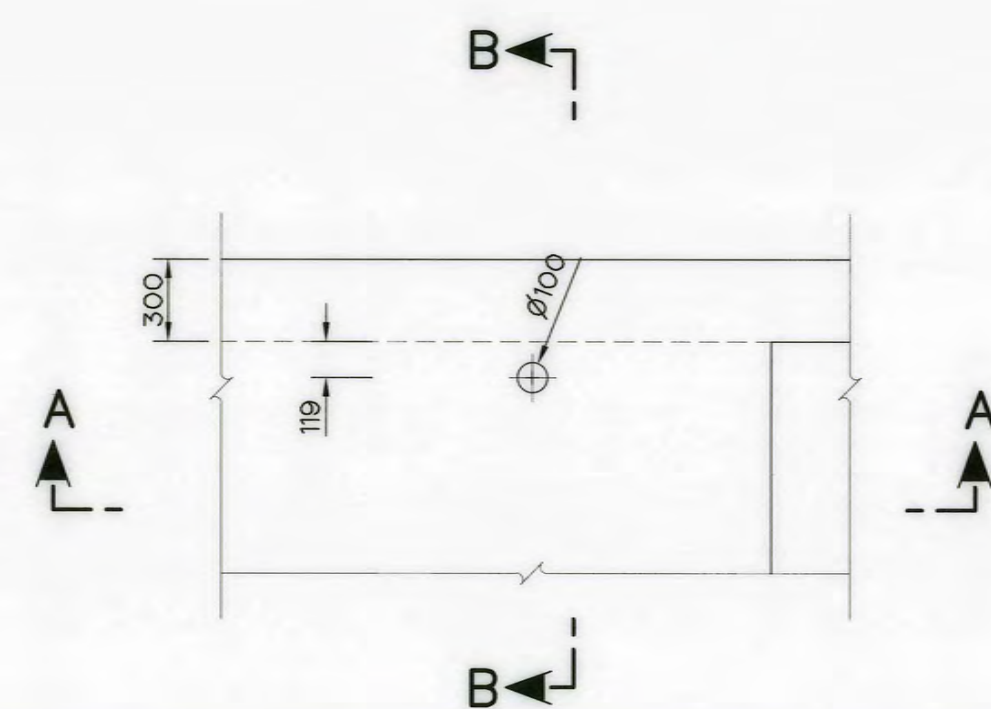
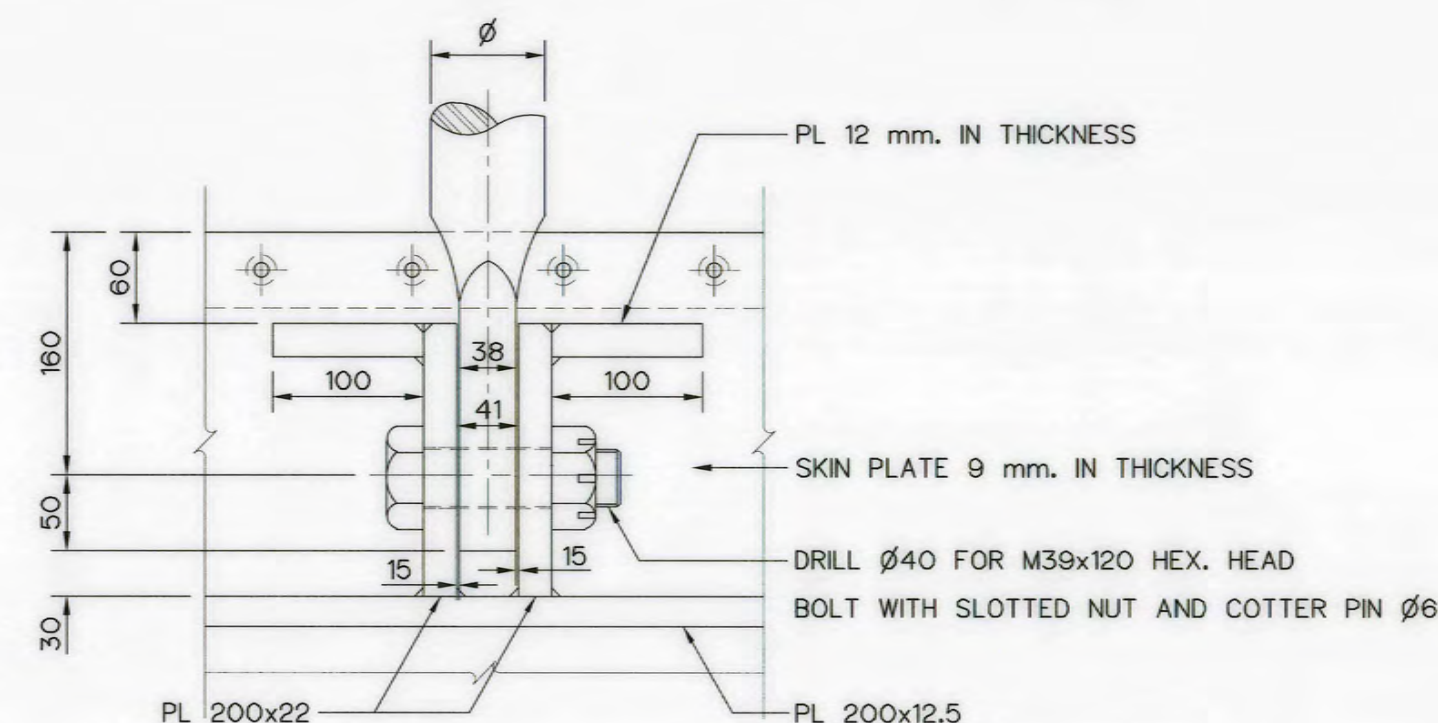


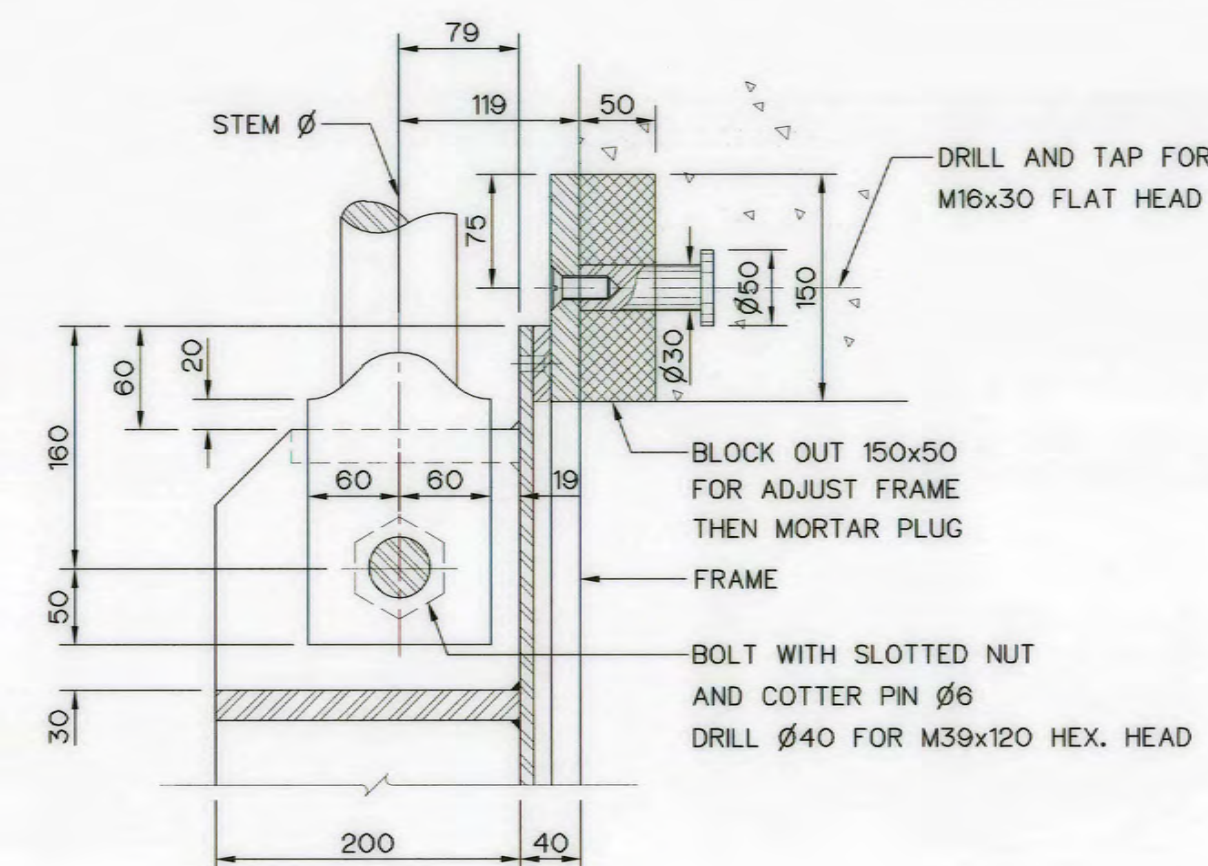
3					 SPT CONSULTANTS CO., LTD. DESIGNED <i>Min</i> 08.29.074 08.9462 DRAWN <i>[Signature]</i> 08.8231 PROJECT MANAGER <i>[Signature]</i> DATE 28/10/2021	 MINISTRY OF ENERGY REVIEWED <i>08/10</i> SUBMITTED <i>[Signature]</i> RECOMMENDED <i>[Signature]</i> APPROVED <i>[Signature]</i>		SHEET NO. 23 of 129
2								
1								
NO.	DATE	REVISIONS	CHECKED	APPROVED				
CONSULTANTS DEDE								



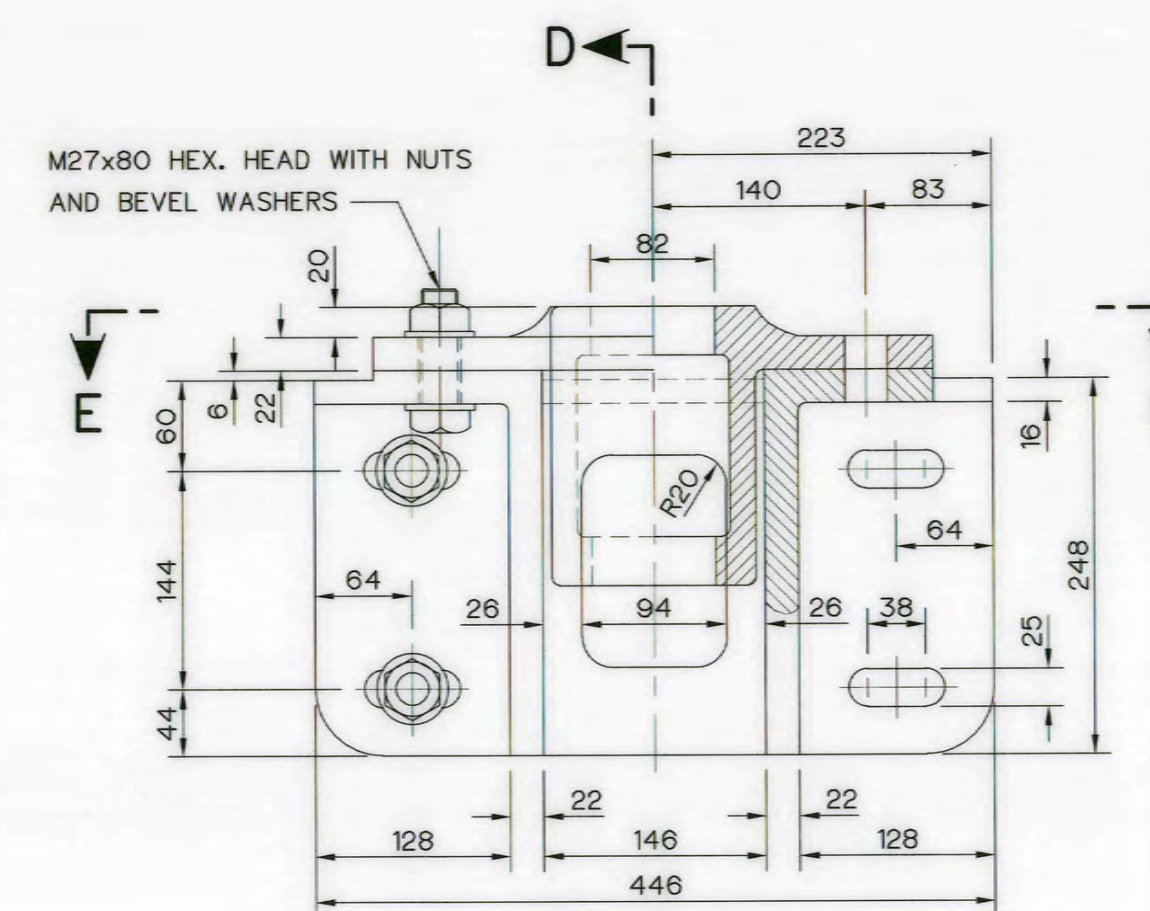
PLAN
NOT TO SCALE



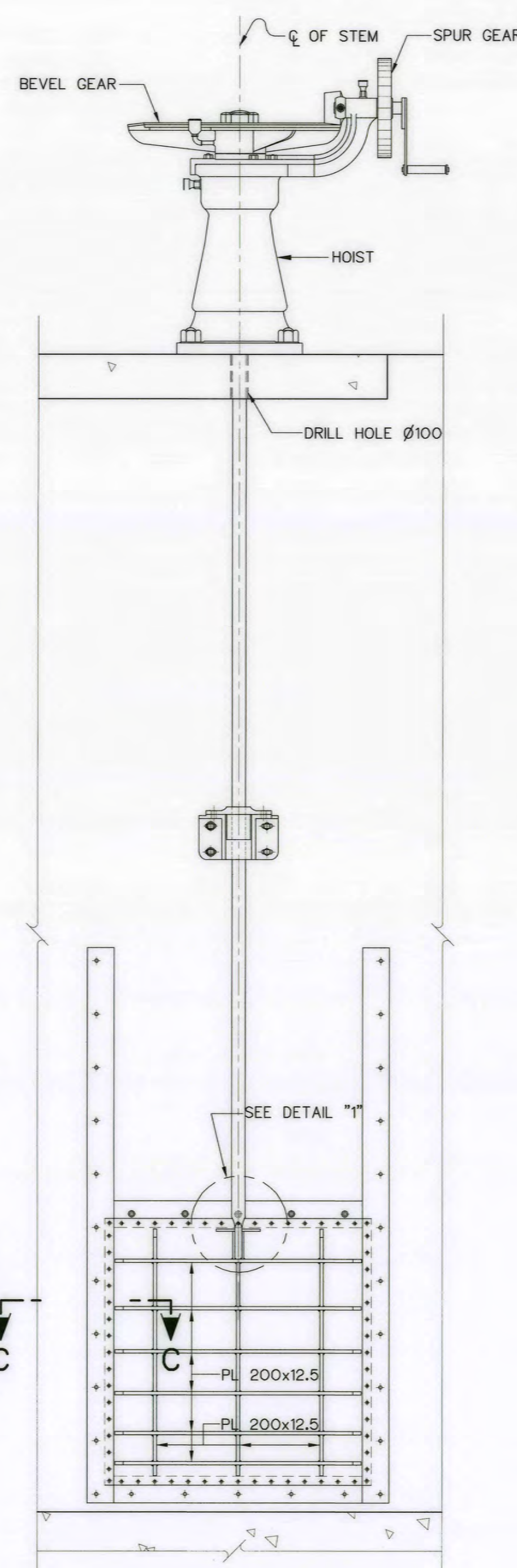
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NOT TO SCALE



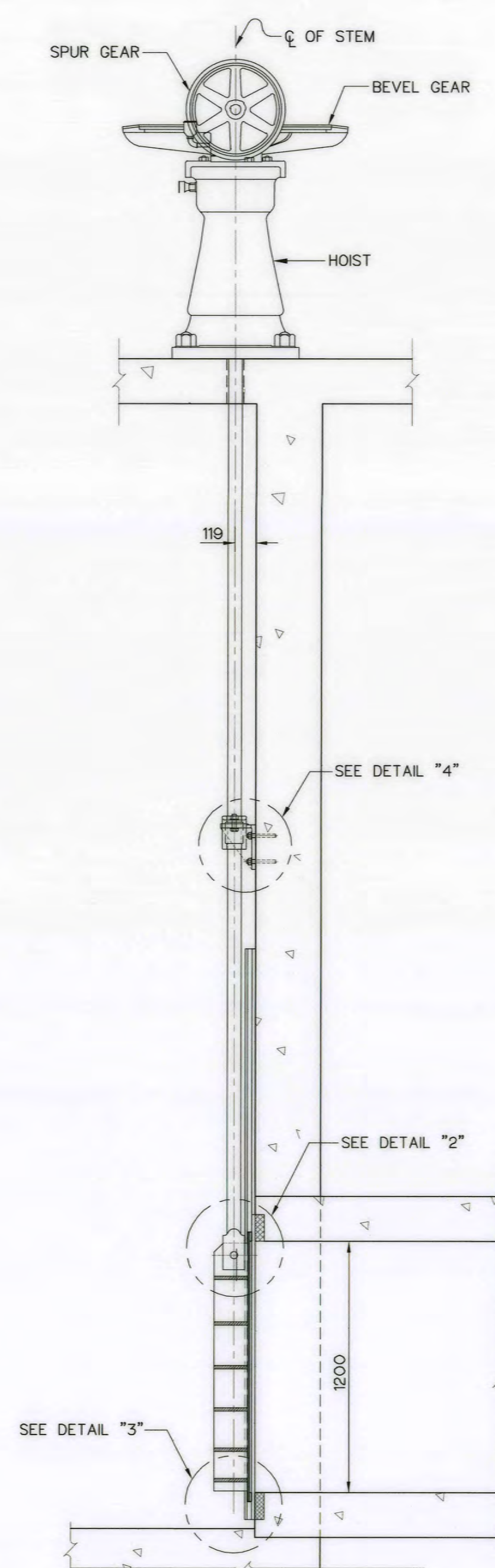
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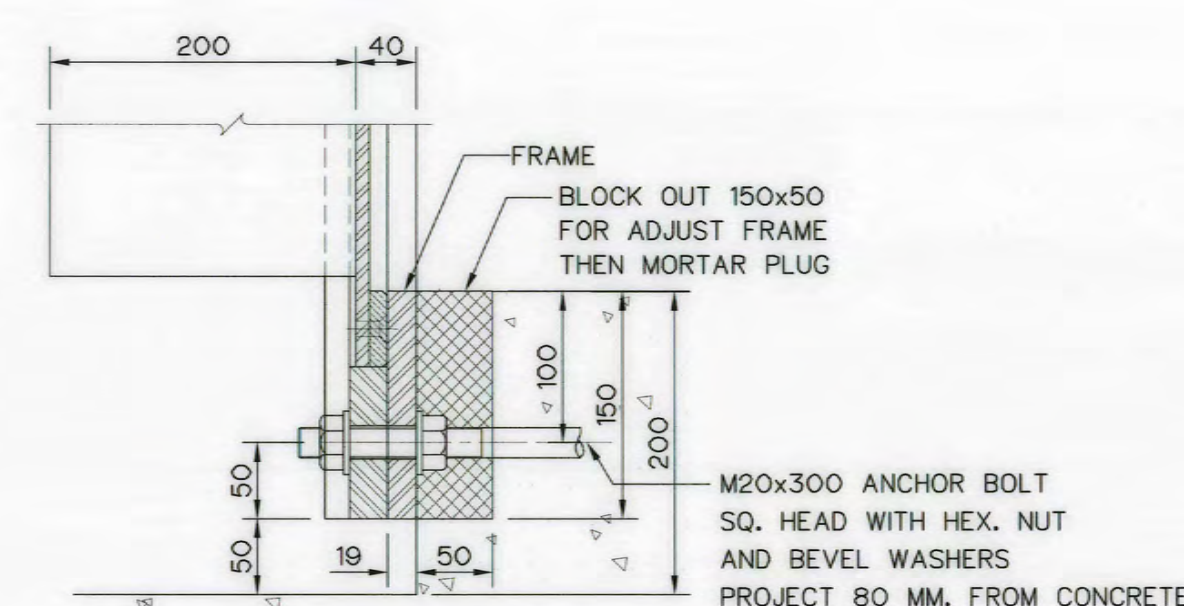
STEM GUIDE
NOT TO SCALE



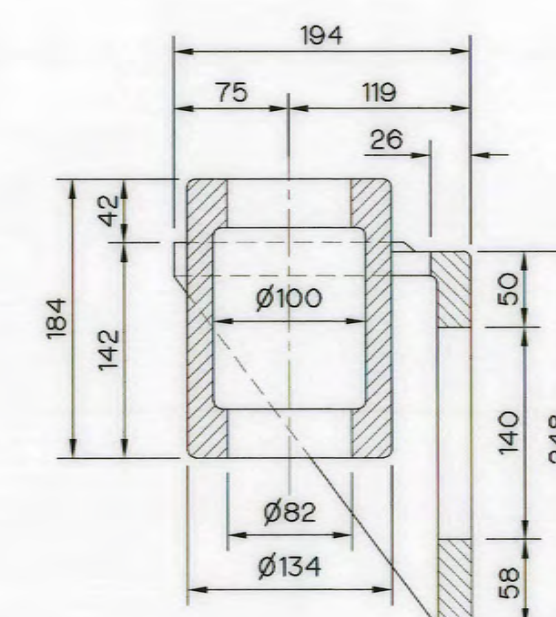
SECTION A-A
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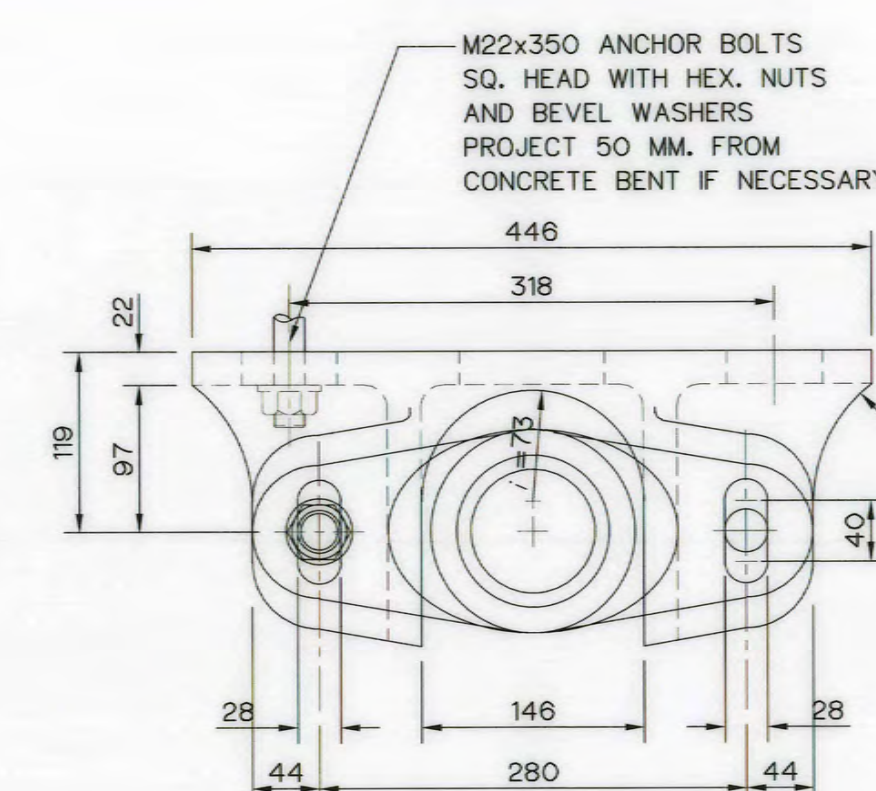
SECTION B-B
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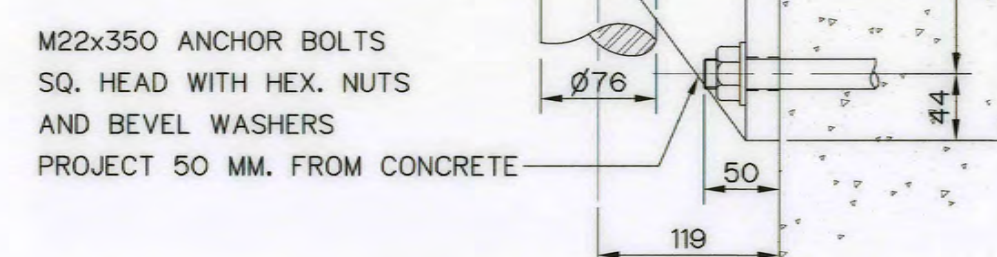
DETAIL "3"
SCALE 1:5



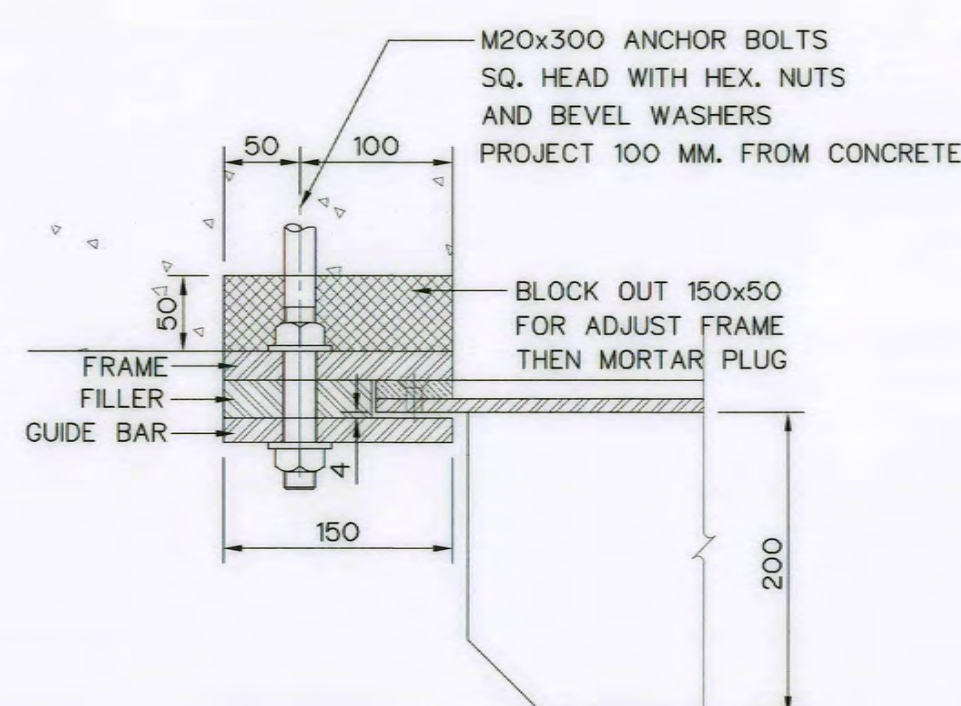
SECTION D-D
SCALE 1:5



SECTION E-E
SCALE 1:5



DETAIL "4"
SCALE 1:5



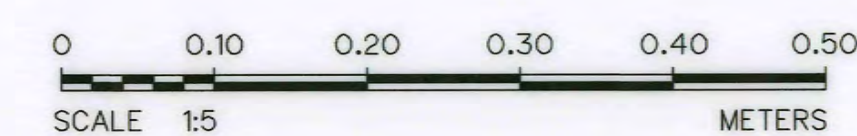
SECTION C-C
SCALE 1:5

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS, AND ELEVATION ARE IN METERS UNLESS OTHERWISE SHOWN.
2. ALL WELDING WILL BE 6 MILLIMETERS, UNLESS OTHERWISE SHOWN.
3. ALL BOLTS AND NUTS USE ASTM A325.
4. ALL STRUCTURAL STEELS ARE JIS G 3101 SS400.
5. ALL STAINLESS STEELS PLATES ARE JIS G 4304 SUS 304.
6. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONTRACTOR HAS TO SUBMITTED SHOP DRAWING TO FIELD ENGINEER FOR APPROVAL.

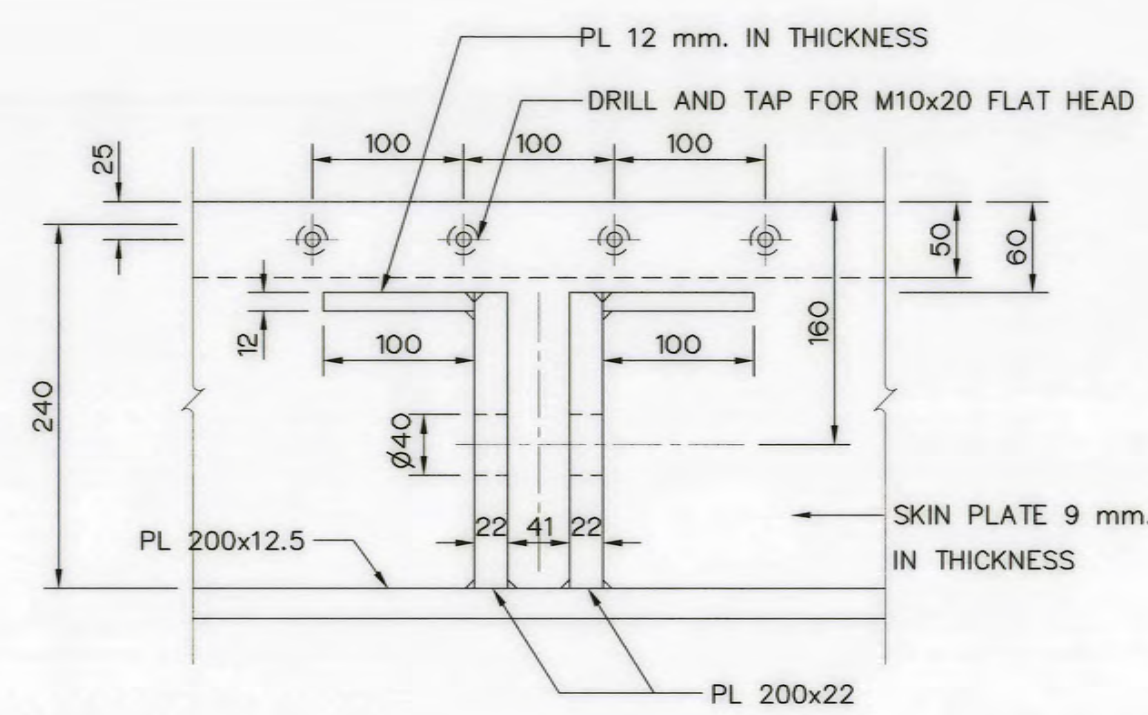
REFERENCE DRAWINGS :

1. WEIR, PLAN AND SECTION A-A AKP-WE-02
2. WEIR, 1.20x1.20 M. SLUICE GATE (SHEET 2/2) AKP-WE-13
3. WEIR, GATE LIFT, CAPACITY 4.0 TONS AKP-WE-14

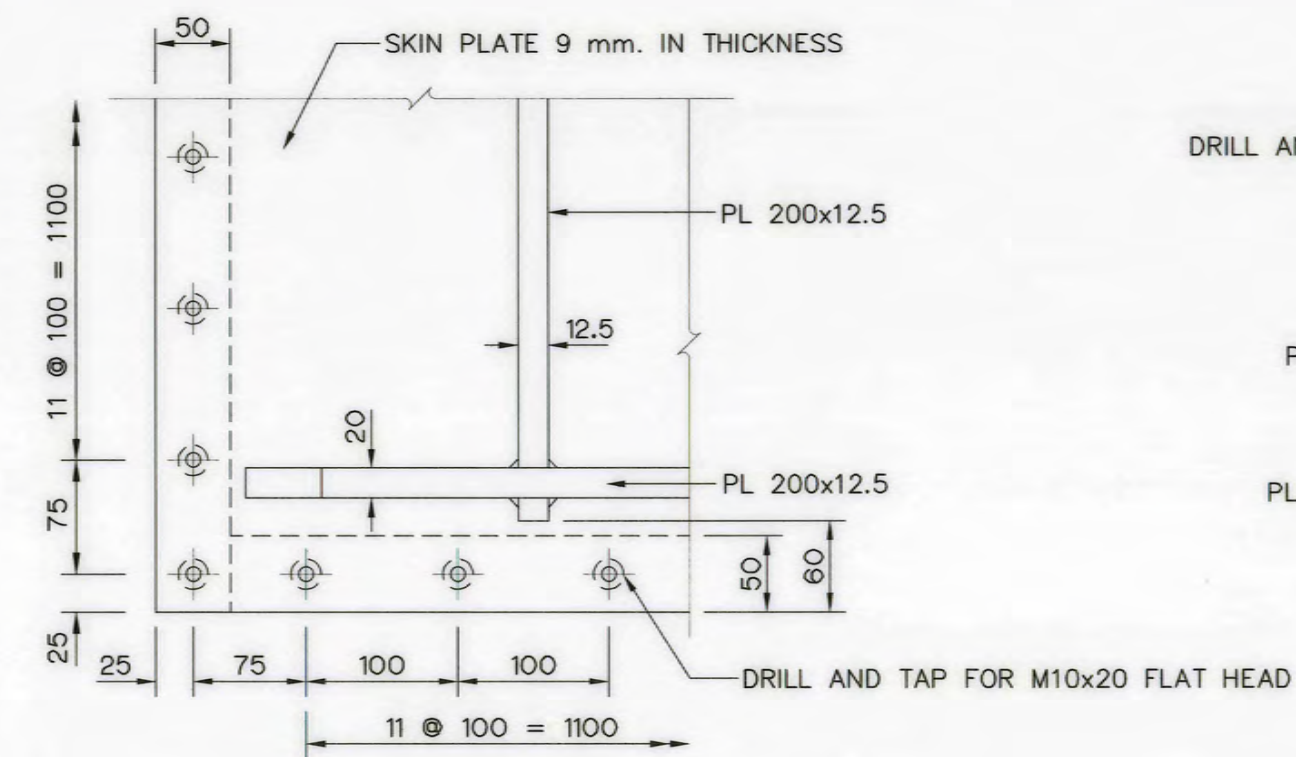


3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
			CONSULTANTS	DEDE

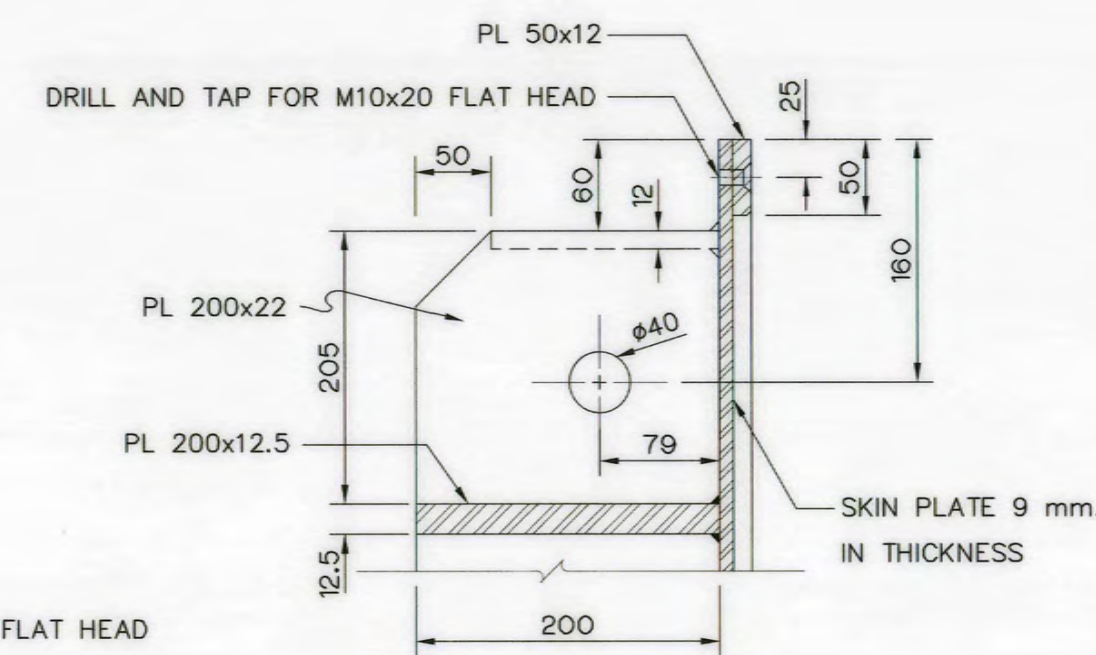
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE WEIR 1.20x1.20 M. SLUICE GATE (SHEET 1/2)	
DESIGNED <i>W. W. 29074</i> DRAWN <i>W. W. 29074</i> CHECKED <i>W. W. 29074</i>	REVIEWED <i>W. W. 29074</i> SUBMITTED <i>W. W. 29074</i> RECOMMENDED <i>W. W. 29074</i> APPROVED <i>W. W. 29074</i>
PROJECT MANAGER DATE 28/10/2021	DRAWING NO. SHEET NO. 24 OF 129



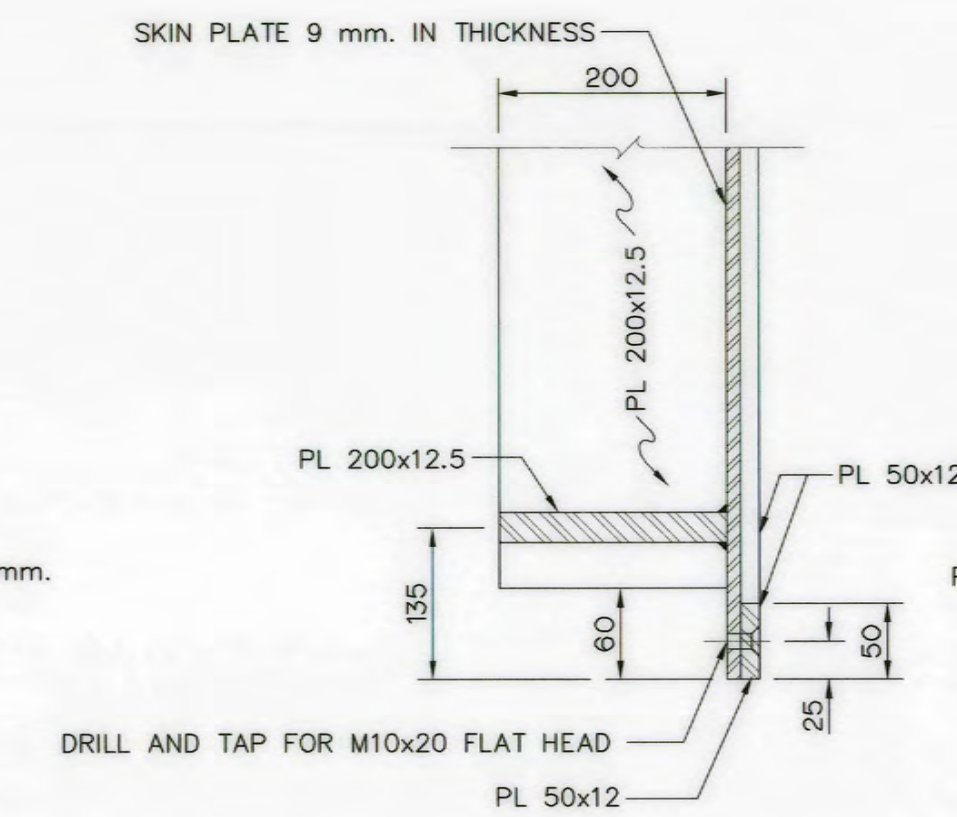
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NOT TO SCALE



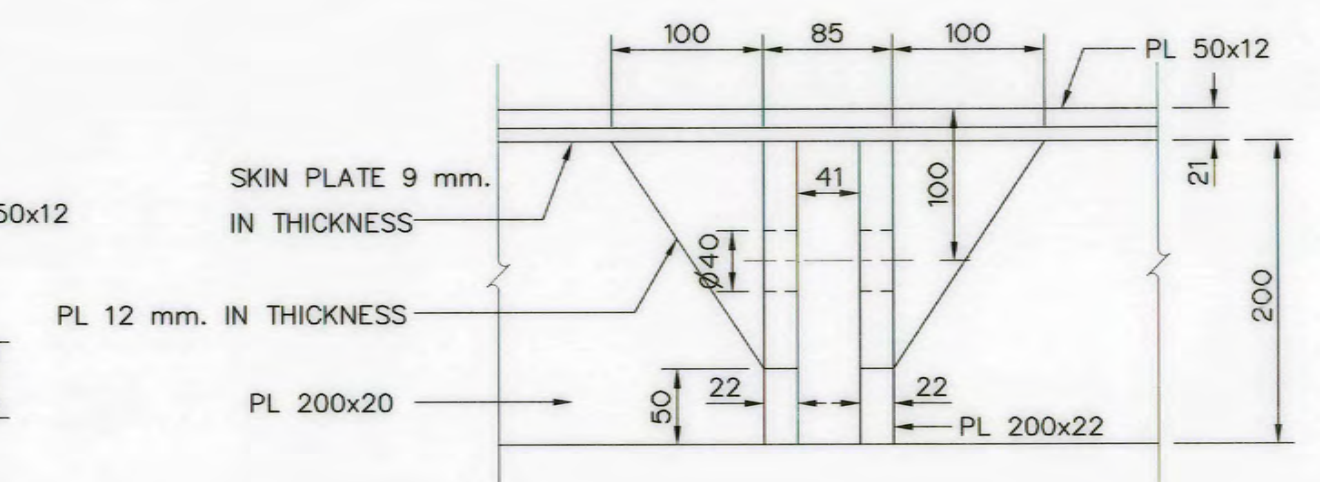
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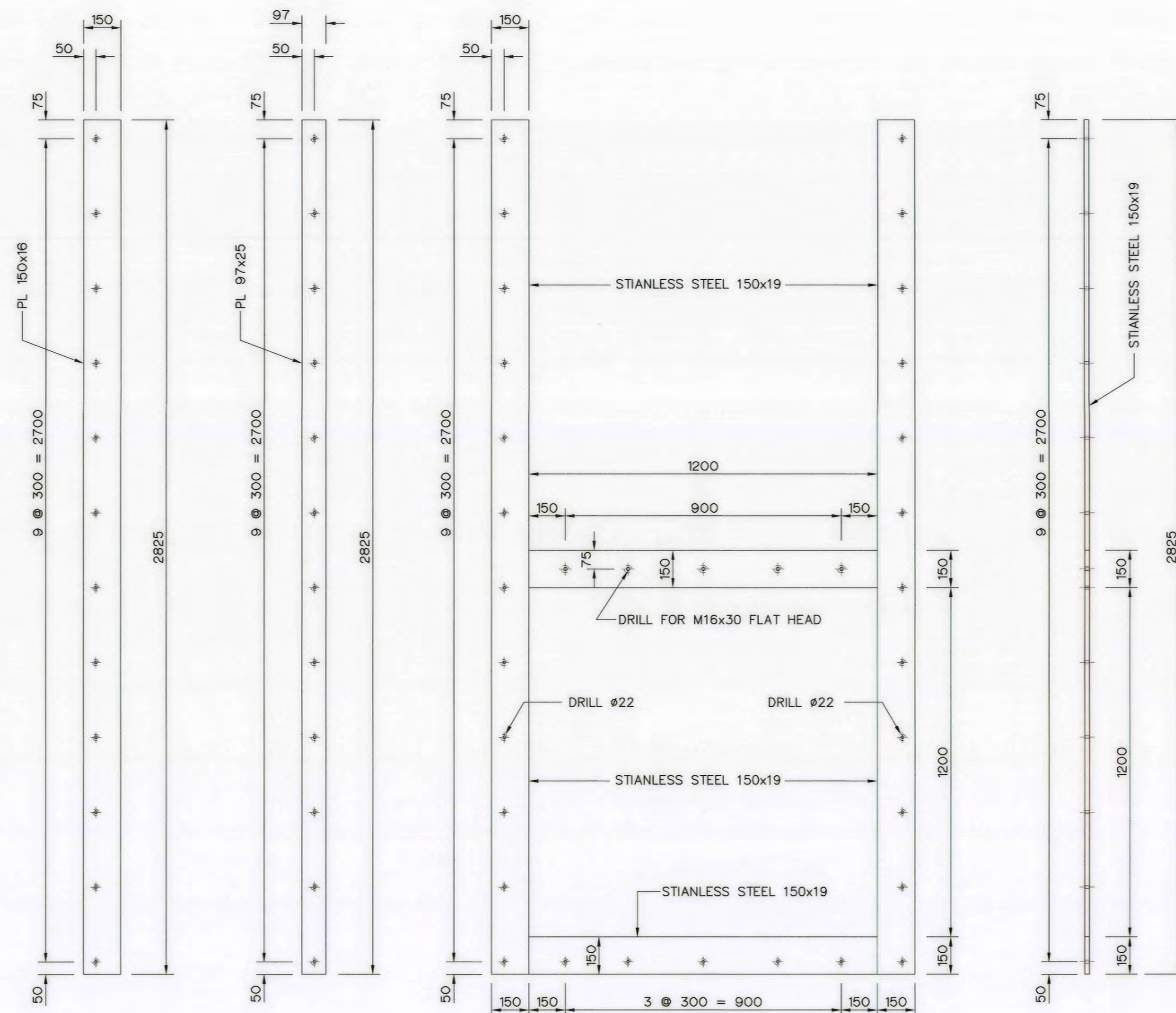
DETAIL "3"
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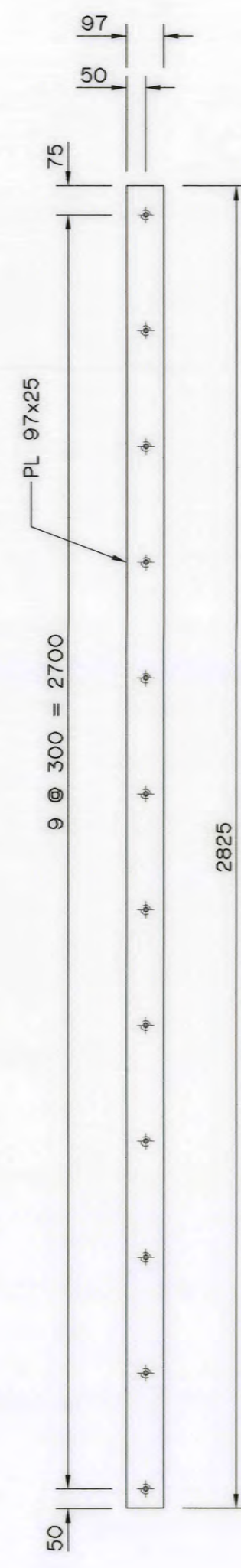
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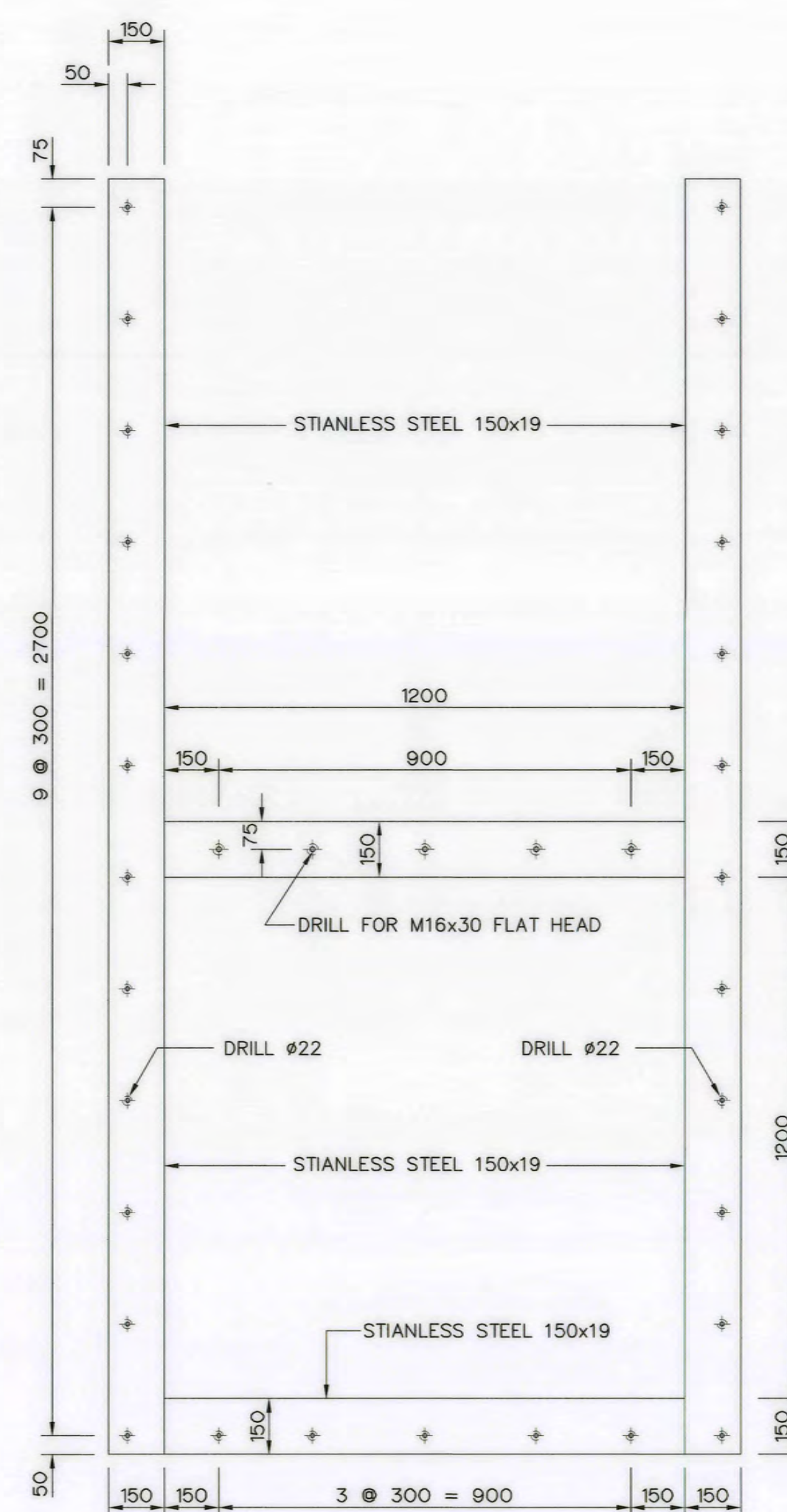
DETAIL "5"
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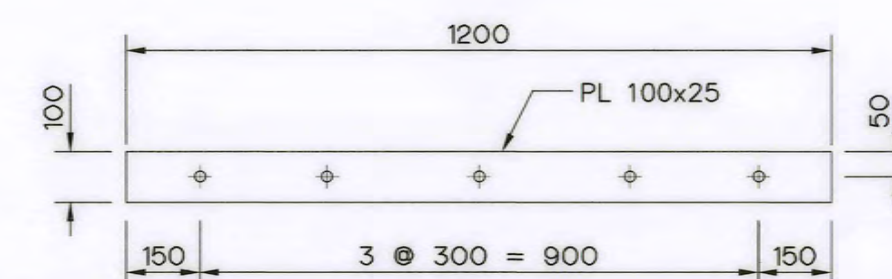
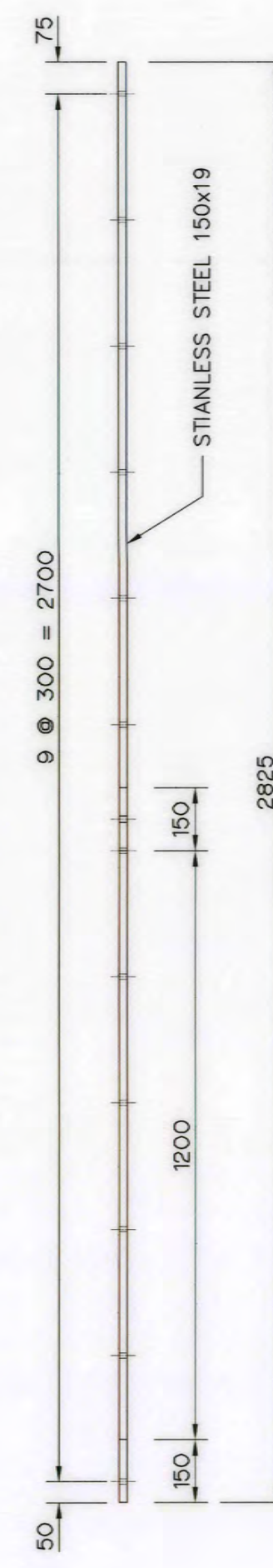
GUIDE BAR
NOT TO SCALE



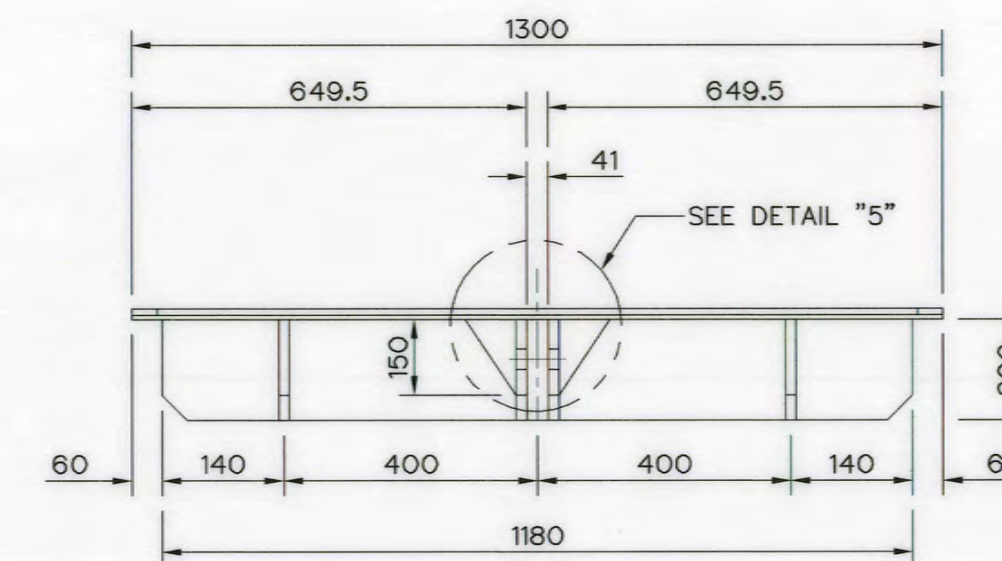
FILLER
NOT TO SCALE



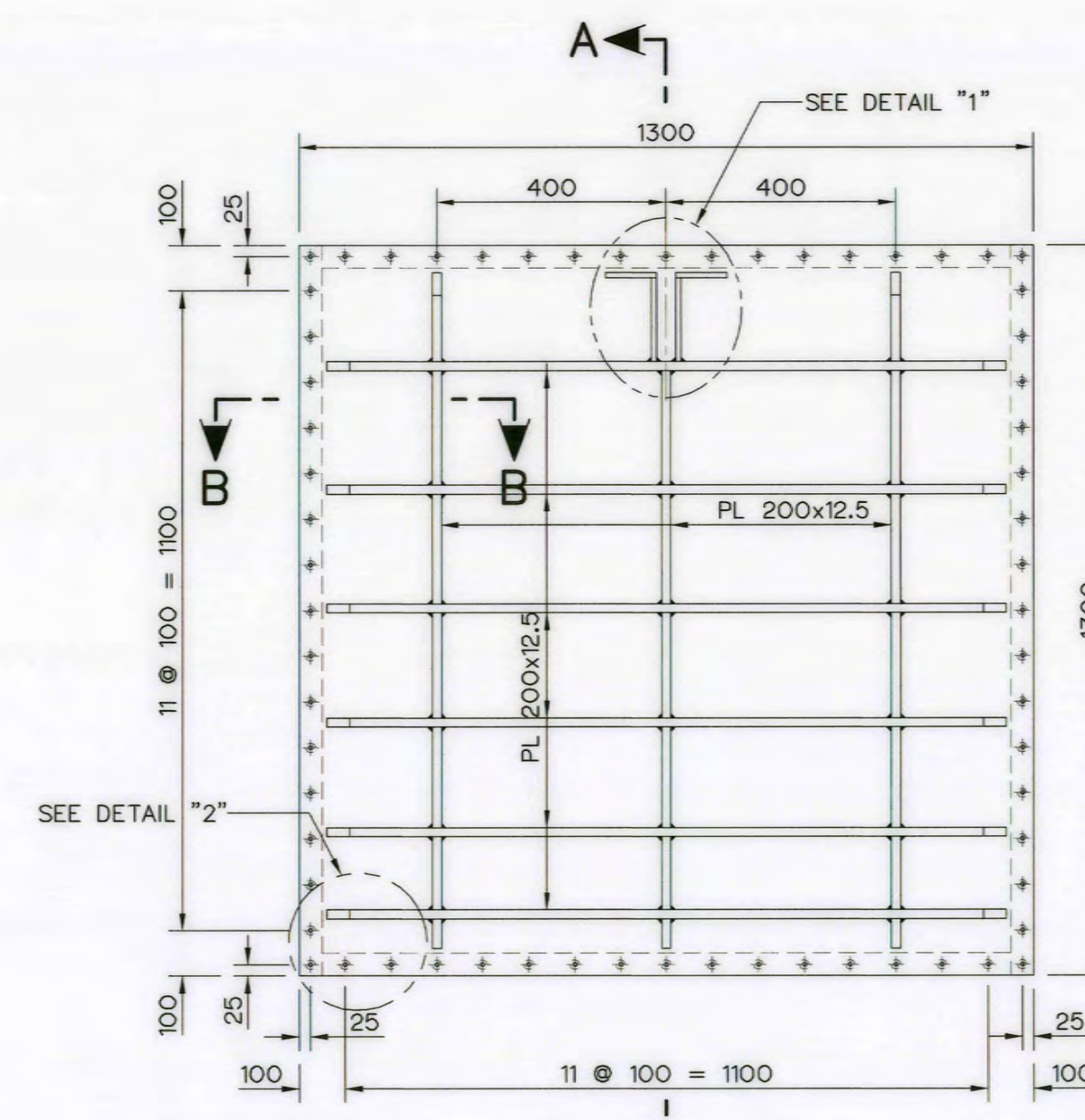
FRAME
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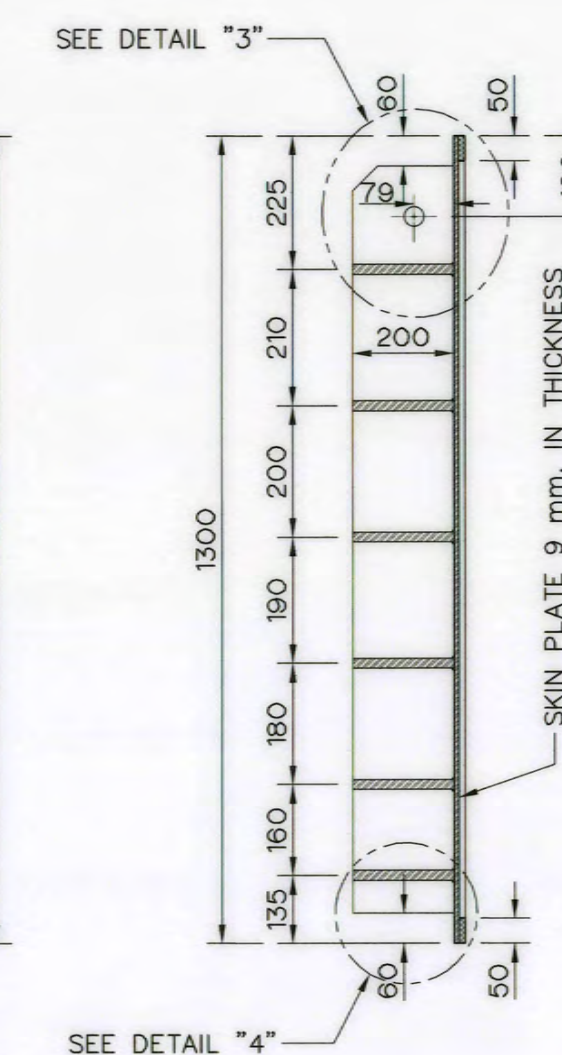
BOTTOM BAR
NOT TO SCALE



SECTION B-B
NOT TO SCALE



GATE LEAF
NOT TO SCALE



SECTION A-A
NOT TO SCALE

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SHOWN.
2. ALL WELDING WILL BE 6 MILLIMETERS, UNLESS OTHERWISE SHOWN.
3. ALL BOLTS AND NUTS USE ASTM A325.
4. ALL STRUCTURAL STEELS ARE JIS G 3101 SS400.
5. ALL STAINLESS STEELS PLATES ARE JIS G 4304 SUS 304.
6. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONTRACTOR HAS TO SUBMITTED SHOP DRAWING TO FIELD ENGINEER FOR APPROVAL.

REFERENCE DRAWINGS :

- | | |
|---|-----------|
| 1. WEIR, PLAN AND SECTION A-A | AKP-WE-02 |
| 2. WIER, 1.20x1.20 M. SLUICE GATE (SHEET 1/2) | AKP-WE-12 |
| 3. WEIR, GATE LIFT, CAPACITY 4.0 TONS | AKP-WE-16 |

 KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE WEIR 1.20x1.20 M. SLUICE GATE (SHEET 2/2)	
 PCM P&C MANAGEMENT CO., LTD.  SPT CONSULTANTS CO., LTD.	 Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>[Signature]</i> 28.12.9074 <i>[Signature]</i> 28.9.462	REVIEWED <i>[Signature]</i>
DRAWN <i>[Signature]</i>	RECOMMENDED <i>[Signature]</i>
CHECKED <i>[Signature]</i> 28.12.31	APPROVED <i>[Signature]</i>
<i>[Signature]</i> PROJECT MANAGER	28/10/2021 DATE
AKP-WE-13	
DRAWING NO.	SHEET NO. 25 OF 129

50 KG.

TWO REQ'D
SCALE 1:2.5

4 KG.

ONE REQ'D
SCALE 1:5
3 1/2 KG.

25 KG.

ONE REQ'D
SCALE 1:5
6 KG.

NOTE

1. ALL DIMENSIONS GIVEN IN MILLIMETERS EXCEPT AS NOTED
2. 4-TONNE RATED CAPACITY IS FOR LIFT FURNISHED WITH SINGLE ACME THREADED STEM. TO CUT DOWN THE OPERATING TIME, MULTIPLE THREADS MAY BE ADOPTED AT THE SACRIFICE OF CAPACITY
3. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONTRACTOR HAS TO SUBMITTED SHOP DRAWING TO FIELD ENGINEER FOR APPROVAL.

- SYMM ABOUT ?

3" SINGLE ACME, 2P, $\frac{1}{16}$ " OVER SIZE

ONE REQ'D
SCALE 1:2.5
8 KG.

ONE REQ'D
SCALE 1:2
3 KG.

140 KG.

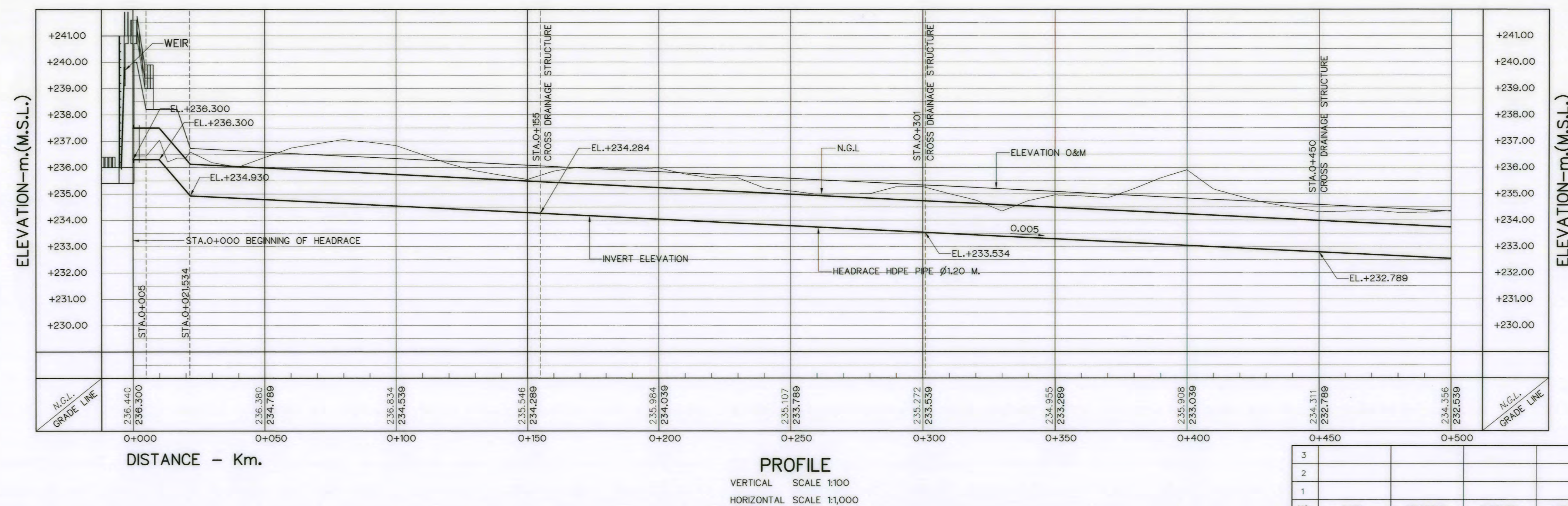
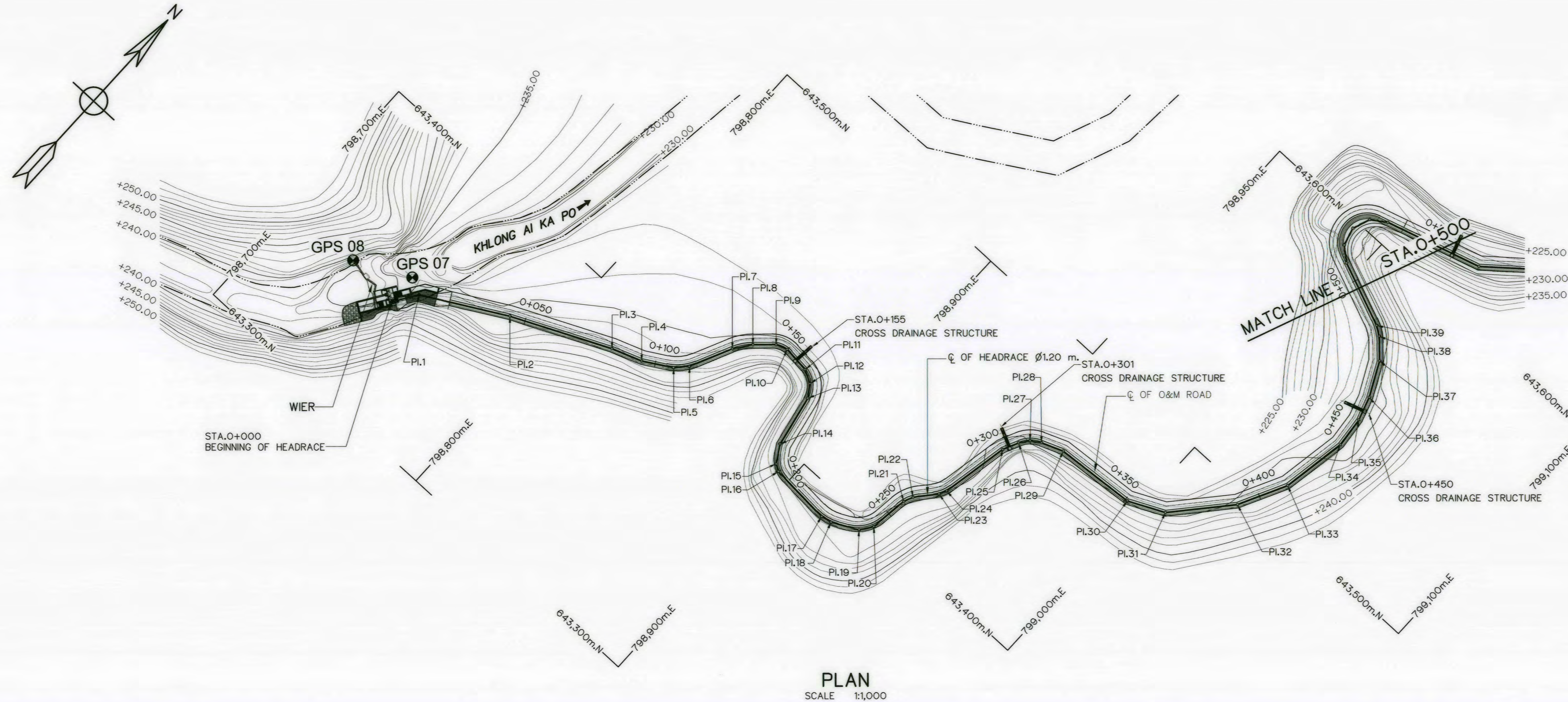
SMOOTH FINISH ALL OVER EXCEPT AS NOTED

ONE REQ'D
SCALE 1:5
40 KG.

ASSEMBLY
SCALE 1:7.5
310 KG.

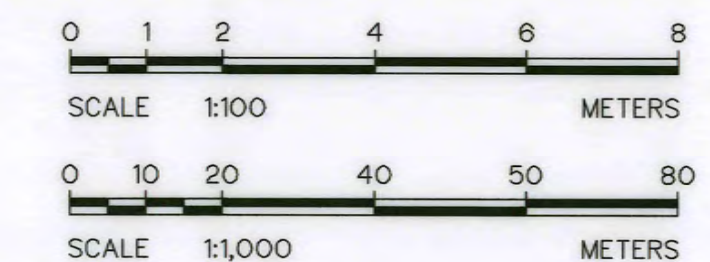
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWA	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE WEIR GATE LIFT, CAPACITY 4.0 TONS	

3					 SPT CONSULTANTS CO., LTD.	 MINISTRY OF ENERGY
2					DESIGNED  18.29074  28.9462	REVIEWED 
1					DRAWN 	SUBMITTED 
NO.	DATE	REVISIONS	CHECKED	APPROVED	CHECKED  28.8231	APPROVED 
CONSULTANTS				DEDE	 28/10/2021	DRAWING NO. AKP-WE-14
					PROJECT MANAGER	SHEET NO. 26 of 12

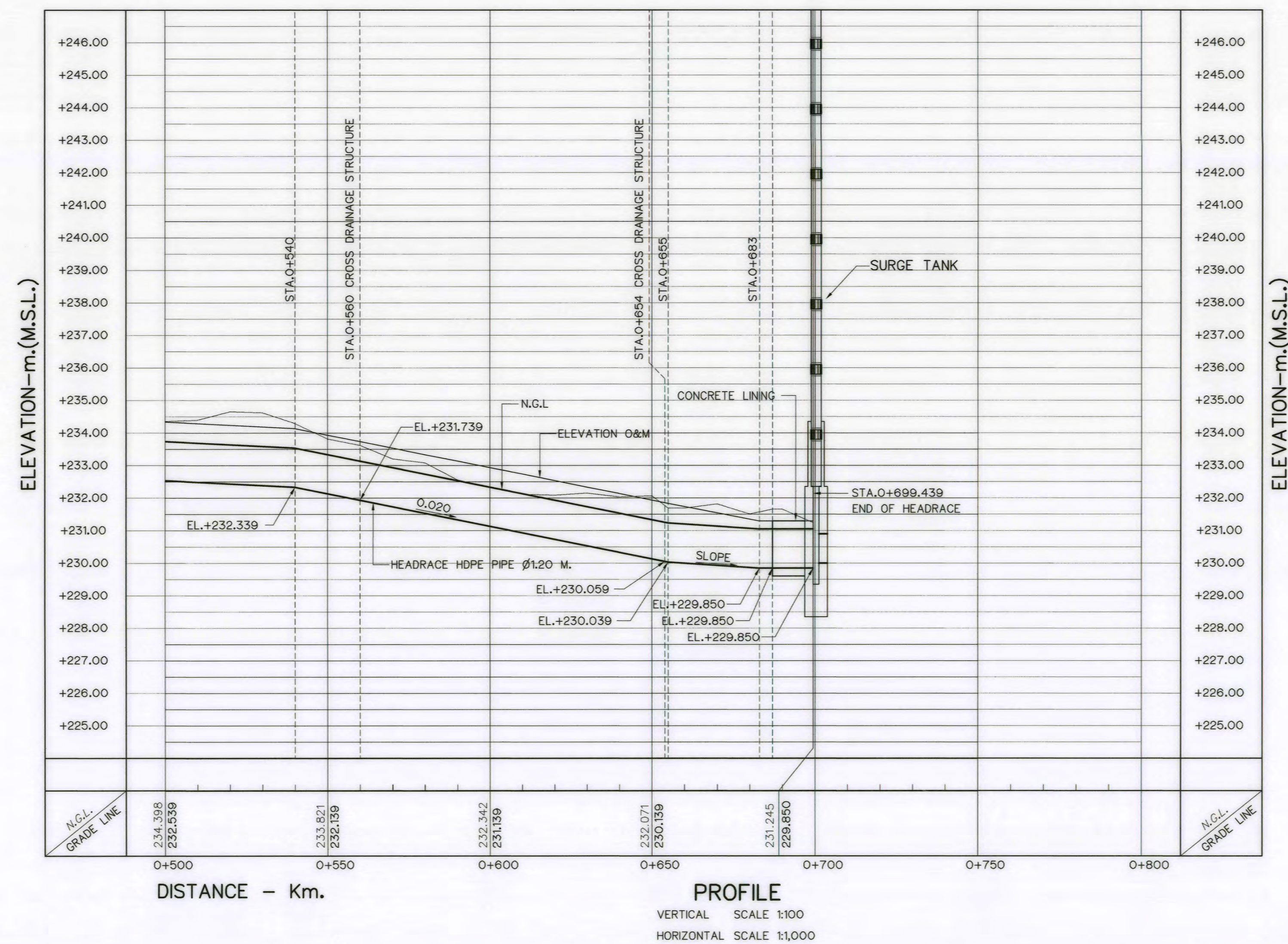
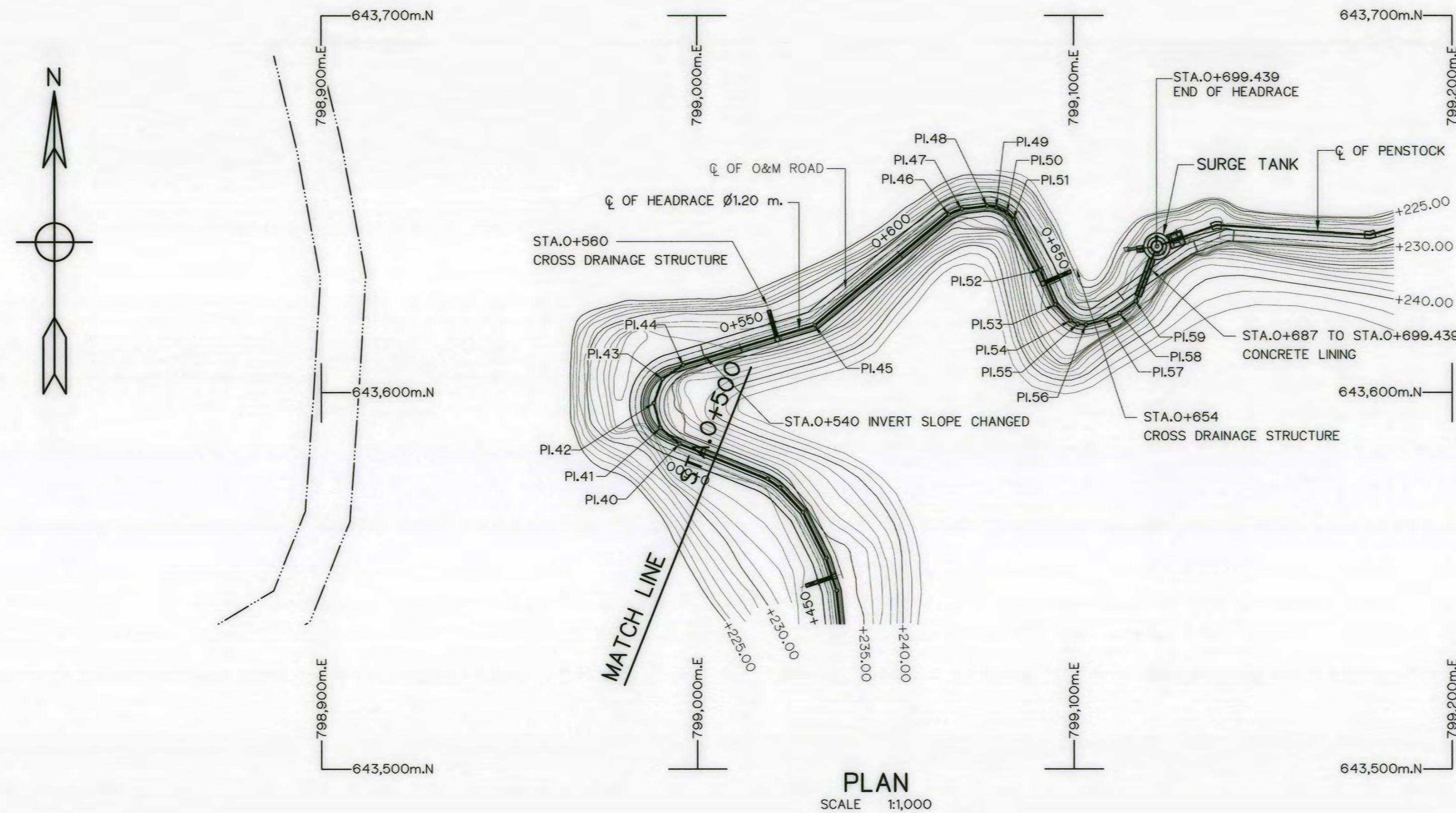


- NOTES :**
1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
 2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
 3. THE ALIGNMENT OF THE HEADRACE AND RELATED STRUCTURES SHALL BE CHECK AND CORRECTED BY THE CONTRACTOR TO SUIT THE FIELD CONDITIONS AND SHALL BE SUBMITTED TO DEDE'S FIELD ENGINEER FOR APPROVAL

- REFERENCE DRAWINGS :**
1. HEADRACE, PLAN AND PROFILE, STA.0+500 TO STA.0+699.439 AKP-HR-02
 2. HEADRACE, DATA CURVE OF HEADRACE AKP-HR-03
 3. HEADRACE, TYPICAL SECTIONS AND DETAILS AKP-HR-04
 4. HEADRACE, TYPICAL CROSS DRAINAGE AND DETAILS AKP-HR-05
 5. HEADRACE, CONCRETE LINING, HORIZONTAL BEND AND JOINT AKP-HR-06



KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE HEADRACE PLAN AND PROFILE, STA.0+000 TO STA.0+500	
DESIGNED <i>[Signature]</i> 28/10/21 DRAWN <i>[Signature]</i> CHECKED <i>[Signature]</i> 28/10/21 PROJECT MANAGER	REVIEWED <i>[Signature]</i> SUBMITTED <i>[Signature]</i> RECOMMENDED <i>[Signature]</i> APPROVED <i>[Signature]</i> 28/10/21 DATE
NO. 1 DATE 28/10/21 REVISIONS CHECKED APPROVED CONSULTANTS	DEDE SHEET NO. 27 OF 129

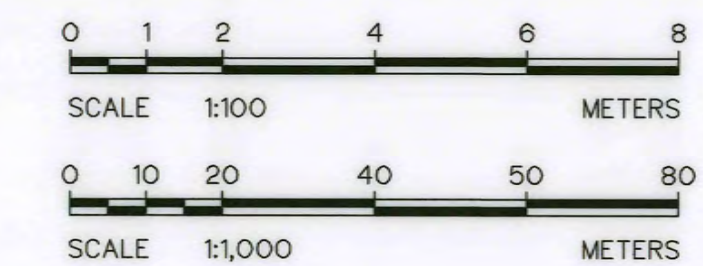


NOTES :

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS. UNLESS OTHERWISE SHOWN.
2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
3. THE ALIGNMENT OF THE HEADRACE AND RELATED STRUCTURES SHALL BE CHECK AND CORRECTED BY THE CONTRACTOR TO SUIT THE FIELD CONDITIONS AND SHALL BE SUBMITTED TO DEDE'S FIELD ENGINEER FOR APPROVAL

REFERENCE DRAWINGS :

1. HEADRACE, PLAN AND PROFILE, STA.0+000 TO STA.0+500 AKP-HR-01
2. HEADRACE, DATA CURVE OF HEADRACE AKP-HR-03
3. HEADRACE, TYPICAL SECTIONS AND DETAILS AKP-HR-04
4. HEADRACE, TYPICAL CROSS DRAINAGE AND DETAILS AKP-HR-05
5. HEADRACE, CONCRETE LINING, HORIZONTAL BEND AND JOINT AKP-HR-06

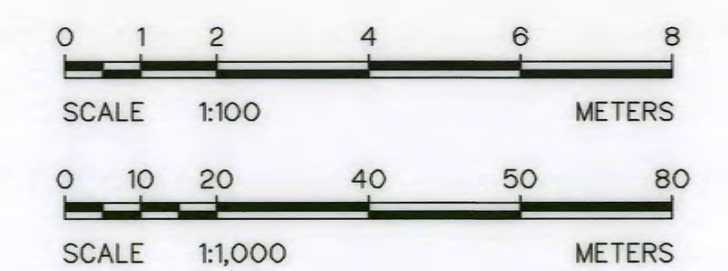


KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE HEADRACE PLAN AND PROFILE, STA.0+500 TO STA.0+699.439			
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.		Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
DESIGNED <i>Wan</i> 28/29074 28/9462		REVIEWED <i>Wan</i>	
DRAWN <i>Wan</i>		SUBMITTED <i>Wan</i>	
CHECKED <i>Wan</i> 28/8231		APPROVED <i>Wan</i>	
PROJECT MANAGER		SHEET NO.	
DATE		28/10/2021	
CONSULTANTS		DEDE	
3		28 OF 129	

NO.	PI.	COORDINATE		PI. - PI. (m)	DEFLECTION ANGLE (° - ' - ")	PI. STA. (km)	BEARING (N/S ° - ' - " E/W)
		N	E				
B		643,341.931	798,749.620	-	-	0+000.000	N 33°-12'-59.48" E
PI.1		643,350.578	798,755.282	10.336	27°-27'-43.25"	0+010.336	N 60°-40'-42.72" E
PI.2		643,367.173	798,784.828	33.887	4°-23'-45.02"	0+044.223	N 65°-04'-27.74" E
PI.3		643,383.636	798,820.253	39.064	4°-44'-11.90"	0+083.287	N 69°-48'-39.65" E
PI.4		643,387.685	798,831.210	11.674	10°-17'-46.47"	0+094.981	N 52°-30'-53.18" E
PI.5		643,393.655	798,841.385	11.807	17°-6'-48.85"	0+106.768	N 42°-24'-04.33" E
PI.6		643,397.985	798,845.339	5.864	17°-6'-20.06"	0+112.632	N 25°-17'-44.27" E
PI.7		643,413.243	798,852.550	16.876	10°-55'-54.70"	0+129.508	N 36°-13'-38.97" E
PI.8		643,419.373	798,857.041	7.599	10°-55'-34.29"	0+137.107	N 47°-09'-13.25" E
PI.9		643,425.313	798,863.249	8.467	24°-17°-29.13"	0+145.574	N 71°-26°-43.29" E
PI.10		643,426.525	798,867.402	4.381	24°-18°-12.10"	0+149.955	S 84°-15°-05.52" E
PI.11		643,425.545	798,877.137	9.784	22°-38°-33.09"	0+159.739	S 61°-36°-32.43" E
PI.12		643,422.989	798,881.866	5.376	27°-43°-36.49"	0+165.115	S 33°-52°-55.94" E
PI.13		643,416.526	798,884.863	5.376	22°-38°-58.78"	0+170.491	S 11°-13°-57.16" E
PI.14		643,399.442	798,888.653	19.457	20°-6°-17.45"	0+189.948	S 31°-20°-14.62" E
PI.15		643,393.175	798,892.469	7.337	27°-28°-55.73"	0+197.285	S 58°-49°-10.35" E
PI.16		643,391.696	798,894.913	2.857	27°-27°-25.03"	0+200.142	S 86°-16°-35.38" E
PI.17		643,390.223	798,917.547	22.682	15°-24°-44.60"	0+222.824	N 78°-18°-40.02" E
PI.18		643,391.028	798,921.438	3.973	15°-24°-10.60"	0+226.797	N 62°-54°-29.42" E
PI.19		643,395.813	798,930.792	10.507	27°-55°-13.52"	0+237.304	N 34°-59°-15.91" E
PI.20		643,400.318	798,933.945	5.499	27°-54°-57.40"	0+242.803	N 07°-04°-18.51" E
PI.21		643,414.368	798,935.688	14.158	16°-37°-48.53"	0+256.960	N 40°-20°-07.04" E
PI.22		643,417.762	798,937.178	3.707	16°-38°-24.38"	0+260.667	N 40°-20°-31.42" E
PI.23		643,425.016	798,943.338	9.517	14°-48°-21.46"	0+270.184	N 25°-32°-09.96" E
PI.24		643,427.735	798,944.338	3.013	14°-47°-41.06"	0+273.198	N 10°-44°-28.90" E
PI.25		643,452.511	798,949.338	25.218	14°-49°-12.17"	0+298.415	N 25°-33°-41.07" E
PI.26		643,458.131	798,952.026	6.230	10°-43°-4.90"	0+304.645	N 36°-16°-45.97" E
PI.27		643,461.526	798,954.518	4.211	21°-28°-32.86"	0+308.857	N 57°-45°-18.83" E
PI.28		643,463.773	798,958.080	4.212	10°-43°-17.24"	0+313.068	N 68°-28°-36.07" E
PI.29		643,466.861	798,965.910	8.417	16°-58°-36.13"	0+321.485	N 85°-27°-12.21" E
PI.30		643,469.195	798,995.261	29.444	21°-0°-36.25"	0+350.929	N 64°-26°-35.96" E
PI.31		643,475.389	799,008.214	14.358	23°-17°-18.49"	0+365.286	N 41°-09°-17.47" E
PI.32		643,495.110	799,025.451	26.192	14°-35°-13.79"	0+391.479	N 26°-34°-03.68" E
PI.33		643,512.490	799,034.142	19.432	16°-55°-58.08"	0+410.910	N 09°-38°-05.60" E
PI.34		643,536.276	799,038.180	24.126	15°-38°-2.36"	0+435.037	N 05°-58°-56.77" W
PI.35		643,547.419	799,037.009	11.204	11°-49°-41.60"	0+446.241	

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

1. HEADRACE, PLAN AND PROFILE, STA.0+000 TO STA.0+500	AKP-HR-01
2. HEADRACE, PLAN AND PROFILE, STA.0+500 TO STA.0+699.439	AKP-HR-02



 KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE HEADRACE DATA CURVE OF HEADRACE	
 P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	 Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>Mina</i> ๒๒.๒9074 <i>ch</i> ๒๒.๒462	REVIEWED <i>DAV</i>
DRAWN <i>[Signature]</i>	SUBMITTED <i>[Signature]</i>
CHECKED <i>[Signature]</i> ๒๒.๒231	RECOMMENDED <i>[Signature]</i>
<i>[Signature]</i>	APPROVED <i>[Signature]</i>
PROJECT MANAGER	DATE
	28/10/2021
DRAWING NO.	SHEET NO.
AKP-HR-03	29 OF 129

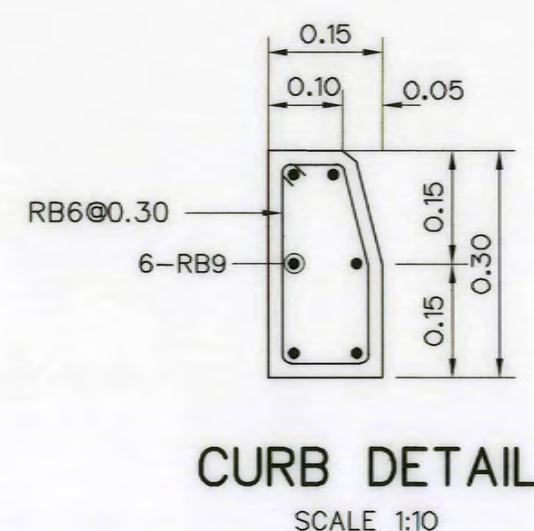
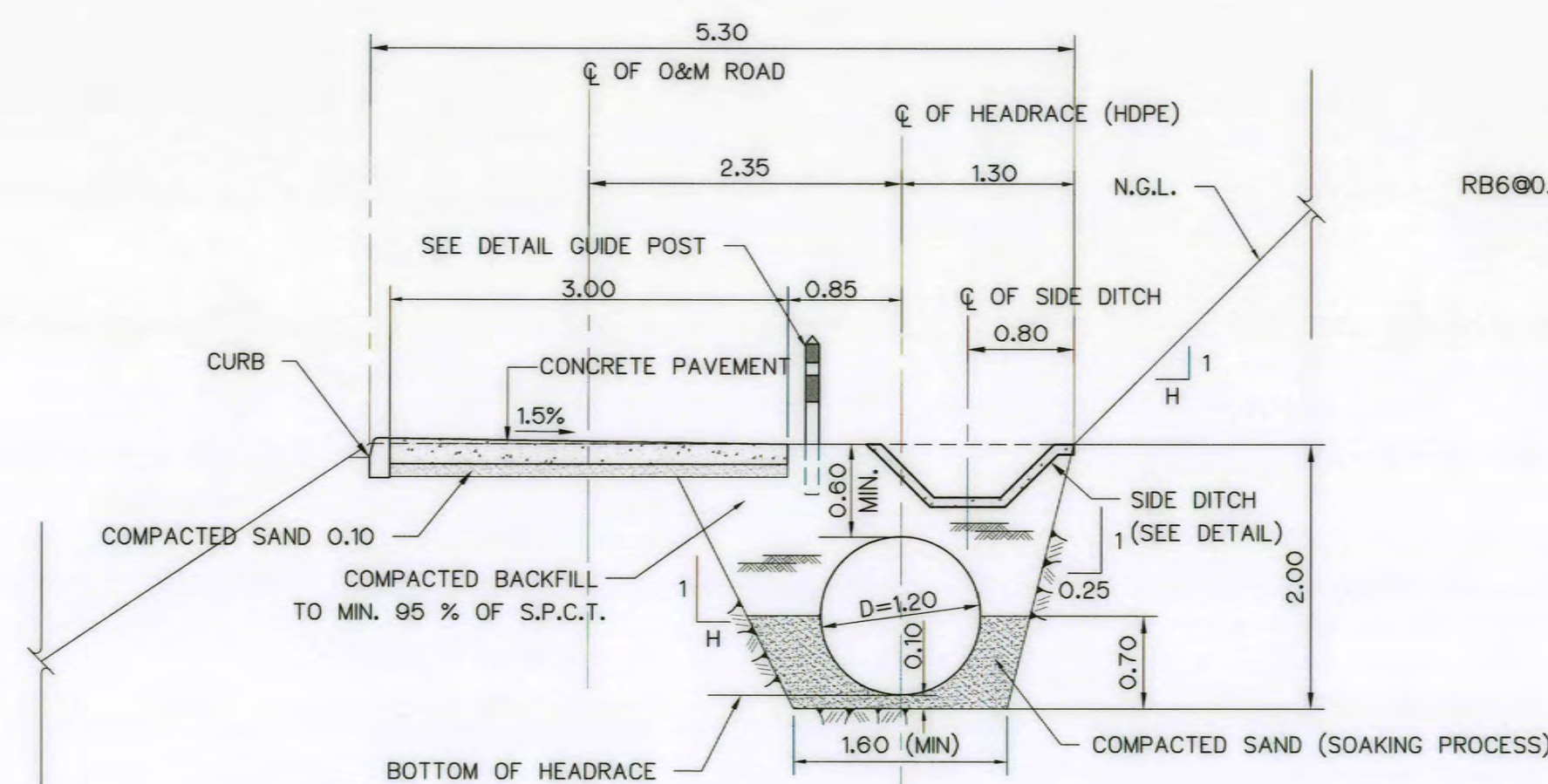
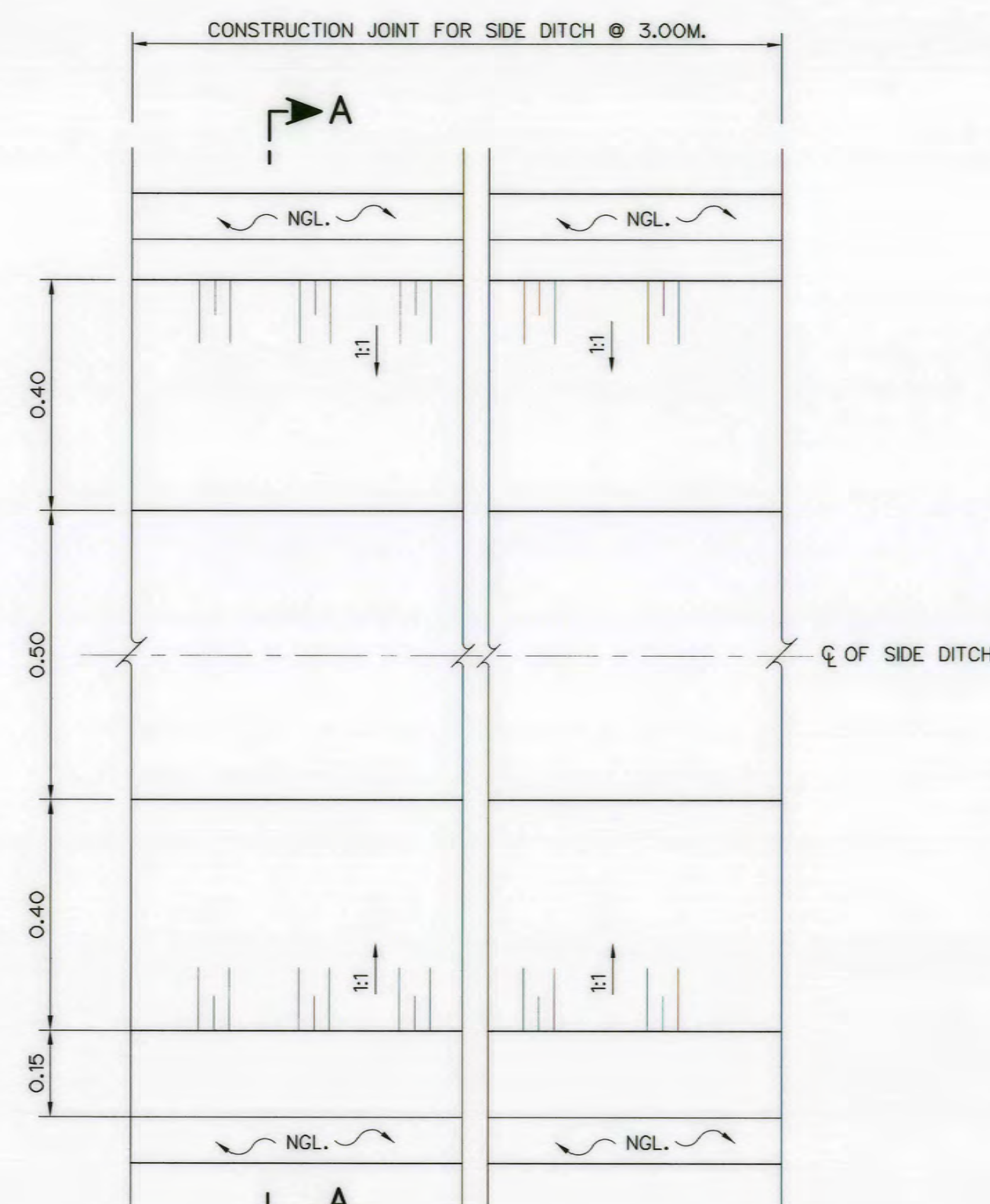
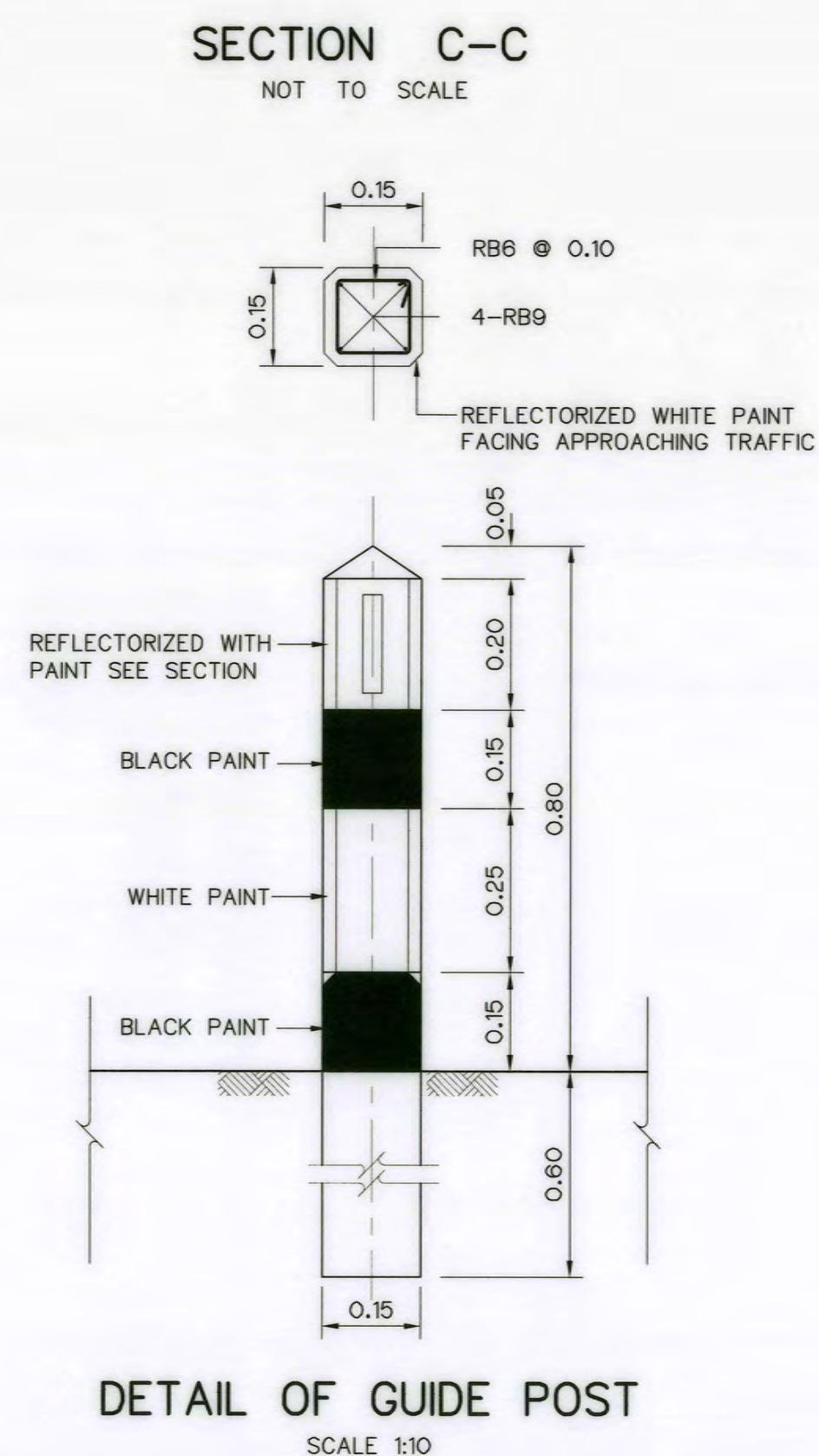
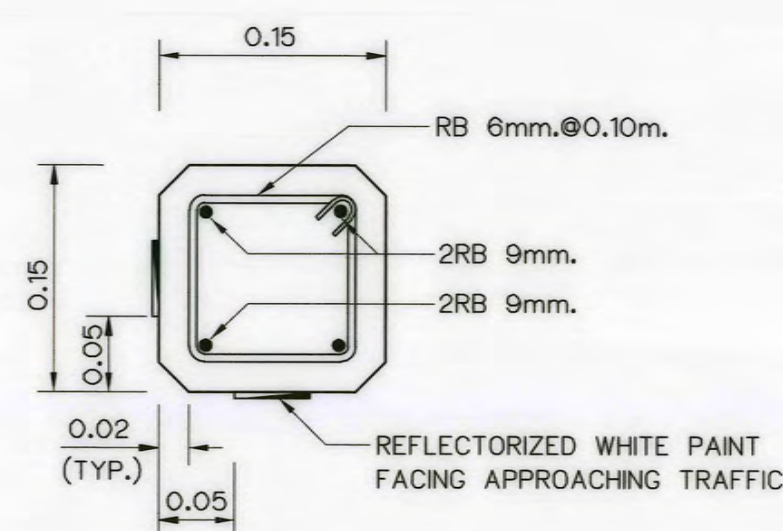
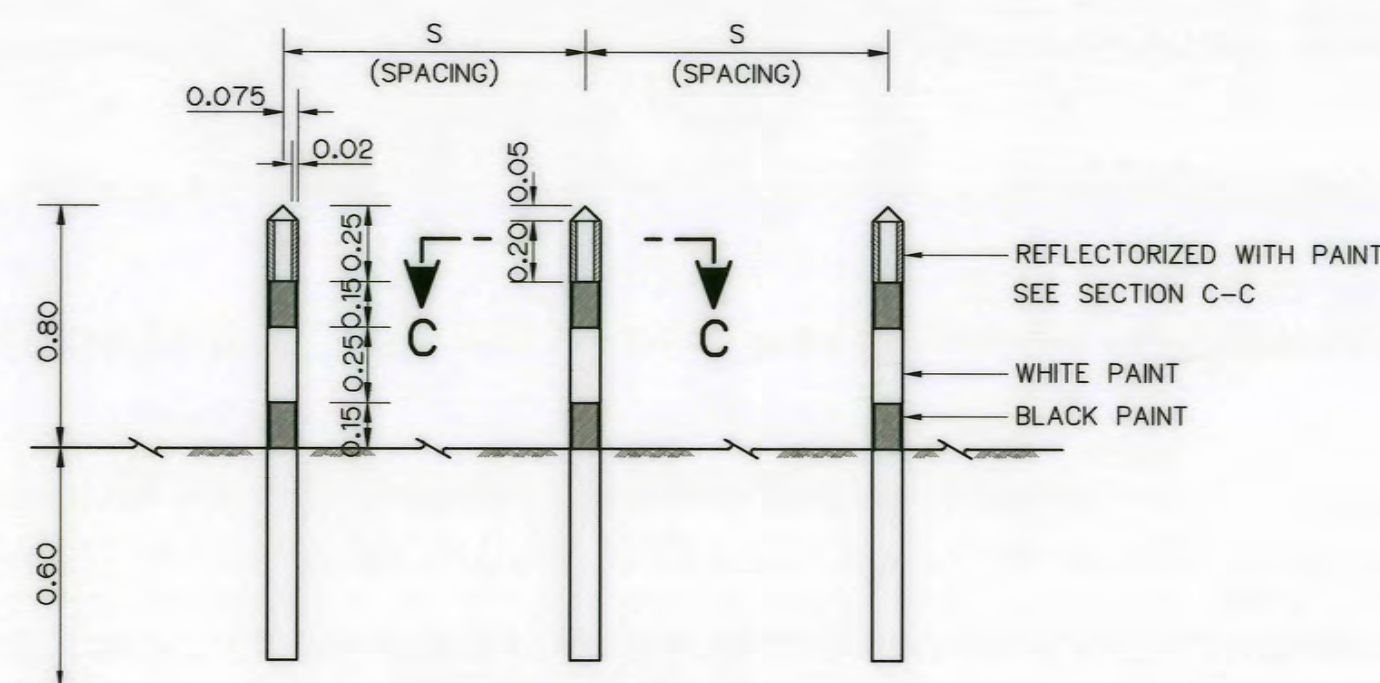
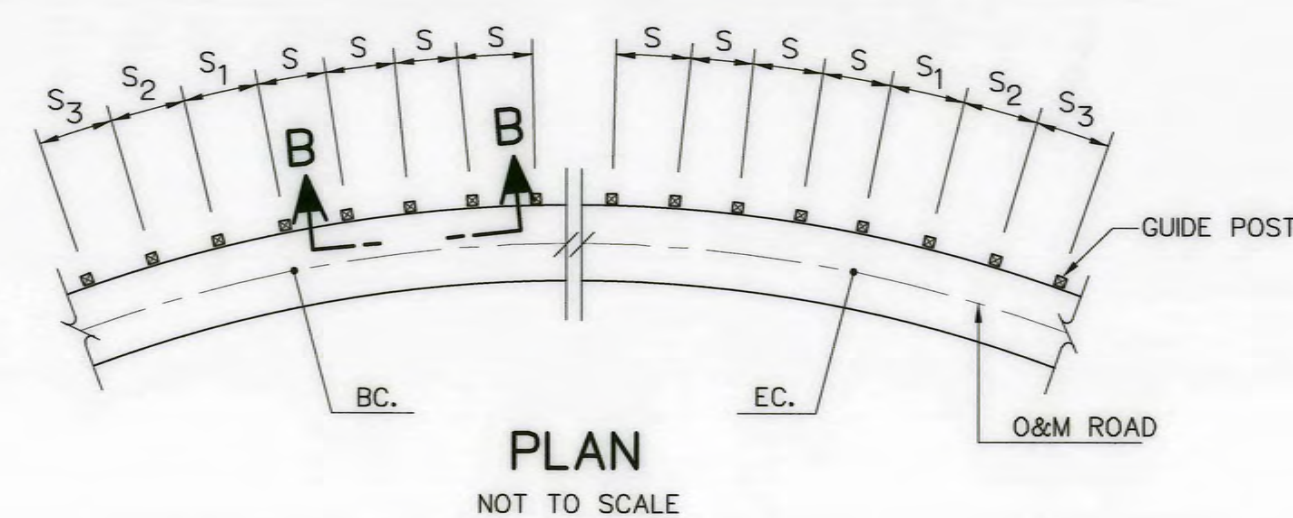


TABLE 1 TABLE OF CUT SLOPE

TYPE OF GROUND	SLOPE 1:H
EARTH	1:1
MODERATELY WEATHERED ROCK	1:0.5
FRESH ROCK	1:0.25

TABLE 2 TABLE OF FILL SLOPE

TYPE OF GROUND	SLOPE 1:H
EARTH	1:1.5
MODERATELY WEATHERED ROCK	1:1
FRESH ROCK	1:1

TABLE 3

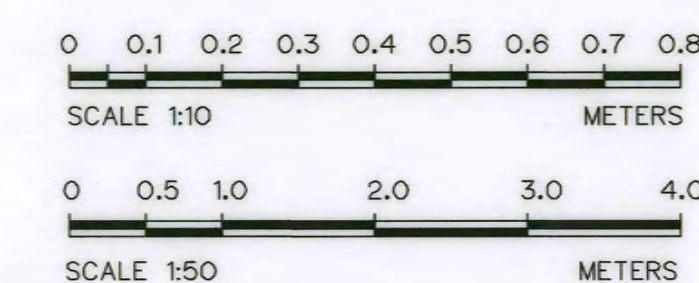
SPACING OF GUIDE POSTS				
RADIUS M.	S M.	S1 M.	S2 M.	S3 M.
15 - 74	4	8	12	24
75 - 99	6	12	18	36
LARGER THAN 100	NO GUIDE POSTS INSTALLED			

NOTES :

- ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
- SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
- GUIDE POSTS ARE REQUIRED AT EVERY BENDS AND BETWEEN BENDS WITH MAXIMUM 10.00 M. SPACING.
- THE SOIL/ROCK TYPE SHALL BE CONSIDERED DIRECT BY FIELD ENGINEER.
- BEFORE EXCAVATION SHOULD BE EVALUATED AND ANALYSIS BY FIELD GEOTECHNICAL ENGINEER OR ENGINEERING GEOLOGIST.
- IN CASE OF DEEP CUT/HIGH FILL AT DOUBTFUL AREA, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CORRECT AND/OR ADJUST THE RELEVANT DRAWINGS TO OBTAIN FIELD ENGINEER APPROVAL.
- BENCHING SHALL BE REQUIRED ON EXISTING GROUND SLOPE IN THE PORTION OF EMBANKMENT. THE NUMBER OF STEPS DEPENDS UPON THE HEIGHT AND STABILITY OF SLOPE CONSIDERED BY FIELD ENGINEER. THE WIDTH SHALL BE PERMITTED FOR COMPACTED EQUIPMENT. DENSITY OF COMPACTED MATERIAL SHALL NOT BE LESS THAN 95% OF STANDARD PROCTOR.

REFERENCE DRAWINGS :

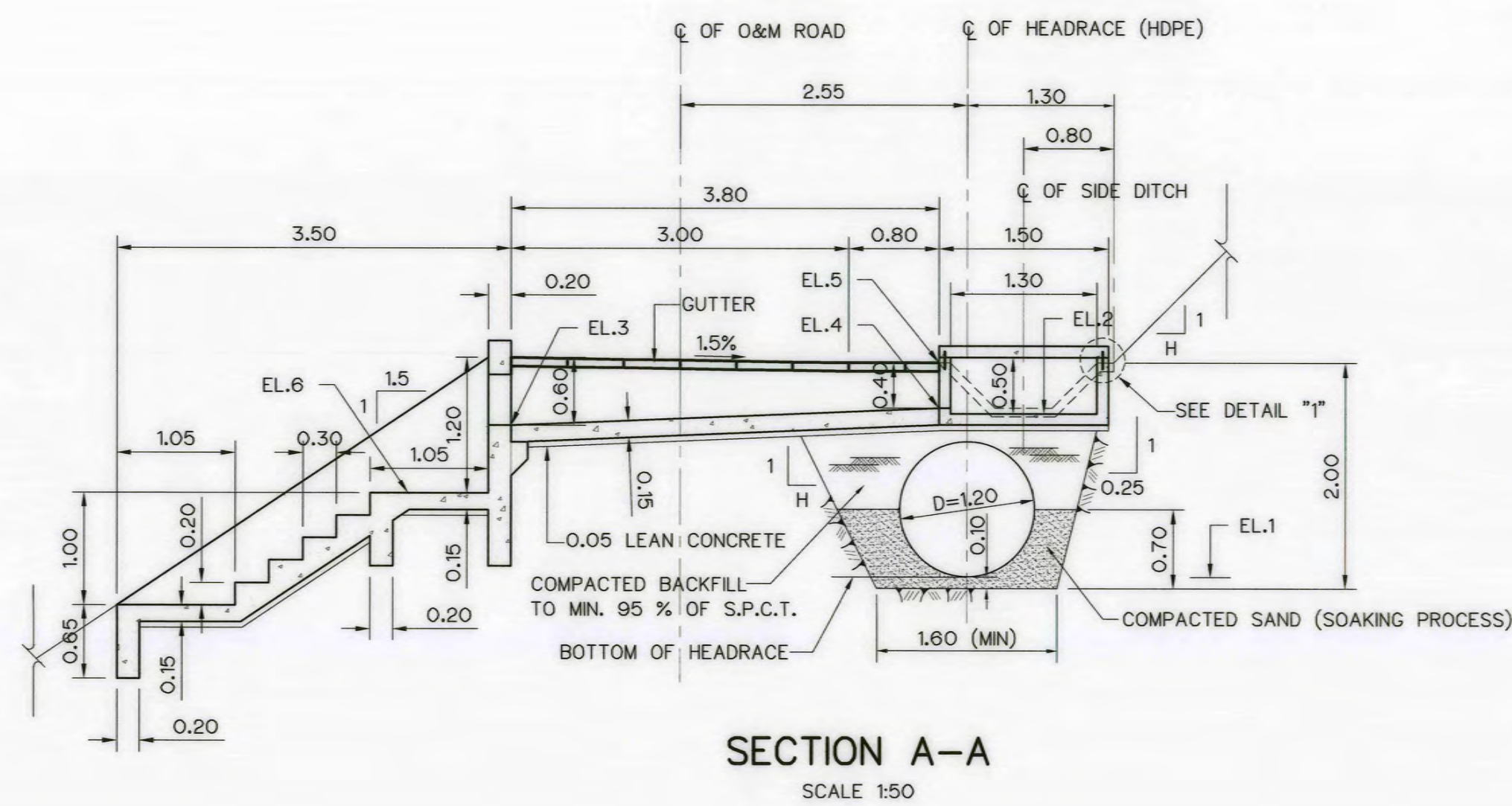
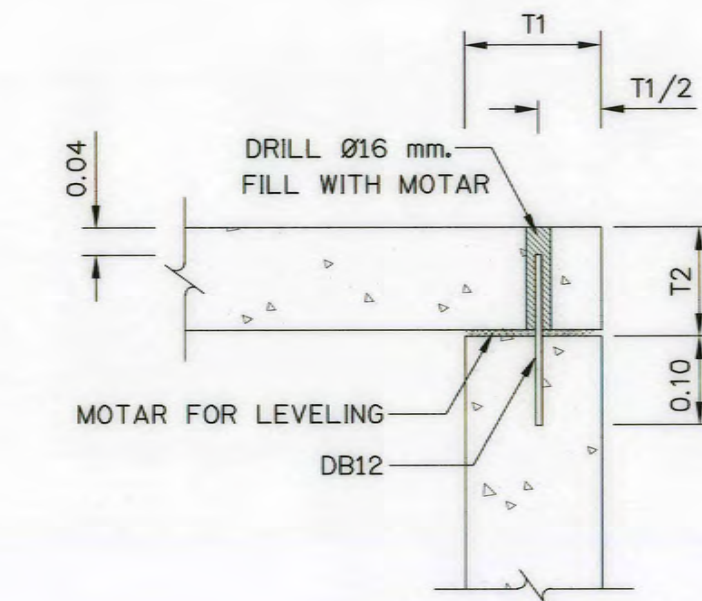
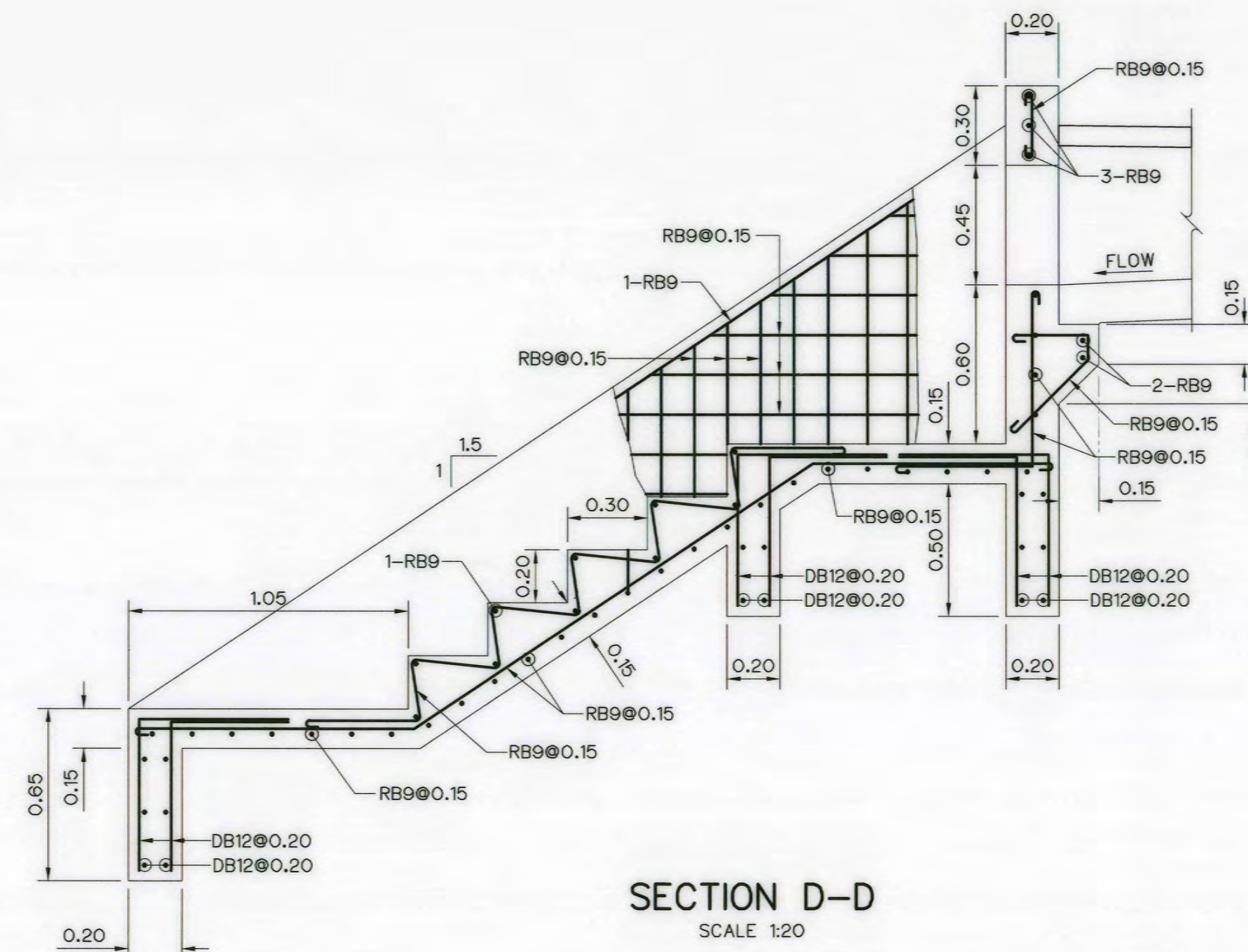
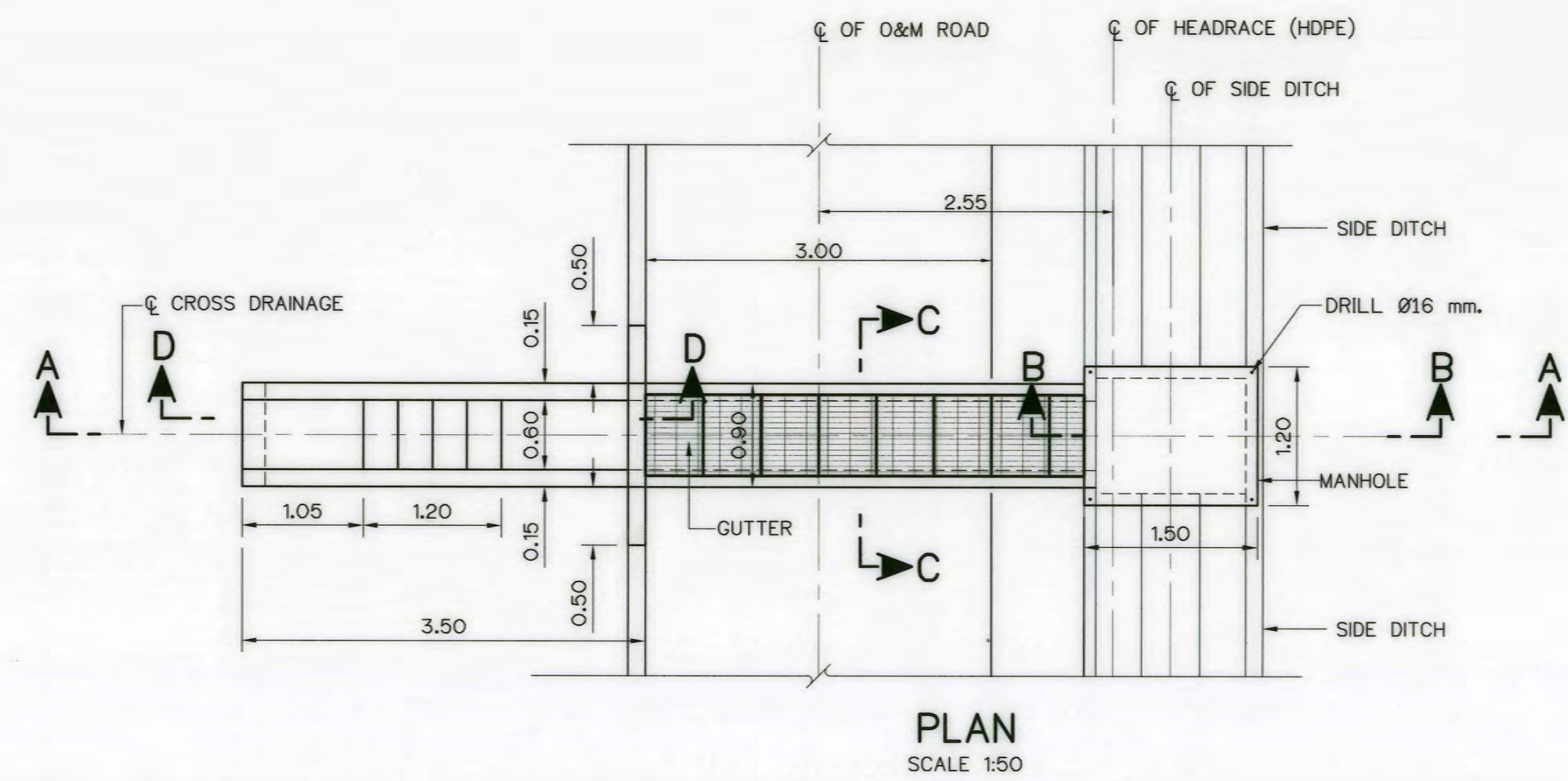
- HEADRACE, PLAN AND PROFILE, STA.0+000 TO STA.0+500 AKP-HR-01
- HEADRACE, PLAN AND PROFILE, STA.0+500 TO STA.0+699.439 AKP-HR-02
- O&M ROAD, PLAN AND PROFILE, STA.0+000 TO STA.0+500 AKP-OM-01
- O&M ROAD, PLAN AND PROFILE, STA.0+500 TO STA.1+000 AKP-OM-02



3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED

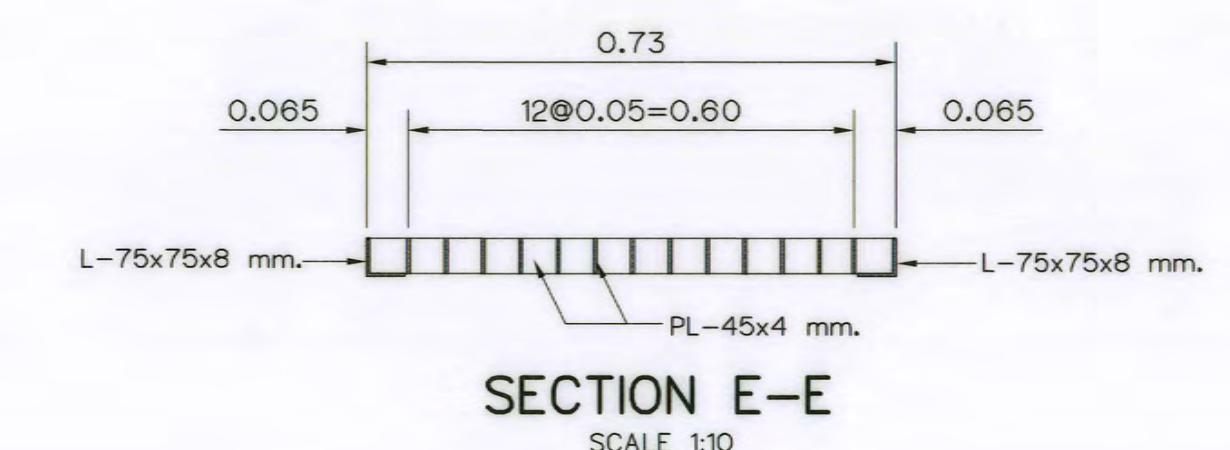
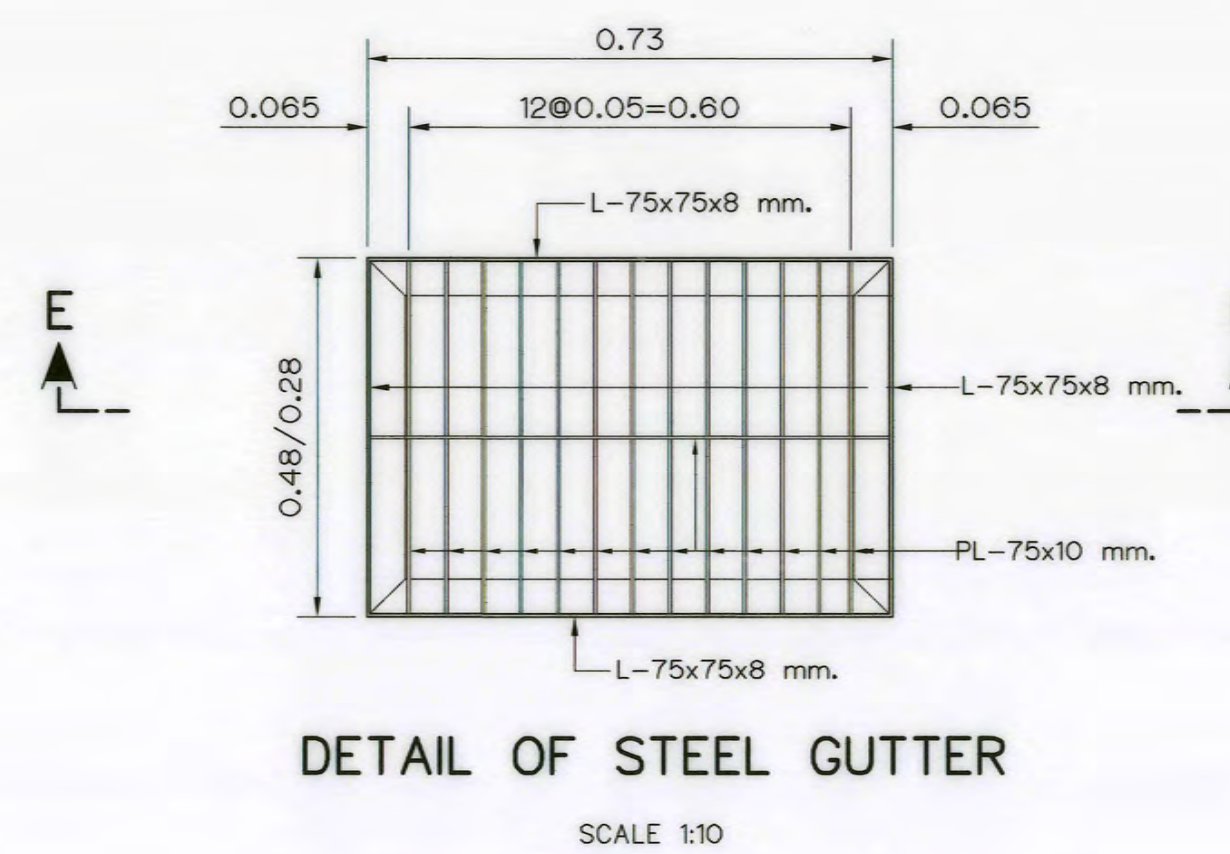
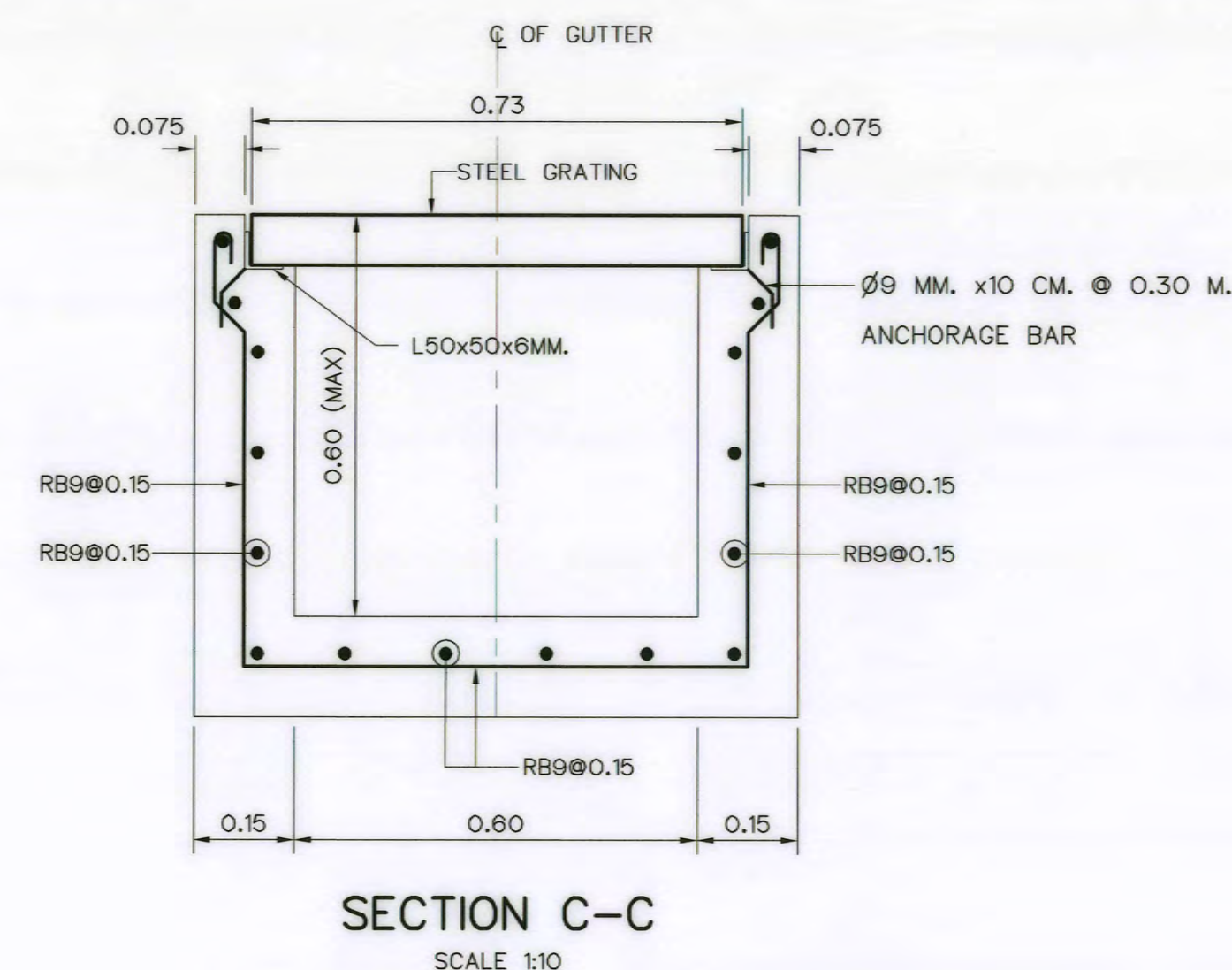
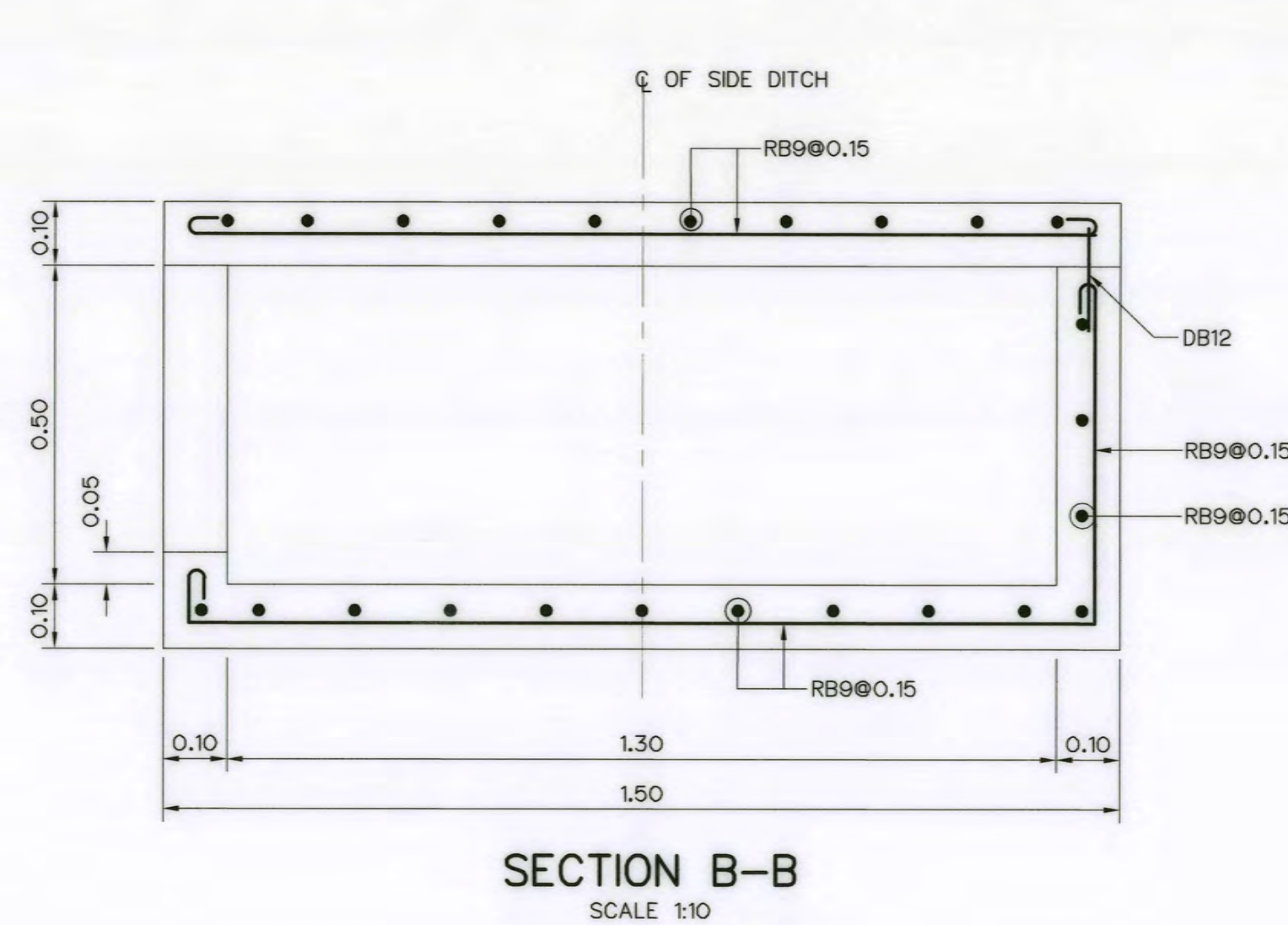
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE HEADRACE TYPICAL SECTIONS AND DETAILS	
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>Wan</i> 28.29074 28.9462 DRAWN <i>Wan</i> CHECKED <i>Wan</i> 28.8231	REVIEWED <i>Wan</i> SUBMITTED <i>Wan</i> RECOMMENDED <i>Wan</i> APPROVED <i>Wan</i> 28/10/2021
PROJECT MANAGER DATE	DRAWING NO. SHEET NO.

AKP-HR-04 30 OF 129



INSTALLATION DATA OF CROSS DRAINAGE STRUCTURES

STA.	FLOW DIRECTION	ELEVATION (m.M.S.L.)					
		EL.1	EL.2	EL.3	EL.4	EL.5	EL.6
0+155	RIGTH TO LEFT	234.284	235.634	235.529	235.684	236.084	234.929
0+301	RIGTH TO LEFT	233.534	234.884	234.779	234.934	235.334	234.179
0+450	RIGTH TO LEFT	232.789	234.139	234.034	234.189	234.589	233.434
0+560	RIGTH TO LEFT	231.739	233.089	232.984	233.139	233.539	232.384
0+654	RIGTH TO LEFT	230.059	231.409	231.304	231.459	231.859	230.704

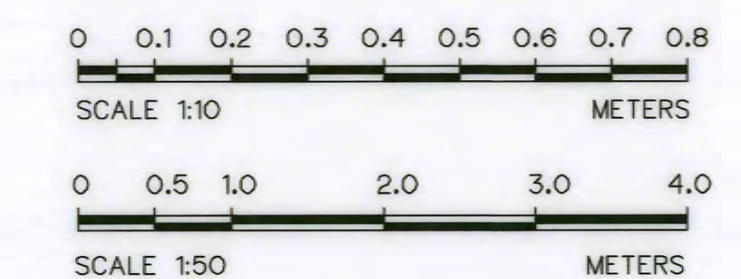


NOTES :

- ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
- SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
- DRESSING OF GROUND TO SUIT THE STRUCTURE TO BE DETERMINED IN THE FIELD.

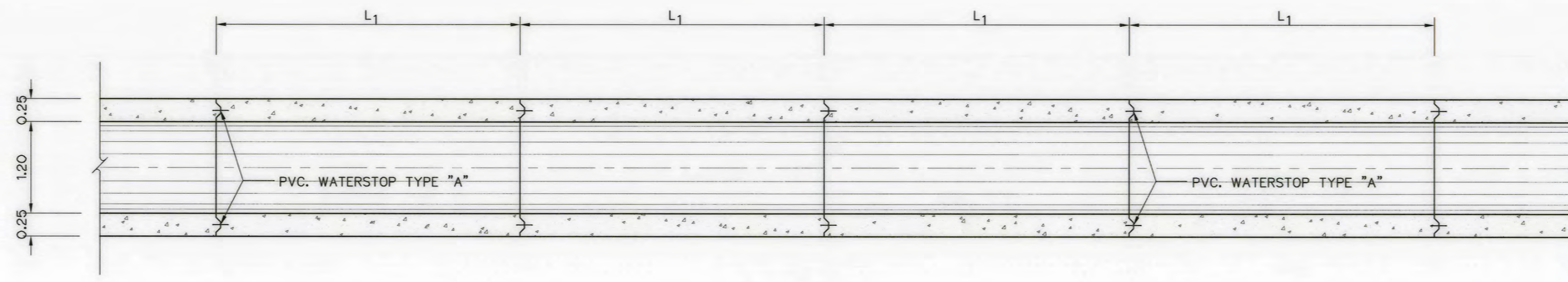
REFERENCE DRAWINGS :

- HEADRACE, PLAN AND PROFILE, KM. 0+000 TO KM. 0+500 AKP-HR-01
- HEADRACE, PLAN AND PROFILE, KM. 0+500 TO KM. 0+699.439 AKP-HR-02

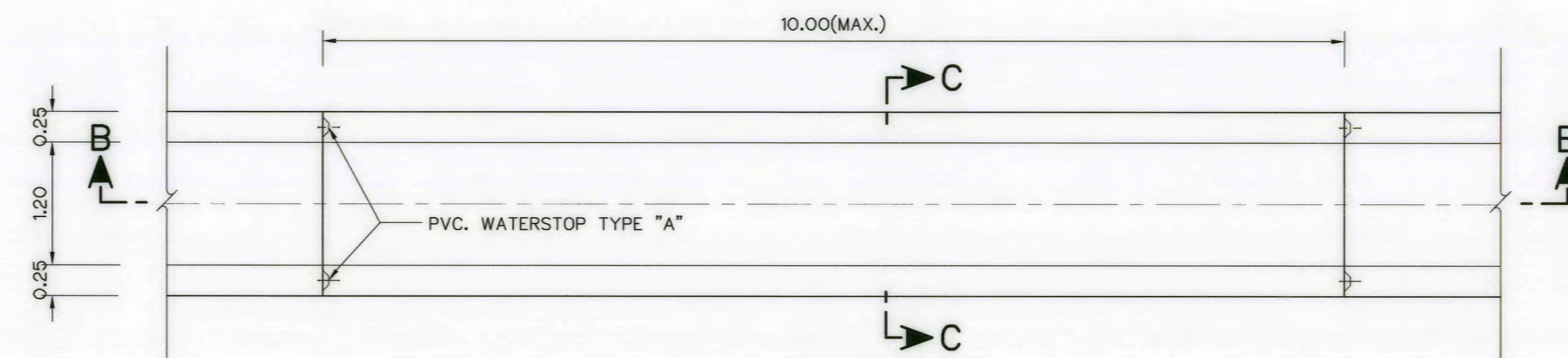


KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE HEADRACE TYPICAL CROSS DRAINAGE AND DETAILS	
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>Min</i> 28/10/2021 DRAWN <i>Min</i> CHECKED <i>Min</i> 28/10/2021 PROJECT MANAGER	REVIEWED <i>Min</i> SUBMITTED <i>Min</i> RECOMMENDED <i>Min</i> APPROVED <i>Min</i> 28/10/2021 DRAWING NO. AKP-HR-05 SHEET NO. 31 OF 129

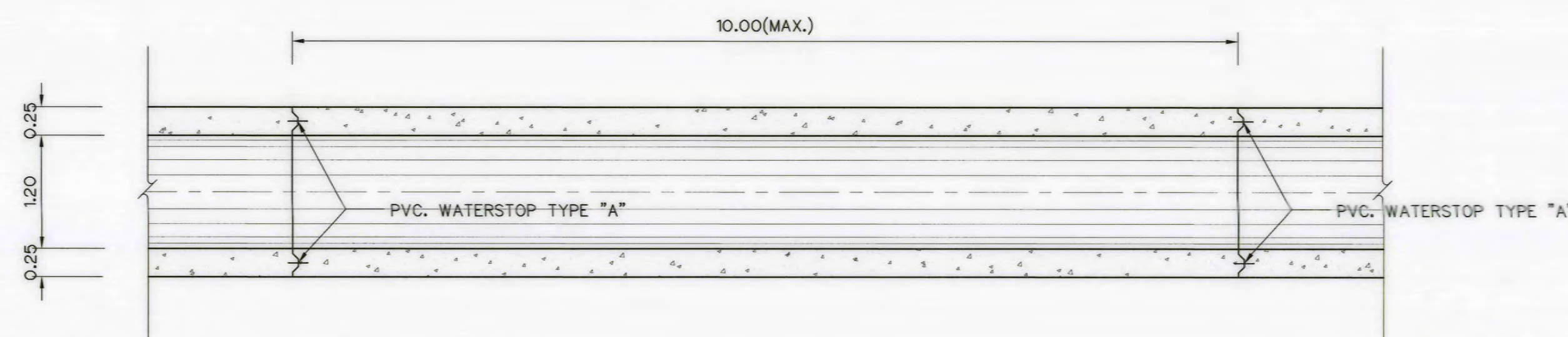
NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				
CONSULTANTS			DEDE	



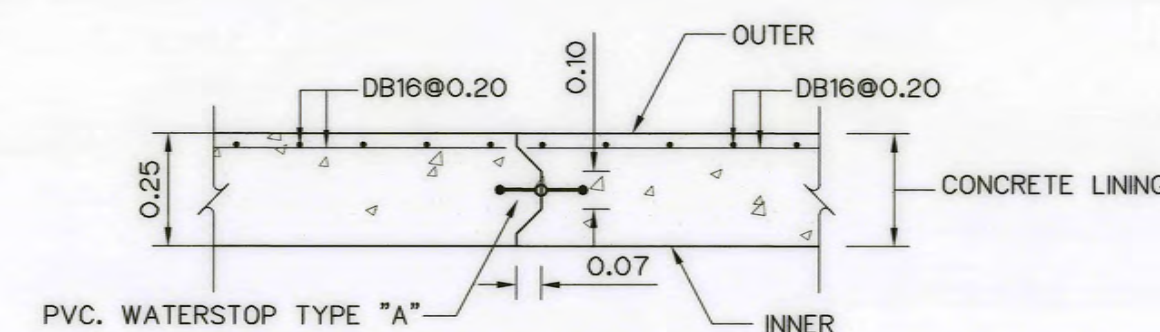
SECTION A-A
NOT TO SCALE



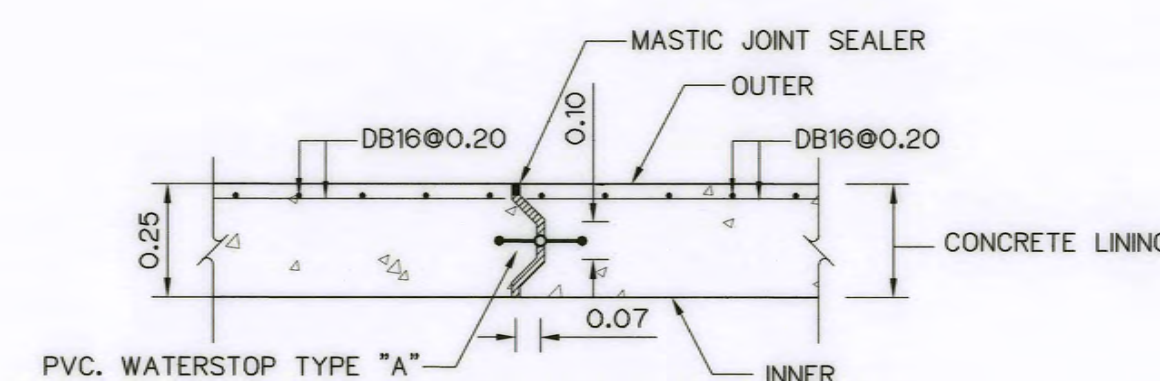
PLAN
NOT TO SCALE



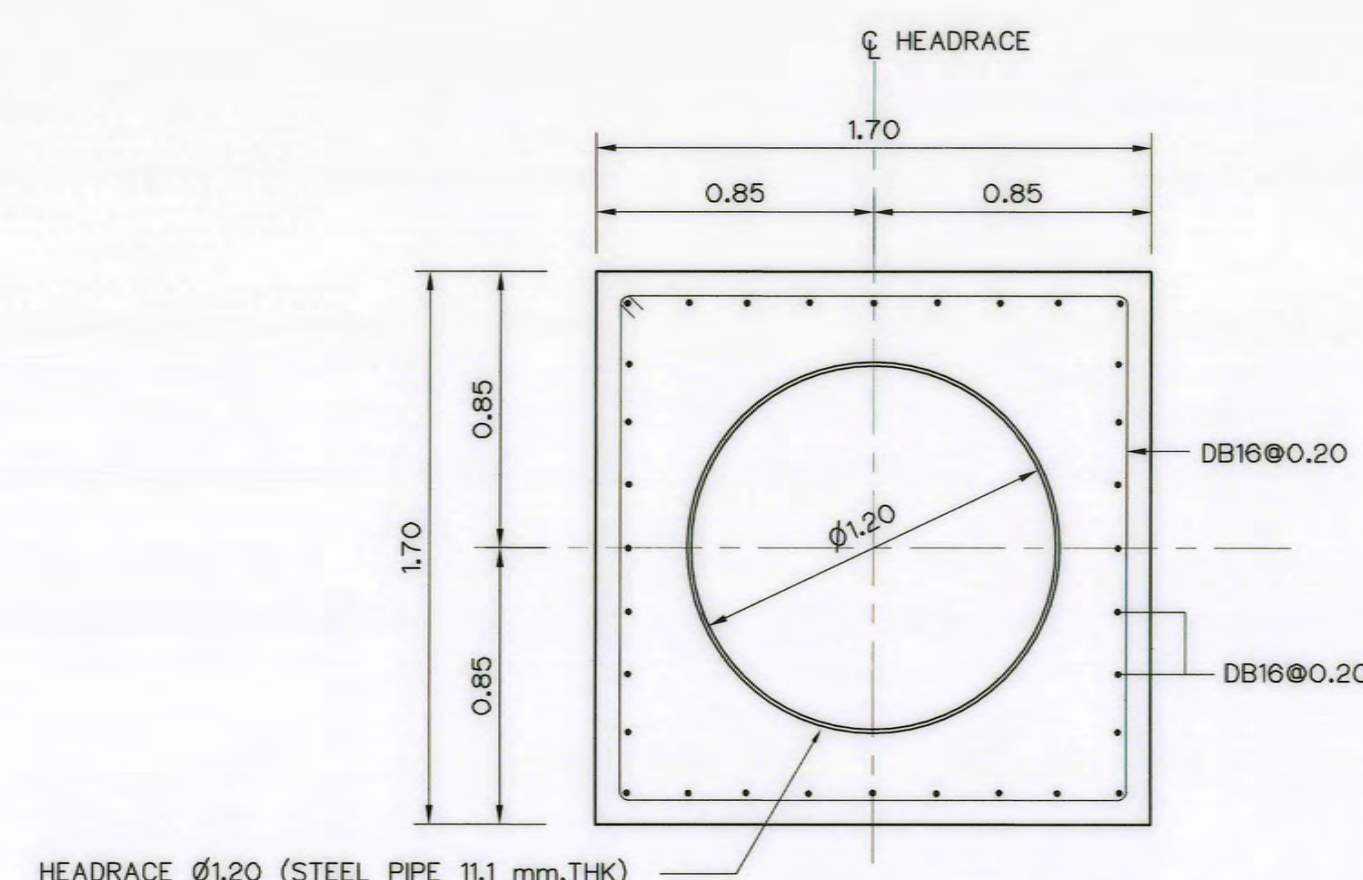
SECTION B-B
NOT TO SCALE



CONTRACTION JOINT @ 10 M. (MAX.)
SCALE 1:20



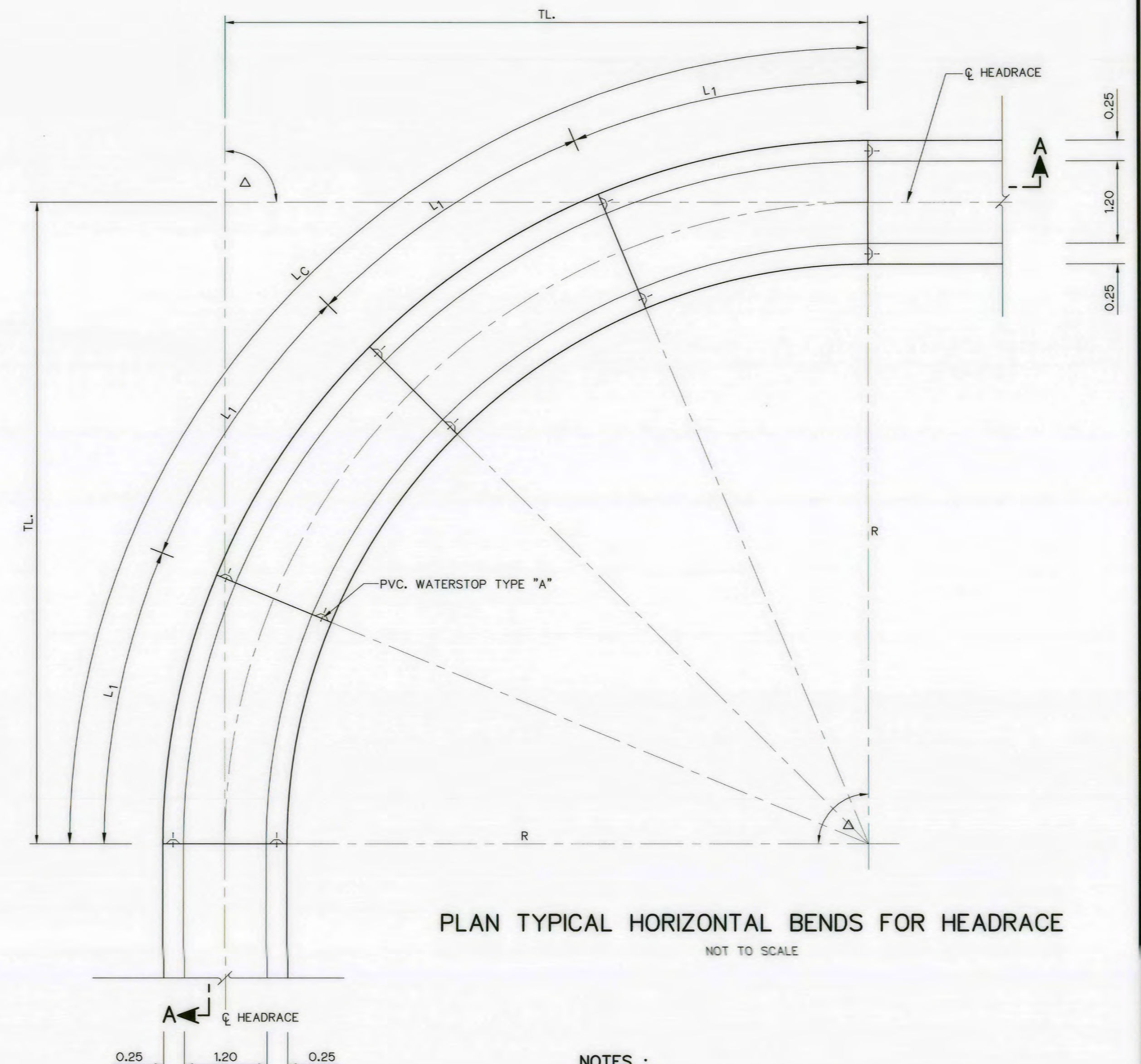
EXPANSION JOINT @ 30 M.
SCALE 1:20



SECTION C-C
NOT TO SCALE

REFERENCE DRAWINGS :

1. HEADRACE, PLAN AND PROFILE, STA.0+500 TO STA.0+699.439



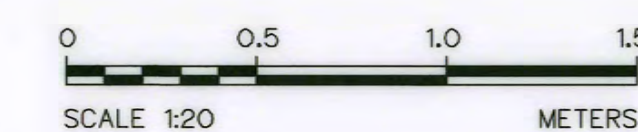
PLAN TYPICAL HORIZONTAL BENDS FOR HEADRACE
NOT TO SCALE

NOTES :

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
3. SYMBOL AND ABBREVIATIONS
 - Δ = DEFLECTION ANGLE
 - R = RADIUS
 - TL = LENGTH OF TANGENT
 - LC = LENGTH OF CURVE
 - N = NUMBER OF UNIT HEADRACE IN CURVE
 - L1 = LENGTH OF UNIT HEADRACE
 - INT = INTEGER
4. GUIDE POSTS ARE REQUIRED AT EVERY BENDS AND BETWEEN BENDS WITH MAXIMUM 10.00 M. SPACING.
5. EXPANSION JOINT ARE REQUIRED AT 30 M. SPACING.

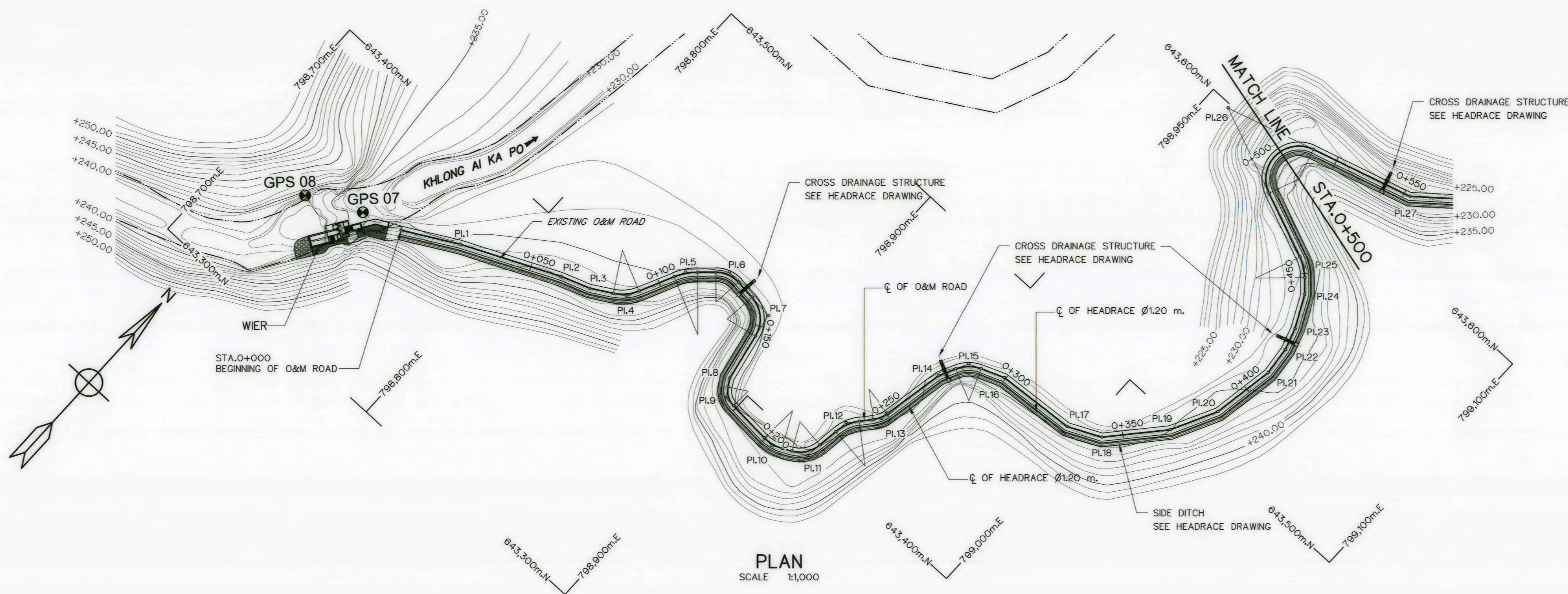
TABLE DETAIL HEADRACE IN HORIZONTAL CURVE

CASE	CONDITION	N (UNIT)	L1 (M.)
1	LC ≤ 10.00 M.	1	LC
2	LC > 10.00 M.	1+INT $\left[\frac{LC}{10} \right]$	$\frac{LC}{N}$



KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE HEADRACE CONCRETE LINING, HORIZONTAL BEND AND JOINT	
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	REVIEWED <i>[Signature]</i> SUBMITTED <i>[Signature]</i> RECOMMENDED <i>[Signature]</i> APPROVED <i>[Signature]</i>
DESIGNED <i>[Signature]</i> 28/9/2021 DRAWN <i>[Signature]</i> CHECKED <i>[Signature]</i> 28/9/2021	DRAWING NO. 28/10/2021 PROJECT MANAGER DATE
CONSULTANTS DEDE	SHEET NO. 32 OF 129

AKP-HR-02

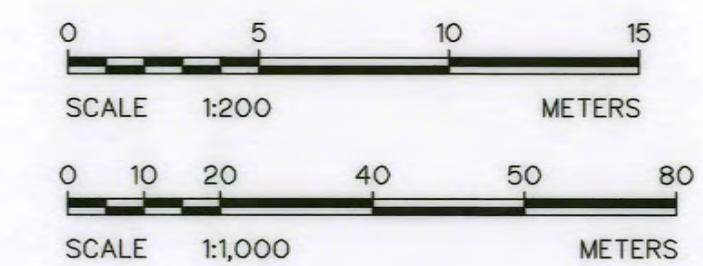
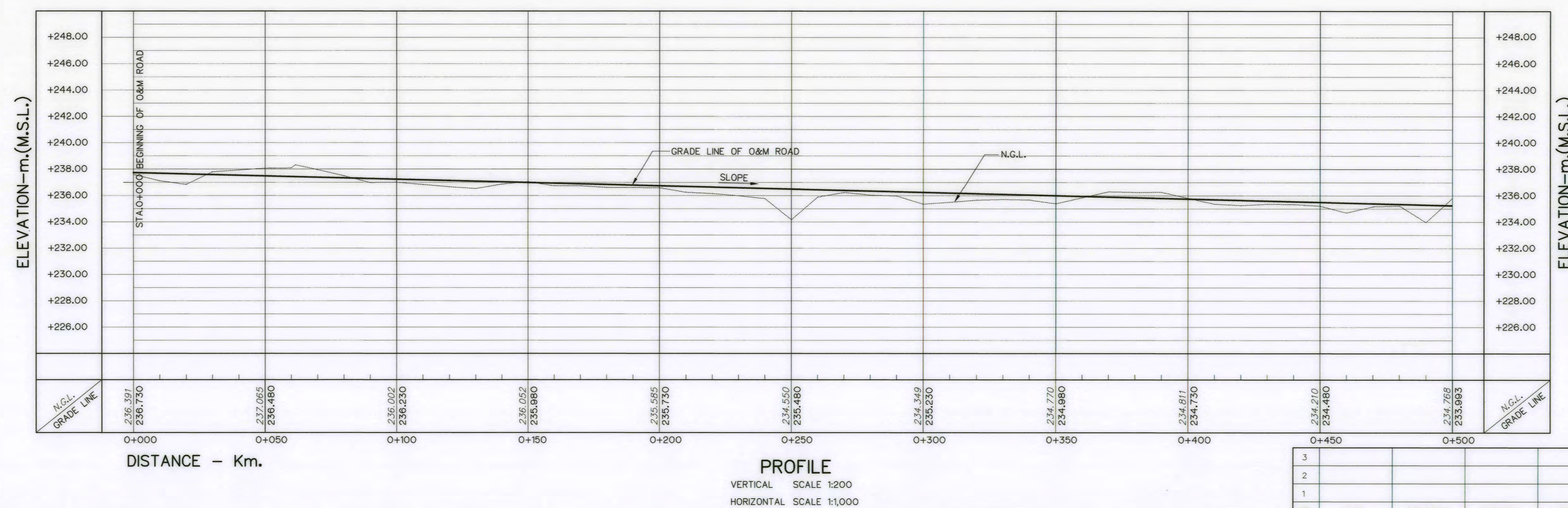


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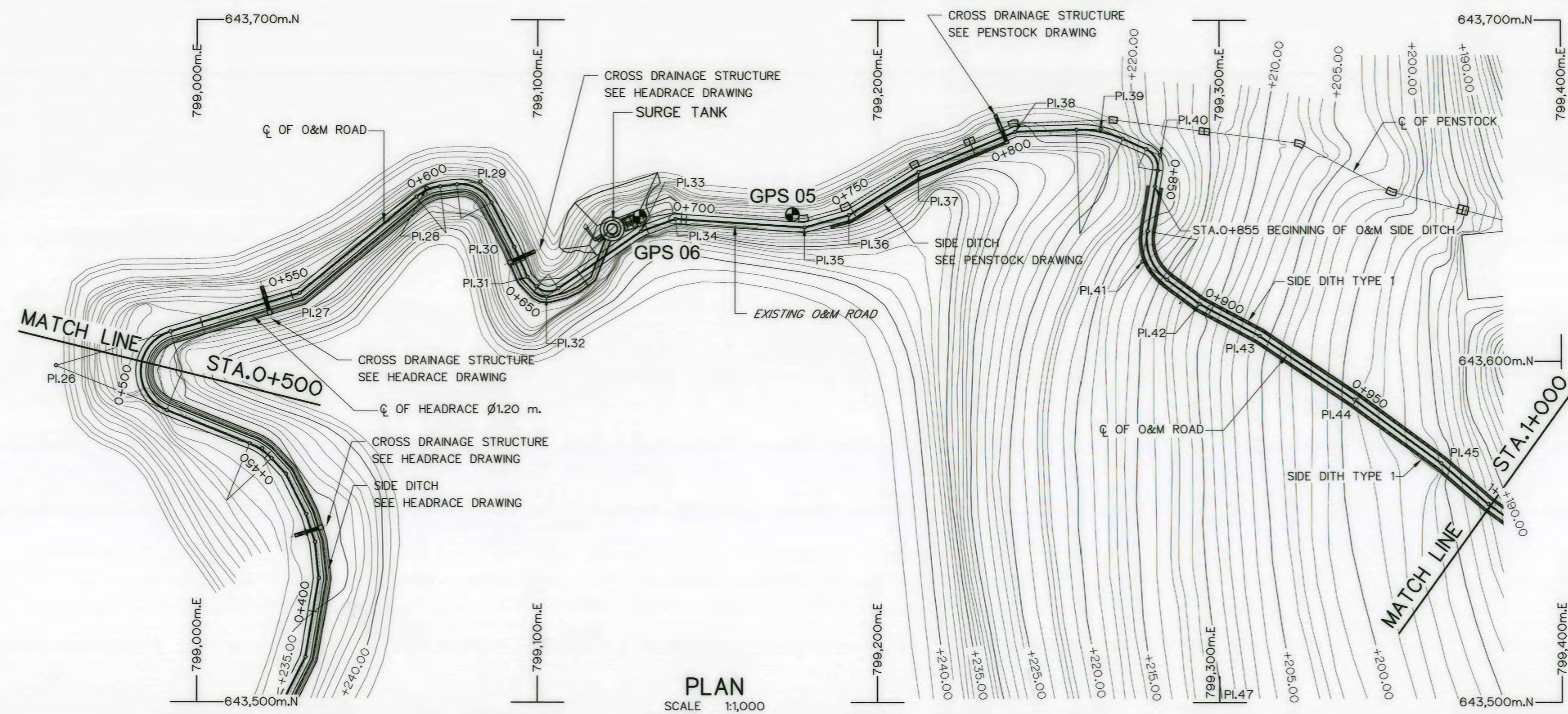
1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
2. SYMBOLE, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
3. THE ALIGNMENT OF O&M ROAD AND RELATED STRUCTURES SHALL BE CHECK AND CORRECTED BY THE CONTRACTOR TO SUIT THE FIELD CONDITIONS AND SHALL BE SUBMITTED TO DEDE'S FIELD ENGINEER FOR APPROVAL

REFERENCE DRAWINGS :

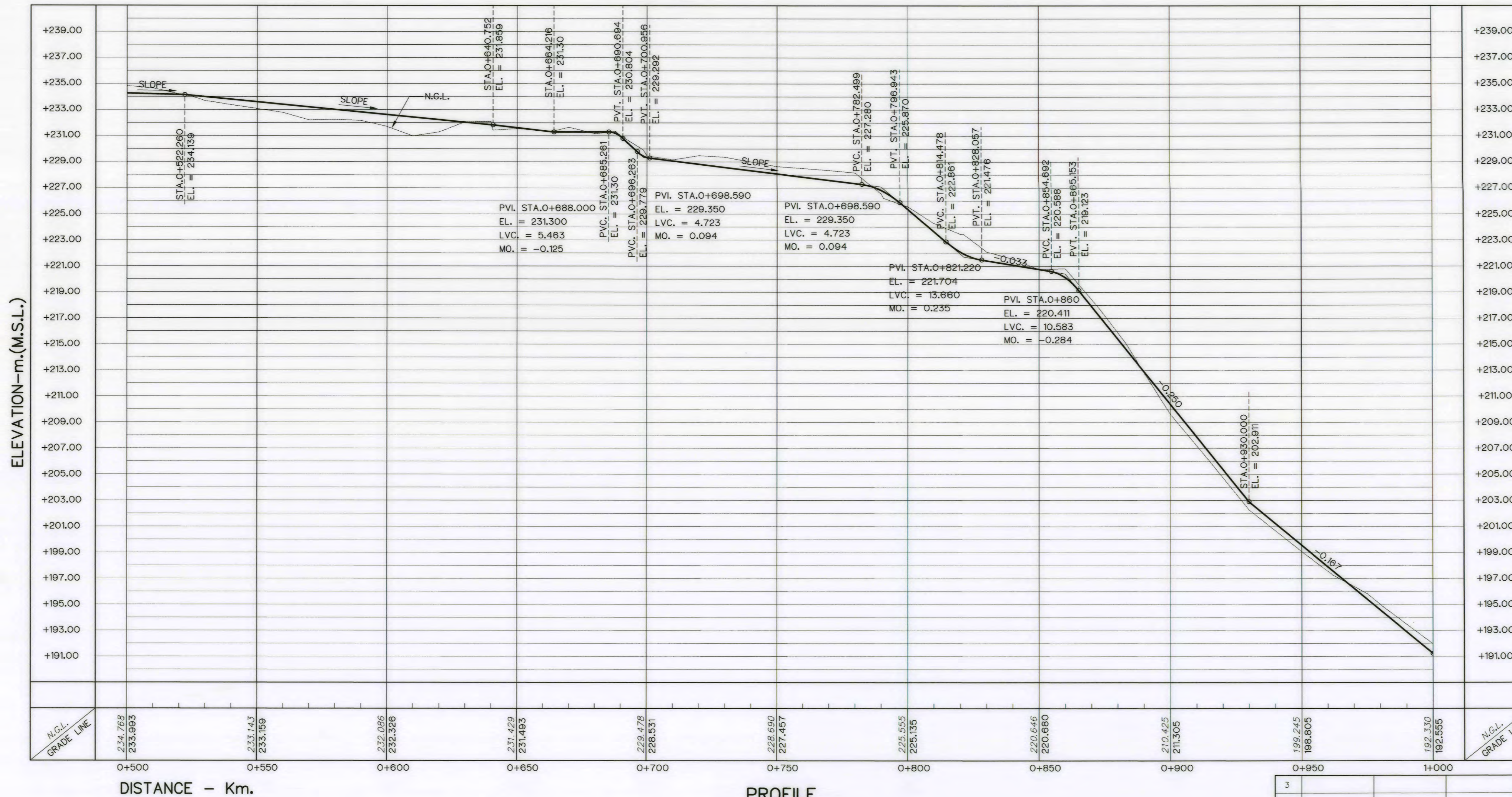
1. O&M ROAD, PLAN AND PROFILE, STA. 0+500 TO STA. 1+000 AKP-OM-02
2. O&M ROAD, TYPICAL SECTIONS AND DETAILS AKP-OM-05
3. HEADRACE, TYPICAL SECTIONS AND DETAILS AKP-HR-04



KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY			
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT			
PART : 1 CIVIL WORKS AND TRANSMISSION LINE O&M ROAD PLAN AND PROFILE, STA. 0+000 TO STA. 0+500			
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	DESIGNED <i>Wm</i> 281.29074 DRAWN <i>Wm</i> CHECKED <i>Wm</i> 281.8231 PROJECT MANAGER	REVIEWED <i>Wm</i> SUBMITTED <i>Wm</i> RECOMMENDED <i>Wm</i> APPROVED <i>Wm</i> 28/10/2021 DATE	MINISTRY OF ENERGY DRAWING NO. AKP-OM-01 SHEET NO. 33 OF 129



PLAN
SCALE 1:1,000



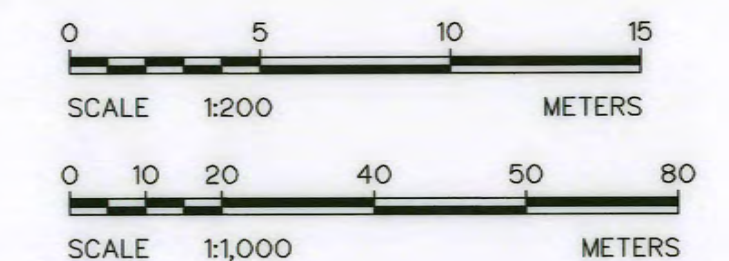
PROFILE
VERTICAL SCALE 1:200
HORIZONTAL SCALE 1:1,000

NOTES :

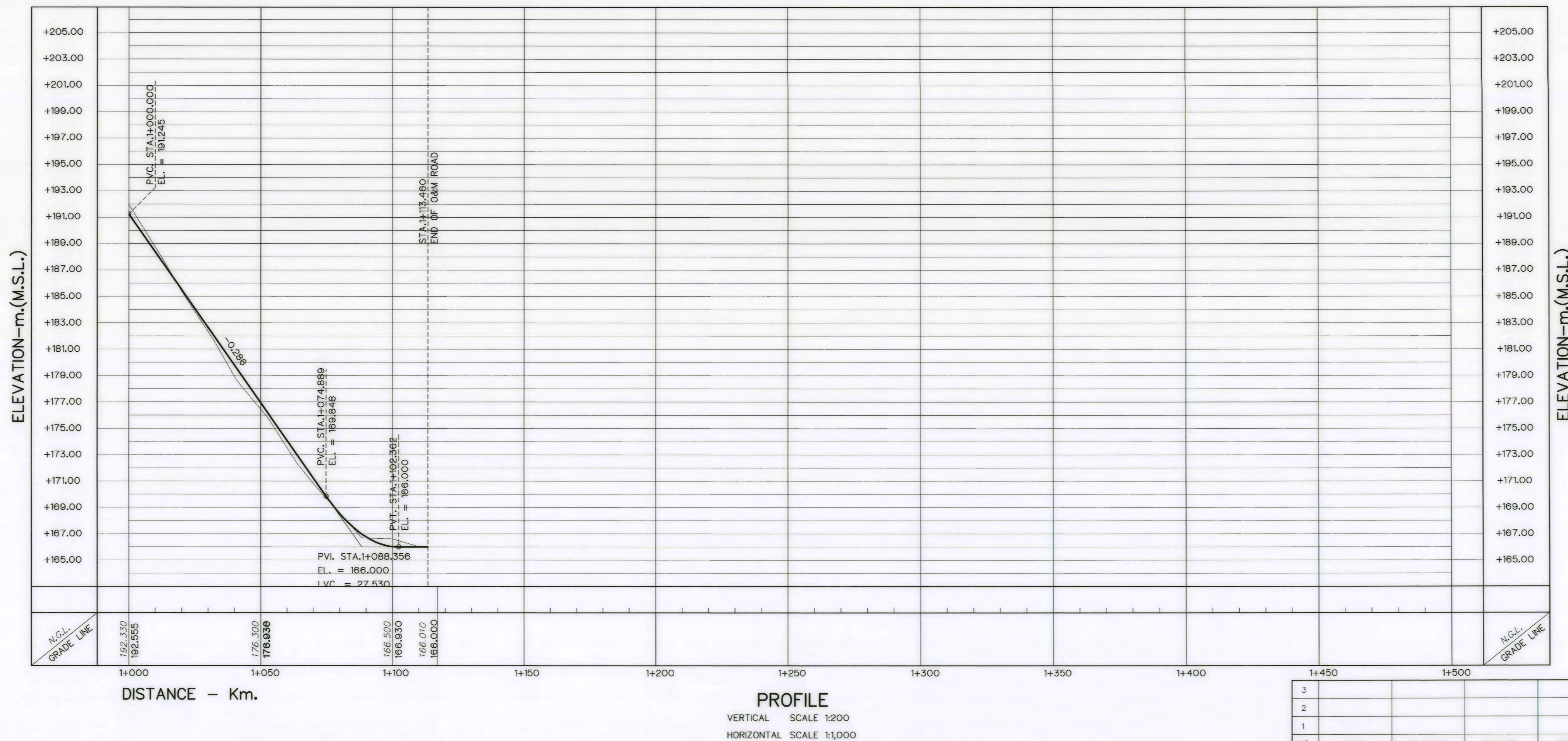
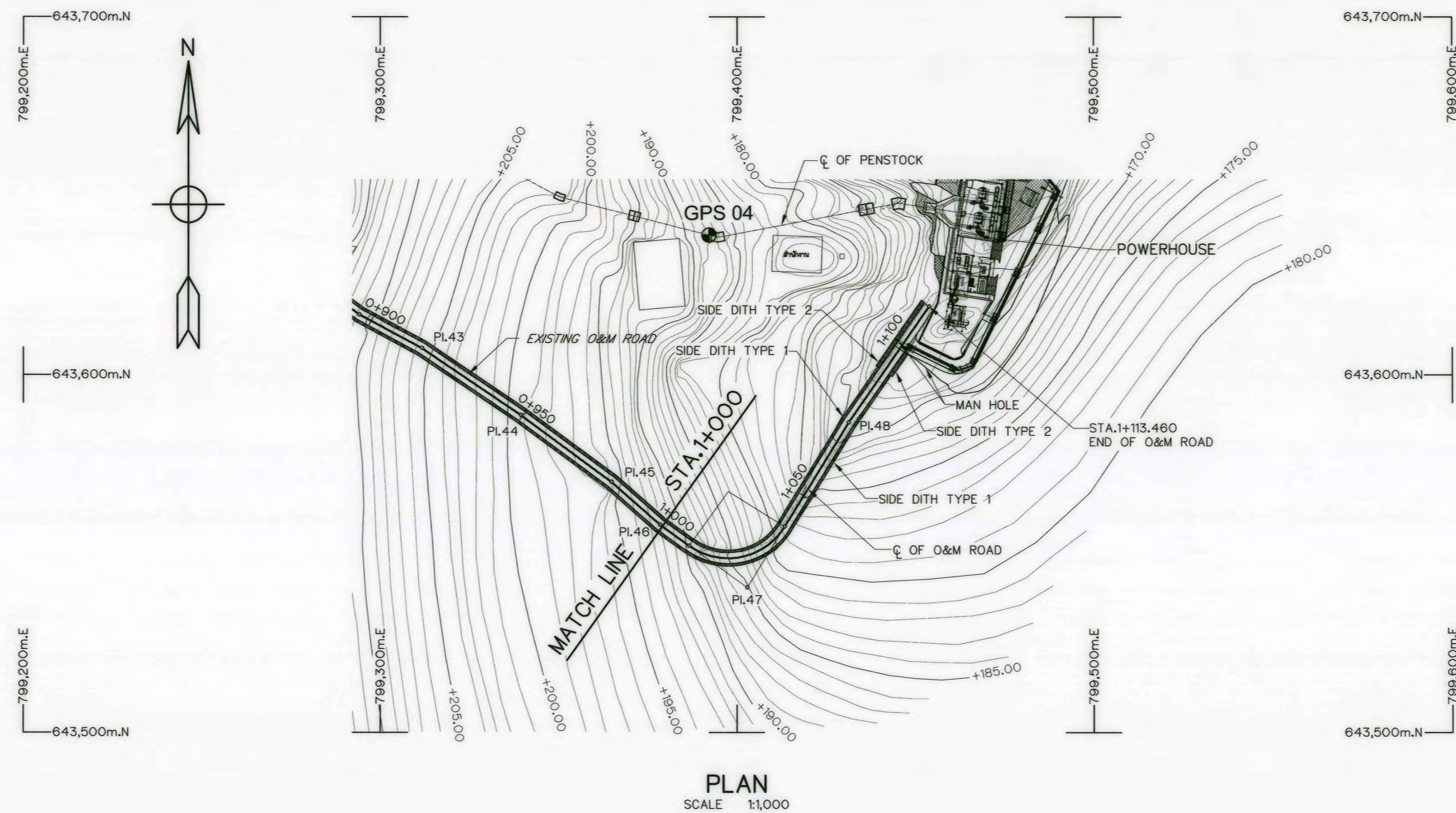
1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
2. SYMBOLE, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. AKP-GN-03
3. THE ALIGNMENT OF O&M ROAD AND RELATED STRUCTURES SHALL BE CHECK AND CORRECTED BY THE CONTRACTOR TO SUIT THE FIELD CONDITIONS AND SHALL BE SUBMITTED TO DEDE'S FIELD ENGINEER FOR APPROVAL

REFERENCE DRAWINGS :

1. O&M ROAD, PLAN AND PROFILE, STA. 0+000 TO STA. 0+500 AKP-OM-01
2. O&M ROAD, PLAN AND PROFILE, STA. 0+500 TO STA. 1+113.460 AKP-OM-03
3. O&M ROAD, TYPICAL SECTIONS AND DETAILS AKP-HR-05
4. O&M ROAD, TYPICAL SIDE DITCH TYPE 1 AND SIDE DITCH TYPE 2 AKP-HR-06
5. PENSTOCK, TYPICAL SECTIONS AND DETAILS AKP-PS-02

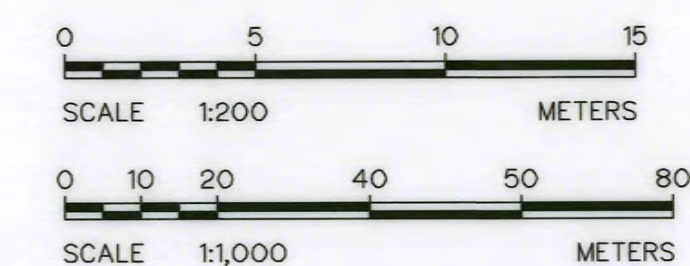


KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE O&M ROAD PLAN AND PROFILE, STA. 0+500 TO STA. 1+000	
DESIGNED <i>Wan</i> 28/10/2021 28/10/2021	REVIEWED <i>Wan</i>
DRAWN <i>Wan</i>	SUBMITTED <i>Wan</i>
CHECKED <i>Wan</i> 28/10/2021	RECOMMENDED <i>Wan</i>
APPROVED <i>Wan</i>	APPROVED <i>Wan</i>
PROJECT MANAGER	DRAWING NO. AKP-OM-02
DATE	SHEET NO. 34 OF 129



- NOTES :
1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS. UNLESS OTHERWISE SHOWN.
 2. SYMBOLE, ABBREVIATIONS AND CENERAL NOTES SEE DWG. NO. AKP-GN-03
 3. THE ALIGNMENT OF O&M ROAD AND RELATED STRUCTURES SHALL BE CHECK AND CORRECTED BY THE CONTRACTOR TO SUIT THE FIELD CONDITIONS AND SHALL BE SUBMITTED TO DEDE'S FIELD ENGINEER FOR APPROVAL

- REFERENCE DRAWINGS :
1. O&M ROAD, PLAN AND PROFILE, STA. 0+500 TO STA. 1+000 AKP-OM-02
 2. O&M ROAD, TYPICAL SECTIONS AND DETAILS AKP-OM-05
 3. HEADRACE, TYPICAL SECTIONS AND DETAILS AKP-HR-04
 4. PENSTOCK, TYPICAL SECTIONS AND DETAILS AKP-PS-02



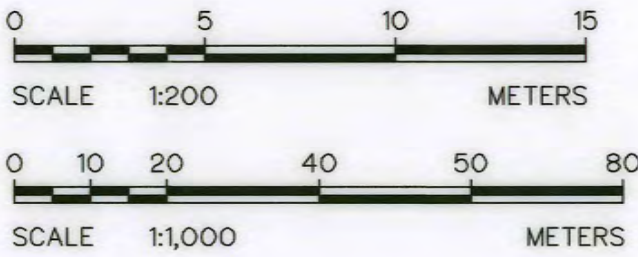
KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE O&M ROAD PLAN AND PROFILE, STA. 1+000 TO STA. 1+113.460	
P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>[Signature]</i> 28/10/2021 DRAWN <i>[Signature]</i> CHECKED <i>[Signature]</i> 28/10/2021 PROJECT MANAGER	REVIEWED <i>[Signature]</i> SUBMITTED <i>[Signature]</i> RECOMMENDED <i>[Signature]</i> APPROVED <i>[Signature]</i> 28/10/2021 DRAWING NO. AKP-OM-03 SHEET NO. 35 OF 129

HORIZONTAL CURVE OF O&M ROAD

NO. PL.	COORDINATE		PL. - PL.	DEFLECTION ANGLE	TL	R	LC	BC. STA.	PL. STA.	EC. STA.	BEARING
	N	E									(N/S ° - ' - " E/W)
B	643,358.243	798,764.131	-	-	-	-	-	-	0+000.000	-	N 60°-40'-40.38" E
PL1	643,369.266	798,783.756	22.509	4°-23'-47.39"	-	-	-	-	0+022.509	-	N 65°-04'-27.76" E
PL2	643,385.808	798,819.351	39.251	4°-44'-22.85"	-	-	-	-	0+061.760	-	N 69°-48'-50.62" E
PL3	643,389.797	798,830.201	11.560	10°-18'-19.62"	-	-	-	-	0+073.320	-	N 59°-30'-30.99" E
PL4	643,396.869	798,842.211	13.937	34°-12'-33.52"	5.0	16.248	9.701	0+082.257	0+087.257	0+091.959	N 25°-17'-57.48" E
PL5	643,418.156	798,852.273	23.545	21°-51'-8.07"	4.5	23.311	8.891	0+106.004	0+110.504	0+114.894	N 47°-09'-05.54" E
PL6	643,429.210	798,864.190	16.254	48°-35'-42.53"	5.0	11.075	9.393	0+121.649	0+126.649	0+131.042	S 84°-15'-11.93" E
PL7	643,427.059	798,885.564	21.482	73°-1'-12.05"	9.0	12.158	15.495	0+138.524	0+147.524	0+154.019	S 11°-13'-59.88" E
PL8	643,400.308	798,890.877	27.274	20°-6'-20.10"	-	-	-	-	0+172.293	-	S 31°-20'-19.98" E
PL9	643,394.066	798,894.678	7.308	54°-56'-15.50"	4.0	7.694	7.377	0+175.601	0+179.601	0+182.978	S 86°-16'-35.48" E
PL10	643,392.476	798,919.110	24.484	30°-49'-5.72"	4.0	14.513	7.806	0+199.462	0+203.462	0+207.268	N 62°-54'-18.80" E
PL11	643,398.755	798,931.383	13.786	55°-49'-53.82"	6.0	11.324	11.035	0+211.054	0+217.054	0+222.089	N 07°-04'-24.98" E
PL12	643,417.274	798,933.681	18.661	33°-15'-59.72"	5.0	16.737	9.717	0+229.750	0+234.750	0+239.468	N 40°-20'-24.69" E
PL13	643,427.252	798,942.155	13.091	29°-36'-0.57"	3.0	11.354	5.866	0+244.559	0+247.559	0+250.425	N 10°-44'-24.12" E
PL14	643,453.249	798,947.086	26.461	14°-48'-56.12"	-	-	-	-	0+273.885	-	N 25°-33'-20.25" E
PL15	643,463.990	798,952.222	11.906	42°-55'-27.95"	5.0	12.718	9.528	0+280.791	0+285.791	0+290.319	N 68°-28'-48.20" E
PL16	643,469.176	798,965.374	14.138	16°-58'-25.69"	-	-	-	-	0+299.456	-	N 85°-27'-13.89" E
PL17	643,471.503	798,994.640	29.358	21°-0'-29.90"	-	-	-	-	0+328.815	-	N 64°-26'-43.99" E
PL18	643,477.300	799,006.764	13.439	23°-17'-29.22"	-	-	-	-	0+342.253	-	N 41°-09'-14.77" E
PL19	643,496.430	799,023.484	25.407	14°-35'-10.77"	-	-	-	-	0+367.660	-	N 26°-34'-04.01" E
PL20	643,513.228	799,031.884	18.781	16°-56'-2.28"	-	-	-	-	0+386.441	-	N 08°-38'-01.72" E
PL21	643,536.351	799,035.809	23.454	15°-37'-42.39"	-	-	-	-	0+409.895	-	N 05°-59'-40.66" W
PL22	643,546.931	799,034.698	10.638	11°-50'-10.66"	-	-	-	-	0+420.533	-	N 17°-49'-51.33" W
PL23	643,555.098	799,032.071	8.579	8°-54'-39.07"	-	-	-	-	0+429.112	-	N 26°-44'-30.39" W
PL24	643,566.881	799,026.134	13.194	16°-24'-25.28"	-	-	-	-	0+442.307	-	N 43°-08'-55.67" W
PL25	643,574.307	799,019.173	10.178	25°-2'-31.65"	4.0	18.011	7.872	0+448.485	0+452.485	0+456.357	N 68°-11'-27.32" W
PL26	643,598.530	798,958.639	65.201	141°-33'-44.21"	35.0	12.201	30.146	0+482.558	0+517.558	0+512.704	N 73°-22'-16.89" E
PL27	643,619.884	799,030.139	74.621	22°-53'-20.65"	-	-	-	-	0+552.324	-	N 50°-28'-56.24" E
PL28	643,650.614	799,067.394	48.294	32°-29'-11.32"	4.0	13.729	7.785	0+596.618	0+600.618	0+604.402	N 82°-58'-07.55" E
PL29	643,652.562	799,083.188	15.914	69°-30'-18.89"	7.0	1-89	12.239	0+609.316	0+616.316	0+621.556	S 27°-31'-33.56" E
PL30	643,633.431	799,093.158	21.573	3°-54'-24.48"	-	-	-	-	0+636.129	-	S 23°-37'-09.08" E
PL31	643,624.581	799,097.028	9.659	20°-16'-31.44"	-	-	-	-	0+645.788	-	S 43°-53'-40.52" E
PL32	643,618.823	799,102.568	7.990	80°-43'-50.75"	4.3	5.059	7.128	0+649.478	0+653.778	0+656.606	N 55°-22'-28.73" E
PL33	643,637.997	799,130.336	33.745	14°-40'-10.58"	-	-	-	-	0+686.051	-	N 70°-02'-39.31" E
PL34	643,641.661	799,140.427	10.736	23°-38'-53.34"	-	-	-	-	0+696.786	-	S 86°-18'-27.35" E
PL35	643,639.206	799,178.469	38.121	19°-12'-6.51"	-	-	-	-	0+734.907	-	N 74°-29'-26.14" E
PL36	643,642.831	799,191.532	13.557	16°-15'-22.57"	-	-	-	-	0+748.464	-	N 58°-14'-03.57" E
PL37	643,655.449	799,211.910	23.968	9°-10'-46.46"	-	-	-	-	0+772.432	-	N 67°-24'-50.03" E
PL38	643,667.281	799,240.354	30.807	20°-40'-14.46"	-	-	-	-	0+803.239	-	N 88°-05'-04.50" E
PL39	643,668.116	799,265.322	24.982	25°-55'-45.36"	7.0	30.406	13.760	0+821.221	0+828.221	0+834.981	S 65°-59'-10.14" E
PL40	643,660.372	799,282.704	19.029	75°-38'-5.94"	4.5	5.798	7.653	0+842.510	0+847.010	0+850.164	S 09°-38'-55.80" W
PL41	643,629.304	799,277.422	31.514	63°-4'-55.64"	9.0	14.663	16.144	0+868.178	0+877.178	0+884.321	S 53°-25'-59.84" E
PL42	643,616.852	799,294.209	20.901	8°-17'-49.28"	-	-	-	-	0+896.223	-	S 61°-43'-49.13" E
PL43	643,607.446	799,311.700	19.860	5°-42'-36.03"	-	-	-	-	0+916.082	-	S 56°-01'-13.09" E
PL44	643,588.771	799,339.408	33.414	2°-21'-50.99"	-	-	-	-	0+949.496	-	S 53°-39'-22.10" E
PL45	643,570.116	799,364.763	31.478	4°-46'-30.18"	-	-	-	-	0+980.974	-	S 48°-52'-51.91" E
PL46	643,558.162	799,378.457	18.178	5°-30'-6.43"	-	-	-	-	0+999.152	-	S 54°-22'-58.34" E
PL47	643,540.635	799,402.923	30.096	93°-55'-31.68"	2-	18.675	30.613	1+009.248	1+029.248	1+039.862	N 31°-41'-29.97" E
PL48	643,586.708	799,431.369	54.147	3°-4'-7.36"	-	-	-	-	1+074.009	-	N 34°-45'-37.33" E
E	643,619.119	799,453.862	39.451	-	-	-	-	-	1+113.460	-	-

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

- REFERENCE DRAWINGS :
1. O&M ROAD, PLAN AND PROFILE, STA. 0+000 TO STA. 0+500 AKP-OM-01
2. O&M ROAD, PLAN AND PROFILE, STA. 0+500 TO STA. 1+000 AKP-OM-02
3. O&M ROAD, PLAN AND PROFILE, STA. 1+000 TO STA. 1+113.460 AKP-OM-03



KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE O&M ROAD DATA CURVE OF O&M ROAD	
PCM P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>Wichan</i> 28/10/2021 28.10.2021	REVIEWED <i>Wichan</i>
DRAWN <i>Wichan</i>	SUBMITTED <i>Wichan</i>
CHECKED <i>Wichan</i> 28/10/2021	RECOMMENDED <i>Wichan</i>
APPROVED <i>Wichan</i> 28/10/2021	APPROVED <i>Wichan</i>
PROJECT MANAGER DATE	DRAWING NO. SHEET NO. AKP-OM-04 36 OF 129

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
		CONSULTANTS	DEDE	

TYPICAL SECTION FOR HILLSIDE
NOT TO SCALE

TYPICAL SECTION FOR FLAT AREA
NOT TO SCALE

DETAIL OF EXPANSION JOINT

NOT TO SCALE

DETAIL OF CONSTRUCTION JOINT

NOT TO SCALE

DETAIL OF CONTRACTION JOINT

NOT TO SCALE

TYPICAL SECTION FOR ALONG WITH HEADRACE
SCALE 1:50

PLAN OF REINFORCEMENT CONCRETE PAVEMENT

NOT TO SCALE

DETAIL "A"

NOT TO SCALE

TYPICAL SECTION FOR ALONG WITH PENSTOCK
SCALE 1:50

REINFORCEMENT DETAIL OF CONCRETE PAVEMENT CROSS-SECTION

NOTES 1 :

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE INDICATED.
2. EXPANSION JOINT SHALL BE CONSTRUCTED AT THE INTERVAL OF 90 METERS.
3. MASTIC JOINT SEALER SHALL BE OF THE HOT POURED ELASTIC TYPE CONFORMING TO TIS.479.
4. JOINT FILLER SHALL CONFORM TO THE AASHTO M.213-74 OR ASTM.D1751-73 SPECIFICATION.
5. REINFORCING STEEL SHALL CONFORM TIS.20 GRADE SR 24 FOR ROUND BARS AND TIS.24 GRADE SD 30 FOR DEFORMED BAR.
6. PLASTIC SHEET USED IN CONSTRUCTION SHALL HAVE THE FOLLOWING REQUIREMENTS :
 - 6.1 THICKNESS OF 0.07 MM. WITH A TOLERANCE OF NOT MORE THAN 7 % SHALL BE REQUIRED.
 - 6.2 WIDTH SHALL NOT BE LESS THAN 1.20 M.
 - 6.3 IT SHALL BE COLOURLESS, TRANSPARENT AND WATERPROOF, FREE FROM POROUS AREA, TURN AREA AND BLISTERING AREA WHICH ARE VISIBLE BY NAKED EYE. EDGE SHALL BE STRAIGHT.
 - 6.4 CONTINUOUS LENGTH SHALL BE REQUIREMENT TO THE WIDTH OF TRAFFIC LANES. CONNECTION ALLOWED AT LONGITUDINAL JOINTS WITH NOT LESS. THAN 20 CM. OVERLAPPING SHALL BE REQUIRED.

STA. TO STA.	SIDE DITCH TYPE	DETAIL DRAWING
0+000.000 - 0+639.752	TRAPEZOIDAL	AKP-HR-04
0+742.454 - 0+799.322	RECTANGULAR	AKP-PS-02
0+855.000 - 1+113.460	RECTANGULAR	AKP-OM-06

3				
2				
1				
NO.	DATE	REVISIONS	CHECKED	APPROVED
	CONSULTANTS		DEDE	

 KINGDOM OF THAILAND Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY	
AI KA PO HYDROPOWER PROJECT TAMBON PHUKHAO THONG AMPHOE SUKHIRIN CHANGWAT NARATHIWAT	
PART : 1 CIVIL WORKS AND TRANSMISSION LINE O&M ROAD TYPICAL SECTIONS AND DETAILS	
 P&C MANAGEMENT CO., LTD. SPT CONSULTANTS CO., LTD.	 Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED <i>Asipon ๓๒.29074</i> <i>๓๒.๙462</i>	REVIEWED <i>OK</i>
DRAWN <i>Qus</i>	SUBMITTED <i>Sw</i>
CHECKED <i>[Signature]</i> <i>๓๒.8231</i>	RECOMMENDED <i>Tos</i>
<i>[Signature]</i>	APPROVED <i>นางสาว</i>
28/10/2021 PROJECT MANAGER DATE	DRAWING NO. SHEET NO. AKP-OM-05 37 OF 129