


# Structures plan production

 **Info:** For more information about the Civil 3D Knowledge Base topic display and formatting, see Getting started.

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## 08 Structures

Last updated: 2024-05-02

### Overview

Loads the Structures profile and Structures palette for use in the creation of structures plans, including bridges, culverts, retaining walls, sign structures, and miscellaneous structures.

### Usage

WisDOT Sheets tab > Sheet Creation panel > 08 Structure

The palette can also be loaded from the command line: `DOTSHEETS-08`

### Content

The palettes contain tools needed for structures plan production including:

- Structures drawing templates
- Sheet templates #sheet and sheet borders.
- Structures custom tools
- Structures template textstyles
- Structures template multileader styles
- Structures template dimension styles
- Structures blocks

For more information, see "Structures plan production" on the previous page.

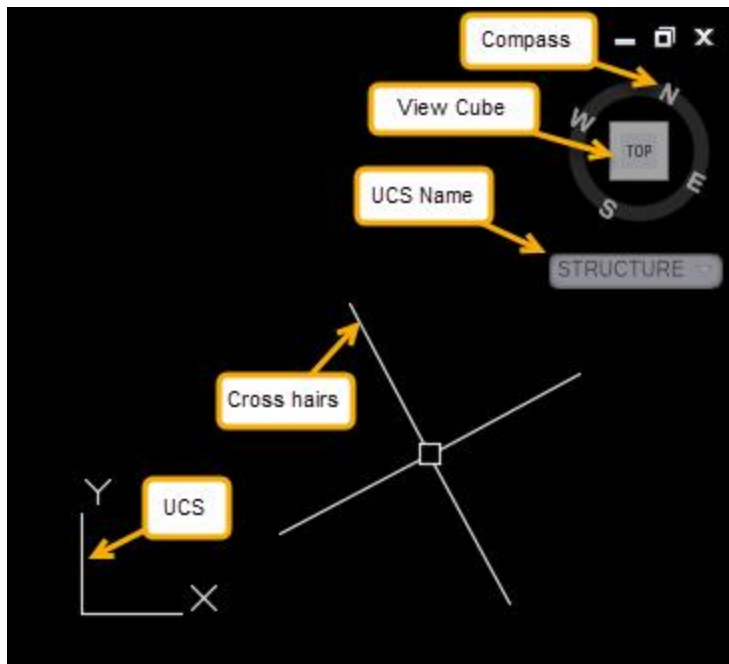
## Structures coordinate systems

Last updated: 2024-05-01


### Overview


When drawing a layout or geotechnical plan with coordinate-correct references and drawings, it is often necessary to use a rotated coordinate system.


### View control user interface



- **Compass** - shows where global North is
- **View Cube** - Show Current UCS rotation relative to current view
- **UCS Name** - name of current UCS
  - **WCS** - World Coordinates (globally correct)
  - **Unnamed** - "unsaved" custom UCS
  - **STRUCTURE** - "saved" custom UCS
- **Crosshairs** - Show orientation of unrotated text/dimension relative to view
- **UCS** - show X & Y definition. Always correlates to View Cube

 **Requirement:** All coordinate-correct drawings should use a **struct-decimal-start** template. For more information see the Structures Drawing Templates page.

 **Warning:** Changing the UCS also changes the location of coordinate 0,0 with respect to the World Coordinate System (WCS). All XREFs should be attached when UCS is set to **WCS**.

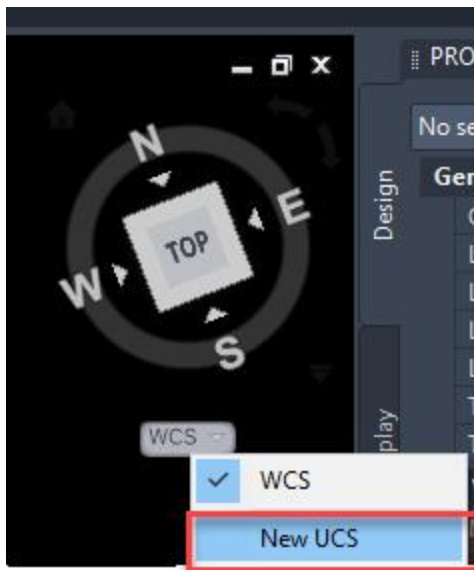
 **Info:** Rotation of view will not impact the proper insertion of the reference.

### Create UCS for structure

1. Use the Rotate View tool to rotate the view to align with the structure.
2. Type **UCS** at the command line
  - A. Alternatively:
    - I. Below the **View Cube** click the **down** arrow next to **WCS**



- II. Choose **New UCS**

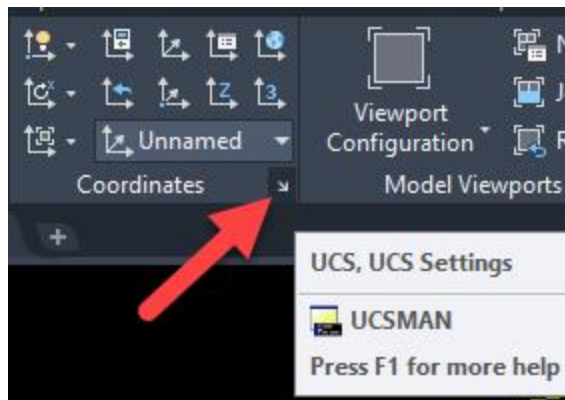


3. Create new UCS using the **View** option.

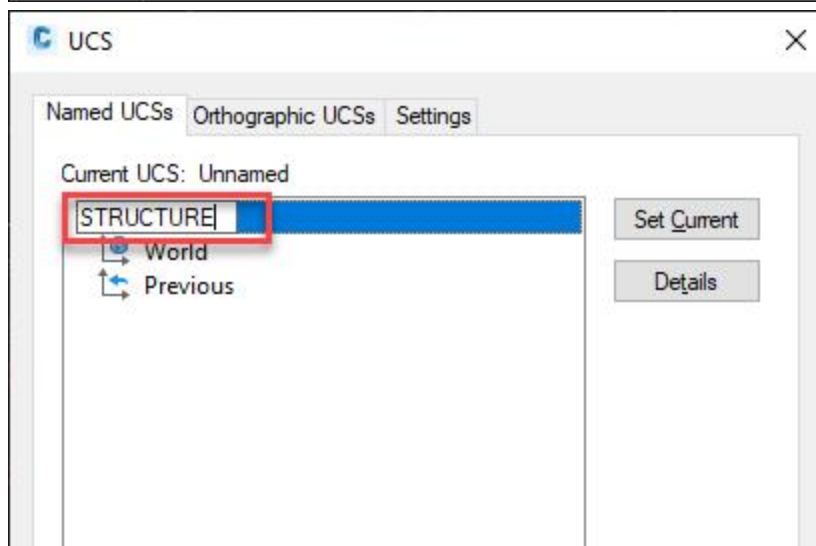
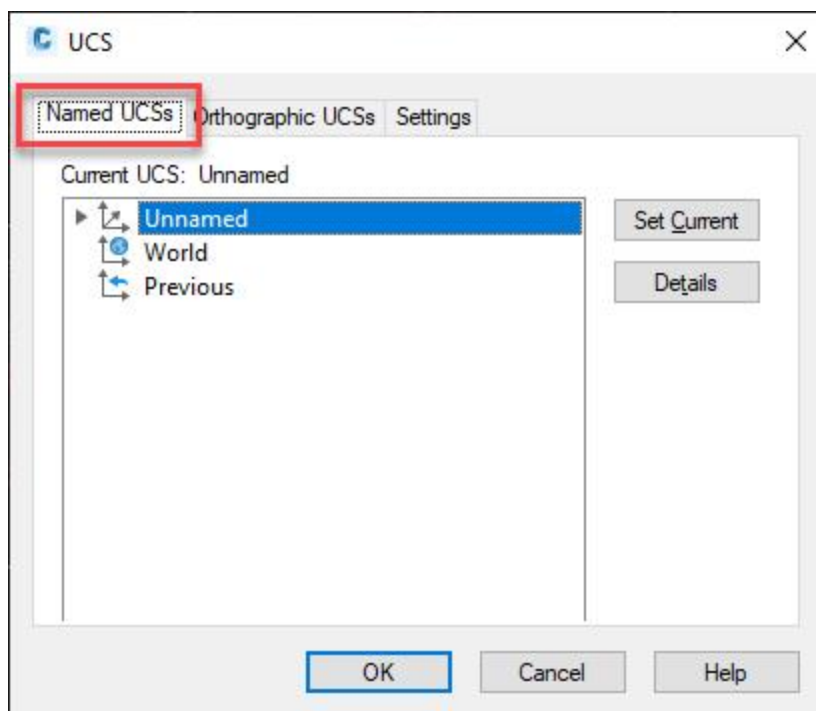


4. Open the UCS Manager with **Ribbon > View Tab > Coordinates panel > bottom right arrow** (or **USCMAN**):


Create UCS for structure



5. In the **Named UCSs** tab, click on **Unnamed** and rename it to **STRUCTURE**.



6. 

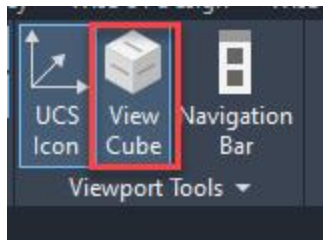
 **Requirement:** All dimensioning and annotating should be completed with the **STRUCTURE UCS** active.

## *Reset crosshairs orthogonal to view*

1. Type the commandline **SNAPANG**
2. Type **0**

## *Toggle between UCSs*


1. If it is not currently displayed, turn on the **View Cube**.
  - A. **Ribbon > View tab > Viewport Tools panel > View Cube**



2. UCS can be toggled at any point in time using the drop-down below the **View Cube**.



3. Match view rotation to the active UCS using the **UCS** command.

 **Warning: Known Bug:** If you are using a named view (not WCS) it will change to "Unnamed" when you go between paper space and model space. You can either ignore this or set the view back to your named view. The unnamed view is a copy of your named view, so it's OK to leave it.

## **Structures insert sheets**

Last updated: 2024-05-01

Total video time: 13:29

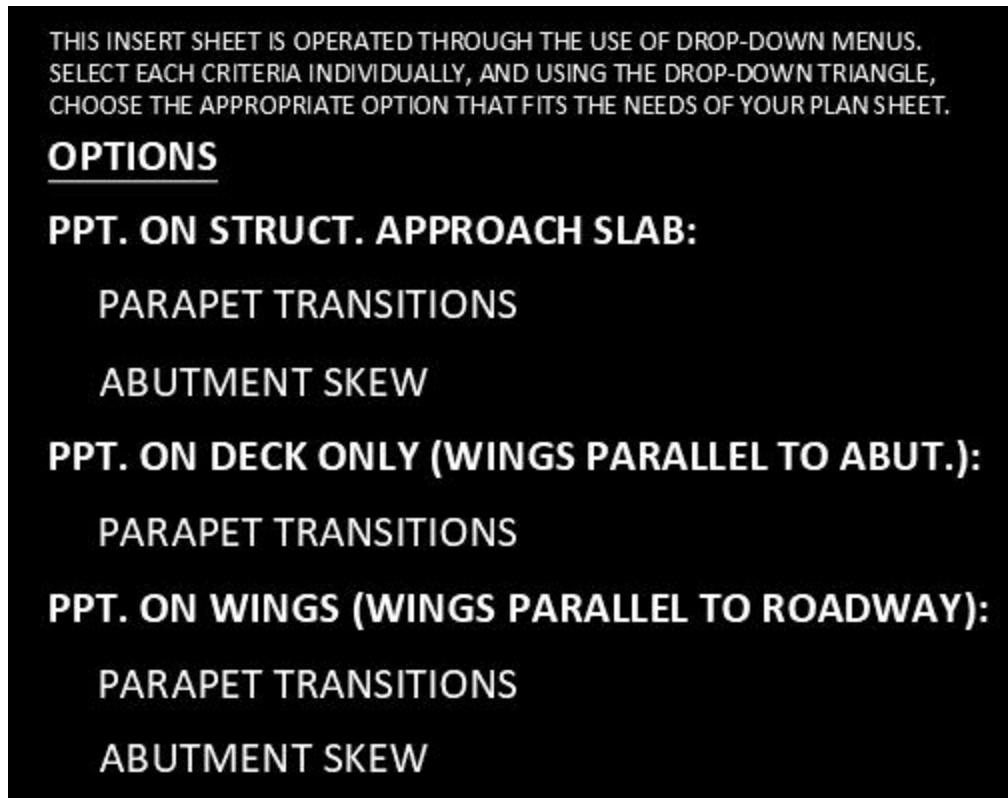
## *Download and modify insert sheets*

Structures insert sheets can be downloaded from the [Bridge Manual Insert Sheets](#) page.

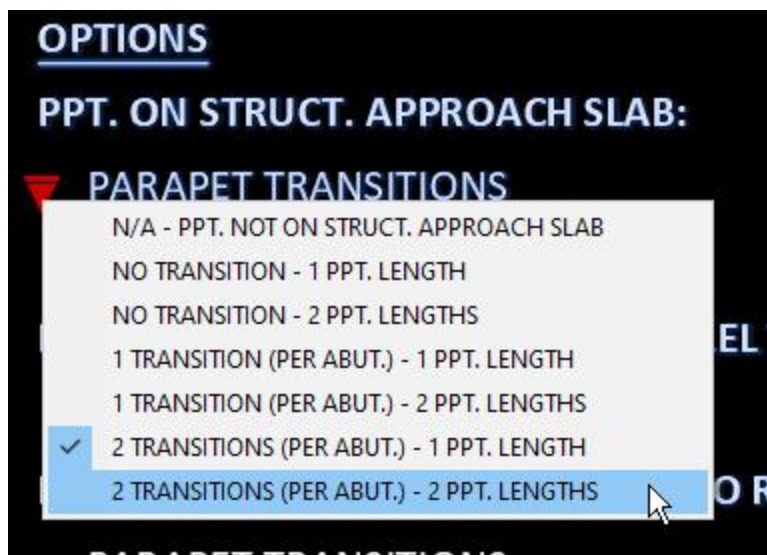
[pln-prod-struct-ins-01.mp4](#) 5:07

Each insert sheet consists of several dynamic blocks. These blocks have visibility states that can be selected to modify the insert sheet. They also may have attributes which can be modified with structure-specific information.

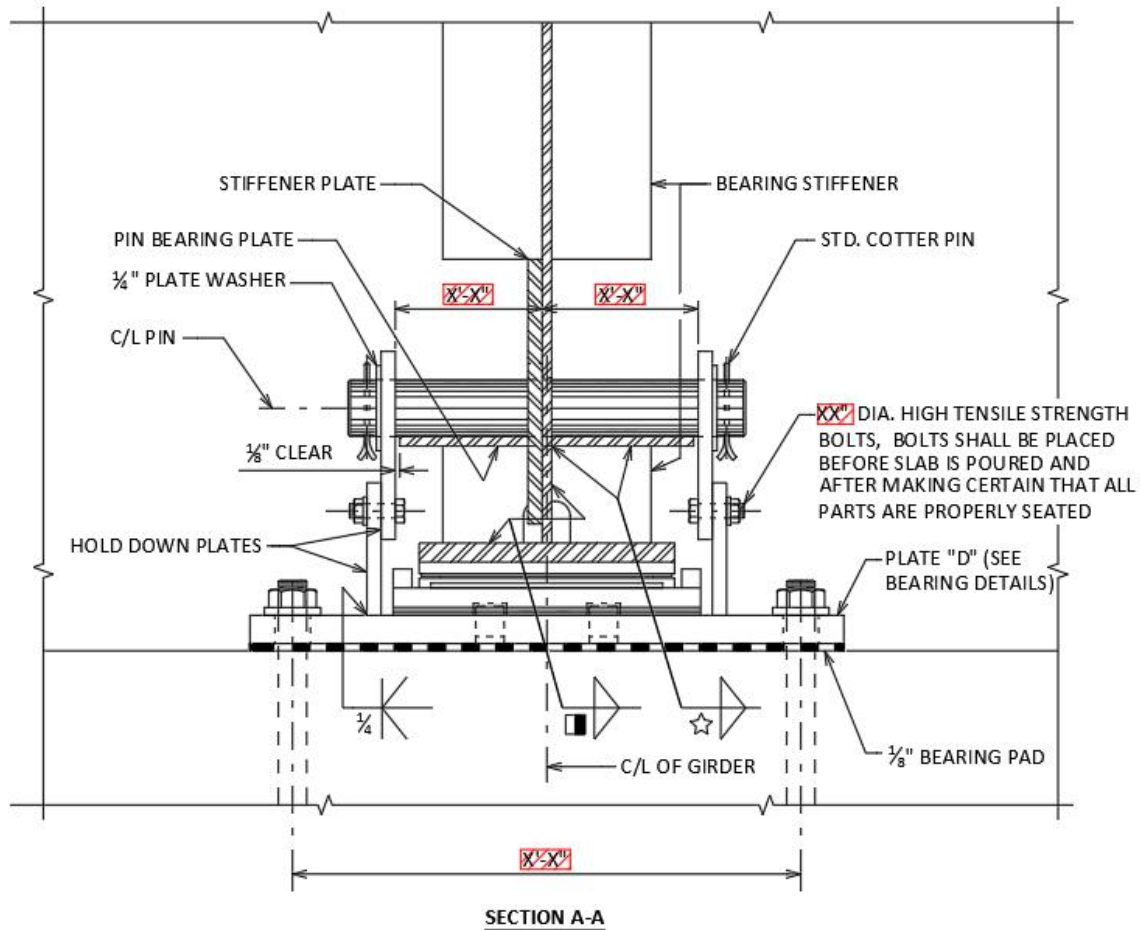
1. In **Model Space** each insert sheet has a list of sheet options to the right of the sheet.



2. Click on each option to access the visibility state dropdown menu. Click on the dropdown menu and then select the option that matches your structure details.



3. Once each option is selected, open **Paper Space** - the only sheet layout in the drawing will be named **INSERT SHEET**
4. Any attributes that need to be edited will show up red. Double-click the attribute from inside the view-port to edit them.




5. The Enhanced Attribute Editor will open allowing you to edit the attributes highlighted in red.



**Enhanced Attribute Editor**

Block: INS\_BRHOLDWN\_BASE  
Tag: DIM2

Select block 

Attribute | Text Options | Properties

Tag	Prompt	Value
DIM2	DIM SECTION A-A	X'-X"
DIM4	DIM SECTION A-A	X'-X"
DIA1	BOLT DIA. SECTION A-A	XX"
DIA2	BOLT DIA. PIN PLATE	XX"
R1	RAD. PLATE WASHER	X"
R2	RAD. PLATE WASHER	X"
SH#	SHEET NUMBER IN NOTES	XX"
DIM6	DIM STIFFENER PLATE	X'-X"
DIM7	DIM STIFFENER PLATE	X'-X"
DIM8	DIM STIFFENER PLATE	X'-X"
DIM9	DIM STIFFENER PLATE	X'-X"
TK1	THICK STIFFENER PLATE	XX"
DIM10	DIM ANCHOR BOLT DETAIL	X'-X"
BS1	BAR SIZE ANCHOR BOLT DETAIL	XX"
BS2	BAR SIZE ANCHOR BOLT DETAIL	XX"
DIM11	DIM GIRDER DETAIL	X'-X"
DIM12	DIM GIRDER DETAIL	X'-X"
DIM13	DIM GIRDER DETAIL	X'-X"

Value: X'-X"

Apply OK Cancel Help

- Tables with missing information are typically not stored as attributes. Double click the table to edit it. Some tables, like the the girder camber and deflection tables, are not dynamic tables and will need to be edited by adding text over the table linework.



# BILL OF BARS

## FOR DECK PARAPETS

BAR MARK	COAT	XX. ABUT.	XX. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X			4'-5"	X		PARAPET VERT.
R502	X			5'-8"	X		PARAPET VERT.
R503	X	24	24	2'-9"	X		PARAPET VERT.
R504	X	24	24	4'-4"	X		PARAPET VERT.
R505	X	12	12	5'-5"	X		PARAPET VERT.
R506	X	12	12	5'-6"	X		PARAPET VERT.
R507	X	2	2		X		PARAPET HORIZ.
R508	X	10	10				PARAPET HORIZ.
R509	X	10	10	4'-9"	X		PARAPET VERT.
R510	X	4	4		X		PARAPET HORIZ.
R5XX	X	10	10				PARAPET HORIZ.

7. Once all attributes have been edited, turn off the red designer notes by turning off (or freezing) the **B\_ANNO\_DESIGN\_NOTES** layer.



### Warning:

- The sheet layout included in our insert sheets use the **SHT2** sheet border for the Bureau of Structures. Consultants should replace the sheet border block with **SHT2C** to remove the Bureau of Structures logo and replace it with their own logo.
- The sheet layout included in our insert sheets are not set up to connect to the structures sheet set template. Replace the sheet border as explained on the Structures Sheet Sets page.

## Import insert sheet to existing drawing

It is also possible to import an insert sheet into an existing drawing instead of having separate files for each insert sheet. The following video demonstrates how to do this.

Import insert sheet to existing drawing

[pln-prod-struct-ins-02.mp4](#) 8:21