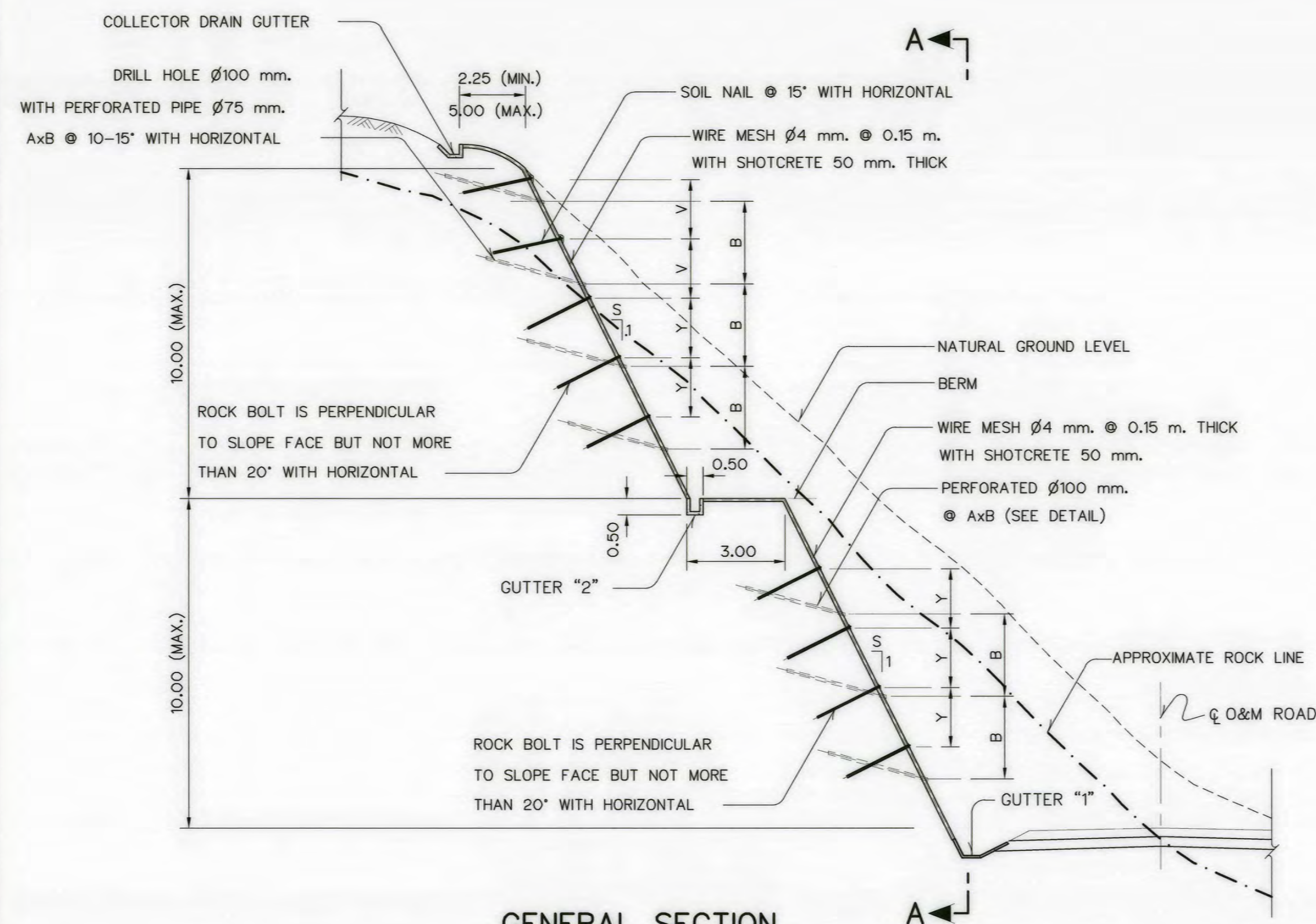
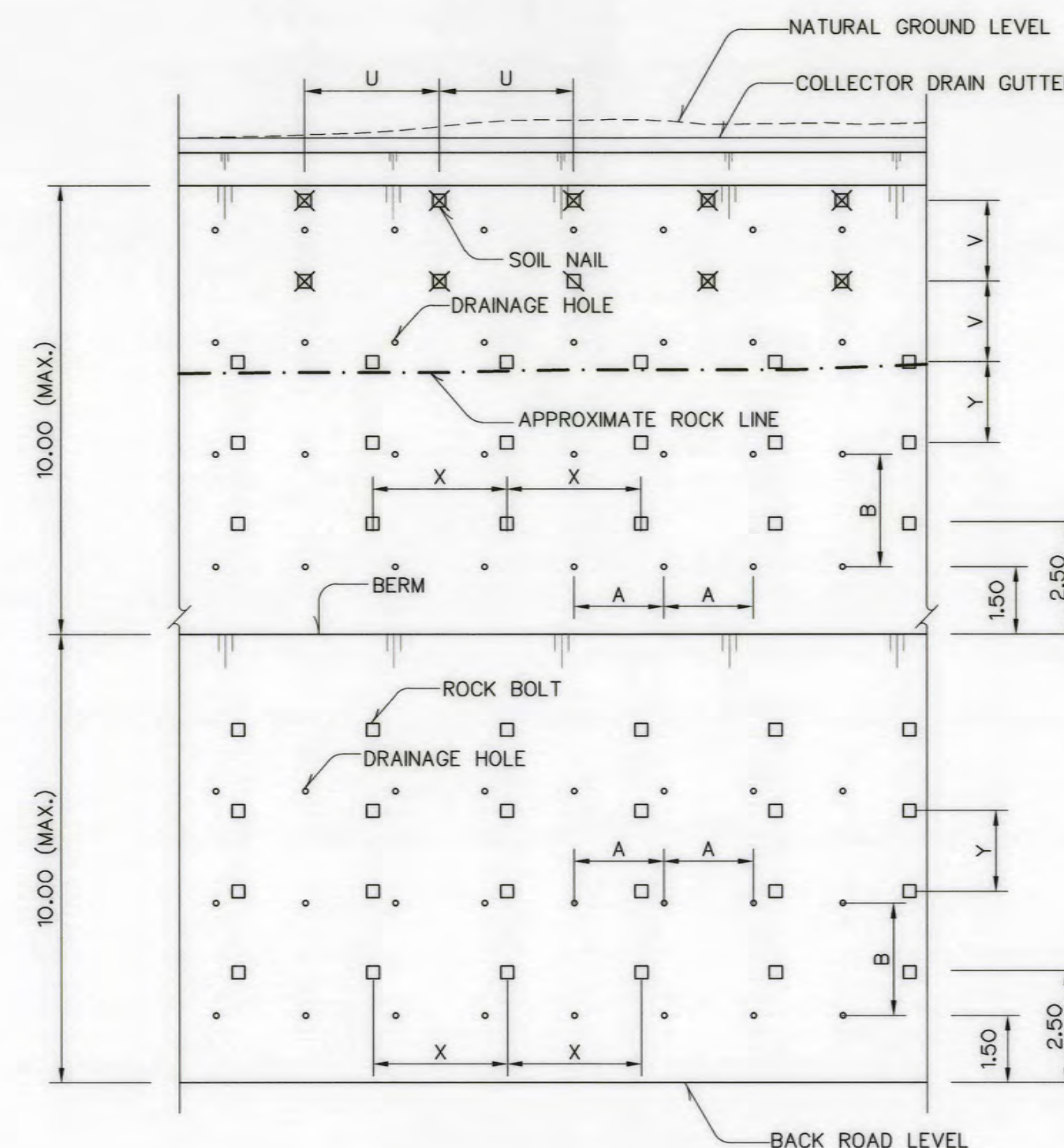
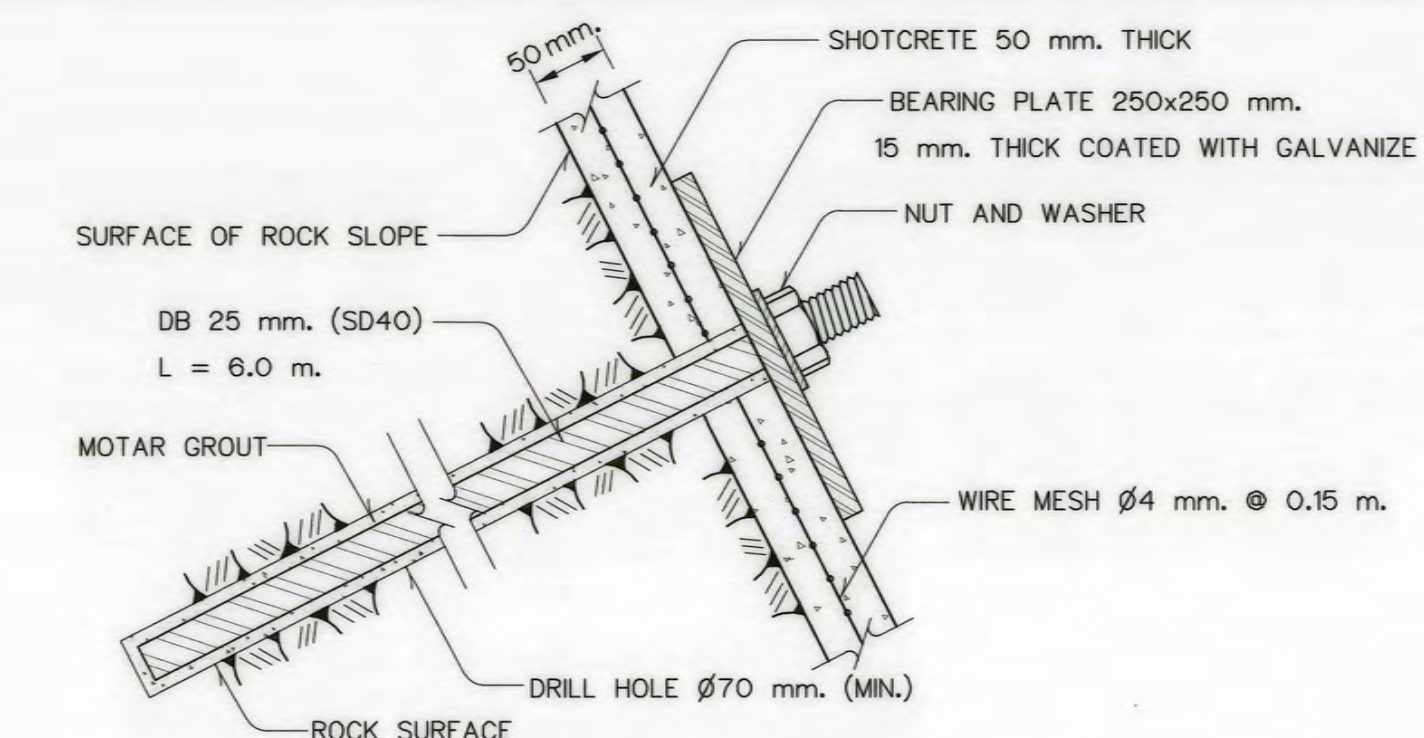




GENERAL SECTION
NOT TO SCALE

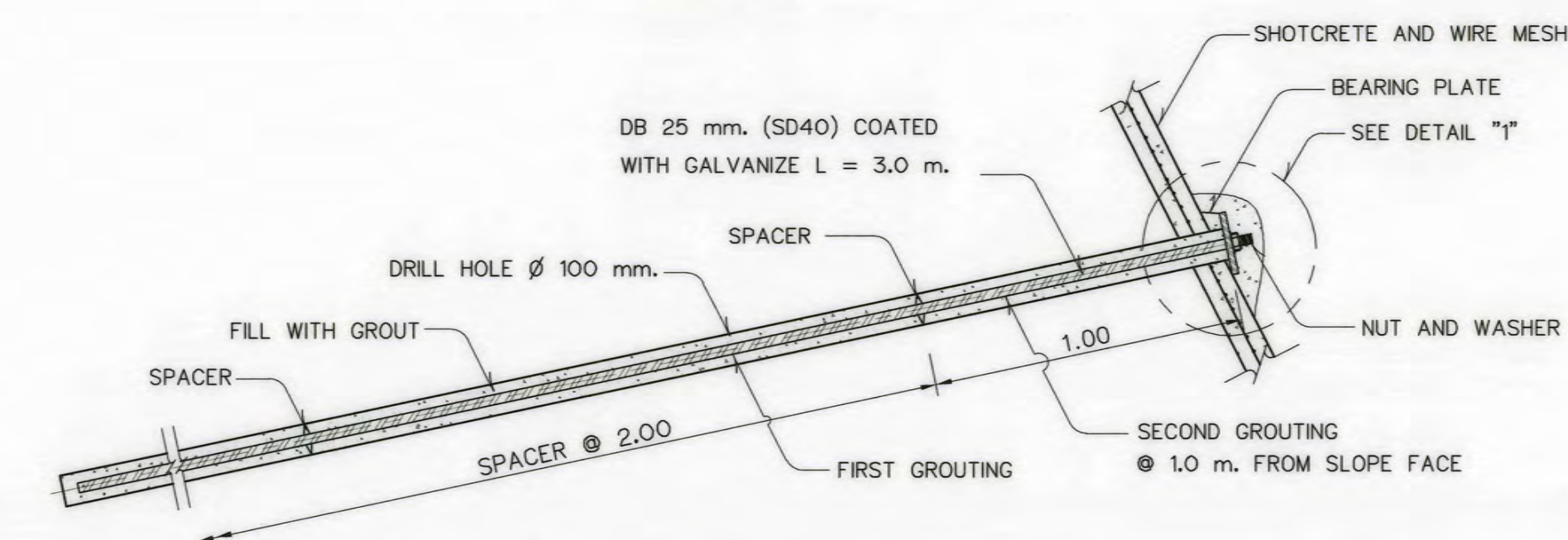


SECTION A-A
ROCK BOLT, SOIL NAIL AND DRAINAGE HOLE
NOT TO SCALE



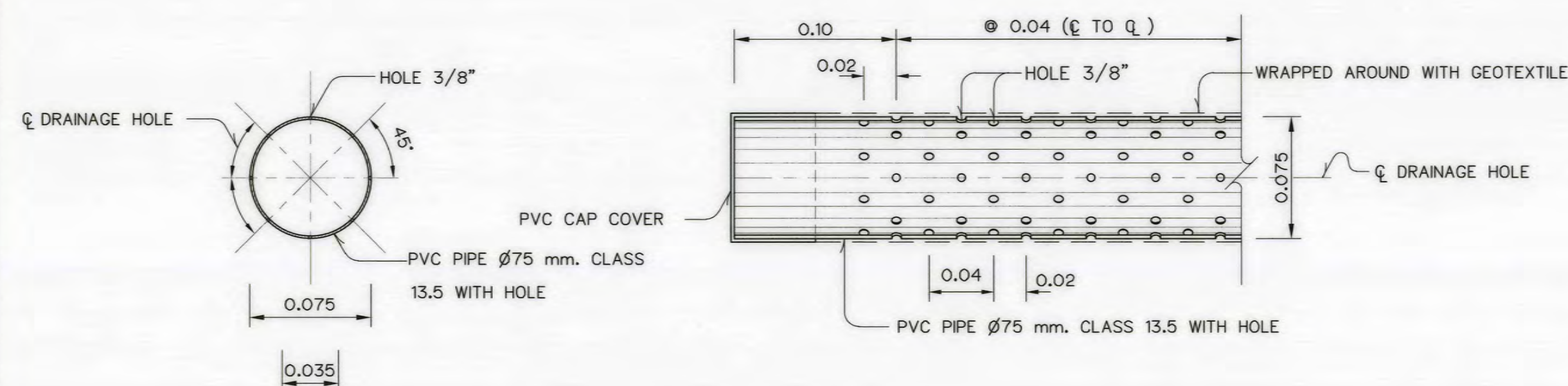
ROCK BOLT INSTALLATION DETAIL

SCALE 1:5



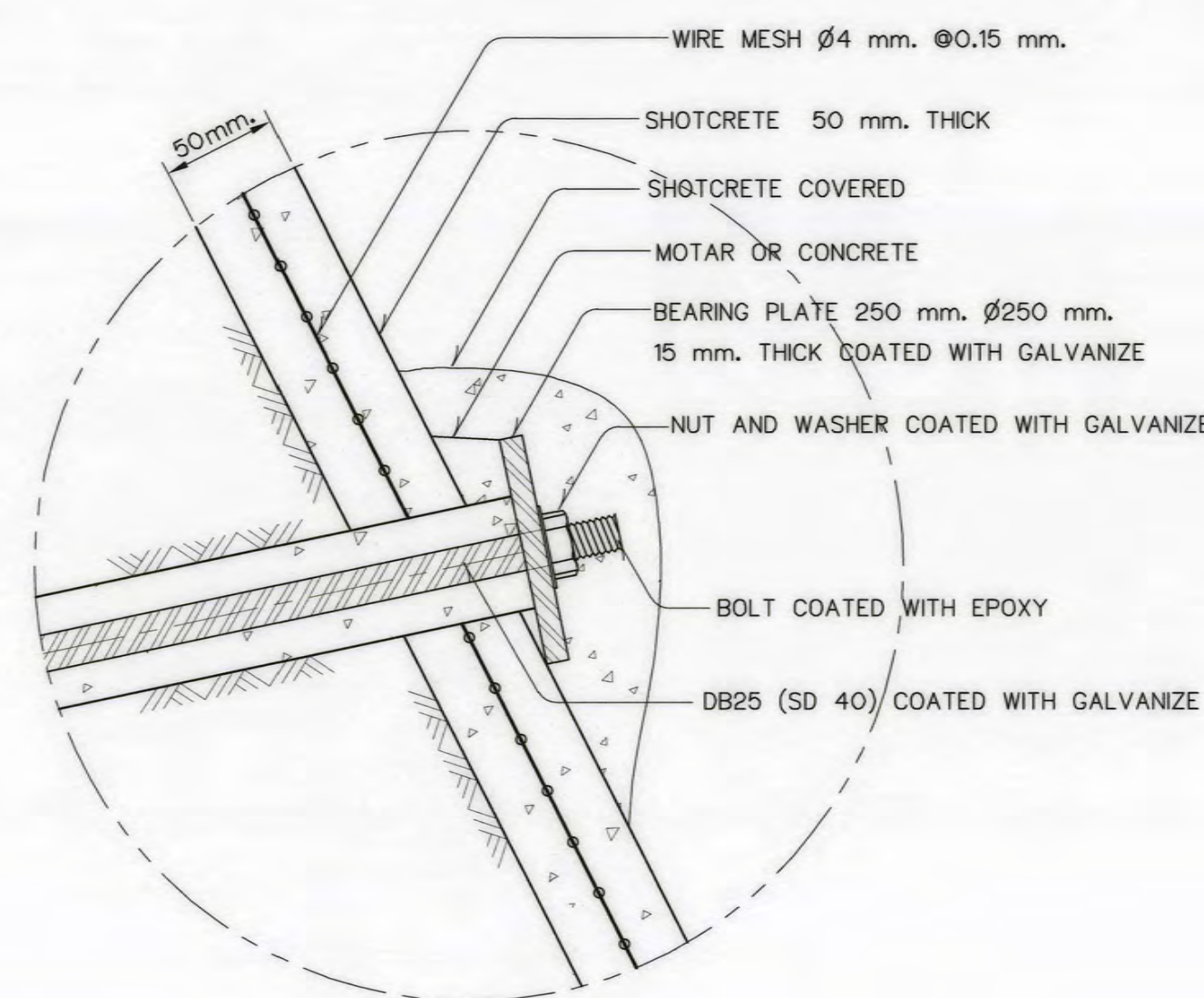
SOIL NAIL DETAIL

SCALE 1:10



PERFORATED PIPE DETAIL

SCALE 1:3



DETAIL "1"

SCALE 1:3

SOIL NAIL ROCK BOLT AND DRAINAGE HOLE DIMENSIONS

ITEM	DIMENSIONS (m.)
A	3.00
B	2.50
U	2.00
V	2.00
X	3.00
Y	3.00

REFERENCE DRAWINGS :

1. POWER HOUSE, SLOPE PROTECTION

AKP-PH-25

DRAINAGE HOLE AND PERFORATED PIPE DETAIL

SCALE 1:10

NOTES :

1. THE SOIL/ROCK TYPE SHALL BE CONSIDERED DIRECT BY FIELD GEOTECHNICAL ENGINEER OR ENGINEERING GEOLOGIST.
2. THIS DISCONTINUITY ANALYSIS IS THE PRELIMINARY ANALYSIS ONLY. IN CONSTRUCTION STAGE SHALL BE EVALUATED AND ANALYSIS IN THE DETAIL AND SHOULD BE MADE BY FIELD GEOTECHNICAL ENGINEER OR ENGINEERING GEOLOGIST.
3. PROTECTION CASE IN ROCK CONDITION; CASE#1 IS CONSISTED OF PLANE FAILURE AND LOW SLOPE CUT, AND CASE#2 IS CONSISTED OF PLANE FAILURE AND HIGHLY SLOPE CUT, AND CASE#3 IS CONSISTED OF PLANE AND WEDGE FAILURES. IT SHALL BE CONSIDERED DIRECT BY FIELD GEOTECHNICAL ENGINEER OR ENGINEERING GEOLOGIST.
4. IN CASE OF HIGHLY WEATHERED ROCK SHOULD BE QUICKLY PROTECTION.
5. ROCK BOLT IS USED STABILITY FOR ROCK EXCAVATION, SOIL NAIL USED STABILITY FOR SOIL EXCAVATION, WITH INSTALLATION FOLLOWED THE TECHNICAL SPECIFICATION.
6. ROCK BOLT INSTALLATION SHOULD BE INSTALLED TO PERPENDICULAR TO PLUNGE OF DISCONTINUITY OF ROCK MASS.

0 0.05 0.1 0.2 0.25
SCALE 1:3 METERS

0 0.05 0.1 0.2 0.3 0.4
SCALE 1:5 METERS

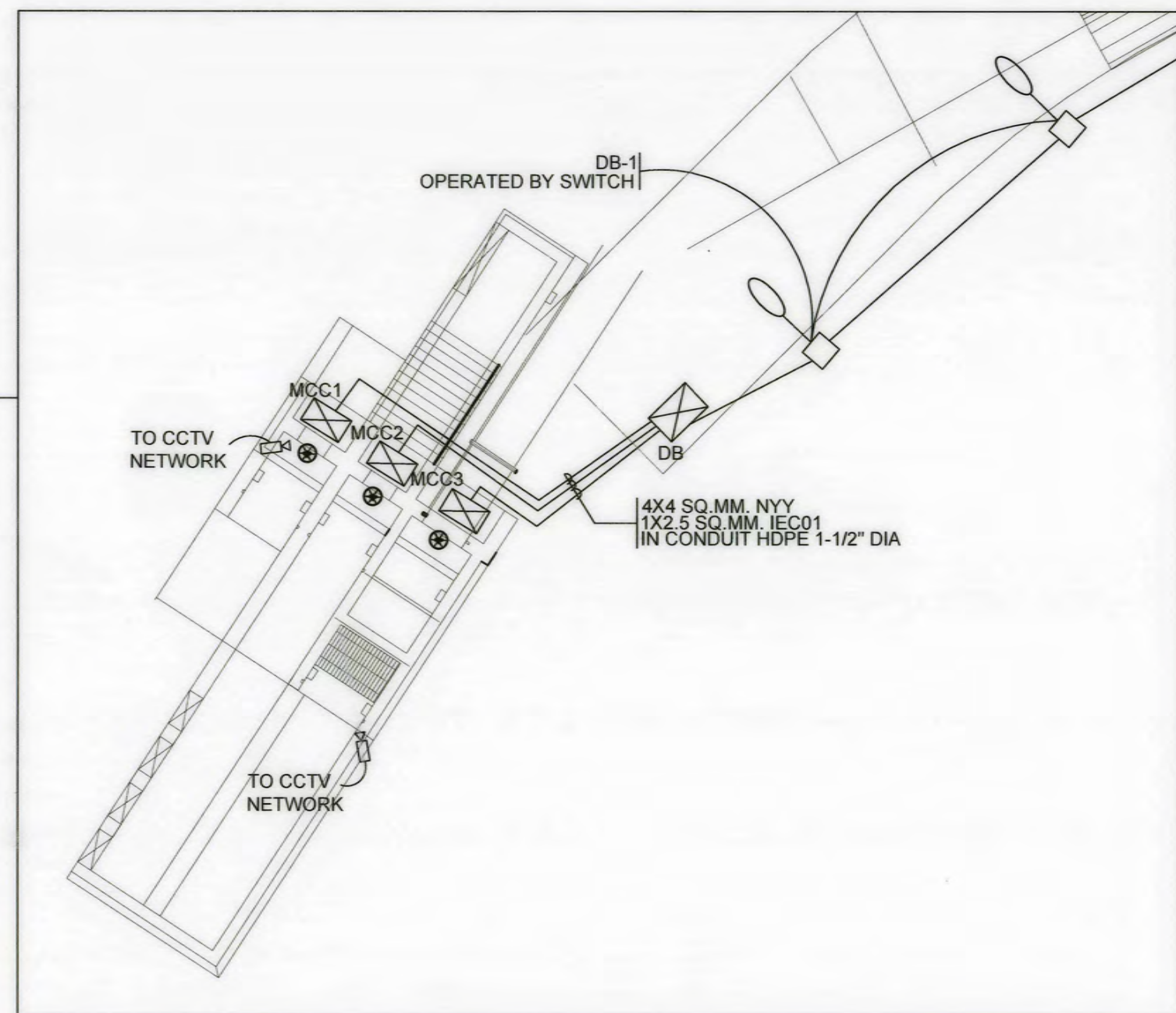
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8
SCALE 1:10 METERS

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED

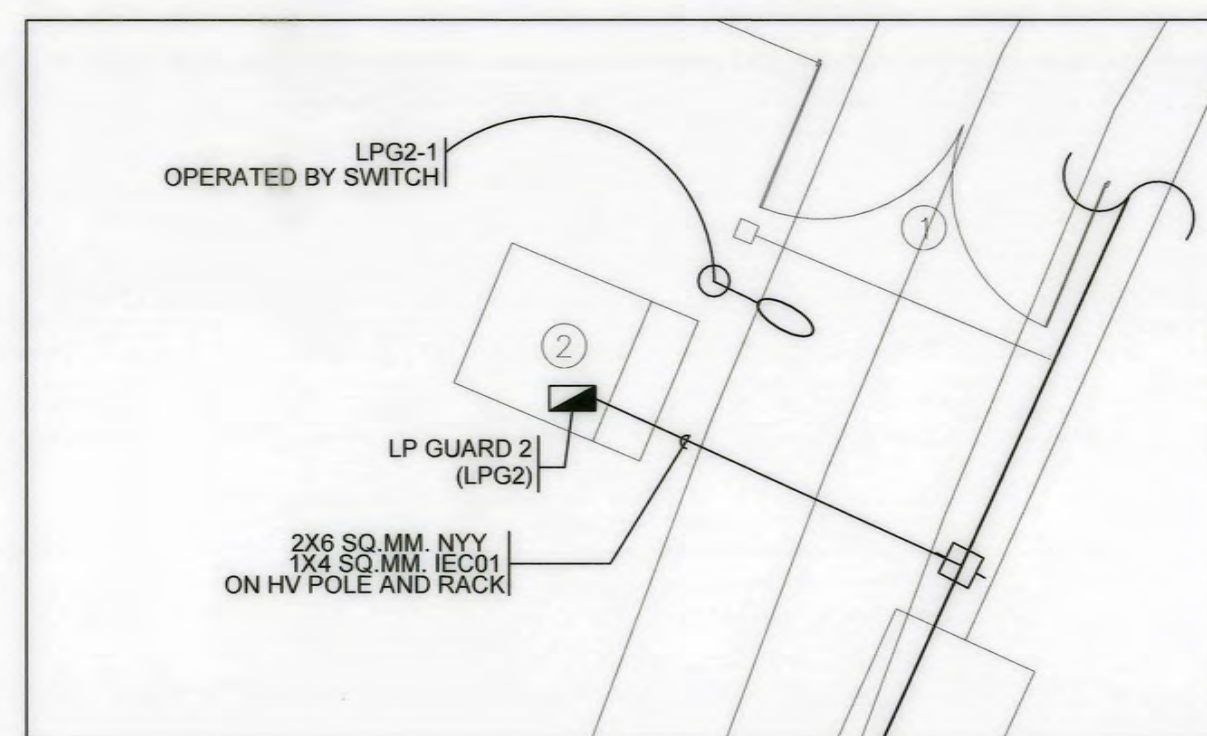
CONSULTANTS

DEDE

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY		AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE		POWERHOUSE TYPICAL OF SLOPE PROTECTION	
DESIGNED SPT CONSULTANTS CO., LTD.	28/10/2021	REVIEWED	28/10/2021
DRAWN	28/10/2021	RECOMMENDED	28/10/2021
CHECKED	28/10/2021	APPROVED	28/10/2021
PROJECT MANAGER	DATE	DRAWING NO.	SHEET NO.
		AKP-PH-26	88 OF 129



WEIR AREA PLAN
SCALE 1 : 150

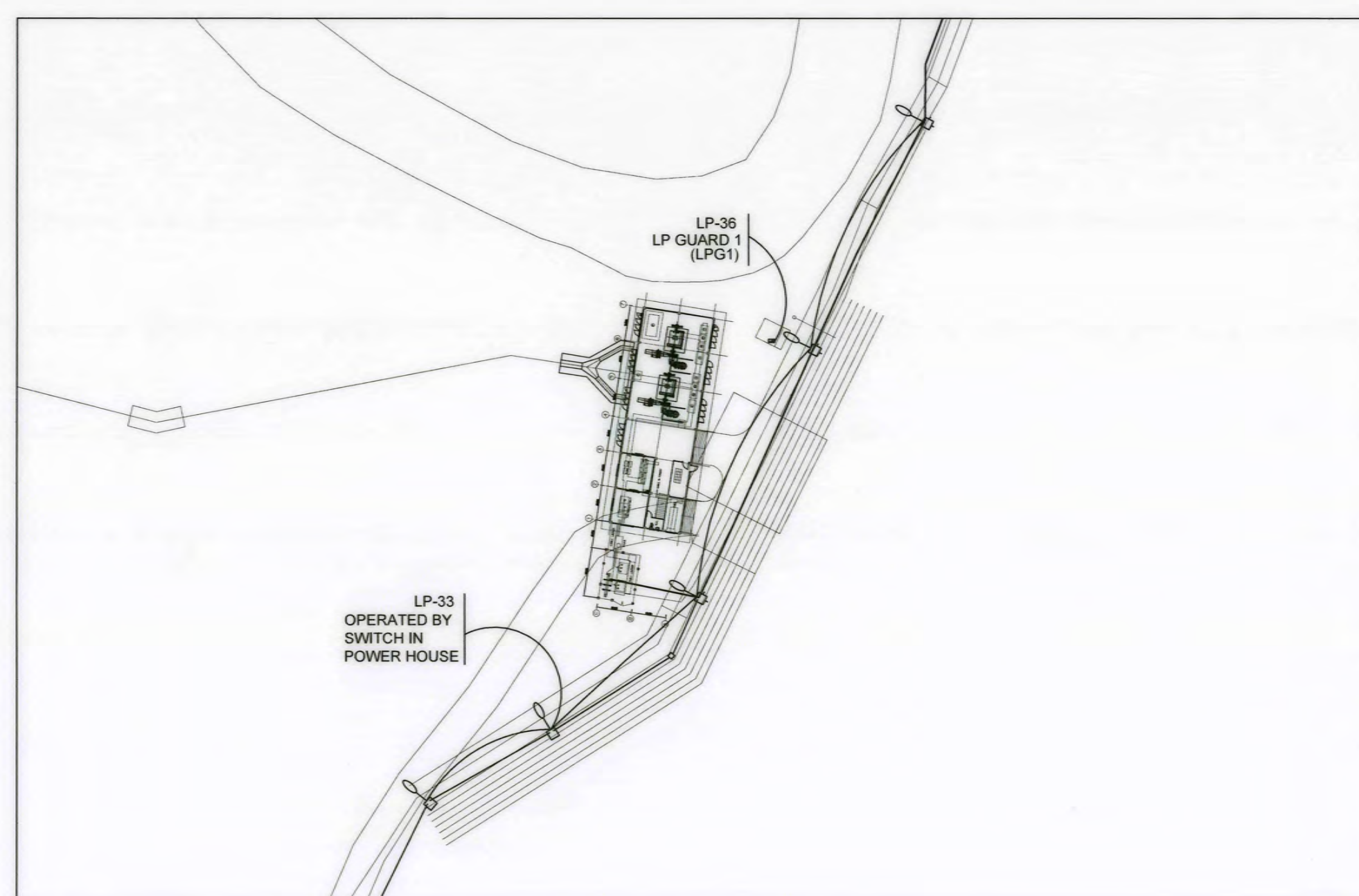


GUARD HOUSE 2 AREA PLAN
SCALE 1 : 150

4-70 SQ.MM. NYY
1-10(G) SQ.MM. IEC01
ON LOW VOLTAGE POLE
SIGNAL CABLE IN CONDUIT UNDER GROUND

EXTERNAL LIGHTING PLAN
SCALE 1 : 1250

4-70 SQ.MM. NYY
1-10(G) SQ.MM. IEC01
ON LOW VOLTAGE POLE
SIGNAL CABLE IN CONDUIT UNDER GROUND



POWER HOUSE PLAN
SCALE 1 : 1250

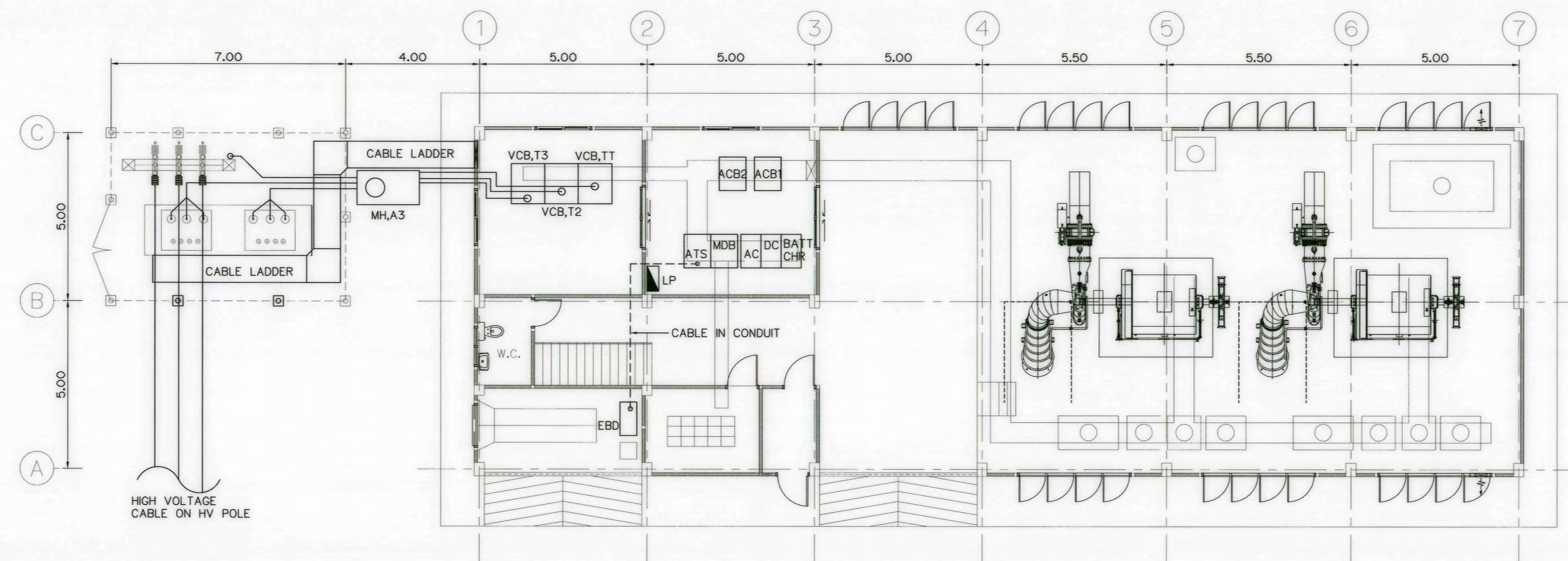
KINGDOM OF THAILAND
Department of Alternative
Energy Development and Efficiency
MINISTRY OF ENERGY

AI KA PO HYDROPOWER PROJECT
TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT

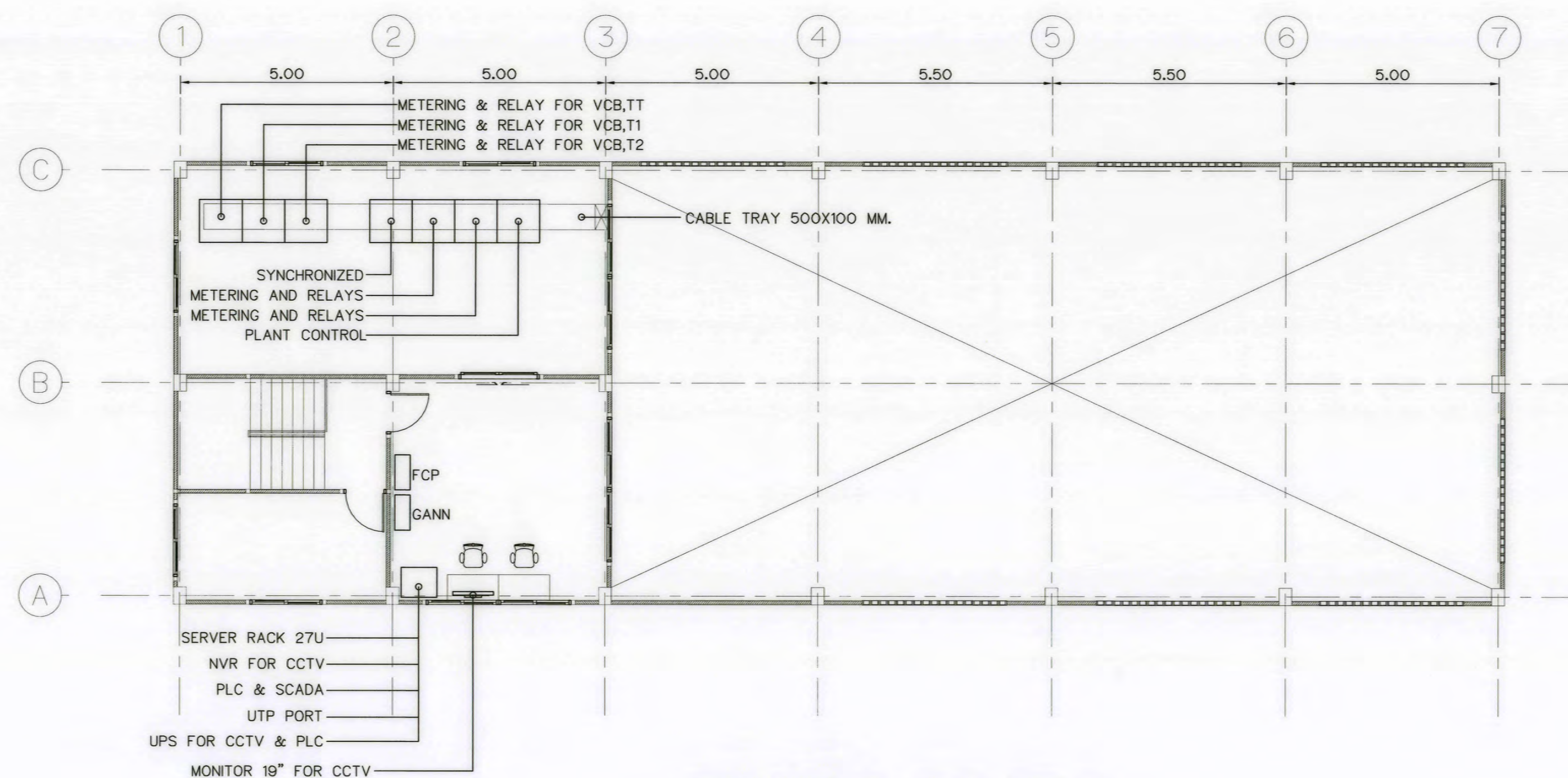
PART : 1 CIVIL WORKS AND TRANSMISSION LINE
POWERHOUSE
EXTERNAL LIGHTING PLAN

P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.			
DESIGNED	REVIEWED	SUBMITTED	RECOMMENDED
DRAWN	CHECKED	APPROVED	
PROJECT MANAGER DATE 28/10/2021		DRAWING NO. AKP-PH-27	
		SHEET NO. 89 OF 129	

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED



MAIN CUBICAL PLAN 1ST FL
SCALE 1:100

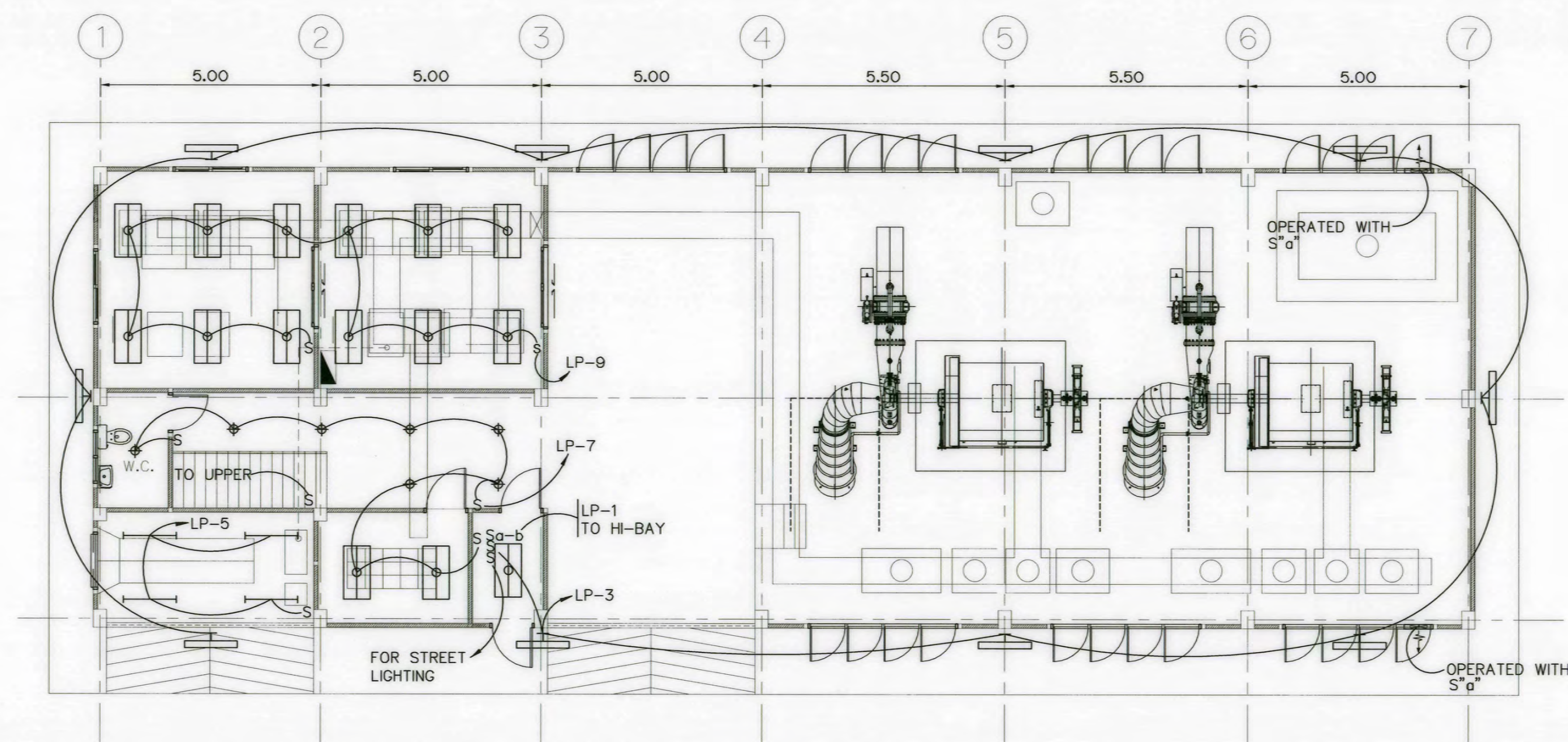


MAIN CUBICAL PLAN 2ND FL
SCALE 1:100

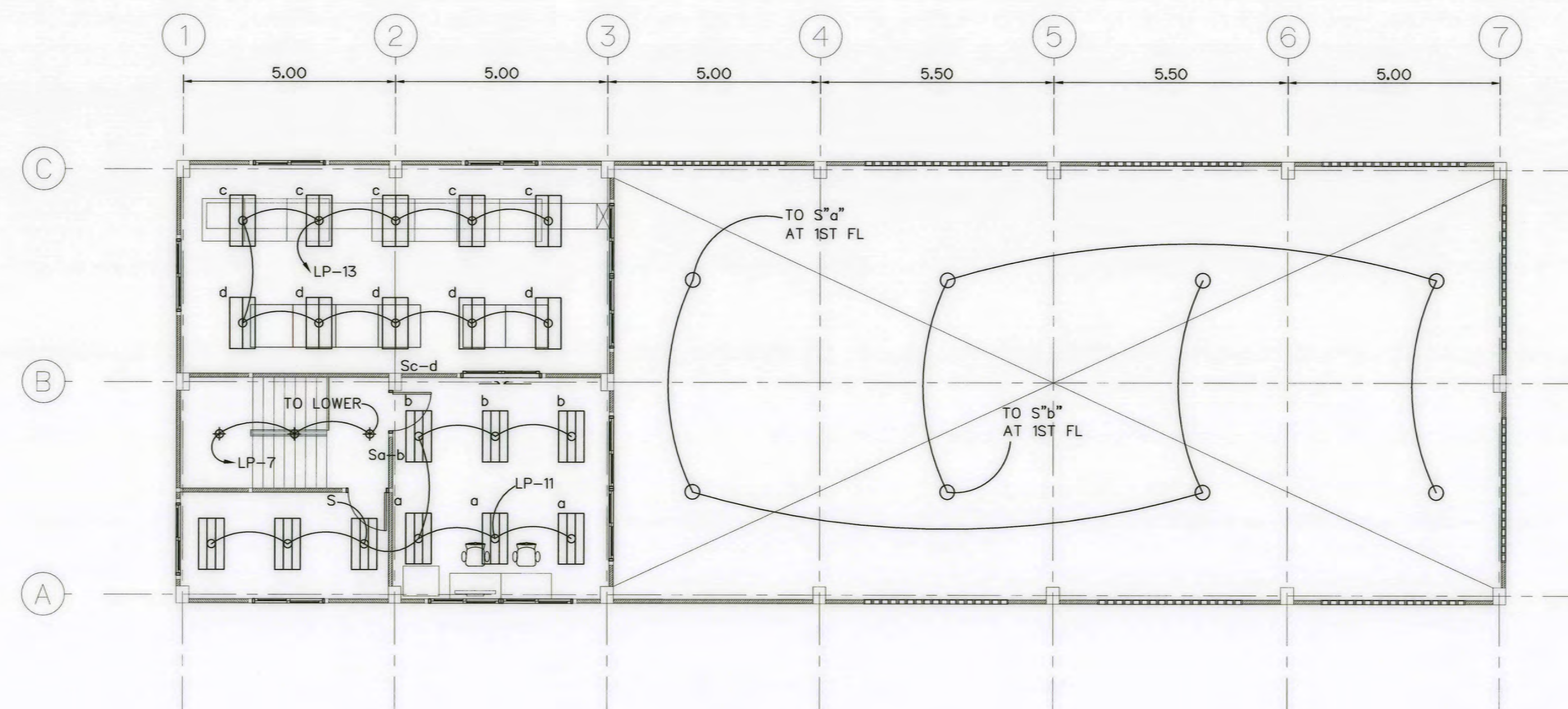
0 1 2 3 4 5 6 7 8
SCALE 1:100 METERS

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE MAIN CUBICLE PLAN			
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED		SUBMITTED	
DRAWN		RECOMMENDED	
CHECKED		APPROVED	
DATE		DATE	
PROJECT MANAGER		SHEET NO.	
AKP-PH-28		90 OF 129	

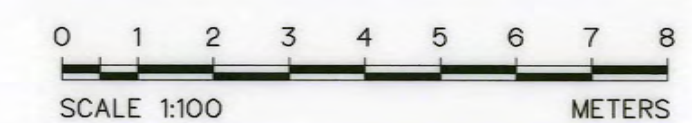
3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
CONSULTANTS			DEDE	

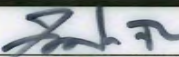
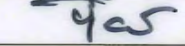
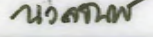


LIGHTING PLAN 1ST FL
SCALE 1:100

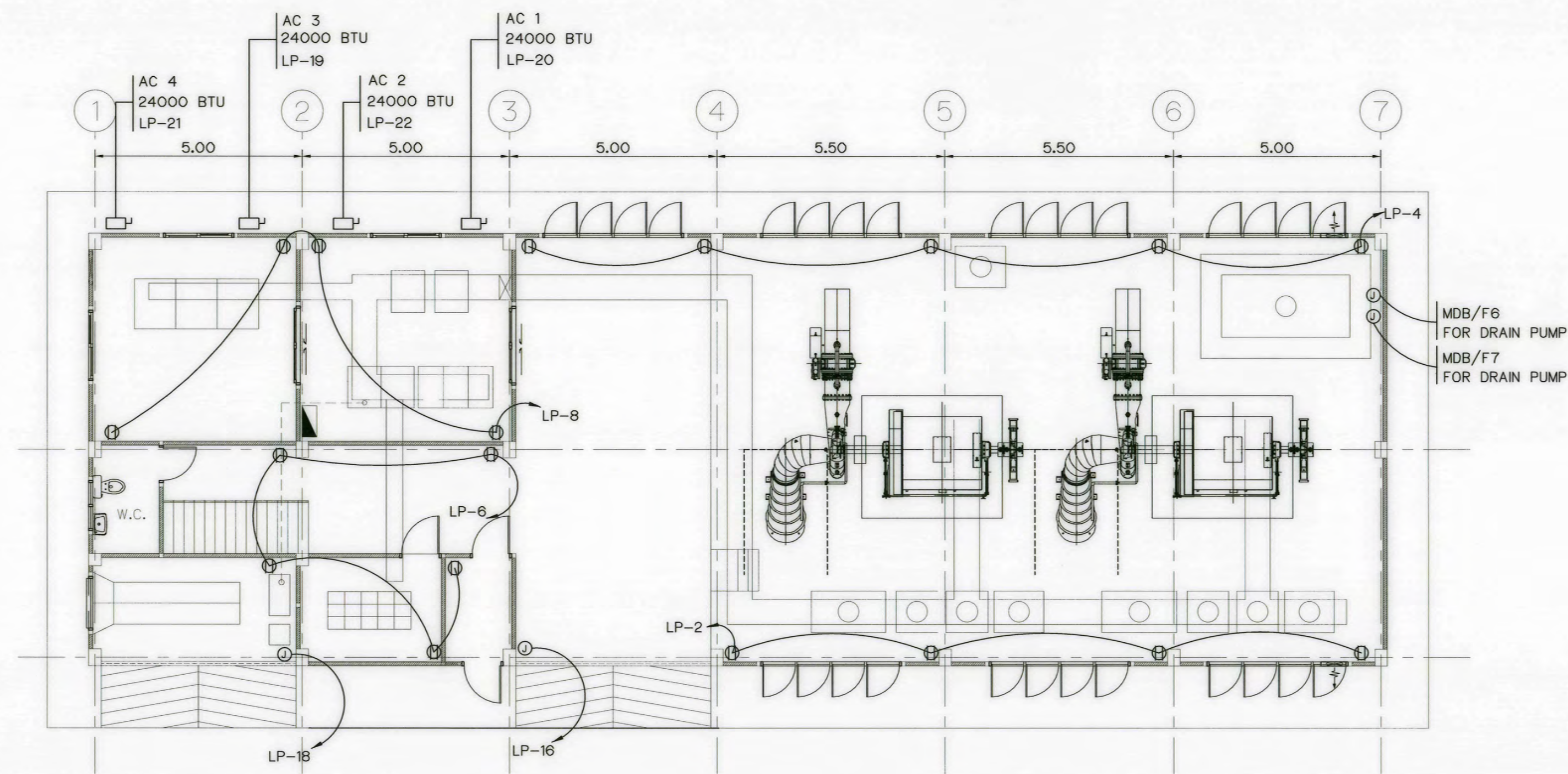


LIGHTING PLAN 2ND FL
SCALE 1:100

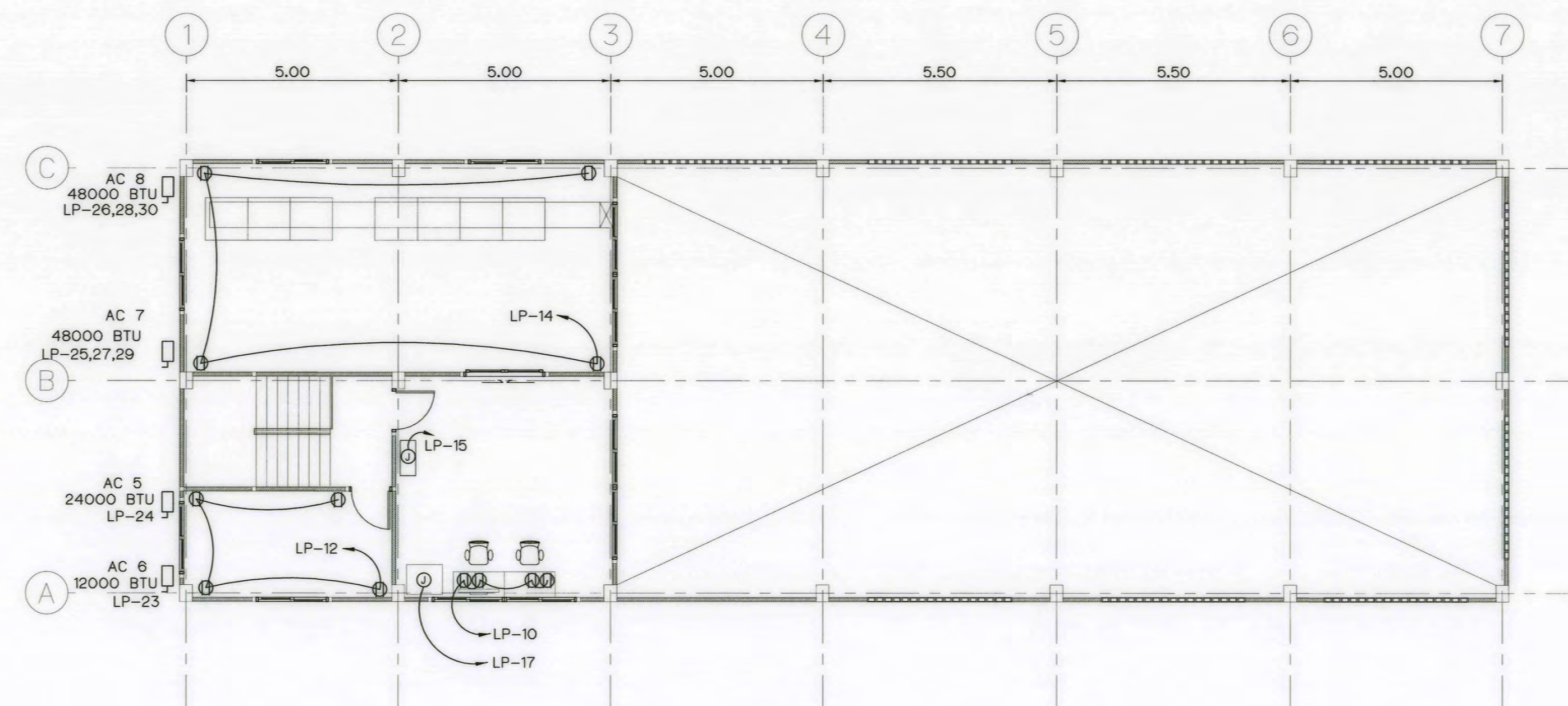


 KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE LIGHTING PLAN			
 P&C MANAGEMENT CO., LTD.		 Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
 SPT CONSULTANTS CO., LTD.		REVIEWED 	
DESIGNED		วันที่ 17/6/64	SUBMITTED 
DRAWN			RECOMMENDED 
CHECKED		วันที่ 23/6/64	APPROVED 
		28/10/2021	DRAWING NO. AKP-PH-29
PROJECT MANAGER		DATE	SHEET NO. 91 OF 129

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
	CONSULTANTS		DEDE	



ELECTRICAL POWER PLAN 1ST FL
SCALE 1:100

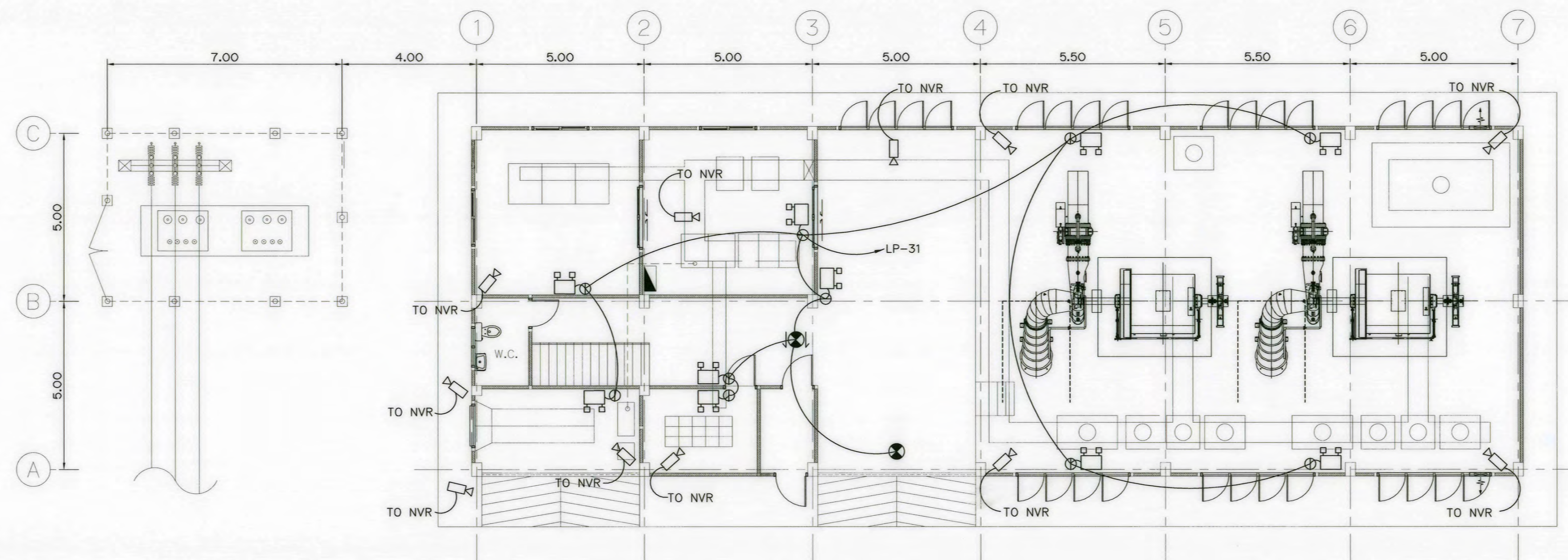


ELECTRICAL POWER PLAN 2ND FL
SCALE 1:100

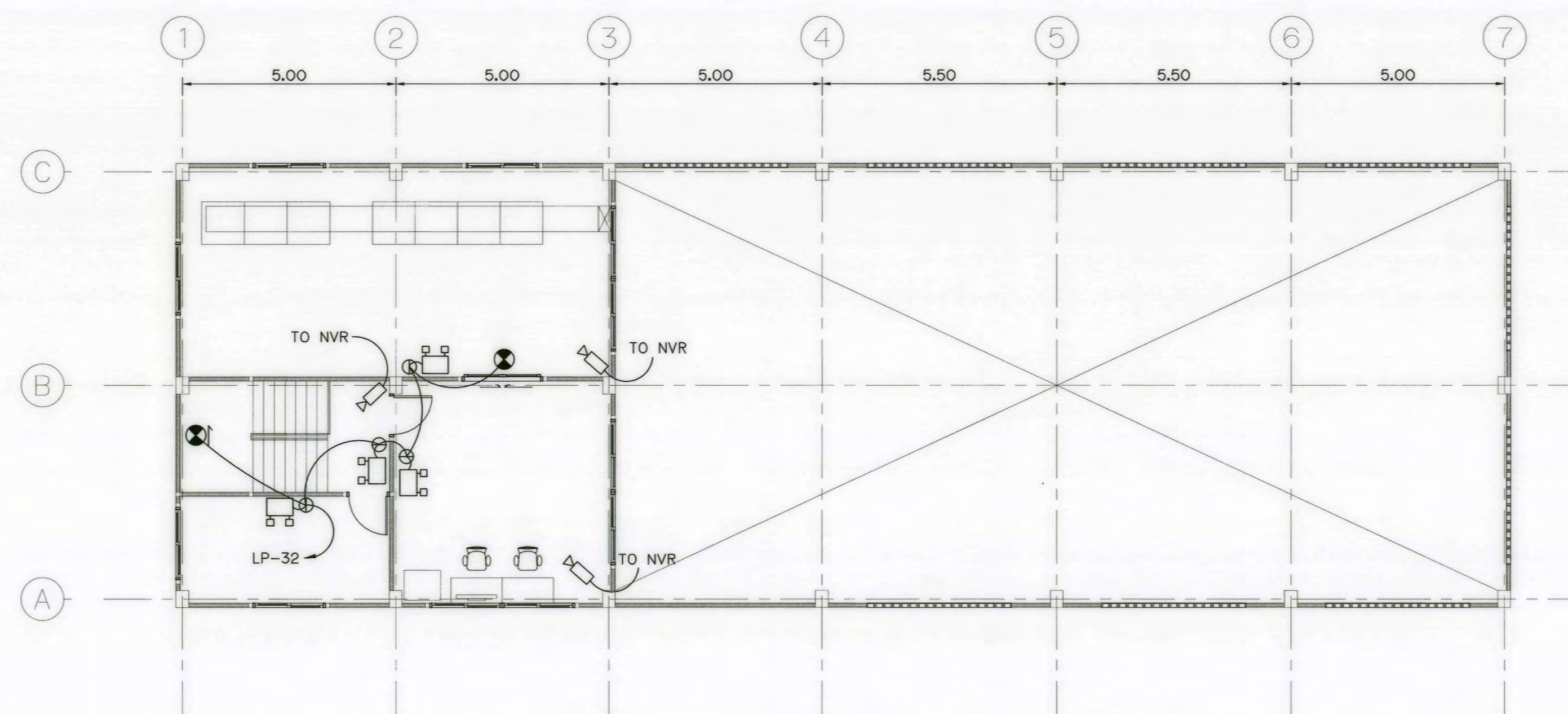
0 1 2 3 4 5 6 7 8
SCALE 1:100 METERS

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE ELECTRICAL POWER PLAN			
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED	DATE 28/10/2021	REVIEWED	DATE 28/10/2021
DRAWN	DATE 28/10/2021	SUBMITTED	DATE 28/10/2021
CHECKED	DATE 28/10/2021	RECOMMENDED	DATE 28/10/2021
PROJECT MANAGER		SHEET NO. 92 OF 129	

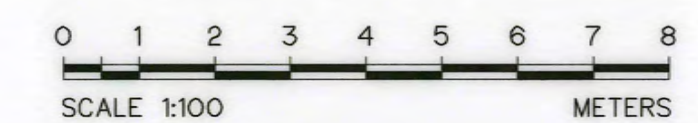
3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED



EMERGENCY & FIRE EXIT SIGN & CCTV PLAN 1ST FL
SCALE 1:100

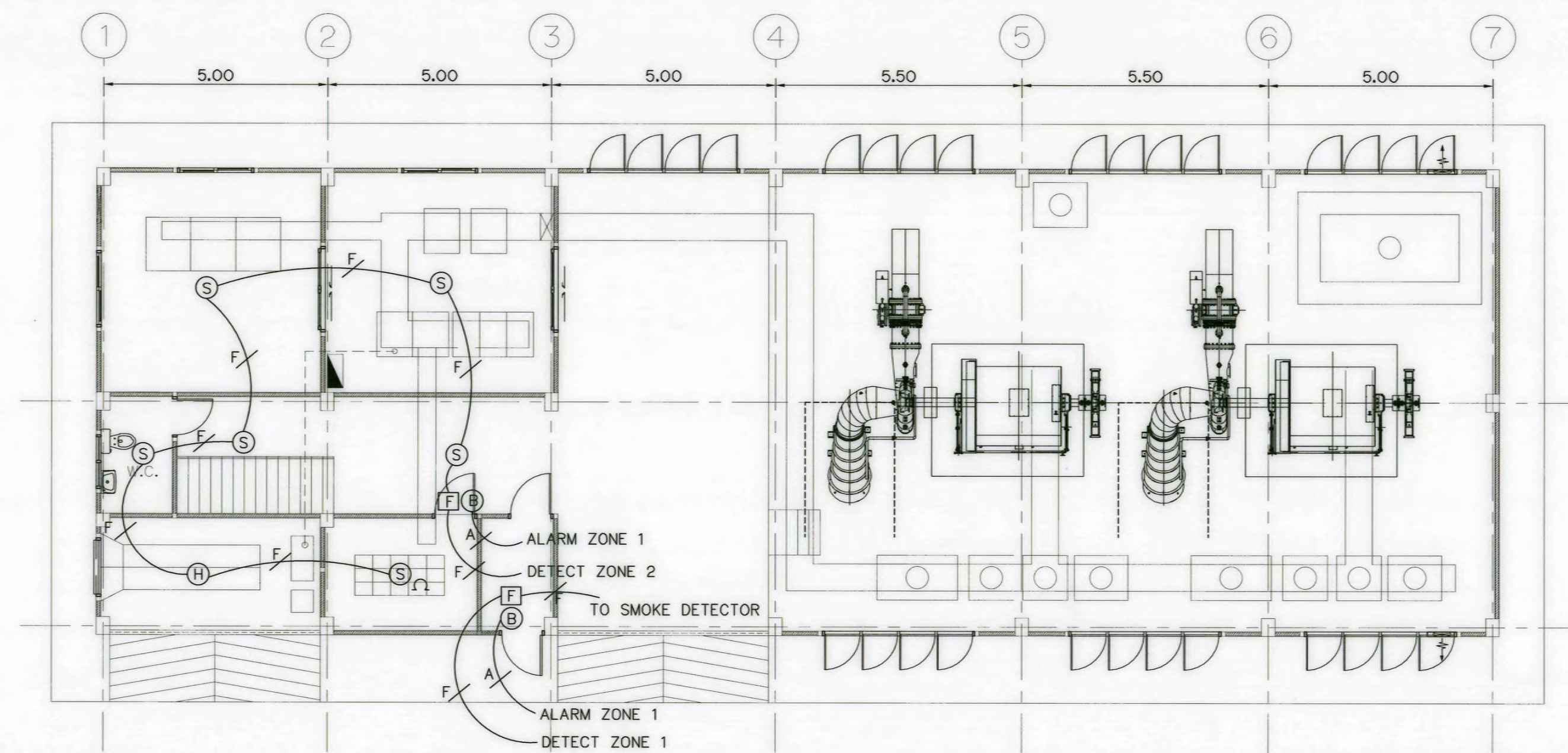


EMERGENCY & FIRE EXIT SIGN & CCTV PLAN 2ND FL
SCALE 1:100

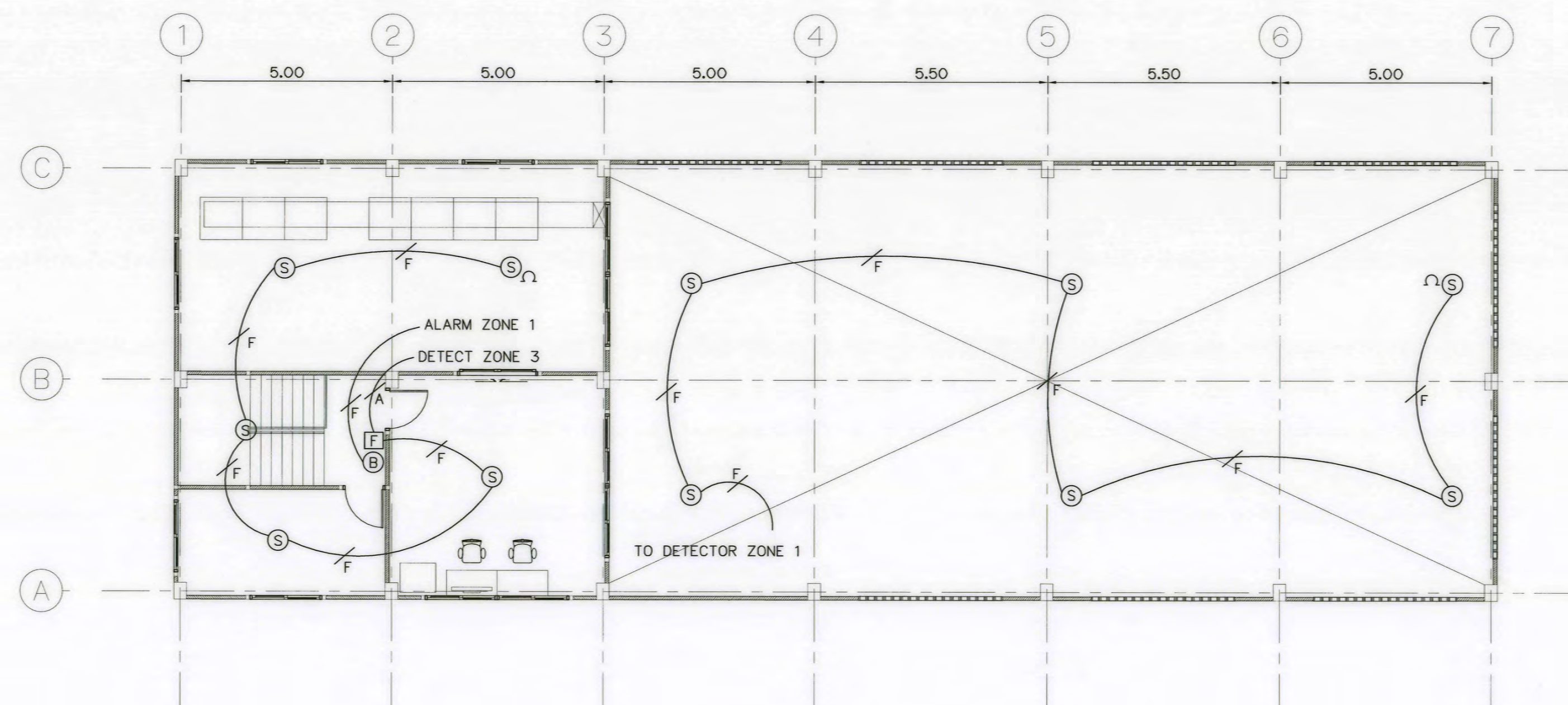


KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE EMERGENCY , FIRE EXIT AND CCTV PLAN			
PCM P&C MANAGEMENT CO., LTD. SPT SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED		REVIEWED	
DRAWN		SUBMITTED	
CHECKED		RECOMMENDED	
APPROVED		APPROVED	
PROJECT MANAGER		DRAWING NO.	
DATE		SHEET NO.	
28/10/2021		AKP-PH-31 93 OF 129	

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
CONSULTANTS			DEDE	



FIRE ALARM PLAN 1ST FL
SCALE 1:100

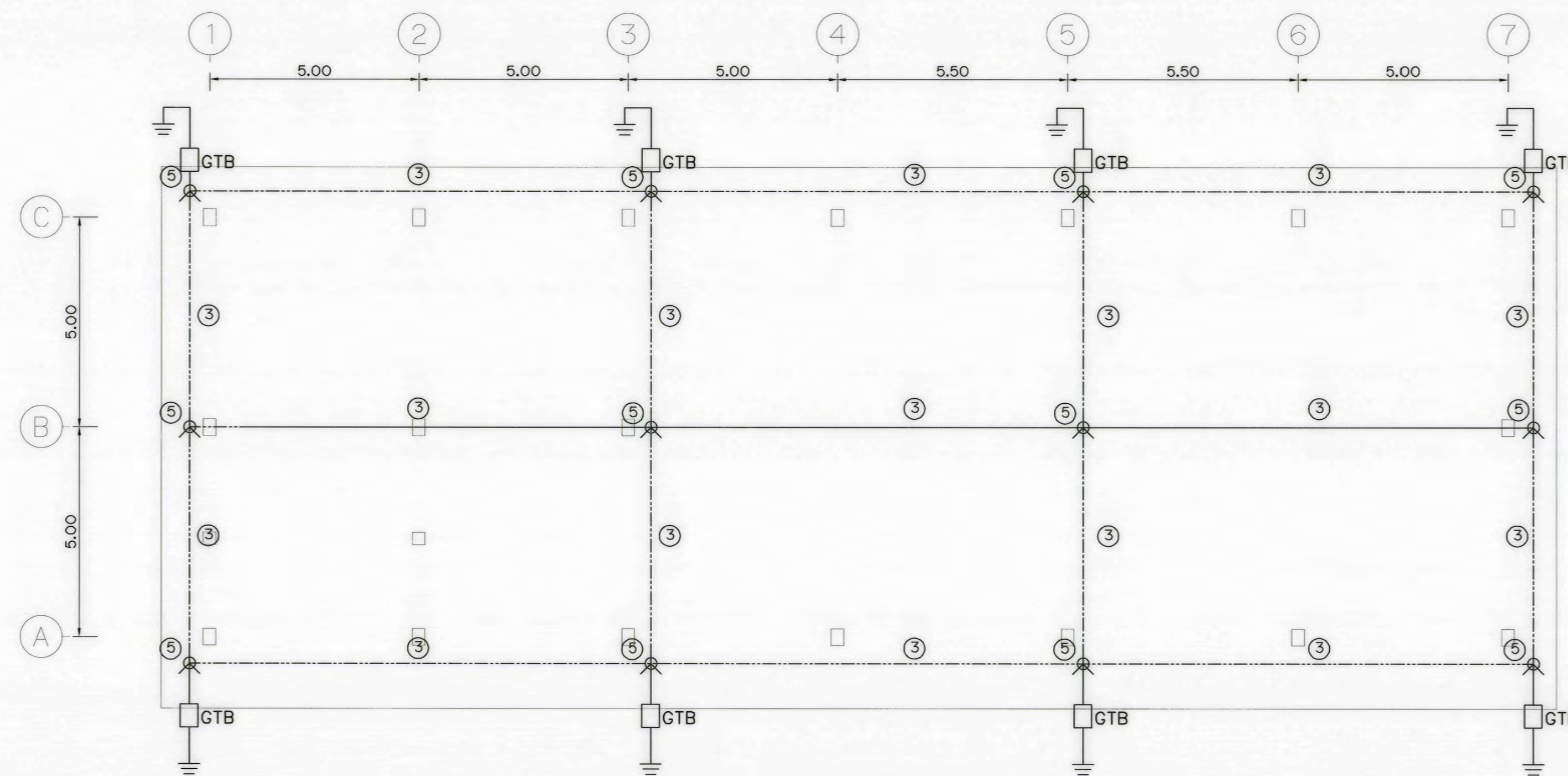


FIRE ALARM PLAN 1ST FL
SCALE 1:100

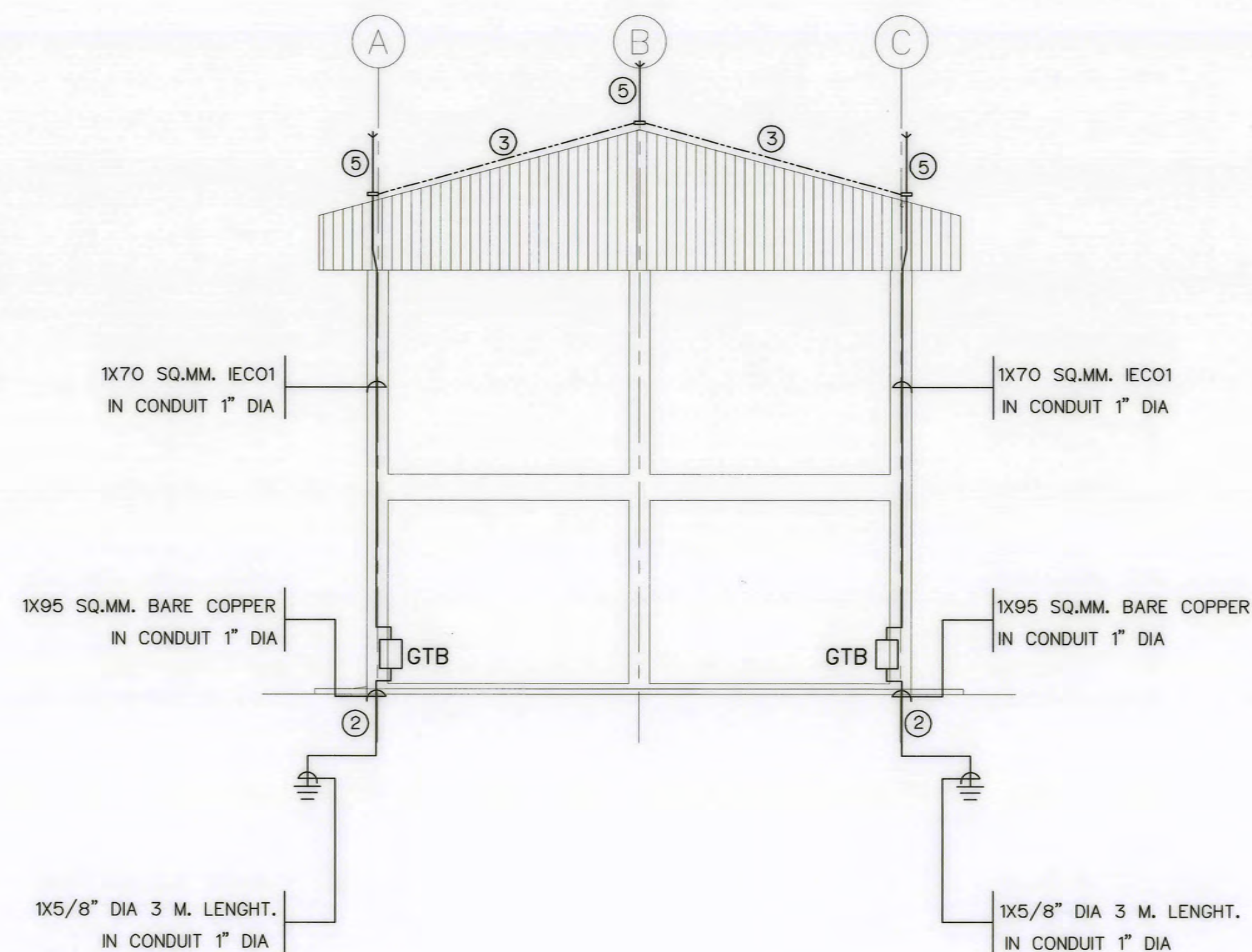
0 1 2 3 4 5 6 7 8
SCALE 1:100 METERS

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE FIRE ALARM PLAN			
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED		SUBMITTED	
DRAWN		RECOMMENDED	
CHECKED		APPROVED	
PROJECT MANAGER		DATE	SHEET NO.
		28/10/2021	AKP-PH-32 94 OF 129

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
			CONSULTANTS	DEDE



LIGHTNING ARRESTER ROOF PLAN
SCALE 1:100



LIGHTNING ARRESTER SECTION PLAN
SCALE 1:100

LEGEND	DESCRIPTION	MATERIAL	PLOTTING
①	POWER HOUSE GROUND GRID (CONNECT TO SUB GROUND) BURIED IN THE SOIL AT LEAST 0.5 m. DEEP	120 sq.mm. BARE COPPER CONDUCTOR	-----
②	DOWN CONDUCTOR EMBEDDED IN CONCRETE	95 sq.mm. BARE COPPER CONDUCTOR	—————
③	ROOF CONDUCTOR FOR FORMING FARADAY CAGE	25 mm x 3 mm COPPER BAR	-----
④	MAIN EARTHING CONDUCTOR	30 x 4 mm COPPER BAR	—●—●—
⑤	AIR TERMINAL 1.00 m LENGTH	SIZE DIAMETER 16 mm	⊙

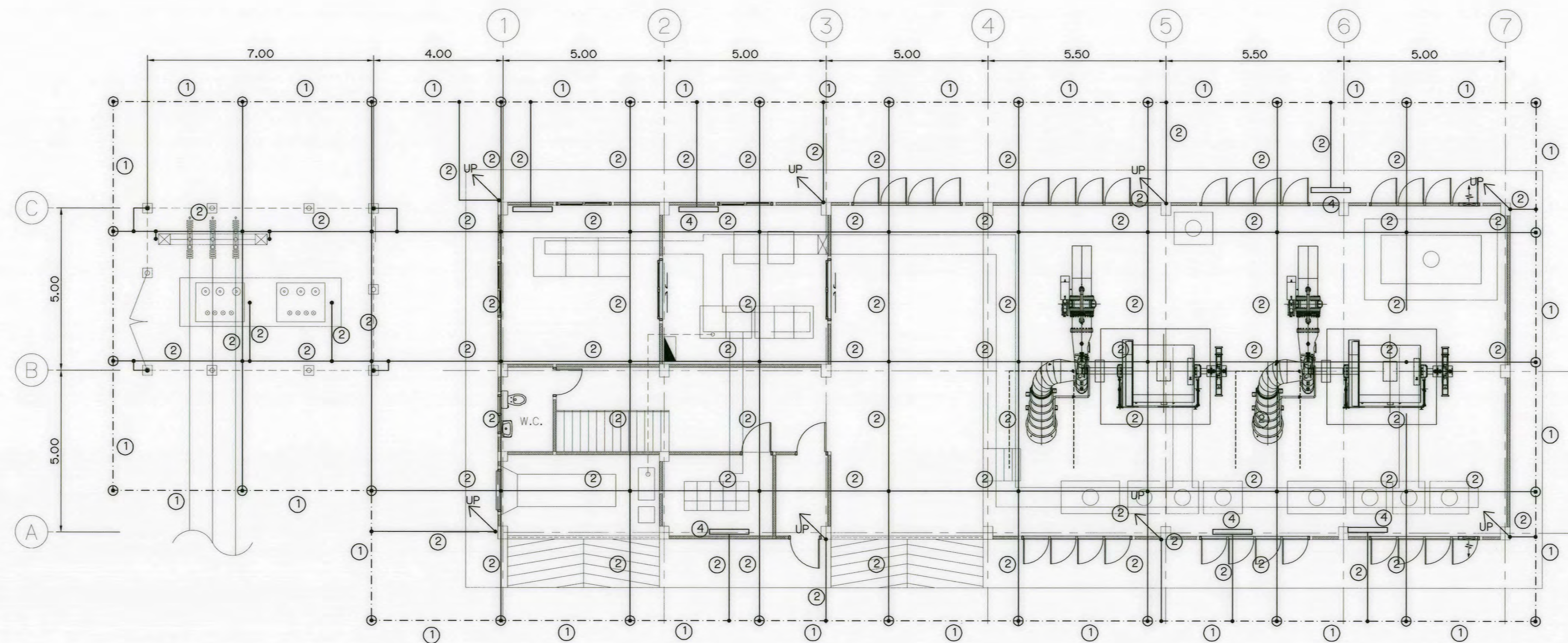
PLOTTING

-----	120 sq.mm. BARE COPPER
⊙	COPPER COVER GROUND ROD 5/8"x10'
—●—●—	GROUND CONNECTION, WELD TYPE
—	INDICATED TO EQUIPMENTS OR STEEL STRUCTURE
—	FALT BAR

NOTES

1. THE EARTHING SYSTEM IS DESIGNED IN ACCORDANCE WITH VDE 0141/7.89 (EARTHING SYSTEM FOR POWER INSTALLATIONS WITH RATED VOLTAGES ABOVE 1 kV.) AND THE PLANNING RULES FOR AVOIDANCE OF UNPERMISSIBLE TRANSIENT OVERVOLTAGES IN SECONDARY CIRCUITS.
2. THE LAYING OF EARTHING CONDUCTORS IS TO BE DETERMINED ON SITE ACCORDING TO ARCHITECTURAL AND TECHNICAL CIRCUMSTANCES.
3. ALL CROSSING CONDUCTORS WITH THE EARTHING GRID SHALL TO BE CONNECTED CONDUCTIVELY WITH THERMITE WELDING.
4. ALL EARTHING CONDUCTOR IN THE CONCRETE SHALL BE ATTACHED WITH REINFORCE STEEL BY WELDING PROCESS EVERY 1 m INTERVAL.
5. ALL EARTHING CONNECTIONS SHALL BE WELDING TYPE. COMPRESSION CONNECTOR OR WRENCH LOCK CONNECTORS ARE NOT ALLOW. EXCEPT IT SHALL BE SUBMITTED FOR APPROVAL BEFORE INSTALLATION.
6. CONTRACTOR SHALL BE LEAVE EARTHING CONDUCTOR FROM FLOOR TO EQUIPMENT ABOUT 1.5 m LENGTH.
7. ALL DIMENSIONS ARE IN METERS, EXCEPT OTHERWISE AS SHOWN.

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE LIGHTNING ARRESTER PLAN			
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED		SUBMITTED	
DRAWN		RECOMMENDED	
CHECKED		APPROVED	
PROJECT MANAGER		DATE	
CONSULTANTS		DEDE	
28/10/2021		AKP-PH-33	
95		OF 129	



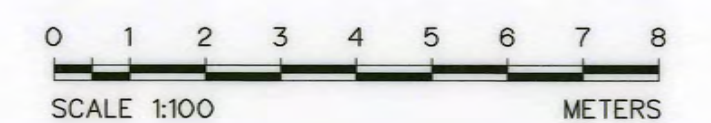
LEGEND	DESCRIPTION	MATERIAL	PLOTTING
①	POWER HOUSE GROUND GRID (CONNECT TO SUB GROUND) BURIED IN THE SOIL AT LEAST 0.5 m. DEEP	120 sq.mm. BARE COPPER CONDUCTOR	-----
②	DOWN CONDUCTOR EMBEDDED IN CONCRETE	95 sq.mm. BARE COPPER CONDUCTOR	—————
③	ROOF CONDUCTOR FOR FORMING FARADAY CAGE	25 mm x 3 mm COPPER BAR	-----
④	MAIN EARTHING CONDUCTOR	30 x 4 mm COPPER BAR	—————
⑤	AIR TERMINAL 1.00 m LENGTH	SIZE DIAMETER 16 mm	⚡

PLOTTING

-----	120 sq.mm. BARE COPPER
⊙	COPPER COVER GROUND ROD 5/8"x10'
⊕	GROUND CONNECTION, WELD TYPE
—	INDICATED TO EQUIPMENTS OR STEEL STRUCTURE
—	FALT BAR

NOTES

1. THE EARTHING SYSTEM IS DESIGNED IN ACCORDANCE WITH VDE 0141/7.89 (EARTHING SYSTEM FOR POWER INSTALLATIONS WITH RATED VOLTAGES ABOVE 1 kV.) AND THE PLANNING RULES FOR AVOIDANCE OF UNPERMISSIBLE TRANSIENT OVERVOLTAGES IN SECONDARY CIRCUITS.
2. THE LAYING OF EARTHING CONDUCTORS IS TO BE DETERMINED ON SITE ACCORDING TO ARCHITECTURAL AND TECHNICAL CIRCUMSTANCES.
3. ALL CROSSING CONDUCTORS WITH THE EARTHING GRID SHALL TO BE CONNECTED CONDUCTIVELY WITH THERMITE WELDING.
4. ALL EARTHING CONDUCTOR IN THE CONCRETE SHALL BE ATTACHED WITH REINFORCE STEEL BY WELDING PROCESS EVERY 1 m INTERVAL.
5. ALL EARTHING CONNECTIONS SHALL BE WELDING TYPE. COMPRESSION CONNECTOR OR WRENCH LOCK CONNECTORS ARE NOT ALLOW. EXCEPT IT SHALL BE SUBMITTED FOR APPROVAL BEFORE INSTALLATION.
6. CONTRACTOR SHALL BE LEAVE EARTHING CONDUCTOR FROM FLOOR TO EQUIPMENT ABOUT 1.5 m LENGTH.
7. ALL DIMENSIONS ARE IN METERS, EXCEPT OTHERWISE AS SHOWN.



KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE GROUNDING SYSTEM PLAN			
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	DESIGNED DRAWN CHECKED PROJECT MANAGER	REVIEWED SUBMITTED RECOMMENDED APPROVED	DATE 28/10/2021
CONSULTANTS		DEDE	
DRAWING NO. AKP-PH-34		SHEET NO. 96 OF 129	

LOAD SCHEDULE													
DIAGRAM N R S T G	PANEL NO : MDB ELECTRICAL SYSTEM : 3Ø, 4w, 400/230 v, 50Hz MAX CKT : 9 LOCATION : POWER HOUSE MOUTED : FLOOR												
	FEED	DESCRIPTION		CIRCUIT BREAKER CABLE		CONDUIT		LOAD CONNECTION(VA)					
	NO.	P	AT	AF	IC	SECTION (sq.mm)	TYPE	DIA (INCH)	TYPE	R	S	T	
	1	2	40	160		2X10/1X4G	IEC01	3/4	EMT	7000			
	2	2	40	160		2X10/1X4G	IEC01	3/4	EMT		7000		
	3	3	50	160		4X16/1X4G	IEC01	1-1/4	EMT	2800	2800	2800	
	4	3	80	160		4X35/1X10G	IEC01	2	EMT	20660	19900	19080	
	5	3	50	160		4X70/1X10G	NYYY	3	HDPE	11700	11200	11200	
	6	3	20	160		4X4/1X2.5G	IEC01	3/4	EMT	1500	1500	1500	
	7	3	20	160		4X4/1X2.5G	IEC01	3/4	EMT	1500	1500	1500	
	8	3	30	160									
	9	3	125	160		4X70/1X16G	IEC01	2-1/2	IMC	5000	5000	5000	
MAIN BREAKER: ☒ LUG: ☐		3	250	400		CONDUCTOR : 4x185sq.mm IEC01				50160	48900	41080	
BUS PHASE : 400 A						1x25(6)sq.mm IEC01				100% LOAD: 140140 VA			
INCOME LINE : ACB1 & ACB2						IN CABLE TRENCH				90% LOAD: 126126 VA			

LOAD SCHEDULE													
DIAGRAM N L G	PANEL NO : LPG1 ELECTRICAL SYSTEM : 1Ø, 3w, 230 v, 50Hz MAX CKT : 6 LOCATION : GUARD HOUSE 1 MOUTED : WALL												
	FEED	DESCRIPTION		CIRCUIT BREAKER CABLE		CONDUIT		LOAD CONNECTION(VA)					
	NO.	P	AT	AF	IC	SECTION (sq.mm)	TYPE	DIA (INCH)	TYPE				
	1	1	16	50		2X2.5/1X2.5G	IEC01	1/2	EMT		200		
	2	1	20	50		2X4/1X2.5G	IEC01	1/2	EMT		660		
	3	1	16	50							640		
	4												
	5												
	6												
	MAIN BREAKER: ☒ LUG: ☐		2	20	50	CONDUCTOR : 2x4 sq.mm NYYY				100% LOAD: 1500 VA			
BUS PHASE : 50 A						1x2.5(6)sq.mm IEC01							
INCOME LINE : LP-36						IN CONDUIT 1-1/4" DIA HDPE							

REMARKS: CB "E" IS EARTH LEAK CIRCUIT BREAKER 30 mA.

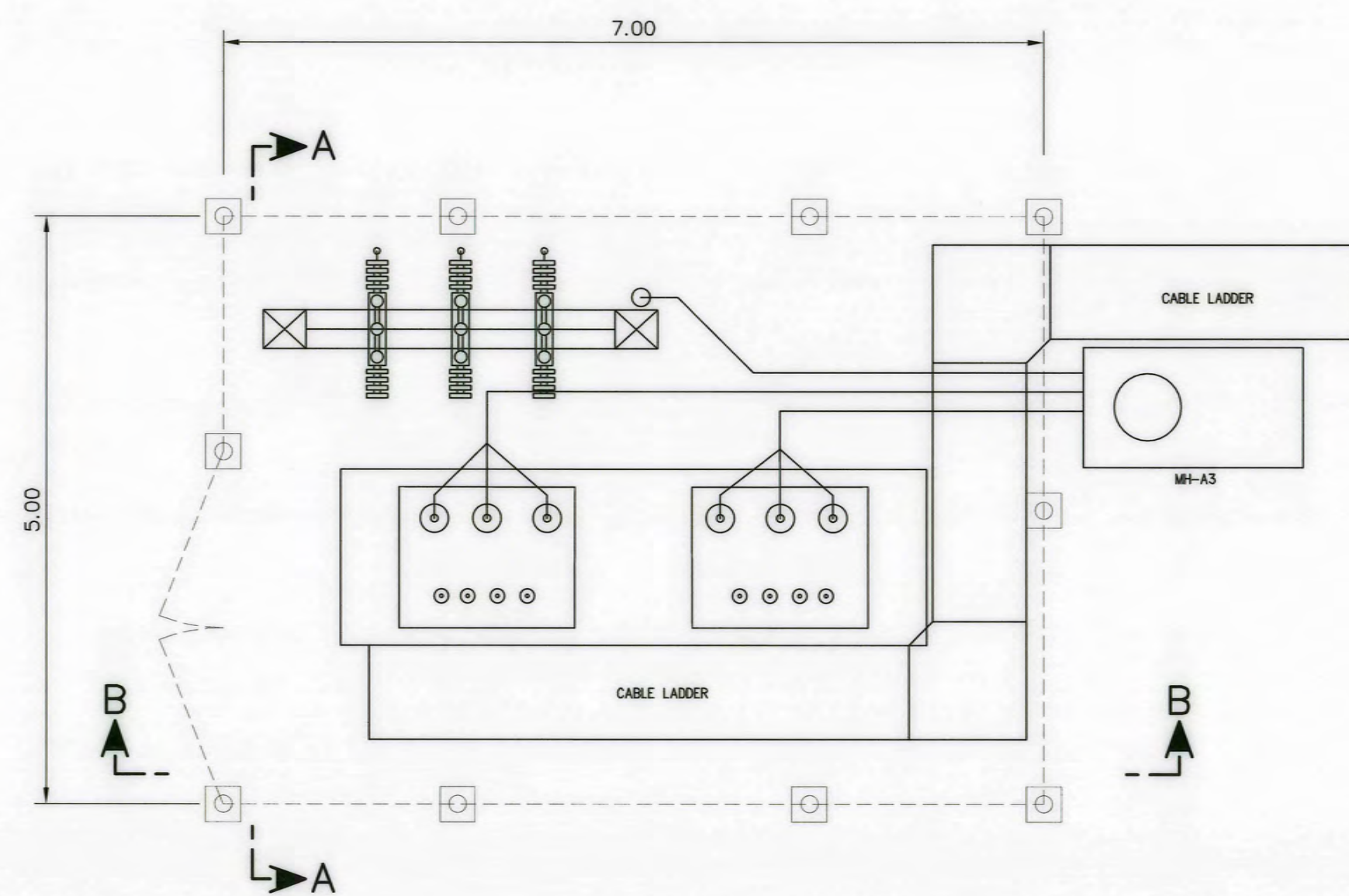
LOAD SCHEDULE													
DIAGRAM N L G	PANEL NO : LPG2 ELECTRICAL SYSTEM : 1Ø, 3w, 230 v, 50Hz MAX CKT : 6 LOCATION : GUARD HOUSE 2 MOUTED : WALL												
	FEED	DESCRIPTION		CIRCUIT BREAKER CABLE		CONDUIT		LOAD CONNECTION(VA)					
	NO.	P	AT	AF	IC	SECTION (sq.mm)	TYPE	DIA (INCH)	TYPE				
	1	1	16	50		2X2.5/1X2.5G	IEC01	1/2	EMT		200		
	2	1	20	50		2X4/1X2.5G	IEC01	1/2	EMT		660		
	3	1	16	50							640		
	4												
	5												
	6												
	MAIN BREAKER: ☒ LUG: ☐		2	20	50	CONDUCTOR : 2x6 sq.mm NYYY				100% LOAD: 1500 VA			
BUS PHASE : 50 A						1x4(6)sq.mm IEC01							
INCOME LINE : LP-38						IN CONDUIT 1-1/4" DIA HDPE OR ON RACK							

REMARKS: CB "E" IS EARTH LEAK CIRCUIT BREAKER 30 mA.

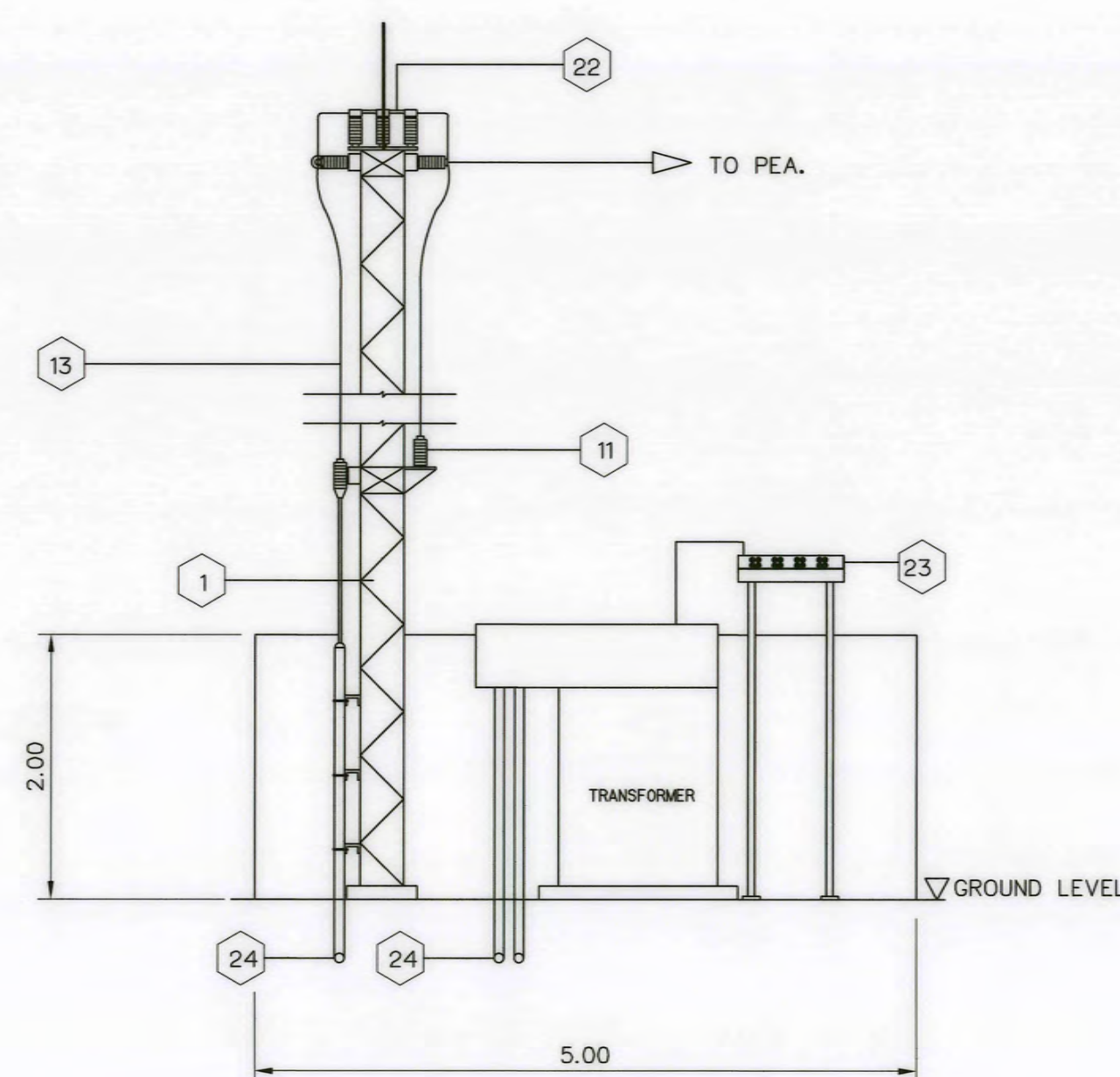
LOAD SCHEDULE													
DIAGRAM N R S T G	PANEL NO : LP ELECTRICAL SYSTEM : 3Ø, 4w, 400/230 v, 50Hz MAX CKT : 42 LOCATION : POWER HOUSE MOUTED : WALL												
	CKT	DESCRIPTION		CIRCUIT BREAKER CABLE		CONDUIT		LOAD CONNECTION(VA)					
	NO.	P	AT	AF	IC	SECTION (sq.mm)	TYPE	DIA (INCH)	TYPE	R	S	T	
	1	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT	2000			MACHINE BAY
	3	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT		300		EXTERNAL LIGHTING
	5	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT			200	DIESEL GEN ROOM
	7	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT	400			BATT , TOILET , CORRIDOR
	9	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT		500		SWITCH GEAR ROOM
	11	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT			600	OFFICE & MEETING ROOM
	13	1	16	50		2x2.5/1x2.5	IEC01	1/2	EMT	400			CONTROL ROOM
G	15	1	20	50		2x4/1x2.5	IEC01	1/2	EMT		1500		FCP
	17	1	20	50		2x4/1x2.5	IEC01	1/2	EMT			1500	SERVER
	19	1	32	50		2x6/1x2.5	IEC01	3/4	EMT	2500			INTERLOCK WITH AC4
	21	1	32	50		2x6/1x2.5	IEC01	3/4	EMT		2500		INTERLOCK WITH AC3
	23	1	20	50		2x4/1x2.5	IEC01	1/2	EMT			1400	MEETING ROOM
	25									1700			
	27	3	20	50		4x4/1x2.5	IEC01	3/4	EMT		1700		INTER LOCK WITH ACB
	29										1700		
	31	1	20	50		2x4/1x2.5	IEC01	1/2	EMT	2500			EMER & FIRE EXIT LIGHTING
	33	1	20	50		2x4/1x2.5	NYYY	1-1/4	HDPE		1500		STREET LIGHTING
G	35	1	20	50								1500	
	37	1	20	50									
	39	1	20	50									
	41	1	20	50								1500	
	2	1	20E	50		2x4/1x2.5	IEC01	1/2	EMT	880			MACHINE BAY
	4	1	20E	50		2x4/1x2.5	IEC01	1/2	EMT		1100		MACHINE BAY
	6	1	20E	50		2x4/1x2.5	IEC01	1/2	EMT			1100	BATT , TOILET , CORRIDOR
	8	1	20	50		2x4/1x2.5	IEC01	1/2	EMT	880			SWITCH GEAR
	10	1	20	50		2x4/1x2.5	IEC01	1/2	EMT		1100		OFFICE
	12	1	20	50		2x4/1x2.5	IEC01	1/2	EMT			880	MEETING ROOM
G	14	1	20	50		2x4/1x2.5	IEC01	1/2	EMT	880			CONTROL ROOM
	16	1	20	50		2x4/1x2.5	IEC01	1/2	EMT		1500		ROLLER SHUTTER
	18	1	20	50		2x4/1x2.5	IEC01	1/2	EMT			1500	ROLLER SHUTTER
	20	1	32	50		2x6/1x2.5	IEC01	3/4	EMT	2500			INTER LOCK WITH AC2
	22	1	32	50		2x6/1x2.5	IEC01	3/4	EMT		2500		INTER LOCK WITH AC1
	24	1	32	50		2x6/1x2.5	IEC01	3/4	EMT			2500	OFFICE
	26									1700			
	28	3	20	50		4x4/1x2.5	IEC01	3/4	EMT		1700		INTER LOCK WITH AC7
	30										1700		
	32	1	20	50		2x4/1x2.5	IEC01	1/2	EMT	1320			EMER & FIRE EXIT LIGHTING
G	34	1	20	50							1000		LCI
	36	1	20	50		2x4/1x2.5	NYYY	1-1/4	HDPE			1500	FOR LIGHTING AND EE
	38	1	20	50		2x6/1x4	NYYY	1-1/4	HDPE			1500	FOR LIGHTING AND EE
	40	1	20	50								1500	
	42	1	20	50									
	MAIN BREAKER: ☒ LUG: ☐		3	60	100	CONDUCTOR : 4x35/10G sq.mm IEC01				20660	19900	19080	
	BUS PHASE : 200 A					100% LOAD: 59640 VA							
	INCOME LINE : MDB					WIRING IN CONDUIT 2" DIA EMT				80% LOAD: 47712 VA			

REMARKS: CB "E" IS EARTH LEAK CIRCUIT BREAKER 30 mA.

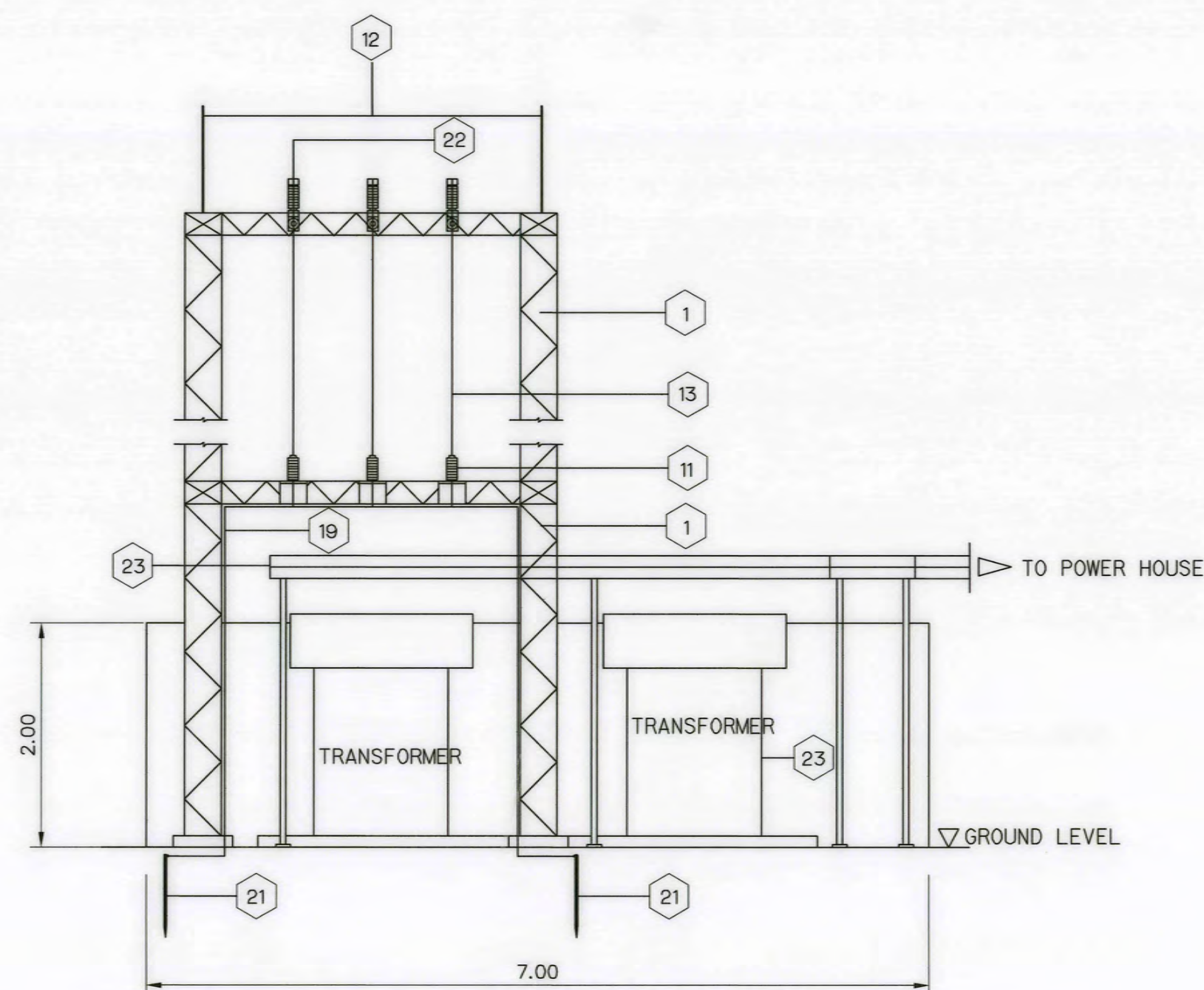
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE LOAD SCHEDULE			
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	DESIGNED DRAWN CHECKED	REVIEWED SUBMITTED RECOMMENDED APPROVED	28/10/2021 PROJECT MANAGER
CONSULTANTS		DEDE	
NO. DATE REVISIONS CHECKED APPROVED		DRAWING NO. SHEET NO. AKP-PH-35 97 OF 129	



TRANSFORMER SWITCH YARD PLAN
NOT TO SCALE



SECTION "A"-"A"
NOT TO SCALE



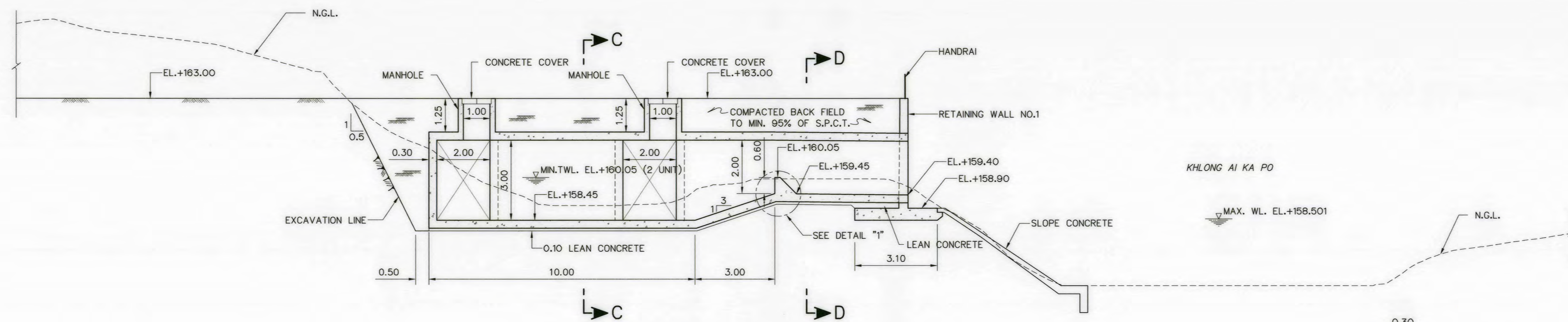
SECTION "B"-"B"
NOT TO SCALE

BILL OF MATERIAL	
ITEM	DESCRIPTION
1	STEEL POLE 12.0 M.LONG
2	CROSSARM,SPUN PRESTRESSED CONCRETE,100x100x2,500 mm.
3	CROSSARM,SPUN PRESTRESSED CONCRETE,120x120x2,000 mm.
4	BEAM SPUN, PRESTRESSD CONCRETE, 100x100x3,200 mm.
5	CONCRETE BEAM 150x250x3,450 mm.FOR TRANS.PLATFORM
6	BRACE,FLAT,FOR CROSSARM,30x6x760 mm.
7	BOLT,MACHINE HEXAGON M16x550 mm.
8	INSULATOR, SUSPENSION TYPE (CLASS 52-1)
9	INSULATOR, LINE POST TYPE CLASS 57-2L
10	CUT-OUT,FUSE, OPEN TYPE, SINGLE INSULATOR, DROP-OUT 100A.
11	SURGE ARRESTERS 3 kV. 5 kA.
12	OVER HEAD GOUND WIRE (OHGW)
13	ALUMINIUM CONDUCTOR STEEL REINFORCED
14	CLAMP STRAIN FOR AI 35-70 sq.mm.
15	WIRE, STEEL STRANDED, 50/7 DIN 48201
16	CLAMP, SINGLE U-BOLT, M 8
17	WIRE, STEEL, SOLID, DIMETER 4 mm.
18	CONNECTOR, PARALLEL GROOVE, DOUBLE BOLT, AI 25-95 sq.mm.
19	PIPE, RIGID PVC. 20x2,500 mm. COMP. WITH FIXER
20	ROD, GROUND 60x60x5 mm. 2,000 mm. LONG
21	TRANSFORMER 3 PHASE 3,500-400/230 V.
22	LINE SWITCH
23	LOW VOLTAGE CABLE (CV) WIRE ON CABLE TRAY
24	33KV XLPE IN HDPE PIPE

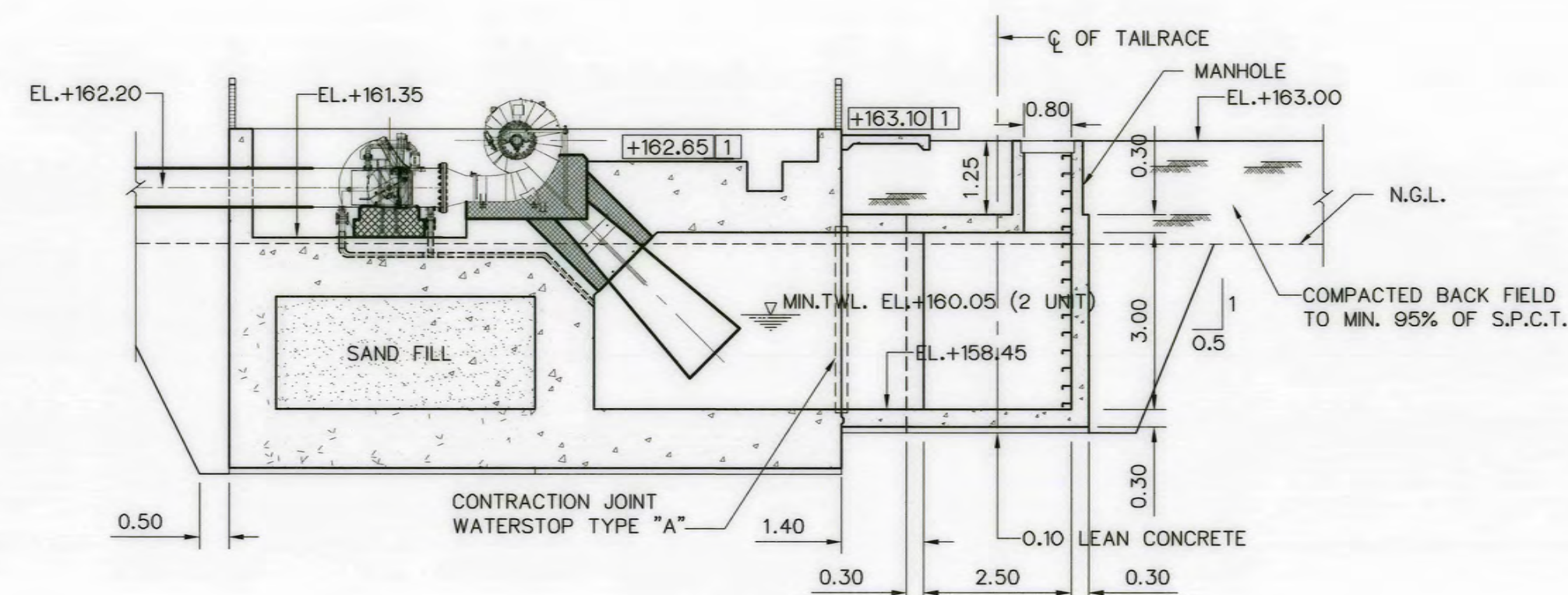
NOTE :
1. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONSTRUCTION DRAWING SHALL CONFORM TO PEA'S STANDARD AND REGULATIONS.

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE POWERHOUSE SWITCH YARD AREA	
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED 28/10/2021	SUBMITTED
DRAWN 28/10/2021	RECOMMENDED
CHECKED 28/10/2021	APPROVED
PROJECT MANAGER	SHEET NO. 98 OF 129

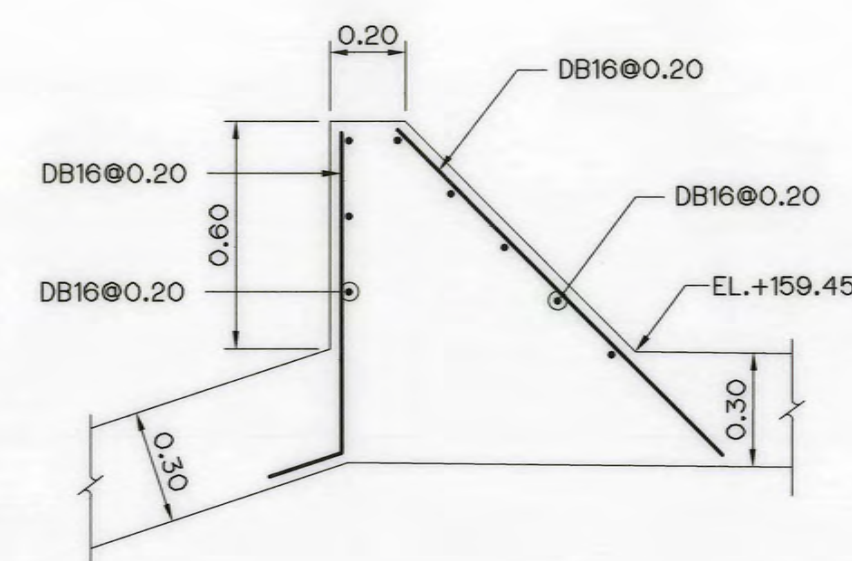
3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
			DEDE	



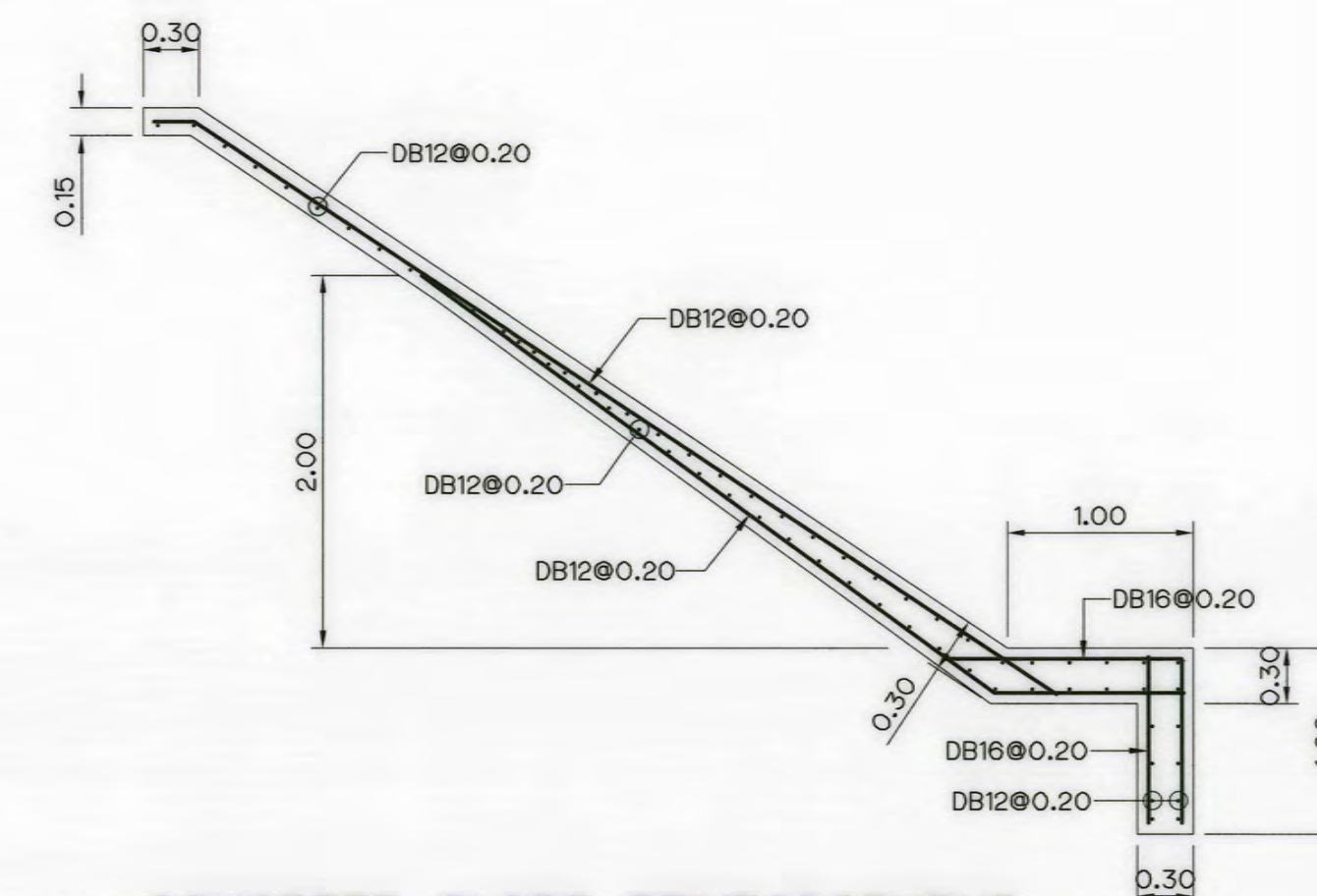
SECTION A-A
SCALE 1:100



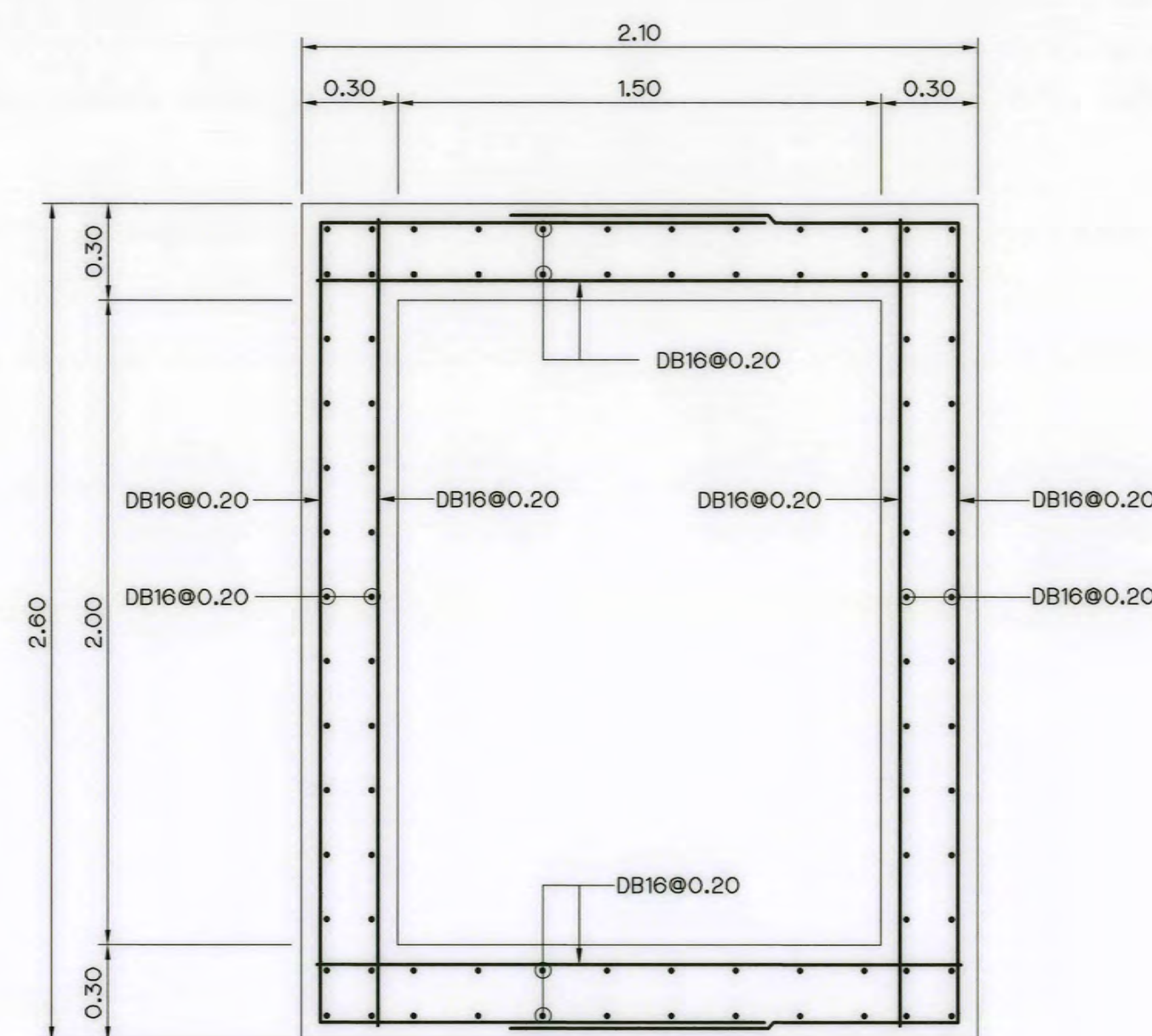
SECTION B-B
SCALE 1:100



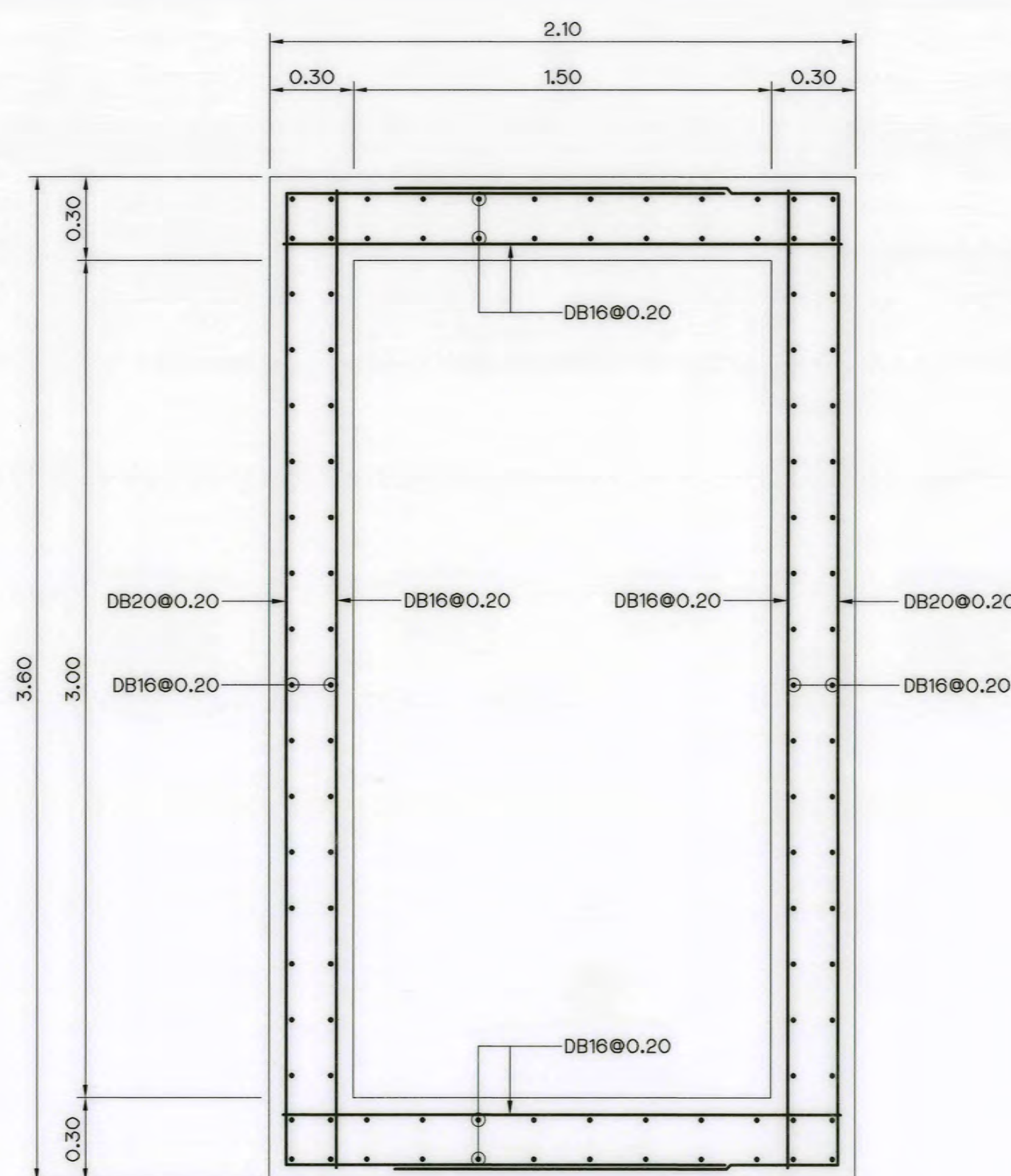
DETAIL "1"
SCALE 1:20



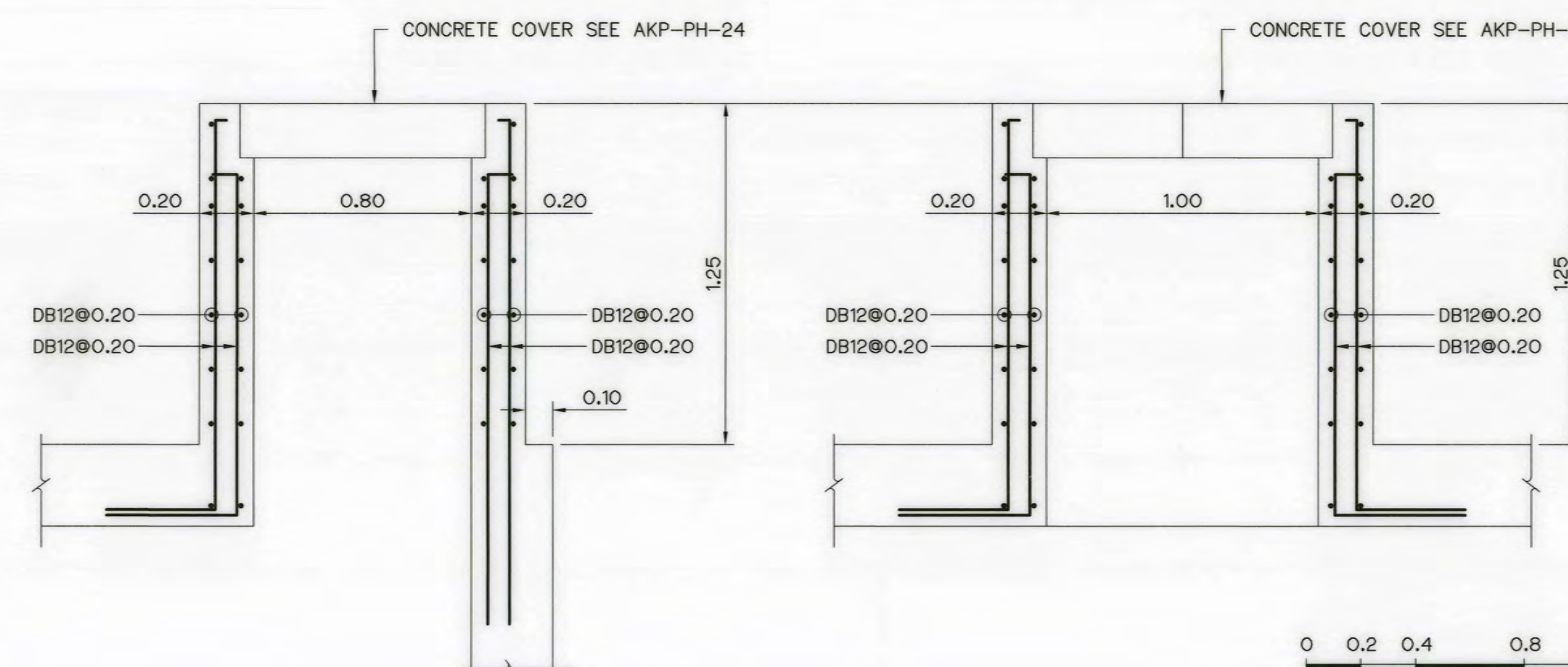
CONCRETE SLOPE REINFORCEMENT
SCALE 1:20



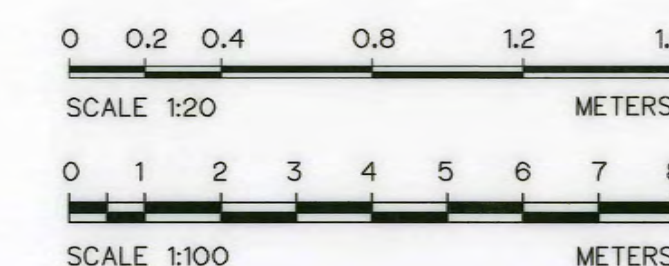
SECTION D-D
SCALE 1:20



SECTION C-C
SCALE 1:20



MANHOLE DETAIL
SCALE 1:20



NOTES :

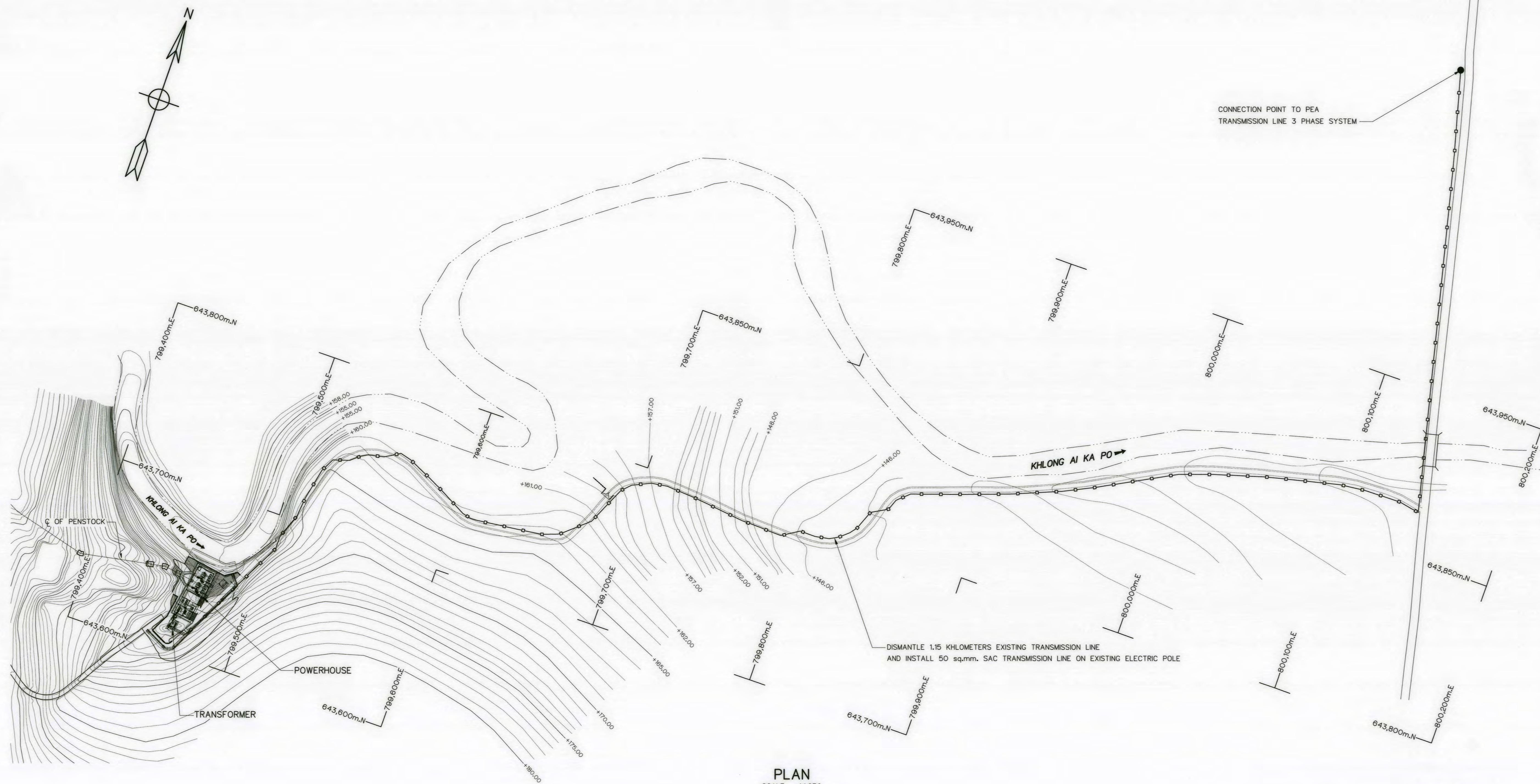
1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03

REFERENCE DRAWINGS :

1. TAILRACE, PLAN AKP-TR-01
2. POWERHOUSE, RETAININGWALL REINFORCEMENT DETAILS AKP-PH-13
3. POWERHOUSE, MISCELLANEOUS DETAILS AKP-PH-24

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
			DEDE	

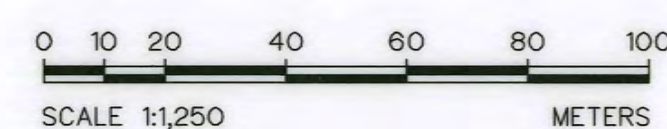
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE	
TAILRACE SECTIONS	
DESIGNED <i>Man</i> 28/10/21 28/10/21	REVIEWED <i>Man</i>
DRAWN <i>Man</i>	RECOMMENDED <i>Man</i>
CHECKED <i>Man</i> 28/10/21	APPROVED <i>Man</i>
PROJECT MANAGER	DRAWING NO. SHEET NO.
DATE	AKP-TR-02 100 OF 129



PLAN
SCALE 1:1,250

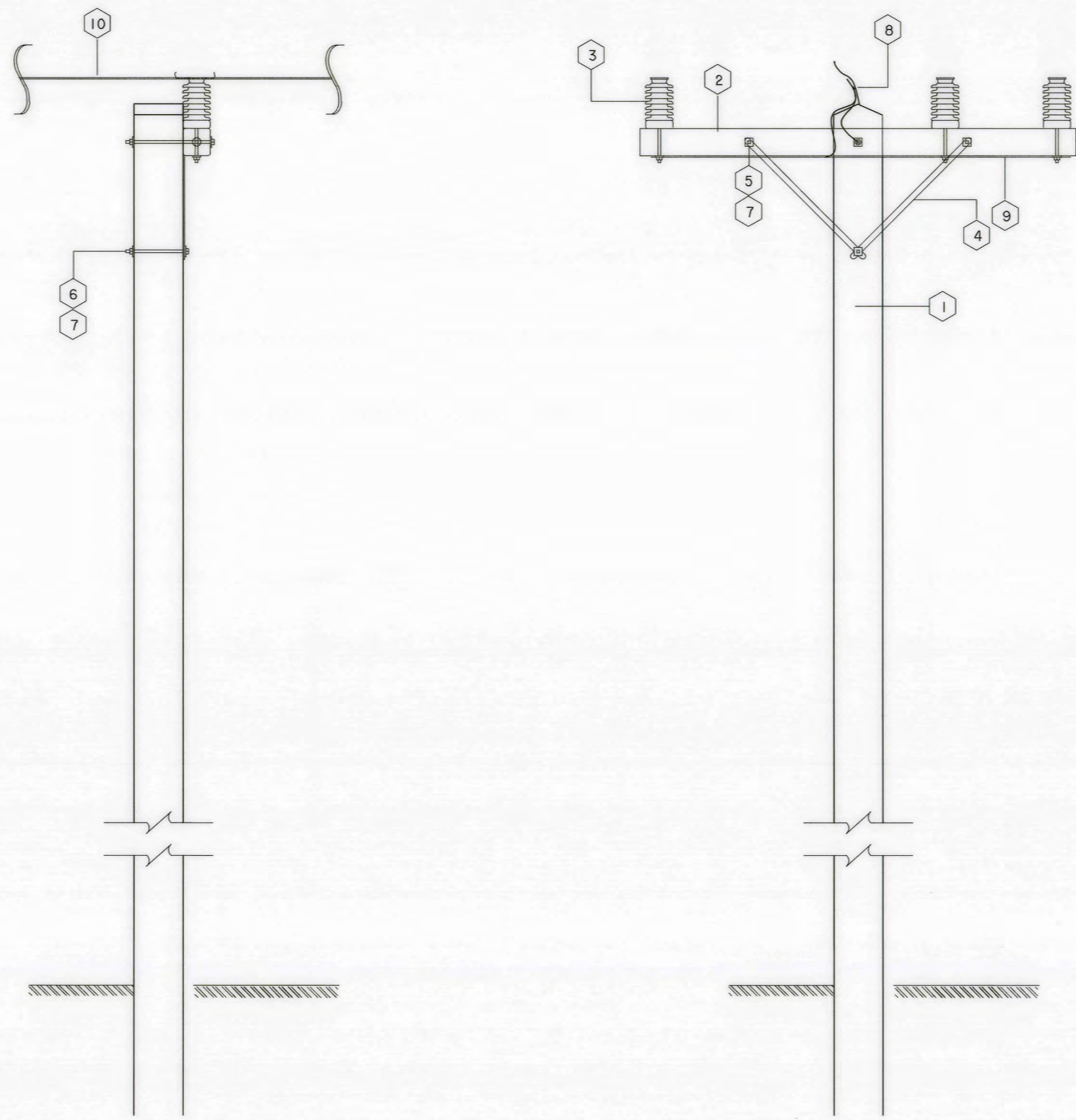
NOTES:

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN
2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
3. IMPROVED BY INSTALL NEW TRANSMISSION LINE ON EXISTING ELECTRIC POLE

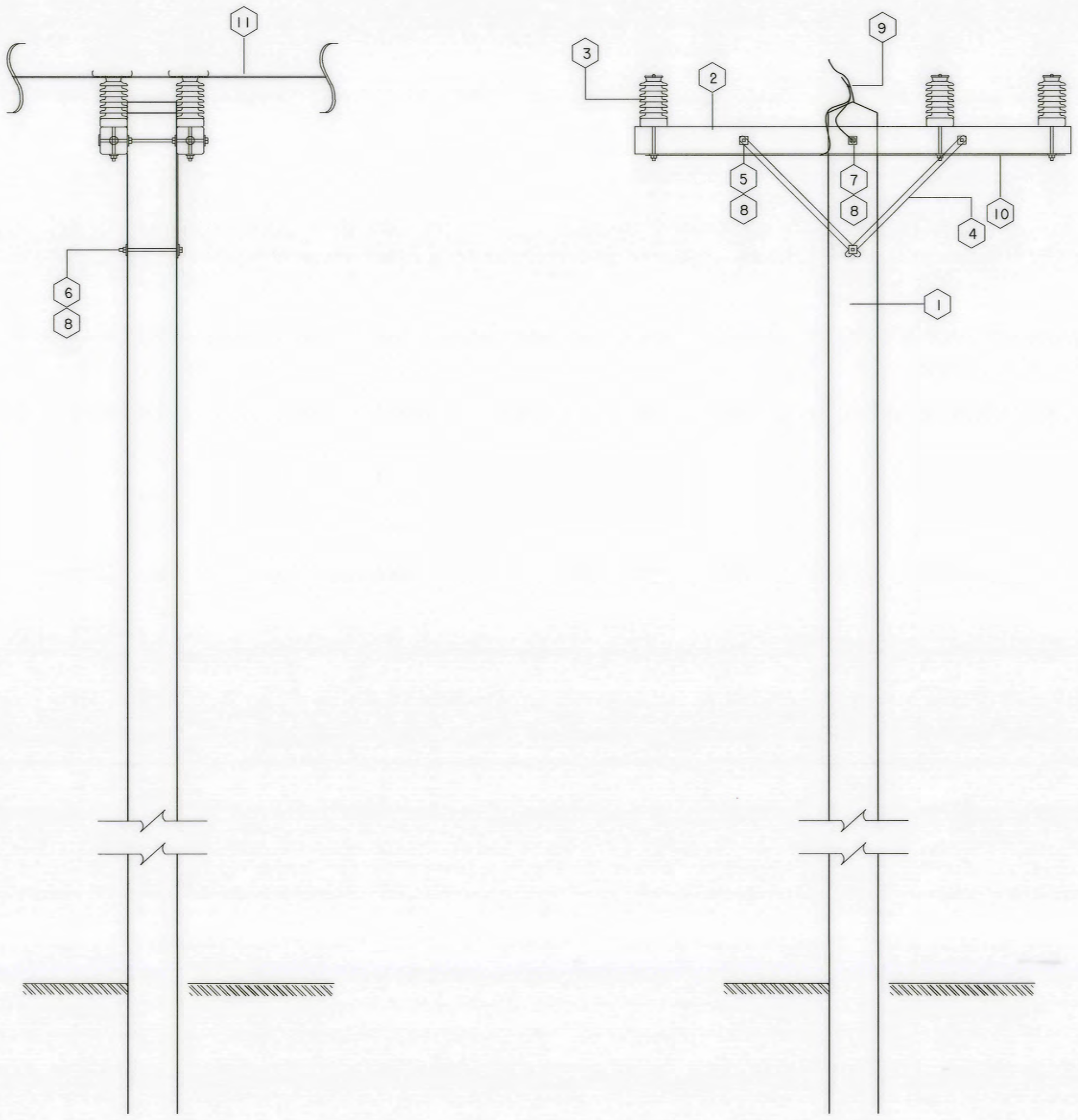


KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE TRANSMISSION LINE PLAN STA.0+000 TO STA.1+110			
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED		REVIEWED	
DRAWN		SUBMITTED	
CHECKED		RECOMMENDED	
APPROVED		APPROVED	
PROJECT MANAGER		DRAWING NO.	
DATE		SHEET NO.	
28/10/2021		AKP-TS-01	
101		OF 129	

POLE TYPE "A"
(0°-5°)



POLE TYPE "B"
(5°-60°)



NOTE :

1. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONSTRUCTION DRAWING SHALL CONFORM TO PEA'S STANDARD AND REGULATIONS.

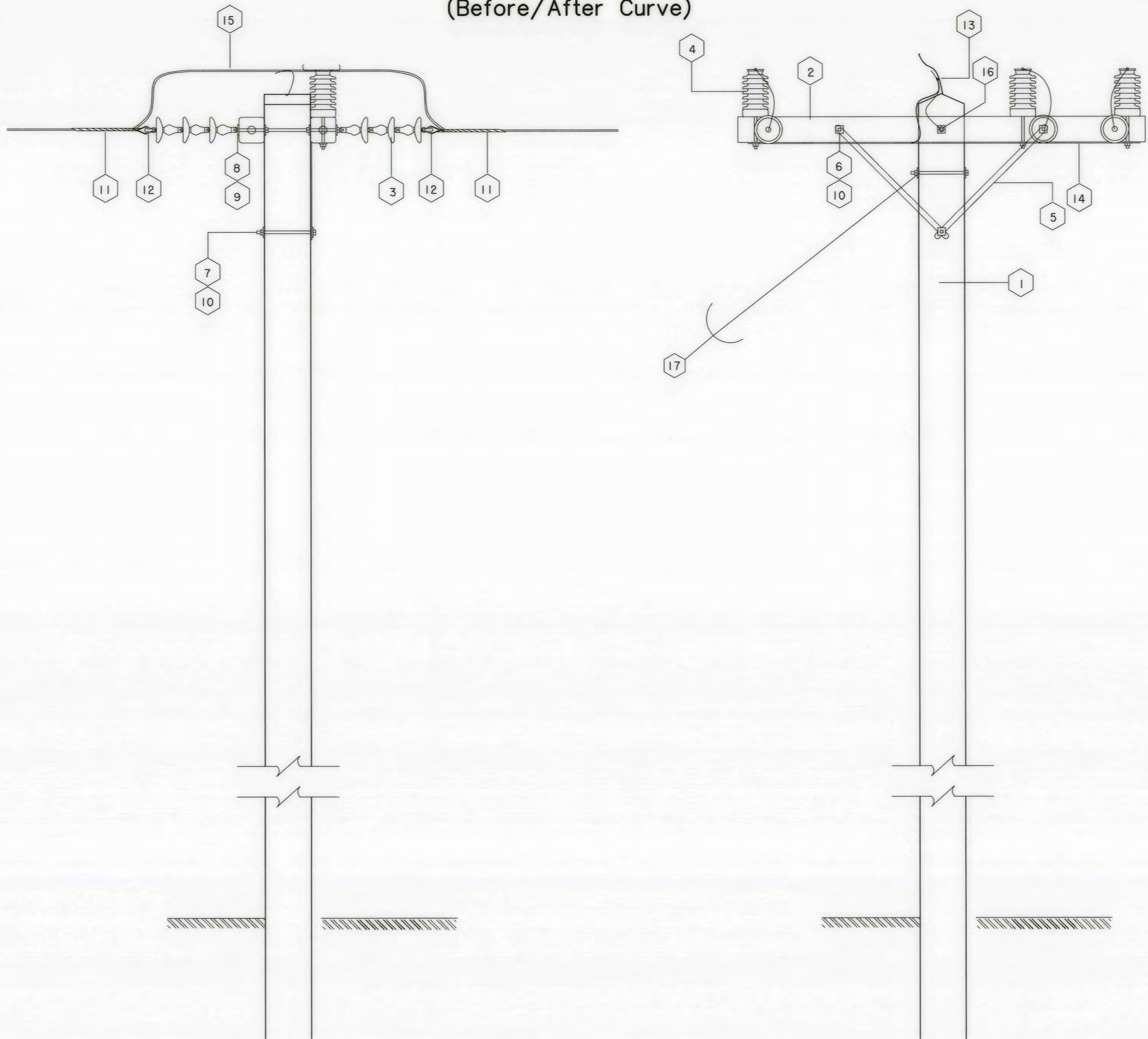
BILL OF MATERIAL	
ITEM	DESCRIPTION
1	POLE CONCRETE 12.0 M.LONG
2	CROSSARM,SPUN PRESTRESSED CONCRETE,120x120x2,000 mm.
3	INSULATOR,LINE POST TYPE,ANSI C 29.7 CLASS 57-2L
4	BRACE,FLAT,FOR CROSSARM,30x6x760 mm.
5	BOLT,MACHINE, M16x170 mm.
6	BOLT,MACHINE, M16x200 mm.
7	WASHER,SQUARE,FLAT,52x52x4.5 mm,HOLE Dia. 18 mm.TIS 258
8	CLAMP, SINGLE U-BOLT, M 8
9	WIRE STEEL SOLID Dia. 4 MM.
10	35kV-CC (SAC)

BILL OF MATERIAL	
ITEM	DESCRIPTION
1	POLE CONCRETE 12.0 M.LONG
2	CROSSARM,SPUN PRESTRESSED CONCRETE,120x120x2,000 mm.
3	INSULATOR,LINE POST TYPE,ANSI C 29.7 CLASS 57-2L
4	BRACE,FLAT,FOR CROSSARM,30x6x760 mm.
5	BOLT,MACHINE, M16x170 mm.
6	BOLT,MACHINE, M16x200 mm.
7	BOLT,MACHINE, M16x400 mm.
8	WASHER,SQUARE,FLAT,52x52x4.5 mm,HOLE Dia. 18 mm.TIS 258
9	CLAMP, SINGLE U-BOLT, M 8
10	WIRE STEEL SOLID Dia. 4 MM.
11	35kV-CC (SAC)

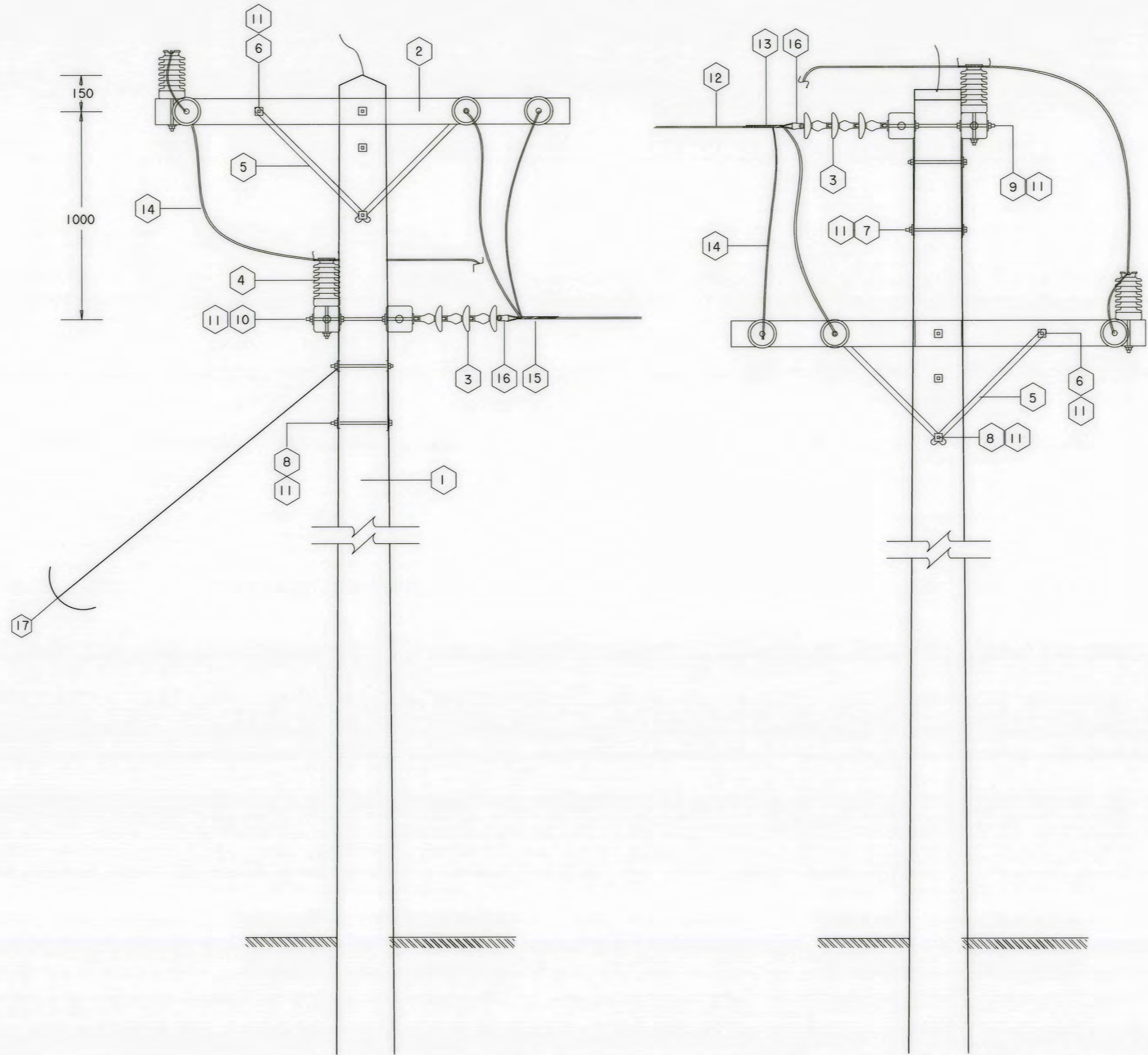
3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
		CONSULTANTS	DEDE	

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE TRANSMISSION LINE POLE TYPE "A" AND "B"			
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	DESIGNED a.w.n.1764	REVIEWED a.w.n.1764	RECOMMENDED a.w.n.1764
CHECKED a.w.n.1764	28/10/2021	APPROVED a.w.n.1764	DRAWING NO. AKP-TS-02
PROJECT MANAGER		DATE	
		SHEET NO. 102 OF 129	

POLE TYPE "C"
(Before/After Curve)



POLE TYPE "D"
(60°-90°)



BILL OF MATERIAL

ITEM	DESCRIPTION
1	POLE CONCRETE 12.0 M.LONG
2	CROSSARM,SPUN PRESTRESSED CONCRETE,120x120x2,000 mm.
3	INSULATOR,SUSPENSION TYPE,TIS 354 , TYPE A (CLASS 52-1)
4	INSULATOR,LINE POST TYPE,ANSI C 29.7 CLASS 57-2L
5	BRACE,FLAT,FOR CROSSARM,30x6x760 mm.
6	BOLT,MACHINE, M16x170 mm.
7	BOLT,MACHINE, M16x200 mm.
8	BOLT,DOUBLE ARMING,ROUND EYE, M16x450 mm.
9	NUT,EYE, M 16 ,DIN 582
10	WASHER,SQUARE,FLAT,52x52x4.5 mm.HOLE Dia. 18 mm.TIS 258
11	PREFORMED DEAD-END FOR SAC 35-95 sq.mm.
12	CLEVIS, THIMBLE, FOR PREFORMED DEAD-END
13	CLAMP, SINGLE U-BOLT, M 8
14	WIRE STEEL SOLID Dia. 4 MM.
15	35kV-CC (SAC)
16	WIRE STEEL STRANDED 50/7 DIN 48201
17	GUY (STEEL STARNDARD WIRE 95 Sq.mm.)

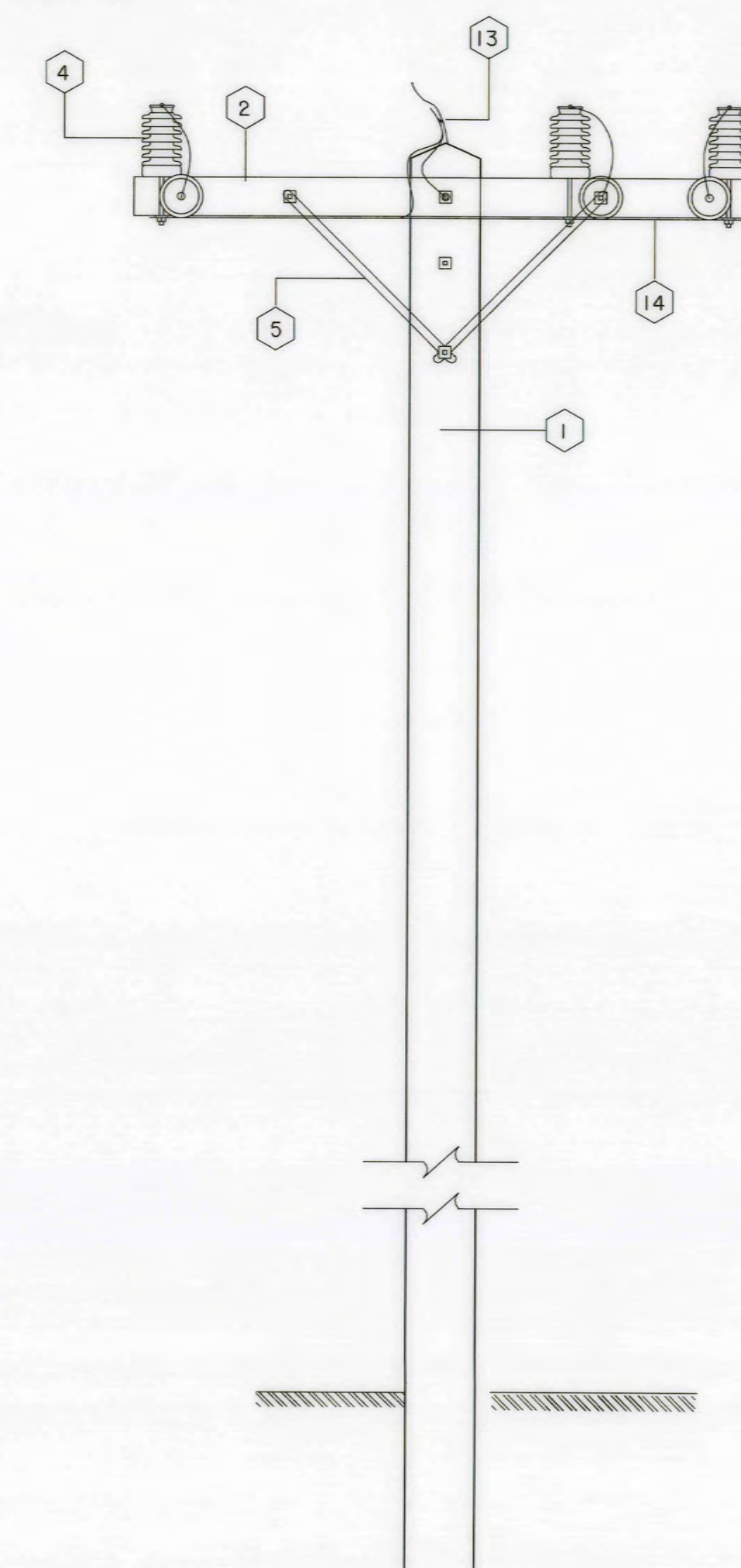
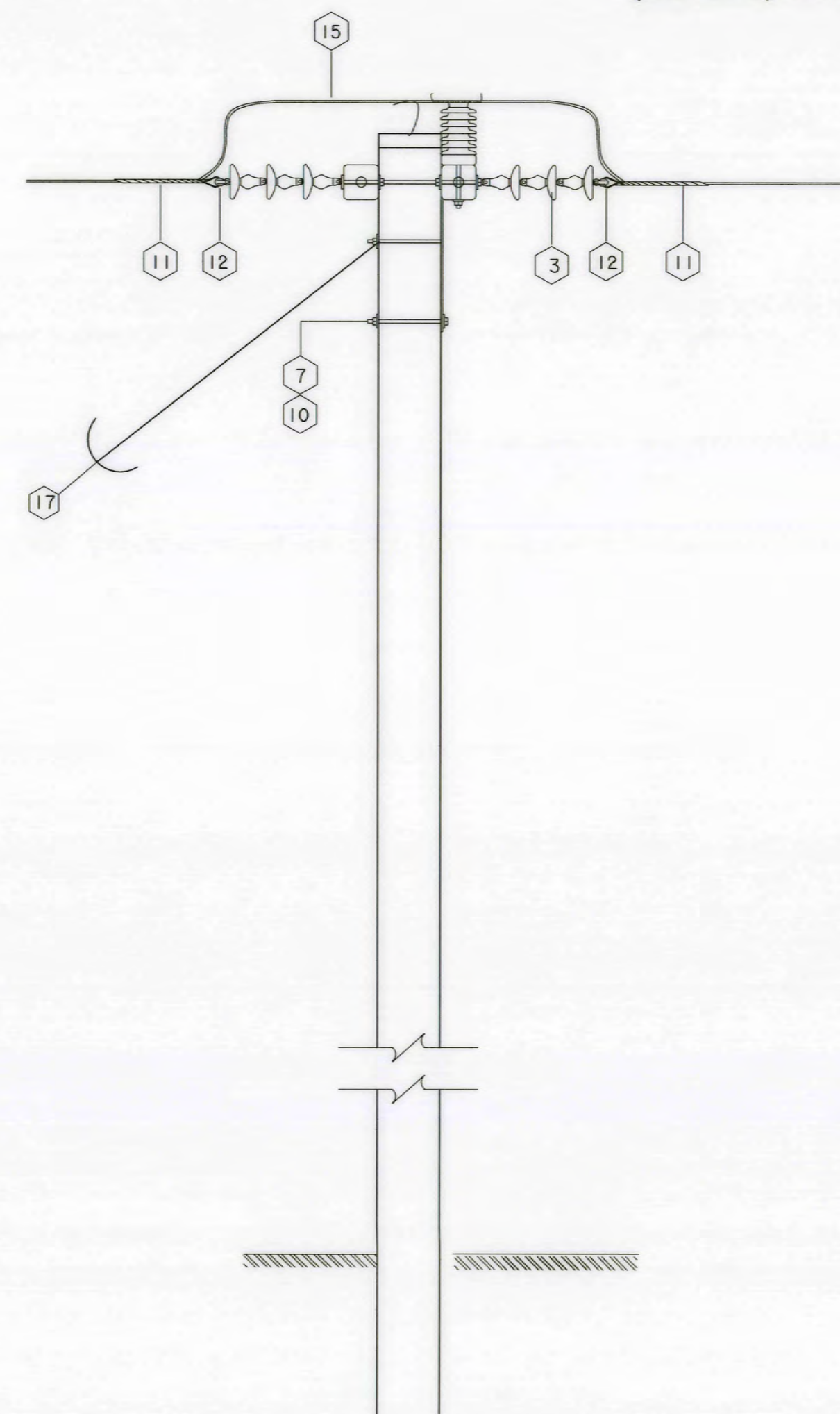
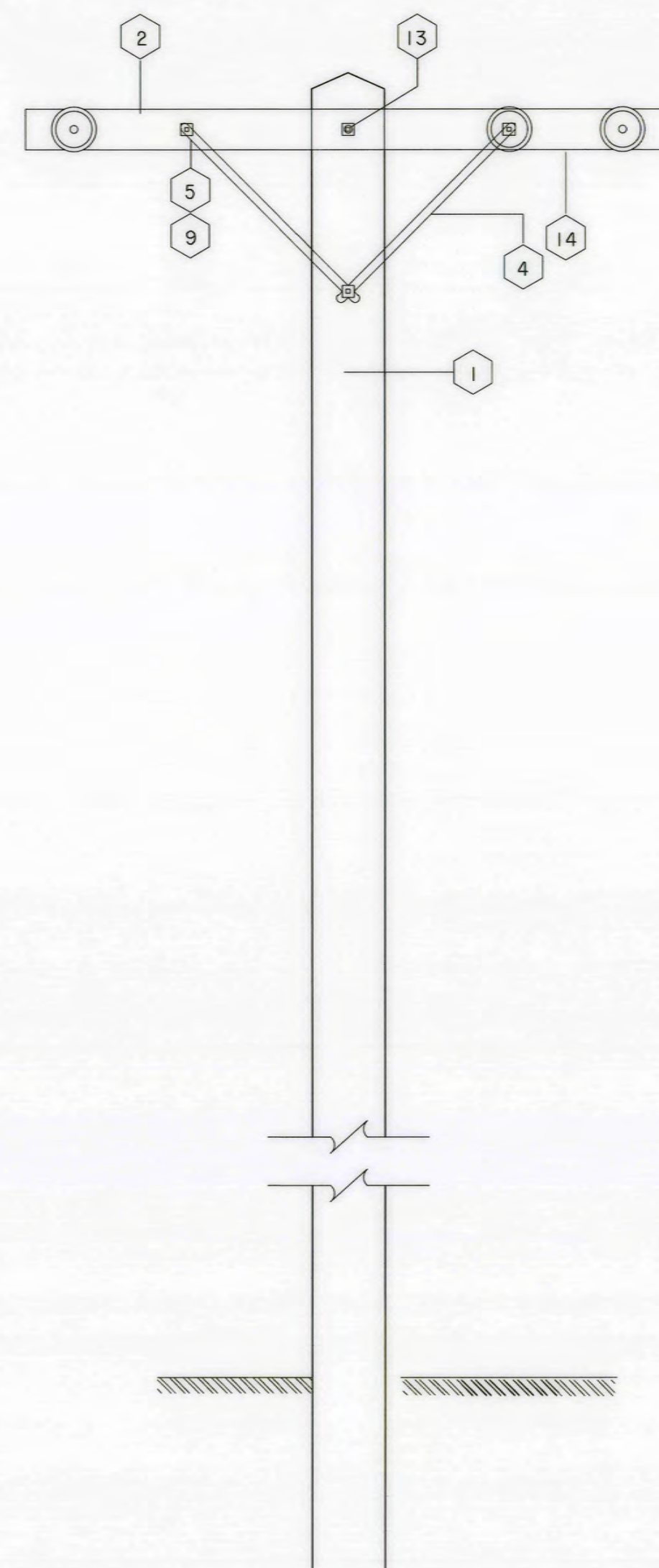
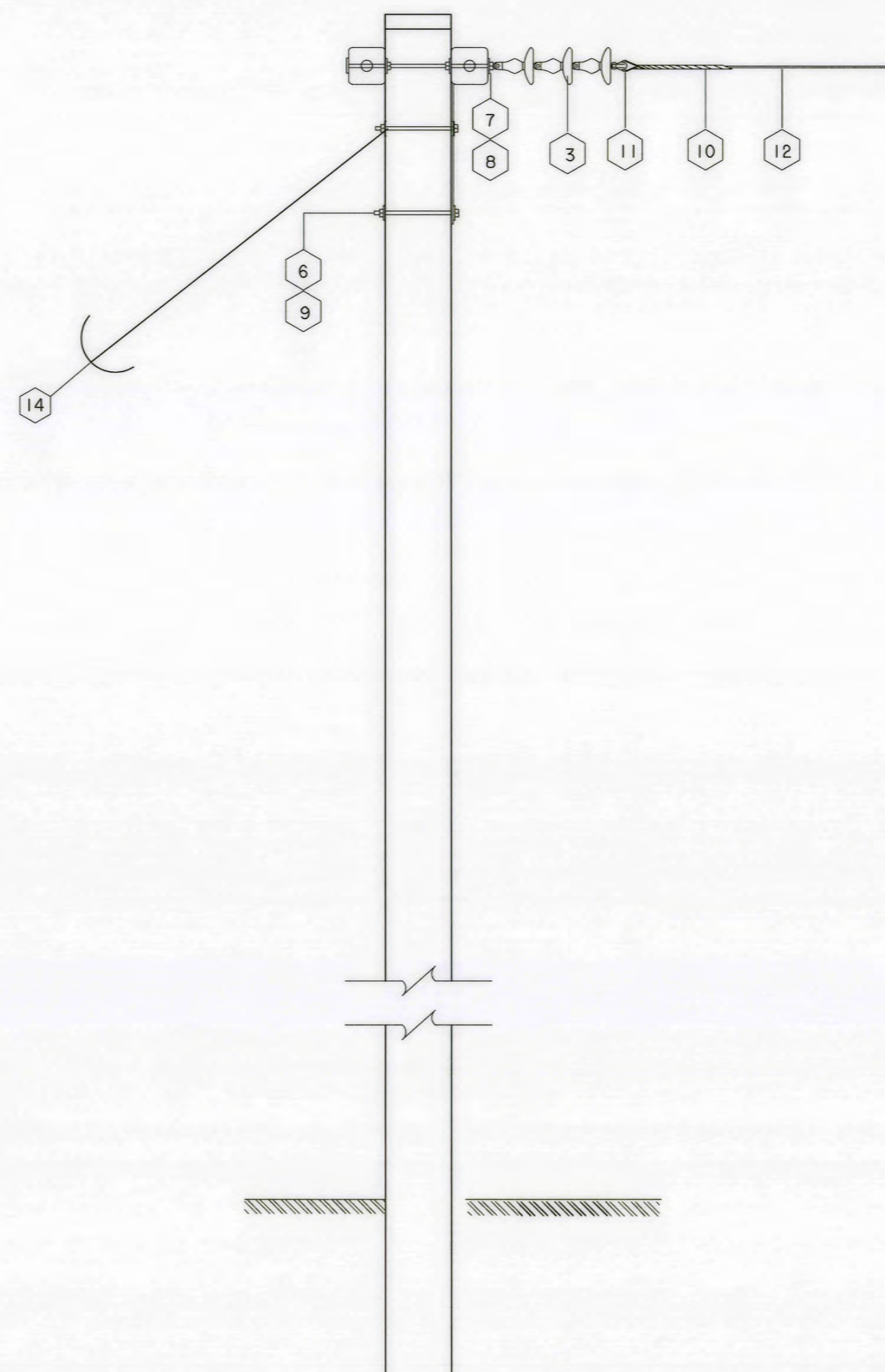
BILL OF MATERIAL

ITEM	DESCRIPTION
1	POLE CONCRETE 12.0 M.LONG
2	CROSSARM,SPUN PRESTRESSED (FOR DEADENDING),120x120x2,000 mm.
3	INSULATOR,SUSPENSION TYPE,TIS 354 , TYPE A (CLASS 52-1)
4	INSULATOR,LINE POST TYPE, ANSI C 29.7 CLASS 57-2L
5	BRACE,FLAT,FOR CROSSARM,30x6x760 mm.
6	BOLT,MACHINE, M16x170 mm.
7	BOLT,MACHINE, M16x200 mm.
8	BOLT,MACHINE, M16x250 mm.
9	BOLT,DOUBLE ARMING,ROUND EYE, M16x450 mm.
10	BOLT,DOUBLE ARMING,ROUND EYE, M16x500 mm.
11	WASHER,SQUARE,FLAT, 52x52x4.5 mm. HOLE Dia.18 mm. TIS 258
12	ALUMINUM CONDUCTOR STEEL REINFORCED
13	PERFOR DEAD-END FOR SAC 35-95 sq.mm.
14	35kV-CC (SAC)
15	PERFOR DEAD-END FOR AERIAL CABLE 50 sq.mm.
16	CLEVIS, THIMBLE, FOR PERFORMED DEAD-END
17	GUY (STEEL STARNDARD WIRE 95 Sq.mm.)

NOTE :

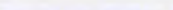
1. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONSTRUCTION DRAWING SHALL CONFORM TO PEA'S STANDARD AND REGULATIONS.

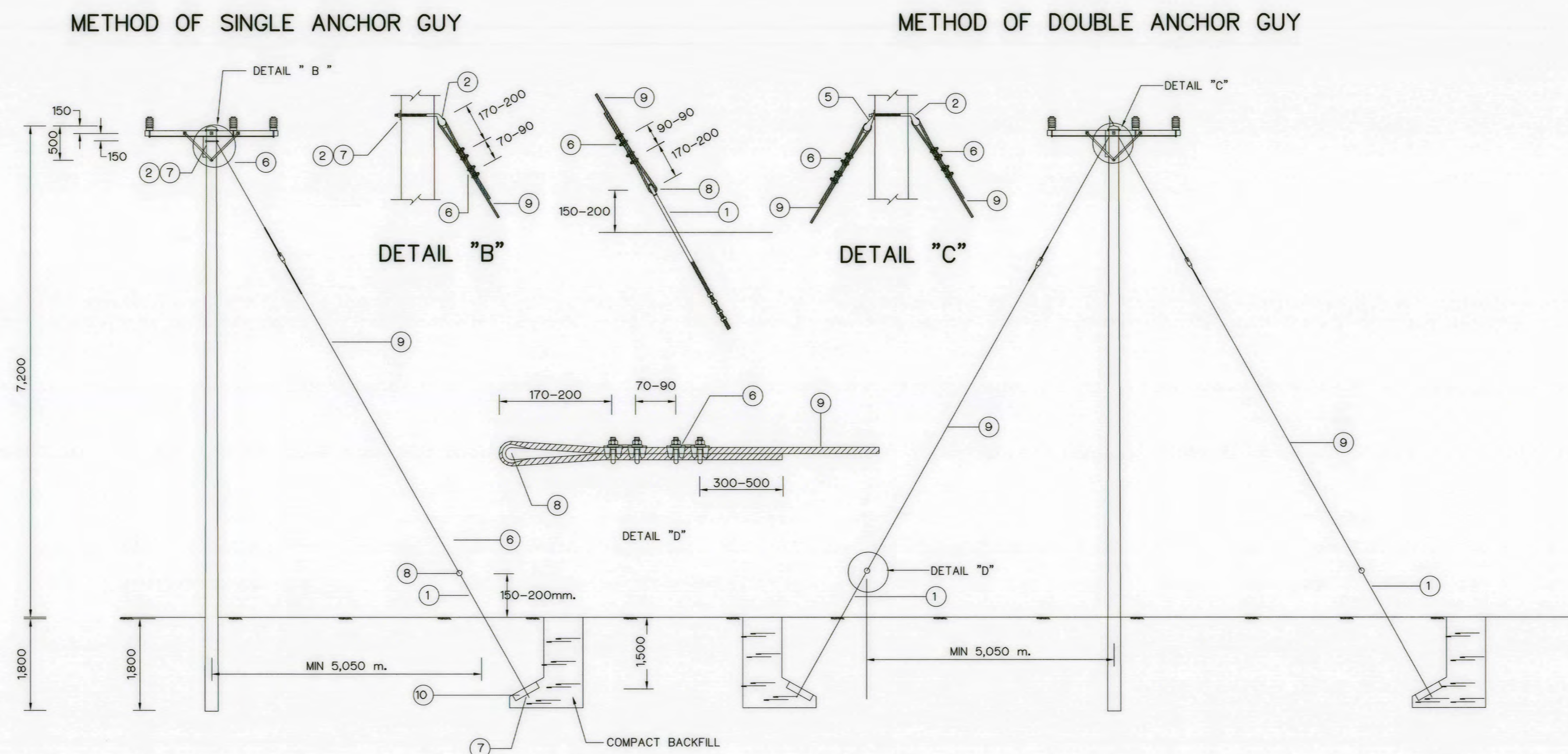
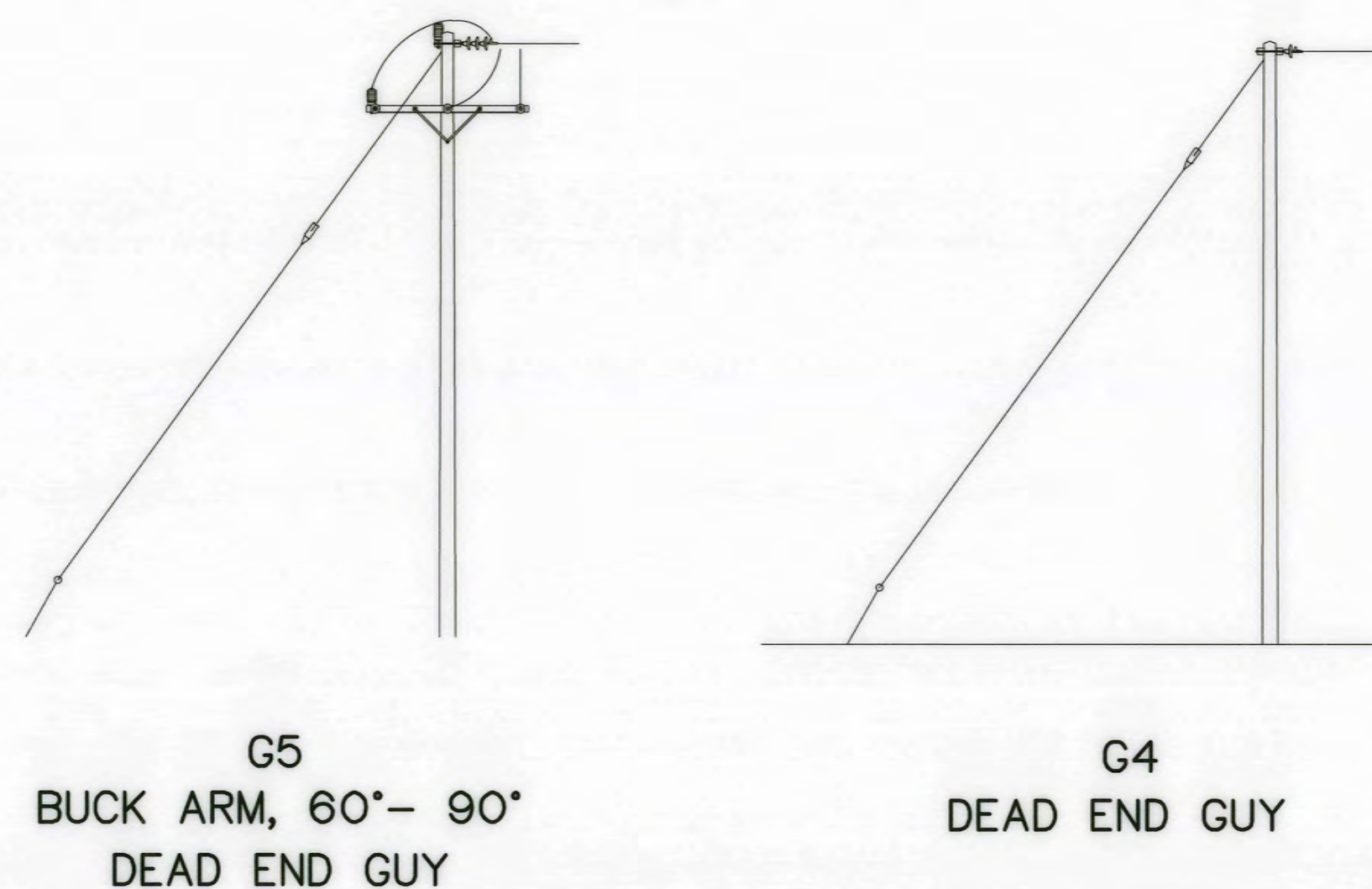
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE TRANSMISSION LINE POLE TYPE "C" AND "D"	
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED 28/10/2021	REVIEWED 28/10/2021
DRAWN 28/10/2021	SUBMITTED 28/10/2021
CHECKED 28/10/2021	RECOMMENDED 28/10/2021
APPROVED 28/10/2021	APPROVED 28/10/2021
PROJECT MANAGER DATE	DRAWING NO. AKP-TS-03
	SHEET NO. 103 OF 129



BILL OF MATERIAL	
ITEM	DESCRIPTION
1	POLE CONCRETE 12.0 M.LONG
2	CROSSARM,SPUN PRESTRESSED CONCRETE,120x120x2,000 mm.
3	INSULATOR,SUSPENSION TYPE,TIS 354 , TYPE A (CLASS 52-1)
4	INSULATOR,LINE POST TYPE,ANSI C 29.7 CLASS 57-2L
5	BRACE,FLAT,FOR CROSSARM,30x6x760 mm.
6	BOLT,MACHINE, M16x200 mm.
7	BOLT,DOUBLE ARMING,ROUND EYE, M16x450 mm.
8	NUT,EYE, M 16 ,DIN 582
9	WASHER,SQUARE,FLAT,52x52x4.5 mm,HOLE Dia. 18 mm.TIS 258
10	PREFORMED DEAD-END FOR SAC 35-95 sq.mm.
11	CLEVIS, THIMBLE, FOR PREFORMED DEAD-END
12	CLAMP, SINGLE U-BOLT, M 8
13	WIRE STEEL SOLID Dia. 4 MM.
14	35kv-CC (SAC)
15	WIRE STEEL STRANDED 50/7 DIN 48201
16	GUY (STEEL STARNDARD WIRE 95 Sq.mm.)

1. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONSTRUCTION DRAWING SHALL CONFORM TO PEA'S STANDARD AND REGULATIONS.

3					 SPT CONSULTANTS CO., LTD.	 MINISTRY OF ENERGY	
2				DESIGNED  ๑๓/๑.1764		REVIEWED 	
1				DRAWN 		SUBMITTED 	
NO.	DATE	REVISIONS	CHECKED	APPROVED		CHECKED  ๑๑/๑.8231	APPROVED 
CONSULTANTS					DEDE	28/10/2021 PROJECT MANAGER DATE	
						DRAWING NO.	SHEET NO.
						AKP-TS-04	104 of 129

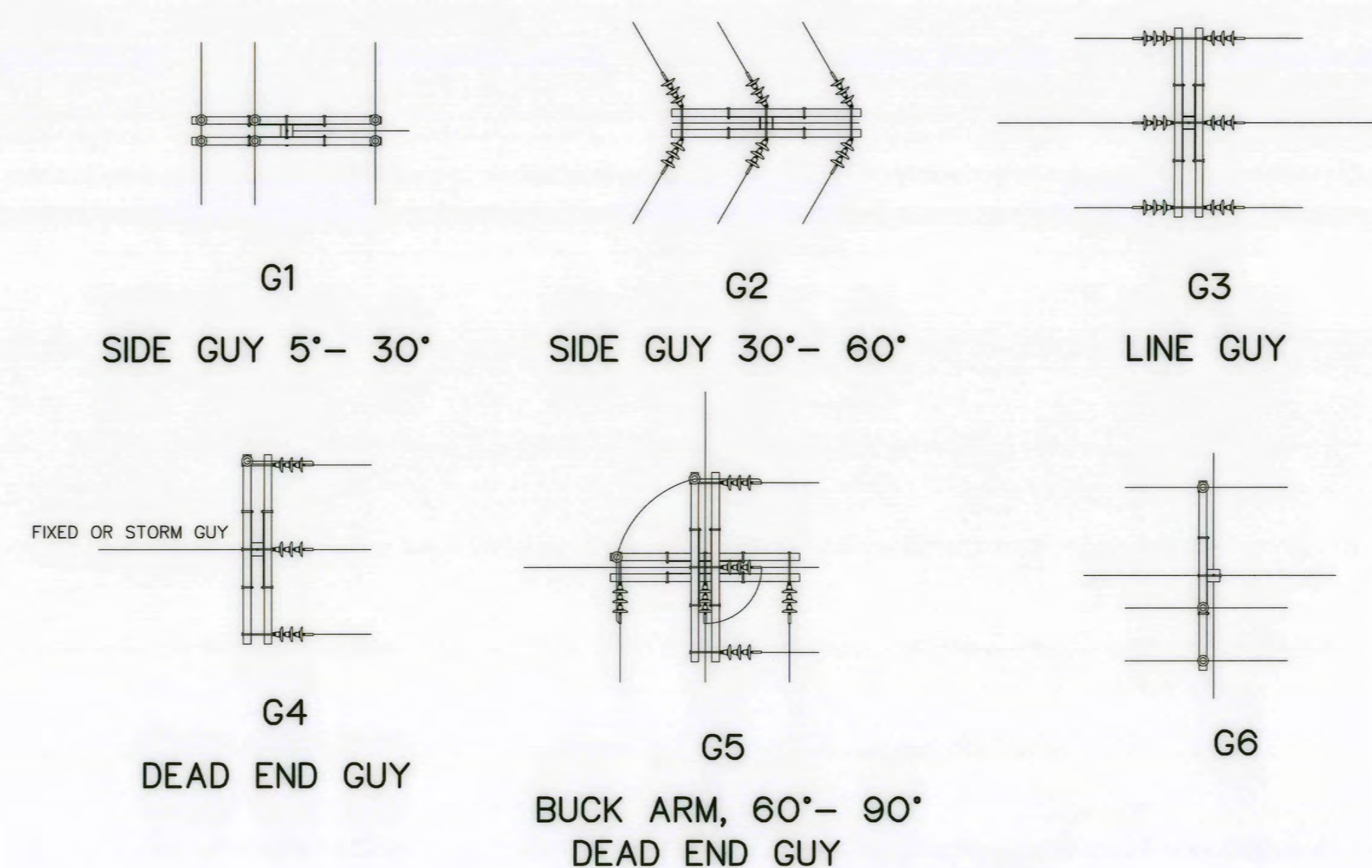


NOTE :

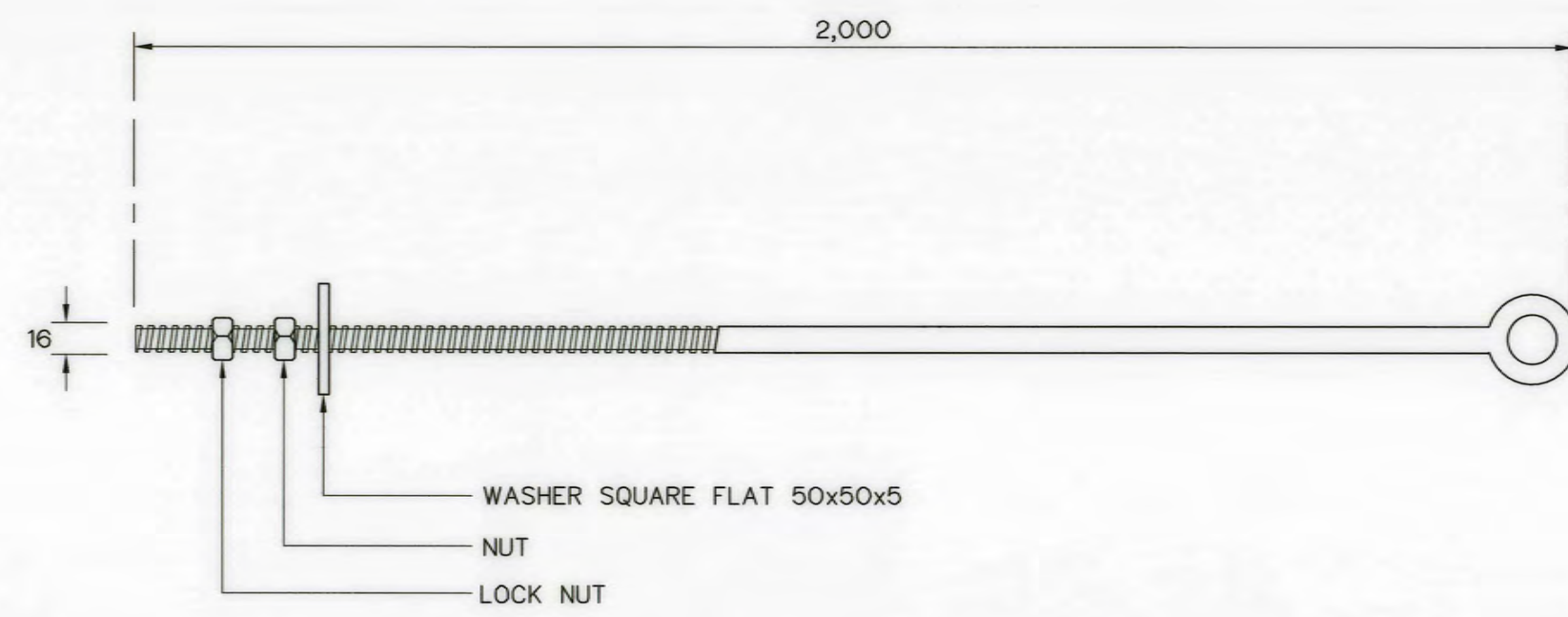
1. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONSTRUCTION DRAWING SHALL CONFORM TO PEA'S STANDARD AND REGULATIONS.

BILL OF MATERIAL FOR ANCHOR GUY

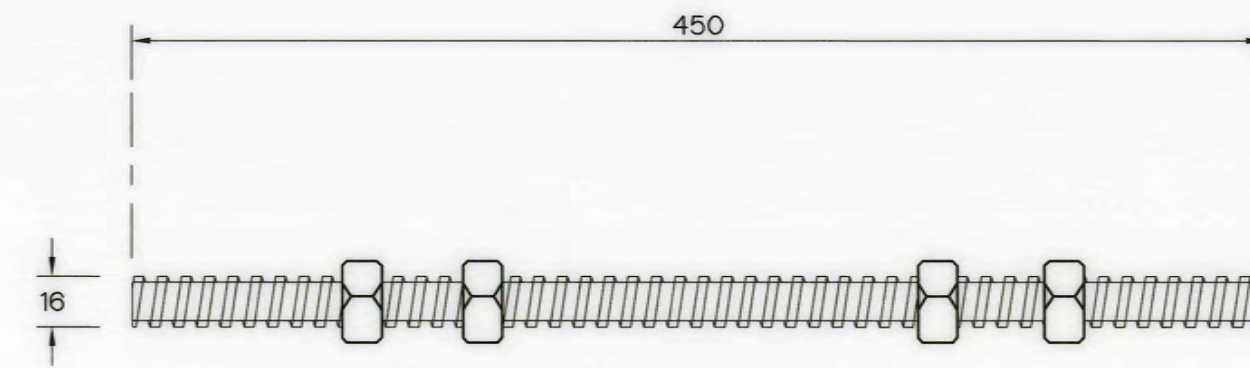
ITEM	DESCRIPTION	REQ'D					
		G1	G2	G3	G4	G5	G6
1	ANCHOR ROD, M. 16 x 2,000 mm. COMPLETE WITH SQUARE NUT	1	1	2	1	2	4
2	BOLT, SINGLE STRANDED EYE 45° M. 16 x 250 mm. COMPLETE WITH SQUARE NUT	1	1	1	1	2	2
3	BOLT, SINGLE STRANDED EYE 30° M. 16 x 250 mm. COMPLETE WITH SQUARE NUT	-	1	-	1	2	-
4	BOLT, DOUBLE ARMING, ROUND EYE, M. 16 x 200 mm. COMPLETE WITH SQUARE NUT	-	-	-	-	-	-
5	STRAND EYE SINGLE ANGLE 45°	-	-	1	-	-	2
6	CLAMP, DOUBLE U-BOLT, M. 16 mm.	4	8	8	8	16	16
7	WASHER, SQUARE FLAT 50 x 50 x 5 mm. HOLE Ø18 mm.	2	2	2	4	6	4
8	GUY, THIMBLE, FOR STEEL STRANDED WIRE 50 Sq.mm.	1	2	2	2	4	4
9	STEEL STRANDED WIRE 50 Sq.mm.	15 m.	35 m.	30 m.	35 m.	70	60
10	CONCRETE ANCHOR 550 x 550 x 180 mm.	1	1	2	2	2	4
11	STRAIN INSULATOR CLASS 54-4	1	1	2	2	2	4



KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE TRANSMISSION LINE TYPE OF ANCHOR GUY			
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	DESIGNED DRAWN CHECKED PROJECT MANAGER	REVIEWED SUBMITTED RECOMMENDED APPROVED	DATE 28/10/2021
CONSULTANTS		DEDE	
AKP-TS-05		105 OF 129	



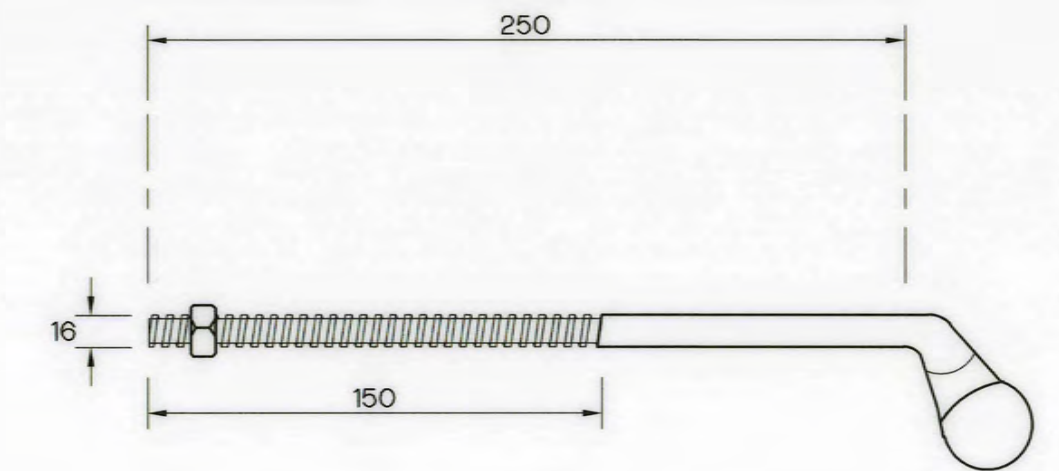
DETAIL OF ANCHOR BOLT FOR GUY WIRE
NOT TO SCALE



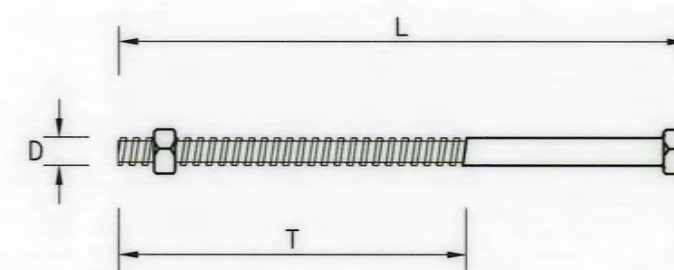
BOLT, DOUBLE ARMING
NOT TO SCALE



STRAND EYE SINGLE ANGLE 30°
NOT TO SCALE

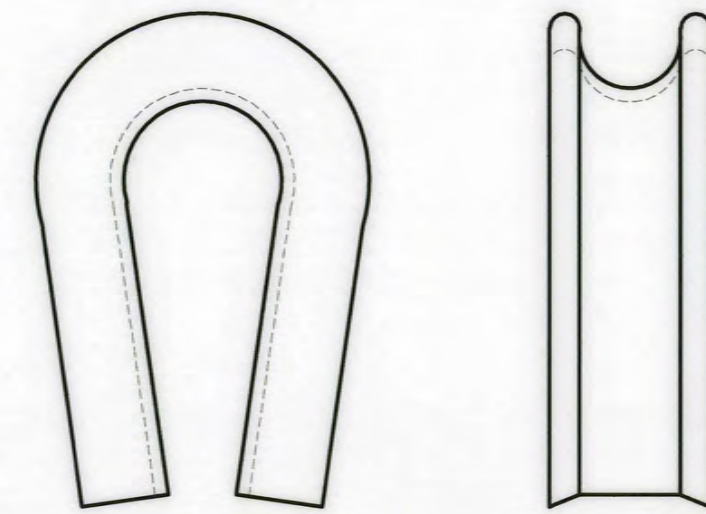


BOLT, SINGLE STRANDED EYE 45°
NOT TO SCALE

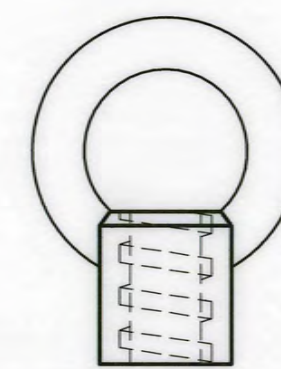


NOT TO SCALE

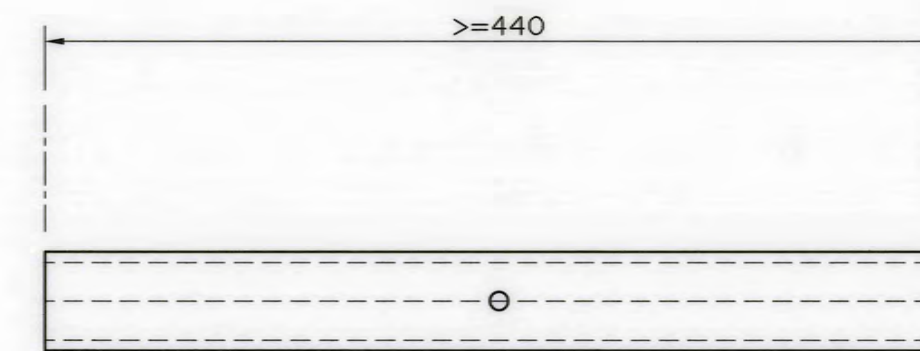
BOLT, MACHINE (D x L)	
1	M. 16 x 130 mm. (T = 35 mm.)
2	M. 16 x 170 mm. (T = 50 mm.)
3	M. 16 x 200 mm. (T = 50 mm.)
4	M. 16 x 250 mm. (T = 75 mm.)
5	M. 16 x 300 mm. (T = 75 mm.)
6	M. 16 x 400 mm. (T = 100 mm.)



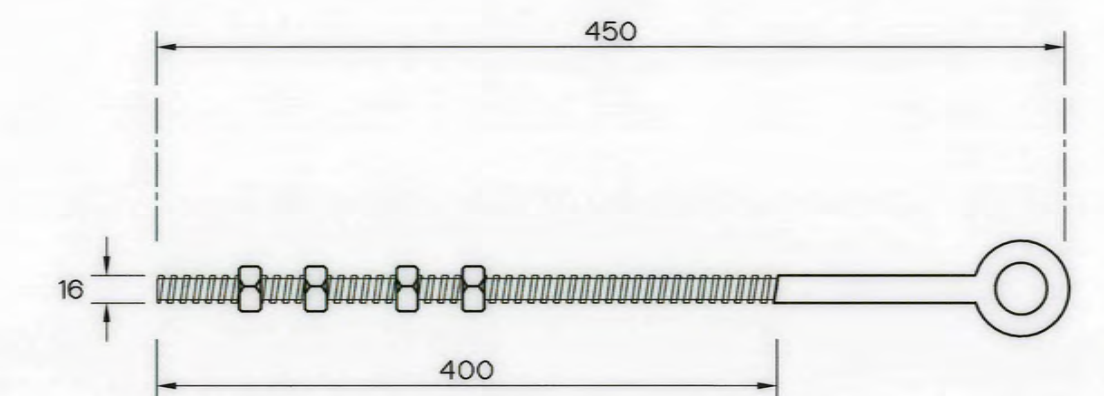
GUY THIMBLE
FOR STEEL STRAND GUY WIRE 35Sq.mm.
NOT TO SCALE



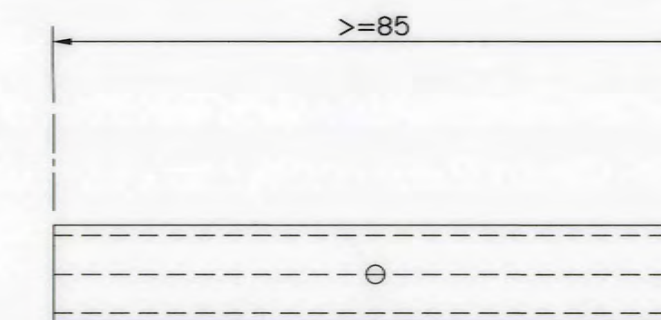
NUT EYE
NOT TO SCALE



CONNECTOR, SPLICE, COMPRESSION TYPE
TENSION LOADED FOR PIC(ACSR) 120/8 Sq.mm.
NOT TO SCALE



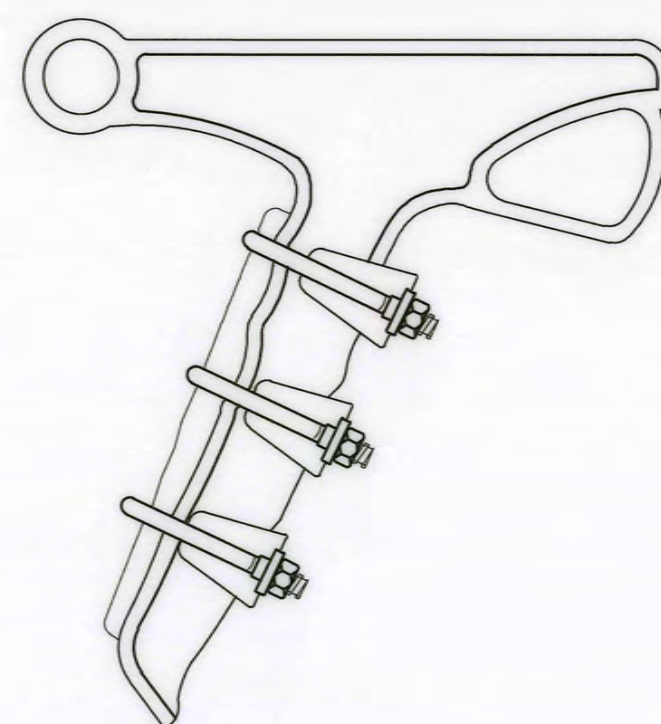
BOLT, DOUBLE ARMING, ROUND EYE
NOT TO SCALE



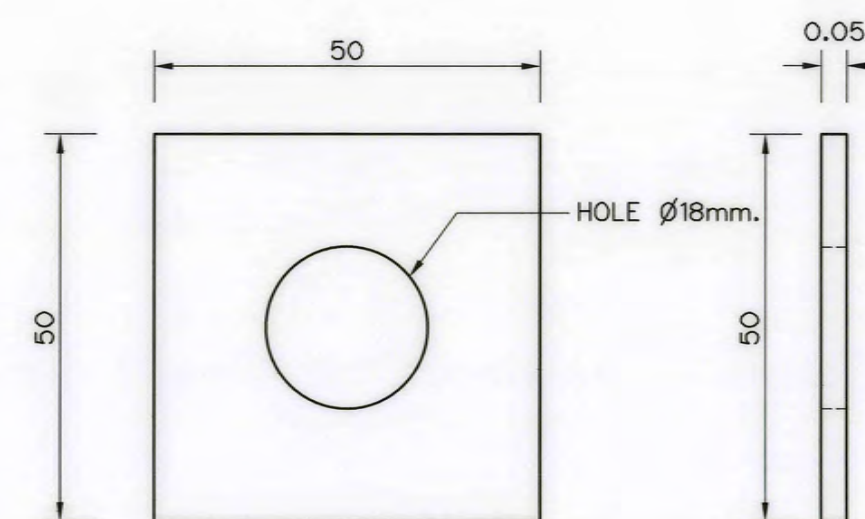
CONNECTOR, SPLICE, COMPRESSION TYPE
TENSIONLESS LOADED FOR PIC(ACSR) 120/8 Sq.mm.
NOT TO SCALE



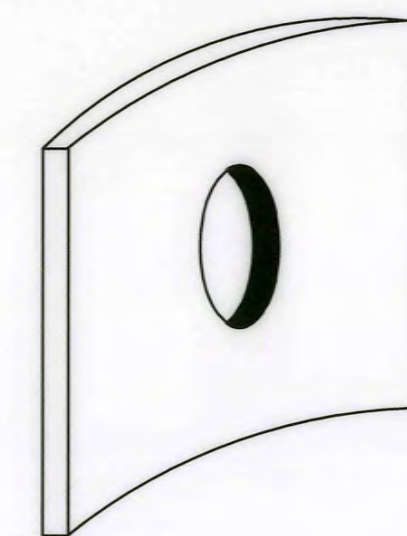
CLAMP, SINGLE U-BOLT M.8
NOT TO SCALE



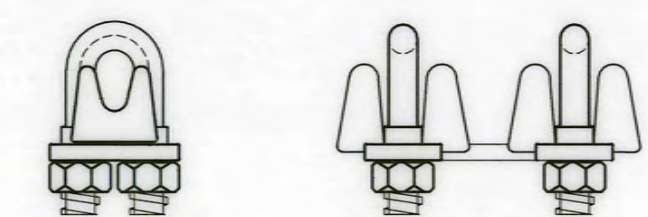
CLAMP, STRAIN, WITH CLAMPING KEEPER
FOR PIC (ACSR) 120/8 Sq.mm.
NOT TO SCALE



WASHER SQUARE FLAT
NOT TO SCALE



WASHER, CURVE, SQUARE 60x60x5mm.
HOLE Ø22 mm.
NOT TO SCALE



CLAMP, SINGLE U-BOLT M.16
NOT TO SCALE

NOTE :

- THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONSTRUCTION DRAWING SHALL CONFORM TO PEA'S STANDARD AND REGULATIONS.

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED

CONSULTANTS

DEDE

KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE TRANSMISSION LINE POLE ASSEMBLY ACCESSORIES, ANCHOR BOLT FOR GUY	
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>[Signature]</i> 28/10/2021 DRAWN <i>[Signature]</i> CHECKED <i>[Signature]</i> 28/10/2021 PROJECT MANAGER	REVIEWED <i>[Signature]</i> SUBMITTED <i>[Signature]</i> RECOMMENDED <i>[Signature]</i> APPROVED <i>[Signature]</i> DRAWING NO. AKP-TS-06 SHEET NO. 106 OF 129

10.00m. 10.00m.

MAX 0.50m.

45° 45°

Diagram illustrating the dimensions and components of a vertical assembly:

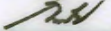
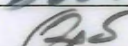
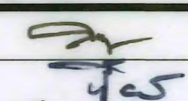
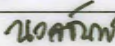
- ANGLE 65x65x6 mm.**: Label for the vertical structural member.
- GROUND WIRE CLAMP J - 1152**: Label for the top connection point.
- Dimensions (mm)**:
 - 50
 - 1750
 - 100
 - 500
 - 100
- BOLT MACHINE M16x250 mm, COMPLETE WITH WASHER SQUARE FLAT 50x50x5 mm. HOLE $\varnothing$ 18 mm.**: Label for the bolt assembly at the base.

Technical drawing of a 65x65x6 mm angle. The drawing shows the angle with dimensions and labels:

- ANGLE 65x65x6 mm.** (Label for the angle itself)
- GROUND WIRE CLAMP J - 1152** (Label for the clamp at the top)
- 50** (Dimension for the top section)
- 1750** (Main vertical dimension)
- 100** (Dimension for the bottom section)
- 500** (Dimension for the bottom section)
- 100** (Dimension for the bottom section)
- BOLT MACHINE M16x250 mm, COMPLETE WITH WASHER SQUARE FLAT 50x50x5 mm. HOLE $\varnothing$ 18 mm.** (Label for the bolt and washer)

A technical drawing of a bolt and nut assembly. The bolt is shown in cross-section, with a hexagonal head and a threaded shank. A nut is threaded onto the shank. The drawing is a line drawing with hatching to indicate the cross-section of the bolt.

NOT TO SCALE

 KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE TRANSMISSION LINE OVERHEAD GROUND WIRE BAYONET ASSEMBLY	
 PCM P&C MANAGEMENT CO., LTD.  SPT CONSULTANTS CO., LTD.	 Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED 	REVIEWED 
DRAWN 	SUBMITTED 
CHECKED 	APPROVED 
PROJECT MANAGER	DRAWING NO.
DATE	AKP-TS-07
	SHEET NO.
	107 of 129

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
	CONSULTANTS		DEDE	