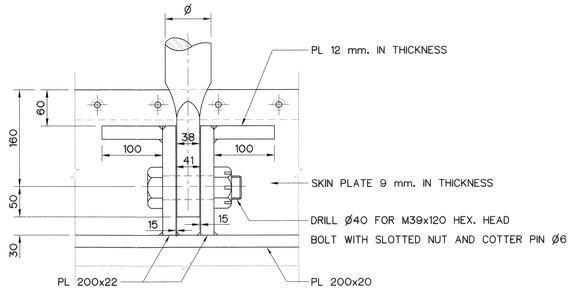
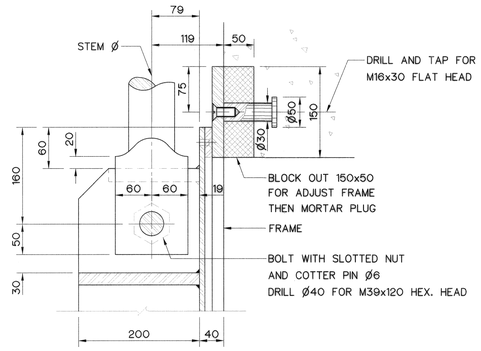


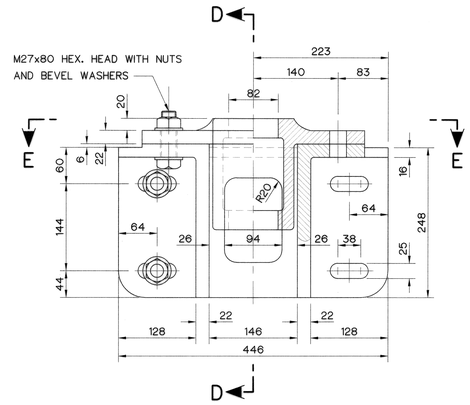
PLAN
NOT TO SCALE



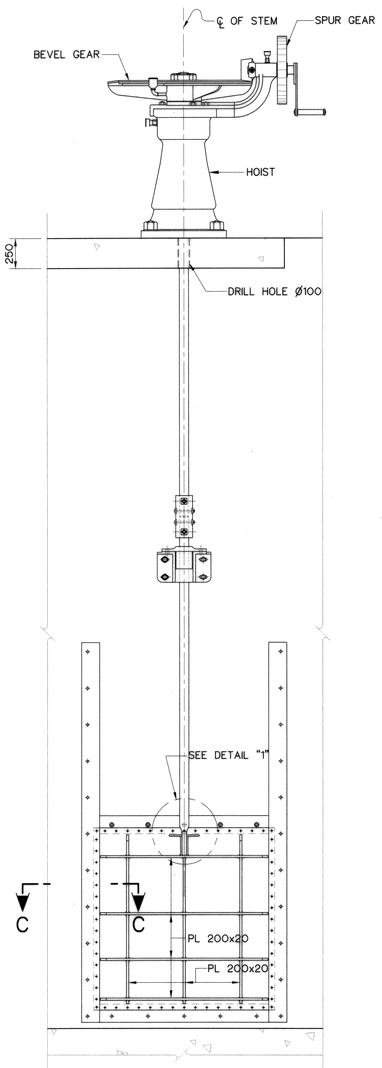
DETAIL "1"
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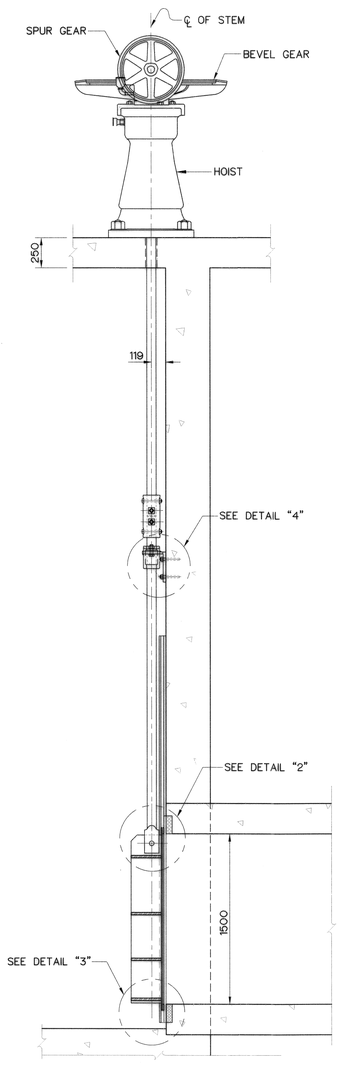
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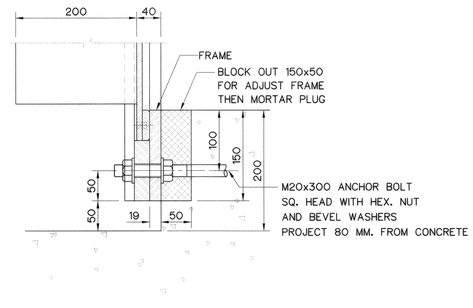
STEM GUIDE
NOT TO SCALE



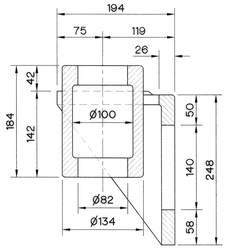
SECTION A–A
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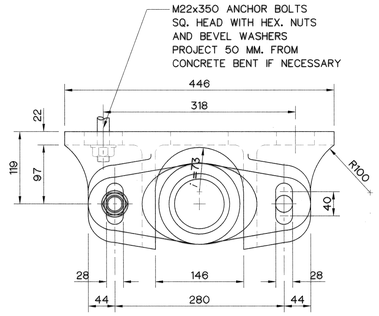
SECTION B–B
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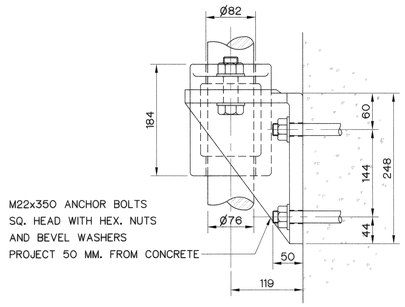
DETAIL "3"
SCALE 1:5



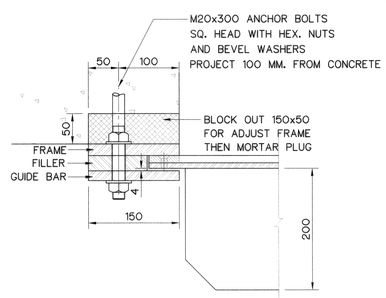
SECTION D–D
SCALE 1:5



SECTION E–E
SCALE 1:5



DETAIL "4"
SCALE 1:5



SECTION C–C
SCALE 1:5

NOTE :

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 DWGS :

1. WEIR SECTIONS	MH–WE–02
2. 1.50x1.50 m. VERTICAL GATE (GATE DATAIL)	MH–WE–07
3. PEDESTAL SCREW LIFT CAPACITY 6.5 TONS	MH–WE–09

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

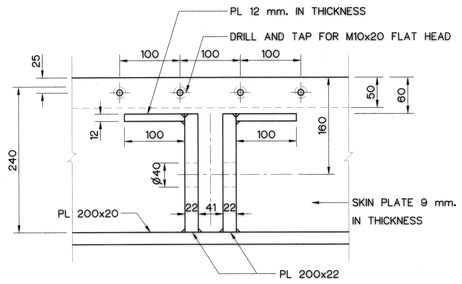
CIVIL WORKS AND TRANSMISSION LINE
WEIR
1.50x1.50 m. VERTICAL GATE (GATE INSTALLATION)

P&C MANAGEMENT CO.,LTD.

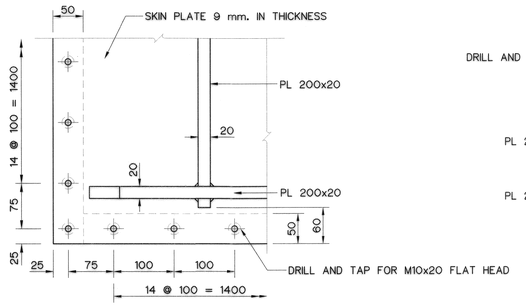
Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

DESIGNED	วิชิต.64624	วิชิต.6226	REVIEWED
DRAWN			SUBMITTED
CHECKED		วิชิต.6226	RECOMMENDED
PROJECT MANAGER		05/03/2559 DATE	APPROVED P. Hanstad

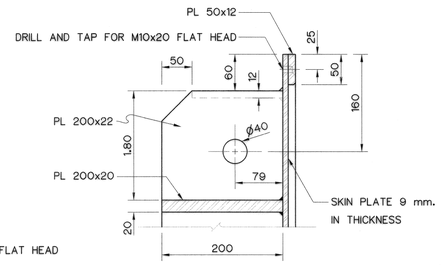
DRAWING NO. MH–WE–06
SHEET NO. 19 OF 130



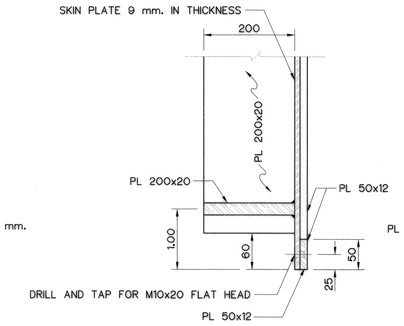
DETAIL "1"
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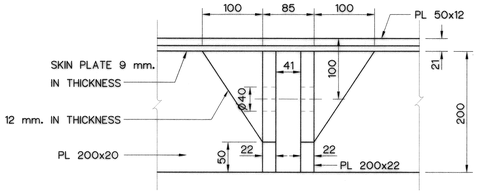
DETAIL "2"
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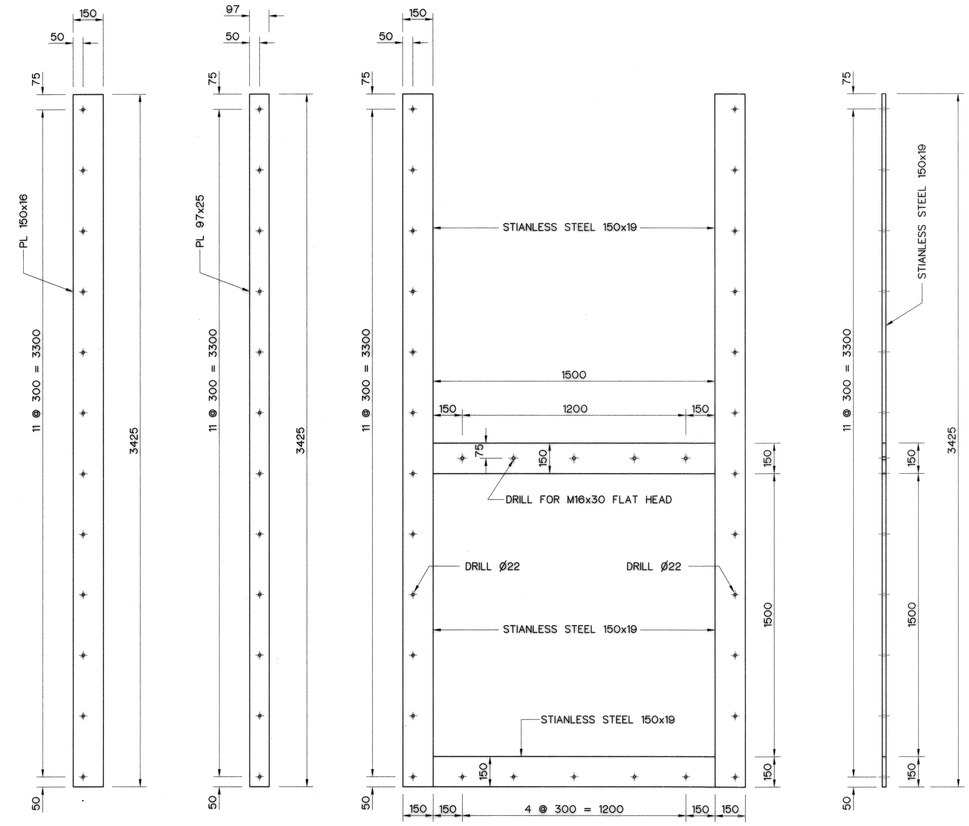
DETAIL "3"
NOT TO SCALE



DETAIL "4"
NOT TO SCALE



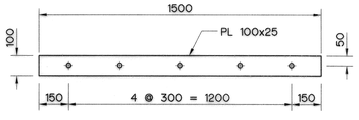
DETAIL "5"
NOT TO SCALE



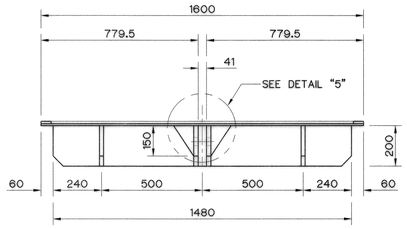
GUIDE BAR
NOT TO SCALE

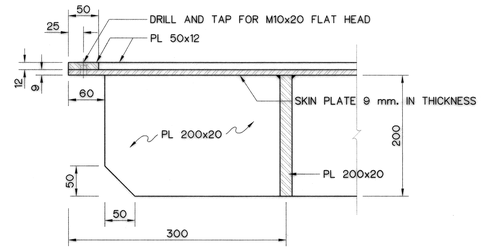
FILLER
NOT TO SCALE

FRAME
NOT TO SCALE

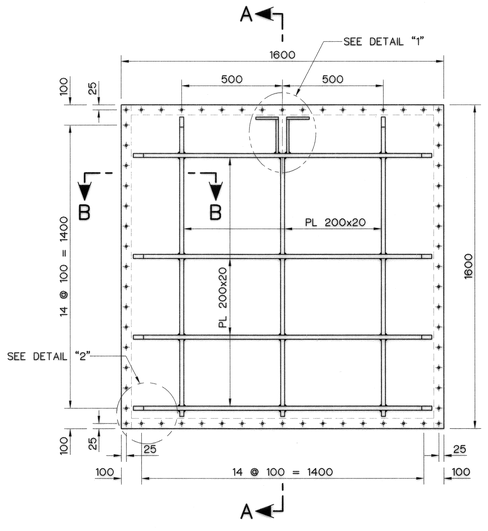


BOTTOM BAR
NOT TO SCALE

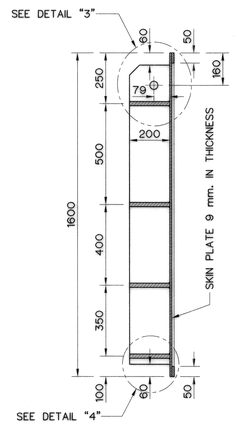




SECTION B–B
NOT TO SCALE



GATE LEAF
NOT TO SCALE



SECTION A–A
NOT TO SCALE

NOTE :

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 DWGS :

1. 1.50x1.50 m. VERTICAL GATE (GATE INSTALLATION)	MH-WE-06
2. PEDESTAL SCREW LIFT CAPACITY 6.5 TONS	MH-WE-09

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

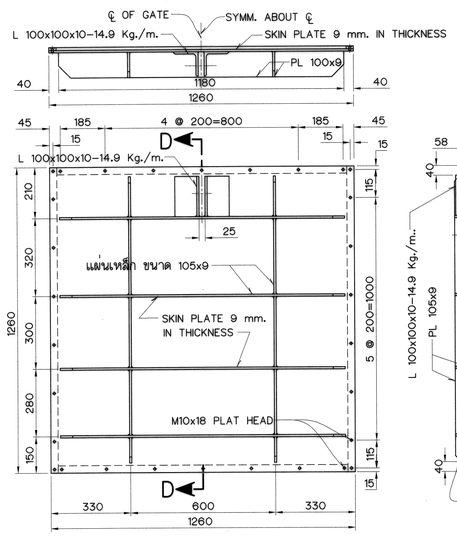
CIVIL WORKS AND TRANSMISSION LINE
WEIR
1.50x1.50 m. VERTICAL GATE (GATE DETAIL)

P&C MANAGEMENT CO.,LTD.

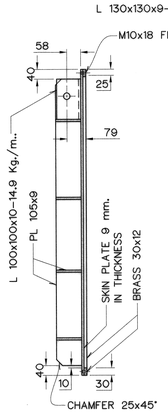
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

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

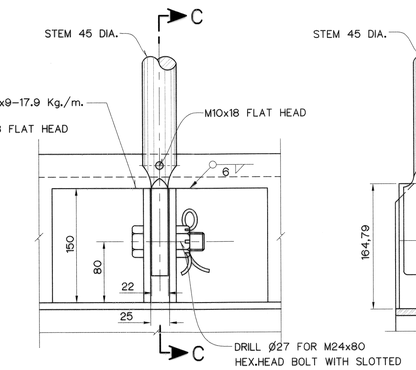
DRAWING NO. MH-WE-07
SHEET NO. 20 OF 130



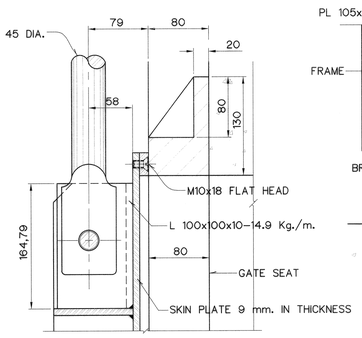
GATE LEAF
NOT TO SCALE



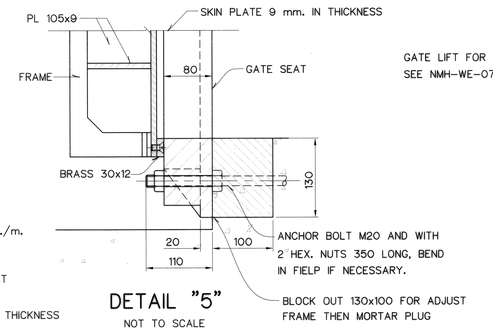
SECTION D–D
NOT TO SCALE



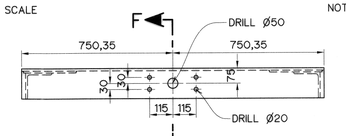
DETAIL "4"
NOT TO SCALE

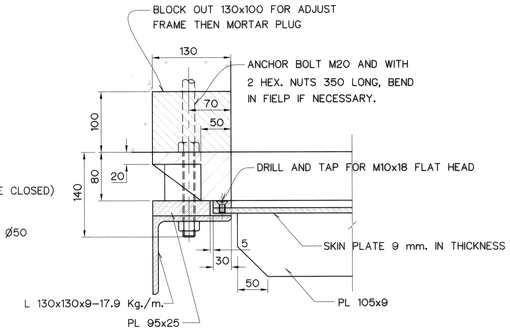


SECTION C–C
NOT TO SCALE

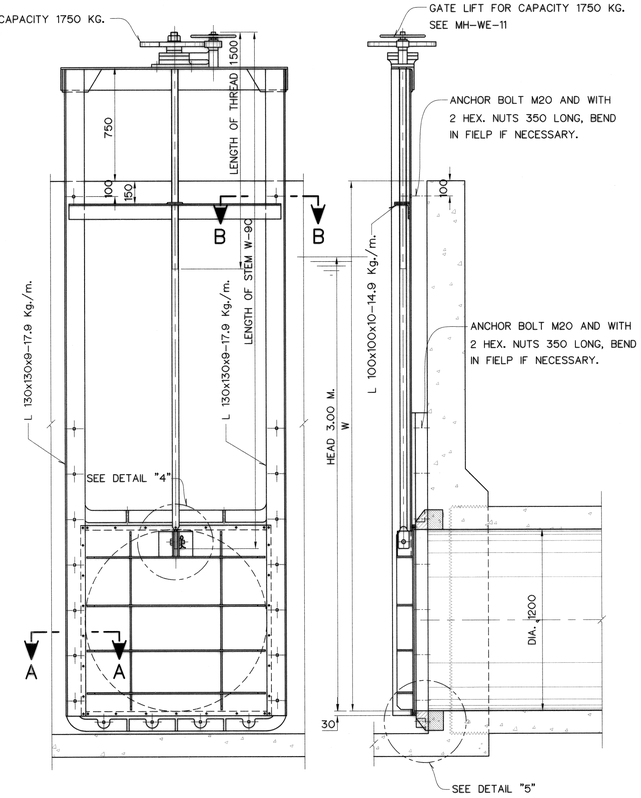


DETAIL "5"
NOT TO SCALE

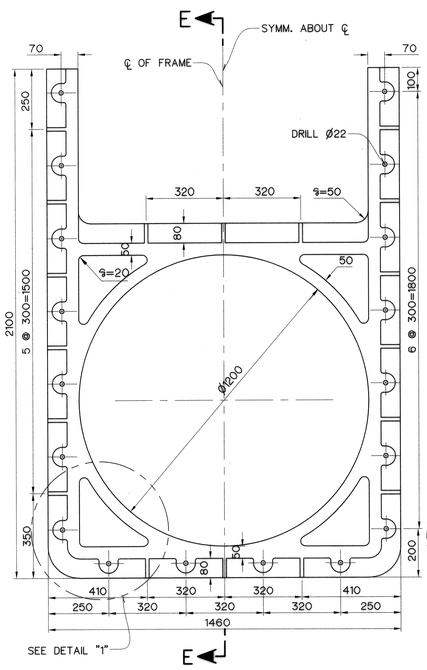




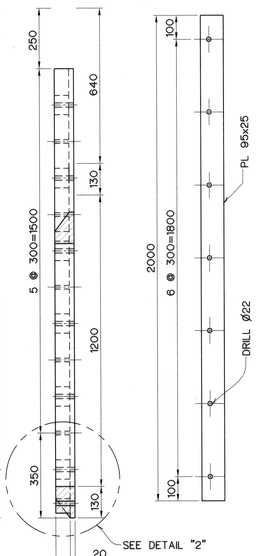
SECTION A–A
NOT TO SCALE



ASSEMBLY
NOT TO SCALE

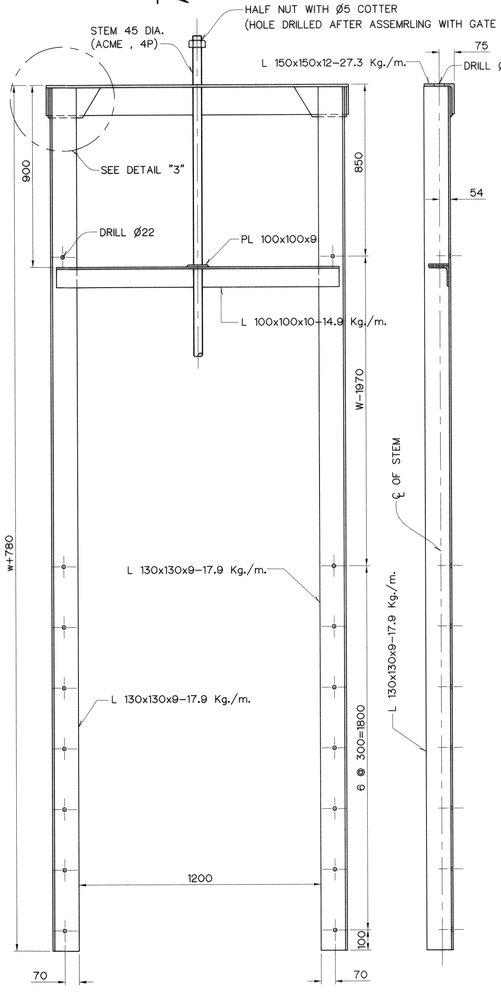


GATE SEAT
NOT TO SCALE



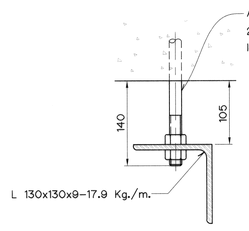
SECTION E–E
NOT TO SCALE

FILLER
NOT TO SCALE

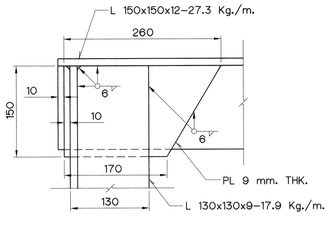


FRAME
NOT TO SCALE

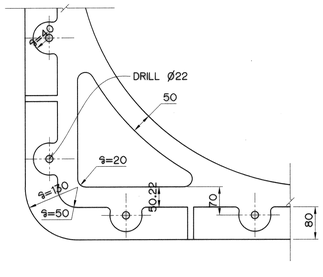
SECTION F–F
NOT TO SCALE



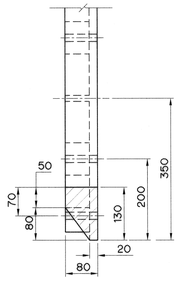
SECTION B–B
NOT TO SCALE



DETAIL "3"
NOT TO SCALE



DETAIL "1"
NOT TO SCALE



DETAIL "2"
NOT TO SCALE

NOTE :
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.

REFERENCE DWGS :
1. GATE–LIFT PEDESTAL AND HAND WHEEL MH–WE–10
2. VERTICAL SCREW–LIFT CAPACITY 1,750 KG. MH–WE–11

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
WEIR
DIA. 1.20 m. VERTICAL GATE

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				

CONSULTANTS — DEDE

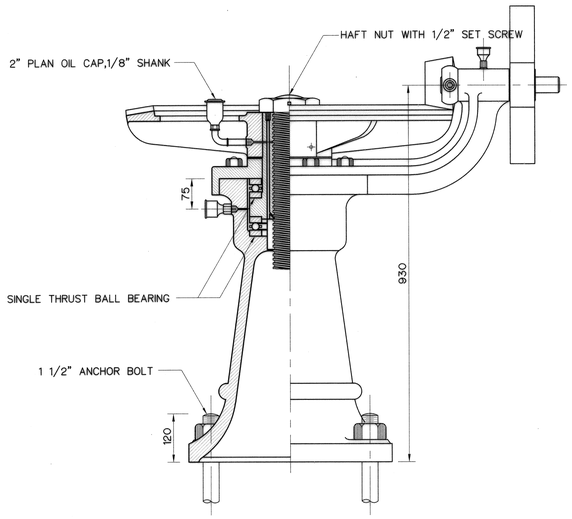
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

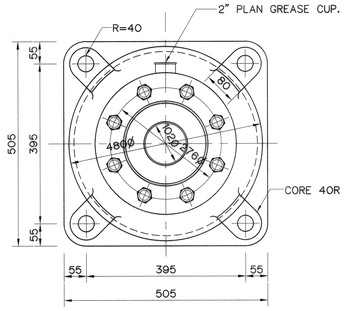
DESIGNED	วิชิต.64624	สิน.6226	REVIEWED
DRAWN			SUBMITTED
CHECKED		สิน.6226	RECOMMENDED
PROJECT MANAGER		01/03/2559 DATE	APPROVED

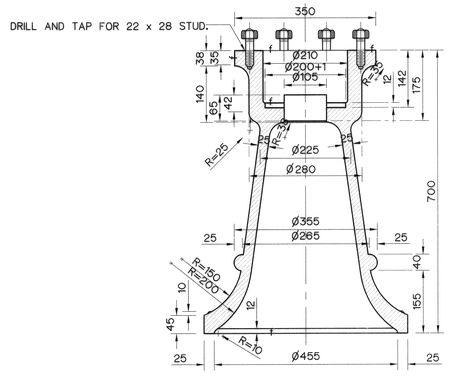
DRAWING NO. MH–WE–08

SHEET NO. 21 OF 130

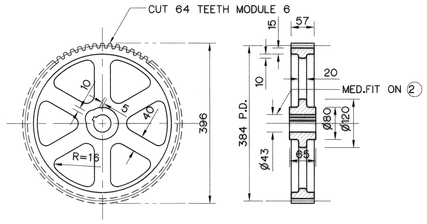


ASSEMBLY
SCALE 1 : 7.5

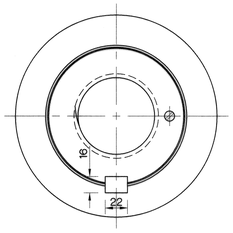


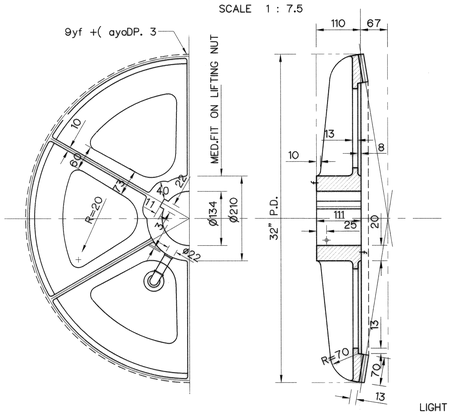


PEDESTAL
CAST IRON
SCALE 1 : 7.5

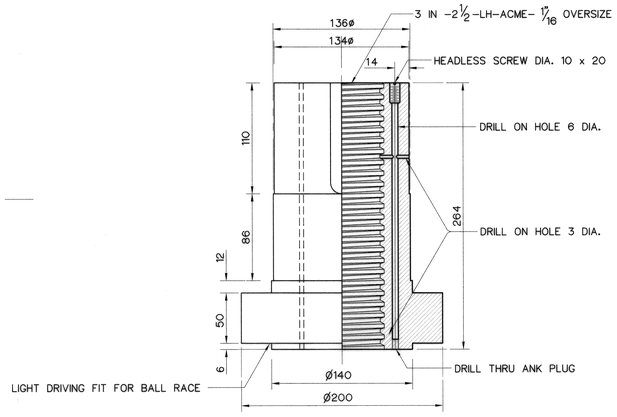


SPUR GEAR
SCALE 1 : 7.5

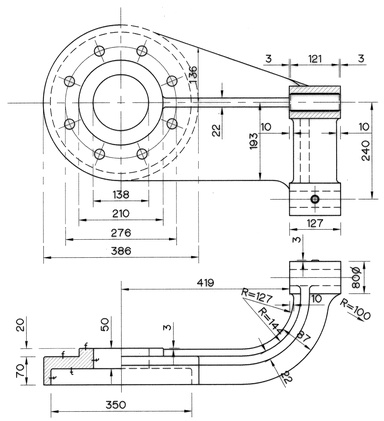




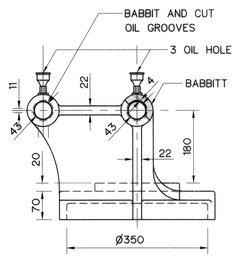
BEVEL GEAR
CAST IRON
SCALE 1 : 7.5

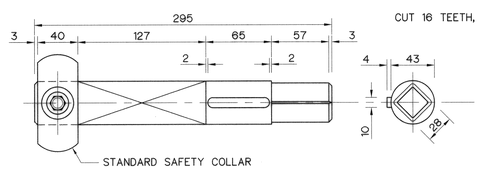


LIFTING NUT
PHOSPHOR BRONZE
SCALE 1 : 3

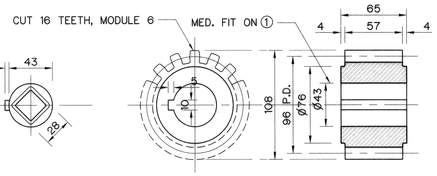


GAP AND BEARING
CAST IRON
SCALE 1:7.5

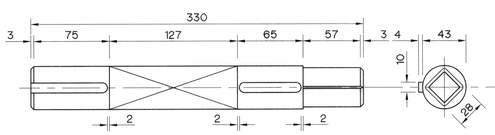




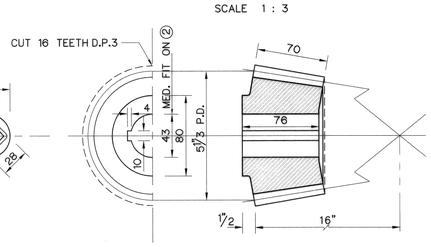
BEVEL PINION SHAFT
COLD ROLLED STEEL
SCALE 1 : 3



SPUR PINION
CAST IRON
SCALE 1 : 3



BEVEL GEAR SHAFT
COLD ROLLED STEEL
SCALE 1 : 3



BEVEL PINION
CAST IRON
SCALE 1 : 3

CRANK ARM
CAST IRON
SCALE 1 : 7.5

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SHOWN.
2. THIS DRAWING IS DESIGNED FOR GUIDE LINE ONLY, THE CONTRACTOR HAS TO SUBMITTED SHOP DRAWING TO FIELD ENGINEER FOR APPROVAL

0 0.05 0.1 0.2 0.25
SCALE 1:3 METERS

0 0.1 0.2 0.3 0.4 0.5 0.6
SCALE 1:7.5 METERS

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
WEIR
PEDESTAL SCREW LIFT CAPACITY 6.5 TONS

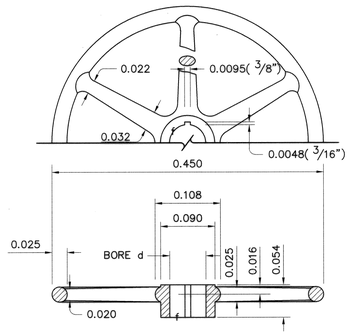
NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				

CONSULTANTS: P&C MANAGEMENT CO.,LTD.
DEDE

DESIGNED an.1950
DRAWN
CHECKED an.1950
PROJECT MANAGER 01/03/2559 DATE

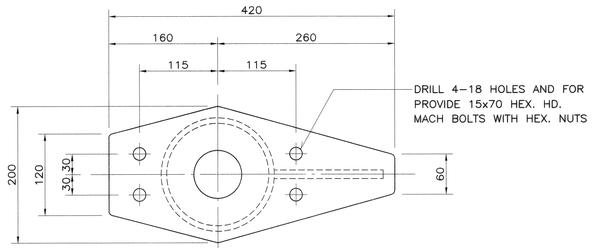
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED P. Hanwill

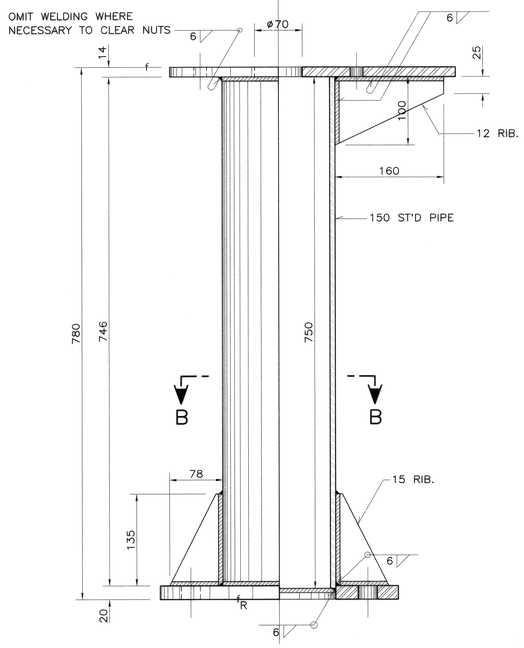
DRAWING NO. MH-WE-09
SHEET NO. 22 OF 130



45–CM. DIA. HAND WHEEL

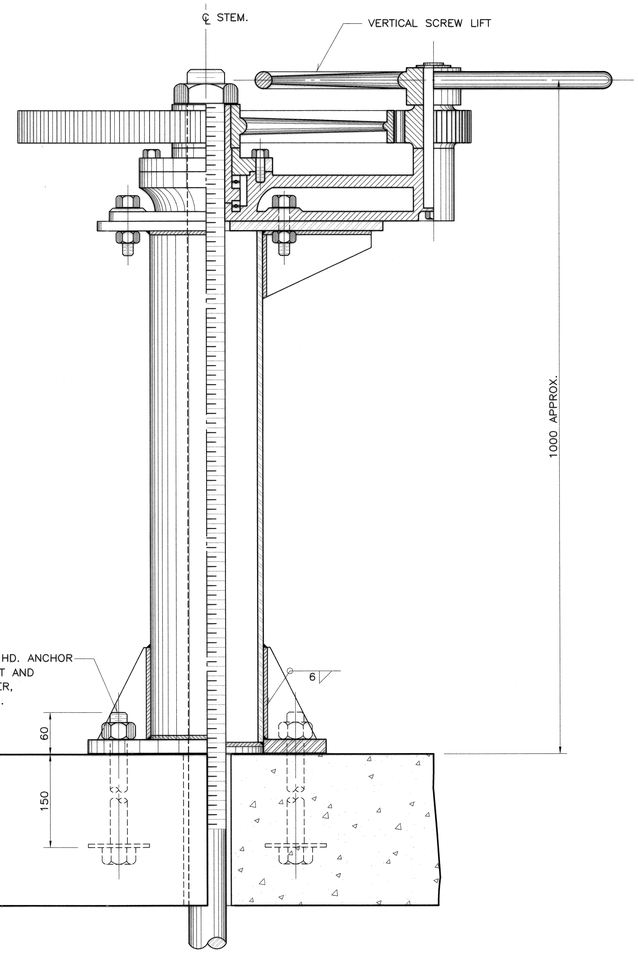
NOT TO SCALE





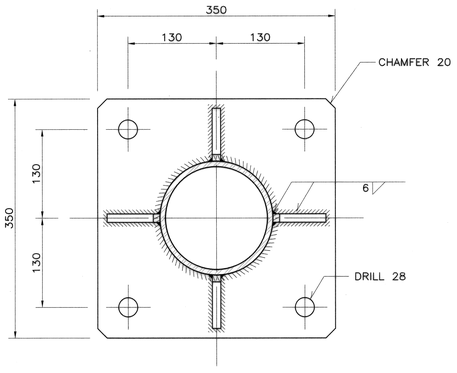
PEDESTAL

NOT TO SCALE



INSTALLATION

NOT TO SCALE



SECTION B–B

NOT TO SCALE

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SHOWN.

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

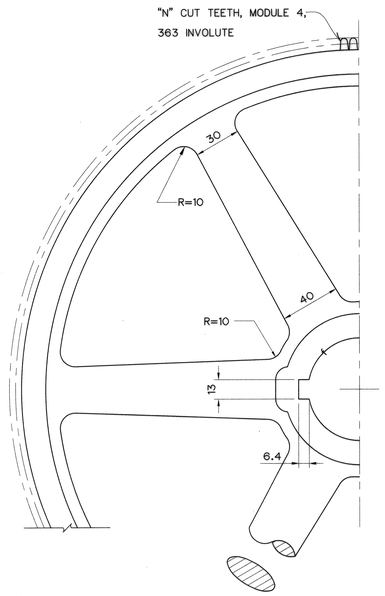
WEIR

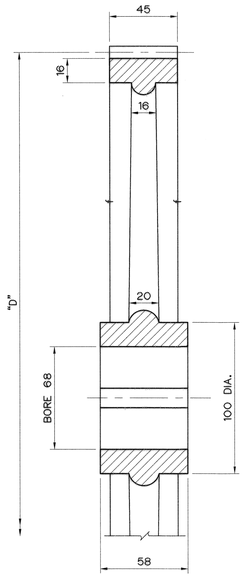
GATE–LIFT PEDESTAL AND HAND WHEEL

P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

DESIGNED		พ.ศ.1950	SUBMITTED
DRAWN			RECOMMENDED
CHECKED		พ.ศ.1950	APPROVED P. Hanpattanakit
PROJECT MANAGER		08/03/2554 DATE	DRAWING NO. MH–WE–10
			SHEET NO. 23 OF 130



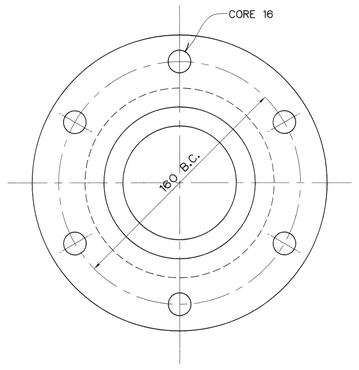


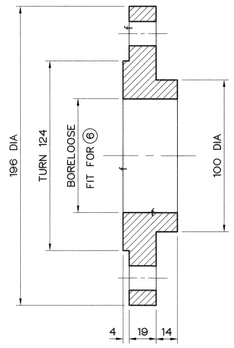
1

SPUR GEAR

CAST IRON

NOT TO SCALE



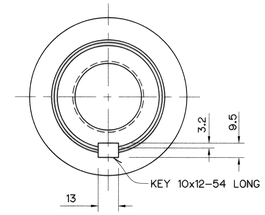


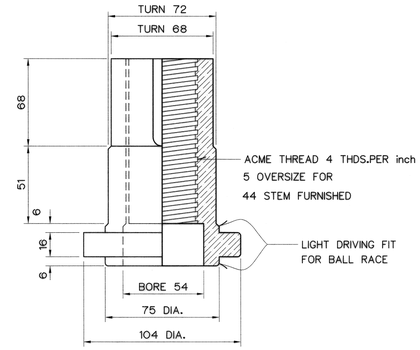
4

COVER PLATE

CAST IRON

NOT TO SCALE



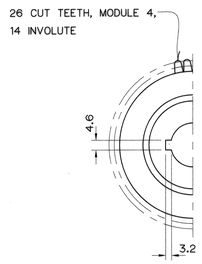


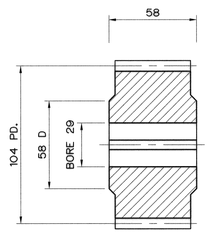
6

LIFTING NUT

BRONZE

NOT TO SCALE



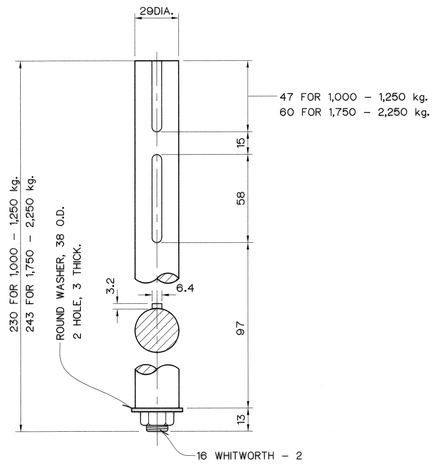


2

PINION

CAST IRON

NOT TO SCALE

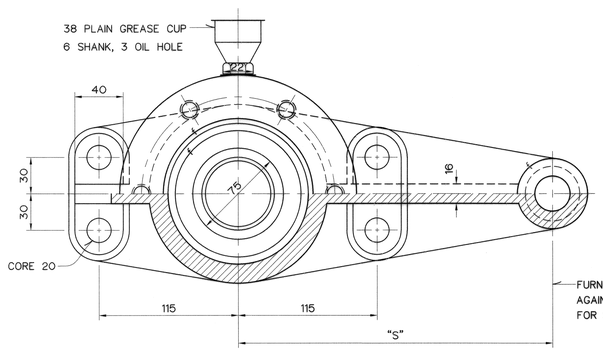


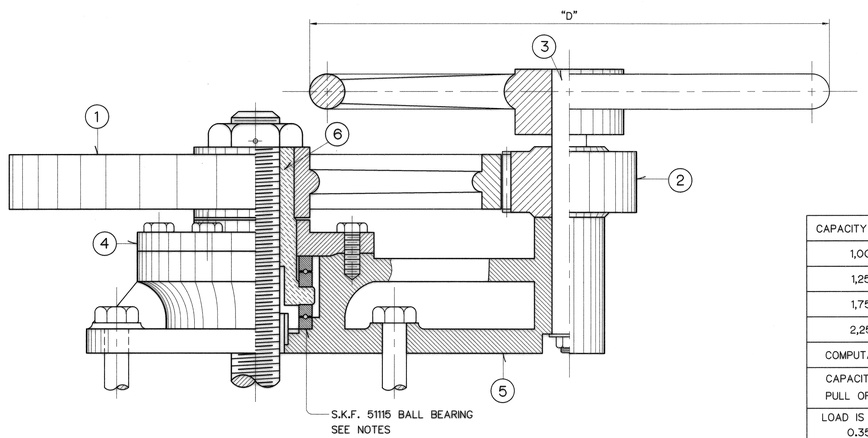
3

PINION SHAFT

MILD STEEL

NOT TO SCALE



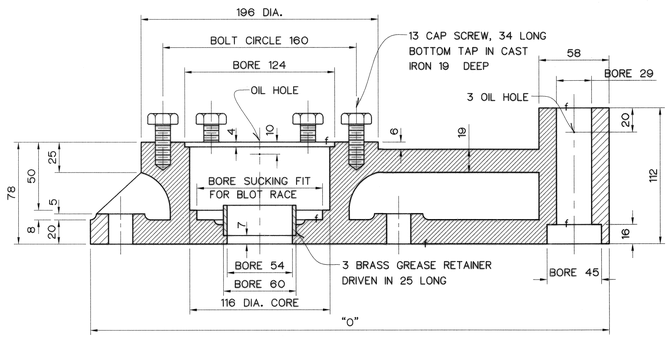


ASSEMBLY

NOT TO SCALE

CAPACITY (Kg.)	"N"	"D"	"S"	"O"	"D1"
1,000	104	416	260	429	300
1,250	104	416	260	429	380
1,750	130	520	312	481	450
2,250	143	572	338	502	530

COMPUTATION NO. SCREW LIFT I
CAPACITY IS BASED ON A HANDWHEEL PULL OF 9 KG. (4.5 KG.PER HAND)
LOAD IS EQUAL TO 0.35xWATER PRESSUREON GATE LEAL + WEIGHT OF GATE AND STEM.



5

BASE

CAST IRON

NOT TO SCALE

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT AS SHOWN
2. SINGLE – THRUST BALL BEARING S.K.F. 51115
   DYNAMIC CAPACITY = 8150 LBS. (3,700 kg.)
   BORE = 75
   OUTSIDE DIAMETER = 100
   HEIGHT = 19

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

WEIR

VERTICAL SCREW–LIFT CAPACITY 1,750 KG.

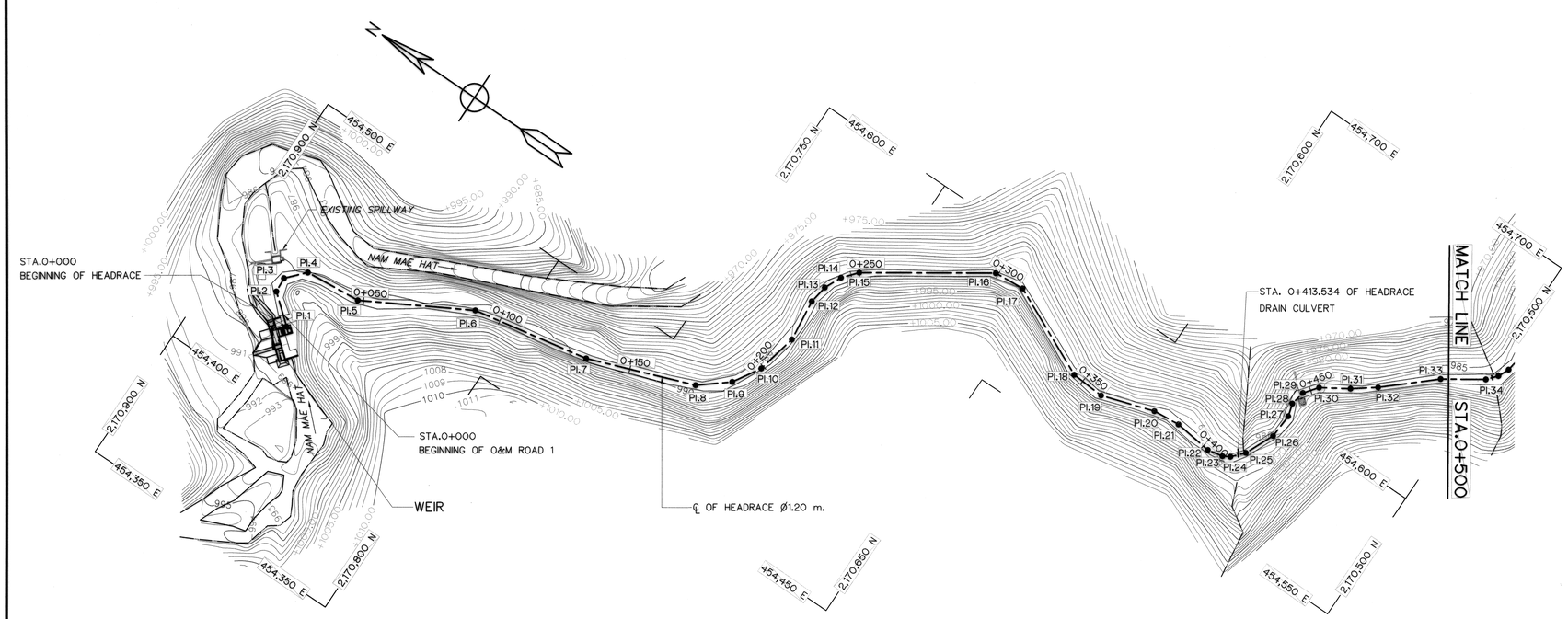
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

DESIGNED	20.1.1950	REVIEWED	
DRAWN		SUBMITTED	
CHECKED	20.1.1950	RECOMMENDED	
PROJECT MANAGER	08/03/2559 DATE	APPROVED	

DRAWING NO. MH–WE–11

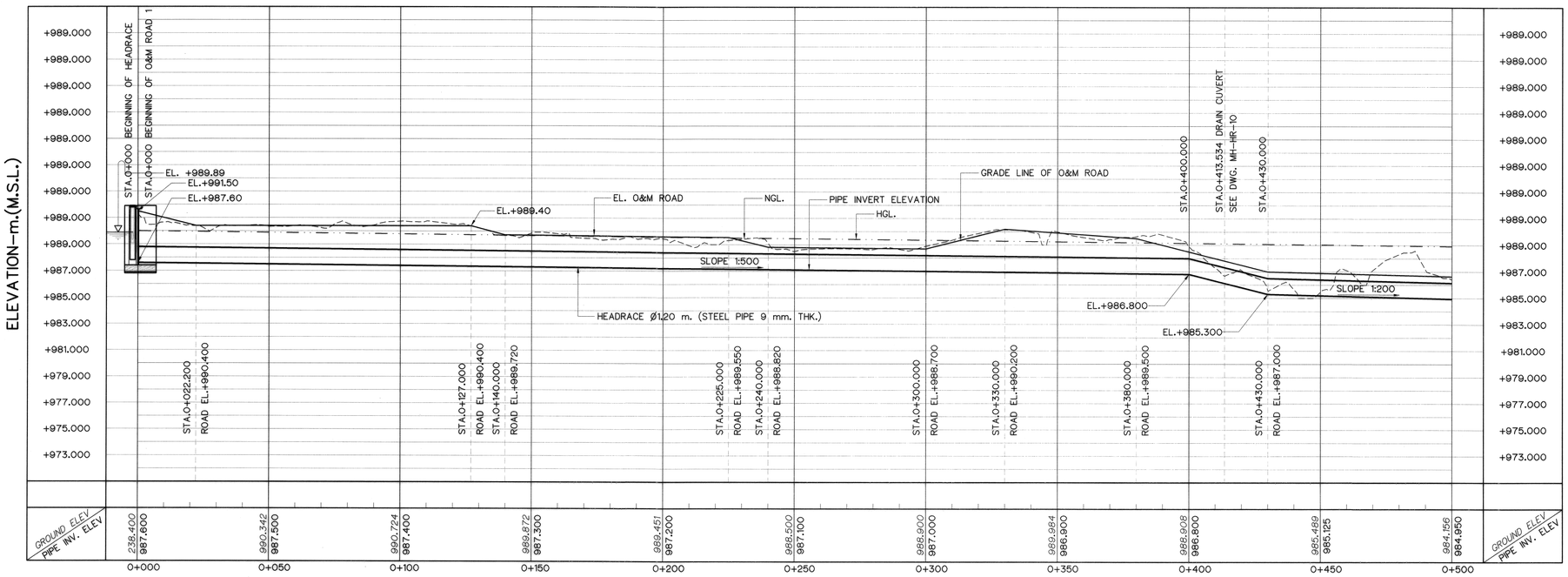
SHEET NO. 24 OF 130



PLAN
SCALE 1:1,000

HORIZONTAL CURVE OF HEADRACE

NO. PI.	COORDINATE OF PI. N	COORDINATE OF PI. E	PI. TO PI. (m)	DEFLECTION ANGLE (△) (° – ' – ")	PI. STA. (km)	BEARING (N/S ° – ' – " E/W)
PI.1	2,170,867.819	454,425.669	–	–	0+000.000	–
PI.2	2,170,877.907	454,433.994	13.080	46°– 31'– 52.45"	0+013.080	N39°– 31'– 50.67"E
PI.3	2,170,878.285	454,439.485	5.504	46°– 31'– 16.39"	0+018.584	N86°–03'– 43.11" E
PI.4	2,170,872.294	454,446.004	8.854	42°–23'–59.62"	0+027.438	S47°–25'–00.50"E
PI.5	2,170,851.801	454,447.803	20.572	24°–07'–25.33"	0+048.010	S05°– 01'– 00.88"E
PI.6	2,170,814.728	454,468.472	42.445	18°– 20'–24.28"	0+090.455	S29°– 08'– 26.21" E
PI.7	2,170,772.085	454,476.607	43.412	09°–40'– 44.25"	0+133.867	S 10°– 48'– 01.93" E
PI.8	2,170,734.171	454,490.767	40.472	18°– 58'– 23.23"	0+174.339	S20°– 28'– 46.18" E
PI.9	2,170,723.948	454,499.18	13.240	18°– 58'– 40.45"	0+187.579	S39°– 27'– 09.41" E
PI.10	2,170,717.952	454,508.938	11.453	18°– 58'– 31.33"	0+199.032	S58°– 25'–49.86"E
PI.11	2,170,714.653	454,523.704	15.130	18°– 58'– 17.92"	0+214.162	S77°–24'– 21.18" E
PI.12	2,170,716.366	454,539.03	15.421	15°– 37'–28.60"	0+229.583	N83°–37'–20.90"E
PI.13	2,170,715.276	454,545.725	6.783	15°– 37'– 31.44"	0+236.366	S80°– 45'– 10.50" E
PI.14	2,170,712.423	454,551.879	6.783	15°– 37'– 31.01"	0+243.149	S65°–07'–39.06"E
PI.15	2,170,708.018	454,557.037	6.783	15°– 37'–46.92"	0+249.932	S49°–30'–08.05"E
PI.16	2,170,667.236	454,584.413	49.118	29°–25'–38.79"	0+299.050	S33°–52'– 21.13" E
PI.17	2,170,656.186	454,585.272	11.083	29°–25'– 21.49"	0+310.133	S04°–26'–42.34"E
PI.18	2,170,623.496	454,570.044	36.063	21°– 20'– 46.15"	0+346.196	S24°– 58'– 39.15" W
PI.19	2,170,611.316	454,569.271	12.205	21°– 20'– 19.48"	0+358.401	S03°–37'–53.00"W
PI.20	2,170,592.314	454,575.338	19.947	12°– 18'– 50.46"	0+378.348	S 17°– 42'–26.48"E
PI.21	2,170,582.474	454,576.267	9.884	12°– 18'– 36.45"	0+388.232	S05°– 23'–36.03"E
PI.22	2,170,568.617	454,574.586	13.959	18°– 19'– 10.00"	0+402.191	S06°–55'–00.42"W
PI.23	2,170,563.034	454,575.712	5.695	18°– 17'– 44.64"	0+407.886	S 11°– 24'–09.58"E
PI.24	2,170,560.511	454,577.151	2.905	18°– 19'– 32.19"	0+410.791	S29°– 41'– 54.21" E
PI.25	2,170,556.701	454,581.386	5.697	18°– 18'– 34.69"	0+416.488	S48°– 01'– 26.41" E
PI.26	2,170,552.072	454,591.948	11.532	19°– 53'–35.36"	0+428.020	S66°–20'– 01.10" E
PI.27	2,170,551.489	454,600.788	8.859	19°– 53'–48.43"	0+436.879	S86°– 13'– 36.46"E
PI.28	2,170,552.826	454,605.413	4.814	26°–44'– 14.37"	0+441.693	N73°– 52'– 35.11" E
PI.29	2,170,551.839	454,610.68	5.359	26°–43'–29.80"	0+447.052	S79°–23'– 10.52" E
PI.30	2,170,548.088	454,615.597	6.184	20°–35'–47.83"	0+453.236	S52°– 39'–40.72"E
PI.31	2,170,538.542	454,621.577	11.264	04°–50'–22.73"	0+464.500	S32°–03'–52.89"E
PI.32	2,170,530.56	454,627.571	9.982	04°–50'– 16.61"	0+474.482	S36°–54'– 15.61" E
PI.33	2,170,513.681	454,642.632	22.622	08°– 01'– 33.31"	0+497.104	S 41°– 44'–32.22" E



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

SCALE 1:200 METERS (0 5 10 15)

SCALE 1:1,000 METERS (0 10 20 40 60 80)

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
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
4. REMOVE ALL EXISTING HEADRACE
5. DEMOLISH ALL EXISTING CONCRETE PAVEMENT
6. ALIGNMENT OF NEW O&M ROAD CONFORM TO EXISTING O&M ROAD

REFERENCE DRAWINGS :

1. HEADRACE PLAN AND PROFILE, STA. 0+500 TO STA. 1+000	MH–HR–02
2. HEADRACE TYPICAL SECTIONS	MH–HR–06
3. DRAIN CULVERT STA. 0+413.534	MH–HR–10

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
PLAN AND PROFILE, STA. 0+000 TO STA. 0+500

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				

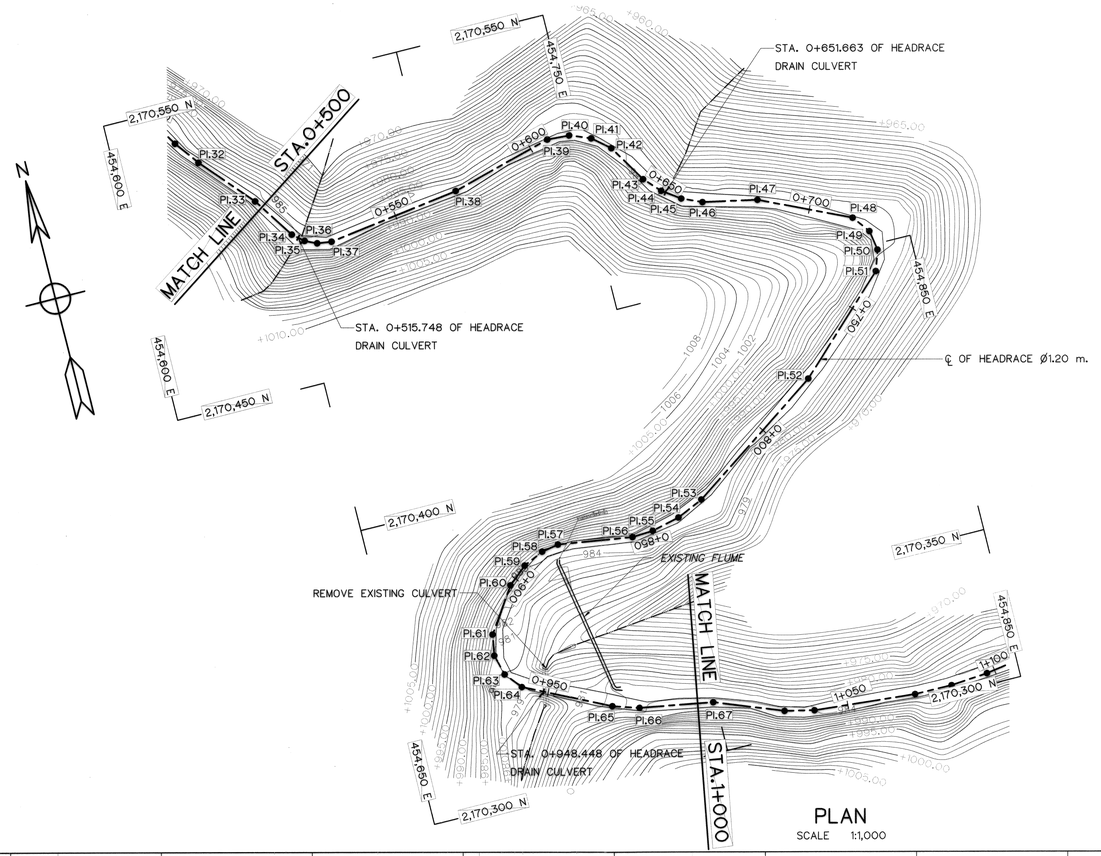
CONSULTANTS: P&C MANAGEMENT CO.,LTD.

DEDE: Department of Alternative Energy Development and Efficiency, MINISTRY OF ENERGY

DESIGNED	วิศ.64624	วิศ.6226	REVIEWED
DRAWN			SUBMITTED
CHECKED		วิศ.6226	RECOMMENDED
PROJECT MANAGER	08/03/2559 DATE		APPROVED

DRAWING NO. MH–HR–01

SHEET NO. 25 OF 130



PLAN

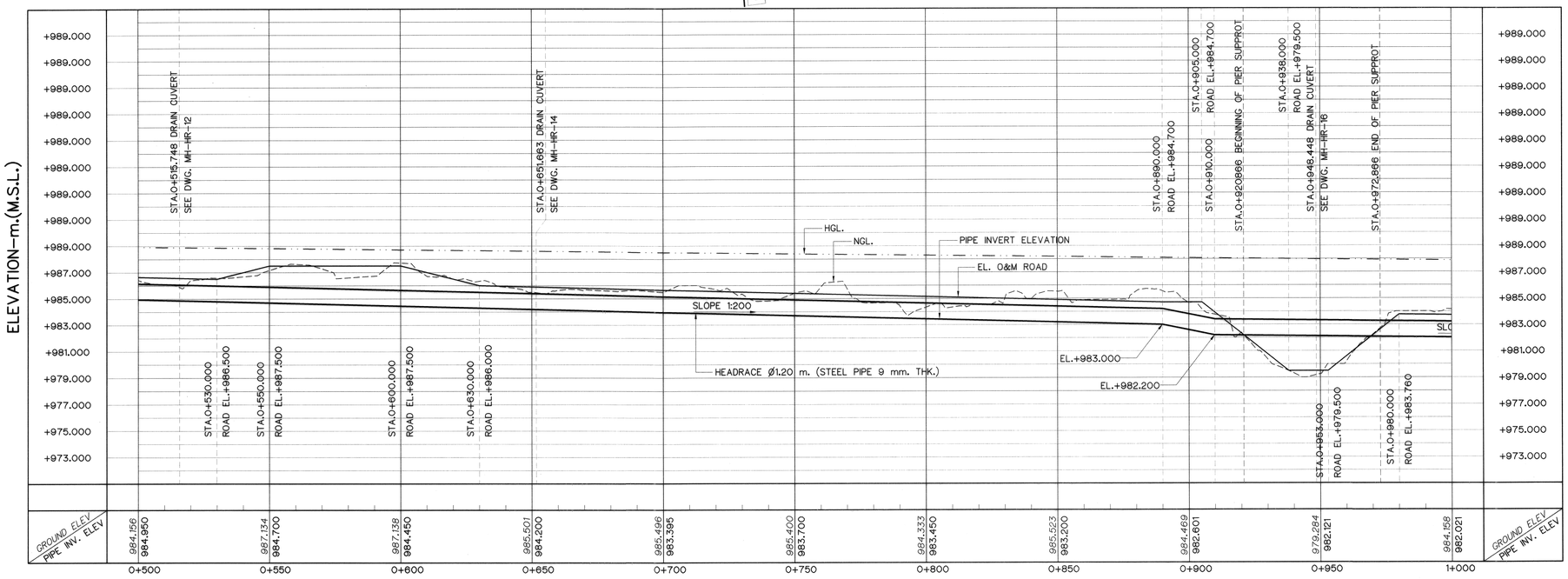
SCALE 1:1,000

HORIZONTAL CURVE OF HEADRACE

NO. PI.	COORDINATE OF PI. N	COORDINATE OF PI. E	PI. TO PI. (m)	DEFLECTION ANGLE (△) (° – ' – ")	PI. STA. (km)	BEARING (N/S ° – ' – " E/W)
PI.34	2,170,500.109	454,651.689	16.317	16°– 02'– 40.12"	0+513.421	S 33°– 42'– 58.91" E
PI.35	2,170,497.005	454,655.357	4.805	16°– 04'– 33.25"	0+518.226	S 49°– 45'– 39.03"E
PI.36	2,170,495.297	454,659.164	4.173	16°– 01'– 35.07"	0+522.399	S 65°– 50'– 12.28" E
PI.37	2,170,494.617	454,663.92	4.804	16°– 03'– 49.30"	0+527.203	S 81°– 51'– 47.35"E
PI.38	2,170,500.736	454,707.866	44.370	07°– 11'– 54.12"	0+571.573	N 82°– 04'–23.36"E
PI.39	2,170,509.8	454,741.4	34.737	18°– 22'– 45.40"	0+606.310	N 74°– 52'–29.24"E
PI.40	2,170,509.382	454,748.752	7.364	18°– 22'– 52.27"	0+613.674	S 86°– 44'–45.37"E
PI.41	2,170,506.667	454,755.597	7.364	18°– 23'– 04.28"	0+621.038	S 68°– 21'– 53.09"E
PI.42	2,170,501.932	454,761.236	7.363	18°– 22'– 46.67"	0+628.401	S 49°– 58'– 48.82"E
PI.43	2,170,489.434	454,768.925	14.674	11°– 38'– 35.97"	0+643.075	S 31°– 36'– 02.14"E
PI.44	2,170,484.257	454,773.794	7.107	11°– 38'– 21.21"	0+650.182	S 43°– 14'– 38.11" E
PI.45	2,170,480.169	454,779.607	7.107	11°– 38'– 34.94"	0+657.289	S 54°– 52'– 59.32"E
PI.46	2,170,477.338	454,786.126	7.107	11°– 38'– 30.64"	0+664.396	S 66°– 31'– 34.27"E
PI.47	2,170,473.613	454,803.907	18.167	12°– 52'– 11.55"	0+682.563	S 78°– 10'– 04.91"E
PI.48	2,170,60.22	454,833.023	32.049	27°– 54 08.10"	0+714.612	S 65°– 17'– 53.36"E
PI.49	2,170,454.595	454,837.323	7.080	27°–53'– 48.38"	0+721.692	S 37°– 23'– 45.25"E
PI.50	2,170,448.033	454,838.421	6.653	27°–54'– 02.92"	0+728.345	S 09°– 29'–56.88"E
PI.51	2,170,441.315	454,836.186	7.080	27°–53'– 58.13"	0+735.425	S 18°– 24'–06.05"W
PI.52	2,170,412.358	454,805.883	41.914	09°–30'– 38.88"	0+777.339	S 46°– 18'– 04.18"W
PI.53	2,170,382.448	454,761.852	53.229	10°– 29'– 43.01"	0+830.568	S 55°– 48'–43.06"W
PI.54	2,170,378.6	454,753.083	9.576	10°– 30'–04.45"	0+840.144	S 66°– 18'– 26.07"W
PI.55	2,170,376.415	454,743.761	9.575	10°– 29'– 26.93"	0+849.719	S 76°– 48'–30.52"W
PI.56	2,170,376.084	454,736.744	7.025	11°– 02'– 19.47"	0+856.744	S 87°– 17'–57.46"W
PI.57	2,170,379.678	454,712.222	24.784	19°– 09'–59.05"	0+881.528	N 81°– 39'–43.07"W
PI.58	2,170,378.604	454,706.607	5.717	13°– 12'– 52.75"	0+887.245	S 79°– 10'– 17.88"W
PI.59	2,170,375.602	454,699.878	7.368	15°– 54'– 52.30"	0+894.613	S 65°– 57'– 25.12"W
PI.60	2,170,370.425	454,693.699	8.061	15°– 55'– 19.41"	0+902.674	S 50°– 02'–32.82"W
PI.61	2,170,356.087	454,683.984	17.319	24°– 33 03.60"	0+919.993	S 34°– 07'– 13.41"W
PI.62	2,170,349.147	454,682.814	7.038	24°–32'– 43.36"	0+927.031	S 09°– 34'– 09.81"W
PI.63	2,170,342.347	454,684.633	7.039	24°–33'– 53.48"	0+934.070	S 14°– 58'–33.54"E
PI.64	2,170,336.919	454,689.114	7.039	24°–32'– 46.68"	0+941.109	S 39°– 32'–27.03"E
PI.65	2,170,323.544	454,716.643	30.606	08°–04'– 02.82"	0+971.715	S 64°– 05'– 13.71" E
PI.66	2,170,320.775	454,725.244	9.036	08°–03'– 34.47"	0+980.751	S 72°– 09'– 16.53" E

TABLE OF PIER DIMENSIONS

PIER NO.	STA.	N.G.L.	FOOTING ELEV.	PIPE INVERT ELEV.	NOTE
1	0+920.866	+982.176	+980.176	+982.176	
2	0+927.866	+980.848	+978.848	+982.165	
3	0+934.866	+979.762	+977.762	+982.151	
4	0+942.366	+979.000	+977.000	+982.136	
5	0+946.366	+979.078	+977.078	+982.128	
6	0+953.366	+978.000	+976.000	+982.114	
7	0+960.366	+978.326	+976.326	+982.100	
8	0+967.366	+982.000	+980.000	+982.086	
9	0+972.866	+982.718	+980.718	+982.075	



PROFILE

VERTICAL SCALE 1:200

HORIZONTAL SCALE 1:1,000

0 5 10 15

SCALE 1:200 METERS

0 10 20 40 60 80

SCALE 1:1,000 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
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
4. REMOVE ALL EXISTING HEADRACE
5. DEMOLISH ALL EXISTING CONCRETE PAVEMENT
6. ALIGNMENT OF NEW O&M ROAD CONFORM TO EXISTING O&M ROAD

REFERENCE DRAWINGS :

1. HEADRACE PLAN AND PROFILE, STA. 0+000 TO STA. 0+500	MH–HR–01
2. HEADRACE PLAN AND PROFILE, STA. 1+000 TO STA. 1+500	MH–HR–03
3. HEADRACE TYPICAL SECTIONS	MH–HR–06
4. HEADRACE CONCRETE PIER	MH–HR–07
5. DRAIN CULVERT STA. 0+515.748 PLAN AND SECTION	MH–HR–12
6. DRAIN CULVERT STA. 0+651.663 PLAN AND SECTION	MH–HR–14
7. DRAIN CULVERT STA. 0+948.448 PLAN AND SECTION	MH–HR–16

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

HEADRACE

PLAN AND PROFILE, STA. 0+500 TO STA. 1+000

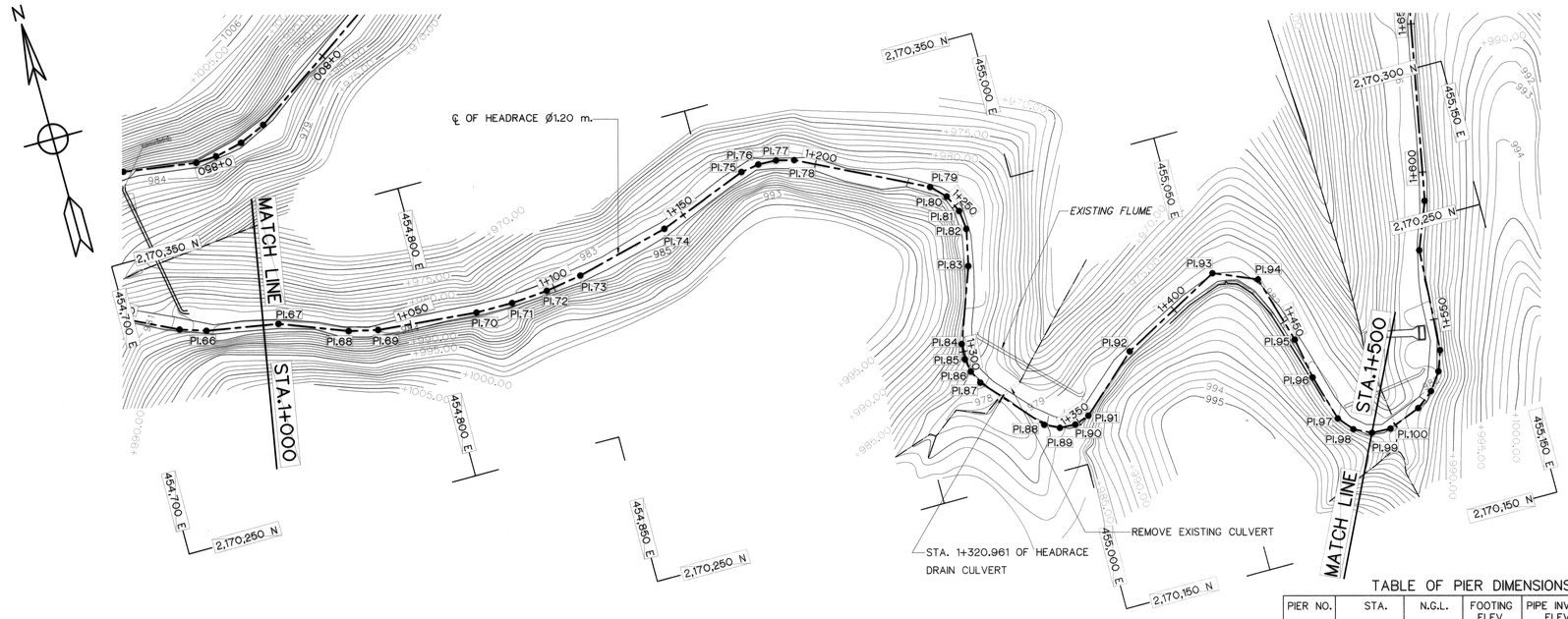
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED	วิชัย.64624	REVIEWED	
DRAWN		SUBMITTED	วิชัย.6226
CHECKED	วิชัย.6226	RECOMMENDED	
PROJECT MANAGER	08/03/2564 DATE	APPROVED	P. Homsuk

DRAWING NO. MH–HR–02

SHEET NO. 26 OF 130



PLAN

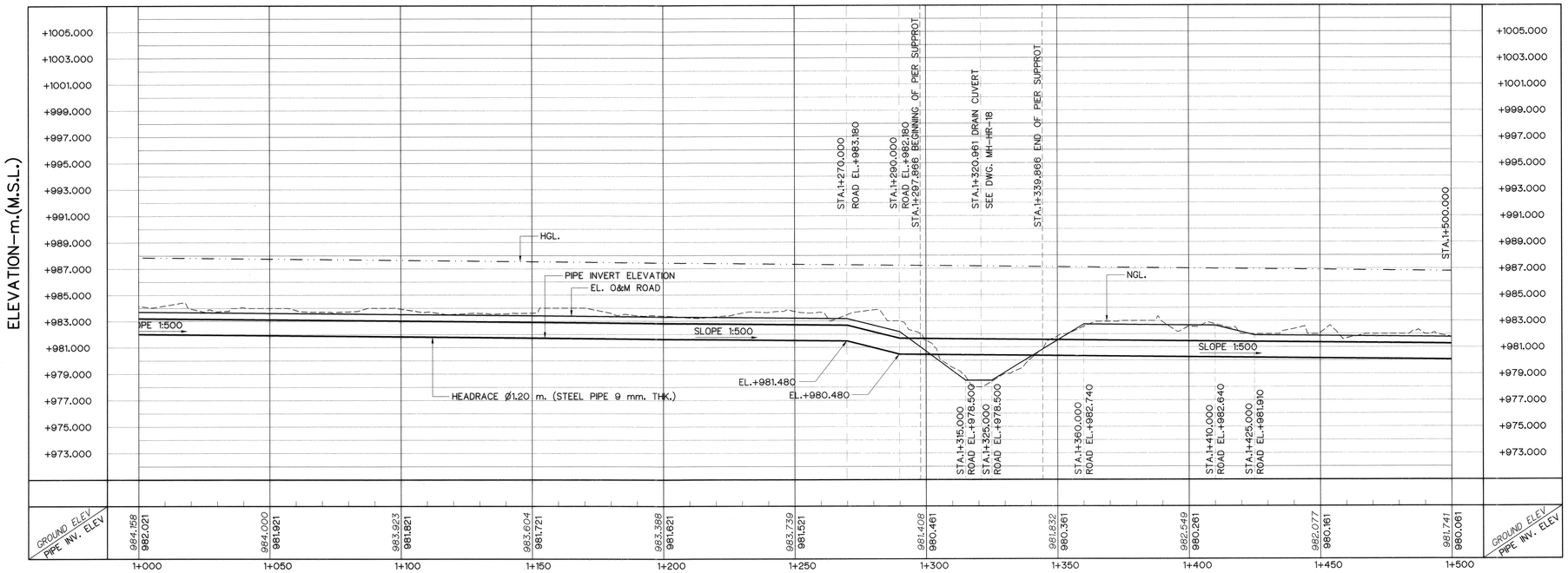
SCALE 1:1,000

HORIZONTAL CURVE OF HEADRACE

NO. PI.	COORDINATE OF PI. N	COORDINATE OF PI. E	PI. TO PI. (m)	DEFLECTION ANGLE (△) (° – ' – ")	PI. STA. (km)	BEARING (N/S ° – ' – " E/W)
PI.67	2,170,316.623	454,749.317	24.428	11°– 14'– 32.42"	1+005.179	S 80°– 12'– 51.00" E
PI.68	2,170,308.086	454,771.524	23.791	07°– 59'– 45.65"	1+028.970	S 68°– 58'– 18.57" E
PI.69	2,170,305.842	454,781.219	9.951	07°– 59'– 28.88"	1+038.921	S 76°– 58'– 04.22"E
PI.70	2,170,302.884	454,814.754	33.665	04°– 43'– 35.23"	1+072.586	S 84°– 57'– 33.10" E
PI.71	2,170,302.816	454,827.148	12.394	04°– 43'– 45.73"	1+084.980	S 89°– 41'– 08.33"E
PI.72	2,170,303.77	454,839.504	12.393	04°– 43'– 35.66"	1+097.373	N 85°– 35'–05.94"E
PI.73	2,170,305.739	454,851.74	12.393	04°– 43'– 37.41"	1+109.766	N 80°– 51'– 30.28"E
PI.74	2,170,313.49	454,883.134	32.337	07°– 25'– 28.92"	1+142.103	N 76°– 07'–52.88"E
PI.75	2,170,325.209	454,913.202	32.271	11°– 54'– 27.63"	1+174.374	N 68°– 42'–23.96"E
PI.76	2,170,326.211	454,919.264	6.144	11°– 54'– 50.82"	1+180.518	N 80°– 36'– 51.59" E
PI.77	2,170,325.94	454,925.401	6.143	11°– 54'– 04.89"	1+186.661	S 87°– 28'– 17.59" E
PI.78	2,170,324.409	454,931.351	6.144	11°– 54'– 21.35"	1+192.805	S 75°– 34'– 12.70" E
PI.79	2,170,303.738	454,973.11	46.595	18°– 56'– 28.89"	1+239.400	S 63°– 39'– 51.35" E
PI.80	2,170,299.167	454,977.637	6.433	18°– 56'– 19.11"	1+245.833	S 44°– 43'–22.46"E
PI.81	2,170,293.375	454,980.435	6.432	18°– 55'– 39.70"	1+252.265	S 25°– 47'–03.35"E
PI.82	2,170,286.988	454,981.203	6.433	18°– 56'– 23.13"	1+258.698	S 06°– 51'– 23.65"E
PI.83	2,170,274.81	454,978.596	12.454	07°– 47'– 01.82"	1+271.152	S 12°– 04'–59.48"W
PI.84	2,170,250.141	454,969.682	26.230	15°– 19'– 10.24"	1+297.382	S 19°– 52'–01.30"W
PI.85	2,170,245.225	454,969.291	4.932	15°– 17'– 57.14"	1+302.314	S 04°– 32'–51.06"W
PI.86	2,170,240.38	454,970.211	4.932	15°– 18'– 52.43"	1+307.246	S 10°– 45'–06.08"E
PI.87	2,170,235.95	454,972.378	4.932	15°– 18'– 40.28"	1+312.178	S 26°– 03'– 58.51" E
PI.88	2,170,216.627	454,989.4	25.751	22°– 41'– 47.22"	1+337.929	S 41°– 22'–38.79"E
PI.89	2,170,214.295	454,994.197	5.334	22°– 41'– 27.10"	1+343.263	S 64°– 04'–26.01" E
PI.90	2,170,213.994	454,999.522	5.334	22°– 41'– 09.63"	1+348.597	S 86°– 45'– 53.11" E
PI.91	2,170,215.77	455,004.551	5.333	22°– 42'– 04.18"	1+353.930	N 70°– 32'–57.26"E
PI.92	2,170,233.018	455,023.605	25.701	13°– 53'– 54.04"	1+379.631	N 47°– 50'–53.08"E
PI.93	2,170,251.123	455,057.295	38.247	50°– 58'– 33.96"	1+417.878	N 61°– 44'–47.13" E
PI.94	2,170,245.153	455,071.551	15.456	50°– 58'– 09.21"	1+433.334	S 67°– 16'– 38.91" E
PI.95	2,170,222.4	455,078.208	23.707	05°– 56'– 49.32"	1+457.041	S 16°– 18'– 29.71" E
PI.96	2,170,208.628	455,080.726	14.000	05°– 56'–54.90"	1+471.041	S 10°– 21'– 40.38"E
PI.97	2,170,193.061	455,085.281	16.220	23°– 48'– 09.62"	1+487.261	S 16°– 18'– 35.28"E
PI.98	2,170,188.18	455,089.393	6.382	23°– 48'– 58.64"	1+493.643	S 40°– 06'–44.90"E
PI.99	2,170,185.375	455,095.126	6.382	23°– 48'– 31.00"	1+500.025	S 63°– 55'–43.54"E

TABLE OF PIER DIMENSIONS

PIER NO.	STA.	N.G.L.	FOOTING ELEV.	PIPE INVERT ELEV.	NOTE
10	1+297.866	+981.496	+979.496	+980.456	
11	1+303.866	+981.000	+980.000	+980.454	
12	1+305.866	+979.677	+977.677	+980.454	
13	1+310.866	+979.115	+977.115	+980.434	
14	1+314.866	+978.000	+976.000	+980.426	
15	1+321.866	+978.332	+976.332	+980.412	
16	1+328.866	+979.000	+977.000	+980.398	
17	1+334.366	+980.000	+978.000	+980.383	
18	1+339.866	+980.908	+978.908	+980.372	



PROFILE

VERTICAL SCALE 1:200

HORIZONTAL SCALE 1:1,000

0 5 10 15

SCALE 1:200 METERS

0 10 20 40 60 80

SCALE 1:1,000 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
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
4. REMOVE ALL EXISTING HEADRACE
5. DEMOLISH ALL EXISTING CONCRETE PAVEMENT
6. ALIGNMENT OF NEW O&M ROAD CONFORM TO EXISTING O&M ROAD

REFERENCE DRAWINGS :

1. HEADRACE PLAN AND PROFILE, STA. 0+500 TO STA. 1+000	MH–HR–02
2. HEADRACE PLAN AND PROFILE, STA. 1+500 TO STA. 2+000	MH–HR–04
3. HEADRACE TYPICAL SECTIONS	MH–HR–06
4. HEADRACE CONCRETE PIER	MH–HR–07
5. DRAIN CULVERT STA. 1+320.961 PLAN AND SECTION	MH–HR–18

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
PLAN AND PROFILE, STA. 1+000 TO STA. 1+500

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				
	CONSULTANTS		DEDE	

P&C MANAGEMENT CO.,LTD.

DESIGNED วิ.64624 สิ.6226

DRAWN

CHECKED สิ.6226

PROJECT MANAGER 08/03/2559 DATE

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

REVIEWED

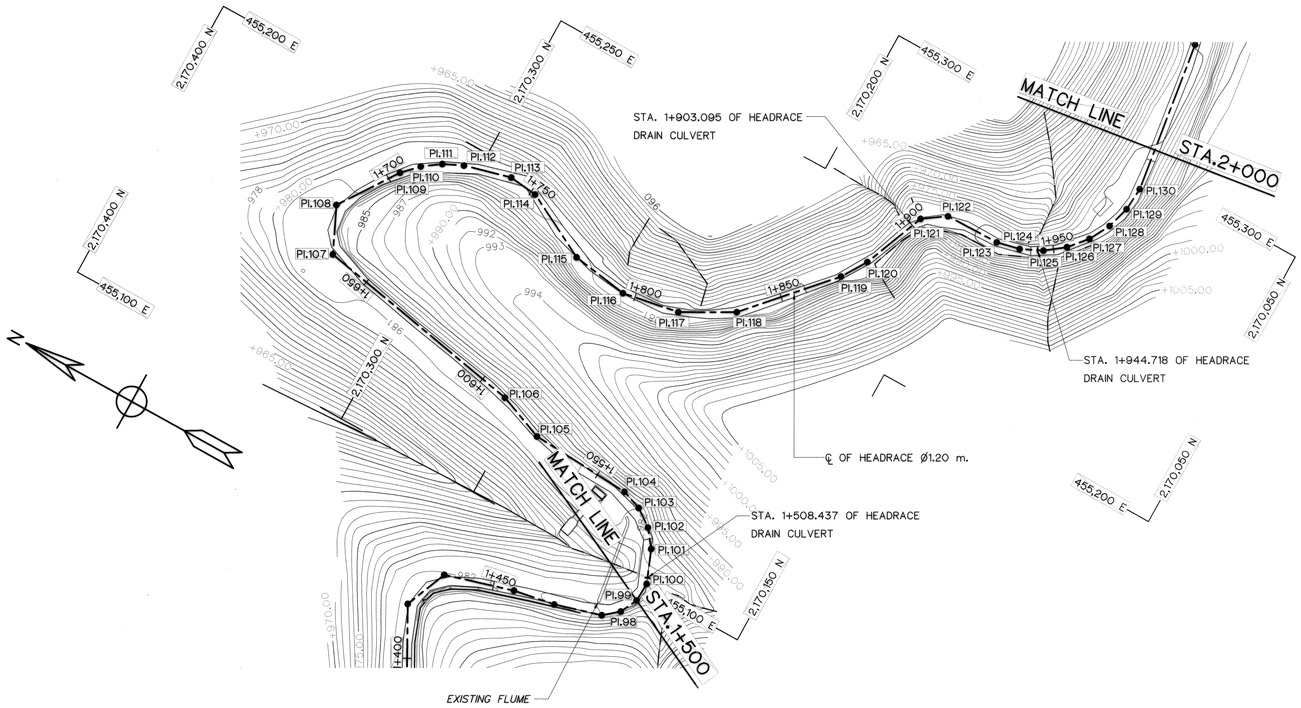
SUBMITTED

RECOMMENDED

APPROVED

DRAWING NO. MH–HR–03

SHEET NO. 27 OF 130

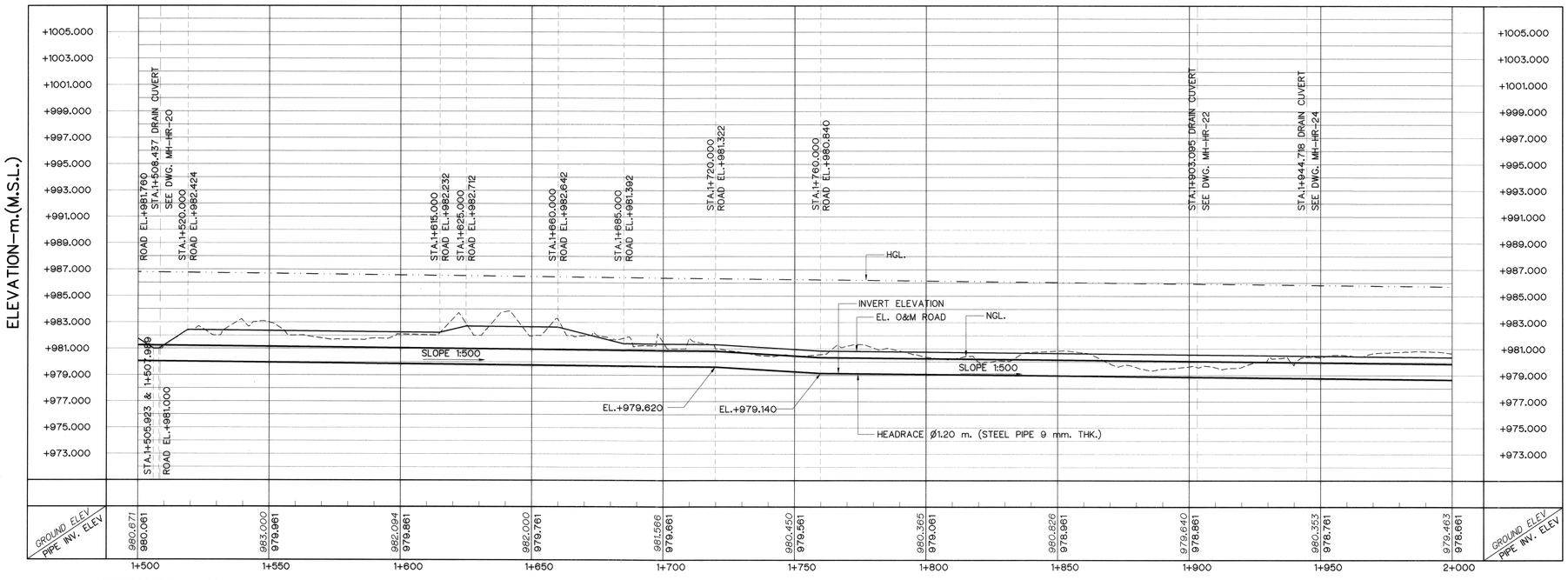


PLAN

SCALE 1:1,000

HORIZONTAL CURVE OF HEADRACE

NO. PI.	COORDINATE OF PI. N	COORDINATE OF PI. E	PI. TO PI. (m)	DEFLECTION ANGLE (△) (° – ' – ")	PI. STA. (km)	BEARING (N/S ° – ' – " E/W)
PI.99	2,170,185.375	455,095.126	6.382	23°– 48'– 31.00"	1+500.025	S 63°– 55'– 43.54"E
PI.100	2,170,185.123	455,101.504	6.383	23°– 49'– 08.09"	1+506.408	S 87°– 44'– 14.55" E
PI.101	2,170,189.397	455,112.323	11.633	16°– 18'– 11.51"	1+518.041	N 68°– 26'–37.36"E
PI.102	2,170,193.775	455,117.955	7.133	16°– 18'– 48.07"	1+525.174	N 52°– 08'–25.85" E
PI.103	2,170,199.558	455,122.13	7.133	16°– 17'– 59.23"	1+532.307	N 35°– 49'–37.78"E
PI.104	2,170,206.28	455,124.514	7.132	16°– 18'– 52.54"	1+539.439	N 19°– 31'– 38.55"E
PI.105	2,170,240.467	455,126.433	34.241	18°– 00'– 29.41"	1+573.680	N 03°– 12'– 46.01" E
PI.106	2,170,255.999	455,132.464	16.662	10°– 36'– 15.96"	1+590.342	N 21°– 13'– 15.42" E
PI.107	2,170,328.709	455,146.093	73.976	54°– 38'– 09.48"	1+664.318	N 10°– 36'–59.45"E
PI.108	2,170,335.562	455,160.96	16.370	58°– 51'– 33.34"	1+680.688	N 65°– 15'–08.94"E
PI.109	2,170,322.353	455,180.461	23.553	10°– 15'– 27.60"	1+704.241	S 55°– 53'– 17.72" E
PI.110	2,170,317.321	455,185.605	7.196	10°– 15'– 34.34"	1+711.437	S 45°– 37'– 50.12" E
PI.111	2,170,311.454	455,189.77	7.195	10°– 15'– 32.11"	1+718.632	S 35°– 22'– 15.78" E
PI.112	2,170,304.938	455,192.824	7.196	10°– 15'– 29.55"	1+725.828	S 25°– 06'–43.67"E
PI.113	2,170,289.332	455,196.963	16.146	21°– 08'– 06.42"	1+741.974	S 14°– 51'– 14.13" E
PI.114	2,170,279.738	455,195.907	9.652	21°– 08'– 00.36"	1+751.626	S 06°– 16'– 52.29"W
PI.115	2,170,257.676	455,184.464	24.853	18°– 48'– 38.80"	1+776.479	S 27°– 24'–52.65"W
PI.116	2,170,238.549	455,181.57	19.345	18°– 48'– 17.45"	1+795.824	S 08°– 36'– 13.84" W
PI.117	2,170,219.51	455,184.996	19.345	18°– 48'– 26.24"	1+815.169	S 10°– 12'–03.60"E
PI.118	2,170,202.592	455,194.377	19.345	18°– 48'– 34.04"	1+834.514	S 29°– 00'–29.84"E
PI.119	2,170,178.136	455,221.365	36.420	10°– 03'– 24.90"	1+870.934	S 47°– 49'–03.87"E
PI.120	2,170,172.859	455,229.769	9.923	10°– 03'– 38.63"	1+880.857	S 57°– 52'– 28.78"E
PI.121	2,170,164.34	455,250.786	22.678	33°– 30'– 53.33"	1+903.535	S 67°– 56'– 07.41" E
PI.122	2,170,156.839	455,255.926	9.093	33°– 31'– 01.46"	1+912.628	S 34°– 25'– 14.08" E
PI.123	2,170,138.577	455,256.214	18.264	12°– 08'– 14.59"	1+930.892	S 00°– 54'– 12.62" E
PI.124	2,170,130.892	455,257.994	7.888	12°– 08'– 02.21"	1+938.780	S 13°– 02'– 27.21" E
PI.125	2,170,123.752	455,261.35	7.889	12°– 07'– 45.78"	1+946.669	S 25°– 10'– 29.42" E
PI.126	2,170,117.477	455,266.131	7.889	12°– 08'– 16.13"	1+954.558	S 37°– 18'– 15.20" E
PI.127	2,170,112.348	455,272.124	7.888	12°– 08'– 05.01"	1+962.446	S 49°– 26'– 31.33" E
PI.128	2,170,108.593	455,279.062	7.889	12°– 07'– 53.97"	1+970.335	S 61°– 34'–36.34"E
PI.129	2,170,106.38	455,286.634	7.889	12°– 08'– 26.75"	1+978.224	S 73°– 42'– 30.31" E
PI.130	2,170,105.809	455,294.502	7.889	12°– 07'– 46.00"	1+986.113	S 85°– 50'–57.06"E



PROFILE

VERTICAL SCALE 1:200

HORIZONTAL SCALE 1:1,000

0 5 10 15
SCALE 1:200 METERS

0 10 20 40 60 80
SCALE 1:1,000 METERS

NOTES :

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS. UNLESS OTHERWISE SHOWN.
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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
4. REMOVE ALL EXISTING HEADRACE
5. DEMOLISH ALL EXISTING CONCRETE PAVEMENT
6. ALIGNMENT OF NEW O&M ROAD CONFORM TO EXISTING O&M ROAD

REFERENCE DRAWINGS :

1. HEADRACE PLAN AND PROFILE, STA. 1+000 TO STA. 1+500	MH-HR-03
2. HEADRACE PLAN AND PROFILE, STA. 2+500 TO STA.2+097.998	MH-HR-03
3. HEADRACE TYPICAL SECTIONS	MH-HR-05
4. HEADRACE CONCRETE PIER	MH-HR-06
5. DRAIN CULVERT STA. 1+508.437 PLAN AND SECTION	MH-HR-20
6. DRAIN CULVERT STA. 1+903.095 PLAN AND SECTION	MH-HR-22
7. DRAIN CULVERT STA. 1+944.718 PLAN AND SECTION	MH-HR-24

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

MAE HAT HYDROPOWER PROJECT

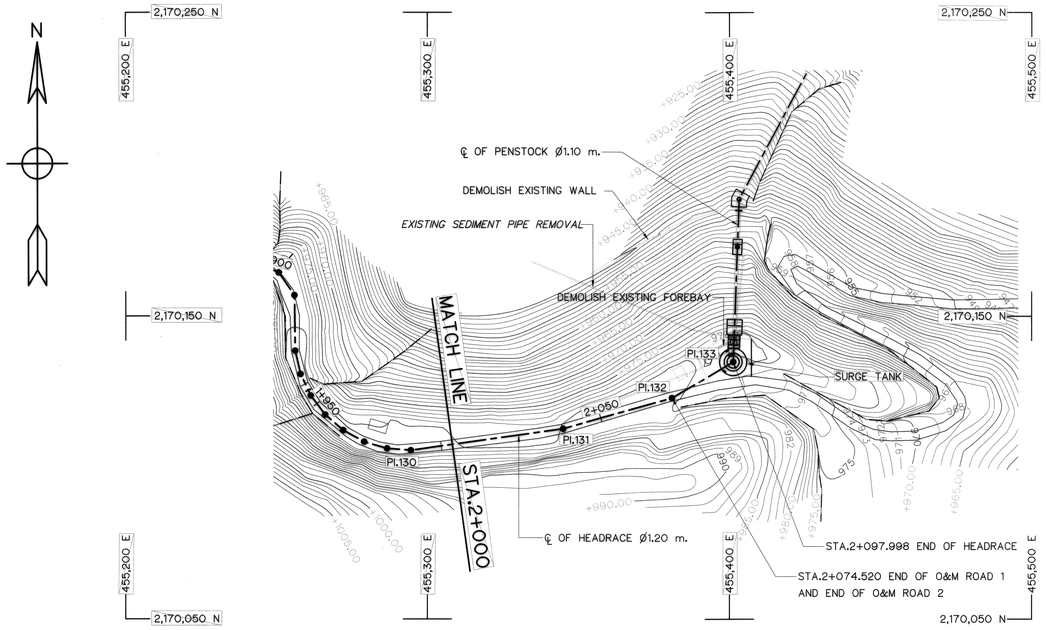
CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
PLAN AND PROFILE, STA. 1+500 TO STA. 2+000

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				

CONSULTANTS: P&C MANAGEMENT CO.,LTD.

DEDE: Department of Alternative Energy Development and Efficiency, MINISTRY OF ENERGY

REVIEWED			
DESIGNED	วิชัย 64624	สมชัย 6226	SUBMITTED
DRAWN			RECOMMENDED
CHECKED	สมชัย 6226		APPROVED
PROJECT MANAGER	08/03/2559 DATE		DRAWING NO. MH-HR-04
			SHEET NO. 28 OF 130

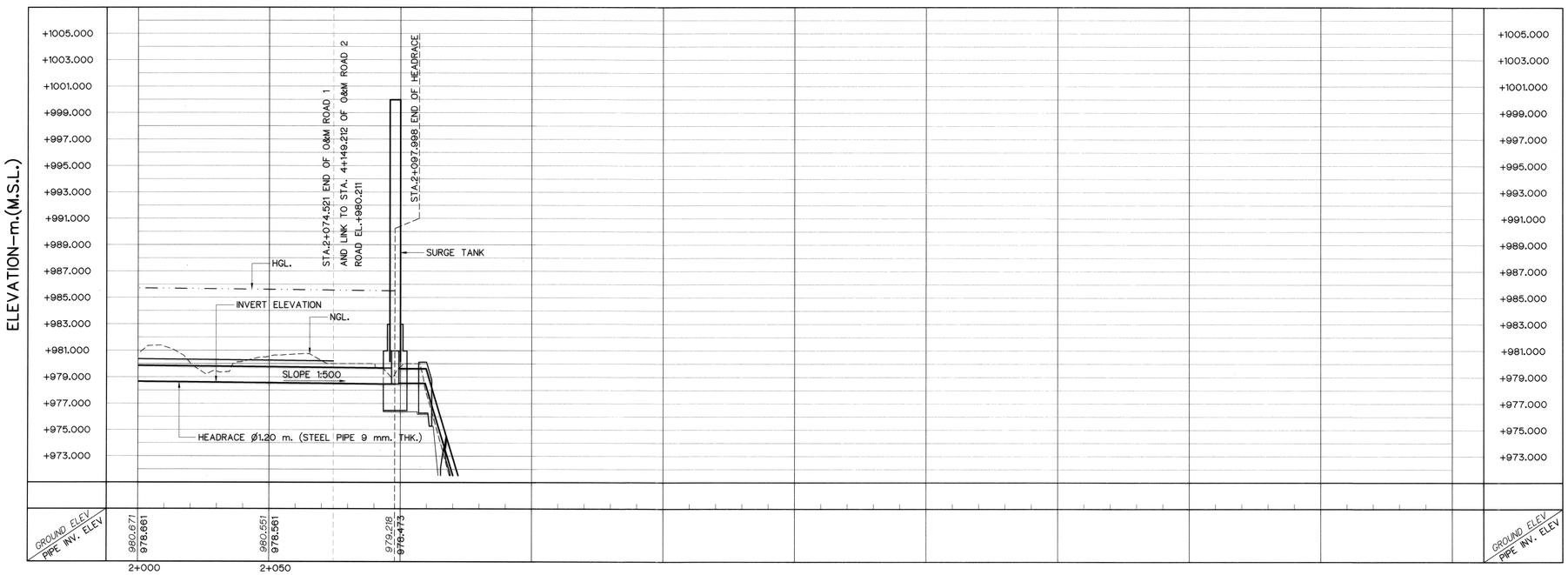


PLAN

SCALE 1:1,000

HORIZONTAL CURVE OF HEADRACE

NO. PI.	COORDINATE OF PI.		PI. TO PI.	DEFLECTION ANGLE (△)	PI. STA.	BEARING
	N	E	(m)	(° – ' – ")	(km)	(N/S ° – ' – " E/W)
PI.131	2,170,112.885	455,344.987	50.978	07°– 44'– 34.96"	2+037.091	N 82°– 01'– 16.95" E
PI.132	2,170,123.027	455,381.016	37.429	14°– 48'– 01.96"	2+074.520	N 74°– 16'– 41.99" E
END	2,170,134.951	455,401.241	23.478		2+097.998	



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. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. MH–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
4. REMOVE ALL EXISTING HEADRACE
5. DEMOLISH ALL EXISTING CONCRETE PAVEMENT
6. ALIGNMENT OF NEW O&M ROAD CONFORM TO EXISTING O&M ROAD

REFERENCE DRAWINGS :

1. HEADRACE PLAN AND PROFILE, STA. 2+000 TO STA. 2+500 MH–HR–04
2. HEADRACE TYPICAL SECTIONS MH–HR–06
3. HEADRACE CONCRETE PIER MH–HR–07

0 5 10 15

SCALE 1:200 METERS

0 10 20 40 60 80

SCALE 1:1,000 METERS

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
PLAN AND PROFILE, STA. 2+000 TO STA. 2+097.998

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				

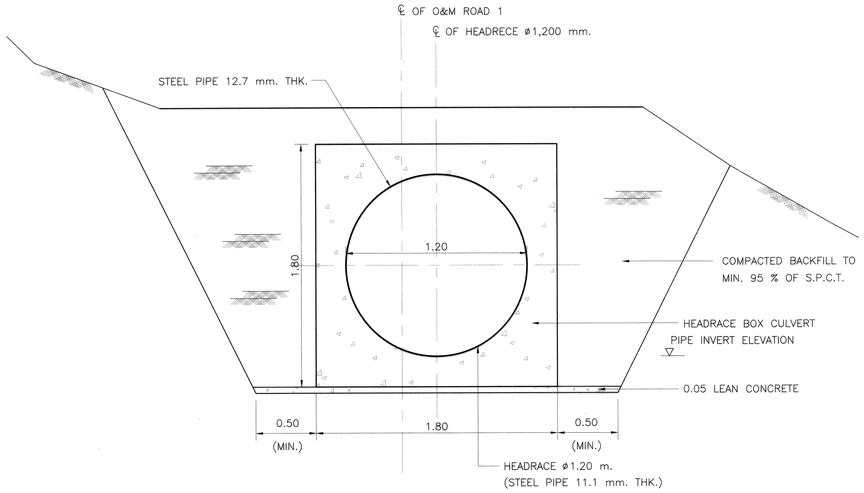
CONSULTANTS | DEDE

P&C MANAGEMENT CO.,LTD.

DESIGNED วิ.64624 สิ.6226
DRAWN
CHECKED สิ.6226
PROJECT MANAGER 08/03/2564 DATE

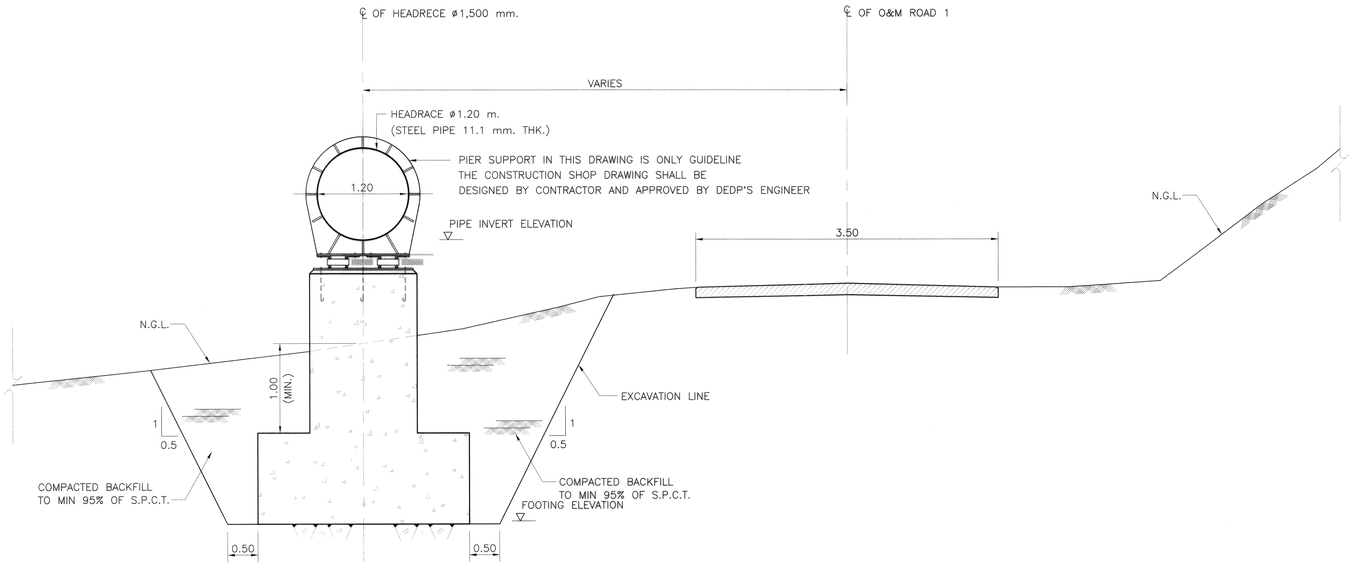
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED

DRAWING NO. MH–HR–05
SHEET NO. 29 OF 130



EARTH EXCAVATION

NOT TO SCALE

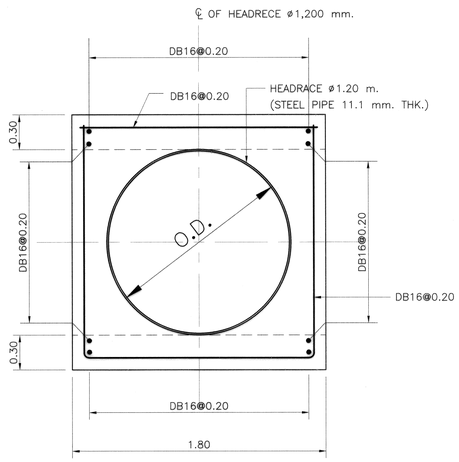


CONCRETE PIER

SCALE 1:50

TYPICAL SECTIONS OF HEADRACE

SCALE 1:50



HEADRACE BOX CULVERT REINFORCEMENT DETAIL

NOT TO SCALE

TABLE OF HEADRACE SUPPORT

STA TO STA	TYPE OF HEADRACE SUPPORT
0+000 – 0+921	EARTH EXCAVATION
0+921 – 0+973	PIER
0+973 – 1+298	EARTH EXCAVATION
1+298 – 1+344.5	PIER
1+344.5 – 2+097.998	EARTH EXCAVATION

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
3. CONCRETE DESIGN BASED ON THE COMPRESSIVE STRENGTH OF 210 KSC, STANDARD CYLINDER Ø0.15x0.30 m. TEST AT AGE 28 DAYS. UNLESS OTHERWISE INDICATED IN SPECIFIC DRAWINGS.
4. ULTIMATE TENSILE STRESSES OF REINFORCING STEEL, CONFORM TO THE REQUIREMENT OF THAI INDUSTRIAL STANDARD DESIGNATION SR24 FOR STRUCTURAL GRADE PLAIN ROUND BAR AND SD30 FOR INTERMEDIATE GRADE DEFORMED BAR.

REFERENCE DRAWINGS :

1. HEADRACE PIER DIMENSIONS MH-HR-07

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
HEADRACE
TYPICAL SECTIONS

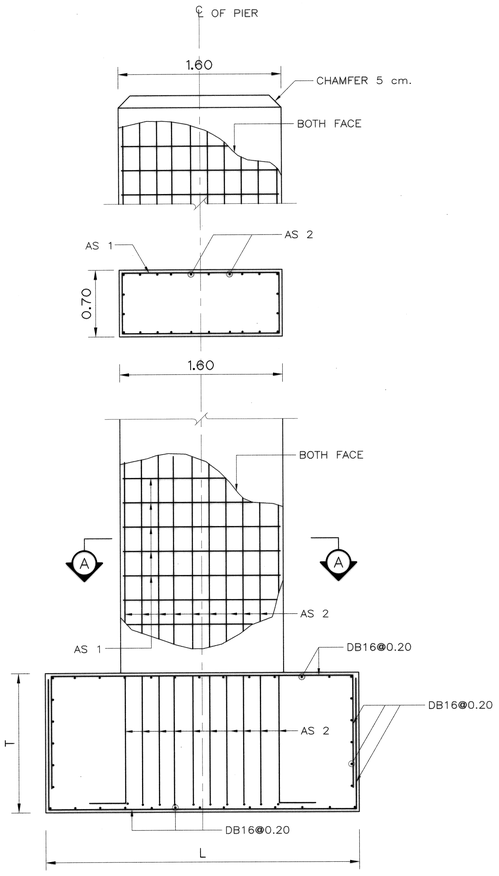
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED วิชิต.64624 วิชิต.6226
DRAWN
CHECKED วิชิต.6226
PROJECT MANAGER 08/03/2564 DATE

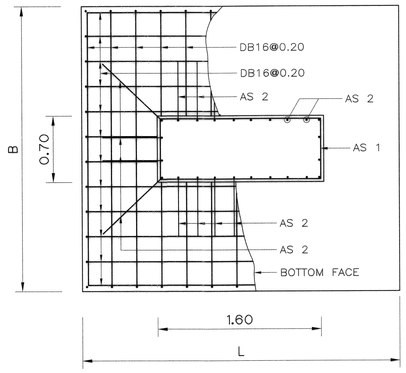
REVIEWED
SUBMITTED
RECOMMENDED
APPROVED P. Hanpatt

DRAWING NO. MH-HR-06
SHEET NO. 30 OF 130



RC. PIER DETAILS

SCALE 1:30

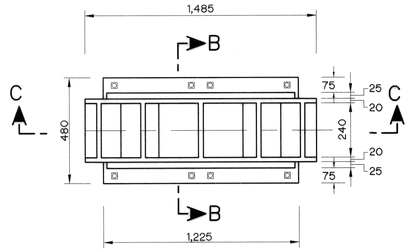


SECTION A–A

SCALE 1:30

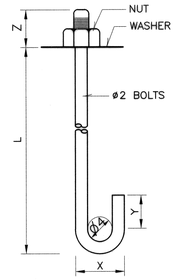
PIER DATA

H	BXL	T	AS 1	AS 2
H < 1	1.80x1.80	0.60	DB16@0.20	DB16@0.20
1 < H ≤ 2	2.00x2.00	0.60	DB16@0.20	DB16@0.20
2 < H ≤ 3	2.40x2.20	0.80	DB16@0.20	DB16@0.15
3 < H ≤ 4	2.60x2.60	0.80	DB16@0.20	DB16@0.15
4 < H ≤ 5	3.00x2.80	1.00	DB16@0.20	DB20@0.20
5 < H ≤ 6	3.00x3.00	1.00	DB16@0.20	DB20@0.15



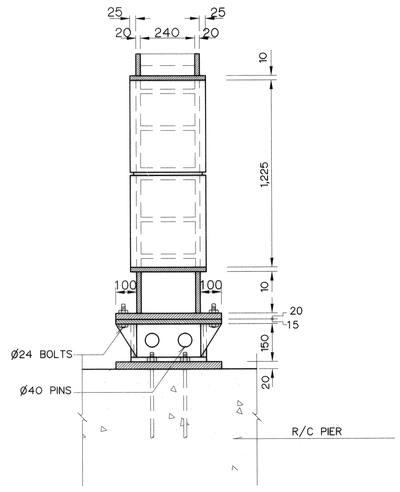
PLAN

NOT TO SCALE



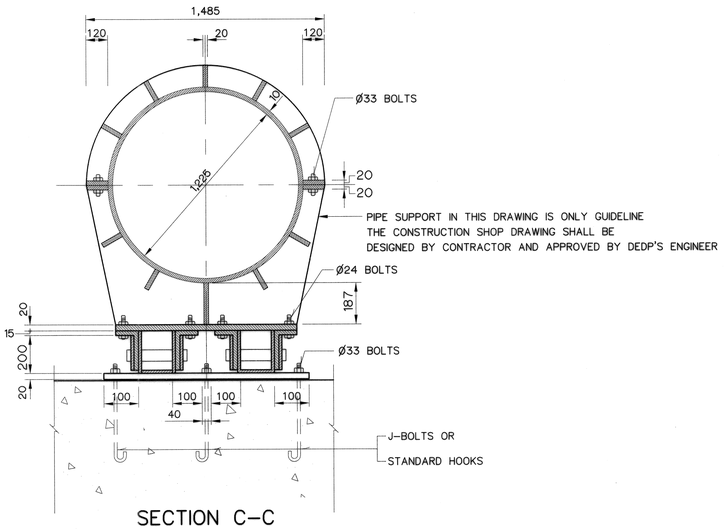
HOOKED BOLT

NOT TO SCALE



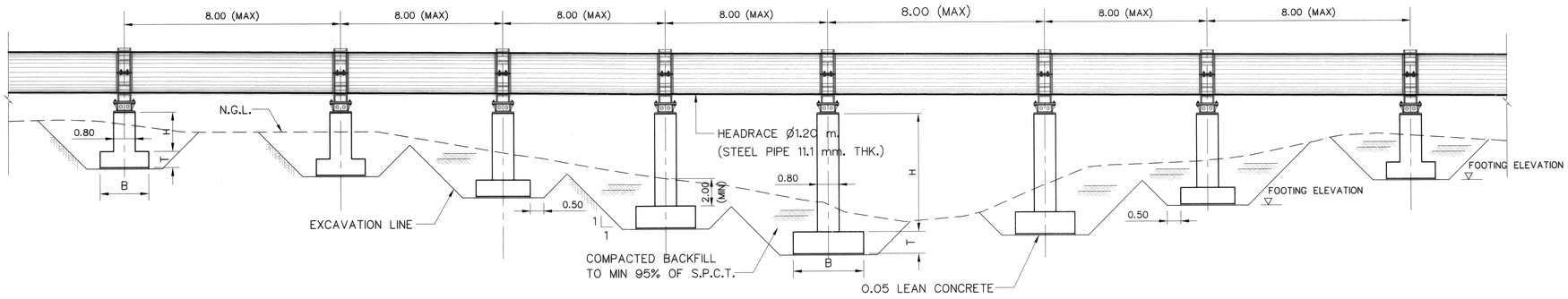
SECTION B–B

NOT TO SCALE



SECTION C–C

NOT TO SCALE



PROFILE OF CONCRETE PIER

NOT TO SCALE

NOTES :

1. DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, DIMENSIONS OF PIPE SUPPORT ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
2. SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. MH–GN–03
3. CONCRETE DESIGN BASED ON THE COMPRESSIVE STRENGTH OF 210 KSC, STANDARD CYLINDER Ø0.15x0.30 m. TEST AT AGE 28 DAYS. UNLESS OTHERWISE INDICATED IN SPECIFIC DRAWINGS.
4. ULTIMATE TENSILE STRESSES OF REINFORCING STEEL, CONFORM TO THE REQUIREMENT OF THAI INDUSTRIAL STANDARD DESIGNATION SR24 FOR STRUCTURAL GRADE PLAIN ROUND BAR AND SD30 FOR INTERMEDIATE GRADE DEFORMED BAR.
4. ALLOWABLE BEARING CAPACITY NOT LESS THAN 15 TON/sq m.

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				
	CONSULTANTS		DEDE	

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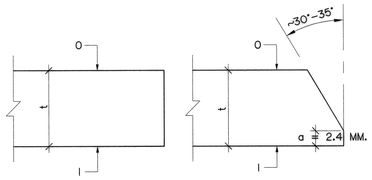
MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
CONCRETE PIER

P&C MANAGEMENT CO.,LTD.

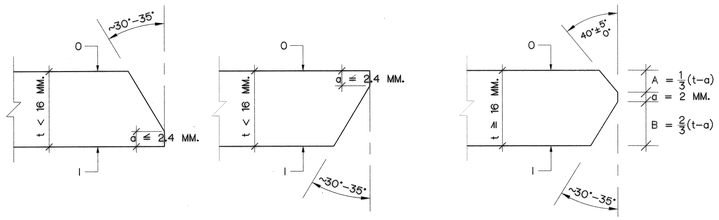
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED	วิชิต 64624 วิ 25.6226	REVIEWED	
DRAWN		SUBMITTED	
CHECKED	วิ 25.6226	RECOMMENDED	
PROJECT MANAGER	08/03/2559 DATE	APPROVED	
		DRAWING NO.	MH–HR–07
		SHEET NO.	31 OF 130



PIPE END DIMENSIONS

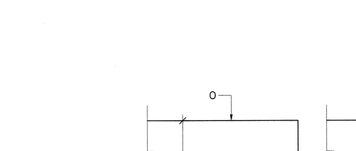
NOT TO SCALE



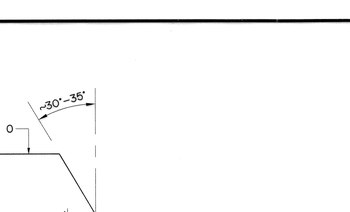
PIPE END DIMENSIONS

FOR D ≥ 800 MM.

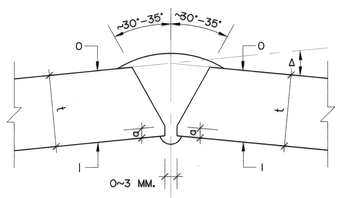
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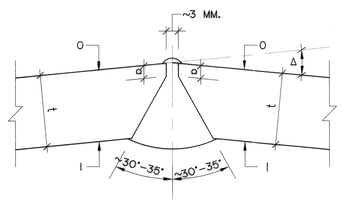
COUPLING



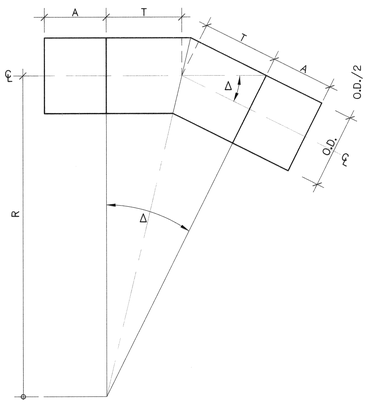
BUTT WELDED



OUTSIDE WELD FOR BEND



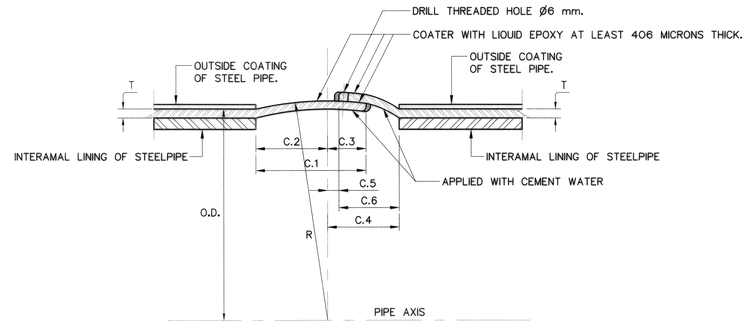
INSIDE WELD FOR BEND



PIPE BEND DETAILED

DIMENSIONS FOR PIPE CONNECTING

NOT TO SCALE



SURFACED SLEEVE WELDED JOINT

NOT TO SCALE

DIMENSIONS IN MILLIMETERS

NOMINAL DIAMETER	OUTSIDE DIA. OD.	THICKNESS t	R	C.1 (C.2 + C.3)	C.2	C.3	C.4 (C.5 + C.6)	C.5	C.6
1,200	1219.2	11.1	641	316	197	119	224	25	199

NOTE :

1. TOLERANE OUTSIDE CIRCUMFERENCE OF SPIGOT SHALL BE $\pm\frac{8}{0}$ mm.
2. TOLERANE OUTSIDE CIRCUMFERENCE OF SOCKET SHALL BE $\pm\frac{8}{0}$ mm.
3. IN CASE OF THE PIPE TO BE COATED INSIDE WITH LIQUID EPOXY THE COATING SHALL EXTEND TO PIPE ENDS.
4. ALL DIMENSIONS IN MILLIMETER, UNLESS OTHERWISE SHOWN.
5. SYMBOLS

   t = PIPE THICKESS
   O.D. = OUTSIDE DIAMETER
   O = OUTSIDE FACE
   I = INSIDE FACE

6. Δ SHALL BE LESS THAN 22.5 DEGREE

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
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	CONSULTANTS		DEDE	

KINGDOM OF THAILAND
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MINISTRY OF ENERGY

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
JOINT DETAILS FOR STEEL PIPE

P&C MANAGEMENT CO.,LTD.

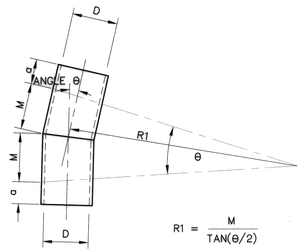
Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

DESIGNED	ส.ค.64624	REVIEWED	
DRAWN		SUBMITTED	
CHECKED	ส.ค.6226	RECOMMENDED	
CHECKED	ส.ค.6226	APPROVED	

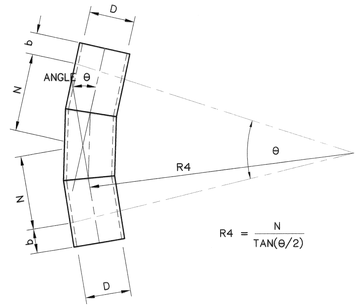
PROJECT MANAGER — 01/08/2564 DATE

DRAWING NO. MH-HR-08

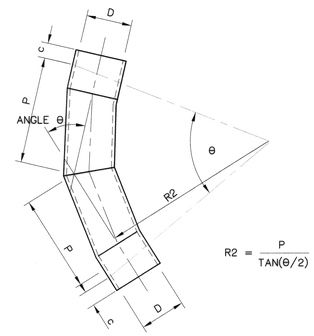
SHEET NO. 32 OF 130



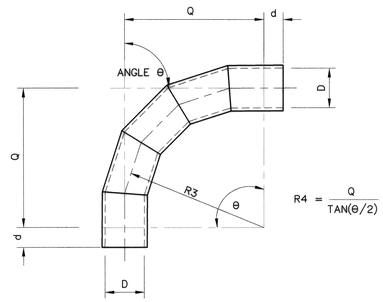
2–PIECE ELBOW
NOT TO SCALE



3–PIECE ELBOW
NOT TO SCALE



4–PIECE ELBOW
NOT TO SCALE



5–PIECE ELBOW
NOT TO SCALE

D	ELBOW							
	2–PIECE θ = 11.25°		3–PIECE θ = 22.25°		4–PIECE θ = 45°		5–PIECE θ = 45°	
	M	a	N	b	P	c	Q	d
150	100	250	175	225	275	225	375	250
200	100	250	200	225	300	225	450	250
250	100	250	225	200	350	225	500	250
300	125	275	250	275	400	275	575	300
400	150	350	300	325	500	325	700	350
500	175	350	350	325	550	325	825	350
600	200	350	400	350	650	350	650	350
700	225	400	450	400	725	400	950	375
800	225	475	500	450	800	450	1075	425
900	250	450	525	450	850	425	1175	475
1,000	250	525	550	500	875	500	1250	450
1,200	275	400	575	400	950	375	1300	525
1,500	300	475	675	475	1050	450	1375	400
1,800	325	450	700	425	1150	425	1575	550

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
HEADRACE
FITTINGS FOR STEEL PIPE

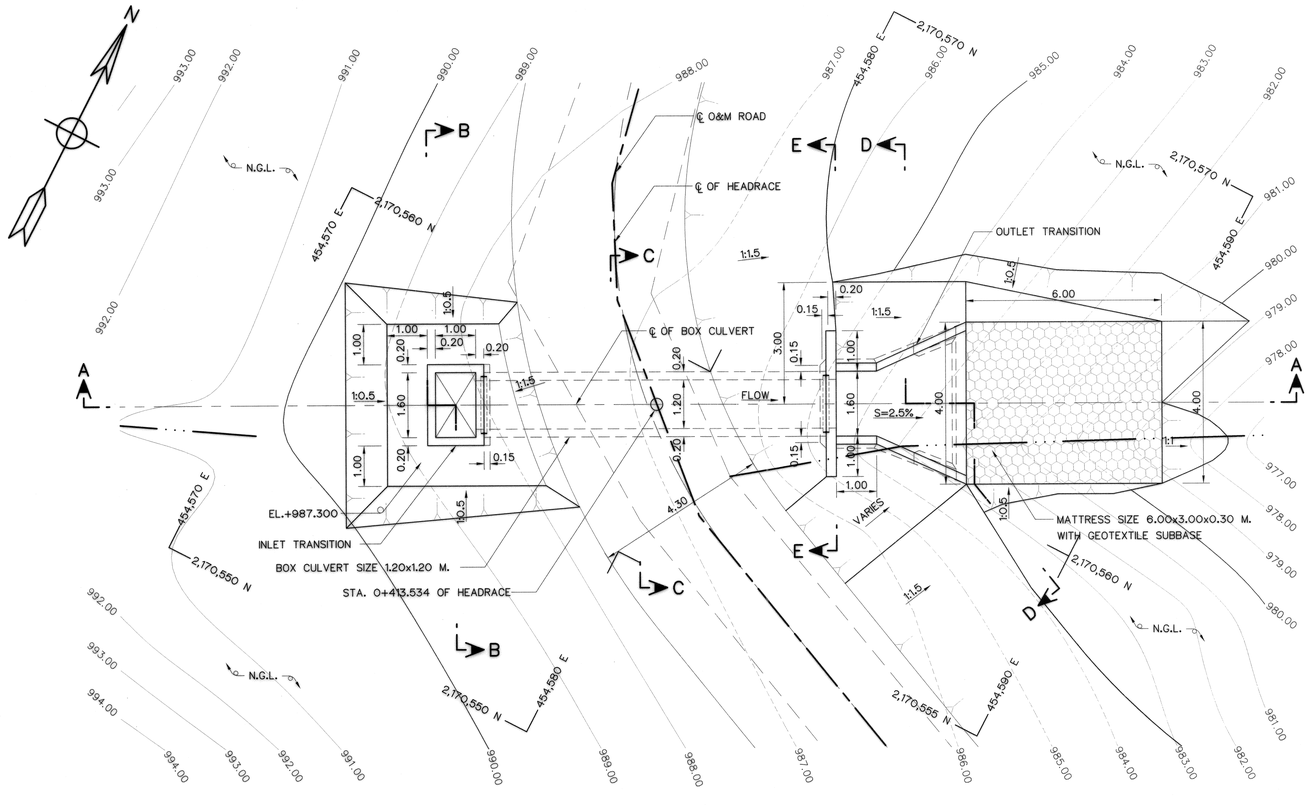
P&C MANAGEMENT CO.,LTD.

Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

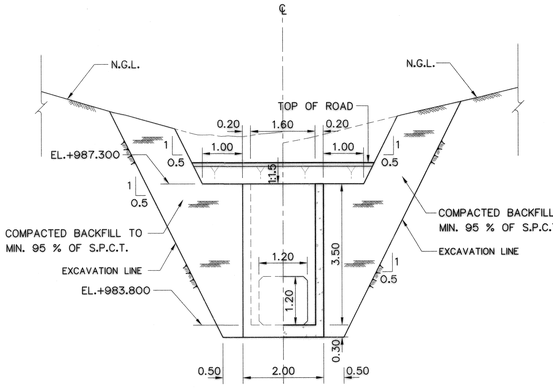
DESIGNED 25.6.4624 25.6.226
DRAWN
CHECKED 25.6.226
PROJECT MANAGER 08/08/2559 DATE

REVIEWED
SUBMITTED
RECOMMENDED
APPROVED

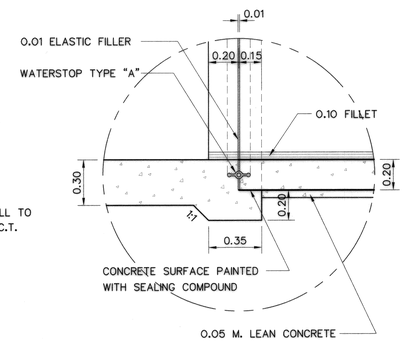
DRAWING NO. MH–HR–09
SHEET NO. 33 OF 130



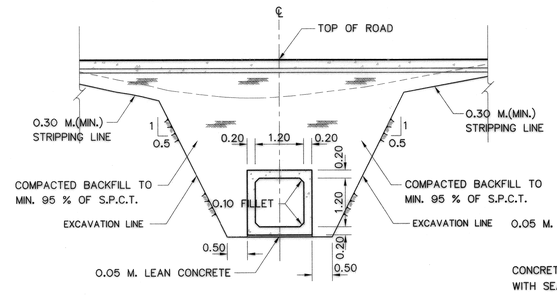
PLAN
SCALE 1:75



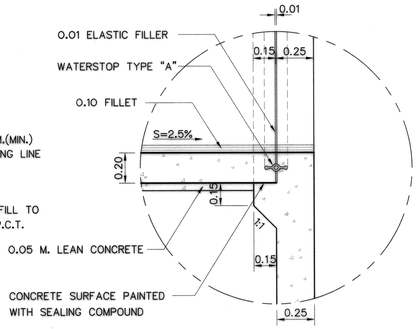
SECTION B–B
SCALE 1:75



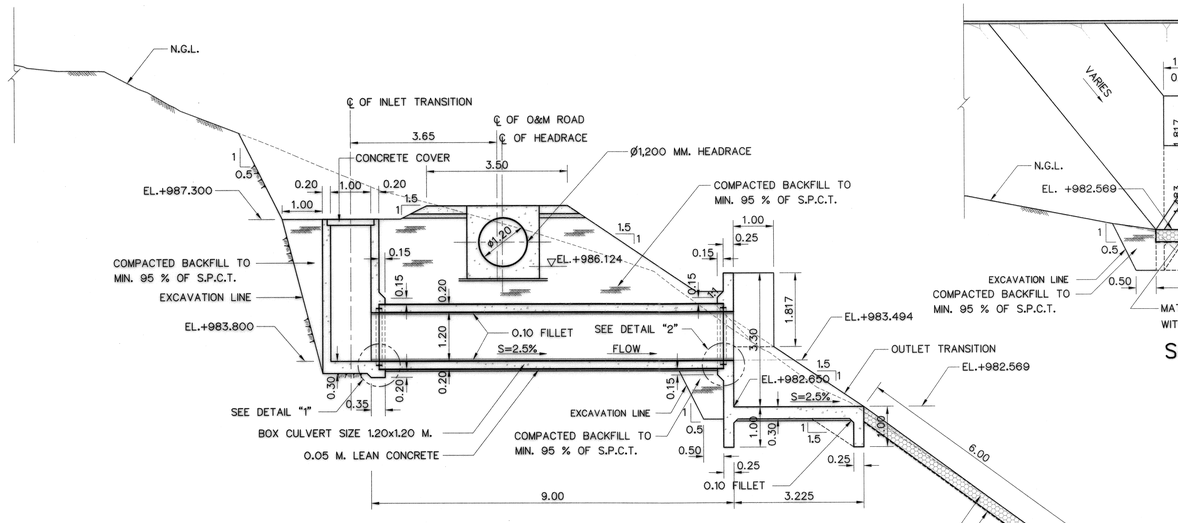
DETAIL "1"
SCALE 1:20



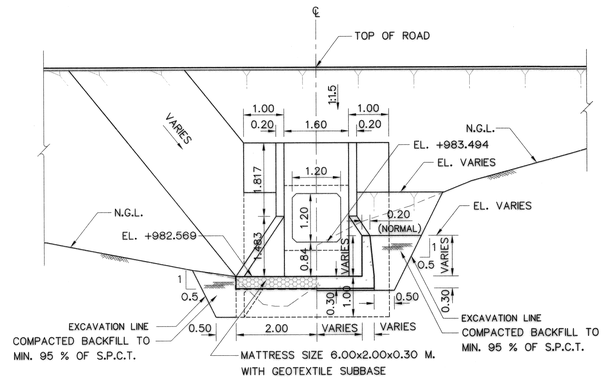
SECTION C–C
SCALE 1:75



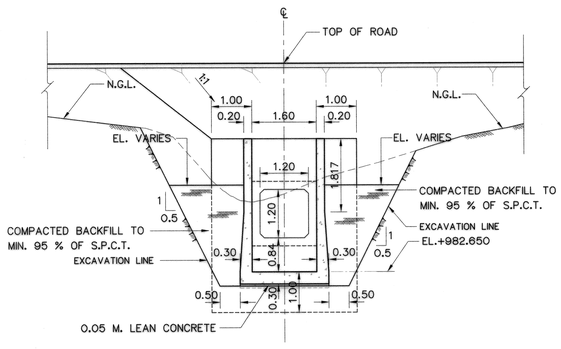
DETAIL "2"
SCALE 1:20



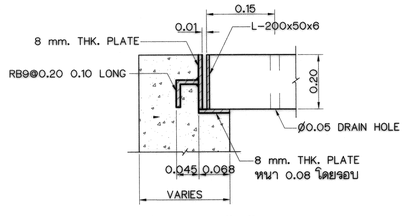
SECTION A–A
SCALE 1:75



SECTION D–D
SCALE 1:75



SECTION E–E
SCALE 1:75



DETAIL "2"
NOT TO SCALE

NOTES :

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

REFERENCE DRAWING :

1. HEADRACE PLAN AND PROFILE, STA. 0+000 TO STA. 0+500	MH-HR-01
2. DRAIN CULVERT STA. 0+413.534, REINFORCEMENT DETAILS	MH-HR-11

0 0.5 1.0 1.5
SCALE 1:20 METERS

0 0.5 1 2 3 4 5 6
SCALE 1:75 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
HEADRACE
DRAIN CULVERT STA. 0+413.534 , PLAN AND SECTION

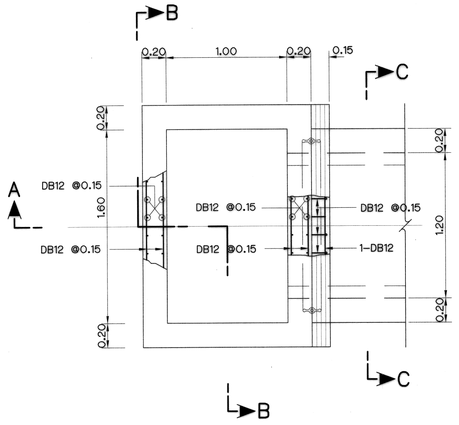
P&C MANAGEMENT CO.,LTD.

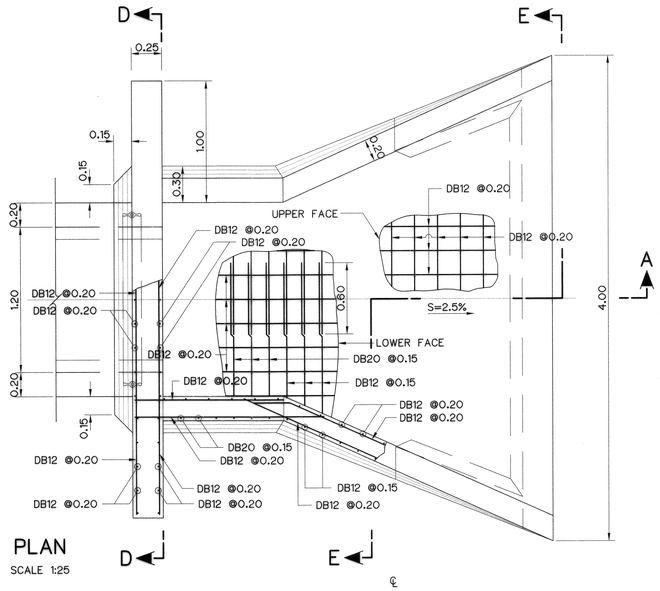
Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

DESIGNED	วิชัย.64624	วิชัย.6226	REVIEWED
DRAWN			SUBMITTED
CHECKED	วิชัย.6226		RECOMMENDED
PROJECT MANAGER	01/03/2559 DATE		APPROVED

DRAWING NO. MH-HR-10

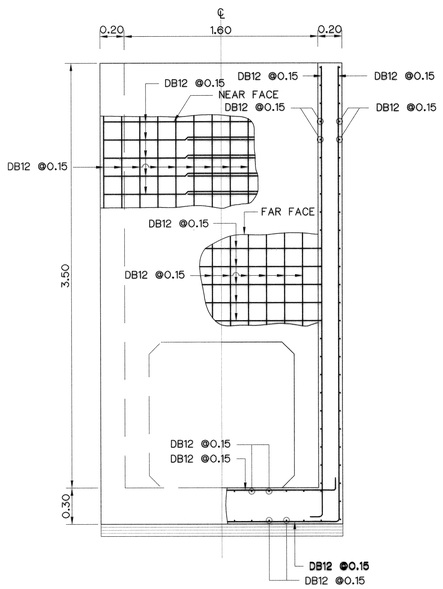
SHEET NO. 34 OF 130





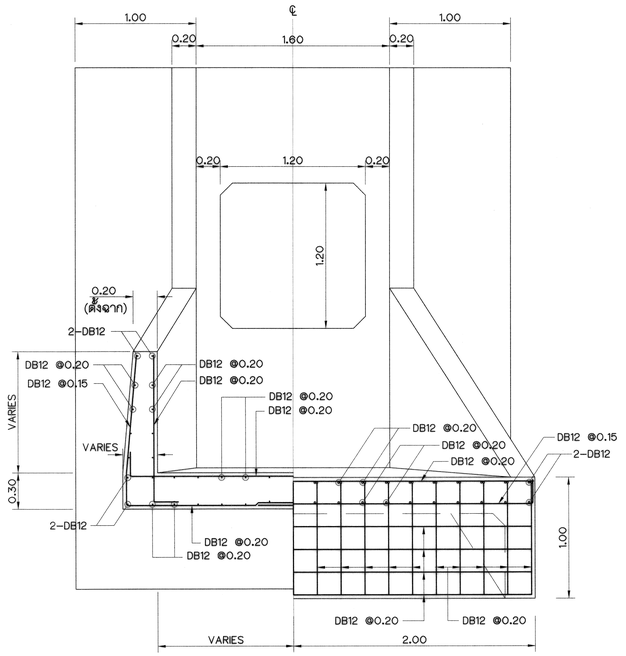
PLAN

SCALE 1:25



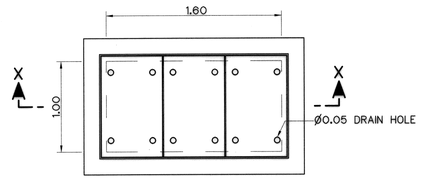
SECTION B–B

SCALE 1:25



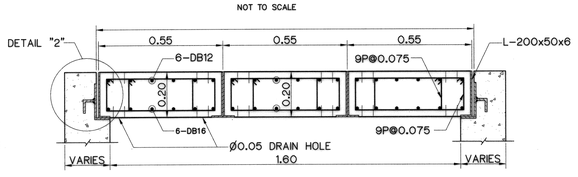
SECTION E–E

SCALE 1:25



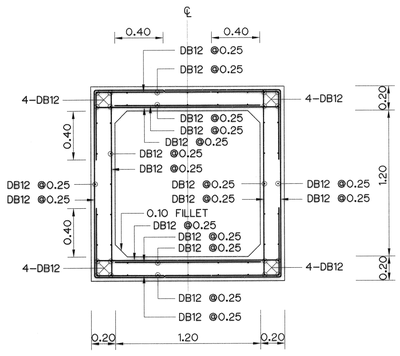
CONCRETE COVER

NOT TO SCALE



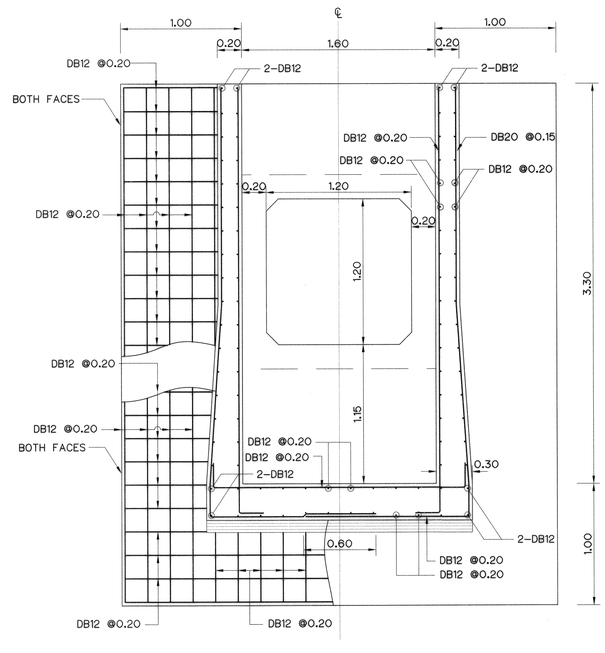
SECTION X–X

NOT TO SCALE



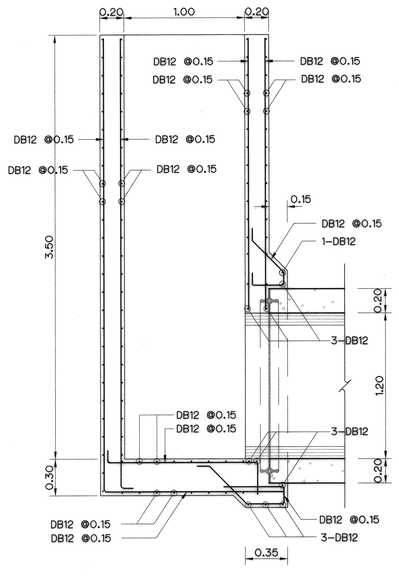
SECTION C–C

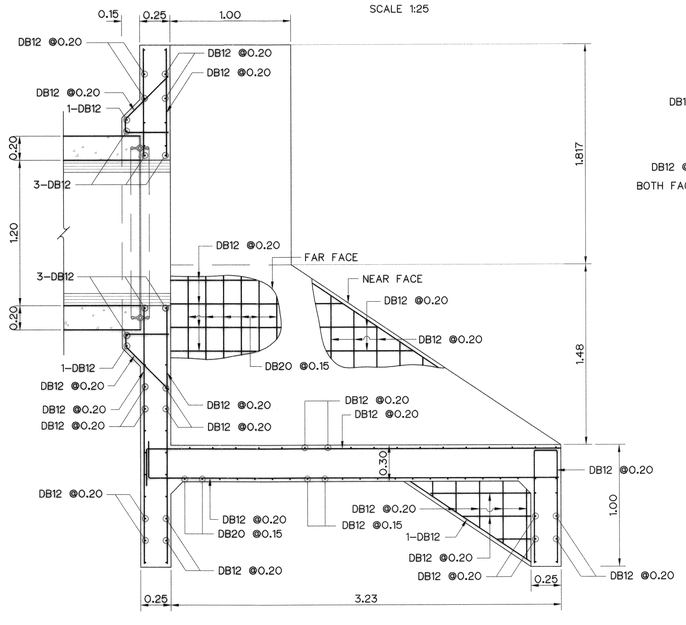
SCALE 1:25



SECTION D–D

SCALE 1:25





SECTION A–A

SCALE 1:25

0 0.5 1.0 1.5 2.0

SCALE 1:25 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. NMH-GN-03
3. CONCRETE DESIGN BASED ON THE COMPRESSIVE STRENGTH OF 210 KSC, STANDARD CYLINDER Ø0.15x0.30 m. TEST AT AGE 28 DAYS. UNLESS OTHERWISE INDICATED IN SPECIFIC DRAWINGS.
4. ULTIMATE TENSILE STRESSES OF REINFORCING STEEL, CONFORM TO THE REQUIREMENT OF THAI INDUSTRIAL STANDARD DESIGNATION SR24 FOR STRUCTURAL GRADE PLAIN ROUND BAR AND SD30 FOR INTERMEDIATE GRADE DEFORMED BAR.

REFERENCE DRAWINGS :

1. DRAIN CULVERT STA. 0+413.534, PLAN AND SECTION NMH-HR-10

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

MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
DRAIN CULVERT STA. 0+413.534 REINFORCEMENT DETAILS

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				
	CONSULTANTS		DEDE	

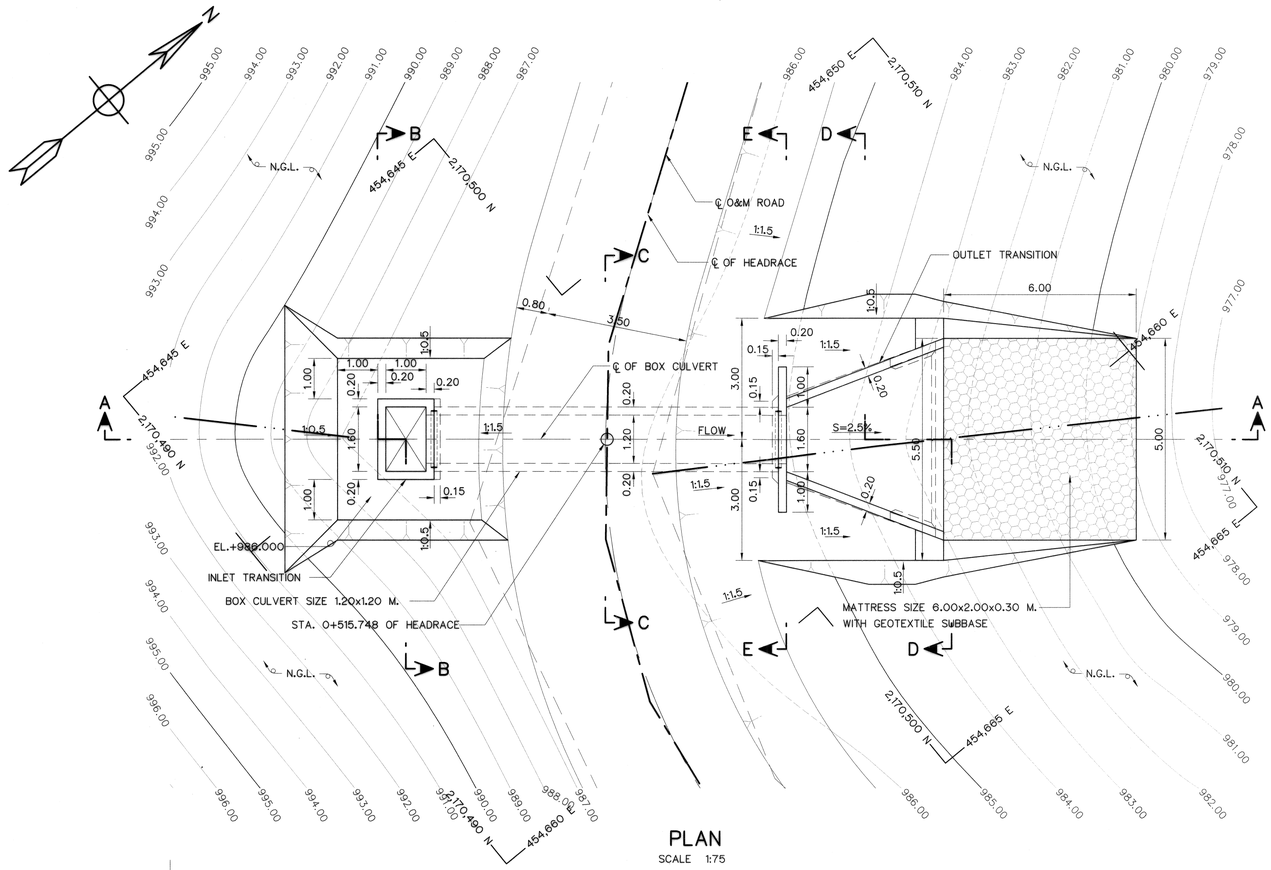
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MINISTRY OF ENERGY

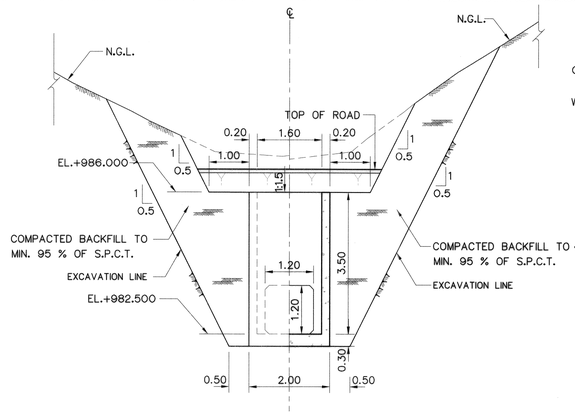
DESIGNED	สม.64624	REVIEWED	
DRAWN		SUBMITTED	สม.6226
CHECKED	สม.6226	RECOMMENDED	
PROJECT MANAGER	07/08/2564 DATE	APPROVED	

DRAWING NO. MH-HR-11

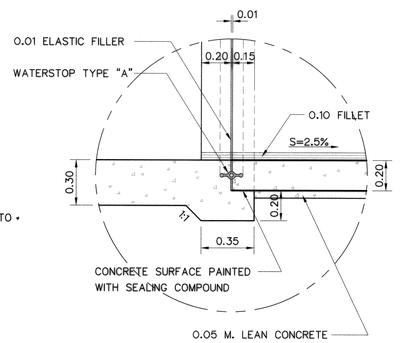
SHEET NO. 35 OF 130



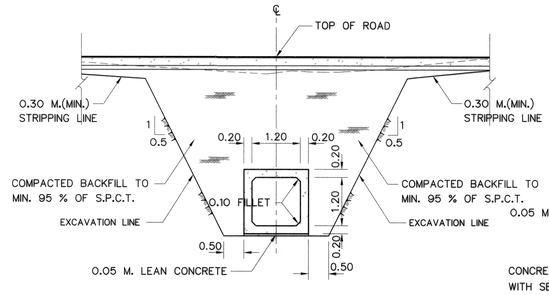
PLAN
SCALE 1:75



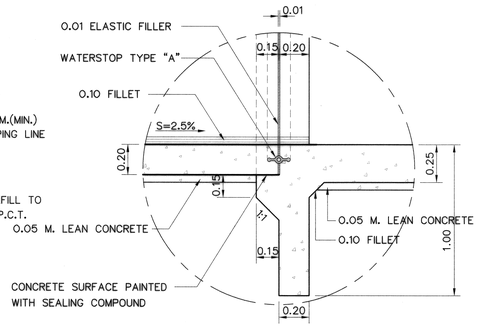
SECTION B–B
SCALE 1:75



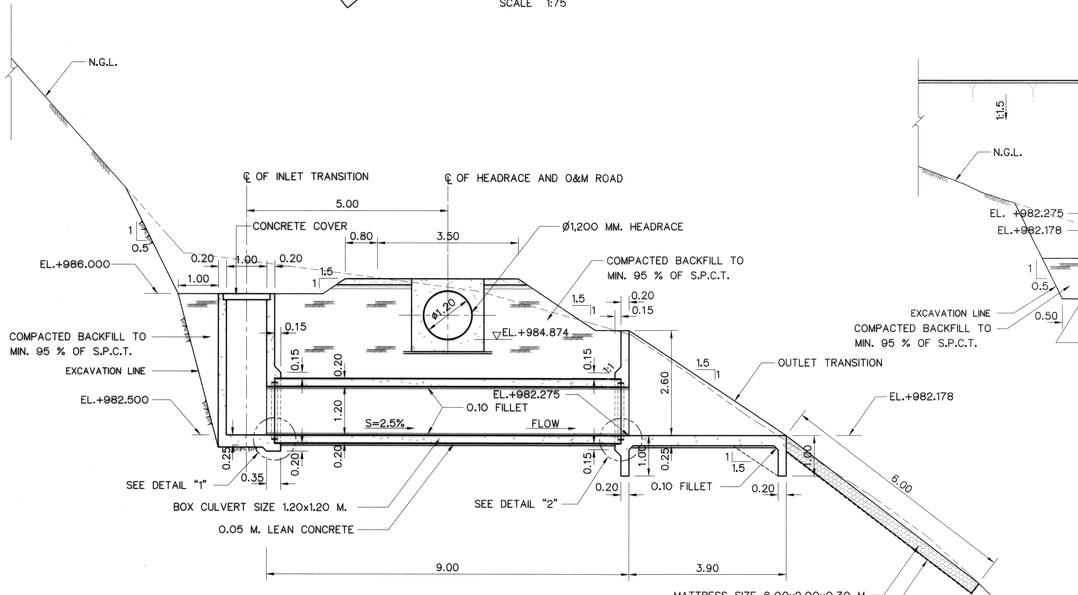
DETAIL "1"
SCALE 1:20



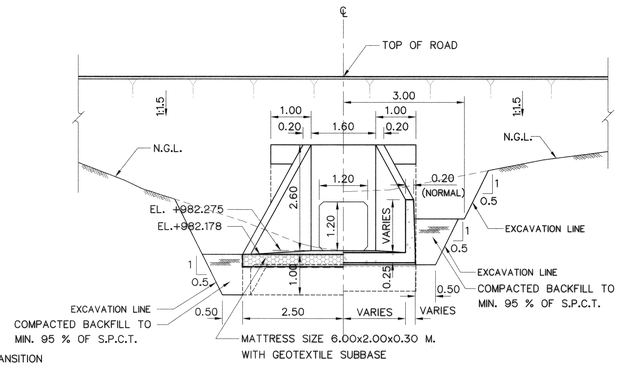
SECTION C–C
SCALE 1:75



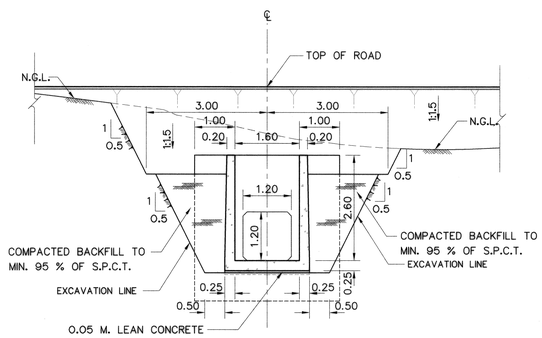
DETAIL "2"
SCALE 1:20



SECTION A–A
SCALE 1:75



SECTION D–D
SCALE 1:75



SECTION E–E
SCALE 1:75

NOTES :

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

REFERENCE DRAWING :

1. HEADRACE PLAN AND PROFILE, STA. 0+500 TO STA. 1+000	MH-HR-02
2. DRAIN CULVERT STA. 0+515.748, REINFORCEMENT DETAILS	MH-HR-13

0 0.5 1.0 1.5
SCALE 1:20 METERS

0 0.5 1 2 3 4 5 6
SCALE 1:75 METERS

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
2				
1				
	CONSULTANTS		DEDE	

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Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

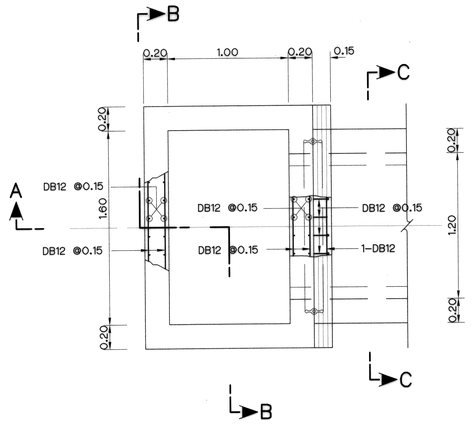
MAE HAT HYDROPOWER PROJECT

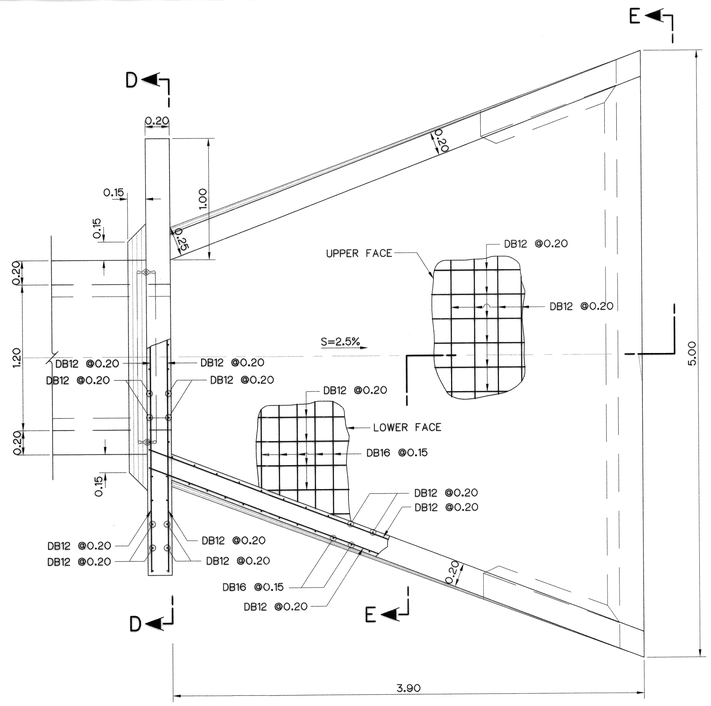
CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
DRAIN CULVERT STA. 0+515.748 , PLAN AND SECTION

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Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

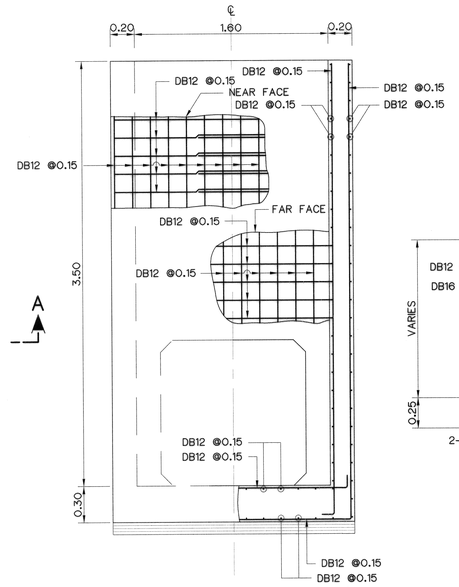
DESIGNED	สิริ.64624	REVIEWED	
DRAWN	สิริ.6226	SUBMITTED	
CHECKED	สิริ.6226	RECOMMENDED	
PROJECT MANAGER	06/03/2559 DATE	APPROVED	
		DRAWING NO.	MH-HR-12
		SHEET NO.	36 OF 130





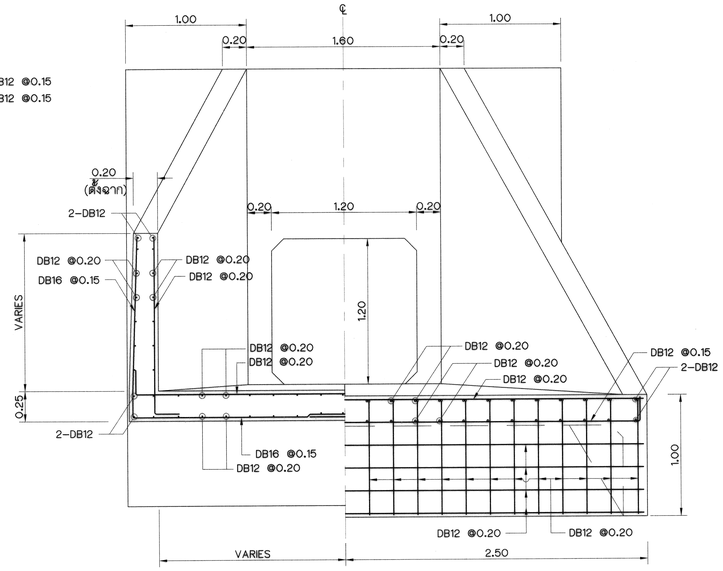
PLAN

SCALE 1:25



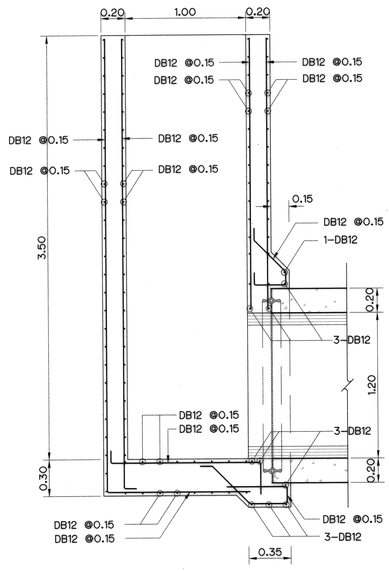
SECTION B-B

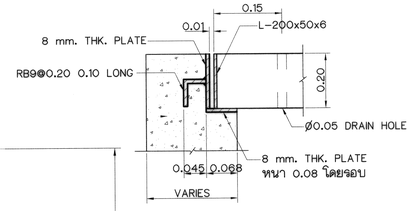
SCALE 1:25



SECTION E-E

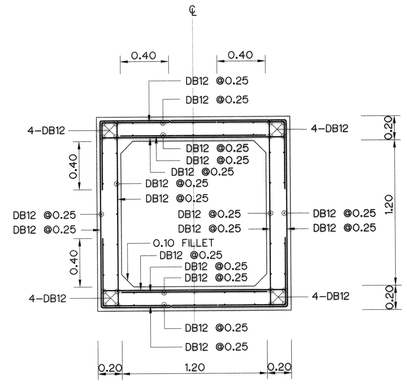
SCALE 1:25





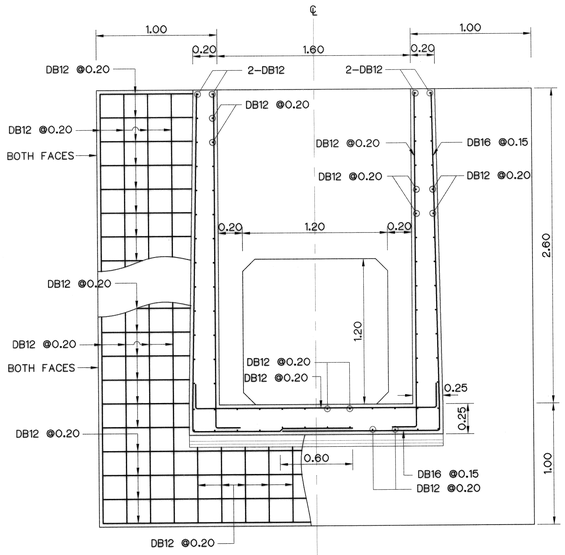
DETAIL "2"

NOT TO SCALE



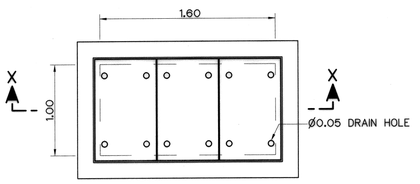
SECTION C-C

SCALE 1:25



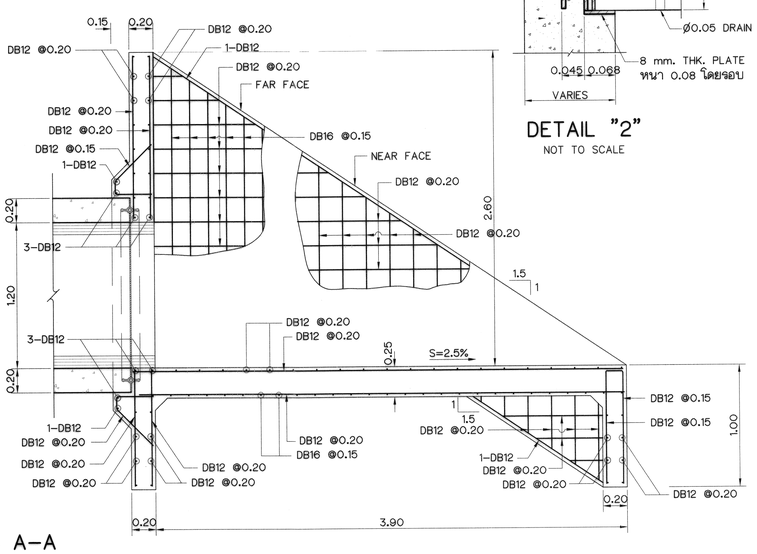
SECTION D-D

SCALE 1:25



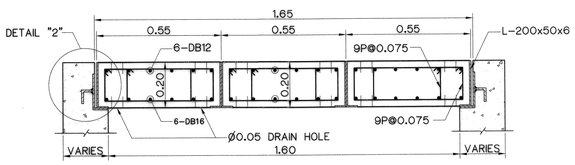
CONCRETE COVER

NOT TO SCALE



SECTION A-A

SCALE 1:25



SECTION X-X

NOT TO SCALE

0.0 0.5 1.0 1.5 2.0

SCALE 1:25 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
3. CONCRETE DESIGN BASED ON THE COMPRESSIVE STRENGTH OF 210 KSC, STANDARD CYLINDER Ø0.15x0.30 m. TEST AT AGE 28 DAYS. UNLESS OTHERWISE INDICATED IN SPECIFIC DRAWINGS.
4. ULTIMATE TENSILE STRESSES OF REINFORCING STEEL, CONFORM TO THE REQUIREMENT OF THAI INDUSTRIAL STANDARD DESIGNATION SR24 FOR STRUCTURAL GRADE PLAIN ROUND BAR AND SD30 FOR INTERMEDIATE GRADE DEFORMED BAR.

REFERENCE DRAWINGS :

1. DRAIN CULVERT STA. 0+515.748, PLAN AND SECTION MH-HR-12

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
HEADRACE
DRAIN CULVERT STA. 0+515.748 REINFORCEMENT DETAILS

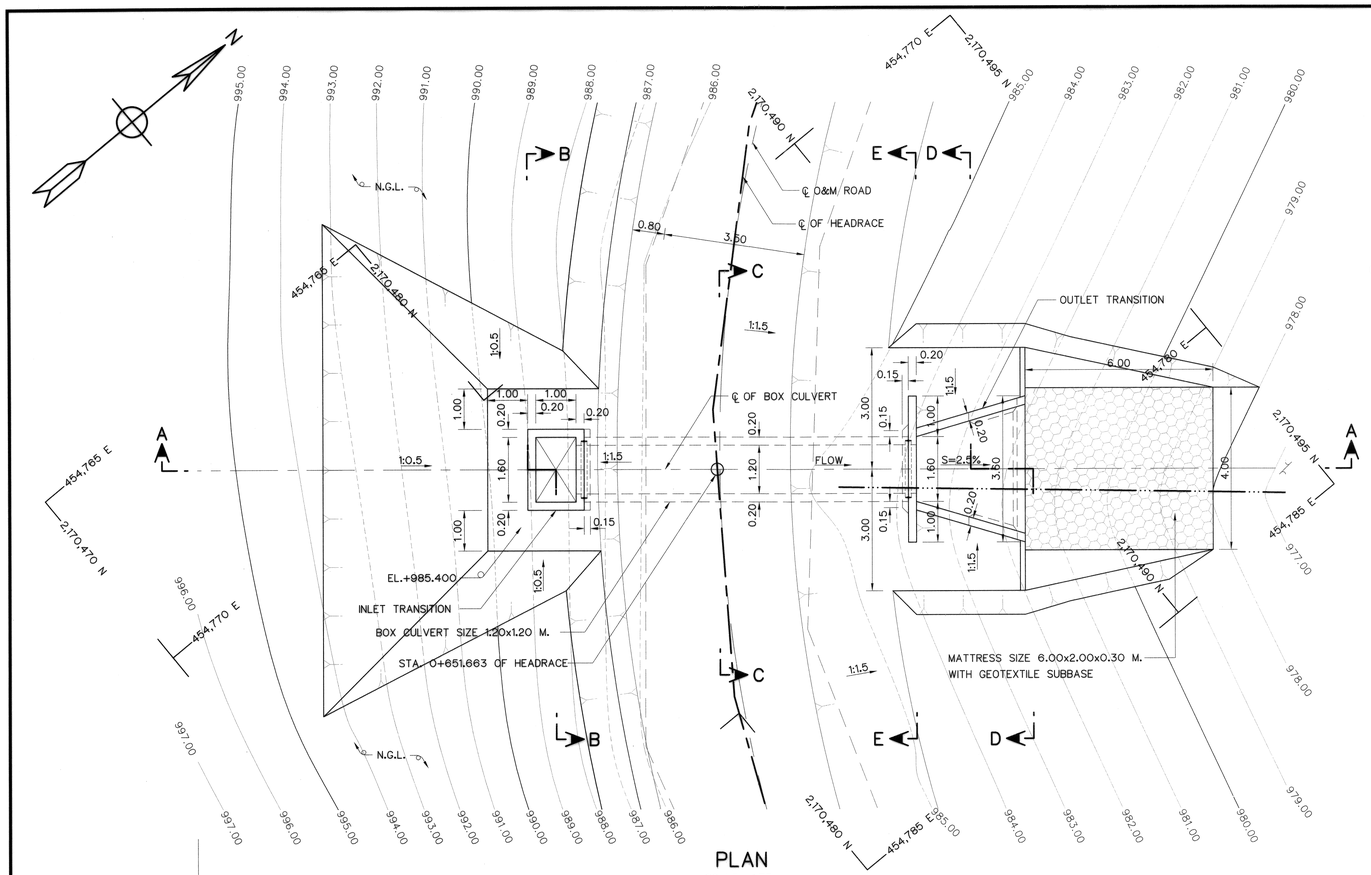
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Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

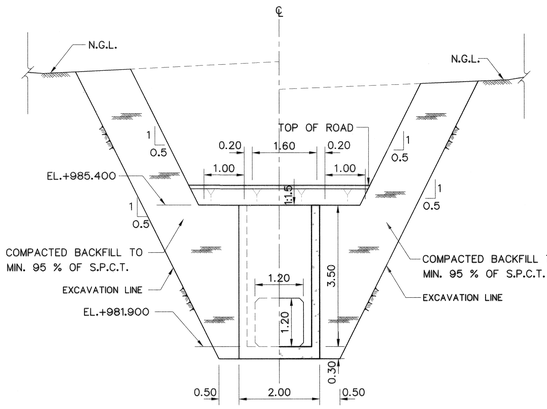
DESIGNED	วิศ.64624	REVIEWED	
DRAWN		SUBMITTED	
CHECKED	วิศ.6226	RECOMMENDED	
PROJECT MANAGER	08/03/2564 DATE	APPROVED	

DRAWING NO. MH-HR-13

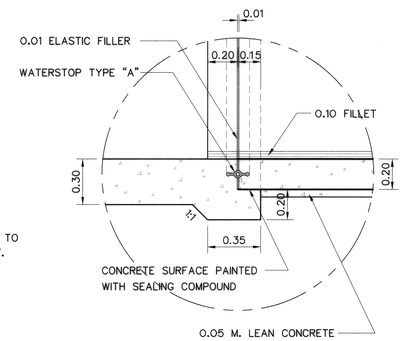
SHEET NO. 37 OF 130



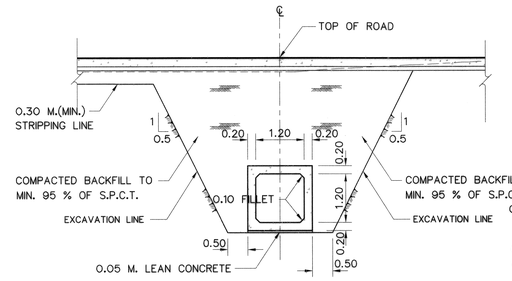
PLAN
SCALE 1:75



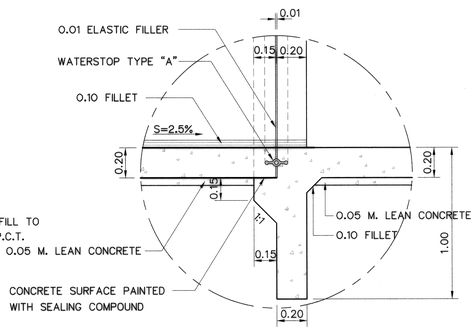
SECTION B–B
SCALE 1:75



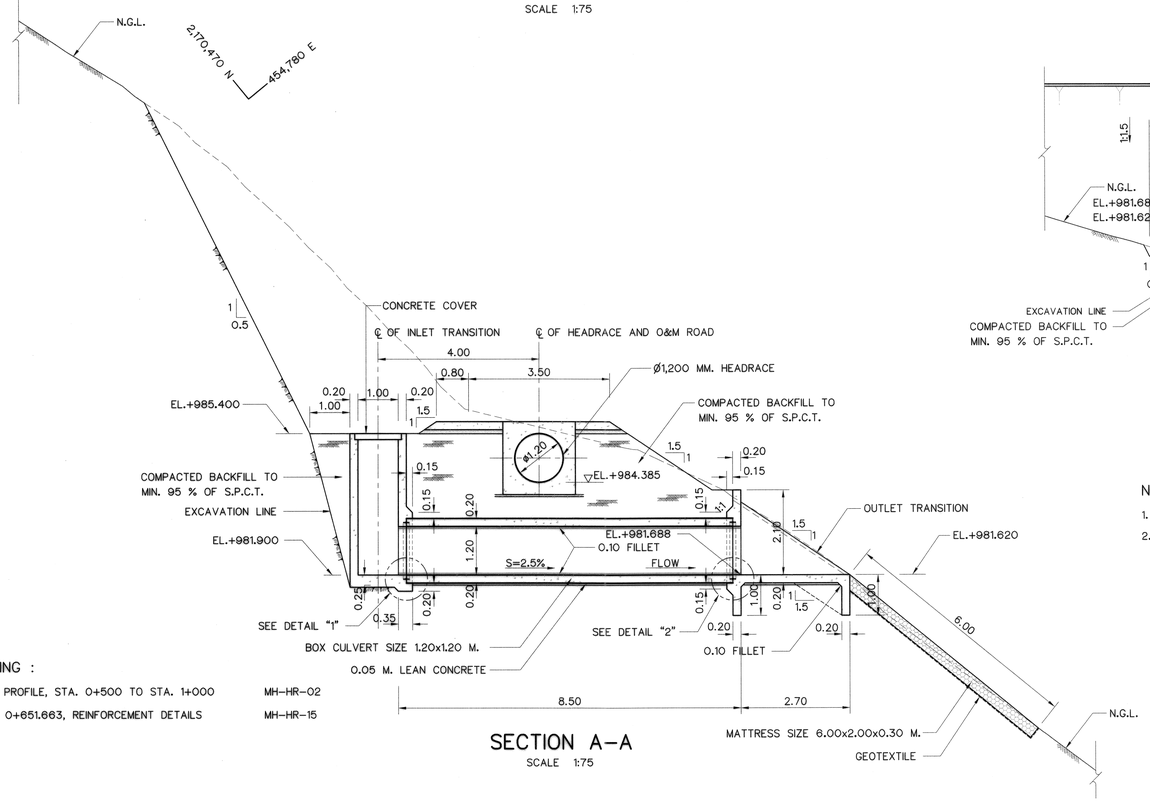
DETAIL "1"
SCALE 1:20



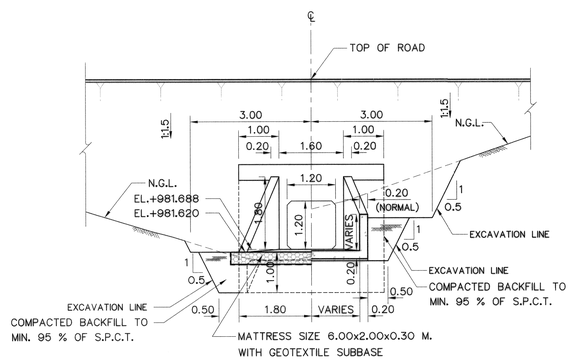
SECTION C–C
SCALE 1:75



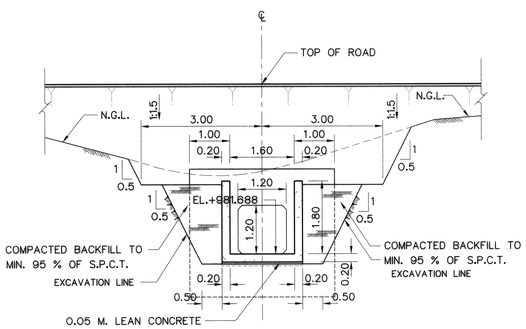
DETAIL "2"
SCALE 1:20



SECTION A–A
SCALE 1:75



SECTION D–D
SCALE 1:75



SECTION E–E
SCALE 1:75

REFERENCE DRAWING :

1. HEADRACE PLAN AND PROFILE, STA. 0+500 TO STA. 1+000 MH-HR-02
2. DRAIN CULVERT STA. 0+651.663, REINFORCEMENT DETAILS MH-HR-15

NOTES :

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

0 0.5 1.0 1.5
SCALE 1:20 METERS

0 0.5 1 2 3 4 5 6
SCALE 1:75 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

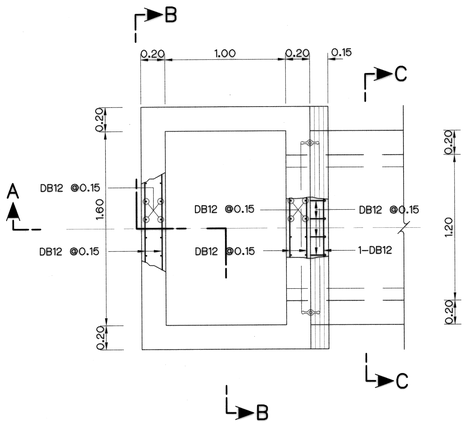
CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
DRAIN CULVERT STA. 0+651.663 , PLAN AND SECTION

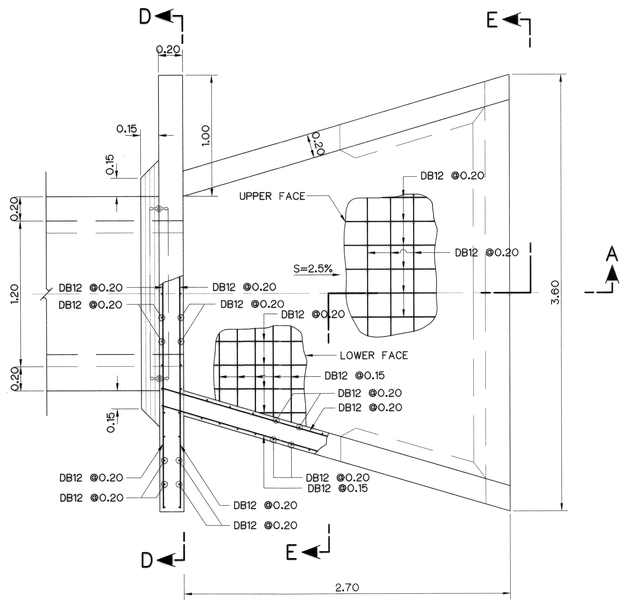
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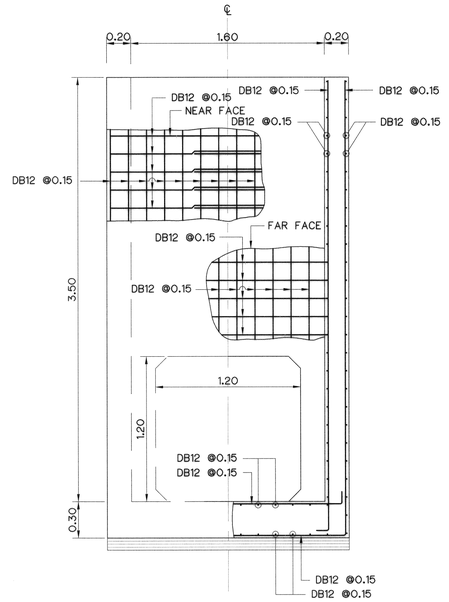
DESIGNED	วิศ.64624	วิศ.6226	REVIEWED
DRAWN			SUBMITTED
CHECKED		วิศ.6226	RECOMMENDED
PROJECT MANAGER	01/03/2564 DATE		APPROVED

DRAWING NO. MH-HR-14
SHEET NO. 38 OF 130

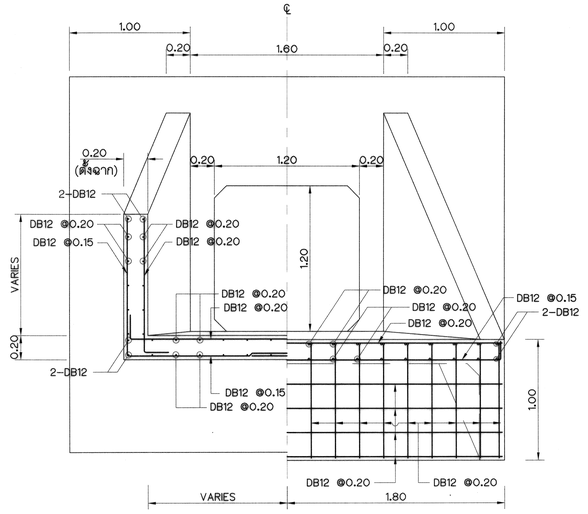




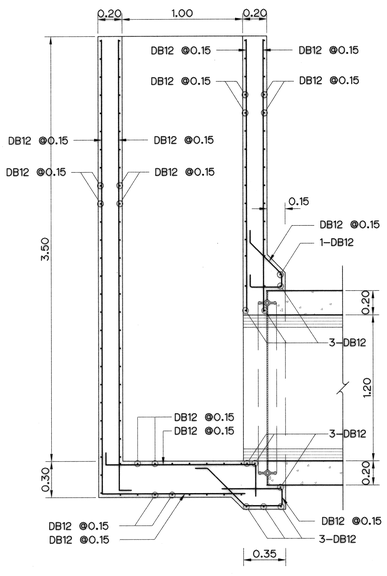
PLAN
SCALE 1:25



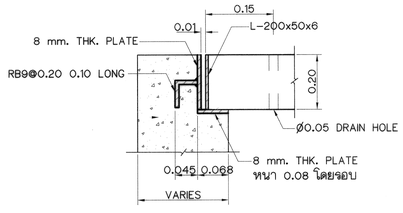
SECTION B–B
SCALE 1:25



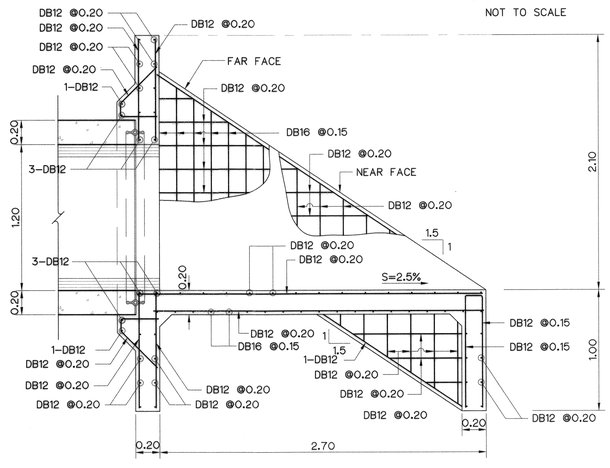
SECTION E–E
SCALE 1:25



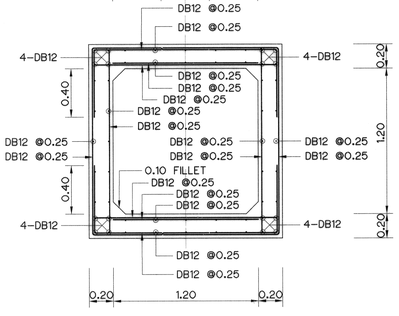
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NOT TO SCALE



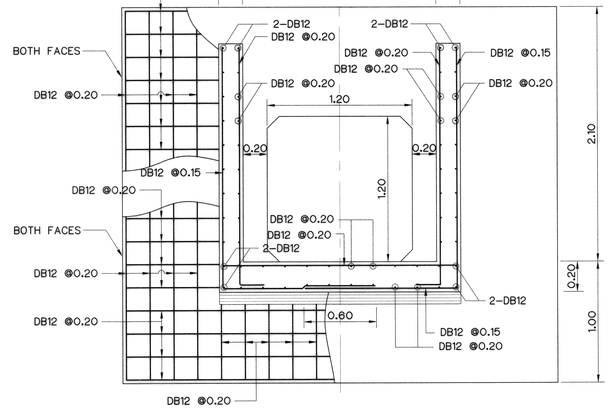
DETAIL "2"
NOT TO SCALE



SECTION A–A
SCALE 1:25



SECTION C–C
SCALE 1:25



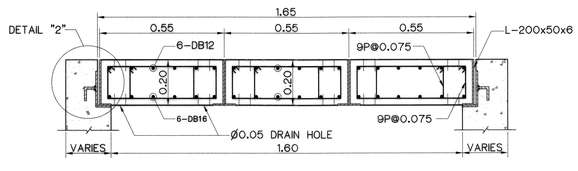
SECTION D–D
SCALE 1:25

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
3. CONCRETE DESIGN BASED ON THE COMPRESSIVE STRENGTH OF 210 KSC, STANDARD CYLINDER Ø0.15x0.30 m. TEST AT AGE 28 DAYS. UNLESS OTHERWISE INDICATED IN SPECIFIC DRAWINGS.
4. ULTIMATE TENSILE STRESSES OF REINFORCING STEEL, CONFORM TO THE REQUIREMENT OF THAI INDUSTRIAL STANDARD DESIGNATION SR24 FOR STRUCTURAL GRADE PLAIN ROUND BAR AND SD30 FOR INTERMEDIATE GRADE DEFORMED BAR.

REFERENCE DRAWINGS :

1. DRAIN CULVERT STA. 0+651.663, PLAN AND SECTION — MH-HR-14



SECTION X–X
NOT TO SCALE

0 0.5 1.0 1.5 2.0
SCALE 1:25 METERS

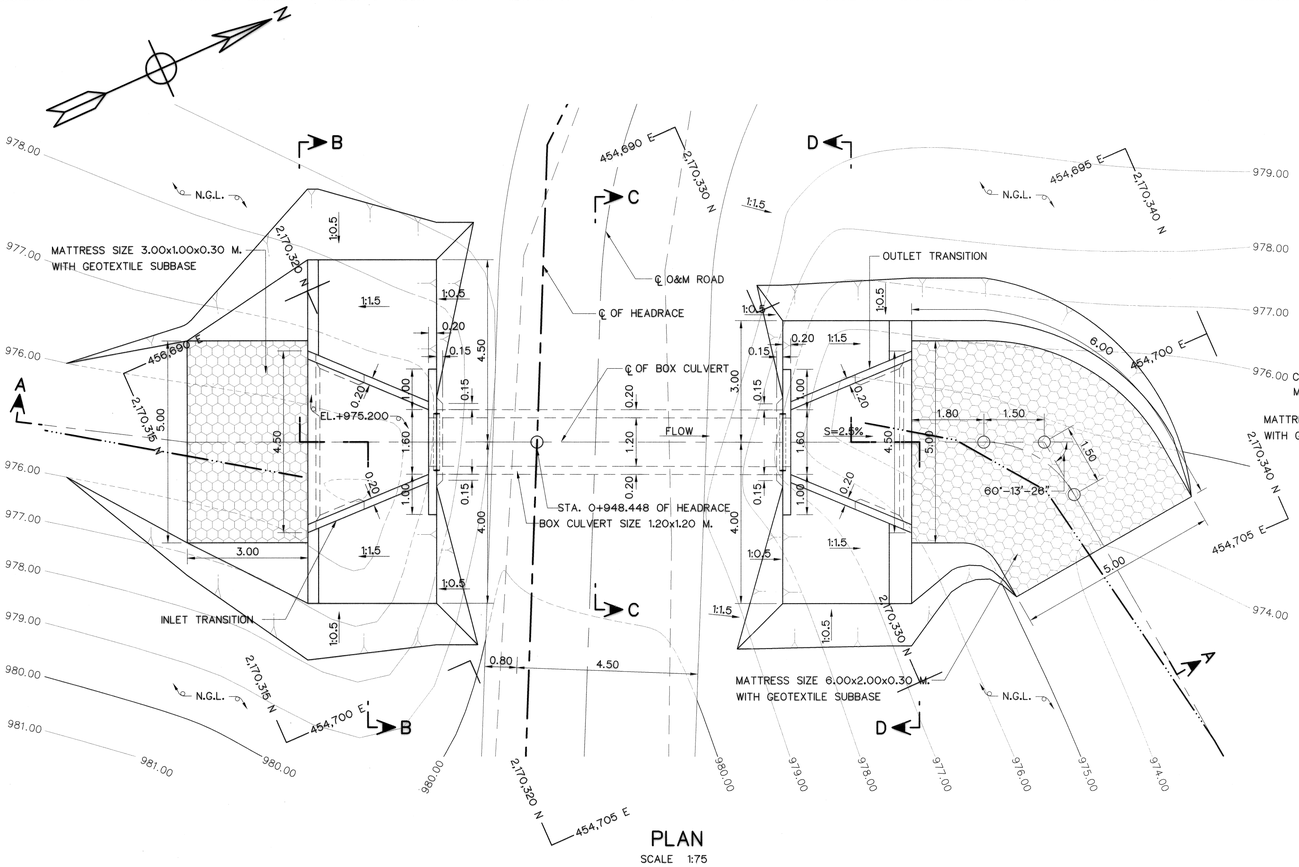
NO.	DATE	REVISIONS	CHECKED	APPROVED
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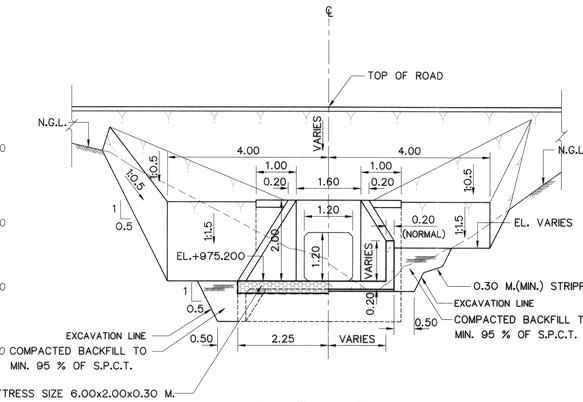
MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
DRAIN CULVERT STA. 0+651.663 REINFORCEMENT DETAILS

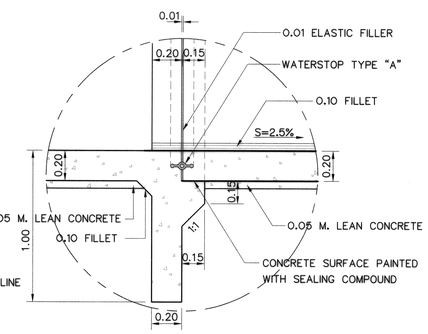
P&C MANAGEMENT CO.,LTD.	Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY
DESIGNED พ.ย.64624	REVIEWED
DRAWN	SUBMITTED
CHECKED	RECOMMENDED
PROJECT MANAGER	APPROVED
DATE	DRAWING NO. MH-HR-15
	SHEET NO. 39 OF 130



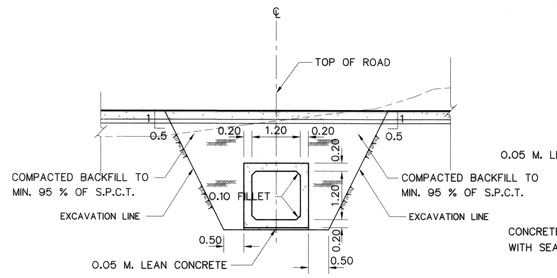
PLAN
SCALE 1:75



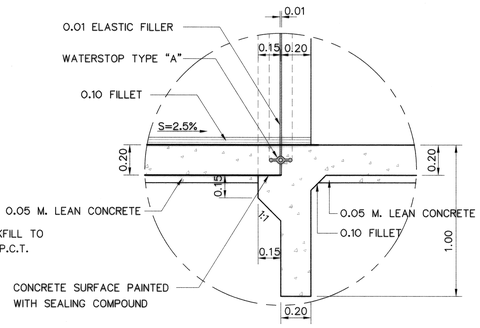
SECTION B–B
SCALE 1:75



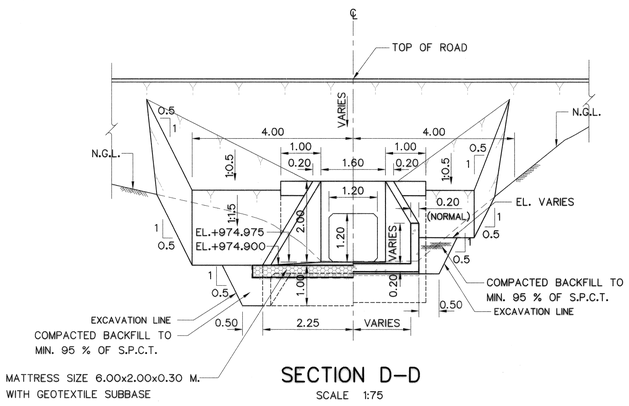
DETAIL "1"
SCALE 1:20



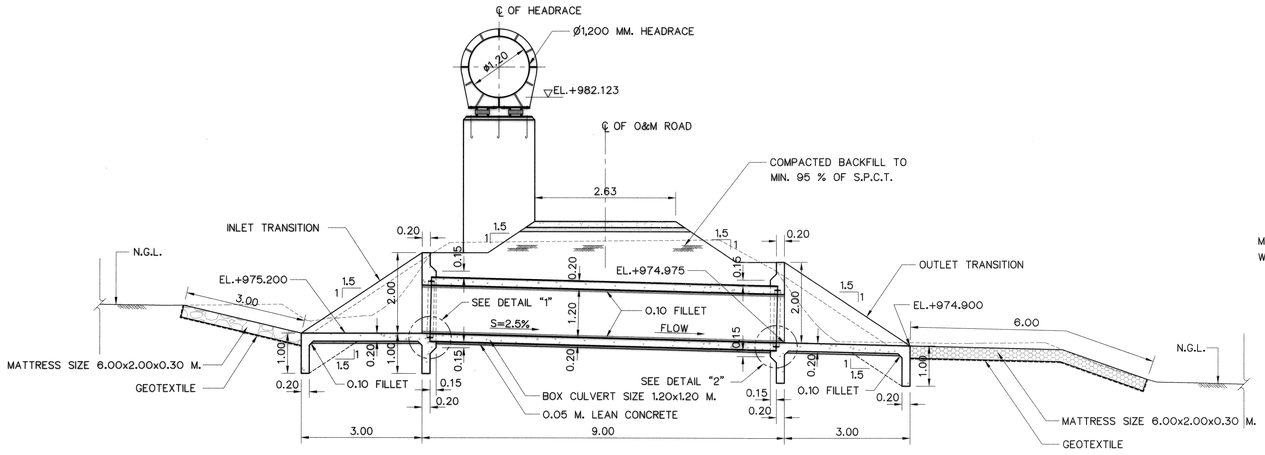
SECTION C–C
SCALE 1:75



DETAIL "2"
SCALE 1:20



SECTION D–D
SCALE 1:75



SECTION A–A
SCALE 1:75

NOTES :

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

REFERENCE DRAWING :

1. HEADRACE PLAN AND PROFILE, STA. 0+500 TO STA. 1+000	MH-HR-02
2. DRAIN CULVERT STA. 0+948.448, REINFORCEMENT DETAILS	MH-HR-17

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SCALE 1:20 METERS

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SCALE 1:75 METERS

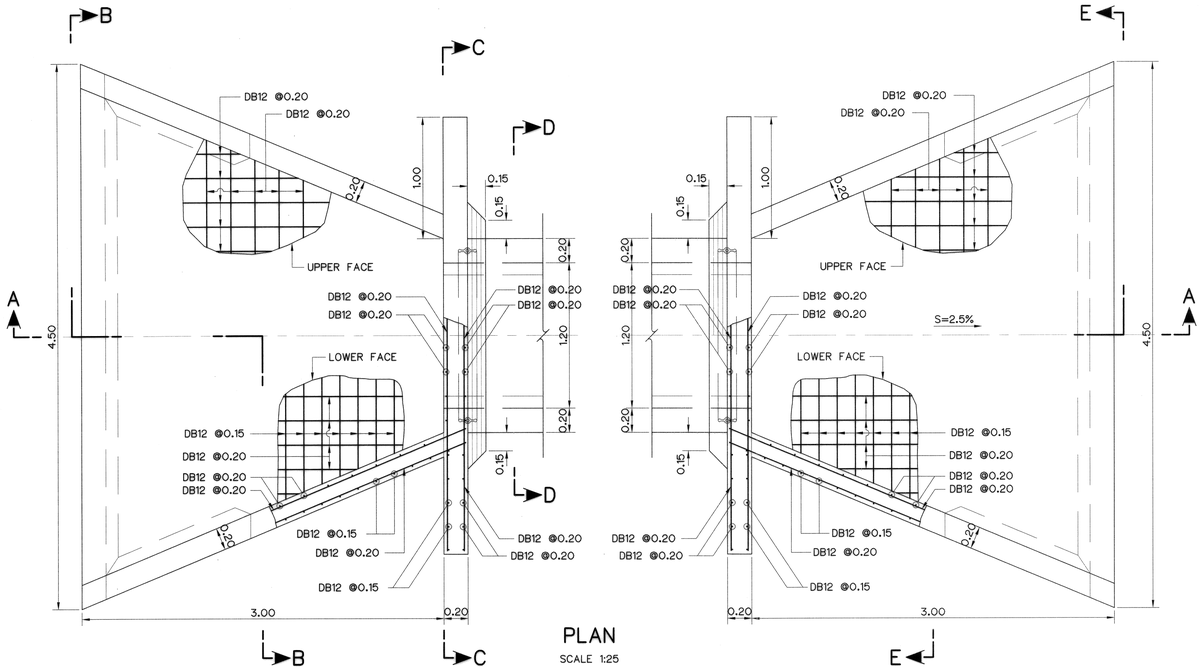
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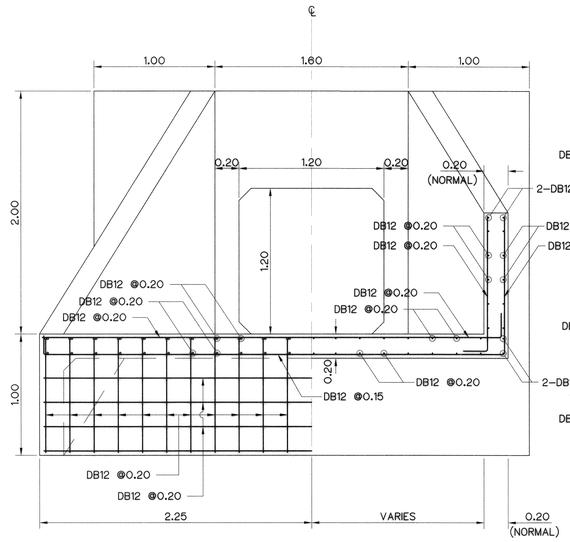
CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
DRAIN CULVERT STA. 0+948.448 , PLAN AND SECTION

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DESIGNED กิ่ง.64624 สิ.6226	REVIEWED
DRAWN	SUBMITTED
CHECKED สิ.6226	RECOMMENDED
PROJECT MANAGER	APPROVED P. Hansaff
08/08/2559 DATE	DRAWING NO. MH-HR-16
	SHEET NO. 40 OF 130



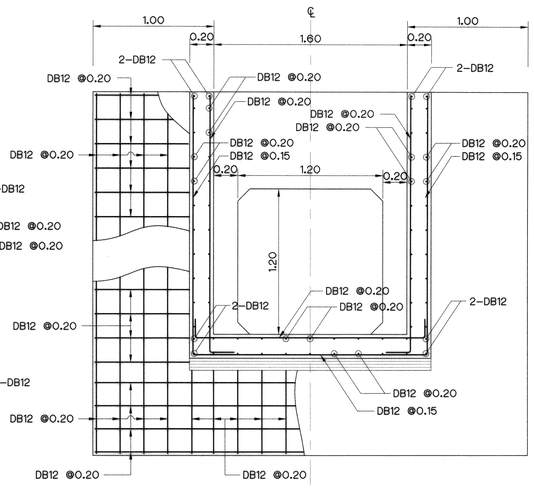
PLAN

SCALE 1:25



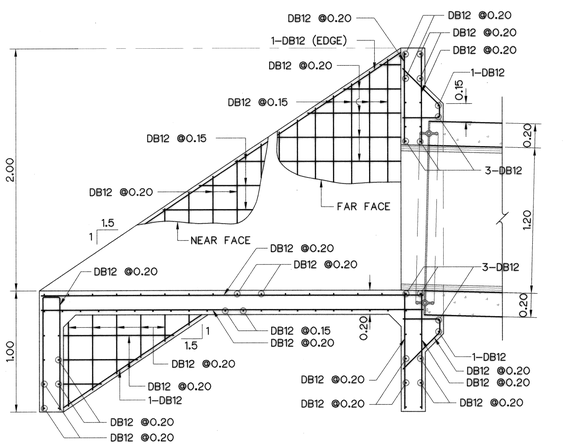
SECTION B–B

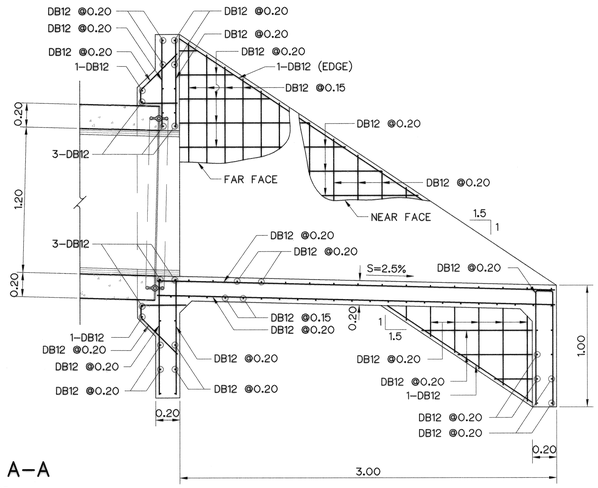
SCALE 1:25



SECTION C–C

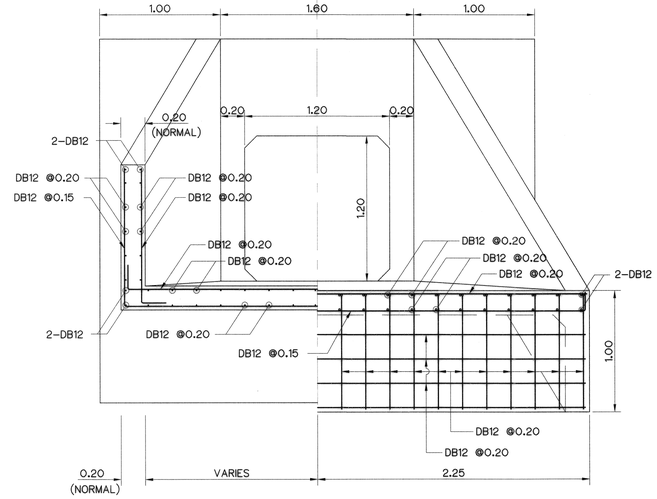
SCALE 1:25





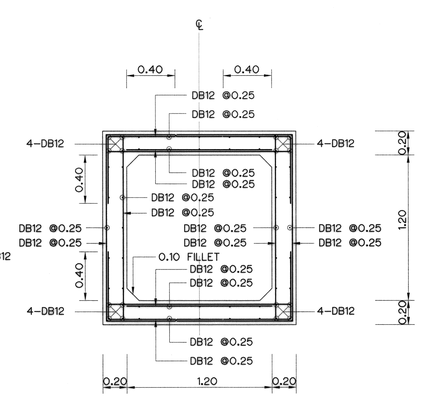
SECTION A–A

SCALE 1:25



SECTION E–E

SCALE 1:25



SECTION D–D

SCALE 1:25

NOTES :

1. ALL DIMENSIONS AND ELEVATIONS (M.S.L.) ARE IN METERS, UNLESS OTHERWISE SHOWN.
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REFERENCE DRAWINGS :

1. DRAIN CULVERT STA. 0+948.448, PLAN AND SECTION MH-HR-16

0 0.5 1.0 1.5 2.0

SCALE 1:25 METERS

NO.	DATE	REVISIONS	CHECKED	APPROVED
3				
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	CONSULTANTS		DEDE	

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MAE HAT HYDROPOWER PROJECT

CIVIL WORKS AND TRANSMISSION LINE
HEADRACE
DRAIN CULVERT STA. 0+948.448 REINFORCEMENT DETAILS

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DESIGNED	วิ.64624	อ.ท.	สย.6226
DRAWN			
CHECKED		อ.ท.	สย.6226
PROJECT MANAGER		08/03/2564	DATE

REVIEWED
SUBMITTED
RECOMMENDED
APPROVED P. Hanwell

DRAWING NO. MH-HR-17

SHEET NO. 41 OF 130