## **BAB 1: REKABENTUK AWALAN\_CREATE NETWORK**

## **Create Network**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1.	Folder latihan > 02_CourseWork > 01	5.	Set working folder > 01 Hospital
	Hospital Latihan_Rekabentuk		Latihan_Rekabentuk Awalan_Create
	Awalan_Create Network > 06_Resourses		Network.
	> 04 Family > Copy folder tersebut;	6.	Data shortcut > surface >
	i. C3D18_dr-nc_Pipe		02EW_08_Rekabentuk Awalan > RC >
	ii. C3D18_dr-nc_Structures		create reference > Style > 02 Border only
2.	C > Program Data > Autodesk > C3D		> ok
	2019 > enu > Pipes Catalog > paste fail.	7.	Taip Xref > attach > 01_WIP >
3.	01 Hospital Latihan_Rekabentuk		C3D19_WIP_F0_03RD > open > check
	Awalan_Create Network > 01_WIP >		locate using geographic data
	C3D19_WIP_F0_00TP > copy > paste >		Rajah 7a
	rename > C3D19_WIP_F0_04DR	8.	Home tab > create design panel > set pipe
4.	Aplikasi C3D > open file >		network catalog
	C3D19_WIP_F0_04DR		Rajah 8a
		9.	Tutup fail



Rajah 7a



# **BAB 1: REKABENTUK AWALAN\_CREATE NETWORK**

## **Create Network**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1.	Setting	g tab > pipe > Pipe rule set > RC >	3.	Setti	ng tab > pipe network > Part lists >
	new > isi maklumat seperti berikut;			RC >	Create part list > isi maklumat seperti
	i.	Information tab		berikı	ıt;
		Name: 01_Latihan Pipe Rule		i.	Information tab
	ii.	Rules tab			Name: 01_ Monson Drain
		- Add Rule > isi jadual seperti		ii.	Pipes tab
		rajah di bawah;			- New part list > RC > Add part
		Rajah 1a			family > General
		Rajah 1b			pipe > Tick General Rec. Pipe >
		Rajah 1c			ОК
2.	Setting	g tab > Structure > Structure rule			- General Rec. Pipe > RC > add
	set > r	c > new > isi maklumat seperti			part size > isi maklumat seperti
	berikut;				berikut;
	i.	Information tab			Inner pipe width: 600 mm
		Name: 01_Latihan Structure Rule			Inner pipe height: 600 mm >
	ii.	Rules tab			ok
		- Add Rule > isi jadual seperti			- Style: Basic
		rajah di bawah;			- Rules: 01_ Latihan pipe Rules
		Rajah 2a		iii.	Structure tab
		Rajah 2b			- New Part list > RC > Add part
		OK			family > Rc Sump
					- Rc Sump > RC > add part size
					> isi maklumat seperti berikut;
					Drain Width: 600 mm > ok
					- Style: 02 Drainage reinforced
					Concrete Sump > ok
					- Rules: 01_Latihan Structure
					Rule > ok

4.	<ul> <li>4. Home tab &gt; create design panel &gt; pipe</li> <li>network &gt; pipe network creation tools &gt; isi</li> <li>jadual seperti berikut;</li> </ul>		<ul> <li>8. La &gt; enter &gt; turn on layer 01_Mark Monson</li> <li>Drain</li> <li>9. Turn off object span</li> </ul>				
	jauuai :		9. 40				
	١.		10	0. Network layout tools > draw pipe and			
		04DR_01_Monson Drain		structure > lukis pada point yg tih ditanda >			
	ii.	Network Part List: 01_Monson		esc.			
		Drain		Rajah 10a			
	iii.	Surface Name: 02EW_08_	11	1. Klik paip pada S7 – S9 > Rc > Pipe			
		Rekabentuk Awalan		properties > Isi maklumat jadual seperti			
	iv.	Structure label style: 01	berikut;				
		Drainage Sump		i. Start Invert Elevation:0			
	٧.	Pipe Label style: 04 Flow		ii. Pipe Slope (Hold Start): -0.2 > ok			
		Direction > ok	12	2. Klik paip pada S7 – S8 > Rc > Pipe			
5.	Netwo	ork layout tools > Pipe network		properties > Par properties > Isi maklumat			
	prope	rties > lsi jadual mengikut maklumat		jadual seperti berikut;			
	terseb	put;		i. Start Invert Elevation: 0.095 > apply			
	i.	Layout setting		ii. Pipe Slope (Hold Start): - 0.2 >			
		Name templates:		apply > ok			
		- Pipe: Rajah 8a	13	3. Klik Pipe dan structure > RC > select			
		- Structure: Rajah 8b > ok		similar > object viewer.			
6.	Netwo	ork layout tools > structure list > RC		Rajah 13a			
	Sump	1300mm x 1300mm	14	4. Close Fail			
7.	Pipe L	.ist > 600mm x 600mm					

Parameter Value				
0.20%				
0.50%				
0.300m				
3.000m				
	Value 0.20% 0.50% 0.300m 3.000m	Value 0.20% 0.50% 0.300m 3.000m	Value 0.20% 0.50% 0.300m 3.000m	

Rajah 1a

Pipe Rule Set - 01_Latihan Pipe Rule formation Rules			
Value			Ŷ
			Л,
Invert			
0.000m			
	Value Invert 0.000m	Value Invert 0.000m	Value Invert 0.000m



A	Pipe Rule Set - 01_Latihan Pipe Rule		×
Inf	formation Rules		
1	Add Rule Delete Rule		
Pa	Parameter Value		Ŷ
	Cover and Slope		л
	Pipe to Pipe Match		
	Set Pipe End Location		
	- Start Location Structure Center		
	- End Location Structure Center		
	- Start Offset 0.000m		
	- End Offset 0.000m		

Rajah 1c

Ą	A Structure Rule Set - 01_Latihan Structure Rule					×
In	Information Rules					
	Add Ru	le Delete Rule				
Parameter Value						Ŷ
					n	
	-	- Drop Reference Location Invert				
	-	Drop Value	0.000m			
		Maximum Drop Value	1.000m			

Rajah 2a

A Structure Rule Set - 01_Latihan Structure Rule -						
Information Rules						
Add Rule Delete Rule						
Parameter	Value			Ϋ́		
Pipe Drop Across Structure						
E- Set Sump Depth						
- Control Sump By	Depth					
Sump Depth	0.000m					

Rajah 2b

Name Template			×
Name formatting template			
Property fields:			
Next Counter		~	Insert
Name:			
Pipe <[Next Counter]>			
Number style:			
1, 2, 3			~
Starting number:	Increment value:		
8	1		

Rajah 8a

- Hume remplace			
Name formatting template			
Property fields:			
Next Counter		~	Insert
Name:			
S<[Next Counter]>			
Incremental number format			
Incremental number format Number style: 1, 2, 3			~
Incremental number format Number style: 1, 2, 3 Starting number:	Increment value:		~
Incremental number format Number style: 1, 2, 3 Starting number:	Increment value:		~

Rajah 8b



Rajah 10a



Rajah 13a

# **BAB 1: REKABENTUK AWALAN\_CREATE NETWORK**

## **Create Network**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

## ARAHAN:

4	0	a tele se la construcción se est l'est				
1.	Setting	g tab> pipe network > part list >			2) Rules: 01_Latinan	
	RC > (	create part list > isi maklumat			Structure Rule > OK > OK	
	sepert	i berikut;	-		Rajah 1b	
	i.	Information Tab	2.	La > e	nter > turn off > 01_ Monson Drain	
		- Name: 02_Internal Drain	3.	Turn o	n layer > 02_ mark Internal Drain 1	
	ii.	Pipes Tab	4.	Home	tab > create design panel > Pipe	
		<ul> <li>New part list &gt; RC &gt; Add part</li> <li>family &gt; General pipe &gt; general</li> </ul>		network > pipe network creation tools > isi		
				maklu	mat seperti berikut;	
		circular pipe > ok		i.	Network Name: 04DR_02_Internal	
	- General circular pipe 1) Add Part Size > Inner				Drain	
				ii.	Network part list: 02_ Internal	
		Pipe Diameter > 300mm			Drain	
		> ok		iii.	Surface name:	
		2) <b>Style:</b> Basic > ok			02EW_08_Rekabentuk Awalan	
		3) Rules: 01_Latihan Pipe		iv.	Structure label style: 01_	
		Rules > ok			Drainage Sump	
		Rajah 1a		v.	Pipe Label style: 04 Flow	
	iii.	Structure Tab			Direction > ok	
		- New part list > RC > Add	5.	Create	e pipe network seperti berikut;	
		part family > typical sump >		i.	Structure list: Brick sump (type A)	
		brick sump (type A)		ii.	Pipe List: 300mm General Circular	
		- Brick sump (type A)			Pipe	
		1) Add Part Size > Drain		iii.	Draw pipes and structure: Pipe	
		width > 300mm > ok			and structure	
		2) Style: 01_Drainage brick		iv.	Pipe network properties	
		sump > ok			Rajah 5a	
		3) Rules: 01_Latihan			Rajah 5b	
		Structure Rule > ok		v.	Draw pipe and structure	
		- Null Structure			Rajah 5c	
		1) Style: Null style				



A	N	etwork Parts List - 02_Internal Drain			×				
Information Pipes Structures Summary									
	N	ame	Style	Rules	-	Render Material	Pay Item		-
	E	Call 02_Internal Drain	July 12		Ť				ì
		🗄 🗁 General Circular Pipe	e	F	3	e		53	
		🤣 300 mm General Circ	Basic 😪	01_Latihan Pipe Rule 🤇	3	<none> 🛞</none>	[none]	5	
									1

Rajah 1a

A	Netwo	ork Parts Li	st - 02_Interr	nal Drain						-		$\times$
Inf	Information Pipes Structures Summary											
	Name	1			Style		Rules		Render N	late	Pay Item	
	- C	02_Interr	nal Drain									
	Ģ	🕞 Null	Structure			ę		Ę		ę		53
		6	Iull Structur	e	Null	6.	01_Latiha	4	<none></none>	۲	[none]	23
	ė	Brick	Sump (Type	e A)		e		Q		e		23
		- 🖨 B	rick Sump (	Туре А)	01 Drainage Brick	k S 💼	01_Latiha	B	<none></none>	8	[none]	23

A Name Template			$\times$
Name formatting template			
Property fields:			
Next Counter		$\sim$	Insert
Name:			
Pipe<[Next Counter]>			
Incremental number format			
1, 2, 3			~
Starting number:	Increment value:		
9	1		
	OK	Cancel	Help

Rajah 5a

Name formatting template			
Property fields:			
Next Counter		~	Insert
Name:			
S<[Next Counter]>			
incremental number format			
incremental number format Number style: 1, 2, 3			
incremental number format Number style: 1, 2, 3 Starting number:	Increment value:		
incremental number format Number style: 1, 2, 3 Starting number: 10	Increment value:		

Rajah 5b



Rajah 5c



Rajah 7a



Rajah 10a



Rajah 11a

## **BAB 1: REKABENTUK AWALAN\_CREATE NETWORK**

## **Create Network**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

- La > enter > turn off layer > 03\_Mark
   Internal Drain 2
- 2. Turn on layer > 04\_ Internal Drain 3
- Prospector tab > pipe networks > networks > 04DR\_02\_Internal Drain > RC > Edit network > isi maklumat seperti berikut;
  - i. Structure list: Brick sump/ Null Structure
  - ii. **Pipe List:** 300mm General Circular Pipe
  - iii. Draw Pipe And Structures: Pipes and structure
  - iv. Create pipe network pada S25 sehingga S31 > Klik paip > object viewer Rajah 3a
- La > enter > turn off layer > 04\_ Mark
   Internal Drain 3
- Turn on layer > 05\_ Mark Internal
   Drain 4

- 6. Toolspace > pipe networks > networks
  > 04DR\_02\_Internal Drain > RC > Edit network > isi maklumat seperti berikut;
  - i. Structure list: Brick sump/ Null Structure
  - ii. **Pipe List:** 300mm General Circular Pipe
  - iii. Draw Pipe And Structures: Pipes and structure
  - iv. Create pipe network pada S10
     sehingga S32 > Klik paip >
     object viewer
     Rajah 6a
- Create pipe dari S56 ke S53
   Rajah 7a
- La > enter > turn off layer > 05\_ Mark
   Internal Drain 4
- Turn on layer > 06 \_ Mark Internal
   Drain 5
- 10. Create pipe dari S58 ke S35 Rajah 10a

- 11. Create pipe dari S65 ke S37 Rajah 11a
  - Rajah 11b
- 12. La > enter > turn off layer > 06 \_ Mark Internal Drain 5
- 13. Turn on layer > 07 \_ Mark Internal Drain 6
- 14. Create pipe dari S56 ke S23 Rajah 14a
- 15. Turn off semua layer
- 16. Select pipe network > RC > Objectviewer > tutup fail.Rajah 16a



Rajah 3a



Rajah 7a



Rajah 11a



Rajah 11b



Rajah 14



Rajah 16a

## **BAB 2 : REKABENTUK AWALAN\_CREATE NETWORK**

## **Create Network**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1.	Folder latihan > 02_CourseWork > 02	7.	Klik paip berikut dan tukarkan style kepada
	Hospital Latihan_Rekabentuk		S4- S5 > properties > style > 11 Culvert
	Awalan_Style Label dan Table > 01_WIP		i. S4 - S5
	> C3D19_WIP_F0_04DR > open.		ii. S20 - S21
2.	Prospector tab > Data shortcut > RC >		iii. S34 – S35
	Set working folder > 02 Hospital		iv. S37 – S23
	Latihan_Rekabentuk Awalan_Style Label	8.	Klik internal drain > Select similar >
	dan Table.		properties > style > 01 Precast Block
3.	Check direction sump		Drain_ Size 1
4.	Pilih paip S1 – S8 (kecuali pipe S4-S5)		Rajah 8a
	Rajah 4a		Rajah 8b
5.	RC > properties > style > 02 Precast	9.	Check direction untuk internal drain
	Block Drain Size 2	10.	. Select direction > RC > Select similar >
	Rajah 5a		properties > pipe label style > 01 Drainage
6.	Klik paip S7-S9 >properties > style > 02		Pipe
	Precast Block Drain_Size 2- Reverse		Rajah 11a



Rajah 5a



Rajah 8b



Rajah 11a

## **BAB 2 : REKABENTUK AWALAN\_STYLE LABEL DAN TABLE**

## Add Label & Table

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

- 1. Annotate tab > add label > pipe network > Single part plan > klik pada culvert tersebut: i. S4 – S5 ii. S25 - S26 iii. S22 – S23 S24 – S17 iv. 2. Prospector tab > pipe network > network > 04DR\_01\_Monson Drain > Pipes 3. Tukar nama Pipe 4 kepada C1 Rajah 3a 4. Prospector tab > pipe network > network > 04DR\_02\_Internal Drain > Pipes > Tukarkan nama bagi paip tersebut; i. Pipe 19 > C2 ii. Pipe 32 > C3Pipe 35 > C4iii. 5. Prospector tab > pipe network > network > 04DR 02 Internal Drain > Structures 6. Tukarkan nama untuk semua null vii. structure bermula dari N1 - N43 7. Tukarkan nama untuk semua brick sump bermula dari S10 - S31 8. Tukarkan description untuk kesemua
- Brick Sump (Type A) Size 1000 mm x 1000 mm > Brick Sump
- 9. Prospector tab > pipe network > network> 04DR\_01\_ Monsun Drain > Structures
- 10. Tukarkan description untuk kesemua RC Sump Size 1300 mm x 1300 mm > RC Sump

- Annotate tab > add table > pipe network > add structure > isi maklumat jadual seperti di bawah;
  - i. Table style: 01 Sump Table
  - ii. Check by network
     Select network: 04DR\_01\_
     Monsun Drain
  - iii. Check split tableMax. rows per table: 10Max. table per stack: 3
  - iv. Klik OK Rajah 11a
- Annotate tab > add table > pipe network > add structure > isi maklumat jadual seperti di bawah;
  - v. Table style: 01 Sump Table
  - vi. Check by network Select network: 04DR\_02\_ Internal Drain
  - ii. Check split tableMax. rows per table: 42Max. table per stack: 3
  - viii. Klik OK Rajah 12a
- 13. Delete kesemua null structure
- 14. Tutup fail

Status	Name	Descripti
√⊘1	🥏 Pipe 1	600 mm X 6
√⊘1	🥟 Pipe 2	600 mm X 6
√⊘1	🥪 Pipe 3	600 mm X 6
√⊘1	@C1	600 mm X 6

Rajah 3a

	TABLE OF SUMP								
SUMP NO	Dimension (mm)	FINISH GROUND LEVEL (m)	SUMP INVERT LEVEL (m)	HEIGHT OF SUMP (m)	TYPE OF SUMP				
হা	929 X 729	1.74	0.777	0.985	RC Sump				
<u>80</u>	9 <b>99 X 99</b> 9	1.73	0.496	1.231	RC Sump				
53	1777 X 7771	1.72	0.376	1.343	RC Sump				
54	777 X 777	1.91	0.320	1.588	RC Sump				
S5	355 X 555	1.8B	0.289	1.587	RC Sump				
<b>98</b>	929 X 729	1.71	0.218	1.498	RC Sump				
\$7	999 X 999	1.71	0.000	1.707	RC Sump				
58	777 X 777	1.70	-0.052	1.760	RC Sump				
S9	777 X 777	1.08	0.095	0.985	RC Sump				

Rajah 11a

	TABLE OF SUMP							
SUMP NO	DIMENSION (mm)	FINISH GROUND LEVEL (m)	SUMP INVERT LEVEL (m)	HEIGHT OF SUMP (m)	TYPE OF SUMP			
S10	999 X 999	3.00	2.365	0.635	Brick Sump (Type A)			
511	77? X 77?	3.00	2.266	0.734	Brick Sump (Type A)			
512	77? X 77?	3.00	2.227	0.773	Brick Sump (Type A)			
S13	999 X 999	3.00	2.145	0.855	Brick Sump (Type A)			
514	777 X 777	3.00	2.074	0.926	Brick Sump (Type A)			
S15	77? X 77?	3.00	2.004	0.996	Brick Sump (Type A)			
S16	777 X 777	3.00	1.933	1.067	Brick Sump (Type A)			
S17	??? X ???	3.00	1.893	1.107	Brick Sump (Type A)			
S18	777 X 777	3.00	2.365	0.635	Brick Sump (Type A)			
S19	77? X 77?	3.00	2.293	0.707	Brick Sump (Type A)			
S20	??? X ???	3.00	2.195	0.805	Brick Sump (Type A)			
S21	777 X 777	3.00	2,170	0.830	Brick Sump (Type A)			
522	??? X ???	3.00	2.117	0.883	Brick Sump (Type A)			
S23	??? X ???	3.00	2.096	0.904	Brick Sump (Type A)			
S24	777 X 777	3.00	1.989	1.011	Brick Sump (Type A)			
525	??? X ???	3.00	2,281	0.719	Brick Sump (Type A)			
S26	??? X ???	3.00	2.247	0.753	Brick Sump (Type A)			
S27	??? X ???	3.00	2.179	0.821	Brick Sump (Type A)			
S28	777 X 777	3.00	2.365	0.635	Brick Sump (Type A)			
S29	77? X 77?	3.00	2.262	0.738	Brick Sump (Type A)			
S30	??? X ???	3.00	2.345	0.655	Brick Sump (Type A)			
S31	777 X 777	3.00	2.225	0.775	Brick Sump (Type A)			

Rajah 12a

## **BAB 3 : REKABENTUK TERPERINCI\_SALIRAN TERBUKA**

## **Create Profile View and profile**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

## ARAHAN:

1.	Folder	latihan > 03 Hospital		i
	Latiha	n_Rekabentuk Terperinci_Saliran		
	Terbuł	(a > 01_WIP >		iii
	C3D19	9_WIP_F0_04DR > open		
2.	Prospe	ector tab > Data shortcut > RC >		iv
	Set wo	orking folder > 03 Hospital		
	Latiha	n_Rekabentuk Terperinci_Saliran		v
	Terbuł	a		
3.	Home	tab > create design panel >		
	alignm	ent > create alignment from		vi
	netwoi	k parts > klik S1 & Klik S8 > enter.		
	Rajah	3a		
4.	lsi dial	og box create alignment- from pipe		vi
	netwoi	rk seperti berikut;		
	i.	Name: 04DR_MS_01_Monson		
		Drain		
	ii.	Type: Miscellaneous	7.	Н
	iii.	Alignment style: 04		pro
		Miscellaneous Alignment	8.	lsi
	iv.	Alignment label set: 01 No label		ba
		set		i
	v.	Create profile and profile view:		i
		check > ok		ii
5.	Create	profile from surface		iv
	Rajah	5a	9.	Dra
6.	Create	Profile View		Ra
	i.	General tab		Ra
		- Profile view style: 03 Drainage		Ra
		profile view > next		

- ii. Station range
  - Use default > next
- iii. Profile View height
  - Use default > next
- v. Profile display options
  - Use default > next
- v. Pipe/ Pressure network
  - Choose all 04DR\_01\_Monson Drain > next

#### vi. Data bands

- Select band set: 03 Drainage band set > next
- vii. Profile hatch options
  - Use default > Create profile view
    - Rajah 6a
- Home tab > create design panel > profile > profile ceation tools > klik tajuk profile view
- Isi maklumat create profile seperti di bawah;
  - i. Name: Invert level
  - ii. Profile style: 02 Design Profile
  - iii. Profile label set: none
  - v. Klik OK
- 9. Draw tangent > klik pada paip
  - Rajah 9a
  - Rajah 9b
  - Rajah 9c



Rajah 3a

A Create	Profile from	n Surface								Х
Alignment:	45 01 Mon	son Drain			Select s	urfaces:				9
Station_rar	N3_01_M01	Son Drain			8 02E	W_08_Rekat	entuk Awala	an		∎Ş.
Alignment	ige H									
Start: 0+00	0.00m	End 0+	l: -419.79m	1						
To sample	e:				Sam;	ple offsets:				
0+00	0.0011	-12 0	+419.79m	-0;					Add>>	>
Profile list:										
							Station		Elevi	
Name	Description	Туре	Data Sou	Offset	Update M	Layer	Style	Start	End	м
02EW_08		M	02EW_08	0.000m	Dynamic		01 Existin	0+000.00m	0+419.79m	1.69
<										>
Remove			Draw in pro	file view		0	к	Cancel	Help	

Rajah 5a



Rajah 6a



Rajah 9a



Rajah 9b



Rajah 9c

# BAB 3 : REKABENTUK TERPERINCI\_SALIRAN TERBUKA

## **Create Drain**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

### ARAHAN:

1.	Tool p	allete > RC > new pallete > Latihan		vii.	Target surface:
	- > RC I	Latihan > Import subassemblies >			02EW_08_Rekabentuk Awalan
	source	e file > 03 Hospital		viii.	Set baseline and region
	Latiha	n_Rekabentuk Terperinci_Saliran			parameters: Check > ok > Rebuild
	Terbul	ka > 06_Resourses > 04 Family >			corridor.
	C3D1	8_dr-sa_Half Round > open > ok.	5.	Klik co	orridor > object viewer.
2.	Home	tab > create design panel >	6.	Klik co	orridor > Rc > corridor properties > isi
	Assem	nbly > create assembly > isi		maklu	mat seperti berikut;
	maklu	mat seperti berikut;		i.	Parameters tab
	i.	Name: 04DR_01_Monson			Frequency
		Drain_Half Round			- Along tangent: 1.000m
	ii.	Assembly Type: Other			- Curve increment: 1.000m
	iii.	Assembly Style: Basic			- Along spiral: 1.000m
	iv.	Code Set Style: 02 JKR All			- Along vertical curves: 1.000m
		Codes > OK	7.	Klik S	1 sehingga S9 > RC > properties >
3.	Selec	t Half_Round_Drain > Klik pada		style >	> basic > esc
	assem	nbly > esc	8.	Klik S	1 > adjust corridor
4.	Home	tab > corridor > corridor > Isi		Rajah	8a
	maklu	mat seperti berikut;	9.	Klik co	orridor > split region > adjust corridor
	i.	Name: 04DR_01_Monson Drain		untuk	S2, S3,S4,S5,S6,S7,S8
	ii.	Corridor style: 01 JKR General		Rajah	9a
		Corridor			
	iii.	Baseline type: Alignment and			
		profile			
	iv.	Alignment:			
		04DR_MS_01_Monson Drain			
	۷.	Profile: Invert Level			
	vi.	Assembly: 04DR_01_Monson			
		Drain_Half Round			

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Rajah 3a



Rajah 8a



Rajah 9a

# **BAB 3 : REKABENTUK TERPERINCI\_SALIRAN TERBUKA**

## **Create Corridor**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1.	Home	tab > create design panel >		v	i.	Data bands
	alignm	ent > create alignment from				- Select band set: 03 Drainage
	network parts > klik S9 dan S7 > enter.					band set > next
2.	Isi maklumat create alignment – from pipe			vi	i.	Profile hatch options
	netwo	rk dialog box seperti di bawah;				<ul> <li>Use default &gt; Create profile</li> </ul>
	i.	Name: 04DR_MS_02_Monson				view
		Drain				Rajah 4a
	ii.	Type: Miscellaneous	5.	LA	\ > en	nter
	iii.	Alignment style: 04	6.	Τι	ırn on	a layer > 08_Mark Subassembly
		Miscellaneous Alignment		Ra	ajah 6	ða
	iv.	Alignment label set: 01 No	7.	Но	ome ta	ab > draw panel > polyline > klik
		Labels Set		ра	ida tit	ik bulatan ( akan nada 2 polyline)
	٧.	Create profile and profile view:		Ra	ajah 7	7a
		Check > ok		Ra	ajah 7	7b
3.	Create	e profile from surface	8.	KI	ik pol	yline > add vertex
4.	Create	e profile view dialog box		Ra	ajah 8	Ba
	i.	General tab	9.	KI	ik bula	atan pada polyline > RC > select
		- Profile view style: 03 Drainage		sir	nilar :	> hide selected object
		profile view > next	10	. Ho	ome ta	ab > create design panel > expand
	ii.	Station range		>	create	e subassembly from polyline >
		<ul> <li>Use default &gt; next</li> </ul>		se	lect e	entities
	iii.	Profile View heig <b>ht</b>		Ra	ajah 1	0a
		<ul> <li>Use default &gt; next</li> </ul>	11	. Isi	jadua	al create subassemblies seperti
	iv.	Profile display options		be	erikut;	
		<ul> <li>Use default &gt; next</li> </ul>			i.	Name: Square Drain_Body
	۷.	Pipe/ Pressure network			ii.	Code set style: 02 JKR All Codes
		- Choose all 04DR_01_Monson		i	ii.	Mid ordinate distance: 0.010m
		Drain > next		i	v.	Erase existing entities: Check > OK
			12	. Kl	ik sub	bassembly > add code > Enter code
				>	Barrie	er > enter (buat pada semua
				ba	hagia	an polyline) Rajah 12a

13. Klik a	ssembly > add shape > klik pada	22. Klik su	ubassembly (yg longkang tu) > add to			
semu	a link > enter	assen	nbly > klik pada assembly			
Rajah	13a	23. Ulang	langkah yang sama untuk another			
14. Klik a	assembly > add code > Enter code >	subassembly.				
Barrie	er > klik pd tengah assembly > enter	Rajah 23a				
15. Modif	y origin assembly	24. Home tab > create design panel > profile >				
Rajah	15a	profile	creation tools > klik tajuk profile			
16. Home	e tab > create design panel > expand	04DR	_MS_02_Monson Drain > isi jadual			
> crea	ate subassembly from polyline >	seper	ti berikut;			
select	entities > isi jadual create	i.	Name: Invert level			
subas	semblies seperti berikut;	ii.	Profile style: 02 Design Profile			
i.	Name: Square Drain_Lid	iii.	Profile label set: 01 No Labels > OK			
ii.	Code set style: 02 JKR All Codes	25. Draw	tangent			
iii.	Mid ordinate distance: 0.010m	Rajah	25a			
iv.	Erase existing entities: Check >	26. Prosp	ector tab > Corridor >			
	ОК	04DR	_01_Monson Drain > RC > Properties			
17. Klik si	ubassembly > add code > Enter	> Isi ja	adual seperti berikut;			
code	> Barrier > enter	i.	Parameter tab			
18. Klik a	ssembly > add shape > select		- Add baseline			
shape	e > enter		Alignment:			
19. Klik s	subassembly > add code > Enter		04DR_MS_02_Monson Drain			
code	> Barrier > klik pd tengah		- Vertical baseline			
subas	sembly > enter		Rajah 26b			
Rajah	19a		- BL - 04DR_MS_02_Monson			
20. Klik s	ubassembly > modify origin > klik		Drain – (5) > RC > Add region			
hujun	g subassembly		Rajah 26c			
Rajah	20a		- Frequency			
21. Home	e tab > create design panel >		Rajah 26d			
assen	nbly > create assembly > sisi jadual		- OK > rebuild corridor			
seper	ti berikut;		- Adjust Corridor			
i.	Name: 04DR_02_Monson		Rajah 26e			
	Drain_Box Culvert	27. Prosp	ector > pipe network > network >			
ii.	Alignment style: Basic	04DR	_01_Monson Drain > structure > RC			
iii.	Code set style: 02 JKR All Codes	> Sele	ect > properties > style > 02 Drainage			
iv.	Klik OK	Reinfo	prced Concrete Sump			

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Rajah 4a



Rajah 6a



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Rajah 10a

Rajah 12a













Rajah 20a



Rajah 23a



Rajah 25a



Rajah 26b

Rajah 26c

Pro	operty	Value
Ŧ	Corridor Information	
	Horizontal Baseline	
	Along tangents	1.000m
	Along curves	At an increment
	Curve increment	1.000m
	Mid-ordinate distance to define	0.200m
	Along spirals	1.000m
	At horizontal geometry points	Yes
	At superelevation critical points	Yes
	Vertical Baseline	
	Along vertical curves	1.000m
	At vertical geometry points	Yes
	At high/low points	Yes
	Offset Target	
	At offset target geometry points	Yes
	Adjacent to offset target start/e	Yes
	Along offset target curves	<none></none>
	Curve increment	25.000m
	Mid-ordinate distance to define	0.200m

Rajah 26d



Rajah 26e

## **BAB 4: REKABENTUK TERPERINCI\_PENGURUSAN MODEL**

## Grating

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1.	Folder latihan > 04 Hospital	5.	Tool pallete > Klik pallete > Letakkan pada
	Latihan_Rekabentuk		S1.
	Terperinci_Pengurusan Model > 01_WIP	6.	Adjust kedudukan pallete supaya berada
	> C3D19_WIP_F0_04DR > open		pada kedudukan yang betul.
2.	Prospector tab > Data shortcut > RC >		Rajah 6a
	Set working folder > 04 Hospital	7.	Klik Structure S1 dan pallete > RC > isolate
	Latihan_Rekabentuk		selected object > adjust position
	Terperinci_Pengurusan Model		Rajah 7a
3.	Tool pallete > RC > new palate > name >	8.	Top view > RC > end isolation
	3D block.	9.	Ulang langkah yang sama untuk S2
4.	04 Hospital Latihan_Rekabentuk		sehingga S8
	Terperinci_Pengurusan Model > 06_		
	resources > 04 family > klik		
	C3D18_dr_3d_MS Grating 975 x 975 >		
	Drag ke tool pallete.		



Rajah 6a



Rajah 7a

# **BAB 4: REKABENTUK TERPERINCI\_PENGURUSAN MODEL**

### **Extract Solid**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1.	Klik co	orridor 04DR_01_Monson Drain tab	8.	Klik	semua internal drain > peroperties >
	> extr	act corridor solids tools > all region		laye	r > drain.
	> Extr	act corridor solid dialog box;	9.	Klik	paip culvert > select similar >
	i.	Codes to extract		prop	erties > layer > culvert.
		Rajah 1a	10	. Xref	> enter > Detach fail > C3D18 WIP F0
	ii.	Property Data		03R	D.
		Rajah 1b	11	. La >	enter > turn off all layer
	iii.	Output options	12	. Laye	er properties > turn on layer berikut;
		Rajah 1c		i.	Barrier
2.	Klik co	orridor > select similar > object		ii.	Grating
	viewe	r.		iii.	DR-DRN
3.	Create	e layer baru seperti berikut;		iv.	Drain
	i.	Sump		۷.	Culvert
	ii.	Drain		vi.	ACAD-TB
	iii.	Culvert		vii.	Sump
4.	Klik g	rating > Rc > select similar			Rajah 12a
5.	Prope	rties > layer > grating 600x600	13	. Sele	ct model > RC > object viewer
6.	Klik su	ump > RC > select similar	14	. Laye	er states manager dialog box > new >
7.	Prope	rties > layer > sump		new	layer state name > pengurusan model
				> ok	

A Extract Corridor	Solids						
Codes to Extract Property Data Output Options	Corridor 04DR_01_Monson Drain	Add R	egions				
	Name	Code Type	Side	Start Station	End Station	Color 8	Laver Nam

Rajah 1a

Codes to Extract	Corridor property set definitions				
Property Data	🖃 🗐 Property Set Definitions	Name	Descrip	Default	Visible
Output Options	Corridor Model Information	<b>□</b> +Corrido			
	- E Corridor Property Data - User Defi	<b>⊡</b> +Corrido			
	Corridor Shape Information	<b>□</b> +Baselin			
		<b>⊡</b> +Horizor			
		T+ Vertical			
		E+Region			

Rajah 1b

operty Data	Output object type	
utput Options	AutoCAD 3D Solids (based on corridor sampling)	Ý
	Output destination options	
	Insert into current drawing	
	O Add to an existing drawing	
	O Add to a new drawing	
		100

Rajah 1c



Rajah 12a

# **BAB 4: REKABENTUK TERPERINCI\_PENGURUSAN MODEL**

## **Property Data**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

### ARAHAN:

1.	Taip P	roperty data > sets	5. Copy culvert > paste > rename > Internal
2.	Style r	manager dialog box > documentation	Drain
	object	s > property set definitions > RC > new	i. Applies to tab
	> culv	ert > isi maklumat seperti berikut;	<b>Objects:</b> Solid (3D) > apply >
	i.	General tab	6. Copy culvert > paste > rename > Monson
		Name: Grating	Drain
	ii.	Applies to tab	ii. Applies to tab
		<b>Objects:</b> Block Reference > apply	<b>Objects:</b> Solid (3D) > apply > ok > esc
	iii.	Definition tab	7. Klik monson drain> select similar
		Add manual property definition	8. Properties > extended data > add property
		- Name: Bahan > ok	sets > check item berikut;
		Add manual property definition	i. General
	- Name: Katalog> ok		ii. Monson Drain
	Add manual property definition		iii. Klik OK
		- Name: Nama Pembekal> ok	9. Klik grating > select similar
		Add manual property definition	10. Toolspace > extended data > add property
		- Name: No. Tel. Pembekal> ok	sets > check item berikut;
		Add manual property definition	i. General
		- Name: Tarikh Pasang> ok	ii. Grating
		Add manual property definition	iii. Klik OK
		- Name: Tarikh waranty> ok	11. Klik sump > select similar
		Add manual property definition	12. Toolspace > extended data > add property
		<ul> <li>Volume &gt; ok &gt; apply</li> </ul>	sets > check item berikut;
3.	Сору	culvert > paste > rename > Sump	i. General
	i.	Applies to tab	ii. Sump
		<b>Objects:</b> Structure > apply	iii. Klik OK
4.	Сору	culvert > paste > rename > Internal	13. Klik culvert > select similar
	Drain		14. Toolspace > extended data > add property
	i.	Applies to tab	sets > check item tersebut;
		<b>Objects:</b> Pipe > apply	i. General
			ii. Culvert > ok

15. Klik internal drain > select similar	17. Export to > Folder latihan > 04 Hospital
16. Toolspace > extended data > add	Latihan_Rekabentuk Terperinci_Pengurusan Model >
property sets > check item tersebut;	02_SHARE > name >
i. General	jkrCv19_1_(BMhpB1_19_001)_F1_Dr00_(s)_190101 >
ii. Internal drain	save.
iii. Klik OK	18. Buka perisian Naviswork > append model
17. Taip nwcout > enter	jkrCv19_1_(BMhpB1_19_001)_F1_Dr00_(s)_190101

## **BAB 5: REKABENTUK TERPERINCI\_PENJANAAN LUKISAN**

### Penjanaan Lukisan

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

1. Folder latihan > 05 Hospital	6. Layer properties > turn off layer berikut;		
Latihan_Rekabentuk Terperinci_Penjanaan	i. 01_Mark Monson Drain		
Lukisan > 01_WIP > C3D19_WIP_F0_04DR	ii. 02_Mark Internal Drain 1		
> open.	iii. 02_Notes		
2. Prospector tab > Data shortcut > RC > Set	iv. 03_Map		
working folder > 05 Hospital	v. 03_Mark Internal Drain 2		
Latihan_Rekabentuk Terperinci_Penjanaan	vi. 04_Mark Internal Drain 3		
Lukisan > select folder	vii. 05_Mark Internal Drain 4		
3. Layer properties > turn on all layer	viii. 06_Mark Internal Drain 5		
4. Application menu > drawing utilities >	ix. 06_Simbol		
drawing properties > isi maklumat seperti	x. 07_Mark Internal Drain 6		
berikut;	xi. 08_Mark Subassembly		
i. Summary tab	xii. Barrier		
- Title: Projek Membina dan	xiii. C- ROAD- CORR		
Menyiapkan Hospital Latihan	7. Layer Properties > turn off & freeze layer >		
- Author: Jack Sparrow	С-ТОРО		
ii. Custom tab	8. Xref > attach drawing > 05 Hospital		
- Disemak: Zainariah	Latihan_Rekabentuk Terperinci_Penjanaan		
- Dilukis: Izzati	Lukisan > 05_ Incoming > jkrAR_01(BMhpB1		
- Pengarah Kanan: Jony Tony	_19_001)_A1_WT01_(s)100101 > Open >		
- Pengarah Khidmat Pakar dan	locate using geographic data > OK		
Pengurusan: Jul Ripin			
- Jurutera Awam Penguasa Kanan:			
Rosnah			
- Jurutera Awam Penguasa: Mael			
- Jurutera Awam Kanan: c			
- No. Fail Projek:			
JKR.CPAB.900.003.000			
- Klik OK			
5. Layout tab > check maklumat pada layout			
sheet			

## **BAB 5: REKABENTUK TERPERINCI\_PENJANAAN LUKISAN**

#### **Create Layout**

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

#### ARAHAN:

 Layout tab > DC klik viewport > ze > enter > Scale Plan > 1:1000 > Lock view Rajah 1a
 Klik viewport > add rectangular > Pilih table sump > adjust table. Rajah 2a Rajah 3a



Rajah 1a



Rajah 3a

## BAB 5: REKABENTUK TERPERINCI\_PENJANAAN LUKISAN

## Sheet Set Manager

Fail latihan: C3D19\_WIP\_F0\_04DR.dwg.

### ARAHAN:

- Home tab > expand palette panel > sheet set manager
- 2. Sheet Set manager > open file > 01\_WIP> HOSPITAL LATIHAN > Open
- Sheet set manager > sheet > hospital latihan > RC > new subset
- Subset properties > Subset name > Lukisan Rekabentuk Saliran > klik ok Rajah 4a
- 5. Sheet set manager > sheet > hospital latihan > lukisan rekabentuk saliran > Rc > Import layout as sheet > browse for drawing > C3D19\_WIP\_F0\_04DR > open > import check
- Lukisan Rekabentuk saliran > layout >RC
   rename & renumber > isi maklumat jdual seperyi berikut;
  - i. Number: 01
  - ii. Sheet title: Pelan lukisan sistem saliran
  - iii. Klik OK
- Lukisan rekabentuk jalan dalaman > 01-Pelan lukisan jalan dalaman > copy clipboard with base point> tajuk lukisan & no. lukisan

Rajah 7a

 Lukisan Rekabentuk saliran > Pelan lukisan sistem saliran > paste >rea Rajah 8a

- 9. Pelan lukisan sistem saliran tab > RC> page setup manager
- 10. Page setup manager > klik pelan
  lukisan sistem saliran (A1 Setup)
  >modify > isi table seperti berikut;
  - i. Plot style table:

monochrome.ctb

Rajah 10a

ii. Klik OK

11. Sheet set manager > sheet > hospital latihan > RC > resave all sheets

- 12. Lukisan Rekabentuk saliran > Rc > Publish > Publish to DWF
- 13. Save in > 05 Hospital
  Latihan\_Rekabentuk
  Terperinci\_Penjanaan Lukisan >
  03\_Publish >
  jkrCv19\_1\_(bMhpB1\_19\_001)F1\_DR\_
  190101 > select
- 14. 05 Hospital Latihan\_Rekabentuk
  Terperinci\_Penjanaan Lukisan >
  03\_Publish > open file >
  jkrCv19\_1\_(bMhpB1\_19\_001)F1\_DR\_
  190101

A Sub	oset Properties	X
Su	ıbset	-
	Subset Name	Lukisan Rekabentuk Saliran
	Create Folder Hierarchy	No
	Publish Sheets in Subset	Publish by Sheet 'Include for Publish' Set
	New Sheet Location	C:\Users\ubim040\Desktop\ATY_02_M.L
	Sheet Creation Template	A1 Section 1 to 1000(C:\Users\ubim040\
	Prompt for Template	Yes

Rajah 4a



Rajah 7a

Γ	NAMA	PROJEK :	PROJEK	MEMBINA	DAN	MENYIAPKAN	HOSPITAL	LATIHAN	
H									
L									
	TAJUK	LUKISAN	PELAN	LUKISAN	SISTE	M SALIRAN			
╟									 
	NO. L	JUKISAN :	JKR.CKA	\S/07.50C	/020	)/MOIS/J26/k	(T <b>/01/(0</b> 1)	)	
L									

#### Rajah 8a

A Plot Style Table Edit	or - Template L	ukisan BKA.ctb			>
General Table View Fo	orm View				
Plot styles:		Properties			
Color 243	^	Color:	Black		~
Color 244			Dither:	On	~
Color 245				0II	*
Color 246		Gray	scale:	Off	$\sim$
Color 247		F	Pen #:	Automatic	-
Color 248				natomatic	-
Color 249		Virtual p	pen #:	Automatic	÷
Color 250		Screening: 5	0		÷
Color 251		Lineburger [	-		
Color 252		unetype:	Jse object	linetype	~

Rajah 10a