

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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

THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE III)
(DETAILED DESIGN STUDY)

VOLUME III : TENDER DOCUMENT OF PACKAGE 2
(KM 108.466 TO KM 118.560)

(VOL. III-6 : TENDER DRAWINGS, A3 SIZE)

OCTOBER, 2000

SANYU CONSULTANTS INC.
PACIFIC CONSULTANTS INTERNATIONAL

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LIST OF DRAWINGS FOR SECOND PACKAGE (1/2)

CATEGORY	DWG No.	TITLE OF DRAWINGS	CATEGORY	DWG No.	TITLE OF DRAWINGS
1. GENERAL	GNL-201	SYMBOLS AND GENERAL NOTES	4. No.7 PUMPING STATION (BUILDING WORKS)	PSB-201	GENERAL NOTES
	GNL-202	THE SITE PLAN		PSB-202	DOORS, WINDOWS AND FINISHING SCHEDULE
	GNL-203	PLAN OF No.7 PUMPING STATION		PSB-203	GROUND FLOOR PLAN (EL.+13.7m)
2. SAND SETTLING BASIN	SSB-201	GANERAL PLAN AND PROFILE		PSB-204	FIRST FLOOR PLAN (EL+19.5m)
	SSB-202	DETAILED JUNCTION SECTION		PSB-205 – 206	ROOF PLAN (EL.+23.30m), (EL.+34.925m)
	SSB-203	DETAILED GATE SECTION		PSB-207 – 208	ELEVATIONS (1/2) - (2/2)
	SSB-204	GENERAL ARRANGEMENT OF ROLLER GATE		PSB-209	SECTIONS
	SSB-205	DETAILED O/M BRIDGE		PSB-210 – 211	STANDARD DETAILS (1/2) – (2/2)
	SSB-206 – 207	GATE SECTION-REINFORCEMENTS (1/2) – (2/2)		PSB-212 – 213	DETAILS (1/2) – (2/2)
	SSB-208	DETAILED PLAN AND PROFILE		PSB-214 – 215	GENERAL NOTES (1/2) – (2/2)
	SSB-209	DEAILED SECTIONS		PSB-216	COLUMN ARRANGEMENT PLAN
	SSB-210 – 212	REINFORCEMENTS (1/3) – (3/3)		PSB-217 – 219	FRAMING PLAN (1/3) – (3/3)
	SSB-213 – 215	CROSS SECTIONS (1/3) – (3/3)		PSB-220	ROOF FRAMING PLAN
3. No.7 PUMPING STATION (CIVIL WORKS)	PSC-201	PLAN		PSB-221 – 223	FRAMING ELEVATION (1/3) – (3/3)
	PSC-202	PROFILE & CROSS SECTION		PSB-224 – 225	RC MEMBER SCHEDULE (1/2) – (2/2)
	PSC-203 – 209	SUCTION SUMP STRUCTURE (1/7) – (7/7)		PSB-226	STRUCTURAL STEEL MEMBER SCHEDULE
	PSC-210	STOREGE ROOM DETAILS		PSB-227 – 229	STRUCTURAL STEEL DETAILS (1/3) – (3/3)
	PSC-211 - 214	STAIRCASE DETAILS (1/4) – (4/4)		PSB-230 – 232	RC STRUCTURAL DETAILS (1/3) – (3/3)
	PSC-215	BRICK WALL DETAILS		PSB-233 – 237	LIGHTING AND SOCKET OUTLET INSTALLATION SCHEDULE (1/5) – (5/5)
	PSC-216	VENTILATION DETAILS		PSB-238	GENERAL NOTES FOR VAC AND PLUMBING SYSTEM
	PSC-217 - 218	INTAKE-REINFORCEMENTS (1/2) – (2/2)		PSB-239	DIAGRAM FOR WATER SUPPLY SYSTEM
	PSC-219	EXCAVATION PLAN OF SUCTION SUMP		PSB-240	PLUMBING SYSTEM, EXTERIOR PIPING PLAN
	PSC-220 - 221	FLAMING PLAN OF PUMP ROOM (1/2) – (2/2)		PSB-241	VENTILATION AND AIR CONDITIONING SYSTEM, GROUND FLOOR PLAN
	PSC-222 - 223	FLAMING ELEVATION OF PUMP ROOM (1/2) – (2/2)		PSB-242	VENTILATION AND AIR CONDITIONING SYSTEM, GROUND FIRST PLAN
	PSC-224 – 231	PUMP ROOM-REINFORCEMENTS (1/8) – (8/8)			
	PSC-232	THRUST BLOCK			
	PSC-233 – 234	VALVE CHAMBER STRUCTURE (1/2) – (2/2)			
	PSC-235 – 236	VALVE CHAMBER-REINFORCEMENTS (1/2) – (2/2)			
	PSC-237	FLOW METER CHAMBER STRUCTURE			
	PSC-238	FLOW METER CHAMBE-REINFORCEMENTS			
	PSC-239 - 241	PIT COVER DETAILS (1/3) – (3/3)			
	PSC-242	MISCELLANIOUS STEEL DETAILS			
	PSC-243– 245	CROSS SECTIONS (1/3) – (3/3)			

LIST OF DRAWINGS FOR SECOND PACKAGE (2/2)

CATEGORY	DWG No.	TITTLE OF DRAWINGS	CATEGORY	DWG No.	TITTLE OF DRAWINGS
5. No.7 PUMPING STATION (MECHANICAL EQUIPMENT)	PSM-201	NEAT LINE OF SUCTION PIPE	7.DELIVERY PRESSURED PIPELINE	DPP-201 - 204	PLAN AND PRPFILE OF PIPELINE (1/4) – (4/4)
	PSM-202 – 203	PIPING DIAGRAM, (WATER) – (OIL)		DPP-205 - 208	PLAN AND PROFILE OF O/M ROAD (1/4) – (4/4)
	PSM-204	GENERAL ARRANGEMENT OF DISCHARGE HEADER		DPP-209 - 228	CROSS SECTIONS OF PIPELINE (1/20) – (20/20)
	PSM-205	GENERAL ARRANGEMENT OF OVERHEAD TRAVELLING CRANE		DPP-229	TYPICAL CROSS SECTION OF PIPELINE AND O/M ROAD
	PSM-206	GENERAL ARRANGEMENT OF PUMP DISCHARGE VALVE, ISOLATING VALVE AND VALVE OPERATING SYSTEMS		DPP-230	LAYOUT PLAN OF SURGE TANK No.1
	PSM-207	GENERAL ARRANGEMENT OF PIPELINE VALVE		DPP-231	PLAN AND SECTION OF SURGE TANK No.1
	PSM-208	GENERAL ARRANGEMENT OF BULKHEAD GATE		DPP-232	SECTIONS AND DETAILS OF SURGE TANK No.1
	PSM-209	GENERAL ARRANGEMENT OF STOP LOGS		DPP-233 – 236	SURGE TANK No.1-REINFORCEMENTS (1/4) – (4/4)
	PSM-210	GENERAL ARRANGEMENT OF FIXED TRASH SCREEN AND TRASH CAR		DPP-237	CROSS SECTION OF SURGE TANK No.1
	PSM-211	GENERAL ARRANGEMENT OF GANTRY CRANE		DPP-238	LAYOUT PLAN OF SURGE TANK No.2
	PSM-212	GENERAL ARRANGEMENT OF FLOW METER		DPP-239	PLAN AND SECTIONS OF SURGE TANK No.2
	6. No.7 PUMPING STATION (ELECTRICAL EQUIPMENT)	PSE-201		GENERAL NOTES	DPP-240 – 241
PSE-202		PUMP UNIT POWER SUPPLY SINGLE LINE DIAGRAM		DPP-242	CROSS SECTION OF SURGE TANK No.2
PSE-203		380V LOAD CENTER AND MAIN PUMP AUX. MORTOR CONTROL CENTER (MCC) SINGLE LINE DIAGRAM		DPP-243	MISCELLANEOUS WORKS OF No.1 AND No.2 SURGE TANKS
PSE-204		MAIN PUMP COMMON AUX. MOTOR CONTROL CENTER SINGLE LINE DIAGRAM		DPP-244	PLAN AND SECTION OF BLOW OFF No.1
PSE-205		EQUIPMENT LAYOUT AND POWER CABLING PLAN		DPP-245	PLAN AND SECTION OF BLOW OFF No.2
PSE-206		MAIN PUMP UNIT PROTECTION SYSTEM AND OPERATION BLOCK DIAGRAM		DPP-246	PLAN AND SECTION OF BLOW OFF No.3
PSE-207		MAIN MOTOR, MAIN MOTOR CONTROL, DC SOURCE, GENERATOR CONTROL PANEL OUTLINE		DPP-247 - 248	PLAN AND SECTIONS OF BLOW OFFS No.1, No.2 and No.3 (1/2) – (2/2)
PSE-208		CENTRAL CONTROL ROOM EQUIPMENT LAYOUT PLAN		DPP-249 – 251	BLOW OFFS No.1, No.2 and No.3-REINFORCEMENTS (1/3) – (3/3)
PSE-209		MAIN PUMP SYSTEM CRT DISPLAY AND DATA ACQUISITION PLAN		DPP-252	CROSS SECTIONS OF BLOW OFFS No.1, No.2 and No.3
PSE-210		DC POWER SOURCE AND UPS SINGLE LINE DIAGRAM		DPP-253	PLAN AND SECTIONS OF AIR VALVES
PSE-211		EMERGENCY DIESEL GENERATOR		DPP-254	AIR VALVES-REINFORCEMENTS
PSE-212		EMERGENCY GENERATOR LAYPUT PLAN		DPP-255	DETAILS OF PIPE ALIGNMENT
PSE-213		POWER SUPPLY SYSTEM CENTRAL DIAGRAM		DPP-256	DETAILS OF PIPE SPECIALS
PSE-214		AUXILIARY SUBSTATION SINGLE LINE DIAGRAM		DPP-257 – 258	DETAILS OF CATHODIC PROTECTION SYSTEM (1/2) – (2/2)
PSE-215		AUXILIARY SUBSTATION PANEL COMPOSITION		DPP-259	DETAIL OF CONCRETE COLUMN
PSE-216		AUXILIARY SUBSTATION PANEL LAYOUT AND CABLING PLAN		DST-201	GENERAL PLAN AND PROFILE
PSE-217		AUXILIARY SUBSTATION CABLE TRUNKING SYSTEM PLAN		DST-202	DETAILED PLAN, PROFILE AND SECTIONS
PSE-218		AUXILIARY SUBSTATION EARTH LINK PLAN		DST-203	DISCHARGE TANK-REINFORCEMENT
PSE-219		AUXILIARY SUBSTATION 11KV MAIN FEEDER CABLE PLAN		DST-204 - 205	CROSS SECTIONS (1/2) – (2/2)
		8.DISCHARGE TANK			
		9.ACCESS ROAD		OMR-201 – 202	No.3 ACCESS ROAD – PLAN AND PROFILE (1/2) – (2/2)
				OMR-203	No.3 ACCESS ROAD – TYPICAL CROSS SECTION
				OMR 204 – 211	No.3 ACCESS ROAD – CROSS SECTIONS (1/8) – (8/8)

SYMBOLS

B, b	WITDH
BC, B.C.	BEGINNING OF CURVATURE
BP	BEGINNING POINT
¢	CENTERLINE
CM, cm	CENTIMETER
Cj, CJ	CONSTRUCTION JOINT
Contr. jt, CONTR. JT	CONTRACTION JOINT
CL	CURVE LENGTH
D22	DEFORMED BAR DIA. 22 mm
DWG., Dwg.	DRAWING
DIA., dia.	DIAMETER
EC, E.C.	END OF CURVATURE
EL.	ELEVATION
EP	END POINT
Exp. jt, EXP. JT	EXPANSION JOINT
H.W.L.	HIGH WATER LEVEL
IA	INTERSECTIONAL ANGLE
KM, km	KILOMETER
L	LENGTH
M, m	METER
Max., MAX.	MAXIMUM
Min., MIN.	MINIMUM
N, n	NUMBER
IP, I.P.	POINT OF INTERSECTION
PL	STEEL PLATE
P.V.C.	POLYVINYL CHLORIDE PIPE
R	RADIUS OF CURVATURE
R.C., RC	REINFORCED CONCRETE
S.L., SL	SECOND LENGTH
SP	MIDDLE POINT OF CURVATURE
T, t	THICKNESS
T.L., TL	TANGENT LENGTH
W.L.	WATER LEVEL
W.S.	WATER SURFACE
φ	DIAMETER
15 D22	15 (NUMBER OF REINFORCEMENT)- DEFORMED BAR DIA. 22 mm
5 D22/m	5 (NUMBER OF REINFORCEMENT PER METER) – DEFORMED BAR DIA. 22 mm

GENERAL NOTES

- ALL DIMENSIONS AND ELEVATIONS ARE IN METERS, UNLESS OTHERWISE SHOWN.
- DURING THE CONTRACT PERIOD, IT IS THE CONTRACTOR'S DUTY TO CHECK THE CORRECTNESS OF ALL THE RELEVANT LOCATIONS, DIMENSIONS, ELEVATIONS AND OTHER DATA AS PROVIDED BY THE DRAWINGS AND SPECIFICATIONS BEFORE THE IMPLEMENTATION OF EACH WORK.
- THE DESIGN LINES SHOWN IN THE DRAWINGS ARE LINES WITHIN WHICH NO EXCAVATED MATERIALS OF ANY KIND AND NO TIMBERING SHALL BE PERMITTED TO REMAIN.
- COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAY SHALL BE AS FOLLOWS :

1) LINING CONCRETE	225 kg/cm ²
2) REINFORCED CONCRETE	275 kg/cm ²
3) PLAIN CONCRETE	180 kg/cm ²
- CONCRETE THICKNESS SHALL VARY UNIFORMLY BETWEEN DIMENSIONS SHOWN.
- CHAMFER ALL EXPOSED EDGES 2 cm, UNLESS OTHERWISE INDICATED.
- UNLESS OTHERWISE INDICATED, REINFORCEMENT SHALL BE DEFORMED BAR OF STEEL 52.
- THE MINIMUM LENGTH OF LAP FOR SPLICING PARALLEL BARS SHALL BE AS GIVEN IN TABLE A.

TABLE A LENGTH OF LAPPED SPLICE "L"

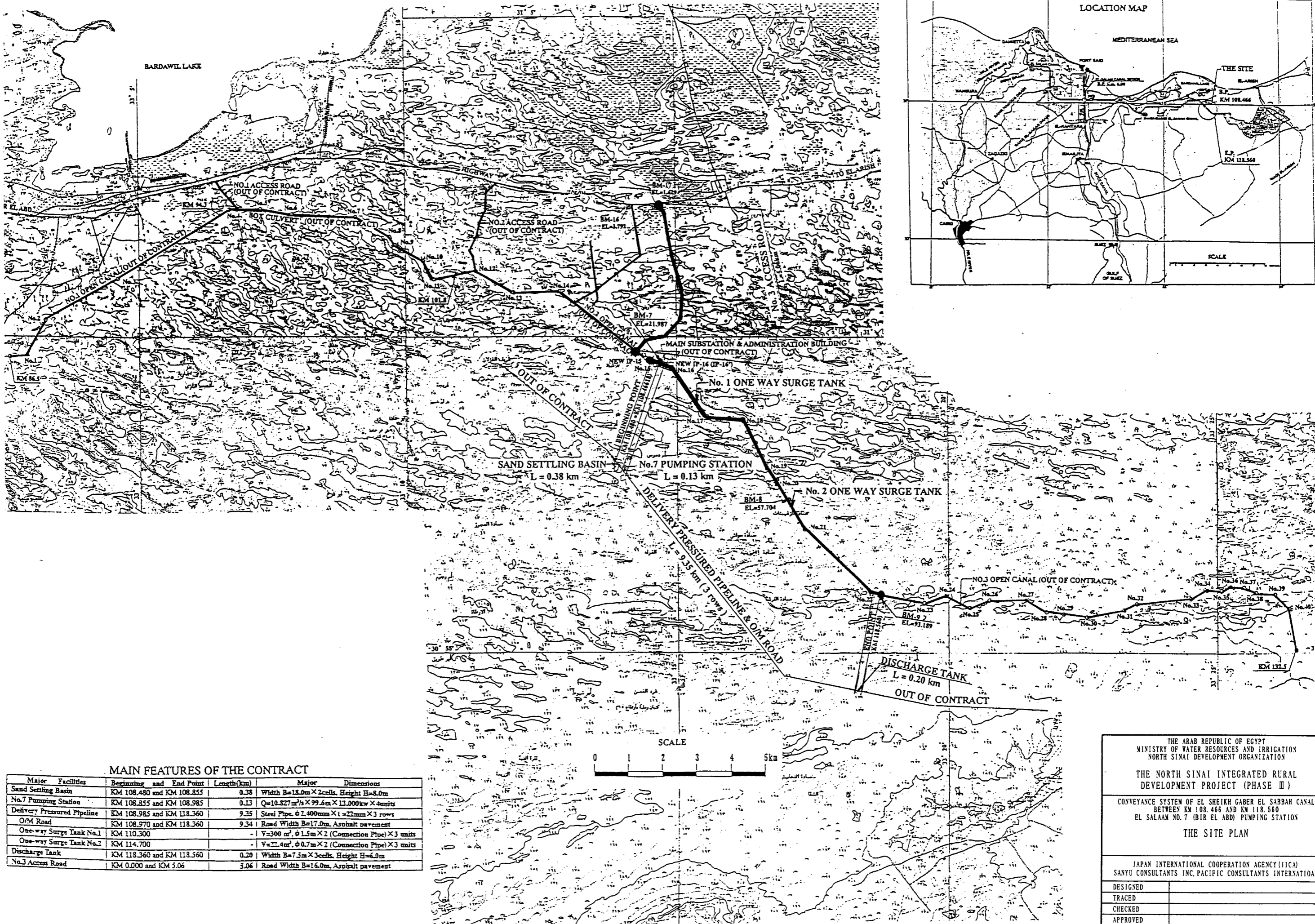
BAR DIA.	L (cm)	BAR DIA.	L (cm)
D10	0.59	D22	1.29
D13	0.76	D25	1.46
D16	0.94	D28	1.64
D19	1.11	D32	1.87

WHEN REINFORCEMENTS OF DIFFERENT SIZE ARE TO BE SPLICED, THE LENGTH OF LAP SHALL BE GOVERNED BY THE SMALLER DIAMETER BAR.

EMBEDMENT LENGTH OF REINFORCEMENT SHALL BE MORE THAN 45 BAR DIAMETERS.

- UNLESS OTHERWISE SHOWN, THE COVER OF CONCRETE TO THE MAIN REINFORCEMENT (DISTANCE BETWEEN FACE OF CONCRETE AND CENTERLINE OF THE NEAREST MAIN REINFORCEMENT) SHALL BE 6 cm FOR SLABS AND 7 cm FOR BEAMS.
- USE 10 BAR DIAMETER RADIUS FOR 90° BEND OF MAIN REINFORCEMENT.
- DIMENSIONS AND LOCATIONS OF BLOCKOUT SHOWN ON THE DRAWINGS ARE TENTATIVE AND MAY BE MODIFIED. BLOCKOUT CONCRETE, FOR PAYMENT, WILL BE MEASURED AS A PART OF THE ADJACENT CONCRETE.
- TREE PLANTATION SHALL BE CARRIED OUT ON BOTH SIDES OF O/M ROADS AND THE NEAREST BERMS TO THE O/M ROADS IN CUT AND FILL SECTIONS ALONG No.1 AND No.2 OPEN CANAL SECTIONS. FOR DELIVERY PRESSURED PIPELINE SECTION, TREE PLANTATION SHALL BE CARRIED OUT ONLY ON BOTH SIDES OF O/M ROAD. THE CONTRACTOR SHALL DESIGN THE DRIP IRRIGATION SYSTEMS NECESSARY FOR IRRIGATION OF PLANTED TREES AND INSTALL THE DRIP IRRIGATION SYSTEMS APPROVED BY THE EMPLOYER.
- UNLESS OTHERWISE INDICATED, STONE PITCHING SHALL BE STONE PITCHING WITH MORTAR CAULKING.

THE ARAB REPUBLIC OF EGYPT MINISTRY OF WATER RESOURCES AND IRRIGATION NORTH SINAI DEVELOPMENT ORGANIZATION THE NORTH SINAI INTEGRATED RURAL DEVELOPMENT PROJECT (PHASE II)	
CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBABH CANAL BETWEEN KM 108.466 AND KM 118.560 EL SALAAM NO. 7 (BIR EL ABD) PUMPING STATION SYMBOLS AND GENERAL NOTES	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) SANYU CONSULTANTS INC. PACIFIC CONSULTANTS INTERNATIONAL	
DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	GNL-201



MAIN FEATURES OF THE CONTRACT

Major Facilities	Beginning and End Point	Length(km)	Major Dimensions
Sand Settling Basin	KM 108.480 and KM 108.855	0.38	Width B=18.0m X 2cells, Height H=8.0m
No.7 Pumping Station	KM 108.855 and KM 108.985	0.13	Q=10.827m ³ /s X 99.6m X 13,000kw X 4units
Delivery Pressured Pipeline	KM 108.985 and KM 118.360	9.35	Steel Pipe, φ 2,400mm X t = 22mm X 3 rows
O/M Road	KM 108.970 and KM 118.360	9.34	Road Width B=17.0m, Asphalt pavement
One-way Surge Tank No.1	KM 110.300	-	V=300 m ³ , φ 1.5m X 2 (Connection Pipe) X 3 units
One-way Surge Tank No.2	KM 114.700	-	V=27.4m ³ , φ 0.7m X 2 (Connection Pipe) X 3 units
Discharge Tank	KM 118.360 and KM 118.560	0.20	Width B=7.5m X 3cells, Height H=6.0m
No.3 Access Road	KM 0.000 and KM 3.06	3.06	Road Width B=16.0m, Asphalt pavement

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 NORTH SINAI DEVELOPMENT ORGANIZATION

THE NORTH SINAI INTEGRATED RURAL
 DEVELOPMENT PROJECT (PHASE III)

CONVEYANCE SYSTEM OF EL SHEIKH GABER EL SABBAB CANAL
 BETWEEN KM 108.466 AND KM 118.560
 EL SALAAM NO. 7 (BIR EL ABD) PUMPING STATION

THE SITE PLAN

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

DESIGNED	
TRACED	
CHECKED	
APPROVED	
DRAWING NO.	GNL-202