

# ***CIVIL 3D DESIGN SURVEY DELIVERABLES***

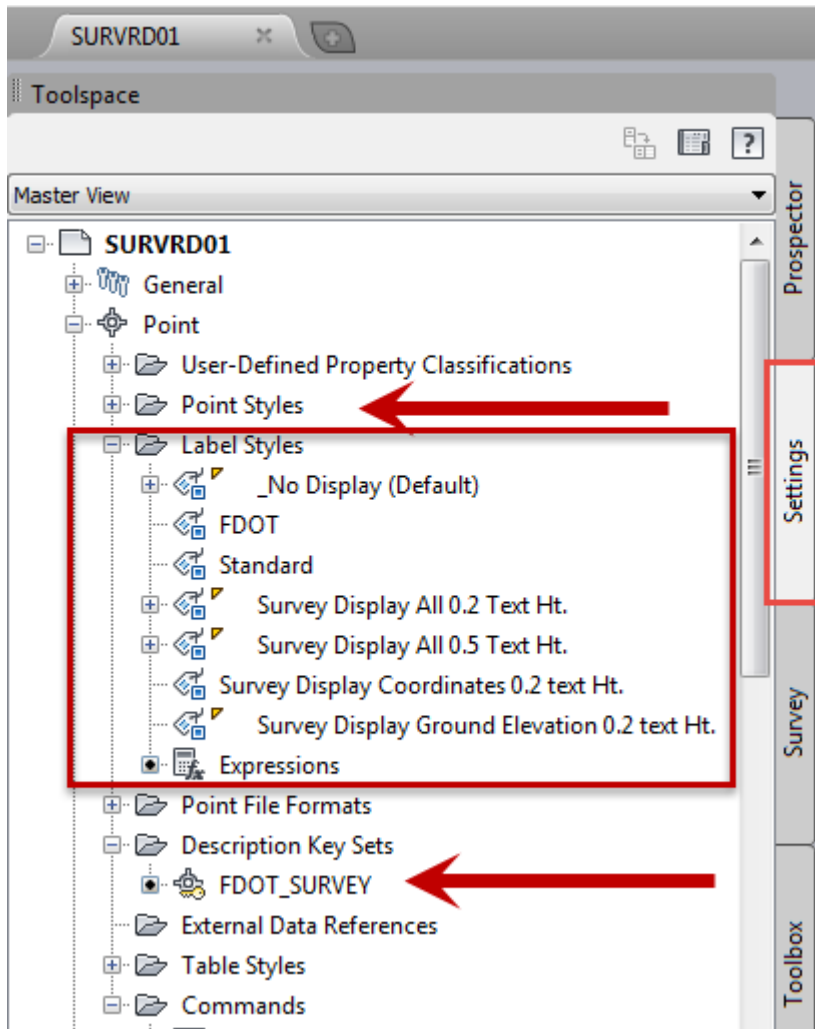
***CIVIL 3D Styles***

***Visualization***

# *CIVIL 3D STYLES*

- ◆ Styles are an integral part of Civil 3D and can even replace the need for layers
- ◆ FDOT uses a number of styles throughout the design process
- ◆ Surveying and Mapping uses styles for visualization of point objects, surfaces, alignments and labels
- ◆ Styles are embedded in the template and therefore are drawing specific, but can be moved from drawing to drawing.
- ◆ Styles can be edited, usually in Toolspace>Settings tab

# CIVIL 3D LABEL STYLES



- ◆ Point Label Styles that begin with the word “survey” will not change size with the drawing scale
- ◆ All other label styles will change size based on the drawing scale

# *CIVIL 3D POINT & LABEL STYLES*

- ◆ Civil 3D uses point objects. Like surfaces and alignments, point objects have built in intelligence.
- ◆ When point objects are inserted into a drawing from the survey database, they are visualized based on the associated point and label style.
- ◆ Point and label styles are associated with point objects based on the “CreatePoints” Command (see point settings) and the Description Key Set.
  - ✓ NOTE: Description key point and label style settings take precedent over the Point Group display settings in the Toolspace>Prospector tab.

# ***CIVIL 3D POINT & LABEL STYLES***

- ◆ In previous releases of the FDOT Civil 3D state kit, all points were set to visualize all labels.
- ◆ In FDOT2014.C3D MR1 the survey point label styles have been revised to stack and to visualize only specific labels.
  - ✓ Default Points and Ground Shots (GND) will only show the point position and elevation
  - ✓ Most Point features will only show the point feature and comment/description field
  - ✓ Chain points that use chain features (ie. Leica Smart Works) are set to elevation only or No\_Display

# CIVIL 3D POINT & LABEL STYLES

Code	Style	Point Label Style	Format	Layer
AC	<input checked="" type="checkbox"/> _Marker	<input checked="" type="checkbox"/> Elevation - 0.2	S+	<input checked="" type="checkbox"/> PointLocator_ep
AGV	<input checked="" type="checkbox"/> _No Display (Default)	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
ANT	<input checked="" type="checkbox"/> ANT	<input checked="" type="checkbox"/> Description - 0.5	S+	<input checked="" type="checkbox"/> Tower_ep
AP	<input checked="" type="checkbox"/> _Marker	<input checked="" type="checkbox"/> Elevation - 0.2	S+	<input checked="" type="checkbox"/> PointLocator_ep
APRS	<input checked="" type="checkbox"/> _Marker	<input checked="" type="checkbox"/> Elevation - 0.2	S+	<input checked="" type="checkbox"/> PointLocator_ep
ARST	<input checked="" type="checkbox"/> _Marker	<input checked="" type="checkbox"/> Elevation - 0.2	S+	<input checked="" type="checkbox"/> PointLocator_ep
AT	<input checked="" type="checkbox"/> AT	<input checked="" type="checkbox"/> Description - 0.5	S+	<input checked="" type="checkbox"/> Monument_ep
ATTN	<input checked="" type="checkbox"/> _No Display (Default)	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BARW	<input checked="" type="checkbox"/> _No Display (Default)	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BAS	<input checked="" type="checkbox"/> _Marker	<input checked="" type="checkbox"/> Elevation - 0.2	S+	<input checked="" type="checkbox"/> PointLocator_ep
BCATV	<input checked="" type="checkbox"/> _No Display (Default)	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BCATVB	<input checked="" type="checkbox"/> QL B	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BCATVC	<input checked="" type="checkbox"/> QL C	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BCATVD	<input checked="" type="checkbox"/> QL D	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BGV	<input checked="" type="checkbox"/> _No Display (Default)	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> PointLocator_ep
BL	<input checked="" type="checkbox"/> BL	<input checked="" type="checkbox"/> _No Display (Default)	S+	<input checked="" type="checkbox"/> BLSurveySymbL_ep
BLC	<input checked="" type="checkbox"/> NL	<input checked="" type="checkbox"/> Survey Display All 0.5 Text Ht.	S+	<input checked="" type="checkbox"/> PointLocator_ep
BLDG	<input checked="" type="checkbox"/> _Marker	<input checked="" type="checkbox"/> Elevation - 0.2	S+	<input checked="" type="checkbox"/> PointLocator_ep
BN	<input checked="" type="checkbox"/> BN	<input checked="" type="checkbox"/> Description - 0.5	S+	<input checked="" type="checkbox"/> Beacons_ep
BNCH	<input checked="" type="checkbox"/> BNCH	<input checked="" type="checkbox"/> Description - 0.5	S+	<input checked="" type="checkbox"/> BusStop_ep
BNK	<input checked="" type="checkbox"/> GND	<input checked="" type="checkbox"/> Survey Display Ground Elevation 0.2 text Ht.	S+	<input checked="" type="checkbox"/> PointLocator_ep
BOL	<input checked="" type="checkbox"/> BOL	<input checked="" type="checkbox"/> Description - 0.5	S+	<input checked="" type="checkbox"/> Bollard_ep

# ***CIVIL 3D POINT & LABEL STYLES***

- ◆ Survey point and label styles for design surveys will be found in the DREXRD, TOPORD, TOPORW, UTEXRD and SURVRD templates
- ◆ Point styles control how the points will be visualized.
  - ✓ FDOT existing point features have been set to an idealized size based on and relative to the size of travel lanes. Once placed in a drawing file, they will remain static in size and will not change with the drawing scale.
  - ✓ A few point styles like the BL and CL symbols will change size with the drawing scale for annotation scale purposes.

# CIVIL 3D POINT & LABEL STYLES

- ◆ Label Styles control how the point object labels will be displayed.
  - ✓ FDOT has provided a number of Label Styles for the surveyor to use in developing deliverables.
  - ✓ Label Styles that end in 0.2 will stay static at 0.2 feet in height and are unaffected by the drawing scale.
  - ✓ Label Styles that end in 0.5 will stay static at 0.5 feet in height and are unaffected by the drawing scale.
- ◆ The label style associated with point objects inserted in the drawing can be changed individually in the Properties box or globally in the Prospector under Point Groups.

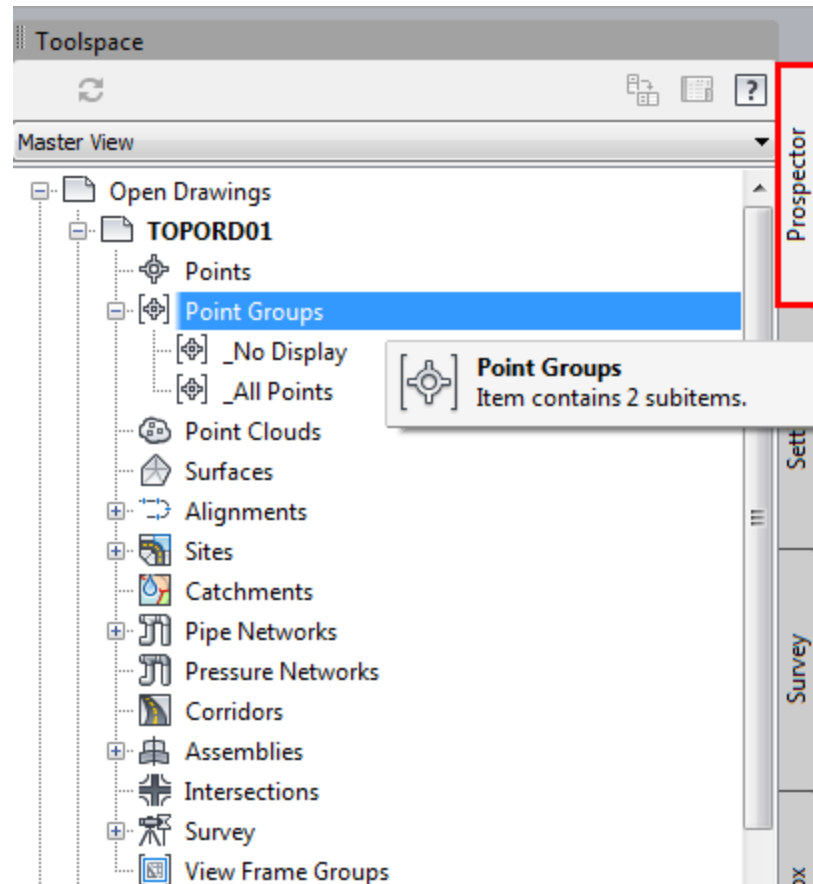


# CIVIL 3D POINT GROUPS

- ◆ Toolspace > Prospector tab > Point Groups
  - ✓ Survey templates have two preset point groups
    - \_No Display – turns off all point and label styles
    - \_All Points – turns on all point and label styles
  - ✓ Civil 3D displays Point Groups based on a hierarchy order of the point groups.
    - The top group has precedent over the lower groups
    - For example if \_No Display is at the top then all groups lower in the list will not display
    - EXCEPTION: Description Key settings take precedent over Point Groups hierarchy unless point and label “Overrides” are selected

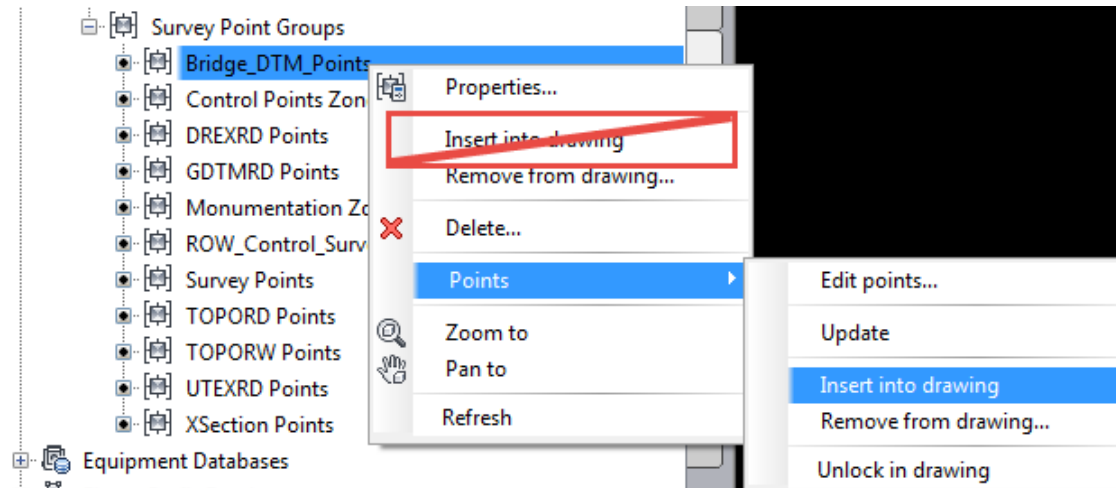
# CIVIL 3D POINT GROUPS

- ◆ When points from the survey database are inserted into a drawing they will show up in the Prospector under Point Groups.



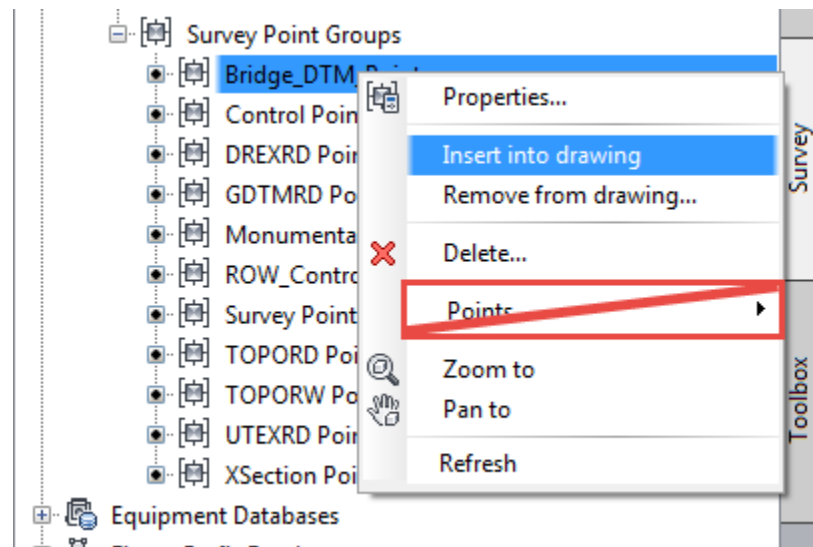
# CIVIL 3D POINT GROUPS

- ◆ To insert points into a drawing from the survey database, right click on “Survey Points” or a “Survey Point Group”.
  - ✓ To insert points into the `_All Points` group
    - Hover over “Points” and select from the options “Insert into drawing”. This will always insert the points into the “`_All Points`” group even if it is done from a survey database point group.



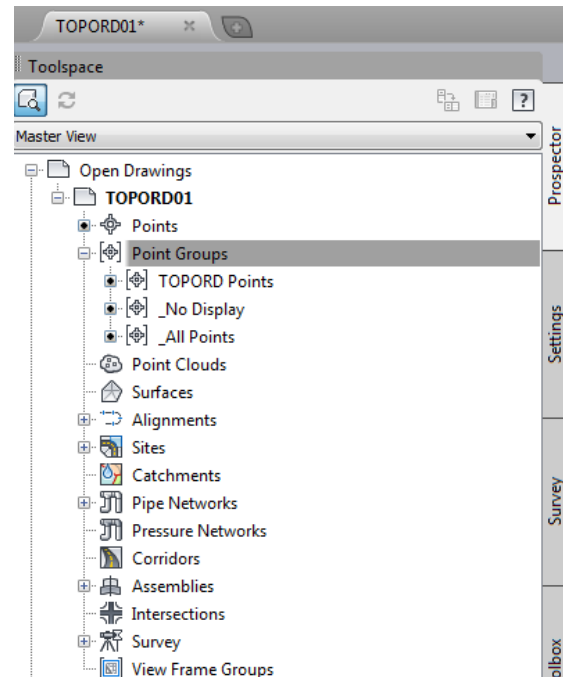
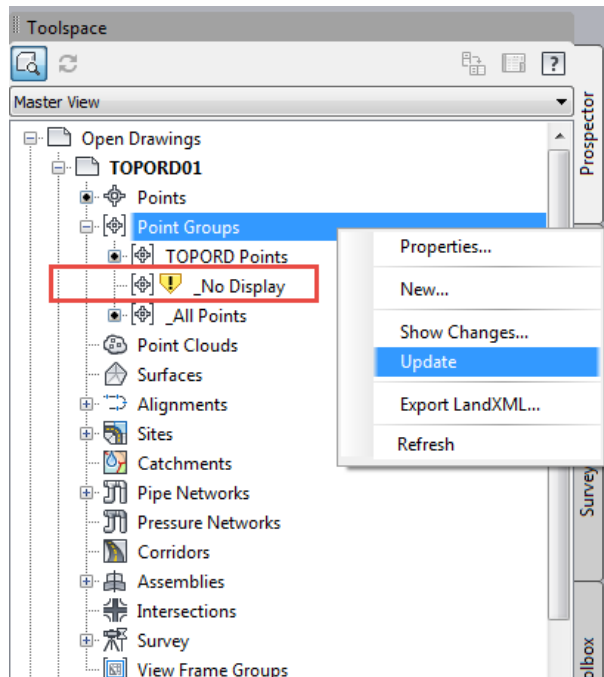
# CIVIL 3D POINT GROUPS

- ◆ To insert points into a drawing from the survey database, right click on “Survey Points” or a “Survey Point Group”.
  - ✓ To insert points into its own point group
    - Do not hover over “Points”. Instead, click on the “Insert into drawing” directly below “Properties...”



# CIVIL 3D POINT GROUPS

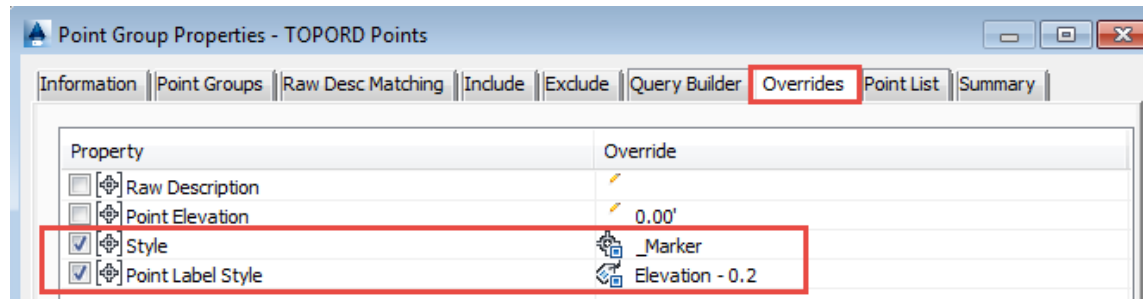
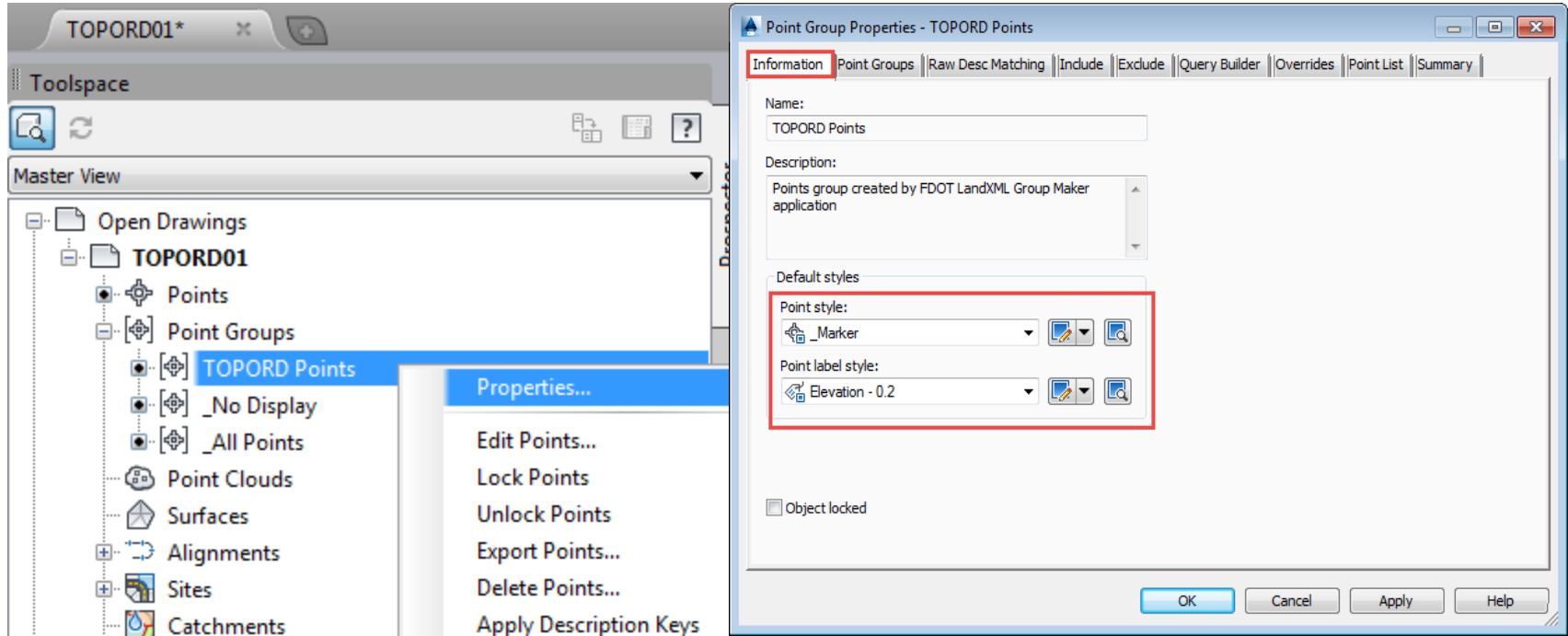
- ◆ Once the points have been inserted into the active drawing, navigate to the Toolspace>Prospector and view the point groups. Right click on point groups and “Update”. This will update any affected groups that did not update with the insertion like the “\_No Display” group below.



# CIVIL 3D POINT GROUPS

- ◆ To reverse the insertion process, instead of choosing insert into drawing, choose “Remove from drawing...”
- ◆ After removing points and/or point groups from the drawing, update the point groups in Toolspace>Prospector.
- ◆ Changing the display of points in a point group can be done by right clicking the point group in the Prospector and selecting “Properties”.
  - ✓ Select the “Information” tab and change to the desired Point style and/or Point label style. Note: If the style is defined in the description keys for a point object then overrides must be selected in the “Overrides” tab.

# CIVIL 3D POINT GROUPS

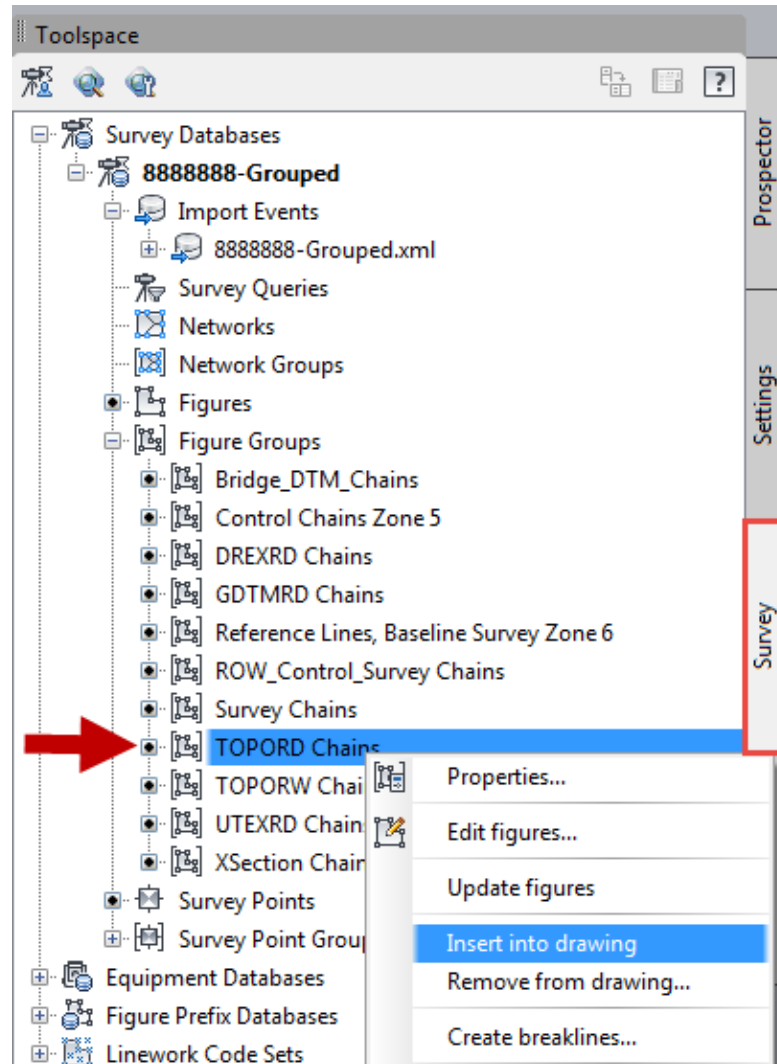


# CIVIL 3D FIGURE GROUPS

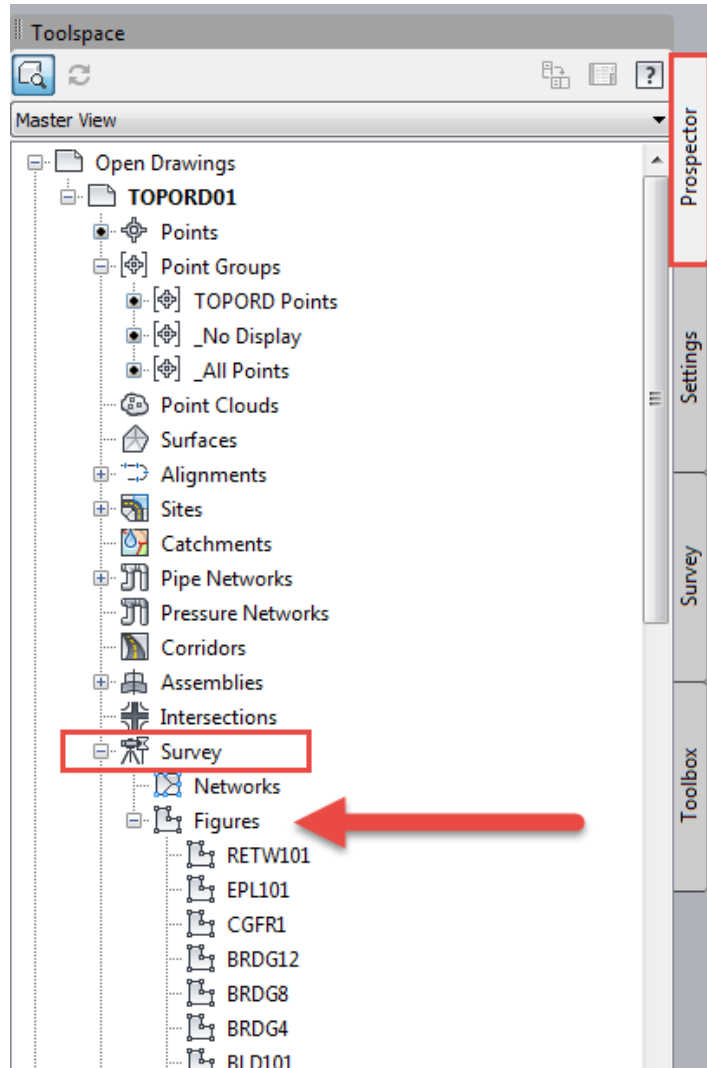
- ◆ Civil 3D Figure Groups work similarly to the Point Groups in that they can be inserted into the drawing from the survey database in the Toolspace>Survey tab. Once inserted into the drawing, figures are listed in the Prospector under Survey>Figures, however, they are not segregated into groups like points.
- ◆ Note that it is critical that the appropriate template be used for the figures inserted into a drawing. For instance drainage figures inserted into a TOPORD template will not visualize properly because there are no drainage layers in the TOPORD template. Drainage layers are found in the DREXRD template. Only the SURVRD template has all survey layers for a single file delivery.



# CIVIL 3D FIGURE GROUPS



# CIVIL 3D FIGURE GROUPS



# ***FDOT CIVIL 3D DELIVERABLES***

- ◆ FDOT deliverables can be created from the Point and Figure groups created with the LandXML Grouper
- ◆ Use the Create File utility to create and open the appropriate file.
  - ✓ TOPORD
  - ✓ UTEXRD
  - ✓ DREXRD
  - ✓ GDTMRD
  - ✓ ALGNRD (Found under Roadway Design Files)
  - ✓ CTLSRD

# ***FDOT CIVIL 3D DELIVERABLES***

- ◆ To create a TOPORD, UTEXRD, or DREXRD deliverable
  - ✓ Insert the appropriate Point Group
  - ✓ Insert the appropriate Figure Group
  - ✓ Edit Figures if necessary
  - ✓ Label as needed (includes turning on/off point labels)
- ◆ To create a GDTMRD or ALGNRD deliverable
  - ✓ Insert the LandXML file(s) created in the SURVRD file using the “Insert” tab on the Civil 3D Ribbon.
- ◆ To create the CTLSRD deliverable, see Part 4 in the Design Survey series

# ***CIVIL 3D DESIGN SURVEY DELIVERABLES***

***Direct Questions to:***

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