

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

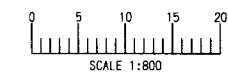
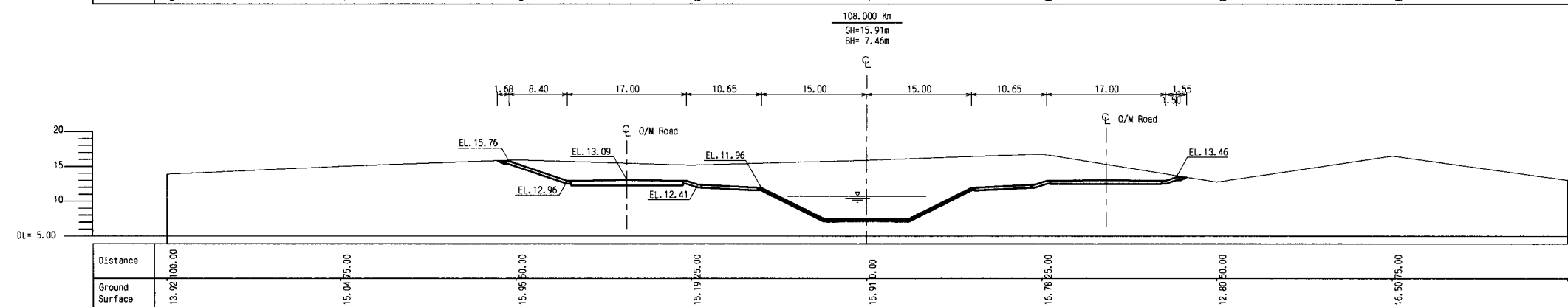
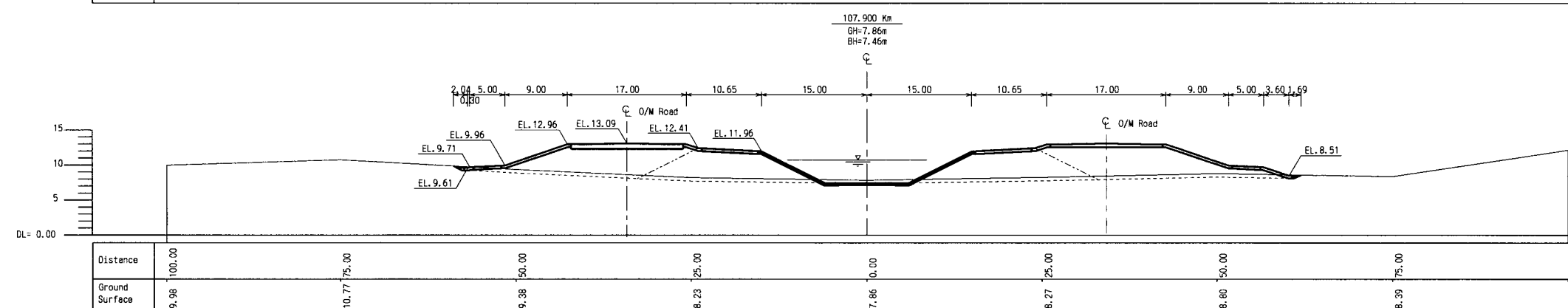
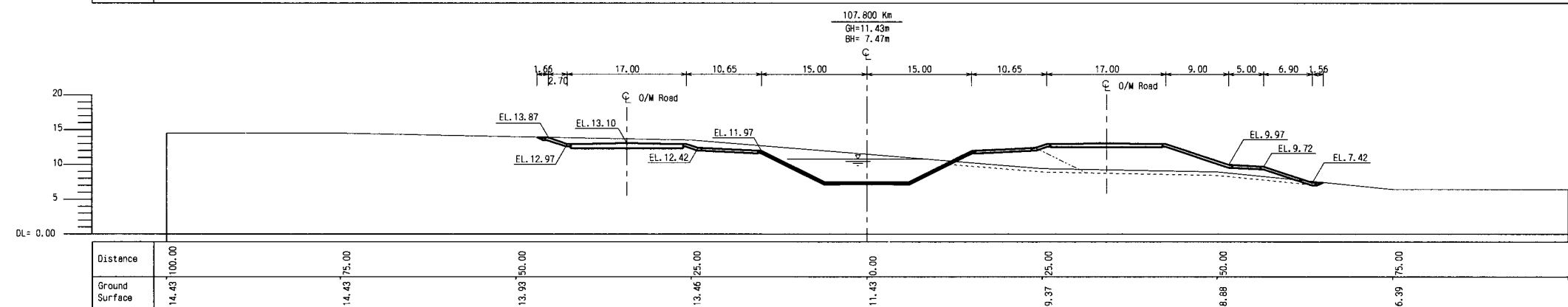
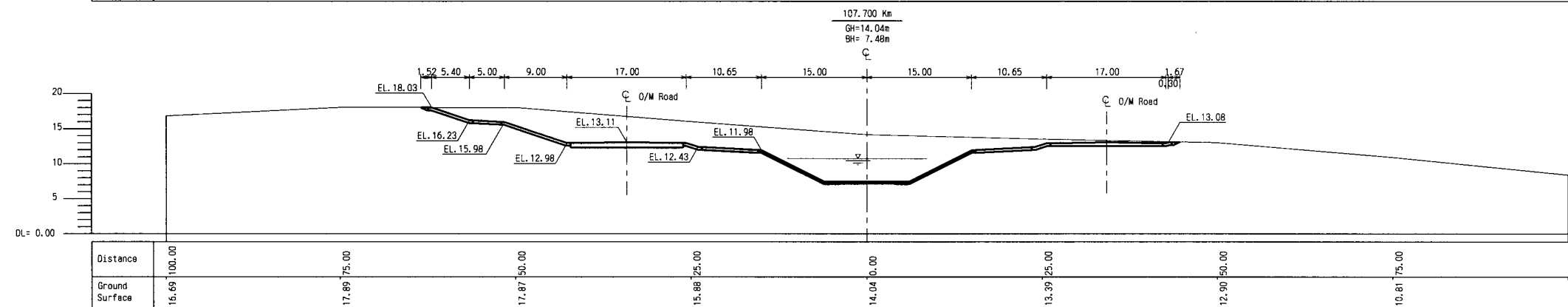
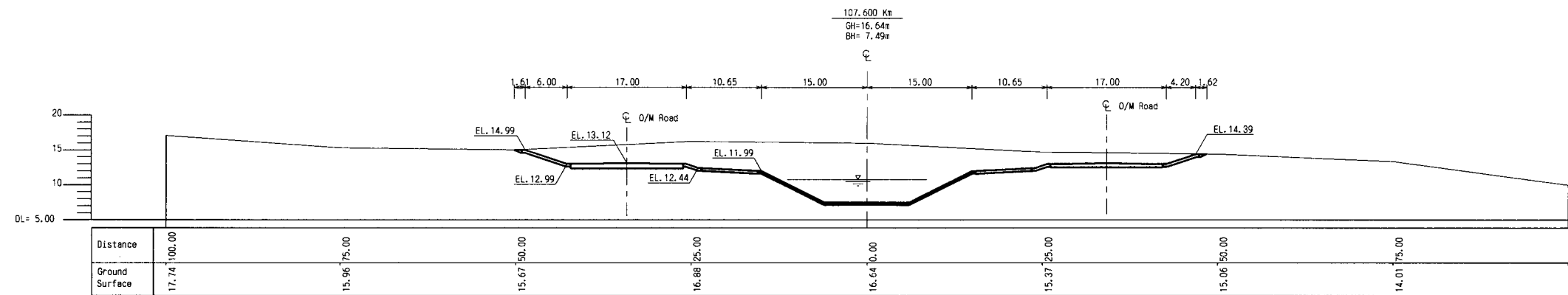
THE NORTH SINAI INTEGRATED RURAL
DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAAH CANAL
BETWEEN KM 86.500 AND KM 108.466

No. 2 OPEN CANAL
CROSS SECTIONS
BETWEEN KM 107.100 AND KM 107.500

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

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-154



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

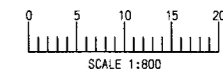
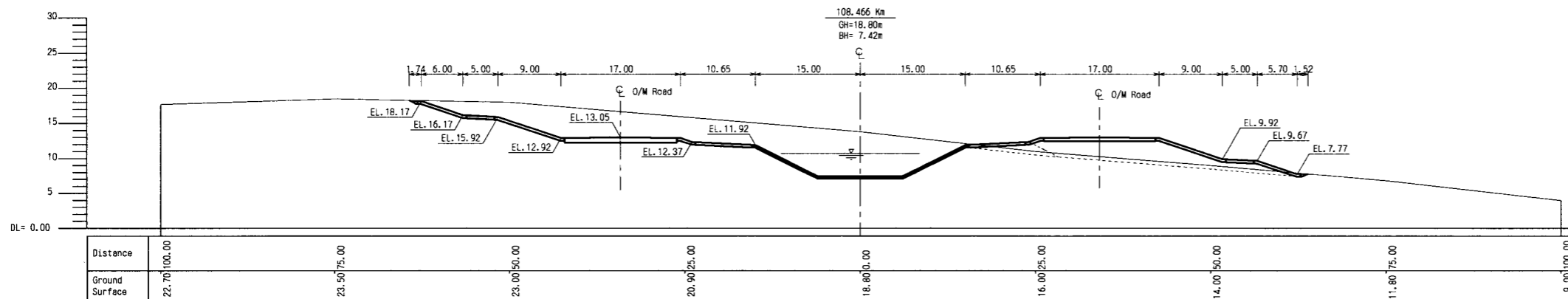
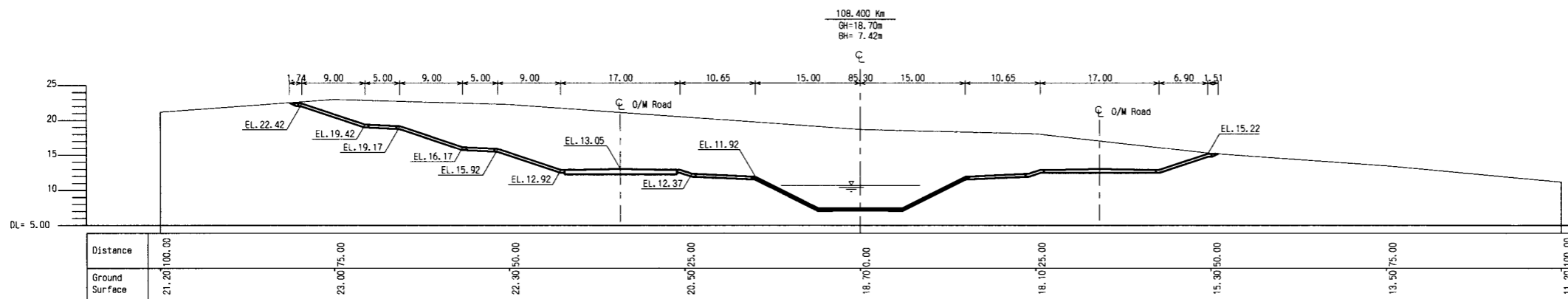
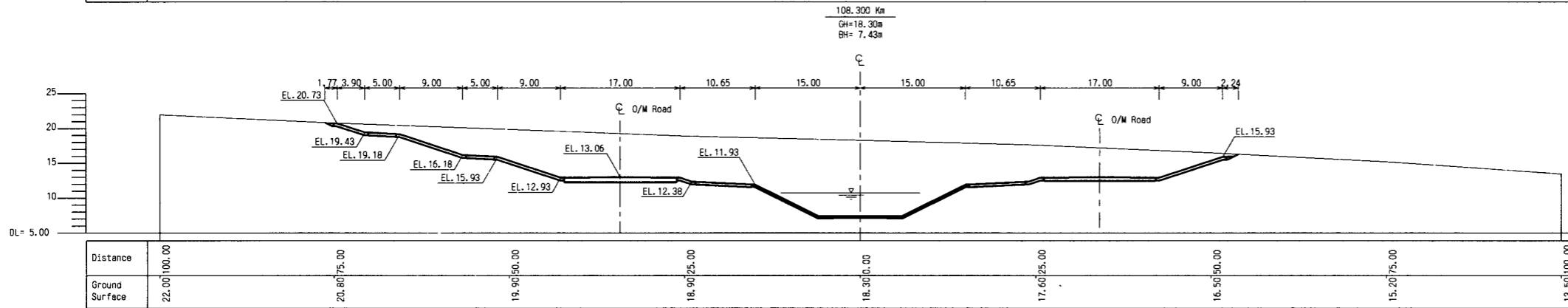
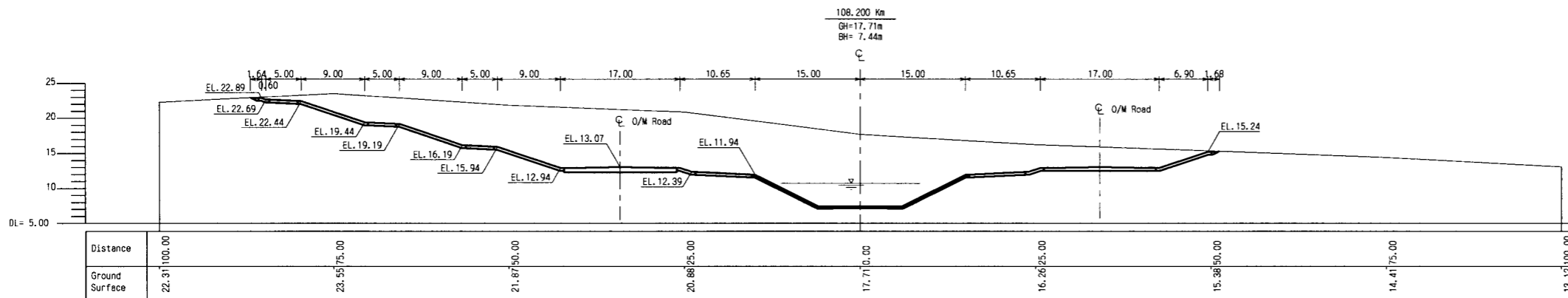
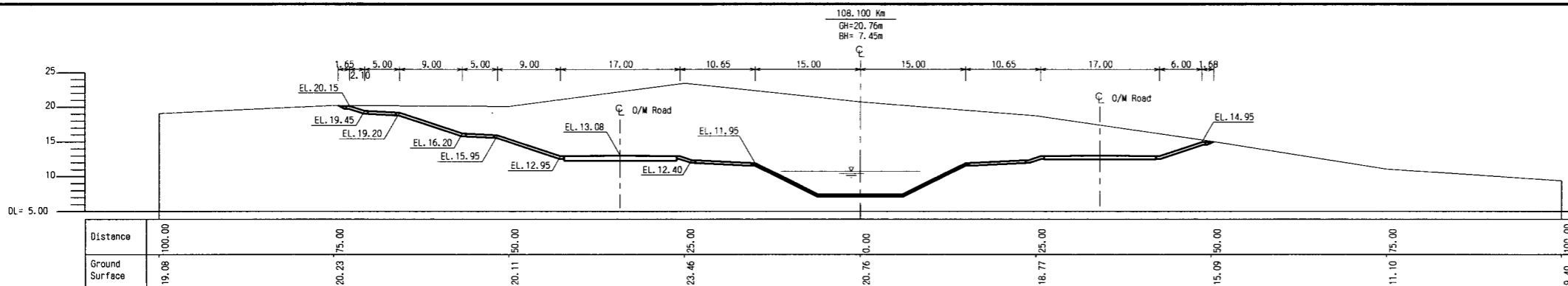
THE NORTH SINAI INTEGRATED RURAL
 DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAH CANAL
 BETWEEN KM 86.500 AND KM 108.466

No. 2 OPEN CANAL
 CROSS SECTIONS
 BETWEEN KM 107.600 AND KM 108.000

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

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-155



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

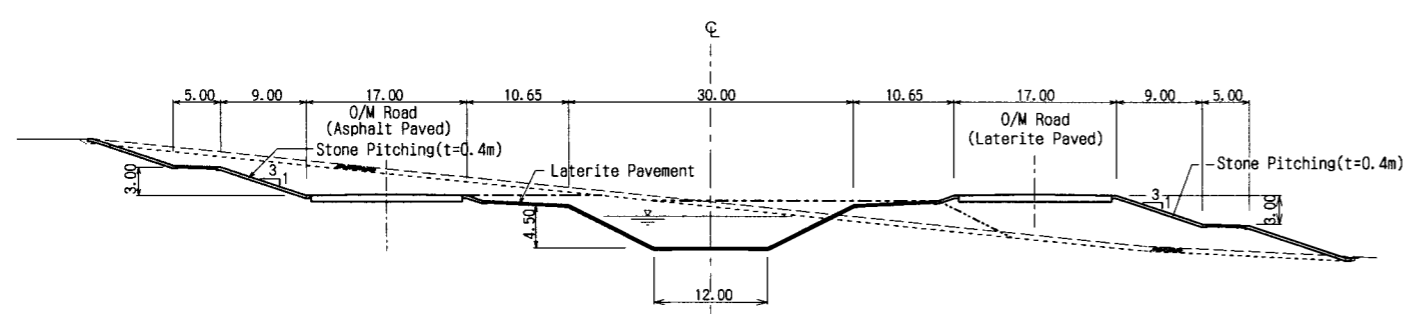
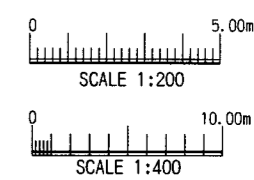
**THE NORTH SINAI INTEGRATED RURAL
 DEVELOPMENT PROJECT (PHASE III)**

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL
 BETWEEN KM 86.500 AND KM 108.466

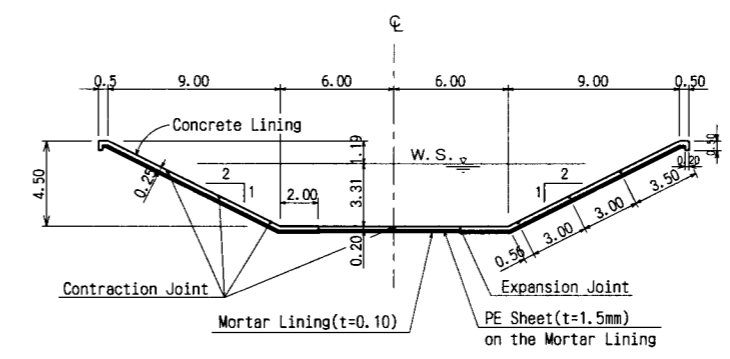
No. 2 OPEN CANAL
 CROSS SECTIONS
 BETWEEN KM 108.100 AND KM 108.466

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

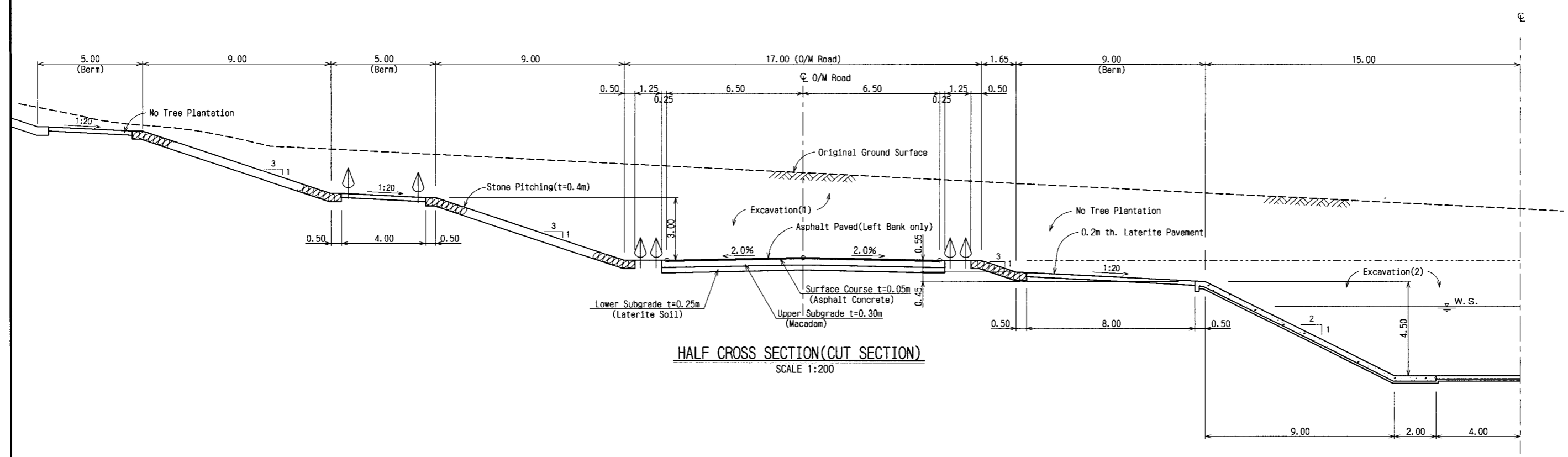
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-156



TYPICAL SECTION OF OPEN CANAL
NOT TO SCALE

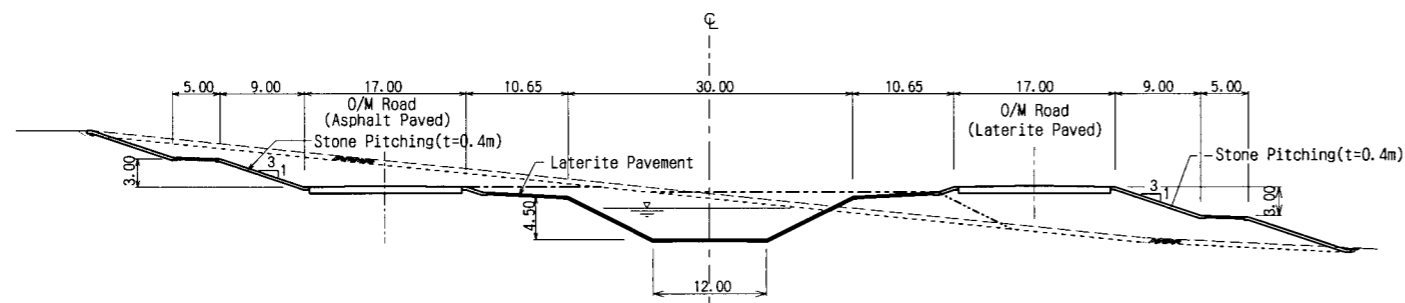


CONCRETE LINED SECTION
SCALE 1:400

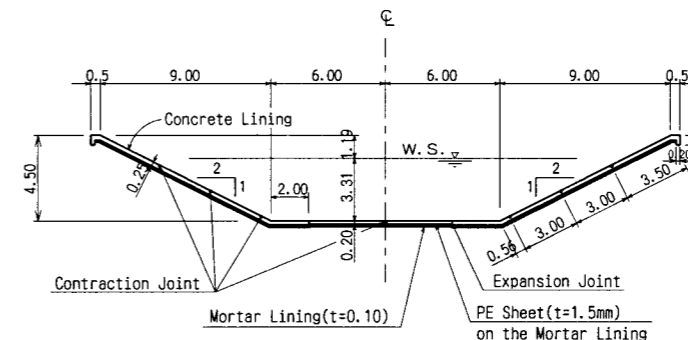


HALF CROSS SECTION (CUT SECTION)
SCALE 1:200

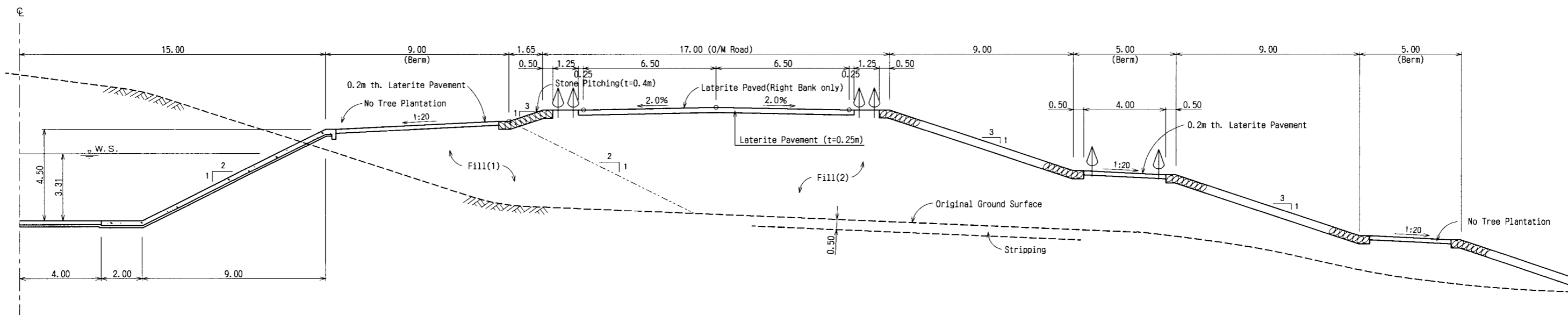
THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION	
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 86.500 AND KM 108.466	
OPEN CANAL TYPICAL SECTION (CUT SECTION)	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-157



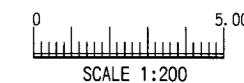
TYPICAL SECTION OF OPEN CANAL
NOT TO SCALE



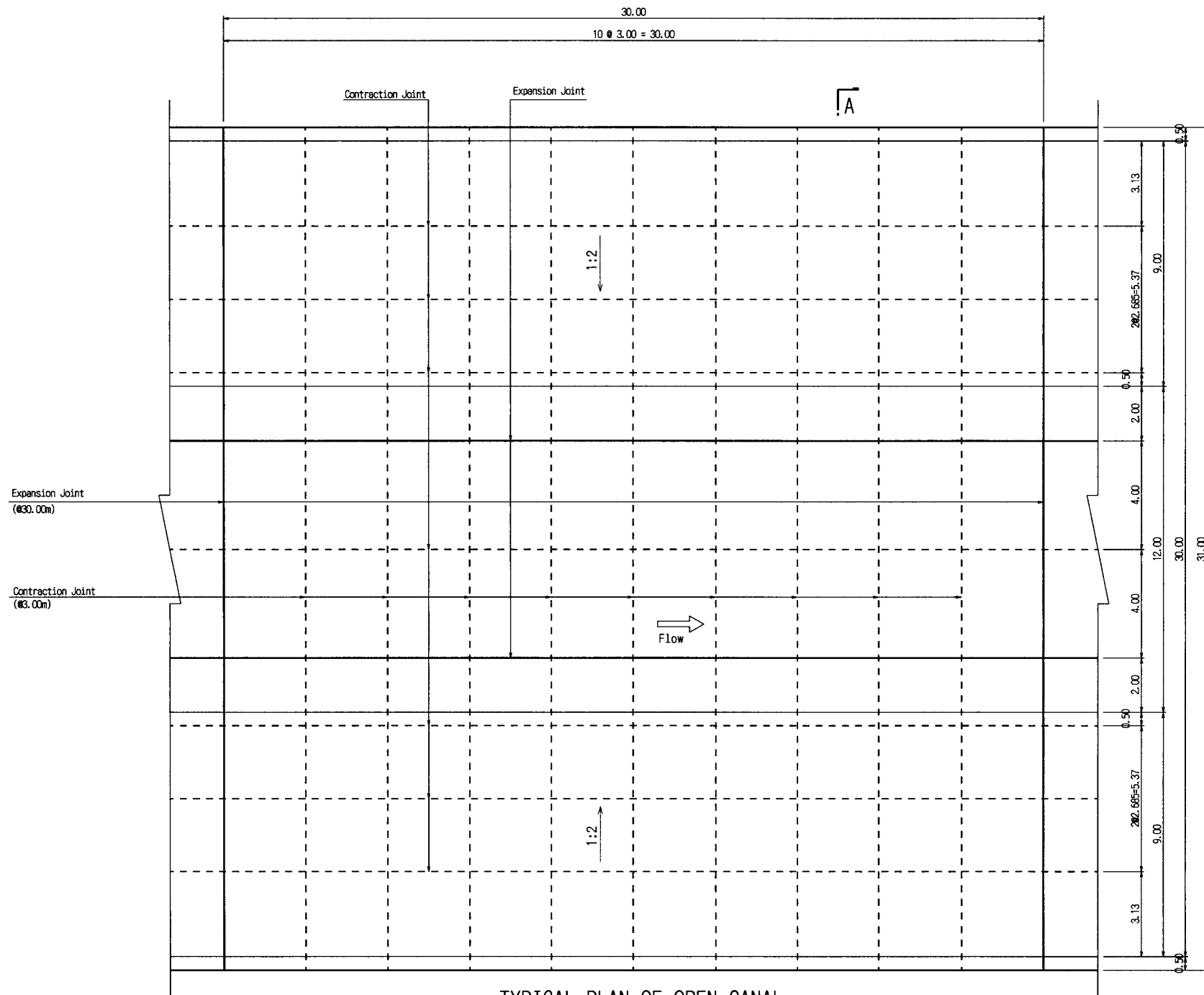
CONCRETE LINED SECTION
SCALE 1:400



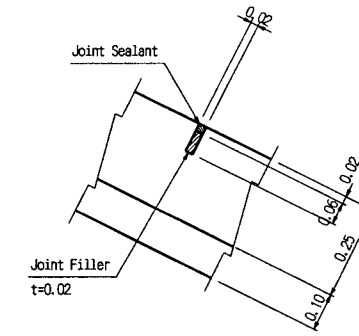
HALF CROSS SECTION(FILL SECTION)
SCALE 1:200



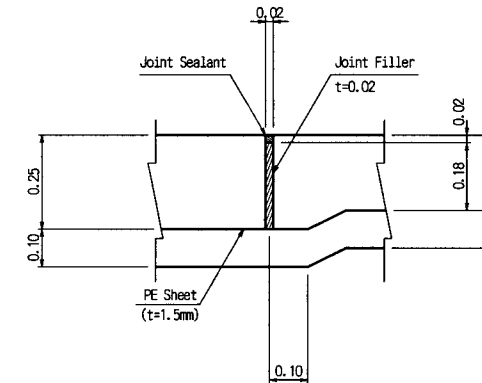
THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION	
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 86.500 AND KM 108.466	
OPEN CANAL TYPICAL SECTION (FILL SECTION)	
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-158



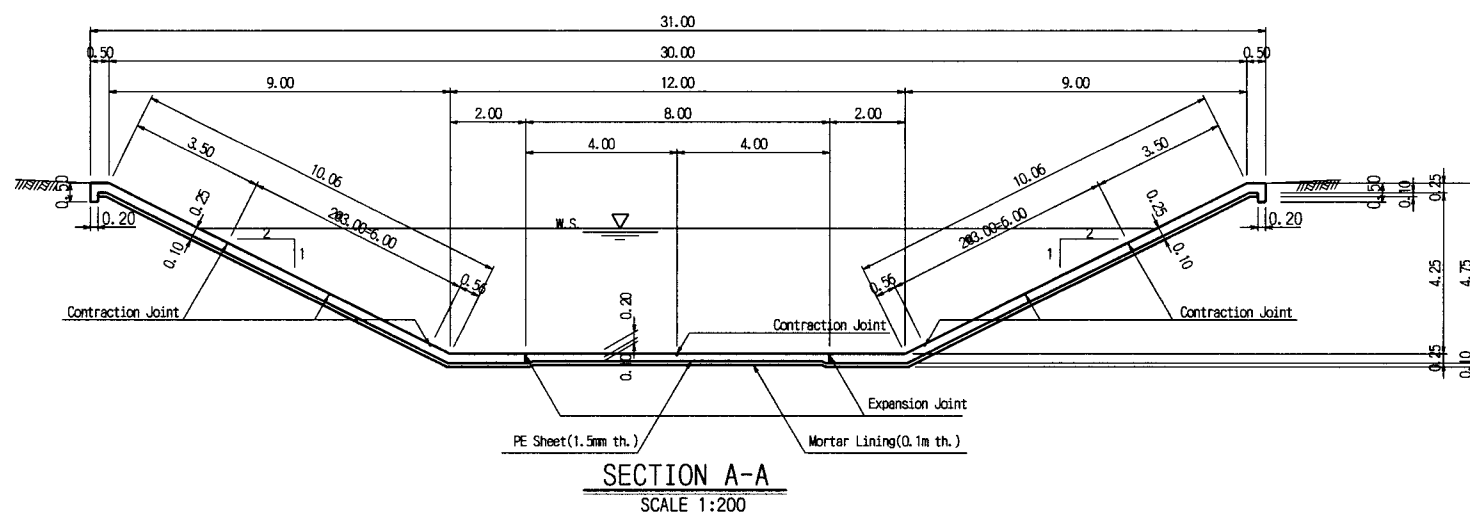
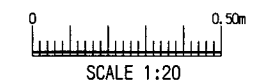
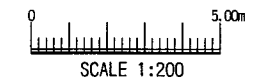
TYPICAL PLAN OF OPEN CANAL
SCALE 1:200



CONTRACTION JOINT
SCALE 1:20

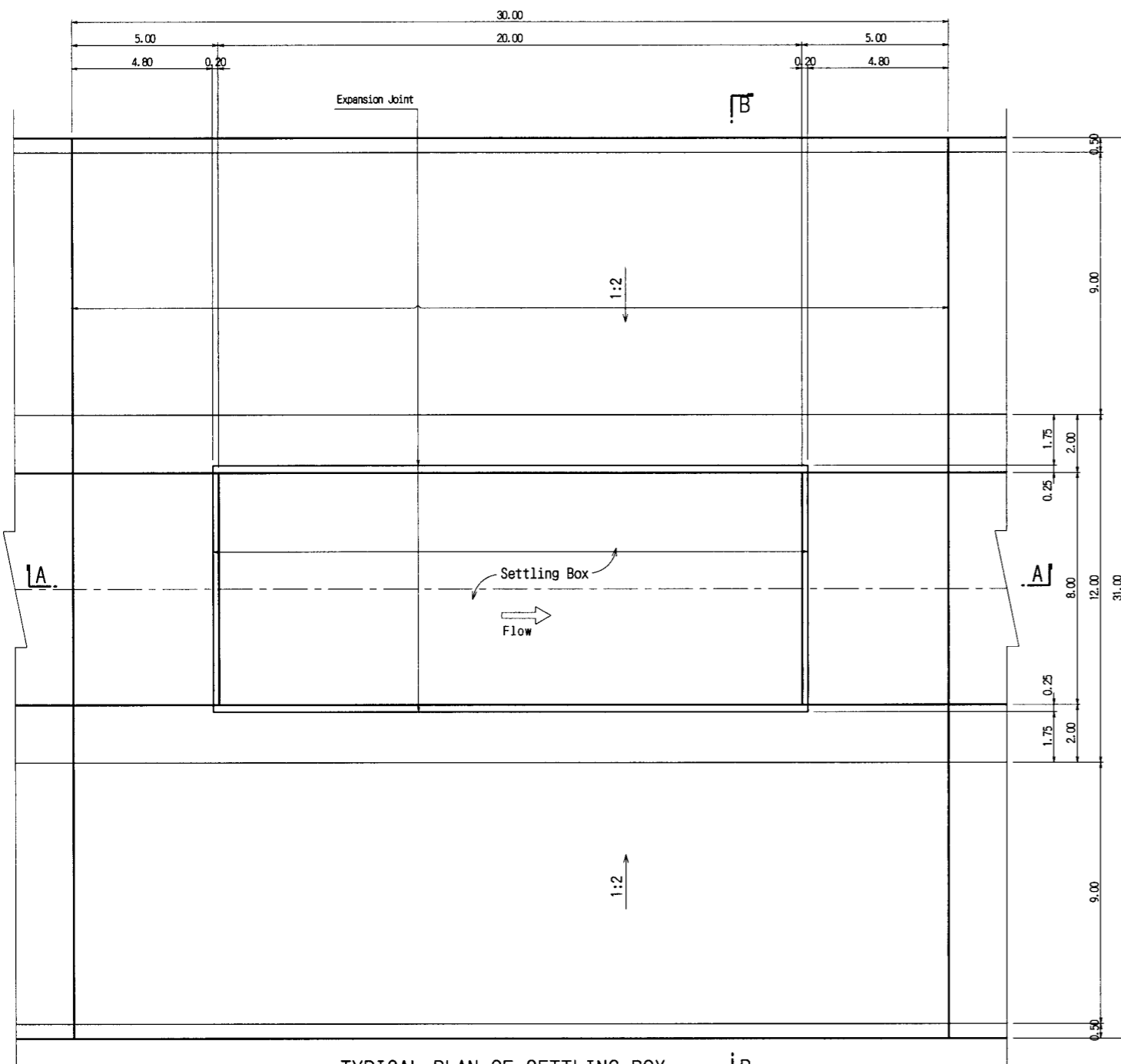


EXPANSION JOINT
SCALE 1:20

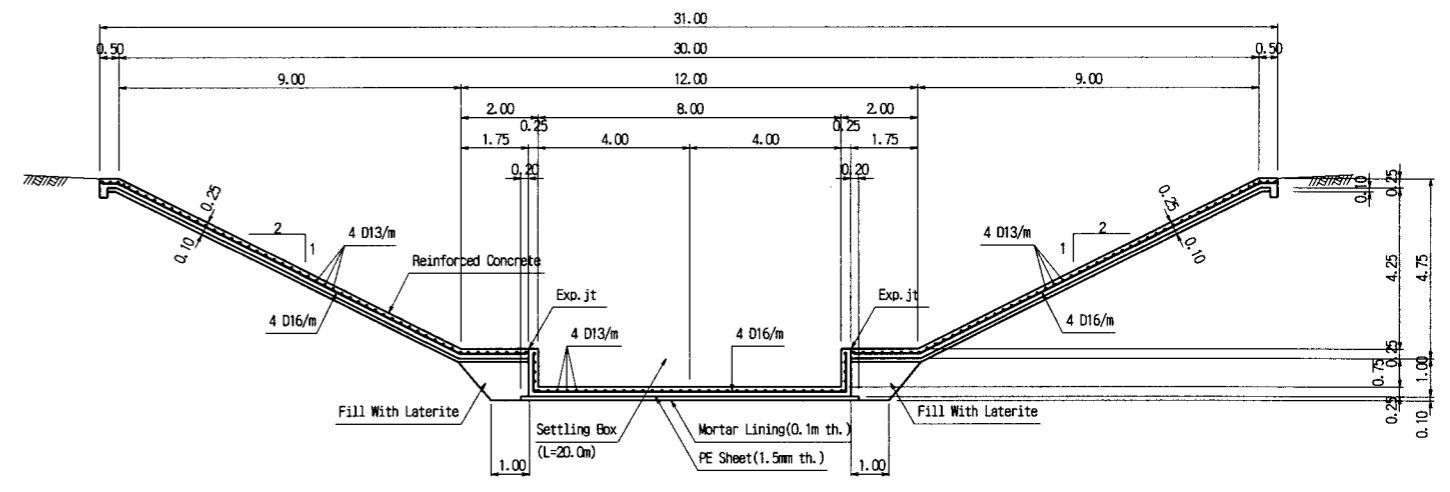


SECTION A-A
SCALE 1:200

THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION	
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 86.500 AND KM 108.466	
OPEN CANAL CONCRETE LINED SECTION TYPICAL PLAN AND SECTION	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-159



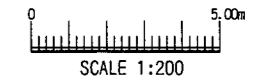
TYPICAL PLAN OF SETTLING BOX
SCALE 1:200



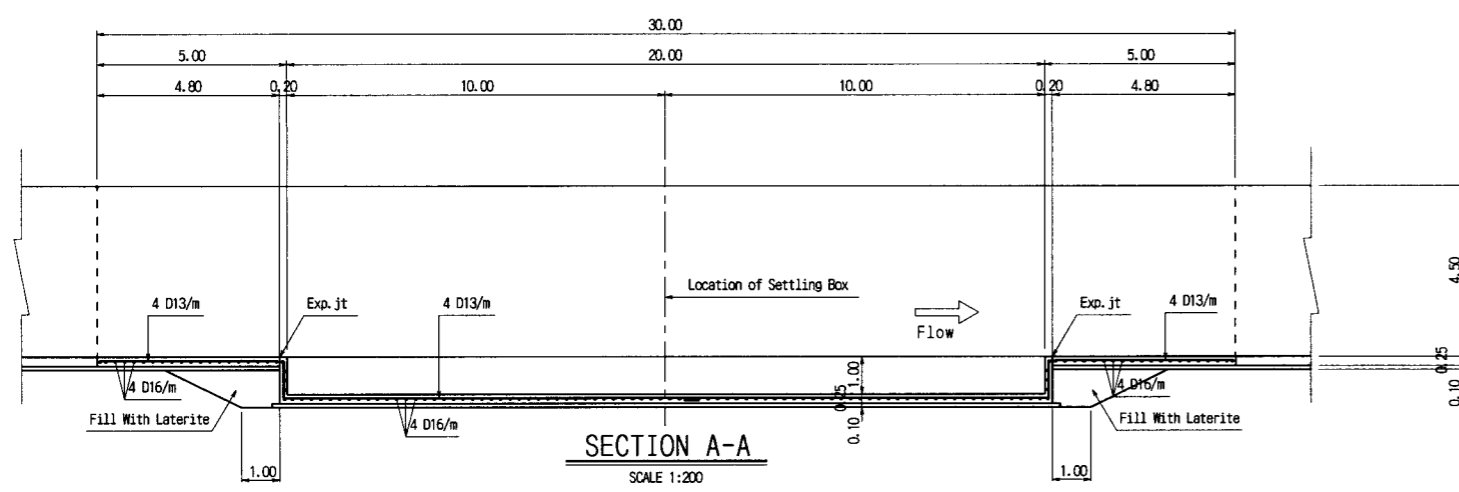
SECTION B-B
SCALE 1:200

LOCATION OF SETTLING BOX

No. 1 Open Canal		No. 2 Open Canal	
1	KM 87.00	1	KM 102.00
2	KM 88.00	2	KM 103.00
3	KM 89.00	3	KM 104.00
4	KM 90.00	4	KM 105.00
5	KM 91.00	5	KM 106.00
6	KM 92.00	6	KM 107.00
7	KM 93.00	7	KM 108.00
8	KM 94.00		



SCALE 1:200



SECTION A-A
SCALE 1:200

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

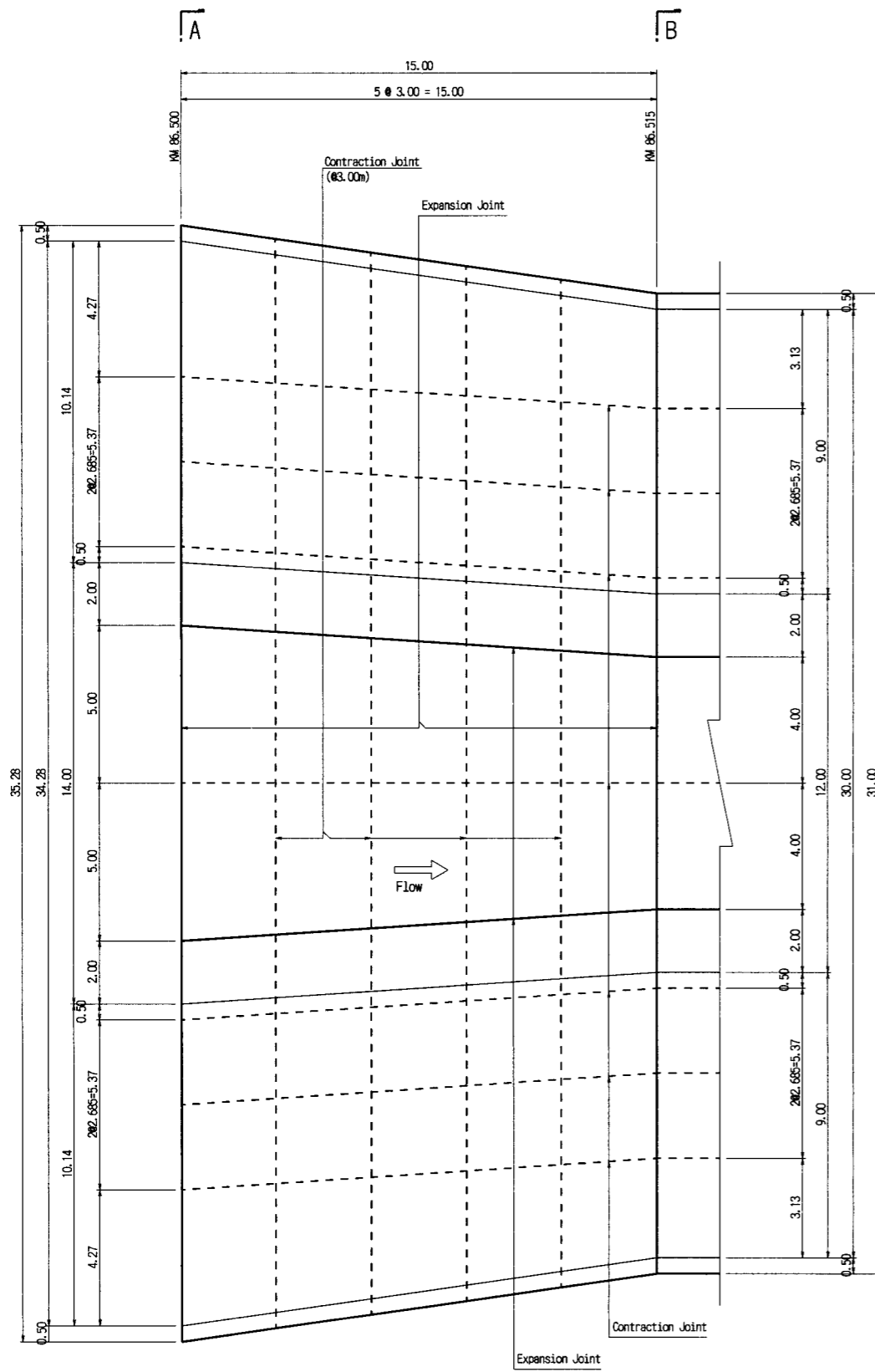
THE NORTH SINAI INTEGRATED RURAL
DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL
BETWEEN KM 86.500 AND KM 108.466

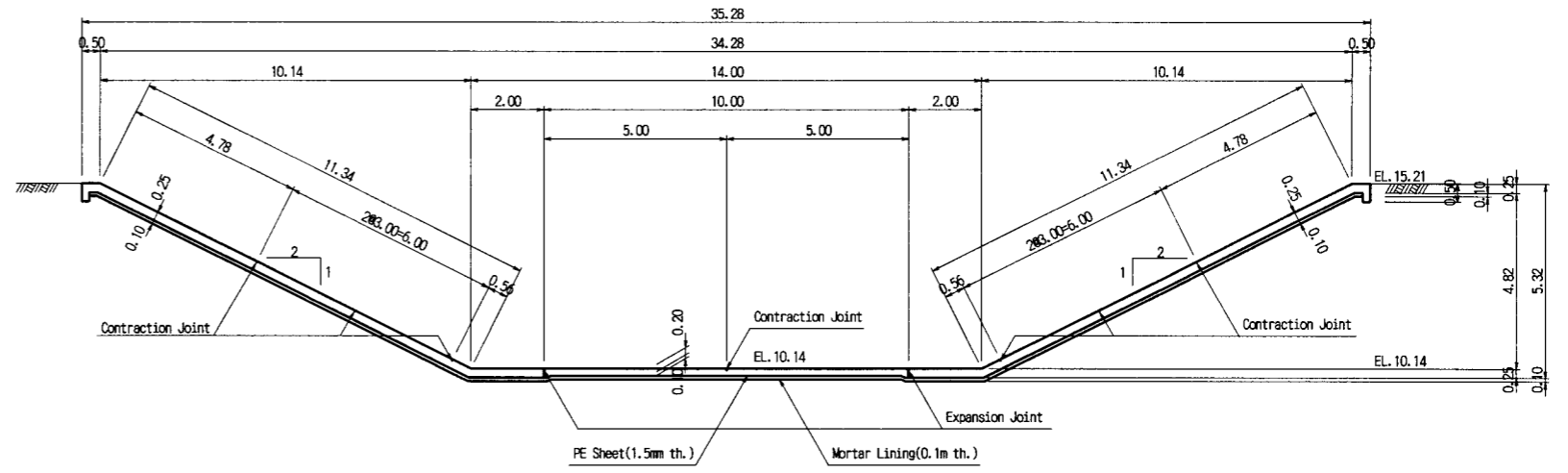
OPEN CANAL
SETTLING BOX
PLAN AND SECTIONS

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

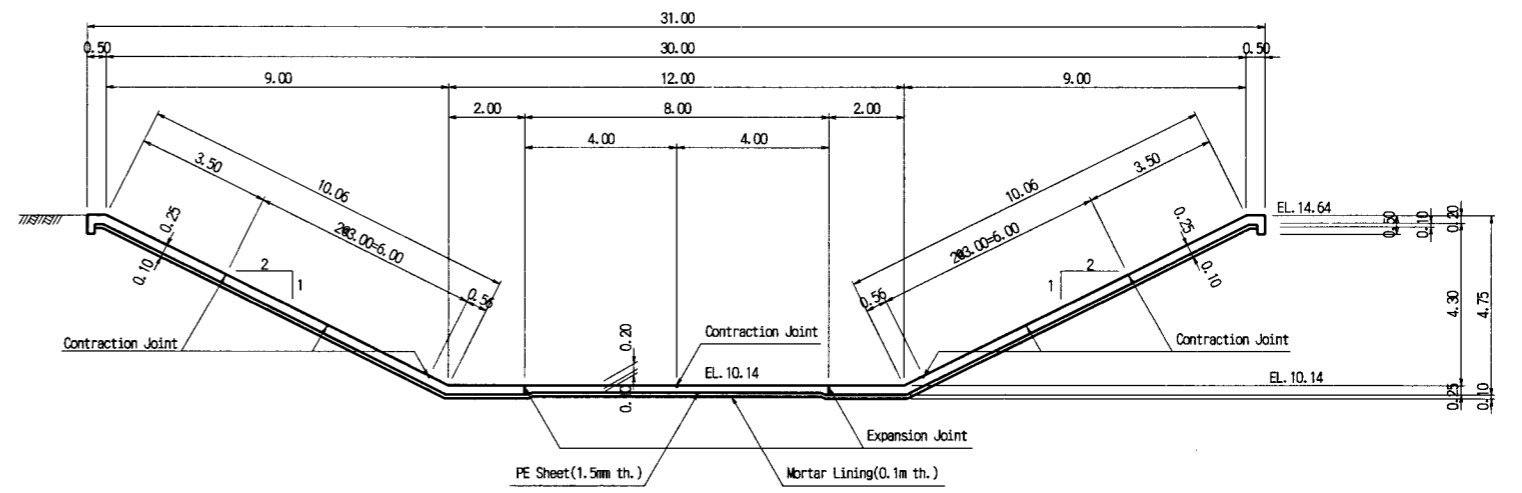
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-160



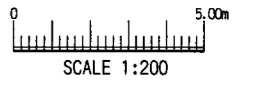
PLAN OF OPEN TRANSITION(1)
SCALE 1:200



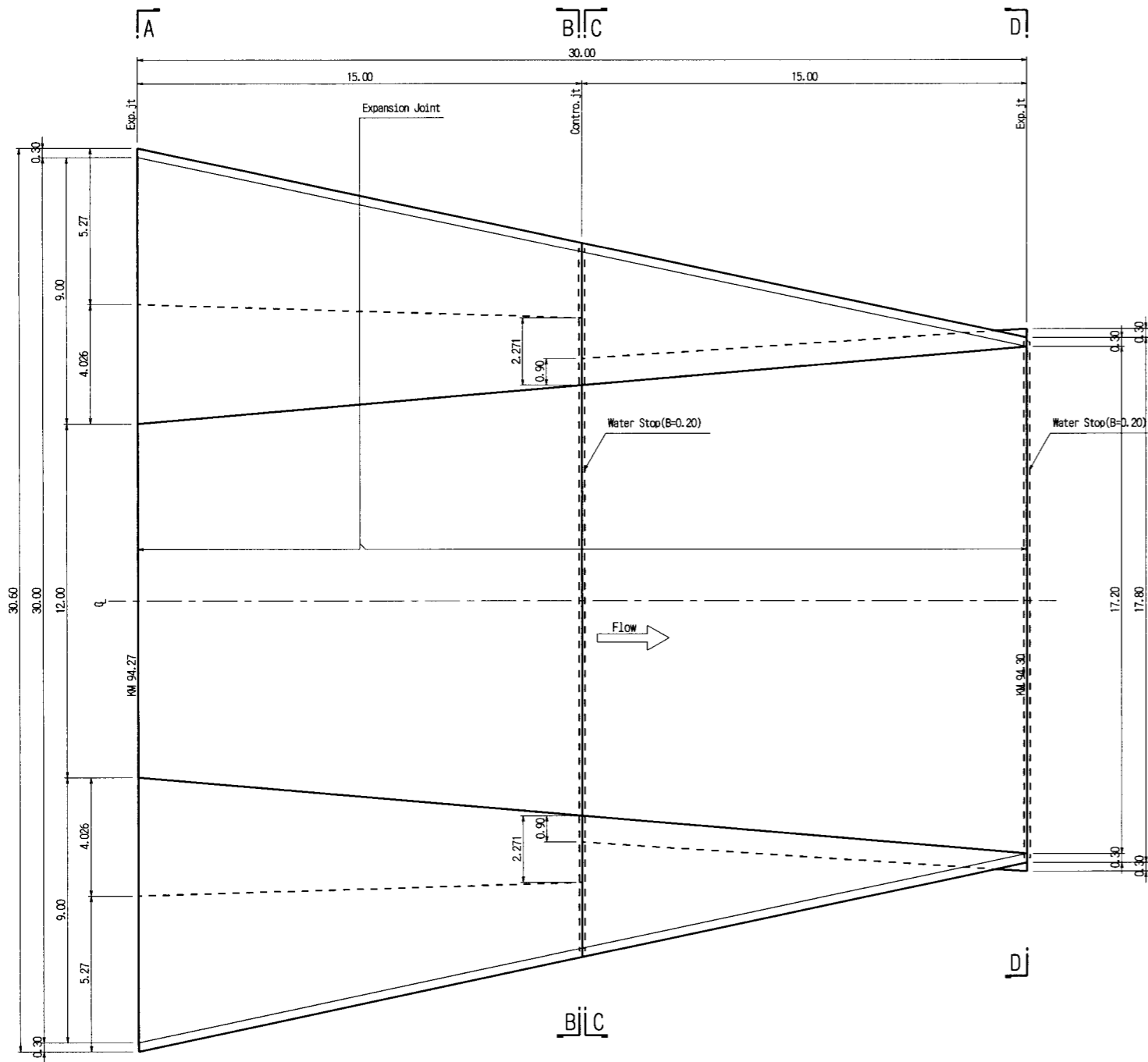
SECTION A-A
SCALE 1:200



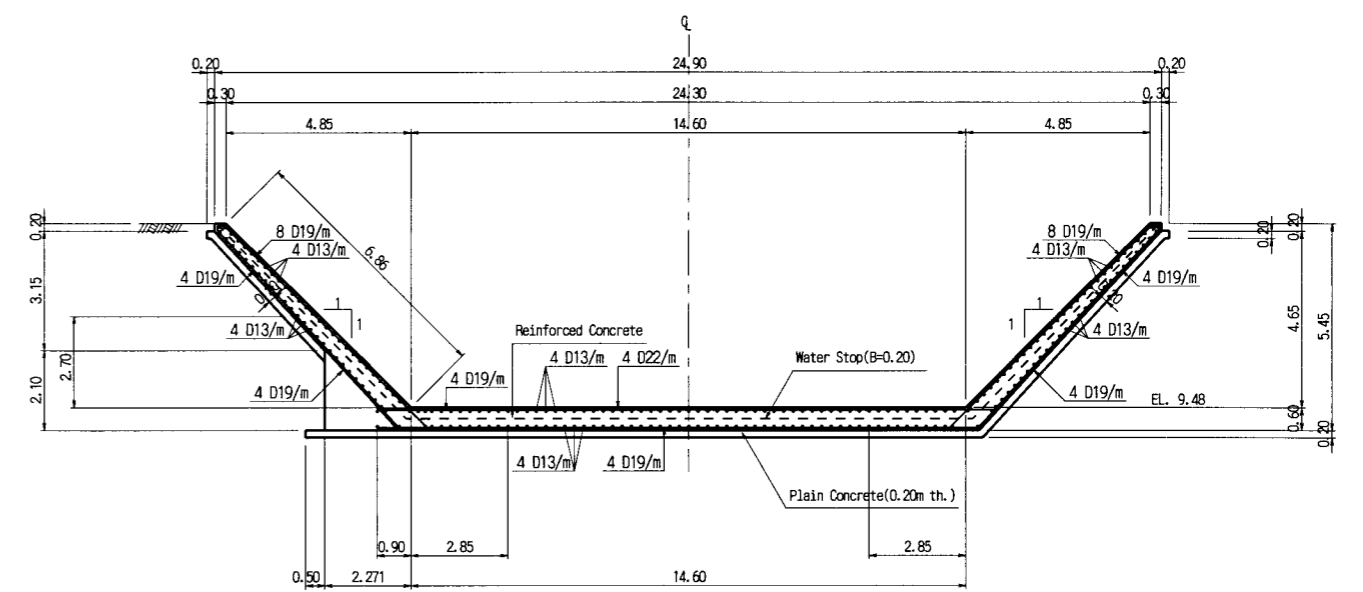
SECTION B-B
SCALE 1:200



THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION	
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 86.500 AND KM 108.466	
OPEN CANAL OPEN TRANSITION(1) PLAN AND SECTIONS	
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-161

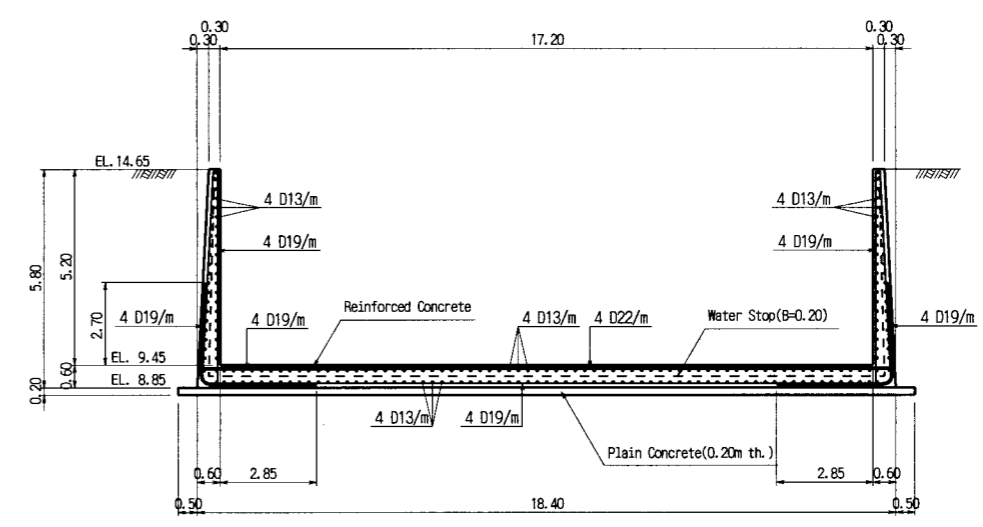


PLAN OF OPEN TRANSITION(2)
SCALE 1:200

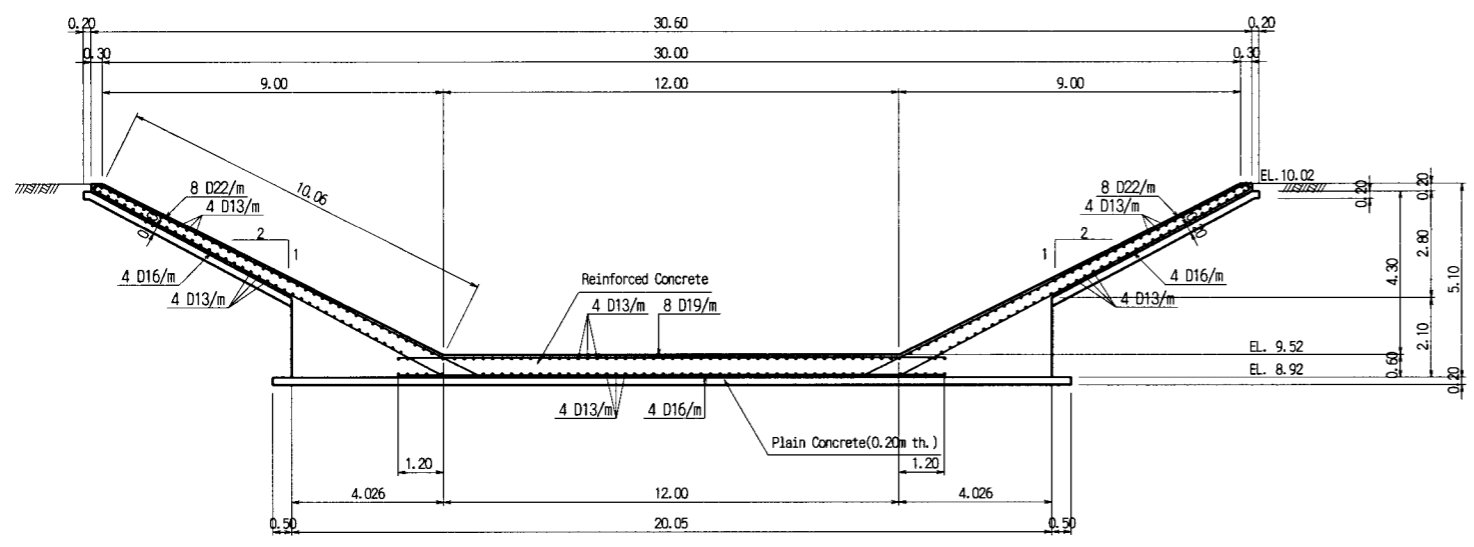


SECTION B-B
SCALE 1:200

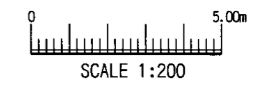
SECTION C-C
SCALE 1:200



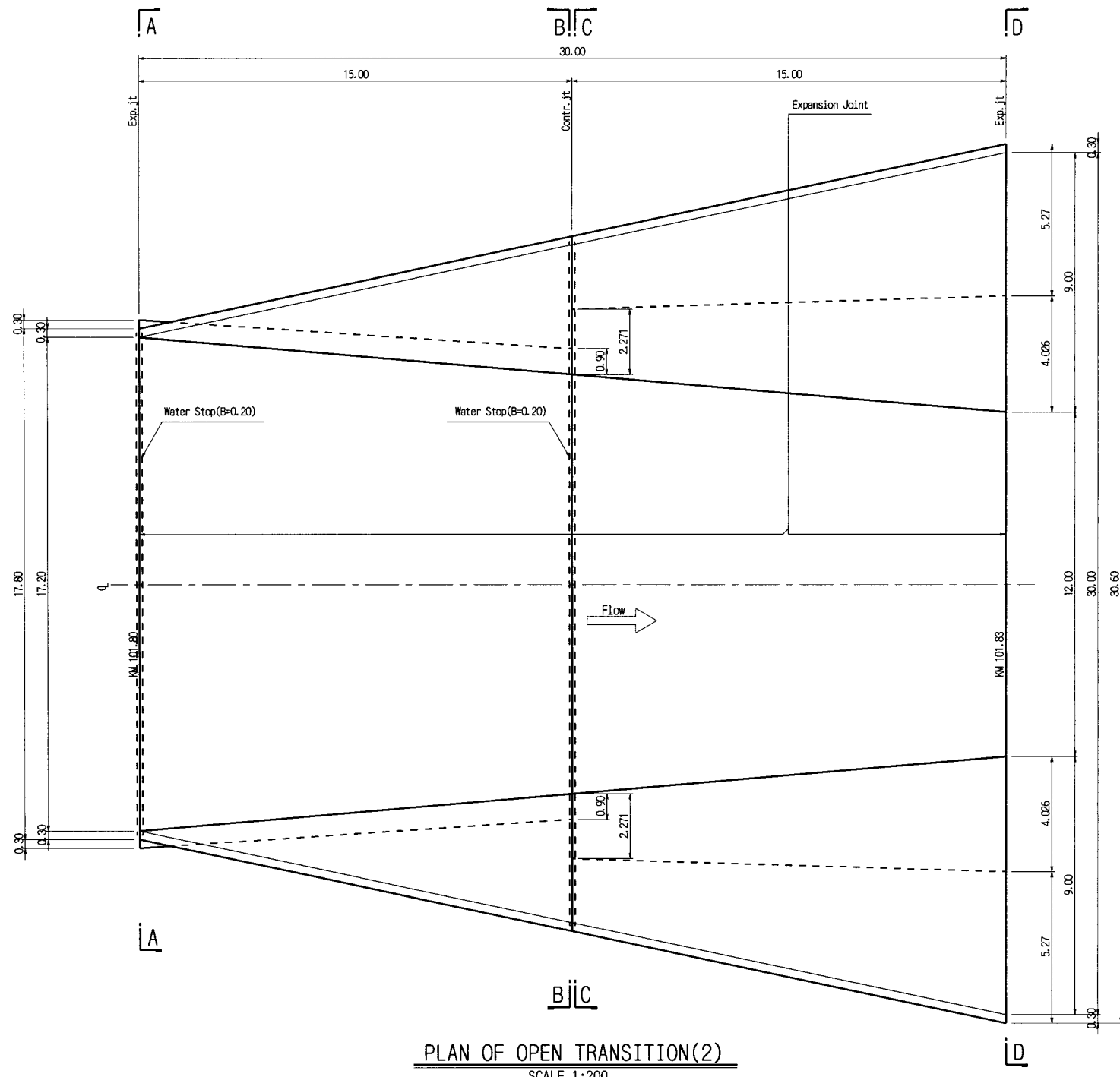
SECTION D-D
SCALE 1:200



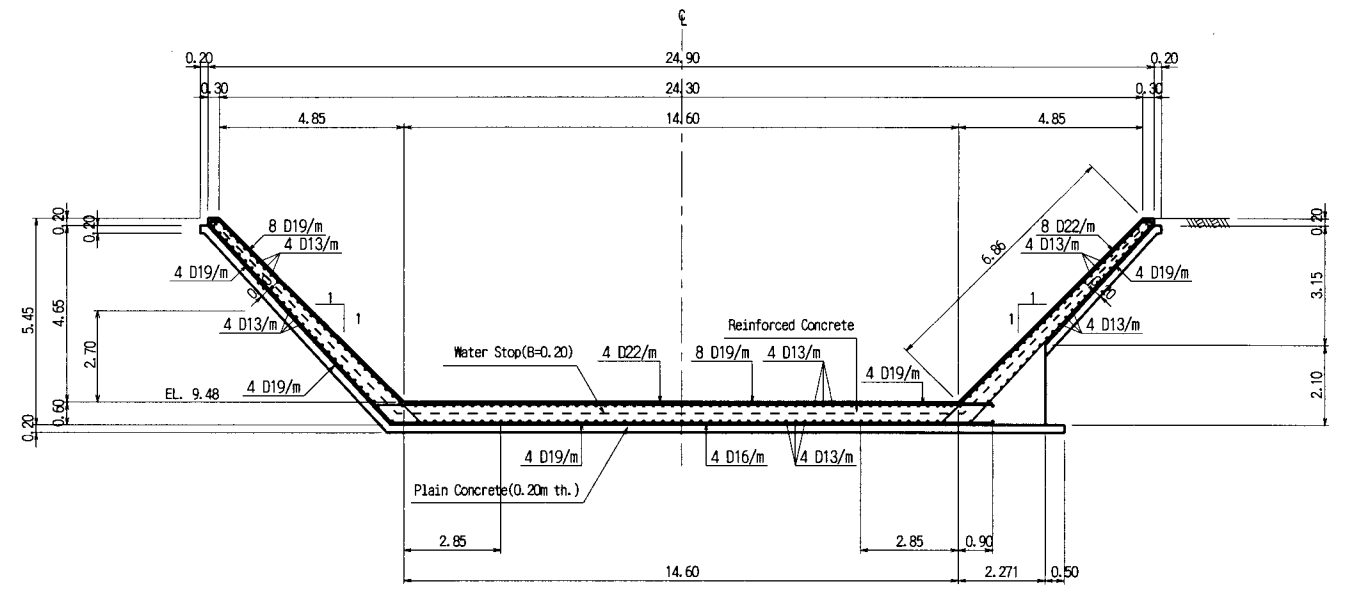
SECTION A-A
SCALE 1:200



THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION	
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 86.500 AND KM 108.466	
OPEN CANAL OPEN TRANSITION(2) PLAN AND SECTIONS	
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-162

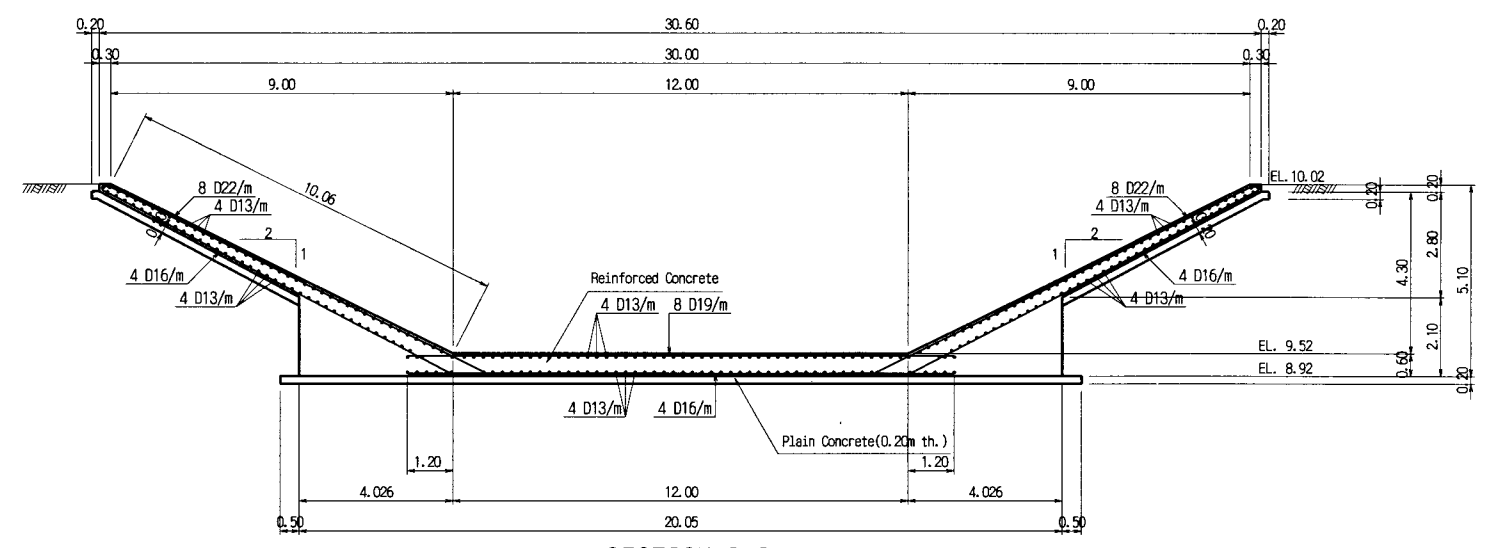


PLAN OF OPEN TRANSITION(2)
SCALE 1:200

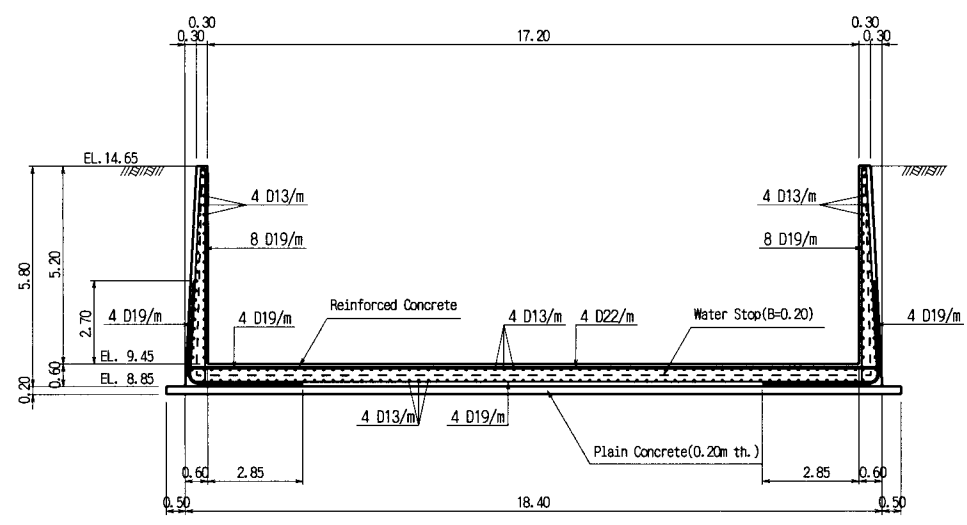


SECTION B-B
SCALE 1:200

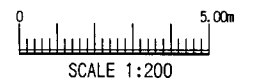
SECTION C-C
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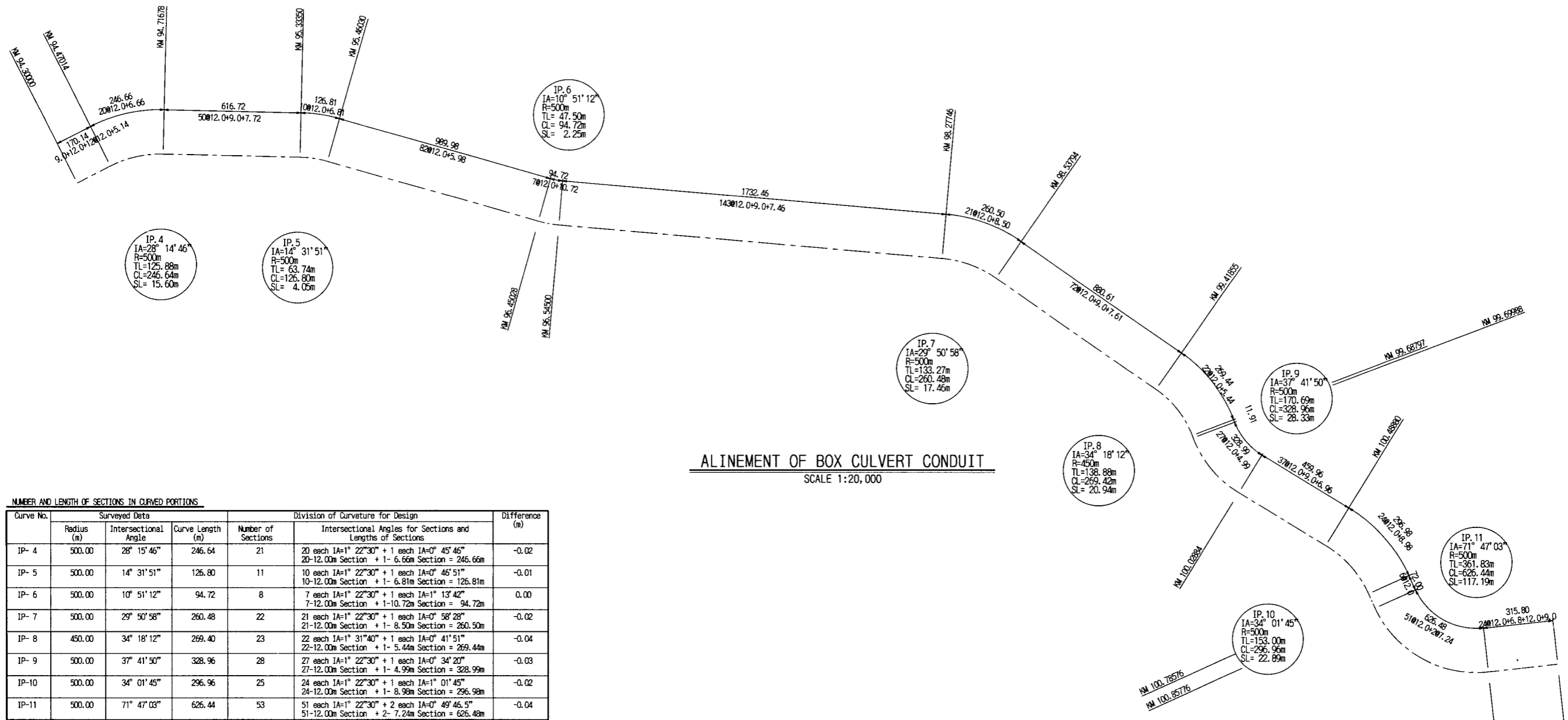
SECTION D-D
SCALE 1:200



SECTION A-A
SCALE 1:200



THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION	
THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 86.500 AND KM 108.466	
OPEN CANAL OPEN TRANSITION(3) PLAN AND SECTIONS	
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA) SANYU CONSULTANTS INC, PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
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CHECKED	
APPROVED	
DRAWING NO.	CCL-163



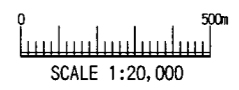
ALIGNMENT OF BOX CULVERT CONDUIT
SCALE 1:20,000

NUMBER AND LENGTH OF SECTIONS IN CURVED PORTIONS

Curve No.	Surveyed Data			Number of Sections	Division of Curvature for Design Intersectional Angles for Sections and Lengths of Sections	Difference (m)
	Radius (m)	Intersectional Angle	Curve Length (m)			
IP- 4	500.00	28° 15' 46"	246.64	21	20 each IA=1° 22' 30" + 1 each IA=0° 45' 46" 20-12.00m Section + 1- 6.66m Section = 246.66m	-0.02
IP- 5	500.00	14° 31' 51"	126.80	11	10 each IA=1° 22' 30" + 1 each IA=0° 46' 51" 10-12.00m Section + 1- 6.81m Section = 126.81m	-0.01
IP- 6	500.00	10° 51' 12"	94.72	8	7 each IA=1° 22' 30" + 1 each IA=1° 13' 42" 7-12.00m Section + 1-10.72m Section = 94.72m	0.00
IP- 7	500.00	29° 50' 58"	260.48	22	21 each IA=1° 22' 30" + 1 each IA=0° 58' 28" 21-12.00m Section + 1- 8.50m Section = 260.50m	-0.02
IP- 8	450.00	34° 18' 12"	269.40	23	22 each IA=1° 31' 40" + 1 each IA=0° 41' 51" 22-12.00m Section + 1- 5.44m Section = 269.44m	-0.04
IP- 9	500.00	37° 41' 50"	328.96	28	27 each IA=1° 22' 30" + 1 each IA=0° 34' 20" 27-12.00m Section + 1- 4.99m Section = 328.99m	-0.03
IP-10	500.00	34° 01' 45"	296.96	25	24 each IA=1° 22' 30" + 1 each IA=1° 01' 45" 24-12.00m Section + 1- 8.96m Section = 296.96m	-0.02
IP-11	500.00	71° 47' 03"	626.44	53	51 each IA=1° 22' 30" + 2 each IA=0° 49' 46.5" 51-12.00m Section + 2- 7.24m Section = 626.48m	-0.04

LOCATION OF EXPANSION JOINT

From	KM 94.30000	KM 94.47014	KM 94.71678	KM 95.33350	KM 95.46030	KM 96.45028	KM 96.54500	KM 96.27746	KM 98.53794	KM 99.41855	KM 99.68797	KM 99.69988	KM 100.02884	KM 100.48880	KM 100.78576	KM 100.85776	KM 101.48420	
To	KM 94.47014	KM 94.71678	KM 95.33350	KM 95.46030	KM 96.45028	KM 96.54500	KM 98.27746	KM 98.53794	KM 99.41855	KM 99.68797	KM 99.69988	KM 100.02884	KM 100.48880	KM 100.78576	KM 100.85776	KM 101.48420	KM 101.80000	
Alignment	Straight		IP-4:Curved		Straight		IP-5:Curved		Straight		IP-7:Curved		Straight		IP-10:Curved		Straight	
1	94.30000	94.48214	94.71678	95.36950	95.48430	96.49828	96.55700	98.28946	98.58594	99.41855	99.68797	99.69988	100.06484	100.53680	100.83376	101.48420	101.48420	
2	94.30900	94.54214	94.71678	95.42950	95.54430	96.56170	98.34946	98.64594	99.47855	99.69988	99.71188	100.12484	100.59680	100.84576	101.95376	101.54420		
3	94.36900	94.60214	94.83678		94.88030	96.67700	98.40946	98.70594	99.53855		99.77188	100.18484	100.65680		101.01376	101.60420		
4	94.42900	94.66214	94.89678		94.93230	96.75700	98.46946	98.76594	99.59855		99.83188	100.23284	100.71680		101.07376	101.66420		
5		94.71678	94.92078		95.60430	96.74900	98.52946	98.82594	99.65855		99.89188	100.24484	100.77680		101.13376	101.72420		
6			94.95678		95.66430	96.76100		98.88594	99.68797		99.95188	100.30484			101.19376	101.77900		
7			95.01678		95.72430	96.79700		98.93394			100.01188	100.36484			101.25376	101.79100		
8			95.07678		95.78430	96.85700		98.99394				100.42484			101.31376	101.80000		
9			95.13678		95.84430	96.91700		99.00594				100.48184			101.37376			
10			95.19678		95.90430	96.97700		99.06594							101.43376			
11			95.25678		95.96430	97.03700		99.12594							101.48420			
12			95.31678		96.02430	97.09700		99.18594										
13					96.08430	97.15700		99.24594										
14					96.14430	97.21700		99.30594										
15					96.20430	97.27700		99.36594										
16					96.26430	97.33700		99.41855										
17					96.32430	97.39700												
18					96.38430	97.45700												
19					96.44430	97.51700												
20						97.57700												
21						97.63700												
22						97.69700												
23						97.75700												
24						97.81700												
25						97.87700												
26						97.93700												
27						97.99700												
28						98.05700												
29						98.11700												
30						98.17700												
31						98.23700												
32						98.29700												
33						98.35700												



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

**THE NORTH SINAI INTEGRATED RURAL
DEVELOPMENT PROJECT (PHASE III)**

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAAH CANAL
BETWEEN KM 86.500 AND KM 108.466

**BOX CULVERT
ARRANGEMENT OF CONDUIT JOINT**

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

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	CCL-164