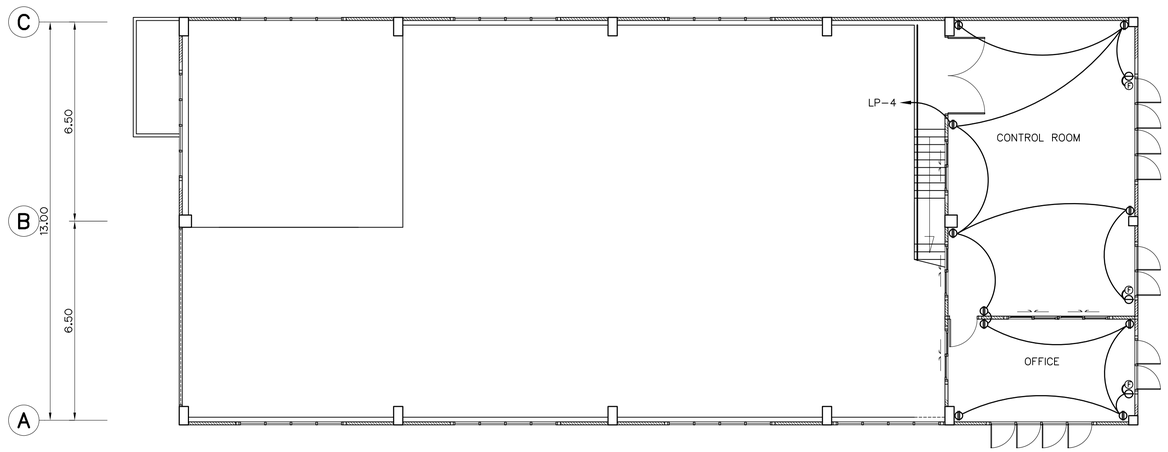


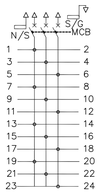

PLAN 2nd FLOOR

SCALE 1:100

## LOAD SCHEDULE OF PANEL BOARD 3Ph 400V 50Hz

PANEL NO.LP — LOCATION : POWERHOUSE

| CCT No. | DESCRIPTION | LOAD IN VA R | LOAD IN VA S | LOAD IN VA T | CIRCUIT BREAKER P | CIRCUIT BREAKER AT | CIRCUIT BREAKER AF | CIRCUIT BREAKER kA. |
|---|---|---|---|---|---|---|---|---|
| LP-1 | MACHINE HALL LIGHTING 1 (250W HIGHBAY LUMINAIRE) | 600 | | | 1 | 10 | 60 | 10 |
| LP-3 | MACHINE HALL LIGHTING 2 (250W HIGHBAY LUMINAIRE) | | 600 | | 1 | 10 | 60 | 10 |
| LP-5 | MACHINE HALL LIGHTING 3 (250W HIGHBAY LUMINAIRE) | | | 600 | 1 | 10 | 60 | 10 |
| LP-7 | MACHINE HALL POWER RECEPTACLE 1 | 2,309 | | | | | | |
| LP-9 | | | 2,309 | | 3 | 16 | 60 | 10 |
| LP-11 | | | | 2,309 | | | | |
| LP-13 | THE FIRST FLOOR RECEPTACLE | 3,800 | | | 1 | 25 | 60 | 10 |
| LP-15 | THE FIRST FLOOR LIGHTING | | 1,410 | | 1 | 10 | 60 | 10 |
| LP-17 | THE SECOND FLOOR LIGHTING | | | 1,120 | 1 | 10 | 60 | 10 |
| LP-19 | CONTROL ROOM AIR CONDITION NO.2 36,000 BTU/HR | 4,250 | | | 1 | 25 | 60 | 10 |
| LP-21 | THE SECOND FLOOR EMERGENCY LIGHTING | | 800 | | 1 | 10 | 60 | 10 |
| LP-23 | SERVICE BAY LIGHTING (150W HIGHBAY LUMINAIRE) | | | 400 | 1 | 10 | 60 | 10 |
| LP-2 | MACHINE HALL EMERGENCY LIGHTING | 1,200 | | | 1 | 10 | 60 | 10 |
| LP-4 | THE SECOND FLOOR RECEPTACLE | | 2,800 | | 1 | 16 | 60 | 10 |
| LP-6 | CONTROL ROOM AIR CONDITION NO.1 36,000 BTU/HR | | | 4,250 | 1 | 25 | 60 | 10 |
| LP-8 | MACHINE HALL POWER RECEPTACLE 2 | 2,309 | | | | | | |
| LP-10 | | | 2,309 | | 3 | 16 | 60 | 10 |
| LP-12 | | | | 2,309 | | | | |
| LP-14 | OUTDOOR LIGHTING | 400 | | | 1 | 10 | 60 | 10 |
| LP-16 | OFFICE ROOM AIR CONDITION 24,000 BTU/HR | | 2,295 | | 1 | 16 | 60 | 10 |
| LP-18 | THE FIRST FLOOR EMERGENCY LIGHTING | | | 1,200 | 1 | 10 | 60 | 10 |
| LP-20 | MACHINE HALL RECEPTACLE | 1,200 | | | 1 | 10 | 60 | 10 |
| LP-22 | SPARE | | 4,600 | | 1 | 25 | 60 | 10 |
| LP-24 | SPARE | | | 4,600 | 1 | 25 | 60 | 10 |
| | TOTAL LOAD IN VA | 16,668 | 16,443 | 16,868 | 3 | 100 | 250 | 25 |
| | | | 49,979 | | | | | |




## LEGENDS :

- 2x36 W. FLUORESCENT LAMP (HANGING OR CEILING TYPE) WITH BALLAST LOW LOSS, CAPACITOR AND STARTOR AT SWITCH "a"
- 2x36 W. FLUORESCENT LAMP (CORROSION PROOF) WITH BALLAST LOW LOSS, CAPACITOR AND STARTOR
- 1x36 W. FLUORESCENT LAMP (HANGING CEILING TYPE) WITH BALLAST LOW LOSS, CAPACITOR AND STARTOR, AT SWITCH "a"
- 1x20 W. COMPACT FLUORESCENT (WALL TYPE, OUTDOOR IP54)
- 3S a-c — SWITCH "3" SETS FOR SWITCH "a" TO "c"
- S" — TWO-WAYS SWITCH
- SIMPLEX RECEPTACLE WITH GROUND, 10 A. 220 VAC.
- 20 W. COMPACT FLUORESCENT
- (F) EXHAUST FAN 12"
- OUTDOOR BOLLARD TYPE WITH 20 W. COMPACT FLUORESCENT
- DUPLEX RECEPTACLE WITH GROUND, 10 A. 220 VAC.
- POWER RECEPCTACLE 3P+N+E 32 A. 400 VAC.
- HIGH BAY FIXTURE 1x400 W. HIGH PRESSURE SODIUM
- HIGH BAY FIXTURE 1x250 W. HIGH PRESSURE SODIUM
- EMERGENCY LIGHTING 2x55 W. HALOGEN W/SEALED LEAD ACID BATTERY BACKUP 2 HOURS
- A/C — AIR CONDITIONING, SPLIT TYPE
- LP — LOAD PANEL 3 PHASE (18 CIRCUITS) WITH MAIN CIRCUIT BREAKER
- LCP1 — LIGHTING CONTROL PANEL
- SECONDARY LINES, 380/220 V 50 MM THW OVERHEAD INSULATED CABLES, 3Ø 4 WIRE
- UNDERGROUND WIRING IN CONDUIT

SCALE 1:100 — 0 1 2 4 6 8 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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| | CONSULTANTS | | DEDE | |

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

POWERHOUSE

ELECTRIC AND LIGHTING SYSTEMS (SHEET 4/4)

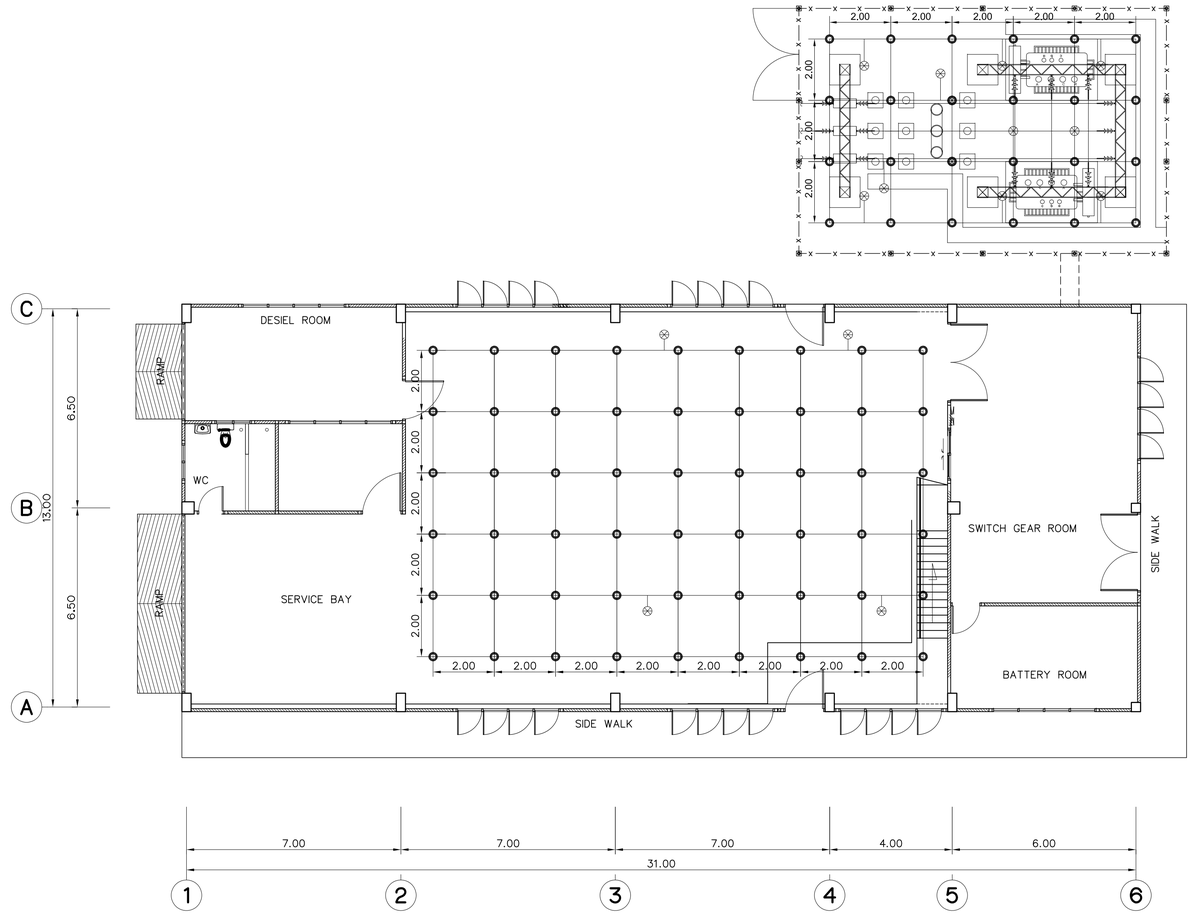
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| DESIGNED | ชัชวาล | REVIEWED | |
| DRAWN | | SUBMITTED | |
| CHECKED | ชัชวาล | RECOMMENDED | |
| PROJECT MANAGER | 03/03/2559 DATE | APPROVED | P. Hemwall |

DRAWING NO. MH-PH-24

SHEET NO. 107 OF 130




## PLAN 1st FLOOR

SCALE 1:100

## LEGENDS :

- GROUND ROD
- GROUND POINT FOR POWER PLANT EQUIPMENT GROUNDING
- BARE CUPPER CONDUCTOR

## NOTE

1. GROUNDING SYSTEM DONE BY CONTRACTOR C2
2. GROUNDING CONDUCTOR, TAP AND RISER FROM GROUNDING NETWORK TO POWER EQUIPMENT SHALL BE FORMED BY BARE COPPER CONDUCTOR NOT LESS THAN 95 SQ.MM.
3. GROUNDING SYSTEM RESISTANCE WILL NOT EXCEED 5 OHM.
4. CONNECTOR TO WITH IN & BETWEEN THE GROUNDING NETWORK TO POWER PLANT EQUIPMENT WILL BE MADE BY THERMAL CADWELD
5. GROUND ROD WILL BE COPPER COVER STEEL DIAMETER 15.87 MM. 2,400 MM. LONG
6. THIS DRAWING USE FOR GUIDE ONLY

0 1 2 4 6 8

SCALE 1:100 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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| | CONSULTANTS | | DEDE | |

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Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

POWERHOUSE

GROUNDING SYSTEMS

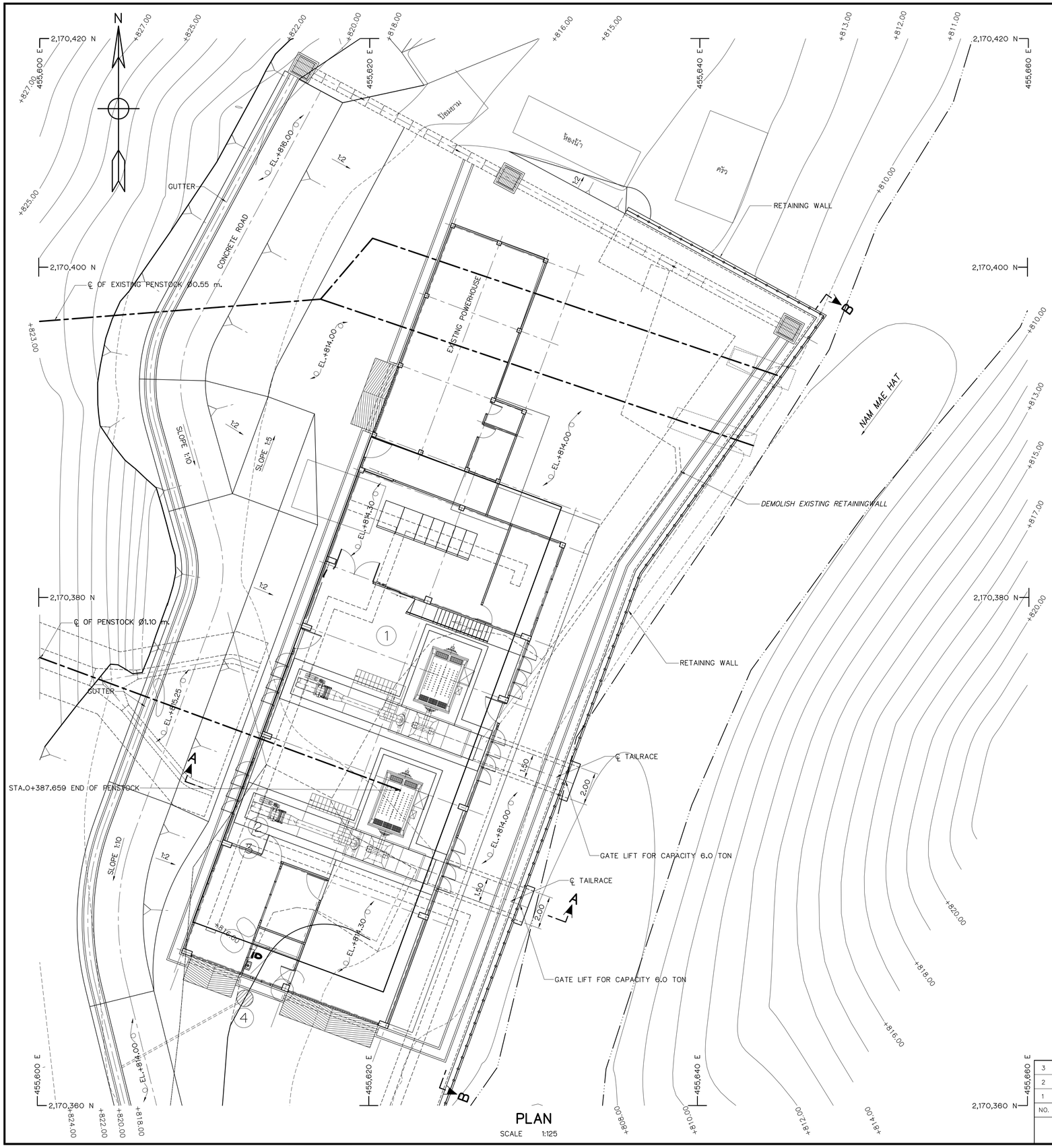
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| DRAWN | | SUBMITTED | |
| CHECKED | วิทวัฒน์ | RECOMMENDED | |
| PROJECT MANAGER | 08/03/2559 DATE | APPROVED | |

DRAWING NO. MH-PH-25

SHEET NO. 108 OF 130




PLAN

SCALE 1:125

## LISTS :

1. POWERHOUSE
2. GATE VALVE Ø3/4"
3. PRESSURE REDUCING VALVE
4. SEPTICK TANK

## NOTES :

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. NMH-GN-03
3. THE CONTRACTOR (C1) HAS TO SUBMIT THE SHOP DRAWINGS OF ALL HOUSING, GUARD HOUSE, ELEVATED TANK FLAG POLE, ENTRANCE GATE WITH, NAME BOARD AND GATE WIDTH 6.00 M. TO FIELD ENGINEER FOR APPROVAL, BEFORE CONSTRUCTION.

## REFERENCE DRAWINGS :

| | | |
|---|---|---|
| 1. | TAILRACE, SECTIONS AND DETAILS | MH-TR-02 |

0 1 2 4 6 8 10

SCALE 1:125 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE
## TAILRACE
## PLAN

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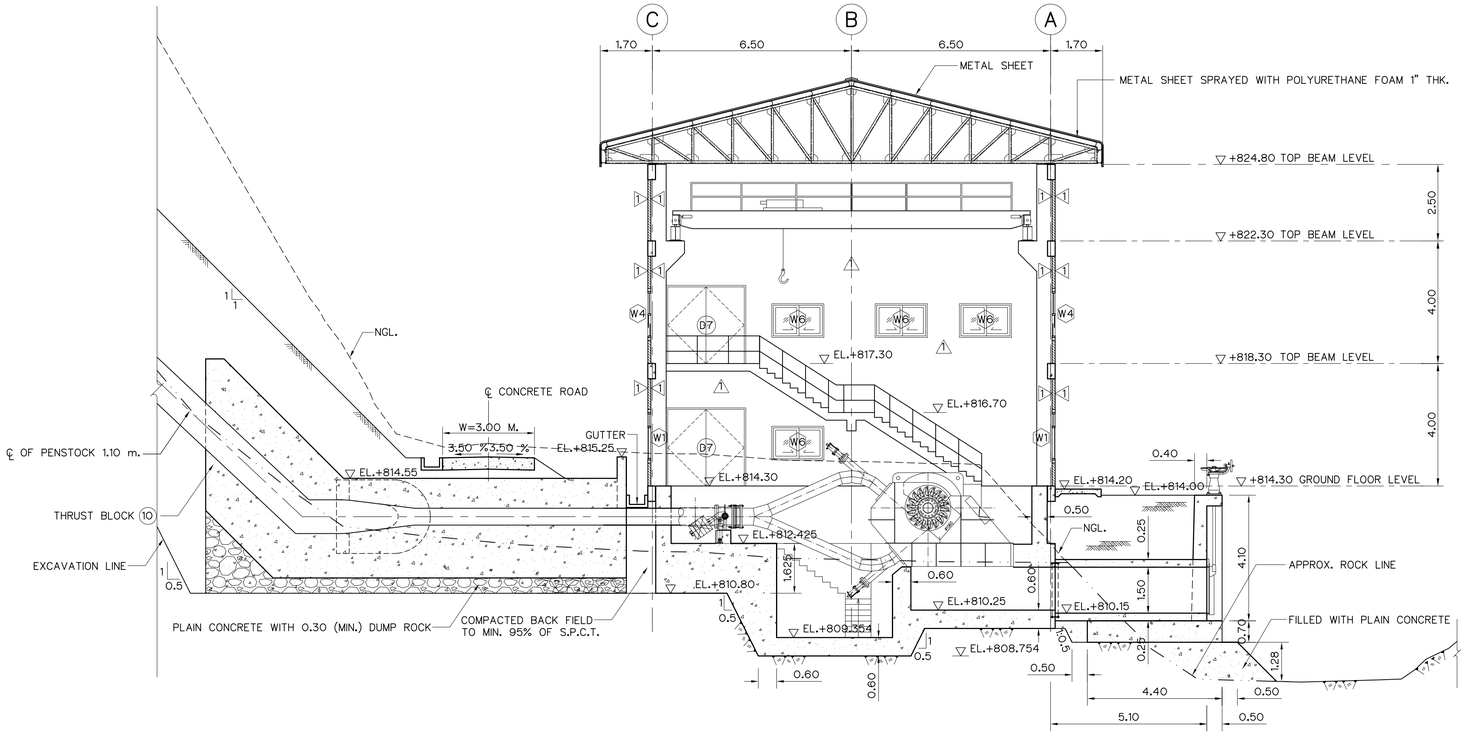
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

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| DESIGNED | วศ.ดิเรก | วศ.จิรวัฒน์ | วศ.ชัยวัฒน์ |
| DRAWN | | | |
| CHECKED | วศ.จิรวัฒน์ | วศ.ชัยวัฒน์ | |
| PROJECT MANAGER | | DATE | 08/03/2559 |

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RECOMMENDED
APPROVED P. Hanwell

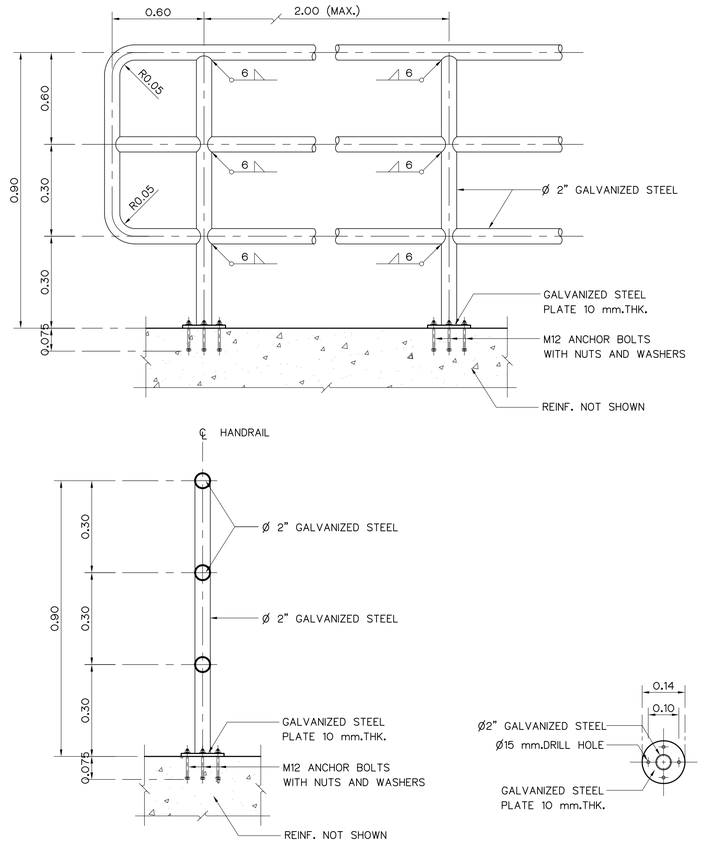
DRAWING NO. MH-TR-01

SHEET NO. 109 OF 130



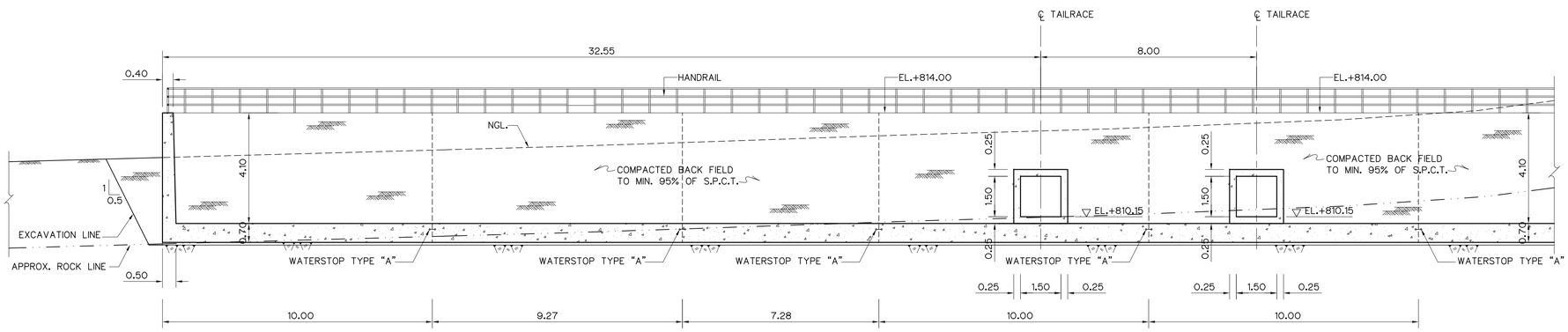

## SECTION A–A

SCALE 1:100




## DETAIL OF HANDRAIL

SCALE 1:20




## SECTION B–B

SCALE 1:100

0 0.5 1 1.5
SCALE 1:20 METERS

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

### NOTES :

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

### REFERENCE DRAWINGS :

| | |
|---|---|
| 1. TAILRACE PLAN | MH–TR–01 |
| 2. TAILRACE REINFORCEMENT DETAILS | MH–TR–03 |
| 3. WEIR 1.50x1.50 m. VERTICAL GATE (GATE INSTALLATION) | MH–WE–06 |
| 4. WEIR PEDESTAL SCREW LIFT CAPACITY 6.5 TONS | MH–WE–09 |
| 4. PENSTOCK THRUST BLOCK PLAN, SECTIONS REINFORCEMENT DETAILS 4/4 | MH–PS–05 |

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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MINISTRY OF ENERGY

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

TAILRACE

SECTIONS AND DETAIL

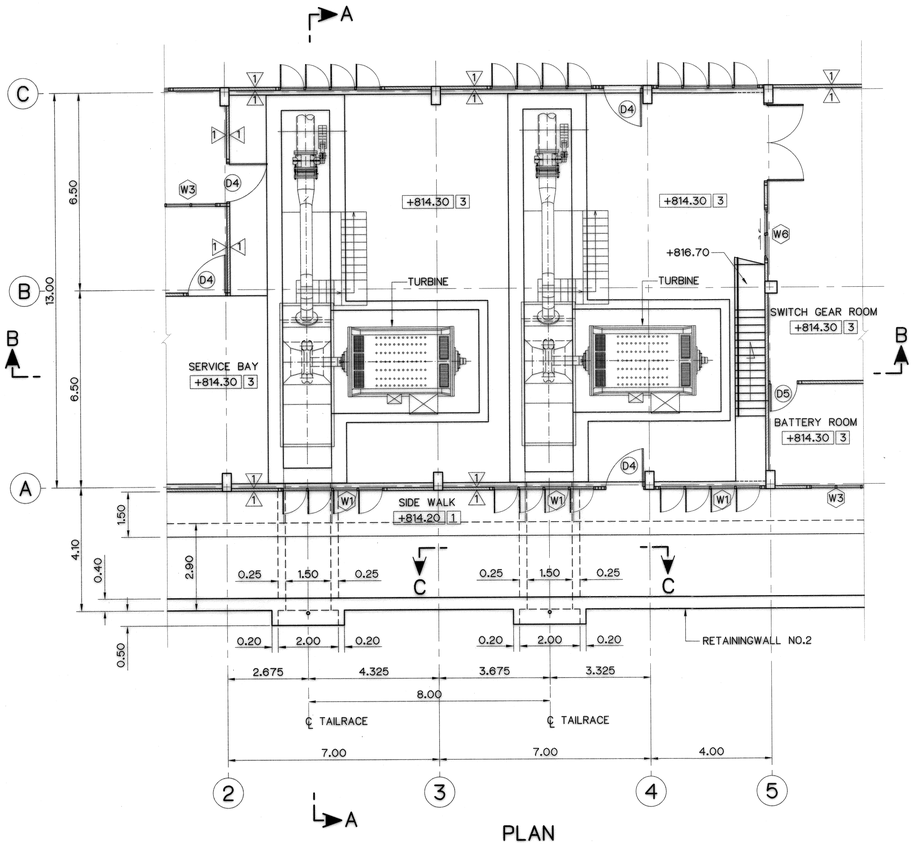
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MINISTRY OF ENERGY

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DRAWN
CHECKED สิน.6226
PROJECT MANAGER 03/03/2559 DATE

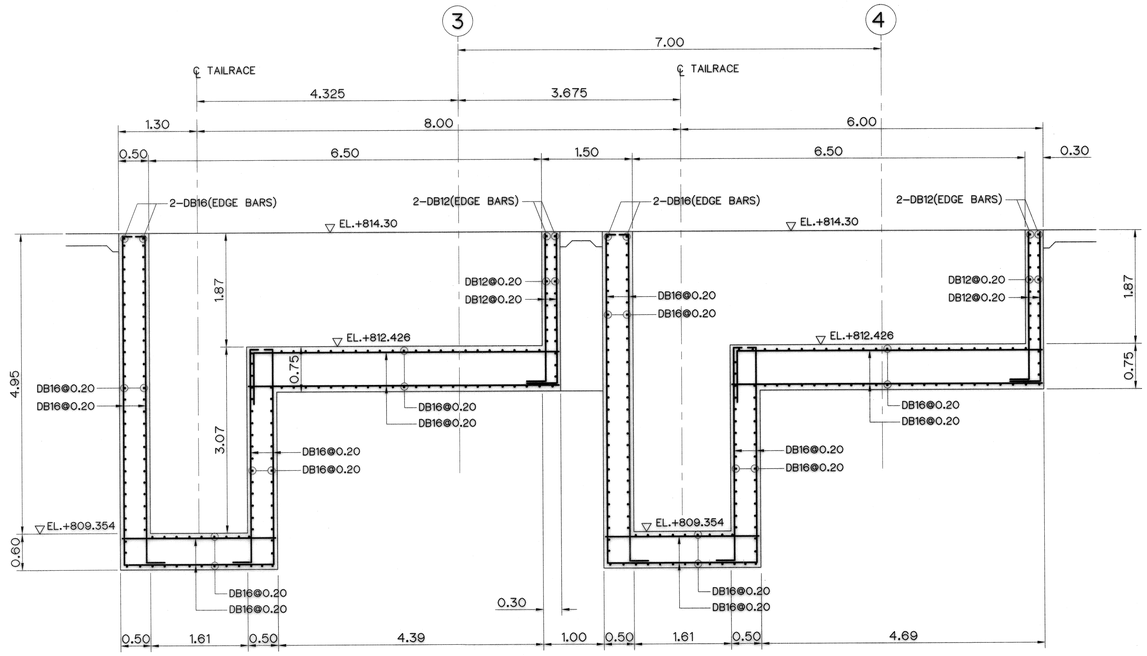
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DRAWING NO. MH–TR–02
SHEET NO. 110 OF 130



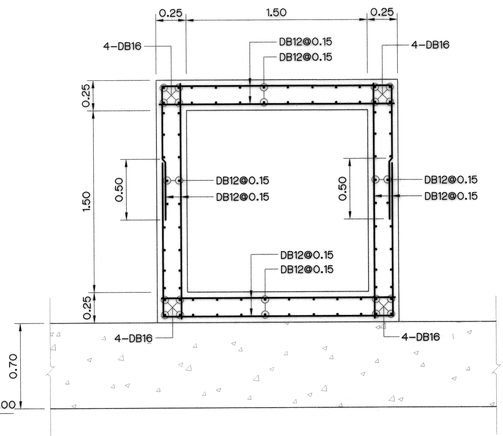

PLAN

SCALE 1:100



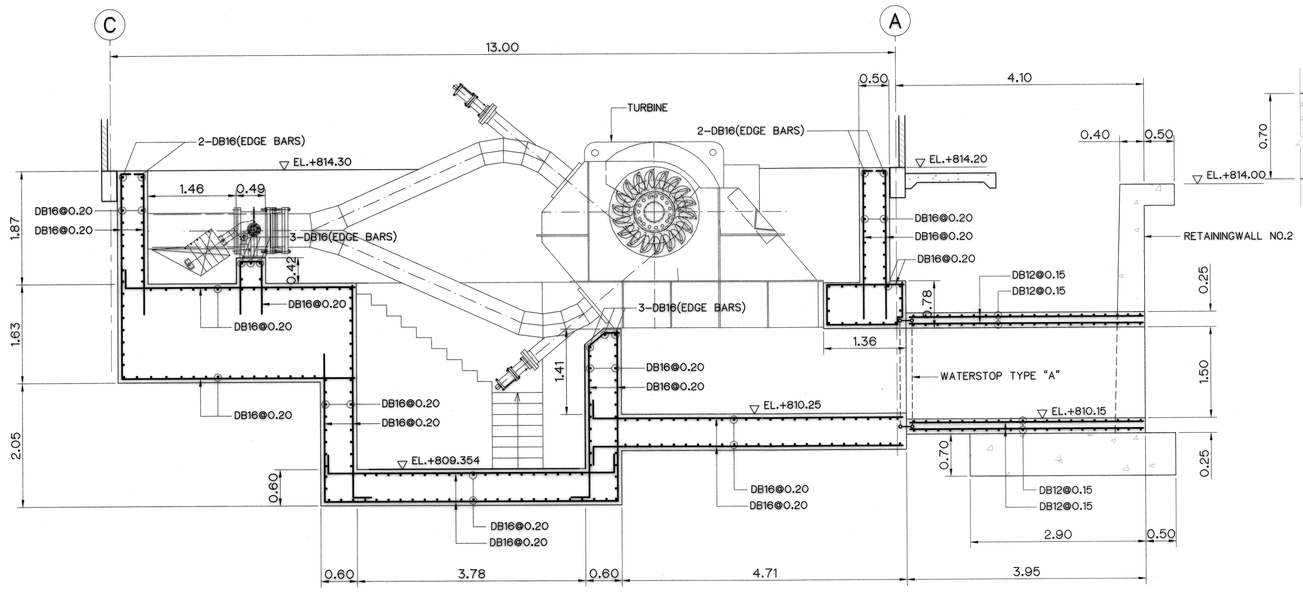

SECTION B–B

SCALE 1:50




SECTION C–C

SCALE 1:25




SECTION A–A

SCALE 1:50

RETAININGWALL NO.2

0 0.5 1 1.5 2

SCALE 1:25 METERS

0 0.5 1 2 3 4

SCALE 1:50 METERS

0 1 2 4 6 8

SCALE 1:100 METERS

## NOTES :

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

## REFERENCE DRAWINGS :

1. TAILRACE PLAN — MH-TR-01

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE
## TAILRACE
## REINFORCEMENT DETAILS

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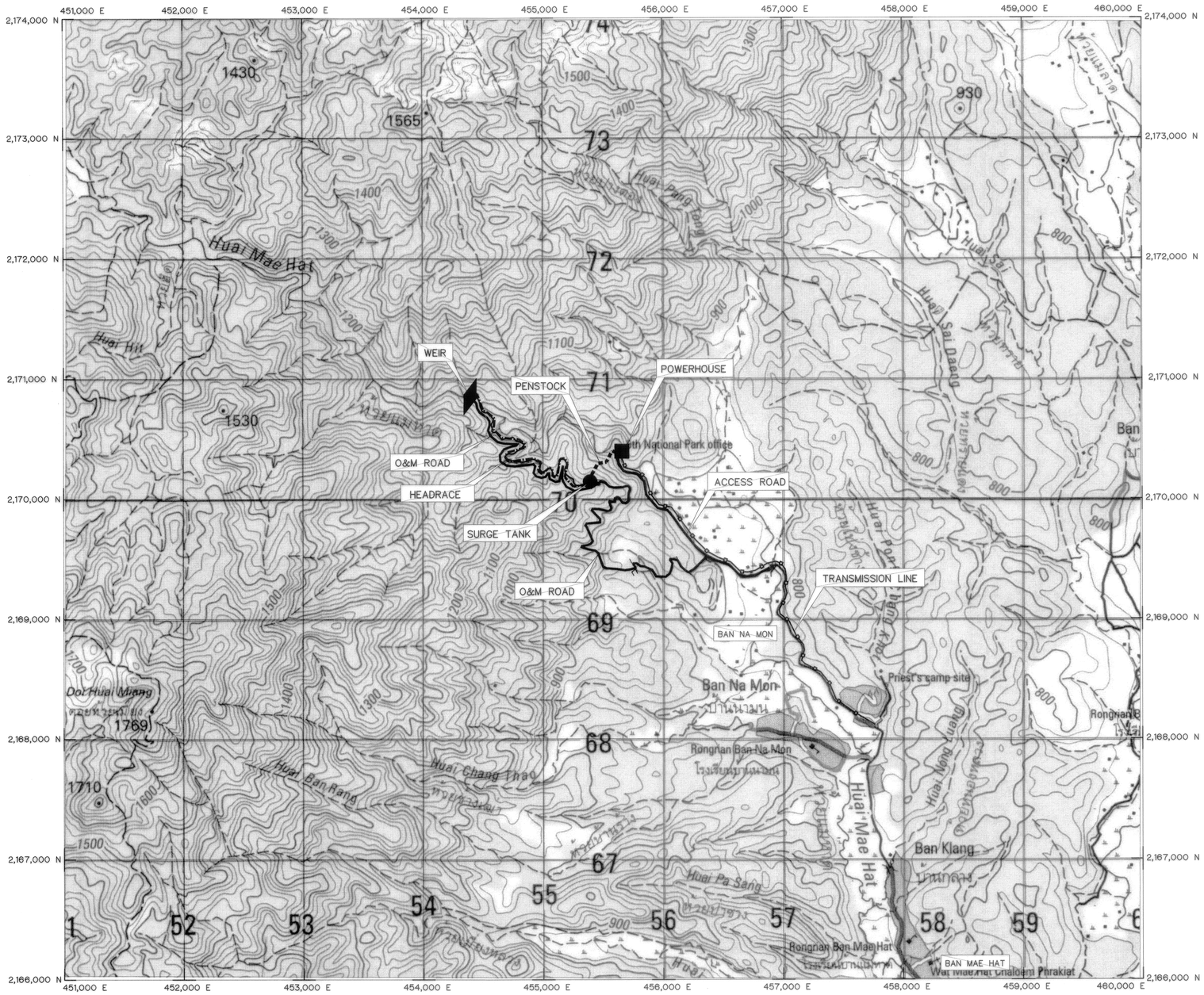
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

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| DESIGNED | วิฑูรย์ | วิฑูรย์ | REVIEWED |
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| | | | APPROVED |

PROJECT MANAGER — DATE 08/08/2557

DRAWING NO. MH-TR-03

SHEET NO. 111 OF 130




PROJECT AREA MAP

SCALE 1:20,000

0 500 1,000 1,500

SCALE 1:20,000 METERS

N

N

**NOTES :**

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN
2. THE POLE OF TRANSMISSION LINE IS PRESTRESSED CONCRETE WITH 12.00 METERS HIGH

**LEGENDS :**

- STREAM
- WEIR
- HEADRACE
- SURGE TANK
- PENSTOCK
- POWERHOUSE
- ACCESS ROAD
- TRANSMISSION LINE

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

MAE HAT HYDROPOWER PROJECT

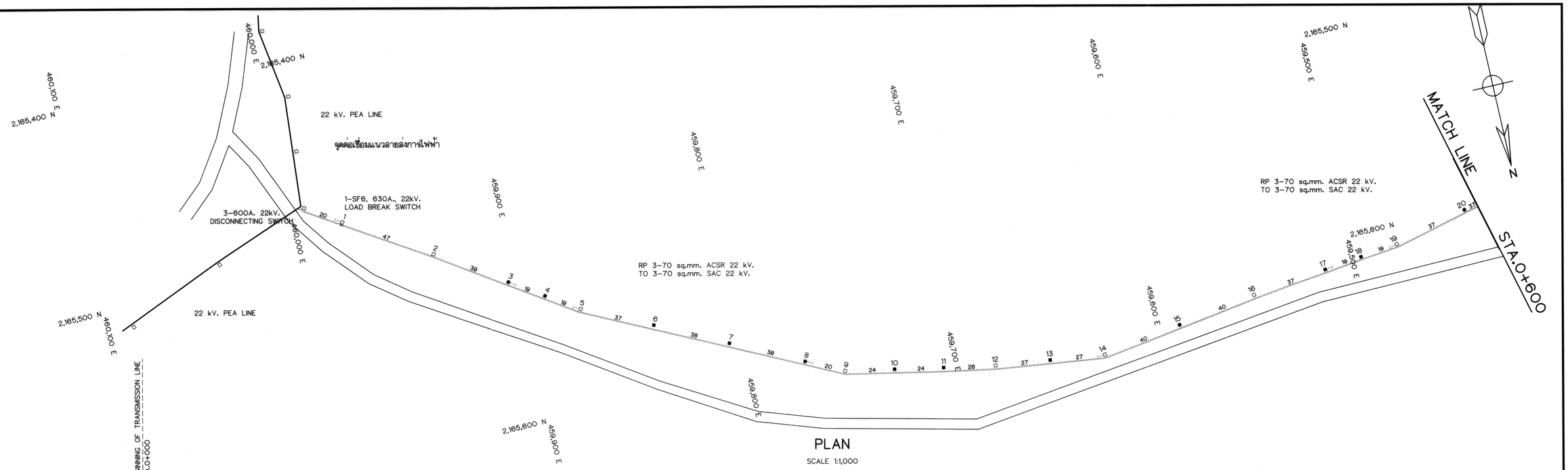
CIVIL WORKS AND TRANSMISSION LINE
TRANSMISSION LINE
GENERAL PLAN

P&C MANAGEMENT CO.,LTD.

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PROJECT MANAGER 01/03/2565 DATE

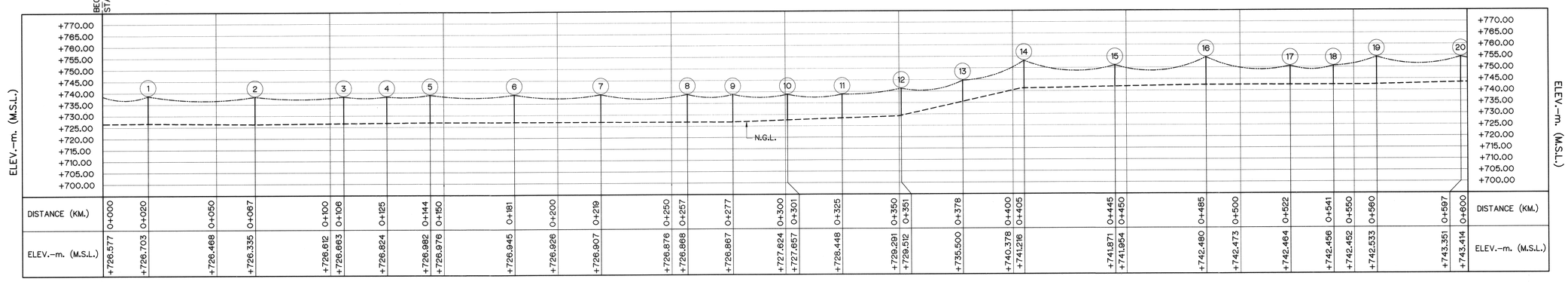
Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED

DRAWING NO. MH-TS-01
SHEET NO. 112 OF 130




## PLAN

SCALE 1:1,000




## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| EXISTING POLE | 0 | 0 | | | | 1 | | | | | | | |
| 1 | 20 | 20 | | | | | 1 | | | | 1 | | |
| 2 | 47 | 67 | 1 | | | | | | | | | | |
| 3 | 39 | 106 | | | 1 | | | | | | 1 | | |
| 4 | 19 | 125 | | 1 | | | | 1 | | | | | |
| 5 | 19 | 144 | | | 1 | | | | | | 1 | | |
| 6 | 37 | 181 | 1 | | | | | | | | | | |
| 7 | 38 | 219 | 1 | | | | | | | | | | |
| 8 | 38 | 257 | | | 1 | | | | | | 1 | | |
| 9 | 20 | 277 | | 1 | | | | | | | | | |
| 10 | 24 | 301 | | 1 | | | | | | | | | |
| 11 | 24 | 325 | | 1 | | | | | | | | | |
| 12 | 26 | 351 | | 1 | | | | | | | | | |
| 13 | 27 | 378 | | 1 | | | | | | | | | |
| 14 | 27 | 405 | | | 1 | | | | | | 1 | | |
| 15 | 40 | 445 | 1 | | | | | | | | | | |
| 16 | 40 | 485 | 1 | | | | | | | | | | |
| 17 | 37 | 522 | | | 1 | | | | | | 1 | | |
| 18 | 19 | 541 | | 1 | | | | | | | | | |
| 19 | 19 | 560 | | | 1 | | | | | | 1 | | |
| 20 | 37 | 597 | 1 | | | | | | | | | | |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

## REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 0+600 TO STA. 1+200 | MH-TS-03 |
| 2. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 3. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 4. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 5. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

## NOTES:

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

## LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M — REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

## TRANSMISSION LINE

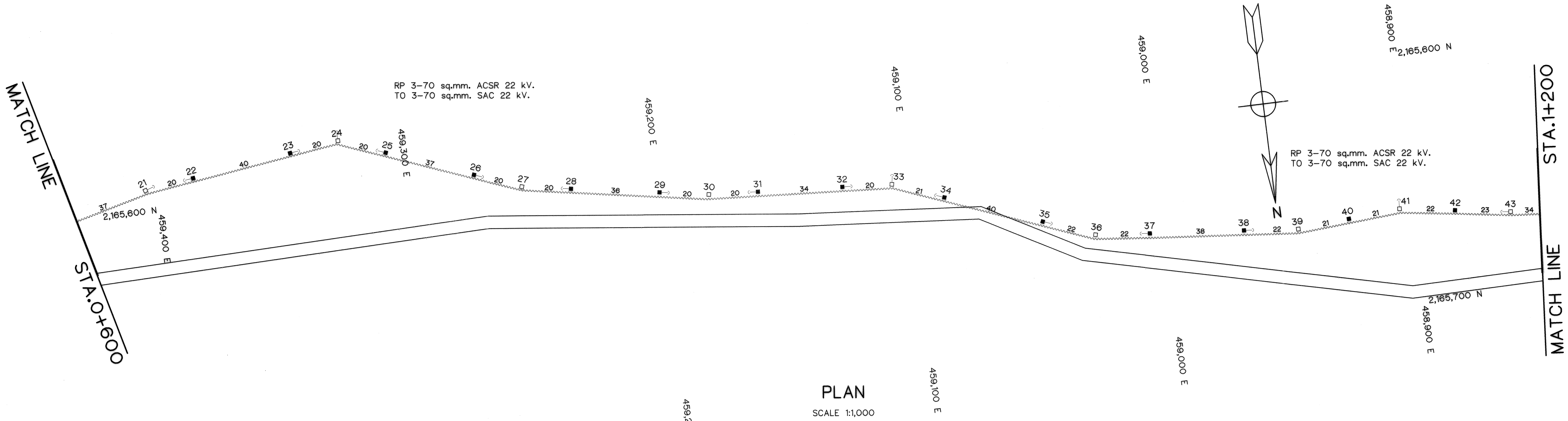
## PLAN AND PROFILE, STA. 0+000 TO 0+600

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MINISTRY OF ENERGY

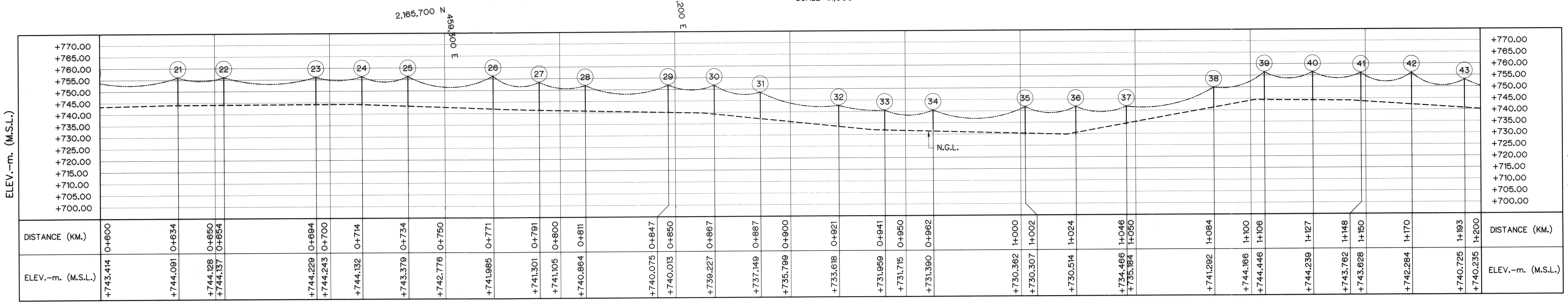
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| DRAWN | | | SUBMITTED |
| CHECKED | วิชิต.6226 | | RECOMMENDED |
| PROJECT MANAGER | | 08/05/2564 DATE | APPROVED |

DRAWING NO. MH-TS-02
SHEET NO. 113 OF 130




PLAN

SCALE 1:1,000




PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

**TRANSMISSION LINE PROPERTIES**

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY POLE TYPE A | B | C | D | E | GUY TYPE G1 | G2 | G3 | G4 | G5 | G6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 37 | 597 | 1 | | | | | | | | | | |
| 21 | 37 | 634 | | | 1 | | | | | | 1 | | |
| 22 | 20 | 654 | | | 1 | | | | | | 1 | | |
| 23 | 40 | 694 | | | 1 | | | | | | 1 | | |
| 24 | 20 | 714 | | 1 | | | | 1 | | | | | |
| 25 | 20 | 734 | | | 1 | | | | | | 1 | | |
| 26 | 37 | 771 | | | 1 | | | | | | 1 | | |
| 27 | 20 | 791 | | 1 | | | | | | | | | |
| 28 | 20 | 811 | | | 1 | | | | | | 1 | | |
| 29 | 36 | 847 | | | 1 | | | | | | 1 | | |
| 30 | 20 | 867 | | 1 | | | | | | | | | |
| 31 | 20 | 887 | | | 1 | | | | | | 1 | | |
| 32 | 34 | 921 | | | 1 | | | | | | 1 | | |
| 33 | 20 | 941 | | 1 | | | | 1 | | | | | |
| 34 | 21 | 962 | | | 1 | | | | | | 1 | | |
| 35 | 40 | 1,002 | | | 1 | | | | | | 1 | | |
| 36 | 22 | 1,024 | | 1 | | | | | | | | | |
| 37 | 22 | 1,046 | | | 1 | | | | | | 1 | | |
| 38 | 38 | 1,084 | | | 1 | | | | | | 1 | | |
| 39 | 22 | 1,106 | | 1 | | | | | | | | | |
| 40 | 21 | 1,127 | | 1 | | | | | | | | | |
| 41 | 21 | 1,148 | | 1 | | | | 1 | | | | | |
| 42 | 22 | 1,170 | | 1 | | | | | | | | | |
| 43 | 23 | 1,193 | | | 1 | | | | | | 1 | | |

**REFERENCE DRAWINGS :-**

| | | |
|---|---|---|
| 1. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 0+000 TO STA. 0+600 | MH-TS-02 |
| 2. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 1+200 TO STA. 1+366 | MH-TS-04 |
| 3. | TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. | TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. | TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. | TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

**NOTES:**

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

**LEGENDS :**

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

CONSULTANTS | DEDE

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
TRANSMISSION LINE
PLAN AND PROFILE, STA. 0+600 TO 1+200

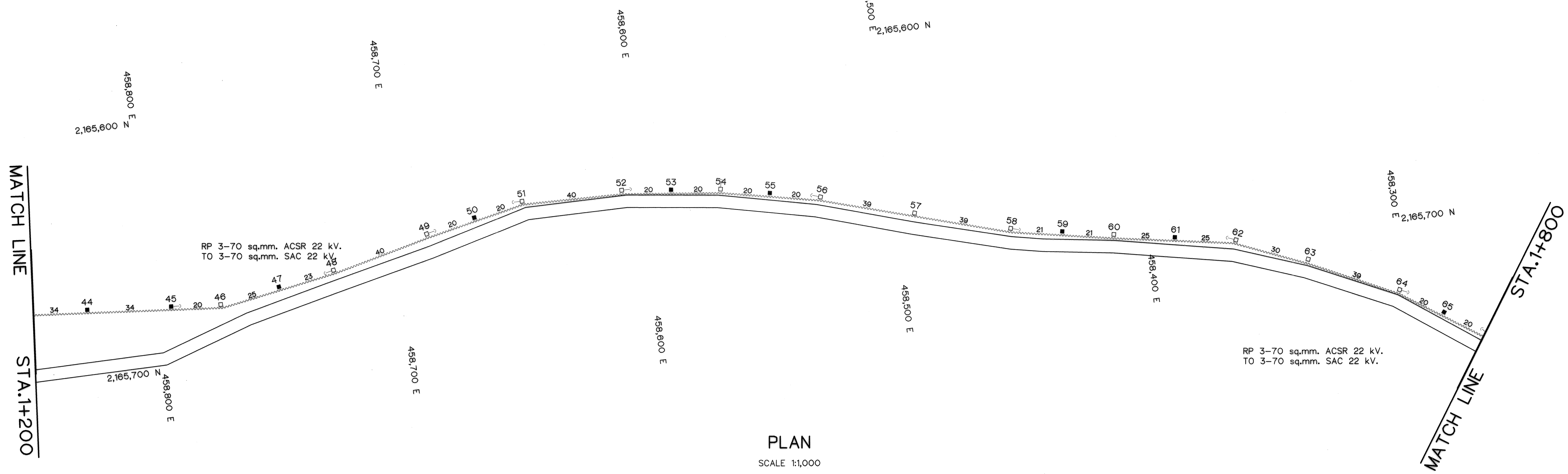
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED ภย.64624 สย.6226
DRAWN
CHECKED สย.6226
PROJECT MANAGER — DATE 08/03/2559

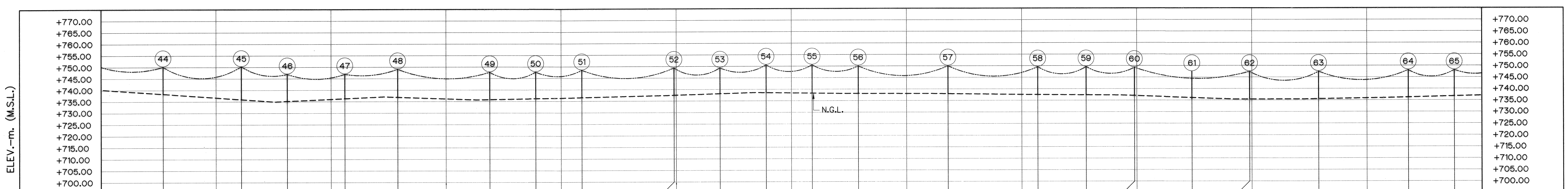
REVIEWED
SUBMITTED Chair
RECOMMENDED
APPROVED P. Hounsell

DRAWING NO. MH-TS-03
SHEET NO. 114 OF 130




## PLAN

SCALE 1:1,000




| DISTANCE (KM.) | ELEV.-m. (M.S.L.) |
|---|---|
| 1+200 | +740.235 |
| 1+227 | +738.343 |
| 1+250 | +736.731 |
| 1+261 | +735.960 |
| 1+281 | +735.175 |
| 1+300 | +736.034 |
| 1+306 | +736.305 |
| 1+329 | +736.878 |
| 1+350 | +736.167 |
| 1+369 | +735.821 |
| 1+389 | +736.184 |
| 1+400 | +736.383 |
| 1+409 | +736.571 |
| 1+449 | +737.524 |
| 1+450 | +737.555 |
| 1+469 | +738.144 |
| 1+489 | +738.545 |
| 1+500 | +738.414 |
| 1+509 | +738.306 |
| 1+529 | +738.111 |
| 1+550 | +738.056 |
| 1+568 | +737.958 |
| 1+600 | +737.573 |
| 1+607 | +737.513 |
| 1+628 | +737.357 |
| 1+649 | +737.033 |
| 1+650 | +736.996 |
| 1+674 | +736.107 |
| 1+699 | +735.430 |
| 1+700 | +735.431 |
| 1+729 | +735.566 |
| 1+750 | +735.902 |
| 1+768 | +736.248 |
| 1+788 | +736.745 |
| 1+800 | +737.039 |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 43 | 23 | 1,193 | | | 1 | | | | | | 1 | | |
| 44 | 34 | 1,227 | 1 | | | | | | | | | | |
| 45 | 34 | 1,261 | | | 1 | | | | | | 1 | | |
| 46 | 20 | 1,281 | | 1 | | | | | | | | | |
| 47 | 25 | 1,306 | | 1 | | | | | | | | | |
| 48 | 23 | 1,329 | | | 1 | | | | | | 1 | | |
| 49 | 40 | 1,369 | | | 1 | | | | | | 1 | | |
| 50 | 20 | 1,389 | | 1 | | | | | | | | | |
| 51 | 20 | 1,409 | | | 1 | | | | | | 1 | | |
| 52 | 40 | 1,449 | | | 1 | | | | | | 1 | | |
| 53 | 20 | 1,469 | | 1 | | | | | | | | | |
| 54 | 20 | 1,489 | | 1 | | | | 1 | | | | | |
| 55 | 20 | 1,509 | | 1 | | | | | | | | | |
| 56 | 20 | 1,529 | | | 1 | | | | | | 1 | | |
| 57 | 39 | 1,568 | 1 | | | | | | | | | | |
| 58 | 39 | 1,607 | | | 1 | | | | | | 1 | | |
| 59 | 21 | 1,628 | | 1 | | | | | | | | | |
| 60 | 21 | 1,649 | | 1 | | | | | | | | | |
| 61 | 25 | 1,674 | | 1 | | | | | | | | | |
| 62 | 25 | 1,699 | | | 1 | | | | | | 1 | | |
| 63 | 30 | 1,729 | 1 | | | | | | | | | | |
| 64 | 39 | 1,768 | | | 1 | | | | | | 1 | | |
| 65 | 20 | 1,788 | | 1 | | | | | | | | | |

### REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 0+600 TO STA. 1+200 | MH-TS-03 |
| 2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 1+800 TO STA. 2+400 | MH-TS-06 |
| 3. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

### NOTES:

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

### LEGENDS :

1. (wavy line) 22 kV. SPACE AERIAL CABLE
2. (dashed line) EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. ■ NEW 12M. CONCRETE POLE
4. □ EXISTING 12M. CONCRETE POLE
5. RM 12M □ REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

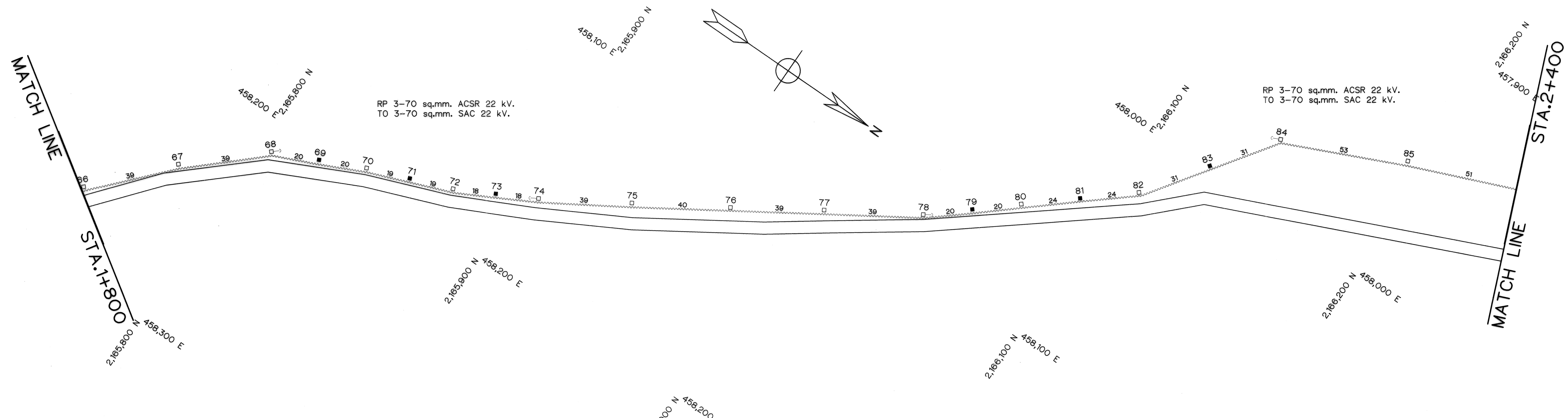
MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
TRANSMISSION LINE
PLAN AND PROFILE, STA. 1+200 TO 1+800

P&C MANAGEMENT CO.,LTD.
DESIGNED ภย.64624 ลย.6226
DRAWN
CHECKED ลย.6226
PROJECT MANAGER DATE 08/03/2559

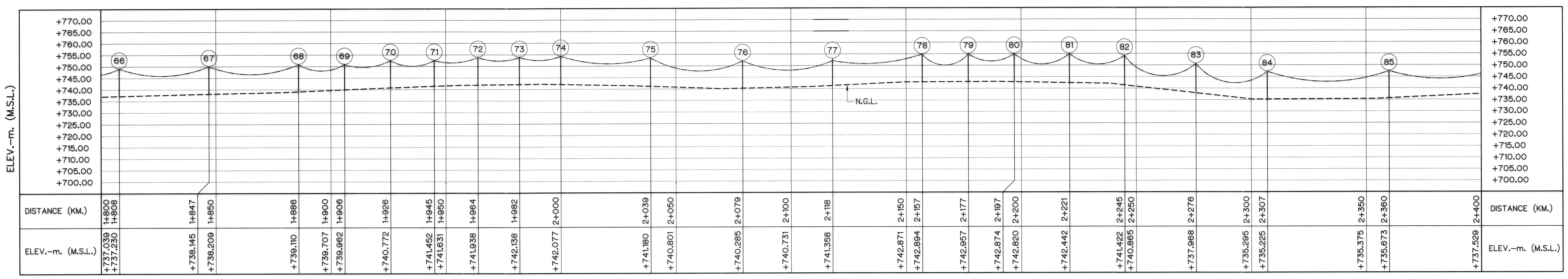
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED

DRAWING NO. MH-TS-04
SHEET NO. 115 OF 130




## PLAN

SCALE 1:1,000




## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 65 | 20 | 1,788 | | 1 | | | | | | | | | |
| 66 | 20 | 1,808 | | | 1 | | | | | | 1 | | |
| 67 | 39 | 1,847 | 1 | | | | | | | | | | |
| 68 | 39 | 1,886 | | | 1 | | | | | | 1 | | |
| 69 | 20 | 1,906 | | 1 | | | | | | | | | |
| 70 | 20 | 1,926 | | 1 | | | | | | | | | |
| 71 | 19 | 1,945 | | 1 | | | | | | | | | |
| 72 | 19 | 1,964 | | 1 | | | | | | | | | |
| 73 | 18 | 1,982 | | 1 | | | | | | | | | |
| 74 | 18 | 2,000 | | | 1 | | | | | | 1 | | |
| 75 | 39 | 2,039 | 1 | | | | | | | | | | |
| 76 | 40 | 2,079 | 1 | | | | | | | | | | |
| 77 | 39 | 2,118 | 1 | | | | | | | | | | |
| 78 | 39 | 2,157 | | | 1 | | | | | | 1 | | |
| 79 | 20 | 2,177 | | 1 | | | | | | | | | |
| 80 | 20 | 2,197 | | 1 | | | | | | | | | |
| 81 | 24 | 2,221 | | 1 | | | | | | | | | |
| 82 | 24 | 2,245 | | 1 | | | | | | | | | |
| 83 | 31 | 2,276 | | 1 | | | | | | | | | |
| 84 | 31 | 2,307 | | | 1 | | | | | | 1 | | |
| 85 | 53 | 2,360 | 1 | | | | | | | | | | |

## REFERENCE DRAWINGS :-

| | | |
|---|---|---|
| 1. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 1+200 TO STA. 1+800 | MH-TS-04 |
| 2. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 2+400 TO STA. 3+000 | MH-TS-06 |
| 3. | TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. | TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. | TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. | TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

## NOTES:

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

## LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. ■ NEW 12M. CONCRETE POLE
4. □ EXISTING 12M. CONCRETE POLE
5. RM 12M □ REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
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| | CONSULTANTS | | DEDE | |

KINGDOM OF THAILAND
Department of Alternative Energy Development and Efficiency
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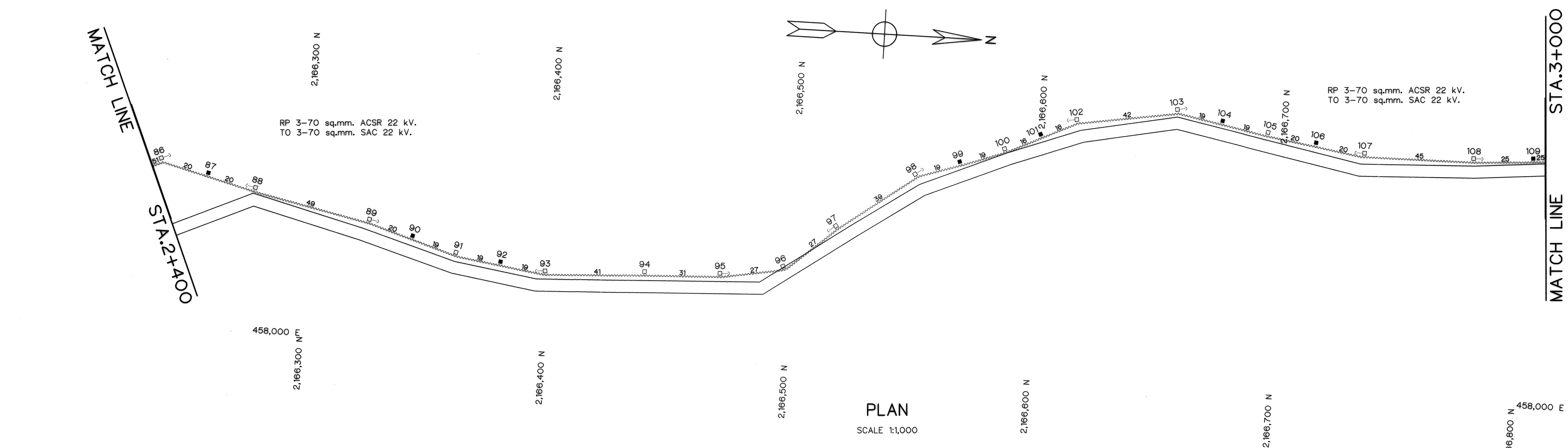
**MAE HAT HYDROPOWER PROJECT**

**CIVIL WORKS AND TRANSMISSION LINE**

**TRANSMISSION LINE**

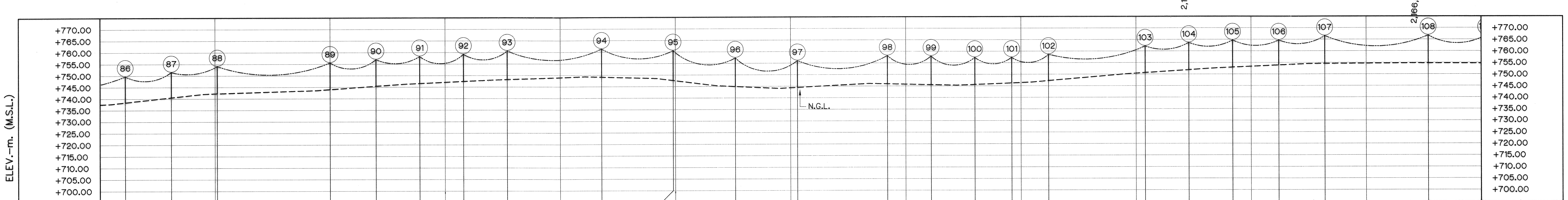
**PLAN AND PROFILE, STA. 1+800 TO 2+400**

| | |
|---|---|
| P&C MANAGEMENT CO.,LTD. | Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY |
| | REVIEWED [signature] |
| DESIGNED [signature] ภย.64624 [signature] สย.6226 | SUBMITTED [signature] |
| DRAWN [signature] | RECOMMENDED [signature] |
| CHECKED [signature] สย.6226 | APPROVED [signature] |
| PROJECT MANAGER [signature] DATE 08/03/2559 | DRAWING NO. MH-TS-05 — SHEET NO. 116 OF 130 |




## PLAN

SCALE 1:1,000




| DISTANCE (KM.) | ELEV.-m. (M.S.L.) |
|---|---|
| 2+400 | +737.529 |
| 2+411 | +738.425 |
| 2+431 | +740.572 |
| 2+450 | +742.252 |
| 2+451 | +742.282 |
| 2+500 | +744.006 |
| 2+520 | +745.435 |
| 2+539 | +746.617 |
| 2+550 | +747.119 |
| 2+558 | +747.483 |
| 2+577 | +748.255 |
| 2+600 | +749.006 |
| 2+618 | +749.169 |
| 2+649 | +747.663 |
| 2+650 | +747.539 |
| 2+676 | +744.961 |
| 2+700 | +744.350 |
| 2+703 | +744.509 |
| 2+742 | +745.989 |
| 2+750 | +745.820 |
| 2+761 | +745.588 |
| 2+780 | +745.653 |
| 2+796 | +746.290 |
| 2+800 | +746.449 |
| 2+812 | +747.274 |
| 2+850 | +750.446 |
| 2+854 | +750.704 |
| 2+873 | +751.930 |
| 2+892 | +753.017 |
| 2+900 | +753.383 |
| 2+912 | +753.931 |
| 2+932 | +754.572 |
| 2+950 | +754.669 |
| 2+977 | +754.756 |
| 3+000 | +754.682 |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

### TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE | ACCUMULATIVE DISTANCE | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | (M.) | (M.) | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 85 | 53 | 2,360 | 1 | | | | | | | | | | |
| 86 | 51 | 2,411 | | | 1 | | | | | | 1 | | |
| 87 | 20 | 2,431 | | 1 | | | | | | | | | |
| 88 | 20 | 2,451 | | | 1 | | | | | | 1 | | |
| 89 | 49 | 2,500 | | 1 | | | | | | | | | |
| 90 | 20 | 2,520 | | 1 | | | | | | | | | |
| 91 | 19 | 2,539 | | 1 | | | | | | | | | |
| 92 | 19 | 2,558 | | 1 | | | | | | | | | |
| 93 | 19 | 2,577 | | | 1 | | | | | | 1 | | |
| 94 | 41 | 2,618 | 1 | | | | | | | | | | |
| 95 | 31 | 2,649 | | | 1 | | | | | | 1 | | |
| 96 | 27 | 2,676 | | 1 | | | | | | | | | |
| 97 | 27 | 2,703 | | | 1 | | | | | | 1 | | |
| 98 | 39 | 2,742 | | | 1 | | | | | | 1 | | |
| 99 | 19 | 2,761 | | 1 | | | | | | | | | |
| 100 | 19 | 2,780 | | 1 | | | | | | | | | |
| 101 | 16 | 2,796 | | | | | | | | | | | |
| 102 | 16 | 2,812 | | | 1 | | | | | | 1 | | |
| 103 | 42 | 2,854 | | | 1 | | | | | | 1 | | |
| 104 | 19 | 2,873 | | 1 | | | | | | | | | |
| 105 | 19 | 2,892 | | 1 | | | | | | | | | |
| 106 | 20 | 2,912 | | 1 | | | | | | | | | |
| 107 | 20 | 2,932 | | | 1 | | | | | | 1 | | |
| 108 | 45 | 2,977 | | | 1 | | | | | | 1 | | |

### REFERENCE DRAWINGS :-

1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 1+800 TO STA. 2+400 — MH-TS-05
2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 3+000 TO STA. 3+600 — MH-TS-07
3. TRANSMISSION LINE, POLE TYPE "A" AND "B" — MH-TS-16
4. TRANSMISSION LINE, POLE TYPE "C" AND "D" — MH-TS-17
5. TRANSMISSION LINE, POLE TYPE "E" — MH-TS-18
6. TRANSMISSION LINE, TYPE OF ANCHOR GUY — MH-TS-19

### NOTES:

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

### LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M — REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

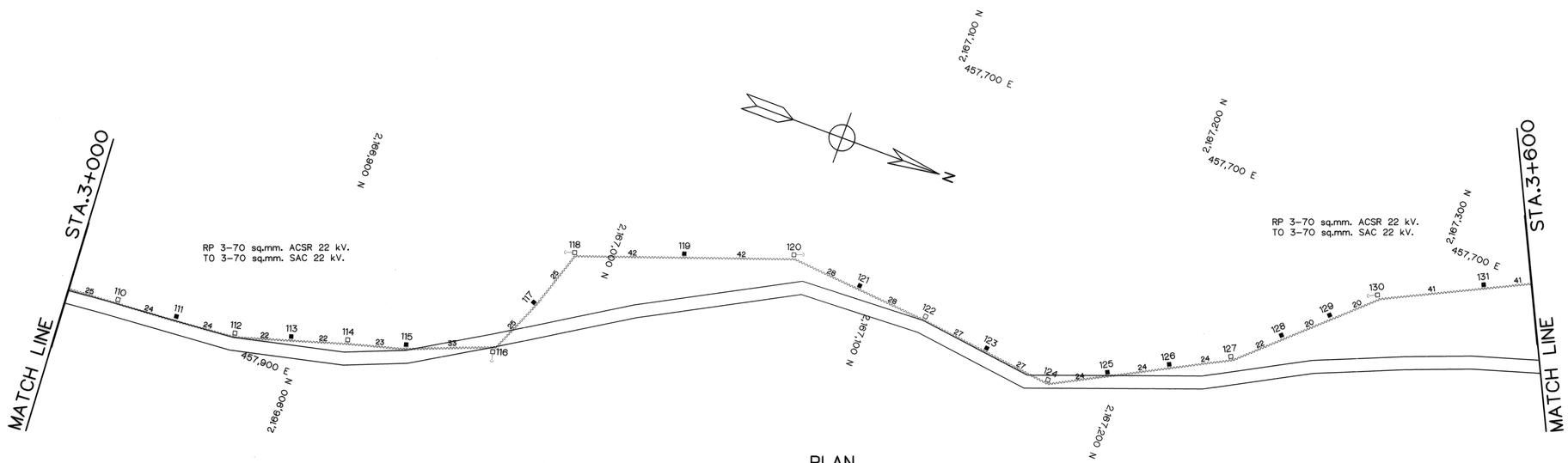
KINGDOM OF THAILAND
Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
TRANSMISSION LINE
PLAN AND PROFILE, STA. 2+400 TO 3+000

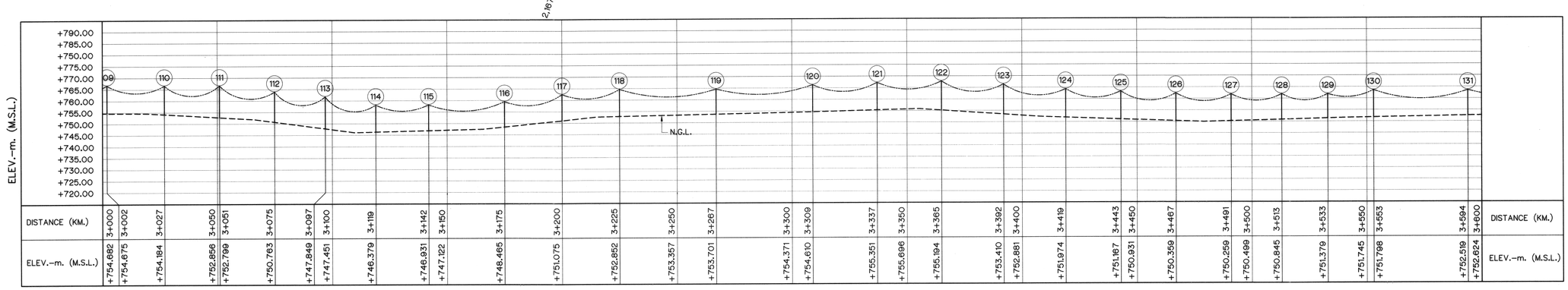
P&C MANAGEMENT CO.,LTD.
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED ภย.64624 สย.6226
DRAWN
CHECKED สย.6226
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED
PROJECT MANAGER
DATE 08/03/2559
DRAWING NO. MH-TS-06
SHEET NO. 117 OF 130




## PLAN

SCALE 1:1,000




| DISTANCE (KM.) | 3+000 | 3+002 | 3+027 | 3+050 | 3+051 | 3+075 | 3+097 | 3+100 | 3+119 | 3+142 | 3+150 | 3+175 | 3+200 | 3+225 | 3+250 | 3+267 | 3+300 | 3+309 | 3+337 | 3+350 | 3+365 | 3+392 | 3+400 | 3+419 | 3+443 | 3+450 | 3+467 | 3+491 | 3+500 | 3+513 | 3+533 | 3+550 | 3+563 | 3+594 | 3+600 | DISTANCE (KM.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ELEV.-m. (M.S.L.) | +754.682 | +754.875 | +754.184 | +752.856 | +752.799 | +750.763 | +747.849 | +747.451 | +746.379 | +746.931 | +747.122 | +748.465 | +751.075 | +752.852 | +753.357 | +753.701 | +754.371 | +754.610 | +755.351 | +755.696 | +755.194 | +753.410 | +752.881 | +751.974 | +751.167 | +750.931 | +750.359 | +750.259 | +750.499 | +750.845 | +751.379 | +751.745 | +751.798 | +752.519 | +752.624 | ELEV.-m. (M.S.L.) |

## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 108 | 45 | 2,977 | | | 1 | | | | | | 1 | | |
| 109 | 25 | 3,002 | | 1 | | | | | | | | | |
| 110 | 25 | 3,027 | | 1 | | | | | | | | | |
| 111 | 24 | 3,051 | | 1 | | | | | | | | | |
| 112 | 24 | 3,075 | | 1 | | | | | | | | | |
| 113 | 22 | 3,097 | | 1 | | | | | | | | | |
| 114 | 22 | 3,119 | | 1 | | | | | | | | | |
| 115 | 23 | 3,142 | | 1 | | | | | | | | | |
| 116 | 33 | 3,175 | | | | 1 | | 1 | | | | | |
| 117 | 25 | 3,200 | | 1 | | | | | | | | | |
| 118 | 25 | 3,225 | | | | 1 | | 1 | | | | | |
| 119 | 42 | 3,267 | 1 | | | | | | | | | | |
| 120 | 42 | 3,309 | | | 1 | | | | | | 1 | | |
| 121 | 28 | 3,337 | | 1 | | | | | | | | | |
| 122 | 28 | 3,365 | | 1 | | | | | | | | | |
| 123 | 27 | 3,392 | | 1 | | | | | | | | | |
| 124 | 27 | 3,419 | | 1 | | | | | | | | | |
| 125 | 24 | 3,443 | | 1 | | | | | | | | | |
| 126 | 24 | 3,467 | | 1 | | | | | | | | | |
| 127 | 24 | 3,491 | | 1 | | | | | | | | | |
| 128 | 22 | 3,513 | | 1 | | | | | | | | | |
| 129 | 20 | 3,533 | | 1 | | | | | | | | | |
| 130 | 20 | 3,553 | | | 1 | | | | | | 1 | | |
| 131 | 41 | 3,594 | 1 | | | | | | | | | | |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

## REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 2+400 TO STA. 3+000 | MH-TS-06 |
| 2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 3+600 TO STA. 4+200 | MH-TS-08 |
| 3. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

## NOTES:

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

## LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

TRANSMISSION LINE

PLAN AND PROFILE, STA. 3+000 TO 3+600

P&C MANAGEMENT CO.,LTD.

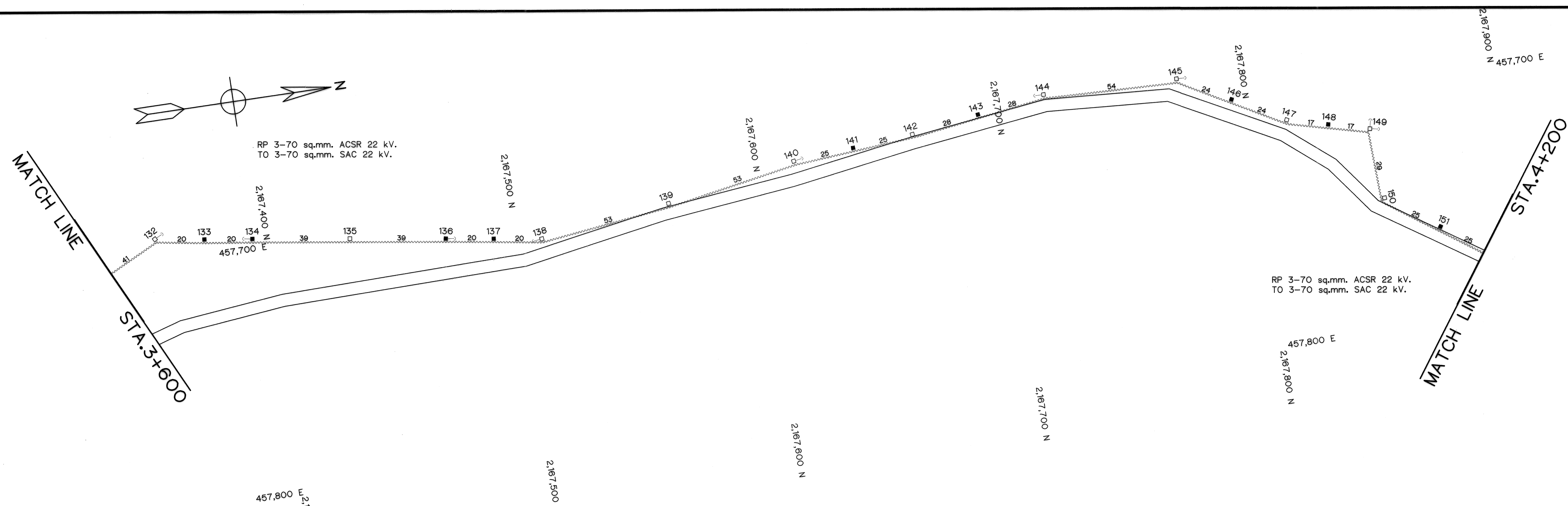
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

| | | | |
|---|---|---|---|
| DESIGNED | วิศ.64624 | วิศ.6226 | REVIEWED |
| DRAWN | | | SUBMITTED |
| CHECKED | วิศ.6226 | | RECOMMENDED |
| PROJECT MANAGER | | 08/03/2564 DATE | APPROVED |

P. Hanpa M.

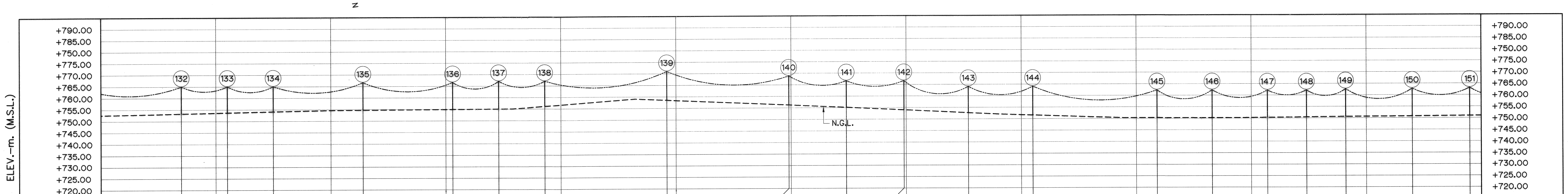
DRAWING NO. MH-TS-07

SHEET NO. 118 OF 130




## PLAN

SCALE 1:1,000




| DISTANCE (KM.) | ELEV.-m. (M.S.L.) |
|---|---|
| 3+600 | +752.624 |
| 3+635 | +753.279 |
| 3+650 | +753.590 |
| 3+655 | +753.694 |
| 3+675 | +754.109 |
| 3+700 | +754.627 |
| 3+714 | +754.728 |
| 3+750 | +754.926 |
| 3+753 | +754.943 |
| 3+773 | +755.053 |
| 3+793 | +756.132 |
| 3+800 | +756.658 |
| 3+846 | +758.512 |
| 3+850 | +758.345 |
| 3+899 | +756.267 |
| 3+900 | +756.223 |
| 3+924 | +755.160 |
| 3+949 | +754.015 |
| 3+950 | +753.968 |
| 3+977 | +752.702 |
| 4+000 | +751.765 |
| 4+005 | +751.603 |
| 4+050 | +750.309 |
| 4+059 | +750.285 |
| 4+083 | +750.218 |
| 4+100 | +750.270 |
| 4+107 | +750.335 |
| 4+124 | +750.493 |
| 4+141 | +750.645 |
| 4+150 | +750.693 |
| 4+170 | +750.804 |
| 4+195 | +750.989 |
| 4+200 | +751.026 |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE | ACCUMULATIVE DISTANCE | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | (M.) | (M.) | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 131 | 41 | 3,594 | 1 | | | | | | | | | | |
| 132 | 41 | 3,635 | | | 1 | | | | | | 1 | | |
| 133 | 20 | 3,655 | | 1 | | | | | | | | | |
| 134 | 20 | 3,675 | | | 1 | | | | | | 1 | | |
| 135 | 39 | 3,714 | 1 | | | | | | | | | | |
| 136 | 39 | 3,753 | | | 1 | | | | | | 1 | | |
| 137 | 20 | 3,773 | | 1 | | | | | | | | | |
| 138 | 20 | 3,793 | | | 1 | | | | | | 1 | | |
| 139 | 53 | 3,846 | 1 | | | | | | | | | | |
| 140 | 53 | 3,899 | | | 1 | | | | | | 1 | | |
| 141 | 25 | 3,924 | | 1 | | | | | | | | | |
| 142 | 25 | 3,949 | | 1 | | | | | | | | | |
| 143 | 28 | 3,977 | | 1 | | | | | | | | | |
| 144 | 28 | 4,005 | | | 1 | | | | | | 1 | | |
| 145 | 54 | 4,059 | | | 1 | | | | | | 1 | | |
| 146 | 24 | 4,083 | | 1 | | | | | | | | | |
| 147 | 24 | 4,107 | | 1 | | | | | | | | | |
| 148 | 17 | 4,124 | | 1 | | | | | | | | | |
| 149 | 17 | 4,141 | | | | 1 | | | | | | 1 | |
| 150 | 29 | 4,170 | | | | 1 | | | | | | | |
| 151 | 25 | 4,195 | | 1 | | | | | | | | | |

## REFERENCE DRAWINGS :-

| | | |
|---|---|---|
| 1. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 3+000 TO STA. 3+600 | MH-TS-07 |
| 2. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 4+200 TO STA. 4+800 | MH-TS-09 |
| 3. | TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. | TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. | TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. | TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

## NOTES:

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

## LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

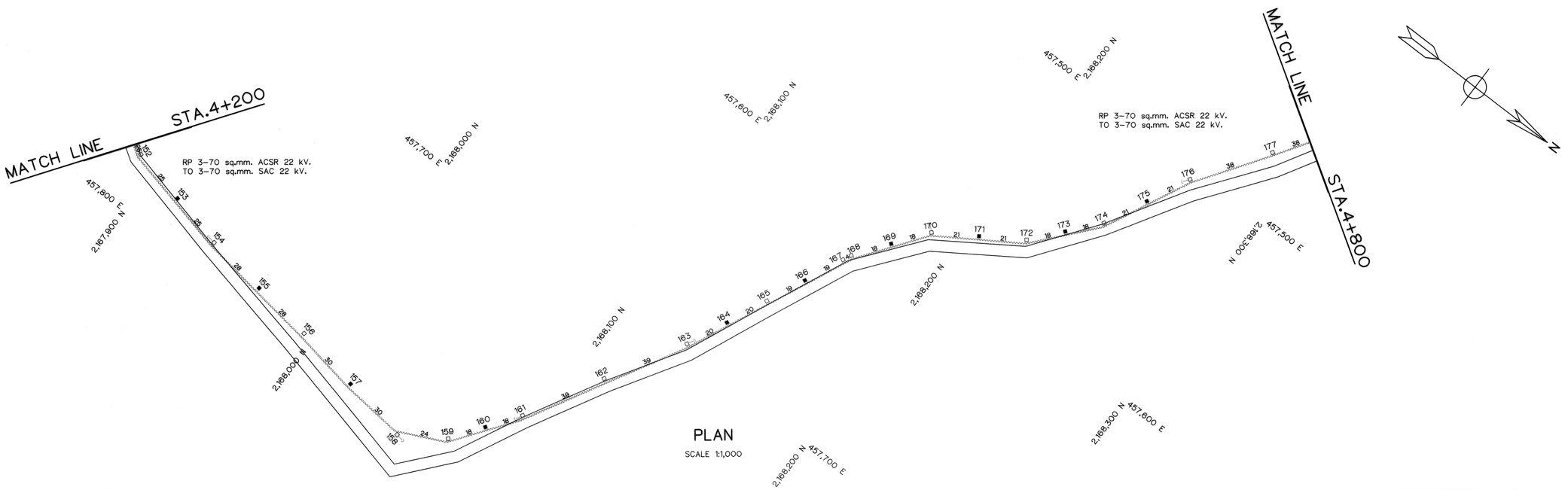
MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
TRANSMISSION LINE
PLAN AND PROFILE, STA. 3+600 TO 4+200

P&C MANAGEMENT CO.,LTD.

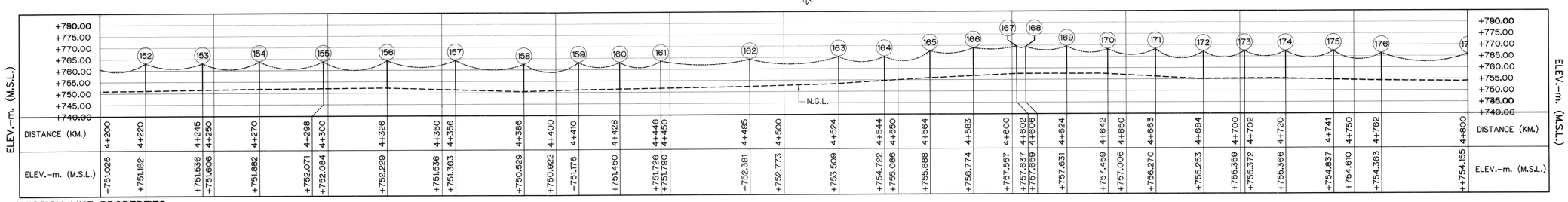
Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

| | |
|---|---|
| DESIGNED ภย.64624 สย.6226 | REVIEWED |
| DRAWN | SUBMITTED |
| CHECKED สย.6226 | RECOMMENDED |
| PROJECT MANAGER — DATE 08/03/2559 | APPROVED P. Hans... |
| DRAWING NO. MH-TS-08 | SHEET NO. 119 OF 130 |




## PLAN

SCALE 1:1,000




## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 151 | 25 | 4,195 | | 1 | | | | | | | | | |
| 152 | 25 | 4,220 | | 1 | | | | | | | | | |
| 153 | 25 | 4,245 | | 1 | | | | | | | | | |
| 154 | 25 | 4,270 | | | | 1 | | | | | 1 | | |
| 155 | 28 | 4,298 | 1 | | | | | | | | | | |
| 156 | 28 | 4,326 | 1 | | | | | | | | | | |
| 157 | 30 | 4,356 | 1 | | | | | | | | | | |
| 158 | 30 | 4,386 | | | 1 | | | | | | 1 | | |
| 159 | 24 | 4,410 | | 1 | | | | | | | | | |
| 160 | 18 | 4,428 | | 1 | | | | | | | | | |
| 161 | 18 | 4,446 | | | 1 | | | | | | 1 | | |
| 162 | 39 | 4,485 | 1 | | | | | | | | | | |
| 163 | 39 | 4,524 | | | 1 | | | | | | 1 | | |
| 164 | 20 | 4,544 | | 1 | | | | | | | | | |
| 165 | 20 | 4,564 | | 1 | | | | | | | | | |
| 166 | 19 | 4,583 | | 1 | | | | | | | | | |
| 167 | 19 | 4,602 | | 1 | | | | | | | | | |
| 168 | 4 | 4,606 | | 1 | | | | | | | | | |
| 169 | 18 | 4,624 | | 1 | | | | | | | | | |
| 170 | 18 | 4,642 | | 1 | | | | 1 | | | | | |
| 171 | 21 | 4,663 | | 1 | | | | | | | | | |
| 172 | 21 | 4,684 | | 1 | | | | | | | | | |
| 173 | 18 | 4,702 | | 1 | | | | | | | | | |
| 174 | 18 | 4,720 | | 1 | | | | | | | | | |
| 175 | 21 | 4,741 | | 1 | | | | | | | | | |
| 176 | 21 | 4,762 | | | | | | 1 | | | | | |
| 177 | 38 | 4,800 | 1 | | | | | | | | | | |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

### REFERENCE DRAWINGS :-

| | | |
|---|---|---|
| 1. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 3+600 TO STA. 4+200 | MH-TS-08 |
| 2. | TRANSMISSION LINE, PLAN AND PROFILE, STA. 4+800 TO STA. 5+400 | MH-TS-10 |
| 3. | TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. | TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. | TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. | TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

### NOTES:

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

### LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M — REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

## TRANSMISSION LINE

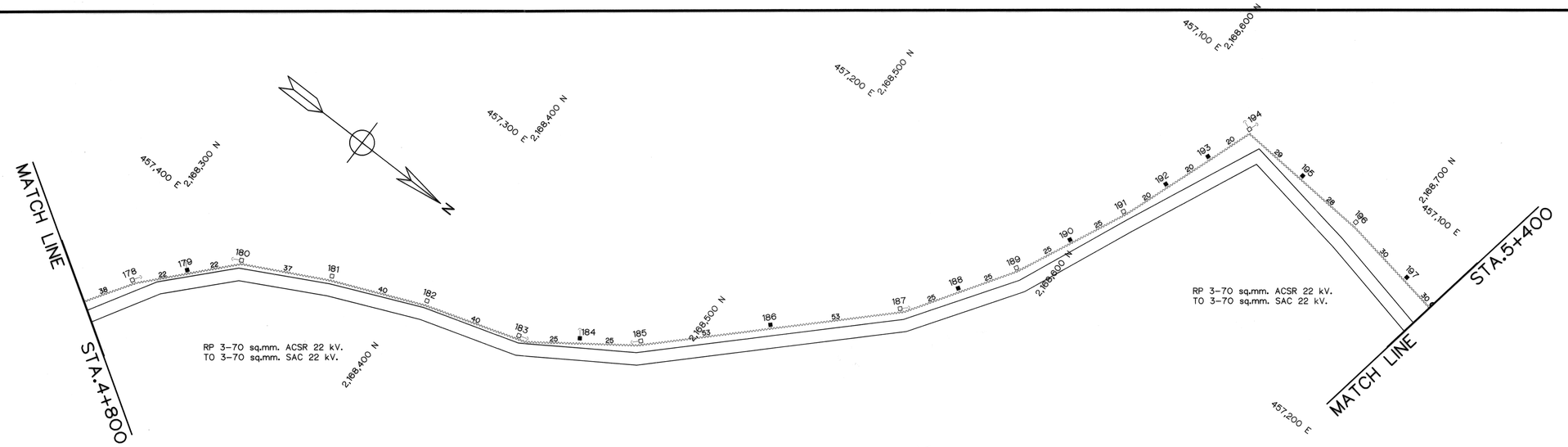
## PLAN AND PROFILE, STA. 4+200 TO 4+800

P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

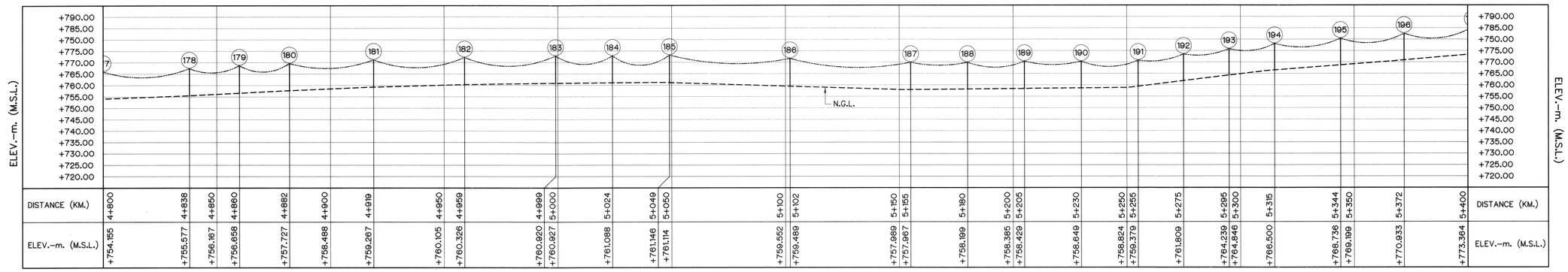
| | | | |
|---|---|---|---|
| DESIGNED | วิศ.64624 | วิศ.6226 | REVIEWED |
| DRAWN | | | SUBMITTED |
| CHECKED | วิศ.6226 | | RECOMMENDED |
| PROJECT MANAGER | | DATE 08/03/2564 | APPROVED |

DRAWING NO. MH-TS-09
SHEET NO. 120 OF 130




## PLAN

SCALE 1:1,000




| DISTANCE (KM.) | 4+800 | 4+838 | 4+850 | 4+880 | 4+882 | 4+900 | 4+919 | 4+950 | 4+959 | 4+999 | 5+000 | 5+024 | 5+049 | 5+050 | 5+100 | 5+102 | 5+150 | 5+155 | 5+180 | 5+200 | 5+205 | 5+230 | 5+250 | 5+255 | 5+275 | 5+295 | 5+300 | 5+315 | 5+344 | 5+350 | 5+372 | 5+400 | DISTANCE (KM.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ELEV.-m. (M.S.L.) | +754.155 | +755.577 | +756.167 | +756.658 | +757.727 | +758.488 | +759.267 | +760.105 | +760.326 | +760.920 | +760.927 | +761.088 | +761.146 | +761.114 | +759.552 | +759.489 | +757.989 | +757.967 | +758.199 | +758.385 | +758.429 | +758.649 | +758.824 | +759.379 | +761.809 | +764.239 | +764.846 | +766.500 | +768.736 | +769.199 | +770.933 | +773.364 | ELEV.-m. (M.S.L.) |

## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 | |
| 177 | 38 | 4,800 | 1 | | | | | | | | | | | |
| 178 | 38 | 4,838 | | | 1 | | | | | | 1 | | | |
| 179 | 22 | 4,860 | | 1 | | | | 1 | | | | | | |
| 180 | 22 | 4,882 | | | 1 | | | | | | 1 | | | |
| 181 | 37 | 4,919 | 1 | | | | | | | | | | | |
| 182 | 40 | 4,959 | | 1 | | | | | | | | | | |
| 183 | 40 | 4,999 | | | 1 | | | | | | 1 | | | |
| 184 | 25 | 5,024 | | 1 | | | | 1 | | | | | | |
| 185 | 25 | 5,049 | | | 1 | | | | | | 1 | | | |
| 186 | 53 | 5,102 | 1 | | | | | | | | | | | |
| 187 | 53 | 5,155 | | | 1 | | | | | | 1 | | | |
| 188 | 25 | 5,180 | | 1 | | | | | | | | | | |
| 189 | 25 | 5,205 | | 1 | | | | | | | | | | |
| 190 | 25 | 5,230 | | 1 | | | | | | | | | | |
| 191 | 25 | 5,255 | | 1 | | | | | | | | | | |
| 192 | 20 | 5,275 | | 1 | | | | | | | | | | |
| 193 | 20 | 5,295 | | 1 | | | | | | | | | | |
| 194 | 20 | 5,315 | | | | 1 | | | | | | 1 | | |
| 195 | 29 | 5,344 | | 1 | | | | | | | | | | |
| 196 | 28 | 5,372 | | 1 | | | | 1 | | | | | | |
| 197 | 30 | 5,402 | | 1 | | | | | | | | | | |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

## REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 4+200 TO STA. 4+800 | MH-TS-09 |
| 2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 5+400 TO STA. 6+000 | MH-TS-11 |
| 3. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

## NOTES:

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

## LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M — REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

## TRANSMISSION LINE

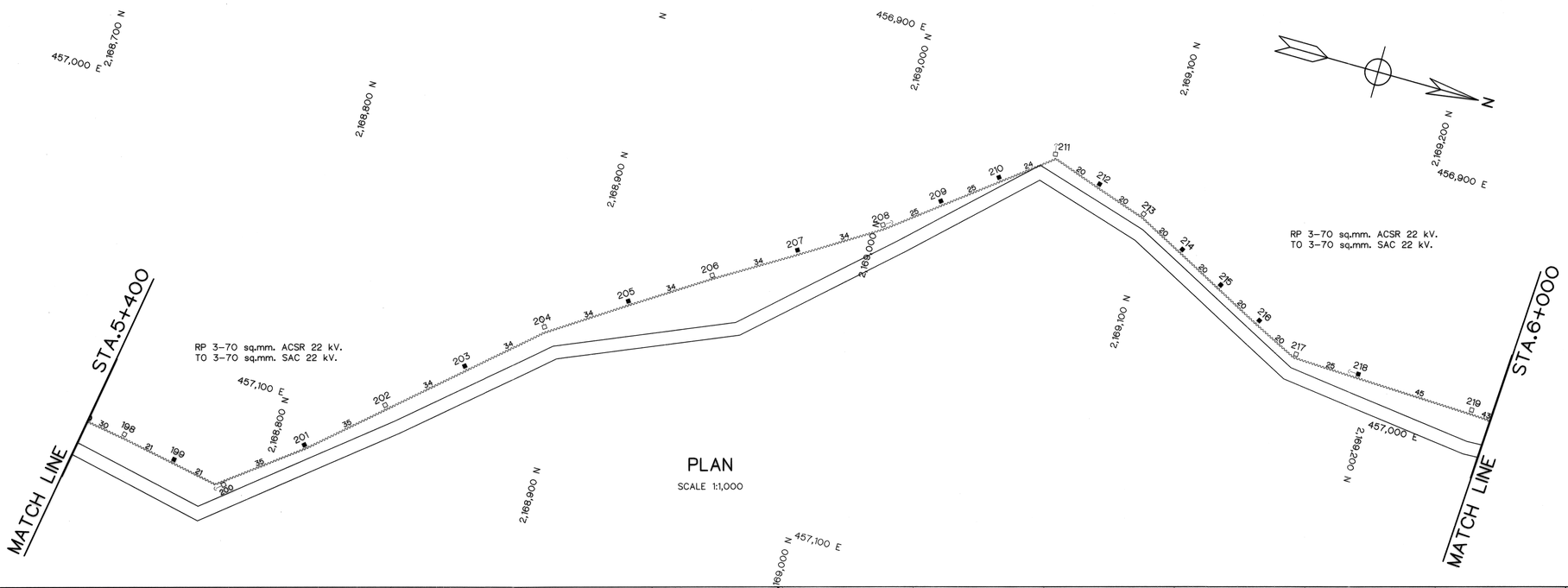
## PLAN AND PROFILE, STA. 4+800 TO 5+400

P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

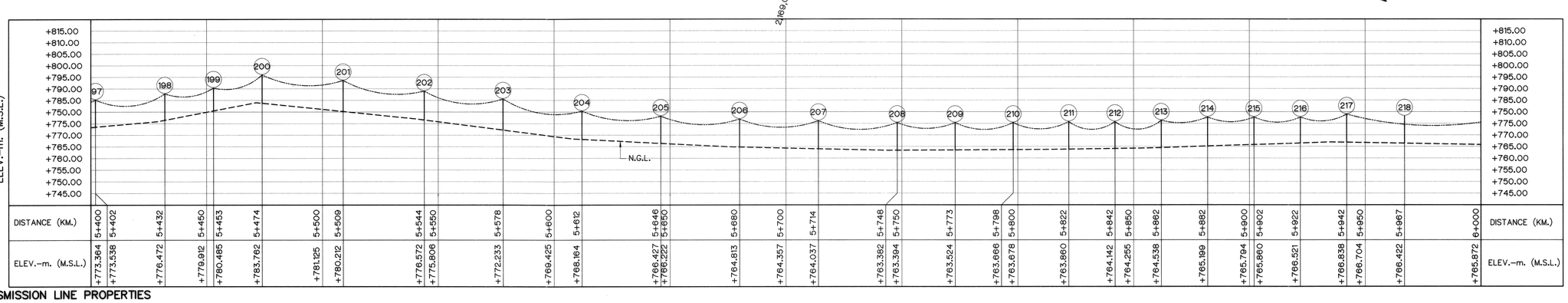
| | | | |
|---|---|---|---|
| DESIGNED | [illegible] | [illegible] | REVIEWED |
| DRAWN | [illegible] | | SUBMITTED |
| CHECKED | [illegible] | [illegible] | RECOMMENDED |
| PROJECT MANAGER | | DATE | APPROVED |

DRAWING NO. MH-TS-10
SHEET NO. 121 OF 130




## PLAN

SCALE 1:1,000




## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 197 | 30 | 5,402 | | 1 | | | | | | | | | |
| 198 | 30 | 5,432 | | 1 | | | | | | | | | |
| 199 | 21 | 5,453 | | 1 | | | | | | | | | |
| 200 | 21 | 5,474 | | | | 1 | | 1 | | | | | |
| 201 | 35 | 5,509 | 1 | | | | | | | | | | |
| 202 | 35 | 5,544 | 1 | | | | | | | | | | |
| 203 | 34 | 5,578 | 1 | | | | | | | | | | |
| 204 | 34 | 5,612 | | 1 | | | | 1 | | | | | |
| 205 | 34 | 5,646 | 1 | | | | | | | | | | |
| 206 | 34 | 5,680 | 1 | | | | | | | | | | |
| 207 | 34 | 5,714 | 1 | | | | | | | | | | |
| 208 | 34 | 5,748 | | | 1 | | | | | | 1 | | |
| 209 | 25 | 5,773 | | 1 | | | | | | | | | |
| 210 | 25 | 5,798 | | 1 | | | | | | | | | |
| 211 | 24 | 5,822 | | | | 1 | | | | | | 1 | |
| 212 | 20 | 5,842 | | 1 | | | | | | | | | |
| 213 | 20 | 5,862 | | 1 | | | | 1 | | | | | |
| 214 | 20 | 5,882 | | 1 | | | | | | | | | |
| 215 | 20 | 5,902 | | 1 | | | | 1 | | | | | |
| 216 | 20 | 5,922 | | 1 | | | | | | | | | |
| 217 | 20 | 5,942 | | 1 | | | | | | | | | |
| 218 | 25 | 5,967 | | | 1 | | | | | | 1 | | |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

### REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 4+800 TO STA. 5+400 | MH-TS-10 |
| 2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 6+000 TO STA. 6+600 | MH-TS-12 |
| 3. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

### NOTES:

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

### LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

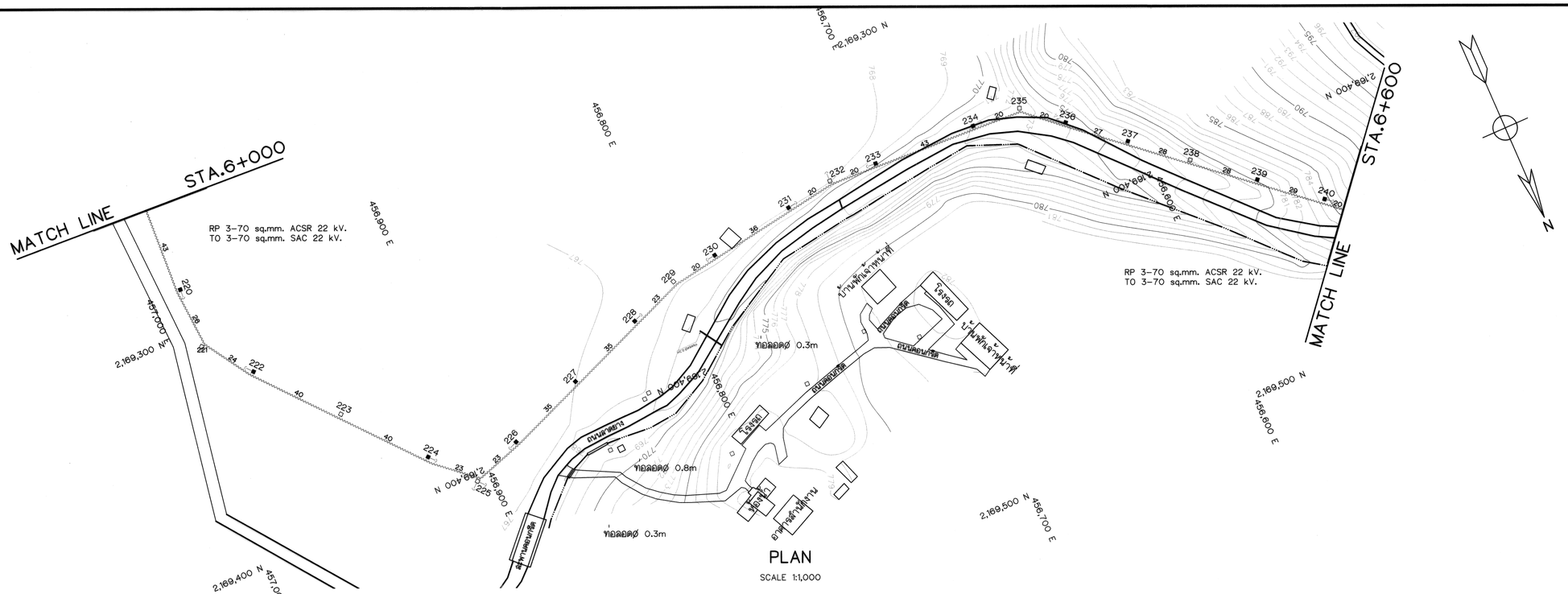
## TRANSMISSION LINE

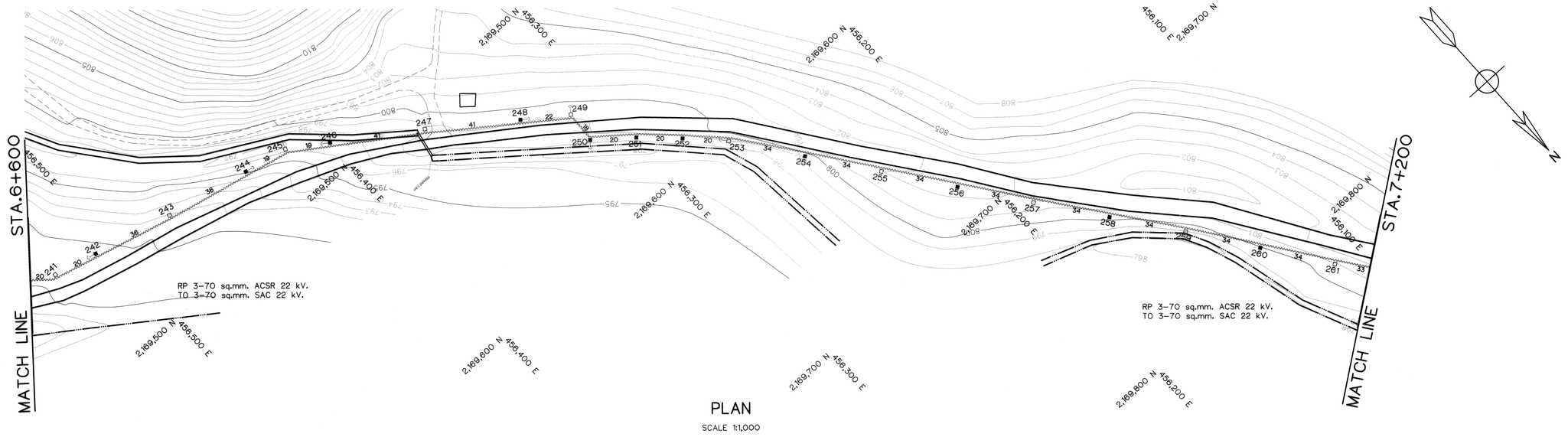
## PLAN AND PROFILE, STA. 5+400 TO 6+000

P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

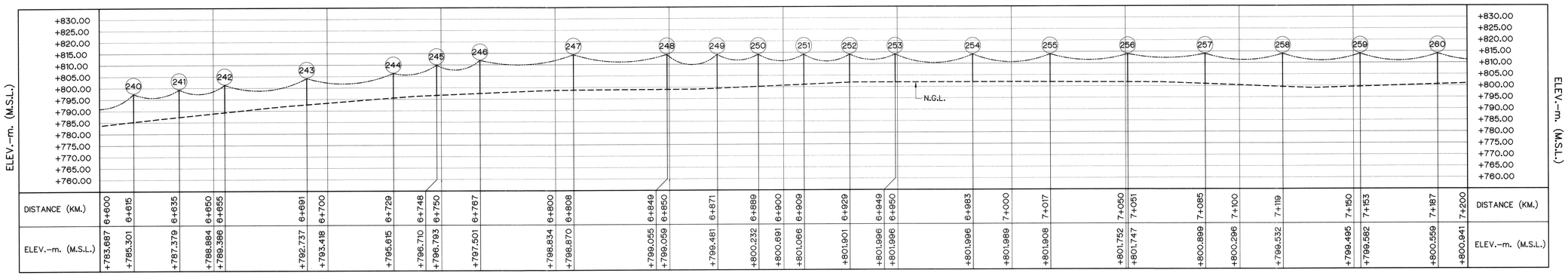
| | | | |
|---|---|---|---|
| DESIGNED | ส.ต.ท.64624 | REVIEWED | |
| DRAWN | | SUBMITTED | |
| CHECKED | ส.ต.ท.6226 | RECOMMENDED | |
| PROJECT MANAGER | | APPROVED | |
| | DATE | DRAWING NO. | MH-TS-11 |
| | | SHEET NO. | 122 OF 130 |


MATCH LINE
STA.6+000
RP 3-70 sq.mm. ACSR 22 kV.
TO 3-70 sq.mm. SAC 22 kV.
456,900 E
457,000 E
2,169,300 N
2,169,400 N
456,700 E
456,800 E
2,169,500 N
456,600 E
STA.6+600
MATCH LINE
RP 3-70 sq.mm. ACSR 22 kV.
TO 3-70 sq.mm. SAC 22 kV.
N
ท่อระบายน้ำ Ø 0.3m
ท่อระบายน้ำ Ø 0.8m
ท่อระบายน้ำ Ø 0.3m
ถนนลาดยาง
ถนนลาดยาง
ถนนลาดยาง
ถนนลาดยาง
ร้านค้า
ร้านค้า
ร้านค้า




## PLAN

SCALE 1:1,000




## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

### TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 239 | 28 | 6,586 | 1 | | | | | | | | | | |
| 240 | 29 | 6,615 | | | 1 | | | | | | 1 | | |
| 241 | 20 | 6,635 | | 1 | | | | | | | | | |
| 242 | 20 | 6,655 | | | 1 | | | | | | 1 | | |
| 243 | 36 | 6,691 | 1 | | | | | | | | | | |
| 244 | 38 | 6,729 | | | 1 | | | | | | 1 | | |
| 245 | 19 | 6,748 | | 1 | | | | 1 | | | | | |
| 246 | 19 | 6,767 | | | 1 | | | | | | 1 | | |
| 247 | 41 | 6,808 | 1 | | | | | | | | | | |
| 248 | 41 | 6,849 | | | 1 | | | | | | 1 | | |
| 249 | 22 | 6,871 | | | | 1 | | 1 | | | | | |
| 250 | 18 | 6,889 | | | | 1 | | 1 | | | | | |
| 251 | 20 | 6,909 | | 1 | | | | | | | | | |
| 252 | 20 | 6,929 | | 1 | | | | | | | | | |
| 253 | 20 | 6,949 | | | 1 | | | | | | 1 | | |
| 254 | 34 | 6,983 | 1 | | | | | | | | | | |
| 255 | 34 | 7,017 | 1 | | | | | | | | | | |
| 256 | 34 | 7,051 | 1 | | | | | | | | | | |
| 257 | 34 | 7,085 | 1 | | | | | | | | | | |
| 258 | 34 | 7,119 | 1 | | | | | | | | | | |
| 259 | 34 | 7,153 | 1 | | | | | | | | | | |
| 260 | 34 | 7,187 | 1 | | | | | | | | | | |

### REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 6+000 TO STA. 6+600 | MH-TS-12 |
| 2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 7+200 TO STA. 7+800 | MH-TS-14 |
| 3. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

### NOTES:

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

### LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. RM 12M — REMOVE 12M. CONCRETE POLE
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

CONSULTANTS | DEDE

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

## TRANSMISSION LINE

## PLAN AND PROFILE, STA. 6+600 TO 7+200

P&C MANAGEMENT CO.,LTD.

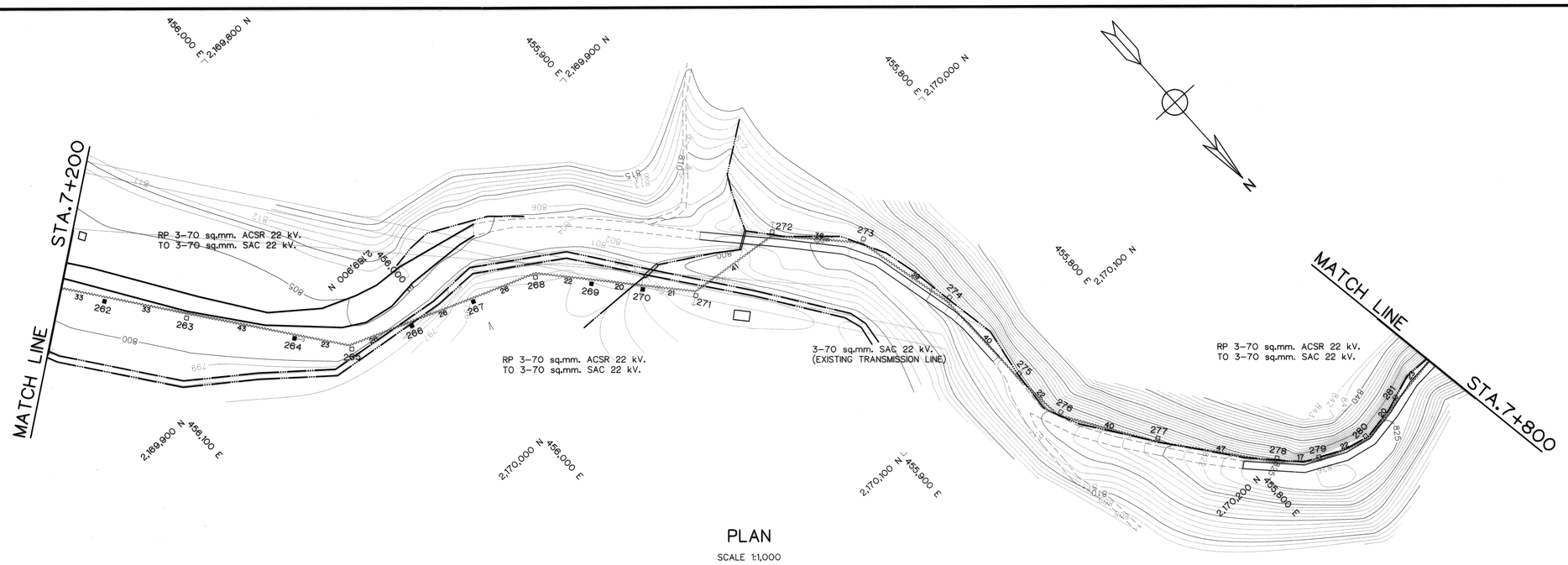
Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

| | | | |
|---|---|---|---|
| DESIGNED | วิฑ.64624 | REVIEWED | |
| DRAWN | | SUBMITTED | |
| CHECKED | วิฑ.6226 | RECOMMENDED | |
| | | APPROVED | |

PROJECT MANAGER | 08/08/2559 DATE

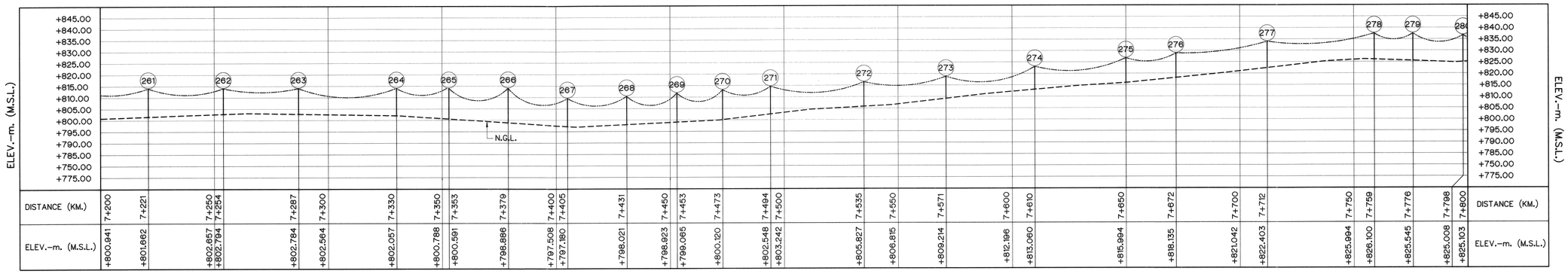
DRAWING NO. MH-TS-13

SHEET NO. 124 OF 130




## PLAN

SCALE 1:1,000




## TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 260 | 34 | 7,187 | 1 | | | | | | | | | | |
| 261 | 34 | 7,221 | 1 | | | | | | | | | | |
| 262 | 33 | 7,254 | 1 | | | | | | | | | | |
| 263 | 33 | 7,287 | 1 | | | | | | | | | | |
| 264 | 43 | 7,330 | | | 1 | | | | | | 1 | | |
| 265 | 23 | 7,353 | | 1 | | | | | | | | | |
| 266 | 26 | 7,379 | | 1 | | | | | | | | | |
| 267 | 26 | 7,405 | | 1 | | | | | | | | | |
| 268 | 26 | 7,431 | | 1 | | | | | | | | | |
| 269 | 22 | 7,453 | | 1 | | | | | | | | | |
| 270 | 20 | 7,473 | | 1 | | | | | | | | | |
| 271 | 21 | 7,494 | 3 - 70 sq.mm. SAC 22KV. EXISTING TRANSMISSION LINE | | | | | | | | | | |
| 272 | 41 | 7,535 | | | | | | | | | | | |
| 273 | 36 | 7,571 | | | | | | | | | | | |
| 274 | 39 | 7,610 | | | | | | | | | | | |
| 275 | 40 | 7,650 | | | | | | | | | | | |
| 276 | 22 | 7,672 | | | | | | | | | | | |
| 277 | 40 | 7,712 | | | | | | | | | | | |
| 278 | 47 | 7,759 | | | | | | | | | | | |
| 279 | 17 | 7,776 | | | | | | | | | | | |
| 280 | 22 | 7,798 | | | | | | | | | | | |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

### NOTES:

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

### LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. REMOVE 12M. CONCRETE POLE (RM 12M)
6. 3 - 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

### REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 6+600 TO STA. 7+200 | MH-TS-13 |
| 2. TRANSMISSION LINE, PLAN AND PROFILE, STA. 7+800 TO STA. 8+086 | MH-TS-15 |
| 3. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 4. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 5. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 6. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

TRANSMISSION LINE

PLAN AND PROFILE, STA. 7+200 TO 7+800

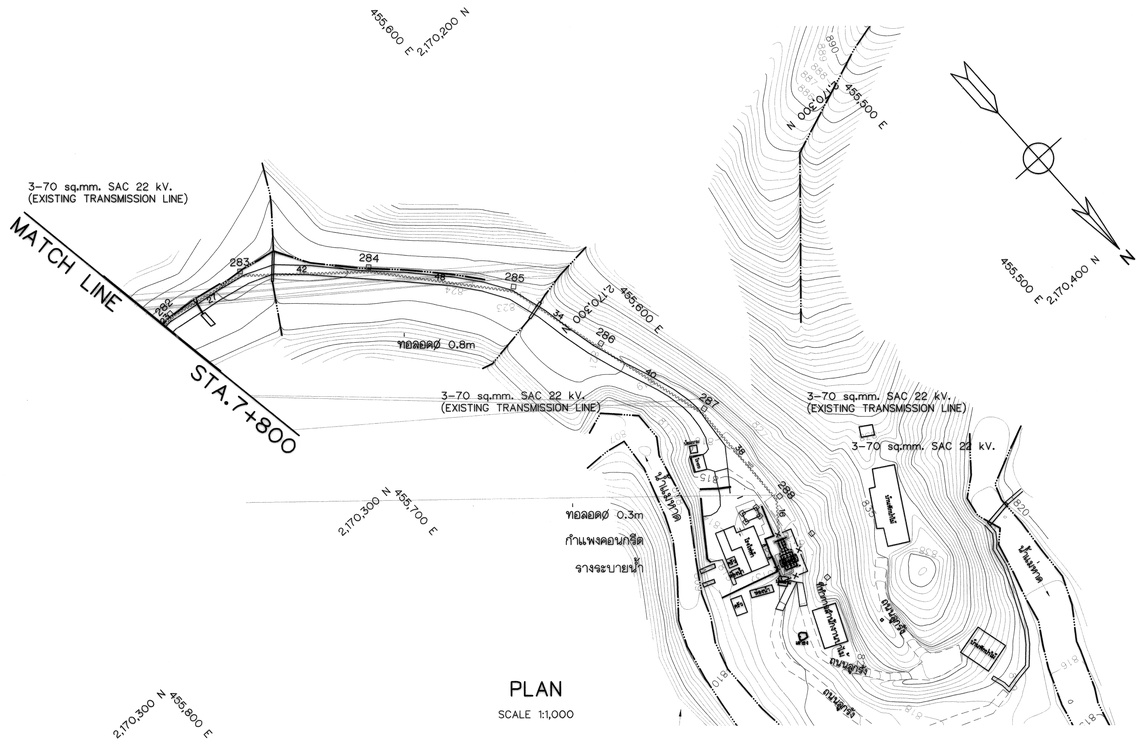
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED สมิต,64624 สมิต,6226
DRAWN
CHECKED สมิต,6226
PROJECT MANAGER 08/08/2559 DATE

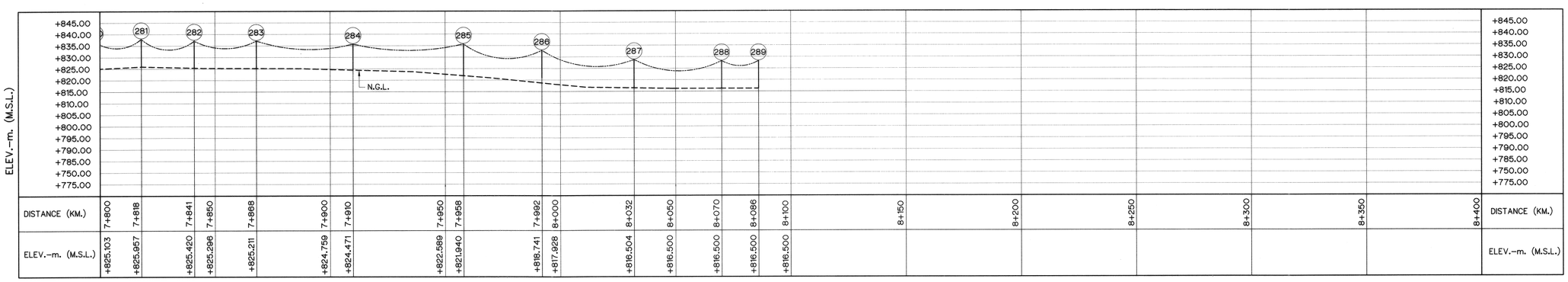
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED P. Hannah

DRAWING NO. MH-TS-14
SHEET NO. 125 OF 130




## PLAN

SCALE 1:1,000




| DISTANCE (KM.) | 7+800 | 7+818 | 7+841 | 7+850 | 7+868 | 7+900 | 7+910 | 7+950 | 7+958 | 7+992 | 8+000 | 8+032 | 8+050 | 8+070 | 8+086 | 8+100 | 8+150 | 8+200 | 8+250 | 8+300 | 8+350 | 8+400 | DISTANCE (KM.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ELEV.-m. (M.S.L.) | +825.103 | +825.957 | +825.420 | +825.296 | +825.211 | +824.759 | +824.471 | +822.589 | +821.940 | +818.741 | +817.928 | +816.504 | +816.500 | +816.500 | +816.500 | +816.500 | | | | | | | ELEV.-m. (M.S.L.) |

## PROFILE

HORIZONTAL SCALE 1:1,000
VERTICAL SCALE 1:1,000

### TRANSMISSION LINE PROPERTIES

| POLE NO. | DISTANCE (M.) | ACCUMULATIVE DISTANCE (M.) | QUANTITY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | POLE TYPE | | | | | GUY TYPE | | | | | |
| | | | A | B | C | D | E | G1 | G2 | G3 | G4 | G5 | G6 |
| 280 | 22 | 7,798 | 3 – 70 sq.mm. SAC 22KV. EXISTING TRANSMISSION LINE | | | | | | | | | | |
| 281 | 20 | 7,818 | | | | | | | | | | | |
| 282 | 23 | 7,841 | | | | | | | | | | | |
| 283 | 27 | 7,868 | | | | | | | | | | | |
| 284 | 42 | 7,910 | | | | | | | | | | | |
| 285 | 48 | 7,958 | | | | | | | | | | | |
| 286 | 34 | 7,992 | | | | | | | | | | | |
| 287 | 40 | 8,032 | | | | | | | | | | | |
| 288 | 38 | 8,070 | | | | | | | | | | | |
| TEAK OFF STRUCTURE | 16 | 8,086 | | | | | | | | | | | |
| TOTAL | | 8,086 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| GRAND TOTAL CABLE REPLACE | | 7,489 | 35 | 82 | 40 | 0 | 0 | 17 | 0 | 0 | 41 | 4 | 0 |

### NOTES:

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

### LEGENDS :

1. 22 kV. SPACE AERIAL CABLE
2. EXISTING 22 kV. PEA. OVERHEAD TRANSMISSION LINE
3. NEW 12M. CONCRETE POLE
4. EXISTING 12M. CONCRETE POLE
5. REMOVE 12M. CONCRETE POLE
6. 3 – 100A. FUSE CUTOUT 33 kV.
7. GUY
8. LOAD BREAK SWITCH, SF6, 630A, 33KV. WITH AUTOMATIC REMOTE CONTORLLED
9. DISCONNECTING SWITCH 600A, 33KV.

### REFERENCE DRAWINGS :-

| | |
|---|---|
| 1. TRANSMISSION LINE, PLAN AND PROFILE, STA. 7+200 TO STA. 7+800 | MH-TS-14 |
| 2. TRANSMISSION LINE, POLE TYPE "A" AND "B" | MH-TS-16 |
| 3. TRANSMISSION LINE, POLE TYPE "C" AND "D" | MH-TS-17 |
| 4. TRANSMISSION LINE, POLE TYPE "E" | MH-TS-18 |
| 5. TRANSMISSION LINE, TYPE OF ANCHOR GUY | MH-TS-19 |

0 5 10 15 20 25 50 100
SCALE 1:1,000 METERS

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

## TRANSMISSION LINE

## PLAN AND PROFILE, STA. 7+800 TO 8+086

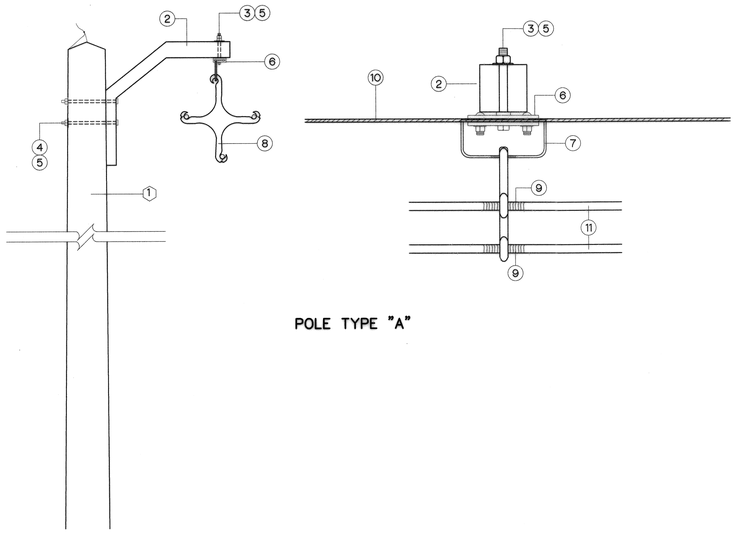
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MINISTRY OF ENERGY

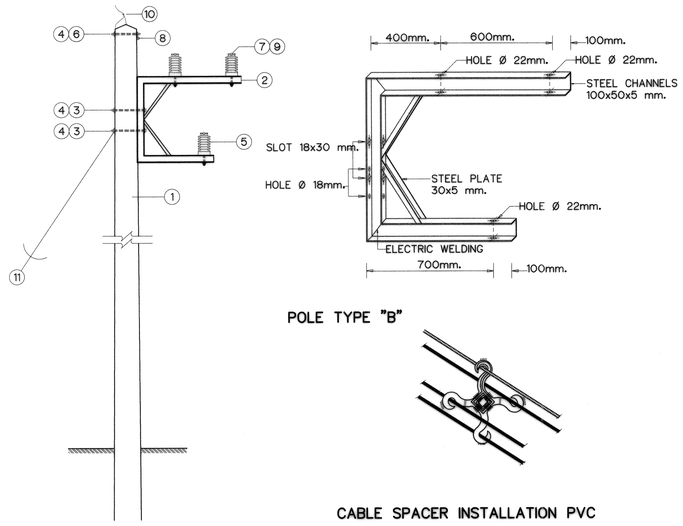
| | | | |
|---|---|---|---|
| DESIGNED | วิศ.64624 | วิศ.6226 | SUBMITTED |
| DRAWN | | | RECOMMENDED |
| CHECKED | วิศ.6226 | | APPROVED |
| PROJECT MANAGER | | 09/01/2569 DATE | DRAWING NO. MH-TS-15 |

REVIEWED

SHEET NO. 126 OF 130




POLE TYPE "A"




POLE TYPE "B"



CABLE SPACER INSTALLATION PVC

| BILL OF MATERIAL POLE TYPE "A" | |
|---|---|
| ITEM | DESCRIPTION |
| 1 | POLE CONCRETE 12 M. LONG |
| 2 | BRACKET AERIAL CABLE FOR STRAIGHT TYPE |
| 3 | BOLT MACHINE M16x170 mm. |
| 4 | BOLT MACHINE M16x250 mm. |
| 5 | WASHER SQUARE FLAT 52x52x4.5 mm. HOLE Dia.18 mm. TIS 258 |
| 6 | CLAMP GUY TRIPLE BOLT |
| 7 | LINK CABLE SPACER ( MADE OF GALV. STEEL Dia. 9 mm. ) |
| 8 | CABLE SPEACER 22 KV. |
| 9 | TIE WIRE 4.0 sq.mm. |
| 10 | WIRE STEEL STRANDED 50/7 DIN 48201 |
| 11 | AERIAL CABLE 70 sq.mm. 25 KV. |

| BILL OF MATERIAL POLE TYPE "B" | |
|---|---|
| ITEM | DESCRIPTION |
| 1 | POLE CONCRETE 12 M. LONG |
| 2 | BRACKET AERIAL CABLE FOR CORNER TYPE |
| 3 | BOLT MACHINE M16x350 mm. |
| 4 | WASHER SQUARE FLAT 52x52x4.5 mm. HOLE Dia. 18 mm. TIS 258 |
| 5 | INSULATOR LINE POST TYPE ANSI C 29.7 CLASS 57-2L |
| 6 | GROUND WIRE SUPPORT AND CLAMP FOR CONCRETE POLE |
| 7 | AERIAL CABLE 70 sq.mm. 25 kV. |
| 8 | GROUND WIRE SUPPORT AND STEEL STRANDED 50/7 DIN 48201 |
| 9 | TIE WIRE 4.0 sq.mm. |
| 10 | CLAMP SINGLE U-BOLT M8 |
| 11 | GUY (STEEL STARNDARD WIRE 95 Sq.mm.) |

**NOTES :**

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

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
|---|---|---|---|---|
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| | CONSULTANTS | | DEDE | |

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

TRANSMISSION LINE

POLE TYPE "A" AND "B"

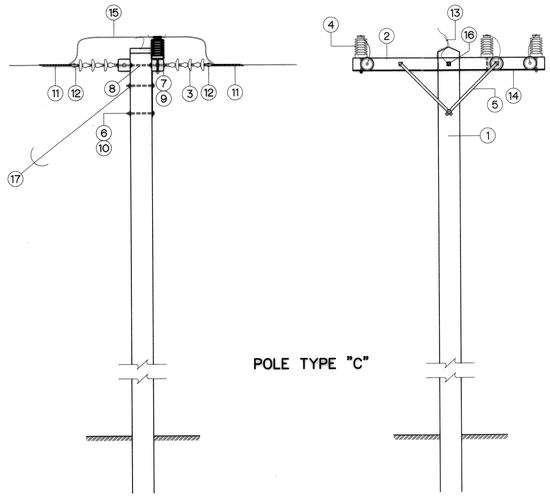
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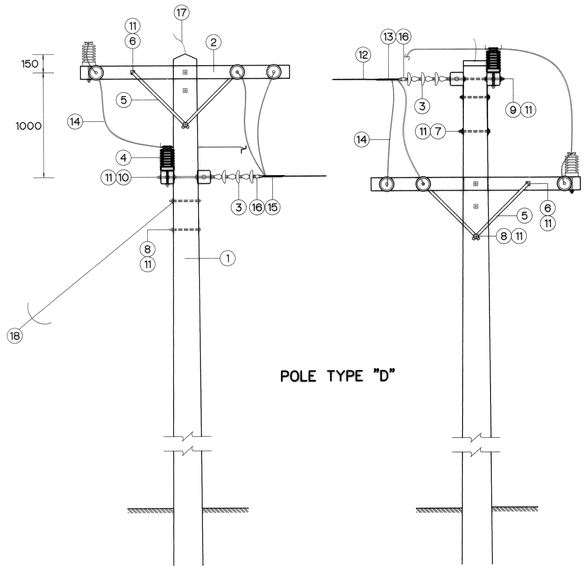
| | | | |
|---|---|---|---|
| DESIGNED | วิฑูรย์ | REVIEWED | |
| DRAWN | | SUBMITTED | |
| CHECKED | วิฑูรย์ | RECOMMENDED | |
| PROJECT MANAGER | 08/08/2559 DATE | APPROVED | |

DRAWING NO. MH-TS-16

SHEET NO. 127 OF 130




POLE TYPE "C"







POLE TYPE "D"

| BILL OF MATERIAL POLE TYPE "C" | |
|---|---|
| ITEM | DESCRIPTION |
| 1 | POLE CONCRETE 12.0 M. LONG |
| 2 | CROSSARM,SPUN PRESTERSSED CONCRETE,120X120X2,000mm. |
| 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,30X6X760mm. |
| 6 | BOLT,MACHINE, M16X170mm. |
| 7 | BOLT,MACHINE, M16X200mm. |
| 8 | BOLT,DOUBLE ARMING,ROUND EYE, M16X450mm. |
| 9 | NUT, EYE, M16, DIN 582 |
| 10 | WASHER,SQUARE,FLAT,52X52X4.5mm.HOLE Dia.18mm.TIS 258 |
| 11 | PREFORMED DEAD-END FOR AERIAL CABLE 70sq.mm. |
| 12 | CLEVIS,THIMBLE,FOR PREFORM DEAD-END |
| 13 | CLAMP,SINGLE U-BOLT,M8 |
| 14 | WIRE STEEL SOLID Dia.4mm. |
| 15 | AERIAL CABLE 70sq.mm. 25kV. |
| 16 | WIRE STEEL STRANDED 50/7 DIN 48201 |
| 17 | GUY (STEEL STARNDARD WIRE 95 Sq.mm.) |

| BILL OF MATERIAL POLE TYPE "D" | |
|---|---|
| ITEM | DESCRIPTION |
| 1 | POLE CONCRETE 12 M. LONG |
| 2 | CROSSARM SPUN PRESTERSSED 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 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 | AERIAL CABLE 70 sq.mm. 25 kV. |
| 13 | PERFOR DEAD-END FOR AERIAL CABLE 70 sq.mm. |
| 14 | AERIAL CABLE 70 sq.mm. 25 kV. |
| 15 | PERFOR DEAD-END FOR AERIAL CABLE 70 sq.mm. |
| 16 | CLEVIS THIMBLE FOR PERFORMED DEAD-END |
| 17 | CLAMP SINGLE U-BOLT M 8 |
| 18 | GUY (STEEL STARNDARD WIRE 95 Sq.mm.) |

**NOTES :**

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

| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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| | CONSULTANTS | | DEDE | |

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

# MAE HAT HYDROPOWER PROJECT

## CIVIL WORKS AND TRANSMISSION LINE

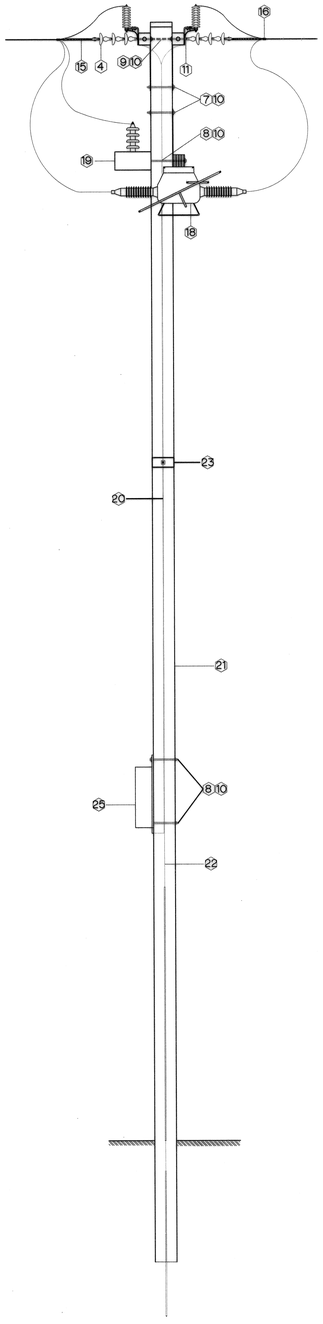
## TRANSMISSION LINE

## POLE TYPE "C" AND "D"

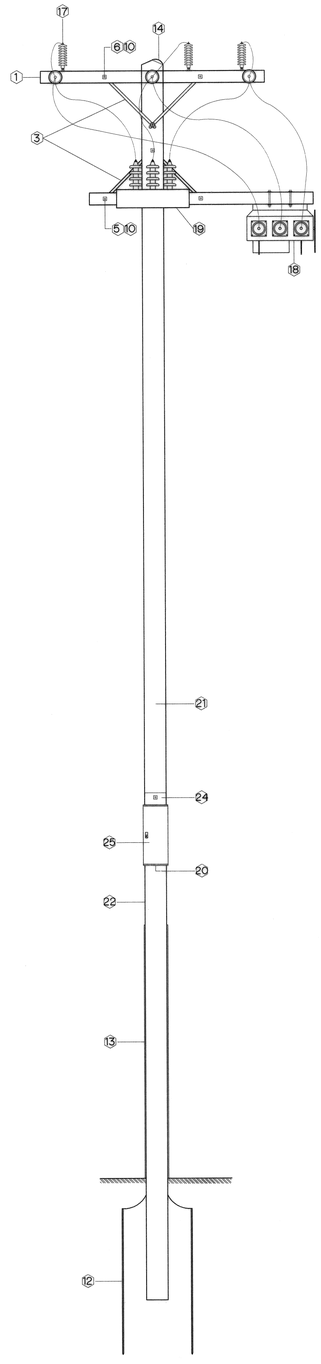
P&C MANAGEMENT CO.,LTD.

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| | |
|---|---|
| DESIGNED | วพ.604 |
| DRAWN | |
| CHECKED | วพ.604 |
| PROJECT MANAGER | 05/05/2559 (DATE) |
| REVIEWED | |
| SUBMITTED | |
| RECOMMENDED | |
| APPROVED | |
| DRAWING NO. | MH-TS-17 |
| SHEET NO. | 128 OF 130 |

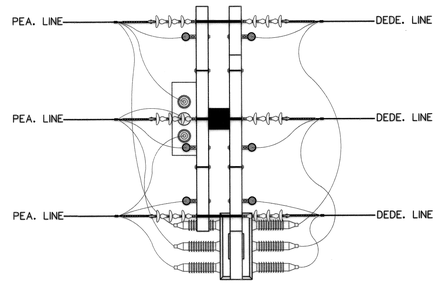



SIDE VIEW




FRONT VIEW

## POLE TYPE "E"




TOP VIEW

**BILL OF MATERIAL POLE TYPE "E"**

| ITEM | DESCRIPTION |
|---|---|
| 1 | CROSS ARM, SPUN, PRESTRESSED CONCRETE 120X120x2,000mm. |
| 2 | STEEL, SQUARE, 100 x 3.2 mm., 2,000mm. LONG |
| 3 | BRACE,FLAT FOR CROSS ARM 30X6X760mm. |
| 4 | INSULATOR,SUSPENSION (TYPE D TIS.354) TYPE (CLASS 52-1) |
| 5 | BOLT,MACHINE M.16X130mm. COMPLETE WITH SQUARE NUT |
| 6 | BOLT,MACHINE M.16X170mm. COMPLETE WITH SQUARE NUT |
| 7 | BOLT,MACHINE M.16X250mm. COMPLETE WITH SQUARE NUT |
| 8 | BOLT,MACHINE M.16X300mm. COMPLETE WITH SQUARE NUT |
| 9 | BOLT,DOUBLE ARMING,ROUND EYE M.16X450mm. COMPLETE WITH SQUARE NUT |
| 10 | WASHER,SQUARE,FLAT 50X50X5mm.HOLE Dia.18mm. |
| 11 | NUT,EYE M.16 DIN 582 |
| 12 | ROD,GROUND, 60X60X5mm. LONG |
| 13 | CONDUIT,PVC,RIGID,DIA 20X2,500mm. TIS.216 |
| 14 | CLAMP,SINGLE U-BOLT,M.8 (WIRE ROPE CLIP) |
| 15 | PREFORMED DEAD-END, FOR AERIAL CABLE 25 KV. 70 sq.mm. |
| 16 | CONNECTOR,PARALLEL GROOVE,TRIPLE BOLT,AL, 70-185 sq.mm. |
| 17 | LIGHTING ARRESTER 21 KV. 10 KA. |
| 18 | LOAD BREAK SWITCH, SF6, 630A, 24KV. |
| 19 | TRANSFORMER,VOLTAGE 3PHASE, OUTDOOR,RATIO 22,000/100 V., 10 VA. |
| 20 | CONTROL CABLE |
| 21 | POLE, CONCRETE, 12 m. LONG |
| 22 | WIRE, STEEL STRANDED 50/7 sq.mm. TIS.404 |
| 23 | PLATE,WOOD, SIZE 2X20X30 cm. |
| 24 | PLATE,WOOD, SIZE 2X20X60 cm. |
| 25 | CONTROL UNIT, AUTOMATIC REMOTE CONTORLLED, FOR SF6 |

**NOTES :**

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| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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KINGDOM OF THAILAND
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MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

TRANSMISSION LINE

POLE TYPE "E"

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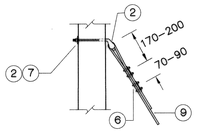
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

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| DESIGNED | วพก.604 | REVIEWED | |
| DRAWN | | SUBMITTED | |
| CHECKED | วพก.604 | RECOMMENDED | |
| PROJECT MANAGER | DATE | APPROVED | |

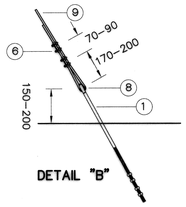
DRAWING NO. MH-TS-18

SHEET NO. 129 OF 130

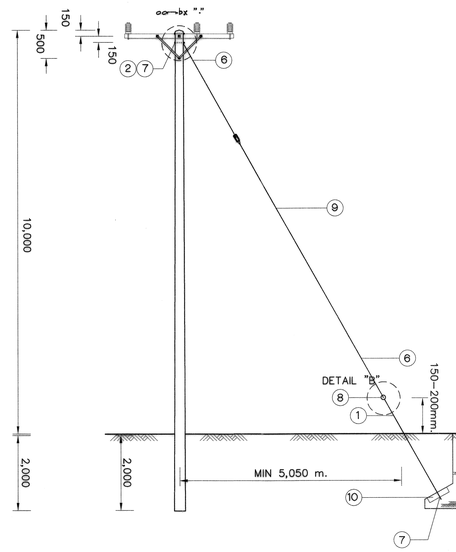
METHOD OF SINGLE ANCHOR GUY



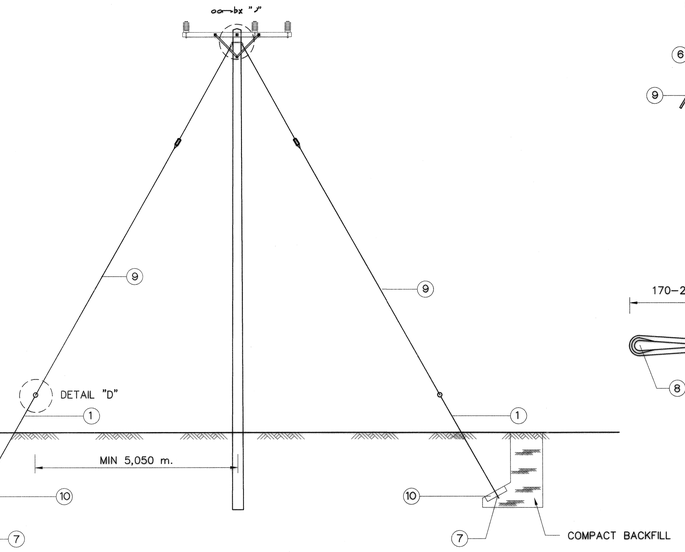

DETAIL "A"

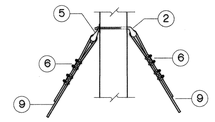



DETAIL "B"

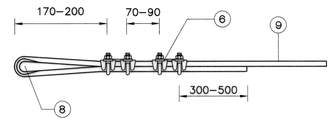



METHOD OF DOUBLE ANCHOR GUY

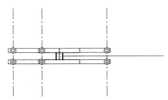



DETAIL "C"




DETAIL "D"



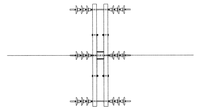
G1

SIDE GUY 5°– 30°



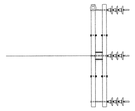
G2

SIDE GUY 30°– 60°



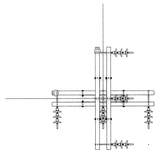
G3

LINE GUY



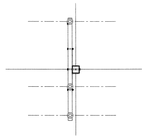
G4

DEAD END GUY



G5

BUCK ARM, 60°– 90°
DEAD END GUY



G6

FIXED OR STORM GUY

**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 m. | 60 m. |
| 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 |

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| NO. | DATE | REVISIONS | CHECKED | APPROVED |
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CONSULTANTS | DEDE

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE

TRANSMISSION LINE

TYPE OF ANCHOR GUY

P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED ชวน.604 | REVIEWED

DRAWN | SUBMITTED

CHECKED ชวน.604 | RECOMMENDED

APPROVED P. Hanwong

PROJECT MANAGER 08/03/2559 DATE

DRAWING NO. MH–TS–19

SHEET NO. 130 OF 130