TUTORIAL: ANNOTATIVE TEXT, MULTILEADERS AND DIMENSIONS

1. Open WallSection.dwg



2. Set the UNITS variable as follows:

Type UNITS ← Type: Architectural Precision: 1/32" Insertion Scale: select drop-down list and pick "Inches" Angle Type: Decimal Degrees Angle Precision: select drop-down list and pick 0 Click the OK button

Below is how your dialogue box should look:

An Drawing Units	×
Length	Angle
<u>T</u> ype:	Туре:
Architectural 🔹	Decimal Degrees 🔹 👻
Precision:	Precisio <u>n</u> :
0'-0 1/32'' 🔹	0 -
	Clockwise
Insertion scale	
Units to scale inserted content:	
Inches 🔹	
Sample Output	
1 1/2",2",0" 3"<45,0"	
Lighting	
Units for specifying the intensity of	lighting:
Generic 🔹	
OK Cancel	Direction <u>H</u> elp

3. Create an Annotative Text Style:

Click on the Annotate Tab in the Ribbon Open the Text Style dialogue box by clicking the clicking on the arrow that points diagonally down and to the right on the "Text" panel Select the "Standard" style Font Name: Stylus BT Check the box to the left of "Annotative" Check the box to the left of "Match text orientation to layout Set "Paper Text Height" to 3/32" Click the "Apply" button Click the "Close" button

Angene Text Style			×
Current text style: Standard Styles: A Standard	Font Font Name: The Stylus BT	Font Style: Roman 💌	Set Current
	Use Big Font Size Annotative (1) W Match text orientation to layout	Paper Text Height 0'-0 3/32''	Delete
All styles	Effects Upside down Backwards	Width Factor: 1.00000 Oblique Angle:	
AaBbCcD	Vertical	Apply Close	Help

4. Create a text style to assign to dimensions.

This text style will not need to be "Annotative," but it will be compressed horizontally in order to facilitate placing dimension numbers between extension lines. It will also give dimension text a distinctive look so they will not be confused with notes.

Open the Text Style dialogue box by clicking the clicking on the arrow that points diagonally down and to the right on the "Text" panel Select the DIMENSIONS style Font Name: Stylus BT Leave the box to the left of "Annotative" unchecked Set "Height" to 0 Set "Width Factor" to 0.75 Click the "Apply" button Click the "Close" button

Your dialogue box should; look like this:

An Text Style			X
Current text style: DIMENSIONS Styles: DIMENSIONS & Standard	Font Font Name: The Stylus BT Use Big Font	Font Style: Roman 💌	Set Current New Delete
	Size Annotative Annotative Annotative Annotative	Height 0.0000	
All styles 🗸	Effects		
	🔲 Upside down	Width Factor:	
	Backwards	0.7500	
AaBbCcD		Oblique Angle:	
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Vertical	0	
		Apply Close	Help

Note: If there is no DIMENSIONS text style already created, create a new one by that name, as follows:

Select the "New..." button

Type the name of the new style: DIMENSIONS and Click the OK button

🎦 New Text Style 💽		
Style Name: DIMENSIONS		ОК
		Cancel

Follow the other steps as above.

5. Create a variable height text style to use with the drawing titles in paper space, for example. This text style will not be Annotative

Open the Text Style dialogue box by clicking the clicking on the arrow that points diagonally down and to the right on the "Text" panel Select the "New..." button

Type the name of the new style: TITLE and Click the OK button

🎦 New Text Style 🛛 💽		
Style Name: TITLE		ОК
		Cancel

Font Name: Stylus BT Leave the box to the left of "Annotative" unchecked Set "Height" to 0 Set "Width Factor" to 1 Click the "Apply" button Click the "Close" button

At Text Style			.
Current text style: TITLE <u>S</u> tyles: DIMENSIONS Standard TITLE	Font <u>Font Name:</u> <u>Tr Stylus BT</u> <u>Use Big Font</u> Size Annotative <u>Match text orientation</u> to layout	Font Style: Roman Heigh <u>t</u> 0'-0''	Set <u>C</u> urrent <u>N</u> ew <u>D</u> elete
All styles	Effects Upsid <u>e</u> down Bac <u>k</u> wards Vertical	<u>W</u> idth Factor: 1.00000 <u>O</u> blique Angle: 0	
		Apply Close	<u>H</u> elp

6. Create an Annotative Dimension style:

Click on the Annotate Tab in the Ribbon

Open the Text Style dialogue box by clicking the clicking on the arrow that points diagonally down and to the right on the "Dimensions" panel Select the Standard style

Click the "Modify..." button to make the following changes to the Standard style:

Select the "Symbols and Arrows" tab Arrowheads First: select drop-down list and pick Architectural tick Arrowheads Second: select drop-down list and pick Architectural tick Arrowheads Leader: select drop-down list and pick Right angle Arrow size: 3/32"

An Modify Dimension Style: Standard	—
Lines Symbols and Arrows Text Fit Primary I Arrowheads First:	Units Alternate Units Tolerances Image: Constraint of the symbol of the sym
© Line Dimension Break	Radius jog dimension Jog angle: 45
Break size:	Linear jog dimension Jog height <u>f</u> actor: 1 1/2'' 💦 * Text height
	OK Cancel <u>H</u> elp

Select the "Lines" tab Color: Bylayer Linetype: ByLayer Lineweight: ByLayer Extend beyond ticks: 1/16" Baseline spacing: 0 Extension lines Color: ByLayer Linetype ext line 1: ByLayer Linetype ext line 2: ByLayer Extension lines Linetype: ByLayer Extend beyond dim lines: 1/16"

An Modify Dimension Style: Standard	
Lines Symbols and Arrows Text Fit Primary	Units Alternate Units Tolerances
Dimension lines	
<u>C</u> olor:	
Linetype: ByLayer 🔻	
Lineweight: ByLayer 🔻	
Extend beyond ticks:	
Baseline spacing:	
Suppress: Dim line 1 Dim line 2	Ч <u>е</u>
⊂ Extension lines	
Colo <u>r</u> :	Extend beyond dim lines:
Linetype ext line 1: ByLayer 💌	Offset from origin:
Linetype ext line 2: ByLayer 🔻	
Line <u>w</u> eight: ByLayer 🗸	Fixed length extension lines
Suppress: Ext line <u>1</u> Ext line <u>2</u>	, L <u>e</u> ngth: 1''
	OK Cancel <u>H</u> elp

Select the "Text" tab Text style: Dimensions (you made this text style earlier in this exercise) Text color: ByLayer Text height: 3/32" Fraction height scale: 0.75 (this is the height proportion of numerator and denominator in stacked fractions) Text placement Vertical: select drop-down list and pick "Above" Text placement Horizontal: select drop-down list and pick "Centered" Offset from dim line: 1/32"

Text alignment: select the radio button "Aligned with dimension line"

An Modify Dimension	Style: Standard		
Lines Symbols and A	rrows Text Fit Pri	Primary Units Alternate Units Tolerances	1
- Text appearance			
Text style:	DIMENSIONS -		
Text <u>c</u> olor:	ByLayer		
Fill color:	None None		
Text heigh <u>t</u> :	3/32"		
Fraction <u>h</u> eight scale:	0.75000		
Draw <u>f</u> rame around	text	Text <u>a</u> lignment	
- Text placement		Horizontal	
⊻ertical:	Above	▼	
Horizontal:	Centered	 Aligned with dimension line 	
View <u>D</u> irection:	Left-to-Right		
Offset from dim line:	1/32''	×	
		OK Cancel <u>H</u> elp]

Select the "Fit" tab

Fit options: "Always keep text between ext lines" Text placement: "Over dimension line, without leader" Scale for dimension features: check the box to the left of "Annotative" Fine tuning: check the box to the left of "Draw dim line between ext lines"

An Modify Dimension Style: Standard	—
Lines Symbols and Arrows Text Fit Primary L Eit options If there isn't enough room to place both text and arrows inside extension lines, the first thing to move outside the extension lines is: Either text or arrows (best fit) Arrows Text Both text and arrows Always keep text between ext lines Suppress arrows if they don't fit inside extension lines 	Units Alternate Units Tolerances
Text placement When text is not in the default position, place it: <u>B</u> eside the dimension line Over dimension line, with leader Over dimension line, without leader	Scale for dimension features Image: Annotative Image:
	OK Cancel <u>H</u> elp

Select the "Primary Units" tab Unit format: select drop-down list and pick "Architectural" Precision: select drop-down list and pick 0'-0 1/16" Fraction format: select drop-down list and pick "Diagonal" Round off: 1/16" Zero suppression: check the box to the left of 0 feet Angular dimensions: select drop-down list and pick "Decimal Degrees" Angular dimensions Precision: select drop-down list and pick 0

An Modify Dimension S	Style: Standard	.
Lines Symbols and Ar	rows Text Fit Primary	Units Alternate Units Tolerances
Linear dimensions		
<u>U</u> nit format:	Architectural 🔹	
Precision	0'-0 1/16'' 🔹	
Fraction format:	Diagonal 🔹	1945 - 19
De <u>c</u> imal separator:	😳 (Period) 🔹 💌	
<u>R</u> ound off:	1/16"	
Prefi <u>x</u> :		
<u>S</u> uffix:		Angular dimensions
- Measurement scale -	1.00000	Units form <u>a</u> t: Decimal Degrees 🔹
Scal <u>e</u> factor:	1.00000	Precision:
Zero suppression		
Leading	Trailing	
Sub-units fact	or:	
8'-4''	0. ■ 0 <u>f</u> eet	Trailing
Cut unit cutfin	0 inches	
Sub-u <u>n</u> it suffix		
		OK Cancel <u>H</u> elp

Your dialogue box should look like this:

You do not need to change anything in the "Alternate Units" or "Tolerances" tabs

Click "OK" button Click "Set Current" button Click "Close" button Done

7. Create a Multileader Style to annotate the drawing:

Click on the Annotate Tab in the Ribbon

Open the Multileader Style Manager by clicking on the arrow that points diagonally down and to the right on the "Leaders" panel

In the Multileader Style Manager dialogue box, select the Standard style:

🎦 Multileader Style Manage	r	×
Current multileader style: Standa	ard	
<u>S</u> tyles:	Preview of: Standard	
Standard		Set Current
		<u>N</u> ew
	/ Default Text	Modify
		Delete
	*	
List:		
All Styles 🔻		
	Close	<u>H</u> elp

Click the "Modify..." button

Under the Leader Format tab, change the following:

Type: Straight Color: By layer Linetype: By layer Lineweight: By layer Arrowhead Symbol: Right Angle Arrowhead Size: 3/32" Leader Break Size: 1/8" (a Leader Break is a gap created in the leader line where leader lines cross model geometry)

Angle Modify Multileader	Style: Standard	×
Leader Format Leade	er Structure Content	
General		
<u>Т</u> уре:	Straight 🔹	Default Text
<u>C</u> olor:	🗖 ByLayer 🔹	
Linetype:	ByLayer 🔹	
Lineweight:	ByLayer 🔻	
Arrowhead		
Symbol:	🔁 Right angle 🔹 🔻	
Size:	þ/32'' 🚖	
Leader break		
<u>B</u> reak size:	1/8"	
Learn about Multile	ader Styles	OK Cancel <u>H</u> elp

Click on the "Leader Structure" tab Check the box to the left of Maximum leader points and set to 2 Uncheck the box to the left of "First segment angle" Check the box to the left of "Second segment angle" and set to 0 Check the box to the left of "Automatically include landing" Check the box to the left of "Set landing distance" and set it to 3/32"" Check the box to the left of "Annotative"

🎦 Modify Multileader Style: Standard		
Leader Format Leader Structure Content		
Constraints		
Maximum leader points	2 🚔	— Default Text
Eirst segment angle	0 -	
Second segment angle	0 •	
Landing settings		
Automatically include landing		L C
Set landing <u>d</u> istance		
3/32" 🚖		
Scale		
✓ Annotative (i)		
 Scale multileaders to Jayout 		
Specify scale:	1.00000 ≑	
Learn about Multileader Styles		OK Cancel <u>H</u> elp

Click the Content tab Multileader type = Mtext Text style: Standard Text angle: Keep horizontal Text color: ByLayer Check the box to the left of "Always left justify" Pick the radio button "Horizontal attachment" Left attachment: Middle of top line Right attachment: Middle of bottom line Landing gap: 3/32"

¹⁰ Modify Multileader Style:		
<u>M</u> ultileader type:	Mtext 🔻	
Text options		— Defauit Text
<u>D</u> efault text:	Default Text	
Text <u>s</u> tyle:	Standard 🔹 📖	
Text <u>a</u> ngle:	Keep horizontal 🔹	
Text <u>c</u> olor:	ByLayer 🔹	\checkmark
<u>T</u> ext height:	3/32''	,
📝 Aļways left justify	Erame text	
Leader connection		
Horizontal attachment		
Vertical attachment		
L <u>e</u> ft attachment:	Middle of top line 🔹	
<u>R</u> ight attachment:	Middle of bottom line	
Landing gap:	0'-0 3/32''	
 Learn about Multileader S 	ityles	OK Cancel <u>H</u> elp

Click "OK" button Click "Set Current" button Click "Close" button

8. Set up two viewports each with different scales:

Click on the Layout1 tab

Double-click inside the viewport with the mouse wheel (this will zoom to extents) Set the scale of the viewport to $1 \frac{1}{2} = 1'-0''$ by clicking on the "Viewport Scale" button on the bottom right side of the screen.



Lock the viewport scale by selecting the open golden lock icon to the left of the Viewport Scale button - the lock icon will close and turn gray.



Set the current layer to A-ANNO-VPRT Zoom out so that the viewport covers about 1/2 of the screen Make a new viewport by typing $MV \leftarrow I$ Pick a lower left corner for the viewport , then an upper right corner Double click inside this new viewport Set the scale of this new viewport to 3/4" = 1'-0"Lock the viewport scale Click on the Model tab

Now you are in business to do Annotative Text, Dimensions and Multileaders

9. Place a general note in the left viewport

Set the current layer to A-ANNO-NOTE

Click on the Layout 1 tab

Double click inside the left viewport (the one with the scale of $1 \frac{1}{2} = 1'-0''$)

Select the Annotate tab in the Ribbon

In the Text panel, select the Standard text style

Select the Multiline text button (the Big A) and denote the boundaries of the text box Turn Caps lock key on

Type the following in the text box: NOTE: RETAINING WALL DETAIL SHALL BE USED FOR ALL LOCATIONS AROUND PARKING LOT WHERE LOT ELEVATION IS 2'-0" LOWER THAN NATURAL TOPOGRAPHY

		AutoCAD 2010 wallsectio	nA complete.dwg		dimbreak
Home Mesh Modeling Render Ins	sert Annotate Parametric View Manag	e Output Express Tools Text Editor			
AsBbCcD ABbCcD ABbCcD Annotative	B I T Stylus BT U O ByLayer Aa AA A Background Mask	Justification	Columns Symbol Field	ABC Spell Check Dictionaries Replace	More * X Ruler Close Text Editor
Style	Formatting 💌	Paragraph 👻 🙀	Insert	Spell Check ¥ Tools ▼	Options Close
	NOTE: RETAINING USED FOR ALL LC	CATIONS AROUND F LEVATION IS 2'-0" LO	BE ARKING		MText General Color Layer Linetype scale Plot style Linetype scale Plot style Style Anotative scale Justify Direction Paper text height Model text height Matation Line space factor Line space distance

Left click mouse outside of text box or click on the "Close Text Editor" button on the right side of the Ribbon



10. Place multileader callouts in each viewport

Zoom into the railing cap

Under the "Leaders" panel, click the "Multileader" button

•	↓ Multileader	Standard 7° 7° 78 78	•	Ta
ы		Leaders	ы	

Click the first point on the railing cap and the second point a bit to the right from there Type the note: RAILING CAP

Left click mouse outside of text box or click on the "Close Text Editor" button on the right side of the Ribbon

Click the "Multileader" button again

Click the first point on the square tube in the detail and the second point a bit to the right from there

Type the note: HSS 2x2x3/16

Left click mouse outside of text box or click on the "Close Text Editor" button on the right side of the Ribbon

In order to create a second (or more) leader line from a multileader note, click on the icon on the Ribbon to the right of the Multileader icon - the one with the + sign in it. Left-click on the text of the Multileader, then left-click on the location you want to position the second arrow head. Conversely, if you want to remove a leader, click on the icon on the Ribbon to the right of the add multileader icon - the one with the red x, then left-click on the text of the Multileader, and then left-click on the leader line that you want to delete.

tput	Express Tools 🛛 📼		
•	Multileader	/le • [T.
ы	Lead	lers »	
	ch .		

The result is shown below:



Now click inside the <u>other</u> viewport (the one whose scale is 3/4" = 1'-0")

Zoom into the railing. Under the "Leaders" panel, click the "Multileader" button



Click the first point on the railing and the second point a bit to the right from there Type the note: GUARDRAIL

Left click mouse outside of text box or click on the "Close Text Editor" button on the right side of the Ribbon



Add the other notes using the Multileader command as shown.

Note that the text is proportionally larger with relation to the guardrail drawing itself than the text in the left viewport but appears to be the same text size in paper space.

Note also that this text does not appear at all in the left viewport, or vice-versa.

That is because each viewport is set to a different scale and annotative text, multileaders and dimensions are scaled to the viewport scale in which they are drawn.

When the "Annotation Visibility" button at the bottom right corner of the screen is turned on



(looks like this): all annotative objects are displayed in each viewport regardless of the viewport scale.

When the "Annotation Visibility" button at the bottom right corner of the screen is turned off



(looks like this): only annotative objects that are setup for the current annotation scale are displayed.

There is also an "Annotative Scale Add" button to the right of the Annotation Visibility



button at the bottom of the screen. It is off by default (looks like this):

I strongly recommend that you do not turn this on. With this button turned on, if you change scales of the viewport, all annotations already created within the viewport will change scales. Thus, each such annotation receives a "multi scale" icon (two triangles) when you hover your cursor over it, and such annotations will appear in any viewport scaled to <u>either</u> of those scales. It is a blessing but also a curse. For simplicity, I suggest keeping each annotation object confined to one viewport scale only. With this button turned <u>off</u> (the default) if you were to change scales of the viewport, the annotative objects would disappear.

11. Add dimensions in each viewport

Set the current layer to A-ANNO-DIMS Click in the left viewport to make it active Add the following dimensions:



Click in the right viewport to make it active Add the following dimensions:



12. Put a title and scale under each viewport in paper space.

Set current layer to A-ANNO-NOTE Select the "Annotate" tab on the Ribbon Select the Multiline Text Icon on the left side of the Annotate Ribbon



Make the TITLE style current. Do not be concerned about the size of the text yet. You can change it after you type the text into the text box.

			AutoCAD 2010 wallsection	A complete.dwg			Type a keyword
Home Mesh Modeling Render Inse	ert Annotate Parametric View Ma	nage Output	Express Tools Text Editor	•			
AaBbCcD AaBbCcD A Annotative	B I In Stylus BT U O ByLayer Aa A Asckground Mask	Justification	E Bullets and Numbering •	Columns Symbol Field	ABC Spell Edit Check Dictionaries	ABC Image: More + Find & Image: Replace	Close Text Editor
Style	Formatting 👻		Paragraph 🕶 🛛 🗎	Insert	Spell Check ¥	Tools - Options	Close

Draw a multiline text box under the left viewport to define the area where you want the title to show (don't worry, you can always change it later, if it is not exactly where you want it to be).



р

Type the following text into the box: SECTION THRU RETAINING WALL ← SCALE: 1 1/2" = 1'-0"

It will look like this:



As you type the 1 1/2" after the SCALE: you may receive a pop-up dialogue box that looks like this:

🎦 AutoStack	Properties	×
ׯy	Do you want to automatically stack the text expressions x/y, x#y, and x ² y as you type? Enable AutoStacking. Remove leading blank: 1 x/y becomes 1x/y Specify how "x/y" should stack: Convert it to a diagonal fraction Convert it to a horizontal fraction	
	Don't show this dialog again; always use these settings. OK Cancel	

In order for your text fractions to be "stacked" check "Enable AutoStacking" and "Remove leading blank" and select the radio button "Convert it to a diagonal fraction. Thus your fractional text will have the same appearance as your fractional dimensions. If you always want these same results every time you type a fraction, check the box "Don't show this dialogue again' always use these settings"

Now you can set the height of the text.

Highlight both lines of text.



In the Ribbon, change the height of both lines of text to 1/8" (looks like this):



Highlight the top line:

In the Ribbon, change the height of this line of text to 3/16" (looks like this):



Also, select the \underline{U} button (looks like this):



Here is the result:



When it looks like that, click outside the box, or close the text editor:



Now do the same for the right viewport.

Type the following text into the box: OVERALL SECTION THRU RETAINING WALL ← SCALE: 3/4" = 1'-0" It will look like this:



When it looks like that, click outside the box, or close the text editor:

		Type a key	word or phra	
Find & Replace	More •	Close Text Editor		
Tools 🔻	Options	Close		
ſ				

13. In paper space, zoom to extents and plot both viewports to a PDF using the Monochrome plot style table

14. Create a DWF

15. Submit both in blackboard as attachments

Appendix: User interface differences with AutoCAD Architecture 2010 program

Conveniently in AutoCAD Architecture 2010, text styles, dimension styles and multileader styles can be selected and modified on the Home tab of the Ribbon, the "Annotation" panel, shown pinned open below.



Click on the



to bring up the Text Style Manager.

Click on the



to bring up the Dimension Style manager.

Click on the



to bring up the Multileader Style manager.

Creating and modifying these is the same as in AutoCAD 2010.

You can also insert text, dimensions and multileaders in the drawing all from this same very useful panel. Note that you may also insert text and dimensions (but curiously, not multileaders) from the "Annotate" tab of the Ribbon.

> END OF TUTORIAL: ANNOTATIVE TEXT, MULTILEADERS AND DIMENSIONS