Placing/Using MicroSation V8i Standards in CONNECT FIles

Listed below are the locations of the Iowa DOT Bridge Bureau V8i CADD Standards in ProjectWise (PW).

PWMain\Documents\Highway\Bridge\V8i Standards\Bridges\

PWMain\Documents\Highway\Bridge\V8i Standards\Culverts\LRFD\

PWMain\Documents\Highway\Bridge\V8i Standards\Pedestrian Tunnels\

PWMain\Documents\Highway\Bridge\V8i Standards\SignTrusses\

Connect Version Bridge Cell Libraries

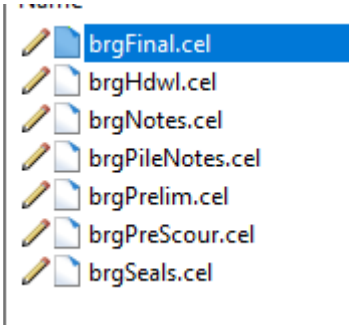
PWMain\Documents\IowaDOTStandardsConnect\Configuration\Organization-Civil\IowaDOT_Standards\Cell\BridgeGeneralUseCells.cel

PWMain\Documents\IowaDOTStandardsConnect\Configuration\Organization-Civil\IowaDOT_Standards\Cell\BridgeDesManualCaddNotes.cel

V8i Version Bridge Cell Libraries

If necessary, some of the V8i cells may be used and modified as needed if a CONNECT version is not available. It may be necessary to update the cell to use the current levels if the cell is used on a CONNECT format sheet. If the cell is used on a V8i format sheet, then it may be used as-is.

PWMain\Documents\IowaDOTStandards\BridgeDesign\Cells\brgFinal.cel



When working in a MicroStation CONNECT Edition file, there will be a need to use existing Iowa DOT Bridge Bureau standards that were developed in MicroStation V8i. **This document is meant to provide general guidance on the use of the V8i standards in CONNECT plan sheet models. Some of these new levels/colors/line weights will change as these are still being developed and refined while the CONNECT workflow is being established. There may be a need for Professional Detailer judgement to determine an adequate color and line weight to use on some details for current projects, until the official Iowa DOT Bridge Bureau level library is finalized and V8i standards are updated to CONNECT.**

It is suggested to use black and white (B&W) pdf print style, "**BW_pdf_SheetModel",** since this is a transitional phase of setting levels/colors/line weights from V8i to CONNECT and print output may be visually different than what was used in V8i. **The important thing to focus on, is that the details and information to construct what is in the plans is accurate, legible, and understood.**

The previous font used on Bridge Bureau standards in V8i was Font83 and all text was upper case. The new font used on CONNECT files and updated standards will be Engineering Vert, a TrueType font, using sentence case text. **When using existing V8i standards\worksheets in CONNECT, the STANDARD font style or Font83 may be retained, or it may be updated to the Engineering Vert font.** (It is not required to change the existing V8i font when using existing V8i standards\worksheets.)

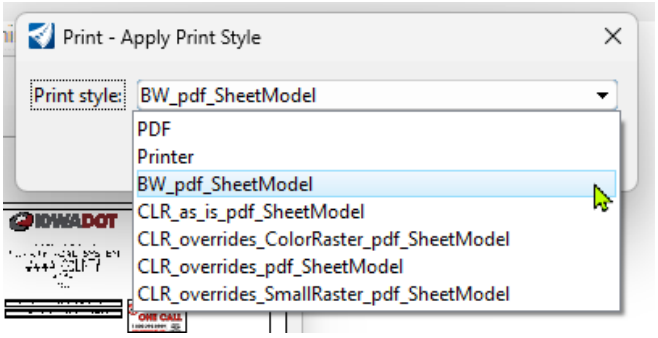
Note: The images used in this document are from a file using Bentley Systems ProStructures CONNECT Edition. The Bridge Bureau Final Design plan sheets may be done in ProStructures. However, if there are no ProStructures generated elements modeled in the file, then the plan sheets may also be developed in OpenRoads Designer (ORD). ProStructures working units are in Feet\Inches. OpenRoads Designer and OpenBridge Designer\Modeler working units are in Survey Feet\Survey Inches.

Do not use the same file that an actual bridge model is in, OpenBridge Modeler (OBM), for plan sheet development.

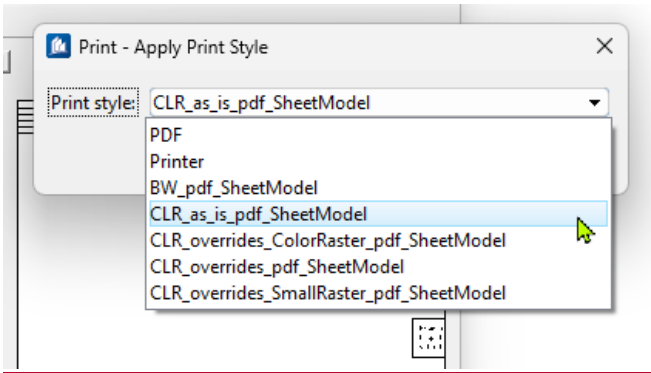
If any MicroStation V8i standards (with unmodified levels) are used in a MicroStation CONNECT file, then it is suggested to print in black and white (B&W), using print style "**BW_pdf_SheetModel"**. Currently it is recommended to not spend time editing V8i standards to change the levels to CONNECT versions when used in plan sheet development. **The one recommended conversion to make, is to change all V8i text to CONNECT SheetText level and all V8i dimensions to the CONNECT Dimensions level.** If it is requested on a project to update the V8i elements on a worksheet, then see the "Recommended Conversion of V8i to CONNECT Levels" section in this document.

If all of the file is fully CONNECT version, with no V8i standards or elements, then the print output may be done in color with the suggested print style "**CLR_as_is_pdf_SheetModel"** or as another option "**CLR_overrides_ColorRaster_pdf_SheetModel" (this style may cause some of the rebar elements to print black)**.

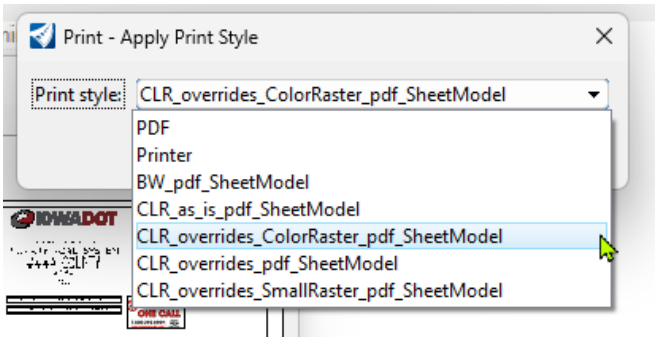
The image below is showing the black & white print style "BW_pdf_SheetModel".



The image below is showing the black & white print style "CLR_as_is_pdf_SheetModel".

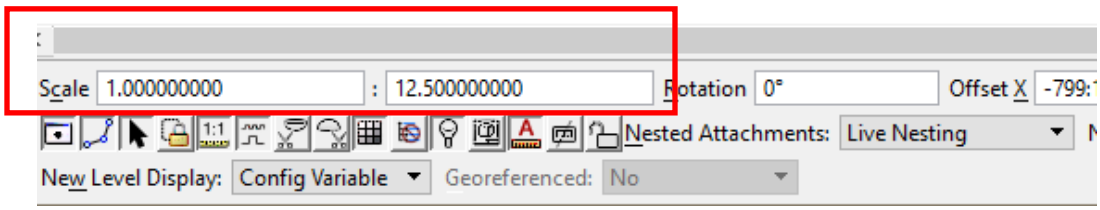


The image below is showing the color print style "CLR_overrides_ColorRaster_pdf_SheetModel" (this style may cause some of the rebar elements to print black).



The V8i standard may be Imported or Referenced and copied or merged into the CONNECT file. Importing the V8i models is preferred because this will allow more ideal editing capabilities by referencing within the same file the imported V8i 2D Design Model in to a CONNECT Sheet Model. This would be similar to the recommended CONNECT workflow of using a Design Model referenced to a Drawing Model that is referenced to a Sheet Model.

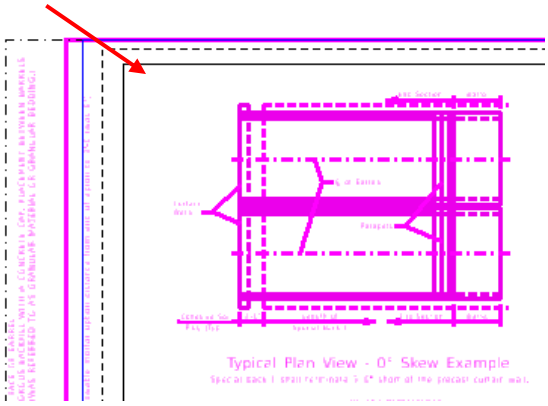
Reference the V8i standard in at a 1:12.5 scale into the CONNECT Sheet Model Border.



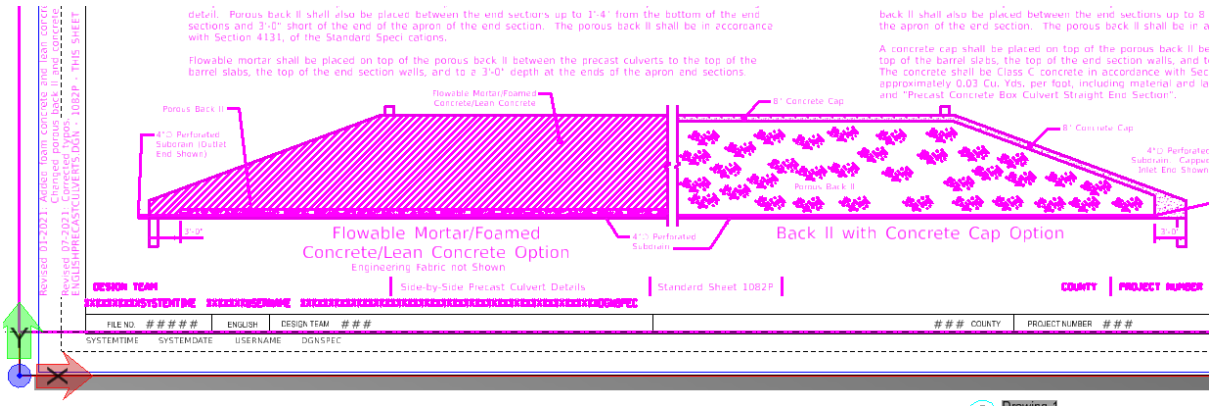
The CONNECT Sheet Model is using an ANSI D size sheet and provides a slightly larger detailing area compared to the V8i standard that is referenced in at a 1:12.5 reference scale and moved into the CONNECT sheet border. The ideal location of the V8i standard into the larger CONNECT sheet area is to

place the upper left corner of the V8i drawing border to the upper left corner of the CONNECT sheet border. This will require relocating of the V8i standard border text to the proper location in the CONNECT sheet border (sheet revision data, sheet title and number).

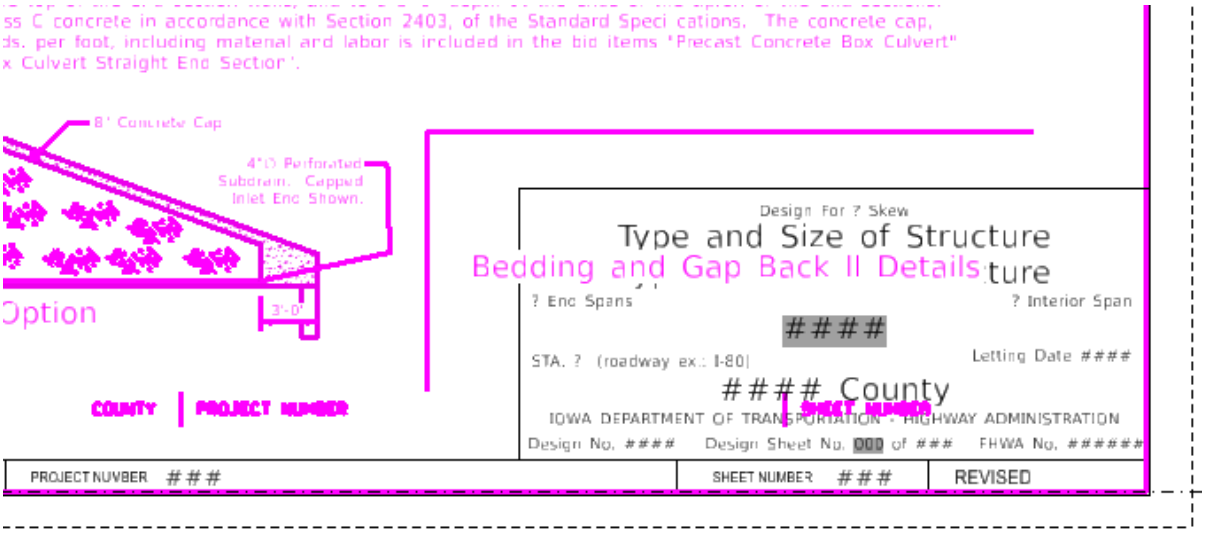
The image below is showing upper left corner of highlighted V8i standard placed into CONNECT sheet border.



The image below is showing highlighted V8i standard in CONNECT sheet model with some of the text that will need to be properly located. If it is a standard worksheet, ensure the information in the lower center of the sheet border is placed in the CONNECT Sheet Model border (Standard Sheet Number and Sheet Description).



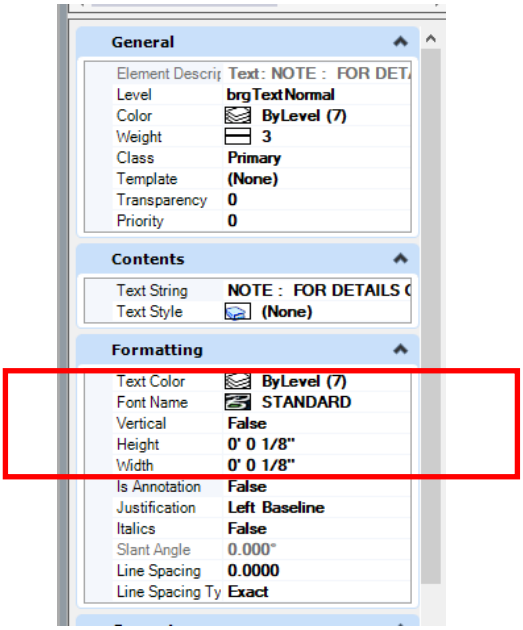
The image below is showing highlighted V8i standard in CONNECT sheet model with some of the text that will need to be properly located.



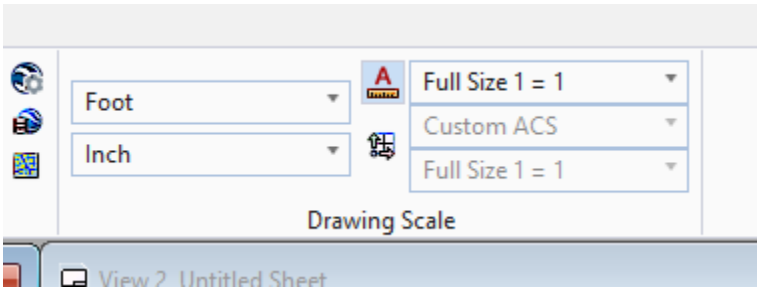
Text Styles

When the V8i version of the standard is placed into a CONNECT file, the Font83 text may come in as STANDARD font style (this is because Font83 is not supported in a CONNECT configured directory). **The STANDARD font style or Font83 may be retained, or it may be updated to the Engineering Vert font.** If keeping the V8i font, then change the V8i text levels from "brgText…" to the CONNECT **SheetText** level and the V8i dimension levels from "brgDim…" to the CONNECT **Dimensions** level (set to Color=0, Weight=1). When the V8i standard is scaled at a 1:12.5 reference scale, the normal text height will be at 1/8" in a Full Size 1=1 scale CONNECT sheet model.

The image below is showing properties of text elements.



The image below is showing drawing scale of Sheet Model.



The previous Font83 symbols that were created using fractions and certain keyboard symbols will no longer be valid. The Font83 symbols will display as the original characters that were used to create the symbols (example: **±** will display as **}** and **ø** will display as **59/64**).

The Font83 text elements shown in the image below will have to be changed to the proper symbols supplied in MicroStation Text Editor.

FONT 83 **APPENDIX E**

														SPACE
! !	" "	# #	$ $	% %	& &	' '	((	))	* *	+ +	, ,	- -	. .	/ /	Ø 0
1 1	2 2	3 3	4 4	5 5	6 6	7 7	8 8	9 9	: :	; ;	< <	= =	> >	? ?	@ @
A A	B B	C C	D D	E E	F F	G G	H H	I I	J J	K K	L L	M M	N N	O O	P P
Q Q	R R	S S	T T	U U	V V	W W	X X	Y Y	Z Z	[[	\ \	]]	° °	- -	` HALF SPACE
a a	b b	c c	d d	e e	f f	g g	h h	ı i	j j	k k	l l	m m	n n	o o	p p
q q	r r	s s	t †	u u	v v	w w	x x	y y	z z	{ P	: ¢	} ±	~ Δ	UNDEF	UNDEF
1/2 1/2	1/4 1/4	3/4 3/4	1/8 1/8	3/8 3/8	5/8 5/8	7/8 7/8	1/16 1/16	3/16 3/16	5/16 5/16	7/16 7/16	9/16 9/16	11/16 11/16	13/16 13/16	15/16 15/16	1/32 1/32
3/32 3/32	5/32 5/32	7/32 7/32	9/32 9/32	11/32 11/32	13/32 13/32	15/32 15/32	17/32 17/32	19/32 19/32	21/32 21/32	23/32 23/32	25/32 25/32	27/32 27/32	29/32 29/32	31/32 31/32	1/64 µ
3/64 °	5/64 2	7/64 3	9/64 4	11/64 6	13/64 -2	15/64 -3	17/64 -4	19/64 -6	21/64 21/64	23/64 23/64	25/64 25/64	27/64 27/64	29/64 29/64	31/64 31/64	33/64 °
35/64 ±	37/64 2	39/64 3	41/64 41/64	43/64 µ	45/64 45/64	47/64 °	49/64 ¢	51/64 P	53/64 I	55/64 II	57/64 III	59/64 ø	61/64 IV	63/64 §	KEY RESULT

When editing the V8i standard in CONNECT, the text may be left as STANDARD, Font83, or updated to the Engineering Vert. If converting text and dimensions to the Engineering Vert font, then use the proper template for plan annotation.

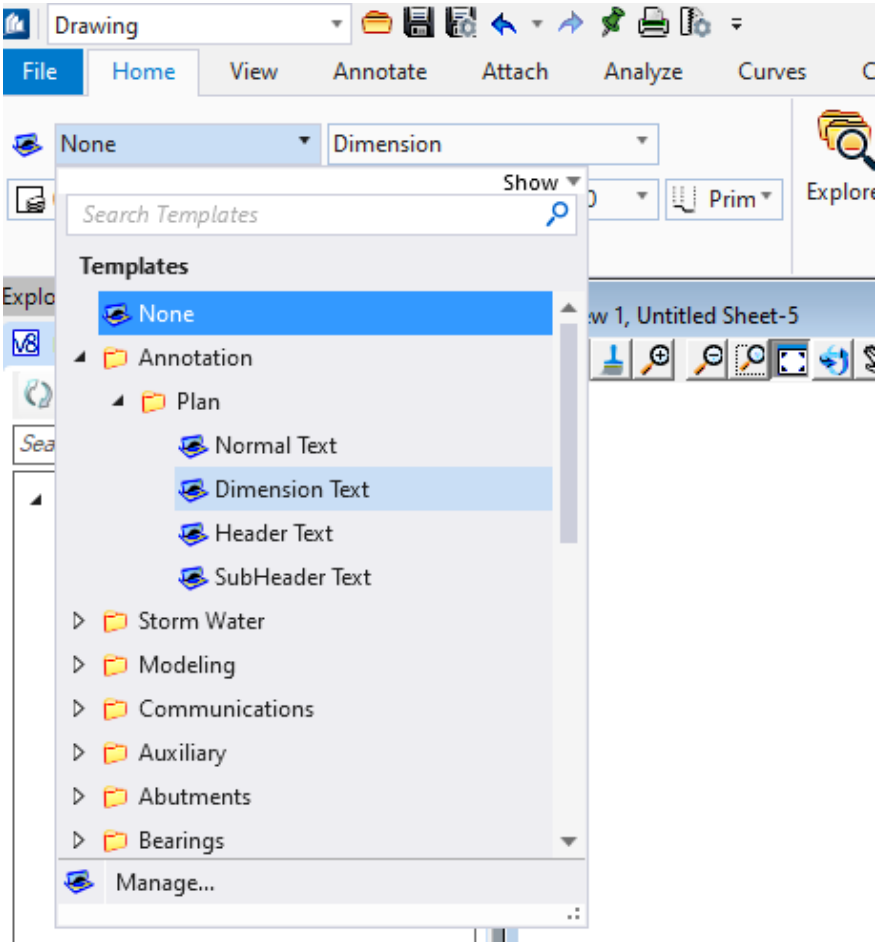
Normal Text: Use for any notes except dimension leader notes.

Dimension Text: Use for all dimensions, leader notes and dimensional/numerical values and text used in tables or fields. For an example, see the tables used on the Iowa DOT Culvert Barrel Details standard sheets.

Header Text: Use for all headers and title blocks.

SubHeader Text: Use when Header and Normal text do not seem appropriate. Such as the word "Notes" used when labeling or title of a group of notes or instructions.

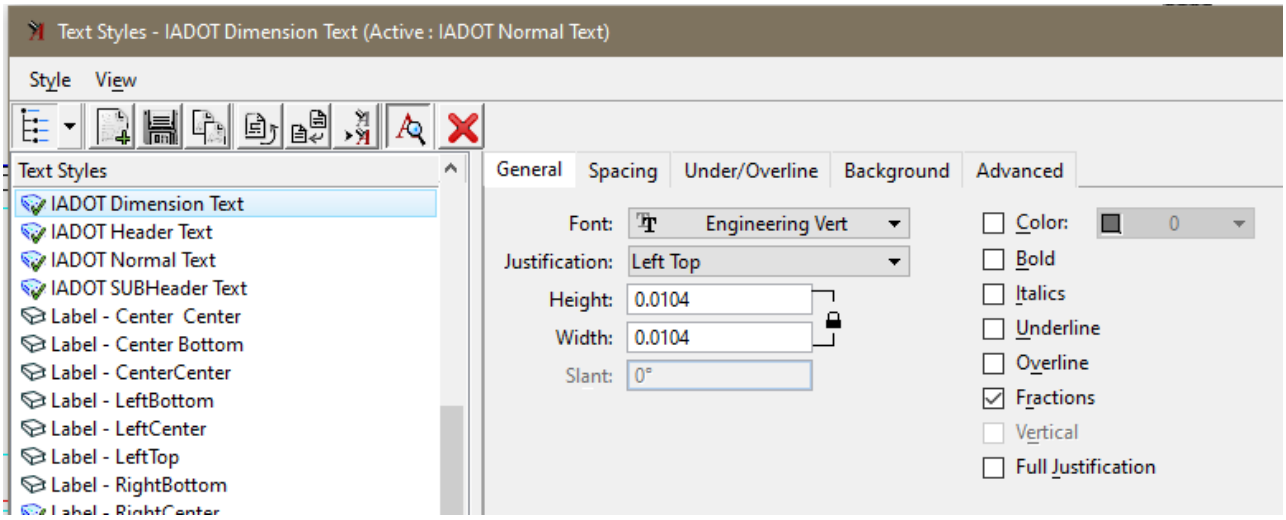
The image below is showing the list of text Annotation Templates.



Text Style Sizes

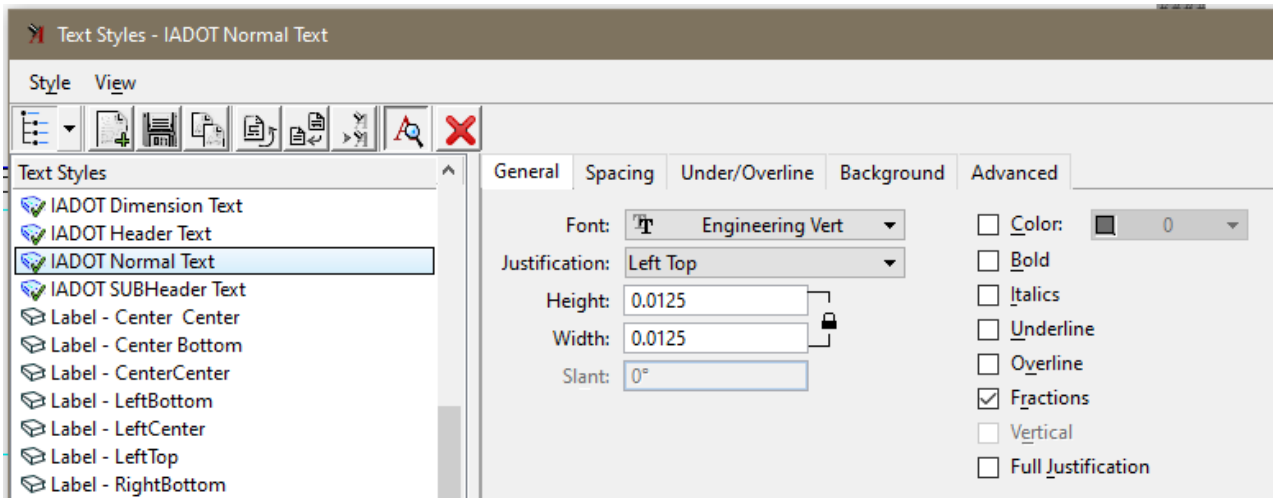
Settings for text styles are shown in the images below.

Dimension Text: 1/8” (0.125/12=0.0104166)

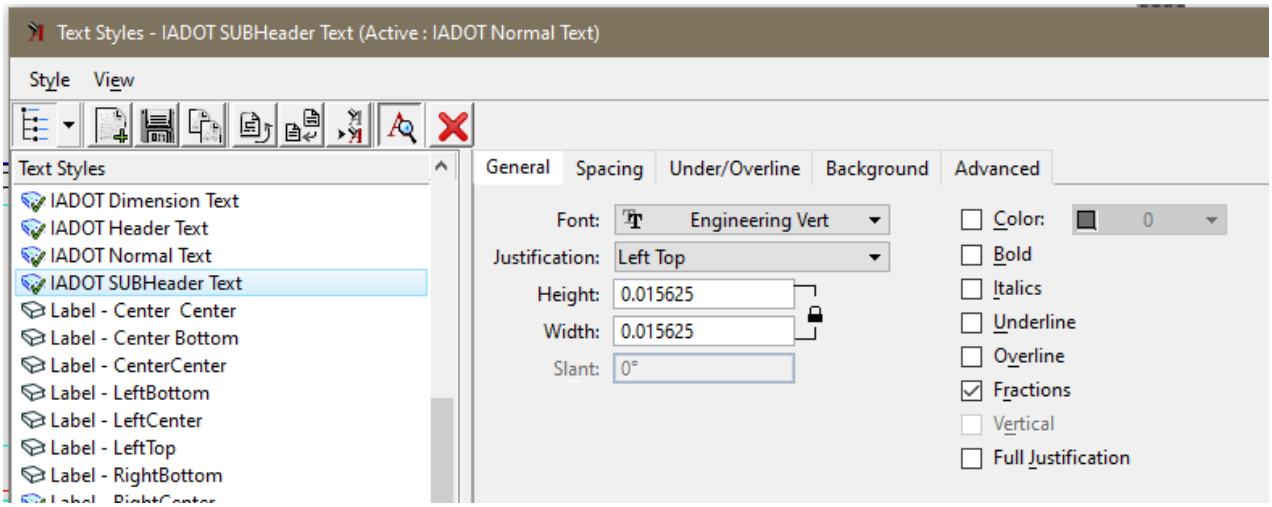


Normal Text: Approx. 5/32” (0.15/12=0.0125)

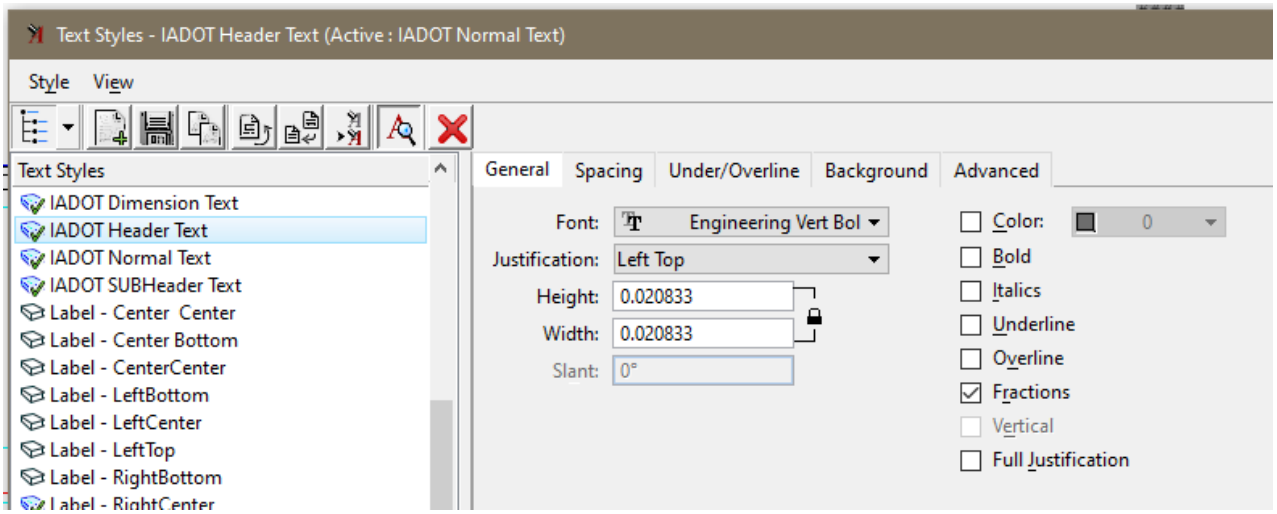
Slightly larger than Dimension Text for increased legibility on notes.



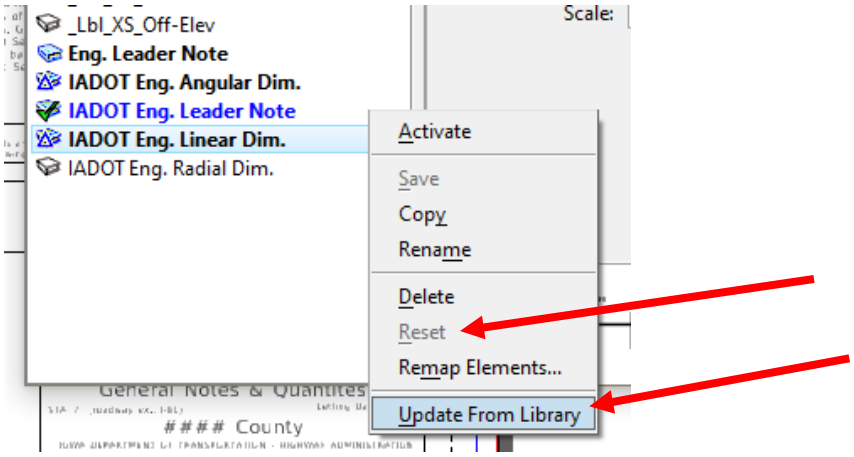
Subheader Text: 3/16" (0.1875/12=0.015625)



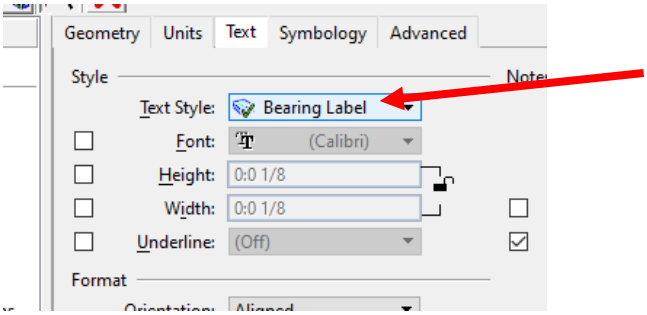
Header Text; ¼" (.25/12=.020833)

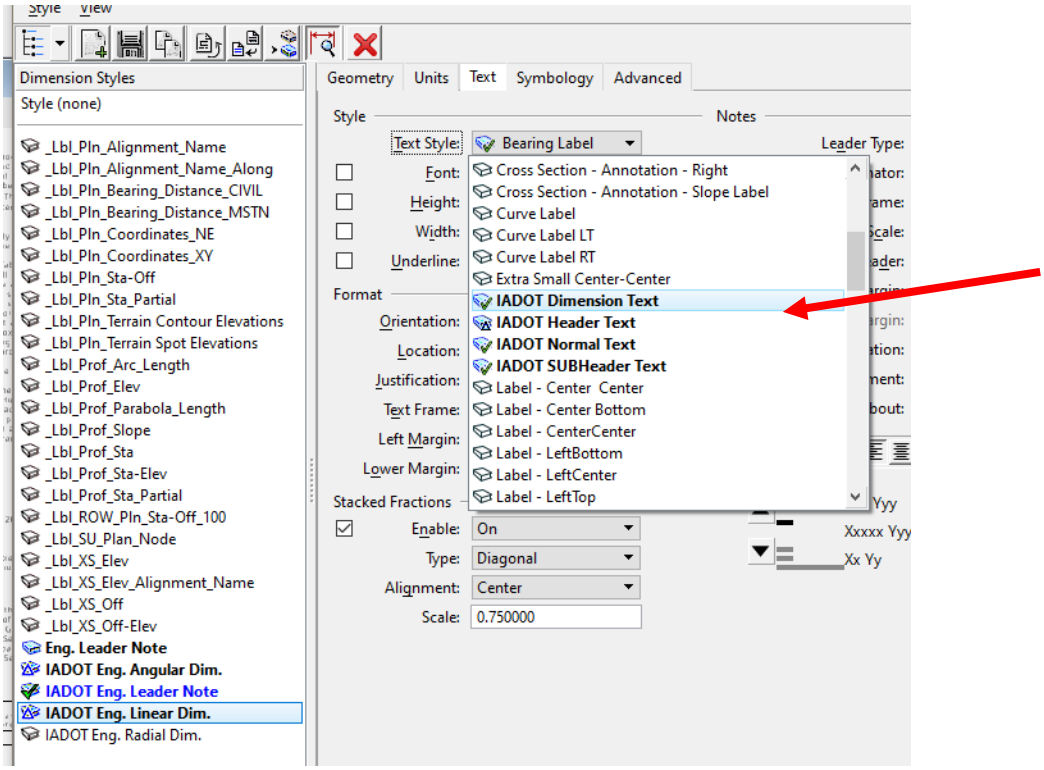


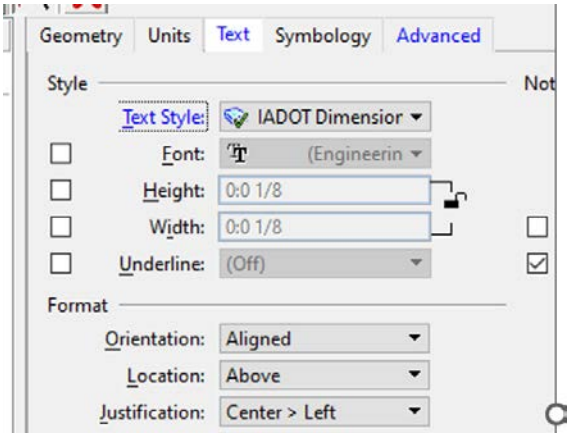
If the IADOT Dimension Styles are not using the proper **Text Style** with the proper **Font**, then the dimension style may need "Reset" or "Update From Library".



If this does not work, then select the proper IADOT Text Style in the dimension settings.







Placing the Title Block Text Field Cell

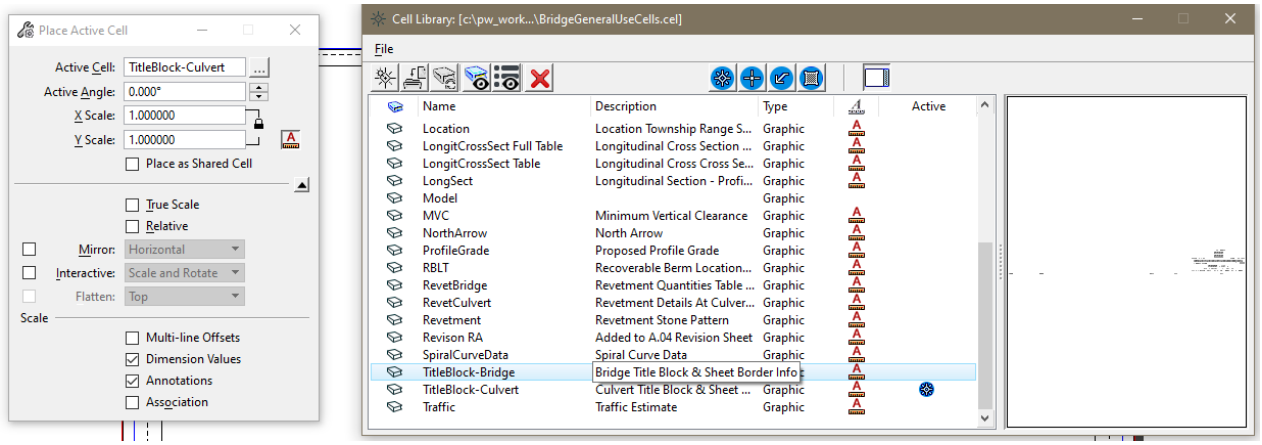
The new CONNECT "Bridge Plan Production Seed" file includes the proper Bridge and Culvert Sheet Models with the Title Block included using text fields to auto populate text when the sheet model is added to the Sheet Index. The below guidance is to show how to attach the cell in a manual process if desired.

When placing the Title Block Cell for plan sheets ensure "Place as Shared Cell" is **UNCHECKED**. This will allow editing of the individual title block text lines for each sheet. If "Place as Shared Cell" is activated, then all instances of that cell will show the same changes.

> Shared Cell definition: A cell whose elements are stored only once in the DGN file, regardless of how often the cell is placed. Any change made to one instance of a shared cell reflects in all instances of that shared cell.

Title Block cells for Bridge and Culvert sheets are in the **BridgeGeneralUseCells.cel** file on ProjectWise. PWMain\Documents\IowaDOTStandardsConnect\Configuration\Organization-Civil\IowaDOT_Standards\Cell\BridgeGeneralUseCells.cel

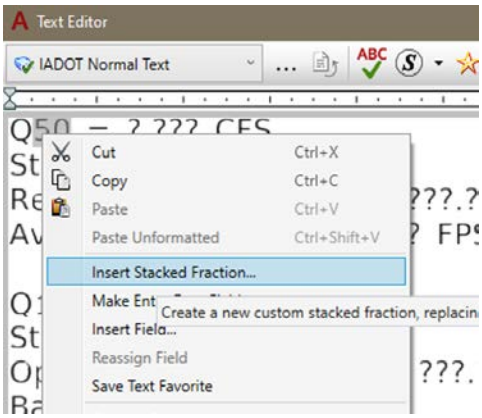
The image below is showing the cell library with the Title Block cells.

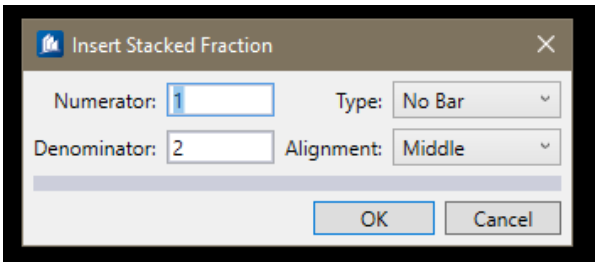


Create Text Subscript/Superscript

The use of the Subscript and Superscript in the Text Editor tools provide text that is too small to adequately read if a pdf is printed on paper. To create an adequate size subscript/superscript, the use of "Insert Stacked Fraction" in the Text Editor provides a good option.

In the Text Editor, right click to get the menu to pop up and select **Insert Stacked Fraction…**





In the Numerator window hit the "space bar" to create an empty space (this is just a place holder, blank numerator).

In the Denominator window enter the required text/number for the subscript entry.

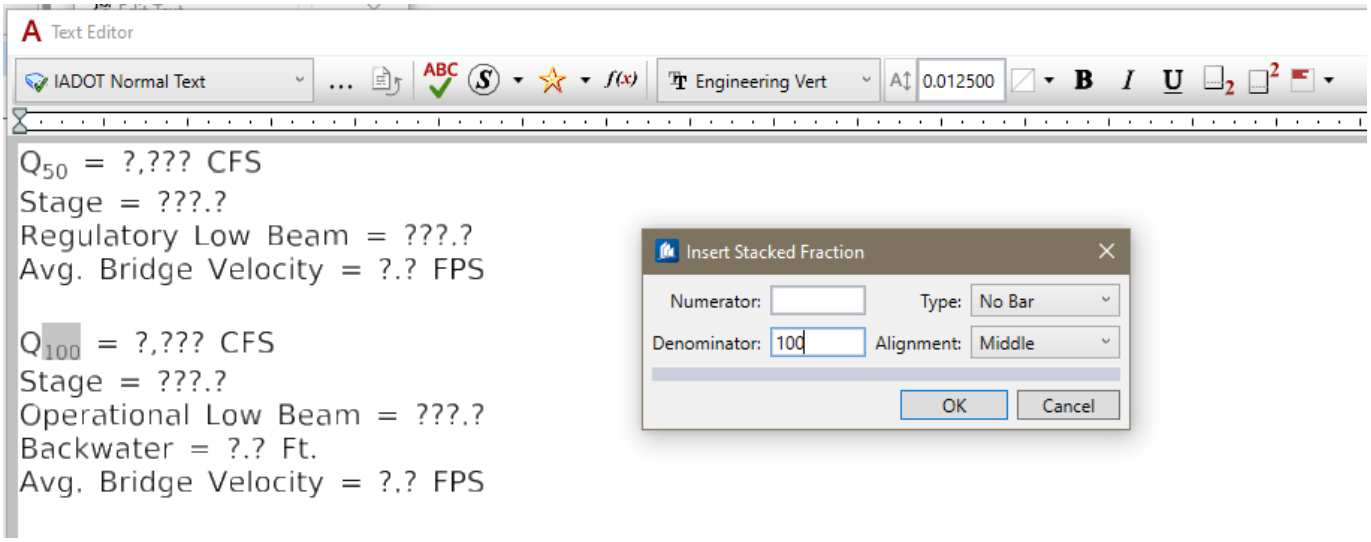
In the Type window select No Bar.

In the Alignment window select Middle.

Select OK to complete the subscript creation.

For Superscript the entries of information in Numerator and Denominator are reversed.

The image shows the example of a flow rate value label for 100 years.



Levels

This guidance is for 2D detailing. When using a 3D model to develop 2D details, some of the levels used in the 3D model will be set from the model features and may differ from what is listed below. Examples of these levels would be the OBD and OBM prefixed levels.

The **PC_** & **PS_** levels were put in place with the intent of being used with ProStructures 3D rebar/steel modeling. If only applying 2D details, without the ProStructures rebar/steel tools (not 3D model based), then the recommendation would be to use the rebar type/coating levels **PC_REBAR**, **PC_REBAR_EPOXY** and **PC_REBAR_STAINLESS** similar to what was done in the past with 2D detailing. In addition, the other **PC_** levels may be used in a logical manner (structural element) based from their descriptions in the Level Manager list.

Some levels have prefix letters to signify the application elements they are tied to. These prefix levels may be used for any detailing, as desired.

- PC = ProConcrete
- PS = ProSteel
- OBD and OBM = OpenBridge Designer/Modeler
- OBD_D and OBM_D = OpenBridge Designer/Modeler Decorations (2D elements tied to the 3D OBM model components).
- All levels ending in **GL** are intended to be used in ProStructures as “Guide Lines” when modeling rebar.

Recommended Conversion of V8i to CONNECT Levels:

The one recommended conversion to make, is change all V8i text and dimensions levels to CONNECT SheetText level. This conversion is not mandatory, it is a suggested change that would make V8i text and dimensions black on the white background of the CONNECT Sheet Model and ensure consistent output of a B&W print.

Below are some of the recommended level conversions from V8i to CONNECT. When using V8i standard worksheets in a CONNECT file, it is not required to convert the levels of V8i linear elements to CONNECT levels. The V8i worksheets may be used “as is” in a CONNECT file. The use of B&W print output is recommended for these sheets.

V8i Level	CONNECT Level
brgTextNormal	SheetText
brgTextSubheader	SheetText
brgTextHeader	SheetText
brgDimensionLines	Dimensions (Change Color=0, Weight=1)
brgTableBorder	SheetGridMajor
brgTableLines	SheetGridMinor
brgTextBlockOut	TextBlockOut
brgBorder	SheetBorder

V8i Level	**CONNECT Level**
brgShading	PC_REPAIR_SHADING
brgRevAnnotation	PC_REVISION_ANNOTATION, Revisions
brgAluminum	Aluminum
brgBentoniteSlurry	BentoniteSlurry
brgDirtRock	Dirt
brgConcrete	Concrete *or* PC_CONCRETE (either may be used for all 2D concrete), PC_CONCRETE_MISC, PC_CULVERT_CIP
brgConcreteAbutFoot	PC_ABUT, PC_FTG
brgConcreteAbutWall	PC_ABUT, PC_WALL
brgConcreteAbutWing	PC_ABUT, PC_WALL
brgConcreteDeck	PC_DECK
brgConcretePierCap	PC_PIER_CAP
brgConcretePierCol	PC_PIER_COLUMN
brgConcretePierFoot	PC_FTG, PC_PADFOOTING
brgConcretePrecast	PC_CULVERT_PC
brgConcreteRail	PC_BARRIER
brgConcreteRustication	PC_CONCRETE_MISC, ConcreteRustication
brgDeckBottom	PC_DECK
brgDeckTop	PC_DECK
brgConstructionLines	PS_CONST (Ensure Element Class is set to Construction.)
brgErosionStoneBottom	ErosionControl
brgErosionStoneTop	ErosionControl
brgGranularMaterial	TC_Granular TC_GranularBackFill TL_GranularTop
brgXsFabric	TC_EngineeringFabric
brg3DFabric	TC_EngineeringFabric
brgFlowableMortar	FlowableMortar
brgJointMaterial	Joints
brgNeoprene	Neoprene
brgPVC	PVC
brgRebarBlack	PC_REBAR

V8i Level	CONNECT Level
brgRebarEpoxy	PC_REBAR_EPOXY
brgStainless	PC_REBAR_STAINLESS
brgRemovals	PC_REPAIR_REMOVALS, Removals
brgRevetmentBottom	Revetment
brgRevetmentTop	Revetment
brgXsRevetment	Revetment
brg3DRevetment	Revetment
brgStrandsPrestressed	OBD_Tendon
brgStructuralSteel brgStructuralSteelWeathered	PS_GIRDER, PS_PLATE, Steel
brgTemporaryStructures	BridgeTemporaryStructure
brgTimbers	Timbers
brgUtility	UtilitiesAboveGround, UtilitiesBelowGround
brgWireMesh	WireMesh

See additional CONCRETE and REBAR options shown below.

Name		Description			
Bridge	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		0	0	0
BridgeExistingStructure	**IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib**		**234**	**0**	**1**
BridgeSubstructure	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib		65	0	8
BridgeSubstructureExisting	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		234	0	0
BridgeSubstructureProposed	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		3	0	0
BridgeSuperStructure	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib		3	0	8
BridgeSuperStructureExisting	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		234	0	0
BridgeSuperStructureProposed	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		3	0	0
BridgeTemporaryStructure	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		15	0	3

Name		Description			
Culvert	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		0	0	0
CulvertExisting	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		234	0	0
CulvertProposed	IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib		3	0	0

Name		Description				Used
• **Dimensions**	**IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib**		0	0	1	•
Dirt	**IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib**	**Dirt, Rock, Porous Backfill, Soil Backfill**	**28**	**0**	**4**	

Name		Description				Used
Dimensions	**IowaDOT_FeatureDefinitions_ElementTemplates_Annotation_Levels.dgnlib**		**230**	**0**	**0**	•
Dirt	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Dirt, Rock, Porous Backfill, ...	28	0	4	

Name		Description			
PC_ABUT	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Abutment	13	0	8
PC_APPROACH	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Approach Slab	35	0	8
PC_BARRIER	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Curb and Barrier	131	0	6
PC_BEAM	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Concrete Beam	19	0	8
PC_BEARING	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Bearings	89	0	2
PC_COLUMN	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Column	13	0	8
PC_CONCRETE	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Concrete	3	0	8
PC_CONCRETE_MISC	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Structure: Misc Concrete	3	0	8
PC_COVER	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Rebar Cover	32	0	0
PC_CULVERT_CIP	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Culvert: Cast-in-place	35	0	8
PC_CULVERT_PC	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Culvert: Precast	46	0	8
PC_DECK	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Deck	3	0	8
PC_DIAPHRAGM_CONC	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Concrete Diaphragm	51	0	8
PC_FTG	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Footing/Floor	13	0	8
PC_MARKER	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Marker	6	0	0
PC_OBJECT	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Object	2	0	0
PC_PADFOOTING	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Pad Footing	13	0	8
PC_PIER_CAP	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Concrete Pier Cap	13	0	8
PC_PIER_COLUMN	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Concrete Pier Columns	13	0	8
PC_REBAR	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar	12	0	3
PC_REBAR GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar Guideline	16	4	0
PC_REBAR GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar Guideline	16	4	0
PC_REBAR GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar Guideline	16	4	0
PC_REBAR GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar Guideline	16	4	0
PC_REBAR GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar Guideline	16	4	0
PC_REBAR GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Black Rebar Guideline	16	4	0
PC_REBAR_ABUT	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Abutment	28	0	3
PC_REBAR_ABUT GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Abutment	16	4	0
PC_REBAR_ABUT GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Abutment	16	4	0
PC_REBAR_ABUT GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Abutment	16	4	0
PC_REBAR_ABUT GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Abutment	16	4	0
PC_REBAR_ABUT GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Abutment	16	4	0
PC_REBAR_ABUT GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Abutment	16	4	0
PC_REBAR_APPROACH	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Approach Slab	82	0	3
PC_REBAR_APPROACH GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Approach Slab	16	4	0
PC_REBAR_APPROACH GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Approach Slab	16	4	0
PC_REBAR_APPROACH GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Approach Slab	16	4	0
PC_REBAR_APPROACH GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Approach Slab	16	4	0
PC_REBAR_APPROACH GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Approach Slab	16	4	0
PC_REBAR_APPROACH GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Approach Slab	16	4	0
PC_REBAR_BARRIER	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Barrier and Curbing	34	0	3
PC_REBAR_BARRIER GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guid...\ Barrier and Curbing	16	4	0
PC_REBAR_BARRIER GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guid...\ Barrier and Curbing	16	4	0
PC_REBAR_BARRIER GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guid...\ Barrier and Curbing	16	4	0
PC_REBAR_BARRIER GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guid...\ Barrier and Curbing	16	4	0
PC_REBAR_BARRIER GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guid...\ Barrier and Curbing	16	4	0
PC_REBAR_BARRIER GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guid...\ Barrier and Curbing	16	4	0
PC_REBAR_BEAM	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Beam	60	0	3
PC_REBAR_BEAM GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0

See additional CONCRETE and REBAR options shown below.

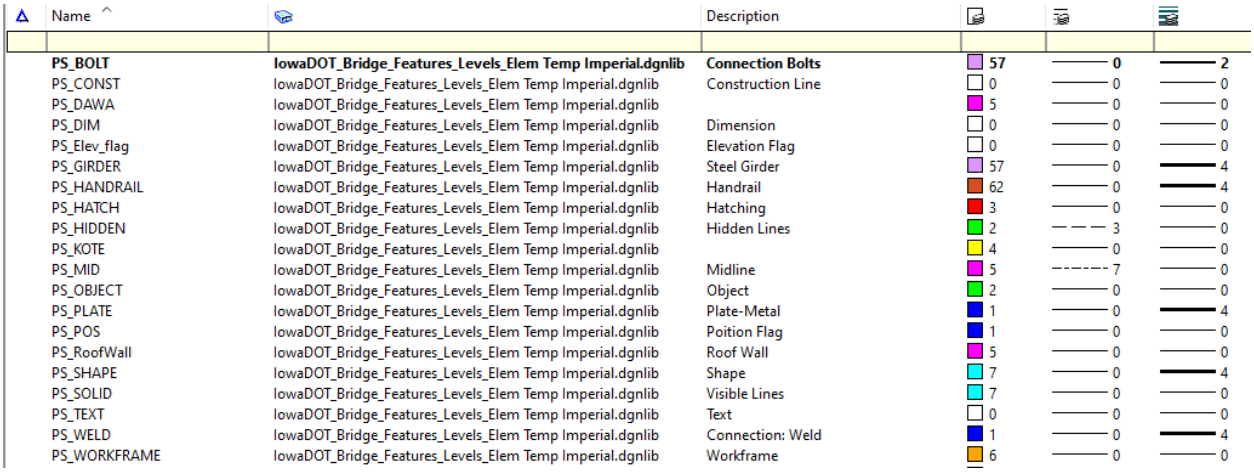
Name		Description			
PC_REBAR_BEAM	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Beam	60	0	3
PC_REBAR_BEAM GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0
PC_REBAR_BEAM GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0
PC_REBAR_BEAM GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0
PC_REBAR_BEAM GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0
PC_REBAR_BEAM GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0
PC_REBAR_BEAM GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Beam	16	4	0
PC_REBAR_CULVERT_CIP	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Cast-in-place Culvert	12	0	3
PC_REBAR_CULVERT_CIP GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: for CIP Culvert	16	4	0
PC_REBAR_CULVERT_CIP GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: for CIP Culvert	16	4	0
PC_REBAR_CULVERT_CIP GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: for CIP Culvert	16	4	0
PC_REBAR_CULVERT_CIP GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: for CIP Culvert	16	4	0
PC_REBAR_CULVERT_CIP GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: for CIP Culvert	16	4	0
PC_REBAR_CULVERT_CIP GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: for CIP Culvert	16	4	0
PC_REBAR_CULVERT_PC	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Precast Culvert	12	0	3
PC_REBAR_CULVERT_PC GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guidelin: Precast Culvert	16	4	0
PC_REBAR_CULVERT_PC GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guidelin: Precast Culvert	16	4	0
PC_REBAR_CULVERT_PC GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guidelin: Precast Culvert	16	4	0
PC_REBAR_CULVERT_PC GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guidelin: Precast Culvert	16	4	0
PC_REBAR_CULVERT_PC GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guidelin: Precast Culvert	16	4	0
PC_REBAR_CULVERT_PC GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guidelin: Precast Culvert	16	4	0
PC_REBAR_DECK	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Decking	18	0	3
PC_REBAR_DECK GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Decking	16	4	0
PC_REBAR_DECK GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Decking	16	4	0
PC_REBAR_DECK GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Decking	16	4	0
PC_REBAR_DECK GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Decking	16	4	0
PC_REBAR_DECK GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Decking	16	4	0
PC_REBAR_DECK GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Decking	16	4	0
PC_REBAR_DIAPHRAGM	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Diaphragm	12	0	3
PC_REBAR_DIAPHRAGM GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Diaphragm	16	4	0
PC_REBAR_DIAPHRAGM GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Diaphragm	16	4	0
PC_REBAR_DIAPHRAGM GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Diaphragm	16	4	0
PC_REBAR_DIAPHRAGM GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Diaphragm	16	4	0
PC_REBAR_DIAPHRAGM GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Diaphragm	16	4	0
PC_REBAR_DIAPHRAGM GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Diaphragm	16	4	0
PC_REBAR_DOWELS	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Dowels	10	0	3
PC_REBAR_DOWELS GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Dowels	16	4	0
PC_REBAR_EPOXY	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Epoxy Rebar	18	0	3
PC_REBAR_EPOXY GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Epoxy Rebar Guideline	16	4	0
PC_REBAR_FOOTING	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Foundations	42	0	3
PC_REBAR_FOOTING GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Foundations	16	4	0
PC_REBAR_FOOTING GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Foundations	16	4	0
PC_REBAR_FOOTING GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Foundations	16	4	0
PC_REBAR_FOOTING GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Foundations	16	4	0
PC_REBAR_FOOTING GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Foundations	16	4	0
PC_REBAR_FOOTING GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Foundations	16	4	0
PC_REBAR_MISC	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Misc	12	0	3
PC_REBAR_MISC GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_MISC GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0

See additional CONCRETE and REBAR options shown below.

Name		Description			
PC_REBAR_MISC	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Misc	12	0	3
PC_REBAR_MISC GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_MISC GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_MISC GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_MISC GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_MISC GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_MISC GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Misc	16	4	0
PC_REBAR_PIER_CAP	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Pier Cap	10	0	3
PC_REBAR_PIER_CAP GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Cap	16	4	0
PC_REBAR_PIER_CAP GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Cap	16	4	0
PC_REBAR_PIER_CAP GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Cap	16	4	0
PC_REBAR_PIER_CAP GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Cap	16	4	0
PC_REBAR_PIER_CAP GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Cap	16	4	0
PC_REBAR_PIER_CAP GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Cap	16	4	0
PC_REBAR_PIER_COL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Pier Column	26	0	3
PC_REBAR_PIER_COL GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Column	16	4	0
PC_REBAR_PIER_COL GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Column	16	4	0
PC_REBAR_PIER_COL GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Column	16	4	0
PC_REBAR_PIER_COL GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Column	16	4	0
PC_REBAR_PIER_COL GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Column	16	4	0
PC_REBAR_PIER_COL GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Pier Column	16	4	0
PC_REBAR_PILE	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Piling	12	0	3
PC_REBAR_PILE GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Piling	16	4	0
PC_REBAR_PILE GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Piling	16	4	0
PC_REBAR_PILE GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Piling	16	4	0
PC_REBAR_PILE GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Piling	16	4	0
PC_REBAR_PILE GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Piling	16	4	0
PC_REBAR_PILE GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Piling	16	4	0
PC_REBAR_STAINLESS	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar	41	0	3
PC_REBAR_STAINLESS GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar Guideline	16	4	0
PC_REBAR_STAINLESS GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar Guideline	16	4	0
PC_REBAR_STAINLESS GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar Guideline	16	4	0
PC_REBAR_STAINLESS GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar Guideline	16	4	0
PC_REBAR_STAINLESS GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar Guideline	16	4	0
PC_REBAR_STAINLESS GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Stainless Rebar Guideline	16	4	0
PC_REBAR_WALL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Wall	10	0	3
PC_REBAR_WALL GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wall	16	4	0
PC_REBAR_WALL GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wall	16	4	0
PC_REBAR_WALL GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wall	16	4	0
PC_REBAR_WALL GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wall	16	4	0
PC_REBAR_WALL GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wall	16	4	0
PC_REBAR_WALL GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wall	16	4	0
PC_REBAR_WINGWAL GL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wingwall	16	4	0
PC_REBAR_WINGWAL GL 1	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wingwall	16	4	0
PC_REBAR_WINGWAL GL 2	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wingwall	16	4	0
PC_REBAR_WINGWAL GL 3	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wingwall	16	4	0
PC_REBAR_WINGWAL GL 4	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wingwall	16	4	0
PC_REBAR_WINGWAL GL 5	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing Guideline: Wingwall	16	4	0
PC_REBAR_WINGWALL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Wingwall	28	0	3

Name		Description			
PC_REBAR_WINGWALL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Reinforcing: Wingwall	28	0	3
PC_REPAIR_EXISTING	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Repair: Existing Structure	230	0	1
PC_REPAIR_REMOVAL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Repair: Removal	228	0	2
PC_REVISION_ANNOTATION	**IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib**	**Revision: Markups and Text**	**5**	**0**	**5**
PC_SHADING	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Shading	233	0	0
PC_SLAB	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Slab	99	0	8
PC_STRIPFOOTING	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Strip Footing	115	0	8
PC_STRUCT_WALL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Structure: Wall Concrete	19	0	8
PC_WALL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Bridge Wingwall	13	0	8

See additional STEEL options below.



Name		Description			
PS_BOLT	**IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib**	**Connection Bolts**	**57**	**0**	**2**
PS_CONST	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Construction Line	0	0	0
PS_DAWA	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib		5	0	0
PS_DIM	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Dimension	0	0	0
PS_Elev_flag	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Elevation Flag	0	0	0
PS_GIRDER	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Steel Girder	57	0	4
PS_HANDRAIL	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Handrail	62	0	4
PS_HATCH	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Hatching	3	0	0
PS_HIDDEN	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Hidden Lines	2	3	0
PS_KOTE	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib		4	0	0
PS_MID	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Midline	5	7	0
PS_OBJECT	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Object	2	0	0
PS_PLATE	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Plate-Metal	1	0	4
PS_POS	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Poition Flag	1	0	0
PS_RoofWall	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Roof Wall	5	0	0
PS_SHAPE	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Shape	7	0	4
PS_SOLID	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Visible Lines	7	0	0
PS_TEXT	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Text	0	0	0
PS_WELD	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Connection: Weld	1	0	4
PS_WORKFRAME	IowaDOT_Bridge_Features_Levels_Elem Temp Imperial.dgnlib	Workframe	6	0	0