No. 51

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF SETTLEMENT AND REGIONAL DEVELOPMENT
THE REPUBLIG OF INDONESIA

THE DETAILED DESIGN

OF

FLOOD CONTROL, URBAN DRAINAGE AND
WATER RESOURCES DEVELOPMENT IN
SEMARANG IN THE REPUBLIC OF INDONESIA

# **FINAL REPORT**

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**AUGUST 2000** 

CTI ENGINEERING INTERNATIONAL CO., LTD.
IN ASSOCIATION WITH
PACIFIC CONSULTANTS INTERNATIONAL
AND
PASCO INTERNATIONAL INC.

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#### JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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# THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

# **FINAL REPORT**

COMPONENT B:
JATIBARANG MULTIPURPOSE DAM CONSTRUCTION

**VOLUME IV WORK QUANTITY CALCULATION** 

#### **AUGUST 2000**

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#### CONSTITUTION OF THE REPORT

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- COMPONENT A: WEST FLOODWAY/GARANG RIVER IMPROVEMENT

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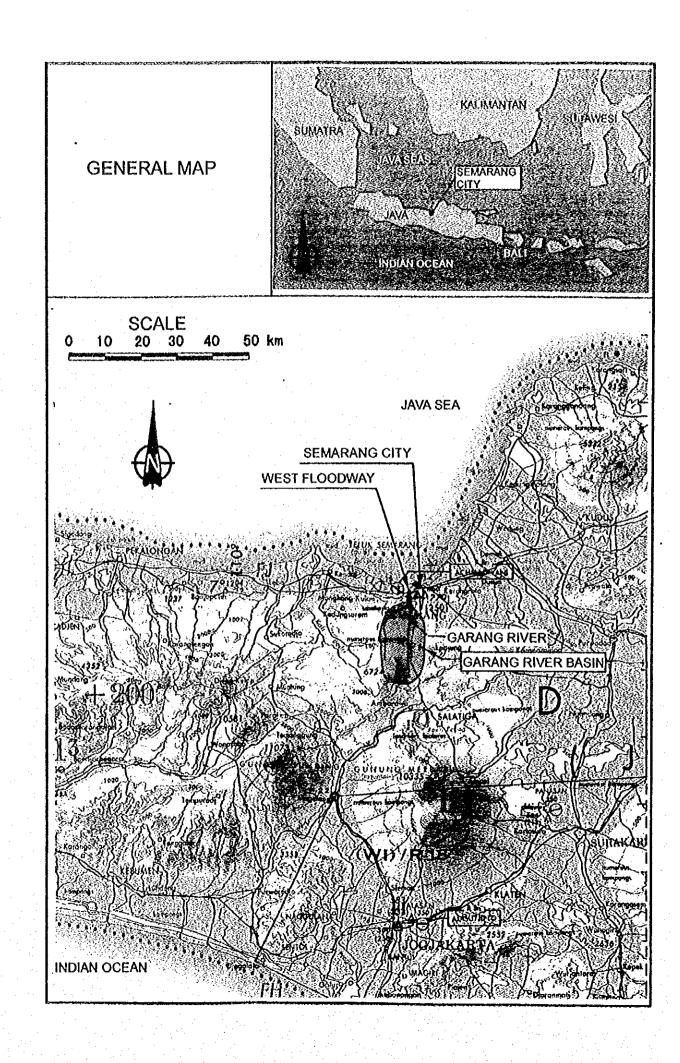
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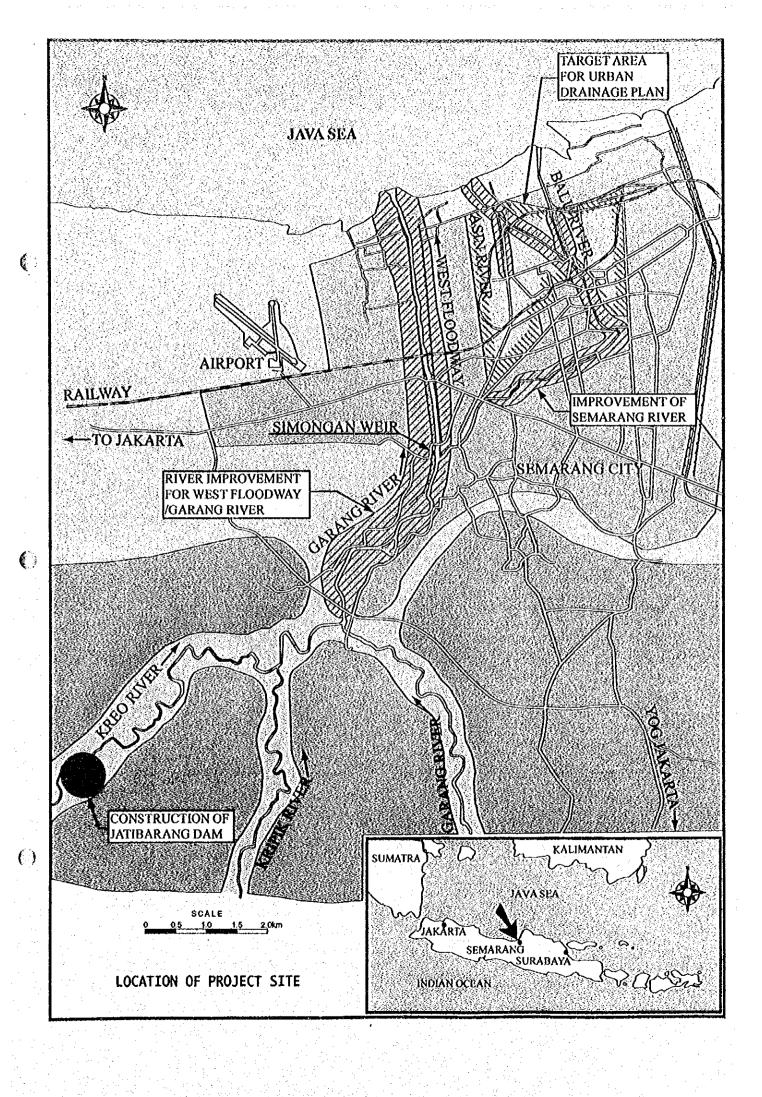
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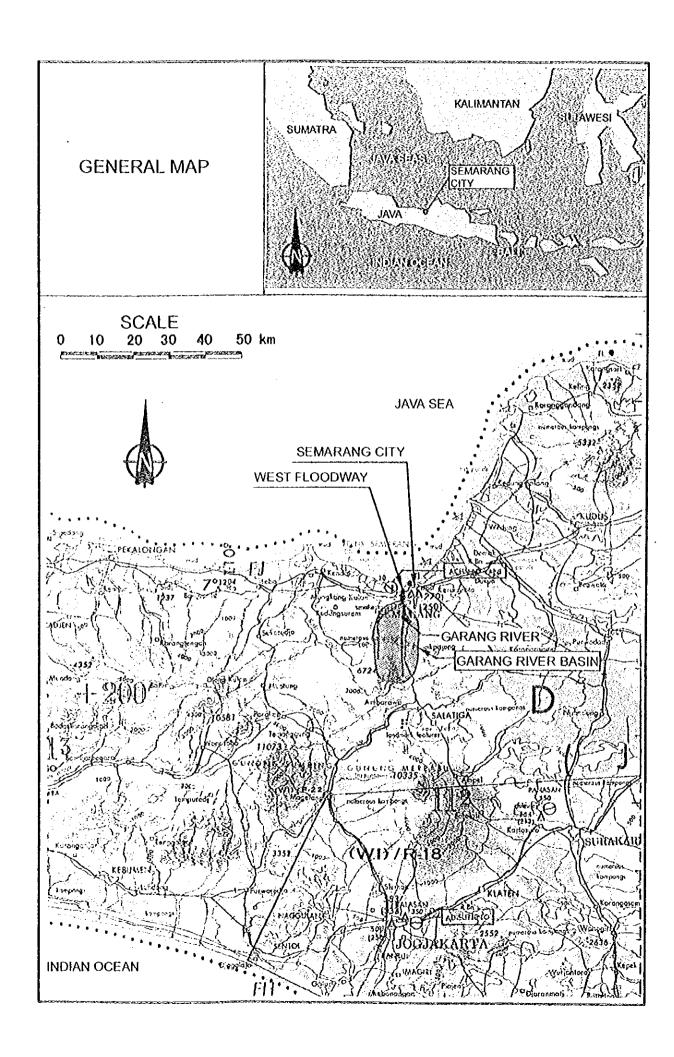
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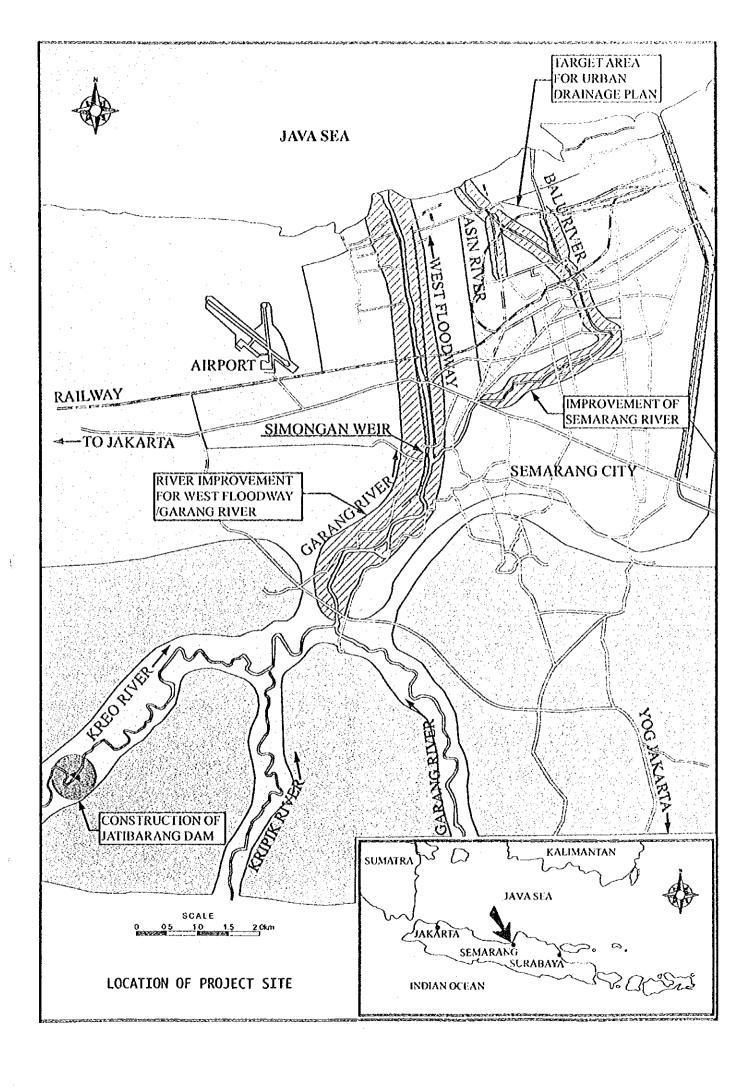
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# Chapter 1 SUMMARY

# PACKAGE 1: JATIBARANG MULTIPURPOSE DAM INCLUDING APPURTENANT STRUCTURES

item No.	Description	Unit	Quantity
Α,	GENERAL		
8.	WATER CONTROL		<u> </u>
c.	SURFACE EXCAVATION AND EARTH WORKS	·	
C.1	Clearing and Grubbing:		
C.1.1	for Areas to be Excavated	Wş.	320,000
C.1.2	for Reservoir	ha	70
C.2	Stripping of Topsoil	W <sub>3</sub>	320,000
C.3	Surface Excavation:	3 /	12.64
C.3.1	for Diversion Facilities (Cofferdam, Upstream and Downstream Portals)	₩,	8,000
C.3.2	for Embankment Dam	w <sub>2</sub>	174,000
C.3.3	for Gallery	W <sub>3</sub>	7,000
C.3.4	for Spiliway	W <sub>3</sub>	453,500
C.3.5	for Inclined Intake Structure	₩3	11,000
C.3.6	for Hydropower Station (below EL.80.0m)	m³	400
C.3.7	for Dam management Complex	m³	36,000
C.4	Exploratory Trench Excavation in Common	W)	6,000
C.5	Exploratory Trench Excavation in Rock	W <sub>3</sub>	500
C.6	Construction of Common Fill or Backfill	W)	22,000
C.7	Construction of Backfill Gravel or Gravel Bedding (Crushed Stone)	m³	3,000
C.8	Clearing Surfaces in Exposed Foundation for Inspection	- W <sub>3</sub>	6,000
C.9	Construction of Random Fill for Temporary Cofferdam	m³	24,000
<b>).</b>	TUNNELLING	10.5	11.4
D.1	Underground Excavation:		aste a tra
D.1.1	for Diversion Tunnet	m³	- 18,300
D.1.2	for Outlet Tunnel	W <sub>2</sub>	2,300
0.2	Furnishing and Instalting Steel Rib Supports and Accessories:		
D.2.1	for Diversion Tunnel	tonne	200
D.2.2	for Outlet Tunnel	lonne	37
D.3	Production and Placing Shotorete Lining:	11/2/4	
D.3.1	for Diversion Tunnel	t	1,800
D.3.2	for Outlet Tunnel	.m3	360
D,4	Furnishing and Installing Steel Mesh Reinforcement:		
0.4.1	for Diversion Tunnel	kg	11,400
D.4.2	for Outlet Tunnet	kg	5,400
	Furnishing and Installing Rock Boits:	.9	4 4 4 4 1 2
D.5,1	for Diversion Tunnel (25 mm dia.)	m	17,400
D.5.2	for Outlet Tunnel (22 mm dia.)	m	
	(a) Anna Laura for that (AC)		1,200

PACKAGE 1: JATIBARANG MULTIPURPOSE DAM INCLUDING APPURTENANT STRUCTURES

ltem No.	Description	Unit	Quantity
 E,	DRILLING AND GROUTING		
E.1	Core Drilling (66 mm dia):		
E.1.1	from within Gallery	m	1,200
E.1.2	from Surface		4,900
E.2	Rotary Driting Hotes for Grouting (46 mm dia):	***	4,500
E.2.1	from within Gallery	m	5,200
E.2.2	from Surface	m	14,400
E.2.3	from Tunnels	"" m	
E.3	Drill set-up for driking grout hole	No.	1,100
E.4	Wash and Water Pressure Testing	No.	4,100
E.5	Cement used in Pressure Growting		4,100
E.6		tonne	410
E.7	Fine aggregate used in Pressure Grouting	tonne	2
	Hook-up to Holes and Connections for Grouting	No.	4,100
E.8	Casing pipe for pressure grouting	tonne	10
	EMBANKMENT CONSTRUCTION	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
<u>.                                    </u>	<del></del>	187 (C. )	
F.1	Dam Embankment Impervious Zone Including Contact Sturry and Contact Material		119,000
F2	Dam Embankment SemI-penvious Zone :		
F.2.1	in Upstream SemI-pervious Zone	- m <sub>2</sub>	33,000
F.2.2	In Downstream Fine Semi-pervious Zone	₩3	24,000
F.2.3	In Downstream Coarse Semi-pervious Zone	m3	25,000
F.3	Dam Embarkment Penrious Zone:	15 8817	FI
F.3.1	In Inner Pervious Zone	m3	96,000
F.3.2	in Outer Pervious Zone including Surface Treatment	m³	495,000
F.3.3	In Riprap Zone	m³ .	10,000
F.4	Special Compaction for Dam Embankment:		1 4 4 4 4 1 2 1 4 1 4 1 4 1 4 1 4 1 4 1
F.4.1	in Impervious Zone Embankment	.m³	1,600
F.4.2	in Upstream and Downstream Semi-penvious Zone	W,	3,000
<del></del>			
	PROTECTION AND SUPPORT OF EXCAVATION	15 <sup>3</sup> 7 4	
G.1	Construction of Wet Stone Masonry	m³	500
G.2	Construction of Stone Pitched Stope Protection	—————————————————————————————————————	300
G.3	Construction of Cobble Stone Foundation	m <sup>s</sup>	200
G.4	Construction of Mat Gabions	n³	100
G.5	Shotorete Concrete In Surface Excavation including Drain Pipe and Gravel; 10 cm in Thickness	.m²	13,000
G.6	Furnishing and Installing Steel Mesh Reinforcement in Surface Excavation	kg	34,000
	Furnishing and Placing Full Face Sodding and Strip Sodding Including Maintenance Watering	LL 2	35,000
	Furnishing and Installing Grouted Anchor Bar including Drilling and Grouting; 25 mm in Diameter	m	12,500
1 4/25 17		20 - 0386	
	DRAINAGE	33555	
H.1	Construction of Surface Drains:	<u> </u>	
H.1.1	Type 1-1 (Wel Stone Masonly)	m	2,700
H.1.2	Type 1-2 (Wet Stone Masonry)	m	2,700
H.1.3	Type 2-1 (Wet Stone Masonry) with Concrete Cover	- M	80
H.1.4	Type 2-2 (Wet Stone Masonry) with Grating Cover	m	50
H.1.5	Type 3-1 (Reinforced Concrete)	m	420
H.1.6	Type 3-2 (Reinforced Concrete) with Grating Cover	m	30
	Construction of Catch Basins (Wet Stone Masonry)		

PACKAGE 1: JATIBARANG MULTIPURPOSE DAM INCLUDING APPURTENANT STRUCTURES

Item No.	Description	Unit	Quantity
i.	CONCRETE PRODUCTION AND CONCRETE CONSTRUCTION	1,21	
1,1	Furnishing and Placing PVC Waterstop; 300mm wide	m	4,500
1.2	Furnishing and Installing PVC Pipe Drains 50 mm dfa.:		
1.2.1	50 mm in Diameter as Weephole	m	100
1.2.2	100 mm in Diameter for Bridge	m	15
	Furnishing and Installing Perforated PVC Pipe 250 mm dia.	m	900
	Furnishing and Installing Perforated PVC Pipe 200 mm dia.		300
	Furnishing and Placing Joint Filler or Joint Sealant:		
1.5.1	Elastic Joint Filler, 10 mm in Thickness	, m²	350
1.5.2	Polysulphide Mastic Joint Sealant	Mre	600
1.5.3	Bitumen-Rubber Mastic Joint Filler (IGAS or equivalent)	litre	6,400
	Furnishing and Installing Deformed Reinforcement Bars :		
1,6,1	in Diversion Tunnel	tonne	290
1,6.2	in Spilway	tonne	500
		tonne	260
1.6.3	In Gallery	tonne	140
1.6.4	In Hydropower Station	tonne	100
1.6.5	in Other Structures		3
	Furnishing and Placing Dowel Bars 25 mm dia including PVC sleeve	ennot	
	Furnishing and Placing Metal Seals	m	40
F	Production and Construction of Concrete Type A for Diversion Tunnel Lining	₩,	6,800
	Production and Construction of Concrete Type 8:		6 700
1.10.1	in Gallery and Entrance	U)3	5,700
1.10.2	In Inclined Intake Structure	m³ .	900
1.10.3	in Hydropower Station	m³	4,500
1.10.3	in Other Structures in the Artistation of the Artis	w,	50
	Production and Construction of Concrete Type C	m3	120
	ricoccontant consucción de concete Type D.		
1.12.1	In Spillway	™3	52,000
1.12.2	in Outlet Tunnel	₩3	1,400
1.12.3	in Concrete Plug in Diversion Tunnel	₩,	1,000
1.12.4	in Adit to the contract of the	m³	100
1.12.5	in Other Structures	m³	2,500
1.13	Production and Construction of Concrete Type E:		1. 12 <sup>3</sup> 1 × 3
1.13.1	in Structures	LU3	1,000
I.13.2	Backfill Concrete in Seams, Defects and Faults :	m <sup>3</sup>	200
114 1	Furnishing and installing Precast Prestressed Concrete Beams Spillway Bidge including Tensioning and Frection	L.S.	
	Furnishing and Installing Precast Concrete Diaphragms for Spiltway Bridge Including Tensioning and Erection	L.S.	
	Furnishing and Installing Precast Concrete Panels for Spillway Bridge including Erection	L.S.	
<u>'''''                                </u>	Foresting and instanting Freezest Controlle Parkes for Springly bridge incoming checourt	<u></u>	
<u> </u>	DOAD CONSTRUCTION		
	ROAD CONSTRUCTION	M2	152,000
	Excavation for Road Construction		
	Placing and Compacting Suitable Fill for Common Embankment	m³	6,100
	Production and Construction of Crushed Stone Sub-Base Course	m³.	7,300
	Production and Construction of Penetration Macadam Base Course	m³	2,000
	Production and Construction of Hot Asphalt Mix Surface Course; Minimum 50 mm thick		17,000
	Production and Construction of Concrete Pavement; 150 mm thick	· Lus	1,700
J.7	Furnishing and Installing Guard Rail	· m	1,000

# PACKAGE 1: JATIBARANG MULTIPURPOSE DAM INCLUDING APPURTENANT STRUCTURES

ltem No.	Description	Unit	Quantity
K.	FURNISHING AND INSTALLING METALWORK		
K.1	Miscellaneous Metalwork (Galvanised)	- ka	
K.2	Miscellaneous Metatwork (Painted)	kg	7,600
K.3	Miscetaneous Melalwork (Stainless Steel)	kg	4,500
K4	Miscellaneous Metal Work in Underground Works:	kg	500
K.4.1		-	
K.4.2	and the state of t	L.S.	
	for Adit Concrete Filling (Graut Pipes)	L.S.	
· · · · · · · · ·	WATER CAUSES IN ANY	4 4.	<u> 19</u> 125 (1
•	WATER CONTROL PLANT	1	
L.1	Furnishing and instating Water Control Plant for Outlet Facilities:	1.751	
L.1.1	Bulkhead Gate; B 2.0 m x H 2.0 m including Gate Guide, Hoist, Air Vent, etc	L.S.	1
L.1.2	Emergency Water Outlet Gate; B 2.0 m x H 1.65 m including Gate Guide, Lifting Beam, Hoist, etc	L.S.	11 7 7 1
L1.3	Trash Rack for Buikhead Gate and Low Water Outlet Gate	L.Ş.	\$150 L
L1.4	Outst Pipe;1400 mm da., 650 mm dia., and 250 mm dia. including Transition Pipe, Reducer, Installation Stand, etc.	L.S.	
L.1.5	Control and Guard Gates with Auxiliary Facilities; for 650 mm dia. Outlet Pipe	L.Ş.	
L.1.6	Control and Guard Gates with Auxiliary Facilities; for 250 mm da. Outlet Pipe	L.S.	
L.1.7	Overhead Travelling Crane (3 tonne) and Operating Stand in Control and Guard Gates Operation Room	L.S.	
L.1.8	Electrical Equipment for Control and Guard Gates including local control panels and ultrasonic flow meters.	L.S.	
L2	Furnishing and Installing Water Control Plant for Hydropower Station:	1.5	
L.2.1	Outlet Pipe comprising 1400 mm dia. section, 1400 mm to 800 mm reducer, and 800 mm dia. section	L.S.	
L.2.2	Taikrace Gale; 8 2.15 m x H 2.075 m including Gale Guide, Hoist, etc	L.S.	7.3
L.2.3	Drainage Pipe Valve 150 mm dia.	L.S.	
L.3	Furnishing and Installing Flap Gate 600 mm da.	L.S.	-
	Furnishing and Installing Closure Gate for Diversion Yunnet, B 6.2 m x H 5.8 m including Gate Guide, etc	L.S.	
			<u> </u>
	INSTRUMENTATION OF STRUCTURES	9.5	· · · · · · · · · · · · · · · · · · ·
	Supplying and Installing Electrical Piezometers:		
M.1.1	in Embankment	1.6	
M.1.2	in Borehole	No.	20
		No.	4
	Supplying and Installing Foundation Deformation Meter (including Drilling and Backfilling Drilled Hole)  Supplying and Installing Electrical Tri-axial Joint Meters	No.	1
		No.	2
	Supplying and Installing Probe Extensioneter with Magnet/Reed Switch Transducer	No.	1 1
	Supplying and installing Strong Motion Accelerograph with Recorder	No.	1 Hult 2 H
	Supplying and Installing Surface Movement Markers :	1.50	
M.6.1 M.6.2	on Upstream Surface of Embankment Dam	No.	6
	on Downstream Surface of Embankment Dam	No.	9
M.6.3	on Dam Crest	No.	6
M.6.4	on Natural Ground	No.	4
M.6.5	Movement Marker Bench Mark	No.	3
M.6.6	Movement Marker Control Station	No.	2
	Supplying and Installing Terminal Box for instruments in gallery	No.	3
M.8 S	Supplying and Installing Digital Readout Unit	No.	2
	burneling and feetally a feet a feetally and		
	Supplying and Installing Stand Pipe Piezometer in Borehole	No.	7

PACKAGE 1: JATIBARANG MULTIPURPOSE DAM INCLUDING APPURTENANT STRUCTURES

item No.	Description	Unit	Quantity
			·
ı, c	GENERATING PLANT		
N.1 F	umishing and Installing Turbines and Auxiliaries:		
N.1.1	Hydraulic Turbine (Horizontal Francis: 1,630kW, H= 64.3m, Q= 3mVs)	Set	1
N.1.2	Governor (Electric governor Dn:30% Dp:60%)	Set	1
N.1.3	Inlet Valve (Butterfly or Biplane Valve 0 = 0.8m)	Set	1
N.1.4	Cooling Water System, if necessary	Set	1
. N.1.5	Drainage & Dewatering System.	Set	1
N.1.6	Oil Storage & Transfer System, if necessary	Set	1
N.1.7	Compressed Air Supply System, if necessary	Set	1
N.1.8	Maintenance Tools Machine Shop Equipment	lot	1
N.1.9	Spare Parts	Lot	1
N.1.10	Instruction Employer is Personnel and Altendance of Employer at Shop Tests	Lot	1
N.1.11	Flow Meter System	Set	1
N.2 F	urnishing and Installing Generators and Excitation System:		
N.2.1	Generator (Horizontal 2MVA 750rpm 6.6kV pt.0.8)	Set	1
N.2.2	Excitation System (Brushless exciter & AVR two indoor outlicles)	Set	1
N.2.3	Neutral Grounding Cubicle	Set	1
N.2.4	Spare parts	Lot	1
N.3 F	umishing and installing Main Transformer (2000kVA 6.6/20kV)	Set	1
N.4 F	umishing and Installing Outdoor Cubicle :	<del></del> ,	
N.4.1	20kV DS Cubicle (one outdoor cubide 20 kV MOF, DS, LA, DS, CH)	Lot	1
N.4.2	20kV CB Cubide (one outdoor cubide 24kV CB, PT, CT, CH)	Set	1
	6.6kV Cubide (one outdoor cubide 6.6 kV DS, PT, CT, CH)	Lot	1
	umishing and installing Indoor Cubicle :		
	6.6kV CB cubicle (one indoor cubicle VCB 7.2kV 1kA, DS, PT, CT, Ar, CH)	Lot	1
	Station Tr. Cubide (one indoor cubide SLTr. 6.6/.4,2 150kVA, PF, PT, CT)	Lot	. 1
	DC Supply System (one indoor cubicle, Charger, Inverter, Battery, MCCB)	Lot	1
	Switchgear for Krapyak s/s one indoor cubide, 24kV CB, PT, CT, CH	Lot	1
	umishing and Installing Control and Protection Equipment (six panels)	Lot	: 1
———	umishing and Installing Cables and Fittings:		
N.7.1	20kV Power Cables (CVT 3c 35m)	Lot	1
N.7.2	6.6kV Power Cables (CVT 3c 100m)	Lot	1
	Low Voltage Cables (PVC-CVV, CVV-S)	Lot	1
	umishing and Installing Ancillary Equipment:		
	Telephone System (PABX 20 telephone sets)	Lot	1
N.8.2	Lighting Auroliany (Lighting fixture Distribution panels conduit wires)	Lot	1
	umishing and installing Grounding System	Lot	. 1
	umishing and Installing Overhead Travelling Crane (15ton, span= 9.5m, lift=20m, Hoist=1 tonne)	Set	1
	urnishing and installing Transmission Lines:		
	Steel Towers (20kV 1cd h=20m)	Set	2
	Concrete Poles (20kV 1cct h=13m)	No.	280
	Insulators and Fittings (Suspension: 254mm)	Lot	1
	Power Conductors (AAAC 120 sq. 14km)	km	14
	Telecommunication Lines (CCCP-AP-SS-0.65mm-20P)	km	14

# PACKAGE 1: JATIBARANG MULTIPURPOSE DAM INCLUDING APPURTENANT STRUCTURES

ltem No.	Description	Unit	Quantity
o. ·	RELOCATION OF POWER TRANSMISSION LINE		
0.1	Relocation of Power Transmission Line	L.S.	
		<b>'</b>	*
Ρ.	MISCELLANEOUS WORKS	<u> </u>	
P.1	Bridge Bearings:		
P.1.1	for Spillway Bridge Including Elastomeric Bearing Pad (350 x 280 x 73) and Rubber Sheet (400 x 100 x 30)	No.	6
P.1.2	for Access Road Bridge including Elastometric Bearing Pad (350 x 280 x 59) and Rubber Sheet (400 x 100 x 200)	No.	10
P.2	Bridge Expansion Joints:		
P.2.1	in Spitway Bridge	L.S.	100
P.2.2	in Access Road Bridge	L.S.	i 4 i
P.3	Permanent Electrical Installation:		1 1 1 1 1 1
	Gallery and General Lighting Installation	L.S.	18 827 1 1
5 1 2	Power Supply Facilities	L.S.	in state i
P.4	Supplying and Installing Submergible Drainage Pumps :		
P,4.1	Drainage for Gallery, 0.2 m²/min with Automatic Pump Operation System	No.	2
P.4.2	Drainage for Hydropower Station; 0.5 m³/min	No.	2
P.5	Reconstruction Wel Stone Masonry Steps to Goa Kreo	L.S.	
P.6	Furnishing and Installing Trash Boom in Reservoir Induding Concrete Anchor	LS.	1, 1, 1, 1, 1,
P.7	Supplying and Installing Reservoir Water Level Sensor with Recorder	L.S.	
P.8	Supplying and Installing Water Level Staff Gauge:	No.	
P.8.1	for Reservoir Water Level Installed on Inclined Intake Structure	No.	
P.8.2	for Downstream River Water Level installed on Concrete Wall	No.	Tarford and the second
Ρ.9	Provision of Maintenance Equipment:	. 2	
P.9.1	Patrol Boat with Trailer	No.	2 Po 1 P
P.9.2	Patrol Vehicles (4-Y/D)	No.	2
P.9.3	Station Wagon State of the Control o	No.	2
P.9.4	Dump Truck (6 tonne)	No.	1
P.9.5	Grass Cutters	No.	3
		1011	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
).	BUILDING WORKS		
0.1	Hydropower Station (including excavation, filting, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & Windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	L.S.	
0.2	Garage (including excavation, filing, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	L.\$.	
O.3 [I	Guard House (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	L.S.	
0.4	External Works (including excavation, filling, grading, foundation, fence, drain cover, flag stone, retaining wall, ree planting, concrete block, plastering, concrete paving, tile, sanitary, electrical and painting works)	L.S.	

# PACKAGE 2: OPERATION AND MAINTENANCE BUILDINGS AND GOA KREO BRIDGE

item No.	Description	Unit	Original Quantity	Quantity with Allowance
A.	GENERAL			
		14 1	1.4%	
8.	DAM MANGEMENT COMPLEX			
B.1	Buildings			
B.1.1	Administration Building (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & Windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	L.S.		
B.1.2	Staff House 1 (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, ble, sanitary, electrical and painting works)	L.S.		
B.1.3	Staff House 2-1 (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior fnishing, tile, sanitary, electrical and painting works)	L.S.		
B.1.4	Staff House 2-2 (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	LS.		
B.1.5	Staff House 2-3 (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	L.S.		
B.1.6	Staff House 2-4 (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, tile, sanitary, electrical and painting works)	L.S.		
8.1.7	Mushola (including excavation, filling, grading, foundation, reinforced concrete, roofing, concrete block, brick, plastering, door & windows, glazing, miscellaneous metal, interior finishing, ble, sanitary, electrical and painting works)	L.S.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
B.2.	External Works (including excavation, filling, grading, foundation, fence, drain cover, flag stone, retaining wall, tree planting, concrete block, plastering, concrete paying, ble, sanitary, electrical and painting works)	L.S.		
8.3.	Power Supply Facilities (including PLN connection to all buildings)	LS.	the state	
,				

PACKAGE 2: OPERATION AND MAINTENANCE BUILDINGS AND GOA KREO BRIDGE

Item No. Description	Unit	Original Quantity	Quantity With Allowance
C. CONSTRUCTION OF APPROACH BRIDGE TO GOA KREO		f 94.	
C.1. Bridge and Approach Road			
(Superstructure)			
C.1.1 Concrete, Type B including Formwork	m³	99	104
C.1.2 Deformed Reinforcing Bars	kg	17,616	18,680
C.1.3 Asphaltic Concrete	tonne	23	25
C.1.4 Expansion Joint	m	10	11
C.1.5 Hand Rail	kg	476	500
C.1.6 Drain Pipe, PVC Pipe Dia. 100 mm	m	48	51
C.1.7 Elastometric Bearing Pad (316 x 316 x 41)	No.	16	16
(Substructure and Approach Road)	4.4.4.4.	1,14	
C.1.8 Clearing and Grubbing	m²		10
C.1.9 Stripping of Topsoil	m³ ·	47	50
C.1.10 Excavation	m³	1,023	1,130
C.1.11 Backfilling	rn <sup>3</sup>	879	967
C.1.12 Embankment	m³	103	114
C.1.13 Concrete, Type C-1 including Scaffolding and Formwork	m <sup>3</sup>	155	163
Formwork	m²	410	
Scaffolding	m²	43	11
C.1.14 Deformed Reinforcing Bars	kg	11,473	12,170
C.1.15 Leveling Concrete, Type E	m <sup>3</sup>	8	9
C.1.16 Wet Stone Masonry	m <sup>3</sup>	136	150
C.1.17 Weep Hole, Dia. 50 mm	No.	70	70
C.1.18 Asphaltic Concrete	tonne	18	19
C.1.19 Gravet	m³	31	35
C.2. Gate Relocation			3 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (
C.2.1 Demolition of Existing Gate	L.S.		
C.2.2 Excavation	m³	14	20
C.2.3 Concrete, Type C-1 including Formwork	m³	6	7
C.2.4 Deformed Reinforcing Bars	kg	210	230
C.2.5 Wet Stone Masonry Reconstruction	m³	7	10
C.26 Stone Block Reconstruction	m³	21	30
C.3 Existing Buildings			* 1.44.
C.3.1 Demolition and Reconstruction of Guard House, Mushola and Toilet	L.S.		The Section

Chapter 2
DAM

2.1 Dam Excavation

			1				E	
DAM			ω	Excavation	n Volum	9		Total Vol. in
* IR		Ω	CI	CM-I	CM-H	ţq	rd	each Height
higher than EL. 157.0 m	Upstream Pervious Zone Foundation		0	0	0	0	O	0
	pervio	347	879	0	0	0	<u></u>	1,226
	Downstream Pervious Zone Foundation	0	0	0	0	0	0	0
	Total	347	879	0	0	0	0	1,226
EL. 140.0 m - EL. 157.0 m	157.0 m Upstream Pervious Zone Foundation			0	0	0	0	1,206
	Impervious and Semi-pervious Zone Trench		0 15,921	0	0	0	0	15,921
	Downstream Pervious Zone Foundation	204	3,159	0	0	0	0	3,363
	Total	204	20,286	0	0	0	0	20,490
EL. 125.0 m - EL. 140.0 m	Upstream Pervi		0 2,756	0	0	0	0	2,756
	Impervious and Semi-pervious Zone Trench		0 19,181	10,515	0	0	<u></u>	29,696
	Downstream Pervious Zone Foundation		0 1,306	268	0	0	0	1,574
	Total	0	23,243	10,783	0	0	0	34,026
EL. 110.0 m - EL. 125.0 m Upstream Perv	4~	)	0 3,053	0	0	0	0	3,053
	Semi-pervio	<u> </u>	9,206	13,961	5,880	0	0	29,047
	Downstream Pervious Zone Foundation	0	1,496	0	0	0	0	1,496
			0 13,755	13,961	5,880	0	0	33,596
EL. 95.0 m - EL. 110.0 m	ious 2	0	જો	0	0	0	18	2,192
	Semi-pervio	0	<u>س</u>	6,355	6,487	1,174	0	17,202
	Downstream Pervious Zone Foundation		1,618	0	0	2,631	0	4,249
- 1		0		6,355	6,487	3,805	18	23,643
EL. 80.0 m - EL. 95.0 m			0 1,041	1,681	0	2,635	8,484	13,841
	Semi	) 	0 1,414	5,879	2,526	2,306	3,097	15,222
	Downstream Pervious Zone Foundation		0 1,417	1,648	0	7,175	5,661	15.901
			3,872	9,208	2,526	12,116	17,242	44,964
	. ⊸	0	_	1,681	0	2,635	8,502	23,048
Grand Total	Semi~pervio	347	- 64 0,	36,710	14,893	3,480	3,097	108,314
	Downstream Pervious Zone Foundation	204		1,916	0	9.806	5,661	26,583
	Total	55]	3	40,307	14,893	15,921	17,260	157,945
	Total x 1.1	900	75,900	44,300	16,400	17,500	19,000	173,700

# 1. EXCAVATION FOR UPSTREAM PERVIOUS ZONE FOUNDATION

higher tl	han EL.	157.0 n	n .			(m²)						(m³)
Sta.			- Aı	ea	. 145 H				Vo	lume	•	
	D	CL	CM-L	СМ-Н	td	rd	D	CL	CM-L	СМ-Н	td	rd
60			1		1.1						,	
70		<u> </u>	<u> </u>		:			1 1				
80		<u> </u>	<u> </u>		:						: }	
90		<u> </u>	l									
100			<u> </u>								:	·
110		<u> </u>			1.1						v*	
120		<u> </u>	<u> </u>	1					2			<u>.</u>
130		1	1 2		- '						٠.,	
140	2.5						<b>.</b>		1 2 3			
150	- 1				1 , 4	-				1.		
160											. :	
170			:	i	. 1	<u> </u>	1		17			· ·
180	4.5	1						2.5		1 1 1 1	€ 4.5	
190				1.1				1 4				·
200			3		luina.	14.5					1841	
210	· .		<u> </u>		1 1 1	<b>_</b>		1	. i	4	24 (1)	
220					1	]	fig. :	. 13		April 1		
230				2.1	: :			1. 19			is	
240						]		100			. 1711	1 1 1 1 1 1
250	·	<u> </u>			<u> </u>						17 1	<u> </u>
<b>FOTAL</b>				1	2 , 1							

EL. 140	.0 m - l	EL. 157.	0 m			(m²)				100		(m³)
Sta.	· 19.	4 1 1		rea				- 114	Vo	lume	· 3 - 1 - 1 -	14. The second
	D	CL	CM-L	CM-H	td	rď	D	CL	CM-L	CM-H	td	rd
60		<u> </u>	1 1 1			٠.	_ ·					
70					j							
80		0.0	!							1	7.3	
90		36.5	i					182.5				
100	* : ·	0.0			. :		1 - 1	182.5	1.74	7		
110			1				\$5.50	4 1 1				
120			1.1				4.1,14.2		** :	2 1		
130		<u> </u>	ţ .					141 1	· .	+ 16	4.1	3.75
140		į						44 1 2	7 45			
150								1. 1				1.5
160							``.	- 1 - 1 i				
170			- 1		1		1.			+ 2.1		
180			11		1 1			3.4.7		1 1	· .	
190	<u> </u>	0.0					1000					
200		0.5						2.5		17.4	1 20 2	
210	1.4	37.1				· .		188.0				
220		33.3						352.0	10.00			110
230		13.2	1,000 B	1		100		232.5	4 1			
240	1 1	0.0						66.0		L 1 1 19	1 44 (	
250			38				111	S 14 5 4	5 5 4			
TOTAL		la la		ŀ	: 1	$\neg \neg$		1,206.0				

EL. 125	.0 m - l	EL. 140.	0 m	·		(m²)	)					(m³)
Sta.				rea					Vo	lume		
	D	Ct.	CM-L	CM-H	td	rd	D	CL	CM-L	СМ-Н	td	rd
60							]					 
70							1		2			
80							1					
90		0.0						1				
100		70.2						351.0				
110		46.2			* .		<b> </b> [	582.0				:
120		0.0						231.0				
130												
140					-							
150		į										
160		0.00			: -			]				:
170		0.0			1875							
180		64.5						322.5		}		11
190		51.4						579.5			-	
200		43.3		<u> </u>				473.5	-			10.4
210		0.0	14.		e			216.5		į		
220			5									1.
230	_			*** ,								
240	·						1 1 1					
250		25 (4)				4 -	l					1.1.75
TOTAL		11.0		1				2,756.0		- 1		

	.0 m - l	EL. 125.	0 m	<u> </u>		(m²)		N 1		<u> </u>	<u> </u>	(m³
Sta.		<u> </u>	A	rea	· ·				Vo	lume		for all the
1.74	D	CL_	CM-L	CM-H	td	rd	D	Cl.	CM-L	CM-H	td	rd
60	3 1	1			-							41.5
70						· .					, ,	
80	1. 1.						100					1.0
90	***		1.25		1, 1, 1		4 - 1 - 1	Apr. 14			•	
100		0.0	3	1 1				i			:	
110		43.9		4 1	28 47			219.5				1
120		140.1	17 4	and the				920.0		11		. v 44 i .
130	.: .	0.0		1.		: :		700.5				11.
140	1977		1.1			1.1	7	Mad v			1.	
150		0.0	1		18.47	200	51 75			de se		F 45
160	:	10.5	, e e - 1					52.5				E 1 F
170		100.7			-711			556.0				1,575.0.2
180		10.1	1.				·	554.0				
190		0.0	* *	1 1				50.5				
200			24									
210	4 -	100	2011		2 %							
220	20.00	1.5				12.1	3.2					46 7 2 3
230							- 14 ×			i		1. 2
240	3.	1.7	(F) (F)							. [		: •
250					1.44							
TOTAL	17,134				1.41		Ī	3,053.0	1	Ī		2 .

	) m ~ E	L. 110.0	ın			(m²)						(m³)
Sta.				rea					Vo	lume		
	D	CL	CM-L	CM-H	td	rd	D	CL	CM-L	CM-H	tà	rd
60											1	
70						1						
80												
90		<u> </u>									<i>r</i>	
100					7.3					1.5		1 22
110						1						
120	:	0.0			`	0.0			4 .*	1. 1.		
130	·	128.6		7)		1.8		643.0				9.0
140		0.0				0.0		643.0				9.0
150		19.6	1.1					98.0				
160		69.2						444.0				
170		0.0	. "			]		346.0		49.45		14" T
180										4 1 1		
190					112					1 4		
200					-11							- A
210				·						3.1		
220								* .	1. 1.4			
230	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1											*
240												~-
250		<u> </u>									-	
TOTAL								2,174.0				18.0

	0 m - E	L. 95.0 i	'n			(m2)						(m3)
Sta.		5 B 1 B	Aı	rea			1 1		Vol	ume		
	D	CL	CM-L	CM-H	tď	rd	D	CL	CM-L	CM-H	ld	rd
60						1 4	3 4 2 5		, and	100		
70			10.0						1000			14 1 4 1
80				2.25						4	71 11	No. 1
90		4000				4					1.5	14 1
100			7 4		14.							
110			4		500 BA					15.15.243		
120		0.0	0.0		0.0					100		*
130		4.3	31.0		263.5	0.0		21.5	155.0		1,317.5	
140		0.0	79.0	80.7	0.0	622.5		21.5	550.0	A 14	1,317.5	3,112.5
150		10.1	58.1			225.9	4.0	50.5	685.5			4,242.0
160		89.7	0.0			0.0	3.2	499.0	290.5		4.50	1,129.5
170	1. 1	0.0		5 J. 10	3543.2			448.5				1.5.1
180												
190				•						19 7 22	1700	1.1
200							1					30 - 5
210						2.11	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	14.4.2.	144			1 + 1 + 1
220									41.46			77
230				11. 4.14			** * :					47 6 4
240	1 44										i	7.4 (1)
250		31, 351		3.			100					5 8 8
TOTAL							11	1,041.0	1,681.0	- / -	2,635.0	8,484.0

# 2. EXCAVATION IMPERVIOUS ZONE FOUNDATION

Sta.				ea					Vo	lume		
	D	CL	CM-L	СМ-Н	td	rd	D	CL	CM-L	CM-H	ŧd	rd
60		· .					·					
70						<u> </u>						
80					. :							
90					-							
100												
110												
120												
130												
140												
150												
160							Ī					
170	- 1											
180					1 5 1		<del>-</del>		·			
190				. 1	-	· ·						
200												
210												
220		-							i			
230		0.0								:		
240	0.0	34.5				()		172.5	- /	17.5		
250	34.7	53.4				i i	173.5	439.5				
260	0.0	0.0					173.5	267.0				
TAL	1			i		i	347.0	879.0		i		
							371.01	013.0				

EL. 140	1 m 0.	EL. 157.	0 m	<u> </u>	<u>. 1 2 2 2 </u>	(m²)	11.5	4 - 11 - 1	200		14 May 12 19	(m <sup>3</sup> )
Sta.			Aı	ea				· ·	Vo	lume		1.5
	D	CL		CM-H	td	rd	· D	Cl.	CM-L	CM-H	td	rd
60		0.0									18 (4)	
70		414.8		•	The second			2,074.0				
80		246.7	- 4		7.11			3,307.5		1 11 11 11		
90		41.1	7. × 20			i		1,439.0		1 11 11	9.7	757 a 5
100		0.0						205.5			91	1 22 1
110									1.4		- A A	25.5
120	<u> </u>								- 2 t 1	:	<u> </u>	
130	- 1					7.5	1					
140		1 11							:		74	
150				5,50	247				*			3 10 1
160		4 14 1			1, 3,			1		10 10 10	4	
170				***					:	1		
180							5 45					
190		0.0			*	· ·						
200	·	53.5	- 1- <u>-</u> 1			24 77	3 44 5	267.5				
210		215.9				1.15 A		1,347.0		. 877		
220		275.5		i	Turkers.	1.		2,457.0			1 12 2 2 1	4 1 1 1 1 1
230	37.44	210.2	1 2 11		77.3			2,428.5	14.4	L 1 - 1 1 1	1,7 64	100
210		130.8			: "			1,705.0			<u> </u>	
250		3.6						672.0		To a Transport	: .	
260		0.0						18.0				ar tr
TOTAL	ł							15,921.0				

	.0 m - 1	EL. 140.	0 m			(m²)			1		gar except	(m³)
Sta.			Aro	ea					Vo	nine		
	D	CL	CM-L	CM-H	td	rd	D	CL	CM-L	CM-H	td	rd
60		0.0	0.0		,	•						
70		101.8	15.7			]		509.0	78.5			
80		235.6	25.5			1		1,687.0	206.0			
90		428.0	43.1					3,318.0	343.0			
100		450.6	24.3					4,393.0	337.0			
110		163.6	0.0					3,071.0	121.5			- : :
120		0.0	1			1		818.0				
130			<u> </u>									
140	·		·			]		1				1.5
150								[				
160		1.0				•		1	-			
170		0.0										
180		26.5	0.0					132.5		·		
190		217.8	294.2		٠.			1,221.5	1,471.0			*
200		175.7	480.4					1,967.5	3,873.0			
210		83.2	162.6					1,294.5	3,215.0	14.		
220		35.3	5.7					592.5	841.5			
230		0.0	0.0	- /				176.5	28.5			
240										12.1	a de la companya de l	
250			I		1.7						<b>-</b>	
ΓΟΤΑL			1					119,181.0	10,515.0			

101111			<u> </u>	l		<u></u>	<u> </u>	113,101.0	110,010.0	<u> </u>	· ·	1
EL. 110	0 m F	71 125 i	0 m		118	(m²)		1.11				(m³
Sta.	<u>.V. III</u>	J. 120.		ea		(nr )			Vo	lume	2 + 2 - 1 + 1 + 1 + 1	(in
	D	CL		CM-H	td	rð	D	CL	CM-L	CM-H	td	rd
60				34			<u> </u>	<u> </u>	0	<u> </u>		<u> </u>
70	+ 4					47 447	<u>ii</u>		<u> </u>	1, 4		
80		1.07	7.5		- Pr. j	11.						-
90	15 g 15	0.0	0.0									1
100		36.5	257.2	0.0	1:			182.5	1,286.0		2.11	
110		309.5	153.9	247.1		V 1		1,730.0		1,235.5	12 (1.14)	
120		290.8	0.0	148.3				3,001.5		1,977.0		
130		0.0		0.0				1,454.0		741.5	F 4.	
140								N 2 P P	4 1			
150											1 11 6	
160		0.0	<u> </u>	0.0				,				
170		99.3	0.0					496.5		97.0	1 2 2	
180		184.5	408.4					1,419.0		785.0		
190		0.0	485.7	35.6			i	922.5		866.0		344.5
200			90.9	0.0			<u>[</u>		2,883.0	178.0	* 4	
210			0.0						454.5		100	
220												
230			1.5		- 1 1	·						
240					- 4							1.0
250			1									1 1 1 1 1 1 1
TOTAL							<u> </u>	9,206.0	13,961.0]	5,880.0		

EL. 95.0	) m - El	110.0	m	21 × 1	<u> </u>	(m²)					2	(m³)
Sta.	<del></del>			ea			<u>                                     </u>		Vol	ume		
	D	CL	CM-L	CM-H	td	rd	D	CL	CM-L	CM-H	td	rd
60								i				
70												
80												
90												
100				0.0								
110		0.0	0.0	39.4						197.0		
120		70.0	251.2	190.9	0.0			350.0	1,256.0	1,151.5		
130		135.1	42.3	32.0	117.4			1,025.5	1,467.5	1,114.5	587.0	
140		0.0	0.0	0.0	0.0			675.5	211.5	160.0	587.0	
150			·									
160		0.0	0.0	0.0								1:
170		113.5	295.8	191.6				567.5	1,479.0	958.0		-
180		0.0	46.2	194.8			11	567.5	1,710.0	1,932.0		
190			0.0	0.0					231.0	974.0		
200			4.						-			
210					· · · · · · · · · · · · · · · · · · ·							
220				ĺ			·					
230					1							
240								111				1
250									14 4			1
TOTAL	]							3,186.0	6,355.0	6,487.0	1,174.0	

1101110		<u> </u>	<u> </u>				u	0,100.0	0,000.0	0,101.0	1,111.0	
EL. 80.	0 m - E	L. 95.0 <u>։</u>	n			(m²)		1	11 - 11 - 15 - 15 - 15 - 15 - 15 - 15 -	. Y <sub>a</sub> ra <del>ta</del>		(m³)
Sta.			Aı	ea		1 1			Vo	lume		
L	D	CL	CM-L	CM-H	tđ	rd	D	CL	CM-L	СМ-Н	td	rd
60						+ 1			1 1			4 1 1
70			7 - 3	2.00					27 2 4 4			
80			7.4						F F 1 F 1		ļ	<del>-</del>
90			1921	19.55		3.554.7						
100										100		
110	+ 1		ï	3.75			1	1 11	F 2 5	1.4		÷ 111
120		0.0	0.0	0.0	0.0							** .
130	* * * * .	13.5	98.0	29.9	135.5	0.0		67.5	490.0	149.5	677.5	
140		0.0	168.2	95.9	0.0	265.3		67.5	1,331.0	629.0	677.5	1,326.5
150		0.0	150.4	87.1	95.1	0.0		0.0	1,593.0	915.0	475.5	1,326.5
160		127.9	171.3	0.0	0.0	44.4		639.5	1,608.5	435.5	475.5	222.0
170	- Y 2	0.0	0.0	39.7		0.0		639.5	856.5	198.5		222.0
180	1			0.0	100			1 1 11		198.5		
190				1 44 4		]						1,
200			4		1.0	- 4					7	
210										٠		1 -
220							14 1	1.1				1
230									- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1.00	3 7
240				1	1.20		3.55					
250					7 5					10 m A		3.1.
TOTAL								1,414.0	5,879.0	2,526.0	2,306.0	3,097.0

#### 3. EXCAVATION FOR DOWNSTREAM PERVIOUS ZONE FOUNDATION

Sta.		157.0 п		геа		(m²)			Vo	lume		<b>(</b> m
1	D	CL	CM-L		td	rd	D	CL.	CM-L	CM-H	td	rd
60												
70			1									
80			1								-	
90							~					
100					4747g (				. ,	š :		147
110		· ·		44	7. 7/5				1,			
120				142				, .	14.1	4 5 6		
130												
140		I					li		42 11	14.3		
150				3.5		-			18 E. S.			
160				1,3						20.0		7 2 - 2
170			1	1.5					14			: 6
180		-				· - [				5		2002
190									6.00	8.1		41.
200											- :	11.5
210												14
220			2.5 (4.								11111	par .
230	. 4											7 . 11.
240	17 (3)	17	111		7 7.7		100			7 2 7		: ;
250		1.0			1.			- 15 N				
OTAL										To the second	***************************************	7

EL. 140	.0 m - E	L. 157.	0 m			(m²)	4					(rn <sup>3</sup> )
Sta.				rea				State of the	Vo	luine		1.10
	D	CL	CM-L	CM-H	td	rd	D	CL	CM-L	СМ-Н	td	rd
60	0.0	0.0						1 19 2				1 e
70	2.1	172.4	1.07				10.5	862.0				1.11.1
80	<u> 18.3 j</u>	86.4			-41 A		102.0	1,294.0	100			11.0
90	0.0	0.0		15 15			91.5	432.0				1.4.4
100			1.				4 .			-	4.11	700
110				1.3	100	4 7 7			14.1	11, 11, 14, 1	- 17	g first, m
120			1 72		2 4 1		19 17 4		77. = 15		2.1.	1 + 1 1
130		577					22.41	Track	1.4	11 M		4 411 F
140					parati.		A Carte					14.81
150		, 5,4		20.00	.50	]	7 E. N. P. J.		1775			100
160					1 : -		: 1	-	V 4 4 7 7			7.55
170			1 1		246.5						13 63	1111111
180					4 1			- 1				11 2
190		1.00					100					
200		0.0					1271		7.52	5.1.0	11.1.1.1	
210		18.7					44.5	93.5				
220		22.5			1		100	206.0	4 1.7			se Alser
230		15.9				7 .		192.0			1. )	14.5
240		0.0	1 1 T	4.4				79.5				
250				17.1				77 975				
TOTAL	1						204.0	3,159.0		· · · · · · · · · · · · · · · · · · ·	<del></del>	

Sta.	1 – տ Օ.	<del></del>		ea		(m²)	Volume						
, o.u.	D	CL		CM-H	td	rd	D	CL	CM-L	CM-H	td	rd	
60				<u> </u>								1	
70												i	
80		0.0				!							
90		28.9				!		144.5				1	
100		44.5				i		367.0				1	
110		0.0						222.5				1	
120		***											
130				1								1	
140				ii	<u>-</u>								
150				i						1. 1.			
160				İ									
170		0.0			<del></del>	į	· · · · · · · · ·						
180		17.0			# f. t			85.0		4.		:	
190		34.5		İ		[		257.5		1.			
200		0.0						172.5				1000	
210		5.7	0.0		,			28.5	134.0		1		
220		0.0						28.5				1	
230					<del></del> -		:						
240													
250							1					1	
ΓΟΤΑL	1 ,				24.13			1,306.0	268.0				

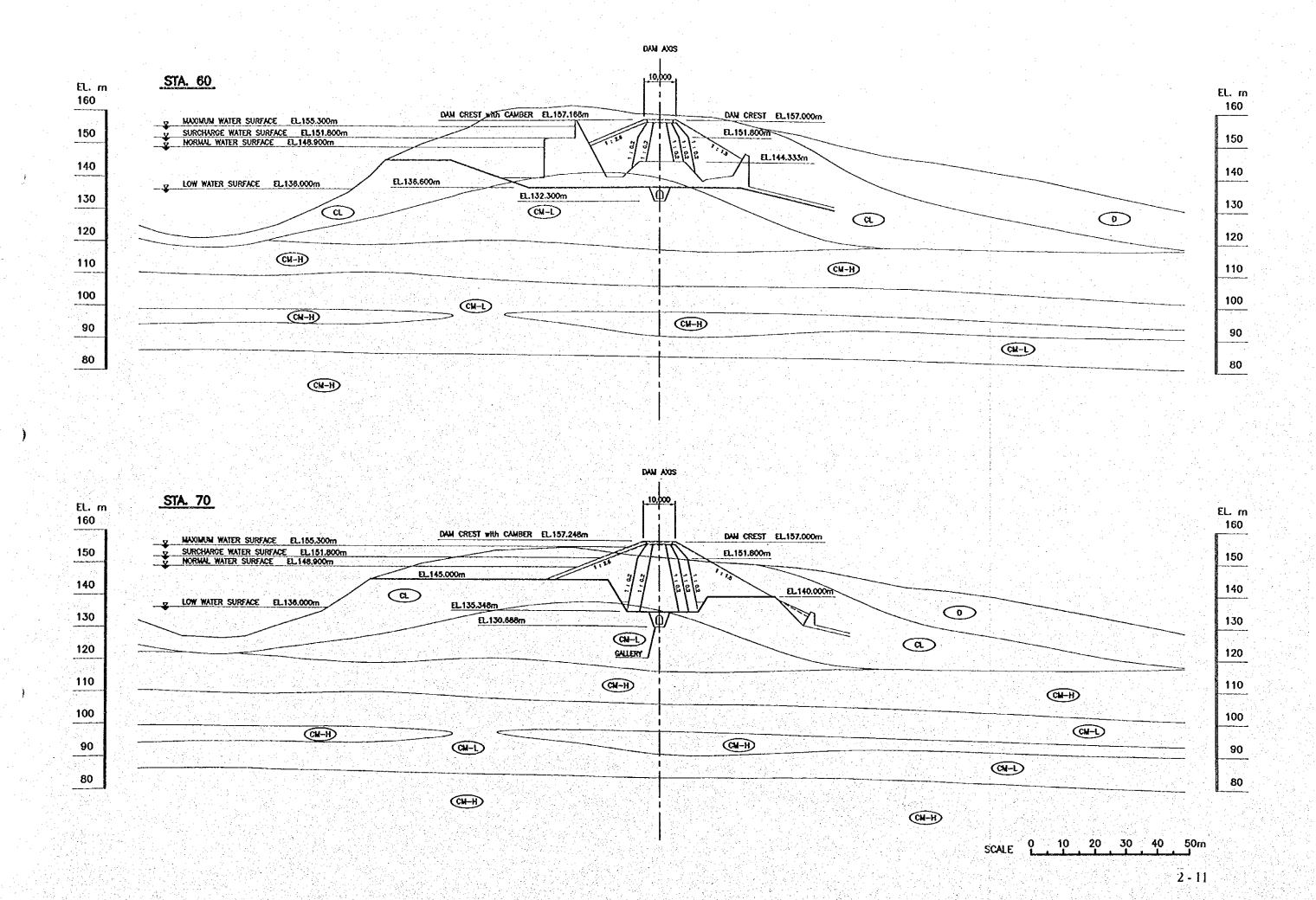
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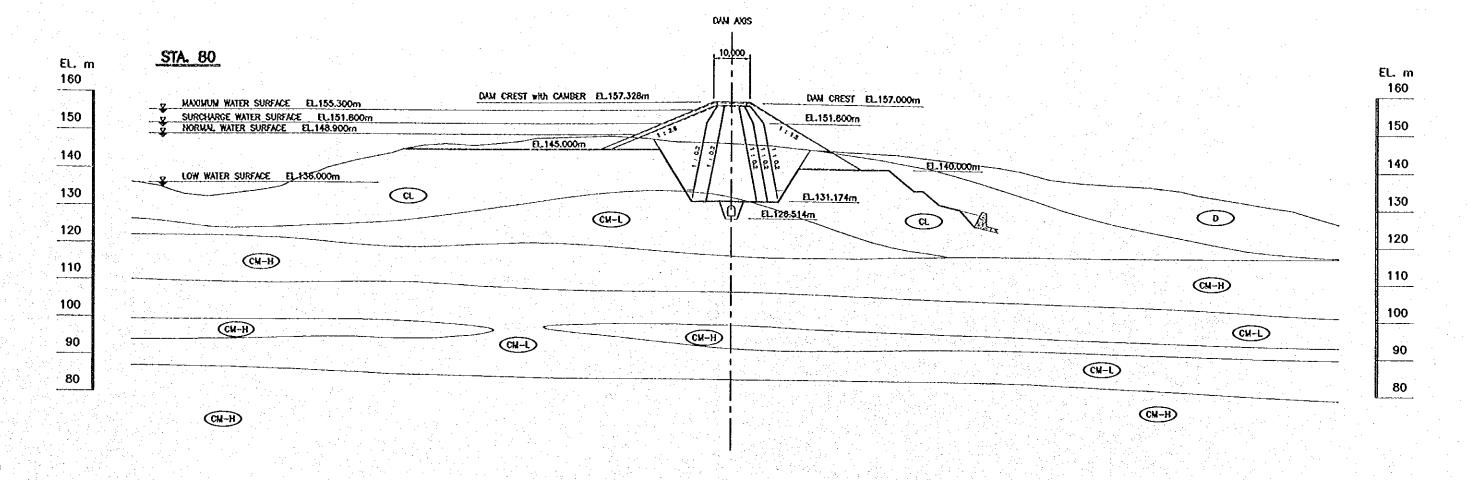
(

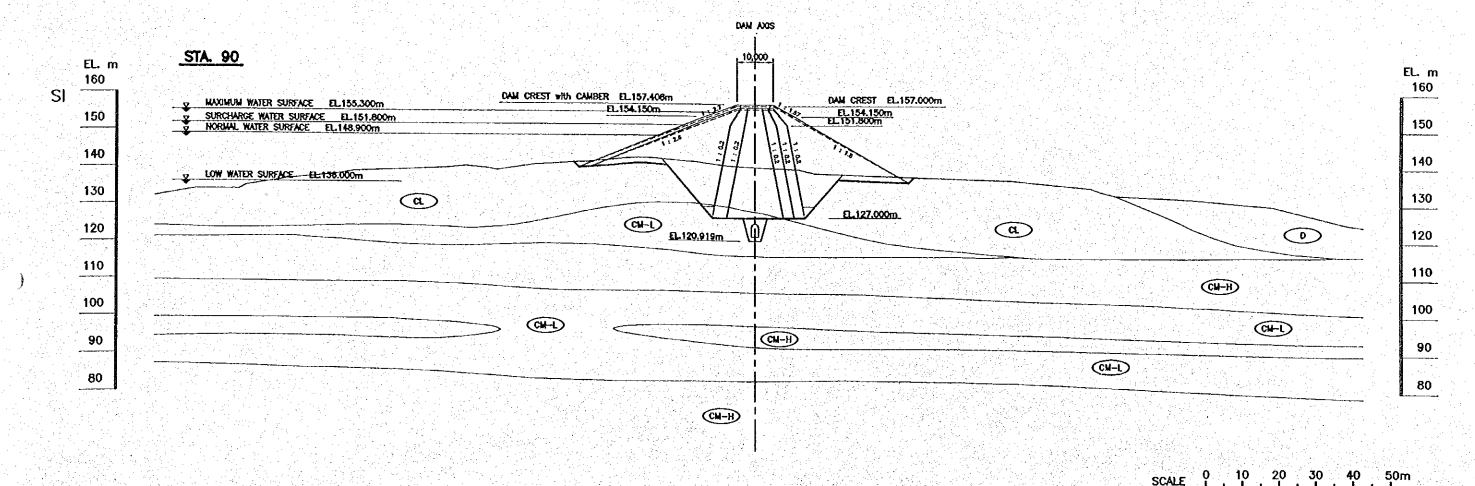
TOTAL		<u></u>	<u></u>				<u> </u>	1,000.0	200.0	<del>`</del>	<del>'</del>	<del>`</del>
EL. 110.	0 m - l	EL. 125.	0 m	tu itus <u>ka li jir</u>		(m²)		1			· · · · · · · ·	(m
Sta.			Aı	rea					Vo	lume		
	D	CL		СМ-Н	td	гd	D	CL	CM-L	СМ-Н	td	rd
60		.*						2.5	47.79			
70			:								7.4	111
80		17							1	. 11	1	
90											4 4	1.1
100		0.0				<u>-</u>	1,000	3		+ 5 .	* ar = **	6.75
110		66.0					4 5	330.0	4 4 4	11.1		4 ,44
120	s + 1	0.0			7.5			330.0		5 G		1675
130	+ 12				1.5		1.3 24	1.5		1111	87 1 42	32 J. 1
140					1			\$ 100			100	
150					14 4		1.	18 (18)	-1	. (3		1 1 1 1
160	11	0.0			-				· .	,	1 22	
170	11 .	53.7				[	11 1	268.5	1			124 1
180	:	29.9					-	418.0				1.15.
190		0.0						149.5				3,797
200						[	1 200				<u> </u>	1274.9
210		:		i								7 37
220						[	E + 11		1 1 1			
230											7 4	2 4 7
240	4 1 4	7 1			7.75							2.45
250	3	100							41		1	
ΓΟΤΆL					7 h			1,496.0		1		

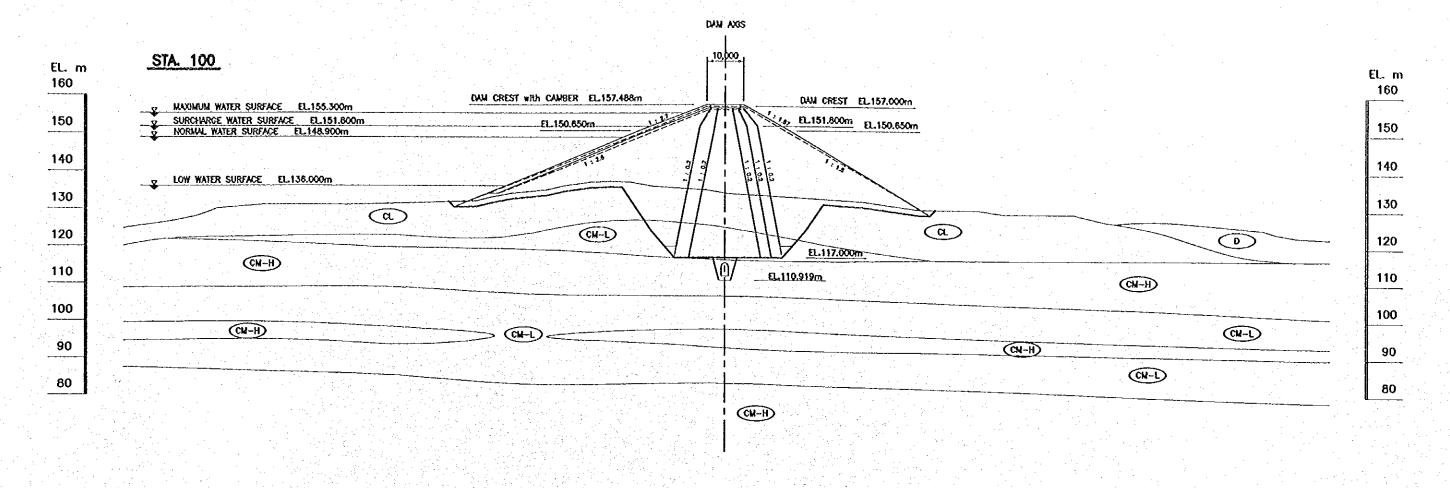
EL. 95.0	) m – El	. 110.0	m M			(m²)						(rn <sup>3</sup> )	
Sta.				ea			Volume						
	D	Cl.		СМ-Н	td	rd	D	CL	ÇM-L	CM-H	td	rd	
60						1						<u> </u>	
70										Ì		,	
80		-								, ·	·	: .	
90													
100												<u></u>	
110		0.0			0.0	]						100	
120		102.6			42.7			513.0			213.5		
130		0.0		[	0.0			513.0			213.5	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
140			-			~							
150		0.0		ii	0.0	j							
160		29.6		1	220.4			148.0			1,102.0	48 14 E	
170		29.6			0.0	[		296.0			1,102.0		
180		0.0			,			148.0				6.25	
190	i		~~~~										
200			1 4				-			3.5		1 2 -	
210									+ 1			11 6	
220												1417	
230				1									
240			·				25	[ ]				Tybr v	
250		1			1,1							13.7 (-)	
TOTAL							: -	1,618.0			2,631.0	. :	

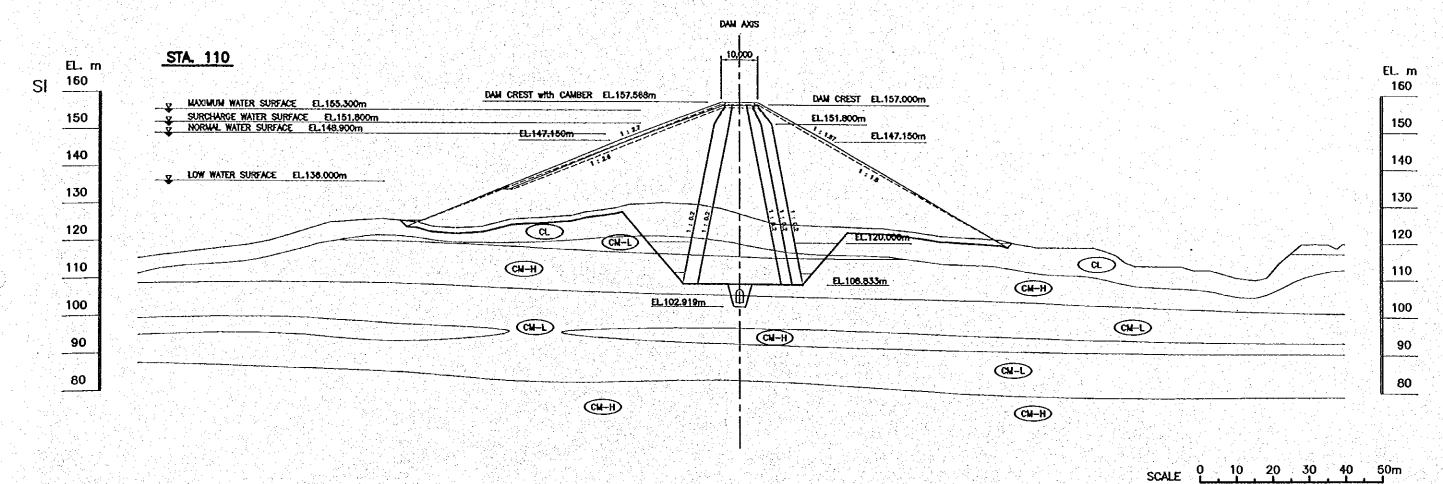
EL. 80.0	0 m - EL	95.0 n	n			(m²)						(m <sup>3</sup> )
Sta.		to the second	Aı	ea								
51.8	D	CL	CM-L	СМ-Н	td	rd	D	CL	CM-L	CM-H	tđ 🤼	гd
60												A. a
70												V-1
80												1.72
90												
100												
110		0.0	- 4		0.0					5.29		ly 1 f
120		48.9	0.0		77.6	0.0	7.	244.5	1 1		388.0	34.275 P. P.
130		8.1	49.4		75.9	134.6		285.0	247.0		767.5	673.0
140	a 1 1	0.0	58.1		0.0	336.0		40.5	537.5		379.5	2,353.0
150		0.0	57.3		413.6	76.2		0.0	577.0		2,068.0	
160		84.7	0.0		150.4	19.3		423.5	286.5	1. 11	2,820.0	
170		0.0		1	0.0	0.0		423.5			752.0	
180					1 1					- 4		198.15
190					1 2 7 4		·			-1		\$ 114
200				l l	<u>.</u>							lan e
210	l						l					16 (15)
220					1 +		V 1.					1
230									ļ			1 1 1 1 1 1
240											1.1	104 1 2
250				<u>.                                    </u>	1		<u> </u>	·			]	11 1
TOTAL								1,417.0	1,648.0		7,175.0	5,661.0



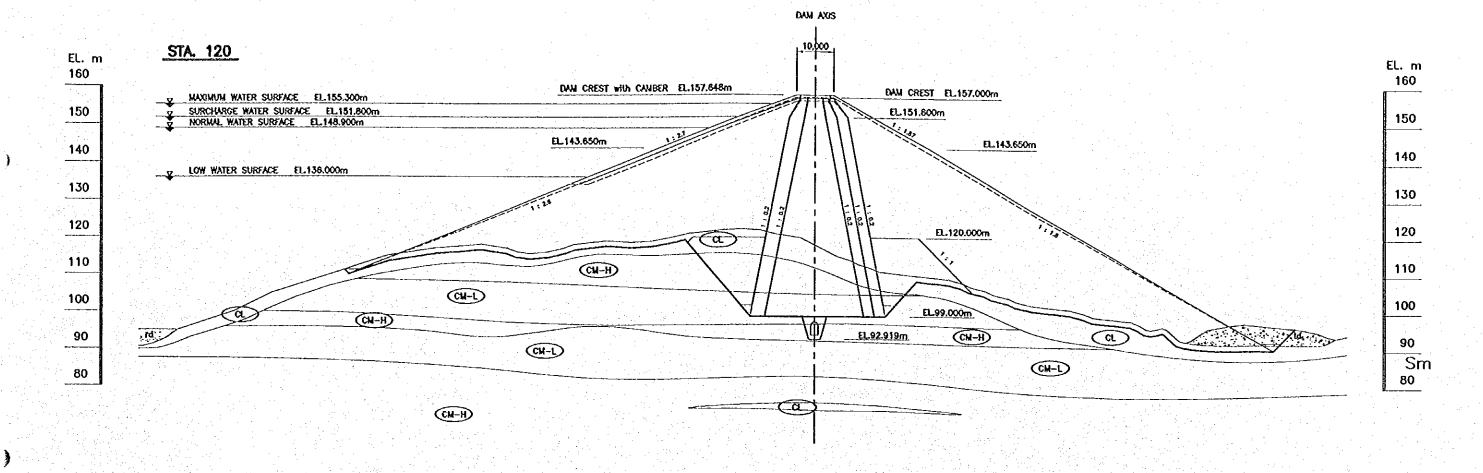


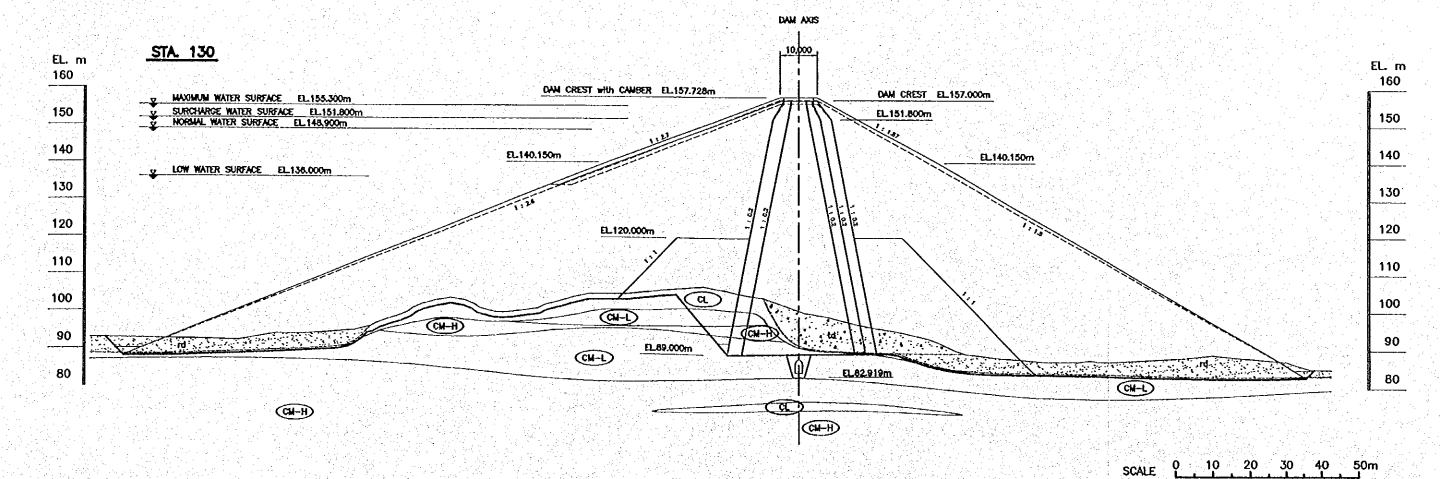




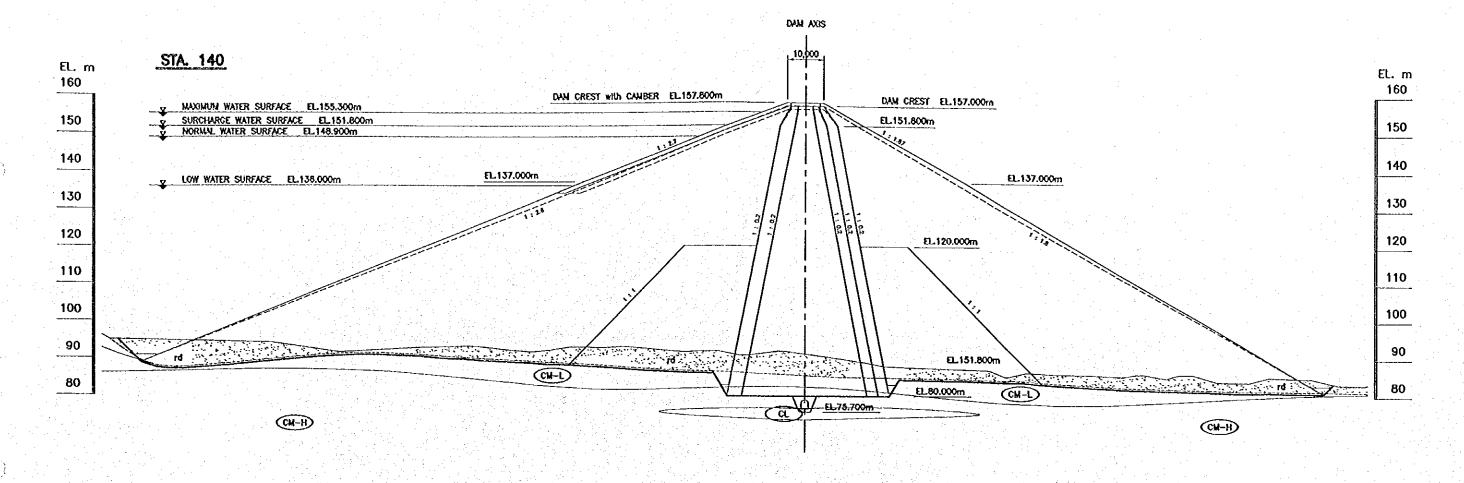


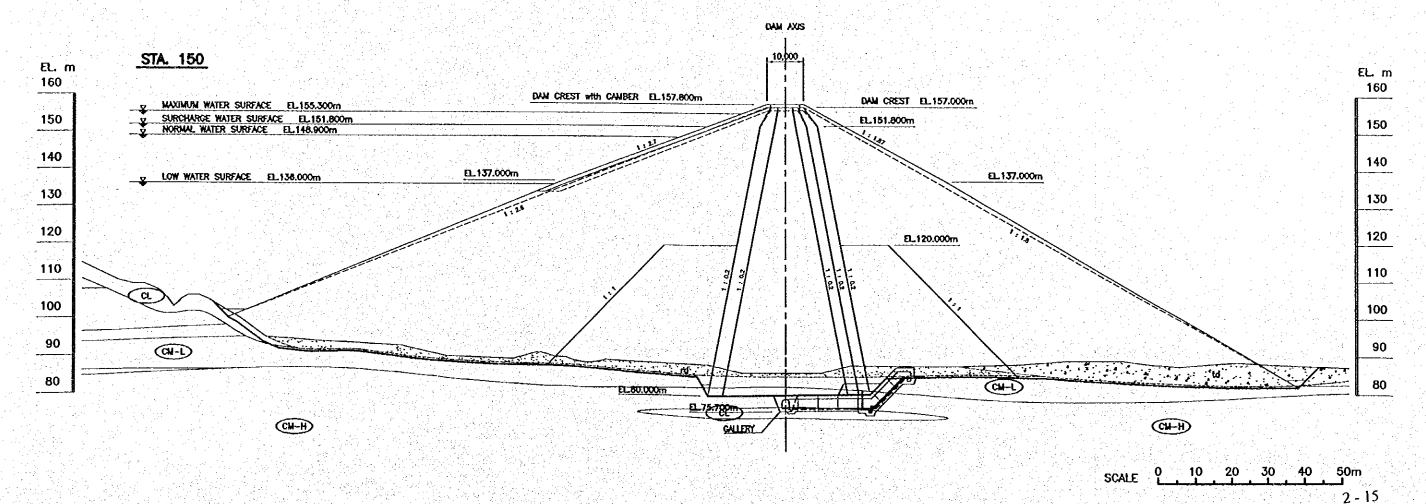
2 - 13

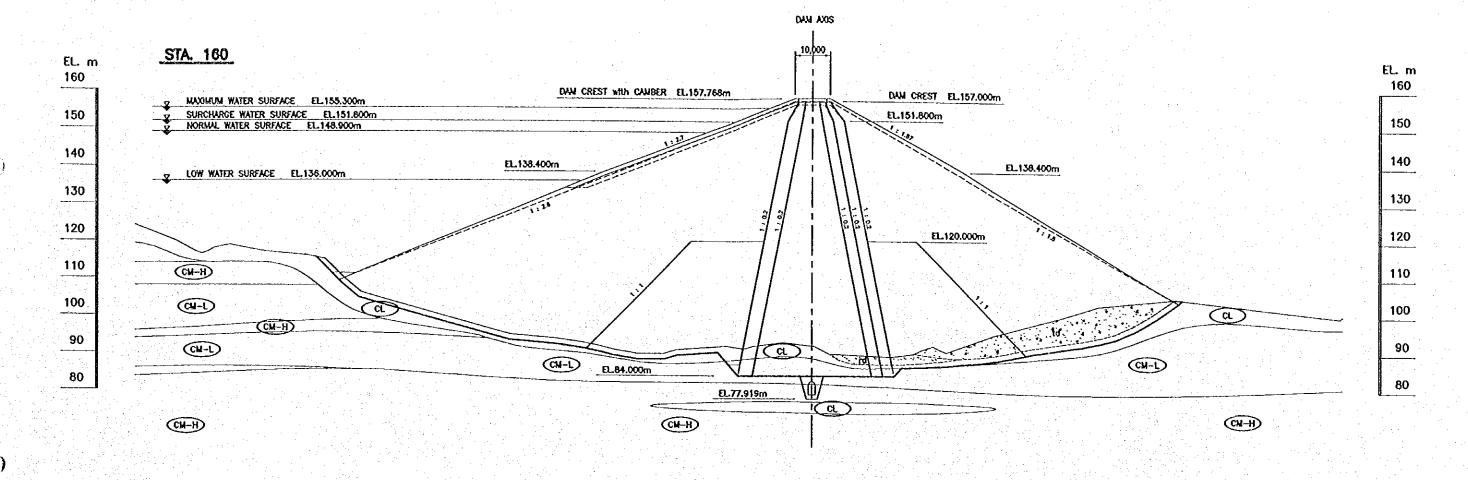


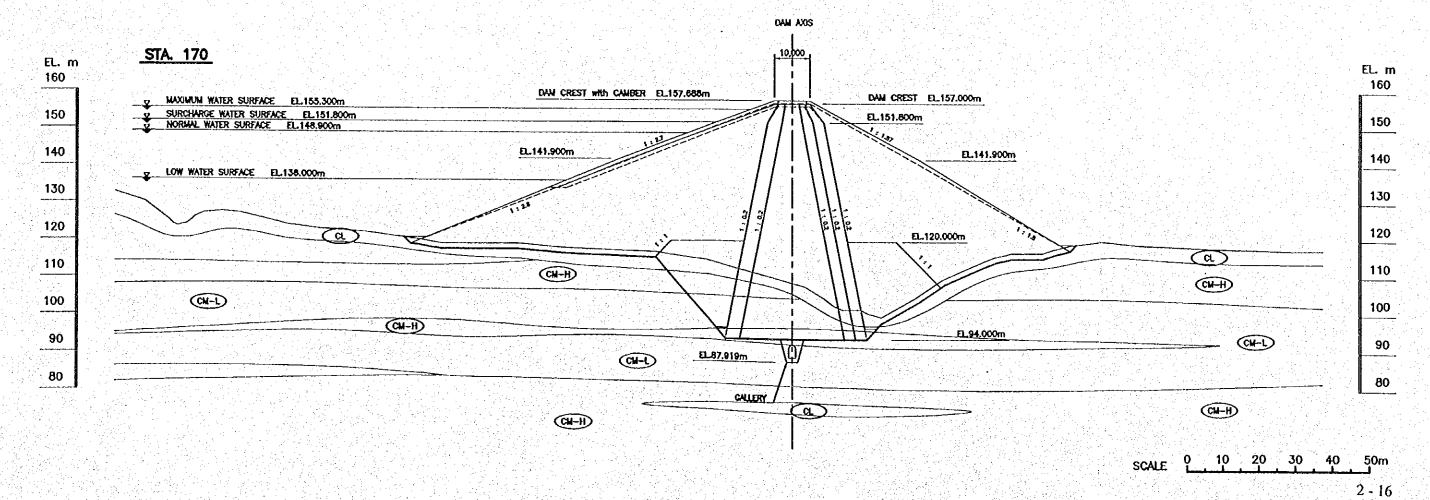


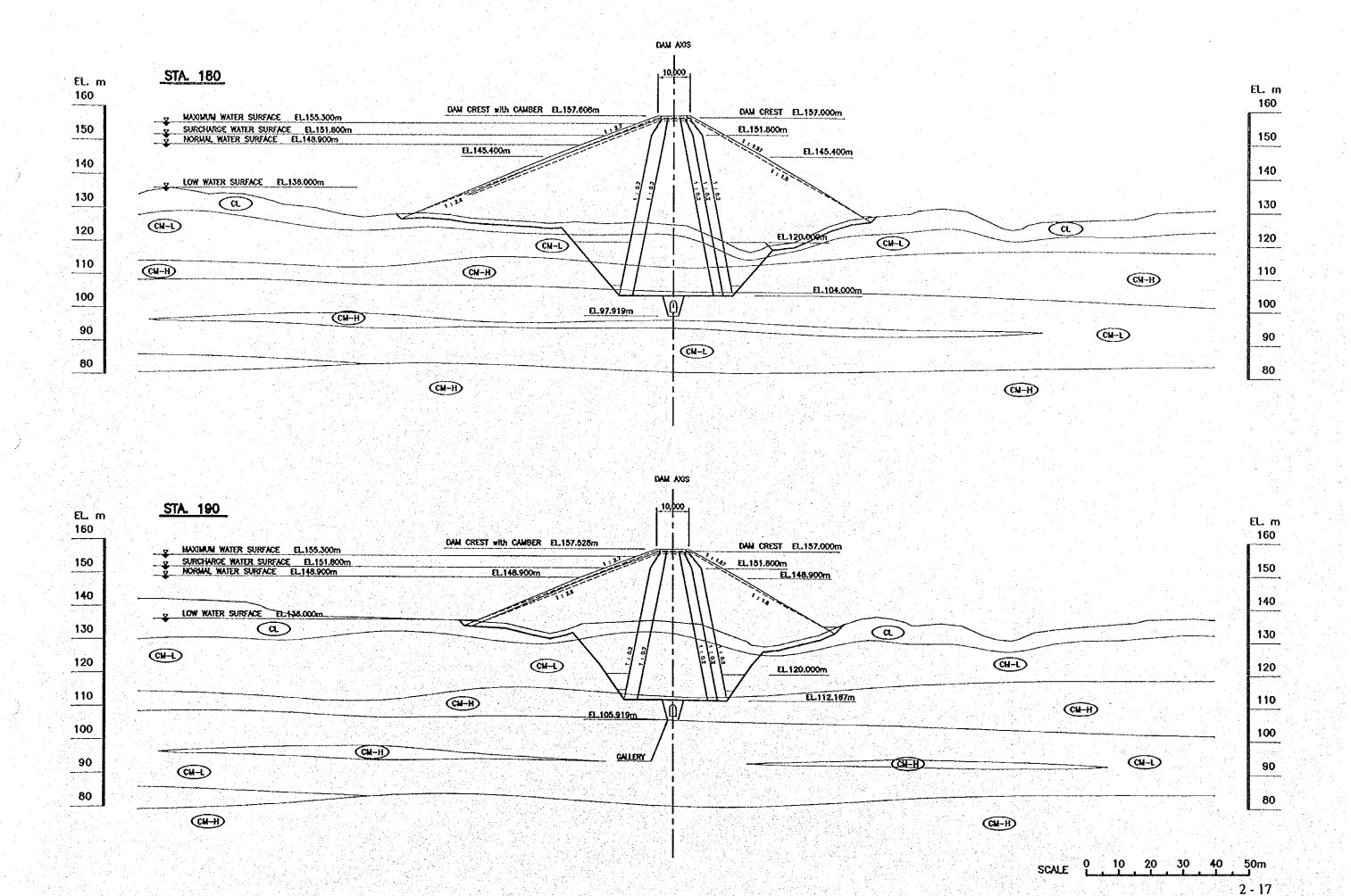
2 - 14

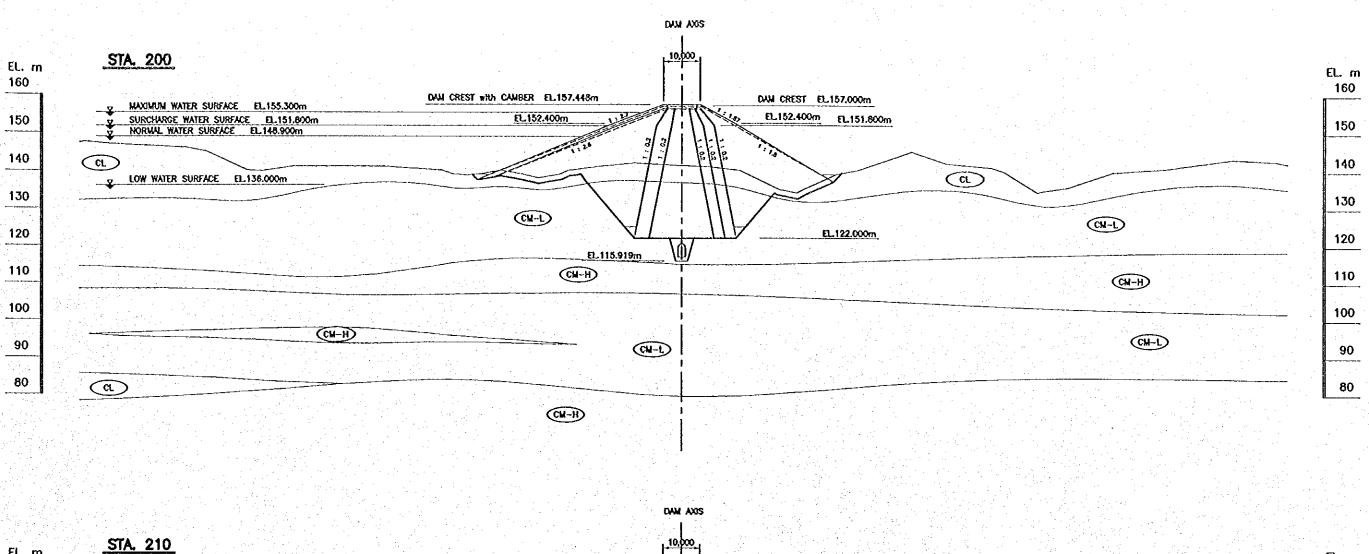


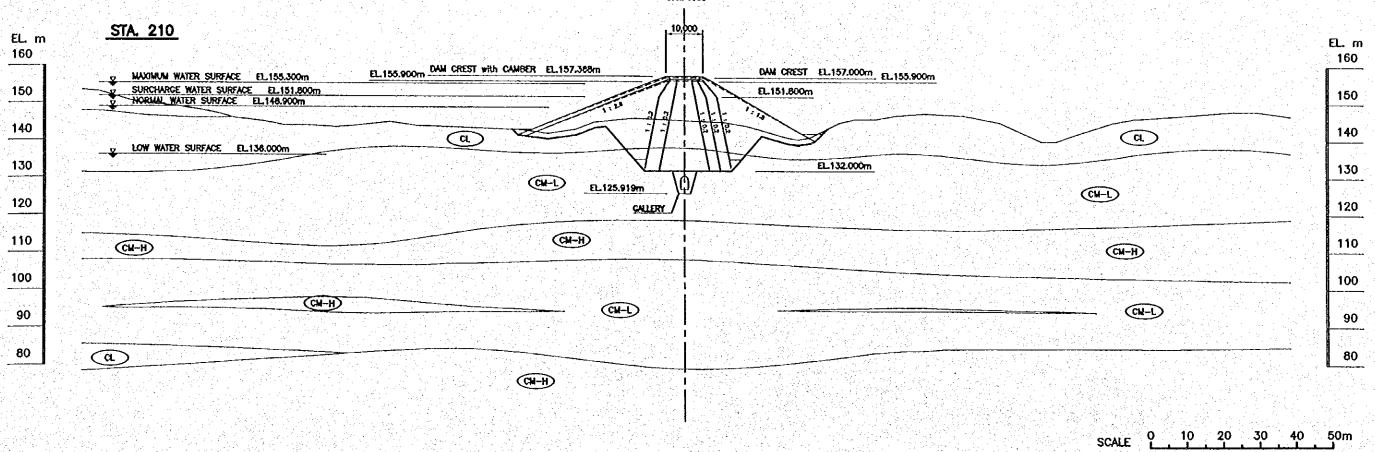




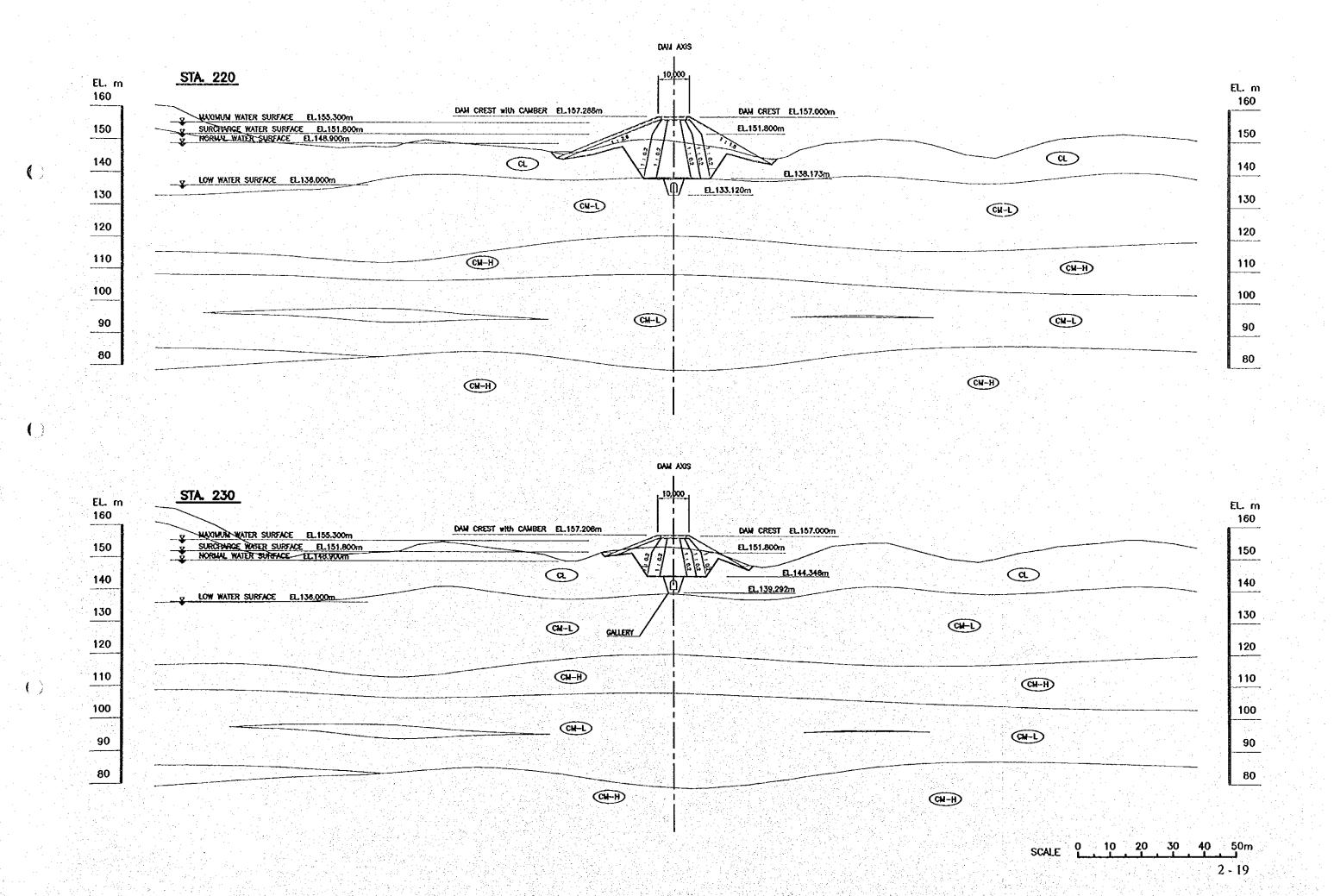


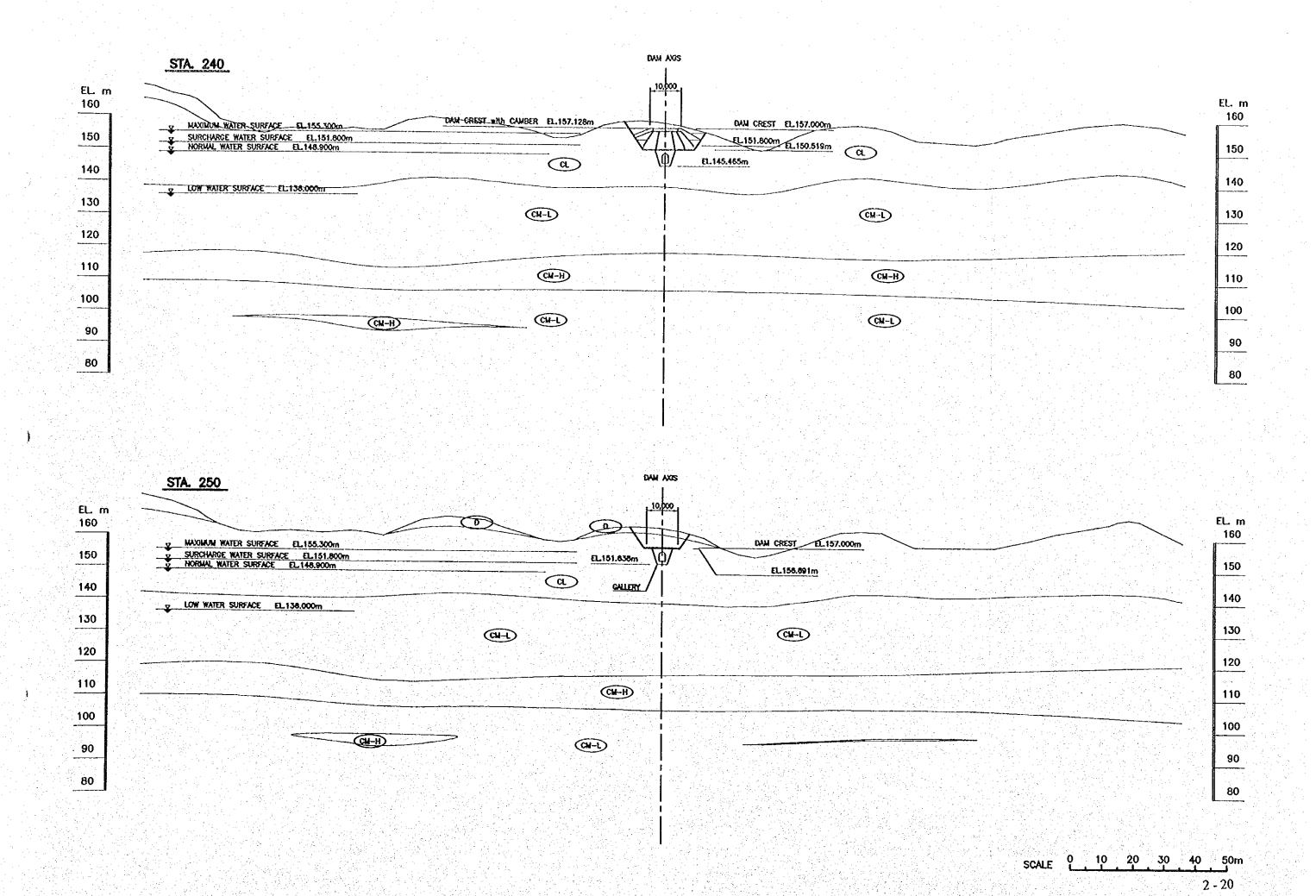






2 - 18





## 2.2 Dam Embankment

## SUMMARY OF EMBANKMENT CALCULATION (1/2)

		Quantity	Quantity
ltem	Unit	Original	x 1.05
		(m³)	(m³)
Dam Embankment Impervious Zone including Contact Slurry and Contact Material	m³	113,513	119,000
Dam Embankment Semi-pervious Zone :		, '	
in Upstream Semi-pervious Zone	em	31,192	33,000
in Downstream Fine Semi-pervious Zone	W3	22,781	24,000
in Downstream Coarse Semi-pervious Zone	m³	23,559	25,000
Dam Embankment Pervious Zone :			+ 111 (1)
in Inner Pervious Zone	m <sub>3</sub>	91,487	96,000
in Outer Pervious Zone including Surface Treatment	m³	471,465	495,000
in Riprap Zone	m <sub>3</sub>	9,752	10,000
Total (excluding Road Material)	tu <sub>3</sub>	763,751	802,000
	We have		
Special Compaction for Dam Embankment : in Impervious Zone Embankment	₩3	1,470	1,540
in Upstream and Downstream Semi-pervious Zone	m <sup>3</sup>	2,800	

SUMMARY OF EMBANKMENT CALCULATION (2/2)

	olume		-	T	Ţ	ì					206	20.5	0.00	300	788.0	2	a	0 0	762	0	ĉ			Ì		1
•	rea Vo				-	-					0.7	Ŀ	S 0 X65	c	¢	ľ	٢	1	Ĺ	3	İ	-	-	-		-
	Ave. A				-	-							!								1					
æ	Downstream	Inner Pervious						1		0.0	61.3	750	936.6	166	996	878	355	1001	9 6.6	000	200					
	Volume		[ [ [		1						306.5	1.468.5	3.849.0	8.251.5	11.258.0	10.659.0	6.686.0	2010	788.5	× .		-	-1			
	Ave Area		Ē			-	1	-					6.78%		-	İ								-	-	
ι¢	Upstream	nner Pervious								0,0	61.3	7.202	537.4	1.12.9	1,138.7	993.1	344.1	134 1	23.6	C	200					
-	lume		-	<u> </u>	176.9		0.70	3,7	30.0	0.050,	322.0	593.5	870.5	151.0	305.0	240.0	035.0	0 777	165.5	9	000	2.00	2.00	2	200	5 6
	ve. Area Ve			-	ŀ	ł	ł	1	1			ļ				1	Γ	1		119.4	0 00	0 20	0.00	20.0	7.77	ŧ
7	Downstrens	Semi-pervious	Contse	00	1.42	1,10	0.55.4	1,0,	6.68	120.1	144.3	174.4	199.7	230.5	230.5	217.5	189.5	159.3	133.8	105.0	27.9	6 90	3000	0.00	0.00	20.0
	Volume		E		151.1	1000	2000	27,00	786.5	0.100	1.275.5	1,547.0	1,846.0	2,133.0	2,269.0	2,208.5	1.997.0	1.695.0	1.421.0	1.149.5	850.0	605.5	410.4	2	77.5	10 20 00
	Ave. Aren	•	E	-~	16.3	100	10.00	0.00	8	00.	127.6	154.7	184.6	213,3	526.9	220.9	1.66	169.5	142.1	115.0	0.5%	9 99	0.15	0.00	0 9	
	Ē	cmi-pervious	- Jillo	0.0	32.5	9 00	2006		0.65	15.2	139.9	169.5	199.7	226.9	126.9	214.8	9.78	<u> </u>	8.621	1.001	6 69	2.3	3. 5	0	0 0	-
-;	Volume	_	111		214.7	10 6/3	0.210		0.20	383.5	1,747.0	2,109.0	2,510.5	2,886.5	3,061.0	2,987.0	2,712.0	2,309.5	1,939.5	1,577.0	1.182.0	852.0	50%	351.5	120.8	11 192 5
	Ave. Area	<u>۔۔۔۔</u> بر	m		22.6	6.13	2 10		3	38.4	174.71	210.9	251.1	7.88	306.1	798.7	271.2	231.0	194.0	157,7	200	85.2	\$ 65	35.0	11.5	
1		Suorviadimos		0.0	ε	5.50	1001	6 31 1	3 3 3	6.86.3	130.9	6.06.7	2,172	300.	306.1	5, 95	351.1	210.8	177.1	138.3	 8:	72.3	47.3	0.52	0'0	-
	Volume	-	-		359.1	5 066	1,979.5	2 586 5	0 132 2	0.10,10	0,010,0	6.110	0.000		0.000	6.186,61	11,774.0	8.886.0	5,592.5	4,677.0	5,927	759.0	1,065.5	524.5	153.3	13.513.4
	Ave. Area		Ē		37.8	123.0	0.861	7567	1,000	0.00	0,166	7.10	1,0,8,0		6 900	2.000	1,177.4	9.88	659.3	7.67.7	3,262	9.57	106,6	52.5	14.6	=
	-	short adm		0.0	75.6	170.3	225.6	7 73.6	16A E	C.Pol.	0.50.7	0.000	2000	E-001-1	0.006	5,10,00	0.5.3.0	754.2	25.0	371.1	214.4	137.4	7.5.7	29.2	0.0	-
1	÷,		-	3	8	5	<u></u> 8	6	. 6	3 5	2 8	3 6	3 5		6 6	2 5	9	2	3	8	<u> </u>	ನ	230	49	5.5	AI.

					9	9		٠ وا-	-	1		9,0	i ç	, u	Ç V	) V	i c	2	ķ	2	, c		1	ij.	ľ
	Total	<u>ء</u> •	, LL		55.6	99 9	2000	, , , c	6,11	0,762,00	2000	6.7 73 6.7 73	1.0	01.7	6.00	77.00	47.5	20 11	21.00	13 97	D. 0	30 7	10	6112	
	Volume		j,E			İ		Ì	ļ	2.5		Ì									20 62	0 52	12.5	3.2.2	
	Ave, Area	ę,	E.		3.6	7.0	7.3	100	3:	1.	7:7	7.5	7.7	7.5	10.6		7.5	7.5	7.2	7.2	7.2	2	15.6	9	
0.	Rond	Material	_	0.0	7.21	7.2	6.6	0.6		0.2	4.6	7.07	16.6	2.2	200	6.6	7.2	7.2	7.2	7.2	7.2	2.2	C &	CC	
	Volume	 	Ė		93.6	263.5	130.0	0 217	2 095	2002	653.5	66.3.5	671.5	677.5	677.0	664.5	653.5	662.0	622.5	521.5	444.0	307.5	0.53	8.09	7 494 0
	Ave, Area	£.					į	1		6.18				-					1					6.7	
	r.	Alprais		0'0	19.7	33.0	33.0	A9 R	2	8.19	65.9	8.99	67.5	67.4	67.0	6.53	64.8	67.6	56.9	47.4	41.4	6.3	5.5	ce	
-	Volume		E	1			١, ١	ľ	1 832 6	8 075.5	16.709.0	28.148.0	33,282.0	33 373.5	28 398.5	18,657.0	11,444.0	8,088,5	5,625.0	3,437.0	1,800.5	867.0	317.5	77.5	2 200 010
	Ave. Area	5	ı	ł	-			ļ	ı	807.6	ĺ	"	ľ	Ι.	1		7	808.9				86.7	×.	6,0	
	Downstream Outer Deprises	onor is local		0.0	165.7					6.786	c 3	3	3	٤.		1,345.1	943.7	674.0	451.0	236.4	123.7	7.67	13.8	0.0	
1	Voiume	E		ľ	740.5		_ 1		j	10,264.0	16,108.5	29,218.5	42,557,0	44,390.5	38,624.0	26,413.0	15,599,0	10,534.0	6,8/2.0	7,089.5	2,112.0	98.5 8	258.0	19.4	260.XIX.0
, Y	Avc. Arch	Ē	L			165.4	Š	Ċ	558.9	1,026.4	1,610.9	2,921.9	4,255.7	4,439.1	3,862.4	2,641.3	1,559.9	1,053	684.2	6		30.5	35.8	3.8	_
1 1-24-11	Outer Pervious		0	200	5.66	174.9	217.0	367.5	750.2	1,302,6	1.919.1	3,924.6	4,586.8	4.291.3	3,433.5	1,849,1	1,270.7	836.1	532.3	285.6	136.8	44.1	7.5	0.0	
	į,		ş	3	3	2	ဋ	S	8	110	္ဌ	2	2	<u>ዩ</u>	<u>8</u>	2	2	8	8	0	0	30	9	250.5	, . ,

Semi-pervious Semi-	Downstream	Downstream	Uostreum	Downstream	Upstroam	Downstroum	<b>7</b>	Pond Pond	Total
2.9	Semi-pervious Fine	Semi-pervious Course	Inner Pervious	Inner Pervious	Outer Pervious	Outer Pervious	Riprup	Mulcriul	1870 1
					2.2	17.6	5.4	7.2	31.5
17.7	13.5				39.2	26.2	13.6		150.6
20.0	15.0				66,8	62.1	8.0		216.9
1.6	2.0	9.9			46,2	67.7			132.8
					3.1	5.4			6.9
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Downstre Seini-pervi Fine	E S	Downstream Semi-pervious Coarse	Upstream Inner Pervious	Downstream Inner Pervious	Upstream Outer Pervious	Downstream Outer Pervious	Riprup	Road	Total
	\  ~i	2.3			2.5	4.6	5.6	7.2	33.
	13.5	13.3			40.4	26.8	13.7		152.6
	15.0	15.0			6.96	62.9	13.7		960
	15.0	15.0			29.9	102.2			. b/./
22.4	14.0	17.7			υ. υ.	5.3			117.6
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	Total	34.8	153.7	261.2	246.8	160.0	101.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	957.6	(m)		Total	200	2.70	7 226	- 007	2.07.0	177.0	6.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,344.7
10	Road Material	7.2																7.2		01	Road	1	2.,				-		1					-				7.2
6	Riprap	5.8	13.6	13.6														33.0	-	6	Кіргар	- 6	2 5	13.6	2.0								-					49.6
8	Downstream Outer Pervious	4.8	27.3	63.2	102.3	26.4	2.4										_	226.4		90	Downstream Outer Pervious		1.00	P.6.2	9 601	0.001	0 66											339.4
7	Upstream Outer Pervious	2.6	41.0	97.2	47.3	26.4	2.4			و الماسانية من مستقد مستقد به مستقد الماسانية								216.9		1	Upstreum Outer Pervious	0	2.0	74.3	1 2 2 2	7.75	29.9											367.6
9	Downstreum Inner Pervious																	0.0		9	Downstream Inner Pervious	-																0.0
ı:	Upstream Inner Pervious																	0.0		5	Upstream Inner Pervious																	0.0
4	Downstreum Semi-pervious Coarse		13,3	15.0	15.0	15.0	15.2											76.0		٧	Downstream Semi-pervious	Coarse	7.67	4.5	0.00	15.0	15.0	13.9										6.08
55	Downstream Semi-pervious Fine	2.5	13.3	15.0	15.0	15.0	5.1									-		72,3		ဗ	Downstream Semi-pervious	- 1	2.00	0.01	0.51	0.5	15.0	9.0										85.0
2	જ	3.3	17.8	20.0	20.0	20.0	19.1									-		100.2		2	Upstream Semi-pervious	6	0.01	0.00	0.0%	20.02	20.0	16.91										118.2
-	Impervious	6.1	27.4	37.2	47.2	57.2	50.5											225.6			Impervious	2	2.00	37.7	17.9	57.2	67.2	45.1						~~	-	and the state of t		287.8
	Flevation (EL. m)	155-157	150-155	145-150	140-145	135-140	130-135	125-130	120-125	115-120	110-115	105-110	100-105	95-100	. 90–55	85-90	80-85			-	Elevation (EL. m)	155-157	150-156	145-150	140-145	135-140	130-135	125-130	120-125	115-120	110-115	105-110	100-105	95-100	90-92	85-90	80-85	
	No.	91	15	11	13	12	=	2	6	80	7	9	S	7	3	2	-	Total	Sta.90		ģ	ď	ŭ	3 5		+	=	Ī		ထ	7	9	က	4	လ	. 2	_	Total

	Total	39.1	7.79	0.000	0.70	2.5.5	7875	129.7	249.8	8.961	96.9	0.0	0.0	0.0	00	200	0 0	000	4. 201. 6	(4.1)		Total	0 44	0.00	1007	7 9X.	492.2	597.9	674.8	483.7	243.6	195.2	7.0g	0.0	0.0	0.0	2 5	2
01	Road Material	7.9	1				-												. 4		101	Road Material	0.6	,							The state of the s							_
6	Riprup	8.6	2.01	2.00	0.01	0.00	3.5.5	2.7	-							-			64.9		5	Riprap	3	0.0		V 8.1	13.4	2.7						1			-	-
æ	Downstream Outer Pervious	5.7	118	27.7	0.10	7.00.7	1.001	173.5	9.89	29.8									\$ 269		8	Downstream Outer Pervious	0.7	3 - 2	20.70	7,601	147.7	186.1	224.6	208.2	4.2							-
	Upstreum Outer Pervious	3.5	46.4		1,691	0.40	415.0	136.3	54.0	29,8						a party management of the first			3.057		L	Upstream Outer Pervious	10.6	7.67	x 101	166.6	223.9	291.9	323.0	138.3						The state of the s		-
9	Downstream Inner Pervious										The same of the sa								0 0		9	Downstream Inner Pervious								and the state of t	46.1	15.2						
S	Upstream Inner Pervious									and the state of t	· rate landidament patrick og menmen en propertier page								0.0		23	Upstream Inner Pervious									46.1	15.2				A STATE OF THE PARTY OF THE PAR		
7	Downstream Semi-pervious Course	l			2 C						1								120.1		7	Downstream Semi-pervious	Course	V ~	0.51	15.0	15.0	15.0	15.0	15.0	15.0	8.8°	4.1			Application of the contract of		-
8	Downstream Semi-pervious Fine		13.4	15.0	15.0	0.01	0.51	0.01	0.61	15.0	0.6								115,21		m	Downstream Semi-pervious	0.6	13.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0)	3.5					
2	Upstream Semi-pervious	3.7	17.9	20.0	20 02	0.00	0.00	0.00	20.0	0.07	16.91								158.51		2	Upstream Semi-pervious			20.0					***************************************		1						
	Impervious	8.9	27.4	37.9	47.9	57.2	87.9	7. 54	7.17	2.78	57.1								164.5		-	Impervious	7.2	27.4	37.2	47.2	57.2	67.2	27.2	87.2	97.2	107.2	26.5					
	Elevation (EL. m)	155-157	150-155	145-150	140-145	135-140	130-136	001-201	001-001	120-123	1.5-1.20	211-21	105-110	100-105	95-100	90-95	85-90	80-85				Elevation (El., m)	155-157	150-155	145-150	140-145	135-140	130-135	125-130	120-125	115-120	10-115	105-110	501-001	201-00	00-08	80-83	
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	Total		42.5	167.7	281.9	307.1	1100	- 0	200	714.5	821.2	818.6	597.8	558.3	ARG F	207.2	0.17.	200	200	6.296.4	(£		Total		36.4	142.1	246.5	350.8	451.5	548.4	645.5	742.7	839.8	1.044.2	1,151.4	1,110.5	973.6	985.9	624.7	192.1	10.591.9
01	Road Material		7.2																	7.2		10	Road	inial Critical	7.2																7.2
6	Riprup		7.0	14.41	14.4	13.8	2 5	2 5	7											65.8		6		on on	7.3	14.4	14.4	14.7	13.7	2.7											6.99
8	Downstream Outer Pervious		6.3	32.5	71.3	1.23	V 151	F 401	7.061	7.57.4	268.4	232.4	251.4	270.2	254 4	169.7	114.0	21.17		2.354.1		8	Downstream	Occi i ci viono	6.6		72.0	113.8	154.2	192.9	231.8	270.7	234.6	253.5	272.4	291.3	310.2	329.1	3/8.0	161.8	3,276,1
7	Upstream Outer Pervious		4.2	48.4	109.01	170.8	0.000	2000	6.762	357.9	415.6	265.7	20.9							1.919.0		2	Upstream Outer Population	enor is isono	1.6	49.5	110.1	172.6	233.6	302.8	363.7	422.0	370.2	408.5	446.8	420.4	275.1	265.6	79.1		3.924.9
9	Downstream Inner Pervious							and the same of th	A come to approximate the same about the same and the sam			75.0	95.0	74.8	14.7					259.5		9	Downstream	200									75.0	95.0	115.0	135.0	155.0	175.0	156.2	30.3	936.5
5	Upstream Inner Pervious													46.1						232.4		ស	Upstream										110.0	130.0	150.0	9.98	46.1	14.7			537.4
4	Downstream Semi-pervious	Course	3.1	13.5	15.0	15.0	0.5	05	0.01	0.01	15.0	15.0	15.0	15.0	19.3	3.5				174.4		V	Downstream	Coarse		13.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	3.0		199.7
3	Downstream Semi-pervious	Fine	3.1	13.5	15.0	15.0	15.0	0.51	200	2.0	15.0	15.0	15.0	15.0	15.0	3.0				169.6		3	Downstream Semi-pervious	Fine	3.2	13.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	3.0		199.7
7	Upstream Semi-pervious		4.1	17.9	20.0	20.0	20.0	20.0	0.0%	2000	20.02	20.0	20.0	20.0	24.3	1.5				230.8		2	Upstream Semi-pervious		4.3	18.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	24.3	1.5	-	271.1
-	Impervious		7.5	27.5	37.2	17.2	57.2	67.2	77.0	0.10	2.18	97.2	107.2	117.2	127.2	26.6				9.588		-	lmpervious	_	6.7	27.5	37.2	47.2	57.2	67.2	77.2	87.2	97.2	107.2	117.2	127.2	137.2	147.2	30.6		1,172.4
 : :	Elevation (EL. m)		155-157	150-155	145-150	140-145	135-140	130-135	125-130	201-001	521-021	115-120	110-115	105-110	100-105	95-100	- 90-95	8590	80-85		The second secon		Elevation (EL. m)		155-157	150-155	145-150	140-145	135-140	130-135	125-130	120-125	115-120	110-115	105-110	100-105	02-100	90-95	85-90	80-85	
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No. Ele	Elevation   Impervious	vious	Upstreum Semi-pervious	Downstream Semi-pervious Fine	Downstream Semi-pervious Coarse	Upstream Inner Pervious	Downstream Inner Pervious	Upstream Outer Pervious	Downstream Outer Pervious	Nprup	Roud	Total
15.	155-157	8.2	4.5					4.9	6.9	7.5	7.2	46.
150	50-155	27.5	18.0					50.4	33.8	14.4		171.1
14.	145-150	37.2	20.0					1111	7.2.7	14.4		, 58%
	40-145	47.2	20.0	15.0				173.6	114.5	14.4		7.66
12 135	135-140	57.2	20.0	15.0				236.0	156.0	14.1		
	130-135	67.2	20.0	15.0				306.1	195.2	2.7		691
10 125	125-130	77.2	20.0	15.0				368.6	0 686			7.67
120	120-125	87.2	20.0	15,0	15.0			724.5	272.6			22.2
11	115-120	97.2	20.0	15.0					236.3	Salaran de la constante de la		070
]	110-115	107.2	20.0			130.0	95.0	410.2	255.1			1.047.5
Ö	105-110	117.2	20.0						273.8			1.154.0
ğ		127.2	20.0						292.5			1.260.5
95		137.2	20.0			0.061			311.2			1.367.1
ര്	90-95	147.2	20.02						329.9			1,460.5
ώ		157.2	20.0			146.5			348.6			1 022 8
8		167.2	23.6						6 476			165
Total	1,	,466.5	306.1	2	2	1.112	1 166	1.587.1	0.380.0	87.5	7.9	12 376
Stu. 150												( <sup>-m</sup> )
<del>-</del> ,,			2	က	4	ເກ	9	2	ဘ	6	10	
No. Elevat (EL.	Elevation   Impervious	vious	Upstream Semi-pervious	Downstream Semi-pervious	Downstream Semi-pervious	Upstream Inner Pervious	Downstream Inner Pervious	Upstream Outer Pervious	Downstream Outer Pervious	Riprap	Road	Total
┢	155-157	8.2	4.5	3111	Coarso			0.4	0.3	7 0		0 34
15 150	150-155	27.5	18.0		13.5			50.8	8.5	0.0		10.
	5-150	37.2	20.0						7.2.7	7 7		786
i	140-145	47.2	20.0					173.6	114.5	14.4		309.7
	135-140	57.2	20.0	-		****		236.0		7.		513.3
	130-135	67.2	20.0	15.0				305.5		2.6		620.
10	5-130	77.2	20.0	15.0				365.4				726.5
12	120-125	87.2	20.0	15.0				422.5				832.
	115-120	97.2	20.0	15.0		110.0	75.0	369.7				938.2
	110-115	107.2	20.0	15.0			95.0					1.044.0
Ö	105-110	117.2	20.0	15.0		150.0			273.6			1,149.9
ĕ	100-105	127.2	20.0	15.0					292.3			1,262.7
- 95	95-100	137.2	20.0	15.0					311.0			1,309.3
<u>ಕ</u>	0-95	147.2	20.0	15.0					329.7			1,284.8
ώ: 	85-90	157.2	20.0	0.51	15.0	172.3		0.77	348.4			0.960
4		187.7	23.6	15.0	18.61		21		162.3			414.6
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	Total		45.2	170.4	284.6	398.9	510.9	616.1	720.7	825.3	930.0	1,040.5	1,107.0	1,068.9	940.8	737.2	350.1	13.6	9,790.2]	(E)		Total			13.4	168.8	282.8	396.3	502.3	606.2	710.1	817.1	755.7	427.0	350.9	288.4	226.5	39.6	0.0	0.0	5,615,1
0	Road	Material	7.2																7.2		10	Road	Material		7.2					-											7.2
6		Riprap	7.7	14.4	14.4	14.4	33.00	2.7				-	-						67.1		6		Riprap		7.1	7.7	7.7	14.1	13.3	2.7											66.0
œ	Downstream	Outer Pervious	6.7	33.5	72.4	114.2	155.0	193.3	231.3	269.3	232.3	250.3	268.3	263.0	199.5	7.96	0.3		2,385.8		~	Downstream	Outer Pervious		6.4	32.9	71.7	113.1	151.5	1.89.1	226.7	264.3	208.9	74.4	6.1						1,345.1
7	<u>!</u>	Outer Pervious   (	1.8	20.0	110.6	173.1	234.9	302.5	362.2	418.8	365.5	408.0	106.5	323.7	209.1	63.5			3,433.6		7	Unstream	ST.		4.4	49.0	109.5	171.9	230.3	297.2	356.2	415.6	215.0	-							1,849.1
9	<u> </u>	Inner Pervious						7			75.0	95.0	115.0	135.0	155.0	175.0	98.2		848.2		6	Downstream	Inner Pervious										75.0	95.0	104.3	65.1	16.0				355.4
5	Upstream	Inner Pervious						B. Mariant Mariant Salata Company of the Company of	The state of the s		0.011	130.0	150.0	170.0	0.061	205.1	38.0		1.866		rs.	Unstream	Inner Pervious	-				-					109.6	100.4	73.3	16.1	14.7				344.1
7	Downstream	Semi-pervious Course	1	13.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	17.1	3.5	217.4		V	Downstream	Semi-pervious	Coarse	3.2	13.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	19.3	3.5			189.5
.ت ا	Downstream	Semi-pervious		13.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	3.0	214.8		23	Downstroam	Semi-pervious	Fine	က	13,5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	3.0			184.7
2	<del>!</del>	Semi-pervious	4.4	18.0	20.0	20,01	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	24.3	4.5	291.2		2	[ Jacitram	ž		4.2	18.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	24.3	4.5			251.0
		Impervious	8.1	27.5	37.2	17.2	57.2	67.2	77.2	87.2	97.2	107.2	117.2	127.2	137.2	147.2	157.2	32.6	1,331,8		_		Impervious		7.7	27.5	37.2	47.2	57.2	67.2	77.2	87.2	97.2	107.2	117.2	127.2	137.2	28.6	-		1,023.0
	Gevation	(E., E)	155-157	150-155	145-150	140-145	135-140	130-135	125-130	120-125	115-120	110-115	105-110	100-105	95-100	90-95	85-90	80-85				Floonion	(E), E)		155-157	150-155	145-150	140-145	135-140	130-135	125-130	120-125	115-120	110-115	105-110	100-105	95-100	90-95	85-90	80-85	
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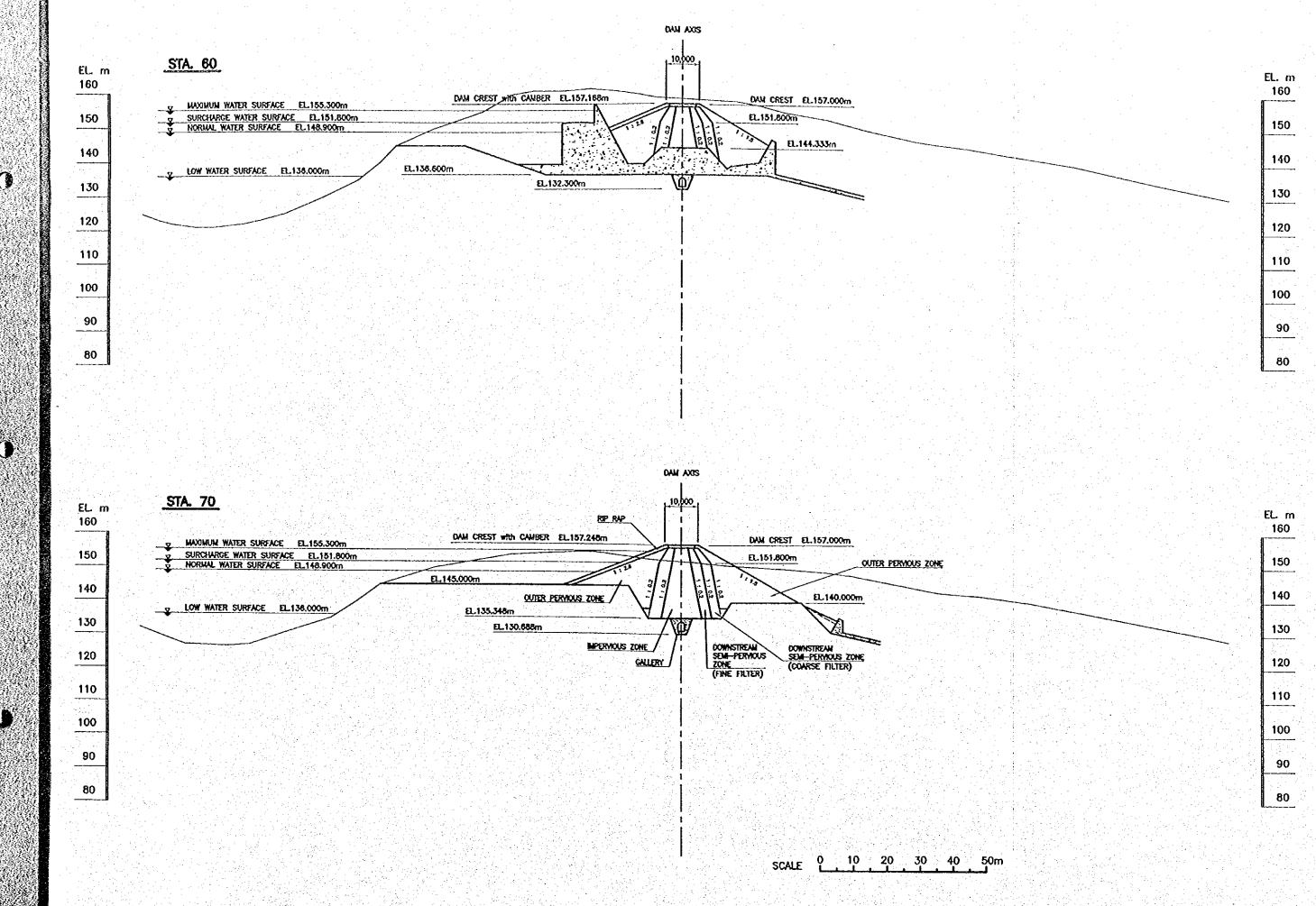
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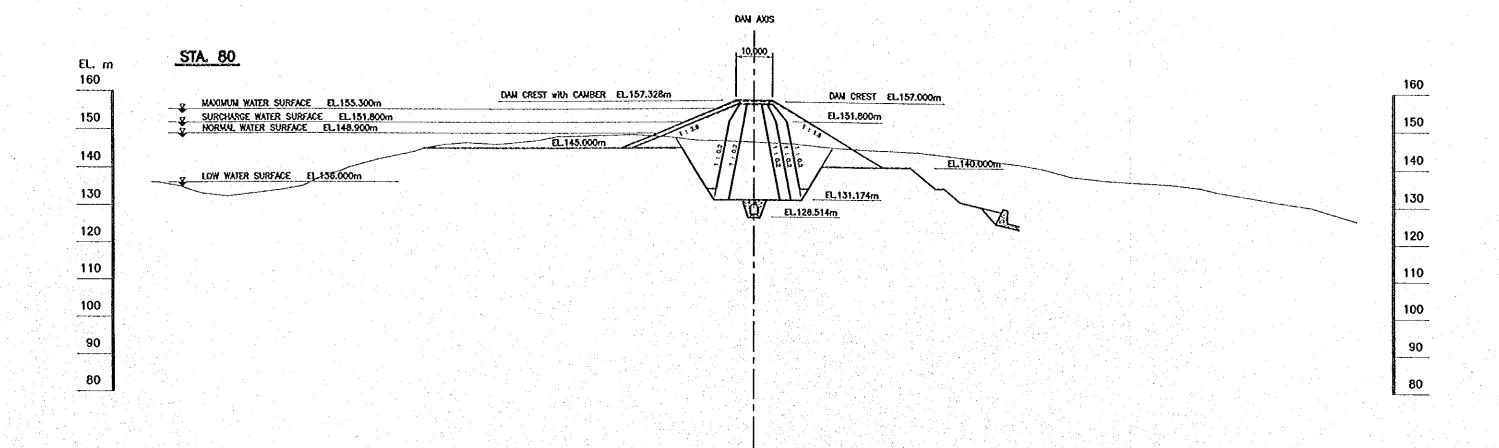
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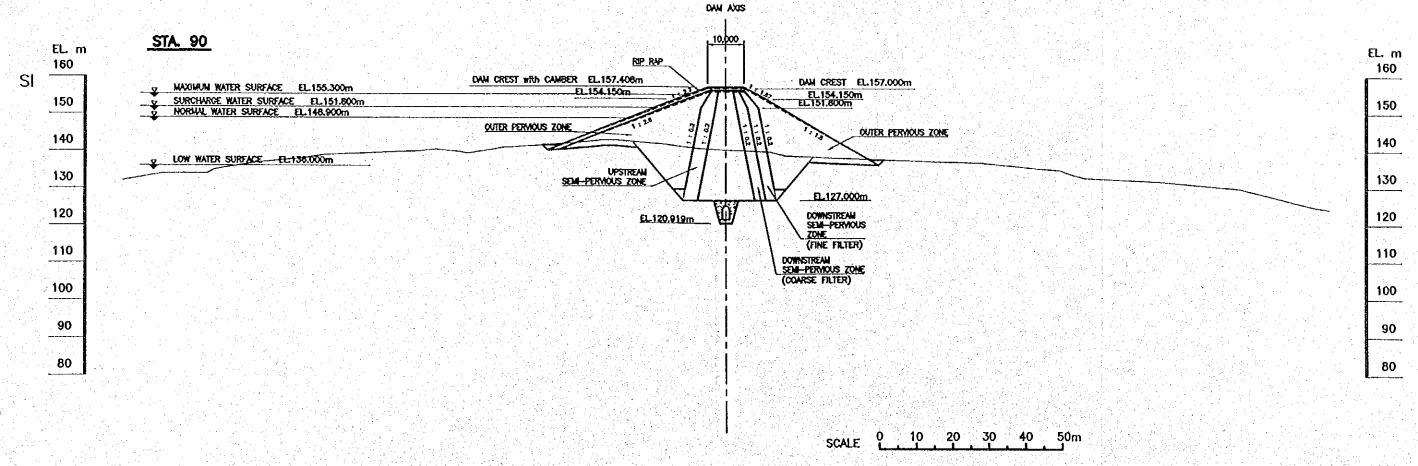
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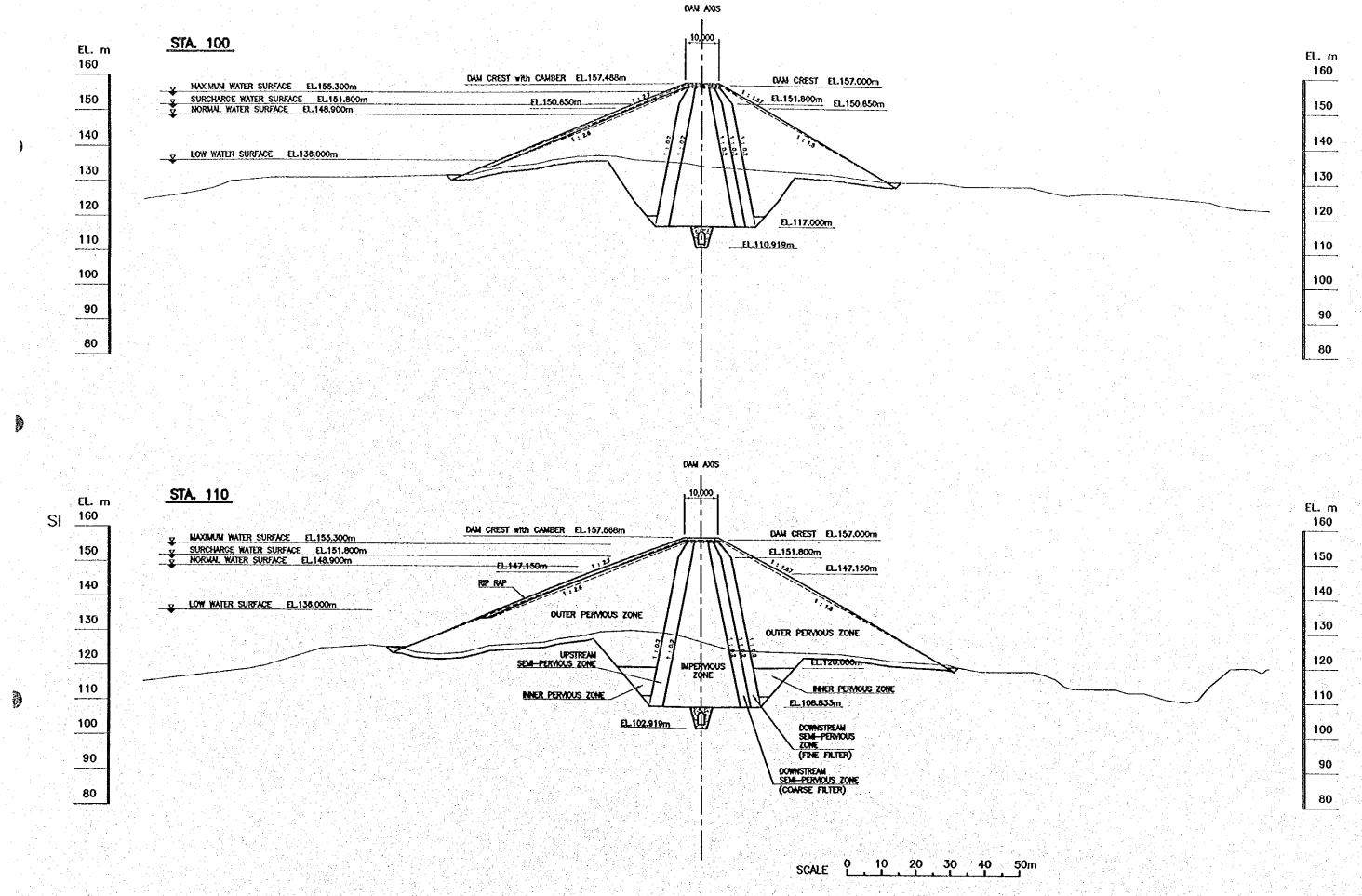
01 6	Riprup Muteriul Totul	6.2 7.0	4 % 1	000	243.4	2.3	0.17						0.0						718	( <sub>m</sub> )	01 6	X		l c	0.0	Č						)		0.0					
20	Downstream Outer Pervious	7.7	0.80	0.12	2.10	), UC	*												193 6		œ	Downstream	Outer Pervious	2 7	2. 90	0.07	6.01												
c-	Upstream Outer Pervious	9.6	x 04	- 62	7.0	0.01													9,88,8		7	Upstream	Outer Pervious	9.8	6.4	0.10	7.01												
9	Downstream Inner Pervious																		0.0		9	Downstream	Inner Pervious															-	-
ទ	Upstream Inner Pervious											***************************************							0.0		S	Upstream	Inner Pervious										***************************************						
4	Downstream Semi-pervious Coarse	2.4	13.3	10 57	5.51 17.51	3.5	0,	4 -4 -5 -11 -11 -11 -11 -11 -11 -11 -11 -11											55.2		4	Downstream .	Semi-pervious	23	13.3	3 8 8	6.6												
23	Downstream Semi-pervious Fine		13.3	0.51	15.0	י ני	0.0												51.2		3		Semi-pervious Fine		13.3	15.0	2.0												
2	Upstream Semi-pervious	3.2	17.8	20.0	22.5	e a	0.0												72.3		7		Semi-pervious	3.0	17.7	23.8	2.8												
1 1	Impervious	5.9	27.3	37.2	47.2					***************************************									137.3		-		lmpervious	5.61	27.3		5.6	4							***************************************				
	Elevation (EL. m)	155-157	150-155	145-150	140-145	135-140	30-136	001-00	051-051	120-125	115-120	110-115	105-110	100-105	95-100	90-92	85-90	80-85		0		Elevation	(EL. 19)	155-157	150-155	145-150	140-145	135-140	130-135	125-130	190-195	116-120	021-011	31-01	011-001	100-105	95-100	26-06	
	No.	16	15	14	13	12		1	3 0	6	∞	7	9	ဌ	٧	က	2		Total	Stu.230		ġ.		16	15	14	3	12	=	2	o	à	0 6	- 1	اه	ا	4		

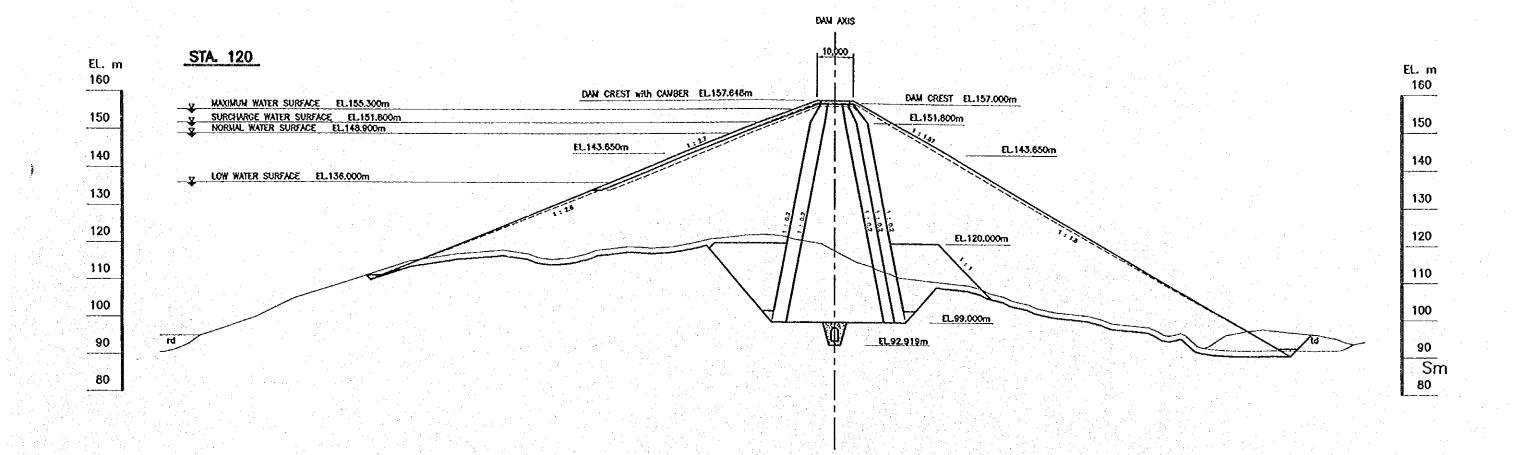
	-	2	23	7	ഗ	9	7	æ	6	01	,
Flevation		Upstream	Downstream		Upstream	Downstream	Upstream	Downstream		Road	Total
(EI, m)	{mpervious	Semi-pervious		Semi-pervious	funer Pervious	funer Pervious   Inner Pervious   Outer Pervious   Outer Pervious	Outer Pervious	Outer Pervious	Riprap	Moterial	
			Fine	Coarse			-				
155-157	5.2	2.8	2.1	2.1			2.0	6.5	12.2	7.2	40.1
150-155	2			16.7		***************************************	5.4		1.1	-	86.5
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135-140										-	0.0
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115-120											0.0
110-115											0.0
105-110											0.0
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85-90											0.0
80-85											0.0
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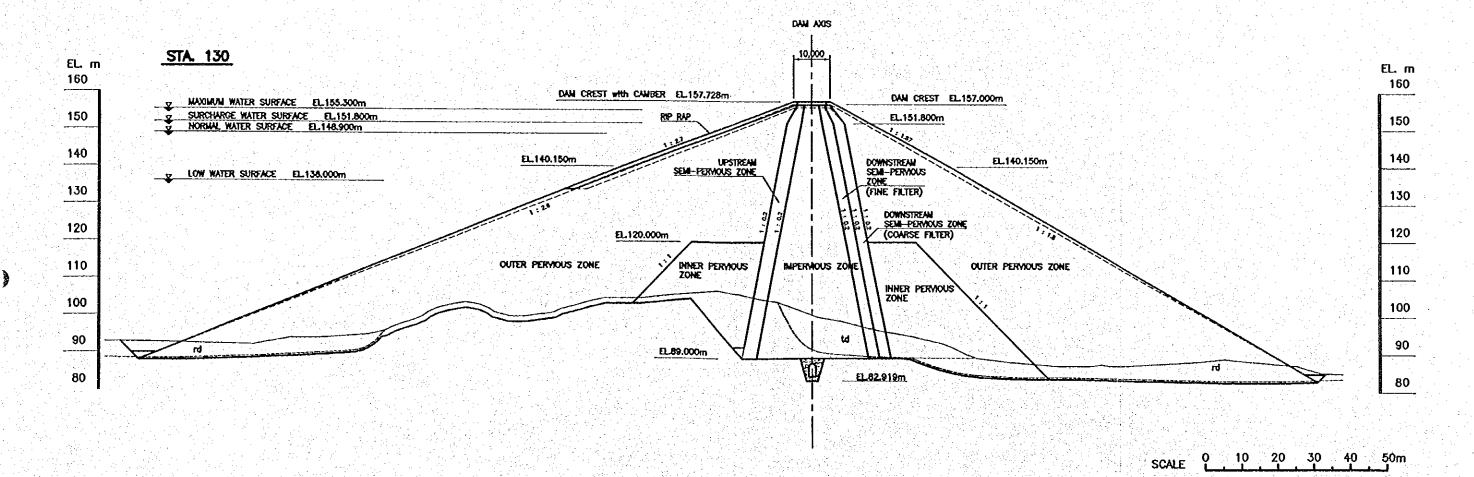




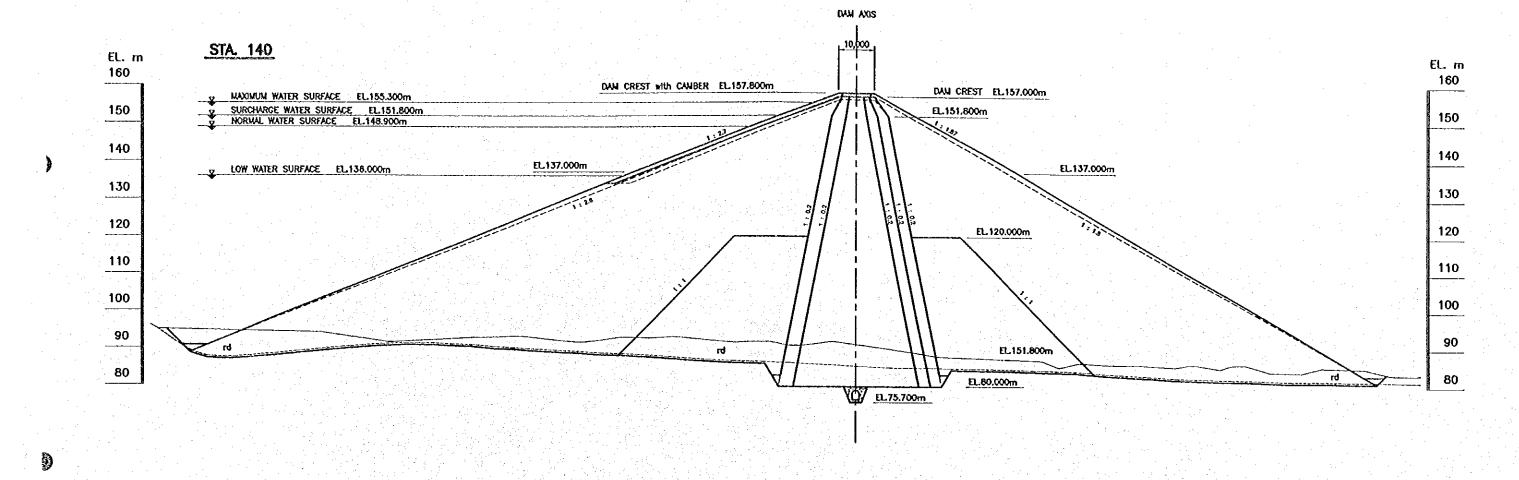


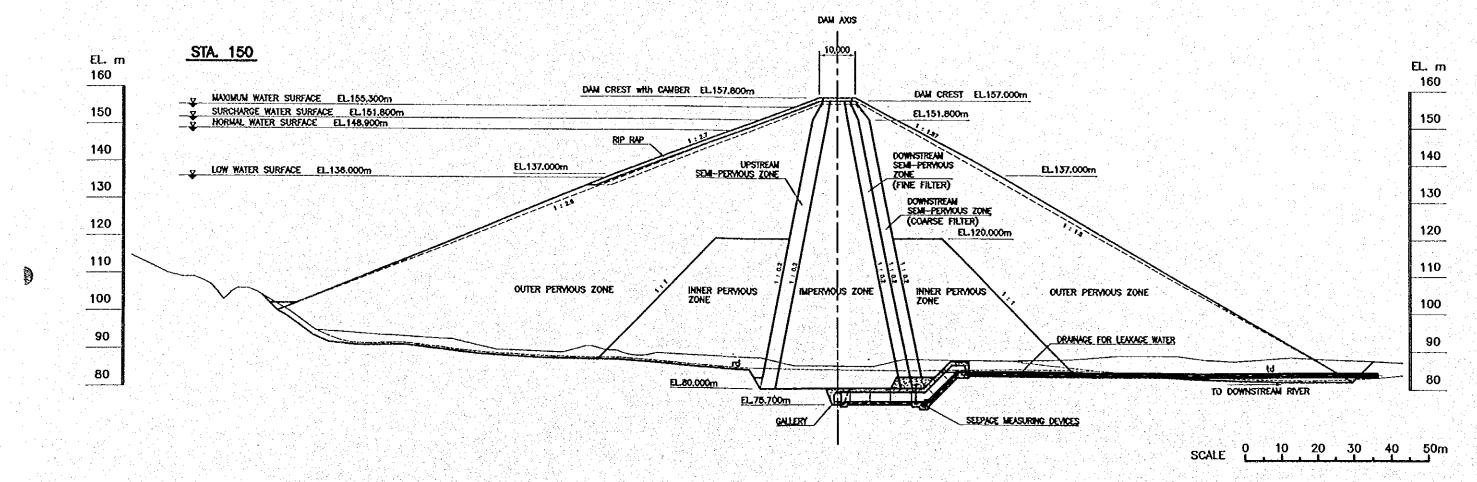


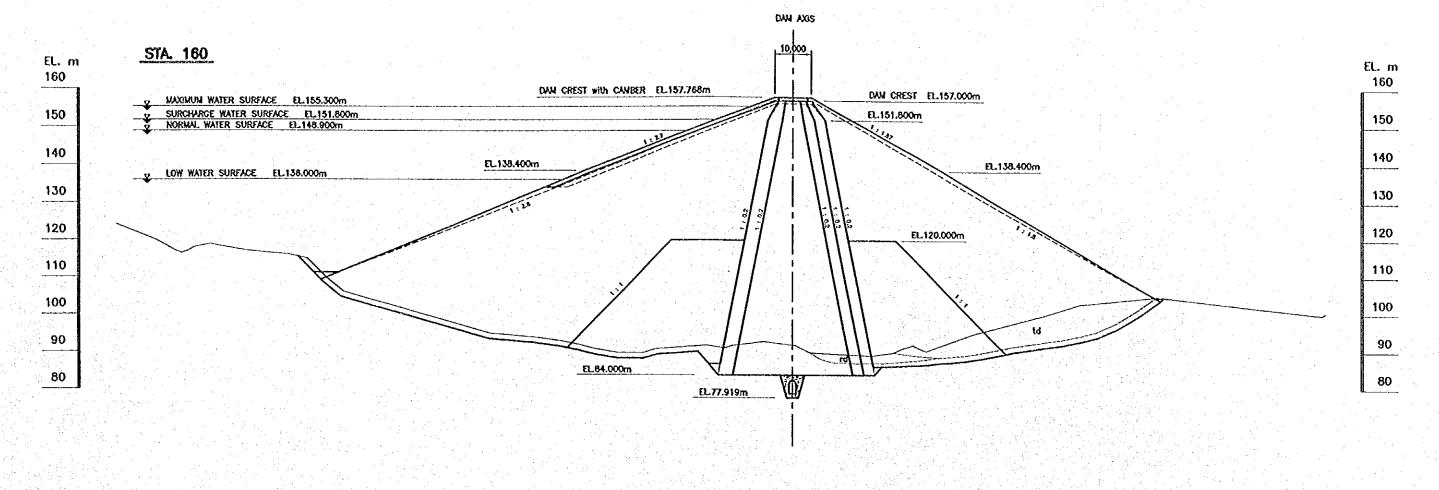


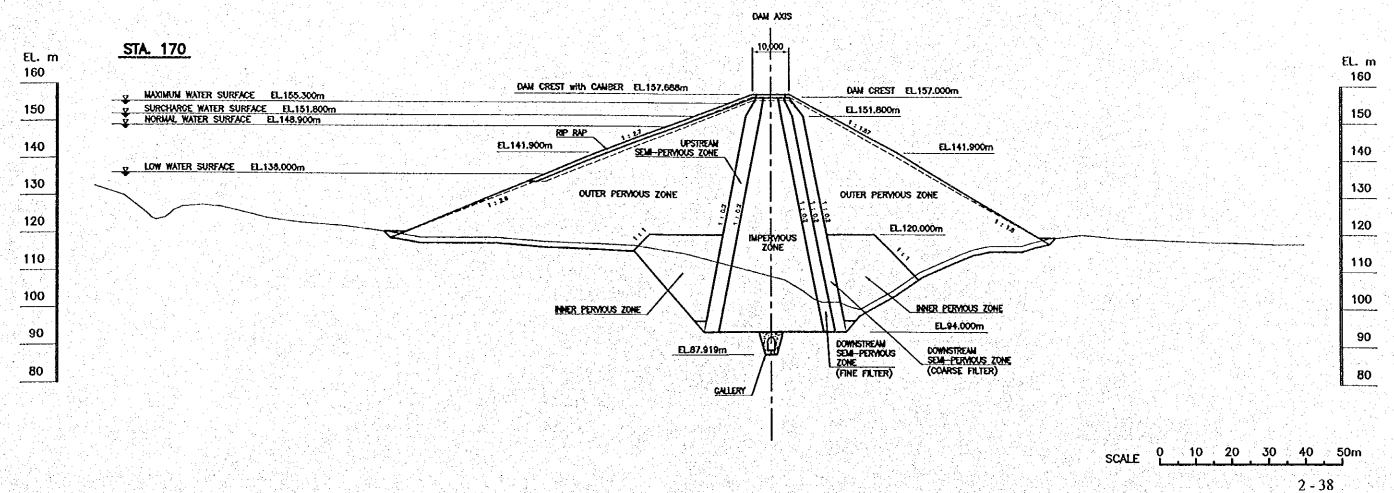


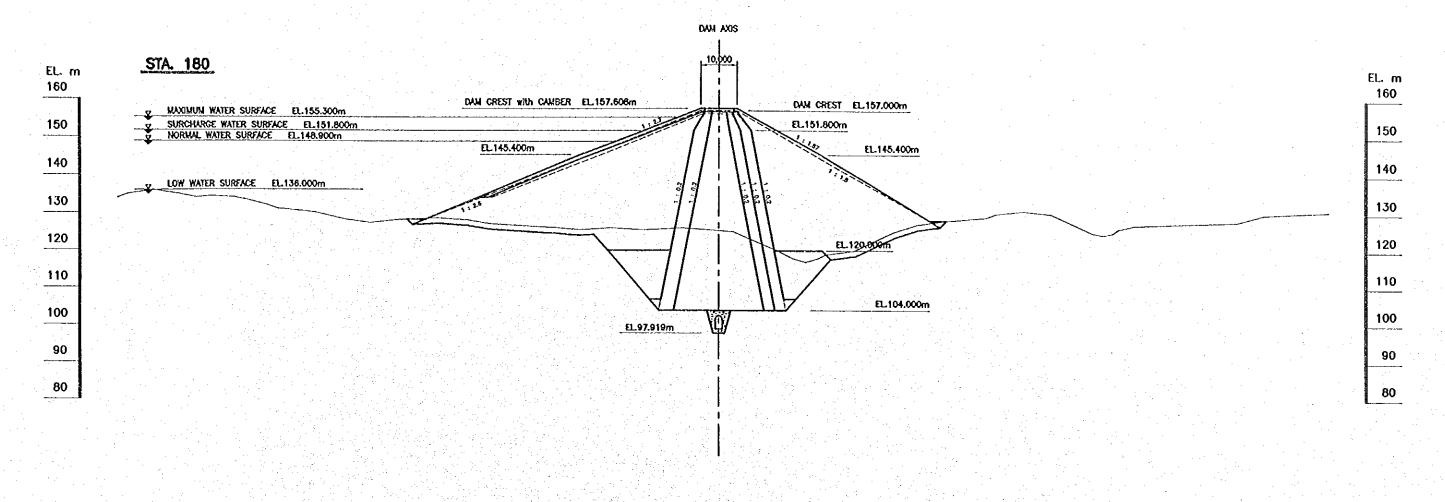
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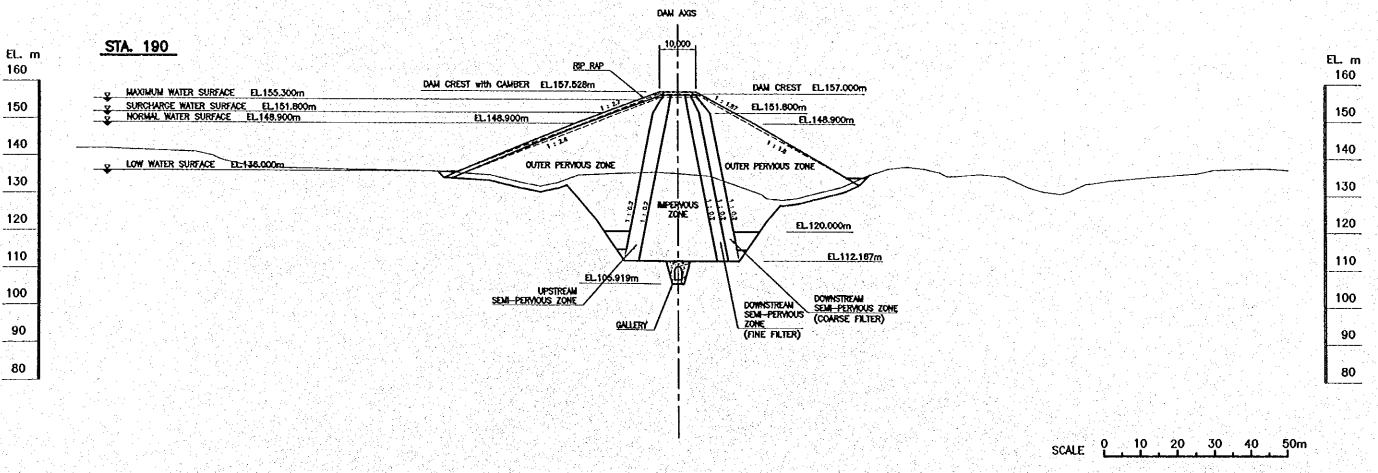


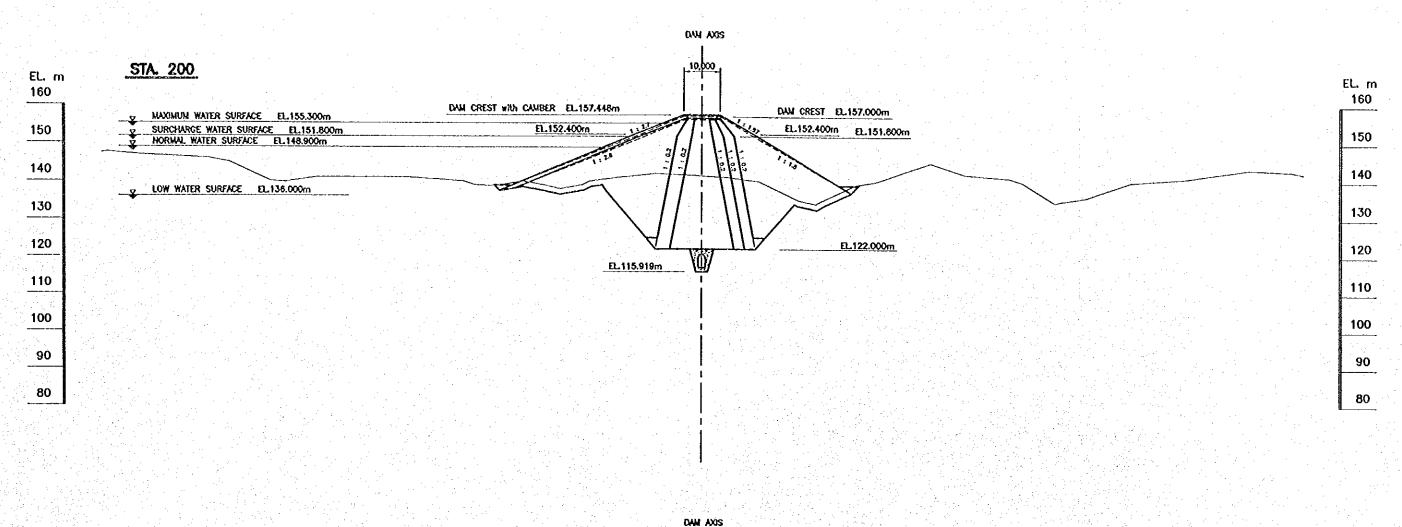


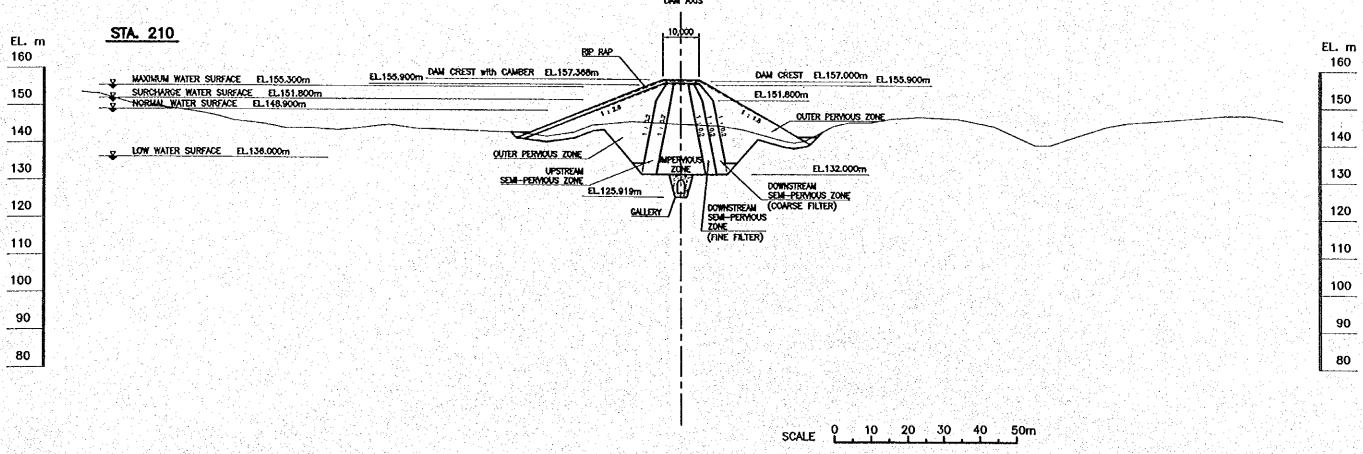


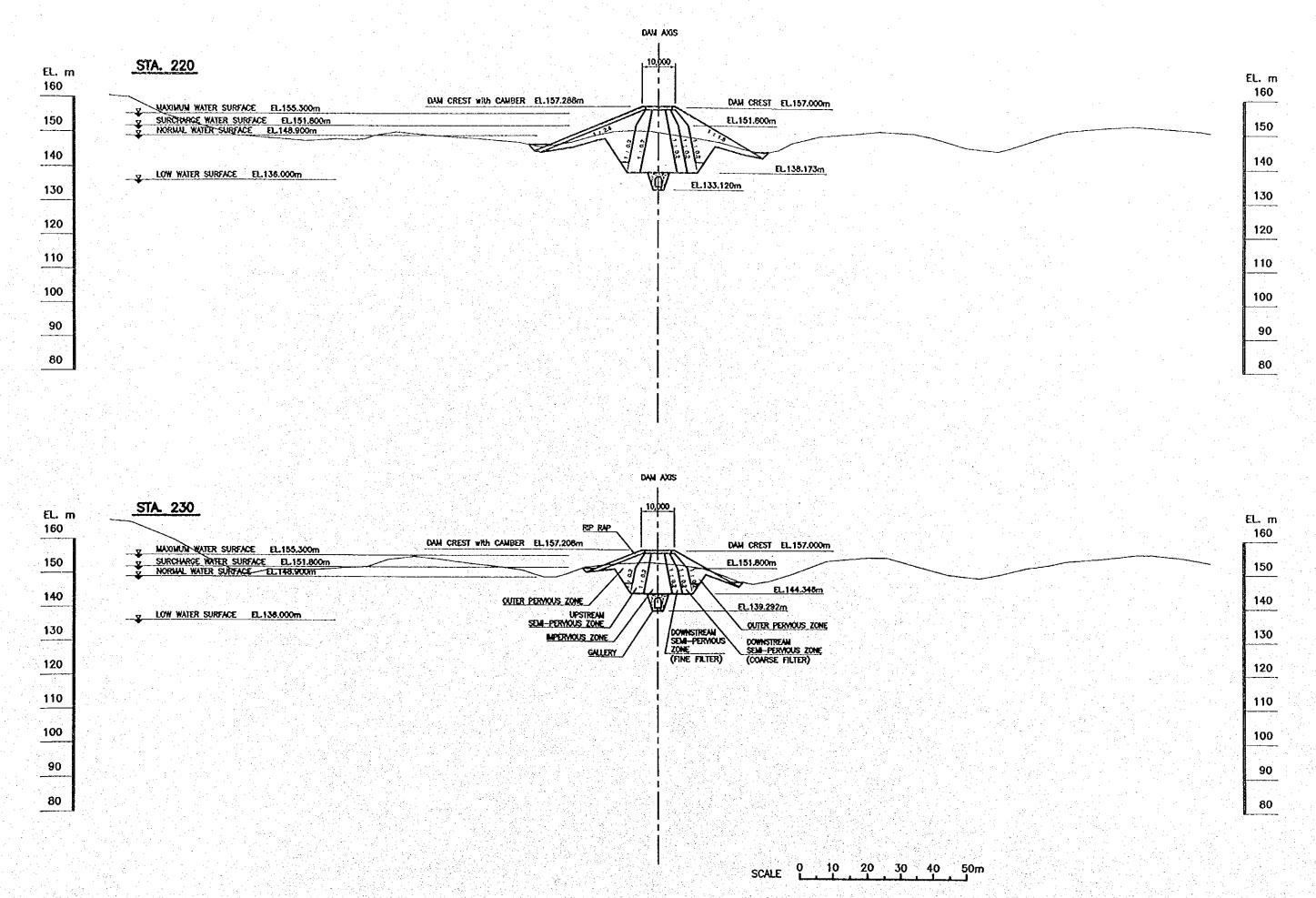


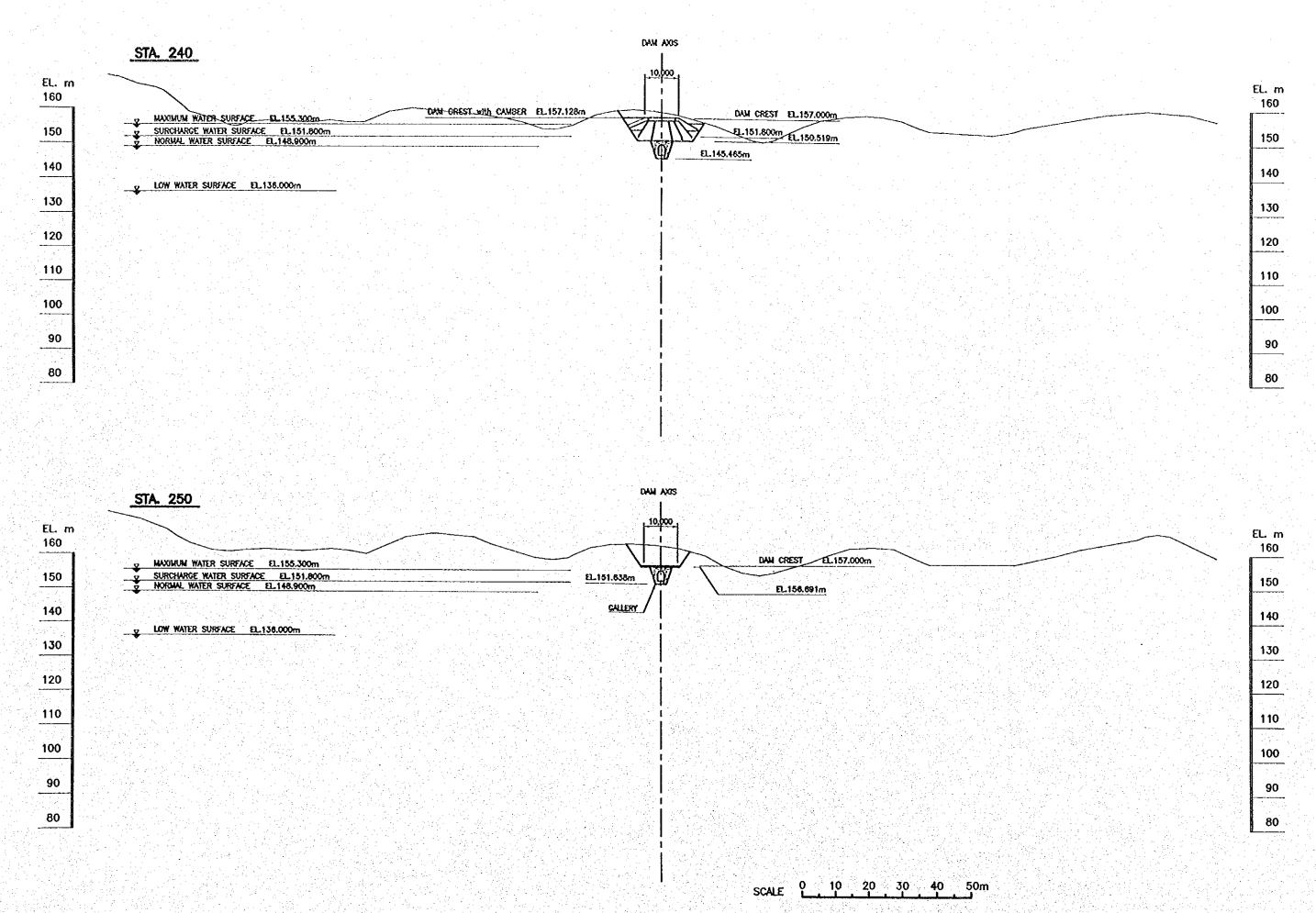












2.3 Gallery

GALLERY - CONCRETE AND EXCAVATION

1	GALLERY - CC	NONDIE AN		U.N	<del></del>	Everystics	
	Di I XI		Concrete	17.1	Distance	Excavation	Volume
	Block No.	Distance	Area	Volume	Distance	Area	
		(m)	(m²)	(m <sup>3</sup> )	(m)	(m²)	(m <sup>3</sup> )
Į	Left Entrance			12.158		0. 450	0.000
-	. 1	9.000	16.495	148.455	9.000	21.156	190.404
-	2	9.000	16.495	148.455	9.000	21.156	190.404
	3	9.000	16.495	148.455	9.000	21.156	190.404
-	4	9.000	16.495	148.455	9.000	21.156	190.404
	5	6.034		100.182	6.034	21.156	127.655
.	6	6.000	16.495	98.970	6.000	21.156	126.936
	7	6.000		98,970	6.000	21.156	126.936
	8	6.000	16.495	98.970	6.000	21.156	126.936
	9	5.905		96.240	5.905	21.156	124.926
	10	5.000	16.495	82.475	5.000	21.156	105.780
	11	6.000	16.495	98.970	6.000	21.156	126.936
:	12	6.000	16.495	98.970	6.000	21.156	126.936
	13	6.000		112.752	6.000	21.156	126.936
Į	14	6.305		109.274	6.305	21.156	133.389
	15	6.000		98.970	6.000	21.156	126.936
.	16	6.000	16.495	98.970	6.000	21.156	126.936
	17	6.000	16.495	98.970	6.000	21.156	126.936
	18	6.000	16.495	98.970	6.000	21.156	126.936
	19	6.000		98.970	6.000	21.156	126.936
	20	6.000	16.495	98.970	6.000	21.156	126.936
	21	5.583		90.723	5.583	21.156	118,114
	22	6.000	16.495	98.970	6.000	21.156	126.936
:	23	6.000		120,459	6.000	21.156	126.936
	24	5.583		90.723	5.583	21.156	118.114
	25	6.000	16.495	98.970	6.000	21.156	126.936
:	26	6.000	16.495	98.970	6.000	21.156	126.936
Ì	27	6.000	16.495	98.970	6.000	21.156	126.936
	28	6.000		98.970	6.000	21.156	126.936
	29 29	6.000		98.970	6.000	21.156	126.936
١	30	6.000		98.970	6.000	21.156	126.936
	30	6.305	10.433	109.274	6.305	21.156	133.389
1	32	6.000		112.752	6.000	21.156	126.936
		6.000	16.495	98.970	6.000	21.156	126.936
1	33 34	6.000	16.495	98.970	6.000	21.156	126.936
	34 35	6.000	16.495	98.970	6.000	21.156	126.936
				98.970	6.000	21.156	126.936
	36	6.000			6.492	21.156	137.345
	37	6.492		107.465 98.970	6.000	21.156	126.936
ł	38	6.000	16.495	98.970	6.000	21.156	126.936
	39 40	6.000 6.000	16.495 16.495	98.970	6.000	21.156	126.936
				98.970	6.000	21.156	126.936
	41	6.000	16.495	98.970	6.000	21.156	126.936
	42	6.000 5.000	16.495		5.000	21.156	105.780
ļ	43	5.000	16.495	82.475 82.475	5.000 5.000	21.156	105.780
	44	5.000	16.495	82,475	3.000	21.130	200.865
	45			156.611 87.131			111.752
	46	6 500	14 646	The state of the s	5.500	19.307	106.189
	47	5.500		80.553	5.500 5.500	19.307	106.189
	48	5.500	14.646	80.553		19.307	106.189
.	49	5.500	14.646	80.553	5.500		114.452
	50	5.928	منميا	96.314	5.928 5.500	19.307	106.189
]	51	5.500	14.646	80.553	5.500	19.307	
. ]	52	6.784		94.826	<del></del>	19.307	6 631 799
-	7			5,332.531			6,631.789
1	Total		- 1.05 =			v 1 0≅ =	7 000
į			x 1.05 =	5,600		x 1.05 =	7,000

: Production and Construction of concrete (Type B)

LOCATION : Galley CALCULATION		RESULT
(B5)		
$A_1 = \frac{1}{2} \times (6.640 + 3.200) \times 4.300 - \frac{1}{4} \times 2.000 \times 4.000 \times 4.000 \times 4.000 + \frac{1}{4} \times 2.000 \times 4.000 \times 4.000 + \frac{1}{4} \times 2.000 \times 4.00$	.00°×½ ÷(1.50×2.00)	1
1 (0.30 x 0.30)	= 16.495 m2/	
<ul> <li>State of the state /li></ul>		: : : : : : : : : : : : : : : : : : : :
V = A1 x (6.895 + 5.252)x/2	<b>ರ</b>	100.182 m3
(B9)		
A: 16.495 m2 (refer to "B5")		
		04 5445 5
V = A1 x ( 6.754 + 4.915) x/2		96.240 m <sup>3</sup>
(B.13)		
A1 = 16.495 m2 (refer to "B5")		
Az : 1/2 x (7.350 + 3.200) x 5.188 - 5/4 x 2.	00°×1/2 + (1.50×200)	
+ (0.30 × 0.30) }	= 22.706_m² r	
V1 = A1 × 1.562	= 25.765 m <sup>3</sup>	
V2 = 1/2 × (A1 + A2) × 4.4.38	= 86.987 m3/	
<u>∑V = V, + V2 </u>		112.752 m³
(B)4)		
$A_1 = 16.495 \text{ m}^2$ (refer to "B.5")		
V1 · A1 × (3,076 + 1.347) × 1/2	= 36.479 m <sup>3</sup> /	
A2 = 22.706 m2 (refer to "B13")		e Kita ta Liberita. Kija li Kababasa
$V_2 = (A_1 + A_2) \times 1/2 \times 2.00$	= 39, 20) m <sup>3</sup>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
V3 = A2 × 1/2 × 2,959		
ZV = V1 + V2 + V3		109.274 m³
	AND THE STATE OF STAT	
A1 = 16.495 m2 (refer to "B5")		
$V = A_1 \times (3.1) + (.28) \times 12$		90.723 m3 (
(B37)		
A1 = 16.495 m2 (refer to "85")		
V = A1 x (6.993 + 6.037) x 1/2		107.465 m³

TYPE OF WORK: Production and Construction of concrete (Type B)

	/ CALCULATION - CALC		RESULT
(B 24)			
(_tefer_ta	) "B 2  ")		90.723 m <sup>3</sup>
\$_UVUV			
(B 31)			
(yeter_	to " B/4")		109, 274 m
(B32)			
(refer	π <sub>0</sub> " β /3")	V =	112.752 n
			**************************************
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3			
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化氯化化物 人名英格兰人姓氏			
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<u> </u>			<u>al de la Mediela.</u> Mediela de la Calda
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: Production and Construction of concrete (Type B)

CALCULATION  (B.23)  A <sub>1</sub> = $6.00 \times 6.64 + 5.78 \times 0.18 = 40.880 \text{ m}^2$ A <sub>2</sub> = $6.00 \times 4.92 + 5.78 \times 0.18 = 30.560 \text{ m}^2$ $V_1 = \frac{1}{2} \times (A_1 + A_2) \times 4.30 = 153.596 \text{ m}^3$ $V_2 = \frac{1}{2} \times (1.840 + 2.200) \times 0.60 \times 6.00 = 7.272 \text{ m}^3$ $V_3 = -(\frac{17}{4} \times 2.00^2 \times \frac{1}{2} + 1.50 \times 2.00) \times 6.00 = -27.425 \text{ m}^3$ $V_4 = -0.30 \times 0.30 \times 6.00 = -0.540 \text{ m}^3$ $V_5 = -(\frac{17}{4} \times 2.00^2 \times \frac{1}{2} + 1.50 \times 2.00) \times 2.50 = -11.427 \text{ m}^3$	
A) = $b.00 \times b.64 + 5.78 \times 0.8 = 40.880 \text{ m}^2$ A) = $b.00 \times 4.92 + 5.78 \times 0.8 = 30.560 \text{ m}^2$ $V_1 = \frac{1}{2} \times (A_1 + A_2) \times 4.30 = 153.596 \text{ m}^3$ $V_2 = \frac{1}{2} \times (1.840 + 2.200) \times 0.60 \times 6.00 = 7.272 \text{ m}^3$ $V_3 = -(\frac{\pi}{4} \times 2.00^2 \times \frac{1}{2} + 1.50 \times 2.00) \times 6.00 = -27.425 \text{ m}^3$ $V_4 = -0.30 \times 0.30 \times 6.00 = -0.540 \text{ m}^3$	
$A_{2} = b.00 \times 4.92 + 5.78 \times 0.18 = 30.360 \text{m}^{2} \times 1.00 \times 4.92 + 5.78 \times 0.18 = 30.360 \text{m}^{2} \times 1.00 \times 1.0$	
$V_{1} = \frac{1}{2} \times (A_{1} + A_{2}) \times 4.30 = \frac{1}{3}.596 \mathrm{m}^{3} /$ $V_{2} = \frac{1}{2} \times (1.840 + 2.200) \times 0.60 \times 6.00 = 7.272 \mathrm{m}^{3} /$ $V_{3} = -\left(\frac{1}{2} \times 2.00^{2} \times \frac{1}{2} + 1.50 \times 2.00\right) \times 6.00 = -27.425 \mathrm{m}^{3} /$ $V_{4} = -0.30 \times 0.30 \times 6.00 = -0.540 \mathrm{m}^{3} /$	
$V_{2} = \frac{1}{2} \times (1.840 + 2.200) \times 0.60 \times 6.00 = 7.272 \text{ m}^{3} \times 1.50 \times 2.00 \times 6.00 = 7.272 \text{ m}^{3} \times 1.50 \times 2.00 \times 6.00 = -27.425 \text{ m}^{3} \times 1.50 \times 2.00 \times 1.50 \times 2$	
$V_{2} = \frac{1}{2} \times (1.840 + 2.200) \times 0.60 \times 6.00 = 7.272 \text{ m}^{3} \times (1.840 + 2.200) \times 0.60 \times 6.00 = 7.272 \text{ m}^{3} \times (1.840 + 2.200) \times 6.00 = -27.425 \text{ m}^{3} \times (1.840 + 2.200) \times (1.840 + 2.200) \times (1.840 + 2.200) \times (1.840 + 2.200) \times (1.840 + $	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
$V_{3} = -\left(\frac{\pi}{4} \times 2.00^{2} \times \frac{1}{2} + 1.50 \times 2.00\right) \times 6.00 = -27.425 \text{ In}^{3} \times 10^{2$	1
V4 = -0.30 × 0.30 × 6.00 = -0.540 m <sup>3</sup>	1
	- 1
$V_5 = -(\sqrt{2} \times 2.00^2 \times \sqrt{2} + 1.50 \times 2.00) \times 2.50 = -11.427 \text{ m}^3$	<u> </u>
$V_6 = -0.30 \times 0.30 \times 2.50$ = $-0.225  \text{m}^3$	2000 de 1000 d
$V_7 = -0.30 \times 0.30 \times 2.00 = -0.180 \text{m}^3$	
$V_8 = -0.60 \times 0.60 \times 1.70$ = -0.612 m <sup>3</sup>	
$3V = V_1 + V_2 + V_3 + V_4 + V_5 + V_4 + V_7 + V_8 = /20.459$	
24 11 12 12 12 12 12 12 12 12 12 12 12 12	<i>m</i> -
(B45)	
A1 = 1/2 × (6.640 + 3.200) × 4.300 - (1/4×2002 × 1/2 + 1.50 × 2.00)	1 1 1
$+(0.30 \times 0.30)$ = $16.495 \text{m}^2$	-
$V_1 = A_1 \times (2.2)2 + 0.992) \times \frac{1}{2} = 26.425  m^3$	1 1 1 1
V2 = A1 x (4.824 + 3.604) ×/2 + (0.30 × 0.30 × 1.70)	
= 69.663 m <sup>3</sup>	
Az = 1/2 x (b. 640 + 3.200) x 4.300 = 21.156 m² (	
$V_3 = A_2 \times (2.320 \pm 0.60) \times \frac{1}{2} = 30.888  \text{m}^3$	3
A = 16 : (/ //0 : 2 000) // 200	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
- 70.100 M	
$V_4 = A_3 \times (0.68 + 3.00) \times 1/2 = 29.63.5 \text{ m}^3$	
$2V = V_1 + V_2 + V_3 + V_4 = 156.611$	m3
	1
	- 1.7 F

TYPE OF WORK : Production and Construction of concrete (Type B)

CALCULATION		RESULT
(B46)		
A, = 1/2 × (6.640 + 3.200) × 4.300 - \((2.50)	0x2.00 - 1/2x0.20 x2)	
+ (0.30×0.30)		
V1 = A1 x (1.840 + 2.631) x 1/2		
A2 = (2.60 x 3.60) - (2.50 x 2.00 - 1/2 x 0.20	02×2)	51
+(0.30×0.30) {		
V2 = A2 x (4.384 + 5.657) x /2	= 21.638 m <sup>3</sup>	
4 ( 20 ( 20 )	4 000 3	
The Control of the Co	= 4.028 m <sup>2</sup>	
aget e de la figura de la casa de la figura de la figura de la figura de la figura de la figura de la figura d	= 0.263 m <sup>2</sup>	
$V_3 = V_2 \times (A_3 + A_4) \times 43\% \times 2$		
$As = (2.60 \times 3.40) - \{(2.50 \times 2.00 - \frac{1}{2} \times 0.00)\}$		
+ (0.30 x 0.30) \	= 3.790 to 2	
V4 = As x (3.560 + ).869) × 1/2	= 10,288 m <sup>3</sup>	A STATE
Vs = 1/2 × 0.50 × 0.15 × (3.500 + 3.800) × /2	2 = 0.137 m <sup>3</sup>	
$5V = V_1 + V_2 + V_3 + V_4 + V_5 + 0.50 \times 0.20$	×2.00 =	87.13) m
(B50)		
$A_1 = \frac{1}{2} \times (5.780 + 2.840) \times 4.900 - \left(\frac{17}{4} \times 2.00\right)$		
	= 16.458 m²	
$V_1 = A_1 \times (3.220 + 4.685) \times 1/2 - \{(0.30 \times 0.00) \times 1/2 - (0.30	1.60 x 2.00 x 2) +	
(1.200 x 1.300 x 1.00)	= 62.770 m <sup>3</sup>	
A2 = 1/2 x (2.420 + 2.840) x 0.70	= 1.841 m²	
V2 = A2 x (2.180 + 2.685) x /2	= 4.478 m <sup>3</sup>	
A3 = 1/2 x (5.780 + 3.200) x 4.300 - (1/4 x Z		
+(0.30 × 0.30)	= 14.646 m <sup>2</sup>	
医乳腺素 医甲基甲酚磺基 美国产品 医乳性病性 化二甲基磺胺二甲甲基甲基甲基	= 29,292 m <sup>3</sup>	
V3 = A3 x (0.90 + 3.10) x/9	- 27.212 m <sup>2</sup>	
$V4 = -\frac{\pi}{4} \times 0.20^2 \times (3.30 + 0.30) \times 2$	- U,220 M	96.314 m
SV = V1 + V2 + V3 + V4		70,314 M

TYPE OF WORK LOCATION

: Production and Construction of concrete (Type B)

LOCATION	: Gallery		
	CALCULATION	mprompt the majority control of the	RESULT
(B52)			
V1 = (3.40	4+3,818) ×/2×1,00 × 3,800	= 13,722 m3	
V2= (4,4.	36 + 4.850) ×/2 × 1.00 × 3.800	= 17.643 m <sup>3</sup>	
V3 = 0.90 z	x 3.30 x 3.800 - 1/4 x 0.60° x 0.90	= //.032 m <sup>3</sup>	: : :
化二甲基二二甲甲基甲甲基二甲基二甲基二甲甲基二甲甲基二甲甲基二甲甲基二甲甲基二甲	3.404 + 2.037) × 3.300 × 0.90 ×	<ul> <li>The control of the second contr</li></ul>	
Vs = 1/2 x (	(3.536 + 2.169) × 3.300 × 0.90 ×	2 = 16.994 m3	
V6 = 1/2 x C	2.037 + 3.500) × 2.000 × 0.80	(0.30×0.30	
× 3,50	<b>∞)</b>	$= 4.11.5 \text{ m}^3$	
V7 = 1.60	×2.00 × 2.169 - (1.00 × 0.80 × 1.00)	+ 1/2 × 0.469 2	
× /. 00	interior de la companya de la companya de la companya de la companya de la companya de la companya de la compa	= 6.03   m3	
V8 = 1/2 x 0	299 × 3, 285 + 1/2 × 0.18 × 0.600 ×	1/9	d to the term of the second
	8) x 2		
	.18 × 0.600 × 3.069 × 2		
V10 = 1/2 x 1.	60 × 0.48 × (4.16 + 3.20) ×1/2 - 1/2	4×0.60°×0,330	
		= 1,320 m <sup>3</sup>	
SV = V1+ 1	~ +V10		94.826 m
(Entrance) :	EL + 156.100 m above		
V1 = 1/2 x ( 0.99	90+5,734) × 3,100 × 0.30 =	3,587 m³	
V2=1/2×(1.4	114 + 5.734) × 2.800 × 0.30 =	3.002 m <sup>3</sup>	
V3 = 1/2 x (3)	560 + 2,400) x 2,800 x 0,30 x 2	= 5.006 m <sup>3</sup>	
V4 = 0.50 x	0.20 × 2.00	= 0.200 m <sup>3</sup>	
Vs = 1/2 × 0.20	0×0.20 × (3,360 + 5.734) × 2	0.363 m3	
ZV = V1+ ~	v + Vs	// · · · · · · · · · · · · · · · · · ·	12.158 m3
		nteritere i filosofi attende er og det Filosofi og det er er og det er og	
<del></del>	ALL PROPERTY SEEDS OF THE SEEDS	STEEL STATE	
		A TO ALC: A TO THE TOTAL OF	

Formwork

OCATION : Gallery CALCULATION	RESULT
(B 5)	
A1 = 1/2 x (6.640 + 3.200) x4.300 - (1/4x2.002x/2+(1.50x2.00)	
$4(0.30 \times 0.30)$ = $16.50 \mathrm{m}^2$	
A = (15x2.00x/2 + 1.50x2 + 0.30x2) x (6.895+5.252)x/2	
= 40.95 m <sup>2</sup>	
ZA = A1 x2 + A2 + (2054 x 6.640) + (1.373 x 2.00) =	90.33 m²
(89)	
$A_1 = 16.50 \text{m}^2$ (refer to "85")	
Az = 1 16x 2,00x/2+1.50x2+0.30x2 x (6.754+4915)x/2	
$A_2 = \int \frac{10 \times 2.00 \times /2 + 1.5072 + 0.30 \times 2}{10.30 \times 2} \times \frac{10.007 + 1.0072}{10.30 \times 2} = 39.33 \text{ m}^2$	
SA = A1 x 2 + A2 + (1.924 × 6.640) + (1.252 x 2.00) =	87.61 m²
(B)3)	
A1 = 16.50 m2 (refer to "B5")	
$A_2 = \frac{1}{2} \times (7.350 + 3.200) \times 5.188 - \frac{1}{2} \times 2.00^2 \times \frac{1}{2} + (1.50 \times 2.00)$	
+(0.30×0.30) } = 22.71 m²	
A3 = (15×200 ×/2 + 1.50×2 + 0.30×2) × 6.00 = 40.50 m²	
$A4 = 4.526 \times (7.350 + 6.640) \times \frac{1}{2} = 31.66 \text{ m}^2$	
As = 6.640 × 1.562 = 10.37 m2	
$A6 = 2.00 \times 6.00$ = 12.00 m <sup>2</sup>	
$\Sigma A = A_1 + \cdots + A_6$	133,74 m²
7B 14)	<u> </u>
A1 = 16.50 m2 (refer to "B5")	
Az = 22.7/ m3 (refer to "B13")	
A3 = (15x200x/2+1.50x2+0.30x2 x 6.305 = 42.5) m2	
$A4 = 2.00 \times 6.305$ = 12.61 m <sup>2</sup>	
As = 6.640 x 3.076 = 20.42 m <sup>2</sup>	
A6 = 1/2 x (7.350 + 6.640) x 2.695 = 18.85 m2	
5.A = A1 + 2 +A4	/33,60 m

CALCULATION CALCULATION		***
	RESULT	Ė
(8 21)		
A) = 16,50 m2 (refer to "B5")		- 1
$A_2 = \{1.5 \times 2.00 \times /2 + 1.50 \times 2 + 0.30 \times 2\} \times (4)$	1.547+6.619)×1/2	
172-11802-W-72-11-00-2-11-00-2-1-11-	$= 37.64  \text{m}^2$	-
	= 8,09 m <sup>2</sup>	<del></del>
A3: 6.640 x 1.219	in the state of th	
114 - 2100 - 21001	= 5,34 m <sup>2</sup>	
χA · Aι + ~ +A4	= 67.57	m2
75 377)		- 5
(B 37)		
A1 = 16.50 m2 (refer to "B5")		
$A_2 = \sqrt{15} \times 2.00 \times /2 + 1.50 \times 2 + 0.30 \times 2 \times 6.$		
A3 = 6.640 x (2.003 + 4.990)	= 46.43 m <sup>2</sup>	
A4 = 2,00 x (1.607+4.593)	$= 12.40 \mathrm{m}^2$	y = 3 - 1
8A = A1 + 2 + A4	= 119.09	m <sup>2</sup>
		1 1 1 1 1 1 1 1 -
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		er et. Ferge
	The second secon	
		14.7 F.
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: Formwork

ocation : Galley calculation	RESULT
(B23)	
A1 = 1/2 x (6.820 + 5.100) x 4.300 + 1/2 x (1.840 + 2.200) x 0	.60
$-\frac{1}{1}(\sqrt{4} \times 2.00^2 \times \sqrt{2} + 1.50 \times 2.00) + (0.30 \times 0.30)$	
= 22.1	8 m <sup>2</sup>
$A_2 = 1.50 \times 6.00$ = 9.00	) m <sup>2</sup>
$A_3 = 1.50 \times (2.00 \times 2 + 2.50 \times 2)$ = 13,50	) jn <sup>2</sup>
$A4 = \frac{\pi}{6} \times 2.00 \times (6.00 + 2.50)$ = 26.70	m²
$As = 0.30 \times (6.00 + 5.70 + 2.50 \times 2) = 5.01$	m²
$A_6 = 0.30 \times (1.70 + 0.60 \times 2 + 1.70)$ = 1.38	
$A_7 = 6.00 \times 4.30 - (\frac{1}{24} \times 2.00^2 \times \frac{1}{2} + 1.50 \times 2.00) + (0.30 \times 0.00)$	0.30)
= 21.14  m	
ΣΑ = A1×2 + A2 + ~ + A7	$=   /2 .09 \mathrm{m}^2$
(B45)	
$A_1 = \frac{1}{2} \times (6.640 + 3.200) \times 4.30 - \frac{(1/4 \times 2.00^2 \times 1/2 + 1.50 \times 2.00)}{(1/4 \times 2.00^2 \times 1/2 + 1.50 \times 2.00)}$	
$(0.30 \times 0.30)$ = 16.50	m <sup>2</sup>
A2 = (11/2 x 2.00 + 1.50 x 2) x (1.574 + 4.186) x/2	
$-(2.50 \times 2.00) = 12.69$	) m <sup>2</sup>
$A_3 = (7.30 \times 2 + 0.283 \times 2 + 1.80) \times 2.50 = 14.92$	ing the second of the second o
$A_3 = (2.30 \times 27 \times 3.27 + 1.00) \times (1.30) = 2.593$ $A_4 = 0.30 \times (3.35 + 2.50 \times 2 + 0.30) = 2.593$	
As = 1/2 x (6.640 + 3.200) x 4.200 - (2.50 x 2.00) = 16.	
As = 72 x (6.640 + 3.200 ) x + 30 = (2.30)	
3A = A1+ 2 + A5	= .62.87 m²
(B 46) AL= 1/2 x (6.080 + 3.200) × 3.600 - (7.50 × 2.00) = 11.	70 m²
$A_1 = \frac{1}{2} \times (6.080 + 3.200) \times 3.500 \times (2.50 + 2.00) \times 2.50 \times 2 = 8.0$ $A_2 = \frac{1}{2} \times (1.264 + 2.300) \times 2.50 \times 2 = 8.0$	The second section of the section of th
$B_2 = \sqrt{2 \times (R_2 \Omega) + 2 \times (R_2 \Omega)}$	9/m²
M3 = /3 x (3.5) 14 1 0.000 y x 21-0 x 2	59m²
A4 * /2 X ( 3.738 T 2.700 ) . 2.30 / 2	erik wasan basan basan ba
18 = (1.207 + 3.10 1 1 7 3.10 12 2 18 4.	78 m²
A6 = 5.560 X <.W	5 <sup>1</sup> 7 m <sup>2</sup>
A7 = 0.30 X (2.30 + 3.300) + 0.110 E0.	$\mathcal{O}_{m^2}$
A8 = 0.50 x 2,00 x 2	$06 \mathrm{m}^2$
A4 = 72 × (B. TOV + 2.300 / 2.11)	70m-
A10 = 2.60 x 2.90 - (2.50 x 2.00) = 2.5	T m ~

: Formwork

LOCATION : Gallery CALCULATION		RESULT
(B.50)		
A1= 1/2 x (4.745 + 4.048) x 1.50 x 2	= 13.19 m²	
A2 = 1/2 x (2.314 + 1.692) x 1.50 x 2	= b.0   m²	
A3 = 1/2 x (3.634 + 4.048) x 15/2 x 2.00	= 12,07 m²	
A4=1/2 x (1.692 + 1.278) x 1/2 x 2.00	= 4.67 m <sup>2</sup>	
A4 - 1/2 x (5.780 + 2.840) x 4.90 - 1/4 x 2.0	02×/2+1.50×2.00	
+ (0.30×0.30)}	= 16.46 m <sup>2</sup>	
As = 1/2 x (5.780 + 3.200) x 4.30 - {15/4 x 2.	$00^{2} \times 1/2 + 1.50 \times 2.00$	
+(0,30×0.30)}	= 14.65 m <sup>2</sup>	
A6 = 1.30 ×1.20 × 2	= 3.12 m²	
$A_7 = 1.30 \times 1.00 \times 2$	= 2.60 m²	
As = 0.60 × 2.00 × 4	= 4.80 m <sup>2</sup>	
Ag = 2.30 x 2.90	$= 4.60  \text{m}^2$	
ΣA = A1 + ~ + Aq		\$2.17 m²
(B.52)		
A, = 1/2 x (5.780 + 3.200) x 4.300 - { 1/4 x 2.		
+(0.30×0.30)}	= 14.65 m <sup>2</sup>	
A2 = ( 15/2 x 2.00 x /2 + 1.50 x 2 ) x (2.837+		
	= /4.26 m <sup>2</sup>	N. 10 (1971)
A3 = (16/2 x 2.00 x /2 + 0.50 x 2) x (3.536 +		
	= 7.33 m²	
A4: (1/4 x 2.00 2 x /2 + 0.50 x 2.00) + (1.00 x	i india na Garage and Albania 🖡 🖈 🕏	
	= 3.37 m <sup>2</sup>	
As = 1.00 × 0.80 × 2 + 0.80 × 1.00	= 2.40 m <sup>2</sup>	
$A_6 = 3.50 \times 2.00$	$= 7.00 m^2$	
Ay = 1/2 × (7.550 + 4.850) × 2.700 × 2	- 33.48 m²	
As = 3.80 x 2.70	= 10.26 m <sup>2</sup>	
A9 = 3.8/8 × 3.80	= 14.51 m²	
ZA - A1+ ~ + A9		07.26 m2
		V/VXOWZ

17.307

TYPE OF WORK : Scaffolding.

(B 5)  A1 = $\frac{1}{16.640} \times 4.300 \times 2$ = $\frac{57.10 \text{ m}^2}{1.50 \times 2.00 \times 1/2} + \frac{1.50 \times 2}{1.50 \times 2.00 \times 1/2} \times \frac{(6.895 + 5.252) \times 1/2}{1.50 \times 2.00 \times 1/2} = \frac{37.30 \text{ m}^2}{1.50 \times 2.00 \times 1/2}$	
	<b> </b>
$A_2 = \frac{75 \times 2.00 \times 1/2}{1.50 \times 1/2} + 1.50 \times 1/2 \times (6.89.5 + 5.252) \times 1/2 = 37.30 \text{ m}^2$	A. 2
ΣΑ = A1 + A2 = ==	94.40 m2
(B 9)	
$A_1 = 57.10  \text{m}^2  \text{(refer to "B5")}$	
$A_2 = \frac{16 \times 2.00 \times /2 + 1.50 \times 2}{\times (6.754 + 4.915) \times /2} = 35.83 \text{ m}^2$	Service Services of the service of t
3A ° A1 + A2 =	92.93 m²
(β <sub>1</sub> 3)	
$A_1 = 6.640 \times 4.300$ = 28.55 m <sup>2</sup>	
A2 = 7.350 × 5.188 = 38.13 m <sup>2</sup>	
A3 = \15x2.00x/2+1.50x2\x6.00 = 36.85 m2	
2A = A1 + A2 + A3	103.53 m²
(β/4)	
$A_1 = 6.640 \times 4.300$ = $28.55 \text{ m}^2$	
A2 = 7.350 x 5./88 = 38./3 m <sup>2</sup>	
A3 = 1 15 x 2.00 x /2 + 1.50 x 2 x 6.305 = 38.72 m2	
5A = A1 + A2 + A3	105.40m²
(B 21)	
A <sub>1</sub> = 6.640 × 4.300 = 28.55 m <sup>2</sup>	
Az= {15x 2.00 x/2 +1.50 x 2} x (2.15) + 3.431) = 34.28 m2	
XA - A1+A2	62,83 m²
<i>(B37)</i>	
A1 = 6.640 x 4.300 = 28.55 m <sup>2</sup>	
Δ2 = \15x2.00x/2+1.50x2/x6.491 = 39.87 m2	
$\Sigma A = A_1 + A_2$	8.42 m²
	and the second of the second o

TÝPE OF WORK :

Scaffolding

OCATION : Gallew CALCULATION		RESULT
(B 23)		
$A_1 = \frac{1}{2} \times (6.820 + 5.100) \times 4.30 \times 2$	= 51,26 m <sup>2</sup>	
Az = 6.00 × 4.30	= 25,80_ra <sup>2</sup>	
$A_3 = 2.50 \times (6.00 + 2.00 \times 2 + 2.50 \times 2)$	= 37.50 m²	
		114.56 m²
5A = A1+ A2 + A3		77.73.00
(B45)		
$A_1 = \frac{1}{2} \times (b.640 + 3.200) \times 4.30 \times 2$	$= 42.31  \text{m}^2$	
$A_2 = 2.50 \times (1.574 \times 2 + 4.185 + 3.00 + 5.00)$	= 38.33 m²	
XA = A1 + A2		80.64-m²
(B46)	40.02	
A1 = 1/2 x (6.080 + 3.200) x 4.30	= /9, 95 m <sup>2</sup>	
Az = 1/2 x (1.264 + 2.300) x 2.50 x 2	$= 8.91  \text{m}^2$ $= 26.91  \text{m}^2$	
A3 = 1/2 x (5.374 + 5.388) x 250 x 2 A3 = 1/2 x (3.436 + 2.400) x 2.50 x 2	$= 14.59 m^2$	
$A_3 = 72 \times (3.436 + 2.400) \times 2.50 \times 2$ $A_4 > \frac{1}{2} \times (6.460 + 3.560) \times 2.90 \times 2$	= 75.57 m = 29.06 m <sup>2</sup>	
As = 2.60 × 2.90	$= 7.54 \text{ m}^2$	
		106.96 m²
(B50)	A TOMOR STATE OF THE STATE OF T	
A1 = 1/2 x (5.780 + 2.840) x 4.900	= 21. 12 m²	
Az= 1/2 x (5.780 + 3.200) x 4.300	$= 19.3) \text{ m}^2$	
$A_3 = \frac{1}{2} \times (4.74.5 + 3.634) \times 2.50 \times 2$	= 20.95 m <sup>2</sup>	
A4=1/2 x (2.3)4 + 1.278) x 2.50 x 2	= 8.98 m²	
$XA = A1 + \sim + A9$		70.36 m²
(B52)		
A) = 1/2 x (5,780 + 3,200) x 4.30	$= 19.31  \text{m}^2$	
A2 = 1/2 × (2.837+3.404) × 2.50 × 2	= 15 60 m²	
A3 = 1/2 x (7.550 + 4.850) x 2.70 x 2	= 33.48 m²	
A4 = 3.80 x 2.70	- 10.26 m²	ing the state of t
$SA = A_1 + A_4$		78 65 m²

(B5)		
A = (1/4 x 2.00° x /2 + 1.50 x 2.00 + 0.30 x 0.30)	= 4.66 m²	
V1 = A x (6.895+5.252) x/2	= 28.30 m³	<u> </u>
V2 = 1/2 × 4.300 × 1.795 × 6.640	= 25.63 m³	
XV = V1 + V2	7 88	50.93 m3
(B9)		
A = 4.66 m2 (refer to "B5")		
V, = A x ( 6.754 + 4.915) x/2	= 27./9 m <sup>3</sup>	
V2 = 1/2 x 4.300 x1.784 x 6.640	= 25.47m <sup>3</sup>	
SV = V1 + V2		52.66m
(B 13)  (B 13)  (refer to "B5")		
$V_1 = A \times b \cdot \Omega$	= 27.96 m <sup>3</sup>	
V2 = 1/2 x 5.188 x 5.188 x 7.350	= 98.91 m <sup>3</sup>	
$\lambda V = V_1 + V_2$	<del></del>	12b.87m3
(B)4) A = 4.66 m² (refer to "B.5")		
V1 = A × 6.305	= 29.38 m³	
V2 = 1/2 x 4.30 x 4.30 x 6.640	$= 6/\sqrt{39} m^3$	
XV = V, + V2		90.77 m <sup>3</sup>
(R2I)		
A = 4.66 m² (refer to "B5")		
V = A x (2.15) + 3.431)		26.01 m3
A:= 4.66 m <sup>2</sup> (refer to "B5")		10 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
$V_1 = A_1 \times b.491$	$= 30.25  \text{m}^3$	
$V_2 = 1/2 \times 4.30 \times 4.30 \times 6.640$	= 6/.39 m3	
ZV = V1 + V2		91.64 m <sup>3</sup>

TYPE OF WORK

Supporting

OCATION : Gallery CALCULATION	RESULT
(B 23)	
$V = (\sqrt[7]{4} \times 2.00^2 \times \sqrt{2} + 1.50 \times 2.00) \times (6.00 + 2.50) =$	38.85 m³
(B45)	
$V_1 = (\sqrt[4]{4} \times 2.00^2 \times \sqrt{2} + 1.50 \times 2.00) \times (1.574 + 4.185) = 26.32 \text{ m}^3$	
V2 = 2.50 x 3.00 x 2.00 = 15,00 m <sup>3</sup>	
$V3 = \sqrt{2} \times 4.30 \times 2.071 \times (6.640 + 3.200) \times \sqrt{2} = 21.91 \text{ m}^3$	
ZV=V1+V2+V3	63,23 m3
	00(20 mo
B46)	
$V_1 = \frac{1}{2} \times (1.264 + 2.300) \times 2.50 \times 2.00$ = 8.9/ m <sup>3</sup>	
V2 = 1/2 x (5.374+5.388) x 2.50 x 2.00 = 26.9) m3	
$V_3 = \frac{1}{2} \times (3.436 + 2.400) \times 2.50 \times 2.00 = 14.59 \text{ m}^3$	
$XV = V_1 + V_2 + V_3$	
$\Delta V = V \cup \nabla V + V + V + V + V + V + V + V + V + V$	50.4/m <sup>3</sup>
(B <i>\$0</i> )	
$V_1 = (\sqrt{5/4} \times 2.00^2 \times \sqrt{2} + 1.50 \times 2.00) \times (4.190 + 1.796) =$	≥7.36 m³
(852)	
V1=(5/4 x 2.00° x /2 + 1.50 x 2.00) x (3.500 + 3.404) x /2	
= 15.78 m <sup>3</sup>	
$V_2 = (\frac{15}{4} \times 200^2 \times \frac{1}{2} + 0.50 \times 2.00) \times (3.536 + 1.700) \times \frac{1}{2}$	
6.73 m <sup>3</sup>	
$\Delta V = V_1 + V_2$	22.5] m <sup>3</sup>

TÝPE OF WORK

3

	/ CALCULATION			RESULT
(Entrance ) : FL+1.	56.100m above			
(Homwork)				
A1 = 1/2 × (0.990 + 3	5.734) × 3.100 ×	<u> </u>	₹0.84 m²	
Az = 1/2 x (1.414 +			$20.01  \text{m}^2$	
A3 = 1/2 x (3.560				
A4 = 0.50 x 2.00 x			2,00 m <sup>2</sup>	
$As = 0.20 \times 20$	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.40 m <sup>2</sup>	
A6 = 0.283 x (3			5.15 m <sup>2</sup>	
$\Sigma A = A_1 + \sim + A_6$				81.78 m
Scalfolding )				
- Manual Ing		2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 14 m 4 m.
$A1 = 20.84 \text{ m}^2$			* 144 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1	
$A_2 = 20.0  \text{m}^2$			8 - 10 12 - 12 - 13 - 14 - 15 - 15 - 15 - 15 - 15 - 15 - 15	No. 1 No. 1
A2 = 33,38 m2			2 2 2 3	
A4 = 2.60 x 2.80	= 7.28 m²			
ZA = A1 + ~ + A4				81.51 m2
			<u> </u>	
Supporting)				
V1 = 1/2 x (1.414 +5.7				
V1 = 1/2 x (1.414 +5.7				
		2.00 =		36.70 in
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 SV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 SV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 SV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 SV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 BV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 XV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 SV = V1 + V2	.400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 SV = V1 + V2	.400) × 2.800 ×	2.00 =	76.69 m <sup>3</sup>	
V1 = 1/2 x (1.414 + 5.7) V2 = 1/2 x (3.560 + 2 XV = V1 + V2	400) × 2.800 ×		16.69 m <sup>3</sup>	
V <sub>1</sub> = ½ x (1.414 + 5.7) V <sub>2</sub> = ½ x (3.560 + 2 SV = V <sub>1</sub> + V <sub>2</sub>	(400) × 2.800 ×	2.00 =	16.69 m <sup>3</sup>	
V <sub>1</sub> = ½ x (1.414 + 5.7) V <sub>2</sub> = ½ x (3.560 + 2 XV = V <sub>1</sub> + V <sub>2</sub>	.400) × 2.800 ×		16.69 m <sup>3</sup>	
$V_1 = \frac{1}{2} \times (1.414 + 5.7)$ $V_2 = \frac{1}{2} \times (3.560 + 2.7)$ $\Xi V = V_1 + V_2$	400) × 2.800 ×		76.69 m <sup>3</sup>	

GALLERY - STEEL REINFORCEMENT BAR

Block No.	Distance	Volume
PIOCK IVO.	(m)	volume (kg)
Left Entrance	419	7,088
1	9.000	5,230
2	9.000	5,230 5,230
3	9.000	
4	9.000	5,230
5	6.034	5,230
6 6	6.000	3,559
7	6.000	3,477
8		3,477
9	6.000	3,477
10	5.905	3,518
	5.000	2,892
11	6.000	4,069
12	6.000	4,069
13	6.000	4,380
14	6.305	4,344
15	6.000	4,996
16	6.000	4,996
17	6.000	4,996
18	6.000	4,996
19	6.000	4,996
20	6.000	4,996
21	5.583	4,821
22	6.000	4,996
23	6.000	6,915
24	5.583	4,821
25	6.000	4,996
26	6.000	4,996
27	6.000	4,996
28	6.000	1,996
29	6.000	4,996
30	6.000	4,996
31	6.305	4,344
32	6.000	4,380
33	6.000	4,069
34	6.000	4,069
35	6.000	3,477
36	6.000	3,477
37	6.492	3,799
38	6.000	3,477
39	6.000	3,477
40	6.000	3,477
41	6.000	3,477
42	6.000	3,477
43	5.000	2,892
44	5.000	2,892
45		4,913
46		3,673
47	5.500	4,521
48	5.500	4,521
49	5.500	4,521
50	5:928	5,202
51	5.500	4,521
52	6.784	8,114
		237,545
Total		
	x 1.06 =	252,000

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TYPE OF WORK: Furnishing and Installing Deformed Reinforcing bar

	: Gallery			THE RESIDENCE OF THE PARTY OF T
		CALCULATION		RESULT
(B 5)				
	(Refer to	dravina)	W = 3559 kg	3,56 ton
	- (- (- (- (- (- (- (- (- (- (- (- (- (-	33337		
(B 9)			•	
	C Refer to	drawing)	W = 3.518 kg	3.52 ton
(B 13)				fg 4,38 ton
	(Refer to	_drawing_)	W = 4380	4,36
(B 14)				
	Refer to	drawing)	w = 4344	kg 4,34 ton
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
(B21)				
(	Refer to	drawing)	w = 48211	9. 4.82 ton
(0.)1)				
(B31)	<u> </u>			lg 4.34 tor
<u> </u>	Refer <u>to</u>	drawing)	w = 4344	7.37
(B 32)				
a vertición de de de	Refer to	drawing)	W = 4380 k	9 4.38 tor
And Indian Section 1995.	i jedini saka in jedina se sebili. Njenista in seriesi	<i>(</i>		V
(B37)				
13 Feb. 15 19	≷efer to	drawing)	w = 3799	g 3.80 tor
<u> </u>	≩eferto_	drawing)	w = 37991	3.80 tor
er falle et la				g 3.80 tor
<u> </u>		drawing)  drawing)	w = 37991 w = 4821	g 3.80 tor
(B24) (B24)	Refer 10	drawing)		lg 3.80 tor
	Refer to	drawing)	w = 482)	19 4.89 tor
(B24).	Refer to	drawing)	w = 482)	19 4.89 tor
(B24)	Refer to	drawing)	w = 482)	6 4.89 tor
(B24).	Refer to	drawing)	w = 482)	by 4.89 tor
(B24).	Refer to	drawing)	w = 482)	4.89 tar
(B24)	Refer to	drawing)	w = 482)	6 4.89 tor
(B24).	Refer to	drawing)	w = 482	489 to
(B24) (	Refer to	drawing)	w = 482	489 to
(B24)	Refer to	drawing)	w = 482	489 to
(B24)	Refer to	drawing)	w = 482	489 to

TYPE OF WORK : Furnishing and Installing Deformed Reinforcing Pars

CALCULATION OF PARAMETER AND A CALCULATION OF PARAMETER AND A CALCULATION	RESULT
(B23)	1
W = 6,915 to (refer to drawing)	6.92 ton
(B 45)	1
W = 4,913 kg (refer to drawing)	4.91 ton
	4 3
(B.46)	
W = 3.673 kg (refer to drawing)	3.67 ton
(BSO)	
W = 5,202  kg (refer to drawing)	5.20 ton
india ang talah terdi. Ang talah salah salah terditah terdi. Ang talah terdi. Ang talah salah salah salah sala Bergin di dengan terdi. Bergin terdi. Bergin terdi. Bergin terdi. Bergin terdi. Bergin terdi. Bergin terdi. Be	
(B\$2)	Q    ton
W = 8.114  kg (refer to drawing)	8.11 ton
(Entrance at Left side)	7 09 ton
W = 7.088  kg	7.01 2.1
(Upstream Portal of Diversion Facility)	20 (210)
w = 30,636 Fg	30.64 ton
Inclined Intake Structure)  W1 = 344 kg	
W4 = 1847 18/5.0m x 37.85 = 13982 18	
$Ws = 1847 \frac{16}{5.0 \text{ in}} \times \frac{1}{2} \times (1.376 + 4.690) = 1120 \frac{1}{2}$	
WS = 1871	A see a see a see
W6 = (0.56 x 1.58 +8/m x 74) x 4 = 262 kg	
$Wq = 9250  \mathrm{fg}$	_ <del> </del>
$\Sigma W = W_1 + \infty + W_7$	40. 61 ton
n de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la com	

#### GALLERY STAIRS - CONCRETE

1	Block No.	Gradient	Distance	1 Step	Number of Steps	Volume per Step	Volume
-			(m)	(m)	(No.)	(m3)	(m3)
ſ	Spillway L3	1:1	23.094	0.353	65.4	0.067	4.36
١	Spillway L4-1	- I:l	23.094			0.067	4.36
Į	1	i	:				0.00
į	2						0.00
ł	100 <b>3</b>						0.00
1	4 1						0.00
1	5	1:2.396	1.373	0.400	3.4	0.061	0.21
-1	6	1:2.396	6.000	0.400			0.91
- 1	7	1:2.396	6.000	0.400			0.91
- 1	8	1 : 2.396	6.000	0.400	15.0		0.91
ı	9	1:2.396	4.158	0.400			
1	<b>9</b>	1 . 2.390			10.4		0.63
- [	10		1.253	0.353	3.5		0.24
ł	10	1:1	5.000	0.353	14.2		0.94
İ		1.1	6.000	0.353	17.0		1.13
	12	l.l	6.000	0.353	17.0		1.13
	13	1:1	6.000	0.353	17.0		1.13
	11	1:1	4.305	0.353	12.2		0.81
1	15	1:1	6.000	0.353	17.0		1.13
-	16	1.1	6.000	0.353	17.0		1.13
}	17	1:1	6.000	0.353	17.0		1.13
	18	1:1	6.000	0.353	17.0		1.13
1	19	1:1	6.000	0.353	17.0	0.067	1.13
1	20	1:1	6.000	0.353	17.0		1.13
ı	21	1:1	2.669	0.353	7.6		0.50
ł	22						0.00
1	23		5-1				0.00
١	24	1.1	2.669	0.353	7.6	0.067	0.50
ł	25		6.000	0.353	17.0		1.13
١.	26 26	1:1	6.000	0.353	17.0		1.13
-	20 27						
1	28	1:1	6.000	0.353	17.0	0.067	1.13
1		1:1	6.000	0.353	17.0	0.067	1.13
	29	1.1	6.000	0.353	17.0	0.067	1.13
ı	30	1:1	6.000	0.353	17.0	0.067	1.13
.	31	1:1	4.305	0.353	12.2	0.067	0.81
1	32	1:1	6.000	0.353	17.0	0.067	1.13
1	33	1.1	6.000	0.353	17.0	0.067	1.13
1	34	1:1	6.000	0.353	17.0	0.067	1.13
·}	35	1:1	6.000	0.353	17.0		1.13
ļ	36	1:1	6.000	0.353	17.0		1.13
1	37	1:1	1.607	0.353	4.6	0.067	0.30
		1:1.62	4.593	0.400	11.5	0.084	0.96
-	38	1:1.62	6.000	0.400	15.0	0.084	1.26
1	39	1:1.62	6.000	0.400	15.0	0.084	1.26
1	40	1:1.62	6.000	0.400	15.0	0.084	1.26
	41	1:1.62	6.000	0.400	15.0	0.084	1.26
-	42	1:1.62	6.000	0.400	15.0	0.084	1.26
[	43	1:1.62	5.000	0.400	12.5	0.084	1.05
ĺ	44	1:1.62	5.000	0.400	12.5	0.084	1.05
1	45	1:1.62	1.219	0.400	3.0	0.084	0.26
J	46	1:1.02	5.374	0.353	15.2	0.067	1.01
ı	47		0.014	0.000	10.2	0.001	0.00
ł							0.00
ļ	48						0.00
1	49			0.0-0		0.007	
1	50	LL	2.314	0.353	6.6	0.067	0.44
1	51 51 50 50 50 50 50 50 50 50 50 50 50 50 50	L: L }	5.500	0.353	15.6	0.067	1.04
ŀ	52	1:1	3.500	0.353	9.9	0.067	0.66
1							51.817
1	Total					100	
L,					and the second of the second	x 1.02 =	50.0

GALLERY STAIRS - STEEL REINFORCEMENT BAR

Block No.	Gradient	Distance	1 Step		Weight per Step	Volume
Territoria de la companya della companya della companya de la companya della comp		(m)	(m)	(No.)	(kg)	(kg)
Spillway L3	:1:1	23.094	0.353	65.4	9.776	639.57
Spillway L4-1	1:1	23.094	0.353	65.4	9.776	639.57
1 mg 1						0.00
2						0.00
3						0.00
4		ť			1	0.00
5	1:2.396	1.373	0.400	3.4	9.776	33.56
6	1:2.396	6.000	0.400	15.0	9.776	146.64
7	1:2.396	6,000	0.400	15.0	9.776	146.64
8	1:2.396	6.000	0.400	15.0	9.776	146.64
9	1:2.396	4.158	0.400	10.4	9.776	101.62
9		1.253	0.353	3.5	9.776	34.70
10	1:1					
10	1:1	5.000	0.353	14.2	9.776	138.47
11	1:1	6.000	0.353	17.0	9.776	166.16
12	1:1	6.000	0.353	17.0	9.776	166.16
13	1,1	6.000	0.353	17.0	9.776	166.16
14	: 1:1	4.305	0.353	12.2	9.776	119.22
15	1:1	6.000	0.353	17.0	9.776	166.16
16	1:1	6.000	0.353	17.0	9.776	166.16
17	1:1	6.000	0.353	17.0	9.776	166.16
18	1:1	6.000	0.353	17.0	9.776	166.16
19	1:1	6.000	0.353	17.0	9.776	166.16
20	1:1:	6.000	0.353	17.0	9.776	166.16
21	1:1	2.669	0.353	7.6	9.776	73.92
22		2.003	0.000	1.0	3.110	0.000
23		1 1 1 1 1 1				0.000
23	, ,	2.669	A 252	7.0	0.176	
	1:1		0.353	7.6	9.776	73.92
25	$\begin{bmatrix} & 1 & 1 & 1 \\ & & 1 & 1 \end{bmatrix}$	6.000	0.353	17.0	9.776	166.16
26	1:1	6.000	0.353	17.0	9.776	166.16
27	1:1	6.000	0.353	17.0	9.776	166.16
28	1:1	6.000	0.353	17.0	9.776	166.16
29	1:1	6.000	0.353	17.0	9.776	166.16
30	1:1	6.000	0.353	17.0	9.776	166.16
31	1:1	4.305	0.353	12.2	9.776	119,22
32	1:1	6.000	0.353	17.0	9.776	166.16
33	1:1	6.000	0.353	17.0	9.776	166.16
34	1:1	6.000	0.353	17.0	9.776	166.16
35	1:1	6.000	0.353	17.0	9.776	166.16
36	1:1	6.000	0.353	17.0	9.776	166.16
37	1:1	1.607	0.353	4.6	9.776	44.50
	1:1.62	4.593	0.400	11.5	9.776	112.25
38	1:1.62	6.000	0.400	17.3 15.0	9.776	146.64
39	1:1.62	6.000	0.400	15.0 15.0	9.776	146.64
40	1:1.62	6.000	0.400			
				15.0	9.776	146.64
41	1:1.62	6.000	0.400	15.0	9.776	146.64
42	1:1.62	6.000	0.400	15.0	9.776	146.64
43	1:1.62	5.000	0.400	12.5	9.776	122.20
44	1:1.62	5.000	0.400	12.5	9.776	122.20
45	1:1.62	1.219	0.400	3.0	9.776	29.79
46	1:1	5.374	0.353	15.2	9.776	148.83
47						0.00
48						0.00
49	3.43 (A)	19 18 4 4 4				0.00
50	1:1	2.314	0.353	6.6	9.776	64.08
51	1:1	5.500	0.353	15.6	9.776	152.32
52	1:1	3.500	0.353	9.9	9.776	96.93
	14.	4 3 4 4	- A.	8 1 N 18 18 18 18 18 18 18 18 18 18 18 18 18	12/12/12/12	7,363.272
Total						1,300.212
					x 1.06 =	7,800.0
L	L	└ <b>┈┈┈</b>	<u>-</u> -		<u> </u>	1,000.0

GALLERY - WATER STOP 300 mm IN WIDTH

· [	Joint No.	1 1	2	3	4	5	Total
	Joint 1101	(m)	(m)	(m)	(m)	(m)	(m)
1	Spillway I	9.694	5.754	4.084	4.000	2.794	26.326
1	0	9.694	5.754	4.084	4.000	2.794	26.326
	1	9,694	5.754	4.084	4.000	2.794	26.326
	2	9.694	5.754	4.084	4.000	2.794	26.326
	3	9.694	5.754	4.084	4.000	2.794	26.326
	4	9.694	5.754	4.084	4.000	2.794	26.326
- 1	5	9.694	5.754	4.084	4.000	2.794	26.326
	6	9.694	5.754	4.084	4.000	2.794	26.326
	7	9.694	5.754	4.084	4.000	2.794	26.326
	8	9.694	5.754	4.084	4.000	2.794	26.326
.	9	9.694	5.754	4.084	4.000	2.794	26.326
.	10	9.694	5.754	4.084	4.000	2.794	26.326 26.326
	П	9.694	5.754	4.084	4.000	2.794	26.326
	12	9.694	5.754	4.084	4.000 4.000	2.794 2.794	26.326
	13	9.694	5.754 5.754	4.084 4.084	4.000	2.794	26.326
٠ ا	14	9.694	5.754 5.754	4.084	4.000	2.794	26.326
	15	9.694 9.694	5.754 5.754	4.084	4.000		26.326
	16	9.694 9.694	5.754 5.754	4.084	4.000	2.794	26.326
	17 18	9.694	5.754	4.084		2.794	26.326
	19	9.694	5.754	4.084	4.000		26.326
	20	9.694	5.754	4.084	4.000		26.326
	21 21	9.694	5.754	4.084	4.000	2.794	26.326
١.	22	9.694	5.754	4.084	4.000	2.794	26.326
	23	9.694	5.754	4.084	4.000	2.794	26.326
.	24	9.694	5.754	4.084	4.000	2.794	26.326
	25	9.694	5.754	4.084	4.000		26.326
	26	9.694	5.754	4.084	4.000		26.326
	27	9.694	5.754	4.084	4.000		26.326
	28	9.694	5.754	4.084	4.000	2.794	26.326
.	29	9.694	5.754	4.084	4.000	2.794	26.326
	30	9.694	5.754	4.084	4.000	2.794	26.326
	31	9.694	5.754	4.084	4.000	2.794	26.326
	32	9.694	5.754	4.084	4.000		26.326
	33	9.694	5.754	4.084	4.000		26.326
	34	9.694	5 <b>.7</b> 54	4.084	4.000	2.794	26.326
	35	9.694	5.754	4.084	4.000		26.326
	36	9.694	5.754		1:		26.326
7	37	9.694	5.754	4.084	4.000	2.794	26.326 26.326
	38	9.694	5.754	4.084	4.000	2,794	26.326 26.326
	39	9.694	5.754	4.084		2.794 2.794	26.326 26.326
	40	9,694	5.754	4.084	4,000 4,000	2.794	26.326
	41	9.694	5.754	4.084 4.084	4.000	2.794	26.326
	42	9.694	5.754 5.754	4.084	4.000	2.794	26.326
•	43	9.694 9.694	5.754 5.754	4.084	4.000	2.794	26.326
	44 45	9.694 9.694	5.754	4.084		2.794	26.326
	45 46	9.694	5.754	4.084		2.794	26.326
	40 47	9.094	4.974	4.084		2.754	25.208
	48	9.396	4.974	4.084	4.000	2.754	25.208
	49	9.396	4.974	4.084		2.754	25.208
Ċ,	50	9.396	1.974	4.084		2.754	25,208
	51	9.396	4.974	4.084			25.208
·	52	9.396	4.974	4.084			25.208
Ş				(4) E. 4) E.			1,388.570
	Total						
						x 1.05 =	1,500

Joint No.	Area	Distance	Tot	al
	(cm <sup>2</sup> )	(cm)	(cm <sup>3</sup> )	(litter)
0		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
1				
2	\$4.34			
3				
4				
5	200.0	664.0	132,800	132.8
6	200.0	664.0	132,800	132.8
7	200.0	664.0	132,800	132.8
8	200.0	664.0	132,800	132.8
9	200.0	664.0	132,800	132.8
10	200.0	664.0	132,800	132.8
11	200.0	664.0	132,800	132.8
12	200.0	664.0	132,800	132.8
13	200.0	664.0	132,800	132.8
14	200.0	664.0	132,800	132.8
15	200.0	664.0	132,800	132.8
16	200.0	664.0	132,800	132.8
17	200.0	664.0	132,800	132.8
18	200.0	664.0	132,800	132.8
19	200.0	664.0	132,800	132.8
20	200.0	664.0	132,800	132.8
21	200.0	664.0	132,800	132.8
22	200.0	664.0	132,800	132.8
23	200.0	664.0	132,800	132.8
	200.0	664.0	132,800	132.8
24		664.0	132,800	132.8
25	200.0			132.8
26	200.0	664.0	132,800	132.8
27	200.0	664.0	132,800	132.8
28	200.0	664.0	132,800	
29	200.0	664.0	132,800	132.8
30	200.0	664.0	132,800	132.8
31	200.0	664.0	132,800	132.8
32	200.0	664.0	132,800	132.8
33	200.0	664.0	132,800	132.8
34	200.0	664.0	132,800	132.8
35	200.0	664.0	132,800	132.8
36	200.0	664.0	132,800	132.8
37	200.0	664.0	132,800	132.8
38	200.0	664.0	132,800	132.8
39	200.0	664.0	132,800	132.8
40	200.0	664.0	132,800	132.8
41	200.0	664.0	132,800	132.8
42	200.0	664.0	132,800	132.8
43	200.0		132,800	132.8
44	200.0			132.8
45	200.0			132.8
46	200.0			132.8
47	200.0			115.6
48	200.0			115.6
49	200.0	578.0		115.6
50	200.0	578.0	115,600	115.6
51	200.0			115.6
52	200.0	578.0	115,600	115.6
	14.24.13.3			6,271.2
Total				
and the second s	•	•	x 1.02 =	6,400

## 2.4 Spillway

#### 2.4.1 Excavation, Backfill and Stripping Top Soil

#### **Excavation Volume of Spillway**

Unit: [m<sup>3</sup>]

Elevation	Excavation Volume [m³]						Total
Elevation	D	CL	CM-L	CM-H	td	rd	Total
higher than EL. 157.0 m	4,047.0	61,471.5	7.0	0.0	0.0	0.0	
EL. 136.6 m - EL. 157.0 m	26,173.0	102,664.0	32,945.0	0.0	0.0	0.0	
EL. 125.0 m - EL. 136.6 m	27,817.0	19,148.0	0.0	0.0	0.0	0.0	
EL. 110.0 m - EL. 125.0 m	19,075.3	21,942.3	0.0	20,528.4	344.0	0.0	
EL. 95.0 m - EL. 110.0 m	0.0	6,286.3	11,737.4	22,844.5	104.0	0.0	
EL. 80.0 m - EL. 95.0 m	0.0	4,510.1	23,751.5	994.0	1,248.5	3,632.4	
Lower than EL. 80.0 m	0.0	0.0	0.2	1,029.0	0.0	0.0	1,029.2
Total	77,112.3	216,022.2	68,441.1	45,395.9	1,696.5	3,632.4	
Total x 1.1	84,800.0	237,600.0	75,300.0	49,900.0	1,900.0	4,000.0	453,500.0

#### **Backfill Volume of Spillway**

Unit: [m³]

	Lest Side		
Backfill Volume	17,154.0		
Backfill Volume x 1.1	18,900.0	2,300.0	21,200.0

Unit : [m²]

	Total
Stripping Top Soil	33,962.1
Stripping Top Soil x 1.1	37,400.0

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#### **Excavation Volume Classified by Elevation**

(1) Higher than EL. 157.0 m

(1) 111	gner m	nan EL.											
Sta.			Area	(m²)					Volum	e (m³)			
	D	CL	CM-L	СМ-Н	td	rd	D	CL	CM-L	CM-H	td	rd	
-20									1		100		
-10	) :		: 3									<u> </u>	
(	_1											17.11	
10		0		1112.1		1		* *4 * *;	1		1	1.54	
20		87				,	0	433	0	0			
30		333				1.7	0	2,098	0	0			
40	_ ]	612					0	4,727	0	0	1. 1.		
50		845		4,424	:.		0	7,286	0	0	7.59		
60		991	0	4		- 1	0	9,180	0	0	1.7		
70		1,030	1	100			0	10,104	4	0			
80-1	-	964	0	新基			0	9,966	7/ 4		100	·	
80-1	, ,,	766											
(Left	)	, ,00											
80-2	1 47	623		100			209	6.047				145471	
(Left	}					3.5	35 to	6,947	0	0			
90		532	1 + (+	191			625	5,774	0	0	45.5		
100		230			7.5	14.7	947	3,808	0	0	117	3	
110		0					1,266	1,150	0	0	77 [1]	T. K	
120		! — · <i>-</i> — <del>.</del>	25.7				868	0	0	0	1 1 1 1		
130							134	0	0	0	1 1 17 1		
140							0	0	0	0			
150										priton to a			
160									4. 14 1.1	i v situsi	- H 1,0	. Tast	
170											1979		
180								1 1 1				7	
190	1						0					7.74.5	
200						- 1				<u>-</u>		5 4 4	
210	I			- 1	<u> </u>						9.110		
220								<u>l</u>					
230										J. 15 P.			
240					 [							20.	
250	<u> </u>			l	<u></u>								
260													
270				-				<u> </u>			35.43	9,197	
280								<u> </u>			73.5	1.5(4)	
290							4 4 1					75.55	
300										1,, 30,77			
310							8 2 5						
320											Y.,; (	7,77	
330	<u> </u>									84 B X		1-11	
Total		1			$oxed{\int}$		4,047	61,472	7	0	0	0	
			-					<del></del>	<del></del>				

(2) EL. 136.6 m - EL. 157.0 m

Sta		130.0	, III - EL	. 137.0 : Area (				Volume (m³)							
"		D	CL		CM-H	td	rd	D	CL	CM-L		td	rd		
	-20		0										;		
1	-10		86					0	428	0	0				
	-0		228					0	1,567	0	0	1			
	10		597	0		:		· 0	4,122	0	0	1			
	20		1,221	42		٠.		0	9,089	210	0				
	30		1,162	192		1.		0		1,170	0				
	40		997	364				0	-	2,782	0	;			
	50		771	548				0	8,839	4,564	0		· ·		
	60	1 1 2	525	591	1 4 24	1		• : 0	6,477	5,698	0	- · · · · · · · · · · · · · · · · · · ·	:		
	70	1,44	498	607				0	5,115		0				
	0-1	ý.	630	482				0	5,640	5,446	: 0				
	0-1		143	386	T. N.										
	eft)														
	0-2		212	318	Teller Kel Kelen		14	0	1,775	3,522	0				
(L	eft)		1 to 1 to 1					0	5,421	2,525	0				
-	90		873	187			1 13 1 17 17 1	0	8,536	986	0				
1	100	48	835 772	<u>10</u> 0				239	8,032	51	0		7		
1	110 120	257	572	U	-		- 1 · 1 · 1	1,523	6,720	0	0				
1	130	407	357					3,320	4,649	0	- $0$	127			
-	140	496	156			*		4,517	2,566	0	0		1		
: 1	150	489	17					4,926	866	0	0	, 1-2			
	160	369	2				1 15	4,288	99	0	0	14	1 1		
	170	261	0	7 (1)	- 5,3,57			3,148	12	0	0	1 . 2 . 1	\$.		
1	180	184		A. 111			51144	2,227	0	0	0				
1	190	92						1,383	0	0	0				
1 2	200	14	4 224	- 15. d	275	.:	V. C	532	0	0	0	Ç. 183	1.		
2	210	0	47 77			4.		72	0	0	0	17.			
2	220		N - T	V. 14				0	0	0	0				
2	230		12.5			: :	1	1. 1	" d = 4			<u>:</u>	, K.		
	240	1.7				: 1	77 41	)							
1	250		in di	i de jaj	1	; ;	1			-		<u> </u>			
	260			130,330											
	270	- 13			[44]										
	280	11 : (4							- 1			1 .			
	290			abat V	Maria San			2 6 7		fla 1.14 at t d	A STATE OF STATE	# 11. T			
	300														
	310						1.40	5.53							
	$\frac{320}{220}$					#1.									
	330		142 A	1,40,40			22 314	26 172	102 664	32,945	0	0	0		
Te	otal			1, 14, 16,	11214		7 8 7 5 3	26,173	102,664	32,743	<u>_</u>	U	0		

(3) EL. 125.0 m - EL. 136.6 m

Sta.	Γ	) III - JSI	Area				Volume (m³)						
	D	CL		CM-H	td	rd	D	CL	CM-L	CM-H	td	rd	
-20		<u> </u>		1					J 3				
-10	1		.:		-					315			
0		ļ									1.7		
10				1		11							
20		:		1	,								
30						Tarit		el la	ere print	1 (3)	11		
40					. `	11.14		11.4	100	7000		1,11	
50									5 41	7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			
60			1.0						7 . 1				
70						1 1			1,1,1,1,1		2.5		
80-1			+ 1 <b>3</b>	#	7,	1/2		:			1	347.74.7	
80-2						100					10 L 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
90										Paul Fel			
100		0					0	0	0	0	0	0	
110		48			20		0	241	0	0	0	0	
120		122			1		0	851	0	0	0	0	
130		: 216		* 2.4			. 0	1,691	0	0	0	0	
140	0	330		3232		Transfer	0	2,732	0	0	0	0	
150	37	418	1 114	10 Tal. 10		147	187	3,744	0	0	0	0	
160	161	350	14, 25, 35		. 5 %. 1	1 1 2 4 1 2 2	994	3,840	0	0	0	Ó	
170	287	250		1 1	1,1	30.3	2,243	2,996	0	0 \ 0	0	0	
180	391	154	3 3	10.054	·-		3,389	2,019	0	0 1 2	0	0	
190	497	> 22		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1			4,437	881	0	0	0	0	
200	479	5				1,	4,881	133	0	0	0	0	
210	380	0				279 3	4,296	23	0	0	0	0	
220	272						3,261	0	0	0	0	0	
230	147						2,096	0	0	0	0	0	
240	33						900	0	0	0	<i></i> 0	0	
250	0	<u> </u>					165	0	0	0	0	0	
260							0	0	0	0	0	0	
270					- <u>.</u>		0	0	0	0	0	0	
280 290							0	0	0	0		0	
300	0	1					0	0	0	0	0	0	
310	27						18	0	0	0	0	0	
320							151	0	0	0	0	0	
330	35 23			<u> </u>			308	0	0	0	0	0	
340	9				<u> </u>		291	0	0	0		0	
350	0			5			159	0	0	0	0	0	
360	0						43	0	V V	0	0	0	
	V)	<u> </u>	<del></del>		┷		0	0	0	0]	0	0	
Total			*******		$\perp$		27,817	19,148	0	0	0	0	

(4) EL. 110.0 m - EL. 125.0 m

(4) EL.	<u> </u>	, 111 LJL	Area				Volume (m <sup>3</sup> )							
J.a.	D	CL	CMJ	CM-H	td	rd	D	CL	CM-L		td rd			
-20			CIVI-IS	CIVITI			<u></u>		CIVI-D	CIVI-II	1 (0	I I U		
-10	ļ		<u> </u>	ļ		<del>                                     </del>								
0				i								<b></b>		
10	<b> </b> -	<u> </u>			-	ļ								
${20}$							<b></b>	1						
30		<del></del>		-										
40			<u> </u>	İ										
50								1 +						
60		. 4										A		
70		:			<u> </u>					:				
80-1			4. 4.					1				E 17.7		
80-2		1 1								-		\$ A		
90			77.1								A. 14	-		
100														
110			_								1 1			
120				11.7	7.							3		
130							1.	. :-				1 41		
140														
150	0	0	1,1				0	0	0	0	0	0		
160		70			-		0	351	0	0	0	. 0		
170		156					0	1,128	0.	0	· 0	0		
180	0	269		0			0	2,124	0	0	0	0		
190	3	□ 373	1. 1.	83			16	3,213	0	415	0	0		
200	39	366	1.1.0	236			212	3,698	0	1,594	0	0		
210	193	210	£	249	- :	1.0	1,161	2,883	0	2,424	0	0		
220	274	116		220		* . * *	2,333	1,632	0	2,342	0	0		
230	300	54		215		**:	2,867	849	0	2,173	0	0		
240	320	37		224			3,097	452	0	2,197	0	0		
250	273	30	- 1 A	228			2,965	330	0	2,261	0	0		
260	196	35		. 198			2,345	323	0	2,127	0	0		
270	87			154	0		1,412		0	1,759	0	0		
280	36	31		94	24		613	311	0	1,241	120	0		
290	18	24		61	10		268	274	0	773	172	0		
300	40		3 17	21	_0		290	466	0	406	52	0		
310	40	81	14 (2).	47			400	753	0	339	0	0		
320	39	94		15			392	874	0	310	0	0		
330 340	27	70 53		10 0	-23 		330	820	0	49	0	0		
350	17 7	24	0.15 1.00		<del></del>	- 12 (	221	615	0		0	0		
360	0	i		7.1			120 37	382	0	0		$-\frac{0}{0}$		
370	U	2 0				15 15 15 15 15 15 15 15 15 15 15 15 15 1	0	127 8	0	0	0	0		
		<u> </u>					L	<del> </del>				- <del>0</del>		
Total	1						19,075	21,942	0	20,528	344	U		

(5) EL. 95.0 m - EL, 110.0 m

Sta.	<del> </del>	m - EL.	Агеа (			<del></del>	Volune (m³)					<del></del>
- X - 1	D	CL		CM-H	td	rd	D	CL	CM-L	CM-H	td	rd
-20		1			_` <u>`</u>		<b>∦</b>			1	1-13	
-10	<del></del>	<del> </del>	<u> </u>				-	;		<b></b>		ļ
0							<b> </b>		<del> </del>	<del> </del>	[	
10		<u> </u>		·	$\vdash$	<u> </u>		<del>:</del>	<u> </u>			
20		<u> </u>				ļ	1		1			
30						<b></b>			<u> </u>			<del> </del>
40							<b> </b>	, , ,				
50							-33		<del>                                     </del>			
60					:					i		
70					 :							
80-1											l	1 1
80-2									1.1		<u></u>	7
90											27	
100												
110	1.			e d .				31.54				15.5
120		3 .		1 2.0		-						
130					100							
140		2.3				-						1
150	. (				1	V.		1 . 1		7, 1		
160			1 1						`			
170		365.3		, o <sub>1</sub> A		1 11		1 1 1	. 1/2	4.15		1 2 2
180	5.5.		, , , ; ;			1, 1				1 1 16 4	1 11	
190		1.42		0	1.1,	100	0	0	0	0	0	0
200		0		27			0	0	0	135	0	0
210		7	0	197	0		0	36	0	1,122	∵ 0	0
220	7.24	0	93	262	1	44 44	0	36	464	2,299	6	0
230		37	192	260	9		0	: 185	1,426	2,612	52	0
240	25.	51	190	287	0		0	442	1,912	2,736	46	0
250		45	177	301	1.		0	483	1,833	2,943	0	0
260		45	156	273			0	453	1,661	2,870	0	0
270		49	124	222	-		0	471	1,399	2,471	0	3:10
280		55	106	177			0	518	1,151	1,994	0	0
290	300	58	78	124	7:	1.51	0	564	920	1,504	0	0
300		54	18	52	3-		0	563	483	879	0	0
310		58	29	74			0	562	236	632	Ò	0
320		65	5	23	7.		0	613	168	488	0	- 0
330	52.7	69	3	5	¥.		0	667	40	140	ō	· 0
340		35	3	0	1.5		0	520	32	23	0	0
350		0	0				0	176	16	0	0	0
360									9.1. 92.		4.4	18.22
Total						1	0	6,286	11,737	22,845	104	0

(6) EL. 80.0 m - EL. 95.0 m

Sta.	00.0	m - EL.	Area				Volume (m³)						
Sta.	D	CL		CM-H	td	rd	<u> </u>	D   CL   CM-L   CM-H					
-20			CIVI-L	CIVI-FI	iu 		∦ <u>'</u>	CL:	CM-L	CM-H	td	rd	
-10		<del></del>	<u> </u>	ļ		ļ			<del> </del>	<u>i</u>			
0			<u></u>	1					ļ	: 			
10		<del> </del>	<b> </b>		-	7	1						
20		<u> </u>		<u> </u>		<u> </u>	1 1		<u> </u>			ļ	
30	<u> </u>	<del> </del>		!	├				<u> </u>				
40	·	<b> </b>		ļ			<b> </b>		1	!		<b> </b>	
50				<u> </u>			<b>  </b>		ļ	·			
60		<del>                                     </del>				<del></del>	<b> </b>		<u> </u>			l	
70			14									<u> </u>	
80-1		-	- 10 M				1					ļ	
80-2													
90													
100	<del>:</del> -					<b></b>						<u>-</u>	
110		<u></u>									1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
120	· ·			1					<u> </u>			<b>]</b>	
130													
140		<u> </u>								<u> </u>			
150													
$-\frac{150}{160}$													
170	<u> </u>												
180												- : · · · · · · · · · · · · · · · · · ·	
190					- 1								
200												1 A	
210				+ 1 +									
220			0				0	0	~	ō	<u>-</u>	<del>-</del>	
230		0	27	o seriesies Egantos ar j	0		0	0	136		0	$\frac{0}{0}$	
240		20	228		4	0	0	102	1,274		20	0	
250	1.37	41	388	0	8	14	0	308	3,077	0	60	70	
260		38	456	8	$-\frac{3}{10}$	$\frac{14}{26}$	0		4,219		89	202	
270	- 1 45 - 1 45	31	404	10	0			344	4,302			341	
280		42	328	22	_	52		367	3,660		0	469	
290		38	296	11	0	30	0	401	3,119		$-\frac{0}{0}$	411	
300		35	90	20	27	59	0	365	1,932		137	447	
310		59	108	24	7	43	0	469	990		171	510	
320		63	31	4	15	28	0	610	691		108	353	
330		52	20	0	27	27	0	573	252	22	208	277	
340		32	0	33.3	27	42	0	420	101	0	271	346	
350	1 1 1	0	0		0	0	0	161	101		137	$-\frac{340}{209}$	
360			V V				- V	101	•	<b></b>	131	2.09	
Total		<del></del>					0	4,510	23,752	994	1,249	3,632	
Totall				1	1	1	<u> </u>	4,310	23,132	794	1,249	3,032	

(7) Lower than EL. 80.0 m

Sta.		. 7	Area	(m²) .			_					
	D	CL		СМ-Н	td	rd	D	CL	Volun CM-L	CM-H	td	rd
-20									1			
-10			İ			:						
0								(		1		
10			,					- 1 L			1.	
20												
30		:										- 25
40			- 1					1 2 4			14.	
50							7.14					
60												
70							3 4	1000			14 4	
80-1				, F (F)			7 16					17.7
80-2					,		, fi					stig s
90			$\mathbb{R}^{1} \times \mathbb{A}^{1}$		1. 1.4		14 17				1, 44, 5	
100							1.13					
110					: .		17		Markey.		100	1 / 44
120	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1				41-12					1
130			3 . }						4,750	1944	7 15 16	- 1 /
140	1		12.5	(9 i %)	1.5	14 (14 f		4 ( 3.4 )	74. 7.5	VIA P	3 - B	: 1 5-
150	4	.577 - 1		4 1 4 A	7.		1 4					* e
160					- 7					44 C. S.		
170		:	-	47 1		17.4				11.443.271.	8-2-4	1 22
180			- 1	V 3 (1997)					7 (2) (1 (2) (2) (1 (2) (2) (1) (2)	40 (3.4	11.7	
190				1.5			1.57		1 2 2 7 1			
200						127.4	4.1	1 1 1				-1,15
210	2.5				7.	1.0	1724		1.47.74			
220					-		48.4				3.25	******
230		1	:					141.94	i e shi i Y	11 : 세계 :		71 J. C.
240		,		V. 1 . 5 .	- ;				1417 1177 - 1		2 *** * * *	4.5.45
250		(f) (i)		1.21	7.		10.00	121.1	Para Jawa		7.7	
260				1.44				多数扩展	1,14			3. (.)
270		ser r				24 (2	11 15 11	. N. 194. B	1 / 54	F1 7 55		Willia
280					7		11.3	i gair it	70 Feb	7.534,434		W. 50
290			0	0			0	0	- O	0	0	/-
300			0	36			0	0	0	178	0	9. ,
<b>310</b>			0	67	-J.	10.0	0	0	· · ·i	- 515	0	5 5
320	1		. 7.	0	13		0	0	0	337	0	
330	: " "	14.50	147.1	11 1 14	1		0	0	0	0	0	• (
Total							0		0	1,029	0	1 (

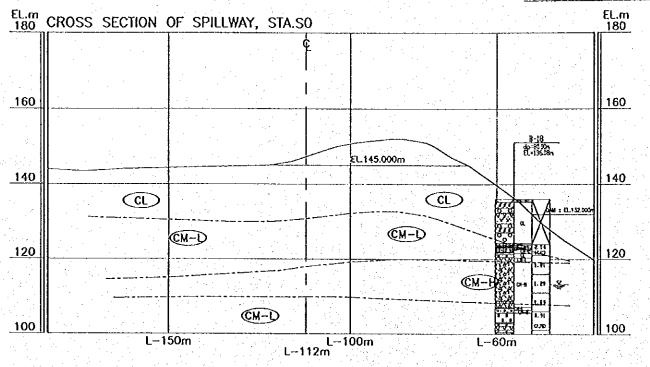
#### **Backfill Volume of Spillway**

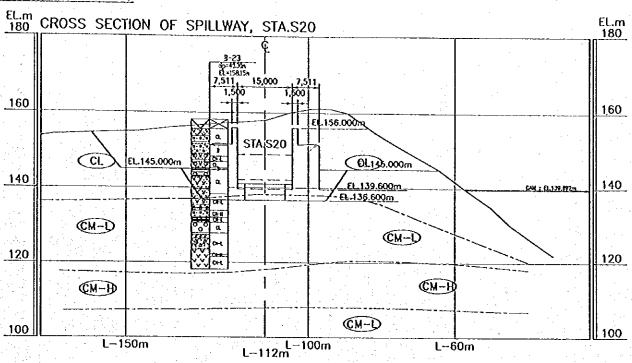
		Left	Side of Spilly	vay	Righ	Side of Spilly	vay
	Sta.S	Area	Ауе. Агеа	Volume	Area	Ave. Area	Volume
		$[m^2]$	$[m^2]$	[m <sup>3</sup> ]	$[m^2]$	(m²)	[m³]
-	-20	115.11		1.00			
-	-10			- B.7 B			
	0			17.8 %			
	10	0.0	14.000		0.0		
	20	32.4	16.2	162.0	32.4	16.2	162.0
.	30	21.2	26.8	268.0	21.2	26.8	268.0
	40	15.0	18.1	181.0	21.2	21.2	212.0
	50	151.3	83.2	831.5	22.6	21.9	219.0
	60	137.9	144.6	1,446.0	0.0	11.3	113.0
	70	177.7	157.8	1,578.0			
	80-1	177.7	177.7	1,777.0			
1	80-2	177.7	177.7	1,777.0			
	90	111.4	144.6	1,445.5	0.0		
	100	52.0	81.7	817.0	1.2	0.6	6.0
	110	26.3	39.2	391.5	8.0	4.6	46.0
.	120	11.0	18.7	186.5	8.8	8.4	84.0
: -	130	3.5	7.3	72.5	1.4	5.1	51.0
	140	3.5	3.5	35.0	3.5	2.5	24.5
	150	3.5	3.5	35.0	3.5	3.5	35.0
	160	3.5	3.5	35.0	3.5	3.5	35.0
	170	3.5	3.5	35.0	3.5	3.5	35.0
	180	4.1	3.8	38.0	4.1	3.8	38.0
	190	2,1	3.1	31.0	2.1	3.1	31.0
	200	1.4	1.8	17.5	1.4	1.8	17.5
	210	1.4	1.4	14.0	1.4	1.4	14.0
	220	1.4	1.4	14.0	1.4	1.4	14.0
	230	1.8	1.6	16.0	1.8	1.6	16.0
-	240	18.4	10.1	101.0	0.0	0.9	9.0
	250	65.6	42.0	420.0	19.0	9.5	95.0
	260	93.9			5.0	·	120.0
	270	93.9	93.9	939.0	3.2	4.1	41.0
	280	93.9			1		35.0
	290	93.9	i	939.0	0.0	1.9	19.0
	300	88.6	91.3	912.5	<u> </u>		<u> </u>
	310	45.5		670.5	0.0	·	- 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	320	0.4			36.8		184.0
	330	. 0.0	0.2	2.0	0.0	18.4	184.0
	Total			17,154.0			2,108.0
L		h to history			Grand	Total:	19,262.0

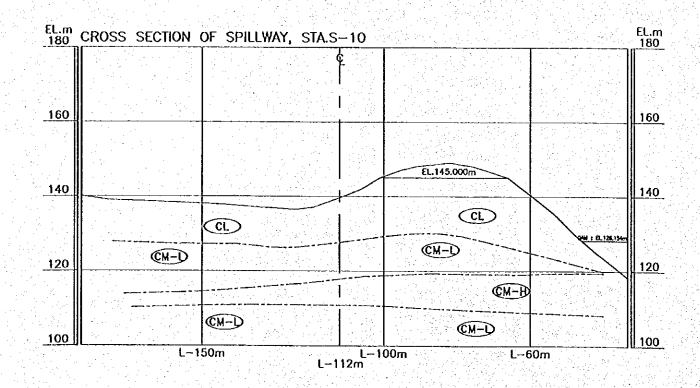
Stripping Top Soil Area of Spillway

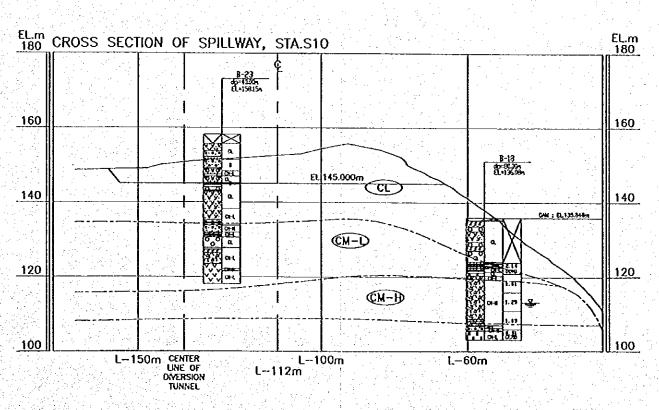
Sta.S	Length	Ave. Length	Area
6	(m)	[m]	$[m^2]$
-20	0.00	-	-
-10	36.05	18.03	180.25
0	56.98	46.51	465.13
10	95.23	76.10	
20	100.11	97.67	<del></del>
30 (	102.91	101.51	1,015.10
40	105.51	104.21	1,042.07
50	101.34	103,42	1,034.23
60	85.19	93,27	932.66
70	88.19	86.69	866.92
80-1	85.12	86.66	
80-2	85.57	85.34	853.45
90	76.29	80.93	809.28
ិ 100	64.48	70.39	703.85
110	62.38	63.43	634.32
120	63.73	63.05	630.55
130	68.78	66.25	662.54
140	71.82	70.30	703.01
150	72.94	72.38	723.79
160	70.26	71.60	716.00
170	73.34	71.80	717.99
180	74.81	74.07	740.74
190	76.69	75.75	757.52
200	78.98	77.84	778.35
210	81.23	80.11	801.06
220	80.76	81.00	809.99
230	82.44	81.60	816.01
240	92.56	87.50	875.00
250	97.51	95.04	950.38
260	95.24	96.38	963.77
270	89.85	92.54	925.44
280	85.78	87.81	878.14
290	82.54	84,16	841.60
300	95.08	88.81	888.08
310	103.26	99.17	991.71
320	118.79	111.03	1,110.26
330	122.05	120.42	1,204.17
340	.97.92	109.98	1,099.85
350	25.48	61.70	617.04
360 370	4.35	14.92	149.18
	0.00	2.18	21.76
Total			31,515.47

## CROSS SECTIONS OF SPILLWAY (1/10)



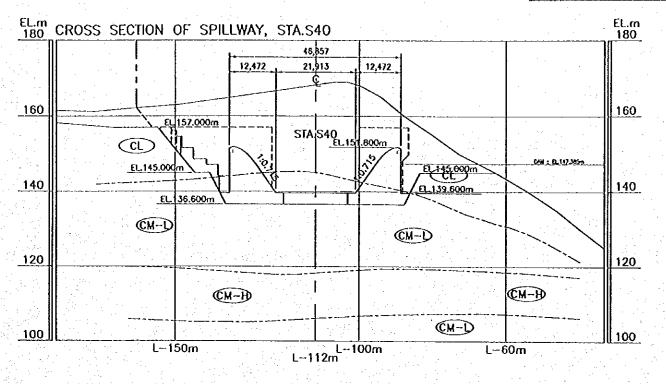


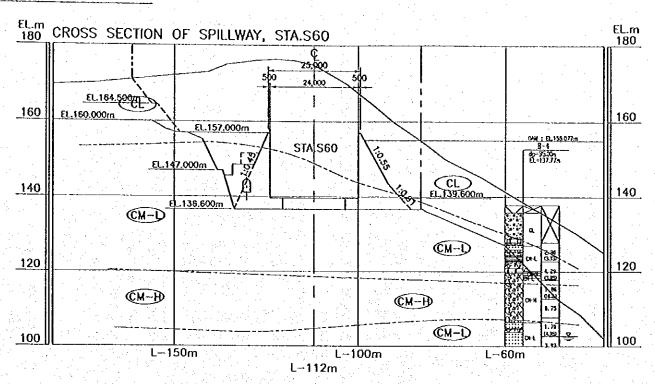


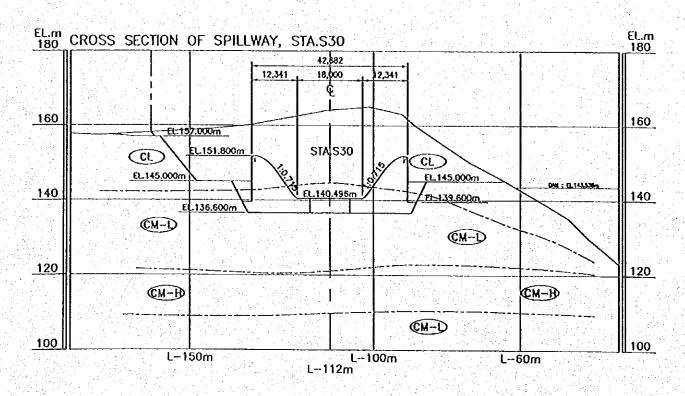


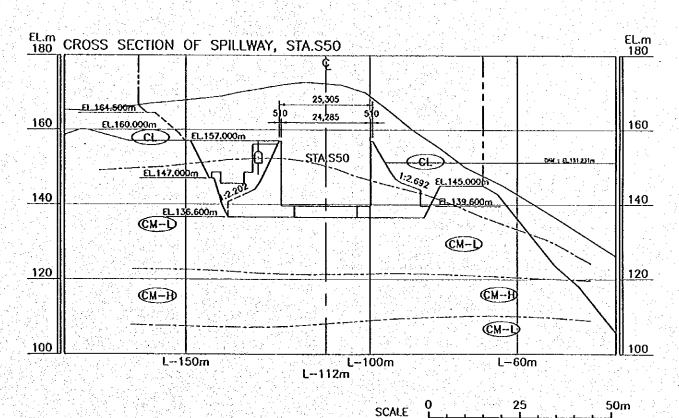
SCALE 0 25 50m

## CROSS SECTIONS OF SPILLWAY (2/10)

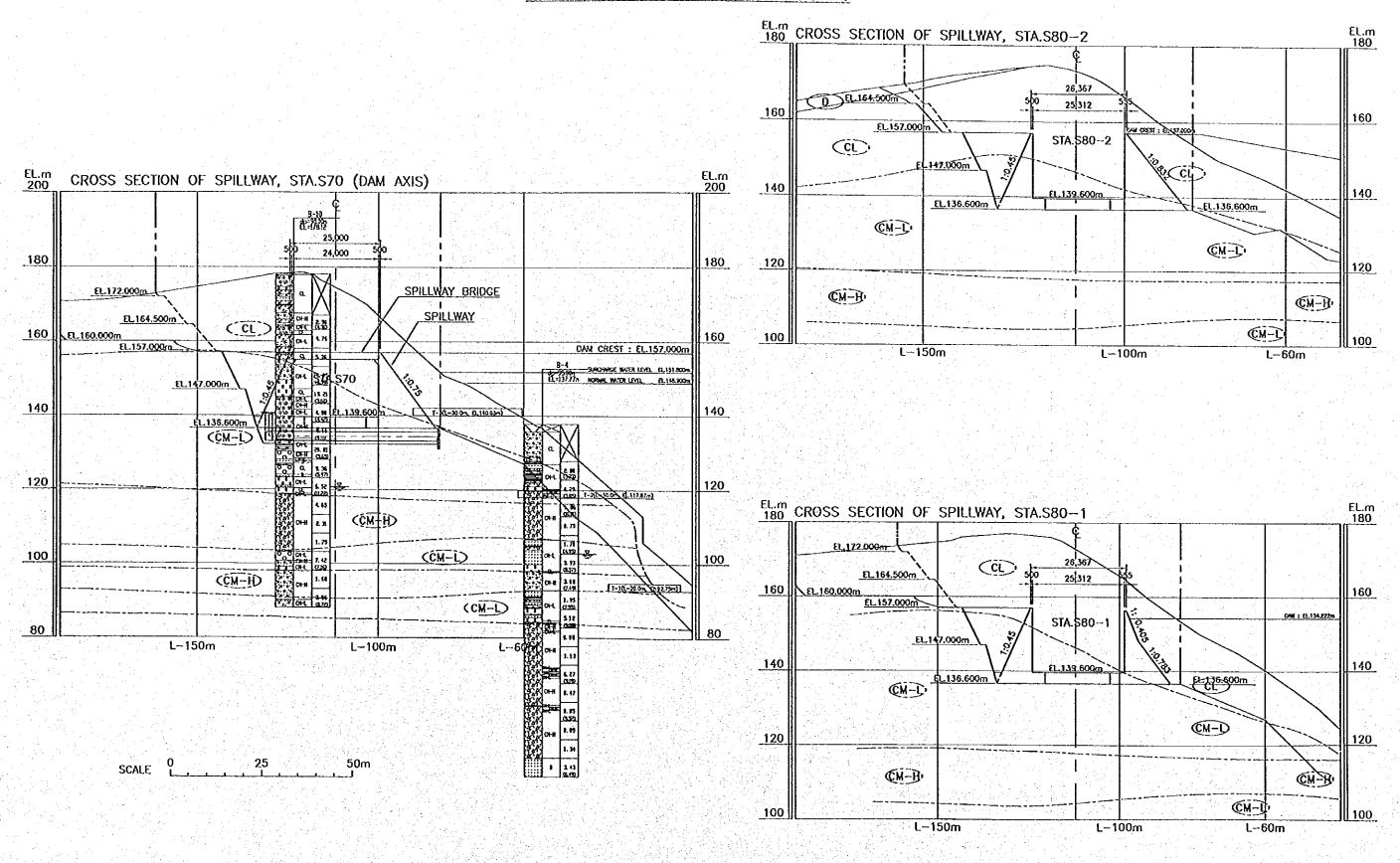




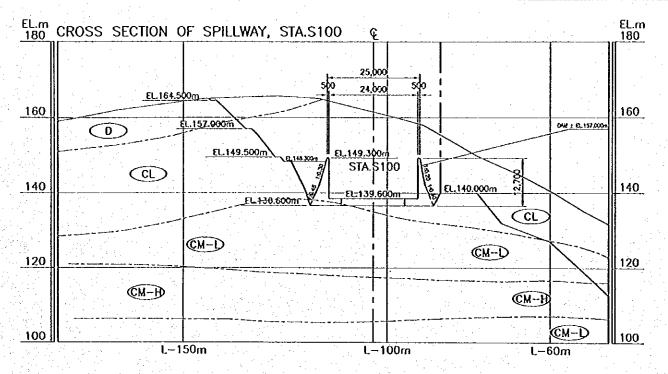


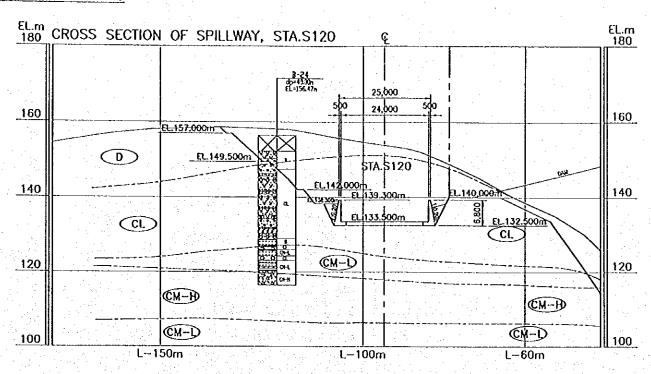


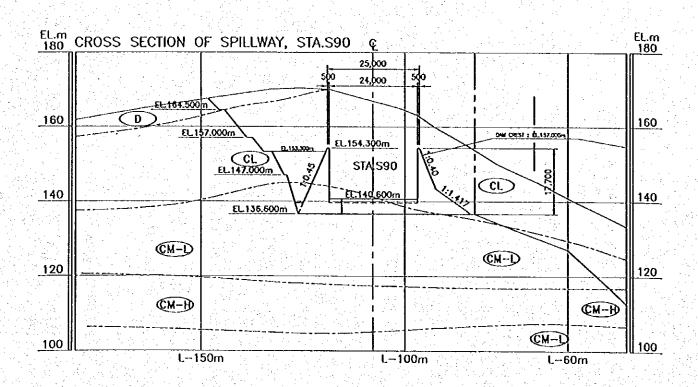
#### CROSS SECTIONS OF SPILLWAY (3/10)

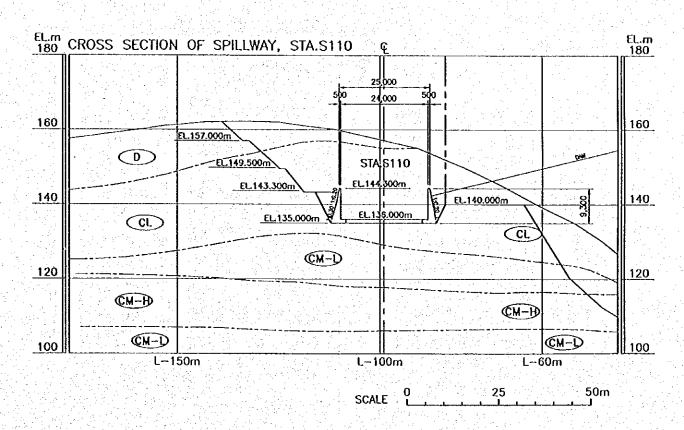


### CROSS SECTIONS OF SPILLWAY (4/10)

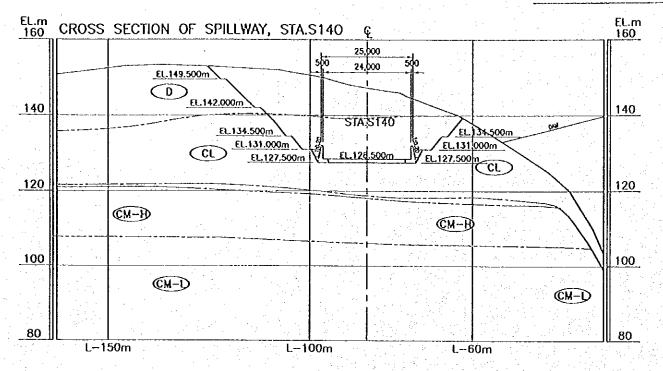


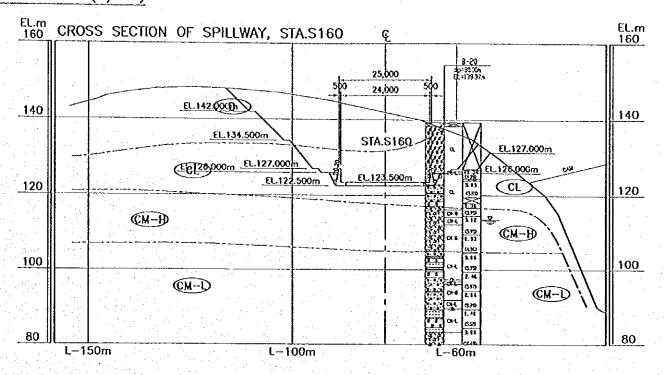


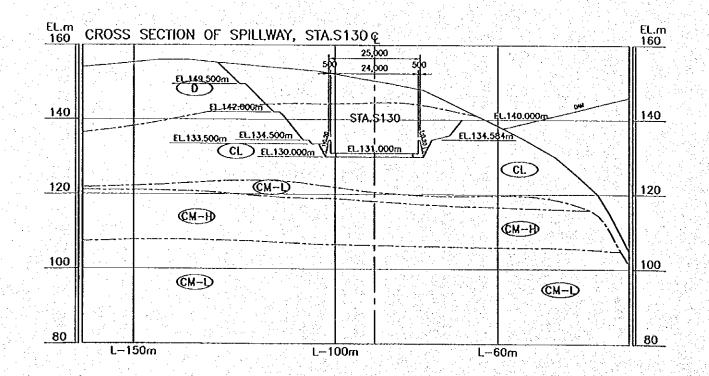


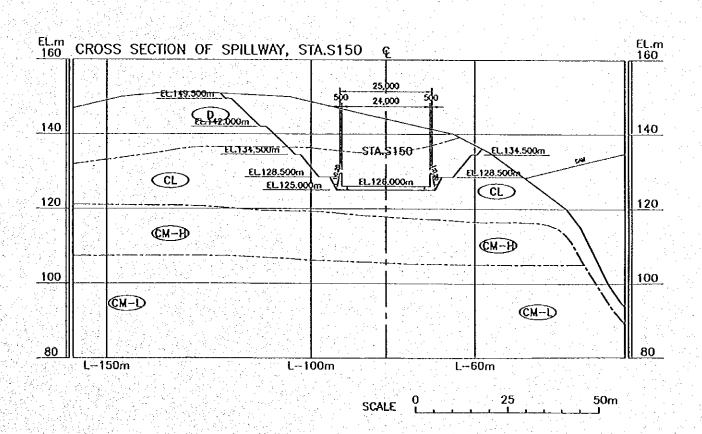


## CROSS SECTIONS OF SPILLWAY (5/10)

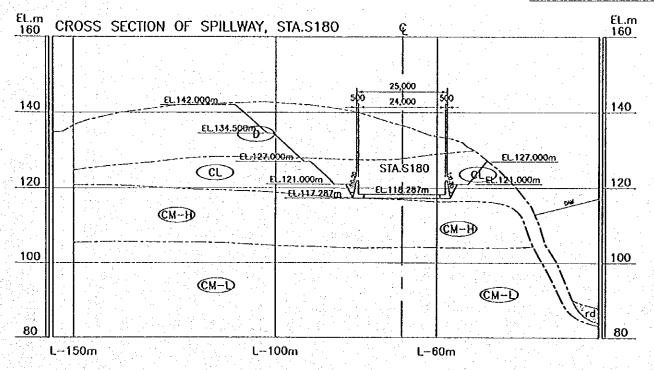


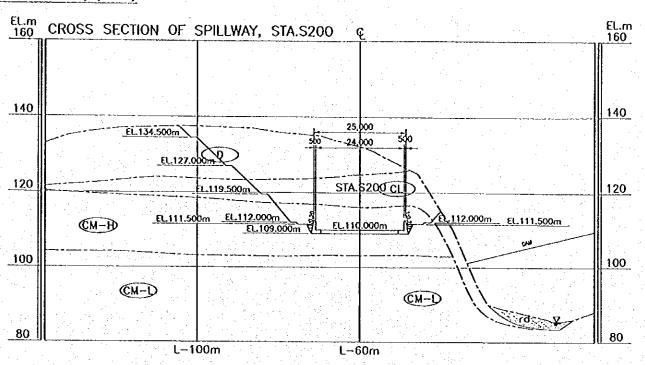


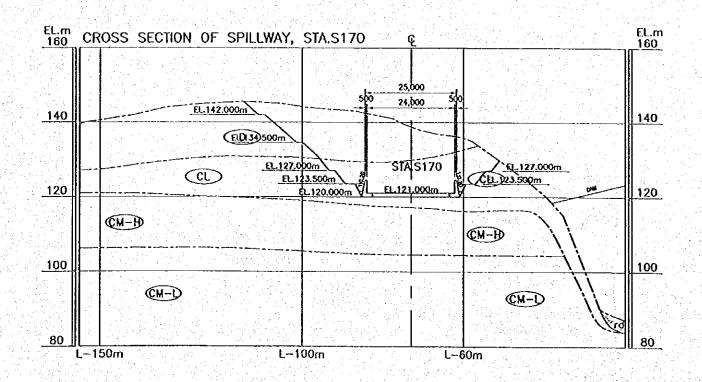


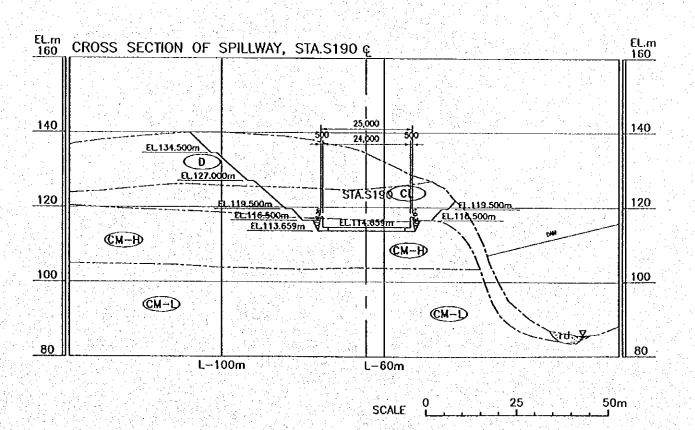


## CROSS SECTIONS OF SPILLWAY (6/10)

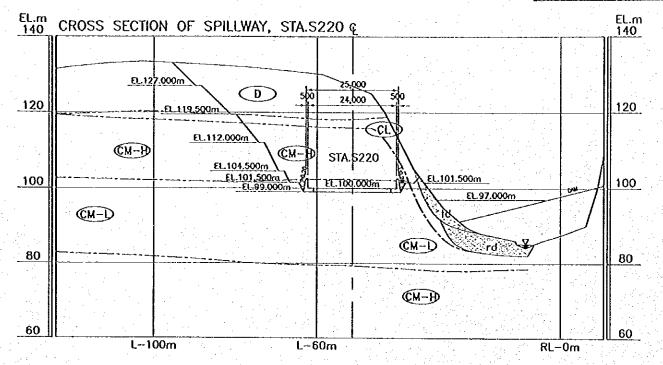


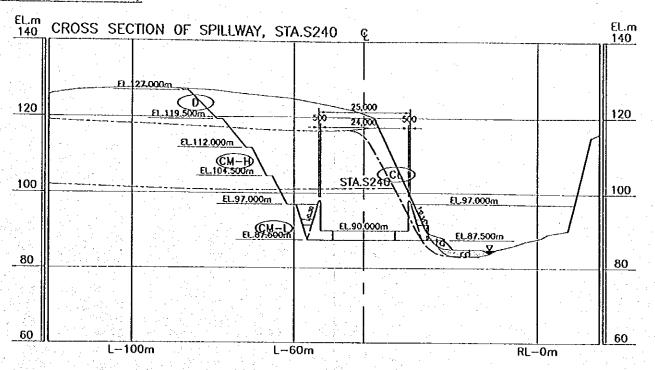


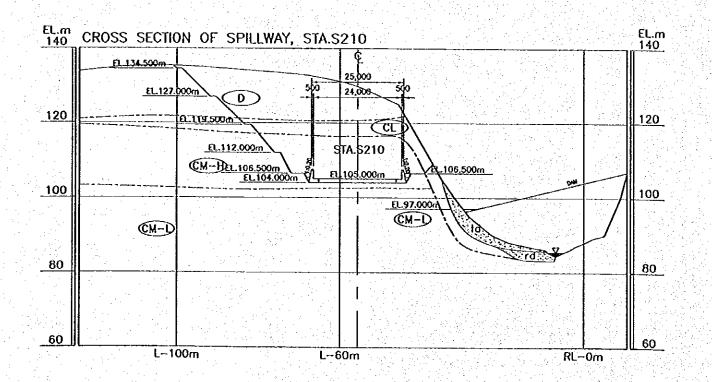


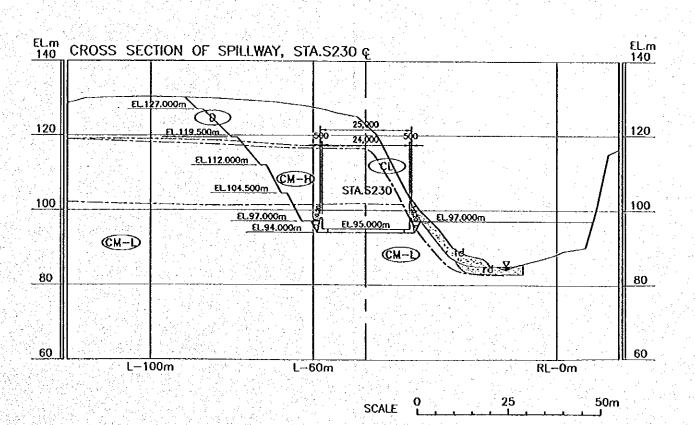


## CROSS SECTIONS OF SPILLWAY (7/10)

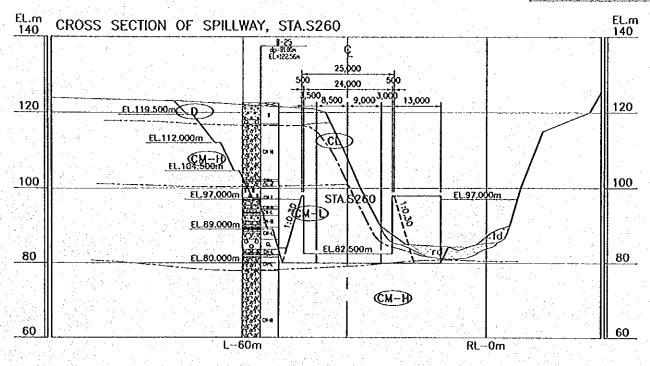


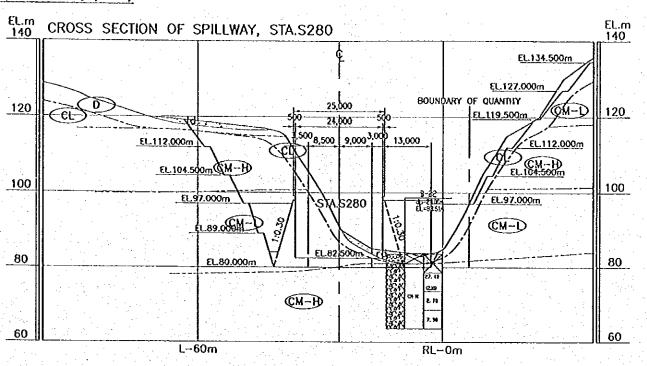


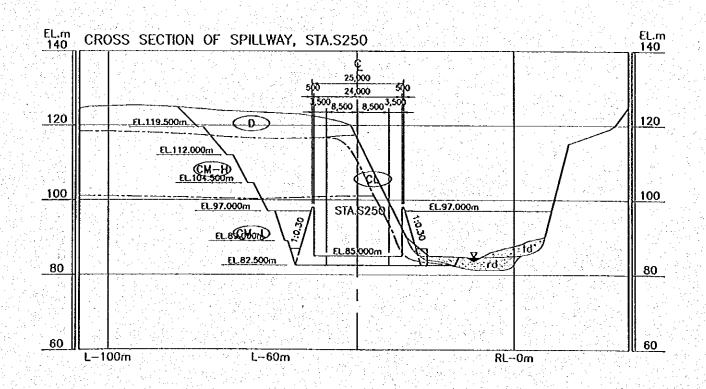


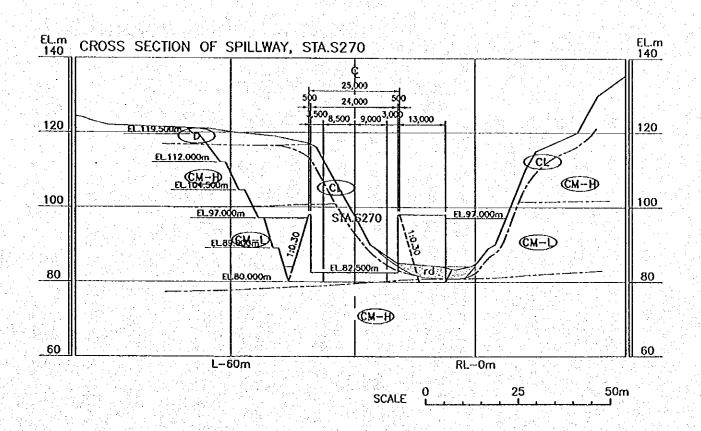


## CROSS SECTIONS OF SPILLWAY (8/10)

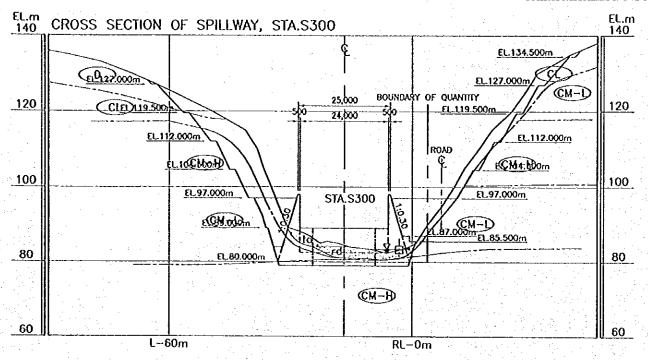


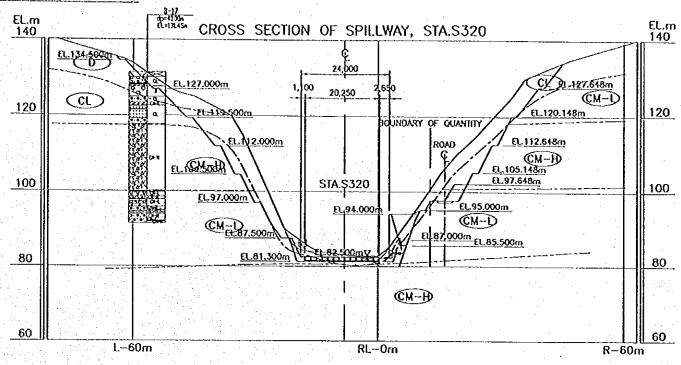


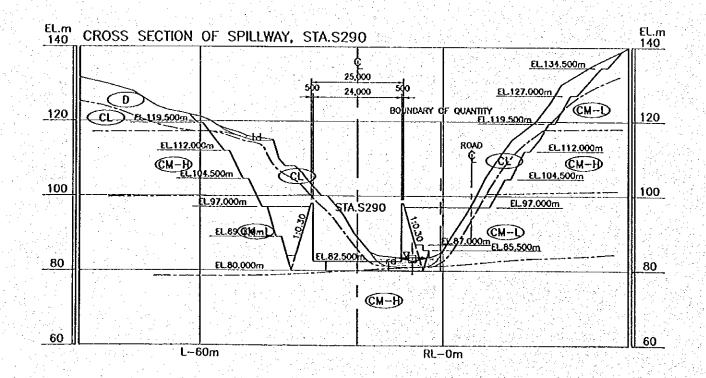


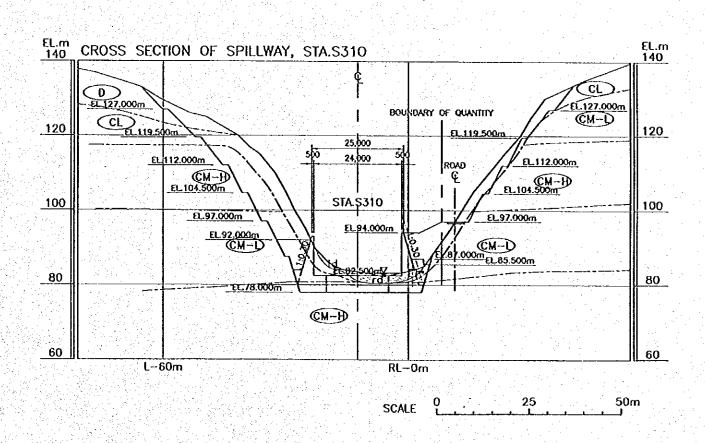


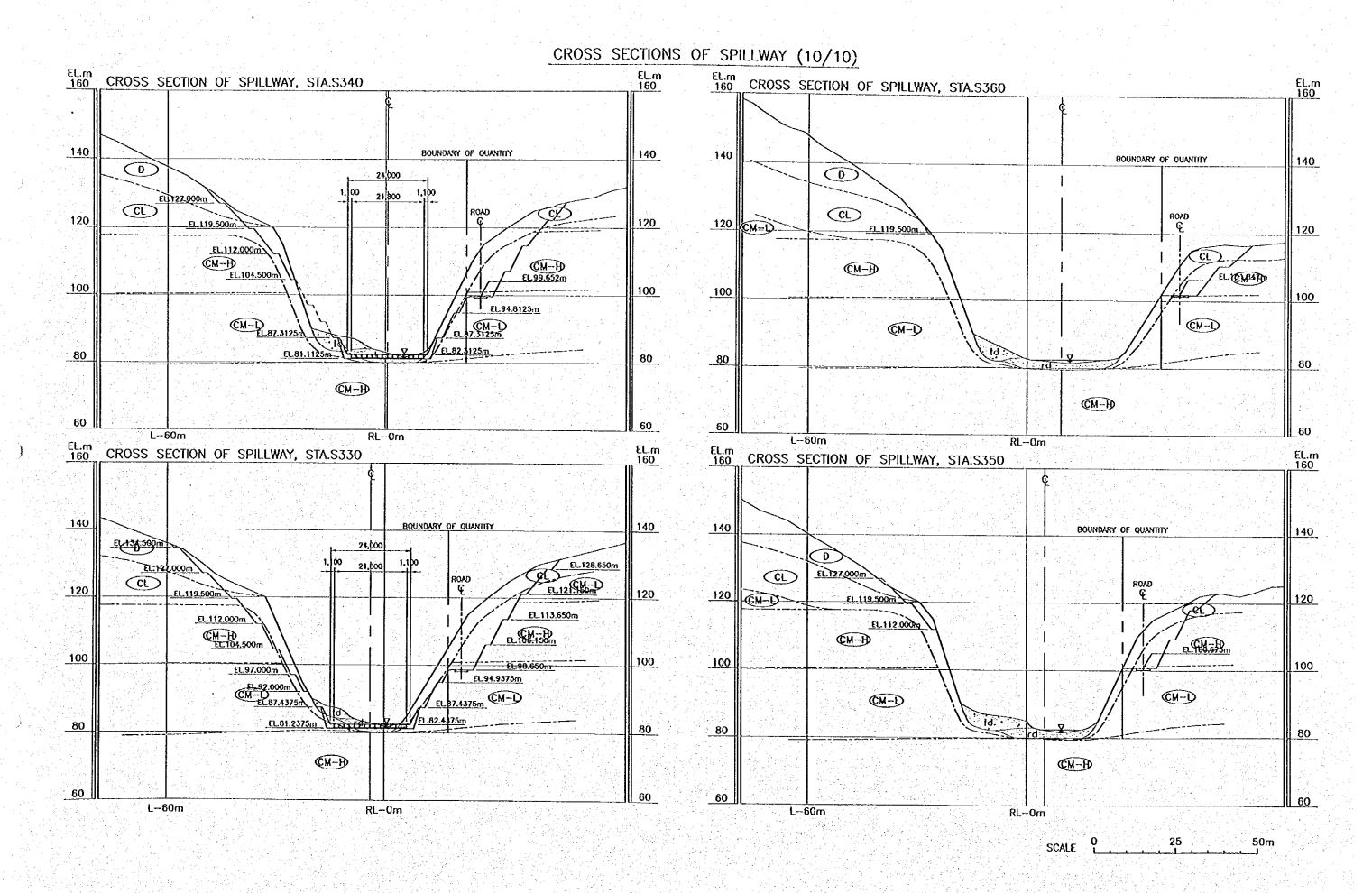
CROSS SECTIONS OF SPILLWAY (9/10)











## 2.4.2 Cocrete (Type D)

# Concrete Volume of Spillway by Each Block

Unit			١.
Linit	٠	(m)	٦,
Ville	٠	(	,

Block	Lef	t Wall		Center	Slab		Right	Wall
	Name	Volume (m³)	Name	Volume (m³)	Ņame	Volume (m³)	Name	Volume (m³)
1	L-1	2,387.64	C-1	1,191.11			R-1	2,387.64
2	L-2	1,382.29	C-2	621.08			R-2	1,382.29
	L-W	685.21	7.4 m s m					} 
3	L-3	3,710.33	C-3	765.00			R-3	2,937.61
4-1	L-4-1	2,036.12	C-4-1	765.00		<u> </u>	R-4	4,458.87
4-2	14-2	2,270.63	C-4-2	642.60		73.73 32.74	1	
5	L-5	1,107.15	C-5	714.00	::		R-5	474.66
6	L-6	250.82	C-6L	140.70	C-6R	140.70	R-6	210.28
7 223	L-7	137.48	C-7L	157.50	C-7R	157.50	R-7	137.48
8	L-8	98.50	C-8L	157.50	C-8R	157.50	R-8	98.50
- 9	L-9	98.50	C-9L	157.50	C-9R	157.50	R-9	98.50
10	L-10	98.51	C-10L	157.50	C-10R	157.50	R-10	98.51
11	L-11	96.95	C-11L	157.50	C-11R	157.50	R-11	96.95
12	L-12	80.95	C-12L	157.50	C-12R	157.50	R-12	80.95
13	L-13	79.21	C-13L	157.50	C-13R	157.50	R-13	79.21
14	L-14	186.13	C-14L	212.63	C-14R	212.63	R-14	196.84
15	L-15	730.74	C-15	637.50			R-15	786.00
16	L-16	1,061.06	C-16	656.25	-2- 1	3	R-16	Hydro PS
17	L-17	1,067.25	C-17	656.25			R-17	Hydro PS
18	L-18	1,067.25	C-18	637.50			R-18	1,113.56
19	L-19	1,517.30	C-19	2,155.31			R-19	1,492.47
20	7 ( <del>)</del> 70	4. <del></del> /					R-20	616.89
Total		20,150.03		10,897.41		1,455.83		16,747.22
							G-Total	49,250.49
						G-Tota	1 x 1.05	51,700.00

2 - 85

(1) Co	ncrete Volur	(1) Concrete Volume of Overflow Wei	ow Weir (Ov	erflow Wei	r (Overflow Weir ~ J3 and JR3)	R3)			G-Total	16,764.98 (m³)	m³)
Left Side	ģç					Center					
Name	Section	Area	Distance	Volume	Block	Name	Section	Area	Distance	Volume	Block
		(m <sup>2</sup> )	(m)	(m)	E)			(m²)	(m)	(m)	(m)
3	JCL	108.28	2.00	216.56		1	JCL	108.28			
2 15 24 34 -	Pier+J1	190.01	1.50	285.02		<u>ં</u>			11.00	1,191.11	-
	7.1	142.75	10.21	1,457.80			JCR	108.28			1,191,11
	11	142.75	3.00	428.26	2,387,64	C-5	\ ∀	207.03	3.00	621.08	621.08
L-2	Jim	142.75	89.6	1.382.29	1.382.29	ુ	8	255.00	3.00	765.00	765.00
	12	142.75	2.00	285.51						Total	2,577.18
	LW.	120.25	-								1.0
			2.00	298.15			A plant decrease the con-				
	1-1	177.90				Right Side	ģ.				
			3.15	536.08		Name	Section	Area	Distance	Volume	Block
	2-2	162.90						(m <sup>2</sup> )	( <b>m</b> )	(m³)	(m)
			3.56	530.56		 	JCR	108.28	2.00	216.56	
	3-3	135.17					Pier+J1	190.01	1.50	285.02	
	Edge	0.00	7				11	142.75	10.21	1,457.80	W
			7.82	623.71		And the second of	71	142.75	3.00	428.26	2,387.64
	4-4	159.62		ė.		R-2	11	142.75	89.6	1,382.29	1,382.29
			3.56	594.62		R-3	J2	142.75	2.00	285.51	
	5-5	174.44					JR3	152.75	3.82	582.75	
			4.94	841.70			JR3	152.75	9.52	1,454.67	
	13	166.54			3,710.33		JR3	152.75	4.02	614.68	2,937.61
	43			Total	7,480.27		- W - W - W - W - W			Total	6,707.54

(2) Concre	(2) Concrete Volume of Control Portion (J3 ar	f Control Po	rtion (J3 an	d JR3 ~ JE	nd JR3 ~ JR4 and Block L-W)	L-W)			G-Total	11,742,60 (m³)	E)
Left Side						Center.		4	1		
Name	Section	Area	Distance	Volume	Block	Name	Section	Area	Distance	Volume	Block
		(m²)	(m)	(m <sup>3</sup> )	(m <sup>2</sup> )			(m²)	(m)	(m <sup>3</sup> )	(m)
L-4-1	13	153.77				C-4-1	C-4-1	255.00	3.00	765.00	765.00
			15.00	2,036.12		C-4-2	C-4-2	214.20	3.00	642.60	642.60
	J4-1(left)	117.71			2,036.12	C-5 upper	G-G	19.50	17.00	331.50	331.50
[ 1-4-2	14-1(left)	117.71						*		Total	1,739.10
			89.8	1,021.71							
	J4-1(left)	117.71									
			11.28	1,248.91							
	14-2(left)	103.73			2,270.63	Right Side					
L-S	J4-2(left)	103.73				Name	Section	Arca	Distance	Volume	Block
upper			00.9	552.67				(n)	(E)	(B <sup>3</sup>	(m <sup>3</sup> )
	JR4(left)	80.49			552.67	R-4	JRS	152.75			
₩-J	Edge	00.0					De gran der eine eine eine eine eine eine eine ei	and the state of t	18.00	2,965.61	
			3.30	39,46			J4-1(right)	176.76			
	A1-A1	23.92							12.07	1,493.26	4 .
	A2-A2	19.60					JR4(right)	70.76			4,458.87
			1.50	41.50						Total	4,458.87
	B1-B1	35.74							<b>.</b>		
	B2-B2	26.40									
	<u> </u>		1.50	53.52							
	ပ	44.96							1.5		
	C2-C3	27.48									
			3.30	144.24							
	D-D	59.93		7							
			2.70	172.01							
	E1-E1	67.48									
	E2-E2	53.00									
			3:00	234.48							
	F-F	103.32			685.21						
				Total	5.544.62						

(3) Concrete Volume of Chute (JR4 ~ J15+3,000)

(a) Left Side Section Area Distance Volume Block Name (m<sup>2</sup>)(m³) (m) (m³) L-5 JR4 80.49 10.00 554,49 lower J5(1/2) 30.41 554.49 L-6 J5(2/2) 25.67 13.40 250.82 11.76 250.82 J6 11.76 L-7 15.00 137.48 6.57 137.48 L-8 6.57 J7 15.00 98.50 6.57 J8 98.50 L-9 J8 6.57 15.00 98,50 6.57 98.50 L-10 J9 6.57 15.00 98.51 J10 6.57 98.51 L-11 J10 6.57 5.00 34.08 J10+5.0m 7.06 10.00 62,87 5.51 96.95 L-12 311 5.51 15.00 80.95 5.28 J12 80.95 L-13 J12 5.28 15.00 79.21 J13 5.28 79.21 L-14 113 5.28 10.00 81.12 J13+10.0m 10.94 3.00 51.76 23.56 J13+13.0m 53.25 2.00 29.68 J14(1/2) 186.13 J14(2/2) L-15 30.31 15.00 730.74 115(1/2) 67.12 730.74 L-16 J15(2/2) 62.75 3.00 207.26 upper J15+3.0m 75.43 207.26 Total 2,619.55

L	·Total				
(b) Cer		<del>,</del>			·
Name	Section	Arca	Distance	Volume	Block
		(m²)	(n)	(m³)	(m³)
C-5	JR4	59.50	115-4.	[	
lower			10.00	382.50	
	J5(1/2)	17.00			382.50
	J5(2/2)~J6			1,1	Ŷ.
C-6L		10.50		140.70	
C-6R		10.50	13.40	140.70	140,70
	J6~J7	<u> </u>			
C-7L		10.50	15.00	157.50	
C-7R		10.50	15.00	157.50	157.50
	J7~J8				
C-8L		10.50	15.00	157.50	157.50
C-8R		10.50	15.00	157.50	157.50
	J8~J9	10.50			1 1
C-9L		10.50	15.00	157.50	157.50
C-9R	l	10.50	15.00	157.50	157.50
0.00	J9~J10	10.50		117.50	
C-10L		10.50	15.00	157.50	157.50
C-10R	J10~J11	10.50	15.00	157,50	157.50
C 111	110~111			167.50	147.60
C-11L	<del></del>	10.50	15.00	157,50	157.50
C-11R	111 112	10.50	15.00	157.50	157.50
C 131	J11~J12	10.50	15.00	157 60	167.60
C-12L		10.50 10.50	15,00	157,50	157.50
C-12R	J12~J13	10.20	15.00	157.50	157.50
C-J3L	112~113	10.50	15.00	152.50	167.50
		10.50		157,50	157.50
C-13R C-14L	Ji3	10.50 10.50	15.00	157.50	157,50
C-14L	J13	10.50	10.00	105.00	
	313+10.0m	10.50	10.00	103.00	
	213 110.011	10.50	3.00	55.13	- 55
	J13+13.0m	26.25	::00	33.13	
	313.13.011	20.23	2,00	52.50	
	J14(1 <i>1</i> 2)	26.25	2.00		212.63
C-14R	J14(1/2)	10.50			212.03
` ' '		30.501	10.00	105.00	
	J13+10.0m	10.50	10.00	105.00	
			3.00	55,13	
	J13+13.0m	26.25	3.00		
	1		2.00	52.50	- A 5 <b>]</b>
	J14(1/2)	26.25			212.63
C-15	J14(2/2)	42.50	1		
		2 2 2 2	15.00	637.50	
	J15(1/2)	42.50	74 : 6		637.50
C-16	J15(2/2)	43.75		T 4 1 34 1	
upper			3.00	131.25	
	J15+3.0m	43.75	7 5 **		131.25
				Total	4,062.90
41.44					

(4) Con	crete Voli	ime of Sti	lling Basin	(J15+3,000	~ END)			otal		11,702 58	(m³)
(a) Lett		· · ·				(c) Righ					٠.,
Name	Section	Area	Distance	Volume	Block	Name	Section	Area	Distance	Volume	Block
		(m²)	(m)	(m³)	(m³)			(m²)	(m)	· (m³)	(m³)
L-16	J15+3.000	)-J16				R-16	Concrete	volume shoc	ld be		
lower	1.0	71.15	12.00	853.80	853.80	lower	estimated	in Hydropo	wer Station	1 12	
L-17	116~117(1				10.00	R-17	Concrete t	volume shou	ıld be		
		71.15	15.00	1,067.25	1,067.25		estimated	in Hydropo	wer Station		
L-18	J17(2/2)~.	118	7 4	18 E	Street,	R-18	J17(2/2)~	118			
		71.15		1,067.25	1,067.25			74.24	15.00	1,113.56	1,113.56
L-19	G-G	126.78	3.50	443.74		R-19	H-H	112.88	3.50	395.07	
	118	62.40					J18	65.49			
			2.00	124.80					2.00	130.98	1
	Δ-Λ	62.40	1,1 -1 11,1				Λ-Λ	65.49			
			2.00	136.00	laga ta la				2.00	142.18	
	B-B	73.60					B·B	76.69			1000
			1.50	110.40					1.50	115.03	
	B-B	73.60					B-B	76.69			
			9.00	511.36				<u> </u>	6.00	421.73	
1	c-c	40.01	2.24				C-C	63.89			
			3.00	151.43			l		1 4.50	287.49	
	D-D	60.91					J19(1/2)	63.89			1,492,47
		60.01	0.50	30.46		R-20	J19(2/2)	79.64			
	D D	60.91			100		(1.0 (0.10)		1.00	79.61	
N	<u>i-i</u>	7,93	3.20				J19(2/2)	79.64			
	12.1	0.00	2.30	9.11	1 512 10	200	55	21.31	0.50	38.49	14.4
	Edge	0.00		Total	1,517.30 4,505.60		D-D	74.31			- 첫 12 년
				10tai [	4,303.00]		17 (7	41.68	5.45	316.06	
(b) Cent	a.		e Prince A				E-E	41.08	2.55		
Name	Section	Area	Distance	Volume	Block		F-F	70.39	233	142.88	
Ivailic	Section		100		1000		r-r	10.39			
0.16		(m²)	(m)	(m³)	(m³)	1 1			0.50	35.19	
C-16	J15+3.000	i i			****		F-F	70.39	·		
lower	1170	43.75	12.00	525.00	525.00		J.J	7.14			· ·
C-17	116~117(1			(36.3	(57.35		C.i.	0.03	1.30	4.64	61600
C-18	117(20)	43.75	15.00	656.25	656.25	L	Edge	0.00;			616.89
C-18	J17(2/2)~J		12.00	(27.50	(12.50				L	Total	3,222.93
C 10	G-G	12.50	15.00	637.50	637.50			, I, 5			
C-19	10.0	126.78	17.00	2,155.31	2,155.31						

	ght Side				
Name	Section	Агеа	Distance	Volume	Block
		(m²)	(m)	(m³)	(m <sup>3</sup> )
R-5	JR4	70.76			
			10,00	474.66	
	J5(1/2)	24.17			474.66
R-6	J5(2/2)	19.62		4	100
l			13.40	210.28	1977
	16	11.76			210.28
R-7	16	11.76		.,	
			15.00	137,48	74 - 71
	J7	6.57	175	1, 144	137.48
R-8	J7	6.57	0.00	1 1 2 24	
+ 4,			15.00	98.50	
	J8	6.57		445 4 5 1	98.50
R-9	J8	6.57	1 / 14h		
			15.00	98,50	
, ",".	19	6.57	a de la final de l		98.50
R-10	<u> 19</u>	6.57	·		
			15.00	98.51	
	310	6.57			98.51
R-11	J10	6.57		<u> 1997 (j. 35</u>	
			5.00	34,08	
	J10+5.0m	7.06			
			10.00	62,87	14.0
- :	)11	5.51			96.93
R-12	<u> </u>	5.51		1 to 1 to 1	
			15.00	80.95	
	J12	5.28			80.95
R-13	J12	5.28		3 No. 18	
		1 14	15.00	79.21	
	J13	5.28			79.21
R-14	J13	5.28		11s 2 5 5	
		ļļ	10.00	79.13	
	J13+10.0m	10.54			
15 to 1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		3.00	57.54	
	J13+13.0m	27.81		12 12 14	
11 2 112	<b> </b>	<del>  </del>	2.00	60.18	
	114(1/2)	32.36			196.84
R-15	J14(2/2)	35.00			
	115(14)	1	15.00	786.00	
	J15(1/2)	69.80			786.00
R-16	Concrete volu				
upper	estimated in	Hydropo	ower Station		
	L	1 1			0.00
	1000		Ł	Total	2,357.88

Arca (m²)	L	CL	CR	R	Total
JR4	80.49	59.50		70.76	210.75
J5(1/2)	30.41	17.00		24.17	71.58
J5(2/2)	25.67	10.50	10.50	19.62	66.29
16	11.76	10.50	10.50	11.76	44.53
J <b>7</b> ,J8,J9	6.57	10.50	10.50	6.57	34.13
JIO	6.57	10.50	10,50	6.57	34.14
J10+5.0m	7.06	10.50	10.50	7.06	35.12
JII	5.51	10.50	10.50	5.51	32.02
J12,J13	5.28	10.50	10.50	5.28	31.56
J13+10.0m	10.94	10.50	10.50	10.54	42.49
J13+13.0m	23.56	26.25	26.25	27.81	103.88
J14(1/2)	29.68	26,25	26.25	32.36	114.55
J14(2/2)	30.31	42.50	100	35.00	107.81
115(1/2)	67.12	42.50		69.80	179.42
J15(2/2)	62.75	43.75			106.50
J15+3.0m	75,43	43,75			119.18

#### 2.4.3 Form Work of Spillway

Unit: (m²)

Portion	Location	Outside	Inside	Total
Overflow Weir	Overflow Weir~J3,JR3	2,246.98	1,938.61	4,185.60
Control Portion	J3,JR3 ~ JR4,Block L-W	1,663.69	1,522.42	3,186.11
Chute	JR4 ~ J15+3.000	1,603.18	2,077.24	3,680.42
Stilling Basin 🐬	J15+3.000 ~ End	1,539.68	2,712.00	4,251.68
	Grand Total	7,053.53	8,250.27	15,303.80

#### (1) Form Work of Overflow Weir (Overflow Weir~J3 and JR3)

(a) Outside: 2,246.98 (m<sup>2</sup>)

Lest			Right		11.
Section	Length Distance Area	Total	Section	Length Distance Area	Total
	(m) (m) (m²)	(m²)		(m) (m) (m²)	(m²)
JCL	10.91 7.50 81.84		JCR	10.91 7.50 81.84	
Pier-in	- 81.73	1,5,7	Pier-in	- 81.73	
Pier-out	- 47.26		Pier-out	47.26	
Pier	8.32 1.50 12.48	( 2 : 5	Pier	8.32 1.50 12.48	
J1	12.90 30.00 386.85		J1	12.90 30.00 386.85	
J3	19.08 30.21 576.42		JR3	19.86 14.98 297.50	
		1,186.57	JR3	- 152.75	1,060.41

(b) Inside: 1,938.61 (m<sup>2</sup>)

Left	symphesical profile		Right		1 14.34
Section	Length Distance Area	Total	Section	Length Distance Area	Total
	(m) (m) (m²)	(m²)		(m) (m) (m <sup>2</sup> )	(m²)
JCL	16.10 7.50 120.78		JCR	16.10 7.50 120.78	
Pier	12.58 1.50 18.87		Pier	12.58 1.50 , 18.87	
J1	17.01 30.00 510.21		<b>[</b> ]]]	17.01 30.00 510.21	
Ji	3.00 14.68 44.05		J1 ****	3.00 14.68 44.05	
Wall	- 261.00	property.	Wall	208.80	
Тос	45.00	999.91	Toe	- 36.00	938.71

### (2) Form Work of Control Portion (J3 and JR3 ~ JR4, and Block L-W)

(a) Outside: 1,663.69 (m<sup>2</sup>)

Left ::	The second second			Right	ladyka kija gada ya sun	1 (4) (14-1)
Section	Length Distance	Area	Total	Section	Length Distance Area	Total
	(m) (m)	(m²)	(m²)	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(m) (m) (m²)	(m²)
J4-1(left)	19.08 34.96	667.07	(A. 1.56)	J4-1(right)	25.50 30.07 766.68	
J4-2	17.44 6.00	104.62	445	្រំ ខែសម្រាំ		
L-W		125.32	897.00			766.68

(b) Inside:

1,522.42 (m²)

Left	late Halley being	1 Page 1	Right	Links Weetings Village	landy (r.)
Section	Length Distance Area (m) (m) (m²)	Total (m²)	Section	Length Distance Area (m) (m) (m²)	Total (m²)
Wall Toe	560.89 104.30		Wall Toc	- 613.09 - 113.30	in digital digital
L-W	130.84	796.03			726.39

#### (3) Form Work of Chute (JR4 ~ J15+3.000)

1,603.18 (m<sup>2</sup>) (a) Outside:

Left			134.		Right				es i ji
Section	Length	Distance	Area	Total	Section	Length	Distance	Area	Total
	(m)	(m)	(m²)	(m²)	A .	(m) <sup>1</sup>	(m)	(m²)	(m²)
JR4(left)	14.15	-12.5		1.	JR4(right)	17.13	al tank		1.17.1
** .	4.5	10.00	111.97				10.00	125.91	
J5(1/2)	8.25	A A			J5(1/2)	8.06			
J5(2/2)	9.81			, ,	J5(2/2)	9.59			
		13.40	107.09				13.40	105.57	
J6	6.17		D. M.	19 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	J6	6.17	$(-1)^{d_1} + (-1)^{d_2}$		
		15.00	69.22			1. 1. 1. 1.	15.00	69.22	
J7	3.06				37	3.06		n de la serie Mais la serie	
	- 4	50.00	162.13			1997	50.00	162.13	
J10+5.0	3.43		(Ista)		J10+5.0	3.43		क्षाम् Қ	- N - N - N - N
		47.00	128.45			14 EV	47.00	128.45	
J13+7.0	2.04				J13+7.0	2.04			
		26.00	216.53	4 1 2 2 2 1			26.00	216.53	$m_{K}(dr)$
J15+3.0	14.62			795.38	J15+3.0	14.62			807.79

(b) Inside:

Left			Right		1.5 1.5 1	
Section	Length Distance Area (m) (m) (m²)	Total (m²)	Section	Length Distance (m) (m)	Area (m²)	Total (m²)
Wall Toe	827.6 211.0	2 0 1,038.62	Wall Toe		827.62 211.00	1,038.62

#### (4) Form Work of Stilling Basin (J15+3.000 ~ End)

(a) Outside: 1,539.68 (m²)

Left	<u>Chally related to be to be a long of the control o</u>	<u> </u>	Right	19. 李净 翻花 不知为一;	
Section	Length Distance Area (m) (m) (m²)	Total : (m²) :	Section	Length Distance Area (m) (m) (m)	Total (m²)
J15+3.0 J18+5.5	14.62 47.50 694.26 14.62	2.7	J15+3.0 J18+5.5	14.62 20.50 299.63 14.62	
c-c	9.00 103.36 8.35		C-C E-E	9.00 105.41 8.81 8.45 74.43	
D-D(u/s) D-D(d/s)	60.92 60.92	919.45	F-F(u/s) F-F(d/s)	70.39 70.39	620.23

(b) Inside:

2,712.00 (m<sup>2</sup>)

Left			•	Right		talahar Ha
Section	Length Dista (m) (m		Total (m²)	Section	Length Distance Ai	rea Total
Wall Toe		830.88 232.75		Wall Toe		5.88 7.13
Sub-Dam	19.35 24	4.00 464.38	1,528.00			1,184.00

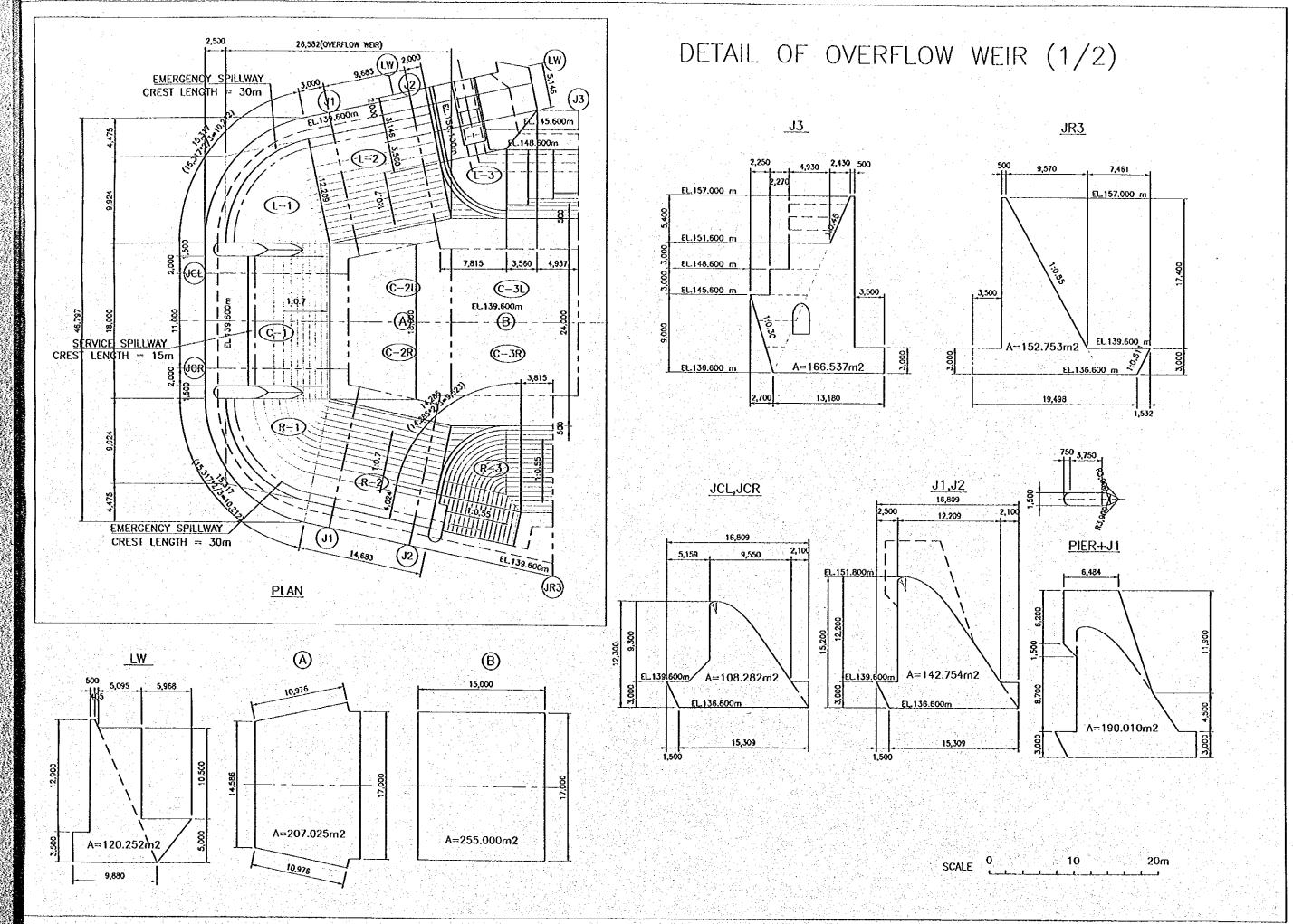
Frame Wor	k of Joints		Grand Total:		3,184.32	3,184.32 (m <sup>2</sup> )	
Left		Right		Center			
Section	Area	Section	Area	Section	Area		
	(m <sup>2</sup> )		(m <sup>2</sup> )		$(m^2)$		
JCL	108.28	JCR	108.28		-		
] JI h j	142.75	J1	142.75		1 2	:	
J2	142.75	J2	142.75	J2	72.00		
J3	166.51	JR3	152.75	J3	72.00		
Jw	120.25	•	1 1 2	J4-1	72.00		
J4-1	117.71	JR4	70.76	J4-2	72.00		
J4-2	103.73			- (			
J5	30.41	J5	24.17	J5	21.00		
J6	11.76	J6 👯	11.76	J6	21.00	1 .	
J7	6.57	J7	6.57	J7	21.00		
J8	6.57	J8 :	6.57	J8	21.00		
J9	6.57	J9	6.57	J9	21.00		
J10	6.57	J10	6.57	J10	21.00		
JH	5.51	J11	5.51	JH	21.00	1.	
J12	5.28	J12	5.28	J12	21.00		
J13	5.28	J13	5.28	J13	21.00	3.1	
J14	30.31	314 C.5	35.00	114	52.50		
J15	67.12	J15	69.80	J15	43.75		
116 g	71.15	J16		J16	43.75		
J17	71.15	J17	78.24	J17	43.75		
J18	71.15	J18	78.24	∮ J18	42.50		
-		J19	83.64	Center	143.16	#= 1 1 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Total	1,297.42	Total	1,040.49	Total	846.41		

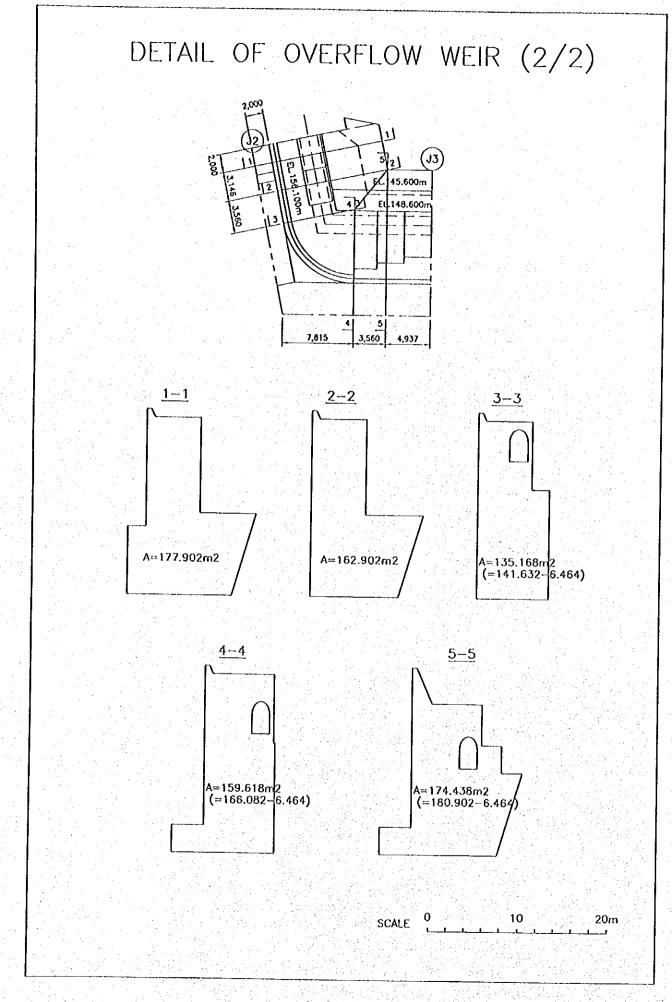
#### 2.4.4 Weight of Steel Reinforcing Bar by each Block

Un	īt	: (	kg)

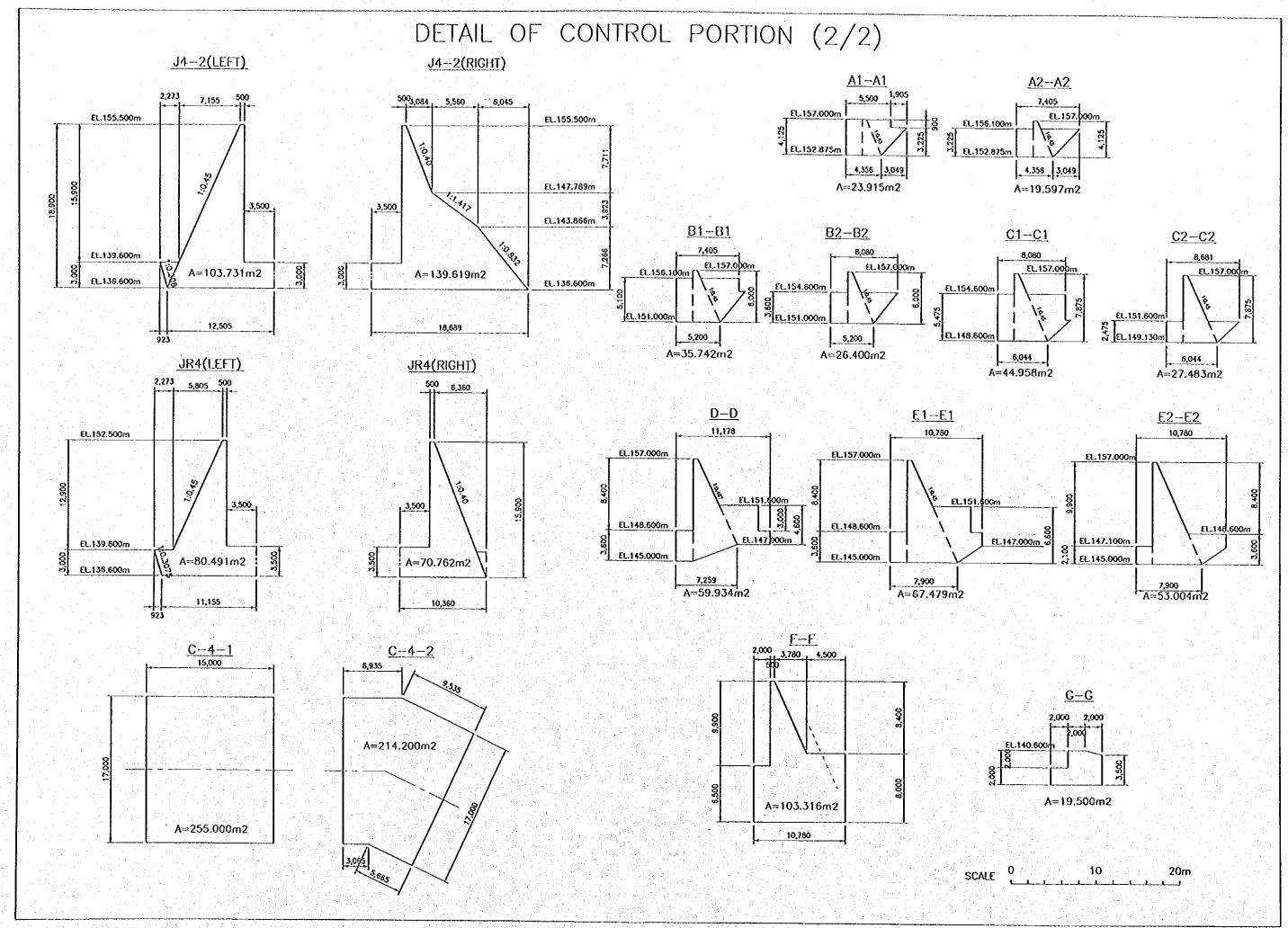
Block	Lef	t Wall		Cente	r Slab		Righ	t Wall
	Name	Weight (kg)	Name	Weight (kg)	Name	Weight (kg)	Name	Weight (kg)
1	L-1	4,907	C-1	1,702		A	R-1	4,907
2	L-2	1,515	C-2	7,090	1		R-2	1,515
;	L-W	1,079	11 <u></u> 1 (6)					
3	L-3	13,942	C-3	8,776			R-3	12,903
4-1	L-4-1	21,051	C-4-1	8,776	(		R-4	28,813
4-2	L-4-2	13,565	C-4-2	7,252		¥4 1. p	· •••	
5	L-5	12,960	C-5	9,513		St. 14-1-16	R-5	7,780
6	L-6	4,387	C-6L	4,744	C-6R	4,744	R-6	4,183
7	L-7	3,178	C-7L	5,294	C-7R	5,294	R-7	3,178
8	L-8	2,319	C-8L	5,294	C-8R	5,294	R-8	2,319
9	L-9	2,319	C-9L	5,294	C-9R	5,294	R-9	2,319
10	L-10	2,539	C-10L	5,300	C-10R	5,300	R-10	2,539
11	L-II	2,510	C-11L	5,374	C-11R	5,374	R-11	2,510
12	L-12	2,133	C-12L	5,622	C-12R	5,622	R-12	2,133
13	L-13	2,223	C-13L	5,604	C-13R	5,604	R-13	2,223
14	L-14	2,689	C-14L	5,679	C-14R	5,679	R-14	2,689
15	L-15	11,684	C-15	9,250		4	R-15	11,724
16	L-16	13,421	C-16	9,226	1		R-16	Hydro PS
17	L-17	12,624	C-17	9,050	•		R-17	Hydro PS
18	L-18	12,624	C-18	8,776	1122	j f , 2-2 tie	R-18	12,624
19	L-19	14,543	C-19	14,852			R-19	12,191
20		i 🟋	T #=#11 44		77 H	-42	R-20	8,018
Total		158,212		142,468	1.11	48,205	图片 基础	124,568
			ng san t				G-Total:	473,453
						G-Total	x 1.06	502,000

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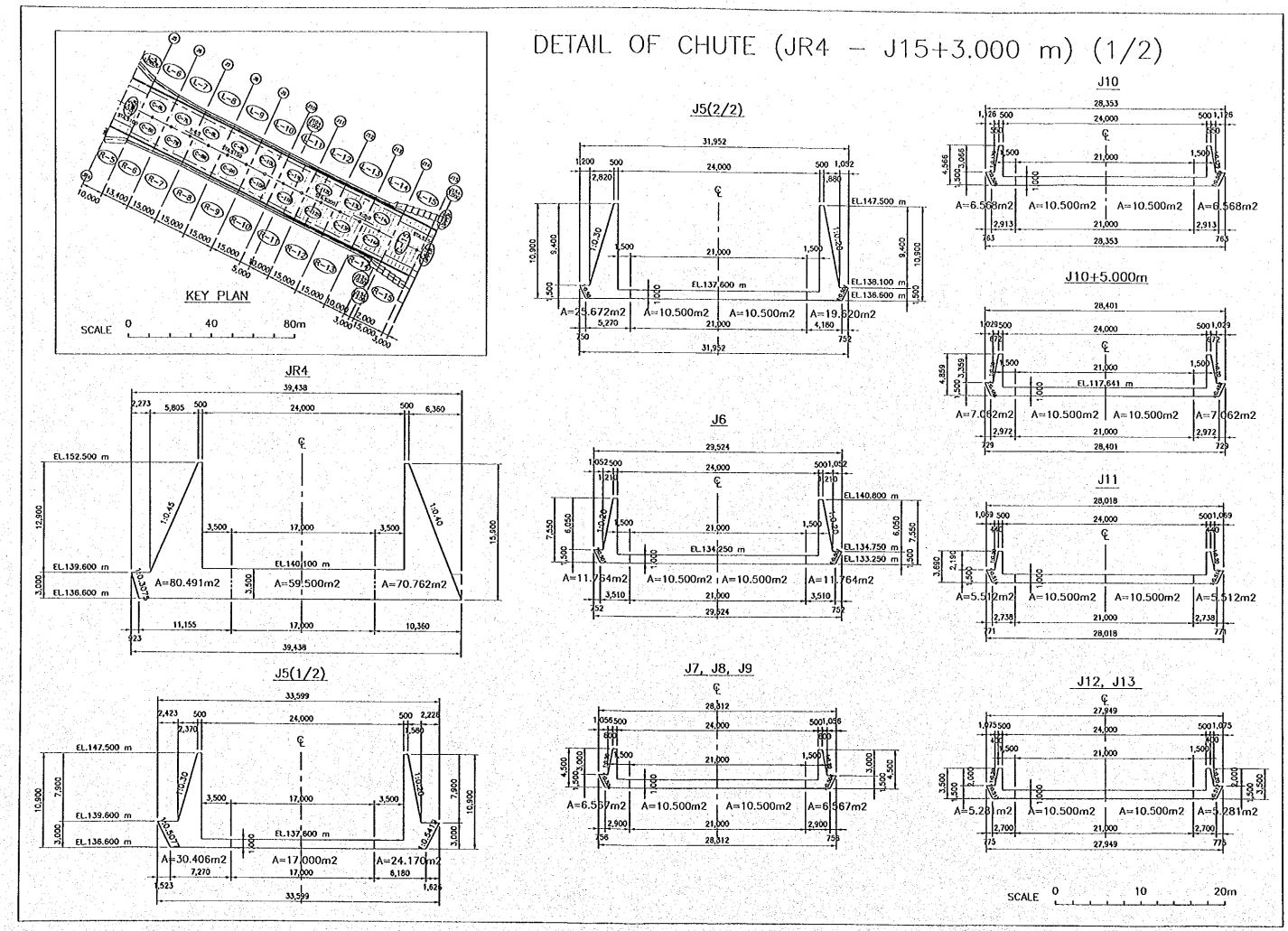




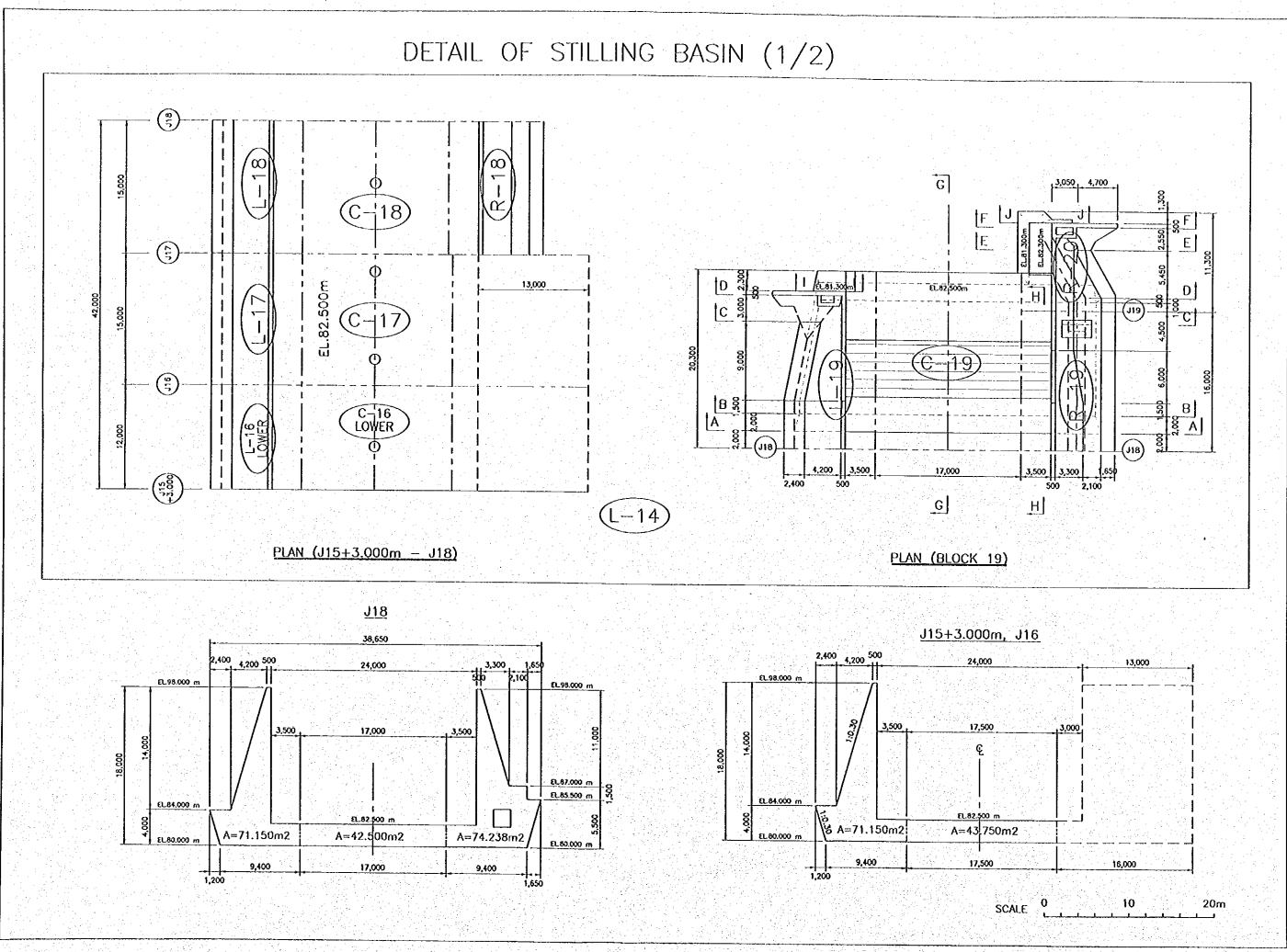
# DETAL OF CONTROL PORTION (1/2) <u>JR3</u> EL.157.000 m EL.157.000 m EL 139,600m EL.136.600 m n A=152.753m2 A=153.772m2 J4-1(LEFT) J4-1(RIGHT) EL.157.000 m EL.139.600 m A=117.711m2 A=176.760m2 BLOCK L-W <u>PLAN</u>

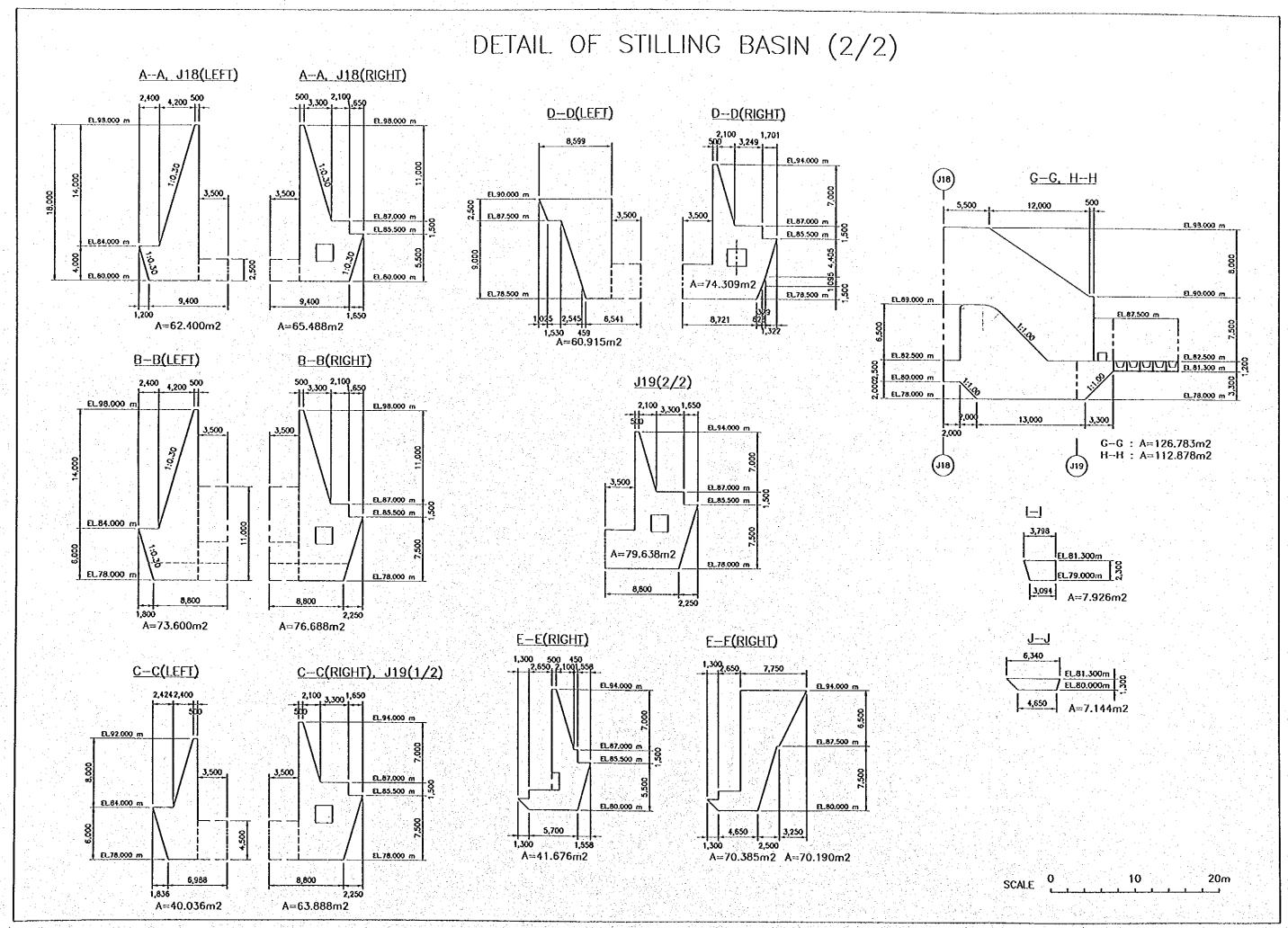


1



#### DETAIL OF CHUTE (JR4 - J15+3.000 m) (2/2)5003,300 3,000 EL.98.000 m A=10.500m2 A=10.544m2 3,500 EL.87.000 m EL 87.000 m J13+13.000m EL.84.000 m \GA=67.121m2 A=42.500m2 A=69.800m2 EL81.500 m J15(2/2) A=26.250m2 | A=26.250m2 | A=27.813m2 EL.98.000 m J14(1/2) 33,476 EL85.500 m EL.98.000 m EL.84.000 m A=62.748m2 A=43.750m2 EL.94,500 m EL.81.500 m 1,255 EL.89.000 m J15+3.000m A=26.250m2 A=29.584m2 | A=26.250m2 A=32.363m2 3,300 3,750 500 13,000 EL.98.000 m J14(2/2) EL.98.000 m 3,500 EL.93.000 m EL.82.500 m A=75.425m2 A=43!750m2 EL80.000 m A=42.500m2 A≈35.000m2 EL.89.000 m =30.310m2 8,500





~ 4 ~	11 1 1 1 1 1	~	
//	350001/1111	E PAUALAI	Spillway

E-T-3 Dackin O	are or opinion	Onte a fin )				
:		Lest Right	Total			
Overflow Weir	Overflow Weir~J3,JR3	273.30 0.00	273.30			
Control Portion	J3,JR3 ~ JR4,Block L-W	402.01 0.00	402.01			
Chute	JR4 ~ J15+3.000	257.51 153.19	410.70			
Stilling Basin	J15+3.000 ~ End	369.32 219.92	589.24			
7 (180)	Grand Total	1,302.13 373.12	1,675.25			
Gr	and Total x 1.05	1,370.00 390.00	1,760.00			

(1) Overflow Weir (Overflow Weir~J3 and JR3)

Left		30.00	Right		
Section	Length Distance Area	Volume	Section	Length Distance Area	Volume
	(m) (m) (m²)	(m <sup>3</sup> )		(m) (m) $(m^2)$	(m³)
J3	18.09 30.21 546.60	273.30			3.35

(2) Control Portion (J3 and JR3 ~ JR4, and Block L-W)

Left	Hall vir kraft in Ho	5. 探测的	Right		
Section	Length Distance Area (m) (m) (m²)	* 18 July 2015	Section	Length Distance Area (m) (m) (m²)	Volume (m³)
J4-1(left) J4-2	17.98 34.96 628.72 16.34 6.00 98.03		1		
L-W	77.26	38.63			

(3) Chute (JR4 ~ J15+3.000)

Left		alt Histori	1 1 2		Right		44.50		
Section	Length	Distance	Area	Volume	Section	Length D	Distance	Area	Volume
	(m)	(m)	(m²)	(m³)		(m)	(m)	(m²)	(m³)
JR4(left)	11.95	State Mark		M. All					
		10.00	90.57	45.28					
J5(1/2)	6.16	(1) (7) (4)		(BA) (Con-					
J5(2/2)	7.73		al de la seconda						
		13.40	79.44	39.72	LASS A LONG				
J6	4.13								
# T		15.00	38.63	19.31			Nation		Section 1
J7	1.02				J7	1.02			
		50.00	60.15	30.08			50.00	60.15	30.08
J10+5.0	1.39				J10+5.0	1.39			
		47.00	56.54	28.27			47.00	56.54	28.27
J13+7.0	1.02				J13+7.0	1.02			
		26.00	189.70	94.85			26.00	189.70	94.85
J15+3.0	13.57				J15+3.0	13.57			

(4) Stilling Basin (J15+3.000 ~ End)

Left Annual Control of the Control o				Right Teacher and the control of the			
Section	Ĭ	Distance Area		Section	Length Distance Area	Volume	
	(m)	(m) (m²)	(m³)		(m) (m) (m²)	(m³) /	
J15+3.0	13.57			J15+3.0	13.57 <b>4.36</b> (19.44)		
		47.50 644.67	322.34		20.50 278.23	139.11	
J18+5.5	13.57			J18+5.5	13.57		
	100	9.00 93.96	46.98	A STATE OF THE STA	9.00 96.01	48.01	
C-C	7.31			C-C	7.76		
					8.45 65.61	32.80	
				Е-Е	7.76		

### 2.4.6 Water Stop

	A STATE OF THE PARTY OF THE PAR
Grand Total of Water Stop:	1,800.87 (m)
Grand Total of Water Stop x 1.05	1,900.00 (m)
Compared to the Compared State of the Compar	

# Along Cross Section

## Along Profile Section

Unit : (m)	

			Unit : (m)
Block	Left	Right	Center
C-1	71.4 <u>-</u> 84	477-01	-
C-2	13.35	13.35	
C-3	15.00	15.00	
C-4-1	15.00	15.00	
C-4-2	16.47	8.73	1 41 • 14′ •
C-5	17.37	17.37	•
C-6	13.81	13.81	13.81
- 1. C-7 at	/ // 15.46	15.46	15.46
C-8	15.46	15.46	15.46
.: C-9	15.46	15.46	15.46
C-10	15.48	15.48	15.48
C-11	15.95	15.95	15.95
C-12	16.69	16.69	16.69
C-13	16.77	16.77	16.77
C-14	16.77	16.77	16.77
C-15	16.77	16.77	14 & • 4 y k
C-16	15.35	15.35	A GA B SEC
C-17	15.00	15.00	1 A - A-
C-18	15.00	15.00	lai es ar
C-19	29.39	29.39	14-47
Total	310.55	302.81	141.85

	<del></del>		onn . (m
Section	Left	Right	Center
JCL,JCR	37.57	37.57	414
JI	47.54	47.54	-
J2	47.54	47.54	17.00
JR3	-	43.61	112
J3	33.75	7 a - 17	17.00
Jw	15.90	-	-
J4-1	20.90	•	17.00
J4-2	19.40	_	17.00
JR4		15.90	- 11
J5	13.40	13.40	17.00
J6	8.05	8.05	21.00
J7	5.00	5.00	21.00
J8	5.00	5.00	21.00
J9	5.00	5.00	21.00
J10	5.00	5.00	21.00
J11	5.00	5.00	21.00
J12	4.00	4.00	21.00
J13	4.00	4.00	21.00
J14	10.00	10.00	17.00
J15	17.50	17.50	: 17.00
J16	19.00	19.00	17.00
J17	19.00	19.00	17.00
J18	19.00	19.00	17.00
J19		15.00	4 2 55
Total	361.56	346.11	338.00

# 2.4.7 Others

# Drainage Ditch

		Type 1-1 (Denth = $500 \text{ mm}$ )
97	94.0m	Total Length of Drainage Ditch Type 1-1 $\times$ 1.05
	89.6m	Total Length of Drainage Ditch Type 1-1:
÷		

	Right Side	Location Length (m)				Total   0.0
$1 \text{ ypc } 1^{-1} \text{ (Lepun = 200 initi)}$	ે ક	Location Length (m)	53.5	22.2	13.9	9.68
ĺ	Left Side		on EL.97.0m	on EL.97.0m	Slope of 1:1.5	

ainage Ditch Type 1-2:	Fotal Length of Drainage Ditch Type 1-2 x 1.05
fotal Length of Drainage Ditch Type 1-2:	fotal Length of Drainage Dit

			:	. ,			_
ę	Length (m)	47.5	52.9			100.4	
Right Side	Location	Slope of 1:4.0	Slope of 1:2.0			Total	
ie	Length (m)	8.1	55.3	54.5	53.4	171.3	
Left Side	Location	on EL.157.0m	Slope of 1:2.0	Slope of 1:4.0	Slope of 1:2.0	Total	

From Mountain Stream, Type 1-2 (Depth = 250 mm

de	Length (m)						0.0
Right Si	Location						Total
le	(m) thgaan	8.4	5.1	8.4	1.5	9.6	29.4
Left Sic	Location	Slope of 1:0.5	on EL.104.5m	Slope of 1:0.5	on EL.112.0m	Slope of 1:0.8	Total
	Left Side Right Side	ft Side Right Sic   Length (m) Location	Side Length (m) Locat	Side Right Sic Length (m) Location 8.4 1.5	Side Right Sic Length (m) Location 8.4 1.5 8.4	Side Right Sic Restriction 8.4 Location 1.5 8.4 8.4 8.4 1.5	Side Right Sic Length (m) Location 8.4 1.5 8.4 1.5 8.4 9.6

# Drainage Box

	Total Volume of Drainage Box:	7.63	(m3)
ż	Total Volume of Drainage Box:	8.00	8.00 (m3)

Drainage Box Type 1-1 2.1m x 2.1m x 0.75m - 1.5m x 1.5m x 0.6m = 1.958 (m<sup>2</sup>/1box)

3 Boxes:  $1.958 \times 3 = 5.87 \text{ (m}^2$ )

Drainage Box Type 1-2 1.25m x 1.25m x 0.50m - 0.75m x 0.75m x 0.35m = 0.584 (m<sup>2</sup>/1box)

3 Boxes:  $0.584 \times 3 = 1.75 \text{ (m}^3$ )

PVC Drain Pipe 1) \$250 mm

850.3m Total Length of \$250mm

94.40 Right Side J7+9.0 ~ J13+7.0 Step EL.96.0m Step Concrete \_ocation\_ 133.0 28.6 Length (m) Behind Side Walls Step EL.96.0m Step Concrete J5~J13+7.0 34-1 - 35Location

Total length (m)

Length (m) Number

ocation

Total Length of \$250mm: Inder the Chute (type 2)

(2) \$200 mm

20.5

O E E

Under the Chute (Type 1)

on EL.84.25m Step ~ Type ]

on EL.84.25m

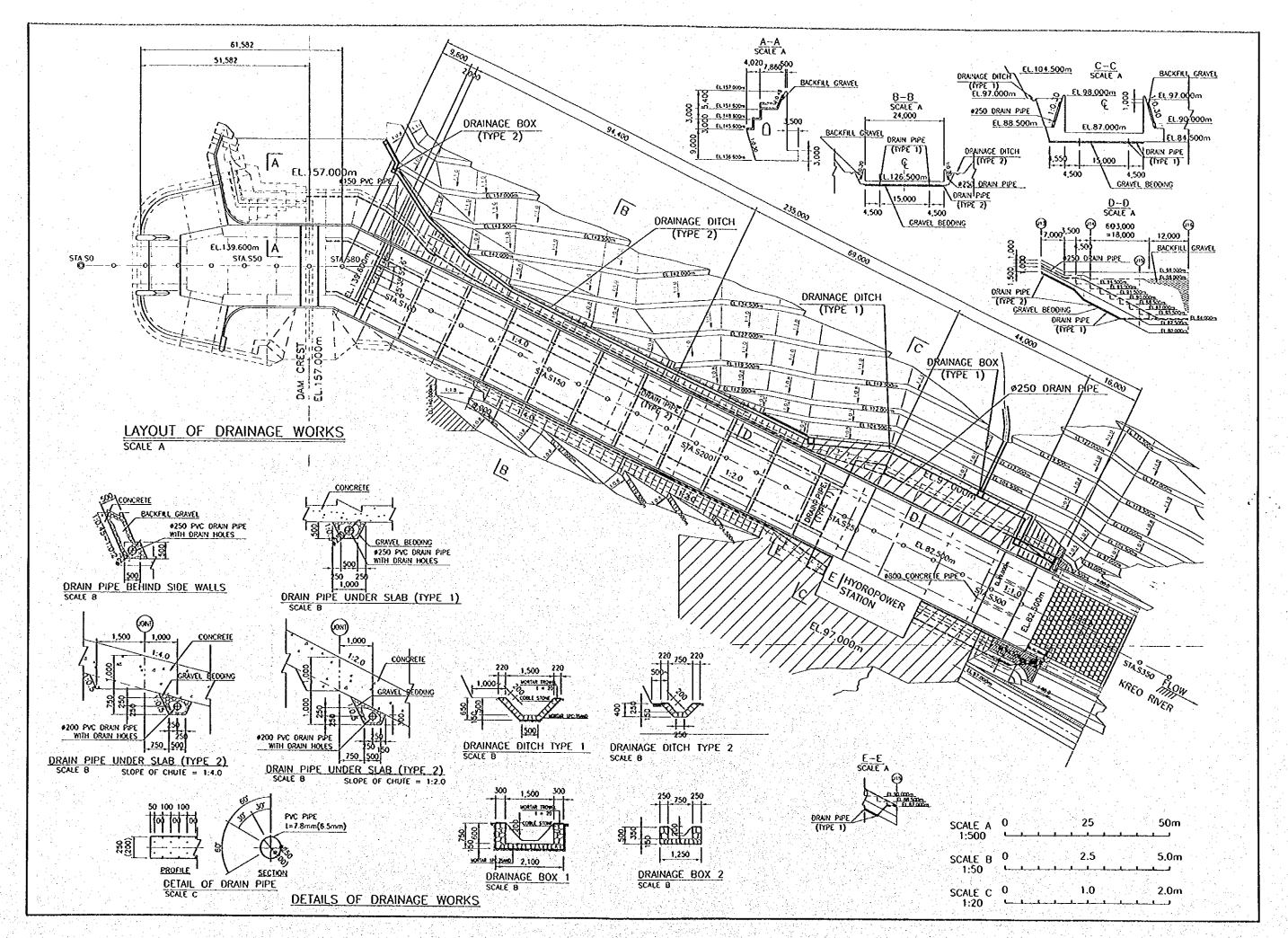
Total

. :: '	10	ing in	2.7	14.E.	<i>i</i> ,	( j.,		٠.
de	Length (m)	9 20	16.0	1251	777	18.6	1966	5:52
Right Side	Location	J4-1 ~ J4-2	1	1	27.7 J31 ~ EL 84 25m	on EL.84,25m	Total	
le	Length (m)	16.1	16.0	125.1	27.7	28.7	213.6	
Loft Side	Location	J4-1-~ J4-2	J4-2 ~ J5		J31~ EL.84.25m	on EL:84.25m	Total	

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Gravel Bedding for Drain Pipe	or Drain Pip	ଧା			Excavation for Gravel Bedding for Drain Pipe	avel Bedding	for Drain Pi	욆	
Total Volume of Gravel Bedding	ravel Beddin			901.4 m3	Total Volume of Excavation:	cavation:			1,029.7 m3
Under the Chute (Type 1), ¢250 mm	ype 1); ¢250	nm ,			Under the Chute (Type 1), \$250 mm	ype 1), \$250	mim		
Type 1 (\$250 mm), Left Side	. Left Side				Type 1 (\$250 mm), Left Side	. Left Side			
Location	Area (m2)	Length (m)	Number	Volume (m3)	Location	Area (m2)	Length (m)	Number	Volume (m3)
J4-1 ~ J4-2	1.28	16.1	1	20.6	J4-1 ~ J4-2	1.50	16.1	_	24.2
J4-2 ~ J5	1.28	16.0	1	20.4	J4-2 ~ J5	1.50	16.0	-	24.0
J5~J13	1.28	125.1		159.9	15~113	1.50	125.1		187.7
J31 ~ EL.84.25m	1.28	27.7	-	35.4	J31 ~ EL.84.25m	1.50	27.7		41.6
on EL.84.25m	1.41	28.7		40.5	on EL.84.25m	1.63	28.7	1	46.9
Total		213.6		276.8	Total		213.6		324.2
Type 1 (\$250 mm)	, Right Side				Type 1 (\$250 mm).	Right Side			
Location	Area (m2)	Length (m)	Number	Volume (m3)	Location	Area (m2)	Length (m)	Number.	Volume (m3)
J4-1 ~ J4-2	1.28	9.20	1	11.8	J4-1 ~ J4-2	1.50	9.20		13.8
J4-2~J5	1.28	16.0		20.4	J4-2 ~ J5	1.50	16.0		24.0
J5 ~ J13	1.28	125.1	1	159.9	JS ~ JI3	1.50	125.1		187.7
J31 ~ EL.84,25m	1.28	27.7	-	35.4	J31 ~ EL.84,25m	1.50	27.7	-1	41.6
on EL.84.25m	1.41	18.6	-1	26.2	on EL.84.25m	1.63	18.6	1	30,4
Total		9.961		253.7	Total		196.6		297.4
Under the Chute (type 2), \$200 mm	ype 2), ¢200	mm			Under the Chute (type 2), \$200 mm	/ре 2), ф200 г	uin		
Location	Area (m2)	Length (m)	Number	Volume (m3)	Location	Area (m2)	Length (m)	Number	Volume (m3)
C-5	1.36	20.5	1	27.8	C-5	1.50	20.5		30.8
C-6 ~ C-11	1.39	24.0	9	200.0	C-6 ~ C-11	1.53	24.0	9	220.6
C-12~C-15	1.49	24.0	4	143.0	C-12~C-15	1.63	24.0	4	156.8
Total		68.50		370.9	Total		68.50		408.1



### Shotcrete

Grand Total of Shotcrete: 3,825.26 (m²)

(1) Shotcrete on Excavation Stope

	Left Side of	Spillway		Right Side o	f Spillway		Left Upstr	eam of Spill	way
	Slope of Excavation	1:0	.5	Slope of Excavation	1:0	.5	Slope of Excavation	1:0	.8
	Elevation (EL m)	Horizontal Area Ah (m²)	Area of Slope (m²)	Elevation (EL.m)	Horizontal Area Ah (m²)	Arca of Slope (m²)	Elevation (EL.m)	Horizontal Area Ah (m2)	Area of Stope
			Ah x 2.2			Ah x 2.2	ui		Ah x 1.6
	172~ 164.5~172			172~ 164.5~172			146 169	270.0	3 7 7 7
į	157~164.5			157~164.5	) a		145~157 To	270.8	433.4
	149.5~157		1.	149.5~157	-		2 2 2 2	vitti.	433,4
	142~149.5			142~149.5	-				
	134.5~142			134.5~142	•	-			
	127~134.5		- 1	127~134.5	_	-			
	119.5~127 112~119.5			119.5~127	- A 1	•			
	104.5~112	538.0	1,202.9	112~119.5 104.5~112		-			
	97~104.5	444.0	992.7	97~104.5					
	92~97	66.9	149.7	95~97	59.7	133.5			
	87.5~92	47.8	106.9	87.5~95	85.9	192.1			
Į	То	tal /	2,452.3	To	tal	325,6		india e Gwelenia	

(2) Shotcrete on Berm

Left Side			Right Side	
Location	1:0.5 ~ 1:0.8	among 1:0.5	Location	among 1:0.5
Elevation	Area of Benn	Area of Berm	Elevation	Area of Benn
(EL.m)	(m2)	(m2)	(EL.m)	(m2)
172.0			172.0	
164.5	•	-	164.5	•
157.0		•	157.0	- 1
149.5			149.5	
142.0	-	-	142.0	-
134.5		-	134.5	-
127.0	- 7	-	127.0	- 1
119.5			119.5	
112.0	232.9	-	112.0	
104.5		- 197.8	104.5	- 1
97.0		47.0	97.0	
92.0		14.5	95.0	40.0
87.5		49.1	87.5	32.7
Total	232.9	308.4	Total	72.8

Sodding

Grand Total of Sodding:

10,889.5 (m²)

7,173.9 (m<sup>2</sup>)

780.5 (m<sup>2</sup>)

Sub-Total:

Sub-Total:

(1) Sodding on Excavation Slope (1/2)
Left Side of Spillway

Left Side of S	piliway	<u> </u>		At the A. C.	et in the state	新疆 网络美国首奏
Slope of Excavation	1:	1.0	1:	1.0	1:	0.8
Elevation (EL.m)	Horizontal Area Ah (m²)	Area of Slope (m²)	Horizontal Area Ah (m²)	Area of Slope	Horizontal Area Ah (m²)	Area of Slope
		Ah x 1.4		Ah x 1.4		Ah x 1.6
172~	<u> </u>		as Hire 1		10000000000000000000000000000000000000	
164.5~172	34.6	49.0	_			
157~164.5	152.6	215.8	<u>-</u>		100,1	160.3
149.5~157	283.2	400.6	_		83,7	134.0
142~149.5	401.2	567.4	<u>.</u>		81.6	130.6
134.5~142	462.3	653.8	28.7	40.6	124.2	198.8
127~134.5	475.7	672.7	284.1	401.8	180.9	289.6
119.5~127	643.7	910.3	465.0	657.6	50.9	81.5
112~119.5	-	-	1 1		1,005.5	1,609.6
104.5~112	•	- i	-	_		
97~104.5	-	_	•			346 28
92~97	- 3					
87.5~92	<u> </u>					
	Total	3,469.5	Total	1,100.0	Total	2,604.4

(2) Sodding on Excavation Slope (2/2)

Right Side of Spillway

Slope of Excavation	1:	0.8	1:	1.8
Elevation	Horizontal Area	Area of Slope	Horizontal Area	Area of Slope
(EL.m)	Ah (m²)	(m²)	Ah (m²)	(m²)
		Ah x 1.6		Ah x 1.1
172~				
164.5~172		_	<u></u>	
157~164.5	<u>.</u> .	-		
149.5~157	_	-		_
142~149.5		•		
134.5~142	89.2	142.8	61.4	70.2
127~134.5	157.9	252.8		
119.5~127	106.0	169,7		
112~119.5	49.7	79.5		
104.5~112	28.9	46.3		
97~104.5	12.1	19.3		
95~97	•			
87.5~95	•			
	Total	710.3	Total	70.2

(3) Sodding on Berm

Left Side of Spillway

Left Side of S	pinway			
Location	1:0.8 ~	1:0.8 ~		
Elevation	Area of Berm	Area of Benn		
(EL.m)	(m²)	(m²)		
172.0	· · · · · · · · · · · · · · · · · · ·	<u>-</u>		
164.5	30.2	· -		
157.0	66.6	, -		
149.5	92.4	-		
142.0	111.1	-		
134.5	136.8	34.3		
127.0	137.7	74.2		
119.5	148.4	112.9		
112.0	_	=		
104.5		•		
97.0	•			
92.0				
87.5	-	-		
Total	723.1	221.4		

Sub-Total:	1,049.3	

Right Side of Spillway

. 9	opining
Location	1.0.8 ~
Elevation	Area of Benn
(EL.m)	(m²)
172.0	-
164.5	-
157.0	
149.5	
142.0	
134.5	38.6
127.0	35.3
119.5	16.5
112.0	9.7
104.5	4.6
97.0	-
92.0	-
87.5	-
Total	104.7

(4) Sodding on Backfill Slope (1/2)

Sub-Total:

1,244.0 (m<sup>2</sup>)

Left Side of Spillway

		Slope of	Backfill		
1:	2.0	1:	4.0	1:	1.5
Horizontal Area	Arca of Slope	Horizontal Arca	Area of Slope	Horizontal Area	Area of Slope
Ah (m²)	(m²)	Ah (m²)	(m²)	Ah (m²)	(m²)
	∴ Aħ x 1.1		Ah x 1.0		Ah x 1.2
520.7 229.2	582.2 256.2	271.7	280.0	104.5	125.5
Total	838.4	Total	280.0	Total	125.5

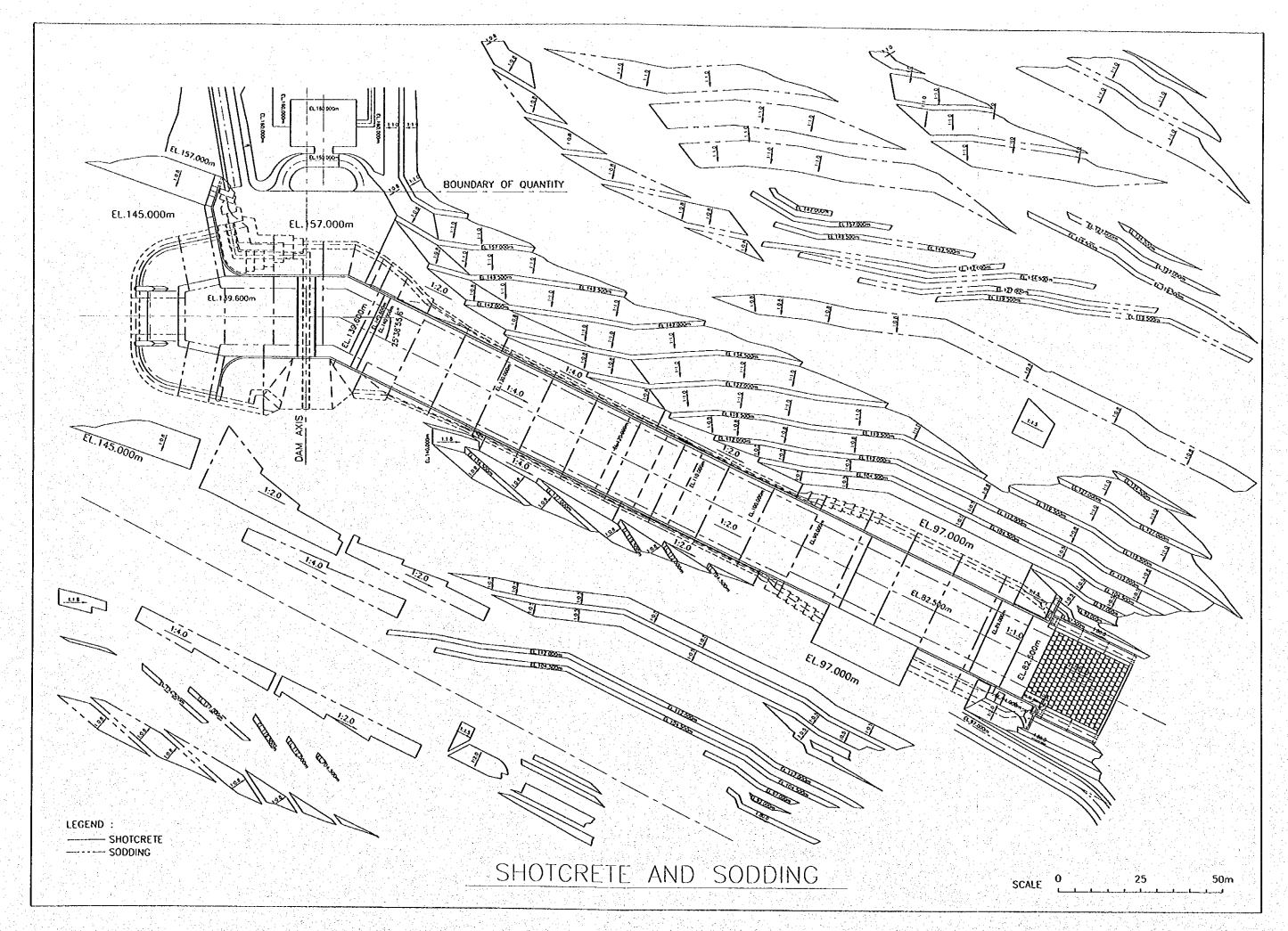
(5) Sodding on Backfill Slope (2/2)

Sub-Total:

641.7 (m²)

Right Side of Spillway

Right Side of	Spiriway				
		Slope of	Backfill		4 14 0
1:	2.0	1:	4.0	12 - 4. m. l:	1.5
Horizontal Area Ah (m²)	Area of Slope	Horizontal Area Ah (m²)	Area of Slope (m²)	Horizontal Area Ah (m²)	Area of Slope
	Ah x 1.1		Ah x 1.0		Ah x 1.2
230.6	257.8	237.4	244.7	31.3	37.6
90.9	101.6				37.0
Total	359,4	Total	244.7	Total	37.6



#### 2.5 Diversion Tunnel

#### 1. SUMMARY

1. SUMMARY						
DESCR	IPTION	UNIT	UPPER	UNDER	TOTAL	LEGEND
	EXCAVATION	l m³	8, 421. 4	8, 859. 4	17, 280. 8	
EXCAVATION	OVERBREAK	m <sup>3</sup>	639.8	321.9	961.7	13cm
	TOTAL	tn <sup>3</sup>	9, 061. 2	9, 181. 3	18, 242. 5	
STEEL RIB SUPPORT	H-125	kg	110, 802. 1	58, 253. 3	169, 055. 4	
OTEDS NID COTTON	PLATE(t=9)	kg	1, 856, 7	1, 738. 4	3, 595. 1	,
	PLATE(t=16)	kg	7,000,1	5, 860. 0	5, 860. 0	
	BOLT NUT			ə, 600. U		
	COLLAR BRACE	kg		1, 499. 5	2,616	416
	Total	kg	4, 498. 4		5, 997. 9	Ф16
		kg	119, 803. 2	67, 351. 2	187, 154. 3	
	Total x 1.05	kg	125, 800. 0	70, 700. 0	196, 500, 0	
	L		5 000			
mi or	STEEL PIPE		5, 292	1,764	7, 056	
MIKE	E NET	m <sup>2</sup>	2, 646. 9	2, 469. 4	5, 116. 3	Φ5x150x150 (2.13 kg/m2)
		(kg)	5.4		10, 897. 7	
	. A Player at 17		20 0 0	x 1.05	11, 400. 0	
	N GROUT				18	L=10, 00m
	TION GROUT		_		56	L=5.00m
ROCK BOLT	D25 L=3.0m		<del>-</del>	-	4, 823	TYPICAL
	D25 L≈4.0m		. – .	-	520	INLET, OUTLET
	TOTAL.	ø			16, 550	
	TOTAL x 1.05	0		4 5 4 7	17, 400	
SHOTCRETE	OVERBREAKAGE	m <sup>3</sup>	248. 2	123.0	371.2	5cm
	PRIMARY	Д3	245. 1	123. 0	368. 1	5cm
	SECONDARY	<sub>m</sub> 3	766. 7	246.9	1013.5	10cm
	TOTAL	m <sup>3</sup>	1, 260. 0	492.8	1, 752. 8	
	OVERBREAKAGE	m <sup>2</sup>	5, 002. 1	2, 465. 0	7, 467. 1	
	PRIMARY	m <sup>2</sup>	4, 522. 0	2, 466. 0	6, 987. 9	
	SECONDARY	m <sup>2</sup>	4, 863. 9	2, 467. 7	7, 331. 7	<del></del>
	TOTAL	m <sup>2</sup>	14, 388. 0	7, 398. 7	21, 786. 7	
	CONCRETE	3	3, 033. 4	2,872.7	5, 906. 1	
CONCRETE			394.9			
CONCRETE	OVERBREAKAGE	m <sup>3</sup>		195.0	589.9	8cm
	TOTAL	m <sup>3</sup>	3, 428. 3	3, 067. 8	6, 496. 0	
•••	TOTAL x 1.05	<sub>0</sub> <sup>3</sup>	3, 600. 0	3, 200. 0	6, 800. 0	totan area as
	RM CEN	m²	402.4	357.0	759. 4	JOINT, OUTLET
WATER S	TOP SEAL	tts.	440.7	473.3	914.0	· · · · · · · · · · · · · · · · · · ·
	x 1.05	_ m			960.0	
REINFORCING	D13	kg			270, 296. 1	
	D22	kg			4, 124. 2	
	TOTAL	kg			274, 420. 3	
	TOTAL x 1.06	kg			291, 000. 0	
PLUG	PLUG CONCRETE	m <sup>3</sup>	- 1.0 <del></del> 1.0		903. 7	
	FORM	m²	_	-	257.8	
	MAIN SEAL COPPER	m			18. 3	
	HEADER PIPE	m	Z	W <del>-</del> U	60.0	Φ40mm (1.50 kg/m)
	AIR OUTLET PIPE	m		-	30.0	Ф 40гт
	RIZER PIPE	CA CA	-		113.3	Ф25ma (0.94 kg/m)
	COOLING PIPE	m			205. 0	Ф25пл
	TOTAL	kg_		4 21 12	431.2	
	x 1.05	kg	<u> </u>		460.0	
	DRAIN PIPE	_ <u>m</u>			30.0	Ф 150пт
	JOINT GROUT OUTLET	- 1	1	· -	66]	The state of the s

SUMMARY (Upstream Portal and Temporary Cofferdam)

	DESCRIPTION	and the second second	UNIT	TOTAL	E SE LEGEND
	Excavation	Total	m <sup>3</sup>	5, 301. 9	
	EXCAVACION	x 1.1	m <sup>3</sup>	5, 800. 0	
	Concrete Type D	Total	m <sup>3</sup>	1, 761. 0	
Upstream Portal	Concrete Type D	x 1.05	m <sup>3</sup>	1, 850. 0	
opstream fortar	Concrete Type C	Total	m <sup>3</sup>	9.8	
	Concrete type C	x 1.05	ш3	10.0	
	Reinforcing Bar	Total	kg	30. 6	
	weinioteting bat	x 1.06	kg	32.0	
Temporary Cofferdam	Excavation	Total	m <sup>3</sup>	1, 800. 0	
	LACGIACION	x 1.1	п3	2, 000. 0	
	rdam Embankment	Total	m <sup>3</sup>	21, 335. 9	
	LECONKETT	x 1.1	m <sup>3</sup>	23, 500. 0	

#### 2. EXCAVATION

#### 2-1. EXCAVATION (TYPICAL SECTION)

I) LPPER

 v1
 = 18.696×411.2247
 = 7,688.674  $m^3$  

 v2 (OVERBREAK)
 = 1.436×411.247
 = 590.551  $m^3$ 

2) UNDER

C

 v1
 = 19.674×411.247
 = 8,090.873  $m^3$  

 v2 (OVERBREAK)
 = 0.720×411.247
 = 296.098  $m^3$ 

#### 2-2. EXCAVATION (PLUG SECTION)

1) LPPER

v1 =  $24.508 \times 29.016 + 1/2(18.696 + 24.508) \times 1.000$  =  $732.726 \text{ m}^3$ v2(OYERBREAK) =  $1.640 \times 30.017$  =  $49.228 \text{ m}^3$ 

2) UNDER

v1 =  $25.704 \times 29.016 + 1/2(19.674 + 25.704) \times 1.000$  =  $768.516 \text{ m}^3$ v2(OVERBREAK) =  $0.859 \times 30.017$  =  $25.785 \text{ m}^3$ 

#### 2-3. EXCAVATION (TOTAL)

 LPPER  $\Sigma V = v1+v1 = 7,688.67 + 732.73$  = 8,421.400 m³

 LNDER  $\Sigma V = v1+v1 = 8,090.87 + 768.52$  = 8,859.389 m³

OVERBREAK UPPER  $\Sigma V = v2+v2 = 590.55 + 49.23$  = 639.779 m<sup>3</sup> OVERBREAK UNDER  $\Sigma V = v2+v2 = 296.10 + 25.79$  = 321.883 m<sup>3</sup>

#### 3. STEEL RIB SUPPORT

#### 3-1. STEEL RIB SUPPORT (TYPICAL SECTION)

#### 1) LPPER

ITEN	LENGTH	QUANTITIY	WHEIGHT/UNIT	WHE IGHT/m	EXTENSION	TOTAL WEIGHT
H-125x125x6, 5x9 (kg)	5. 225	2	23.8	248, 710	411	102219, 810
PL-155×180×9 (kg)		4	1.971	7.884	411	3240, 324
BOLT NUT Ф25	0.070	6	-	e :	411	2466
COLLAR BRACE $\Phi$ 16(kg)	1.076	6	1.58	10, 200	411	4192, 397
STEEL PIPE \$21,7×1.9	0.080	12			411	4932
WIRE NET (m2)	10.681	1		10.681m <sup>2</sup>	411, 247	4392, 326

#### 2) LNDER

ITEM	LENGTH	QUANTITIY	MEIGHT/UNIT	WHEIGHT/m	EXTENSION	TOTAL WEIGHT
H-125x125x6, 5x9	2.748	2	23, 8	130, 805	411	53760, 773
PL-155×180×9	-	2	1.971	3.942	411	1620, 162
PL-230×230×16	_	2	6.614	13. 288	411	5461.368
COLLAR BRACE 416	1.076	2	1,58	3, 400	411	1397, 466
STEEL PIPE \$21.7×1.9	0.080	4			411	1644
WIRE NET (m²)	2.771	2	-	5, 512n <sup>2</sup>	411, 247	2279. 026

## 3-2. STEEL RIB SUPPORT (PLUG SECTION)

#### 1) LPPER

<del></del>					1 1 1 2 2 2 3 3 3 3	N - 1
443 <b>1TEM</b> 24 2 2	LENGTH	QUANTITIY	WHEIGHT/UNIT	WHE IGHT/m	EXTENSION	TOTAL WEIGHT
H-125x125x6. 5x9(kg)	6,010	2	23.8	286, 076	30	8582, 280
PL-155×180×9(kg)		4	1.971	7.884	30	236, 520
BOLT NIT	0.07	6	-		30	180
COLLAR BRACE \$16(kg)		6	1.58	10, 200	30	306, 014
STEEL PIPE 421.7×1.9	0.080	12	91 i - 1	1 <del>-</del> 9	30	360
WIRE NET (m²)	12.252	1	_	12, 252թ²	30.017	367, 768

#### 2) LNDER

		100	and the second second		4.00	
ITEM		QUANTITIY	MIEIGHT/UNIT	WHEIGHT/m	EXTENSION	TOTAL WEIGHT
H-125x125x6.5x9(kg)		2	23.8	149, 750	30	4492, 488
PL-155×180×9(kg)		2	1.971	3.912	30	118, 260
PL-230×230×16		2	6.644	13. 288	30	398, 640
COLLAR BRACE \$\Phi\$16(kg)		2	1.58	3.400	30	102,005
STEEL PIPE \$21.7×1.9	0.080	4		- 33	30	120
WIRE NET (m²)	3. 169	2		6, 338a <sup>2</sup>	30. 017	190, 248

#### 3-3. STEEL RIB SUPPORT (TOTAL)

#### 1) UPPER

ITEM	TYPICAL SECTION	PLUG SECTION	TOTAL WEIGHT
H-125x125x6, 5x9(kg)	102219.810	8582. 280	110802.090
PL-155×180×9(kg)	1620. 162	236. 520	1856, 632
BOLT NUT	2466	180	2616
COLLAR BRACE \$\Phi 16 (kg)	4192, 397	306.014	4498, 412
STEEL PIPE \$21.7×1.9	4932	360	5292
WIRE NET (m2)	2279. 131	367. 768	2646, 899

#### 2) UNDER

ITEM	TYPICAL SECTION	PLUG SECTION	TOTAL VEIGHT
H-125x125x6, 5x9(kg)	53760.773	4492. 488	58253. 261
PL-155×180×9(kg)	1620. 162	118. 260	1738. 422
PL-230×230×16(kg)	5461.368	398. 640	5860.008
COLLAR BRACE Φ16(kg)	1397, 466	102.005	1499. 471
STEEL PIPE \$21.7×1.9	1644	120	1761
WIRE NET (m2)	2279. 131	190. 248	2469, 379

4. GROUTING

4-1. CURTAIN GROUT

4-2. CONSOLIDATION GROUT

 $L=5.00n \qquad \qquad n=8\times 7 \qquad \qquad = \qquad 56$ 

5. ROCK BOLT

5-1. TYPICAL SECTION

L=3.0m, n=13 = 13×371 = 4,823

5-2. INLET, OUTLET SECTION

L=4.0m, n=13 =  $n=13\times40.022/1.000$  =  $13\times40$  = 520

#### 6. SHOTCRETE

#### 6-1. SHOTCRETE (TYPICAL SECTION)

#### 1) UPPER

ar a si			Anna Carlotte (1997)		
	v1 (OVERBREKAGE)	$= 0.558 \times 411,247$		- 1. - 1 1 1 1 1 1 1.	229, 476 m <sup>3</sup>
	v2 (PRIMARY)	$= 0.551 \times 411.247$		=	226. 597 <sub>III</sub> 3
	v3 (SECONDARY)	$= 1.776 \times 411.247$			730. 375 a <sup>3</sup>
	al (OVERBREKAGE)	$= 11.246 \times 411.247$			4 604 004
11:	a2 (PRIMARY)	$= 11.240 \times 411.247$ = 11.090 \times 411.247			4, 624. 884 m 4, 149. 482 m
	a3 (SECONDARY)	$= 11.030 \times 411.247$ = 10.933 \times 411.247		기념 등 기	4.
10.00	ao (olconunit)	- 10. 955 \ 411. 241			4, 496. 163 m²
2)	UNDER				
ing the second	v1 (OVERBREKAGE)	$= 0.276 \times 411.247$			113. 504 m <sup>3</sup>
	v2(PRIMARY)	$= 0.276 \times 411,247$			113. 504 m <sup>3</sup>
	v3 (SECONDARY)	$= 0.554 \times 411.247$			227. 831 m <sup>3</sup>
11	al (OVERBREKAGE)	$= 5.532 \times 411.247$			2, 275, 018 m
÷, .	a2(PRIMARY)	$= 5.534 \times 411.247$			2, 275. 841 m
	a3 (SECONDARY)	$= 5.538 \times 411.247$		<b>=</b>	2, 277. 486 m

#### 6-2. SHOTCRETE (PLLG SECTION)

a3 (SECONDARY)

#### 1) UPPER

v1 (OVERBREKAGE)	= 0.624×30.017 =	18. 720 m <sup>3</sup>
v2 (PRIMARY)	$= 0.617 \times 30.017$	18. 510 m <sup>3</sup>
v3 (SECONDARY)	$= 1.210 \times 30.017$	36. 300 m <sup>3</sup>
a1 (OVERBREKAGE)	= 12.566×30.017 $=$	377. 194 nf
a2 (PRIMARY)	$= 12.409 \times 30.017$	372. 481 m
a3 (SECONDARY)	= 12.252×30.017	367. 763 m²
) UNDER		
v1 (OVERBREKAGE)	$= 0.316 \times 30.017$	9. 485 m <sup>3</sup>
v2 (PRIMARY)	$= 0.316 \times 30.017$	9. 485 m <sup>3</sup>
v3 (SECONDARY)	$= 0.634 \times 30.017$	19. 031 m <sup>3</sup>
al (OVERBREKAGE)	$= 6.330 \times 30.017$	190, 008 nf
a2(PRIMARY)	$= 6.334 \times 30.017$	190, 128 m

 $= 6.338 \times 30.017$ 

190. 248 m²

#### 6-3. SHOTCRETE (TOTAL)

```
OVERBREAKAGE UPPER \Sigma V = v1+v1 = 229,476 + 18,72
                                                                                           248. 196 m<sup>3</sup>
     PRIMARY UPPER \Sigma V = v2+v2 = 226.60 + 18.510
                                                                                           245. 107 m<sup>3</sup>
   SECONDARY UPPER \Sigma V = v3+v3 = 730,375 + 36,300
                                                                                           766.675 m<sup>3</sup>
OVERBREAKAGE UNDER \Sigma V = v1+v1 = 113,504 + 9,485
                                                                                           122. 989 m<sup>3</sup>
  PRIMARY UNDER \Sigma V = v2+v2 = 113,504 + 9,485
                                                                                           122. 989 m<sup>3</sup>
   SECONDARY UNDER \Sigma V = v3+v3 = 227,831 + 19,031
                                                                                           246, 862 m<sup>3</sup>
OVERBREAKAGE UPPER \Sigma A = a1+a1 = 4,624.884 + 377.194
                                                                                        5, 002. 078 m
     PRIMARY UPPER \Sigma A = a1+a1 = 4,149.482 + 372.481
                                                                                        4, 521, 963 m
   SECONDARY UPPER \Sigma A = a1+a1 = 4,496,163 + 367,768
                                                                                        4, 863. 931 m
OVERBREAKAGE UNDER \Sigma A = a1+a1 = 2,275.018 + 190.008
                                                                                        2, 465. 026 m
     PRIMARY UNDER \Sigma A = a1+a1 = 2,275.841 + 190.128
                                                                                        2, 465, 969 m
   SECONDARY UNDER \Sigma A = a1+a1 = 2,277.486 + 190.248
                                                                                        2, 467. 734 m
```

#### 7. CONCRETE

#### 7-1. CONCRETE (TYPICAL SECTION)

#### 1) UPPER

	vi	= 6.3	81 × 411. 247 🕟		55	2, 624. 167 <sub>m</sub> 3 =
4	v2 (OVERBREAK)	= 0.8	77×411.247		=	364, 776 m <sup>3</sup>
4						
2)	UNDER			ing and the second seco	and the second	
					41	
100	vl	= 5.9	81×411.247		=	2, 459, 668 m <sup>3</sup>

. 181.771 m<sup>3</sup>

#### 7-2. CONCRETE (PLUG SECTION)

v2 (OVERBREAK) = 0.442 × 411.247

#### 1) EPPER

vl		= 12.	193×29. 016+1	/2(6. 381+12.	193) x1. 000	=	363. 079 m <sup>3</sup>
v2 (0YEF	BREAK)	= 1.00	03×30.017			=	30. 107 m <sup>3</sup>

#### 2) UNDER

vl	$= 12.048 \times 29.016 + 1/2 (5.981 + 12.048) \times 1.000$	$=$ 358. 599 $^{\circ}$
v2 (OVERBREAK)	$= 0.442 \times 30.017$	$=$ 13. 268 $_{\rm m}^{3}$
i b (o i b) tb) (d t d to		10. 500 (1)

#### 7-3. CONCRETE (OUTLET PRPJECTION)

UPPER v1  $= 7.687 \times 6.00$ 46. 122 m<sup>3</sup> UNDER v2  $= 9.007 \times 6.00$ 54. 462 m<sup>3</sup> 7-4. CONCRETE (TOTAL) UPPER  $\Sigma V = v1+v1+v1 = 2,624.167 + 363.079+46.122 = 3,033.368 m<sup>3</sup>$ UNDER  $\Sigma V = v_1 + v_1 + v_2 = 2,459.668 + 358.599 + 54.462 = 2,872.729 m<sup>3</sup>$ OVERBREAK UPPER  $\Sigma V = v2+v2 = 364,776 + 30,107$ 394. 883 m<sup>3</sup> OVERBREAK UNDER  $\Sigma V = v2+v2 = 181,771 + 13,268$ 195, 039 <sub>01</sub>3 8. FORM 8-1. FORM (JOINT) 1) TYPICAL SECTION =6. 381×46 UPPER A1 =  $6.381 \times 411.247/9.000$ 293. 526 m<sup>2</sup> UNDER A2 =  $5.981 \times 411.247/9.000$ ≈5.981×46 275. 126 m<sup>2</sup> 2) PRUG SECTION UPPER A1 =  $12.193 \times 2$ 24. 386 m<sup>2</sup> UNDER A2 =  $12.048 \times 2$ 24.096 m<sup>2</sup> 3) OUTLET PROJECTION UPPER A1 =  $11.516 \times 6.000 + 7.687 \times 2$ 84. 470 m<sup>2</sup> UNDER A2 =  $6.600 \times 6.000 + 9.077 \times 2$ 57.754 m<sup>2</sup> 2) FORM(TOTAL) UPPER A1 = 293.526 + 24.386 + 84.470402. 382 m<sup>2</sup> UNDER A2 = 275.126 + 24.096 + 57.754356. 976 m<sup>2</sup> 9. WATER STOP SEAL

UPPER 1.1 =  $9.581 \times 441.247/9.000$  =  $9.581 \times 46$  =

UNDER  $L2 = 10.289 \times 441.247/9.000$ 

440.726 m

473. 294 m

 $=10.289 \times 46 =$ 

10-1. TYPE (A)

							(kg/m)
NO.	DIA	LENGTH	WEIGHT	WEIGHT	N	WEIGHT	LEGEND
		(mn)	(kg/m)	(kg)	- 1 H	(kg)	1.45
1	D 13	4,910	0.995	4.885	3.33	16.28	
2	D 13	2.450	0.995	2.438	6.67	16.25	
3	D 13	9,110	0.995	9.064	3.33	30.21	7 4 4.4
4	D 13	5,390	0.995	5.363	3.33	17.88	
5	D 13	2,690	0.995	2.677	3.33	8.92	
6	D 13	10,050	0.995	10.000	3.33	33.33	1 7 7 1 1 1
.7	D 13	1,000	0.995	0.995	.: 88	87.56	10 14 P. 1
8	D 13	500	0.995	0.498	58	28.88	
		9.35		1.27.0	D13	239.31	
		eg 199	a. 1950. i	TOTAL	1.4	239.31	kg
							responsible
27.0			A 1 15.41.1				

# 10-2. TYPE (B)

(kg/<u>m</u>)

Ю	DIA	LENGTH	MEICHL	MEICHT	N	MEICHT	LEGEND
		(mm)	(kg/m)	(kg)		(kg)	
1	D 13	4,910	0.995	4.885	5.00	24.43	77 14 17 18 18 18 18 18 18 18 18 18 18 18 18 18
2	D 13	2,450	0.995	2.438	10.00	24.38	
3	D 13	1,000	0.995	0.995	51	50.75	
100				North Balleton (1997) Port Months			
		Kasa K			D13	99.56	
. :				TOTAL		99.56	kg
		1 - 1					

#### 10-3. TYPE (C)

(kg/m)

Ю	DIA	LENGTH	WEIGHT	WEIGHT	N	WEIGHT	LEGEND
		(mn)	(kg/m)	(kg)	λ	(kg)	
1	D 13	4,910	0.995	4.885	5.00	24.43	
2	D 13	2,450	0.995	2.438	10.00	24.38	A. A.
3	D 13	9, 110	0.995	9.064	5.00	45.32	
4	D 13	1,000	0.995	0.995	96	95.52	
.¥.							
					D13	189.65	
7.7				TOTAL	1.5	189.65	kg
				# 11 1 f.			
. ' .		Marija			1. 3		

10-4. TYPE (D)

NO   DIA   LENGTH   WEIGHT   WEIGHT   N   WEIGHT   LEGEN	-	e the delication of the second			i dita	. (2017)		(kg/m)
1 D 22	D ON	)IA	LENGTH	WEIGHT	WEIGHT	N	DEIGHT	LEGEND
2 D 22			(0.0)	(kg/m)	(kg)		(kg)	
3 D 22 9, 110 3. 04 27. 694 3. 33 92. 31 4 D 22 1,000 3. 04 3. 040 82 249. 28 5 D 22 6,700 3. 04 20. 368 3. 33 67. 89 6 D 22 4, 660 3. 04 14. 166 6. 67 94. 44 7 D 22 2, 670 3. 04 8. 117 6. 67 54. 11 8 D 22 2, 920 3. 04 8. 877 3. 33 29. 59  D22 687. 02 kg	1	D 22	4, 910	3. 04	14. 926	3. 33	49. 75	
4       D 22       1,000       3.04       3.040       82       249.28         5       D 22       6,700       3.04       20.368       3.33       67.89         6       D 22       4,660       3.04       14.166       6.67       94.44         7       D 22       2,670       3.04       8.117       6.67       54.11         8       D 22       2,920       3.04       8.877       3.33       29.59     D22 687.02  TOTAL 687.02 kg	2	D 22	2,450	3.04	7.448	6. 67	49.65	1, 1
5 D 22 6,700 3.04 20.368 3.33 67.89 6 D 22 4,660 3.04 14.166 6.67 94.44 7 D 22 2,670 3.04 8.117 6.67 54.11 8 D 22 2,920 3.04 8.877 3.33 29.59  D22 687.02  TOTAL 687.02 kg	3	D 22	9, 110	3.04	27. 694	3.33	92.31	3 3
6 D 22 4,660 3.04 14.166 6.67 94.44 7 D 22 2,670 3.04 8.117 6.67 54.11 8 D 22 2,920 3.04 8.877 3.33 29.59  D22 687.02  TOTAL 687.02 kg	4	D 22	1,000	3, 04	3,040	82	249. 28	
6 B 22 4,660 3.04 14.166 6.67 94.44 7 D 22 2,670 3.04 8.117 6.67 54.11 8 D 22 2,920 3.04 8.877 3.33 29.59 D 22 687.02 TOTAL 687.02 kg	5	D 22	6, 700	3. 04	20. 368	3.33	67.89	
8 D 22 2,920 3.04 8.877 3.33 29.59  D22 687.02  TOTAL 687.02 kg	6	D 22	4,660	3.01	14. 166	6, 67	94. 44	
D22 687.02 TOTAL 687.02 kg	7	D 22	2,670	3. 04	8. 117	6. 67	54. 11	
D22 687.02 TOTAL 687.02 kg	8	D 22	2, 920	3. 04	8. 877	3. 33	29.59	11 11 1
TOTAL 687.02 kg	· ·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8			13.5-7		
						D22	687. 02	
	2.1				TOTAL		687. 02	kg
	<u> </u>							
				\$ 1 m		3 3 4 5		

#### 10-5 TOTAL

TYPE (A)	=239, 31x40. 02	22 D13	9, 577, 66	
TYPE (B)	=\$3. 82x371. 20	06 D13	255, 025. 95	
1YPE(C)	=158. 26x30. 01	16 D13	5, 692. 53	
TYPE (b)	=595. 82x6, 003	3 022	4, 124. 18	
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	OTAL D13	270, 296. 15	kg
		D22	4, 124, 18	ke
		TOTAL	274, 420. 33	kg
		n e ne palatra		

#### 11. PLUG

#### 11-1. CONNRETE

MAIN PLUG v1 = 21.437×30.017 = 643.474  $\text{m}^3$ TEMPORARY PLUG v2 = 26.008×10.006 = 260.236  $\text{m}^3$  $\Sigma V = v1+v2 = 643.474 + 260.236 = 903.71 \text{ m}^3$ 

11-2. FORM

MAIN PLUG al = 6. 142×30. 017+21. 437×2 = 227. 238 m<sup>3</sup> TEMPORARY PLUG a2 = 26. 008+4. 571 = 30. 579 m<sup>3</sup>  $\Sigma A = v1+v2 = 227. 238 + 30. 579 = 257. 82 m<sup>3</sup>$ 

11-3. MAIN SEAL CUPPER

L = 13.295 m

#### 11-4. COOLING PIPE

HEADER PIPE Φ 40mm = 60.00 m

AIR OUTLET PIPE Φ 40mm = 30,00 m

RISER PIPE Φ 25mm = (4.96+2.42+2.92) × 11 = 113.30 m

COOLING PIPE Φ 25mm = 106+99 = 205.00 m

DRAIN PIPE Φ 150mm = 30.00 m

JOINT GROUT OUTLET 6×11 = 66

TYPE OF WORK LOCATION

: Production and Construction of concrete (Type D)
: Upstream Portal of Diversion Facility

LOCATION : Upstream Portal of Diversion Facility	
CALCULATION	RESULT
$A_1 = 1.00 \times 2.50$ = $2.500 \text{ m}^2$	
Az = 1/2 x (1.00 + 3.26) x 11.300 = 24.069 m2	
$A_3 = \frac{1}{2} \times (12.120 + 13.320) \times 3.00 + \frac{1}{2} \times 1.80 \times 1.50 \times 2$	
= 40.860 m <sup>2</sup>	
$A_4 = (A_1 + A_2) \times 2 + A_3 = 93.998 m^2$	
$V_1 = A_4 \times 11.128$ = 10.46, 010 m <sup>3</sup>	
$As = \frac{1}{2} \times (.8.150 + 1.878) \times 3.800 = 19.053 \mathrm{m}^2$	
$V_2 = As \times 5.60 = 106.700 \text{ m}^3$	
- 706.10 m	
A6 = 0.40 x 2.50 = 1.000 m2	
$A_7 = \frac{1}{2} \times (0.40 + 2.88) \times 12.400 = 20.336 \text{ m}^2$	
A8 = 1/2 x (12,560 + 13,320) x 1.90 + 1/2 x 1.80 x 1.50 x 2	
= 27.286 m²	
$A9 = (A6 + A7) \times 2 + A8 = 69.958 \text{ m}^2$	
V3 = A9 x 1.522 + (0.40 x 0.40 x 8.400) + (0.50 x 0.40 x 8.400)	
= 109,500 m <sup>3</sup>	
A10 = 1/2 × (1.00 + 1.88) × 4.40 = 6.336 m²	
An = 1/2 x (9.36 + 13.320) x 9.90 + 1/2 x 1.80 x 1.50 x 2	
$-(5.60 \times 5.60) = 83.606 \text{ m}^2$	
V4 = (A1 + A10) x (9.72 + 6.67) x/2 x 2 = 144.822 m3	
Vs = A11 x (6.67 + 1.320) x 1/2 = 334.006 m3	
Vb = 1/2 x 1.80 x 1.50 x (16.320 + 13.320) x /2 = 20.00 7 m3	
ХV = И + 116 -	1761.095 m³

TYPE OF WORK

OCATION: Upstream Portal of Diversion Facility CALCULATION	RESULT
(Formwork)	
$A_1 = \frac{1.00 \times 2.50 + \frac{1}{2} \times (1.00 + 3.26) \times 11.30}{\times 2} \times 2 = 53.1$	4 m²
$A_2 = \sqrt{2} \times (12.12 + 12.72) \times 1.50$ = 18.6.	3 m <sup>2</sup>
$A_3 = \frac{1}{2} \times (22.37 + 21.12) \times 2.50 \times 2 = 108.7$	3 m²
$A_4 = \frac{1}{2} \times (21.12 + 15.821) \times 12.80 \times 1.019 \times 2 = 481.8$	A Section 1
$As = \{12, 25 \times 13.80 - \frac{1}{2} \times (1.878 + 8.150) \times 3.80 \} \times 2$	
= 297.5	79 m²
A6 = 3.80 × 5.60 = 21, 20	
$A_7 = 5.60 \times (0.785 + 0.882)$ - 9.34	
$A8 = 5.60 \times 7.538$ = 42.2)	Audit for the second second
$A_{9} = \frac{1}{2} \times (10.120 + 6.670) \times 6.90 \times 2 = 115.8$	A Delta Commence
$A_{10} = \frac{1}{2} \times (5.577 + 2695) \times 5.60 \times 2 = 46.3$	transfer of the contract of the con-
$A_{10} = \frac{72 \times (3.577 \times 5.60)}{5.60 \times 2} = \frac{31.2}{5.577 \times 5.60}$	tif 🖈 🖫 👫 📗 til skiller i til til til skiller i til til til skiller i til til til skiller i til til til skiller i til til til skiller i til til til skiller i til til skiller i til til skiller i
$A_{12} = 0.60 \times 6.10 \times 2 \times 4$ = 29.28	EAR CHEAD E
	His of the second of the second
	e transfer i de la companya da la companya da la companya da la companya da la companya da la companya da la c
A14 = 0.40 x 6.80 x 2 = 5.4 A15 = 2.014 x 5.60 = 11.20	
	=   /29].[/w
ZA = A1 + 2 + A15.	
Boaffolding)	
$A_1 = 53.14 \text{ m}^2$	
$A_2 = 18.63 \text{ m}^2$	
$A_3 = 108.73 + 481.83 = 590.56 \text{m}^2$	
A4 = 299,99 m²	
$As = 2).28 m^2$	
$A_6 = 115.85 \text{ m}^2$	
$A\eta = 46,32 \text{ m}^2$	
Az = 29.28 m²	
Aq = 16.56 m2	
A10 = 7.697 x 5.60 = 43.10 m2	
$ZA = A_1 + A_10$	= 1234.7/*
(Supporting)	
V = 1/2 × (5.577 + 2.695) × 5.60 × 5.60	= 129.70 m

# Upstream Portal

•			
- N	cav	721	On.
1.20	Car	rau	UII

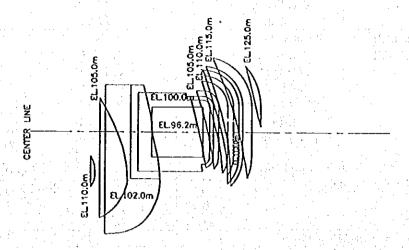
Excavation	T	A-00 (m/s)		
Elevation		Area (m²)		Volume
(m)	Area 1	Area 2	Total	(m³)
127.0			0.000	- 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
125.0	19.207		19.207	19.2
120.0		a weet to find a	123.224	356.1
115.0			142.726	664.9
113.0		5 10 145	140.246	283.0
113.0	89.134	to the second section	89.134	0.0
110.0	79.558	6.655	86.213	263.0
105.0	65.063	161.388	226.451	781.7
102.0		508.412	583.184	1,214.5
102.0		150.539	225.311	0.0
100.0	393.356		393.356	618.7
96.2	186.080		186.080	1,100.9
Total				5,301.9
Total x 1.1				5,800.0

# Temporary Cofferdam

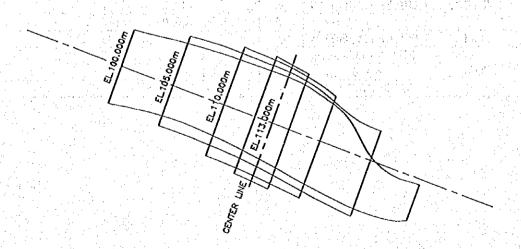
#### Embankment

Linibankinen		377.1	19.4	era i di Albanda Namera
Elevation		Area (m²)		Volume
(m)	Area 1	Лтеа 2	Total	(m³)
113.0	330.386		330.386	Franke keelig ja
110.0	852.640		852.640	1,774.5
105.0	1,497.322		1,497.322	5,874.9
100.0	1,742.388		1,742.388	8,099.3
99.0	1,742.388	and the second	1,742.388	1,742.4
95.0	180.000		180.000	3,844.8
		1. Sec. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
Total	AND THE STORY	See See See See		21,335.9
Total x 1.1	3 7 7 12 4			23,500.0

# UPSTREAM PORTAL EXCAVATION



## TEMPORARY COFFERDAM EMBANKMENT



SCALE 0 10 20 30 40 50m

## 2.6 Outlet Facilities

# 1. Summary

DES	CRIPTION	UNIT	QUANTITY	LEGEND
	EXCAVATION	m <sup>3</sup>	2, 148. 2	
EXCAVATION	OVERBREAK	m <sup>3</sup>	121.9	5cm
	TOTAL	m <sup>3</sup>	2, 270. 0	
STEEL RIB	H-100x100x6x8	kg	26, 533. 0	
SUPPORT	PLATE(t=9)	kg	1, 017. 0	
	PLATE(t=16)	kg	3, 428. 3	
	BOLT NUT	17:15	516	
	COLLAR BRACE	kg	3, 793. 0	Ф16
	Total	kg	35, 287. 4	
	Total x 1.05	kg	37, 100. 0	
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	.,		
	STEEL PIPE	127 %	3, 096	Φ21.7x1,9×80
WI	re net	m <sup>2</sup>	2, 397. 7	Φ5x150x150 (2.13 kg/m2)
		(kg)	5, 107. 2	
		x1.05	5, 400. 0	
	IN GROUT	4 1	18	L=10.00m
	ATION GROUT		48	L=5.00m
ROCK BOLT	D22 L=1.50m		777	
	TOTAL	m	1, 166	
	TOTAL x 1.05	m	1, 200	
	OVERBREAKAGE	3 3	121. 9	5cm
	SHOTCRETE	m <sup>3</sup>	234. 4	10cm
SHOTCRETE	TOTAL	m <sup>3</sup>	356. 3	
	OVERBREAKAGE	m²	2, 464. 1	
	SHOTCRETE	m²	2, 403. 9	
OOMODETO	TOTAL	m <sup>2</sup>	4, 868. 0	
CONCRETE	OUTLET PROJECTION	m <sup>3</sup>	49. 2	
CODY	x 1.05	m <sup>3</sup>	50.0	
FORM	OUTLET PROJECTION	_m²	83. 5	
PLUG	FILLING CONCRETE	m <sup>3</sup>	1, 313. 1	
rluo	x 1.05	m³	1, 400. 0	
	WATER STOP SEAL	at	7.4	

SUBMARY (Inclined Intake Structure)

	DESCRIPTION		UNIT	TOTAL	LEGEND
	Excavation	Total	m <sup>3</sup>	9, 295. 9	
	Excuraction	x 1.1	_0 <sup>3</sup>	10, 200, 0	:
	Concrete Type B	Total	m <sup>3</sup>	803. 5	
	concrete type b	x 1.05	m <sup>3</sup>	840. 0	
Inclined Intake	Concrete Type C	Total .	m <sup>3</sup>	84. 9	
Structure	concrete type c	x 1.05	m <sup>3</sup>	89. 0	
	Reinforcing Bar	Total	kg	40.6	
	Kerintorchig Dar	x 1.06	kg	43. 0	
	Excavated Slope	Total	ຫຼີ	2, 387. 0	
	catated Stope	x 1.1	m <sup>2</sup>	2, 620. 0	

#### 2. EXCAVATION

#### 2-1. EXCAVATION (TYPICAL SECTION)

 $v1 = 5.373 \times 368.476 = 1,979.822 \text{ m}^3$  $v2 \text{ (OVERBREAK)} = 0.310 \times 368.476 = 114.228 \text{ m}^3$ 

#### 2-2. EXCAVATION (PLUG SECTION)

v1 = 8.476×19.044+1/2(5.373+8.476)x1.000 = 168.341  $_{\rm m}^{\rm 3}$ v2(OVERBREAK) = 0.381×20.047 = 7.638  $_{\rm m}^{\rm 3}$ 

#### 2-3. EXCAVATION (TOTAL)

EXCAVATION  $\Sigma V = v1+v1 = 1,979.82 + 168.34 = 2,148.163 \,_{D}^3$ OVERBREAK  $\Sigma V = v2+v2 = 114.23 + 7.64 = 121.866 \,_{m}^3$ 

#### 3. STEEL RIB SUPPORT

#### 3-1. STEEL RIB SUPPORT (TYPICAL SECTION)

N=367. 470/1. 50=245 ITFM LENGTH QUANTITIY WHEIGHT/UNIT WHEIGHT/m EXTENSION TOTAL WEIGHT 2.955 11-100x100x6x8 (kg) 17.2 101.652 245 24, 904. 740 PL-155×180×9 (kg) 2 1.971 3.942 245 965.790 PL-230×230×16 (kg) 2 6, 644 13, 288 245 3, 255. 560 BOLT NUT \$25 0.070 2 245 190 COLLAR BRACE \$16(kg) 1.576 6 245 1, 58 14.940 3,660,418 STEEL PIPE \$21.7×1.9 0.080 12 245 2,940 WIRE NET (m2) 6.114 367.470 1 2, 246. 712 6, 114n<sup>2</sup>

#### 3-2. STEEL RIB SUPPORT (PLUG SECTION)

N=20, 047/1, 50=13 ITEM LENGTH QUANTITIY WHEIGHT/UNIT THE IGHT/m EXTENSION TOTAL VEIGHT H-100x100x6x8 (kg) 3.611 2 17. 2 125, 250 13 1,628.255 PL-155 × 180 × 9 (kg) 1.971 2 3, 942 13 51, 246 PL-230×230×16 (kg)  $\overline{2}$ 13. 288 13 6.644 172.744 BOLT NUT 0.07 2 13 26 COLLAR BRACE \$16(kg) 1.076 6 1.58 10.200 13 132, 606 STEEL PIPE \$21.7×1.9 0.080 12 13 156 WIRE NEI (e2) 7.534 20.047 151, 034 7, 534m<sup>4</sup>

#### 3-3. STEEL RIB SUPPORT (TOTAL)

11EM	TYPICAL SECTION	PLUG SECTION	TOTAL WEIGHT
H-100x100x6x8 (kg)	24, 901, 740	1628. 255	26, 532, 995
$PL-155\times180\times9(kg)$	965, 790	51, 246	1, 017, 036
PL-230×230×16 (kg)!	3, 255, 560	172, 744	
BOLT NUT	490	26	· · · · · · · · · · · · · · · · · · ·
COLLAR BRACE \$16(kg)	3, 660, 418	132, 606	3, 793, 024
STEEL PIPE \$21.7×1.9	2, 940. 000	156	3, 096
WIRE NET (m <sup>2</sup> )	2, 246. 712	151.034	

4. GROUTING

4-1. CURTAIN GROUT

L=10.00m n = 18

4-2. CONSOLIDATION GROUT

L=5.00m n=6×8 = 48

5. ROCK BOLT

D22, L=1.50m, n=8 n=3×388.523/1.500 =3×259 = 777

y Marith (1967)

on second of the first and period

2 - 124

#### 5. SHOTCRETE

#### 5. 1 TYPICAL SECTION

 V1 (OVERBREAKAGE)
 = 0.310×368.476
 = 114.228  $\text{m}^3$  

 V2 (SHOTCRETE)
 = 0.596×368.477
 = 219.612  $\text{m}^3$  

 A1 (OVERBREAKAGE)
 = 6.269×368.476
 = 2,309.976  $\text{m}^2$  

 A2 (SHOTCRETE)
 = 6.114×368.477
 = 2,252.862  $\text{m}^2$ 

#### 5. 1 PLUG SECTION

 V1 (OVERBREAKAGE)
 = 0.381 × 20.047
 = 7.638  $m^3$  

 V2 (SHOTCRETE)
 = 0.738 × 20.047
 = 14.795  $m^3$  

 A1 (OVERBREAKAGE)
 = 7.688 × 20.047
 = 154.121  $m^2$  

 A2 (SHOTCRETE)
 = 7.534 × 20.047
 = 151.034  $m^2$ 

#### 5. 1 TOTAL

OVERBREAKAGE  $\Sigma V = v1+v1 = 114.23 + 7.64 = 121.866 \text{ m}^3$ SHOTCRETE  $\Sigma V = v2+v2 = 219.61 + 14.80 = 234.407 \text{ m}^3$ OVERBREAKAGE  $\Sigma A = v1+v1 = 2,309.98 + 154.12 = 2,464.097 \text{ m}^2$ SHOTCRETE  $\Sigma A = v2+v2 = 2,252.86 + 151.03 = 2,403.896 \text{ m}^2$ 

#### 7. CONCRETE (OUTLET PROJECTION)

 $V1 = 4.471 \times 5.012 = 22.409 \text{ m}^3$ 

#### 8. FORM (OUTLET PROJECTION)

A1 =  $6.780 \times 5.012 + 4.471 \times 2$  =  $42.923 \text{ m}^2$ 

9. PLUG

9-1. CONCRETE

4 - . . . . .

= 5.875×20.047

= 117.776  $\text{m}^3$ 

9-2 FORV

Al

 $= 5.875 \times 3$ 

= 17.625 m<sup>2</sup>

9-3. WATER STOP SEAL.

LI

 $= 7.38 \times 1$ 

7, 380 m

1

TYPE OF WORK : Production and Construction of concrete (Type B)
LOCATION : Inclined Intake Structure

LOCATION : Inclined Intake Structure CALCULATION	RESULT
(Between EL+110.00m and EL+130.00m)	
$A_1 = 0.70 \times 3.90 - (0.55 \times 0.25) \times 2 = 2.455  \text{m}^2$	i er
$A_2 = 1.60 \times 0.95 - (0.90 \times 0.40) = 1.160 \text{ m}^2$	
$A_3 = \sqrt{2} \times (4.95 + 3.90) \times 1.050 = (0.60 \times 0.30) \times 2$	
$-\frac{75}{4} \times 0.20^2$ = 4.255 m <sup>2</sup>	
$A_4 = A_1 + A_2 \times 2 + A_3 = 9.030 \text{m}^2$	
$V_1 = A_{4.x}(24.377 - 1.00)$ = 211.094 m <sup>3</sup>	
$A_5 = 0.70 \times 3.90 - (3.40 \times 0.25)$ = $1.880 \text{ m}^2$	
$A_6 = 0.55 \times 1.050$ = 0.578 m <sup>2</sup>	
$A_7 = A_5 + A_6 \times 2 + A_2 \times 2 = 5.356 \mathrm{m}^2$	
$V_2 = A_7 \times 1.90 + A_4 \times 0.50$ = $14.69 \text{ m}^2$	
V3 = 1/2 x (FL+114.666 - FL+110.000) x 3.100 x 3.900	
$-\frac{\pi/4 \times 1.40^2 \times 1.470}{25.943 \text{ m}^3}$	
$V_4 = \frac{1}{6} \times 3.00 \times \frac{1.800}{100} \times 1.8$	
$= 29.700  \text{m}^3$	
Vs = 1/2 x 1.240 x 3.00 x (17.50 + 3.90) x 1/2 = 10.602 m3	
V6 = 1/2 × (3.941 + 1.200) × 3.350 × 3.900 - (1.40 × 0.60	
x 2.800) + 1/2 × ( 0.858 × 1.200) × 3.900 - 1/2 × (0.957	
+0.600) x 0.50 x 3.40 = 3).916 m <sup>3</sup>	
	25204/
- ΣV= V <sub>1</sub> † ~ + V6	323.946 m <sup>3</sup>
(Between FL+130.00 and FL+152.00)	
$A_1 = \{2.30 \times 0.95 - (0.55 \times 0.40 + 0.40 \times 0.90)\} \times 2 = 3.2/0  \text{m}^2$	
Az = 1/2 x (3.90 + 4.95) x 1.050 - 1/4 x 0.202 = 4.615 m2	
VI = (AI + A2) x 37.85 = 296.176 m3	
$V_2 = (A_1 + A_2) \times \frac{1}{2} \times (1.376 + 4.450) = 22.794 \text{ m}^3$	
$\nabla V = V_1 + V_2$	318 9703
	2703.170 M7

TYPE OF WORK : Production and Construction of concrete (Type B)

LOCATION : Inclined Intake Structure	
CALCULATION To The address	RESULT
(Operation Deck)	1. 1
$V_1 = 0.60 \times 11.700 \times 6.20$ = 43.524 m <sup>3</sup>	
$V_2 = -0.60 \times 3.780 \times 0.60$ = -1.361 m <sup>3</sup>	1
V3 = 1/2 × (0.656 + 0.369) ×0.10 ×2 + 0.30×0.56 ×0.60 ×2	· · · · · · · · · · · · · · · · · · ·
$= -0.325  \text{m}^3$	
$V_4 = -\{\frac{1}{2} \times (0.656 + 0.369) \times 0.10 \times 2 + 0.30 \times 0.56\} \times 1.82$	
= -0.492 m³	
$V_5 = V_2 \times (6.194 + 7.571) \times 0.80 \times 6.20 = 34.137 \text{ m}^3$	
$V_6 = V_2 \times (10.168 + 9.774) \times 3.60 \times 0.60 \times 2 = 43.075 \text{ m}^3$	1
$V_{11} = 0.80 \times 10.031 \times 6.20$ = 49.754 m <sup>3</sup>	
$V_8 = -(0.9/4 + 0.430) \times 0.80 \times 0.55 \times 2 = -1.783 \text{ m}^3$	
$Vq = -0.914 \times 0.80 \times 2.00$ = $-1.462 \mathrm{m}^3$	
$V_{10} = -(0.63) + 0.745 + 0.688) \times 0.80 \times 0.40 \times 2 = -1.32) \text{ m}^3$	
$V_{H} = -1.344 \times 0.80 \times 2.00$ = $-2.150 \text{ m}^3$	
V12 = -0.40 × 0.40 × 6.194 × 2 = -1.982 m2	
$V_{13} = \frac{1}{2} \times 0.210 \times 0.294 \times 0.60 \times 19 = 0.259 \text{ m}^3$	
$V_{14} = \frac{1}{2} \times 0.60 \times 0.210 \times 2.80 = 0.176 \text{ m}^3$	
V15 = 1/2 x (0.210 + 0.219) x 0.294 x 0.60 x 5 = 0.189 m3	
$V_{16} = -\frac{\pi}{4} \times 0.20^2 \times 7.566$ = -0.238 m <sup>3</sup>	
	160.600 sn <sup>3</sup>
XV= V1+ ~ + V16	
7aTAL =	_803.516m <sup>2</sup>

TYPE OF WORK : Production and Construction of concrete (Type C)

OCATION : CALCULATION	RESULT
(Upstream portal of Diversion Facility)	<u> </u>
V) = 0.40 × 6.10 × 0.60 × 2 = 2.928 m	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
V2 = 0.50 × 6.10 × 0.60 × 2 = 3.660 m	3
$V_3 = 1.522 \times 0.60 \times 0.40 \times 2$ = 0.73 m	3
V4 = 0.50 x 5.60 x 0.40 = 1.120 m	3
$V_{s} = 0.60 \times 5.60 \times 0.40$ = 1.344 m	3
ΣV = V1+ ~ + Vs	= 9.783 m <sup>3</sup>
(Inclined Intake Structure)	
$V_1 = 0.55 \times 0.25 \times 23.877 \times 2 = 6.566 \text{ m}$	3 200 0 0 0 0
$V_2 = 0.25 \times 3.40 \times 0.50$ = 0.425 m	
$V_3 = \frac{1}{2} \times (0.60 + 0.95\%) \times 0.50 \times 3.40$ = 1.323 m	n <sup>3</sup>
$V_4 = 0.40 \times 0.40 \times (24.377 + 1.400) \times 2 = 8.249$	m3
V5 = (0.60 x 0.30 + 0.10 x 0.40) x (24.3 TT+1,400) x 2 = 11.342	2 <sub>m</sub> 3
$V_6 = 1.050 \times 1.00 \times 2.000$ = $2.100$	<sub>m</sub> 3
$Vq = 0.60 \times 1.50 \times 2.000$	<sub>m</sub> 3
$V8 = 0.55 \times 0.40 \times (37.85) \times 2 = 16.654$	<u>h</u> 3
$V_9 = 0.40 \times 0.40 \times (37.85 + 4.690) \times 2 = 13.613$	m <sup>3</sup>
$V_{10} = (0.60 \times 0.30 + 0.10 \times 0.40) \times (37.85 + 4.690) \times 2 = 18.718$	m <sup>3</sup>
VII = 0.25 x 0.25 x 3.10 = 0.194	m <sup>3</sup>
Viz = 0.40 × 0.40 × 6.194 × 2 = 1.982 1	η3
V13- 0.983 x 0.25 × 0.55 × 2 = 0.270 r	<sub>1</sub> ਰ
V14 = (0.63) + 0.745 + 0.688) × 0.40×2 = 1.651 n	<sub>g</sub> 3
$\Sigma V = V_1 + \cdots + V_{14}$	=   84.68'( m

LOCATION : Inclined Intake Structure CALCULATION		RESULT
(Between EL+130,00 and FL+ 152,00m)		
(Formwork)		<del></del>
A1 = 2.30 x 37.85 x 4	348. 22 m²	
A2 = 1/2 x 2.30 x 1.690 x 4 =	21,57 m²	
A3 = 0.95 × 37.85 × 2 =	71.92 m²	
A4 = 0.40 x (37.85 + 1.960) x2 =	3/.85 m²	
$A_5 = 2.80 \times (37.85 + 3.640) =$	116.17 m²	
$\Sigma A = A_1 + \sim +A_5$	<b>3</b>	589.73 m²
(Scaffolding)		10 10 10 10 10 10 10 10 10 10 10 10 10 1
$A_1 = 348.22 \text{ m}^2$		348.22m2
(Supporting)		
$V_1 = 0.40 \times 0.40 \times (37.85 + 3.640) \times 2$		13.28 m³
(Operation Deck)		
$A_1 = 10.168 \times 3.00 - (0.656 \times 0.60 \times 2 + 0.65)$	6x 1.820)	
	= · 48.86 m²	
$A_2 = 0.60 \times 6.20 \times 2$	$= 7.44 \mathrm{m}^2$	
A3= 11.70 × 0.60 × 2	$= 14.04 \text{ m}^2$	
A4 = 1/2 x (10, 168 + 9,774) x 3.60 x 4	= 143,58 m²	
As = 1/2 x (6.194 + 7.571) x 0.60 x 2	= 8.26 m²	
A6 = 0.80 x 10.030 x 2	$= 16.05 \mathrm{m}^2$	The second secon
A7 = 0.80 × 6.20	$= 4.96  \text{m}^2$	
As = 6.194 x 0.40 x 2 x 2	= 9,97 m <sup>2</sup>	
A9 = 6.194 x 5.00	= 30.97m²	
A10 = 0.30 x 1.032 x b	= 1.86 m²	
Au = 1.032 x 0.60 x 2 x 2	$= 2.48 \mathrm{m}^2$	ng photosophic and a second
Av = 1.032 × 1.820	5 1/88 m2	
A13 = (0.914 +0.430) ×0.80 ×2	= 2./5 m <sup>2</sup>	
A14 = 0.430 × 0.80 × 2	= 0.69 m2	
A15 = 3.10 x 1.376 x 2	= 8.53 m²	
A16 = 2.80 x 1.376 x 2	= 3.85 m²	
AM = (0.63)+0.745+0.688) x0.80x2	≥ 3.30 m²	and the second of the second o

TYPE OF WORK

Scaffolding.)  A1: $V_{2\times}(u.15) + (0.031) \times 4.40 \times 2 = 93.20 \text{ m}^{3}$ A2: $V_{2\times}(0.168 + 9.714) \times 3.60 \times 2 = 71.79 \text{ m}^{2}$ SA = A1 + A2  Supporting.)  V1: $V_{2\times}(u.168 + 9.714) \times 3.60 \times 5.00 = 179.48 \text{ m}^{3}$ V2: $V_{2\times}(u.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^{3})$ V3: $V_{2\times}(u.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^{3})$ ZV: $V_{1} + V_{2} + V_{3}$ = 270.59 i	: Inclined Intake Structure CALCULATION	RESULT
Aig = 2.673 × 3.90 = 10.72 m <sup>2</sup> Ai = Ai + \(\neg \) + Aig = 336.586  Fallolding )  Ai = \(\frac{12}{2} \times \) (10.151 + 10.03  1 × 4.40 × 2 = 93.20 m <sup>2</sup> Ai = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.60 × 2 = 91.79 m <sup>2</sup> Supporting )  Vi = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.60 × 5.00 = 179.48 m <sup>3</sup> Vi = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.60 × 5.00 = 179.48 m <sup>3</sup> Vi = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.60 × 2 = 82.63 m <sup>3</sup> Vi = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.60 × 2 = 82.63 m <sup>3</sup> Vi = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.900 = 8.48 m <sup>3</sup> Zi = \(\frac{12}{2} \times \) (10.168 + 9.714) × 3.900 = 8.48 m <sup>3</sup> Zi = \(\frac{12}{2} \times \) (11.16) ×	50 x 7.544 x 2 = 17.35 m <sup>2</sup>	
Scaffolding.)  A1: $V_{2\times}(u.15) + (0.031) \times 4.40 \times 2 = 93.20 \text{ m}^{3}$ A2: $V_{2\times}(0.168 + 9.714) \times 3.60 \times 2 = 71.79 \text{ m}^{2}$ SA = A1 + A2  Supporting.)  V1: $V_{2\times}(u.168 + 9.714) \times 3.60 \times 5.00 = 179.48 \text{ m}^{3}$ V2: $V_{2\times}(u.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^{3})$ V3: $V_{2\times}(u.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^{3})$ ZV: $V_{1} + V_{2} + V_{3}$ = 270.59 i		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
A1: $\frac{1}{2} \times \text{CILISI} + \text{IO.03I} \times 4.40 \times 2 = 93.20 \text{ m}^2$ A2: $\frac{1}{2} \times \text{CIO.168} + 9.774.1 \times 3.60 \times 2 = 71.79 \text{ m}^2$ EA = A1 + A2  Supporting )  V1: $\frac{1}{2} \times \text{CIO.168} + 9.774.1 \times 3.60 \times 5.00} = 179.48 \text{ m}^3$ V2: $\frac{1}{2} \times 7.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^3$ EV2: $\frac{1}{2} \times 2.467 \times 1.762 \times 3.900 = 8.48 \text{ m}^3$ EV2: $\frac{1}{2} \times 2.467 \times 1.762 \times 3.900 = 8.48 \text{ m}^3$	+ ~ + A19 -	336.58m
$\begin{array}{llllllllllllllllllllllllllllllllllll$	19-)	
$A_{2} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 2 = .71.79 \text{ m}^{2}$ $\Sigma A = A_{1} + A_{2} = .764.99 \text{ m}^{2}$ Supporting ) $V_{1} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{2} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.60 \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.00 = .179.48 \text{ m}^{3}$ $V_{3} = 1/2 \times (10.168 \pm 9.714 +) \times 3.0$	$(11.151 + 10.031) \times 4.40 \times 2 = 93.20 \text{ m}^2$	
Supporting ) $V_1: \frac{1}{2} \times (10.168 \pm 9.774) \times \frac{1}{2}.60 \times 5.00 = 179.48.16^{3}$ $V_2: \frac{1}{2} \times \frac{1}$		
$V_{1} = V_{2} \times (10.168 \pm 9.774) \times 3.60 \times 5.00 = 179.48 \text{ m}^{3}$ $V_{2} = V_{2} \times 7.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^{3}$ $V_{3} = V_{4} \times 2.467 \times 1.762 \times 3.900 = 8.48 \text{ m}^{3}$ $270.591$ $20 = V_{1} + V_{2} + V_{3}$	Α,	164.99 m²
$V_{1} = V_{2} \times (10.168 \pm 9.774) \times 3.60 \times 5.00 = 179.48 \text{ m}^{3}$ $V_{2} = V_{2} \times 7.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^{3}$ $V_{3} = V_{4} \times 2.467 \times 1.762 \times 3.900 = 8.48 \text{ m}^{3}$ $270.591$ $20 = V_{1} + V_{2} + V_{3}$	)	
$V_2 = V_2 \times 7.164 \times 10.03 \times 1.150 \times 2 = 82.63 \text{ m}^3$ $V_3 = V_2 \times 2.467 \times 1.762 \times 3.900 = 8.48 \text{ m}^3$ $\overrightarrow{2}V = V_1 + V_2 + V_3 = 270.59 \text{ p}$		
$\sqrt{3} \cdot \sqrt{2} \times 2.467 \times 1.762 \times 3.900 = 8.48 \text{ m}^3$ $2 \times 1.4 \times 1.762 \times 3.900 = 8.48 \text{ m}^3$ $2 \times 1.4 \times 1.762 \times 3.900 = 8.48 \text{ m}^3$		
		270.59 m
		1 x 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
		and the periods
		a entergajo judita
		्र राजनेत्रहरू स्टब्स्

TYPE OF WORK

		RESULT
(Between EL+110,00 to EL+130,00)	3 1	
(Fornwork)		
A) = 2.30 × (24.377 + 1.40) × 2	= 118.57 m²	
Az= 1.90 x (24, 377) x 2	$= 92.63 \mathrm{m}^2$	
A3 = (3.90 + 2.00) × 24.377	= /43.82 m <sup>2</sup>	<u> </u>
Az = 0.40 × 24.377 × 2	= 19.50 m <sup>2</sup>	
$A_5 = 0.25 \times 24.377 \times 4$	= 24,377;n <sup>2</sup>	
A6 = 7.80 x 23,377 + 1.050 x 2.80	= 68.40 m <sup>2</sup>	
Ay = 3.25 x 1.40 x 3	= 13.65 m²	
A8 = (1.40 + 0.60 × 2) × 2.80	= 7.28 m²	
$99 = \frac{1}{2} \times 9.20 + 2.629 \times 2.00 \times 2$	= 7.66 m <sup>2</sup>	
$\Delta_{10} = 2.00 \times 3.90$	$= 7.80 \text{ m}^2$	
$\Delta_{\rm H} = 0.25 \times 3.40$	$= 0.85 \mathrm{m}^2$	
4 <sub>12</sub> = (1.40 + 1.05 + 1.40) x 2.80	= 10.78 m²	
BA - A1+ ~ + A12	= 1	<i>5/3</i> , 32 m
Scattolding)		
A1 = 1/8,57m <sup>2</sup>		· · · · · · · · · · · · · · · · · · ·
$A_2 = 7.66 \text{ m}^2$		
$A_3 = 3.25 \times 2.80 \times 2 = 18.20 \mathrm{m}^2$		
$A_3 = 2.00 \times 3.90 = 7.80 \text{ m}^2$		
$A_4 = 3.35 \times 3.90 = 13.07 \mathrm{m}^2$		***************************************
$\Delta A = A_1 + \infty + A_9$		165.30 in
Supporting)		
V = (2.00. x 0.70 + 2.80 x 0.90) x 24.377	<b>2</b> 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	95.56 m

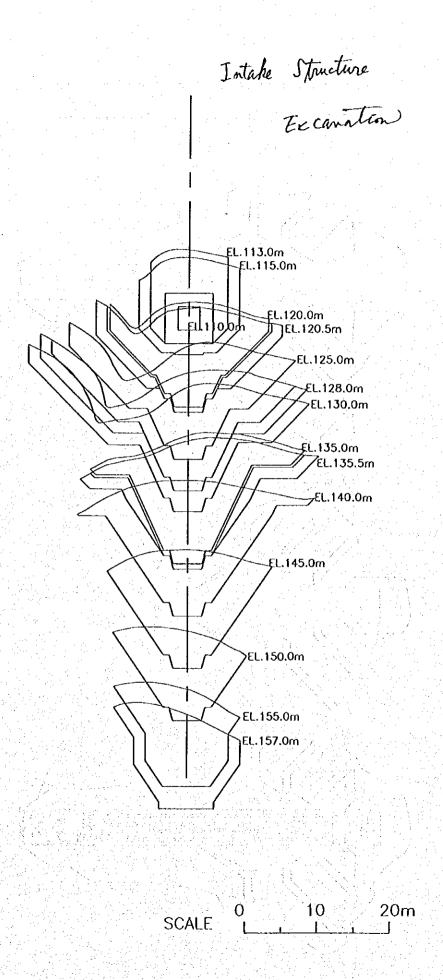
## Inclined Intake Structure

Excavation

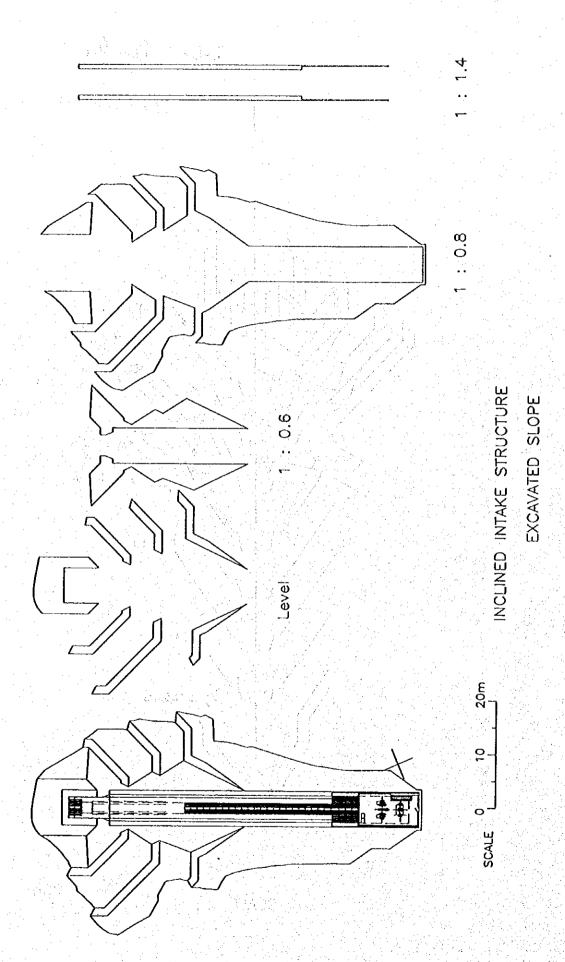
Elevation		Area (m²)	14-1-15-1-17-2	Volume
(m)	Area 1	Area 2	Total	(m <sup>3</sup> )
157.0	162.642		162.642	
155.0	154.021		154.021	316.7
150.0	136.288		136,288	725.8
145.0	214.630		214.630	877.3
140.0	283.078	200	283.078	1,244.3
135.5	228,113	43.543	271.656	1,248.2
135.5	228.113		228.113	0.0
135.0	229.650		229.650	114.4
130.0	273.616		273.616	1,258.2
128.0	227.600	46.137	273.737	547.4
128.0	227.600		227.600	0.0
125.0	227.117		227.117	682.1
120.5	176.470	39.282	215.752	996.5
120.5	176.470		176.470	0.0
120.0	178.929	sa di Magadisa	178.929	88.8
115.0	155.616	grade et antier i filologie	155.616	836.4
113.0	44.220	79.920	124.140	279.8
113,0	44.220	e a ser est production	44.220	0.0
110.0	9.300		9.300	80.3
110.0	0.000		0.000	0.0
Total	Turk to the		10 10 10 10 10 10 10 10 10 10 10 10 10 1	9,295.9
Total x 1.1	17 24 74 75 38 1.4		to a superior	10,200.0

Excavated Slope

	1:0.6	1:0.8	1:1.4	Level	total
	(m2)	(m2)	(m2)	(m2)	tota.
	96.96	32.39	38.56	79.92	
	100,69	98.82	38.56		
		107.38		29.33	1. 44 . 15.4 .
		503.99	Alegeric et al Albert	18.47	
		55.27		17.65	1 1 1
		68.08		16.82	
4.1		34.31	sa Charles Con	25.08	
a the Albert		4 Number (1200)			48 2 3 3 3
Total	197.65	900.24	77.12	208.90	医克勒曼氏试验检
	1 200 D				1 1 11
x slope	384	1,441	95	467	Allega Salas S
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Tarana a Tarana
Total(x 1.1)	420	1,590	100	510	2,620



(



## 2.7 Steel Structure

Total Quantity of Gate

	l	Steel	Material	Machine	Sub-total	Pai	nting	Acid
ITEX	NEKE	Waterial		single unit	Sub total	Pricer		
		(kg)	(kg)	(kg)	(kg)	(m)	(ni)	(m)
BULK HEAD GATE	Gate Leaf	3334	139	0	3473	0.0	45.6	3, 0
	Gate guide	19314	208	0	19522	468.5	44.3	39. 1
	lloist	7178	992	688	8858	2, 4	92. 2	0.5
	1 Gate Total	29826	1339	688	31853	470. 9	182. 1	42.6
EMERGENCY GATE	Gate Leaf	1639	51	0	1690	0.0	27. 8	1.8
	Lifting Beam	428	4	0	432	0.0	9.5	0. 2
	Gate guide	10902	6	0	10908	258.4	26. 7	18. 7
	lloist	7512	987	504	9003	2, 4	105, 4	0, 5
	l Gate Total	20481	1048	501	22033	260.8	169.4	21.2
Trash Rack		14993	61	0	15057	0.0	477.2	0. 4
STEEL PENSTOCK	Outlet pipe	140483	0	0	140483	2115.7	1833. 7	0.0
	Installation stand	102417	5756	0	108173	3574.8	0.0	0.0
	Total	242900	5756	0	248656	5690. 5	1833. 7	0.0
OUT LET	Control Gate	5697	247	650	6594	8. 4	39. 7	0.9
STRUCTURES	Guard Gate	5121	266	650	6037	8.2	34.8	0. 5
( ¢ 650)	Auxiliary Facilities	1444	70	845	2359	32.8	0.0	0.0
	Installation stand	335	19	0	354	13.8	0.0	0.0
	<b>Total</b>	12597	602	2145	15344	63. 2	74, 5	1.4
OUT LET	Control Gate	829	30	217	1076	0.6	11.9	0.9
STRUCTURES	Cuard Cate	802	642	217	1661	0. 5	7.8	0.0
( ¢ 250)	Auxiliary Facilities	<b>7</b> 56	13	285	1054	27.8	0.0	0.0
	Installation stand	235	13	0	248	9.5	0.0	0.0
	Total	2622	698	719	1039	38.4	19. 7	0. 9
Operating Stand		4192	30	0	4222	0.0	130. 0	0.0
DIVERSION CATE	Cate Leaf	17207	126	0	17333	0.0	251, 6	6. 7
	Cate guide	3121	12	0	3133	58.4	11.2	7. 1
to the last	i Gate Total	20328	138	-: 3 C 0	20466	58.4	262.8	13. 8
Electrical Equ				2020	531	1		4 9
		10 1 12 12		1.0				
Total		347939	9675	6076	362201	6582. 2	3149. 4	80.3
医二氏试验检 建二氯酚	据: 4.5 年 (1874年) [1884]			A 2 47 4 4 5 5 5 5		s salah Te		

BULK HE	BULK NEAD GATE (Gate Leaf)								(6/1)
2	1	Varionial		Dimensions (mm)		Weig	Weight (kg)	Painting /	Arca (m <sup>2</sup> )
5		<u>\$</u> .		Shape X Length	whantity	Unit	Þ	Painting	ν. ον
	Gate Leaf							1. S. O. S.	7,1
	Skin Plate	SS400	PI.	14×1800×2200			435	7	6
		SS400	Ы	14×90×2000	7		162	-	Į.
	Main Girder Web	SS400	PI,	9× (422×2055)	2		122		5
	Main Girder Flange	SS400	P.	14×120×2000	9.		1581		6
	Wain Girder Web	SS400	Ы	9× (422×2055)	3		183	5.	2
	Side Girder Flange	SS400	. Jd	14×100×1800	4		62		4
	Side Girder Web	SM400C	ΡĮ	45×272×1800	2		311		000
	sub beam	SS400	ρľ	9×70×265	3		4	ď	
	sub beam	SS400	Pl.	9×70×305	6:		14		4
	sub beam	SS400	Pl.	9×442×1700	-		53		i,
	sub beam	SS400	7	16×282×1700	2		113	ï	188
	Vertical sub beam Web	SS400	PI	9×160×1700	2		38	-	
	Main Wheel	SSW-Q1S	<b>RB</b>	\$400×70	8		555	2.	2
	Wheel pin	SCM435	RB	♦ 126×500	8		392		9
	Key Plate	SUS304	F.		16		171		0.3
	Shaft End-Plate	SUS304	딦	16× ¢170	8		23		0.4
	Side Shoe	CAC603	t	12×50×100	4		2		
	Bracket	SS400	P.	100X1	4		3	0.	
	Bracket	SS400	[-]	9× (100×150)	4		2	Ö	
	Scal base	SUS304	t	X07	1		12		0.2
		SUS304	ر <u>.</u> د	10×70×1750	2		19	-	0.2
		SUS304	Pl.	20×30×2000	1		10		0. 1
		SUS304	<u>[</u>	ral.			10		0.2
		202304		12×50×1750	2		171		0.4
	Seal clamp bar	SUS304	2	12×95×2100	1		19		0.4
	Trash rack bar	55400	÷	50×6×310	28		20		6
	TANG TACK WASHET	+	, J.	12×120×680	4		31	0	1
		SGP	o	150A×60	4		5		2
	Water filling valve	SUS304	RB	Ø 350 × 120	2		87		0.5
	Sci Imouth	SUS304	4	350-0	2		62		0.3
	- Innge	SS400	t)	$22 \times (\phi 280 - \phi 166)$	4		28	0.3	3

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פערג ווו	BULK HEAD GATE (Gate Leaf)								(2/3)
Q Z	man in a common to the second of the second	Marchial	The Super Residence of the	Dimensions(mm)		Weig	Weight (kg)	Painting	Arca (m²)
	Laborated Specification and Deposits of	- 1		Shape X Length	אַחשוורז ראַ	Unit.		Painting	Acid
								1. S. 0. S.	
	Rod cover	SGP	Pipe		2		10	ó	3(
	Flange	SS400	PL	$12 \times (4250 - 476.3)$	2		8	0.	72
	Blind plate	SS400	PL	12× ¢ 250	2		6	o	21
	Rod	SS400	RB	4 40 × 1750	2		34	0	\ 
	Head plate	SS400	ţ	60×100×200	2		191	o	2
-	Rod pin	S45C	RB	φ 50 × 150	2		ເດ		
	Bearing	00FSS	EN3	02×(95¢-08¢)	4		9	Ö	
	Bearing	001/SS	ld	12× ( 4 200 - 4 60)	4	-	1	Ö	2
	Rib	SS400	ď	1	8			0	jõ
	Lifting beam	001/SS	۰	200 X 80 X 7, 5 X 2000	2		186	8	0
	Pin	S45C	25	Ф50×150	2		4	o	0
	Bracket	001/SS	7d	12 × 200 × 600	Ϋ		45		0
	Bracket	SS400	2	12×300×600	Ţ		189		
	Bracket base	SS400	E,	12 X 300 X 400	2		26	o	9
	Reinforcement	SS400	ī.	9×250×500	T		35		10
	Rib	SS400	PL	9×75×178	8		8	Ö	2
	Lubricating Unit	SUS304	83 83	Ø 10 X (t=1, 0) X 5000	ic		7		17
	Lubricating Unit	SS400	ΡΓ	12	1 set		20	0	V
	Lubricating Unit	SS400	Id	61	Sct		151	Ö	~
	Lubricating Unit	SS400	긥	3.2	1 set		3	ं	4
				Sub Total			3334	45.	6 3.0
			-						
								-	
								-	
		· · · · · · · · · · · · · · · · · · ·		the second secon					

Team	110m   Material   Dinensions (mm)   Quantity   Init   Weight (New York)   Painting Area   Dinensions (mm)   Dinensions	1170	DOLLA HEAD WATE (GALC Leal)							(3/3)
Elbow   Sap	Elbow   Sign   Shape	No.	Item				Weigh		Painting A	rea(m²)
150, 807   150, 807	1.00	3"	A Committee of the Comm		×	Adanci ty	Unit	M	Painting	Acid
1904   101   11   1500   10   10   10   10	1904   101   1058		15 1 2 cm	900	000			ii	Ċ.	
Section   Color   Co	State		40.5	300	) F(S)	2	_	10		
12   12   12   13   15   15   15   15   15   15   15	1994		DOST	(0) Liess	$\phi 151 - \phi 126$	တ		32		
Rubber	Rubbor   Oil fast   E500000   1   22   22   22   22   22   22		DUST	0111ess	ф 56— ф 41) X	Þ		3		
Subsect	Mindoor   Synthetic   6/40-P tyne x 5600   1   22   1   1   1   2   1   1   2   1   1			Oilless	$\phi$ 68 $ \phi$ 42) $\times$	2		e		
String	Market			Synthetic	Vpc X	-		22		
Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Silsgod   Mickey   Silsgod   Mickey   Silsgod   Mickey   Silsgod   Mickey   Silsgod   Mickey   Mickey   Silsgod   Mickey   M	Signature   Sign		Kubber	Synthetic			-	IS.		
1	Subsequence   Subsequence			SUS304		Set		Į.		T
Silisand   Wick 80	Sisson   Misk   Sisson   Misk   Sisson   Sisson   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Misk   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sub Total   Sisson   Sisson   Sub Total   Sisson   Sisson   Sub Total   Sisson   Sisson   Sisson   Sub Total   Sisson   Sisson   Sisson   Sub Total   Sisson		Scal Washer	thetic	For M16	80	0.00	-	+	T
Sils304   N20 X 60   N, SW   32   0.296   9   1   1   1   1   1   1   1   1   1	1t   SilS304   N20 X 60   N, SW   32   0.296   9     1t   SilS304   M20 X 80   N, SW   32   0.296   9     1t   SilS304   M20 X 60   N, W   32   0.345   11     2st   SilS304   M12 X 60   N, W   100   0.055   9     2st   Rolt   SilS304   M12 X 60   N   M   100   0.055   9     2st   Rolt   SilS304   M12 X 60   N   M   100   0.055   9     2st   Rolt   SilS304   M12 X 60   N   M   100   0.055   9     2st   Rolt   SilS304   M12 X 60   N   M   100   0.055   9     2st   Rolt   SilS304   M12 X 60   N   N   N   N   N   N   N   N   N		Rolt	SUS304	2	000	2000			
STUSSOA   M20 × SW   SZ   SZ   SZ   SZ   SZ   SZ   SZ	Sils304   W20 x 80   N. SW   32   0.345   11   11   11   11   11   11   11		301 t			000	0.200	2 0		
Substitute	SIIS304   M.6×60   N.W.   40   0.771   7   1   1   1   1   1   1   1   1		Rolt	_		200	0.230	7		
sash Bolt     Slisson     Mi2x60     N     100     0.085     9       ash Bolt     Slisson     Mi2x60     N     16     0.085     9       Sub Total     16     0.085     1       Gate Leaf Total     3473     0.0     45.6     3.	11 (a)     SUSSIGN     MI2X60     N     100     0.055     9       ash Bolt     SUSSIGN     MI2X50     N     16     0.055     9       Sub Total     16     0.052     11     139       Gatc Leaf Total     3/73     0.0     45.6     3.		Bolt	<u> </u>	. 2	700	0.045	- 0		
ash Bolt     Sisson     MIZXED     N     16     0.082     1       Sub Total     Sub Total     139       Gate Leaf Total     3473     0.0     45.6     3.	ash Bolt     Sisson     MIZXED     N     16     0.082     1       Sub Total     139     139       Gate Leaf Total     3473     0.0     45.6     3.		Rolt '		2	200	7.00	7		
Sub Total 159 139	Sub Total 159 139 5.0 (45.6 3.		Flash Bolt	7025,15		001	0.035	S		
Sub Total 139 0.0 45.6 3.	Sub Total     139       Gate Leaf Total     3473       0.0     45.6       3.					Ċ	0.082			
Gate Leaf Total 3/73 0.0 (45.6 3.	Gate Leaf Total 3473 0.0 45.6 3.							00.		
Gate Leaf Total 3473 0.0 45.6 3.	Gate Leaf Total     3473     0.0     45.6     3.							SC1		
					7 Kg.		-	0770	Į.	
							-	0.1.0	Ċ,	
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		1								
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	The second secon	2						†-		
1、 1、 1、 1、 1、 1、 1、 1、 1、 1、 1、 1、 1、 1	さいが さいたい ひゅうちょう まいしい しょきのう こうしゅう かいかい こうしゅう アイフィン・アイン かいかい しんしん かいかい かいかい かいかい かいかい かいかい かいかい									

BULK H	BULK HEAD GATE (Gate guide)								(1/3)
No	10 + 1	Votoriol	, 31	Dimensions (mm)		Weigh	Weight (kg)	Painting	Painting Area(m²)
The second second	The second secon	וויס הפדדטד		Shape X Length	ACCOUNT LY	Unit	M	Painting	Acid
	Sill beam				3			1.8 0.	-
	Rail	SS400	)	300×90×9×2300	2		1751	4	
		SS400	H	$200 \times 200 \times 8/12 \times 1000$	2		100	2.4	
	Seal Plate	SUS304	PL	12×150×2600	<b>{</b>		37	-	0.4
	Cover Plate	SS400	PL	12×450×2600	1		110	1.2	1.2
	Cover Plate	SS400	ld	12×300×350	2		20	2	0.2
	Rib	SS400	PI	9×300×300	S		32	L	
	Installation beam	SS400	7	75×75×9×600	rc.		30	6.0	
	Installation beam	SS400	7	75×75×9×300	7		121		
	Installation beam	SS400	RB	16×250 M16	23		6	0.3	
		SD295A	D :	16×400	23		7.		
	Lintel beam								
	Rail	SS400		200×90×8×2300	1		707	1.7	
	Scal Plate	SUS304	ţ	13×150×2000	-		3.1		0.3
	Cover Plate	SS400	ŀΓ	$12 \times (1021 \times 2024)$			178	6.1	6.1
	Sub beam	SS400	Γ	$100 \times 100 \times 12 \times 2300$	1		32	0 7 0	0.2
	Rib	SS/100	PI.	9×90×120	20		15	0.4	
	Installation beam	SD295A	Ω	16×300	10		ī	0.2	
	Installation beam	SD295A	۵	16×400	10		9	0.2	
	Ä								
		SS400	Pľ.	22×150×1950	V		202	2.3	_
	Rail Web	SS/100	ΡĽ	19×256×1950	2		149	2.0	
	Wheel track	SUS304N2	4.1	13×200×1950	2		80		8.0
	Cover Plate	SS400	PL.	$12 \times (1078 \times 1950)$	2		292	3.1	3.11
	Rib	SS400	PL	9×300×400	01		85	2.4	
	Installation beam	SS400	KI3	16×250 M16	10		4	0. 1	
	Anchor bar	SD295A	Q.	16×400	01		9	0.2	
	Joint plate	SS400	Pl	12×100×256	8		191	0.3	
	Side guide (Front rail)						-		
	Front rail	SS400	บ	$150 \times 150 \times 6.5/9 \times 1950$	3		72	2.3	
	Front rail	SUS304	-1	75×75×9×1950	2		39	1.2	
	Whoel track	SUS304	ЪГ	10×120×1950	3		37		0.5
	Bearing Plate	SS400	ď		2		15		0.2
	Rib	SS400	Ы	9×100×200	10		7.	0,4	
200									

( m) R:	Acid																	φ 10.			T														
Painting Area(m <sup>2</sup> )	Painting	0.8.	Ļ																						7.	6.3	11.3	· ·	0 7				0	C.	
Pair	Pair	ı.	0.4	0.3	0.7	0 2		129.1		2.8		0	5.0		78.1	30			10.6		15.8		15.9												
Weight (kg)	**			8	12	E		4022	1.042	133	789	313	767		2396	1297	1239	516	373	106	526	313	191		187	218	392	106	25	18	49	701	24	16	23
Weis	Unit											1																							
October 19 August 19 Augus	wusnitziy		01	20	20	8		2	2	80	264	792	792		2	2	2	2	264	08	264	792	792		2	2	-14	4	2	9	56	2	2	2	8
Dimensions (mm)	Shape X Length				16×400	12×100×141		194×150×6/9×65714	10×100×	$12 \times 100 \times$	75×75×9×300	16×250 M16	16×400		150×150×6.5/9×65108	75×75×9×65108	10×120×65108			11	75×75×9×200	16×250 M16	16×400		150×150×7/10×3000	150 × 150 × 7/10 × 3500	150×150×7/10×900	7	1150×150×7/10×400	150×150×7/10×433	12×71, 5×130	75×75×9×3500	75×75×9×1200	75×75×9×800	9×200×200
				RB	Q	. P1,		H	PL	PL	T	RB	٥		S	-1	PI,	Ы	Pl.	PI,	1	RB	0		H	11	Н	æ	H	11	PL	7	7	-1	2
Material			SS400	SS400	SD295A	SS400		SS400	SUS304	SS400	SS400	SS400	SD295A		SS400	SS400	SS400	SS400	SUS304	SS400	SS400	SS400	SD295A		SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400
No.			Installation beam	Installation beam	Anchor bar	Joint plate	Side guide (Sub rail)	Main Rail	Wheel track	Joint plate	Installation beam	Installation beam	Anchor bar	Side guide(Sub front rail)	Rail	Rail	Wheel track	Bearing Plate	Rib	Joint plate	Installation beam	Installation beam	Anchor bar	Inspection stand	Rail	(Rail	Post	Всат	Beam	Всяш	Rib	Side roller rail	Sub beam	Sub beam	Gusset

(3/3)	Arca(m²)	Acid		0.6	0.7	0.4														 39. 1													39. 1
	Painting Ar	Cing	0. S.				ا. 3		T		1.0	0.4	-							44.3	-											 	 14.3
	Pain	Painting	1. S.				1.3	0.6	0.9						0.5	72.7		2.3	3.2	168.5												 	168.5
-	Weight (kg)	М.		48	56	28	157	21	32	37	49	19	1001		S	13861	28	92	108	19314				787	1111		9		37	26	3	208	19522
	Weig	"Unit																						0.158			0.174						
		אַרטוויר ז ראַ		2	2	61	20	20	40	80	40	20	l set		-1	=	4	48	36					176	3274		32		36	72	72		
	Dimensions (mm)	Shape X Length			PL [10×100×3500	PL 10×50×3500		١. ا	FB 65×9×230		PL  12×100×130	PL 12×100×100			Pipe  150/1001	X470(	Pipe  150A 90' E(L)	90×6×269	L 75×75×9×300	Sub Total				M16×60 N	M16		M16×70 N		for 150A, A type, M16	$\sim$	(AP16	Sub Total	Gate guide Total
	Matorial			SUS304	SUS304	SUS304	. SS400	SS400	SS400	SD295A	SS400	SS400	SS400		SGP	SGP	SGP	SS400	SS400			A to the contract of the contr		SUS304	SUS304		SS400		SS400	SS400	glass		
BULK HEAD GATE (Gate guide)	<b>LC</b>		S. C. C. C. C. C. C. C. C. C. C. C. C. C.	Wheel track	Boaring Plate	Bearing Plate	Anchor Pad	Stiffener	Stiffencr	Anchor	Liner plate	Liner place	Gate resting device	Air pipe	Air pipe	Air pape	we were Elbow recent constructions and		Installation beam		the second of th	The second secon	Side guide (Sub front rail)	Bolt	come constitution of the second secon	Gate resting device	Solt, Nut	Air Pipe	U bolt	Anchor bolt	Anchor setter		

Ş	3		1	Dimensions (mm)		Weight (kg)	(kg)	Dainting Area (m.)	(1/5)
	#130 ·	Material			Quantity				
	Detin					Unit	W	Painting	Acid
	Sholl	200770	-	17. C. 1/1000 X 1800				1. S. 0. S.	
	C. do plato	SMTOOL	اد	1800 × 301	1		1705	_	
	City Little	SM400A	₹	( ♦ I300 <b>–</b> ♦	1		181	. 1	
	Side plate	SM400A	2	28× ( \$ 1200 - \$ 100)	2		1767	1	
	Share End-Mate	SM100A	2				100		
	901	SM400A	Ľ.	28×(150×400)	œ		50.0	) i	
	Pastening plate	SS400	دي	10×150×150	e cc			0.5	
	Boss	S25C	RB EB	( 4 100 - 6 220) X 250	5		1		
	Rope stopper	S25C	ر.	< 125	- 0		7/7	0.4	
	Bush	CAC603	83	( \$220 - 6 190) × 250	1		5	c C	
	Drum gear			(M=12 7=118 P=120)	1		777		
	Rim	SCM35	SES.	100 P					
:	Web	O L VIII S	1	100 0 100	7		148	0.8	
	Rib	CC IN A 10	, د	25 ( \$ 1344 - \$ 400)			293	2.7	
	Factoning n ato	30.00		25 × 85 × 472	9		37	6 0	
	Passenting prace	SC#410	اد	16×100×180	9		12.		
	Dark Place	SCW410	3	( \$400 - \$220) × 250	-		179		T
	nsng	CAC603	ZB	(φ220-φ190)×250	-		00		T
	rinion gear	SCM440	:	(M=12, Z=21, B=130)			777		
	Drum shaft	S45C-N	RB	Ø 190 × 2400	-				
	Key Plate	SS400	<u>.</u>	16×60×950			534	1.4	
	Pinion pin	S45C-N	5	4-10 × 605	*		8		
	Bearing (2 pieces)	SC450	25	A 100 × 180	7		51		
	Bush	CACEON	200	3	77		120	0.2	
		20000	GV.	1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	2		111	ı	
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	Material		Umensions (mm)	÷	Weight (kg)	t (kg)	Painting A	Arca (m²)
			Shape X Length	Augurt ty	Unit	ħ	Painting	Acid
en de de la comprese del comprese de la comprese del comprese de la comprese del comprese della							1. S. 0. S.	
See Drum-Brackets	SS400	L D	$ 22 \times (750 \times 1000) $	63		207	2.4	
	SM400A	ı	20 (PL25) × 200 × 1050	2		199		
Orum-Bracket	SM400A	τ.	20 (PL25) × 200×1100	2		69		
progression Orum-Bracket community	· SS400 ··	Ρľ	12×180×750	V		51		
state brum Bracketam in the second	SS400	þj	12×100×600	2		11	0.2	
	SS400	ીત	12×180×800	V		54:		
Drum Bracket	SS400	٦d	14×400×400	2		35	9 0	
Orum-Bracket	SS400	1	$14 (P1.19) \times (400 \times 400)$	~		35.		
Drum-Bracket	SS400	ЪГ	12×96×374	16		25		
Bearing Stand	SM400A	1	20 (PL25) × 160 × 410	2		21	0.3	
Bearing Stand	SS400	Id	12×170×410	2		13	0.3	
Bearing Stand	SS400	ીત	12×65×170	8		200	0.2	
Brake Stand	SS400	دډ	10 (PL12) ×85×430	2	-	9		
Brake Stand	SS400	Ίd	12×350×450	1		15	0.3	
Srake Stand	SS400	Id.	12×98×450	61		8		
Brake Stand	SS400	ોત	12×98×400	2		12	0.2	
Brake Stand	SS400	깁	12×90×173	7		9	o.	
Motor Stand	SS400	ιJ	10×80×280	7		V	-	
Motor Stand	SS400	<b>5</b>	12×310×360	1		Ξ	0, 2	
Motor Stand	SS400	Ρ,	12×138×450	?		13	0.2	
Motor Stand	SS400	P	112×138×410	61		11		
Position indicator stand	SS400	겁	12×400×400	-		ī		
	SS400	_1	65×65×6×150	2		23		
š	SS400	٠.	65×65×6×400	2		5	0.2	
Limit switch box stand	SS400		65×65×6×200	2		7.	0.1	
Emergency opening device								
Rod	SUS304	RB	φ25×1300	-		æ		O
Thrust	SUS304	RB	φ 50 × 200	-		55		5
Guide	SUS304	٦d	30 X ( $\phi$ 80 $ \phi$ 27)	2		2		0
Guide	SUS304TPA	Pine	80A (Sch40) × 400			9		0 2
Bracket	SS400	1d	12×180×250			v	0 1	
Bracket	SS400	ીત	6×80×250	-		-		
Bracket	SS400	2	6×50×220			-		

. 5				Dimensions (mm)	,	Weig	Weight (kg)	Paint	Painting Arca(m <sup>2</sup> )	( m )
	, com	Material		Shape X Length	אמנועמה א	Unit	*	Painting	_	Acid
								1. S.	ļ	
		SS400	Pi,	12×220×240	1		5		0.1	
		SS400	PI.		1		5		0.1	
	Control Stand	SS400	H ]	200×200×8/12×680	1		34		0.8	
:	Control Stand	SS400	Ы	00E×58×6	2		4		0.1	
the second	Gear cover	SS400		2.3×2.5m	2		06		10.0	
1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m	Gear cover	SS400		50×50×6×100	91		28		0.8	
	Chain cover	SS400	PL	$2.3\times0.4\text{m}$	2		20			
	Chain cover	SS400		[50×50×6×200	4		b		0.0	
10 11 11	Oil catch	SS400	- Id	2.3×2.5m	2		06			
	Oilcatch	SS400	7	50×50×6×1600	4		28		1.3	
	Oil catch	SS400	7	50×50×6×850	Þ		15		0.7	
- 1.0	Hanger	SS400	5	22×300×380	16		315	-	3.6	
	Jeist Tame									
a managaria	Main girder	SS400	H	400 X 200 X 8/13 X 3380	2		442	-	10.8	
and and an ex-	Main girder	SS400	Н	400×200×8/13×2000	4		523		12.8	
	Sub-flame	SS400			I		82	-	2.0	
1 1 2 2 2 2 2	Sub flame	SS400	}	250×90×9/13×350	∞		26		2.4	
	Sub flame	SS400		250×90×9/13×500	1		21		0.4	
1 1	Ribs are conserved on the second of the	SS400	PL	PL12×96×374	21		117		0.9	
	Anchor-Pad	SS400	P.	16×200×200	21		09	1.0		
1	Anchor	SD295A	. O	16×150	18		11	0.4		
:	Liner or secretaring may be a commen	SS400	دډ	100×100×200	12		188	1.0	-	
1	the state of the s		***							
	and the second s			Sub Total			7178	2.1	92.2	0.5
	the second of th								_	
	a the second of							-	-	
								-	-	
									-	
e se je openije se	And the second of the second o									
									-	
		.vi								=

Івилк не	BULK HEAD GATE (Gate guide)						(4/5)
	:		Dimensions (mm)		Weight (kg)	Painting Ar	Area(m <sup>-</sup> )
, ,	To the second of	Material	Shape X Length	udantity Unit	W	Painting "	Acid
						l. S.   0. S.	
	Motor		1.5kw, 6P, 50Hz		53		
	Melical speed reducer		QBG-496 i=1/500	1	550		
Clyman by Service	Limit switch Box		MD233	1	08		
	Gate Position Indicator		(STX110-S1-D		50		
							-
			Sub Total	a company of the second of the	683		
						-	
	Brake		BMS4-1316UPS	1	1001		uss
	Chain coupling		CR-5016-J	2	7		
	Gear-coupling		KSS-280		116		
	Limit switch		Direct moving type	1	10		
	Limit switch			3	3		
	Chain sprocket		1.	2	9		
	Chain-sprocket		RS40 T=18		1		
	Roller-chain		RS40 160 rink			7	
	Roller chain		RS40 100 rink	1			
	Wire Rope	JIS(6×37)	0.20 × 140m G type	1	202		
	Rope socket		for \$20	1	9	•	
	Pin		for $\phi 20$	1	33		
	Tool box			1 set	25		
	te(operation)	White acryle	t=5.0 mm		T		
		C2801P		1			
	Inbricating Oil			1 set	3301		
	Hand pomp		MP-113 3 [	2	30		
	Distributing Valve		VS32	2	8	-	
	Distributing Valve		(VS33	4	<u>x</u>		
	Distributing Valve		\VS34	2	ı		
	Y type strainer		3/8	7	4		
	Oil pack		SGP-104	<b>.</b>	12		
	Lubricating parts		High pressure screwed union 3/8	3.7	9		
			High pressure screwed tee 3/8	4			
			pressure	18	3		
			High pressure screwed clbow 3/8	വ	1		

		Dimensions (mm)		Weil	Weight (kg)	Painti	Painting Area(m <sup>2</sup>	FE
A company of the second of the	Material.	Shape X Length	Quantity	Unit	M very	Painting	-	Acid
						1. S.   O	<del> </del>	
Lubrication parts		High pressure plug 3/8	10		1	-		
		pressure nipple 3,	24		1			
		High pressure long nipple 3/8	10		2			
	SUS304	joint	24		-			
	SUS304	noinn	16		1	-	-	
	SUS304		19		1	-		
		clump	99		<b>8</b> 4			
		Tube clump \$10×2	35		I			
			12			-		
			12		1	-	_	
	4T	bolt 14	125		1			Ì
		)]t	12		1		-	l
		1/4B×500 I			ı	-		
Bolt, Nut							-	
Reamer bolt	SASC	φ29 X 160 with N. SW	9	:	7			
Bolt	SS400	4×160 with N.	9		5		-	l
Bolt	SS400	with N,	8		27		_	
Bolt	SS/100	with N,	8		5	-	-	
Bolt	SS400	M30 × 120 with N, SW	8		10			
Knock pin	S45C		7 4		1	-		ł
Bolt	SS400	M24×120 with N, SW	10		7		-	l
Knock pin	S45C		4		2		_	l
Rolt	SS400	M10×60 with N, SW	7		_		_	
<u> </u>	SS400		V				-	
Rolt	SS400	M12×45 with N, SW	7		ĩc		_	
Bolton company of the control of the	SS400		4			-		
	SS400	M10×60 with N, SW	7			-	_	l
Bolt	SS400	M12×60 with N, SW	72		1	-	-	
801t	SS400	M24 × 150 N2	24		20			
the second secon		and the second of the second o			:	-	_	
	-	Sub Total		1.0	992			
	_							١

(1/1)	Area(m <sup>-</sup> )	Acid									0.2	0.2	0.2	0.5		0.2	0.4					0.1				T			Ī			•	
	Painting Ar	Painting	SO		10.0		0.7			-			-		-	-		0.8	0.	0.3			0.9	 27.8				-		-		o 70	0:13
		P. P.		L	505	158	25	96	51	18	181	18	13	10	191	111	21	36	ເນ	25	4	52	44	1639	660	7.7	· 10		9		51	1 600	262
	Weight (kg)	Unit																									0. 187	0.012	0.142	!			
		אַנימוורזירא		-	4	2	9	9	2	9	2	2	1	1	2		1	4	v	8	8	2	4				80	80	44				
	Dimensions (mm)	Shape X Length		16×1650×2700	300×90×12/16×2600	$300 \times 90 \times 12/16 \times 1630$	9×100×595	9×291×775	35×50×1630	45×50×150	$10 \times 70 \times 1630$	10×70×1630	10×70×2300	20×30×2300	12×50×1630	12×50×2300	12×95×2300	12×200×480	$12 \times 60 \times 200$	12× (90×480)	$12 \times (0.00 - 0.50)$	φ50×175	12×90×1300	Sub Total	4.40- 13 + 1140 × 6554	1 1 1 C	1	for M16	M16		Sub Total	Gato Lost Total	
				] bʃ			PL	l PL			t	t		1	PL	l hr	l PL	Pl.	PL	Pl.	Pl.	RB	PL					rubbe					
	. Votoriol	3		SS400	SS400	SS400	SS400	SS400	CAC603	CAC603	SUS304	SUS304	SUS304	SUS304	SUS304	SUS304	SUS304	SS400	SS400	SS400	SS400	SUS304	SS400		Sverberio	Synthetic	SUS304	SUS304+Synthotic	SUS304				
EMERGENCY GATE (Gate Leaf)	WO + 1	and the majorate of the following the property of the contract	Gate Leaf	Skin Plate	Main girder	Side girder	Side girder	Side girder	Bearing Plate	Guide shoe	Slide plate scat	Seal base	Seal base	Rubber stopper	Seal clamp bar	Seal clamp bar	Seal clamp bar	llanger	Bracket	Bracket	Bracket	Pin	Rein forcement plate		Seal Rubber	Rubber		Washer					

	_							
LCG	Material		Dimensions (mm)		Weig	Weight (kg)	Painting A	Arcs (m²)
and the second s		:	Shape X Longth	wuantity	Unit	*	Painting	Acid
							I.S.   0.S.	
	SS400	Ρ.	9×160×2650	2		09		
Всат Web	SS400	P.	9×182×2650	22		89	6 1	
Guide Flange	SS400	PI,	9×160×500	8		45		
Guide girder web	SS400	PI,	9×152×500	8		43	1.2	
Rib	SS400	Pl.	9×182×160	83		91	0	
Rib	SS400	PI,	9×152×160	_		7		
Corner Rib	SS400	Ρľ		7		10		
Corner Rib	SS/100	PI,	9×160×400	7		181		
Guide Roller	SUS304	RB	\$ 100 X 30	V		7		c
Pin	SUS304	RB	φ 28 × 87	7		2		;
Kcy Plate	SUS304	<b>ر</b> پ	6×26×76	7		1		
Bracket	SS400	PL	14×110×115	00			0 0	
Bracket	SS400	PI,	14×100×210	4		6	.,	
Liner	SS400	ţ	6×100×210	7		4		
Seat plate	SS400	PL	16×110×220	4		121		
Hook	SS400	ţ	50×(140×900)	2		85	70	
Pin	SUS304	RB	φ 45 × 160	2		4		
Key Plate	\$\$400	ų	9X30X100	2				
Hand bar	SUS304	<u>,</u>	19	2		-		1
Rein forcement	SS400	ţ	$25 \times (6100 - 645)$	4		· C	0 0	
Weight	SS400			2		20		
Pin	SUS304	RB	¢ 22 × 150	2		1		
Hanger	SS400	P.	12×150×150	2		7	0.1	
Hanger	SS/100	2	9×100×160	4		ıc	0.1	
Hanger	SS/100	<u>-</u>	9×180×210	2		5	0.1	
Stopper	SUS304	ţ	50×100×100	2		∞		0
Stopper	SS400	Pl.	9×180×210	2		5	0.1	
			Sub Total	-		428	6	0.2
								.1
[50] t	SUS304		M16×50 with N, SW	16		2		
Nut	SUS304		M12, M10			2		
			Sub Total			4		
			LOWER TOOL WALLS					

EMERGE	EMERGENCY GATE (Gate guide)								1(6/1)
2	# <b>*</b> * * * * * * * * * * * * * * * * * *	Matoria		Dimensions (mm)			Weight (kg)	Painting A	Arca (m²)
•	The state of the s	שום חבד דמד		Shape X Length	washeley	Unit	A	Painting	Acid
	Sill beam							1. S.   O. S.	
1	Rail	SS400	J	150×75×6. 5×2700			90	9	
	Seal Plate	SUS304	PI,	10×250×2700		1	54		0.7
	Rib.	SS400	PL	9× (120×120)		9	7	0.1	
	Installation beam	SS400	7	75×75×9×200		9	12	0.4	
	Installation beam	SS400	<u>(33</u>	16×300 M16	1	181	6	0.3	
	Anchor bar	SD295A	Q	16×400	1	81	11	0.4	
	Lintel_guide								
	Rail	SS400		150 X 75 X 6, 5 X 2300		1	43	1.4	
	Seal Plate	SUS304	ب	10×250×2300	-	1	27		0.3
	Cover Plate	SS400	Pl	9×450×2300		1	73	2.1	
4 4 4	Rib	SS400	ΡΓ	9×100×150			3	0.2	
	Rib	SS400	'n	9×50×100		5	2	0. 1	
	Installation beam	SS400	_1	75×75×9×200		5	10		
	Installation boam	SS400	SB.	16×200 M16	1	10	3	0.1	
	Anchor bar	SD295A	൧	16×400	Ξ.	. 101	9	0.2	
	Side guide (Main rail)								
1	Rail	SS400	J	200×90×8×1750		2	106	2.7	
	Bearing Plate	SUS304	ţ	$10(30) \times 200 \times 1750$		2	13		0.5
	Cover Plate	SS400	ЪГ	9×450×1750		2	111	3.2	
	Riba	SS400	PL	9×75×170		4.	*	0.1	
	Rib	SS400	PL.	9×75×150		Ţ	3	0.1	
	Installation beam	SS400	_1	6	~	8	20	6.0	
	Installation beam	SS400	RB	16×300 M16	1(	3	8	0.2	
	Anchor bar	SD295A	· · · · · · · · · · · ·	007×31	1(	. 9	10	0.3	
	Side guide (Sub rail)								
	Rail	SS400		$125 \times 125 \times 6$ , $5/9 \times 63284$		2	2, 987	94.9	
		SUS304	t.	$10(30) \times 100 \times 63284$		2	1304		16.4
	Cover Plate	SS400	PL	9×450×63284		2	4,024	113.9	
	Rib	SS400	PL	1/8×05×6	128	8	38		
	Rib.	SS400	PL	9×84×250	128	8	190	5.4	
	Joint Plate	SS400	Jd.	9×100×300	40		85	2.4	
	Bearing Plate	SS400	-1	75×75×9×250	128	3	319	9.6	0.2
	Rib	SS400	RB	16×300 M16	256	100	121	3.9	

			Dimensions (mm)		Wei	Weight (kg)	Painti	Painting Area(m")	E
A Company of the comp	marcriat		Shape X Length	vuantıty 	Unit	*	Painting		Acid
		ı					1. S.   (	-	
Anchor bar	SD295A	Ω	16×400	256		160	5.1		
Inspection stand									
Rail	SS400	11	125 × 125 × 6, 5/9 × 3500	2		1651		5.3	
Post	007SS	Η	150×150×7/10×850	9		159	-		
Post	SS400	=	150 × 150 × 7/10 × 600	9		112		3.2	
Joint	SS400	=	125×125×6, 5/9×1300	7		123	-	30.6	
Joint	SS400	Ξ	125×125×6, 5/9×900	2		42	-	7	
Joint	SS400	×	125 × 125 × 6, 5/9 × 975	4		92		2 0	
Sub beam	SS400	,_;	75×75×9×1100	9		99	-		
Gusset Plate	001/SS	Ε,	9 X 200 X 200	12		34	-	0 -	
Bearing Plate	SUS304	נו	10 (30) × 100 × 3500	2		72	-		0
Stopper	SS400	P.	12 X 100 X 100	2		2		0.0	
Stopper	SS400	<u>P</u>	12×100×200	4		80			
Rib	SS400	<u>[]</u>	9×59.3×107	24				23	
Rib	SS400	Е.	9×72×130	24		16	-		
Anchor pad	00FSS	P.	16×250×250	12		76	0.7		
Stiffener	SS400	FB	65×9×230	12		13	ĺ		
Stiffener	SS400	FB	65×9×230	24	:	19	o	-	
Anchor	SD295A	C	16×300	48		22	Ö	_	
Liner	SS400	PI,	12×100×130	24		29		0.6	
Liner	SS400	ીત	12×100×100	12		11			
			Sub Total		:	10902	258. 4	26, 7	18.
						:			
30  t	SS400		M16×70	32	0.174	9			
			Sub Total			9			
				1.				-	
	1.0	1	Gate guide Total			10908	258.4	26. 7	33
								_	
		-							
									1
				-		_	-	-	

EMERGE	EMERGENCY GATE(Hoist)									(1/5)
2	TTOM	Matorial		Dimensions (mm)		Weig	Weight (kg)	Painting		Area (m <sup>-</sup> )
	The second secon	-		Shape X Length	לממטנו בא	Unit	Λ	Painting	-	Acid
	Drum	The second of the second of		009 x				0   8	_	
	Shell	SM400C	ţ		2		737	╁		Ī
	Side plate	SM400A	PL	$(28 \times (\phi 1100 - \phi 950)$	2		224	 	2.0	
	Shaft End-Plate	SM400A	PL	$28 \times (6.1000 - 6.330)$	2		308		2.8	
	Rib	SM400A	jid.	28×(100×300)	12	7 T T T T T T T T T T T T T T T T T T T	55			
	Fastening plate	SS400	ţ	10×150×150	121	:	21			
	Boss	S25C	RB	(+330-+220)×250	2	,	187			Γ
	Rope stopper	S25C	÷	85	2		67			Γ
	Bush	CACGU3	RB	$(4220 - 4190) \times 250$	2		43	-	-	
	Dram gear			ŏ					-	Ī
	Rim	SCM435	RB	$(\phi 1600 - \phi 1492) \times 160$	2 2		570	-	2.4	
	Web	SCW410		$28 \times (61472 - 6330)$	2		772	-	6.7	T
	Rib	SCW410		1	121		134	-	2.5	Ī
	Fastening plate	SCW410		16×180×200	121		54	-	0 2	
	Boss	SC#410	1:	( \$330 - \$220) × 250	2		187	-	0 7	
	Bush	CACGOS	RB	(4220-4190) × 250	2		43			T
	Pinion gear	SCM440		(M=16, Z=21, B=130)	2		207		0.3	Ī
	Drum shaft	S45C-N	RB	φ190×1100	2		490		7.3	<u> </u>
	Key Plate	SS400	P.	16×60×250	8		151		0.2	
	Pinion pin	S45C-N	RB	φ80×500	2		39			
	Bearing(2 pieces)	SC450	KB.	φ 70 × 100	4		117	-	0.4	
	Bush	CAC603	KB.	( \$ 80 - \$ 70) × 100	4		7			
			,						-	
								-	<u> </u> _	
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		4								

MERGEN	EMERGENCY GATE (Hoist)									(2/2)
,0,	[Len	24 24 24 24		Dimensions (mm)			Weight (kg)	Paint	Painting Arca(m²	(m <sup>2</sup> )
				Shape X Length	Vusanci cy	Unit	*****	Painting	+	Acid
								1.S.	<u> </u>	
	Drum bracket	SS400	Pl.	$16 \times (750 \times 1000)$	7		318	-		Γ
	Drum bracket	SS400	t)	16 (PL19) × 200 × 1050	4		106		1.7	
	Drum bracket	SS/100	Ų	16 (PL19) ×200×1100	7		111		1 8	T
	Drum bracket	SS400	Ы	12×180×750	8		102	<b>-</b>		Γ
	Drum bracket	SS400		12×100×600	4		23			
	Drum bracket	SS/100	]	12×180×800	90		109	-	2.3	Ţ-
	Drum bracket	SS400	7.	14×400×400	4		70	r		Ī
	Drum bracket	SS400	נג	14 (Pl.19) × (400×400)	7		53			
	Drum bracket	SS400	PI.	12×96×374	8		27		0.6	
	Bearing Stand	SS400	ب	16(Pl.19) ×150×410	2		30			Ī
	Bearing Stand	SS400	7.4	12×104×400	2		9	<u> </u>	0 3	
	Bearing Stand	SS400	14	12×120×104	OC		6	-		T
	Brake Stand	SS400	ţ	10 (PL12) X85X430	2		9	-		T
	Brake Stand	SS400	PL	12×350×450			i.			Ī
	Brake Stand	SS400	PI,	ΙX	2		0:		200	Ī
	Brake Stand	SS400	Pl,	12×98×400	2		2			1
	Brake Stand	SS400	ીત	12×90×173	7		9	<del> </del>		Γ
	Motor Stand	SS400	T.	10×80×170	2		2			T
	Motor Stand	SS400	- P.F	12 X 200 X 200	1		7	-	c.	T
	Motor Stand	SS400	- PL	12×108×450	2		6		0	T
	Motor Stand	SS400	- PL	12×108×410	2		80		0.2	T
	Position indicate stand	SS400	PL	12×400×400	-		22			T
	Position indicate stand	SS400	L	65×65×6×150	2		2			
	Limit indicate stand	SS400		65×65×6×400	2		20	-		Ī
	Limit indicate stand	SS400	-1	65×65×6×200	2		2		.1 .	Γ
	Emergency opening device			and the second of the second o						
	Rod	SUS304	RB	Ф 25 × 1300			5		-	c
	Thrust	SUS304	RB	Ф 50 X 200			, "	<del> </del>		- - - - -
	Guido	SUS304	P.	$30 \times (680 - 527)$	6		, ,	$\dagger$	-	> 0
	Guide	SUS304TPA	Г	Sch40) X4		1 1 1 1 1 1	1 (0		-	0
	Bracket	SS400	PI,	12×180×250	· · · · · · · · · · · · · · · · · · ·		y.		7	*
	Bracket	SS400	þľ.	6×80×250			  -	1	<del> </del>	T-
	Bracket	SS/100	Pl,	6×50×220				<del> </del>	<del> </del>	
The second secon	The second secon									T
			1							-

<b>E</b>							
Operating stand	Material		Shape X Length	Unantity Unit	*	Painting	Acid
Operating stand Operating stand						i.s. 0.s.	
Operating stand	SS400	7.	12×220×240	1	S	Ö	
	SS400	2	12×220×240	1	5		
Operating stand	SS400	Ī	200×200×8/12×680	1	34		8
Operation stand	SS400	٦.	9×85×300	2	1	ó	100
	SS400	1	2.3×2.5m	2	106		0
Goar cover	SS400	l	50 X 50 X 6 X 400	16	28	0.	8
Chair cover	88400	ā	2.3×0.4m	2	20	1.	9
Chain-cover	SS400	l	50×50×6×200	٠. ٨	4	Ö	-
Oil catch	SS400	Ι,	2.3×2.5m	2	106	10.	0
Oil catch	SS400	7	50×50×6×1600	4	28		3
	SS400	,.,	50×50×6×850	4	15	0.	7
ĮĢ	SS/100	12.	22×300×380	16	315	က်	9
Flame							
Main girder	SS400	Н	$400 \times 200 \times 8/13 \times 3600$	2	471	11.	5
Main girder	SS400		400×200×8/13×2100	4	549	13.	4
Sub beam	SS400	_	250×90×9/13×2100	2	145	6	
Sub beam	SS400		250×90×9/13×200	22	35	Ö	
Sub beam	SS400		$250 \times 90 \times 9/13 \times 1000$	2	69		
Rib	SS400		PL12×96×374	12	41	Ö	
Rib	SS400	ЪΓ	PL9×80×224	8	01	o.	3
Anchor	SS400	ЪГ	16×200×200	12.	09	1.0	
Anchor	SD295A	₽	16×150	48	11	0.4	-
Liner	SS400	Ļ	100×100×200	12	188	1.0	-
the section of the se							$\frac{1}{1}$
The second secon			Sub Total		7512	2.4 105.	٠ <u>.</u>
The second secon							
· · · · · · · · · · · · · · · · · · ·							
· · · · · · · · · · · · · · · · · · ·						-	_
The second secon							_
and the second of the second o							
and the second of the second o							1
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					1		

그 살다 다양의의 사고 타니 의미 나면의 마다 이 이렇게	Motor Motor Limit Switch Box Gate Position indicator Gate Costion indicator Chain coupling Gear coupling Limit switch Limit switch Chain sprocket Chain sprocket Chain sprocket Roller chain Roller chain	Material	Dimensions (mm)  Shape X Longth  0.75kw, 6P, 50Hz  QBG-440 i=1/500  MD233 STX110-S1-D  Sub Total	Quantity 1	Weig	Weight (kg)	Painting Arca(m <sup>2</sup> ) Painting Acio	rea(m²) Acid
Motor Helic Limit Gate Gate Chain Cha Chain Chain Chain Chain Cha Cha Cha Cha Cha Cha Cha Cha Ch	d reducer Box n indicator ng g		Shape X 1.cngth  0.75kw, 6P, 50Hz  QBG-440 i=1/500  MD233  STX110-S1-D  Sub Total	wuanticy 1	Unit	М	Painting	Acid
Motor Helic Limit Gate Chain Gear Limit Chain Role Role Role	aced reducer teh Box tion indicator ling ling teh teh seket seket seket		%, 6P, 10 i= 3-S1-D					
Motor Helic Limit Gate Chain Gear Limit Chain Chain Rellc Role Role	seed reducer teh Box tion indicator ling ling tch tch seket seket seket		8, 6P, 5 10 i=1 0-S1-D Sub			_	20 21	-
Helic Limit Gate Chain Gear Limit Chain Chain Relle Relle Relle	aced reducer teh Box tion indicator ling ling teh teh teh teh teh teh teh teh teh teh		1= i	-	•	39	_	
Limit Gate Chain Gear Limit Limit Chain Chain Rolle Rolle Rolle	tch Box tion indicator ling ling tch tch tch scket scket scket sin		O-S1-D Sub	-		380		
Gate Brake Chain Gear Limit Limit Chain Chain Rolle Rolle Rolle Rolle	tion indicator  ling ling ling lich tch cch scket scket scket sin		ي ا	I		30		
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-		20		
Brake Chain coup Gear coup Limit swit Limit swit Chain spro Chain spro Roller cha Roller cha Roller cha Roller cha Roller cha	S S D							I
Brake Chain coup Gear coup Limit swit Limit swit Chain spro Chain spro Roller cha Roller cha Roller cha Roller cha	ling Ling sch tch cket scket scket					199		
Brake Chain coup Gear coup Limit swit Limit swit Chain spro Chain spro Roller cha Roller cha Wire Rope Rope sket	ling Ling sch scket scket scket							
Chain coup Gear coup Limit swit Limit swit Chain spro Chain spro Roller cha Roller cha Roller cha Roller cha Roller cha	ling Ling sch sch scket scket		BMS4-1316UPS	-		1001		
Gear coupl Limit swit Limit swit Chain spro Chain spro Roller cha Roller cha Roller cha Wire Rope	Ling sch scket scket sin		CR-5016-J	2		2		
Limit swit Limit swit Chain spro Chain spro Roller cha Roller cha Roller cha Wire Rope	.ch .ch zeket zeket in		HS-SSA-90   =400	2		73		
Limit swit Chain spro Chain spro Roller cha Roller cha Roller cha Wire Robe	ich zeket seket in sin		Direct moving type		1			
Chain spro Chain spro Roller cha Roller cha Wire Rope	oeket Seket Sin Sin		Roller hand type			2 6		T
Chain spro Rollor cha Rollor cha Wire Rope Rope sket	veket lin lin		,	1	1			T
Roller cha Roller cha Wire Rope Rope sket	iin iin		1	100	+	0 -		
Roller cha Wire Rope Rope sket	ıi.n		=	<b>V</b>			+	
Wire Rope Rope sket			201		†	1.		
Rope sket		11S(6×37)	X	-		1010		
			1	70		907		
Pin				7		),		
Tool box			3	7		3		
Name of att	Name plate (Operation)		4	A		25		
Name of the control o	120 C C C C C C C C C C C C C C C C C C C	G0000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Tahricating	0:1	170027				1		
Read Dump	17. 9		MD_119	ii.		330		
Distributing Valva	ng Valvo		2	7		30		
Distributing	ne Valve		V332 V893	2		8		
Dietributing Volum	10 Vol. 10		2007	7,		8		
V Teno other	iik valve		VS34	2		S		
O:1 ===1	aince		3/8	4		4		
VII DACK			SGP-104	1		12		
Luoricating parts	g parts		High pressur screwed union 3/8	34		9		
	`		High pressur screwed tee 3/8	4		-		
			High pressur screwed elbow 3/8	81		33		
			High pressur screwed elbow 3/8	ic.	- - - - - - -			

MERGEN	EMERGENCY-GATE (Hoist)	The state of the s	And the second s				(2/2)
- X-		7	Dimensions (mm)		Weight (kg)	Painting Area(m <sup>2</sup> )	લ (m²)
No.		materiai	Shape X Length	duant) ty	Unit	Painting	Acid
	the second of th		· · · · · · · · · · · · · · · · · · ·			I.S. 0.S.	
Topic of the street, bearing to	Lubricatring parts	tion to the property and the second of the second of	High pressure plug 3/8	10	-		
and the second second	expressed a superior of production of the superior of the supe	e de la companya de l	]e	24	1		-
and the months	and the complete section of the sect	and the first of the control of the	High pressure nipple 3/8	10	2		-
a consequence of motors	which the manufacture of the second control of the second	SUS304	Pipe=joint"	24	1		
of drawning means	the second secon	SUS304	Pipe union \$10	16	-		
and a reference	entimental and the second of t	SUS304		19	1		
A company of the second of	The second secon			99	1		
And the second	the forest of the second of the second of the second of the second of the second of the second of the second of			35	1		
To the second	and the second of the second o			12	1		
	- The second sec	the same of the sa		12			
The state of the	and the second s	) Lb	+ screw bolt M6×10	125	1		
	The second secon		+ screw bolt M8×30	12	-		
a subject to the second	The second secon		<b>1</b> 00		~		
apair ough	Bolt, Nut						
Andrews State of the	Reamer bolt	2450	\$25 × 120 with N, SWft	121	7		
en en en en en en en en	Bolt	001/SS	with N,	71	5	4	
	[Bo] t	SS400	O with	16	4		
The second of	Bolt .	SS400	M20×35 with N, SW47	91	3		
Say Life Court		SS400	M30×120 with N, SW付	16	19		
1	Knock pin	S45C	φ20×90 with N, SW47	8	2		
•	Bolt	SS400	with N,	9	3		
. A by Contract	Knock pin	S45C	) with N,	4	2		
N 4 1 114	Bolt	SS400	M10×60 with N, SW14	V	<u></u>		
		SS400	with	4			
	1301¢	SS400	with N	4	ıc,		1
1,000	Bolt	SS400	M12×60 with N, SWfd	4			,
1	Bolt	SS400	with	4			
	Bolt	SS400		24	T		
	Bolt	SS400	M24×150 N2	2.4	20		
					-		
			Sub Total		286		
			Hoist Total		8668	2. 4  105. 4	0.5

FRASII F	TRASII RACK (Emergency Gate)					a casa a seconda a seconda a seconda a seconda a seconda a seconda a seconda a seconda a seconda a seconda a s			(1/3)
o N		Mar or series		Dimensions (mm)	0.00 * • • • • • • • • • • • • • • • • • • •	Weigh	Weight (kg)	Painting A	Arca(m²)
				Shape X Length		Unit	₽	Painting	Acid
	EMERGENCY GATE Trash rack						-	I.S   0.S.	
	Trash rack bar	SS400	FB	00×8×06	40	12.1	483	-	
	Trash rack bar	SS400	ΓB	90×9×500	28	3.2	89	2.5	
	Binding bolt	SS400	RB	φ 22 × 1500	18	4.5	18	6 1	
	Binding bolt	SS400	RB	φ 22 × 650	12	1.9	23	0.5	
	Distance piece		Pipc'	201×91	312	0.15	48	4.9	
	Trash rack guide	SS400	1	75×75×9×1500	8		120	3.6	
	Trash rack guide	SS400	ı	75×75×9×550	4	5.5	22	0.7	
	Hook Bolt	SS400	RB	16×180 M16	24		7	0.2	
	Support beam	SS400	H .	X	2		329	2.9	
	Support beam	SS400	Ш	200×200×8/12×600	4		120		
	Post	SS400	=	に	8	124.8	374		Ī
	Rib	SS400	id.		22		35	2	
	Bearing plate	SUS304	<u>P</u> ,	10×100×1800	2	14, 3	29		7
	Seat plate	SS400	급.	2×250×450	c.	.1	35	7 0	
A to add to contain to	Liner	SS400	4.5	10×250×450	6	8	26	20	
* * * * * * * * * * * * * * * * * * * *	Installation beam	SS/100	_	75×75×9×150	80		22		
	Installation bolt	SS400	RB	1	32	0,5	5	0.5	
	Anchor bar	SD295A	_		32		20		
A 10 10 10 10 10 10 10 10 10 10 10 10 10	<ul> <li>One of the control of t</li></ul>		:	· · · · · · · · · · · · · · · · · · ·		. 6	-		
2	and the second of the second o		100,000	Sub Total			18651	51.4	0.4
	and the second of the second o						-		
	Nut	SS400		MT6	112	0.034	*		
	Nut	SS400		M22	120	0.074	6		
S. 11 10 11 11 1	80100	SS400	V	M22×60 N, SW	24	0.296	7	_	
1 mm - 1/2	A CONTRACTOR OF THE CONTRACTOR		4.4						
	and the second of the second o			Sub Total			20	-	
A new order of the second of	the second of th		i			-			
				EMERGENCY GATE Trash rack To	Total		1885	51.4	0
The second second	the second of the second of the second of the second of the second of							. [	
	and the second of the second o	The second second		The second secon		<del> </del>			
							-		T
	A second of the								
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TRASH R	TRASH RACK (Trash rack)								(2	(2/3)
Q N	10	Matorial		Dimensions (mm)	2 1 2 2 2	Weight (kg)	ıt(kg)	Paintin	Painting Arca(m <sup>-</sup> )	
, , , , , , , , , , , , , , , , , , ,	1			Shape X Length	מונטוור זיא	Unit	W	Painting	g Acid	-0
the second second	Trash Rack							1.8 0.		
-1	Trash rack bar	001/SS	ાક	65×12×1470	456	0.6	4104	01	103.2	
The second section of	Trash rack bar	SS400	8J	65×12×863	19	5, 28	1001		2, 5	
	Trash rack bar	SS400	FB	65×12×1817	19	11, 13	211	 	5.3	Ţ
	Binding bolt	SS400	RB	Ф 22 × 1900	310	5.67	1758	7	40.7	<u> </u>
Andrew A. S. A. S.	Distance piece	SCP	Pipe	201×88	2580	0. 148	825		83.9	
7	Trash rack guide	SS400		75×75×6×1900	26	13.0	338		14.8	
e construent	Trash rack guide	SS400	FB	65×6×1900	26	υ. 8	121		6.4	Γ
and the second of	Hook Bolt	004SS	RB	16×180 M16	708	0.3	59			<u> </u>
	Support beam	SS400	H	150×150×7/10×2600	27	81.9	2211	9	63, 2	
the state of the s	Rib	SS400	PI.	9×71.5×130	108	0.66	71}	-	2.0	,
e go adra e come a com	Rib	SS400	٦d	9×150×130	108	1.38	149		4.2	
	Installation beam	SS400		75×75×9×150	22	1,0	55	_	2.4	Γ
	Installation bolt	SS400	RB	16×300 M16	108	0.47	51	_	1.6	
	Anchor bar	SD295A	۵	16×400	108	0.62	67	-	2.2	
- Park										
			10 T W	Sub Total			10150	33	334. 3	
the state of the s							-	_	<b></b> .	
	Bolt	SS400		N16×60	216	0.158	34	,	_	
	Nut. 1	SS400		91W	216	0.034	7			
								_	_	Γ
			2.	Sub Total			41			
							<b></b>	•		
				Trash rack Total			10191	33	334.3	[ ]
							_			
							<b>.</b>	_		
					:		-			
								-		_
							n sou			
										<u> </u>
									•	

		, ,		(mm) was 5 to most (limited)		111			(3/3)	
No.	The second of temperature of the second of t	Material		Cancinations (mm)	Quantity	weight (Kg,	r (Kg)	Painting Area(m <sup>-</sup> ,	urea (m <sup>-</sup> )	
				Shape X Length		Unit	<u> </u>	Painting	Acid	
	Inspection room Trash Rack						-	I.S. 0.S.		
	Trash rack bar	SS400	FB	65×12×1470	168	9.0	1512			
	Binding bolt	SS400	RB	φ22×2100	48	6.3	301	0 2		
	Distance piece	SGP	Pipe	20/ × 88	096	0.14	142	14.4		
	Trash rack guide	SS400	-1	75×75×6×2050	8	1-:	112	- V		
	Trash rack guide	SS400	ં દીતી	65×6×2050	CI	6.3	63	2		
	Hook bolt	SS400	RB	16×180 MIG	9	0.28	18	c		
	Support beam	SS400	И	150×150×7/10×4600	5	144.9	725	20.7		
	Rib	SS400	- Jd	9×71.5×130	20	0.66	1.3	c		
	Rib.	SS400	Ίd	9×150×130	20	1 38	28	0.8		
	Installation beam	SS/100	L	75×75×9×200	10	1.99	20	0.0		
	Installation bolt	SS400	RB	16×300 M16	40	0.47	19	0.6		
	Anchor bar	SD295A	C	16×400	40	0.63	25	80	i z	
				Sub Total	-		2978	91.5		
	Nut	SS400		W16	80	0.034	3			
		*		Sub Total			3			
	the second secon									
1 1 1		1		Inspection room Trash rack T	Total		2981	91.5		
			1							
			-							:
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			7.	rash rack Total (Steel Material	(1		14993	477 9	0	
							2		;	
			Trash	h rack Total (Material Purchased)	ised)		79			
11										
	The second secon									٠.

STEEL P	STEEL PENSTOCK(Trasition Pipe)		***************************************	despending to the second and the second of t		The second secon				(1/2)
No	The second control of the second control of	Materia		Dimensions (mm)	2 4 4 4 6 10	Weigh	Weight (kg)	Painting	ing Arca(m-	·   ~
•		MG 551 2 G.	only agreement to a	Shape X Length	שממוורדרא	Unit	Λ	Pain	Painting	Λcid
The separate representation	the second of th		The second of the second	and the second s				1. S.	0. S.	
According to the party of	Transition Pipe	SM400A	PL	$ 25 \times (\Box 1400 \sim \phi 1400) \times 1150$	1	1148.4	1148	5.9	5.9	
Commence of the party state of	No. 1-Ring-girder Flange	SS400	PL	22×200×6413	I	221.5	222	2.6		
Company of the Artist Company	No. 1 Ring girder Web	SS400	P[	16×200×7425	-	186.5	187			
The state of the s	No. 2 Ring girder Flange	SS400	- J-	22×200×5184	1	199.8	200	2.3		
the experience of the same	No. 2 Ring girder-Web	SS400	<u>.</u>	16×200×6796	1	170.7	171			
a december his common	Bendy Pipe and the second seco	SM400A	[d	9× 0 1400×2471	.1	772.8	773	10.9	10.9	
	Stiffener	SS400	<u>.</u>	ĭ	2	33. 69	67	1.9	-	
Section and Assessment	Straight Pipe	SM400A	۲.	0	I	4378.3	4378	62.0	62.0	
riginal complete to per t	Stiffener	SS400	占	$9 \times (0.1618 - 0.1418)$	10		337	9.5		
Process Same Section and	Bend-Pipe	SM400A	Id.		1	22, 105, 8	22, 106	312.9	312.9	
Complete and the Complete Comp	Stiffener	SS400	Ы	$9 \times (0.018 - 0.1418)$	20		1685	17.7		
And the second second second second	Straight-Pipe	SM400A		9× 0 1400×115000	1	35964. 2	35964	509	509	
The second second second	Stiffener	-SS400-	P	$9 \times (0.1618 - 0.1418)$	76		2, 561	72.5		
To the state of th	Straight-Pipe	SM400A	-DI	ø 1400×7		27	22393	317	317	
and the second of the second of the	Stiffener og og og og og og	SS400	PL	$9 \times (0.1618 - 0.1418)$	48		1618	45.8		
Commence and the second	Bend-Pipe	SM400A	ď	9× ± 1400×35343		11052	11053	156.4	156.4	
	Stiffener	SS400	<u>.</u>	$9 \times (0.1618 - 0.1418)$	26	33, 69	876	24.8		
	Bend Pipe	SM400A	딥	♦ 1400 × 8	1	2	27203	385	385.0	
A The Company of the	Stiffener	SS400	딦	9× ( \$ 1618 - \$ 1418)	58		1,954	55.3	<u></u> .	
	Bend Pipe	SM400A	ر. م	♦ 1400×7	1	2, 468	2, 468	34.9	34.9	
	Stiffener	SS400	<u>.</u>	9× ( 0 1618 0 1418)	9	33, 69	202	5.7		
Account of the last	Straight Pipe	SM400A	]	9× 4-650×1207	1	176.5	1221	2.5	2.5	
192 12 12	Straight Pipe	SMAOOA	<u>-</u>		1	572.9	573	2.	8 1	
A second second	Straight Pipe	SM400A	G.	이	<b>.</b> ⊶	965. 4	965		13, 7	
The State of the State of	Bend-Pipe	SM400A	<u>P</u>	9X & 650 × 1046	-		153			
1	Bend: Pipe	SM400A	<u>.</u>	~,	Ţ	448.0	448		6.3	
1 1 2 1	Reinforcement	SM400A	id.	$12 \times (0.000 - 0.650)$	1	12.7	43	0.5		
	Stiffener	SS400	<u>.</u>		12	17.0	204			
	Straight Pipe	SM400A	교	6× 4300×200	1	9. 1	6		0,2	ļ.
	Reducer pipe	SM400A	2	ٽ ×			10	0.2		
	Straight Pipe	SM400A	P	X	1	6.9	2		0.1	
	Straight Pipe	SM400A	Pľ	6× 6250×972	1	35.1	35	0.7	0.7	
	Straight Pipe	SM400A	<u>.</u>	6× ¢ 250×6150	1	233.0	223	4.9	4.9	

STEEL	STEEL PENSTOCK (Trasition Pipe)			region of the control					(0) (0)
., %		Vatorial		Dimensions (mm)		Weig	Weight (kg)	Painting Area(m <sup>2</sup> )	res (m²)
				Shape X Longth	Wuantity	Unit		Painting	Acid
								I.S. 0 S.	
	Send Pipe	SM400A	E	6× 4250×216	₽	8.2	8	2	2
	Bend Pipe	SM400A	E,	6× 4 250×785	1	29. 7	ε.	9	· ·
	Keinforcement	SMAOOA	PI.	9 × (φ 500 - φ 250)	ş-4	10.4			
-	Stiffener	SS400	P1,-	$6 \times (4412 - 4262)$	9	3.7	66	200	
								<u> </u>	
				Sub Total			140 482 2115	115 7 1039	
							1001	-	
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	the second of th								
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	and the second of the second o		1				1	-	
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The state of the s	and the second of the second o		40.00				-		
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The second second second	the constitution of the co	The transfer of the state of th		and the state of the state of the state of the state of the state of the state of the state of the state of					-

reel i	STEEL PENSTOCK(Installation stand)								S	(9/
N	And the second of the second o	V. to a control		Dimensions (mm)		Weig	Weight (kg)	Painting	Painting Area(m <sup>2</sup>	1~
ĵ		5		Shape X Length	- Unancity	Unit	*	Painting		Acid
	() Installation stand			:				1.8.10.	<del> </del>	
100	Support beam	SS400	1	75×75×6×1400	9	9	58	15		Γ
	Gusser-Plate	001/SS	P.	9×250×300	12	5.3	64			Γ
	Installation stand(Post)	SS400		100 X 50 X 5/7, 5 X 2500	9	23.	140	9.0		1
	Installation stand (Main)	SS400	)	1.	9	23.	140	9.0		Ī
	Installation stand (Main)	SS400		۲.	9	23.	140	9.0	ļ	Γ
	Installation stand(Sub)	SS400	. 1	-	12	10.	123	5.4	 	
Ample of		SS400	PL	9 X 240 X 250	9		25	0.7	_	Γ
2.00.00	Gusser Plate	SS400	PĮ.	9×200×200	9	2	171	0.5		Γ
1	Rail girder	SS400		150×75×6. 5/10×1150	2	21.3	43	1.7		Ī
:	Base	SS400	ÞΓ	16×300×400	9	18	06	1.4	-	
	Liner	SS400	ų	10×300×400	9	9.4	571	7:	 	Γ
	27 8 22							-	-	T
	(2) Installation stand				:			-	-	Γ
	Support beam	SS400	-1	75×75×6×1400	36	9.6	345	15.1		
:	Gusser Plate	SS400	·PL	9×250×300	72	ເກ	382	10.8		Γ
	Installation stand(Post)	SS400		$100 \times 50 \times 5/7.5 \times 1000$	24	ď	225	14.4		Γ
	Installation stand (Main)	SS400	J	- T	12	-	225			Γ
*:	Installation_stand(Wain)	SS400		$100 \times 50 \times 5/7.5 \times 1000$	24	6	225	14.4		
	Installation stand(Sub)	SS400	J	75×75×6×1500	24	10.	247	10.8		
1	Installation stand	SS400 {	.7	75×75×6×500	48	3.4	164	7.2		Γ
	Base Plato	SS400	Ρľ	9×240×250	24	4.	102	2.9		Γ
	Gusser Plate	SS400	Pľ	9×200×200	24	2.8	89	1.9	-	Ī
	Rail girder	SS400		$150 \times 75 \times 6.5/10 \times 16471$	2	30.	61	25.0		
	Base	SS400	PL	16×300×400	99	15.	995	15.8		
;	Liner	SS400	Ļ	10×300×400	99		622	15.8		
										Γ
										Γ
		-	:							
			•							
1 11										

	Marchan		Crineria Cons.	1	WC181	Weight (kg)	Painting Area(m <sup>2</sup> )	C8 (m.)
	_ [		Shape X Length	Auanti ty	Unit	A .	Painting	Acid
(3) Installation stand	:						1. S. 0. S.	
Support beam	SS400		75×75×6×1400	150	9.6	1439	0	_
Gusser Plate	SS400	PL	9×250×300	300		1590	45.0	
Installation stand(Post)	SS400		$100 \times 50 \times 5/7$ . $5 \times 1000$	100	9.4	936	60.09	
	SS400		100×50×5/7.5×2000	50	18, 7	9361	60.0	
Installation stand(Main)	SS400	لحا	$100 \times 50 \times 5/7$ , $5 \times 1000$	100	9.4	936	60.09	-
Installation stand (Sub)	SS400	1	75×75×6×1500	100	10, 3	1028	45.0	
Installation stand	SS400		75×75×6×500	200	3.41	685	30.0	
Base Plate	SS400	PI,	9 X 240 X 250	1001	4.2	424	12.0	
Gusser Plate	SS400	PL	9×200×200	001	2.8	283)	8.0	
Rail girder	SS400	<i>;</i>	$150 \times 75 \times 6.5/10 \times 70686$	2		2630		
Base	SS400	Jd		282		4250	и.	
Liner	SS400	Ų	10 × 300 × 400	282	9.4	2656	67.7	
The second secon					.1			
(1) Installation stand					<del> </del>			
Support beam	SS400	<u>;</u>	75×75×6×1400	228	9.6	2187	95. S.	
Gusser Plate	SS400	Pl,	9×250×300	456	5,3	24161	68.4	_
Installation stand(Post)	SS400		100×50×5/7.5×1000	152		14231		
	SS400		7	192	18.7	1423	16	_
lation stand	SS400		$100 \times 50 \times 5/7$ . $5 \times 1000$	152	9.4	1423	l	_
	SS400		75×75×6×1500	152	10.3	1562	98	
Installation stand	SS400		75×75×6×500	304	3.4	1041	45	
Base Plate	SS400	P.	9×240×250	152	4.2	644	18.2	
Gusser Plate	SS400	PI,	9×200×200	152	2.8	4301	12.2	
Rail girder	SS400	$\int$	$150 \times 75 \times 6.5/10 \times 115000$	2	2139.0	4278	174.8	
base	SS400	F.	16×300×400	460	15.1	6933	110.4	
Linet was a second and a second	SS400	ţ)	10×300×400	094	4.6	4333	110.4	
								-
						<u> </u>		
						-		

STREET P	STEEL PENSTOCK (Installation stand)								(3/8)	
,			: :	Dimensions (mm)		Weigl	Weight(kg)	Painting Arca(m <sup>2</sup>	Arca(m")	
, No.	. I tem	Material		Shape X Length	quantity	Unit	W	Painting	Acid	
a a popular a commence	(5) Installation stand					,		1. S.   0. S		
The second second		SS400	T	75×75×6×1400	144	9.6	1381	60.5		
terminal of the fire		SS400	Jd.	9×250×300	288	5.3	1526	. 32. 4		
to a ward of page 1	Installation stand(Post)	SS400		$100 \times 50 \times 5/7$ . $5 \times 1000$	92	9.4	198	55.2		
The second second		SS400	ر نب	$100 \times 50 \times 5/7.5 \times 2000$	46	18.7	861	55.2		
A Province of the Park of the		SS400		$100 \times 50 \times 5/7$ . $5 \times 1000$	65	9.4	861	55.2		
	Installation stand(Sub)	SS400	1	75×75×6×1500	92	10.3	945	41.4		
Total Control of the Control	Installation stand	SS400	Ţ	75×75×6×500	181	3.4	630			
Age consultation		SS400	٦.	9×240×250	92		390	11.0		
The second secon	Gusser Plate	SS400	PL	9×200×200	92	2.8	260	7.4		1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Rail girder	SS400		150×75×6. 5/10×71605	2	1331.9	2664			
The second of the second		SS400	PL	16×300×400	286	15, 1	4311	68.6	-1	
		SS400	₽	10×300×400	286	9.4	2694	68.6		
	(6) Installation stand	14.								<sub>T</sub>
	Support beam	SS400	,_1	75×75×6×1400	72		069	30.21		
August 10 a	Gusser Plate	SS400	P.E	9×250×300	144	5.3	763			
	Installation stand(Post)	SS400		.1.	48	9.4	449	28.8		т
11.00	Installation stand (Main)	SS400	ٺ	7.	24	18.7	449	28.8	·	· 
	Installation stand (Main)	SS400		$100 \times 50 \times 5/7.5 \times 1000$	48	9.4	449			7
	Installation stand(Sub)	SS400	7	75×75×6×1500	48	10.3	493	- 1		т
	Installation stand	SS400	1	75×.75×6×500	96		329	Ξĺ		~-т
	Base Plate	SS400	PL	9×240×250	48	4.2	203	S		
carrier grow	Gusser Plate	SS400	PL		48		136	က		~г
A CONTRACTOR	Rail girder	SS400		$150 \times 75 \times 6.5/10 \times 71605$	2	1331.9	2664			- T
	Base	SS400	PI.	16×300×400	142	1	2140			-γ
	Liner	SS400	t	10×300×400	142	9.4	1338	34.1		т
										-
:										-т
										-
										- <sub>T</sub>
										F
										-7
			- 1						٠	

Š.	1000	Material		Dimensions (mm)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Weig	Weight (kg)	Painting Arc	Arca (m²)
				Shape X Longth	Andiici cy	Unit	М	Painting	Acid
	(7) Installation stand							1.S. 0.S.	
	Supportheam	SS400	1	75×75×6×1400	174		1669	•	
	Gusser Plate	SS400	PL	9×250×300	348	5.3	1844	52. 2	
	Installation stand(Post)	SS400		$100 \times 50 \times 5/7$ , $5 \times 1000$	116		1086	69. 6	
# A A		SS400		$100 \times 50 \times 5/7.5 \times 2000$	58	18.7	1086	69.69	
	Installation stand(Main)	SS400		$100 \times 50 \times 5/7.5 \times 1000$	116	9.4		69. 6	
	-	SS400		75×75×6×1500	116	10.3		52.2	
		SS400	1	75×75×6×500	232	3.4	795	34.8	
	Base Plate	SS400		9×240×250	116	4.2	492	13.9	
	Gusser Plate	SS400	PL	9×200×200	116		328		
	Rail girder	SS400	J	150×75×6. 5/10×71605	2	1331, 91	2664	132. 2	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Base	SS400	Ы		348		5245		
	Liner	SS400	د ب	10×300×400	348	9.4	3278		
								.1	
	(8) Installation stand	2.00							
	Support beam	SS400	1	75×75×6×1400	24	9.6	230	10.1	
	Gusser Plate	SS400	76	9 X 250 X 300	48		254	7.2	
		SS400		<u></u>	16		150		
	Installation stand (Main)	SS400		$100 \times 50 \times 5/7$ . $5 \times 2000$	œ		150		
	Installation stand (Main)	SS400		$100 \times 50 \times 5/7$ . $5 \times 1000$	16	9.4	150	9.6	
	Installation stand(Sub)	SS400	2	75×75×6×1500	91	10.3	164	7.2	
	Installation stand	SS400	1	75×75×6×500	32		1101		
-	Base Plate	SS400	PL	9×240×250	16		89		
		SS400	PI.	9×200×200	191	2.8	45	1.3	
		SS/100		$150 \times 75 \times 6.5/10 \times 7891$	2	146.8	294	12.0	
1	Base The State of t	SS400	PĽ	16×300×400	32		482	7.7	
And Application	Lineir Transfer out to Age to	SS400	<b>.</b>	10×300×400	32	9.4	301	7 7.	
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specific transcent	The second of th								
					7			~	
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STEEL.	STEEL PENSTOCK (Installation stand)								(2/6)
NO	West I	Varorial		Dimensions (mm)	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Weigh	Weight(kg)	Painting Au	Area (m²)
2		100		Shape X Longth	40mm17	Unit		Painting	Acid
	(9) Installation stand(Branch)		1 1 1 1					1. S.   0, S.	
	Installation stand(Post)	SS400	ړ	75×75×6×1000	20	6.9	137	6.0	
	Installation stand (Main)	007SS	Ľ	75×75×6×900	10		62	2.7	
	Installation stand (Main)	SS400	· · · 1	75×75×6×1000	20	6.9	137	6.0	
	Installation stand(Sub)	SS400	T	75×75×6×1000	20	6.9	137	6.0	
	Installation stand	SS400	7	75×75×6×500	70	3.4	137	6.0	
	Sub beam	00488	_1	75×75×6×1000	20	6.9	137	6,0	
	Gusser Plate	SS400	PL	9×200×200	20	2.8	57	1.6	
	Seat plate	SS400	PL	16×200×200	20	5.0	100	1.6	
	Adjusting	SS400	Pl.	16×75×150	40	1.4	57	6.0	
	Installation stand(Post)	SS400	7	75×75×6×1000	8	6.9	55	2.4	
	Installation stand (Main)	SS400	-1	75×75×6×500	4	3.4	E	0.6	
	[Installation stand(Main)	SS400	נ	75×75×6×1000	8	6.9	55	2.4	
	Installation stand(Sub)	SS400	7	75×75×6×800	8	5, 5	44	1.9	
	Installation stand	SS400	1	75×75×6×500	16	ε,	55	2.4	
	Sub beam	007SS	Τ	75×75×6×1000	8	6.9	55	2.4	
	Gusser Plate	001/SS	PL	9×200×200	8	2.8	23	0.6	
	Scat plate	001/SS	Pl	16×200×200	8		40		
	Adjusting	001/SS	Td.	16×75×150	16		23	0.4	
				Sub Total			102417 3574.	3574.8	
	(i) Installation stand								
	Anchor bolt	SS400		M20 × 250	24	0, 779	19		
	Anchor setter	glass type		AP25	24	0, 101	2		
	(②) Installation stand								
	Anchor bolt	SS400		M20×250	264	0.779	206		
	Anchor setter	glass type		AP25	264	0.101	27		

Item	7 707117	Compared to the control of the contr	and the second s	- Dimensions (mm)		Weight (kg)	Painting Area (m)	(9/9)
Shape   X   Log	, ,	Street Grown of the market Com.	Materi			/0m/ n (197)	ATU SUYAUYAI	( )
stand         SSMOO         M20×250         1128         0.779         879           glass type         AP25         1128         0.779         113           stand         SSMOO         W20×250         1840         0.779         143           stand         SSMOO         W20×250         1444         0.779         891           stand         SSMOO         W20×250         1144         0.779         891           stand         SSMOO         W20×250         1144         0.779         891           stand         SSMOO         W20×250         1392         0.779         1084           stand         SSMOO         W20×250         1392         0.779         1084           stand         SSMOO         W20×250         1392         0.779         1084           stand         SSMOO         W16×170         112         0.046         41           stand         SSMOO         W16×170         112         0.046         5           stand         SSMOO         W16×170         112         0.046         5           stand         SSMOO         W16×170         112         0.046         5           glass type				×	<u>,</u>			\c;
stand         SSA00         M20 x 250         1128         0.779         879           stand         SS400         M20 x 250         1128         0.101         114           stand         SS400         M20 x 250         1840         0.101         186           stand         SS400         M20 x 250         1144         0.101         186           stand         SS400         M20 x 250         568         0.779         442           stand         SS400         M20 x 250         568         0.101         116           stand         SS400         M20 x 250         1382         0.101         141           stand         SS400         M20 x 250         1382         0.101         141           stand         SS400         M20 x 250         1382         0.101         141           stand         SS400         M20 x 250         138         0.101         141           stand         SS400         M20 x 250         138         0.101         141           stand         SS400         M16 x 170         0.06         5         6           glass type         AP2         112         0.06         5         6         6							I. S. 0. S.	
SS400   M20 x 250   1128   0,779   879     Stand   SS400   M20 x 250   1128   0,101   114     Stand   SS400   M20 x 250   1840   0,779   1433     Stand   SS400   M20 x 250   1144   0,101   116     Stand   SS400   M20 x 250   1392   0,779   143     Stand   SS400   M20 x 250   1392   0,101   141     Stand   SS400   M20 x 250   1392   0,101   141     Stand   SS400   M20 x 250   1392   0,101   141     Stand   SS400   M20 x 250   1392   0,101   141     Stand   SS400   M10 x 250   112   0,362   41     Stand   SS400   M16 x 170   112   0,362   41     Stand   SS400   M16 x 170   143   153     Stand   SS400   M16 x 170   144   144     SS400   M20 x 250   112   0,362   41     SS400   M16 x 170   144   145   158   138     Stand   SS400   M16 x 170   144   145   158     Stand   SS400   M16 x 170   144   145   158   138     Stand   SS400   M16 x 170   144   144   144     SS400   M16 x 170   144   145   158   138     Stand   SS400   M16 x 140   144   144   144   144     SS400   M16 x 140   148   144   144   144   144     SS400   M16 x 140   144   144   144   144   144     SS400   M16 x 140   144   144   144   144   144     SS400   M16 x 140   144		tion						
stand         SSA00         W20 x 250         1128         0.101         111           stand         SSA00         W20 x 250         1840         0.779         1433           stand         SSA00         M20 x 250         1144         0.101         186           stand         SSA00         W20 x 250         1144         0.101         116           stand         SSA00         W20 x 250         1392         0.779         442           stand         SSA00         W20 x 250         1392         0.779         1084           stand         SSA00         W20 x 250         1392         0.779         1084           stand         SSA00         W20 x 250         128         0.101         141           stand         SSA00         W20 x 250         128         0.101         133           stand         SSA00         W20 x 250         128         0.101         141           stand         SSA00         W10 x 250         128         0.101         133           stand         SSA00         W10 x 250         128         0.101         131           stand         SSA00         W10 x 250         0.101         0.06         5		Anchor bolt	SS400	M20×250				
stand         SS400         M20×250         1840         0.779         1433           stand         S1ass type         AP25         1840         0.101         186           stand         SS400         M20×250         1144         0.101         116           stand         SS400         M20×250         568         0.101         116           stand         SS400         M20×250         568         0.101         57           stand         SS400         M20×250         1392         0.779         141           stand         SS400         M20×250         128         0.101         141           stand         SS400         M16×170         112         0.362         41           stand         SS400         M16×170         112         0.362         41           stand         SS400         M16×170         0.101         100           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.010		Anchor setter		\AP25	1128			
stand         SS400         M20×250         1840         0.779         1433           stand         SS400         M20×250         1144         0.779         891           stand         SS400         M20×250         1144         0.779         891           stand         SS400         M20×250         568         0.779         442           stand         SS400         M20×250         568         0.779         106/4           stand         SS400         M20×250         1332         0.779         106/4           stand         SS400         M20×250         128         0.779         106/4           stand         SS400         M20×250         128         0.779         106/4           stand         SS400         M16×170         112         0.362         41           stand         SS400         M16×170         128         0.0779         100           stand         SS400         M16×170         1.00         12         1.00           stand         SS400         M16×170         0.01         1.11         0.362         41           stand         SS400         M16×170         0.01         1.00         0.01								
SSA00   M20×250   1840   0.779   1433     stand   SSA00   M20×250   1144   0.779   891     stand   SSA00   M20×250   1144   0.779   891     stand   SSA00   M20×250   1688   0.779   442     stand   SSA00   M20×250   1392   0.779   1084     stand   SSA00   M20×250   1392   0.779   1084     stand   SSA00   M20×250   128   0.101   141     stand   SSA00   M20×250   128   0.779   100     stand   SSA00   M20×250   128   0.779   100     stand   SSA00   M16×170   112   0.362   41     stand   SSA00   M16×170   112   0.362   41     stand   SSA00   M16×170   112   0.362   41     stand   SSA00   M16×170   112   0.362   41     stand   SSA00   M16×170   148   112   0.046   5     stand   SSA00   M16×170   1004   1004		tion						
stand         Riass type         AP25         1840         0.101         186           stand         \$\$3400         \$\$200         \$\$2500         \$\$144         0.101         116           stand         \$\$2400         \$\$2500		Anchor bolt	SS400	M20 X 250	O			
stand         SSA00         W20×250         1144         0.779         891           stand         SSA00         M20×250         1144         0.101         116           stand         SSA00         M20×250         568         0.779         442           stand         SSA00         M20×250         1392         0.779         1084           stand         SSA00         M20×250         1392         0.101         141           stand         SSA00         M16×170         100           glass type         AP25         128         0.101         13           stand         SSA00         M16×170         100         11           glass type         AP26         128         0.101         13           stand         SSA00         M16×170         0.046         5           glass type         AP16         112         0.046         5           glass type         AP26         112         0.046         5           stand         SSA00         M16×170         0.046         5           stand         SSA00         M16×170         0.046         5           stand         SSA00         M16×170         0.04	4	Anchor setter	glass type	AP25	O			T
stand         SSA00         M20 x 250         1144         0,779         891           stand         SSA00         M20 x 250         568         0,779         442           stand         SSA00         M20 x 250         568         0,101         57           stand         SSA00         M20 x 250         1392         0,779         1084           stand         SSA00         M20 x 250         1392         0,101         141           stand         SSA00         M20 x 250         128         0,101         141           stand         SSA00         M16 x 170         100         12         0,01         13           stand         SSA00         M16 x 170         112         0,046         5           glass type         AP25         128         0,01         13           stand         SSA00         M16 x 170         0,046         5           Alass type         AP25         0,046         5           Alass type         AP26         0,046         5           Alass type         AP26         0,046         5           Alass type         AP26         0,046         5           Alass type         AP26								Ī
stand         SSA00         WZOX 250         1:44         0.779         891           stand         SSA00         MZOX 250         568         0.101         116           stand         SSA00         MZOX 250         568         0.779         442           stand         SSA00         MZOX 250         1392         0.779         1084           stand         SSA00         MZOX 250         128         0.101         141           stand         SSA00         MIEXITY         123         0.101         13           stand         SSA00         MIEXITY         128         0.101         13           stand         SSA00         MIEXITY         123         0.101         13           stand         SSA00         MIEXITY         0.101         13           MIEXITY         NOA-Type 1-4S         128         0.101         13           Stand         SSA00         MIEXITY         0.046         5           Stand         NOA-Type 1-4S         100         12           Sub Total         108/73/3574		5 Installation stand						T
stand         SS400         M20×250         568         0.779         442           stand         SS400         M20×250         568         0.101         57           stand         SS400         M20×250         1392         0.779         1084           stand         SS400         M20×250         1392         0.101         141           stand         SS400         M20×250         128         0.779         100           stand         SS400         M20×250         128         0.779         100           stand         SS400         M16×170         0.046         5           glass type         AP16         0.046         5           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.046         5           stand         SS400         M16×170         0.046         5	V	Inchor bolt	SS400	W20×250	Ċ			
stand     SS400     M20×250     568     0.779     442       stand     SS400     M20×250     1392     0.779     442       stand     SS400     M20×250     1392     0.779     1084       stand     SS400     M20×250     128     0.101     141       stand     SS400     M40×250     128     0.779     100       stand     SS400     M16×170     112     0.362     41       stand     SS400     M16×170     112     0.362     41       stand     SS400     M16×170     112     0.046     5       stand     SS400     M16×170     0.046     5       Sub Total     112     0.046     5       Sub Total     108/73/3574	V		glass type	AP25	C			
stand     SS400     W20×250     568     0.779     442       glass type     M20×250     568     0.101     57       stand     SS400     W20×250     1392     0.101     141       stand     SS400     W20×250     128     0.779     1084       stand     SS400     W20×250     128     0.779     100       stand     SS400     M46×170     112     0.362     41       glass type     AP25     128     0.101     13       stand     SS400     M46×170     112     0.362     41       glass type     AP25     128     0.101     13       Stand     SS400     M6×170     0.06     5       stand     SS400     M6×170     0.06     5       stand     SS400     M6×170     112     0.046     5       stand     SS400     N04-Type 1-4S     112     0.046     5       stand     SS400     N04-Type 1-4S     108173/3574								
SS400         WZOXZ50         568         0.779         442           stand         SS400         MZOXZ50         1392         0.779         1084           stand         SS400         MZOXZ50         1392         0.779         1084           stand         SS400         MZOXZ50         128         0.779         100           stand         SS400         MIEXITO         128         0.101         13           stand         SS400         MIEXITO         0.046         5           stand         SS400         MO4-Type 1-4S         12         0.046         5           stand         Substant Total         108173/3554		6) Installation stand						
stand         SSA00         M20×250         1392         0.779         1084           stand         SSA00         M20×250         1392         0.779         1084           stand         SSA00         M20×250         128         0.779         100           stand         SSA00         M16×170         112         0.01         13           stand         SSA400         M16×170         112         0.362         41           glass type         AP16         112         0.046         5           N04-Type 1-4S         162         5         41           Sub Total         100         5756           100         5756         5756	S	Inchor bolt	SS400	M20×250				:
stand     SS400     M20×250     1392     0.779     1084       stand     SS400     M25     0.101     141       stand     SS400     M20×250     128     0.779     100       stand     SS400     M16×170     112     0.779     100       stand     SS400     M16×170     112     0.046     5       glass type     AP16     5     41       stand     SS400     M16×170     112     0.046     5       SS400     M04-Type 1-4S     5756       Sub Total     108173 3574		Inchor setter	glass type	AP25	:			
stand         SS400         M20×250         1392         0.779         1084           stand         SS400         M20×250         128         0.779         100           stand         SS400         M20×250         128         0.779         100           stand         SS400         M16×170         112         0.362         41           stand         SS400         M16×170         112         0.362         41           glass type         AP16         112         0.362         41           glass type         AP16         556         5           stand         Sub-Total         5756           Installation stand Total         108173 3574.								
SS400         M20×250         1392         0.779         1084           stand         SSA00         M20×250         128         0.779         100           stand         SSA00         M16×170         112         0.779         100           stand         SSA00         M16×170         112         0.362         41           glass type         AP16         0.046         5           glass type         AP16         0.046         5           stand         SSA00         M04-Type 1 -4S         5           mod-Type 1 -4S         112         0.046         5           mod-Type 1 -4S         5756         7	ĭ	2 Installation stand	11.00					T
stand     SSM00     M20×250     128     0.101     141       glass type     AP25     100       stand     SS400     M16×170     112     0.362     41       glass type     AP16     112     0.362     41       glass type     AP16     5     41       glass type     AP16     5     5       mod-Type 1-4S     112     0.046     5       mod-Type 1-4S     5756       mod-Type 1-4S     108173 3574.	<b>≦</b>	Inchor bolt	SS400	M20 × 250	C			
stand     SSA00     MZ0×250     128     0.779     100       stand     SSA00     M16×170     112     0.101     13       glass type     M16×170     112     0.362     41       glass type     AP16     5     41       M04-Type 1-4S     12     0.046     5       Sub Total     5756       Installation stand Total     108173 3574.		Inchor setter	glass type	AP25	C			
stand     SSM00     MZ0×250     128     0.779     100       stand     SSA00     M16×170     112     0.101     13       glass type     AP16     112     0.362     41       glass type     AP16     112     0.046     5       M04-Type 1-4S     Sub Total     5756       Installation stand Total     108173 3574.				The second secon				
SSA00     MZO × 250-     128     0.779     100       stand     SSA00     Mi6 × 170     112     0.362     41       glass type     AP16     112     0.046     5       MO4-Type 1-4S     Sub Total     5756       Installation stand Total     108173 3574.	۲	8 Installation stand			:			T
stand     SSA00     M16×170     112     0.362     41       glass type     AP16     112     0.046     5       MO4-Type 1-4S     Sub Total     5756       Installation stand Total     108173 3574.	٧	unchor bolt	<u>ا</u> ا	M20 × 250	c			T
stand     SS400     M16×170     112     0.362     41       glass type     AP16     112     0.046     5       NO4-Type 1-4S     NO4-Type 1-4S     5756       Installation stand Total     108173 3574	<u> </u>	inchor setter	1.)	AP25	C			Ī
stand     SS400     Mi6×170     112     0.362     41       glass type     AP16     5       NO4-Type 1-4S     5756       Sub Total     5756       Installation stand Total     10817313574.								
er SS400 Mi6 × 170 112 0.362 41  AP16								
setter         AP16         5           NO4-Type 1-4S         5756           Sub Total         5756           Installation stand Total         10817313574.	<u> </u>	inchor bolt	SS400	M16×170				
NO4-Type 1-4S Sub Total Installation stand Total	V	nchor setter	glass type	API6	L			
NO4-Type 1-4S         Sub Total       5756         Installation stand Total       108/73/3574.								
otal 5756 Stand Total 108173 3574.	ž	oller		[ ]				
otal 5756 stand Total 108173 3574.								
stand Total 108173 3574.						5756		
stand Total 108173 3574	1							
			-	Stand		108172	2577 8	

OUT LE	OUT LET STRUCTURES (\$ 650 Main Control Gate)	rol Gate)	•	and the second s					(1/2)
V.V.	general per le de la deservación de la constante de la constan	To the second		Dimensions (mm)		Weigh	Weight (kg)	Painting A	Area(m <sup>-</sup> )
<b>5</b> 0.		macer 2		Shape X Length	- Kuantity	Unit	*	Painting	Acid
creation for our ending	<gate leaf=""></gate>							1. S.   O. S.	
- makakan papaturna na	Gate Leaf	SUS304+SM490	ţ	125×1130×846	1	872. 4	872	6.0	0.9
distribution of the same	Beading Plate	CAC403	Ļ	20×80×650	2	9.3	61		
e desirable subtra such a specie	Beading Plate	[ CAC403	t	25×80×650	2	ι.	23	1	
Profesional Commence	The second secon		100						
and the same				Sub Total			914	6.0	6.0
and the second of the second									
· · · · · · · · · · · · · · · · · · ·	Bolt	SUS304		M12 X 25	28	0.059	2		
de la capación desposables o	Eye Bolt	SUS:304		M24	2		23		
and comment of the same of						-			
and the second second	the second secon			Sub Total			T		
***	and the second of the second o								
a company of the contract of	A service of the serv			<pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre></pre> <pre></pre>			918	0.9	6.0
	The second secon			1					
	<bonnet></bonnet>				-	-	-		
	Bonnet					-			
and the second second	Pipe management of the property of the propert	SS400	Jd.	19×2322×659		228.2	228	6	
The state of the s	Pipe Flange	SM400C	4	41 X ( & 855 - 650)			78		
the state of the state of	Pipe Stiffener	SS400	PĽ	9× ( 4-900 - 4-650)	1	21.5	22		
and the speciment of the second	Plate	SS400	PL	12×1194×2070	r		172	3.7	
	Side plate	SS400	P.	12×127×2070	2	25.0	20		
	Lower plate	SS/100		12×127×1220	1		15	0.3	
	Side Flange	SW400C		45×185×2070	2	136. 7	273	1.5	
4,3	Lower Flange	SM400C		45×185×1220	-		18	0.5	
Will condition to the second		SS400	占	16×127×160	2		5		
F. Santa p. 15 in	Upper flange	SM400C	ų	45×384×1540	.1	137.9	138	0.8	
	Stiffener	SS400		9×50×2156	2	7.6	15	0.4	
· · · · · · · · · · · · · · · · · · ·	Stiffener	SS400		9×229×1540	2	13.2	26		
and the section of	Stiffener.	SS400		9×489×500	7		57		
	Stiffener	SS400		9×489×350	2	•	20	0.5	
A Contraction	Vortical stiffener	SS400	Jd.	9×90×361	1		51		
	ŀ	SS400	рļ	9×350×300	1	5.9	ဇ	0.2	
	Vertical stiffener	SS400	PI	16×320×321	2		21		
									-

OUT LE	OUT LET STRUCTURES ( \$650 Main Control Gate)	ol Gate)		the second of the second secon				;		(2/2)
Ş.	E & 1	Variation		Dimensions (mm)		Weig	Weight (kg)	Painting		
		TOT TOOM		Shape X Length	WUSHEJ EY	Unit		Painting	gui	Acid
		,						1. S.	0. S.	
	Seat plate	SM400C	PI,	45×160×400	2	22. 6	451	-	1 .	
	Stiffener	SS400	PL	9×300×350	2	5.2	101		0,2	
	Stiffener	SS400	Pľ.	9×250×361	2		13	-		
	Bearing Plate	SUS304	ι ·	9×85×1720	2	10.4	21	-		
a carryon .	$\sim$ 1	SM400C	رړ				162	-	0.3	
2	Seal ring	CAC.703	t	$ 53 \times (\phi 759 - \phi 650) $	l		40			
	Scal ring clamp bar	SUS304	Pî.	−058¢)	1	25, 3	25		-	
								-	-	
	Bonnet							+	-	T
100 may 1	Pipe	SS400	Г	19×2887×261		112.4	112	-	100	
	Ring beam	SW400C	į,	39 X ( \$ 1100 - \$ 900)			96			T
	Skinplate	SW400C	PI,	50×1540×2070	-	988.5	686	-		T
A	Upper Flange	SM400C	₽	45×196×1540		. 1	107	-		T
*************	Stiffener	SS400	id	9×50×1888	2					T
	Stiffener	SS400	Ρį	9×95×1540	2	10.3	212	-	200	T
*******		SS400	PL	9×160×450	7	5.	202	-		
FIRST STATE		SS400	PI,	9×160×320	2	3.6	7	$\mid$		Ī
	Vertical stiffener	SS400		9×95×361	1	2.4	2	-	0	
4		SS400		9×192×261	-	33	7		0	
	Vertical	SS400	- 1	9×95×321	2	2.2	4		0.1	
	Vertreal	SS400	- 1	9×95×361	7	2.4	10		0.3	
A company of the contract of t	<u>د ا</u>	SS400	- 1	9×95×311	ν	2.1	8	-	0.2	
	12	SS400	님	9×95×361	2	2.4	33		0.1	
	Vertical stillener	SS400		16×320×321	2	10.3	2.1		0.4	
Company Company	_	SM400C	- 1	45×160×400	2	22. 6	45		0.3	
	7	SS400	<u>-</u>	9×250×261	2	4.1	8	-	0.2	
	stiffener	SS400	F.	9	2	2.4	2			
	Bearing Plate	SUS304	t)	20×95×1720	2	24.6	491		-	1
									-	
The second second								-	-	Ī
1 T			-					-	-	Γ
								-	ig	
								-	-	
er god jave til fikken ble e	and recovering the state of the	And the second of the second of the second	*** * * * * * * * * * * * * * * * * * *	magnetise of the property defends to the second of the second of the contract of	· · · · · · · · · · · · · · · · · · ·	the selection of the contract of their		1	And the second of	

(3/2)	\rea(m^)	Acid			8		0	9	7	2	ī		-		5 0.0									[ <u>_</u>					2				
	Painting Area(m²)	Painting	. 0. S.	-	ö.		3.			0					35.								_	-			_		 35.			L	
	Pa	-Rd	1. S.		148	303	256	51	59	181	18	8		_	825	_	57	29	2	-	1	1	28	33	42	1	1	 171	966		ļ	 	
	Weight (kg)	M			5		-1	3	7	5	9	3	3	-	ည်		8	8	3	2	1	90	8	8	8	12	3	_	e,				
	₩e	Unit			147.		128.			1		e	I				o.	2.08	0.063	0.22	0.21	0.28	1, 168	1, 168	2.08		0.03						
	4	אַחמטורדיא			1	1	2	2	¥	V	1						7	30	32	1	1	1	24	28.	20	8	V						
	Dimensions (mm)	Shape X Length			45×580×800	45×580×1540	22×610×1520	22×610×240	22×610×140	22×140×250	(\$205-\$125) X 105	35× ( ¢ 190 – ¢ 105)	$42 \times (0.125 - 0.105)$		Sub Total		36×100	M36×150 N, SW	M12×30	Φ8.4×2523	φ8.4×2372	Φ8.4×3173	M30 X 120 N, SW		M36 X150 N, SW	W16×50	[F105	Sub Total	< Sonnet > Total			!	
(o)	10,00	0			100C +		400 PL	_	SS400 PL		5304 RB	CACA03 t	2403 t				5304	5304	5304	NBR	BR	NBR	5304	5304	5304	SUS304	Cloth inserted rubber						
trol Gat	Vator		1000		WS	/NS	SS	SS	SS	SS	SIIS	CA(	CAC			-	SUS3	SUS3(	SUS3(	N	Z		ins	Sing	SUS3C	Sns	Cloth						
STRUCTURES( \$650 Main Control Gate)			e de la companya del companya de la companya de la companya del companya de la co	Bonnet cover	Upper Flange	Lower Flange	Cover	Stiffener	Stiffener	Stiffener	Packing case	Packing clamp bar	Packing clamp bar				Reamer pin.Nut	Bolt, Nut	Bolt	"O"ring	"O"ring	"O"ring	Bolt, Nut	Bolt, Nut	Bolt, Nut	Boit	".V."packing						
OUT LET	VN.	2			the second of	g transfer to	A Comment	100		and the second	e martin was pro-		37.										100			:			 	 			

Choist> Stand Base Stand Stand Hoist Base SM400C Sindle Spindle Sundance Su	1181 000C t 100 Pt 100 Pt 100 Pt	Shape X Length		# S	Pair	Painting	
<pre><hoist> Stand Base Stand Hoist Base Rib Spindle Couoling Saindle motor</hoist></pre>		The Court of the C					Ö
<pre>Stand Base Stand Stand Hoist Base Rib Spindle Couoling Saindle motor</pre>					1. S.	0.8.	
Stand Base Stand Hoist Base Rib Spindle Couoling			:				
Stand Hoist Base Rib Spindle Couoling		$45 \times 580 \times 800 - \phi 240$	1	147.9	148 0.1	0.8	
Rib Spindle Couoling Saindle motor		19×813.7×760		92.2	92		
Spindle Couoling		45×(4560-4245)	I	71.0	71		
Spindle Couoling	_	19×141×760	4	16.0	64	6.0	
Couoling		100×2970	T	185.0	185		
Saindle motors		( ♦ 210 - ♦ 105) × 250	1	53.1	53		1
		Sub Total			613 0.1	3.3	0.0
					_		
		Spindle motor	1	650.0	650		
		Rasing Height 0.870m				-	
and the second of the second o		Motor 5. 5kw					
	-	A/D converter electrical position	n transmiter		-		
		Spindle rod Tr100×12					
		JMB-2 B-3					
		Sub Total			650		
						-	
solt.Vut	304	M36 × 148 N SW	12	2.079	25	-	
	304			0.316	2		
Bolt, Nut	304		10	2, 593	26		
Reamerbolt, Nut	304	Φ36×215 N, SW	2	2, 593	5		
	:						
		Sub Total			58		
		<pre> &lt; Hoist &gt; Total</pre>			321 0.1	3.3	0.0
						-	
the second of th							
and the second of the second o	:						
				-			
The second section of the section of the sect							

OUT LET	OUT LET STRUCTURES ( \$650 Main Control Gate)	ol Gate)							(5)	(2/2)
· N		I a tactor	51	Dimensions (mm)		Weigh	Weight (kg)	Paintin	Painting Area(m <sup>-</sup> )	<u>ئ</u>
No.			ter pro a sterio	Shape X Length	Anguer Ly	Unit	M.	Painting	g Acid	-0
								I. S. 0.	S.	
esely, a local	Gate-stand									
a per unido e ele	Main beam	SS400	. н	$150 \times 150 \times 7/10 \times 550$	2	17.3	35	0.7		~
process industrial	Main-beam	- SS400	Н	$150 \times 150 \times 7/10 \times 1100$	2	34. 7	69	1.4		
er en producer		SS400	H	150×150×7/10×300	V	9.5	38	0.8		
Amount (2 to 16 to	Subabeam	SS400	Τ	75×75×6×450	2	3.1	9	0,3		
And in the same	Sub-beam	SS400	T	75×75×6×450	Þ	3.1	12	0. ກ		
	Stiffener	SS400	J.	9×65×130	20	9.0	12	0.4		
and separate street	-Seat plate	SS400	ld.	22×200×400	7	13.8	55	0.6	_ = a	
4.00	Hoist stand	SS400	Ы	22×150×150	4	3.9	16			
1	Hoist stand	SS400	Ы	22×150×150	v	2.3	6	0.1	-	
	Liner	SS400	Ίd	6×200×400	P	3.8	121			
The second second	Liner	SS400	Ы	4.5×200×400	4	2.8	11	0.6		
the state of the state of	Linex Table	SS400	Ы	3.2×200×400	8	2.0	16	1.3		
to form the control	Anchor Base	SS400	Ы	22×250×250	4	10.8	43	0.5		
And the second	Stopper	SS400	7	75×75×6×150	8	1.0	8	0.3	-	
Same and the second	and the second of the second o	a and a second					•			
e a se se menos en	de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la			Sub Total			345	8, 3		
Programme America	the second secon		:					,		_
The second	Anchor bolt	SS400		M20×250	16	0, 779	12			
	Anchor-setter	glass type		AP25	16	0. 101	2			
A form to the part		a section of the sect							-	_
				Sub Total			14			
	the state of the s			Installation stand Total			359	8.3		
									_	
									-	
				Steel Material			5, 697	8.4	39.7	0.9
		·					247			
				Material single unit			650			
		1							}	
							-			

1.F	OUT LET STRUCTURES ( \$650 Guard Gate)								(1/2)
Š.	1. Company of the com	N 2 2 3		Dimensions (mm)		Wei	Weight (kg)	Painting Area(m	Vrea (m²)
		3	1	Shape X Length	אמשנונא	Unit	æ	Painting	70.00
	<gate leaf=""></gate>							S C - S -	
	Gate Leaf	SM400C	٠٠	105 × 880 × 885	-	564.9	565		2
	Seal clamp bar	SUS304	د.	15×79×718		6.7	6		
	Beading Plate	CAC403	ديا	t~	2	15.5	31	 	
	Scal Plate	CAC403	Ç	30×75×720	1	Ι.	15:		1
	Guide Plate	CAC/103	ij	20. 5×50×670	2		121		
								-	
				Sub Total			630	1.5	0.0
	•								
	Kubber seal	N, R	c,	10×29 Flat seal   =830	ī		ī		
	Bolt	SUS304		M16×30	6.	0.080	-	 	
	Boit	SUS304		M16×35	28	0.089	2		
	Bolton many many many many	SUS304		M12×25	18	0.036		-	
	Eyebolt	SUS304		M24	2	0.768	2		
		: .		Sub Total			မ		
A 4 4 4 4 4									
		and the same of		<pre><gate leaf=""> Total</gate></pre>			6361	1.5	0
A Company of the Comp	<pre><bonnet></bonnet></pre>								
The state of the s	Bonnet							-	T
e migration and		SS400	Ы	19×669×287		87.1	87	1 2	
may be a second	Intake pipe Flange	SM400C	t	$41 \times (4855 - 4650)$	-	78.0	787	C	
4 4 4 7 7	Skin plate	SM400A	<u> </u>	25×980×1870	Ī		291	3.0	
	Side plate	SM400A	P.	25×105×1870	2	38.9	78	8.0	
	Side Flange	SM400C	Ç	50×160×1870	2		237	0, 0	
er object to delete a	Upper Frange	SM400C	ţ	50×358×1250		119.4	119	9.0	
	Guide shoe	SUS304	t	9×60×1570	2		13	-	1
	Sidly guide	SUS304	ţ	155×165×930	ī	188. 6	1881		7 0
	Horizontal girder	SS400	PI,	16×280×1250	က	28.6	86	1.4	
		SS400	£B	75×19×1825	33	20.4	611	0.8	
April 17 and 4 and 5 and 5	I	SS400	٦.	16×271×417	2		181		
	. 1	SS400	Ы	19×342×417	4	12.5	50	8.0	
	Horizontal stiffener	SS400	2	16×171×287	-		i.c		
	· 日本のでは、日本の日本のでは、日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日								

(9/5)	ng Arca(m²)	ng Acid	<u> </u>	1	0.1	0.2		1		3.2	0.5	3.5	0.5		-	1.0	0.2		0.2	0.6	0.4	0.6	1.5	0.2	0.2	0.1	0.1	0.2	0. 1	0.4	0.1	0.2		0.2	0.1	
	g) Painting	W Painting	1.S.		- 1	16	23			242	787	780	26	40	6	30	26	31	13	36	26	36	92	11	10	31	2	15	18	31	12	111	2	15	6	
	Weight (kg)	Unit		4.7	3.7	8. 1	22.7			242.11	78.0	779.8	97. 1	20.0	9.4	30.4	25.6		12.8	17.8	12.8	18.2	22.9	11.4	5. 1	3.1	3.7	7.3	18.2	31.0	3.7	2.8	2.5	3.7	3.0	
		Wuantity -		2	2	2	-			1-1		-	-	2	1	1	1	1	1	2	2	2	7	1	2	1	2	2	1		2	7	2	4	2	
以 \$1.00 \$1.	Dimensions (mm)	Shape X Length		PL 16×163×287	Pl.  16×100×294		Pt.  22×125×1050			PL 19×699×762	t 41×(4855-4650)	PL  50×1250×1870	t 50 X 198 X 1250	PL 25×95×1610	t 15×105×760	Pipe  350A×450		П	FB 75×19×1140		FB  75×19×1140	Pl. 16×271×762			16×		Pl. 16×100×294		$t   26 \times (498 - 4358.1)$	Pl. (22×150×1200	PL  16×100×291	Pl. 16×100×225	PL 16×100×203	PL  16×100×294	PL 16×100×242	
	1000	water121		SS400	SS400	SS400	SS400			SS400	SM400C	SM400C	SM400C	SUS304	SUS304	SGP	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SS400	SM400A	SS400	SS400	SS400	SS400	SS400	SS400	
OUT LET STRUCTURES ( & 650 Guard Gair)	the specimens of the product of the specimens of the spec	when the state that the state of the state of the state of		Horizontal stiffener	Horizontal stiffener	Vertical stiffener	Scat plate		Bonnet	Outlet pipe	Outlet pipe Flange	Skin plate	Upper Flange	Bearing Plate	Bearing Plate	7	:				Horizontal girder	Horizontal stiffener	Morizontal stiffener	. [			- 1	Vertical stiffener	Air Pipe Flange	Scat plate	Side stiffener	Side stiffener		Side stiffener	Side stiffener	
out Le	QN.	ON.		the management of the con-	Application of the second	The second	Security Section	A Company of	A	and the second	A Company		and the state of t					The second second second					:		4			4	:	1, 1	- A		the major of			

The state of the s			Dimensions (mm)		WCIS	Weight (kg)	Painting	ig Arca (m",	JE
T CCIII	Material		Shape X Length	Quantity	Unit	A	Painting	-	Acid
		-					I. S. O.	╁	
Bonnet cover							╁╴		Γ
Vaner plate	SM400C	t 4	41×550×1250	1	221.3	221		1.4	Ī
Upper plate	SM400C		45×550×630		108.9	109	-		Γ
Web	SS400		6×574×1230	2	83.0	1661	-	2.0	Γ
Stiffoner	SS400		16×125×574	4		36		0.6	Γ
Stiffener	SS400	PL 1	16×248×574	2	.1	361	-		T
Stiffener	SS400	-	16×125×250	4	1 .	171	-		Ī
Air pipe	٠.	c	10A X Sch40 X 150	I			-		Ti
Bush			<u> </u>	1	1.16	-	-	-	T
Boss	SS400	<u>ر</u>	h	1		191	-	0.2	T
Packing clamp bar	CAC/103	t (	180 - 695		2.7	6		.1	T
						<del> </del>	-	_	Γ
the second secon	:		Sub Total			3,647		30.5	c c
and the second of the second o									
"O"ring	NBR	Ť	φ8, 4X2390	2	0.212	<del>                                     </del>	-		Ī
"O"ring	NBR	Ť	58, 4×7260			=		-	Ť
Bolt	SUS304	W	M16×50	9	0.109	1 9	-		T
Bolt	SUS304	M	M12×40	3	Ö	1	-	_	
Bolt, Nut	SUS304	( )	30×120 N, SW	48		57			Ī
Bolt, Nut	SUS304	W N		28		59	-	-	Γ
Bolt, Nut	SUS304	M	0 N,	8		25			
Reamer pin	S45C	1		4	0	-	_	-	
Bolt, Nut	SUS304	W	M36×140 N, SW	22	2	47.		-	Ī
Reamerbolt, Nut	SUS304	,	432×140	2	1, 357	3			Ī
"V"packing	Cloth inserted r	rubber F	95	4	0.034		-	<u> </u>	
Air valve	SUS304	4	Pall Valve				-		Ī
						-	-	_	Γ
		-	Sub Total			į.	-	-	T
							<del> </del>	-	T
			<pre>&lt;</pre>			3, 838		30.51	C LC
					-		-		. 1
								-	
							-	-	

OUT LET	OUT LET STRUCTURES ( & 650 Guard Gate)								: :	(4/5)
צ	The second decided and the second sec	1,000		Dimensions (mm)		Weig	Weight (kg)	Paint	Painting Arca(m²)	ව (#*)
(OV)	1 CCIII	Mareriai	entre entre establishment entre	Shape X Length	לחמחנדנא	Unit	Town in Marchine	Painting	ing	Acid
The second second	the second secon							I. S. I	0. S.	
e to a processor and the second	←Hoist>     ←memory   ← Hoist   ← Hoi		A 10 PK 10 PK				erna.			
20 Mars in 1987 12	- 1	SM400C		45×550×630- ¢250	1	105.0	105	0.1	0.6	-
the second section of		SS400	. Jd	19×845, 1×660	1	83. 2	83		1.1	-
e is an all said	Hoist Base	SW400C	t .	45× (\$ 560- \$ 250)	1	69. 7	102	-	0.4	
jan engele de legger de	_	SS400	PL	19×136×650	4	13. 4	54		0.7	
¥5	Spindle	SUS304N2	RB	100×2690	1	167.5	168			1
To get the property of the	Couoling	SUS304	RB	( ♦ 190 <b>–</b> ♦ 95) × 230	-1	40.1	401			-
en production in the con-	the second of th		,		,					-
t decide the same	The second secon			Sub Total			520	0.1	2.8	0.0
te, serios · ·	the second secon	•							<b></b>	
3 (	Spindle motor			Spindle motor	1	650.0	650			
s physical section in the				Rasing height 0.750m					-	
A CONTRACTOR STORY	and the second of the second o			Motor power 5.5kw						
the second	the state of the s				on transmiter	ı				
	the second secon							-	_	
								-		
	And the second of the second o	The state of the s								
ALADA ALABAMA	A CONTRACTOR OF THE CONTRACTOR			Sub Total			650			·
The second secon	A STATE OF THE STA						3			
er comprehensive of	Studbolt-Nut	SUS304		M36×148 N, SW	12	2.079	25			
CAN ALMERICAN	Bolt	SUS304		M16.X55 SW	9	091 0				
wighter the thereof	Bolt, Nut	SUS304	And the second	M36×193 N. SW	01	2, 423	24	-		
to the second second	Reamerbolt, Nut	SUS304	1.44	M36×193 N, SW	2	2, 423				
	the second of th								-	
				Sub Total			55	<b> </b>	-	
and the second of									-	
				<pre><!--loist-->Total</pre>			1, 225	0.1	2.8	0.0
	The second secon			the second second second second second second	1	:	1		-	
to the supplies										
						. :				
							1			
									_	
,										<u> </u>

Ç.	EC.2	. Markon		Dimensions (mm)		Weig	Weight (kg)	Painting A	Arca (m²)
		יוומ רכיו אמז.	11.00	Shape X Longth	Adames cy	Unit	A A	Painting	Acid
								I. S. 0. S.	
	Installation stand							_	
	Main girder	SS400	Н	150×150×7/10×630	2	19.8	40	1.1	
	Main girder	00VSS	н	150×150×7/10×750	2	23.6		.3	
	Post	SS400	H	150×150×7/10×480	7	15.1		1.7	
	Sub-beam	SS400	1	75×75×6×500	2	3.4			
	Sub beam	SS400	1,	75×75×6×550	7	3.7		0.6	
	Stiffener	SS400		9×65×130	20	0.6		0.3	
3	Stand plate	SS400	PI,	22 × 200 × 200	٧	6.9	28	0.3	
	Liner	SS400	- bl	6×200×200	V	6.1	ω	0.3	
	Liner	SS400	PL	4.5×200×200	7	1.4	9	0.3	
	Liner	SS/100	PI.	3.2×200×200	00	1,000	000	0.6	
	Anchor Base	SS/100	<u>d</u> .	22×250×350	7	15, 100	603	0.7	
To prove the con-	Post stopper	SS400	_	75×75×6×150	α		OX.		
	Hoist stand	SS400	ď.	22 × 150 × 150	7	3.9	199	0.2	
7	Hoist stand	SS400	己	22×150×150	7	2.3	O.		
	the second of th	and the second of the second of							
				Sub Total			324	8.1	
	the transfer of the sexpension of the second								
		SS400		M20×250	91	0, 779	12		
	Anchor setter	glass type		AP25	16		2		
	The second of th								
	Description of the control of the co			Sub Total			14		
	manufacture of the state of the	and the second second							
to the state of the	the second of th			Installation stand Total			338	8. 1	
	the second of th								
Section of the second	the second of th			Steel Material			5, 1211	8.2.34.8	C C
	the second contract of the second second second second second second second second second second second second			Material purchased			3		
	the second control of the second process of the second of	the second secon		, v			650		
and the second second	erio de la companya d	A THE CONTRACT OF THE CONTRACT OF							
	and the section of the extreme continues of the property of the continues	and the second second of							
			**** · · ·						
									•

OUT LET	OUT LET STRUCTURES( ¢650 Auxiliary faciliti	acilitics)							(1/1)
ν	e per esta esta esta esta esta esta esta esta			Dimensions (mm)	)   spt : to	Weigh	Weight (kg)	Painting A	Arca(m²)
6	control of the control	751 135	. In the best of the	Shape X Length	<b>Α</b> 111 ΕΛ	Unit	M	Painting	Acid
free car way seed to	Auxiliary facilities	the second of the second						1. S.   0. S.	
compression and particles	the second of th								
digue d'Americani de Artico de la constante de la constante de la constante de la constante de la constante de		SS400	. bľ	19×669 π×1000	1	313, 5	314	4.2	
manage bags of the co	Plange	SM400C	t	$41 \times (4855 - 4650)$	2	78.0	156	1.0	
Conservation of the	Outlet pipe	STPY400	Pipe	900A (±8, 7) × 1000	1	195.0	195	5, 7	
en ingelieringspeer	Flange	SM400C	t	< ( ↓ 1100 — ç	1	96. 2	96	0.6	
e transfer english, sitting etchana	Stiffener	SS400	PL	$9 \times (\phi 1114.4 - \phi 914.4)$	4	22. 5	06	2.5	
The second second second	Main Air pipe	SGP	Pipe		1	270.8	271	8.9	
. Western Annahis and	Flange	SM400A		$26 \times (6498 - 6358.1)$	-1	18.2	181	0.1	
4 - 11 A - 1 - 14 - 17 - 17	Stiffener	SS400	PL		7	7.2	58	0.8	
garante Seguino Se	Sub_Air pipe	SGP	Pipe	250A×2000	1	84.8	85	3.4	
1.7.40	Flange	SM400A		$24 \times (6400 - 6269.5)$	3	12:9	39	0.4	
TOTAL PART OF THE	Reinforcement	SS400	Td	ф 269.	1	9.6	10	0.2	
· vi mini	Water filling device	dSS	Pipe	150A × 4000	r'	79.2	79	4.2	
100		SM400A	1.	$22 \times (4280 - 4166.6)$	œ	6.9	55	0,6	
	Reinforcement	SS400	Pl.	$9 \times (4300 - 4166.6)$	2		7	0, 2	
* * * * * * * * * * * * * * * * * * * *									
e in the law	The second secon			Sub Total			1; 444	32.8	
A									
	Spring type air valve	SC450		250A	ī		330		
	Hand gate valve	SC450		250A	1		210		
	Hand gate valve	SC450		150A	1		95		
	Electric gate valve	SC450		150A			210		
		1 1							
A promote to				Sub Total			845		
10 10 10 10 10 10 10 10 10 10 10 10 10 1	Elbow	SGP		- 1	1	12. 7	13		
	Elbow	SGP		٥,	2	7.1	141		
	Bolt	SUS304			48	0.438	21		
	Bolt	VOESUS	:	Z	72	0.308	22		
				Sub Total			107		
						<u> </u>			
		•		Auxiliary facilities Total			2, 359	32.8	
			. • •						

No.	No	Mart		Dimensions (mm)		Weig	Weight (kg)	Painting /	Arca(m <sup>-</sup> )
		TELLOTEW			Quantity				
	Installation stand			Shape X Length	1 10 11 11 11 11 11 11 11 11 11 11 11 11	Unit	W	Painting	Acid
								1. S.   0. S.	
	For outlet pipe								
	Installation stand (Post)	SS400	-	75 × 75 × 6 × 1300	C				
	Installation stand (Main)	SS400		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	χį,	8.9	7.7	3.1	
	Installation stand (Main)	SSAOO	-	75 775 85 1000	7		23		
3 2 3 3 4	Installation etand (Sub)	00733		13 × 13 × 0 × 1000	8	6.9	55	2.4	
	Inche lation stand	00450	,	(5×(5×6×1000	8	6.9	55	2.4	
	Bear racton Scalin	25400	-	150×50×6×500	91		35	3	
	Dave and the second sec	SS400	[c]	12×200×200	8		30	9 0	
	LINCT TO STATE OF THE STATE OF	SS400	전	9×75×150	16	8	13	2 2	
				The second secon					
	For main air pipe			· · · · · · · · · · · · · · · · · · ·				+	
	Fnstallation stand	SS400		50×50×6×500	- C				
	the second of th	The state of the s			D	7.7	51	0.6	
	For sub arr pipe				+				
100	Installation stand	SS400	-	50 X 50 X 6 X 1000	(				
	the second secon	transfer of the contract of the			7	4.4	6	0.4i	
And the Second of	For water filling device								
The second second second	Installation stand	55400							
3	Installation ctand	00433	2	50 X 50 X 50 U	4	4.4	8	0.8	
	Thetal lation start	00755		50×50×6×250	4	1.1	4		
	maceritation scand	22400	5.	9×180×180	V V	2.3	6	0.3	
				Sub Total			335	13.8	7
	Ashon Lol								
	Anchor Market	≍!		M16×170	48	0.362	121	-	
	menor sector	grass type	: /	91dV	48	0.046	2		
	A CONTRACTOR OF THE PROPERTY O								
				Sub Total			0		
	The second secon				-	1	[2]	-	
				Installation stand Total			75%	0 61	
1				:		-		17.0	
	The second of th						+		
					-				
					1	1			

ions (mm / Leng / S / Leng / S / Leaf > Leaf > C / C / C / C / C / C / C / C / C / C	1a1 033 t 03 t 04 04 05 06 07 t	Dimensions (mm)   Shape	Quantity 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Weigi Unit 74.7 1 1 1 0.02	Weight (kg)  t W 75  4.7 75  1 2  1 2  1 2  0.02	Painting A 1. S. 0. S. 0. 9 0. 9 0. 9	Arca(m <sup>7</sup> ) Arca(m <sup>7</sup> ) Acid 0.9 0.9
Dimensions (mm   Material   Shape × Long	30 C. t. t. t. t. t. t. t. t. t. t. t. t. t.	mensions (mm ve X Leng X 250 X 250 X 250 Sub Tota Sub Tota	Quantity 2 2 2 2 2 2 2				
Shape   Lord   Sussout-Swide   Shape   Lord	30 t t t t	NX 368 X250 X250 X250 X250 Sub Tota	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.0000000000000000000000000000000000000	35	1 1 0 1 1 1 1 1 1 1 1 1 1 1 1	0. 0. 0. 0.
te Leaf > SUS304+SM490 t 58.x490 x 368 to 250	90 t. t. t. t. t. t. t. t. t. t. t. t. t.	X368 X250 X250 Sub Tota Sub Tota	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		2 2 2 1 1	1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	6.0
Leaf   SUS304+SM490   t   58 x 490 x 368     Ing Plate   CAC403   t   15 x 30 x 250     Ing Plate   CAC403   t   15 x 30 x 250     Ing Plate   CAC403   t   15 x 30 x 250     Sub Tota   SUS304   M10 x 20     Sub Tota   SUS304   M10 x 20     Sub Tota   Sub Tota     Sub	t t t f f f f f f f f f f f f f f f f f	X 368   X 250   X 250   Sub Tota   Sub Tota   Sub Tota	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	141   1   1   1   101   1   1	(5) 20 20 11 1	o         i         o         o	
ing Plate	t t	X250 X250 Sub Tota Sub Tota	16 2 2		2 2 2 1 1		
ing Plate	t E. E.	Sub Total X20 Sub Total X20 Sub Total Sub Total	16		2 6 1 1		
Sub Tota   Sub Tota	1. J. T. T. T. T. T. T. T. T. T. T. T. T. T.	Sub Tota X20 Sub Tota Sub Tota <gatc leaf=""></gatc>	16		62 -		
Sub Tota   Sub 303	1. 1.	Sub Tota  X20  Sub Tota <gate leaf=""></gate>	16		-		
SUS304   M10×20	[-] 1	X20 Sub Tota	16		5 0		
SUS304   M10×20	[-] 1	X20 Sub Tota	16		3 1		
SUS304 M10  Sub Total  Sub Total  CGate Leaf>  CS400 Pl. 12×902×222  CFlange SM400A t 28×(φ400-φ250)  CStiffener SS400 Pl. 12×479×980  SS400 Pl. 12×479×980  SS400 Pl. 12×479×980	1 7	Sub Tota	3	0.1			
Sub Total  Sub Total  Cate Leaf  Cate Leaf  SS400 PL 12×902×222  SS400 PL 12×900-φ250)  SS400 PL 12×400-φ250)  SS400 PL 12×479×980  SS400 PL 12×479×980  SS400 PL 12×479×980	1 7	lb Tota					
Sub Total Sub Total	1 1	ub Tota Leaf>			Š		
e SS400 PL 12×902×222 c Flange SM400A t 28×(\$\phi 400 - \phi 250\$) c Stiffener SS400 PL 12×479×980 SS400 PL 12×479×980 SS400 PL 12×479×980	t Pi	Leaf>					
e SSA00 PL 12×902×222 SM400A t 28×(\$\phi 400 - \phi 250) SSA00 PL 12×400 - \$\phi 250) SSA00 PL 12×479×980 SSA00 PL 12×479×980 SSA00 PL 12×479×980 SSA00 PL 12×479×980	P.J.	Leaf>					
e SSA00 PL 12×902×222 c Flange SM400A t 28×(\$\phi 400 - \phi 250)\$ c Stiffener SSA00 PL 12×479×980 SSA00 PL 12×479×980 SSA00 PL 12×479×980	. F.				79		
e SSA00 PL 12×902×222 c Flange SM400A t 28×(¢400-¢ c Stiffener SSA00 PL 12×479×980 SSA00 PL 12×479×980 SSA00 PL 12×479×980	t Pi						
e SS400 PL 12×902×222 e Flange SM400A t 28×(¢400-¢ c Stiffener SS400 PL 9×(¢400-¢2 SS400 PL 12×479×980 SS400 PL 12×479×980	P.					-	-
e         SS400         PL         12×902×222           e Flange         SM400A         t         28×(φ400-φ           c Stiffener         SS400         PL         9×(φ400-φ           SS400         PL         12×479×980           SS400         PL         12×479×980           SS400         PL         12×479×980	P <u>l.</u>		1				
c Stiffener SS400 PL 9×(4400-42 SS400 PL 9×(4400-42 SS400 PL 12×479×980 SS400 PL 12×479×980	t	$902 \times 222$	1	19.1	19	0.4	
c Stiffener SS400 PL 9×(¢400-¢2 SS400 PL 12×479×980 SS400 Pl 12×479×980		$\phi = 001 \phi$	¥-3	17.0	171		
SS400 PL 12X	P.	X ( 4 100 — 42	1	5. 4	3	0.2	
Id 00755	PL	12×479×980	1	ا ا	35		
71	l PL	12×77×980	2	7.2	141	0.3	
SS400 PL	PI.	12×77×520	1	3.8	T	0.1	
SM400A t	t,	25×105×980	2	20. 4	411	0.4	
nge SM400A t	4	25×105×520	1	10:8	11	0.1	
SS400 PL	PI.	12×77×80	2	9.0	11	-	
nge SM400A t	ţ	25×201×721	1	19.2	191	0.2	
SS400 PL	PL	9×159×721		ເດ	5	0.1	
r SS400   PL	PL	9×214×270	2		9	0.2	
ib SS400 PL	PL	9×180×256	2		5	0.2	
c SM400A PL (25)	PI	25×75×200	2	2.	9	1 0 1	
SS400 PL	77	9×125×195	2	-1	3	0.1	
SS400 PL	Pl.	9×70×156	2	,	2	J	
Plate SUS304 t 9	ţ	9×40×830	2	2.	5		ï
Vertical stiffencr SS400 Pl. 9×125×330	-	9×125×330	2	2.	9	0.1	
		· · · · · · · · · · · · · · · · · · ·					

No.		Verter	and the second	Dimensions (mm)		Weig	Weight (kg)	Paintin	Painting Arca(m <sup>2</sup> )
		ro .	, 1	Shape X Length	Vusacicy	Unit	A	Painting	Acid
								1. S. 1 O.	
	Conseal ring	SM400C	ده	( <del>o</del> 360 — o	1	8.7	g)	-	0.2
		CAC703	Ļ	( <del>o</del> 299 — <del>o</del>	1	3.3	89		
	Seal ring clamp bar	SUS304	E,	12× ( 4350 – 4288)	1	2.7	3	-	
	r.								
							~		-
	Outlet pipe	STPG370	Pine	$\sim$	1	13.6	14		0.4
	Outlet pipe Flange	SW400A	ţ	$28 \times (4540 - 4400)$	1	22.9	23		0.2
	Skin plate	SW400A	PI.	32×721×980	1	145.51	146		1.2
	Upper Flange	SM400A	Ļ	25×99×721			7.		12.00
	Air duct	SS400	PL	9×70×241	Ī	1.2	-		1
	Air duct	SS400	PI.	9×241×525	1	6.8	7	-  -	10 0
	Air Pipe	SGP	Pipe	200A × 174	1	5.2	ır		
	` 1	SM400A		$(20 \times (4.320 - 4.203))$	-	7.6	α		1 0
		SS400		9×60×256	2		2		
	•	SS400		9×60×271	2		2		1 0
	- 1	SS400		9×60×156	2	0 7	=		
	Vertical stiffener	SS400	7	9×185×490	2	r. ir.	Ċ.		8 0
	Scat plate	SM400A	ld	25×75×200	2	2.9	9		0.1
	Stiffener	SS/100		9×175×195	2	2.2	_		0.1
	Stiffener	SS400		9×156×70	2		2		1
	Stiffener	SS400		9×70×236	2	1.2	2		110
	Stiffener	SS400	Pl.	9×175×270	7	3.3	131	-	
	Bearing Plate	SUS304	t	15×45×830	2	ŧ	ŏ	-	
								_	
								-	
			:						
								-	-
								-	
								-	
								-	
	the state of the s		1.00					-	
٠.						The second of the second			

our le	OUT LET STRUCTURES ( & 250 Main Control Gate)	1 Gate)							(3/8)
No.	proprieta de la companya del companya de la companya del companya de la companya del la companya de la companya	Waterial		Dimensions (mm)	1 1 2 2 2 2	Weig	Weight(kg)	Painting A	Arca (m²)
	The second secon		*	Shape X Length	woanezey	Unit		Painting	٧٥٠١٩
and reporting to complete the proof of	The second second second second	*******		and the second of the second o				S 0	
The second secon	Bonnet cover	the second section of the second							
direction constitutions.	The second of the second	SM400C		25×300×360	***	16.1	161	0.2	
The second section of	Vertical and the second	SM400C	ţ	25×300×721	1	40.8	41	0.4	
Sympton of the second of the	COVETAN IN Chiefment charactering a contract of the contract o	SS400	Tcl	12×310×721	2		35		
and the second	And the first of the state of t	SS400	ЪΓ	12×310×140	2	1.	30		
A	the sign of the standard as the standard of the standard	SS400	Pl.	12×310×58	7		7	0.2	
har hy at make made	Sciffener	88400	ld	12×75×58	7	0.3	=	0 0	
The second of the	Packing case	SUS304	RB	( \$ 120 - 661) × 65		6.9	12		
The Specificación designi	- 1 - 10 - 11 - 12 - 13 - 13	CAC403	د ۽	ľ					T
a op 192 på paramet den de	Packing clamp bar	CACA03	t	$20 \times (\phi 61 - \phi 45)$		0.5	=		
Trapped Co. St. Co.	A STATE OF THE PARTY OF THE PAR	100.200 100 100 100							
Addition to the second	and the second of the second o		1	Sub Total			607	0 0	c
and the second parties of	the manufactory and description of the control of t								
	Reamer pin-Nut	- SUS304		18 X 50		0 18	-		T
Company of the Company	Bolt, Nut	- SUS304		M18×65 N.SW	19	0, 24	· ic		
	and 1864 to see the second second second second to the second second second second second second second second	SUS304		M8×16	7.	0.01	ī		
	-	NBR		φ.5, 7×935	-	0.03			
	~1	··· NBR···		0 45.7 × 942	1	0.03	1	-	
	"O"ring	NBR		Ø 5. 7 × 1382	1	0.04	<del>   </del>		
	Bolt, Nut	SUS304	40.00	M22 × 85 N, SW	12	0.46	19		
	Bolt, Nut	SUS304		M24 × 100 N, SW	91	0.64	101		
7	Bolt, Nut	SUS304	1	M18×65 N, SW	14	0, 24	ñ		
And the second second second		SUS304	2	al wa	7	0.0	-		
***	V.Tpacking	"Cloth insorted	rubber	P45	V	0.01	Ī		
	The second secon								
				Sub Total			25		
1									
				< Bonnet > Total			632	6 6	
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OUT LE	OUT LET STRUCTURES ( \$250 Main Control Gate)	ol Gate)		Dimensions (mm)		.	Weight (kg)	02:11	0 . V	(4/5)
No,	Temporal and the man and man and man and and and and and and and and and a	Material			Quantity		Sile ing/	raint	rainting Area(m)	\ <b>E</b> \ 8
				Shape X Longth		Unit		Painting	ing	Acid
	\tag{1.51}							.S.1	0.8	
	\1018t\		1					-		
	Stand Base	SS400	ţ	20×300×360- \$ 120	1	15.2	15		0	Ī
	Stand	SS400	bľ.	$8 \times 402.1 \times 310$	1			+	, c	T
	Holst Base	SS400	t	$20 \times (4300 - 4120)$	1	Ġ		<del> </del>		T
	Stiffener	SS400	Ы	8×82×310	4	9		1	3 0	1
	Spindle	SUS304N2	RB	50 × 1580		24 B		<del> </del>		T
****	Couoling	SUS304	83	(\$100-\$45) X110	( -	7 5	3	$\dagger$	$\dagger$	
AND A CONTRACTOR	The second secon		: :						+	
	The second secon			Sub Total			08	1	6	
	the second of th						65	1	+	) )
A Section of the control of the cont	Spindle motor			Spindle motor		0 220	410	1	+	T
				Raising height 0.350m			717	1	+	
	The second secon			Motor nower 1 5km						T
				1 2 2 2 4 4 5	1				+	
	The control of the co	1 1 2 2		ı	DOSTRION CLAR	r ransmirer		1	+	
			3	Mg_1					1	
The second	er en en en en en en en en en en en en en		T	T. C. W.				-	-	
										-
	The second secon	100 1000 1000 1000		Suo lotal			2171			
4	Studbolt-Nut	708SIIS		WEYET NI SW	ľ	- 1		1	-	
***	Boilt and the second of the se	SliSand			χ) ¢	0. 177		1	1	]
	Bolt, Nut	S11S304		2	0	0.045	0	1	+	
	Reamerbolt, Nut	1000113			c	0.37	2	-	-	
		10000		0 10 × 130 N, 3M	7	0.37				
and the second				Sub Total				1	+	
And the Age							7		$\frac{1}{1}$	
				< Hoist >Total			000			
			Ī				730	5	; ;	Ö Ö
	The second secon						1		+	
	The second secon							1	1	<u> </u>
A SECTION OF SECTION S								1	1	7
			T					~	- -	
			r				1	-	1	7
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lour LE	OUT LET STRUCTURES ( & 250 Main Control Gate	.l Gato)	• • • • • • • • • • • • • • • • • • • •						(2/2)
5		V		Dimensions(mm)		Weig	Weight (kg)	Painting	Painting Area(m²)
		Material	100	Shape X Length	- Ansurick	Unit	Α	Painting	Acid
								1. S. 1 O. S.	-
The second second	Valve stand							-	
engal da en en en en en		SS400		9×600×300	2	12.7	25		0.7
e promovenski se se se	Web and the contract of the co	SS400	Ы	9×600×112	2	4.7	6		0.3
	Stiffener	SS400		9×300×112	2	2.4	ເດ		0.1
	Liner plate	SS400		46×150×100	1	5.4	22	0.2	
	- Anchor-Base	SS400	J.J.	008×009×6	1	12.7	13	0.4	
		and the second		Service of the servic					
a company on a	and the second of the second o			Sub Total			74	0.6	1:1
a library or a second	and the speed of the state of t							-	
	Anchor bolt	SS400		M16×170	7	0.362	-	-	
	Anchor setter	glass type		AP16	٧	0.046	1		-
	and the second of the second o								
100	and the second of the second o	the second second		Sub Total	The second secon	1			
	the majority was the second se	the contract of the contract of		and the second of the second o	-	:	-		
***	the state of the s			Valve stand Total			75	9.0	1.1
	and the second s								
	Specifical and the second seco	A CONTRACTOR OF THE PARTY OF TH							
A company of the second	A the second of			Steel Material			828	0.6	11.9 0.9
100	and the second s			Material purchased			30	-	
				Material single unit			217	-	
									-
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		P-1						•	
	A series of the								

Jour LE	OUT LET STRUCTURES ( $\phi$ 250 Guard Gate)									(1/2)
ź	1			Dimensions (mm)		Weig	Weight (kg)	Painti	Painting Arca(m"	a (m.)
•0v1	Section of the sectio	water1a1		Shape X Length	vuantity	Unit	≯	Painting	K K	Acid
	<gate 1.caf=""></gate>							1. S.   C	o. S.	
	Gate Leaf	SW400C	ţ	50×380×388	1	46, 3	46		0.3	
	Scal clamp bar	SUS304	ť	10×74×298		1.7	2		-	1
	Beading Plate	CACAGS	ţ	20×35×320	2	2	7		ī	
	Scal Plate	CACADS	ţ	20×35×300	<b>, ,</b> ,	1.8	2		!	
	Guide Plate	CACA03	ţ	15.7×25×275	2	6.0	2		1	
				Sub Total			56		0.3	0.0
		2		10 × 90 13 12 500 1			1		1	
	3	N 411	,	ו זמר מכמד ו	1				1	
	Bolt	SUS304		M12 X 20	5	0.034	1			
3	Bolt	SUS304		M10×20	19	0.023	•			
	Bolt	\$118304		M8×16	9	0.012				
	[Eyebol t	SUS304		W8	2	0.028	1	_		
	the second secon							_		
				Sub Total			0			
								-		
		:		<pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre></pre> <pre></pre>			56	-	0.3	0.0
	The second secon								-	
	<bonnet></bonnet>									
	Bonnet									
	Intake pipe	SS400	RB	$(6280 - 6250) \times 156$	1	15.3	15		0.3	
111	Intake pipe Flange	SM400A	t	$ 28 \times (6400 - 6250) $	1	16.8	11		0.1	
	Skin plate	SS400	Ρľ	16×442×810	1	39. 1	39		0.6	
a september	Side plate	SS400	Ы	16×55×810	2	5.7	11		0.2	
	Side Flange	SM100A	t	30×115×810	2		77		0.2	
	Upper Flange	SM400A		30×225×640	1	25.8	26		0.1	
	Guide shoe	SUS304	¢	9×35×630	2		65			-
And the second second	Sill guide	SM400C	t.	115×85×410	1	31.5	32		0.2	
and the second second	- Horizontal girder	SS400	ρľ	9×151×640	2		6			
Alle I algorithms	Horizontal-girder	SS400	FB.	44×12×938	2	3.9	90			
		SS400	Ρľ	9×170×227	2	2.3	9.		0.1	
		SS400	IJ	9×120×156	1				-	
	[Horizontal stiffener	SS400	Pľ	9×86×156	2	0.7	•			
	The second secon								:	

OUT LET	T STRUCTURES ( \$250 Guard Gate)								(5/6)	- (c
No		Matorial		Dimensions (mm)	7 + 1 + 2 = 10	Weigh	Weight (kg)	Paintin	Painting Area(m²)	
			1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Shape X Length	אַרמוורן רּיץ	Unit	М	Painting	R Acid	r
Security Security Sec.	and the second of the second o							l. S.   0.	<u> </u>	Γ
Section of the section of		SS400	 []	9×50×181	2	0.6	1]		1	
e e i proposition de la company	Vertical stiffener	SS400	7	9×156×199	2	1.5	3		0. 1	ı
They are an extra	Seat plate	SS400	Ŀ	12×100×460	1	4.3	4		0.1	Γ
And the state of the state of	errors and property of the second second second second second second second second second second second second		10.1							<u></u>
Service to the contract of the	Bonnet									Γ
tel or way have been a	Outlet pipe	SS400	RB	( $\phi$ 300 $ \phi$ 250) $\times$ 392	I	52.5	53		0.5	Ė
promote a substitution of the	Outlet pipe Flange	SM400A	ţ	$28 \times (4400 - 4250)$	1.	.16.8	171	-	0.1	1
e problema i de la confessioni		SM400A	Ρľ	32×640×810		115.9	116		0.1	Τ
and the second second in the second s	Upper Flange	SM400A	t	30×140×640	1		21		0.1	Τ
production and production	Bearing Plate	SUS304	J.	15×50×640	2	ı.	ဇ			Ti
and the second s	Bearing Plate	SUS304	t	10×60×290		1.4	1			Tī
Control of the Contro	Air-Pipe	SGP	Pipe	150A X 289		5. 7	ŷ	-	0.2	Τ
The state of the state of		SS400	Ы	9×75×620		33	3			7
The second	Horizontal girder	SS400	æ	50×12×570	1	2.7	£		0 1	Τ
1.00	Norizontal girder	SS400	Pľ	9×65×620	-7	2.8	က		0, 1	Γ
1.00		SS400	PI.	9×38×570	~	1.5	2	-	ı	Γ
The state of the state of	Morizontal stiffener	SS400	ЪΓ	9×160×392	23		9		0.2	Γ
The second of th	- 3	SS400	ŀd	9×110×392	1	2.3	2			Τ-
congress of the same		SS400	LI.	9×127×155	2		23		0.1	Γ-
	Vertical stiffener	SS400	Pľ	9×94×147	1	9.0	,,,,		1	Γ
Tara para and	Seat-plate	SS400	ΡĹ	12×110×570	1	9. 9.	9		0. 1	Γ
	Side stiffener	SS400	ld.	9×50×256	2		2		0.1	Γ
	Side stiffener	SS400	ld	9×50×191	2	0.7	1			Τ
	Side stiffener	SS400	딥	9×50×181	2	0.6	7		0.1	Į
	Side stiffener	SS400	Ы,	9×156×185	2	1.4	3	-	-	Γ
										T-
			:		<b></b>	-		-	_	Γ
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AND THE STATE OF T		,	Shape X Length	אַמְשְּׁחֵכְיוֹ רָא	Unit	Ď.	Painting	Acid
		-			:		I.S.   0.S	
Bonnet cover								
Lower plate	SM400A	ţ	30×360×640	1	51.5	52	0	.2
Upper plate	SM400A		23×360×400	1	23. 7	24	C	0.11
Webs	SS400	PL	9×347×620	2	11.2	22	0	9.
Stiffener	SS400	-	9×85×347	<b>V</b>	2.1	60	0	0.2
Stiffener	SS400		9×152×347	2	3.7	7	Ċ	.2
Bush	CAC403	ţ	(461-445)×20	1	0.2	0		1
Boss	S400	t	( \$ 120 - \$47) X65	1	4.9	ĸ		1
Packing clamp bar	CAC403	ţ	$(6110-645) \times 26$	1	1.0	1		1
And the second s	Annual page of the second							
			Sub Total		:	593	5.	8
And the second of the second o							-	
("Ofring"	NBR		φ5.7×940	2	0.038	Ī		
"O'ring	NBR		φ5.7×3210	1		ī		
was Bolt to the second of a second se	SUS304		W10×35	4	0.032	ï		
Bolt	SHS304		₩8×30	2	0.016	T		
Bolt, Nut	SUS304		M22 × 85 N, SW	24	0.491	12		
Bolt, Nut	SUS304		N,	14	0.571	8		
And the second s	SUS304		M24×160 N, SW	9	0.822	5	•	
, Nut.	SUS304		\$30×90	4	0.718	3		
and the second of the agreement of the	SUS304		124×90 N, SW	12	0, 571	2		
, Nut	SUS304		Ф25×90	2	0.571	11		
"-V"packing	Cloth inserted r	rubber	F45	4	0.012	1		
Flange	SUS304		IOK-150A	1		9		
the second of th			The state of the s					-
	The second secon		Sub Total			42	•	
and the second of the second o								
and the second of the second o		1	< Bonnet > Total			635	16	8.3
the second of th								
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No.	1111	UUI LEI SIKUCIUMES ( & 250 Guard Gate)									(4/2)
Shape × Length   Unit   W Painting   Acid	Ş	1941	Vo.*0**	:	Dimensions (mm)		Weig	nt (kg)	Paint	ing Ar	CR (m <sup>-</sup> )
1.5   0.5   1.5   0.5   1.5   0.5   1.5   0.5   1.5   0.5   1.5   0.5	2	The state of the second state of the state o	materi		Shape X	uuanti ty	Unit	Æ	Paint	Sui	Acid
Subsect									I.S.	0. S.	
Base   SNAGOA   1   23.860.8400-6 150   1   22.8   23   - 0.1								ż			
t Basec SMA000 t 20.00			SM400A	ţ	Ð	1	22.8	23	1	0.1	
Ease   SN4000		Stand	SS400	Ρľ	9×499, 5×254	1	0.6	5:		0.3	
Signature		Hoist Base	SM400A	t	<b>♦340-</b> ♦	1		3		0	
Signory   Sign		Stiffener	SS400	ΡĽ	9×86×254	4		9		0.2	
Sussoid   Ris (\$\phi 100-\phi 5\text{Times}   5.6   6   6   6   6		Spindle	SUS304N2	RB	50 X 1340	-	20.9	21	-		[
Sub Total   Sub Total   78 0.0 0.7 0.		Couoling	V0ESUS	RB	(φ100-φ45) ×110	-	3.6	9			Ī
Spindle motor   Spindle motor   1   217.0   217											
Spindle motor   Spindle motor   1   217.0   217					Sub Total			78	0.0		
Shindle motor   Shindle motor   Shindle motor   Shindle motor   Shindle motor   Shindle motor   Shindle							,				
Raising height 0.290m   Motor power 1.5kw   Motor power 1.5kw   Motor power 1.5kw   Motor power 1.5kw   Macor power 1.5kw		Spindle motor			Spindle motor	1	217.0	217			
Motor power 1, 5kw   Motor power 1, 5kw					o						
Number   N											
Spindle Tr50x8					converter electrical	n transmit	10				
bolt-Mut SUS304 M20×79 N,SW 8 0,341 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5					ndle Tr50×8					T	
Sub Total   SuS304   W20×79   N, SW   8   0.341   3									ļ	ľ	
bolt-Mut SUS304 MZ0×79 N,SW 8 0,341 3 SUS304 MZ0×102 N,SW 6 0,045 − SUS304 MZ0×102 N,SW 6 0,39 2 erbolt,Nut SUS304 MZ0×102 N,SW 6 0,39 1 Sub Total 6 6 0.0 0.7 0.									-		
bolt:Nut SUS304 M20×79 N,SW 8 0.341 3					Sub Total			217	,		
bolt.Nut SUS304 M20×79 N,SW 8 0.341 3 6 8 8 0.341 4 8 8 0.341 3 6 8 8 8 0.341 4 9 8 8 0.341 4 9 8 8 0.341 4 9 8 8 0.341 4 9 8 8 0.341 4 9 8 8 0.341 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9											
SUS304   M10×30   SW   6   0.045   -		Studbolt.Nut	SUS304		79 N,	8	0.341	က		-	
with SUS304 M20×102 N,SW 6 0.39 2   Color of the color o		Bolt	SUS304			9	0.045	Ī	-		
exbolt, Nut     SUS304     W20×102     N. SW     2     0.39     1     6     8       Sub Total     6     6     6     6     6     6     6       Aloist>Total     301     0.0     0.7     0.7     0.7		Bolt, Nut	SUS304		N,	Ġ	0.39	2			
Sub Total 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		Reamerbolt, Nut	SUS304		N,	2	0.39	1			
Sub Total 6							-				
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Selection (1) (2) (1) (1) (2) (3) (1) (3) (1) (4) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1											
					<pre><hoist>Total</hoist></pre>			301	0.0		
			•						-		
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OUT 1.E.	OUT LET STRUCTURES ( \$250 Guard Gate)	rate)							(5/5	2
Z.	E C 4	Marketter		Dimensions (mm)		Weig	Weight (kg)	Painting	Painting Arca(m <sup>2</sup> )	
		Mater 191		Shape X Length	waanciicy	Unit	W	Painting	Acid	
								1. S.   0. S.	<del> </del>	Γ
	Valve stand									· [
	Main girder	88400	PI.	9×125×480	な	4.2	1.7	0 1 0	0.4	Γ
	Main girder	SS400	Ы	9×160×480	2	5.4				Γ
	Main girder	SS400	PL	9×80×125	<b>7</b>	2.0	33	_	0.1	Γ
	Main girder	SS400	Pi,	9×100×160	2	1.1	2		2, 1	r
	Stiffener	SS400	Pł.	9×95×160	4	1.1	7		0. 11	<u> </u>
	Anchor Base	. SS400	Pl,	9×330×530	-	12.3	12	0.3		<u> </u>
	Liner	SS400	ţ	66~25×100×180	4	6.4	26	0, 1		
										<u> </u>
				Sub Total			75	0.5	0.	<u> </u>
						3			-	<u> </u>
	Anchor bolt	SS400		M16×170	ゼ	0.362	1			Γ
	Anchor setter	glass type		AP16	4		1			Γ
										Γ
				Sub Total						
								-		<u> </u>
				Valve stand Total			76	0.5	1.0	
					***					_
									_	_
				Stoel Material			802	0.5	7.8] 0.	0
				Material purchased			642			_
				Material single unit			217			Γ
										<u> </u>
										<u> </u>
			٠.				. ;			Γ-
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tem								12.
	Mararial		Dimerratoria (um)	Originative	#e1	Weight (kg)	Painting Area(m",	rea(m*)
			Shape X Length	מתסוורי הא	Unit	A	Painting	Acid
Auxiliary facilities	the second of the second of						I. S. 0. S.	
The second secon	The second secon		and the second of the second of the second of the second of				├-	
Connecting pipe	SS400	. PL	9×259 π × 1000	L	57.5	58	4.2	
A CONTRACTOR OF THE CONTRACTOR	SM400A	ţ,	$28 \times (6400 - 6250)$	7			1.0	
Outlet pipe	SGP	Pipe	400A × 4800	1	372. 5	373	5.7	
the management of the second o	SM400A	ţ	28× ( \$560 - \$409)	1			0.6	
angles of the same was the same was the	SS400	PL	9X ( 4559 - 4409)	V	8. 1		2.5	
Main Air pipe	SGP	Pipe	200A × 4800	1	144.5		6.8	
the state of the s	SW400A	t	22 × ( $\phi$ 330 – $\phi$ 218)	Ī	ς α		0.1	
Stiffener	SS400		6	7	4.2	17	0.8	
Sub air pipe	SGP	Pipe	150A × 2000	1	39, 6		, A	
	SM400A	ر	22 × ( $\phi$ 280 $ \phi$ 166, 6)	3			0.4	
Reinforcement	SS400	P.	9×( ¢ 300 – \$ 166. 6)	1			0.2	
		:						
			Sub Total			756	27.8	
Spring type air valve	SC450		150A	1		190		
Hand gate valve	SC450		150A	I		98	_	
							-	
			Sub Total			285		
	SGP		150A 45° E(L)	1	3, 55	7		
	SUS304		M20×65 N,W	28	0.308			
				-				
			Sub Total			13		
			Auxiliary facilities Total			1,054	27.8	

110 11.	OUT LET STRUCTURES ( \$ 250 Installation stand)	on stand)							[(1/1)]	
Ž	The second state of the se	West of the second		Dimensions (mm)		Weig	Weight(kg)	Painting Arca(m <sup>2</sup>	rea(m²)	
JVO,	The second secon	Matcriai		Shape X Longth	Wuantity	Unit	W	Painting	Acid	
	Installation stand						-	1. S. 1 0. S.		
	For outlet pipe									٠.
	Installation stand(Post)	SS400		75×75×6×700	8	4.8	38	1.71		
	Installation stand (Main)	SS400	1	009×9×52×52	4	4.11	16	0.7		
	Installation stand (Main)	SS400	1	75×75×6×800	8	5.5	14	1.		
	Installation stand (Sub)	SS400	7	75×75×6×800	8	5.5	44	1.9		
	Installation stand	SS400	.7	20×20×6×500	16	2.2	35	1.6		, è
	Base	S\$400	굺	12 × 200 × 200	8	3.8	30	0.6		
	Liner	SS400	Ε,	9×75×150	16	0.8	13			٠.
					, ,					
	For main air pipe									
	Installation stand	SS400	1,	50×50×6×300	9	1.3	8	0.4		
	For sub air pipc			The second secon		1	1	-		
		SS400	1.	008×9×05×05	2	3.5	2	0.3		
				Sub Total			235	9.5		
	The second secon									
	Anchor Bolt	SS400		M16×170	32	0.362	12		:	-
	Anchor setter	glass type		9{dV	32	0.046	1			٠.٠.
				Sub Total		3	13	-	-24-	
		11 11 A		and the second s						
				Installation stand Total		:	248	9.5		
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	the second of the second of the second of the second of the second of the second of the second of the second of									
	and the second of the second o									
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No,								(1/2)
	Matorial		Dimensions (mm)	7.4	Weig	Weight (kg)	Painting Are	Area (m-)
			Shape X Length	אַפּפוורדרא	Unit	М	Painting	Acid
Operation stand							1. S.   0. S.	
All the second of the second o							 	
Floor slab	SS400	chPL	4.5×900×4700	12.1	156.5	157	8.5	
Floor slab	SS400	chPL.	Х	1	103.2	-	5.6	
Floor slab	SS400	,	4.5×500×900	1	16.6		6.0	
Main girder	SS400		150×150×7/10×5500	2	173.3	34	6.6	
Main girder	SS400		150×150×7/10×2200	57			4.0	
Main girder	SS400	H I	150×150×7/10×900	6	28.4		7.3	
Main girder	SS400		$150 \times 150 \times 7/10 \times 500$	2	15.8	32	0.9	
The state of the s	SS400	I II	$150 \times 150 \times 7/10 \times 2850$	1/1	89.8		35, 9	
Post war in Post	SS400	H	$150 \times 150 \times 7/10 \times 650$	2	20.5		1.2	
Horizontal beam	SS400		$150 \times 150 \times 7/10 \times 750$	10	23. 6		8.9	
Horizontal beam	SS400	Н	$150 \times 150 \times 7/10 \times 1350$	4	42.5			
[Horizontal beam	SS400	111	$150 \times 150 \times 7/10 \times 1450$	8	45.7		10.4	
	SS400	I. H	$/10 \times$	8	18.9	151	4.3	
	SS400	H	150×150×7/10×550	7	17.3		2.0	
and the Base and the second se	SS400	P!	12×300×300	16	8.5		2.9	
	SS400	t	10×300×300	16	7.1		2.9	
Stiffener	SS400	PĮ.		176		1	3.2	
Sub beam warm and a second	SS400		75×75×6×750	6		97	2.0	
	SGP	•	32A×5400	[ ]	18.3	18	0.7	
Hand Rail	SGP	Pioe	32/X × 4600	1		191	0.6	
Hand Rail	SGP		32A×2400	1 1	8. 1	8	0.3	
a sayliand skarl	SGP		32A×1600	1	5.4	3	0.2	
land Rail	SGP		32A×1250	1	4.2	4	0.5	
	SGP	Pioc	32A×1100	28	3. 7	104	4.1	
	SGP	Pioe	25A×5400	2	13.1	26	1.1	
	SGP	Pioe	25A×4600	2	11.2	22		
Hand Rail	SGP	Pioe	25A X 2400	ત્ય :	5.8	12	0.5	
Hand Rail	SGP	1	25A × 1600	2		8	0.3	
Hand-Rai-I-	SGP		25A × 1250	2	3.0	9		
Hand Rail	SS400	FB	50×6×15250		35.9	36	1.5	
					-			
						<u></u>		

2			,	Dimensions (mm)		Weig	Weight (kg)	Painting	Arca(m <sup>-</sup> )	
j.		Material		Shape X Length	Wushii ty	Unit	Δ	Painting	Acid	
								I.S.   0.S.	-	¥
	Laddor	SS400	ГВ	75×9×2800	9	14.8	68	_	5	
** ** ** * * *	Ladder	SS400	KB.	00 <i>ν</i> ×61 <i>φ</i>	30	0, 89	27	0.7	7	
	Ladder	SS400	FB	009×6×57	2	3.2	9	0	2	
	Laddor	SS400	RB	00½×61φ	3		3	0	1	· •
1	Ladder	SS400		75×75×6×300	22	2. 1	46		2	
	Ladder	SS400		75×75×6×300	9	2. 1	13	o	5	
										· ·
				Sub Total			4, 192	130	3	<b>-</b>
	Anchor bolt	004SS		M16×170	64	0, 362	23			т
	Anchor setter	glass type		VP16	9	0.046	8			ı
	Bolt	001/88		M20×60 N	91	0.273	4			,
	and the second of the second of the second of									T
				Sub Total			30			r
		: :								
			Ŧ	Operation stand Total			4, 222	130	3	
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	and the second of the second o									1
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	the second of th									· Y
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(1/8) a Area(m <sup>-</sup> )	Acid																			:												
Paintinga	Painting	_		:							 			-				•				-										
	G.		400		4.1	0.4		3.9	3.11	1.8	 1.3		41.7	20.0	15, 5		4.2	2.6	0.6	J	2.9	1.3	0,5	-	1.0	0.8	0.3	0.6	0.4	0.1		
Weight(kg)	Unit	1	400		0.215	0.045		0.300	0.240	0, 135	0.00		6.95	5.01	3,88		0.70	0.43	0.2		0. 18	0.09	0.05	-	0.98	08.0	09.0	0.30	0. 18	0.10		
	Quantity 		1		19m	θΨ6		13m	13m	1.3m		-	9	4	4		9	9	3		16	14	9		1. Om	1.0m	0.5m	2	2	1		
Dimensions (mm)	Shape X Length		W1000×H2000×D600			600V IV3.5sq		CVV2sq-7c	cvv2sq-5c	cvv2sq-2c	Compression terminals, tapes		Rigid Steel Conduits(G28)	Steel	Steel		Normal Bends (G28)	Normal Bends (G22)	Normal Bends (G16)		(Couplings (G28)	(Couplings (G22)	Couplings (G16)		Flexible Metal Conduits (#30)		Flexible Metal Conduits(#17)	Union Couplings (#30)	Union Couplings (#24)	Union Couplings (#17)		
<b>- 1</b>	Material					-																										
ONTROL CABINET FOR BULK HEAD	sometiment of the second of th		Local Control Cabinet		Cables						Fittings for Cables		Rigid Steel Conduits																			
OCAL C	Š.						,					-				-																

LOCAL CONTROL CABINET FOR EMERGENCY GATE Local Control Cabinet  Cables Rigid Steel Conduits

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(4/8)	Asea(m-)	Acid	}												_				_										-					
	Paintinga Arca(m <sup>-</sup> )	Painting		***		سب		 _			<u></u>			-				_		-						_								
		ı M		0.48	0.30	0.10	17, 2		483.6																				-	-				
	Weight (kg)	Unit		0.24	0, 15	0.10	 1.00														-											_	_	
	Ortania	לחמוורז רא		2	2	-																					7							
	Dimensions (mm)	Shape X Length		Box Connectors (#30)	Box Connectors (#24)	Box Connectors (#17)			Total																									
GATE (2/2)	1,10	יוש רכז זמו																							ę									
LOCAL CONTROL CABINET FOR EMERGENCY GATE (2	EV4 Since the April 1999	and the second control of the second control					 Fittings of Metal Conduits				*			The second secon						And the second s			and the second of the second o		A CONTRACTOR OF THE CONTRACTOR		the second secon	the second of th	A SECTION OF THE PARTY OF THE P	the second control of the second control of the second of	A DESCRIPTION OF A DAMESTIC AND A SECOND PROPERTY OF A SECOND PROPERTY O			
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Shape X   Longth   Quantity   University   Local Control Cables   Shape X   Longth   Quantity   University   Local Control Cables   Shape	Logal Control Cabinet Cables.  Fittings for cables Rigid Steel Conduits	erial	<b>45</b>	Quantity	Unit W		, m) 22 m
Control Cabinet         Shape X Longth         Union Coupling (G36)         Union Coupling (H17)         Image And Incompleted (H17)	Control Cabinet  Rs for cables  Steel Conduits		Shape   X   Longth   W800 X H2000 X D600   Son-3c	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_	
WROO XH2000 X D600   1	Control Cabinet  RE for cables Steel Conduits		WS00 X HZ000 X D600			Painting	Acid
WOOD   WOOD	Control Cabinet  RE for cables  Steel Conduits		WS00 X H2000 × D600				
13m   600V CV3.5sq-3c   13m   600V LV3.5sq   13m   600V LV3.5sq   13m   600V LV3.5sq   13m   600V LV3.sq-15c   13m   600V LV3.sq-15c   13m   600V LV3.sq-15c   6m   6m   6m   6m   6m   6m   6m   6	RE for cables Steel Conduits		600V (FV3 550-30	1	400	10	
Cables	RE for cables Steel Conduits		1600V CV3 Sen-3r				
CVV2sq-15c   Gm	Rs for cables Steel Conduits		20.00.00	13ш	0.215	i de	
CVV2sq-15c   13m     Eittings for cables   Compression terminals, tapes     Rigid Steel Conduits (G36)   3     Rigid Steel Conduits (G26)   3     Rigid Steel Conduits (G26)   1     Normal Bends (G36)   6     Normal Bends (G36)   13     Coupling (G22)   6     Coupling (G22)   13     Elexible Metal Conduits (#17)   1     Union Couplings (#24)   2     Union Couplings (#24)   2     Union Couplings (#24)   2     Union Couplings (#24)   2     Union Couplings (#27)   2     Union Couplings (#27)   2     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1     Box Connectors (#17)   1	Rs for cables Steel Conduits		600V IV3, 5sq	13m	ic	9	
CVV2sq-15c   13m     CVV2sq-2c   6m     Cittings for cables   Compression terminals, tapes     Rigid Steel Conduits (G36)   3     Rigid Steel Conduits (G36)   1     Rigid Steel Conduits (G22)   3     Rigid Steel Conduits (G36)   1     Normal Bends (G22)   6     Normal Bends (G22)   6     Normal Bends (G22)   6     Coupling (G22)   13     Flexible Metal Conduits (#38)   1.0m     Flexible Metal Conduits (#38)   1.0m     Flexible Metal Conduits (#17)   0.5m     Union Couplings (#24)   2     Union Couplings (#24)   2     Union Couplings (#24)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   2     Box Connectors (#38)   3     Box Connecto	Rs for cables Steel Conduits		the second of th				
Compression terminals, tapes   Cittings for cables   Compression terminals, tapes   Cittings for cables   Rigid Steel Conduits (G22)   3   Rigid Steel Conduits (G22)   3   Rigid Steel Conduits (G22)   3   Rigid Steel Conduits (G22)   6   Coupling (G22)   6	igs for cables Steel Conduits		CVV2sq-1.5c	13m	0.560	·	
Rigid Steel Conduits   Rigid Steel Conduits (G36)   3   Rigid Steel Conduits (G36)   3   Rigid Steel Conduits (G22)   1   1   1   1   1   1   1   1   1	Steel		CVV2sq-2c	9		2	
Rigid Steel Conduits   Rigid Steel Conduits (G36)   3	Stee]						
Rigid Steel Conduits (G36)   3	Stec]		Compression terminals, tapes		2.1	2	
Kigid Steel Conduits   Rigid Steel Conduits (G36)   3     Rigid Steel Conduits (G22)   3     Rigid Steel Conduits (G36)   1     Normal Bends (G36)   6     Normal Bends (G22)   6     Normal Bends (G22)   6     Rigid Steel Conduits (#38)   1.0m     Flexible Metal Conduits (#38)   1.0m     Flexible Metal Conduits (#38)   2     Union Couplings (#38)   2     Union Couplings (#38)   2     Union Couplings (#17)   1     Box Connectors (#38)   2     Box Connectors (#37)   2     Box Connectors (#37)   1	Steol		A STATE OF THE STA				
Rigid Steel Conduits(G22)   3			Steel	33	8.89	7	
Steel Conduits (G16)   1   1   1   1   1   1   1   1   1			Stee!	8	01		
Bends (G36)       6         Bends (G22)       6         ng (G36)       13         ng (G32)       13         le Metal Conduits (#38)       1.0m         le-Metal Conduits (#24)       1.0m         le-Metal Conduits (#17)       0.5m         Couplings (#38)       2         Couplings (#17)       1         nnectors (#24)       2         nnectors (#17)       2         nnectors (#17)       2			Steel Conduits (616)	-	3.88	6	
Bends (G22)       6         Bends (G22)       6         ng (G36)       13         ng (G22)       13         le Metal Conduits (#38)       1.0m         le Metal Conduits (#24)       1.0m         le Metal Conduits (#17)       0.5m         Couplings (#38)       2         Couplings (#24)       2         Couplings (#17)       1         nnectors (#38)       2         nnectors (#17)       2         nnectors (#17)       2							
Bends (G22)       6         ng (G36)       13         ng (G22)       13         ng (G22)       13         le Metal Conduits (#24)       1.0m         le Metal Conduits (#24)       0.5m         le Metal Conduits (#17)       2         Couplings (#38)       2         Couplings (#24)       2         Couplings (#17)       1         nnectors (#17)       2         nnectors (#17)       2				9		2	
ng (G36) 13  ng (G22) 13  le Metal Conduits (#38) 1.0m  le Metal Conduits (#24) 1.0m  le Metal Conduits (#17) 0.5m  Couplings (#38) 2  Couplings (#24) 2  Couplings (#17) 1  nnectors (#24) 2  nnectors (#17) 1  nnectors (#17) 1			- 1	9	62	9	
13   13   13   13   15   15   15   15							
le Metal Conduits (#38) 1.0m le Metal Conduits (#24) 1.0m le Metal Conduits (#24) 1.0m le Metal Conduits (#17) 0.5m Couplings (#38) 2 Couplings (#24) 2 Couplings (#17) 1 Couplings (#17) 1 Couplings (#17) 1			Coupling (G36)	13	0.22		
le Metal Conduits(#38) 1.0m le Metal Conduits(#24) 1.0m le Metal Conduits(#17) 0.5m Couplings(#38) 2 Couplings(#24) 2 Couplings(#17) 1 Couplings(#17) 1 Couplings(#17) 1 Couplings(#17) 1		1	Coupling (G22)	6.	1 00	200	
le Metal Conduits(#38) 1.0m le Metal Conduits(#24) 1.0m le Metal Conduits(#17) 0.5m Couplings(#38) 2 Couplings(#24) 2 Couplings(#17) 1 Couplings(#17) 1 Couplings(#17) 1 Couplings(#17) 1				?	:		
1e Metal Conduits (#24)       1.0m         le Metal Conduits (#17)       0.5m         Couplings (#38)       2         Couplings (#24)       2         Couplings (#17)       1         nnectors (#38)       2         nnectors (#17)       2         nnectors (#17)       1			Metal Conduits	Č.	1.98		
le Metal Conduits(#17) 0.5m  Couplings(#24) 2  Couplings(#24) 1  Couplings(#17) 1  nnectors(#38) 2  nnectors(#24) 2  nnectors(#24) 2			Metal	- C	c	2 0	
Couplings (#38)       2         Couplings (#24)       2         Couplings (#17)       1         nnectors (#38)       2         nnectors (#24)       2         nnectors (#17)       1				0. Sm	09		
Couplings (#38)       2         Couplings (#17)       1         Couplings (#17)       1         Innectors (#38)       2         Innectors (#24)       2         Innectors (#17)       1							
Couplings (#24)       2         Couplings (#17)       1         nnectors (#38)       2         nnectors (#24)       2         nnectors (#17)       1			Union Couplings (#38)	67	0.41 0.8		
Couplings (#17)       1         nnectors (#38)       2         nnectors (#24)       2         nnectors (#17)       1			Union Couplings (#24)	22	0		
nnectors (#38) 2 nnectors (#24) 2 nnectors (#17) 1			Union Couplings (#17)		c		
Connectors (#24) 2 Connectors (#24) 2 Connectors (#17) 1				 			
Connectors (#24) 2 Connectors (#17) 1			Box Connectors (#38)	2	0.33		
Connectors (#17)			Box Connectors (#24)	2			
			Box Connectors (#17)	-	0		
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Shape X Longth Wuantly Unit W Painting  Total 495.2		The second secon			TO THE CO	Ulmensions (mm)			Weight (kg)	Paintinga Arca(m")	Arca (m.)
19.0   19.0		and figure as all tom consignment of some	Material				Wuantıty		Δ.	Painting	Acid
Total 495. 2   19.0   1											
19. 0											
Total 495. 2  Total 495. 2	Fitt	tings of Metal Conduits					1		19.0		
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1965.2   1966.2   1											
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						e de la companya de l					
					s is a second of				,m		
				4 4 4		the second secon					
	-										
								1			
					e e sa e se e	the second secon					
	- -										
										:	
		The second second second									
							1 1 2 1 2 1 2 1				:

LOCAL	LOCAL CONTROL CABINET FOR OUT LET STRUCT	URES	<b>♦ 250</b>				٠	(4/8)
Š	The second secon	Matoria	Dimensions (mm)			Weight (kg)	Paintinga Arca(m <sup>-</sup> )	Arca (m-)
	Home Springs	שם הכל זמו	Shape X Longth	Augurt by	vy Unit	W	Painting	Acid
	Local Control Cabinet		W800 × H2000 × D600		1	400 400		
	Cables		S S		0.01E	100 P		
	and the second of the second o		600V IV3. 5sq	2		-		
and the second			CVV2sq-15c	2	20m 0.560	30 11.2		
	fittings for cables		Compression terminals, tapes	, tapes		1.7		
	Rigid Steel Conduits		Steel	(38)	5 8.8	39] 44.5		
			Rigid Steel Conduits (G22)	(222)	5 5.01		->-	
			- 1					
			Normal Bends (G36)		8 1. (	8.3		
			Normal Bends (G22)		0	43 3.4		
:			Coupling (G36)	-	19 0.2	22 4. 2		
: :			Coupling(G22)		19 0.09	1.7		
			Metal	1.	Om 1. 2	26 1.3		
				Conduits (#24) 1.	Om O, 8	80 0.8		
		ere,	Union Couplings (#38)		2 0.4	41 0.8		
			Union Couplings (#24)			18 0.4		
			Box Connectors (#38)	-	2 0.	33 0.7		
			Box Connectors (#24)		Ö	5 0.3		
	Fittings of Metal Conduits					27.4		
		1.2						
				-				
			Total			537.1		
								•

No. 100 March and the second of the second o	Matorial	Dimensions (mm)		Weig	Weight(kg)	Paintinga Arca(m"	Arca (m²)
	ואים רכיו	Shape X Length	≼uancı cy	Unit	M	Painting	Acid
Flow Meter Cabinet		W1000×H2000×D600	Ĭ	350	350		
Illtraconic Flow Meter (A650)			-				
			1				
1.		(rems)		u -	1. II		
		A - Sensor		6.	27		
		2 - Junction Box		2	14		
		Coaxial Cable (15m)		0. 22	3.3		
Ultrasonic Flow Meter ( ¢ 250)			-		<u> </u>		
		[items]					
	:	1 - Main Unit		151	151		
		A - Sensor		3	121		
		2 - Junction Box		2	4	-	
		Coaxial Cable (20m)		0.22	4.4		
5 1							
Rigid Steel Conduits		Rigid Steel Conduits (628)	7	6, 95	48.7		
		Normal Bends (628)	8	0. 70	5.6		
		(coup (1 ng (428)	19	0. 18	3,4		
, 1966年, 1966年, 1968年,		Pleasing Mater Continues (#2002 On	0 0	00	6		
				36.7	7		
		Union Couplings (#30)	4	0.30	1.2		
ngs (					18. 2		
		Total			198. 7		

DIVERS	DIVERSION GATE (Gate guide)									(6/1)
Ś	Itom	Martorial		Dimensions (mm)		Weigh	Weight (kg)	Paint	Painting Arca(m-	a (m.)
	-+	5 j		Shape X Length	wuanti ty	linit	A	Dainting		4.00
	Sill beam					,		1 S	V (	777
	Rail	SS400	Н	200 × 200 × 8/12 × 6200		185 4	185	٥	- -	T
	1.	SS400	Н	200 × 200 × 8/12 × 1100	2	32.9	99	0 0	1	
		SUS304	PI	10 X 200 X 5400		85.6	86		+	Ī
	Seal Plate	SUS304	PL	10×500×1100	2	43.6	87	+	+	
	Stiffener	SS400	PL	9× (191×400)	4	3 78	121	c	ŀ	1 1
	Stiffener	SS400	PI.	X 001)	8	101	7	. 1	+	T
	Sub beam	SS400	7	75×75×9×350	11		38	2 -	-	
	Sub beam	SS400	RB	16×250 M16	33	08.0	121		+	T
	Anchor bar	SD295A	6	16×400	33			. I	-	T
	Lintel beam				3		77		-	T
	Rail	SS400		75×75×9×6200	-	61.0	C	-	+	T
	Scal Plate	SUS304	4.	10 X 100 X 5600	1	0.10	70	5	1	-
	Cover 'Plate	SS/100		9 X 350 X 5600		1 000	200			0 5
	Stiffener	SS400		9×75×250	4 4	60.0	Ser		7.0	
	Sub beam	SS400	1	75×75×9×250	2 6	1. 32	ō i	0.7	+	
	Sub beam	SS400	E	16X250 V16	0 0	2. 79	i i	0.0	+	1
	Anchor har	SD295A	6		0 0	0.09	†;		1	
	Main side guide				C <sub>1</sub>	0: 02		5	1	1
	Bearing Plate	S11S304	-	10 X 150 X 5700	1			-		
	Seal Plate	S115304		10 X 80 X 5700	7 0	200	136			
	Cover Plate	26,400	, =	0 × 400 × 5700	7	ľ	2/			6
	Rail Flange	20400	2 6	001000000000000000000000000000000000000	2	161.	322		4.6	
	Rail Web	00755	2 2	12 × 212 × 6700	4	82	340	4.6		
	End girder	00400	<u>-</u>  -	75 × 75 × 0 × 7700	7	113.8	228			
	Toint	25400	100	75 X 63 X 9 X 9 1 0 0	7	.56.	114	3, 4		
	loint	00755	2 2	13×3×300	77	1.59	38		-	
	loin.	201.00	2	3.4.100 A 21.4.	7	1.50	က			
	City hoose	25400		v 1.	2	4.49	6	0.3		
	Set.	22400	Н	75×75×9×300	14	2.99	42	1.3	_	
	Suo Deam	SS400	3	16×250 M16	42	0.39	121	0.5	-	
	Anchor par	SD295A		16×400	42	0.62	26		-	Į.
									-	T
								-	-	T
				The second secon					+	T
										T
	See that the second sec								- 1	-

DIVERS	DIVERSION GATE (Gate guide)					٠			(6/6)
ν	<b>E 3 4 1</b>	N + 2 N		Dimensions (mm)		Weigl	Weight (kg)	Painting /	Arca (m <sup>-</sup> )
				Shape X Length	- Vicentity	Unic	A	Painting	Acid
								S. 0 S.	
	Side~guide(Front-rail)		- ,						
	Bearing Plate	SUS304	ţ	10×150×5700	2	67.8	136		1 7
	Cover Plate	SS400	Pl	9 X 400 X 5700	2	161.1	322	4.6.46	
	Rail	SS400	H	125×125×6, 5/9×5700	2	134.5	269	9	
	End girder	SS400	_1	700	2		114		
	Joint	SS400	FB	75×9×300	24	1.59	38		
	Joint	SS400		9×60×107	2	0.45		1	
	Joint	SS400	PI.	9×116×300	2]	2.50	ır.	0 1	
	Sub beam	SS400	l	75×75×9×300	71	66 6	42	3 -	
	Sub beam	SS400	FB	16×250 M16	42	0 39	17	0 0	
The second second	Anchor bar	SD295A		16×400	42	0.62	26		
1.1									
				Sub Total			3191	58 41 11 9	2
	Bolt	SS400		M16×60 N	20	0, 158	87		
	Nut	SS400		M16	270	0.034	6	 	
			4 4 44	Sub Total			121		
			•						
				Gate guide Total			3133	58.4 11.2	7.1
							· <del>-</del>		
						:			
-								-	
							-		
:			-						
			-						
								<u> </u>	

8 ACCESS ROAD

.8.1 Summary

Earth Works

		Excavation		Embankment		Stripping	Base	Subbase	Hot Asphalt
	Length (m)	(m2)	Subshoulder	Subgrade	Common	Œ	(m2)	(m2)	- Surface
The same agree with the same agree of the same a	•		(m2)	(m2)	(m2)				(m2)
I of Bank Access Road	0.858			180	160	10,700	430	1,500	3,600
Access Road to Hydronower Station	656.5	1	10	200	1.000	17,700	350	1,200	2,800
Access Road to Intake Structure	207.1	12.300		0	0	3,600	8	300	006
Dight Rank Access Boad	1 688		280	1.600	1,500	29.500	830	2,900	7,100
Maintenance Road to Reservoir	397.5			101	40	5,700	0.	300	
Dam Crost Road			0	970	0	0	780	1,100	2,600
Total	3,807.2	151,300	400	2,960	2,700	67,200	1,980	7,300	17.000
				10 miles   10 miles		and the second s			
and a second of the second and the second of									
Drainage Ditch Type 3-I	The second second is a second	to the second se							:
				Drainage	Ditch				
The second second second Road areas when the second	Length (m)	Type 1-1	Type 1-2	Type 2-1	Type 2-2	Type 3-1	Type 3-2		
Left Bank Access Road	828.0	1	280	09	01				
Access Road to Hydropower Station	656.5	46	290		10.			1	
Access Road to Intake Structure	207.1		160	1					
Right Bank Access Rond	1,688.1	1,750	220		1				
Maintenance Road to Reservoir	397.5				,	420			
(Fotal	3,807.2	2.620	950	09	101	420	0		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
							100		
and the second s									
Excavated Slope									
The street of th	1:0.5	1:0.8		Level	2:0:X	i			: : : : : : : : : : : : : : : : : : : :
2.1	(m2)	(m2)	(m2)	(m2)	(m2)				
Lot Bank Access Road	0		390	0					
Access Road to Hydropower Station	3,970			1,110				21	:
Access Road to Intake Structure				8				•	
Right Bank Access Road	520	9,560	2,7	260					
Maintenance Road to Reservoir			7		1,360				
Total	4,490	18.170	2,870	1,750	1.360				:
	Area						1 2 2		
	(m2)				-				
Shotcrete							-		
Total	28,640	<b>—</b>							

## 2.8.2 Left Bank Access Road

### 1. Cross Sectional Area

	1 3 3 4 1	Excavation	F	Embankment		Stripping	Base	Subbase
Sta	Distance	(m2)	Subshoulder	Subgrade	Common	(m)	(m2)	(m2)
	(m)		(m2)	(m2)	(m2)			
0+00		260.01	1.0		:	45.81	0.46	1.51
0+50	50.000	33.29			1 4	16.64	0.46	1.51
BCI	38.057	4.14	0.21	3.18		14.22	0.47	1.87
1+00	11.943	6.38	0.21	2.62	2.94	15.11	0.47	1.81
EC1/BC2	29.843	13.10		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		9.90	0.47	1.50
1+50	20.157	21.63				13.18	0.47	1.50
2+00	50.000	36.93				16.13	0.47	1.50
EC2	32.206	33.23				14.14	0.47	1.05
2+50	17.794	28.85		- Mary		13.47	0.48	- 1.51
2+80	30.000	41.04			1.5	16.06	0.48	1.51
BC3	22.049	37.74				15.57	0.48	1.50
3+50	47.951	20.19			51.5	10.92	0.48	1.50
EC3	18.982	22.53			and the state of the state of	11.59	0.46	1.51
3+90	21.018	15.46	ara India	1.54		13.99	0.46	1.50
BC4	11.284	10.19	2			9.80	0.48	1.50
4+50	48.716	3.37	0.21		1 1 A A A A	7.98	0.48	1.50
EC4	37.678	5.67		and the state of	A. A. Salar	8.63	0.48	1.50
5+00	12.322	5.18				7.66	0.48	1.50
BC5	11.570	4.33	0.07			7.70	0.48	1.50
5+50	38.430	2.17	0.15			7.37	0.48	1.50
EC5	26.008	0.51	0.43			7.15	0.49	2.22
6+00	23.992	2.36			4	5.18	0.48	1.51
6+50	50.000	1.15	0.11	1,74.2		6.48	0.48	1.51
7+00	50.000	1.52	0.28			6.40	0.48	2.15
7+50	50.000	0.12	0.29	0.67		7.31	0.48	2.21
8+00	50.000	0.00	0.50			7.26	0.50	2.24
8+50	50.000	0.04	1.4			6.63	0.46	1.51
8+58	8.000	0.00				6.63	0.46	1.50

# 2. Calculated Volume

	1. P. M. 18.	Excavation		Embankment	to see at the	Stripping	Base	Subbase
Sta	Distance	(m3)	Subshoulder	Subgrade	Common	(m2)	(m3)	(m3)
	(m)	N 1 4 1 4 1 1	(m3)	(m3)	(m3)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
0+00	ng net all et i						+ 5	1.7
0+50	50.000	7,332.5	0.0	0.0	0.0	1,561.3	23.1	75.7
BC1	38.057	712.2	4.1	60.5		587.2	17.7	64.4
1+00	11.943	62.8	2.5	34.6		175.1	5.6	22.0
EC1/BC2	29.843		3.2	39.1	43.9	373.2	14.0	49.4
1+50	20.157	350.1	0.0	0.0		232.6	9.5	30.2
2+00	50.000	1,464.1	0.0	0.0		732.8	23.7	74.9
EC2	32.206	1,129.9	0.0	0.0		487.4	15.2	41.0
2+50	17.794	552.3	0.0	0.0	0.0	245.6	8.5	22.7
2+80	30.000	1,048.2	0.0	0.0	0.0	443.0	14.3	45.2
BC3	22.049	868.5	0.0	0.0	0.0	348.7	10.5	33.2
3+50	47.951	1,388.9	0.0	0.0	0.0	635.1	23.0	71.9
EC3	18.982	405.5	0.0	0.0	0.0	213.6	8.9	28.5
3+90	21.018	399.3	0.0	0.0	0.0	268.8	9.6	31.6
BC4	11.284	144.7	0.0	0.0	0.0	<i>:</i> 134.2	5.3	17.0
4+50	48.716	330.3	5.1	0.0	0.0	433.1	23.4	73.1
EC4	37.678	170.3	4.0	0.0	0.0	312.9	18.1	56.5
5+00	12.322	66.8	0.0	0.0	0.0	100.4	5.9	18.5
BC5	11.570	55.0	0.4	0.0	0.0	88.9	5.6	17.4
5+50	38.430	124.9	4.2	0.0	0.0	289.6	18.4	57.6
EC5	26.008	34.9	7.5	0.0	0.0	188.8	12.6	48.4
6+00	23.992	34.4	5.2	0.0	0.0	147.9	11.6	44.7
6+50	50.000	87.8	2.8	0.0	0.0	291.5	23.9	75.4
7+00	50.000	66.8	9.8	0.0	0.0	322.0	23.9	91.4
7+50	50.000	41.0	14.3	16.8	0.0	342.8	24.0	108.9
8+00	50.000	3.0	19.8	16.8	0.0	364.3	24.5	111.1
8+50	50.000	1.0	12.5	0.0	0.0	347.3	24.0	93.7
8+58	8.000	0.2	0.0	0.0	0.0	53.0	3.7	12.1
Total	858.0	17,166.0	95.2	167.7	141.3	9,721.0	408.7	1,416.6
1000		x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.05	x 1.05
Total with Al	lowance	18,900.0	100.0	180.0	160.0	10,700.0	430.0	1,500.0

### 3. Drainage Ditch

Drainage Ditch Type 1-1	STA. 0+00 to STA. 3+68,982 STA.0+18.0	368.982 x 1.05 = 390 m 19.000 x 1.05 = 20 m
Drainage Ditch Type 1~2	STA, 3+5,767 to STA, 5+70	264.233 x 1.05 = 280 m
Drainage Ditch Type 2-1	The state of the s	55.500 x 1.05 = 60 m
Drainage Ditch Type 2-2		14.000 x 1.05 = 10 m
the state of the s		The state of the s

	1.0.5	1:0.8	1:1.5	Level
	(m2)	(m2)	(m2)	(m2)
		10.52 198.37 1,023.05	76.33 10.90 206.70	
Total	0	1,231.94	293.93	0
x slope	0	1,972	353	0
Total (x 1.1)	0	2,170	390	0

# 2.8.3 Access Road to Hydropower Station

# 1. Cross Sectinal Area

		Excavation						
Sta	Distance	(m2)	Subshoulder	Embankment		Stripping	Base	Subbase
314	(m)	(1112)	(m2)	Subgrade	Common	(m)	(m2)	(m2)
BCI	(III)		(102)	(m2)	(m2)			
ECI/BC2	31.416	78.19		1. 4.		07.10		
0+50	18.584	25.95	0.30	8.82	25.00	27.19	1.18	3.61
EC2/BC3	22.257	26.80	0.30	0.02	35.93	27.50	0.94	3.73
0+90	17.743	20.39		i Mili		14.14	0.47	1.50
EC3/BC4	13.149	11.60	0.26	0.09	1 1	10.77 9.80	0.47	1.51
EC4/BC5	25.307	19.57	0.20	0.03		11.58	0.47	1.57
1+50	21.544	36.29	17.7		£	15.70	0.47	1.50 1.36
EC5/BC6	40.852	30.17	1 4 4 4 4			15.10	0.43 0.47	1.50
2+10	19.148	25.42				14.25	0.47	1.51
EC6/BC7	27.714	40.30			0.78	19.14	0.47	1.62
2+50	12.286	12.81		+ 4	4.89	14.22	0.48	1.84
EC7/BC8	26.809	34.10		1,	1.03	15.77	0.47	1.50
EC8	20.726	34.87				16.77	0.47	1.50
3+20	22.465	15.97			3.83	13.81	0.48	1.79
3+50	30	77.95	A 5		0.00	22.74	0.46	1.51
BC9	46.705	118.98				23.36	0.46	1.51
4+10	13.295	64.17	i			18.60	0.46	1.51
EC9	8.696	44.71			1 12 25	17.76	0.47	1.53
BC10	0.913	43.44	2874			17.54	0.46	1.51
4+50	30.391	60.10	4 4 4			23.29	0.46	1.51
EC10/BC11	12.675	95.31				24.40	0.46	1.51
EC11/BC12	21.991	103.01		4.5	1. 15.54	26.02	0.47	1.50
5+05	20.334	61.42				22.35	0.47	1.50
EC12	29.408	87.16	1.54%	50° 93.	15.04	30.93	0.47	1.50
5+50	15.592	77.60				30.01	0.48	1.51
BC13	25.492	197.65	4.4.745		8 N. 44	39.69	0.46	1.51
EC13/BC14	21.467	133.11	1965			29.86	0.47	1.50
6+10	13.041	134.13	100	- 1 p. 1		32.65	0.47	1.51
EC14	18.113	271.57				38.70	0.47	1.51
6+50	21.887	245.09				49.64	0.47	1.51
6+67.564	17.564	91.33				50.66	0.47	1.51
6+80	12.436	222.70				60.12		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
6+98.5	18.5	0.00	14 14 14 1			0.00		

#### 2. Calculated Volume

	<u>-</u>	Excavation	<del></del>	Embankment	·	Stripping	Base	Subbase
Sta	Distance	(m3)	Subshoulder	Subgrade	Common	(m2)	(m3)	(m3)
	(m)	<b></b>	(m3)	(m3)	(m3)	()		,o <sub>2</sub>
BC1					()			
EC1/BC2	31.416	1,228.2	0.0	0.0	0.0	427,1	18.5	56.7
0+50	18.584	967.7	2.8	82.0	333.9	508.2	19.7	68.2
EC2/BC3	22.257	587.0	3.3	98.2	399.8	463.4	15.7	58.2
0+90	17.743	418.6	0.0	0.0	0.0	221.0	8.3	26.7
EC3/BC4	13.149	210.3	1.7	0.6	0.0	135.2	6.2	20.3
EC4/BC5	25.307	394.3	3.3	1.2	0.0	270.5	12.0	38.9
1+50	21.544	601.7	0.0	0.0	0.0	293.9	9.7	30.8
EC5/BC6	40.852	1,357.5	0.0	0.0	0.0	629.1	18.4	58.6
2+10	19.148	532.2	0.0	0.0	0.0	281.0	9.0	29.0
EC6/BC7	27.714	910.6	0.0	0.0	10.8	462.7	13.0	43.4
2+50	12.286	326.3	0.0	0.0	34.8	201.9	5.8	21.3
EC7/BC8	26.809	628.7	0.0	0.0	65.5	402.0	12.8	44.8
EC8	20,726	714.7	0.0	0.0	0.0	337.2	9.8	31.1
3+20	22.465	571.1	0.0	0.0	43.0	343.5	10.7	37.0
3+50	30.000	1,408.8	0.0	0.0	57.5	548.3	14.1	49.6
BC9	46.705	4,598.8	0.0	0.0	0.0	1,076.6	21.5	70.7
4+10	13.295	1,217.5	0.0	0.0	0.0	278.9	6.1	20.1
EC9	8.696	473.4	0.0	0.0	0.0	158.1	4.0	13.2
BC10	0,913	40.2	0.0	0.0	0.0	16.1	0.4	1.4
4+50	30.391	1,573.3	0.0	0.0	0.0	620.4	13.9	45.8
EC10/BC11	12.675	984.9	0.0	0.0	0.0	302.2	5.8	19.1
EC11/BC12	21.991	2,180.6	0.0	0.0	0.0	554.4	10.2	33.1
5+05	20.334	1,671.8	0.0	0.0	0.0	491.8	9.6	30.5
EC12	29.408	2,184.7	0.0	0.0	0.0	783.4	13.9	44.1
5+50	15.592	1,284.5	0.0	0.0	0.0	475.1	7.4	23.4
BC13	25.492	3,508.3	0.0	0.0	0.0	888.4	11.9	38.4
EC13/BC14	21.467	3,550.2	0.0	0.0	0.0	746.5	10.0	32.3
6+10	13.041	1,742.5	0.0	0.0	0.0	407.6	6.1	19.7
EC14	18.113	3,674.2	0.0	0.0	0.0	646.2	8.5	27.4
6+50	21.887	5,654.1	0.0	0.0	0.0	966.7	10.2	33.1
6+67.564	17.564	2,954.4	0.0	0.0	0.0	880.8	8.2	26.6
6+80	12.436	1,952.6	0.0	0.0	0.0	688.8	2.9	9.4
6+98.5	18.500	2,060.0	0.0	0.0	0.0	556.1	0.0	0.0
Total	698.5	52,163.9	11.2	181.9	945.4	16,066.2	334.4	1,102.6
		x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.05	x 1.05
Total with Al	lowance	57,400.0	10.0	200.0	1,000.0	17,700.0	350.0	1,200.0

# 3. Drainage Ditch

Drainage Ditch Type 1-1	100	STA. 0+00 to STA. 0+72.257		$63.000 \times 1.05 =$	70 m
	100	STA. 0+72.257 to STA. 4+45		372.743 x 1.05 =	390 m
Drainage Ditch Type 1-2	13.60	STA. 3+90 to STA. 6+67.564	Ewit y Tu Al	277.564 x 1.05 =	290 m

	1:0.5	1:0.8	1:1.5	Level
	(m2)	(m2)	(m2)	(m2)
18 1 mg 18 18 18 18 18 18 18 18 18 18 18 18 18	56.25	47.21	15.54	24.57
- 11 × 1	150.00	151.24		12.35
	118.83	78.40		23.05
	35.83	51.34		25.50
1 :	36.91	286.66		108.06
1	90.45	185.84		135.27
	159,13	17.70	1	105.37
	21.68	33.62		6.06
	6.31	106.22		64.45
	2,51	51.54	:	122.16
	79.99	86.18	, ,	137.82
	313.21	5.87		105.74
	297.63	243.65		94.08
	172.72	13.77		41.80
	74.02	319.52		41.00
	14.02	298.02		
1		272.11		
		262.87		
		262.87 251.08		
4.40				
1	1 1	66.36	N 20 10 1.	
		99.95		
		56.82		
	1119	59.74		
	100	110.59		
		91.66		
		52.93		
		314.64		
1.1		60.88		
		224.18		
		131.32		
		92.15		
1 " (March)	College to			
Total	1,615.47	4,124.06	15.54	1,006.28
	11.12 P. 7.1		1.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
x slope	3,612	6,603	19	1,006
Total(x 1,1)	3,970	7,260	20	1,110

## 2.8.4 Access Road to Intake Structure

#### 1. Cross Sectional Area

		Excavation	1 - 43.1 L	Embankment		Stripping	Base	Subbase
Sta	Distance (m)	(m2)	Subshoulder (m2)	Subgrade (m2)	Common (m2)	(m)	(m2)	(m2)
BC1							<del></del>	
EC1	39.794	42.49	e la dise	1 .		19.11	0.57	1.71
0+50	10.206	14.96				8.30	0.62	
BC2	7.926	18.63	11.5			9.04	0.47	
EC2/BC3	40.142	32.16			Project 1	13.02	0.47	1.50
1+20	21.932	49.00				17.52	0.46	1.50
EC3	31.824	31.68		\$ 5.50 h	V 4 14	16.72	0.47	1.50
1+80	28.176	222.93		3	10.0	36.58	0.46	
2+07.110	27.11	7.51	l trans		1000	7.76	0.26	
2+08.780	1.67		1.48	\$ 10 mm				

# 2. Calculated Volume

	A14 - 171	Excavation	1 1 1 2 2	Embankment	111111	Stripping	Base	Subbase
Sta	Distance	(m3)	Subshoulder	Subgrade	Common	(m2)	(m3)	(m3)
	(m)		(m3)	(m3)	(m3)			
BC1				11 1 224		1.0		1.4
EC1	39.794	845.4	0.0	0.0	0.0	380.2	11.3	34.0
0+50	10.206	293.2	0.0	0.0	0.0	139.9	6.1	18.3
BC2	7.926	133.1	0.0	0.0		68.7	4.3	13.4
EC2/BC3	40.142	1,019.4	0.0	0.0	7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	412.8	18.9	60.4
1+20	21.932	890.0	0.0	0.0		334.9	10.2	33.0
EC3	31.824	1,283.8	0.0	0.0	0.0	544.8	14.8	47.8
1+80	28.176	3,586.9	0.0	0.0	0.0	750.9	13.2	42.4
2+07.110	27.11	3,123.6	0.0	0.0	0.0	601.0	9.8	33.9
2+07.110	1.67	6.3	0.0	0.0	0.0	6.5	0.2	0.8
Total	208.78	11,181.7	0.0	0.0	0.0	3.269.7	88.7	284.2
1.5		x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.05	x 1.05
Total with Al	lowance	12,300.0	0.0	0.0	0.0	3,600.0	90.0	300.0

### 3. Drainage Ditch

D . D. I.M.				
Drainage Ditch Type 1-1			$0.000 \times 1.05 =$	0 m
			$0.000 \times 1.05 =$	0 m
Drainage Ditch Type 1-2	STA. 0+57.926 to S	TA.2+8.3	150.374 x 1.05 =	160 m

	1:0.5	1:0.8	1:1.5	Level
	(m2)	(m2)	(m2)	(m2)
		617.42 150.69		75.34
Total	0.00	768.11	0.00	75.34
x slope	0	1,230	0	75
Total (x 1.1)	0	1,350	, 0	80

## 2.8.5 Right Bank Access Road

# 1. Cross Sectional Area

:	<u> </u>	Γ	Excavation		Embankment	<u> </u>	Stripping	Base	Subbase
	Sta	Distance	(m2)	Subshoulder	Subgrade	Common	(m)	(m2)	
	Jia	(m)	(1112)	(m2)	(m2)	(m2)	(m)	(m2)	(m2)
	BCI ;	(01)		(iiia)	(1114)	(mz)			
	ECI	29.147	191.52			1 - 1	: 41.04		
	0+50			1			41.24	0.46	
		20.853	68.68		1	Λ.	16.62	0.46	1.51
	1+00	50	92.00				28.15	0.46	1.51
. ,	BC2	35.318	67.47	: ,	\$ 4		23.70	0.48	
	1+50	14.682	40.92				19.85	0.48	
	EC2/BC3	10.45	50.97				21.66	0.46	
	1+80	19.55	112,70				24.43	0.46	1.51
	EC3/BC4	21.989	155.96				33.67	0.46	1.50
	2+40	38.011	49.08	0.35	1.61	3.97	27.14	0.48	1.61
	EC4	18.014	102.94	i			26.56	0.46	1.51
	BC5	19.301	101.65				27.24	0.46	1.51
	3+00	22,685	77.28			1.5	22.26	0.46	1.51
	EC5/BC6	15.799	68.19			1	22.41	0.46	1.50
	EC6/BC7	25.133	35.81				14.76	0.47	1.50
	3+50	9.068	43.79				15.64	0.47	1.51
. ]	3+90	40	43.23				22.07	0.46	1.51
	EC7	24.759	44.85	48		1 8 6 5.	19.63	0.47	1.52
	4+50	35.241	65.74	[ ]			23.66	0.46	1.51
٠	BC8	24.873	53.15	1.5		1 1 1 1 1 1	20.64	0.47	1.51
	5+00	25.127	48.52	to Espera	1.1	100	19.29	0.47	1.51
	EC8	16.412	51.66	1000		1 Maria	21.04		1.51
	BC9	24.336	35.18				21.62	0.47	
	5+50					1 7 7		0.48	1.49
		9.252	24.82	13.9		The second	14.35	0.48	1.49
	EC9	21.379	17.29		3 - 136 5	1.00	12.15	0.48	1.49
	BC10	16.206	22.99			15 15 1	12.76	0.47	1.51
	6+10	22.415	34.29		1.	14.00	14.36	0.47	1.51
	EC10	25.232	32.34				14.02	0.47	1.51
	6+50	14.768	26.08	0.10			14.86	0.48	1.51
	7+00	50	5.82	0.29	2.25	0.97	13.87	0.48	1.58
	7+50	50	1.55	0.29	3.85	1.56	12.44	0.50	2.03
	8+00	50	7.27				9.07	0.50	1.51
	8+50	50	8.21		W 1 1		8.73	0.50	1.51
	BC11	18.133	27.61		1. 1. 1.		18.74	0.50	1.51
	9+00	31.867	36.91				29.00	0.50	1.51
	EC11/BC12	18.617	16.03				11.66	0.50	1.51
	9+50	31.383	29.14	1			15.87	0.50	1.51
	EC12	11.726	21.60			1/ 1/1	14.38	0.50	1.51
Į	10+00	38.274	7.13	0.29		0.08	10.21	0.48	1.58
ı	10+50	50	8.36	0.22			10.03	0.48	1.58
- [	11+00	50	1.70	0.29	0.16	1 + 1 + 1	8.74	0.48	1.71
- [	11+50	50	3.16	0.29	1.61		10.72	0.48	1.80
	12+00	50	1.74	0.29	2.81	0.28	11.13	0.48	1.93
	BC13	41.501	2.54	0.26			8.84	0.48	1.58
	12+50	8.499	0.18	0.29	4.04		10.51	0.49	2.22
	EC13	31.643	0.18	0.29	0.92	0.46	10.14	0.49	2.22
	13+00	18.357	0.86	0.66		· · · · · · · · · · · · · · · · · · ·	10.92	0.46	2.22
	13+50	50	1.34	0.58	3.20		12.06	0.46	2.24
	13+80	30	1.17	0.58	9.02	2.65	14.65	0.46	2.24
	14+10	30	1.79	0.58	0.58	2.03	17.95	0.46	2.13
	14+50	40	1.53	0.58	0.00		13.31	0.46	2.13
	15+00	50	6.72	V.J0			8.93	0.46	1.51
	BC14	13.225	4.14	ini ya Balon			9.64	0.46	1.51
	15+50	36.775	18.20		10.0				
				or a base of	1.7.734	18 JAN	10.89	0.46	1.51
	16+00	12 402	32.59				12.77	0.46	1.51
	EC14/BC15	13.407	12.28	ار جرا	0.70	ام م	11.35	0.46	1.51
	16+50	36.593	2.42	0.58	8.79	26.42	20.77	0.46	2.22
٠Į	EC15	38.107	10.25	3.46 (1.47) 16	4 115		6.00	0.46	2.22

#### 2. Calculated Volume

·	7	Excavation	T	Embankment		Stripping	Base	Subbase
Sta	Distance	(m3)	Subshoulder	Subgrade	Common	(m2)	(m3)	(m3)
	(m)		(m3)	(m3)	(m3)			
BC1							1 .	
EC1	29.147		0.0	0.0	0.0		6.7	22.1
0+50	20.853				0.0		9.6	
1+00	50			0.0	0.0		23.1	75.7
BC2	35.318		0.0	0.0	0.0		16.5	53.1
1+50	14.682			0.0	0.0		7.0	21.9
EC2/BC3 1+80	10.45		0.0	0.0	0.0	216.9	4.9	15.7
EC3/BC4	19.55 21.989		0.0	0.0	0.0		8.9	29.4
2+40	38.011	2,953.8 3,896.9	0.0	0.0	0.0		10.1	33.1
EC4	18.014		6.6 3.1	30.6 14.5	75.5 35.8	1,155.7	17.9	59.2
BC5	19.301		3.1 0.0	0.0	0.0	483.7 519.2	8.5 8.8	28.0
3+00	22.685		0.0	0.0	0.0	561.5		29.1 34.2
EC5/BC6	15.799		0.0	0.0	0.0	352.9	10.4 7.2	
EC6/BC7	25.133		0.0	0.0	0.0	352.9 467.1	11.7	23.8 37.8
3+50	9.068		0.0	0.0	0.0	137.8	4.3	13.7
3+90	40	1,740.4	0.0	0.0	0.0	754.2	18.5	60.4
EC7	24.759		0.0	0.0	0.0	516.2	11.4	37.4
4+50	35.241	1.948.7	0.0	0.0	0.0	762.8	16.4	53.4
BC8	24.873	1,478.6	0.0	0.0	0.0	550.9	11.6	37.6
5+00	25.127	1,277.3	0.0	0.0	0.0	501.7	11.8	37.9
EC8	16.412	822.1	0.0	0.0	0.0	330.9	7.7	24.8
BC9	24.336	1,056.7	0.0	0.0	0.0	519.1	11.5	36.5
5+50	9.252	277.6	0.0	0.0	0.0	166.4	4.4	13.8
EC9	21.379	450.1	0.0	0.0	0.0	283.3	10.2	31.9
BC10	16.206	326.4	0.0	0.0	0.0	201.8	7.6	24.3
6+10	22.415	642.0	0.0	0.0	0.0	304.0	10.5	33.8
EC10	25.232	840.6	0.0	0.0	0.0	358.1	11.8	38.1
6+50	14.768	431.4	0.7	0.0	0.0	213.3	7.0	22.3
7+00	50	797.6	9.8	56.3	24.3	718.3	23.9	77.2
7+50	50	184.3	14.5	152.5	63.3	657.8	24.5	90.2
8+00	50	220.5	7.3	96.3	39.0	537.8	25.0	88.4
8+50	50	387.0	0.0	0.0	0.0	445.0	25.0	75.4
BC11 9+00	18,133	324.8	0.0	0.0	0.0	249.1	9.1	27.3
EC11/BC12	31.867	1,028.0	0.0	0.0	0.0	760.7	15.9	48.0
9+50	18.617 31.383	492.8	0.0	0.0	0.0	378.5	9.3	28.1
EC12	11.726	708.8 297.5	0.0	0.0	0.0	432.0	15.7	47.3
10+00	38,274	549.8	0.0 5.5	0.0	0.0	177.3	5.9	17.7
10+50	50.214	387.3	12.7	0.0 0.0	1.5 2.0	470.4	18.8	59.2
11+00	50	251.6	12.8	4.1	0.0	506.0 469.5	24.0	79.1
11+50	50	121.7	14.5	44.4	0.0	486.6	24.0	82.2
12+00	50	122.6	14.5	110.7	6.9	546.3	24.0 24.0	87.7 93.3
BC13	41.501	88.9	11.4	58.4	5.7	414.5	19.9	72.8
12+50	8.499	11.6	2.3	17.2	0.0	82.2	4.1	16.1
EC13	31.643	5.7	9.2	78.5	7.3	326.7	15.5	70.1
13+00	18.357	9.5	8.7	8.4	4.2	193.3	8.7	40.7
13+50	50	55.0	31.0	80.0	0.0	574.5	22.9	111.4
13+80	30	37.7	17.4	183.3	39.8	400.7	13.7	67.2
14+10	30	44.4	17.4	144.0	39.8	489.0	13.7	65.6
14+50	40	66.4	23.2	11.6	0.0	625.2	18.3	85.2
15+00	50	206.3	14.5	0.0	0.0	556.0	22.9	91.0
BC14	13.225	71.8	0.0	0.0	0.0	122.8	6.1	20.0
15+50	36.775	410.8	0.0	0.0	0.0	377.5	16.8	55.5
16+00	50	1,269.8	0.0	0.0	0.0	591.5	22.9	75.3
EC14/BC15	13.407	300.8	0.0	0.0	0.0	161.7	6.1	20.2
16+50 FC15	36.593	269.0	10.6	160.8	483.4	587.7	16.8	68.2
EC15	38.107	46.1	11.1	167.5	503.4	510.1	17.5	84.6
Total	1688.107	51,466.6	258.9	1,418.9	1,331.7	26,854.0	791.0	2,805.2
Total with Allo	w.ance	x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.05	x 1.05
Frores with Wild	maile	56,600.0	280.0	1,600.0	1,500.0	29,500.0	830.0	2,900.0

#### 3. Drainage Ditch

Drainage Ditch Type 1-1	STA. 0+00 to STA. 0+50	38.000 x 1.05 =	<b>40</b> m
	STA. 0+50 to STA. 13+90	$1340.00 \times 1.05 =$	· 1410 m
	STA. 14+00 to STA. 16+88.107	$288.107 \times 1.05 =$	300 m
Drainage Ditch Type 1-2	STA. 14+00 to STA. 16+13.407	$213.407 \times 1.05 =$	220 m

14 2 4	1:0.5	1:0.8	1:1.5	Level
lis aj	( a)	/3\	(-0)	/ a\
<u> </u>	(m2)	(m2)	(m2)	(m2)
	97.94	159.37	47.16	46.74
1.50	112.50	629.93	451.05	232.26
		81.65	87.70	44.78
		420.98	176.29	45.01
		202.50	285.68	6.29
		90.67	115.11	90.17
1	111	177.91	113.72	43.90
	1	179.64	69.45	10.50
15.4 (\$ 5.4)	1.1.4	283.76	58.40	
		173.18	47.44	1
		17.50	112.59	
	** * * * * * * * * * * * * * * * * * *	149.61	537.86	
		7.05		
		135.15		
		80.91	4111148	
1.00		132.09	Marie Service	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		360.68		ing about t
	1.0	58.68	1 St.	
		235.88		
	147.1	83.41	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
		313.77		
		184.36	1.1.2	
	1.1	459.77		
		127.60		. ( )
		296.98		
		30.44		
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	61.53		
		93.67		
		198.17		5.40
1447 1547		33.4		
Total	210.44	5,426.84	2,102.45	509.15
50.5			1000	1 30 4 45
x slope	471	8,688	2,527	509
	1.000		14 T	
Total(x 1.1)	520	9,560	2,780	560

### 2.8.6 Maintenance Road to Reservoir

#### 1. Cross Sectional Area

		Excavation		Embankment		Subbase	Stripping
Sta	Distance	(m2)	Subshoulder	Subgrade	Common	(m2)	(m)
	(m)		(m2)	(m2)	(m2)		1,
0+00	i I	1.72				0.75	0.00
0+15	15	1.26	0.17	0.45	0.10	0.88	
BC1	30.481	2.47		0.10	0.10	0.80	7.43
0+60	14.519	5.33			0.10	0.72	7.61
EC1	15.326	9.29		1000	0.10	0.75	9.24
0+90	14.674	9.79			0.10	0.75	9.30
BC2	17.255	9.49			0.10	0.74	10.37
1+25	17.745	7.93			0.10	0.74	9.96
EC2	31.037	10.92			0.10	0.74	9.83
2+00	43.963	15.73	(1.3) H		0.10	0.75	16.65
BC3	46.42	24.82			0.10	0.75	14.28
2+60	13.58	16.34			0.10	0.75	11.38
EC3/BC4	16.266	17.68			0.10	0.75	14.09
3+00	23.734	18.39			0.10	0.74	14.58
EC4/BC5	12.394	20.31		1 3	0.10	0.75	16.26
3+40	27.606	16.29			0.10	0.75	15.50
EC5	31.037	21.89			0.10	0.75	26.04
3+97.5	26.463	32.17			0.10	0.75	22.46

#### 2. Calculated Volume

		Excavation		Embankment	1.5 1.5 1.5	Subbase	Stripping
Sta	Distance	(m2)	Subshoulder	Subgrade	Common	(m2)	(m)
0+00	(m)		(m2)	(m2)	(m2)		
0+15	1.0	00.4					1
BCI	15	22.4				12.2	30.8
0+60	30.481	56.8		8.4	3.0	25.6	175.8
EC1	14.519	56.6		0.7	1.5	11.0	109.2
0+90	15.326		0.0	0.0	1.5	11.3	129.2
1 1	14.674	140.0	0.0	0.0	1.5	11.0	136.1
BC2	17.255	166.3	0.0	0.0	1.7	12,9	169.7
1+25	17.745	154.6	0.0	0.0	1.8	13.2	180.4
EC2	31.037	292.5	0.0	0.0	3.1	23.1	307.2
2+00	43.963	585.8	0.0	0.0	4.4	32.8	582.1
BC3	46.42	941.2	0.0	0.0	4.6	34.9	717.9
2+60	13.58	279.5	0.0	0.0	1.4	10.2	174.2
EC3/BC4	16.266	276.7	0.0	0.0	1.6	12.2	207.1
3+00	23.734	428.0	0.0	0.0	2.4	17.7	340.1
EC4/BC5	12.394	239.8	0.0	0.0	1.2	9.2	191.1
3+40	27.606	505.2	0.0	0.0	2.8	20.7	438.4
EC5	31.037	592.5	0.0	0.0	3.1	23.3	644.7
3+97.5	26.463	715.3	0.0	0.0	2.6	19.9	641.7
Total	397.5	5,565.2	7.7	12.5	39.0	301.2	5,175.8
		x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10
Total with All	owance	6,100	10	10	40	300	5,700

### 3. Drainage Ditch

Drainage Ditch Type 3~1

STA. 0+00 to STA. 3+97.5

397.500 x 1.05 =

420 m

	1.0.5	1:0.8	1:1.5	Level
Sta	(m2)	(m2)	(m2)	(m2)
		261.10	49.98	A STATE OF THE
* .		65.27		4
		12.19	• *	
ŀ		3.48		
	-	4.22	•	
İ		19.27	•	
		135.31		
		271.24		
				\$ 1 T
Total	0	772.08	49.98	0.00
x slope	0	1,236	60	0
Total(x 1.1)	0	1,360	70	0

2.9 Grouting

2.9.1 Summary

Drilling and grouting	Chit	Total	Curtain (Dam)	Blanket (Dam)	Consolidation Consolidation (Dam)	Consolidation (Spillway)	Curtain Consolidation (Tunnel)
Core Drilling (66 mm dia) :							
from within Gallery	£	1,200	1,200				
from Surface	ε	4,900	'				
Rotary Drilling Holes for Grouting (46 mm dia):							
from within Gallery	ε	5,200			1,200		
from Surface	E	14,400	11,700	2,200		500	
from Tunnels	٤	1,050					1,050
Drill set-up for drilling grout hole	o N	4,050	3,200	390	200	80	180
Wash and Water Pressure Testing	So.	4,050	3,200	390	200	80	180
Cement used in Pressure Grouting	tonne	409	324	39	20	8	81

# 2.9.2 Curtain (Dam)

Zone No.	Pilot (66mm dia.)	Primary (46mm dia.)		ndary n dia.)		l'ertiary (	46mm di	a.)	Check (66m
	10 T	(10,111, 0,01)	1	2	1	2	3	4	uld./
L1 L2							<u> </u>	ļ	* :
L3	1 1.111 1 1 1 1		10.7					<del> </del>	
L4		14 T 12 T 1	41 FT		1 41877			<b> </b>	7 7 7 1
L5 L6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				* 1		1 .		1 1 1
L7								<del>-</del>	
L8	14 91	21 2 2 2 2	47.34					<u> </u>	
L9	1 1 1 4 4 2 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1	1, 1 1 1 1	1 1 1		1		5. 5.		
L10 L11		11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.4	2 (1 )			3 4 9	ļ	
L12	1187.4							<del> </del>	
L13		ka ing ka	Mark!			·			
L14 L15			11 200	21	, <u>, , , , , , , , , , , , , , , , , , </u>				111
L16			1 <u>( )</u> ( )		Fr. St.		1 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		
L17		1. 2. 2. 1. 1. 1.							
L18		g state of the table	5 ( - 5 )	5.24 - 3		1.27.2	2,44		
L19 L20	7.31.				1 5 7				
L20		Service of the 6-N					<u> </u>		1 Att ( ) 1
L22	and the say of					177			
L23	<u> </u>	2, 81 8, 18	187 457	(F)		the second			
Cl C2		The transfer of	<u> </u>		1 (1840) 14 1 (1944)	N 72	1 1 2 1 2 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2	24. 34.	
C3			1 2 2	<u></u>					
C4			e de la co	1. 1. 1.	1	44.4			
C5	1 + 4 17 + 10								
C6 C7			3		The state of the s		3 14	N 1 1	
C8								1.00	
C9			a tual New	2.44.2.2					1.10
Cl0 Cl1	antin unda v		<u> </u>			7 4, 14	1.5		
C12	31.3	22.6	22.4	22.8	22.0	22.5	22.7	22.9	21
C13	33.0	23.5	23.3	23.7	23.2	23.4	23.6	23.8	21
C14	33.8	26.1	25.0	27.3	24.4	25.5	26.7	27.9	16
C15 C16	38.5 45.1	30.8 37.5	29.6 36.3	34.0 38.6	29.0	30.2 36.9	32.1	34.5	21
C17	,49.8	33.8	36.8	30.8	35.7	35.3	38.0 32.3	39.2 29.3	25 30
CI8	37.8	26.5	26.5	26.5	26.5	26.5	26.5	26.5	29
C19	36.5	26.5	26.5	26.5	26.5	26.5	26.5	27.8	29
C20 C21	39.3 51.3	35.3 41.0	32.3 41.2	38.3 40.9	30.8 41.2	33.8 41.1	36.8 41.0	39.8 40.9	31 31
C22	50.8	38.5	39.4	38.4	40.7	38.6	38.5	38.4	30
C23	48.3	38.0	38.2	37.9	38.2	38.1	38.0	37.9	28
C24 C25	47.8	36.8	37.7	35.5	37.7	37.4	36.1	34.9	27
C26	44.2 48.1	36.2 40.1	35.2 39.1	37.2 41.1	34.7 38.6	35.7 39.6	36.7 40.6	37.6 41.6	32 36
C27	52.1	44.0	43.0	43.7	42.6	43.5	44.2	43.3	40
C28						1 1 2	G		
R1 R2			+ 11/14 (48) 11				- 10 5 M		The second second
R3						Angelogia			i se stalika. Rujukitiva y
R4			12.09.92	7-13	100000			1 10 17	
R5					- 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2742-12	
R6 R7						73.153 24.153			
R8									
								X . A	2.1.1
Total tal (66mm	687.7	537.3	532.4	543.2	530.3	534.7	540.3	546.2	454.
otal (46mm									1,142 3,764
ital (66mm	día)	nają, y leją šja.					jandan tegisi	x 1.05 =	1,200
tal (46mm	Ain.			A SECTION AND A SECTION AND ASSESSMENT		3.0		x 1.05 = 1	4,000

2. Drilling	g from Surface					j. 14		1	(m)
Zone No.	Pilot (66mm dia.)	Primary (46mm dia.)		ondary m dia.)	,	Tertiary (	(46mm dia	a.)	Check (66mm
	(commit dia.)	(40mm dia.)	1	2	: 1	2	3	4	dia,)
Ll	51.1	42.4				0.0		0.0	62.7
1.2	53.6	44.9							
L3 L4	50.0 56.4	47.4							57.1
1.5	61.8	49.8 52.2			<del> </del> -				<del></del>
L6	63.3	54.4							57.2 57.5
1.7	65.4	56.3							
1.8	67.2	57.1	57.2						57.5
L9	67.3	57.7	57.5						59.9
L10	68.5	60.0		60.8	0.0	0.0			62.6
LII	71.6	63.1	62.4	63.9	0.0				64.8
L12 L13	74.7	64.5			64.6				66.8
L13	74.3 73.5	64.1	64.2		<del> </del>	<del></del>			65.3
L15	68.2	62.7 53.7	63.2 56.7	61.2 51.7	63.4 57.7	63.0		59.7	57.6
L16	61.7	53.2	51.7	53.2	51.7	55.2 51.8		51.7 53.2	54.0
L17	63.2	53.2	53.2	51.7	53.2	53.2	51.8	51.7	55.5 54.0
L18	61.7	52.2	51.7	52.2	51.7	52.2		52.2	54.5
L19	62.2	52,2	52.2	52.2	52.2	52.2		52.2	54.5
L20	62.2	52.2	52.2	52.1	52.2	52.2		50.9	50.3
L21	59.6	48.2	48.2	48.2	48.3	48.2	48.2	48.2	50.3
1.22	58.2	48.2	48.2	48.2	48.2	48.2	48.2	47.7	47.2
1.23	56.5 55.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2	47.2
C1 C2	49.8	45.2 35.3	45.2 36.8	42.8	45.2	45.2	44.3	39.8	40.7
$\frac{C_3}{C_3}$	37.8	27.8	27.8	33.8 27.8	36.8 27.8	36.8 27.8		33.8	30.9
C4	37.8	27.8	27.8	27.8	27.8	27.8	27.8 27.8	27.8 27.8	30.9
C5	37.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	30.9 30.9
C6	37.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	30.9
C7	37.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	30.9
<u>C8</u>	37.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	30.9
C9	37.8	27.8	27.8	27.8	27.8	27.8	27.8	27,8	30.9
C10 C11	37.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	30.9
C12	37.8	26.8	27.8	26.8	27.8	26.8	26.8	26.8	24.7
C13	1.54				-	4 4 4			
Č14	1							1 1 1 1	
C15	- 4 4	A park of the				-			
C16	100	1.51			127 9			11.2	
C17			18 E			1,44	-		
C18		The same of the same		25.25				3.74	
C19 C20					2 87.4			5000	
C21									
C22					3 3 3 3		- 42.5	2007	
C23	1,1,1					1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			
C24					1111111				
C25						N. 1	-		
C26				1 - 1 - 1		14, 14, 14, 14	1.061	11/2/	
C27		10,775			100	2.7			7 T T T T T T T T T T T T T T T T T T T
C28	56.4	47.3	45.2	51.4	46.1	45.2	49.9	51.6	45.0
R1 R2	63.1	57.7	55.9	57.6	54.5	57.4	57.7	57.5	48.7
R3	67.4	57.5 56.8	57.4 57.0	57.4	57.4	57.5	57.5	57.3	55.0
R4	66.4	55.9	56.1	56.6 55.7	57.1 56.2	56.9 56.0	56.7	56.5	55.6
R5	65.5	55.0	55.2	54.8	0.0	0.0	55.8 0.0	55.6	56.0
R6		53.5	54.0	53.0	0.0	0.0	0.0	0.0	56.2 57.0
R7	62.5	51.3	51.9	50.8	0.0	0.0	0.0	0.0	59.3
R8	60.2	48.9	49.6	48.0	0.0	0.0	0.0	0.0	64.4
~	57.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Total	2,527.4	2,048.6	2,045.4	2,046.5	1,256.3	1,254.3	1,252.5	1,242.0	2,149.6
Total (66mm Total (46mm								- ( )	4,677.0
Total (66mm		- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<u> </u>	<u>ing pangkan</u> Tahun di Anga	* 1.75	<u>assertat s</u>	My North	11,145.5
Total (46mm								(1.05 =	4,900.0
Total								<u>: 1.05 = </u>	11,700.0

Zone No.	Pilot	Primary		ondary nm dia.)		Tertiary	(46mm di	a.)	Check (66mm
	(66mm dia.)	(46mm dia.)	1	2	1	2	3	1 4	- dia.)
<u>L1</u>	31.1	31.0							47.1
L2	30.9	30.8	30.						41.2
<u>L3</u>	24.5	30.5	30.0			<del></del>	<u> </u>	:	37.6
L4 L5	28.2 30.9	30.3 29.9	30.4 30.6				<b></b>	1	35.1
L6	29.6	29.9	29.			<del> </del>			33.1
L7	29.0	28.6	28.8			<del> </del>	<del></del>	-	31.0 28.1
L8	28.1	26.7	27.4					+	26.
L9	25.5	24.6	25.0				-		25.9
L10	23.9	24.1	23.9				·		26.0
L11	24.3	24.5	24.4			44.5			25.7
L12	24.7	24.5	24.6				24.	24.4	
L13	24.3	24.1	24.2						23.5
<u>L14</u>	23.5	22.7	23.2						<del></del>
L15	18.2	13.7	16.7		1				12.2
L16 L17	11.7	13.2 13.2	11.7		<del></del>		· <del></del>		
L18	13.2	13.2 12.2	13.2						12.2
L19	12.2	12.2	12.2						12.7 12.7
L20	12.2	12.2	12.2						
L21	9.6	8.2	8.2						8.6
L22	8.2	8.2	8.2						5.4
L23	6.5	5.2	5.2						
C1	5.2	5.2	5.2			5.2	4.3		
C2	4.7	3.0	3.6					9.0	
C3	3.0	3.0	3.0						3.3
<u>C1</u>	3.0	3.0	3.0						3.3
<u>C5</u> 	3.0	3.0	$\frac{3.0}{3.0}$	+					3.3
C7	3.0	3.0 3.0	3.0						3.3
<u>C8</u>	3.0	3.0	3.0		3.0				3.3
C9	3.0	3.0	3.0		3.0				3.3
C10	3.0	3.0	3.0		3.0				3.3
C11	3.0	2.0	3.0		3.0				0.9
C12	0.8	0.9	0.9		0.8				0.8
C13	0.9	0.9	0.9	·	0.9	0.9	0.9	0,9	0.8
C14	1.1	1.1	1.1	1.1	1,1	1.1	1.1	1.1	0.8
C15	1.1	1.1	1.1	1.1	1.1	1.1	0.8	1.1	0.8
C16 C17	1.1	1.1	1.1	1.1	1,1		1.1	<u> </u>	0.8
C18	1.1	1.1 0.8	1.1 0.8	1.1 0.8	1.1 0.8	0.8	1.1 0.8	0.8	0.9
C19	0.8	0.8	0.8		0.8				0.9
C20	1.1	1.1	1.1	1.1	1.1		1.1	1.1	0.9
C21	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.9
C22	. 1.1	1.1	0.8		1.1	1.1	1.1	1.1	0.9
C23	1.1	1.1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.8
C24	1.1	0.9	1.1	0.9	1.1	0.9	0.9	0.9	0.8
C25	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8
C26	0.9	0.9	0.9	0.9	0.9		0.9	0.9	0.8
C27 C28	0.9	7.7	0.9	1.5	0.9	0.9	1.5	1.5	0.8
RI	5.0 15.2	7.7 21.6	4.7 19.0	12.7 22.3	5.2 17.1	5.2 20.8	10.7 22.0	13.3 22.7	5.2
R2		24.8	23.9	25.7	23.5	24.4	25.3	26.0	12.3 21.8
R3	26.3	27.6	27.0	28.3	26.7	27.3	28.0	28.6	25.7
R4	28.9	30.2	29.6	30.9	29.3	29.9	30.6	31.2	29.2
R5	31.5	32.8	32.2	33.5		23.3	30.0	- VI.E	32.4
R6	34.0	34.8	34.4	35.1	10 1 T	3 . )6-	1. 17	3,525	36.3
R7		36.1	35.8	36.4	2 * 2		195 %		41.2
< R8	36.7	37.2	37.0	37.1	1 11	1.5	145		48.8
	37.1			1 1 1 1			्रे प्रदे		
Total	809.0	783.2	778.6	790.0	326.4	328.6	335.4	341.7	813.7
Total			12 1 1 1 1	3 5 d 2 3 6 1	1 x 428	1 4 4		<b></b>	5,306.6
Total		i en de	118 4.5	10.00				x 1.05 = 1	5,600.0

Zone No.	Pilot (66mm dia.)	Primary (46mm dia.)	Secor (46mm	ndary 🕖 n dia.)	1	ertiary (4	6mm dia.	)		(66mm a.)
	٠,	Crommin dia.,	1	2	1	2	3	4	]	
Ll	20.0	11.4	10.7	12.0						15.
L2	22.7	14.1	13.4	14.8				:	]	17.
L3	25.5	16.8	16.1	17.5				- 1		19.
L4	28.2	19.5	18.9	20.2					<u> </u>	21.
L5	30.9	22.3	21.6	23.0				:		24.
L6	33.6	25.0	24.3	25.7	1.00		1 1	1.1	· :	26.
L7	36.4	27.7	27.0	28.4	771		<u> </u>	1 - 1 - 1 - 1	1.5 1	29.
L8	39.1	30.5	29.8	31.1	8 N. H			:		31.
L9	41.8	33.2	32.5	33.9	two english					34.0
L10	44.5	35.9	35.2	36.6	11.74					36.0
LH	47.3	38.6	38.0	39.3	28 [38]			- f	4.4	39.
L12	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	5,64	41.
L13	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0		41.8
L14	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	+ 1 1	41.
L15	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	17.7	41.
L16	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0		41.8
L17	50.0	40.0	40.0	40.0	10.0	40.0	40.0	40.0	-	41.8
L18	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0		41.8
L19	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	1.	41.8
L20	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	٠.	41.8
L21	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	9 T F	41.8
L22	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	1.5	41.8
L23	50.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	4.5	41.8
Cl	50.0	40.0	40.0	38.8	40.0	40.0	40.0	36.9	1 1	37.1
C2	45.1	32.3	33.2	26.3	33.2	33.2	29.3	24.8	137 1	27.6
C3	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8		27.0
C4	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	1.3.	27.6
C5	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	1, 4	27.6
C6	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	57	27.6
C7	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	2.7	27.6
C8	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	7.13	27.6
C9	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	4.1.1	27.6
C10	34.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	111-11-1	.27.€
- C11	34.8	24.8	24.8	24.0	24.8	24.8	24.8	20.5	41	23.8
C12	30.5	21.7	21.5	22.0	21.2	21.6	21.8	22.1		20.2
C13	32.2	22.6	22.4	22.8	22.3	22.5	22.7	23.0	14 1 1	20.6
C14	32.7	25.0	23.8	26.2	23.3	24.4	25.6	26.8		16.1
C15	37.3	29.7	28.5	32.8	27.9	29.1	31.3	33.4	1.5.5	21,1
C16	44.0	36.3	35.2	37.5	34.6	35.8	36.9	38.1		25.1
C17	48.7	32.7	35.7	29.7	37.2	34.2	31.2	28.2	· 3.	29.2
C10 :	00.71	05.0	00.0	05.0	00.0	05.5	25.0	A = A		

25.7 25.7 37.2 36.7 35.7 25.7 25.7 25.7 25.7 25.7 25.7 C18 25.7 25.7 25.7 25.7 25.7 28.4 C19 26.7 28.4 C20 38.2 34.2 31.2 29,7 32.7 35.7 38.7 30.6 C21 50.2 39.9 40.0 39.8 40.1 40.0 39.9 39.7 30.2 C22 38.6 39.6 37.4 49.7 37.4 37.3 37.5 37.2 29.7 27.4 27.0 32.1 C23 36.8 34.5 37.0 36.5 36.9 35.2 47.2 36.9 37.0 37.1 36.7 C24 36.6 46.7 35.8 36.5 33.9 33.8 37.7 C25 43.3 35.2 34.3 36.2 34.7 35.7 36.7 C26 38.2 47.2 39,2 40.1 39.7 38.7 40.6 35.8 C27 C28 43.1 42.1 51.1 42.2 41.6 42.6 42.7 39.5 41.8 39.6 36.1 32.6 39.2 35.7 32.2 51.4 47.9 38.7 35.3 40.9 37.4 40.5 40.0 39.7 38.3 RI 37.0 34.8 31.3 36.6 36,4 33.9 30.5 33.1 R2 44.4 33.5 31.8 33.1 R3 28.3 24.8 29.6 26.1 28.7 25.2 40.9 29.2 30.0 27.9 29.9 25.7 22.2 R4 26.5 27.0 24.4 37.4 26.8 21.3 17.8 R5 33.9 23.1 23.7 18.7 19.6 R6 30.5 20.8 R7 27.0 15.2 16.1 14.4 18.0 R8 23.5 12.6 11.7 10.9 15.6 20.0 Total 2,406.2 1,802.7 1,799.2 1,799.8 1,460.1 1,460.3 1,457.4 1,446.5 1,790.6 15,422.8 16,200.0 324,000.0 Total Total x 1.05 = Total x 20kg/m≃

5.	Water	Pressure	Test

5. Water I	Pressure Test	<u> </u>	Sec	ondary	1		17.		(times)
Zone No.	Pilot (66mm dia.)	Primary (46mm dia.)		ım dia.)		<u> </u>	(46mm d	ia.)	Check (66mm dia.)
Lī	4.0	0.0	1 1	2	1 1	2	3	4	
L2	4.0 5.0				<del></del>		~		3.0
L3	5.0								3.0
L4	6.0								4.0
L5	6.0								5.0
L6	7.0	<del></del>				0.0	0.	0.0	5.0
<u>L7</u> L8	7.0								6.0
L9	8.0 8.0								6.0
L10	$\left  - \frac{3.0}{9.0} \right $								$\frac{7.0}{7.0}$
L11	9.0						~~~~~~~~~~		8.0
L12	10.0							<del></del>	8.0
L13	10.0	· · · · · · · · · · · · · · · · · · ·		8.0					8.0
L14	10.0		<del></del>	v •					8.0
L15 L16	10.0								8.0
L17	10.0 10.0								8.0
L18	10.0	8.0							8.0 8.0
L19	10.0	8.0							8.0
L20	10.0								8.0
L21	10.0	8.0	8.0	8.0					8.0
L22	10.0	8.0					- L	<del></del>	8.0
L23 C1	10.0	8.0				<del>-  </del>			8.0
C2	10.0 9.0	8.0 6.0	8.0 7.0			·		<del></del>	7.0
C3	7.0	5.0	5.0						6.0 6.0
C4	7.0	5.0	5.0						6.0
C5	7.0	5.0	5.0						6.0
<u>C6</u>	7.0	5.0	5.0		<del></del>				6.0
<u>C7</u>	7.0	5.0	5.0	<del></del>				<del></del>	6.0
C8	$\frac{7.0}{7.0}$	5.0	5.0			· <del></del> -		-1	6.0
C10	7.0	5.0 5.0	5.0 5.0		-}				6.0
CII	7.0	5.0	5.0	5.0					6.0 5.0
C12	6.0	4.0	4.0	4.0					4.0
C13	6.0	5.0	4.0	5.0					4.0
C14	7.0	5.0	5.0	5.0			·		3.0
C15 C16	7.0	6.0	6.0	7.0			<del></del> _		4.0
C17	9.0 10.0	7.0 7.0	7.0	8.0 6.0					5.0
C18	7.0	5.0	5.0	5.0					6.0
C19	7.0	5.0	5.0	5.0	5.0				6.0
C20	8.0	7.0	6.0	7.0	6.0	7.0			6.0
C21	10.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	6.0
C22	10.0	7.0	8.0	7.0	8.0	7.0			6.0
C23 C24	9.0	7.0	7.0	7.0		7.0			5.0
C25	9.0 9.0	7.0 7.0	7.0	7.0 7.0	7.0 7.0	7.0 7.0	7.0 7.0		5.0
C26	9.0	8.0	8.0	8.0	8.0	8.0	8.0		6.0 7.0
C27	10.0	9.0	8.0	8.0	8.0	9.0	9.0		8.0
C28	10.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0
R1	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
R2	9.0	7.0	$\frac{7.0}{2.0}$	6.0	7.0	7.0	6.0		7.0
R3 R4	8.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
R5	7.0	5.0 4.0	5.0 5.0	5.0 4.0	5.0 0.0	$\begin{array}{r} 5.0 \\ \hline 0.0 \end{array}$	5.0		5.0
R6	6.0	4.0	4.0	4.0	0.0	0.0	0.0		5.0 4.0
R7	5.0	3.0	3.0	3.0	0.0	0.0	0.0		4.0
R8	5.0	2.0	3.0	2.0	0.0	0.0	0.0		3.0
1 122	4.0	2. 256 2. 44	128 32				17.4 3		
Total	480.0	360.0	360.0	360.0	291.0	293.0	290.0		356.0
Total			1, 4, 4					1.05	3,079.0
Total		autoria de la companya della companya de la companya de la companya della company	1.71				1.7	x 1.05 =	3,200.0

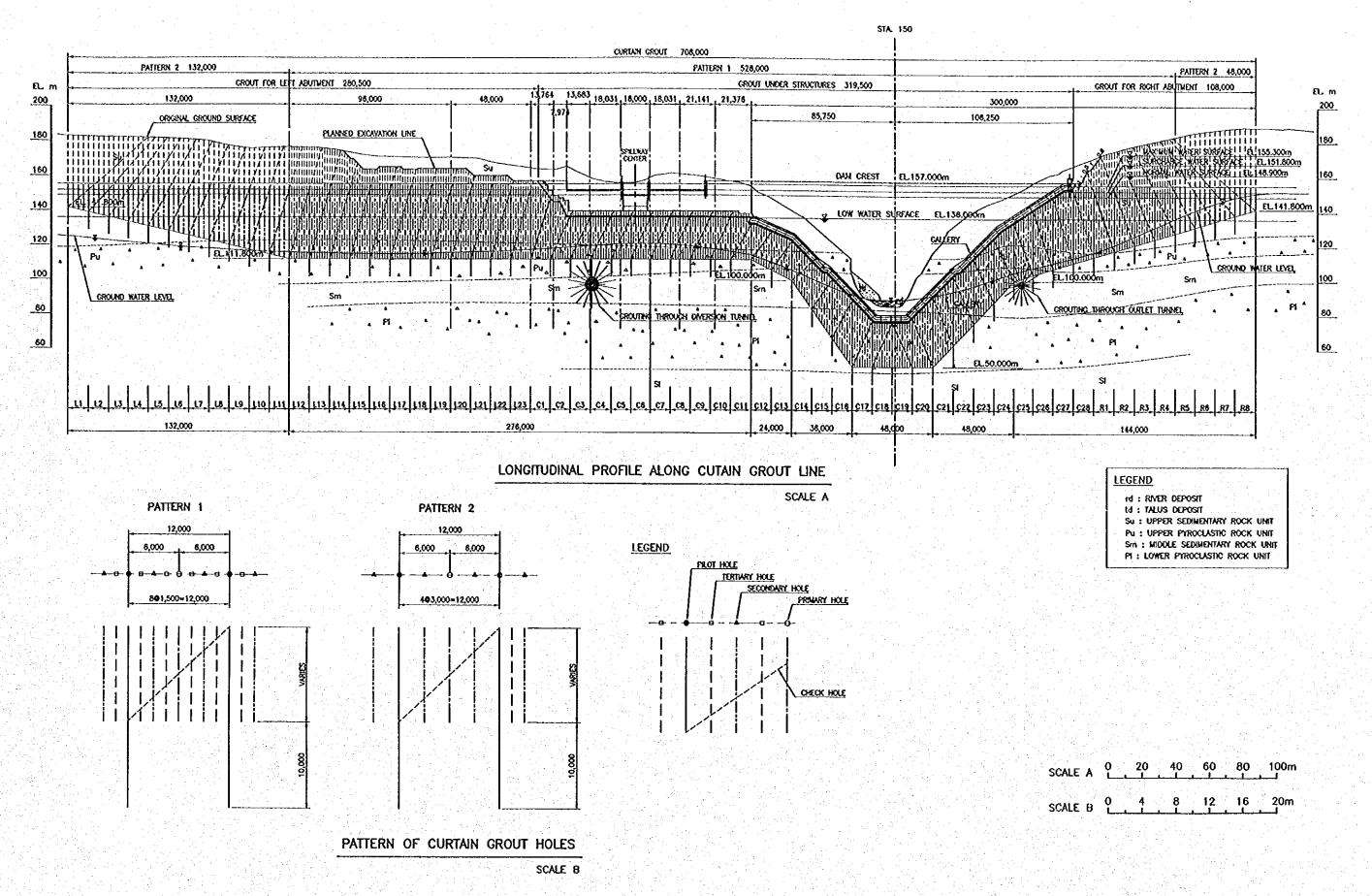
### 2.9.3 Consolidation and Blanket Grouting (46 mm dia.)

Grouting	Drilling (m)	Holes	Total (m)	Grouting (m)	Holes	Total (m)	Pressure Test	Holes	Total
Consolidation					1 7		·		
from Gallery	6.0	192	1152.0	5.0	192	960.0	1.0	192	192.0
Dam		x 1.05 =	1,200.0		x 1.05 =	1,010.0		x 1.05 =	200.0
Total			1		x 20kg/m=	20,000.0		1.71	
from Surface	6.5	77	500.5	5.0		385.0	1.0	77	77.0
Spillway		x 1.05 =	500.0		x 1.05 =	400.0		x 1.05 =	80.0
Total	· .	1.14		1.5	x 20kg/m=	8,000.0			1.7

Grouting	Drilling (m)	Holes	Total (m)	Grouting (m)	Holes	Total (m)	Pressure Test	Holes	Total
Blanket									
from Surface	11.0	188	2068.0	10.0	188	1880.0	2.0	188	376.0
(Dam)		x 1.05 =	2,200.0	1	x 1.05 =	1,970.0		x 1.05 =	390.0
Total					x 20kg/m=	39,000.0			

### 2.9.4 Drilling and Grouting from Tunnels (46mm dia.)

Grouting	No.	Drilling (m)	Holes	Total (m)	Grouting (m)	Holes	Total (m)	Pressure Test	Holes	Total
Diversion								-		
Curtain	1	13.0	1	13.0	10.0	1	10.0	2.0	1	2.0
	2	13.0	2	25.9	10.0	2		2.0		4.0
	3	13.0	2	25.9	10.0	2	20.0	2.0		4.0
	4	13.0	2	25.9	10,0	2	20.0	2.0		4.0
	5	13.0	2	25.9	10.0	2	20.0	2.0	2	4.0
	-6	13.0	2	25.9	10.0	2	20.0	2.0	2	4.0
	7	13.1	2	26.2	10.0	2	20.0	$\frac{3.0}{2.0}$	2	4.0
	8	12.8	2	25.6	10.0	2	20.0	2.0	2	4.0
	9	12.3	2	24.7	10.0	2	20.0	2.0	2	4.0
	10	12.3	1	12.3	10.0	1	10.0	2.0	ī	2.0
Consolidation-1	1	6.2	4.0	24.6	5.0	4.0	20.0	1.0	4.0	4.0
	2	6.2	8.0	49.2	5.0	8.0	40.0	1.0	8.0	8.0
	3	6.2	8.0	49.2	5.0	8.0	40.0	1.0	8.0	8.0
	4	6.1	8.0	48.5	5.0	8.0	40.0	1.0	8.0	8.0
	5	6.0	4.0	24.0	5.0	4.0	20.0	1.0	4.0	4.0
Consolidation-2	1	6.2	6.0	36.9	5.0	6.0	30.0	1.0	6.0	6.0
:	2	6.2	6.0	36.9	5.0	6.0	30.0	1.0	6.0	6.0
at a major and a second	3	6.2	6.0	37.2	5.0	6.0	30.0	1.0	6.0	6.0
	4	6.1	6.0	36.3	5.0	6.0	30.0	1.0	6.0	6.0
Outlet Tunnel	,			10						
Curtain	1	10.1	1	10.1	10.0		100			
					10.01		10.01	2.01	11	2.0
	2	10.1	2	20.2	10.0 10.0	$-\frac{1}{2}$	10.0 20.0	2.0	1 2	2.0
	3	10.1	2	20.2	10.0	2		2.0	1 2 2	4.0
			2	20.2 20.2		2 2	20.0 20.0	2.0 2.0	2	4.0
	3	10.1 10.1	2 2	20.2 20.2 20.2	10.0 10.0 10.0	2 2 2	20.0 20.0 20.0	2.0 2.0 2.0	2 2	4.0 4.0 4.0
	$\frac{3}{4}$	10.1	2	20.2 20.2 20.2 20.2	10.0 10.0	2 2 2 2	20.0 20.0	2.0 2.0 2.0 2.0 2.0	2 2 2	4.0 4.0 4.0 4.0
	3 4 5 6 7	10.1 10.1 10.1	2 2 2 2 2	20.2 20.2 20.2 20.2 20.2 20.2	10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2	20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0	2 2 2 2	4.0 4.0 4.0 4.0 4.0
	3 4 5 6	10.1 10.1 10.1 10.1	2 2 2	20.2 20.2 20.2 20.2	10.0 10.0 10.0 10.0	2 2 2 2 2 2 2	20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0	2 2 2 2 2	4.0 4.0 4.0 4.0 4.0 4.0
	3 4 5 6 7	10.1 10.1 10.1 10.1 10.1	2 2 2 2 2 2 2	20.2 20.2 20.2 20.2 20.2 20.2 20.2 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	2 2 2 2 2 2 2	4.0 4.0 4.0 4.0 4.0 4.0 4.0
	3 4 5 6 7 8	10.1 10.1 10.1 10.1 10.1 10.0 10.0	2 2 2 2 2	20.2 20.2 20.2 20.2 20.2 20.2 20.2	10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	2 2 2 2 2	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
	3 4 5 6 7 8 9 10	10.1 10.1 10.1 10.1 10.1 10.0 10.0	2 2 2 2 2 2 2 2 2	20.2 20.2 20.2 20.2 20.2 20.2 20.2 20.0 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	2 2 2 2 2 2 2 2 2	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0
	3 4 5 6 7 8 9	10.1 10.1 10.1 10.1 10.1 10.0 10.0	2 2 2 2 2 2 2	20.2 20.2 20.2 20.2 20.2 20.2 20.0 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 2 3 3 3	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	2 2 2 2 2 2 2 2	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0
Consolidation-1	3 4 5 6 7 8 9 10	10.1 10.1 10.1 10.1 10.1 10.0 10.0 10.0	2 2 2 2 2 2 2 2 1 3.0 6.0	20.2 20.2 20.2 20.2 20.2 20.2 20.0 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 2 3.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0	2 2 2 2 2 2 2 2 1 3.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0
Consolidation-1	3 4 5 6 7 8 9 10 1 2 3 4	10.1 10.1 10.1 10.1 10.1 10.0 10.0 5.1 5.1	2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.2 20.0 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 2 3 3 3	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0	2 2 2 2 2 2 2 2 2 1 3.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0
Consolidation-1	3 4 5 6 7 8 9 10 1 2 3	10.1 10.1 10.1 10.1 10.1 10.0 10.0 10.0	2 2 2 2 2 2 2 2 1 3.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.2 20.0 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 2 3.0 6.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0	2 2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0 6.0
Consolidation-1	3 4 5 6 7 8 9 10 1 2 3 4	10.1 10.1 10.1 10.1 10.1 10.0 10.0 5.1 5.1 5.1 5.0 5.0	2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.2 20.0 20.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0	2 2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0 6.0 3.0
Consolidation-1	3 4 5 6 7 8 9 10 1 2 3 4 5	10.1 10.1 10.1 10.1 10.1 10.0 10.0 10.0	2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 3.0	20.2 20.2 20.2 20.2 20.2 20.0 20.0 10.0 1	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 3.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0	2 2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0 6.0 6.0 6.0
Consolidation-1	3 4 5 6 7 8 9 10 1 2 3 4 5	10.1 10.1 10.1 10.1 10.0 10.0 10.0 5.1 5.1 5.1 5.0 5.0 5.1 5.1	2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 3.0 6.0	20.2 20.2 20.2 20.2 20.2 20.0 20.0 10.0 1	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 3.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0 1.0	2 2 2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 6.0 6.0 6.0 6.0 6.0
Consolidation-1  Consolidation-2	3 4 5 6 7 8 9 10 1 2 3 4 5	10.1 10.1 10.1 10.1 10.0 10.0 10.0 5.1 5.1 5.1 5.0 5.0 5.1	2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.0 20.0 10.0 1	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0	2 2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0 6.0 6.0 6.0 6.0 6.0
Consolidation-1  Consolidation-2	3 4 5 6 7 8 9 10 1 2 3 4 5 1	10.1 10.1 10.1 10.1 10.0 10.0 10.0 5.1 5.1 5.1 5.0 5.0 5.1 5.1	2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.0 20.0 10.0 1	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0	2 2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 6.0 6.0 6.0 6.0 6.0
Consolidation-1  Consolidation-2	3 4 5 6 7 8 9 10 1 2 3 4 5 1 2 3 4	10.1 10.1 10.1 10.1 10.0 10.0 10.0 5.1 5.1 5.1 5.0 5.0 5.1 5.1	2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.0 20.0 10.0 1	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 10.0 15.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0	2 2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 2.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6
Consolidation-1  Consolidation-2	3 4 5 6 7 8 9 10 1 2 3 4 5 1 2 3 4	10.1 10.1 10.1 10.1 10.0 10.0 10.0 5.1 5.1 5.1 5.0 5.0 5.1 5.1	2 2 2 2 2 2 2 1 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.2 20.2 20.2 20.2 20.2 20.0 20.0 10.0 1	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0 1.0	2 2 2 2 2 2 2 2 2 3.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	4.0 4.0 4.0 4.0 4.0 4.0 2.0 3.0 6.0 6.0 6.0 6.0 6.0 6.0



EMBANKMENT DAM
ARRANGEMENT OF FOUNDATION GROUTING (2/3)

