MANUAL PENYEDIAAN LUKISAN REKABENTUK JALAN (AUTOCAD)



DISEDIAKAN OLEH: MOHAMMAD QATADAH BIN ABU OTHMAN CAWANGAN JALAN IBU PEJABAT JABATAN KERJA RAYA MALAYSIA

NEW LAYER

Pada paparan autocad pilih icon layer atau command LA,
 Pilih New layer seperti paparan di bawah



- -Cipta layer baru
 - a) TitleBlock-continuous
 - b) Dimension-continuous
 - c) BreakLine-continuous
 - d) Text2-continuous
 - f) Text5-continuous
 - g) Viewport-continuous

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L		Dimension		ď	8	Continu	— Defa	0	Col	÷	E <mark>o</mark>	
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		Viewport		ď	<mark></mark> m	Continu	— Defa	0	Col	-	E.	
							\Diamond					

*pastikan pada Layer Viewport bahagian plot perlu ditanda seperti gambarajah diatas supaya apabila mencetak lukisan layer viewport tidak dapat dilihat

DIMENSION STYLE

1. Pada menu bar pilih *Dimension→Dimension Style* atau Command *D*.



2. Pada dialog box dimension style pilih New

Dimension Style Manager Current dimension style: Standard		
Styles:	Preview of: Standard	Set Current New Mod Displays you can Qvert
List: All styles ▼	Description Standard	
	Close	Help

3. Pada style name, namakan 1000j (jika skala 500 namakan 500j) kemudian pilih continue

s: ,	Preview of: Standard		-
Annot	A Create New Dimension Style	×	et Current
Stand	New Style Name:		New
	1000)	Continue	Modify
	Start With:	Cancel	Houry
	Standard 🔹		verride
	Annotative	Help	ompare
	Use for:		
	All dimensions		

- 4. Pada Tab Lines masukkan maklumat sperti gambarajah dibawah:
 - a) Dimension Lines Color = by layer (terpulang pada pilihan masing-masing)
 - b) Extension lines color = by layer(terpulang pada pilihan masing-masing)
 - c) Extend beyond dim line = 1.000
 - d) Offset from origin = 1.000

Dimension lines		
Color:	olor 8 🗸 🗸	
Linetype:	- ByBlock -	
Lineweight:	ByBlock -	
Extend beyond ticks:	0.0000	2.0207
Baseline spacing:	0.3800	
Suppress: Dim line	1 Dim line 2	R0.8045
Extension lines	olor 8	Extend beyond dim lines: 1.0000
Extension lines Color: Linetype ext line 1:	olor 8 ByBlock ByBlock	Extend beyond dim lines: 1.0000
Extension lines Color: Linetype ext line 1: Linetype ext line 2:	olor 8 — ByBlock — ByBlock — ByBlock — ByBlock	Extend beyond dim lines: 1.0000

- 5. Pada Tab Symbol and Arrow masukkan maklumat seperti gambarajah dibawah:
 - a) Arrowhaeds first = Closed filled
 - b) Arrowhaeds second = Closed filled
 - c) Arrowhaeds leader = Closed filled
 - d) Arrow size = 2.5 (pastikan size 2.5 @ 2 dan tidak boleh diubah)

Arrowheads First: Closed filled	
Second: Closed filled Leader: Closed filled Arrow size:	1.1955 80° R0.8045
2.5 Center marks None Mark 0.0900	Arc length symbol Preceding dimension text Above dimension text None
Cline Dimension Break	Radius jog dimension Jog angle: 45
Break size:	Linear jog dimension Jog height factor: 1.5000 Text height

6. Pada Tab Text ikut langkah seprti dibawah

6.1 Pada bahagian *Text Style* pilih icon untuk membuat text style dimension

A Modi	Modify Dimension Style: 25					
Lines	Lines Symbols and Arrows Text Fit Primary Units					
Text appearance						
Text st	tyle:	Standard	•			
Text c	olor:	ByBlock				
Fill col	or:		•			

- 6.2 Pada dialog box text style *click New* dan namakan styles name *DIM_romans* kemudian masukkan maklumat seperti dibawah:
 - a) Font Name = romans.shx
 - b) Height = 0.000 (*pastikan height 0 tidak boleh diubah*)
 - c) Width Factor = 0.7500
 - Kemudian click apply

Text Style Current text style: Standard	-		 X
Styles:	Font Font Name:	Font Style: Regular	Set Current
	Size Annotative Match text orientation to layout	Height 0.0000	Delete
	Effects Upside down Backwards	Width Factor: 0.7500	
	Vertical	O Apply Cancel	Help
	Ŷ,	3	

- 6.3 Pada Tab *Text* masukkan maklumat seperti berikut:
 - a) Text style = DIM_romans
 - b) Text color = yellow (terpulang pada pilihan masing-masing)
 - c) Text Height = 2.5 (pastikan height 2.5 @ 2 dan tidak boleh diubah
 - d) Vertical = Above
 - e) Horizontal = Centered
 - f) Offset from dim line = 0.5
 - g) Text alignment = Aligned with dimension line

Modify Dimension Style: 25	
Lines Symbols and Arrows Text Fit Primary	Vunits Alternate Units Tolerances
Text appearance	
Text style: DIM_romans	
Text color: Yellow	
Fill color: None	
Text height: 2.5000	
Fraction height scale: 1.0000	
Draw frame around text	Text alignment
Text placement	Horizontal
Vertical: Above -	
Horizontal: Centered -	Aligned with dimension line
View Direction: Left-to-Right -	Solution ISO standard
Offset from dim line: 0.5000	
	Q_{2}
	OK Cancel Help

- 7. Pada Tab *Fit* click *Use overall Scale Of* dan masukkan jumlah skala *1* (jumlah 1 dimasukkan kerana lukisan jalan yang direkabentuk menggunakan software civil3d menggunakan unit **meter**).
 - Jika ingin menggunakan skala belainan pada *Use overall Scale Of* masukkan jumlah seperti dibawah:-

Skala	Use overall Scale Of
1:500	0.5
1:250	0.25
1:100	0.1

*gunakan formula *skala dikehendaki / skala sediada* (lukisan jalan unit skala sedia ada adalah 1000)



- 8. Pada Tab Primary Units masukkan maklumat seperti berikut:
 - a) Unit Format = Decimal
 - b) Precision = 0 / 0.0 / 0.00
 - c) Scale factor = 1(jika unit Meter) / 1000 (jika unit milimeter)
 - Kemudian Click **OK**

Lines Symbols and Arrows Text Fit Primary	Units Alternate Units Tolerances
Linear dimensions Unit format: Precision Fraction format: Decimal separator: Round off: Suffix: Measurement scale Scale factor: Linear dimensions Decimal separator: Linear dimensions Linear dimensions Decimal separator: Linear dimensions Linear dimensions	Angular dimensions Units format: Decimal Degrees
Zero suppression Leading Sub-units factor: 100.0000 Sub-unit suffix: 0 inches	Zero suppression

9. Pada dialog box Dimension Style click pada 25 → Set Current → Close

A Dimension Style Manager		X
Current dimension style: 1000j Styles: 1000j Annotative Standard	Preview of: 1000)	Set Current New Modify Override Compare
List: All styles ▼ ✓ Don't list styles in Xrefs	Description 1000j	
	Close	Help

Jika lukisan anda berskala 100 ulang langkah 1-9, Cuma anda perlu mengubah *nama style* (100j) dan *use overall sacale of* pada tab *Fit* kepada *0.1*

TEXT STYLE

- 1. Pada *Menu Bar* pilih *Format* →*Text Style* atau command *ST*.
 - 1.1 Pada dialog box text style *click New* dan namakan styles name *Jln_romans* kemudian masukkan maklumat seperti dibawah:
 - a) Font Name = romans.shx
 - b) Height = 0.000
 - c) Width Factor = 0.7500
 - Pilih set Current Kemudian click apply

Annotation 👻	Lavers 🔻	Block 🕶	Properties
🛕 Text Style			X
Current text style: Jin_ro Styles:	mans		
Annotative	Font Name:	Font Style:	Set Current
dim_mmans	A romans shy	Begular v	
Jin_romans			<u>N</u> ew
Standard	Use Big Font		Delete
	Size		
	Annotat <u>i</u> ve	Height	
	Match text orientation	0.0000	
All styles	Effects		
	Upside down	Width Factor:	
		0.75	
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	<u>v</u> ertical	0	
	C	Apply Close	<u>H</u> elp
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PAPER SPACE (LAYOUT)

1. Pada menu bar pilih *Insert->Layout->Create Layout Wizard*



2. Pada dialog box Create Layout bahagian *Begin* tulis nama page1 (terpulang pada individu sendiri). Kemudian pilih *Next*

6	×
This wizard provides you the ability to design a new layout. You can choose a plot device and plot settings, insert a title block and specify a viewport setup. When you have completed the wizard, the settings will be saved with the drawing. To modify these settings, you can use the Page Setup dialog from within the layout. Enter a name for the new layout you are creating.	
< Back Next >	Cancel
	This wizard provides you the ability to design a new layout. You can choose a plot device and plot settings, insert a title block and specify a viewport setup. When you have completed the wizard, the settings will be saved with the drawing. To modify these settings, you can use the Page Setup dialog from within the layout. Inter a name for the new layout you are creating.

3. Pada bahagian *printer* pilih plotter yang digunakan. Kemudian pilih *Next*

Create Layout - Printer		
Begin Printer Paper Size Orientation Title Block Define Viewports Pick Location Finish	Select a configured plotter for the new layout. None SHARP MX-M753N PCL6 SHARP MX-2010U Send To OneNote 2010 PDF24 PDF PDF24 Fax Oce TDS700 Microsoft XPS Document Writer HP Designjet T770 44in HPGL2 Fax Default Windows System Printer.pc3 DWF ePlot (optimized for plotting).pc3 DWF eView (notimized for plotting).pc3	
	< Back Nex	t > Cancel

4. Pada bahagian *Paper Siz*e pilih kertas yang dikehendaki dan pilih *Drawing Units Milimeters*. Kemudian *Next*

Create Layout - Paper Size			x
Begin Printer Paper Size	Select a paper size to b sizes available are base Oce A1 594x841 mm (e used for the layout. The paper ad on the plot device you selected. Landscape)	
Orientation Title Block Define Viewports Pick Location	Enter the paper units fo Drawing units	rlayout "page1". Paper size in units Width: 841.00 mm	
Finish	 Inches Pixels 	Height: 594.00 mm	
		< Back Next > Cancel	

5. Pada bahagian *Orientation* pilih *Landscape*. Kemudian *Next*.

Create Layout - Orientation	
Begin Printer Paper Size Orientation Title Block Define Viewports Pick Location Finish	Select the orientation of the drawing on the paper.
	< Back Next > Cancel

6. Pada bahagian *Title Block* pilih *None*. Kemudian *Next*

Create Layout - Title Bl	ock
Begin Printer Paper Size Orientation Title Block Define Viewports Pick Location Finish	Select a title block to use for the layout. Select whether the title block will be inserted as a block or attached as an Xref. The title block will be placed at the lower left comer of the paper margin. Path: None Arcnitectural Title Block.dwg Generic 24in x 36in Title Block.dwg
	Type Block Xref < Back Next > Cancel

7. Pada bahagian *Define Viewports* pilih *None*. Kemudian *Next*.

Begin Printer	To add viewports to the layout, s scale, and (if applicable) the row	specify the setup type, s, columns, and spacing.
Paper Size	Viewport setup	Viewport scale:
Orientation	 None 	Scaled to Fit 👻
Title Block	Single	
Define Viewports	Std. 3D Engineering Views	
Pick Location	💿 Алтау	
Finish		
	Rows: 2 Spacing be	tween rows: 0.1
	Columns: 2 Spacing be	tween columns: 0.1

8. Pada bahagian Finish pilih Finish

Create Layout - Finish	
Begin Printer Paper Size Orientation Title Block Define Viewports Pick Location ► Finish	You have created a layout named "page1". To modify the settings you applied in this wizard, you can select the new layout tab, then use the Page Setup dialog to revise any of the existing settings.
	< Back Finish Cancel

9. Kemudian paparan seperti dibawah akan keluar.

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		el (Layout 1), page1/ 名 /名 [「Standard ・)の 2 〇 介 〇 二 戸 日 田 正 で 1*] @ cel *		25			ft v		 Properties No selection General Color Layer Linetype Linetype Linetype Linetype Transparent Thomas 3D Vasalizatio Material Shadow dirp Dpto raster Poto tryle Piot style Piot style Piot style Piot style Piot style Center X Center	ByLayer DIM ByLayer DIM ByLayer DIM Contin E 1 ByLayer 0 So So So No Ves 2D Wireframe
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9.1. Jika paparan keluar warna putih, pada menu bar pilih *Tools→option*.



9.2. Pada dialog box option pilih Tab *Display* kemudian pilih *Colors*

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Files Display	pen and Save	Plot and Publish	System	User Pr	eferences	Drafting	3D Modeling	Selection	Profiles
Window Elemen	its			Displa	ay resolution	n			
Color scheme:	Dark		•	2	100	Arc and	d circle smooth	ness	
Display scro	Il bars in drawing	window		2	8	Segmer	nts in a polyline	curve	
Display Drawing status bar				1	0.5	Render	ed object smoo	othness	
Use large bu	uttons for Toolba	rs			4	Contou	r lines per surfa	ice	
 Resize ribbon icons to standard sizes Show ToolTips 				Displa	ay performa	nce			
Show shortcut keys in ToolTips Show extended ToolTips 2 Number of seconds to delay Show rollover ToolTips Colors Fonts			Pan and zoom with raster & OLE Highlight raster image frame only Apply solid fill Show text boundary frame only Draw true silhouettes for solids and surfaces Crosshair size						
Layout elements	1			100	-				
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Display paper	er background			70	-				-8
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Create view	port in new layou	ıts					3		
			ſ	ОК		Cancel	Apply		Help

9.3. Pada dialog box Drawing Window Colors masukkan maklumat seperti gambarajah dibawah:-

- a) Context = Sheet / layout
- b) Interface element = Uniform background
- c) Color = black

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Kemudian pilih Apply & Close

A Drawing Window C	Colors			X
Context:	<	Interface element:		Color:
	<	Uniform background	~ 【	Black
3D paraller projection 3D paraller projection 3D perspective project Block editor Command line	tion	Grid major lines Grid minor lines Grid axis lines Autotrack vector	≡ (Tint for X, Y, Z Restore current element
Plot preview	A context elements context. elements color.	t is an environment such can have different color The context you select di Select a context, an inte	as model space s assigned depe splays a list of a erface element,	e. Interface ent context ending on the associated and then a
		Light hotspot Light falloff	- [Restore classic colors
	28.2280	6.0834		
		Appl	y & Close	Cancel Help

- Setelah pilih Apply & Close paparan akan bertukar kepada warana hitam seperti gambarajah dibawah



INSERT TITLE BLOCK (xref)

1. Klik pada tab layout atau paper space



2. Pada menu bar pilih Insert->DWG Reference / External References atau command xr



3. Pada dialog box Insert pilih **Attach DWG** dan cari lokasi fail title block disimpan. Kemudian pilih **OK**

	Attach DWG				IE	12	× *
ш	Attach Image	Type	Date	Saved Dath			
ш	Attach DWF	Current	16/01/2020 16:3				
ш	Attach DGN			D:_SM_SURVEY\SMSC-17\SMSC394-JKR\foto\tbm-sm1.jpg			
ш	Attach PDF			D:_SM_SURVEY\SMSC-17\SMSC394-JKR\foto\tbm-sm2.jpg			
ш	Attach Point Cloud			D:_SM_SURVEY\SMSC-17\SMSC394-JKR\foto\tbm-sm3.jpg			
	Attach Coordination Model			D:_SM_SURVEY\SMISC-17\SMISC394-JKR\toto\tom-sm4.jpg D:_SM_SURVEY\SMISC-17\SMISC394-JKR\toto\tom-sm5.ing			
	TBM-SM6 Not F			D:_SM_SURVEY\SMSC-17\SMSC394-JKR\foto\tbm-sm6.jpg			
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4. Letakkan kedudukan title block seperti gambar rajah dibawah



** Pastikan skala Title Block 1:1

INSERT TITLE BLOCK (BLOCK)

1. Pada menu bar pilih *Insert→block* atau command *I*



2. Pada dialog box Insert pilih Browse dan cari lokasi fail title block disimpan. Kemudian pilih OK

A Insert	\frown	
Name: A1_Melintang	- Brows	se
Path: D:\qatadah\manual ke	erja\jkr\A1_Melintang.dwg Data	
Insertion point Specify On-screen	Scale	Rotation Spe <u>c</u> ify On-screen
⊠: 0	<u>X</u> : 1	Angle: 0
⊻ O	<u>Y</u> : 1	Block Unit
⊒: 0	<u>Z</u> : 1	Unit: Unitless
	Diform Scale	Factor: 1
Explo <u>d</u> e	ОК	Cancel <u>H</u> elp

3. Letakkan kedudukan title block seperti gambar rajah dibawah



** Pastikan skala Title Block 1:1

INSERT TEXT

1. Pada menu bar pilih *Insert→block* atau command *I*



2. Pada dialog box Insert pilih Browse dan cari lokasi fail text disimpan. Kemudian pilih OK

A Insert										
<u>N</u> ame:	TEXT TTBLOCK			X	Browse					
Path: D:\qatadah 2017\manual kursus\kursus acad jalan\xref\TEXT TTBLOCK.dwg										
Insertion point Insertion point Image: Specify On-screen		Scale Sp <u>e</u> cify On-screen		Rotation	n giy On-screen					
⊻: [0.000	<u>X</u> :	1.000	<u>A</u> ngle:	0d0'0"					
¥: [0.000	<u>Y</u> :	1.000	Block U	Init					
<u>Z</u> : [0.000	<u>Z</u> :	1.000	Unit:	Unitless					
			Uniform Scale	Factor:	1.000					
Explode OK Cancel Help										

3. Letakkan kedudukan insert point text pada bahagian bawah kiri title block seperti gambar rajah dibawah

	TARIKH	BUTIRAN	Rujukan
		PINDANN	
	Insert		

- ** Pastikan skala Title Block dan Text sama
- 4. Pada menu bar *Modify→explode* atau command *X* atau icon
 - click pada block text kemudian tekan enter



SUSUNATUR LUKISAN

1. Pada menu bar pilih *tools→Toolbars→AutoCAD →Viewports* atau *right click pada mana-mana icon→Viewports*



2. Dialog box viewports akan muncul seperti gambarajah dibawah seterusnya **alihkan dialog box** tersebut pada **bahagian atas** atau **bawah** paparan autocad



3. Pilih / aktifkan layer viewport seperti gambar rajah dibawah 🗋 🐷 🖏 ፣ 🕫 기 🤍 ᅜᇉ 너희 📜 🛄 🗎 🖄 🖼 🗍



4. Pada dialog box viewports pilih *polygonal viewport* atau command *mv > enter >p >enter*



5. Buat ruang untuk susunatur lukisan seperti dibawah (5 point keatas bergantung kepada jajaran lukisan)



5.1. paparan seperti dibawah akan muncul setrusnya pilih icon *paper* atau *double click* pada ruang susunatur atau command *MS*



- 5.2. Seterusnya zoom in pada lukisan yang hendak disusun
- 5.3. Gunakan Command *ucs > enter > ob > click* pada lukisan yang ingin disusun (jajaran yang ingin dilaras) *> plan > enter > c > enter*



5.4. Seterusnya zoom in pada lukisan yang ingin disusun dan pilih skala 1:1000 pada dialog box viewport



5.5 Pilih icon pan atau command **P** susun lukisan seperti yang kita kehendaki dan bersesuaian



5.6. Seterusnya pilih icon model (lokasi bahagian bawah) atau *double click* pada luar ruang susunatur atau command *PS*



- 5.7. Gunakan command *MV > enter > L > enter > ON* click pada viewport yang ingin lock
 -Atau click pada viewport pada bahagian *Properties > Misc > Display Lock > Yes* seperti gambarajah dibawah
 - * Untuk mengeluarkan dialog box Properties gunakan keyboard Ctrl+1



5.8. Click pada grip (point biru) dan ubah grip mengikut kesesuaian susun atur lukisan seperti di bawah



5.9. Masukkan atau lukis garisan LIMIT OFF PROJECT dan MATCHLINE AT CH: pada lukisan seperti di bawah



6. *Off layer viewport* sebelum mencetak lukisan seperti gambar di bawah



