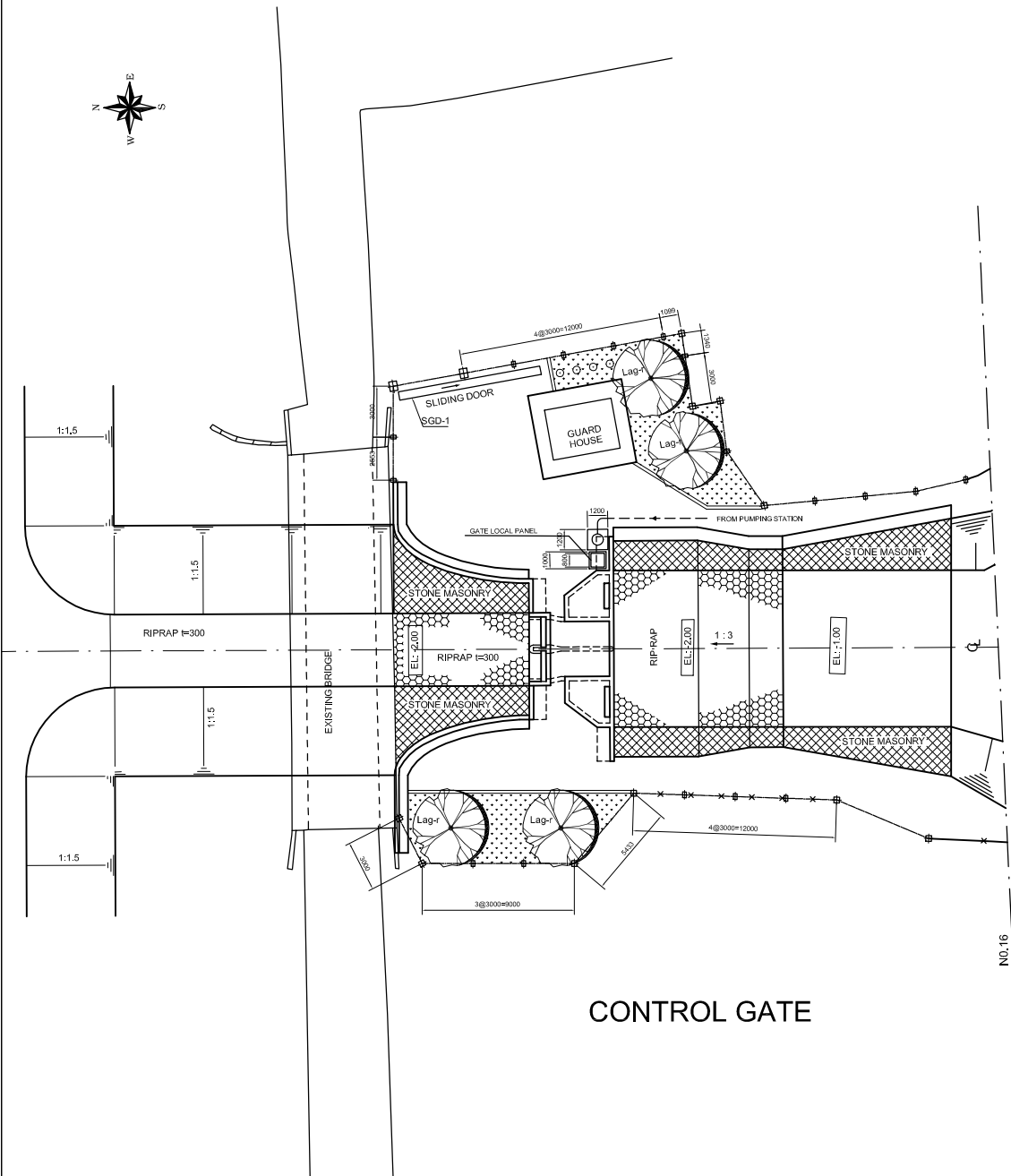
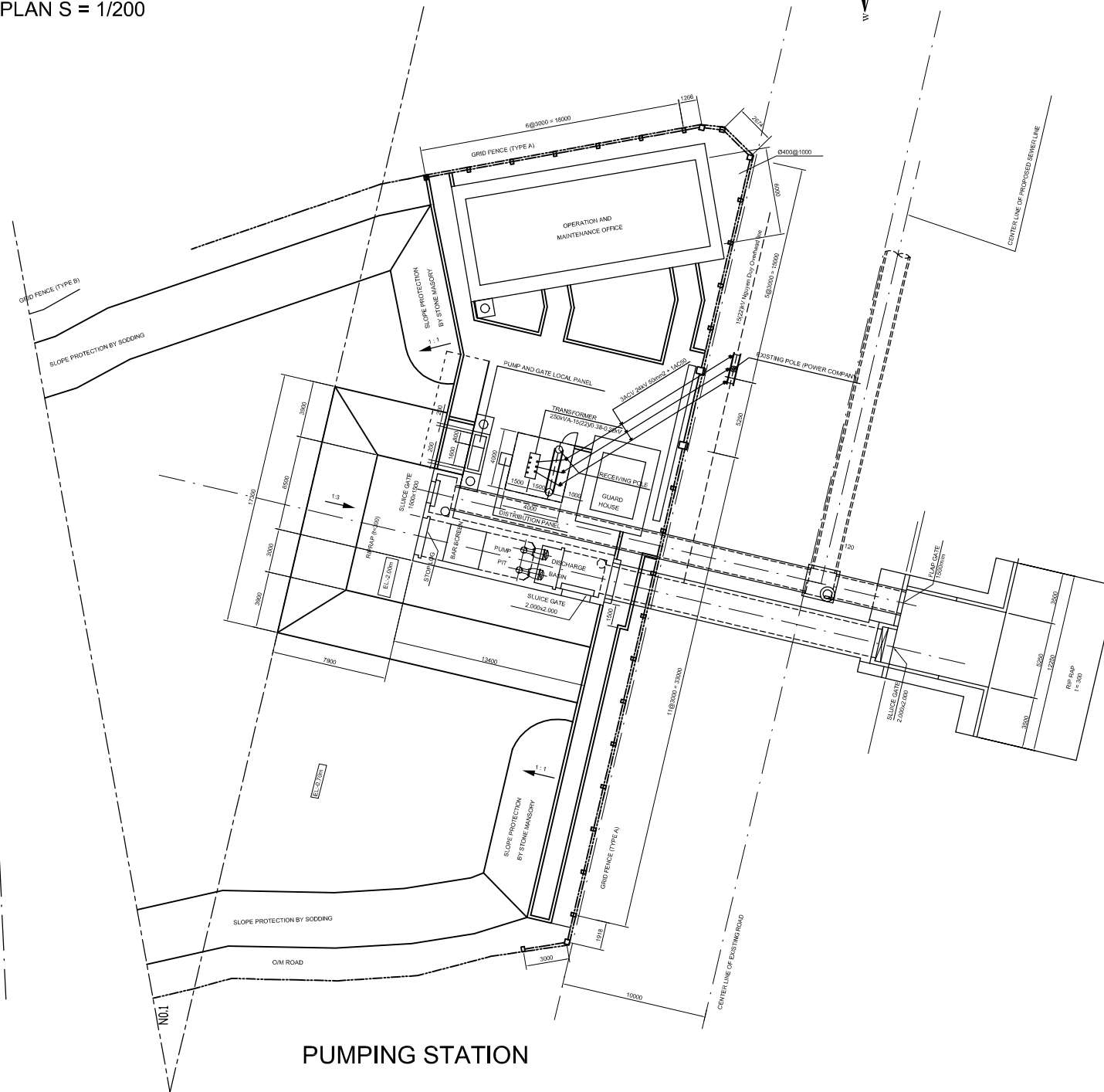


PLAN

PLAN S = 1/200



CONTROL GATE



PUMPING STATION

| | | | |
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| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
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REVISIONS


PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

GENERAL LAYOUT OF
ELECTRICAL EQUIPMENT

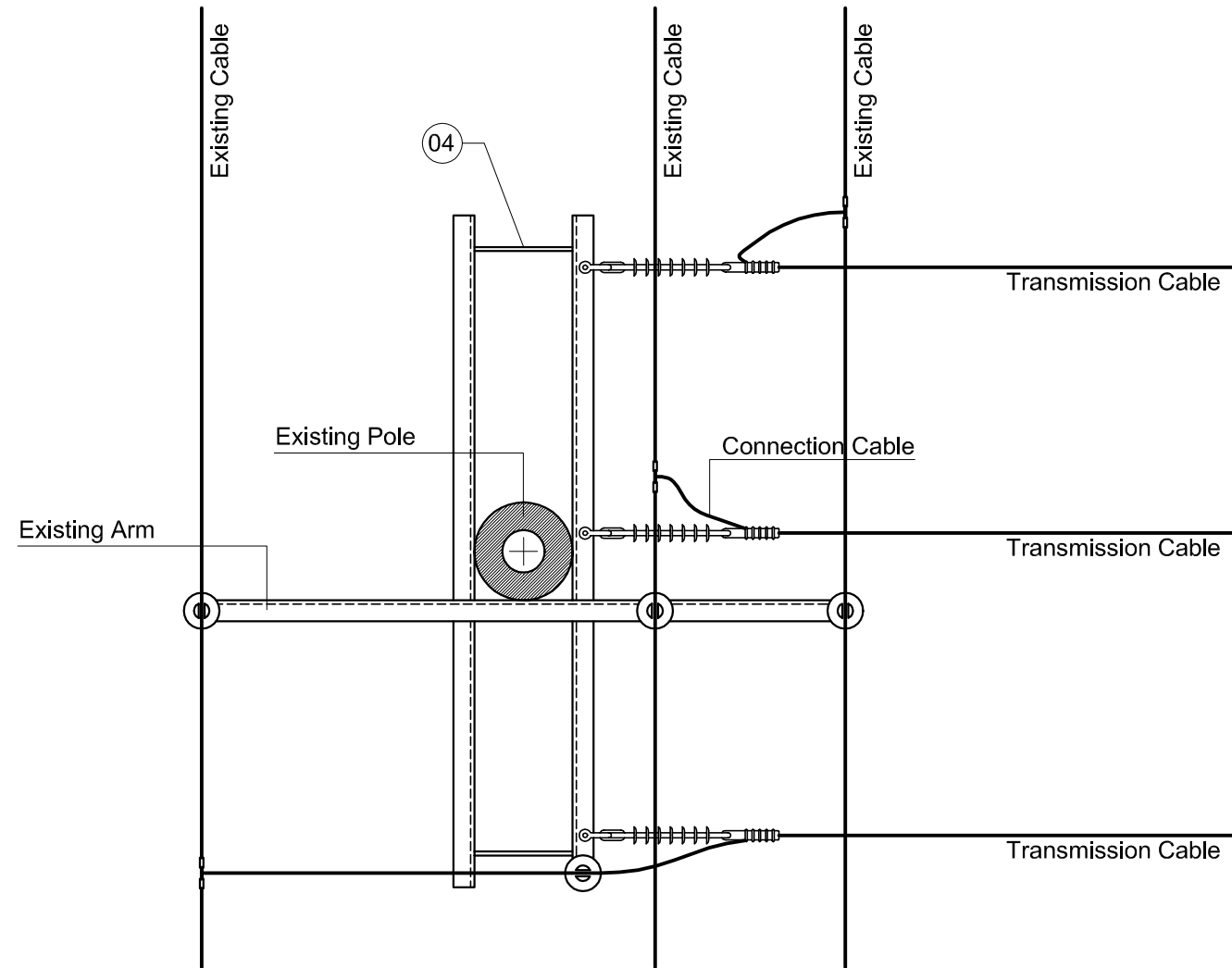
SCALE : 1:200

 JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

 PACIFIC CONSULTANTS INTERNATIONAL

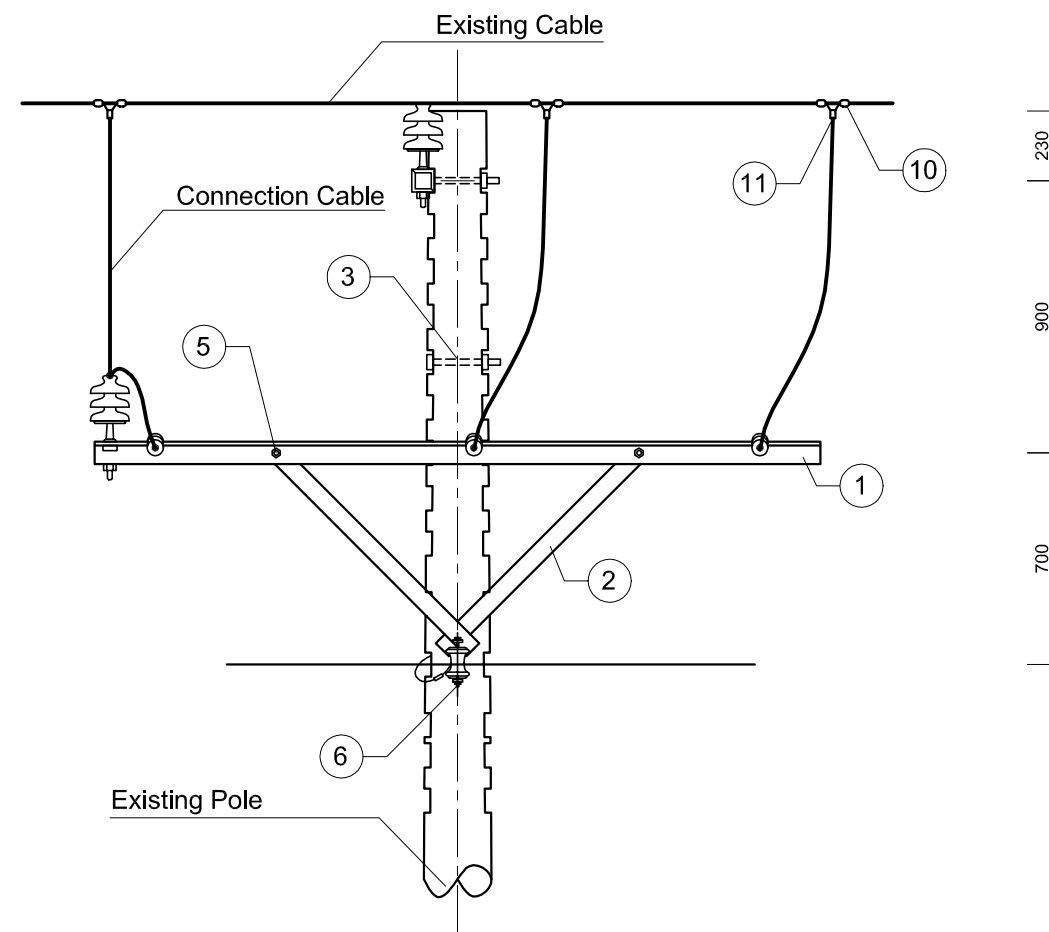
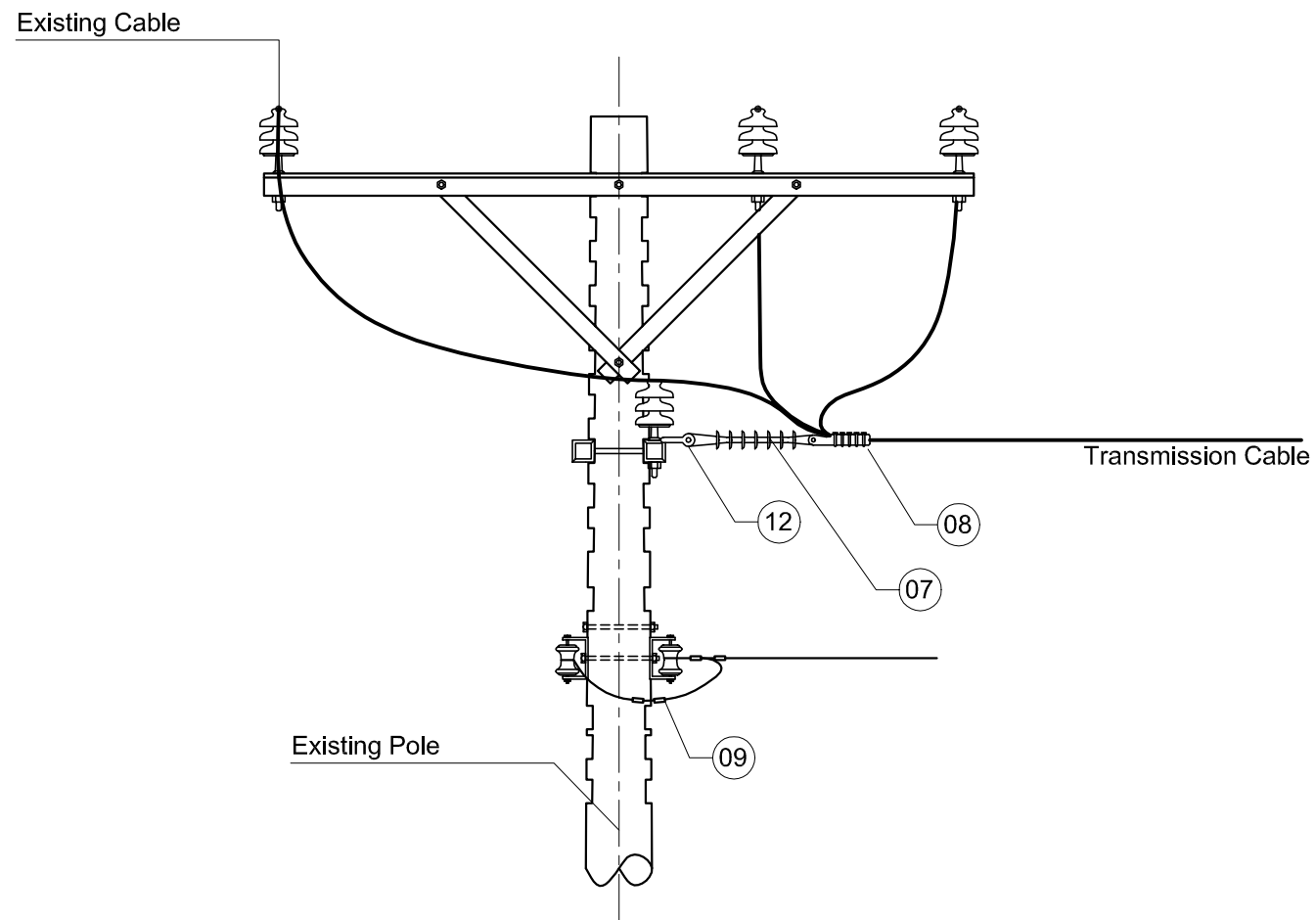
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|--------------------------|-------------------------|
| DESIGNED KOMIYA NOBUO | CHECKED KONDO MASAMI |
|--------------------------|-------------------------|

DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 501

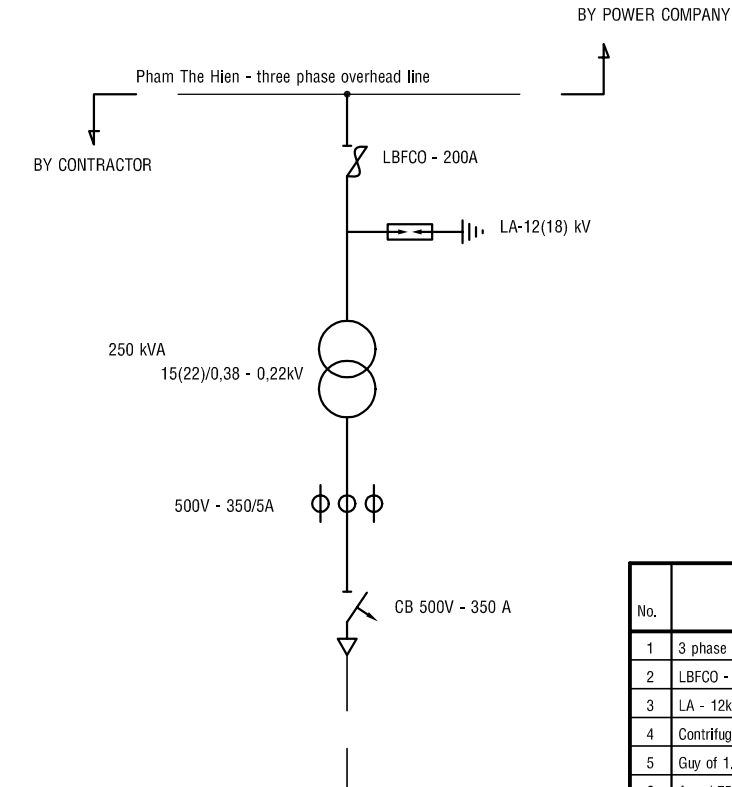
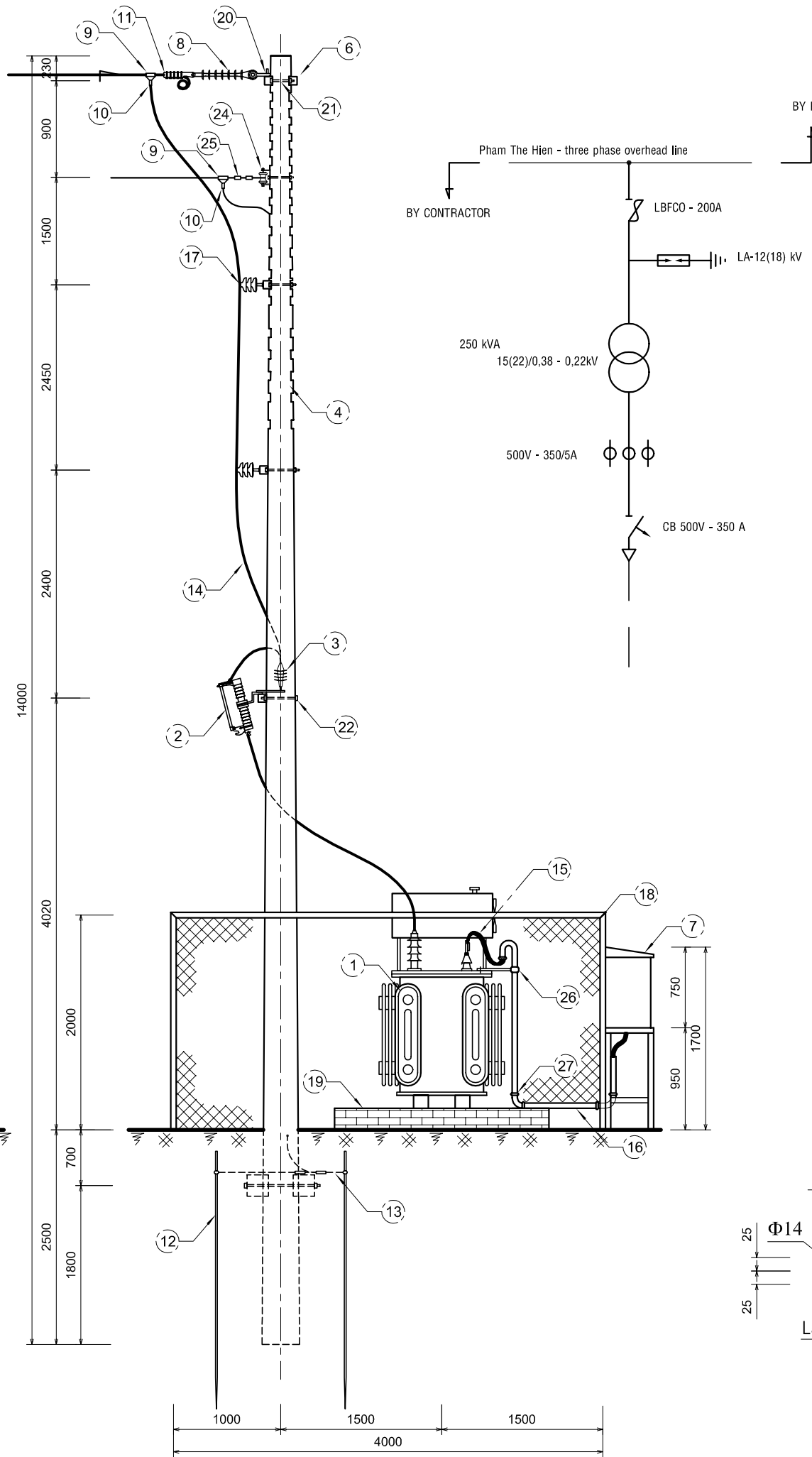
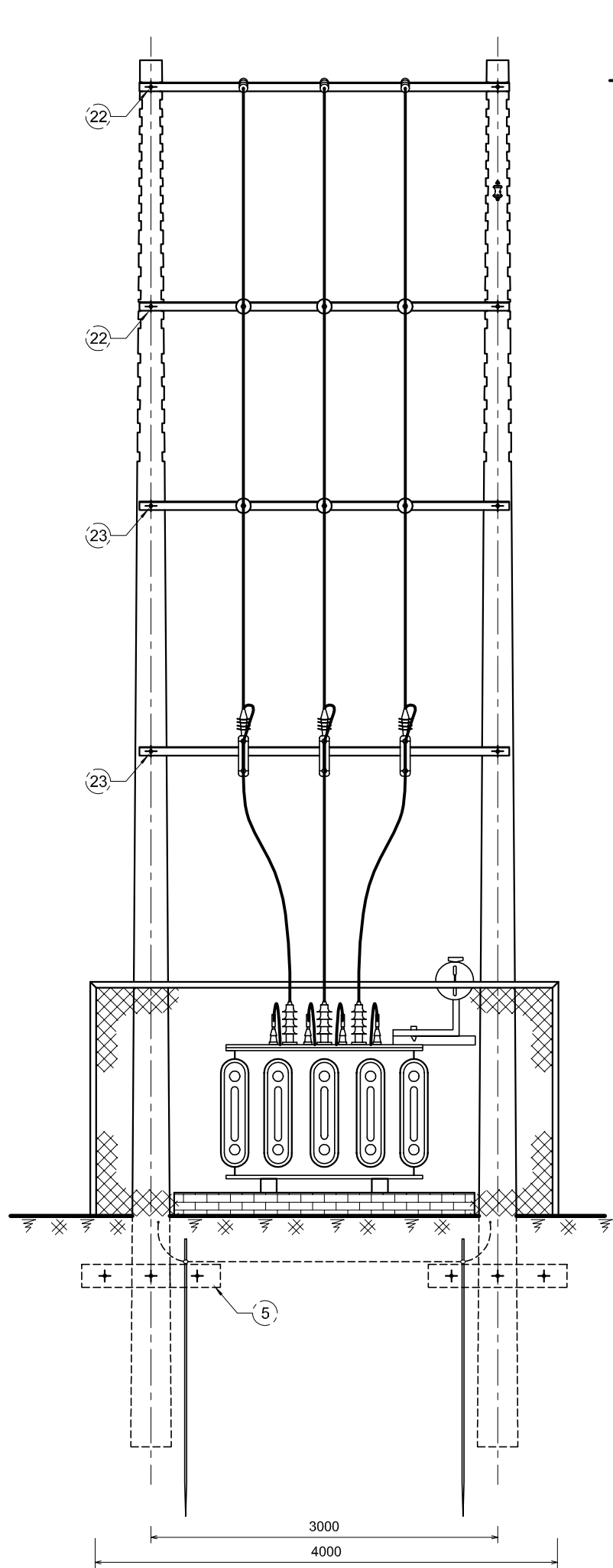


LIST OF MATERIAL AND EQUIPMENT

| No. | ITEM | UNIT | QTY |
|-----|-----------------------------------|------|-----|
| 01 | Steel arm L75x75x8 - 2.4m | arm | 02 |
| 02 | Supporting steel-bar 60x6 - 0.92m | bar | 04 |
| 03 | Bolt 16 x 300 | pcs | 03 |
| 04 | Bolt 16x300 VRS | pcs | 02 |
| | Square washer | pcs | 10 |
| 05 | Bolt 16x40 | pcs | 04 |
| | Square washer Φ14 | pcs | 08 |
| 06 | Uclevisse and spool insulator | pcs | 01 |
| 07 | Polymer insulator of 24kV | pcs | 03 |
| 08 | tension ball | pcs | 03 |
| 09 | Pressure clamp | pcs | 04 |
| 10 | Bail clamp | pcs | 03 |
| 11 | Hotline clamp | pcs | 03 |
| 12 | U Clamp | pcs | 03 |

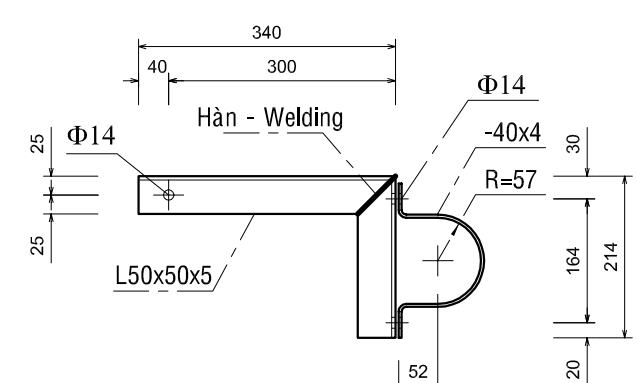


| NO. | DATE | DESCRIPTIONS | BY | APPRO. |
|---|------|-----------------------------------|----|--------|
| REVISIONS | | | | |
| PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT | | | | |
| THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM | | | | |
| PACKAGE B PUMP DRAINAGE IMPROVEMENT BEN ME COC 1 PUMPING STATION | | | | |
| CONNECTION DIAGRAM TO EXISTING TRANSMISSION LINE | | | | |
| SCALE : 1:10 | | | | |
| JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | | PACIFIC CONSULTANTS INTERNATIONAL | | |
| DESIGNED KOMIYA NOBUO | | CHECKED KONDO MASAMI | | |
| DATE : JUNE 2001 | | DWG. No. PB - PDI - BMC1 - 502 | | |



LIST OF MATERIAL AND EQUIPMENT

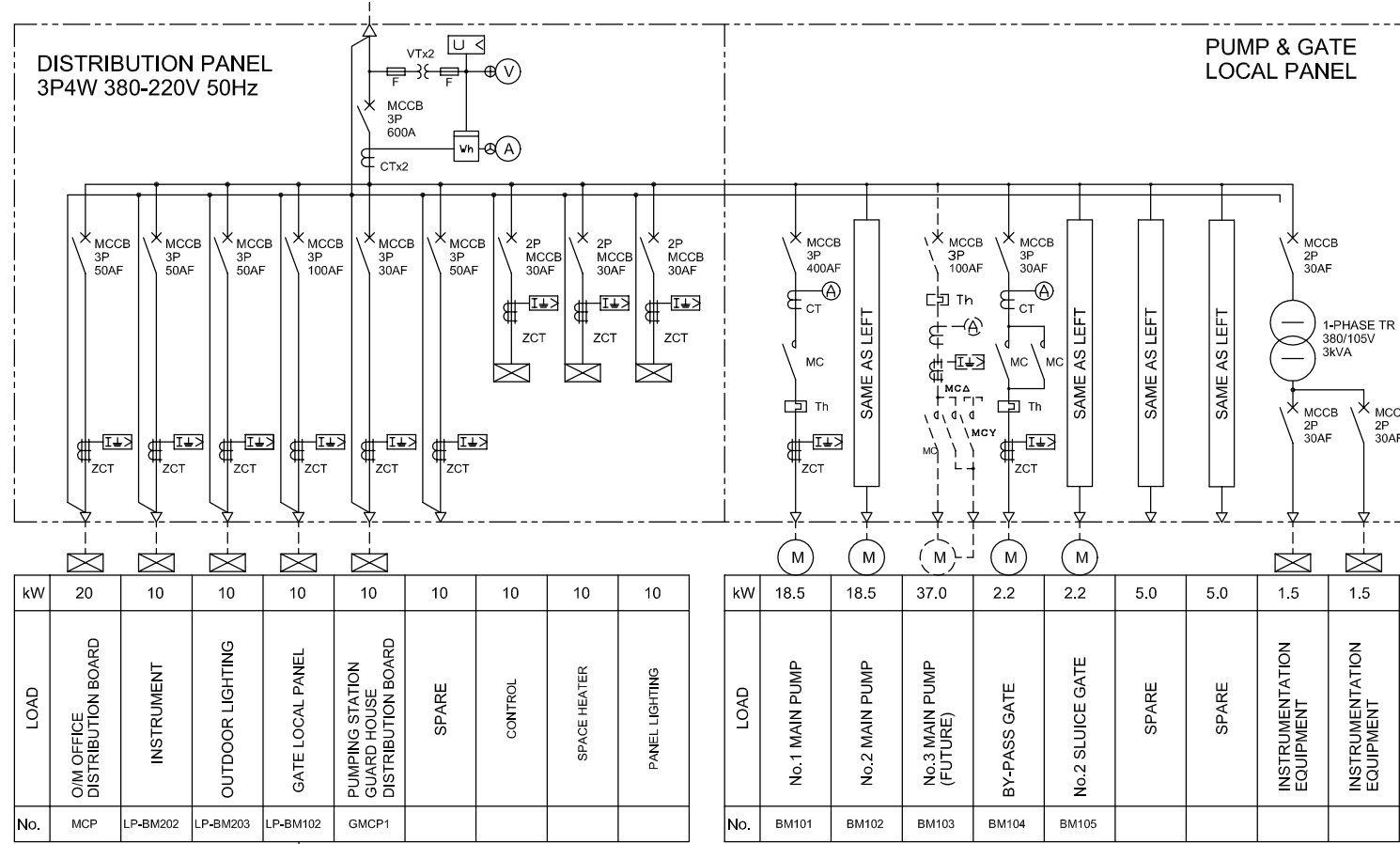
| No. | ITEM | UNIT | QTY |
|-----|--|------|-----|
| 1 | 3 phase transformer 250kVA 15(22)/0.4kV | pcs. | 1 |
| 2 | LBFCO - 24kV - 200A | set | 3 |
| 3 | LA - 12kV | set | 3 |
| 4 | Centrifugal concrete pole of 12m | pole | 2 |
| 5 | Guy of 1.2m | set | 4 |
| 6 | Arm L75x75x8 - 3.2m | arm | 5 |
| 7 | Meter cubicle & LV equipment | set | 1 |
| 8 | Polymer insulator | set | 3 |
| 9 | Bail clamp | set | 3 |
| 10 | Hotline clamp | set | 3 |
| 11 | Tension Clamp | set | 3 |
| 12 | Grounding pole of 2.5m Φ 16 | pcs | 4 |
| 13 | Bare copper conductor of 25mm ² | kg | 7 |
| 14 | Cable of 24kV - 25mm ² | m | 30 |
| 15 | Cable of 500V - 3M240 mm ² | m | 15 |
| | Cable of 500V - M200 mm ² | m | 5 |
| 16 | PVC pipe of Φ 114 | m | 3 |
| 17 | Standing insulator of 24kV | set | 6 |
| 18 | Fence (See dwg No. PB-PDI-BMC1-510) | lot | 1 |
| 19 | Foundation (See Dwg No. PB-PDI-BMC1-510) | lot | 1 |
| 20 | U Clamp | pcs | 3 |
| 21 | Bolt Φ 16x300 VRS | set | 2 |
| 22 | Bolt Φ 16x300 | set | 4 |
| 23 | Bolt Φ 16x350 | set | 4 |
| 24 | Uclevisse and spool Insulator | set | 1 |
| 25 | Clamp of 3 bolts | pcs | 2 |
| 26 | Cable suspension structure | set | 1 |
| 27 | Elbow of Φ 114 | pcs | 3 |



CABLE SUSPENSION STRUCTURE

| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|---|--------------------------------|-----------------------------------|----|-------|
| REVISIONS | | | | |
| PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT | | | | |
| THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM | | | | |
| PACKAGE B PUMP DRAINAGE IMPROVEMENT BEN ME COC 1 PUMPING STATION | | | | |
| SINGLE LINE DIAGRAM FOR RECEIVING SYSTEM | | | | |
| SCALE : 1:25 | | | | |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | | PACIFIC CONSULTANTS INTERNATIONAL | | |
| DESIGNED KOMIYA NOBUO | CHECKED KONDO MASAMI | | | |
| DATE : JUNE 2001 | DWG. No. PB - PDI - BMC1 - 503 | | | |

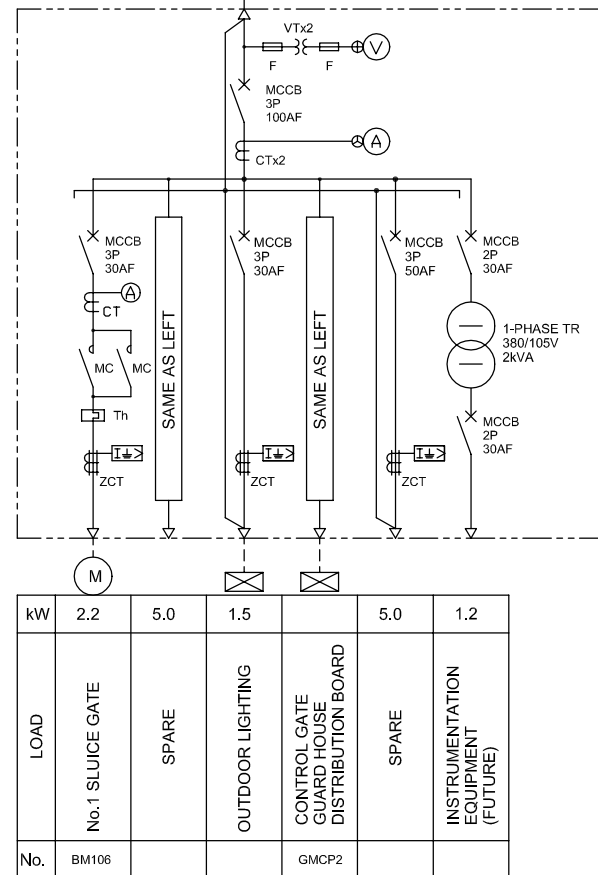
METER CUBICLE AND LV EQUIPMENT



LEGEND

| SYMBOL | DESCRIPTION |
|--------|--------------------------------|
| | AMMETER |
| | VOLTMETER |
| | WATT-HOUR METER |
| | UNDER VOLTAGE RELAY |
| | OVER CURRENT GROUND RELAY |
| | THERMAL OVER CURRENT RELAY |
| | TRANSFORMER |
| | CURRENT TRANSFORMER |
| | VOLTAGE TEST TERMINAL |
| | ZERO PHASE CURRENT TRANSFORMER |
| | MOLDED CASE CIRCUIT BREAKER |
| | MAGNETIC CONTACTOR |
| | AMMETER CHANGE-OVER SWITCH |
| | VOLTMETER CHANGE-OVER SWITCH |
| | MOTOR |

GATE LOCAL PANEL



| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
| | | | | |

REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

SINGLE LINE DIAGRAM FOR
DISTRIBUTION SYSTEM

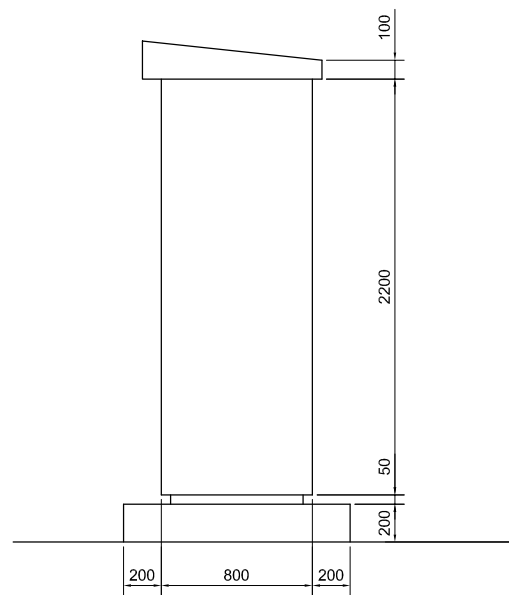
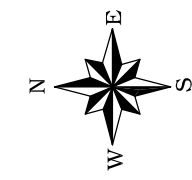
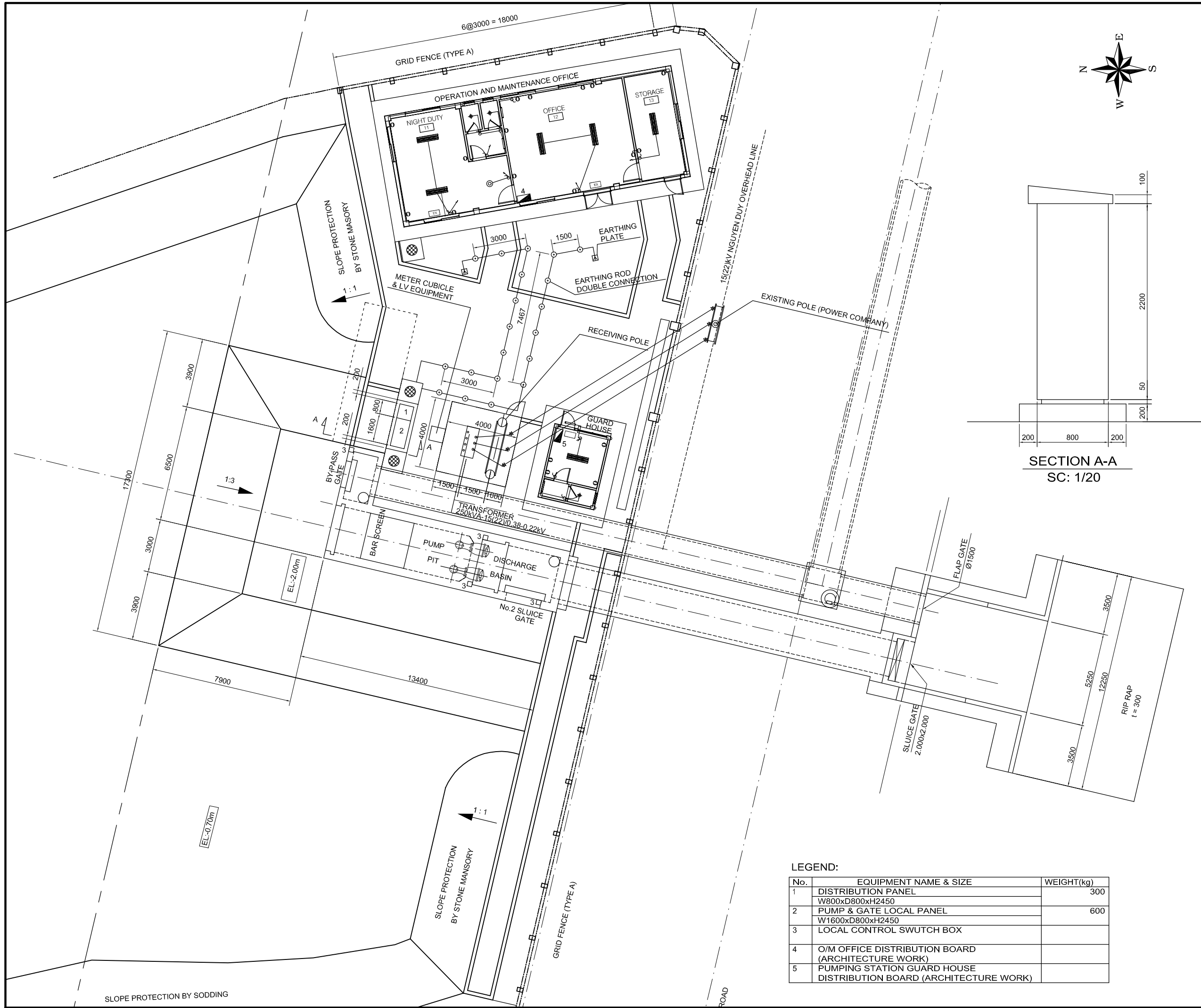
SCALE : NONE

JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

PACIFIC CONSULTANTS INTERNATIONAL

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|--------------------------|-------------------------|
| DESIGNED KOMIYA NOBUO | CHECKED KONDO MASAMI |
|--------------------------|-------------------------|

DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 504



SECTION A-A
SC: 1/20

| NO. | DATE | DESCRIPTIONS | BY | APPRO. |
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REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

LAYOUT OF ELECTRICAL
EQUIPMENT AND EARTHING
SYSTEM FOR PUMPING STATION

SCALE : 1/20; 1/100

JICA JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

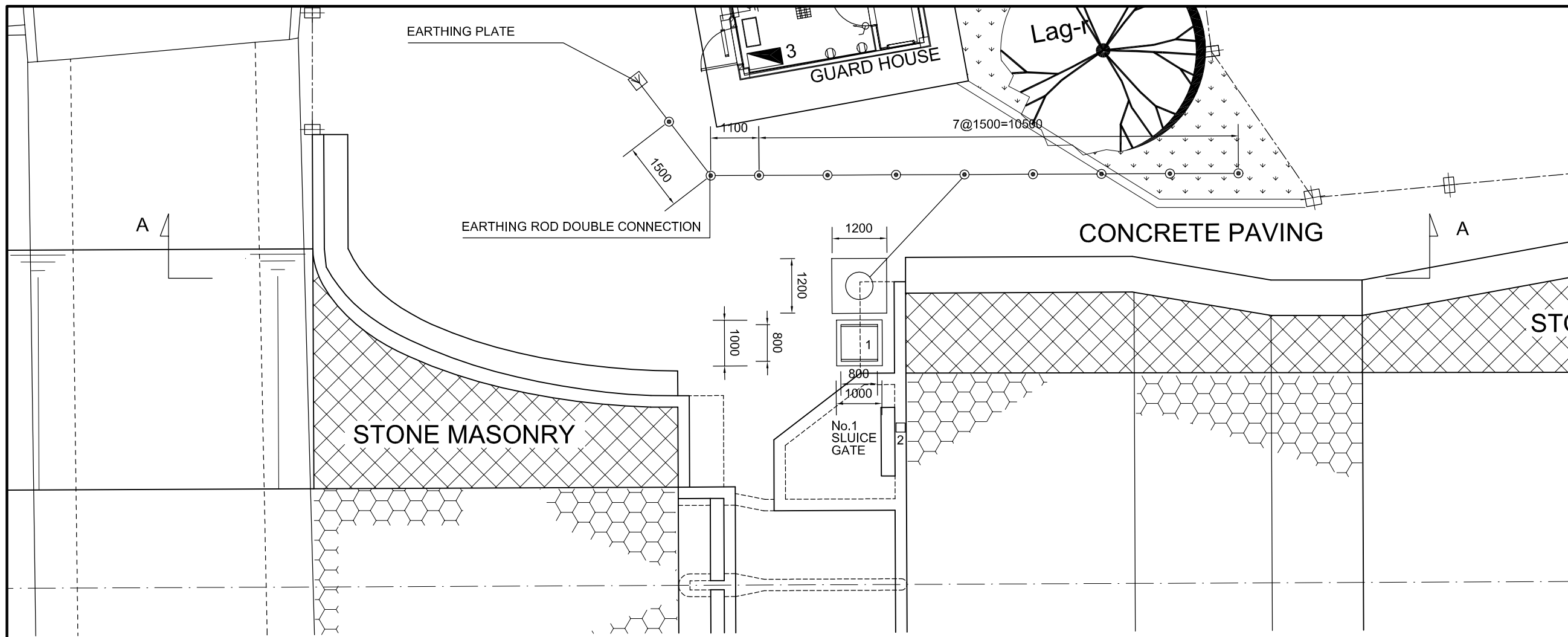
PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED: KOMIYA NOBUO
CHECKED: KONDO MASAMI

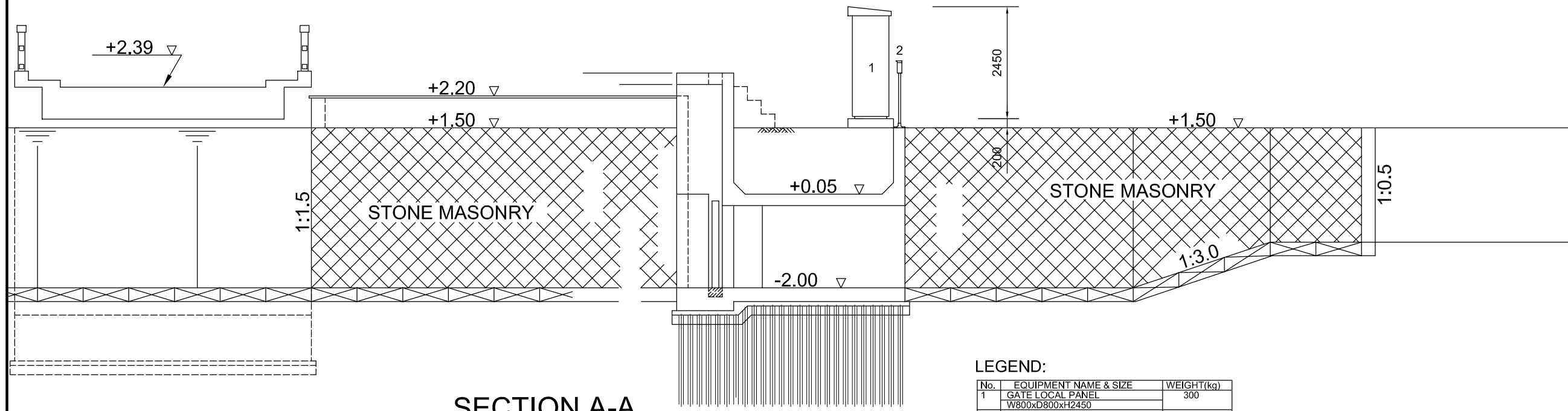
DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 505

LEGEND:

| No. | EQUIPMENT NAME & SIZE | WEIGHT(kg) |
|-----|---|------------|
| 1 | DISTRIBUTION PANEL W800xD800xH2450 | 300 |
| 2 | PUMP & GATE LOCAL PANEL W1600xD800xH2450 | 600 |
| 3 | LOCAL CONTROL SWUTCH BOX | |
| 4 | O/M OFFICE DISTRIBUTION BOARD (ARCHITECTURE WORK) | |
| 5 | PUMPING STATION GUARD HOUSE DISTRIBUTION BOARD (ARCHITECTURE WORK) | |



PLAN



SECTION A-A

LEGEND:

| No. | EQUIPMENT NAME & SIZE | WEIGHT(kg) |
|-----|---|------------|
| 1 | GATE LOCAL PANEL W800xD800xH2450 | 300 |
| 2 | LOCAL CONTROL SWITCH BOX | |
| 3 | CONTROL GATE GUARD HOUSE DISTRIBUTION BOARD (ARCHITECTURE WORK) | |
| ⊙ | EARTH ROD DOUBLE CONNECTION | |
| ⊞ | EARTH PLATE | |

| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
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REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION
LAYOUT OF ELECTRICAL EQUIPMENT
AND EARTHING SYSTEM
FOR CONTROL GATE

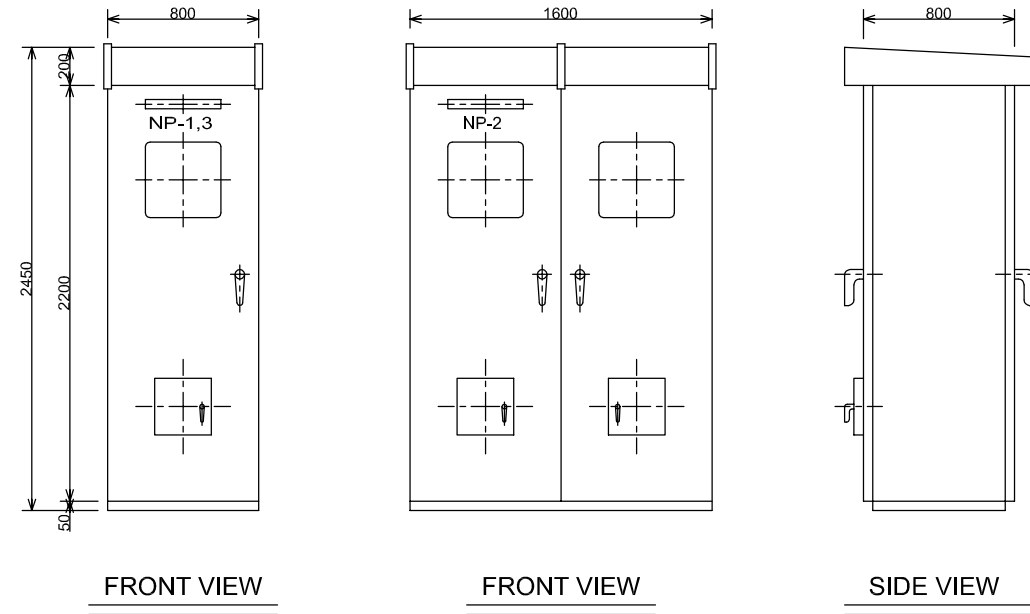
SCALE : 1 : 50

JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED: KOMIYA NOBUO
CHECKED: KONDO MASAMI

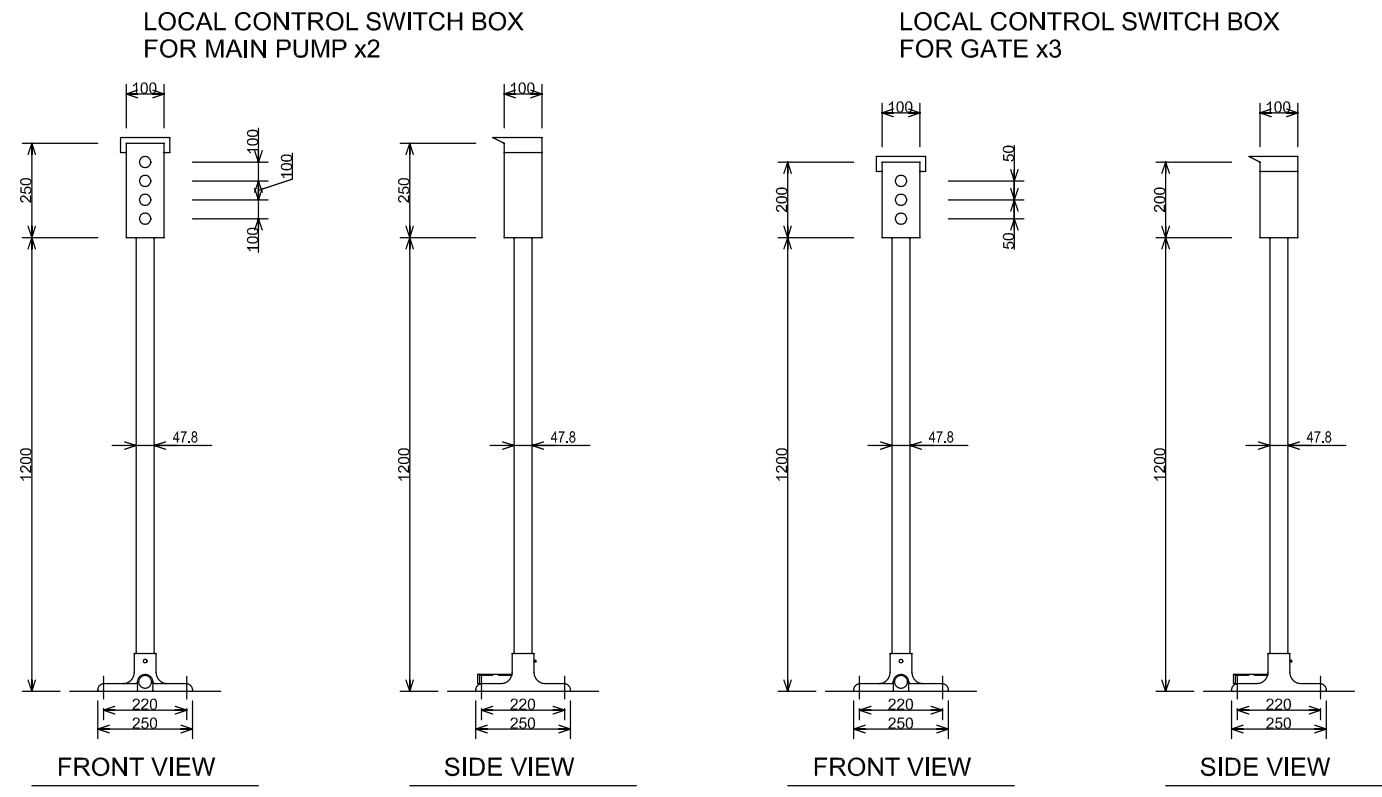
DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 506



NAME PLATE(NP)

| No. | DESCRIPTION |
|------|-------------------------|
| NP-1 | DISTRIBUTION PANEL |
| NP-2 | PUMP & GATE LOCAL PANEL |
| NP-3 | GATE LOCAL PANEL |

(S=1/20)



(S=1/10)

| | | | | |
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| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
|-----|------|--------------|----|-------|

REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

DIMENSION OF SWITCHGEARS
AND CONTROL PANELS FOR
ELECTRICAL EQUIPMENT

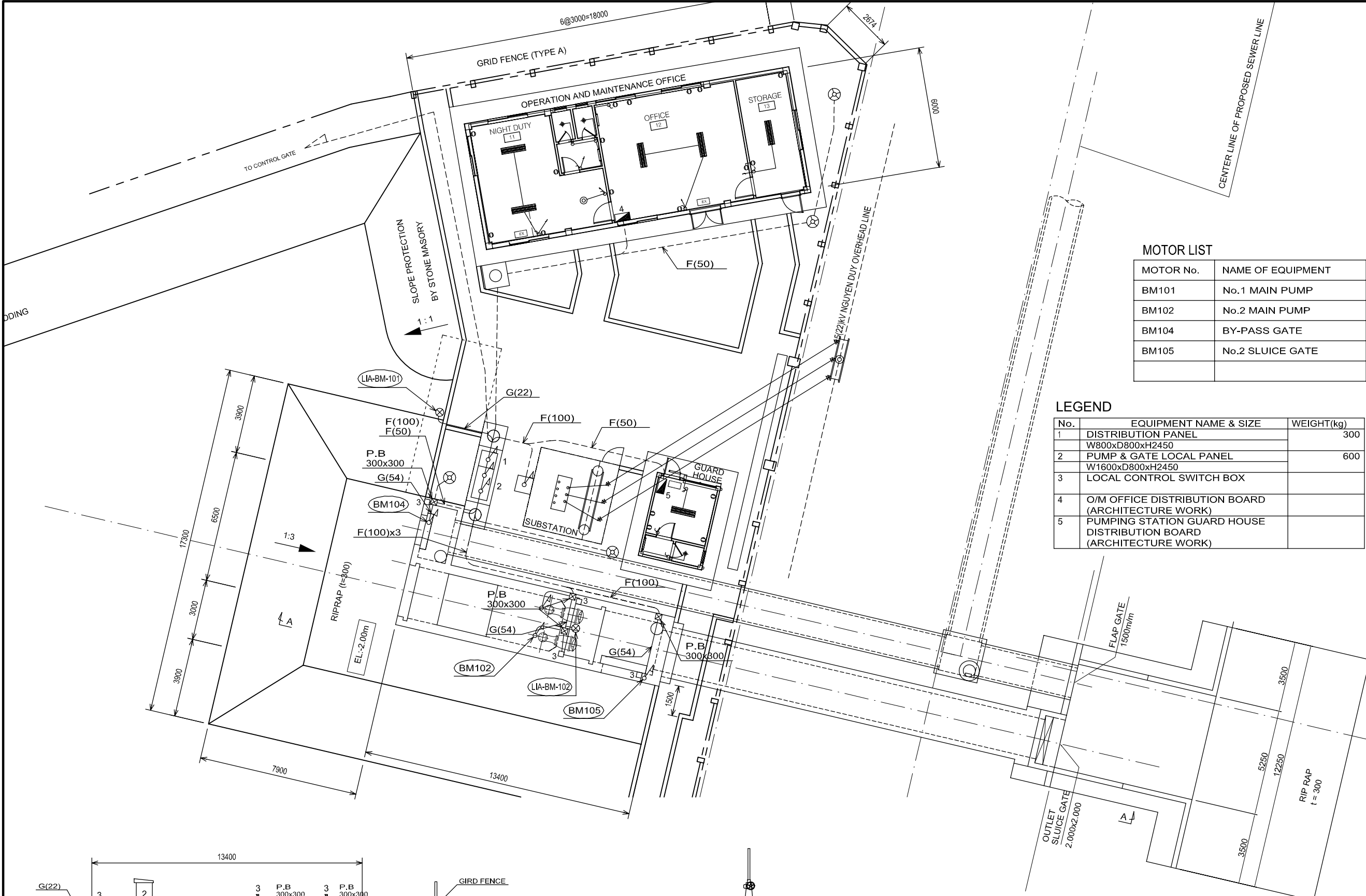
SCALE : 1/10; 1/20

JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

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|--------------------------|-------------------------|
| DESIGNED KOMIYA NOBUO | CHECKED KONDO MASAMI |
|--------------------------|-------------------------|

DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 507

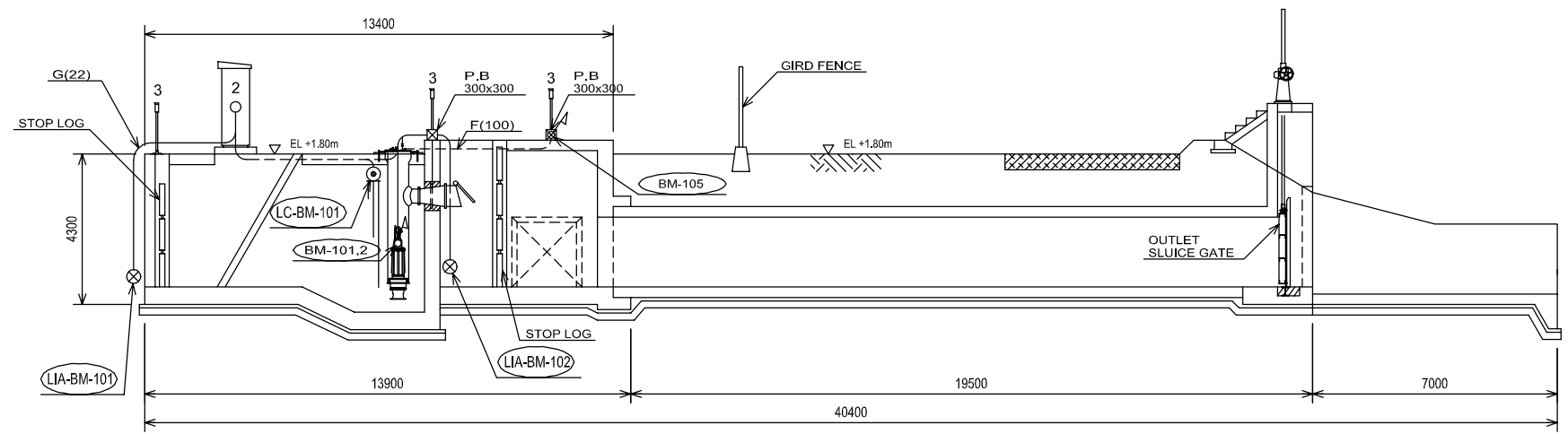


MOTOR LIST

| MOTOR No. | NAME OF EQUIPMENT |
|-----------|-------------------|
| BM101 | No.1 MAIN PUMP |
| BM102 | No.2 MAIN PUMP |
| BM104 | BY-PASS GATE |
| BM105 | No.2 SLUICE GATE |

LEGEND

| No. | EQUIPMENT NAME & SIZE | WEIGHT(kg) |
|-----|--|------------|
| 1 | DISTRIBUTION PANEL W800xD800xH2450 | 300 |
| 2 | PUMP & GATE LOCAL PANEL W1600xD800xH2450 | 600 |
| 3 | LOCAL CONTROL SWITCH BOX | |
| 4 | O/M OFFICE DISTRIBUTION BOARD (ARCHITECTURE WORK) | |
| 5 | PUMPING STATION GUARD HOUSE DISTRIBUTION BOARD (ARCHITECTURE WORK) | |



SECTION A-A

INSTRUMENTATION LIST

| ITEM No. | NAME OF ITEM |
|------------|---|
| LIA-BM-101 | LEVEL METER FOR BY-PASS GATE |
| LIA-BM-102 | LEVEL METER FOR No.2 SLUICE GATE (INSIDE) |
| LC-BM-101 | LEVEL SWITCH FOR No.1 MAIN PUMP |
| LC-BM-102 | LEVEL SWITCH FOR No.2 MAIN PUMP |

| NO. | DATE | DESCRIPTIONS | BY | APPRO. |
|-----|------|--------------|----|--------|
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REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

**WIRING AND PIPING PLAN
FOR PUMPING STATION**

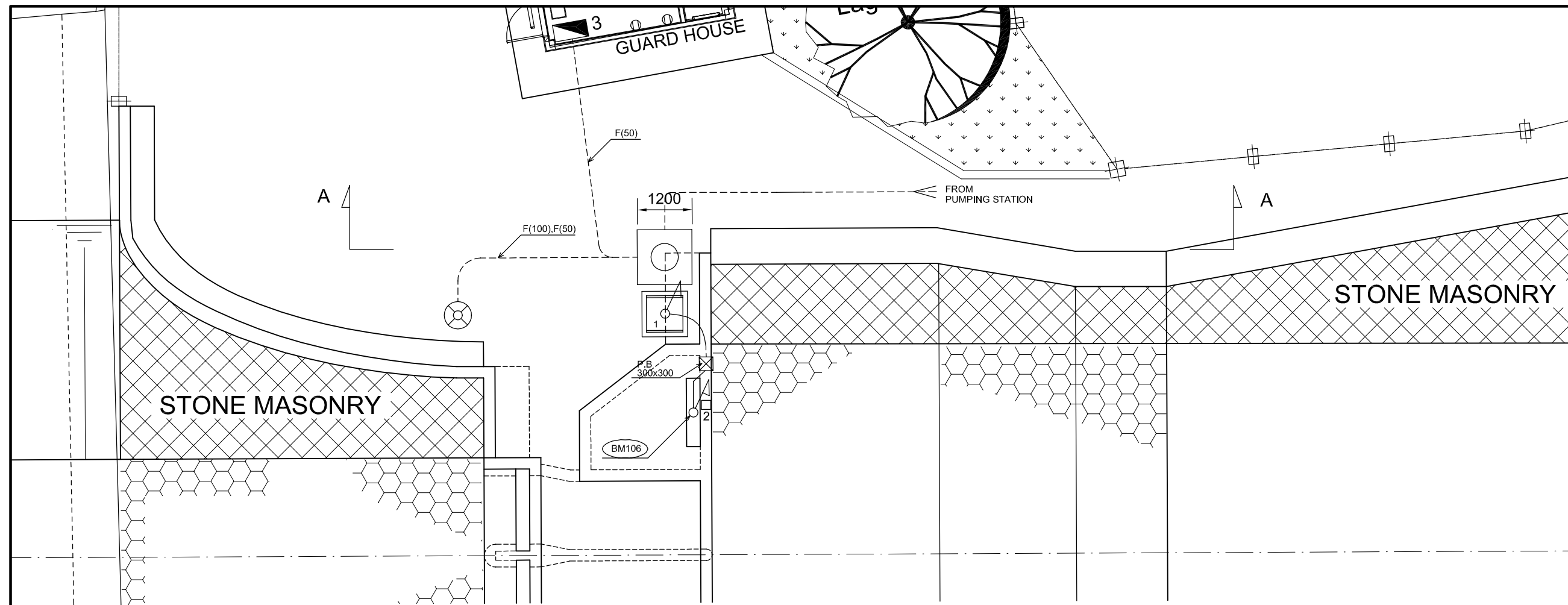
SCALE : 1/100

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

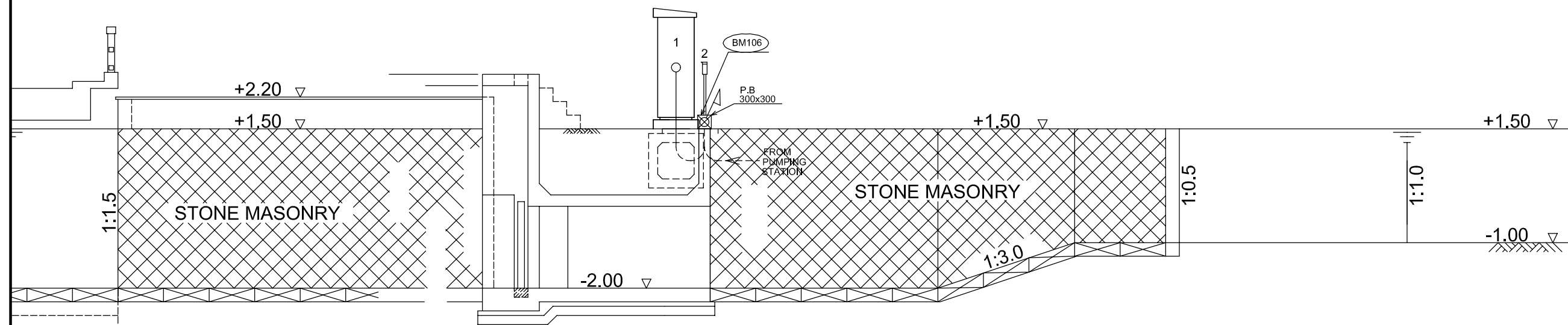
PACIFIC CONSULTANTS INTERNATIONAL

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|--------------------------|-------------------------|
| DESIGNED KOMIYA NOBUO | CHECKED KONDO MASAMI |
|--------------------------|-------------------------|

DATE : JUNE 2001 DWG. No. PB -PDI -BMC1 - 508



PLAN



SECTION A-A

LEGEND:

| No. | EQUIPMENT NAME & SIZE | WEIGHT(kg) |
|-----|---|------------|
| 1 | GATE LOCAL PANEL W800xD800xH2450 | 300 |
| 2 | LOCAL CONTROL SWITCH BOX | |
| 3 | CONTROL GATE GUARD HOUSE DISTRIBUTION BOARD (ARCHITECTURE WORK) | |

MOTOR LIST

| MOTOR No. | NAME OF EQUIPMENT |
|-----------|-------------------|
| BM106 | No.1 SLUICE GATE |

| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
| | | | | |

REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

WIRING AND PIPING PLAN
FOR CONTROL GATE

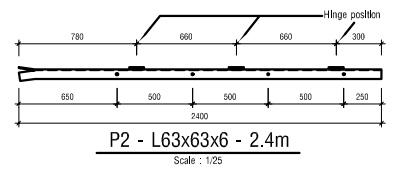
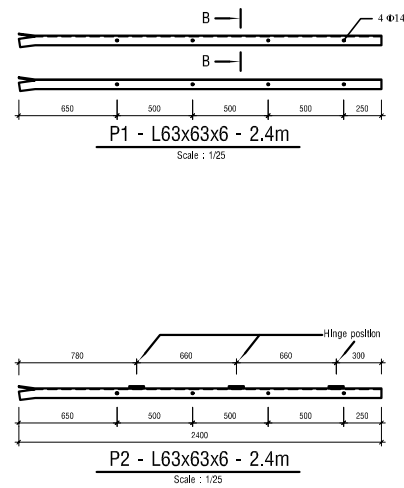
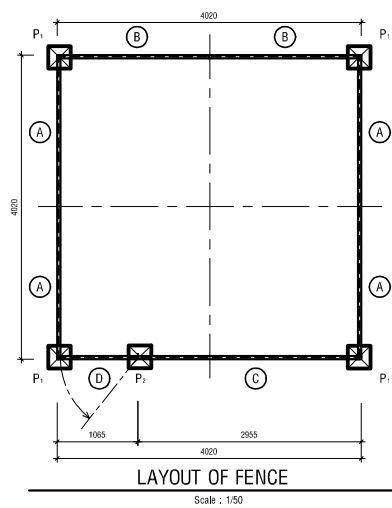
SCALE : 1:50

JICA JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

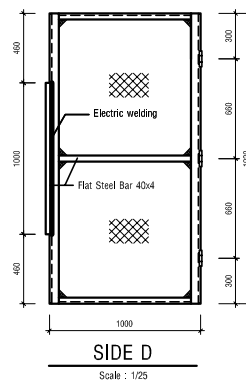
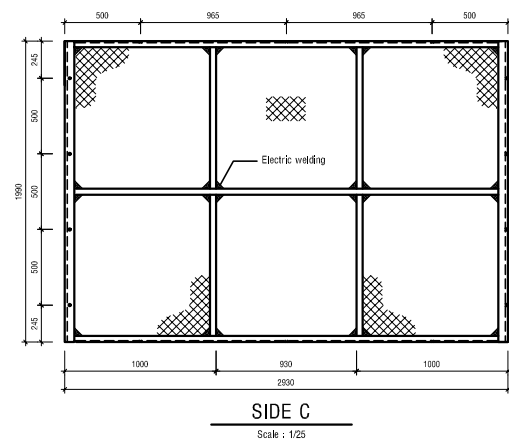
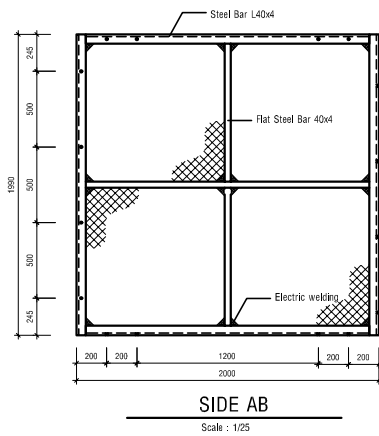
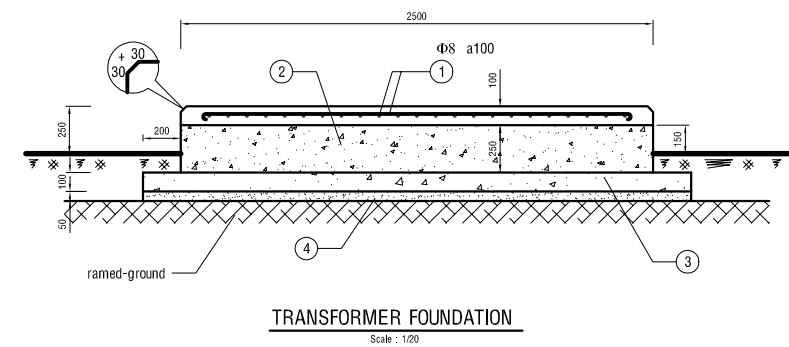
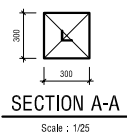
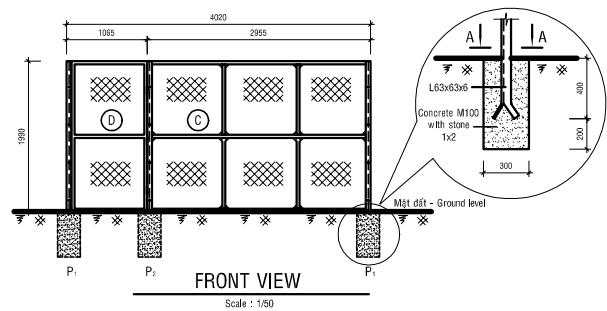
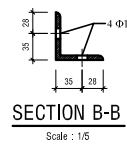
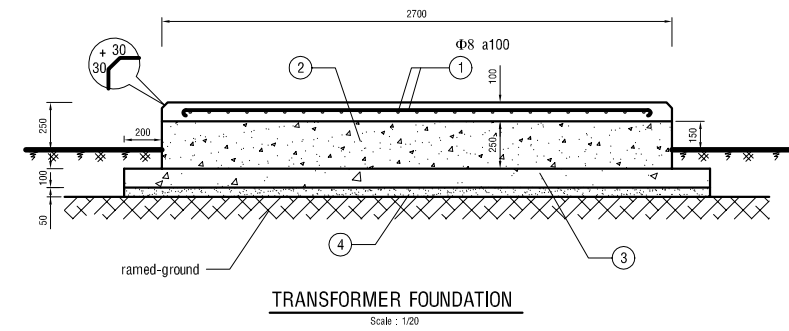
PACIFIC CONSULTANTS INTERNATIONAL

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|--------------------------|-------------------------|
| DESIGNED KOMIYA NOBUO | CHECKED KONDO MASAMI |
|--------------------------|-------------------------|

DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 509



| LIST OF MATERIAL | | | | |
|------------------|--------------------------|----------------|-------|------------|
| No. | ITEM | UNIT | QTY. | WEIGHT, kg |
| 1 | L63x63x6 - 2400 | bar | 5 | 68.75 |
| 2 | L40x40x4 - 2000 | bar | 12 | 58.08 |
| 3 | L40x40x4 - 1990 | bar | 14 | 67.42 |
| 4 | L40x40x4 - 1920 | bar | 2 | 9.29 |
| 5 | L40x40x4 - 2930 | bar | 2 | 14.18 |
| 6 | Flat steel 40x4 - 1000 | bar | 2 | 2.51 |
| 7 | Flat steel 40x4 - 1990 | bar | 8 | 20.00 |
| 8 | Flat steel 40x4 - 2000 | bar | 6 | 15.07 |
| 9 | Flat steel 40x4 - 2930 | bar | 1 | 3.68 |
| 10 | Hinge | pcs | 3 | |
| 11 | Bolt Φ12 - 40 | pcs | 104 | |
| 12 | Concrete with stone M100 | m ³ | 0.27 | |
| 13 | Steel grid of B40 | m ² | 31.83 | |



| MATERIAL LIST | | | |
|---------------|------------------------------|----------------|------|
| No. | Item | Unit | QTY |
| 1 | STEEL BAR Φ 8 | m | 130 |
| 2 | CONCRETE WITH STONE 1x2 M200 | m ³ | 2.36 |
| 3 | CONCRETE WITH STONE 4x6 M100 | m ³ | 0.68 |
| 4 | SAND | m ³ | 0.34 |

| NO. | DATE | DESCRIPTIONS | BY | APPRO. |
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REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B
PUMP DRAINAGE IMPROVEMENT
BEN ME COC 1 PUMPING STATION

FENCE AND FOUNDATION
OF SUBSTATION

SCALE : 1/(5; 20; 25; 50)

JICA JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED
KOMIYA NOBUO

CHECKED
KONDO MASAMI

DATE : JUNE 2001 DWG. No. PB - PDI - BMC1 - 510