USACE
 - Rotated_USACE
- Spot Elevations
 - Beam Elevation (Project)_USACE
 - Beam Elevation (Relative)_USACE
 - 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 ELEC template.

Table 14 : Filled Region Types

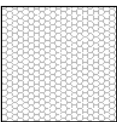
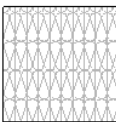
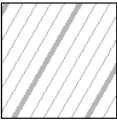
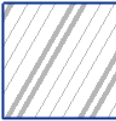
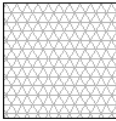
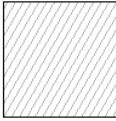
	CONCRETE		DIAGONAL CROSSHATCH		DIAGONAL CROSSHATCH - TRANSPARENT
	DIAGONAL DOWN		DIAGONAL DOWN - TRANSPARENT		DIAGONAL UP
	EARTH		EIFS		FIBERGLASS SEMI-RIGID
	HORIZONTAL LINES		NET3		ORTHO CROSSHATCH
	SAND - DENSE		SOLID BLACK		STONE
	VERTICAL LINES		WOOD 1		WOOD 2

13 Fill Patterns

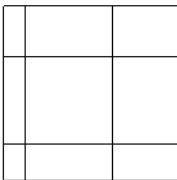
The Following Fill Patterns are also included in the ELEC template, in addition to the patterns provided from the default template provided with Revit out of the box and can be used to create additional Filled Region types as needed.

Table 15 : Fill Patterns

DRAFTING FILL PATTERNS

	EIFS_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		NET3_USACE
	SHAFT (1-HR)_USACE		SHAFT (2-HR)_USACE		SMOKE (0 HR)_USACE
	STONE_USACE				

MODEL FILL PATTERNS

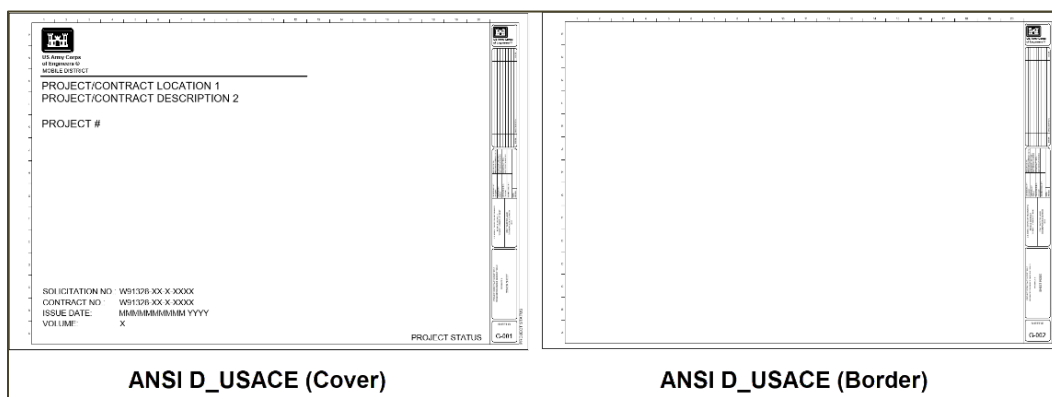
	CEILING 12X12_USACE
---	---------------------

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 16 : 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 ELEC 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-002 – SHEET INDEX
- G-003 - GENERAL NOTES, ABBREVIATIONS
- ES-101 - ELECTRICAL SITE PLAN
- E-101 - LIGHTING PLAN
- E-110 - POWER PLAN
- E-401 - ENLARGED PLAN
- E-501 - LIGHTING SCHEDULE AND DETAILS

- E-601 - ONE-LINE DIAGRAMS AND PANEL SCHEDULES
- E-701 - LIGHTNING PROTECTION PLAN
- E-801 - CATHODIC PROTECTION DETAILS
- FA-001 - FIRE ALARM AND MASS NOTIFICATION LEGEND
- T-001 - SYSTEMS LEGEND
- T-101 - SYSTEMS PLAN
- T-501 - SYSTEMS DETAILS
- T-601 - SYSTEMS RISERS

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 17 : Starting View

 US Army Corps of Engineers ® REVIT STARTING VIEW Read Me Template Version: Electrical Template v4.3	SHEET PUBLISH ORDER <table border="1"> <thead> <tr> <th>Discipline</th> <th>Discipline Group</th> <th>Publish Order</th> </tr> </thead> <tbody> <tr><td>General</td><td>1</td><td>10</td></tr> <tr><td>Hazardous Materials</td><td>2</td><td>20</td></tr> <tr><td>Survey/Mapping</td><td>3</td><td>30</td></tr> <tr><td>Geotechnical</td><td>4</td><td>40</td></tr> <tr><td>Civil</td><td>5</td><td>50</td></tr> <tr><td>Landscape</td><td>6</td><td>60</td></tr> <tr><td>Structural</td><td>7</td><td>70</td></tr> <tr><td>Architectural</td><td>8</td><td>80</td></tr> <tr><td>Interiors</td><td>9</td><td>90</td></tr> <tr><td>Equipment</td><td>11</td><td>110</td></tr> <tr><td>Fire Protection</td><td>12</td><td>120</td></tr> <tr><td>Plumbing</td><td>13</td><td>130</td></tr> <tr><td>Process</td><td>14</td><td>140</td></tr> <tr><td>Mechanical</td><td>15</td><td>150</td></tr> <tr><td>Electrical</td><td>16</td><td>160</td></tr> <tr><td>Telecommunications</td><td>17</td><td>170</td></tr> <tr><td>Resource</td><td>18</td><td>180</td></tr> <tr><td>Other Disciplines</td><td>19</td><td>190</td></tr> <tr><td>Contractor/Shop Drawings</td><td>20</td><td>200</td></tr> <tr><td>Operations</td><td>21</td><td>210</td></tr> </tbody> </table>	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
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																																																														
Browser Organization: Browser organization is sorted by view purpose. The view purposes are 1 Working (WRK), 2 Analysis (ANL), 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: <table border="1"> <thead> <tr> <th>Level</th> <th>View Type</th> <th>Function</th> <th>Region</th> <th>View Purpose</th> </tr> </thead> <tbody> <tr> <td>02_</td> <td>FP_FLOOR PLAN_</td> <td>DIMENSIONS_</td> <td></td> <td>DOC</td> </tr> <tr> <td></td> <td>EL_EAST</td> <td></td> <td></td> <td>WRK</td> </tr> <tr> <td>03_</td> <td>MP_MECHANICAL PLAN_</td> <td>HW PIPING_</td> <td>West_</td> <td>PRS</td> </tr> </tbody> </table> 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 USACE Starting View - Version 4.3	Level	View Type	Function	Region	View Purpose	02_	FP_FLOOR PLAN_	DIMENSIONS_		DOC		EL_EAST			WRK	03_	MP_MECHANICAL PLAN_	HW PIPING_	West_	PRS	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 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 views 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 Navisworks 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 standing view naming. These are recommended (refer to template manual for more information): • FP - Floor Plan • CP - Ceiling Plan • EP - Enlarged Plan • EL - Elevation • SP - Site Plan • GP - Equipment Plan																																											
Level	View Type	Function	Region	View Purpose																																																												
02_	FP_FLOOR PLAN_	DIMENSIONS_		DOC																																																												
	EL_EAST			WRK																																																												
03_	MP_MECHANICAL PLAN_	HW PIPING_	West_	PRS																																																												

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 18 : 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 19 : Levels (Floors)

Level Name	Elevation from Project Datum	Building Story (Y/N)
00 LEVEL TOF	-3'-0"	No
01 LEVEL FF	0'-0"	Yes
02 LEVEL	12'-0"	Yes
03 LEVEL ROOF	24'-0"	Yes

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

18 Pre-loaded Families

Annotation Families

The following USACE annotation families have been pre-loaded into the ELEC template:

Table 20 : 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
North Arrow_USACE	USACE	Yes
Plumbing Fixture Tag_USACE	USACE	Yes
Revision Tag_USACE	USACE	Yes
Room Tag_USACE	USACE	Yes
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 - Crosshair_USACE	USACE	Yes
Spot Elevation – Target Filled_USACE	USACE	Yes
StartupScreen_Border_USACE	USACE	N/A
View Reference_USACE	USACE	Yes
View Title_USACE	USACE	Yes

Detail Items

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

Table 21 : Preloaded Detail Item Families

Family Name	Source	Type Definitions
KeyPlan_Areas_USACE	USACE	KeyPlan_Areas

Electrical Equipment

The following Electrical Equipment Families have been loaded into the ELEC template in addition to the standard Out of the Box preloaded families:

Table 22 : Preloaded Electrical Equipment Families

Family Name	Source	Type Definitions
Circuit Breaker Switchboard_USACE	USACE Legacy ELEC Template	24"x26"
Dry Type Transformer - 480-208Y120 - NEMA Type 2	USACE Legacy ELEC Template	15 kVA
		30 kVA
		45 kVA
		75 kVA
		112.5 kVA
		150 kVA
		225 kVA
		300 kVA
		500 kVA
		750 kVA
Dry Type Transformer - 12000-208Y120 - NEMA Type 1_USACE	USACE Legacy ELEC Template	1000 kVA
Gas Emergency Power Generator_USACE	USACE Legacy ELEC Template	125 kW
Lighting and Appliance Panelboard - 208V MCB - Surface_USACE	USACE Legacy ELEC Template	100 A
Lighting and Appliance Panelboard - 208V MCB_USACE	USACE Legacy ELEC Template	100 A
Lighting and Appliance Panelboard - 208V MLO	USACE Legacy ELEC Template	100 A
		225 A
		400 A
		600 A
Lighting and Appliance Panelboard - 208V MLO - Surface_USACE	USACE Legacy ELEC Template	100 A
Lighting and Appliance Panelboard - 480V MCB - Surface	USACE Legacy ELEC Template	100 A
Lighting and Appliance Panelboard - 480V MCB_USACE_USACE	USACE Legacy ELEC Template	100 A
Lighting and Appliance Panelboard - 480V MLO	USACE Legacy ELEC Template	125 A
		250 A
		400 A

		600 A
Lighting and Appliance Panelboard - 480V MLO - Surface_USACE	USACE Legacy ELEC Template	125 A
Metering Switchboard_USACE	USACE Legacy ELEC Template	24"x26.25"
Single Phase Panel - 120V MCB - Recessed_USACE	USACE Legacy ELEC Template	100A
Single Phase Panel - 120V MCB - Surface_USACE	USACE Legacy ELEC Template	100A
Uninterruptible Power Supply_USACE	USACE Legacy ELEC Template	10 kVA
Utility Switchboard_USACE	USACE Legacy ELEC Template	36"x26.25"
Wet Type Transformer - 12000-480Y277_USACE	USACE Legacy ELEC Template	75 kVA

Electrical Fixtures

The following Electrical Fixture families have been preloaded into the ELEC template:

Table 23 : Preloaded Electrical Fixture Families

Family Name	Source	Type Definitions
Clean Receptacle_USACE	USACE Legacy ELEC Template	Standard
Duplex Receptacle_USACE	USACE Legacy ELEC Template	GFCI
		Above Counter
		Isolated Ground
		Weather Proof
		Printer
		Refrigerator
		Standard
Hexagon Junction Box_USACE	USACE Legacy ELEC Template	120V
High Voltage Receptacle_USACE	USACE Legacy ELEC Template	Standard
Junction Boxes - Load_USACE	USACE Legacy ELEC Template	4" Square 120 - 1
Junction Boxes - No Load_USACE	USACE Legacy ELEC Template	4" Square
Motor Switch_USACE	USACE Legacy ELEC Template	Standard
Motor with Disconnect_USACE	USACE Legacy ELEC Template	Single Phase - 120
Quadruplex Receptacle_USACE	USACE Legacy ELEC Template	GFCI
		Standard
Receptacle - 220V_USACE	USACE Legacy ELEC Template	Standard
Round Plain Junction Box_USACE	USACE Legacy ELEC Template	120V
Simplex Receptacle_USACE	USACE Legacy ELEC Template	Standard

Special Purpose Receptacle_USACE	USACE Legacy ELEC Template	Standard
Switch_USACE	USACE Legacy ELEC Template	Motorized Door

Lighting devices

The following Lighting Device families have been preloaded into the ELEC template in addition to the standard Out of the Box preloaded families:

Table 24 : Preloaded Lighting Device Families

Family Name	Source	Type Definitions
Double Pole Switch_USACE	USACE Legacy ELEC Template	Standard
Emergency Switch_USACE	USACE Legacy ELEC Template	Standard
Illuminated Handle Switch_USACE	USACE Legacy ELEC Template	Standard
Lighting Switches_USACE	USACE Legacy ELEC Template	Circuit Breaker
		Dimmer
		Door
		Four Way
		Key Operated
		Low Voltage
		Pilot Lighted
		Single Pole
		Three Way
		Timer
Weather Proof Switch_USACE	USACE Legacy ELEC Template	Standard

Lighting Fixtures

The following Lighting Fixture families have been preloaded into the ELEC template in addition to the standard Out of the Box preloaded families:

Table 25 : Preloaded Lighting Fixture Families

Family Name	Source	Type Definitions
Bollard Light_USACE	USACE Legacy ELEC Template	Fluorescent - 120V
		Fluorescent - 277V
		Incandescent - 120V
		Incandescent - 277V
Ceiling Light - Flat Round_USACE	USACE Legacy ELEC Template	60W - 120V
		60W - 277V

		100W - 120V
		100W - 277V
Ceiling Light - Linear Box_USACE	USACE Legacy ELEC Template	1'x4'(1 Lamp) - 120V
		1'x4'(1 Lamp) - 277V
		1'x4'(2 Lamp) - 120V
		1'x4'(2 Lamp) - 277V
		2'x2'(2 Lamp) - 120V
		2'x2'(2 Lamp) - 277V
		2'x4'(2 Lamp) - 120V
		2'x4'(2 Lamp) - 277V
Pendant Light - Linear - 1 Lamp_USACE	USACE Legacy ELEC Template	48" - 120V
		48" - 277V
		96" - 120V
		96" - 277V
Pendant Light - Linear - 2 Lamp_USACE	USACE Legacy ELEC Template	48" - 120V
		48" - 277V
		96" - 120V
		96" - 277V
Plain Recessed Lighting Fixture_USACE	USACE Legacy ELEC Template	1x4 - 120
		1x4 - 277
		2x2 - 120
		2x2 - 277
		2x4 - 120
		2x4 - 277
		20x4 - 120
		20x4 - 277
Plain Surface Lighting Fixture_USACE	USACE Legacy ELEC Template	1x4 - 120
		1x4 - 277
		2x2 - 120
		2x2 - 277
		2x4 - 120
		2x4 - 277
		4x4 - 120
		4x4 - 277
Recessed High Efficiency Louvered Light_USACE	USACE Legacy ELEC Template	2 Lamp - 120V
		2 Lamp - 120V
Recessed Lighting Fixture - Two Ballast_USACE	USACE Legacy ELEC Template	1'x4'(2 Lamp) - 120V

		1'x4'(2 Lamp) - 277V
		2'x2'(2 Lamp) - 120V
		2'x2'(2 Lamp) - 277V
		2'x4'(3 Lamp) - 120V
		2'x4'(3 Lamp) - 277V
		20"x4'(2 Lamp) - 120V
		20"x4'(2 Lamp) - 277V
Recessed Parabolic Light_USACE	USACE Legacy ELEC Template	2'x2'(2 Lamp) - 120V
		2'x2'(2 Lamp) - 277V
		2'x2'(3 Lamp) - 120V
		2'x2'(3 Lamp) - 277V
		2'x4'(2 Lamp) - 120V
		2'x4'(2 Lamp) - 277V
		2'x4'(3 Lamp) - 120V
		2'x4'(3 Lamp) - 277V
		2'x4'(4 Lamp) - 120V
		2'x4'(4 Lamp) - 277V
Recessed Volumetric Light_USACE	USACE Legacy ELEC Template	1'x4'(1 Lamp) - 120V
		1'x4'(1 Lamp) - 277V
		1'x4'(2 Lamp) - 120V
		1'x4'(2 Lamp) - 277V
		2'x2'(2 Lamp) - 120V
		2'x2'(2 Lamp) - 277V
		2'x4'(2 Lamp) - 120V
		2'x4'(2 Lamp) - 277V
Spot Light - Exterior_USACE	USACE Legacy ELEC Template	175W Metal Halide - 120V
		175W Metal Halide - 277V
		300W Incandescent - 120V
		300W Incandescent - 277V
Street Light - Standard_USACE	USACE Legacy ELEC Template	250W Halogen - 120V
		250W Halogen - 277V
		250W Halogen - 480V
		250W Sodium - 120V
		250W Sodium - 277V
		250W Sodium - 480V
		400W Halogen - 120V
		400W Halogen - 277V
		400W Halogen - 480V

19 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*

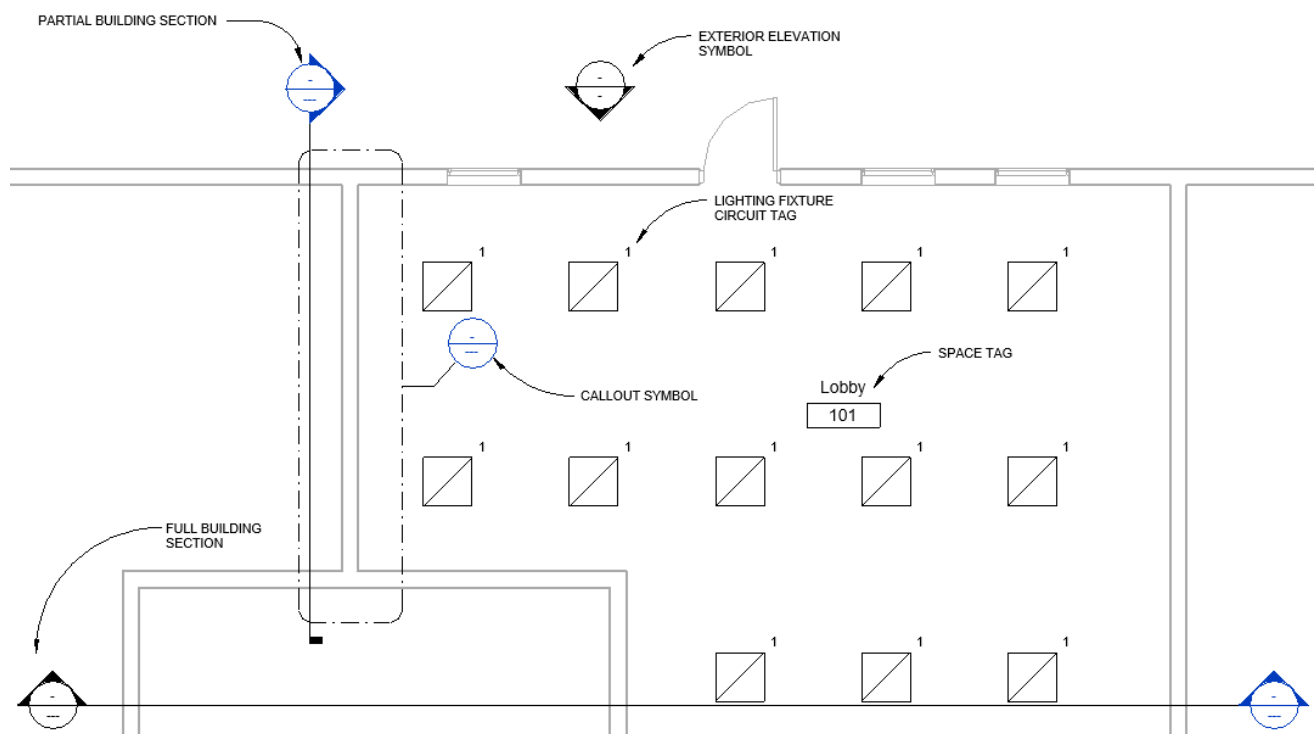
Please direct questions or comments about the templates to: [USACE Revit Template Team](#)

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 26 : General Symbols



View Title – Viewports

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

Table 27 : 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

Veiw - 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: Diffuser Tag_USACE
 - Type: Diffuser Tag
- 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: View Reference_USACE
 - Type: View Reference
- Family: View Title_USACE
 - Type: Default
 - No Number
 - NTS
 - Reference Number

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

[illegible][illegible]

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 ARCH 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_ARCH_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 30 : Title Block - Project Parameters

Parameter	Value
Title Text	
ContractNo_USACE A	W91328-XX-X-XXXX
ContractorID_USACE	ID # C
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 C
AlternateInfoTitle1_USACE	OPTION TITLE 1
AlternateInfo1_USACE D	OPTION FIELD 1
AlternateInfoTitle2_USACE	OPTION TITLE 2
AlternateInfo2_USACE	OPTION FIELD 2 E
General	
DistrictName_USACE F	DISTRICT
DistrictLocation_USACE	19 SAINT JOSEPH STREET
Other	
Project Issue Date G	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	

G	B	A	D
ISSUE DATE: MMMMMMMMMM YY	SOLICITATION NO.: W91328-XX-X-XXXX	CONTRACT NO.: W91328-XX-X-XXXX	OPTION TITLE 1 OPTION FIELD 1
DESIGNED BY: Designer	DRAWN BY: Author	CHECKED BY: Checker	SUBMITTED BY:
US ARMY CORPS OF ENGINEERS DISTRICT 19 SAINT JOSEPH STREET			OPTION TITLE 2 OPTION FIELD 2 E
CONTRACTOR NAME CONTRACTOR LOCATION ID #			SIZE: ANSI D

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 31 : 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 32 : Title Block - Sheet Parameters

A	Drawn By	Author
	Sheet Number	G-001
	Sheet Name	COVER SHEET B
	Sheet Issue Date	10/05/20
	PlotDate_USACE	
	SheetPublishOrder_US...	
	ProductionData_USA...	
	BldgID_USACE	C
	SubmittedBy_USACE	
	SheetDiscipline_USACE	GENERAL
	Level2Designator_US...	
	SheetTitle_USACE	
	Appears In Sheet List	☒
	Revisions on Sheet	Edit...
	Other	

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

SHEET ID	
C BLDG_ID	
A G-001	

Project Parameters on the Cover Sheet Title Block

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

Table 33 : Cover Sheet - Parameters

Parameter	Value
Title Text	
ContractNo_USACE	W91328-XX-X-XXXX A
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 C
Project Status	PROJECT STATUS D
Client Name	CLIENT NAME
Project Address	PROJECT/CONTRACT LOCATION E
Project Name	PROJECT/CONTRACT DESCRIPTION F
Project Number	PROJECT # G
ProjectDescriptor_USACE	PROJECT/CONTRACT DESCRIPTION/IDENTI
Volume_USACE	X H
ProjectCode_USACE	
ProjectLocation_USACE	
Spec#_USACE	

US Army Corps of Engineers ® DISTRICT	
PROJECT/CONTRACT LOCATION E	
PROJECT/CONTRACT DESCRIPTION F	
PROJECT # G	
SOLICITATION NO.: W91328-XX-X-XXXX B	
CONTRACT NO.: W91328-XX-X-XXXX A	
ISSUE DATE: MMMMMMMMMM YYYY C	
VOLUME: X H	
PROJECT STATUS D	
SHEET ID 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 34 : Sheet Parameters - Visibility Settings

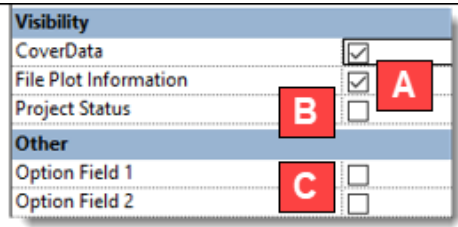
Visibility Settings: Project Level (Type Parameters)		Default Value	
File Plot Information	A	On	
Project Status	B	Off	
Option Field 1		Off	
Option Field 2	C	Off	
Visibility Settings: Sheet Level (Instance Parameter)		Default Value	
Building_ID_Visibility	D	Off	

Table 35 : Project Status, Optional Fields Parameters

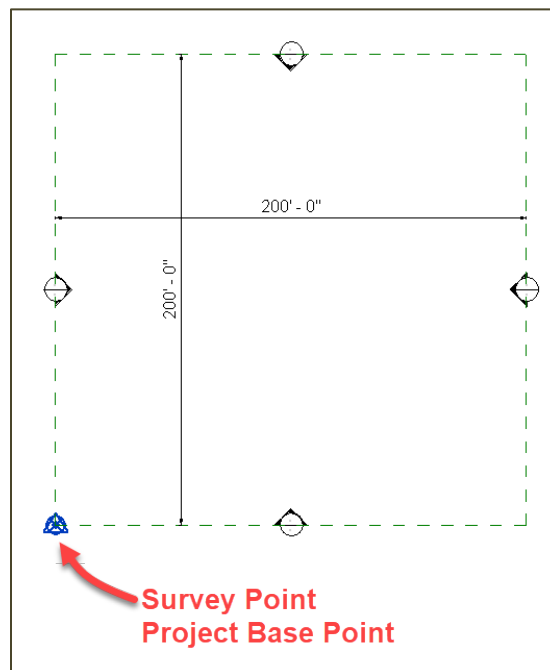
Project Status and Building_ID	Option Fields and File Plot Information																																								
SHEET ID BLDG ID G-002 PROJECT STATUS	<table><tr><td>DESIGNED BY: Designer</td><td>ISSUE DATE: MMMMMMMMMM YYYY</td></tr><tr><td>DRAWN BY: Author</td><td>SOLICITATION NO.: W91328-XX-X-XXXX</td></tr><tr><td>CHECKED BY: Checker</td><td>CONTRACT NO.: W91328-XX-X-XXXX</td></tr><tr><td>SUBMITTED BY:</td><td>OPTION TITLE 1 OPTION FIELD 1</td></tr><tr><td>SIZE: ANSI D</td><td>OPTION TITLE 2 OPTION FIELD 2</td></tr></table> <table><tr><td></td><td>MARK</td><td>DESCRIPTION</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table> Plot Date: 10/18/2020 4:55:14 PM File Path: c:\Users\mfon\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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SIZE: ANSI D	OPTION TITLE 2 OPTION FIELD 2																																								
	MARK	DESCRIPTION																																							

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 36 : 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 37 : 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, bitmap, 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					