

## **PART – B : FUNCTIONAL TECHNICAL SPECIFICATION**

### **SECTION – B4**

### **TENDER DRAWINGS**

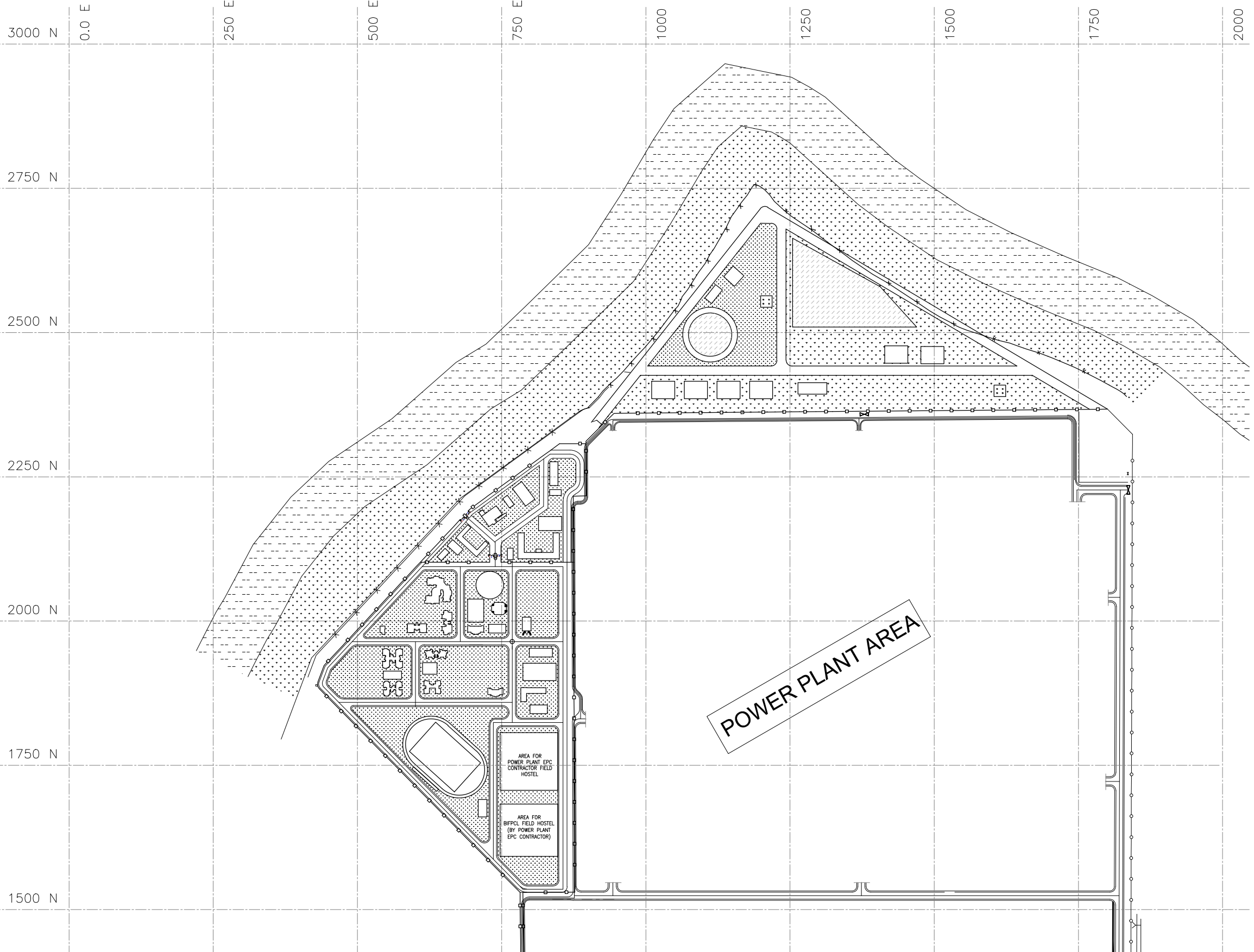
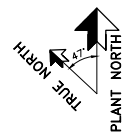
**PART – B : FUNCTIONAL TECHNICAL SPECIFICATION  
SECTION – B4**

**TENDER DRAWINGS**

The following list of drawings/ documents are enclosed with the specification.

Sl. No.	Drawing No.	Drawing Title
<b>A</b>	<b>General</b>	
1.	1114129-C-001	Township – Key Plan
2.	1114129-C-002	Township – Layout of Facilities
3.	1114129-C-003	Township – Facilities outside Township Area
4.	1114129-C-004	Typical Cross Section for Roads
<b>B</b>	<b>Civil</b>	
1.	1114129-C-601	Executive Residence – Type A Architectural Scheme
2.	1114129-C-602	Executive Residence - Type B Architectural Scheme
3.	1114129-C-603	Executive Residence - Type C Architectural Scheme
4.	1114129-C-604	Staff Residence - Type D Architectural Scheme
5.	1114129-C-605	Head of Plant Bungalow Architectural Scheme
6.	1114129-C-606	Guest House Architectural Scheme – 2 sheets
7.	1114129-C-607	Studio Apartments Architectural Scheme
8.	1114129-C-608	Field Hostel - Staff Architectural Scheme
9.	1114129-C-609	Trainees Hostel and Training Center Architectural Scheme
10.	1114129-C-701	Gate House Architectural Scheme
11.	1114129-C-703	Nursery and High School Architectural Scheme
12.	1114129-C-704	Mosque Architectural Scheme
13.	1114129-C-705	Hospital Architectural Scheme
14.	1114129-C-706	Shopping Center Architectural Scheme
15.	1114129-C-707	Temple Architectural Scheme
16.	1114129-C-708	Community Center Architectural Scheme
17.	1114129-C-709	Executive Club Architectural Scheme
18.	1114129-C-710	Non-Executive Club Architectural Scheme

<b>Sl. No.</b>	<b>Drawing No.</b>	<b>Drawing Title</b>
19.	1114129-C-711	Swimming Pool Architectural Scheme
20.	1114129-C-712	Indoor Sports Complex Architectural Scheme
21.	1114129-C-717	Maintenance Store Architectural Scheme
22.	1114129-C-802	Security Force and Army Barracks Architectural Scheme
23.	1114129-C-805	Gas Cylinder Godown Architectural Scheme
24.	1114129-C-806	Transport Center Architectural Scheme
<b>C</b>	<b>Mechanical</b>	
1.	1114129-M-001	Flow Diagram for Fire Water Pumping System
2.	1114129-M-002	Fire Water Ring Main Network Layout
<b>D</b>	<b>Electrical</b>	
1.	1114129-E-202	Main Single line diagram for Township
2.	1114129-E-203	Single line diagram for 11 kV switchgear
3.	1114129-E-204	Single line diagram for 11kV RMU and 415V PCC
4.	1114129-E-301	Control Schemes for 11 kV switchgear – 6 sheets
5.	1114129-E-302	Schematic diagram for DC system
6.	1114129-E-303	Schematic diagram for UPS system
7.	1114129-E-401	Equipment layout at MRSS
8.	1114129-E-402	Equipment layout at Distribution Substation-Type-2
9.	1114129-E-403	Equipment layout at Distribution Substation-Type-1
10.	1114129-E-404	Power distribution layout for Substations
11.	1114129-E-405	Telephone system location layout
12.	1114129-E-406	Equipment layout at Distribution Substation-Type-3
13.	1114129-E-501	Typical details of cable trays & accessories
14.	1114129-E-502	Typical details for bolted type cable tray support system
15.	1114129-E-503	Typical details for cabling installation – 2 sheets
16.	1114129-E-504	Typical details for earthing installation – 3 sheets
17.	1114129-E-505	Typical details for lightning protection installation
18.	1114129-E-506	Typical installation details for illumination system – 3 sheets



POWER PLANT AREA

AREA FOR  
POWER PLANT EPC  
CONTRACTOR FIELD  
HOSTEL

AREA FOR  
BIFPCO FIELD HOSTEL  
(BY POWER PLANT  
EPC CONTRACTOR)

- NOTES**
1. GRID LINES ARE DRAWN IN 250M INTERVALS.
  2. ALL DIMENSIONS ARE IN METERS AND LEVELS ARE IN METERS, UNO.
  3. DO NOT SCALE THE DRAWING FOLLOW WRITTEN DIMENSIONS ONLY.
  4. ARRANGEMENT OF THE BUILDINGS AND FACILITIES SHOWN IN THE DRAWING IS PRELIMINARY.

REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE							CSSR MAP

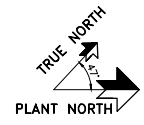
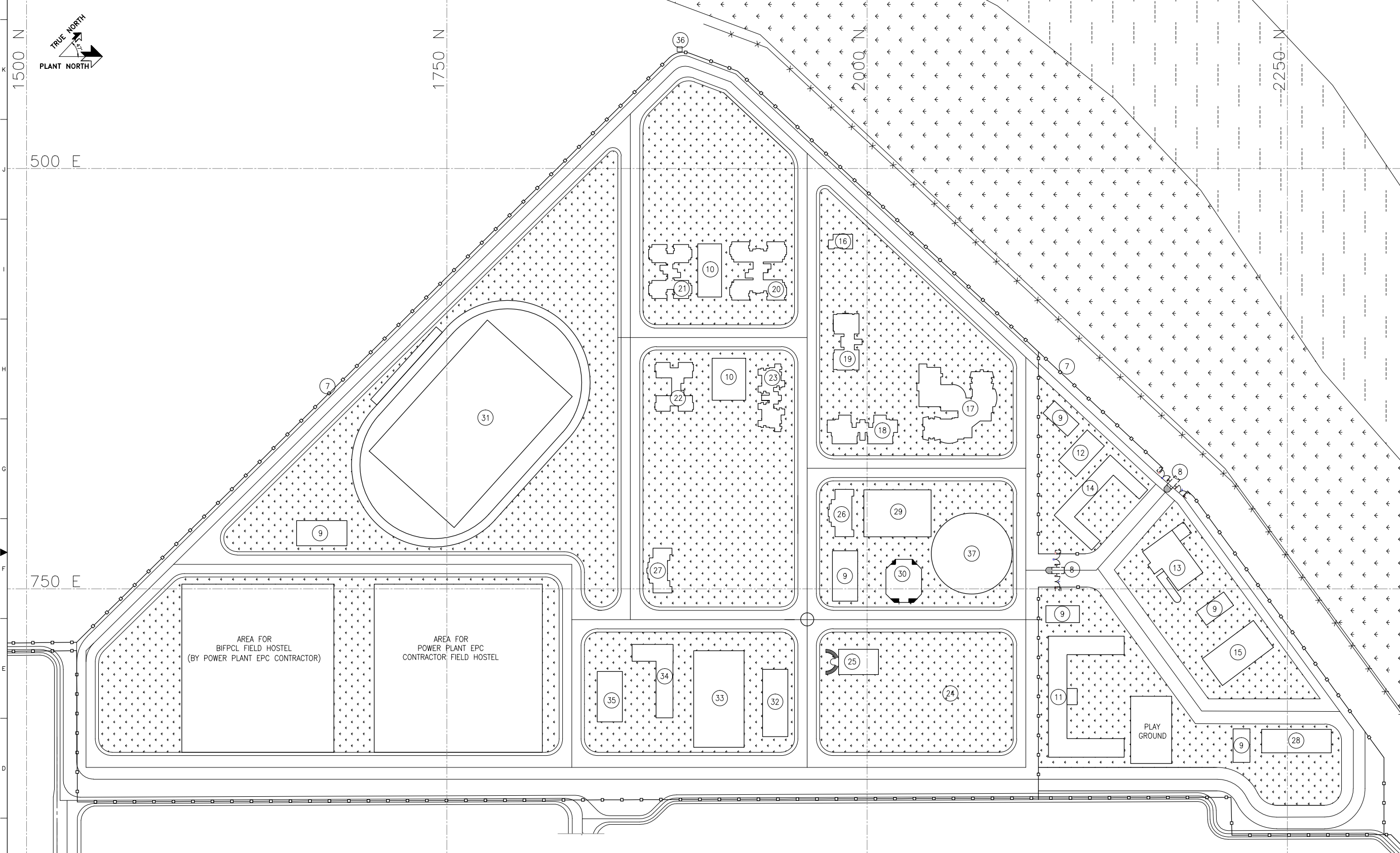
<b>FICHTNER</b>		<b>TOWNSHIP</b>	
		2x660 MW MAITREE STPP	
		<b>TOWNSHIP</b>	
		<b>KEY PLAN</b>	

RELEASED	SIGNATURE	DATE	DEPT.	CIVIL	JOB NO.	SCALE	REV.
DESIGNED	MARK	29.06.18			1114129	1:2500	
CHECKED	MAP	29.06.18					
DEPT. HEAD	RMK	29.06.18					
PROJ. MGR.	MAP	29.06.18					
RELEASED	PRELIMINARY						
	TENDER						
	ENGINEERING						
	CONSTRUCTION						

DWG. NO.	1114129-C-001
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S/NO	AREAS IN TOWNSHIP
7	BOUNDARY WALL
8	GATE AND SECURITY
9	OPEN CAR PARKS
10	CHILDREN PLAY AREAS
11	NURSERY AND HIGH SCHOOL
12	MOSQUE
13	HOSPITAL
14	SHOPPING CENTER
15	TEMPLE
16	HOP BUNGALOW
17	GUEST HOUSE
18	STUDIO APARTMENTS
19	EXECUTIVE RESIDENCE - A
20	EXECUTIVE RESIDENCE - B
21	EXECUTIVE RESIDENCE - C
22	STAFF RESIDENCE - D
23	FIELD HOSTEL - STAFF
24	AUDITORIUM (FUTURE PROVISION)
25	COMMUNITY CENTER
26	EXECUTIVE CLUB
27	NON-EXECUTIVE CLUB
28	TRAINING HOSTEL AND TRAINING CENTER
29	SWIMMING POOL
30	INDOOR SPORTS COMPLEX
31	OUTDOOR SPORTS AREA
32	FIRE WATER PUMP HOUSE
33	MAIN ELECTRIC SUBSTATION
34	MAINTENANCE STORE
35	UG WATER TANK
36	WATCH TOWER
37	CENTRAL RECREATION PARK

**NOTES**  
 1. GRID LINES ARE DRAWN IN 250M INTERVALS.  
 2. ALL DIMENSIONS ARE IN METERS AND LEVELS ARE IN METERS, UNO.  
 3. DO NOT SCALE THE DRAWING FOLLOW WRITTEN DIMENSIONS ONLY.  
 4. ARRANGEMENT OF THE BUILDINGS AND FACILITIES SHOWN IN THE DRAWING IS PRELIMINARY.

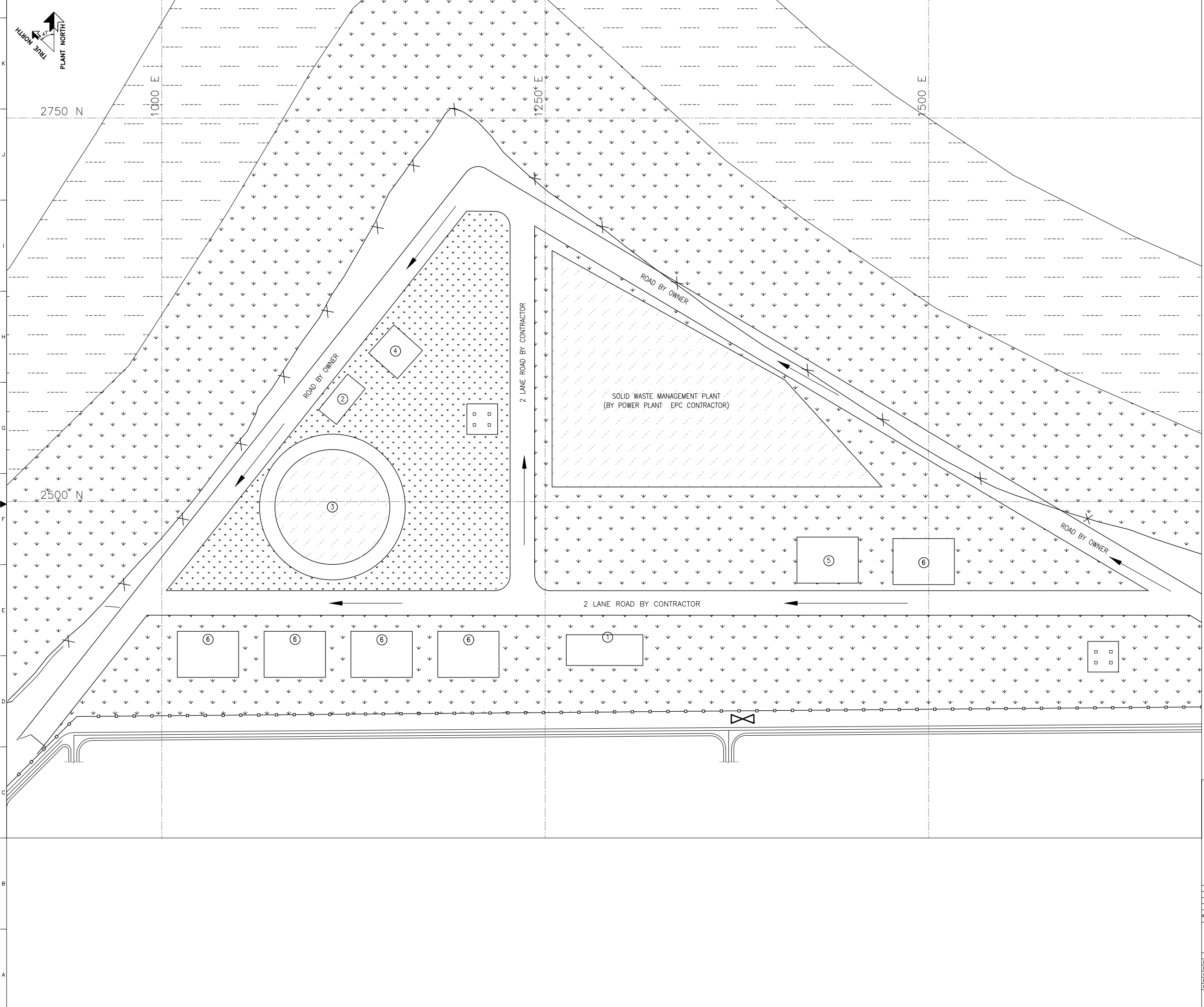
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 F - FUTURE

REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	29.06.18	FOR TENDER PURPOSE						

**FICHTNER** TOWNSHIP  
 2x660 MW MAITREE STPP

RELIEVED	SIGNATURE	DATE	DEPT.	CIVIL	JOB NO.	SCALE	REV.
DESIGNED	CSRR	29.06.18			1114129	1:800	
CHECKED	MMK	29.06.18					
DEPT. HEAD	MMK	29.06.18					
PROJ. MGR.	MAP	29.06.18					
RELEASED	MMK	29.06.18					
TENDER							
ENGINEERING							
CONSTRUCTION							

**TOWNSHIP LAYOUT OF FACILITIES**  
 DWG. NO. 1114129-C-002



SI NO	AREAS IN TOWNSHIP
1	POLICE STATION
2	CYCLONE SHELTER
3	STORM WATER RETENTION POND
4	GAS CYLINDER GODOWN
5	TRANSPORT CENTER
6	SECURITY POREE AND ARMY BARRACKS

**NOTES**  
 1. GRID LINES ARE DRAWN IN 250M INTERVALS.  
 2. ALL DIMENSIONS ARE IN METERS AND LEVELS ARE IN METERS, UNO.  
 3. DO NOT SCALE THE DRAWING FOLLOW WRITTEN DIMENSIONS ONLY.  
 4. ARRANGEMENT OF THE BUILDINGS AND FACILITIES SHOWN IN THE DRAWING IS PRELIMINARY.

**LEGEND:-**  
 F - FUTURE

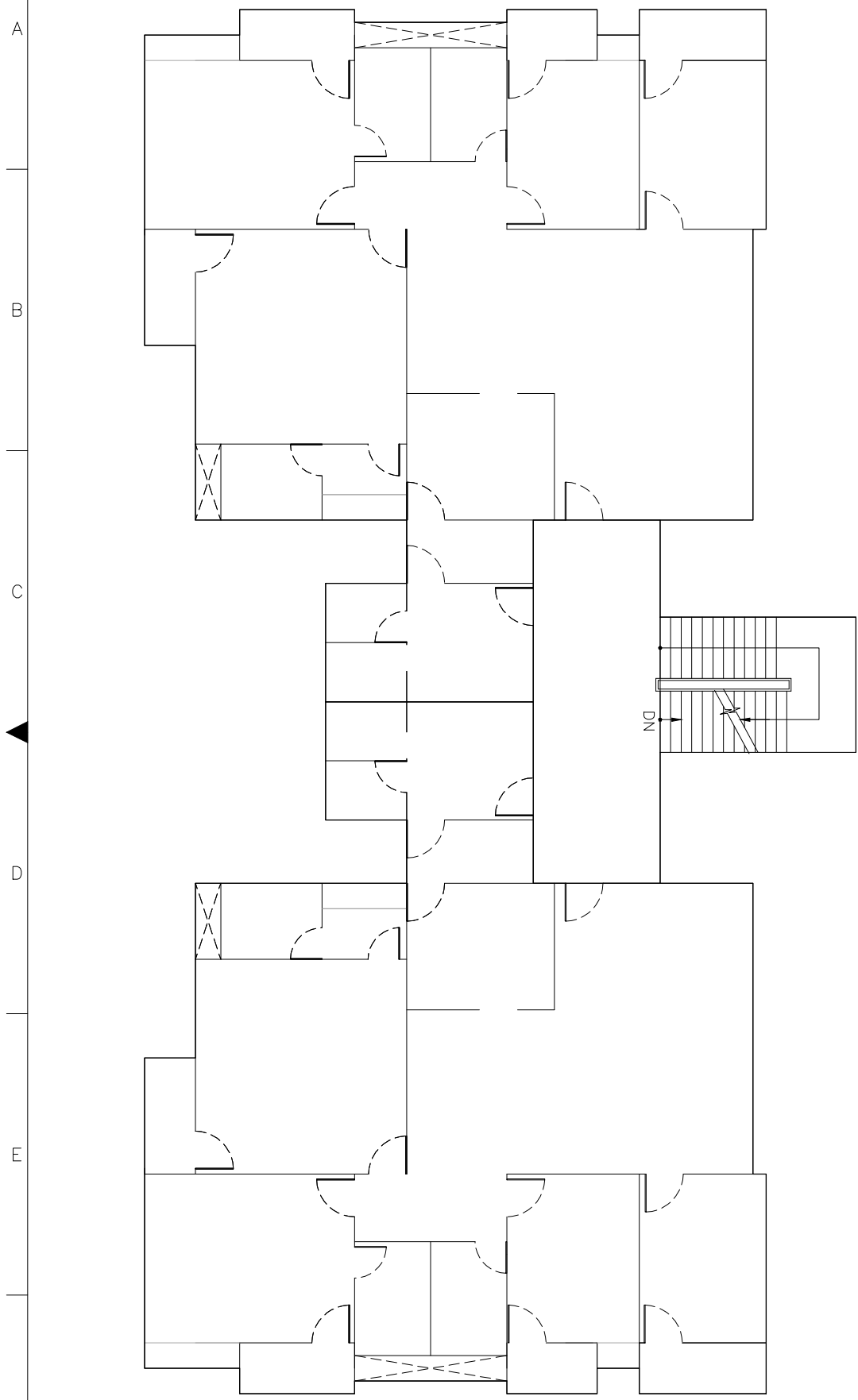
REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE							CSR MAP

**FICHTNER** TOWNSHIP  
 2x660 MW MAITREE STPP

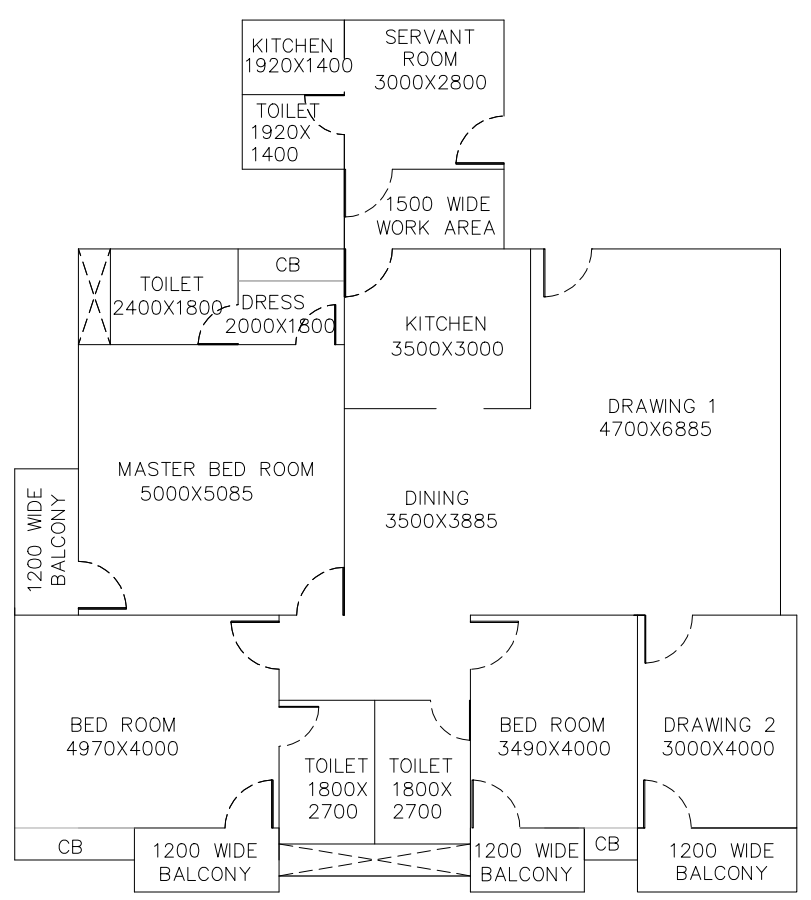
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CHECKED	MAP	29.06.18				
DEPT. HEAD	BMK	29.06.18				
PROJ. MGR.	MAP	29.06.18				
RELEASED	PRELIMINARY					
	TENDER					
	ENGINEERING					
	CONSTRUCTION					

DWG. NO. 1114129-C-003





**RESIDENTIAL BLOCK -TYPE-A**  
**TYPICAL FLOOR PLAN**  
 (SCALE 1:100)



**TYPICAL ARRANGEMENT FOR ONE UNIT**  
 (SCALE 1:100)  
 (ALL DIMENSION ARE IN MILLIMETERS)

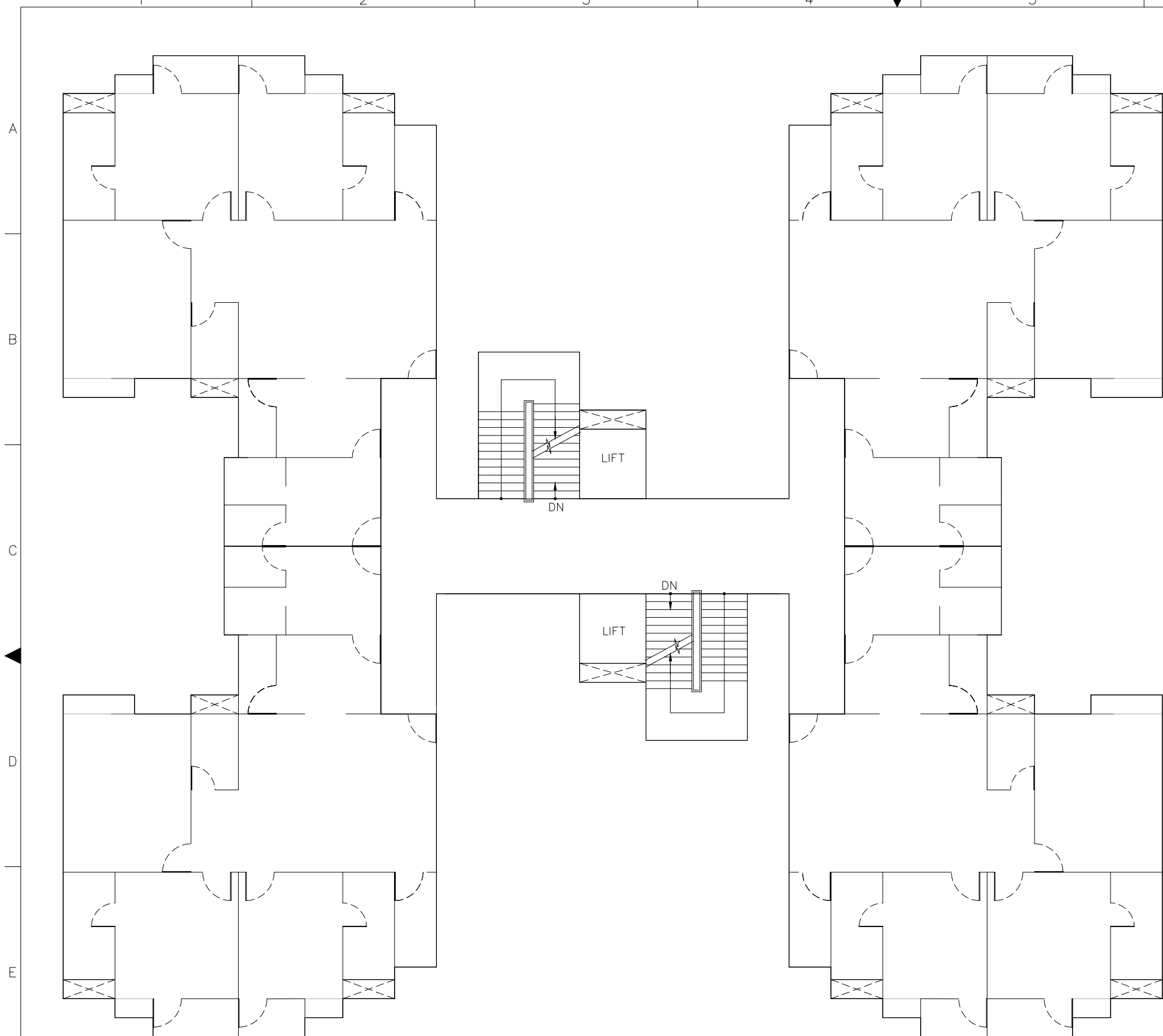
NO OF UNITS PER FLOOR	2
NO OF FLOORS OCCUPIED	2
TOTAL NO OF UNITS PER BLOCK	4
NO OF BLOCKS	2
TOTAL NO OF UNITS PROVIDED	8

AREA STATEMENT ( APPROXIMATE )			
ONE DWELLING UNIT		ONE BLOCK	
AREAS	IN SQFT	AREA	IN SQFT
UNIT AREA	2000	GROUND FLOOR AREA	4400
CIRCULATION AREA (PROPORTIONED)	200	FIRST FLOOR AREA	4400
		STAIR HEADROOM	200
TOTAL AREA	2200	TOTAL BUILT UP AREA	9000

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE	CSSR	MAP					

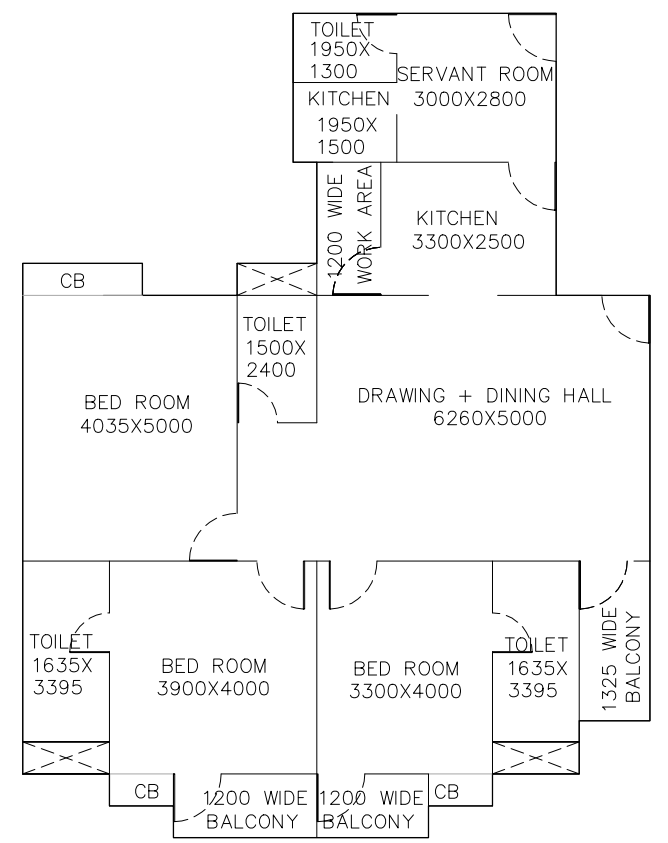
<b>FICHTNER</b>			<b>TOWNSHIP</b> 2x660 MW MAITREE STPP							
			<b>EXECUTIVE RESIDENCE</b> TYPE-A ARCHITECTURAL SCHEME							
	SIGNATURE	DATE								
DRAWN	CSSR	29.06.18								
DESIGNED	MKK	29.06.18								
CHECKED	MAP	29.06.18								
DEPT. HEAD	RMK	29.06.18								
PROJ. MGR.	MAP	29.06.18								
RELEASED FOR	PRELIMINARY		DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:100	REV.				
	TENDER	✓					DWG.NO. 1114129-C-601	A		
	ENGINEERING									
	CONSTRUCTION									





**RESIDENTIAL BLOCK -TYPE-B**  
**TYPICAL FLOOR PLAN**  
 (SCALE 1:100)

NO OF UNITS PER FLOOR	4
NO OF FLOORS OCCUPIED	8
TOTAL NO OF UNITS PER BLOCK	32
NO OF BLOCKS	1
TOTAL NO OF UNITS PROVIDED	32
GROUND FLOOR-PARKING AND ELECTRICAL ROOM	

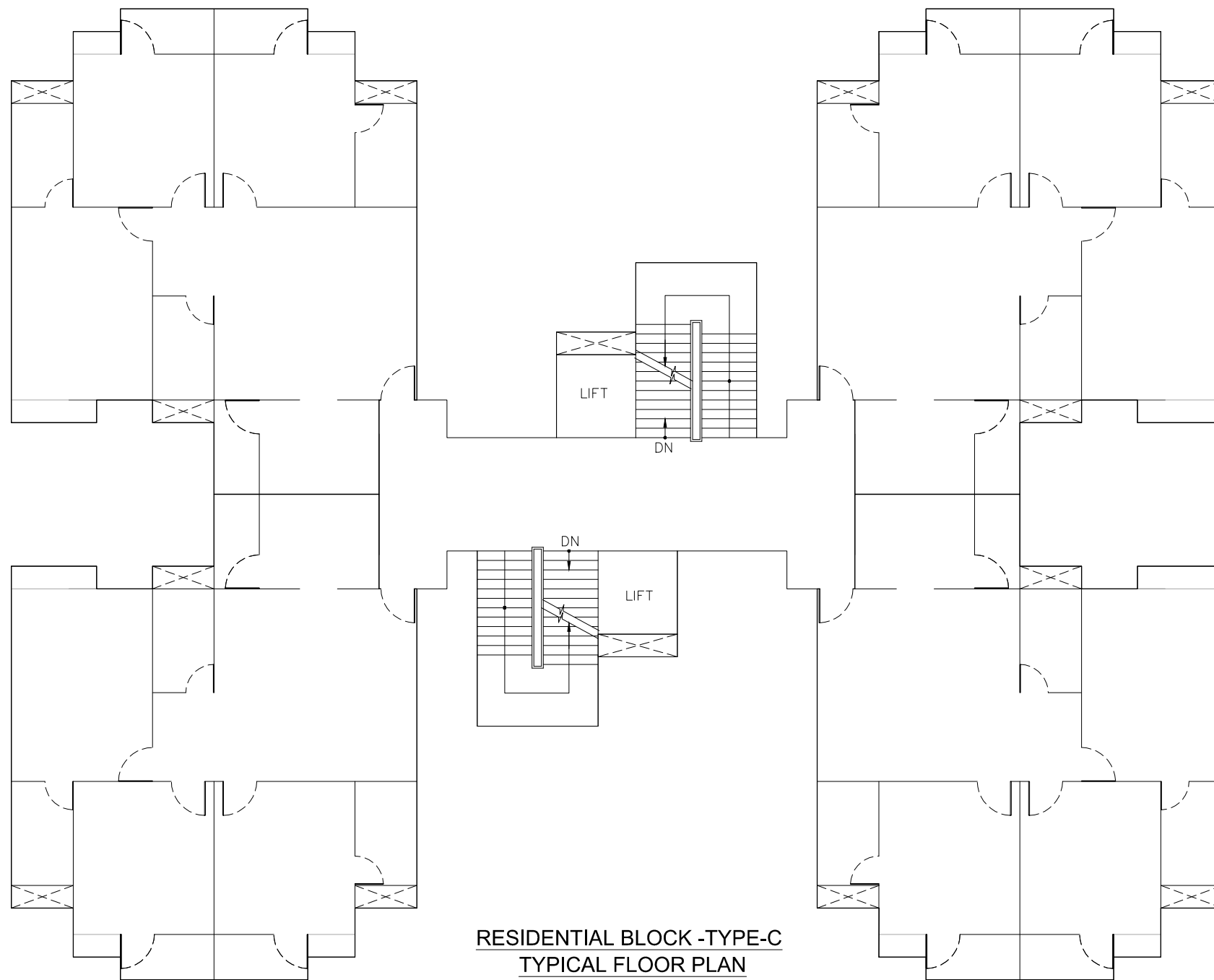


**TYPICAL ARRANGEMENT FOR ONE UNIT**  
 (SCALE 1:100)  
 (ALL DIMENSION ARE IN MILLIMETERS)

AREA STATEMENT ( APPROXIMATE)			
ONE DWELLING UNIT		ONE BLOCK	
AREAS	IN SQFT	AREA	IN SQFT
UNIT AREA	1500	STILT AREA	7200
CIRCULATION AREA (PROPORTIONED)	300	AREA OF ONE FLOOR	7200
		AREA OF 8 FLOORS + STILT FLOOR	64800
		STAIR HEADROOM	400
		LIFT MACHINE ROOM	300
TOTAL AREA	1800	TOTAL BUILT UP AREA	65500

REV.	DATE	DESCRIPTION	DRN.	CSSR	MAP	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE									

<b>FICHTNER</b>			<b>TOWNSHIP</b> 2x660 MW MAITREE STPP			
DRAWN	CSSR	DATE	EXECUTIVE RESIDENCE TYPE-B ARCHITECTURAL SCHEME			
DESIGNED	MKK	29.06.18				
CHECKED	MAP	29.06.18				
DEPT. HEAD	RMK	29.06.18				
PROJ. MGR.	MAP	29.06.18				
RELEASED FOR	PRELIMINARY		DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:100	REV.
	TENDER	✓	DWG. NO. 1114129-C-602			A
	ENGINEERING					
	CONSTRUCTION					

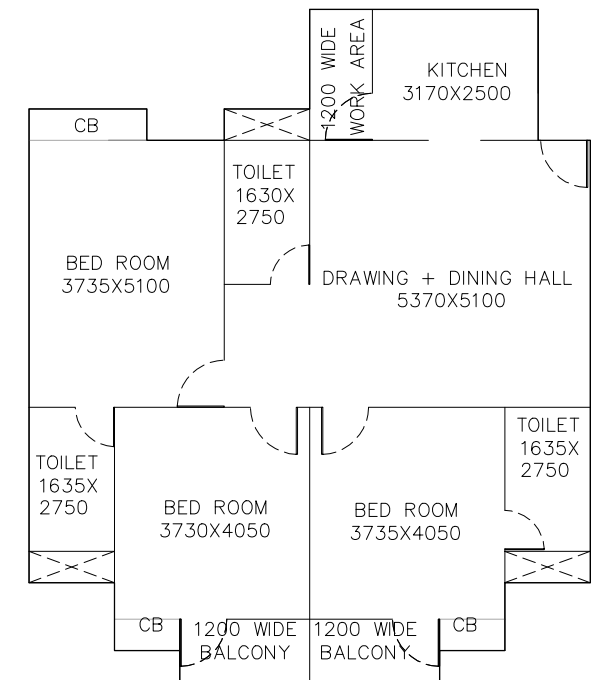


**RESIDENTIAL BLOCK -TYPE-C  
TYPICAL FLOOR PLAN**

(SCALE 1:100)

NO OF UNITS PER FLOOR	4
NO OF FLOORS OCCUPIED	8
TOTAL NO OF UNITS PER BLOCK	32
NO OF BLOCKS	1
TOTAL NO OF UNITS PROVIDED	32
GROUND FLOOR-PARKING AND ELECTRICAL ROOM	

AREA STATEMENT ( APPROXIMATE)			
ONE DWELLING UNIT		ONE BLOCK	
AREAS	IN SQFT	AREA	IN SQFT
UNIT AREA	1250	STILT AREA	6000
CIRCULATION AREA (PROPORTIONED)	250	AREA OF ONE FLOOR	6000
		AREA OF 8 FLOORS + STILT FLOOR	54000
		STAIR HEADROOM	400
		LIFT MACHINE ROOM	300
<b>TOTAL AREA</b>	<b>1500</b>	<b>TOTAL BUILT UP AREA</b>	<b>54700</b>

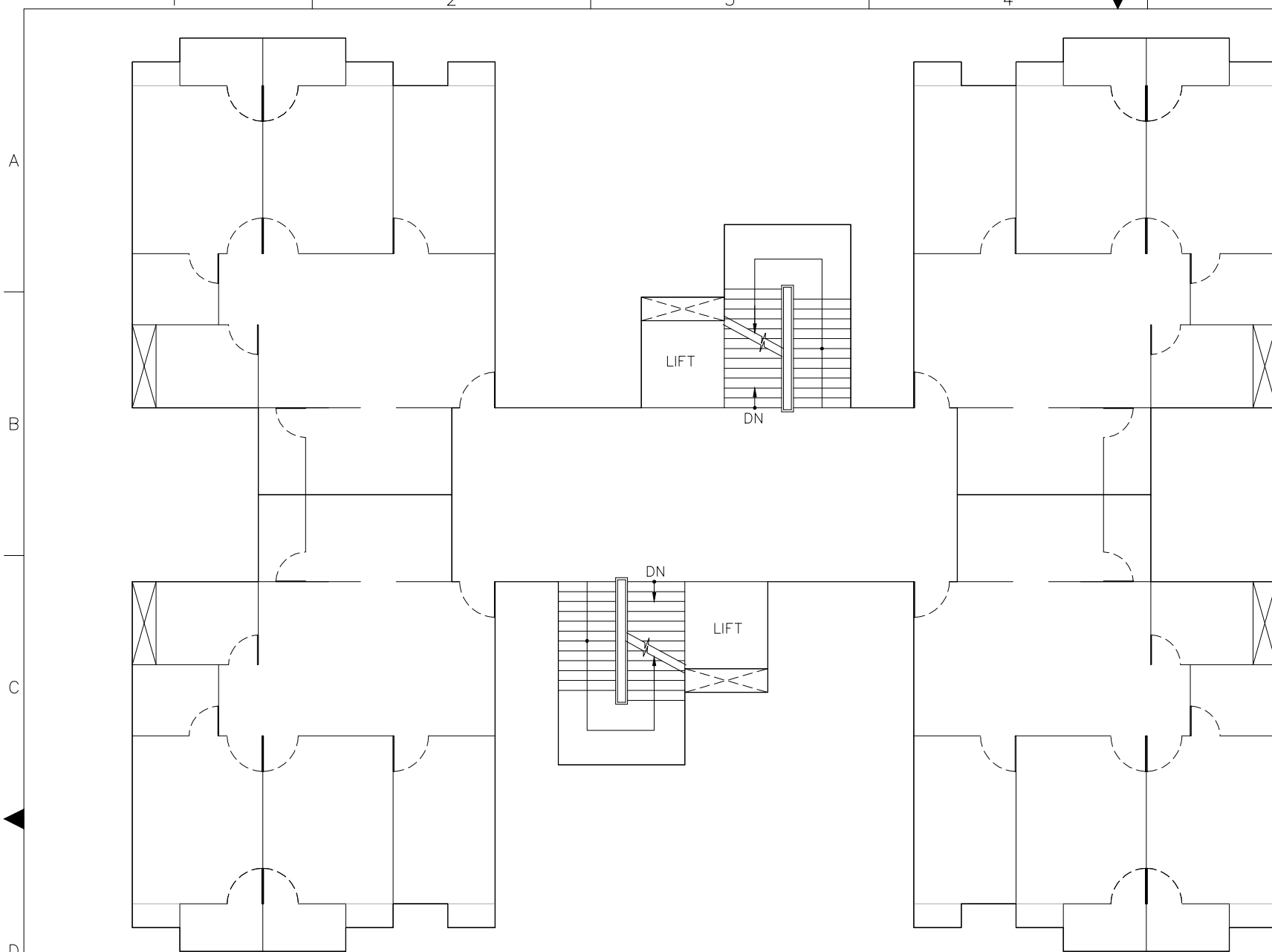


**TYPICAL ARRANGEMENT FOR ONE UNIT**

(SCALE 1:100)

(ALL DIMENSION ARE IN MILLIMETERS)

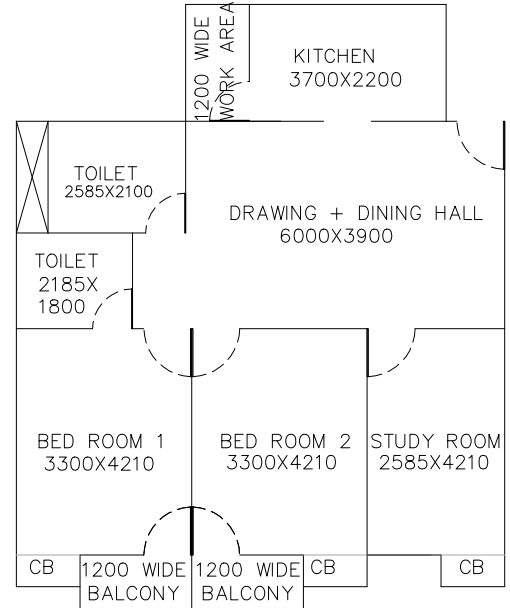
A		29.06.18	FOR TENDER PURPOSE	CSSR	MAP								
REV.	DATE	DESCRIPTION						DRN.	STR.	MECH.	PROC.	ELEC.	INST.
APPROVED BY													
<b>FICHTNER</b>			<b>TOWNSHIP 2x660 MW MAITREE STPP</b>										
	SIGNATURE	DATE	<b>EXECUTIVE RESIDENCE TYPE-C ARCHITECTURAL SCHEME</b>										
DRAWN	CSSR	29.06.18											
DESIGNED	MKK	29.06.18											
CHECKED	MAP	29.06.18											
DEPT. HEAD	RMK	29.06.18											
PROJ. MGR.	MAP	29.06.18	DEPT. CIVIL	JOB NO.	1114129	SCALE:	1:100	REV.					
RELEASED FOR	PRELIMINARY		<b>DWG.NO. 1114129-C-603</b>										
	TENDER												
	ENGINEERING												
	CONSTRUCTION		<b>RA-a</b>										



**RESIDENTIAL BLOCK -TYPE-D  
TYPICAL FLOOR PLAN**  
(SCALE 1:100)

NO OF UNITS PER FLOOR	4
NO OF FLOORS OCCUPIED	8
TOTAL NO OF UNITS PER BLOCK	32
NO OF BLOCKS	1
TOTAL NO OF UNITS PROVIDED	32
GROUND FLOOR-PARKING AND ELECTRICAL ROOM	

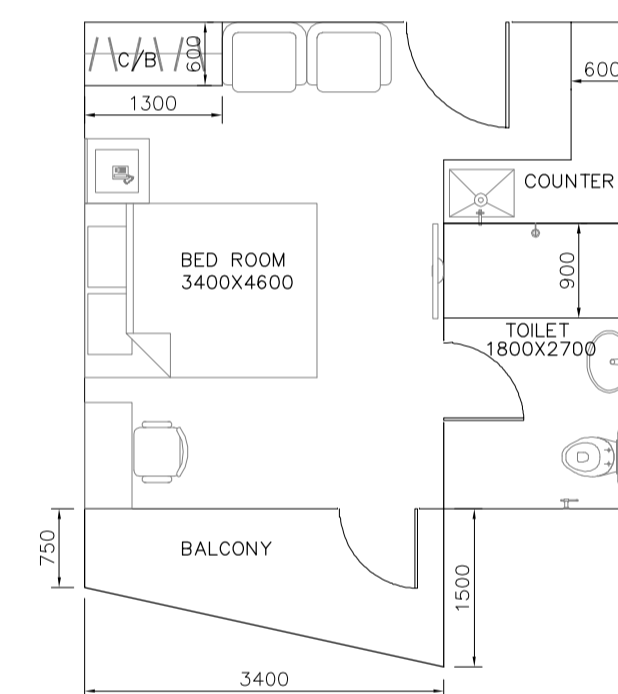
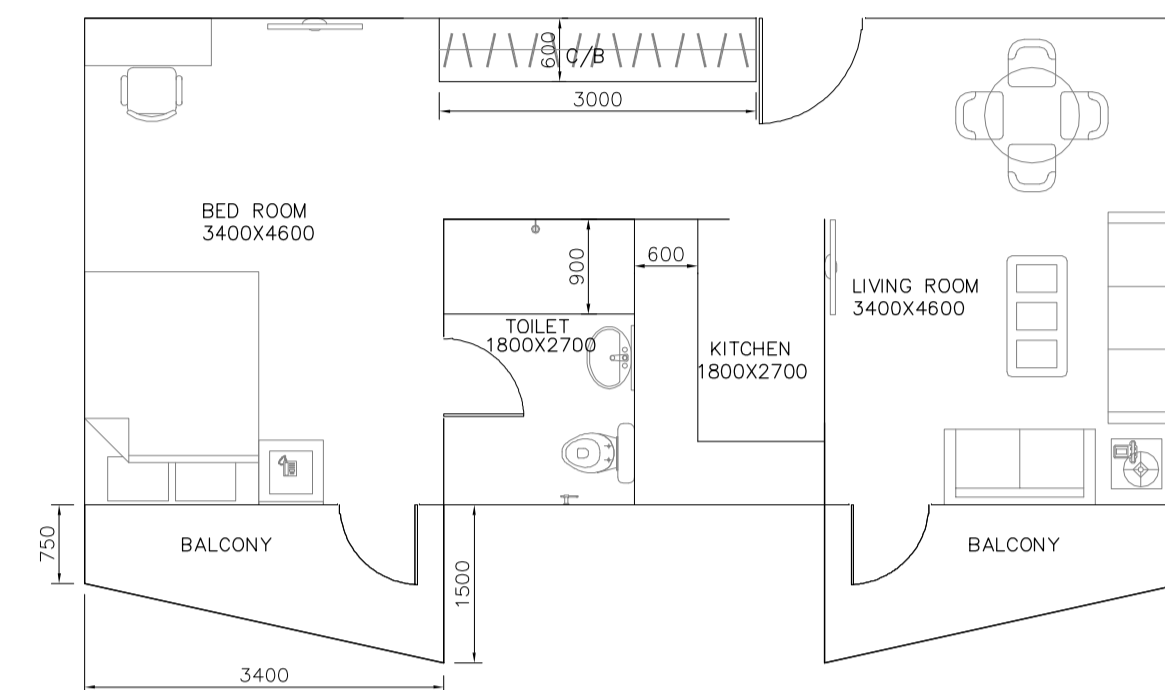
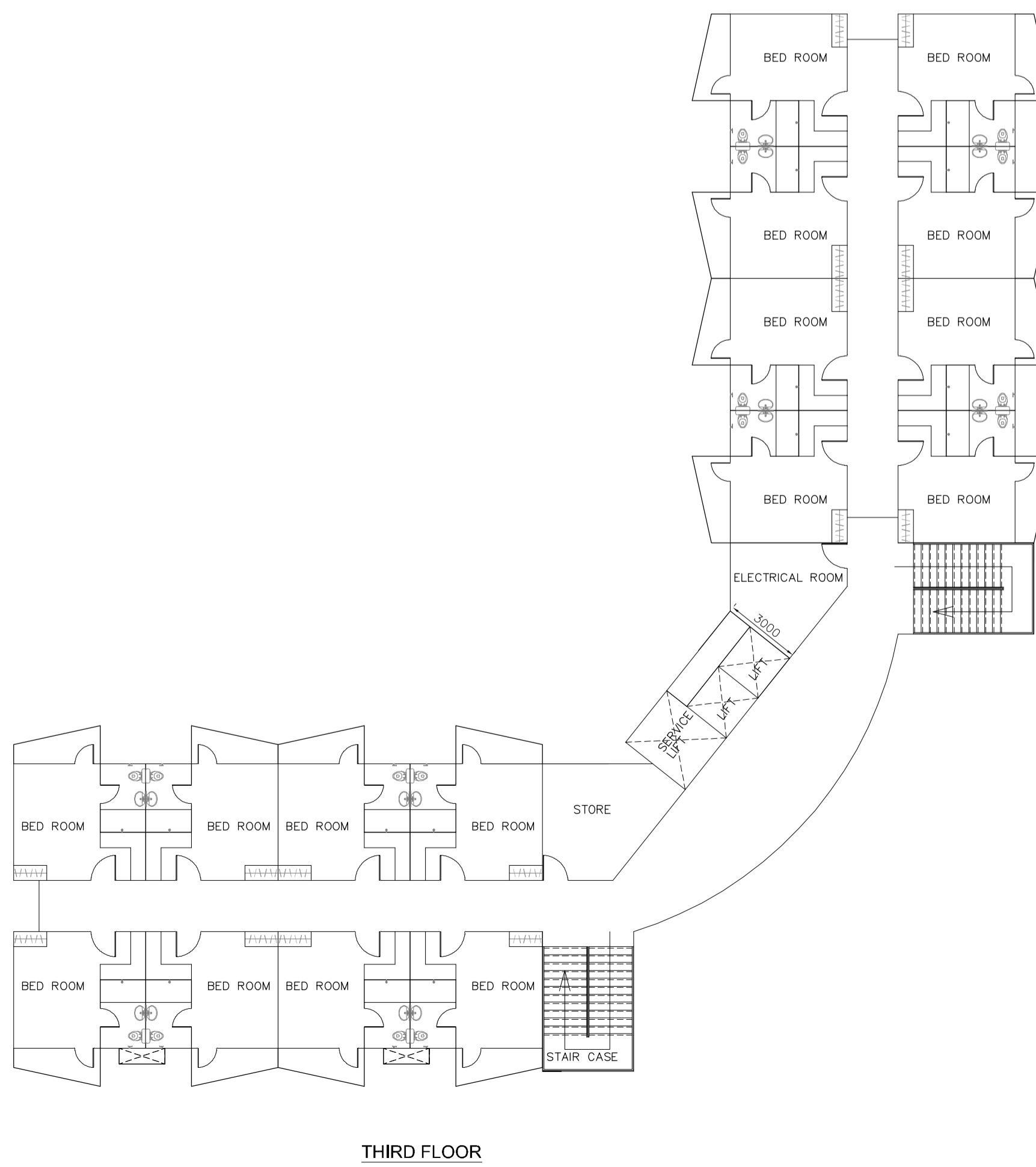
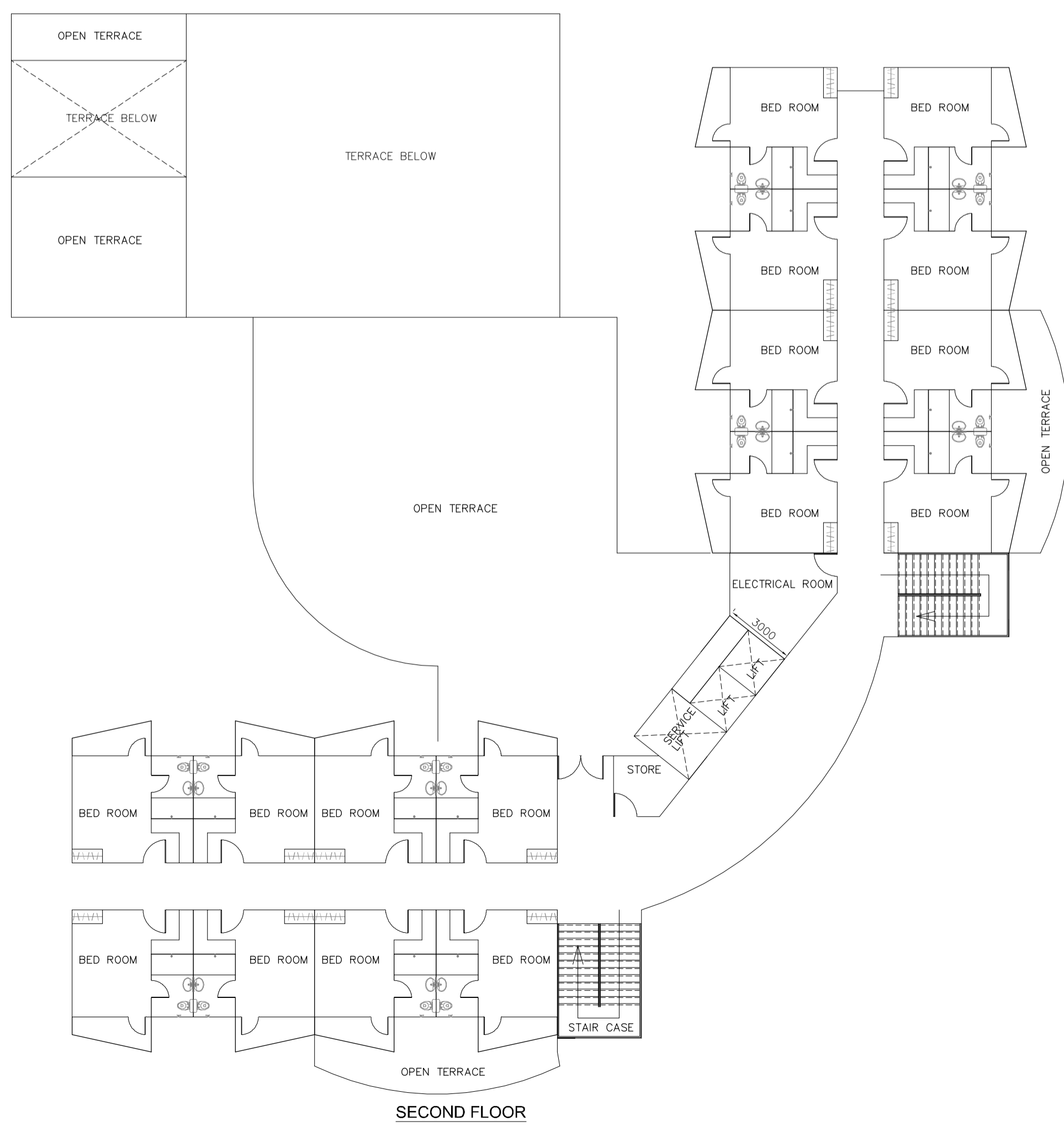
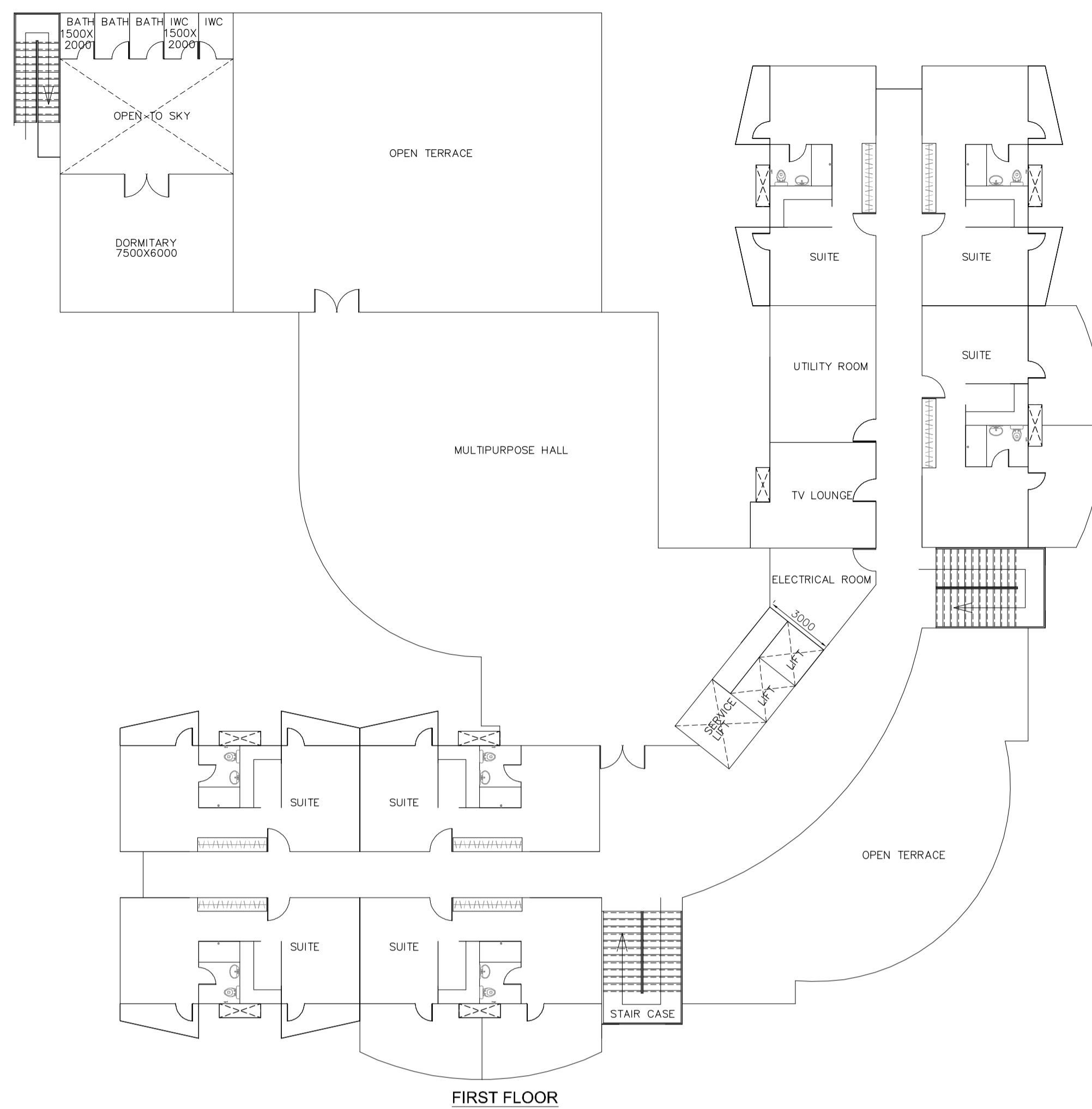
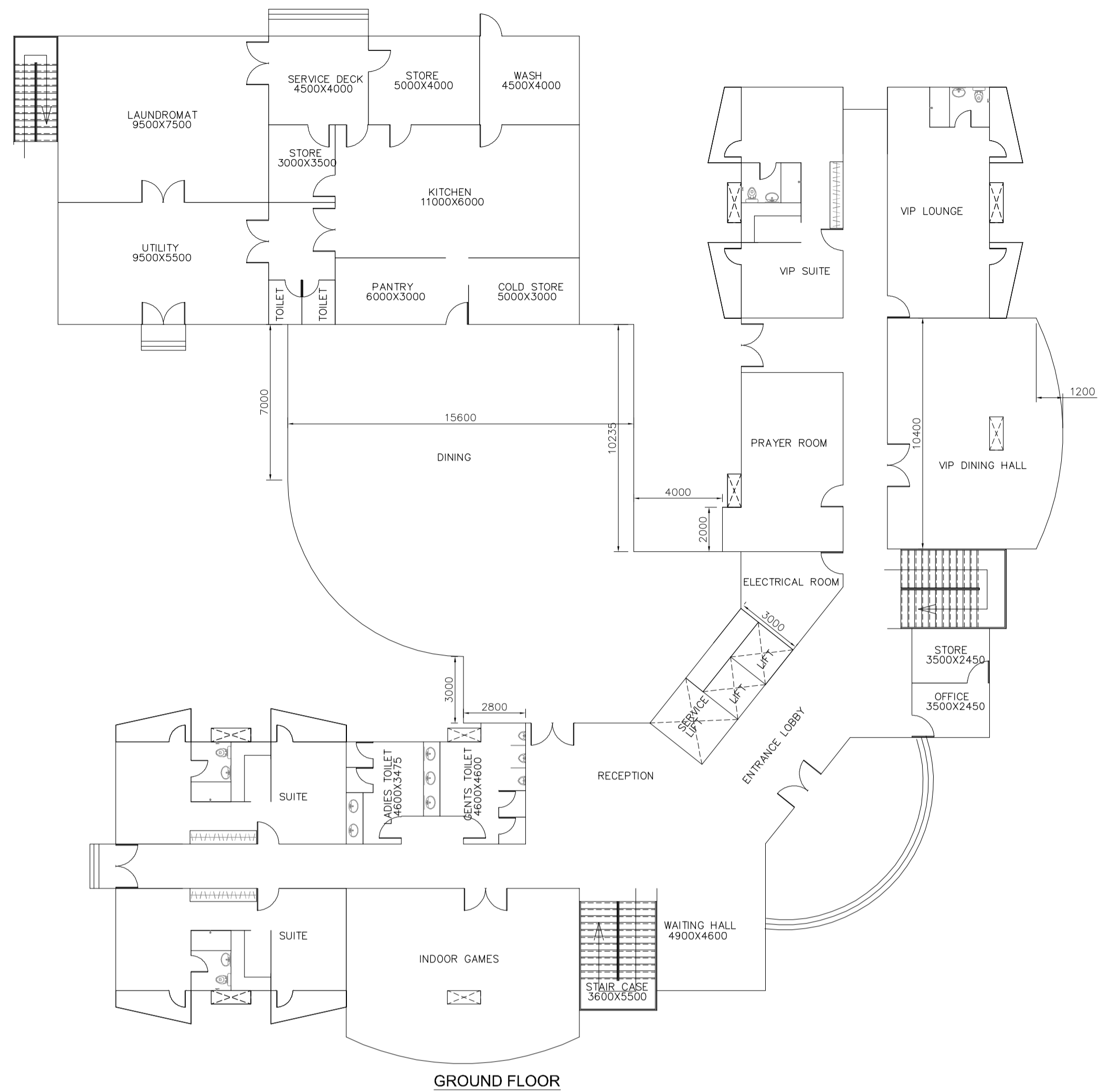
AREA STATEMENT ( APPROXIMATE)			
ONE DWELLING UNIT		ONE BLOCK	
AREAS	IN SQFT	AREA	IN SQFT
UNIT AREA	1000	STILT AREA	5000
CIRCULATION AREA (PROPORTIONED)	250	AREA OF ONE FLOOR	5000
		AREA OF 8 FLOORS + STILT FLOOR	45000
		STAIR HEADROOM	400
		LIFT MACHINE ROOM	300
TOTAL AREA	1250	TOTAL BUILT UP AREA	45700



**TYPICAL ARRANGEMENT FOR ONE UNIT**  
(SCALE 1:100)  
(ALL DIMENSION ARE IN MILLIMETERS)

A		29.06.18	FOR TENDER PURPOSE	CSSR	MAP						
REV.	DATE	DESCRIPTION			DRN.	STR.	MECH.	PROC.	ELEC.	INST.	
APPROVED BY											
<b>FICHTNER</b>			<b>TOWNSHIP 2x660 MW MAITREE STPP</b>								
	SIGNATURE	DATE	<b>STAFF RESIDENCE TYPE-D ARCHITECTURAL SCHEME</b>								
DRAWN	CSSR	29.06.18									
DESIGNED	MKK	29.06.18									
CHECKED	MAP	29.06.18									
DEPT. HEAD	RMK	29.06.18									
PROJ. MGR.	MAP	29.06.18	DEPT. CIVL	JOB NO.	1114129	SCALE:	1:100	REV.			
RELEASED FOR	PRELIMINARY		DWG. NO.		1114129-C-604			A			
	TENDER	✓									
	ENGINEERING										
	CONSTRUCTION										





ROOM TYPE	FLOORS	PER FLOOR NOS	TOTAL NOS
SUITES (550 SQFT)	GROUND FLOOR	3	10
	FIRST FLOOR	7	
ROOMS (275 SQFT)	SECOND FLOOR	16	32
	THIRD FLOOR	16	
TOTAL UNITS			42

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE							

**FICHTNER**  
2x660 MW MAITREE STPP

**TOWNSHIP**  
2x660 MW MAITREE STPP

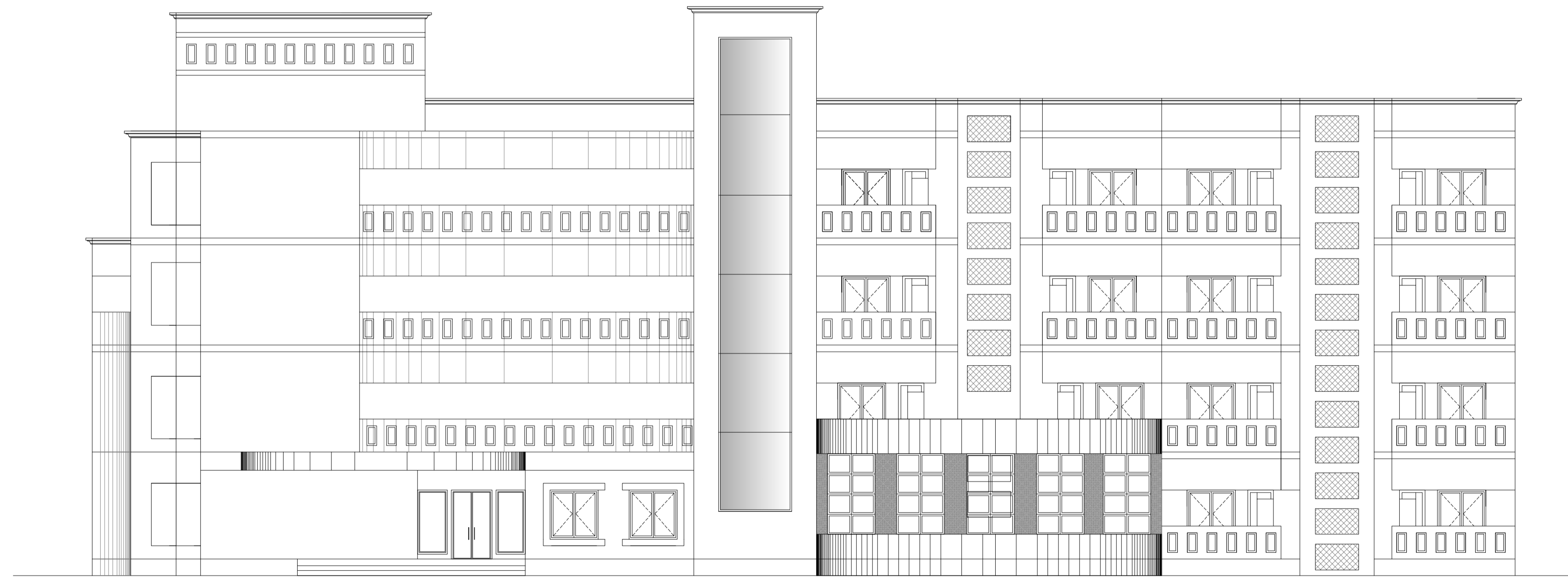
**GUEST HOUSE**  
ARCHITECTURAL SCHEME

REVISED BY	DATE	DEPT.	CIVIL	JOB NO.	SCALE	REV.
DESIGNED	29.06.18			1114129	1:125	
CHECKED	29.06.18					
DEPT HEAD	29.06.18					
PROJ. MGR.	29.06.18					
PRELIMINARY						
TENDER						
ENGINEERING						
CONSTRUCTION						

DWG. NO. 1114129-C-606



FRONT ELEVATION



SIDE ELEVATION

NOTE:-  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	10.07.18	FOR TENDER PURPOSE		RM	MAP				

**FICHTNER**

**TOWNSHIP**  
2x660 MW MAITREE STPP

	SIGNATURE	DATE
DRAWN	RM	10.07.18
DESIGNED	MKK	10.07.18
CHECKED	MAP	10.07.18
DEPT. HEAD	RMK	10.07.18
PROJ. MGR.	MAP	10.07.18

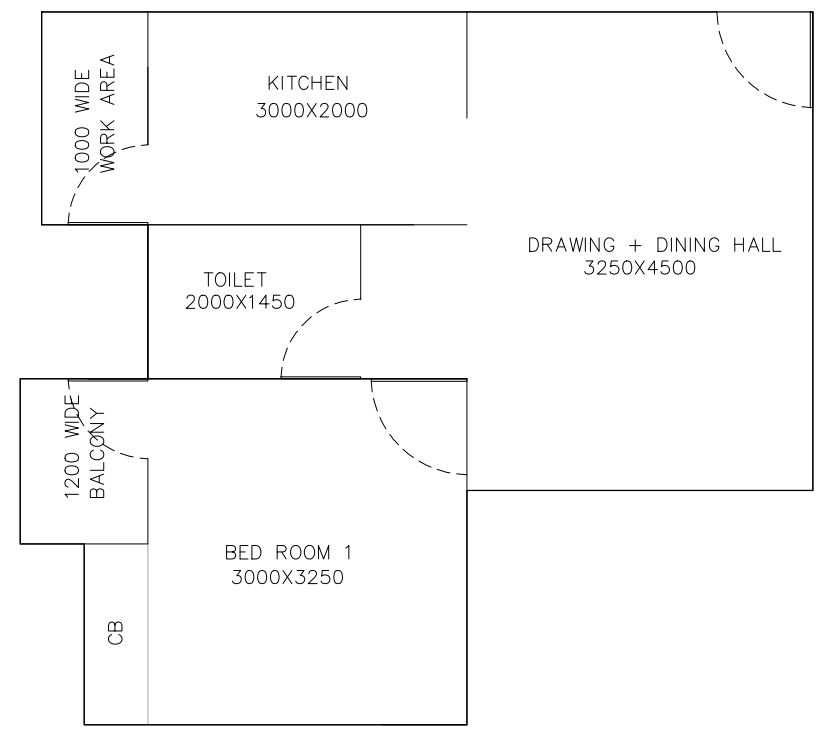
GUEST HOUSE  
ARCHITECTURAL ELEVATIONS

RELEASED FOR TENDER ENGINEERING CONSTRUCTION	PRELIMINARY		DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:100	REV.
	TENDER	✓				
	ENGINEERING		DWG.NO.	1114129-C-606		A
	CONSTRUCTION					





**RESIDENTIAL BLOCK - STUDIO APARTMENTS**  
**TYPICAL FLOOR PLAN**  
 (SCALE 1:100)



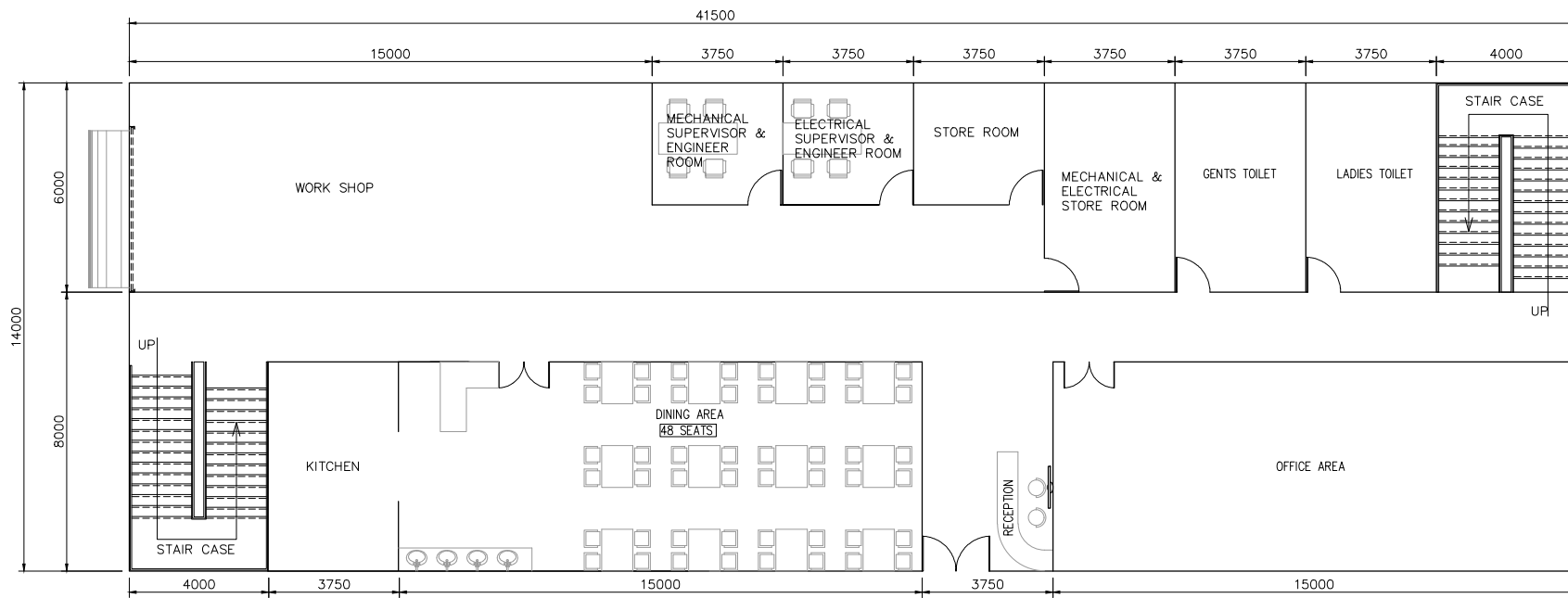
**TYPICAL ARRANGEMENT FOR ONE UNIT**  
 (SCALE 1:50)  
 (ALL DIMENSION ARE IN MILLIMETERS)

NO OF UNITS PER FLOOR	8
NO OF FLOORS OCCUPIED	8
TOTAL NO OF UNITS PER BLOCK	64
NO OF BLOCKS	1
TOTAL NO OF UNITS PROVIDED	64
GROUND FLOOR—PARKING AND ELECTRICAL ROOM	

AREA STATEMENT ( APPROXIMATE)			
ONE DWELLING UNIT		ONE BLOCK	
AREAS	IN SQFT	AREA	IN SQFT
UNIT AREA	420	STILT AREA	4160
CIRCULATION AREA (PROPORTIONED)	100	AREA OF ONE FLOOR	4160
		AREA OF 8 FLOORS + STILT FLOOR	37440
		STAIR HEADROOM	400
		LIFT MACHINE ROOM	300
<b>TOTAL AREA</b>	<b>520</b>	<b>TOTAL BUILT UP AREA</b>	<b>38140</b>

A		29.06.18	FOR TENDER PURPOSE	CSSR	MAP					
REV.	DATE	DESCRIPTION			DRN.	STR.	MECH.	PROC.	ELEC.	INST.
					APPROVED BY					
<b>FICHTNER</b>			<b>TOWNSHIP</b> 2x660 MW MAITREE STPP							
	SIGNATURE	DATE	<b>FIELD HOSTEL – STAFF</b> <b>ARCHITECTURAL SCHEME</b>							
DRAWN	CSSR	29.06.18								
DESIGNED	MKK	29.06.18								
CHECKED	MAP	29.06.18								
DEPT.HEAD	RMK	29.06.18								
PROJ.MGR.	MAP	29.06.18	DEPT. CIVL	JOB NO.	1114129	SCALE:	1:100	REV.		
RELEASED FOR	PRELIMINARY									
	TENDER	✓								
	ENGINEERING									
	CONSTRUCTION									
			DWG.NO.		1 1 1 4 1 2 9 – C – 6 0 8			A		

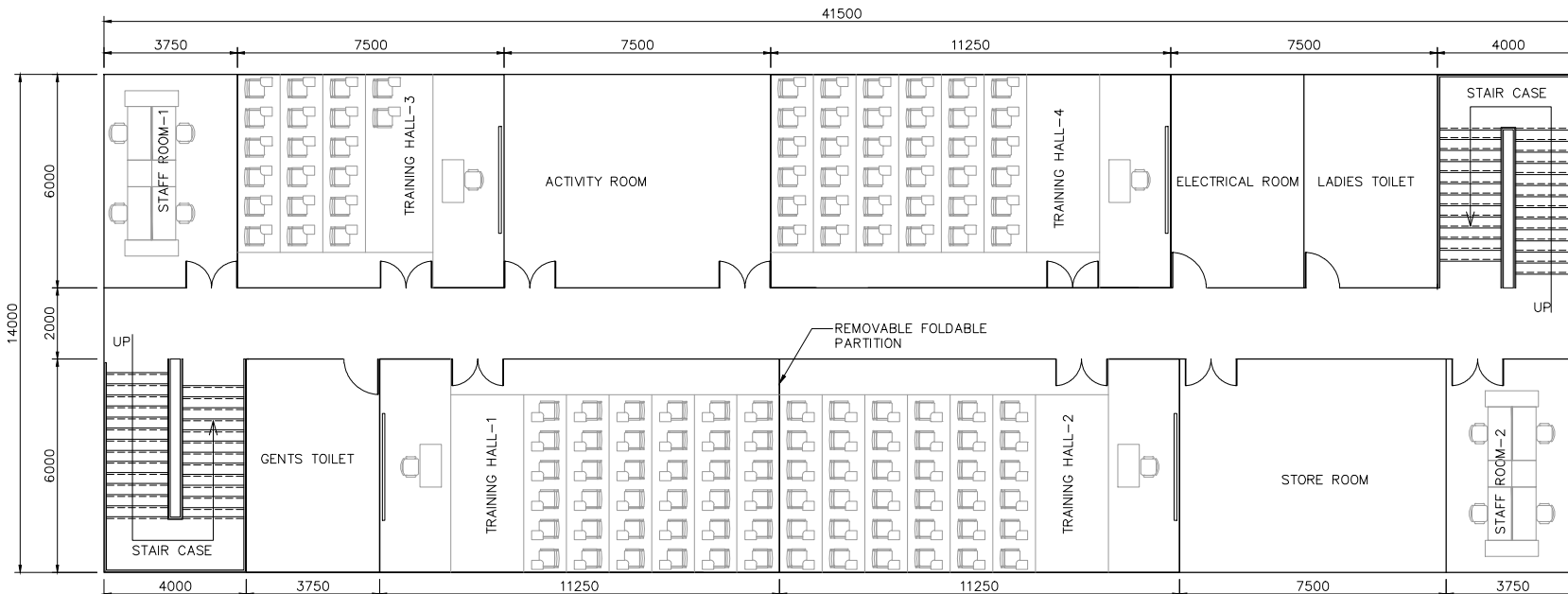




**GROUND FLOOR**

**GROUND FLOOR AREA STATEMENT**

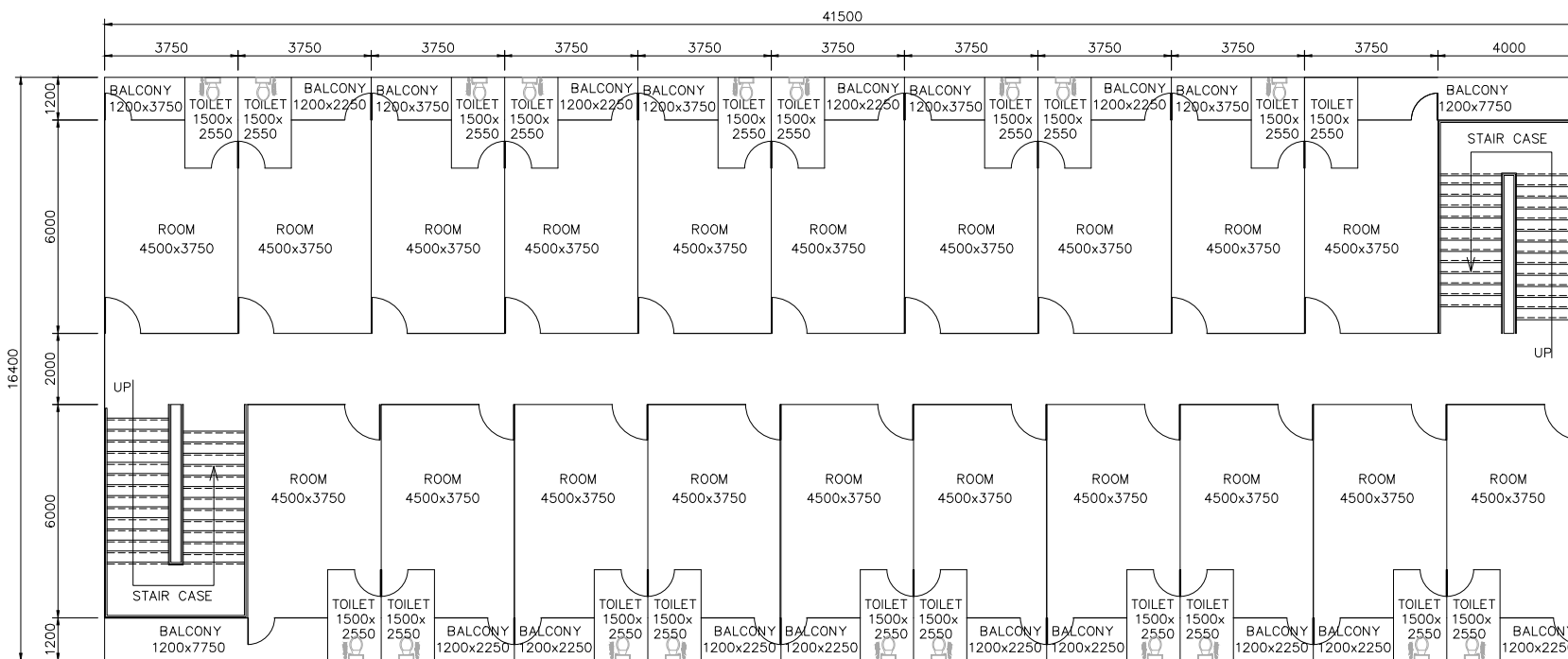
No.	DESCRIPTION	AREA (SQ.M.)
1	OFFICE CUM RECEPTION AREA	112.50
2	CORRIDOR	83.00
3	KITCHEN & DINING	112.50
4	STAIR CASE	48.00
5	GENTS TOILET	22.50
6	LADIES TOILET	22.50
7	WORK SHOP AREA	180.00
TOTAL FLOOR AREA		581.00



**FIRST FLOOR**

**FIRST FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	TRAINING-1	67.50
2	TRAINING-2	67.50
3	TRAINING-3	45.00
4	TRAINING-4	67.50
5	STAFF ROOM-1	22.50
6	STAFF ROOM-2	22.50
7	STAIR CASE	48.00
8	CORRIDOR	83.00
9	LADIES TOILET	22.50
10	GENTS TOILET	22.50
11	ACTIVITY ROOM	45.00
12	ELECTRICAL ROOM	22.50
13	STORE ROOM	45.00
TOTAL FLOOR AREA		581.00



**SECOND FLOOR**

**SECOND FLOOR AREA STATEMENT**

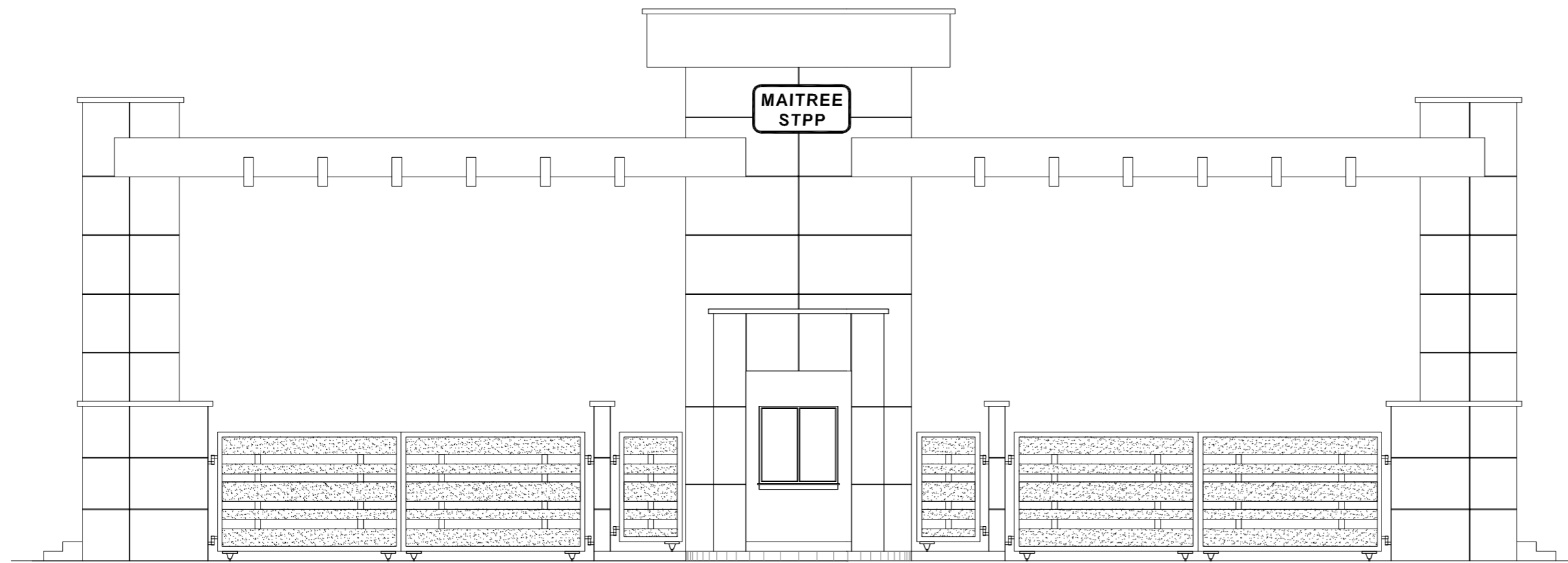
No.	DESCRIPTION	AREA (SQ.M.)
1	ROOM (22.5x20)	450.00
2	BALCONY	110.00
3	STAIR CASE	48.00
4	CORRIDOR	83.00
TOTAL FLOOR AREA		581.00

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE	CSSR	MAP					

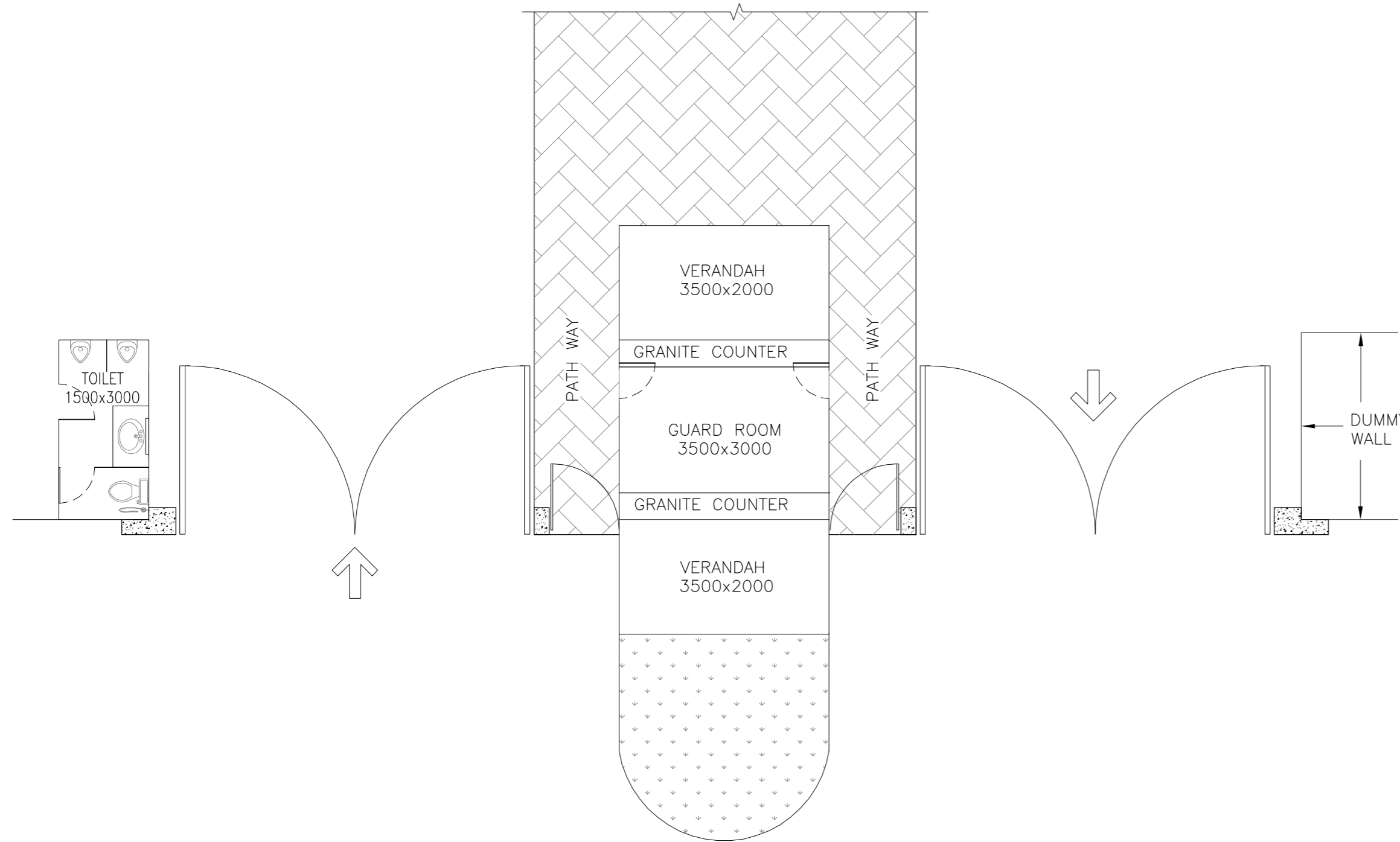
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SIGNATURE		DATE	
DRAWN	CSSR	29.06.18	
DESIGNED	MKK	29.06.18	
CHECKED	MAP	29.06.18	
DEPT. HEAD	RMK	29.06.18	
PROJ. MGR.	MAP	29.06.18	
RELEASED FOR	PRELIMINARY	DEPT.	CIVIL
	TENDER	JOB NO.	1114129
	ENGINEERING	SCALE:	1:100
	CONSTRUCTION	DWG. NO.	1114129-C-609
		REV.	A



ELEVATION

FLOOR AREA STATEMENT

No.	DESCRIPTION	AREA (SQ.M.)
1	GUARD ROOM	10.50
2	VERANDAH (7x2)	14.00
3	TOILET	4.50
	TOTAL AREA	29.00



GROUND FLOOR PLAN

NOTE:-

ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	CSSR	MAP	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	10.07.18	FOR TENDER PURPOSE									

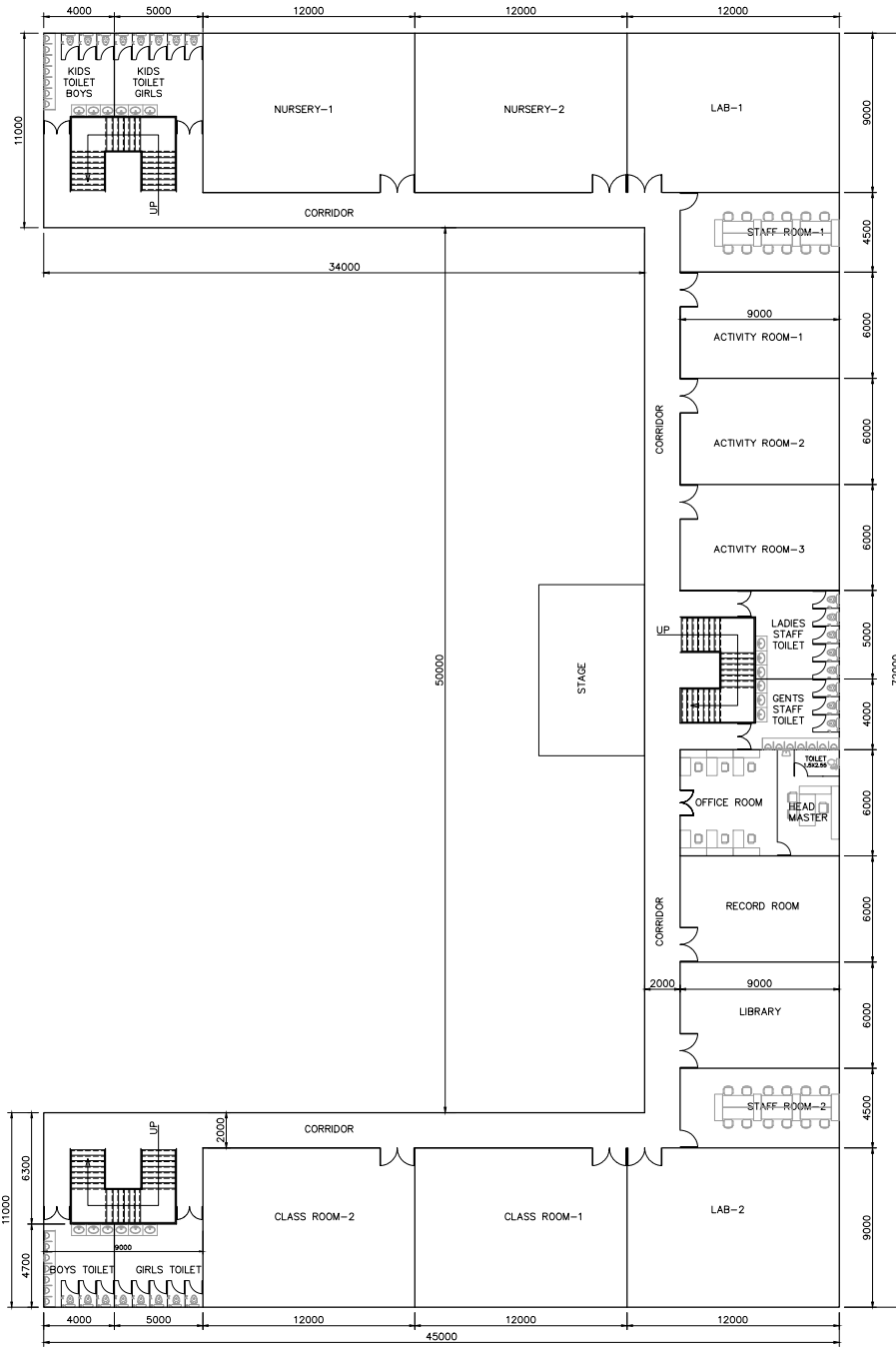
**FICHTNER**

**TOWNSHIP**  
2x660 MW MAITREE STPP

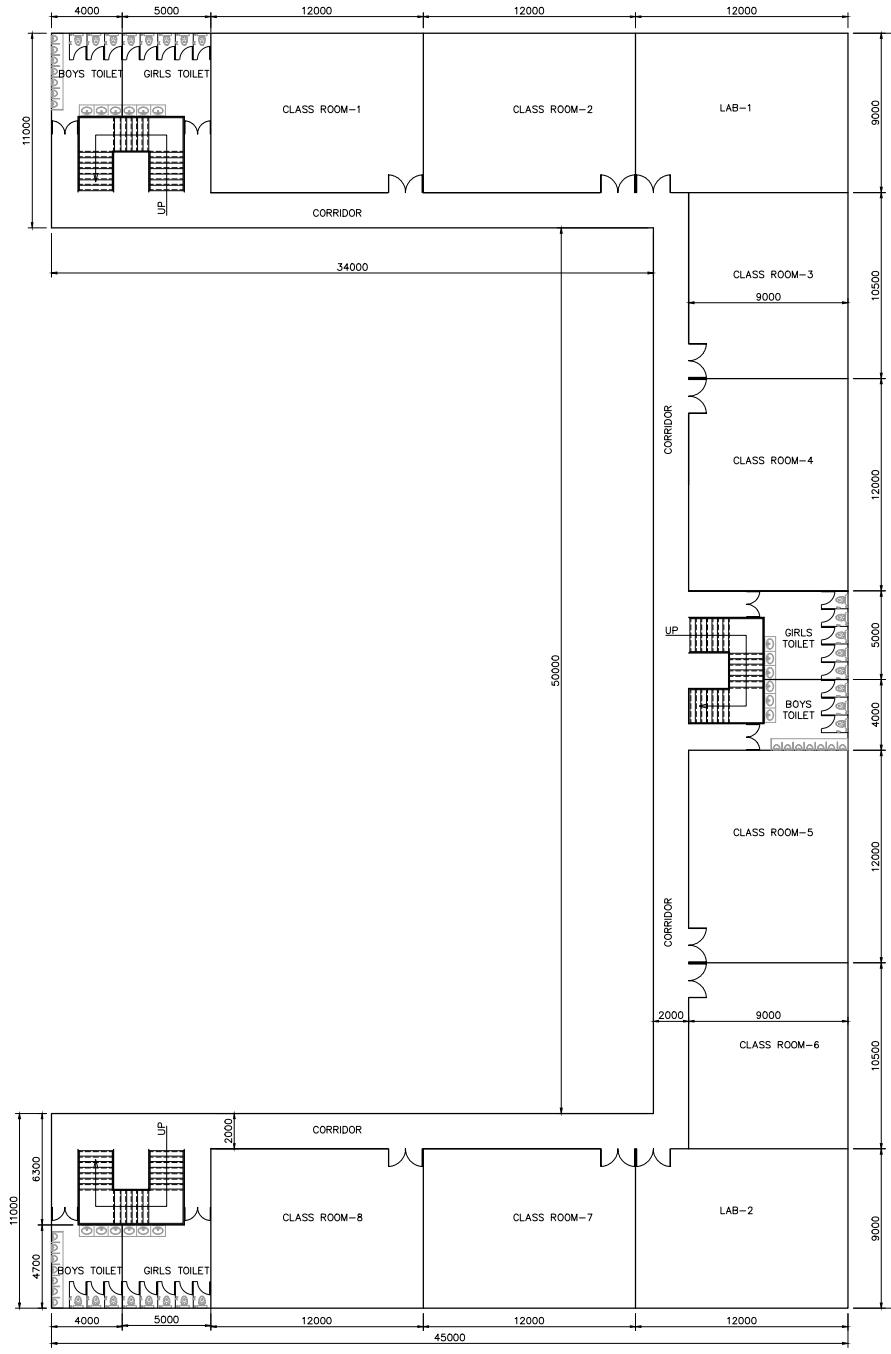
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DESIGNED	MKK	10.07.18
CHECKED	MAP	10.07.18
DEPT.HEAD	RMK	10.07.18
PROJ.MGR.	MAP	10.07.18

GATE COMPLEX  
ARCHITECTURAL SCHEME

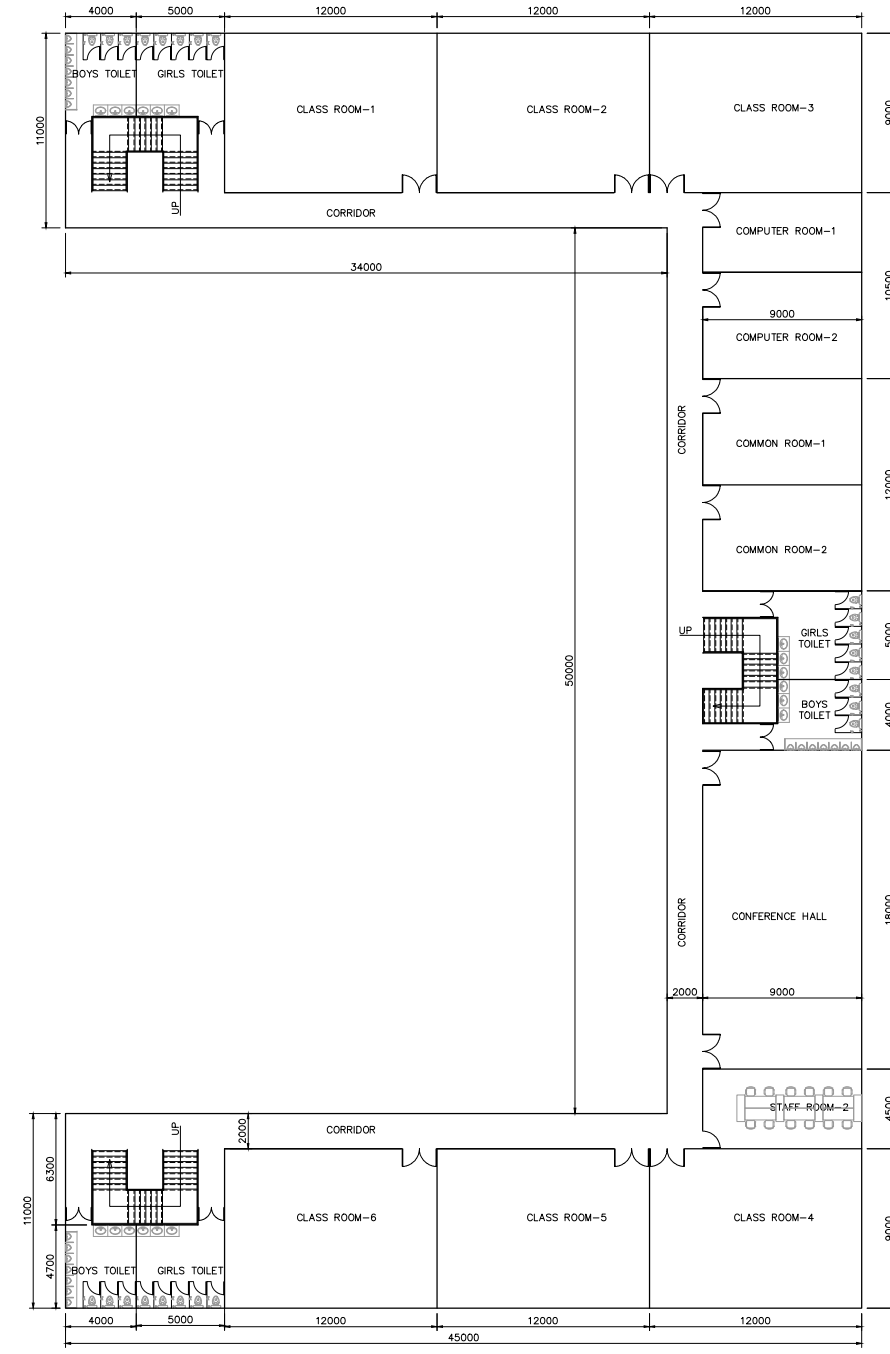
RELEASED FOR TENDER	PRELIMINARY	DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:75	REV.
ENGINEERING					
CONSTRUCTION					
			DWG.NO. 1114129-C-701		A



GROUND FLOOR



FIRST FLOOR



SECOND FLOOR

NOTE:-  
CENTRAL STAIR SHALL HAVE CURVED  
GLAS PROJECTION IN ELEVATION

NOTE:-  
ALL DIMENSION ARE IN MILLIMETERS

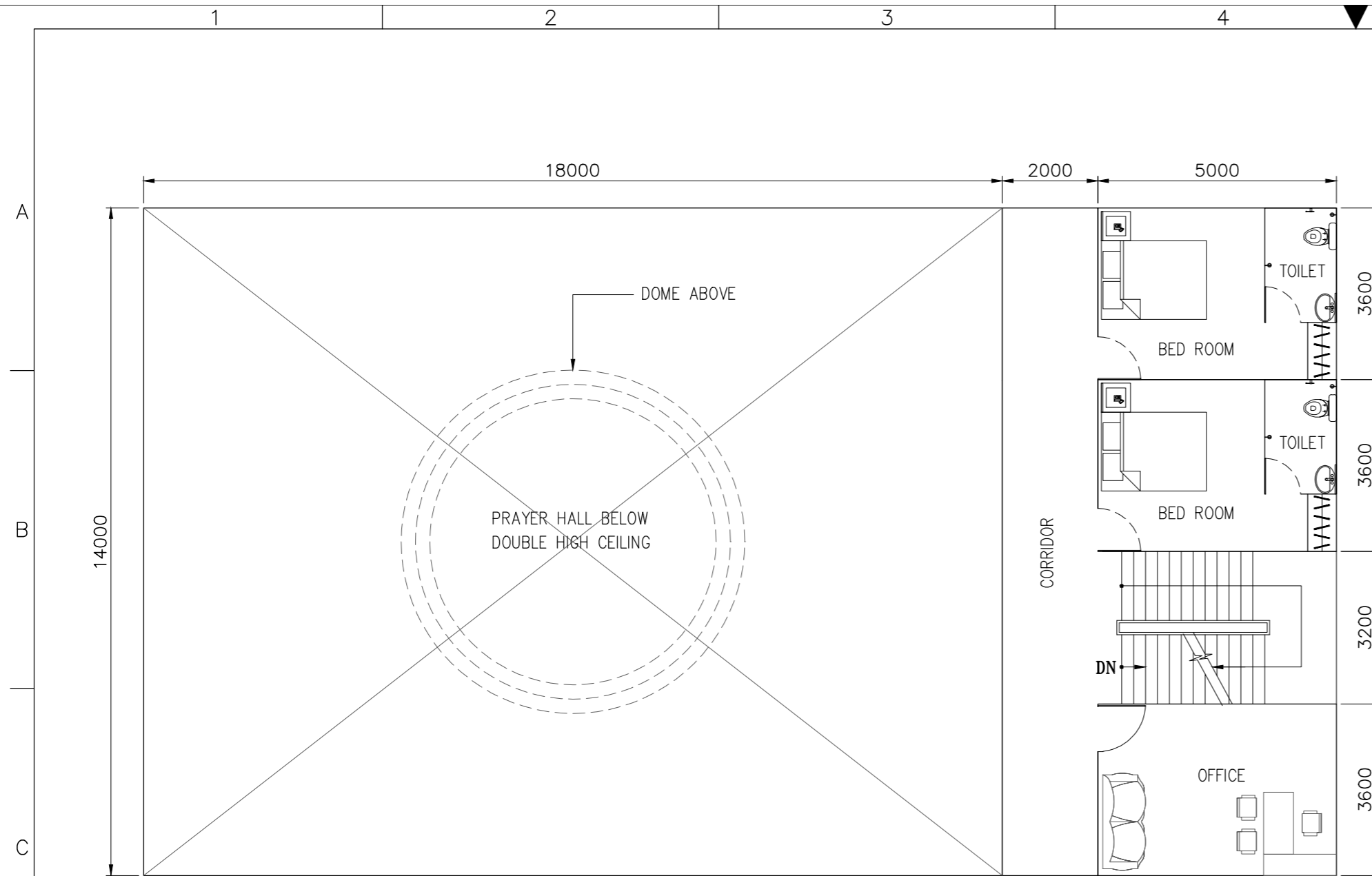
REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PRDC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE							CSSR MAP

**FICHTNER** TOWNSHIP  
2x660 MW MAITREE STPP

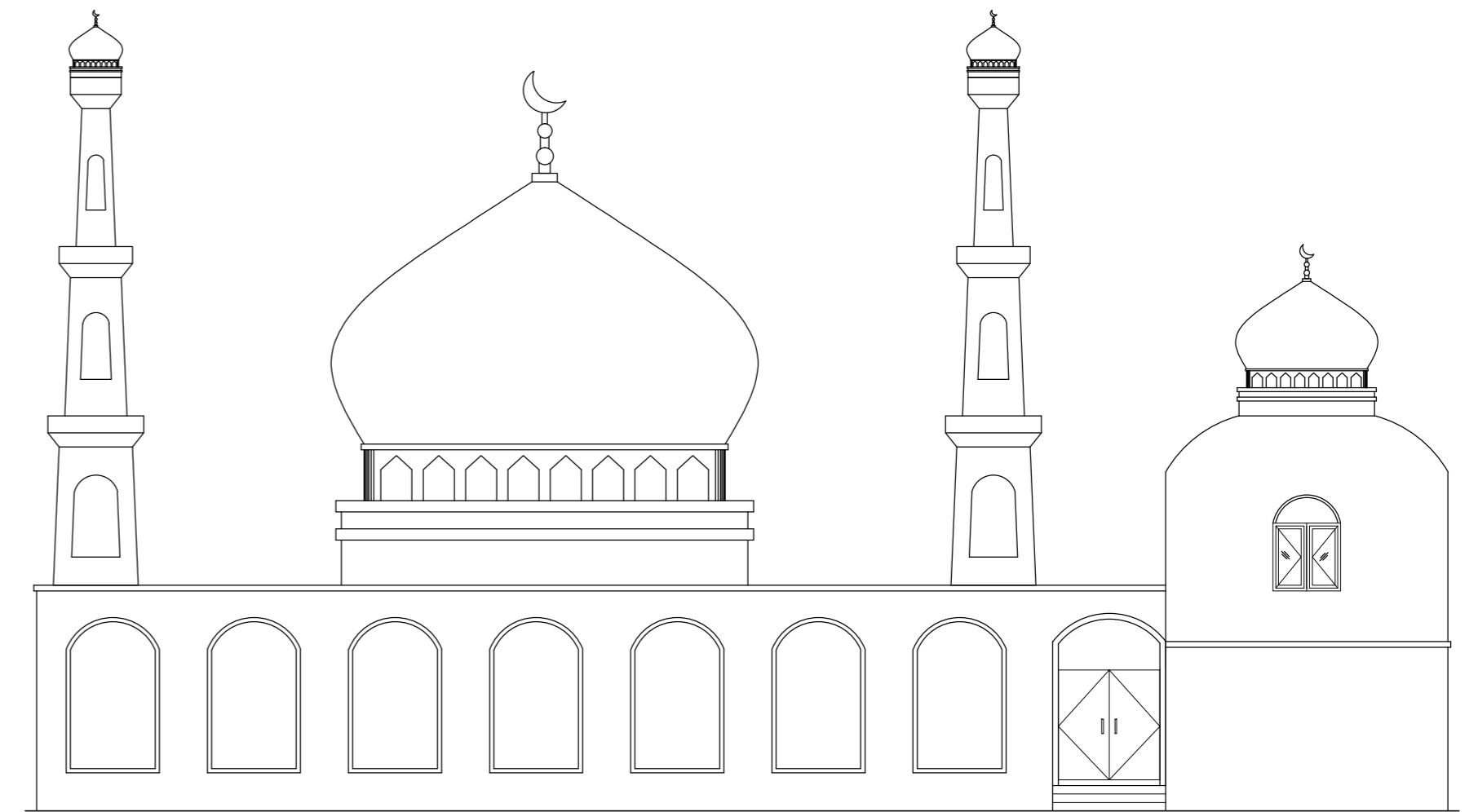
**NURSERY AND HIGH SCHOOL  
ARCHITECTURAL SCHEME**

RELEASED	SIGNATURE	DATE	DEPT.	CIVIL	JOB NO.	SCALE	REV.
DESIGNED	CSSR	29.06.18			1114129	1:150	
CHECKED	MAP	29.06.18					
DEPT. HEAD	MAP	29.06.18					
PROJ. MGR.	MAP	29.06.18					
ENGINEERING							
CONSTRUCTION							

DWG. NO. 1114129-C-703



**FIRST FLOOR PLAN**



**ELEVATION**

**GROUND FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	PRAYER HALL	252.00
2	ABLUTION AREA	18.00
3	STORES	18.00
4	TOILETS	18.00
5	STAIRCASE	16.00
6	CORRIDOR	28.00
	<b>TOTAL AREA</b>	<b>350.00</b>

**FIRST FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	BED ROOM INCL. TOILET	36.00
2	OFFICE	18.00
3	STAIRCASE	16.00
4	CORRIDOR	28.00
	<b>TOTAL AREA</b>	<b>98.00</b>



**GROUND FLOOR PLAN**

**NOTE:--**

ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	10.07.18	FOR TENDER PURPOSE	CSSR	MAP					

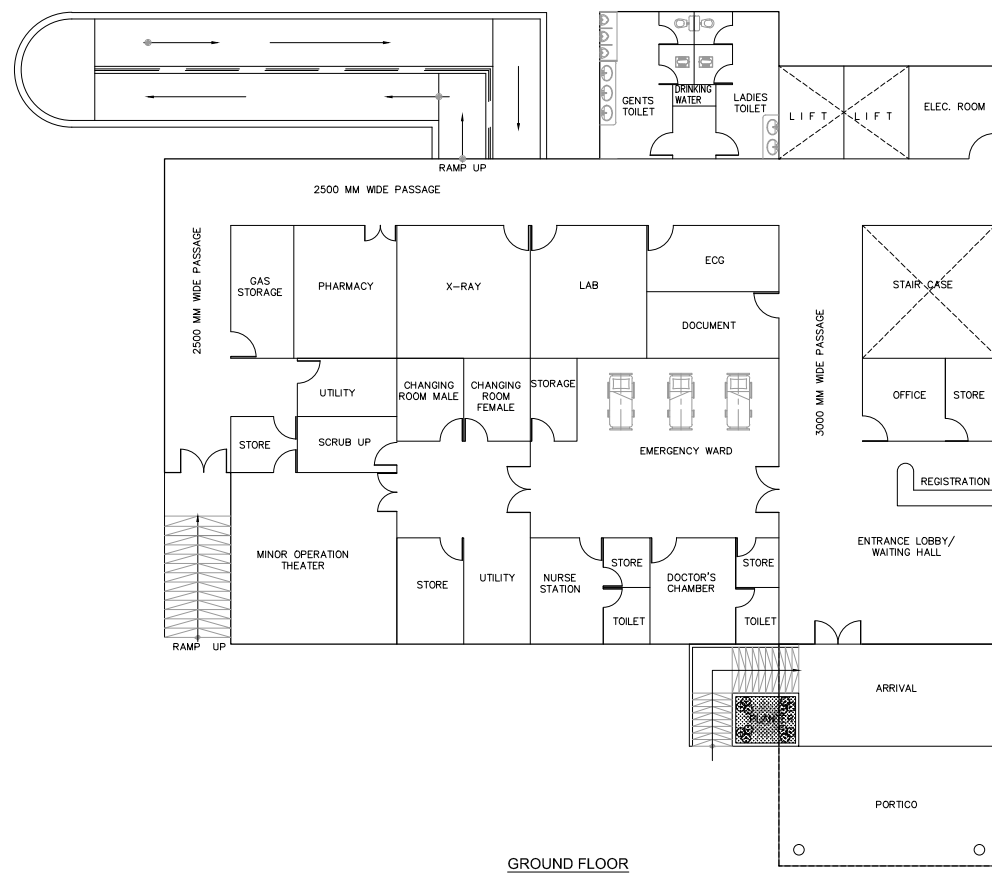
**FICHTNER**

**TOWNSHIP**  
2x660 MW MAITREE STPP

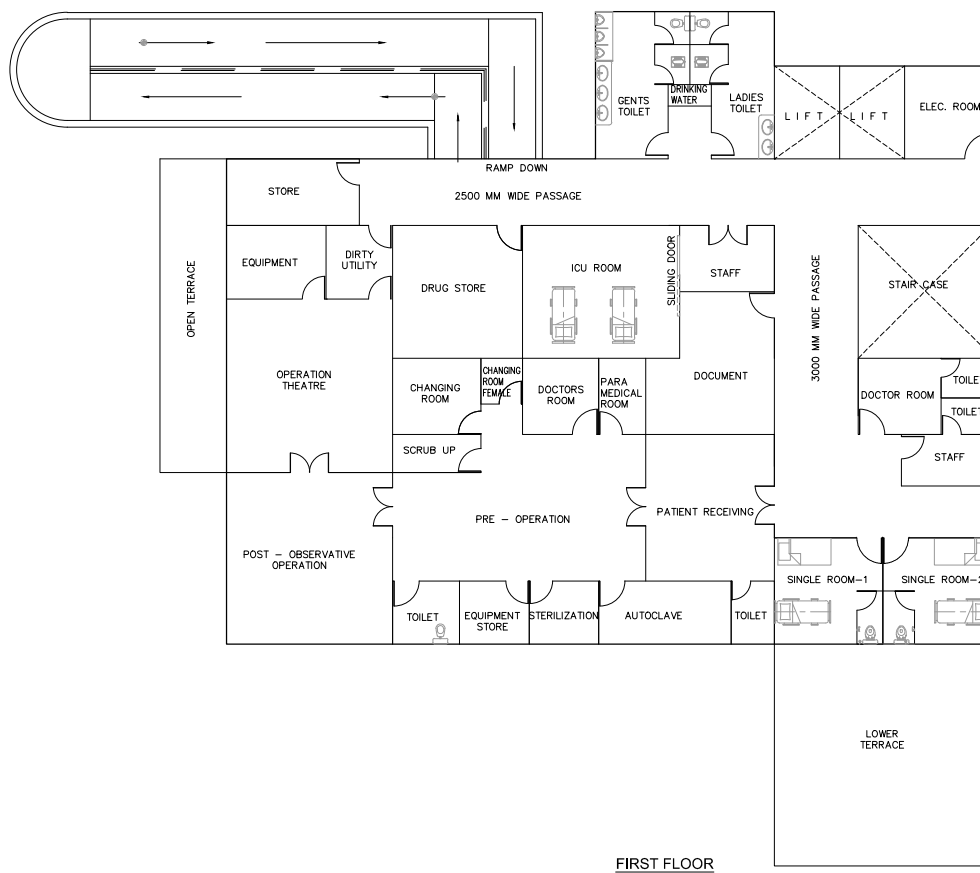
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DESIGNED	MKK	10.07.18
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DEPT.HEAD	RMK	10.07.18
PROJ.MGR.	MAP	10.07.18

**MOSQUE**  
ARCHITECTURAL SCHEME

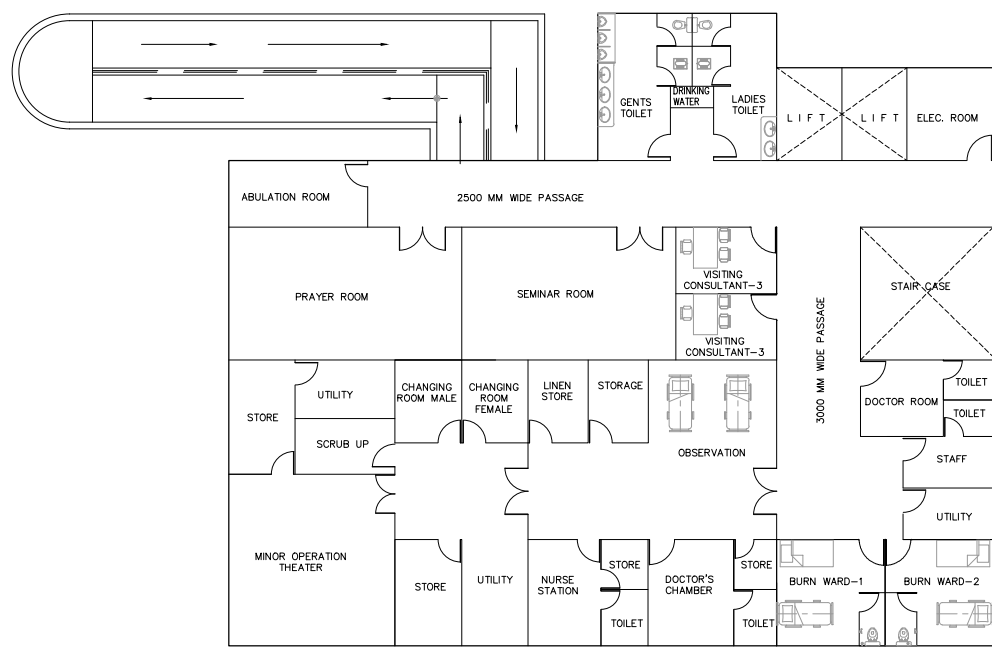
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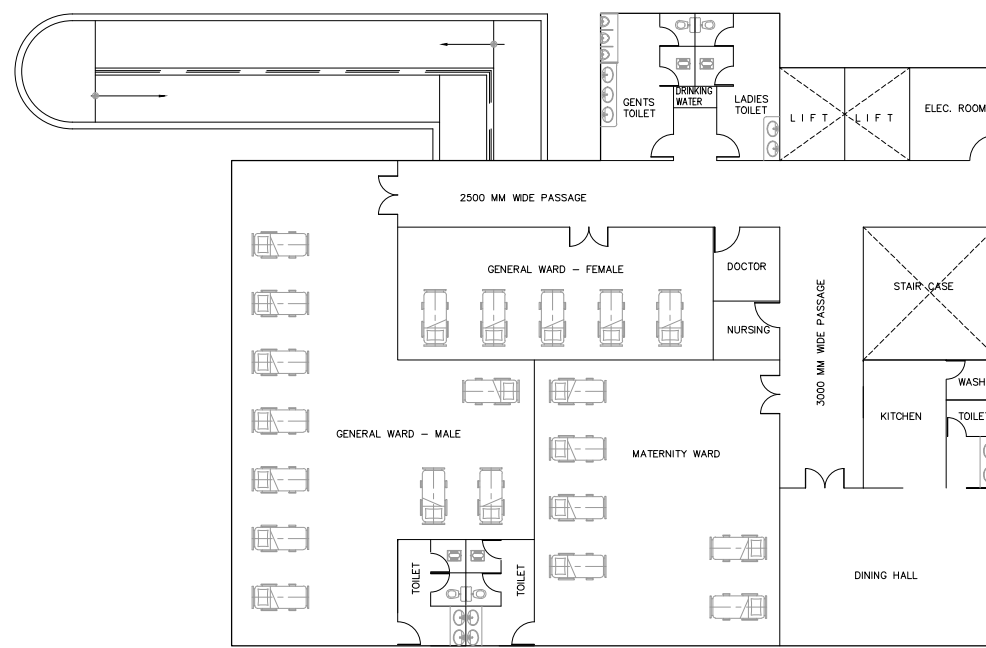
GROUND FLOOR



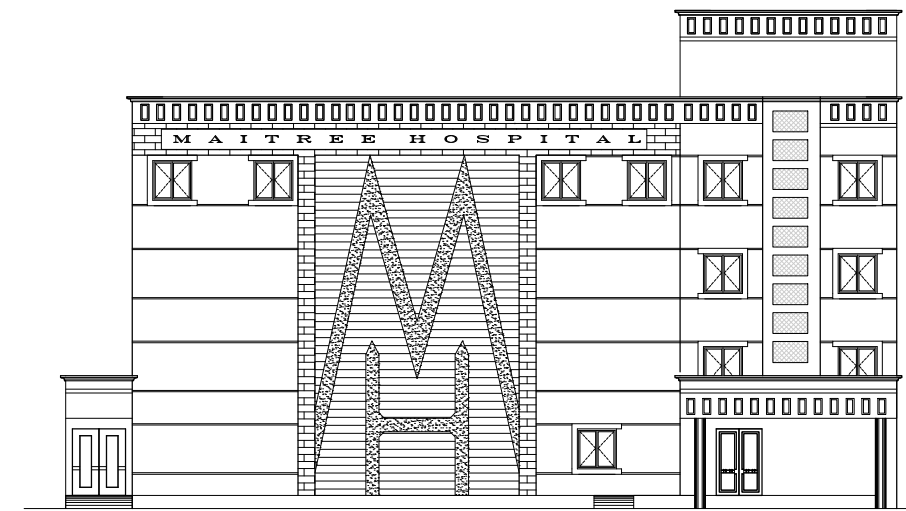
FIRST FLOOR



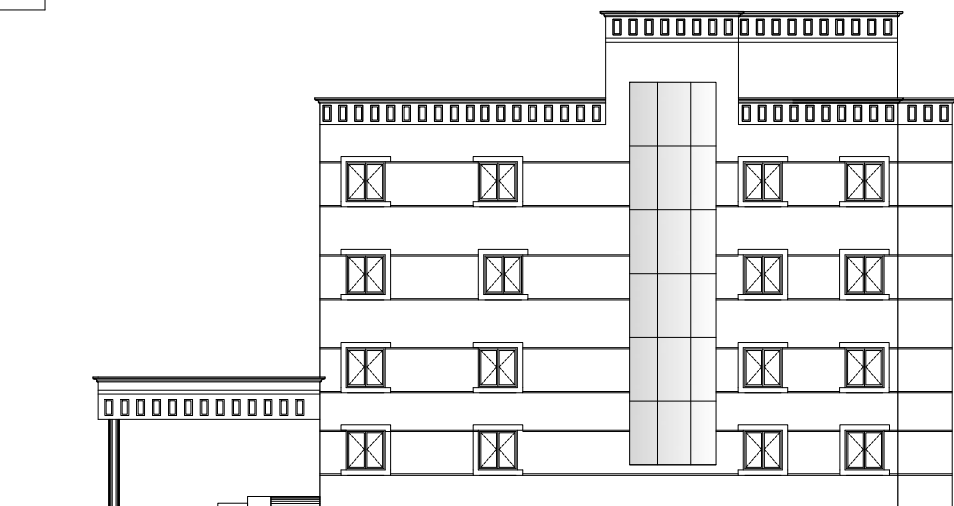
SECOND FLOOR



THIRD FLOOR



FRONT ELEVATION



SIDE ELEVATION

FLOOR AREA STATEMENT

NO.	DESCRIPTION	AREA (SQ.M)
1	GROUND FLOOR AREA	621.00
2	FIRST FLOOR AREA	591.00
3	SECOND FLOOR AREA	591.00
4	THIRD FLOOR AREA	591.00
5	PORTICO AREA	68.00
6	RAMP AREA	90.00
	TOTAL AREA	2552.00

NOTE:-  
ALL DIMENSION ARE IN MILLIMETERS

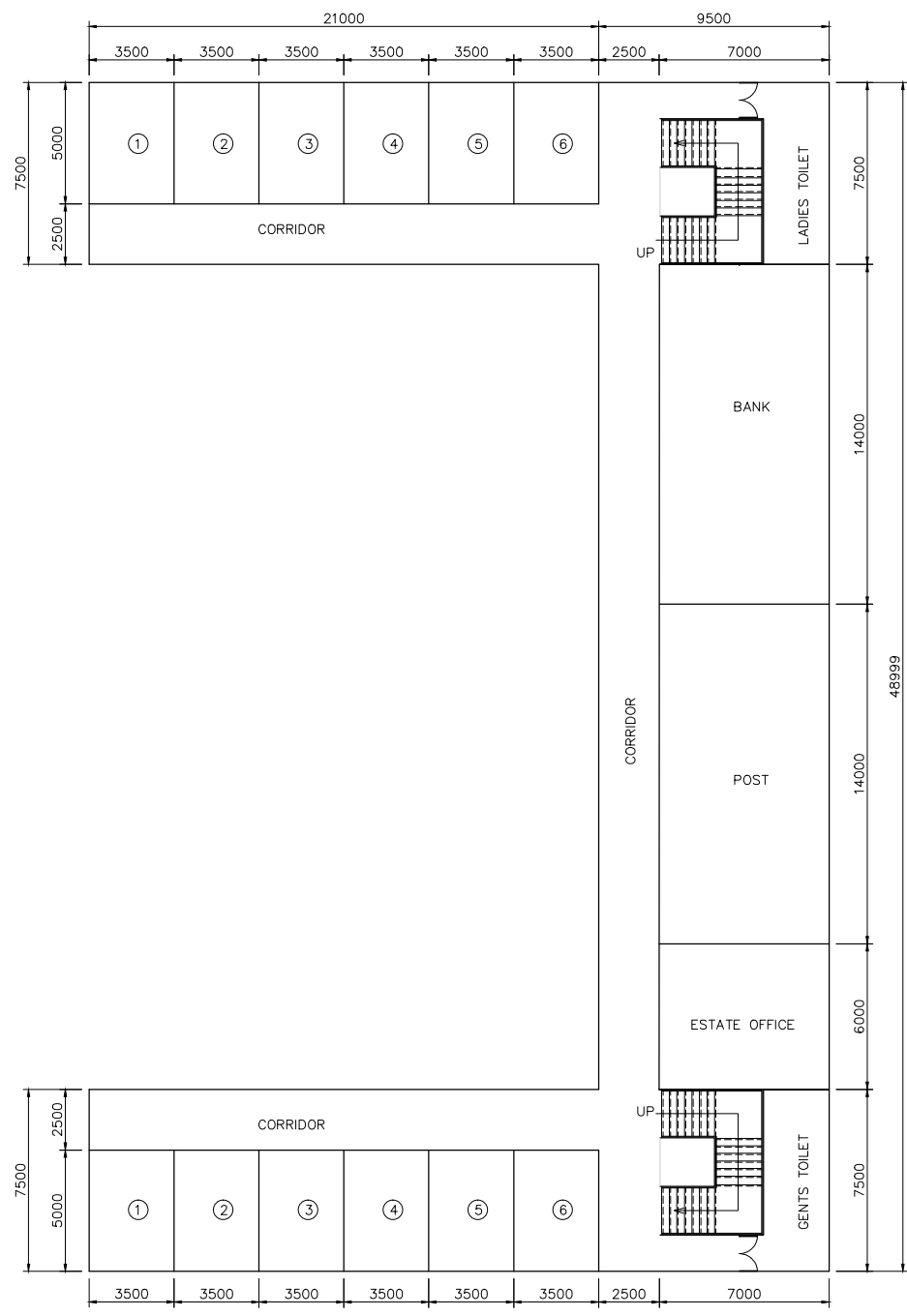
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROG.	ELEC.	INST.	APPROVED BY
A	10.07.18	FOR TENDER PURPOSE							CSSR MAP

**FICHTNER**    **TOWNSHIP**  
2x660 MW MAITREE STPP

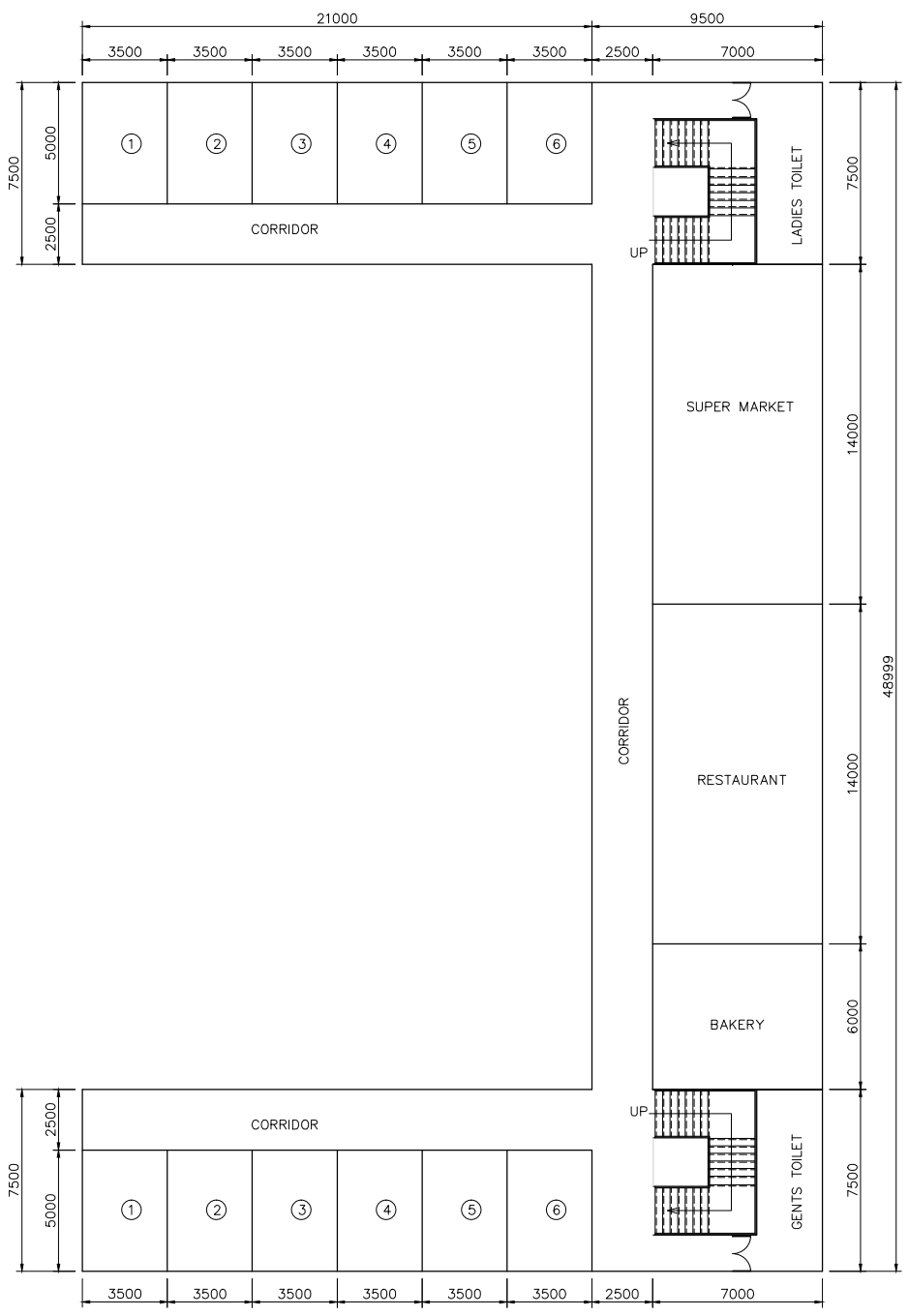
HOSPITAL  
ARCHITECTURAL SCHEME

DRAWN	CSSR	DATE	10.07.18
DESIGNED	RMK		10.07.18
CHECKED	MAP		10.07.18
DEPT. HEAD	RMK		10.07.18
PROJ. MGR.	MAP		10.07.18
RELEASED	PRELIMINARY	DEPT.	CIVIL
	TENDER	JOB NO.	1114129
	ENGINEERING	SCALE:	1:100
	CONSTRUCTION	DWG. NO.	1114129-C-705

REV. A



GROUND FLOOR PLAN



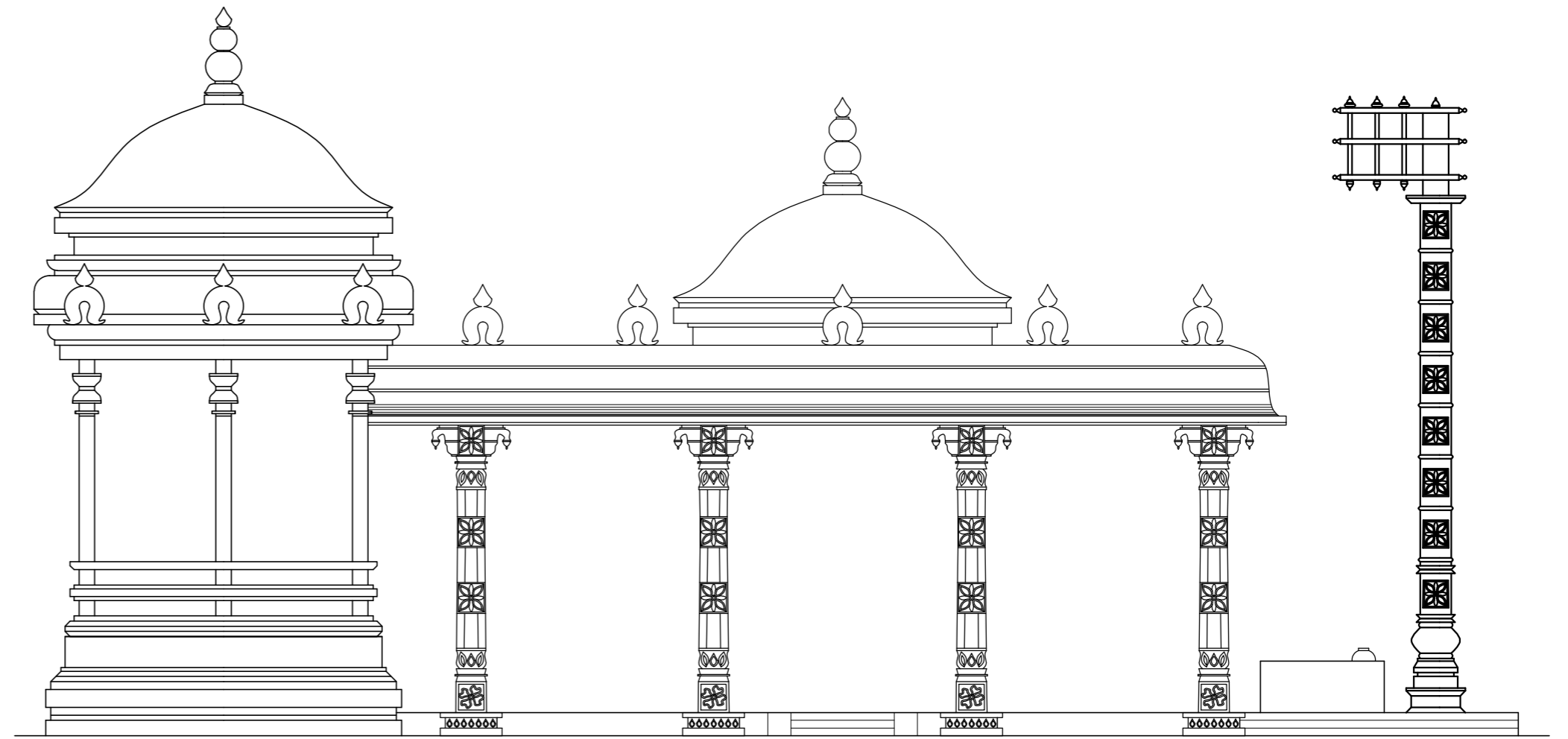
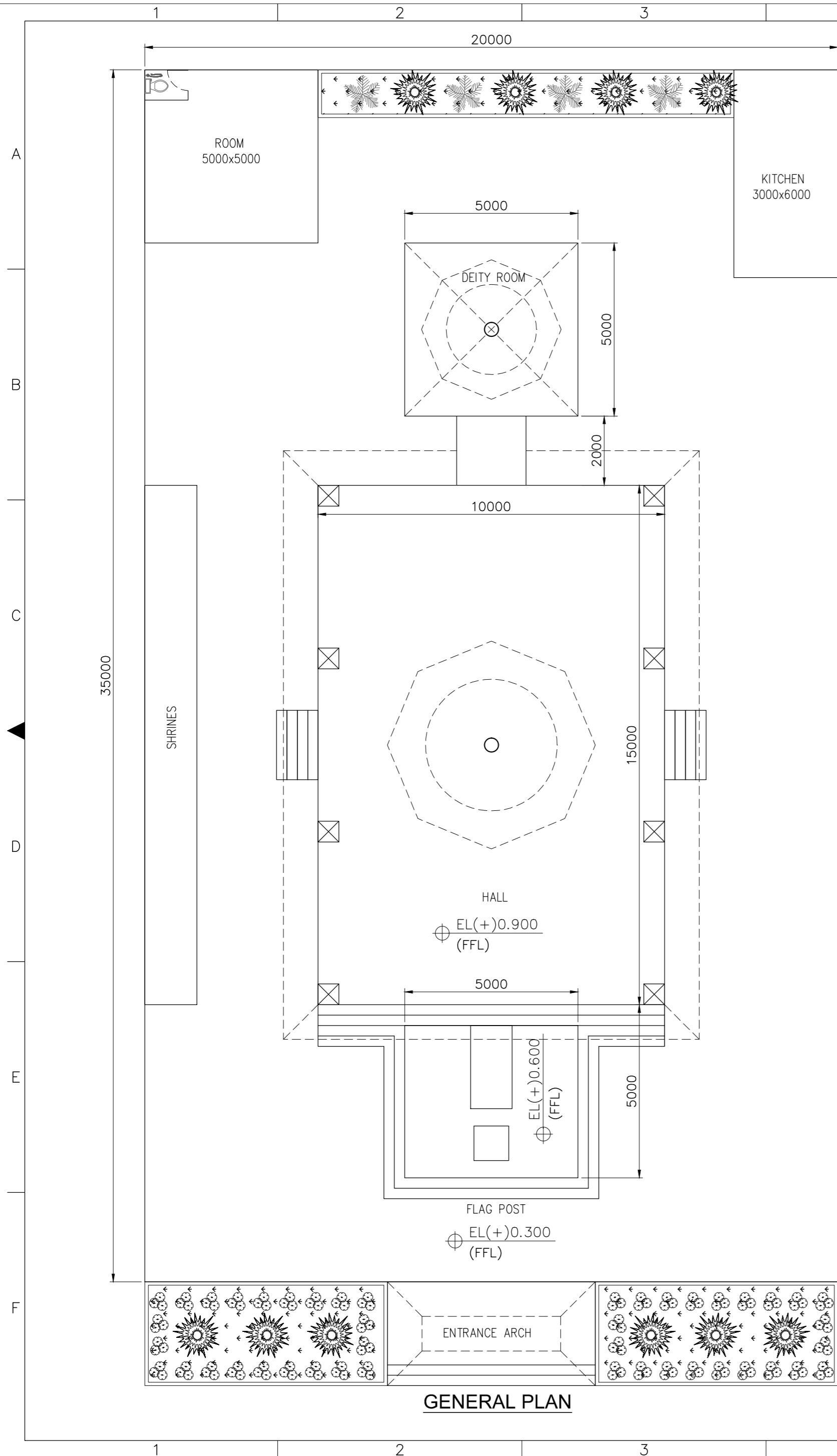
FIRST FLOOR PLAN

AREA STATEMENT	
Total floor area - 1,560 Sq.m (16,800 Sft) = G + 1 FLOORS	
Each floor area - 780 Sq.m (8,400 Sft) (Including Common area)	
Common area - 280 Sq.m (3,000 Sft)	

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE		CSSR	MAP				

<b>FICHTNER</b>			<b>TOWNSHIP</b> 2x660 MW MAITREE STPP			
DRAWN	CSSR	SIGNATURE	DATE	29.06.18		
DESIGNED	MKK			29.06.18		
CHECKED	MAP			29.06.18		
DEPT. HEAD	RMK			29.06.18		
PROJ. MGR.	MAP			29.06.18		
RELEASED FOR	PRELIMINARY		DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:150	REV.
	TENDER	✓				
	ENGINEERING		DWG. NO.	1114129-C-706		A
	CONSTRUCTION					



**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	DEITY ROOM	25.00
2	HALL	150.00
3	KITCHEN	18.00
4	ROOM	25.00
TOTAL AREA		218.00

**NOTE:-**

ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	10.07.18	FOR TENDER PURPOSE	PV	MAP					

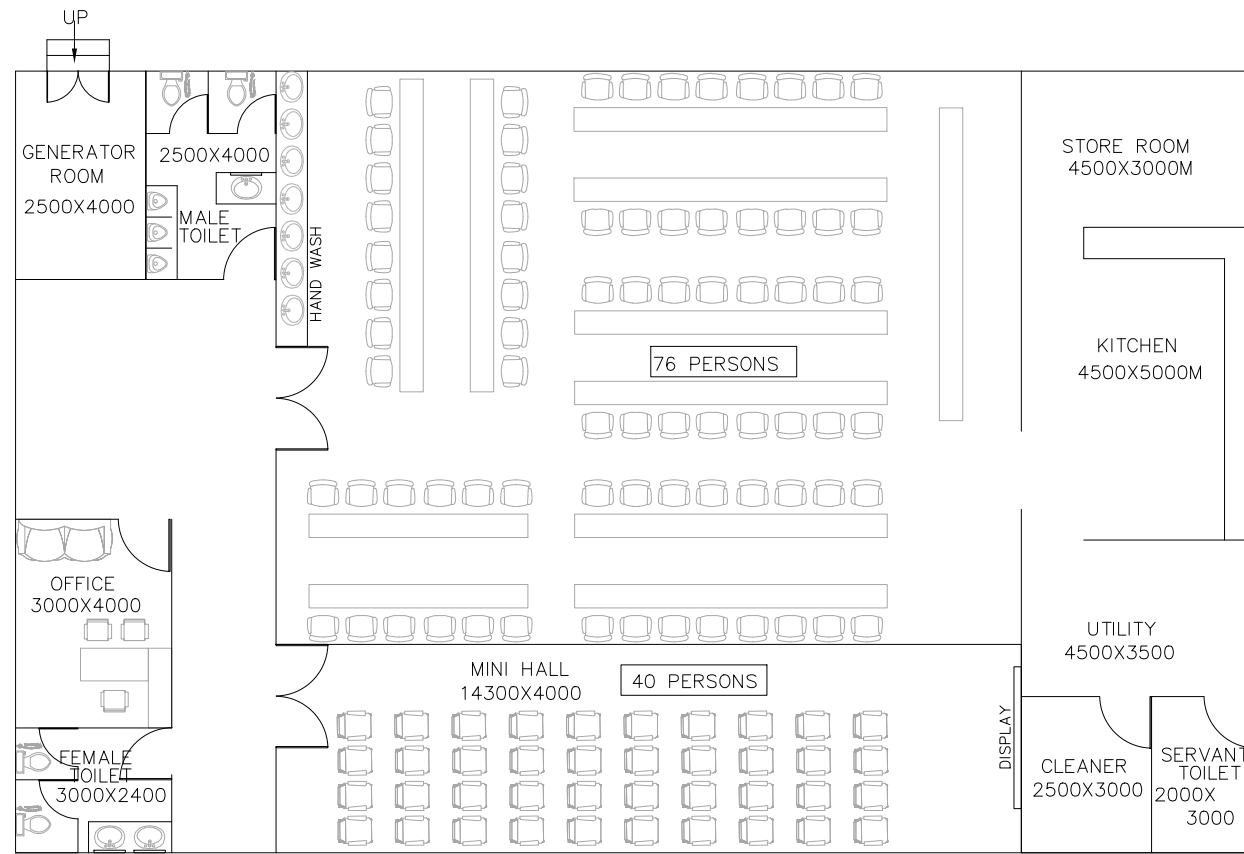
**FICHTNER**

**TOWNSHIP**  
2x660 MW MAITREE STPP

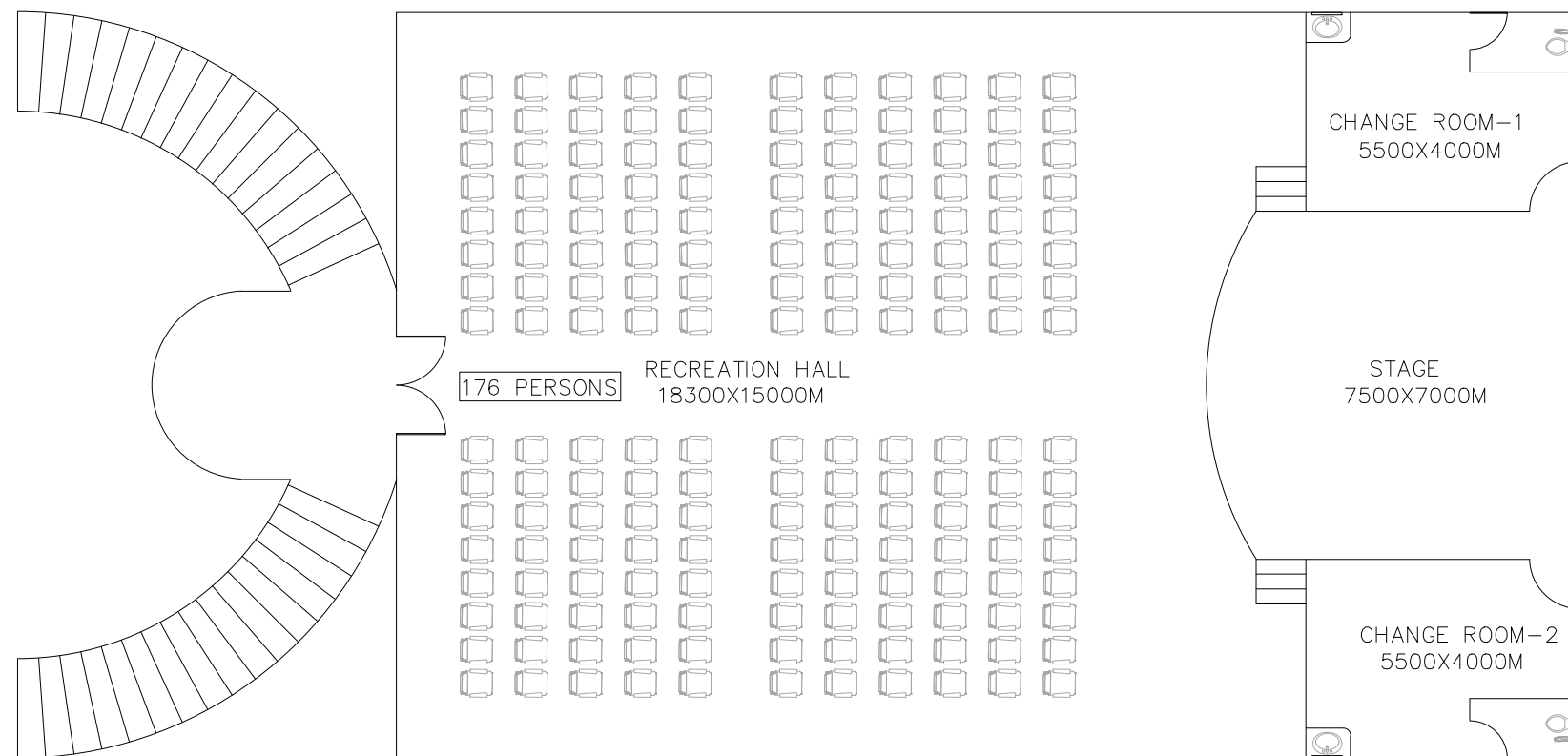
	SIGNATURE	DATE
DRAWN	PV	10.07.18
DESIGNED	MKK	10.07.18
CHECKED	MAP	10.07.18
DEPT. HEAD	RMK	10.07.18
PROJ. MGR.	MAP	10.07.18

**TEMPLE**  
ARCHITECTURAL SCHEME

RELEASED FOR CONSTRUCTION	PRELIMINARY TENDER ENGINEERING	DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:100	REV. A
			DWG. NO. 1114129-C-707		



**GROUND FLOOR**



**FIRST FLOOR**

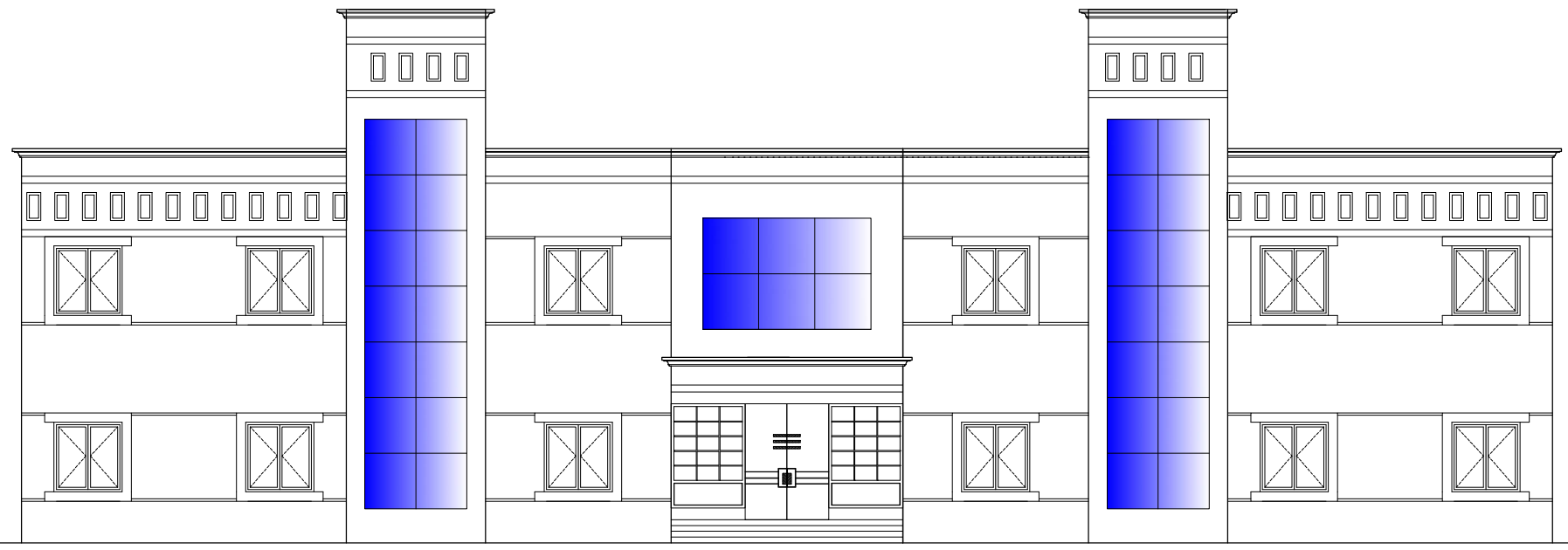
**NOTE:--**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE	CSSR	MAP					

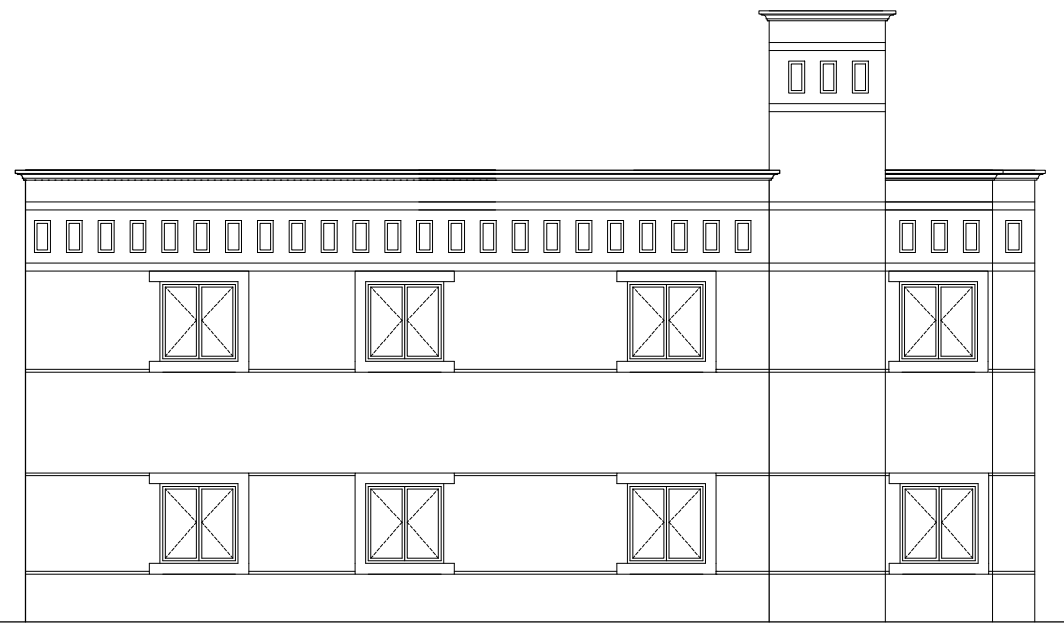
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			<b>COMMUNITY CENTER</b> ARCHITECTURAL SCHEME						
	SIGNATURE	DATE							
DRAWN	CSSR	29.06.18							
DESIGNED	MKK	29.06.18							
CHECKED	MAP	29.06.18							
DEPT.HEAD	RMK	29.06.18							
PROJ.MGR.	MAP	29.06.18							
RELEASED FOR	PRELIMINARY		DEPT.	CIVL	JOB NO.	1114129	SCALE:	1:1000	REV.
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	ENGINEERING								
	CONSTRUCTION								
			DWG.NO. 1114129-C-708						A

RA-a SIZE-A2

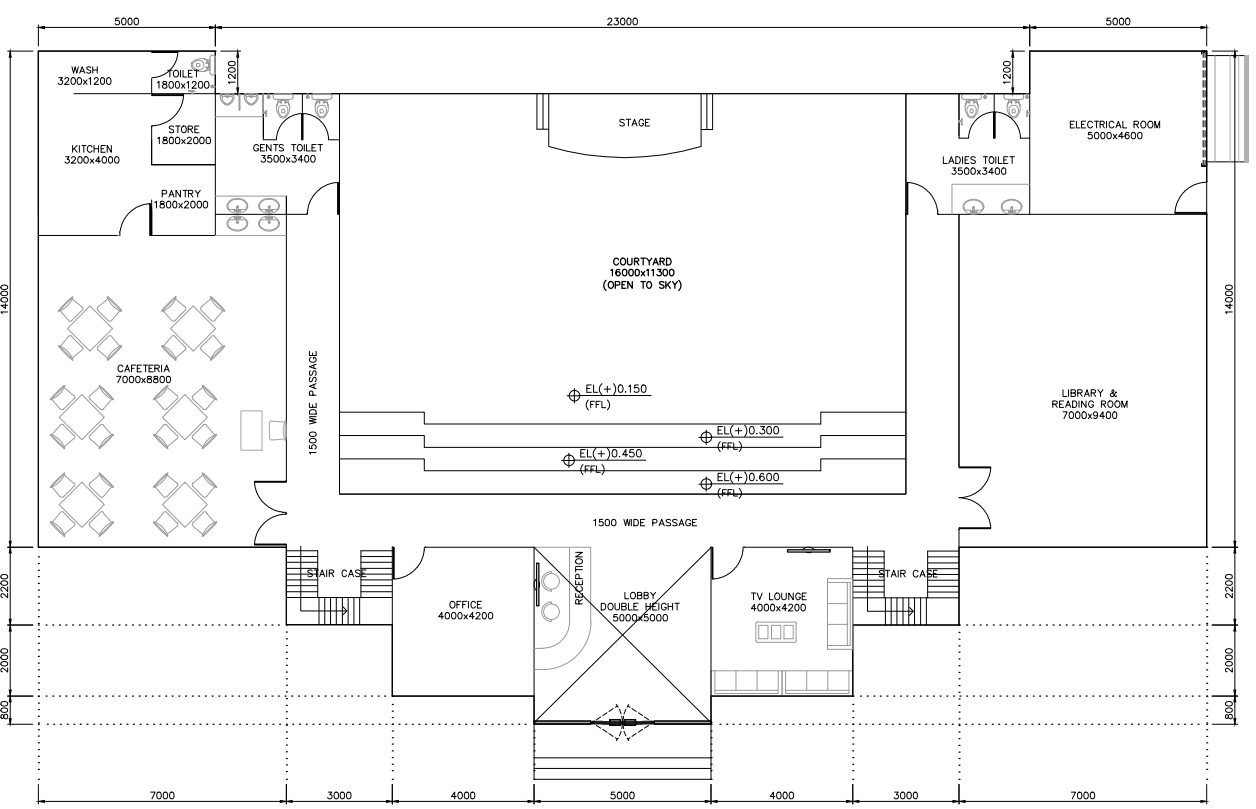




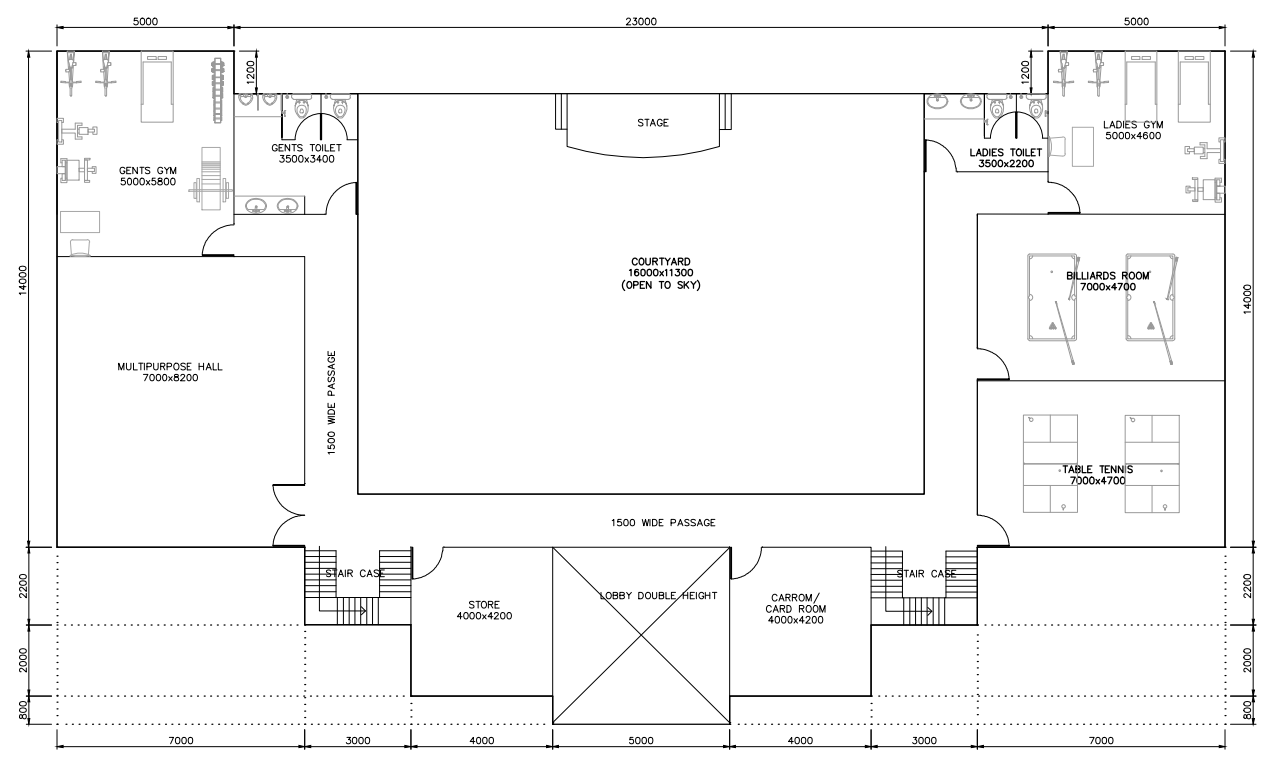
FRONT ELEVATION



SIDE ELEVATION



GROUND FLOOR PLAN  
(SCALE 1:75)



FIRST FLOOR PLAN  
(SCALE 1:75)

**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	GROUND FLOOR	325.00
2	FIRST FLOOR	325.00
TOTAL AREA		650.00

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

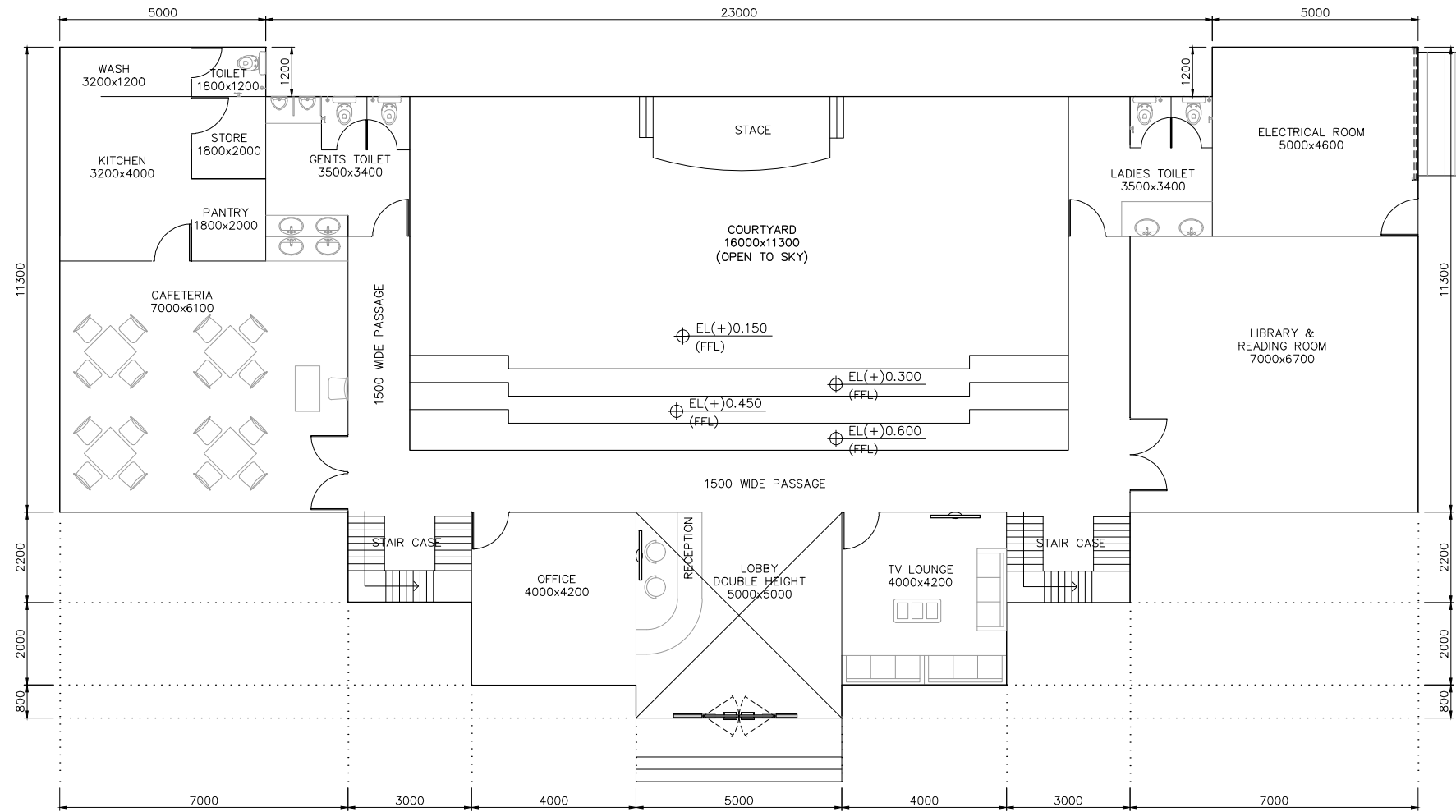
REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE							CSR MAP

**FICHTNER** TOWNSHIP  
2x660 MW MAITREE STPP

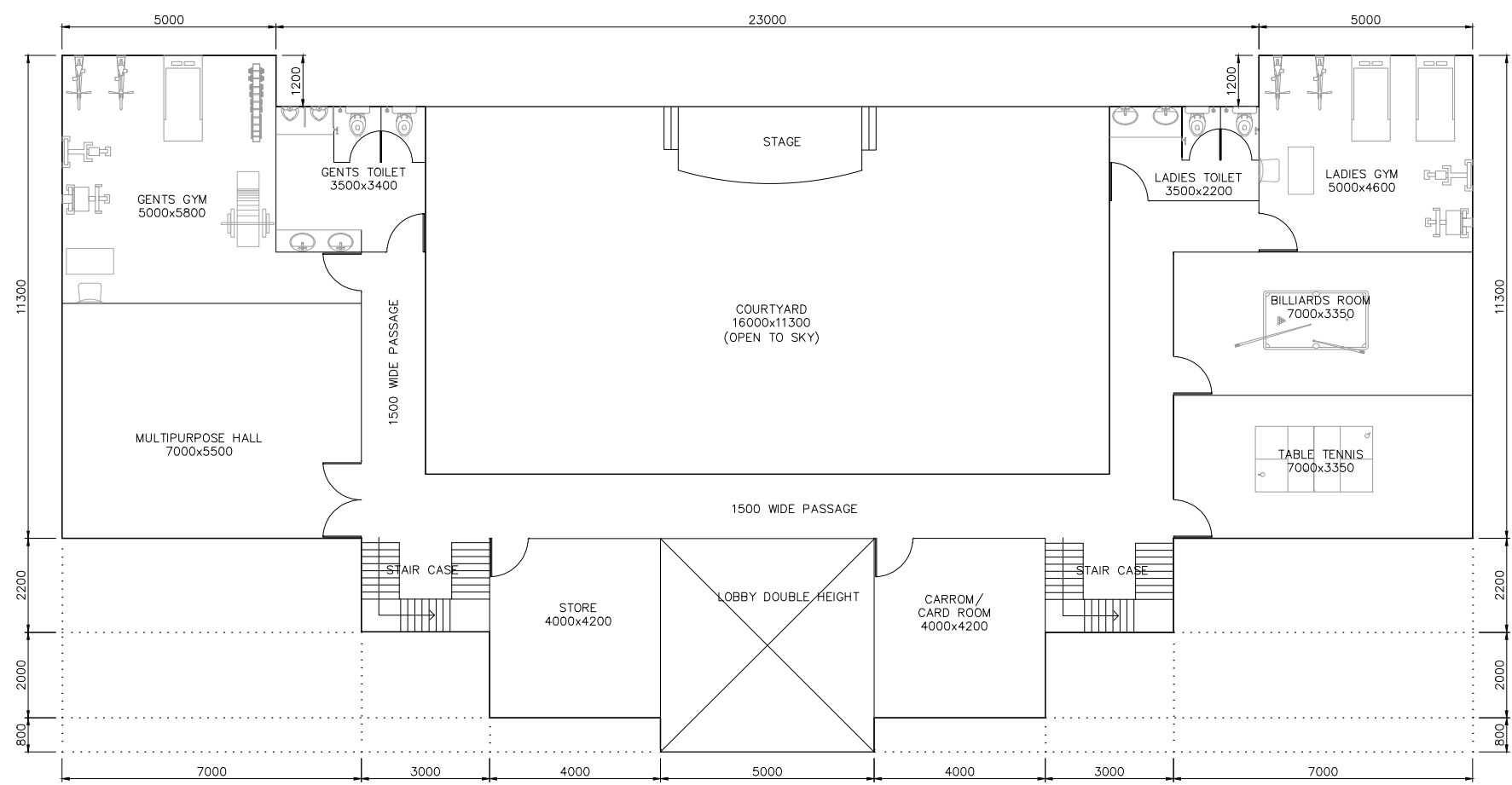
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CHECKED	MAP	29.06.18					
DEPT. HEAD	RMK	29.06.18					
PROJ. MGR.	MAP	29.06.18					
REL. TO TENDER							
REL. TO ENGINEERING							
REL. TO CONSTRUCTION							

EXECUTIVE CLUB  
ARCHITECTURAL SCHEME

DWG. NO. 1114129-C-709



**GROUND FLOOR PLAN**  
(SCALE 1:75)



**FIRST FLOOR PLAN**  
(SCALE 1:75)

**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	GROUND FLOOR	280.00
2	FIRST FLOOR	280.00
	<b>TOTAL AREA</b>	<b>560.00</b>

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE		CSSR	MAP				

**FICHTNER**      **TOWNSHIP**  
2x660 MW MAITREE STPP

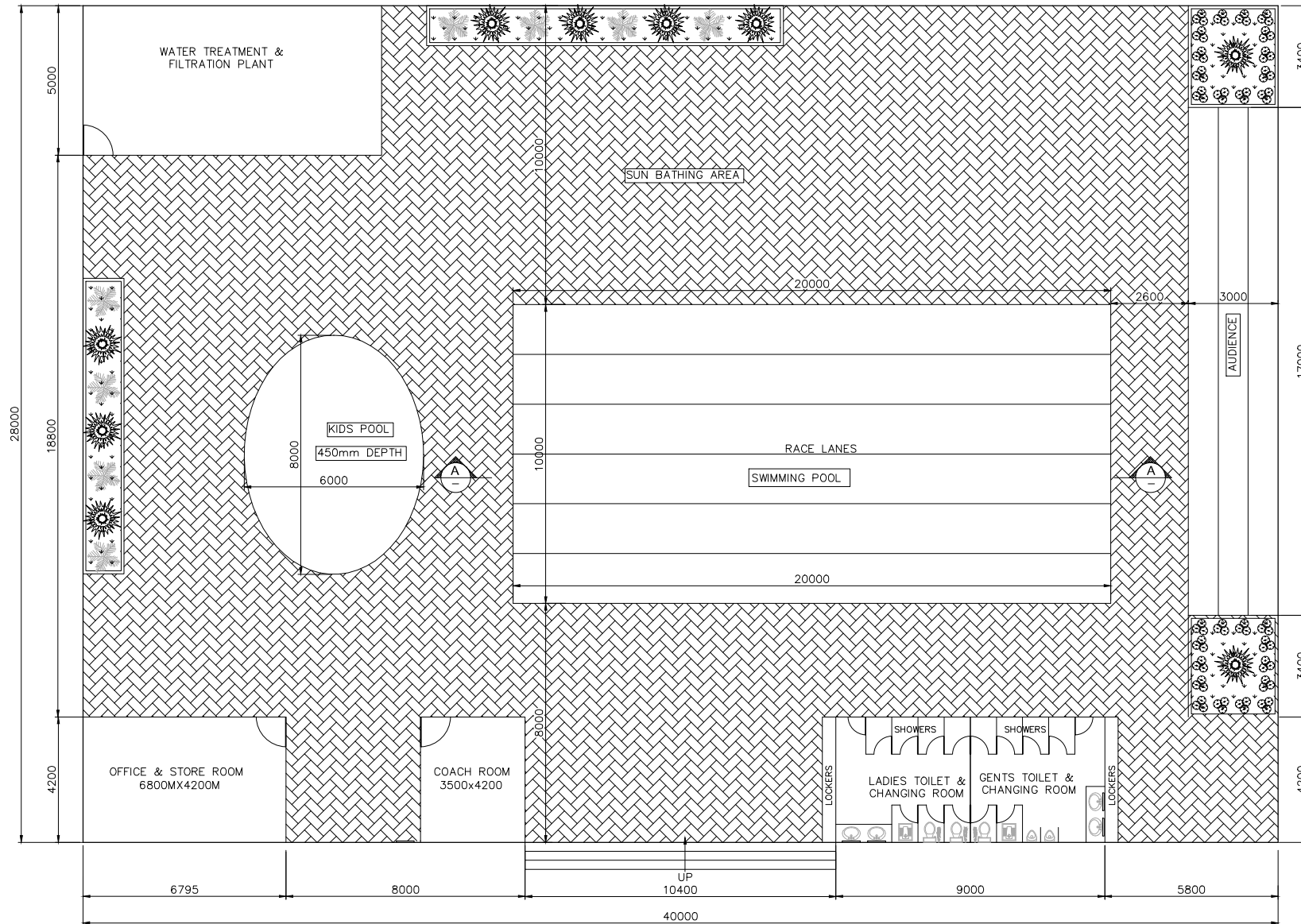
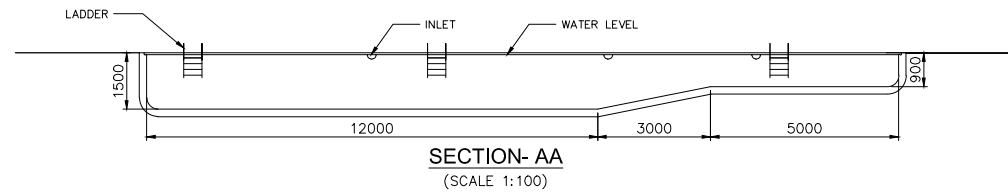
**NON EXECUTIVE CLUB**  
ARCHITECTURAL SCHEME

DRAWN	CSSR	SIGNATURE	DATE	DEPT.	CIVIL	JOB NO.	1114129	SCALE:	1:100	REV.
DESIGNED	MKK		29.06.18							
CHECKED	MAP		29.06.18							
DEPT.HEAD	RMK		29.06.18							
PROJ.MGR.	MAP		29.06.18							

RELEASED FOR TENDER ENGINEERING CONSTRUCTION

DWG.NO. **1114129-C-710**

REV. **A**

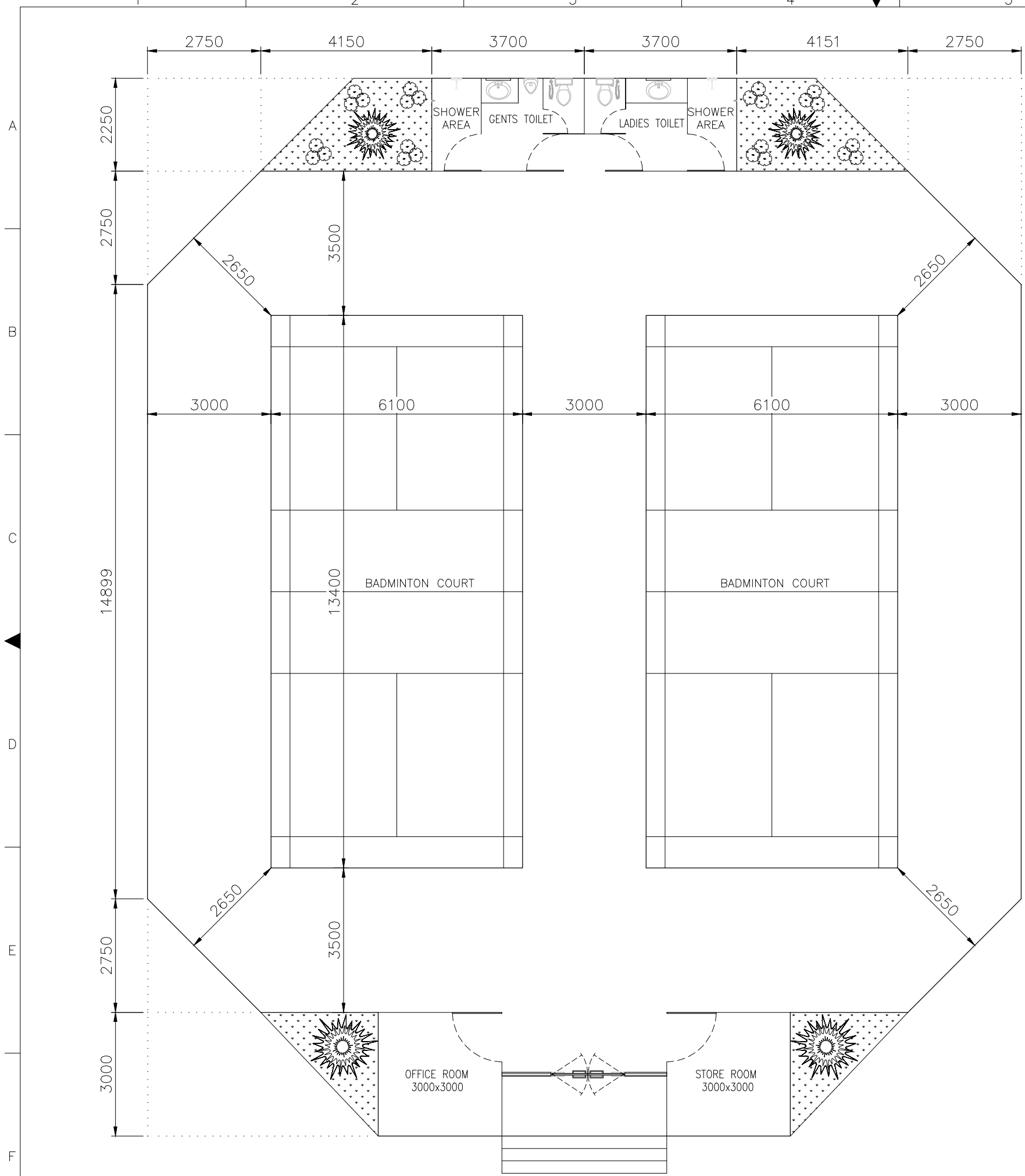


AREA STATEMENT	
Pool Dimension	- 20.0X10.0 = 200 Sq.m
Kids pool	- 8.00X6.00 = 38 Sq.m
Rooms	- 44 Sq.m
Toilet area	- 38 Sq.m

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE		CSSR	MAP				

<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP	
SIGNATURE		DATE	
DRAWN	CSSR	29.06.18	
DESIGNED	MKK	29.06.18	
CHECKED	MAP	29.06.18	
DEPT.HEAD	RMK	29.06.18	
PROJ.MGR.	MAP	29.06.18	
RELEASED FOR TENDER	PRELIMINARY	DEPT. CIVIL	JOB NO. 1114129
ENGINEERING		SCALE: 1:100	REV.
CONSTRUCTION		DWG.NO. 1114129-C-711	A



**PLAN AT BADMINTON COURT**  
(SCALE 1:75)

**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	BADMINTON COURT AREA	417.00
2	ENTRANCE LOBBY	12.00
3	OFFICE ROOM	9.00
4	STORE ROOM	9.00
5	TOILET	17.00
TOTAL AREA		464.00

**NOTE:--**

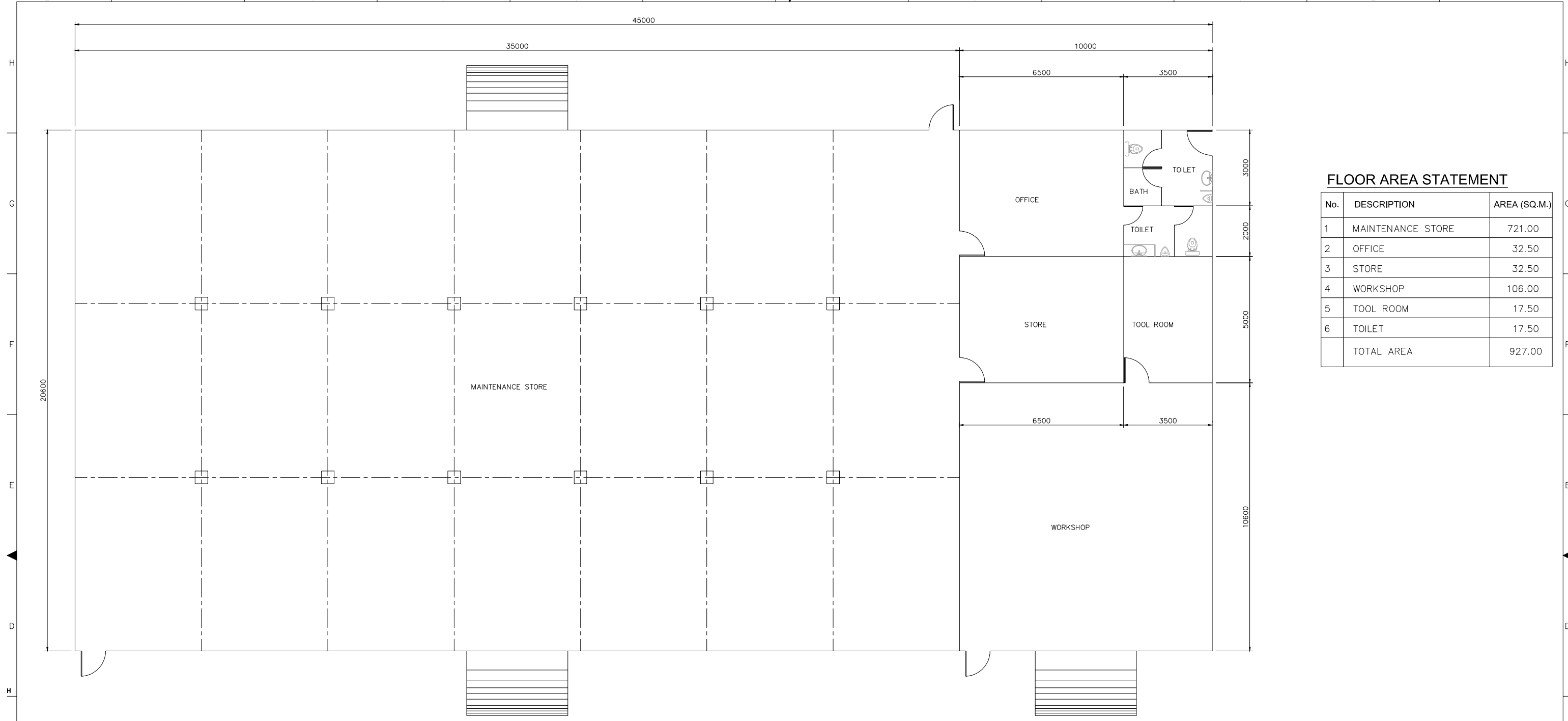
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	29.06.18	FOR TENDER PURPOSE	CSSR	MAP					

<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP				
DRAWN	CSSR	DATE	29.06.18			
DESIGNED	MKK	DATE	29.06.18			
CHECKED	MAP	DATE	29.06.18			
DEPT. HEAD	RMK	DATE	29.06.18			
PROJ. MGR.	MAP	DATE	29.06.18			
RELEASED FOR	PRELIMINARY		DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:100	REV.
	TENDER	✓	DWG.NO. 1114129-C-712		A	
	ENGINEERING					
	CONSTRUCTION					

**INDOOR SPORTS COMPLEX**  
ARCHITECTURAL SCHEME



**GROUND FLOOR PLAN**  
(SCALE 1:75)

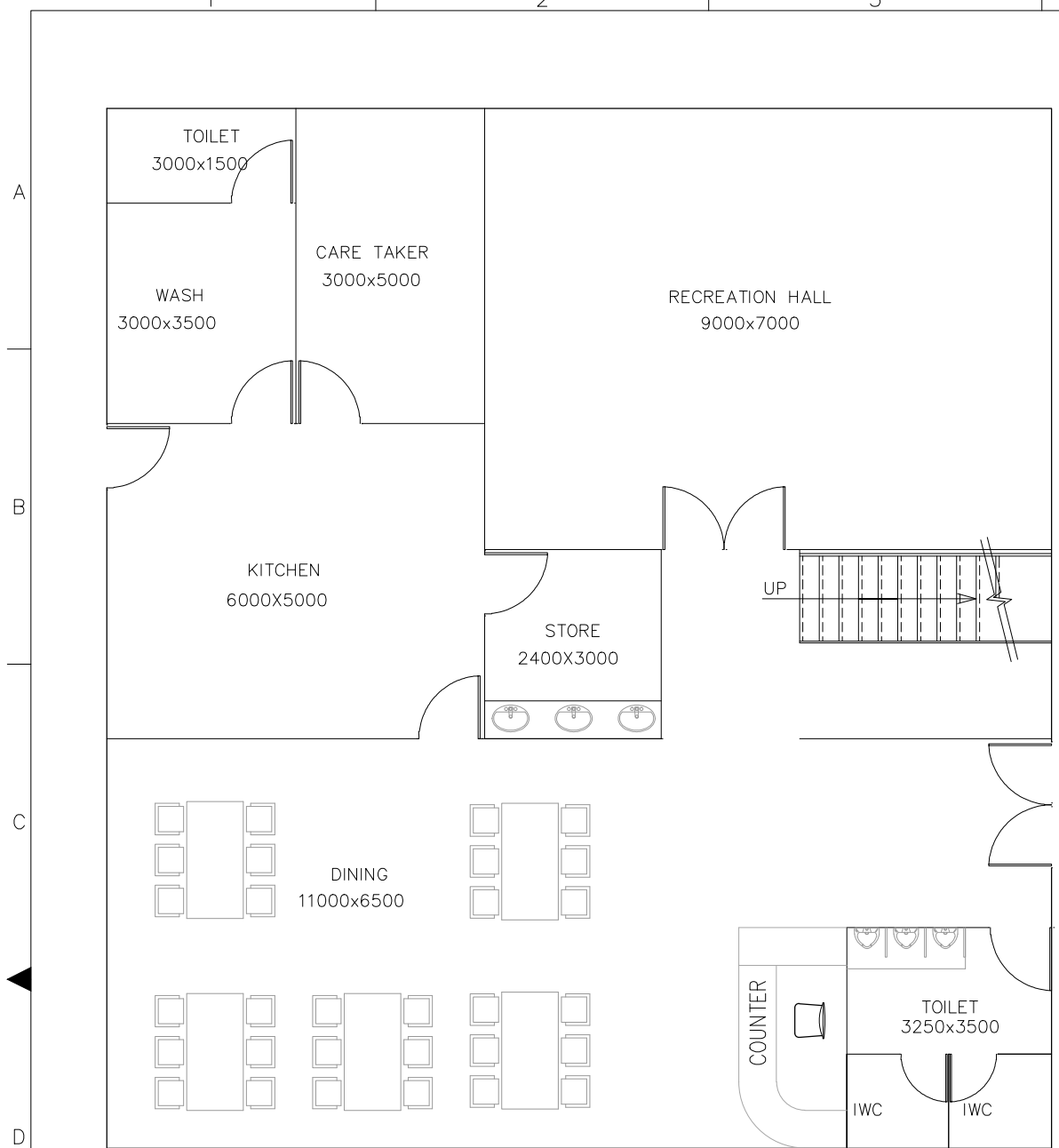
**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	MAINTENANCE STORE	721.00
2	OFFICE	32.50
3	STORE	32.50
4	WORKSHOP	106.00
5	TOOL ROOM	17.50
6	TOILET	17.50
TOTAL AREA		927.00

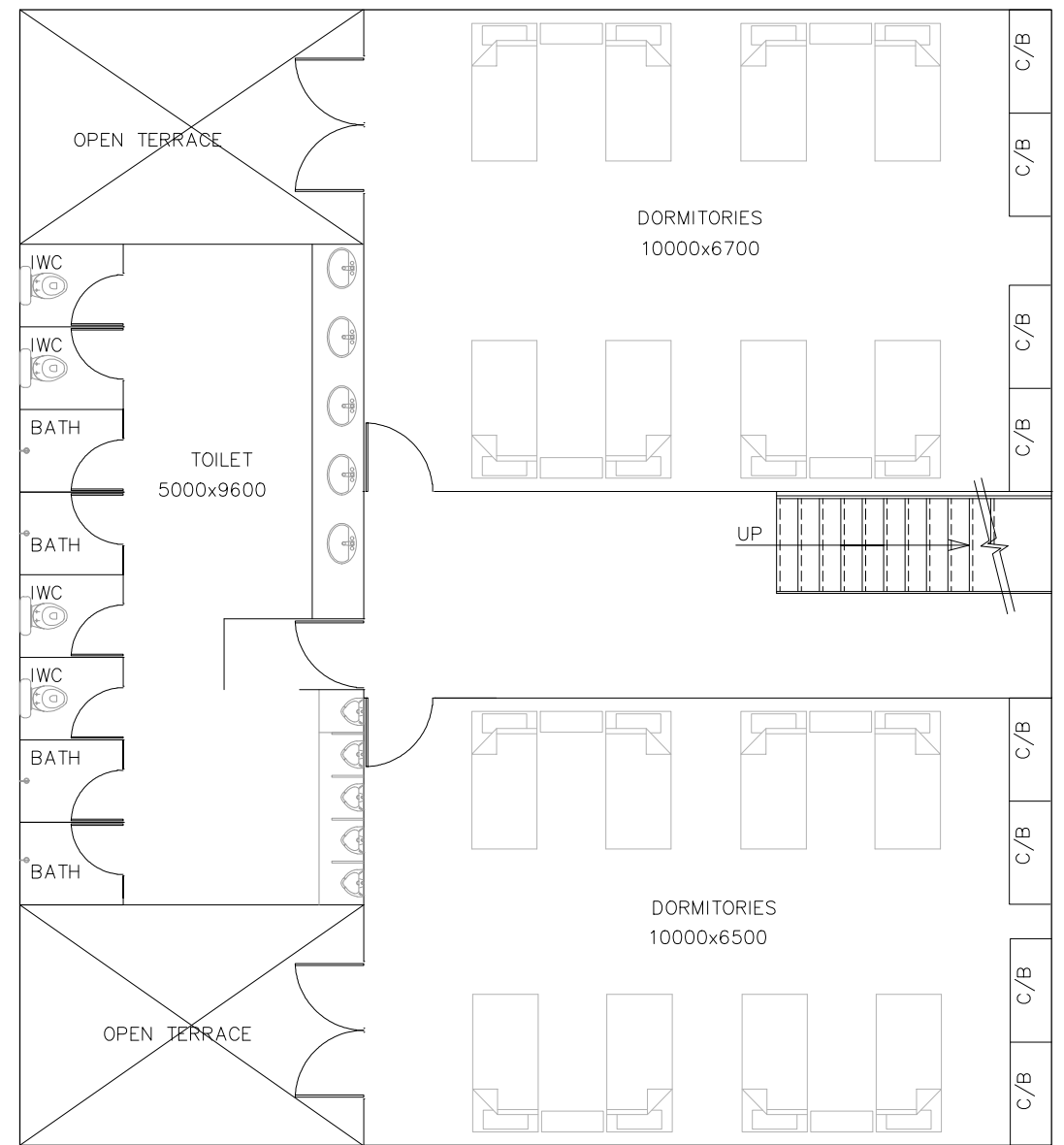
**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	CSSR	MAP	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	19.07.18	FOR TENDER PURPOSE									

<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP	
		<b>MAINTENANCE STORE</b> ARCHITECTURAL SCHEME	
DRAWN	CSSR	SIGNATURE	DATE
DESIGNED	MKK		19.07.18
CHECKED	MAP		19.07.18
DEPT. HEAD	RMK		19.07.18
PROJ. MGR.	MAP		19.07.18
RELEASED	LOC	PRELIMINARY	DEPT. CIVIL
		TENDER	JOB NO. 1114129
		ENGINEERING	SCALE: 1:100
		CONSTRUCTION	DWG. NO. 1114129-C-717
			REV. A



**GROUND FLOOR**



**FIRST & SECOND FLOOR**

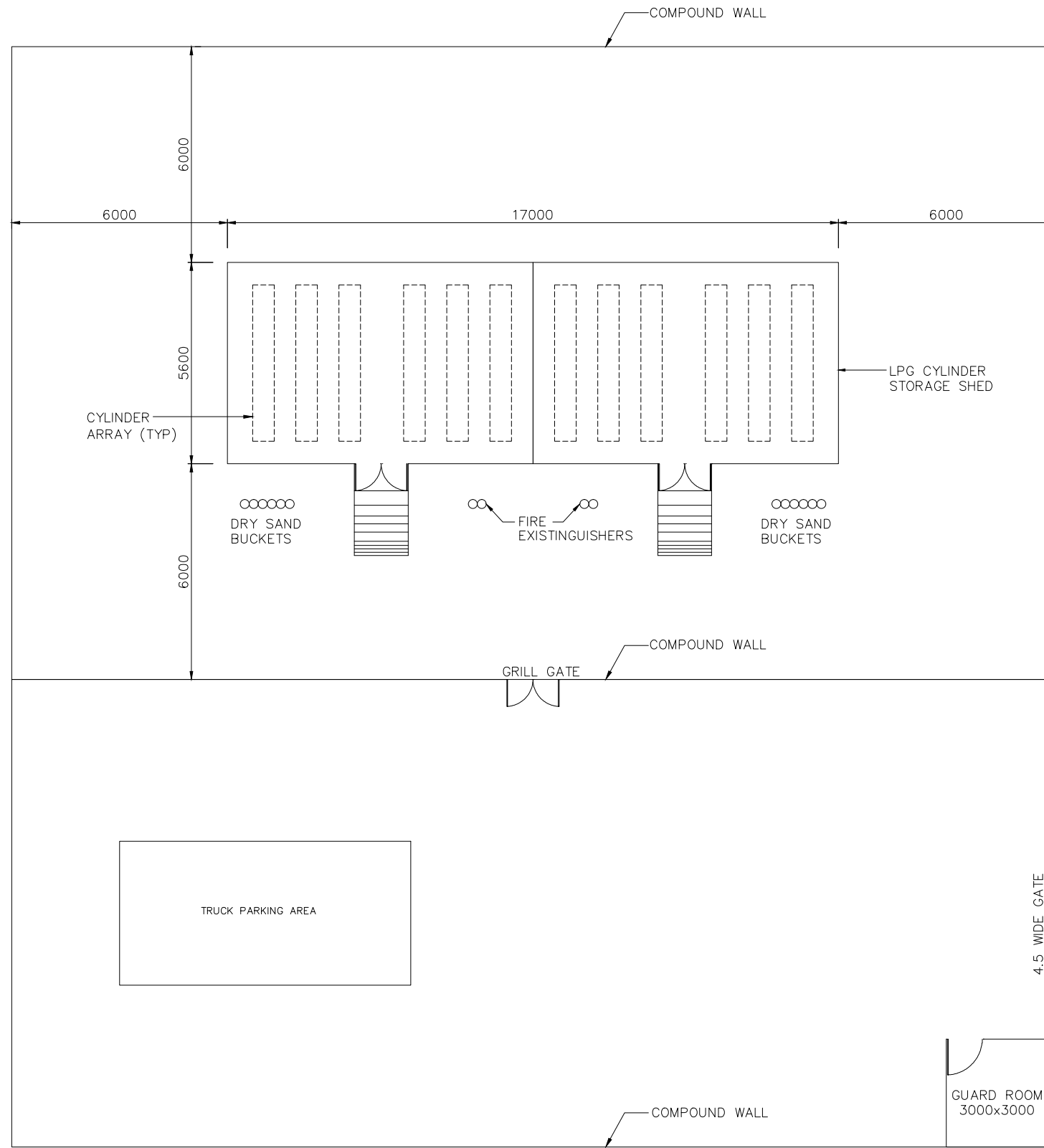
AREA STATEMENT	
AREA	IN (SQ.M.)
GROUND FLOOR AREA	247.00
FIRST FLOOR AREA	213.00

**NOTE:--**

ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	29.06.18	FOR TENDER PURPOSE	CSSR	MAP				

<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP	
SIGNATURE		DATE	
DRAWN	CSSR	29.06.18	
DESIGNED	MKK	29.06.18	
CHECKED	MAP	29.06.18	
DEPT.HEAD	RMK	29.06.18	
PROJ.MGR.	MAP	29.06.18	
RELEASED FOR	PRELIMINARY	DEPT. CIVL	JOB NO. 1114129
	TENDER	SCALE: 1:100	REV.
	ENGINEERING	<b>SECURITY FORCE &amp; ARMY BARRACKS</b> ARCHITECTURAL SCHEME	
	CONSTRUCTION		
DWG.NO. 1114129-C-802		A	



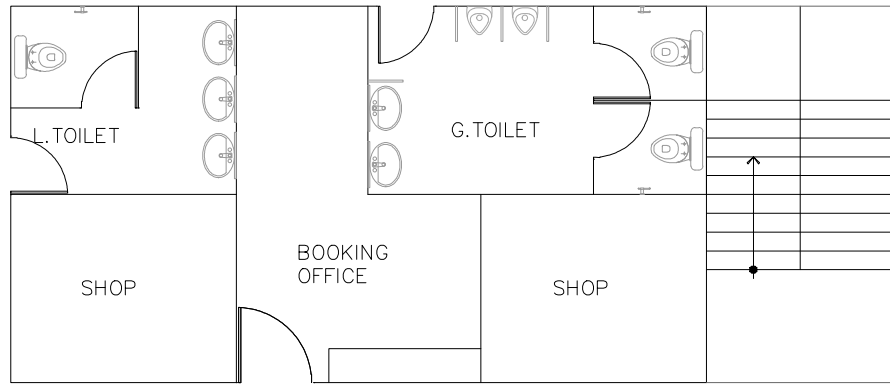
**GROUND FLOOR PLAN**  
(SCALE 1:75)

**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	GOUND FLOOR AREA	95.00
2	GUARD ROOM	9.00
	TOTAL AREA	104.00

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

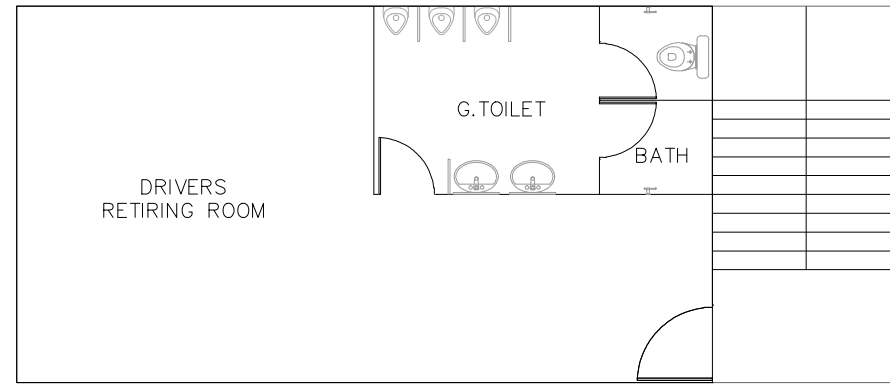
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY	
A	10.07.18	FOR TENDER PURPOSE		RM	MAP					
		<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP						
				<b>GAS CYLINDER GODOWN</b> ARCHITECTURAL SCHEME						
RELEASED FOR	PRELIMINARY	SIGNATURE	DATE	DEPT.	CIVIL	JOB NO.	1114129	SCALE:	1:100	REV.
	TENDER									
	ENGINEERING									
	CONSTRUCTION									
						DWG.NO.	1114129-C-805			A



**GROUND FLOOR PLAN**

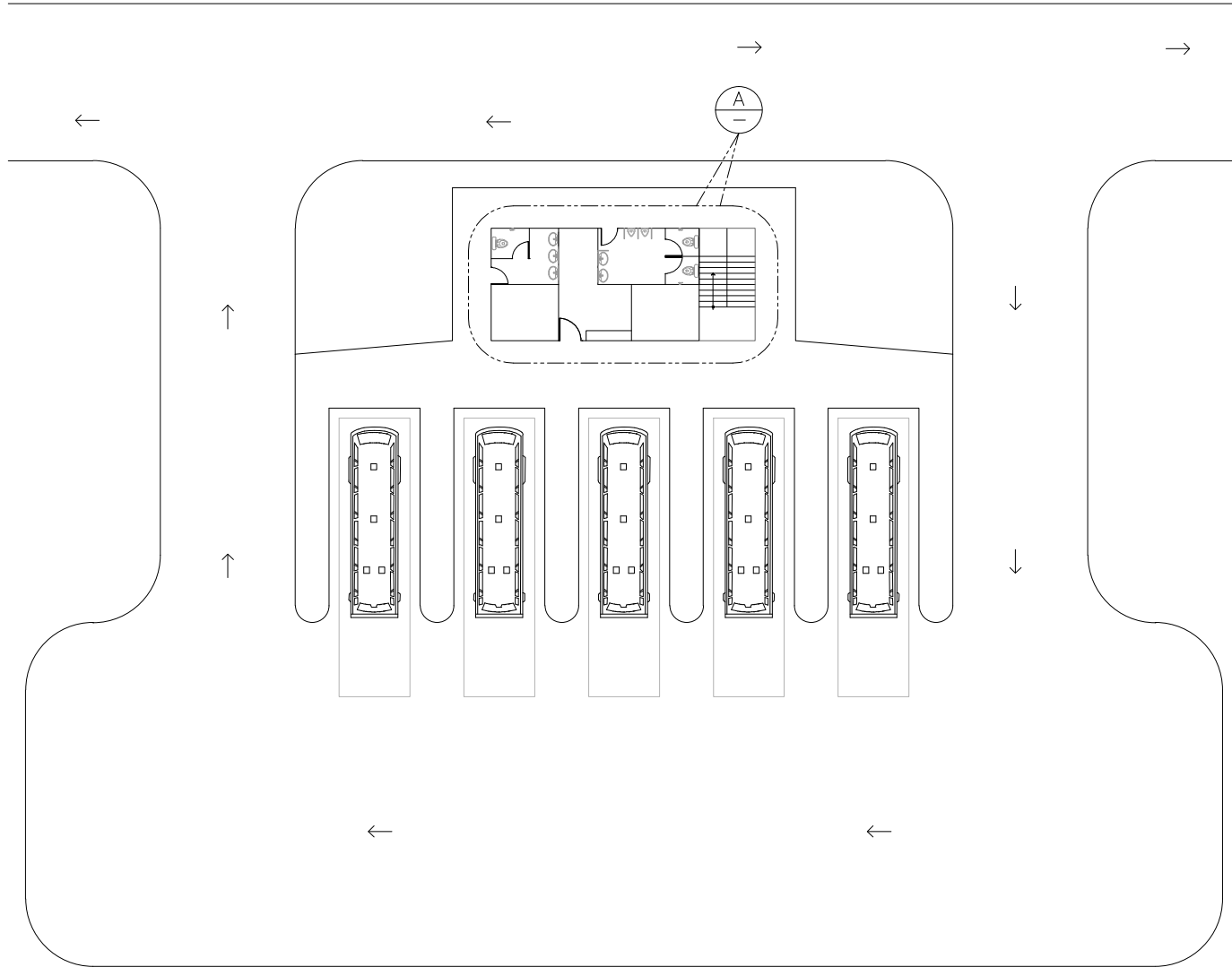
(SCALE 1:50)

**DETAIL** (SCALE 1:50) A



**FIRST FLOOR PLAN**

(SCALE 1:50)



**SITE PLAN**

(SCALE 1:150)

**FLOOR AREA STATEMENT**

No.	DESCRIPTION	AREA (SQ.M.)
1	GOUND FLOOR AREA	46.00
2	FIRST FLOOR	46.00
	TOTAL AREA	92.00
3	OPEN STAIRCASE	12.50

**NOTE:-**  
ALL DIMENSION ARE IN MILLIMETERS

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	10.07.18	FOR TENDER PURPOSE		CSSR	MAP			

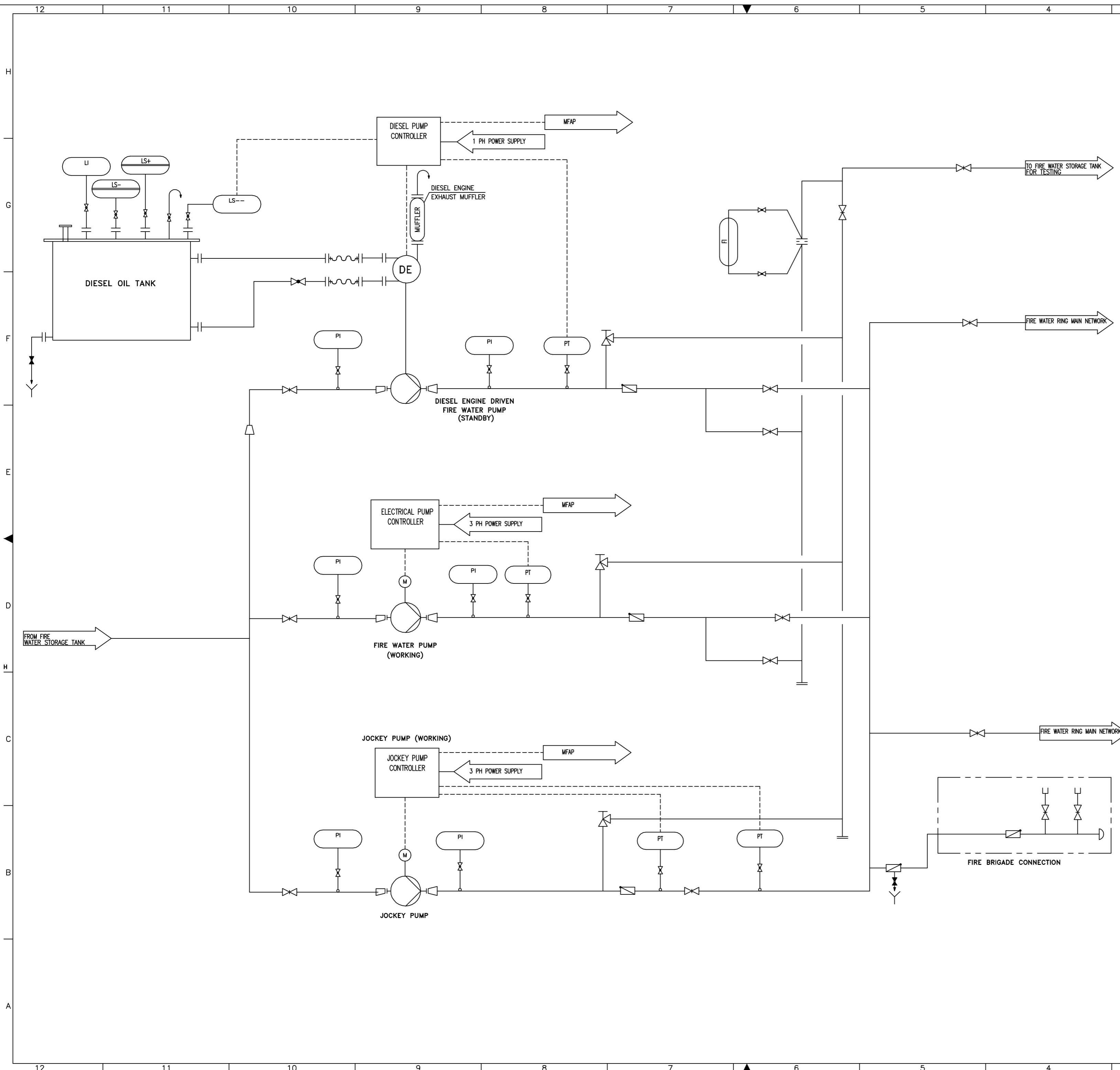
**FICHTNER**      **TOWNSHIP**  
2x660 MW MAITREE STPP

	SIGNATURE	DATE
DRAWN	CSSR	19.07.18
DESIGNED	MKK	19.07.18
CHECKED	MAP	19.07.18
DEPT. HEAD	RMK	19.07.18
PROJ. MGR.	MAP	19.07.18

**TRANSPORT CENTER**  
ARCHITECTURAL SCHEME

RELEASED FOR TENDER ENGINEERING CONSTRUCTION	PRELIMINARY	✓	DEPT. CIVIL	JOB NO. 1114129	SCALE: 1:100	REV.
			DWG. NO. 1114129-C-806			A





**NOTES:**

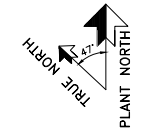
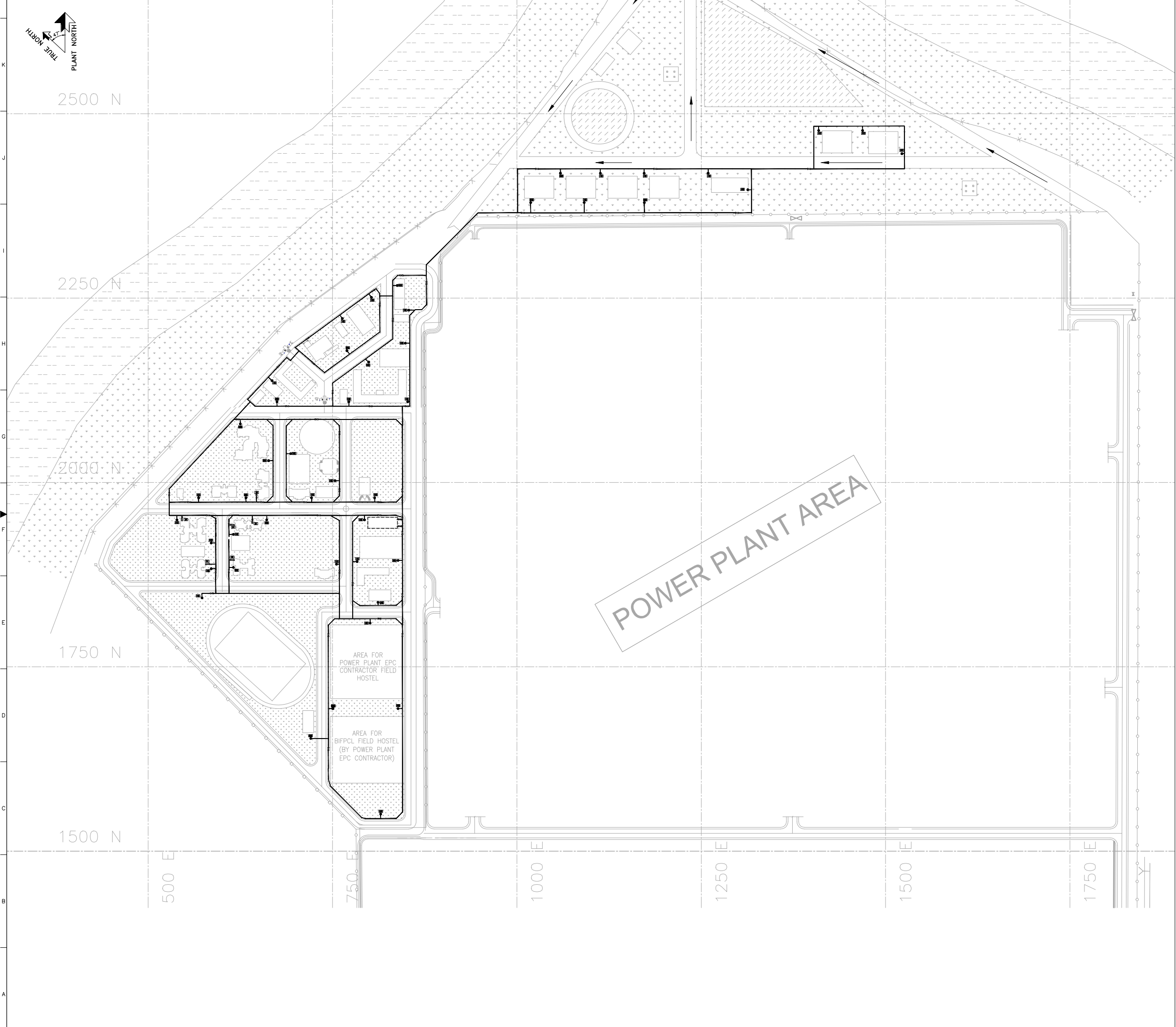
1. ALL EQUIPMENTS, NUMBER OF VALVES, PIPES, FITTINGS WITH NECESSARY INSTRUMENTS SHOWN ARE INDICATIVE AND CONCEPTUAL ONLY. THE DETAILED DESIGN MEETING NFPA AND ALL STATUTORY & LOCAL AUTHORITY REQUIREMENTS SHALL BE CARRIED OUT BY FIRE PROTECTION SYSTEM VENDOR
2. PUMPS, PUMP CONTROLLER INCLUDING ALL ACCESSORIES ARE DESIGNED FIRE PROTECTION SYSTEM SUPPLIER LATEST NFPA-20STANDARDS AND CONFIRM FOR APPROVAL/UL LISTING BY FIRE PROTECTION SYSTEM VENDOR SCOPE.

- LEGENDS:**
- MFAP - MAIN FIRE ALARM PANEL
  - DE - DIESEL ENGINE
  - Gate Valve Symbol - GATE VALVE
  - Gate Valve Normally Closed Symbol - GATE VALVE NORMALLY CLOSED
  - Non Return Valve Symbol - NON RETURN VALVE
  - Drain Valve Symbol - DRIP VALVE
  - Angle Valve Symbol - ANGLE VALVE
  - Globe Valve Symbol - GLOBE VALVE
  - Drain Symbol - DRAIN
  - Centrifugal Pump Symbol - CENTRIFUGAL PUMP
  - Eccentric Reducer Symbol - ECCENTRIC REDUCER
  - Concentric Reducer Symbol - CONCENTRIC REDUCER
  - FI - FLOW INDICATOR
  - LI - LEVEL INDICATOR
  - PI - PRESSURE INDICATOR
  - LS+ - LEVEL SWITCH HIGH
  - PS+ - PRESSURE SWITCH HIGH
  - LS- - LEVEL SWITCH LOW
  - PS- - PRESSURE SWITCH LOW
  - LS-- - LEVEL SWITCH LOW LOW
  - PT - PRESSURE TRANSMITTER

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	27.06.18	FOR TENDER PURPOSE		SS		VS		

<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP	
DESIGNED	LHD	DATE	27.06.18
CHECKED	LHD	DATE	27.06.18
DEPT. HEAD	SAP	DATE	27.06.18
PROJ. MGR.	SCV	DATE	27.06.18
RELEASED FOR TENDER ENGINEERING CONSTRUCTION	PRELIMINARY	DEPT. MECH	JOB NO. 1114129
		SCALE: NTS	REV.
DWG. NO. 1114129-M-001		A	

**FLOW DIAGRAM  
FIRE WATER PUMPING SYSTEM**



- NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METERS, UNO.
  2. DO NOT SCALE THE DRAWING FOLLOW WRITTEN DIMENSIONS ONLY.
  3. THE ARRANGEMENT OF THE BUILDING SHOWN IN THE DRAWING BASED ON PRELIMINARY ENG. THE SAME MAY VARY DURING RELEASE OF CONSTRUCTION DRAWING AFTER DETAILED ENGINEERING.
  4. ALL EQUIPMENTS, NUMBER OF VALVES, PIPES, FITTINGS WITH NECESSARY INSTRUMENTS SHOWN ARE INDICATIVE AND CONCEPTUAL ONLY. THE DETAILED DESIGN MEETING NFPA AND ALL STATUTORY & LOCAL AUTHORITY REQUIREMENTS SHALL BE CARRIED OUT BY FIRE PROTECTION SYSTEM VENDOR
- LEGENDS :**
- - HYDRANT
  - ☒ - HOSE BOX
  - ☒ - INDOOR HOSE
  - ☒ - GATE VALVE

SI NO	AREAS IN TOWNSHIP
1	POLICE STATION
2	CYCLONE SHELTER
3	STORM WATER RETENTION POND
4	GAS CYLINDER GODOWN
5	TRANSPORT CENTER
6	SECURITY POREE AND ARMY BARRACKS
7	BOUNDARY WALL
8	GATE AND SECURITY
9	OPEN CAR PARKS
10	CHILDREN PLAY AREAS
11	NURSERY AND HIGH SCHOOL
12	MOSQUE
13	HOSPITAL
14	SHOPPING CENTER
15	TEMPLE
16	HOP BUNGALOW
17	GUEST HOUSE
18	STUDIO APARTMENTS
19	EXECUTIVE RESIDENCE - A
20	EXECUTIVE RESIDENCE - B
21	EXECUTIVE RESIDENCE - C
22	STAFF RESIDENCE - D
23	FIELD HOSTEL - STAFF
24	AUDITORIUM (FUTURE PROVISION)
25	COMMUNITY CENTER
26	EXECUTIVE CLUB
27	NON-EXECUTIVE CLUB
28	TRAINING HOSTEL AND TRAINING CENTER
29	SWIMMING POOL
30	INDOOR SPORTS COMPLEX
31	OUTDOOR SPORTS AREA
32	FIRE WATER PUMP HOUSE
33	MAIN ELECTRIC SUBSTATION
34	MAINTENANCE STORE
35	UG WATER TANK
36	WATCH TOWER
37	CENTRAL RECREATION PARK

POWER PLANT AREA

AREA FOR  
POWER PLANT EPC  
CONTRACTOR FIELD  
HOSTEL

AREA FOR  
BIFPCL FIELD HOSTEL  
(BY POWER PLANT  
EPC CONTRACTOR)

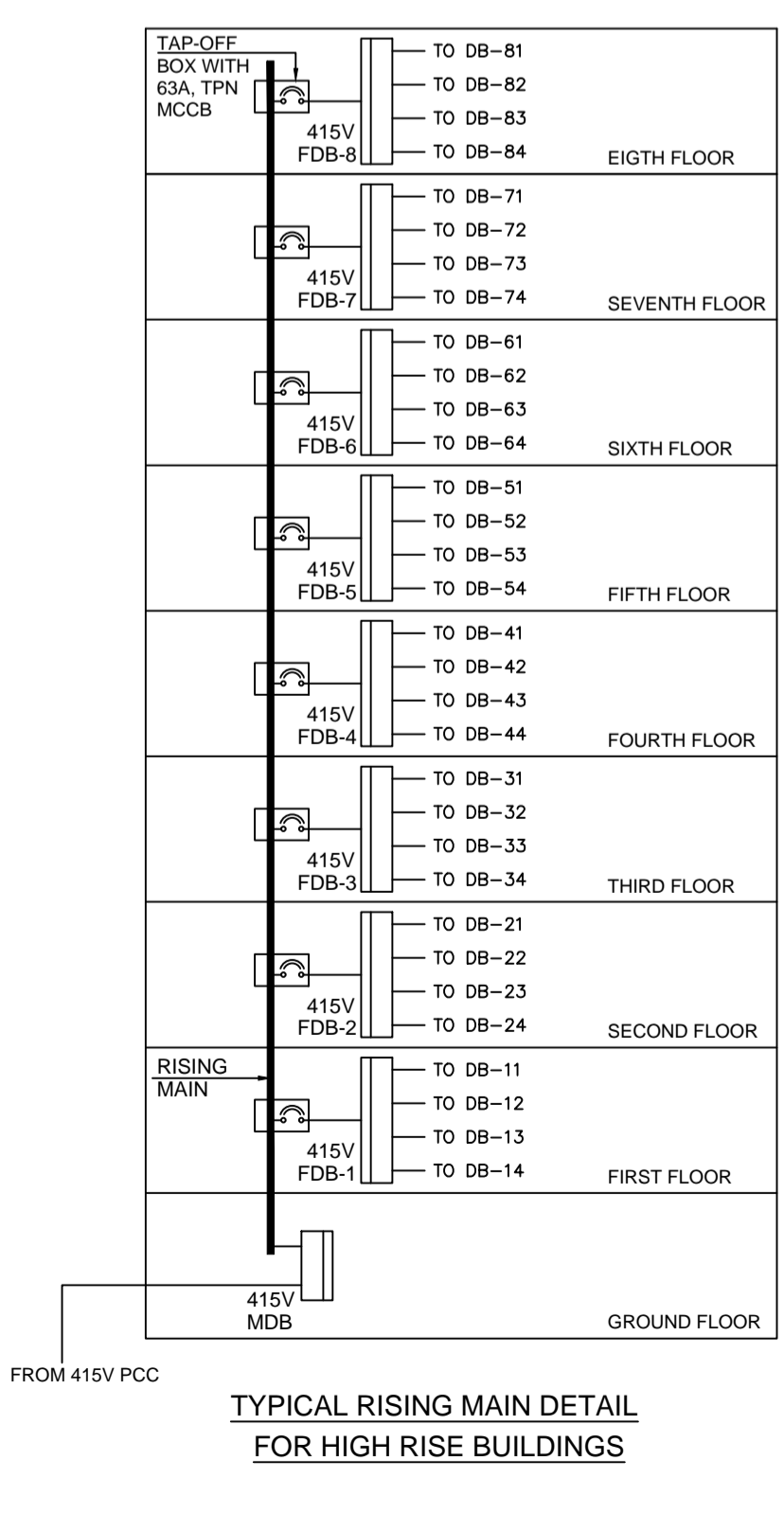
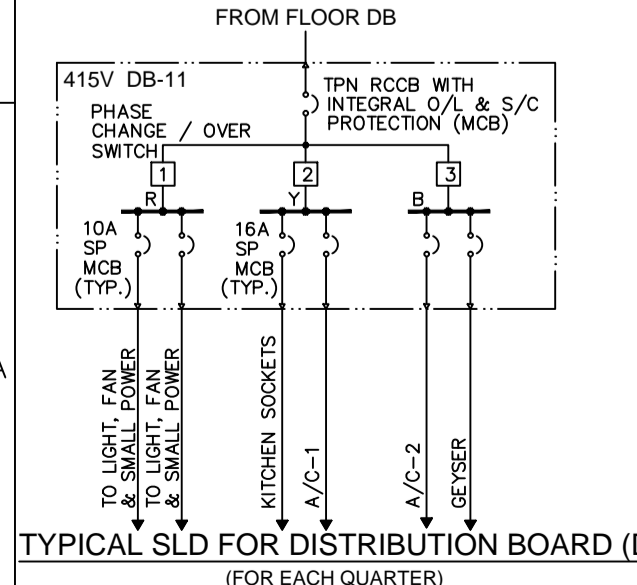
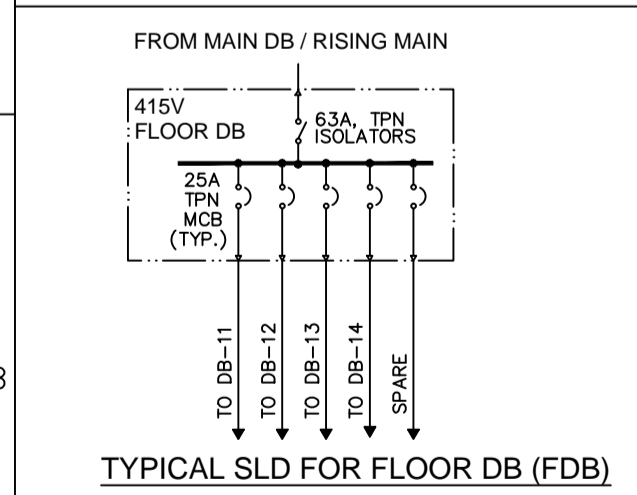
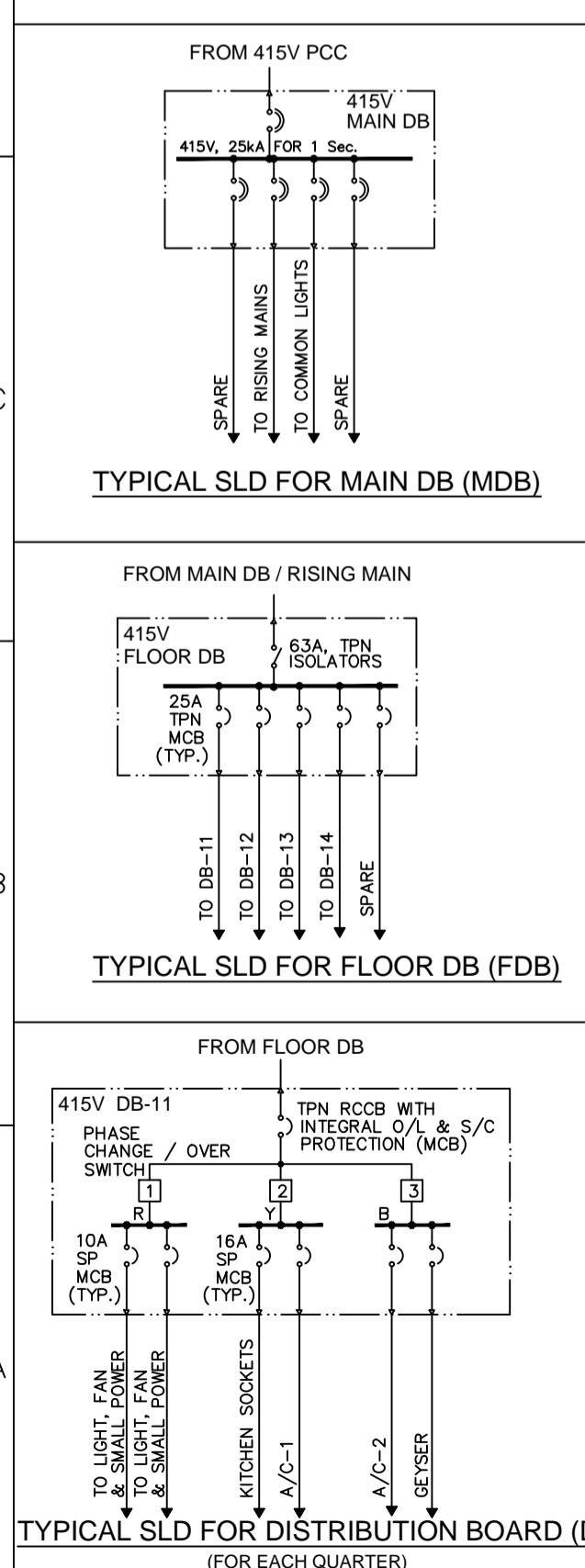
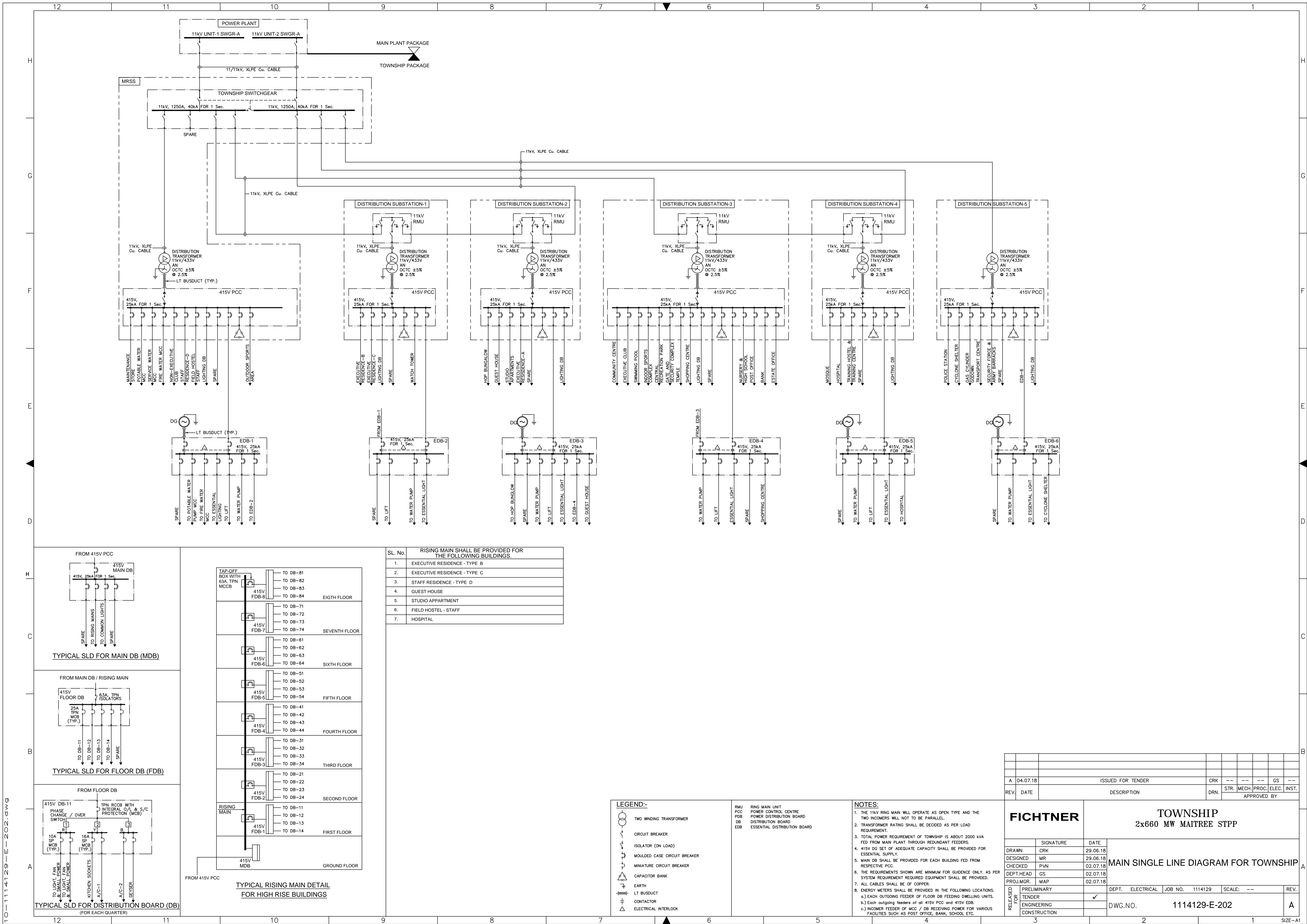
REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	27.06.2018	FOR TENDER PURPOSE							NSK VS

**FICHTNER** TOWNSHIP  
2x660 MW MAITREE STPP

RELEASED	SIGNATURE	DATE	DEPT.	MECH	JOB NO.	SCALE	REV.
DESIGNED	NSK	27.06.2018			1114129	1:1000	
DESIGNED	LHD	27.06.2018					
CHECKED	LHD	27.06.2018					
DEPT. HEAD	VS	27.06.2018					
PROJ. MGR.	MAP	27.06.2018					
PRELIMINARY							
TENDER							
ENGINEERING							
CONSTRUCTION							

**SCHMATIC DIAGRAM FOR  
FIRE WATER RING MAIN NETWORK**

DWG. NO. 1114129-M-002



SL. No.	DESCRIPTION
1.	EXECUTIVE RESIDENCE - TYPE B
2.	EXECUTIVE RESIDENCE - TYPE C
3.	STAFF RESIDENCE - TYPE D
4.	GUEST HOUSE
5.	STUDIO APARTMENT
6.	FIELD HOSTEL - STAFF
7.	HOSPITAL

- LEGEND:-**
- TWO WINDING TRANSFORMER
  - CIRCUIT BREAKER
  - ISOLATOR (ON LOAD)
  - MOULDED CASE CIRCUIT BREAKER
  - MINATURE CIRCUIT BREAKER
  - CAPACITOR BANK
  - EARTH
  - LT BUSDUCT
  - CONTACTOR
  - ELECTRICAL INTERLOCK

- NOTES:**
- THE 11KV RING MAIN WILL OPERATE AS OPEN TYPE AND THE TWO INCOMERS WILL NOT TO BE PARALLEL.
  - TRANSFORMER RATING SHALL BE DECIDED AS PER LOAD REQUIREMENT.
  - TOTAL POWER REQUIREMENT OF TOWNSHIP IS ABOUT 2000 KVA FED FROM MAIN PLANT THROUGH REDUNDANT FEEDERS.
  - 415V DC SET OF ADEQUATE CAPACITY SHALL BE PROVIDED FOR ESSENTIAL SUPPLY.
  - MAIN DB SHALL BE PROVIDED FOR EACH BUILDING FED FROM RESPECTIVE PCC.
  - THE REQUIREMENTS SHOWN ARE MINIMUM FOR GUIDANCE ONLY, AS PER SYSTEM REQUIREMENT REQUIRED EQUIPMENT SHALL BE PROVIDED.
  - ALL CABLES SHALL BE OF COPPER.
  - ENERGY METERS SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS.
    - EACH OUTGOING FEEDER OF FLOOR DB FEEDING DWELLING UNITS.
    - Each outgoing feeders of all 415V PCC and 415V EDB.
    - INCOMER FEEDER OF MCC / DB RECEIVING POWER FOR VARIOUS FACILITIES SUCH AS POST OFFICE, BANK, SCHOOL ETC.

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	--	GS	--

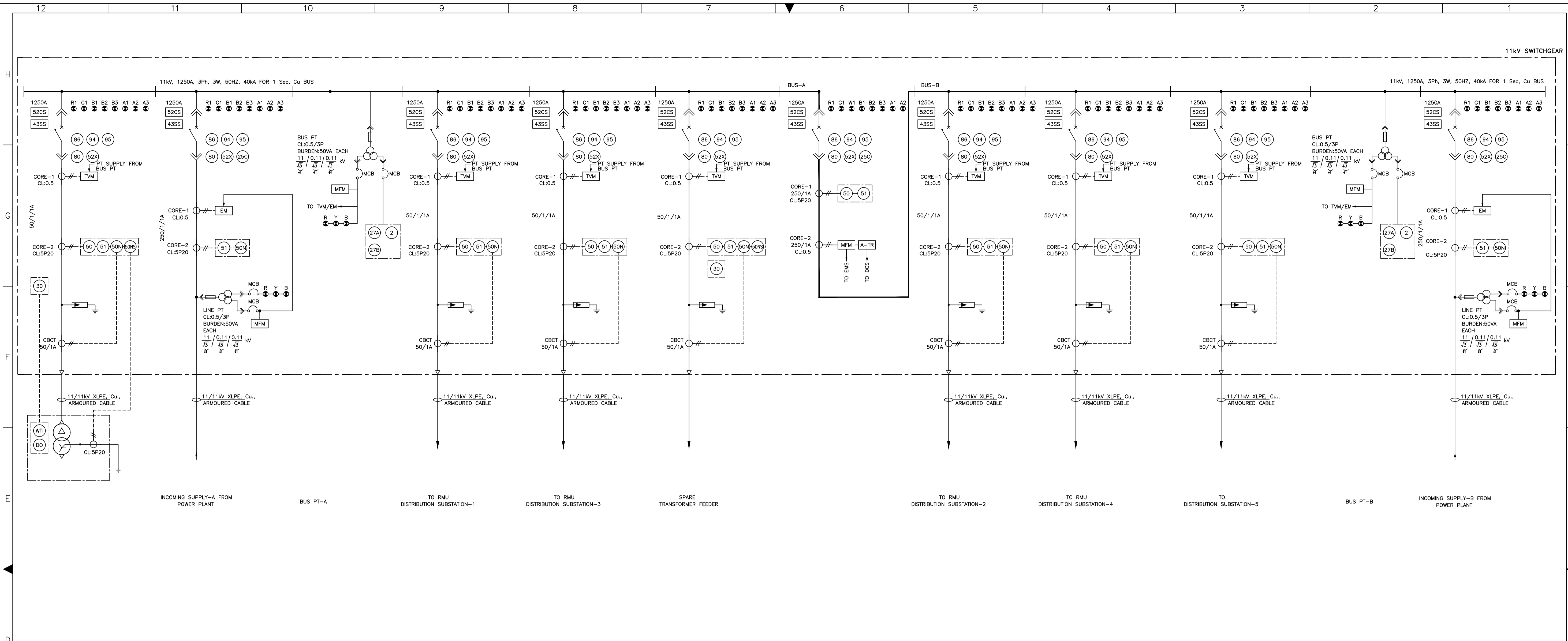
<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP	
DRAWN	CRK	DATE	29.06.18
DESIGNED	MR	DATE	29.06.18
CHECKED	PVN	DATE	02.07.18
DEPT. HEAD	GS	DATE	02.07.18
PROJ. MGR.	MAP	DATE	02.07.18

RELEASED	PRELIMINARY	DEPT.	ELECTRICAL	JOB NO.	1114129	SCALE:	--	REV.	
OK	ENGINEERING			DWG. NO.	1114129-E-202				
	CONSTRUCTION								

1114129-E-202.rws

SIZE-A1



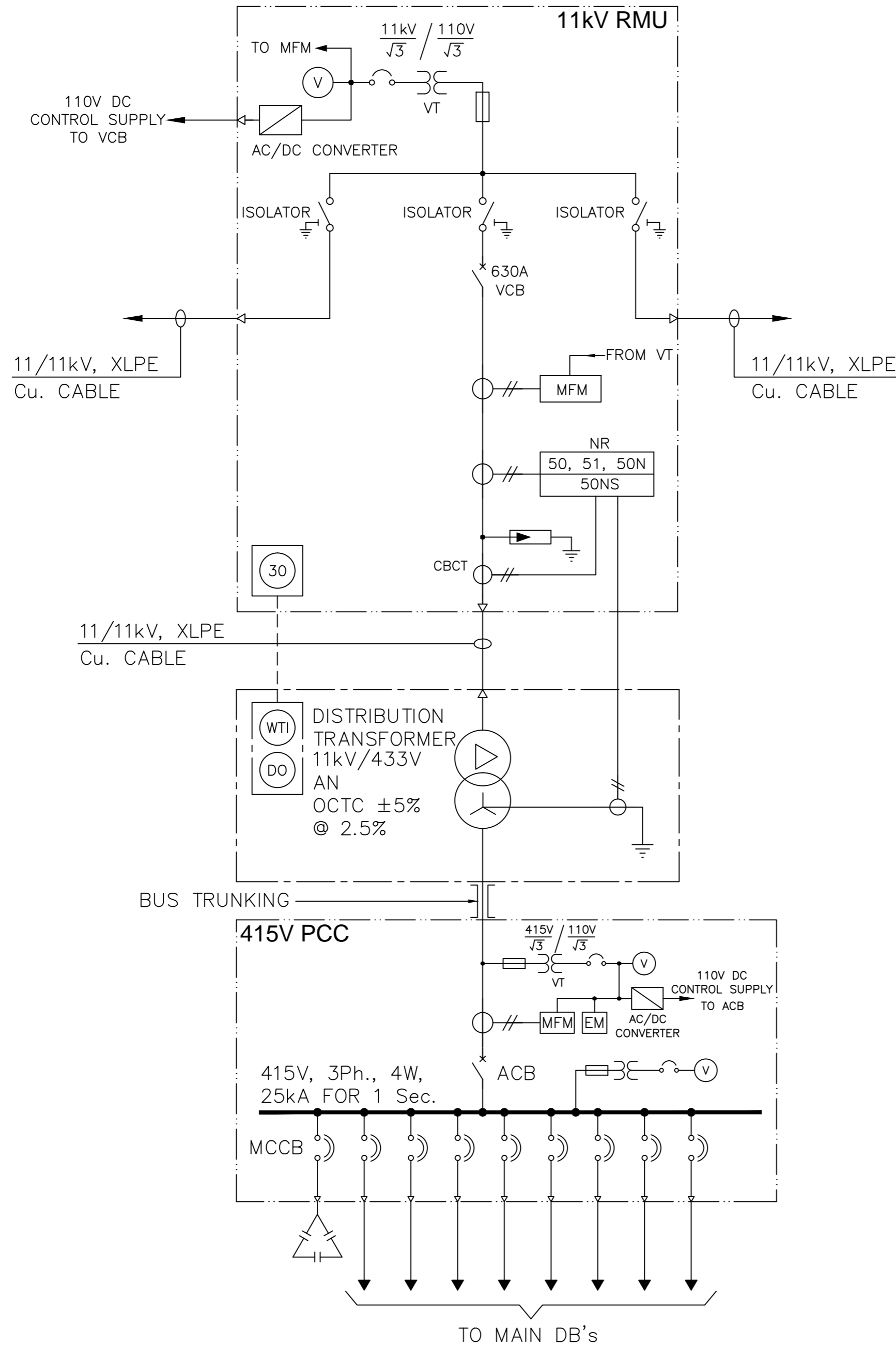
- NOTES:-**
01. DRY TYPE TRANSFORMER FEEDERS SHALL BE PROVIDED WITH SURGE SUPPRESSORS.
  02. DEGREE OF PROTECTION SHALL BE IP 4X FOR SWITCHGEAR AND IP52 FOR RELAY COMPARTMENT.
  03. MINIMUM RATING OF CIRCUIT BREAKER SHALL BE 1250A FOR 40KA SYSTEM.
  04. ALL THE BREAKERS SHALL BE OF VACUUM (VCB) TYPE AND MOTORIZED.
  05. CT SHALL BE RATED FOR 1.2 TIMES THE FULL LOAD CURRENT.
  06. CBCT & RELAY SHALL ENSURE A PICK-UP SENSITIVITY OF 10A PRIMARY E/F CURRENT.
  07. 3 PHASE PT SHALL BE IN SINGLE PHASE CONSTRUCTION.
  08. CURRENT RATINGS MENTIONED IN THE DRAWING ARE AT AN AMBIENT OF 50°C.
  09. SWITCHGEAR SHALL HAVE PROVISION FOR BUS-BAR EXTENSION ON THE EITHER SIDE FOR FUTURE EXPANSION.
  10. EARTHING TRUCK SHALL BE PROVIDED FOR FEEDER EARTHING & BUS EARTHING.
  11. ALL PROTECTION RELAYS SHALL BE MULTIFUNCTIONAL NUMERICAL TYPE.
  12. AUXILIARY RELAYS/ TIMERS ETC. SHALL BE PROVIDED AS PER FINAL SCHEME REQUIREMENTS.
  13. 240V AC SPACE HEATER SUPPLY SHALL BE PROVIDED FOR ALL THE MOTORS FROM SWITCHGEAR.
  14. ALL SPARE CONTACTS SHALL BE WIRED UP TO TERMINAL BLOCK.
  15. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
  16. THE REQUIREMENT SHOWN ARE MINIMUM ONLY. AS PER SYSTEM REQUIREMENT ALL NECESSARY EQUIPMENTS/DEVICES SHALL BE PROVIDED.

- LEGEND:-**
- VACUUM CIRCUIT BREAKER
  - CURRENT TRANSFORMER (CT)
  - POTENTIAL TRANSFORMER (PT)
  - THREE PHASE TRANSFORMER, CONNECTION STAR DELTA
  - FUSE
  - STAR POINT
  - DRAW OUT ASSEMBLY
  - SURGE SUPPRESSOR
  - INDICATING LAMP
  - POWER CABLE TERMINATION
  - DIGITAL VOLTMETER WITH SELECTOR SWITCH
  - TRIVECTOR METER
  - MULTI FUNCTION METER
  - BREAKER CONTROL SWITCH
  - ENERGY AUDIT METER
  - LOCAL/REMOTE SELECTOR SWITCH

- LEGEND:-**
- (WT) - WINDING TEMPERATURE INDICATOR
  - (2) - TIMER
  - (27A)(27B) - UNDER VOLTAGE RELAY (40-80%)
  - (25C) - SYNCHRONISM-CHECK RELAY
  - (30) - AUXILIARY RELAY
  - (50) - INSTANTANEOUS OVER CURRENT RELAY
  - (50N) - DMT EARTH FAULT RELAY
  - (51) - IDMT OVER CURRENT RELAY
  - (51N) - IDMT EARTH FAULT RELAY
  - (52X) - CB CONTACT MULTIPLICATION RELAY
  - (86) - LOCK OUT RELAY
  - (94) - ANTI PUMPING RELAY
  - (95) - TRIP COIL SUPERVISION RELAY
  - (97) - FUSE FAILURE RELAY
  - (80) - DC FAIL RELAY
  - (DO) - DOOR OPEN
  - (50NS) - STANDBY EARTHFALUT RELAY

- REFERENCE DRAWING:-**
01. MAIN SINGLE LINE DIAGRAM
  02. TYPICAL CONTROL SCHEMES FOR HT SWITCHGEARS
- INDICATING LAMP DETAIL:-**
- R - R PHASE (RED)
  - Y - Y PHASE (YELLOW)
  - B - B PHASE (BLUE)
  - R1 - BREAKER ON (RED)
  - G1 - BREAKER OFF (GREEN)
  - A1 - BREAKER AUTO TRIP (AMBER)
  - A2 - BREAKER IN TEST (AMBER)
  - A3 - DC SUPPLY FAIL (AMBER)
  - B1 - BREAKER IN SERVICE (BLUE)
  - B2 - SPRING CHARGED (BLUE)
  - B3 - TRIP CIRCUIT IS HEALTHY (BLUE)

A		04.07.18	ISSUED FOR TENDER	CRK	--	--	GS	--	
REV	DATE	DESCRIPTION		DRN.	STR.	MECH.	PROC.	ELEC.	INST.
<b>FICHTNER</b>				<b>TOWNSHIP 2x660 MW MAITREE STPP</b>					
SIGNATURE		DATE							
DRAWN	CRK	29.06.18							
DESIGNED	MR	29.06.18							
CHECKED	PVN	02.07.18							
DEPT.HEAD	GS	02.07.18							
PROJ.MGR.	MAP	02.07.18							
RELEASED	PRELIMINARY			DEPT.	ELECTRICAL	JOB NO.	1114129	SCALE:	--
OF	TENDER								
CONSTRUCTION	ENGINEERING								
				DWG.NO.	1114129-E-203			A	



**LEGEND:-**

- CIRCUIT BREAKER
- CURRENT TRANSFORMER (CT)
- THREE PHASE TRANSFORMER (TWO WINDING)
- LIGHTNING ARRESTOR
- MULTI FUNCTION METER
- ENERGY METER
- VOLTMETER
- VOLTAGE TRANSFORMER
- FUSE
- AUXILIARY RELAY
- INSTANTANEOUS OVER CURRENT PROTECTION
- IDMT EARTH FAULT PROTECTION
- IDMT OVER CURRENT PROTECTION
- STANDBY EARTHFALT PROTECTION
- DOOR OPEN
- MINIATURE CIRCUIT BREAKER (MCB)
- MOULDED CASE CIRCUIT BREAKER (MCCB)
- PF CAPACITOR BANK
- NUMERICAL RELAY
- WINDING TEMPERATURE INDICATOR

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
APPROVED BY								

<b>FICHTNER</b>		<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>						
DRAWN	CRK	DATE	29.06.18					
DESIGNED	MR	DATE	29.06.18					
CHECKED	PVN	DATE	02.07.18					
DEPT. HEAD	GS	DATE	02.07.18					
PROJ. MGR.	MAP	DATE	02.07.18					
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓	DWG. NO. 1114129-E-204			A		
	ENGINEERING							
	CONSTRUCTION							

**SINGLE LINE DIAGRAM  
FOR 11kV RMU AND 415V PCC**




















**CONTROL SCHEMES FOR  
11 kV SWITCHGEAR**

A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
			APPROVED BY					
<b>FICHTNER</b>			TOWNSHIP 2 x 660MW MAITREE STPP					
	SIGNATURE	DATE	CONTROL SCHEMES FOR 11kV SWITCHGEAR					
DRAWN	CRK	29.06.18						
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓	DWG.NO. 1114129-E-301			(SHEET 01 OF 06) A		
	ENGINEERING							
	CONSTRUCTION							

**INDICATING LAMP DETAILS:-**

- R1 - BREAKER ON (RED)
- G1 - BREAKER OFF (GREEN)
- W1 - BREAKER AUTO TRIP (WHITE)
- B1 - SWITCHGEAR READY (BLUE)
- B2 - SPRING CHARGED (BLUE)
- B3 - TRIP CIRCUIT IS HEALTHY (BLUE)
- A1 - BREAKER IN TEST (AMBER)
- A2 - BREAKER IN SERVICE (AMBER)

**LEGENDS:-**

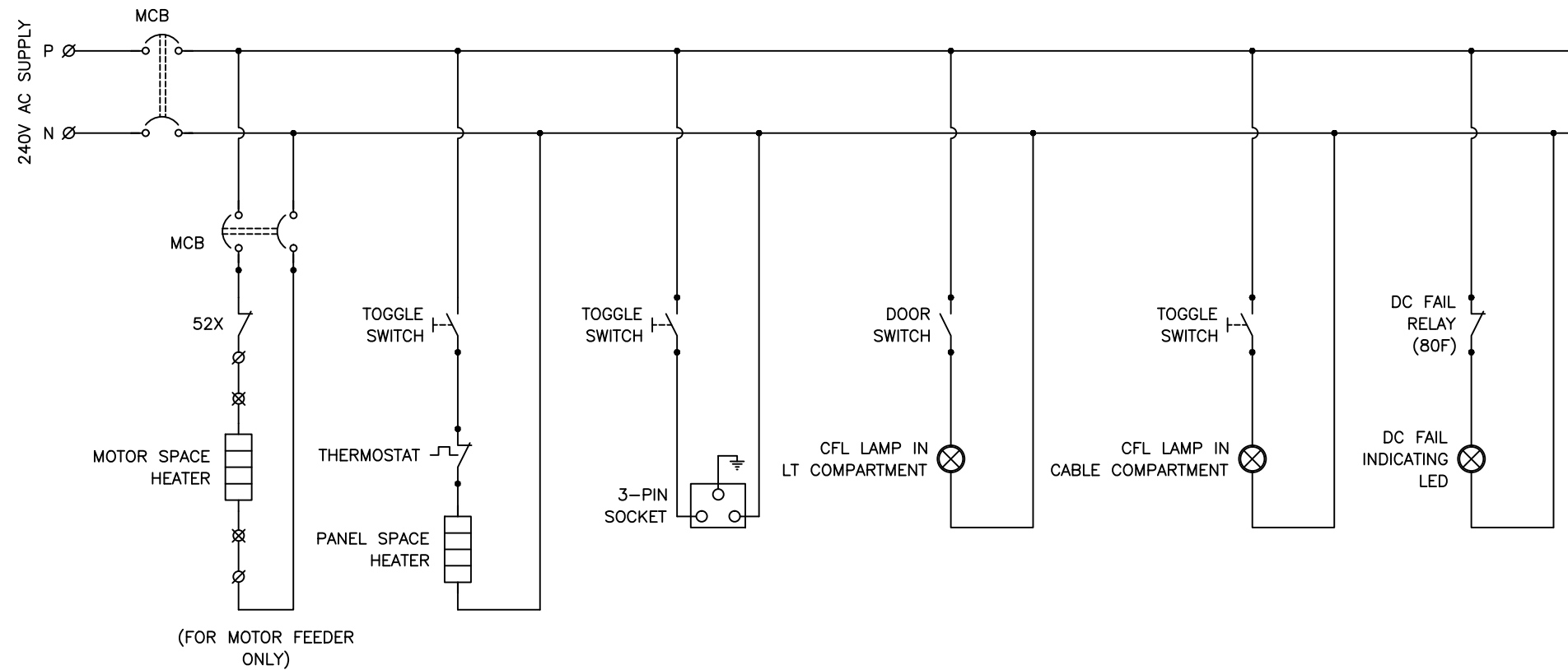
-  - SWITCHGEAR TERMINAL
-  - FIELD TERMINAL
-  - DCS/C&R PANEL TERMINAL
-  - BTS TERMINAL
-  - FUSE
-  - MINIATURE CIRCUIT BREAKER (MCB)
-  - THERMOSTAT
-  - SPACE HEATER
-  - TOGGLE SWITCH
-  - CONTACT NORMALLY OPEN (NO)
-  - CONTACT NORMALLY CLOSE (NC)
-  - OFF DELAY CONTACT (NO)
-  - ON DELAY CONTACT (NO)
-  - RELAY
-  - DIODE
-  - INDICATING LAMP
-  - PUSH BUTTON
-  - DRAWNOUT ASSEMBLY
-  - DC MOTOR
- TC - TRIPPING COIL
- CC - CLOSING COIL

- CS - CONTROL SWITCH
- SS - SELECTOR SWITCH
- LPB - LOCAL PUSH BUTTON
- TVM - TRIVECTOR METER
- NR - NUMERICAL PROTECTION RELAY
- DCS - DISTRIBUTED CONTROL SYSTEM
- C&R PANEL - PROGRAMMABLE LOGIC CONTROLLER
- BTS - BUS TRANSFER SYSTEM
- AT - CURRENT TRANSDUCER
- ODT1/ODT3 - OFF DELAY TIMER
- ODT2/ODT4 - ON DELAY TIMER
- K11 - AUX. RELAY
- K12 - AUX. RELAY
- K13 - AUX. RELAY
- 25C - CHECK SYNCHRONIZATION RELAY
- 27 - UNDER VOLTAGE RELAY
- 33T - TEST LIMIT SWITCH
- 33S - SERVICE LIMIT SWITCH
- 52 - CIRCUIT BREAKER
- 42X/52X - CONTACT MULTIPLICATION RELAY
- 74 - TRIP CIRCUIT SUPERVISION RELAY
- 80F - DC FAILURE RELAY
- 86 - LOCKOUT RELAY
- 94 - ANTI PUMPING RELAY
- 99 - MOTOR PROTECTION RELAY
- 30A - AUX. RELAY FOR OIL TEMPERATURE ALARM & TRIP
- 30B - AUX. RELAY FOR WINDING TEMPERATURE ALARM & TRIP
- 30C - AUX. RELAY FOR BUCHHOLZ RELAY ALARM & TRIP

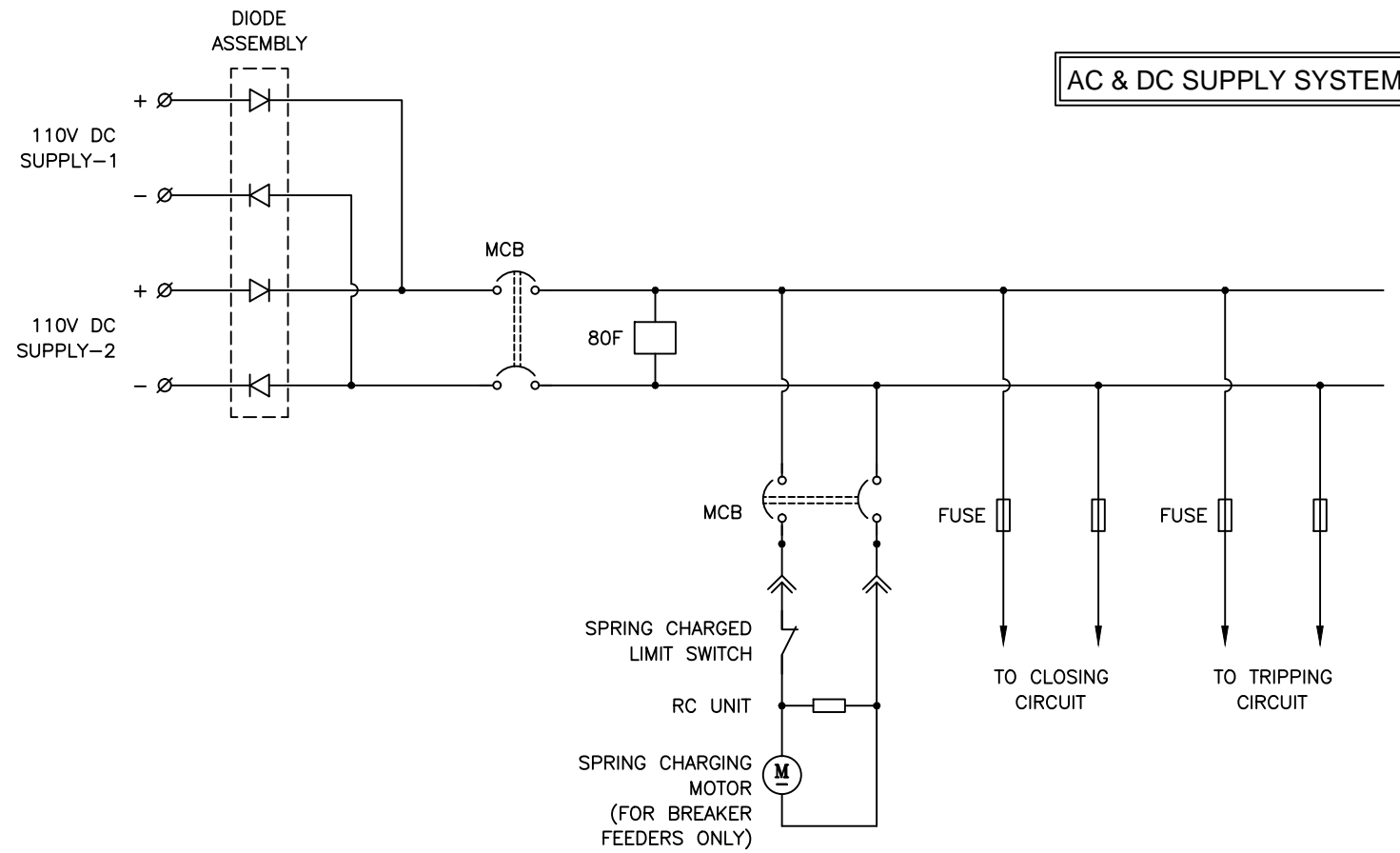
**NOTES:-**

01. SCHEME SHOWS THE MINIMUM REQUIREMENT. SUCCESSFUL BIDDER TO DEVELOP DETAIL DRAWING CONSIDERING NECESSARY AUXILIARY RELAYS, TIMERS AND INTERLOCK REQUIREMENT.
02. 20% SPARE CONTROL TERMINALS SHALL BE PROVIDED
03. ALL APPARATUS SHOWN ARE IN DE-ENERGIZED CONDITION ONLY
04. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.

A		04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--	
REV.	DATE	DESCRIPTION			DRN.	STR.	MECH.	PROC.	ELEC.	INST.
					APPROVED BY					
<b>FICHTNER</b>			TOWNSHIP 2 x 660MW MAITREE STPP							
	SIGNATURE	DATE	CONTROL SCHEMES FOR 11kV SWITCHGEAR							
DRAWN	CRK	29.06.18								
DESIGNED	MR	29.06.18								
CHECKED	PVN	02.07.18								
DEPT. HEAD	GS	02.07.18								
PROJ. MGR.	MAP	02.07.18	DEPT. ELECTRICAL		JOB NO. 1114129		SCALE: ---		REV.	
RELEASED FOR	PRELIMINARY		DWG. NO. 1114129-E-301						A	
	TENDER	✓								
	ENGINEERING									
	CONSTRUCTION									



**TYPICAL AC AUXILIARY SUPPLY CIRCUIT**

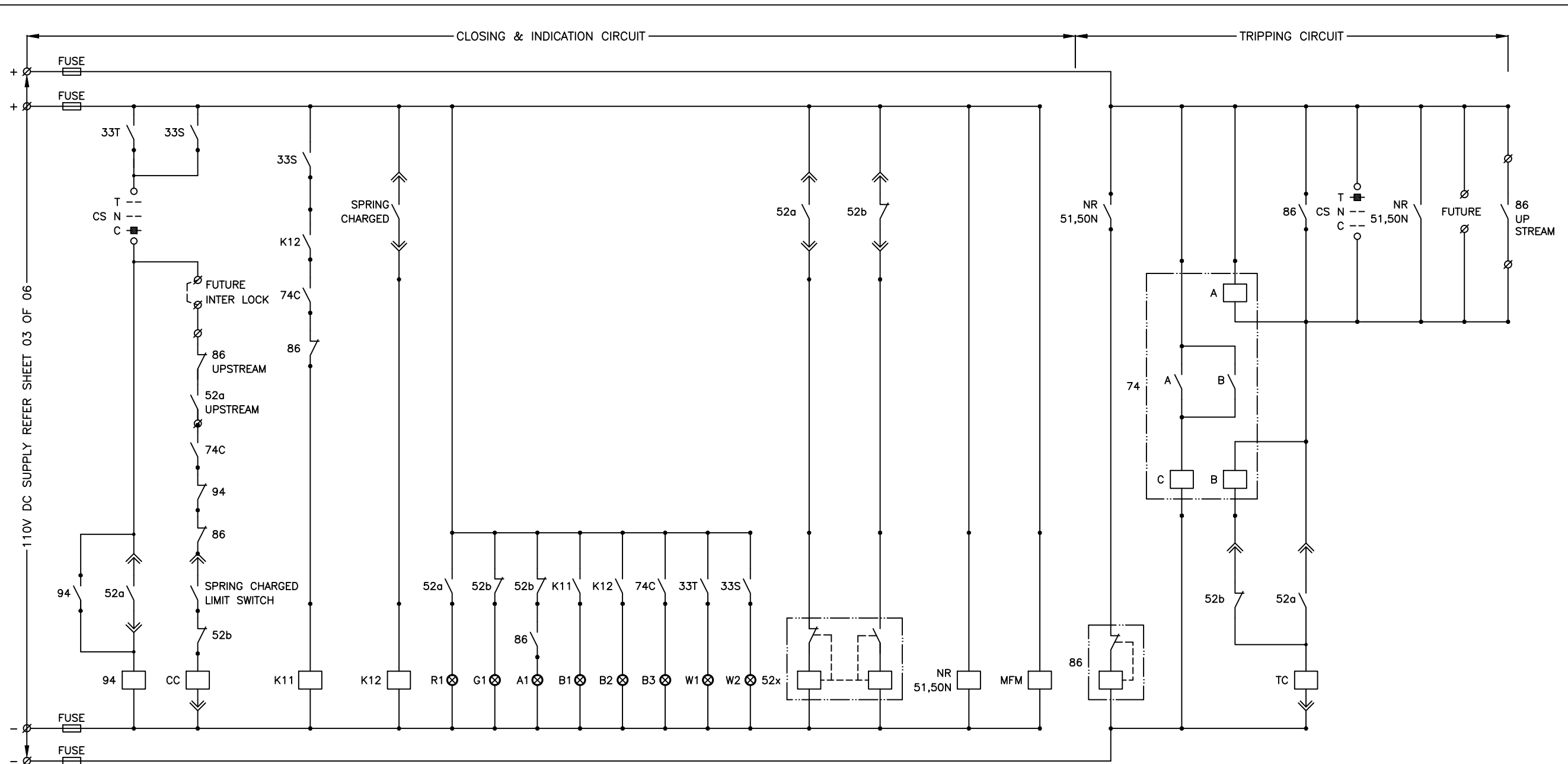


**AC & DC SUPPLY SYSTEM**

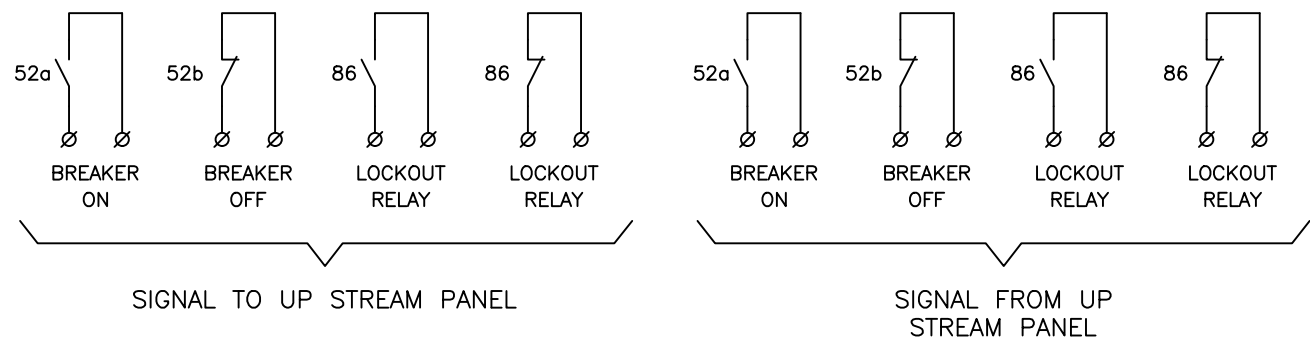
**TYPICAL DC AUXILIARY SUPPLY CIRCUIT**

A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--	
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
<b>FICHTNER</b>			TOWNSHIP 2 x 660MW MAITREE STPP						
DRAWN CRK 29.06.18			CONTROL SCHEMES FOR 11kV SWITCHGEAR						
DESIGNED MR 29.06.18									
CHECKED PVN 02.07.18									
DEPT. HEAD GS 02.07.18									
PROJ. MGR. MAP 02.07.18									
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.			
	TENDER	✓	DWG. NO. 1114129-E-301			A			
	ENGINEERING		(SHEET 03 OF 06)						
	CONSTRUCTION								



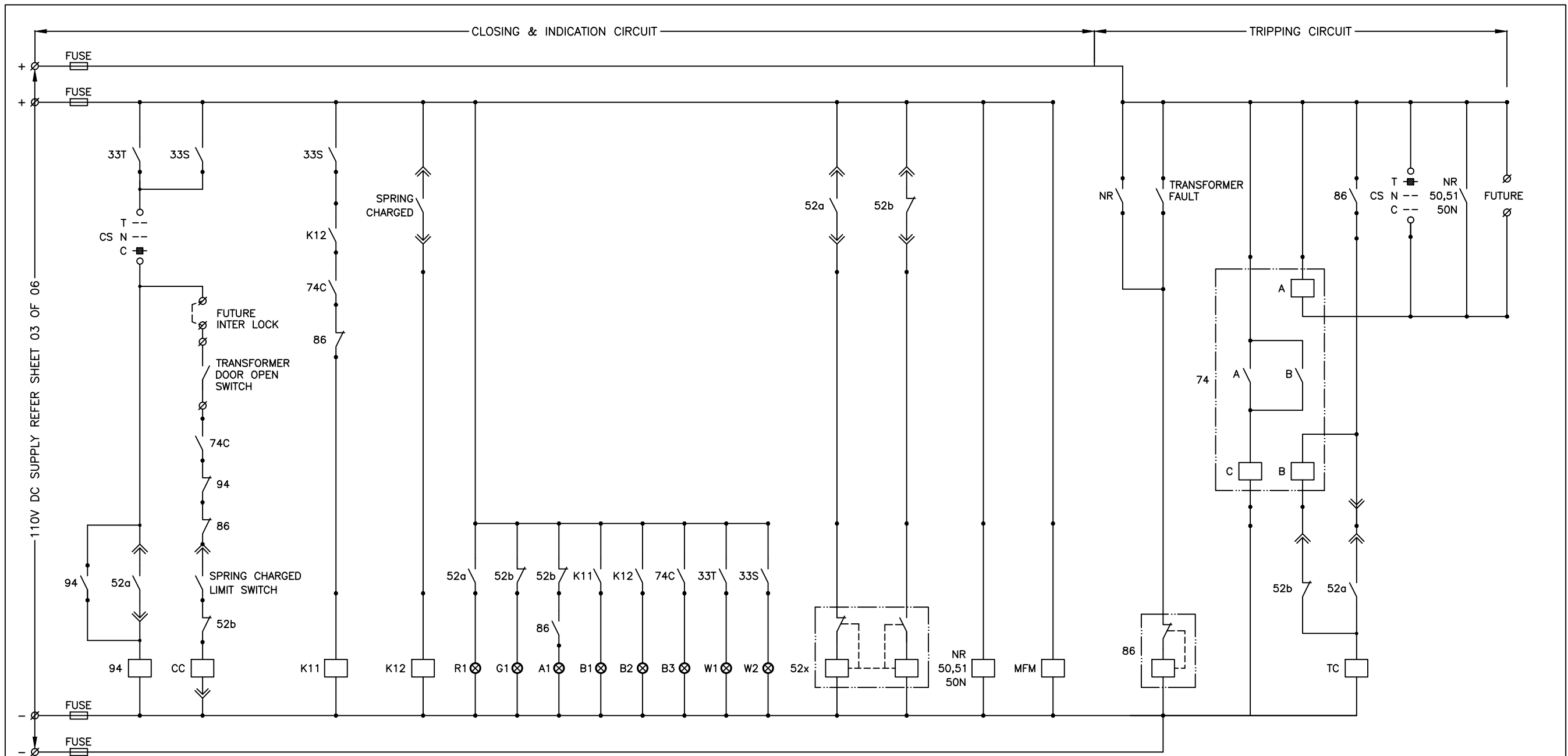


**CONTROL SCHEME FOR INCOMING FEEDERS**



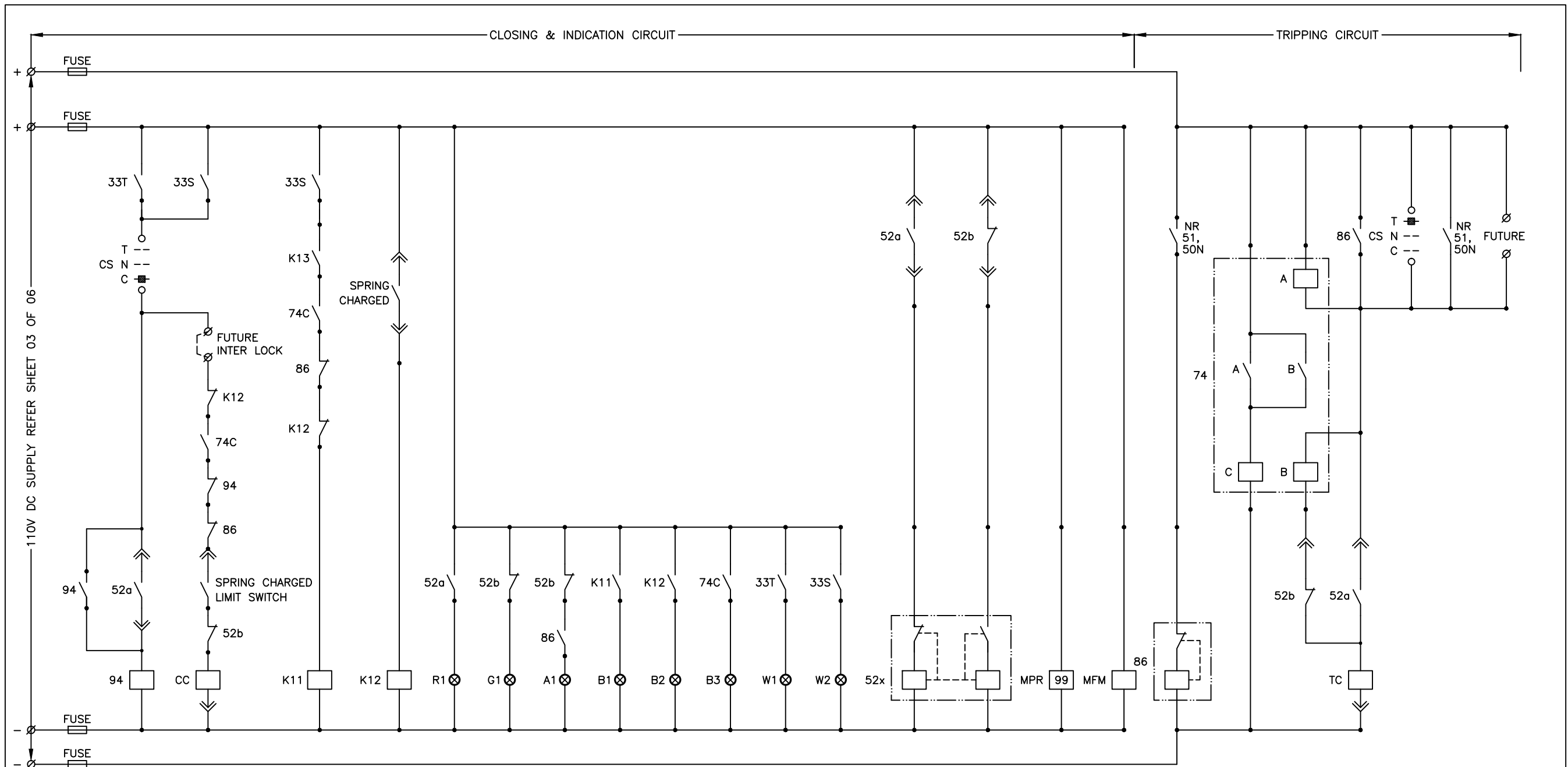
**TERMINAL INTERFACE DETAILS FOR INCOMER**

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY	
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--		
		<b>FICHTNER</b>		TOWNSHIP 2 x 660MW MAITREE STPP						
				CONTROL SCHEMES FOR 11KV SWITCHGEAR						
		SIGNATURE		DATE						
		DRAWN CRK		29.06.18						
		DESIGNED MR		29.06.18						
		CHECKED PVN		02.07.18						
		DEPT. HEAD GS		02.07.18						
		PROJ. MGR. MAP		02.07.18						
RELEASED FOR		PRELIMINARY		DEPT. ELECTRICAL		JOB NO. 1114129		SCALE: --		REV.
		TENDER		✓						A
		ENGINEERING				DWG. NO. 1114129-E-301				
		CONSTRUCTION								
(SHEET 04 OF 06)										



CONTROL SCHEME FOR TRANSFORMER FEEDER

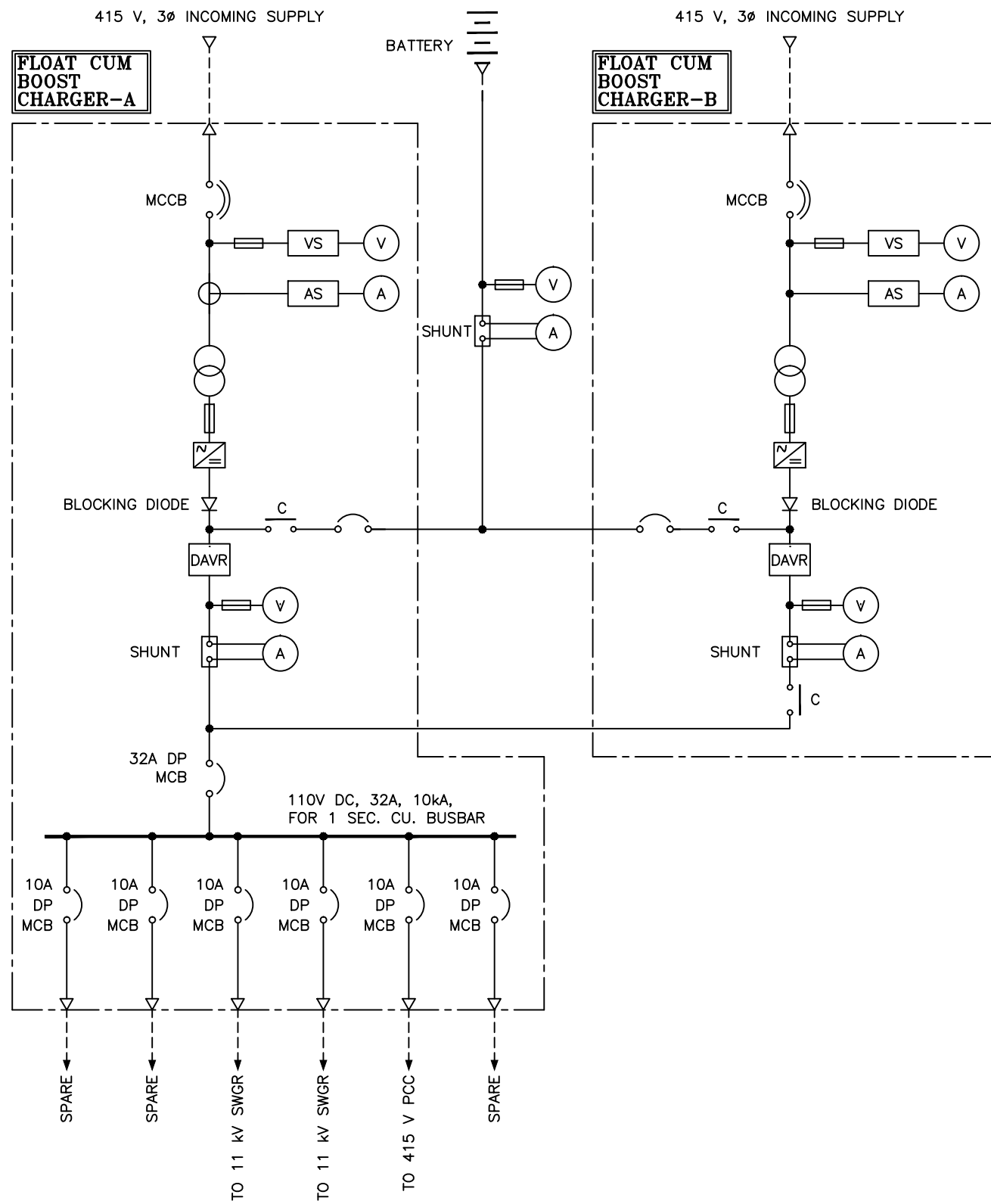
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--	
<b>FICHTNER</b>		TOWNSHIP 2 x 660MW MAITREE STPP							
DRAWN	SIGNATURE	DATE	CONTROL SCHEMES FOR 11KV SWITCHGEAR						
DESIGNED	MR	29.06.18							
CHECKED	PVN	02.07.18							
DEPT. HEAD	GS	02.07.18							
PROJ. MGR.	MAP	02.07.18							
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.			
	TENDER	✓	DWG. NO. 1114129-E-301			A			
	ENGINEERING		(SHEET 05 OF 06)						
	CONSTRUCTION								



CONTROL SCHEME FOR OUTGOING FEEDERS

FOR TENDER PURPOSE ONLY

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--	
<b>FICHTNER</b>									
TOWNSHIP 2 x 660MW MAITREE STPP									
CONTROL SCHEMES FOR 11KV SWITCHGEAR									
DRAWN		SIGNATURE		DATE					
DESIGNED		MR		29.06.18					
CHECKED		PVN		02.07.18					
DEPT. HEAD		GS		02.07.18					
PROJ. MGR.		MAP		02.07.18					
RELEASED FOR	PRELIMINARY			DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER								
	ENGINEERING								
	CONSTRUCTION								
				DWG. NO.	1114129-E-301		(SHEET 06 OF 06)		A



**LEGEND:-**

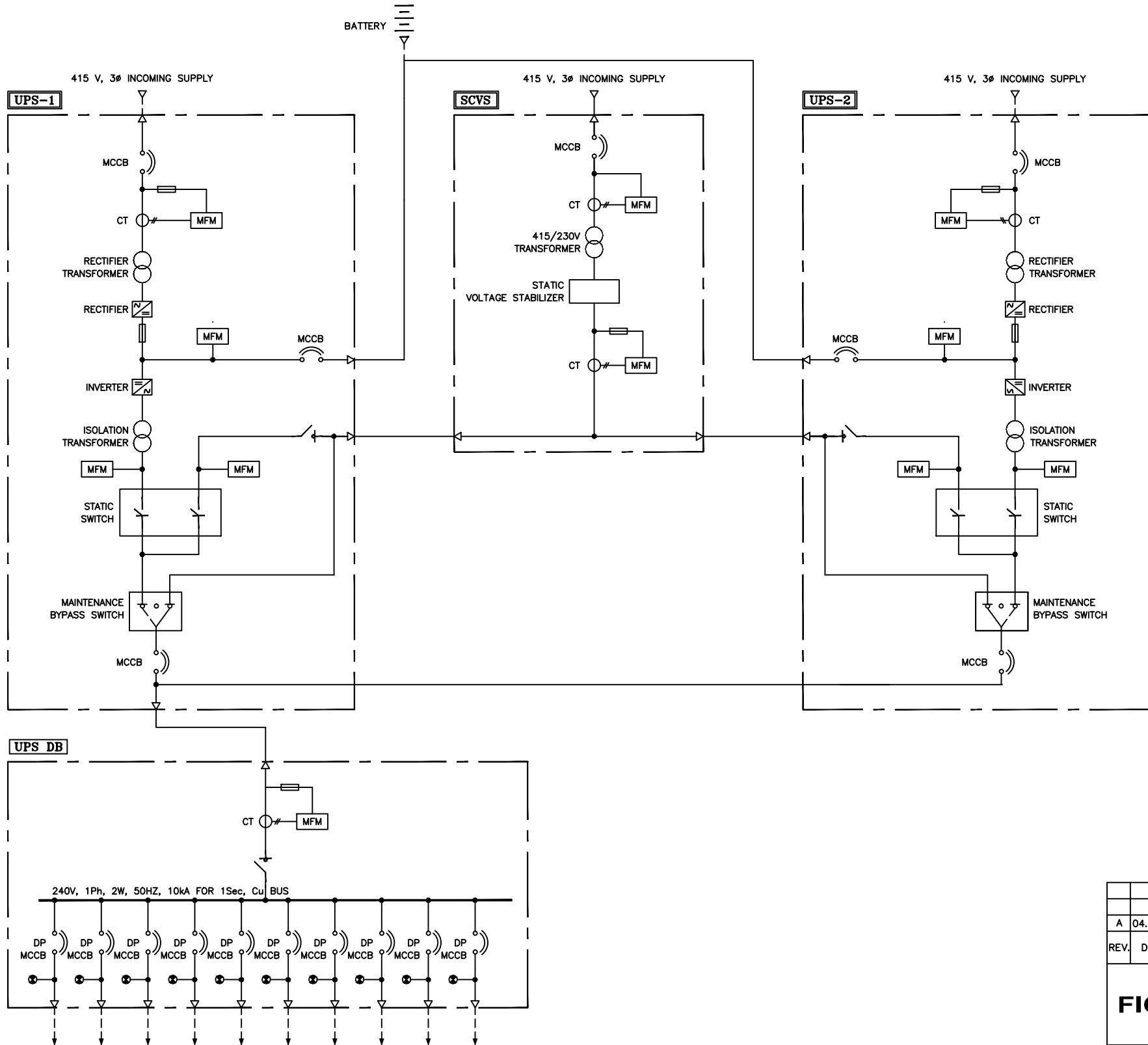
- MOULDED CASE CIRCUIT BREAKER (MCCB)
- MINIATURE CIRCUIT BREAKER (MCB)
- FUSE
- CONTACTOR
- CURRENT TRANSFORMER
- CONVERTER / RECTIFIER
- VOLTAGE SELECTOR SWITCH
- DIGITAL VOLTAGE REGULATOR
- AMPERE SELECTOR SWITCH
- SHUNT
- VOLTMETER
- AMMETER
- POWER CABLE TERMINATION

**NOTES:-**

1. FILTER CIRCUIT SHALL BE PROVIDED AS REQUIRED
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
3. THE REQUIREMENT SHOWN ARE MINIMUM ONLY. AS PER SYSTEM REQUIREMENT ALL NECESSARY EQUIPMENTS/DEVICES SHALL BE PROVIDED.
4. NECESSARY INTERLOCKING SHALL BE PROVIDED BETWEEN CHARGER AND BATTERY FOR FLOAT CHARGING AND BOOST CHARGING.

A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
			APPROVED BY					

<b>FICHTNER</b>		TOWNSHIP 2 x 660MW MAITREE STPP						
DRAWN	CRK	DATE	SCHEMATIC DIAGRAM FOR DC SYSTEM					
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓	DWG. NO. 1114129-E-302			A		
	ENGINEERING							
	CONSTRUCTION							



**LEGEND:-**

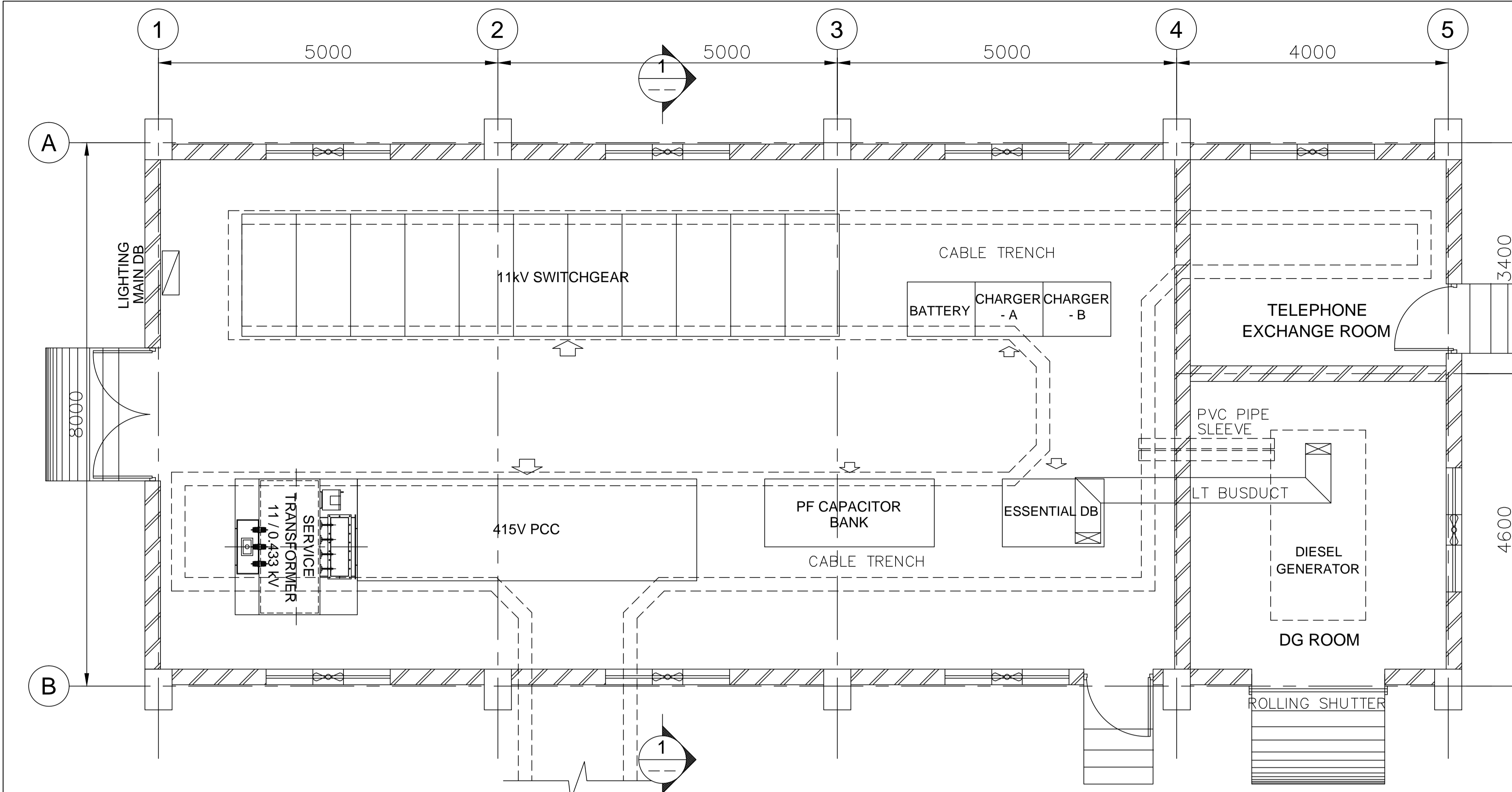
- MOULDED CASE CIRCUIT BREAKER (MCCB)
- MINIATURE CIRCUIT BREAKER (MCB)
- ISOLATOR
- INDICATING LAMP WITH LED
- CURRENT TRANSFORMER (CT)
- TRANSFORMER
- CONVERTER / RECTIFIER
- INVERTER
- FUSE
- MULTI FUNCTION METER (V, I, F)
- POWER CABLE TERMINATION

**NOTES:-**

1. UPS SHALL BE 2x100% PARALLEL REDUNDANT
2. FILTER CIRCUIT SHALL BE PROVIDED ON AC & DC SIDE AS REQUIRED.
3. UPS INVERTER SHALL BE PWM BASED WITH IGBT TECHNOLOGY.
4. BOTH THE INVERTER SHALL SHARE EQUAL LOAD CURRENT AND BOTH THE RECTIFIER SHALL SHARE EQUAL BATTERY CHARGING CURRENT.
5. UPS SYSTEM SHALL BE PROVIDED WITH A FAULT DIAGNOSTIC, MONITORING, CONTROL & RECORDING SYSTEM ON LCD DISPLAY.
6. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
7. THE REQUIREMENT SHOWN ARE MINIMUM ONLY. AS PER SYSTEM REQUIREMENT ALL NECESSARY EQUIPMENTS/DEVICES SHALL BE PROVIDED.

A		04.07.18	ISSUED FOR TENDER	CRK	--	--	GS	--
REV.	DATE	DESCRIPTION			DRN.	STR. MECH. PROC. ELEC. INST. APPROVED BY		
<b>FICHTNER</b>		<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>						
DRAWN	CRK	DATE	<b>SCHEMATIC DIAGRAM FOR UPS SYSTEM</b>					
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓	DWG. NO. 1114129-E-303		A			
	ENGINEERING							
	CONSTRUCTION							

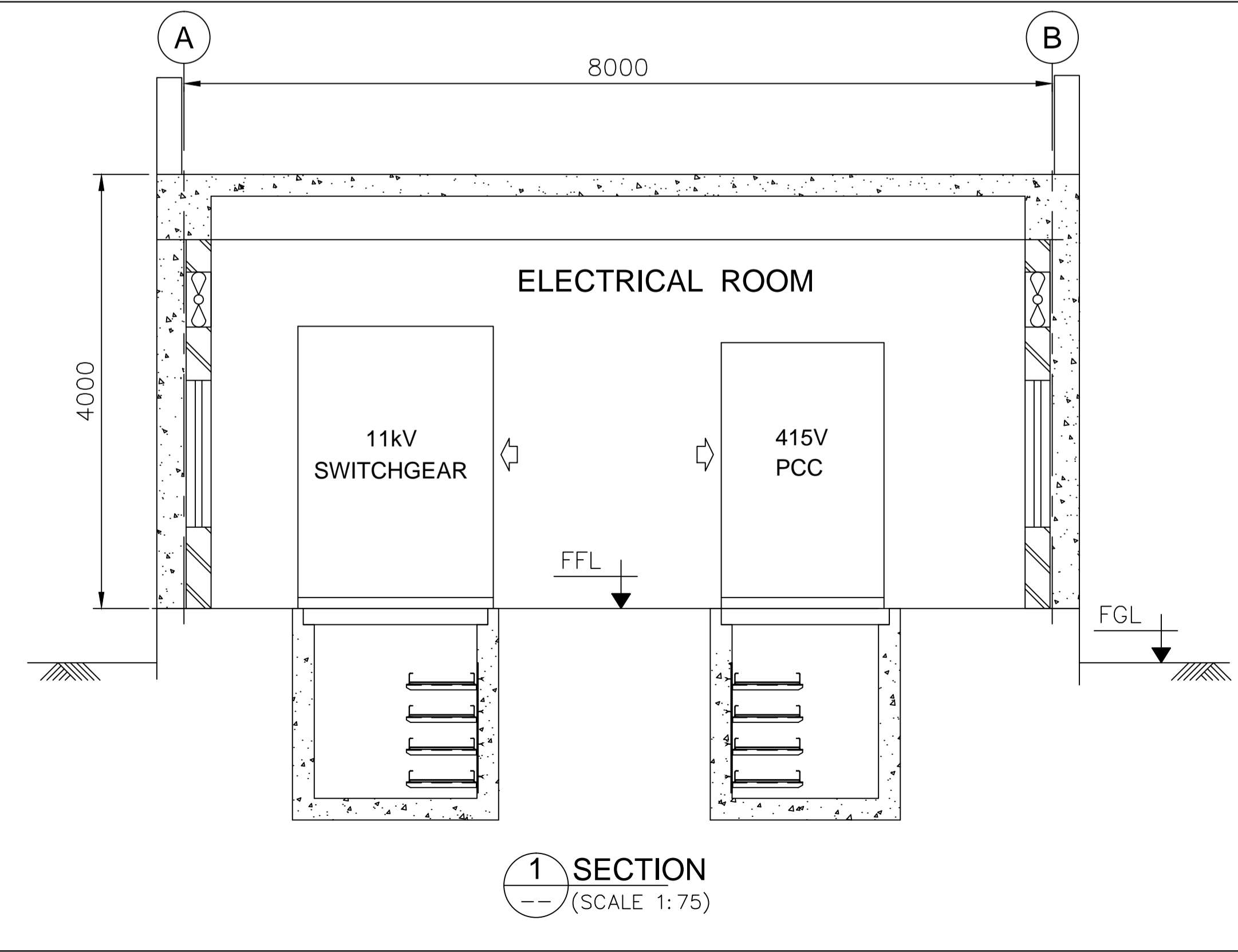
30-1114129-E-302 Rev-A 26.09.14.dwg



- NOTES:-**
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
  - THE DIMENSIONS SHOWN ARE INDICATIVE ONLY. CONTRACTOR SHALL SIZE THE BUILDING AS PER REQUIREMENT.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
  - TRANSFORMER SHALL BE CONNECTED TO PCC BY BUS TRUNCKING.

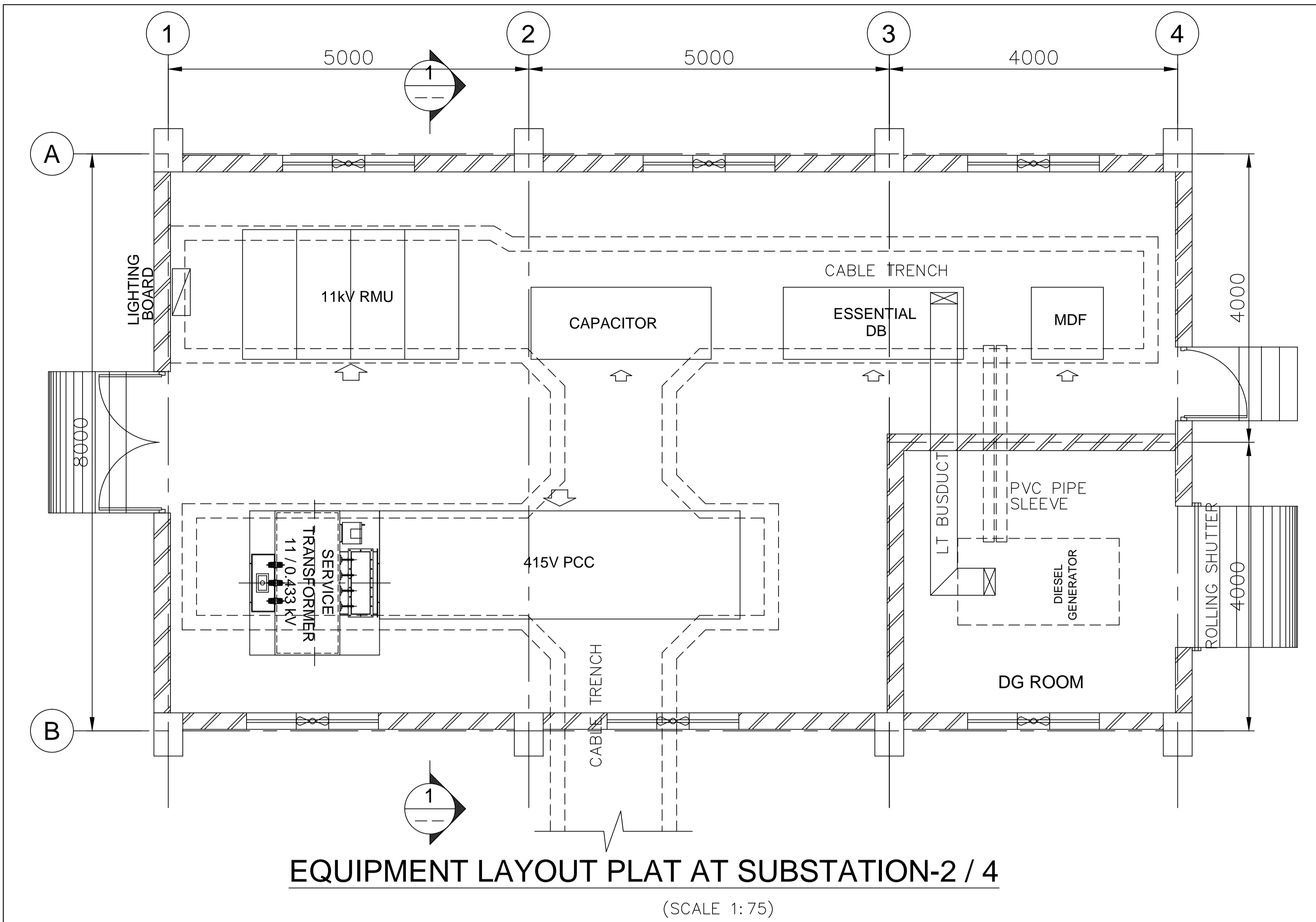
- LEGEND:-**
- FFL - FINISHED FLOOR LEVEL
  - FGL - FINISHED GROUND LEVEL
  - RMU - RING MAIN UNIT
  - MDF - MAIN DISTRIBUTION FRAME
  - PCC - POWER CONTROL CENTRE
  - [Symbol] - EXHAUST / SUPPLY / FRESH AIR FAN
  - [Symbol] - PANEL FRONT

**EQUIPMENT LAYOUT PLAN AT MRSS**  
(SCALE 1:75)



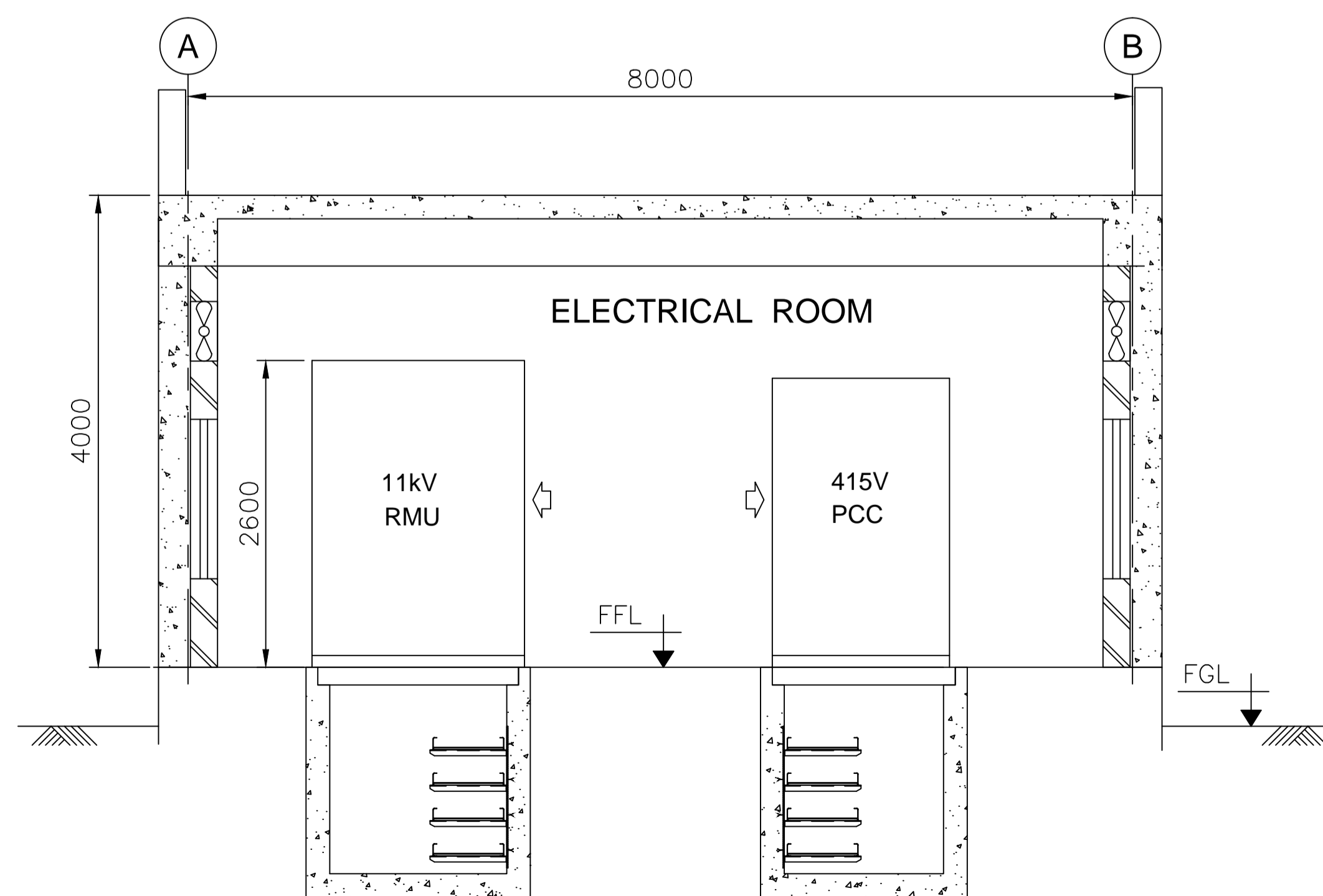
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					
<b>FICHTNER</b>			<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>					
			<b>EQUIPMENT LAYOUT AT MRSS</b>					
DRAWN		CRK	DATE		29.06.18			
DESIGNED		MR	DATE		29.06.18			
CHECKED		PVN	DATE		02.07.18			
DEPT. HEAD		GS	DATE		02.07.18			
PROJ. MGR.		MAP	DATE		02.07.18			
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL		JOB NO. 1114129		SCALE: AS NOTED	
	TENDER	✓	DWG. NO.		1114129-E-401		REV. A	
	ENGINEERING							
CONSTRUCTION								

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**EQUIPMENT LAYOUT PLAT AT SUBSTATION-2 / 4**

(SCALE 1:75)



**1 SECTION**  
(SCALE 1:75)

**NOTES:-**

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. THE DIMENSIONS SHOWN ARE INDICATIVE ONLY. CONTRACTOR SHALL SIZE THE BUILDING AS PER REQUIREMENT.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
4. TRANSFORMER SHALL BE CONNECTED TO PCC BY BUS TRUNCKING.

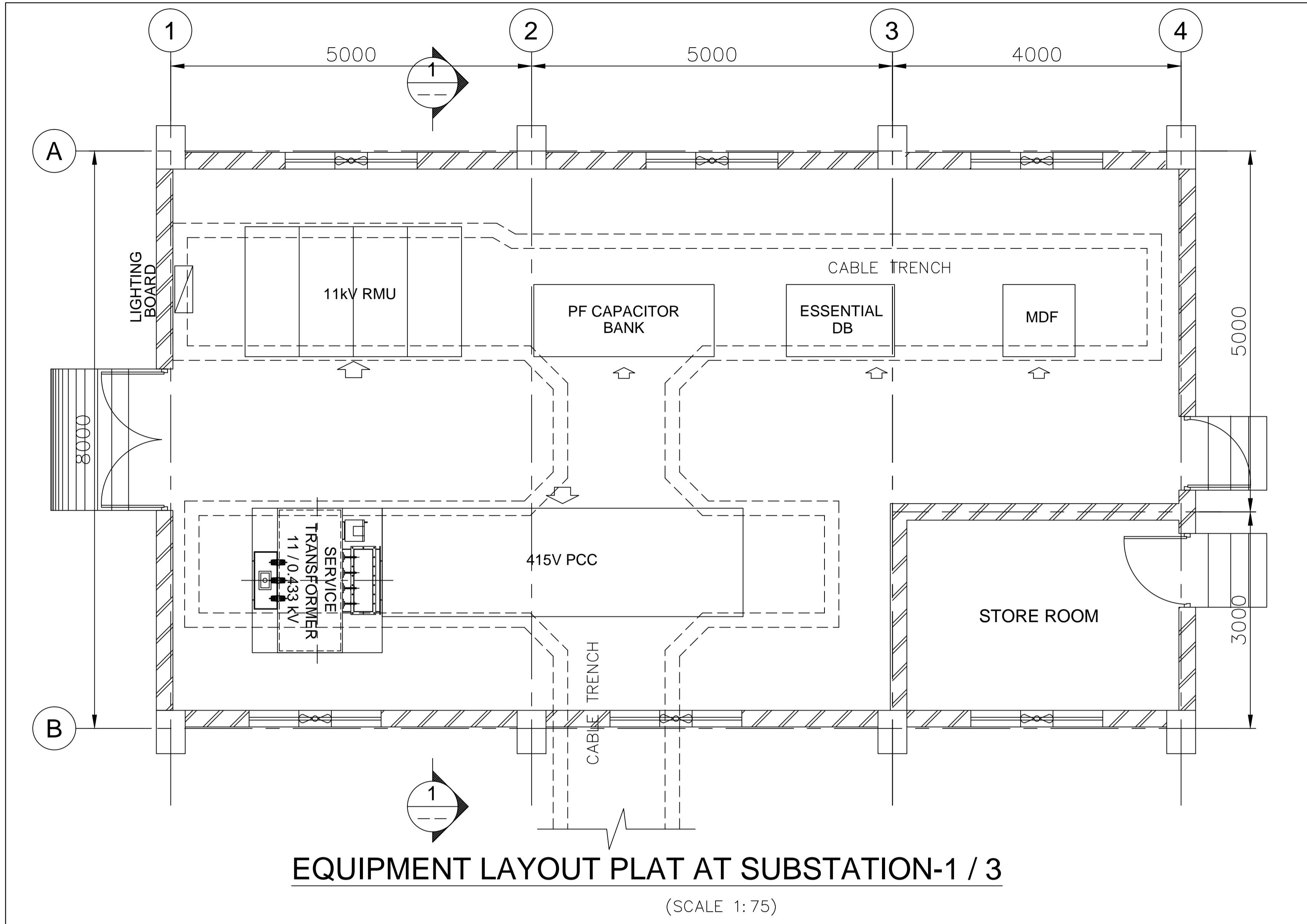
**LEGEND:-**

- FFL - FINISHED FLOOR LEVEL
- FGL - FINISHED GROUND LEVEL
- MDF - MAIN DISTRIBUTION FRAME (FOR TELEPHONE)
- EXHAUST / SUPPLY / FRESH AIR FAN
- PANEL FRONT

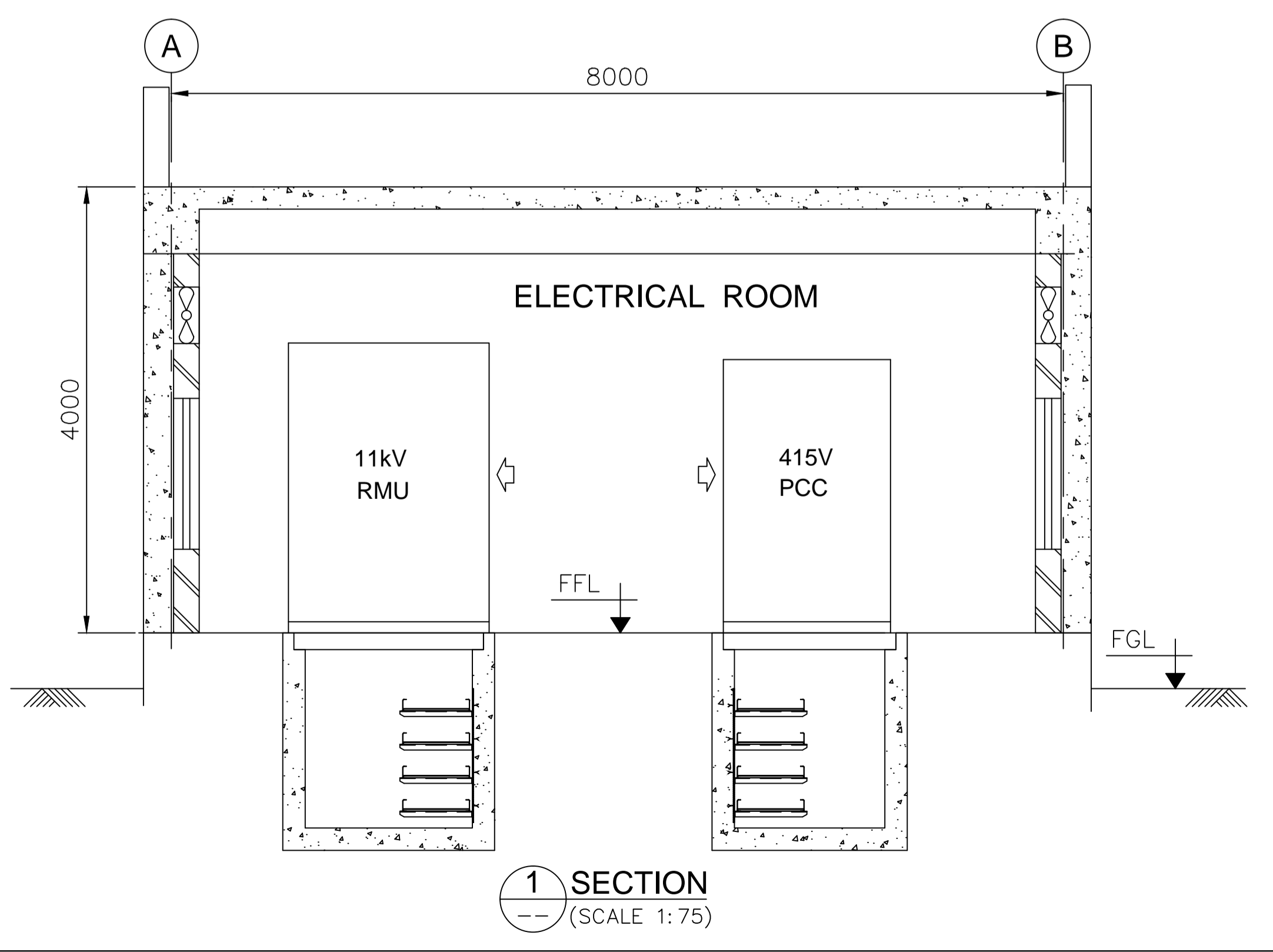
**REFERENCE DRAWINGS:-**

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					

<b>FICHTNER</b>			<b>TOWNSHIP</b> 2 x 660MW MAITREE STPP					
			<b>EQUIPMENT LAYOUT AT</b> <b>DISTRIBUTION SUBSTATION (TYPE-2)</b>					
	SIGNATURE	DATE						
DRAWN	CRK	29.06.18						
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓						
	ENGINEERING							
	CONSTRUCTION							
			DWG.NO. 1114129-E-402			A		



**EQUIPMENT LAYOUT PLAT AT SUBSTATION-1 / 3**  
(SCALE 1:75)



**1 SECTION**  
(SCALE 1:75)

- NOTES:-**
1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
  2. THE DIMENSIONS SHOWN ARE INDICATIVE ONLY. CONTRACTOR SHALL SIZE THE BUILDING AS PER REQUIREMENT.
  3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
  4. TRANSFORMER SHALL BE CONNECTED TO PCC BY BUS TRUNCKING.

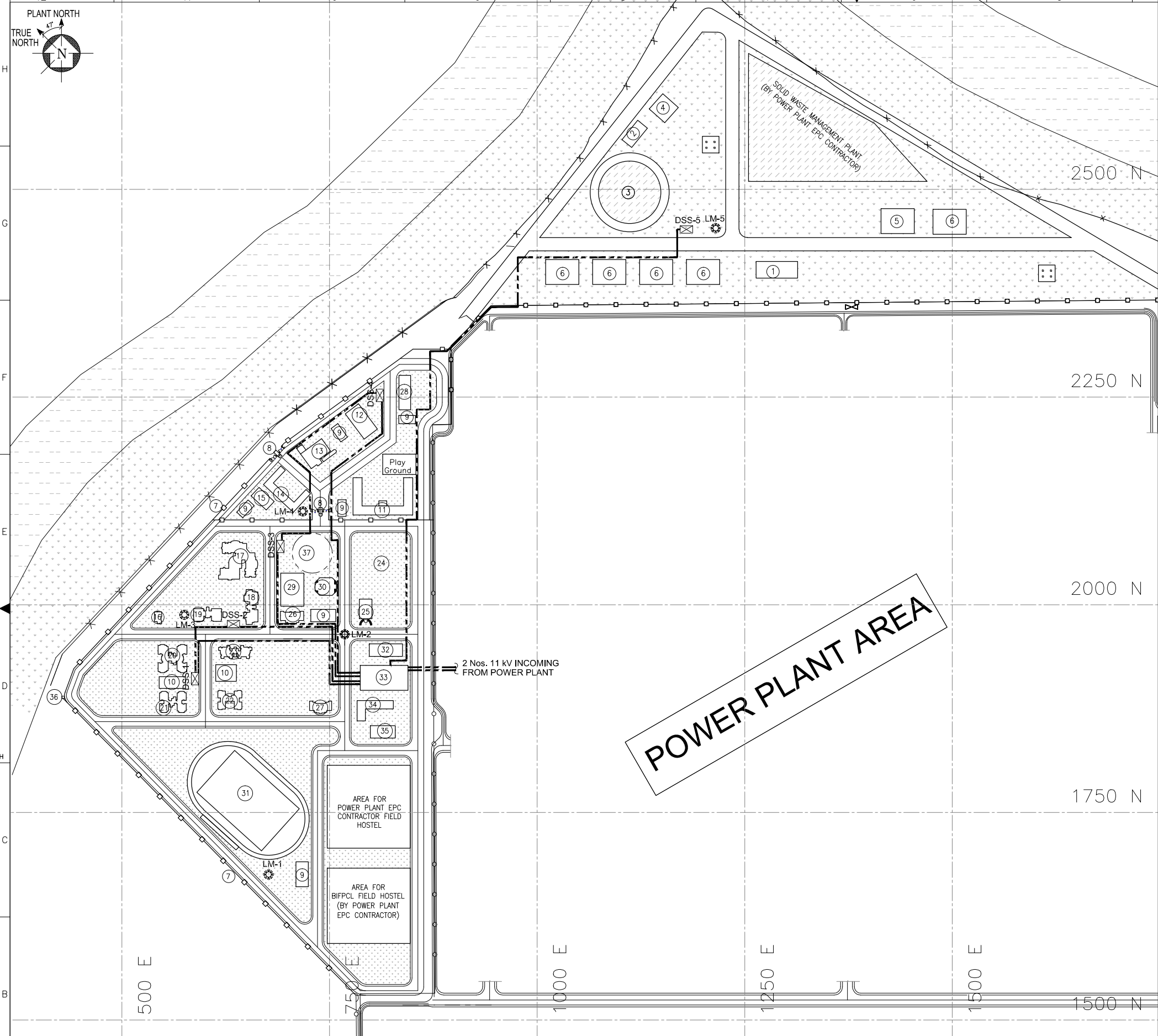
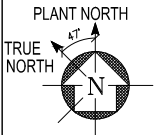
- LEGEND:-**
- FFL - FINISHED FLOOR LEVEL
  - FGL - FINISHED GROUND LEVEL
  - RMU - RING MAIN UNIT
  - MDF - MAIN DISTRIBUTION FRAME
  - PCC - POWER CONTROL CENTRE
  - EXHAUST / SUPPLY / FRESH AIR FAN
  - PANEL FRONT

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					

<b>FICHTNER</b>			<b>TOWNSHIP</b>					
			<b>2 x 660MW MAITREE STPP</b>					
			<b>EQUIPMENT LAYOUT AT DISTRIBUTION SUBSTATION (TYPE-1)</b>					
	SIGNATURE	DATE						
DRAWN	CRK	29.06.18						
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: AS NOTED	REV.		
	TENDER	✓	DWG.NO. <b>1114129-E-403</b>					
	ENGINEERING							
	CONSTRUCTION		A					

30-1114129-E-403 Rev-A 26.09.14.dwg

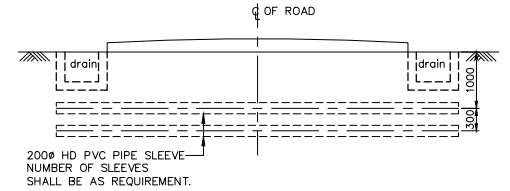
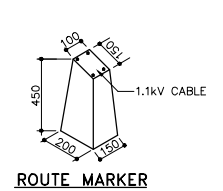
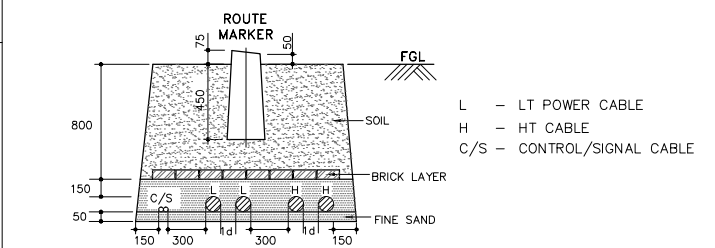




**POWER PLANT AREA**

2 Nos. 11 kV INCOMING FROM POWER PLANT

SI NO	AREAS IN TOWNSHIP
1	POLICE STATION
2	CYCLONE SHELTER
3	STORM WATER RETENTION POND
4	GAS CYLINDER GODOWN
5	TRANSPORT CENTER
6	SECURITY POREE AND ARMY BARRACKS
7	BOUNDARY WALL
8	GATE AND SECURITY
9	OPEN CAR PARKS
10	CHILDREN PLAY AREAS
11	NURSERY AND HIGH SCHOOL
12	MOSQUE
13	HOSPITAL
14	SHOPPING CENTER
15	TEMPLE
16	HOP BUNGALOW
17	GUEST HOUSE
18	STUDIO APARTMENTS
19	EXECUTIVE RESIDENCE - A
20	EXECUTIVE RESIDENCE - B
21	EXECUTIVE RESIDENCE - C
22	STAFF RESIDENCE - D
23	FIELD HOSTEL - STAFF
24	AUDITORIUM (FUTURE PROVISION)
25	COMMUNITY CENTER
26	EXECUTIVE CLUB
27	NON-EXECUTIVE CLUB
28	TRAINING HOSTEL AND TRAINING CENTER
29	SWIMMING POOL
30	INDOOR SPORTS COMPLEX
31	OUTDOOR SPORTS AREA
32	FIRE WATER PUMP HOUSE
33	MAIN ELECTRIC SUBSTATION
34	MAINTENANCE STORE
35	UG WATER TANK
36	WATCH TOWER
37	CENTRAL RECREATION PARK



**NOTES:-**  
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.

**LEGENDS:-**  
DSS 1-5 DISTRIBUTION SUBSTATION  
MRSS MAIN RECEIVING SUBSTATION  
LM 1-5 LIGHTING MAST

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--

**FICHTNER**

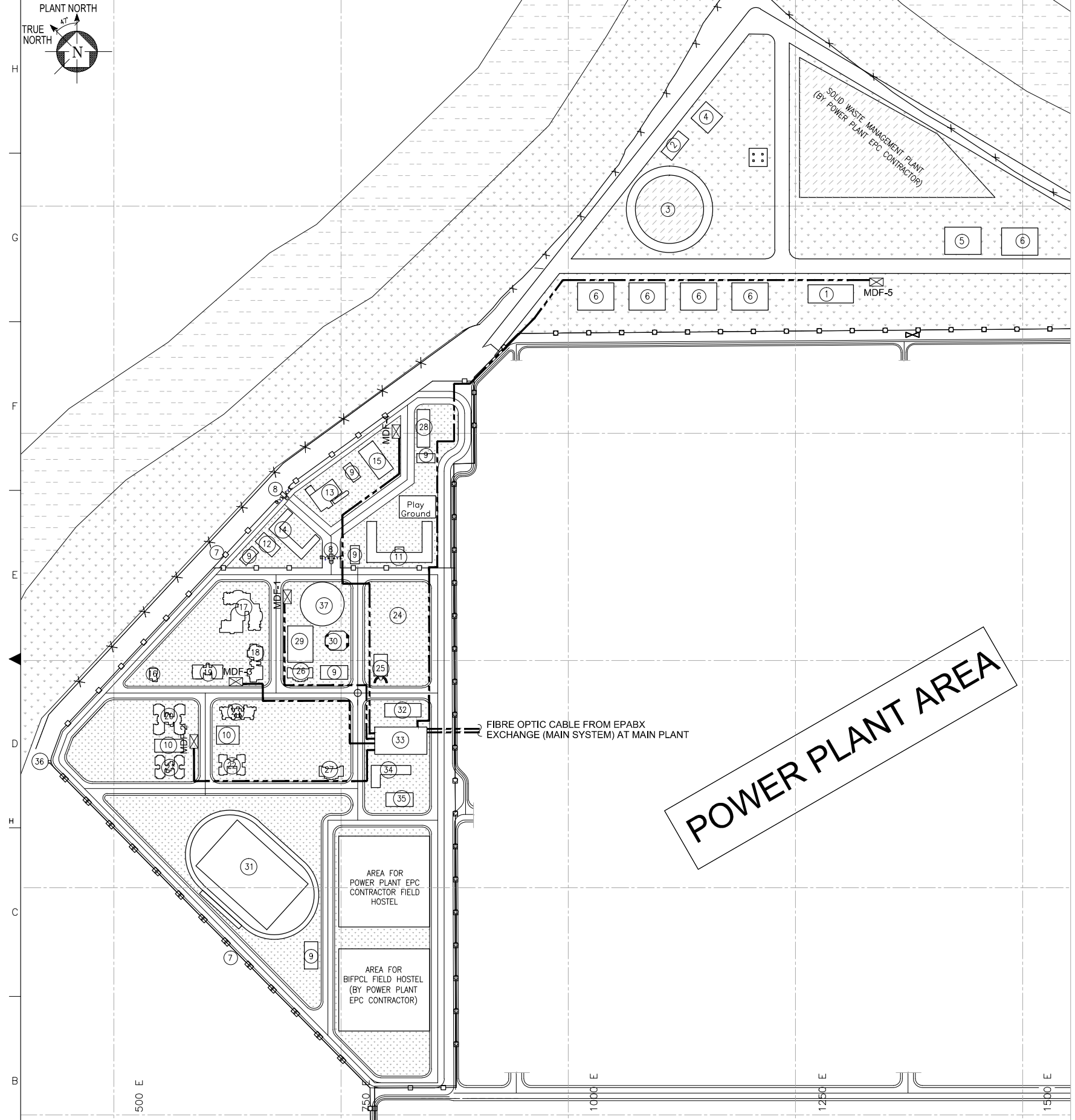
**TOWNSHIP**  
2x660 MW MAITREE STPP

**POWER DISTRIBUTION LAYOUT FOR SUBSTATIONS**

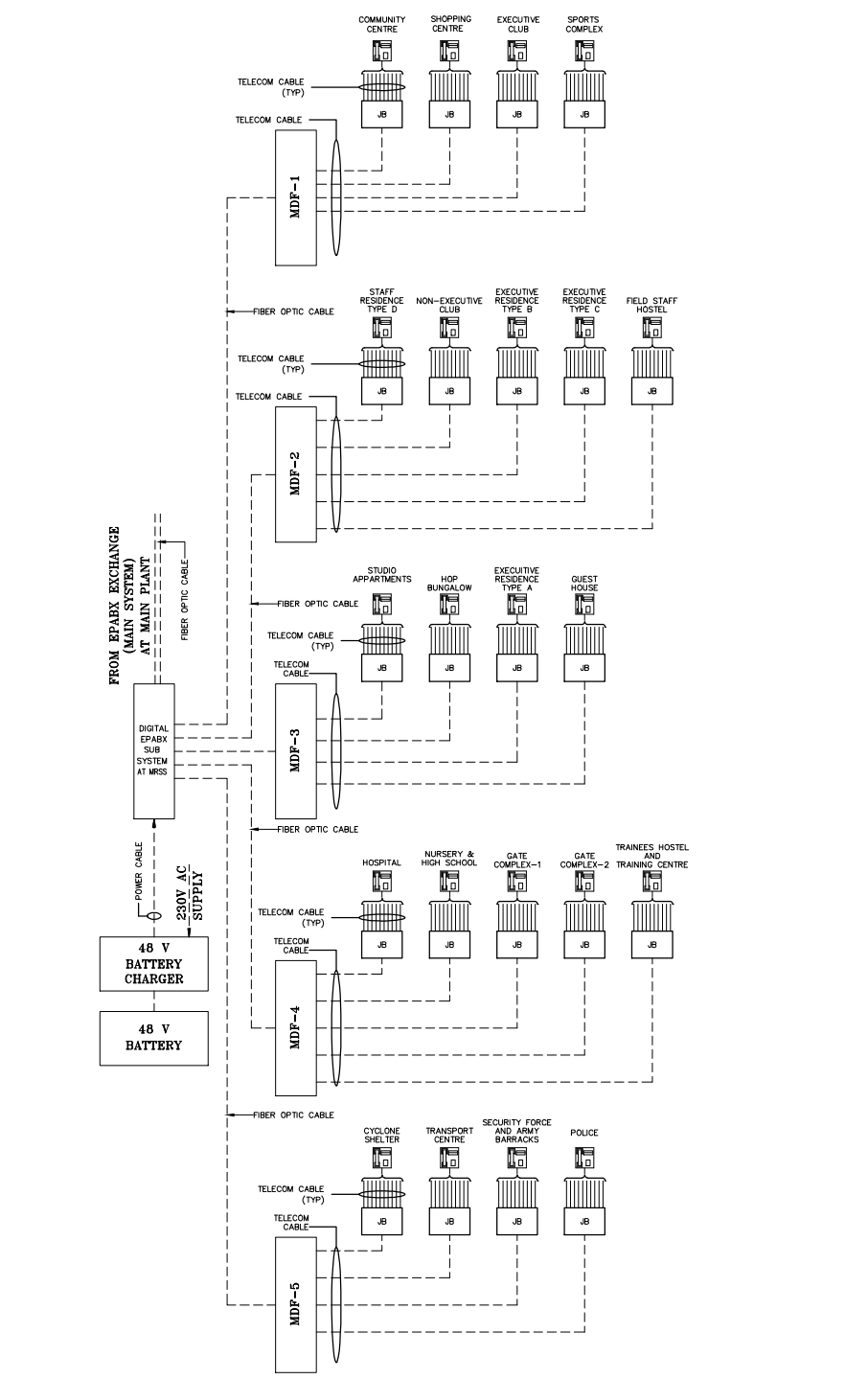
RELEASED FOR	SIGNATURE	DATE	DEPT.	ELECTRICAL	JOB NO.	SCALE:	REV.
PRELIMINARY					1114129	1:2500	
TENDER							
ENGINEERING							
CONSTRUCTION							

DWG.NO. 10-1114129-E-404

SIZE-A

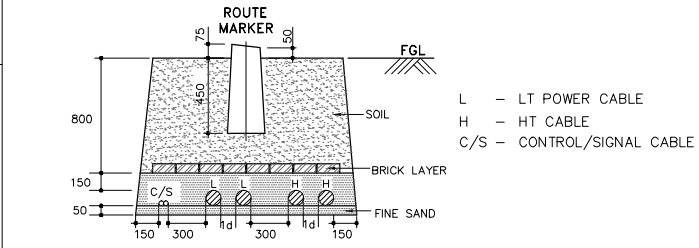


SI NO	AREAS IN TOWNSHIP
1	POLICE STATION
2	CYCLONE SHELTER
3	STORM WATER RETENTION POND
4	GAS CYLINDER GODOWN
5	TRANSPORT CENTER
6	SECURITY POREE AND ARMY BARRACKS
7	BOUNDARY WALL
8	GATE AND SECURITY
9	OPEN CAR PARKS
10	CHILDREN PLAY AREAS
11	NURSERY AND HIGH SCHOOL
12	MOSQUE
13	HOSPITAL
14	SHOPPING CENTER
15	TEMPLE
16	HOP BUNGALOW
17	GUEST HOUSE
18	STUDIO APARTMENTS
19	EXECUTIVE RESIDENCE - A
20	EXECUTIVE RESIDENCE - B
21	EXECUTIVE RESIDENCE - C
22	STAFF RESIDENCE - D
23	FIELD HOSTEL - STAFF
24	AUDITORIUM (FUTURE PROVISION)
25	COMMUNITY CENTER
26	EXECUTIVE CLUB
27	NON-EXECUTIVE CLUB
28	TRAINING HOSTEL AND TRAINING CENTER
29	SWIMMING POOL
30	INDOOR SPORTS COMPLEX
31	OUTDOOR SPORTS AREA
32	FIRE WATER PUMP HOUSE
33	MAIN ELECTRIC SUBSTATION
34	MAINTENANCE STORE
35	UG WATER TANK
36	WATCH TOWER
37	CENTRAL RECREATION PARK

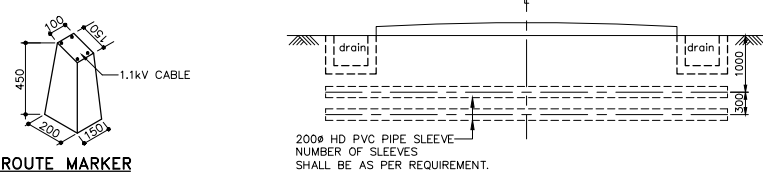


**POWER PLANT AREA**

TYPICAL BLOCK DIAGRAM FOR COMMUNICATION SYSTEM



TYPICAL ARRANGEMENT OF DIRECTLY BURIED CABLES



TYPICAL DETAIL FOR ROAD CROSSING

- NOTES:-**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
  - THE REQUIREMENT SHOWN ARE MINIMUM ONLY. AS PER SYSTEM REQUIREMENT ALL NECESSARY EQUIPMENTS/DEVICES SHALL BE PROVIDED.
  - PHONE SHALL INCLUDE THE FOLLOWING:
    - A. ANALOG PHONE
    - B. DIGITAL PHONE
    - C. IP PHONE
    - D. ISDN PHONE
    - E. PC WITH SOFT PHONE
    - F. VIDEO CONFERENCE DEVICE
  - TELECOM CABLE SHALL BE OF CAT5/CAT6/TWISDED PAIR CABLE/ FO CABLE.
  - MDF SHALL BE LOCATED AT NEARBY DISTRIBUTION SUBSTATION ROOM.

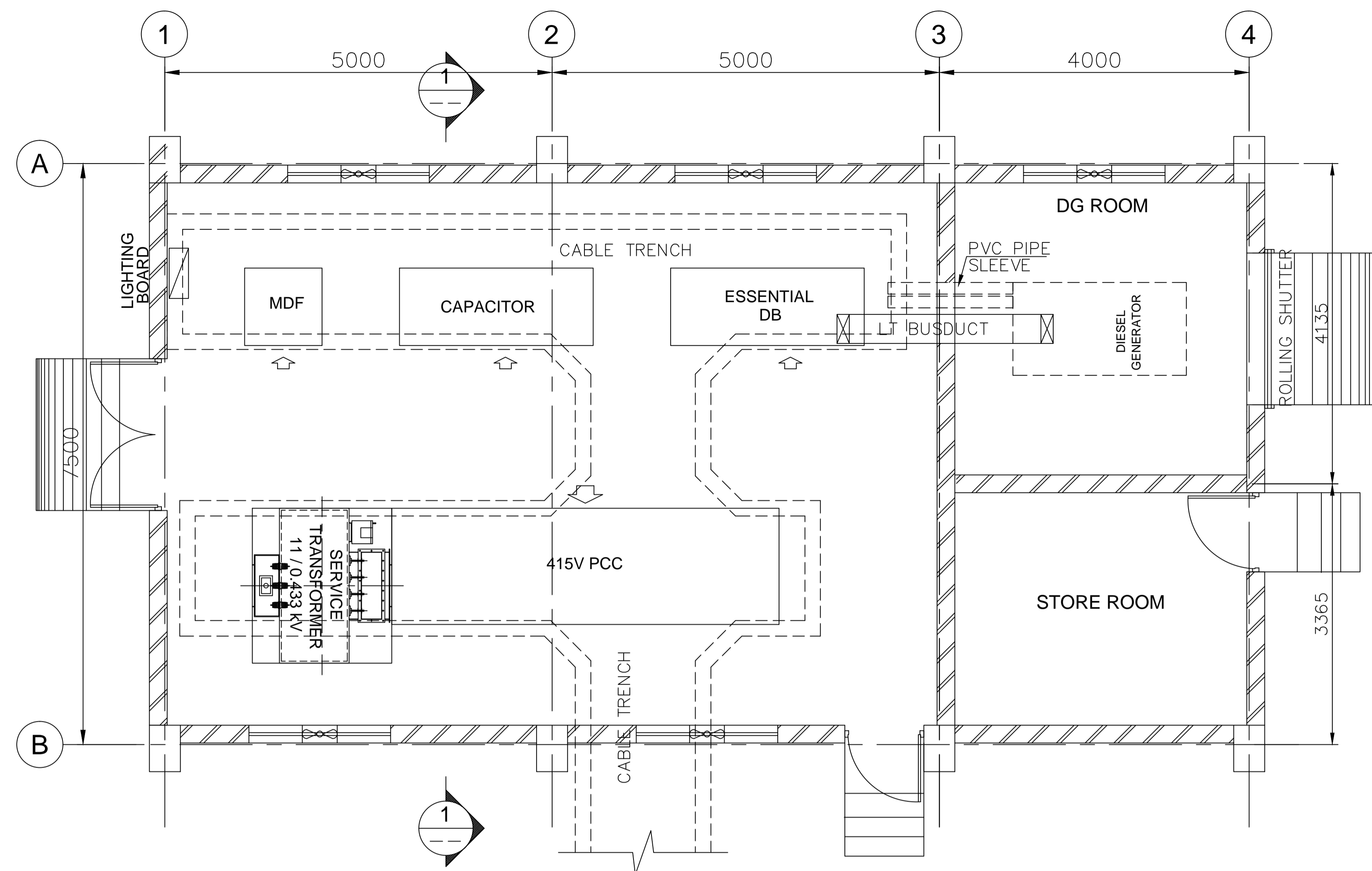
- LEGENDS:-**
- MDF 1-5 - MAIN DISTRIBUTION FRAME
  - FO - FIBER OPTIC
  - JB - JUNCTION BOX

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	--	GS

<b>FICHTNER</b>		<b>TOWNSHIP</b> 2x660 MW MAITREE STPP			
DRAWN: CRK		DATE: 29.06.18			
DESIGNED: MR		DATE: 29.06.18			
CHECKED: PVN		DATE: 02.07.18			
DEPT. HEAD: GS		DATE: 02.07.18			
PROJ. MGR.: MAP		DATE: 02.07.18			
RELEASED FOR:	PRELIMINARY	DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: 1:2500	REV.
	TENDER	✓			
	ENGINEERING				
	CONSTRUCTION				
DWG. NO. 10-1114129-E-405				A	

10-1114129-E-404.dwg





**EQUIPMENT LAYOUT PLAT AT SUBSTATION-5**

(SCALE 1: 75)

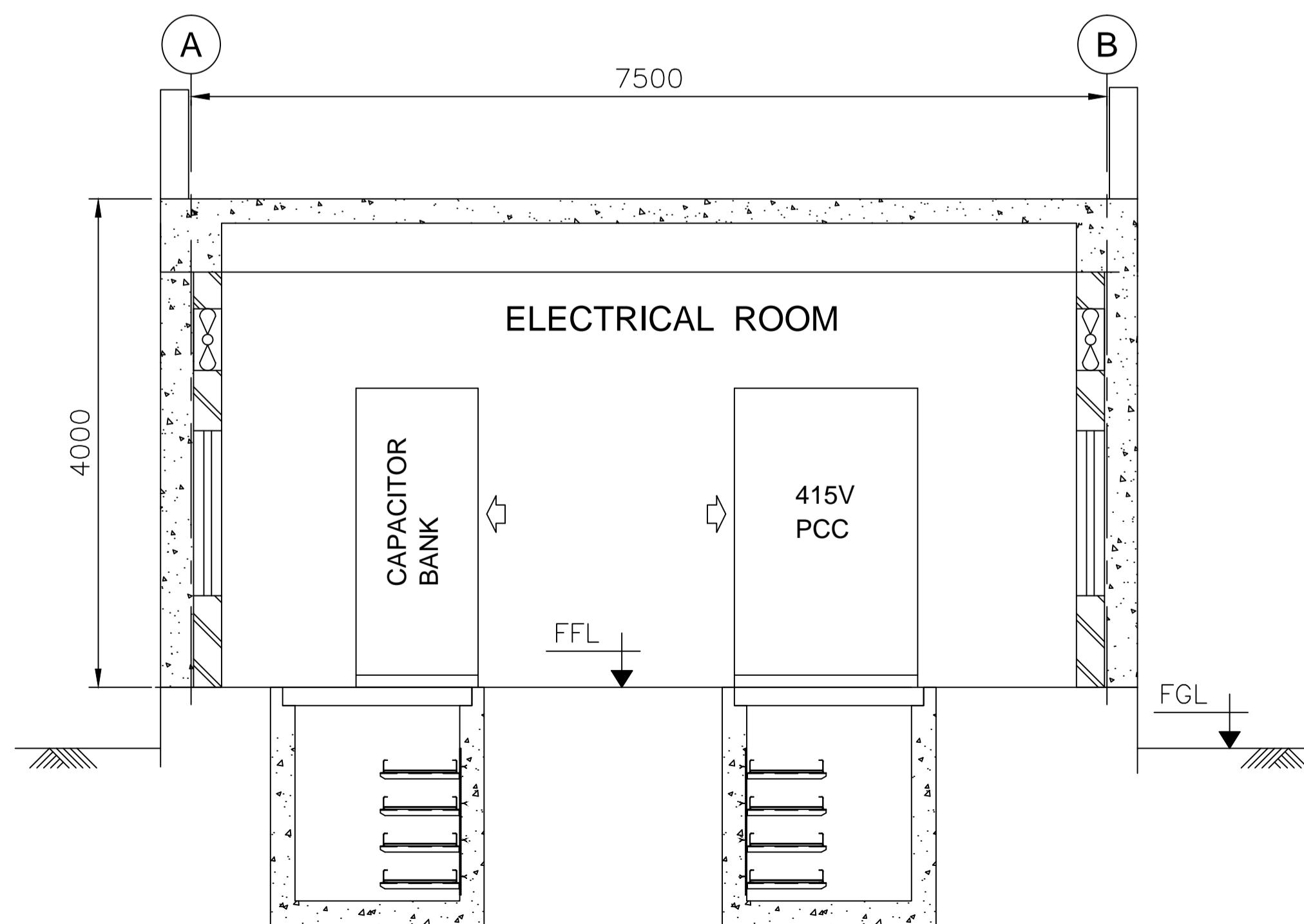
**NOTES:-**

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. THE DIMENSIONS SHOWN ARE INDICATIVE ONLY. CONTRACTOR SHALL SIZE THE BUILDING AS PER REQUIREMENT.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
4. TRANSFORMER SHALL BE CONNECTED TO PCC BY BUS TRUNCKING.

**LEGEND:-**

- FFL - FINISHED FLOOR LEVEL
- FGL - FINISHED GROUND LEVEL
- MDF - MAIN DISTRIBUTION FRAME (FOR TELEPHONE)
-  - EXHAUST / SUPPLY / FRESH AIR FAN
-  - PANEL FRONT

**REFERENCE DRAWINGS:-**



**1 SECTION**  
(SCALE 1: 75)

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					

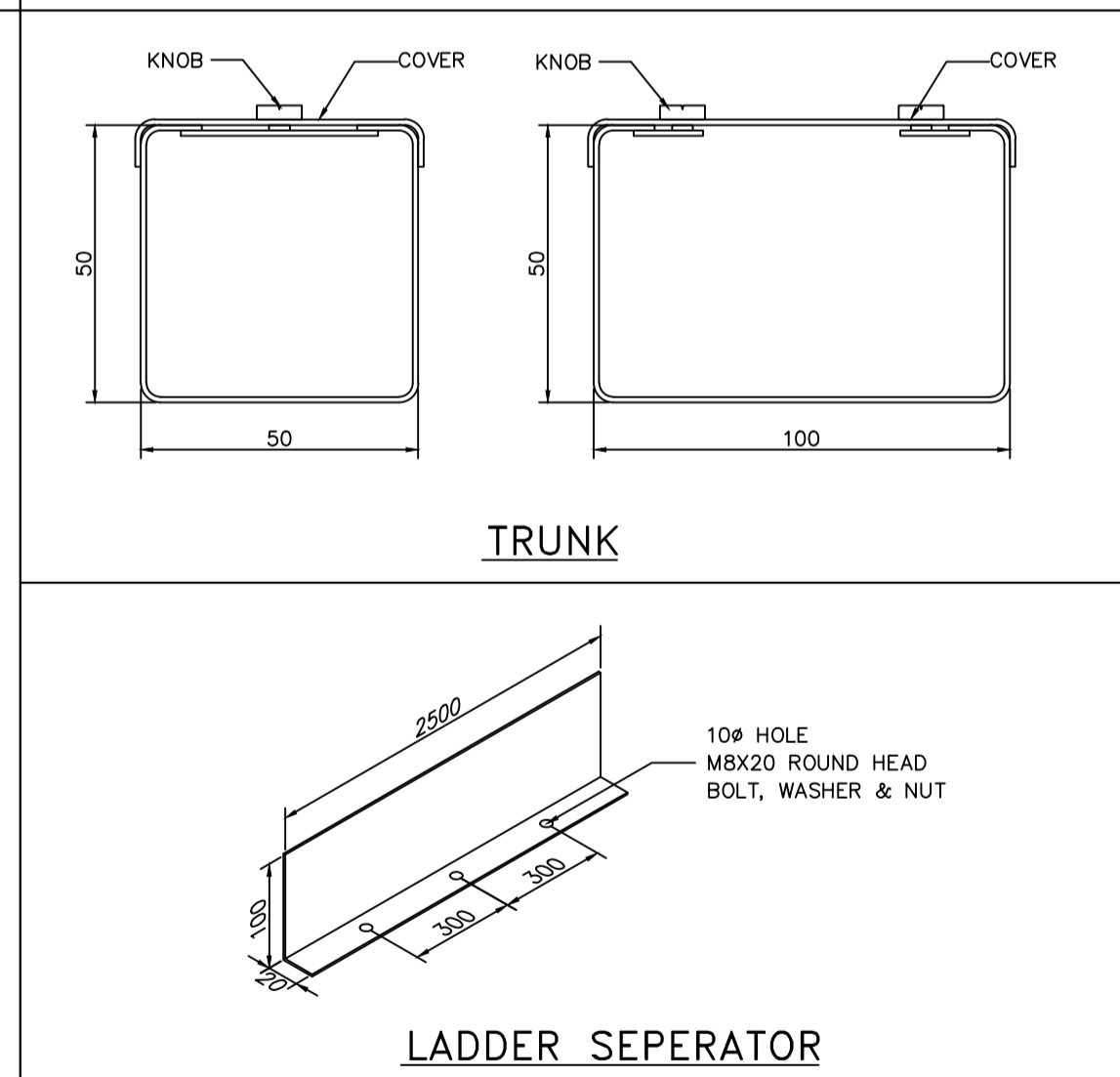
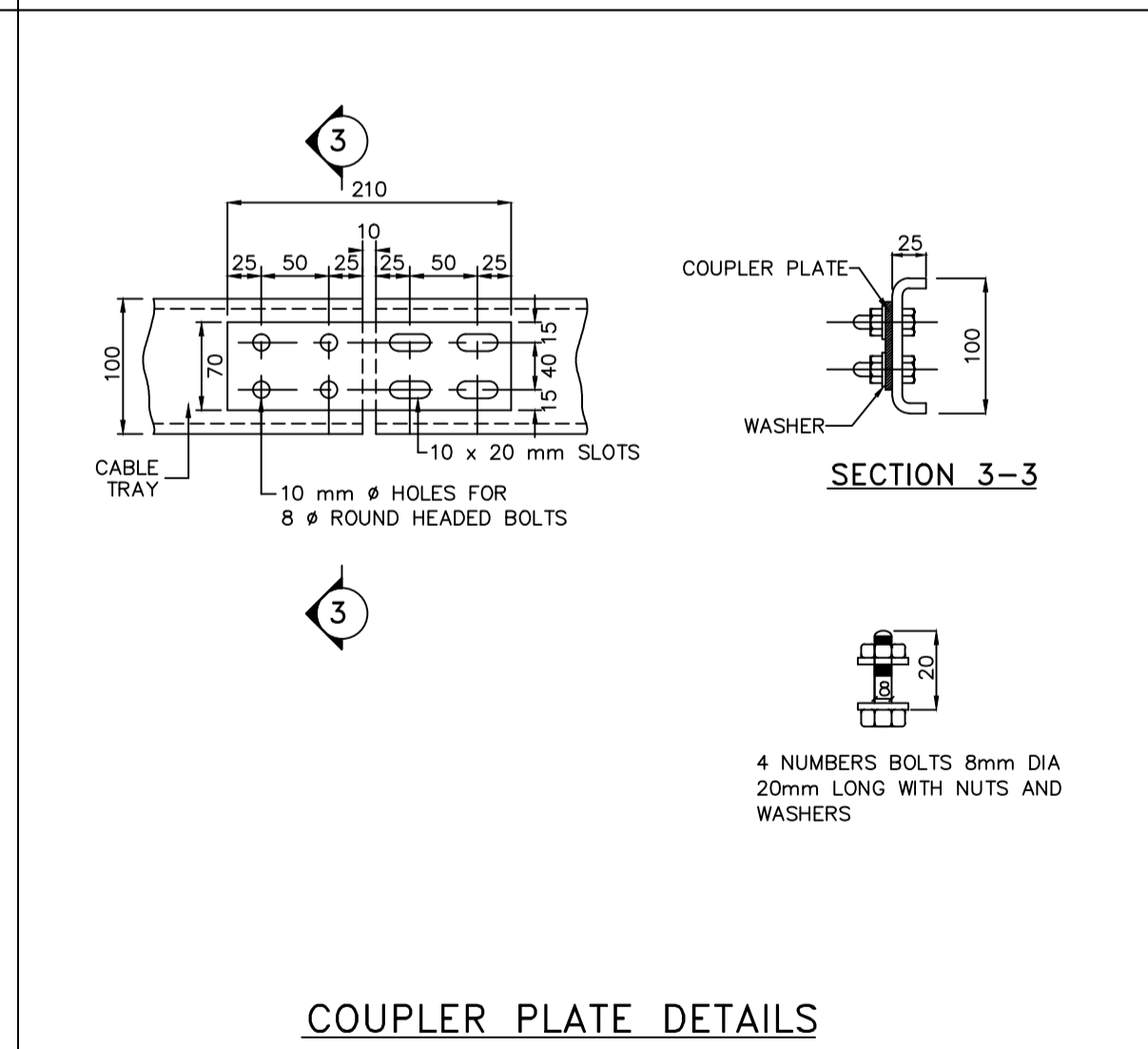
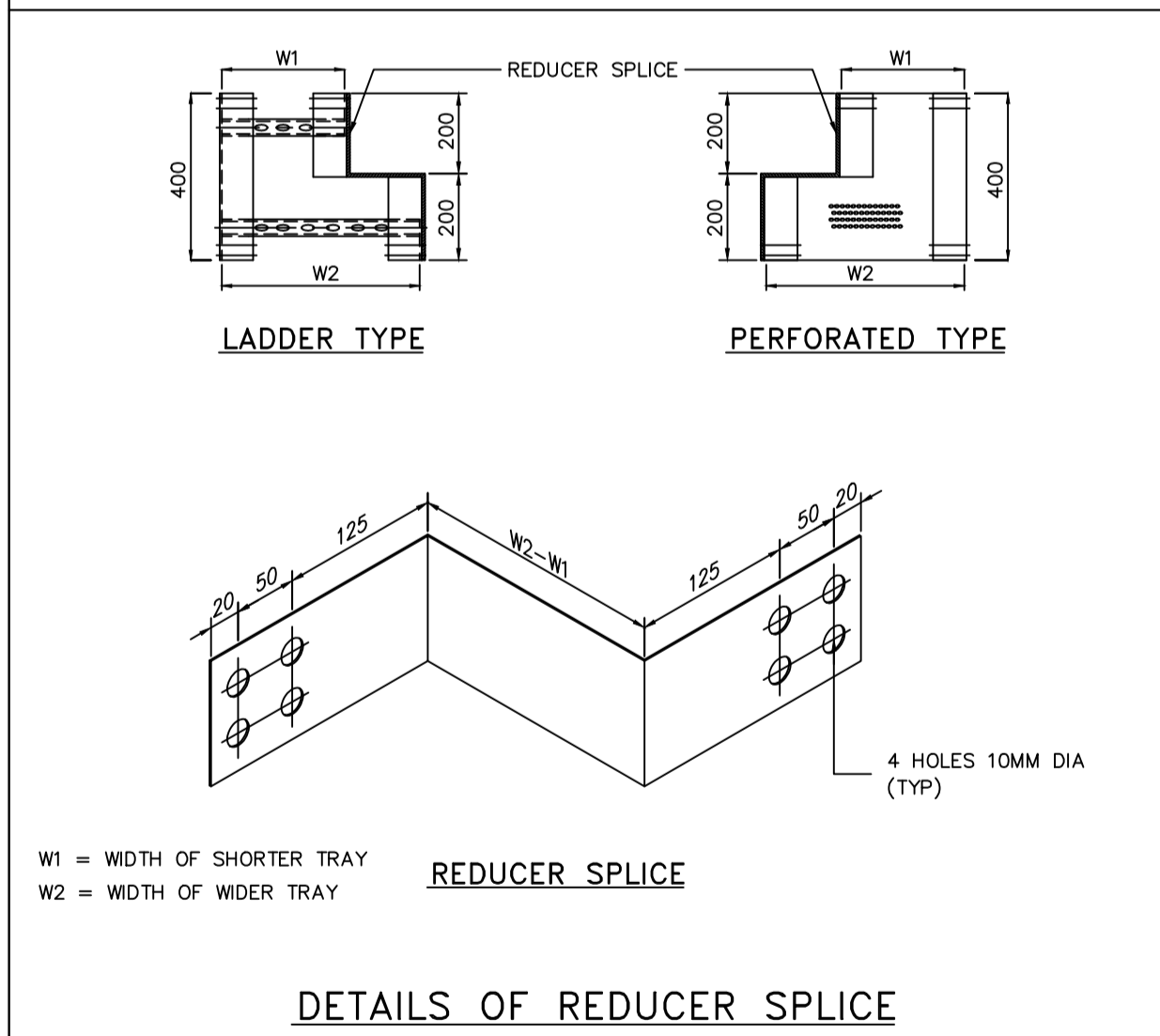
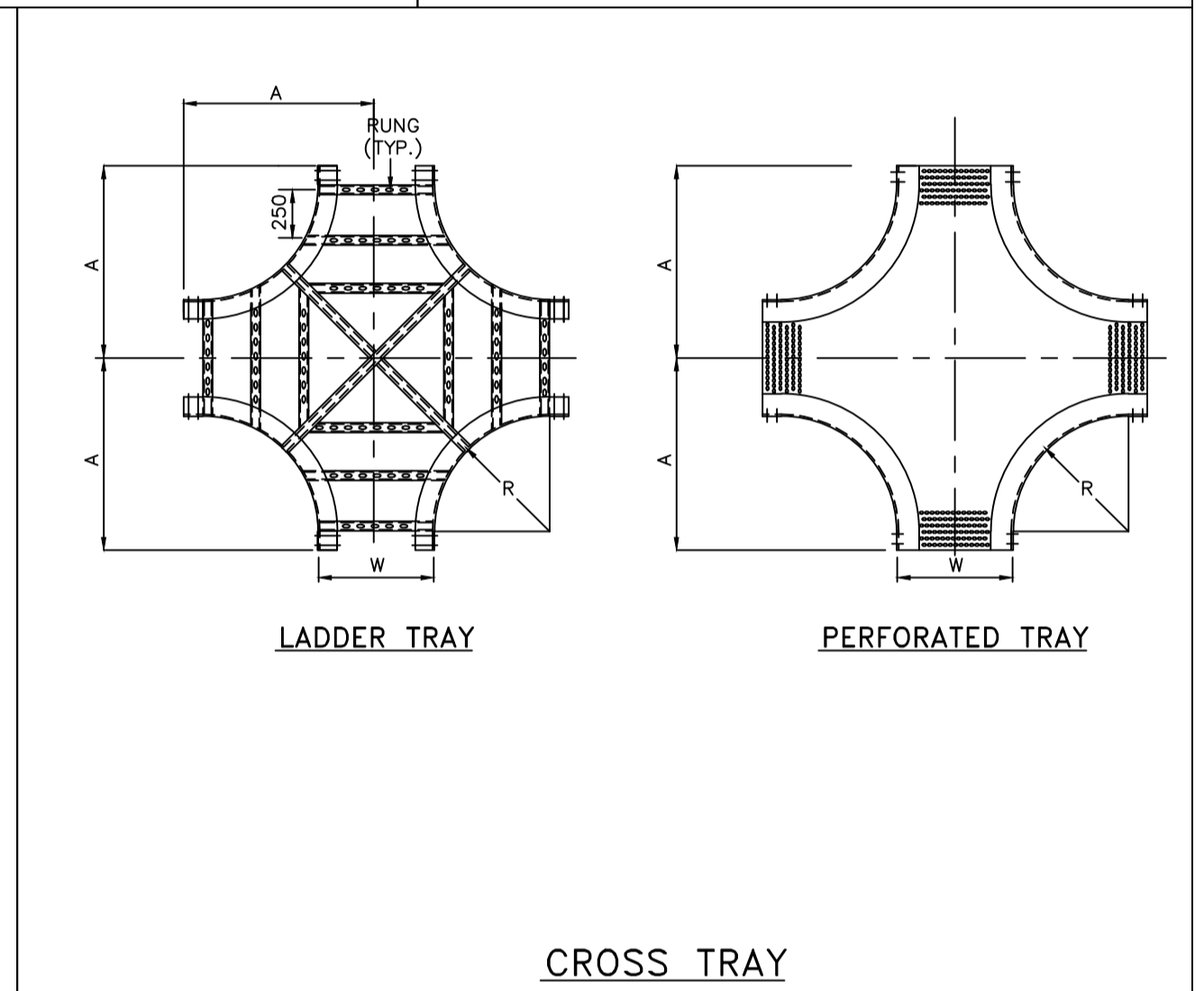
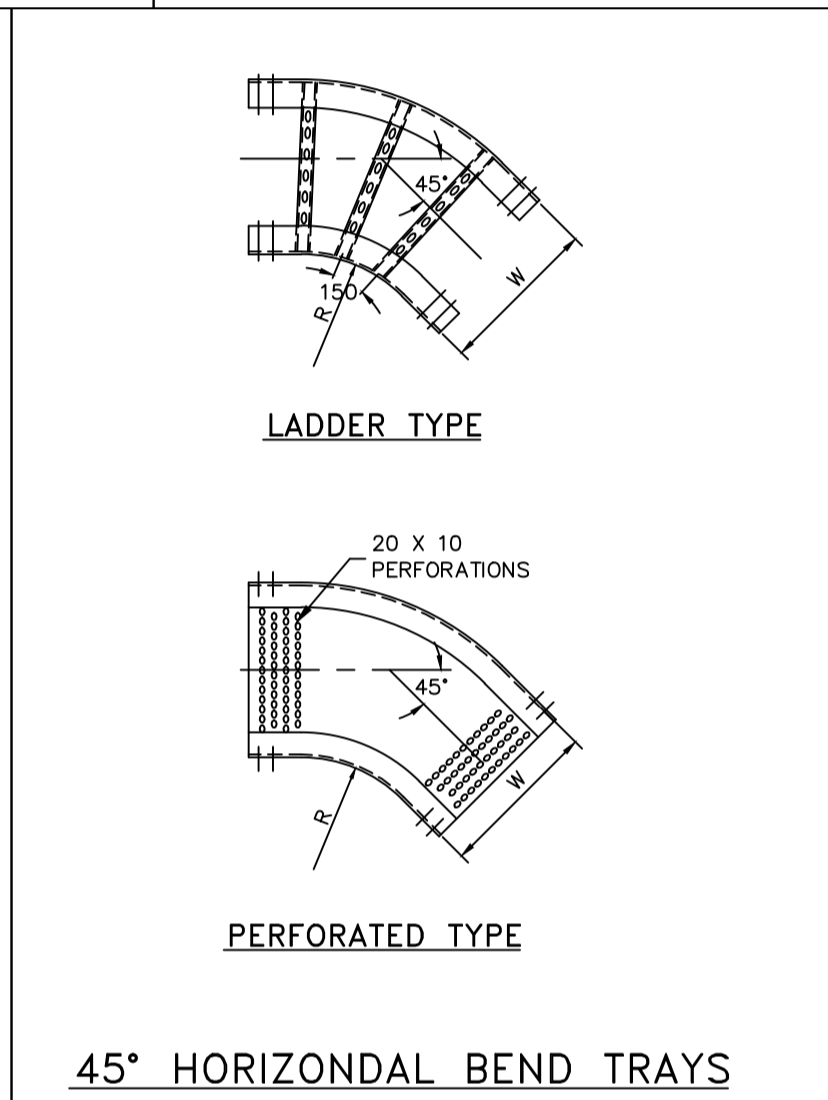
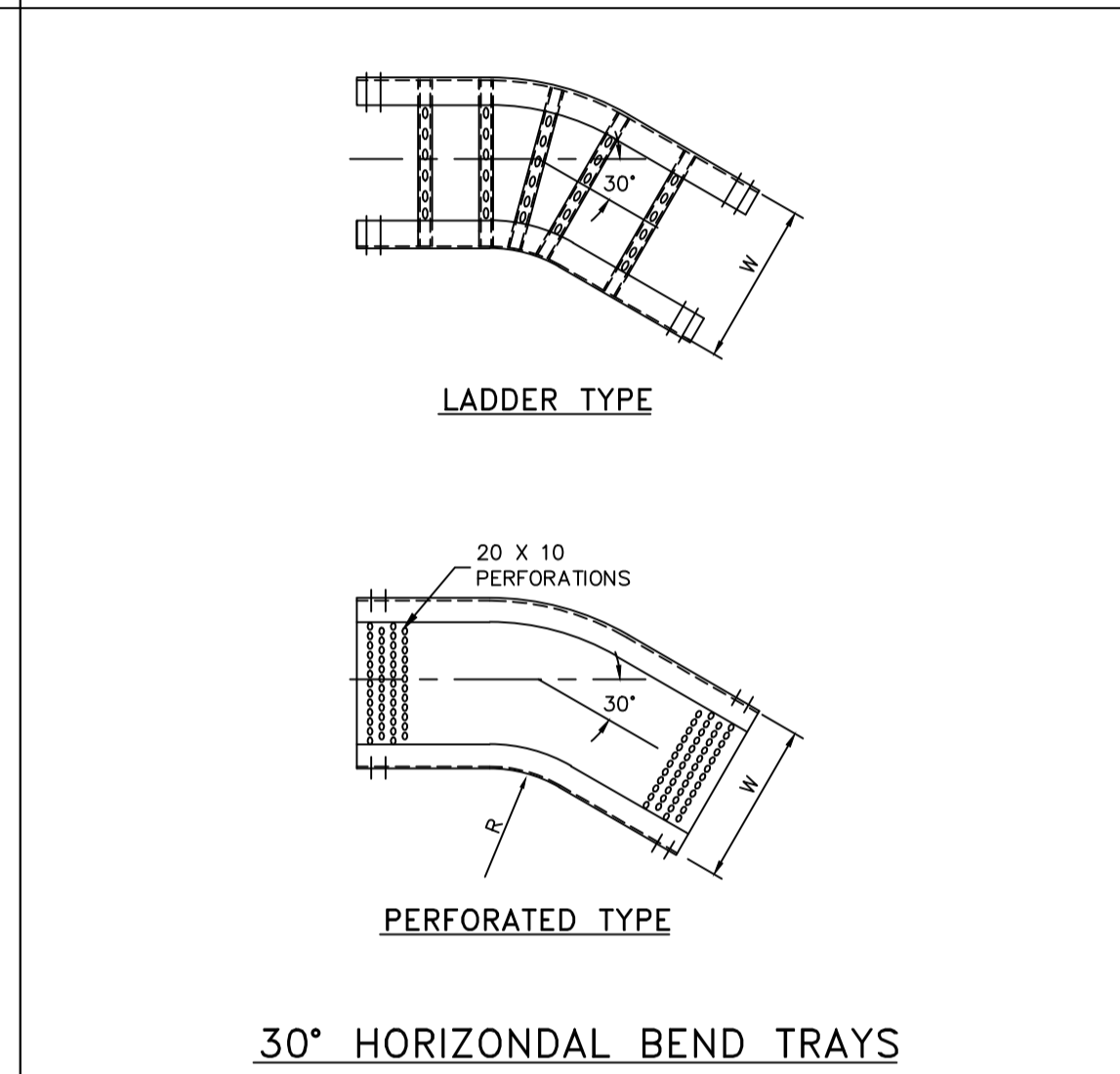
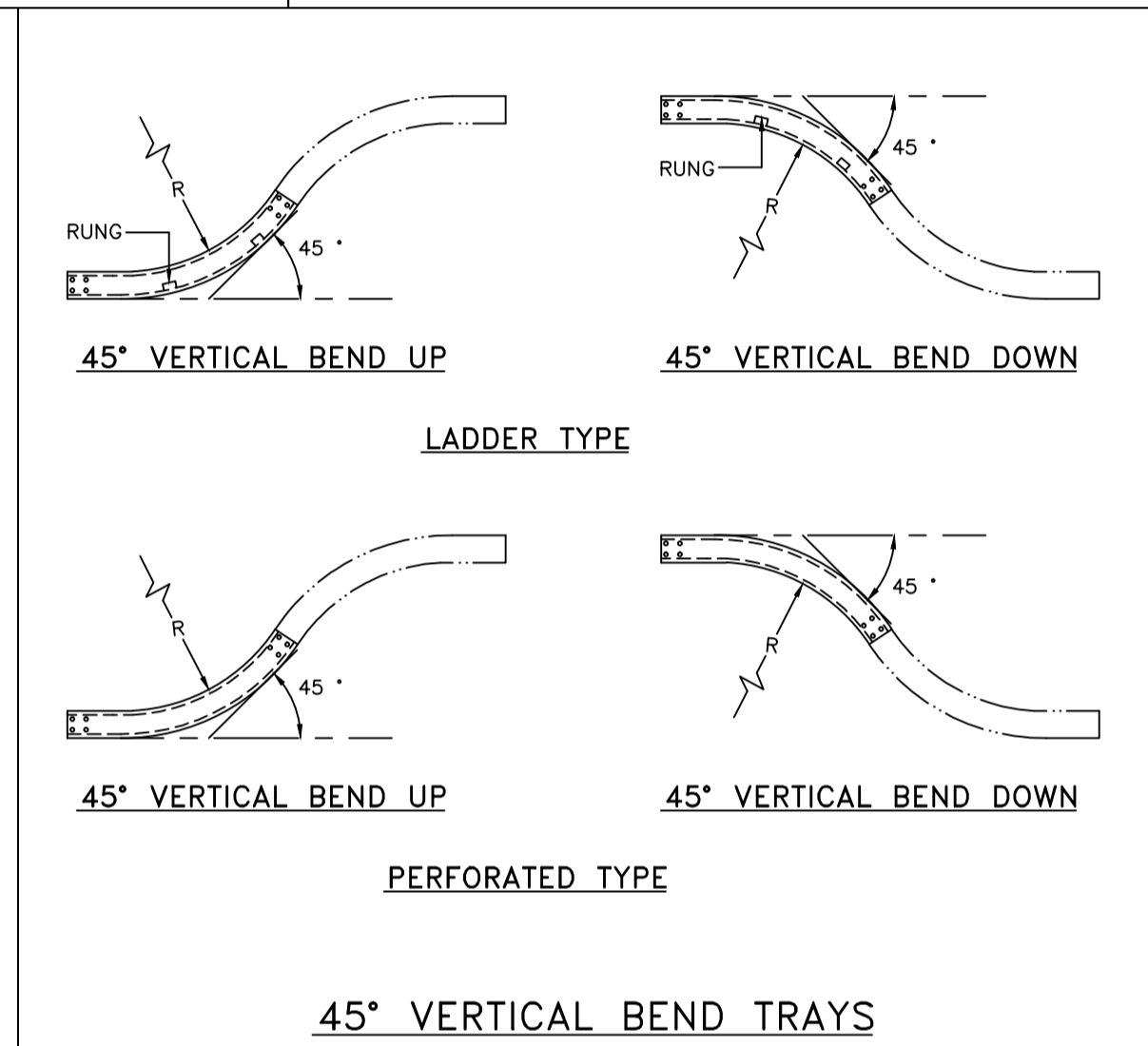
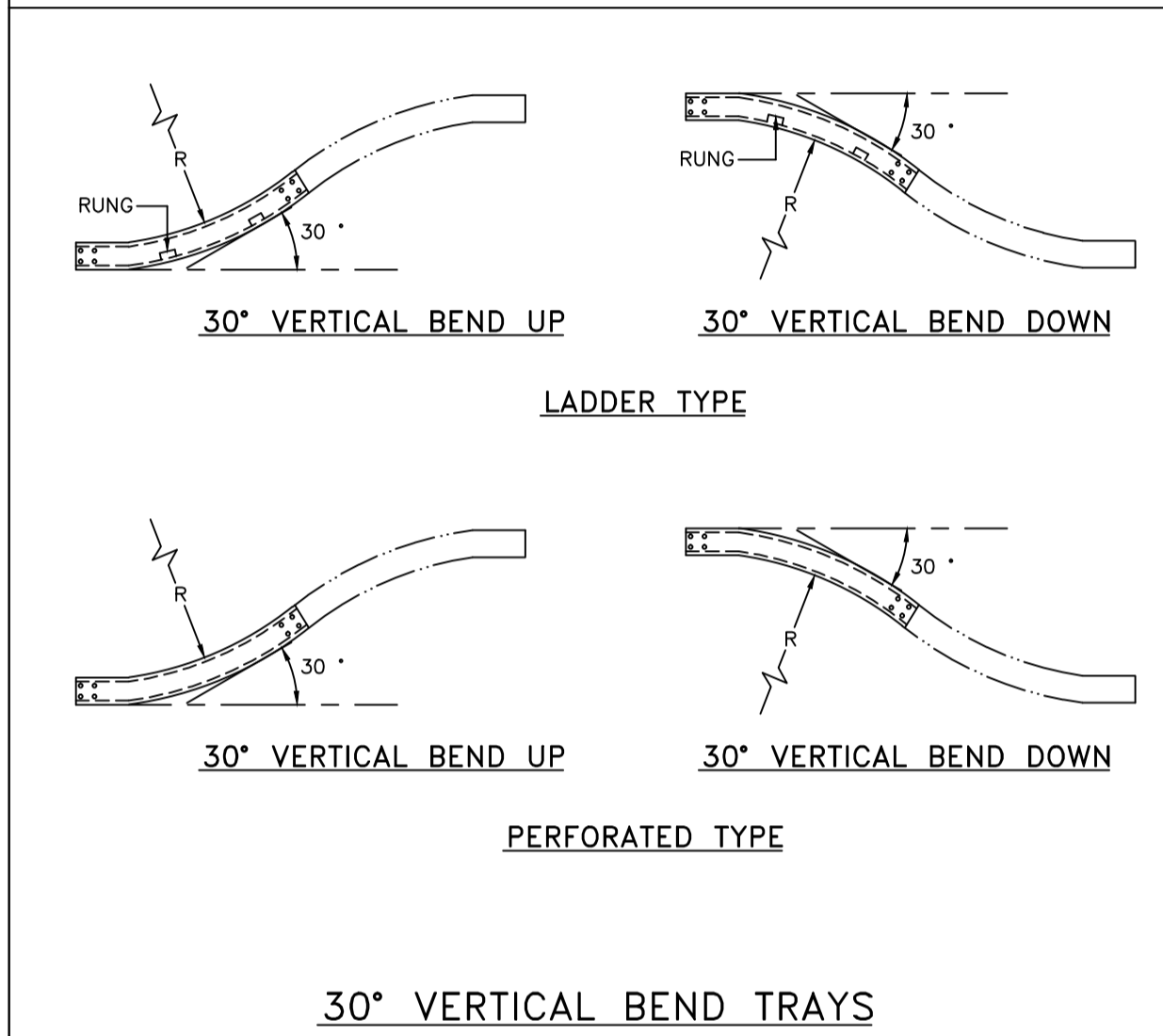
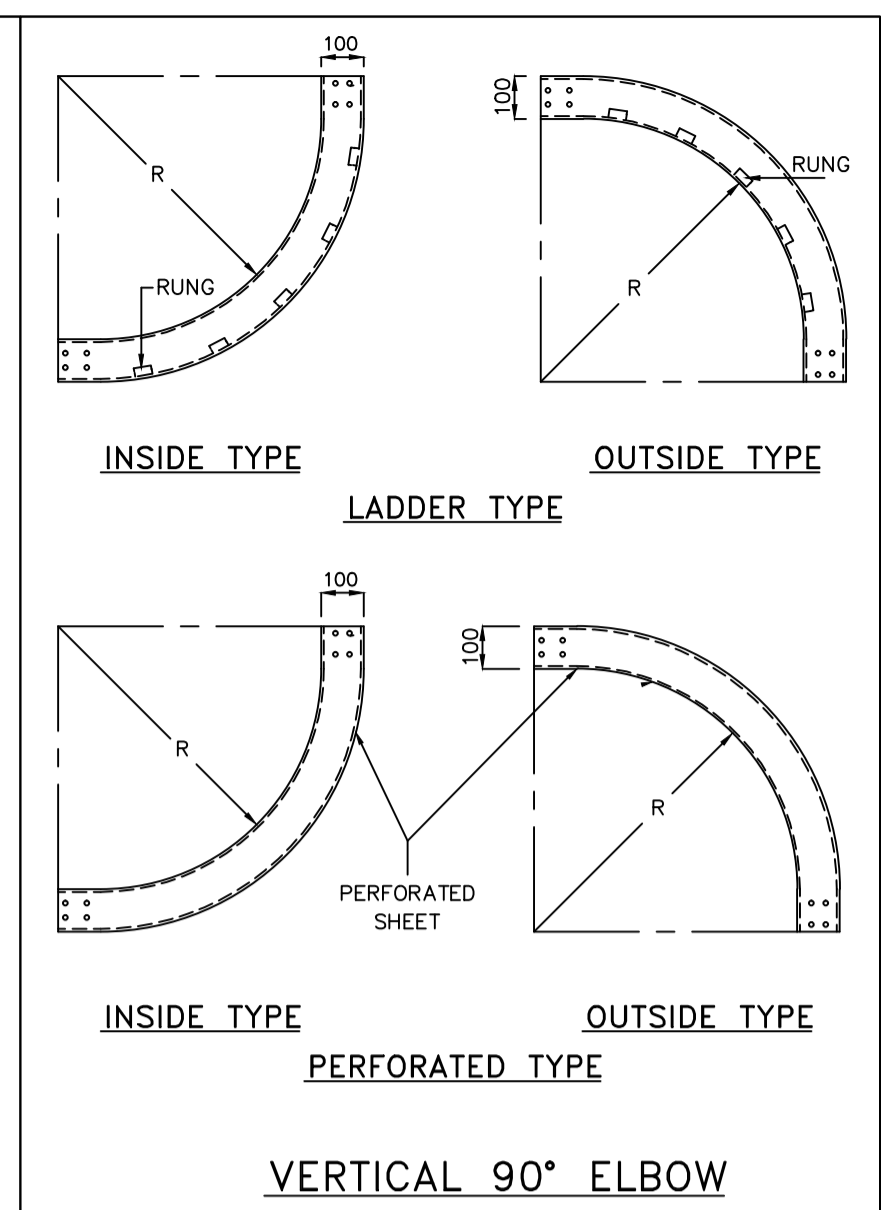
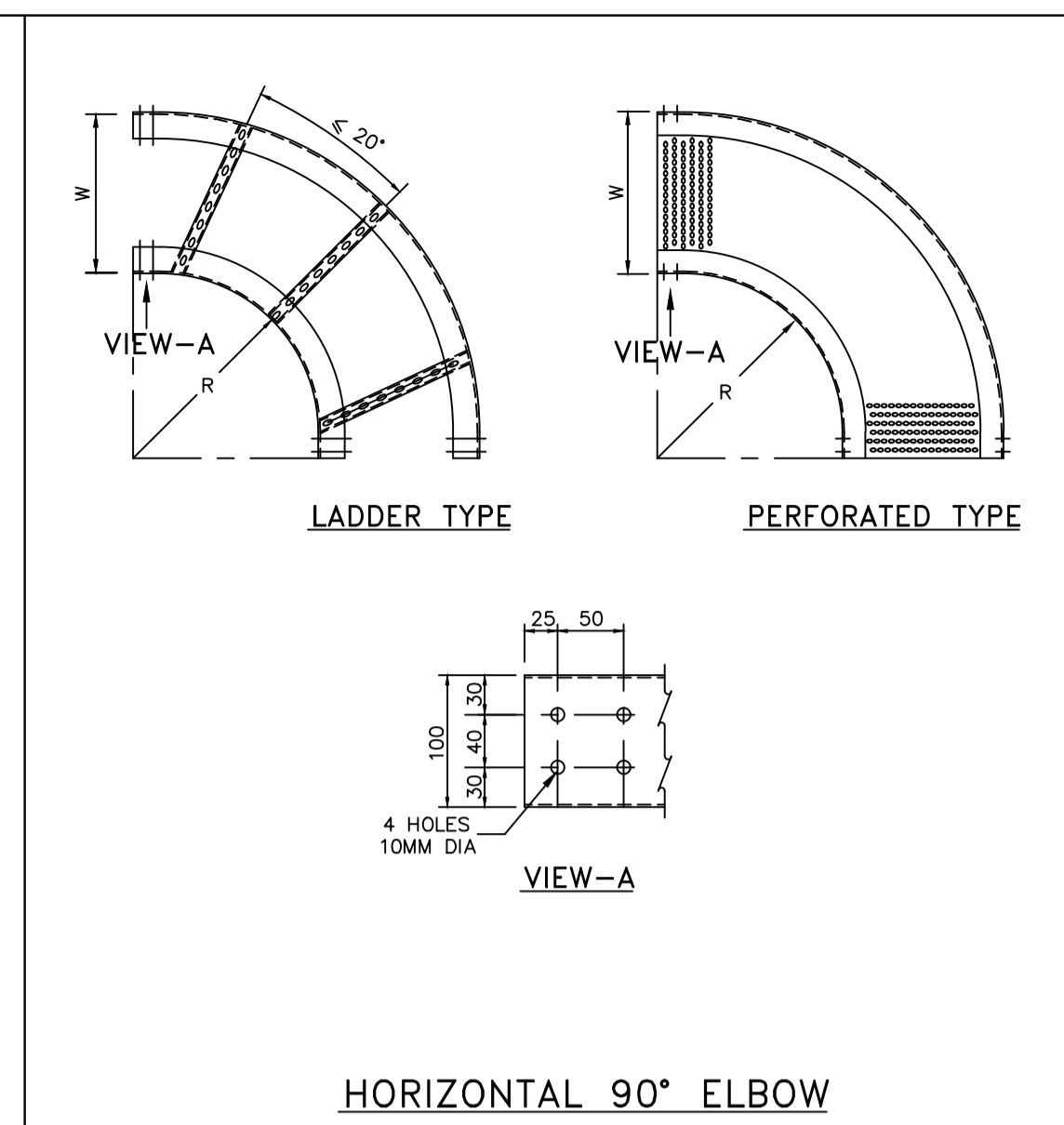
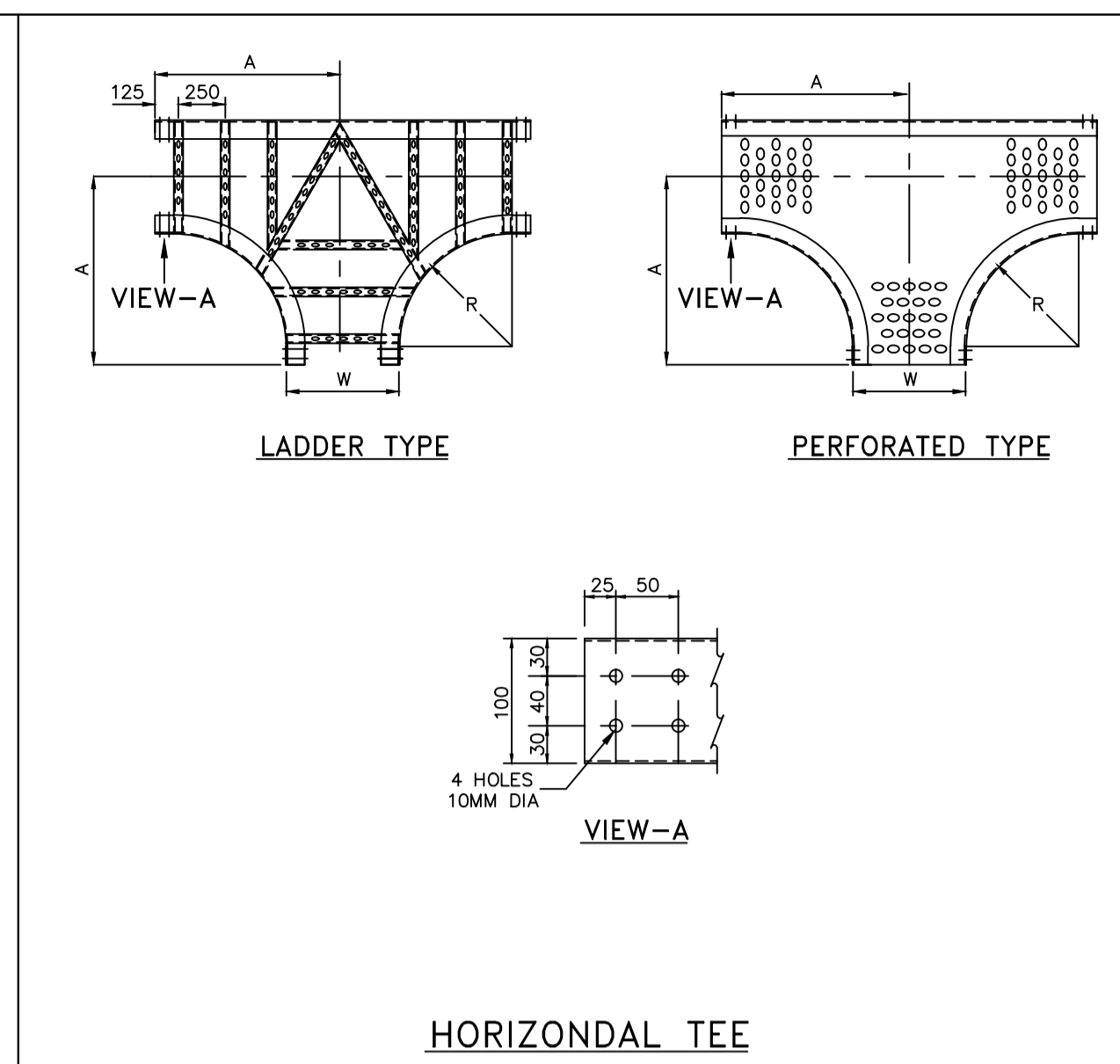
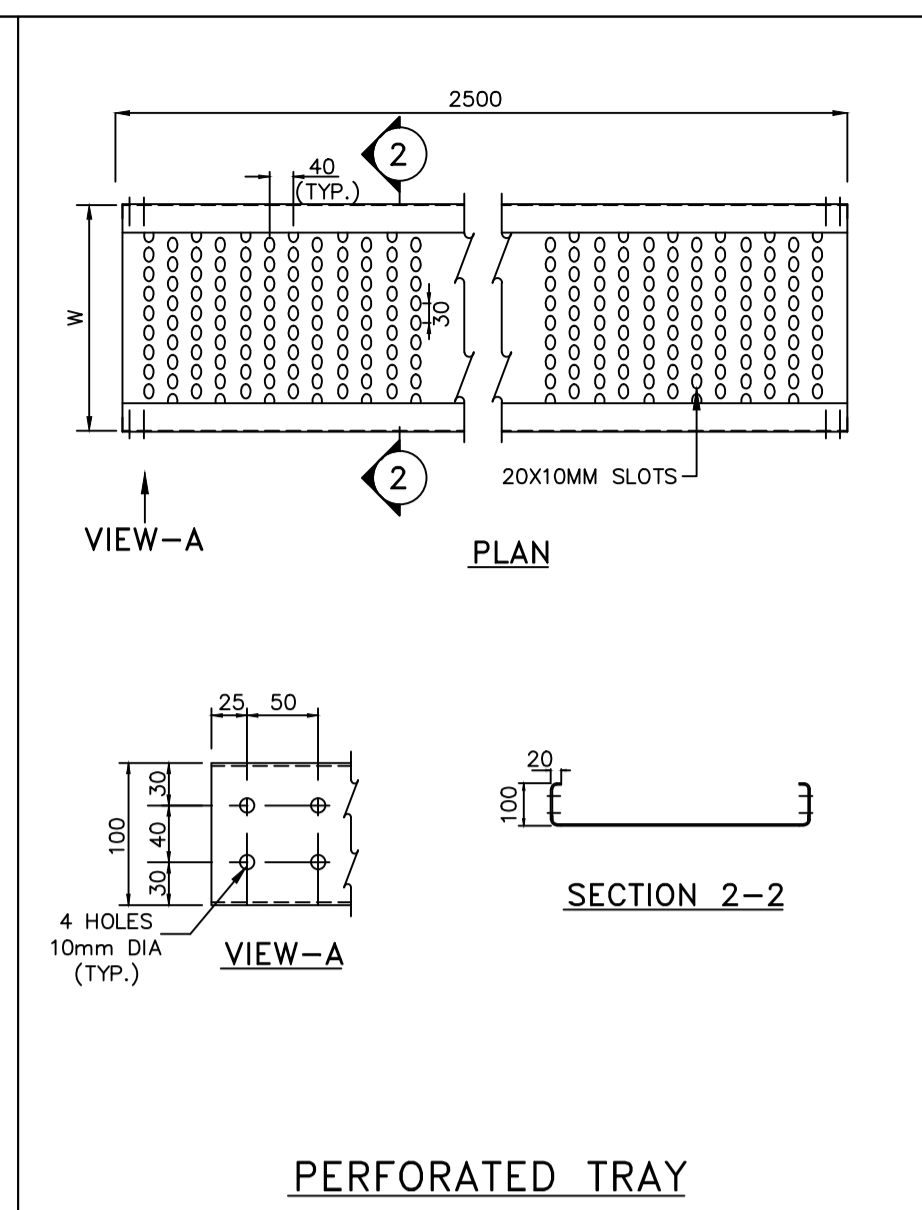
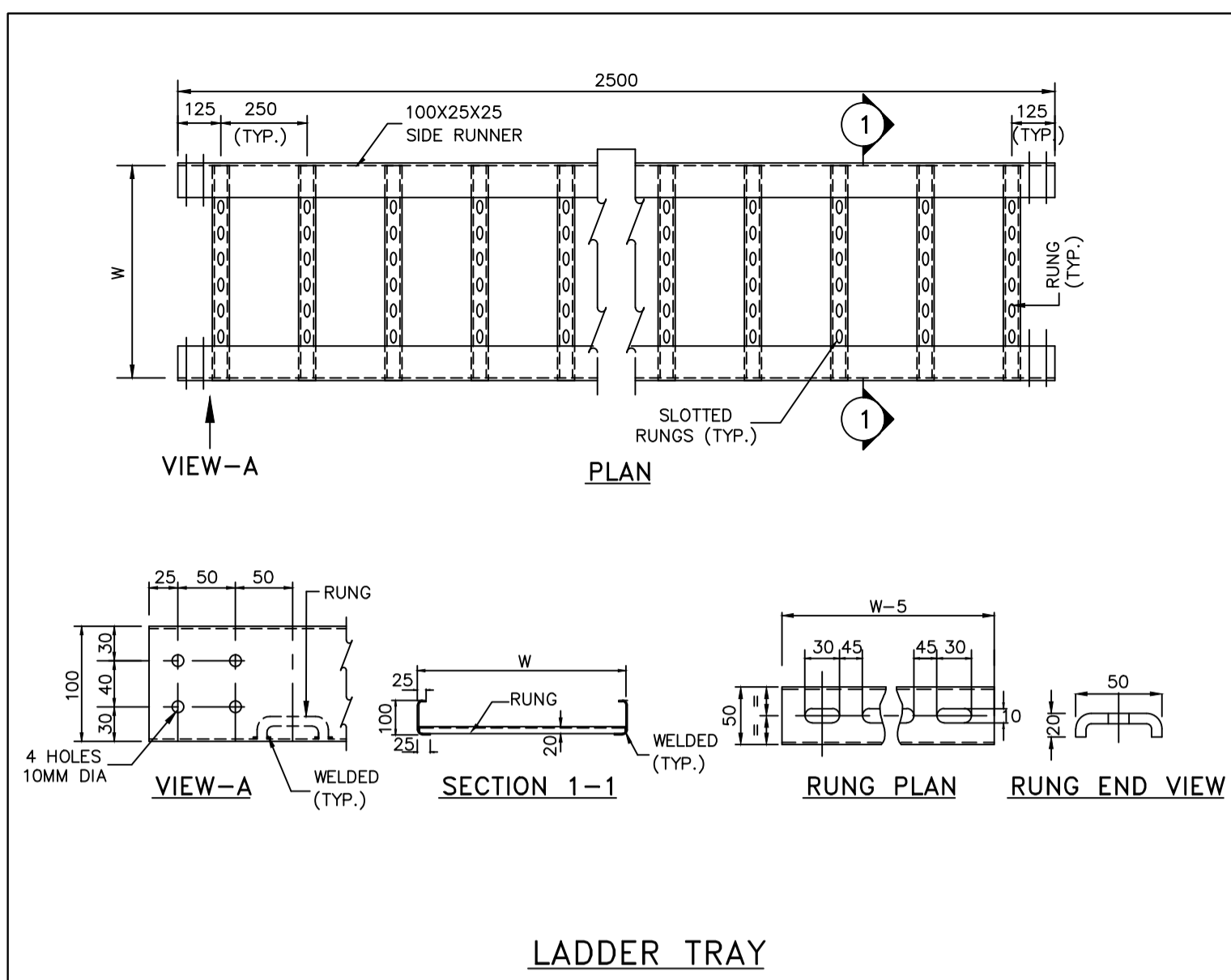
**FICHTNER**

**TOWNSHIP**  
**2 x 660MW MAITREE STPP**

	SIGNATURE	DATE
DRAWN	CRK	29.06.18
DESIGNED	MR	29.06.18
CHECKED	PVN	02.07.18
DEPT. HEAD	GS	02.07.18
PROJ. MGR.	MAP	02.07.18

**EQUIPMENT LAYOUT AT**  
**DISTRIBUTION SUBSTATION (TYPE-3)**

RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.
	TENDER	✓				
	ENGINEERING					
	CONSTRUCTION					
			DWG.NO.	<b>1114129-E-406</b>		<b>A</b>



**NOTES:-**

- ALL DIMENSIONS ARE IN MM.
- ALL TRAY CORNERS SHALL BE FREE OF SHARP EDGES & SMOOTH.
- THE DEPTH, WIDTH AND LENGTH OF TRAYS SHALL BE WITHIN A TOLERANCE OF (±) 3mm. THE THICKNESS TOLERANCE IS OF (±) 0.2mm.
- ALL NUTS, BOLTS, WASHERS ETC., SHALL BE HOT DIP GALVANISED, FOR SIZE ABOVE 12mm AND ELECTROPLATED/ZINC PASSIVATED, FOR SIZES BELOW 12mm.
- TRAYS WIDTH: 900/750/600/450/300/150MM
- TRAYS SHEET STEEL THICKNESS: 2MM.
- THICKNESS OF GALVANIZING: 460GM/SQMM.
- RADIUS (R) = 600MM FOR ≥ 450WIDTH, 300MM FOR ≤ 300MM WIDTH
- A = R+(W/2)+100MM
- CABLE TRAYS, FITTINGS AND ACCESSORIES SHALL BE HOT DIP GALVANISED.
- IN CORROSIVE AREA, CABLE TRAYS SHALL BE EPOXYPAINTED.

**SHEET STEEL THICKNESS**

01. CABLE TRAY & FITTINGS INCLUDING RUNG, SIDE RUNNER & COUPLER PLATE	} = 2 MM
02. TRAY COVER	
03. TRUNK	

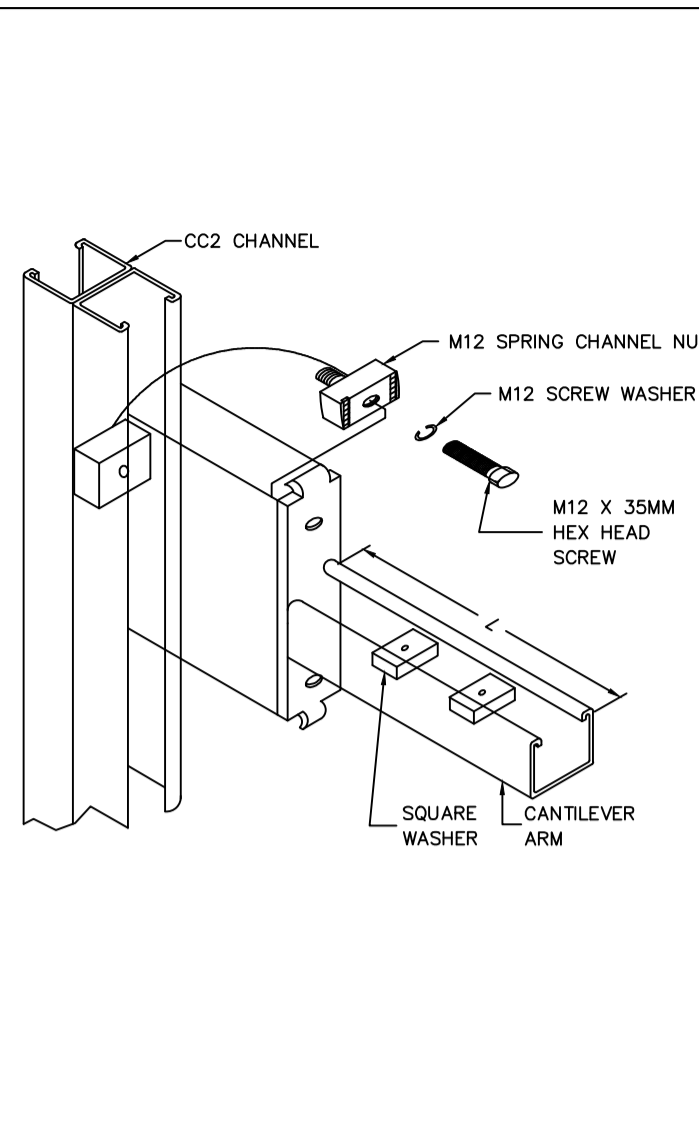
REV	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.	APPROVED BY
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--	

**TOWNSHIP**  
2 x 660MW MAITREE STPP

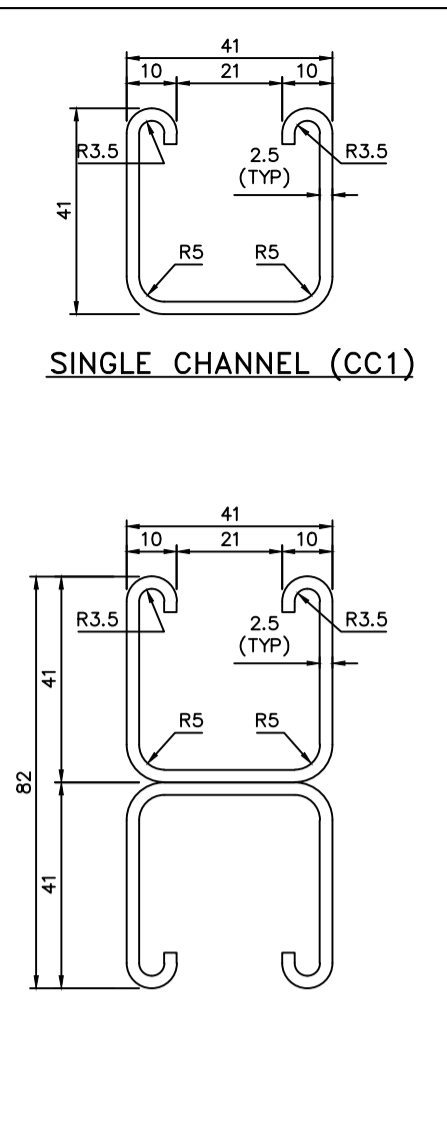
DRAWN	SIGNATURE	DATE
CRK		29.06.18
MR		29.06.18
PWN		02.07.18
GS		02.07.18
MAP		02.07.18

**TYPICAL DETAILS OF  
CABLE TRAYS & ACCESSORIES**

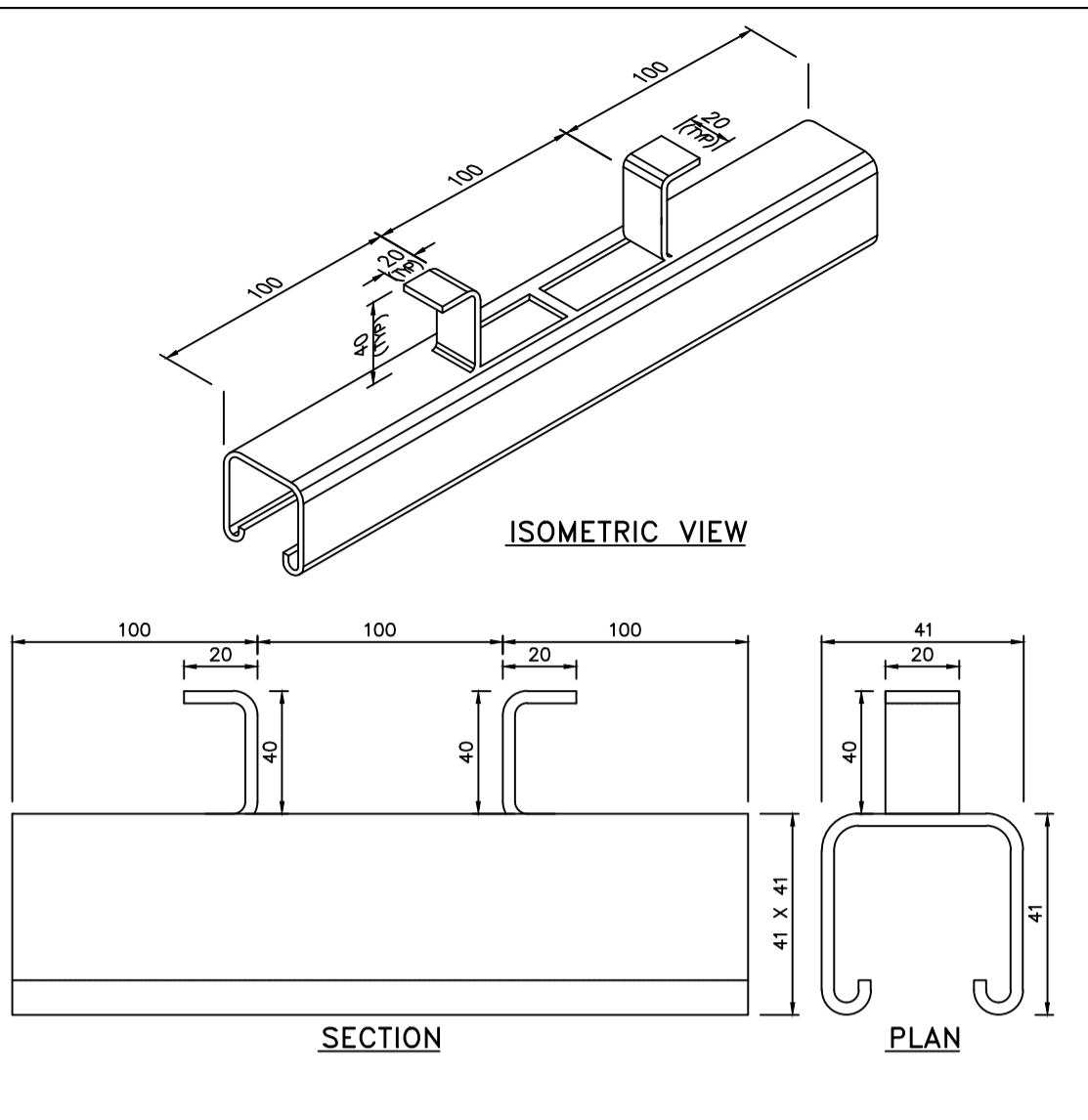
RELEASED FOR	PRELIMINARY	TENDER	ENGINEERING	CONSTRUCTION	DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.
		✓			DWG.NO.	1114129-E-501		A



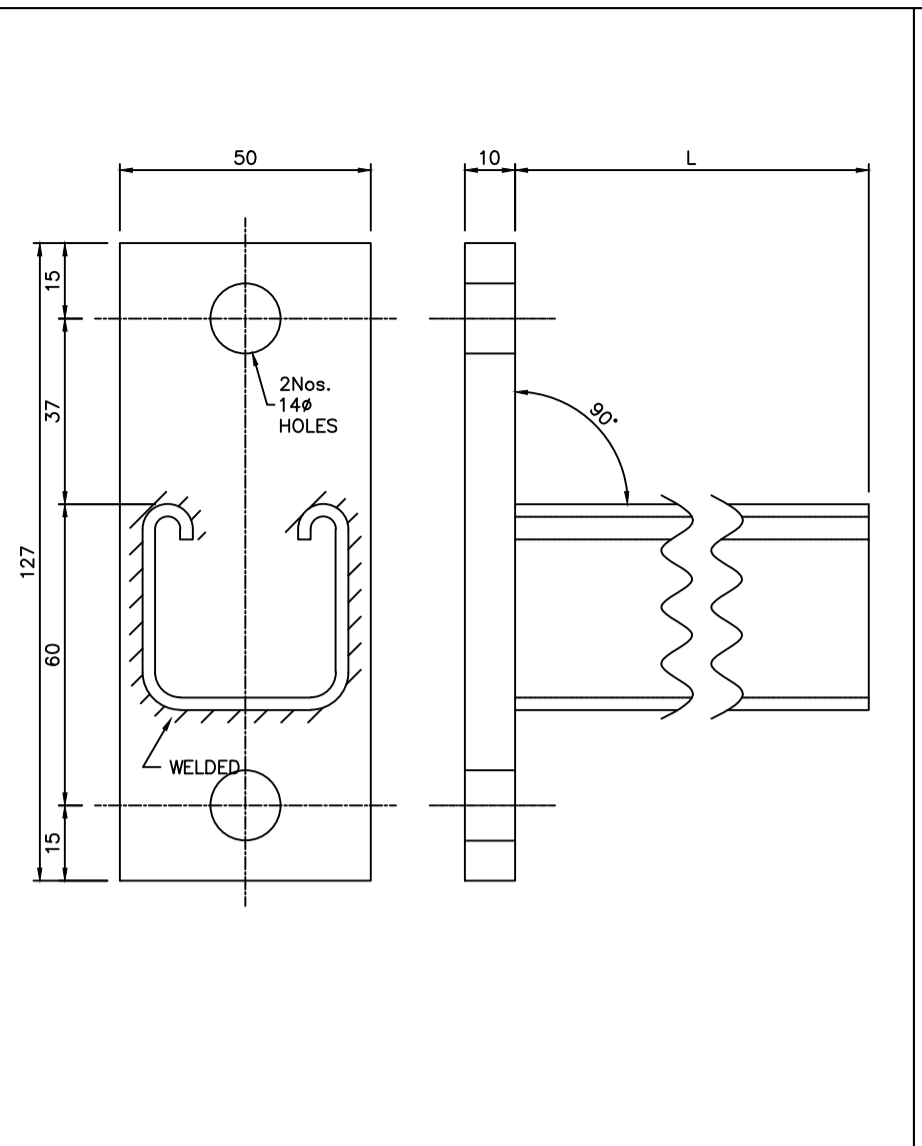
FIXING DETAIL OF CANTILEVER ARM



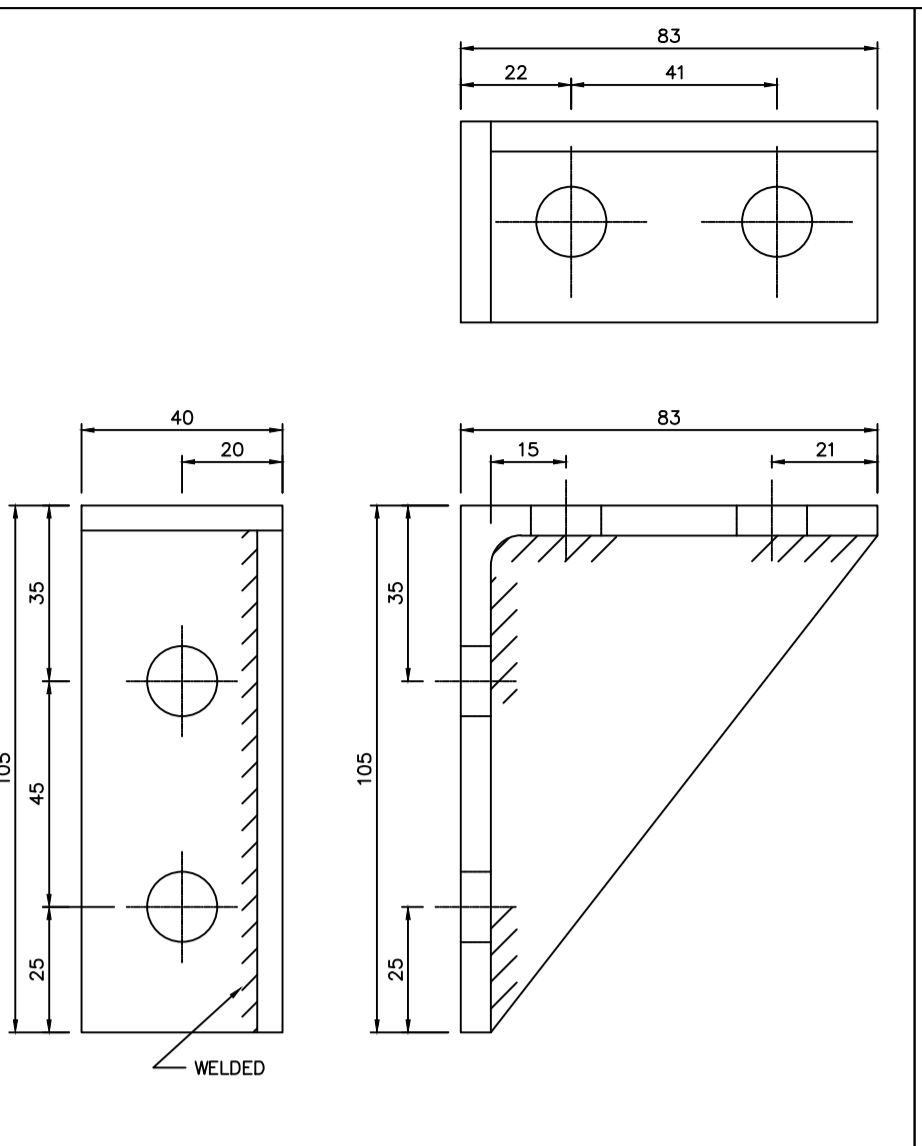
DOUBLE CHANNEL (CC2)



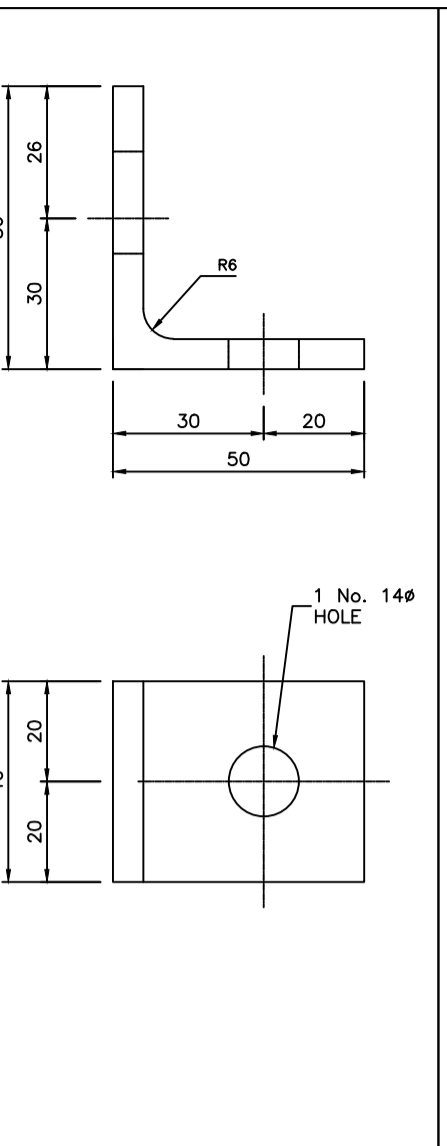
CONCRET INSERT



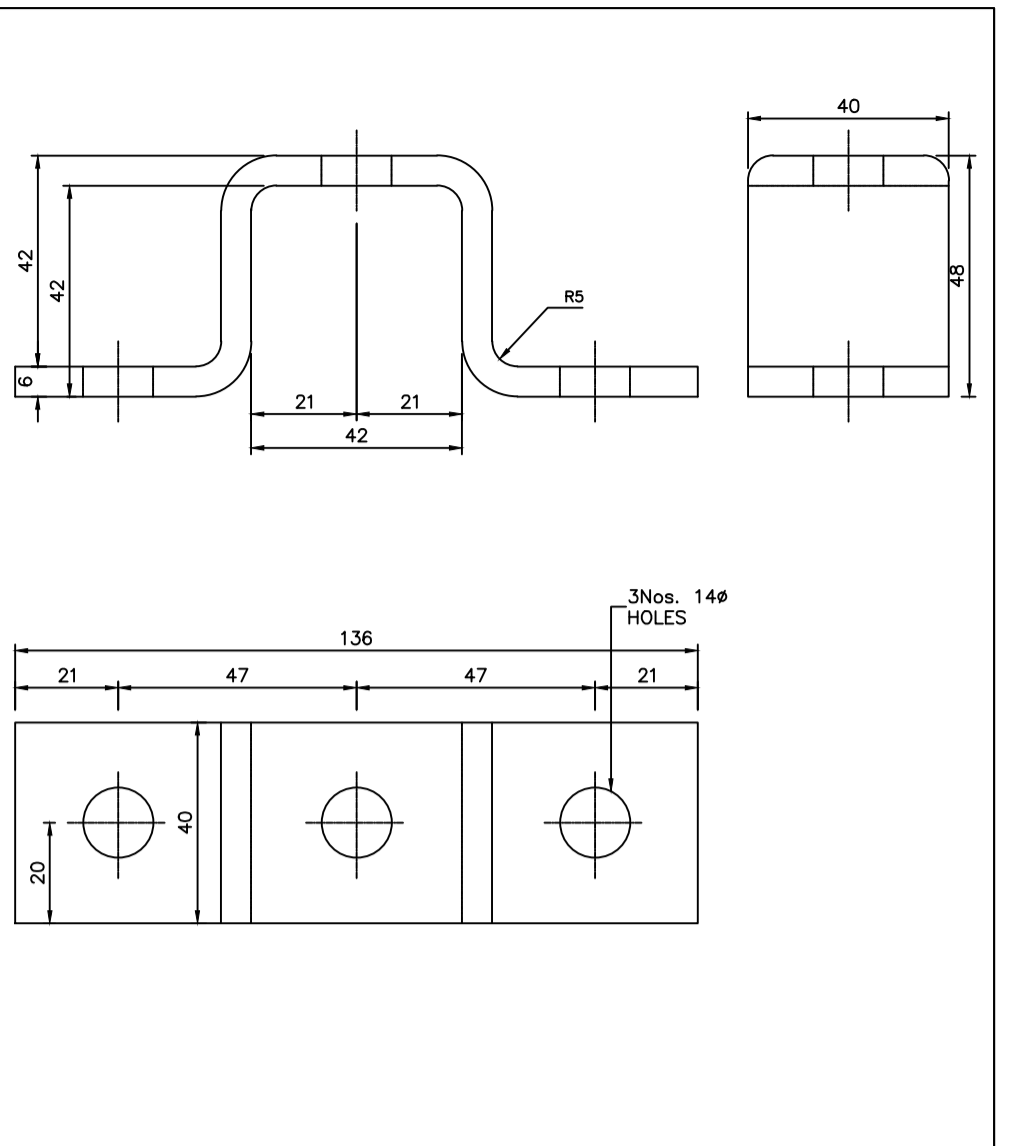
CANTILEVER ARM



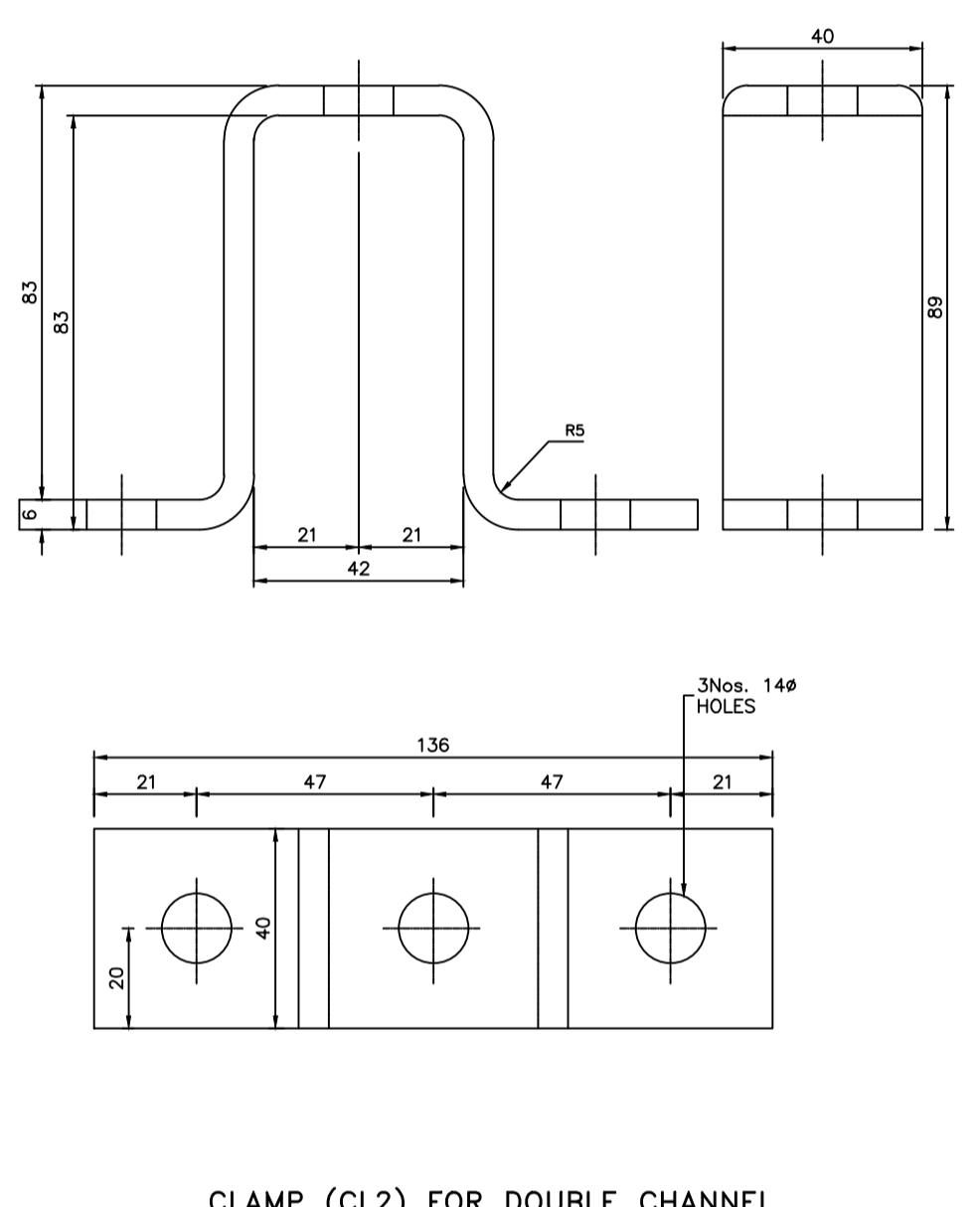
90° ANGLE FITTING (HL1) (DOUBLE BOLT)



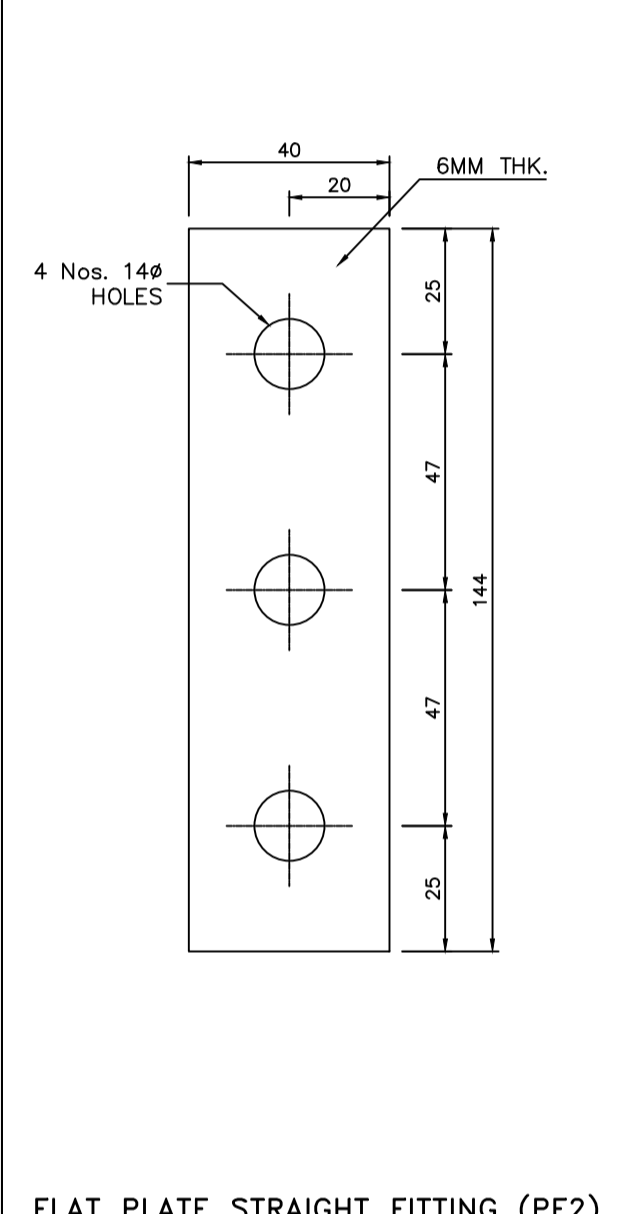
90° ANGLE FITTING (LA1)



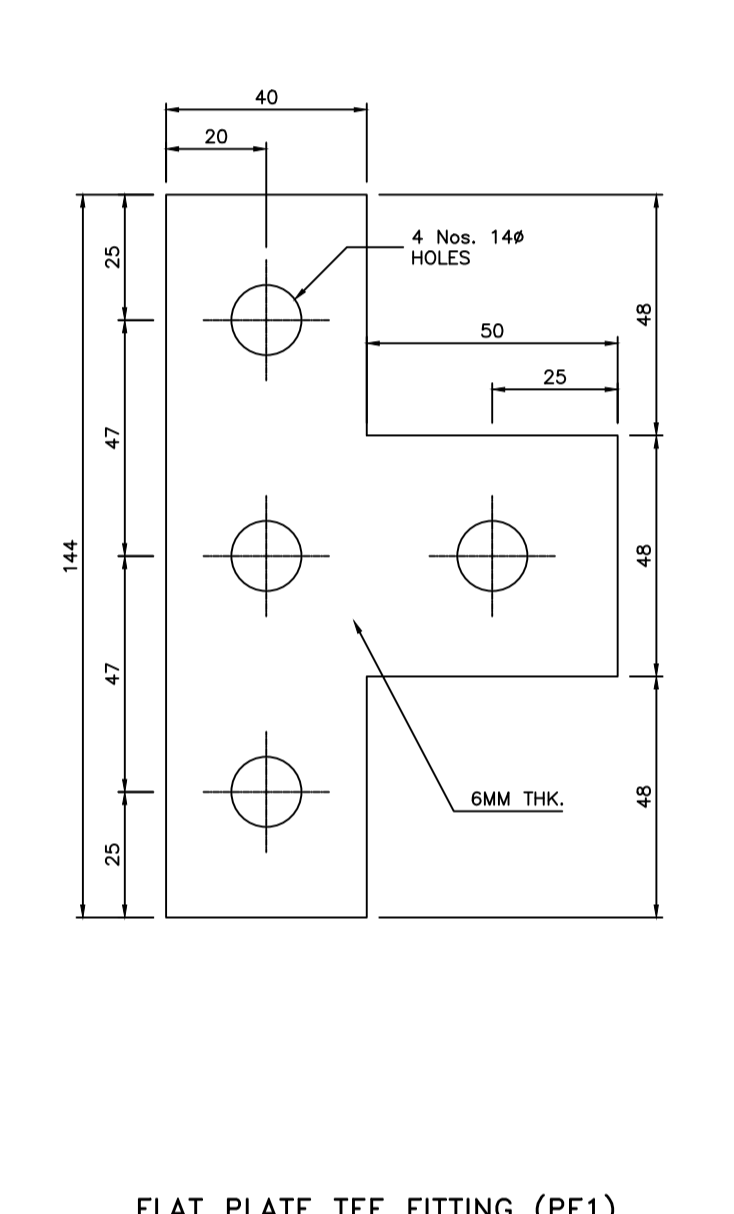
CLAMP (CL1) FOR SINGLE CHANNEL



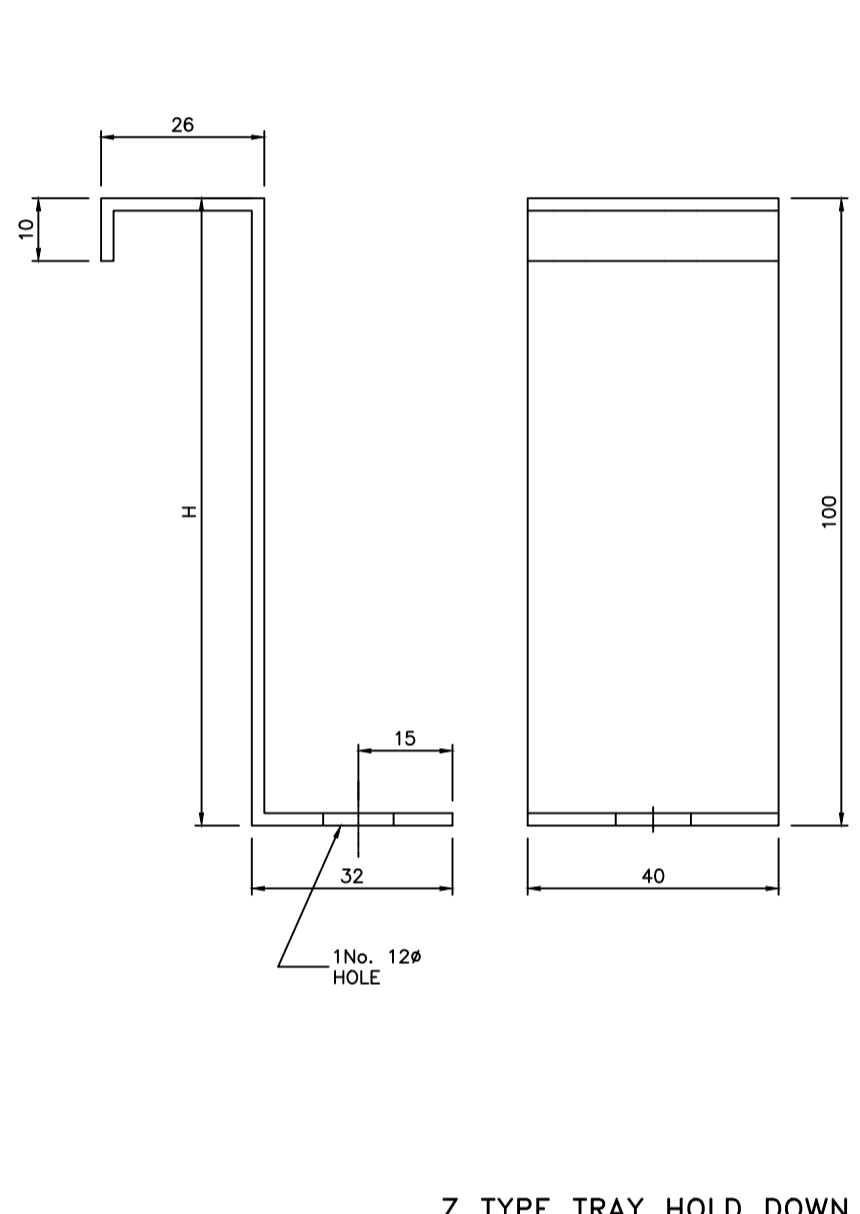
CLAMP (CL2) FOR DOUBLE CHANNEL



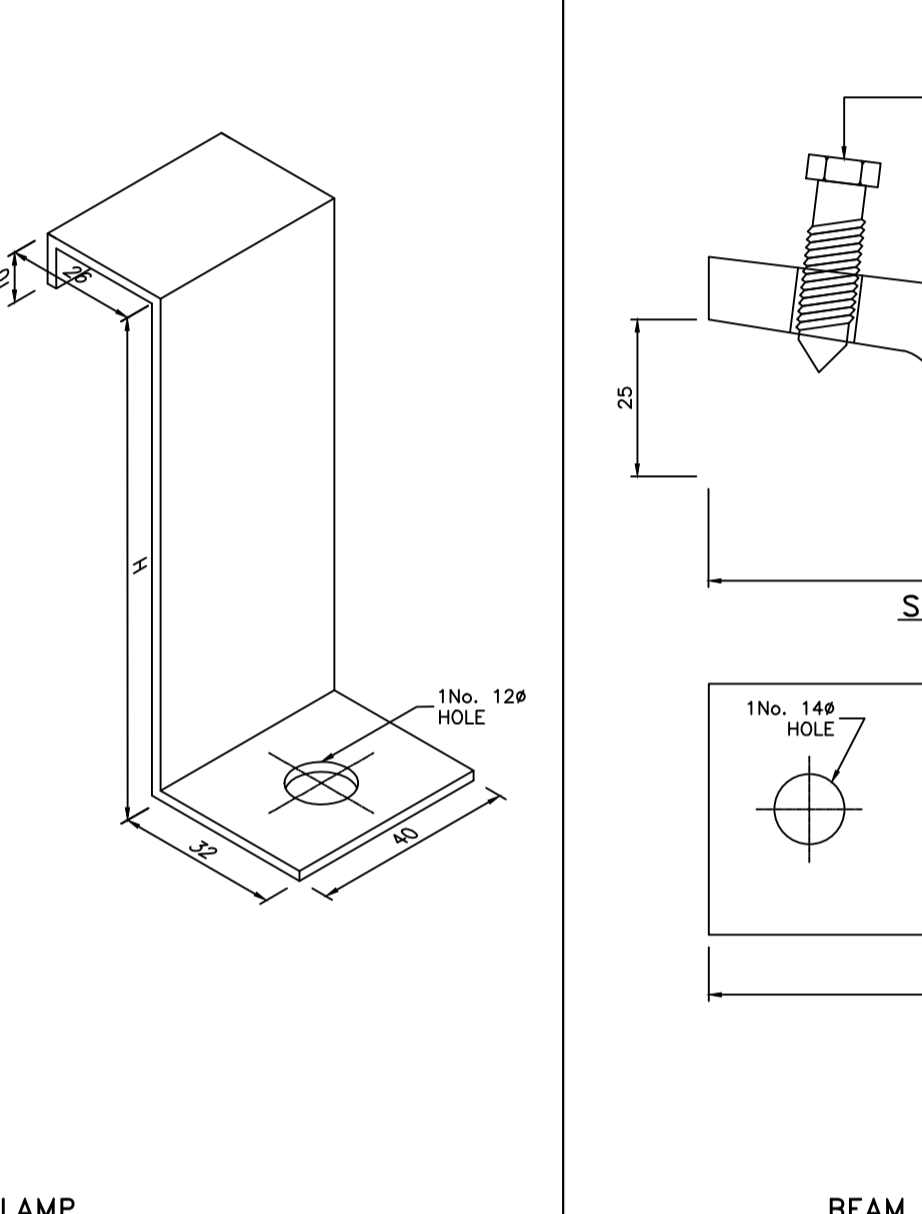
FLAT PLATE STRAIGHT FITTING (PF2)



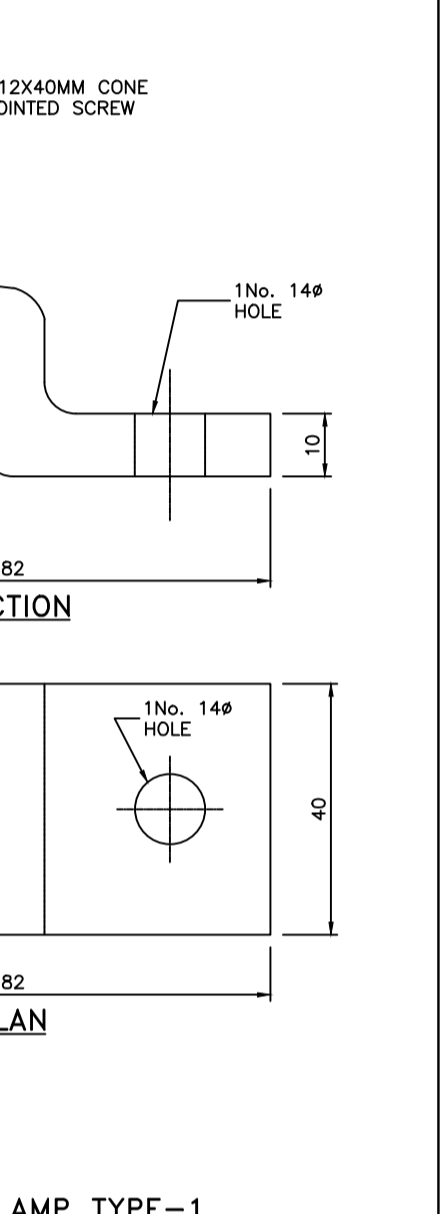
FLAT PLATE TEE FITTING (PF1)



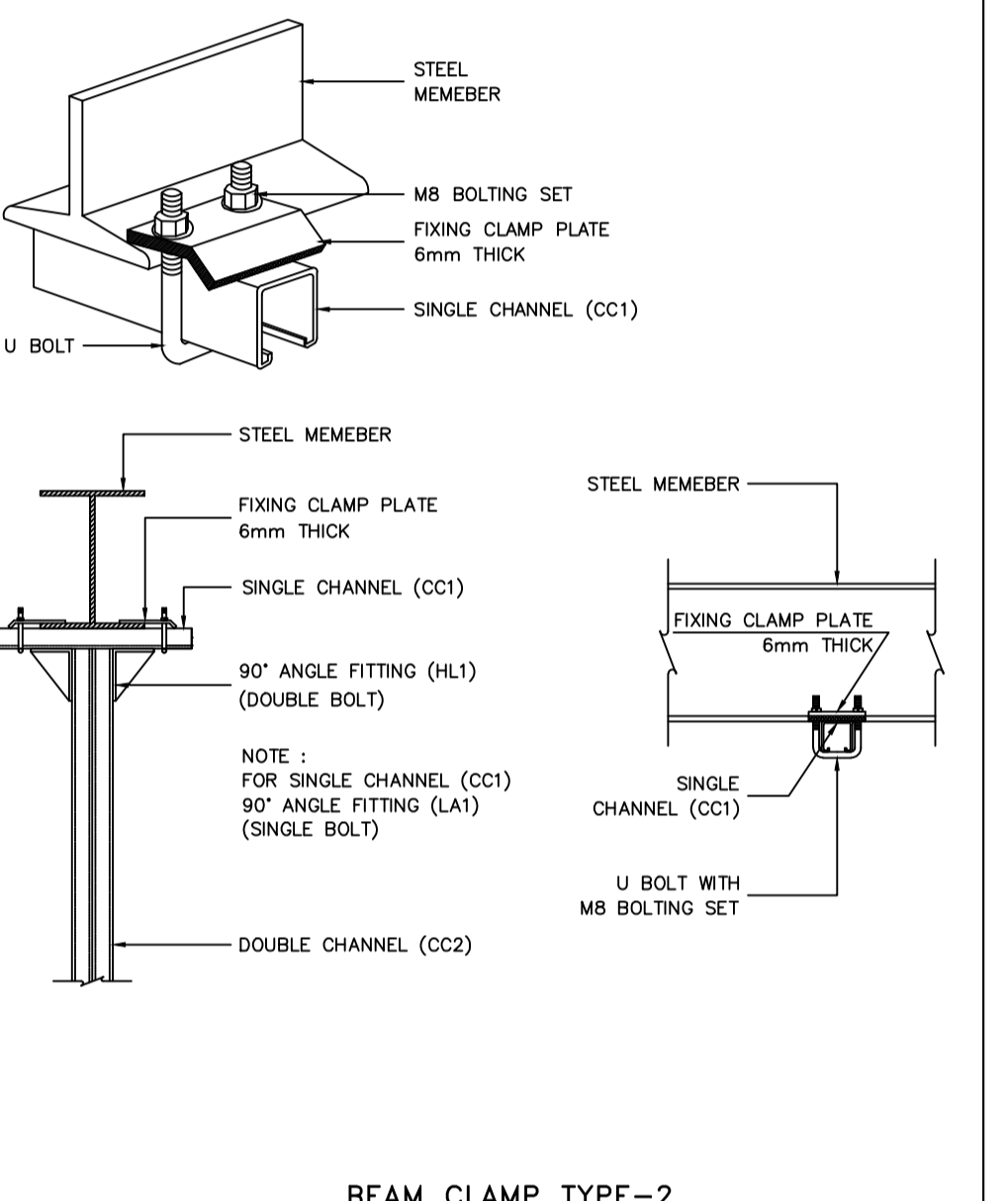
Z TYPE TRAY HOLD DOWN CLAMP



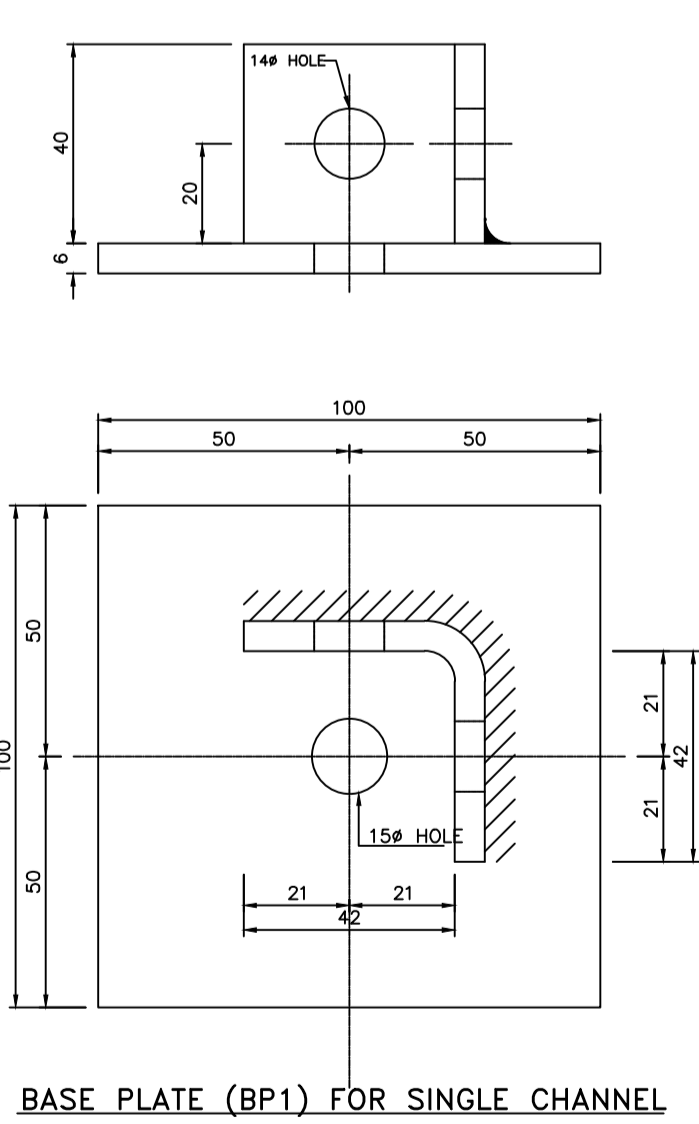
BEAM CLAMP TYPE-1



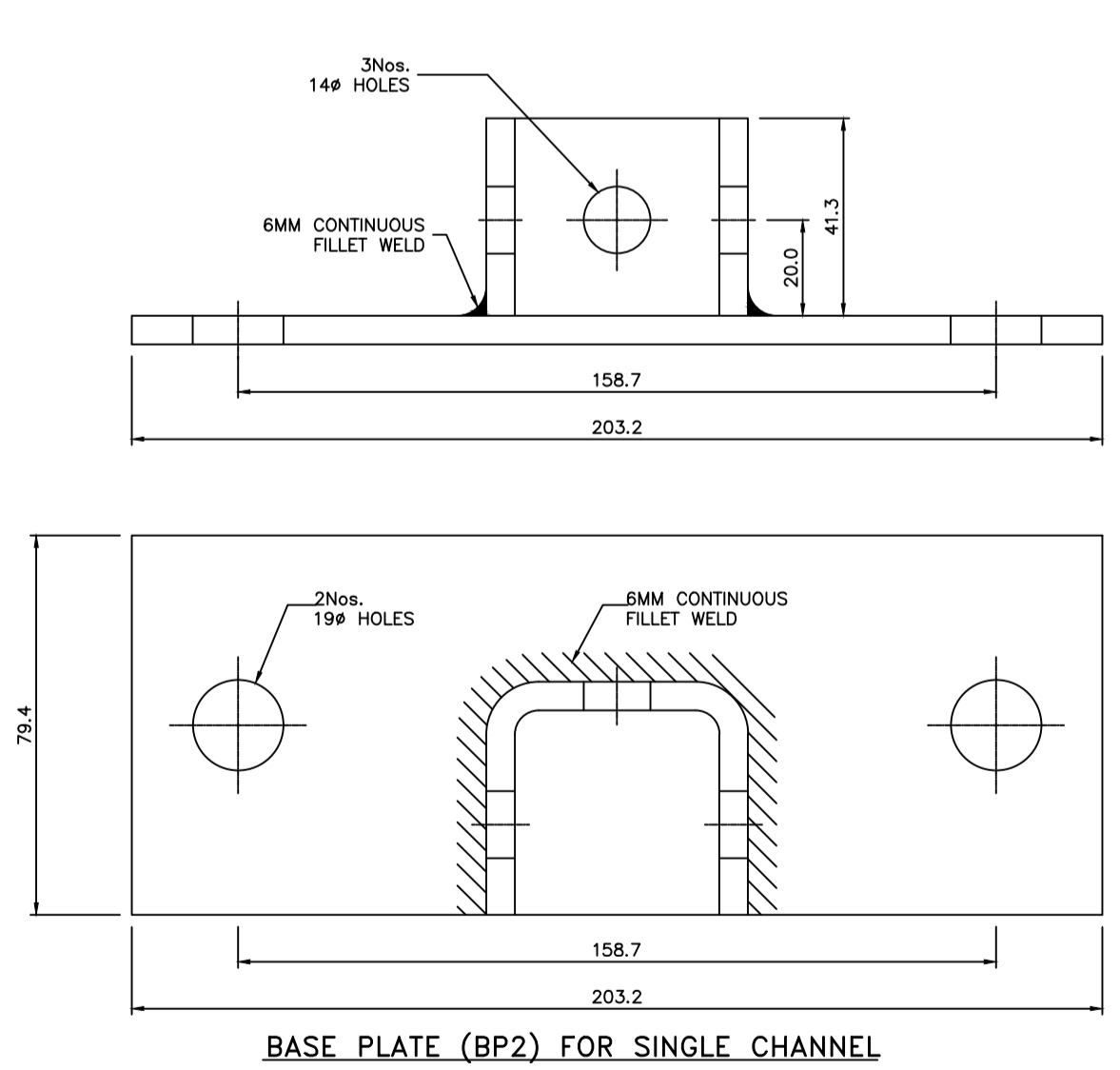
BEAM CLAMP TYPE-2



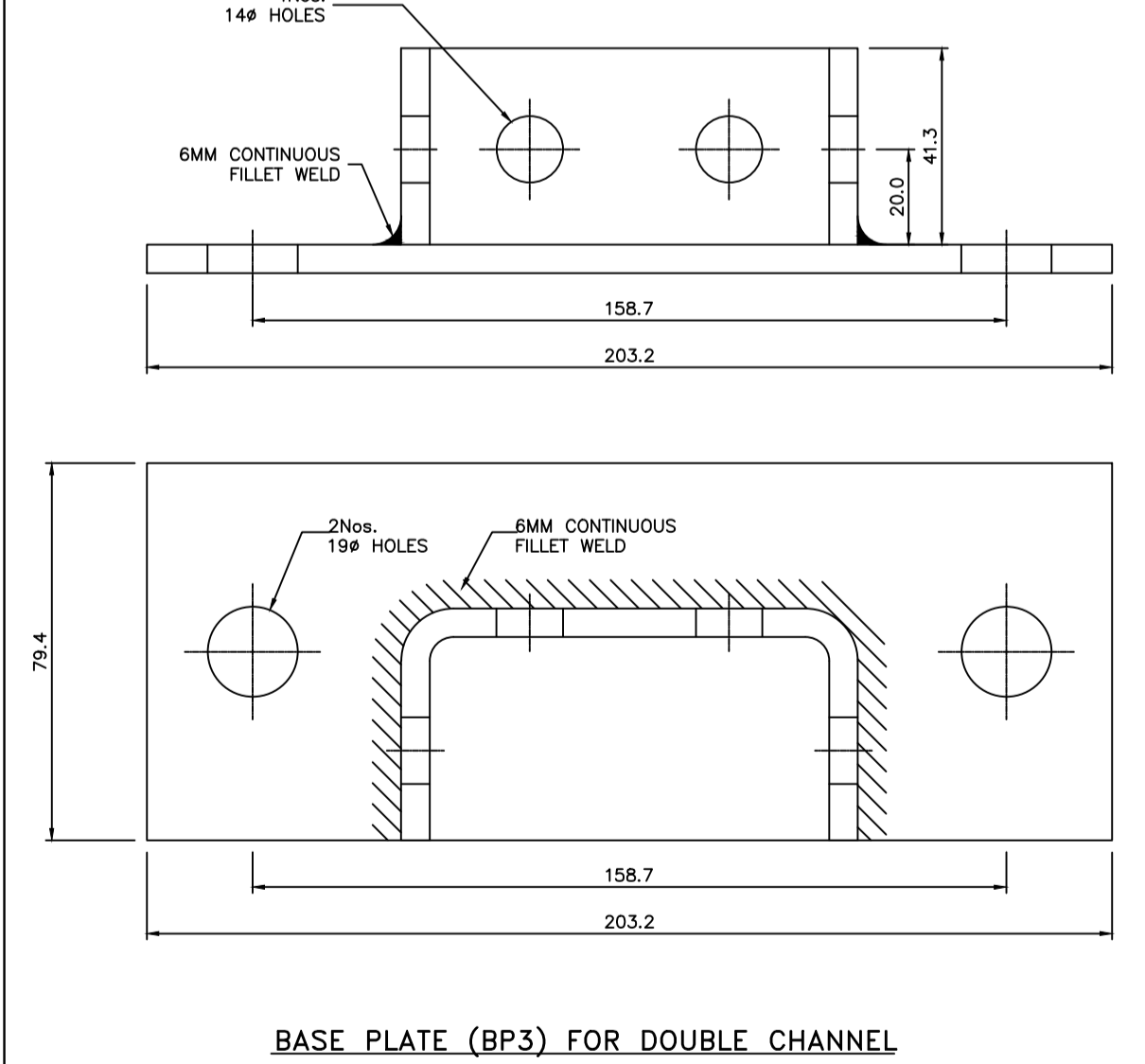
TYPICAL DETAIL OF TRAY FIXING CLAMP



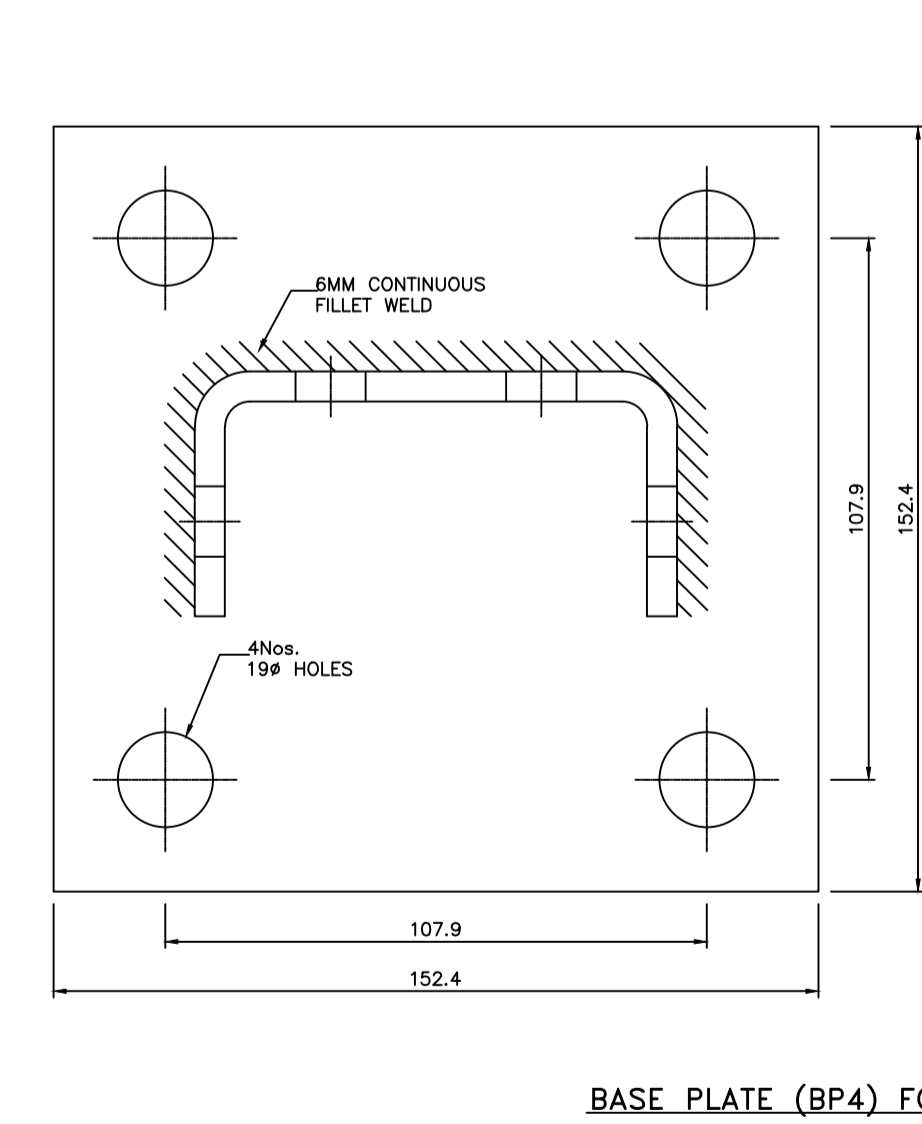
BASE PLATE (BP1) FOR SINGLE CHANNEL



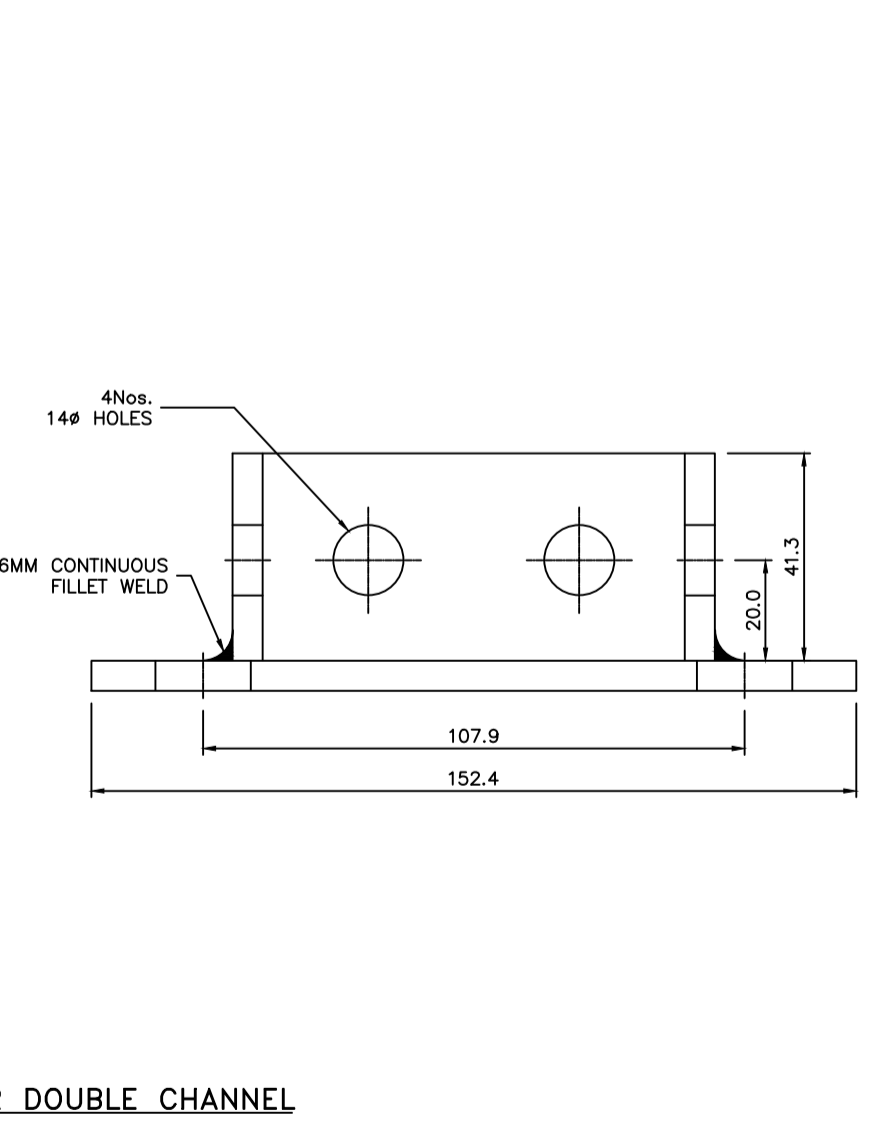
BASE PLATE (BP2) FOR SINGLE CHANNEL



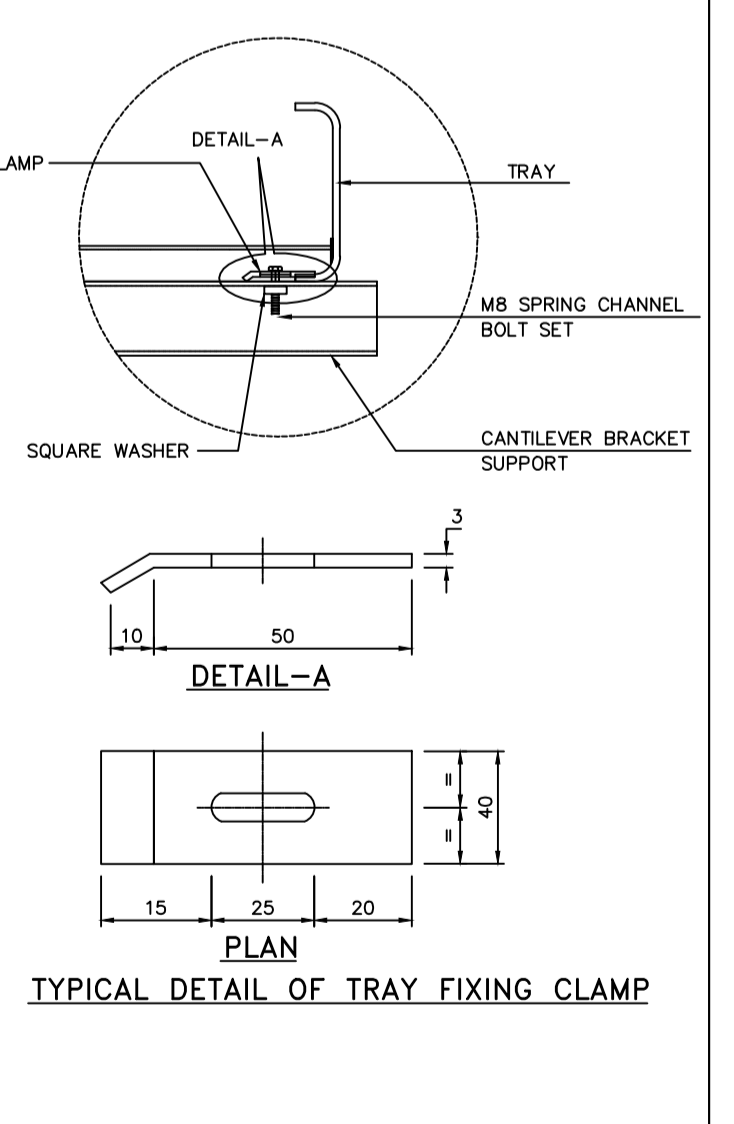
BASE PLATE (BP3) FOR DOUBLE CHANNEL



BASE PLATE (BP4) FOR DOUBLE CHANNEL



TYPICAL DETAIL OF TRAY FIXING CLAMP



TYPICAL DETAIL OF TRAY FIXING CLAMP

NOTES:-  
 01. ALL DIMENSIONS ARE IN MM.  
 02. LENGTH OF CANTILEVER ARM:-  
 L = 350 FOR 300MM TRAY  
 L = 500 FOR 450MM TRAY  
 L = 650 FOR 600MM TRAY  
 L = 800 FOR 750MM TRAY

REV	DATE	DESCRIPTION	CRK	---	---	GS	---
A	04.07.18	ISSUED FOR TENDER	CRK	---	---	GS	---
FICTHNER			TOWNSHIP 2 x 660MW MAITREE STPP				
DRAWN	CRK	DATE	TYPICAL DETAILS FOR BOLTED TYPE CABLE TRAY SUPPORT SYSTEM				
DESIGNED	HR	29.06.18					
CHECKED	PN	02.07.18					
DEPT. HEAD	GS	02.07.18					
PROJ. MGR.	MAP	02.07.18					
PRELIMINARY	DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.			
TENDER	✓	DWG. NO. 1114129-E-502	A				
ENGINEERING							
CONSTRUCTION							

**A. CABLE TRAYS SUPPORT SYSTEM**

- CABLE TRAYS SHALL BE BOLTED TO TRAY MOUNTING SUPPORTS WITH A MINIMUM CLEARANCE OF 300MM BETWEEN CABLE TRAY TIERS / AS SHOWN IN THE DRAWINGS.
- CABLE TRAYS SHALL BE SUPPORTED AT AN INTERVAL OF 2000MM FOR INDOOR HORIZONTAL RUNS 1500MM FOR OUTDOOR HORIZONTAL RUNS AND 1000MM FOR VERTICAL CABLE RISERS/SHAFTS.
- CABLE TRAY SUPPORT MEMBERS WHICH ARE SITE FABRICATED SHALL BE PAINTED WITH PRIMARY COAT AND FINAL COAT OF RAL 9006 SHADE.
- FOR SUPPORTING CABLE TRAYS, EMBEDDED STEEL INSERTS IF PROVIDED ON WALL/FLOOR/CEILING SURFACES SHALL BE UTILISED. IN CASE OF NON-AVAILABILITY OF EMBEDDED STEEL INSERTS IN CASE OF NON-AVAILABILITY OF EMBEDDED STEEL INSERTS THE CONTRACTOR SHALL HAVE TO SECURE THE SUPPORTS ON WALL/FLOOR/CEILING SURFACES BY PROVIDING SUITABLE ANCHORING SYSTEM/STEEL INSERTS HAVING ADEQUATE LOAD BEARING CAPABILITY.

**B. CABLE INSTALLATION**

- CABLE INSTALLATION SHALL BE CARRIED OUT AS PER APPLICABLE STANDARDS.
- POWER CABLE AND CONTROL CABLE SHALL GENERALLY BE TAKEN THROUGH SEPARATE TRAYS.
- THE ALLOCATION OF CABLES IN TRAYS SHALL BE IN THE FOLLOWING ORDER FROM THE TOP MOST TIER:
  - HT POWER CABLE (HT)
  - LT POWER CABLE (LV)
  - CONTROL CABLE
  - SIGNAL CABLE
- MULTICORE HT POWER CABLES SHALL BE LAID IN SINGLE LAYER ONLY IN TOUCHING FORMATION. HT/LT SINGLE CORE CABLES TO BE LAID IN TREFOIL FORMATION WITH A CLEAR SPACING EQUAL TO DIAMETER OF THE TREFOILS.
- LV POWER CABLES OF ABOVE 25 SQ.MM SHALL BE LAID IN SINGLE LAYER ONLY. SMALLER SIZE CABLES CAN BE LAID IN 2 LAYERS.
- CONTROL AND INSTRUMENTATION CABLES MAY BE LAID UP TO A MAXIMUM OF THREE LAYERS IN EACH TRAY.
- ATLEAST 250 MM SPACING SHALL BE MAINTAINED BETWEEN TOP OF THE TRAYS AND BEAMS/PIPING ETC.
- POWER AND CONTROL CABLES SHALL BE SECURELY FIXED TO TRAYS/SUPPORTS WITH SELF LOCKING TYPE NYLON CABLE STRAP WITH DEINTERLOCKING FACILITY AT EVERY 5 METER INTERVAL FOR HORIZONTAL RUN AND CABLES LAID IN VERTICAL RUN OF TRAYS SHALL BE SECURELY FIXED TO TRAYS/SUPPORTS AT EVERY ONE METRE INTERVAL. SINGLE CORE CABLES SHALL BE LAID IN TREFOIL FORMATION USING TREFOIL CLAMPS AT EVERY 2M INTERVAL.
- ALL POWER CABLES SHOULD BE CLAMPED INDIVIDUALLY. THE SCREEN OF SINGLE CORE CABLES WILL BE BONDED TO EARTH AT ONE END ONLY, PREFERABLY AT SWITCHGEAR END.
- IN GENERAL, POWER AND CONTROL CABLES SHALL BE LAID IN LADDER TYPE TRAYS AND SIGNAL CABLES SHALL BE LAID ON PERFORATED TYPE TRAYS.
- BENDING RADIOUS FOR CABLES SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
- WHERE CABLES CROSS ROADS THE CABLES SHALL BE LAID IN HUME PIPES EMBEDDED IN GROUND WITH A MINIMUM COVER OF 1 METRE OR WITH PVC DUCT BANK HAVING RCC COVERING FOR LOWER DEPTH.
- IN EACH CABLE RUN WITH A ROUTE LENGTH OF MORE THAN 250M AND FOR ALL HT CABLES, SOME EXTRA LENGTH SHALL BE KEPT AT SUITABLE POINT/CABLE PULL PIT TO ENABLE ONE STRAIGHT THROUGH JOINTS TO BE MADE, SHOULD THE CABLE DEVELOP FAULT AT A LATER STAGE. CONTROL CABLE TERMINATION INSIDE EQUIPMENT ENCLOSURE SHALL HAVE SUFFICIENT LENGTHS SO THAT SHIFTING OF TERMINATION IN TERMINAL BLOCKS CAN BE DONE WITHOUT REQUIRING ANY SPLICING.
- CONDUITS/PIPES WITH REQUIRED BENDING RADIOUS SHALL BE USED FOR ROUTING OF CABLES FROM CABLE TRAYS TO EQUIPMENT/JUNCTION BOXES. PIPE SLEEVES SHALL BE USED FOR ROUTING OF CABLES BETWEEN FLOORS, ROAD CROSSING, ENTRY/EXIT FROM OUTSIDE OF BUILDING ETC. ALL CONDUITS/PIPE SHALL HAVE THEIR ENDS CLOSED BY CAPS TILL THE CABLES ARE PULLED. AFTER THE CABLES ARE PULLED, THE ENDS SHALL BE SEALED BY SUITABLE SEALING COMPOUND.
- EACH CABLE SHALL BE TAGGED WITH NUMBERS. CABLES SHALL BE TAGGED AT THEIR ENTRANCE AT EVERY 30M AND EXIT FROM ANY EQUIPMENT, JUNCTION BOX. THE TAGS SHALL BE OF ALUMINIUM OR OTHER APPROVED MEANS WITH THE NUMBER PUNCHED ON IT AND SECURELY ATTACHED TO THE CABLE. THE LOCATION OF CABLE JOINTS, IF ANY, SHALL BE CLEARLY INDICATED WITH CABLE MARKER WITH AN ADDITIONAL INSCRIPTIONS "CABLE-JOINT" AND "CABLE NUMBER".
- FERRULES SHALL BE PROVIDED ON ALL CONTROL CABLE CORES IN ALL JUNCTION BOXES AND AT ALL TERMINATIONS. THE FERRULES SHALL CARRY TERMINAL NUMBERS AS PER DRAWINGS. ALL FERRULES SHALL BE COLOURED, PLASTIC & INTERLOCKED TYPE.
- OPENING IN THE FLOOR AND WALL OF CABLE ELECTRICAL ROOM FOR CABLE ACCESS SHALL BE SEALED WITH FIRE PROOF COMPONENT AFTER INSTALLATION OF THE CABLE SYSTEM.

**C. RCC CABLE TRENCH**

- PROPER SLOPE SHALL BE ENSURED IN THE CABLE TRENCHES IN LONGITUDINAL AND ALSO IN TRANSVERSE DIRECTION FOR DRAINING OF WATER.
- EARTHING CONDUCTOR SHALL BE RUN ALONG THE CABLE TRENCH BY CLAMPING OR WELDING TO TRAY SUPPORTS. CABLE TRAYS SHALL BE EARTHED TO THE EARTHING CONDUCTOR AT 30M INTERVAL.

**D. DIRECTLY BURIED CABLES**

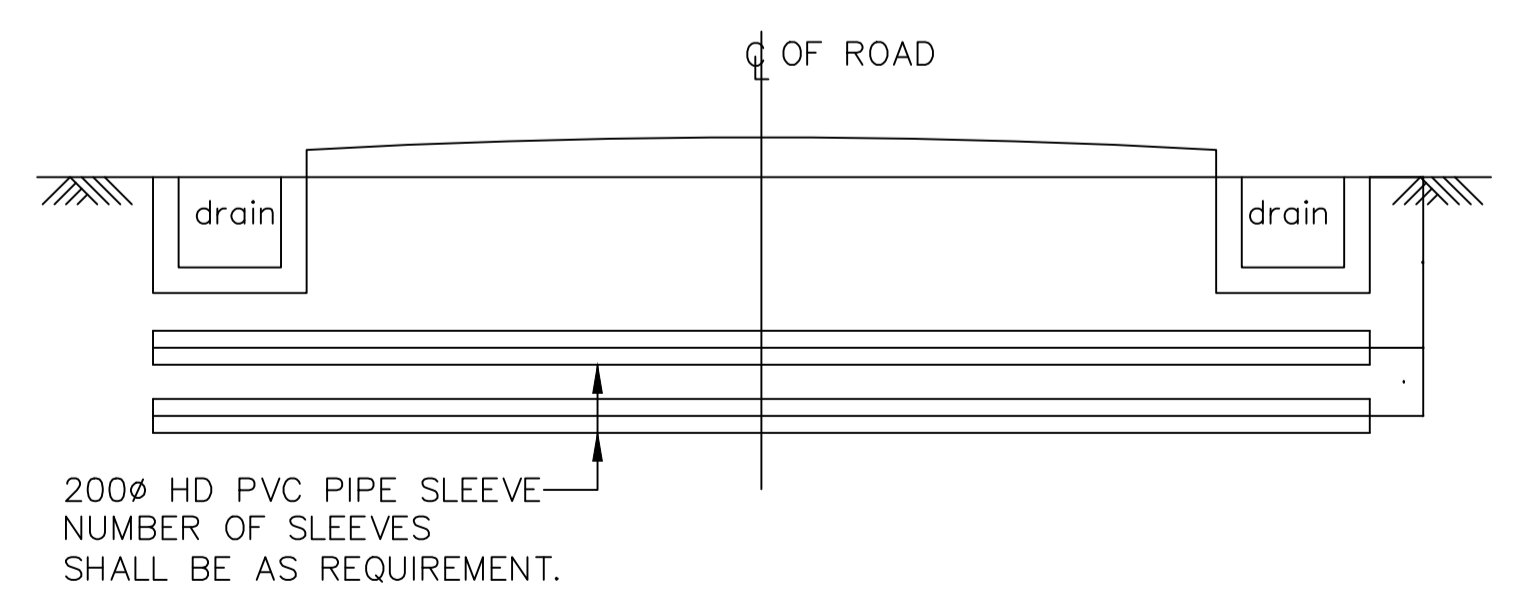
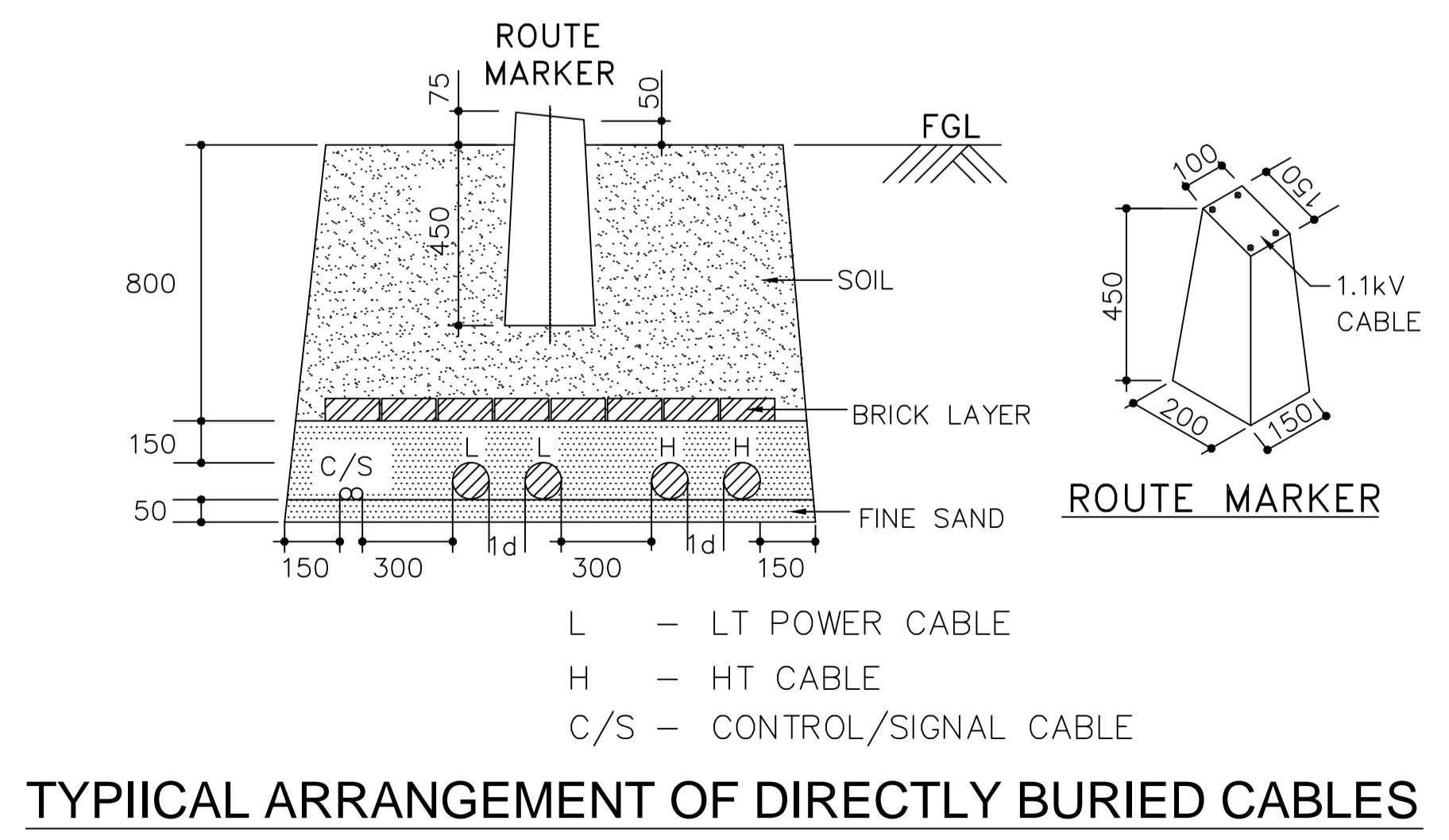
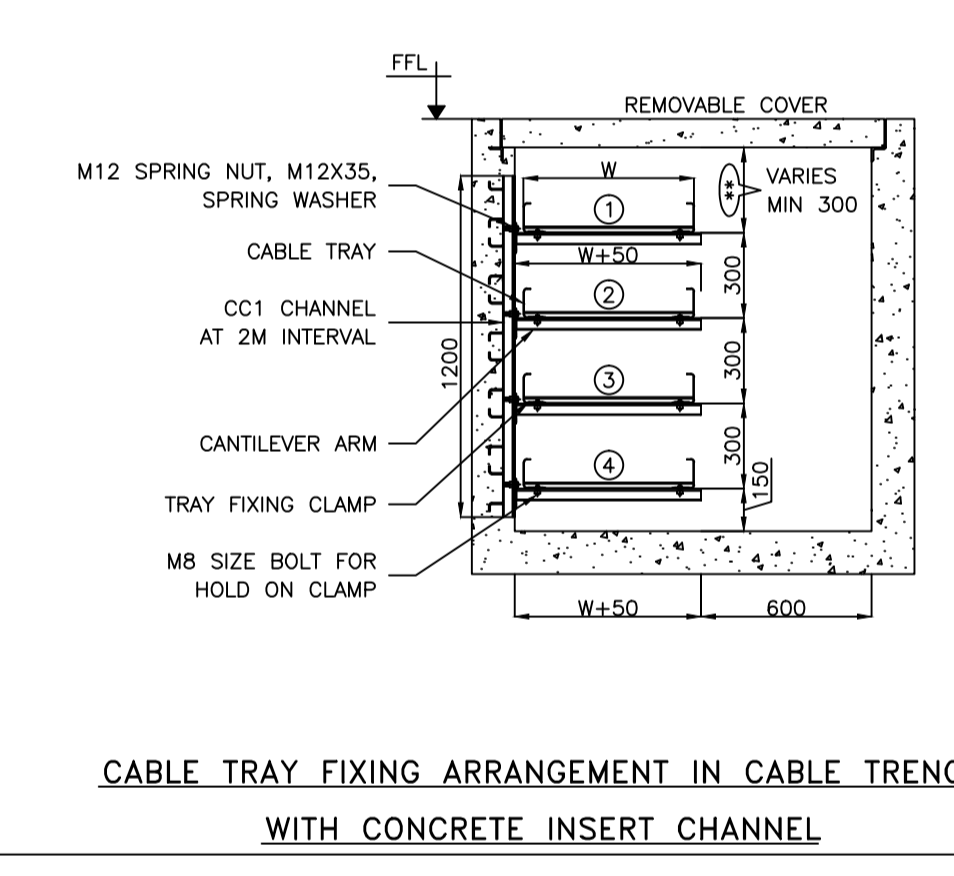
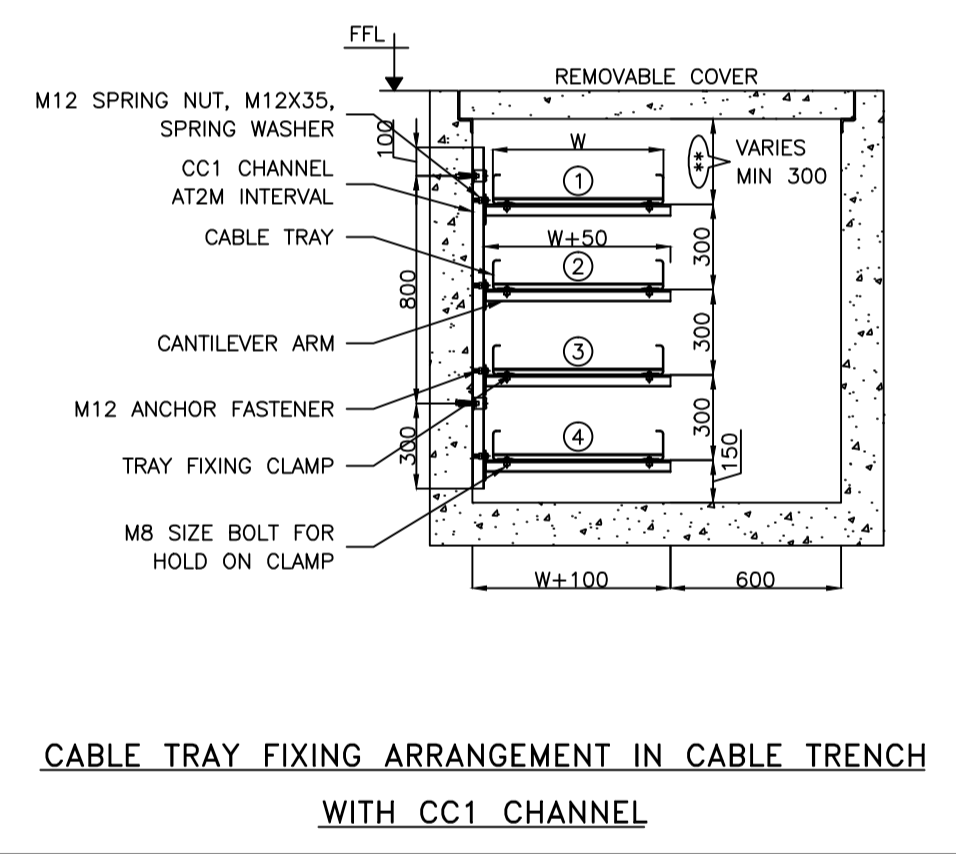
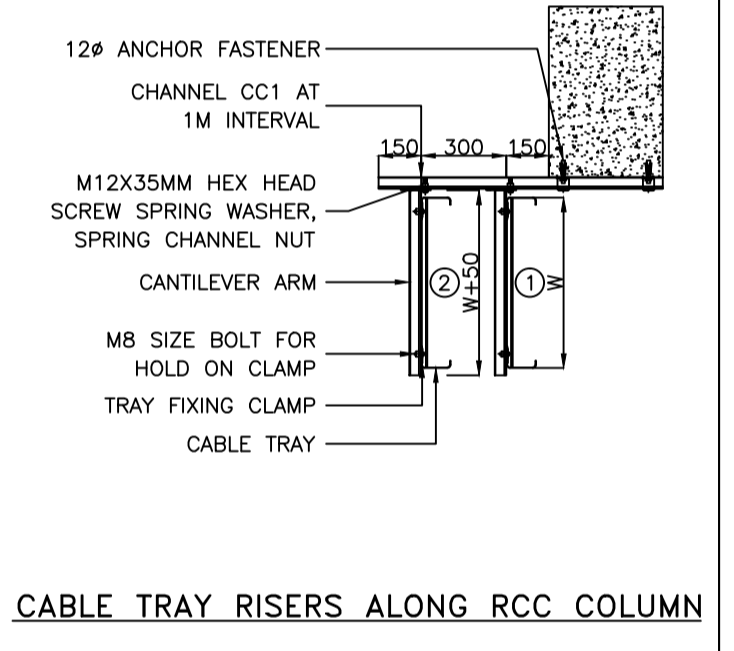
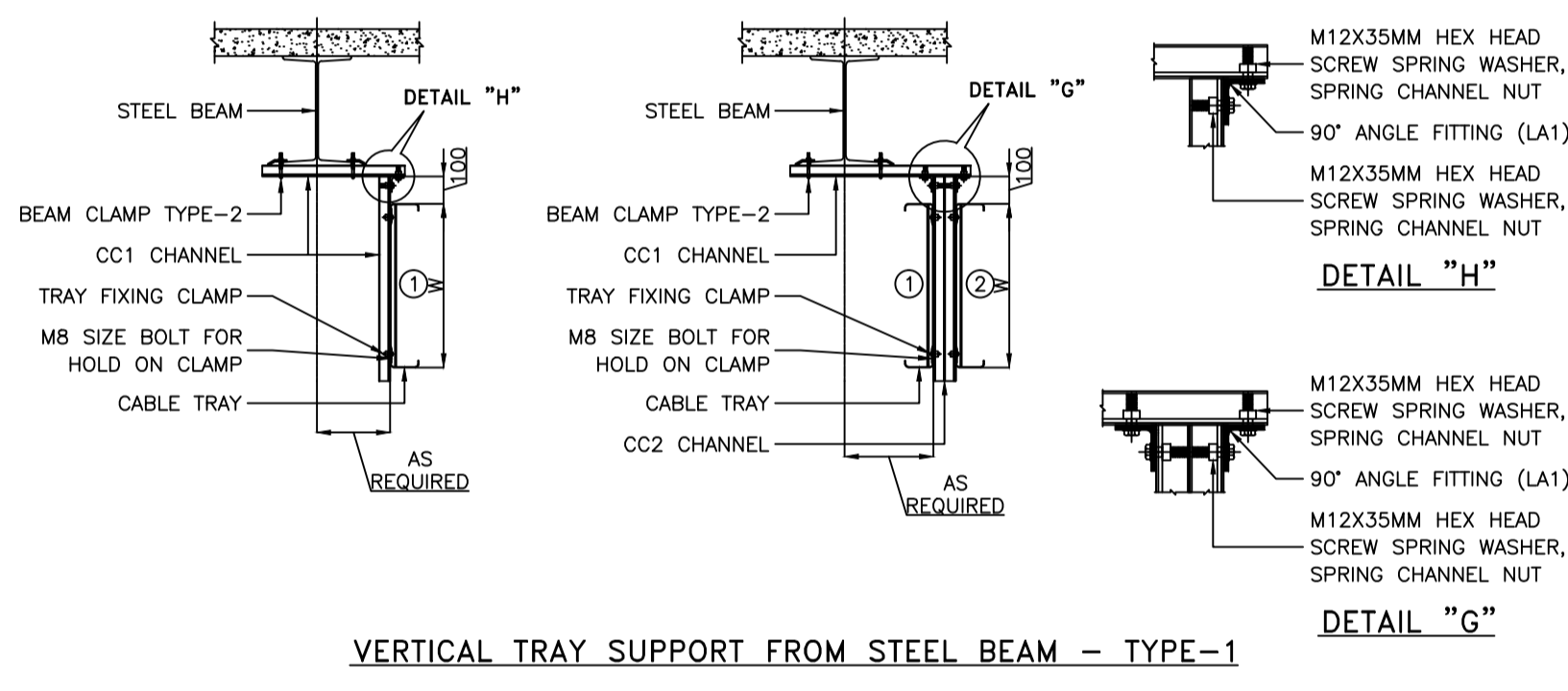
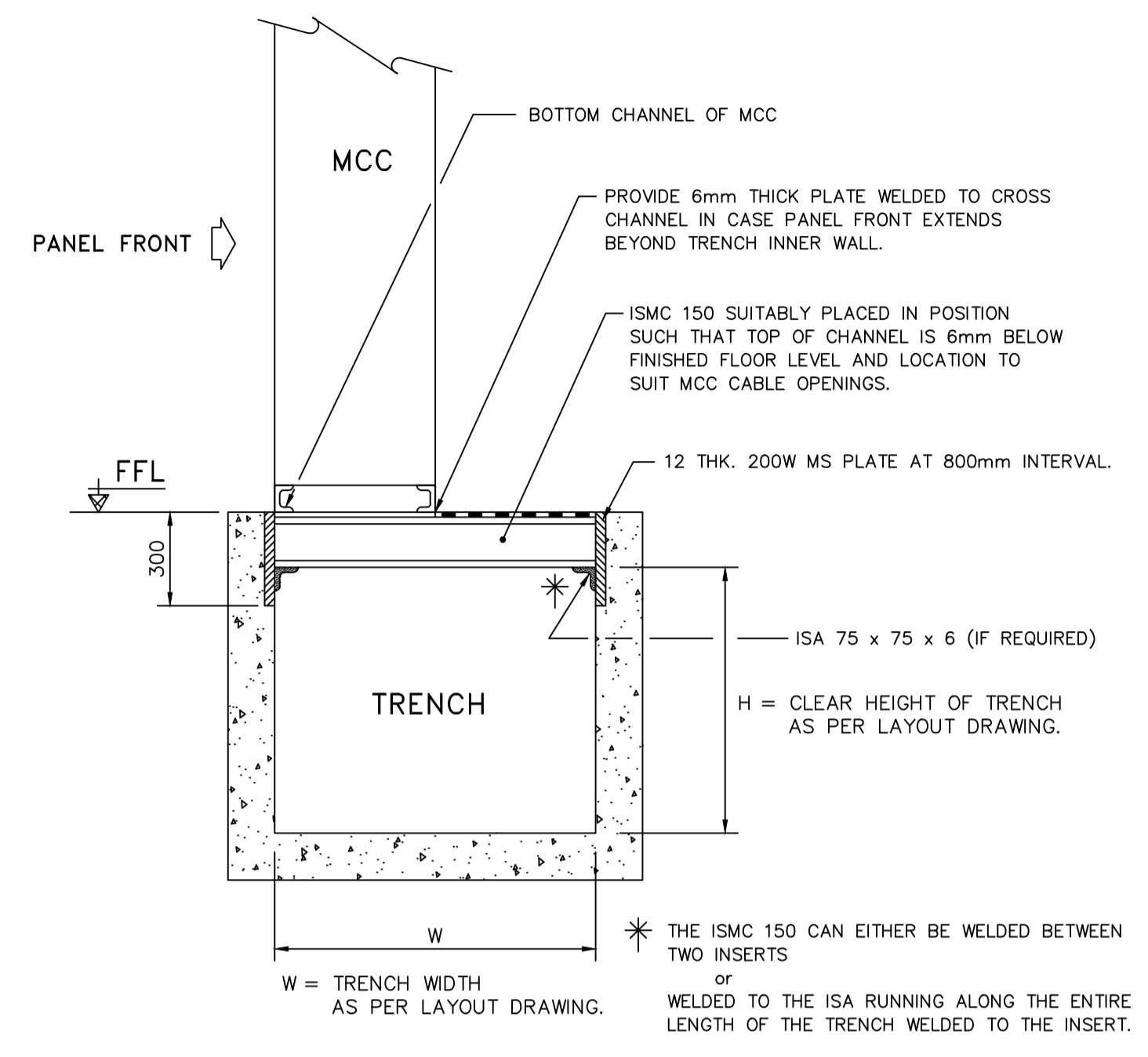
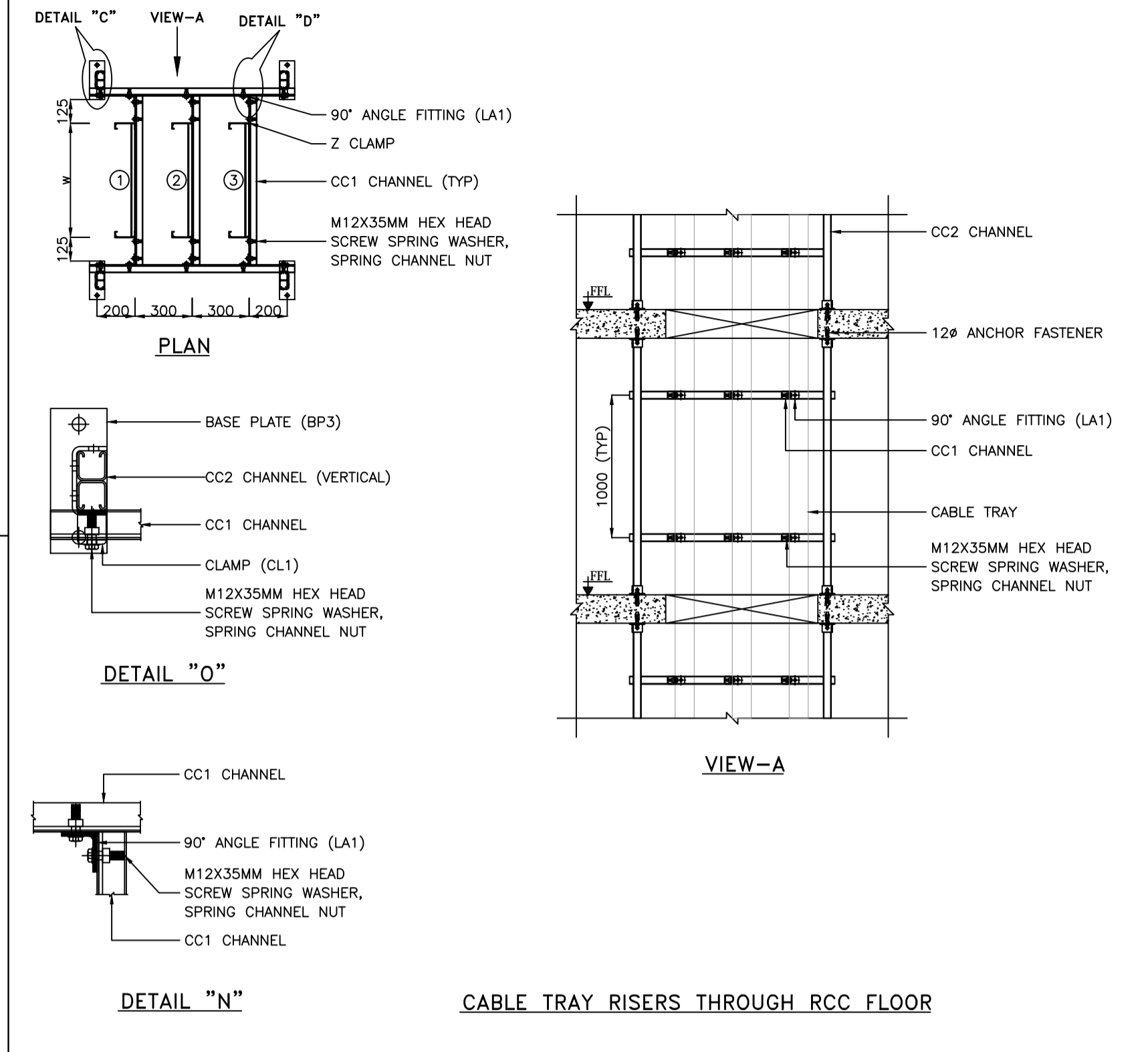
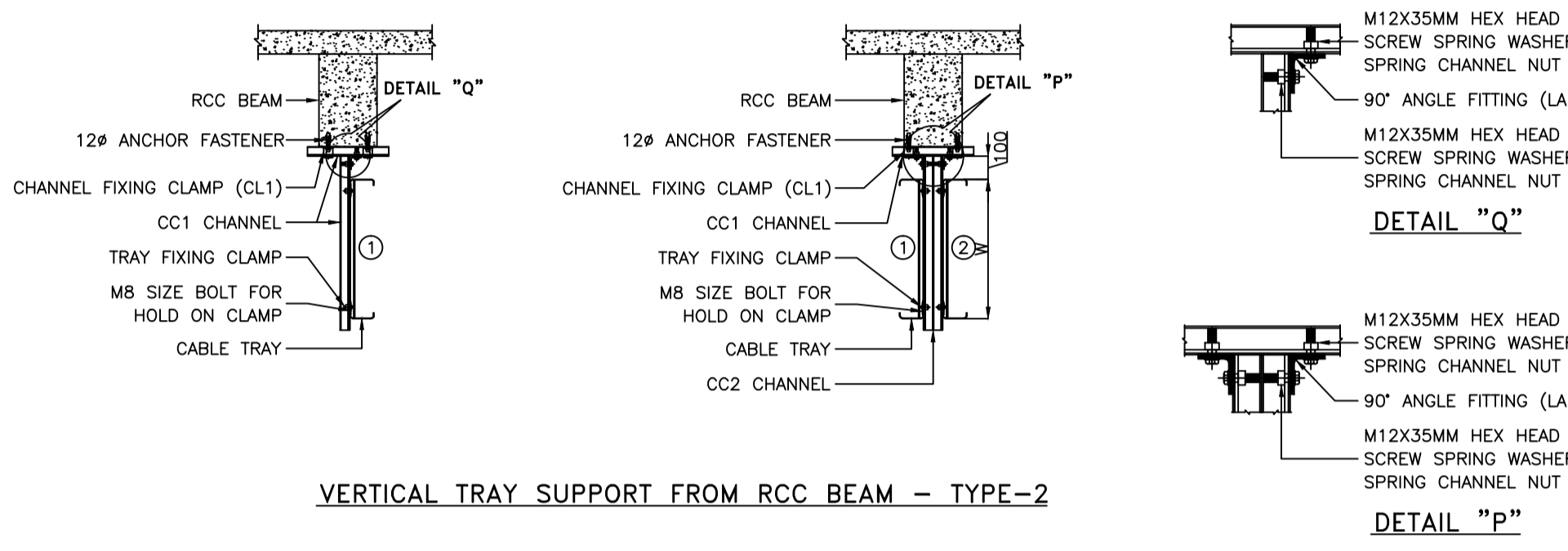
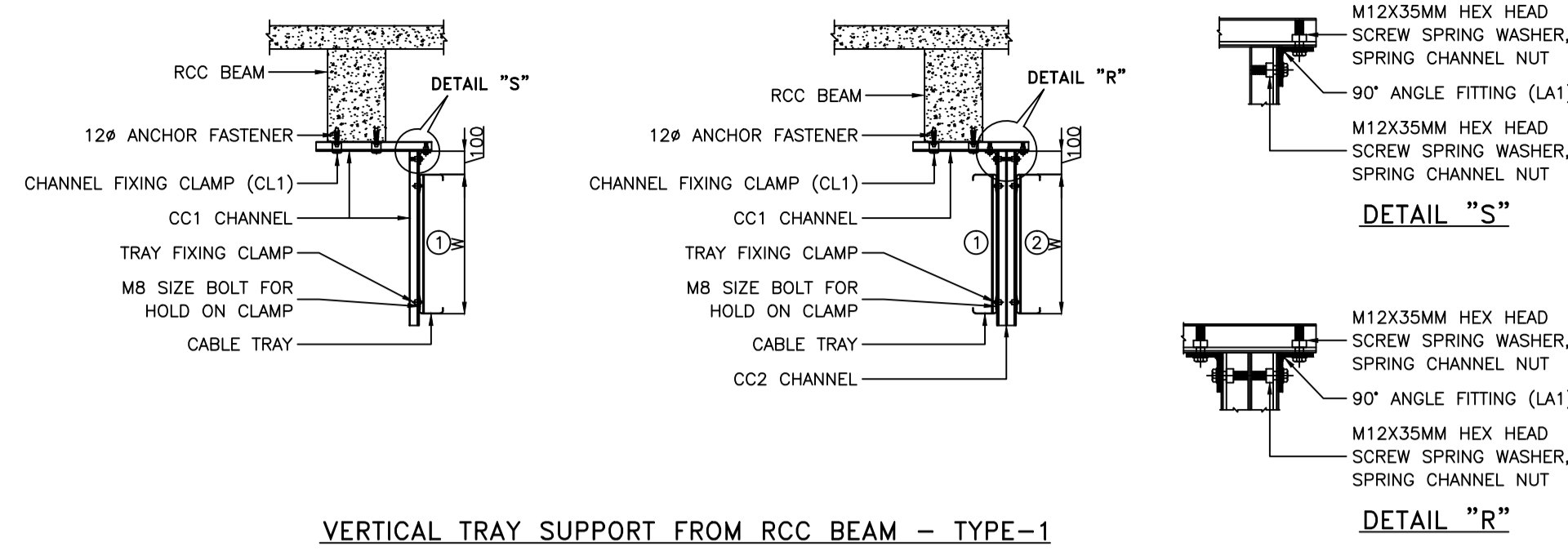
- DIRECTLY BURIED CABLES, SHALL BE INSTALLED BY PROPER EXCAVATION, PREPARATION OF SIEVED SAND BEDDING, RIDDLED SOIL COVER, PROVISION OF BRICK OR CONCRETE PROTECTIVE COVERS, BACK FILLING AND COMPACTING.
- CABLE ROUTE MARKERS AND JOINT MARKERS SHALL BE PROVIDED AS PER SPECIFICATION THE VOLTAGE GRADE OF THE HIGHER VOLTAGE CABLES IN ROUTE SHALL BE ENGRAVED ON THE MARKER. LOCATION OF UNDERGROUND CABLE JOINTS SHALL BE INDICATED WITH CABLE MARKER WITH AN ADDITIONAL INSCRIPTION "CABLE JOINT". THE MARKER SHALL PROJECT 75MM ABOVE GROUND AND SHALL BE SPACED AT AN INTERVAL OF 30 METERS AND AT EVERY CHANGE IN DIRECTION. THEY SHALL BE LOCATED ON BOTH SIDES OF ROAD CROSSINGS AND DRAIN CROSSINGS. TOP OF CABLE MARKER/JOINT MARKER SHALL BE SLOPED TO AVOID ACCUMULATION OF WATER/DUST ON MARKER.

**E. CABLE TERMINATIONS & CONNECTIONS**

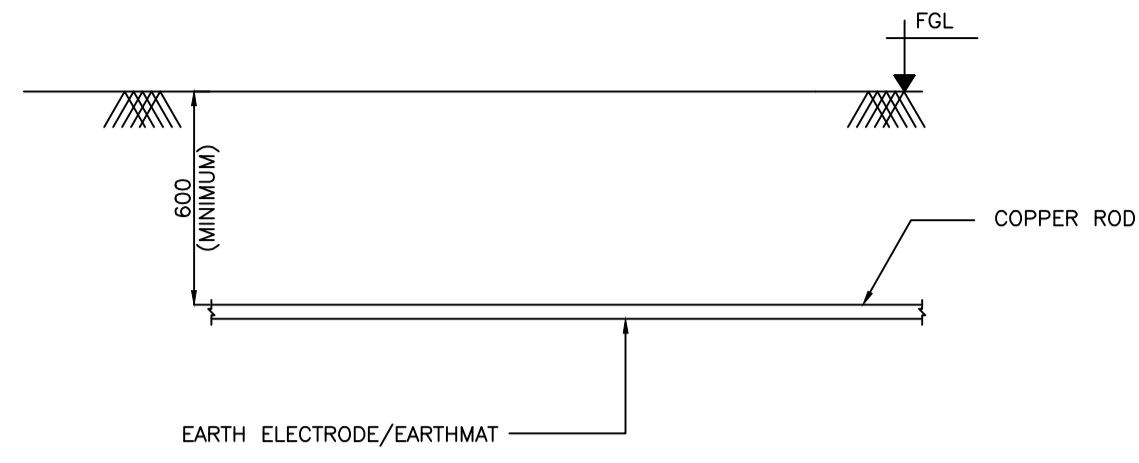
- THE TERMINATION AND CONNECTION OF CABLES SHALL BE DONE STRICTLY IN ACCORDANCE WITH CABLE TERMINATION KIT MANUFACTURER'S INSTRUCTIONS/DRAWINGS.
- THE EQUIPMENT WILL BE GENERALLY PROVIDED WITH UNDRILLED GLAND PLATES FOR CABLES/CONDUIT ENTRY. IN GLAND PLATES, HOLES SHALL BE SUITABLY PUNCHED. THE HOLES SHALL BE TRUE IN SHAPE. ALL CABLE ENTRY POINTS SHALL BE SEALED AND MADE VERMIN AND DUST PROOF. UNUSED OPENINGS SHALL BE EFFECTIVELY SEALED.
- CONTROL CABLE CORES ENTERING SWITCHGEAR/MCCPANELS SHALL BE NEATLY BUNCHED, CLAMPED AND TIED WITH SELF LOCKING TYPE NYLON CABLE TIES WITH DEINTERLOCKING FACILITY TO KEEP THEM IN POSITION.
- ALL CABLE TERMINATIONS SHALL BE APPROPRIATELY TIGHTENED TO ENSURE SECURE AND RELIABLE CONNECTIONS. TERMINATION AND CONNECTION SHALL BE CARRIED OUT IN SUCH A MANNER AS TO AVOID STRAIN ON THE TERMINALS. ALL CABLE ENTRY POINTS SHALL BE PROPERLY SEALED AND MADE VERMIN AND DUST PROOF.
- CABLES AT MOTOR TERMINALS SHALL BE CORRECTLY TERMINATED IN CORRECT PHASE SEQUENCE TO ENSURE THE PROPER DIRECTION OF ROTATION.

A	04.07.18	ISSUED FOR TENDER						CRK	--	--	--	GS	--
REV.	DATE	DESCRIPTION						DRN.	STR.	MECH.	PROC.	ELEC.	INST.
								APPROVED BY					
<b>FICHTNER</b>							<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>						
		SIGNATURE	DATE										
DRAWN		CRK	29.06.18										
DESIGNED		MR	29.06.18										
CHECKED		PVN	02.07.18										
DEPT. HEAD		GS	02.07.18										
PROJ. MGR.		MAP	02.07.18										
RELEASED FOR		PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.						
		TENDER	✓										
		ENGINEERING											
		CONSTRUCTION											
				DWG.NO.	<b>1114129-E-503</b>			(SHEET 01 OF 02)	<b>A</b>				

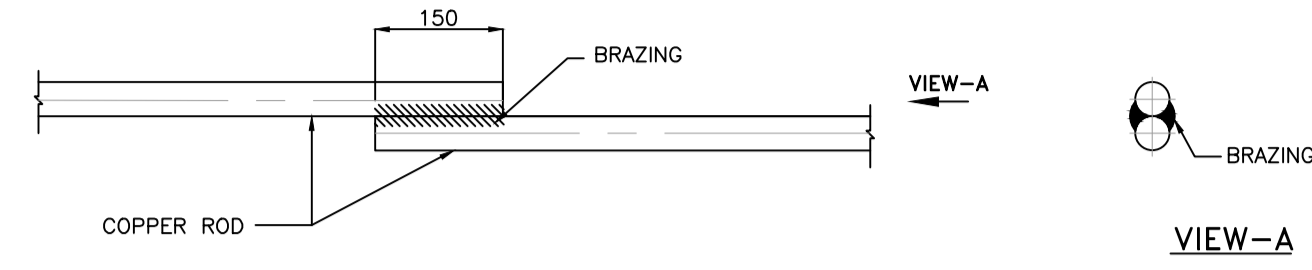
**TYPICAL DETAILS FOR CABLING INSTALLATION**



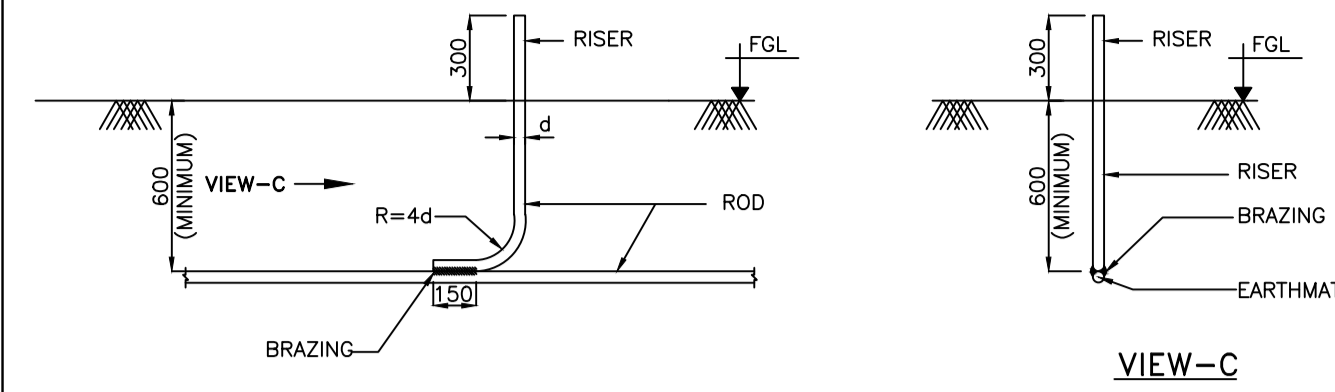
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A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
APPROVED BY								
<b>FICHTNER</b>			<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>					
DRAWN	CRK	29.06.18	<b>TYPICAL DETAILS FOR CABLING INSTALLATION</b>					
DESIGNED	MR	29.06.18						
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DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓	DWG. NO. 1114129-E-503			A		
	ENGINEERING		(SHEET 02 OF 02)					
	CONSTRUCTION							



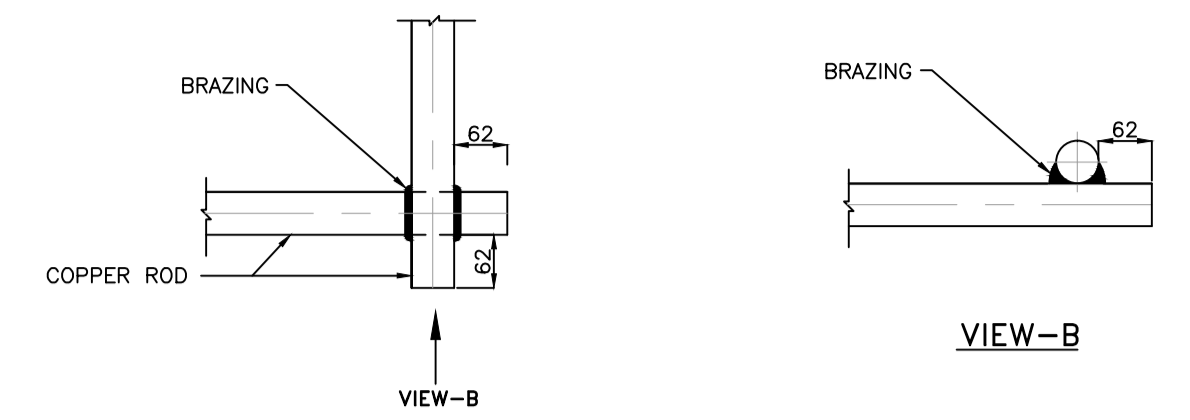
ELEVATION OF EARTHMAT/EARTH ELECTRODE



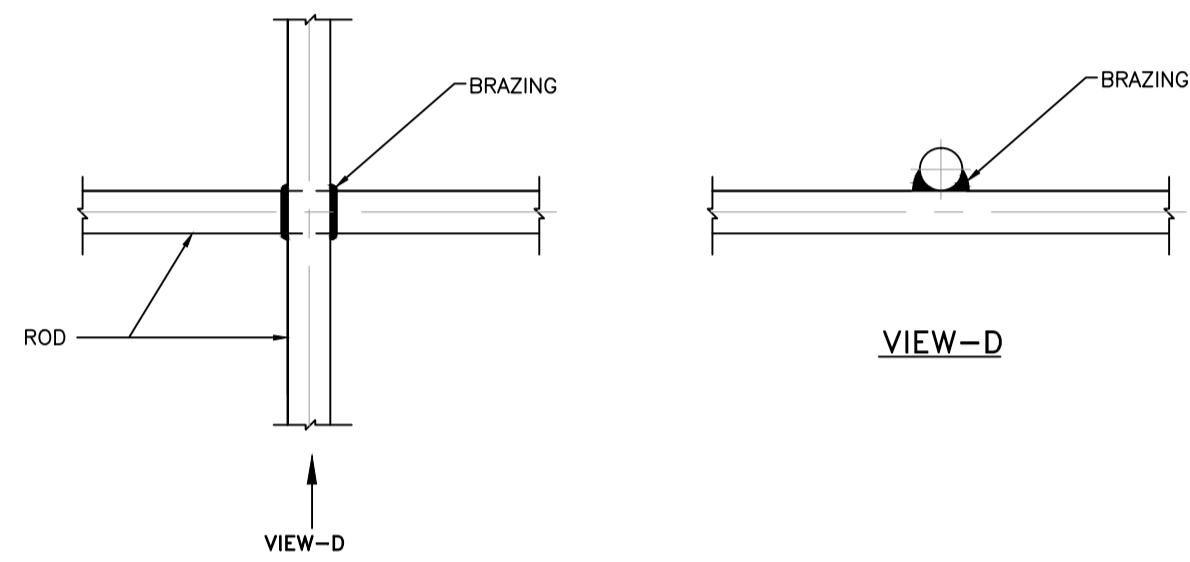
LAP JOINT



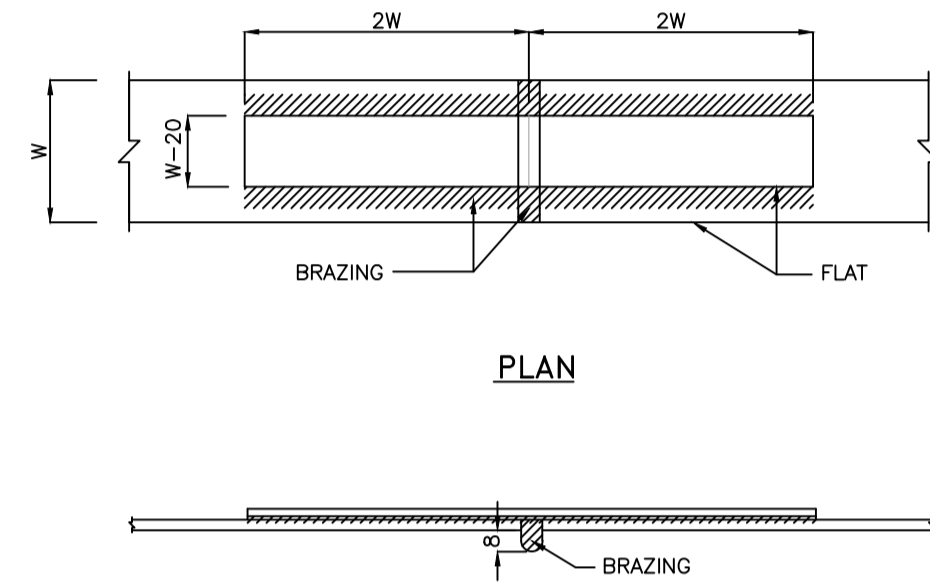
ROD RISER FROM EARTH ELECTRODE /EARTH MAT



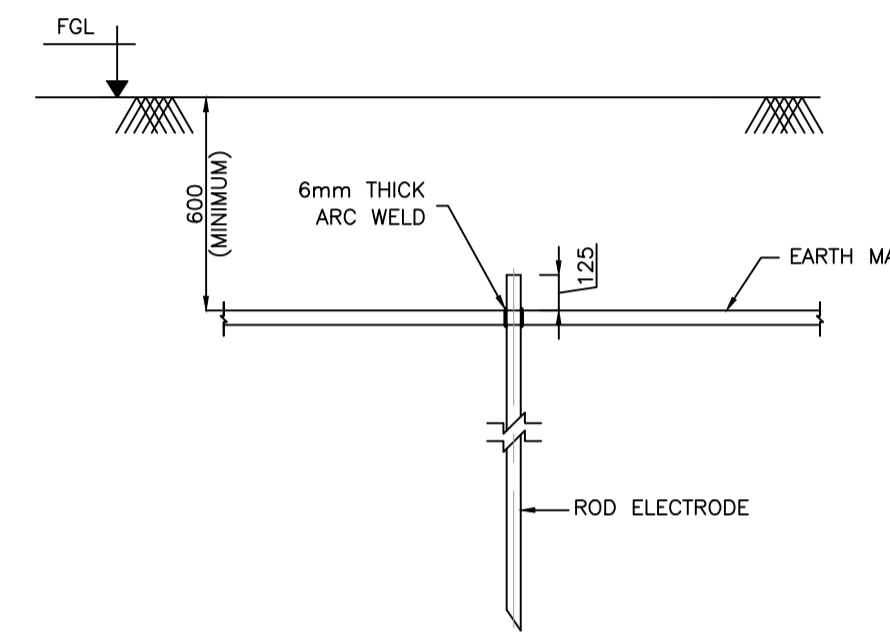
END CONNECTION



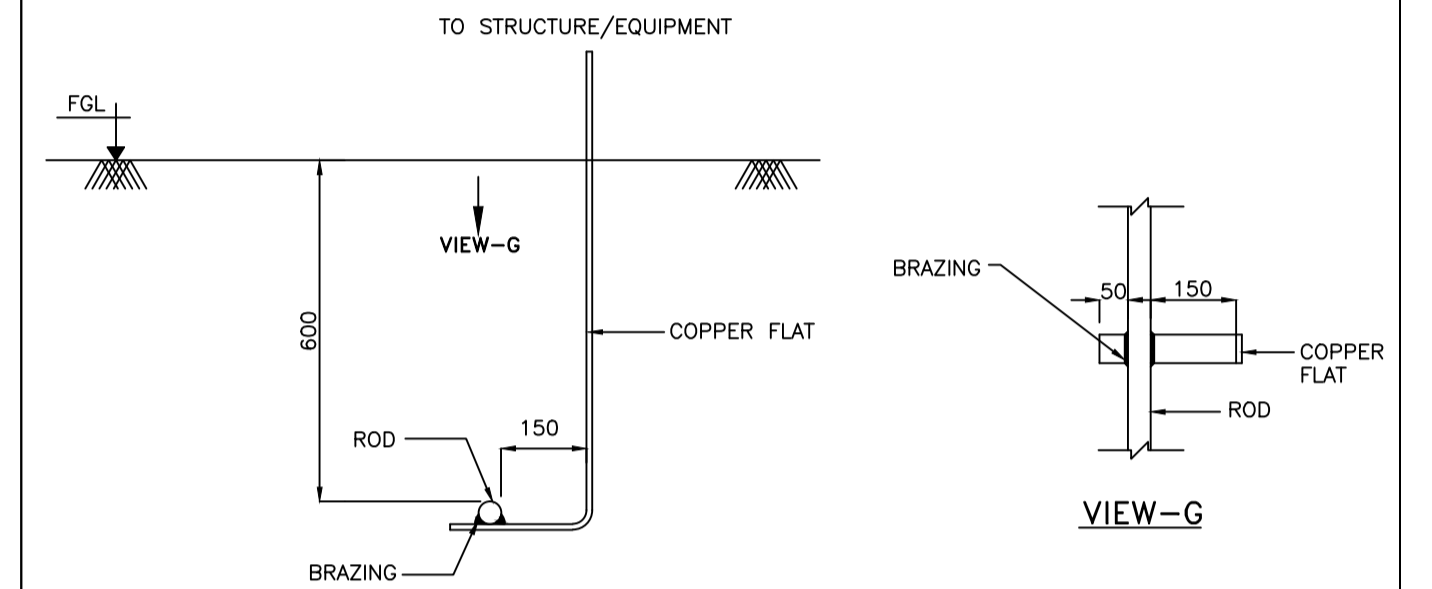
CROSS JOINT



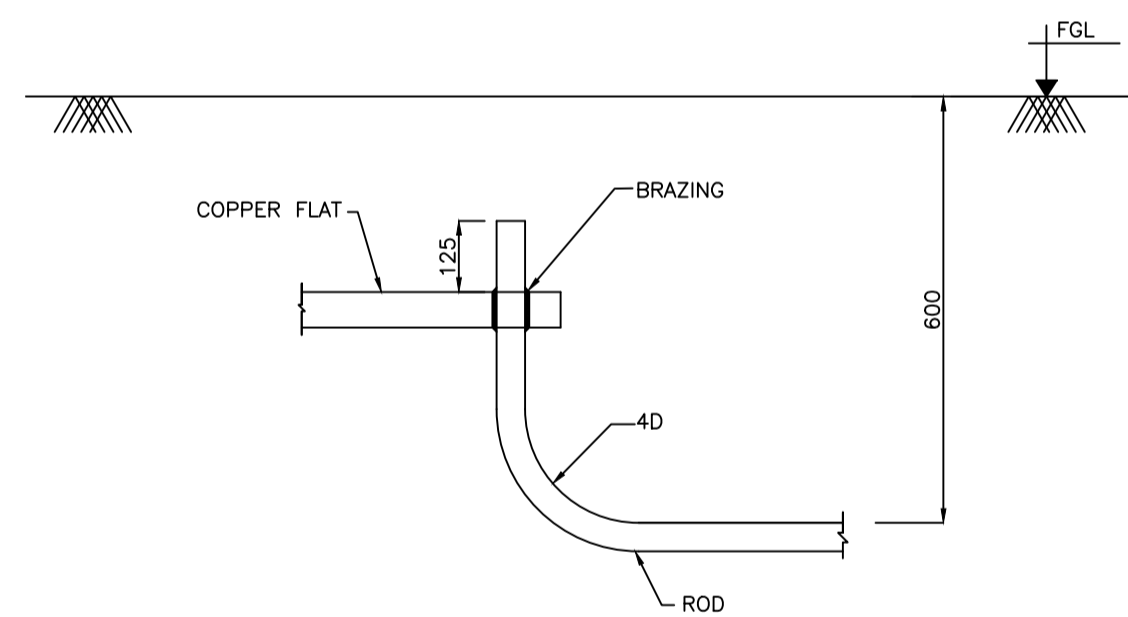
LAP JOINT BETWEEN FLATS



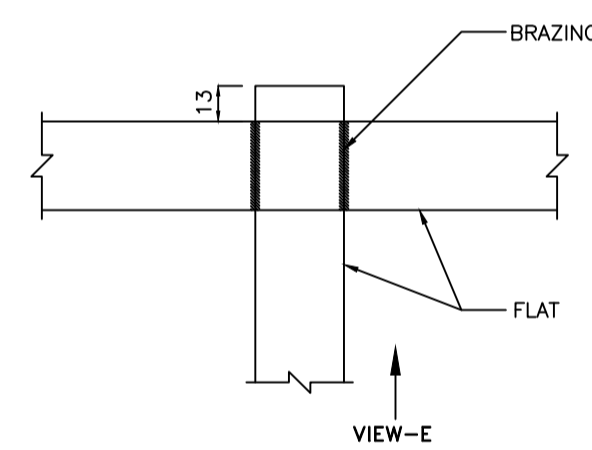
CONNECTION TO ROD ELECTRODE



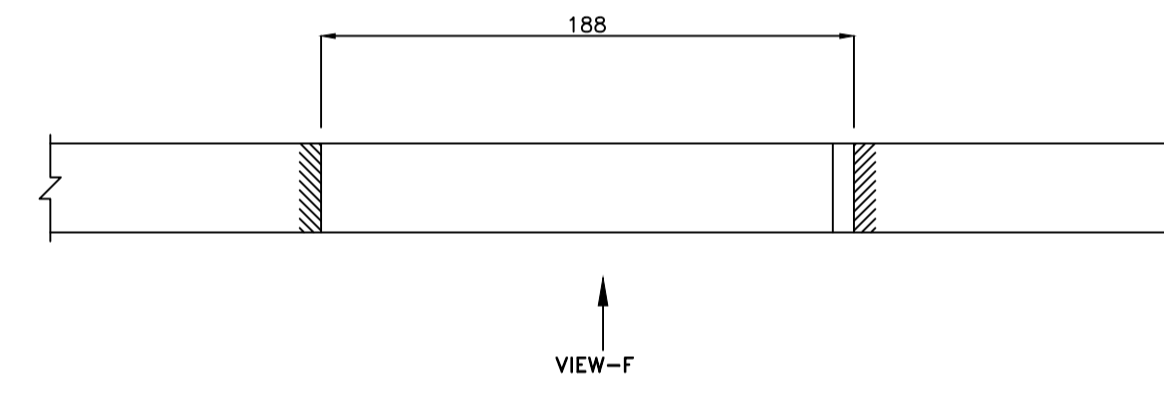
FLAT RISER FROM EARTH ELECTRODE



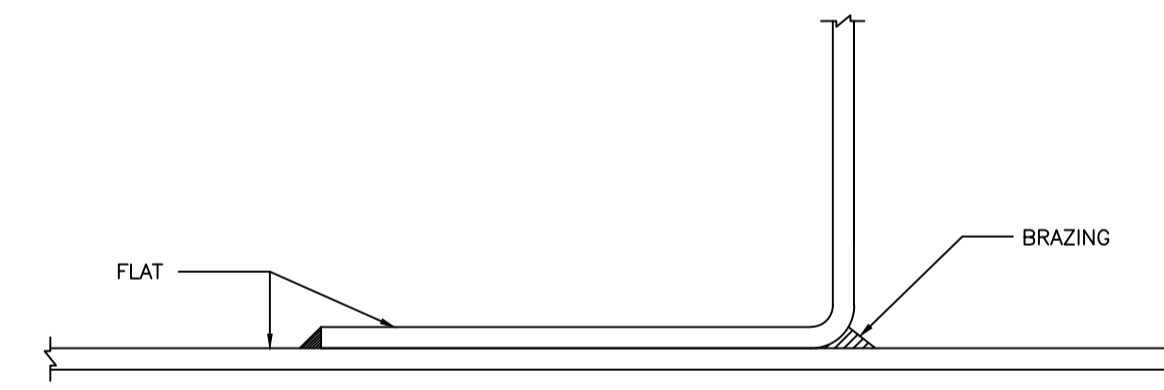
FLAT JOINT TO ROD



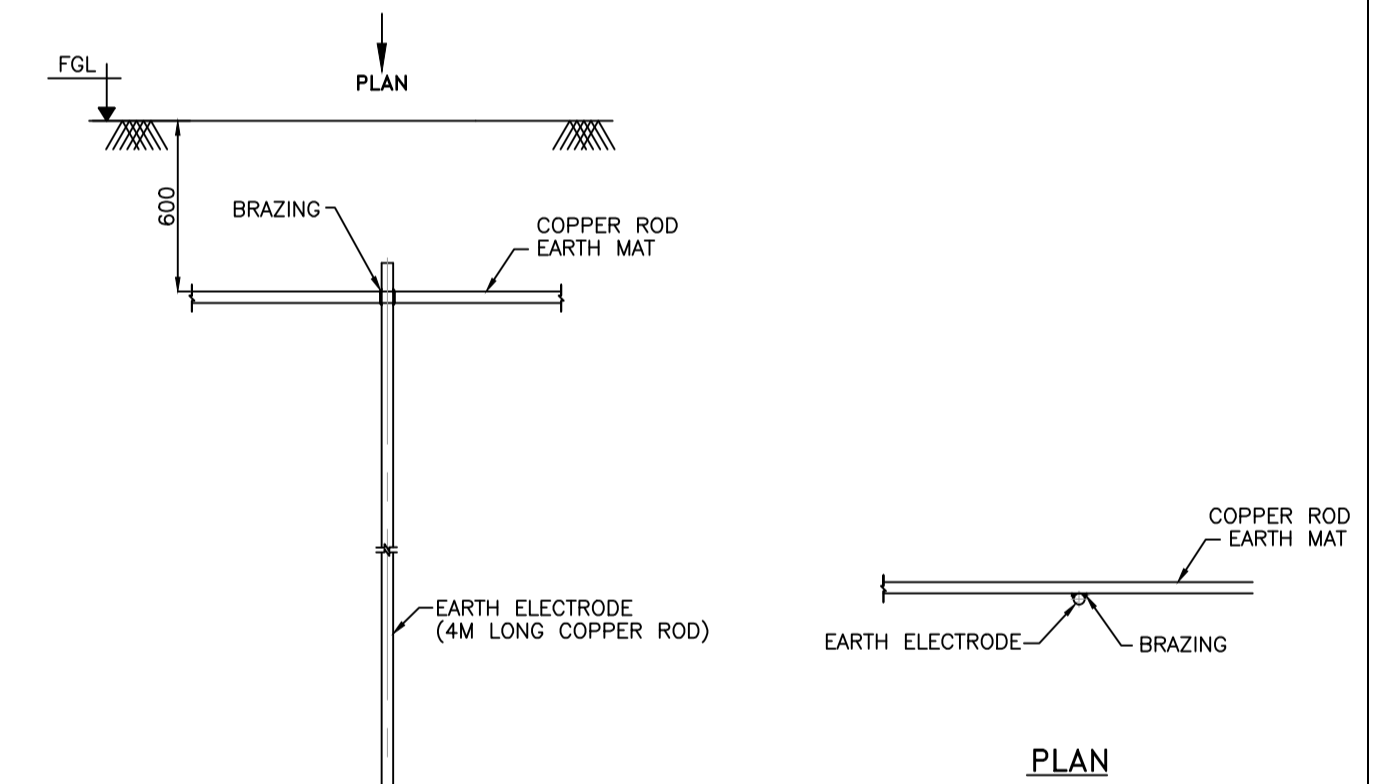
CROSS JOINT BETWEEN FLATS



ANGULAR JOINTS BETWEEN FLATS



VIEW-F



TYPICAL DETAILS OF ROD ELECTRODE (WITHOUT EARTH PIT)

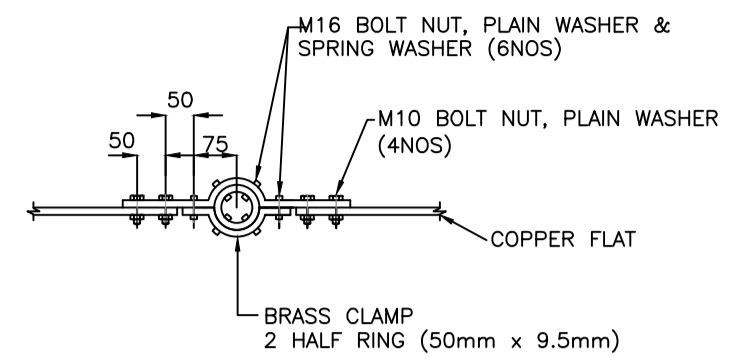
NOTES:

1. ALL THE DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE SPECIFIED
2. BURIED EARTHING CONDUCTORS SHALL GENERALLY BE LAID AT A MINIMUM DEPTH OF 750mm BELOW THE FINISHED GROUND LEVEL UNLESS OTHERWISE SPECIFIED.
3. EARTH RISERS FROM MAIN EARTH GRID SHALL BE BROUGHT 300mm ABOVE FINISHED GROUND LEVEL FOR EQUIPMENT EARTHING/STRUCTURE EARTHING.
4. EARTHING CONDUCTOR IN CONCRETE FLOOR INSIDE THE BUILDING SHALL HAVE 30 TO 50mm CONCRETE COVER.
5. A MINIMUM EARTH COVERAGE OF 300mm SHALL BE PROVIDED BETWEEN EARTH CONDUCTOR AND THE BOTTOM OF TRENCH/UNDERGROUND PIPES AT CROSSINGS.
6. IN THIS DRAWING EARTHING AND GROUNDING ARE USED SYNONYMOUSLY.
7. EARTH ROD / MAT / CONDUCTOR SIZE SHALL BE AS PER CALCULATION.

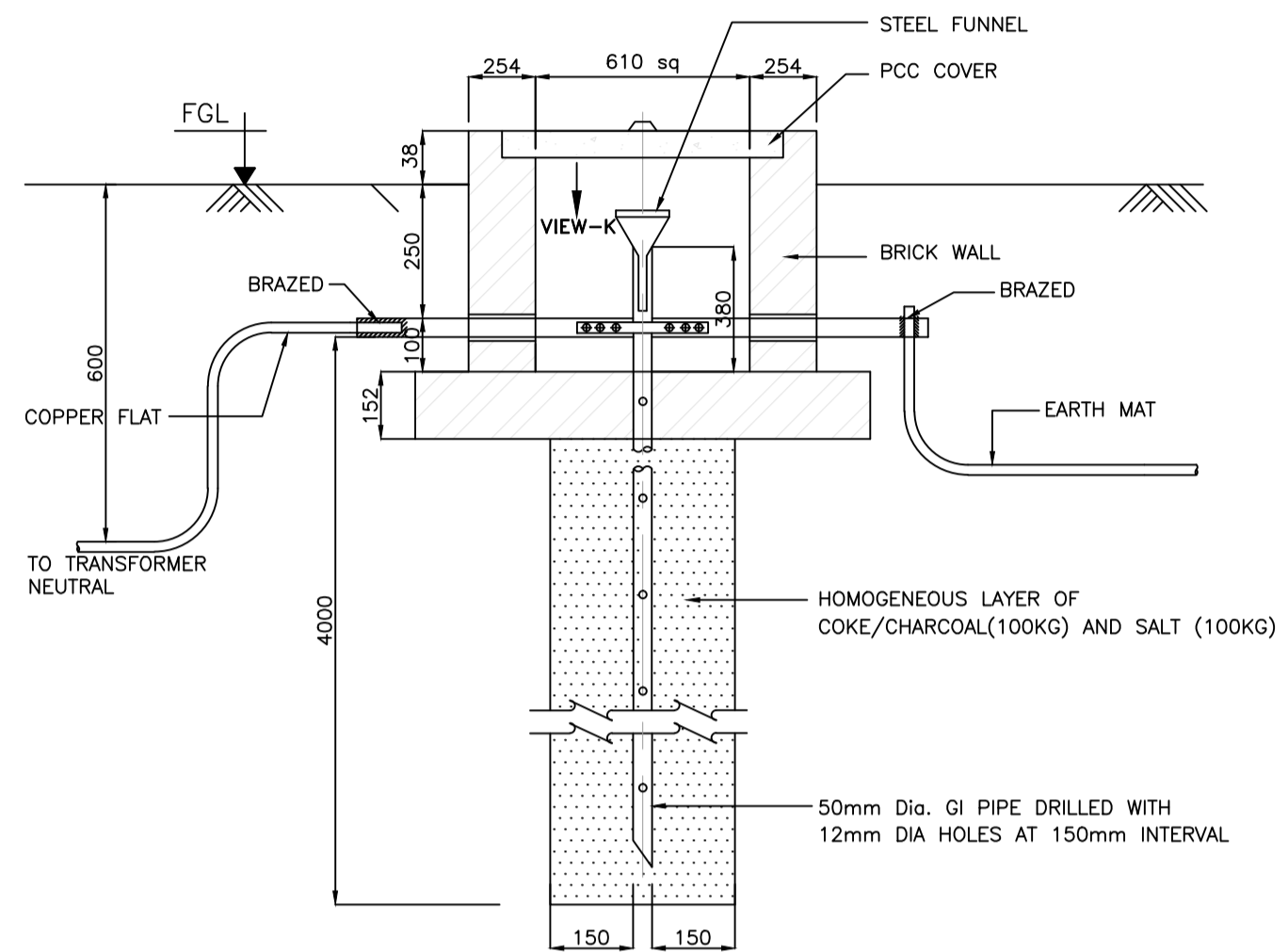
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					

<b>FICHTNER</b>			<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>					
DRAWN	CRK	29.06.18	<b>TYPICAL DETAILS FOR EARTHING INSTALLATION</b>					
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY		DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.		
	TENDER	✓	DWG.NO. 1114129-E-504			A		
	ENGINEERING		(SHEET 01 OF 03)					
	CONSTRUCTION							

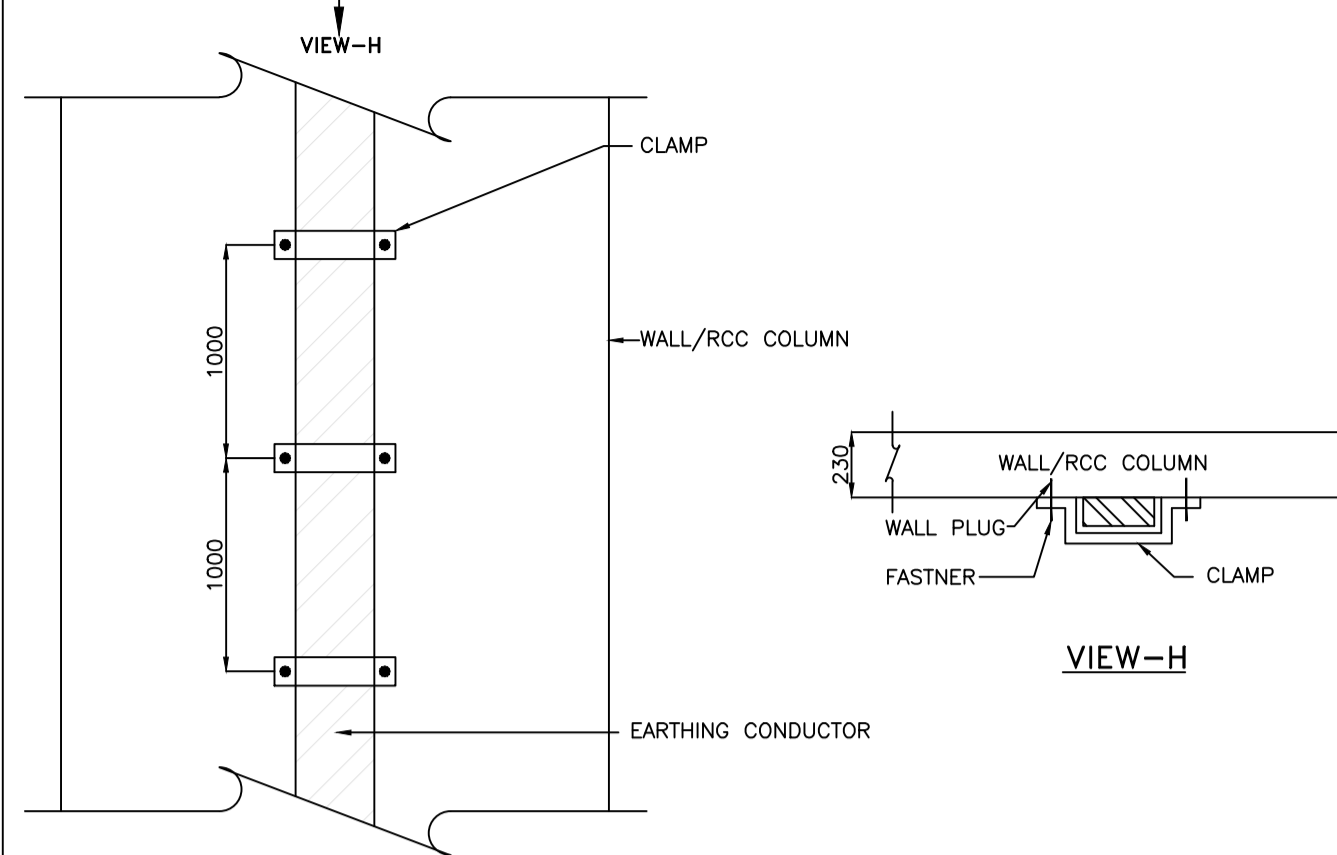




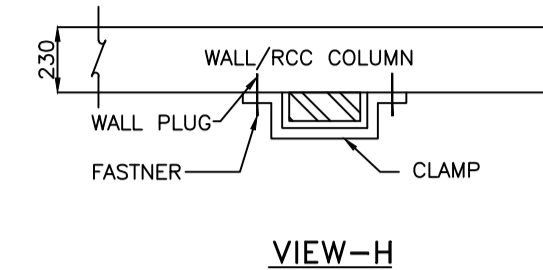
VIEW-K



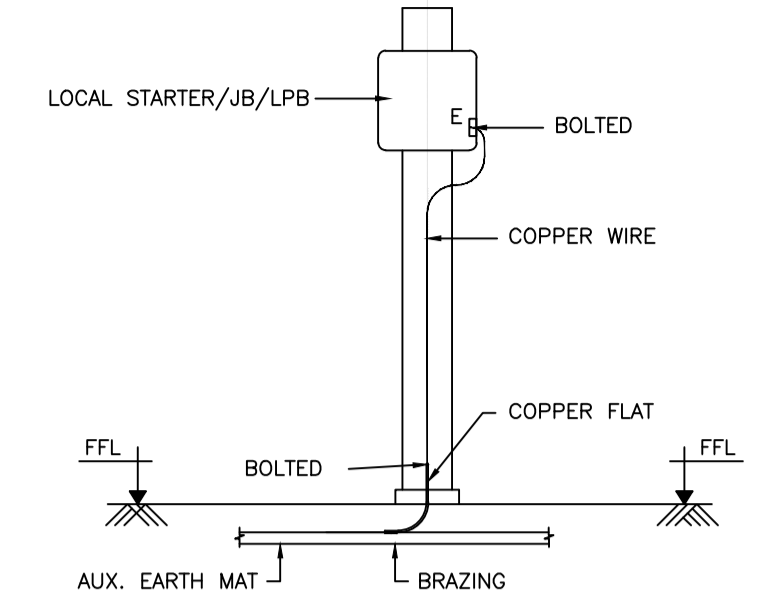
TYPICAL DETAILS OF TREATED EARTH PIT WITH PIPE ELECTRODE



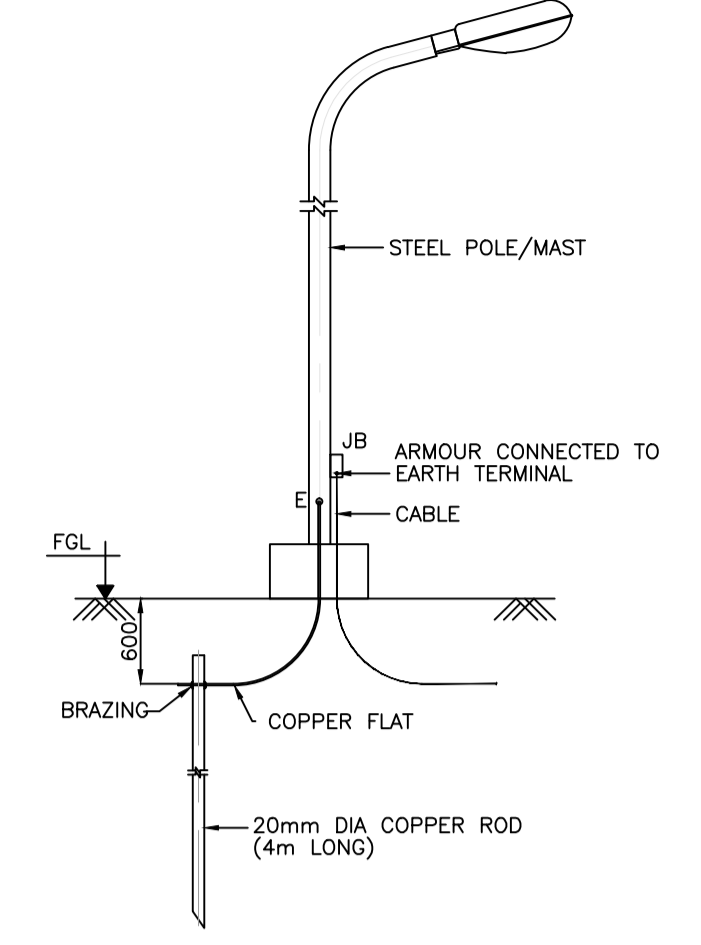
EARTHING CONDUCTOR ALONG WALL/RCC COLUMN



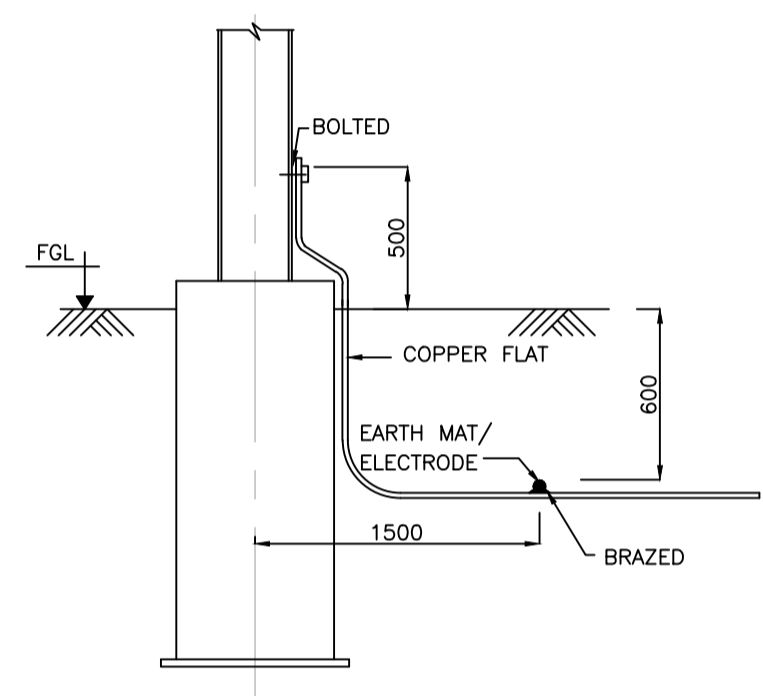
VIEW-H



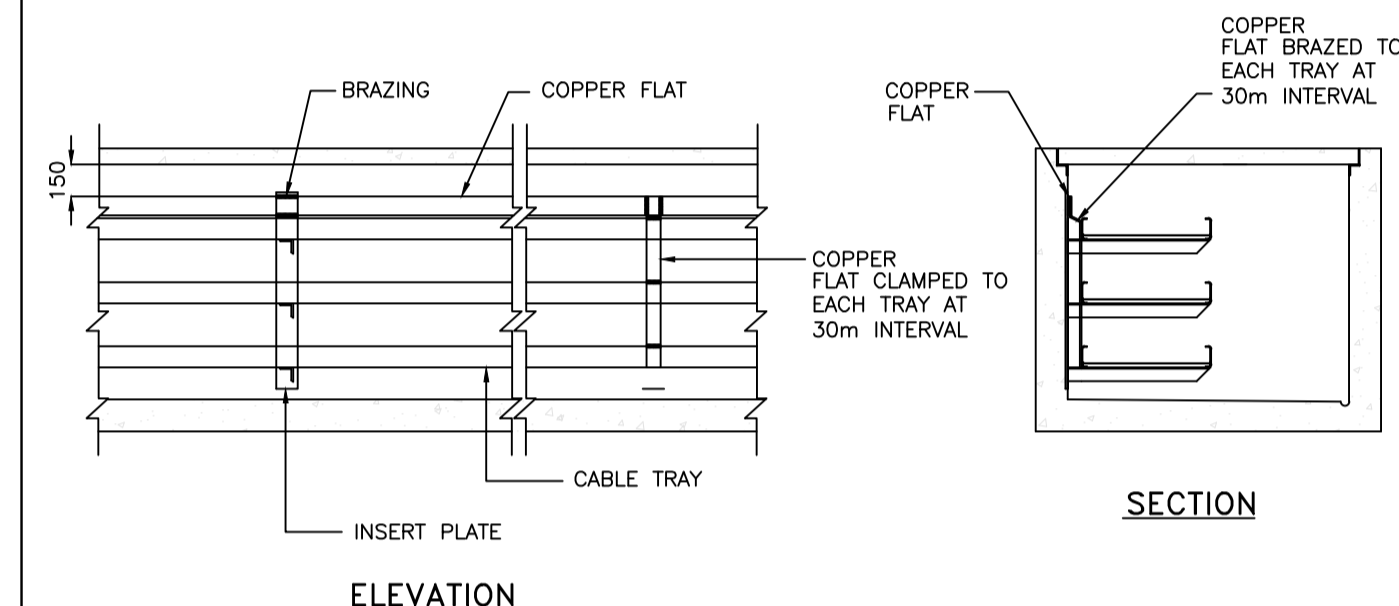
EARTHING OF JB/LPB/STARTER



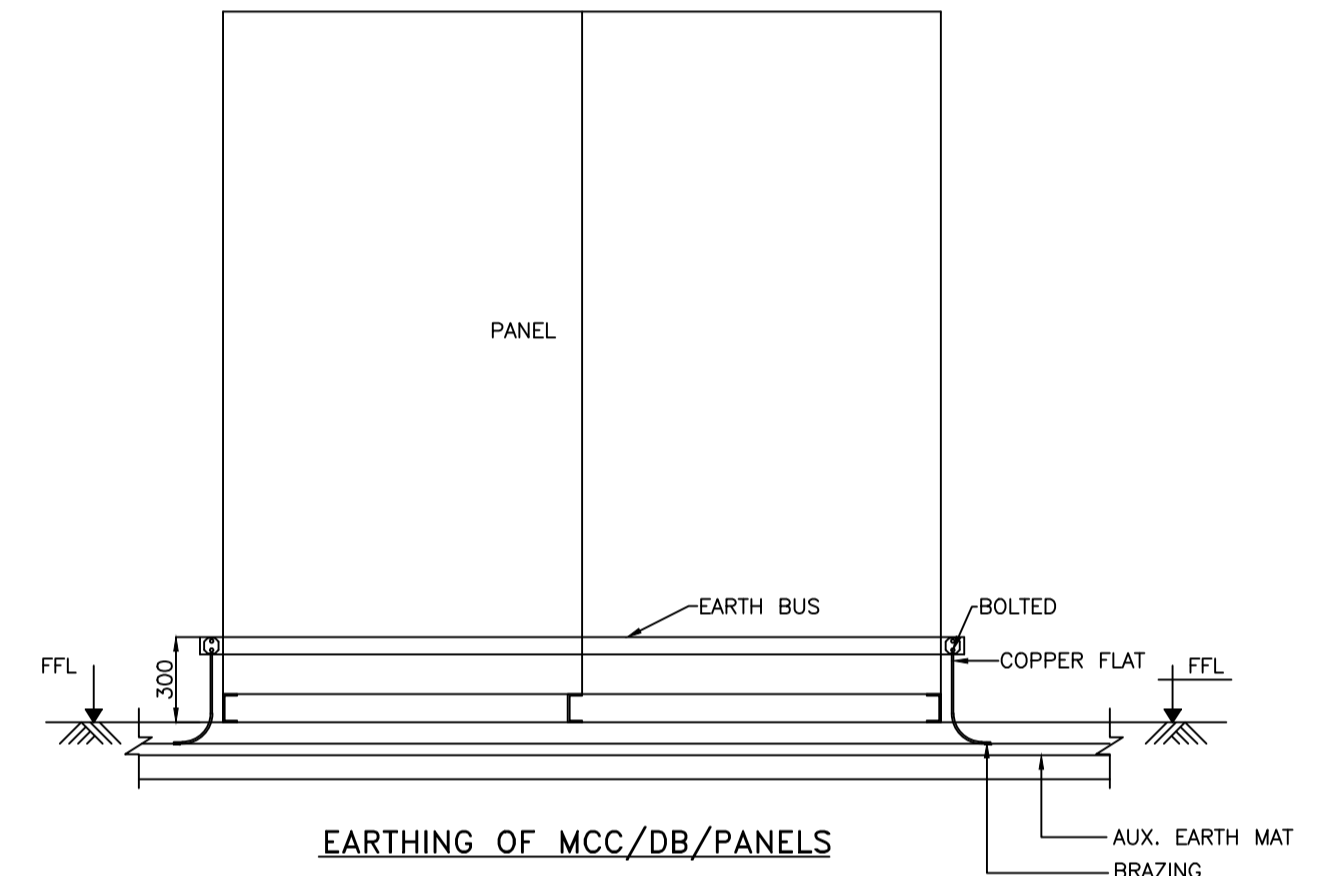
EARTHING OF POLE/MAST



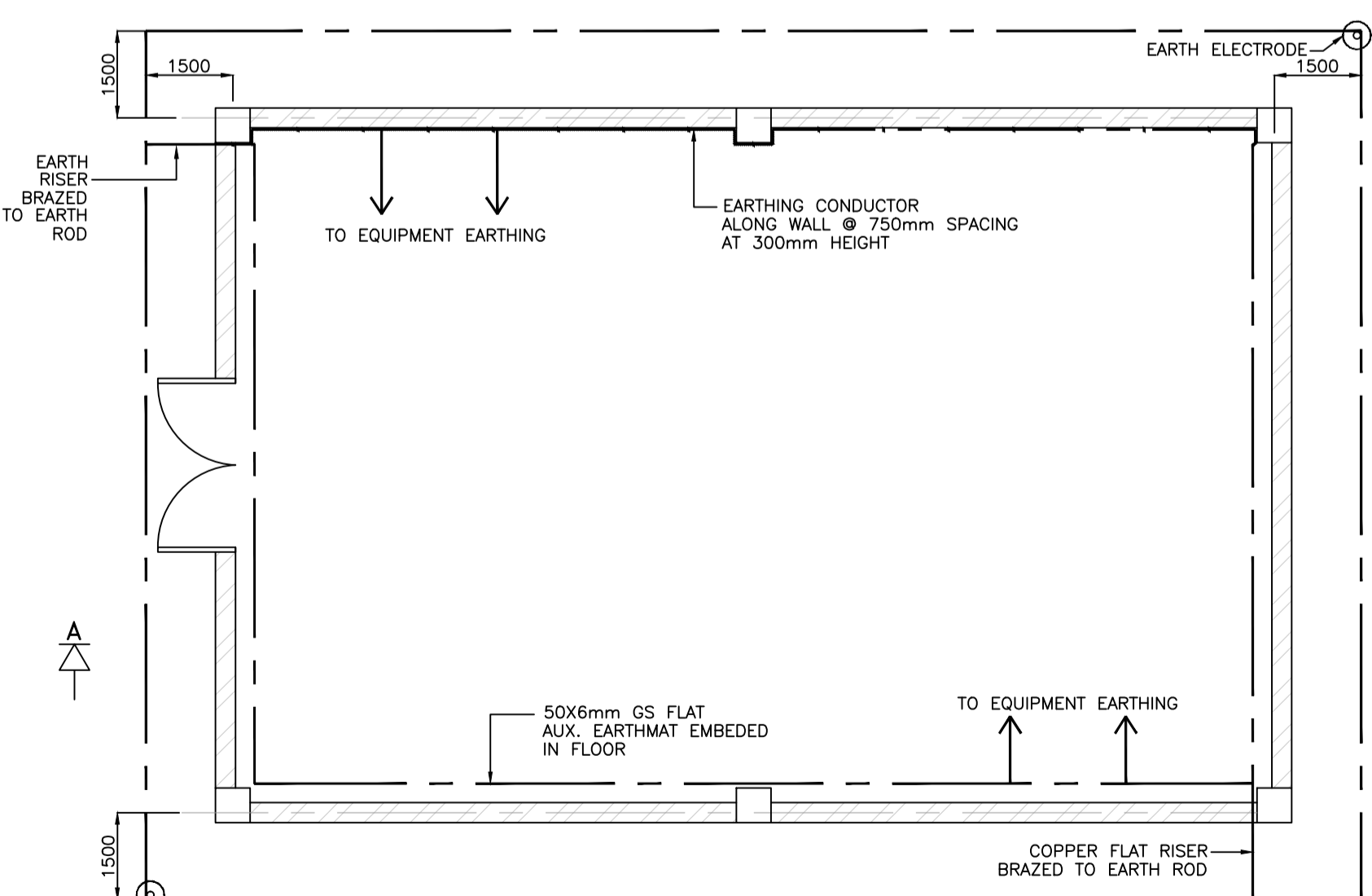
STEEL COLUMN EARTHING



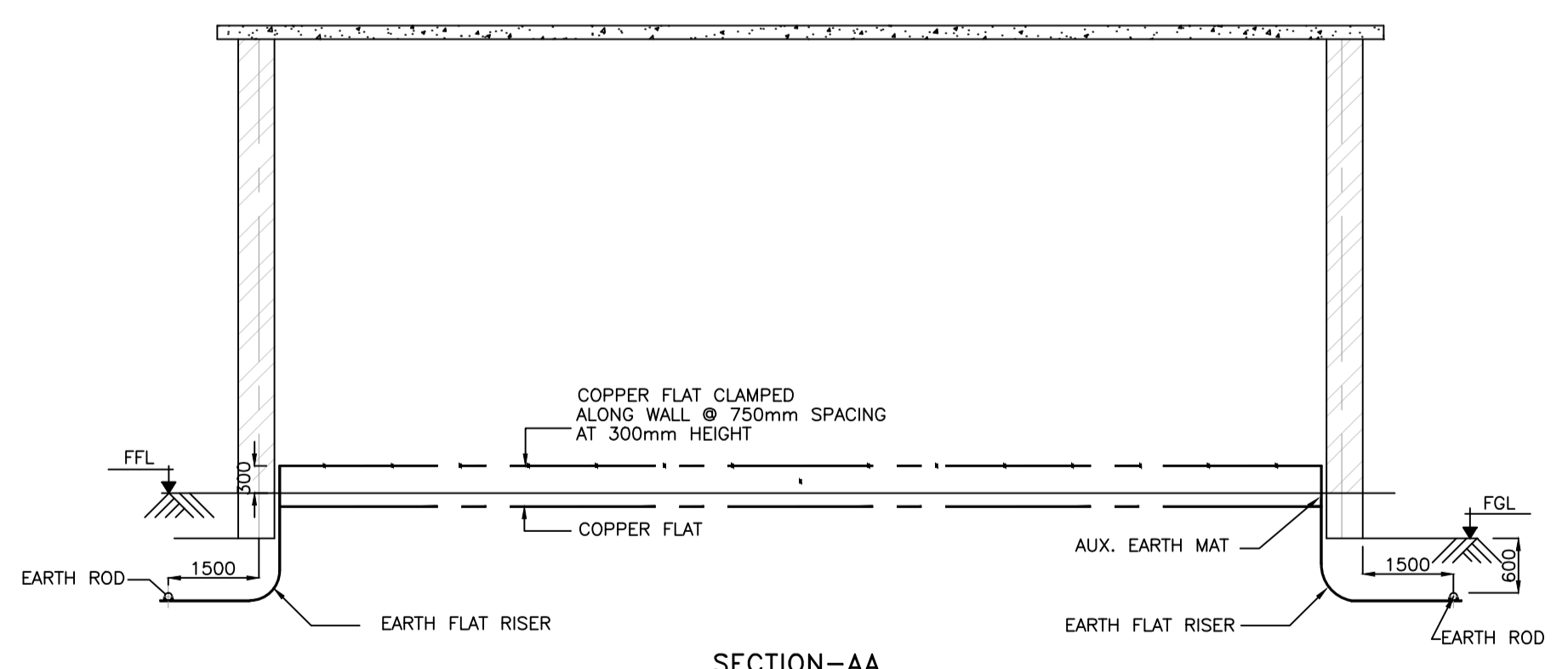
EARTHING OF CABLE TRAYS IN TRENCH



EARTHING OF MCC/DB/PANELS



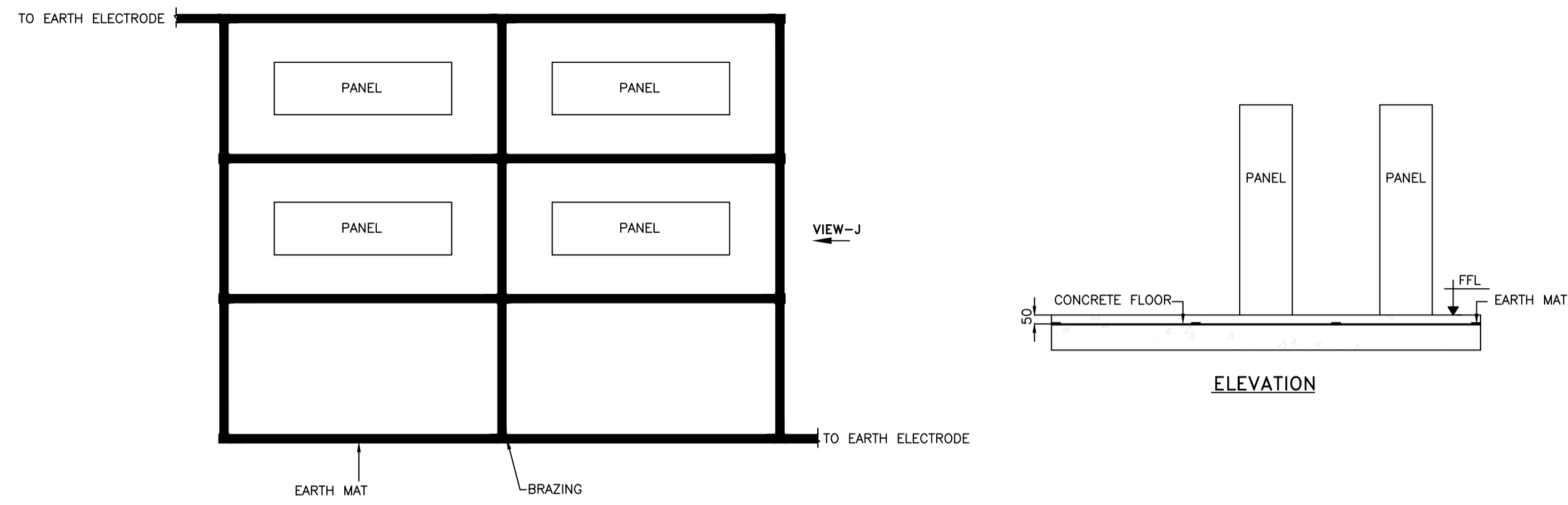
TYPICAL AUXILIARY BUILDING EARTHING



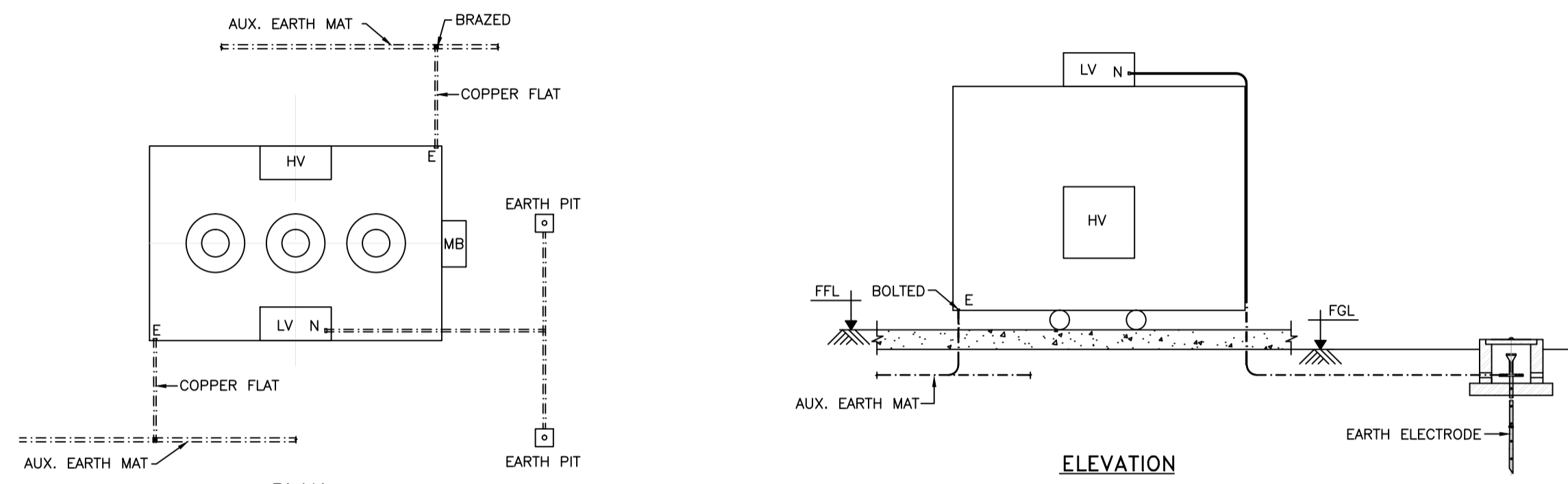
SECTION-AA

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					
			TOWNSHIP 2 x 660MW MAITREE STPP					
SIGNATURE		DATE						
DRAWN	CRK	29.06.18						
DESIGNED	MR	29.06.18						
CHECKED	PVN	02.07.18						
DEPT. HEAD	GS	02.07.18						
PROJ. MGR.	MAP	02.07.18						
RELEASED FOR	PRELIMINARY			DEPT. ELECTRICAL		JOB NO. 1114129		SCALE: --
	TENDER	✓		DWG. NO.		1114129-E-504		REV. A
	ENGINEERING							
	CONSTRUCTION							

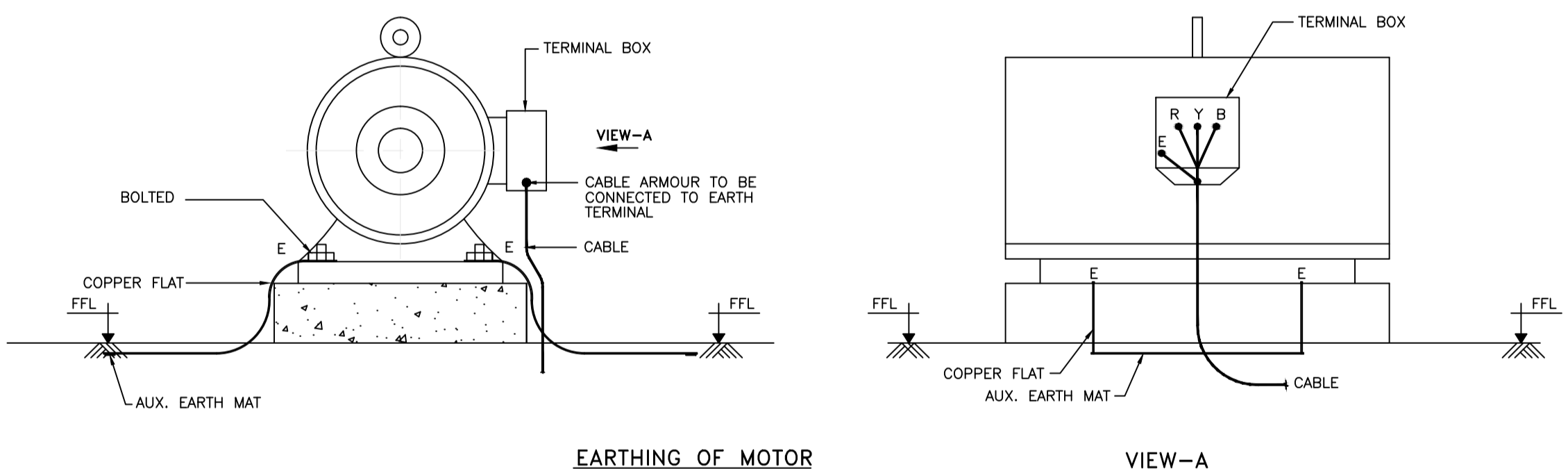
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AUXILIARY EARTH MAT IN CONCRETE FLOOR



INDOOR DRY TYPE TRANSFORMER EARTHING

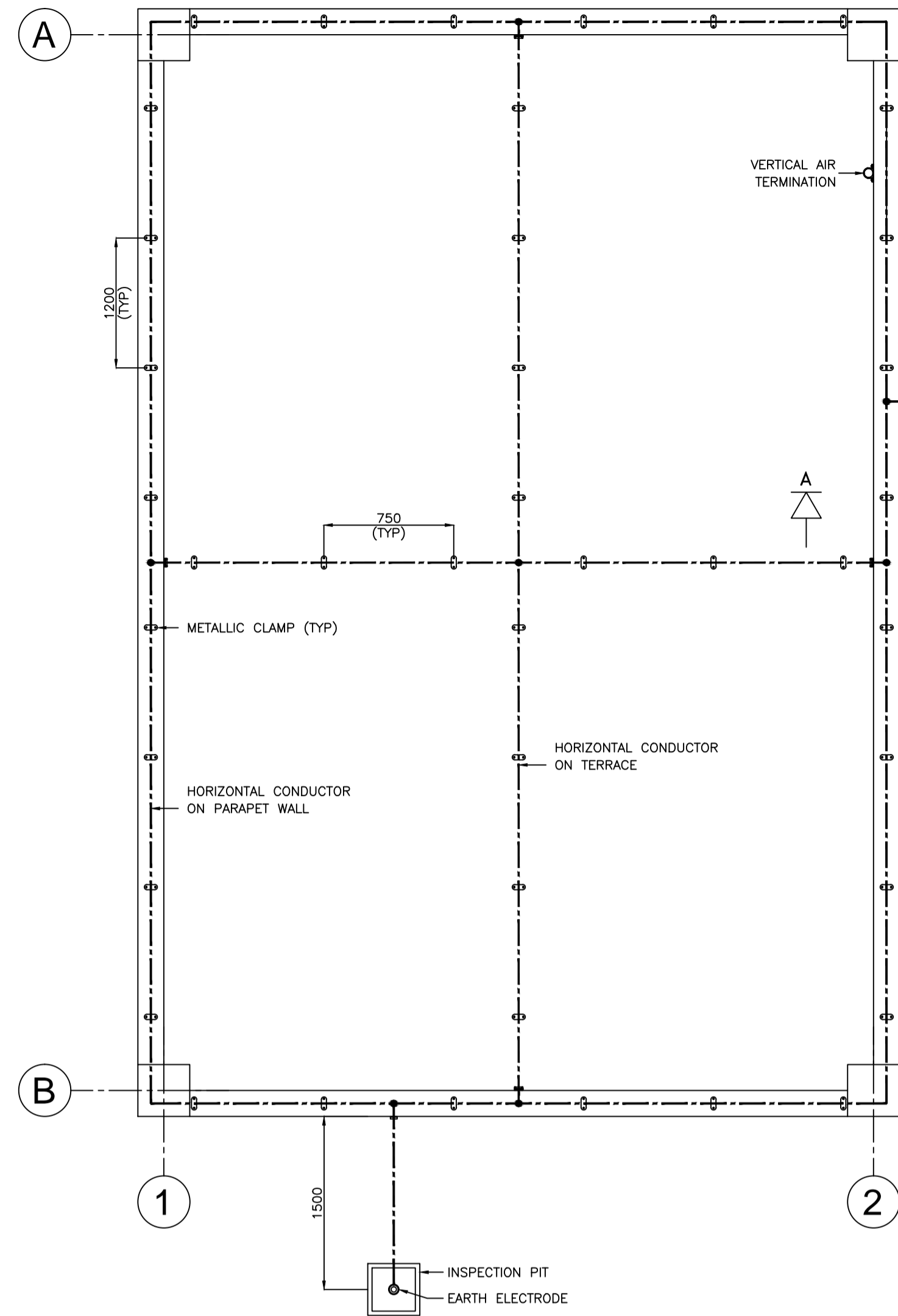


EARTHING OF MOTOR

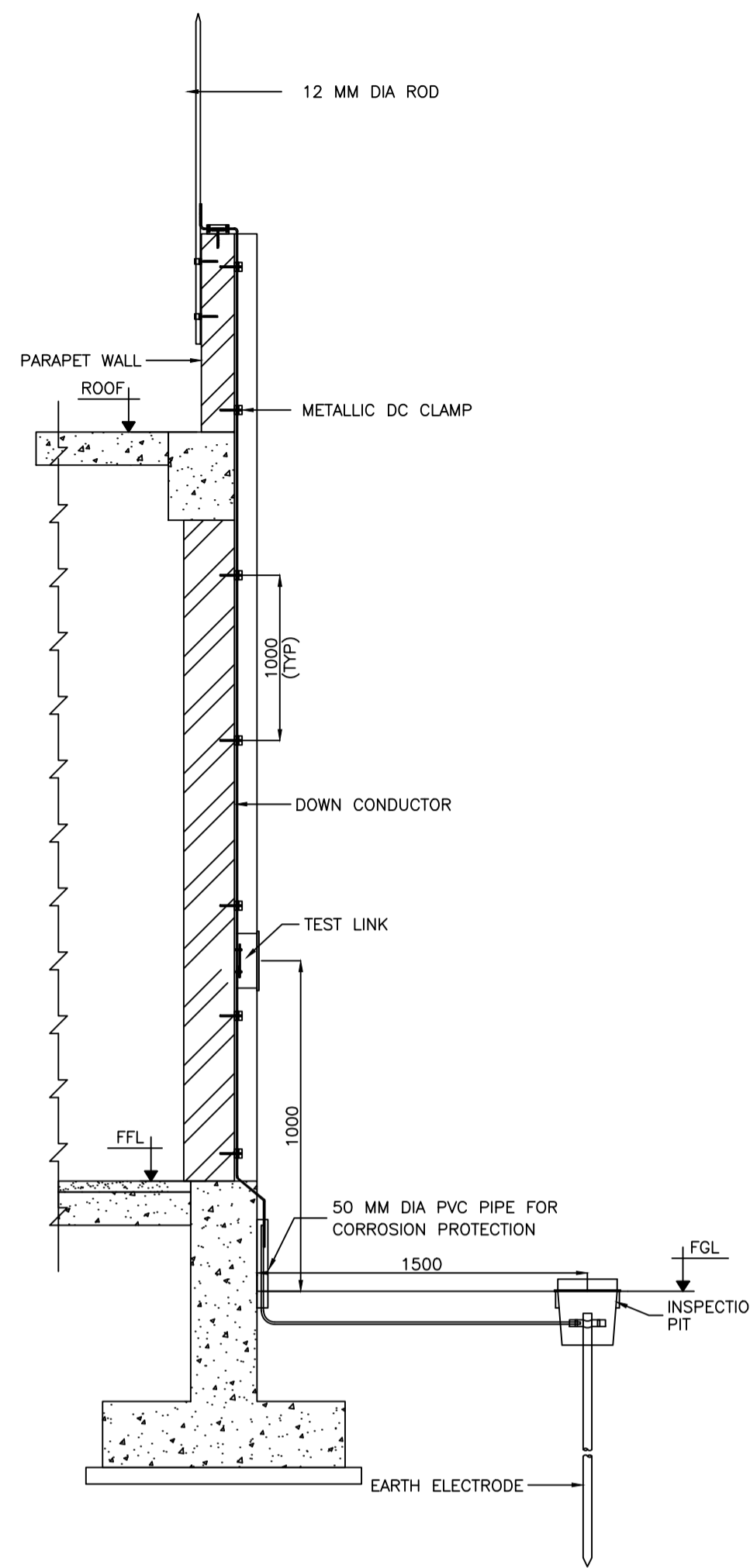
VIEW-A

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REV.	DATE	DESCRIPTION				DRN.	STR.	MECH.	PROC.	ELEC.	INST.
						APPROVED BY					
<b>FICHTNER</b>						<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>					
		SIGNATURE	DATE								
DRAWN		CRK	29.06.18								
DESIGNED		MR	29.06.18								
CHECKED		PVN	02.07.18	<b>TYPICAL DETAILS FOR EARTHING INSTALLATION</b>							
DEPT. HEAD		GS	02.07.18								
PROJ. MGR.		MAP	02.07.18								
RELEASED FOR	PRELIMINARY			DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.				
	TENDER		✓	DWG. NO. <b>1114129-E-504</b>				A			
	ENGINEERING										
	CONSTRUCTION							(SHEET 03 OF 03)			

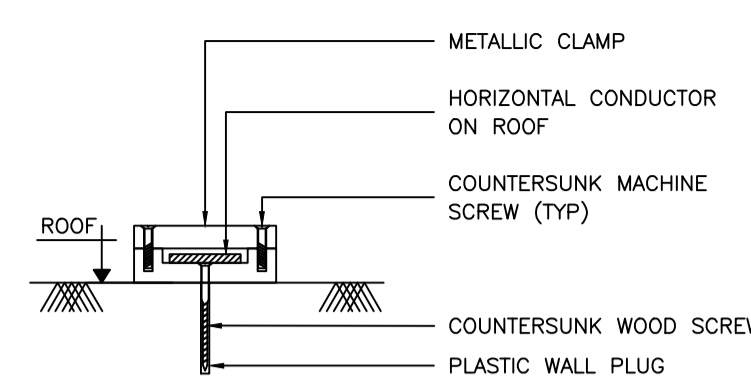
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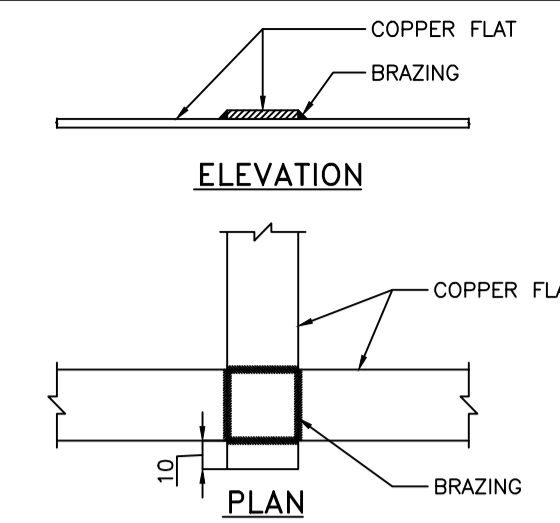
TYPICAL LIGHTNING CONDUCTOR ON PARAPET WALL/ROOF - PLAN



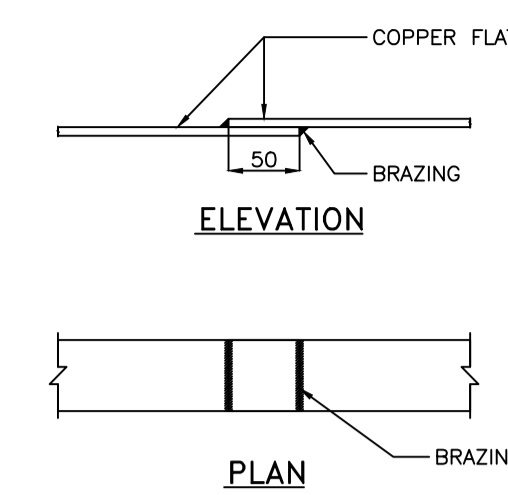
SECTION A-A



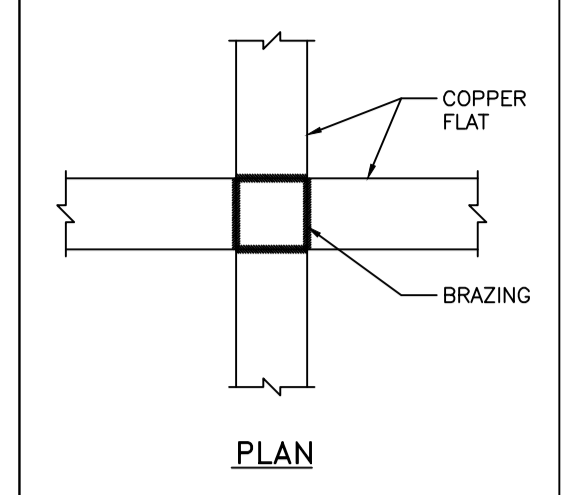
FIXING DETAIL OF CONDUCTOR ON ROOF



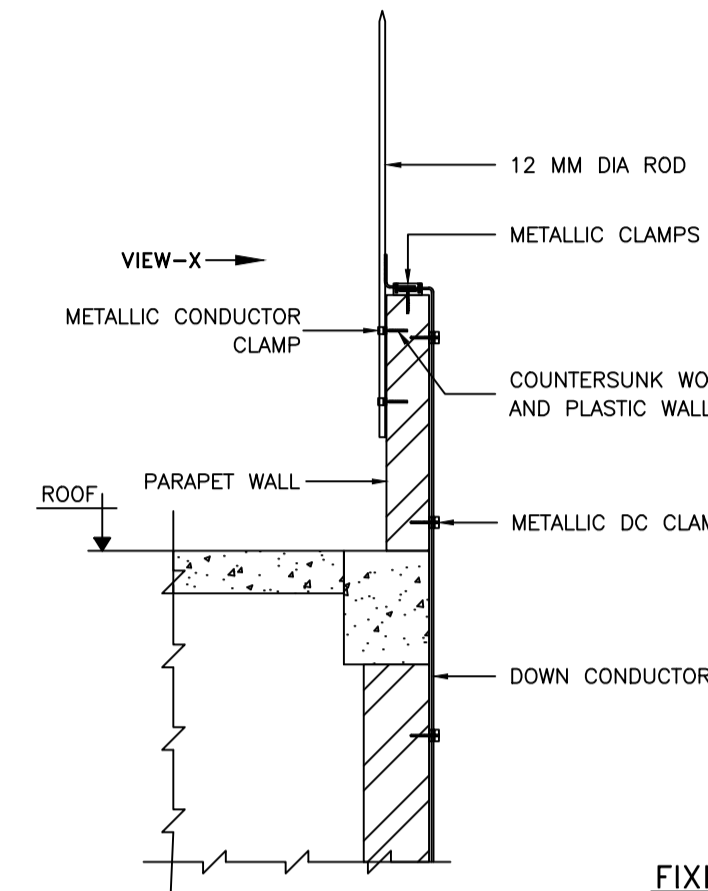
TEE JOINT



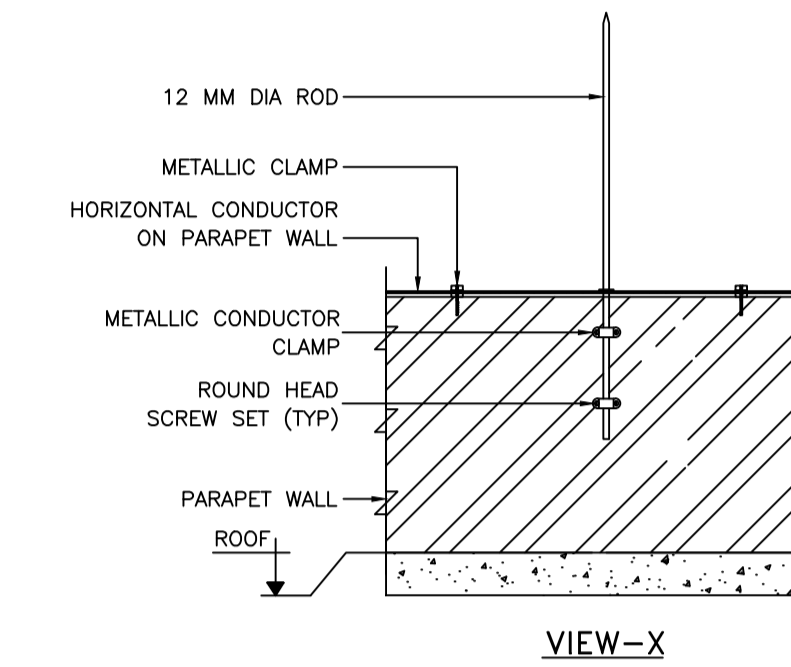
LAP JOINT



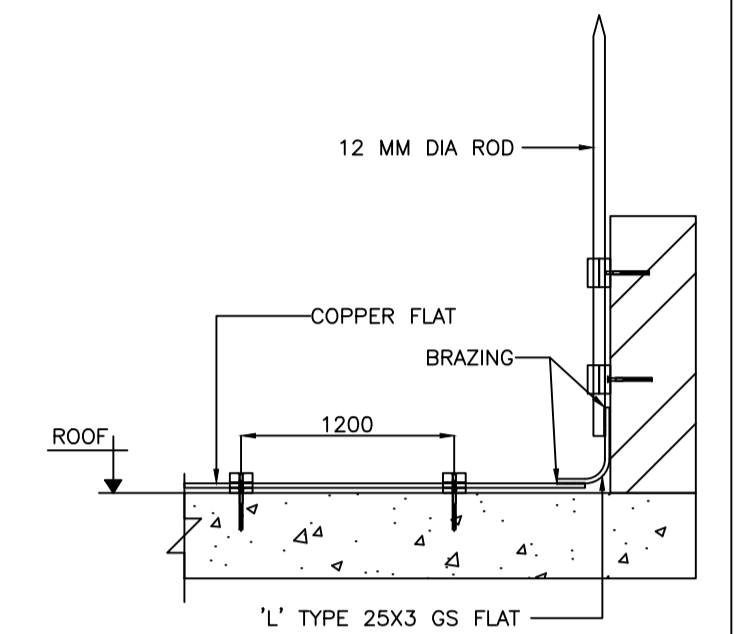
CROSS JOINT



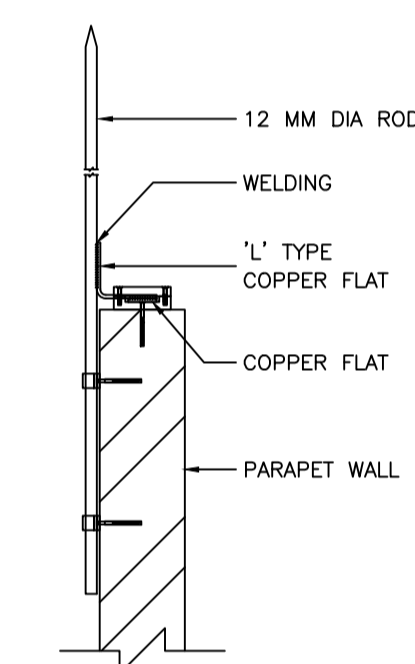
FIXING OF VERTICAL AIR TERMINATION



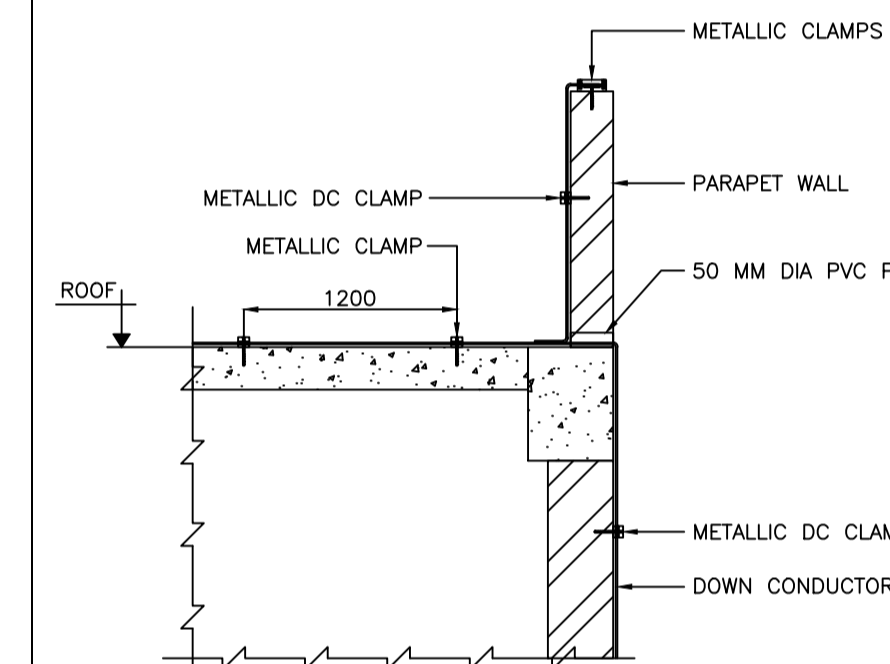
VIEW-X



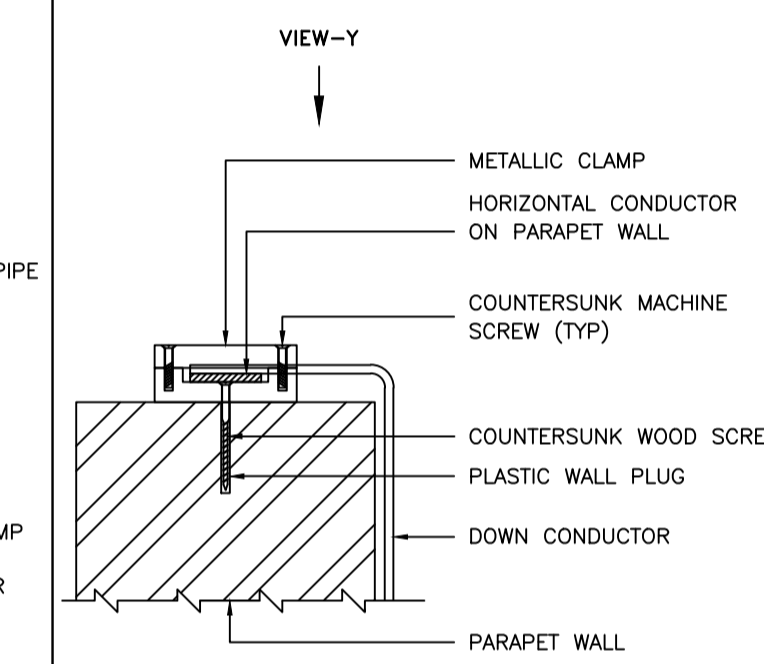
TYPICAL DETAIL OF CONNECTION BETWEEN VERTICAL AIR TERMINATION AND HORIZONTAL CONDUCTOR



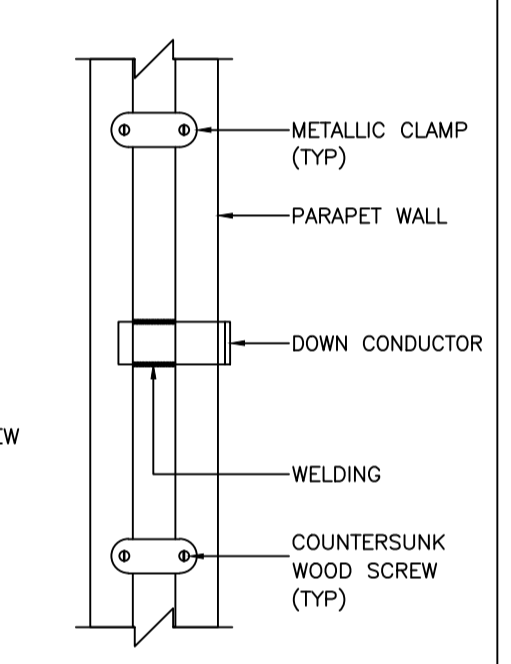
TYPICAL CONNECTION OF VERTICAL AIR TERMINATION AND CONDUCTOR



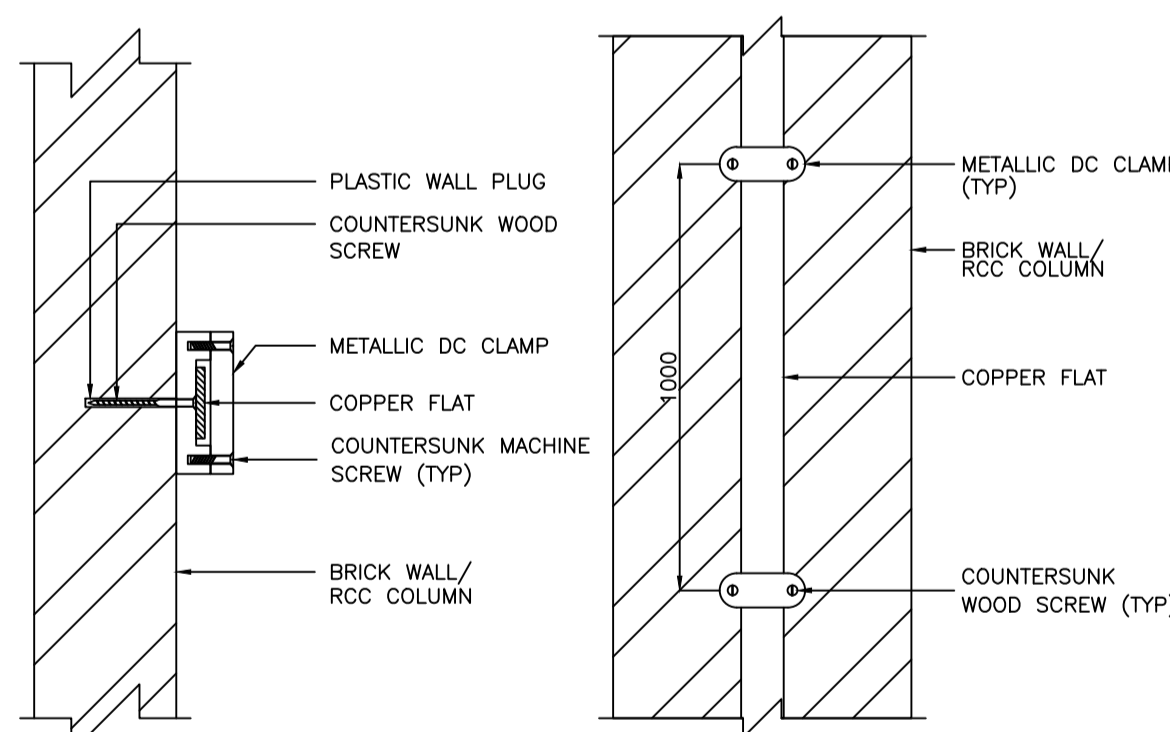
TYPICAL CONNECTION OF HORIZONTAL CONDUCTOR AND DOWN CONDUCTOR



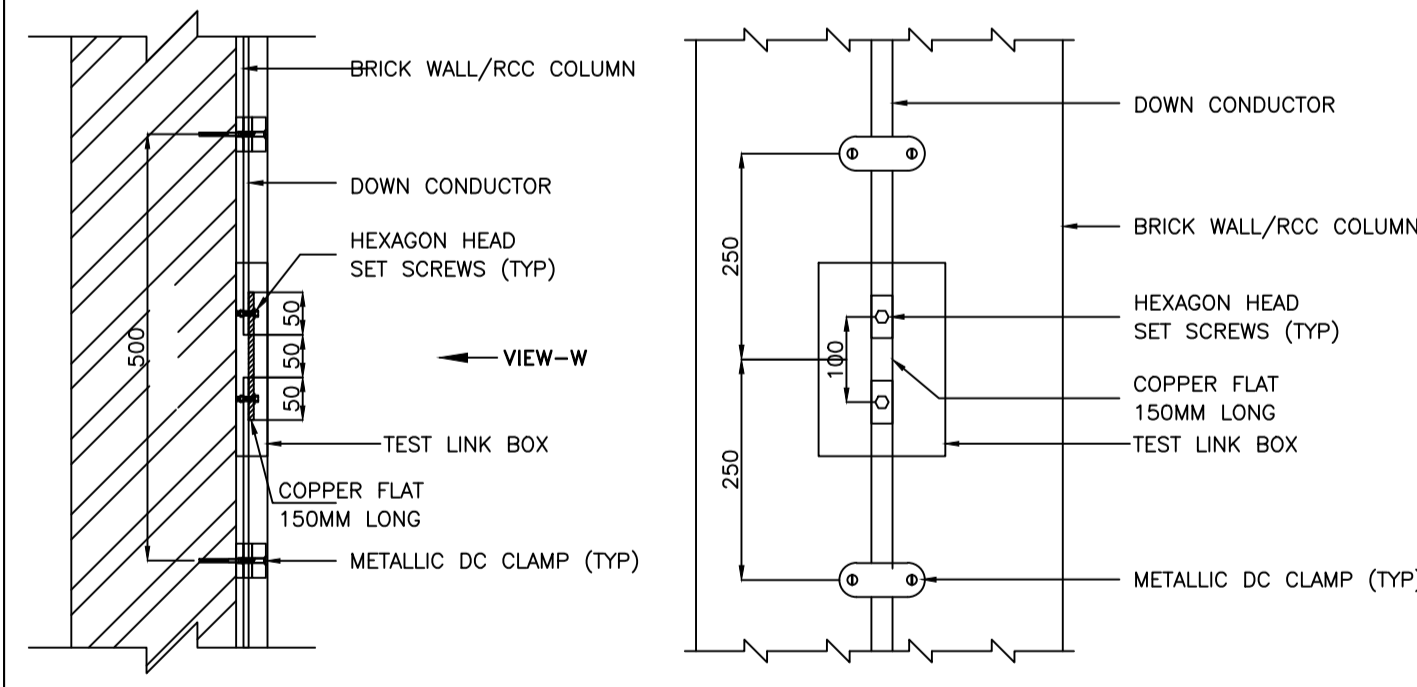
FIXING OF HORIZONTAL CONDUCTOR ON PARAPET WALL



VIEW-Y



TYPICAL FIXING OF DOWN CONDUCTOR



TEST LINK

NOTES:

- LIGHTNING PROTECTION SYSTEM SHALL BE CARRIED OUT AS PER IEC STANDARDS.
- LIGHTNING PROTECTION SYSTEM SHALL COMPRISE AIR TERMINATION, DOWN CONDUCTORS, TEST LINKS, EARTH TERMINATIONS & EARTH ELECTRODES.
- THE MATERIALS SHALL BE AS FOLLOWS:
- AIR TERMINATION NETWORK SHALL CONSIST OF VERTICAL OR HORIZONTAL CONDUCTORS OR COMBINATION OF BOTH.
- ALL EXPOSED METALLIC PROJECTIONS OF THE BUILDING SUCH AS LADDERS, HAND RAIL ETC., SHALL BE BONDED TO AIR TERMINATION NETWORK OR SHALL BE ISOLATED FROM THE LIGHTNING PROTECTION SYSTEM.
- DOWN CONDUCTORS SHOULD FOLLOW THE MOST DIRECT PATH POSSIBLE BETWEEN THE AIR TERMINAL NETWORK AND THE EARTH TERMINATION NETWORK. WHERE MORE THAN ONE DOWN CONDUCTOR IS USED, THE CONDUCTORS SHOULD BE ARRANGED AS EVENLY AS PRACTICABLE AROUND THE OUTSIDE WALLS OF THE STRUCTURE.
- EACH DOWN CONDUCTOR SHALL BE PROVIDED WITH A TEST LINK FOR TESTING, AT APPROXIMATELY 1.0M ABOVE GROUND LEVEL.
- AN EARTH ELECTRODE SHALL BE CONNECTED TO EACH DOWN CONDUCTOR ENCLOSED EARTH PIT SHALL BE PROVIDED FOR TESTING BY ISOLATING THE ELECTRODE.
- THE INSTALLATION WORK SHALL BE DULY CO-ORDINATED AT SITE WITH THE OTHER ACTIVITIES SUCH AS WEATHER PROOFING APPLICATION ON ROOF, SHEET CLADDING INSTALLATION, ETC.
- CONDUCTORS OF LIGHTNING PROTECTION SYSTEM SHALL NOT BE CONNECTED WITH THE CONDUCTORS OF EARTHING SYSTEM ABOVE GROUND LEVEL.
- FOR DETAILS OF EARTH PIT REFER EARTHING INSTALLATION DRAWING.

COMPONENT	MATERIAL	SIZE
HORIZONTAL AIR TERMINATION	COPPER STRIP	25X3 MM
VERTICAL AIR TERMINATION	COPPER ROD	12 MM DIA
DOWN CONDUCTOR	COPPER STRIP	25X3 MM

LEGENDS:  
DC - DOWN CONDUCTOR

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					

**FICHTNER**

TOWNSHIP  
2 x 660MW MAITREE STPP

	SIGNATURE	DATE
DRAWN	CRK	29.06.18
DESIGNED	MR	29.06.18
CHECKED	PVN	02.07.18
DEPT. HEAD	GS	02.07.18
PROJ. MGR.	MAP	02.07.18

TYPICAL DETAILS FOR LIGHTNING PROTECTION INSTALLATION

RELEASED FOR	DEPT. ELECTRICAL	JOB NO. 1114129	SCALE: --	REV.
PRELIMINARY				
TENDER				
ENGINEERING				
CONSTRUCTION				

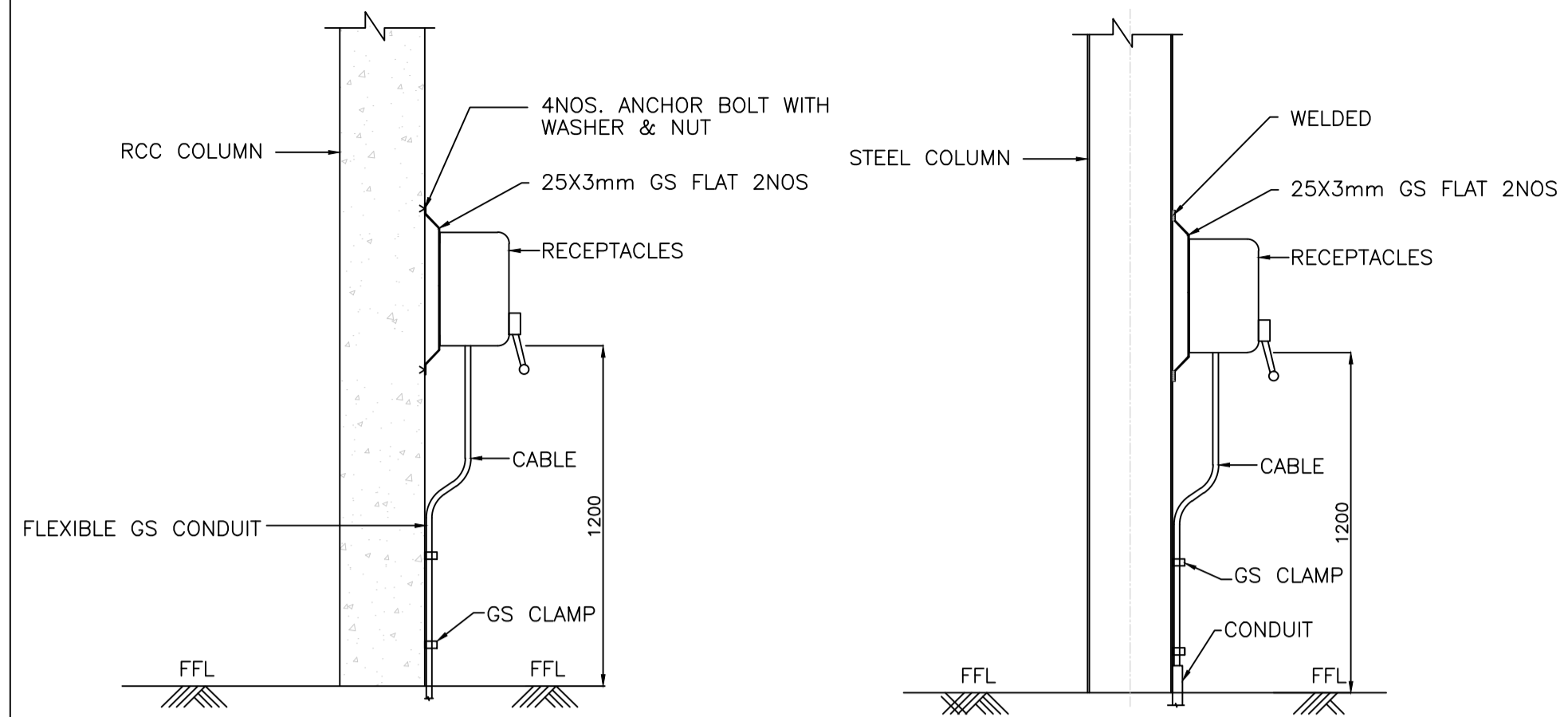
DWG.NO. 1114129-E-505

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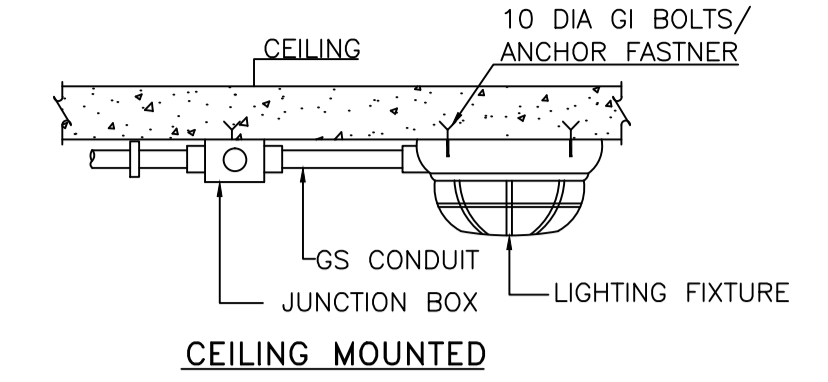
**GENERAL NOTES AND GUIDELINES FOR LIGHTING INSTALLATION:-**

- LIGHTING INSTALLATION SHALL CONFIRM TO THE REQUIREMENTS OF THE TECHNICAL SPECIFICATION.
- EQUIPMENT/DEVICES SHALL BE INSTALLED IN A NEAT WORK MANNER SO THAT IT IS LEVELED, PLUMBED, SQUARED AND PROPERLY ALIGNED AND ORIENTED.
- THE LOCATION OF THE LIGHT FIXTURES, RECEPTACLES, SWITCHES, ETC. SHALL BE SUCH AS TO AVOID INTERFERENCE WITH PIPING/VENTILATION DUCTS/BUSDUCT OR OTHER EQUIPMENT AND TO AVOID OBJECTIONABLE SHADOWS AND GLARE.
- UNLESS OTHERWISE APPROVED, LIGHTING INSTALLATION SHALL BE CARRIED OUT ONLY AFTER ALL OTHER SERVICES SUCH AS PIPING, AIR DUCTING, CABLE TRAY ROUTING ETC IN A PARTICULAR AREA HAVE BEEN INSTALLED.
- LIGHTING FIXTURES SHALL BE FIRMLY SUPPORTED FROM STRUCTURES. CLAMPS MAY BE BOLTED OR WELDED TO THE STEEL WORKS. IN CASE OF CONCRETE STRUCTURES, FIXTURES MAY BE FIXED WITH THE HELP OF ANCHOR FASTENERS AND CLAMPS.
- IN ROOMS HAVING FALSE CEILING LIGHTING FIXTURES, RECEPTACLES, SWITCHBOXES AND THE CONDUITS SHALL BE RECESS MOUNTED.
- IN FALSE CEILING AREAS, TYPE OF LIGHT FIXTURES SHALL MATCH/SUIT TYPE OF FALSE CEILING BEING CONSIDERED.
- RUBBER CUSHIONS SHALL BE PROVIDED FOR LIGHTING FIXTURES WHICH ARE SUBJECT TO VIBRATIONS.
- FOR OUTDOOR LIGHTING & ROAD LIGHTING, PVC INSULATED, PVC INNERSHEATHED, ARMoured, FRLS PVC OUTER SHEATHED COPPER CONDUCTOR CABLES SHALL BE PROVIDED.
- WIRING FOR LIGHTING CIRCUITS OF NORMAL AC SYSTEM, EMERGENCY AC SYSTEM AND DC SYSTEM SHALL RUN IN SEPARATE CONDUITS. TWO DIFFERENT PHASE CIRCUITS SHALL NOT BE LAID IN THE SAME CONDUIT.
- EACH CIRCUIT SHALL HAVE INDEPENDENT PHASE AND NEUTRAL WIRE.
- WIRING FOR LIGHTING FIXTURES AND POWER RECEPTACLE UNITS SHALL BE FED FROM DIFFERENT CIRCUITS.
- ALL THE EQUIPMENT INCLUDING LIGHTING FIXTURES, RECEPTACLES, LIGHTING PANELS, SWITCH BOXES, FANS, EXHAUST FANS ETC. SHALL BE MARKED WITH APPROVED TAG NUMBERS BY PAINTING.
- EMBEDDED CONDUITS SHALL HAVE A MINIMUM CONCRETE COVER OF 40MM. POSITIONING AND ENSURING PROPER ALIGNMENT DURING CONCRETING BY OTHER AGENCIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL CONDUITS TO BE EMBEDDED IN CONCRETE SHALL BE INSPECTED TO ENSURE CONTINUITY AND ACCURACY OF PLACEMENT BEFORE CONCRETE IS POURED. ALL EMBEDDED PIPES/CONDUITS, SLEEVES, LONG RADII BENDS ETC. SHALL HAVE AT LEAST 50MM LONG EXTENSION BEYOND THE EMBEDDED PART, FOR EXTENSION OF THE SAME OR FOR PROVIDING END PLUGS. IF ANY EMBEDDED CONDUIT IS NOT REQUIRED IT SHALL BE PLUGGED/SEALED. ALL ACCESSORIES/FITTINGS REQUIRED MAKING THE INSTALLATION SHALL INCLUDE TEES, ELBOWS, CHECK NUTS, END CAPS, BELL MOUTHS FOR WATER PROOF SEALING, PULL BOXES, CLAMPS, SPACERS ETC.
- FLEXIBLE CONDUIT SHALL BE USED FOR DROPPERS ABOVE FALSE CEILING FOR RECESS MOUNTED FIXTURES.
- ALL CONDUITS INSTALLED OUTDOOR SHALL BE SLOPED TOWARDS PULL BOXES, HAND HOLES/MANHOLES FOR DRAINAGE. WHERE NO PROVISION FOR DRAINAGE CAN BE MADE, BOTH END OF CONDUITS SHALL BE SEALED AFTER CABLE IS LAID THROUGH. MINIMUM SLOPES OF 1 IN 400 SHALL BE PROVIDED.
- THE MINIMUM SIZE OF CONDUIT USED FOR WIRING SHALL BE 20MM DIAMETER FOR BOTH EXPOSED AND EMBEDDED SYSTEMS. THE WIRES IN CONDUITS SHALL OCCUPY A MAXIMUM OF 40% OF THE INTERNAL CONDUIT AREA. THE MAXIMUM NUMBER OF WIRES THAT CAN BE ROUTED INSIDE THE CONDUIT SHALL BE AS FOLLOWS.

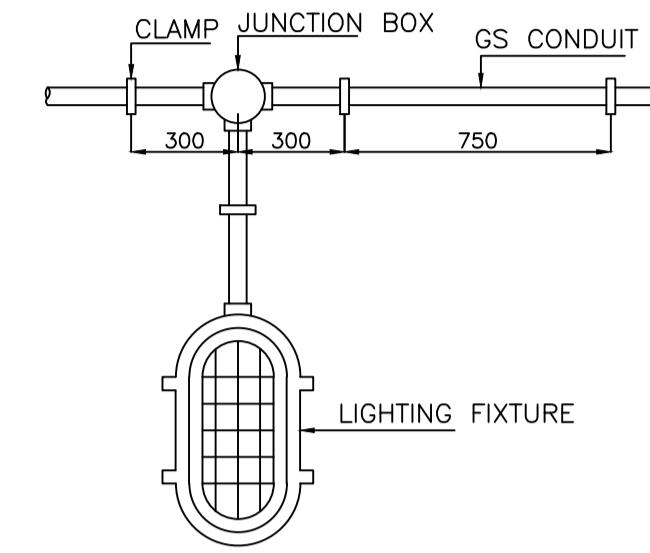
NOMINAL CONDUIT SIZE	MAXIMUM NUMBER OF WIRE		
	1.5 SQ.MM	2.5 SQ.MM	4 SQ.MM
20mm DIA	5	4	3
25mm DIA	10	8	6
32mm DIA	14	12	10



**MOUNTING DETAILS OF RECEPTACLES**

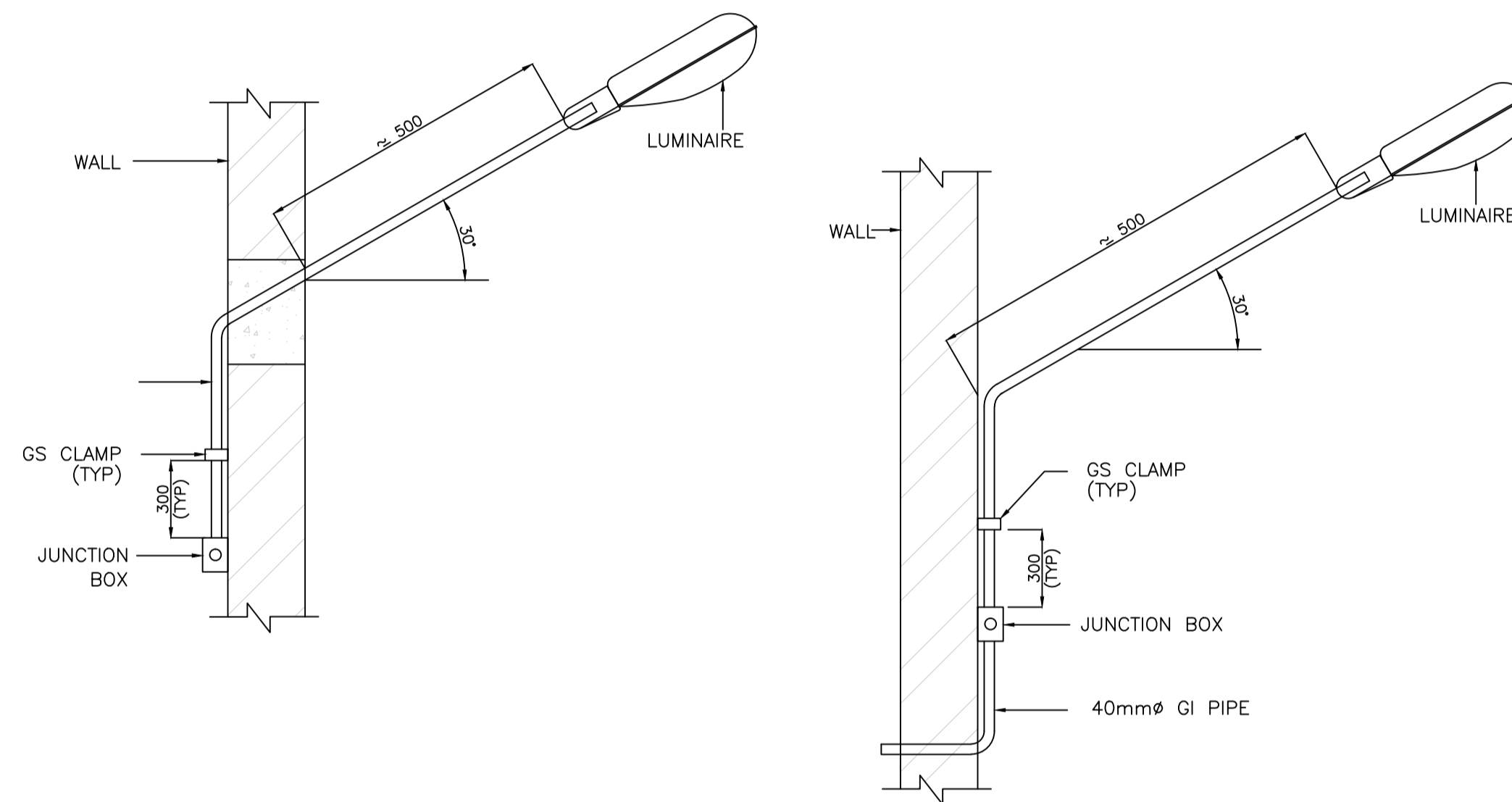


**CEILING MOUNTED**

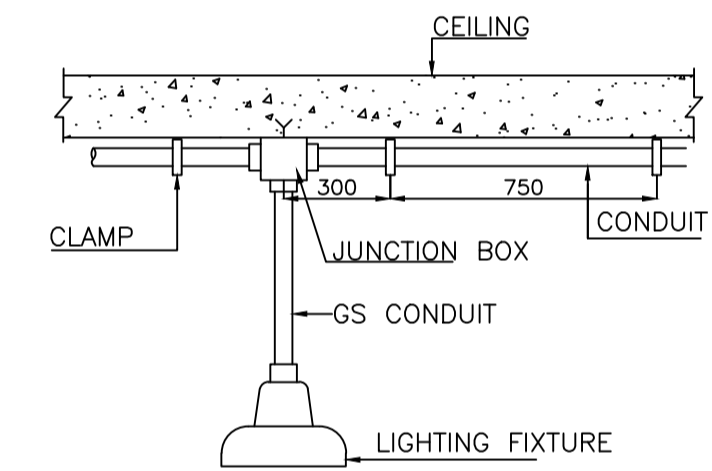
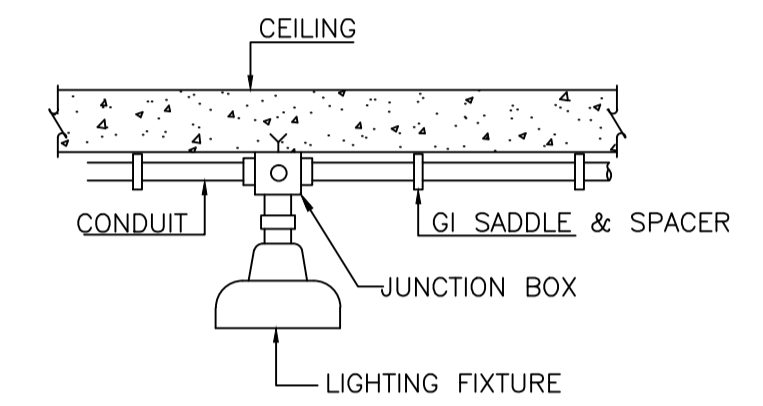


**WALL MOUNTING**

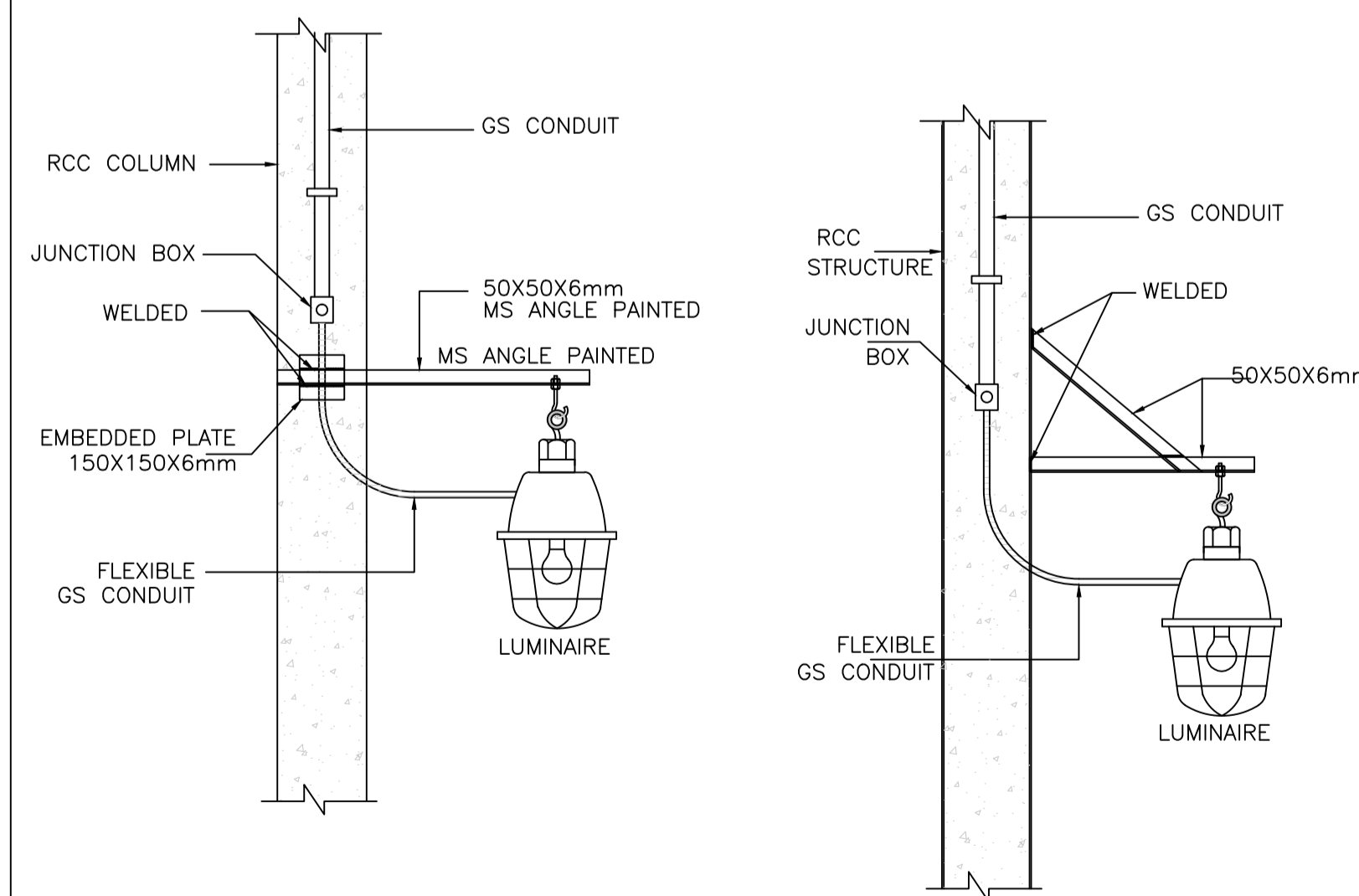
**MOUNTING DETAIL FOR BULK HEAD FIXTURES**



**WALL BRACKET MOUNTING DETAIL FOR STREET LIGHT LUMINAIRE**



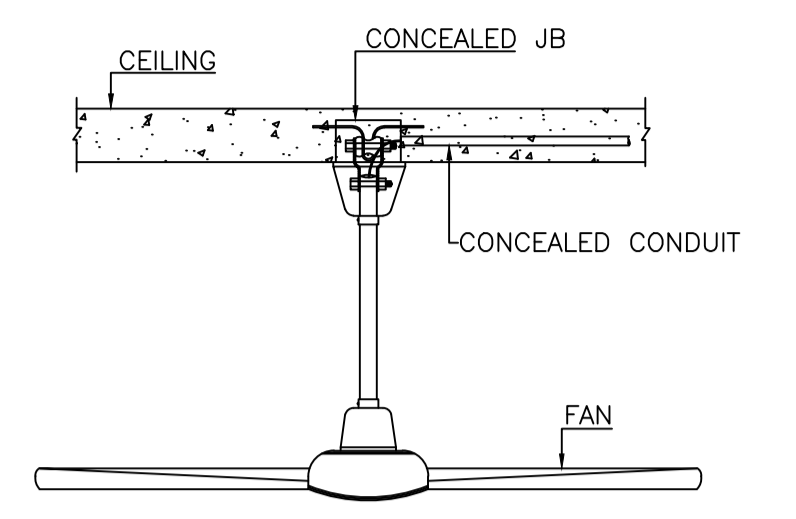
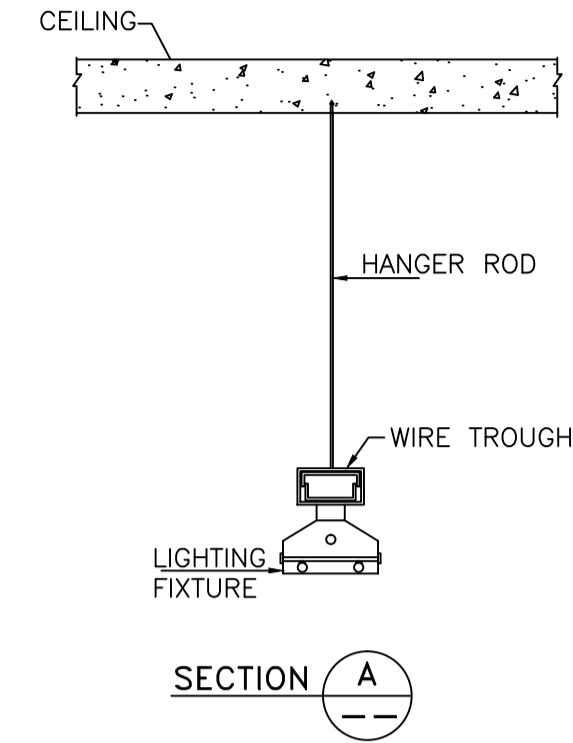
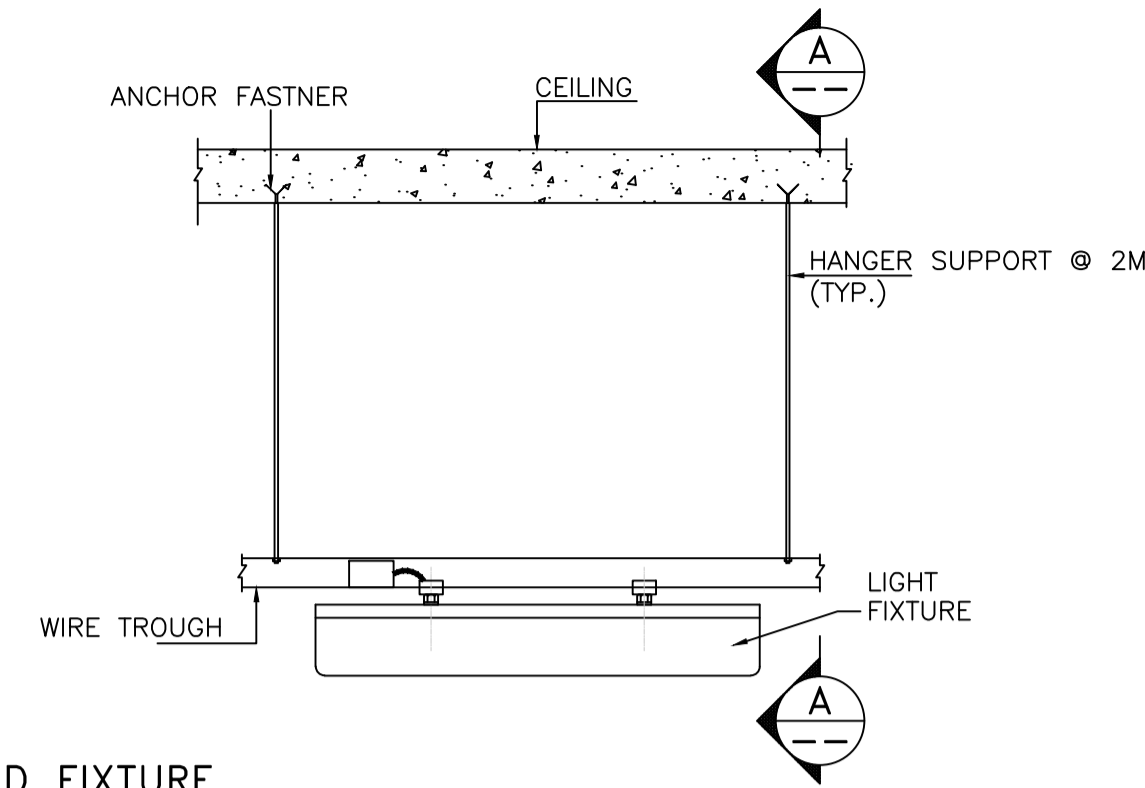
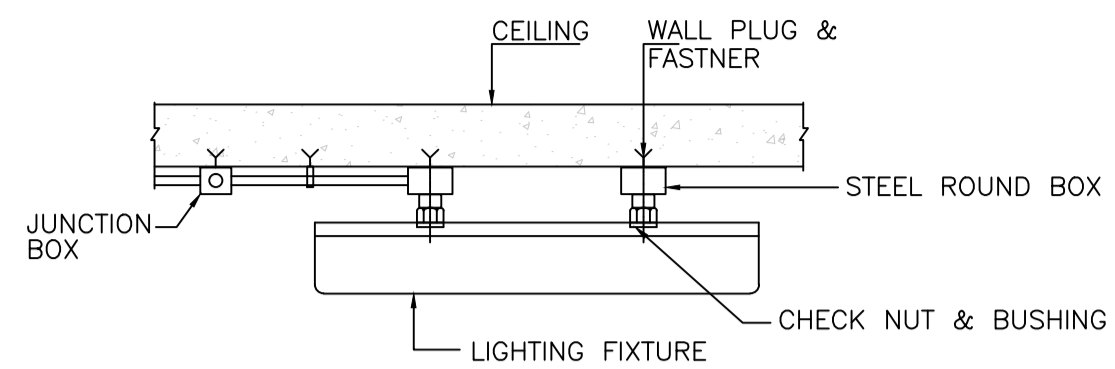
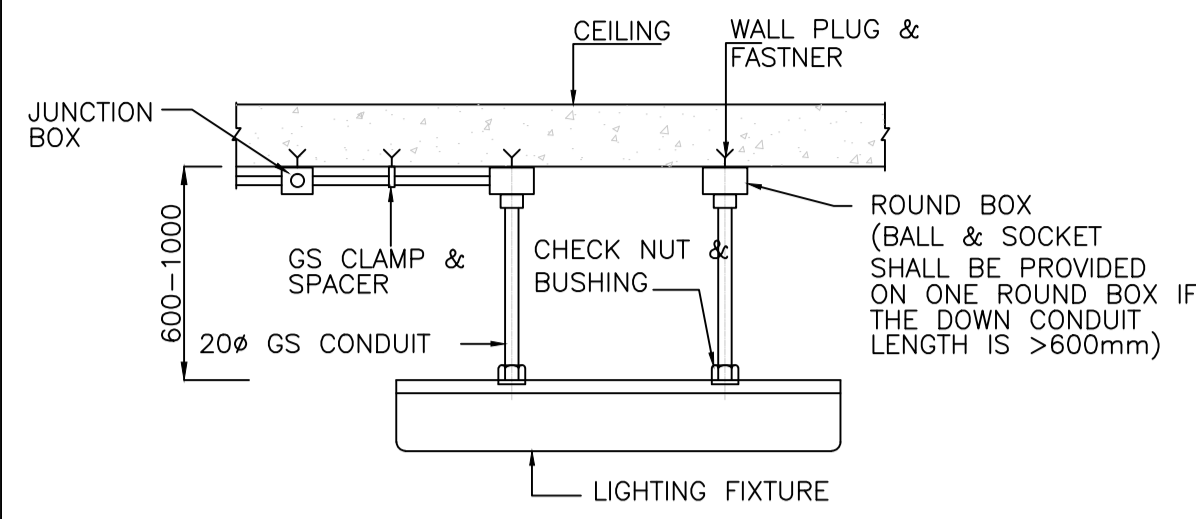
**MOUNTING DETAIL OF DOWN LIGHT FIXTURES**



**COLUMN MOUNTING DETAIL FOR WELL GLASS LUMINAIRE**

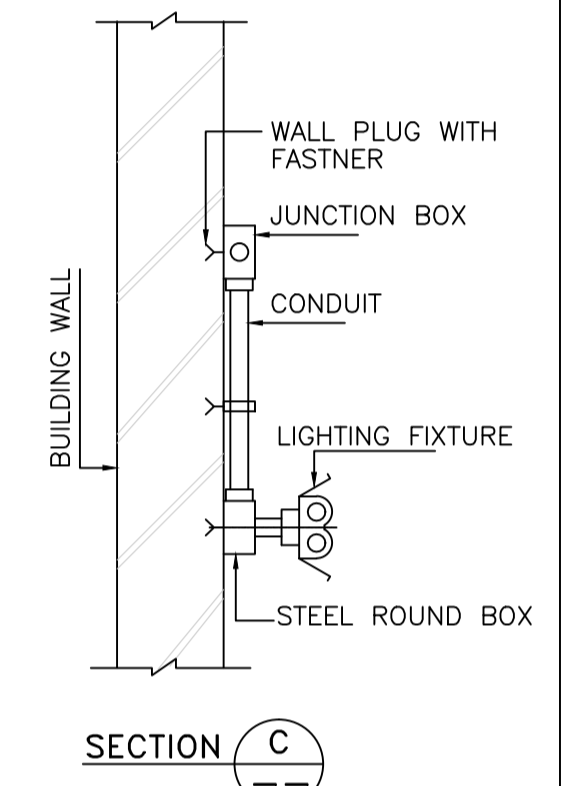
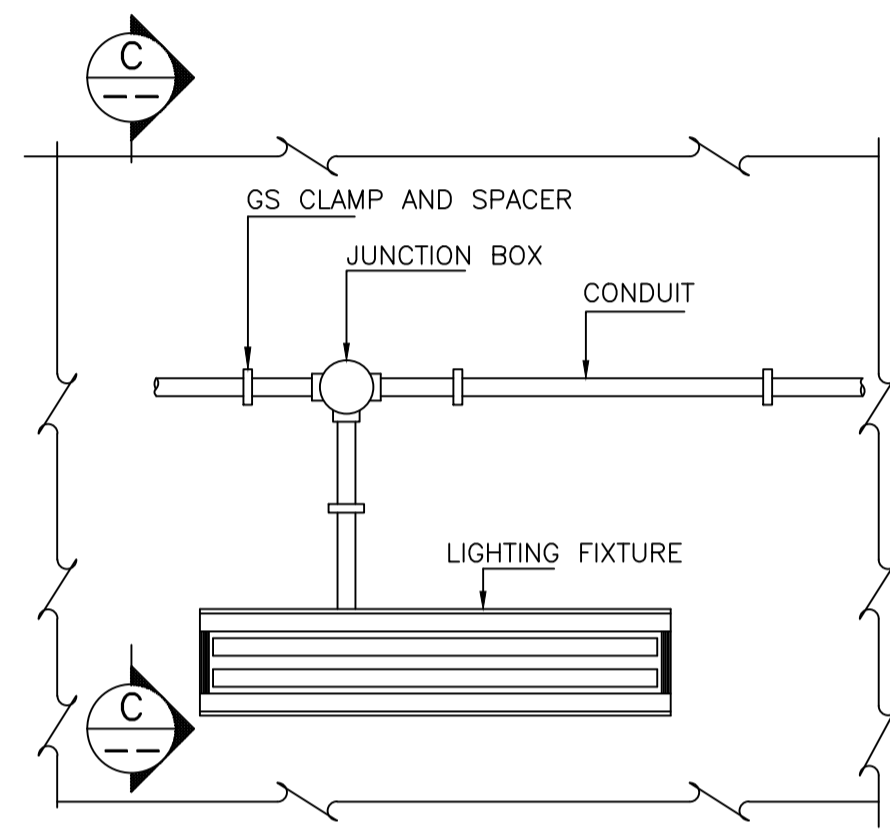
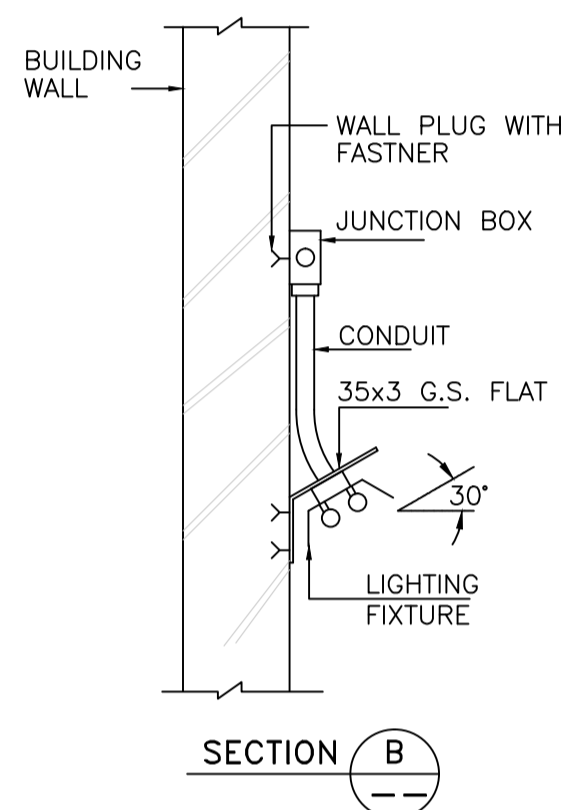
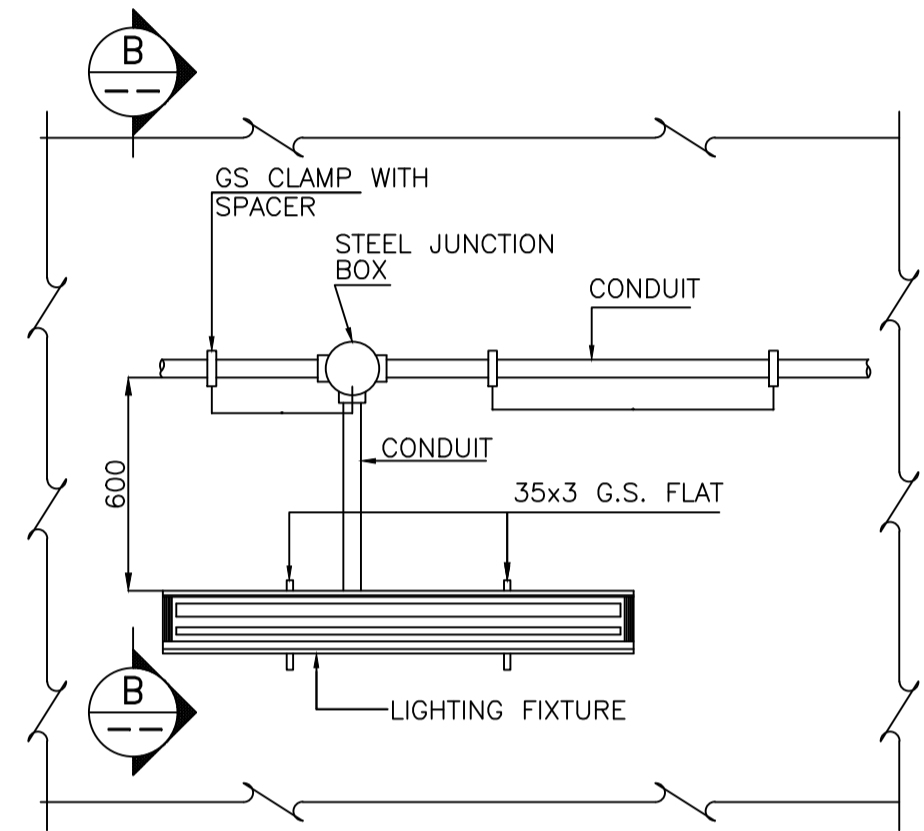
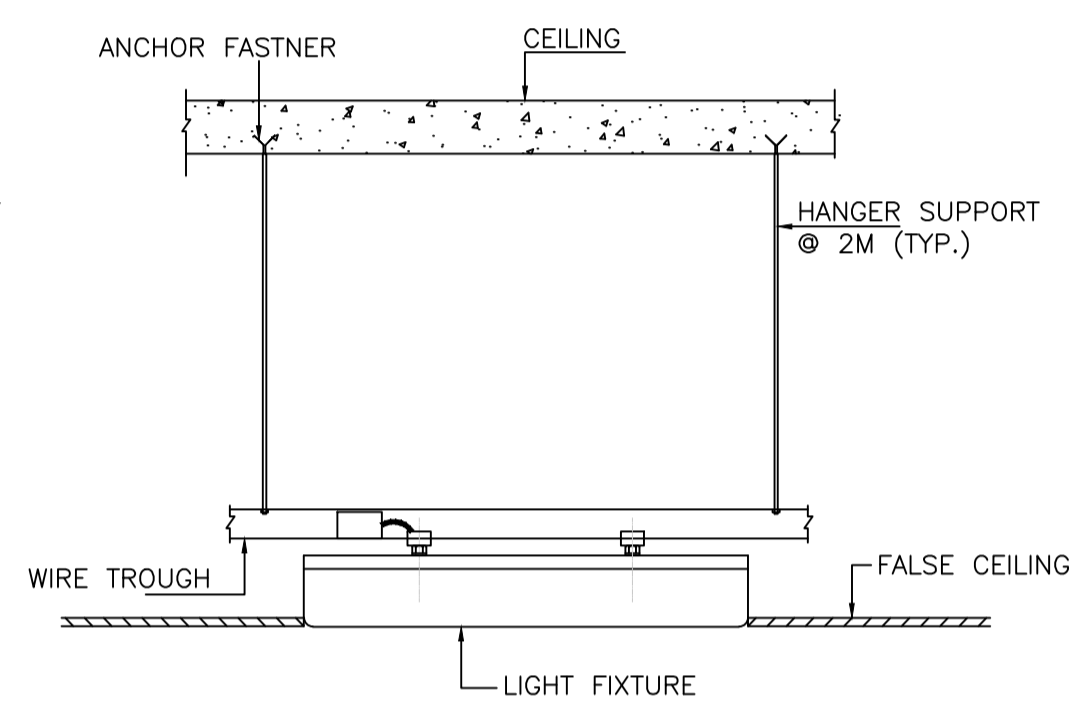
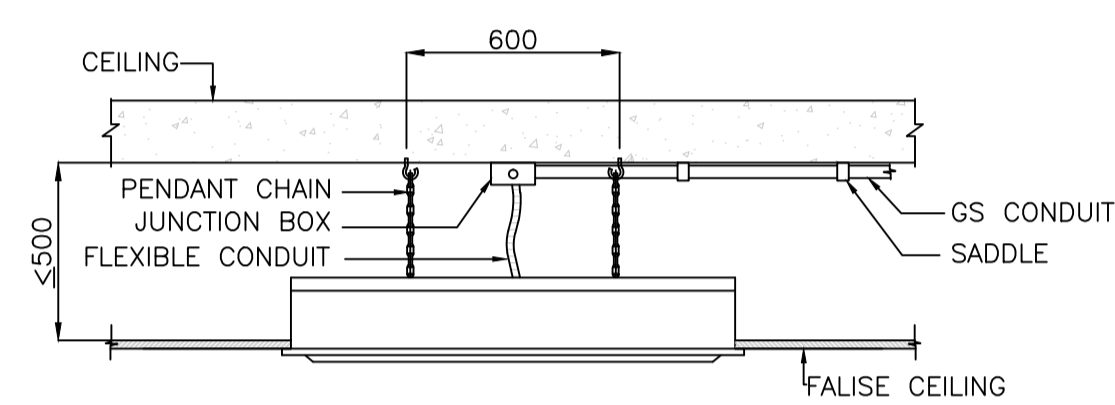
REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					

<b>FICHTNER</b>		<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>	
		<b>TYPICAL INSTALLATION DETAILS FOR ILLUMINATION SYSTEM</b>	
DRAWN	CRK	DATE	29.06.18
DESIGNED	MR	DATE	29.06.18
CHECKED	PVN	DATE	02.07.18
DEPT. HEAD	GS	DATE	02.07.18
PROJ. MGR.	MAP	DATE	02.07.18
RELEASED FOR	PRELIMINARY	DEPT. ELECTRICAL	JOB NO. 1114129
	TENDER	SCALE:	--
	ENGINEERING	DWG.NO.	<b>1114129-E-506</b>
	CONSTRUCTION	(SHEET 01 OF 03)	<b>A</b>



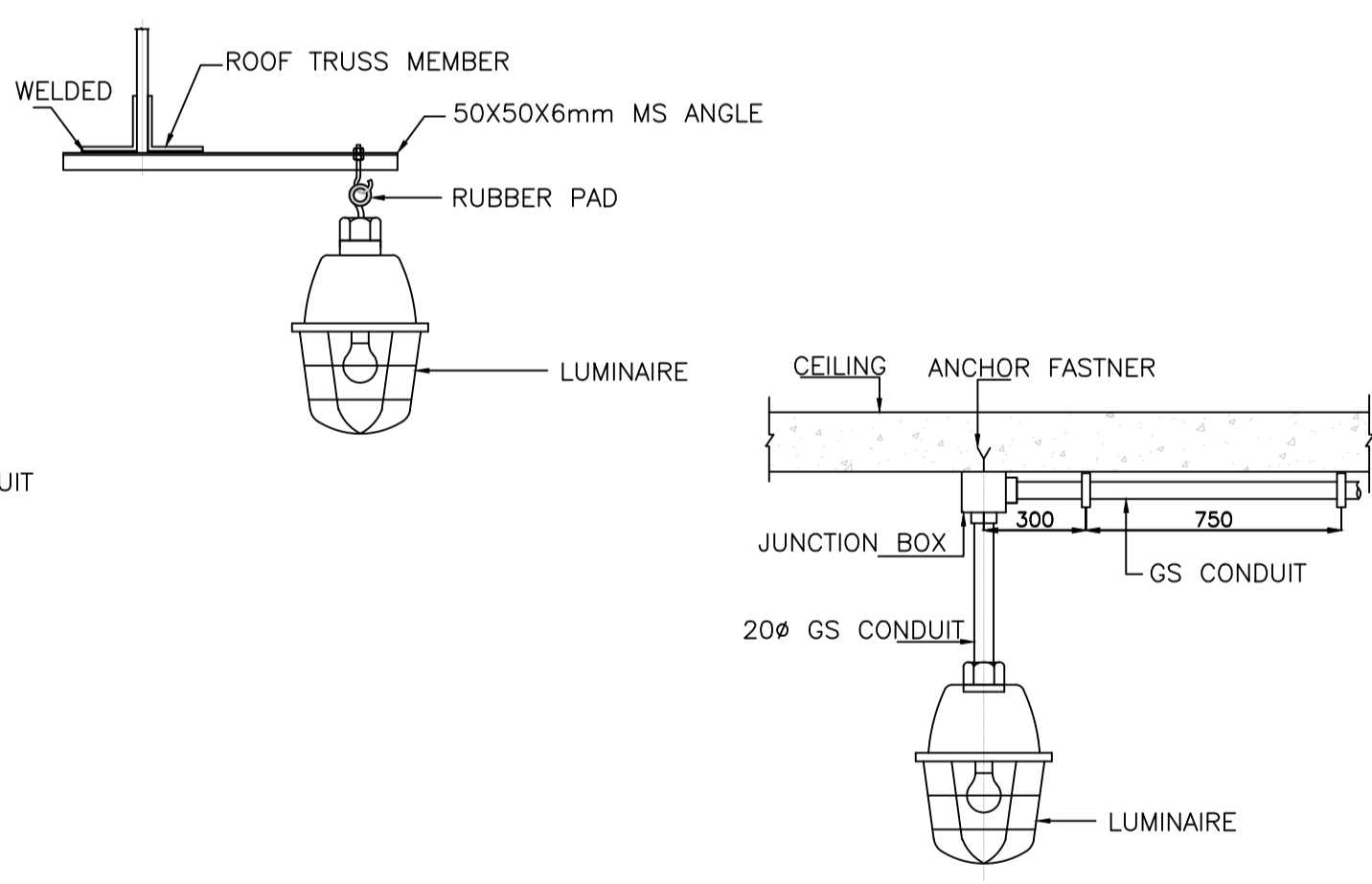
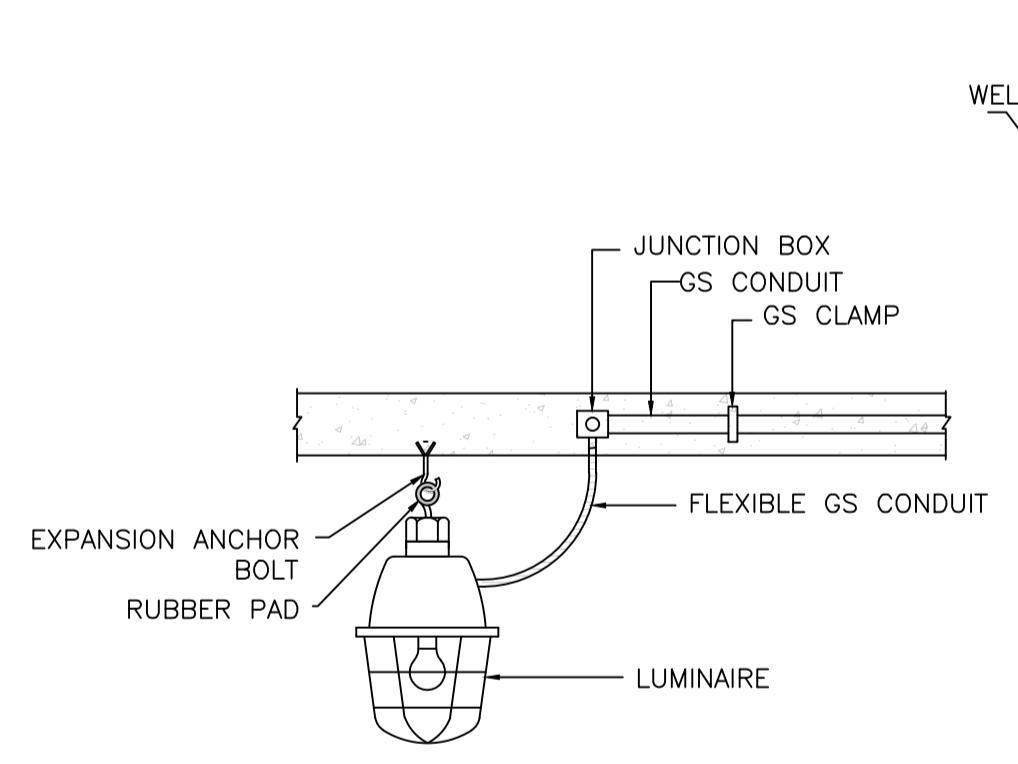
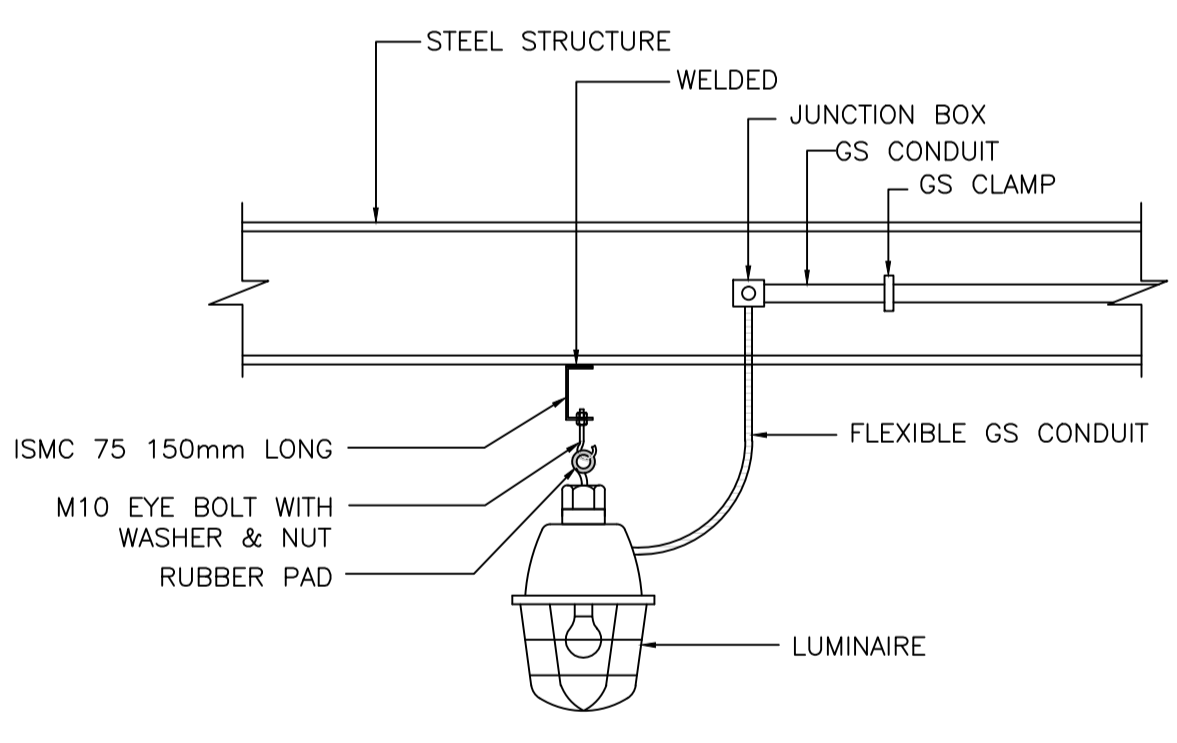
CEILING MOUNTING DETAILS FOR LED FIXTURE

FIXING DETAIL OF CEILING FAN



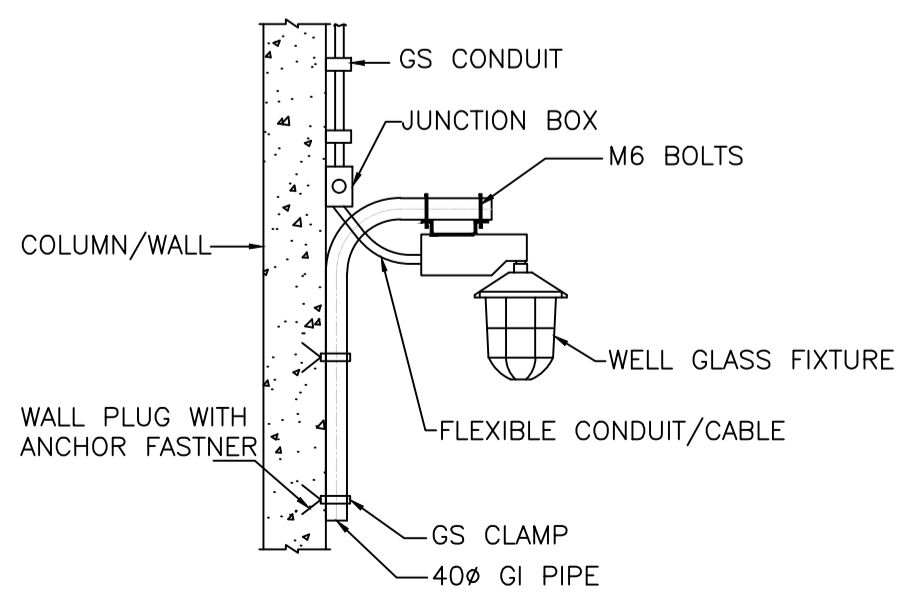
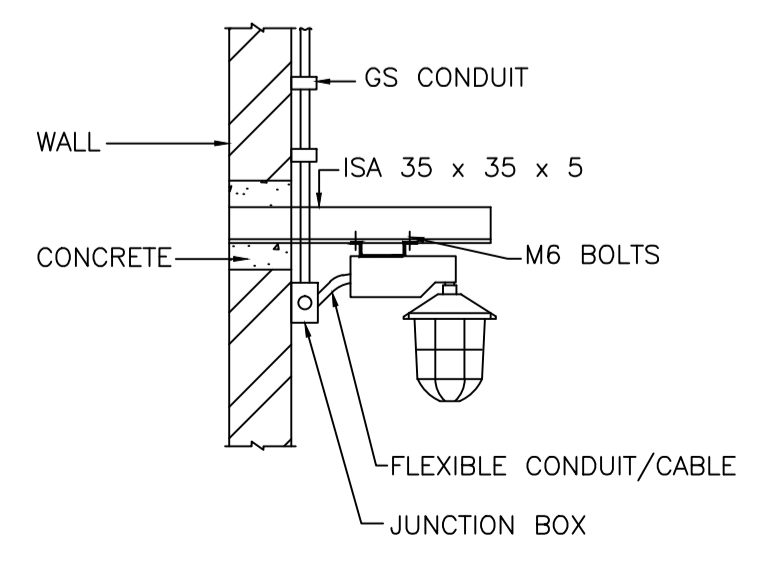
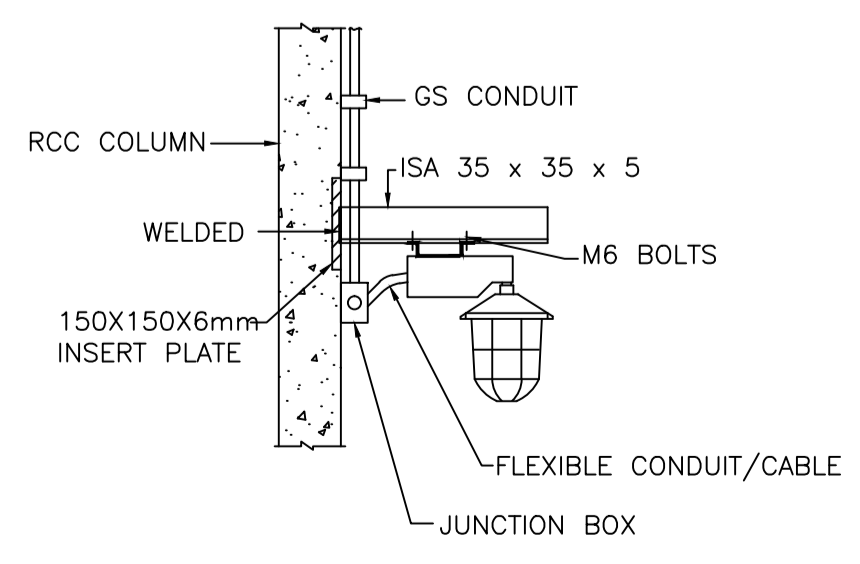
FALSE CEILING MOUNTING DETAILS FOR LED FIXTURE

WALL MOUNTING DETAILS FOR LED FIXTURE



CEILING MOUNTING DETAIL FOR WELL GLASS LUMINAIRE

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--
			APPROVED BY					



WALL MOUNTING DETAIL FOR WELL GLASS FIXTURES

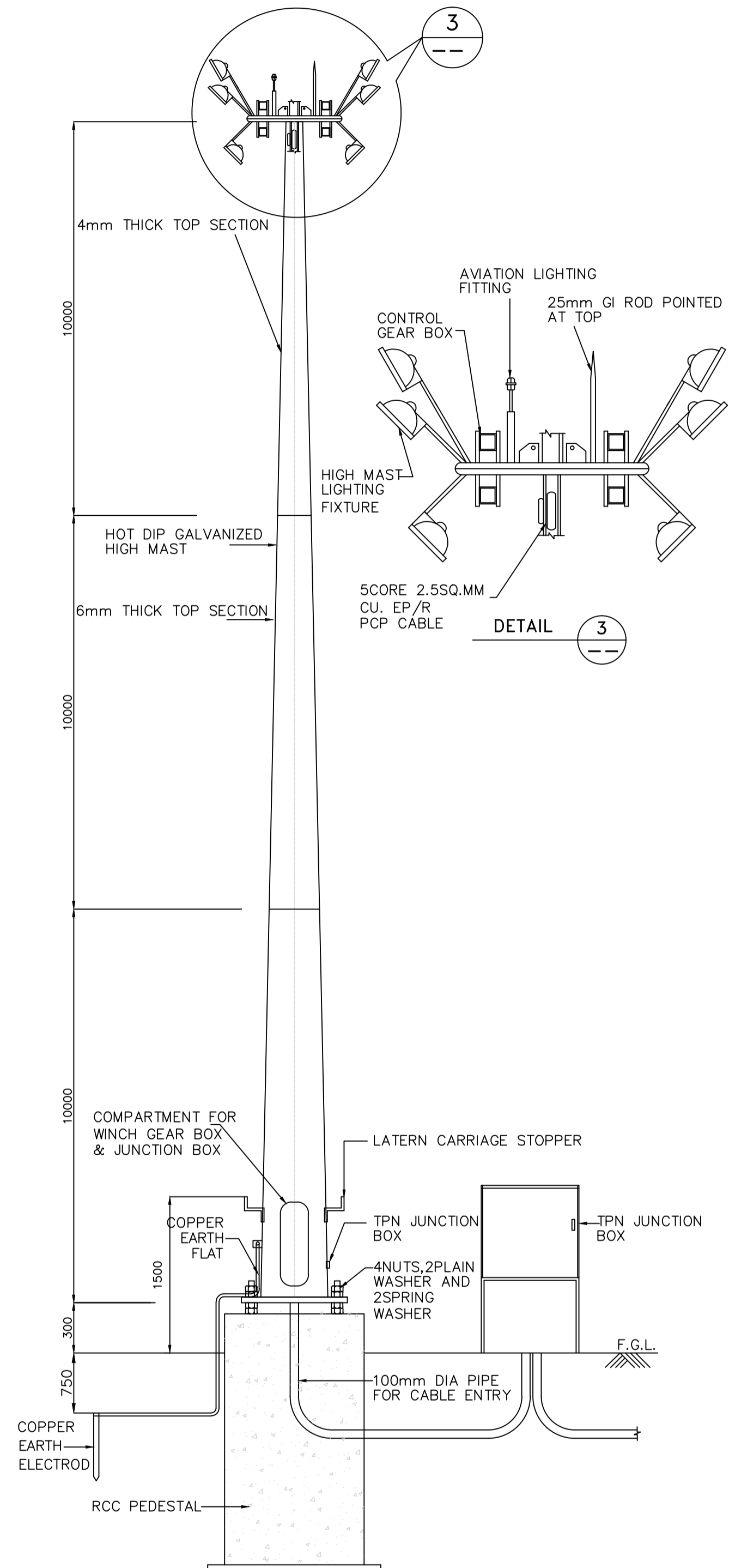
**FICHTNER**

TOWNSHIP  
2 x 660MW MAITREE STPP

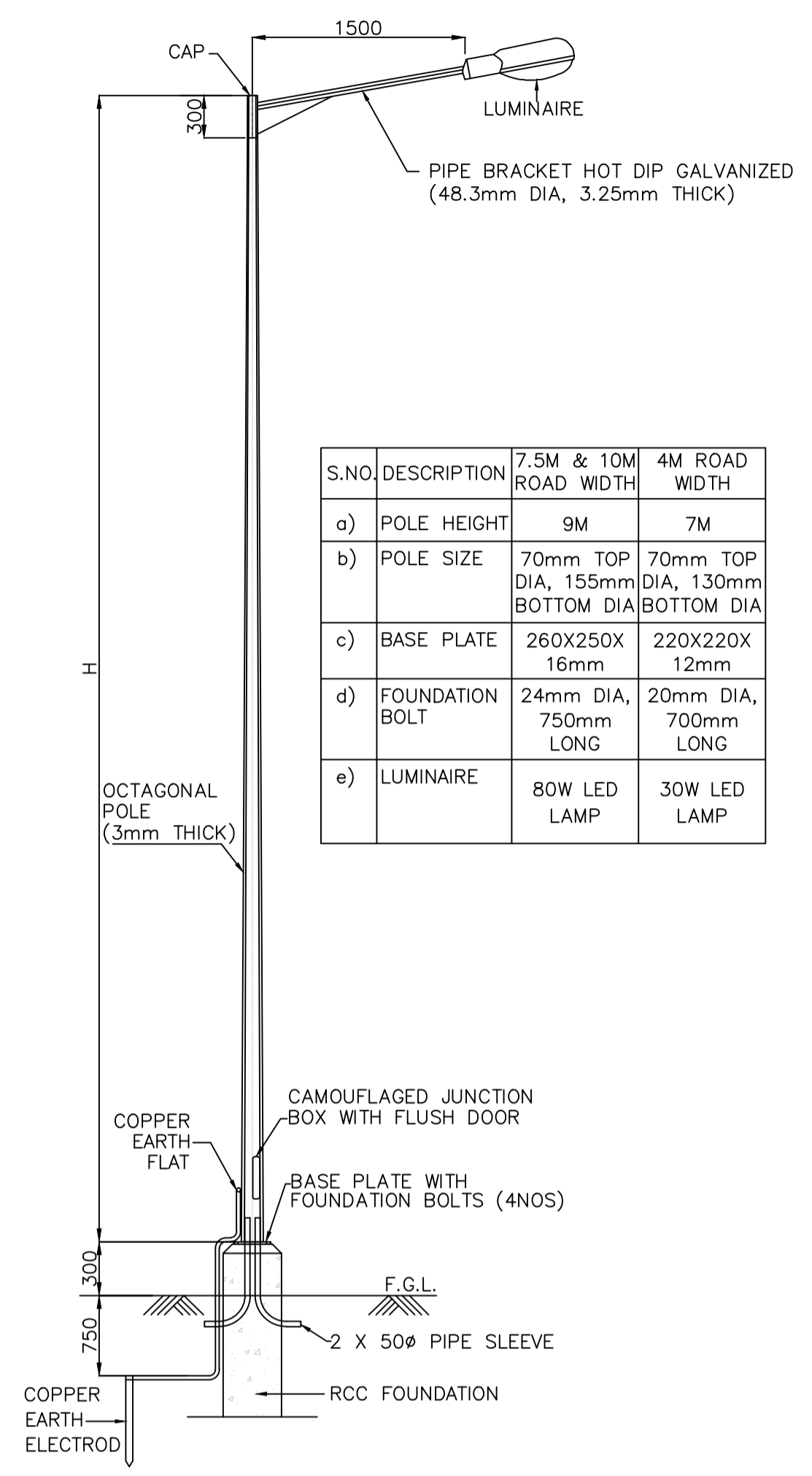
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DESIGNED	MR	29.06.18
CHECKED	PVN	02.07.18
DEPT. HEAD	GS	02.07.18
PROJ. MGR.	MAP	02.07.18

TYPICAL INSTALLATION DETAILS  
FOR ILLUMINATION SYSTEM

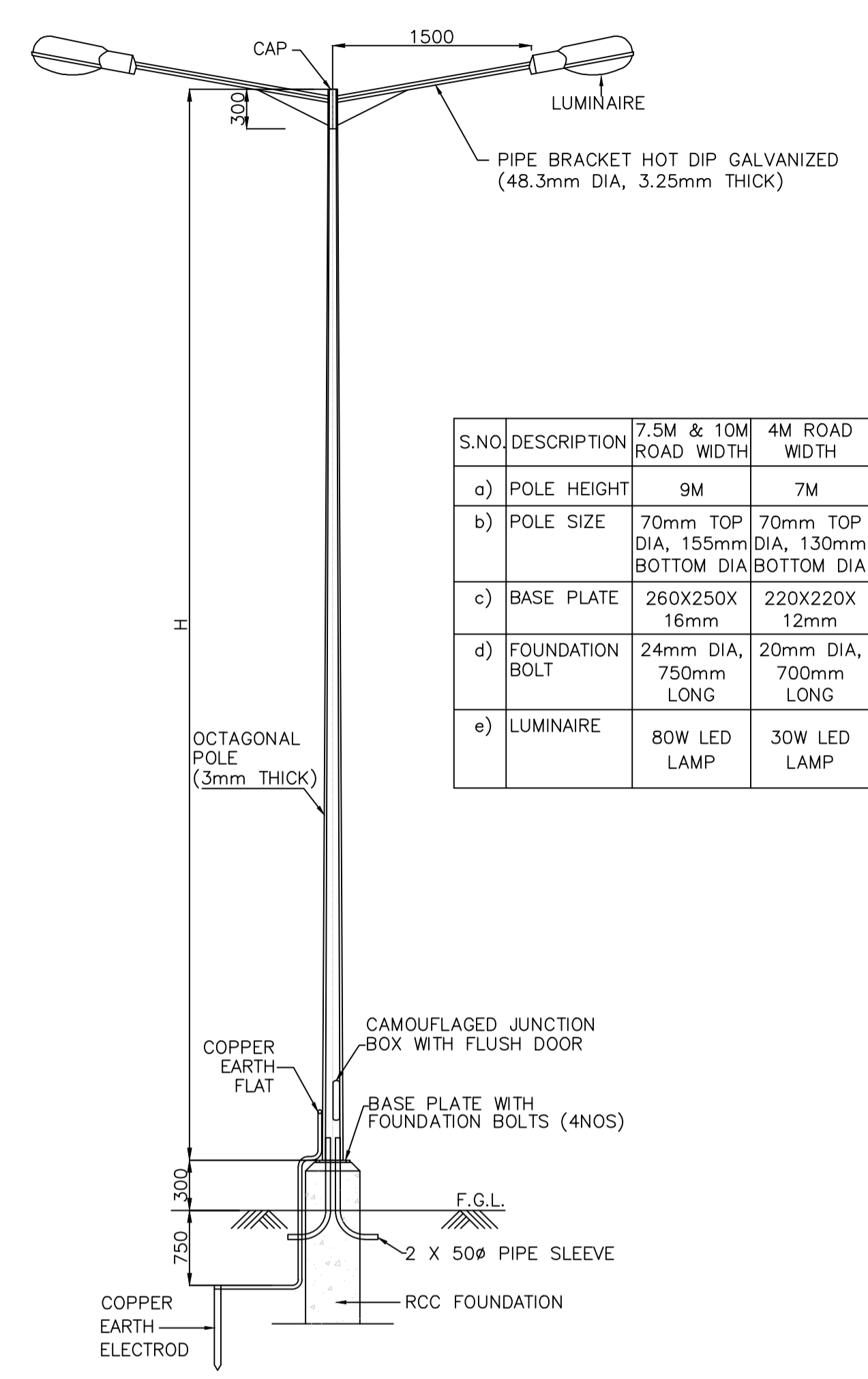
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	ENGINEERING		(SHEET 02 OF 03)			
	CONSTRUCTION					



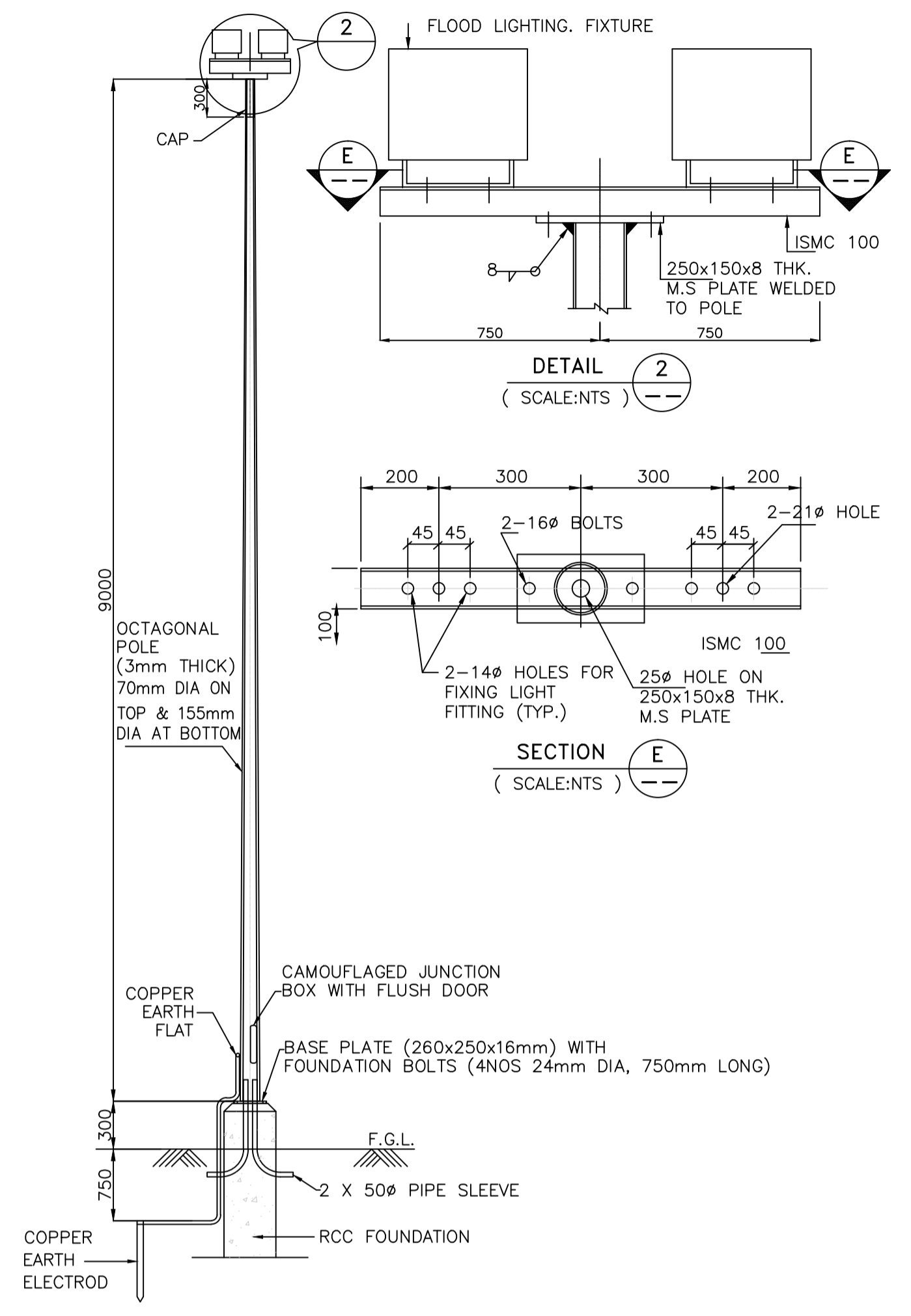
TYPICAL DETAIL FOR HIGHMAST LIGHTING ARRANGEMENT



TYPICAL DETAIL FOR STREET LIGHTING ARRANGEMENT (OCTAGONAL POLE)



TYPICAL DETAIL FOR STREET LIGHTING ARRANGEMENT (OCTAGONAL POLE)



TYPICAL DETAIL FOR FLOOD LIGHTING ARRANGEMENT (OCTAGONAL POLE)

- NOTE:-**
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
  - OCTAGONAL POLE SHALL BE HOT DIP GALVANIZED INSIDE AND OUTSIDE
  - JUNCTION BOX SHALL HAVE 10A SPN MCB AND 16A TERMINAL BLOCK FOR LOOP IN LOOP END OF CABLES

REV.	DATE	DESCRIPTION	DRN.	STR.	MECH.	PROC.	ELEC.	INST.
A	04.07.18	ISSUED FOR TENDER	CRK	--	--	--	GS	--

<b>FICHTNER</b>		<b>TOWNSHIP 2 x 660MW MAITREE STPP</b>	
SIGNATURE		DATE	
DRAWN	CRK	29.06.18	
DESIGNED	MR	29.06.18	
CHECKED	PVN	02.07.18	
DEPT. HEAD	GS	02.07.18	
PROJ. MGR.	MAP	02.07.18	
RELEASED FOR	PRELIMINARY	DEPT. ELECTRICAL	JOB NO. 1114129
	TENDER	SCALE: --	REV.
	ENGINEERING	DWG.NO. <b>1114129-E-506</b>	
	CONSTRUCTION	(SHEET 03 OF 03)	