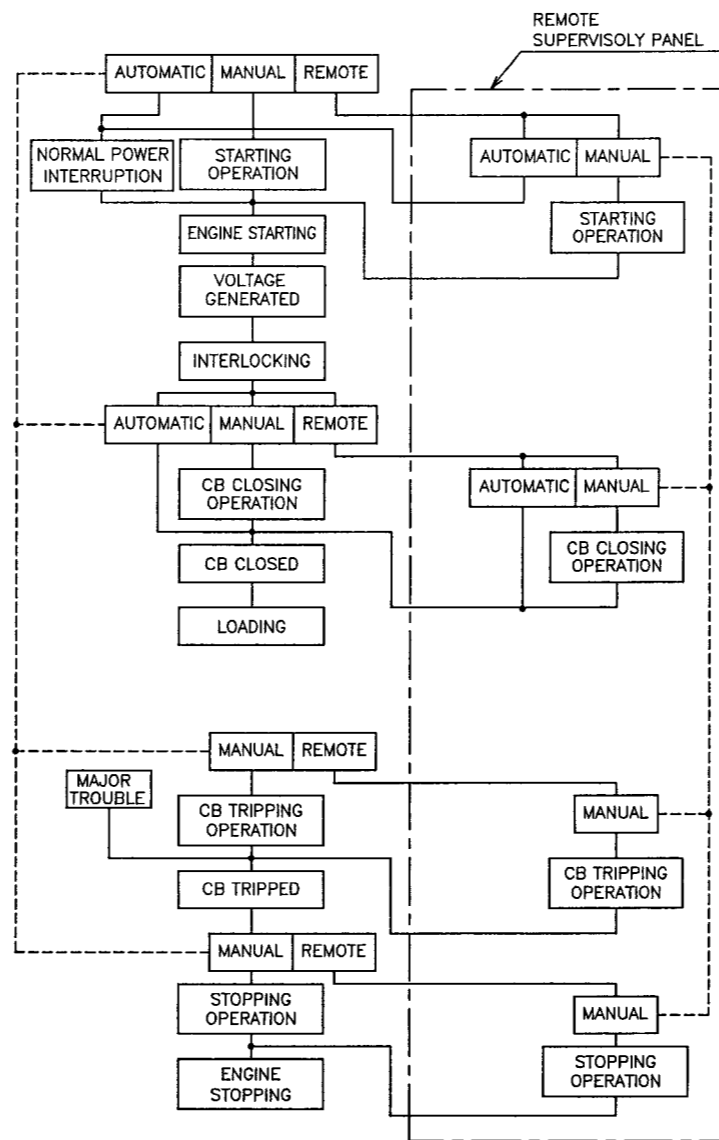
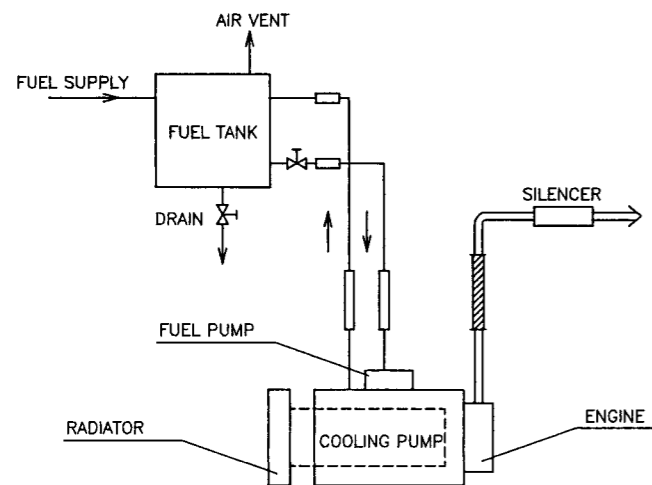


MAIN CIRCUIT CONNECTION DIAGRAM



AUTOMATIC CONTROL SEQUENCE



PIPING SYSTEM DIAGRAM

LEGEND :

SYMBOL	DISCRIPTION	SYMBOL	DISCRIPTION
ACG	AC GENERATOR	AA	AC AMMETER
ENG	ENGINE	AV	AC VOLTMETER
52G	MOLDED CASE CIRCUIT BREAKER	F	FREQUENCY METER
CT	CURRENT TRANSFORMER	DV	DC AMMETER
AVR	AUTOMATIC VOLTAGE REGULATOR	DA	DC VOLTMETER
VAD	VOLTAGE SETTER	84G	VOLTAGE RELAY
83G	CHANGE OVER SWITCH (GENERATOR)	27R	UNDER VOLTAGE RELAY
83R	CHANGE OVER SWITCH (CITY LINE)	49G	OVER CURRENT RELAY
CH	BATTERY CHARGER	NF1~3	MOLDED CASE CIRCUIT BREAKER

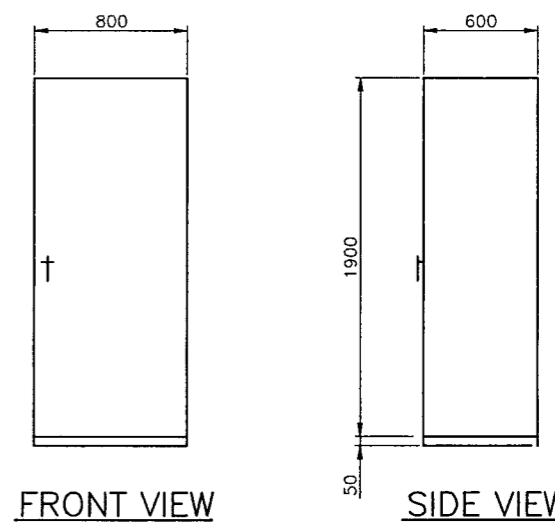
MAIN TECHNICAL DATA

GENERATOR OUTPUT	: 100KVA
POWER FACTOR	: 0.8
RATED VOLTAGE	: 380/220V
RATED FREQUENCY	: 50Hz
REVOLDING SPEED	: 1500r.p.m
ENCITATION SYSTEM	: BRUSHLESS
STARTING SYSTEM	: DC24V CELL MOTOR
COOLING SYSTEM	: RADIATOR COOLING

PROTECTION SYSTEM

PROTECTION DEVICE	ENGINE STOP	CP TRIP	ALARM	INDICATION
LUBICATE OIL PRESSURE LOW	○	○	○	○
COOLING WATER ABNORMAL	○	○	○	○
OVER SPEED	○	○	○	○
INCOMPLETE STARTING	○	○	○	○
OVER CURRENT	—	○	○	○
EMERGENCY STOP	○	○	○	○

POWER SOURCE CHANGE OVER SWITCH PANEL



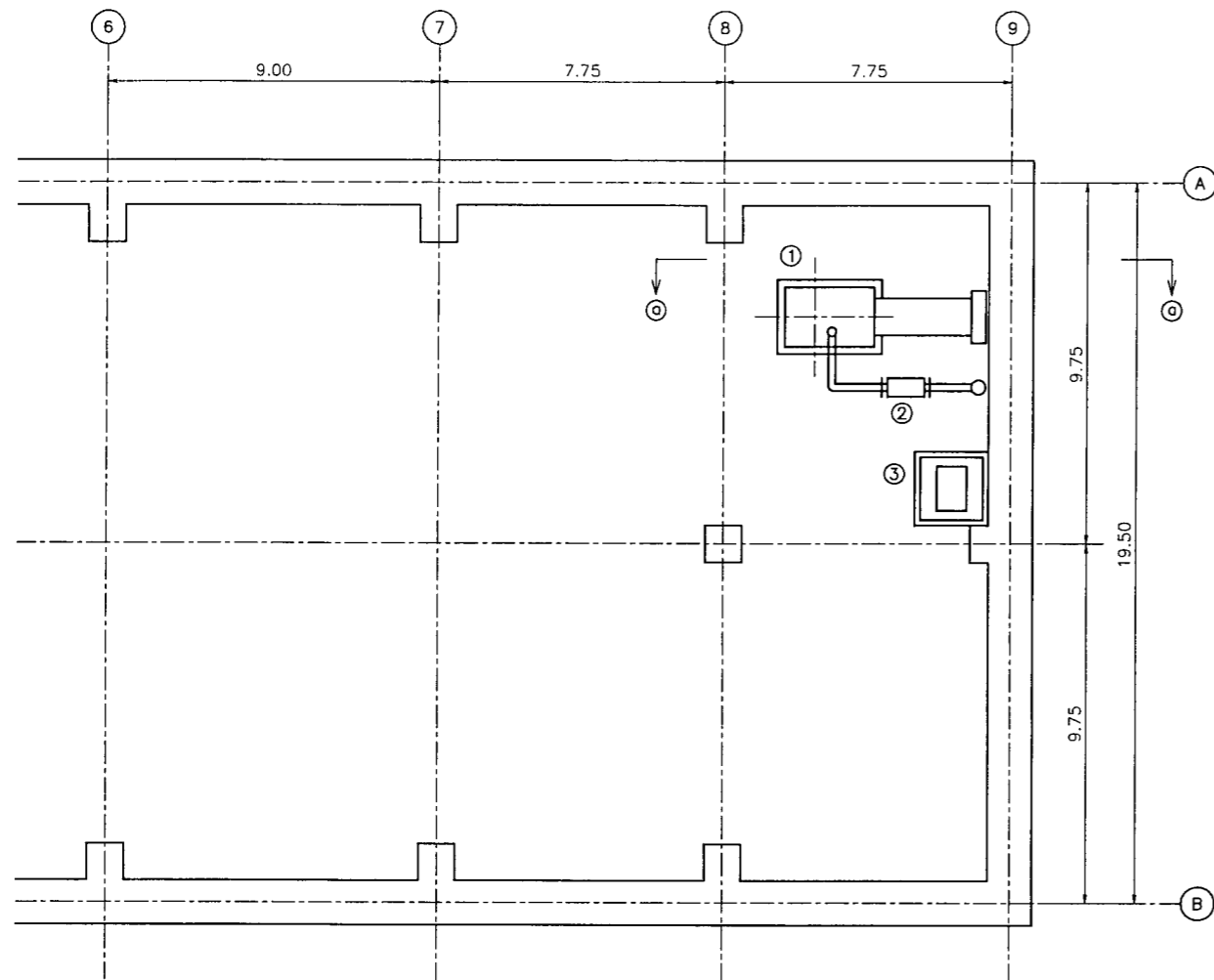
FRONT VIEW

SIDE VIEW

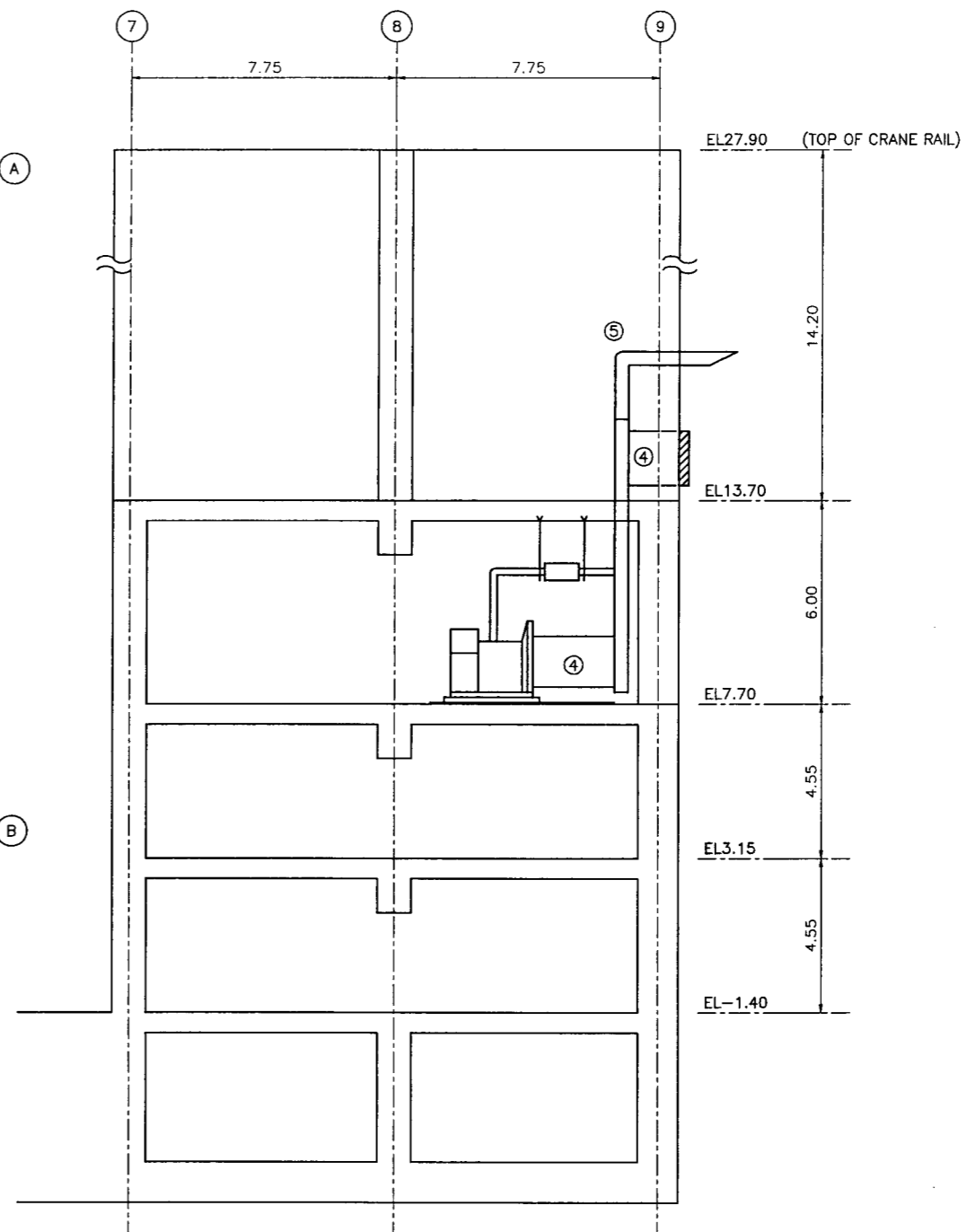
NOTE :

- GENERATOR CONTROL BOARD AND BATTERY UNITS SHALL BE MOUNTED ON THE COMMON BASE FOR GENERATING SET.
- SEE DWG.No.PSE-203 WITH RELATION TO EMERGENCY POWER SUPPLY.

THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAH CANAL BETWEEN KM 108.466 AND KM 118.560 EL SALAAM No. 7 (BIR EL ABD) PUMPING STATION	
PUMP HOUSE EMERGENCY DIESEL GENERATOR	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	PSE-211



PLAN (FLOOR EL7.70)

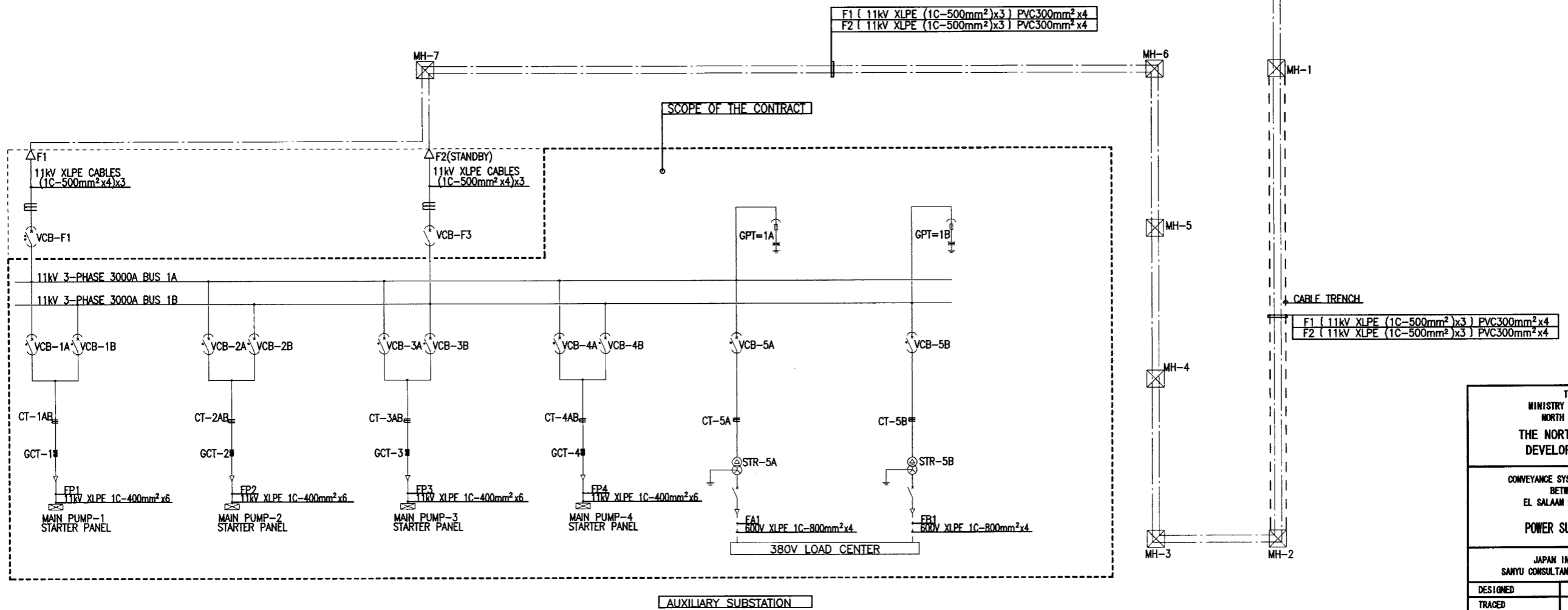
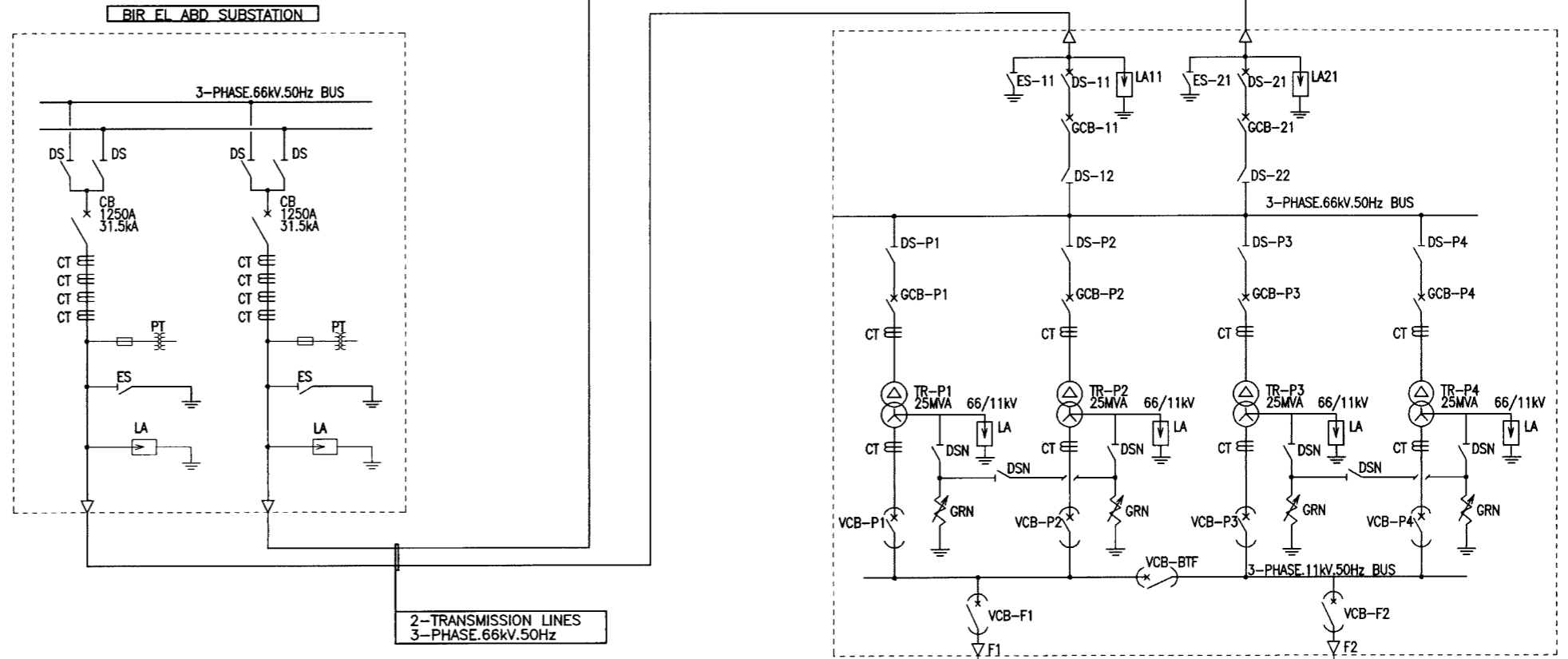


SECTION ①-①

No.	EQUIPMENT SCHEDULE
①	GENERATING SET,ENGINE,GENERATOR,GENERATOR PANEL
②	SILENCER
③	FUEL TANK AND DIKE
④	EXHAUST AIR DUCT
⑤	EXHAUST GAS PIPE

THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAH CANAL BETWEEN KM 108.466 AND KM 118.560 EL SALAAM No. 7 (BIR EL ABD) PUMPING STATION PUMP HOUSE EMERGENCY GENERATOR LAYOUT PLAN	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	PSE-212

LEGEND	
CODE	DESCRIPTION
GCB	GAS INSULATED CIRCUIT BREAKER
VCB	VACUUM CIRCUIT BREAKER (WITHDRAWABLE)
CB	CIRCUIT BREAKER
TR	DISTRIBUTION TRANSFORMER
ES	EARTHING SWITCH
DS	DISCONNECTOR
EDS	DISCONNECTOR WITH EARTHING SWITCH
CT	CURRENT TRANSFORMER
PT	VOLTAGE TRANSFORMER
STR	STATION TRANSFORMER
LA	LIGHTNING ARRESTER
MCCB	MOLDED CASE CIRCUIT BREAKER
DSN	NEUTRAL DISCONNECTOR
GRN	GROUNDING RESISTANCE
	FUSE
	GROUNDING
MH	MANHOLE



THE ARAB REPUBLIC OF EGYPT
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NORTH SINAI DEVELOPMENT ORGANIZATION

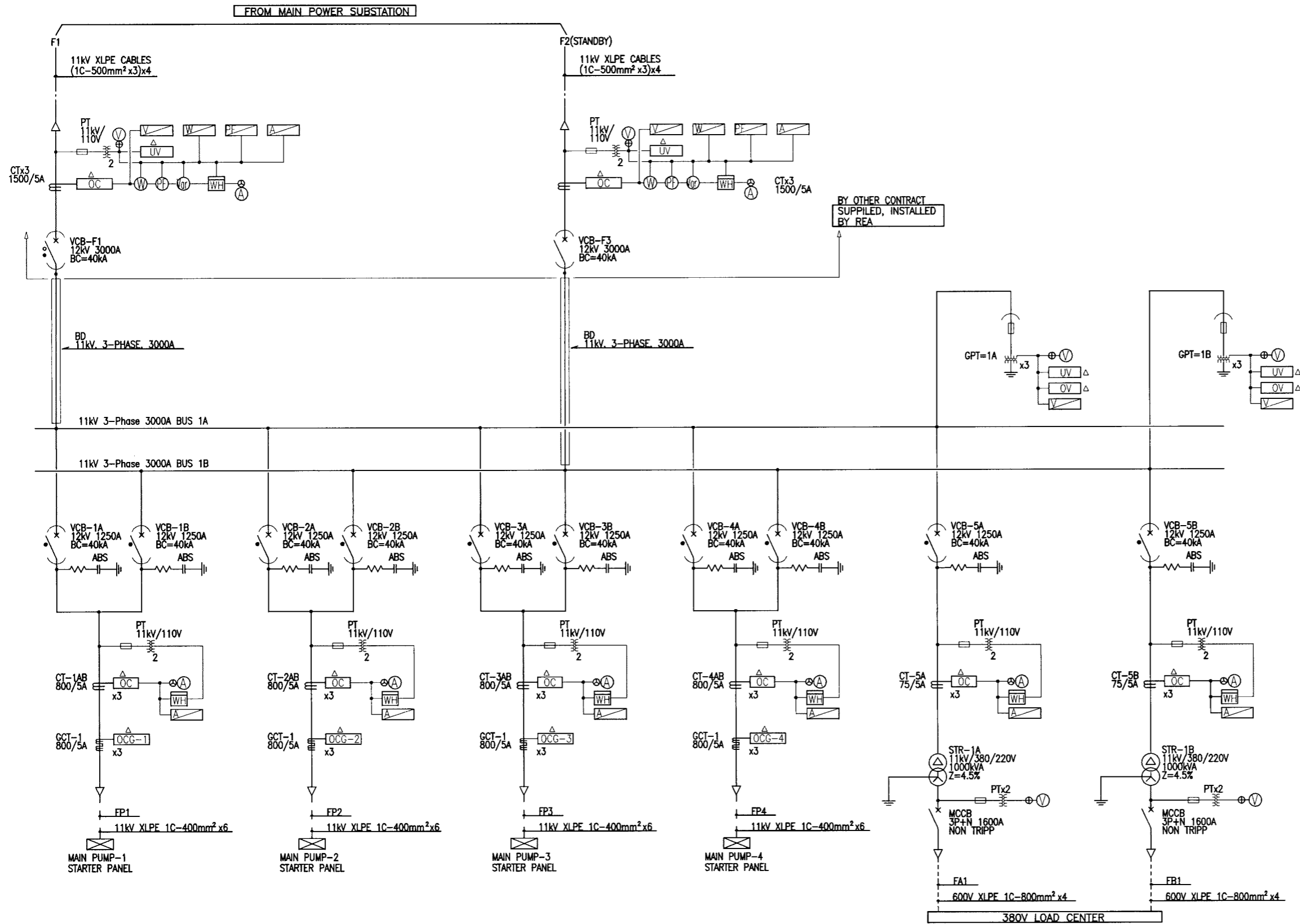
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL
BETWEEN KM 108.466 AND KM 118.560
EL SALAAM No.7 (BIR EL ABD) PUMPING STATION

POWER SUPPLY SYSTEM GENERAL DIAGRAM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	PSE-213



LEGEND	
CODE	DESCRIPTION
VCB	VACUUM CIRCUIT BREAKER (WITHDRAWABLE)
STR	STATION TRANSFORMER
CT	CURRENT TRANSFORMER
PT	VOLTAGE TRANSFORMER
GPT	GROUNDING VOLTAGE TRANSFORMER
GCT	ZERO PHASE CURRENT TRANSFORMER
OC	OVER CURRENT RELAY
OCG	GROUNDING OVER CURRENT RELAY
UV	UNDER VOLTAGE RELAY
OV	OVER VOLTAGE RELAY
V	VOLT METER
A	AMMETER
W	KILO-WATT METER
F	FREQUENCY METER
RP	REACTIVE POWER METER
FUSE	FUSE
BC	BREAKING CAPACITY
TRANS	TRANSDUCER (TO RENTE CONTROL PANEL)
ABS	RUSH CURRENT ABSORBER
MCCB	MOLDED CASE CIRCUIT BREAKER
○	FOR REMOTE SUPERVISION AND OPERATION
•	FOR REMTQE SUPERVISION (MODE INDICATION)
△	FOR REMTQE SUPERVISION (FAULT INDICATION)
WH	KILO-WATT HOUR METER
BD	BUS DUCT 11kV,3-PHASE,3000A

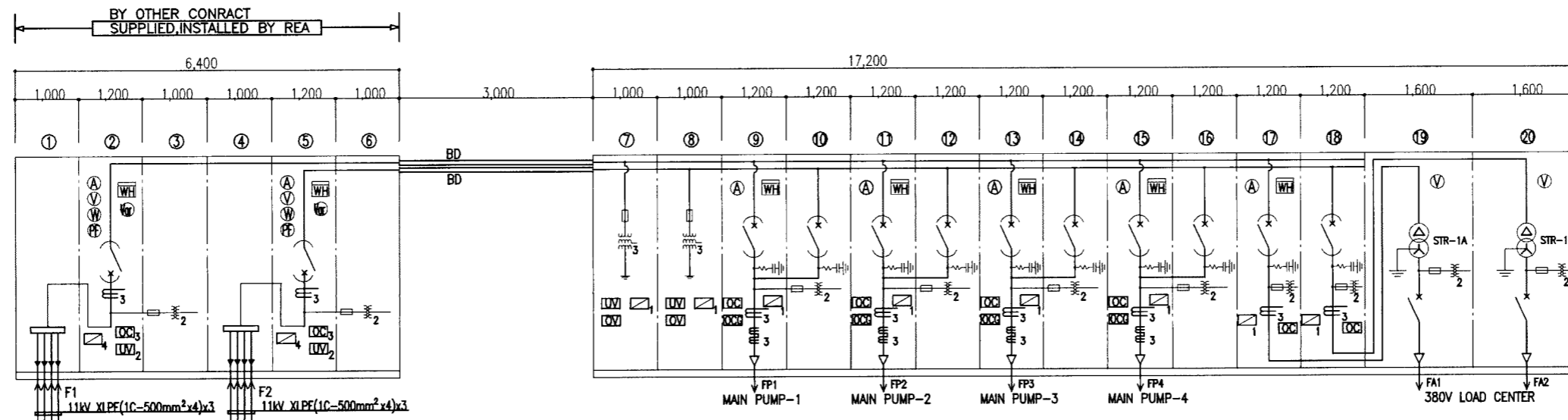
THE ARAB REPUBLIC OF EGYPT
 MINISTRY OF WATER RESOURCES AND IRRIGATION
 NORTH SINAI DEVELOPMENT ORGANIZATION
**THE NORTH SINAI INTEGRATED RURAL
 DEVELOPMENT PROJECT (PHASE III)**

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAH CANAL
 BETWEEN KM 108.466 AND KM 118.560
 EL SALAM No. 7 (B1R EL ABD) PUMPING STATION

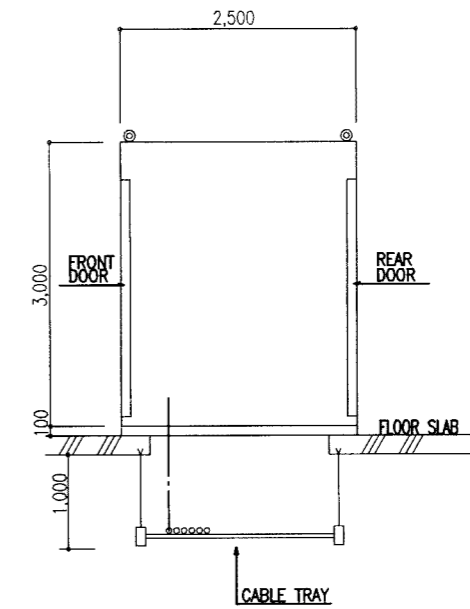
AUXILIARY SUBSTATION SINGLE LINE DIAGRAM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 SAIYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	PSE-214



FRONT VIEW

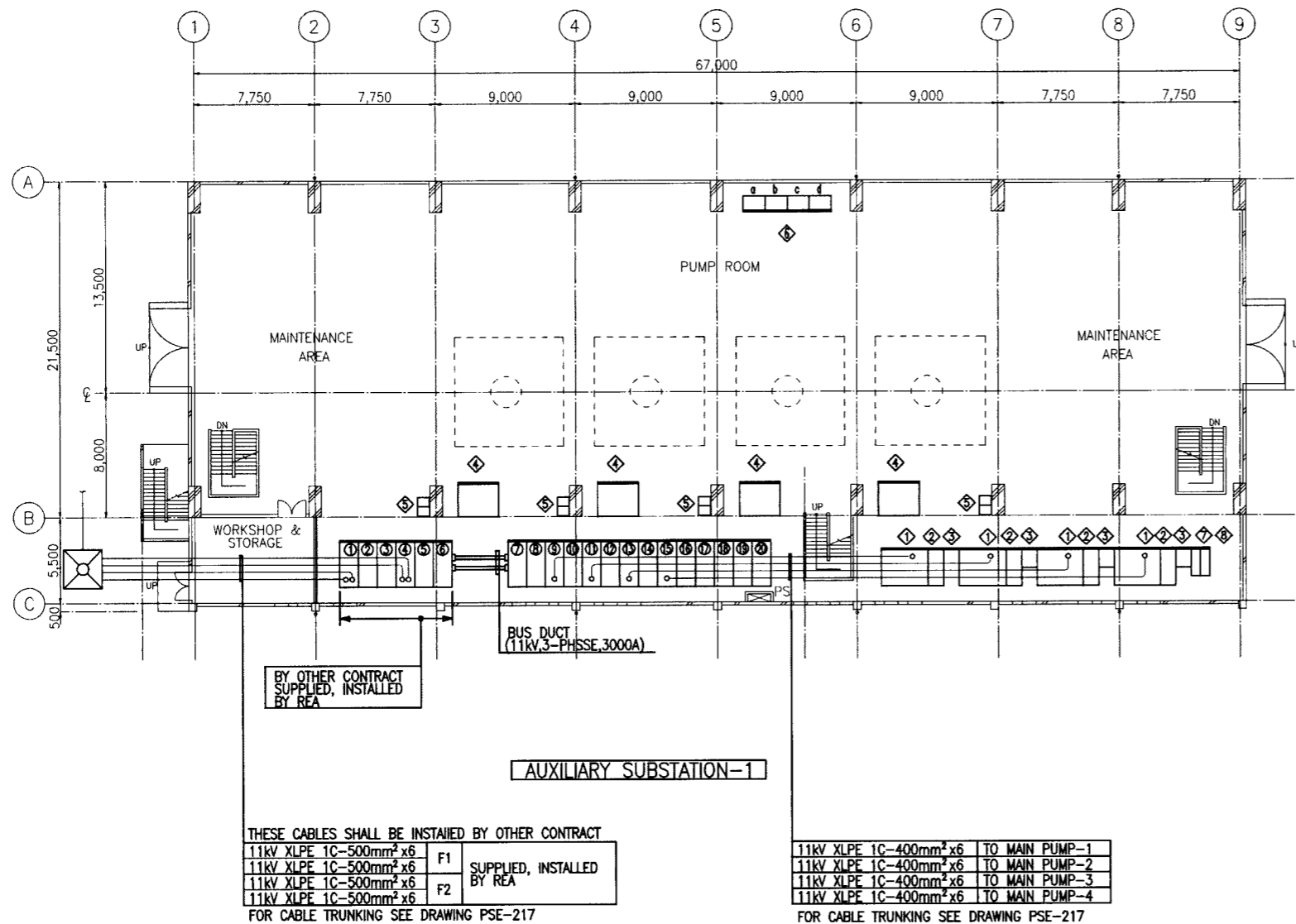


SIDE VIEW

PANEL SCHEDULE		REMARKS
NO.	NAME OF PANEL	
①	CABLE TERMINAL PANEL F1	SHALL BE SUPPLIED AND INSTALLED BY OTHER CONTRACT (BY REA)
②	POWER RECEIVING PANEL F1	
③	PT PANEL F1	
④	CABLE TERMINAL PANEL F2	
⑤	POWER RECEIVING PANEL F2	
⑥	PT PANEL F2	
⑦	GPT PANEL 1A	
⑧	GPT PANEL 1B	
⑨	PUMP MOTOR FEEDER PANEL 1A	
⑩	PUMP MOTOR FEEDER PANEL 1B	
⑪	PUMP MOTOR FEEDER PANEL 2A	
⑫	PUMP MOTOR FEEDER PANEL 2B	
⑬	PUMP MOTOR FEEDER PANEL 3A	
⑭	PUMP MOTOR FEEDER PANEL 3B	
⑮	PUMP MOTOR FEEDER PANEL 4A	
⑯	PUMP MOTOR FEEDER PANEL 4B	
⑰	STATION TRANSFORMER FEEDER PANEL A	
⑱	STATION TRANSFORMER FEEDER PANEL B	
⑲	STATION TRANSFORMER PANEL A	
⑳	STATION TRANSFORMER PANEL B	

LEGEND	
SYMBOL	DESCRIPTION
Ⓐ	AMMETER
Ⓥ	VOLTMETER
Ⓜ	KILO-WATT METER
Ⓜ	REACTIVE POWER METER
Ⓜ	POWER FACTOR METER
Ⓜ	KILO-WATT HOUR METER
Ⓜ	TRANSDUCER
Ⓜ	OVER CURRENT RELAY
Ⓜ	UNDER VOLTAGE RELAY
Ⓜ	OVER VOLTAGE RELAY
Ⓜ	GROUNDING OVER CURRENT RELAY
Ⓜ	GROUNDING OVER VOLTAGE RELAY
Ⓜ	MOLDED CASE CIRCUIT BREAKER
Ⓜ	VACUUM CIRCUIT BREAKER
Ⓜ	RUSH CURRENT ABSORBER
Ⓜ	CURRENT TRANSFORMER
Ⓜ	ZERO PHASE CURRENT TRANSFORMER
Ⓜ	VOLTAGE TRANSFORMER
Ⓜ	GROUNDING VOLTAGE TRANSFORMER
Ⓜ	FUSE
Ⓜ	MOLDED TYPE TRANSFORMER
Ⓜ	CABLE CONNECTION TERMINAL
BD	BUS DUCT 11KV,3-PHASE,3000A

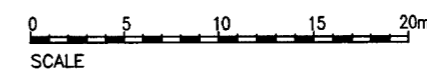
THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAAH CANAL BETWEEN KM 108.466 AND KM 118.560 EL SALAAM No.7 (B1R EL ABD) PUMPING STATION	
AUXILIARY SUBSTATION PANEL COMPOSITION	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) SARYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
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CHECKED	
APPROVED	
DRAWING NO.	PSE-215



GROUND FLOOR PLAN (EL +13.70)
S=1/400

EQUIPMENT PANEL SCHEDULE		
No.	EQUIPMENT	REMARKS
①	MAIN MOTOR STARTING PANEL	11kV VCB 1200Ax3
②	EXCITER TRANSFORMER PANEL	11kV/380V 1-PHASSE 20kVA
③	EXICITER PANEL	AC EXCITER
④	AUTO-TRANSFORMER	11kV 3min. RATING
⑤	MAIN PUMP UNIT CONTROL PANEL	
⑥	a LOAD CENTER	
	b MAIN PUMP MOTOR CONTROL CENTER	
	c MOTOR CONTROL CENTER(A)	
	d MOTOR CONTROL CENTER(B)	
⑦	DC POWER SOURCE PANEL	BATTERY & CHARGER
⑧	GENERATOR CONTROL PANEL	

PANEL SCHEDULE		
NO.	NAME OF PANEL	REMARKS
①	CABLE TERMINAL PANEL F1	SHALL BE SUPPLIED AND INSTALLED BY OTHER CONTRACT (BY REA)
②	POWER RECEIVING PANEL F1	
③	PT PANEL F1	
④	CABLE TERMINAL PANEL F2	
⑤	POWER RECEIVING PANEL F2	
⑥	PT PANEL F2	
⑦	GPT PANEL 1A	
⑧	GPT PANEL 1B	
⑨	PUMP MOTOR FEEDER PANEL 1A	
⑩	PUMP MOTOR FEEDER PANEL 1B	
⑪	PUMP MOTOR FEEDER PANEL 2A	
⑫	PUMP MOTOR FEEDER PANEL 2B	
⑬	PUMP MOTOR FEEDER PANEL 3A	
⑭	PUMP MOTOR FEEDER PANEL 3B	
⑮	PUMP MOTOR FEEDER PANEL 4A	
⑯	PUMP MOTOR FEEDER PANEL 4B	
⑰	STATION TRANSFORMER FEEDER PANEL A	
⑱	STATION TRANSFORMER FEEDER PANEL B	
⑲	STATION TRANSFORMER PANEL A	
⑳	STATION TRANSFORMER PANEL B	



THE ARAB REPUBLIC OF EGYPT
MINISTRY OF WATER RESOURCES AND IRRIGATION
NORTH SINAI DEVELOPMENT ORGANIZATION

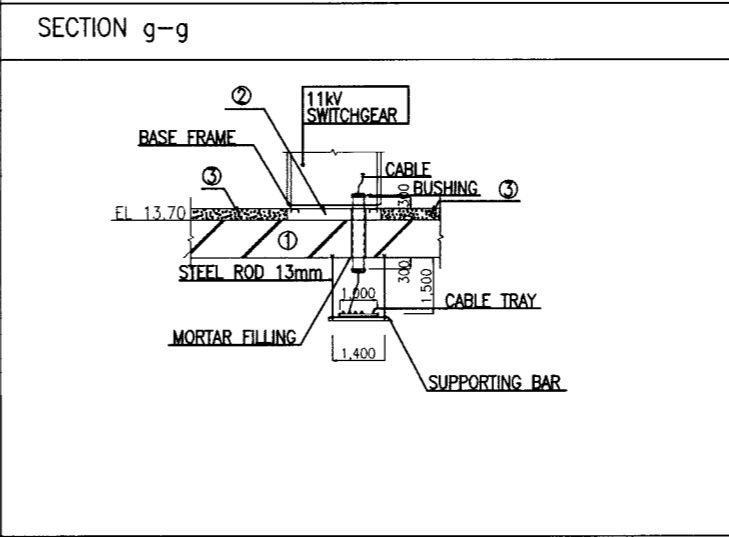
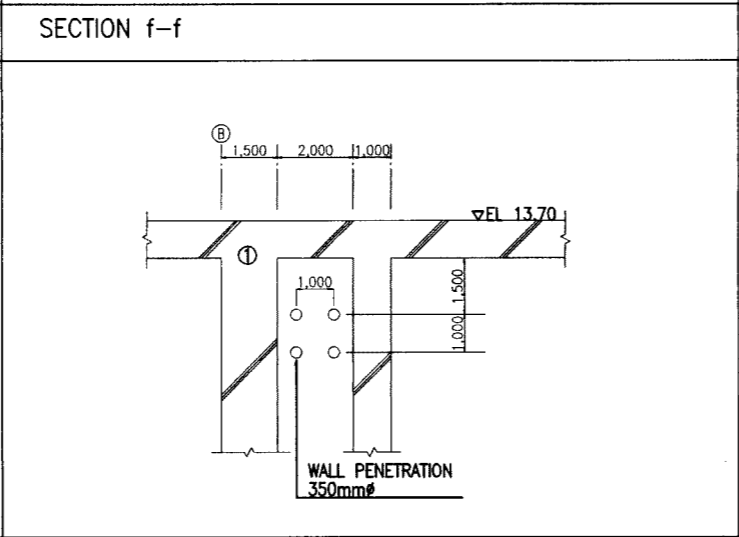
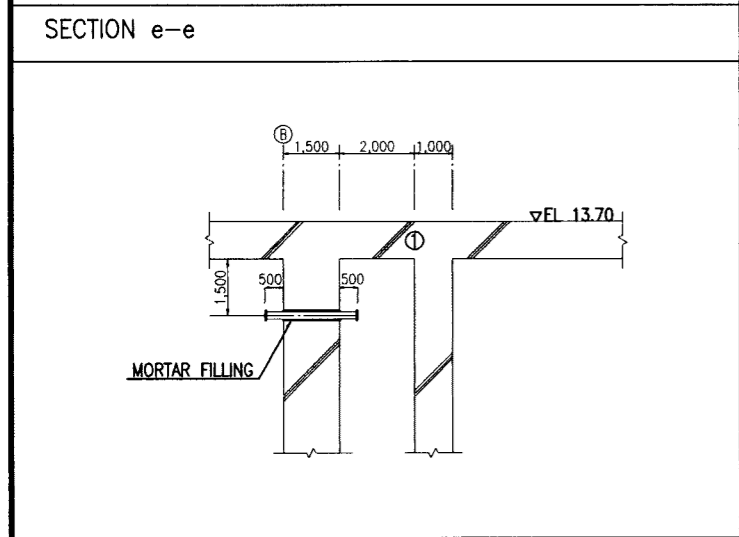
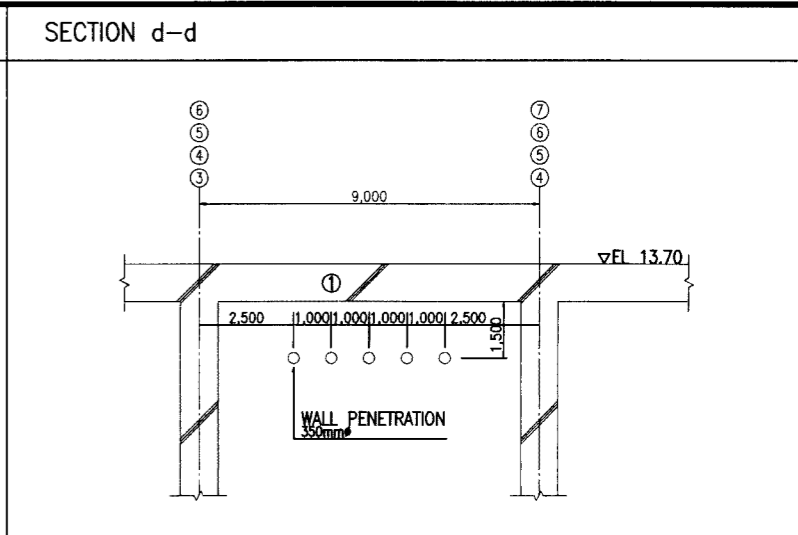
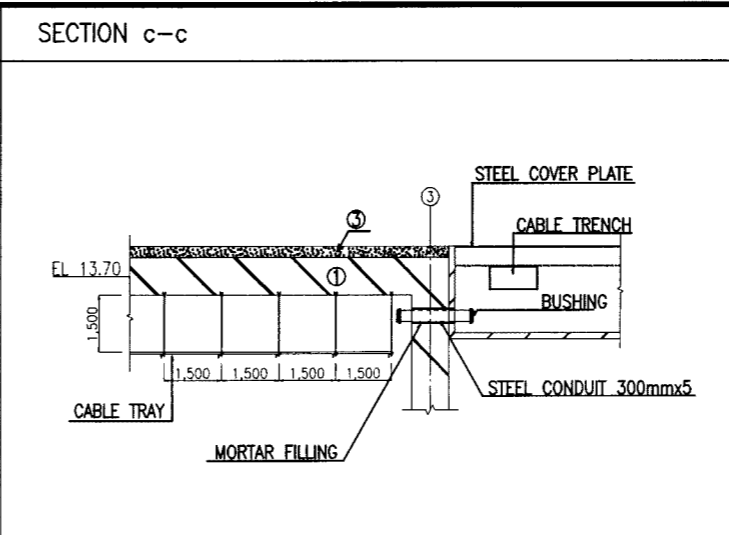
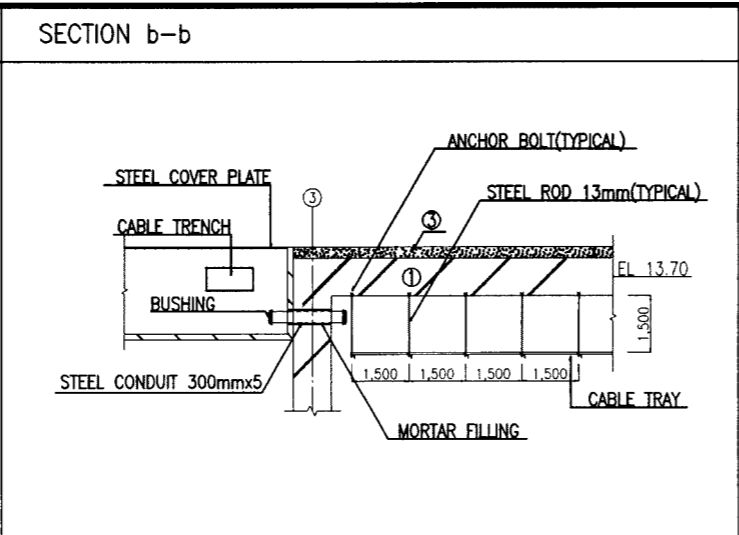
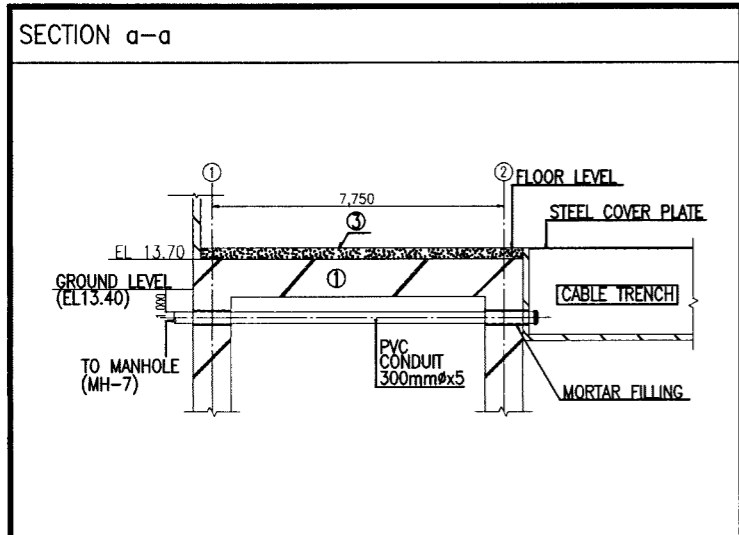
THE NORTH SINAI INTEGRATED RURAL
DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAH CANAL
BETWEEN KM 108.466 AND KM 118.560
EL SALAAM No. 7 (B1R EL ABD) PUMPING STATION

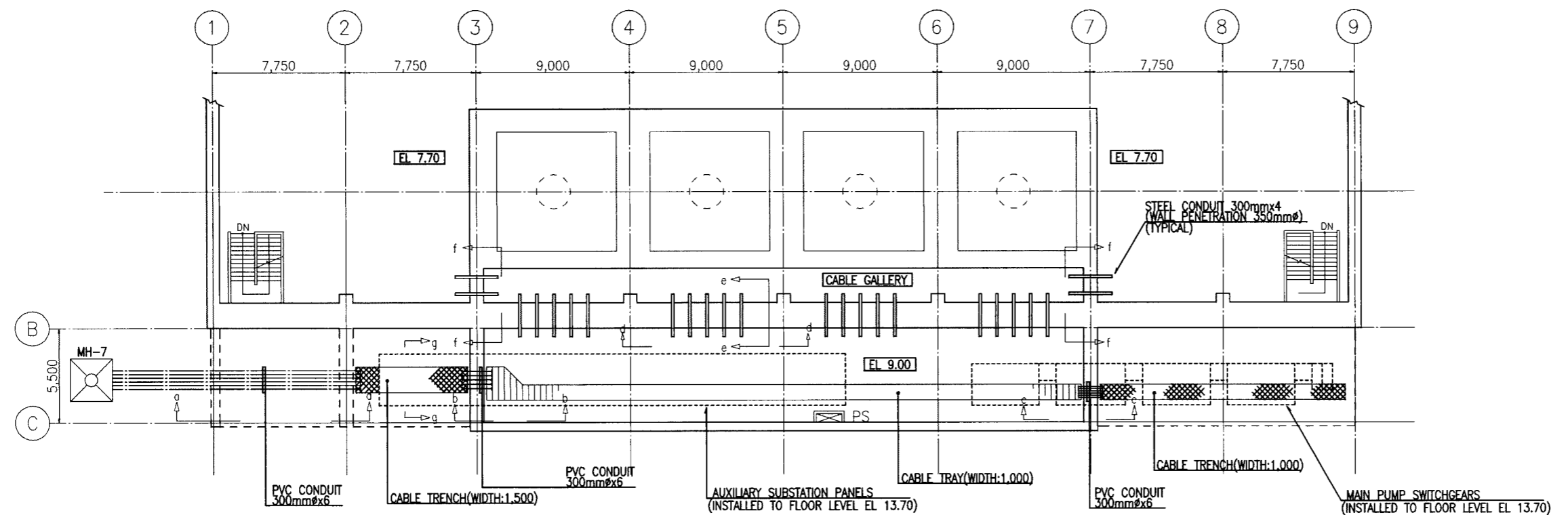
AUXILIARY SUBSTATION PANEL LAYOUT AND CABLING PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SANYU CONSULTANTS INC., PACIFIC CONSULTANTS INTERNATIONAL

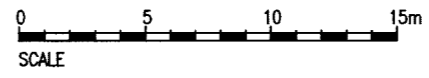
DESIGNED	
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APPROVED	
DRAWING NO.	PSE-216



- ① CONCRETE SLAB
- ② CONCRETE BASE
- ③ SECAONDARY CONCRETE SLAB



CABLE TRUNKING PLAN (EL 9.00)
S=1/300



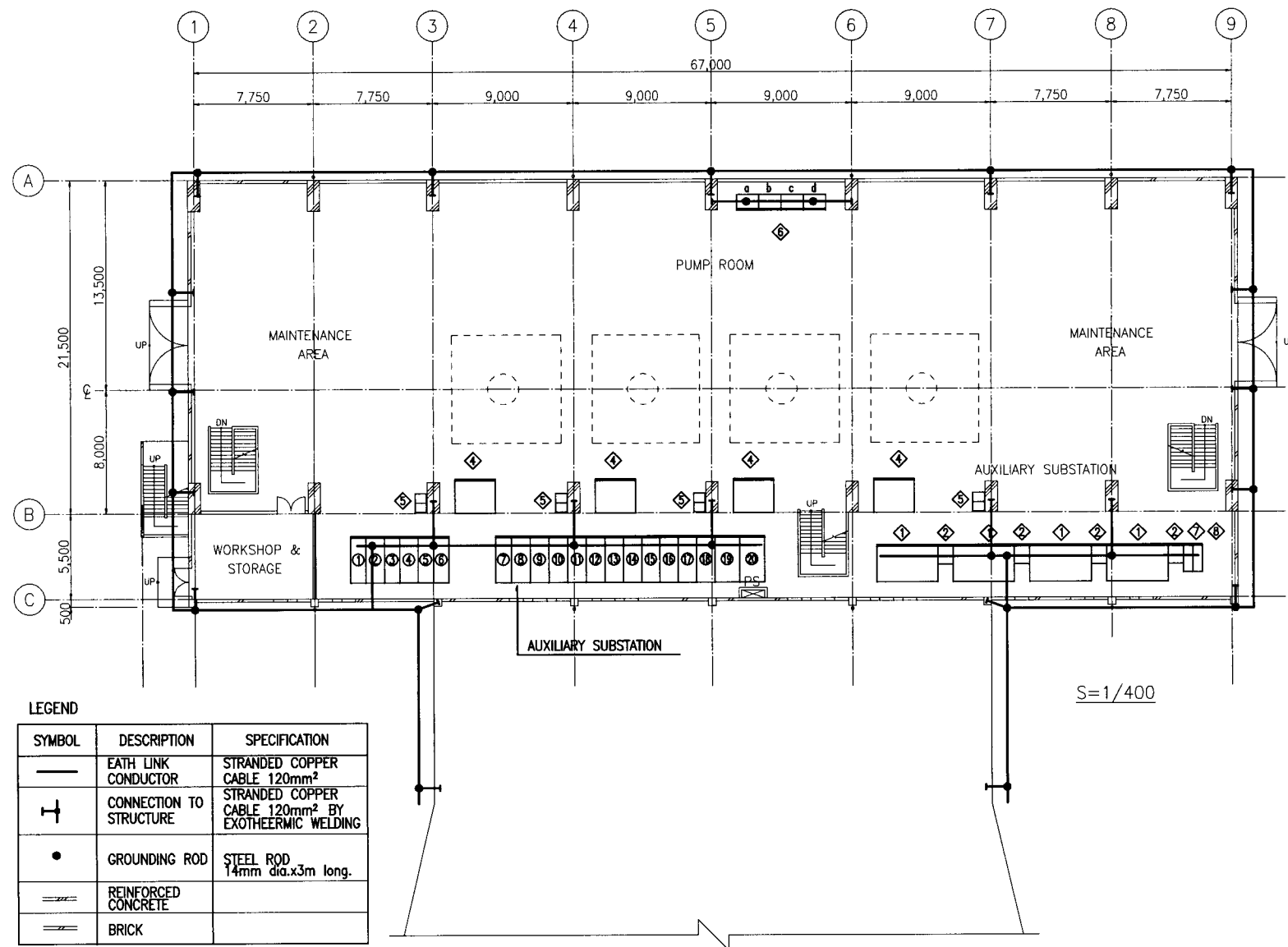
THE ARAB REPUBLIC OF EGYPT
MINISTRY OF WATER RESOURCES AND IRRIGATION
NORTH SINAI DEVELOPMENT ORGANIZATION
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL
BETWEEN KM 108.466 AND KM 118.560
EL SALAAM No. 7 (BIR EL ABO) PUMPING STATION

AUXILIARY SUBSTATION CABLE TRUNKING SYSTEM PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SAMYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL

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TRACED	
CHECKED	
APPROVED	
DRAWING NO.	PSE-217

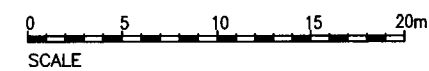


LEGEND

SYMBOL	DESCRIPTION	SPECIFICATION
—	EARTH LINK CONDUCTOR	STRANDED COPPER CABLE 120mm ²
⊥	CONNECTION TO STRUCTURE	STRANDED COPPER CABLE 120mm ² BY EXOTHEERMIC WELDING
•	GROUNDING ROD	STEEL ROD 14mm dia.x3m long.
▨	REINFORCED CONCRETE	
▧	BRICK	

EQUIPMENT PANEL SCHEDULE		
No.	EQUIPMENT	REMARKS
①	MAIN MOTOR STARTING PANEL	11kV VCB 1200Ax3
②	EXCITER TRANSFORMER PANEL	11kV/380V 1-PHASSE 20kVA
③	EXICITER PANEL	AC EXCITER
④	AUTO-TRANSFORMER	11kV 3min. RATING
⑤	MAIN PUMP UNIT CONTROL PANEL	
⑥	a	LOAD CENTER
	b	MAIN PUMP MOTOR CONTROL CENTER
	c	MOTOR CONTROL CENTER(A)
	d	MOTOR CONTROL CENTER(B)
⑦	DC POWER SOURCE PANEL	BATERY & CHARGER
⑧	GENERATOR CONTROL PANEL	

AUXILIARY SUBSTATION-1 PANEL SCHEDULE		
NO.	NAME OF PANEL	REMARKS
①	CABLE TERMINAL PANEL F1	SHALL BE SUPPLIED AND INSTALLED BY OTHER CONTRACT (BY REA)
②	POWER RECEIVING PANEL F1	
③	PT PANEL F1	
④	CABLE TERMINAL PANEL F2	
⑤	POWER RECEIVING PANEL F2	
⑥	PT PANEL F4	
⑦	GPT PANEL 1A	
⑧	GPT PANEL 1B	
⑨	PUMP MOTOR FEEDER PANEL 1A	
⑩	PUMP MOTOR FEEDER PANEL 1B	
⑪	PUMP MOTOR FEEDER PANEL 2A	
⑫	PUMP MOTOR FEEDER PANEL 2B	
⑬	PUMP MOTOR FEEDER PANEL 3A	
⑭	PUMP MOTOR FEEDER PANEL 3B	
⑮	PUMP MOTOR FEEDER PANEL 4A	
⑯	PUMP MOTOR FEEDER PANEL 4B	
⑰	STATION TRANSFORMER FEEDER PANEL A	
⑱	STATION TRANSFORMER FEEDER PANEL B	
⑲	STATION TRANSFORMER PANEL A	
⑳	STATION TRANSFORMER PANEL B	



THE ARAB REPUBLIC OF EGYPT
MINISTRY OF WATER RESOURCES AND IRRIGATION
NORTH SINAI DEVELOPMENT ORGANIZATION

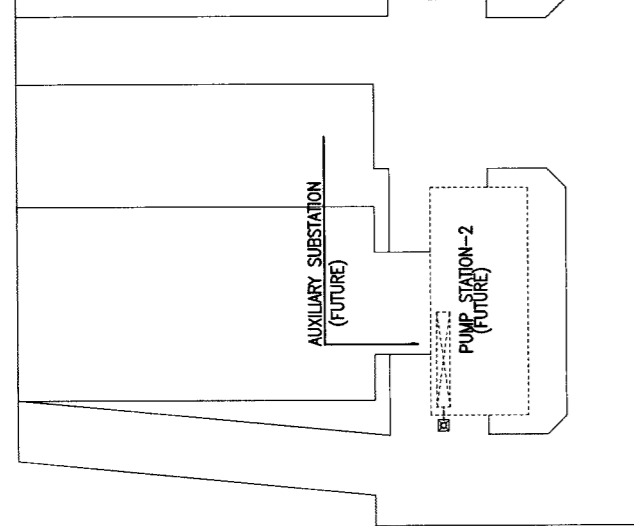
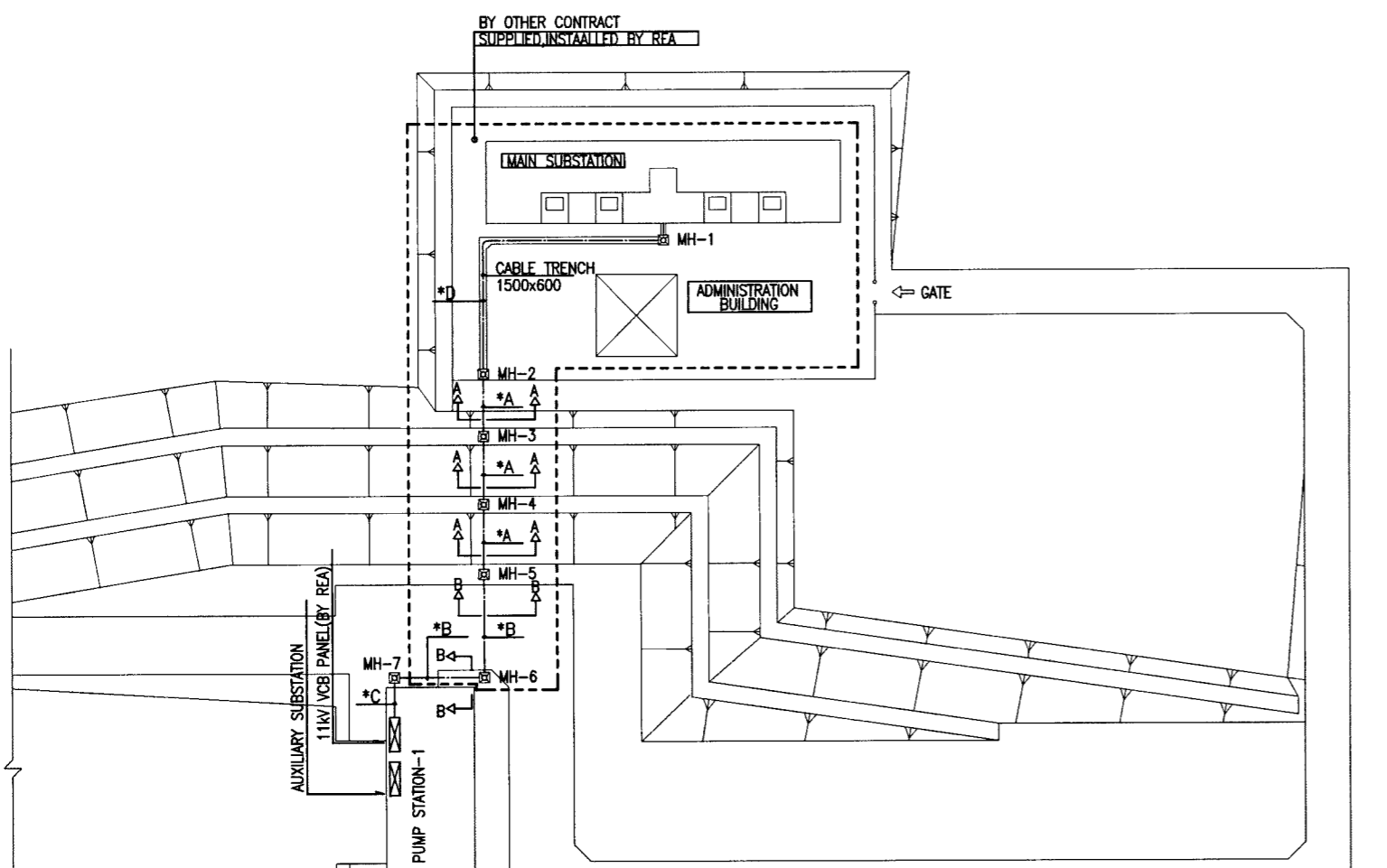
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAH CANAL
BETWEEN KM 108.466 AND KM 118.560
EL SALAAM No. 7 (BIR EL ABD) PUMPING STATION

AUXILIARY SUBSTATION EARTH LINK PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SAMYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL

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CHECKED	
APPROVED	
DRAWING NO.	PSE-218

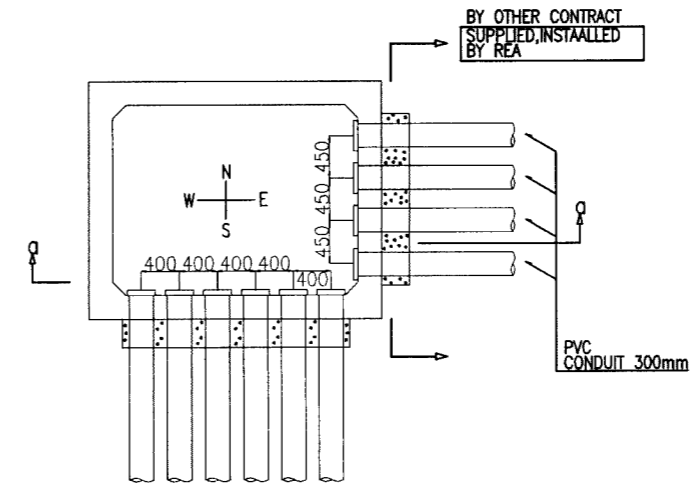


11kV POWER FEEDER CABLE PLAN
S=1/2000

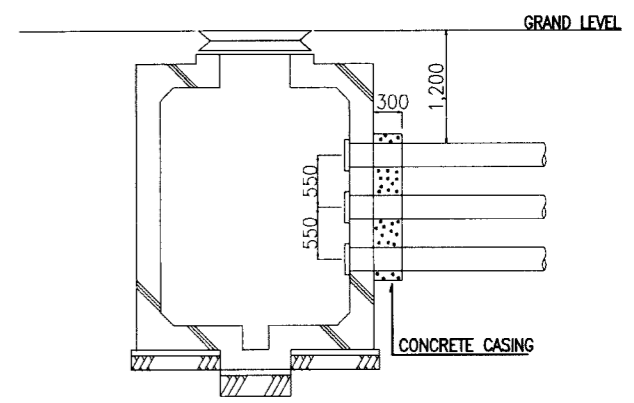
CABLE SCHEDULE				
SYMBOL	FEEDER NO.	CABLE	CONDUIT	REMARKS
*A	F1	11kV XLPE 1C-500mm ² x3	PCV 300mm	SHALL BE SUPPLIED AND INSTALLED BY REA
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
	F2	11kV XLPE 1C-500mm ² x3	PCV 300mm	
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
*B	F1	11kV XLPE 1C-500mm ² x3	PCV 300mm	SHALL BE SUPPLIED & INSTALLED BY REA
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
	F2	11kV XLPE 1C-500mm ² x3	PCV 300mm	
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
		11kV XLPE 1C-500mm ² x3	PCV 300mm	
*C	F1	11kV XLPE 1C-500mm ² x6	PCV 300mm	CABLES SHALL BE SUPPLIED & INSTALLED BY REA
		11kV XLPE 1C-500mm ² x6	PCV 300mm	
	F2	11kV XLPE 1C-500mm ² x6	PCV 300mm	
*D	F1	11kV XLPE 1C-500mm ² x12	CABLE TRENCH	SHALL BE SUPPLIED AND INSTALLED BY REA
	F2	11kV XLPE 1C-500mm ² x12		

MANHOLE SCHEDULE-3

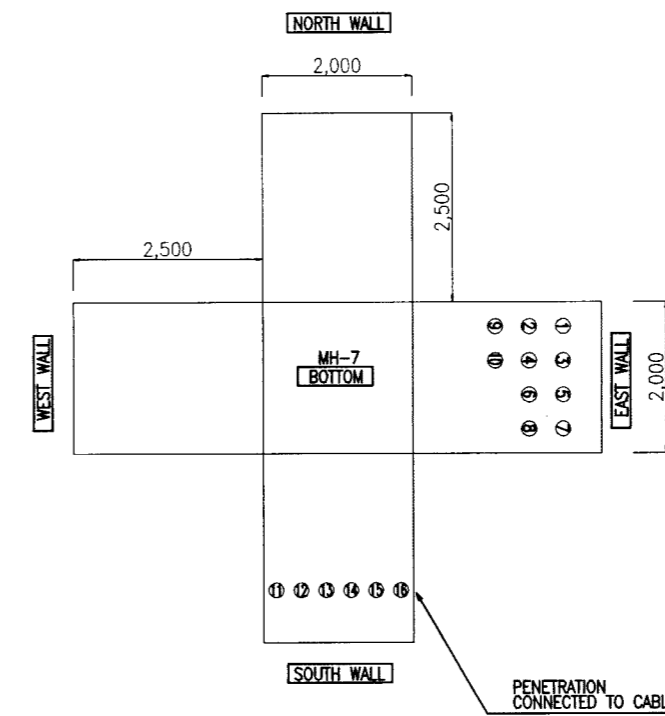
MH-7



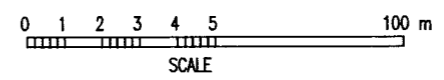
PLAN



SECTION a-a



NO.	CABLE	CONDUIT	REMARKS
①	11kV XLPE 1C-500mm ² x3	PVC 300mm	11kV POWER FEEDER F1
②	11kV XLPE 1C-500mm ² x3	PVC 300mm	
③	11kV XLPE 1C-500mm ² x3	PVC 300mm	
④	11kV XLPE 1C-500mm ² x3	PVC 300mm	
⑤	11kV XLPE 1C-500mm ² x3	PVC 300mm	11kV POWER FEEDER F2
⑥	11kV XLPE 1C-500mm ² x3	PVC 300mm	
⑦	11kV XLPE 1C-500mm ² x3	PVC 300mm	
⑧	11kV XLPE 1C-500mm ² x3	PVC 300mm	
⑨	—	PVC 300mm	SPARE
⑩	—	PVC 300mm	
⑪	11kV XLPE 1C-500mm ² x6	PVC 300mm	11kV POWER FEEDER F1
⑫	11kV XLPE 1C-500mm ² x6	PVC 300mm	11kV POWER FEEDER F2
⑬	11kV XLPE 1C-500mm ² x6	PVC 300mm	
⑭	11kV XLPE 1C-500mm ² x6	PVC 300mm	
⑮	—	PVC 300mm	
⑯	—	PVC 300mm	SPARE



THE ARAB REPUBLIC OF EGYPT
MINISTRY OF WATER RESOURCES AND IRRIGATION
NORTH SINAI DEVELOPMENT ORGANIZATION

THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL
BETWEEN KM 108.466 AND KM 118.560
EL SALAAM No. 7 (BIR EL ABD) PUMPING STATION

AUXILIARY SUBSTATION 11kV MAIN FEEDER CABLE PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SANYU CONSULTANTS INC., PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	PSE-219