

CADANGAN MEMBINA DAN MENYIAPKAN 8 UNIT KUARTERS GURU (KELAS G)  
SERTA KERJA BERKAITAN DI MARTAB RENDAH SAINS MARA (MRSM) ATM BERA,PAHANG

SCHEDULE OF DRAWING

COLD WATER PLUMBING SERVICES		
ITEM	DESCRIPTION	DRAWING No:
1	- GROUND FLOOR PLAN	EMECHSY/2404/MRSM/M&E/CW-01
2	- FIRST FLOOR PLAN	EMECHSY/2404/MRSM/M&E/CW-02
3	- ROOF PLAN	EMECHSY/2404/MRSM/M&E/CW-03
4	- SCHEMATIC DIAGRAM OF COLD WATER PLUMBING 01	EMECHSY/2404/MRSM/M&E/CW-04
5	- SCHEMATIC DIAGRAM OF COLD WATER PLUMBING 02	EMECHSY/2404/MRSM/M&E/CW-05
SANITARY PLUMBING SERVICES		
ITEM	DESCRIPTION	DRAWING No:
1	- GROUND FLOOR PLAN	EMECHSY/2404/MRSM/M&E/SN-01
2	- FIRST FLOOR PLAN	EMECHSY/2404/MRSM/M&E/SN-02
3	- SCHEMATIC DIAGRAM OF SANITARY PLUMBING	EMECHSY/2404/MRSM/M&E/SN-03
4	- DETAILS	EMECHSY/2404/MRSM/M&E/SN-04
FIRE FIGHTING SERVICES		
ITEM	DESCRIPTION	DRAWING No:
1	- GROUND FLOOR PLAN	EMECHSY/2404/MRSM/M&E/FF-01
2	- FIRST FLOOR PLAN	EMECHSY/2404/MRSM/M&E/FF-02

ELECTRICAL SERVICES		
ITEM	DESCRIPTION	DRAWING No:
1	- SITE PLAN - DETAIL OF STREET LIGHTING POLE - TNB METER KIOSK	EMECHSY/2404/MRSM/M&E/EL-01
2	- GROUND FLOOR PLAN - LIGHTING & POWER LAYOUT	EMECHSY/2404/MRSM/M&E/EL-02
3	- FIRST FLOOR PLAN - LIGHTING & POWER LAYOUT	EMECHSY/2404/MRSM/M&E/EL-03
4	- SCHEMATIC DIAGRAM	EMECHSY/2404/MRSM/M&E/EL-04
5	LIGHTNING PROTECTION SYSTEM - ROOF PLAN - DETAILS	EMECHSY/2404/MRSM/M&E/EL-05
TELEPHONE SERVICES		
ITEM	DESCRIPTION	DRAWING No:
1	SITE PLAN - TELEPHONE MANHOLE AND DUCTING LAYOUT PLAN	EMECHSY/2404/MRSM/M&E/TEL-01
2	- GROUND FLOOR PLAN	EMECHSY/2404/MRSM/M&E/TEL-02
3	- FIRST FLOOR PLAN	EMECHSY/2404/MRSM/M&E/TEL-03
4	- SCHEMATIC DIAGRAM	EMECHSY/2404/MRSM/M&E/TEL-04

TENDER DRAWING

LUKISAN NI HAK CIPTA

KONTRAKTOR PERLU MEMERIKSA KESEMUA UKURAN DI TAPAK. HANYA UKURAN YANG TERtera PERLU DIAMBIL KIRA, JIKA TERDAPAT KESALAHAN, PEGHAWI PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :

CADANGAN MEMBINA DAN MENYIAPKAN 8 UNIT KUARTERS GURU (KELAS G) SERTA KERJA BERKAITAN DI MARTAB RENDAH SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :

MAJLIS AMANAH RAKYAT (MARA)

IBU PEJABAT MARA 21 JALAN MARA 50609 KUALA LUMPUR

ARKITEK :

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Fax : 09-6667336

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Tandatangan Jurutera Profesional /Professional Engineer's Signature

I hereby certify that these works have been designed by me in accordance with sound engineering practice and that I take full responsibility for the design and proper performance of the same.

JENIS BANGUNAN

RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:

MECHANICAL & ELECTRICAL SERVICES

- SCHEDULE OF DRAWING

UKURAN

N.T.S

TARIKH KELUAR

JUNE 2024

DISEMAK OLEH

SBY

DILUKIS OLEH

SBM

PINDAAN

Tarikh

Catitan

Disemak

NO. PROJEK

NO. LUKISAN

EMECHSY/2404/MRSM/M&E/SOD

NOTES :

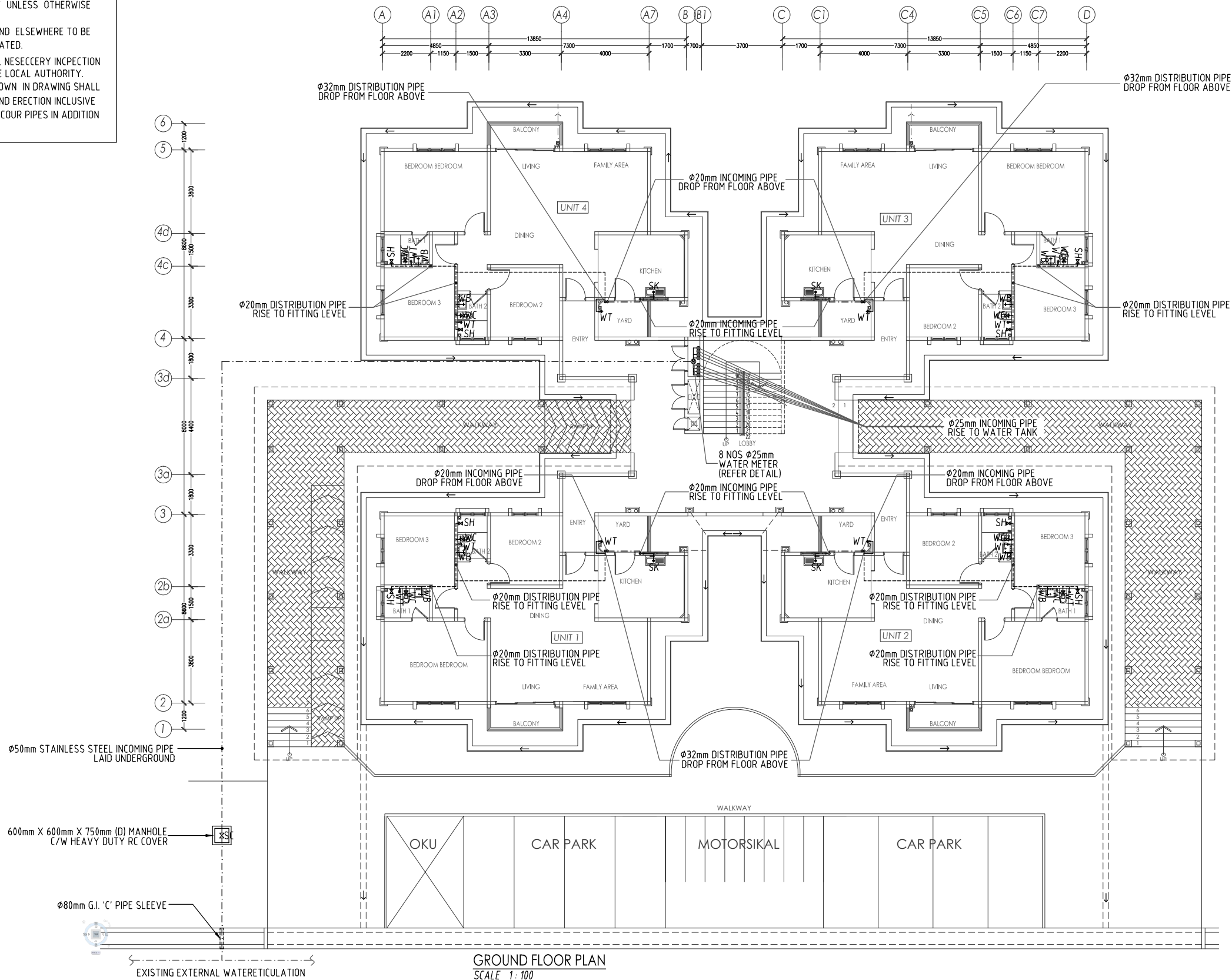
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2. ALL PIPES TO BE SUITABLY SUPPORTED BY APPROVED HANGERS, BRACKETS, ETC.
3. ALL VISIBLE PIPE TO BE PAINTED TO ARCHITECT APPROVAL.
4. ALL VALVES, FITTING AND SPECIAL TO BE CONCEALED EXCEPT OTHERWISE STATED.
5. ALL PIPE SHALL BE UPVC CLASS '7' UNLESS OTHERWISE STATED.
6. ALL PIPEWORKS IN THE TOILET AND ELSEWHERE TO BE CONCEALED EXCEPT OTHERWISE STATED.
7. THE CONTRACT SHALL INCLUDE ALL NESECERY INCEPION AND TESTING TO APPROVAL OF THE LOCAL AUTHORITY.
8. ALL WATER STORAGE TANKS SHOWN IN DRAWING SHALL BE DEEMED TO INCLUDED SUPPLY AND ERECTION INCLUSIVE OF ALL FITTINGS, OVERFLOW AND SCOUR PIPES IN ADDITION TO INCOMING AND OUT GOING PIPES.

COLD WATER PIPES & FITTING SCHEDULE

ITEM	PIPE SIZE (mm)	MATERIAL
INCOMING SUPPLY FROM WATER METER TO WATER TANK & SINK	ALL	STAINLESS STEEL
FROM STORAGE TANK TO FITTINGS.	ALL	UPVC (CLASS 7)

LEGENDS:

WC - WATER CLOSET  
WT - WATER TAP  
WB - WASH BASIN  
SK - SINK  
SH - SHOWER



GROUND FLOOR PLAN  
SCALE 1:100

TENDER DRAWING

NOTES :

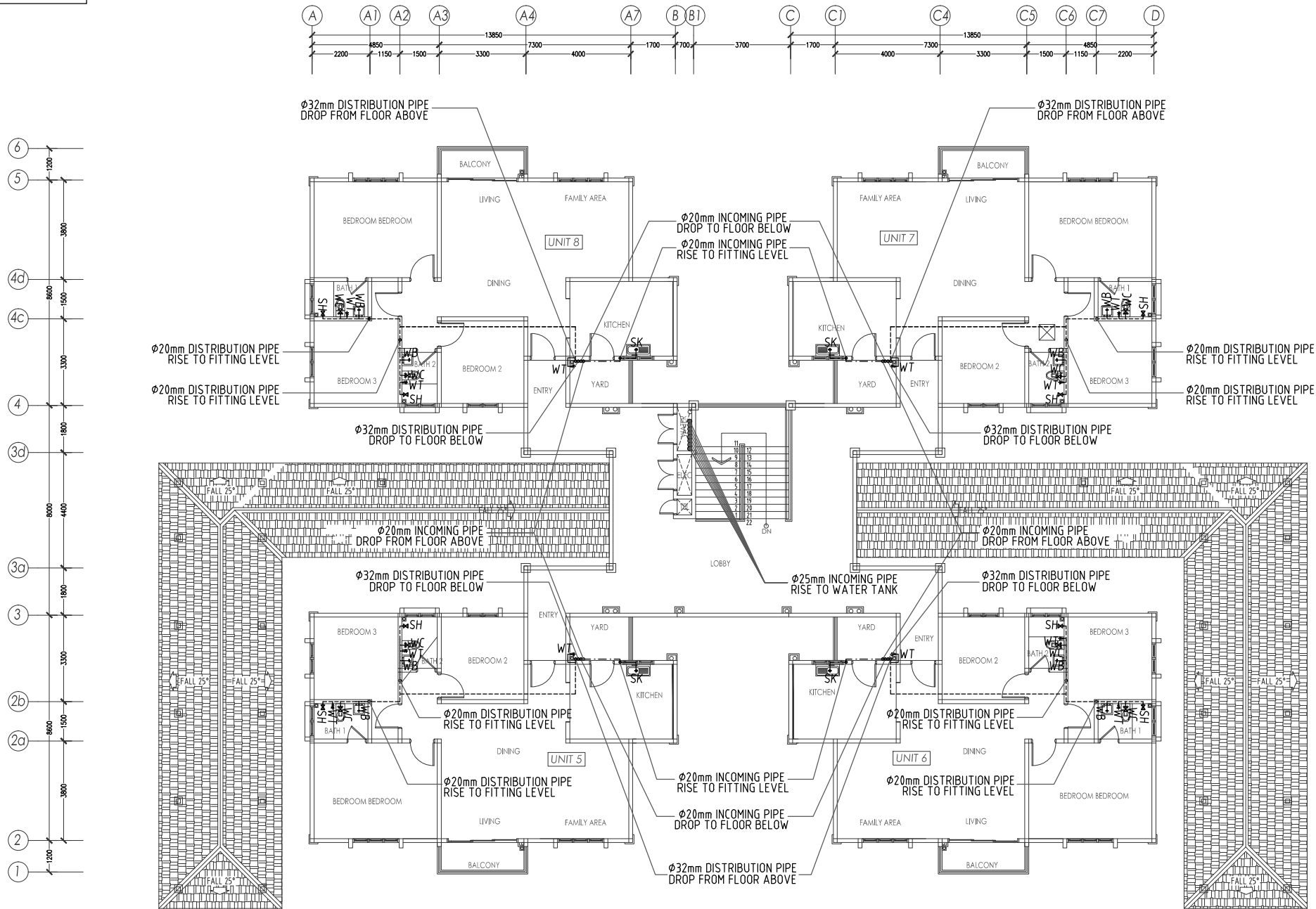
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LEGENDS:

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SK - SINK  
SH - SHOWER



FIRST FLOOR PLAN  
SCALE 1:100

TENDER DRAWING

LUKISAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMUA UKURAN DI TAPAK, HANYA UKURAN  
YANG TERTERA PERLU DIAMBIL HAK, JIKA TERDAPAT KESALAHAN, PENGHAJI  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :

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and proper performance of the same.

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
COLD WATER PLUMBING SERVICES

- FIRST FLOOR PLAN

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN	Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&E/CW-02

NOTES :

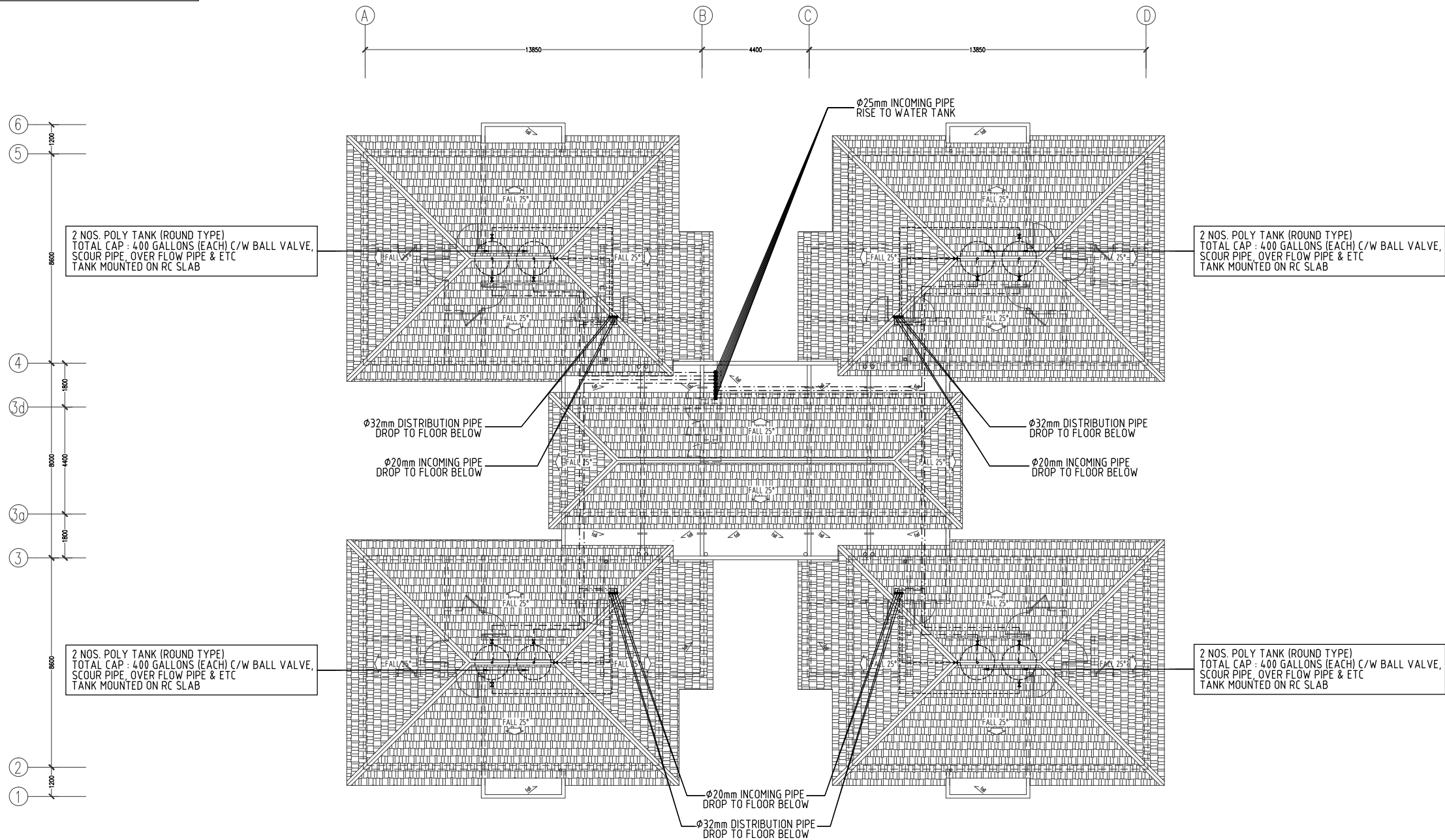
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COLD WATER PIPES & FITTING SCHEDULE

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INCOMING SUPPLY FROM WATER METER TO WATER TANK & SINK	ALL	STAINLESS STEEL
FROM STORAGE TANK TO FITTINGS.	ALL	UPVC (CLASS 7)

LEGENDS:

WC - WATER CLOSET  
WT - WATER TAP  
WB - WASH BASIN  
SK - SINK  
SH - SHOWER



ROOF PLAN  
SCALE 1:100

TENDER DRAWING

LUKISAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMUA UKURAN DI TAPAK, HANYA UKURAN  
YANG TERPERA PERLU DIAMBIL HUKUM JIKA TERDAPAT KESALAHAN, PEGAWAI  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
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8 UNIT KUARTERS GURU (KELAS G) SERTA  
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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
COLD WATER PLUMBING SERVICES

- SCHEMATIC DIAGRAM OF SANITARY PLUMBING

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN		
Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&E/CW-03



## NOTES :

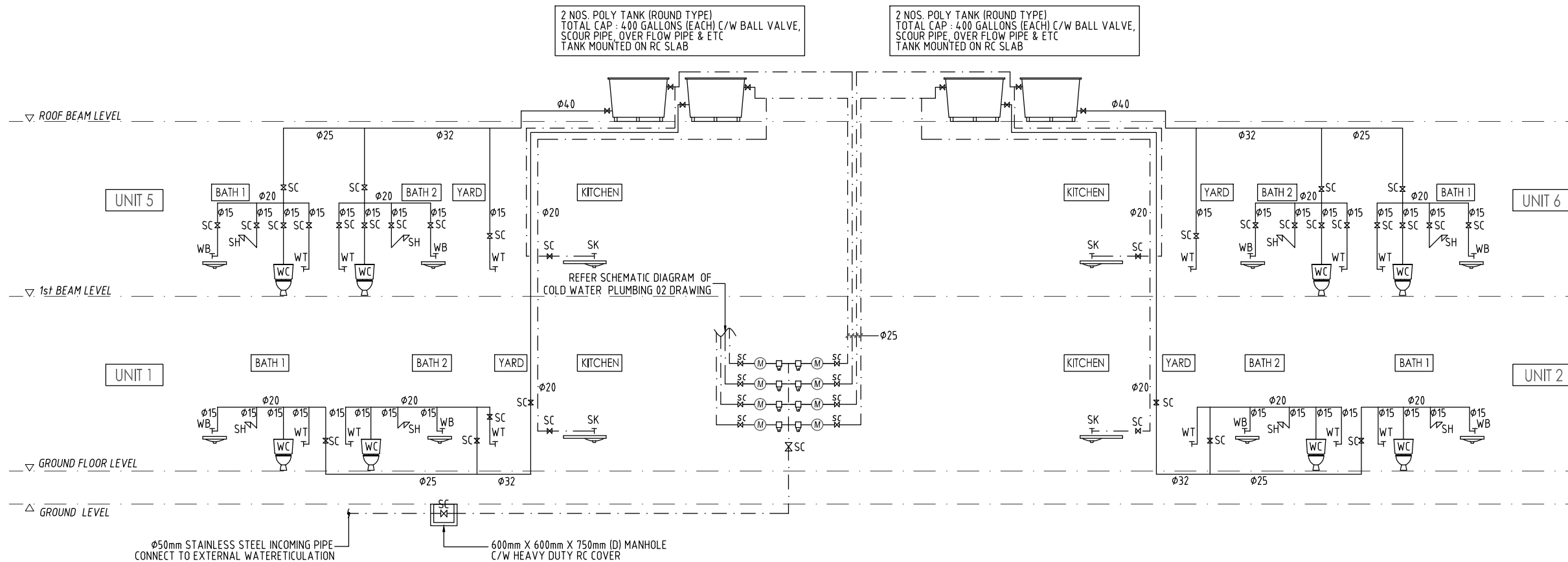
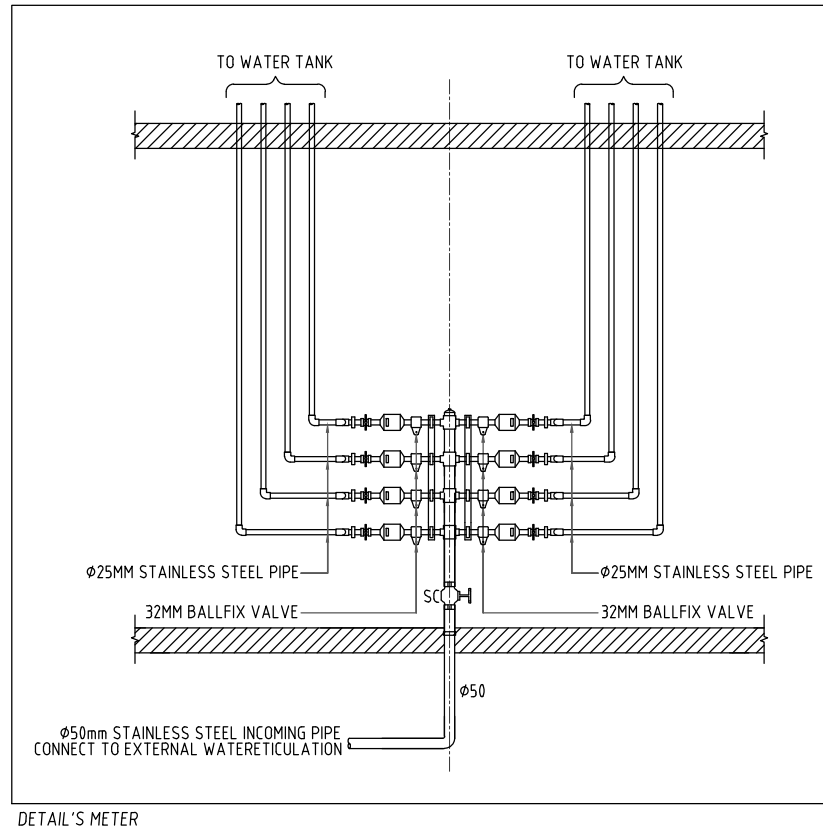
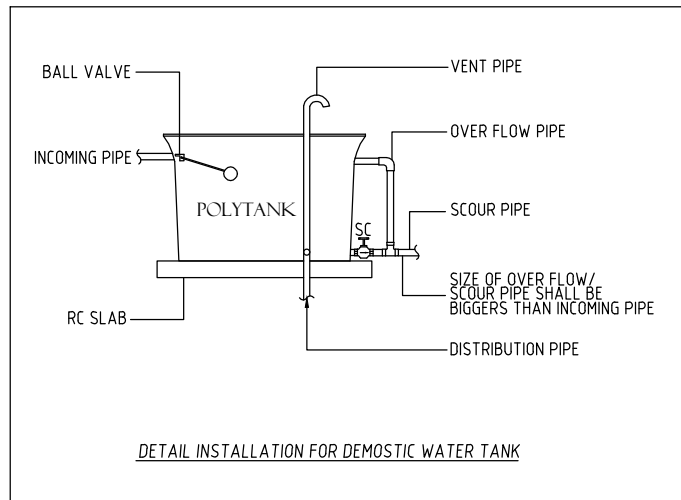
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## COLD WATER PIPES &amp; FITTING SCHEDULE

ITEM	PIPE SIZE (mm)	MATERIAL
INCOMING SUPPLY FROM WATER METER TO WATER TANK & SINK	ALL	STAINLESS STEEL
FROM STORAGE TANK TO FITTINGS.	ALL	UPVC (CLASS 7)

## LEGENDS:

WC - WATER CLOSET  
WT - WATER TAP  
WB - WASH BASIN  
SK - SINK  
SH - SHOWER  
SC - STOPCOCK VALVE

SCHEMATIC DIAGRAM OF COLD WATER PLUMBING 01  
NOT TO SCALE

TENDER DRAWING

LUKISAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
YANG TERPERA PERLU DIAMBIL. JIKA TERDAPAT KESALAHAN, PENGARAH  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :

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KUALA LUMPUR

ARKITEK :

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Tandatangan Jurutera Profesional / Professional Engineer's Signature

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and proper performance of the same.

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
COLD WATER PLUMBING SERVICES  
-SCHEMATIC DIAGRAM OF COLD WATER PLUMBING 01

UKURAN	N.T.S
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&amp;E/CW-04

NOTES :

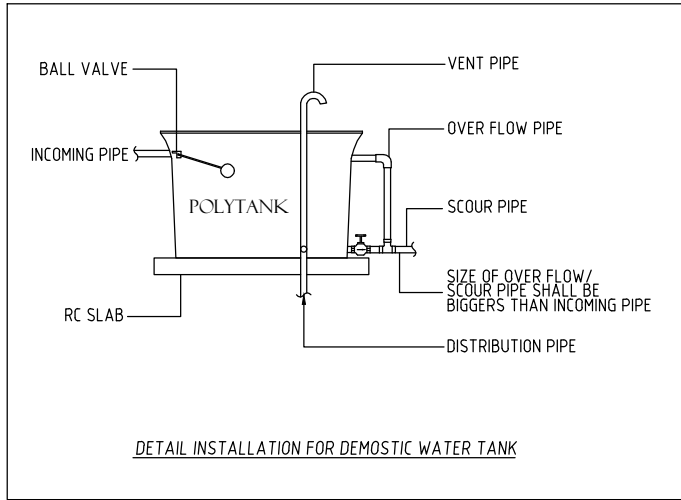
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COLD WATER PIPES & FITTING SCHEDULE

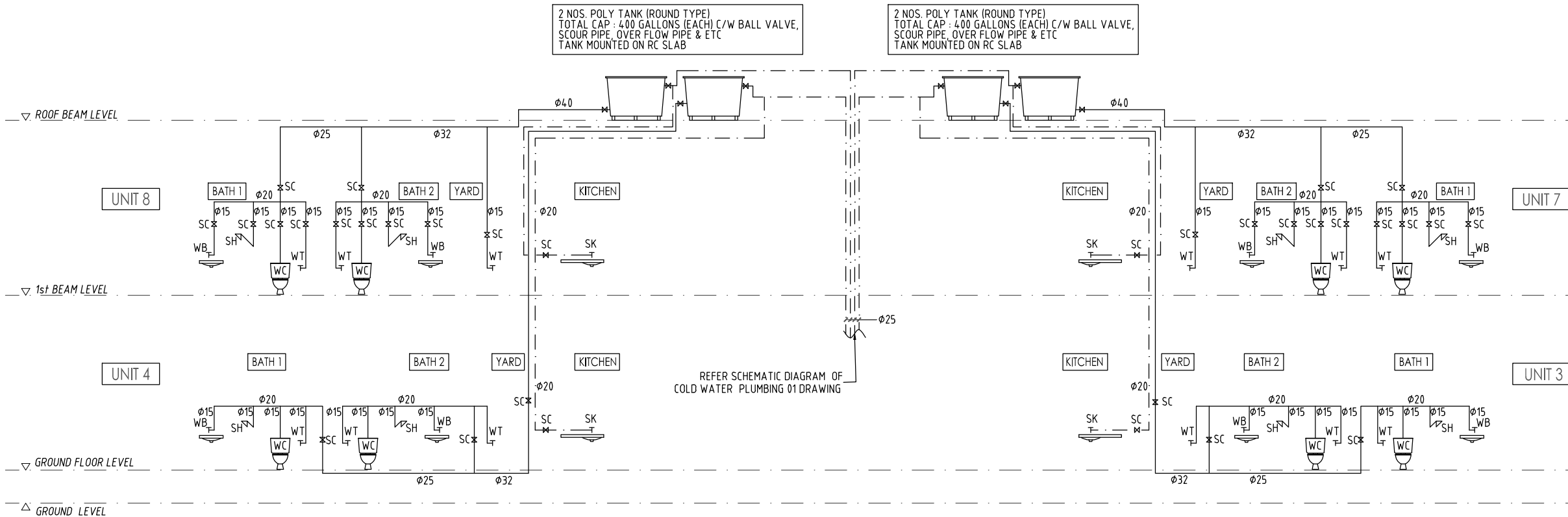
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INCOMING SUPPLY FROM WATER METER TO WATER TANK & SINK	ALL	STAINLESS STEEL
FROM STORAGE TANK TO FITTINGS.	ALL	UPVC (CLASS 7)

LEGENDS:

WC - WATER CLOSET  
WT - WATER TAP  
WB - WASH BASIN  
SK - SINK  
SH - SHOWER  
SC - STOPCOCK VALVE



DETAIL INSTALLATION FOR DOMESTIC WATER TANK



SCHEMATIC DIAGRAM OF COLD WATER PLUMBING 02  
NOT TO SCALE

TENDER DRAWING

LUKISAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
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PENGUKURAN PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

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PROJEK :

CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
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RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
COLD WATER PLUMBING SERVICES

-SCHEMATIC DIAGRAM OF COLD WATER PLUMBING 02

UKURAN	N.T.S
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&E/CW-05

## SANITARY PIPING:

1. THE INSTALLATION PIPEWORKS AND FITTING SHALL COMPLY WITH LOCAL AUTHORITY REQUIREMENT.
2. ALL PIPES SHALL BE SUITABLY SUPPORTED AND PROVIDED WITH CLEANING EYES FOR SERVICING AND INSPECTION
3. SANITARY FITTING AS NECESSARY SHALL BE PROVIDED WITH Ø20 OVERFLOW PIPE.
4. ALL PIPE PASSING THROUGH THE ROOF STRUCTURE SHALL BE SLEEVED AND PROVIDED WITH COLLARS AND FLASHING TO WATER TIGHT JOINT.
5. INSPECTION AND CLEANING EYES SHALL BE PROVIDED ON ALL SOIL & COMBINED PIPES TO PROVIDE ACCESS FOR PROPER INSPECTION AND CLEANING
6. ALL EXPOSED PIPEWORKS SHALL BE PAINTED BY SUBCONTRACTOR (TO COLOUR OF ARCHITECT'S SELECTION) AND SHOULD INCLUDE ZINC CHROMATE PRIMER, 1 UNDER COAT AND 1 FINISH COAT OF GOOD QUALITY ENAMEL.
7. VENT PIPES TO WATER CLOSET SHALL BE Ø50.
8. ALL VENT PIPES SHALL BE TERMINATED WITH GALVANISED WIRE DOME & CARRIED UP TO SUCH A HEIGHT SO AS TO BE EFFECTIVE IN PREVENTING THE ESCAPE OF FOUL AIR AND GASES INTO BUILDING.
9. ALL MANHOLE SHALL BE MAJLIS DAERAH BERA APPROVED TYPE. MANHOLE COVERS SHALL BE HEAVY DUTY CAST IRON FOR MANHOLE SITUATED IN CARPARK OR ROAD.
10. ANTI - SYPHONAGE PIPING SHALL CONFIRM IN ITS ENTIRETY TO BY - LAW 7 (20-22) OF THE SEWERAGE DRAINAGE BY LAW - 1957.
11. ALL SANITARY WORKS SHALL BE CARRIED OUT BY A LICENSED SANITARY PLUMBING REGISTERED WITH AUTHORITY CONCERNED.
12. ALL PIPES SIZES IN MILLIMETERS UNLESS OTHERWISE STATED.

## LEGENDS:-

WC - WATER CLOSET  
FT - FLOOR TRAP  
WB - WASH BASIN  
GT - GULLY TRAP  
IMH - INTERNAL MANHOLE  
SH - SHOWER  
SK - SINK

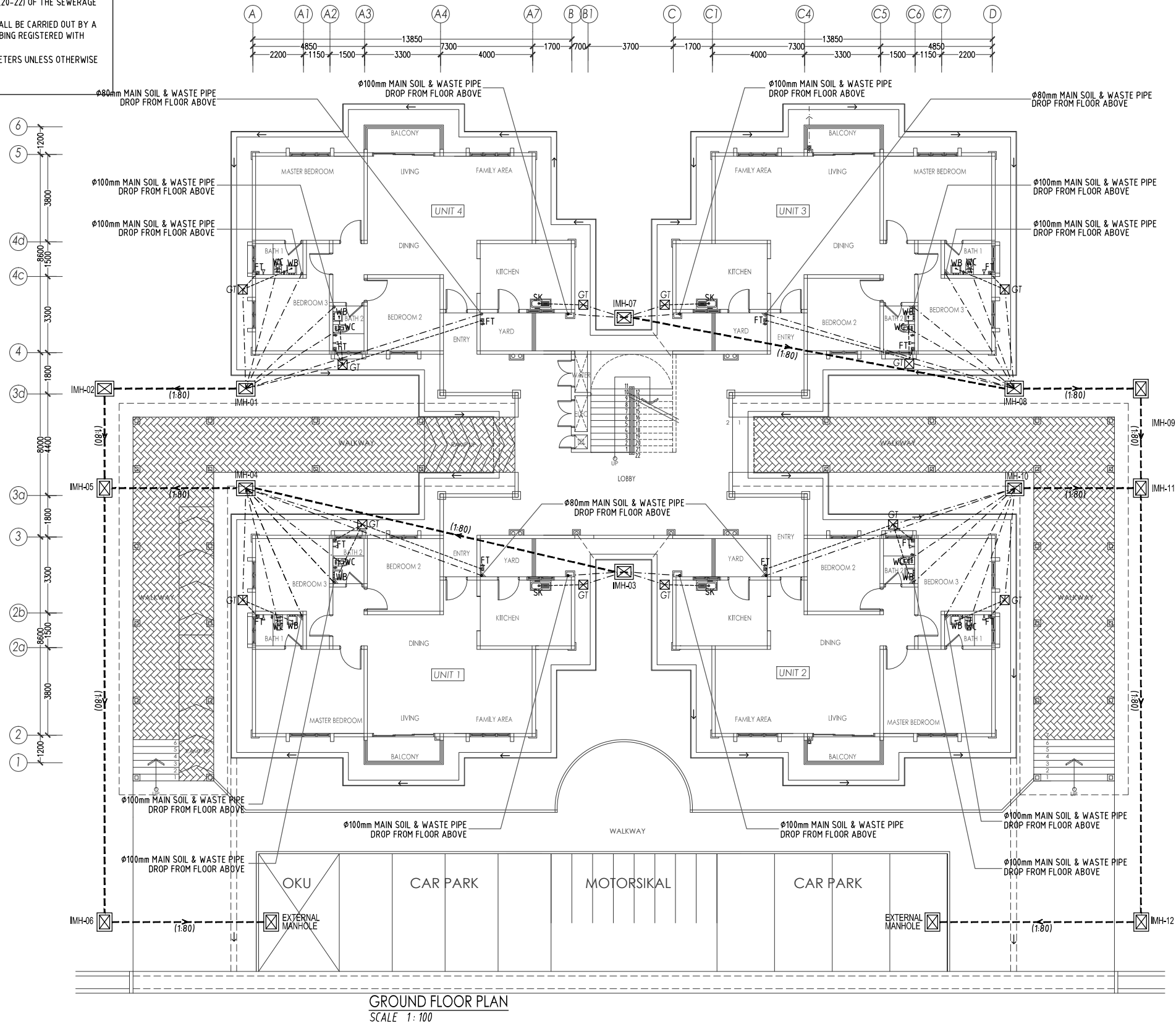
## SCHEDULE OF SOIL &amp; WASTE SIZES

FITTING	PIPE SAIZ (ABOVE GROUND) B.S 4515 & BS 5255		PIPE SAIZ (UNDER GROUND) B.S 4600 & BS 1387
	SOIL & WASTE PIPE	VENT PIPE	
BASIN	40mm uPVC	-	100mm BROWN
SINK	40mm uPVC	-	100mm BROWN
WATER CLOSET	100mm uPVC	-	100mm BROWN
FLOOR TRAP	80mm uPVC	-	100mm BROWN
GULLY TRAP	-	-	100mm BROWN
INTERNAL MANHOLE	-	-	150mm BROWN

VENT ABOVE ROOF LEVER - uPVC BROWN

## SCHEDULE OF INSPECTION CHAMBER

INTERNAL MANHOLE	IMH-01	IMH-02	IMH-03	IMH-04	IMH-05	IMH-06	IMH-07	IMH-08	IMH-09	IMH-10	IMH-11	IMH-12
GRD. LEVEL												
INV. LEVEL												
DIST	0.00m	5.30m	0.00m	16.00m	5.40m	18.00m	0.00m	16.40m	4.70m	0.00m	4.70m	18.00m
DEPTH	0.50m	0.56m	0.50m	0.70m	0.76m	0.98m	0.50m	0.70m	0.75m	0.73m	0.79m	1.00m



TENDER DRAWING

LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
YANG TERTEPA PERLU DIAMBIL WAKA, JIKA TERDAPAT KESALAHAN, PENGHAWA  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :

MAJLIS AMANAH RAKYAT (MARA)  
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KUALA LUMPUR

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Tandatangan Jurutera Profesional /Professional Engineer's Signature

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with sound engineering practice and that I take full responsibility for the design  
and proper performance of the same.

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
SANITARY PLUMBING SERVICES

- GROUND FLOOR PLAN

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKSIAN EMECHSY/2404/MRSM/M&E/SN-01

## SANITARY PIPING:

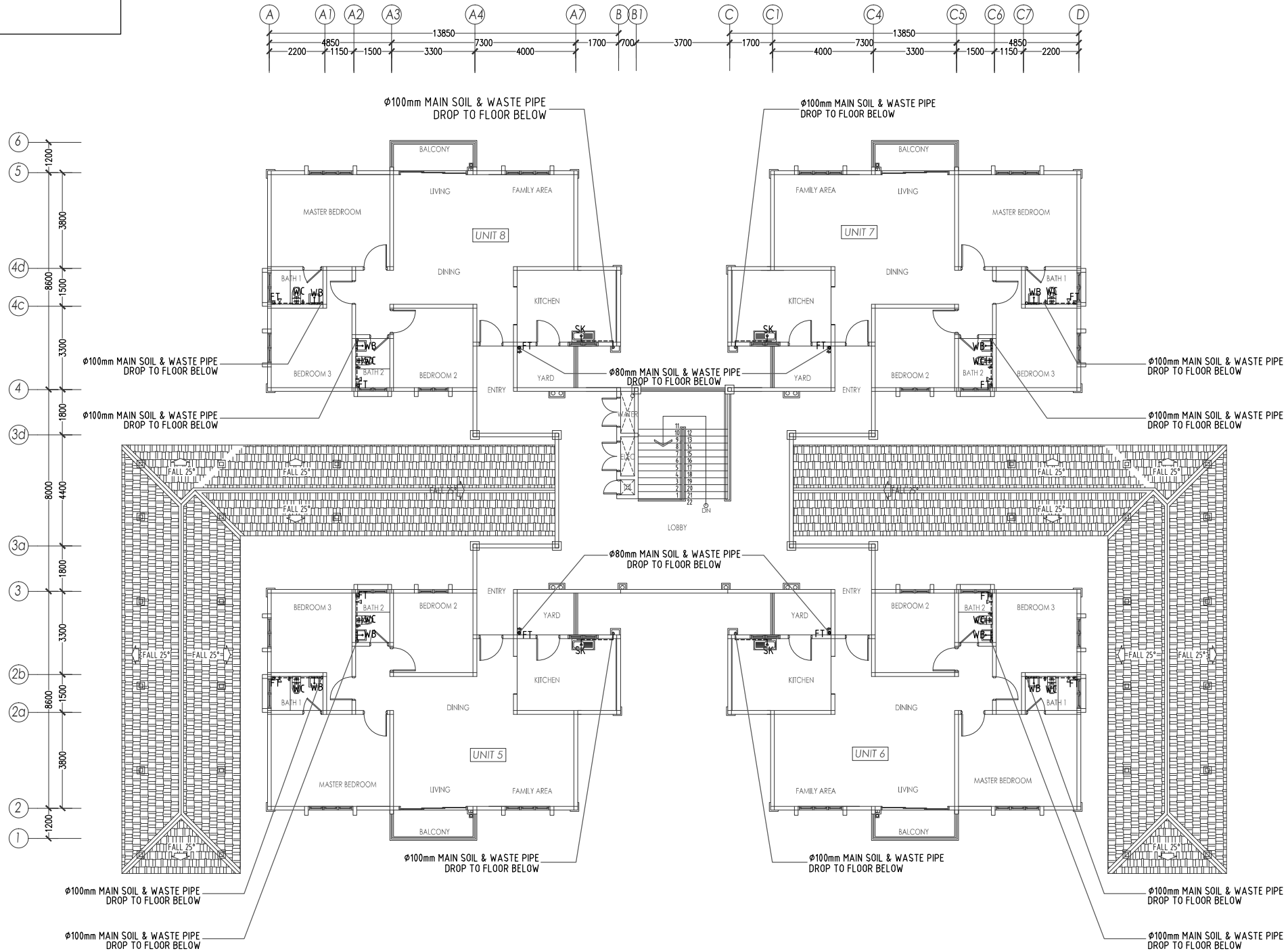
1. THE INSTALLATION PIPEWORKS AND FITTING SHALL COMPLY WITH LOCAL AUTHORITY REQUIREMENT.
2. ALL PIPES SHALL BE SUITABLY SUPPORTED AND PROVIDED WITH CLEANING EYES FOR SERVICING AND INSPECTION
3. SANITARY FITTING AS NECESSARY SHALL BE PROVIDED WITH Ø20 OVERFLOW PIPE.
4. ALL PIPE PASSING THROUGH THE ROOF STRUCTURE SHALL BE SLEEVED AND PROVIDED WITH COLLARS AND FLASHING TO WATER TIGHT JOINT.
5. INSPECTION AND CLEANING EYES SHALL BE PROVIDED ON ALL SOIL & COMBINED PIPES TO PROVIDE ACCESS FOR PROPER INSPECTION AND CLEANING
6. ALL EXPOSED PIPEWORKS SHALL BE PAINTED BY SUBCONTRACTOR (TO COLOUR OF ARCHITECT'S SELECTION) AND SHOULD INCLUDE ZINC CHROMATE PRIMER, 1 UNDER COAT AND 1 FINISH COAT OF GOOD QUALITY ENAMEL.
7. VENT PIPES TO WATER CLOSET SHALL BE Ø50.
8. ALL VENT PIPES SHALL BE TERMINATED WITH GALVANISED WIRE DOME & CARRIED UP TO SUCH A HEIGHT SO AS TO BE EFFECTIVE IN PREVENTING THE ESCAPE OF FOUL AIR AND GASES INTO BUILDING.
9. ALL MANHOLE SHALL BE MAJLIS DAERAH BERA APPROVED TYPE. MANHOLE COVERS SHALL BE HEAVY DUTY CAST IRON FOR MANHOLE SITUATED IN CARPARK OR ROAD.
10. ANTI - SYPHONAGE PIPING SHALL CONFIRM IN ITS ENTIRETY TO BY - LAW 7 (20-22) OF THE SEWERAGE DRAINAGE BY LAW - 1957.
11. ALL SANITARY WORKS SHALL BE CARRIED OUT BY A LICENSED SANITARY PLUMBING REGISTERED WITH AUTHORITY CONCERNED.
12. ALL PIPES SIZES IN MILLIMETERS UNLESS OTHERWISE STATED.

## LEGENDS:-

WC - WATER CLOSET  
FT - FLOOR TRAP  
WB - WASH BASIN  
GT - GULLY TRAP  
IMH - INTERNAL MANHOLE  
SH - SHOWER  
SK - SINK

## SCHEDULE OF SOIL &amp; WASTE SIZES

FITTING	PIPE SAIZ (ABOVE GROUND) B.S 4515 & BS 5255		PIPE SAIZ (UNDER GROUND) B.S 4600 & BS 1387
	SOIL & WASTE PIPE	VENT PIPE	
BASIN	40mm uPVC	-	100mm BROWN
SINK	40mm uPVC	-	100mm BROWN
WATER CLOSET	100mm uPVC	-	100mm BROWN
FLOOR TRAP	80mm uPVC	-	100mm BROWN
GULLY TRAP		-	100mm BROWN
INTERNAL MANHOLE		-	150mm BROWN
VENT ABOVE ROOF LEVER - uPVC BROWN			



FIRST FLOOR PLAN  
SCALE 1:100

TENDER DRAWING

LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
YANG TERTEPA PERLU DIAMBIL HUKU, JIKA TERDAPAT KESALAHAN, PENGHAJI  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
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8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
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TANDATANGAN PEMILIK :

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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
SANITARY PLUMBING SERVICES

- FIRST FLOOR PLAN

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKSIAN EMECHSY/2404/MRSM/M&E/SN-02



SANITARY PIPING:

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2. ALL PIPES SHALL BE SUITABLY SUPPORTED AND PROVIDED WITH CLEANING EYES FOR SERVICING AND INSPECTION

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12. ALL PIPES SIZES IN MILLIMETERS UNLESS OTHERWISE STATED.

LEGENDS:-

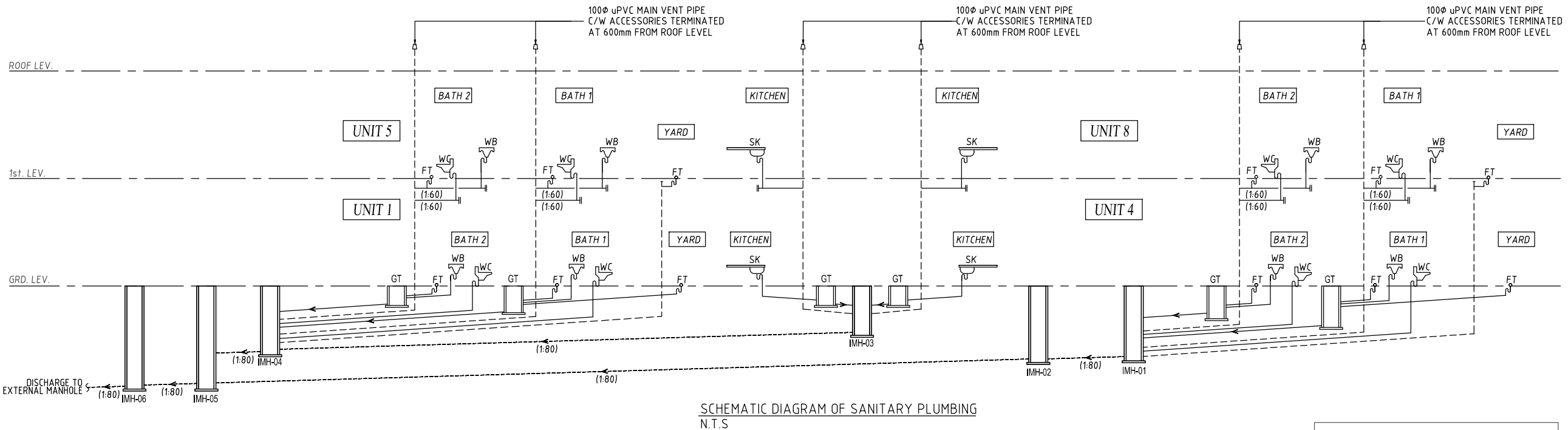
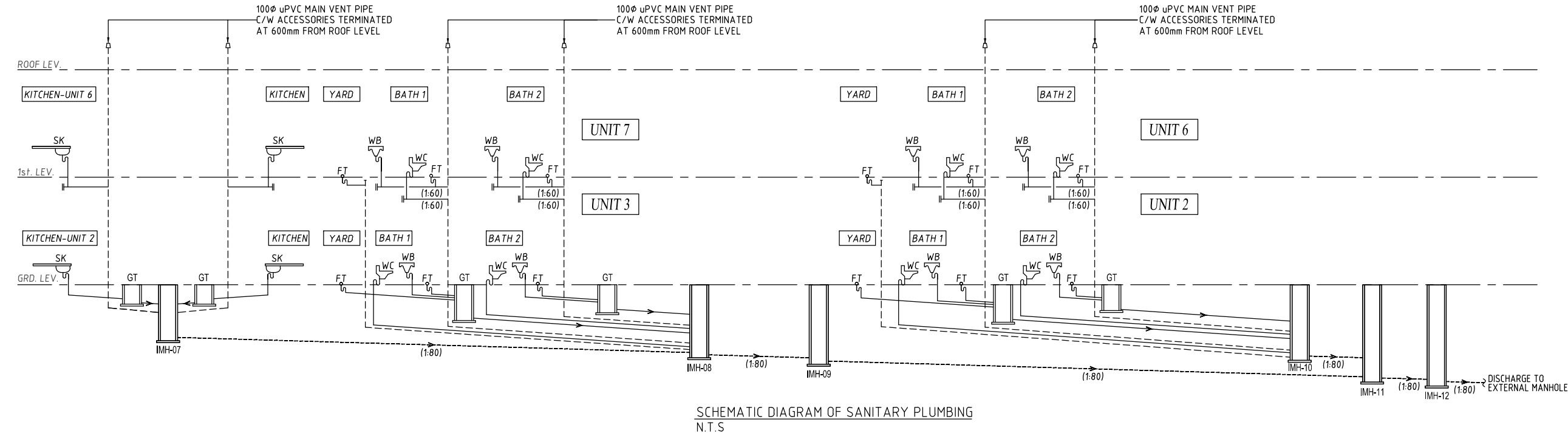
WC - WATER CLOSET  
FT - FLOOR TRAP  
WB - WASH BASIN  
GT - GULLY TRAP  
IMH - INTERNAL MANHOLE  
SH - SHOWER  
SK - SINK

SCHEDULE OF SOIL & WASTE SIZES

FITTING	PIPE SAIZ (ABOVE GROUND) B.S 4515 & BS 5255		PIPE SAIZ (UNDER GROUND) B.S 4600 & BS 1387
	SOIL & WASTE PIPE	VENT PIPE	
BASIN	40mm uPVC	-	100mm BROWN
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FLOOR TRAP	80mm uPVC	-	100mm BROWN
GULLY TRAP		-	100mm BROWN
INTERNAL MANHOLE		-	150mm BROWN
VENT ABOVE ROOF LEVER - uPVC BROWN			

SCHEDULE OF INSPECTION CHAMBER

INTERNAL MANHOLE	IMH-01	IMH-02	IMH-03	IMH-04	IMH-05	IMH-06	IMH-07	IMH-08	IMH-09	IMH-10	IMH-11	IMH-12
GRD. LEVEL												
INV. LEVEL												
DIST	0.00m	5.30m	0.00m	16.00m	5.40m	18.00m	0.00m	16.40m	4.70m	0.00m	4.70m	18.00m
DEPTH	0.50m	0.56m	0.50m	0.70m	0.76m	0.98m	0.50m	0.70m	0.75m	0.73m	0.79m	1.00m



TENDER DRAWING

LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN YANG TERDIRI PERLU DIAMBIL WAKA, JIKA TERDAPAT KESALAHAN, PERUBAHAN PENGUKURAN PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
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KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :

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KUALA LUMPUR

ARKITEK :

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Tandatangan Jurutera Profesional /Professional Engineer's Signature

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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
SANITARY PLUMBING SERVICES

-SCHEMATIC DIAGRAM OF SANITARY PLUMBING

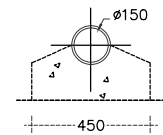
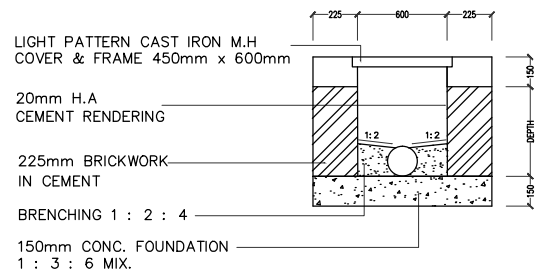
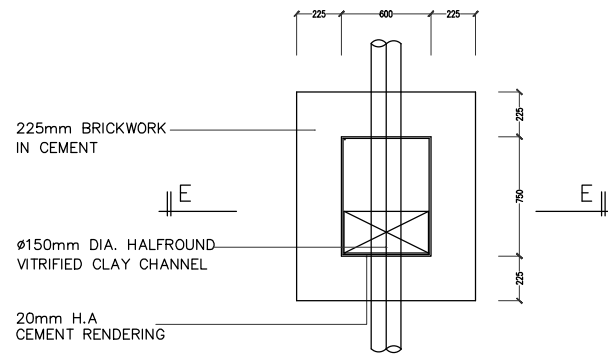
UKURAN	N.T.S
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

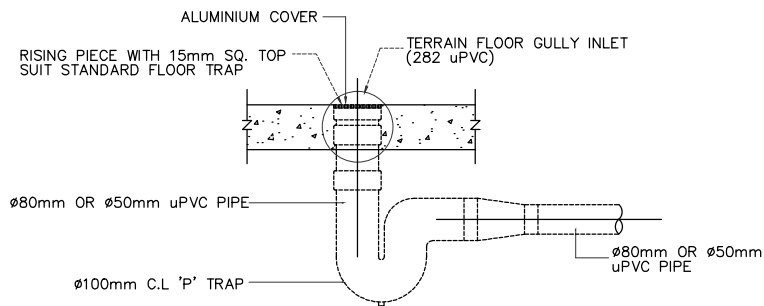
Tarikh	Catitan	Disemak

NO. PROJEK

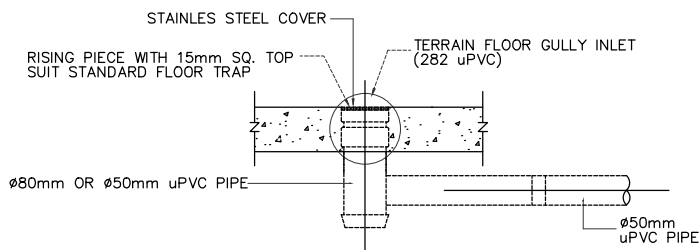
NO. LUKSIAN EMECHSY/2404/MRSM/M&E/SN-03



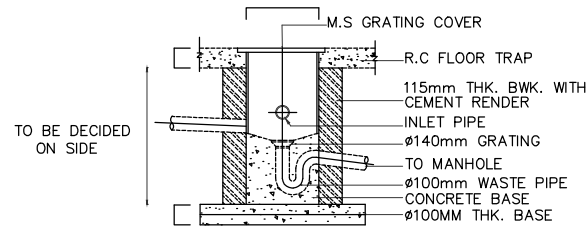
DETAIL OF PIPE SUPPORT



DETAIL OF FLOOR TRAP- GROUND FLOOR



DETAIL OF FLOOR TRAP - ABOVE GROUND



DETAIL OF GULLY TRAP

LUKISAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN YANG TERtera PERLU DIAMBIL HAK, JIKA TERDAPAT KESALAHAN, PERAWA PENGUNA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
**CADANGAN MEMBINA DAN MENYIAPKAN 8 UNIT KUARTERS GURU (KELAS G) SERTA KERJA BERKAITAN DI MARTAB RENDAH SAINS MARA (MRSM) ATM BERA, PAHANG**

TANDATANGAN PEMILIK :

MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
SANITARY PLUMBING SERVICES

- DETAILS

UKURAN	N.T.S
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN	Tarikh	Catitan	Disemak

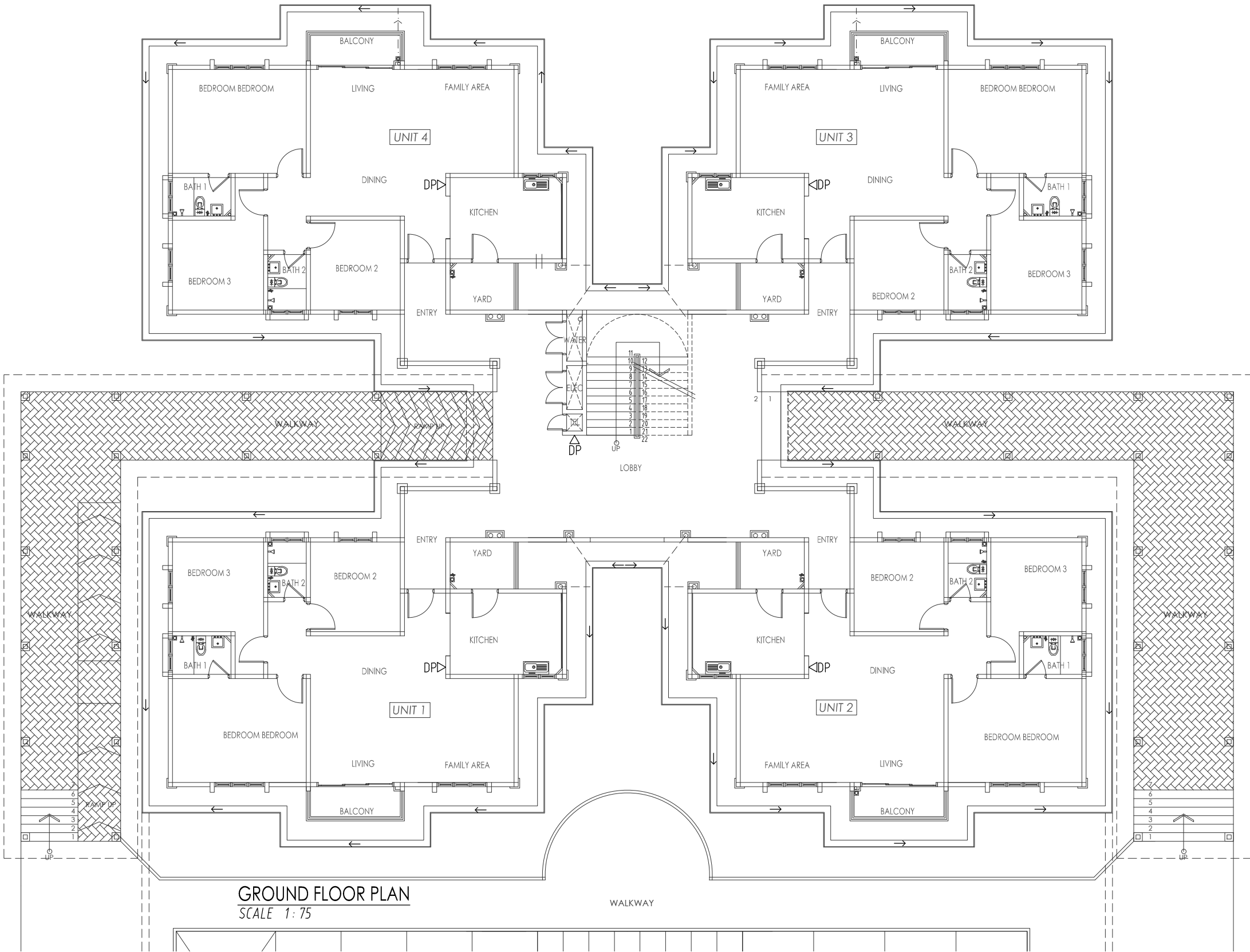
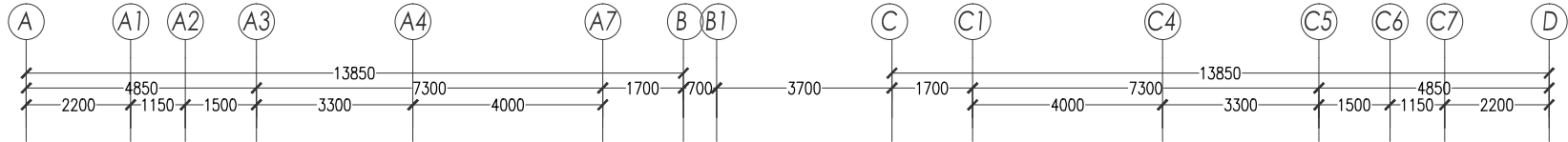
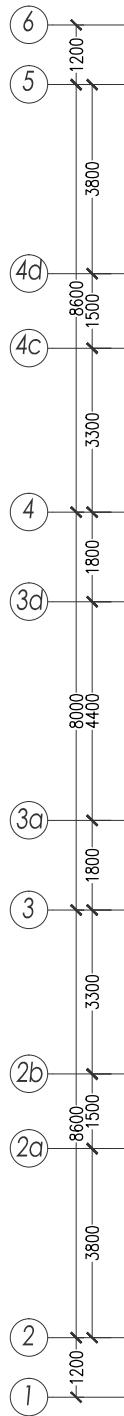
NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&E/SN-04

TENDER DRAWING

LEGENDS

SYMBOL	DISCRIPTION	QTY
<DP	FIRE EXTINGUISHER (4.0KG ABCE DRY POWDER)	5



GROUND FLOOR PLAN  
SCALE 1:75


TENDER DRAWING


LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
YANG TERtera PERLU DIAMBIL WAKA, JIKA TERDAPAT KESALAHAN, PEGHAWI  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
**CADANGAN MEMBINA DAN MENSIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG**

TANDATANGAN PEMILIK :  
  
MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

ARKITEK :  
  
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Tandatangan Jurutera Profesional /Professional Engineer's Signature

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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
FIRE FIGHTING SERVICES

- GROUND FLOOR PLAN

UKURAN	1:75
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

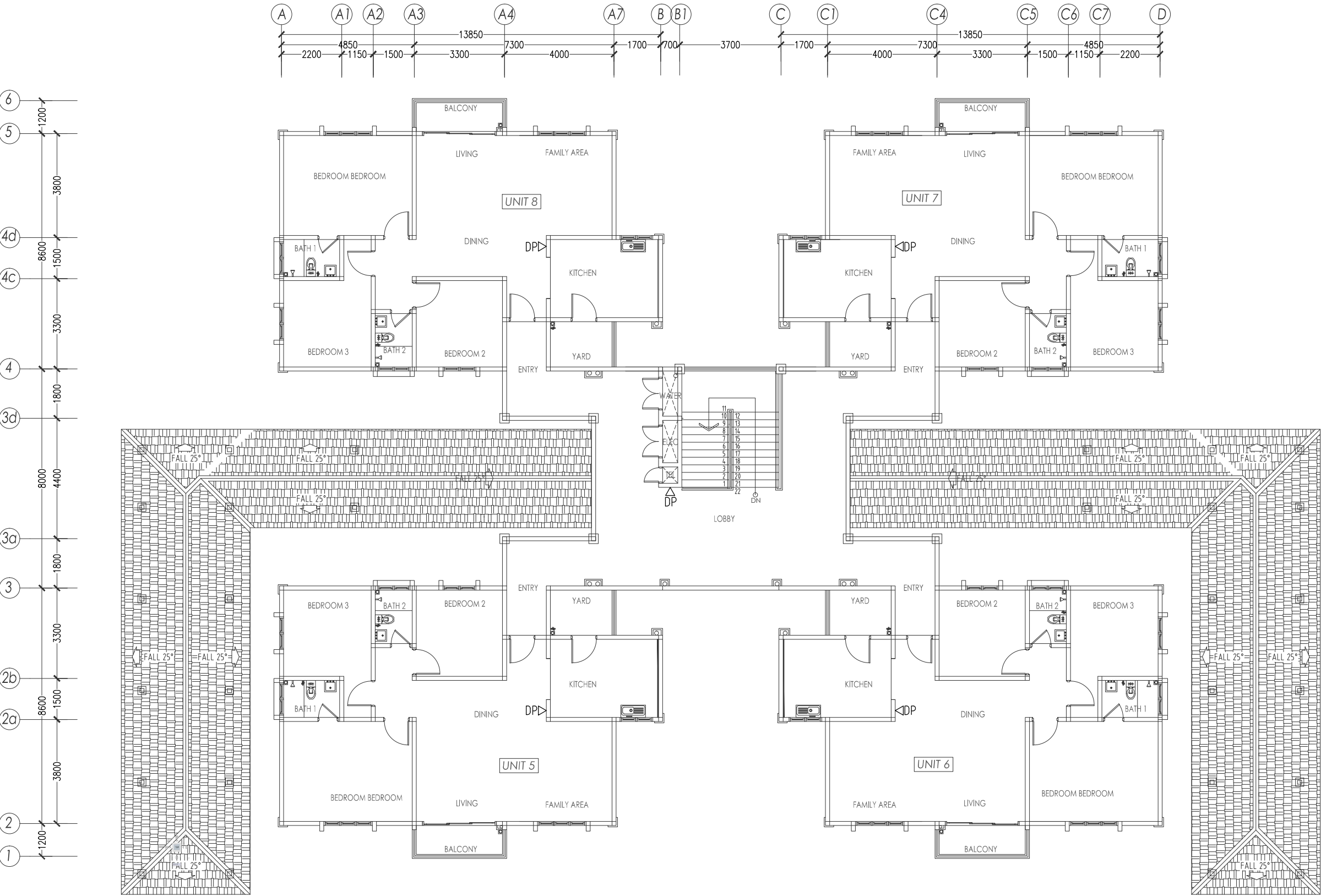
Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKSIAN EMECHSY/2404/MRSM/M&E/FF-01

LEGENDS

SYMBOL	DISCRIPTION	QTY
<IDP	FIRE EXTINGUISHER (4.0KG ABCE DRY POWDER)	5



FIRST FLOOR PLAN  
SCALE 1:75

TENDER DRAWING

LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
YANG TERPERA PERLU DIAMBIL WAKA JIKA TERDAPAT KESALAHAN, PERHATIAN  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
**CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG**

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RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
FIRE FIGHTING SERVICES

- FIRST FLOOR PLAN

UKURAN	1:75
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

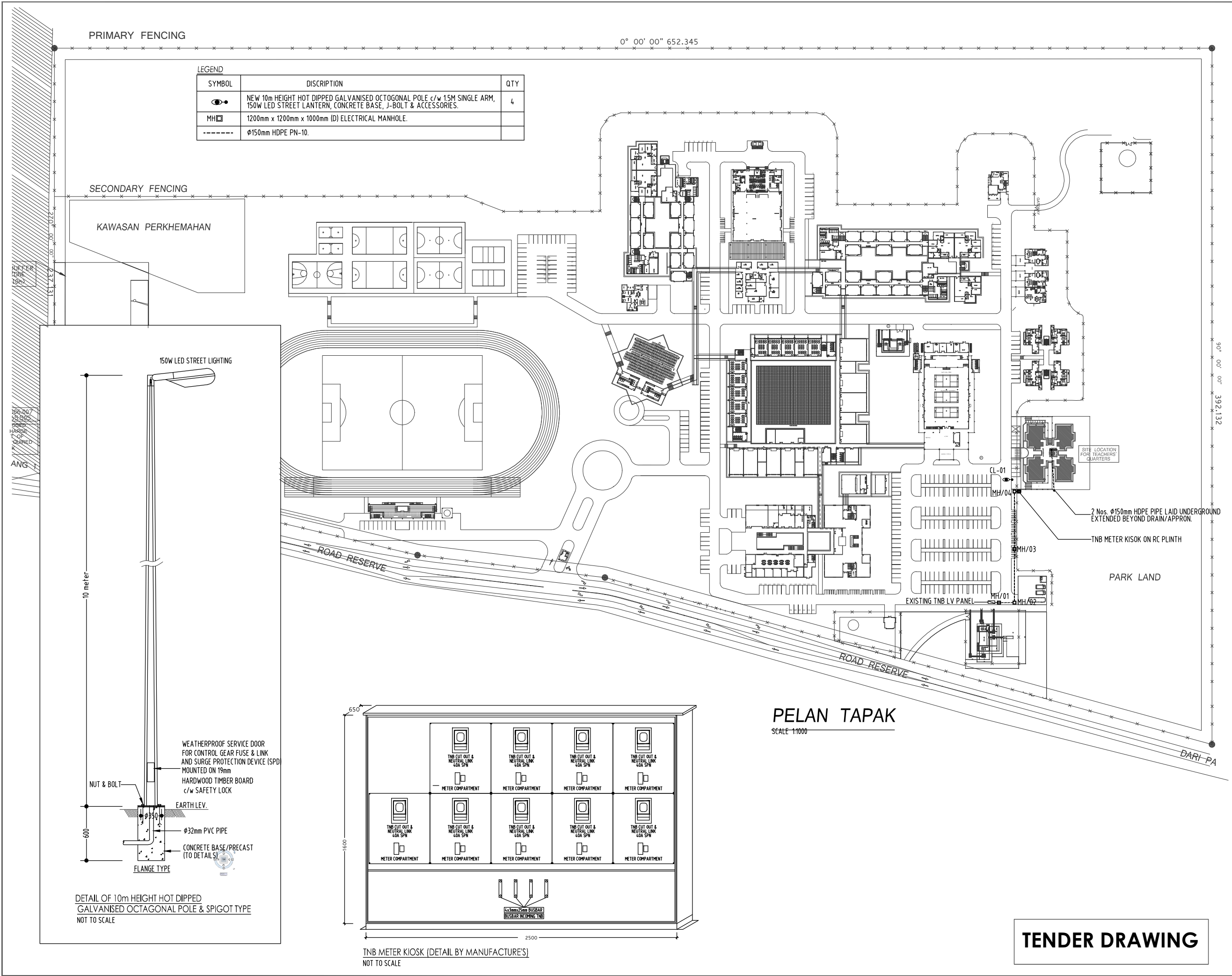
PINDAAN

Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKSIAN EMECHSY/2404/MRSM/M&E/FF-02





LUKSIAN INI HAK Cipta.  
KONTRAKTOR PERLU MEMERIKSA KESAMUA UKURAN DI TAPAK, HANYA UKURAN YANG TERKERA PERLU DIAMBIL KIRA, JIKA TERDAPAT KESILAPAN, PEGAWAI PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
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8 UNIT KUARTERS GURU (KELAS G) SERTA  
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TANDATANGAN PEMILIK :

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Tandatangan Jurutera Profesional /Professional Engineer's Signature

\*I hereby certify that these works have been designed by me in accordance with sound engineering practice and that I take full responsibility for the design and proper performance of the same

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
ELECTRICAL SERVICES

- SITE PLAN
- TNB METER KIOSK
- DETAIL STREET LIGHTING POLE

UKURAN	1: 1000
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN













Tarikh	Catitan	Disemak

NO. PROJEK

NO. LUKSIAN EMECHSY/2404/MRSM/M&E/E-01

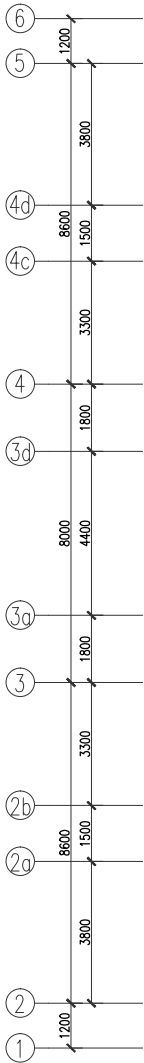
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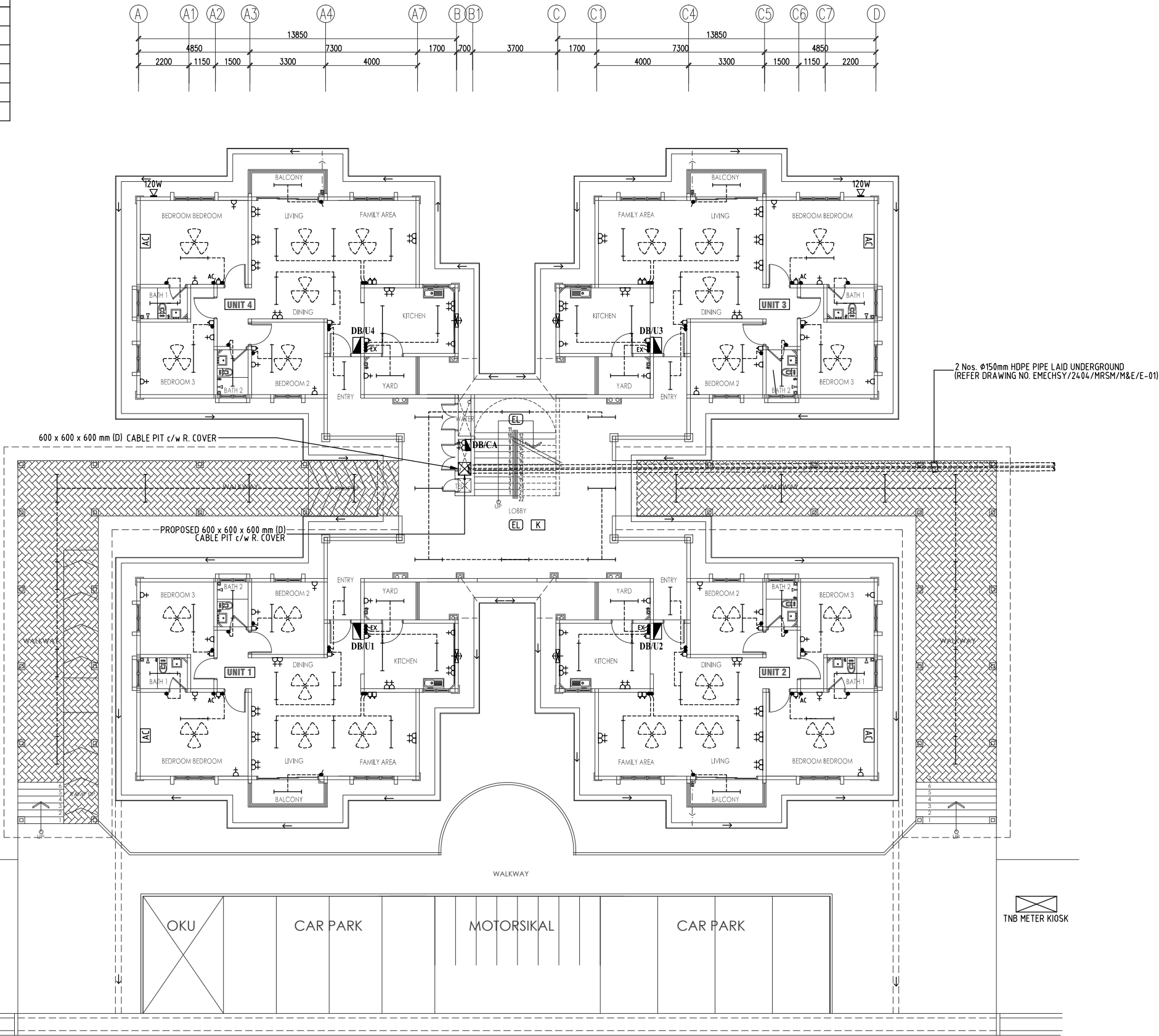
ITEM	DESCRIPTION	QTY
	1200mm DIA. CEILING FAN c/w SWITCH REGULATOR, HOOK & ACCESSORIES	24
	1 x 18W BARE CHANNEL LED LIGHT FTG. (T8)	80
	6A ONE WAY SWITCH.	48
	13A SPN SWITCH SOCKET OUTLET MOUNTED AT 300 mm F.F.F.L	90
	EXHAUST FAN	4
	DISTRIBUTION BOX	5
	20A AIR COND POINT AT 300mm BELOW CEILING LEVEL/SOFFIT	4
	AIRCOND SWITCH C/W PILOT LAMP	4
	EXHAUST FAN SWITCH	4
	EMERGENCY LIGHT	2
	'KELUAR' SIGN	1
	120W LED SPOTLIGHT FTG.	

NOTE :

a) All electrical wiring shall be in the conduit and conceal in the wall.



GROUND FLOOR PLAN  
SCALE 1:100



TENDER DRAWING

LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN YANG TERTERA PERLU DIAMBIL. BILA ADA TERDAPAT KESALAHAN, PENGARAH PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
**CADANGAN MEMBINA DAN MENSIAPKAN 8 UNIT KUARTERS GURU (KELAS G) SERTA KERJA BERKAITAN DI MARTAB RENDAH SAINS MARA (MRSM) ATM BERA, PAHANG**

TANDATANGAN PEMILIK :  
  
MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609 KUALA LUMPUR

ARKITEK :  
  
**YUSDI YUSOFF architect**  
8124, 1st Floor, Jalan Bukit Sekilau,  
25200 Kuantan, Pahang Darul Makmur.  
Tel : +609-513 5117 @ 7117  
Fax : +609-513 9217  
EMAIL : yyarchitect@gmail.com

JURUTERA MEKANIKAL & ELEKTRIKAL :  
  
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CONSULTING ENGINEERS  
No. 28092, Aras 1&2,  
Perkedaian Permint, Perdang Fasa 3,  
Kampung Batin, Seberang Takir,  
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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
ELECTRICAL SERVICES

- GROUND FLOOR PLAN  
- LIGHTING & POWER LAYOUT












UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN	Tarikh	Catitan	Disemak

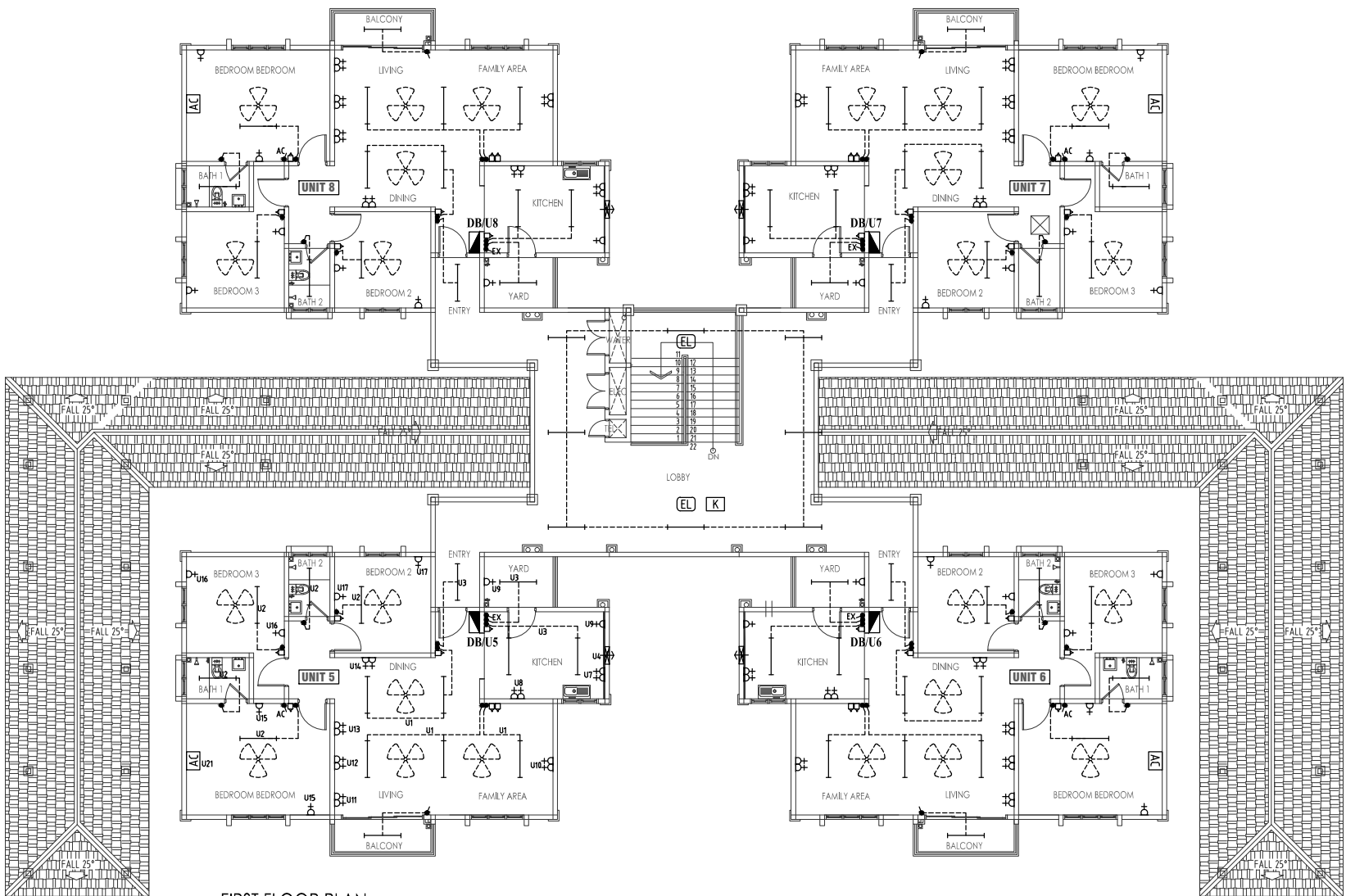
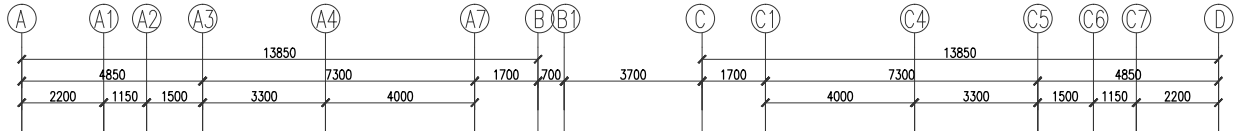
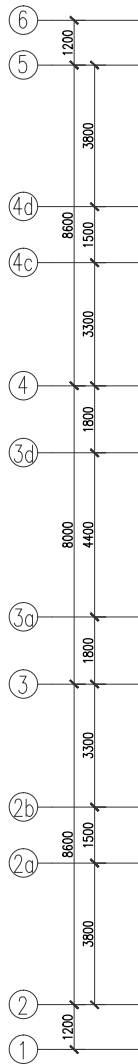
NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&E/E-02

LEGEND :

ITEM	DESCRIPTION	QTY
	1200mm DIA. CEILING FAN c/w SWITCH REGULATOR, HOOK & ACCESSORIES	24
	1 x 18W BARE CHANNEL LED LIGHT FTG.(T8)	68
	6A ONE WAY SWITCH.	48
	13A SPN SWITCH SOCKET OUTLET MOUNTED AT 300 mm F.F.F.L	88
	EXHAUST FAN	4
	DISTRIBUTION BOX	4
	20A AIR COND POINT AT 300mm BELOW CEILING LEVEL/SOFFIT	4
	AIRCOND SWITCH C/W PILOT LAMP	4
	EXHAUST FAN SWITCH	4
	EMERGENCY LIGHT	2
	'KELUAR' SIGN	1

NOTE :  
a) All electrical wiring shall be in the conduit and conceal in the wall.



FIRST FLOOR PLAN  
SCALE 1:100

TENDER DRAWING

LUKISAN NI HAK CIPTA.  
KONTRAKTOR PERLU MEMERIKSA KESEMUA UKURAN DI TAPAK. HANYA UKURAN YANG TERtera PERLU DIAMBIL. WAKA, JIKA TERDAPAT KESALAHAN, PERHARAI PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN.

KELULUSAN

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :

MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

ARKITEK :

  
**YUSDI YUSOF**architect  
8124, 1<sup>st</sup> Floor, Jalan Bukit Sekilau,  
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Fax : 09-6667336  
emechconsult@gmail.com

Tandatangan Jurutera Profesional /Professional Engineer's Signature

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JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
ELECTRICAL SERVICES

- FIRST FLOOR PLAN  
- LIGHTING & POWER LAYOUT

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

NO. PROJEK

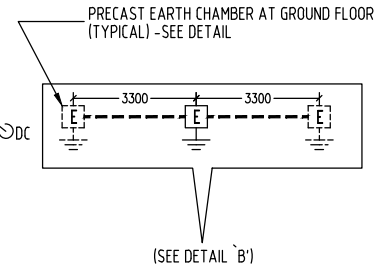
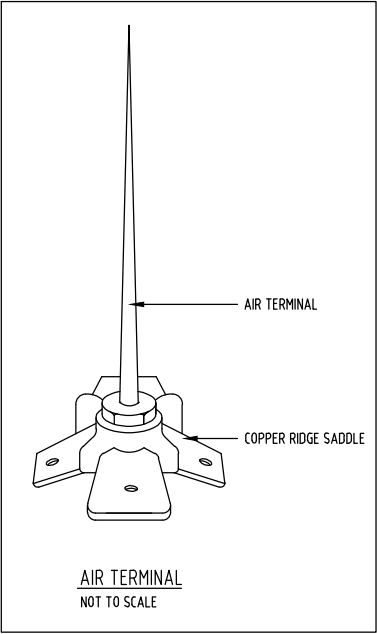
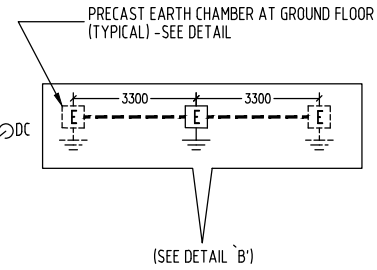
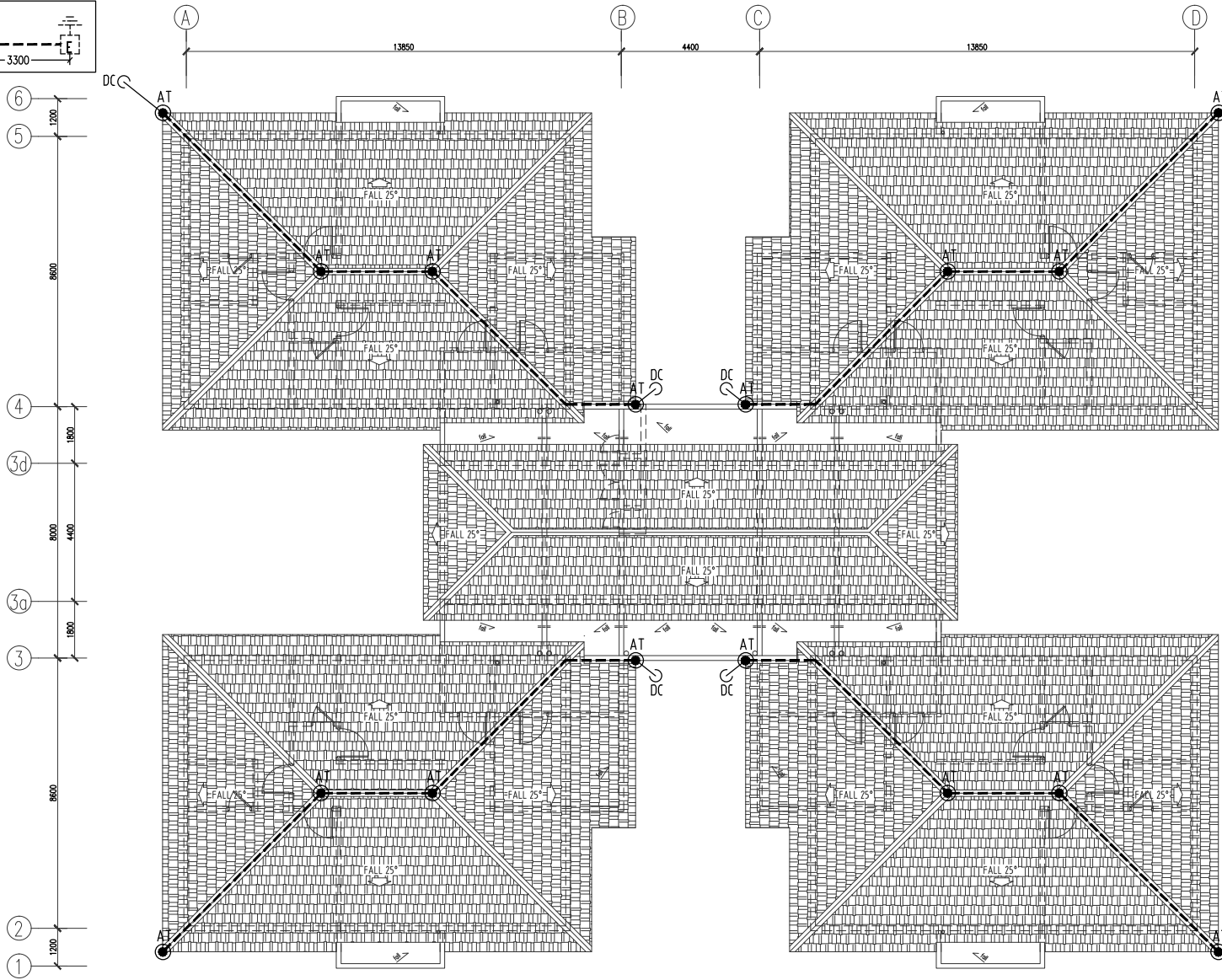
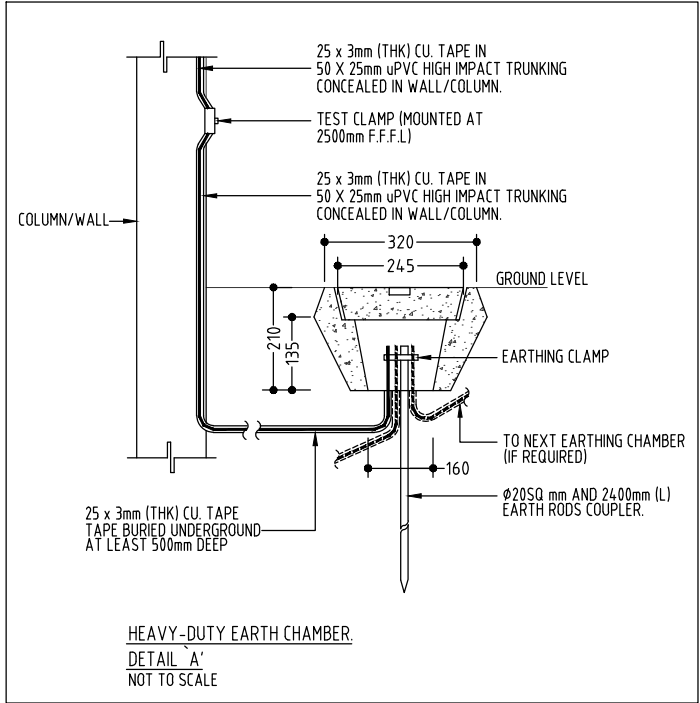
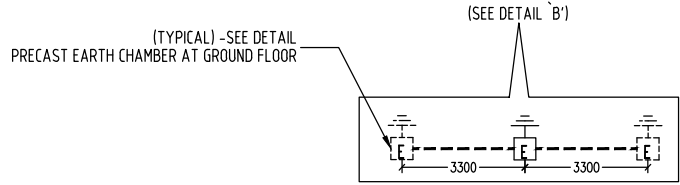
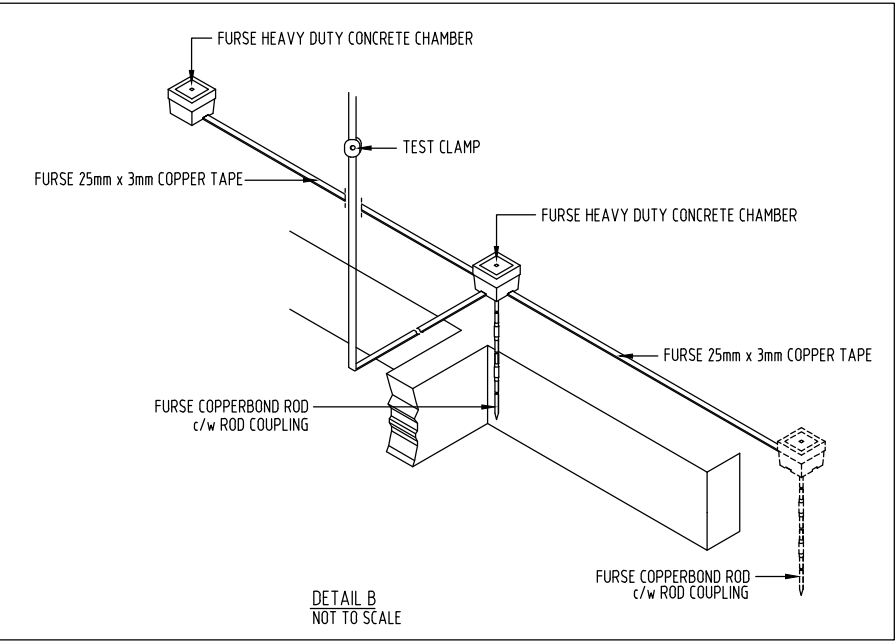
NO. LUKISAN EMECHSY/2404/MRSM/M&E/E-03





LEGENDS

AT	AIR TERMINATION ROD
E	HEAVY-DUTY PRE CAST CHAMBER c/w ELECTRODE (<3 Ohm)
DC	DOWN CONDUCTOR c/w 25 x 3mm (thk) CU. TAPE.
	25 x 3mm (thk) CU. TAPE.



ROOF PLAN  
SCALE 1:100

TENDER DRAWING

LUKSIAN NI HAK CIPTA  
KONTRAKTOR PERLU MEMERIKSA KESEMAH UKURAN DI TAPAK, HANYA UKURAN  
YANG TERtera PERLU DIAMBIL KIRA, JIKA TERDAPAT KESALAHAN, PENGHAWA  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
**PROJEK PEMBINAAN 8 UNIT  
KUARTERS UNTUK GURU DI  
MAKTAB RENDAH SAINS MARA  
(MRSM) ATM BERA, PAHANG DARUL  
MAKMUR**

TANDATANGAN PEMILIK :  
  
MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

ARKITEK :  
  
**YUSDI YUSOF architect**  
8124, 1st Floor, Jalan Bukit Sekilau,  
25200 Kuantan, Pahang Darul Makmur.  
Tel : +609-513 5117 @ 7177  
Fax : +609-513 9217  
EMAIL : yyarchitect@gmail.com

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CONSULTING ENGINEERS  
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Terengganu Darul Iman.  
Tel : 09-6667337  
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Tandatangan Jurutera Profesional / Professional Engineer's Signature

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and proper performance of the same.

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKSIAN:  
ELECTRICAL SERVICES  
LIGHTNING PROTECTION SYSTEM

- ROOF PLAN  
- DETAILS

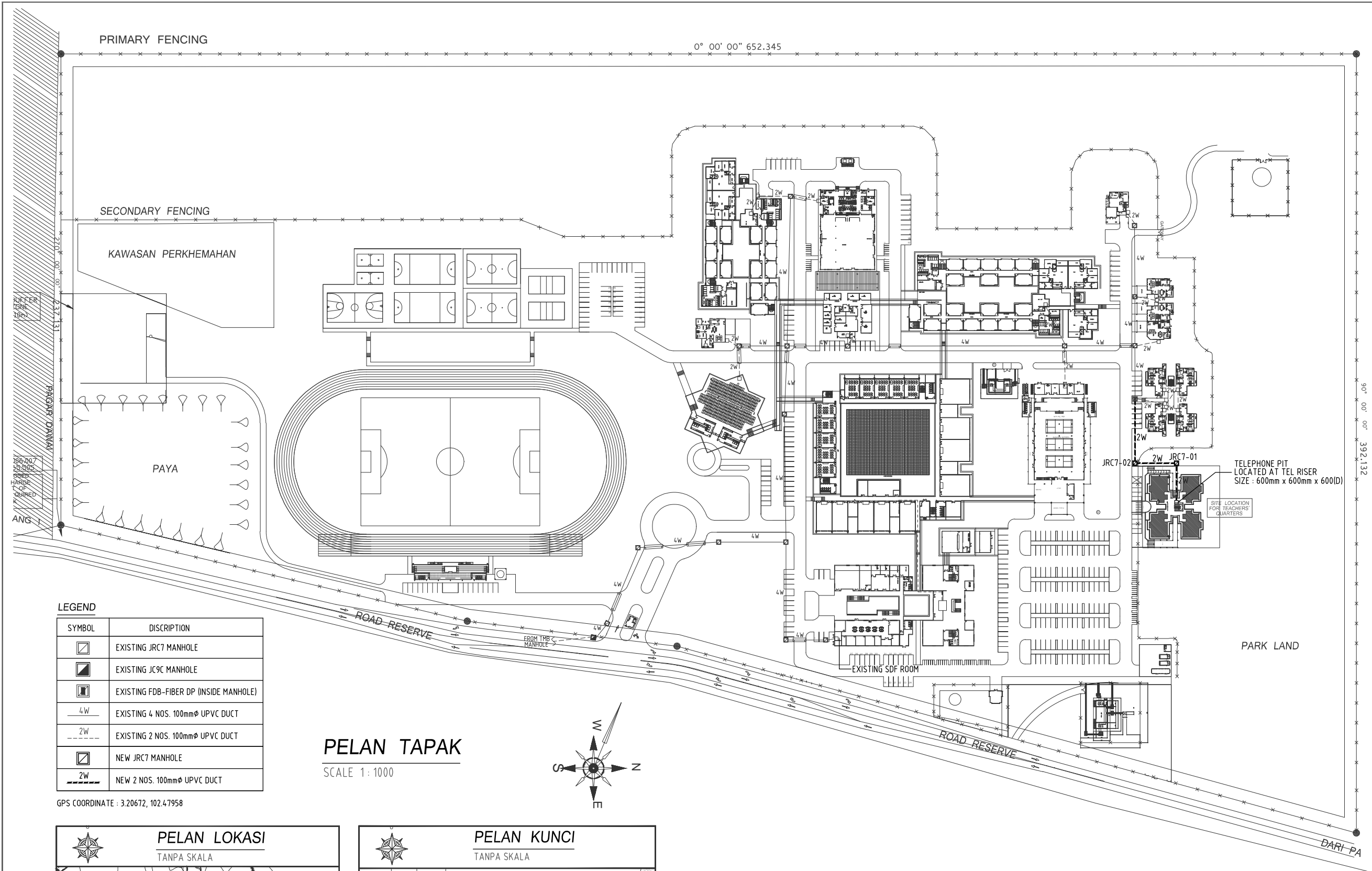
UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

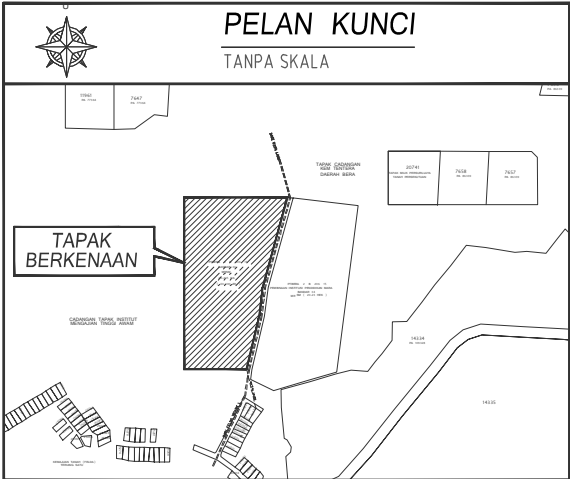
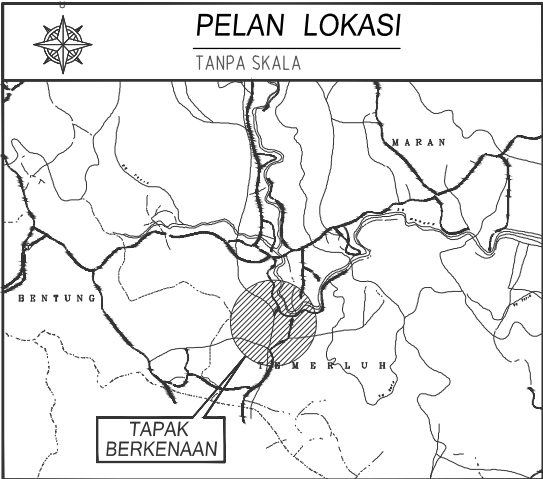
NO. PROJEK

NO. LUKSIAN EMECHSY/2404/MRSM/M&E/E-05



LEGEND	
SYMBOL	DISCRIPTION
	EXISTING JRC7 MANHOLE
	EXISTING JC9C MANHOLE
	EXISTING FDB-FIBER DP (INSIDE MANHOLE)
	EXISTING 4 NOS. 100mmØ UPVC DUCT
	EXISTING 2 NOS. 100mmØ UPVC DUCT
	NEW JRC7 MANHOLE
	NEW 2 NOS. 100mmØ UPVC DUCT

GPS COORDINATE : 3.20672, 102.47958



LUKISAN INI HAK Cipta.  
KONTRAKTOR PERLU MEMERIKSA KESAMUA UKURAN DI TAPAK. HANYA UKURAN  
YANG TERTERA PERLU DIAMBIL KIRA. JIKA TERDAPAT KESILAPAN, PEGAWAI  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
**CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG**

TANDATANGAN PEMILIK :

MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

ARKITEK :

**YUSDI YUSOF architect**  
8124, 1<sup>st</sup> Floor, Jalan Bukit Sekilau,  
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and proper performance of the same

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
TELEPHONE SERVICES  
SITE PLAN  
- TELEPHONE MANHOLE AND DUCTING  
LAYOUT PLAN

UKURAN	1:1000
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM



PINDAAN	Tarikh	Catitan	Disemak

NO. PROJEK

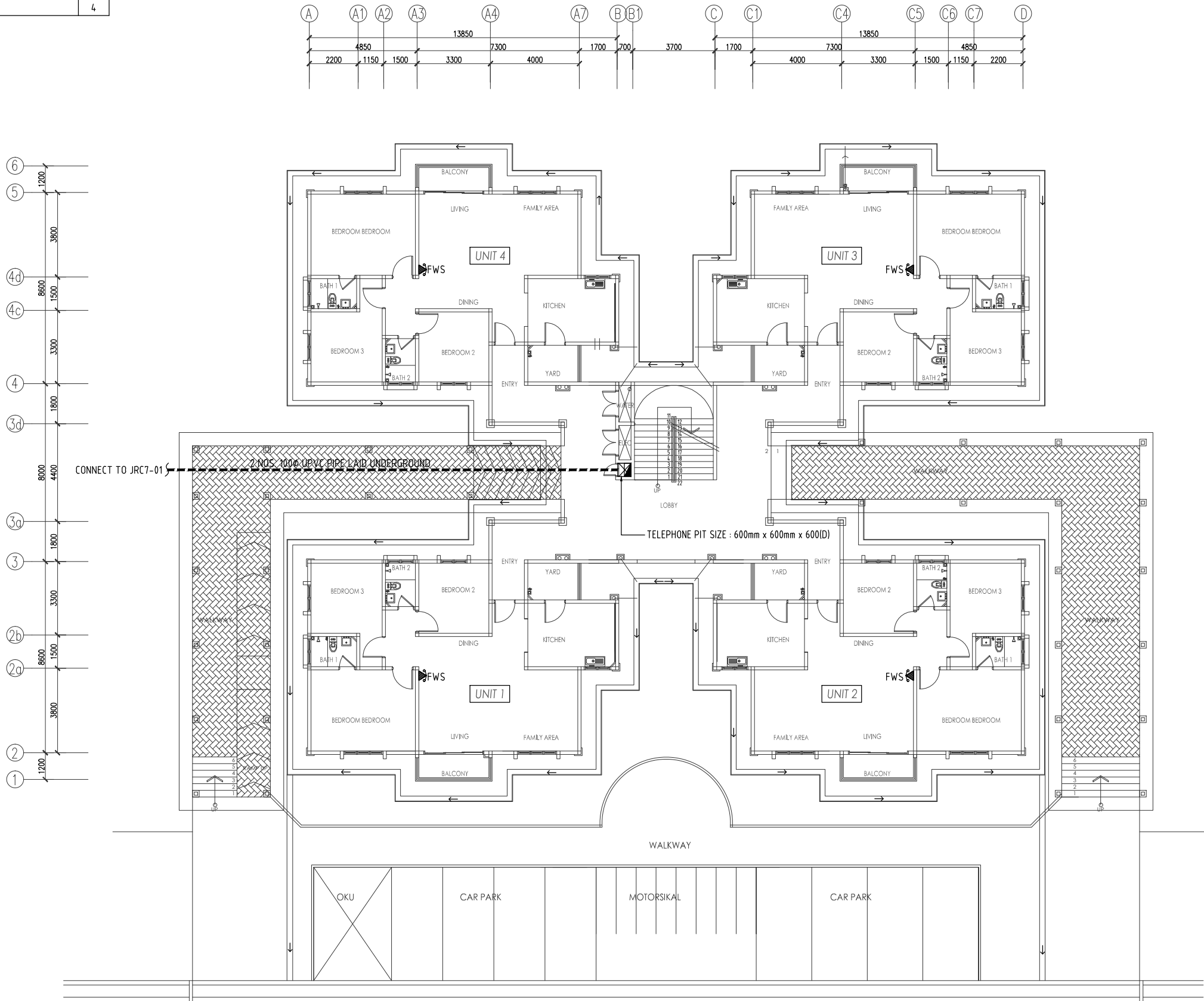
NO. LUKISAN EMECHSY/2404/MRSM/M&E/TEL-01

TENDER DRAWING

LEGEND :

ITEM	DESCRIPTION	QTY
	FIBER TERMINATION BOX	1
	FIBRE WALL SOCKET OUTLET	4

NOTE :  
a) All telephone wiring point shall be in the conduit and conceal in the wall.



GROUND FLOOR PLAN  
SCALE 1:100

TENDER DRAWING

LUKISAN NI HAK CIPTA.  
KONTRAKTOR PERLU MEMERIKSA KESEMUA UKURAN DI TAPAK. HANYA UKURAN YANG TERtera PERLU DIAMBIL HUKU. JIKA TERDAPAT KESALAHAN, PENGARAH PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN.


KELULUSAN

PROJEK :  
**CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG**


TANDATANGAN PEMILIK :

MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

ARKITEK :

  
**YUSDI YUSOFF ARCHITECT**  
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JENIS BANGUNAN:  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
TELEPHONE SERVICES  
- GROUND FLOOR PLAN

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN

Tarikh	Catitan	Disemak

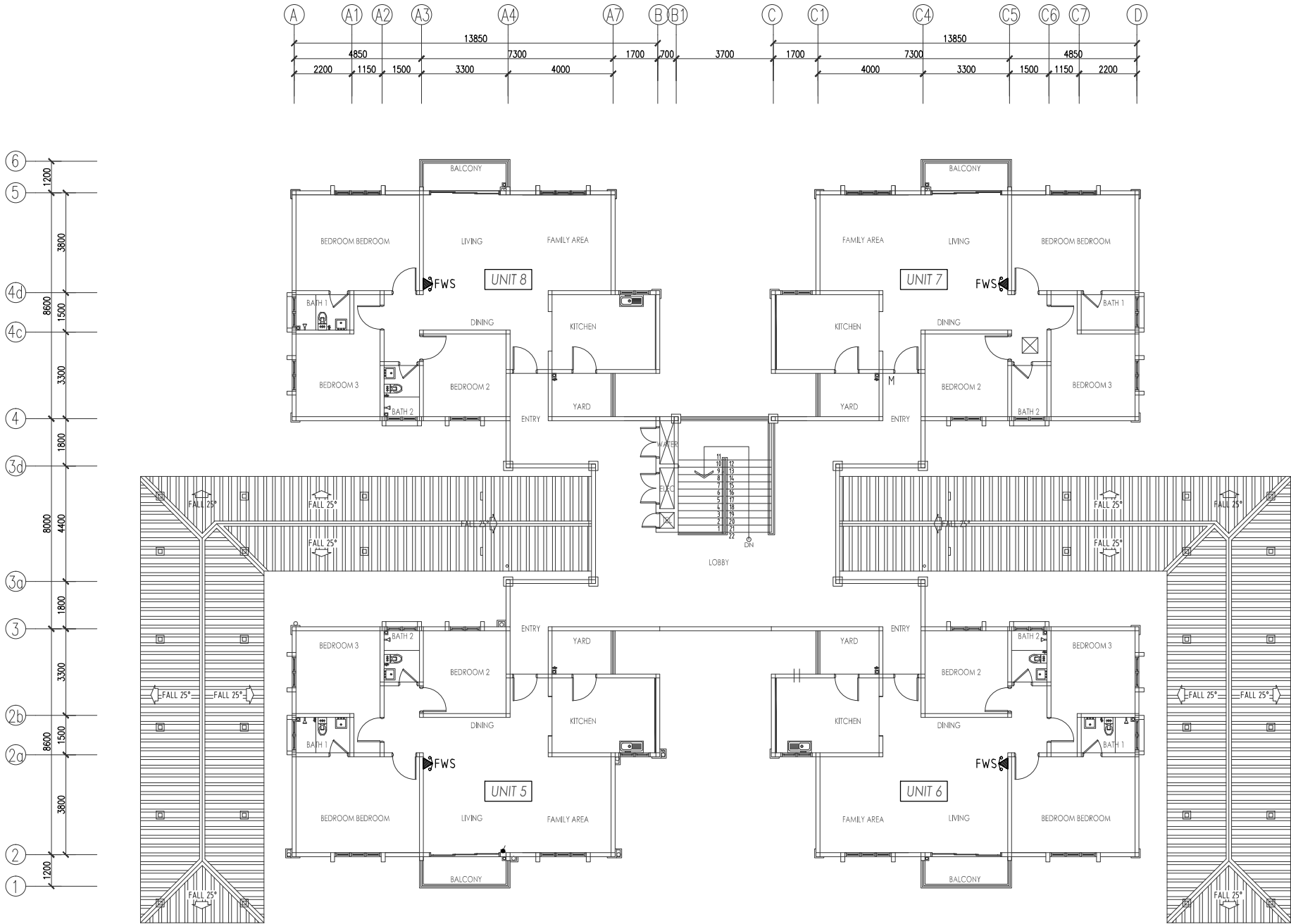
NO. PROJEK

NO. LUKISAN EMECHSY/2404/MRSM/M&E/TEL-02

LEGEND :

ITEM	DESCRIPTION	QTY
 FWS	FIBRE WALL SOCKET OUTLET	4

NOTE :  
a) All telephone wiring point shall be in the conduit and conceal in the wall.



FIRST FLOOR PLAN  
SCALE 1:100

TENDER DRAWING

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

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JENIS BANGUNAN:  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
TELEPHONE SERVICES

- FIRST FLOOR PLAN

UKURAN	1:100
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN		
Tarikh	Catitan	Disemak

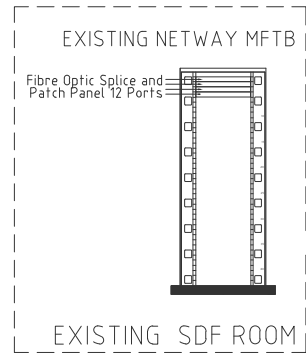
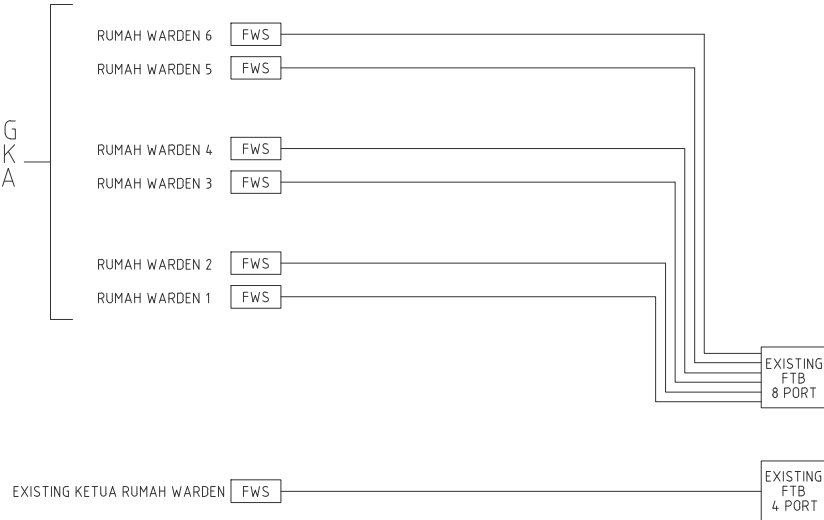
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NO. LUKISAN EMECHSY/2404/MRSM/M&E/TEL-03

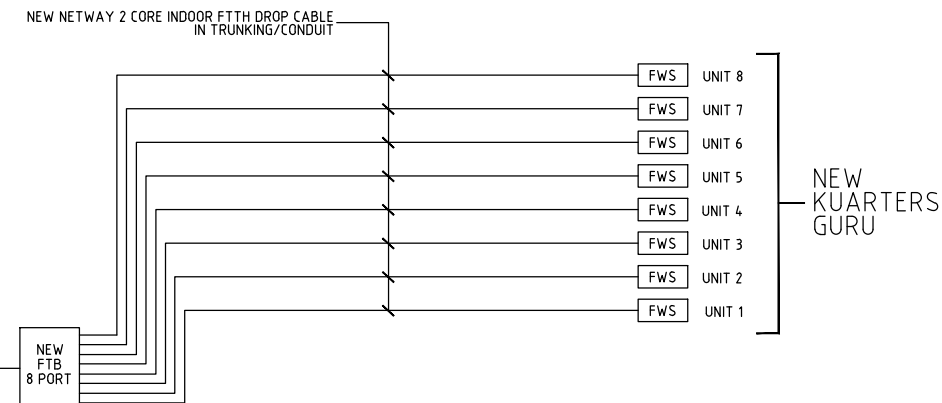
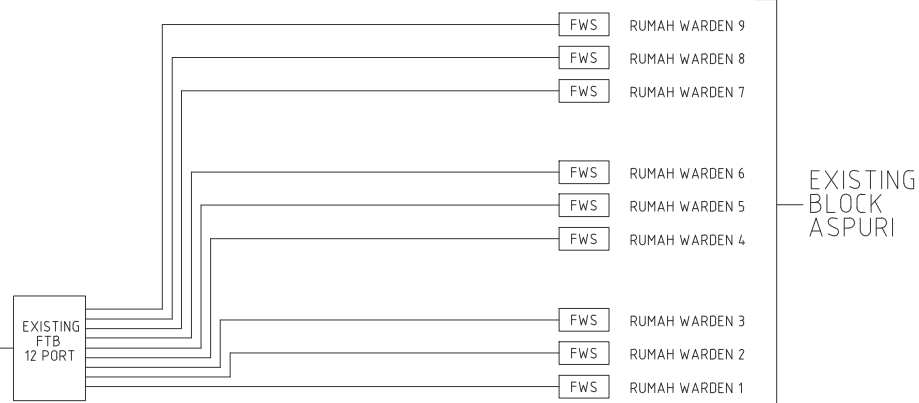
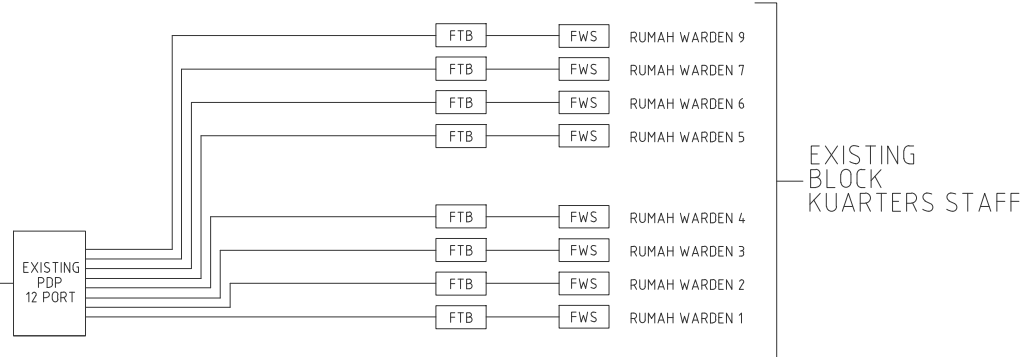
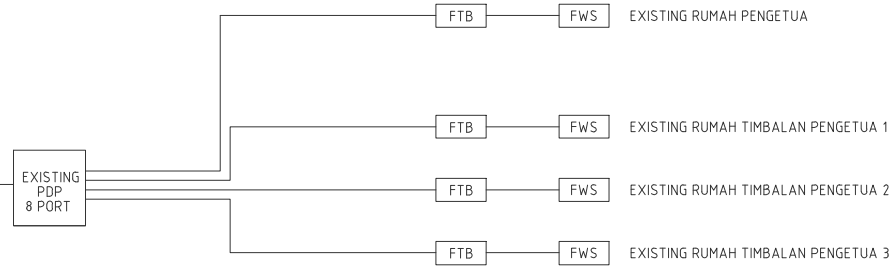
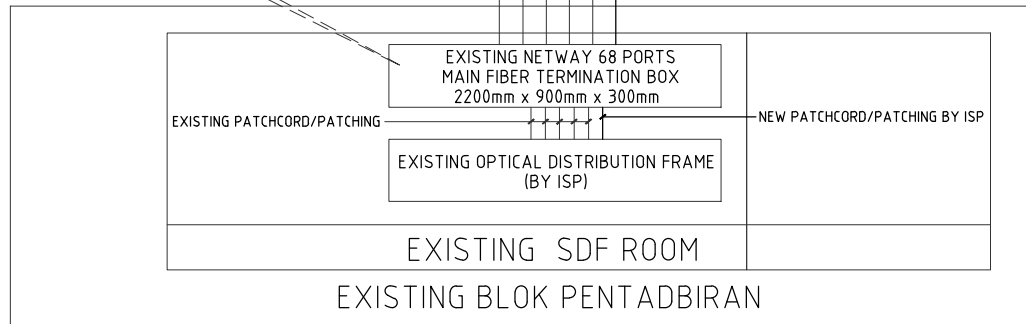


NOTES :  
FDB - FIBER DISTRIBUTION BOX  
FTB - FIBER TERMINATION BOX  
FWS - FIBER WALL SOCKET

EXISTING  
BLOCK  
ASPURA



SCHEMATIC DIAGRAM



NEW 8 CORE FIBER OPTIC SINGLE MODE TYPE  
IN TELEPHONE DUCTING

TENDER DRAWING

LUKISAN INI HAK Cipta.  
KONTRAKTOR PERLU MEMERIKSA KESAMUA UKURAN DI TAPAK. HANYA UKURAN  
YANG TERTERA PERLU DIAMBIL KIRA. JIKA TERDAPAT KESILAPAN, PEJABAT  
PENGUSAHA PERLU DIBERITAHU SEBELUM SEBARANG KERJA DIMULAKAN

KELULUSAN

PROJEK :  
CADANGAN MEMBINA DAN MENYIAPKAN  
8 UNIT KUARTERS GURU (KELAS G) SERTA  
KERJA BERKAITAN DI MARTAB RENDAH  
SAINS MARA (MRSM) ATM BERA, PAHANG

TANDATANGAN PEMILIK :  
  
MAJLIS AMANAH RAKYAT (MARA)  
IBU PEJABAT MARA 21 JALAN MARA 50609  
KUALA LUMPUR

ARKITEK :  
  
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emechconsult@gmail.com

Tandatangan Jurutera Profesional /Professional Engineer's Signature

\*I hereby certify that these works have been designed by me in accordance  
with sound engineering practice and that I take full responsibility for the design  
and proper performance of the same

JENIS BANGUNAN  
RUMAH KUARTERS 2 TINGKAT

TAJUK LUKISAN:  
TELEPHONE SERVICES  
- SCHEMATIC DIAGRAM

UKURAN	N.T.S
TARIKH KELUAR	JUNE 2024
DISEMAK OLEH	SBY
DILUKIS OLEH	SBM

PINDAAN		
Tarikh	Catitan	Disemak

NO. PROJEK
NO. LUKISAN EMECHSY/2404/MRSM/M&E/TEL-04