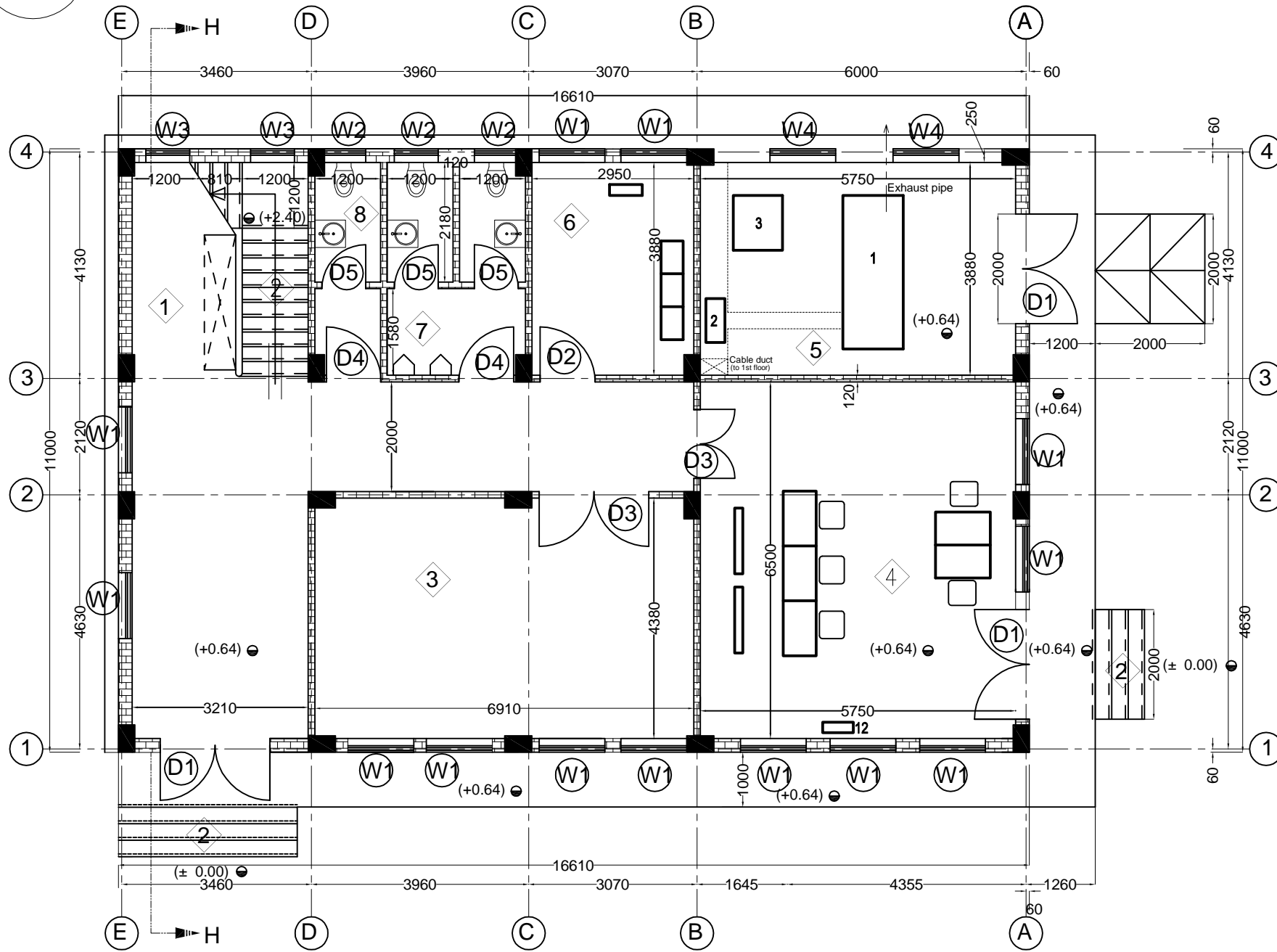
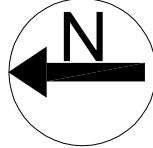
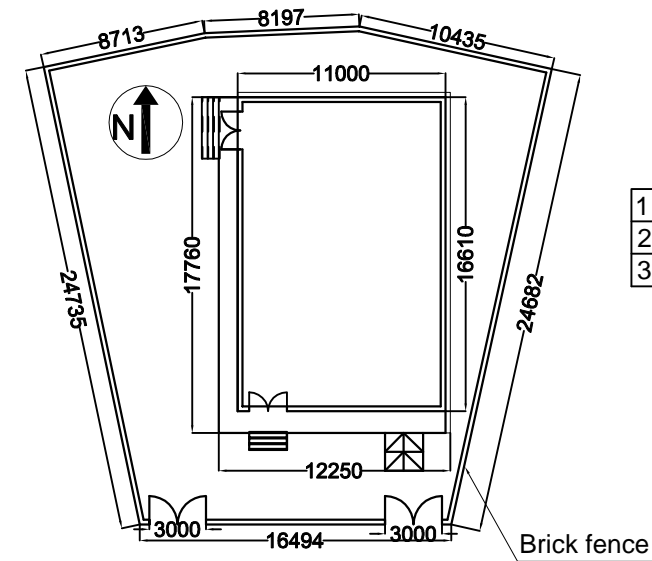


PART III ARCHITECTURE

Central Monitoring Room for Water Management Ground Floor



Layout
No Scale



1	Emergency generator
2	Generator panel
3	Power receiving & distribution panel

GROUND FLOOR WINDOW AND DOORS TABLE

WINDOW TYPE	NO OF LEAFS	WINDOWS		FRAMES	
		DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
W1	2	1200*1200	AL	-	ST
W2	2	800*800	AL	-	ST
W3	2	800*1200	AL	-	ST
W4	2	1200*800	AL	-	ST

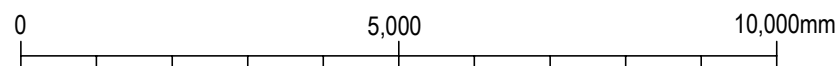
DOOR TYPE	NO OF LEAFS	DOORS		FRAMES		NOTES
		DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL	
D1	1	2000*2500	S	-	S	Fabricated Steel Door with reinforced glass 6mm thickness
D2	1	1000*2200	W	-	W	
D3	2	200*2200	W	-		
D4	1	900*2200	W	-	W	
D5	1	800*2200	W	-	W	
D6	2	1200*2200	AL	-	AL	

GROUND FLOOR FINISHING TABLE

Room No.	Room Name	Walls	Floor	Ceiling	Skirting
1	Entrance & corridor	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
2	Stairs	Plastering and Painting	Galala Marbel	Plastering and Painting	Galala Marbel 30 cm
3	Office	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
4	Monitoring room	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
5	Generator Room	Plastering and Painting	Mosaic tiles	Plastering and Painting	Ceramics 15 cm
6	Server room	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
7	lavatory (Men)	Ceramic tiles	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
8	lavatory (Ladies)	Ceramic tiles	Ceramic tiles	Plastering and Painting	Ceramics 15 cm

Legend

- Brick wall
- Reinforce concrete column

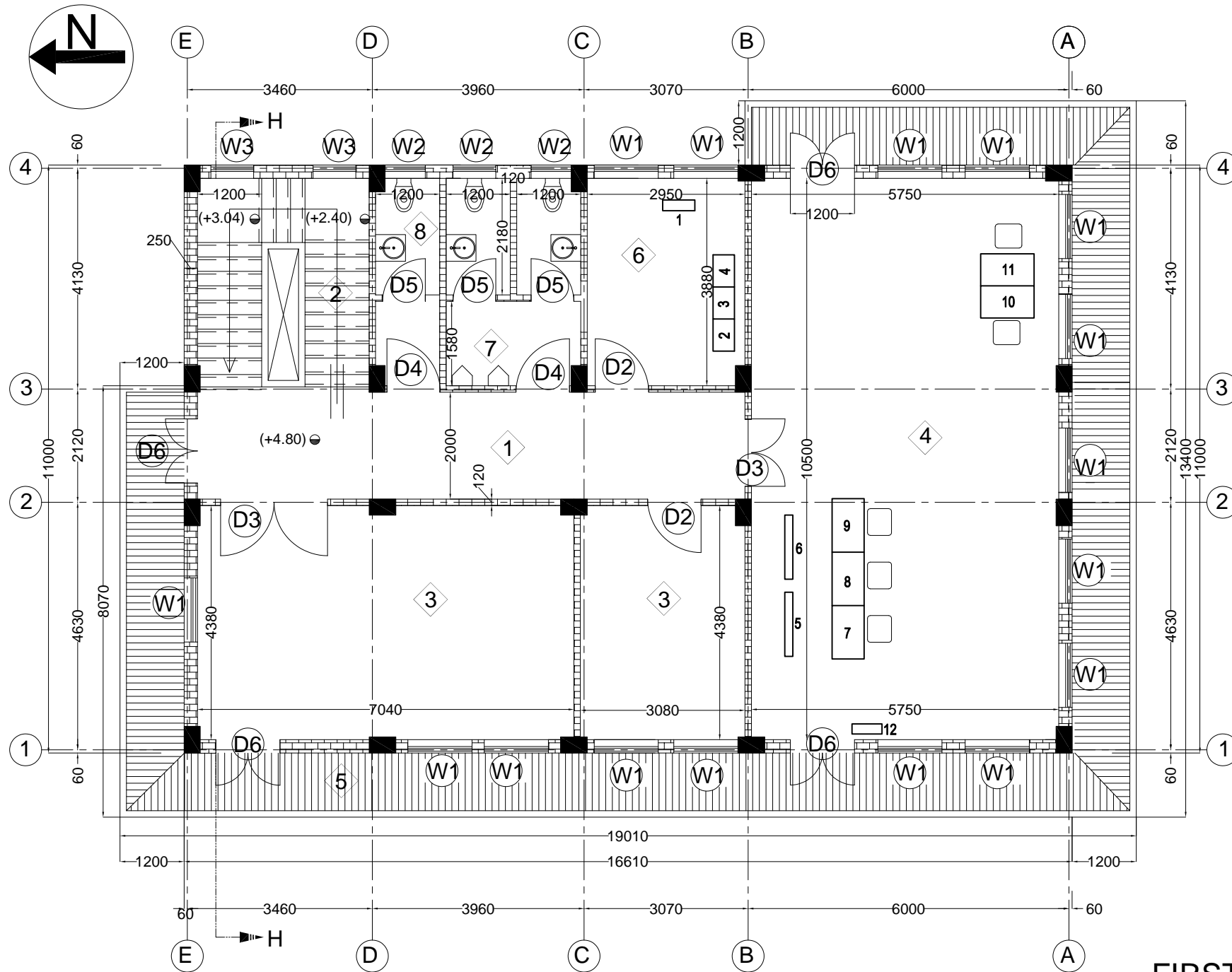


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Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Control house General layout (1/2)	DRW. NO. AC-1
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

Control Room for New Dirout Group of Regulators First Floor



1	Power Distribution Panel 1
2	Equipment Rack 1
3	Equipment Rack 2
4	Equipment Rack 3
5	LCD Monitor 1
6	LCD Monitor 2
7	Terminal PC 1
8	Terminal PC 2
9	Terminal PC 3
10	Terminal PC 4
11	Terminal PC 5
12	Power Distribution Panel 1

FIRST FLOOR WINDOW AND DOORS TABLE

WINDOW TYPE	NO OF LEAFS	WINDOWS		FRAMES	
		DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
W1	2	1200*1200	AL	-	ST
W2	2	800*800	AL	-	ST
W3	2	800*1200	AL	-	ST
W4	2	1200*800	AL	-	ST

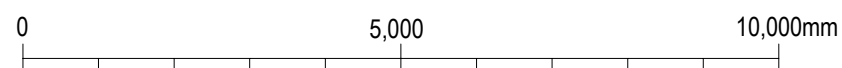
DOOR TYPE	NO OF LEAFS	DOORS		FRAMES		NOTES
		DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL	
D1	1	2000*2500	S	-	S	Fabricated Steel Door with reinforced glass 6mm thickness
D2	1	1000*2200	W	-	W	
D3	2	200*2200	W	-	-	
D4	1	900*2200	W	-	W	
D5	1	800*2200	W	-	W	
D6	2	1200*2200	AI	-	AL	

FIRST FLOOR FINISHING TABLE

Room No.	Room Name	Walls	Floor	Ceiling	Skirting
1	Corridor	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
2	Stairs	Plastering and Painting	Galala Marbel	Plastering and Painting	Galala Marbel 30 cm
3	Office and Meeting Rooms	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
4	Control room	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
5	Terrace	Plastering and Painting	Mosaic tiles	Plastering and Painting	Ceramics 15 cm
6	Server room	Plastering and Painting	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
7	lavatory (Men)	Ceramic tiles	Ceramic tiles	Plastering and Painting	Ceramics 15 cm
8	lavatory (Ladies)	Ceramic tiles	Ceramic tiles	Plastering and Painting	Ceramics 15 cm

Legend

- Brick wall
- Reinforce concrete column

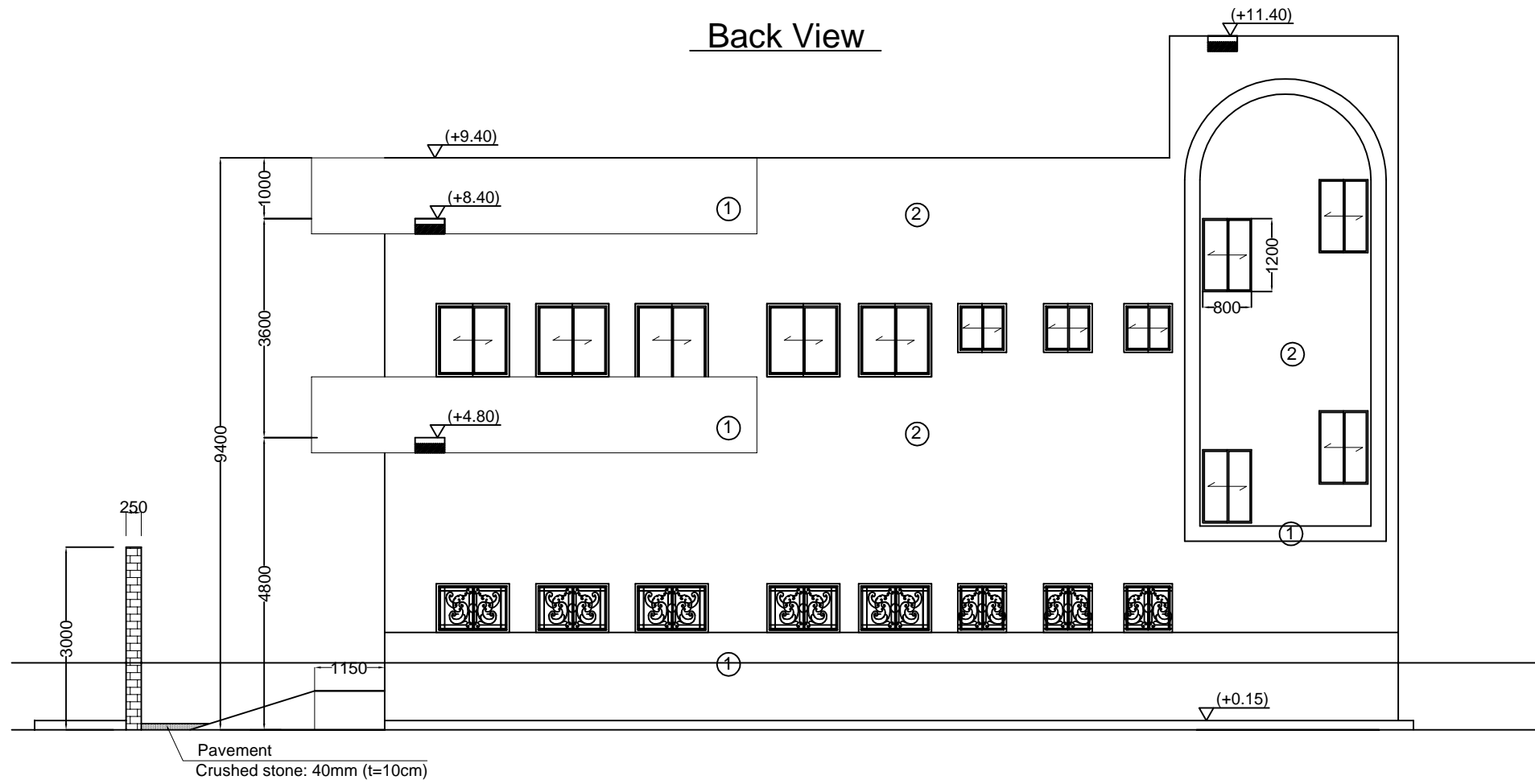


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Reservoir and Grand Barrages Sector

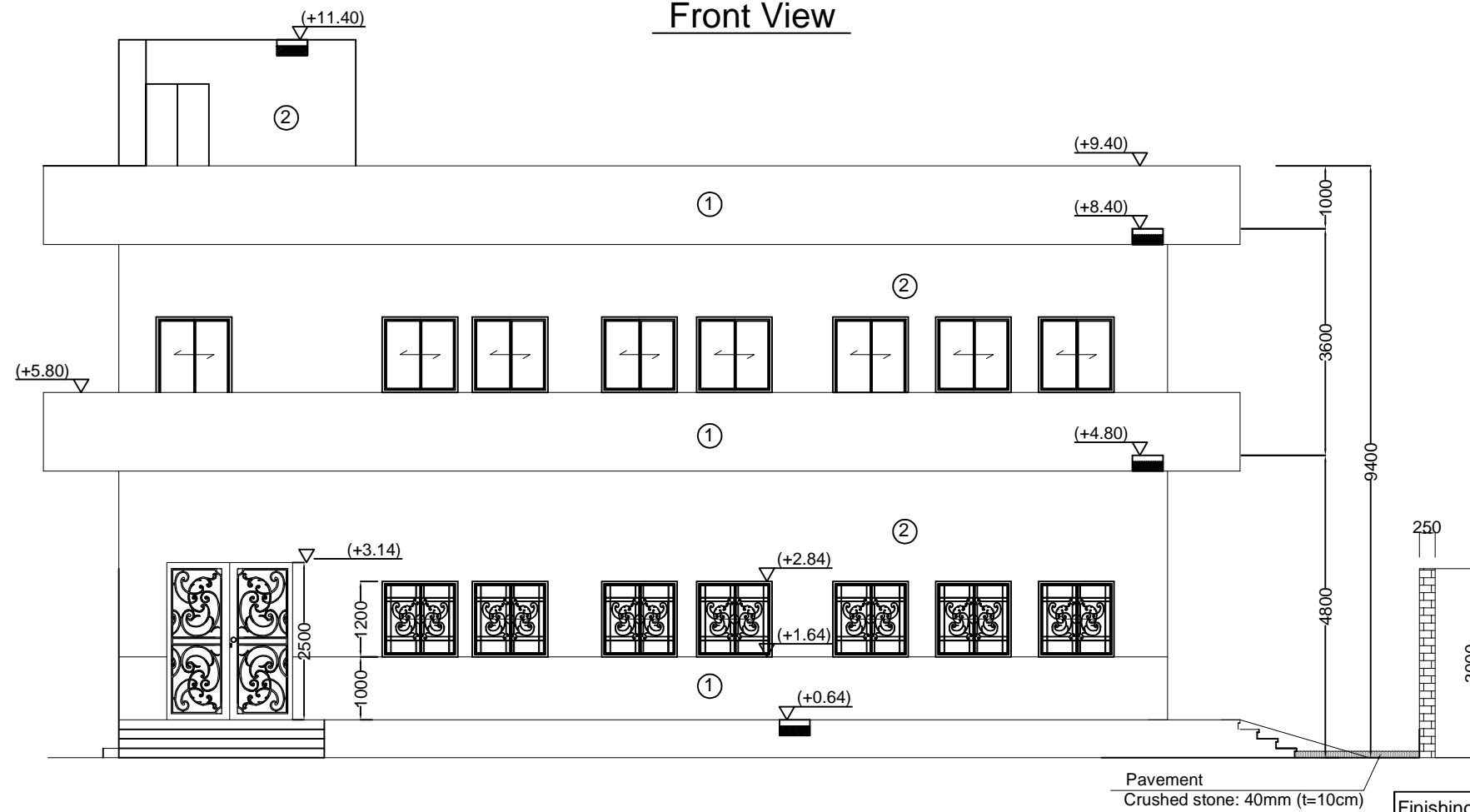
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Control house General layout (2/2)	DRW. NO. AC-2
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:

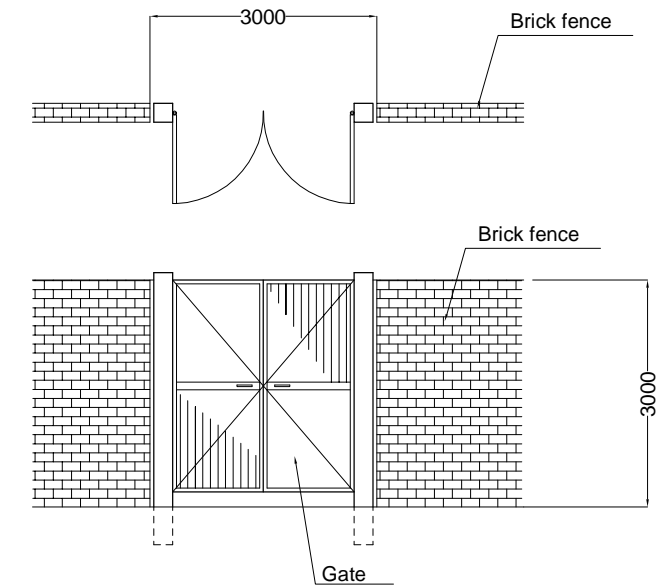
Back View



Front View



General drawing of Gate



Notes :

Design Ground Level (± 0.00) is = EL50.20

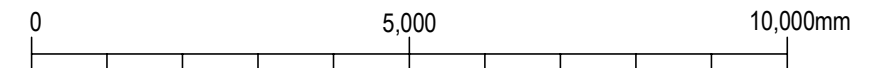


Table of Finishing

Finishing pattern	Finishing Type
①	Plastering : Kimstoon Painting With a requested color
②	Plastering : Kimstoon Painting With a different requested color

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Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

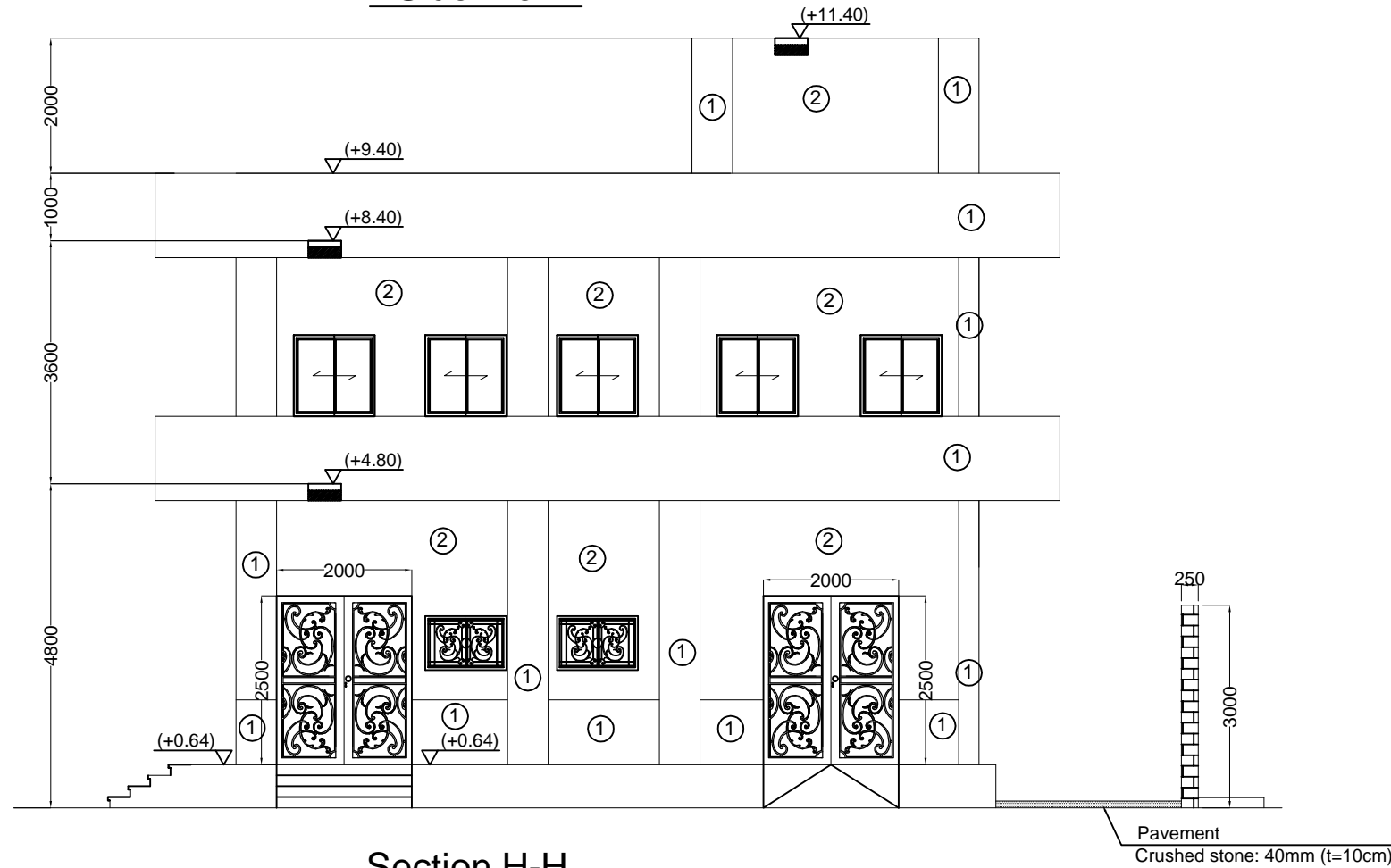
Control house
Views and cross sections(1/2)

DRW. NO.
AC-3

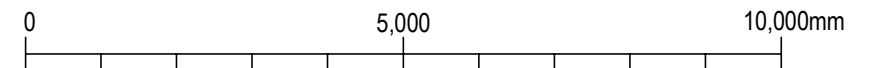
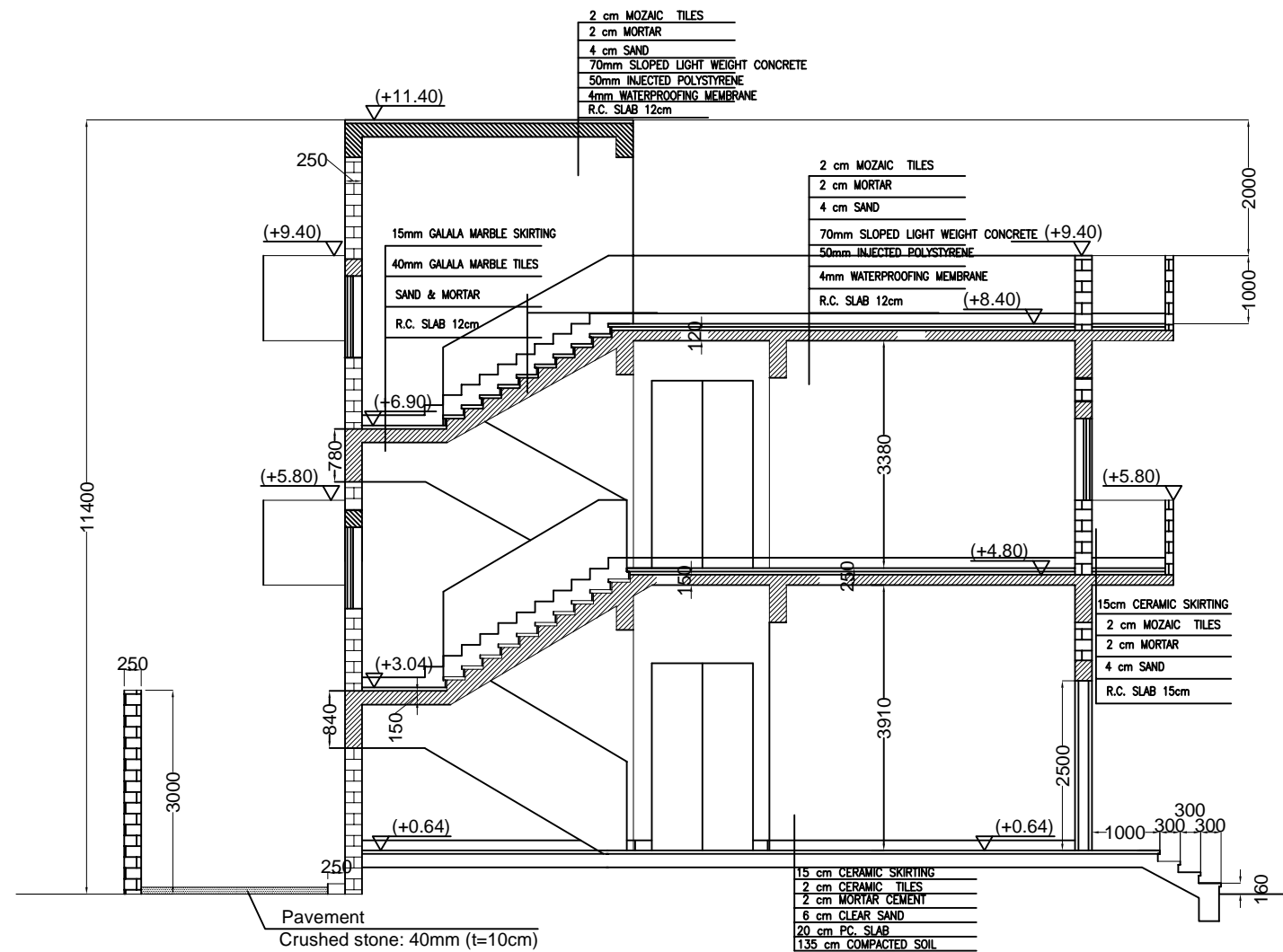
SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Side View

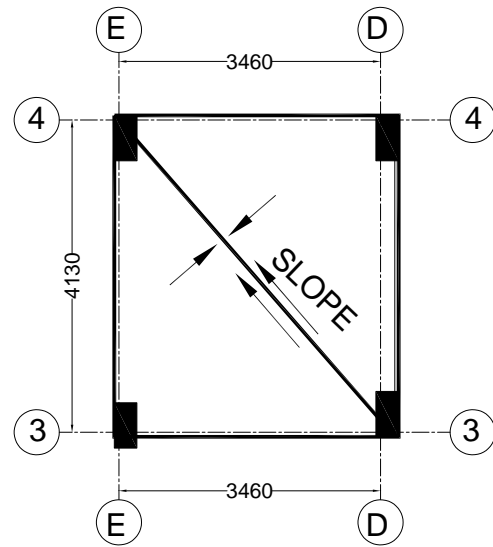


Section H-H

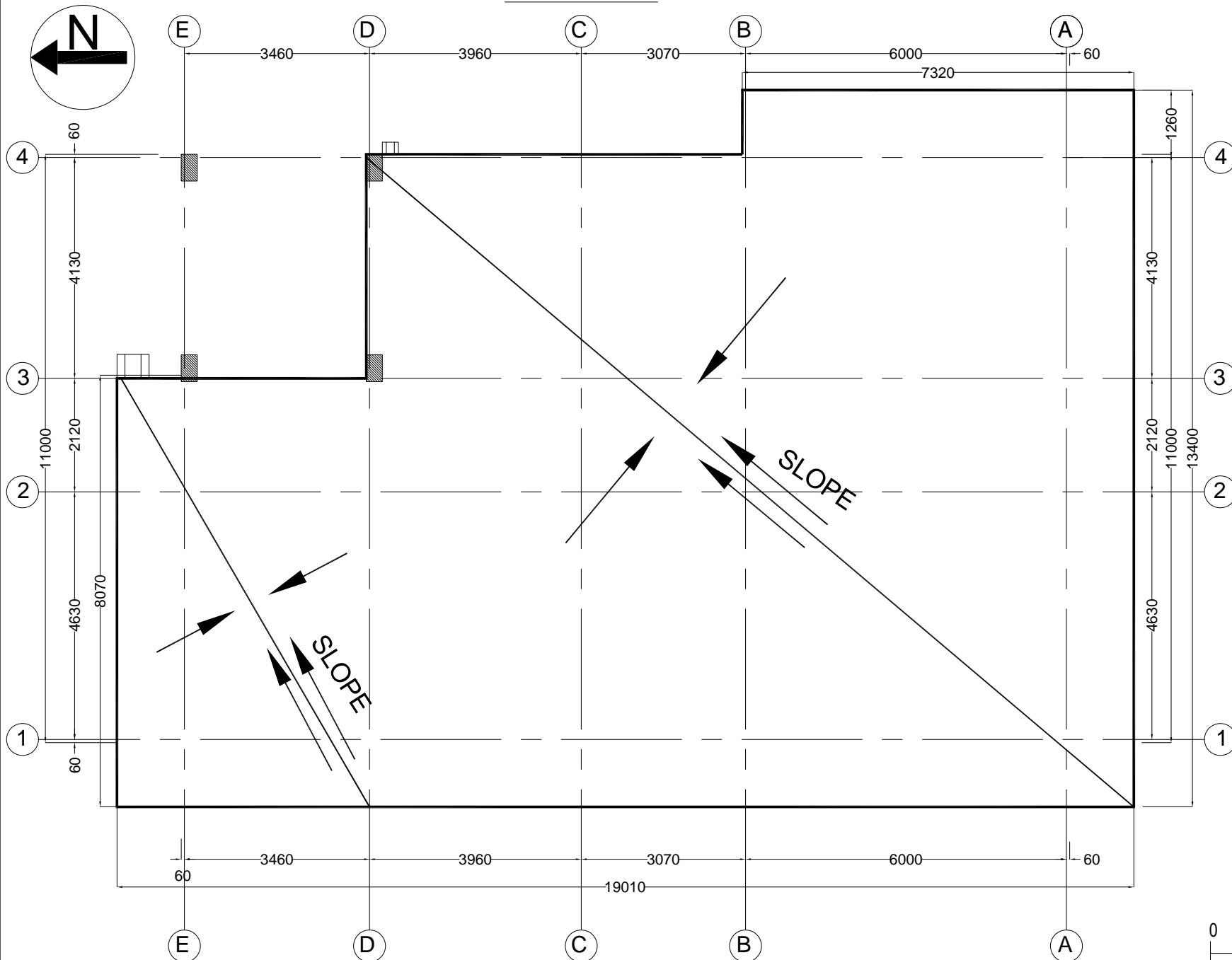


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Control house Views and cross sections (2/2)	DRW. NO. AC-4	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

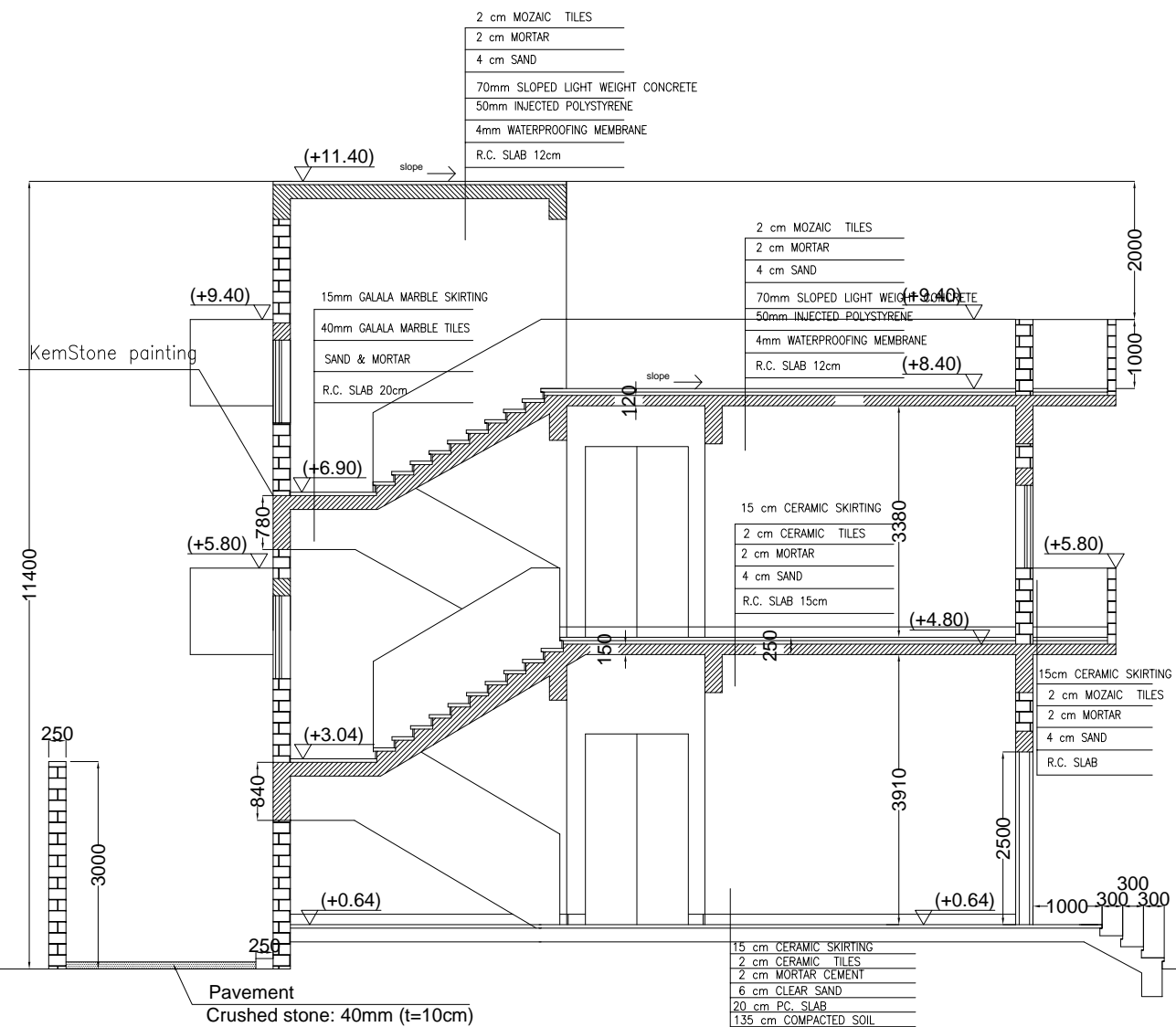
STAIR ROOF PLAN



ROOF PLAN

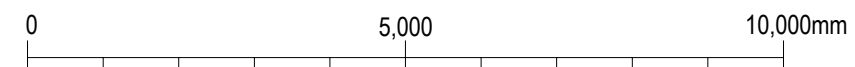
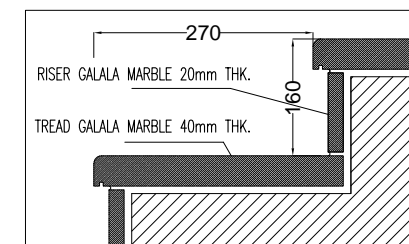


Section H-H



STAIRS DETAIL

(no scale)



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Roof plan	DRW. NO. AC-5		
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

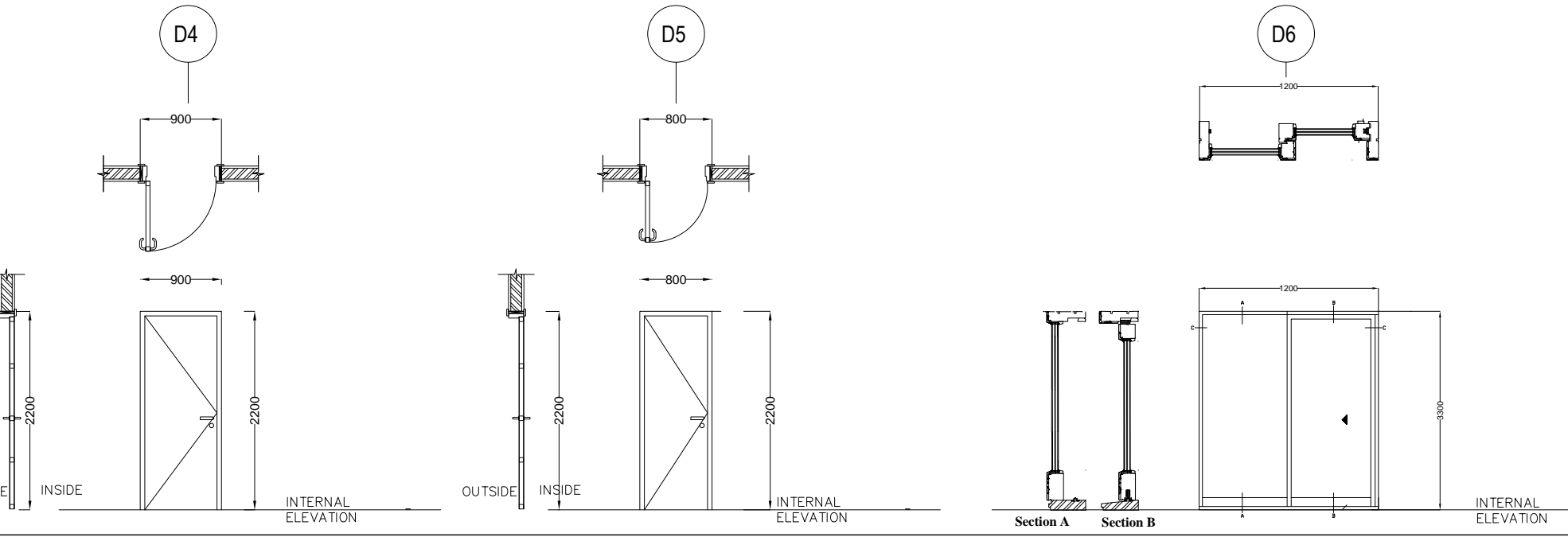
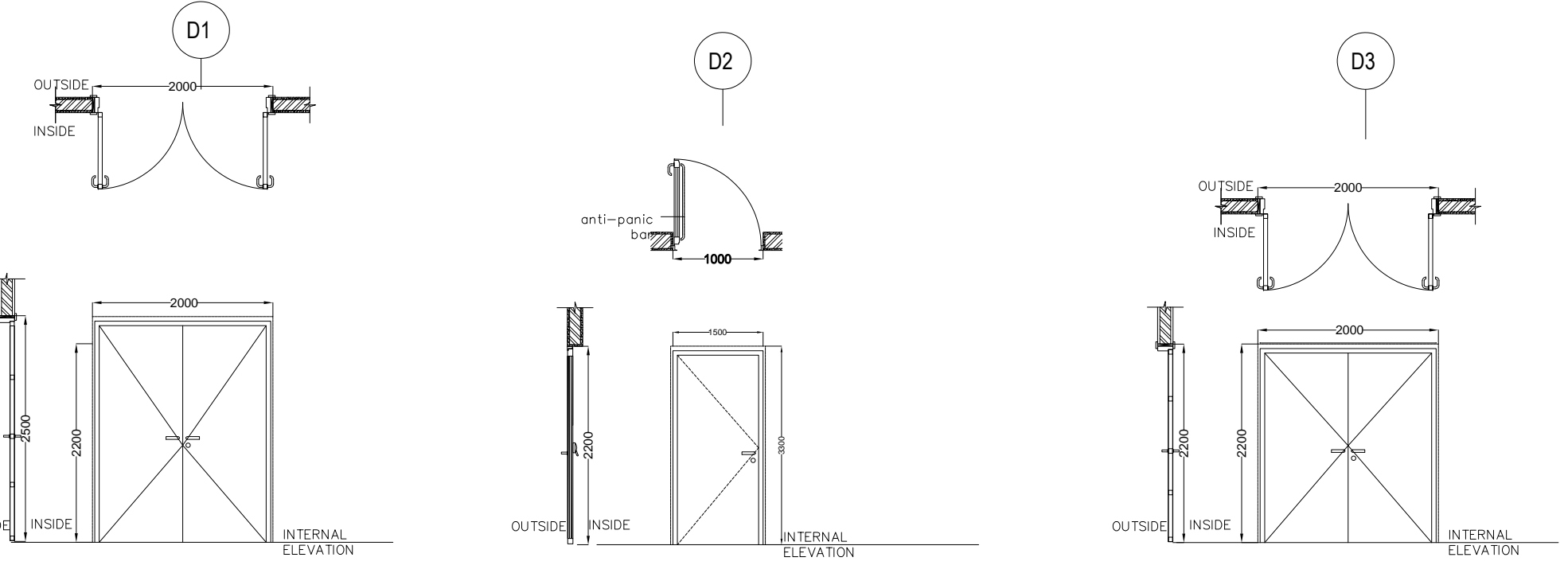
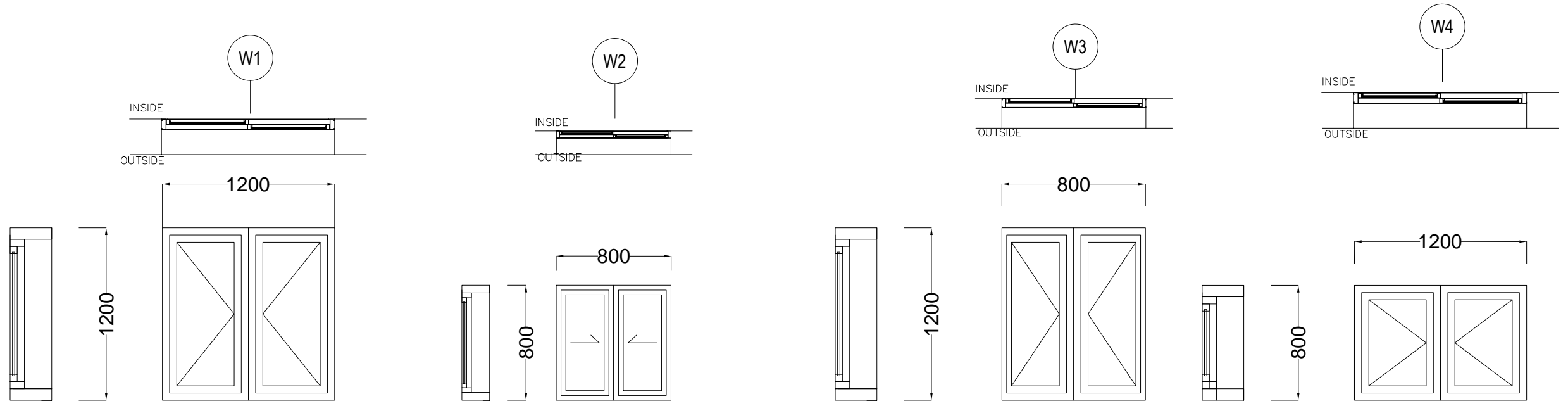


TABLE : GROUND AND FIRST FLOOR FOR WINDOWS AND DOORS

WINDOW TYPE	NO OF LEAFS	WINDOWS		FRAMES	
		DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
W1	2	1200*1200	AL	-	ST
W2	2	800*800	AL	-	ST
W3	2	800*1200	AL	-	ST
W4	2	1200*800	AL	-	ST

DOOR TYPE	NO OF LEAFS	DOORS		FRAMES		NOTES
		DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL	
D1	1	2000*2500	S	-	S	Fabricated Steel Door with reinforced glass 6mm thickness
D2	1	1000*2200	W	-	W	
D3	2	200*2200	W	-		
D4	1	900*2200	W	-	W	
D5	1	800*2200	W	-	W	
D6	2	1200*2200	Al	-	AL	

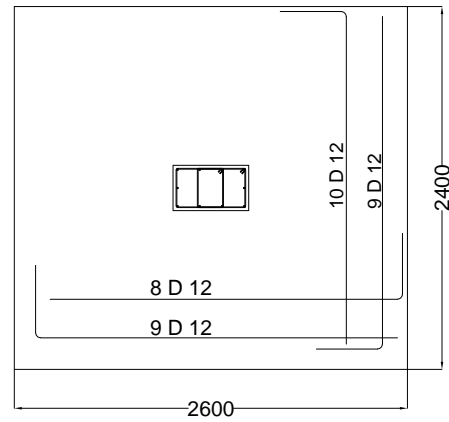
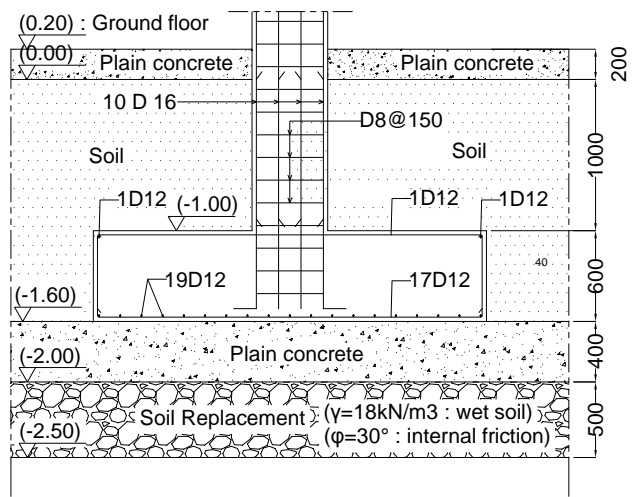
Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Control house Detail of windows and doors	DRW. NO. AC-6
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

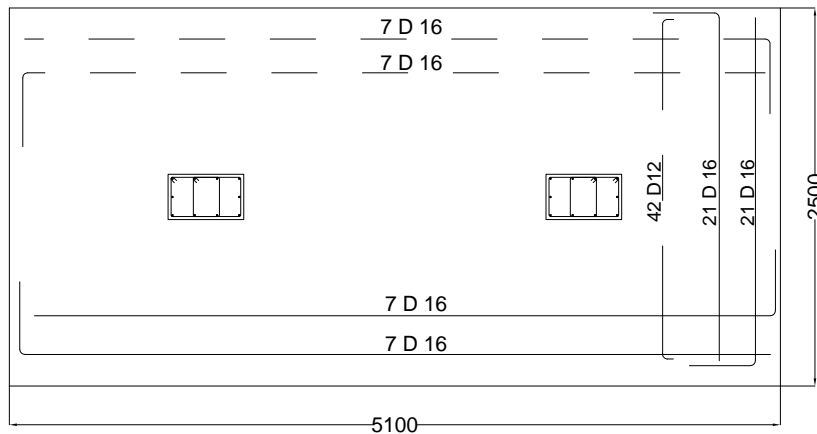
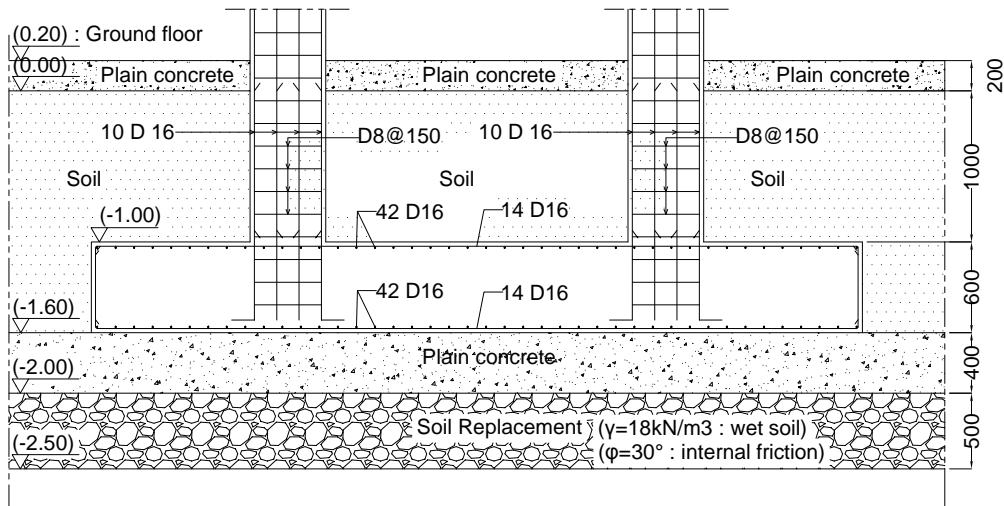
DETAILS OF ISOLATED FOOTING F3

Scale B



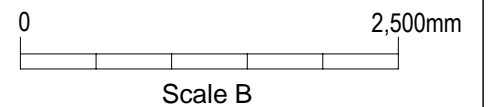
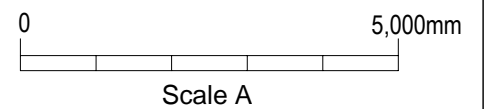
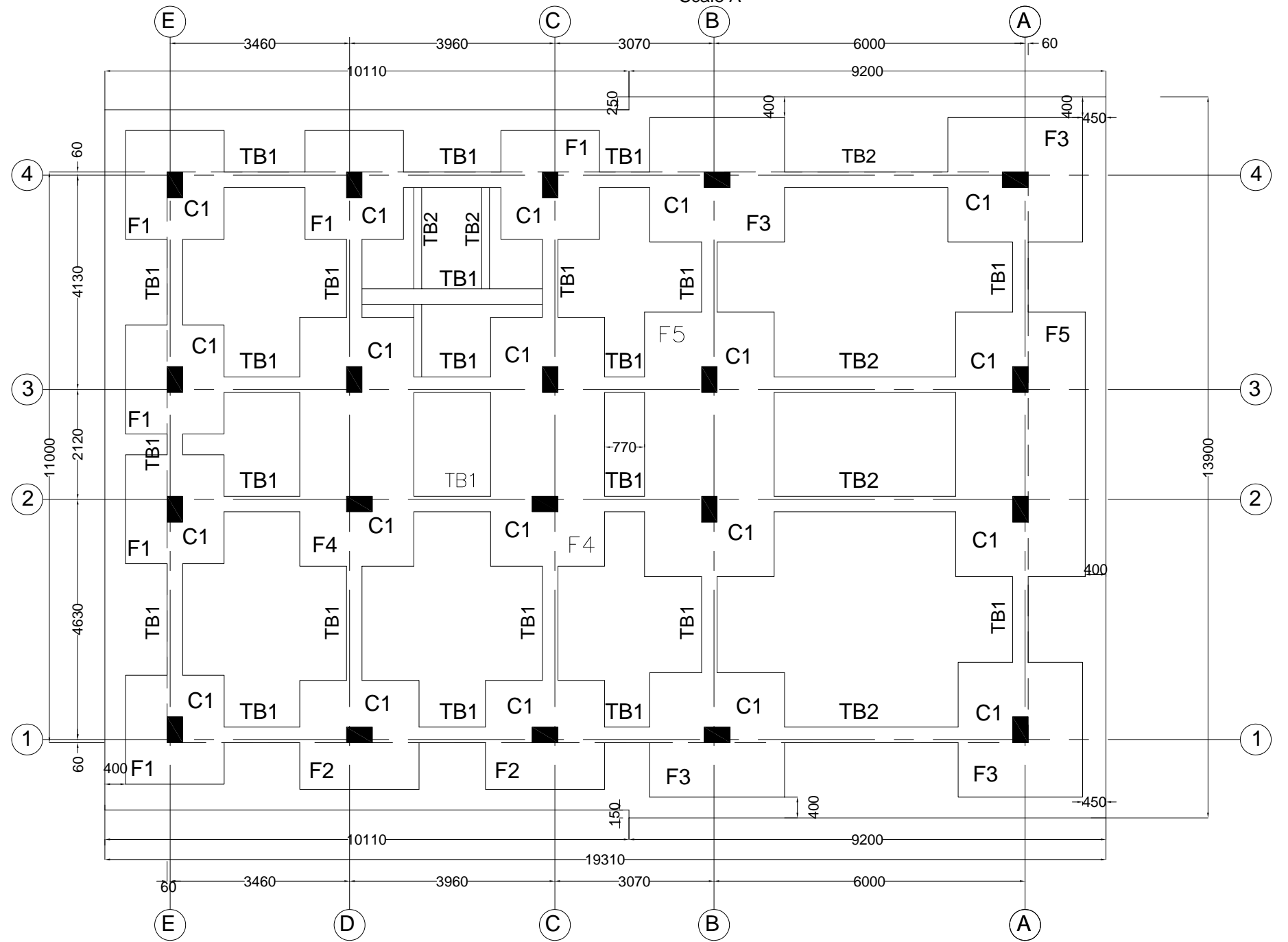
DETAILS OF COMBINED FOOTING F5

Scale B



FOUNDATION PLAN

Scale A



TYPE	PLAIN CONCRETE		REINFORCED CONCRETE		BOTTOM REINF.		TOP REINF.		REMARKS
	THICK.	LENGTH	WIDTH	THICK.	SHORT	LONG	SHORT	LONG	
F1	40	2100	1900	600	16D12	16D12	—	—	ISOLATED FOOTING
F2	40	2300	2100	600	17D12	17D12	—	—	
F3	40	2600	2400	600	19D12	17D12	—	—	COMBINED FOOTING
F4	40	4700	2200	600	40D16	13D16	40D12	13D16	
F5	40	510	2500	600	42D16	14D16	42D12	14D16	

TYPE	SIZE	REINFORCEMENTS		STIRRUPS	FACE BAR EACH FACE	REMARKS
		BOTTOM BARS	TOP BARS			
TB1	150X600	3D16	3D16	D8@15	1D12	
TB2	300X600	4D16	4D16	D10@15	1D12	
TB3	300X600	5D16	5D16	D10@15	1D12	

Notes :

- Foundation :**
- Foundation plan has to be completely excavated
 - foundations Bottom Level is (-2.50) below the natural ground level
 - foundations is designed to carry 3 floors (Ground floor +2 Typical floors)
 - Soil Replacement with 50 cm has to be implemented and compacted in two layers with 25 cm thickness

DRAWINGS :

- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
- UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

- UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.
- PLAIN CONCRETE USED IN BLINDING SHALL HAVE A MINIMUM 28 DAYS CUBIC STRENGTH OF 200 kg/cm² (170kg/cm² cylinder)

CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED

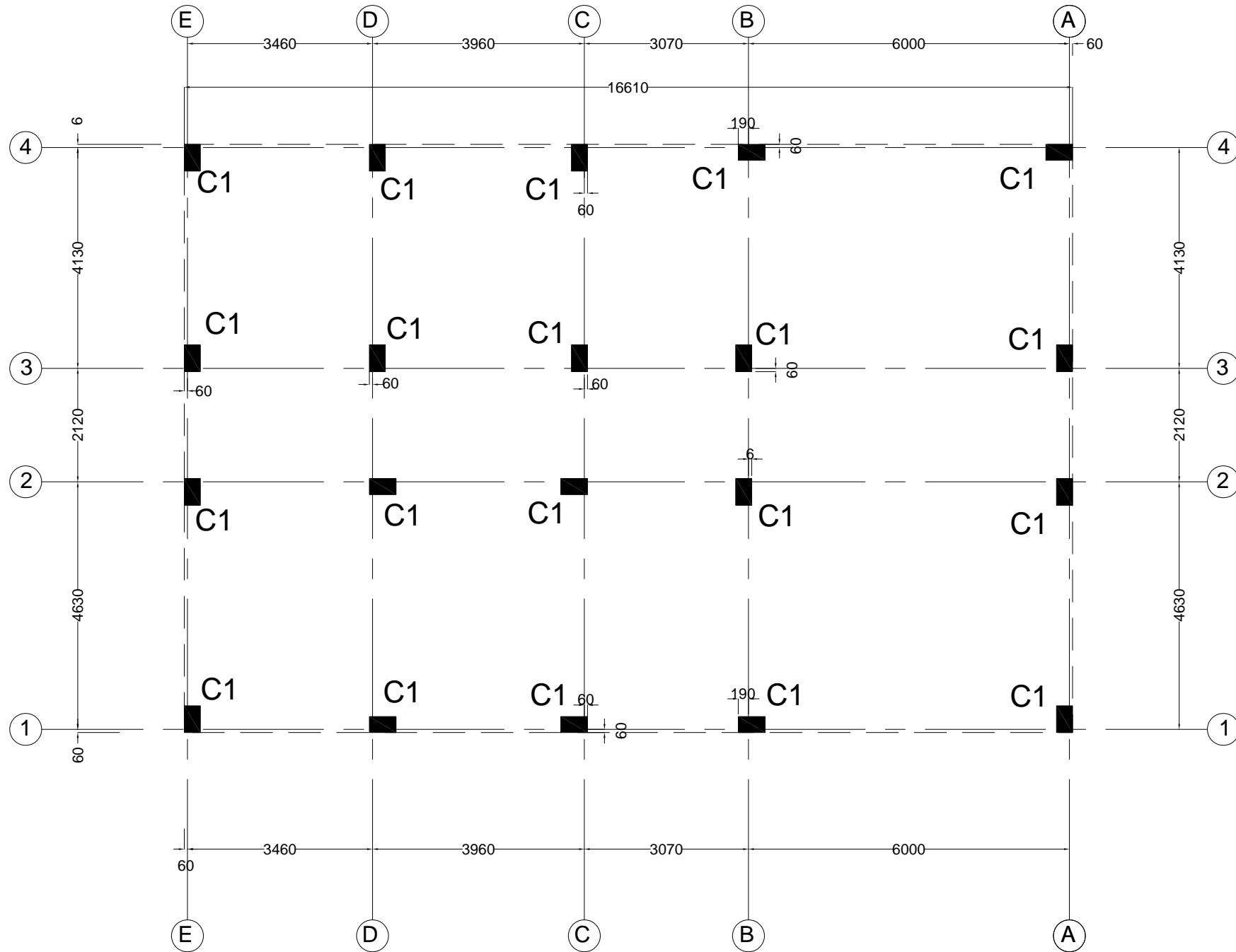
Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Control house Bar arrangement (1/4)	DRW. NO. AC-7
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

Column Axes Layout - Ground Floor

Scale A



Notes :

DRAWINGS :

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
2. UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.

STEEL REINFORCEMENT :

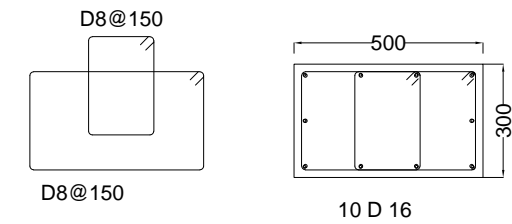
1. ALL STEEL BAR REINFORCEMENT ARE HIGH TENSILE STEEL(ST360/520) EXCEPT STIRRUPS ARE MILD STEEL (ST240/370)
2. SPLICES HAVE TO BE NOT LESS THAN 60 TIMES THE BARS DIAMETER OR 1.00 MEETER

CODES TO BE FOLLOWED :

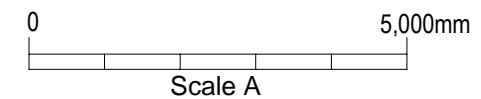
EGYPTIAN CODES HAVE TO BE FOLLOWED

Rebar arrangement

Scale B

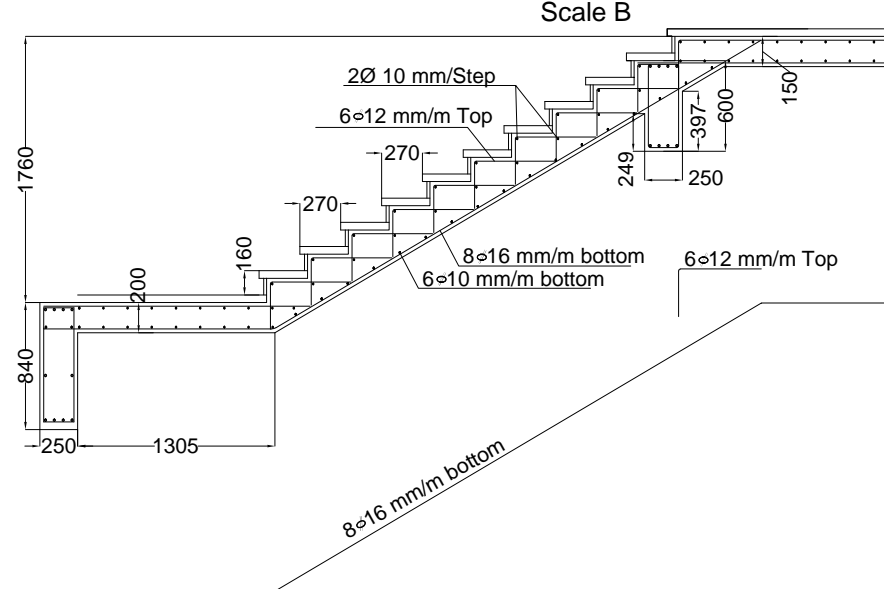


MAIN BARS	10 D 16
Stirrups	D8@150

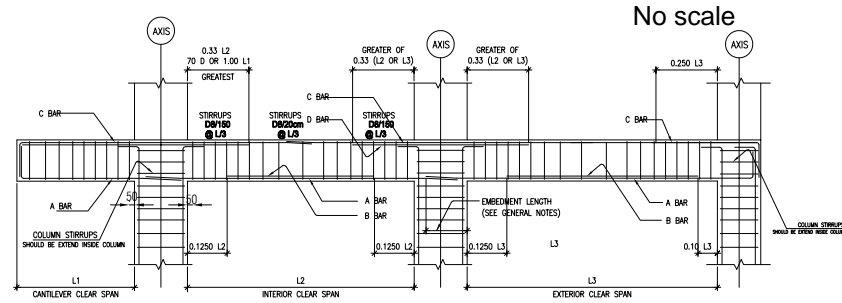


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Bar arrangement (2/4)			DRW. NO. AC-8
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

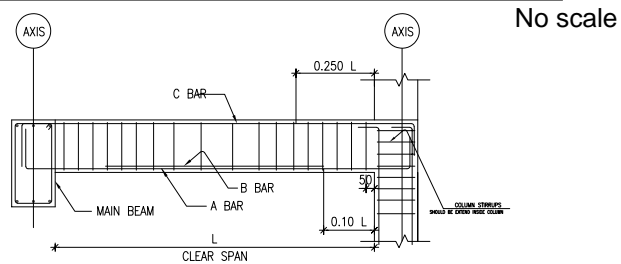
Rebar arrangement for the Stair
Scale B



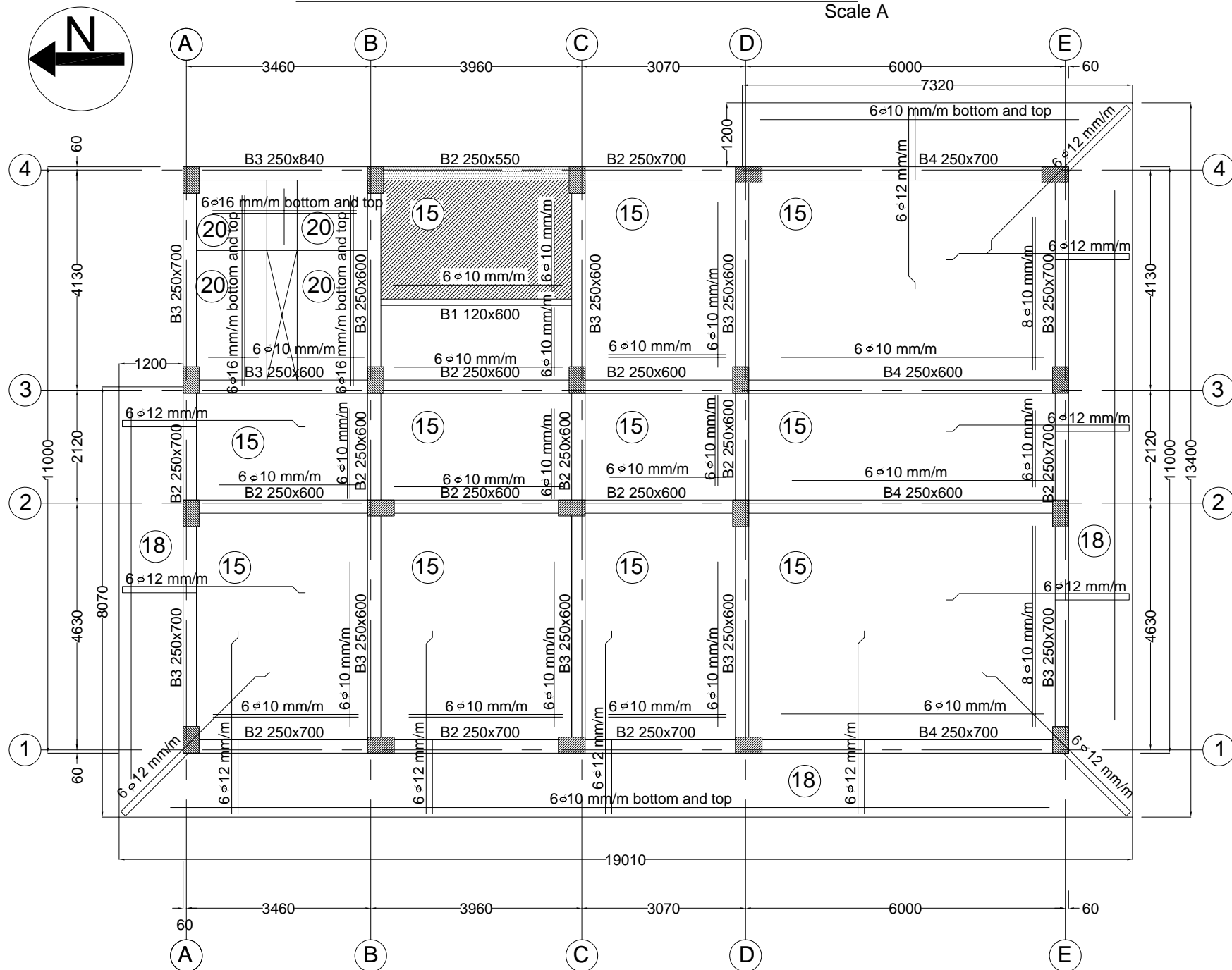
TYPICAL CONTINUOUS BEAM
No scale



TYPICAL SIMPLY SUPPORTED BEAM
No scale



Rebar arrangement for the ceiling slab of ground floor
Scale A



Notes :

DRAWINGS :

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
2. UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

1. UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.
2. CEILING SLAB OF THICKNESS FOR THE GROUND FLOOR IS 150 mm, UNLESS OTHERWISE SPECIFIED
3. THE HATCHED SLAB()ARE LOWERED 150 mm BELOW THE OTHER SLABS FOR THE TOILETS.
4. THE MENTIONED BEAM DEPTH IS INCLUDING THE SLAB DEPTH

STEEL REINFORCEMENT :

1. ALL STEEL BAR REINFORCEMENT ARE HIGH TENSILE STEEL (ST360/520) EXCEPT STIRRUPS ARE MILD STEEL (ST240/370)
2. SPLICES HAVE TO BE NOT LESS THAN 60 TIMES THE BARS DIAMETER OR 1.00 MEETER

CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED

TABLE OF BEAMS

TYPE	BOTTOM BARS		TOP BARS		STIRRUPS			REMARKS
	A BARS	B BARS	C BARS	D BARS	RIGHT	MIDD.	LEFT	
B1	2D16	2D12	2D12	—	D8@150	D8@200	D8@150	
B2	2D16	2D16	2D16	2D16	D8@150	D8@200	D8@150	
B3	3D16	2D16	2D16	3D16	D8@150	D8@200	D8@150	
B4	5D16	3D16	3D16	4D16	D8@150	D8@200	D8@150	

*- AT ADJACENT BEAMS, THE HIGHER VALUE OF TOP BARS (C) & (D) SHOULD BE USED.

TABLE OF SLAB THICKNESS

TYPE	DESCRIPTION
15	Thickness is 150mm
18	Thickness is 180mm
20	Thickness is 200mm



Arab Republic of Egypt
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Detailed Design Study on the Project for
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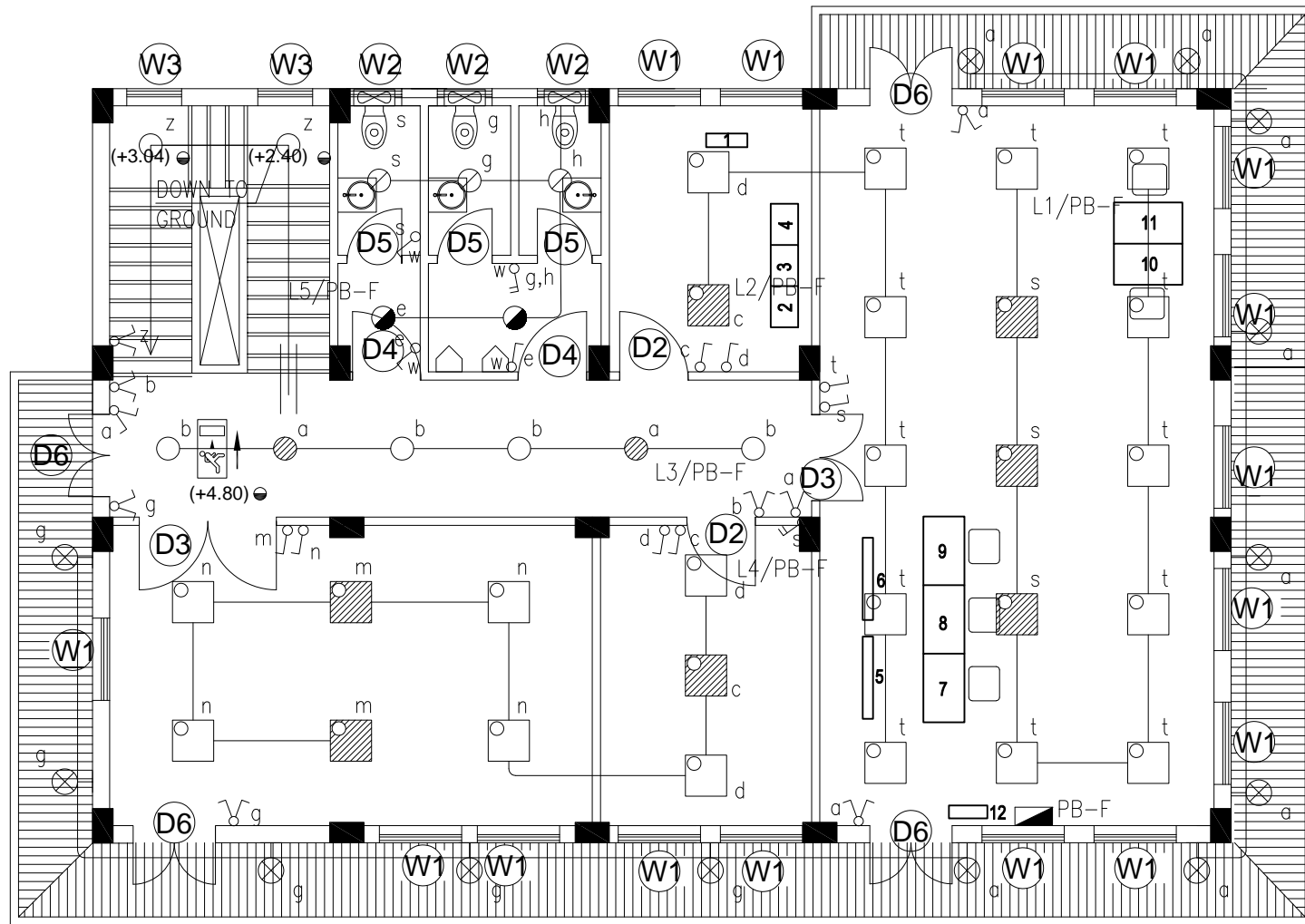
Control house
Bar arrangement (3/4)

DRW. NO.
AC-9

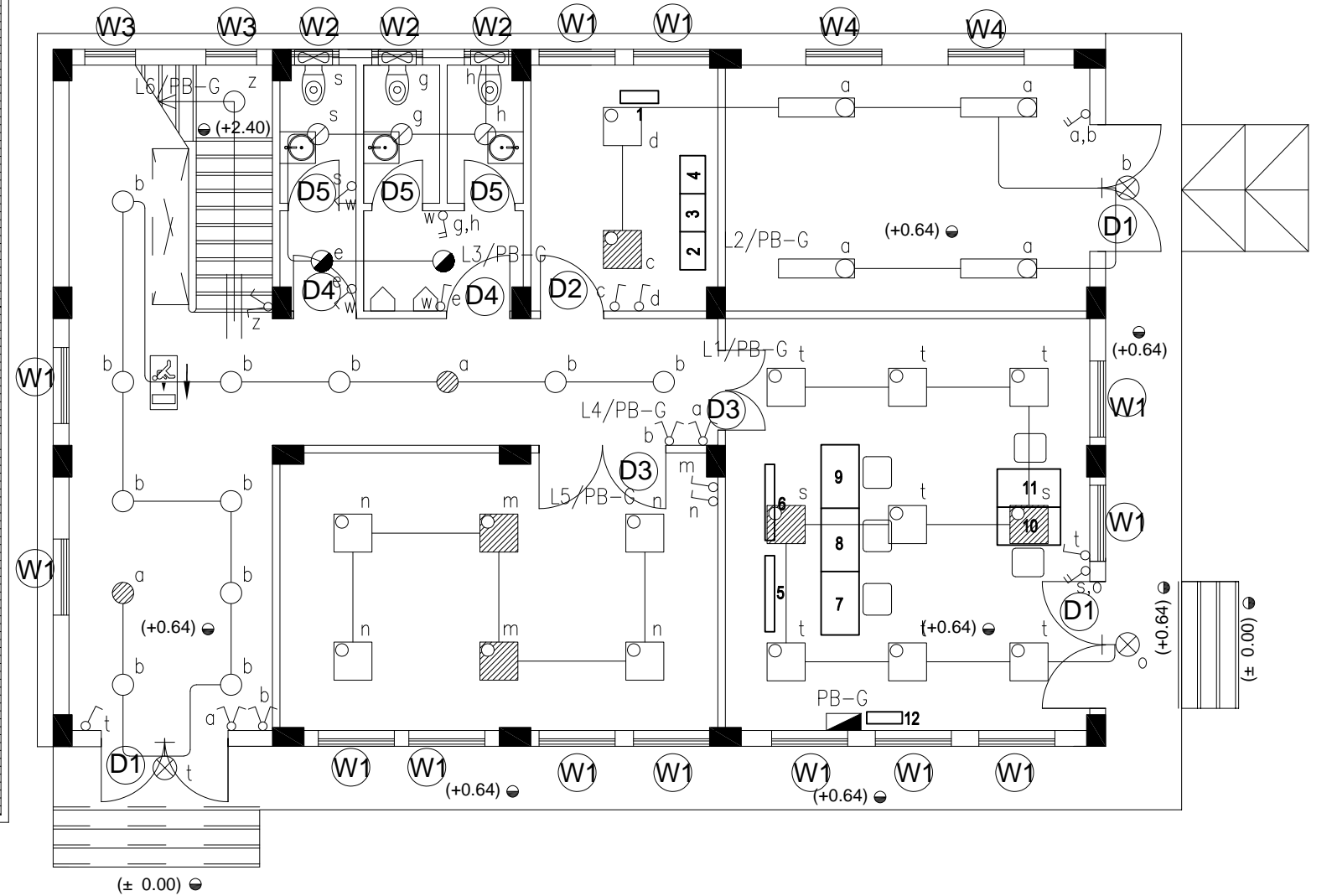
SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

First Floor















Ground Floor



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Electrical works (1/6)			DRW. NO. AC-11
SANYU CONSULTANTS INC.			
PREPARED BY: DATE:	CHECKED BY: DATE:	APPROVED BY: DATE:	DATE:


LEGEND & ABBREVIATIONS









SYMBOL	DESCRIPTION
	<ul style="list-style-type: none"> RECESSED MOUNTED LUMINARIES (TYPE F1) FITTED WITH 4x14 WATT FLUORESCENT TL5 LAMPS OF HIGH LUMINOUS OUTPUT WITH HIGH FREQUENCY ELECTRONIC BALLAST FOR 0.96 POWER FACTOR. LUMINARIES BODY MADE OF SHEET STEEL AND PAINTED WITH ELECTROSTATIC POWDER COATING IN WHITE COLOR. LOUVER MADE OF DARK ANODIZED HIGH PURITY ALUMINUM WITH PARABOLIC LONGITUDINAL AND TRANSVERSE REFLECTOR. PROTECTION CLASS : IP 20
	<ul style="list-style-type: none"> (TYPE F2) SIMILAR TO (TYPE F1) BUT WITH EMERGENCY CONVERSION KIT FOR 2-HOURS AFTER MAINS FAILURE USING Ni-Cd BATTERIES, CHARGER.
	<ul style="list-style-type: none"> (TYPE F3) RECESSED MOUNTED, 2x26W COMPACT FLUORESCENT LAMPS, HIGH FREQUENCY ELECTRONIC BALLAST, IP 20.
	<ul style="list-style-type: none"> (TYPE F4) SIMILAR TO (TYPE F3) BUT WITH EMERGENCY CONVERSION KIT FOR 2-HOURS AFTER MAINS FAILURE USING Ni-Cd BATTERIES, CHARGER.
	<ul style="list-style-type: none"> (TYPE F5) SIMILAR TO (TYPE F3) BUT 1x26W, IP 54.
	<ul style="list-style-type: none"> (TYPE F6) SIMILAR TO (TYPE F5) BUT WITH EMERGENCY CONVERSION KIT FOR 2-HOURS AFTER MAINS FAILURE USING Ni-Cd BATTERIES, CHARGER.
	<ul style="list-style-type: none"> CEILING OR WALL SURFACE MOUNTED LIGHTING FLUORESCENT LUMINARIES (TYPE F7) FITTED WITH 2x28 WATT FLUORESCENT LAMPS OF HIGH LUMINOUS OUTPUT WITH HIGH FREQUENCY ELECTRONIC BALLAST FOR 0.96 POWER FACTOR. BODY : MADE OF GRAY INJECTION MOULDED POLY CARBONATE WITH HIGH IMPACT RESISTANCE DIFFUSER : MADE OF TRANSPARENT INJECTION MOULDED POLY CARBONATE REFLECTOR MADE OF ANTI - CORROSION WHITE PAINTED SHEET STEEL AND FIXED TO THE BODY BY TWO SNAP ACTION CLIPS WITHOUT TOOLS. PROTECTION CLASS : IP 65
	<ul style="list-style-type: none"> (TYPE F8) SIMILAR TO (TYPE F9) BUT WITH EMERGENCY CONVERSION KIT FOR 2-HOURS AFTER MAINS FAILURE USING Ni-Cd BATTERIES, CHARGER.
	<ul style="list-style-type: none"> (TYPE F9) HIGH-BAY WITH 150 W METAL HALIDE LAMP SUSPENDED AT 8 METER HEIGHT
	<ul style="list-style-type: none"> (TYPE F10) WALL MOUNTED LUMINAIRE WITH OPAL DIFFUSER FITTED WITH 1x26 WATT COMPACT FLUORESCENT LAMP OF HIGH LUMINOUS OUTPUT WITH HIGH FREQUENCY, IP54
 	<ul style="list-style-type: none"> (TYPE F11) EXIST SIGN SINGLE OR DOUBLE SIDED WALL OR CEILING MOUNTED WITH 1x8 WATT FLUORESCENT LAMP FOR 3 HOURS OPERATION WITH NI-CD BATTERIES AND CHARGER. LUMINARIES BODY MADE OF POLYCHROMATIC EXIST SIGNS MADE OF LAMINATED PVC FRONT PANEL EXIT SIGN SHALL BE CONNECTED TO A CENTRALIZED CONTROL UNIT DEGREE OR PROTECTION : IP 20 → INDICATES THE ESCAPE DIRECTION

NOTES:

1-THE INSTALLATION REQUIREMENTS AND THE SPECIFICATION IS ACCORDING TO THE EGYPTIAN ELECTRICAL CODE FOR ELECTRICAL INSTALLATION.

2-THE CONTRACTOR IS RESPONSIBLE TO COORDINATE THE ROUTE OF CABLES BETWEEN THE MAIN/SUB-MAIN DISTRIBUTION BOARD WHICH FEED THE PANEL BOARDS ACCORDING TO THE SITE CONDITION

SYMBOL	DESCRIPTION
	ELECTRICAL PANEL BOARD
	LIGHTING SWITCH-ONE WAY-ONE GANG, 220V, 10AMP.
	LIGHTING SWITCH-TWO WAY-ONE GANG, 220V, 10AMP.
	LIGHTING SWITCH-ONE WAY-TWO GANG, 220V, 10AMP.
	LIGHTING SWITCH-TWO WAY-TWO GANG, 220V, 10AMP.
	EXHAUST FAN OUTLET ,220V,50HZ.
	SINGLE SWITCHED SOCKET OUTLET 220V-13AMP, W.P REFER TO WEATHER PROOF
	DUPLEX SWITCHED SOCKET OUTLET 220V-13AMP, W.P REFER TO WEATHER PROOF
	SINGLE SWITCHED POWER SOCKET OUTLET 220V, FOR LAUNDRY, W.P REFER TO WEATHER PROOF
	220V, 50HZ DISCONNECTOR SWITCH FOR A/C, SPLIT UNIT, (AMPER RATING AS PER LOAD SCHEDULE)
	220V, 50HZ DISCONNECTOR SWITCH FOR ELECTRICAL WATER HEATER, (AMPER RATING AS PER LOAD SCHEDULE)

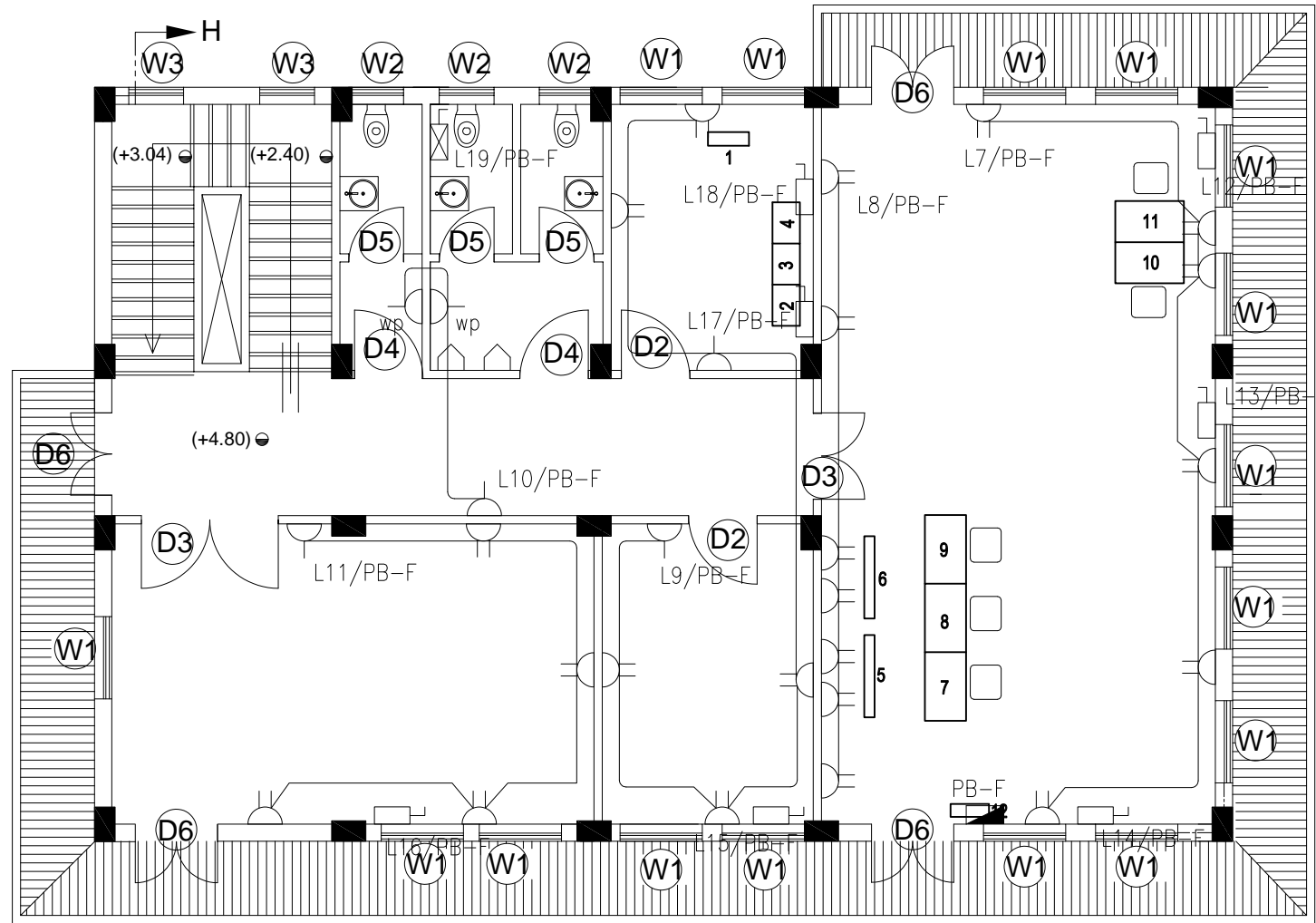
FIRE ALARM SYSTEM	
	ADREEABLE FIRE ALARM CONTROL PANEL
	SMOKE DETECTOR
	MULTI SENSOR DETECTOR
	SOUNDER BELL WITH FLASH W.P REFER TO WEATHER PROOF
	MANUAL CALL STATION
	SIGNAL CONTROL MODULE
	CONTROL MODULE
	END OF LINE RESISTOR

GENERAL NOTES

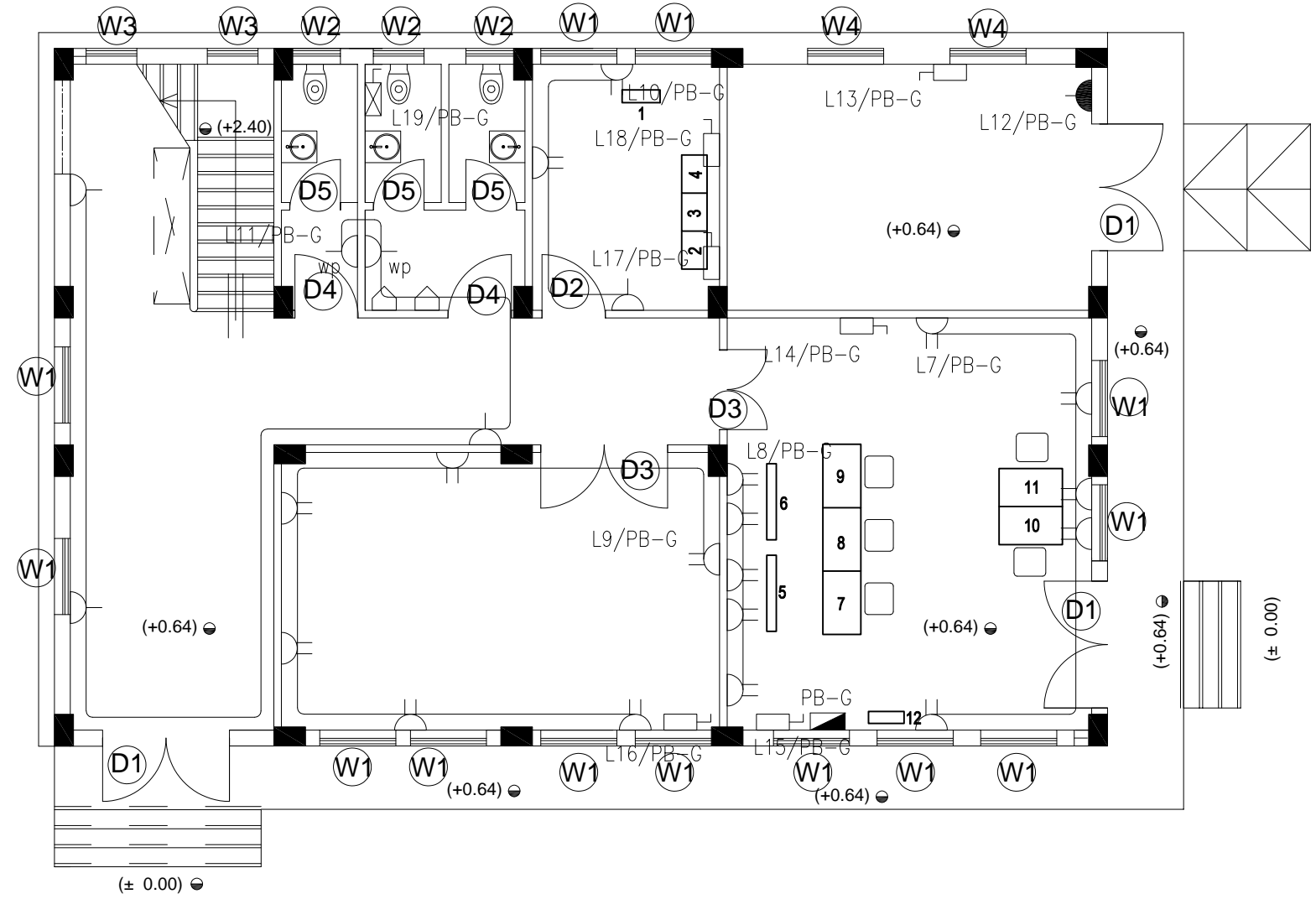
- THE LAYOUT DRAWINGS DO NOT SHOW ALL THE SYSTEMS, ITEMS, OR ACCESSORIES COVERED UNDER THE SCOPE OF ELECTRICAL WORKS TO BE EXECUTED . THE LAYOUT DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT OR SPECIALIST DRAWINGS AND SPECIFICATIONS .
- DO NOT SCALE FROM THE LAYOUT DRAWINGS, WORK ACCORDING TO ARCHITECTURAL OR ELECTRICAL DETAILS UNLESS OTHERWISE INDICATED .
- THE SIZE OF CONDUITS IS IN GENERAL NOT SHOWN ON THE DRAWINGS .THE SIZE OF ALL CONDUITS SHALL BE SELECTED IN ACCORDANCE WITH THE "REGULATIONS" AND AS A FUNCTION OF THE NUMBER & SIZE OF THE INDICATED CONDUCTORS, ALL CONDUITS SHALL BE AS SPECIFIED WITH A MINIMUM SIZE OF ø20mm UNLESS OTHERWISE INDICATED .
- ALL LIGHTING SWITCHES AND SOCKET OUTLETS SHALL BE INSTALLED AT 125cm & 45cm ABOVE F.F.L. RESPECTIVELY . LIGHTING SWITCHES SHALL BE MOUNTED INSIDE THE ROOM ON THE SIDE OF THE DOOR HANDLE WITHIN 15 TO 20cm FROM DOOR FRAME UNLESS OTHERWISE INDICATED .
- ALL DATA AND TELEPHONE OUTLETS (IF ANY) SHALL BE INSTALLED AT 45cm ABOVE F.F.L. UNLESS OTHERWISE INDICATED .
- ALL PANEL BOARDS SHALL BE INSTALLED WITH TOP ENDS AT 180cm ABOVE F.F.L. UNLESS OTHERWISE INDICATED .
- EARTH CONTINUITY CONDUCTORS ARE NOT INDICATED ON THE DRAWINGS, BUT SHALL BE RUN WITH ALL CIRCUITS IN ACCORDANCE WITH REGULATIONS .
- EXACT LOCATION OF ALL ELECTRICAL DEVICES (SWITCHES, SOCKETS, POWER OUTLETS,.....ETC) SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS.
- ALL EQUIPMENT LAYOUTS ARE PROVISIONAL . FINAL LAYOUT SHALL BE DETERMINED BY THE CONTRACTOR FROM THE CONSTRUCTION/SHOP DRAWINGS AND AFTER COORDINATION WITH OTHER TRADES.
- SWITCHING ON CIRCUITS CONTAINING SWITCH SHALL BE DONE IN THE UNGROUNDED CONDUCTOR.
- THE COLOR CODE FOR A FIVE WIRE CIRCUIT IS - ONE RED (PHASE 1), - ONE YELLOW (PHASE 2), - ONE BLUE (PHASE 3), AND ONE BLACK (NEUTRAL) CONDUCTOR INTENDED FOR EARTHING PURPOSE SHALL GREEN WITH YELLOW STRIP.
- IN THE ABSENCE OF ANY INDICATION ON THE DRAWINGS OR THE SPECIFICATIONS, THE INSTALLATIONS SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER.
- ALL CABLES RUN ON ROOF MUST BE INSTALLED ON CABLE TRAY WITH COVER.
- ALL CONDUITS EMBEDDED IN CONCRETE OR INSIDE WALLS SHALL BE HEAVY GAUGE (PVC) CONDUITS, ALL CONDUIT INSTALLED ABOVE FALSE CEILING AND EXPOSED SHALL BE (GALVANIZED) EMT.
- DISCONNECT SWITCHES OF ANY MECHANICAL EQUIPMENTS UNITS WILL BE INSTALLED BESIDE THE UNIT.
- THE CONTRACTOR MUST SUBMIT THE FOLLOWING CALCULATIONS BEFORE CONSTRUCTION THE WORKS.
 - VOLTAGE DROP CALCULATION FOR MAXIMUM V. DROP 4% STARTING FROM TRANSFORMER SECONDARY TERMINALS TILL FINAL LOAD POINT.
 - SHORT CIRCUIT CALCULATIONS.
 - LOAD CALCULATIONS.
 - SELECTIVITY STUDY.
 - EARTHING CALCULATIONS.
 - LIGHTING (LUX) CALCULATIONS.
- THE OPENING IN WALLS & SLABS FOR CABLE TRAY, TRUNKING OR CABLE LADDER SHALL BE CLOSED IN A WORKMANLIKE MANNER WITH APPROVED FIRE-RATED COMPOUND TO SERVE AS FIRE STOP.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Electrical works (2/6)			DRW. NO. AC-12
SANYU CONSULTANTS INC.			
PREPARED BY: DATE:	CHECKED BY: DATE:	APPROVED BY: DATE:	DATE:

First Floor

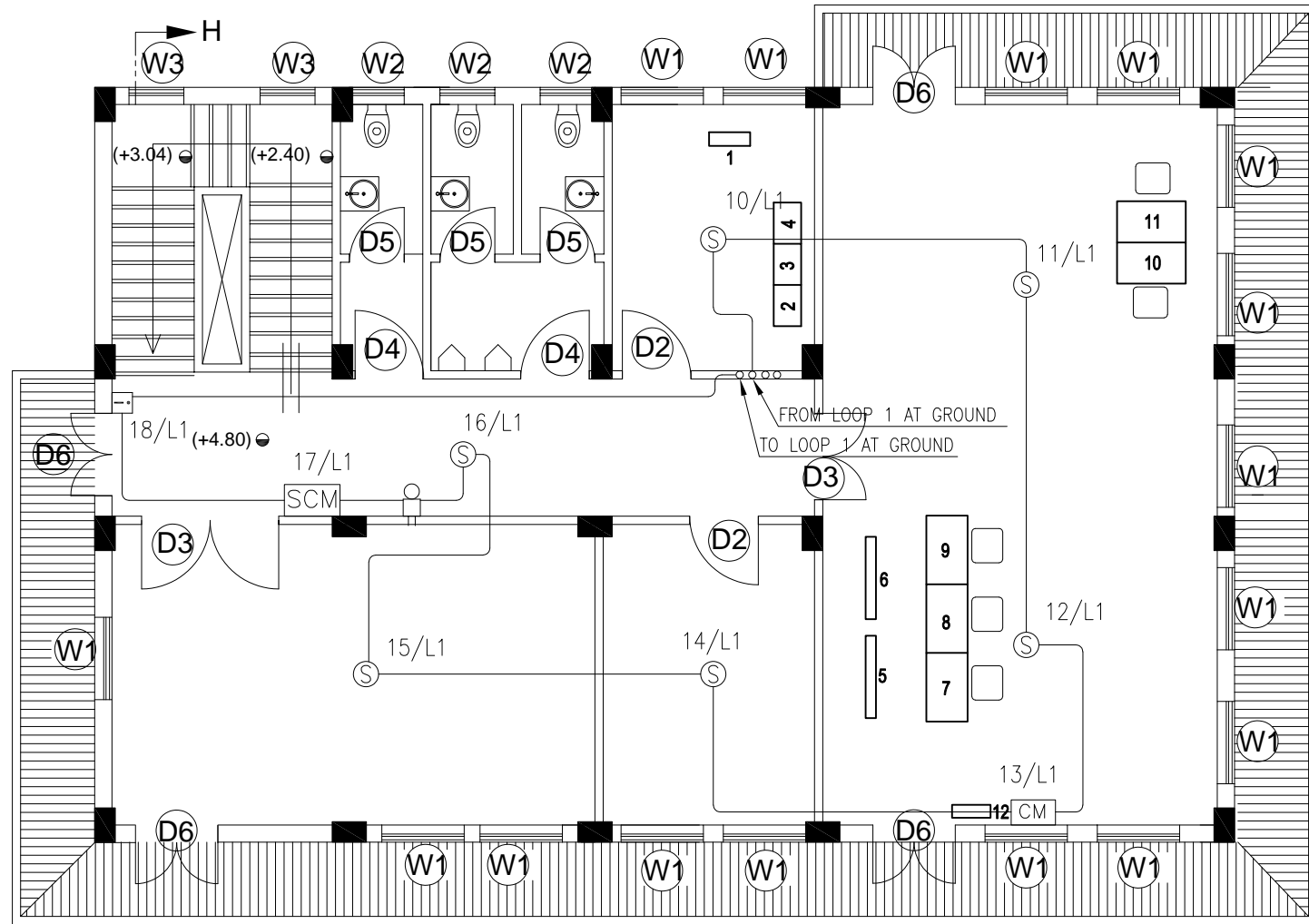


Ground Floor

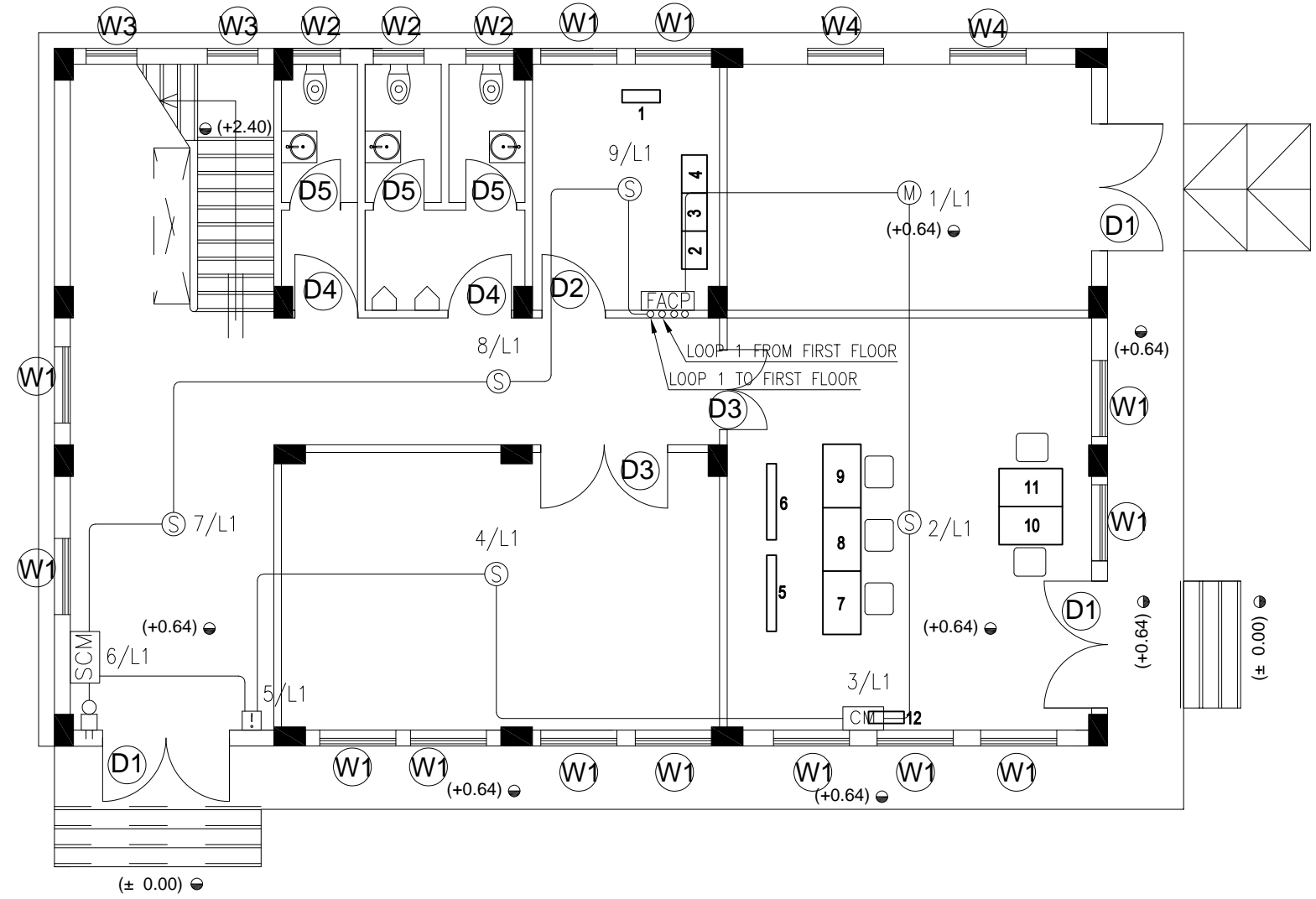


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Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Electrical works (3/6)			DRW. NO. AC-13
SANYU CONSULTANTS INC.			
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DATE:	DATE:	DATE:	DATE:

First Floor

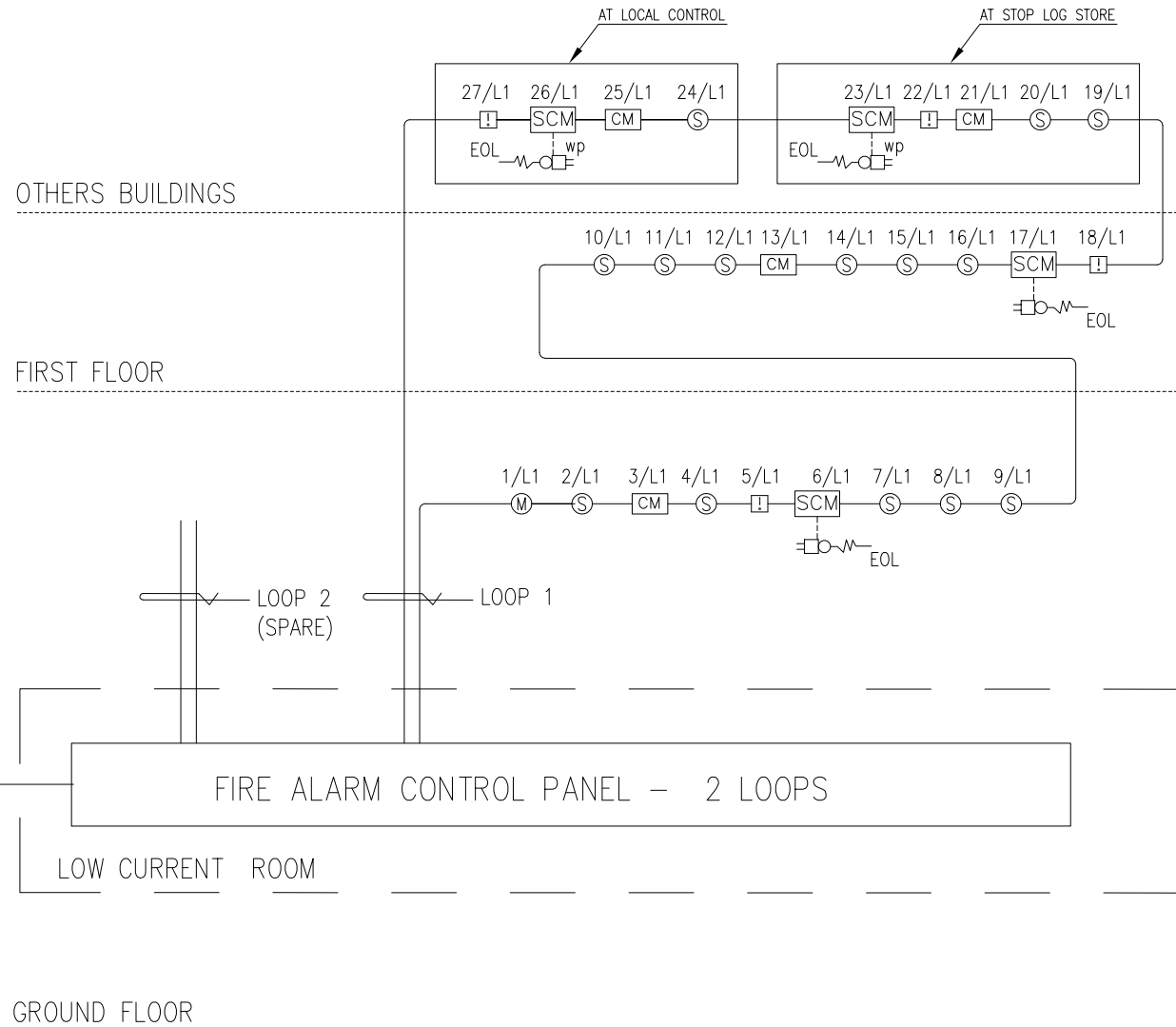
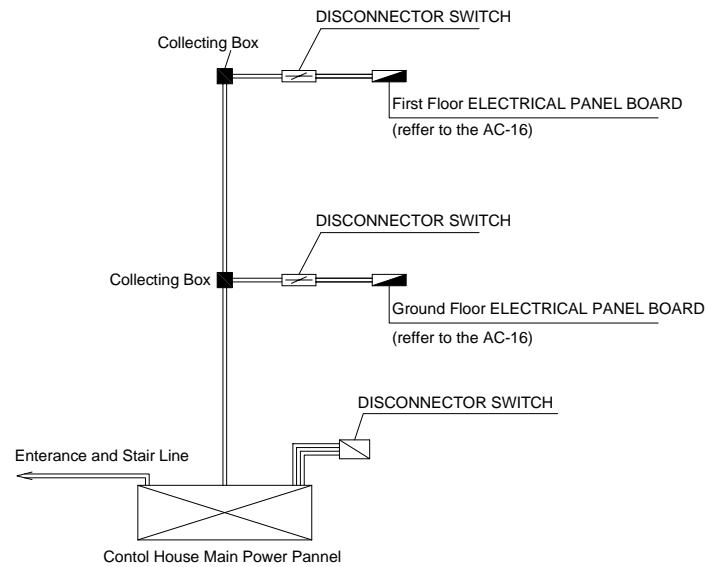


Ground Floor



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Electrical works (4/6)			DRW. NO. AC-14
SANYU CONSULTANTS INC.			
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GENERAL DIAGRAM



PANEL REF.:		PBG (FED FROM NEAREST MDB/SMDB)		380/220, 3-ph, 50 Hz							
LOCATION :		CONTROL HOUSE (GROUND FLOOR)		(4x25)+16Emm2 CU, XLPE/PVC							
NO. OF WAYS:		24		MCCB 40 A							
QUANTITY :		1									
WAY	PHASE	C.B TYPE	C.B RATING (A)	Cable/Wire C.S.A (mm2)	LOAD TYPE	POINT LOAD (VA)	Loop No	PHASE LOAD (KVA)			
								R	Y	B	
1	R	M.C.B	10	3x2.5	LIGHTING	500	L1	0.50			
	Y	M.C.B	10	3x2.5	LIGHTING	720	L2		0.72		
	B	M.C.B+RCD	10	3x2.5	LIGHTING	400	L3			0.40	
2	R	M.C.B	10	3x2.5	LIGHTING	950	L4	0.95			
	Y	M.C.B	10	3x2.5	LIGHTING	450	L5		0.45		
	B	M.C.B	10	3x2.5	LIGHTING	250	L6			0.25	
3	R	M.C.B	16	3x3	NORMAL SOCKETS	900	L7	0.90			
	Y	M.C.B	16	3x3	NORMAL SOCKETS	900	L8		0.90		
	B	M.C.B	16	3x3	NORMAL SOCKETS	1080	L9			1.08	
4	R	M.C.B	16	3x3	NORMAL SOCKETS	540	L10	0.54			
	Y	M.C.B+RCD	16	3x3	NORMAL SOCKETS	900	L11		0.90		
	B	M.C.B	20	3x4	POWER SOCKET	1000	L12			1.00	
5	R	M.C.B	20	3x4	FUEL PUMP	1000	L13	1.00			
	Y	M.C.B	25	3x6	AIR CONDITION	3000	L14		3.00		
	B	M.C.B	25	3x6	AIR CONDITION	3000	L15			3.00	
6	R	M.C.B	25	3x6	AIR CONDITION	3000	L16	3.00			
	Y	M.C.B	25	3x6	AIR CONDITION	2500	L17		2.50		
	B	M.C.B	25	3x6	TELCOM. RACK	2000	L18			2.00	
7	R	M.C.B	20	3x4	HEATER	1500	L19	1.50			
	Y	M.C.B	10	---	SPARE	---	---	---	---	---	
	B	M.C.B	16	---	SPARE	---	---	---	---	---	
8	R	M.C.B	16	---	SPARE	---	---	---	---	---	
	Y	M.C.B	20	---	SPARE	---	---	---	---	---	
	B	M.C.B	25	---	SPARE	---	---	---	---	---	
								8.39	8.47	7.73	
		LIGHTING	NORMAL SOCKETS	POWER SOCKETS	WATER HEATER	AIR CONDITION	MIS LOADS	TOTAL			
C.L (KVA)		3.27	4.32	1.00	1.50	11.50	3.00	24.59			
D.F		1.00	0.80	1.00	1.00	0.80	0.80	0.75			
D.L (KVA)		3.27	3.46	1.00	1.50	9.20	2.40	18.43			

PANEL REF.:		PBF (FED FROM NEAREST MDB/SMDB)		380/220, 3-ph, 50 Hz							
LOCATION :		CONTROL HOUSE (FIRST FLOOR)		(4x25)+16Emm2 CU, XLPE/PVC							
NO. OF WAYS:		24		MCCB 40 A							
QUANTITY :		1									
WAY	PHASE	C.B TYPE	C.B RATING (A)	Cable/Wire C.S.A (mm2)	LOAD TYPE	POINT LOAD (VA)	Loop No	PHASE LOAD (KVA)			
								R	Y	B	
1	R	M.C.B	10	3x2.5	LIGHTING	750	L1	0.75			
	Y	M.C.B	10	3x2.5	LIGHTING	525	L2		0.53		
	B	M.C.B	10	3x2.5	LIGHTING	440	L3			0.44	
2	R	M.C.B	10	3x2.5	LIGHTING	675	L4	0.68			
	Y	M.C.B+RCD	10	3x2.5	LIGHTING	375	L5		0.38		
	B	M.C.B	10	---	SPARE	---	---	---	---	---	
3	R	M.C.B	16	3x3	NORMAL SOCKETS	1080	L7	1.08			
	Y	M.C.B	16	3x3	NORMAL SOCKETS	1260	L8		1.26		
	B	M.C.B	16	3x3	NORMAL SOCKETS	1260	L9			1.26	
4	R	M.C.B+RCD	16	3x3	NORMAL SOCKETS	540	L10	0.54			
	Y	M.C.B	16	3x3	NORMAL SOCKETS	900	L11		0.90		
	B	M.C.B	25	3x6	AIR CONDITION	2500	L12			2.50	
5	R	M.C.B	25	3x6	AIR CONDITION	2500	L13	2.50			
	Y	M.C.B	25	3x6	AIR CONDITION	2500	L14		2.50		
	B	M.C.B	25	3x6	AIR CONDITION	2500	L15			2.50	
6	R	M.C.B	25	3x6	AIR CONDITION	3000	L16	3.00			
	Y	M.C.B	25	3x6	AIR CONDITION	2500	L17		2.50		
	B	M.C.B	25	3x6	TELCOM. RACK	2000	L18			2.00	
7	R	M.C.B	10	---	SPARE	---	---	---	---	---	
	Y	M.C.B	20	3x4	HEATER	1500	L19	1.50			
	B	M.C.B	16	---	SPARE	---	---	---	---	---	
8	R	M.C.B	20	---	SPARE	---	---	---	---	---	
	Y	M.C.B	25	---	SPARE	---	---	---	---	---	
	B	M.C.B	25	---	SPARE	---	---	---	---	---	
								8.55	9.56	8.70	
		LIGHTING	NORMAL SOCKETS	POWER SOCKETS	WATER HEATER	AIR CONDITION	MIS LOADS	TOTAL			
C.L (KVA)		2.77	5.04	---	1.50	15.50	2.00	26.81			
D.F		1.00	0.80	---	1.00	0.80	0.80	0.77			
D.L (KVA)		2.77	4.03	---	1.50	12.40	1.60	20.70			

Notes :

One extinguisher per floor shall be stationed at the proper location in the house.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Control house Electrical works (5/6)	DRW. NO. AC-15	
SANYU CONSULTANTS INC.		
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DIAGRAM OF GROUND FLOOR

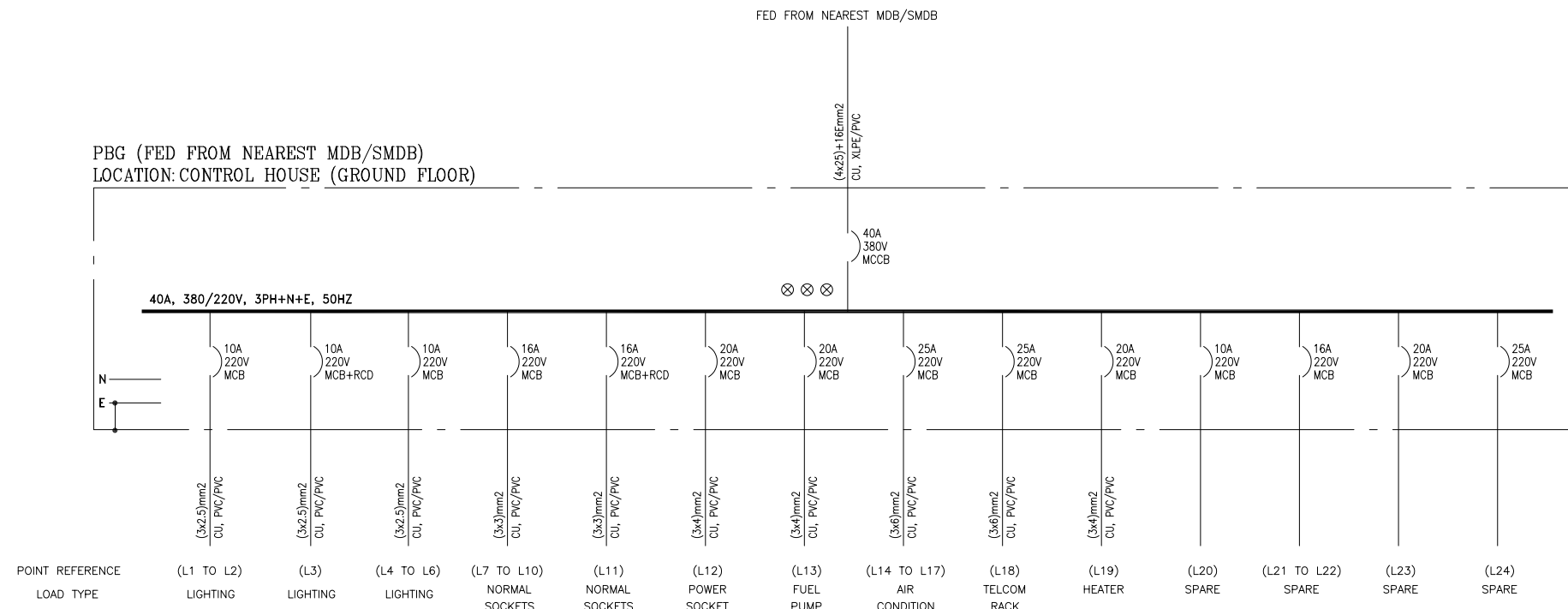
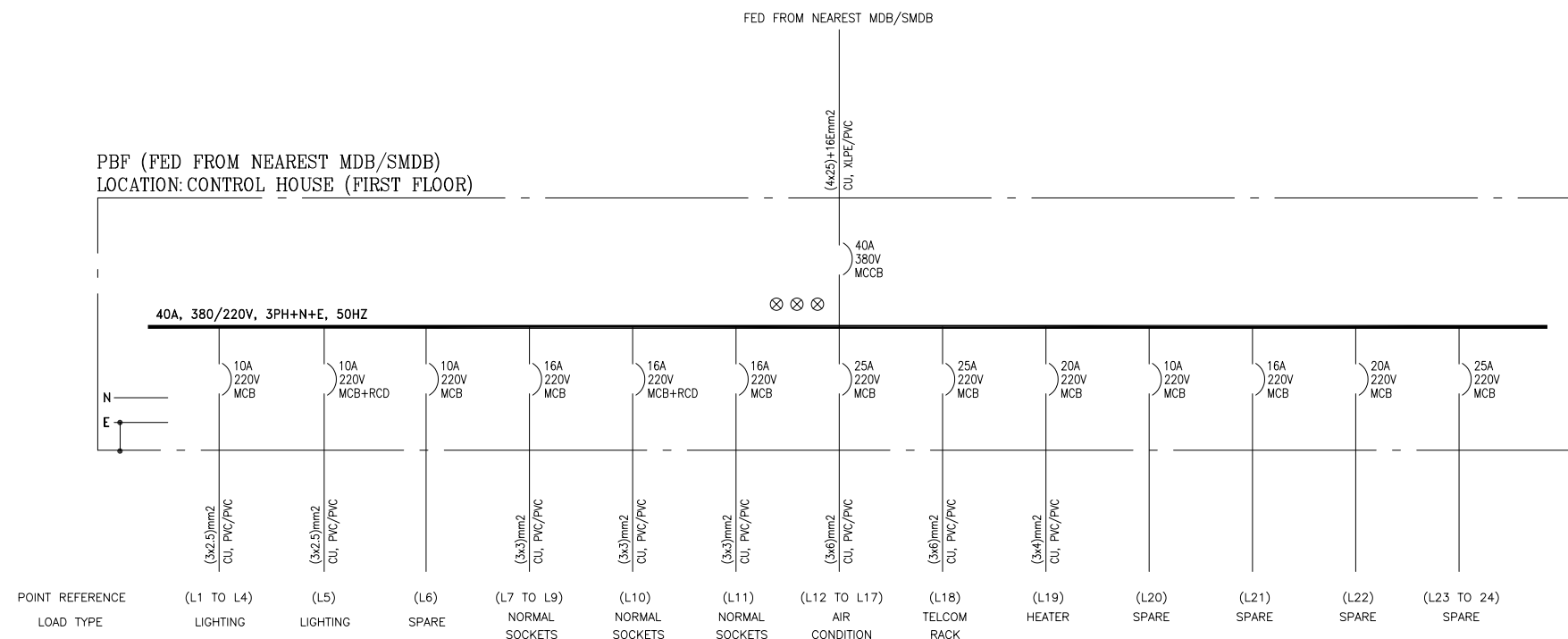
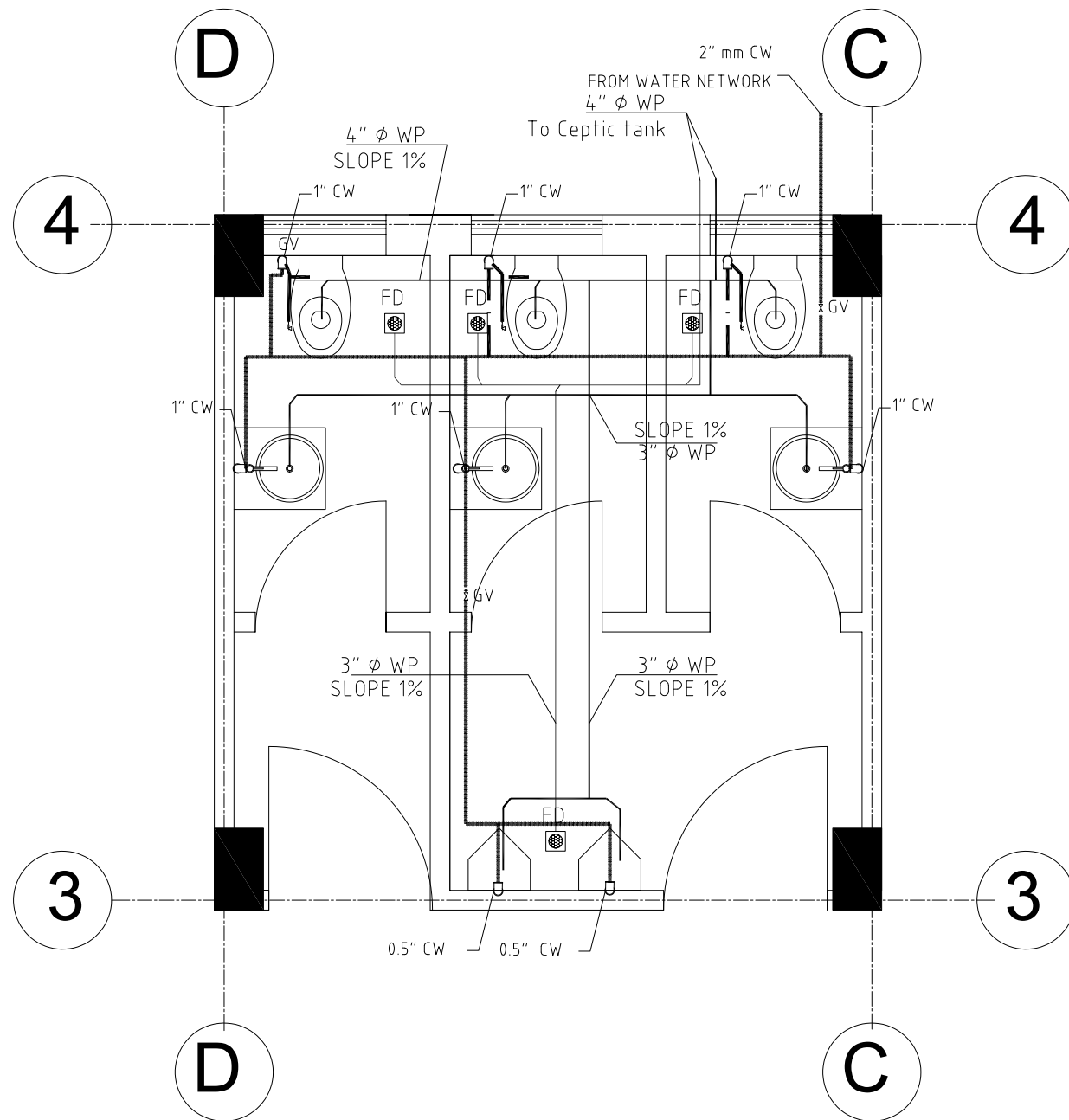


DIAGRAM OF FIRST FLOOR

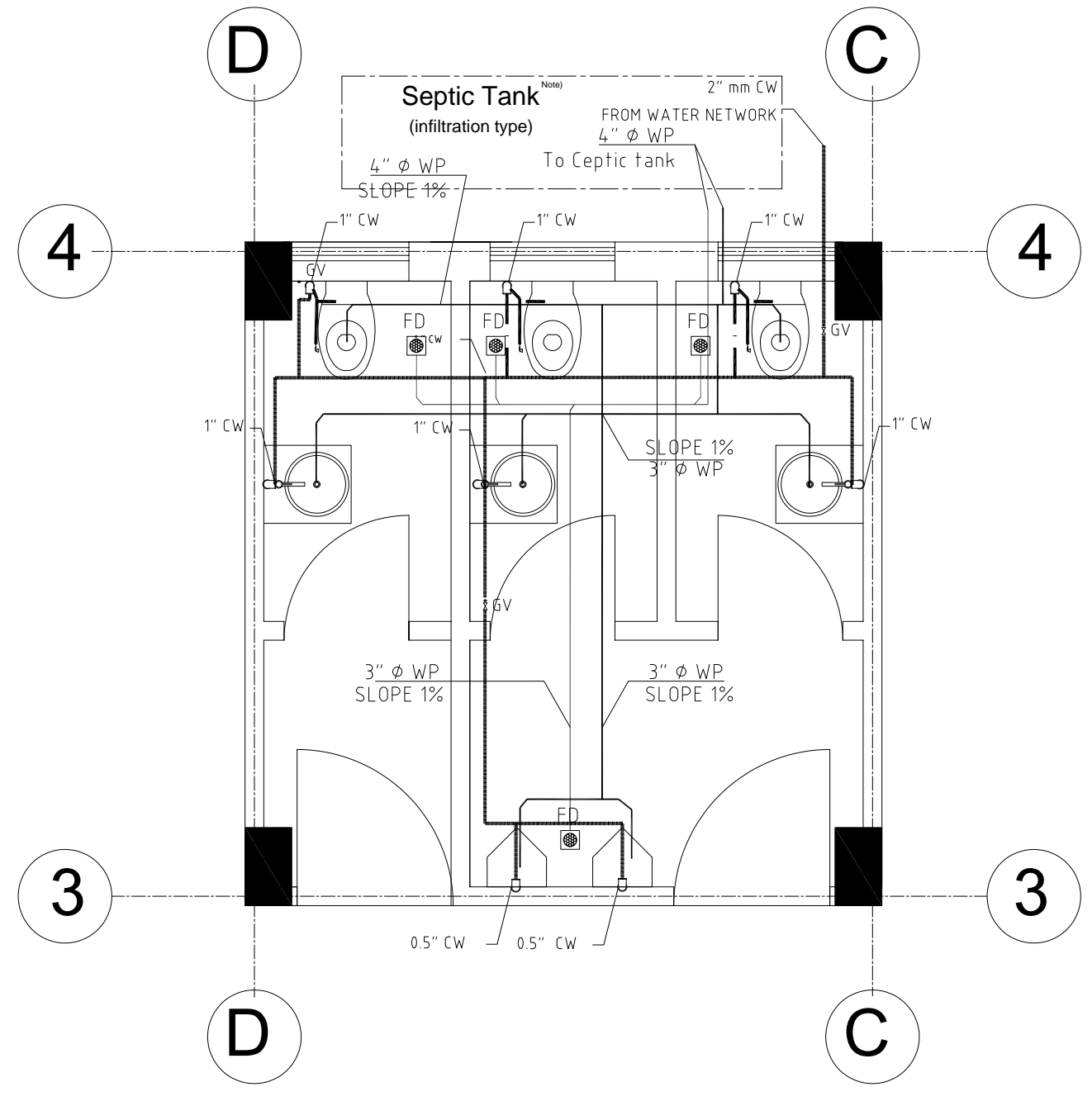


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Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Electrical works (6/6)			DRW. NO. AC-16
SANYU CONSULTANTS INC.			
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DATE:	DATE:	DATE:	DATE:

Enlarge plan for lavatory area
Ground Floor



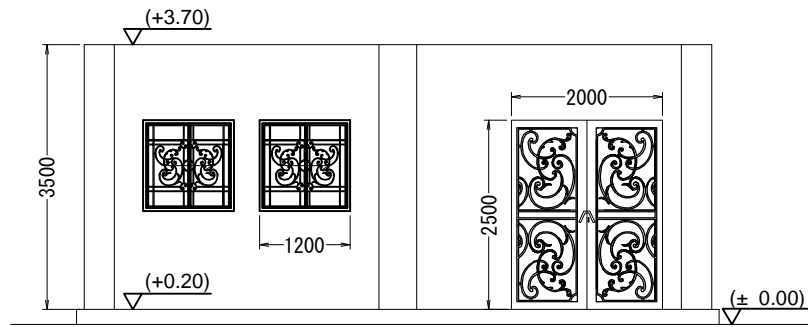
Enlarge plan for lavatory area
First Floor



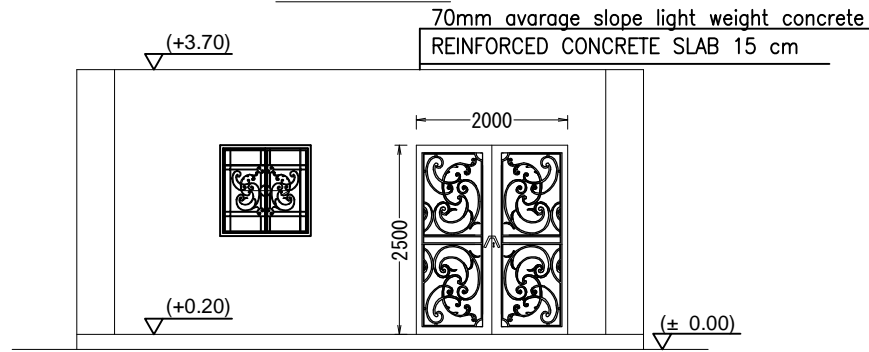
Note) Detailed location of the septic tank shall be directed by the Engineer

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Control house Water supply and sewage plan for lavatory			DRW. NO. AC-17
SANYU CONSULTANTS INC.			
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DATE:	DATE:	DATE:	DATE:

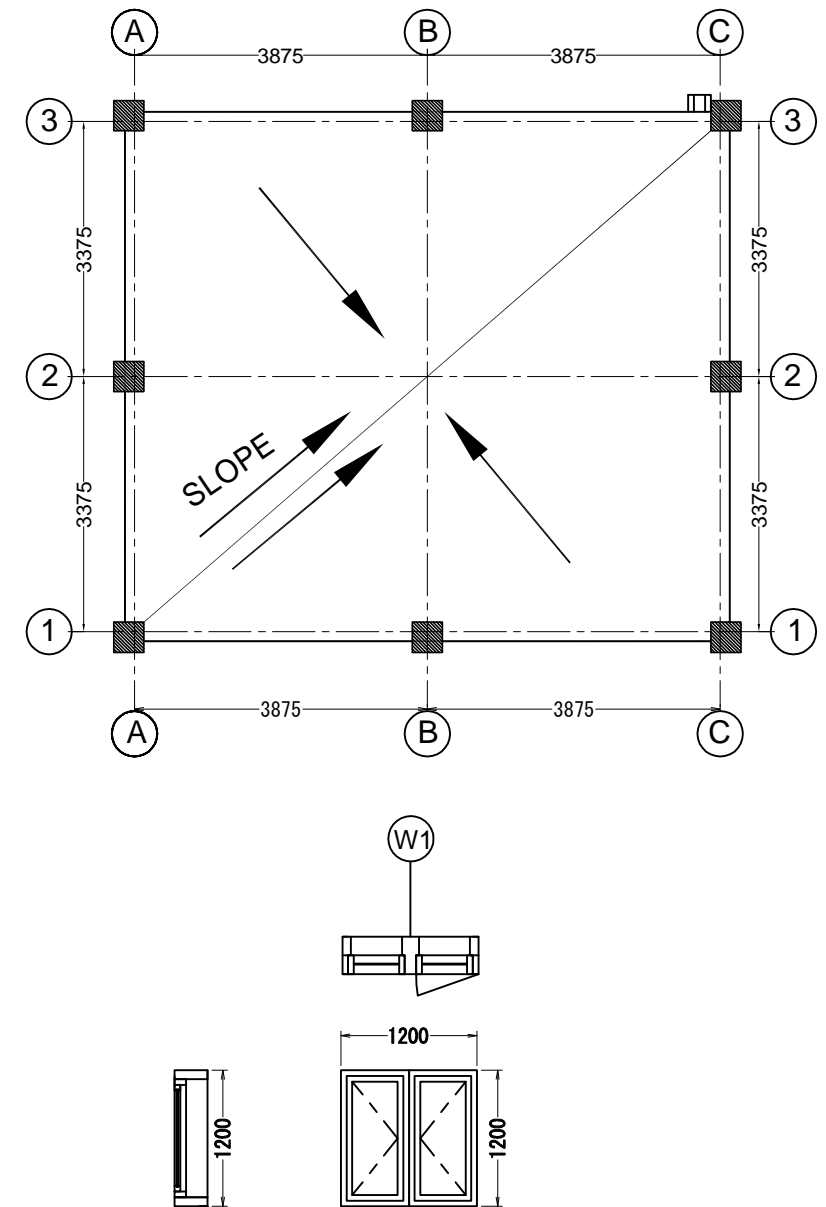
Front View



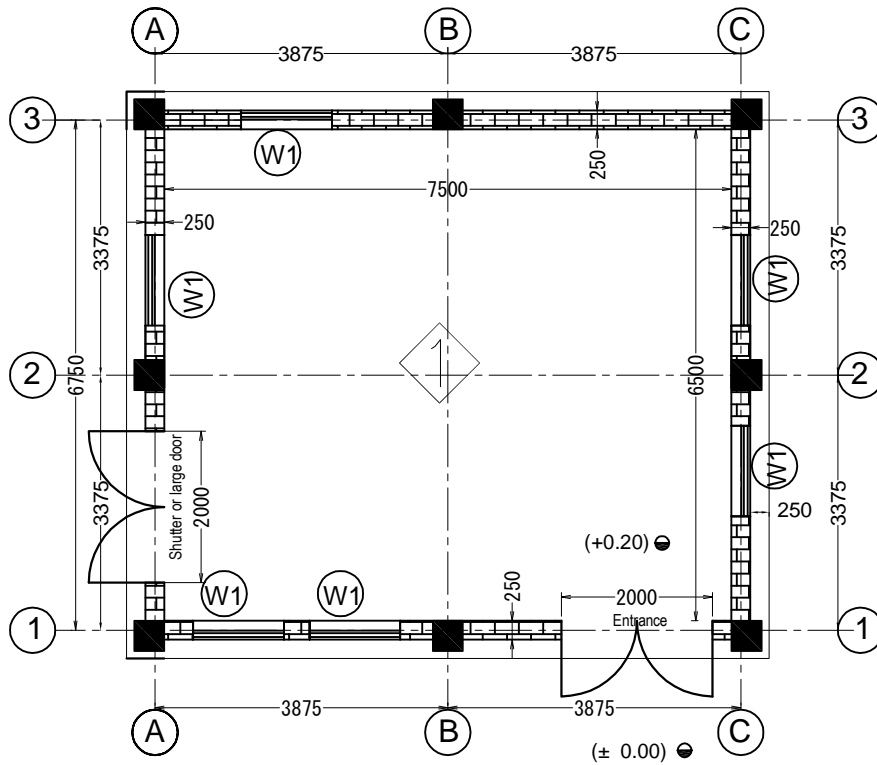
Side View



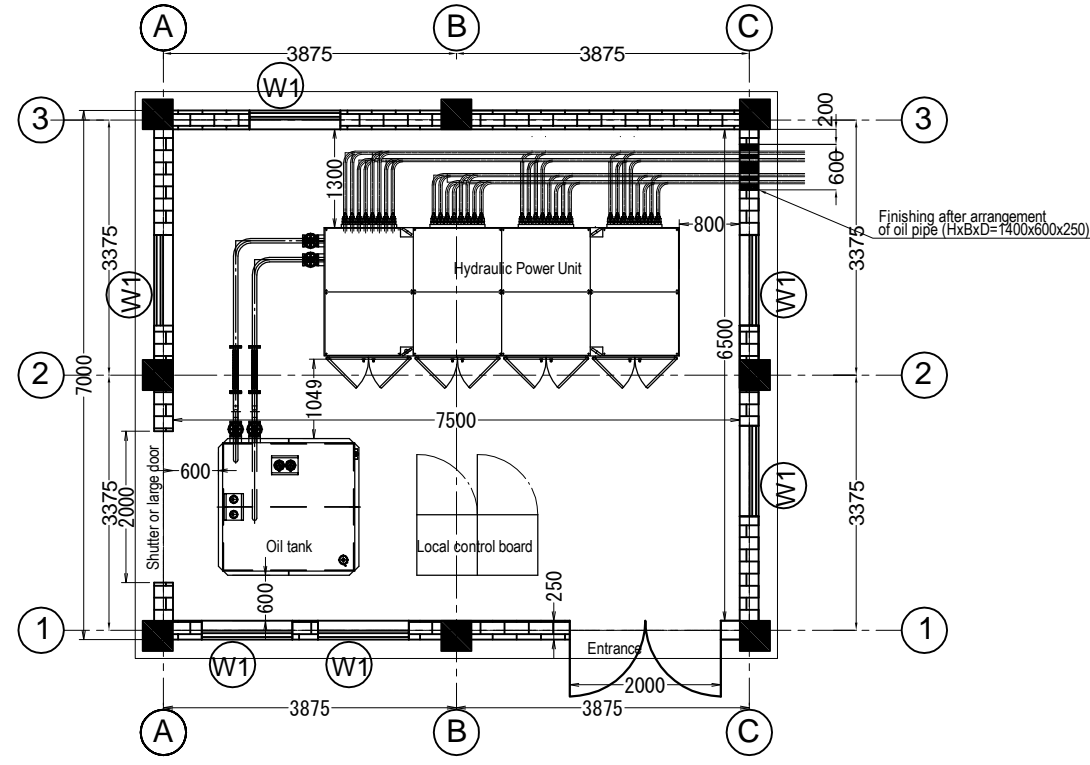
Roof Plan



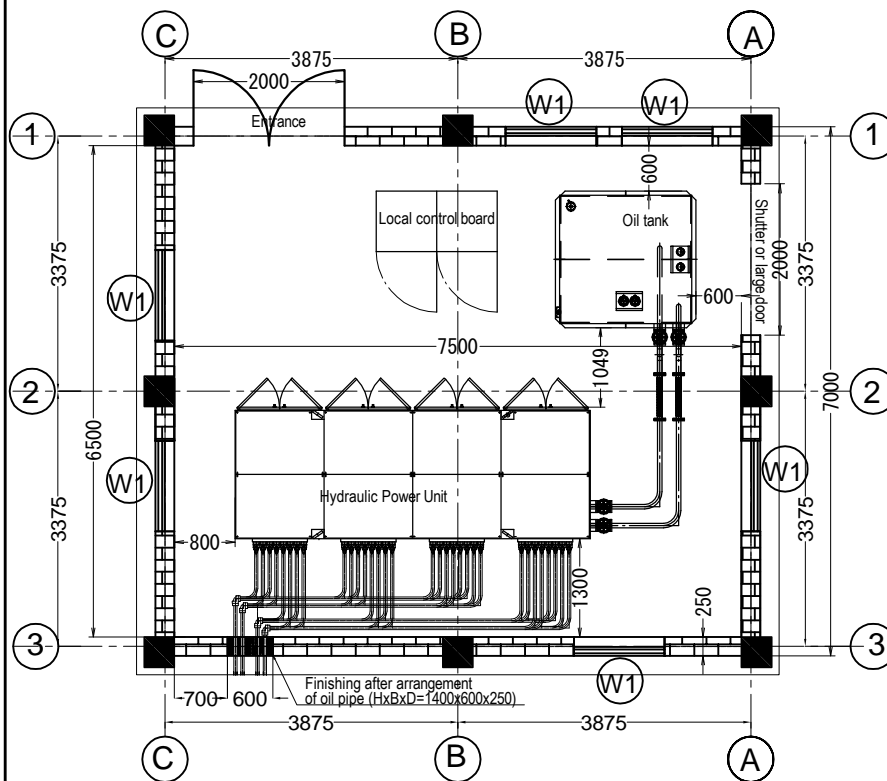
Plan View



Plan View for BAHR YUSEF



Plan View for IBRAHIMIA



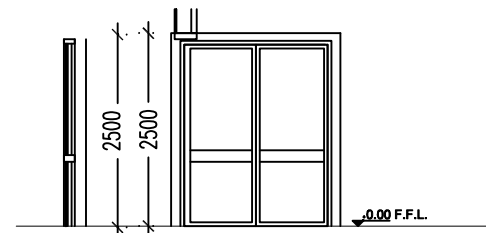
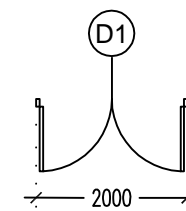
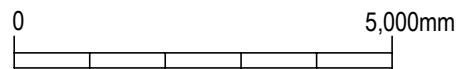
ROOM NO	WINDOW TYPE	NO OF LEAFS	WINDOWS		FRAMES	
			DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
1	W1	2	1200*1200	AL	-	ST

Notes :

Design Ground Level (± 0.00)of Ibrahimia is EL46.20
 Design Ground Level (± 0.00)of Bahr Yusef is EL47.50
 Thickness of wall is 250mm, unless otherwise specified

Legend

- Brick wall
- Reinforce concrete column



Room No.	Room Name	Walls	Floor	Ceiling	Skirting
1	Local control room	Plastering and Painting	Helicopter finished Exposed P. concrete 20 cm Thk.	Plastering and Painting	-----

ROOM NO	DOOR TYPE	NO OF LEAFS	DOORS		FRAMES	
			DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
1	D1	-	2000*2500	ST	-	ST

Arab Republic of Egypt
 Ministry of Water Resources and Irrigation
 Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
 Construction of the New Dirout Group of Regulators

Local control house
 General layout

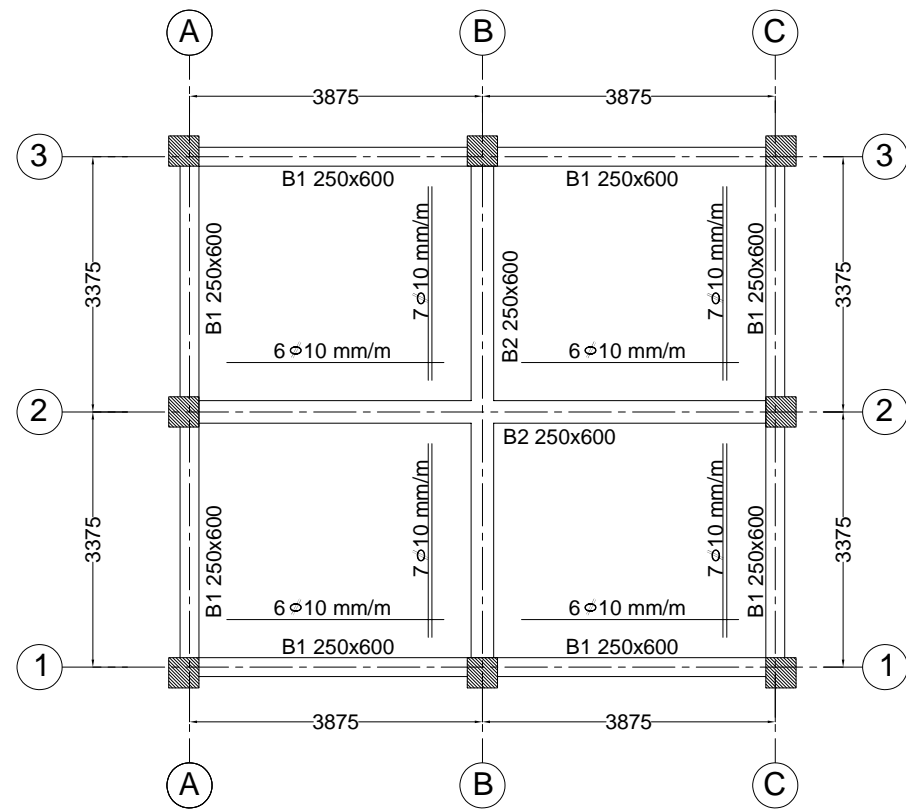
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DATE: _____ DATE: _____ DATE: _____ DATE: _____

DRW. NO.
 AL-1

Rebar arrangement for the Ground floor slab



Notes :

DRAWINGS :

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
2. UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

1. UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.
2. CEILING SLAB OF THICKNESS IS 150 mm, UNLESS OTHERWISE SPECIFIED
3. THE MENTIONED BEAM DEPTH IS INCLUDING THE SLAB DEPTH

STEEL REINFORCEMENT :

1. ALL STEEL BAR REINFORCEMENT ARE HIGH TENSILE STEEL (ST360/520) EXCEPT STIRRUPS ARE MILD STEEL (ST240/370)
2. SPLICES HAVE TO BE NOT LESS THAN 60 TIMES THE BARS DIAMETER OR 1.00 MEETER

CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED

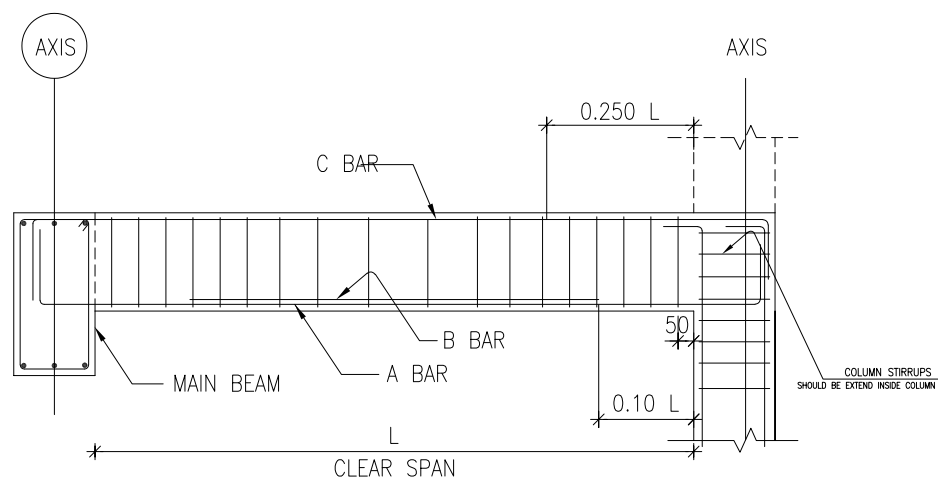
TABLE OF BEAMS

TYPE	BOTTOM BARS		TOP BARS		STIRRUPS			REMARKS
	A BARS	B BARS	C BARS	D BARS	RIGHT	MIDD.	LEFT	
B1	2D16	2D16	2D16	2D16	D8@150	D8@200	D8@150	
B2	4D16	2D16	2D16	—	D8@150	D8@200	D8@150	

*- AT ADJACENT BEAMS, THE HIGHER VALUE OF TOP BARS (C) & (D) SHOULD BE USED.

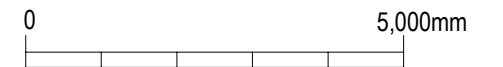
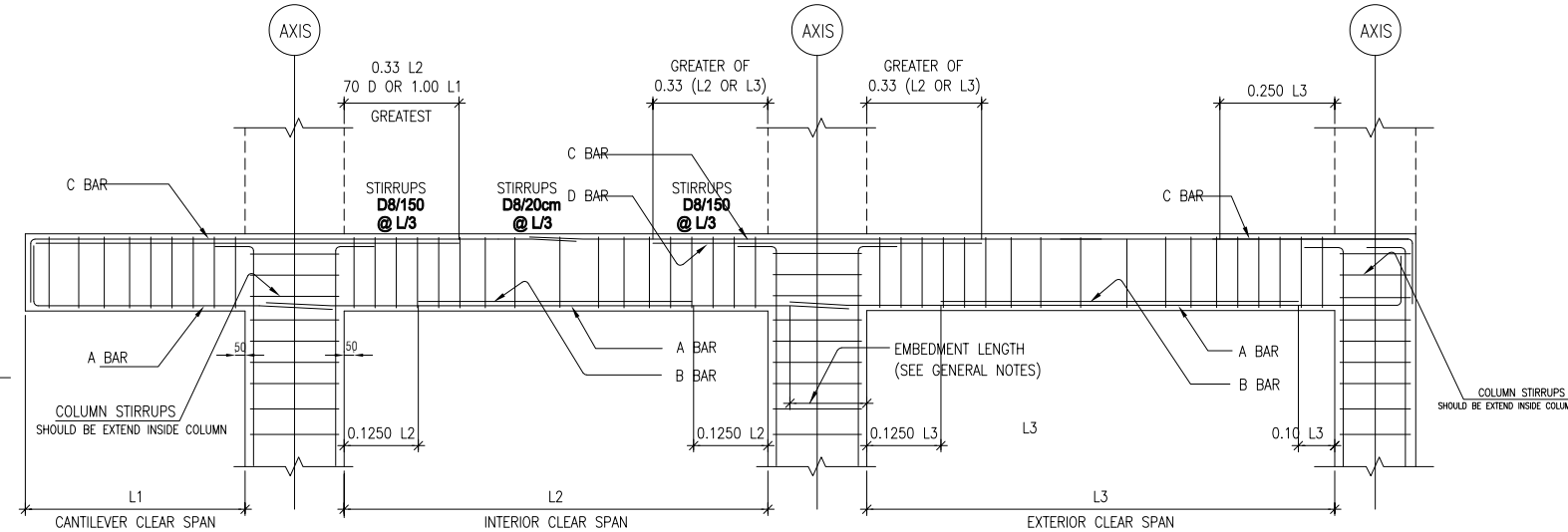
TYPICAL SIMPLY SUPPORTED BEAM

No Scale



TYPICAL CONTINUOUS BEAM

No Scale



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Local control house
Bar arrangement (1/3)

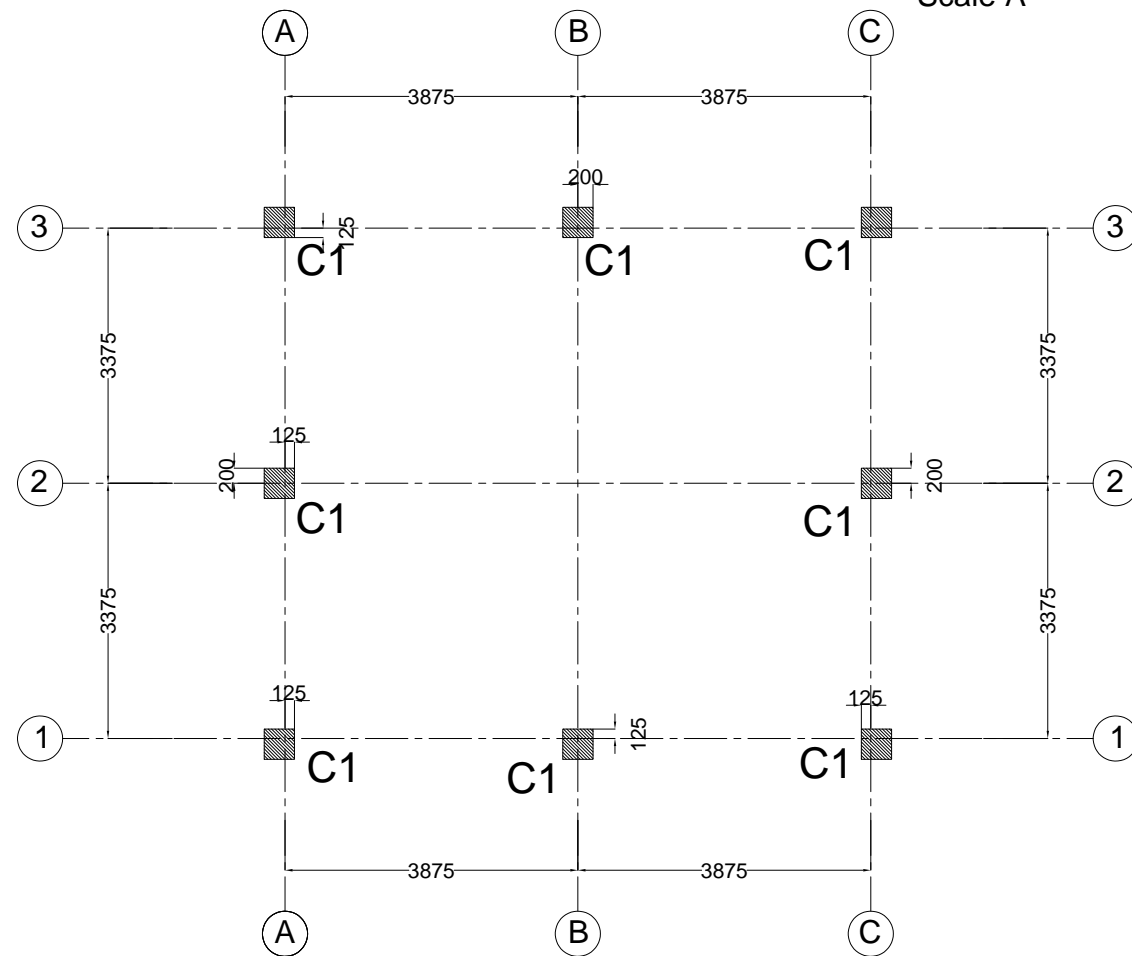
SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

DRW. NO.
AL-2

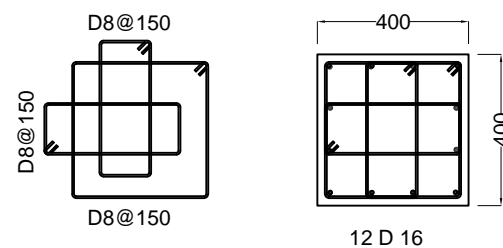
Column Axes Layout - Ground Floor

Scale A



Rebar arrangement

Scale B



MAIN BARS	12 D 16
Stirrups	D8@150

Notes :

DRAWINGS :

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
2. UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

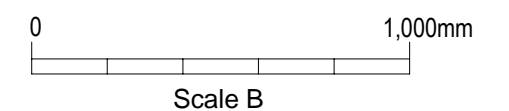
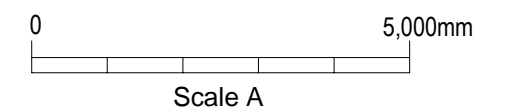
UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.

STEEL REINFORCEMENT :

1. ALL STEEL BAR REINFORCEMENT ARE HIGH TENSILE STEEL (ST360/520) EXCEPT STIRRUPS ARE MILD STEEL (ST240/370)
2. SPLICES HAVE TO BE NOT LESS THAN 60 TIMES THE BARS DIAMETER OR 1.00 MEETER

CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Local control house
Bar arrangement (2/3)

DRW. NO.

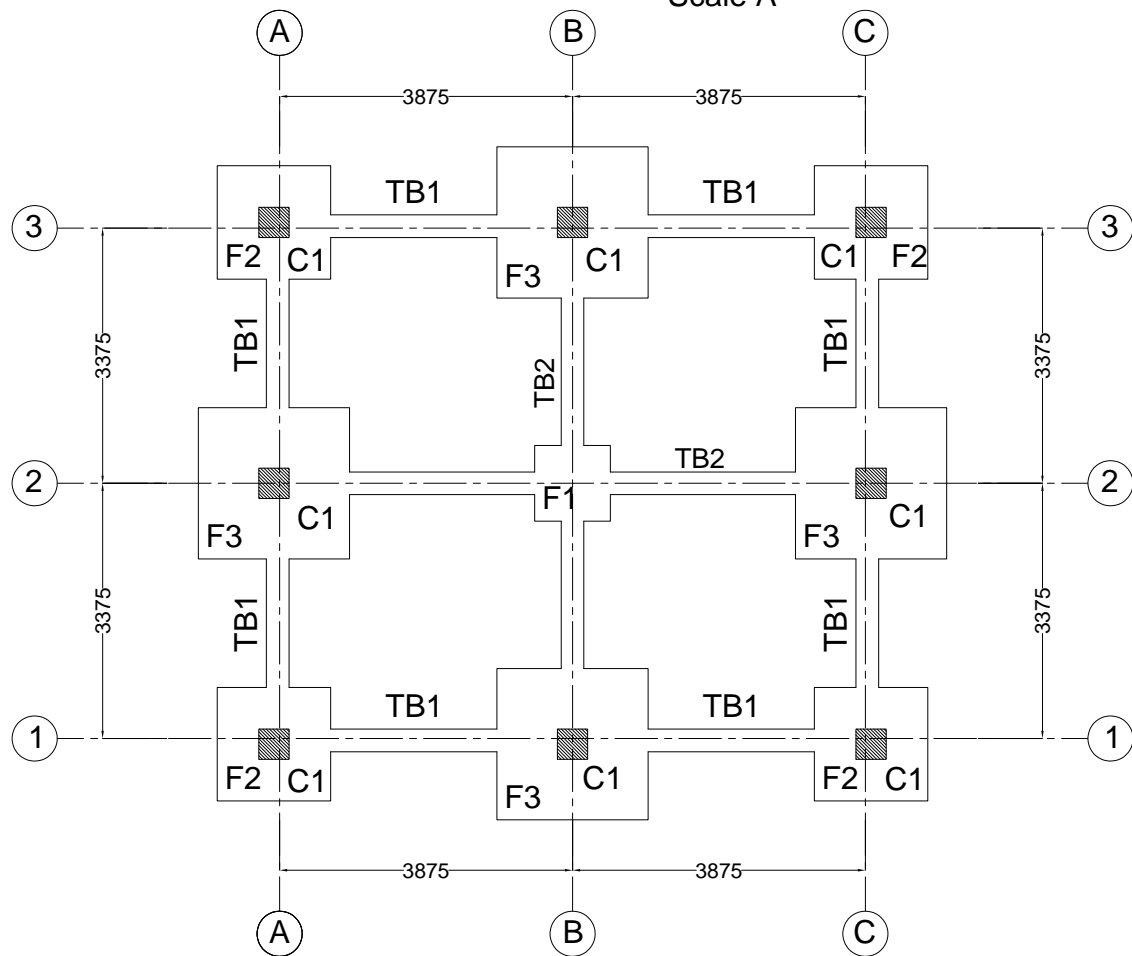
AL-3

SANYU CONSULTANTS INC.

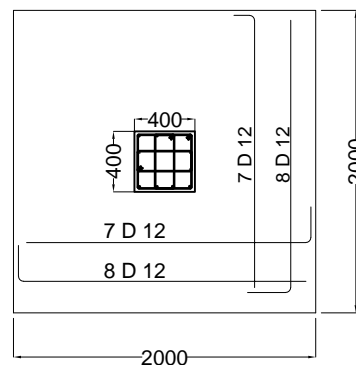
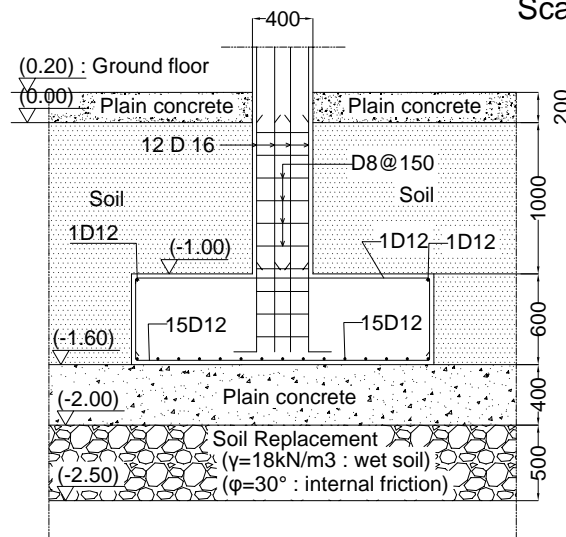
PREPARED BY: CHECKED BY: APPROVED BY:

DATE: DATE: DATE: DATE:

FOUNDATION PLAN
Scale A



DETAILS OF ISOLATED FOOTING F3
Scale B



Notes :

FOUNDATION :

1. FOUNDATION PLAN HAS TO BE COMPLETELY EXCAVATED
2. FOUNDATION BOTTOM LEVEL IS (-2.50) BELOW THE NATURAL GROUND LEVEL
3. FOUNDATION IS DESIGNED TO CARRY ONLY ONE FLOOR (GROUND FLOOR)
4. SOIL REPLACEMENT WITH 50cm HAS TO BE IMPLEMENTED AND COMPACTED IN TWO LAYERS WITH 25cm THICKNESS

DRAWINGS :

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
2. UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

1. UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.
2. PLAIN CONCRETE USED IN BLINDING SHALL HAVE A MINIMUM 28 DAYS CUBIC STRENGTH OF 200kg/cm² (170kg/cm² cylinder).

CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED

TABLE OF FOOTING

TYPE	PLAIN CONCRETE	REINFORCED CONCRETE			BOTTOM REINF.		TOP REINF.		REMARKS
	THICK.	LENGTH	WIDTH	THICK.	SHORT	LONG	SHORT	LONG	
F1	40	1000	1000	600	8D12	8D12	—	—	ISOLATED FOOTING
F2		1500	1500	600	12D12	12D12	—	—	
F3		2000	2000	600	15D12	15D12	—	—	

TABLE OF TIE BEAMS

TYPE	SIZE	REINFORCEMENTS		STIRRUPS	FACE BAR EACH FACE	REMARKS
		BOTTOM BARS	TOP BARS			
TB1	300X600	4D16	4D16	D8@150	1D12	
TB2	300X600	5D16	5D16	D10@150	1D12	

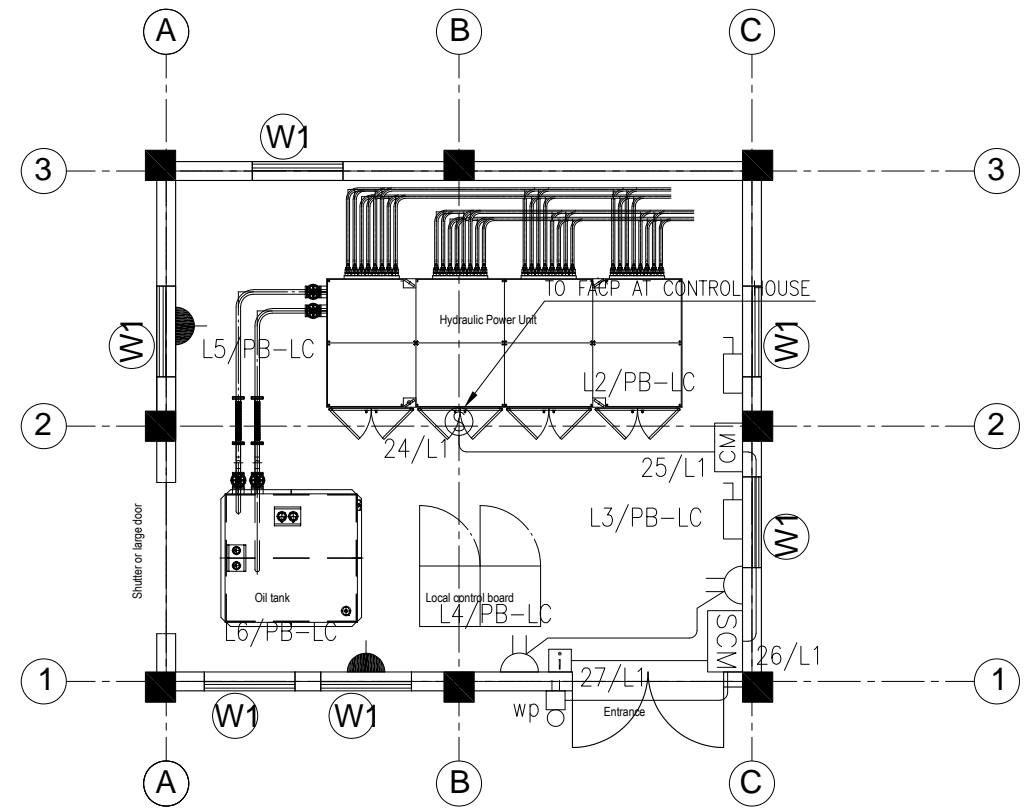
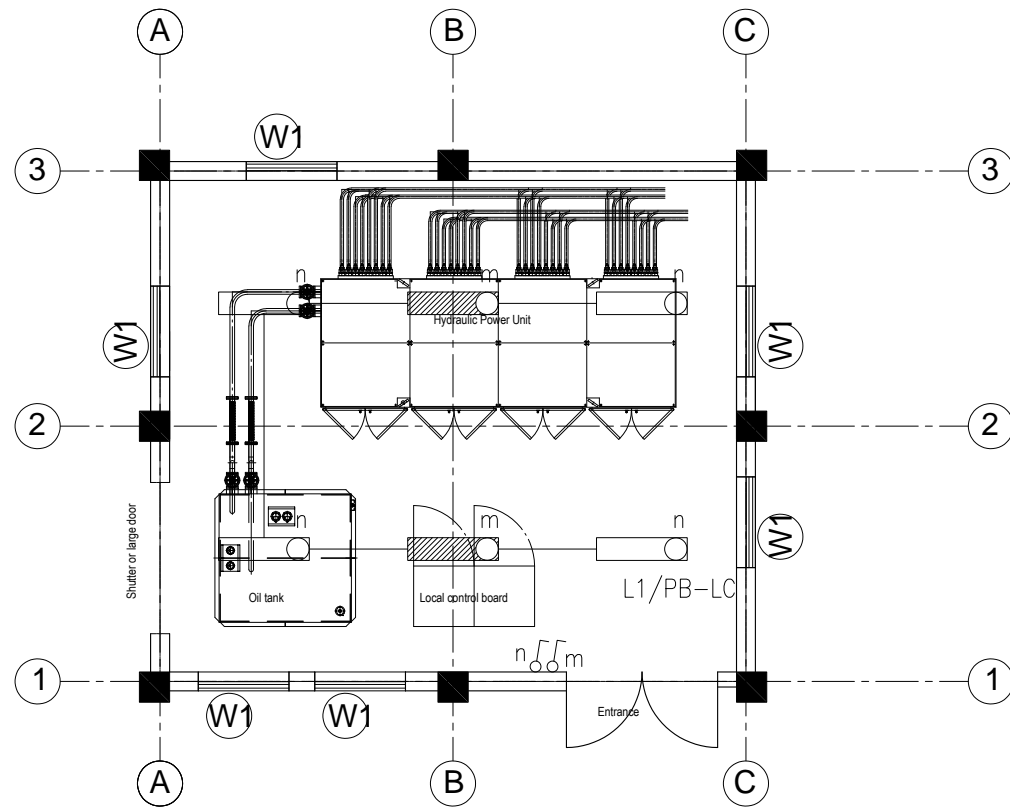
0 5,000mm

Scale A

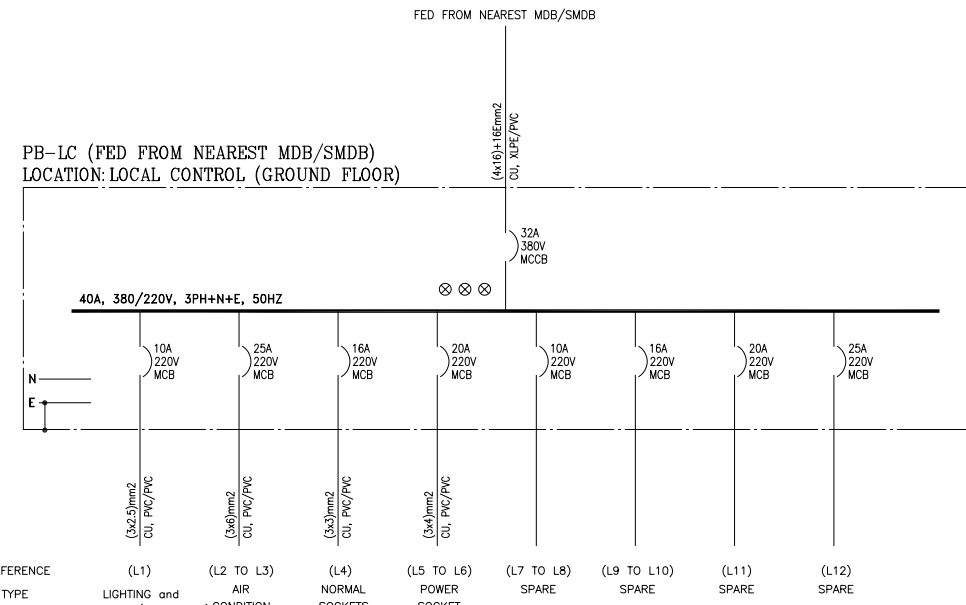
0 2,500mm

Scale B

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Local control house Bar arrangement (3/3)			DRW. NO. AL-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	DATE:



PANEL REF. :		PB-LC		(FED FROM NEAREST MDB/SMDB)		380/220, 3-ph, 50 Hz				
LOCATION :		LOCAL CONTROL (GROUND FLOOR)				(4x16)+16Emm2 CU, XLPE/PVC				
NO. OF WAYS:		12				MCCB 32 A				
QUANTITY :		1								
WAY	PHASE	C.B TYPE	C.B RATING (A)	Cable/Wire C.S.A (mm2)	LOAD TYPE	POINT LOAD (VA)	Loop No	PHASE LOAD (KVA)		
								R	Y	B
1	R	M.C.B	10	3x2.5	LIGHTING	370	L1	0.37		
	Y	M.C.B	25	3x6	AIR CONDITION	3000	L2		3.00	
	B	M.C.B	25	3x6	AIR CONDITION	3000	L3			3.00
2	R	M.C.B	16	3x3	NORMAL SOCKETS	360	L4	0.36		
	Y	M.C.B	10		SPARE					
	B	M.C.B	10		SPARE					
3	R	M.C.B	20	3x4	POWER SOCKET	1000	L5	1.00		
	Y	M.C.B	16		SPARE					
	B	M.C.B	16		SPARE					
4	R	M.C.B	20	3x4	POWER SOCKET	1000	L6	1.00		
	Y	M.C.B	25		SPARE					
	B	M.C.B	20		SPARE					
								2.73	3.00	3.00
		LIGHTING	NORMAL SOCKETS	POWER SOCKETS	WATER HEATER	AIR CONDITION	MIS LOADS	TOTAL		
C.L (KVA)		0.37	0.36	2.00		6.00		8.73		
D.F		1.00	0.80	1.00		0.80		0.85		
D.L (KVA)		0.37	0.29	2.00		4.80		7.46		



Notes :

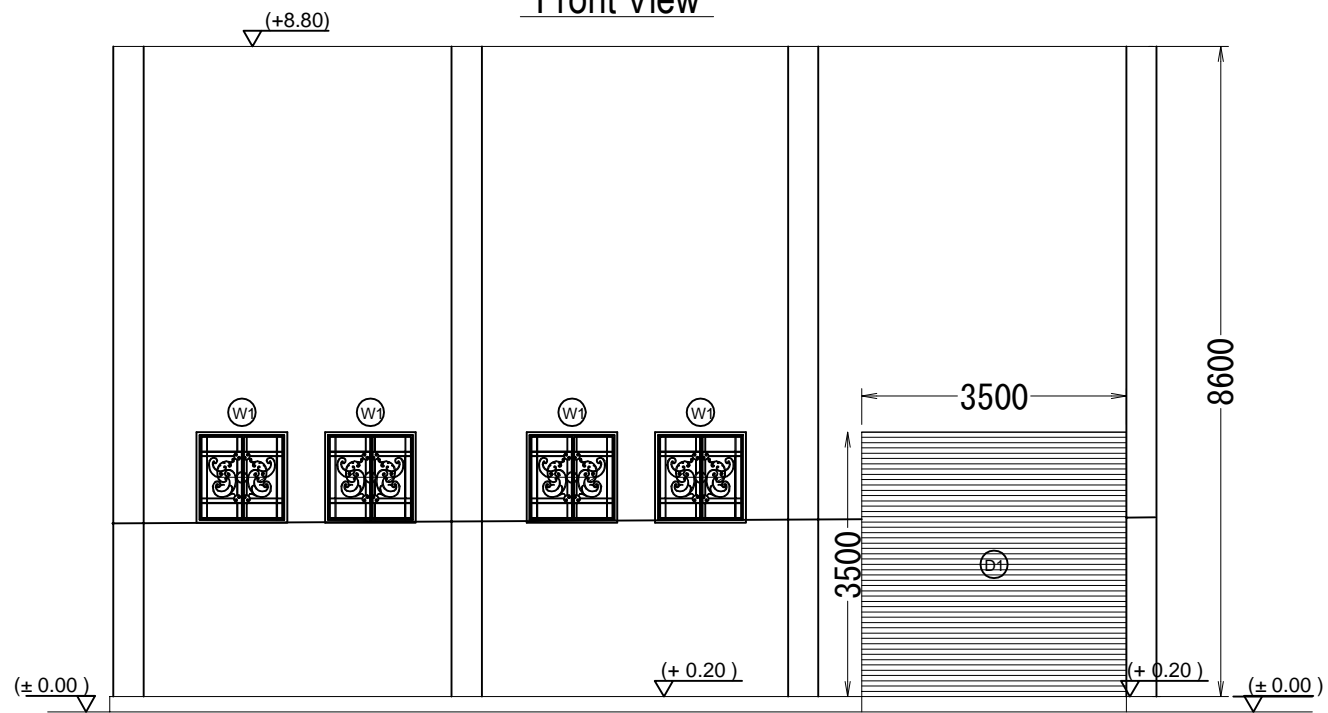
One extinguisher shall be stationed at the proper location in the house.

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

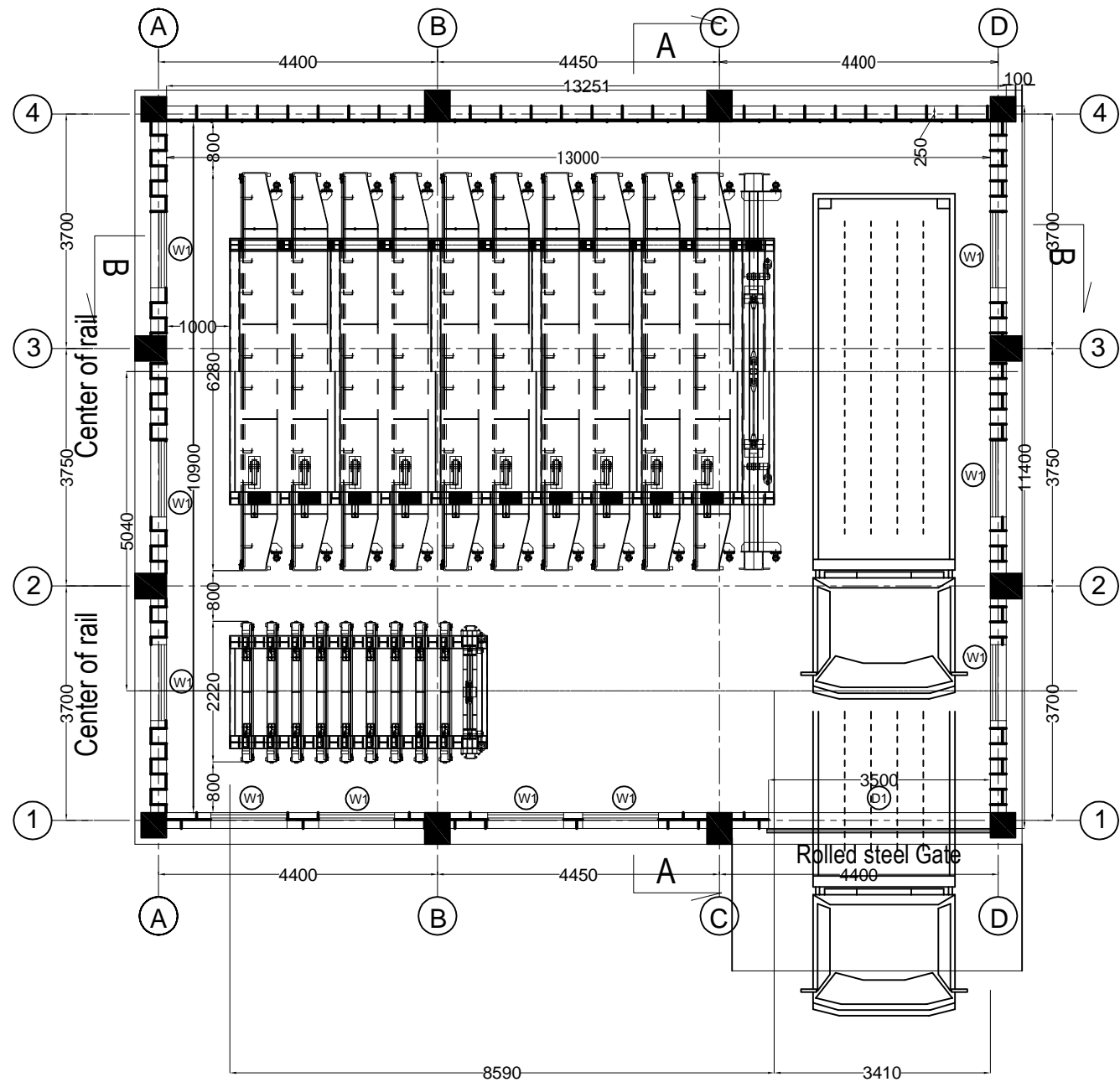
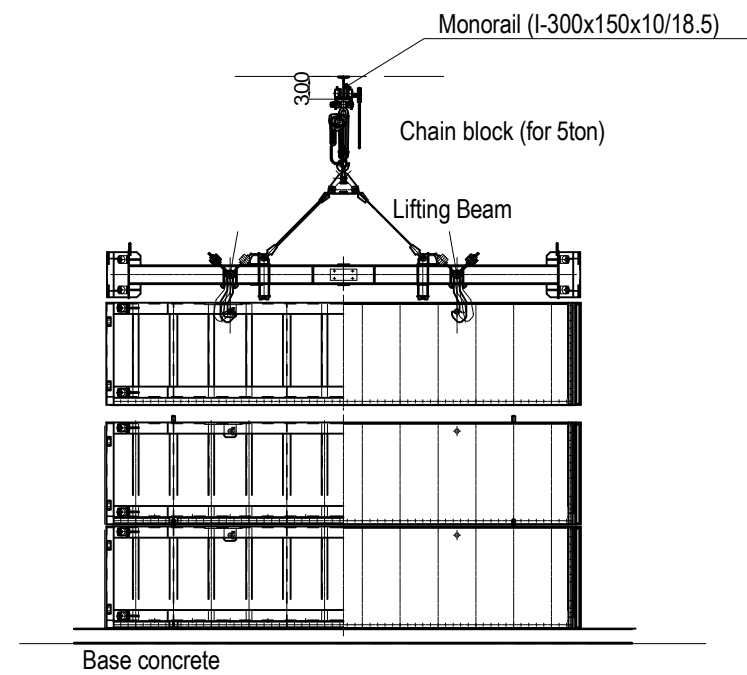
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Local control house Electrical works	DRW. NO. AL-5
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

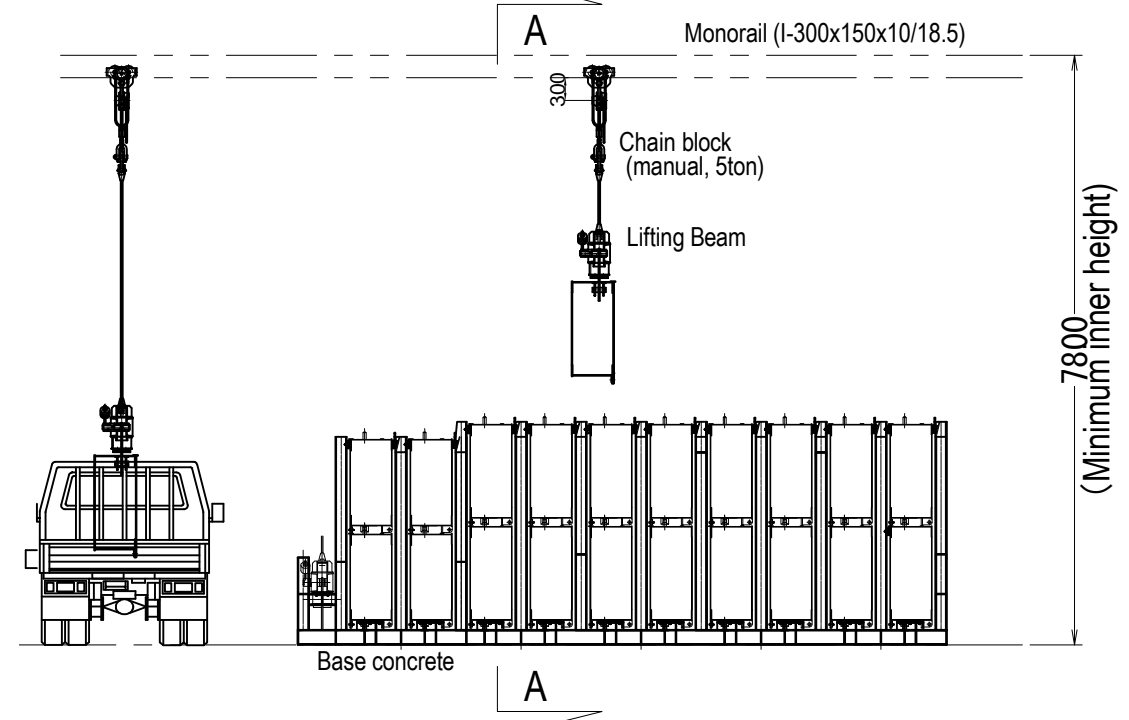
Front View



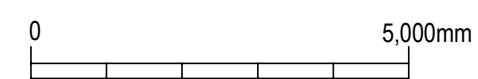
Section A-A



Section B-B



- Legend**
- Brick wall
 - Reinforce concrete column



Notes :
Design Ground Level (± 0.00) is = EL50.20

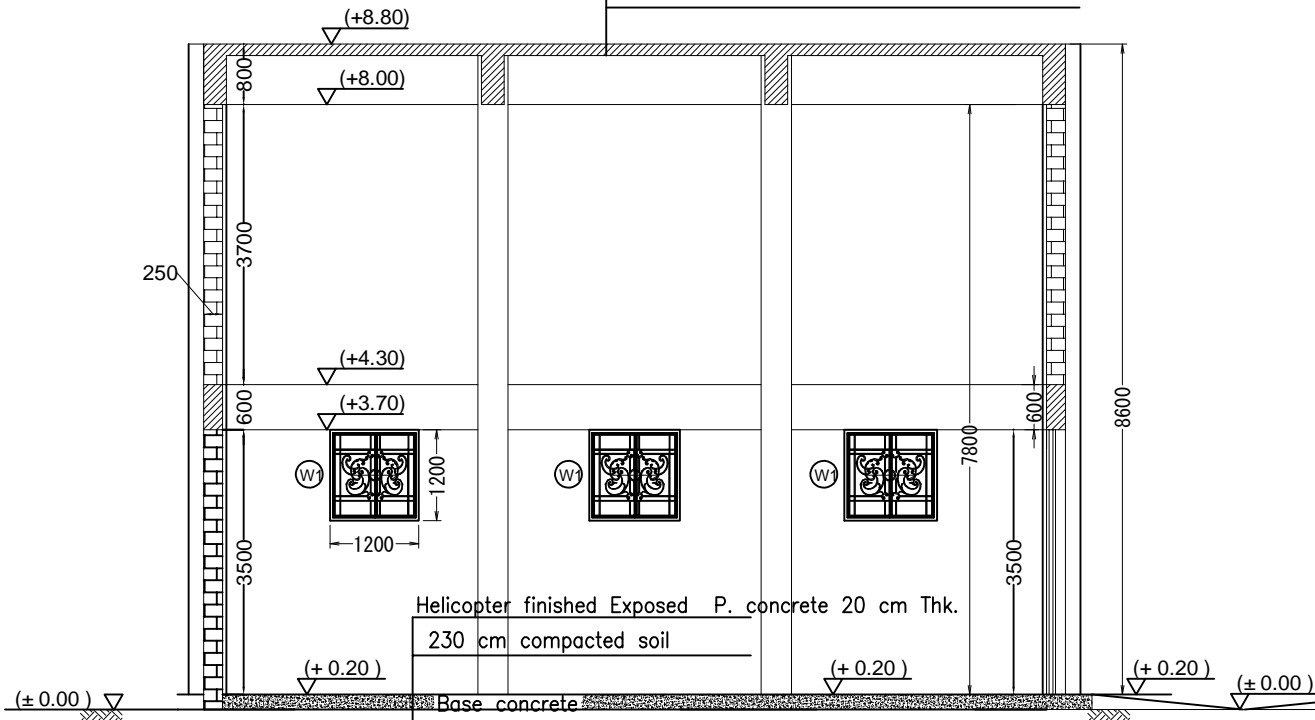
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Stop log house Views and cross sections	DRW. NO. AS-1	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Section A-A

Scale A

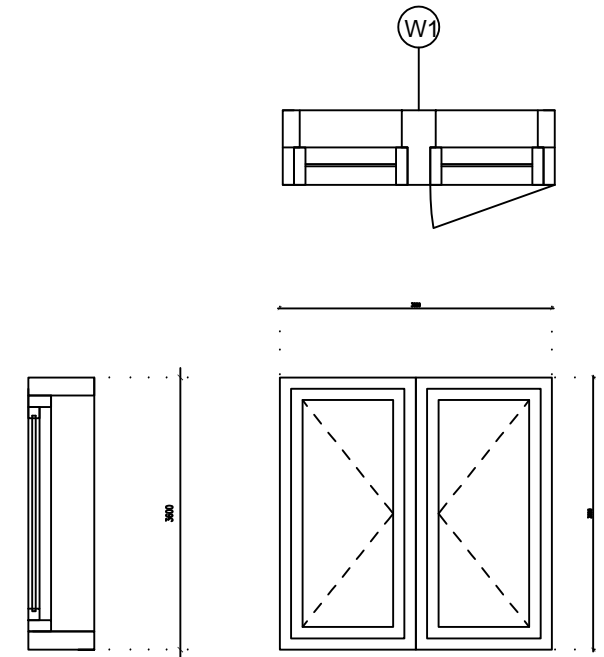
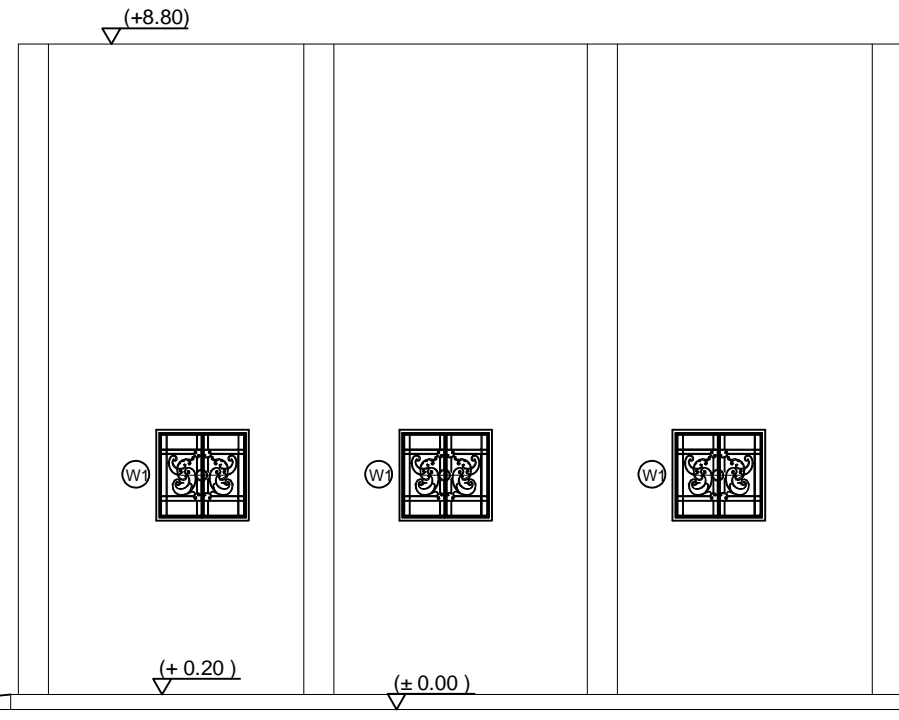
70mm average slope light weight concrete

REINFORCED CONCRETE SLAB 15 cm



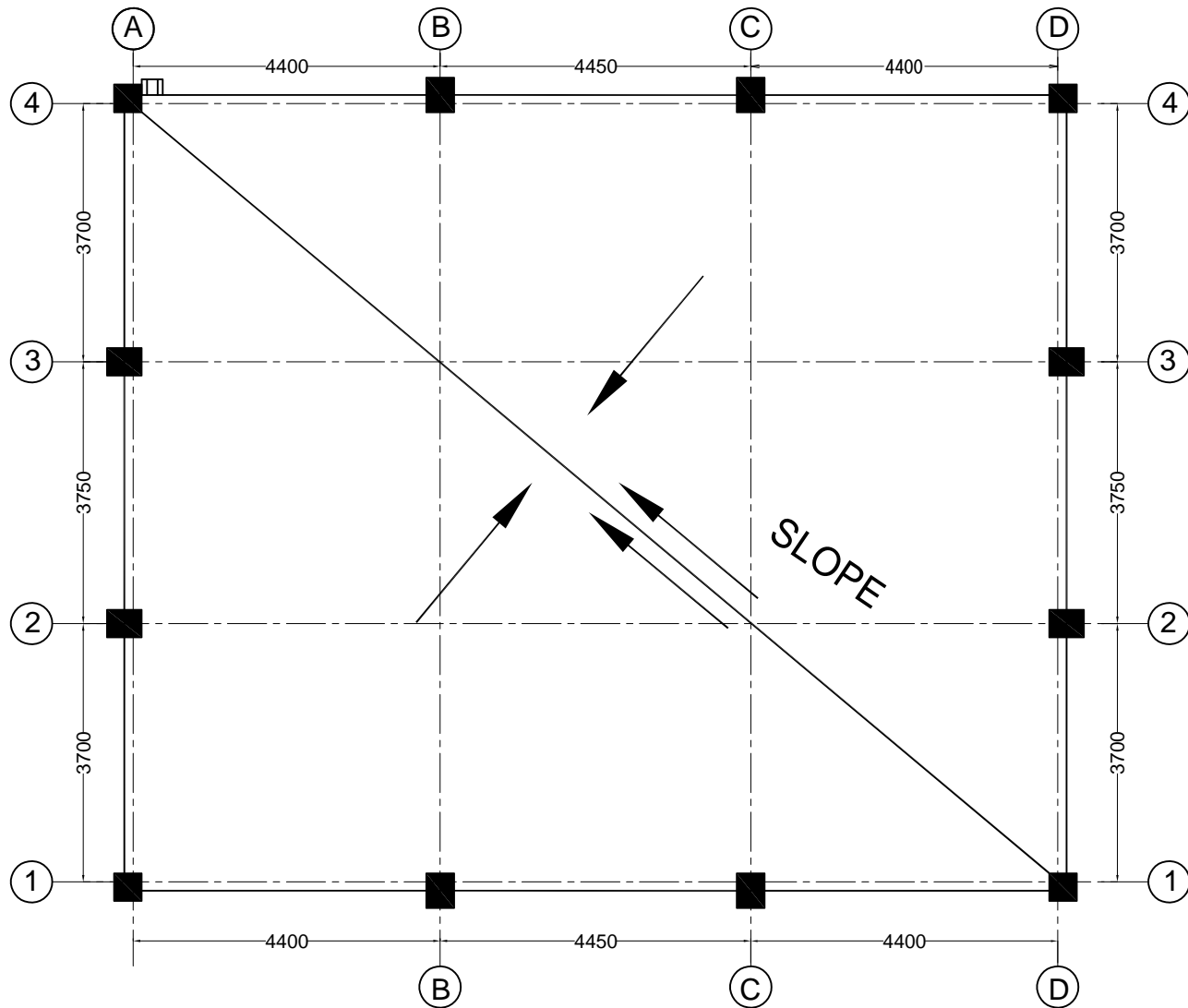
Side view

Scale A



Roof plan

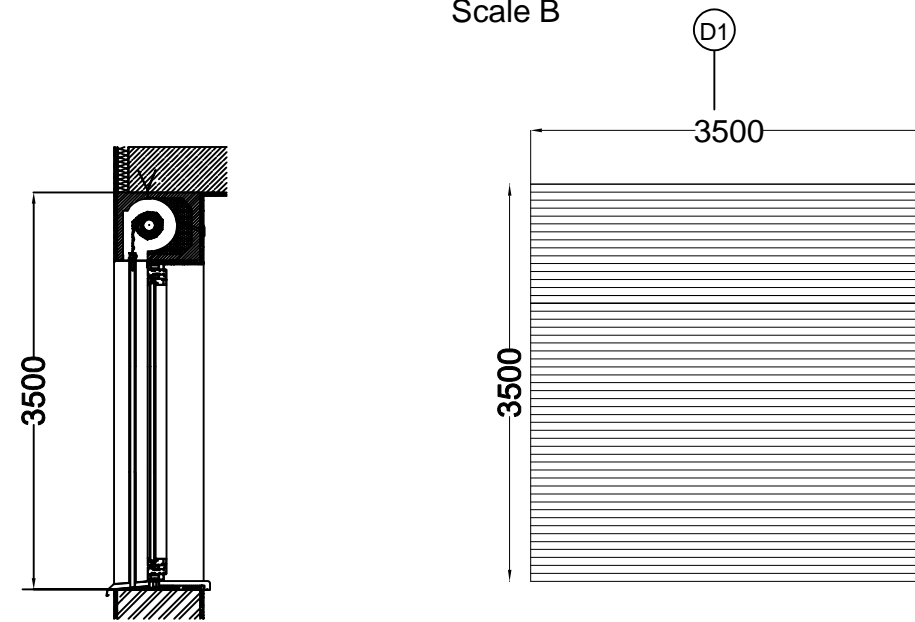
Scale A



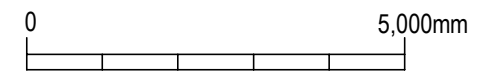
ROOM NO	WINDOW TYPE	NO OF LEAFS	WINDOWS		FRAMES	
			DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
1	(W1)	2	1200*1200	AL	-	ST

Rolled steel gate

Scale B



ROOM NO	OPENING TYPE	NO OF LEAFS	DOORS		FRAMES	
			DIMENSIONS (MM)	MATERIAL	TYPE	MATERIAL
1	(D1)	-	3500*3500	ST	-	ST



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop log house
Roof and cross section

DRW. NO.
AS-2

SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

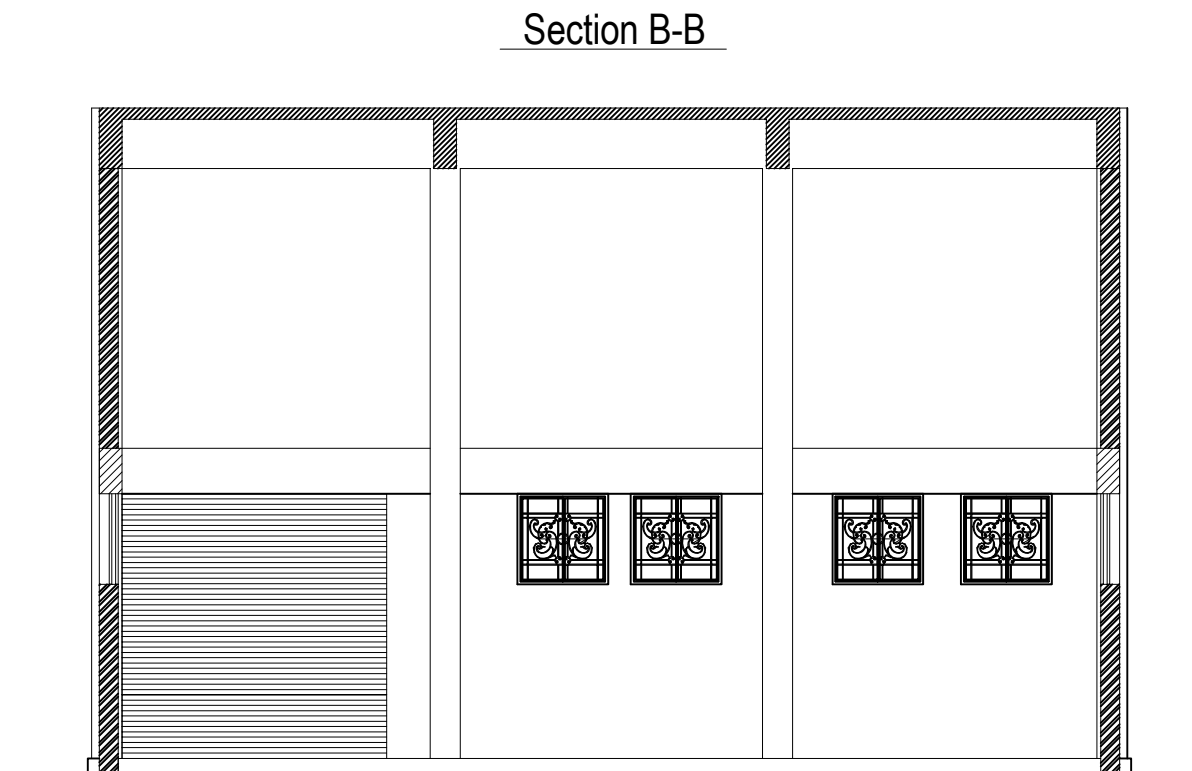
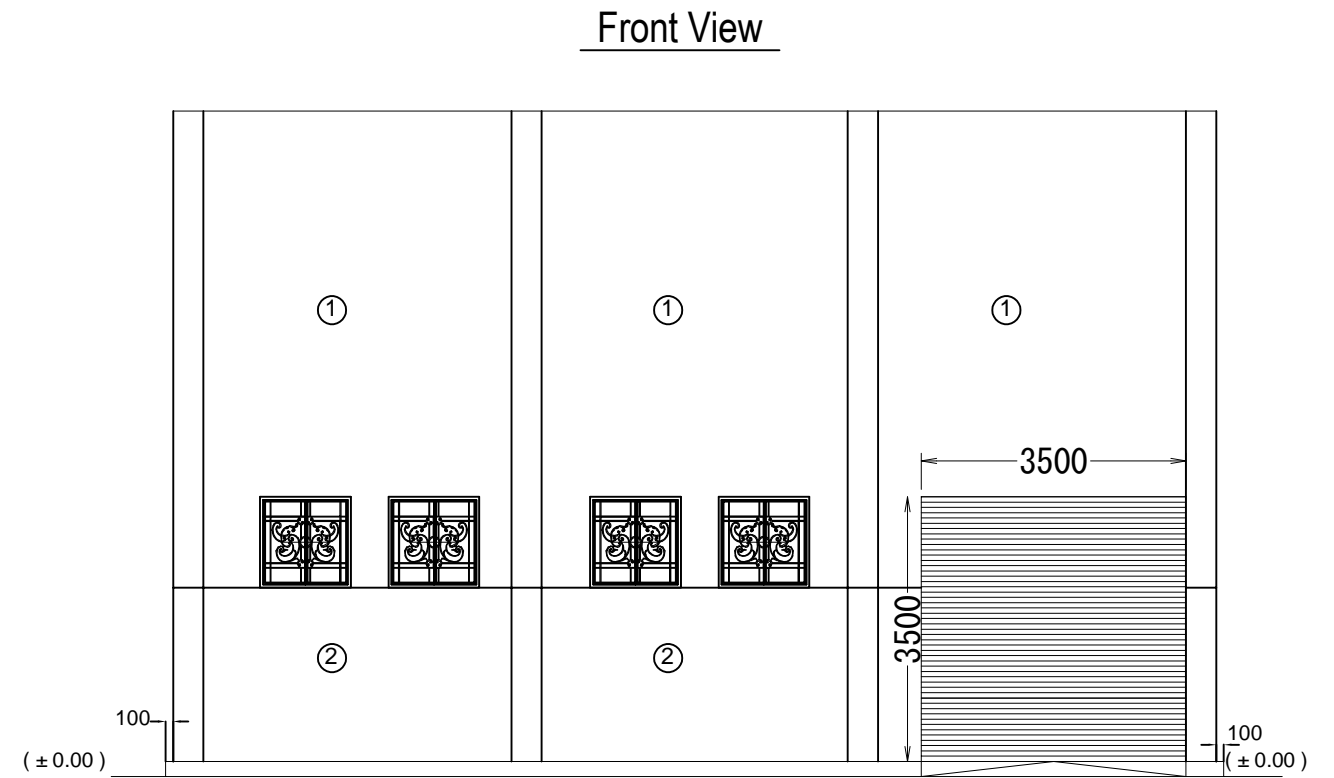
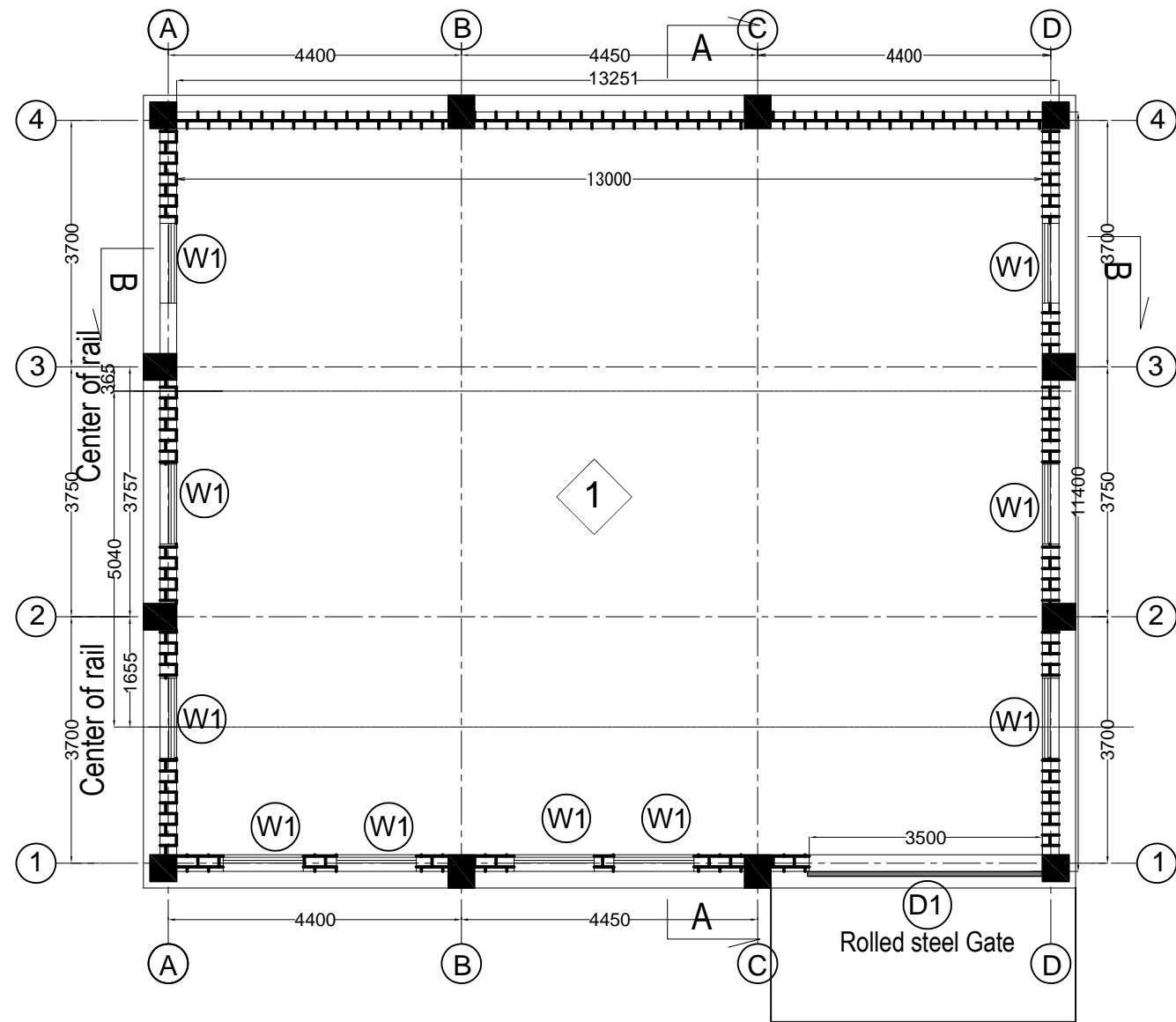
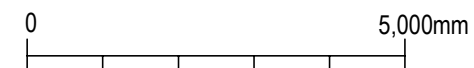


Table on the Finishing of Out Side Wall

Finishing pattern	Finishing Type
①	Plastering : Kimstoon Painting With a requested color
②	Plastering : Kimstoon Painting With a different requested color

Finishing Schedule

Room No.	Room Name	Walls	Floor	Ceiling
①	Stop log room	Plastering and Painting	Helicopter finished Exposed P. concrete 20 cm Thk.	Plastering and Painting

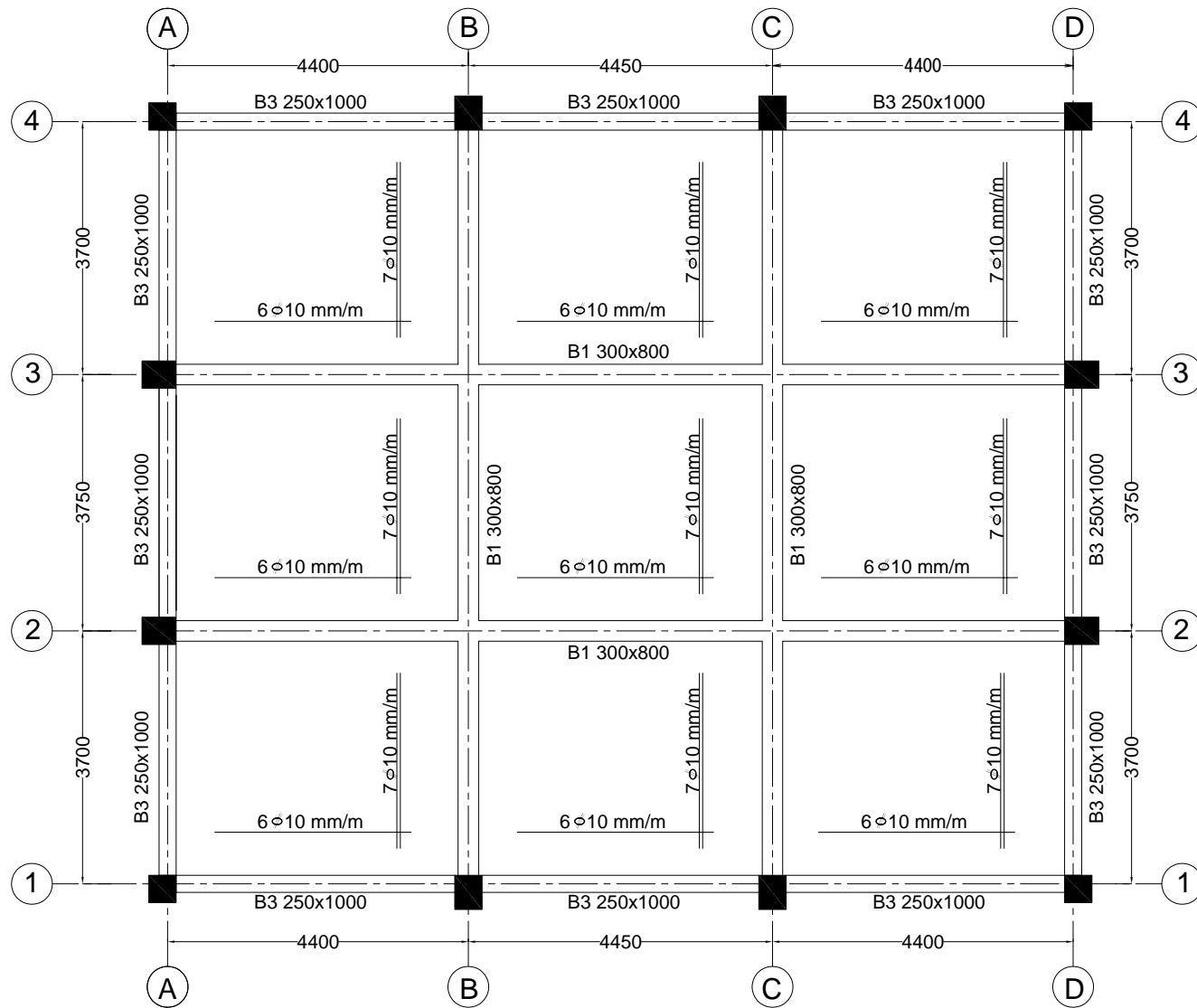


Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

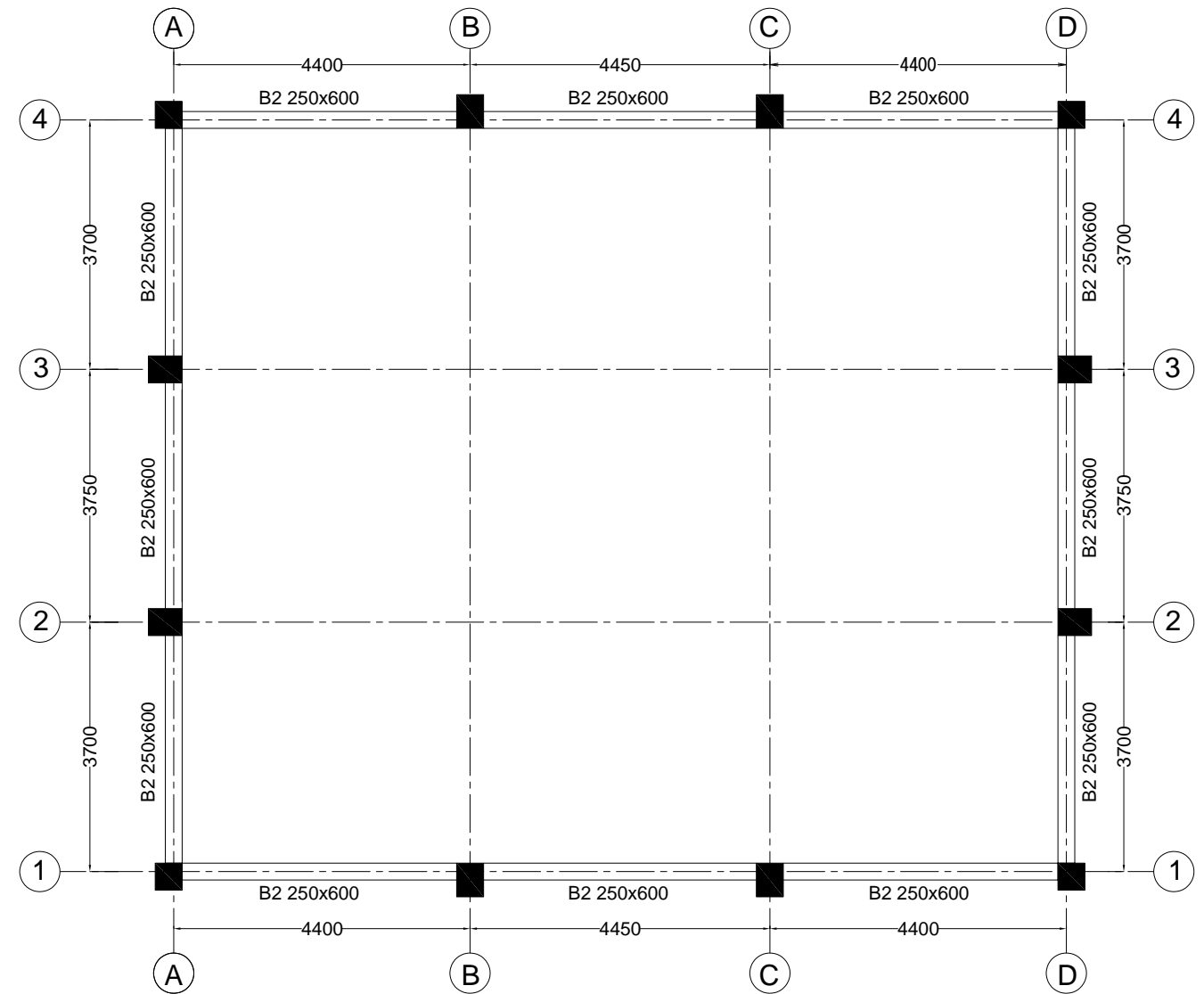
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop log house Finishing schedule	DRW. NO. AS-3
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

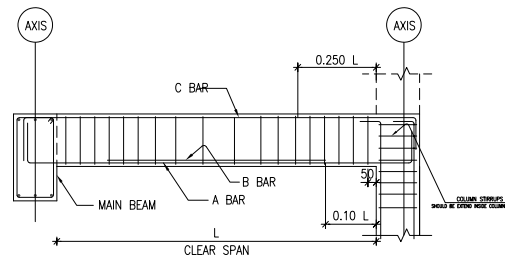
Rebar arrangement for the ceiling slab of ground floor



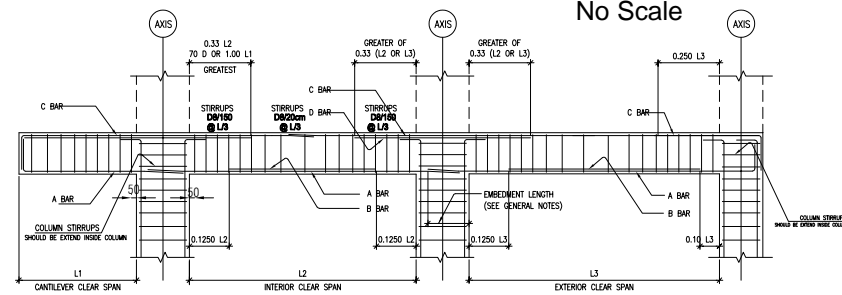
Rebar arrangement for the tie beam at the elevation of (3.70 to 4.30)



TYPICAL SIMPLY SUPPORTED BEAM
No Scale



TYPICAL CONTINUOUS BEAM
No Scale



TYPE	BOTTOM BARS		TOP BARS		STIRRUPS			FACE BAR EACH FACE	REMARKS
	A BARS	B BARS	C BARS	D BARS	RIGHT	MIDD.	LEFT		
B1	2D16	2D16	2D16	2D16	D8@150	D8@200	D8@150	2D12	
B2	5D22	3D22	3D22	—	D8@100	D8@180	D8@100	2D12	
B3	6D22	4D22	3D22	—	D8@100	D8@180	D8@100	2D12	

* - AT ADJACENT BEAMS, THE HIGHER VALUE OF TOP BARS (C) & (D) SHOULD BE USED.

Notes :

DRAWINGS :

- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
- UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

- UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.
- CEILING SLAB OF THICKNESS IS 150 mm, UNLESS OTHERWISE SPECIFIED
- THE MENTIONED BEAM DEPTH IS INCLUDING THE SLAB DEPTH

STEEL REINFORCEMENT :

- ALL STEEL BAR REINFORCEMENT ARE HIGH TENSILE STEEL (ST360/520) EXCEPT STIRRUPS ARE MILD STEEL (ST240/370)
- SPLICES HAVE TO BE NOT LESS THAN 60 TIMES THE BARS DIAMETER OR 1.00 MEETER

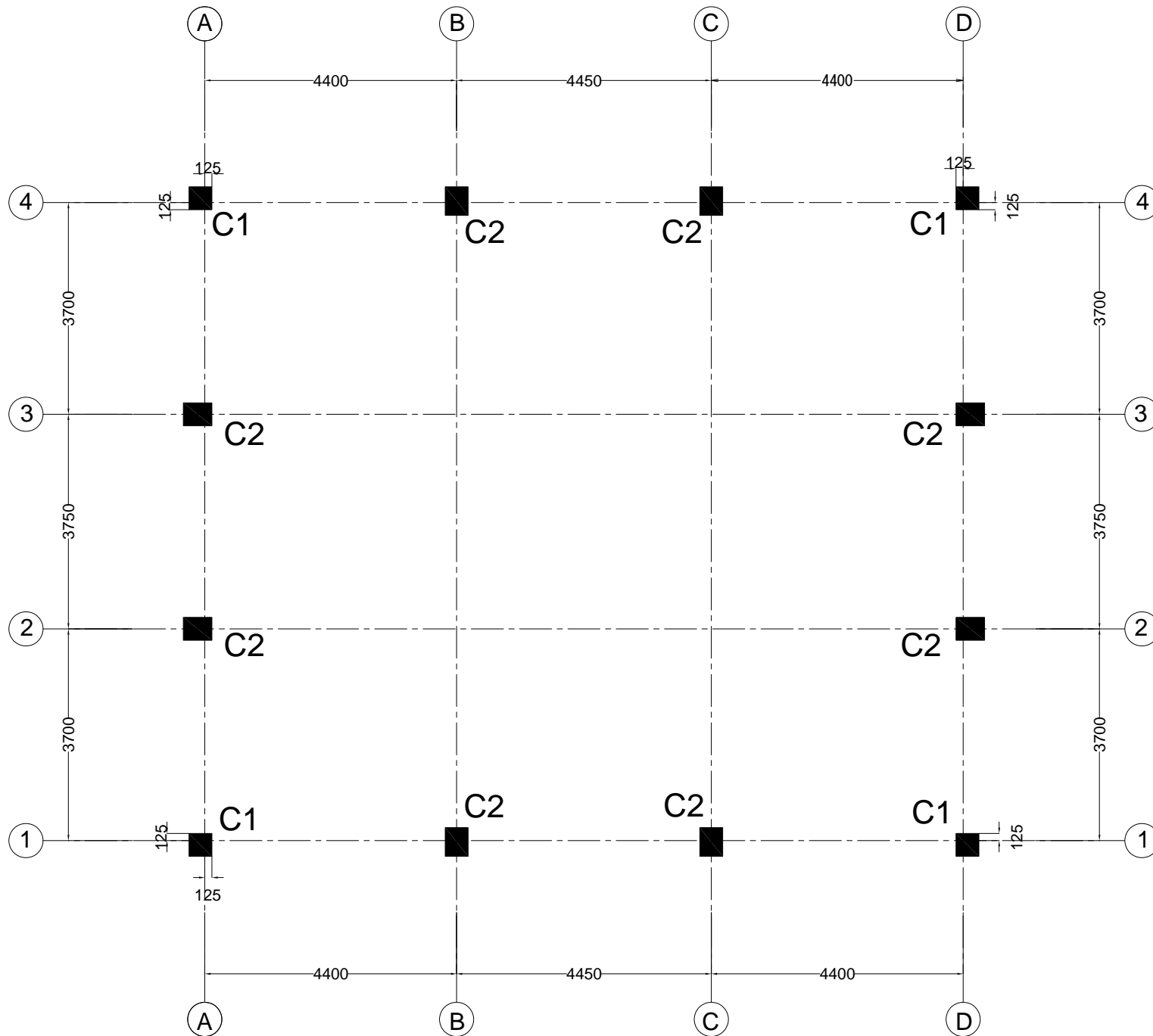
CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Stop log house Bar arrangement (1/3)	DRW. NO. AS-4	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Column Axes Layout - Ground Floor

Scale A



Notes :

DRAWINGS :

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
2. UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.

CONCRETE :

1. UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.

STEEL REINFORCEMENT :

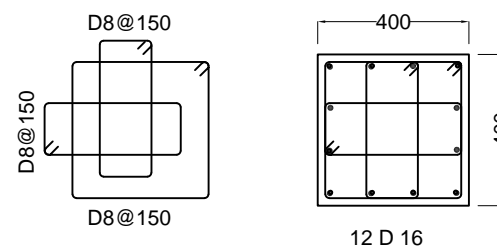
1. ALL STEEL BAR REINFORCEMENT ARE HIGH TENSILE STEEL (ST360/520) EXCEPT STIRRUPS ARE MILD STEEL (ST240/370)
2. SPLICES HAVE TO BE NOT LESS THAN 60 TIMES THE BARS DIAMETER OR 1.00 MEETER

CODES TO BE FOLLOWED :

EGYPTIAN CODES HAVE TO BE FOLLOWED

Column: C1

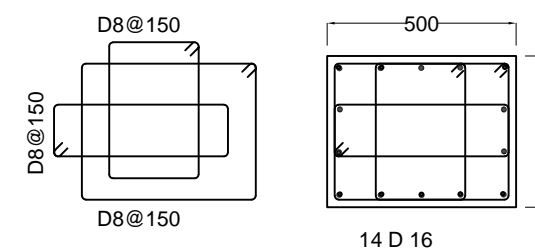
Scale B



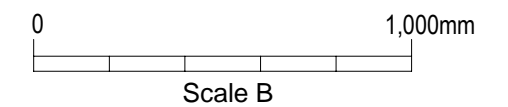
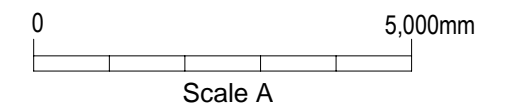
MAIN BARS	12 D 16
Stirrups	D8@150

Column: C2

Scale B

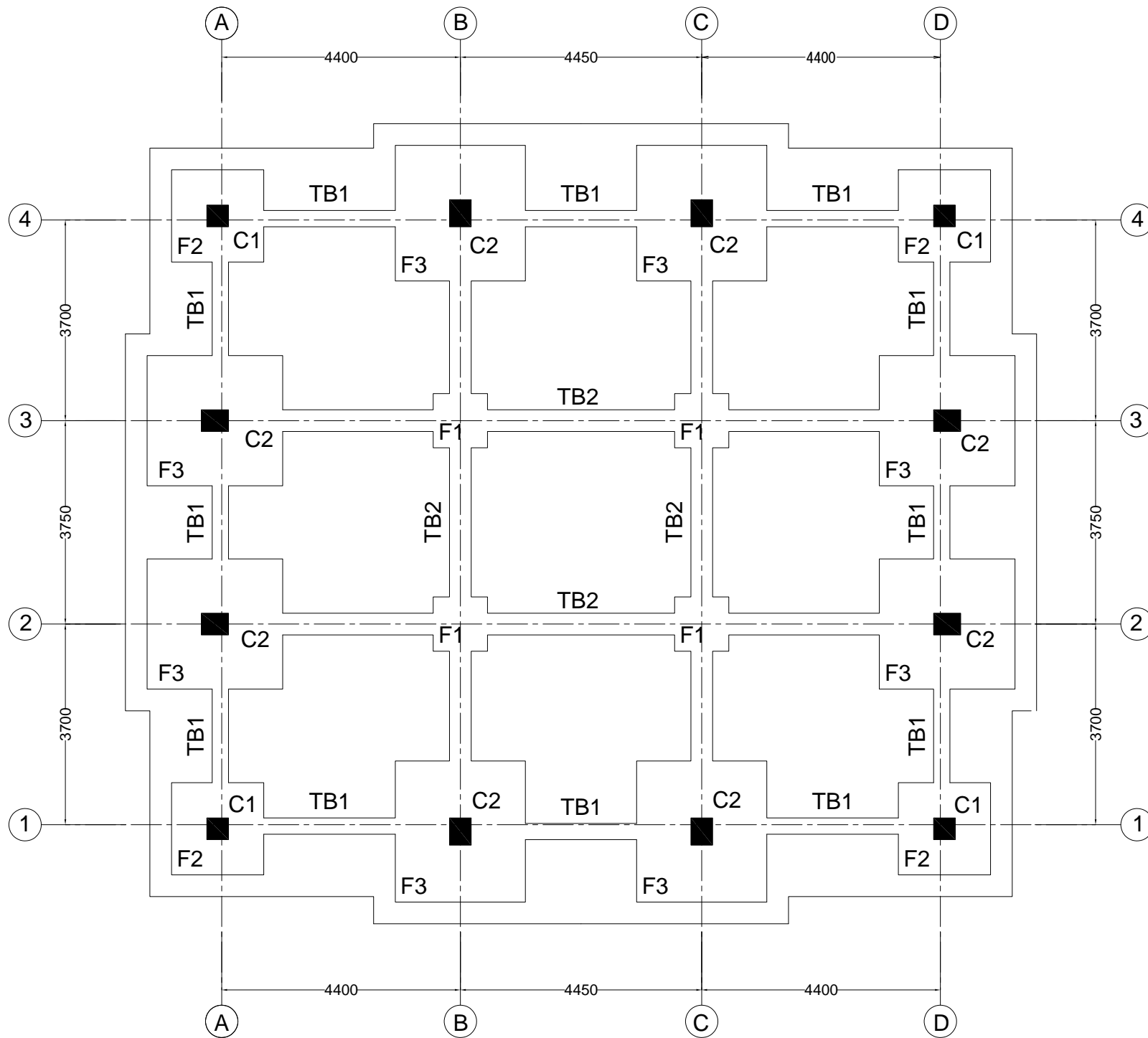


MAIN BARS	14 D 16
Stirrups	D8@150



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop log house Bar arrangement (2/3)			DRW. NO. AS-5
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

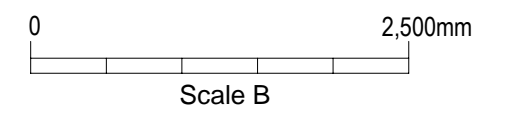
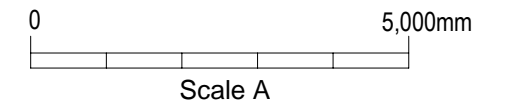
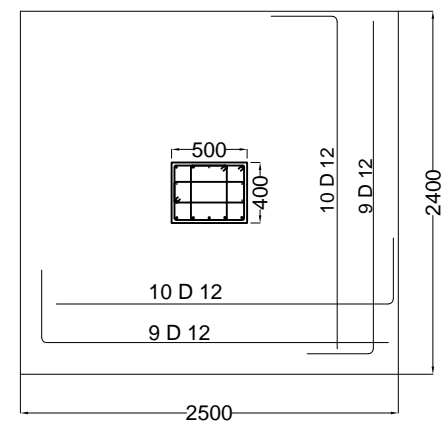
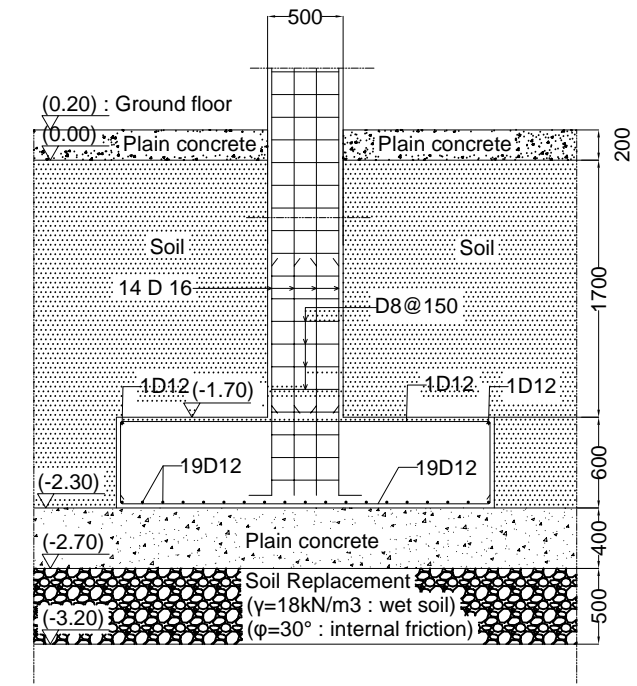
FOUNDATION PLAN
Scale A



Notes :

- FOUNDATION :**
- FOUNDATION PLAN HAS TO BE COMPLETELY EXCAVATED
 - FOUNDATION BOTTOM LEVEL IS (-3.20) BELOW THE NATURAL GROUND LEVEL
 - FOUNDATION IS DESIGNED TO CARRY ONLY ONE FLOOR (GROUND FLOOR)
 - SOIL REPLACEMENT WITH 50cm HAS TO BE IMPLEMENTED AND COMPACTED IN TWO LAYERS WITH 25cm THICKNESS
- DRAWINGS :**
- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, SANITARY AND OTHER DRAWINGS.
 - UNLESS OTHERWISE INDICATED ON DRAWINGS ALL DIMENSIONS ARE IN mm.
- CONCRETE :**
- UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE SHALL HAVE A MIN. 28 DAYS CUBIC STRENGTH OF 250 kg/cm² (210kg/cm² cylinder) ALL STRUCTURE ELEMENTS.
 - PLAIN CONCRETE USED IN BLINDING SHALL HAVE A MINIMUM 28 DAYS CUBIC STRENGTH OF 200kg/cm² (170kg/cm² cylinder).
- CODES TO BE FOLLOWED :**
EGYPTIAN AND JAPANESE CODES HAVE TO BE FOLLOWED

DETAILS OF ISOLATED FOOTING F3
Scale B



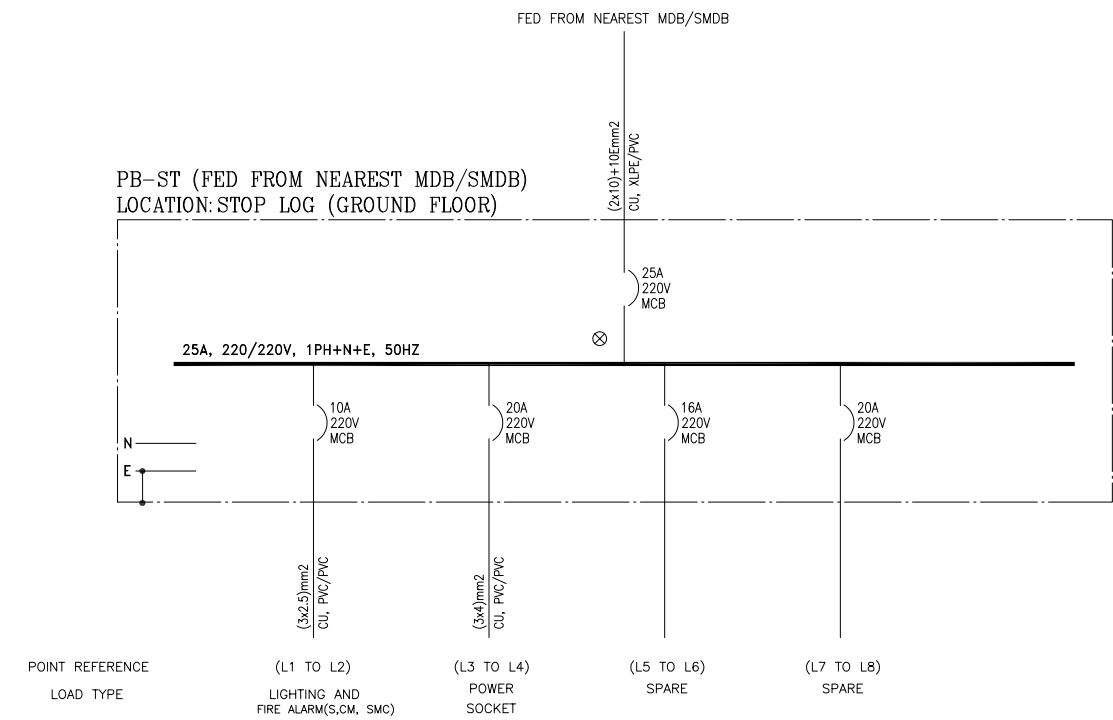
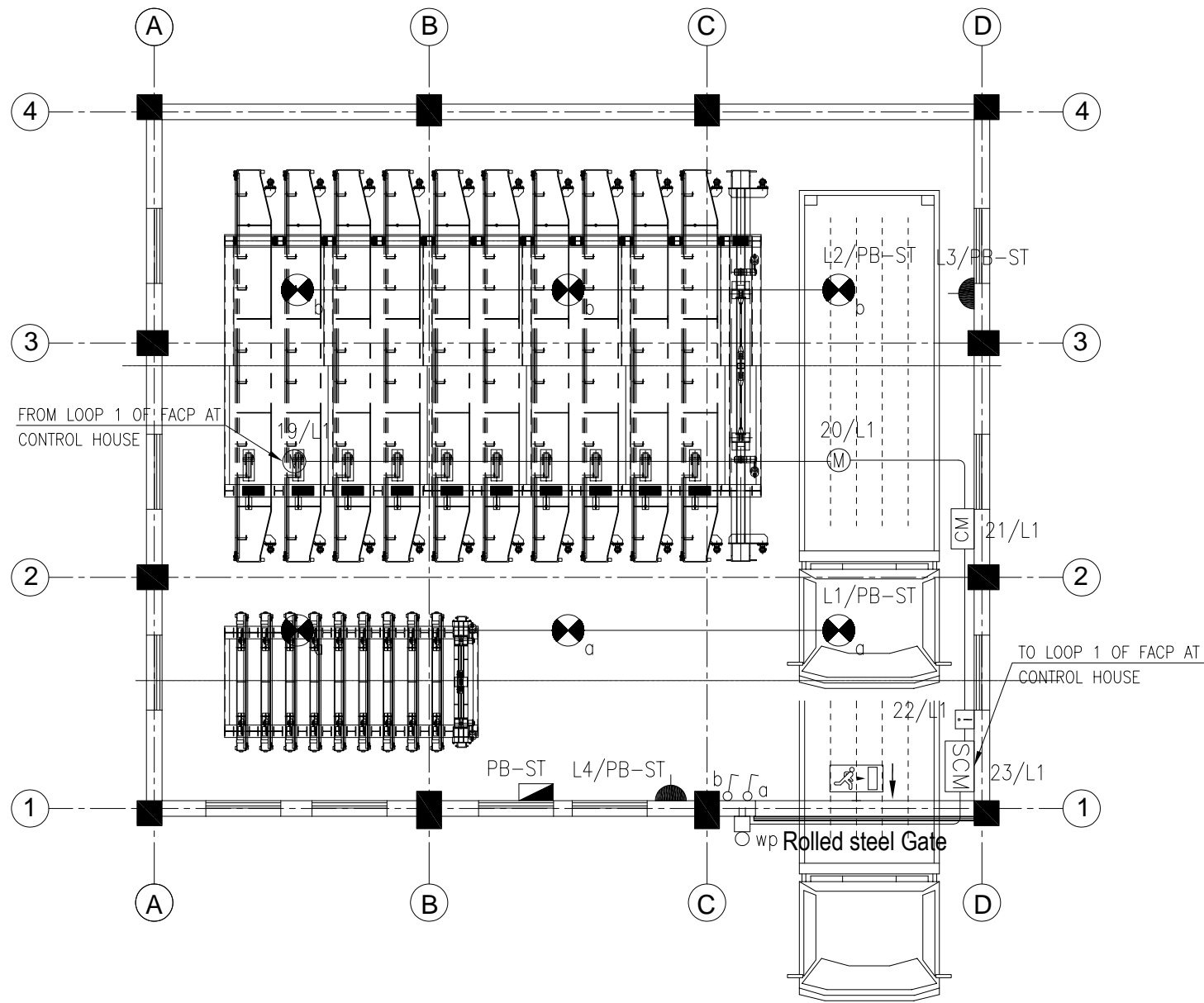
TYPE	PLAIN CONCRETE		REINFORCED CONCRETE		BOTTOM REINF.		TOP REINF.		REMARKS
	THICK.	LENGTH	WIDTH	THICK.	SHORT	LONG	SHORT	LONG	
F1	40	1000	1000	600	8D12	8D12	—	—	ISOLATED FOOTING
F2		1700	1700	600	14D12	14D12	—	—	
F3		2500	2400	600	19D12	19D12	—	—	

TYPE	SIZE	REINFORCEMENTS		STIRRUPS	FACE BAR EACH FACE	REMARKS
		BOTTOM BARS	TOP BARS			
TB1	300X600	4D16	4D16	D8@150	1D12	
TB2	400X600	6D16	6D16	D10@150	1D12	

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop log house Bar arrangement (3/3)	DRW. NO. AS-6
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:



PANEL REF.:		PB-ST (FED FROM NEAREST MDB/SMDB)				220/220, 1-ph, 60 Hz	
LOCATION :		STOP LOG (GROUND FLOOR)				(2x10)+10E mm2	
NO. OF WAYS:		8				CU, XLPE/ PVC	
QUANTITY :		1				M.C.B 25A	
WAY	C.B	C.B	Cable/Wire	LOAD	POINT	Loop No	LOAD (KVA)
	TYPE	RATING (A)	C.S.A (mm2)	TYPE	LOAD (VA)		
1	M.C.B	16	3x3	LIGHTING	510	L1	0.51
2	M.C.B	16	3x3	LIGHTING	510	L2	0.51
3	M.C.B	20	3x4	POWER SOCKET	1000	L3	1.00
4	M.C.B	20	3x4	POWER SOCKET	1000	L4	1.00
5	M.C.B	16	---	SPARE	---	---	---
6	M.C.B	16	---	SPARE	---	---	---
7	M.C.B	20	---	SPARE	---	---	---
8	M.C.B	20	---	SPARE	---	---	---
							3.02
		LIGHTING	NORMAL SOCKETS	POWER SOCKETS	WATER HEATERS	BRANCH PANELS	TOTAL
CONN. (KVA)		1.02	---	2.00	---	---	3.02
DEM. FACTOR		1.00	---	0.80	---	---	0.87
DEM. (KVA)		1.02	---	1.60	---	---	2.62

Notes :
One extinguisher shall be stationed at the proper location in the house.

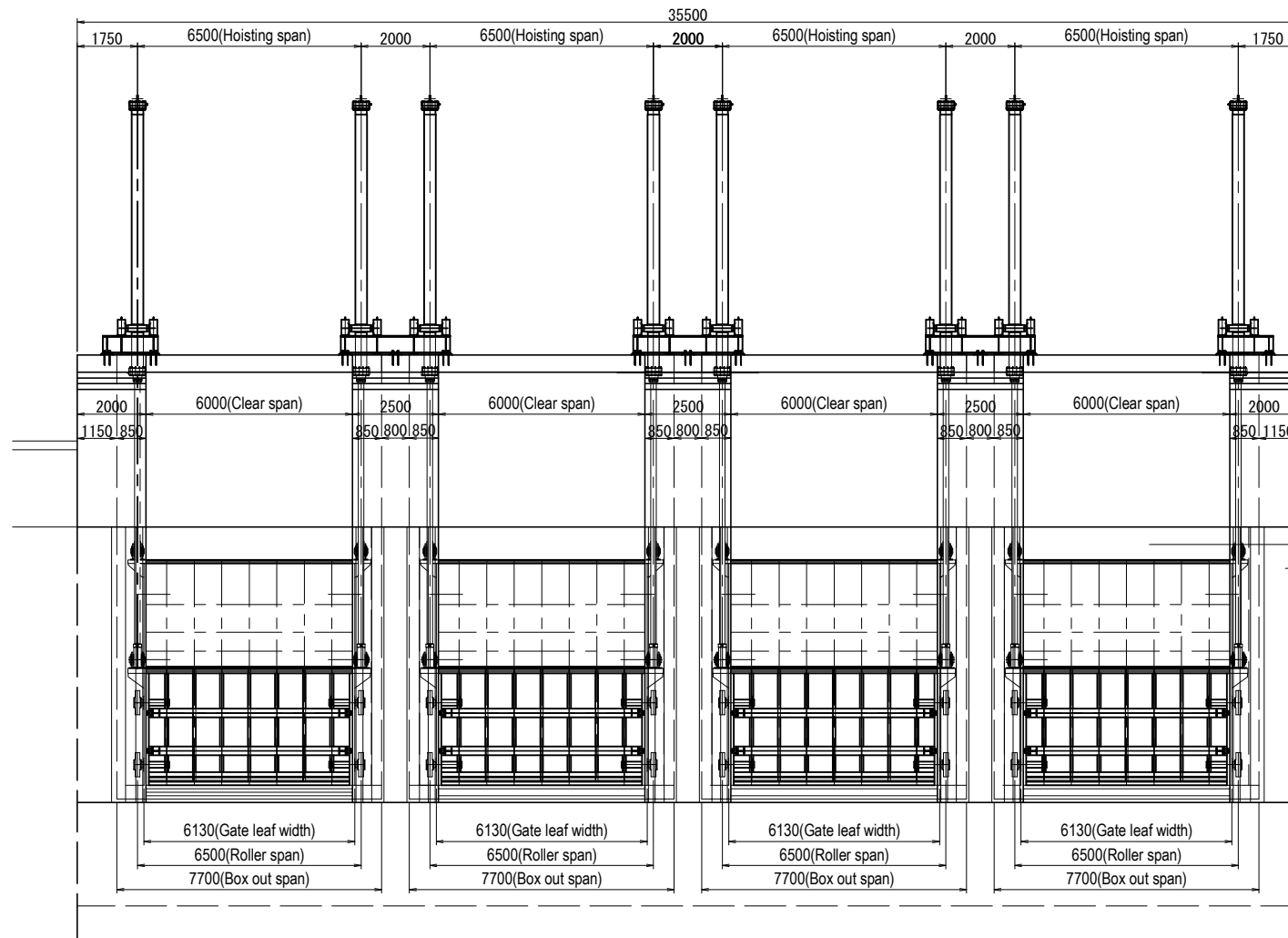
Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

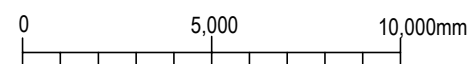
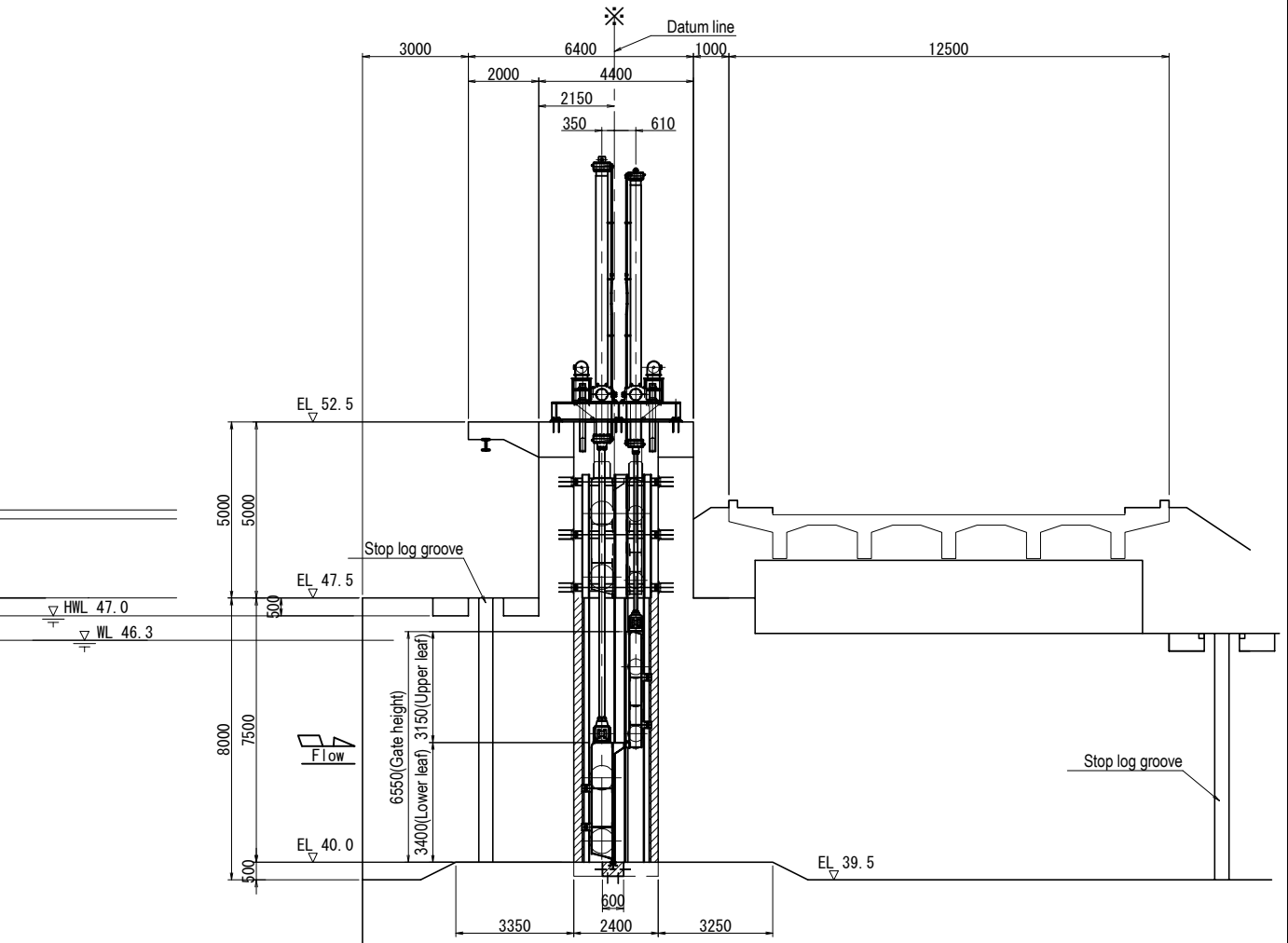
Stop log house Electrical works	DRW. NO. AS-7
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

PART IV MECHANICAL&ELECTRIC WORKS FOR GATE

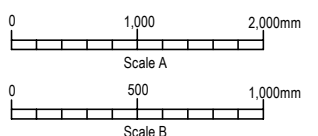
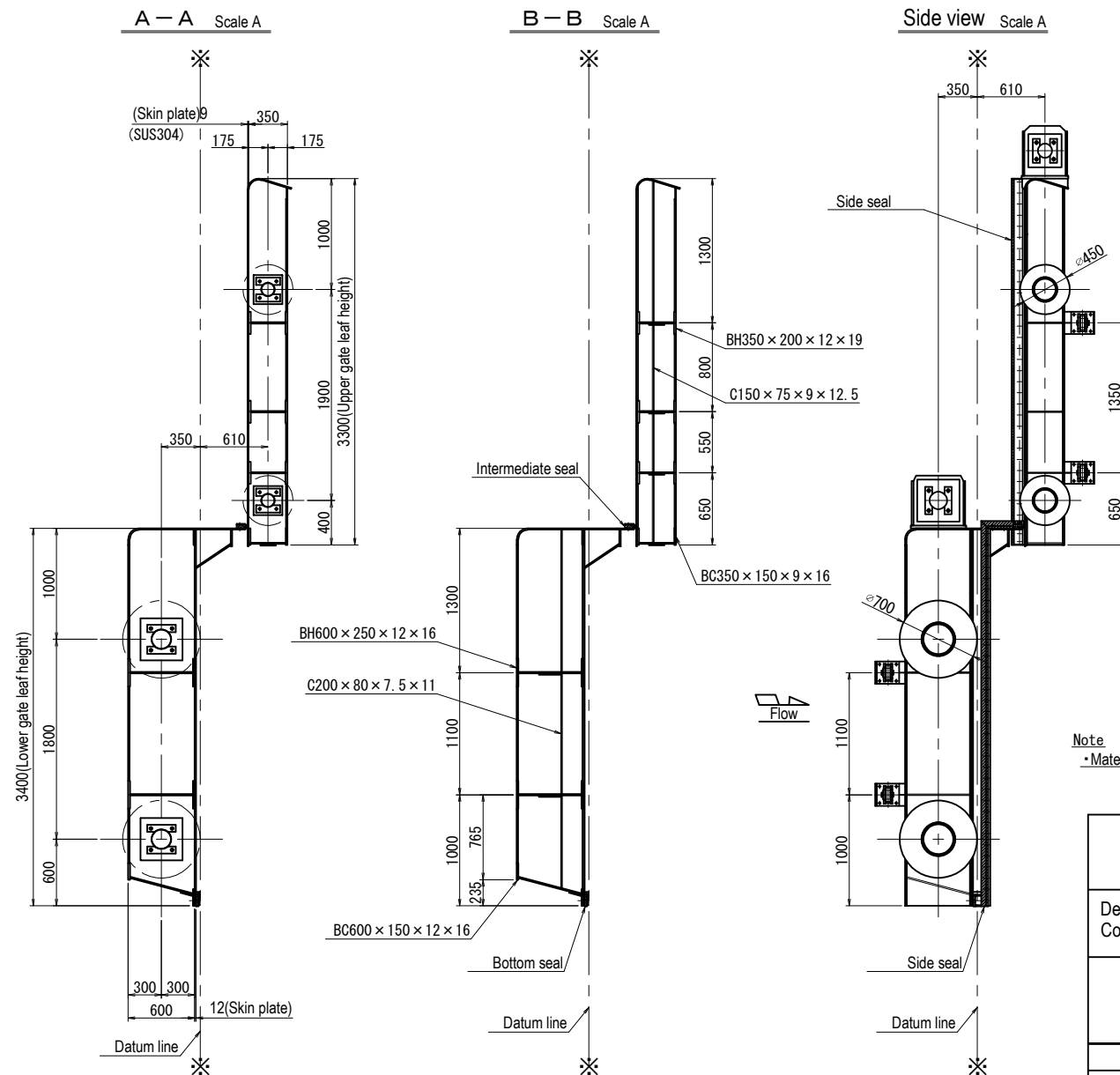
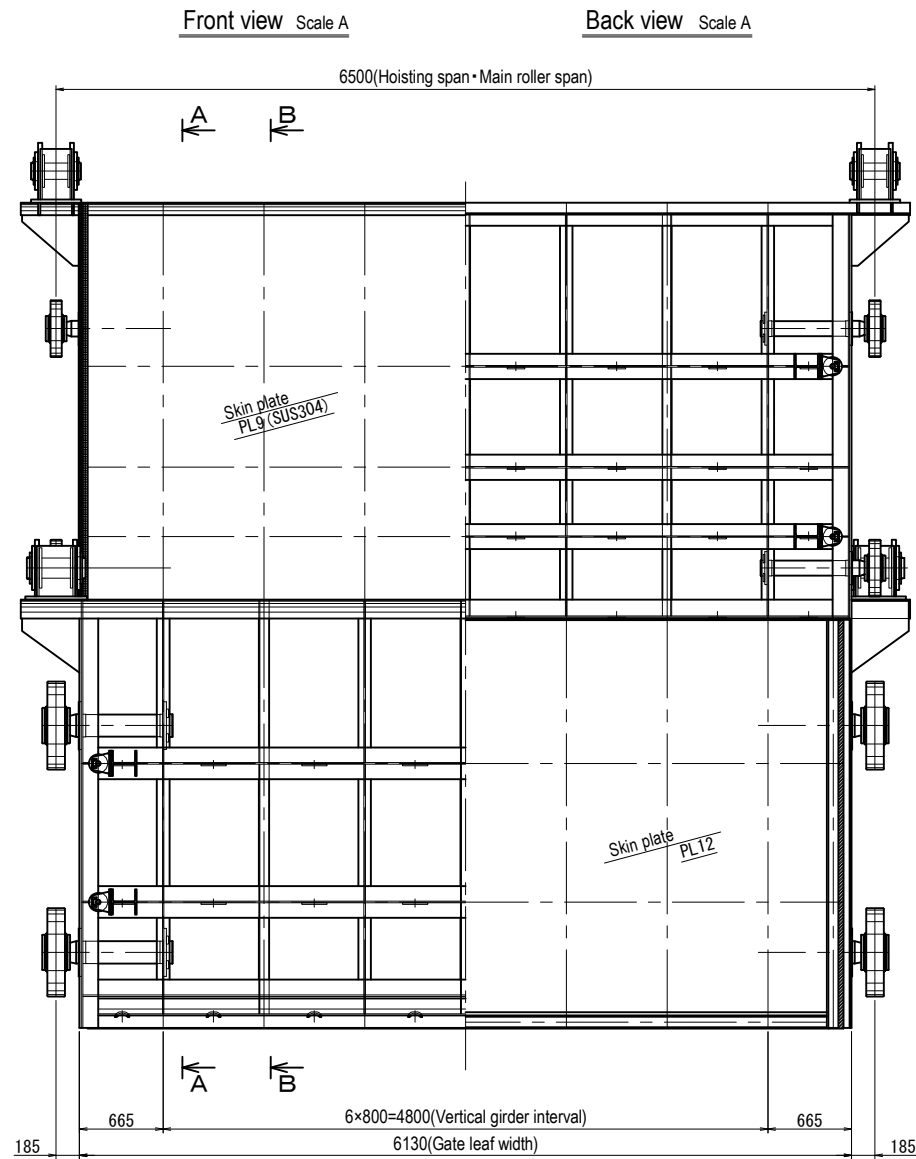
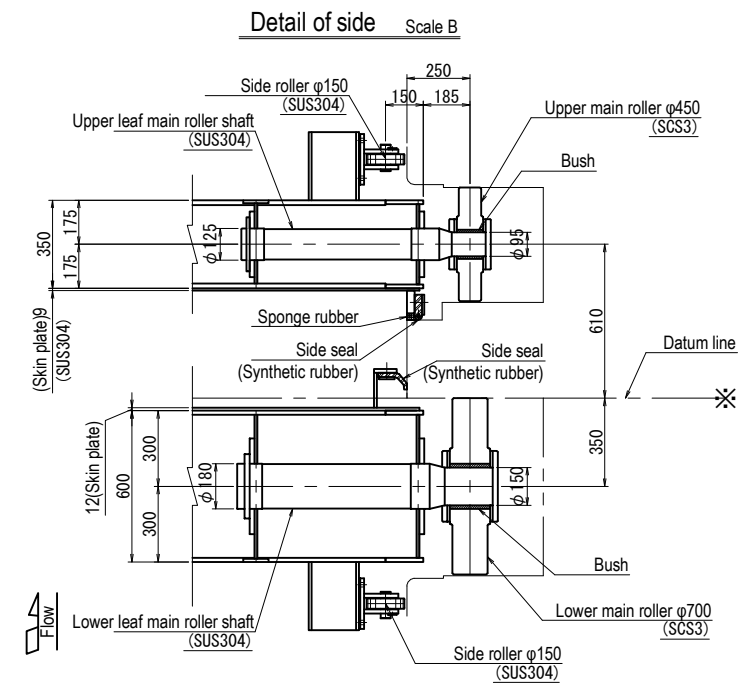
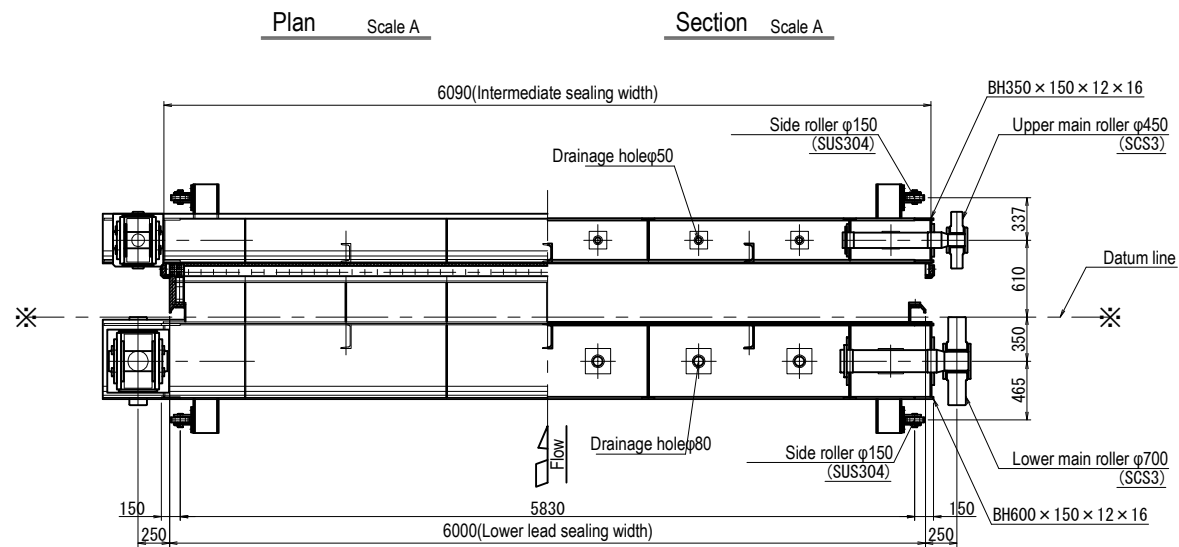
Front elevation



Side view

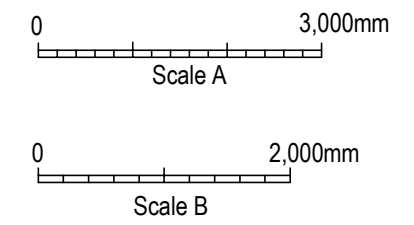
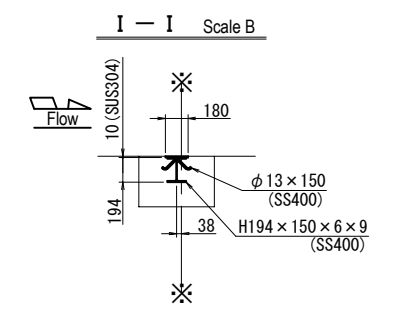
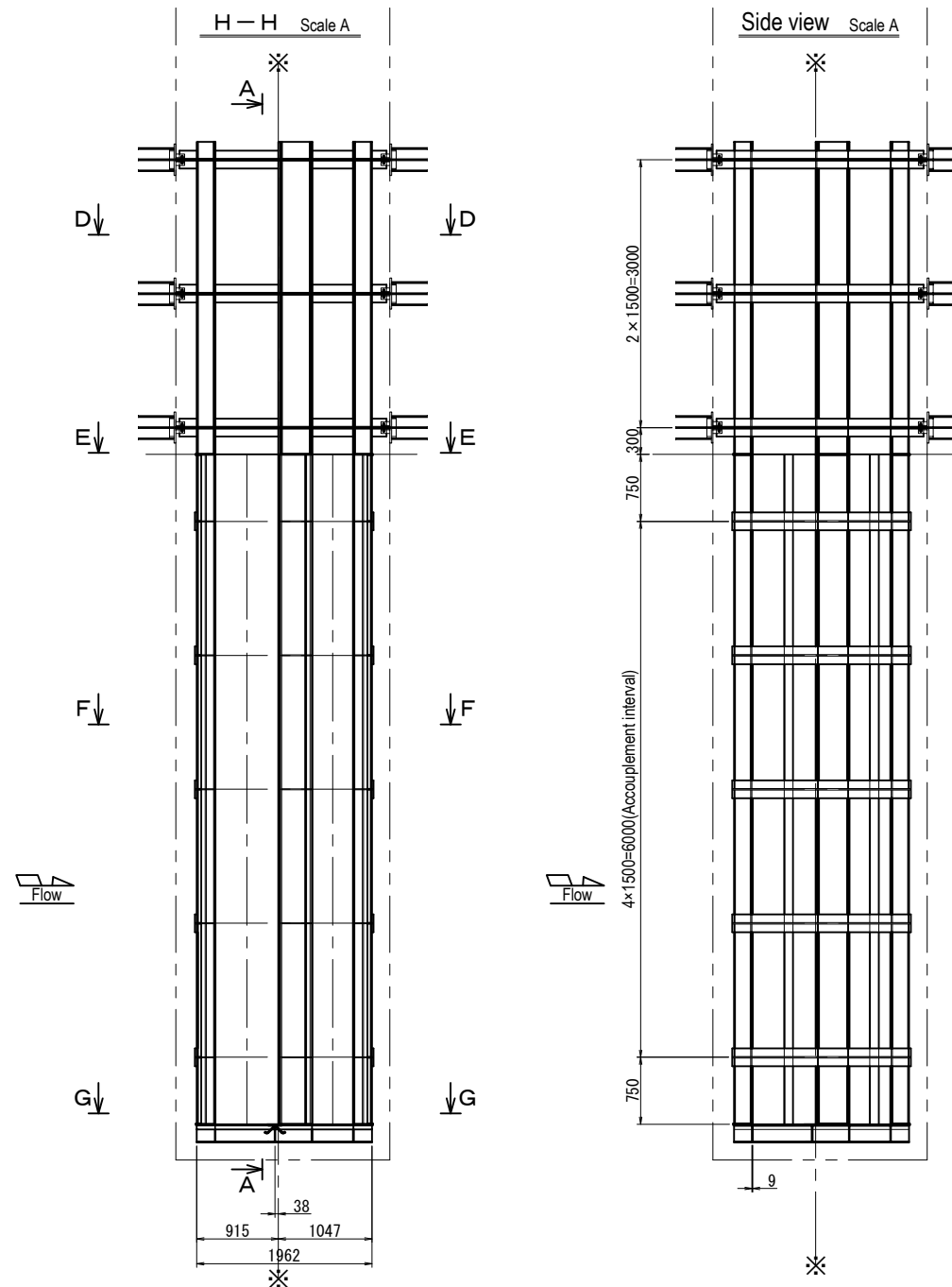
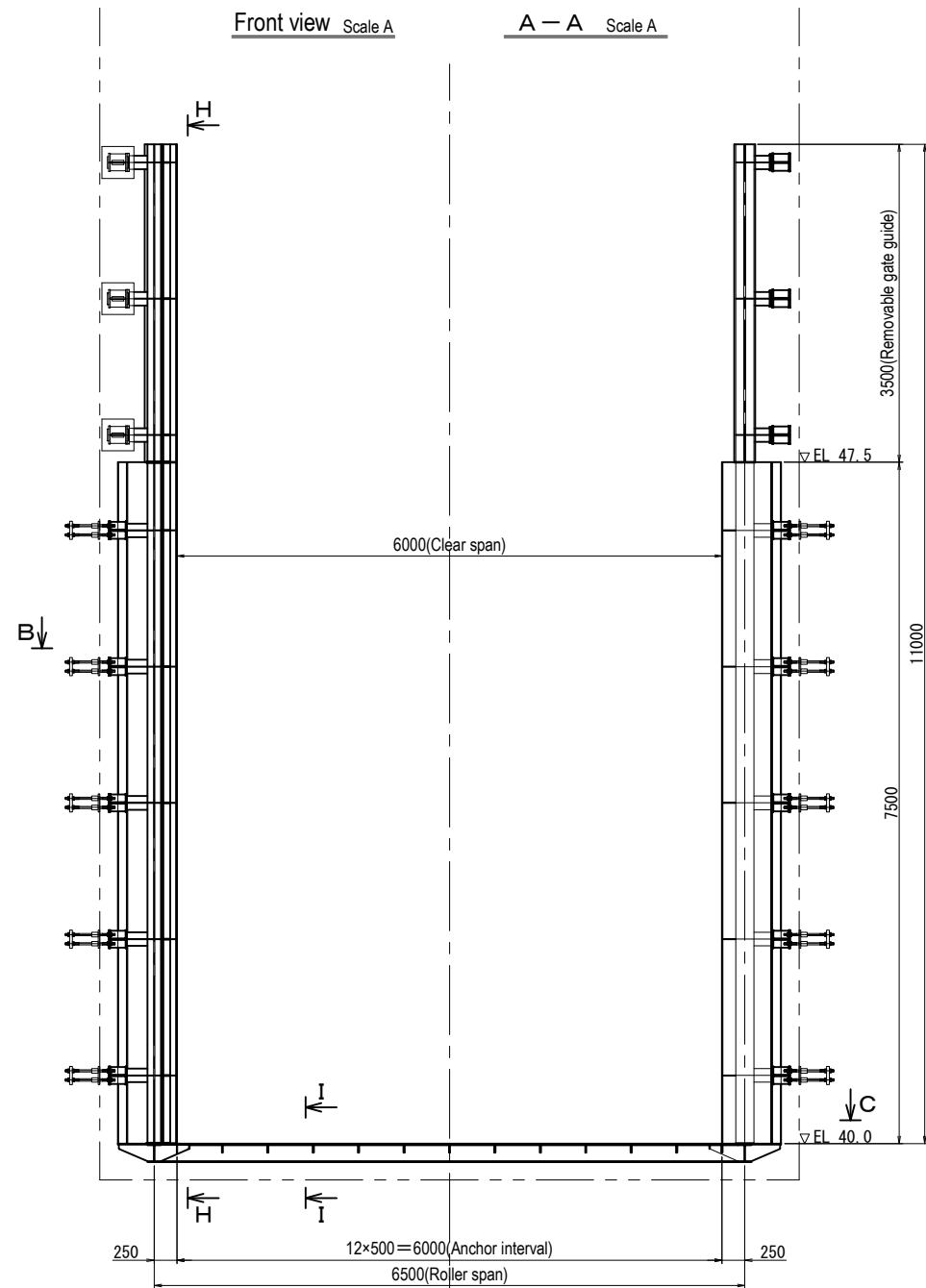
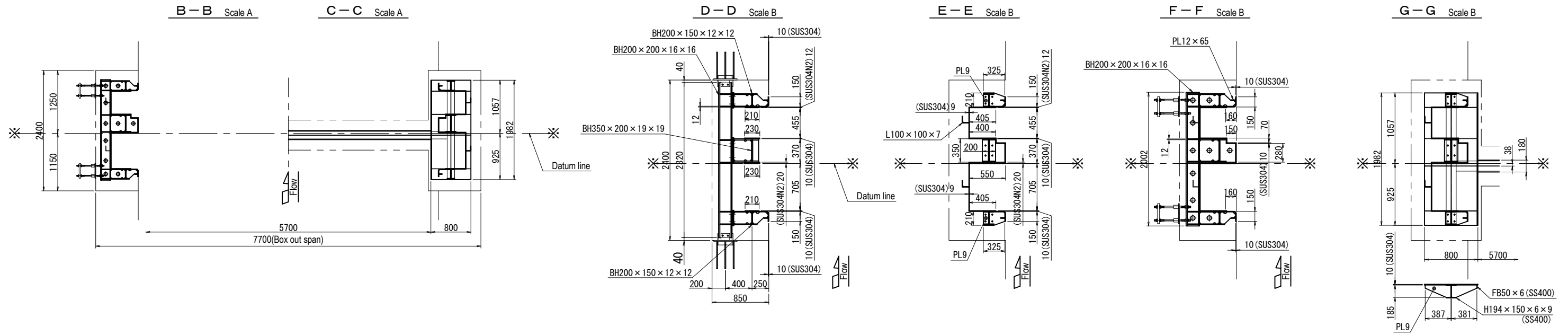


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator General drawing			DRW. NO MBI-1
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



Note
 • Materials shall be SS400 unless otherwise specified.

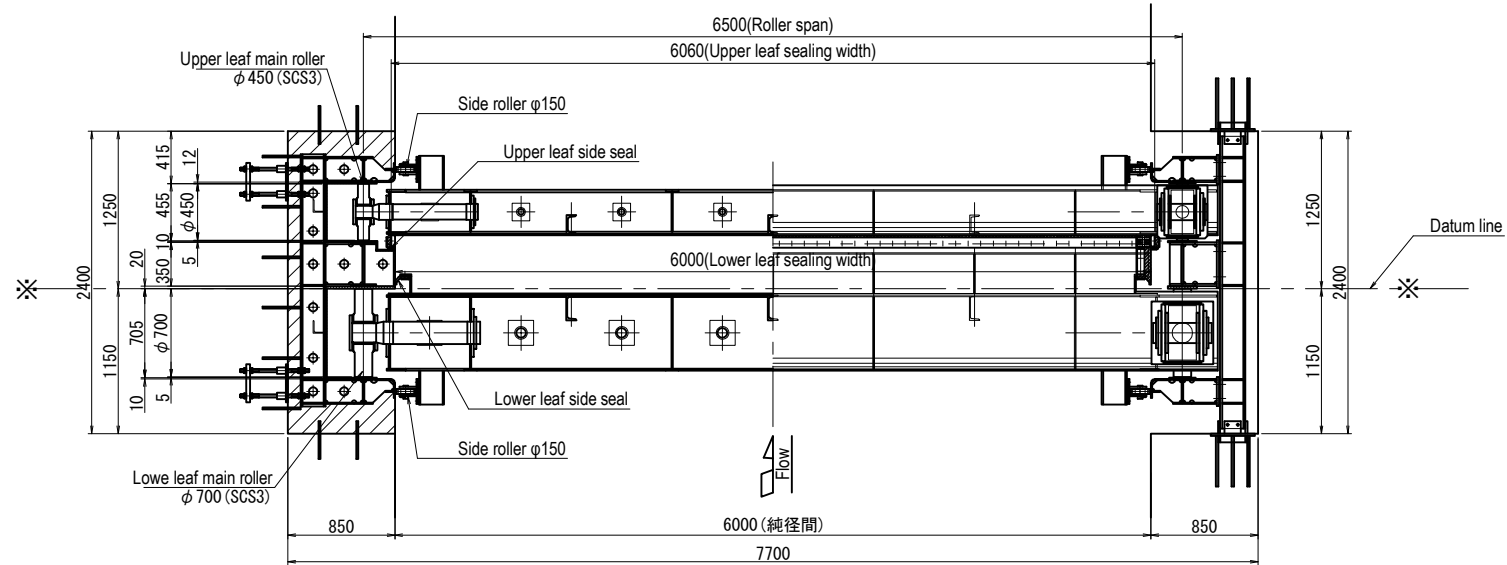
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Gate leaf assembling			DRW. NO. MBI-2
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



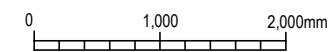
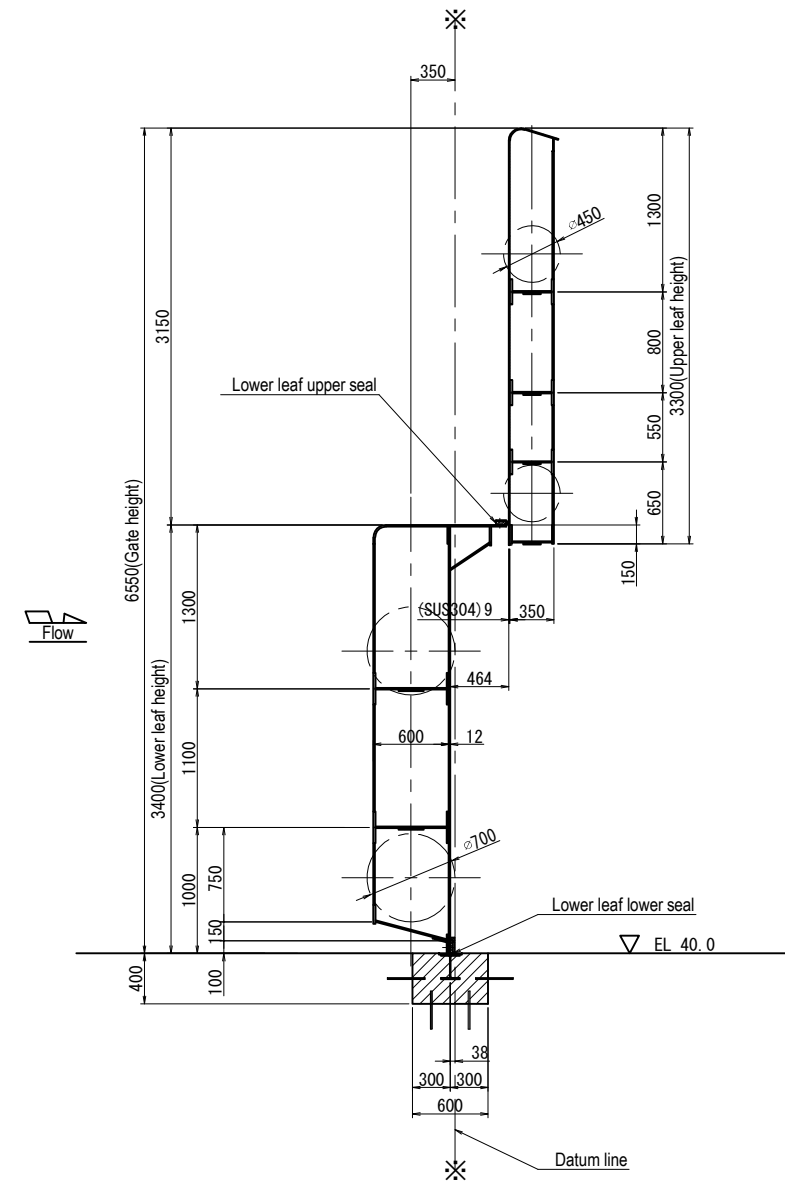
Note:
 *Materials shall be SM400 unless otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Bahr Yusef & Ibrahimia Regulator Gate guide assembling	DRW. NO MBI-3	
SANYU CONSULTANTS INC.		
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DATE:	DATE:	DATE:

Detail of side seal

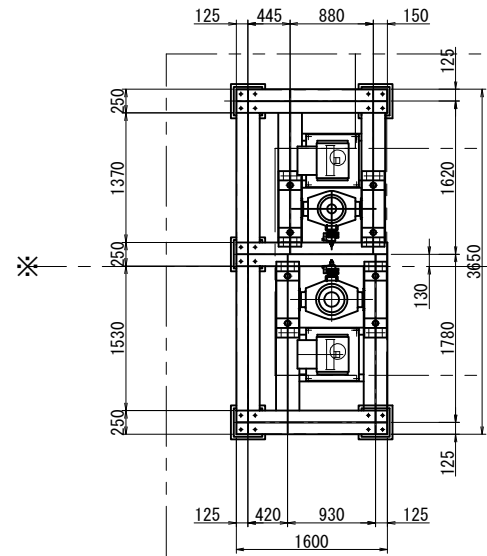


Detail of bottom seal

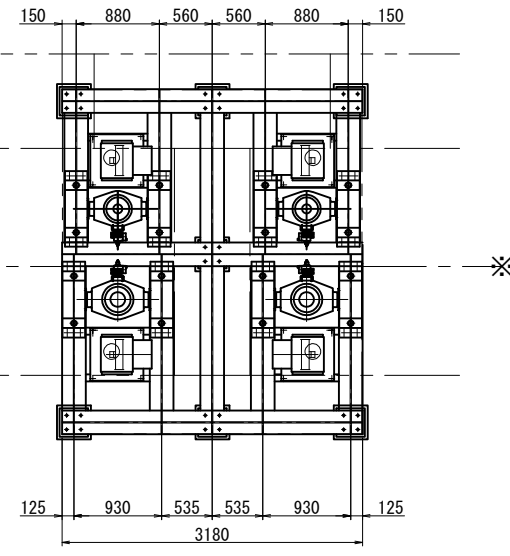


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Detail of seal			DRW. NO MBI-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

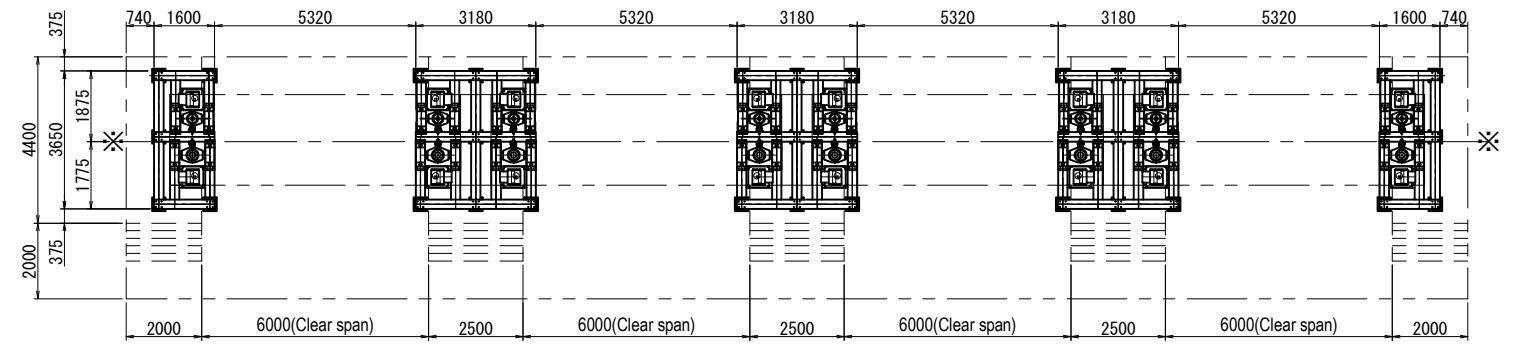
Plan of side Scale A



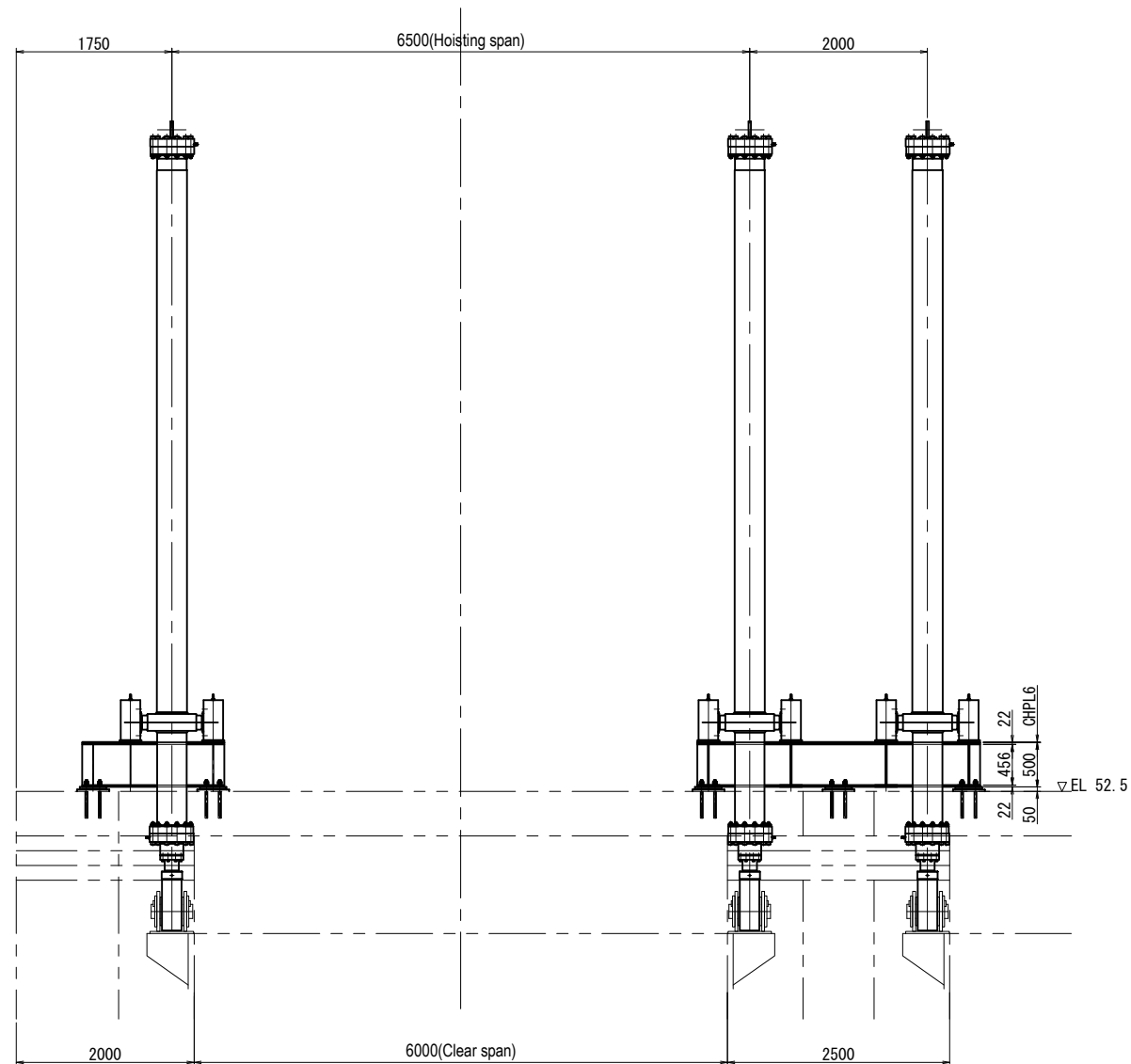
Plan of center Scale A



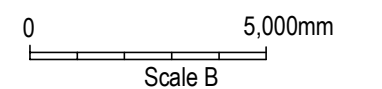
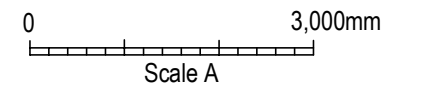
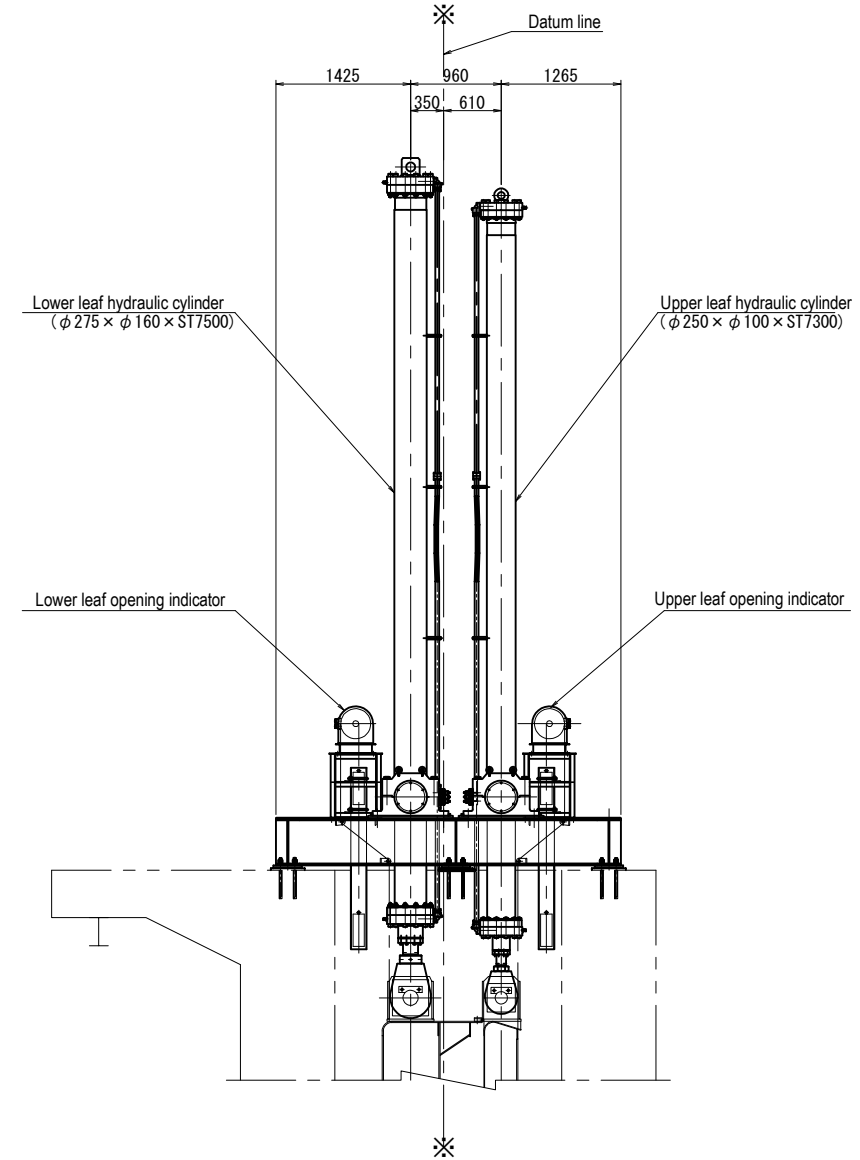
Key Plan Scale B



Front view Scale A

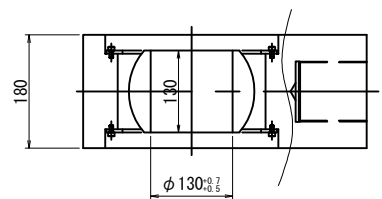
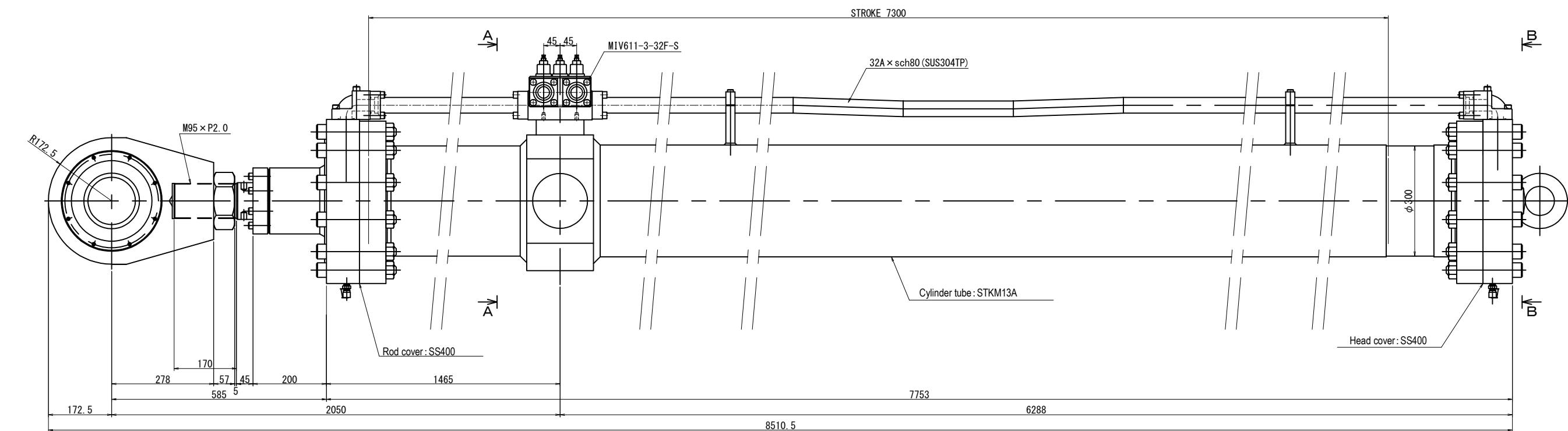


Side view Scale A

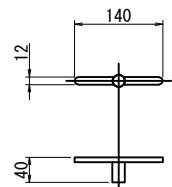


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Hoisting device assembling			DRW. NO MBI-5
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

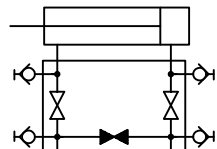
Outline of cylinder



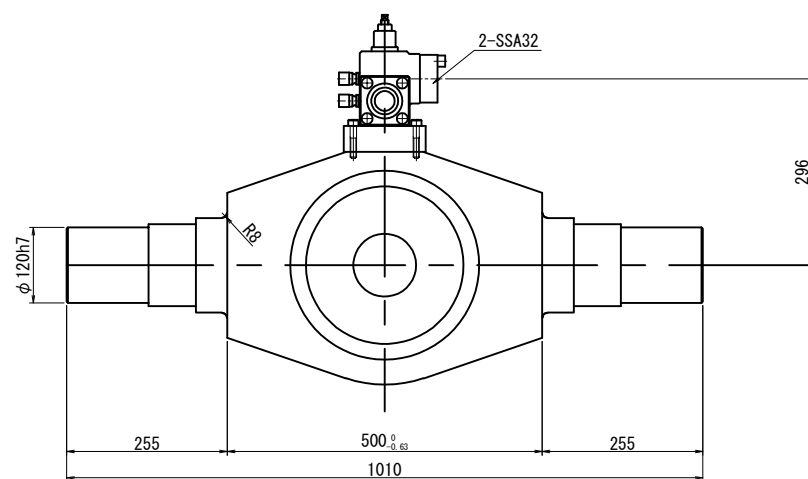
HANDLE (FOR STOP VALVE)



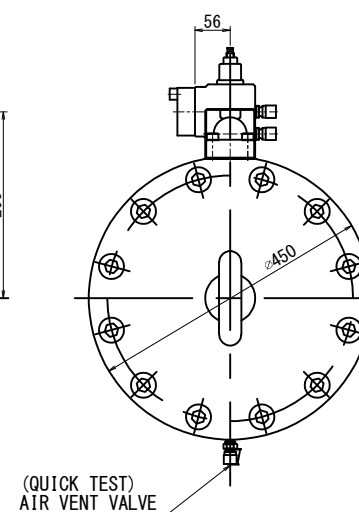
SIMBOL
NO SCALE



A - A



B - B



SPECIFICATION

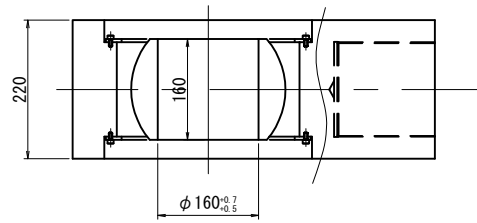
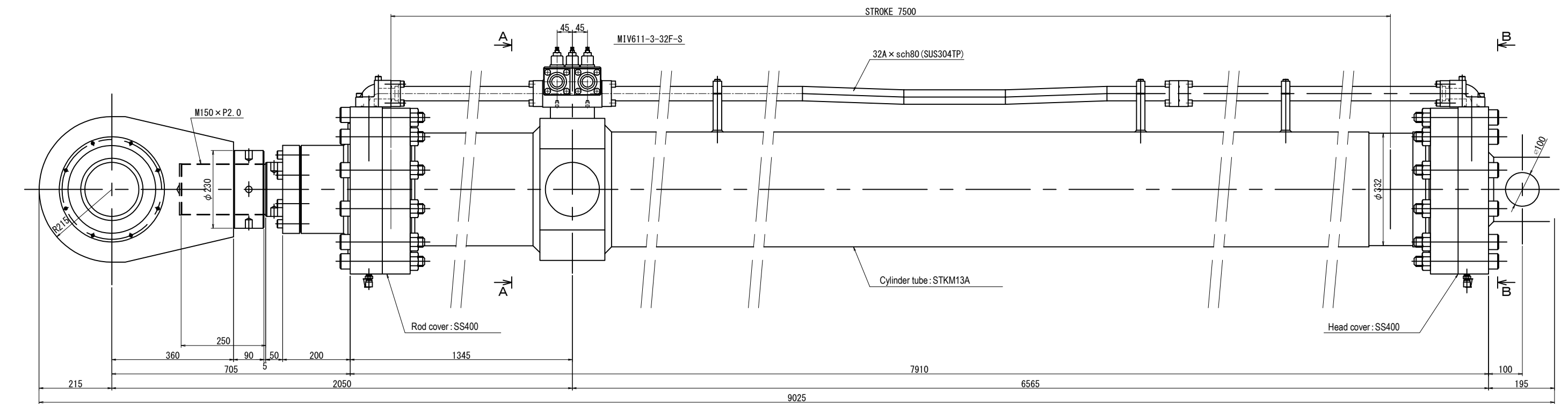
MAX. WORKING PRESSURE	14	MPa
PROOF PRESSURE	21	MPa
CYLINDER BORE	250	mm
ROD DIA	100	mm
STROKE	7300	mm
CUSHION	NON CUSHION	
HYDRAULIC OIL APPLIED	GENERAL-PURPOSE MINERAL HYDRAULIC OIL	
RANGE OF OPERATING TEMPERATURE	-10 °C ~ +80 °C	
LOAD	55	kN
MASS	ABOUT 2690	kg

NOTE

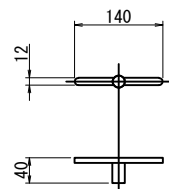
- The hydraulic cylinder should be equipped with a mechanism that the air inside the hydraulic cylinder is released to the cap side automatically at the upper position of the rod.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Upper leaf hydraulic cylinder			DRW. NO. MBI-7
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

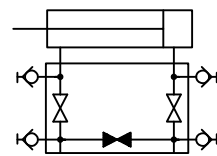
Outline of cylinder



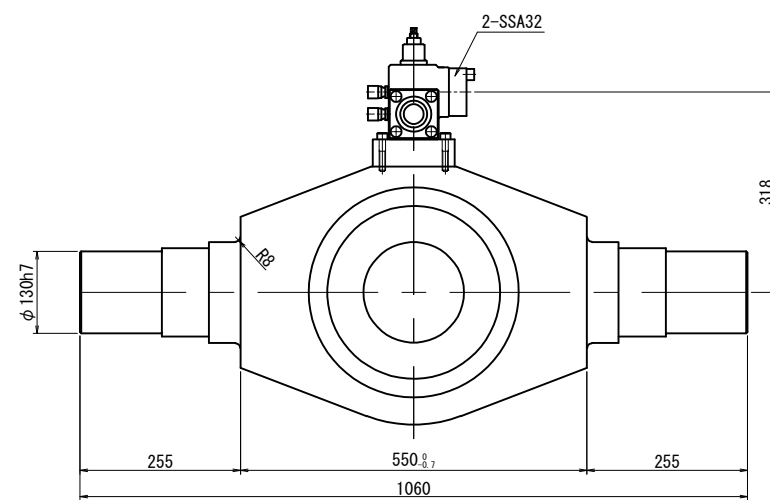
HANDLE (FOR STOP VALVE)



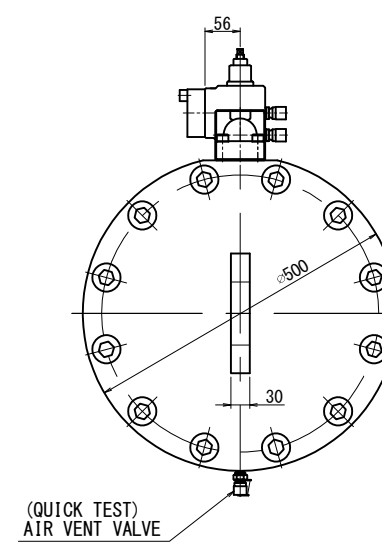
SIMBOL
NO SCALE



A - A



B - B



SPECIFICATION

MAX. WORKING PRESSURE	14	MPa
PROOF PRESSURE	21	MPa
CYLINDER BORE	275	mm
ROD DIA	160	mm
STROKE	7500	mm
CUSHION	NON CUSHION	
HYDRAULIC OIL APPLIED	GENERAL-PURPOSE MINERAL HYDRAULIC OIL	
RANGE OF OPERATING TEMPERATURE	-10 °C ~ +80 °C	
LOAD	250	kN
MASS	ABOUT 4220	kg

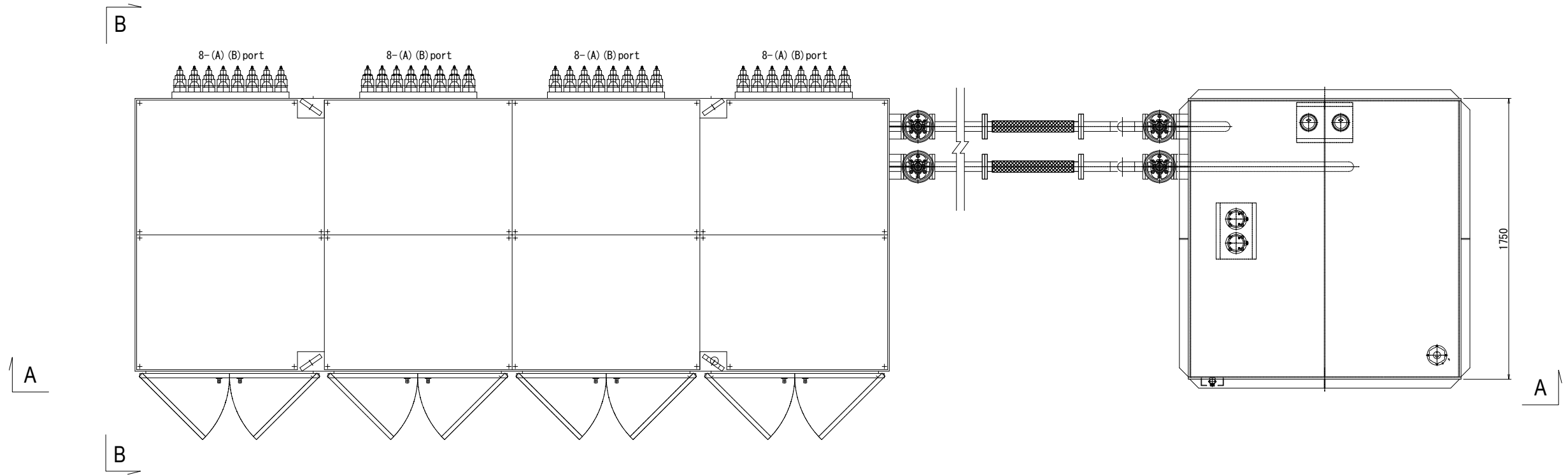
NOTE

- The hydraulic cylinder should be equipped with a mechanism that the air inside the hydraulic cylinder is released to the cap side automatically at the upper position of the rod.

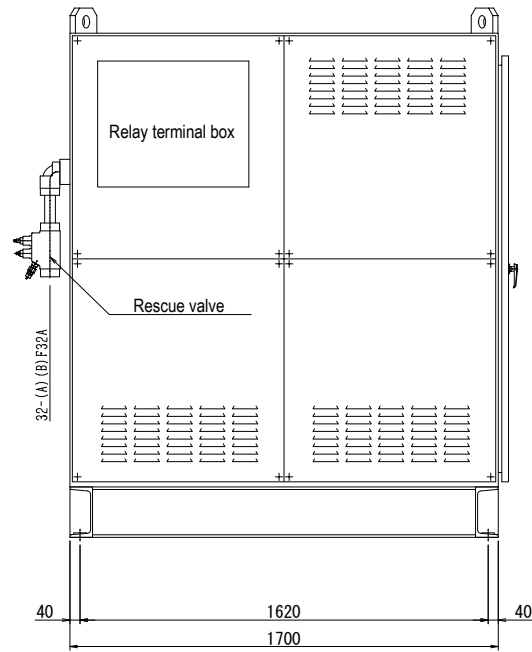


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Lower leaf hydraulic cylinder			DRW. NO. MBI-8
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

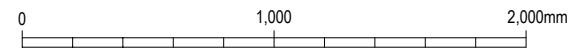
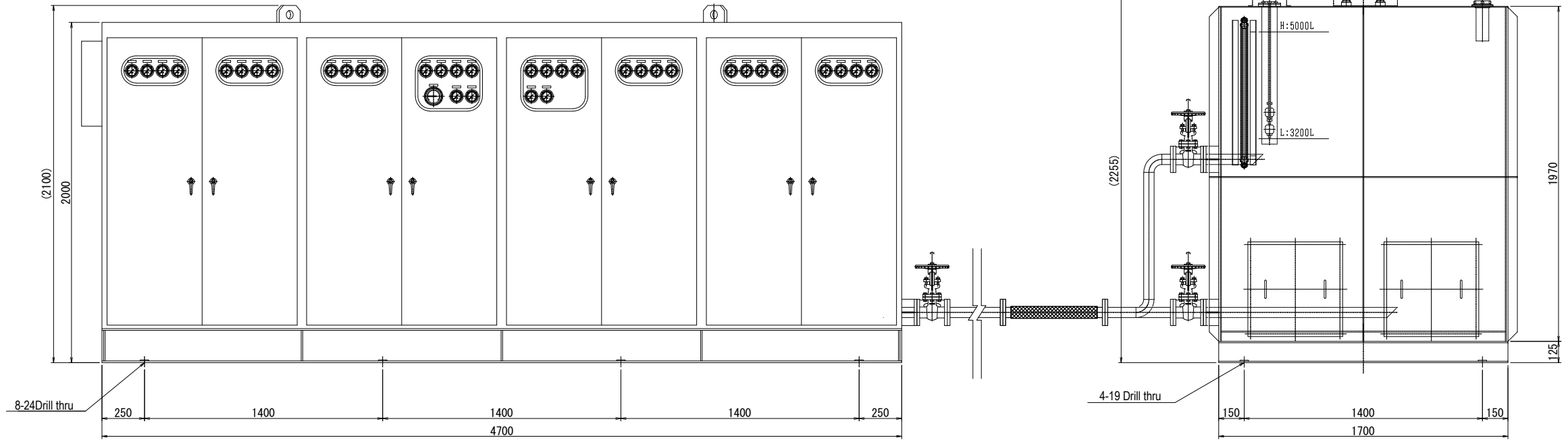
Plan



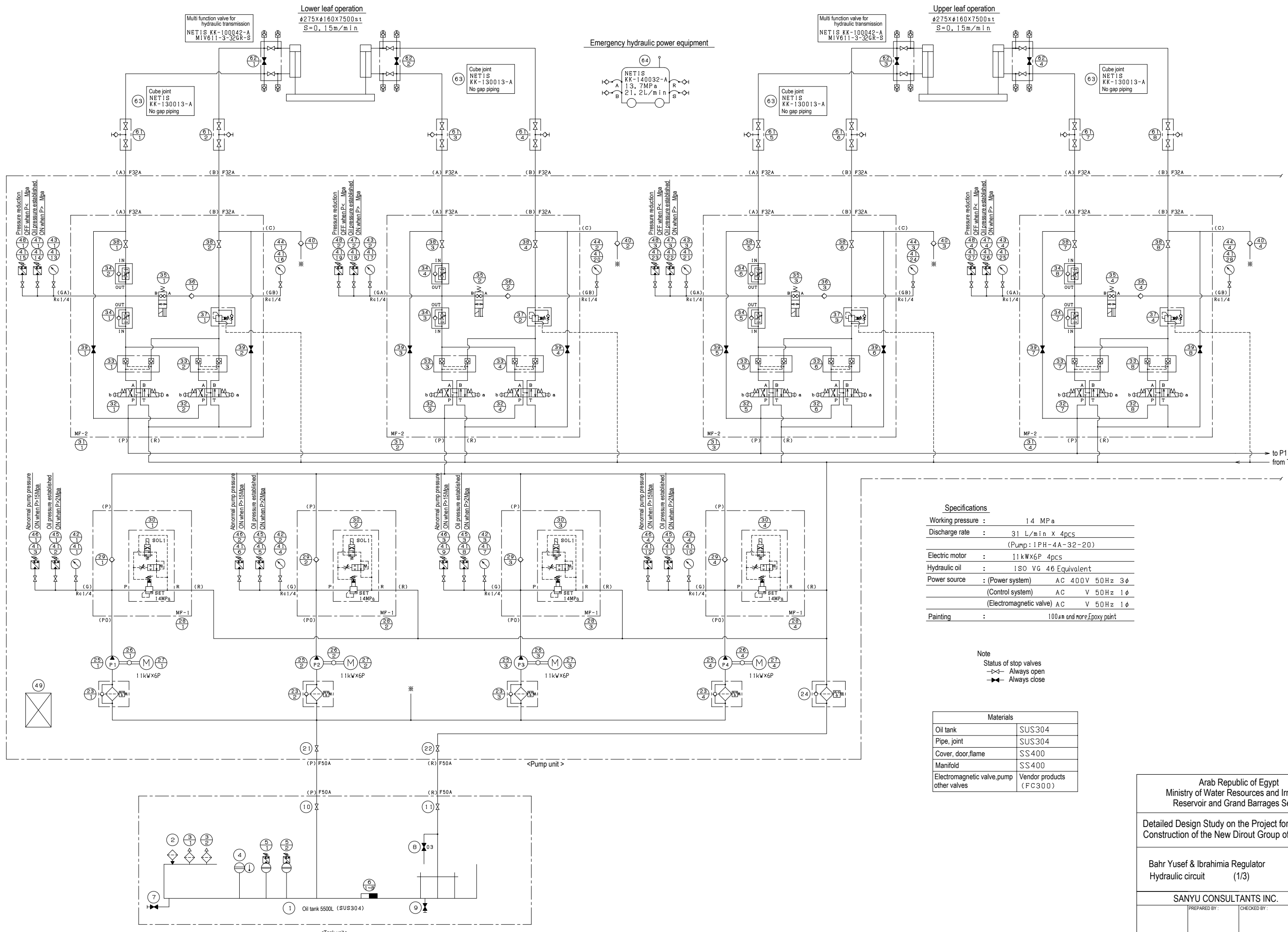
Side view (B-B section)



Front view (A-A section)



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Outline drawing of hydraulic unit			DRW. NO. MBI-9
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



Specifications

Working pressure :	14 MPa
Discharge rate :	31 L/min X 4pcs (Pump: 1PH-4A-32-20)
Electric motor :	11kWx6P 4pcs
Hydraulic oil :	ISO VG 46 Equivalent
Power source :	(Power system) AC 400V 50Hz 3φ (Control system) AC V 50Hz 1φ (Electromagnetic valve) AC V 50Hz 1φ
Painting :	100μm and more Epoxy paint

Note
 Status of stop valves
 —○— Always open
 —●— Always close

Materials

Oil tank	SUS304
Pipe, joint	SUS304
Cover, door, flame	SS400
Manifold	SS400
Electromagnetic valve, pump other valves	Vendor products (FC300)

Arab Republic of Egypt
 Ministry of Water Resources and Irrigation
 Reservoir and Grand Barrages Sector

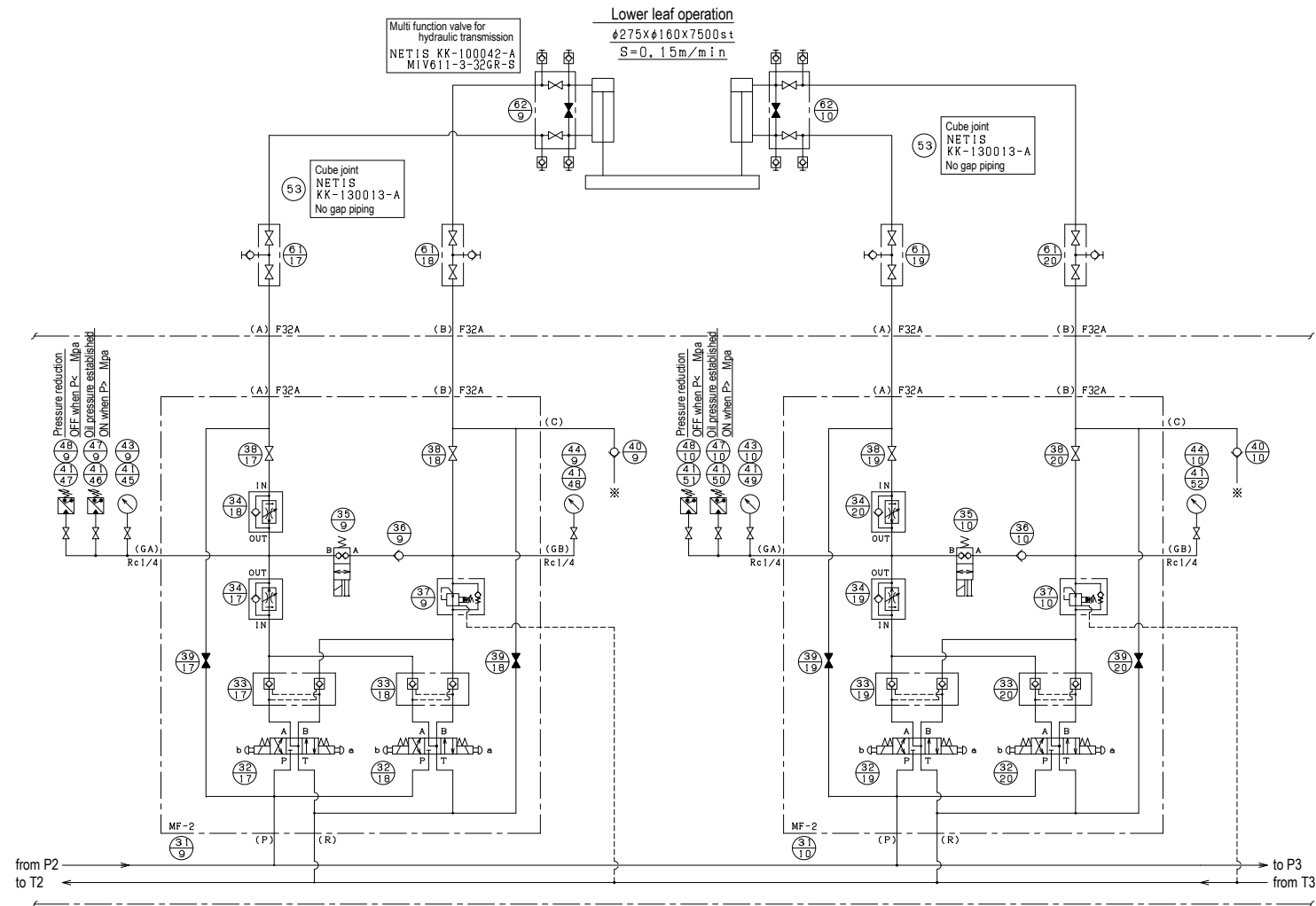
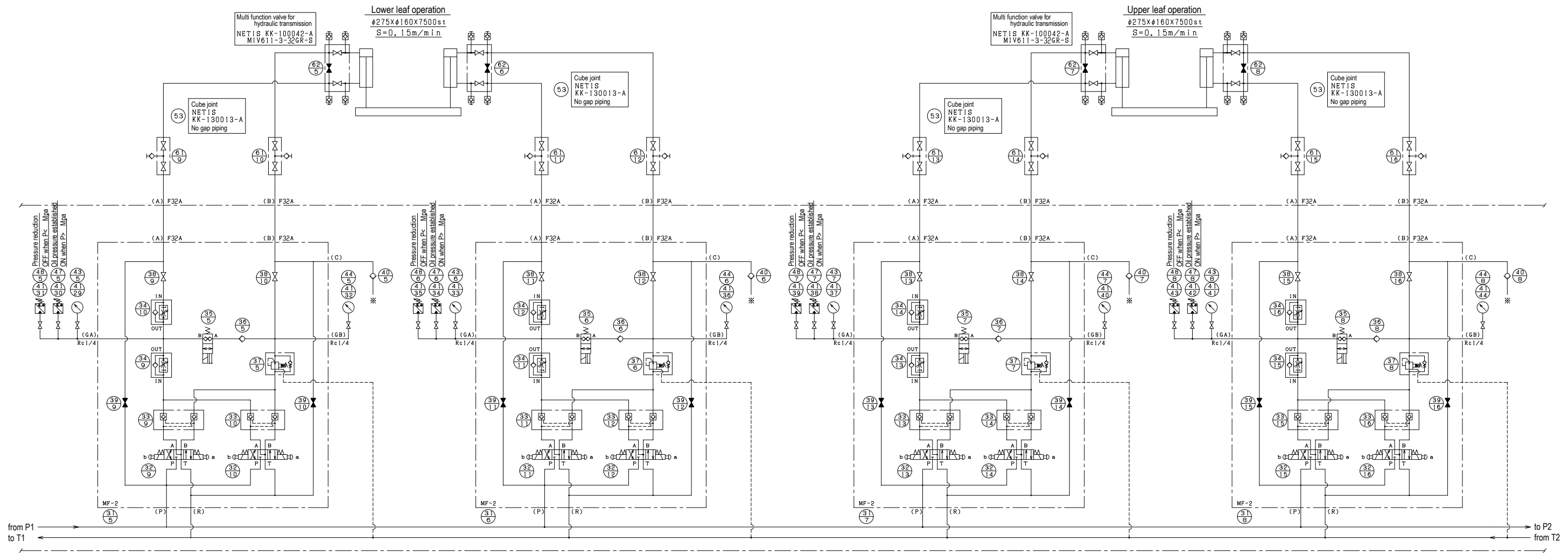
Detailed Design Study on the Project for
 Construction of the New Dirout Group of Regulators

Bahr Yusef & Ibrahimia Regulator
 Hydraulic circuit (1/3)

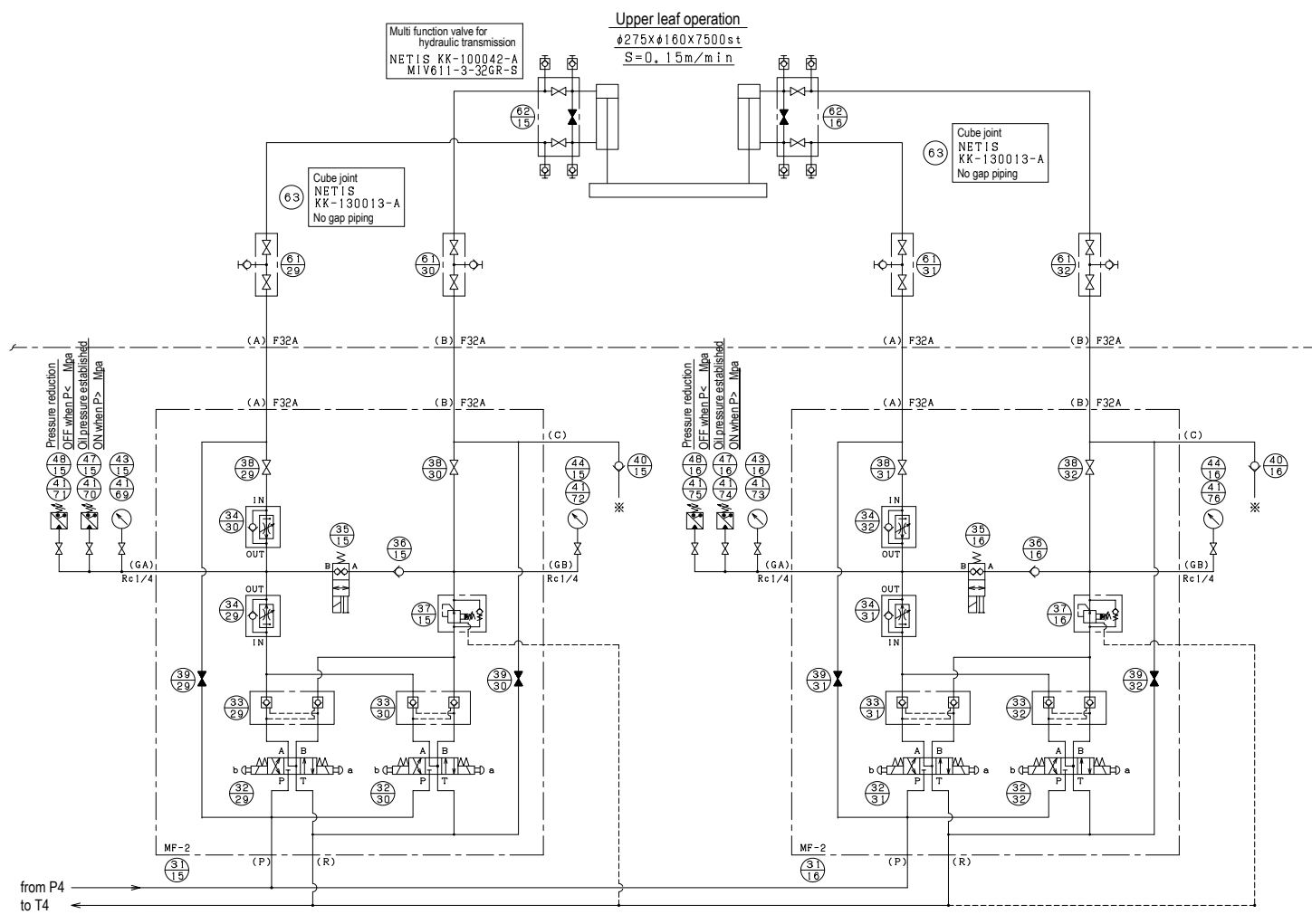
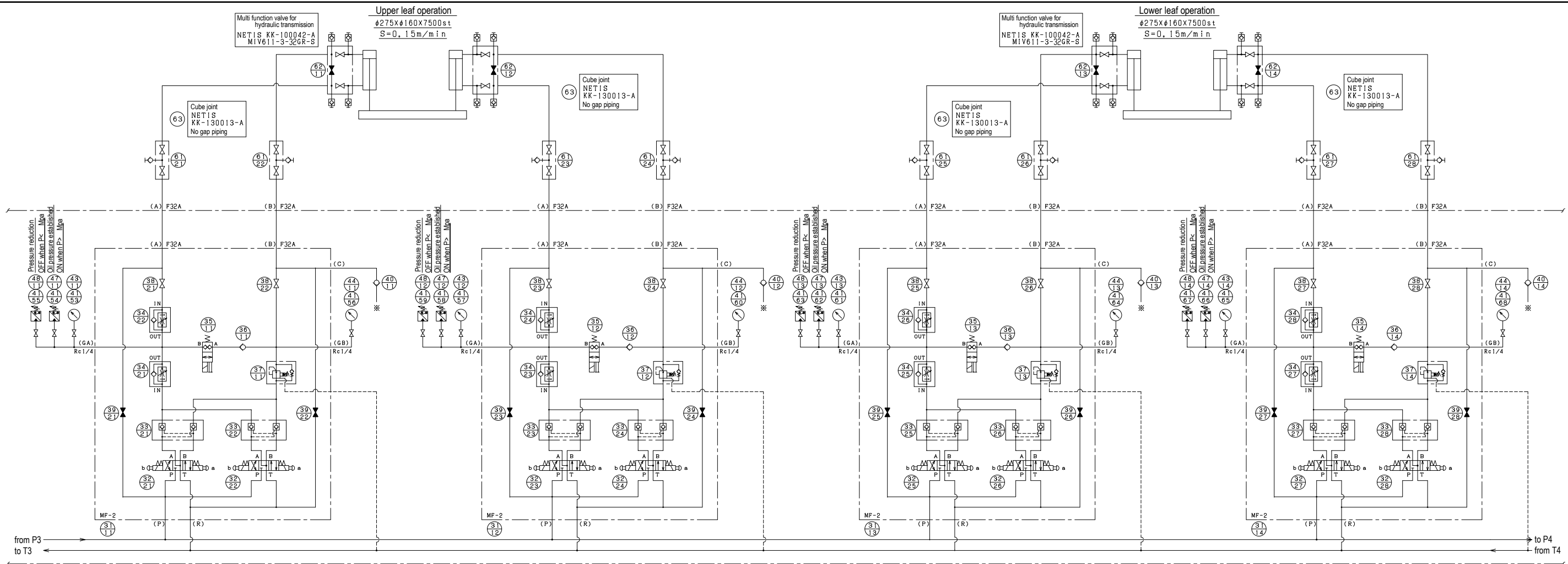
DRW. NO.
 MBI-10

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DATE :	DATE :	DATE :



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef & Ibrahimia Regulator Hydraulic circuit (2/3)			DRW. NO. MBI-11
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

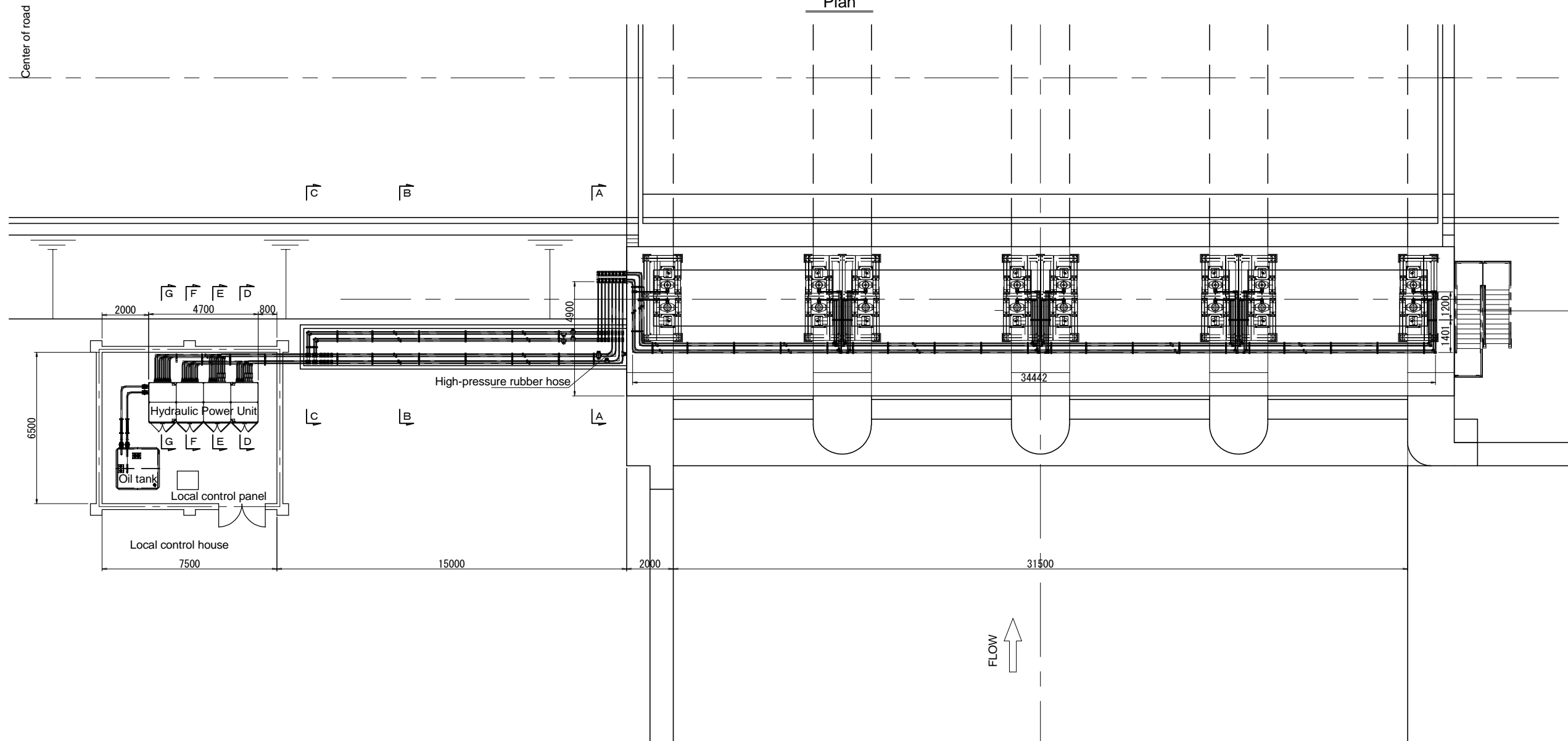


64	Emergency hydraulic power equipment	1		
63	Cube joint	1式		
62	Three-throw valve	16	MIV611 valve	
61	Rescue valve	32		
	<unit products>			
	Oil level gauge with thermometer			
49	Terminal box	1		
48	Pressure switch	16		
47	Pressure switch	16		
46	Pressure switch	4		
45	Pressure switch	4		
44	Pressure gauge	16		
43	Pressure gauge	16		
42	Pressure gauge	4		
41	Gauge valve	76		
40	In-line check valve	16		
39	Stop valve	32		
38	Stop valve	32		
37	Reducing valve	16		
36	Angle type check valve	16		
35	Solenoid operation stop valve	16		
34	Flow control valve	32		
33	Pilot check valve	32		
32	Solenoid valve	32		
31	Manifold	16		
No.	Item	Qty	Type/Model	Remarks

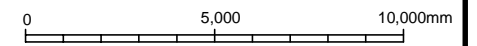
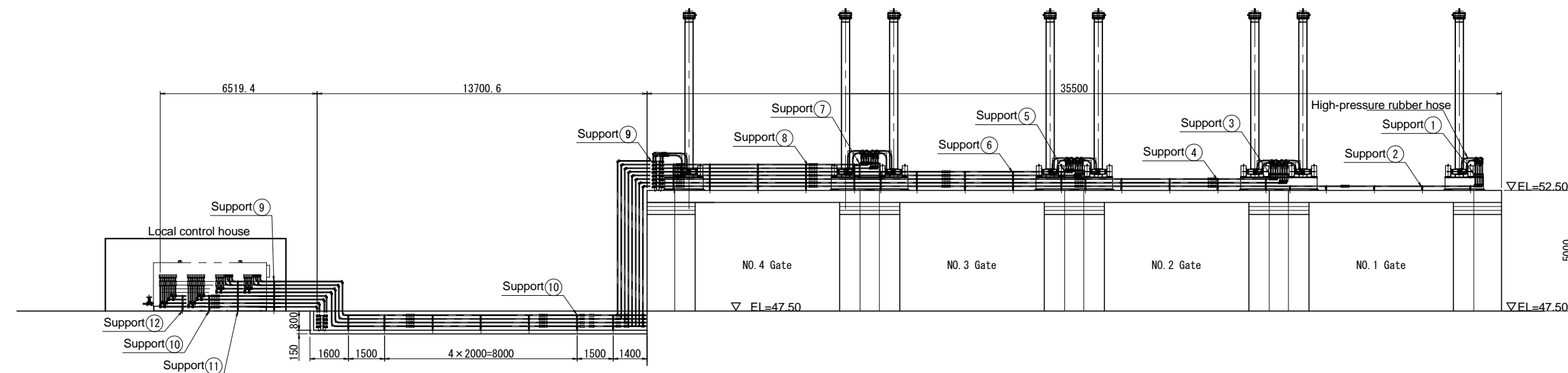
30	Relief valve with electromagnetic valve	4		
29	Angle type check valve	4		
28	Manifold	4		
27	Electric motor	4	11 kWx6P (AC400V 50Hz)	
26	Coupling	4		
25	Gear pump	4	IPH-4A-32-20	
24	Return filter	1		
23	Suction filter	4		
22	Sluice valve	1		
21	Sluice valve	1		
	<Pump unit>			
11	Sluice valve	1		
10	Sluice valve	1		
9	Glove valve	1		
8	Glove valve	1		
7	Glove valve	1		
6	Magnet separator	8		
5	Fluid level switch	2		
4	Oil level gauge with thermometer	1		
3	Air breather	2		
2	Oil hole	1		
1	Oil tank	1	5500L (SUS304)	
	<Tank unit>			
No.	Item	Qty	Type/Model	Remarks

Hydraulic pipe arrangement of Bahr Yusef Regulator (1/2)

Plan

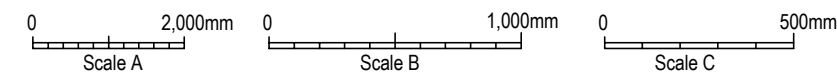
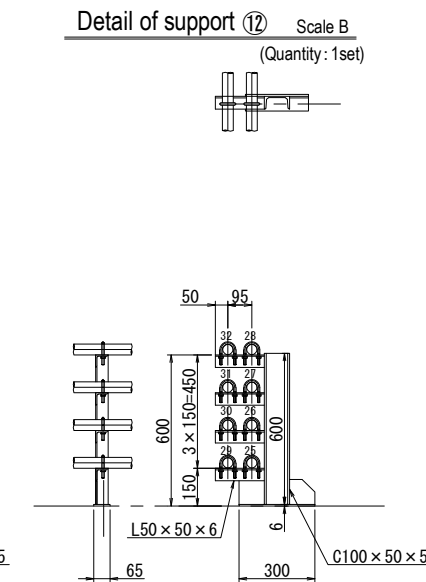
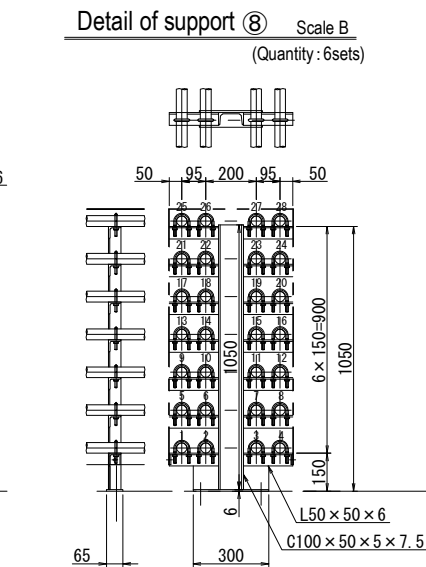
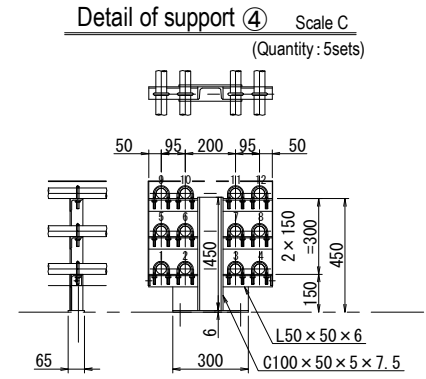
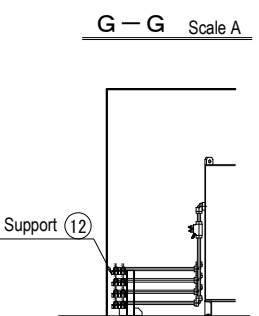
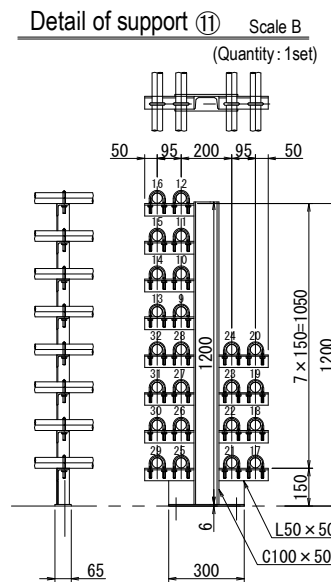
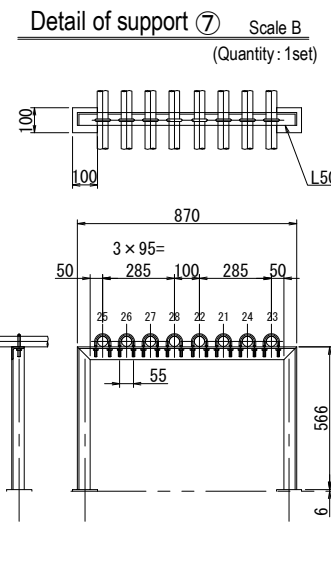
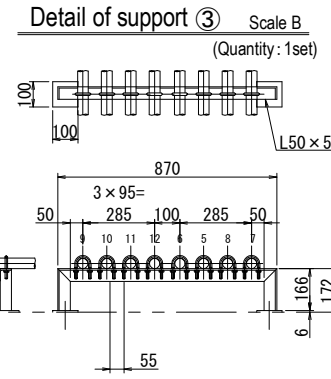
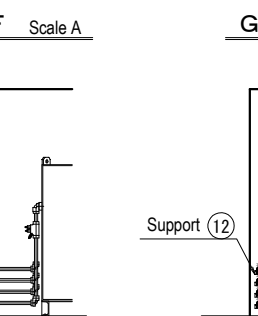
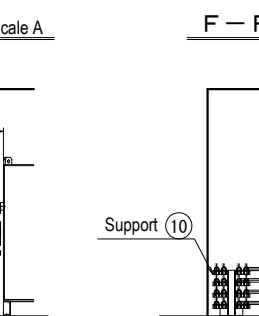
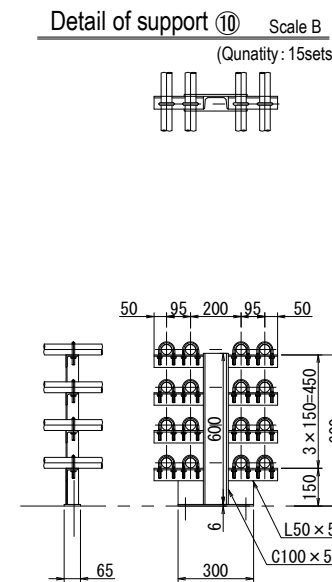
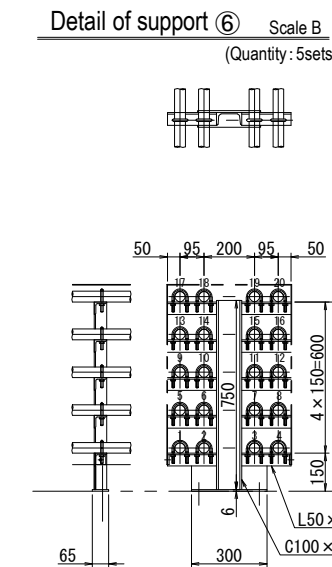
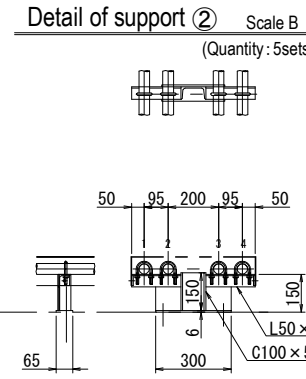
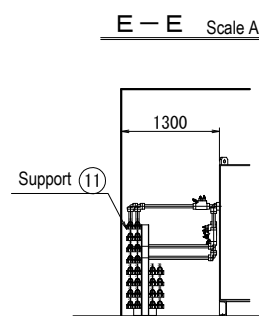
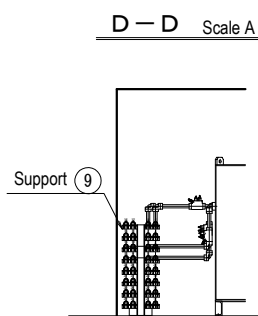
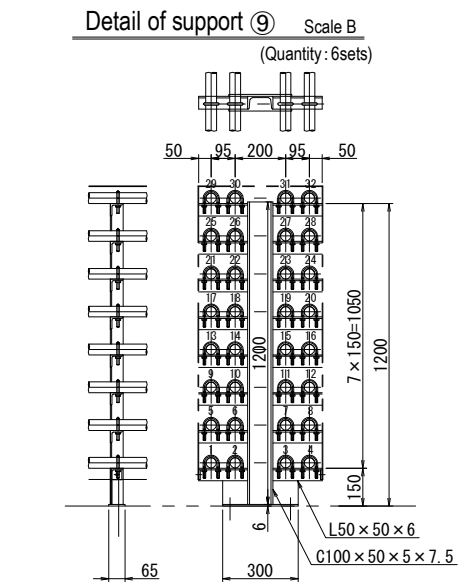
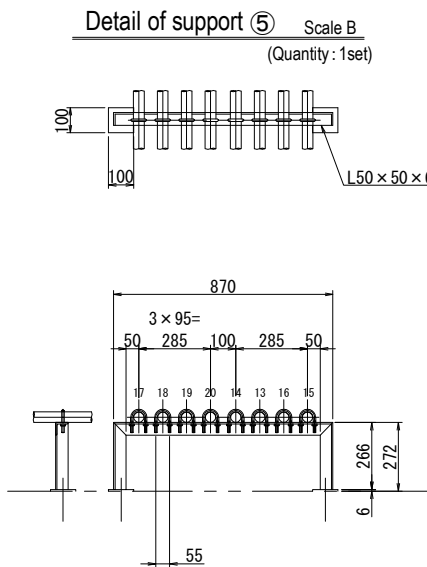
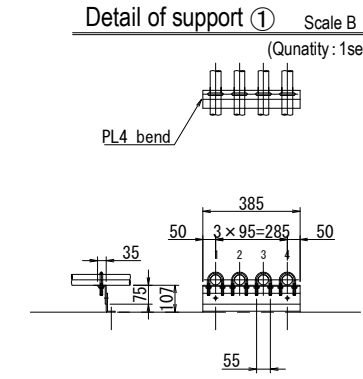
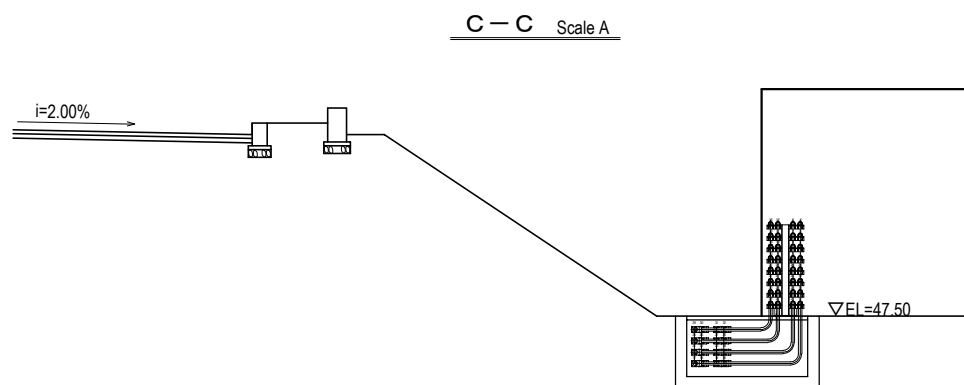
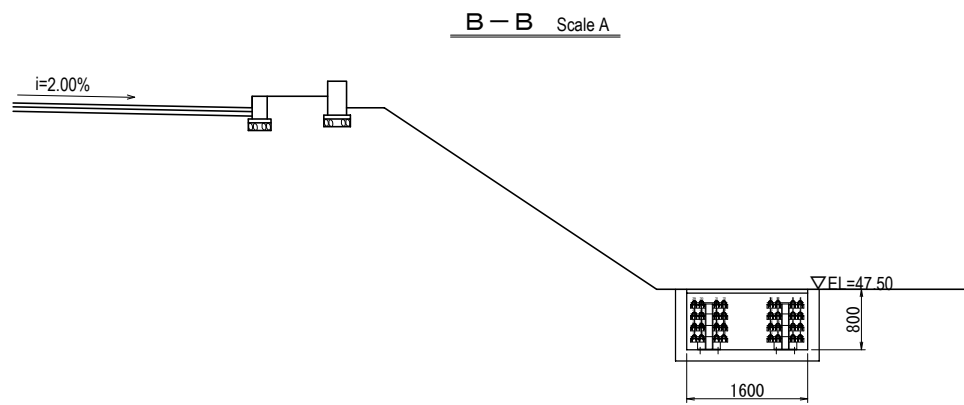
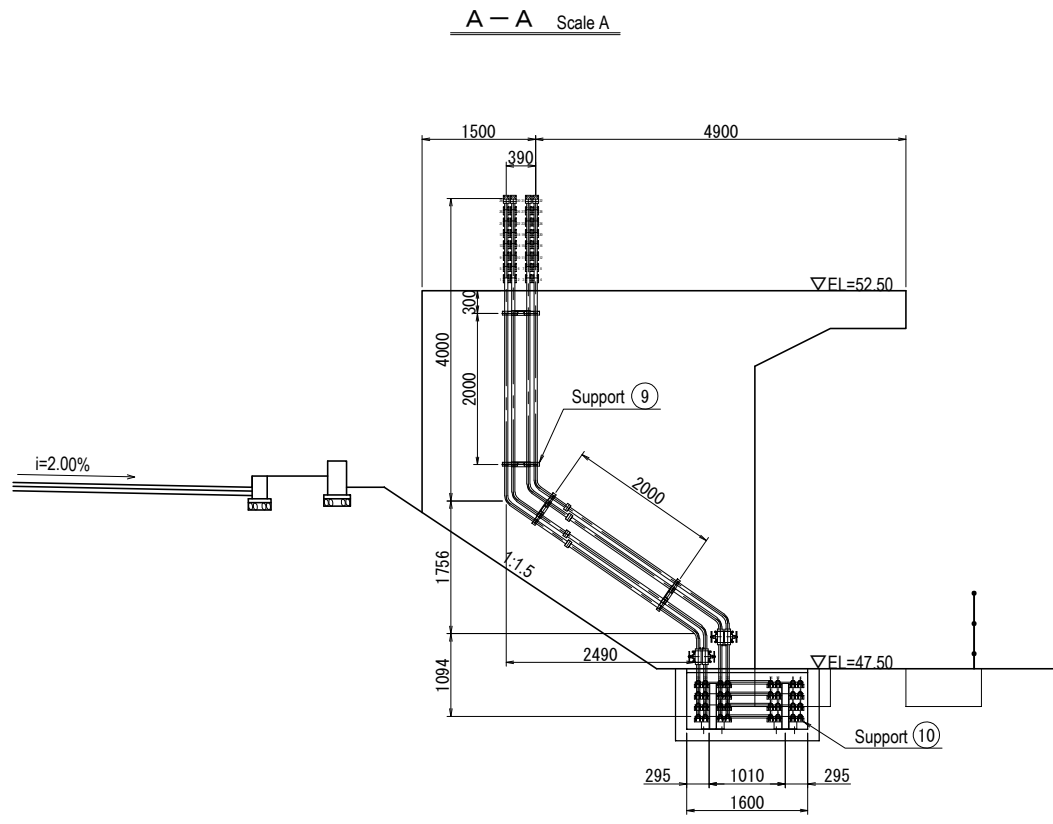


Front view



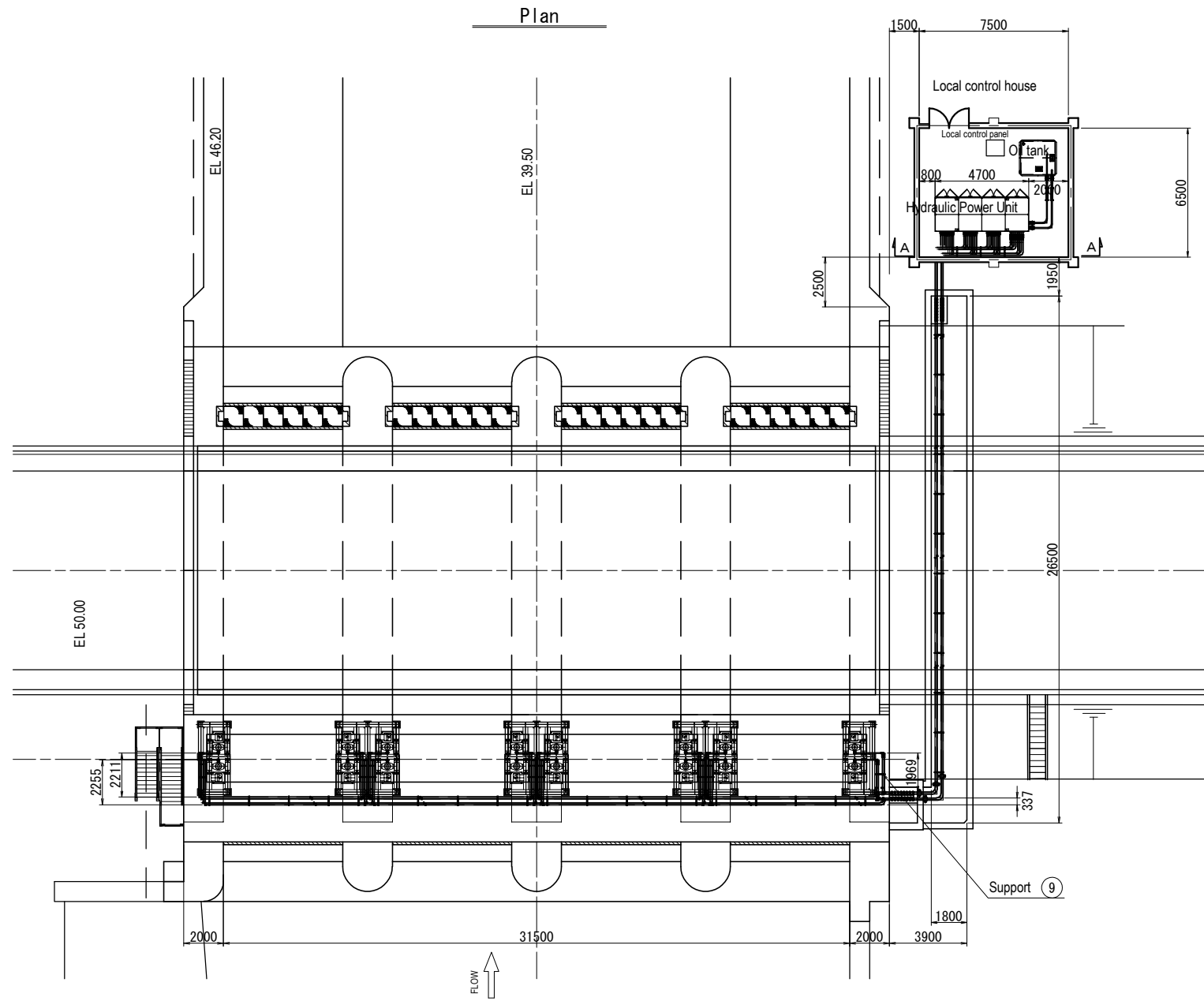
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef Regulator Hydraulic pipe arrangement (1/2)			DRW. NO. MBI-13
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Hydraulic pipe arrangement of Bahr Yusef Regulator (2/2)

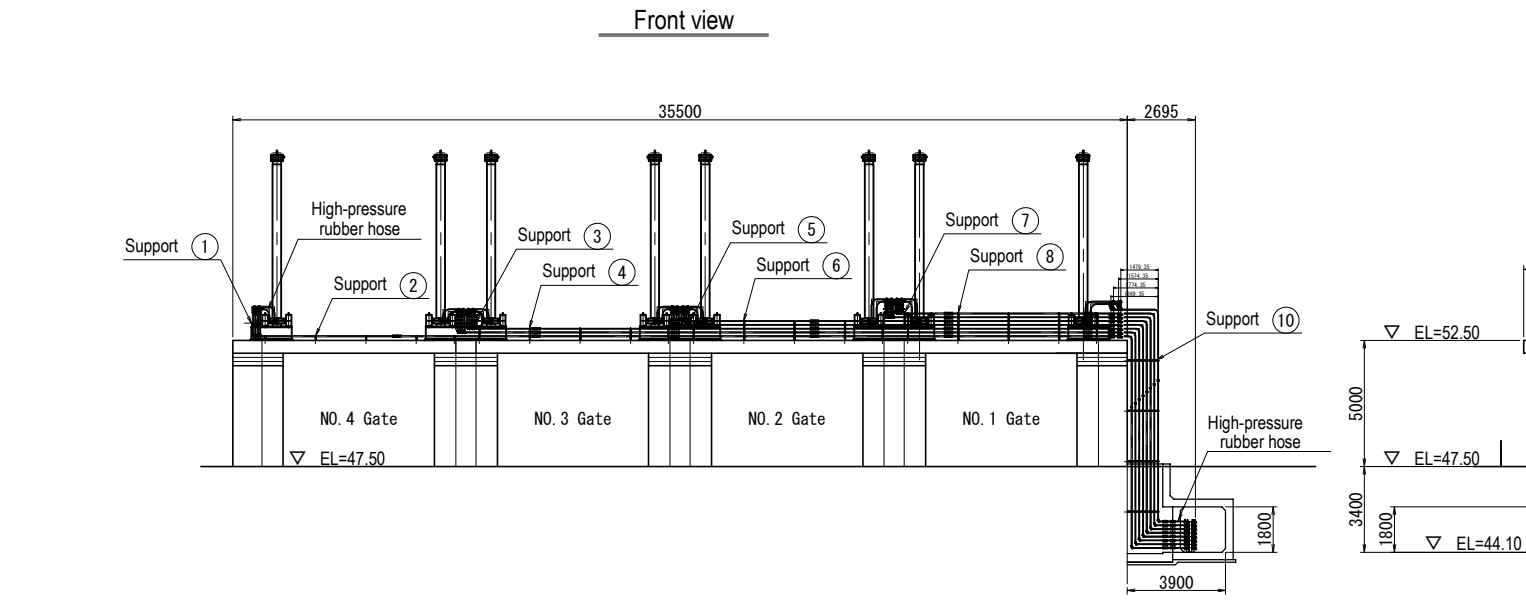


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Bahr Yusef Regulator Hydraulic pipe arrangement (2/2)			DRW. NO MBI-14
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

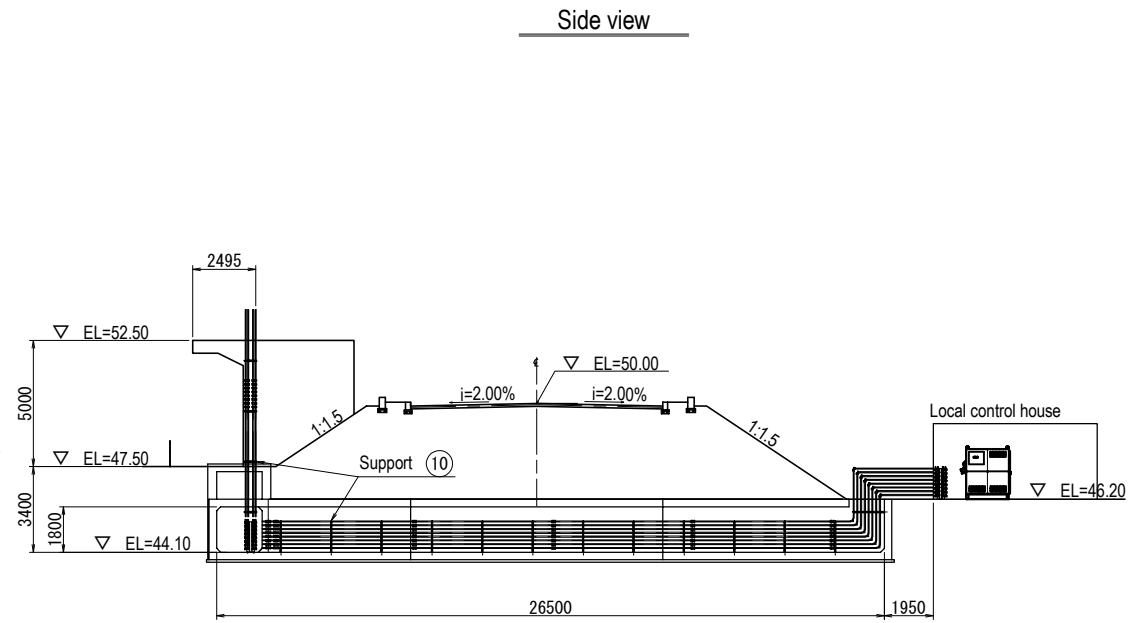
Hydraulic pipe arrangement of Ibrahimia Regulator (1/2)



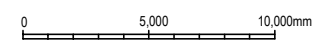
Plan



Front view

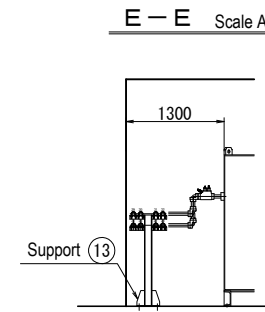
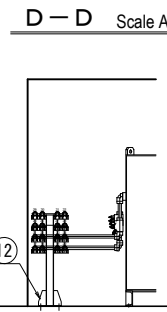
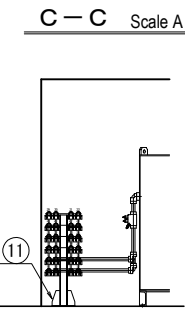
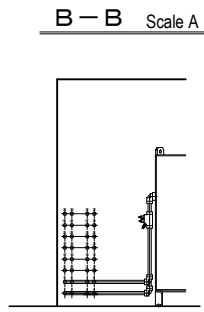
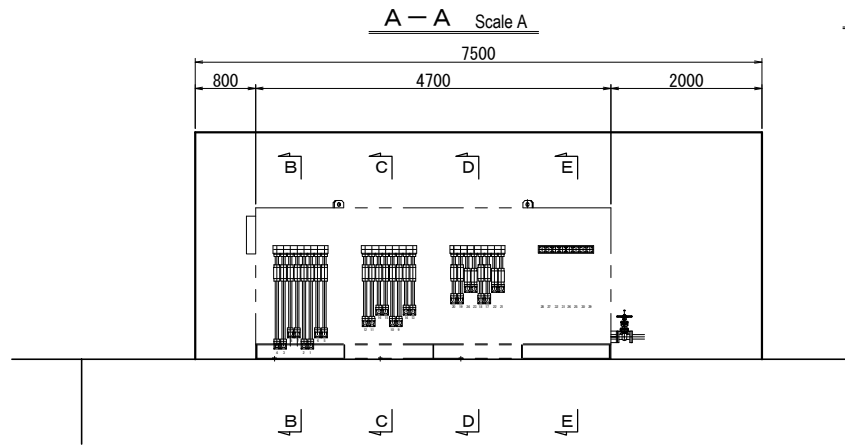


Side view

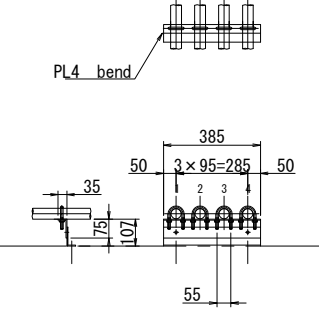


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Ibrahimia Regulator Hydraulic pipe arrangement (1/2)			DRW. NO MBI-15
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

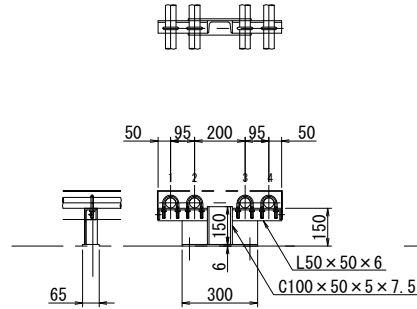
Hydraulic pipe arrangement of Ibrahimia Regulator (2/2)



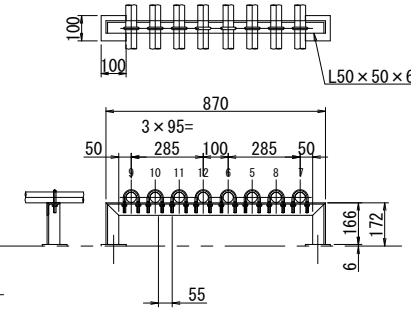
Detail of support ① Scale B
(Quantity: 1set)



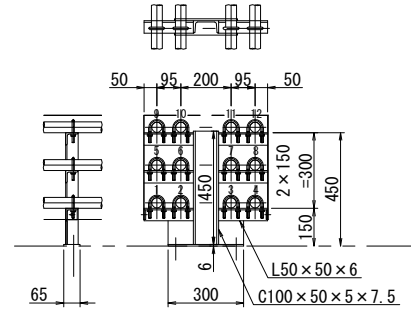
Detail of support ② Scale B
(Quantity: 5sets)



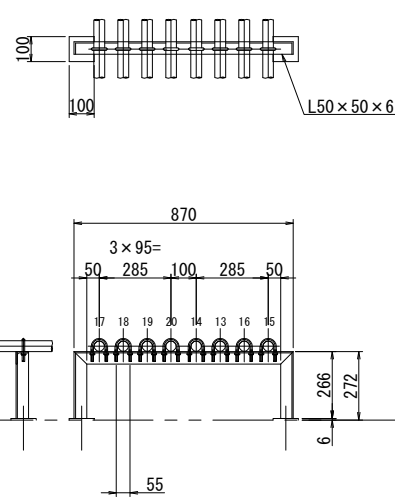
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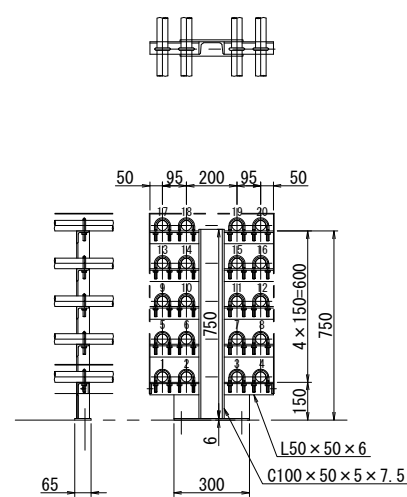
Detail of support ④ Scale C
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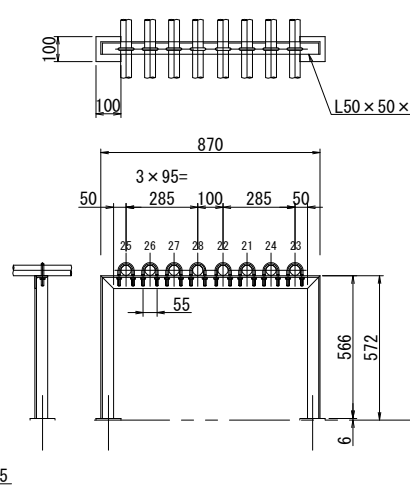
Detail of support ⑤ Scale B
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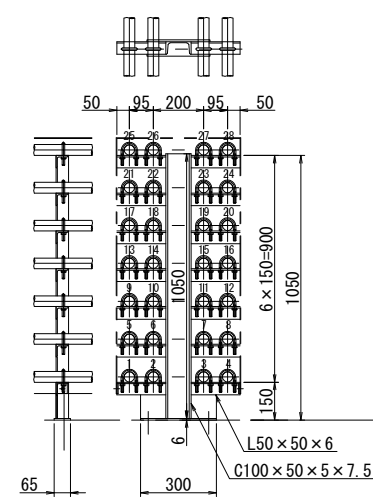
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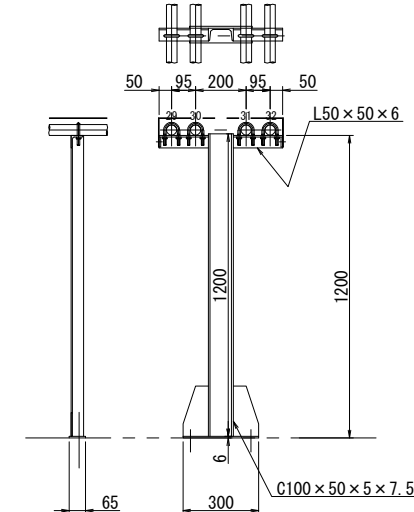
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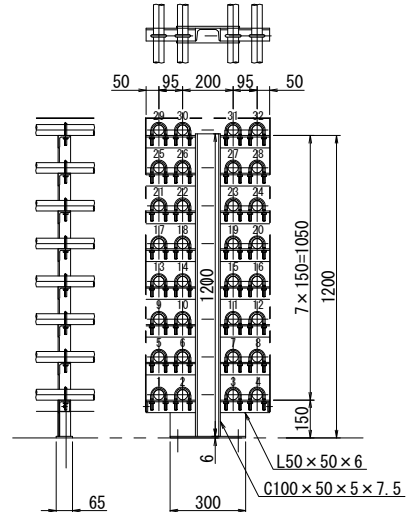
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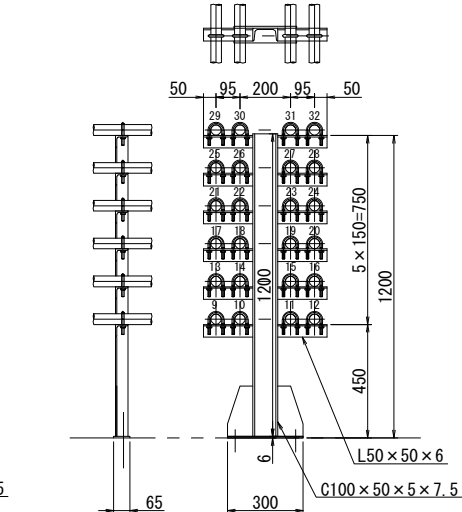
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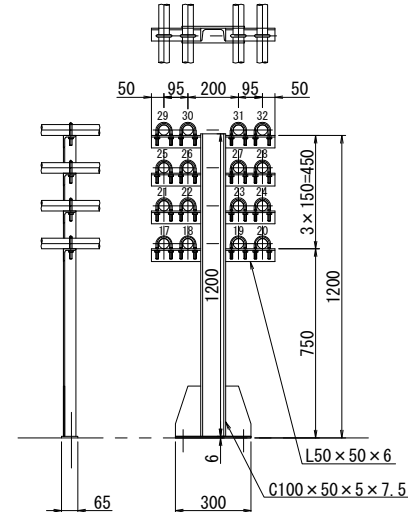
Detail of support ⑩ Scale B
(Quantity: 17sets)



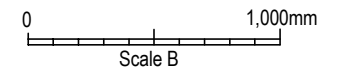
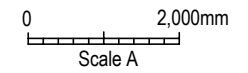
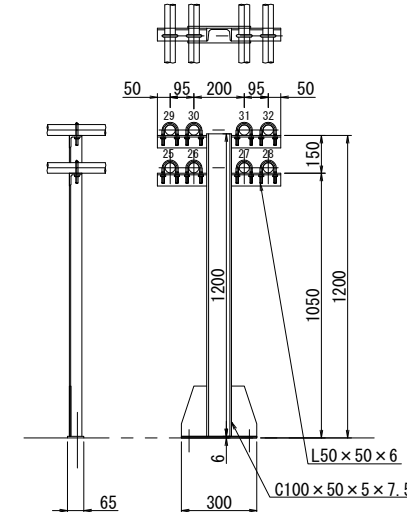
Detail of support ⑪ Scale B
(Quantity: 1set)



Detail of support ⑫ Scale B
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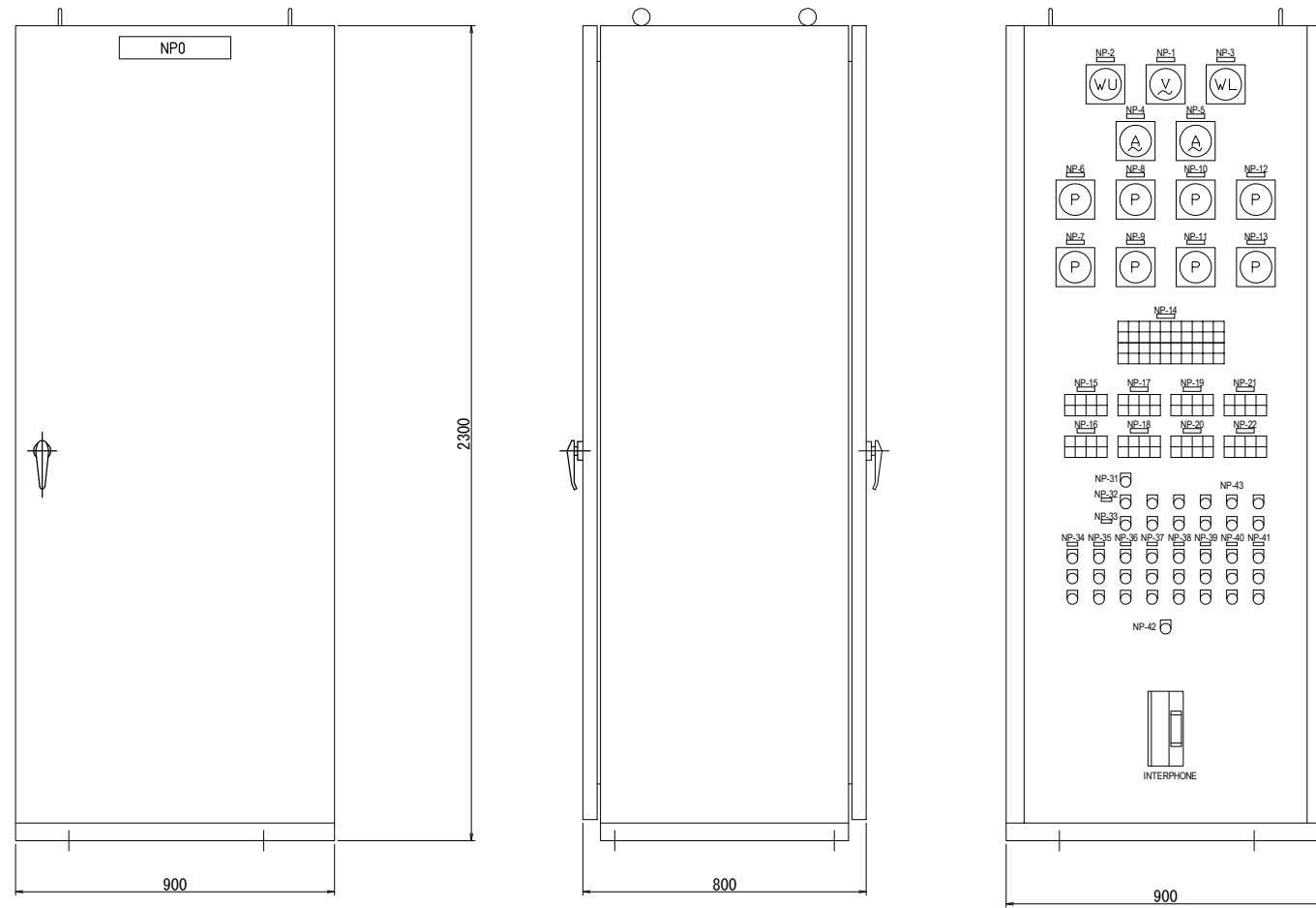


Detail of support ⑬ Scale B
(Quantity: 1set)



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulator			
Ibrahimia Regulator Hydraulic pipe arrangement (2/2)			DRW. NO MBI-16
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Local Control Panel



Name	Mark	Letter
NP-0		LOCAL CONTROL PANEL
NP-1	V	POWER SOURCE VOLTAGE
NP-2	WU	UPPER SIDE WATER LEVEL
NP-3	WL	LOWER SIDE WATER LEVEL
NP-4	A	UPPER GATE PUMP CURRENT
NP-5	A	LOWER GATE PUMP CURRENT
NP-6	P	No.1 UPPER GATE POSITION
NP-7	P	No.1 LOWER GATE POSITION
NP-8	P	No.2 UPPER GATE POSITION
NP-9	P	No.2 LOWER GATE POSITION
NP-10	P	No.3 UPPER GATE POSITION
NP-11	P	No.3 LOWER GATE POSITION
NP-12	P	No.4 UPPER GATE POSITION
NP-13	P	No.4 LOWER GATE POSITION
NP-14	SL1	GATE STATUS INDICATION
NP-15	SL2	No.1 UPPER GATE STATUS INDICATION
NP-16	SL2	No.1 LOWER GATE STATUS INDICATION
NP-17	SL2	No.2 UPPER GATE STATUS INDICATION
NP-18	SL2	No.2 LOWER GATE STATUS INDICATION
NP-19	SL2	No.3 UPPER GATE STATUS INDICATION
NP-20	SL2	No.3 LOWER GATE STATUS INDICATION
NP-21	SL2	No.4 UPPER GATE STATUS INDICATION
NP-22	SL2	No.4 LOWER GATE STATUS INDICATION

Name	Mark	Letter
NP-31	SW	MANUAL-AUTO
NP-32	SW	UPPER GATE PUMP MAIN-STANDBY
	PB	UPPER GATE PUMP START-STOP
NP-33	SW	LOWER GATE PUMP MAIN-STANDBY
	PB	LOWER GATE PUMP START-STOP
NP-34	PB	No.1 UPPER GATE OPEN-STOP-CLOSE
NP-35	PB	No.1 LOWER GATE OPEN-STOP-CLOSE
NP-36	PB	No.2 UPPER GATE OPEN-STOP-CLOSE
NP-37	PB	No.2 LOWER GATE OPEN-STOP-CLOSE
NP-38	PB	No.3 UPPER GATE OPEN-STOP-CLOSE
NP-39	PB	No.3 LOWER GATE OPEN-STOP-CLOSE
NP-40	PB	No.4 UPPER GATE OPEN-STOP-CLOSE
NP-41	PB	No.4 LOWER GATE OPEN-STOP-CLOSE
NP-42	PB	EMERGENCY STOP
	PB	LAMP TEST
	PB	BUZZER STOP
NP-43	PB	BUZZER STOP
	PB	BUZZER RESET

SL:STATUS INDICATING LAMP
PB:PUSH BUTTON SW:SWITCH

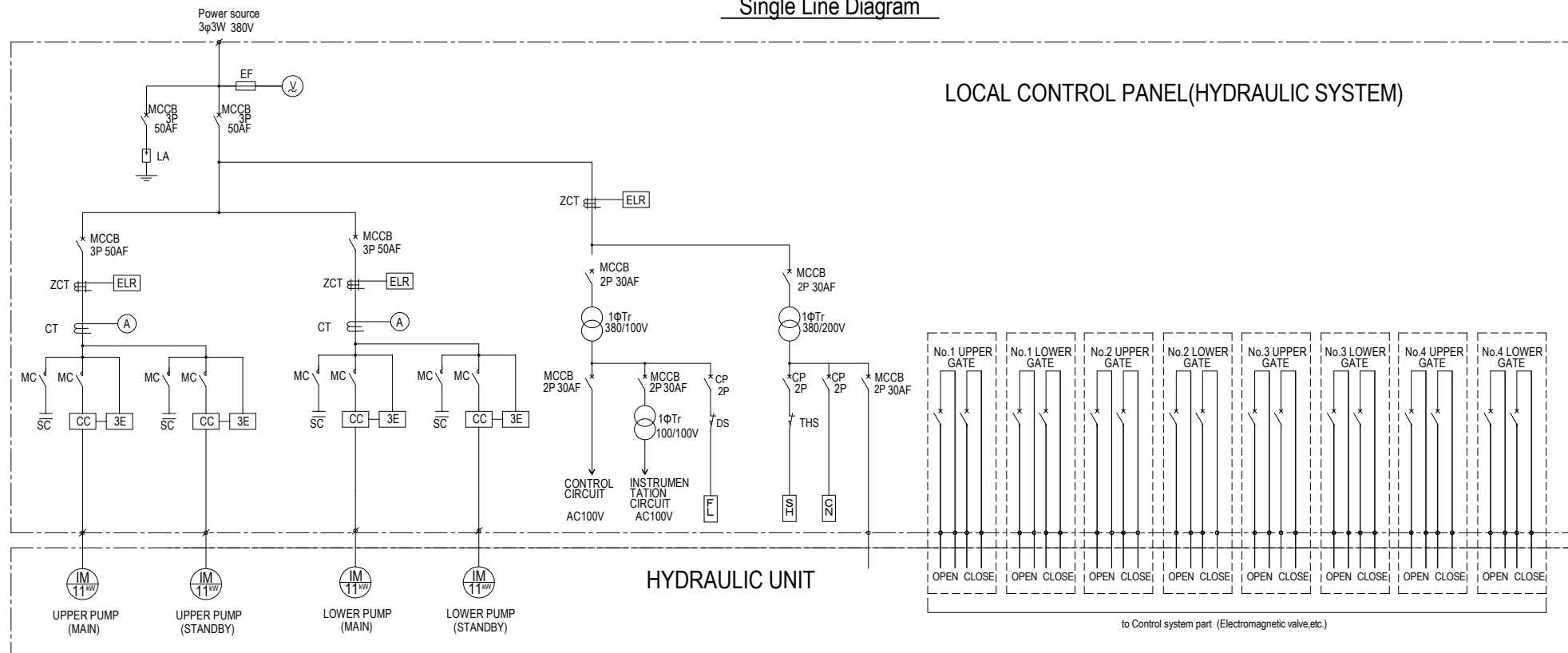
NP-15 ~ NP-22

↑	EMERGENCY UPPER POSITION	UPPER POSITION (FULL OPEN)	
↓		LOWER POSITION (CLOSED)	

NP-14

POWER SOURCE	LOCAL	AUTO	UPPER PUMP MAIN	UPPER PUMP STANDBY	UPPER MAIN PUMP ON	UPPER STANDBY PUMP ON	UPPER OIL PRESSURE ESTABLISHED	
	REMOTE	MANUAL	LOWER PUMP MAIN	LOWER PUMP STANDBY	LOWER MAIN PUMP ON	LOWER STANDBY PUMP ON	LOWER OIL PRESSURE ESTABLISHED	
POWER SOURCE EARTH LEAKAGED	UPPER PUMP 3E MOTION	UPPER PUMP MCCB TRIP	UPPER PUMP CONTACT WELDING	UPPER OIL PRESSURE OVER	UPPER OIL TEMP. OVER	OIL LEVEL DRAWDOWN		
CONTROL POWER EARTH LEAKAGED	LOWER PUMP 3E MOTION	LOWER PUMP MCCB TRIP	LOWER PUMP CONTACT WELDING	LOWER OIL PRESSURE OVER	LOWER OIL TEMP. OVER			EMERGENCY STOP

Single Line Diagram



SYMBOL LEGEND

Mark	Name
MCCB	Molded Case Circuit Breaker
CP	Circuit Protector
ELR	Earth Leakage Relay
ZCT	Zero-phase-sequence Current Transformer
MC	Electromagnetic Contactor
LA	Lightning Arrester
SC	Static Condenser
Tr	Transformer
V	Voltmeter
A	Ammeter
EF	Enclosed Fuse
DS	Disconnecting Switch
THS	Thermoswitch
FL	Fluorescent Lamp
SH	Space Heater
CN	Socket Outlet



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Bahr Yusef & Ibrahimia Regulator
Local control panel and single line diagram

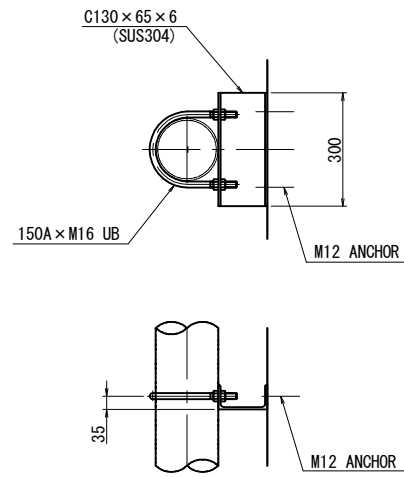
DRW. NO
MBI-17

SANYU CONSULTANTS INC.

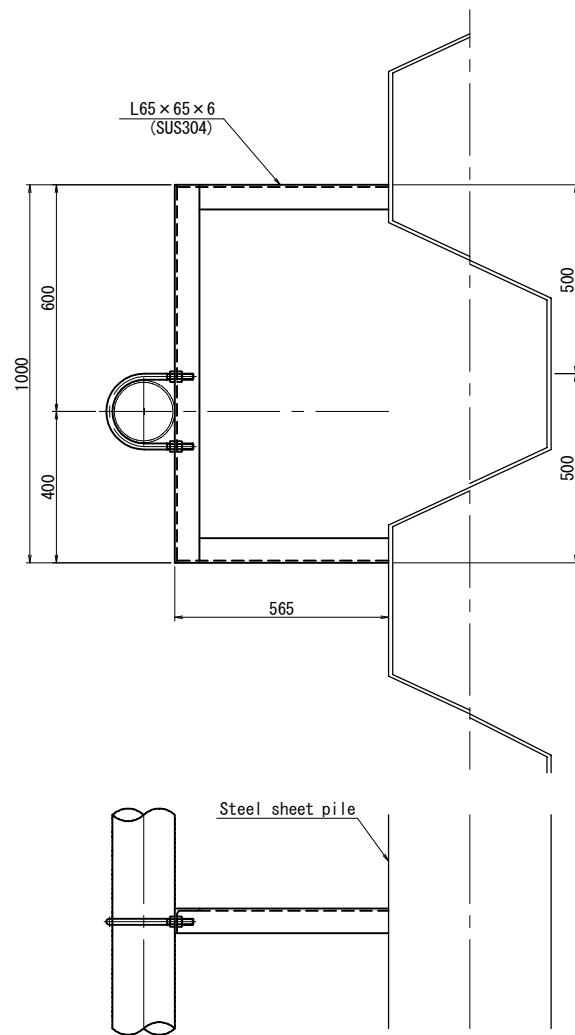
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Water level detector pipe (Bahr Yusef)

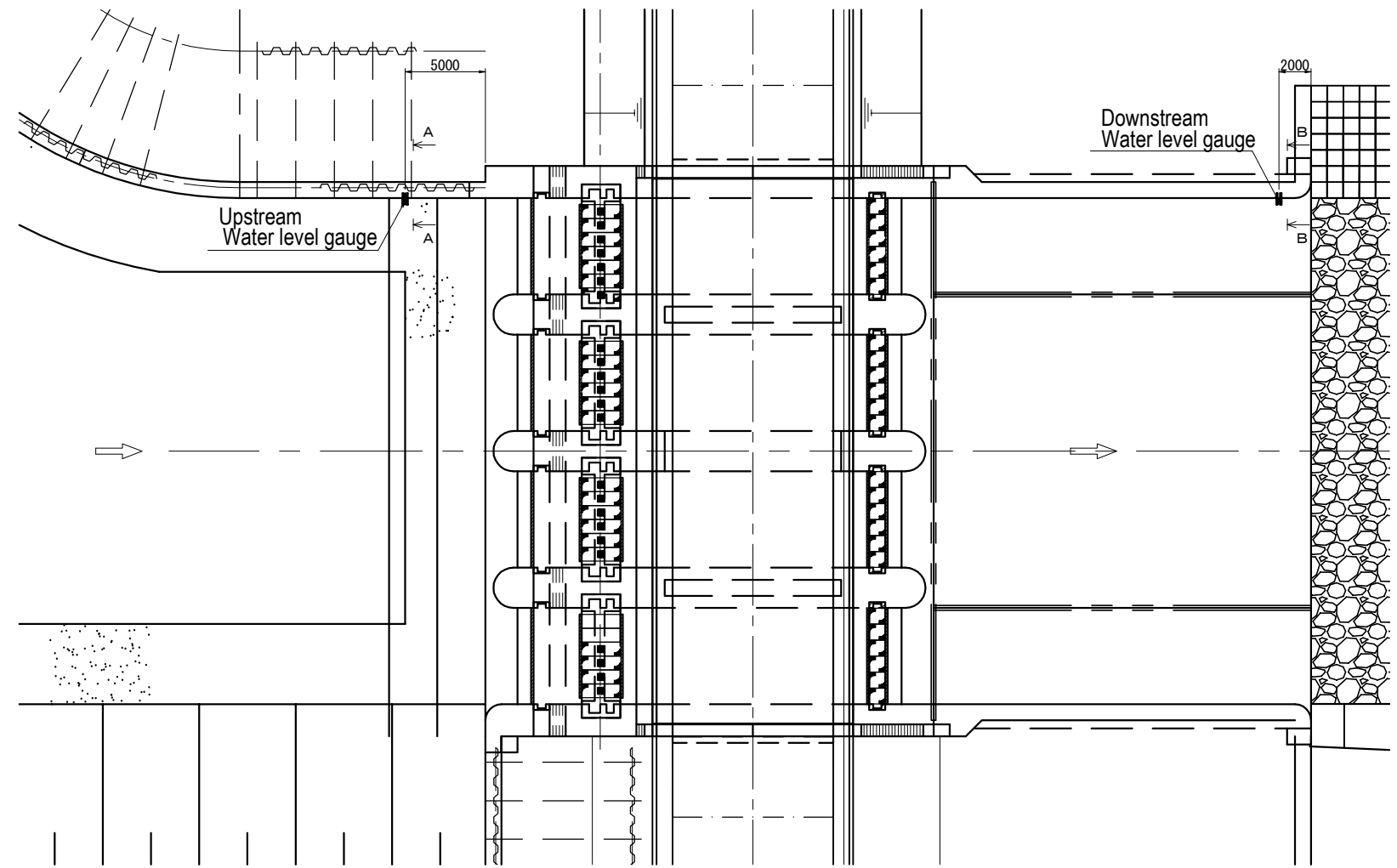
Concrete fixing bracket Scale B



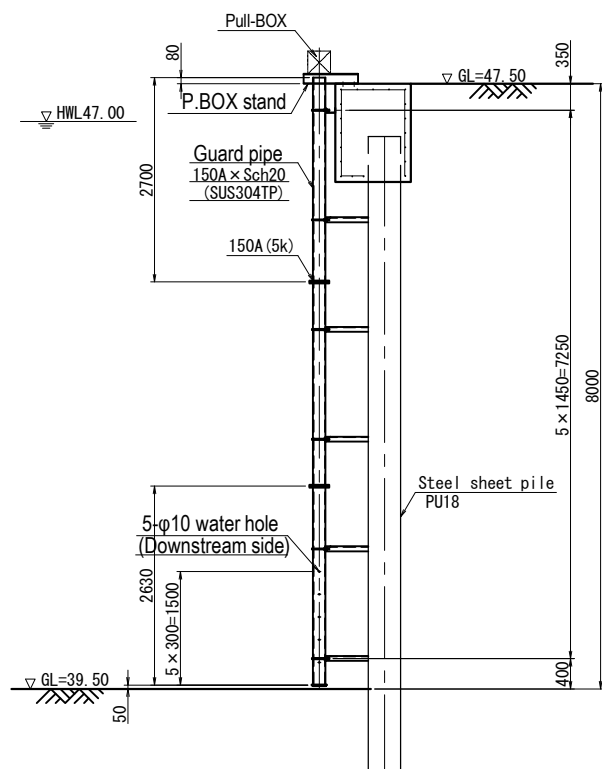
Sheet pile fixing bracket Scale B



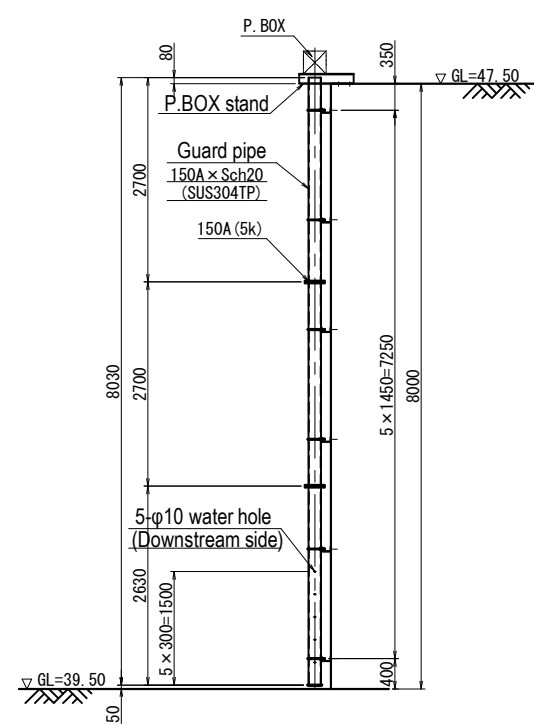
Plan Scale A



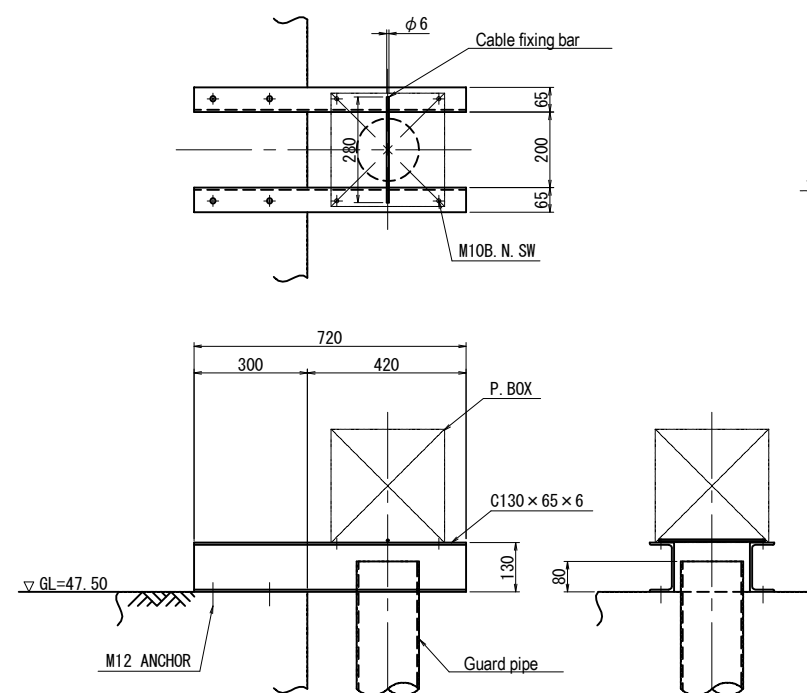
A - A Scale C



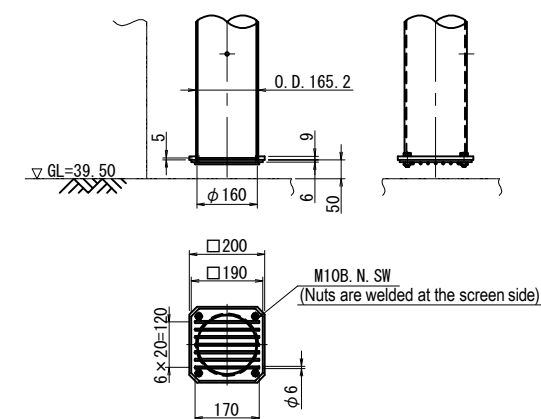
B - B Scale C



Pull-BOX stand Scale B



Bottom screen Scale B

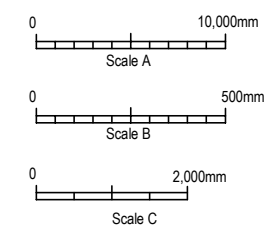


Staff gauge



Note

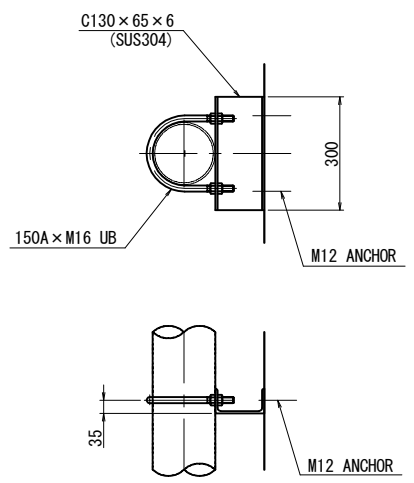
- Material is SUS304 if not otherwise specified.
- Staff gauge shall be installed beside the water level detector



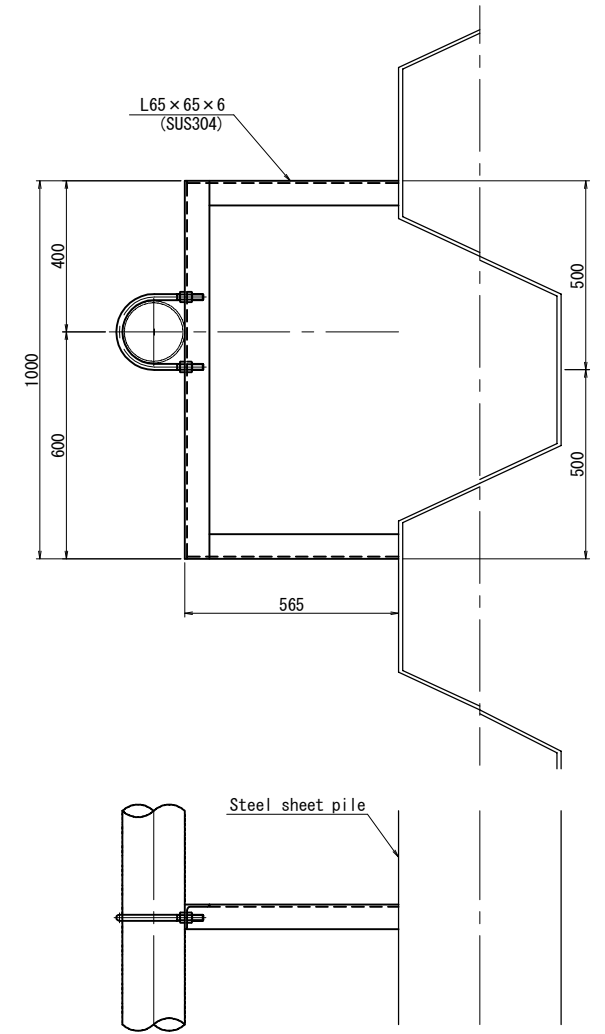
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Bahr Yusef Regulator Water level detector pipe	DRW. NO MBI-18	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Water level detector pipe (Ibrahimia)

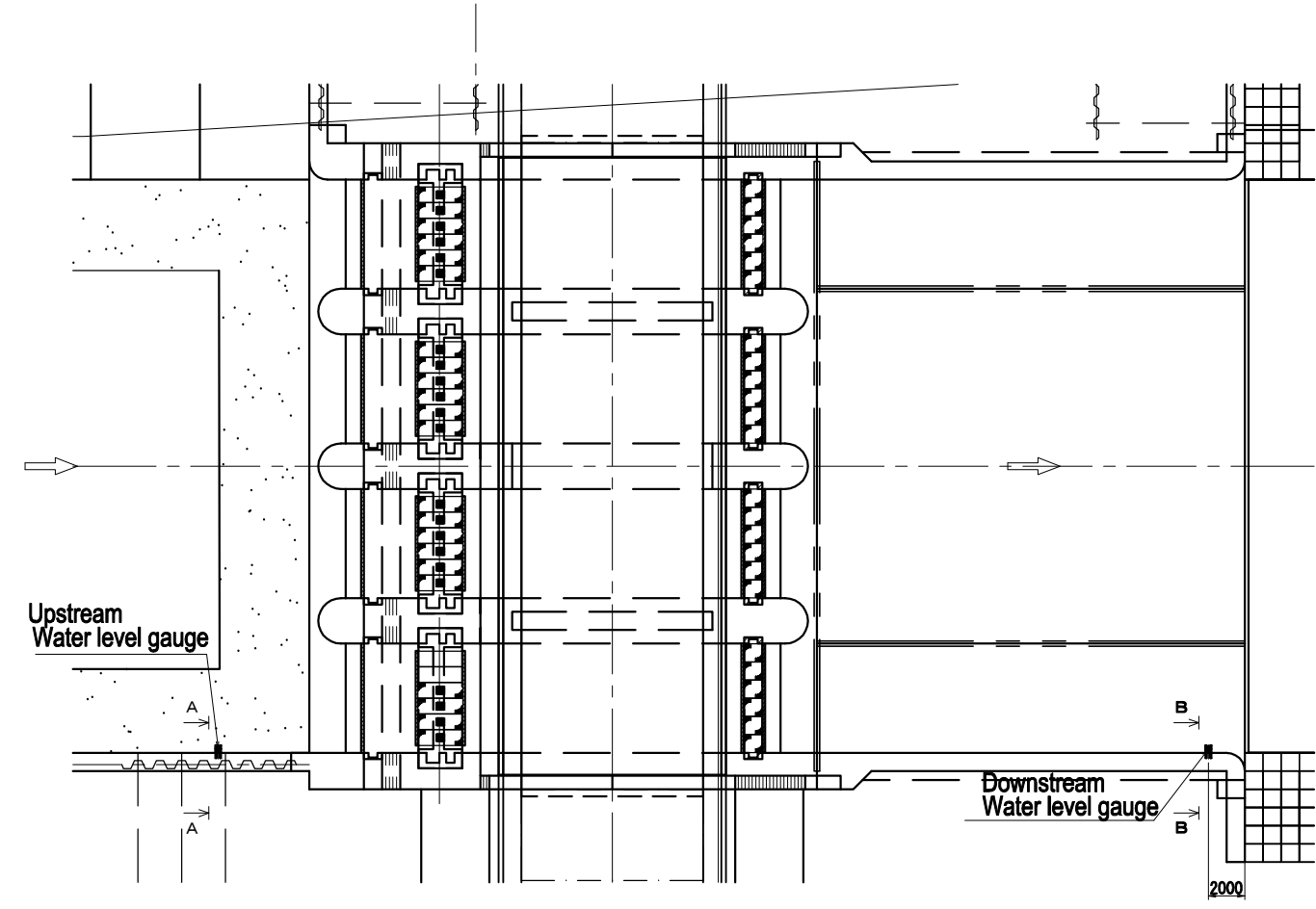
Concrete fixing bracket Scale B



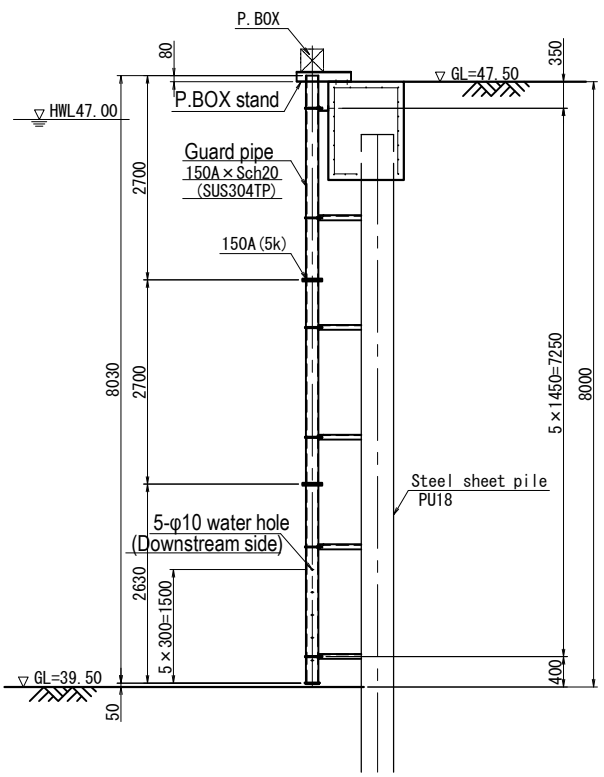
Sheet pile fixing bracket Scale B



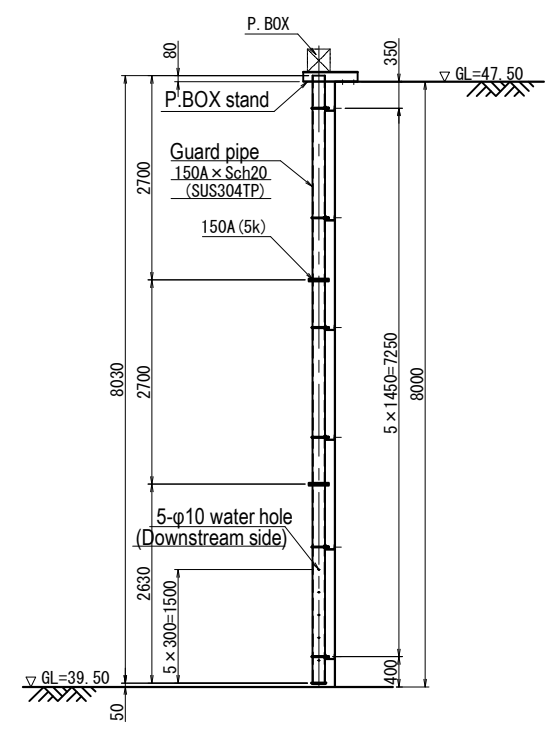
Plan Scale A



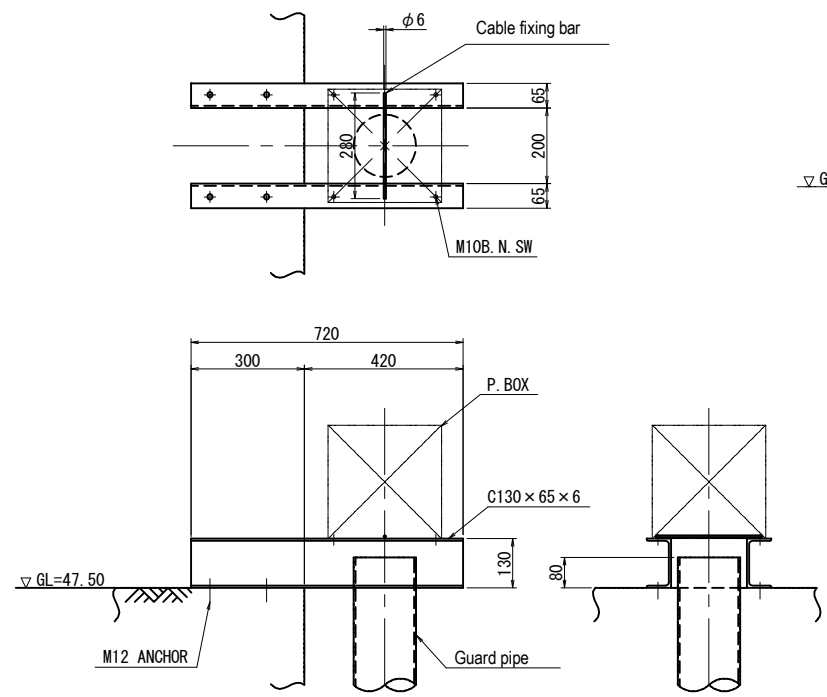
A - A Scale C



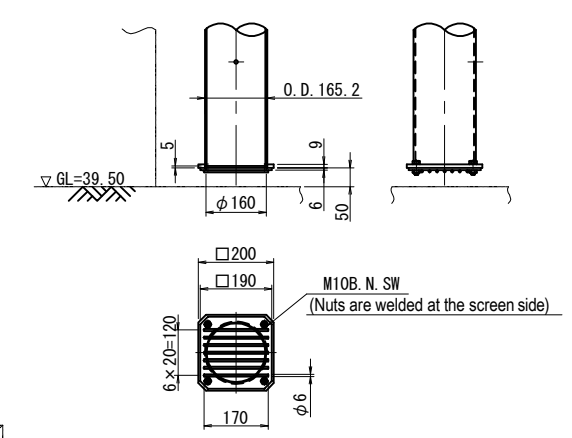
B - B Scale C



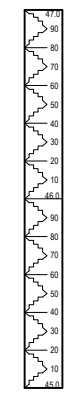
Bottom screen Scale B



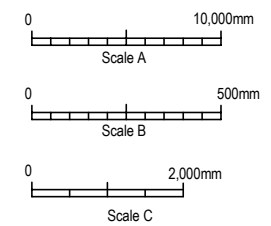
Bottom screen Scale B



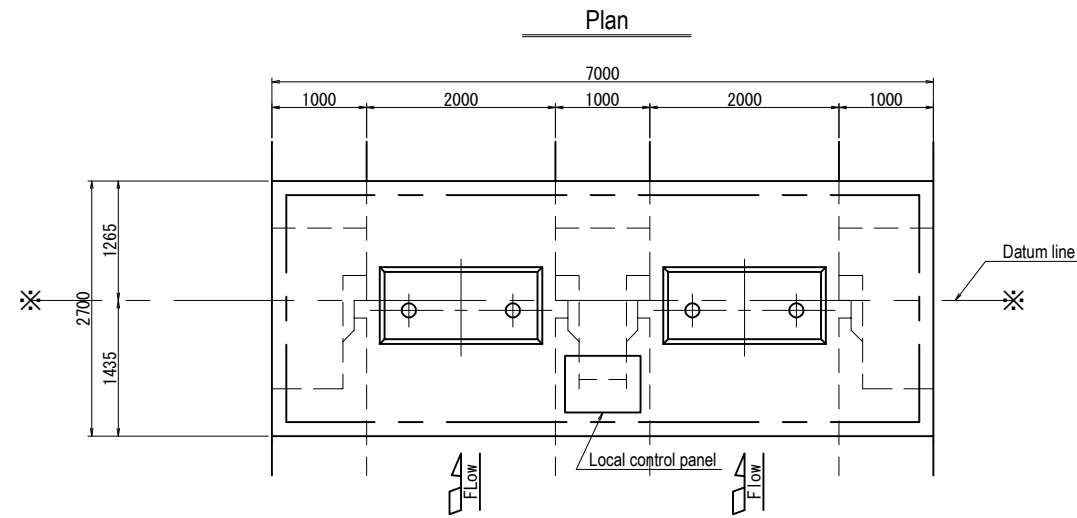
Staff gauge



Note
 • Material is SUS304 if not otherwise specified.
 • Staff gauge shall be installed beside the water level detector

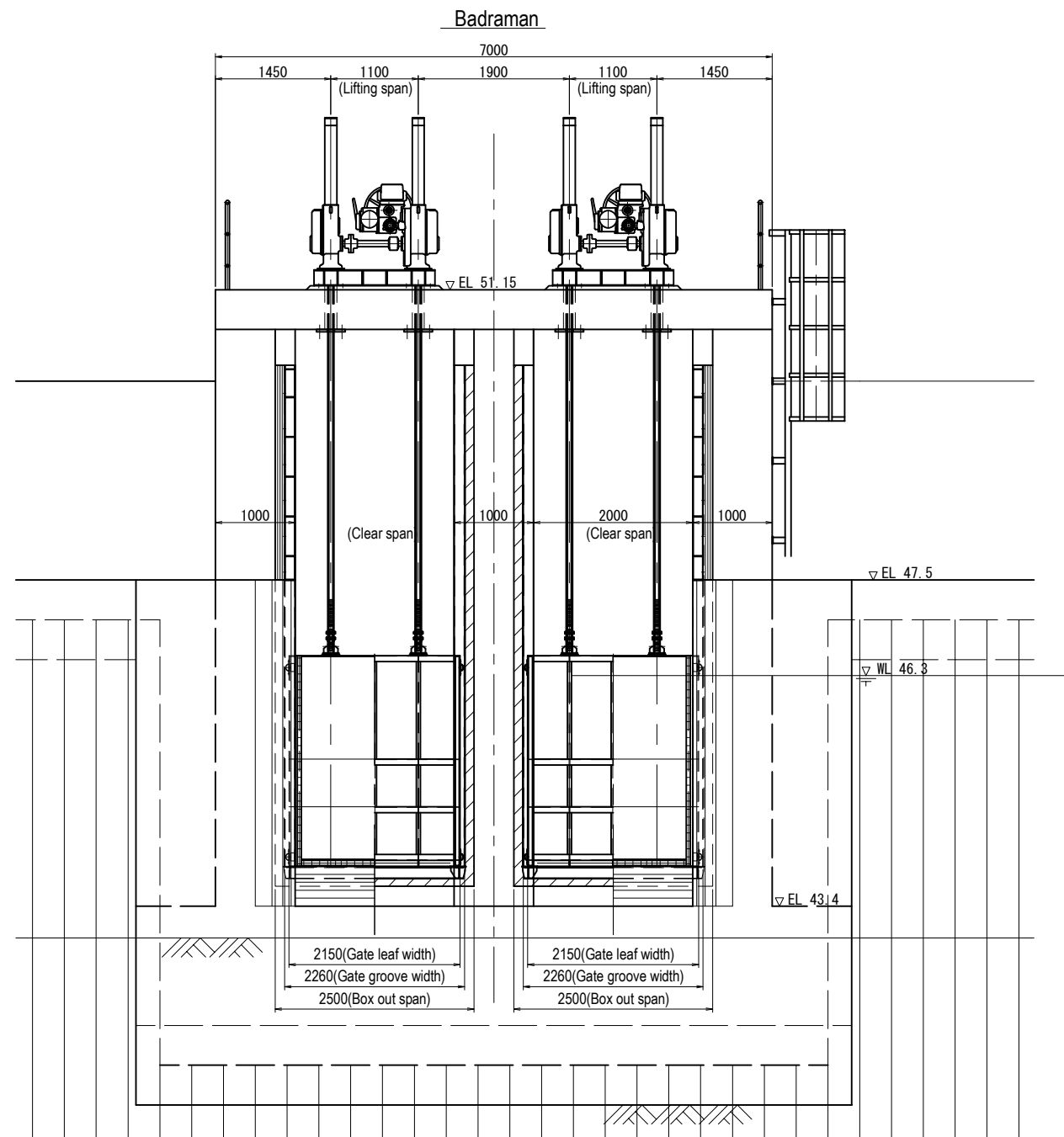


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Ibrahimia Regulator Water level detector pipe	DRW. NO MBI-19	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

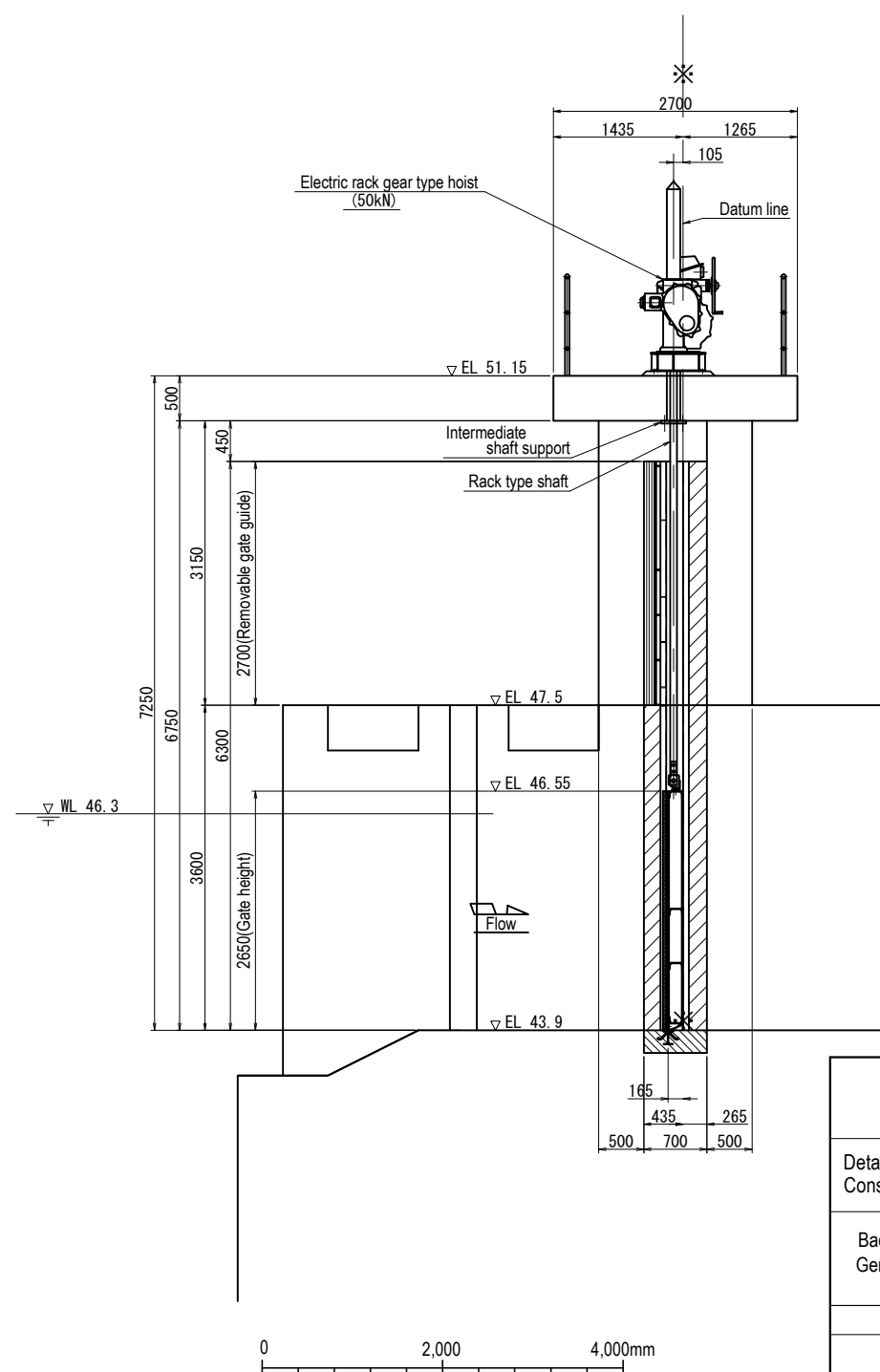


Design Condition		
Type	Slide gate	
Number of gate	2	
Clear span	2.000 m	
Gate height	2.650 m	
Design water depth	2.650 m	
Operation depth	Open	2.650 m
	Close	2.650 m
Sediment height	0.300 m	
Seal type	Upstream 3-side sealing	
Hoist type	Electric rack gear type	
Operating speed	0.3 m/min	
Lifting height	3.600 m	
Operation type	Local and remote control	

Front elevation



Side view



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

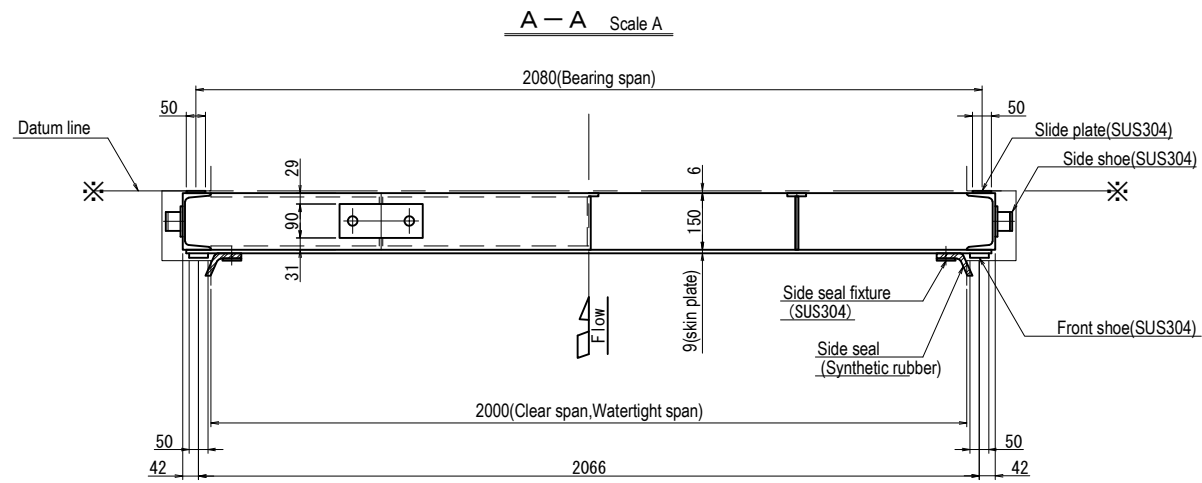
Badraman Regulator (Badraman)
General drawing

DRW. NO

MN-1

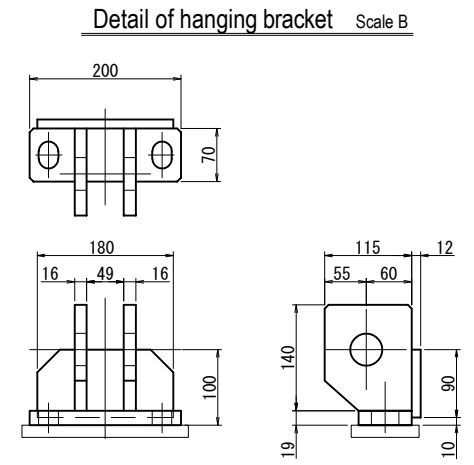
SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

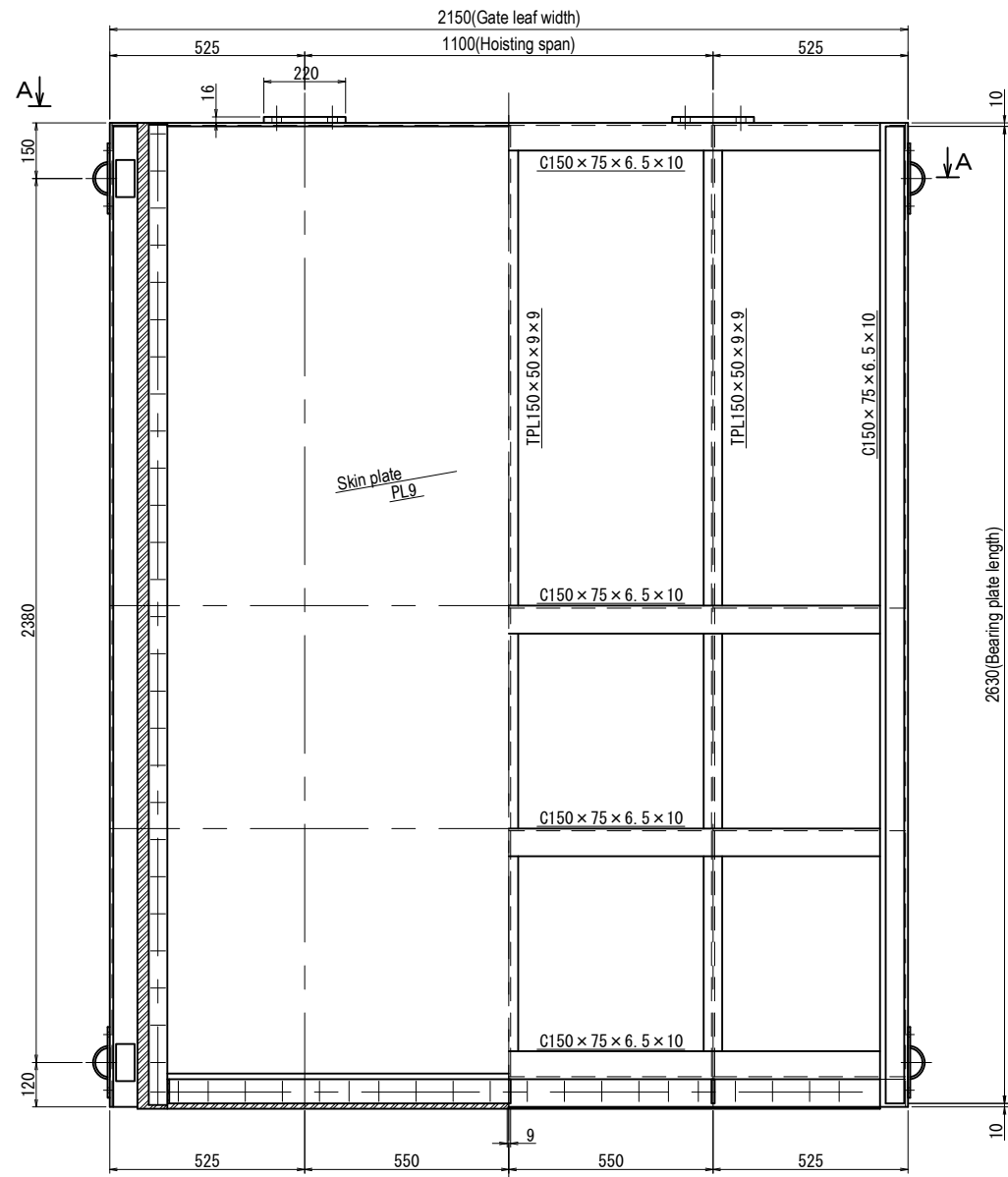


Front view Scale A

Back view Scale A

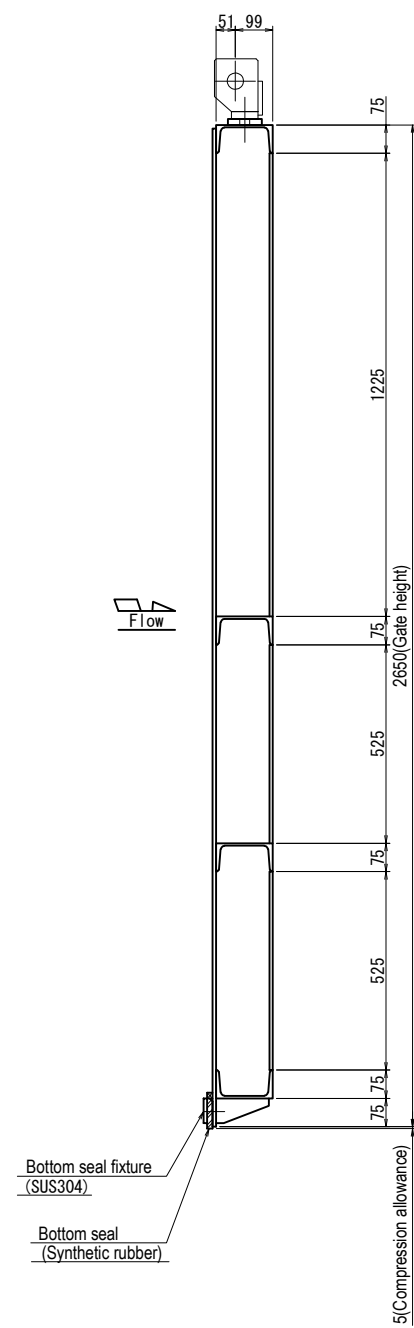


Detail of hanging bracket Scale B

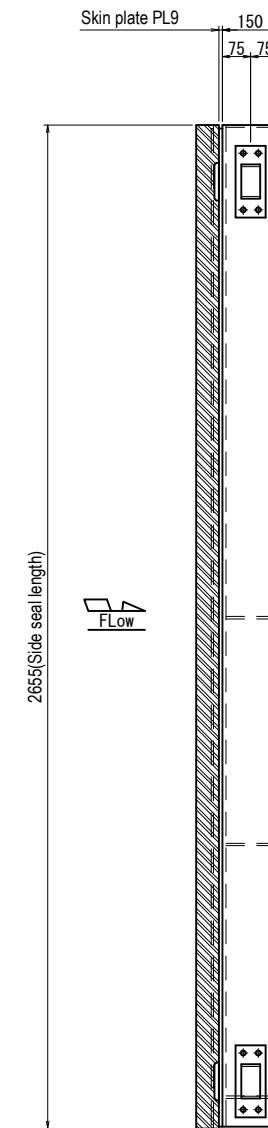


Bottom view Scale A

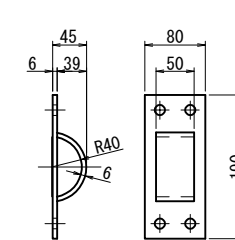
Section Scale A



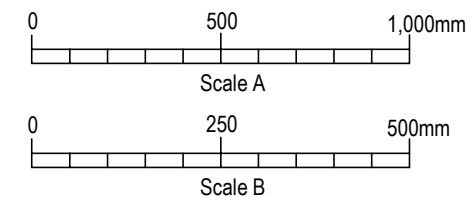
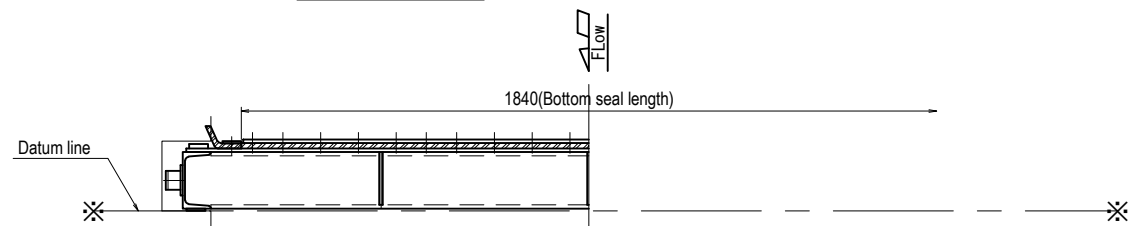
Side view Scale A



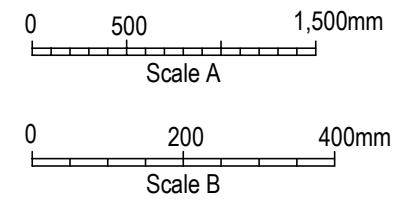
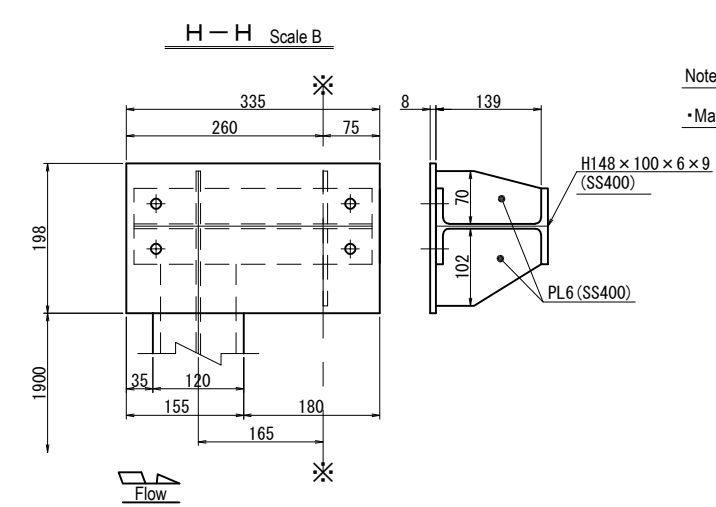
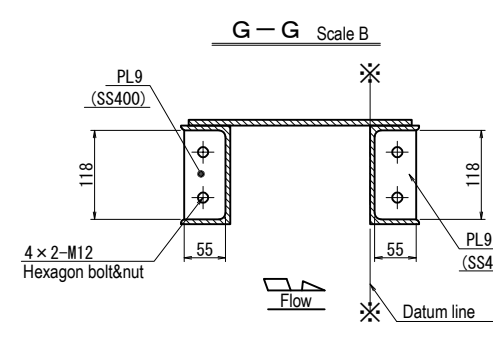
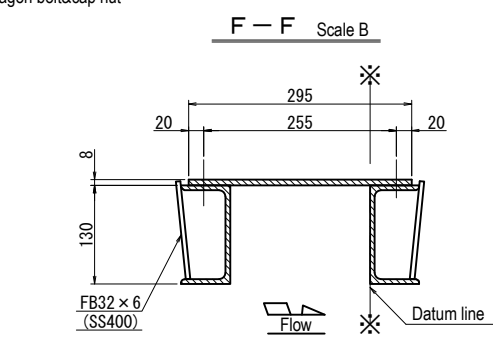
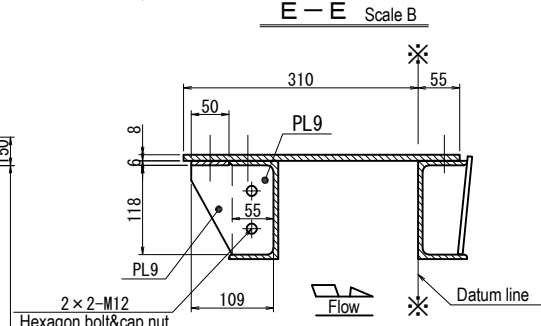
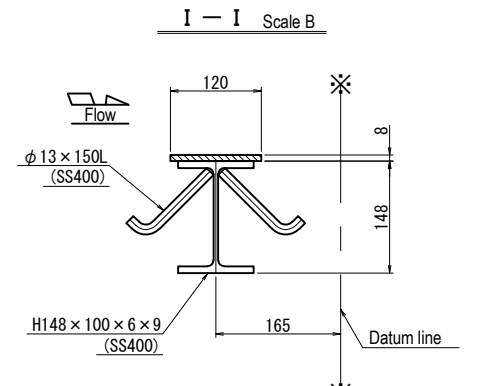
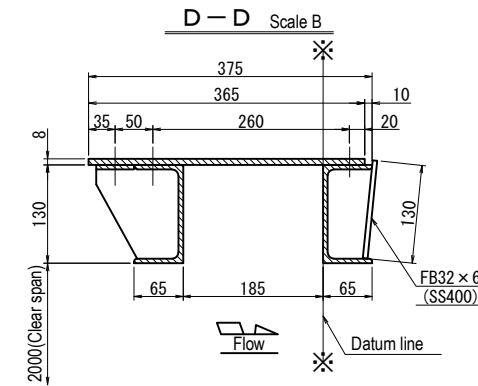
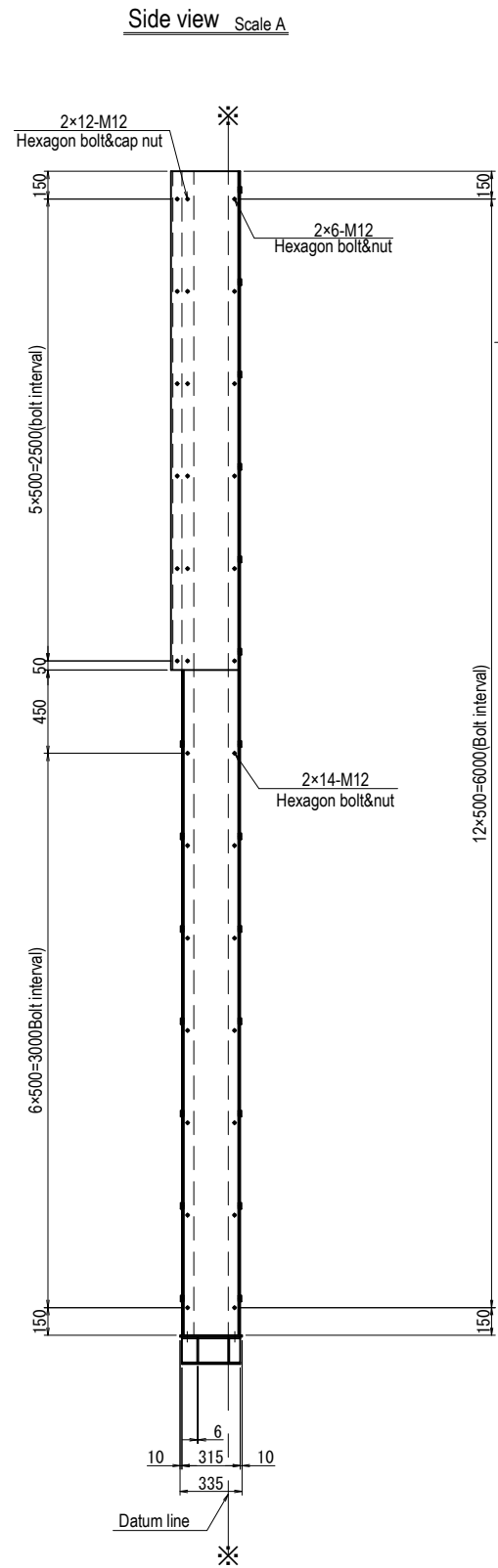
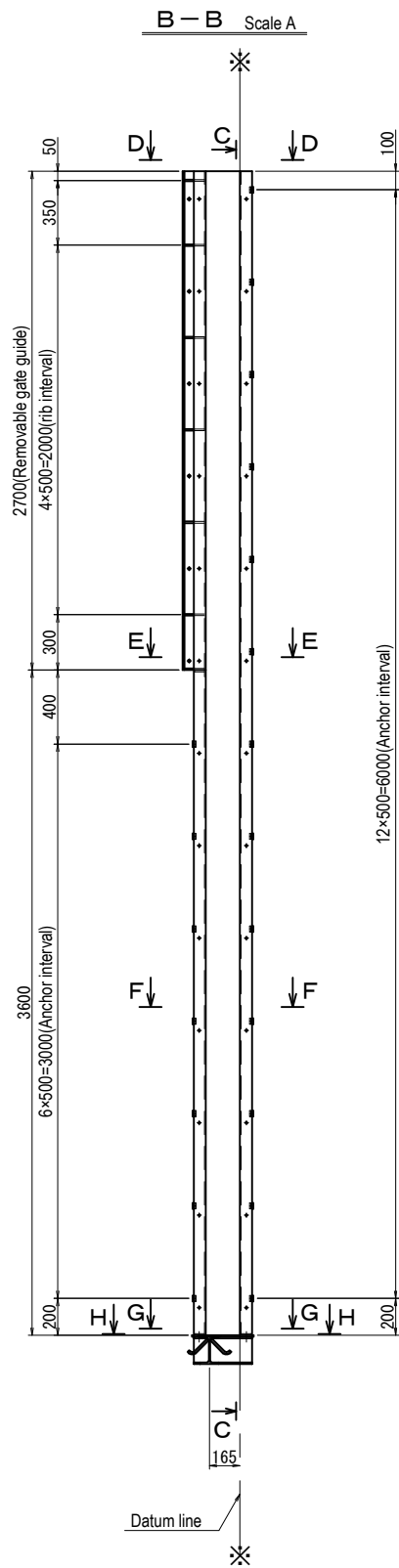
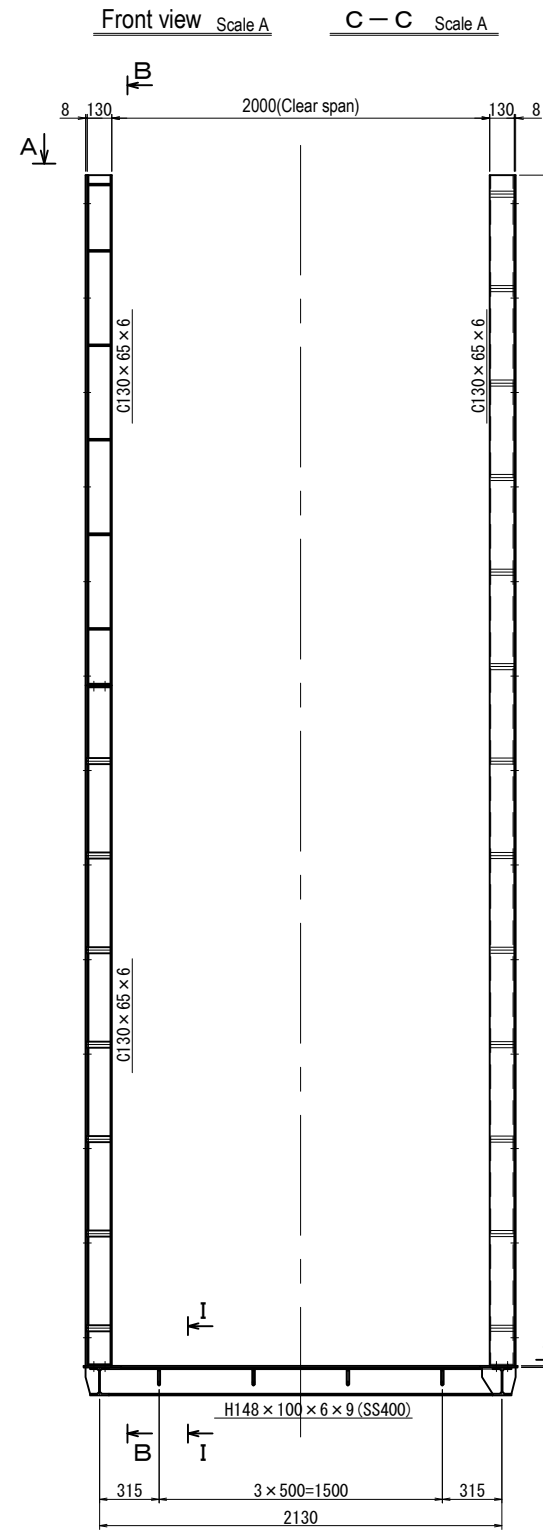
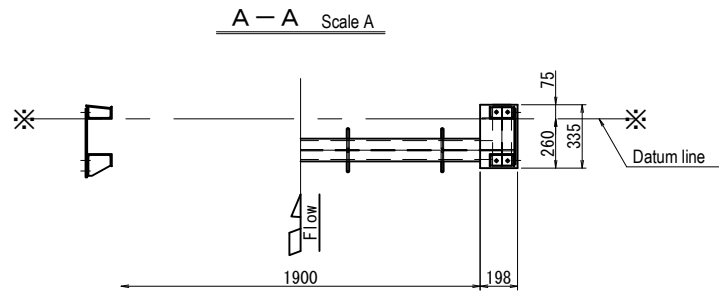
Detail of side shoe Scale B



Note
 •Materials shall be SS400 unless otherwise specified.



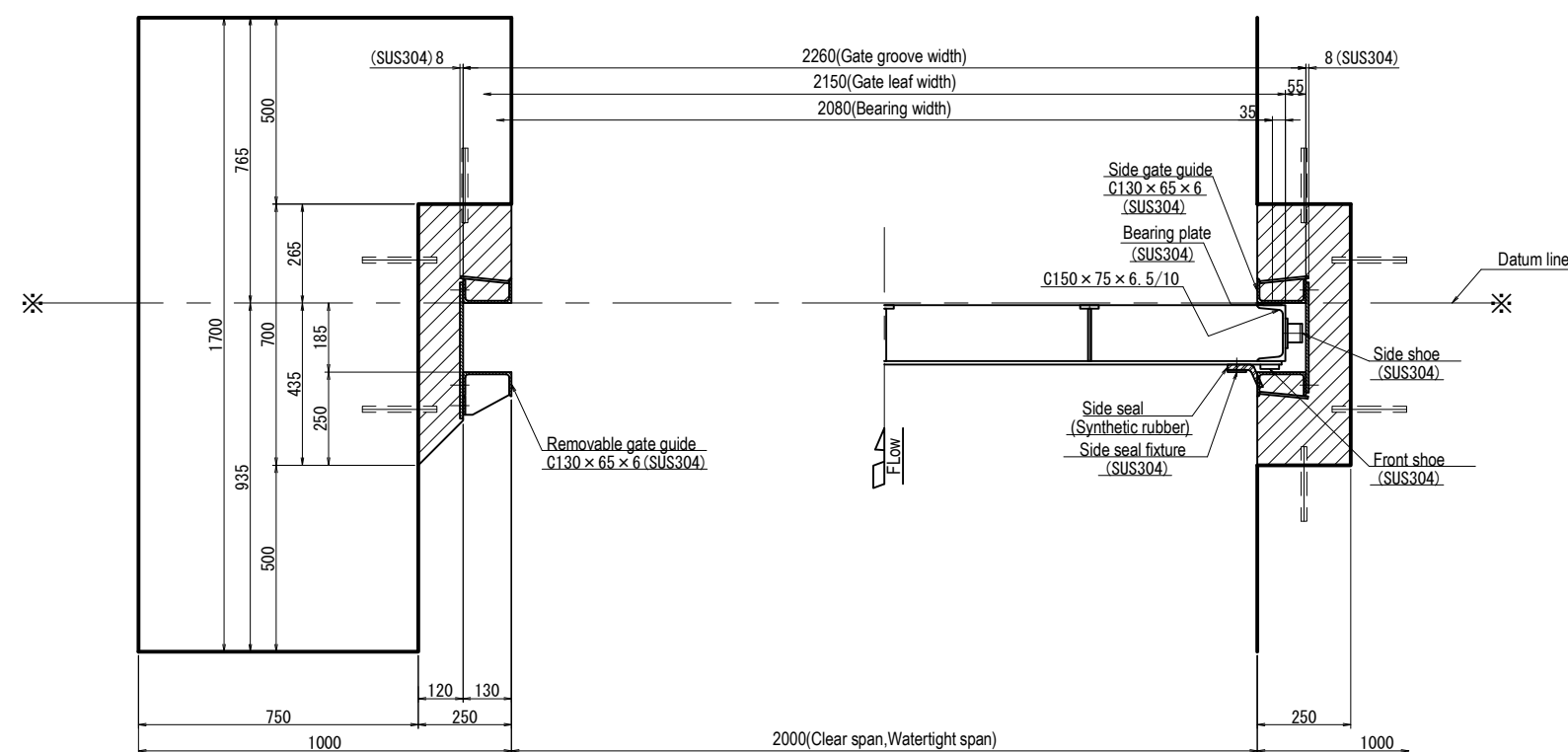
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Badraman Regulator (Badraman) Gate leaf assembling			DRW. NO MN-2
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



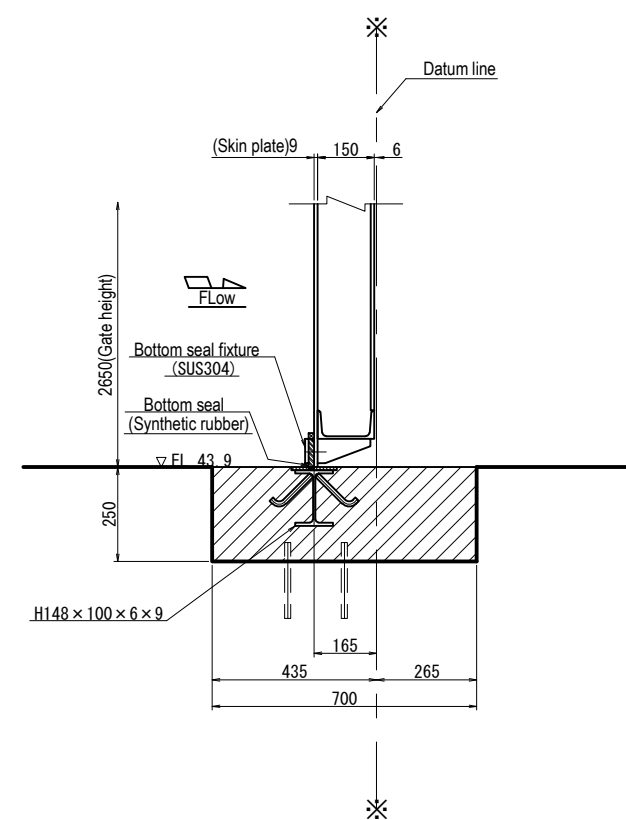
Note
 • Materials shall be SUS304 unless otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Badraman Regulator (Badraman) Gate guide assembling	DRW. NO MN-3	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

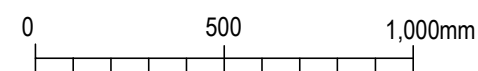
Detail of side seal



Detail of bottom seal

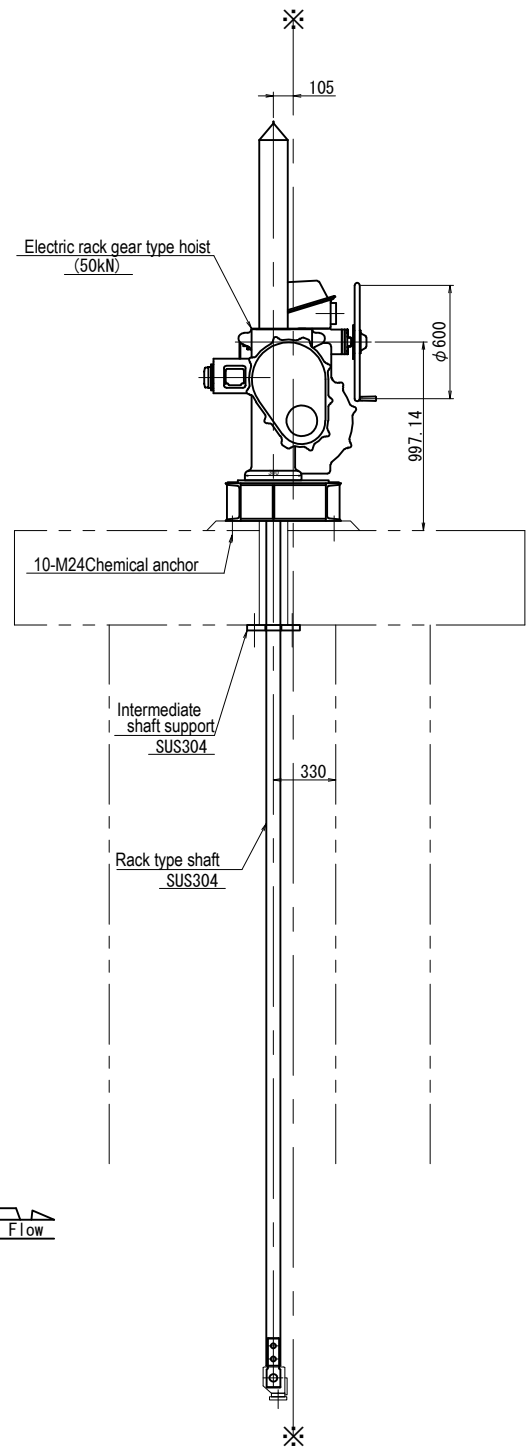


Note
 -Materials shall be SS400 unless otherwise specified.

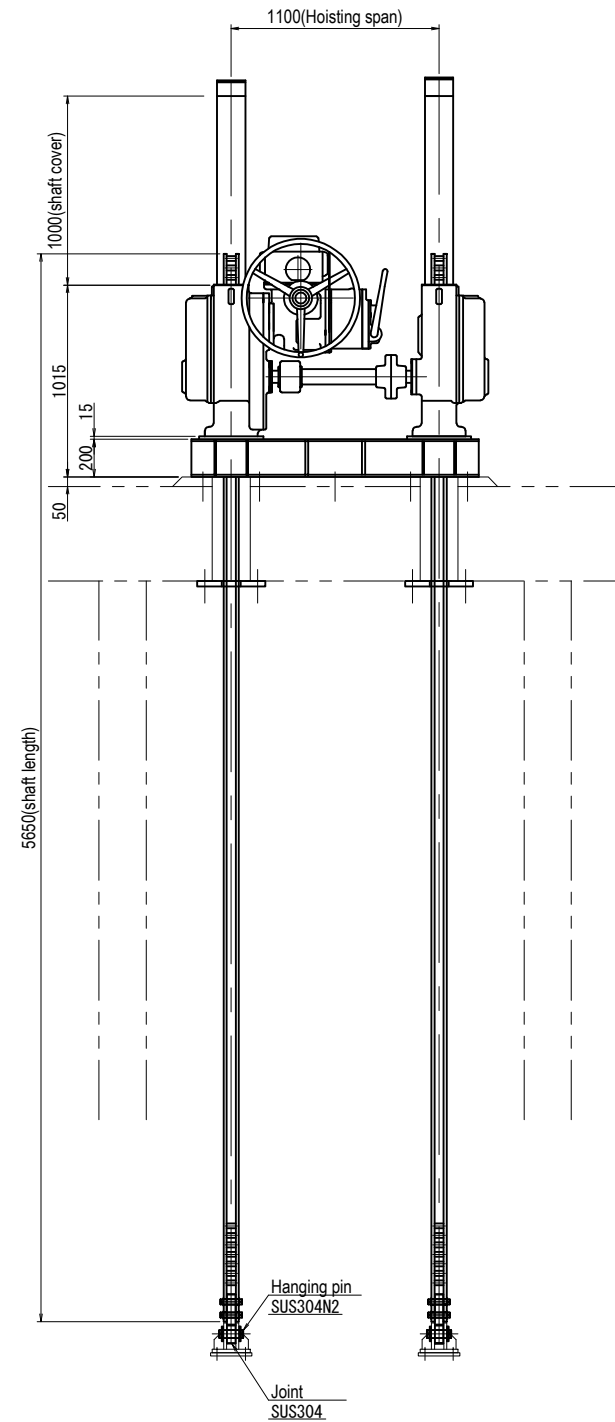


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Badraman Regulator (Badraman) Detail of seal			DRW. NO MN-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

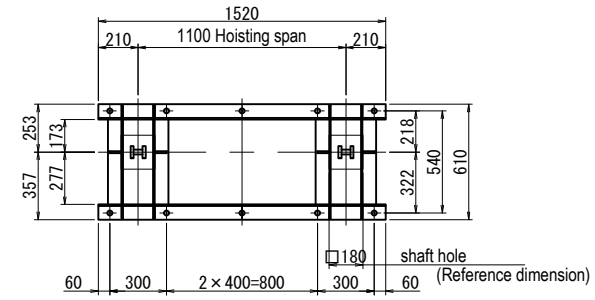
Side view Scale A



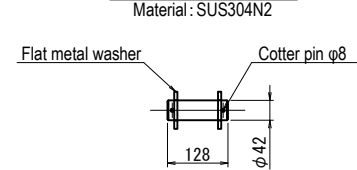
Front view Scale A



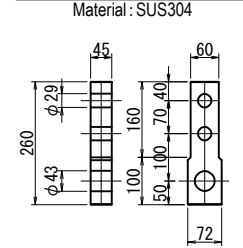
A - A Scale A



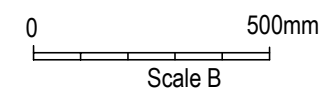
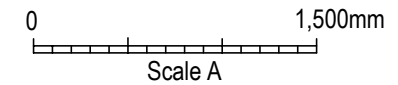
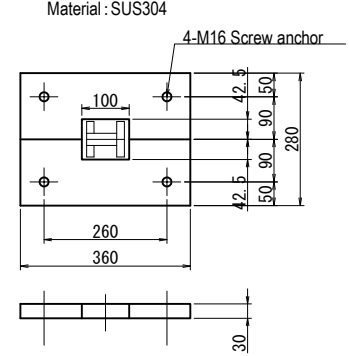
Hanging pin Scale B



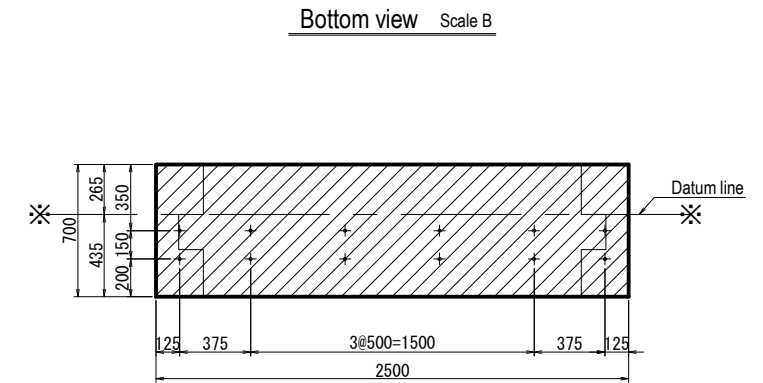
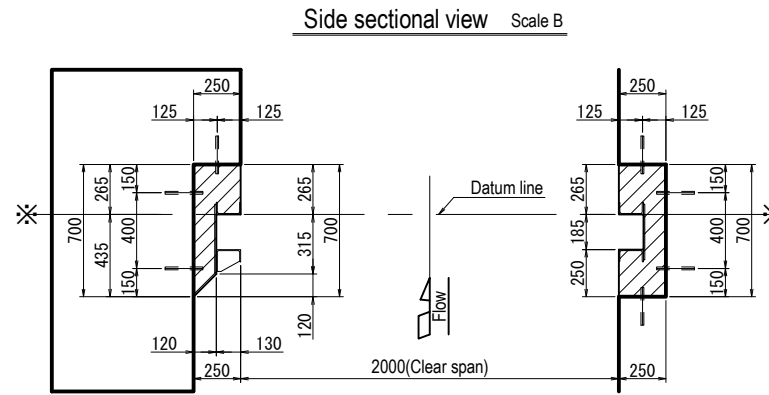
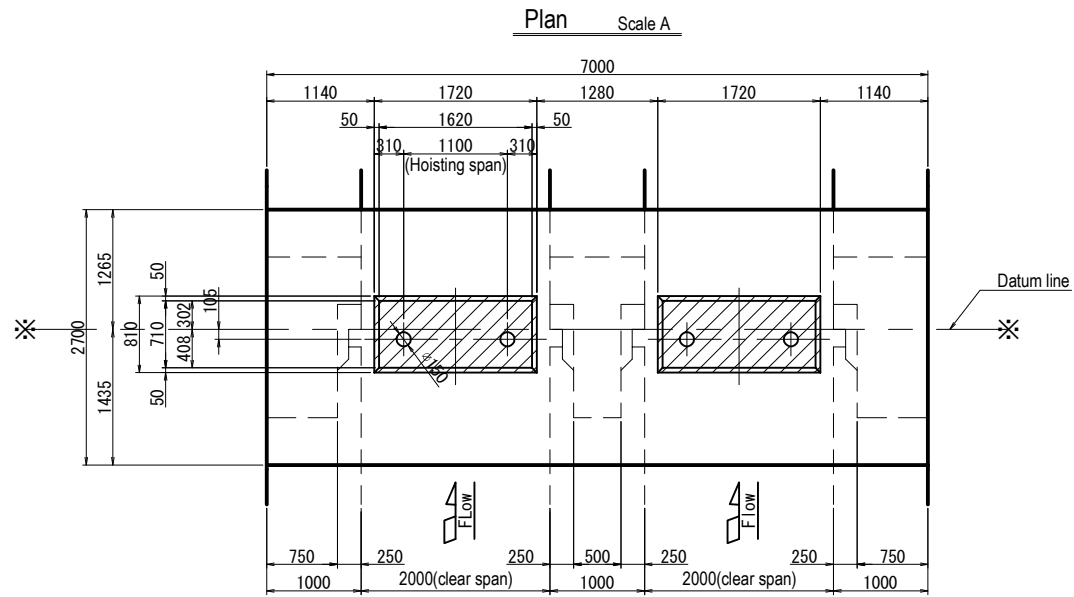
Joint of shaft Scale B



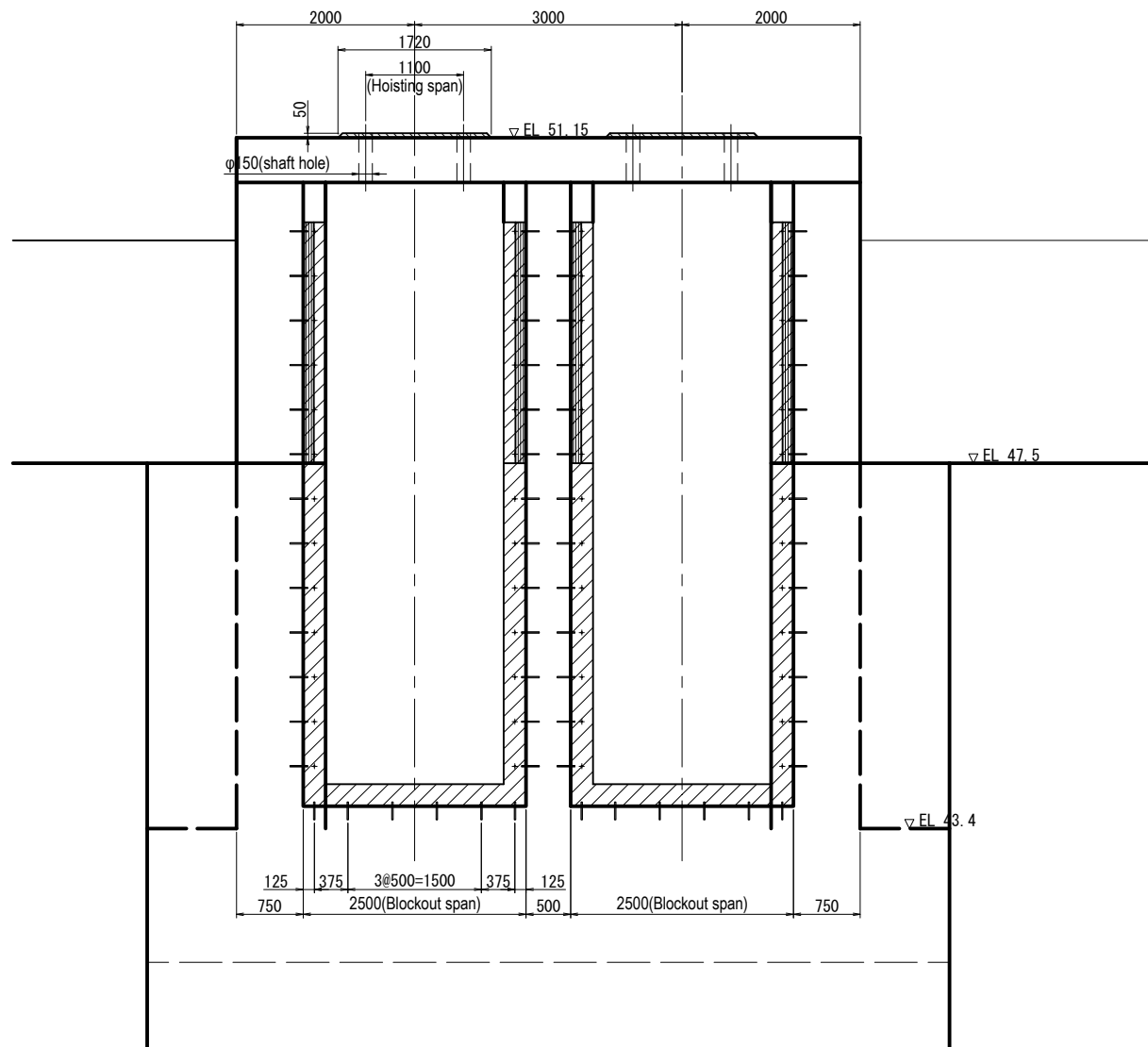
Intermediate shaft support Scale B



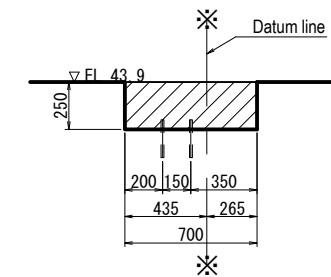
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Badraman Regulator (Badraman) Hoisting device assembling			DRW. NO MN-5
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



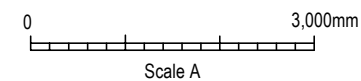
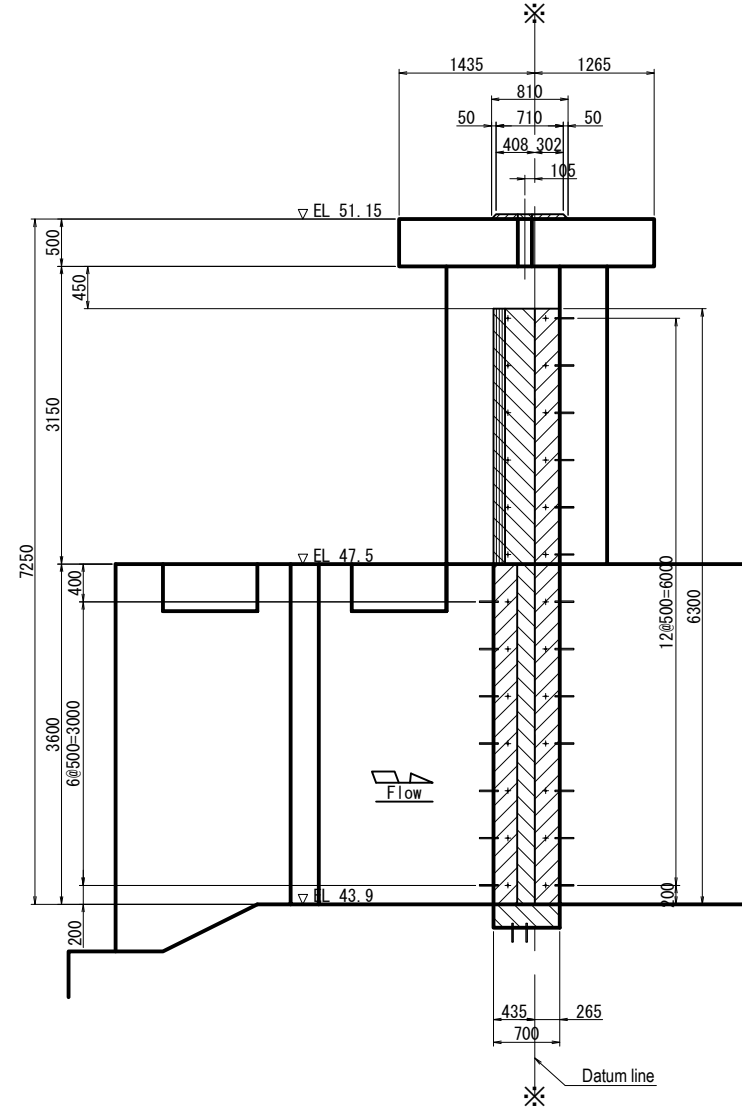
Front View Scale A



Bottom section Scale B



Side view Scale A



Joint bar	
Detail	
Number/one gate	104 pcs
Total	208 pcs

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Badraman Regulator (Badraman)
Blockout and anchors

DRW. NO

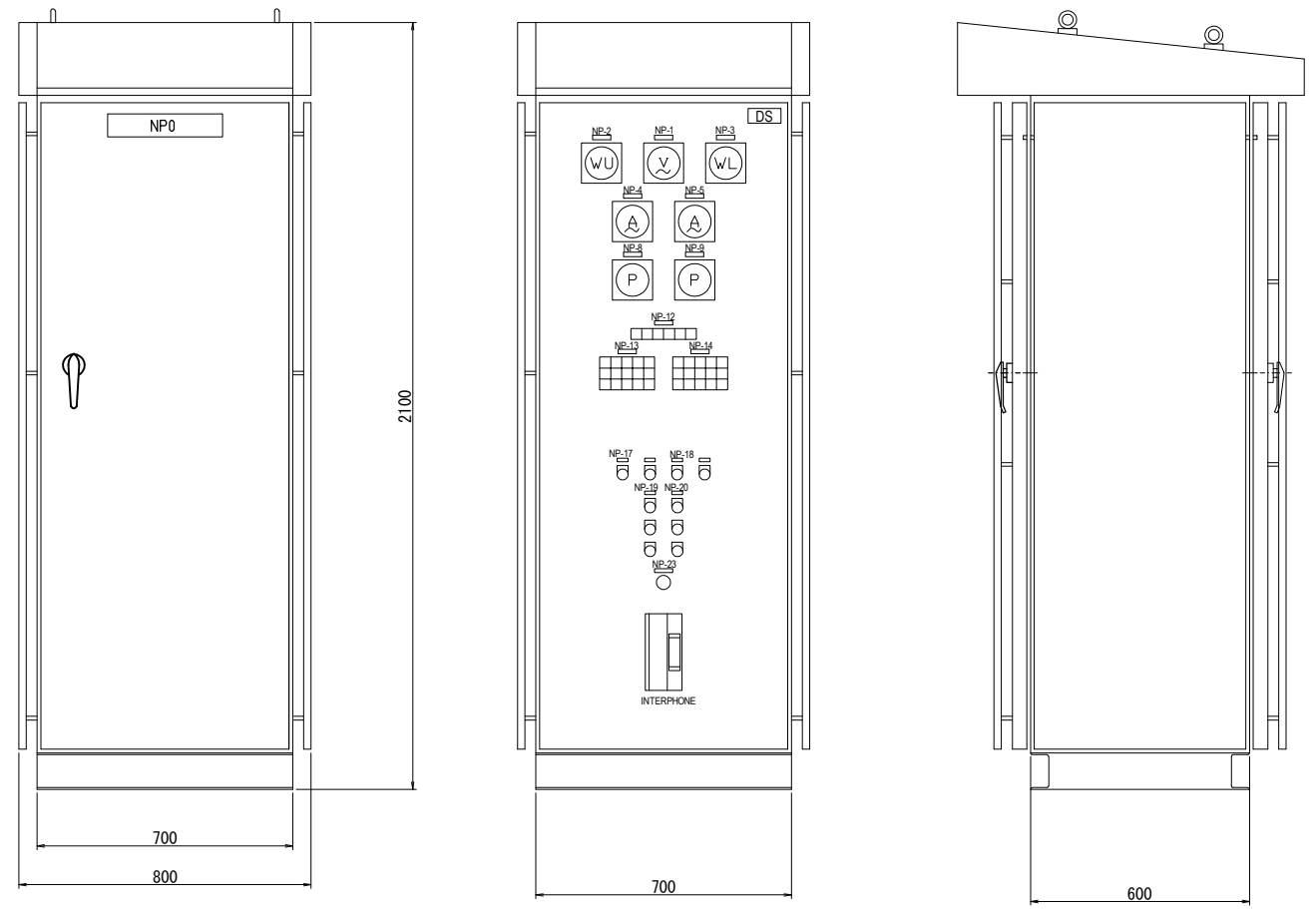
MN-6

SANYU CONSULTANTS INC.

PREPARED BY: CHECKED BY: APPROVED BY:

DATE: DATE: DATE: DATE:

Local Control Panel

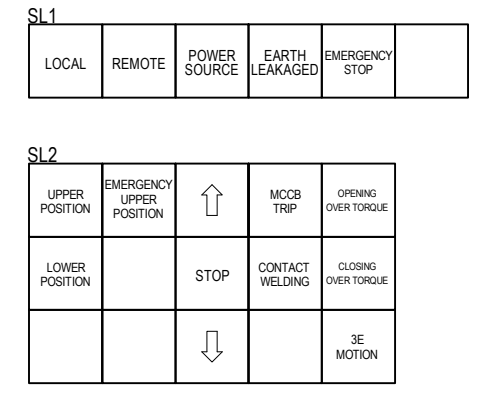


Name	Mark	Letter
NP-0		LOCAL CONTROL PANEL
NP-1	V	POWER SOURCE VOLTAGE
NP-2	WU	UPPER SIDE WATER LEVEL
NP-3	WL	LOWER SIDE WATER LEVEL
NP-4	A	No.1 GATE CURRENT
NP-5	A	No.2 GATE CURRENT
NP-8	P	No.1 GATE POSITION
NP-9	P	No.2 GATE POSITION
NP-12	SL1	STATUS INDICATION
NP-13	SL2	No.1 GATE STATUS INDICATION
NP-14	SL2	No.2 GATE STATUS INDICATION
NP-17		MANUAL-AUTO
NP-18		BUZZER STOP
NP-19		No.1 GATE OPEN-STOP-CLOSE
NP-20		No.2 GATE OPEN-STOP-CLOSE
NP-23		EMERGENCY STOP

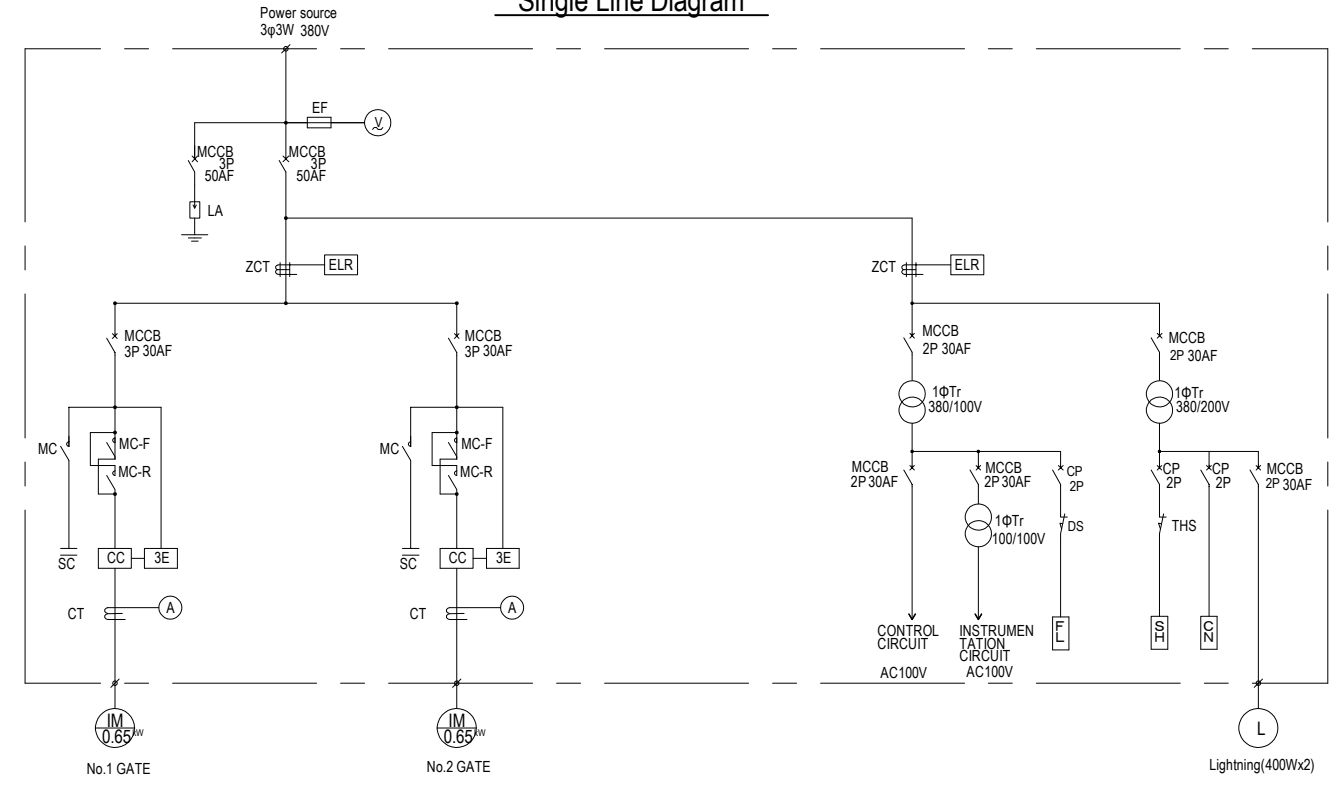
SPECIFICATIONS

1. TYPE OUTDOOR SELFSTANDING
2. PLATE 2.0t(SUS)
3. BASE Ch100X50X5t
4. COATING COLOR MUNSEL 5Y7/1 (SEMI GLOSS)
5. METER COLOR N1.5
6. QTY 1

INDICATING LAMP



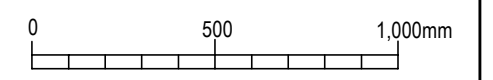
Single Line Diagram



SYMBOL LEGEND

Mark	Name
MCCB	Molded Case Circuit Breaker
CP	Circuit Protector
ELR	Earth Leakage Relay
ZCT	Zero-phase-sequence Current Transformer
MC	Electromagnetic Contactor
LA	Lightning Arrester
SC	Static Condenser
3E	Three Element Relay for over load, open phase and phase sequence reversal
CC	Current Converter
Tr	Transformer
V	Voltmeter
A	Ammeter
EF	Enclosed Fuse
DS	Disconnecting Switch
THS	Thermoswitch
FL	Fluorescent Lamp
SH	Space Heater
CN	Socket Outlet

Note: Refer to the Plan view in the General drawing (MN-1)



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Badraman Regulator (Badraman)
Local control panel and single line diagram

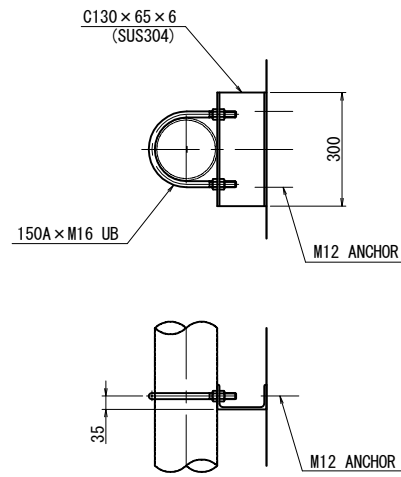
DRW. NO
MN-7

SANYU CONSULTANTS INC.

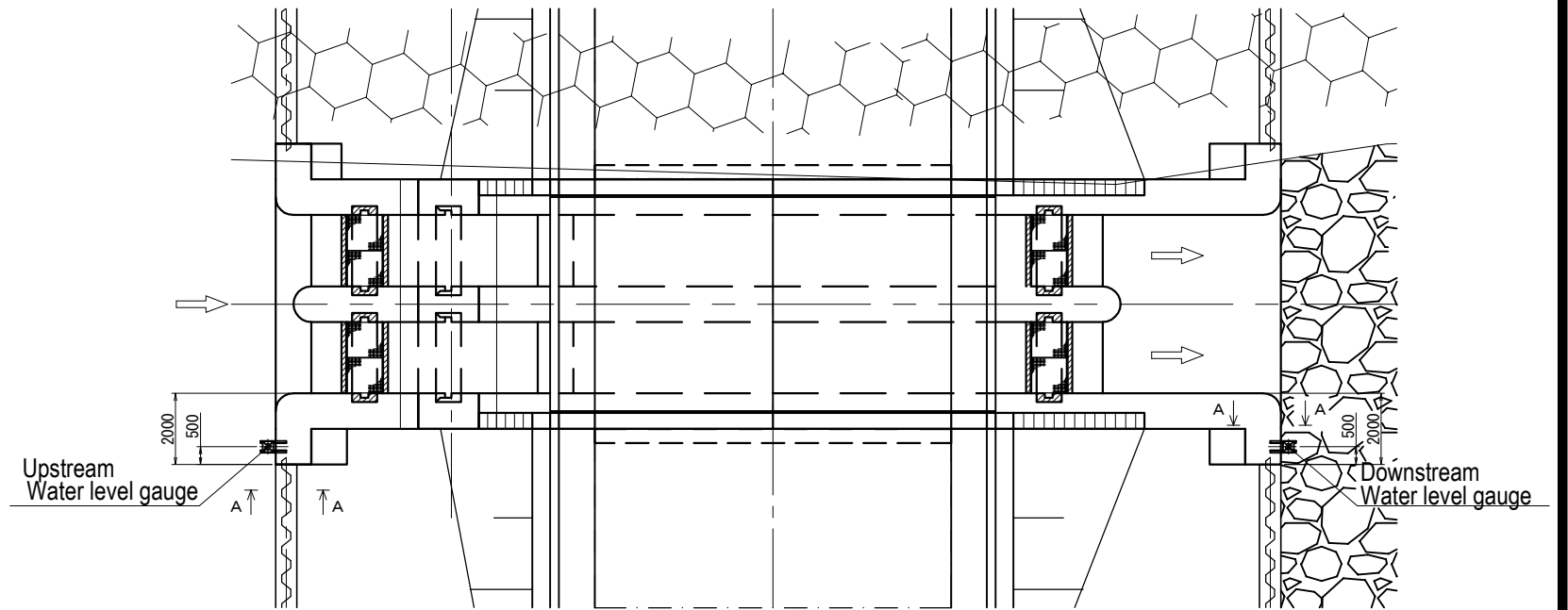
PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

Water level detector pipe (Badraman)

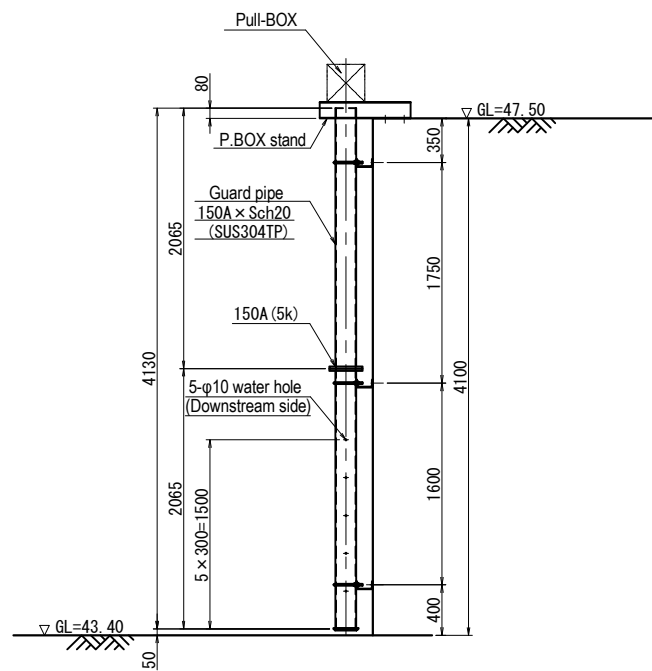
Concrete fixing bracket Scale B



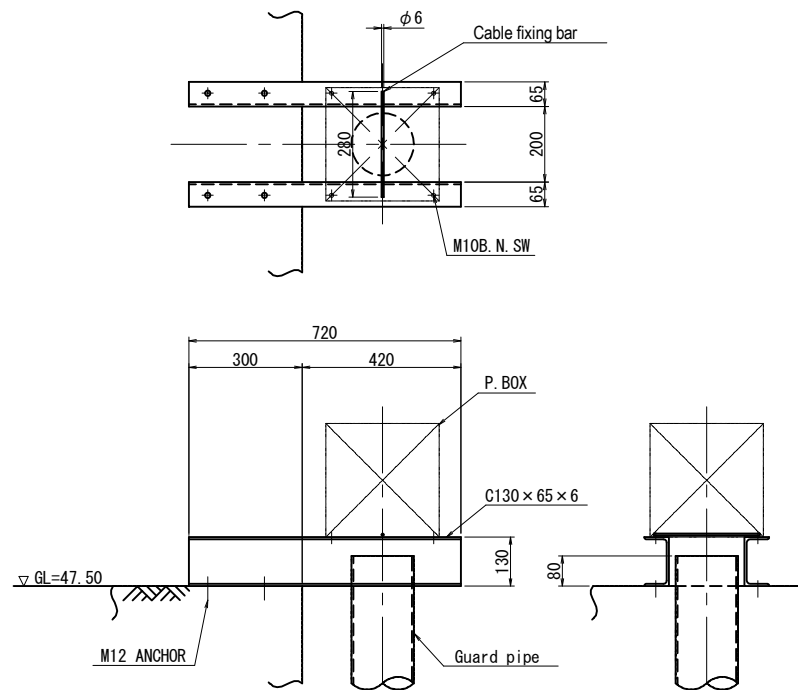
Plan Scale A



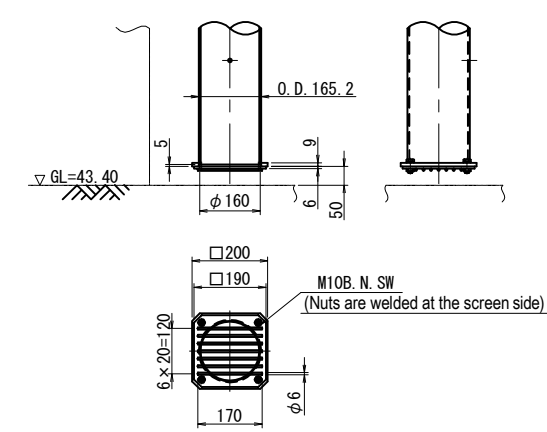
A - A Scale C



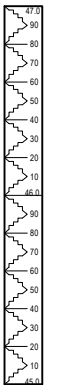
Pull-BOX stand Scale B



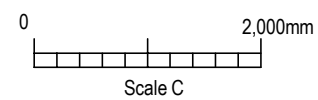
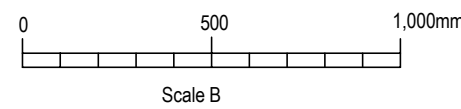
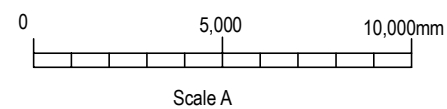
Bottom screen Scale B



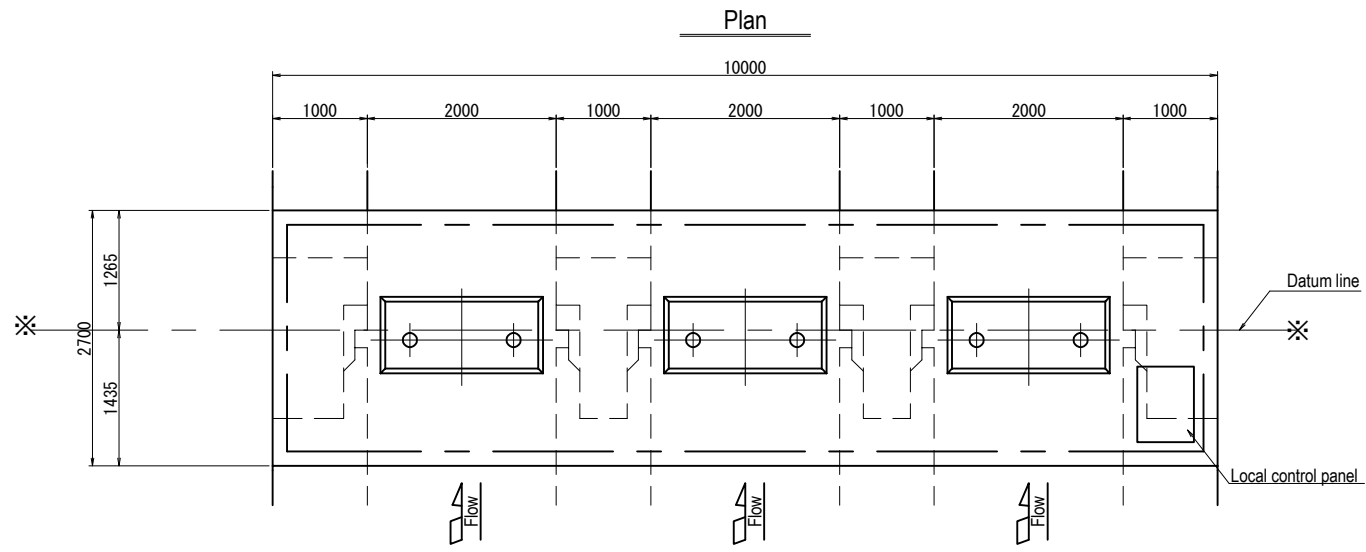
Staff gauge



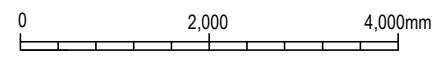
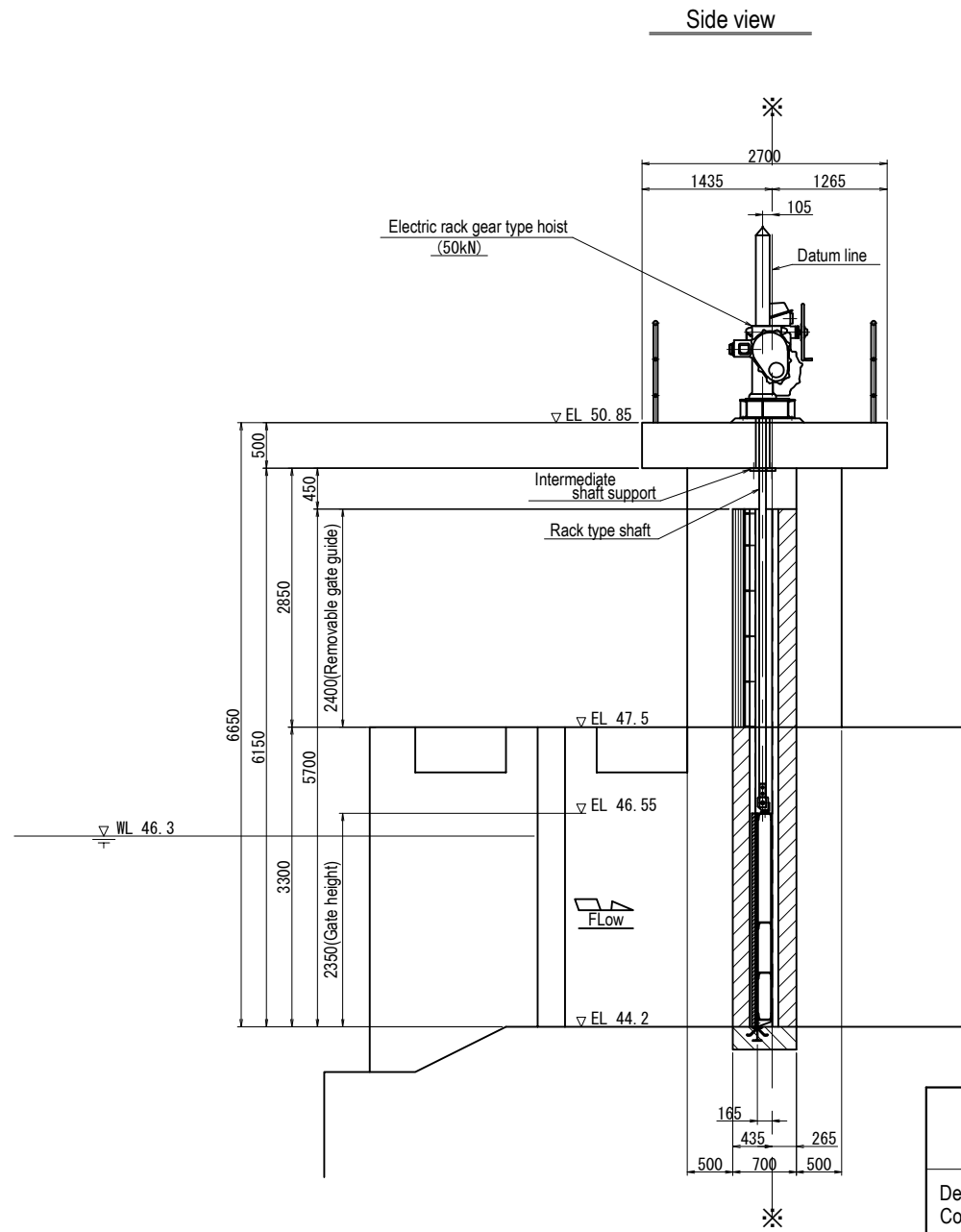
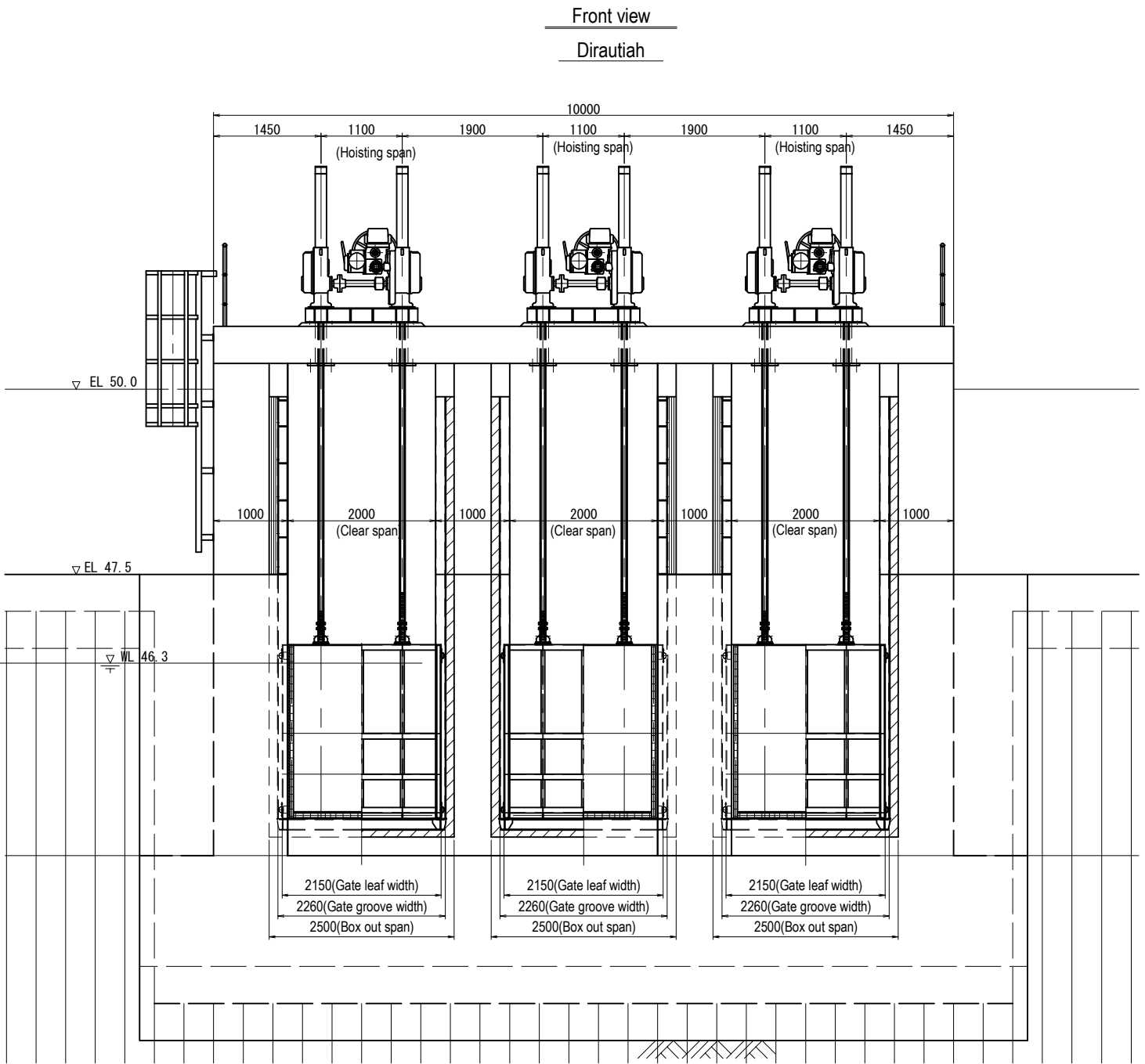
- Note
- Material is SUS304 if not otherwise specified.
 - Staff gauge shall be installed beside the water level detector



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Badraman Regulator (Badraman) Water level detector pipe	DRW. NO MN-8	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:



Design Condition	
Type	Slide gate
Number of gate	3
Clear span	2.000 m
Gate height	2.350 m
Design water depth	2.350 m
Operation depth	Open 2.350 m Close 2.350 m
Sediment height	0.300 m
Seal type	Upstream 3-side sealing
Hoist type	Electric rack gear type
Operating speed	0.3 m/min
Lifting height	3.300 m
Operation type	Local and remote control



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

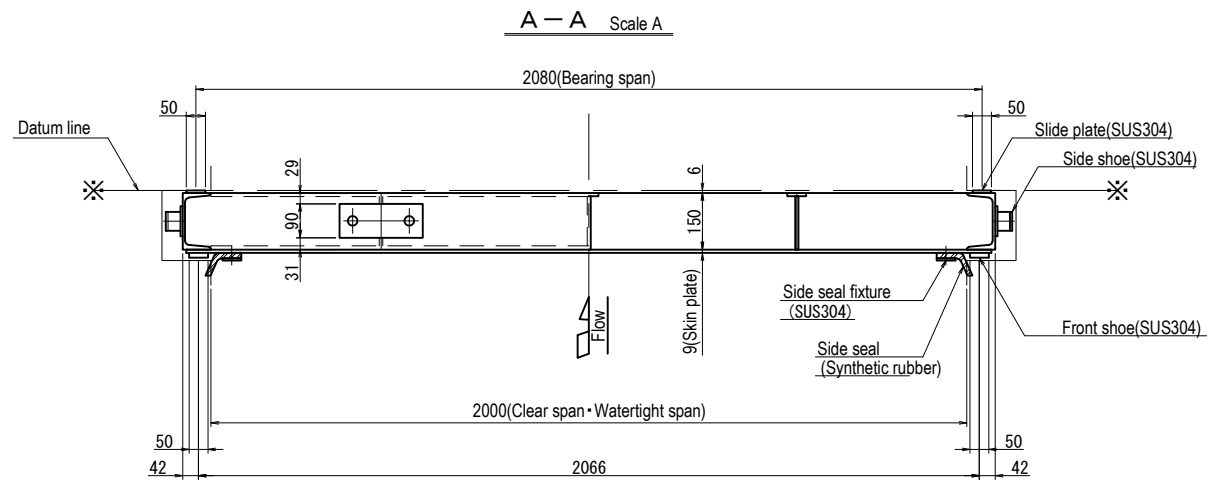
Badraman Regulator (Diroutiah)
General drawing

DRW. NO
MD-1

SANYU CONSULTANTS INC.

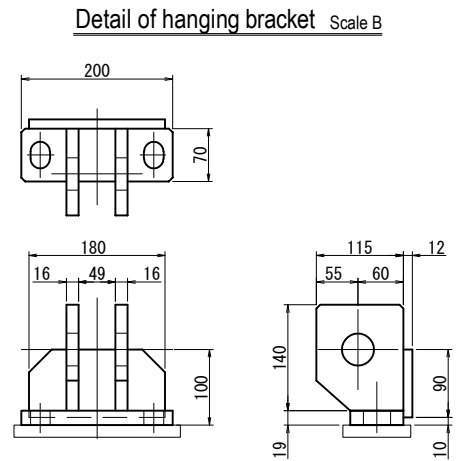
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DATE: _____ DATE: _____ DATE: _____ DATE: _____

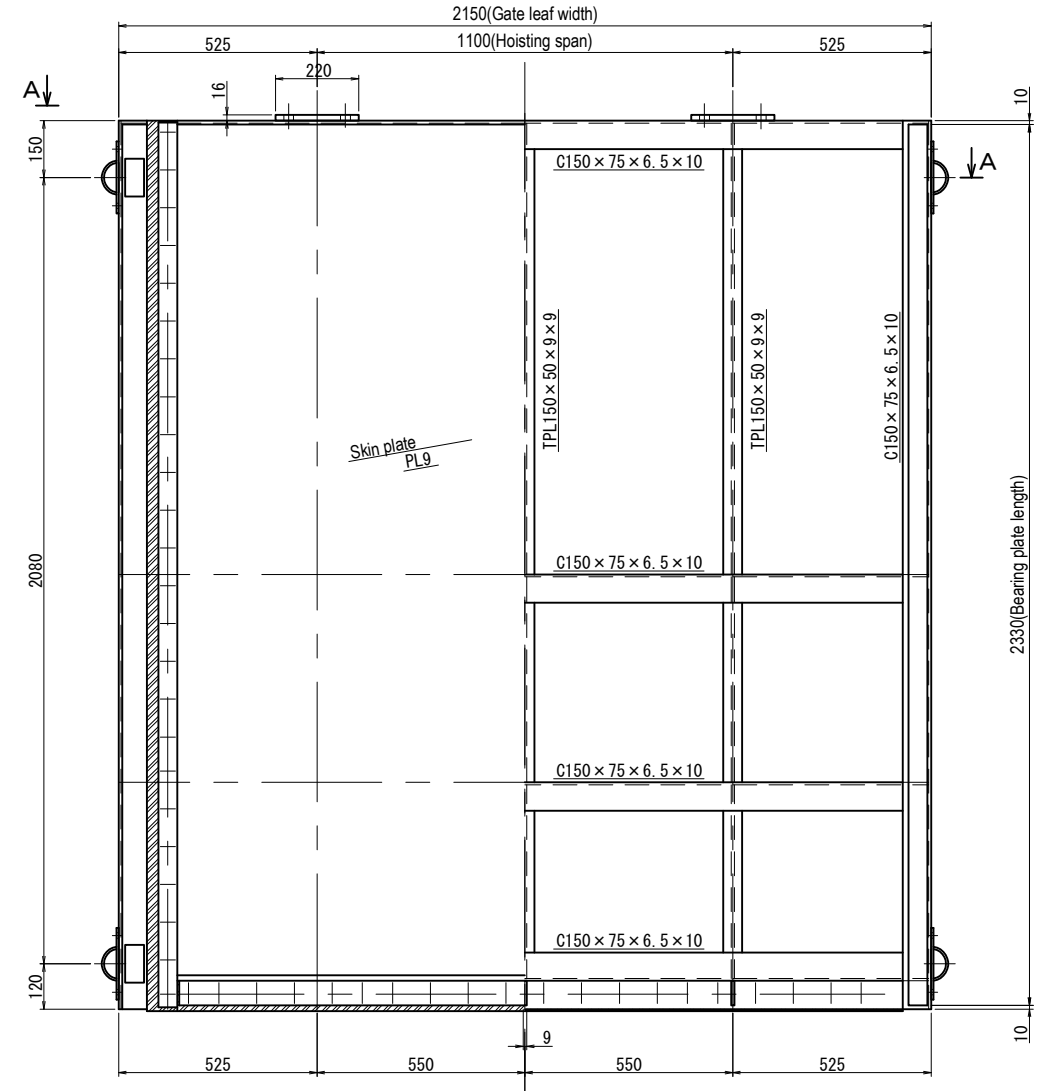


Front view Scale A

Back view Scale A

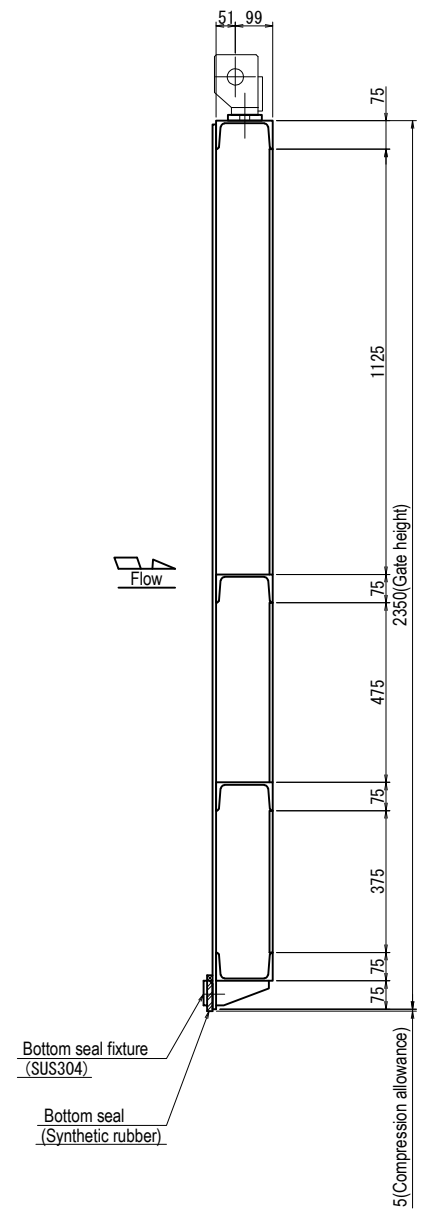


Detail of hanging bracket Scale B

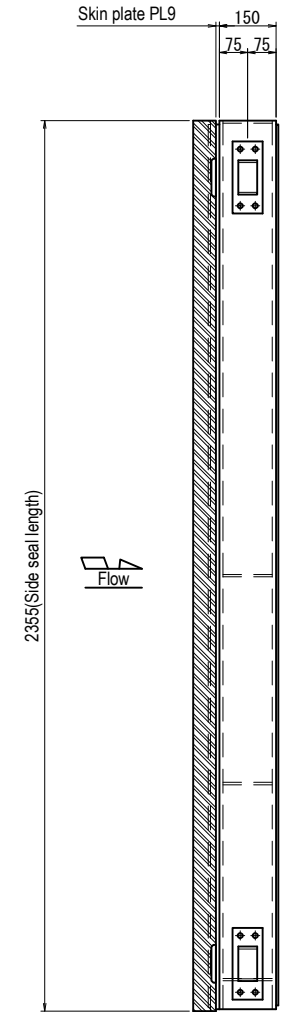


Bottom view Scale A

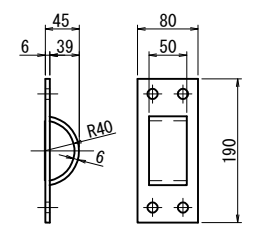
Section Scale A



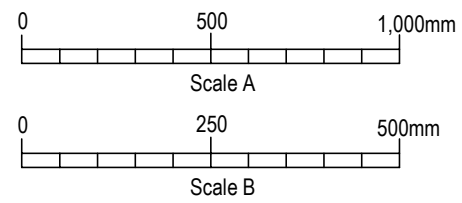
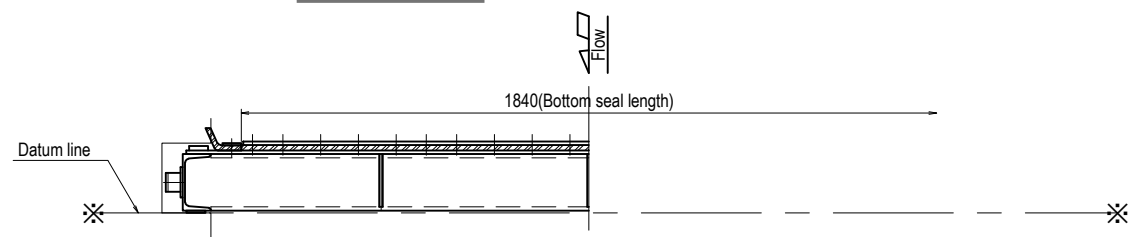
Side view Scale A



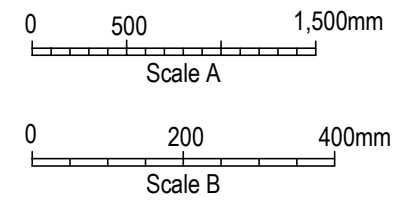
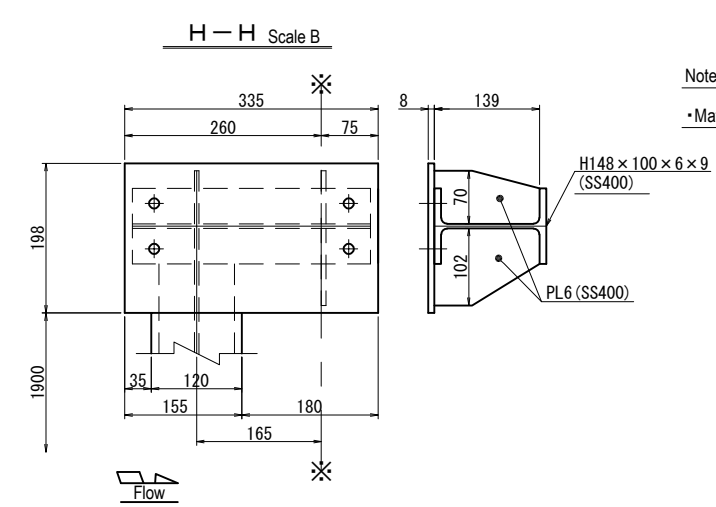
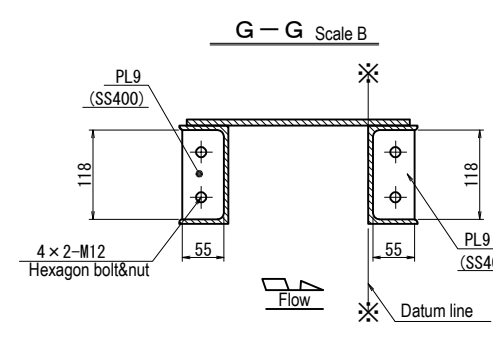
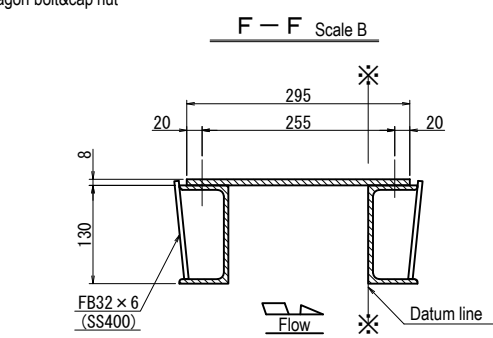
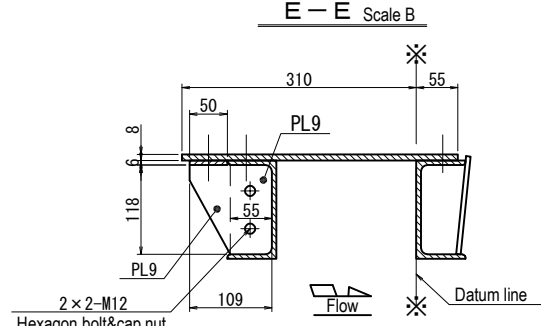
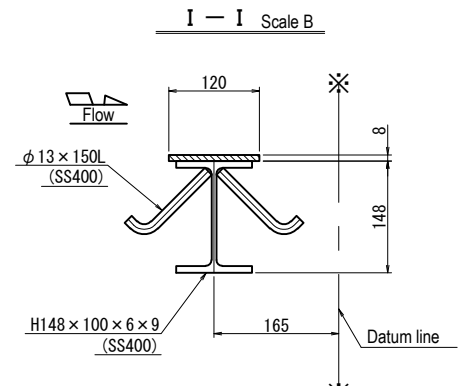
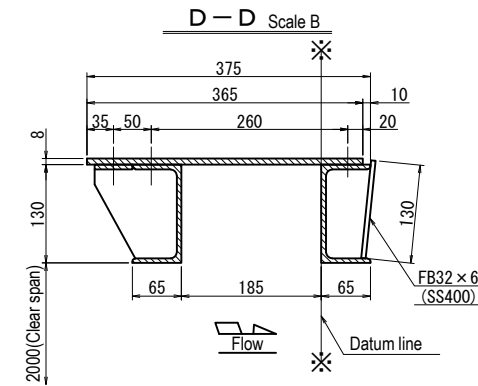
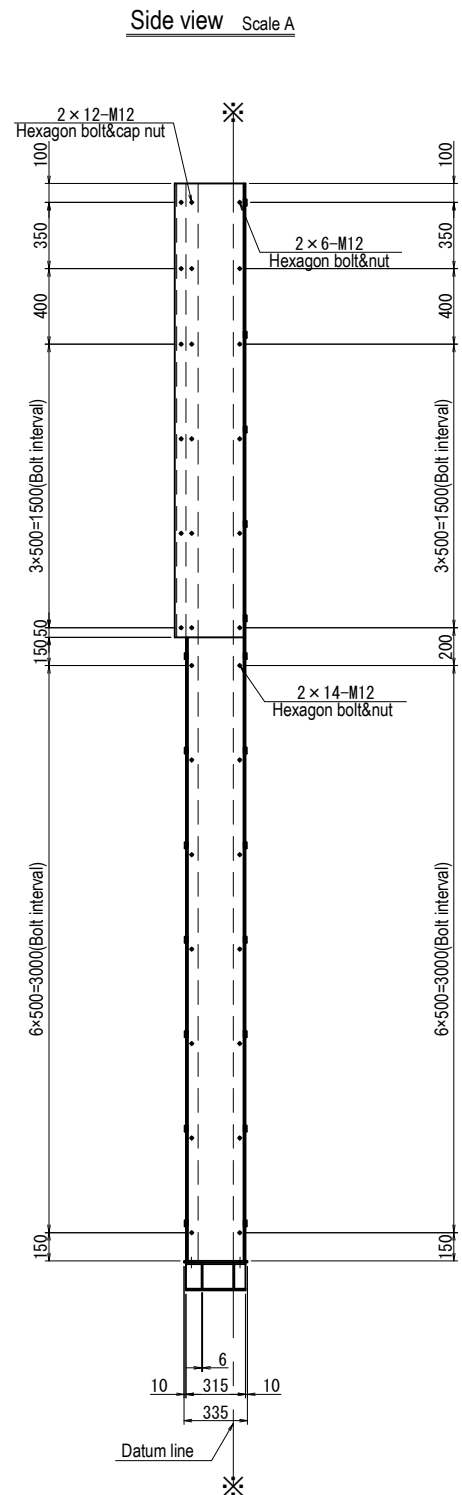
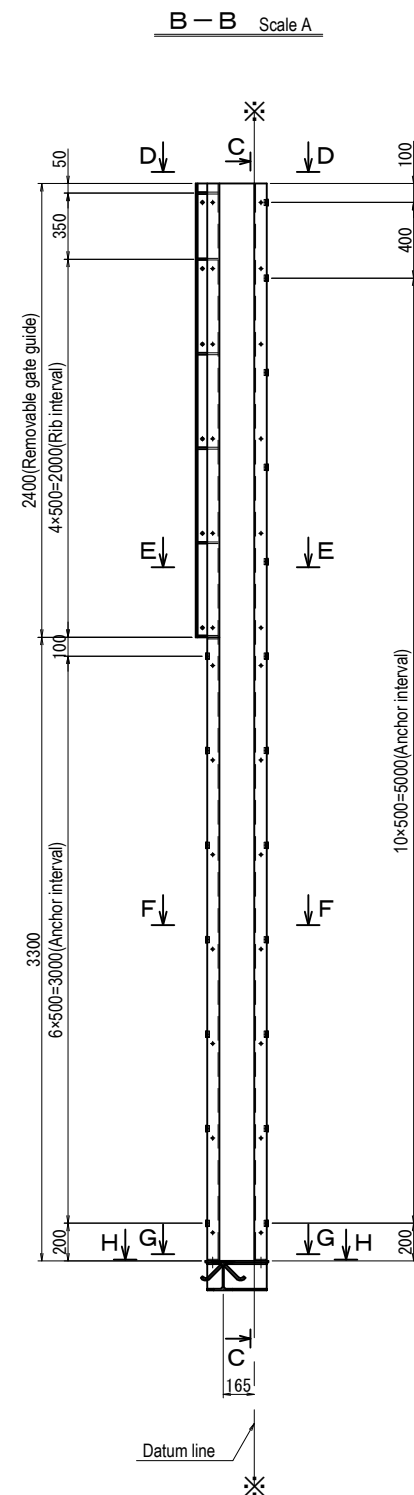
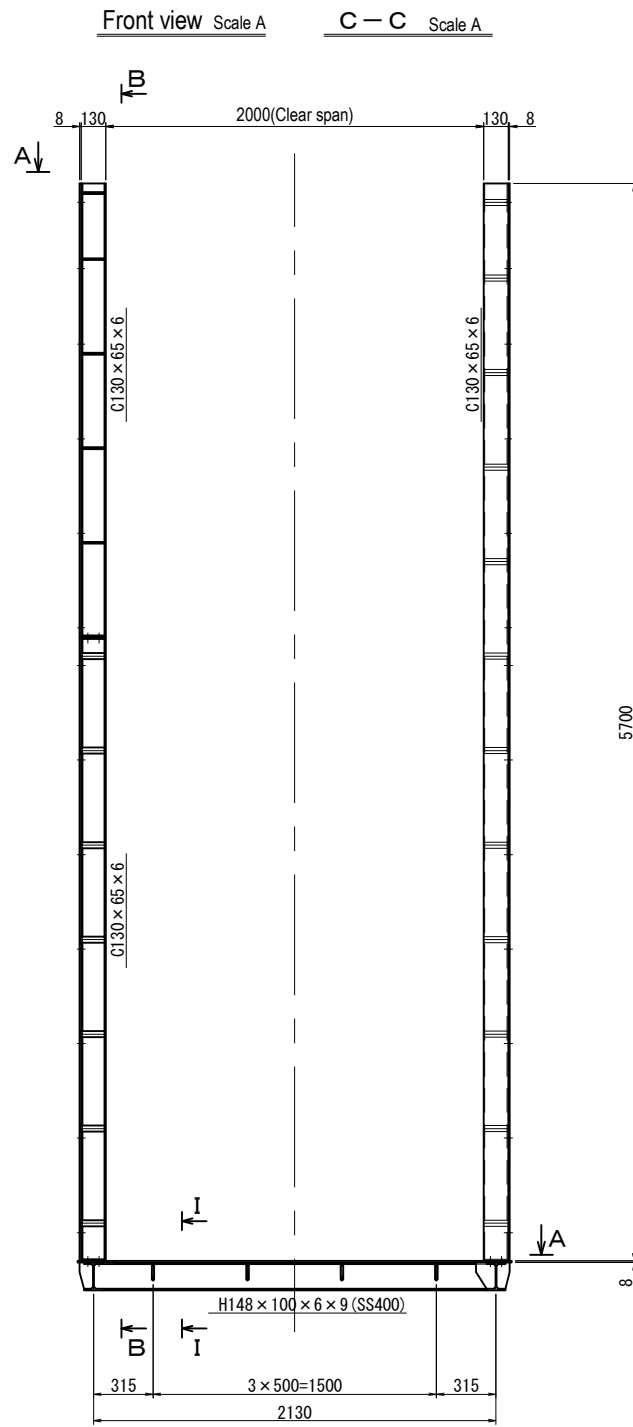
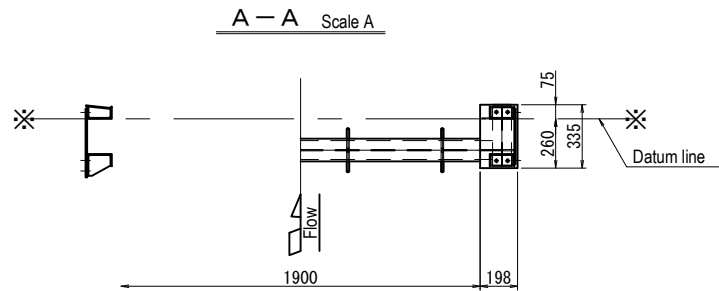
Detail of side shoe Scale B



Note
 •Materials shall be SS400 unless otherwise specified.



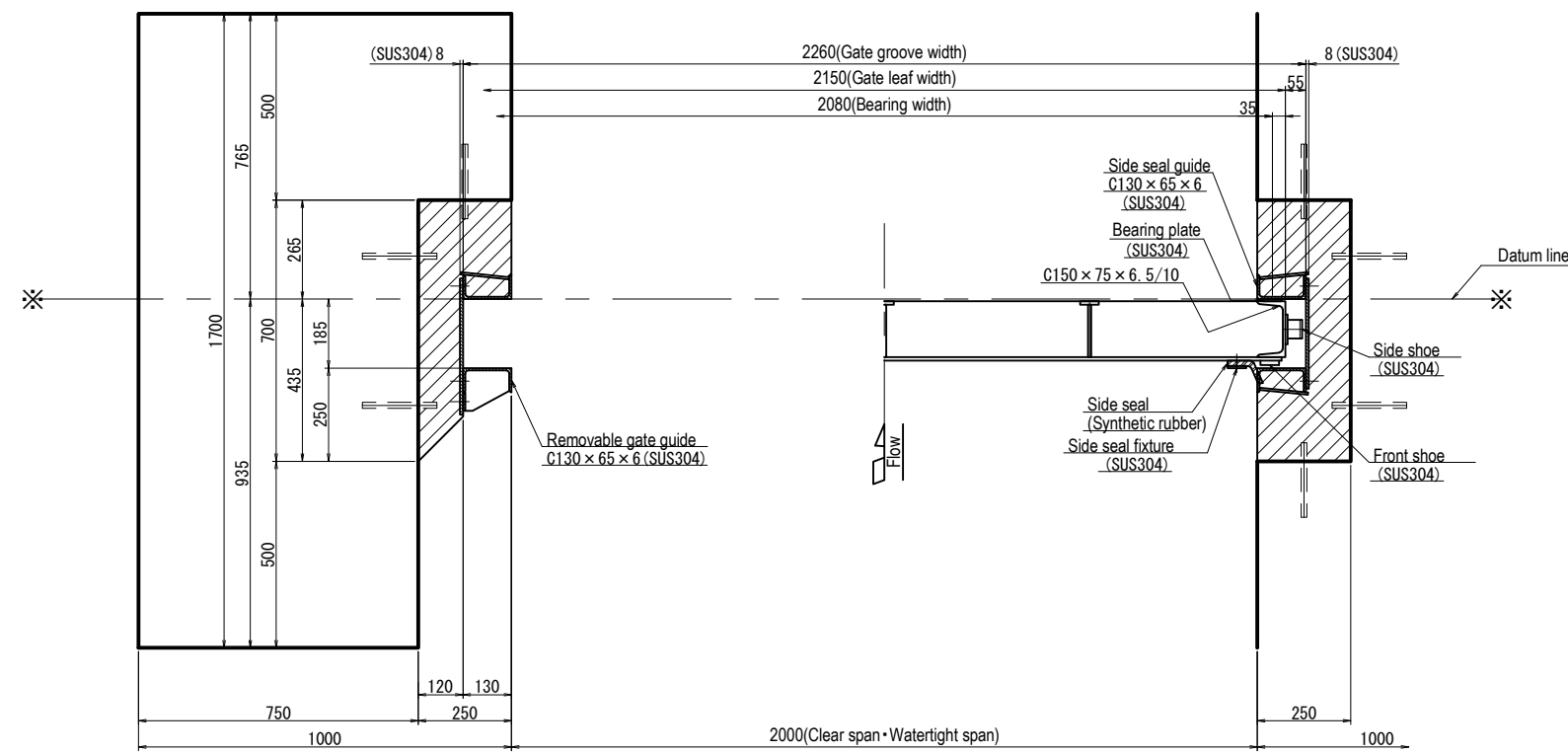
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Badraman Regulator (Diroutiah) Gate leaf assembling			DRW. NO. MD-2
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



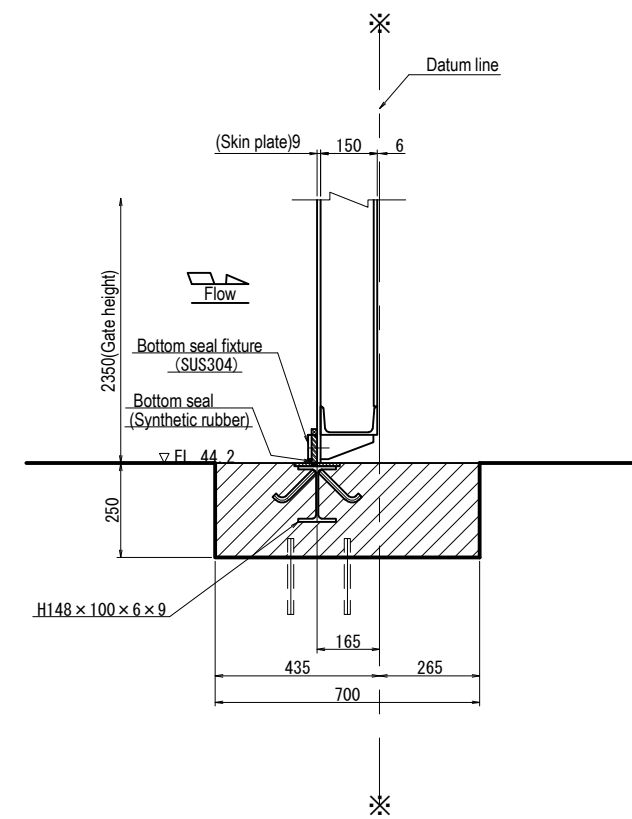
Note
 • Materials shall be SUS304 unless otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Badraman Regulator (Diroutiah) Gate guide assembling	DRW. NO MD-3	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

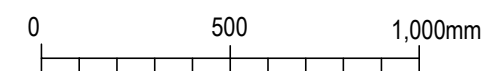
Detail of side seal



Detail of bottom seal

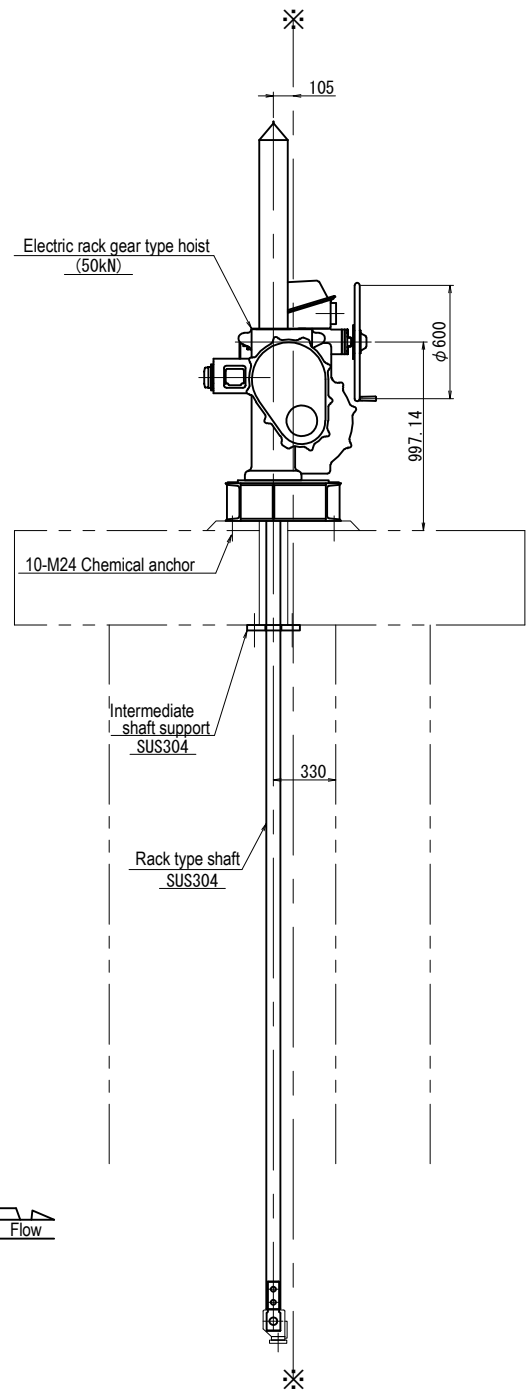


Note
•Materials shall be SS400 unless otherwise specified.

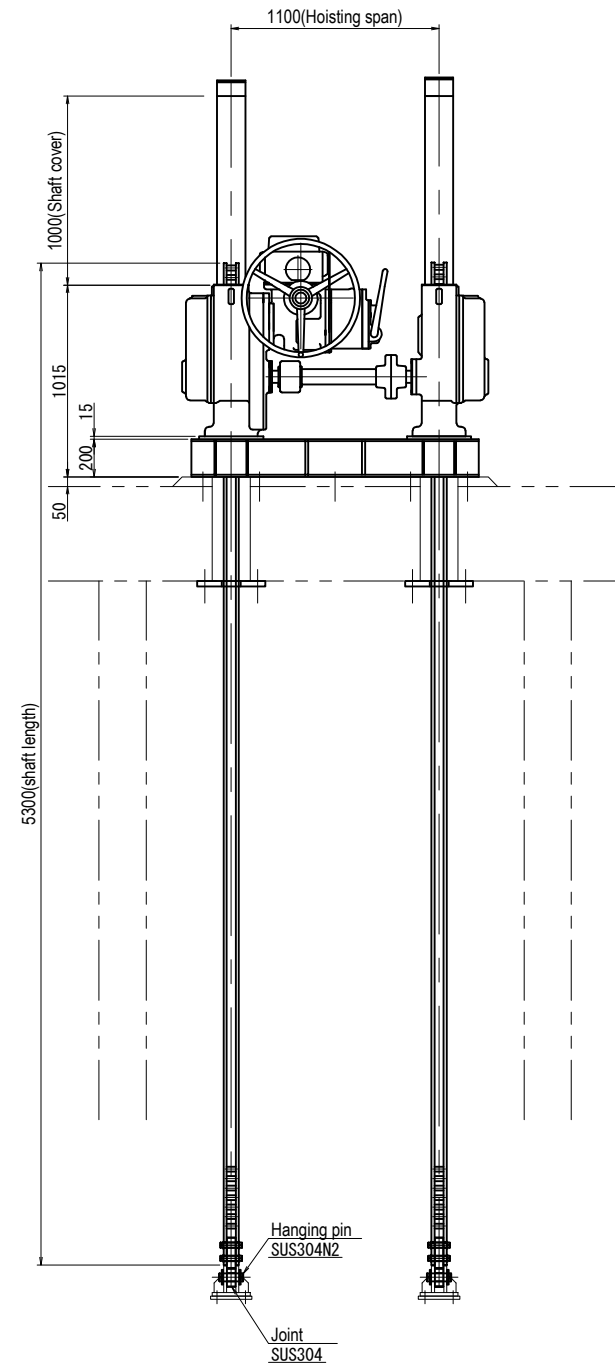


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Badraman Regulator (Diroutiah) Detail of seal			DRW. NO MD-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

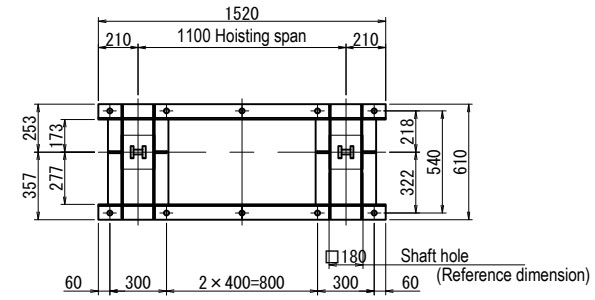
Side view Scale A



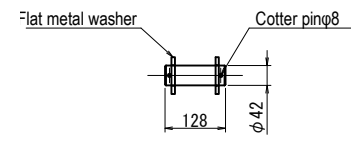
Front view Scale A



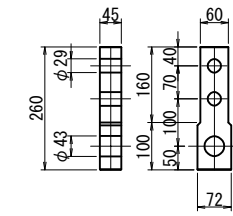
A - A Scale A



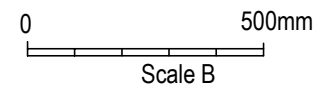
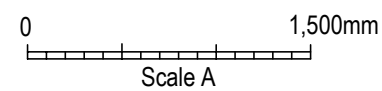
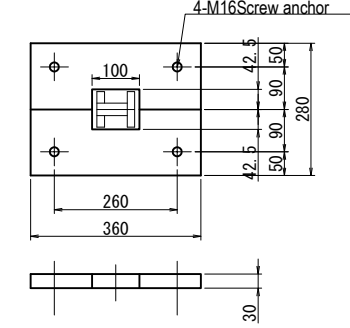
Hanging pin Scale B
Material: SUS304N2



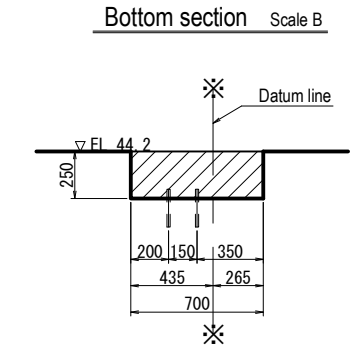
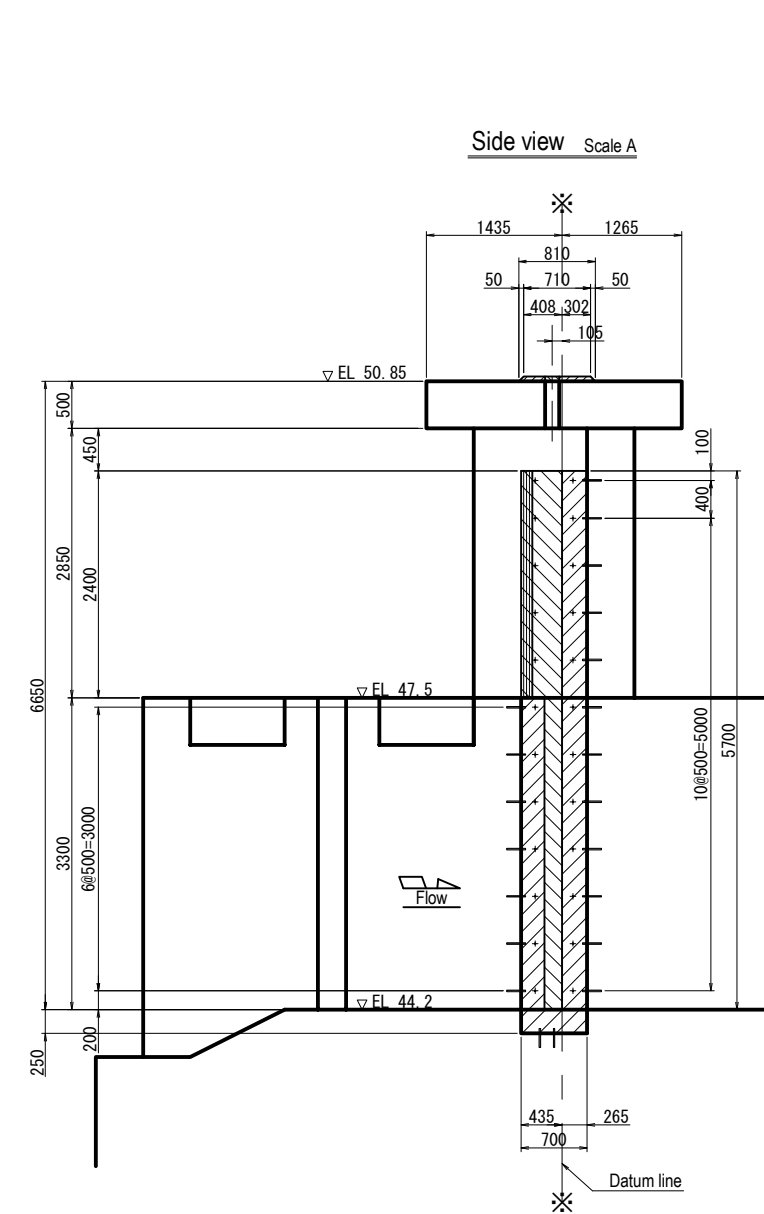
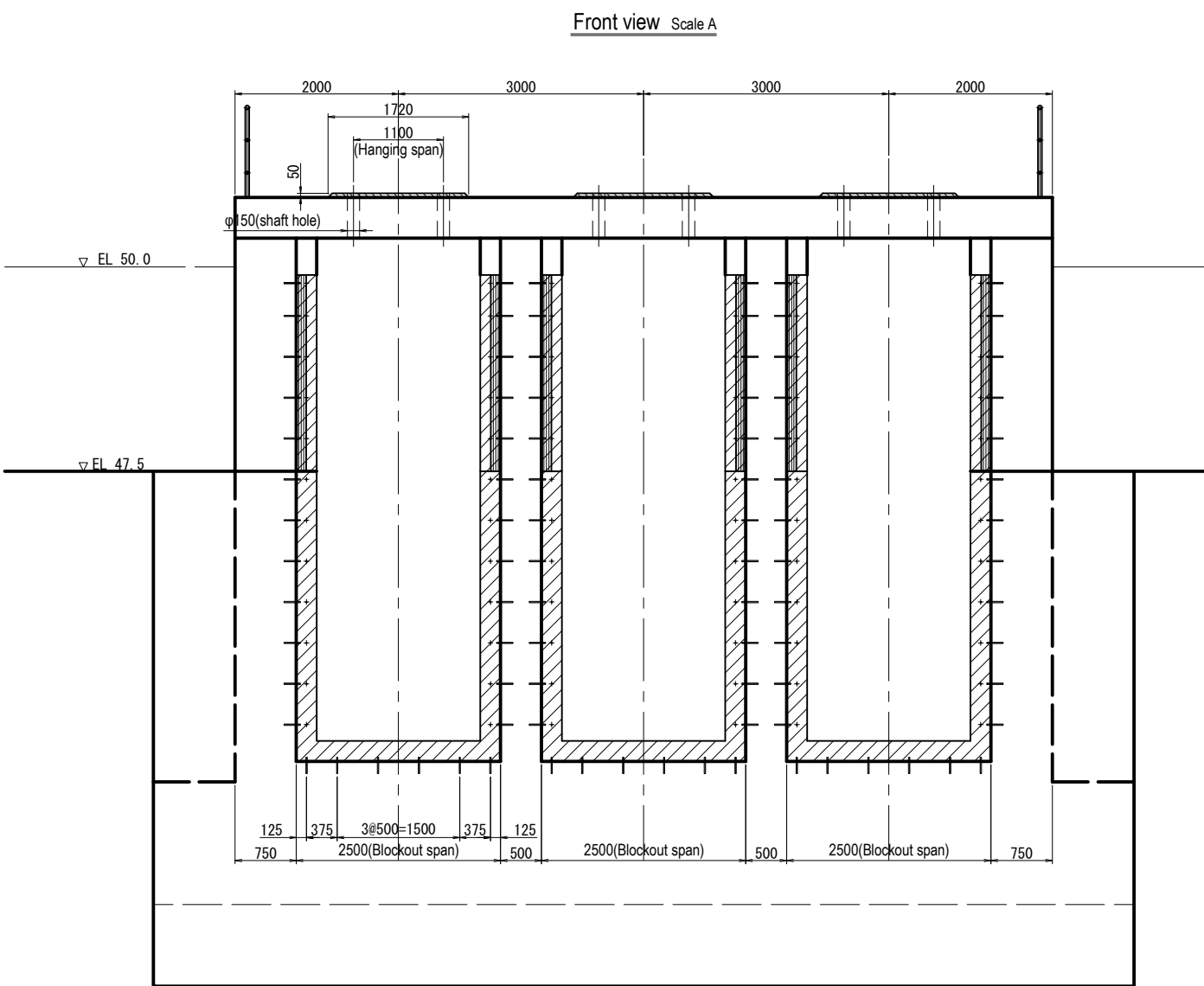
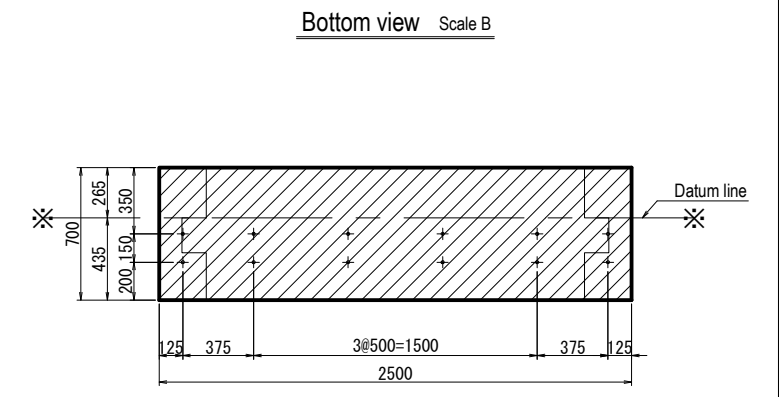
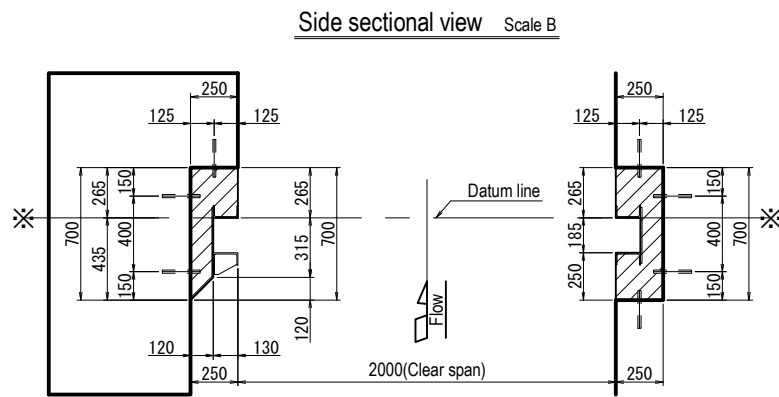
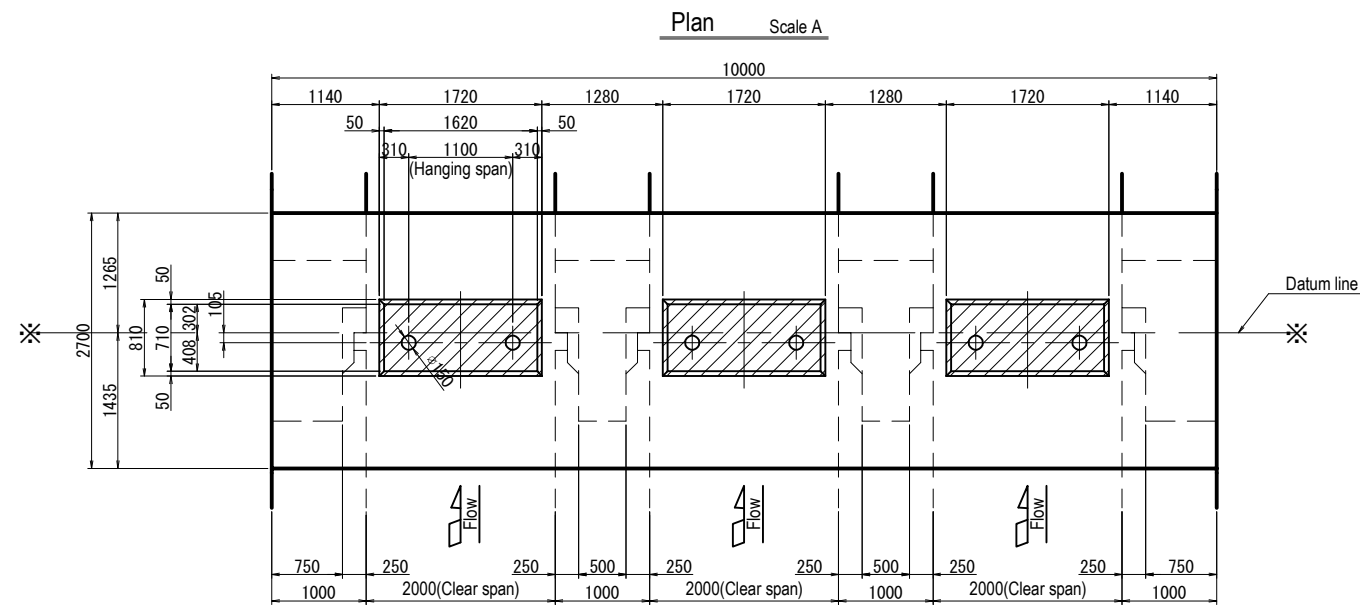
Joint of shaft Scale B
Material: SUS304



Intermediate shaft support Scale B
Material: SUS304



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Badraman Regulator (Diroutiah) Hoisting device assembling			DRW. NO MD-5
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



Joint bar	
Detail	
Number/one gate	98 pcs
Total	294 pcs

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Badraman Regulator (Diroutiah)
Blockout and anchors

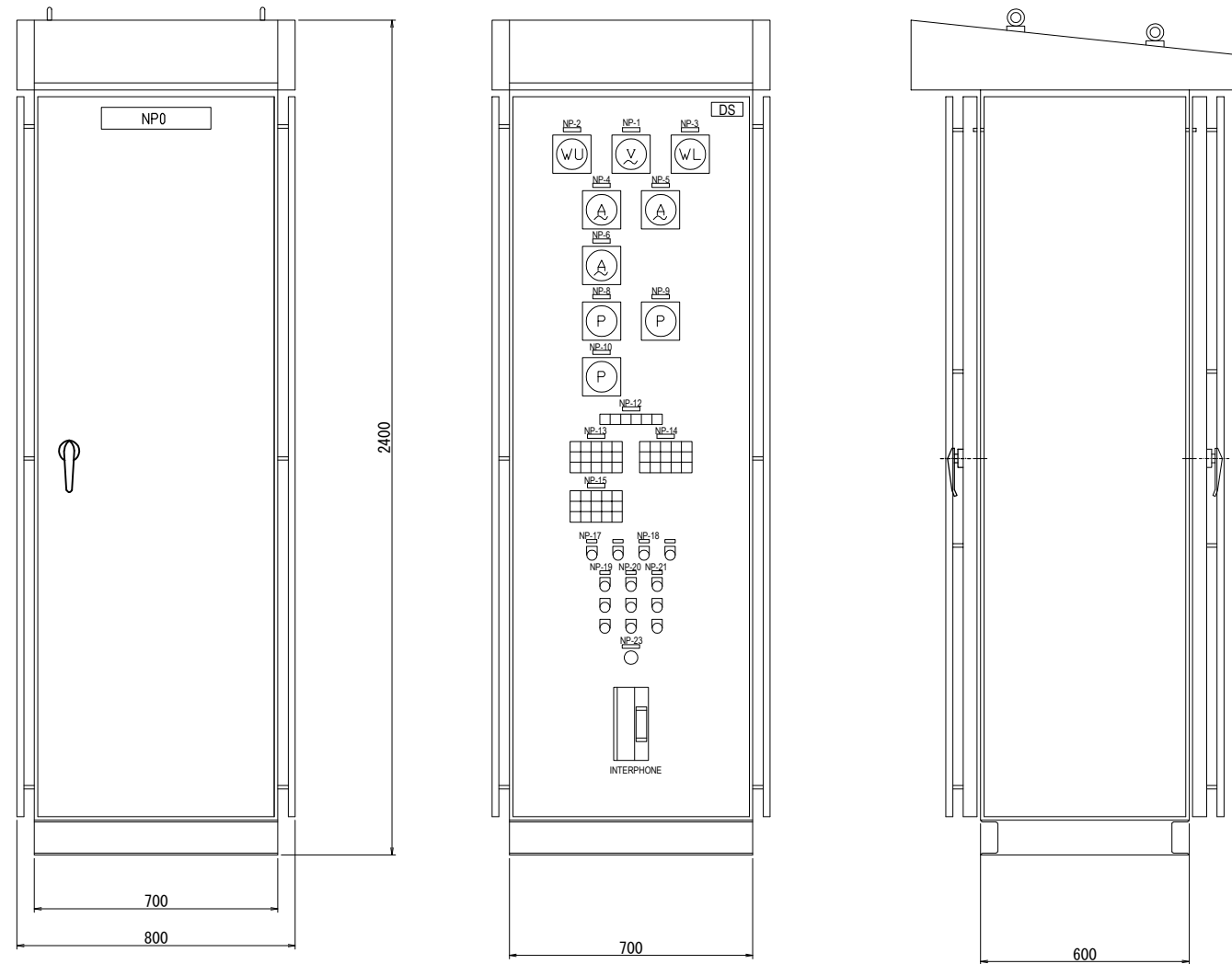
DRW. NO
MD-6

SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____



Local Control Panel

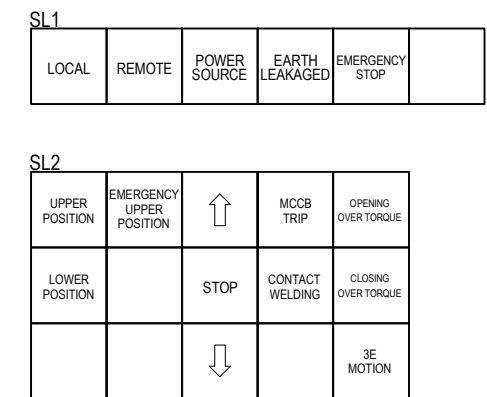


Name	Mark	Letter
NP-0		LOCAL CONTROL PANEL
NP-1	V	POWER SOURCE VOLTAGE
NP-2	WU	UPPER SIDE WATER LEVEL
NP-3	WL	LOWER SIDE WATER LEVEL
NP-4	A	No.1 GATE CURRENT
NP-5	A	No.2 GATE CURRENT
NP-6	A	No.3 GATE CURRENT
NP-8	P	No.1 GATE POSITION
NP-9	P	No.2 GATE POSITION
NP-10	P	No.3 GATE POSITION
NP-12	SL1	STATUS INDICATION
NP-13	SL2	No.1 GATE STATUS INDICATION
NP-14	SL2	No.2 GATE STATUS INDICATION
NP-15	SL2	No.3 GATE STATUS INDICATION
NP-17		MANUAL-AUTO
NP-18		BUZZER STOP
NP-19		No.1 GATE OPEN-STOP-CLOSE
NP-20		No.2 GATE OPEN-STOP-CLOSE
NP-21		No.3 GATE OPEN-STOP-CLOSE
NP-23		EMERGENCY STOP

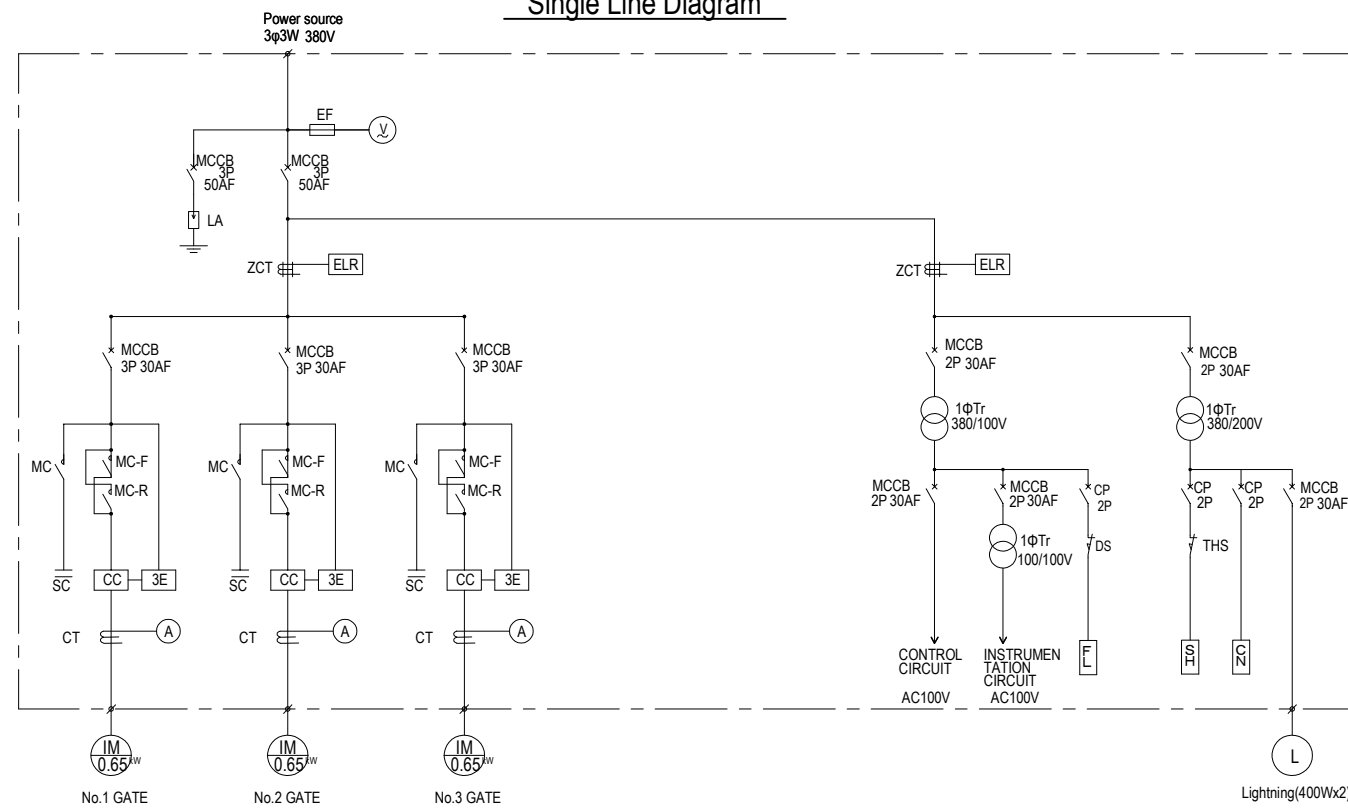
SPECIFICATIONS

1. TYPE OUTDOOR SELFSTANDING
2. PLATE 2.0t(SUS)
3. BASE Ch100X50X5t
4. COATING COLOR MUNSEL 5Y7/1 (SEMI GLOSS)
5. METER COLOR N1.5
6. QTY 1

INDICATING LAMP



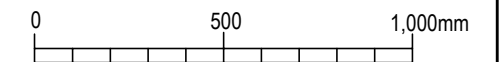
Single Line Diagram



SYMBOL LEGEND

Mark	Name
MCCB	Molded Case Circuit Breaker
CP	Circuit Protector
ELR	Earth Leakage Relay
ZCT	Zero-phase-sequence Current Transformer
MC	Electromagnetic Contactor
LA	Lightning Arrester
SC	Static Condenser
3E	Three Element Relay for over load, open phase and phase sequence reversal
CC	Current Converter
Tr	Transformer
V	Voltmeter
A	Ammeter
EF	Enclosed Fuse
DS	Disconnecting Switch
THS	Thermoswitch
FL	Fluorescent Lamp
SH	Space Heater
CN	Socket Outlet

Note; Refer to the Plan view in the General drawing (MD-1)



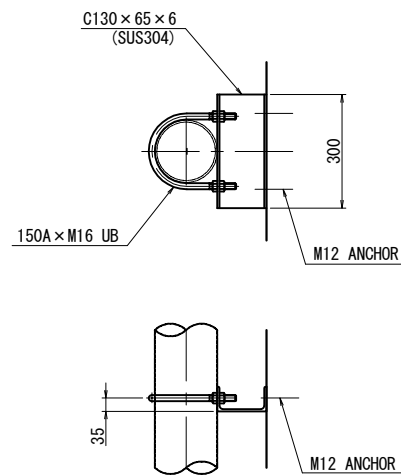
Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

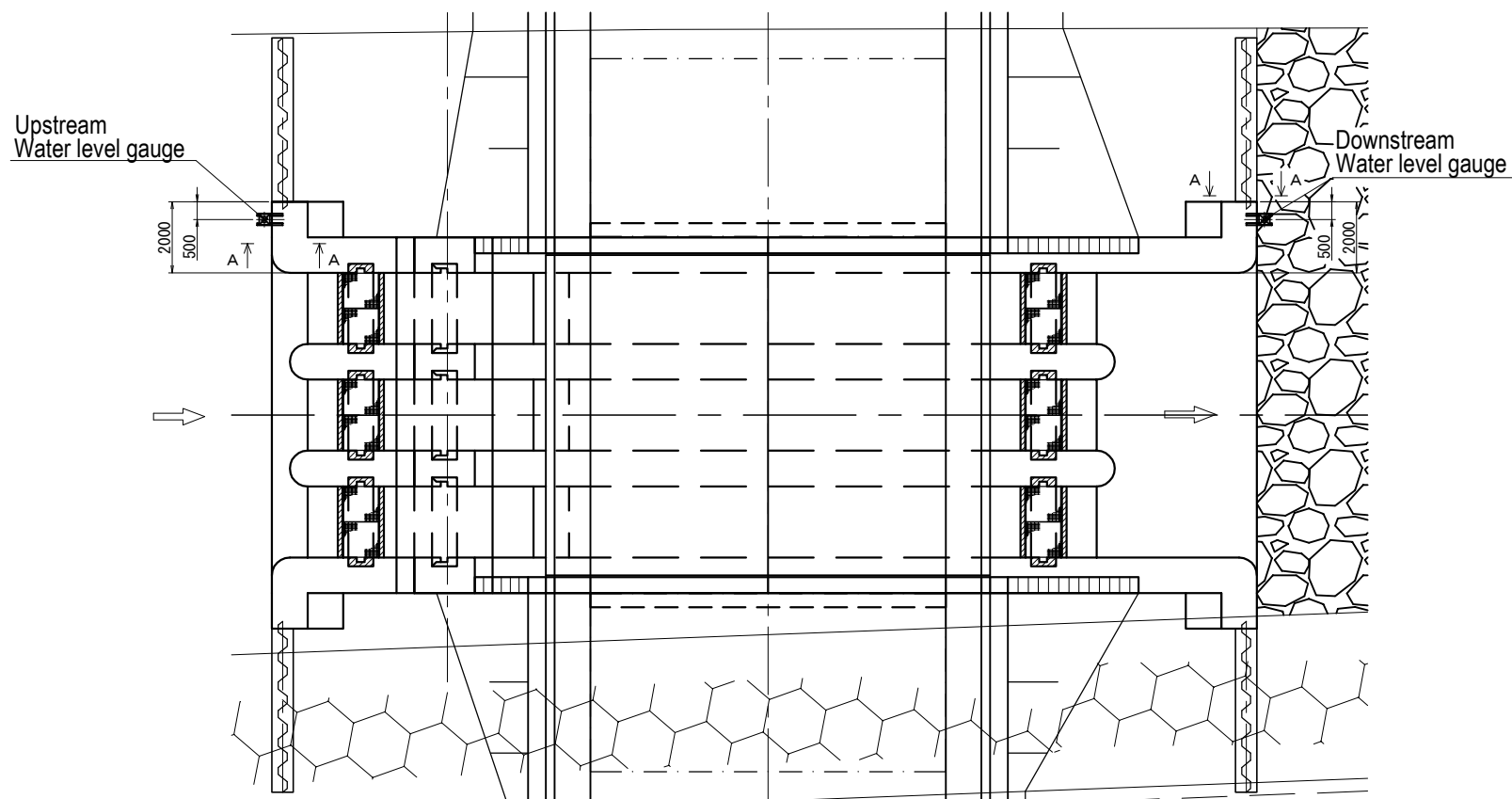
Badraman Regulator (Diroutiah) Local control panel and single line diagram	DRW. NO MD-7
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

Water level detector pipe (Diroutiah)

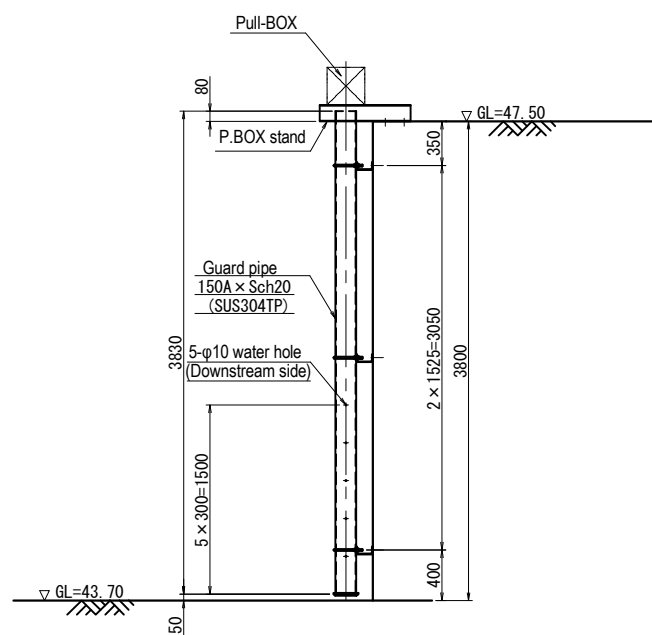
Concrete fixing bracket Scale B



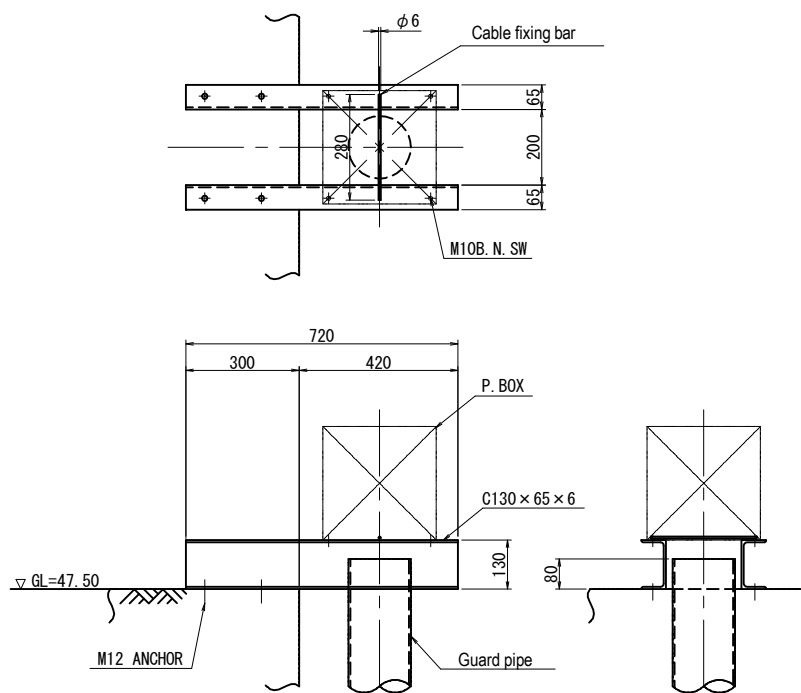
Plan Scale A



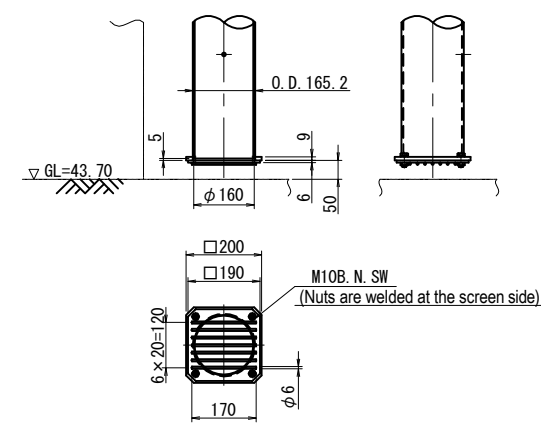
A - A Scale C



Pull-BOX stand Scale B



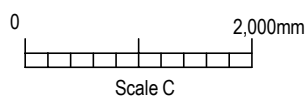
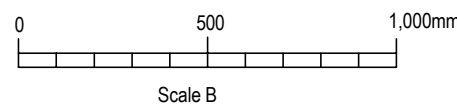
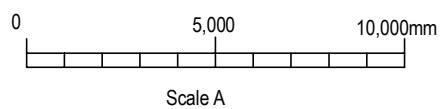
Bottom screen Scale B



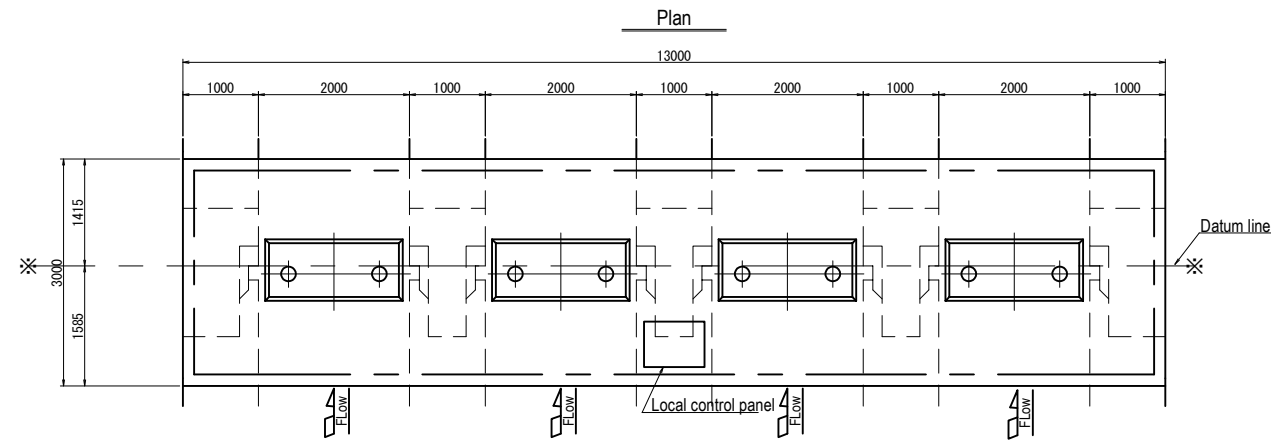
Staff gauge



Note
 • Material is SUS304 if not otherwise specified.
 • Staff gauge shall be installed beside the water level detector

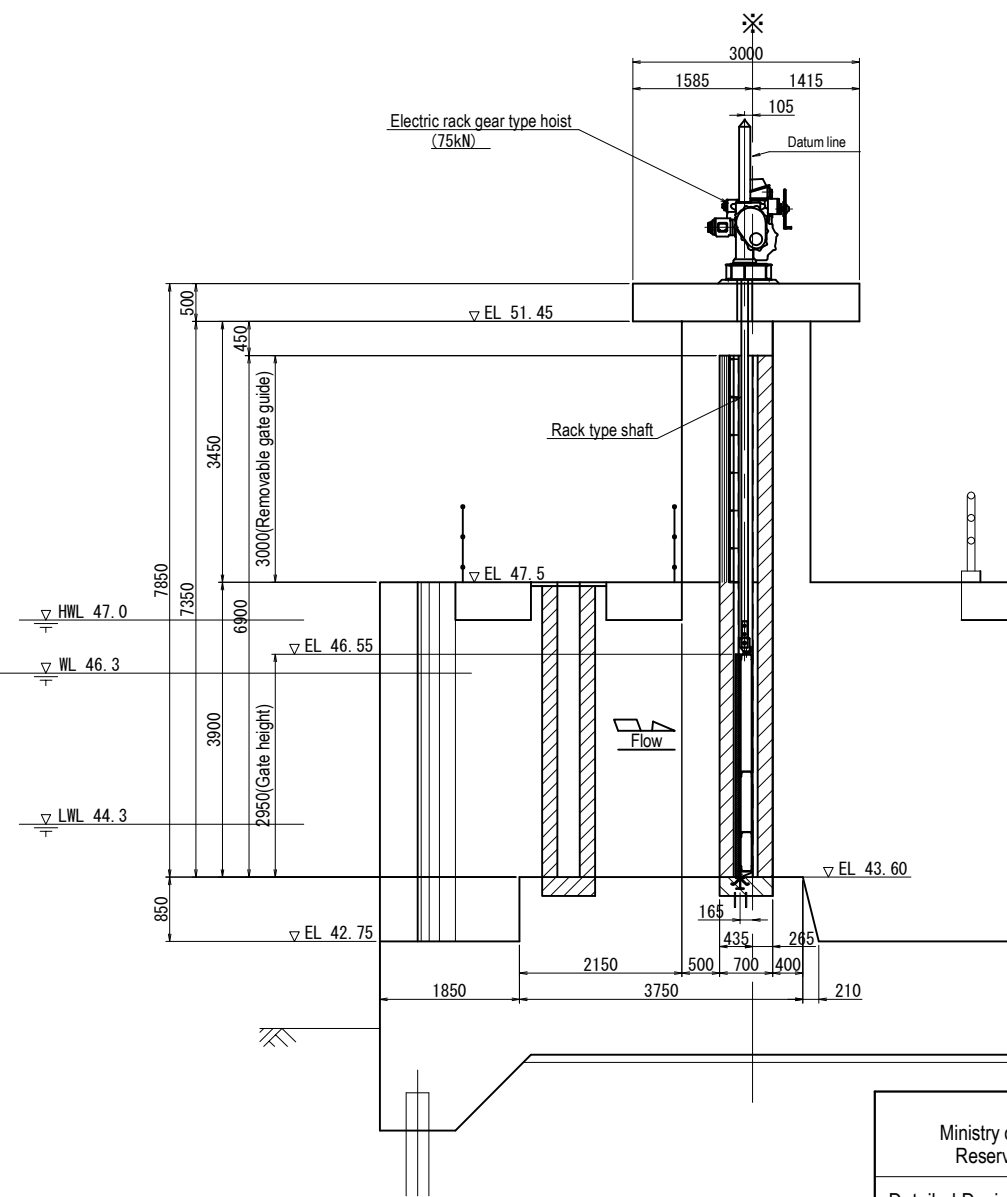


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Badraman Regulator (Diroutiah) Water level detector pipe	DRW. NO MD-8	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

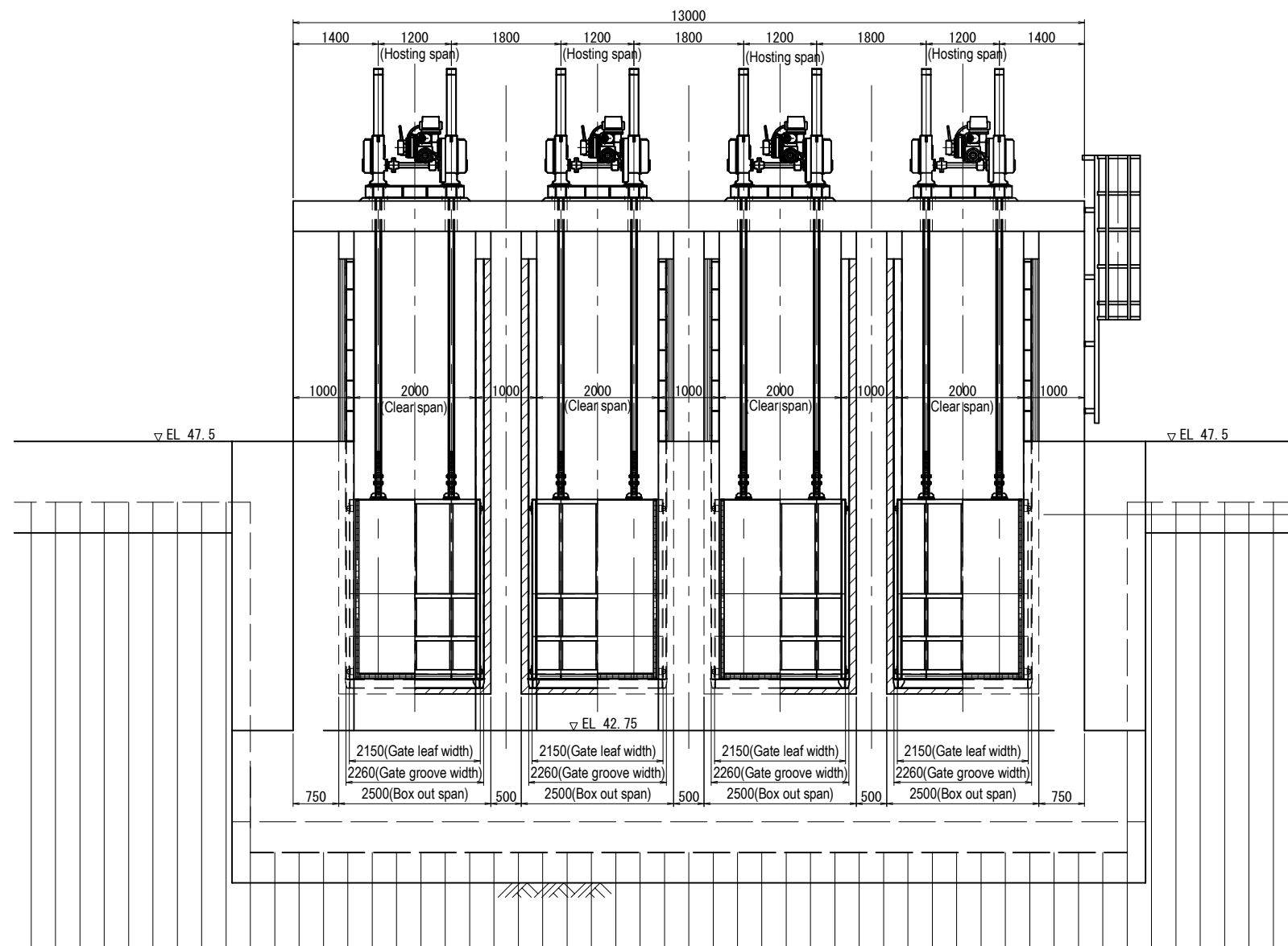


Design Condition		
Type	Slide gate	
Number of gate	4	
Clear span	2.000 m	
Gate height	2.950 m	
Design water depth	2.950 m	
Operation depth	Open	2.950 m
	Close	2.950 m
Sediment height	0.300 m	
Seal type	Upstream 3-side sealing	
Hoist type	Electric rack gear type	
Operating speed	0.3 m/min	
Lifting height	3.900 m	
Operation type	Local and remote control	

Side view



Front elevation



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

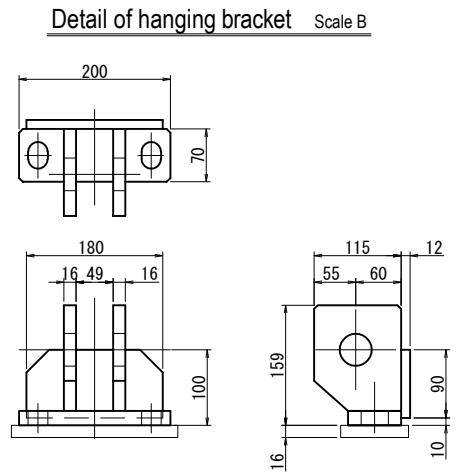
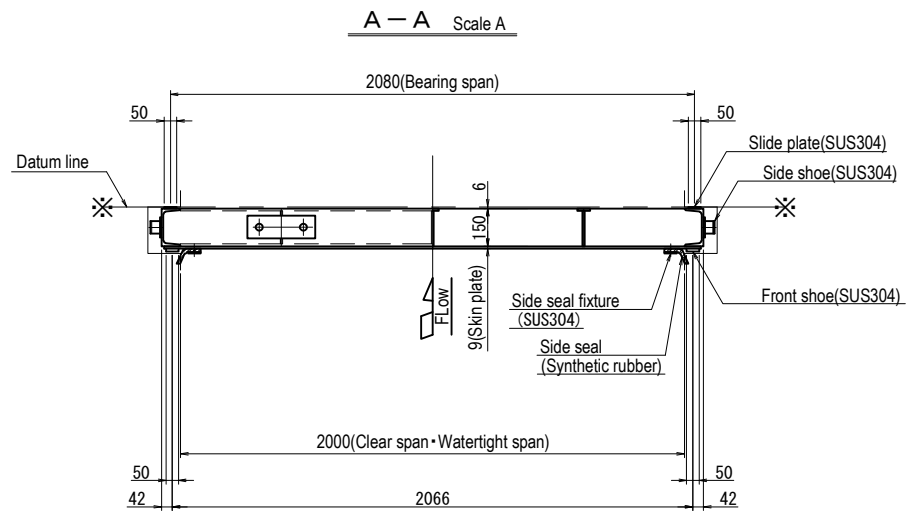
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Abo Gabal Regulator
General drawing

DRW. NO
MA-1

SANYU CONSULTANTS INC.

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DATE:	DATE:	DATE:



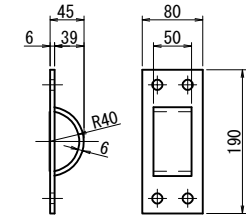
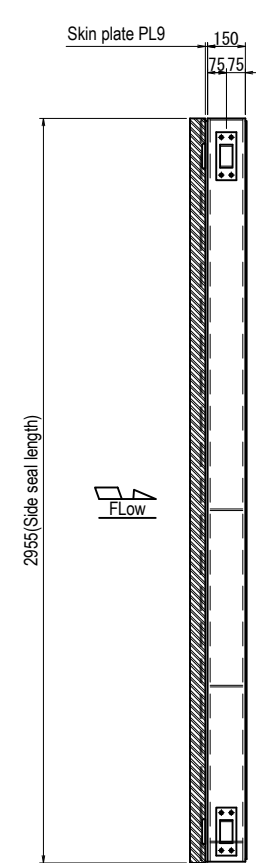
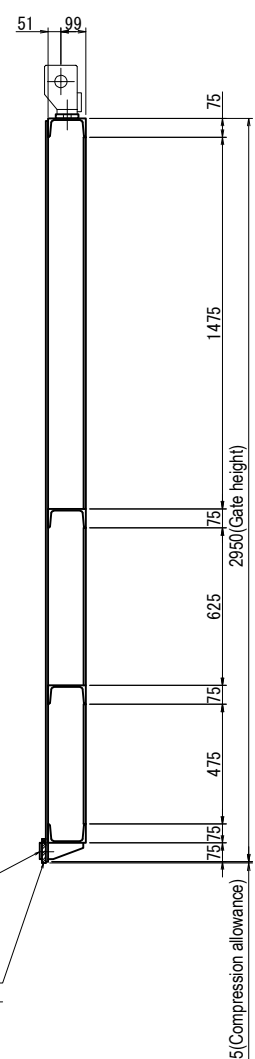
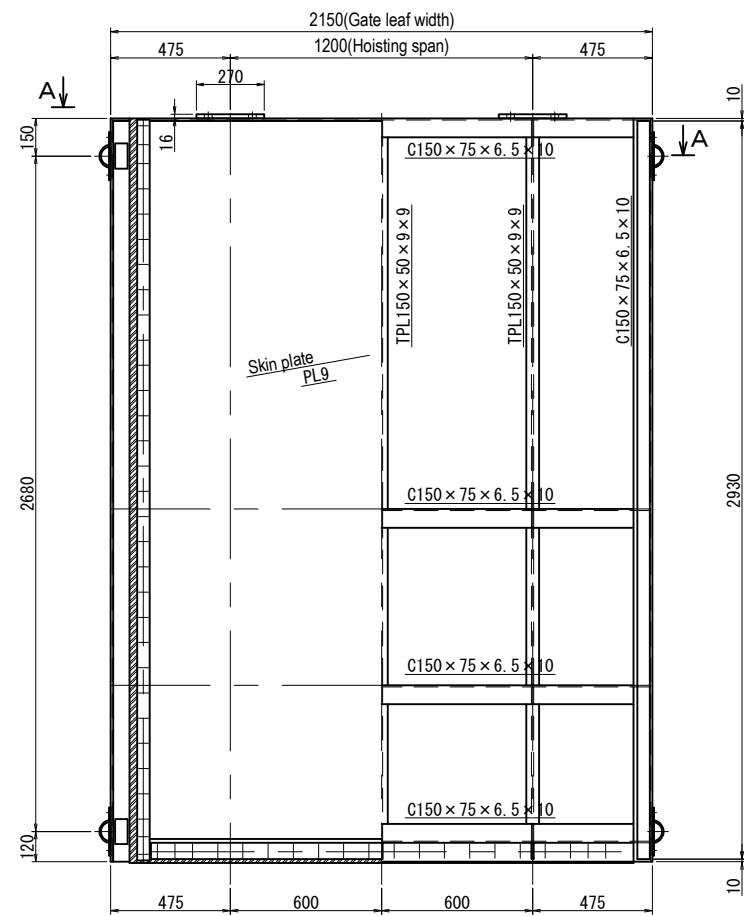
Front view Scale A

Back view Scale A

Section Scale A

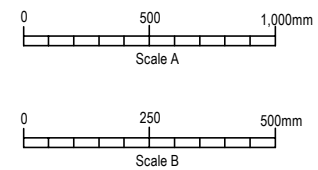
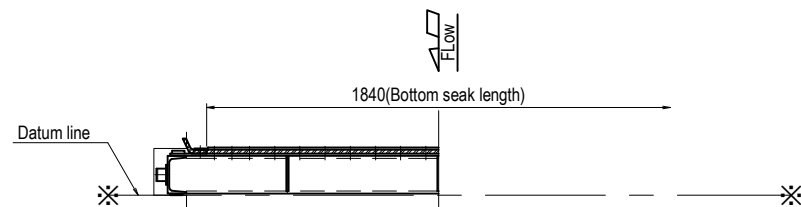
Side view Scale A

Detail of side shoe Scale B

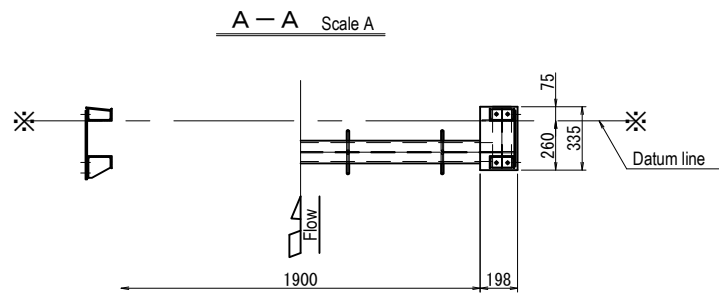


Bottom view Scale A

Note
 *Materials shall be SS400 unless otherwise specified.

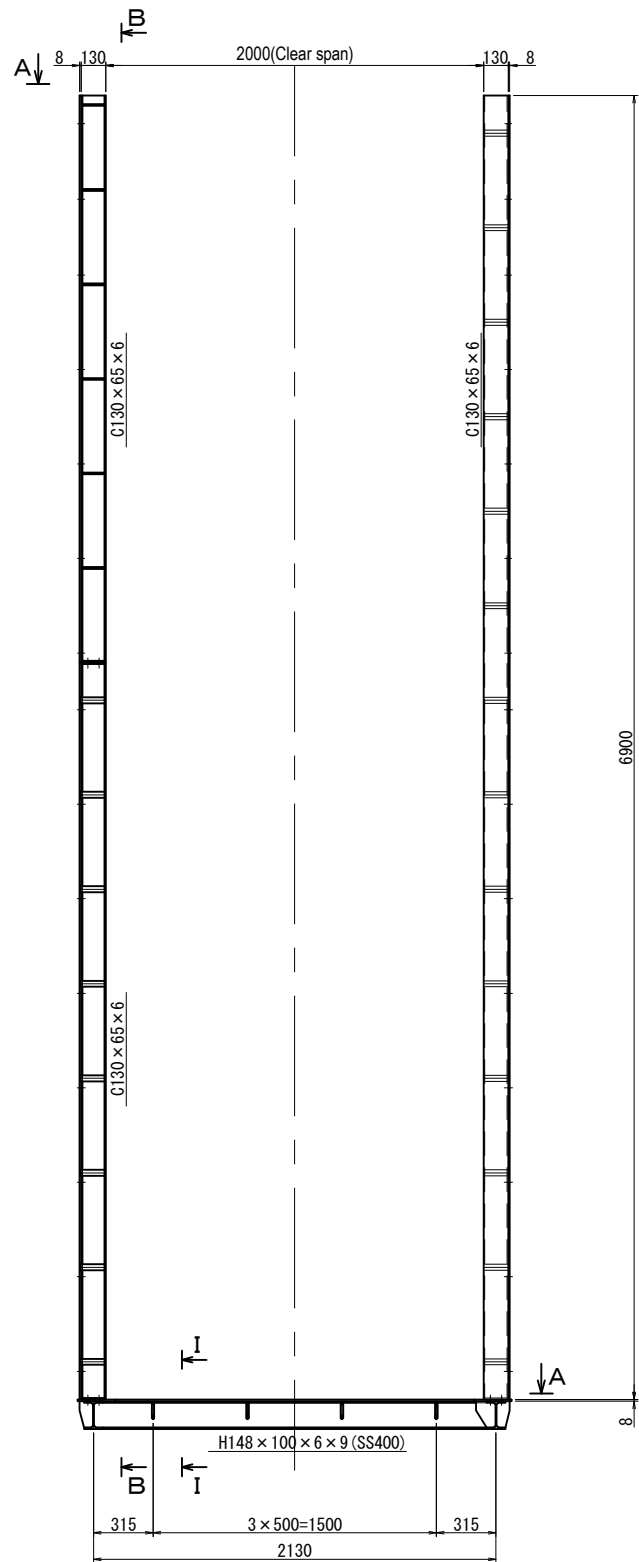


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Abo Gabal Regulator Gate leaf assembling			DRW. NO. MA-2
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

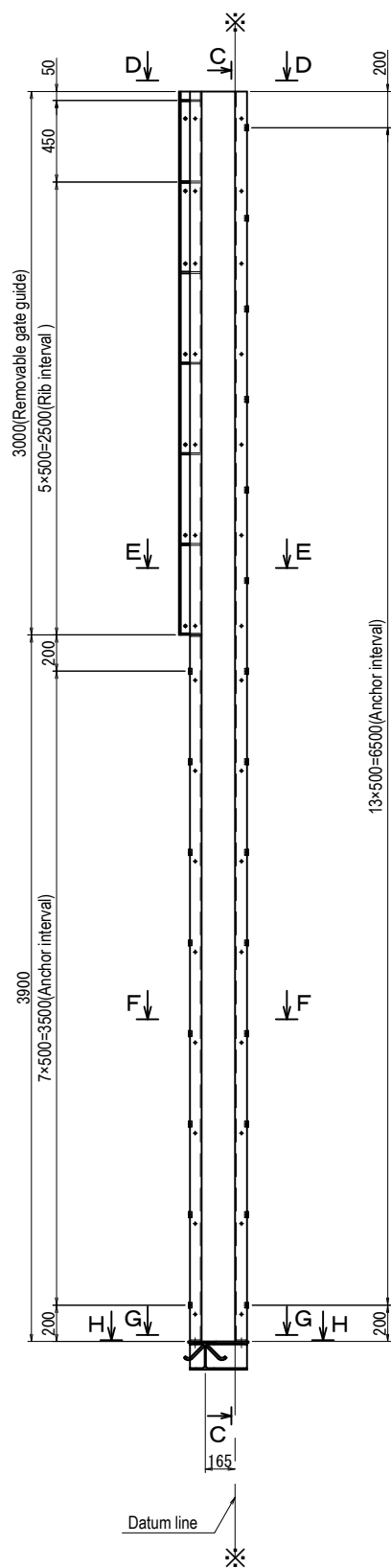


Front view Scale A

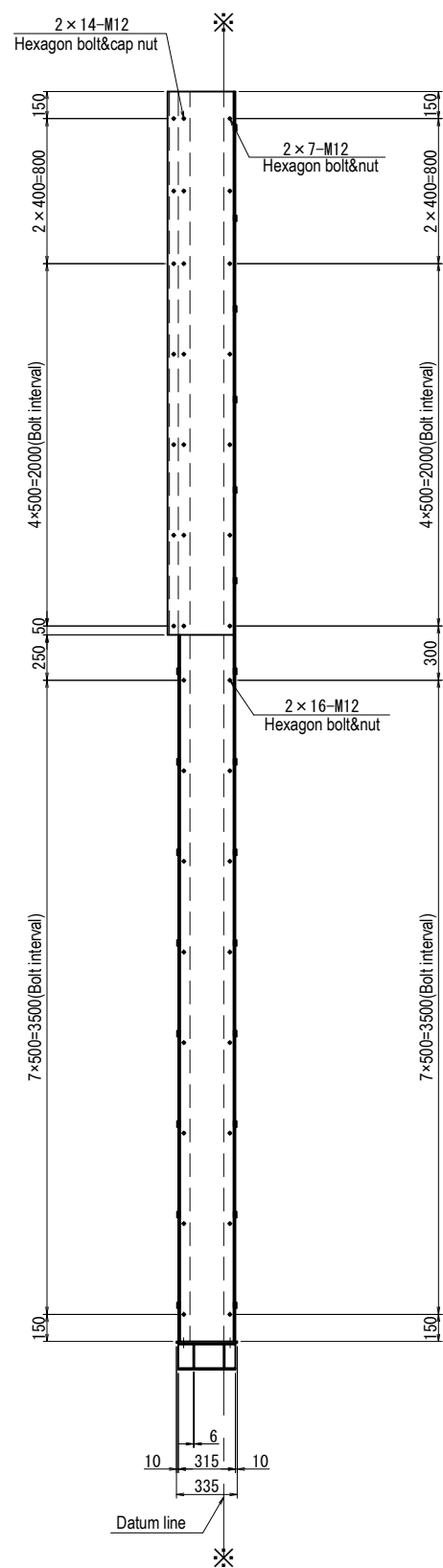
C-C Scale A



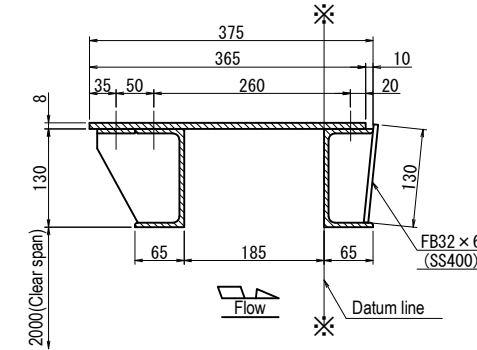
B-B Scale A



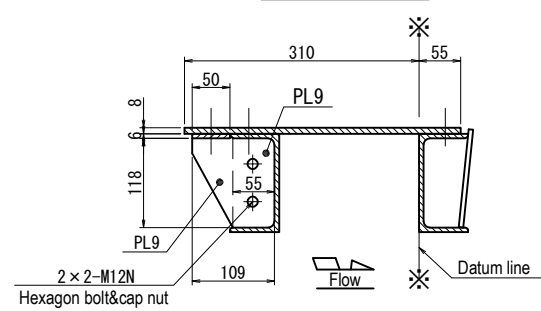
Side view Scale A



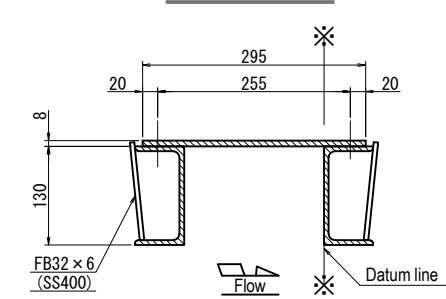
D-D Scale B



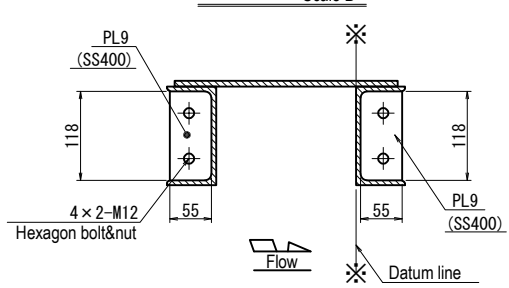
E-E Scale B



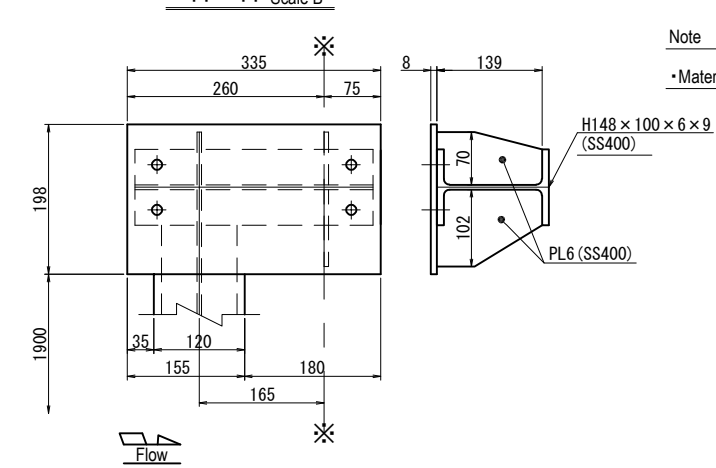
F-F Scale B



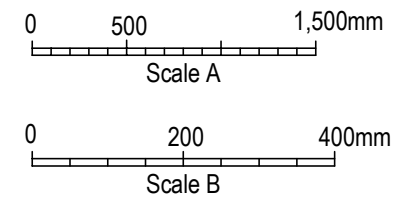
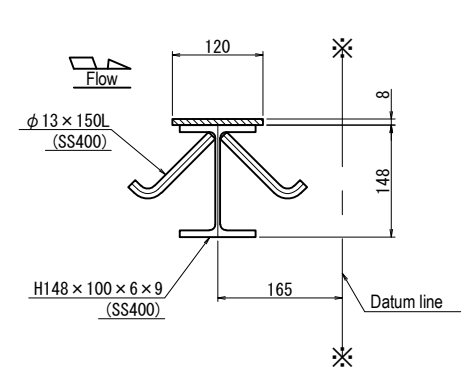
G-G Scale B



H-H Scale B



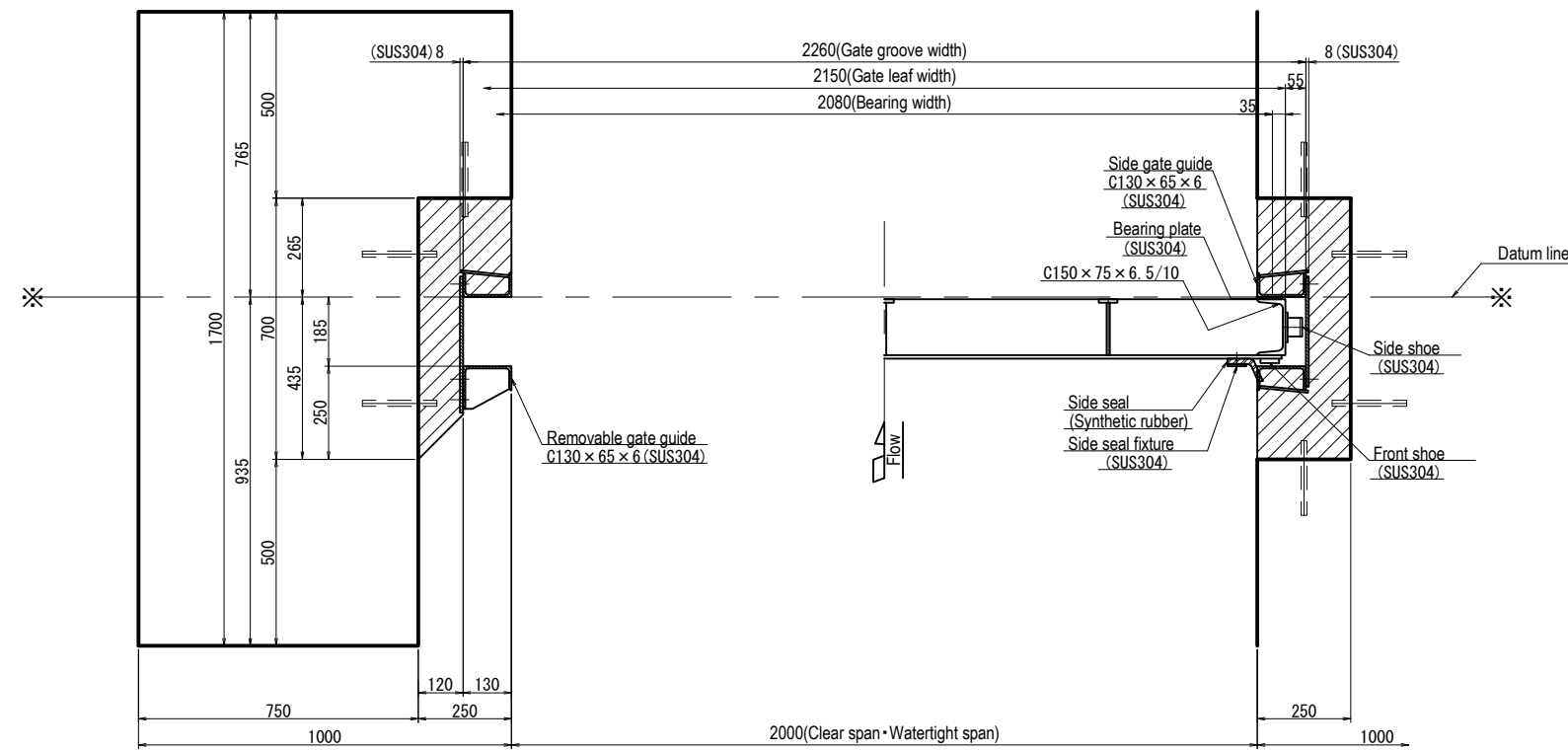
I-I Scale B



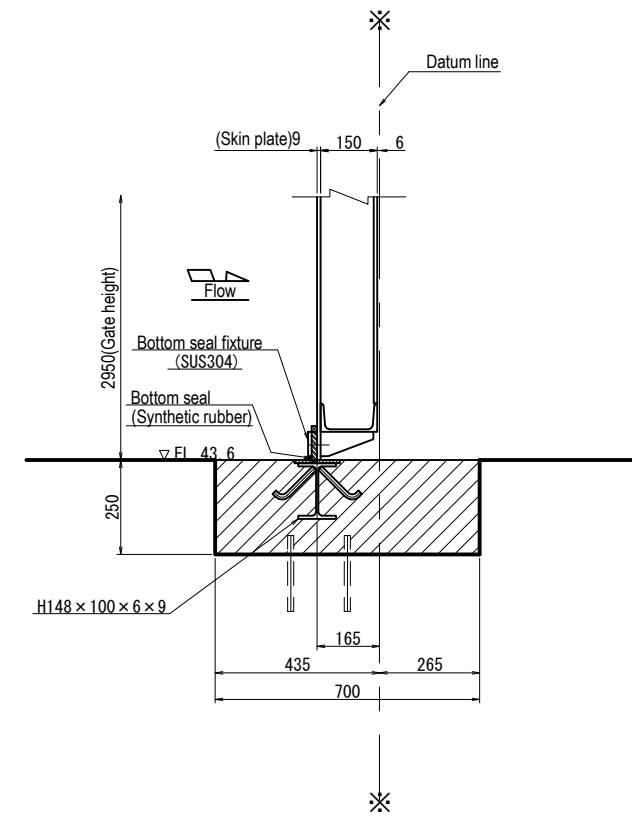
Note
 • Materials shall be SUS304 unless otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Abo Gabal Regulator Gate guide assembling	DRW. NO MA-3	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

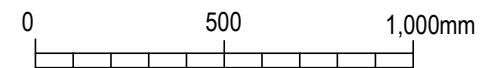
Detail of side seal



Detail of bottom seal

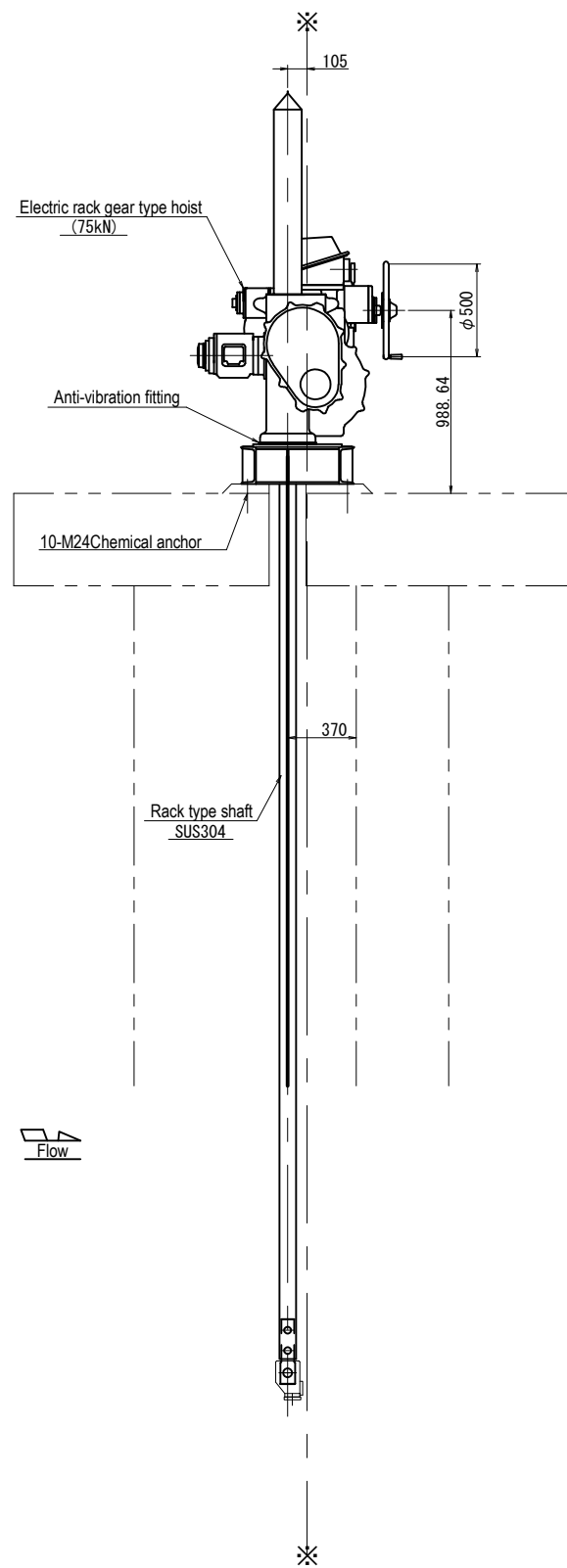


Note
 - Materials shall be SS400 unless otherwise specified.

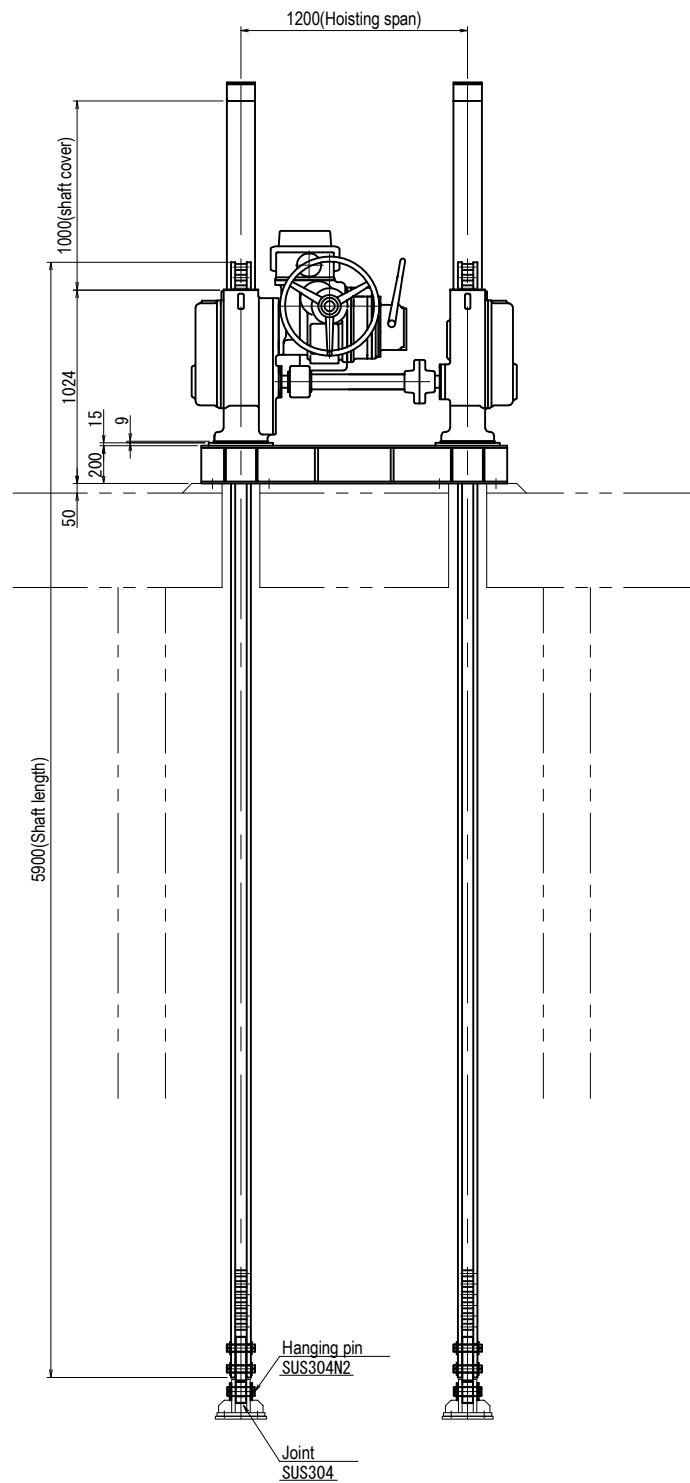


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Abo Gabal Regulator Detail of seal			DRW. NO MA-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

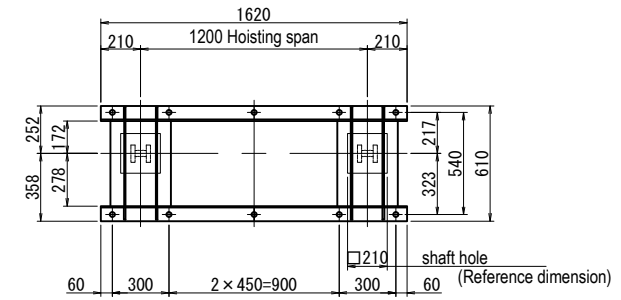
Side view Scale A



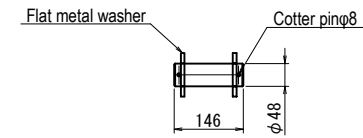
Front view Scale A



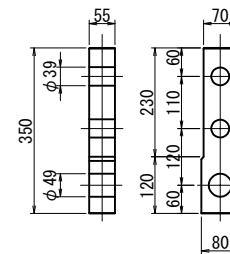
A - A Scale A



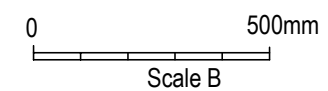
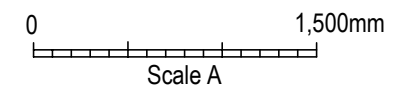
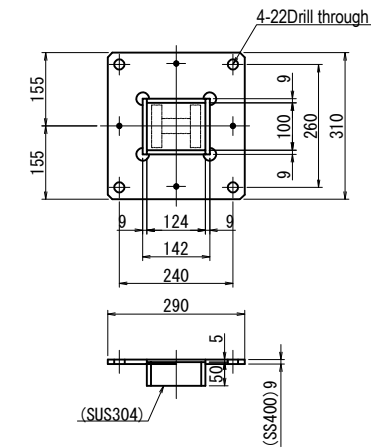
Hanging pin Scale B
Material: SUS304N2



Joint of shaft Scale B
Material: SUS304



Anti-vibration fitting Scale B
Material: SUS304



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

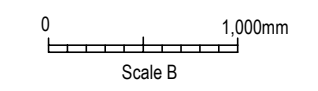
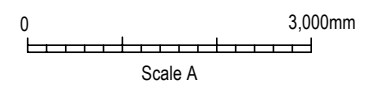
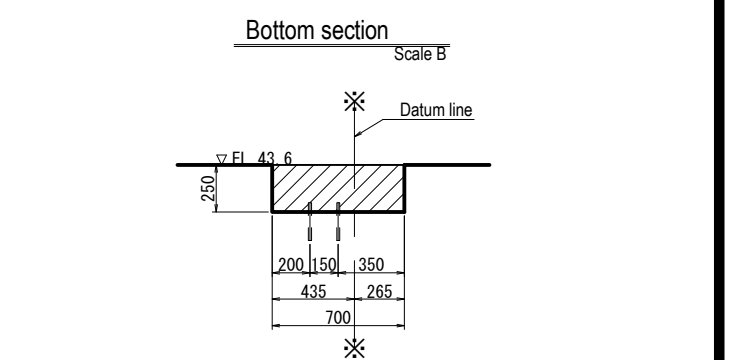
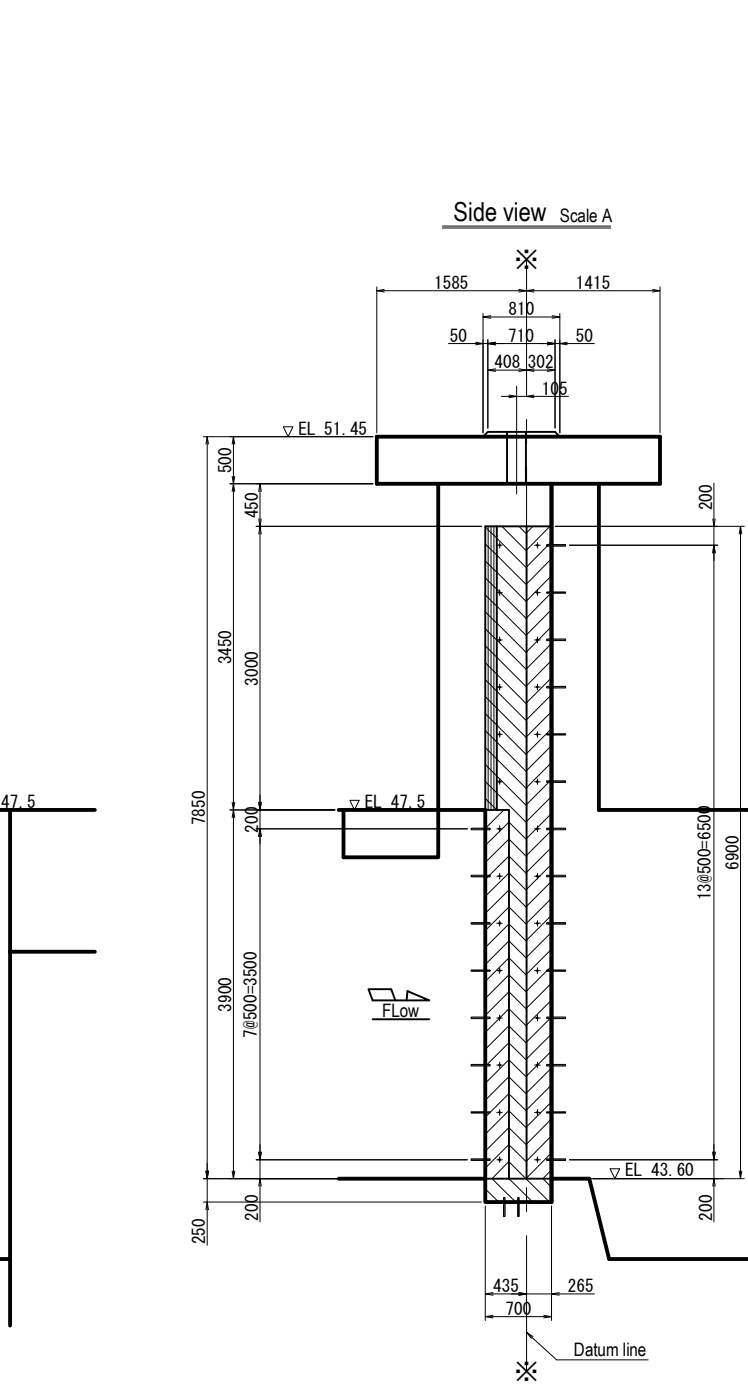
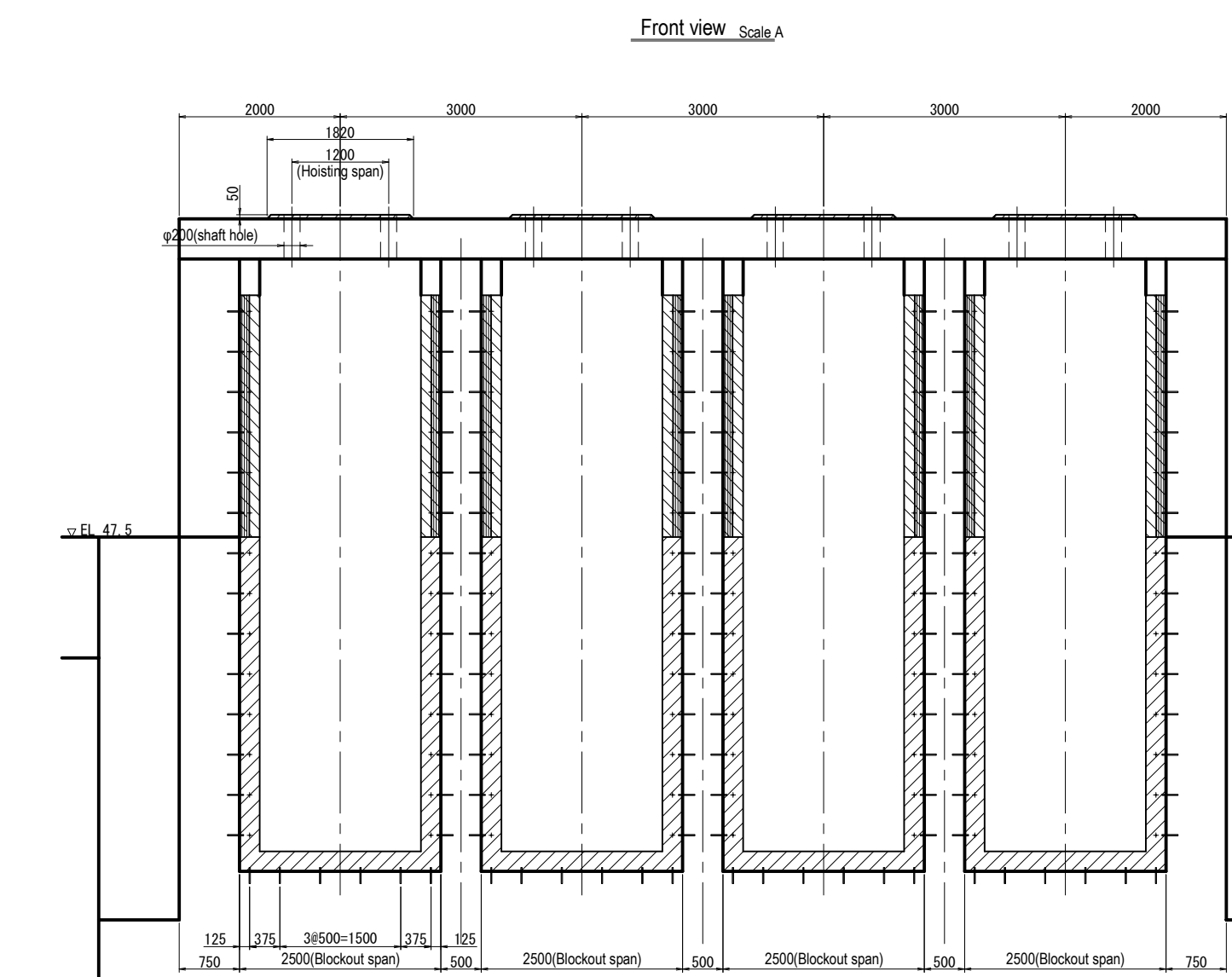
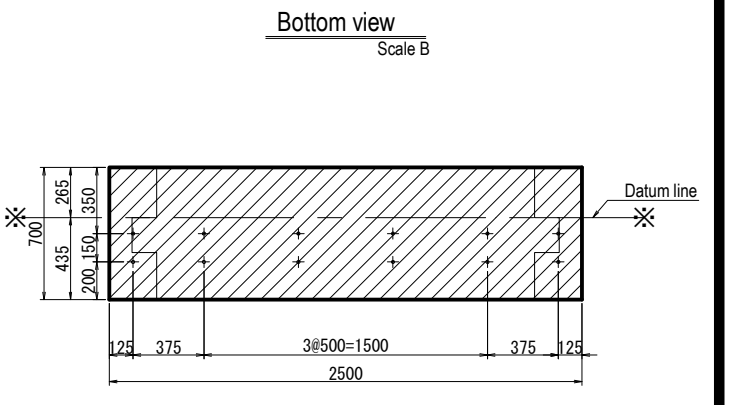
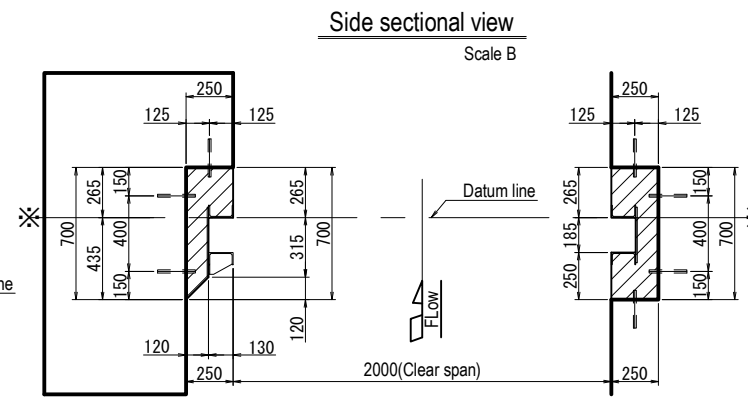
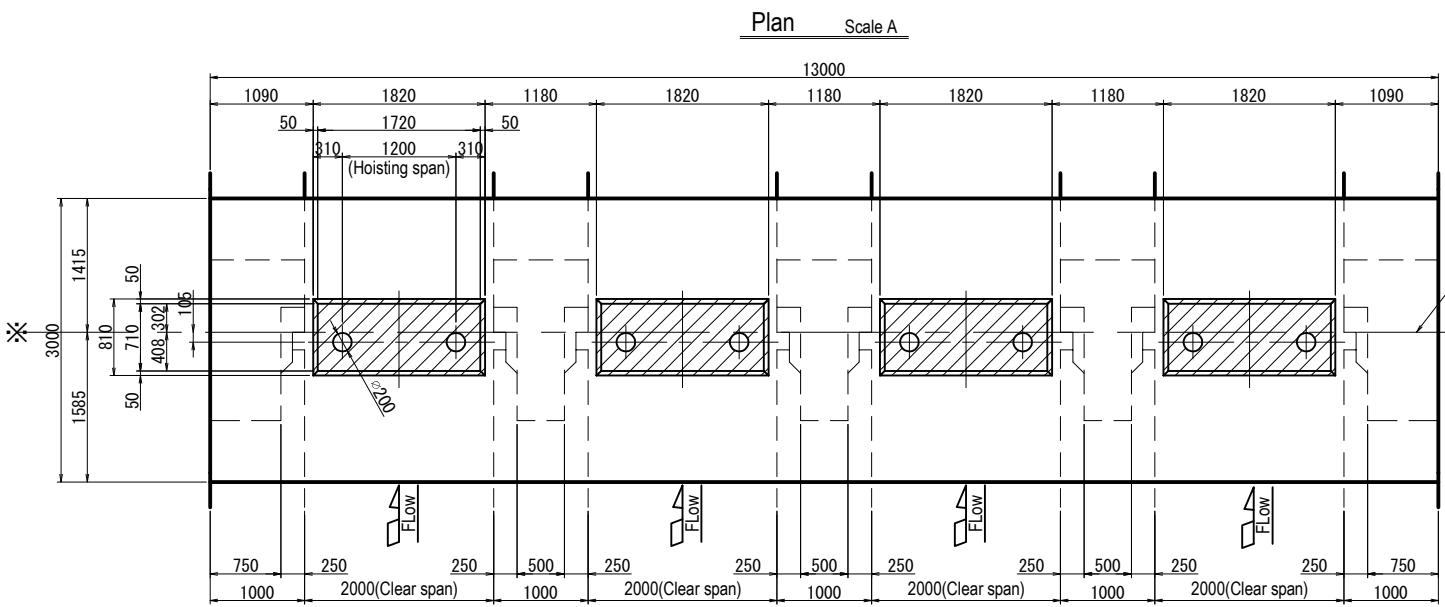
Abo Gabal Regulator
Hoisting device assembling

DRW. NO

MA-5

SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:



Joint bar

Detail	
Number/one gate	112 pcs
Total	448 pcs

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

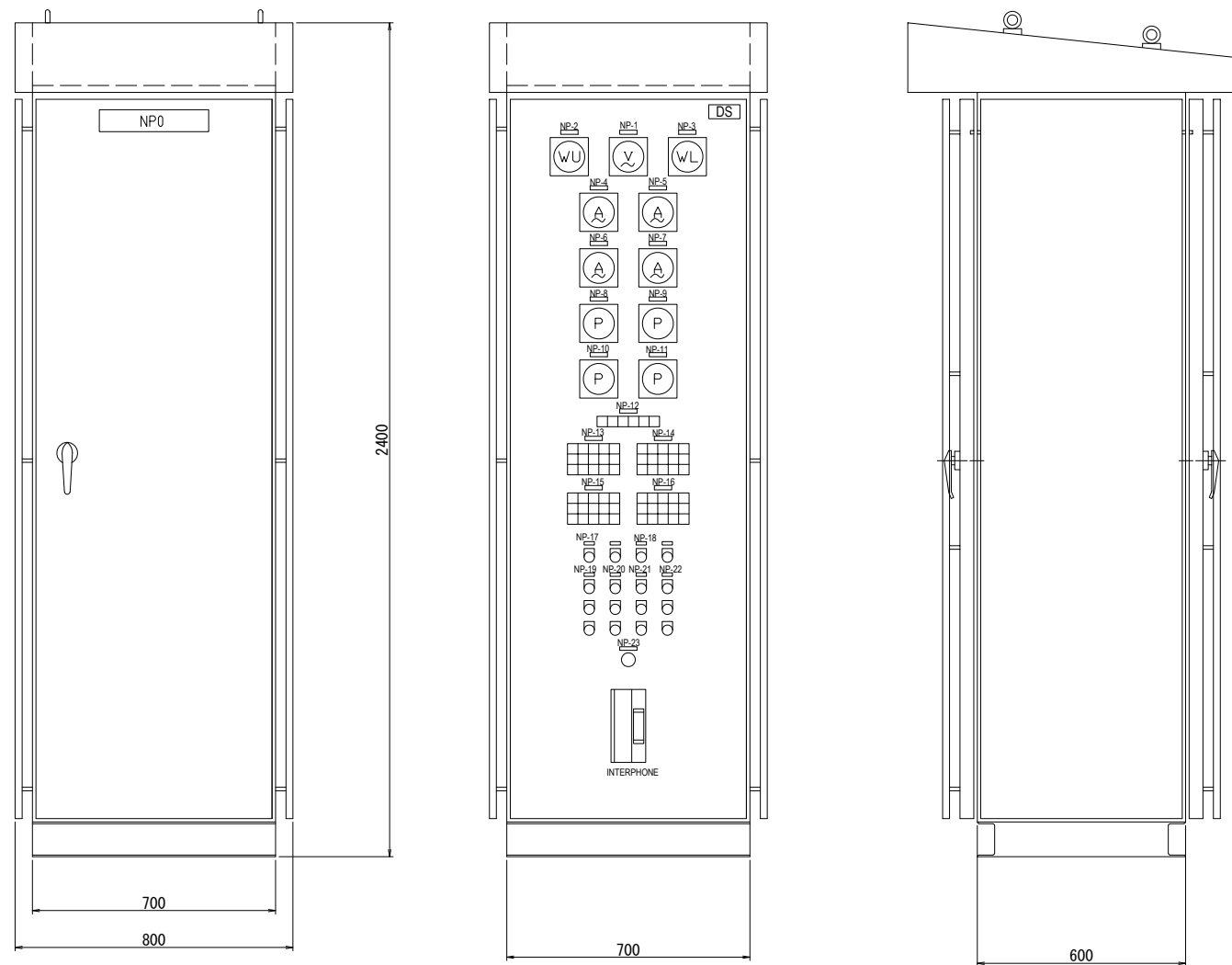
Abo Gabal Regulator
Blockout and anchors

DRW. NO
MA-6

SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Local Control Panel



Name	Mark	Letter
NP-0		LOCAL CONTROL PANEL
NP-1	V	POWER SOURCE VOLTAGE
NP-2	WU	UPPER SIDE WATER LEVEL
NP-3	WL	LOWER SIDE WATER LEVEL
NP-4	A	No.1 GATE CURRENT
NP-5	A	No.2 GATE CURRENT
NP-6	A	No.3 GATE CURRENT
NP-7	A	No.4 GATE CURRENT
NP-8	P	No.1 GATE POSITION
NP-9	P	No.2 GATE POSITION
NP-10	P	No.3 GATE POSITION
NP-11	p	No.4 GATE POSITION
NP-12	SL1	STATUS INDICATION
NP-13	SL2	No.1 GATE STATUS INDICATION
NP-14	SL2	No.2 GATE STATUS INDICATION
NP-15	SL2	No.3 GATE STATUS INDICATION
NP-16	SL2	No.4 GATE STATUS INDICATION
NP-17		MANUAL-AUTO
NP-18		BUZZER STOP
NP-19		No.1 GATE OPEN-STOP-CLOSE
NP-20		No.2 GATE OPEN-STOP-CLOSE
NP-21		No.3 GATE OPEN-STOP-CLOSE
NP-22		No.4 GATE OPEN-STOP-CLOSE
NP-23		EMERGENCY STOP

SPECIFICATIONS

- 1.TYPE OUTDOOR SELFSTANDING
- 2.PLATE 2.0t(SUS)
- 3.BASE Ch100X50X5t
- 4.COATING COLOR MUNSEL 5Y7/1 (SEMI GLOSS)
- 5.METER COLOR N1.5
- 6.QTY 1

INDICATING LAMP

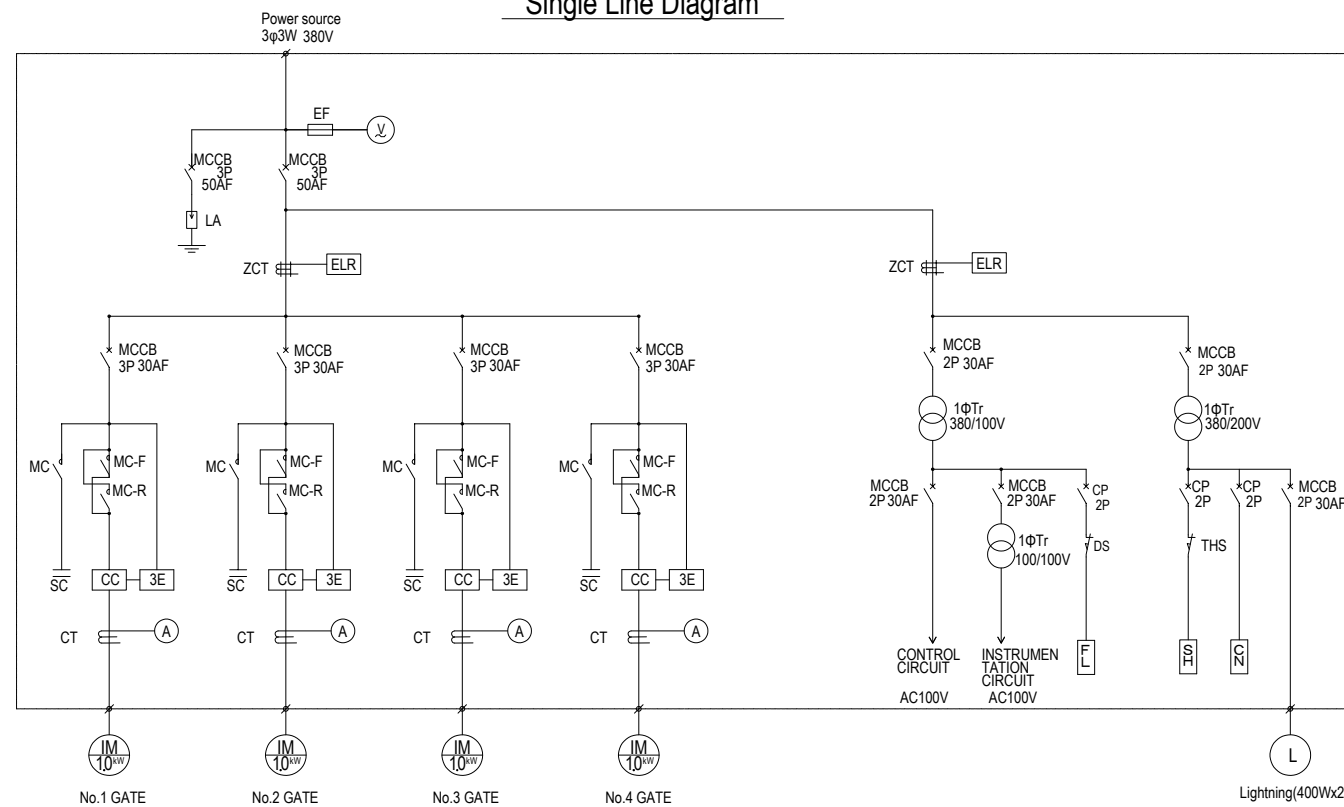
SL1

LOCAL	REMOTE	POWER SOURCE	EARTH LEAKAGED	EMERGENCY STOP	
-------	--------	--------------	----------------	----------------	--

SL2

UPPER POSITION	EMERGENCY UPPER POSITION	↑	MCCB TRIP	OPENING OVER TORQUE
LOWER POSITION		STOP	CONTACT WELDING	CLOSING OVER TORQUE
		↓		3E MOTION

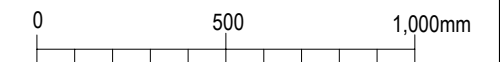
Single Line Diagram



SYMBOL LEGEND

Mark	Name
MCCB	Molded Case Circuit Breaker
CP	Circuit Protector
ELR	Earth Leakage Relay
ZCT	Zero-phase-sequence Current Transformer
MC	Electromagnetic Contactor
LA	Lightning Arrester
SC	Static Condenser
3E	Three Element Relay for over load, open phase and phase sequence reversal
CC	Current Converter
Tr	Transformer
V	Voltmeter
A	Ammeter
EF	Enclosed Fuse
DS	Disconnecting Switch
THS	Thermoswitch
FL	Fluorescent Lamp
SH	Space Heater
CN	Socket Outlet

Note; Refer to the Plan view in the General drawing (MA-1)



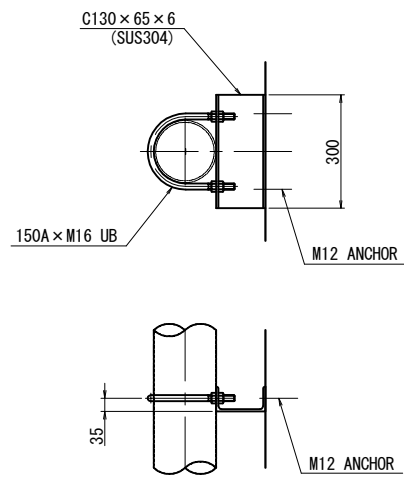
Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

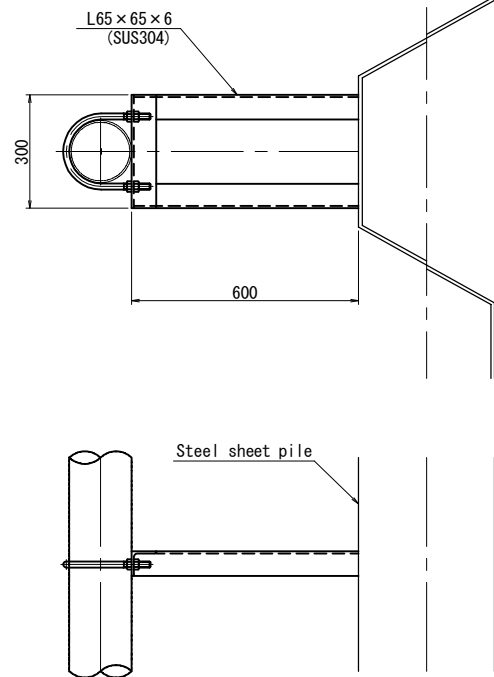
Abo Gabal Regulator Local control panel and single line diagram	DRW. NO. MA-7
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

Water level detector pipe (Abo Gabal)

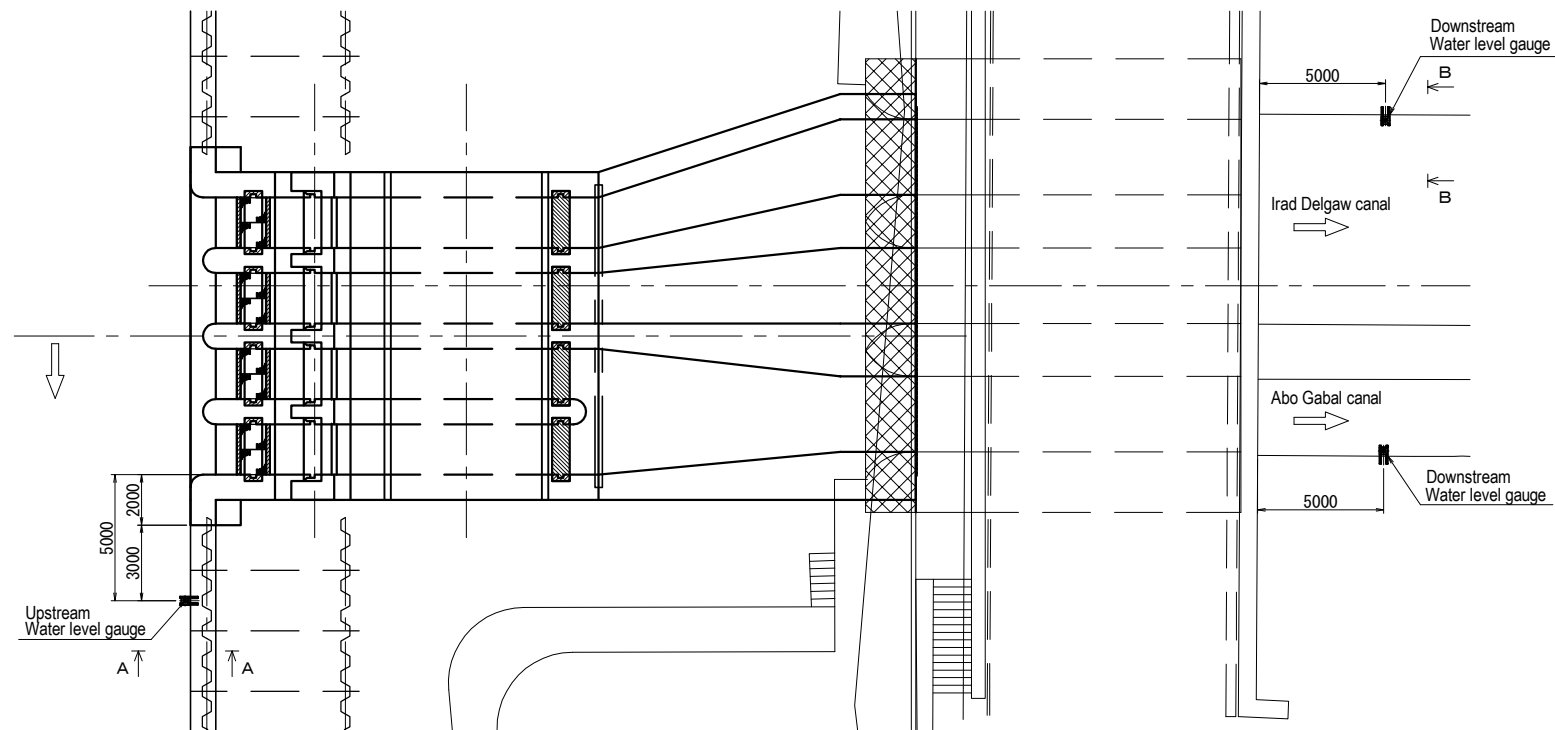
Concrete fixing bracket Scale B



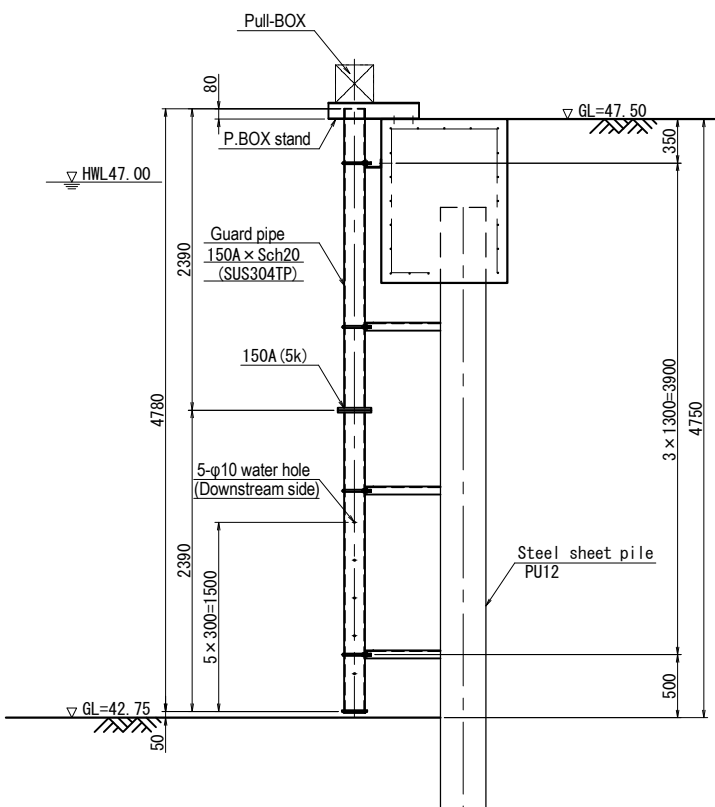
Sheet pile fixing bracket Scale B



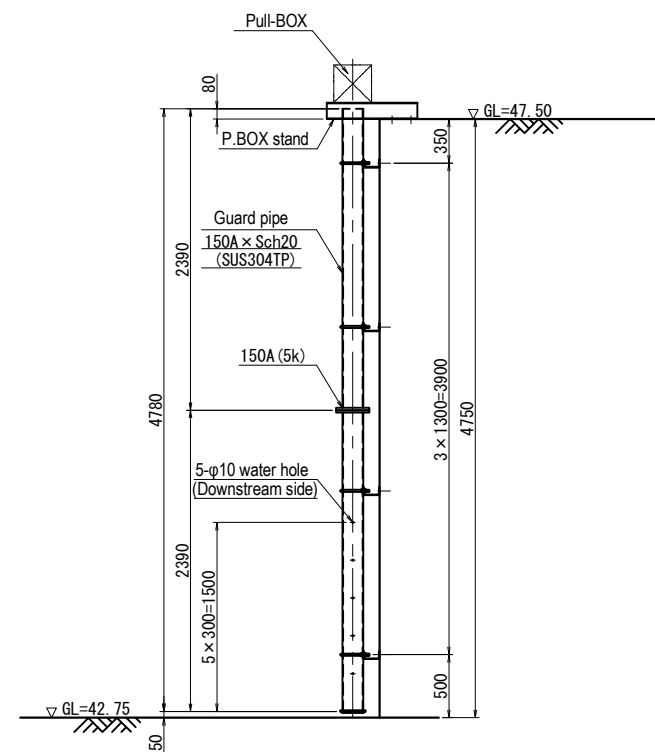
Plan Scale A



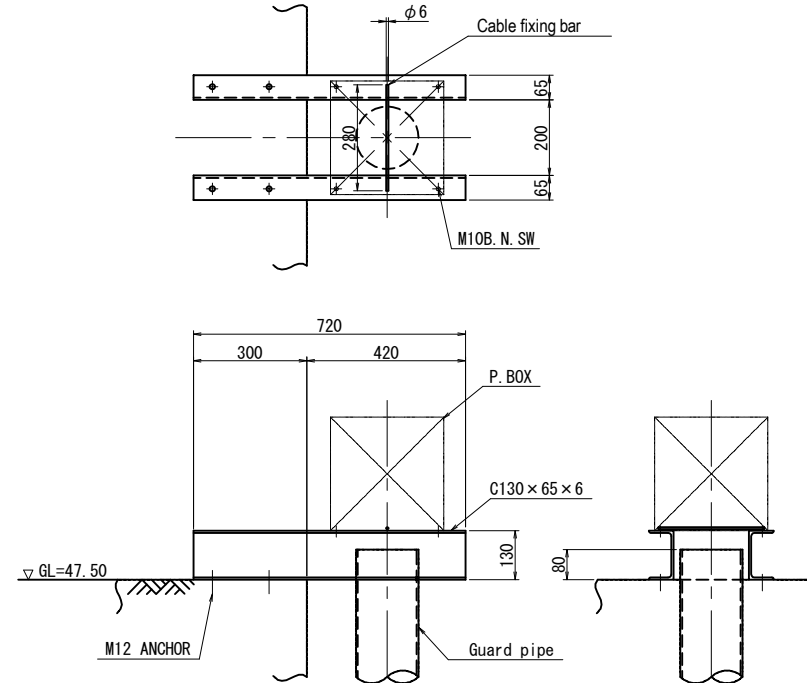
A - A Scale C



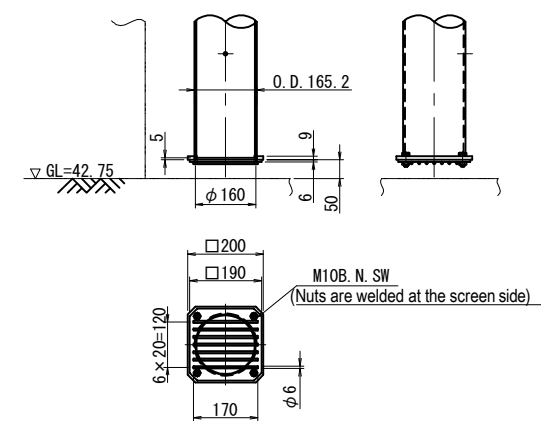
B - B Scale C



Pull-BOX stand Scale B



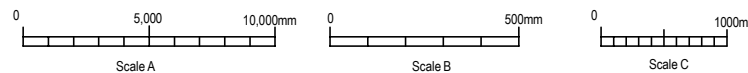
Bottom screen Scale B



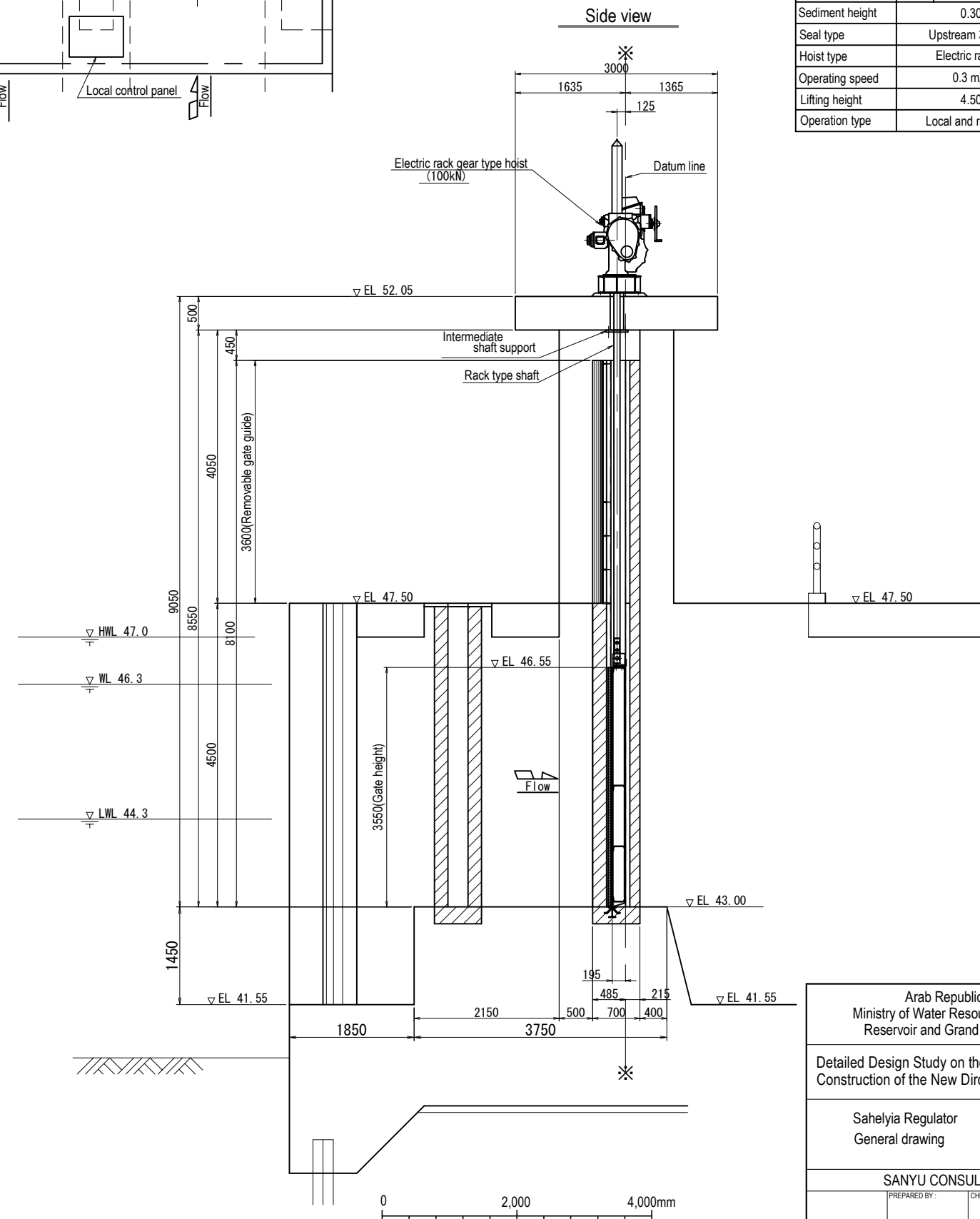
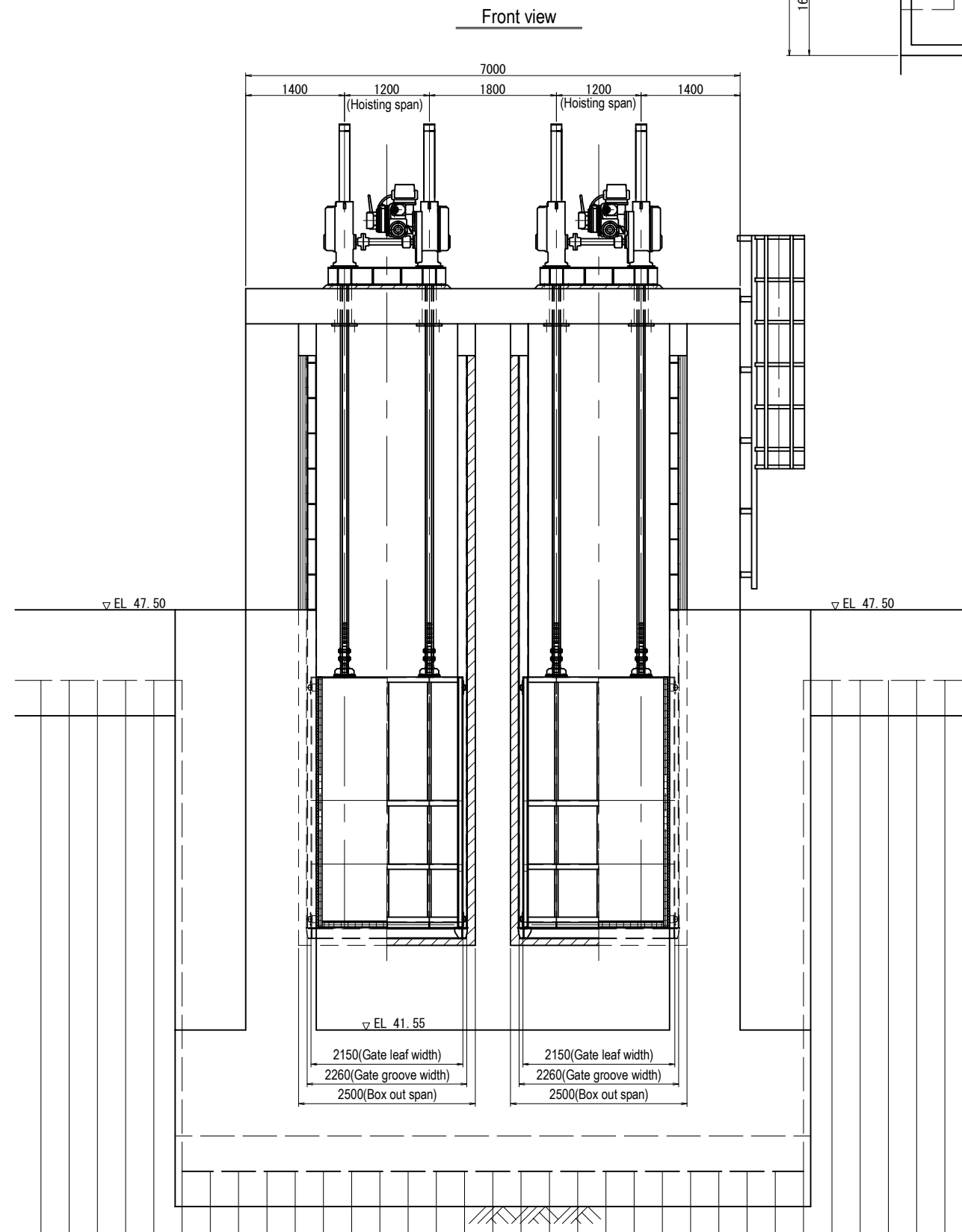
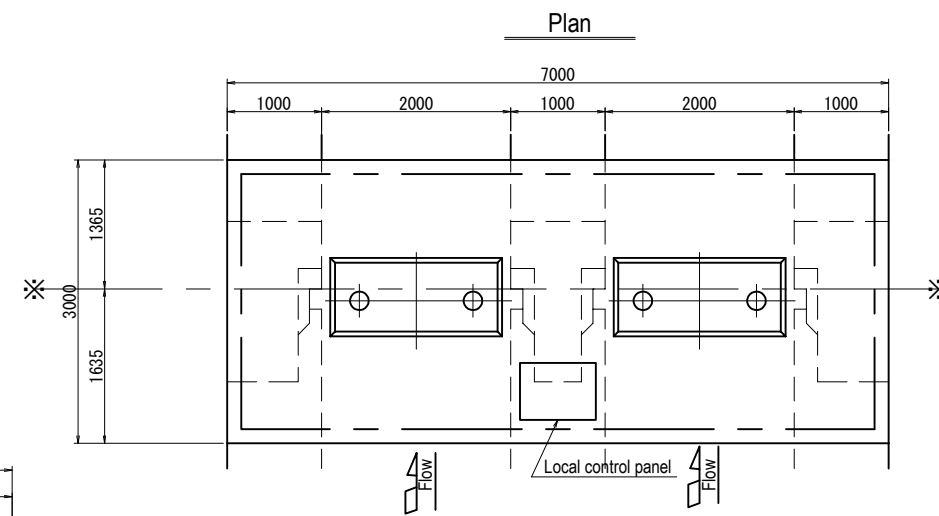
Staff gauge



Note
 • Material is SUS304 if not otherwise specified.
 • Staff gauge shall be installed beside the water level detector



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Abo Gabal Regulator Water level detector pipe			DRW. NO MA-8
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



Design Condition		
Type	Slide gate	
Number of gate	2	
Clear span	2.000 m	
Gate height	3.550 m	
Design water depth	3.550 m	
Operation depth	Open	3.550 m
	Close	3.550 m
Sediment height	0.300 m	
Seal type	Upstream 3-side sealing	
Hoist type	Electric rack gear type	
Operating speed	0.3 m/min	
Lifting height	4.500 m	
Operation type	Local and remote control	

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

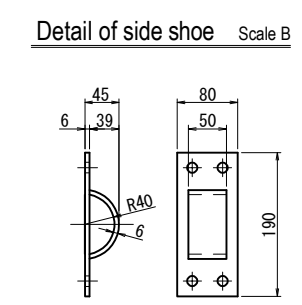
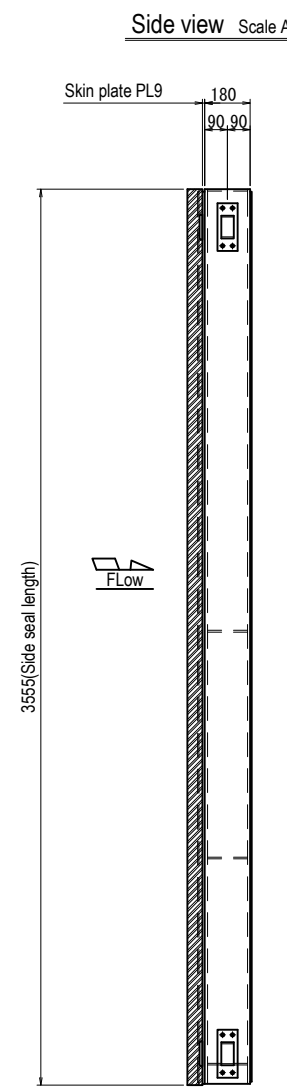
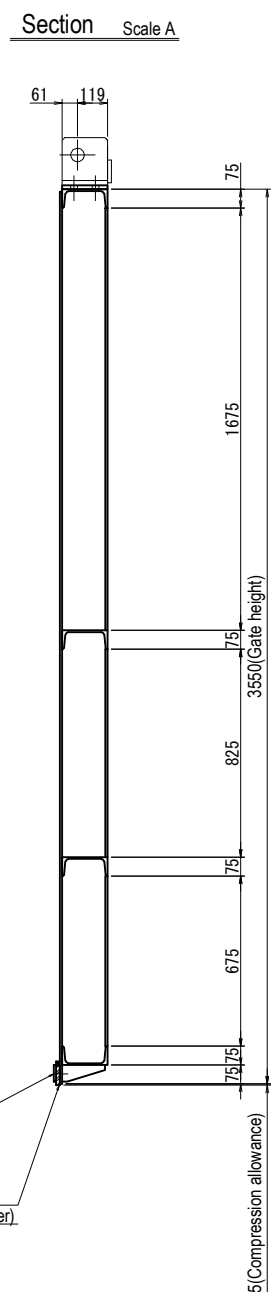
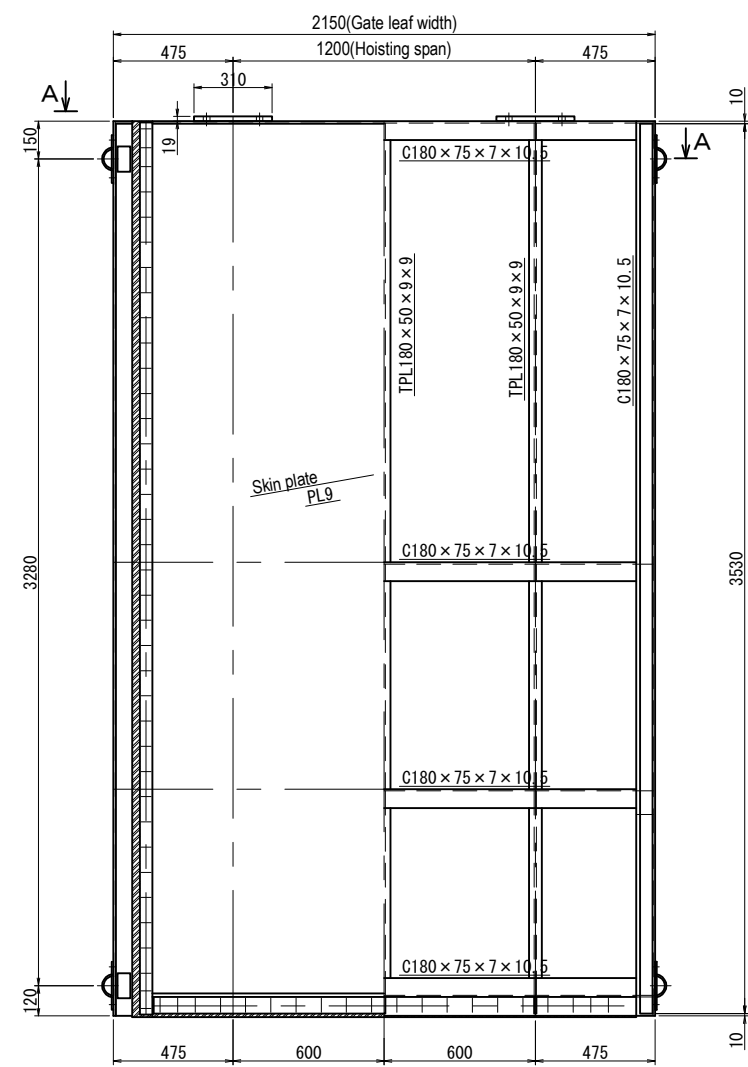
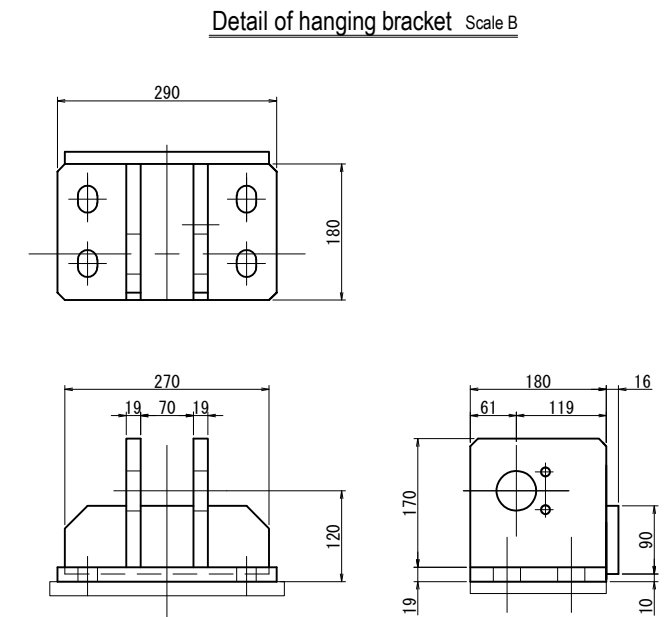
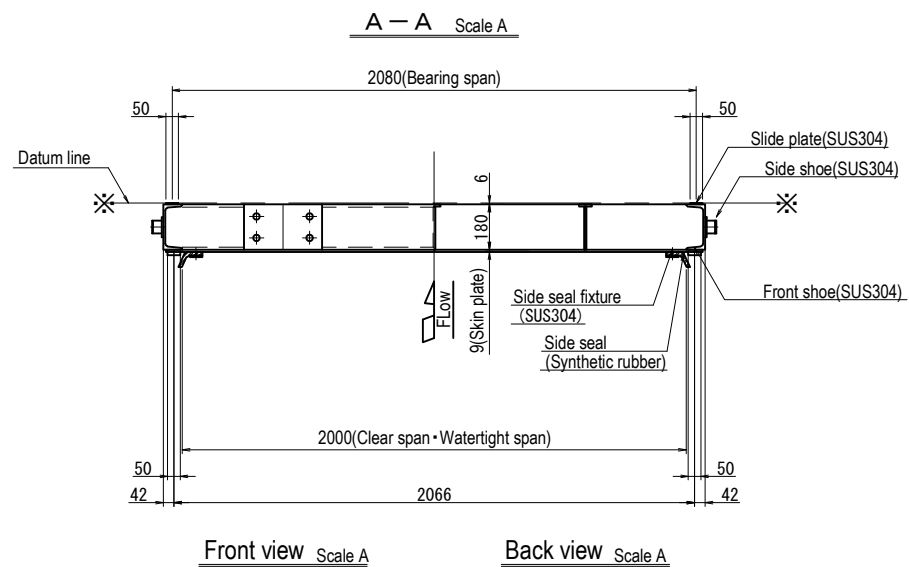
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Sahelyia Regulator
General drawing

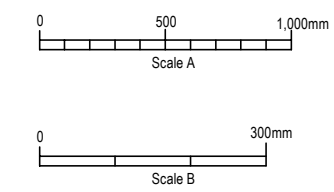
DRW. NO
MS-1

SANYU CONSULTANTS INC.

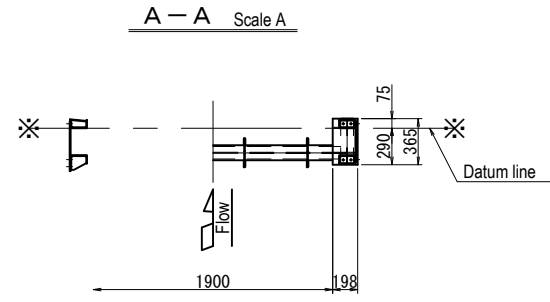
PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____



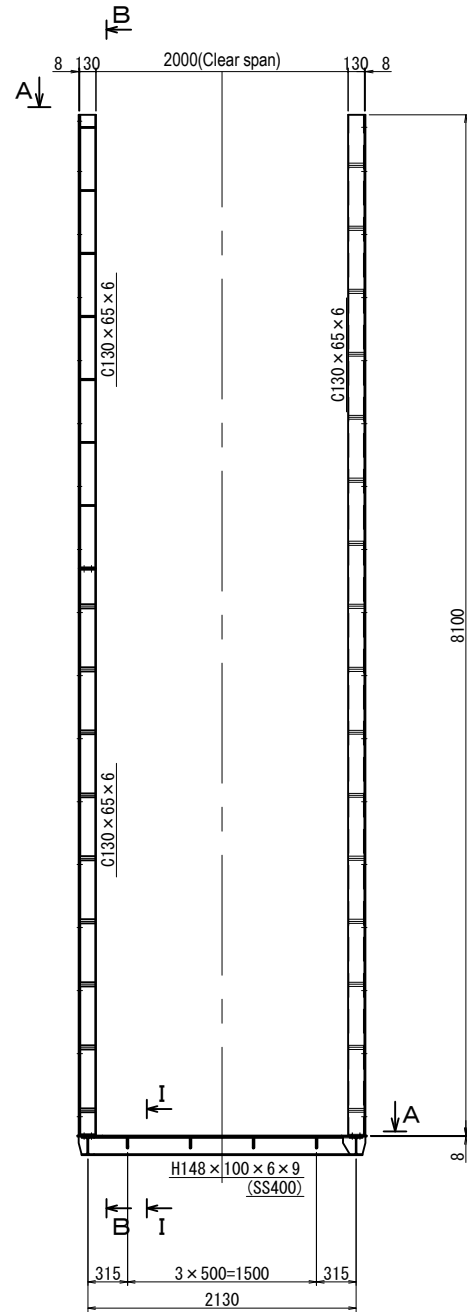
Note
 - Materials shall be SS400 unless otherwise specified.



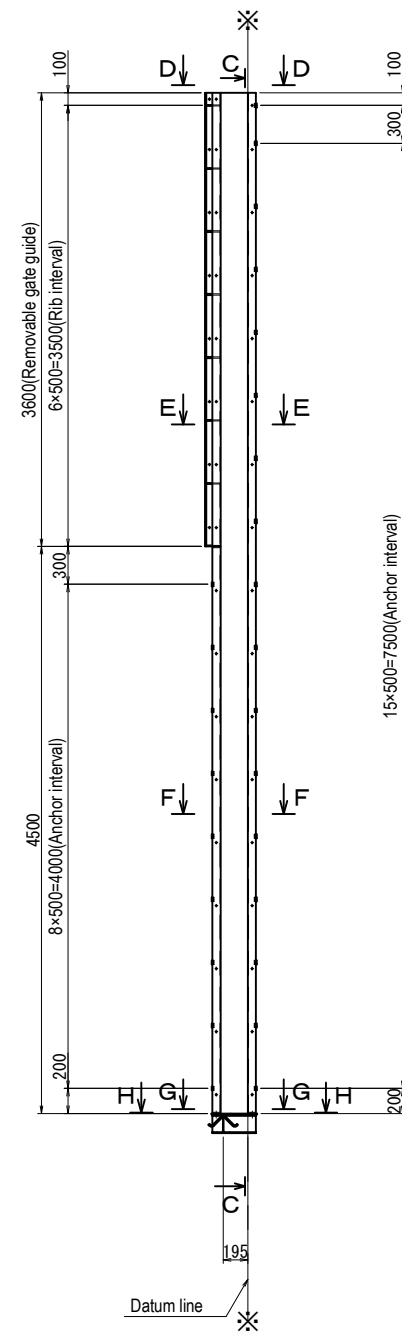
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Sahelyia Regulator Gate leaf assembling			DRW. NO. MS-2
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:



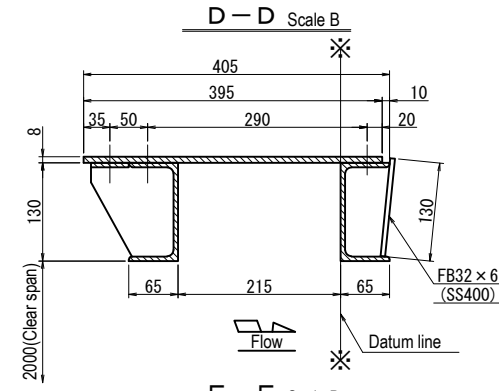
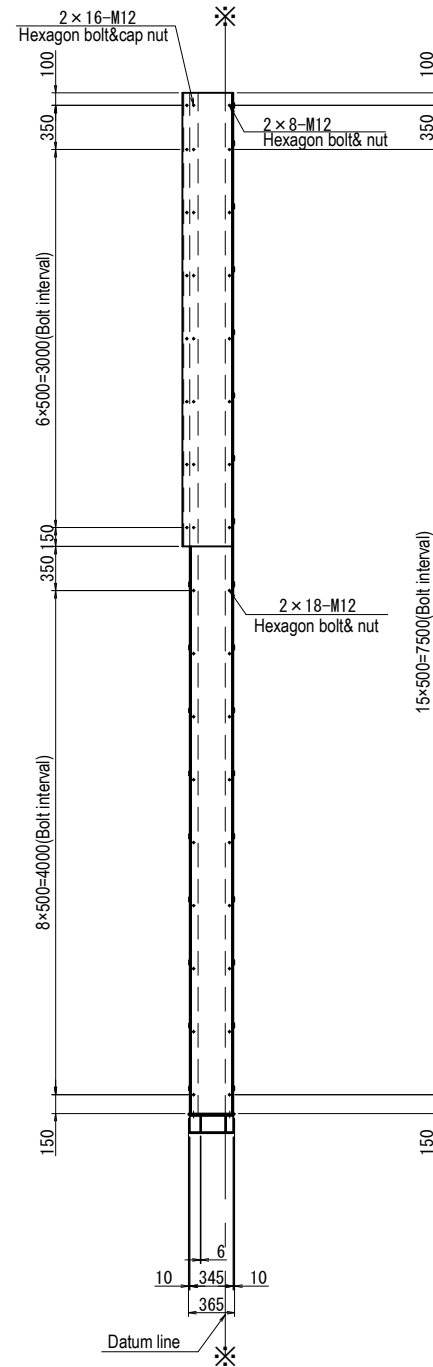
Front view Scale A C-C Scale A



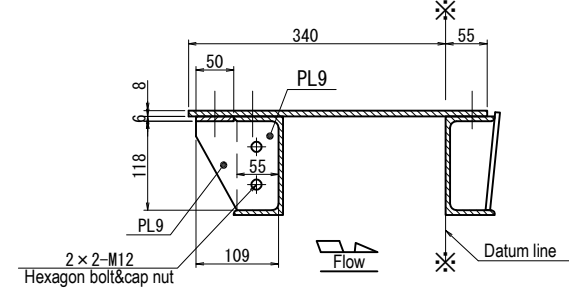
B-B Scale A



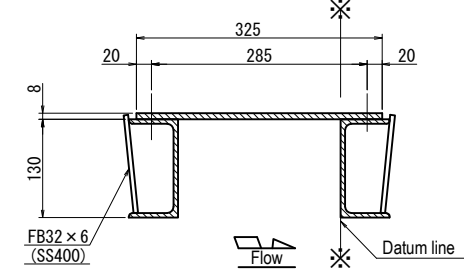
Side view Scale A



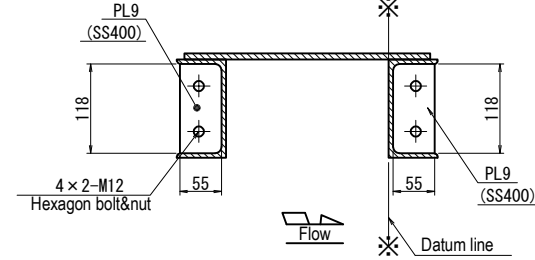
E-E Scale B



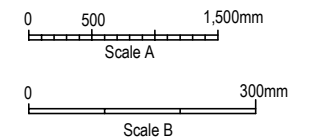
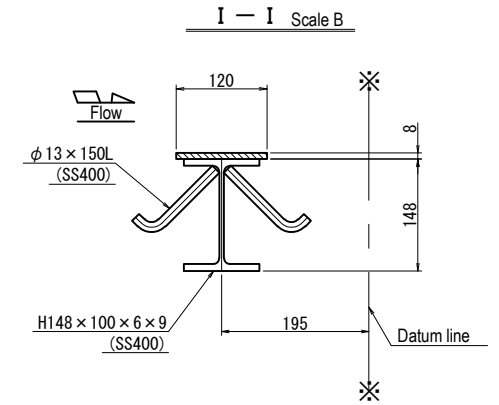
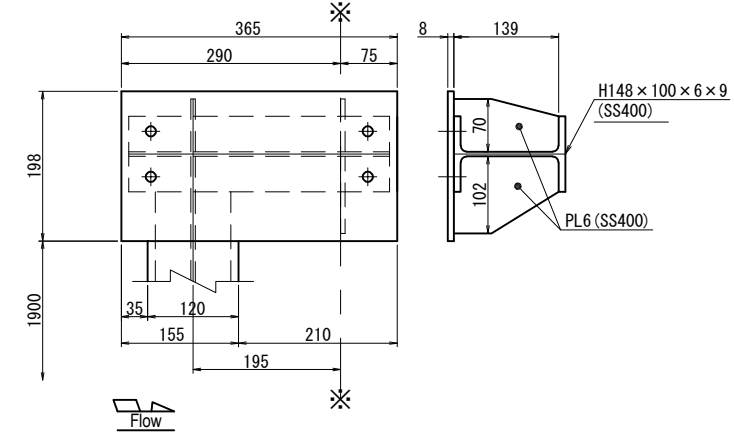
F-F Scale B



G-G Scale B



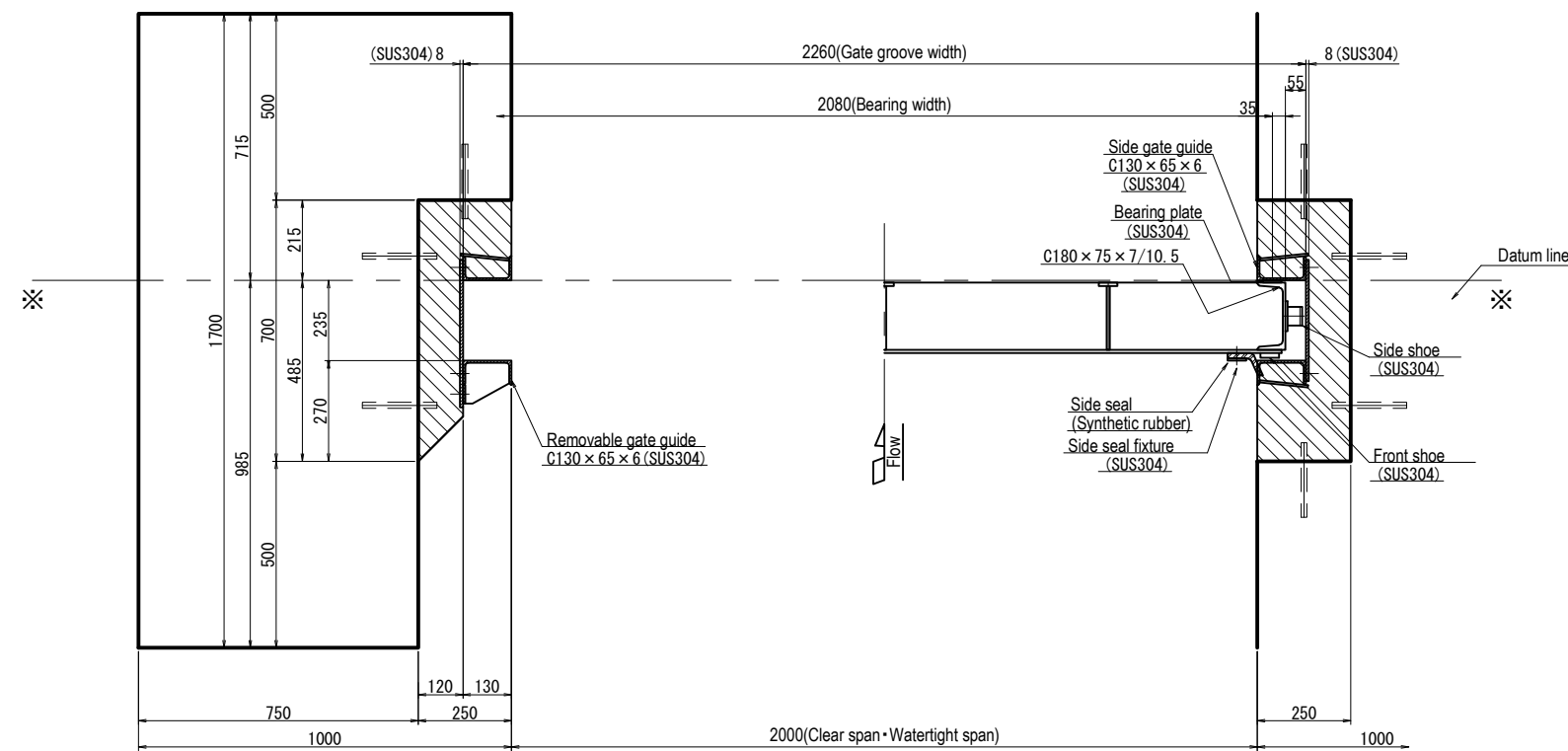
H-H Scale B



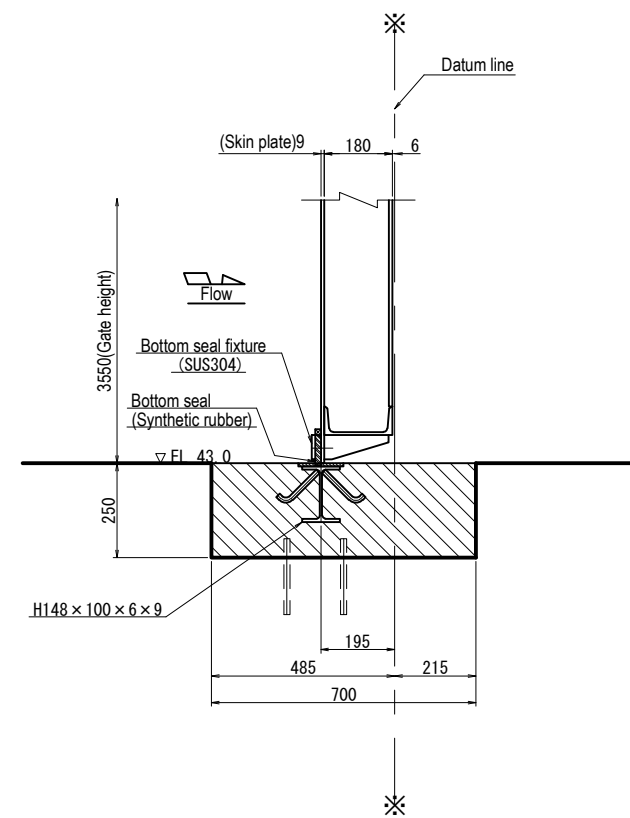
Note
 • Materials shall be SUS304 unless otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Sahelyia Regulator Gate guide assembling			DRW. NO MS-3
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

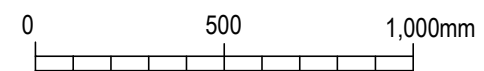
Detail of side seal



Detail of bottom seal

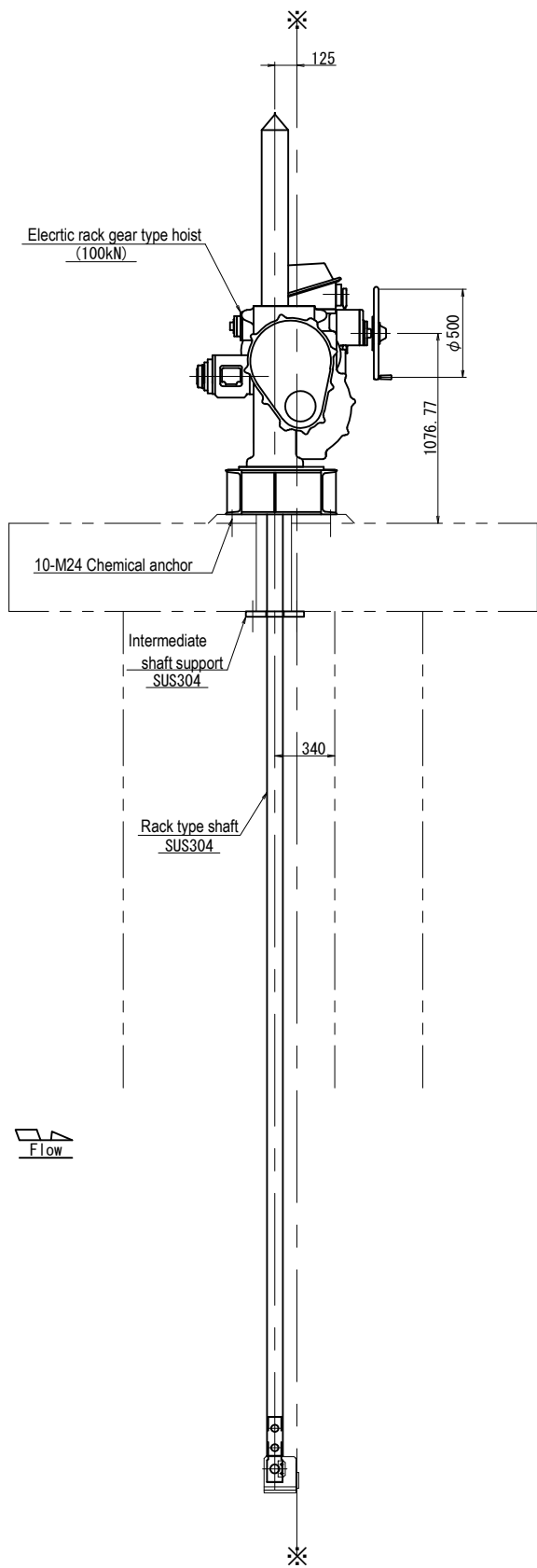


Note:
 -Materials shall be SS400 unless otherwise specified.

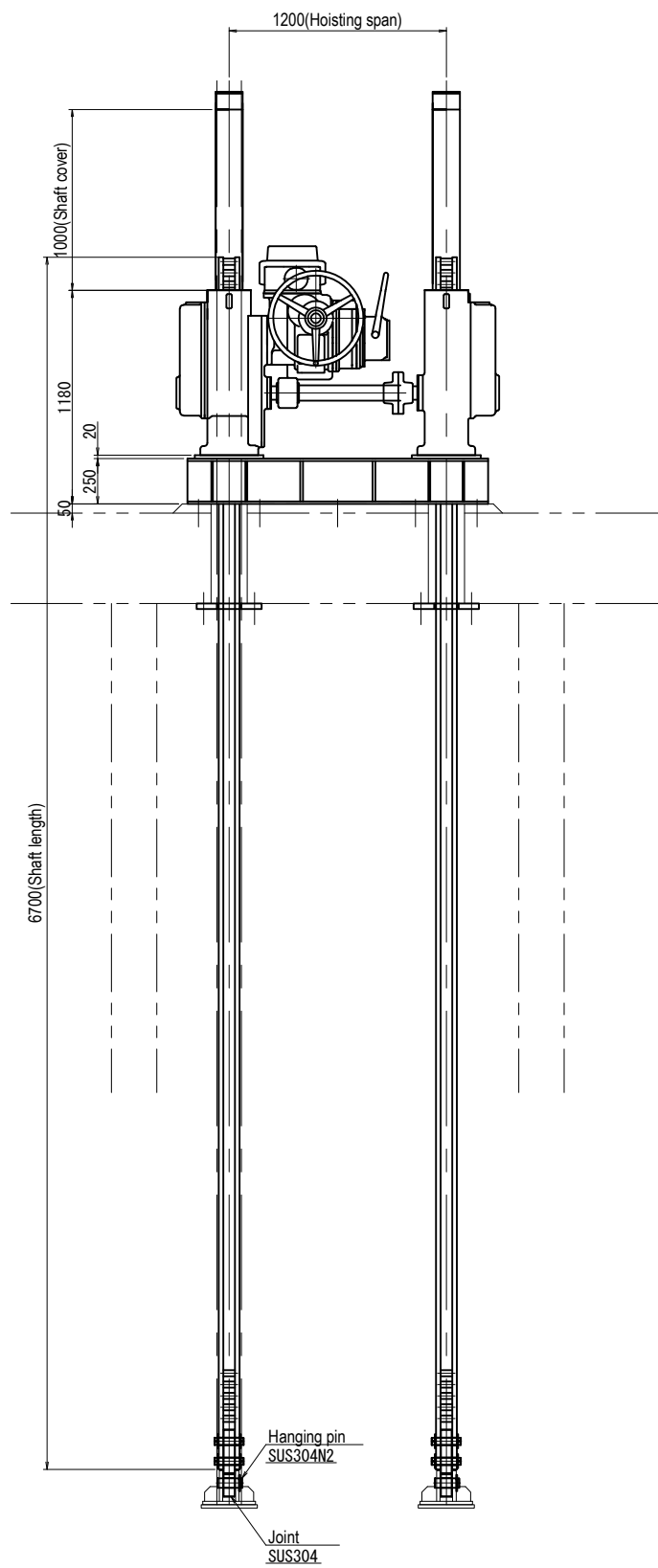


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Sahelyia Regulator Detail of seal			DRW. NO MS-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

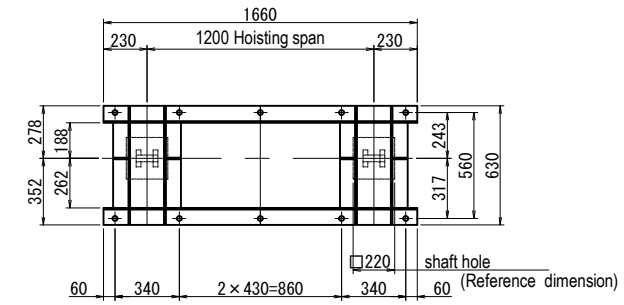
Side view Scale A



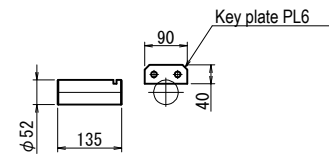
Front view Scale A



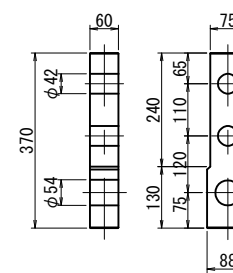
A - A Scale A



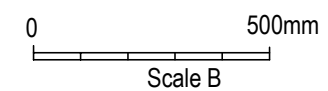
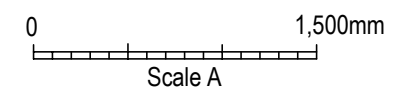
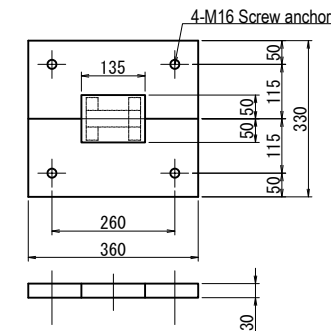
Hanging pin Scale B
Material: SUS304N2



Joint of shaft Scale B
Material: SUS304

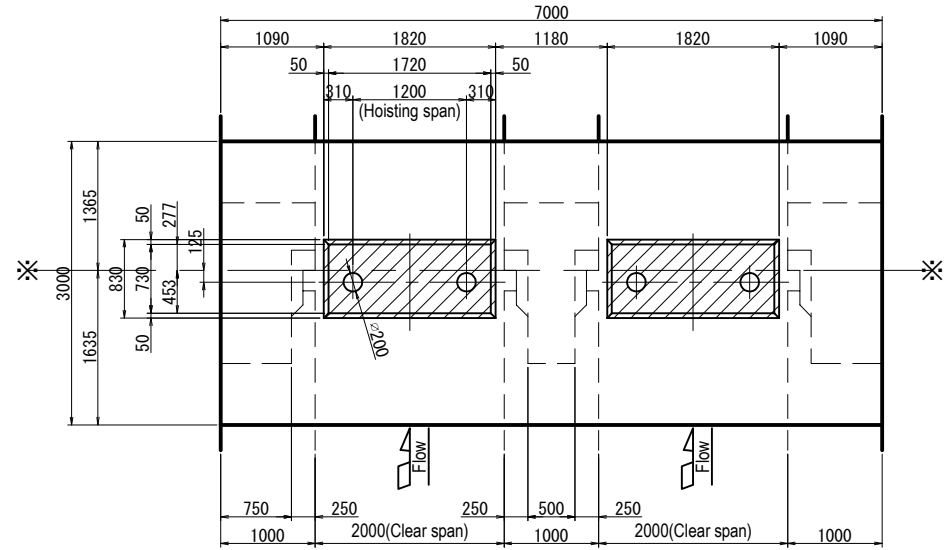


Intermediate shaft support Scale B
Material: SUS304

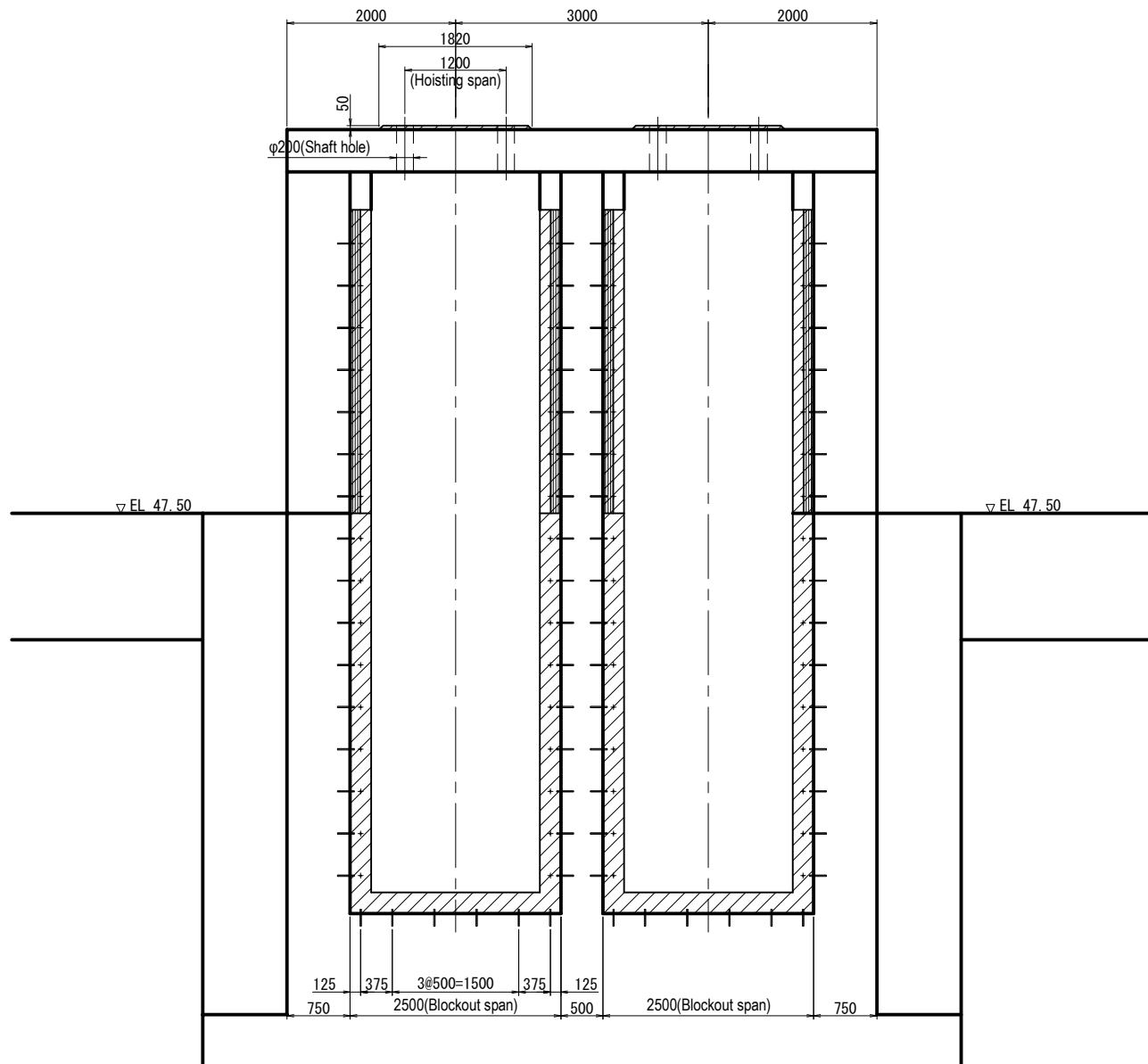


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Saheyliya Regulator Hoisting device assembling			DRW. NO MS-5
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

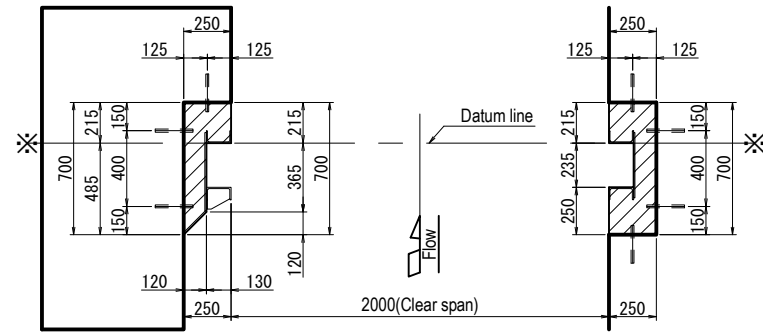
Plan Scale A



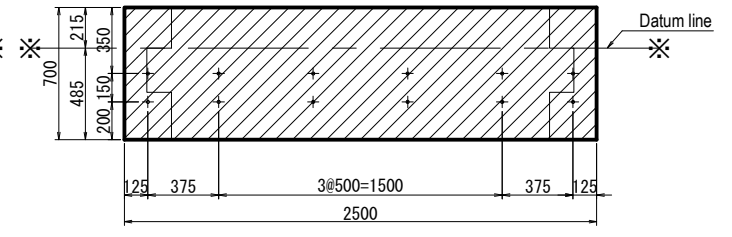
Front view Scale A



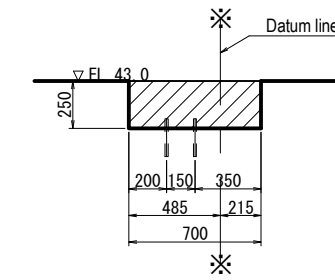
Side sectional view Scale B



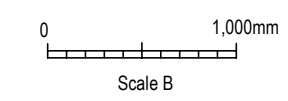
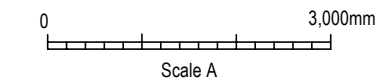
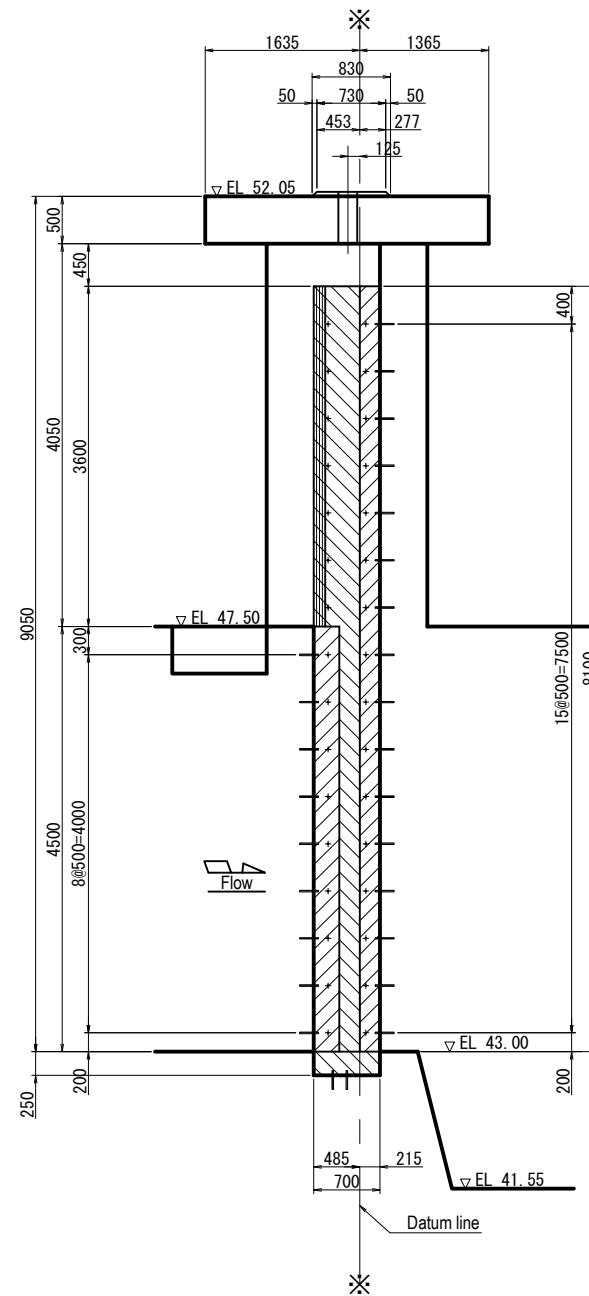
Bottom view Scale B



Bottom section Scale B



Side view Scale A



Joint bar	
Detail	
Number/one gate	126 pcs
Total	252 pcs

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

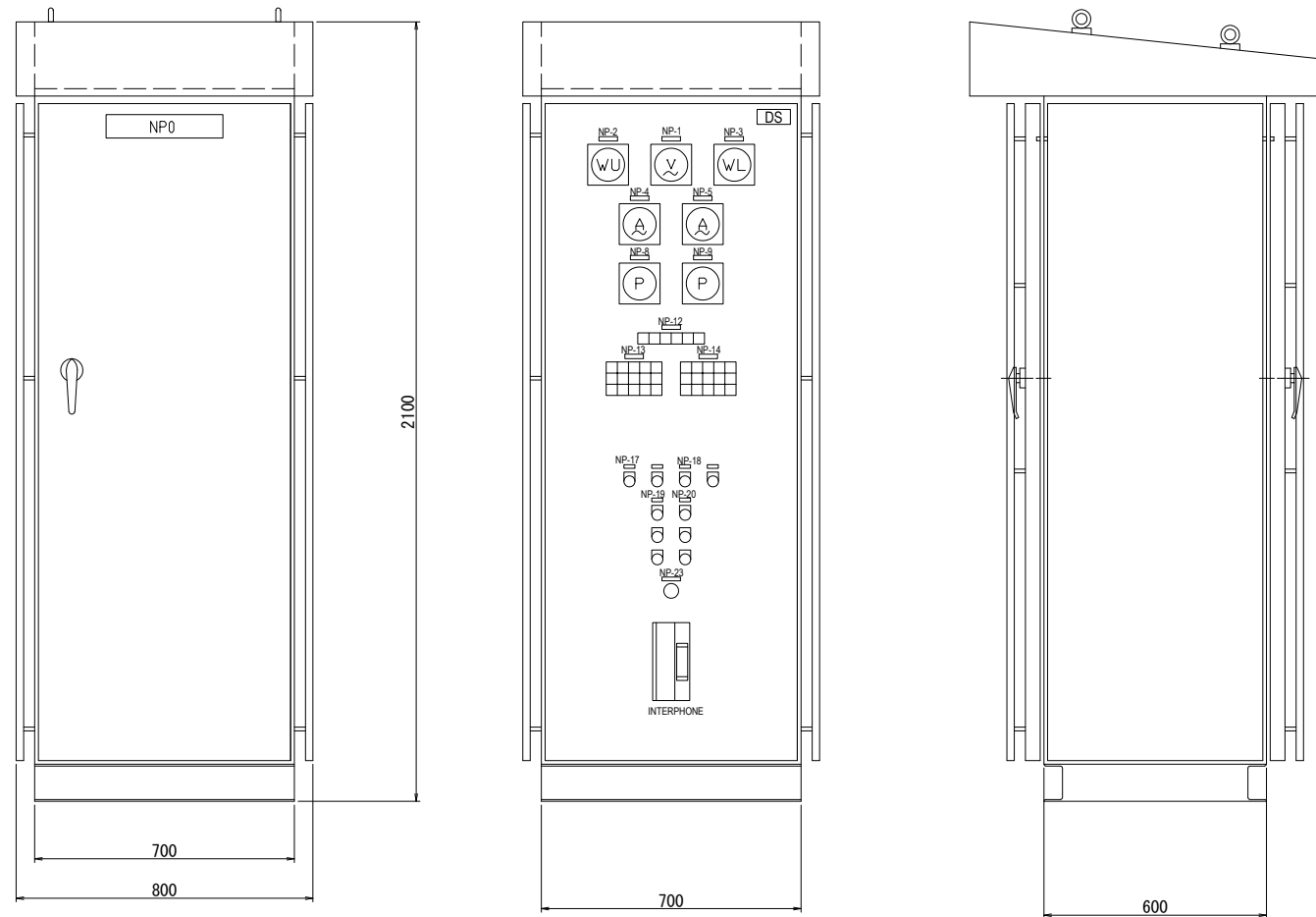
Saheyia Regulator
Blockout and anchors

DRW. NO
MS-6

SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

Local Control Panel



Name	Mark	Letter
NP-0		LOCAL CONTROL PANEL
NP-1	V	POWER SOURCE VOLTAGE
NP-2	WU	UPPER SIDE WATER LEVEL
NP-3	WL	LOWER SIDE WATER LEVEL
NP-4	A	No.1 GATE CURRENT
NP-5	A	No.2 GATE CURRENT
NP-8	P	No.1 GATE POSITION
NP-9	P	No.2 GATE POSITION
NP-12	SL1	STATUS INDICATION
NP-13	SL2	No.1 GATE STATUS INDICATION
NP-14	SL2	No.2 GATE STATUS INDICATION
NP-17		MANUAL-AUTO
NP-18		BUZZER STOP
NP-19		No.1 GATE OPEN-STOP-CLOSE
NP-20		No.2 GATE OPEN-STOP-CLOSE
NP-23		EMERGENCY STOP

SPECIFICATIONS

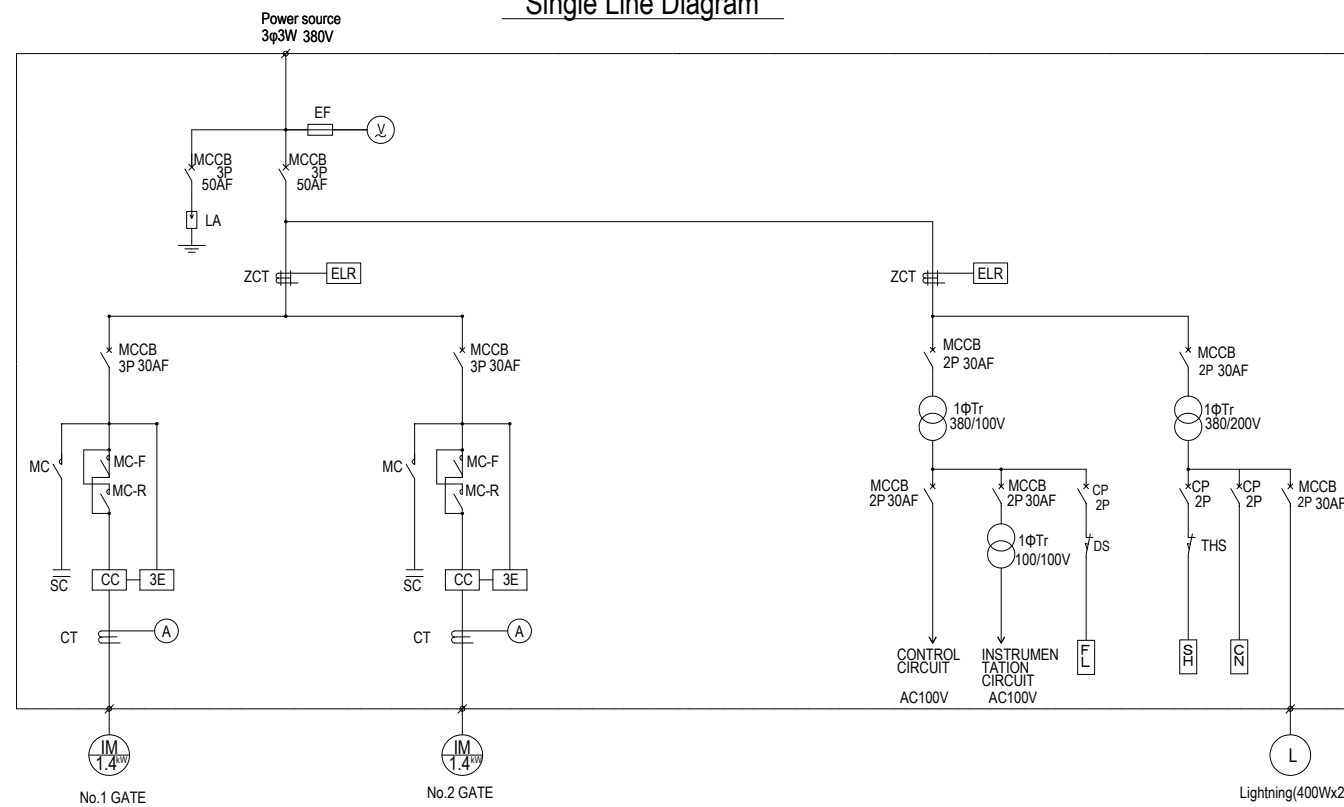
1. TYPE OUTDOOR SELFSTANDING
2. PLATE 2.0t(SUS)
3. BASE Ch100X50X5t
4. COATING COLOR MUNSEL 5Y7/1 (SEMI GLOSS)
5. METER COLOR N1.5
6. QTY 1

INDICATING LAMP

SL1					
LOCAL	REMOTE	POWER SOURCE	EARTH LEAKAGED	EMERGENCY STOP	

SL2					
UPPER POSITION	EMERGENCY UPPER POSITION	↑	MCCB TRIP	OPENING OVER TORQUE	
LOWER POSITION		STOP	CONTACT WELDING	CLOSING OVER TORQUE	
		↓		3E MOTION	

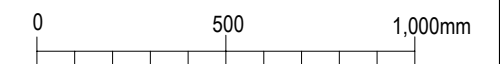
Single Line Diagram



SYMBOL LEGEND

Mark	Name
MCCB	Molded Case Circuit Breaker
CP	Circuit Protector
ELR	Earth Leakage Relay
ZCT	Zero-phase-sequence Current Transformer
MC	Electromagnetic Contactor
LA	Lightning Arrester
SC	Static Condenser
3E	Three Element Relay for over load, open phase and phase sequence reversal
CC	Current Converter
Tr	Transformer
V	Voltmeter
A	Ammeter
EF	Enclosed Fuse
DS	Disconnecting Switch
THS	Thermoswitch
FL	Fluorescent Lamp
SH	Space Heater
CN	Socket Outlet

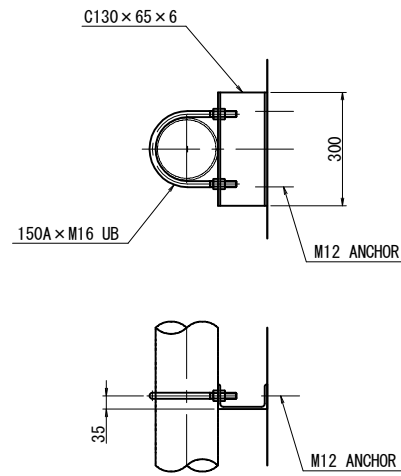
Note: Refer to the Plan view in the General drawing (MS-1)



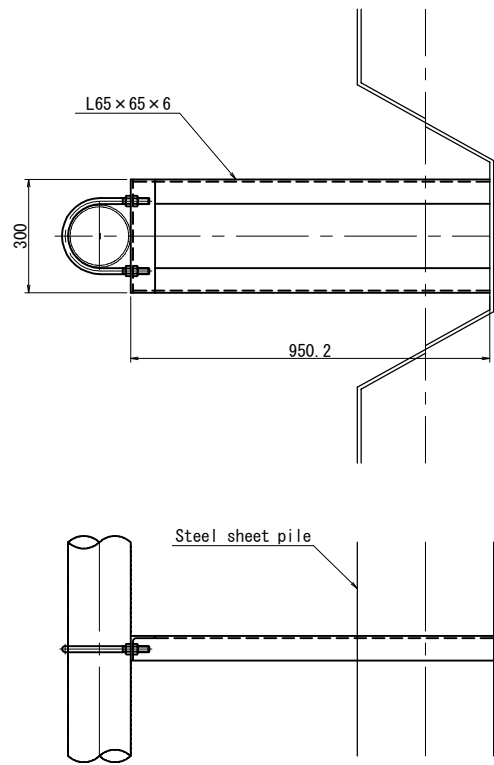
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Sahelyia Regulator Local control panel and single line diagram			DRW. NO. MS-7
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Water level detector pipe (Sahelyia)

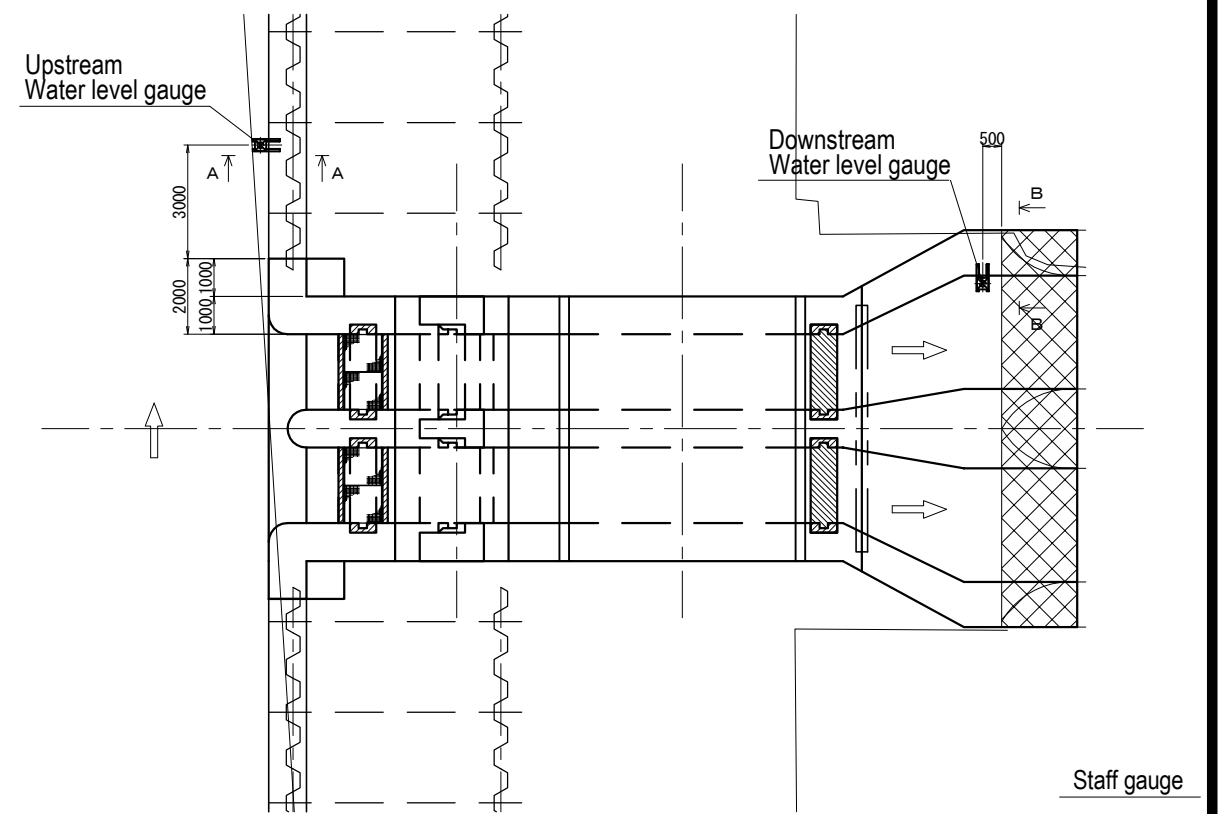
Concrete fixing bracket Scale B



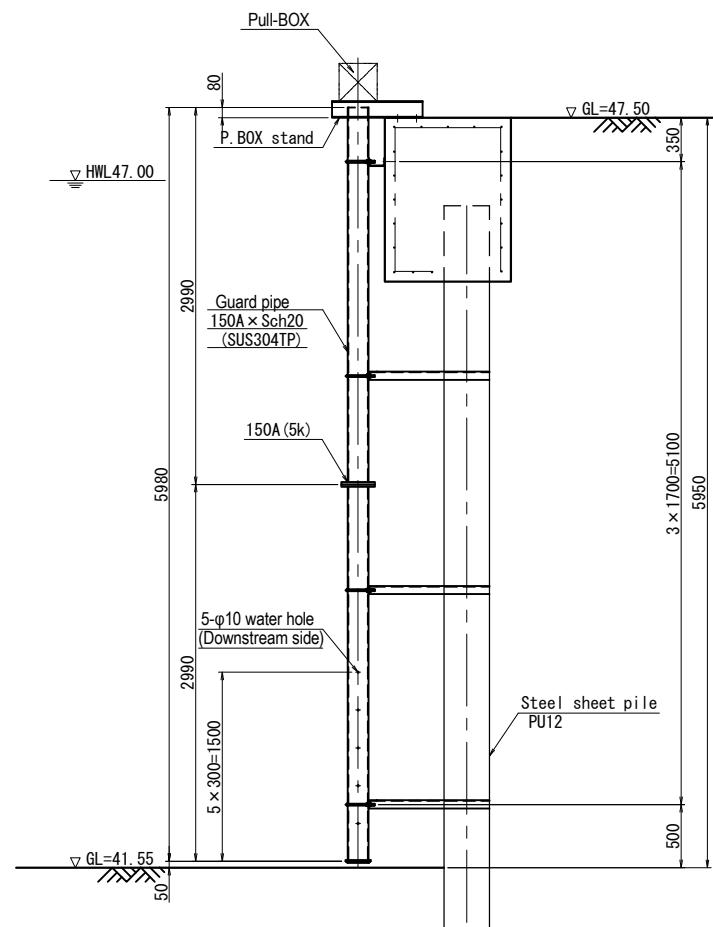
Sheet pile fixing bracket Scale B



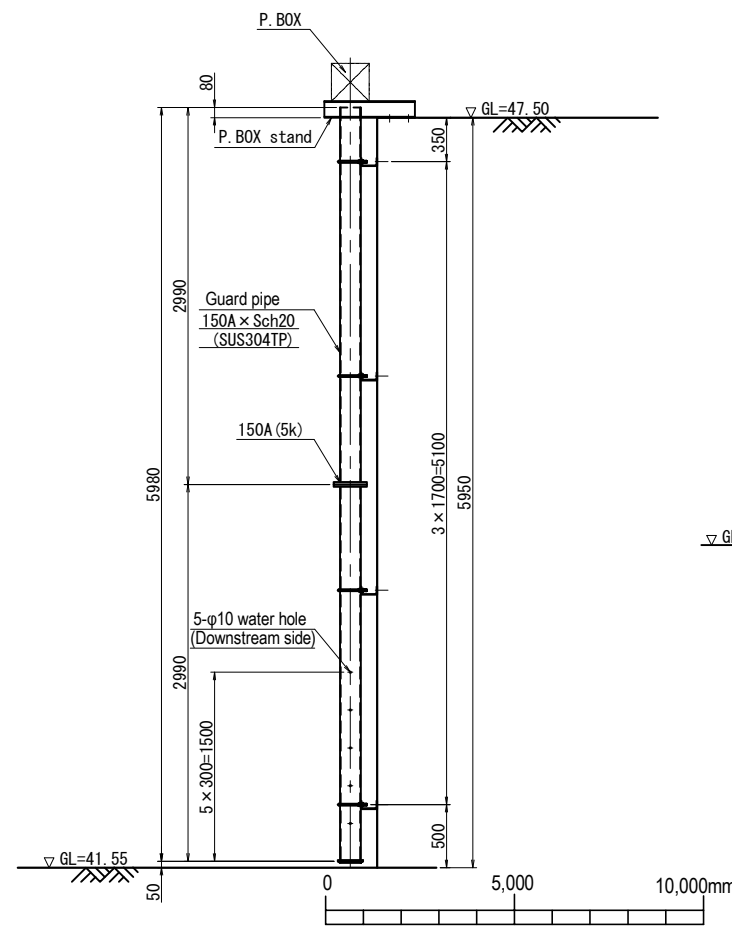
Plan Scale A



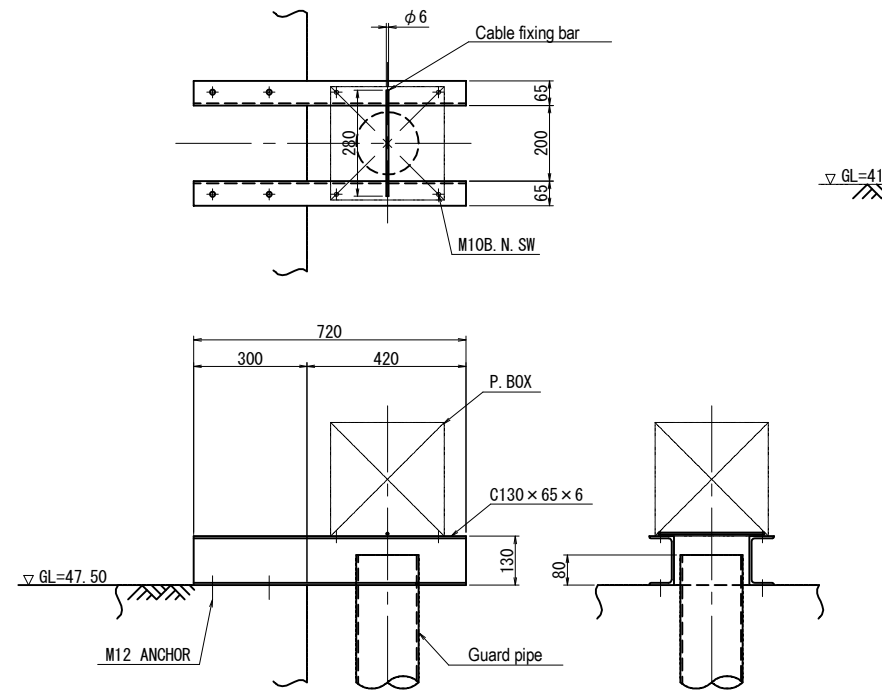
A - A Scale C



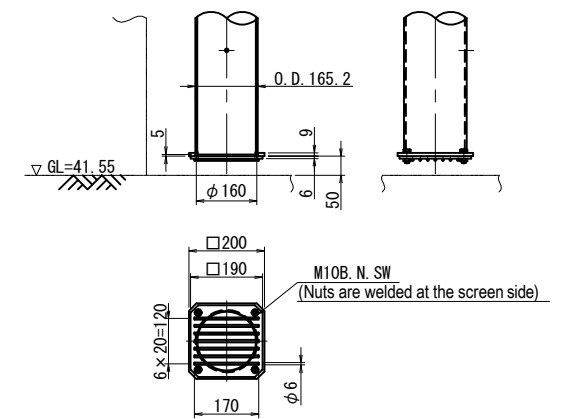
B - B Scale C



Pull-BOX stand Scale B



Bottom screen Scale B



Staff gauge



- Note
- Material is SUS304 if not otherwise specified.
 - Staff gauge shall be installed beside the water level detector

Arab Republic of Egypt
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Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Sahelyia Regulator
Water level detector pipe

DRW. NO
MS-8

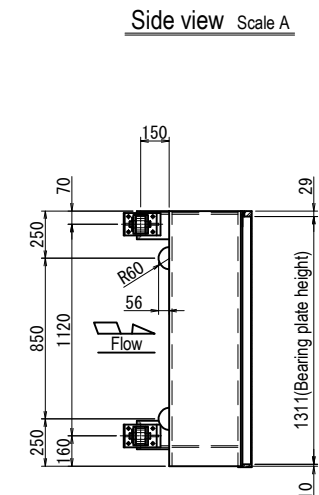
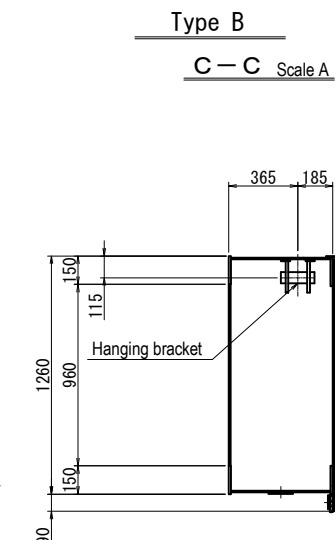
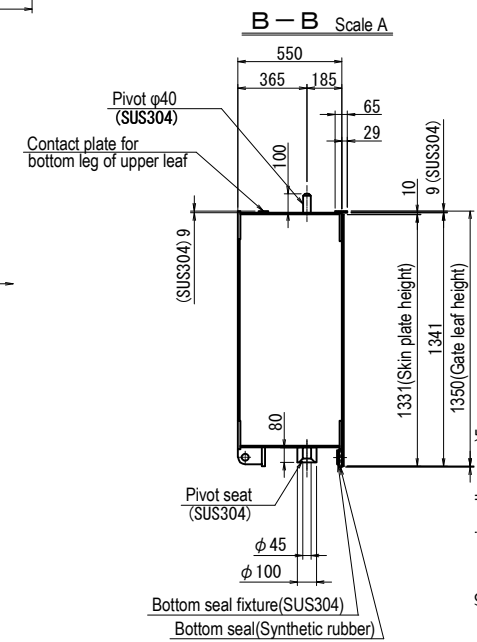
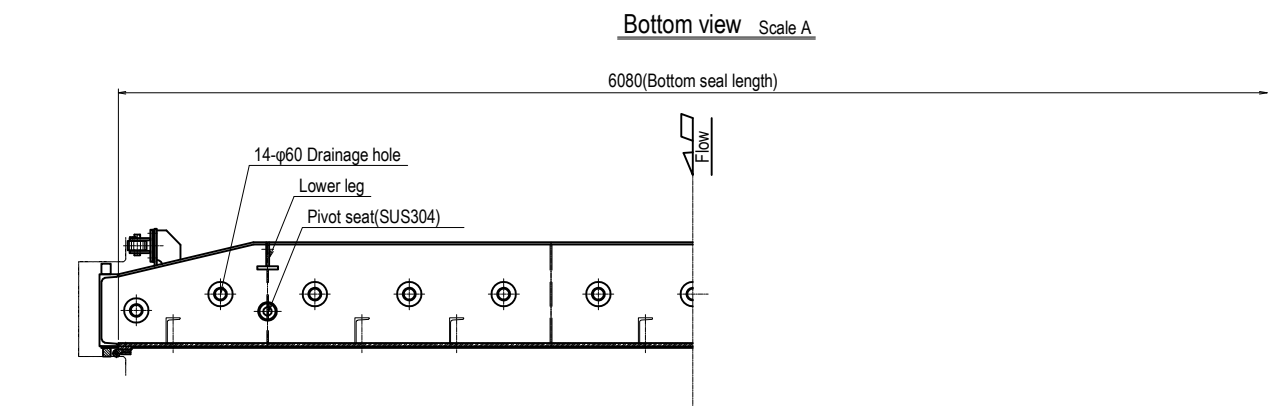
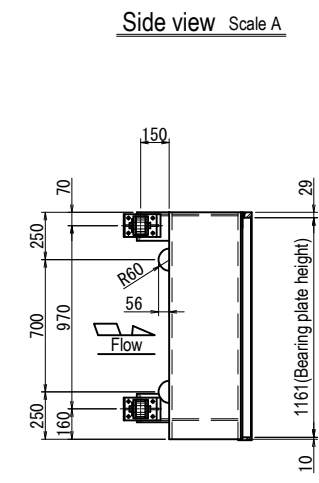
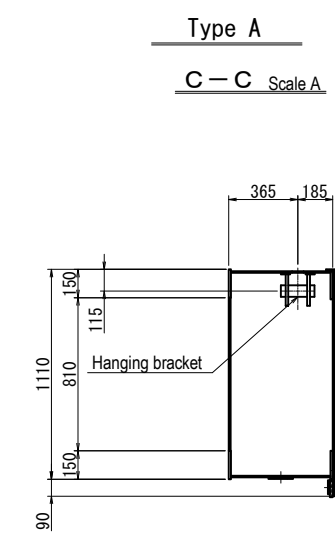
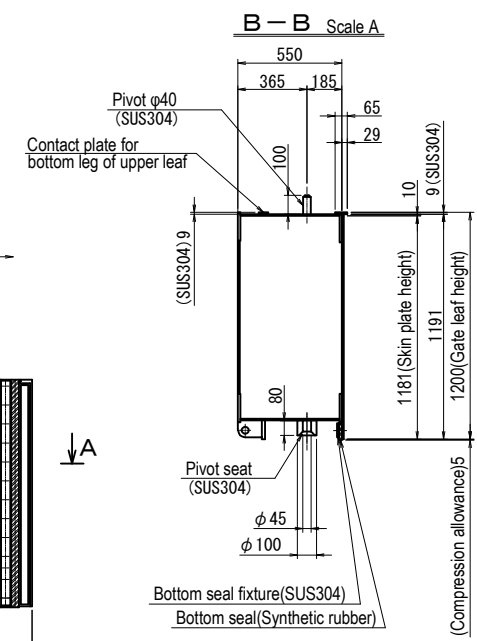
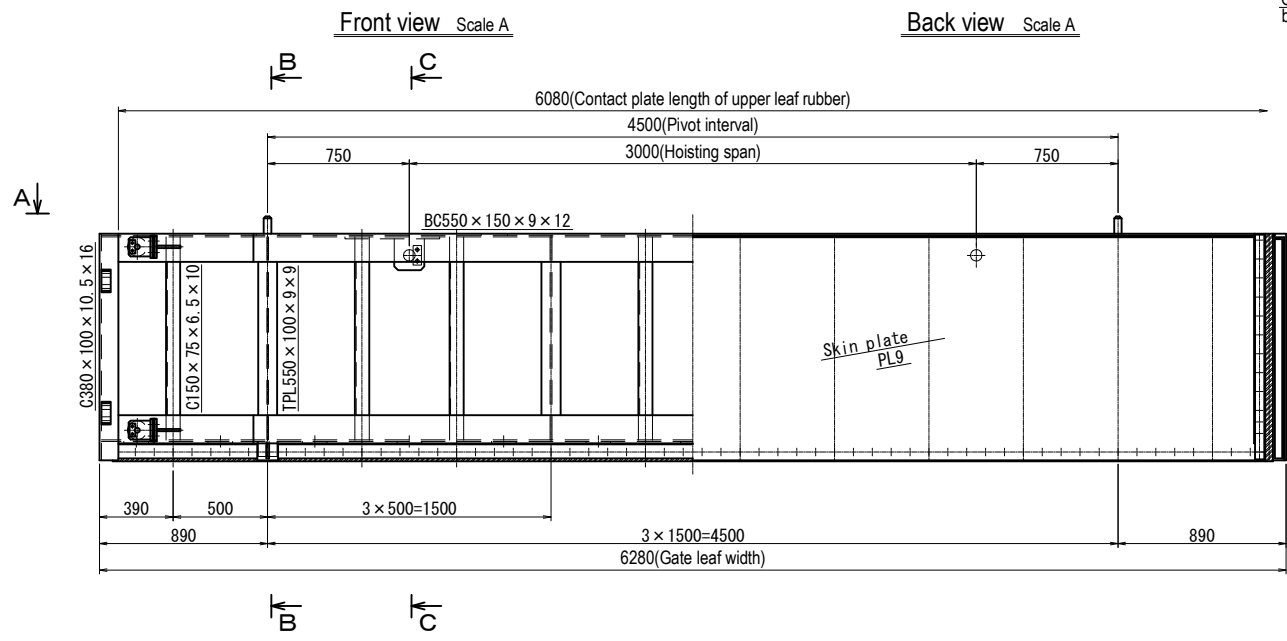
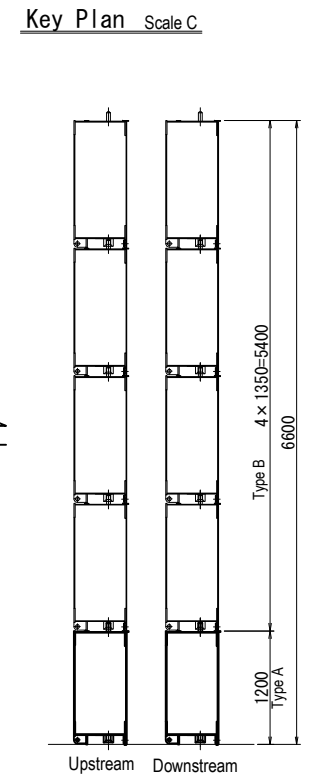
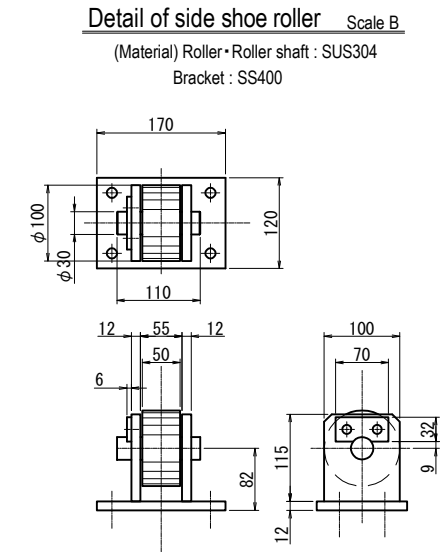
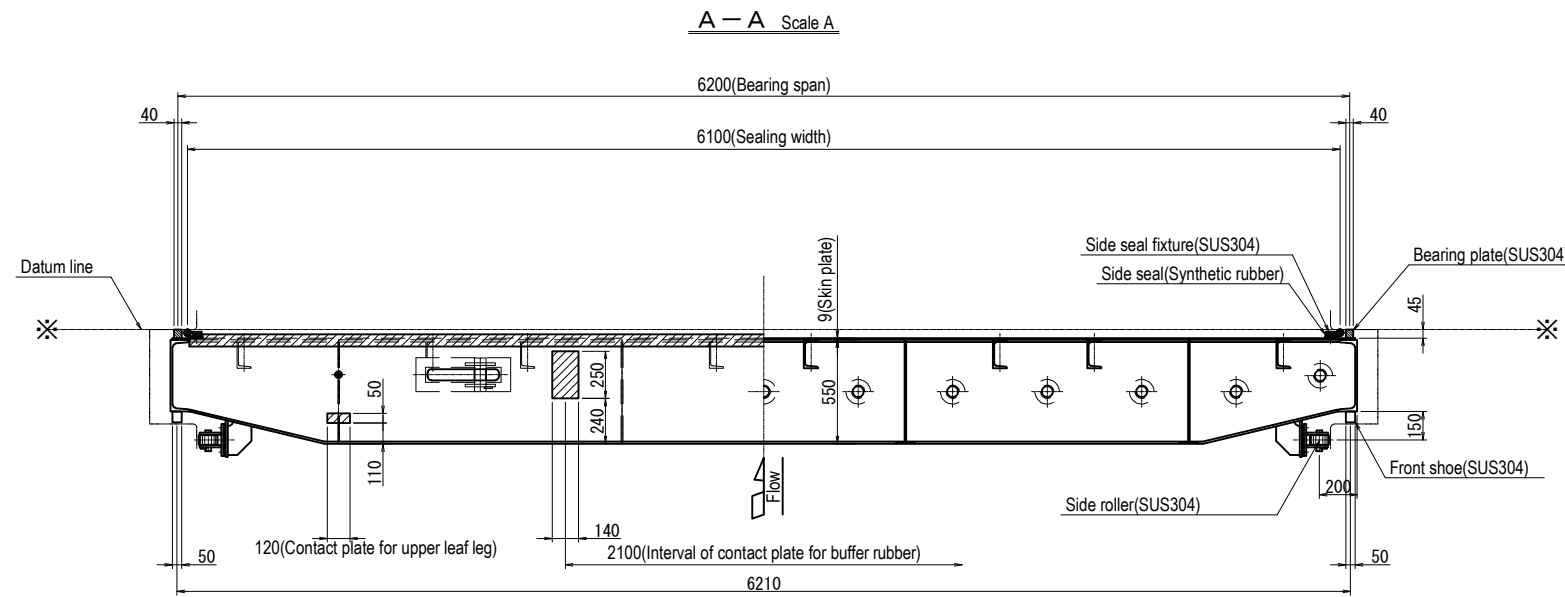
SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

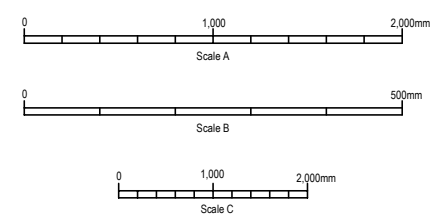
Scale A

Scale B

Scale C



Note
- Material is SS400 if not otherwise specified.



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop logs for large Regulators
Gate leaf assembling

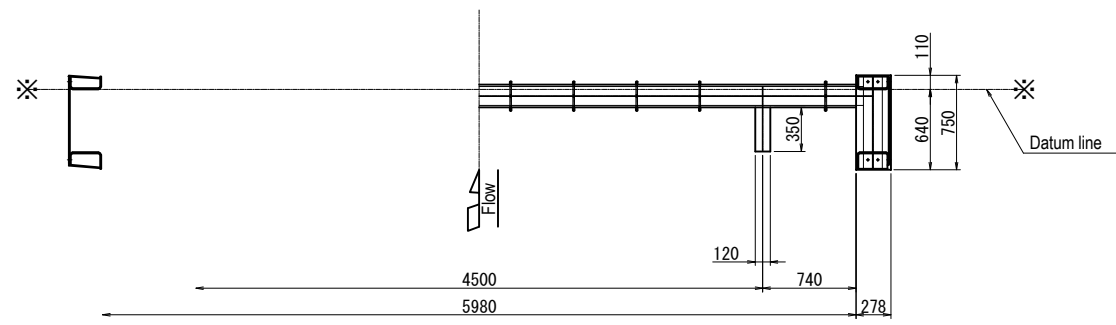
DRW. NO.
ML-1

SANYU CONSULTANTS INC.

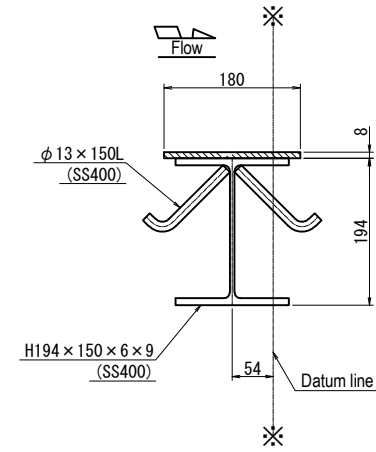
PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____ DATE: _____

Gate guide assembling for upstream stoplog

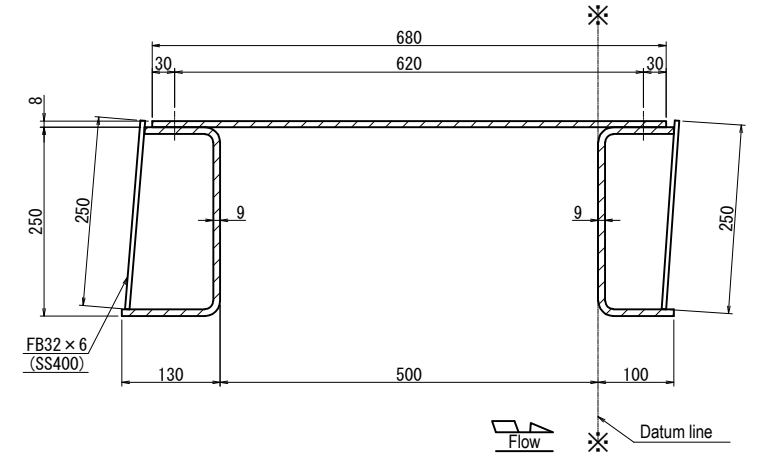
A - A Scale A



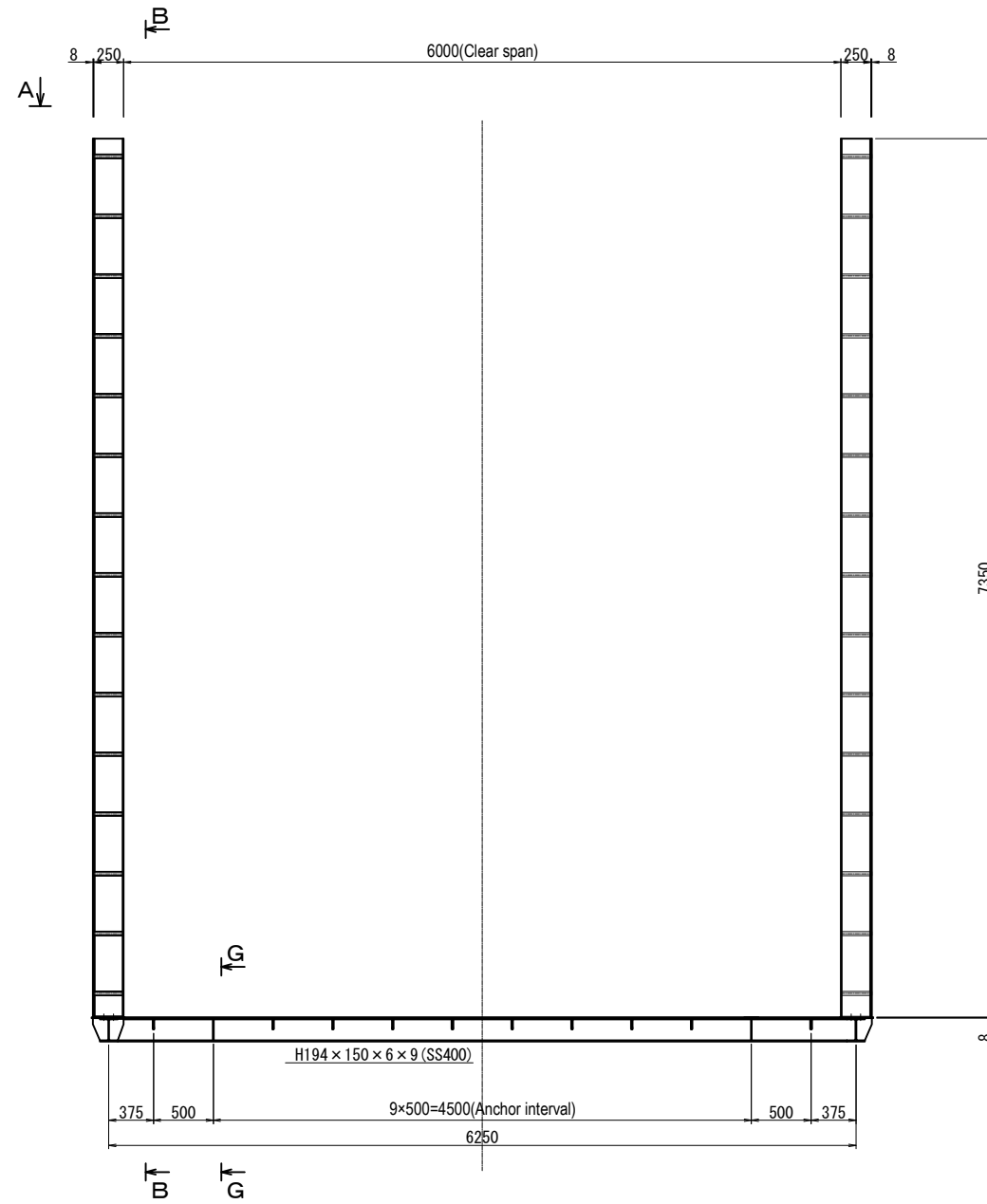
G - G Scale B



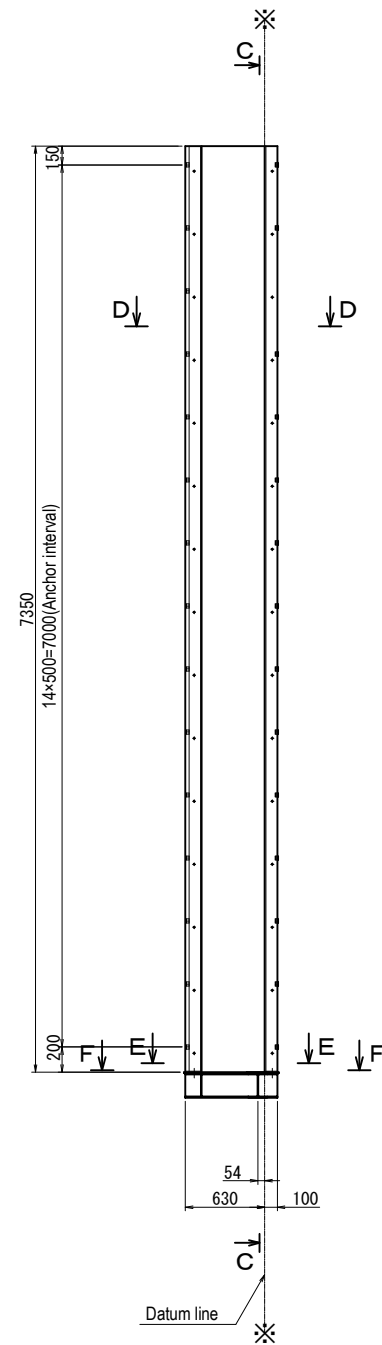
D - D Scale B



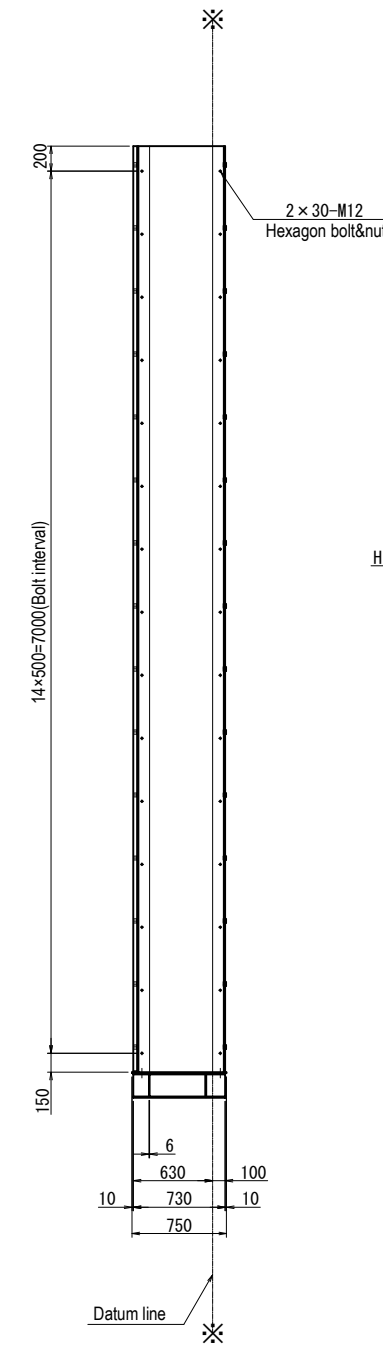
Front view Scale A



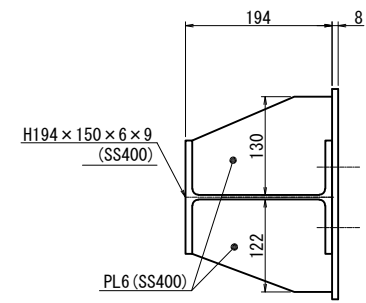
C - C Scale A



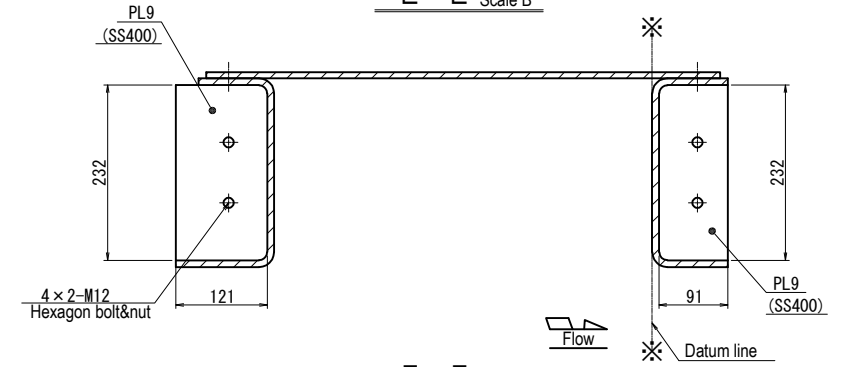
B - B Scale A



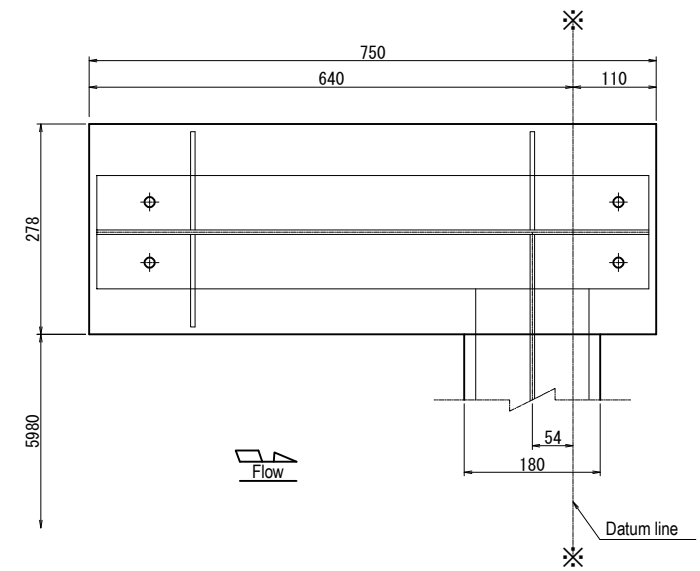
Side view Scale A



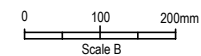
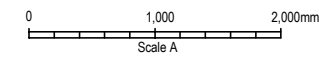
E - E Scale B



F - F Scale B



Note:
- Material is SUS304 if not otherwise specified.



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
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Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop logs for large Regulators
Gate guide assembling (1/2)

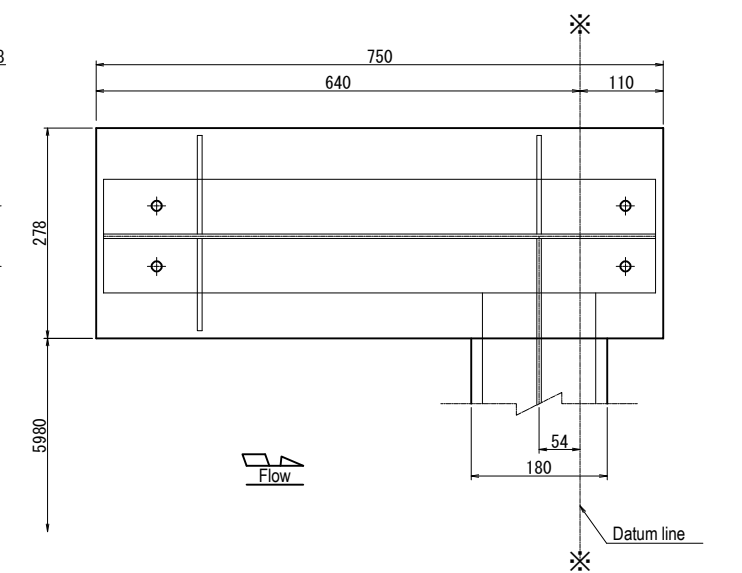
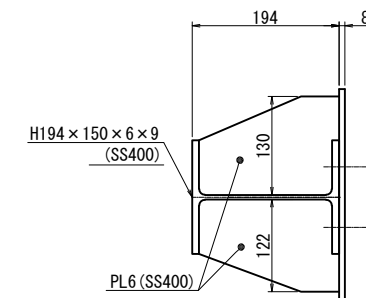
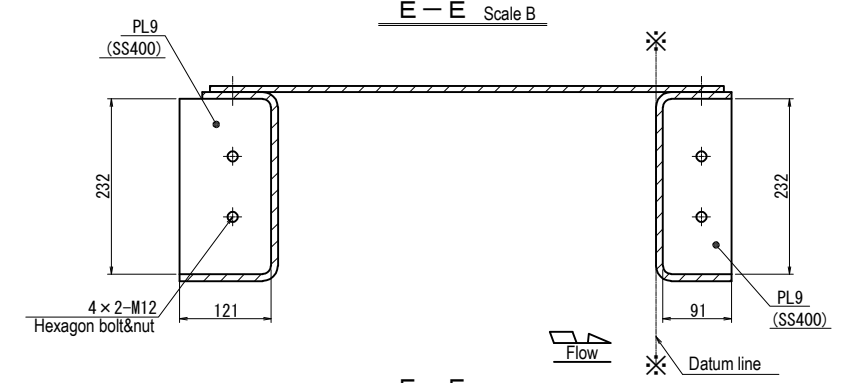
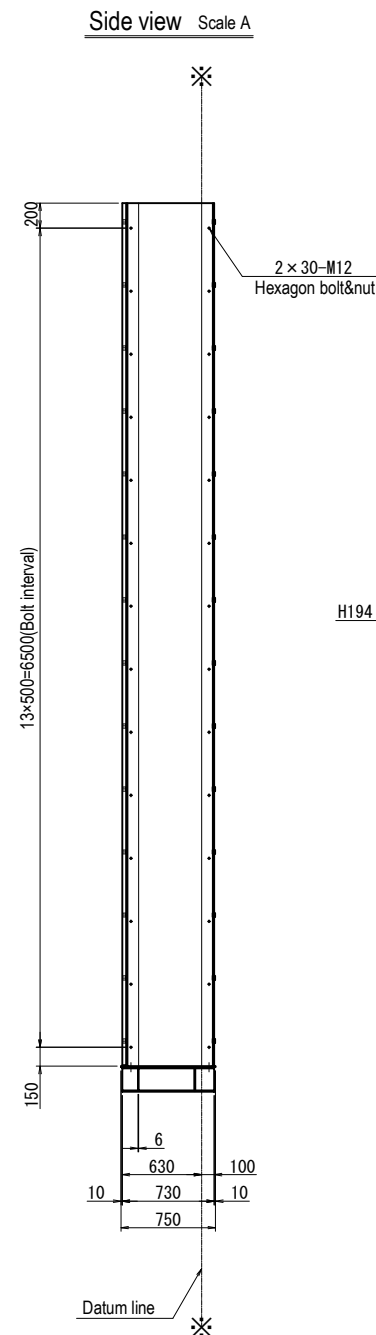
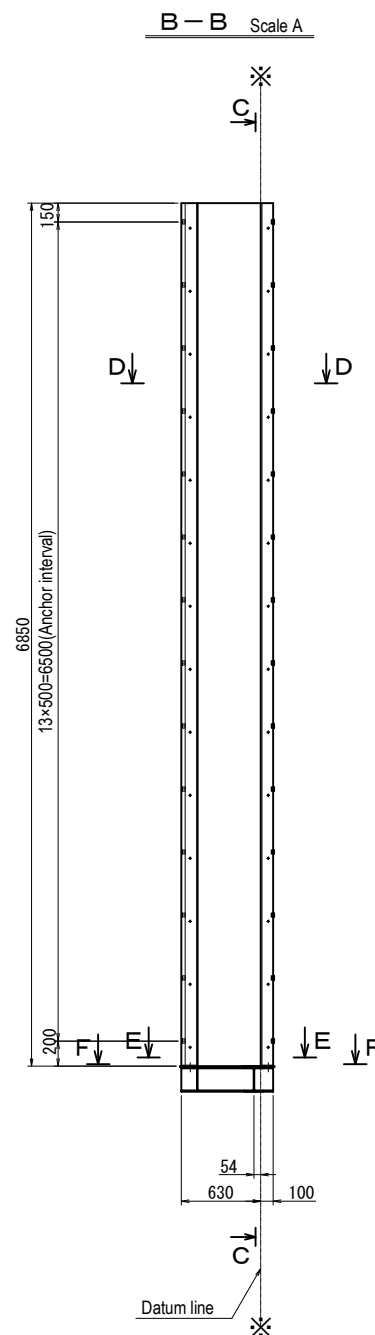
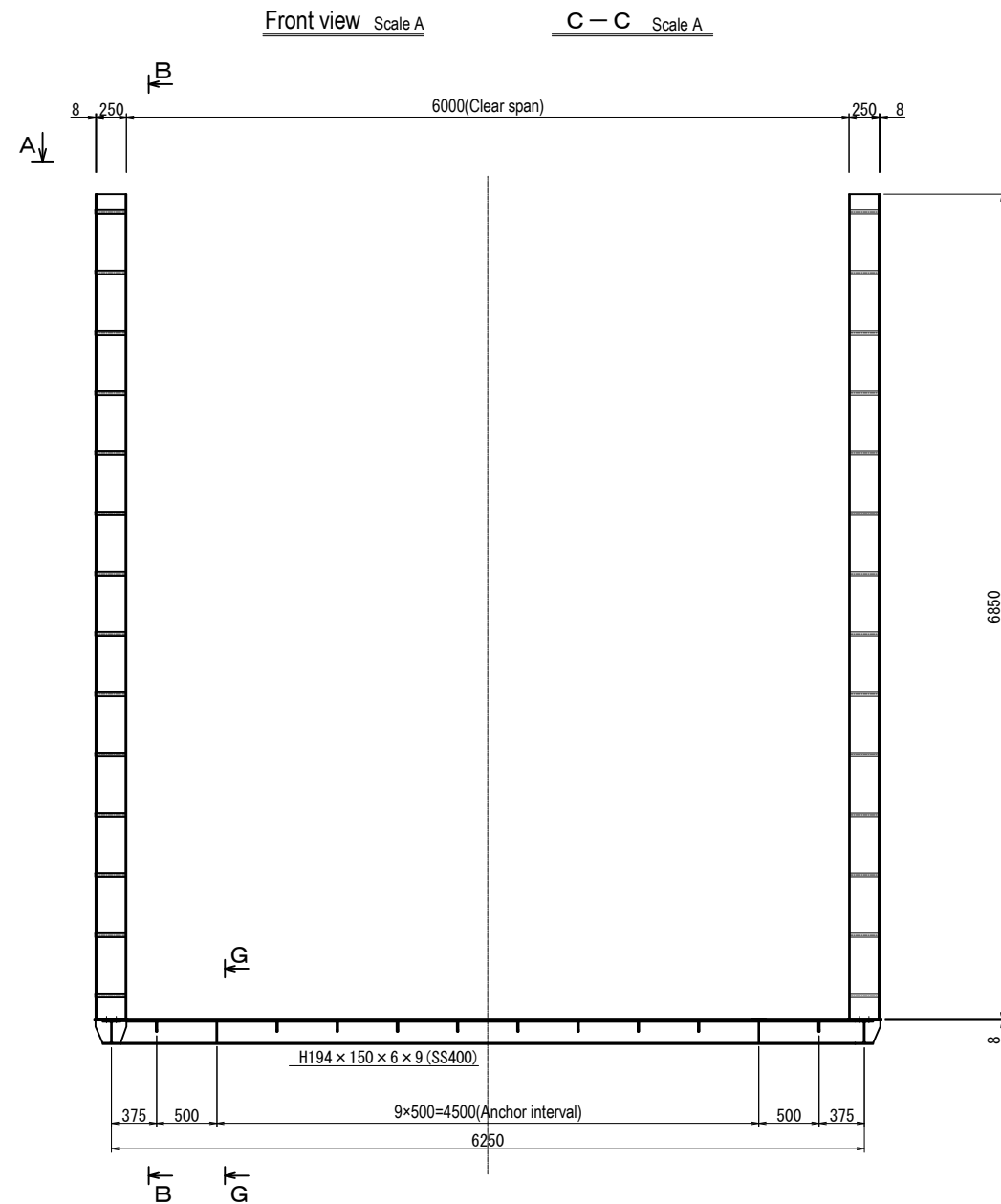
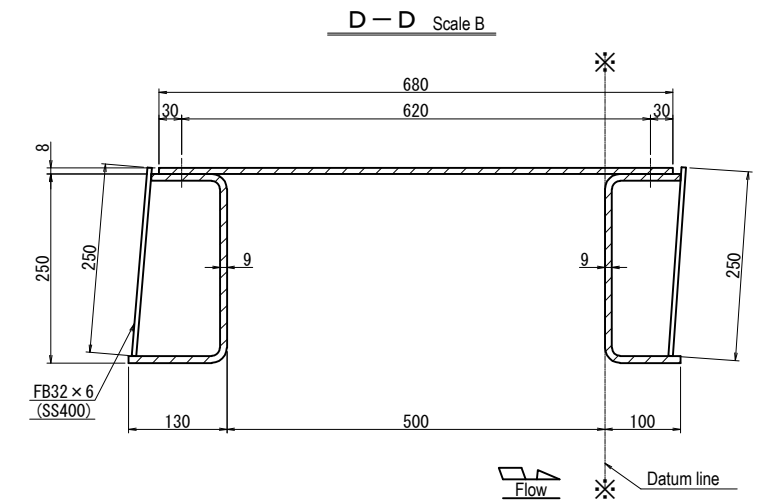
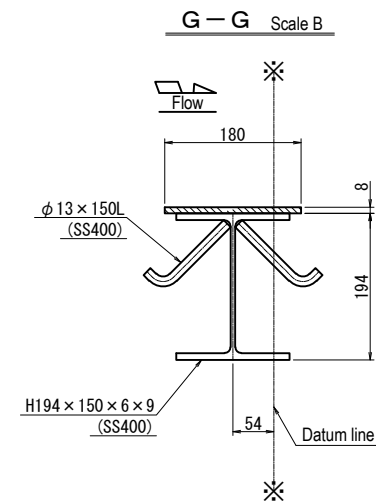
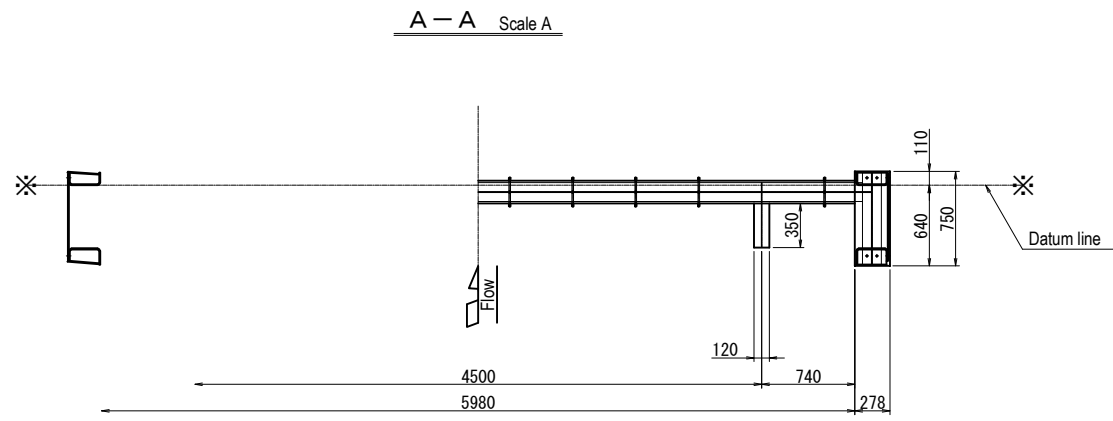
DRW. NO.

ML-2

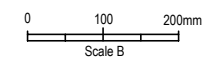
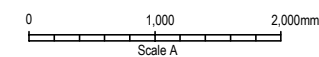
SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Gate guide assembling for downstream stoplog

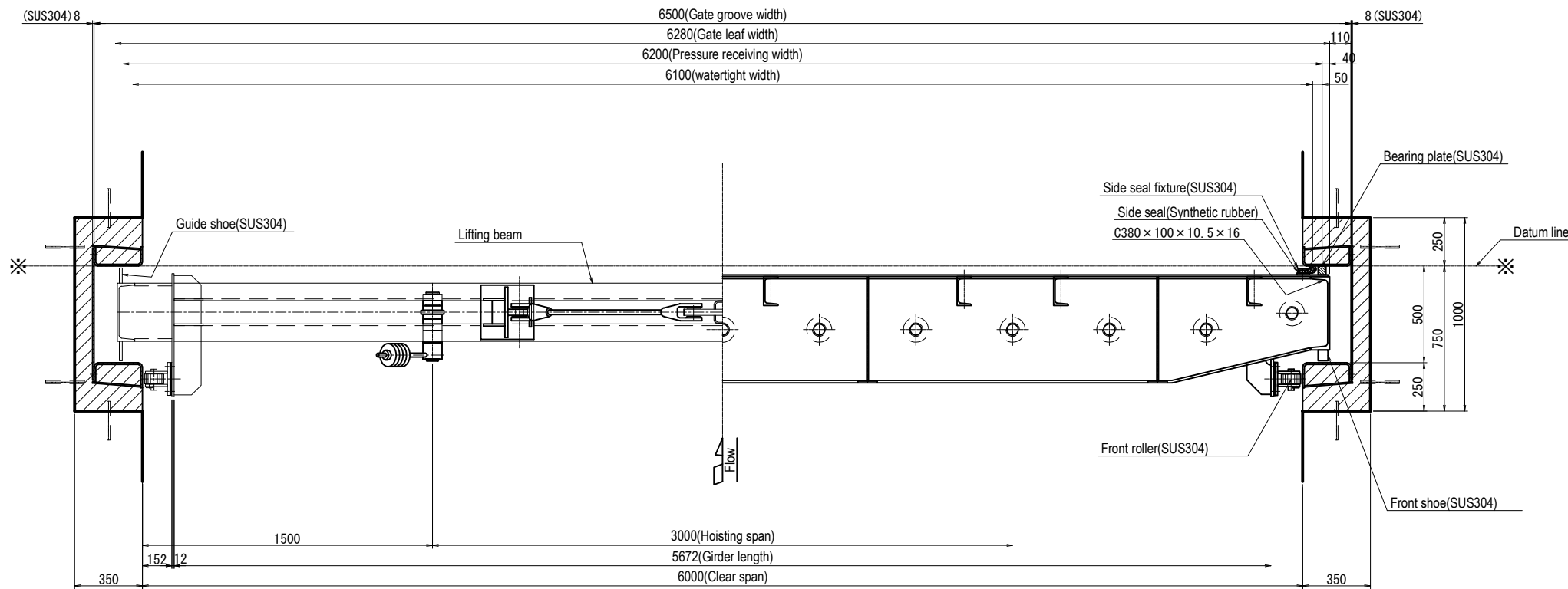


Note
Material is SUS304 if not otherwise specified.

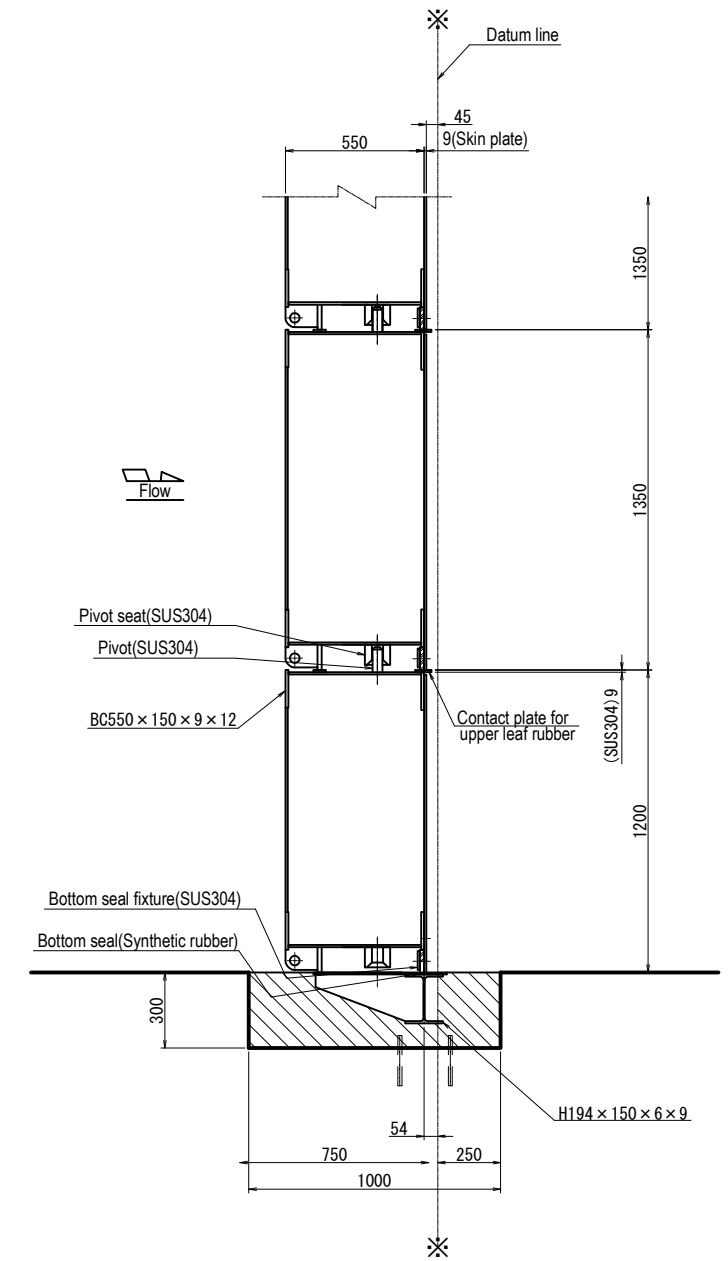


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Stop logs for large Regulators Gate guide assembling (2/2)	DRW. NO. ML-3	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

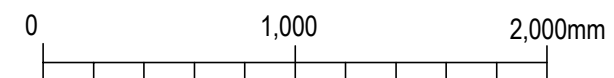
Detail of side seal



Detail of bottom seal

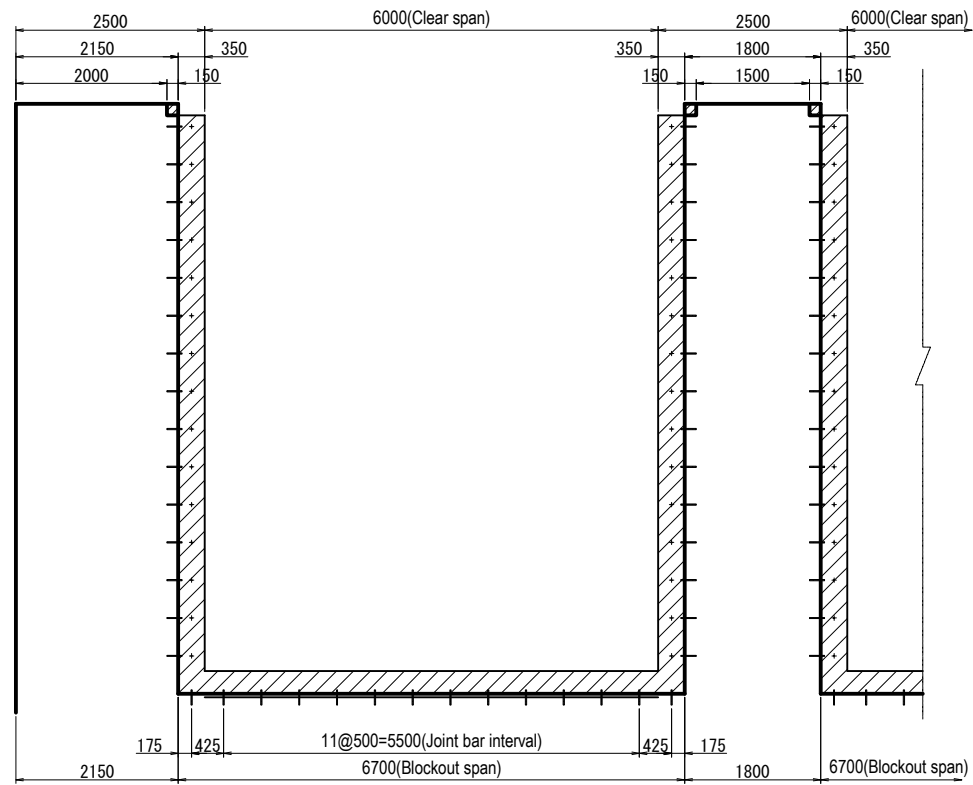


Note
 -Material is SS400 if not otherwise specified.



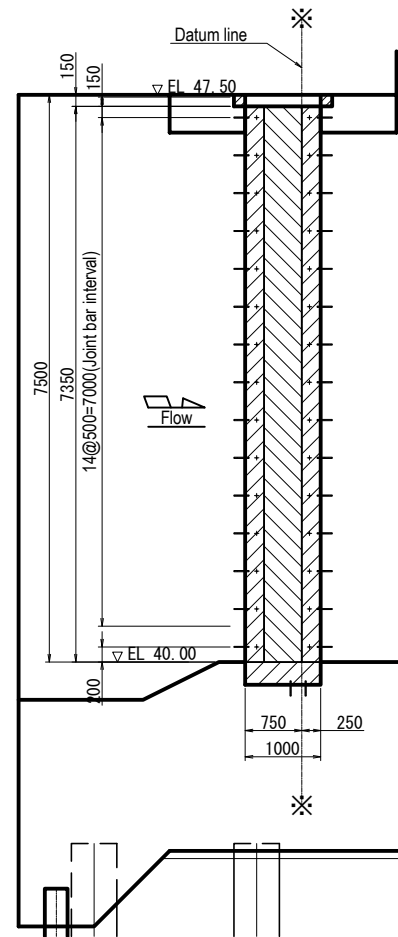
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for large Regulators Detail of seal			DRW. NO. ML-4
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Front view Scale A

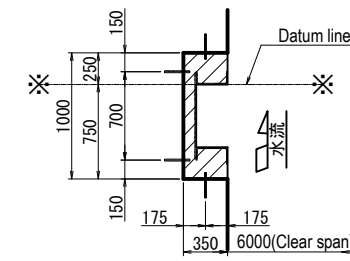


Upstream side

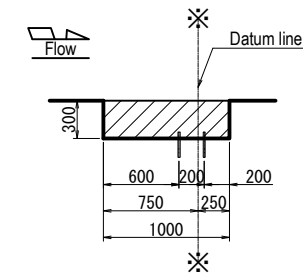
Side view Scale A



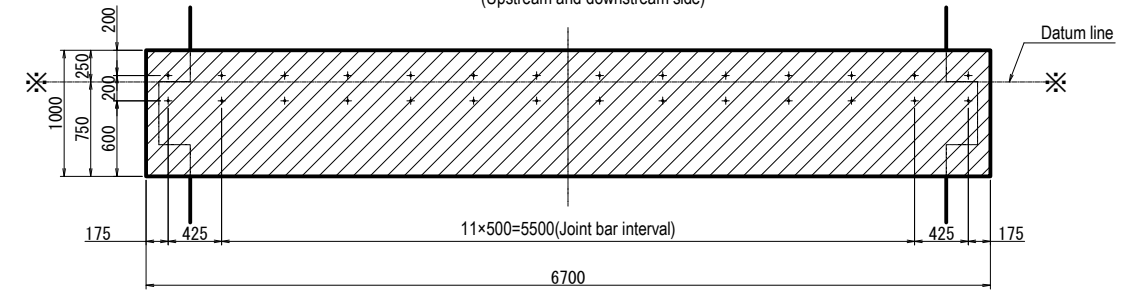
Side sectional view Scale B
(Upstream and downstream side)



Bottom sectional view Scale B
(Upstream and downstream side)

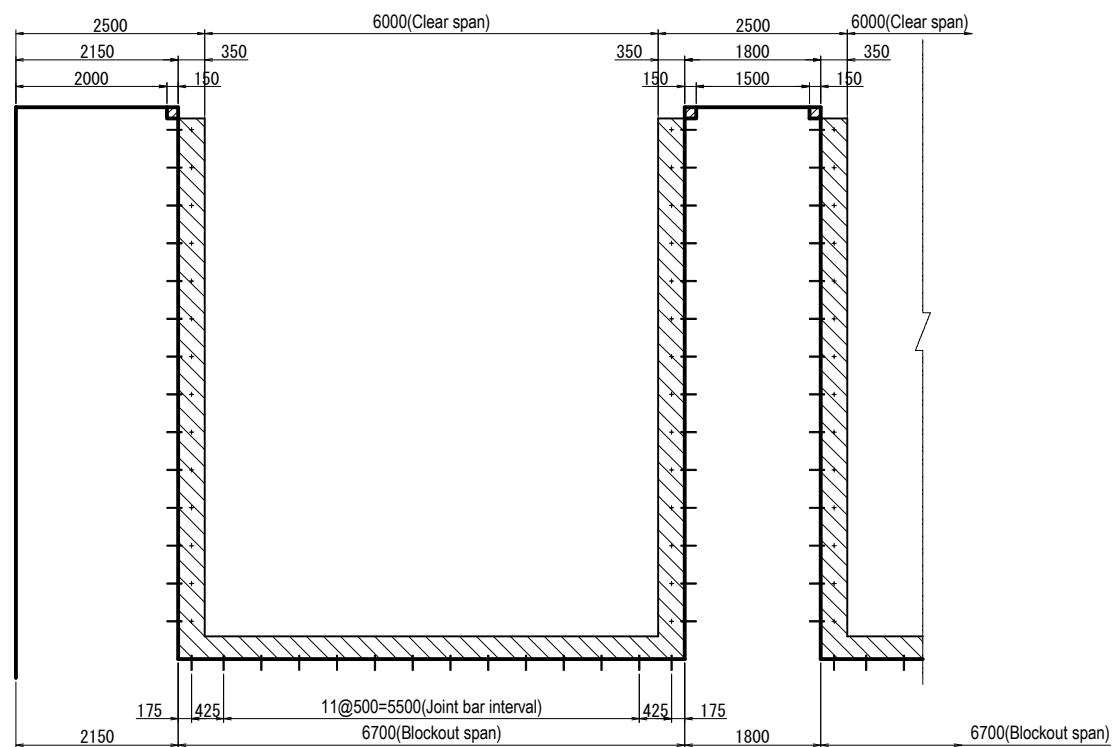


Bottom view Scale B
(Upstream and downstream side)

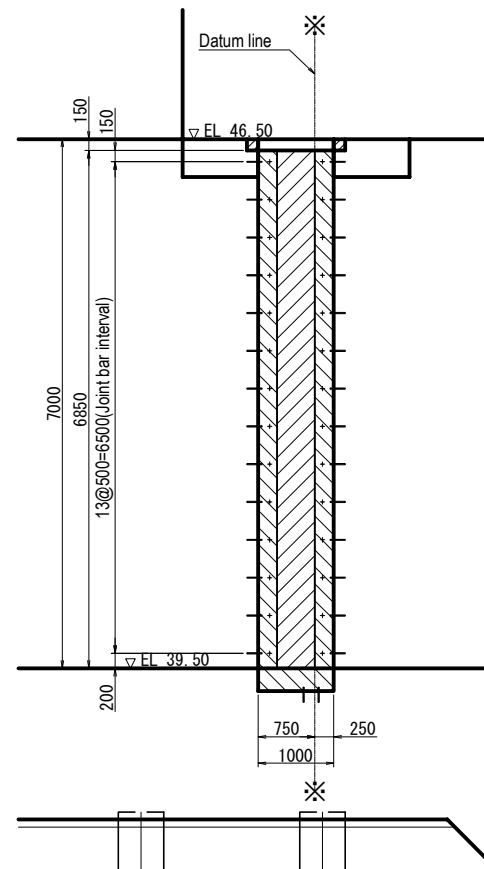


Downstream side

Front view Scale A

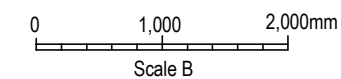
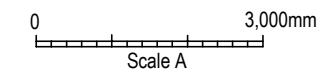


Side view Scale A



Joint bar

Detail	Upstream	Downstream
Number	148 pcs	140 pcs
Subtotal/4 gates	592 pcs	560 pcs
Total/8 gates	1184 pcs	1120 pcs



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop logs for large Regulators
Blockout and anchors

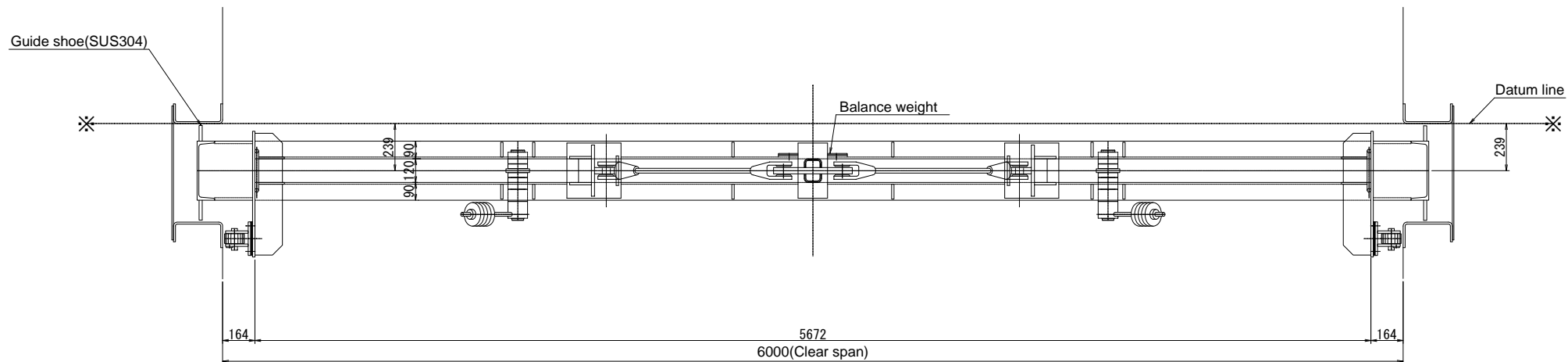
DRW. NO

ML-5

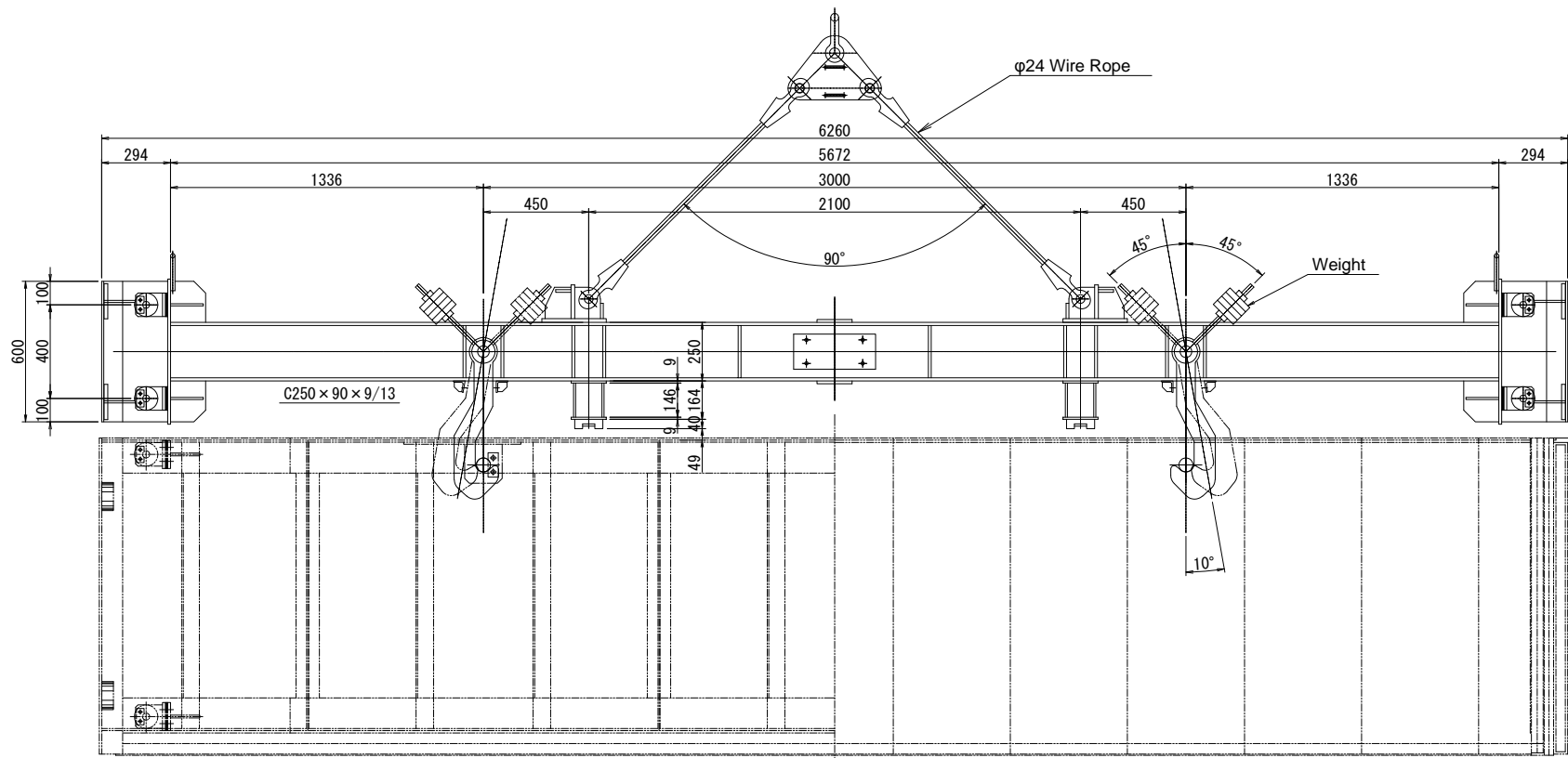
SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

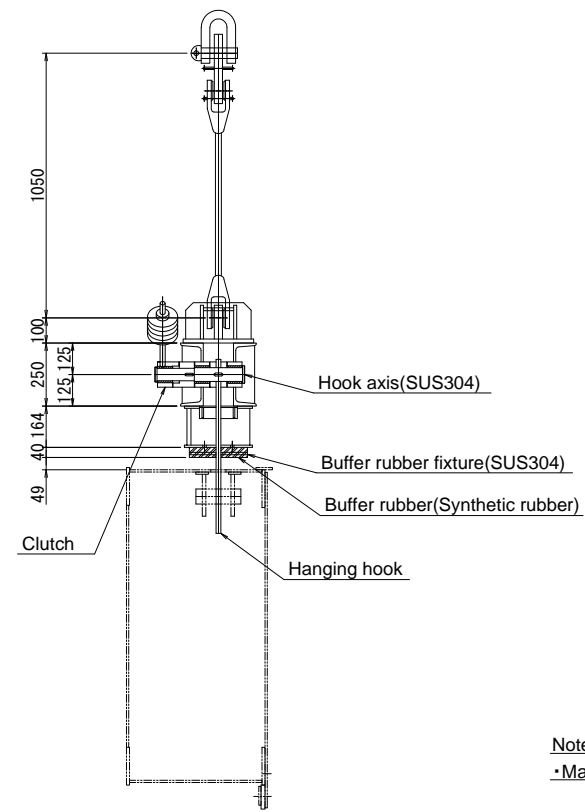
Plan



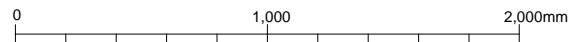
Front view



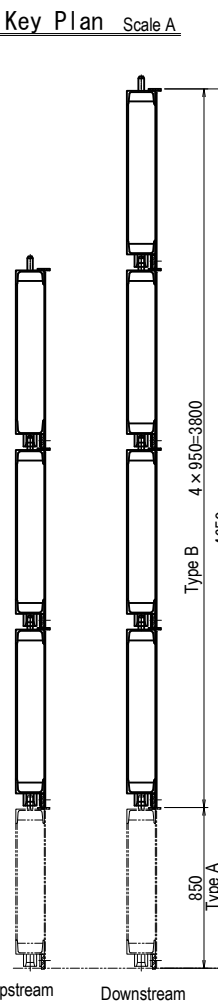
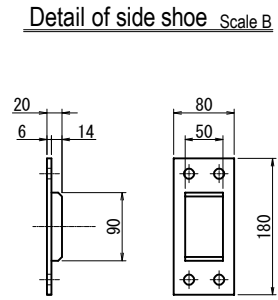
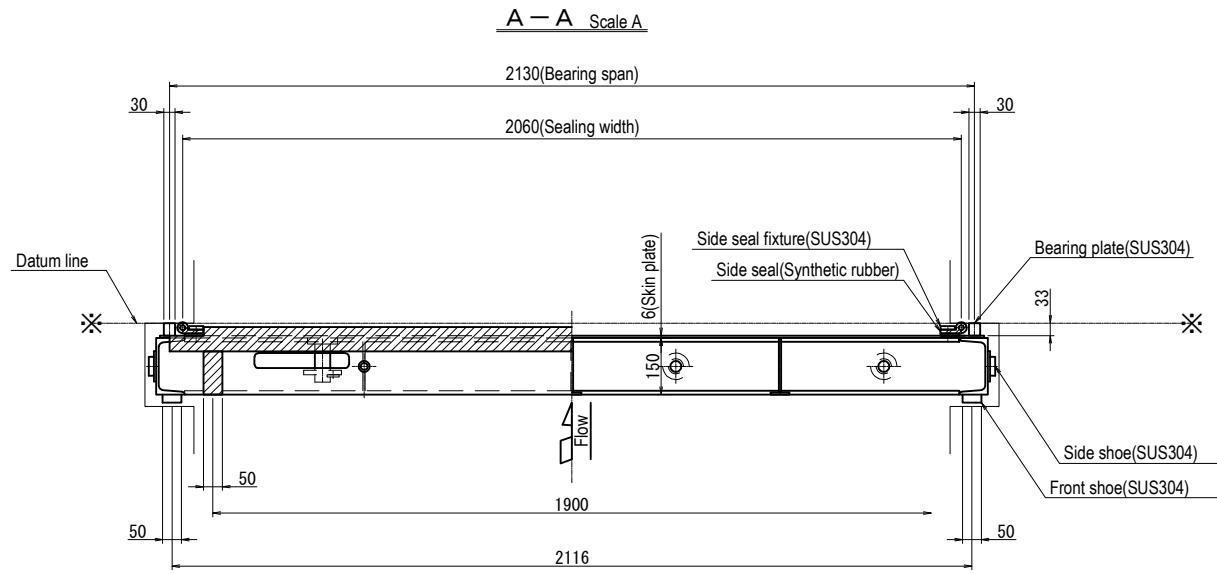
Side view



Note
 -Material is SS400 if not otherwise specified.

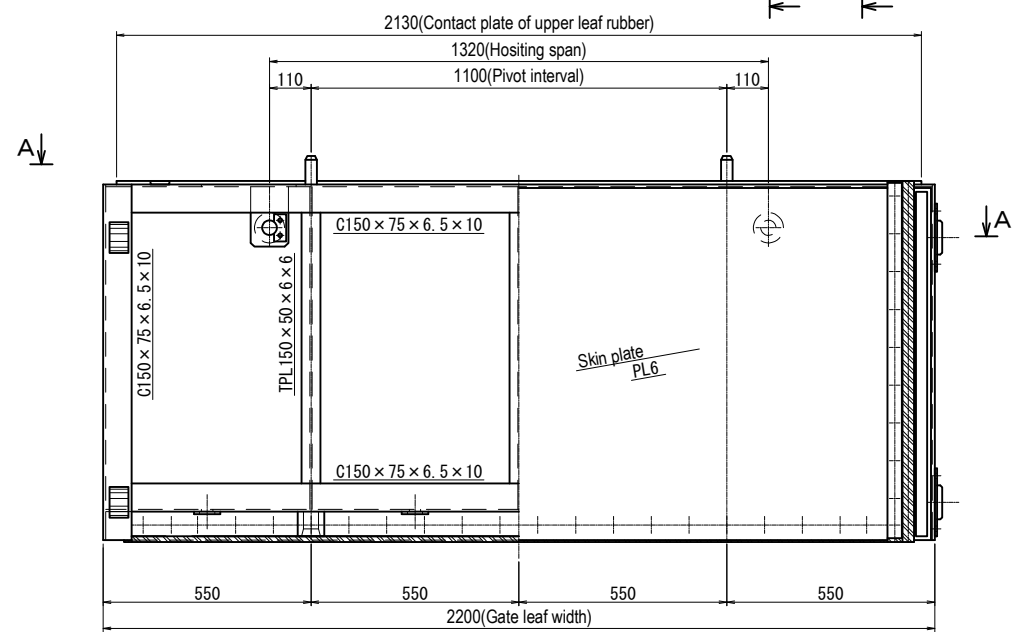


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for large Regulators Lifting beam			DRW. NO. ML-6
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

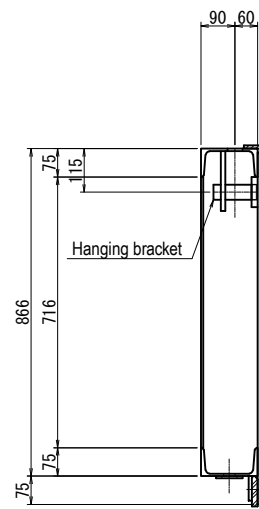


Front view Scale A

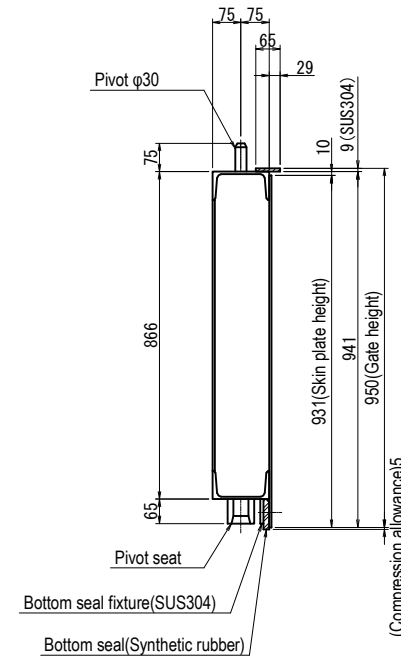
Back view Scale A



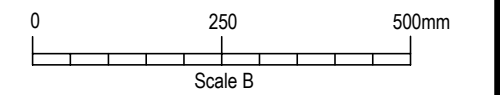
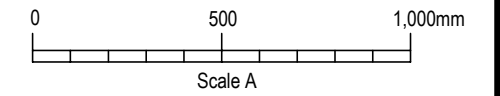
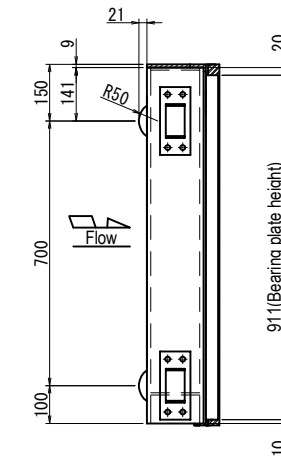
B - B Scale A



C - C Scale A

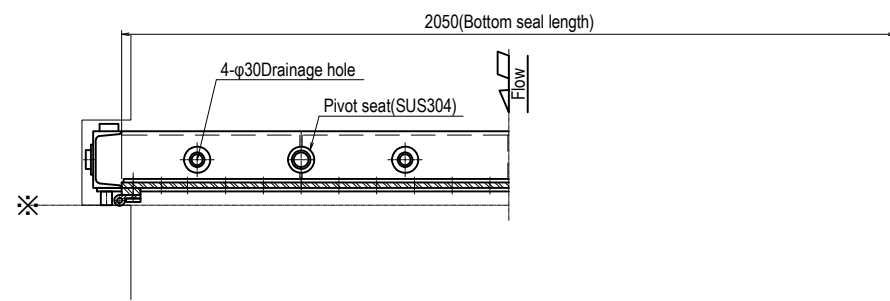


Side view Scale A

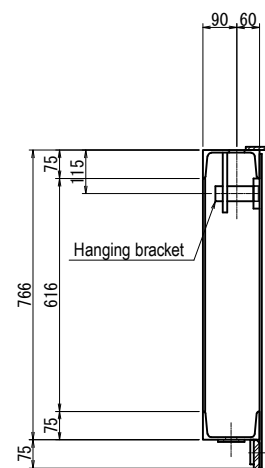


Note:
-Material is SS400 if not otherwise specified.

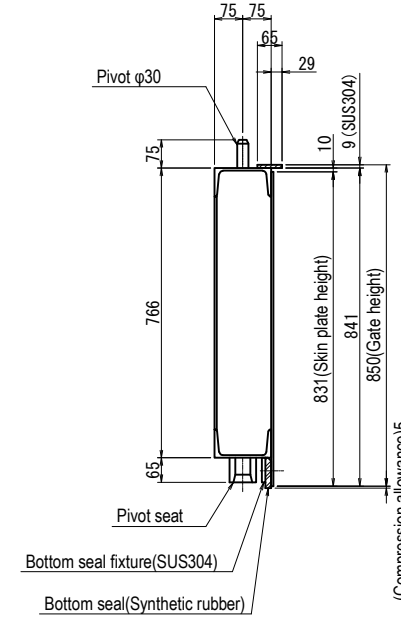
Bottom view Scale A



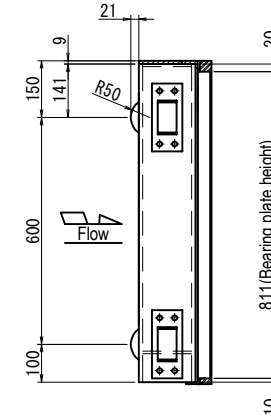
B - B Scale A



C - C Scale A

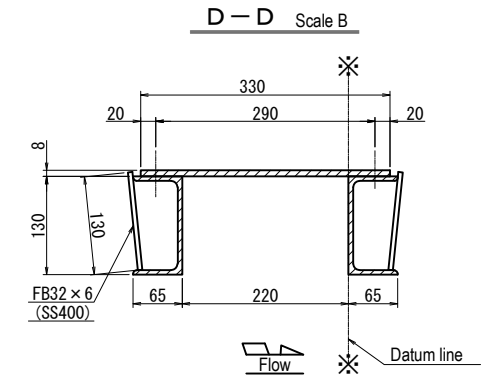
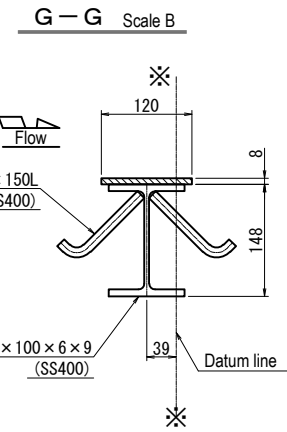
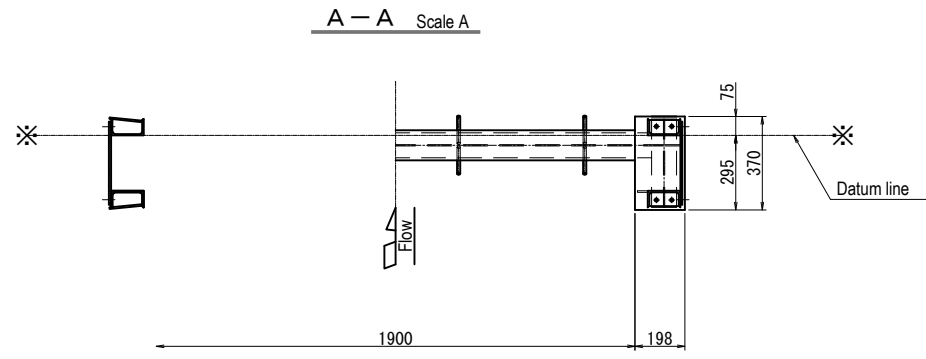


Side view Scale A



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate leaf assembling			DRW. NO ML-7
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Gate guide assembling for Badraman (Upstream side)



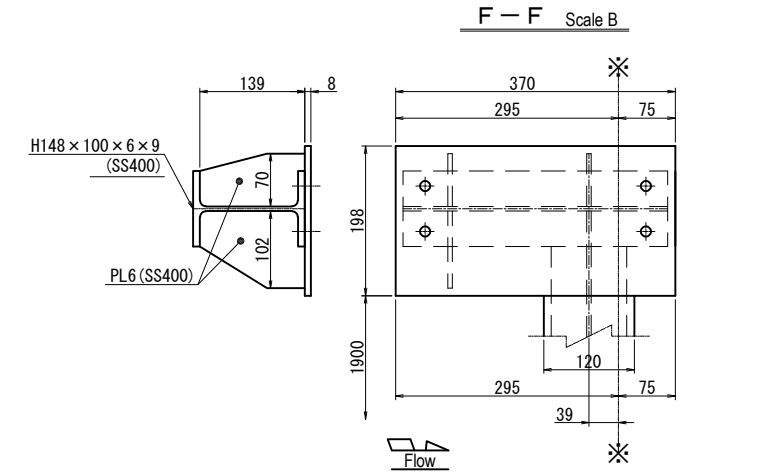
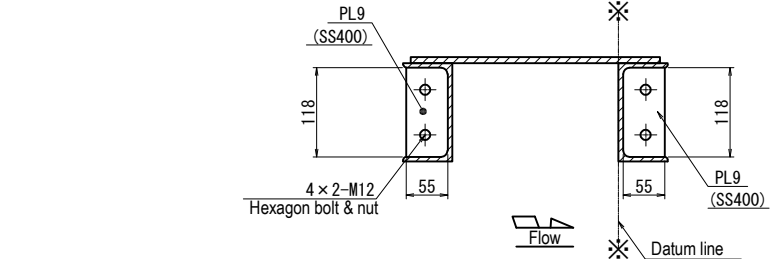
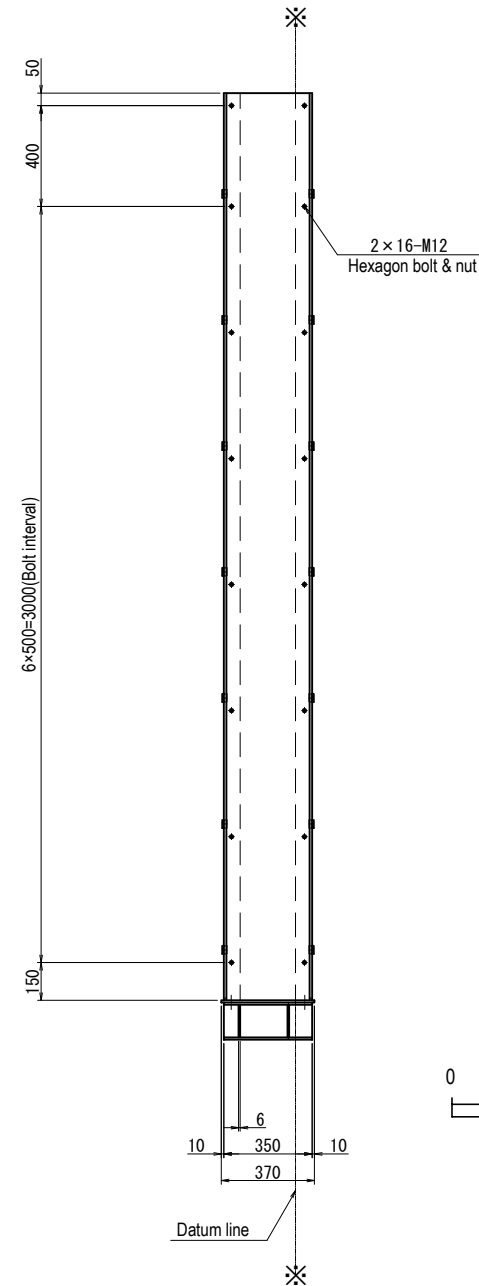
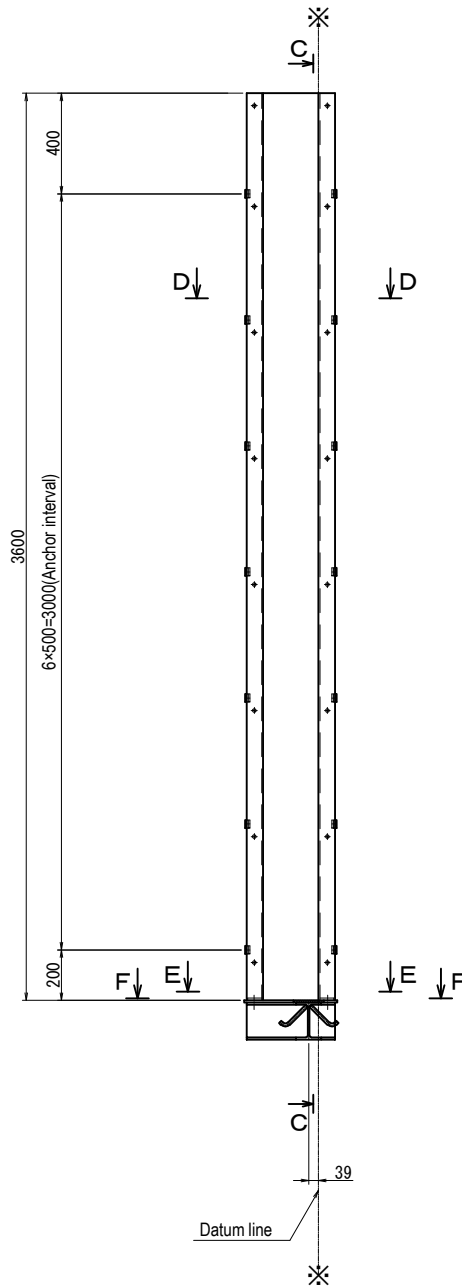
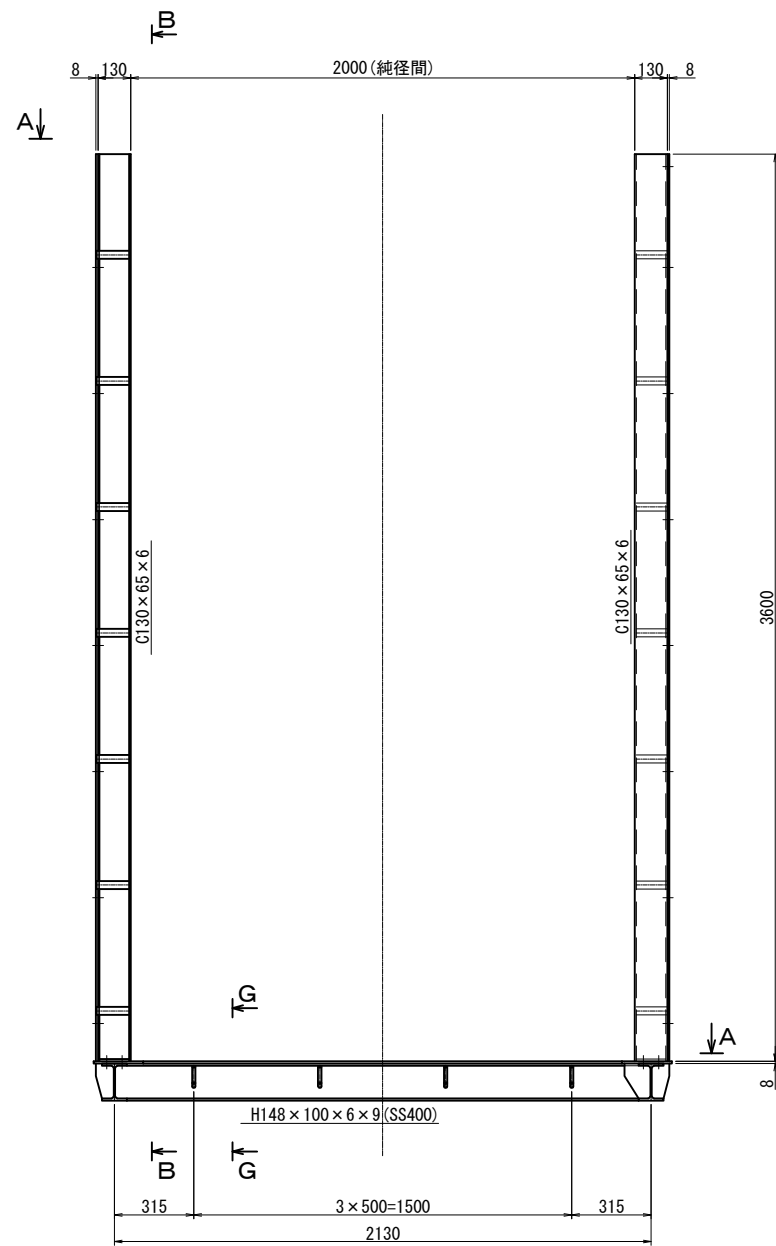
Front view Scale A

C-C Scale A

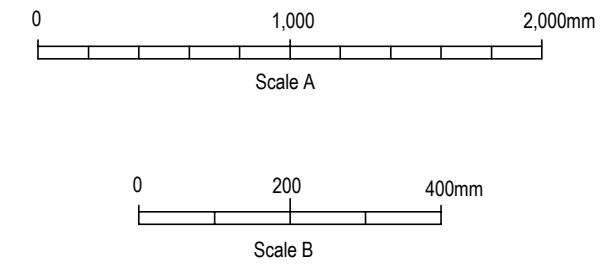
B-B Scale A

Side view Scale A

E-E Scale B

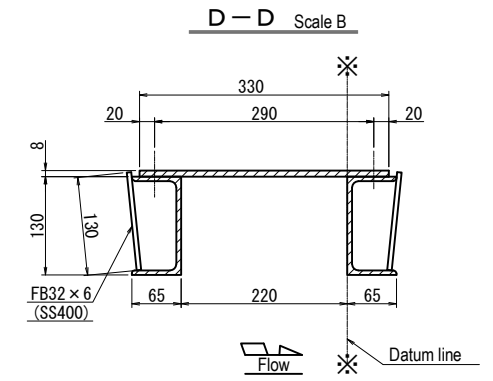
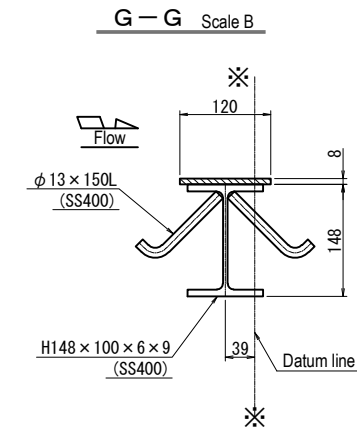
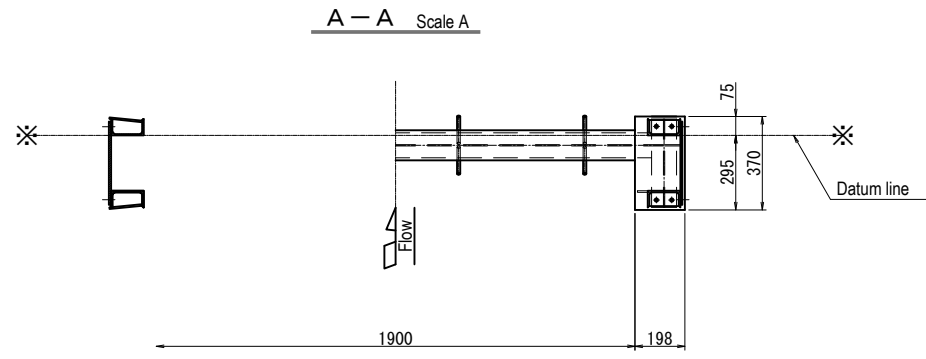


Note:
-Material is SUS304 if not otherwise specified.



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Stop logs for small Regulators Gate guide assembling (1/8)	DRW. NO ML-8	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Gate guide assembling for Badraman (Downstream side)



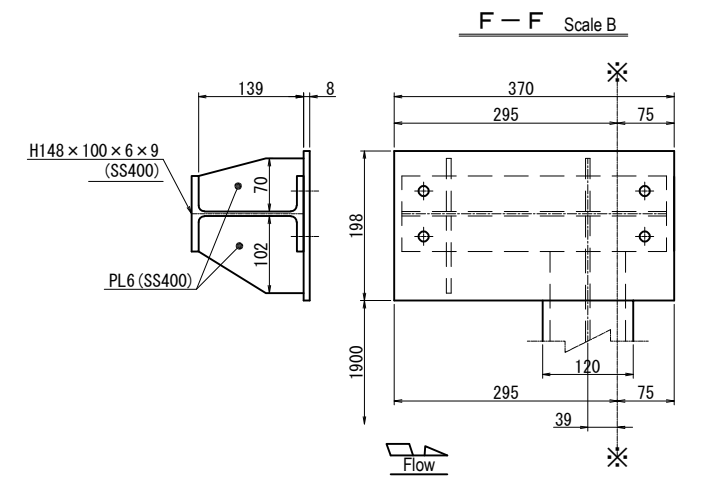
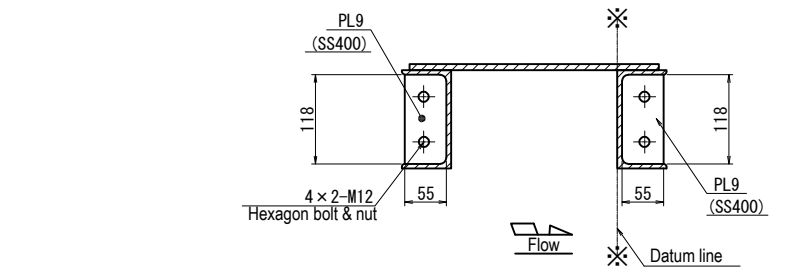
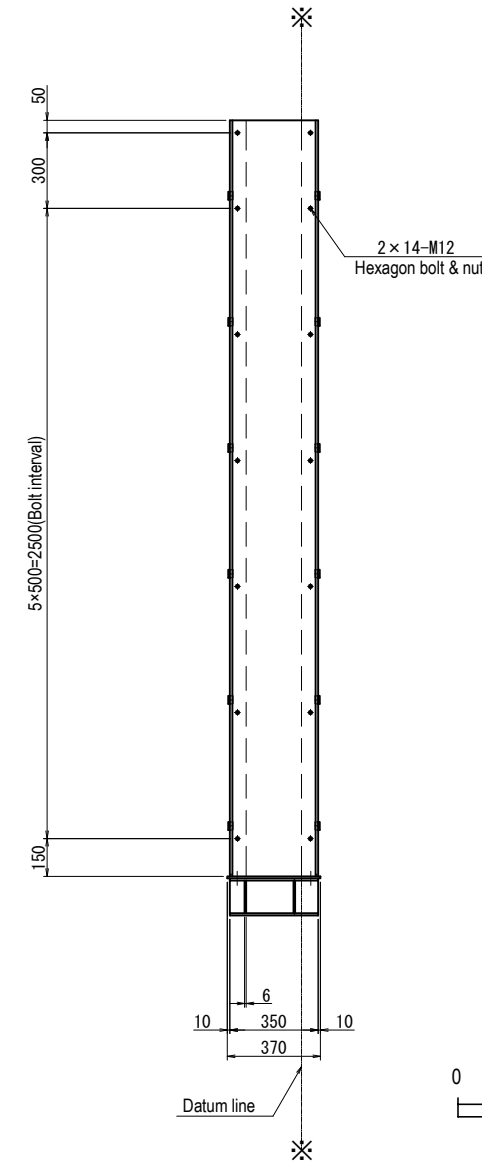
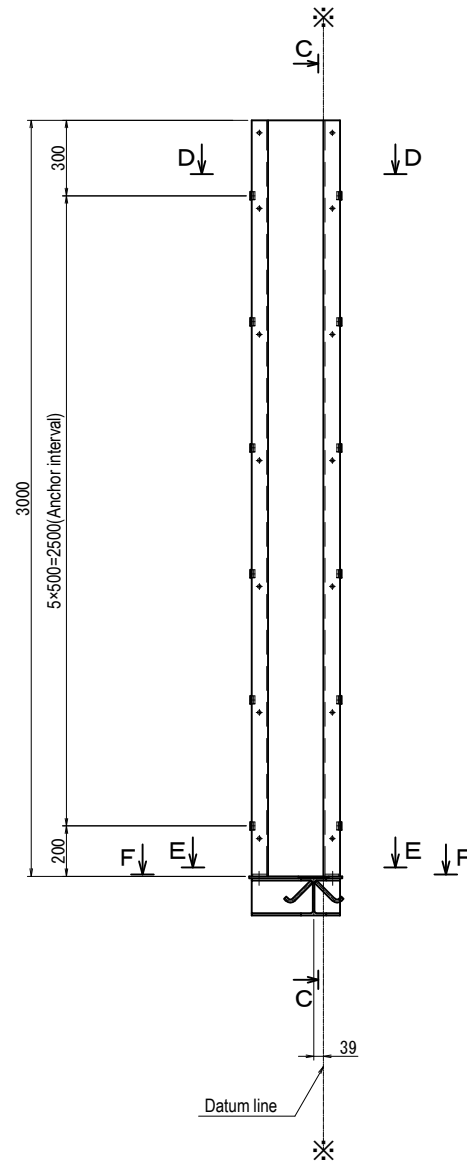
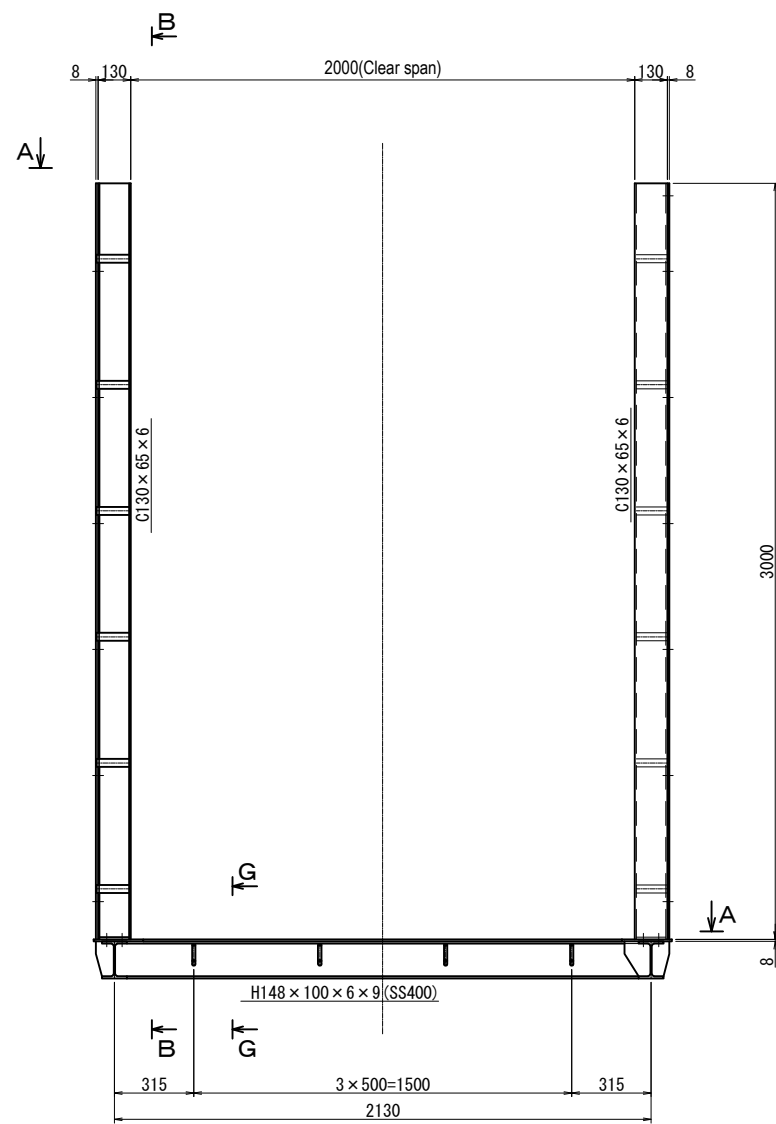
Front view Scale A

C-C Scale A

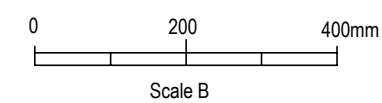
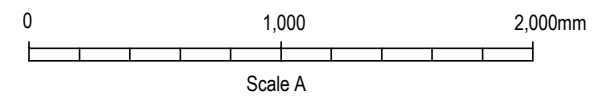
B-B Scale A

Side view Scale A

E-E Scale B

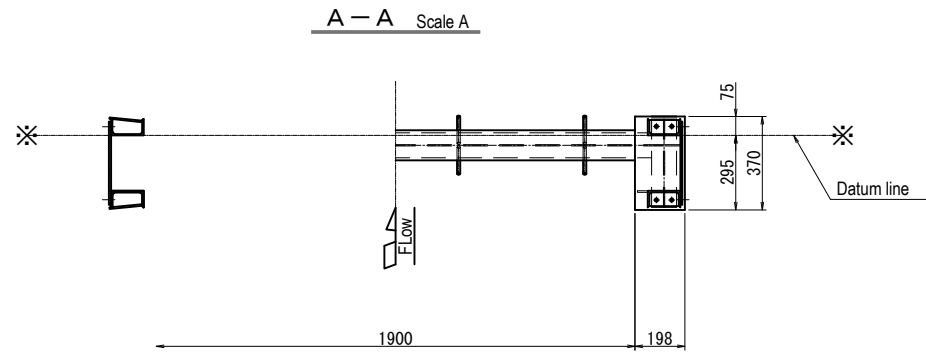


Note:
-Material is SUS304 if not otherwise specified.

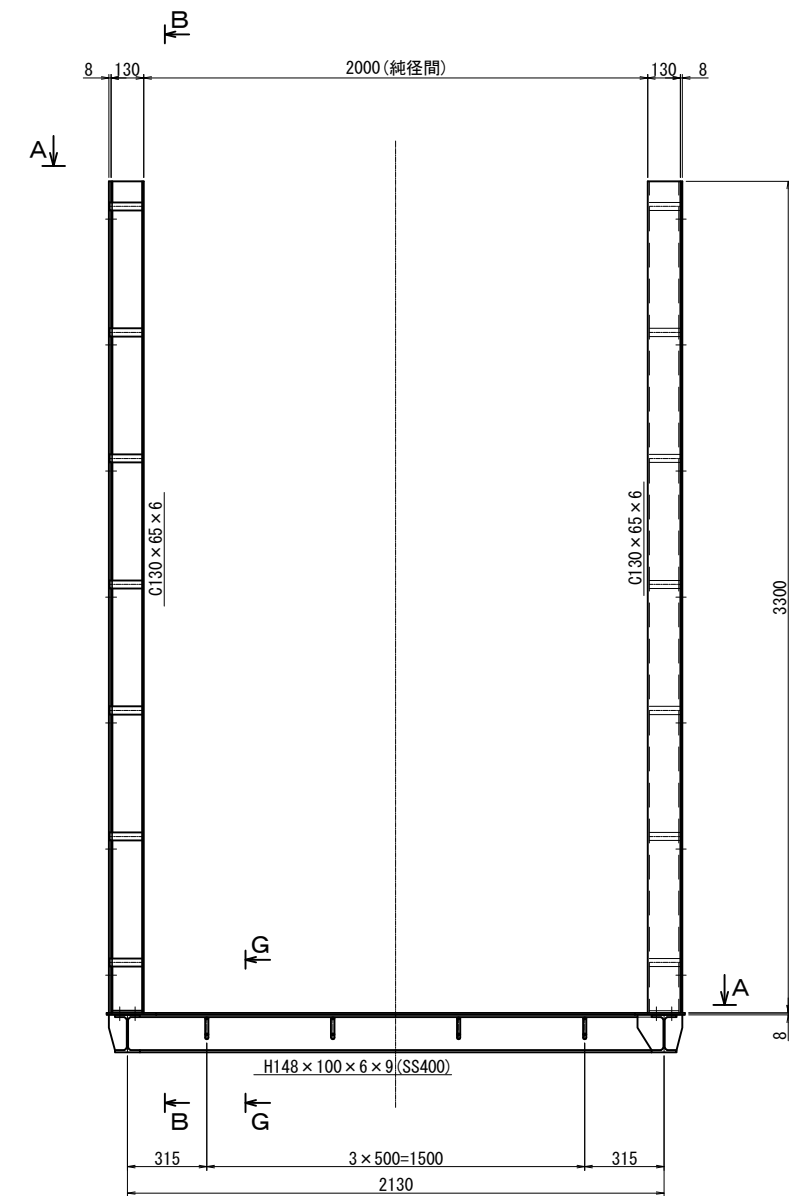


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Stop logs for small Regulators Gate guide assembling (2/8)	DRW. NO ML-9	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

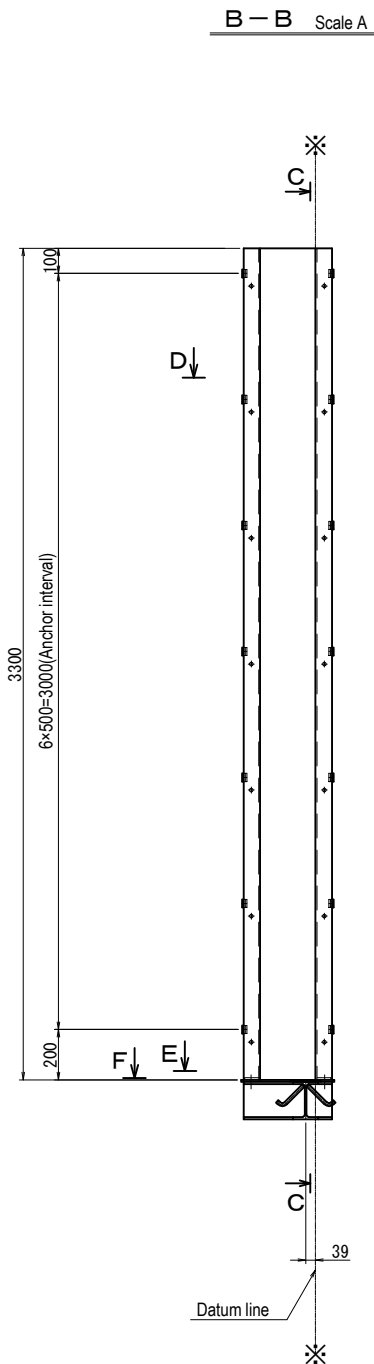
Gate guide assembling for Diroutiah (Upstream side)



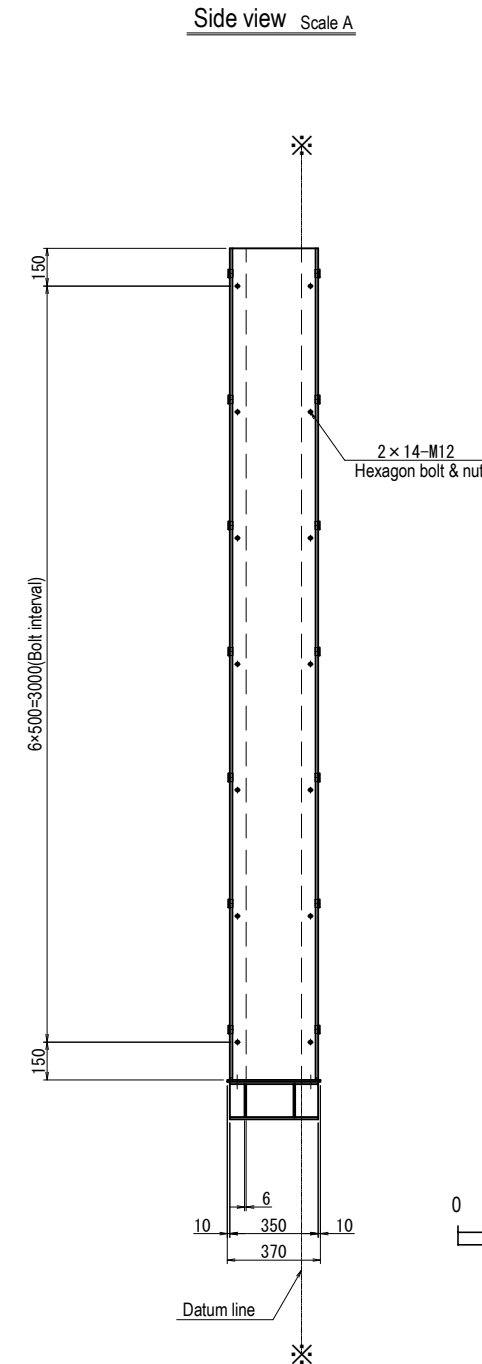
Front view Scale A



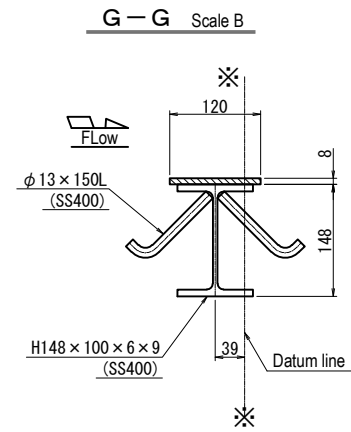
C - C Scale A



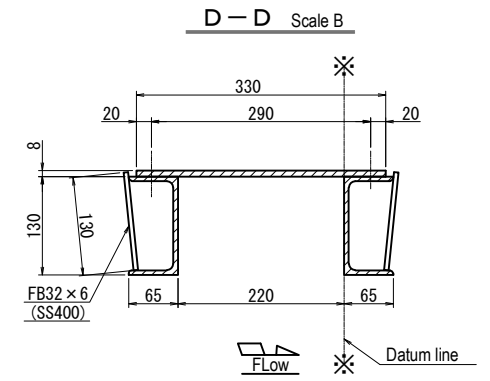
B - B Scale A



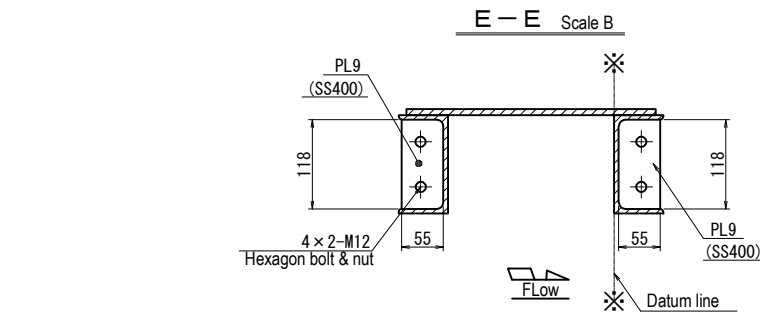
Side view Scale A



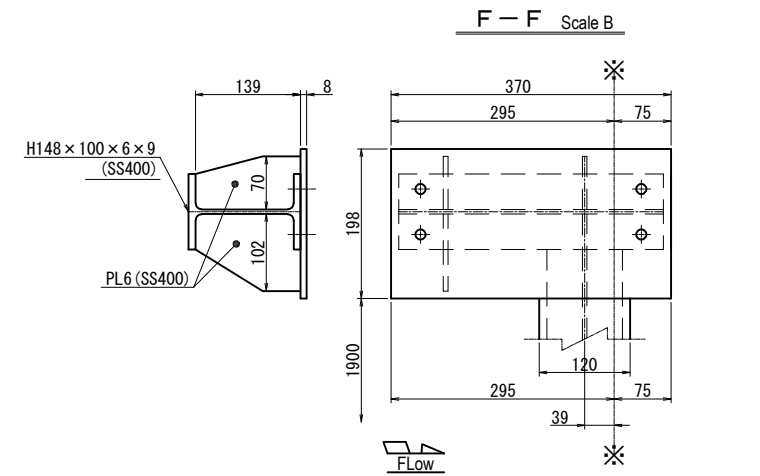
G - G Scale B



D - D Scale B

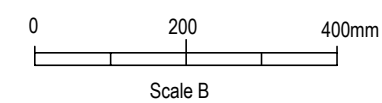
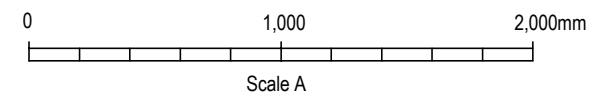


E - E Scale B



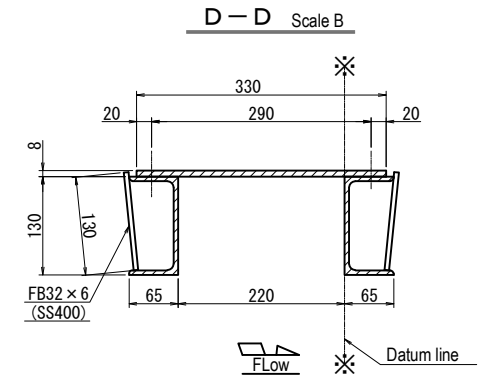
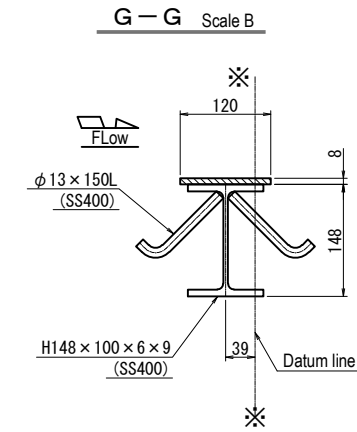
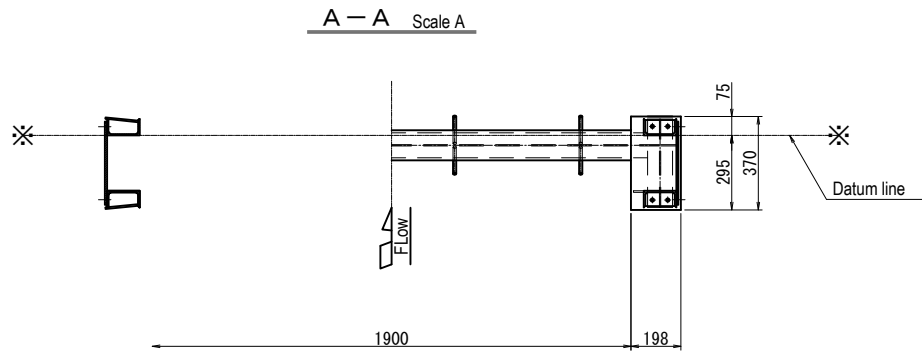
F - F Scale B

Note:
-Material is SUS304 if not otherwise specified.



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate guide assembling (3/8)			DRW. NO ML-10
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Gate guide assembling for Diroutiah (Downstream side)



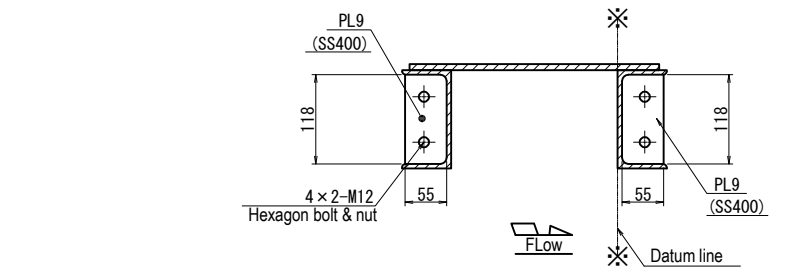
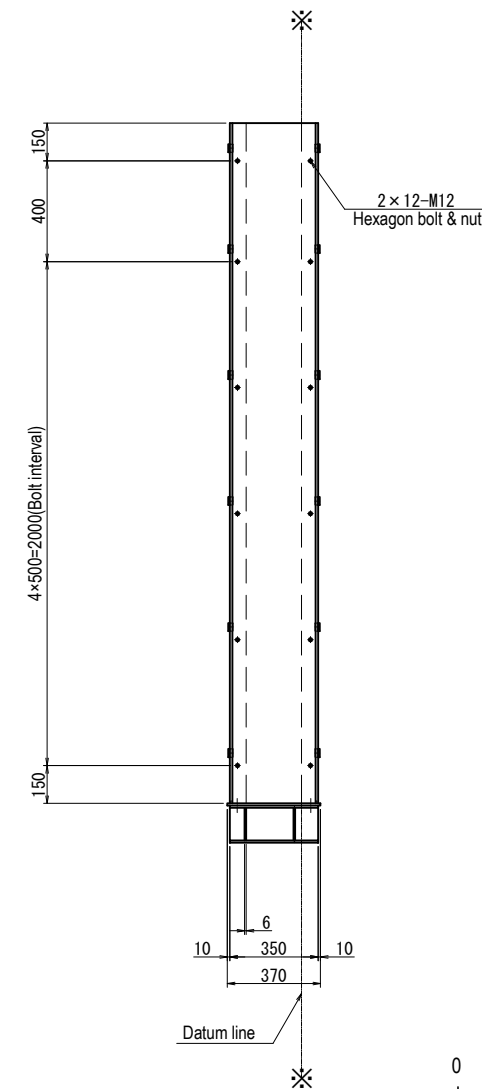
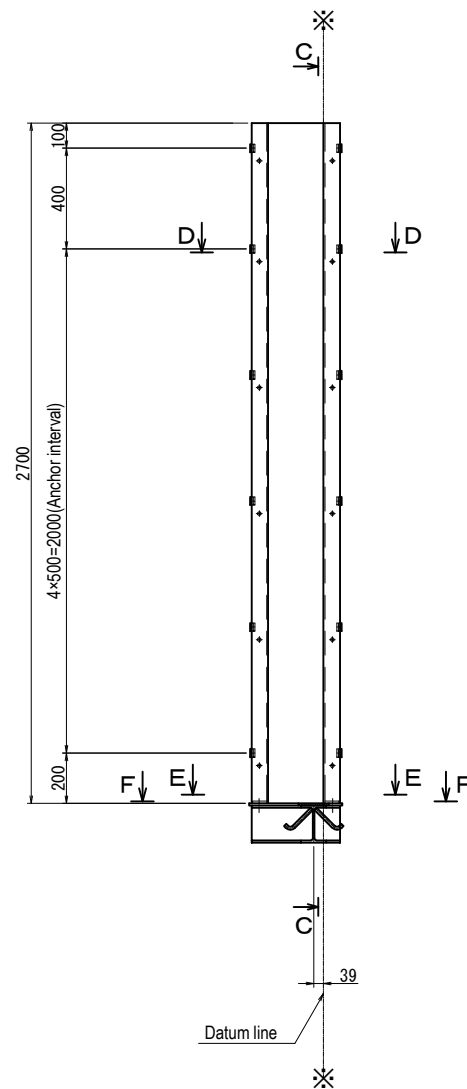
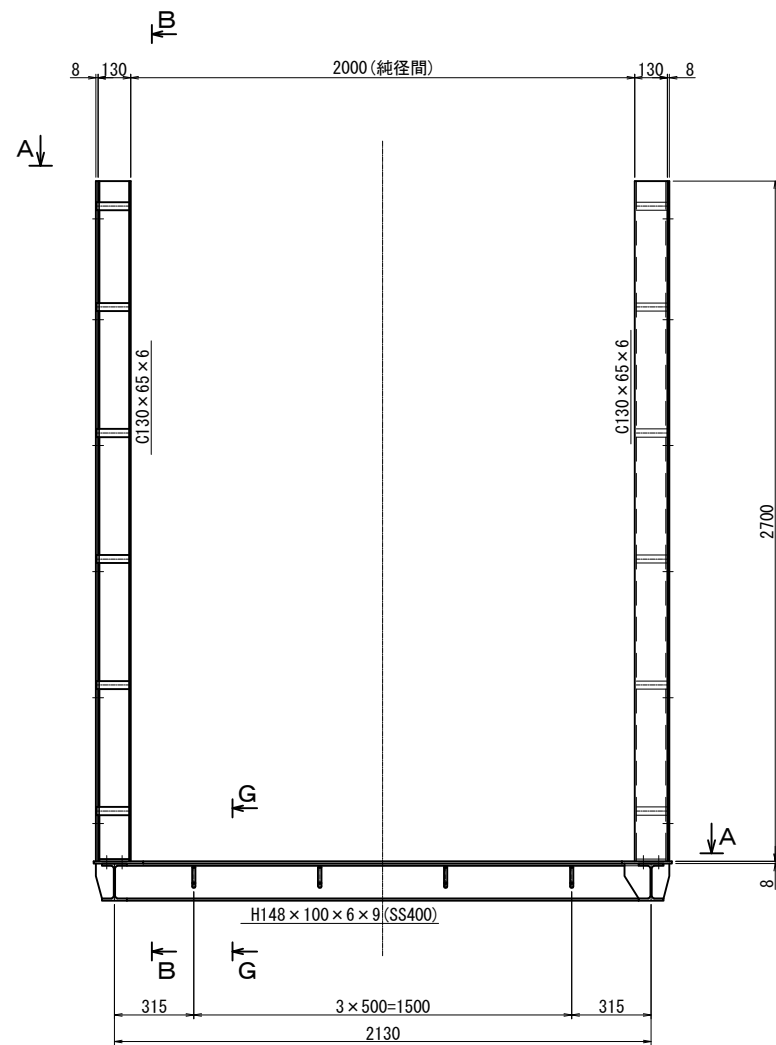
Front view Scale A

C-C Scale A

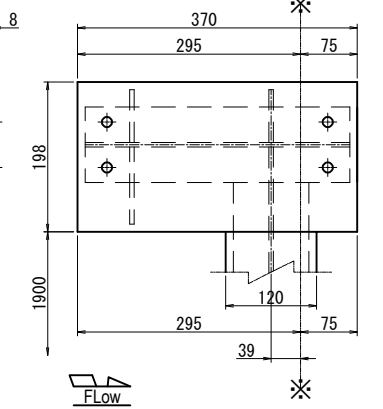
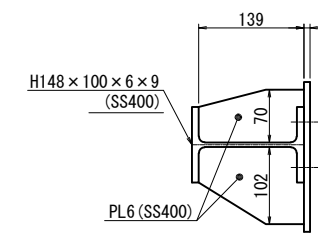
B-B Scale A

Side view Scale A

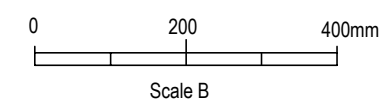
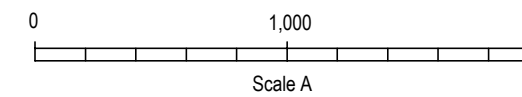
E-E Scale B



F-F Scale B

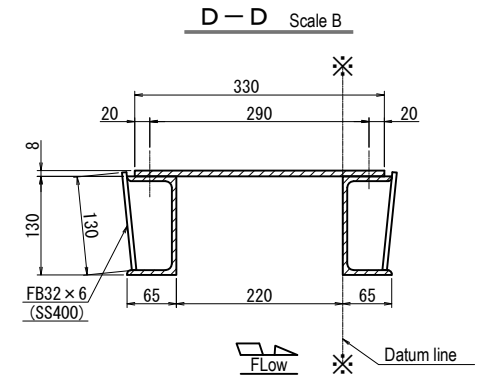
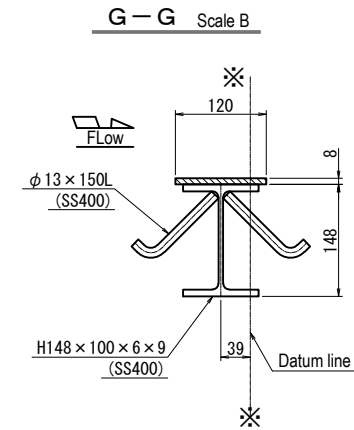
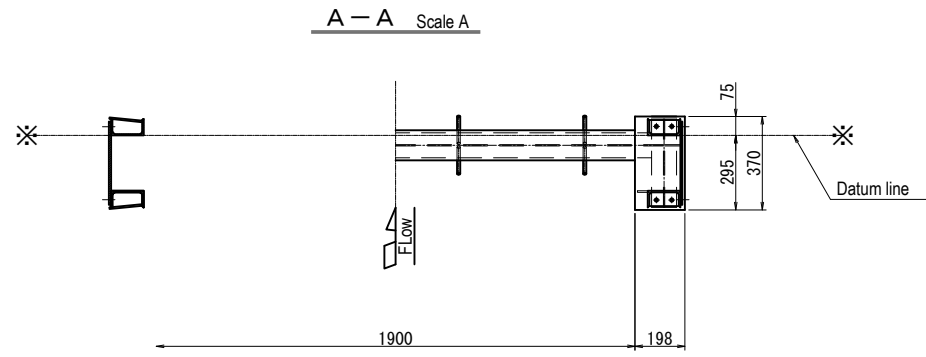


Note:
-Material is SUS304 if not otherwise specified.



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate guide assembling (4/8)			DRW. NO ML-11
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Gate guide assembling for Abo Gabal (Upstream side)

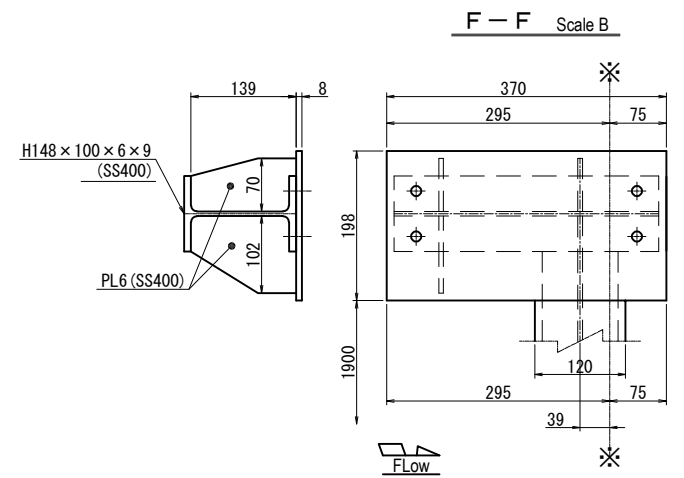
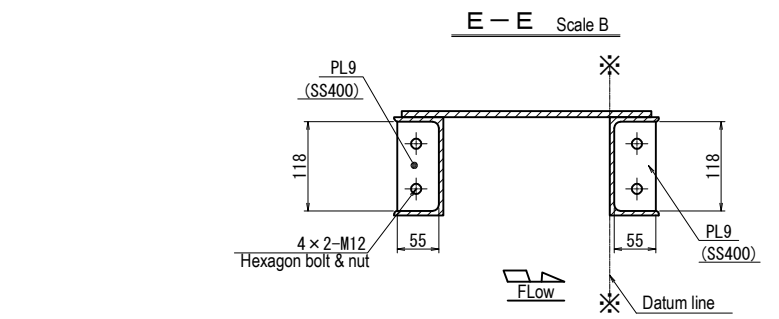
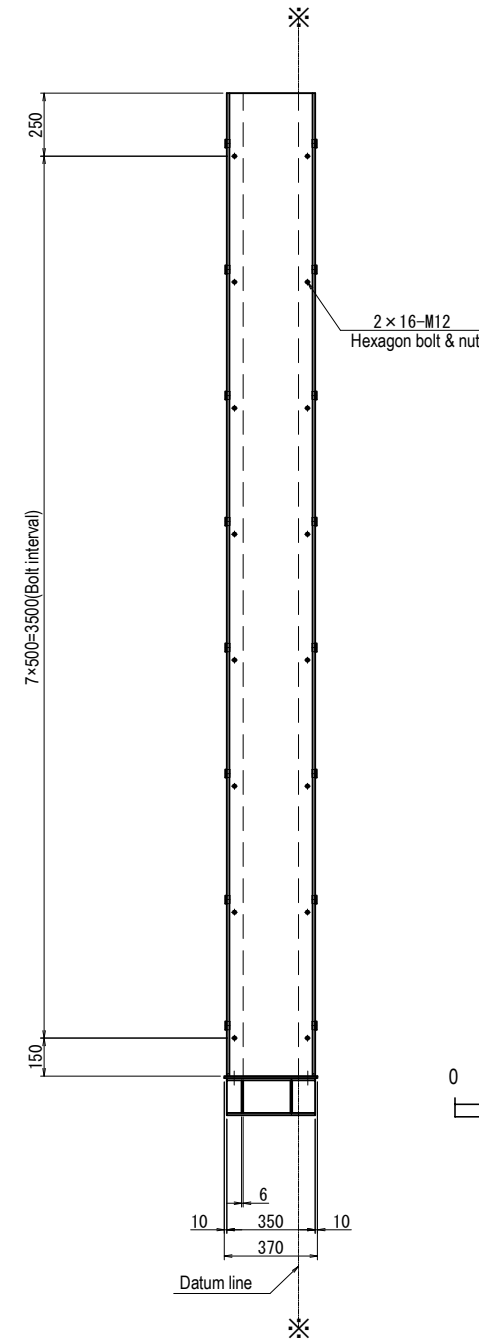
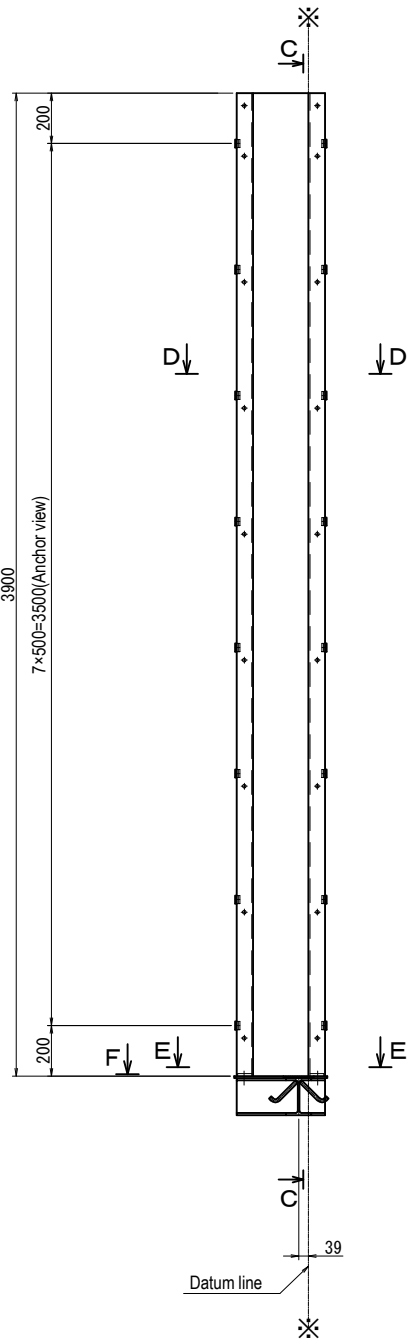
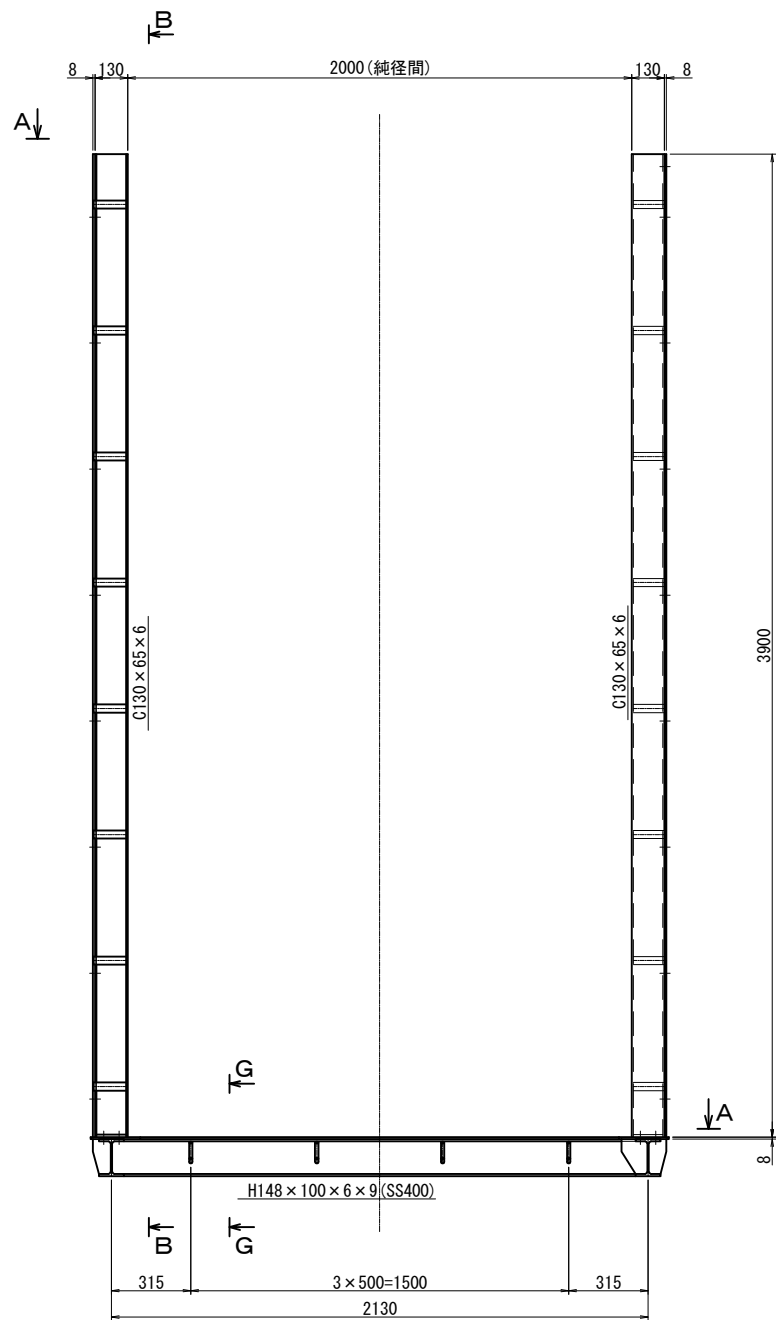


Front view Scale A

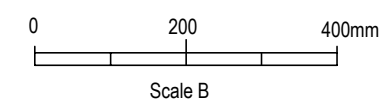
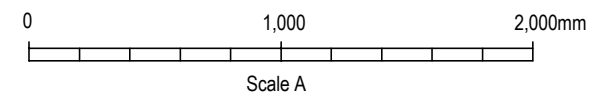
C-C Scale A

B-B Scale A

Side view Scale A

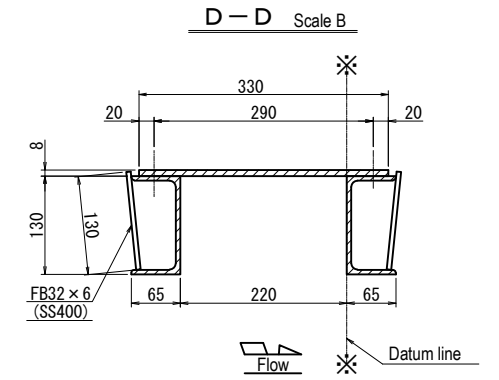
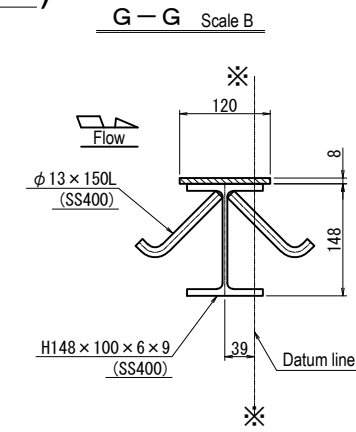
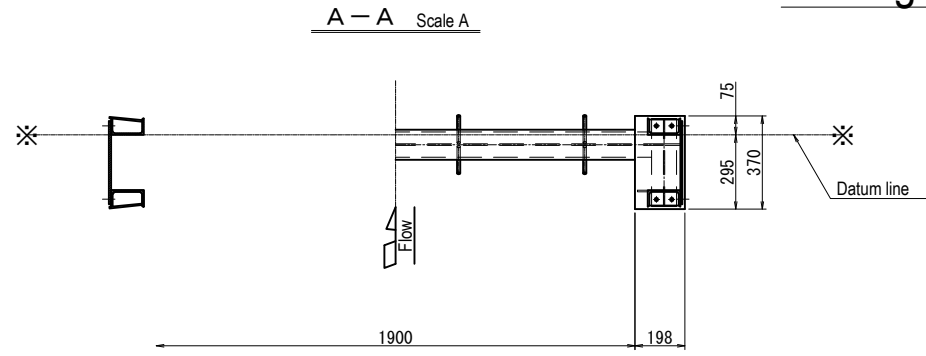


Note:
-Material is SUS304 if not otherwise specified.



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate guide assembling (5/8)			DRW. NO ML-12
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	DATE:

Gate guide assembling for Abo Gabal (Downstream side)

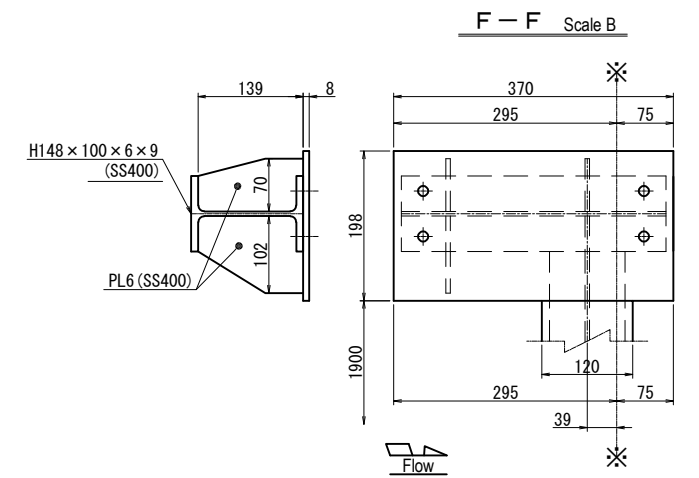
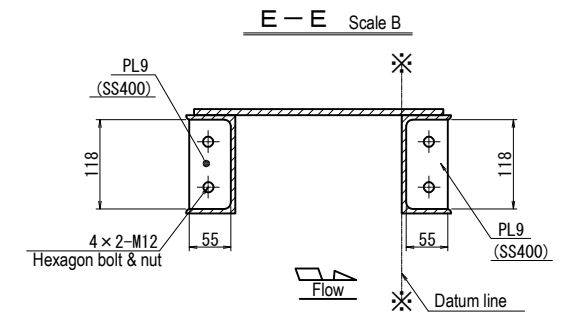
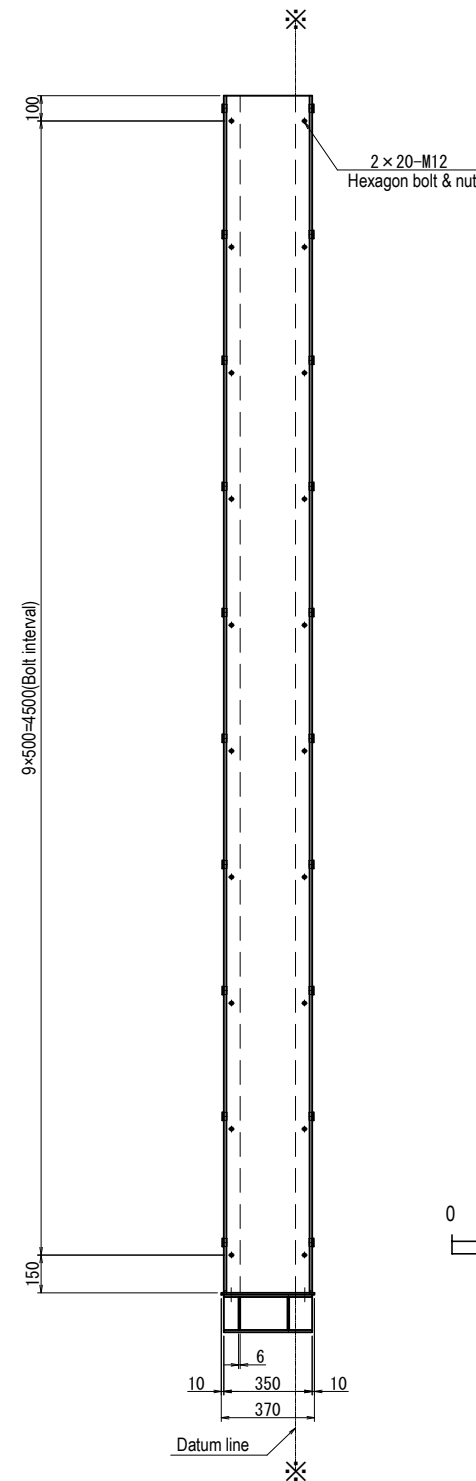
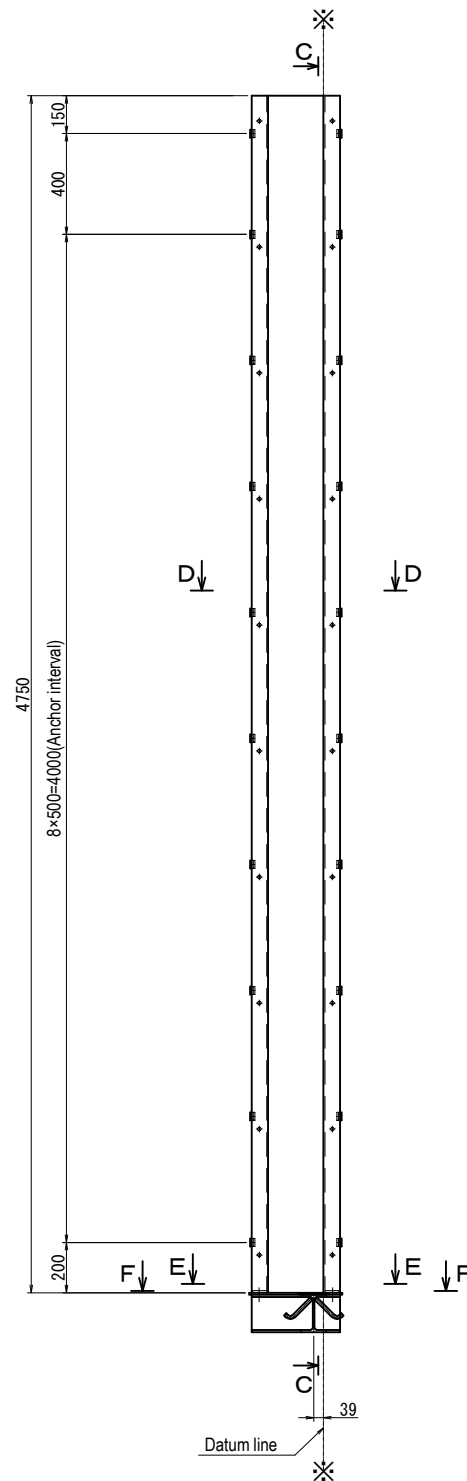
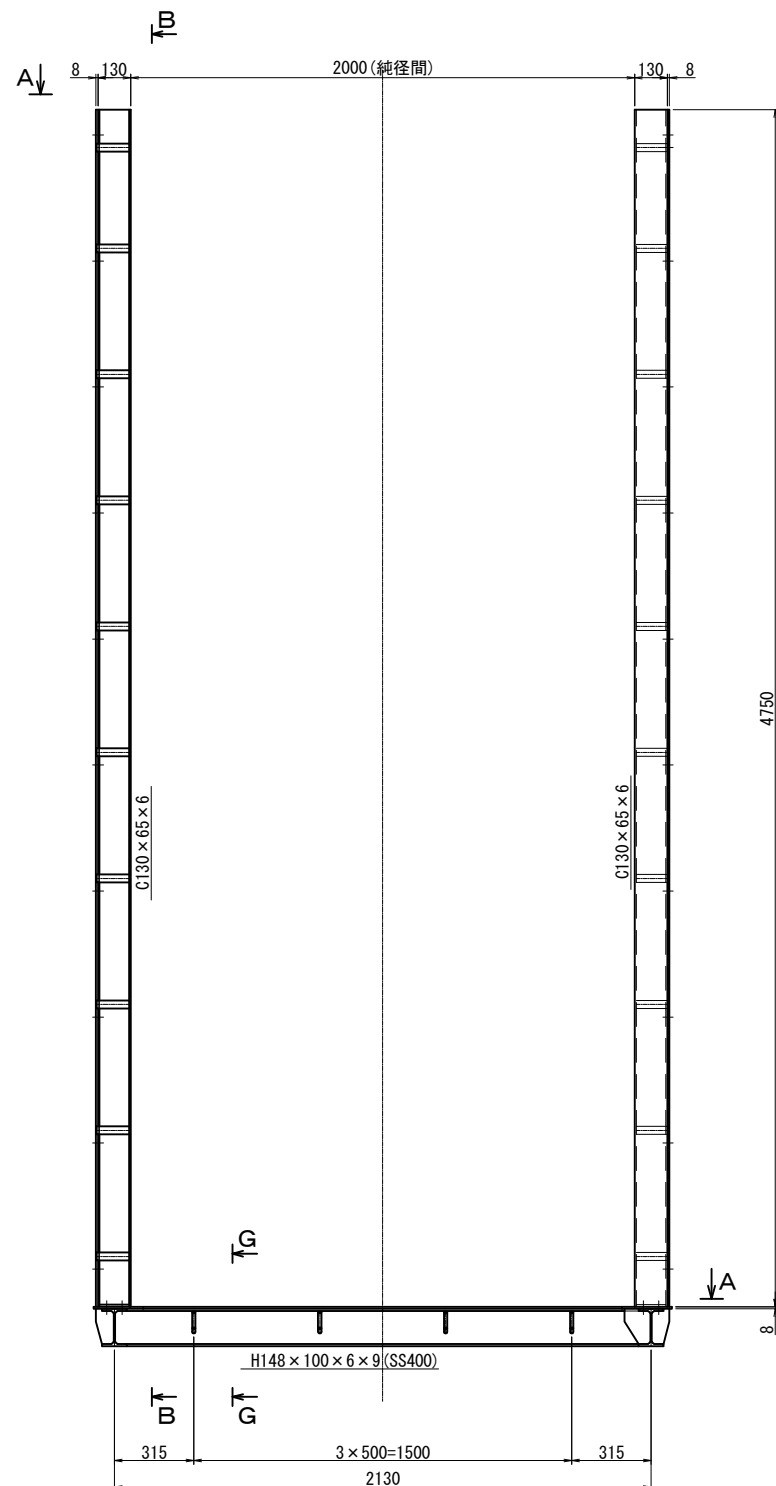


Front view Scale A

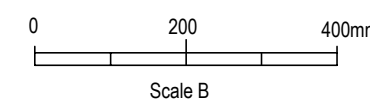
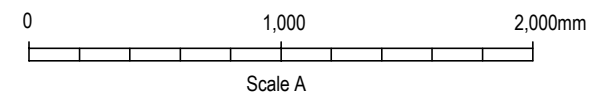
C-C Scale A

B-B Scale A

Side view Scale A

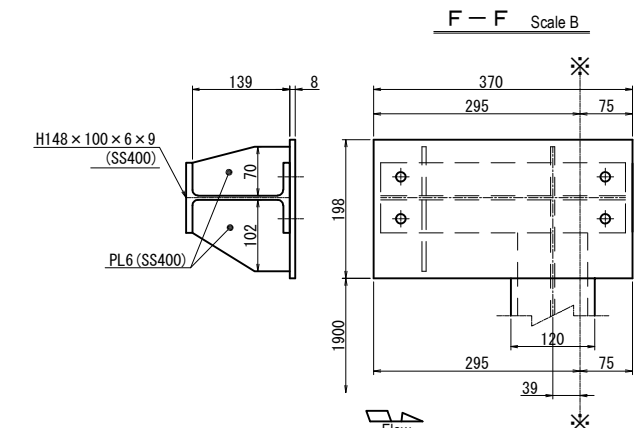
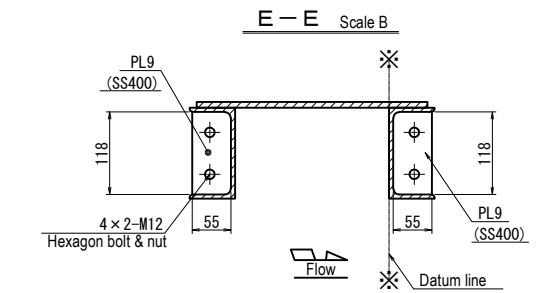
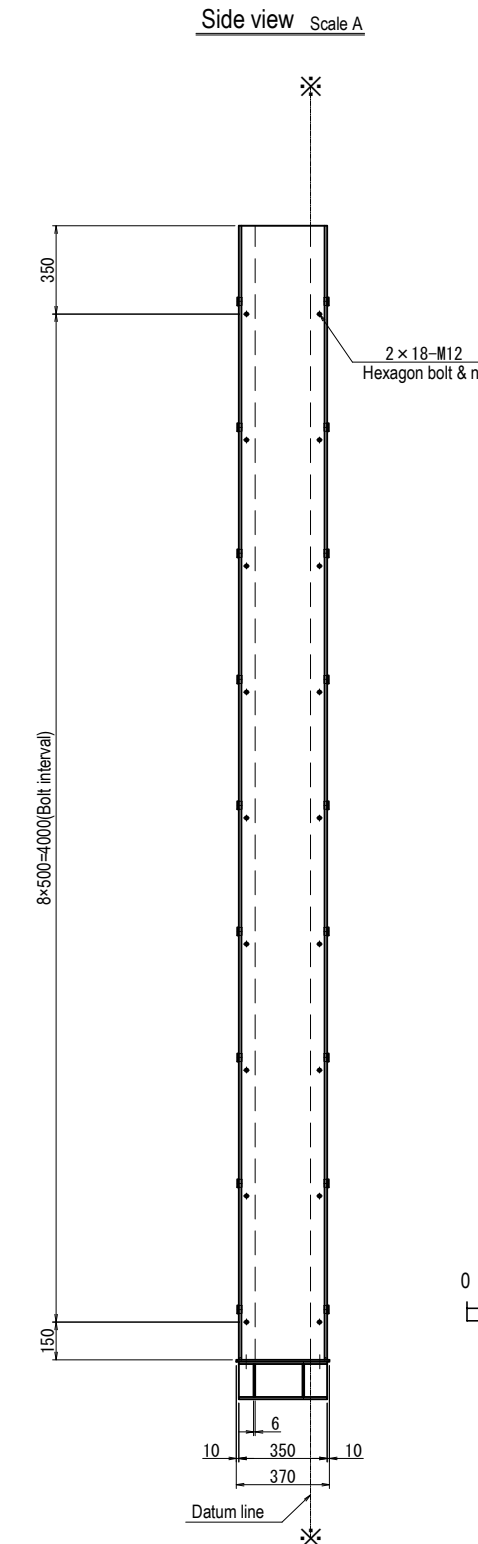
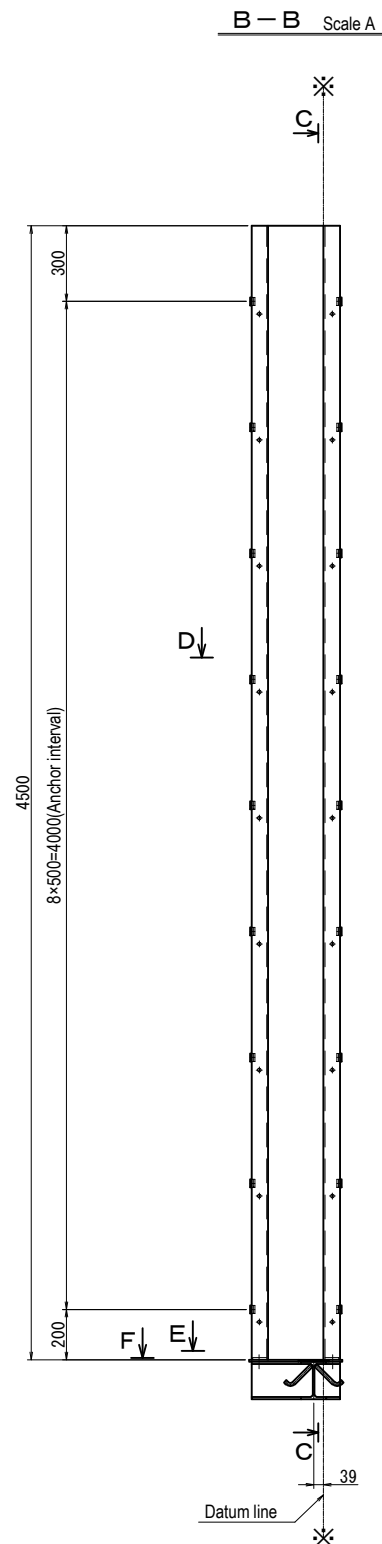
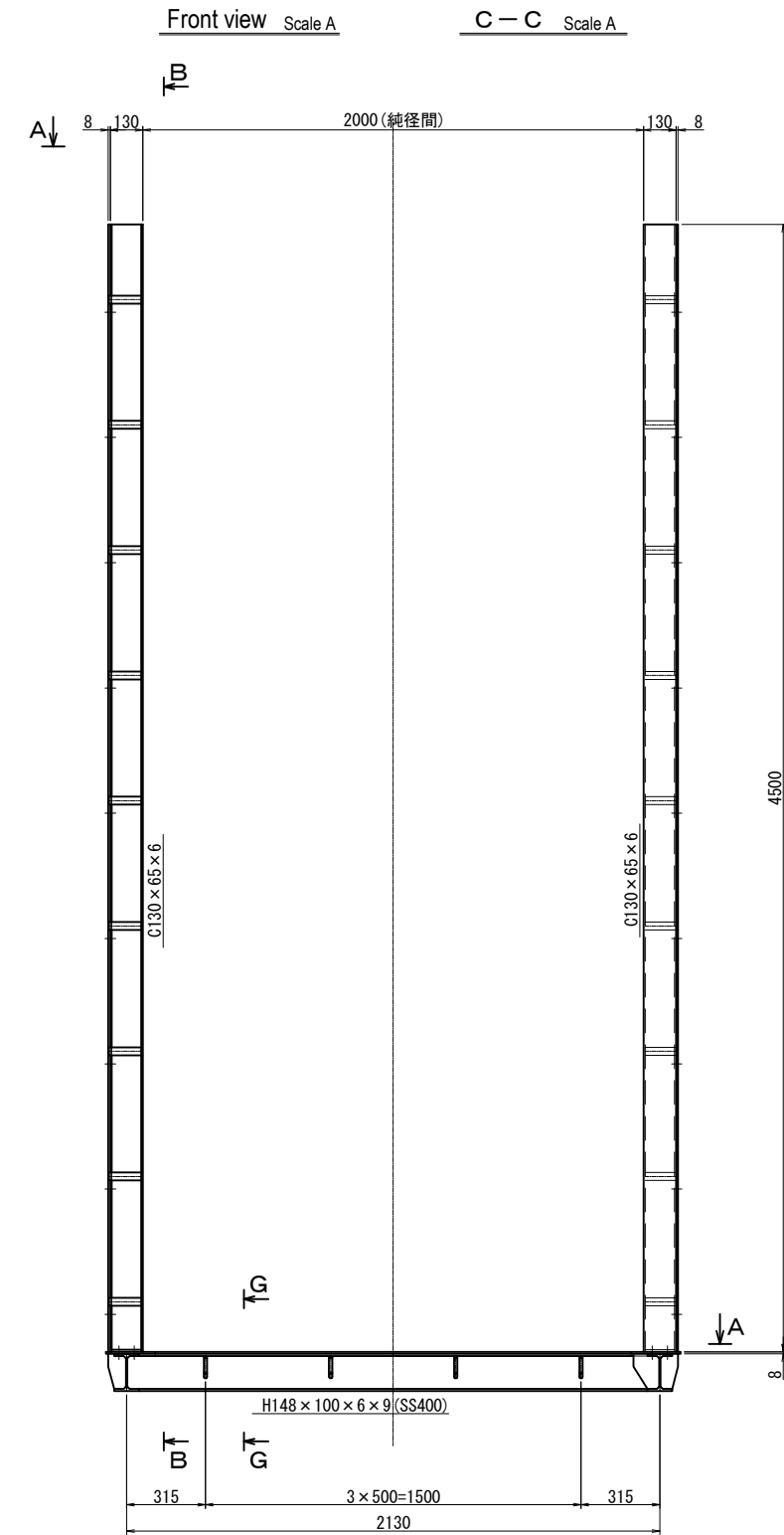
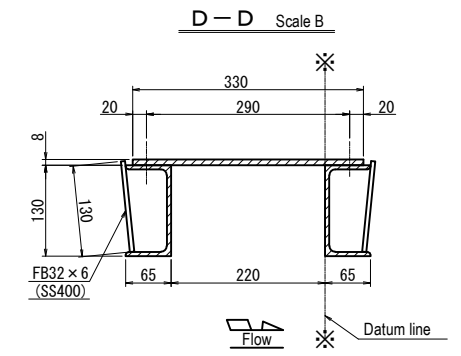
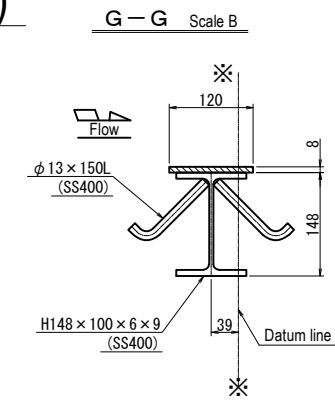
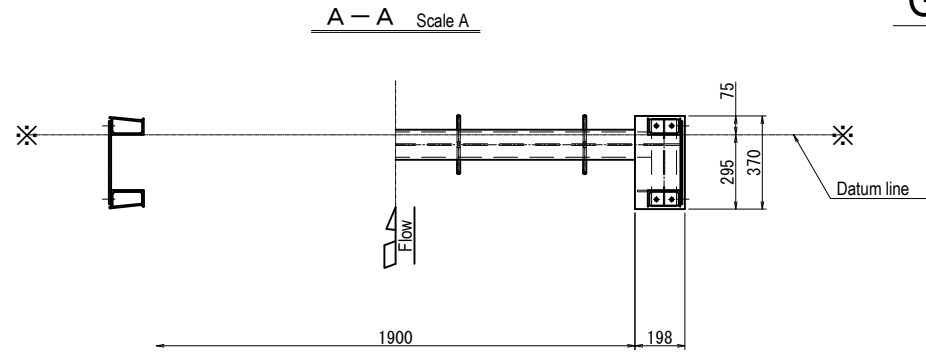


Note:
-Material is SUS304 if not otherwise specified.

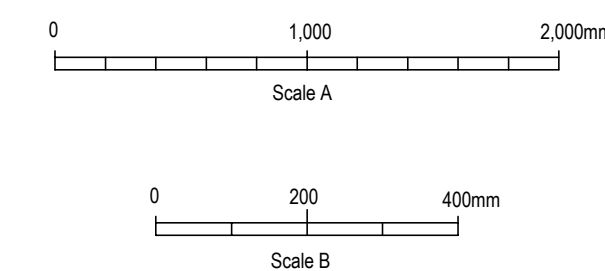


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate guide assembling (6/8)			DRW. NO ML-13
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Gate guide assembling for Sahelyia (Upstream side)

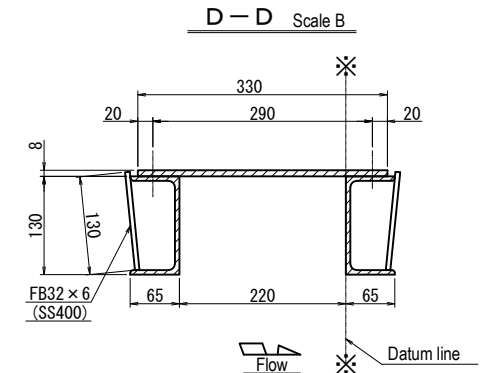
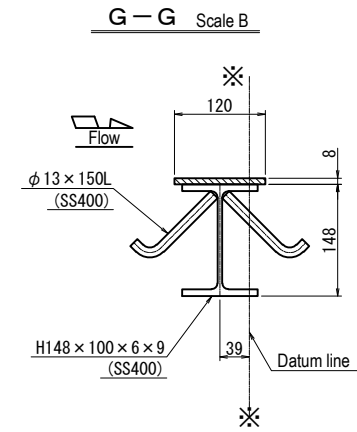
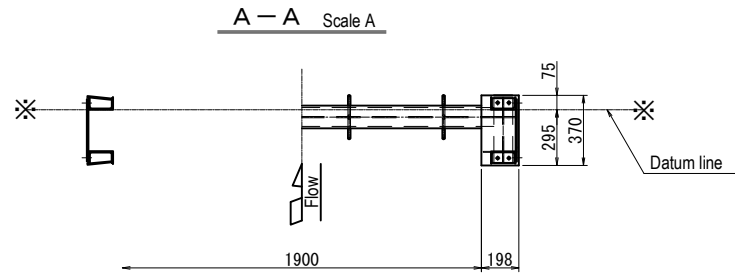


Note:
-Material is SUS304 if not otherwise specified.



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate guide assembling (7/8)			DRW. NO ML-14
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Gate guide assembling for Sahelyia (Downstream side)

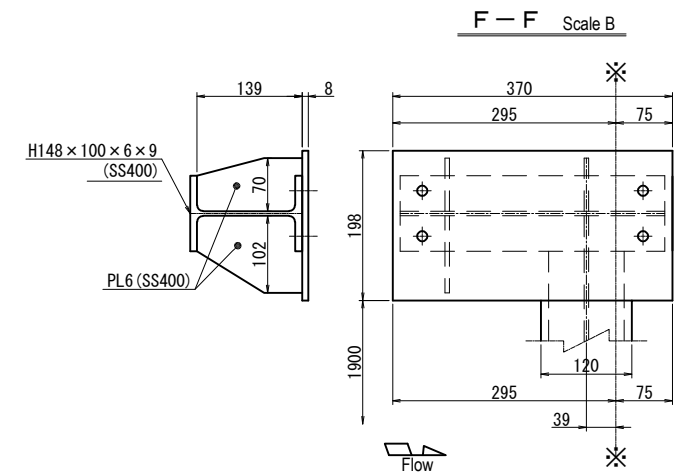
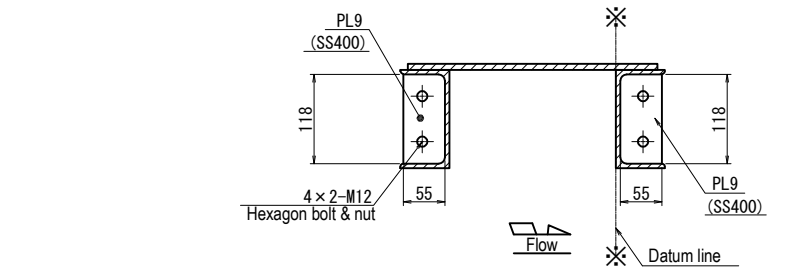
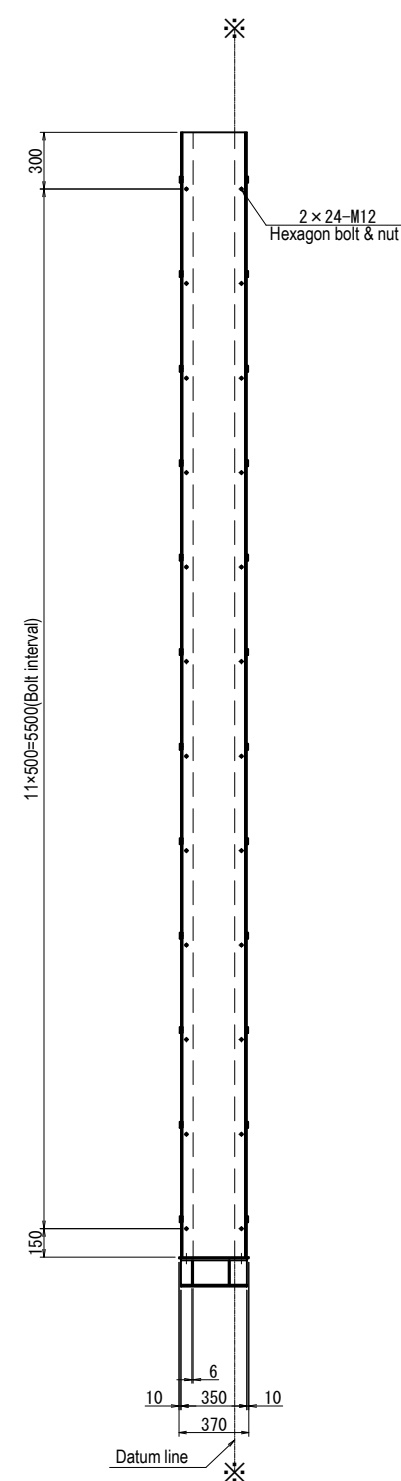
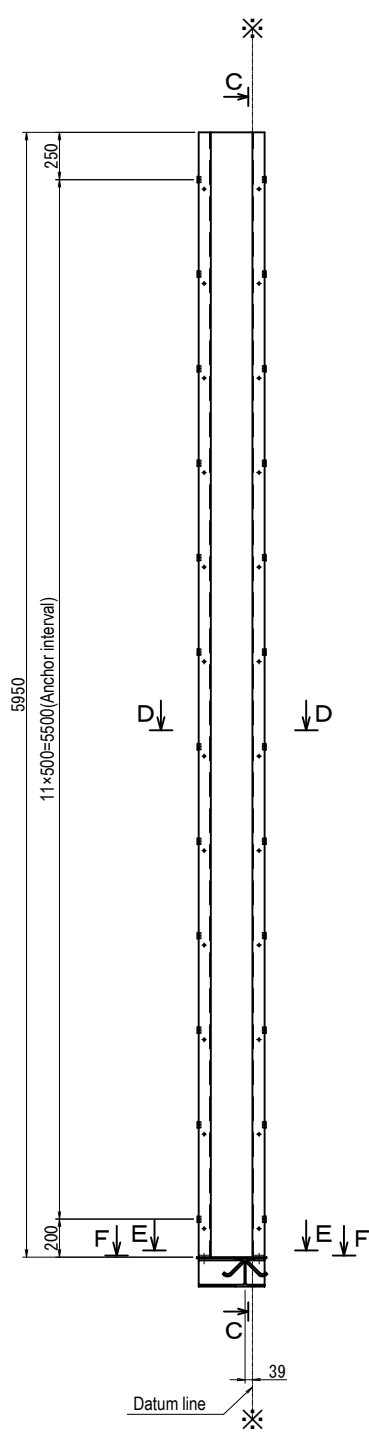
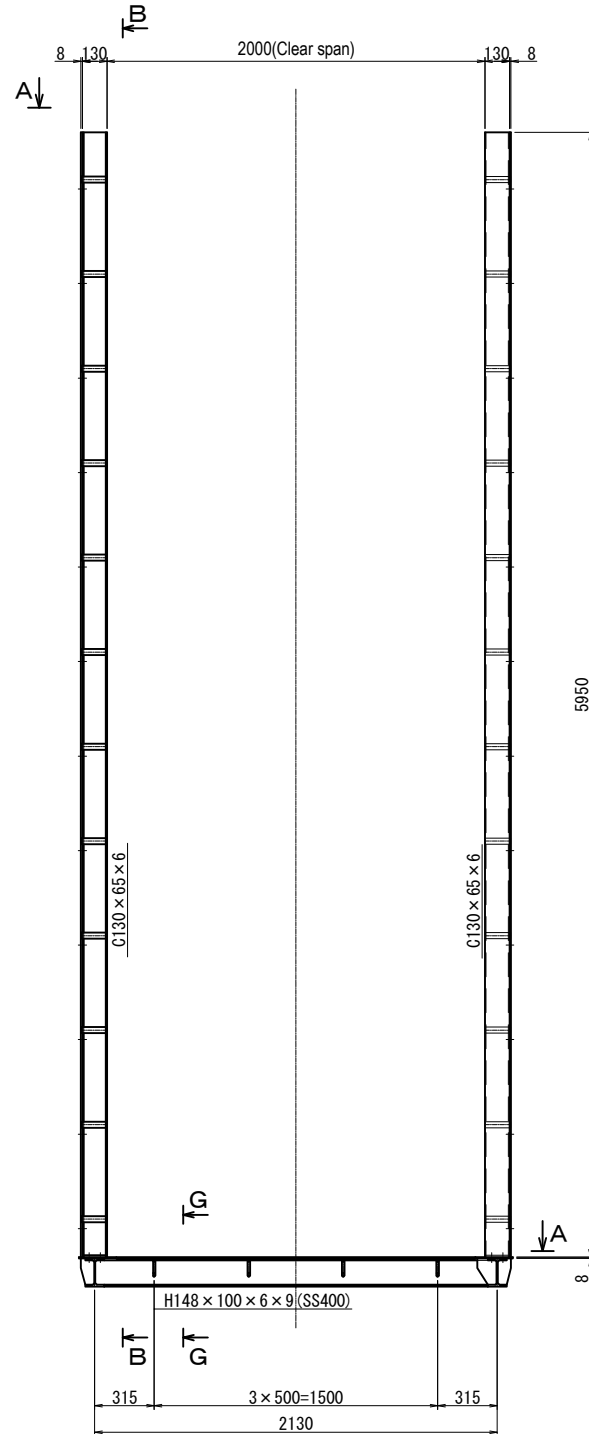


Front view Scale A

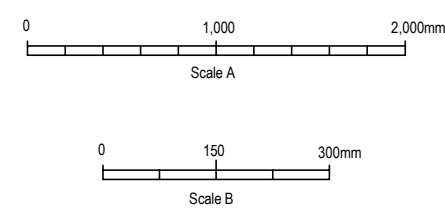
Section B-B Scale A

Side view Scale A

Section E-E Scale B

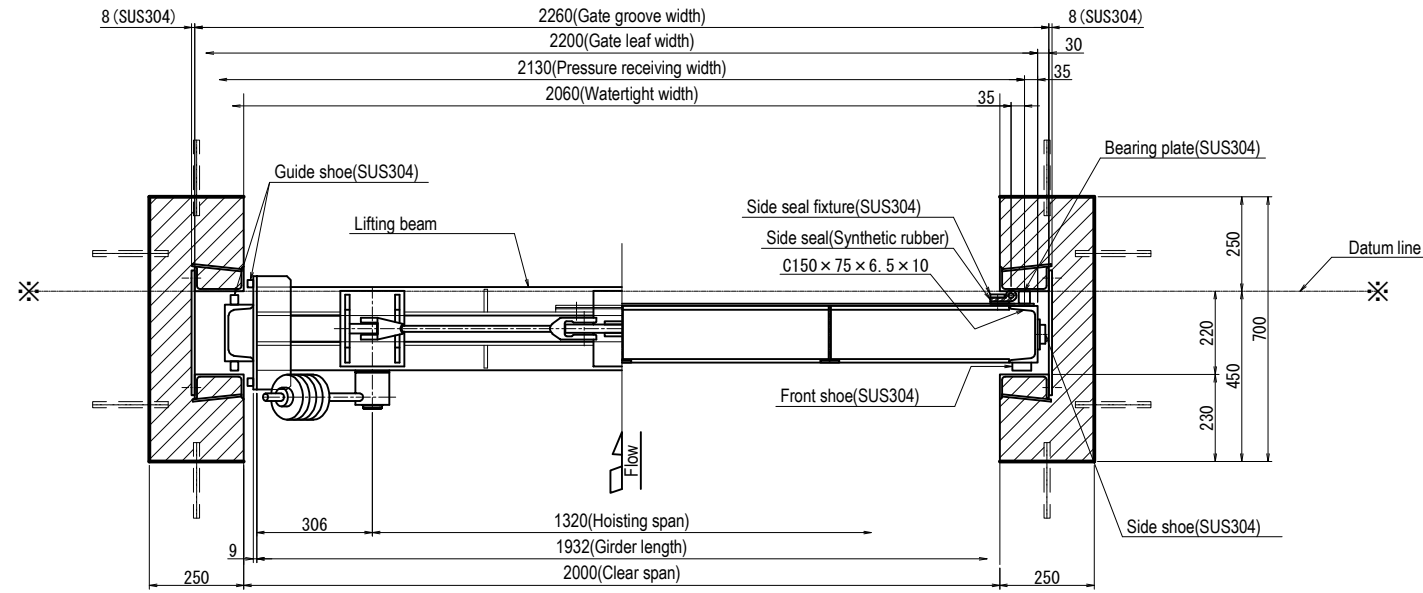


• Material is SUS304 if not otherwise specified.

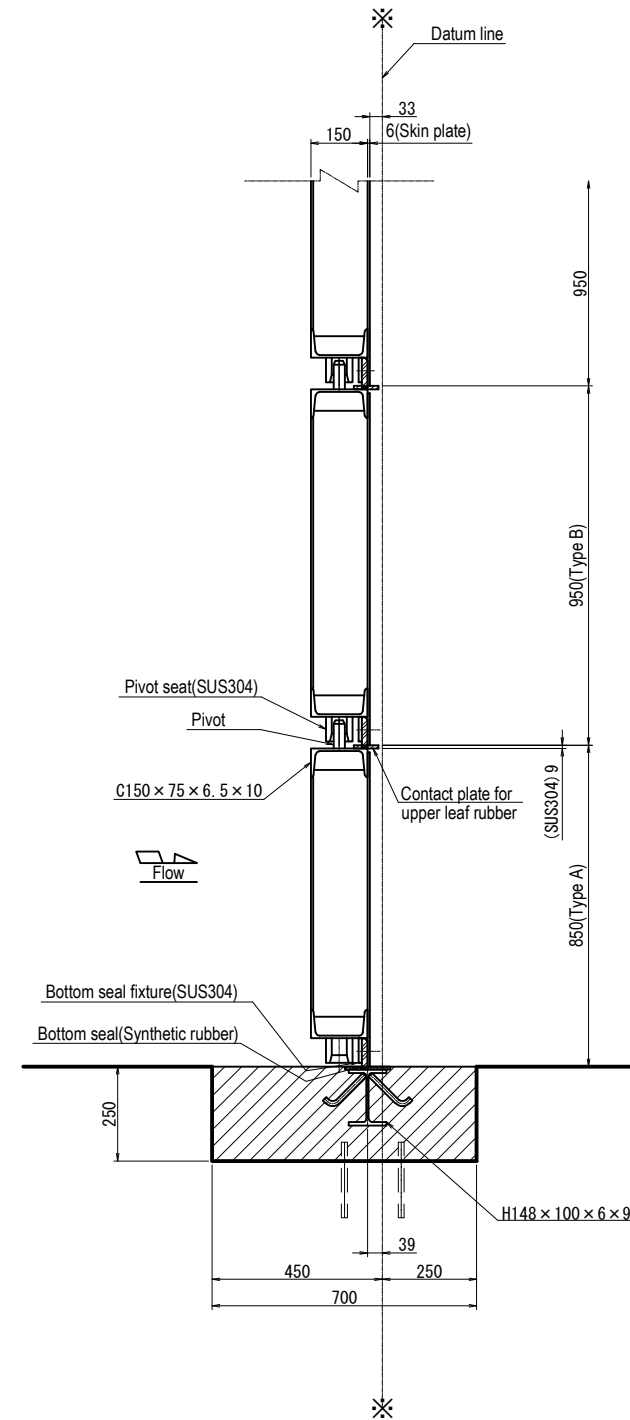


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Gate guide assembling (8/8)			DRW. NO ML-15
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

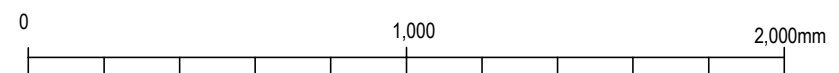
Detail of side seal



Detail of bottom seal



Note:
-Material is SS400 if not otherwise specified.



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Detail of seal			DRW. NO ML-16
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Blockout and anchors for Badraman

Upstream side

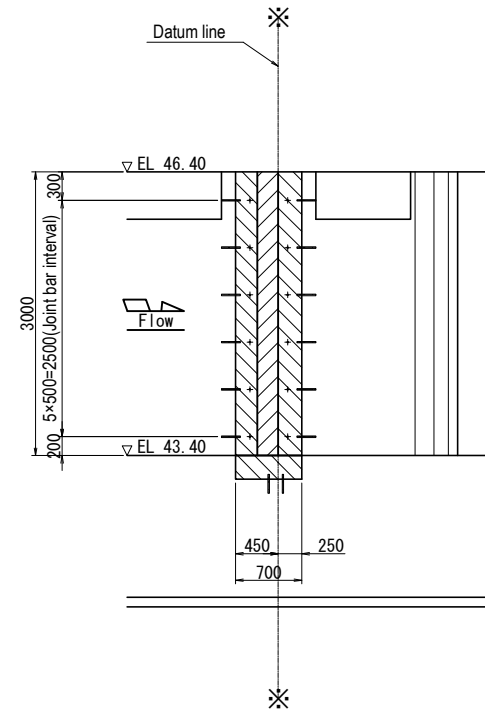
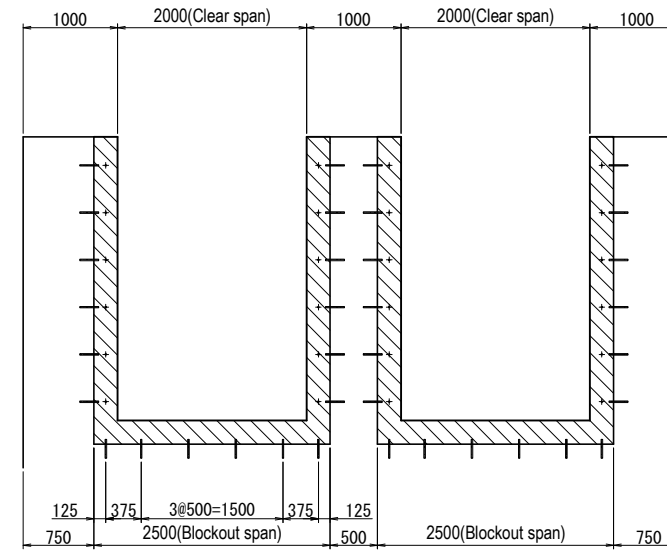
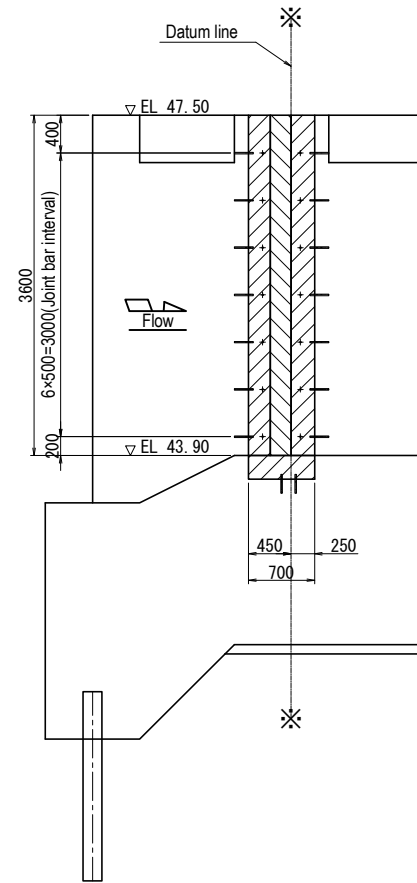
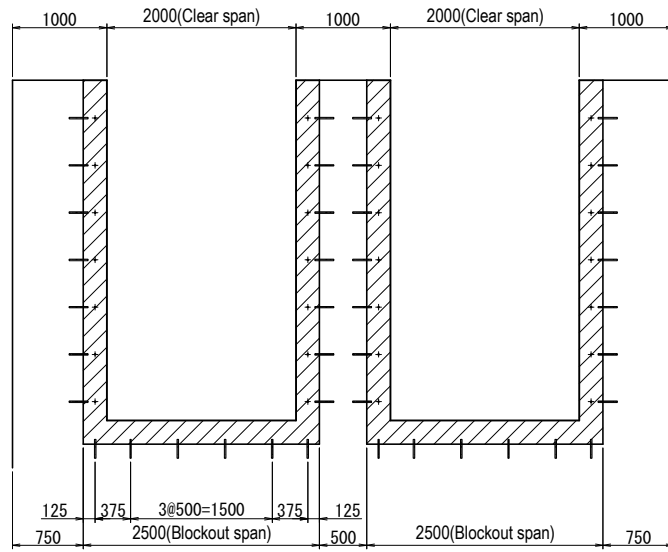
Downstream side

Front view Scale A

Side view Scale A

Front view Scale A

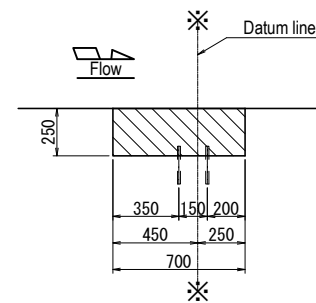
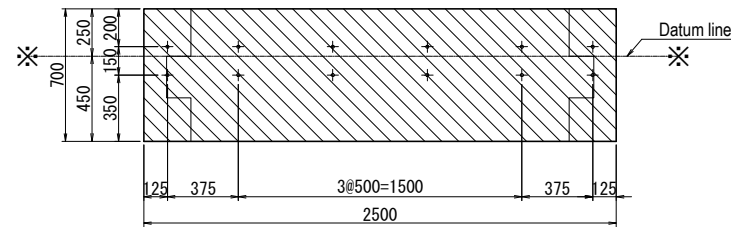
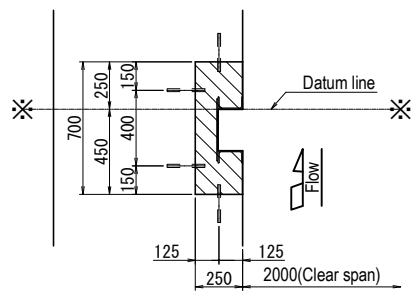
Side view Scale A



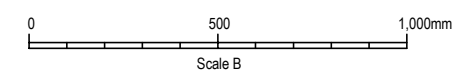
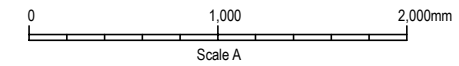
Side sectional view Scale B
(Upstream and downstream side)

Bottom view Scale B
(Upstream and downstream side)

Bottom sectional view Scale B
(Upstream and downstream side)



Joint bar		
	Upstream	Downstream
Detail		
Number	68 pcs	60 pcs
Total	136 pcs	120 pcs

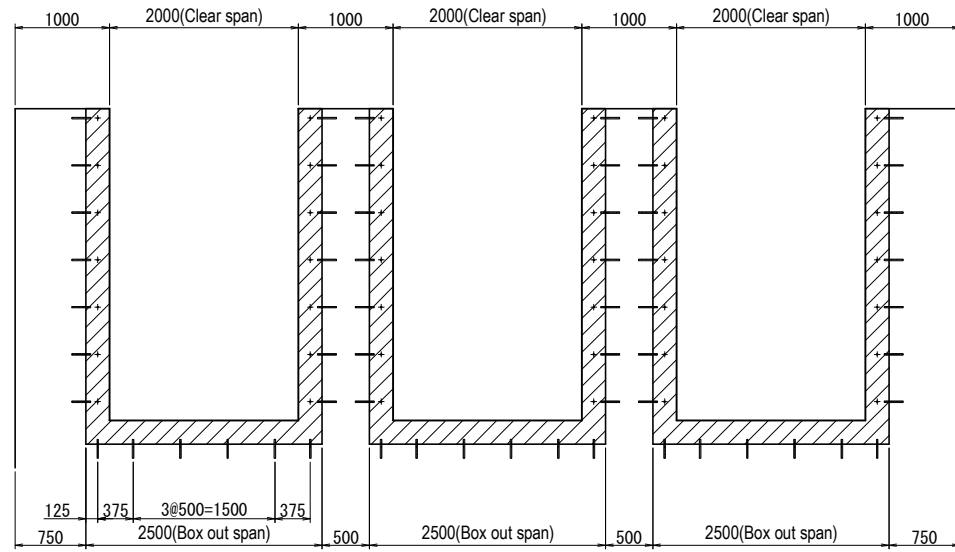


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Blockout and anchors (1/4)			DRW. NO. ML-17
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

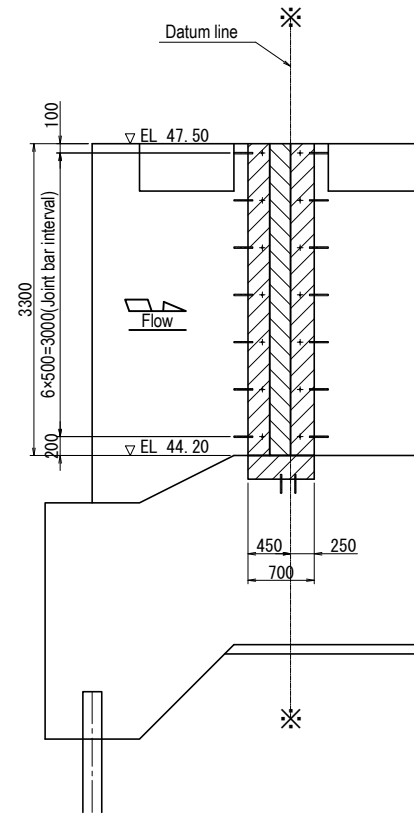
Blockout and anchors for Diroutiah

Upstream side

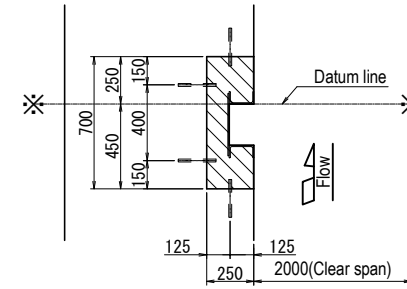
Front view Scale A



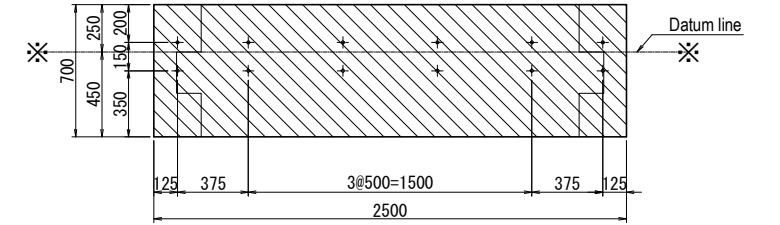
Side view Scale A



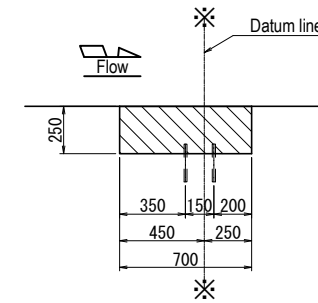
Side sectional view Scale B
(Upstream and downstream side)



Bottom view Scale B
(Upstream and downstream side)

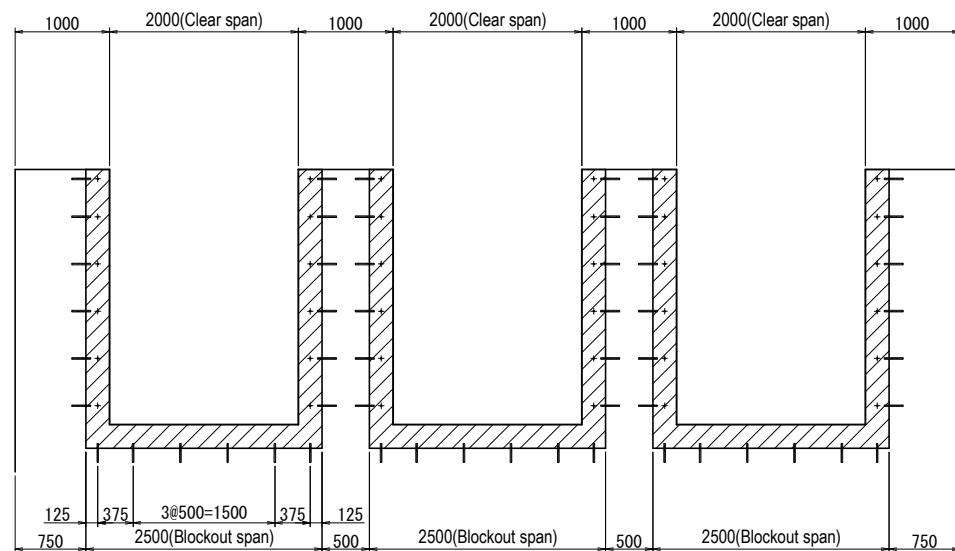


Bottom sectional view Scale B
(Upstream and downstream side)

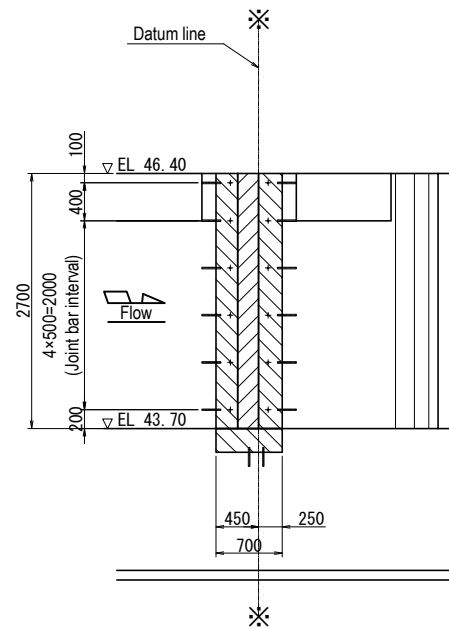


Downstream side

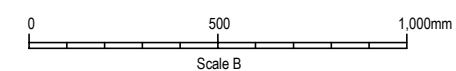
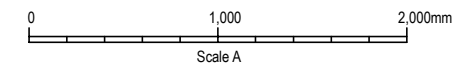
Front view Scale A



Side view Scale A



Joint bar		
	Upstream	Downstream
Detail		
Number	68 pcs	60 pcs
Total	204 pcs	180 pcs



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop logs for small Regulators
Blockout and anchors (2/4)

DRW. NO.
ML-18

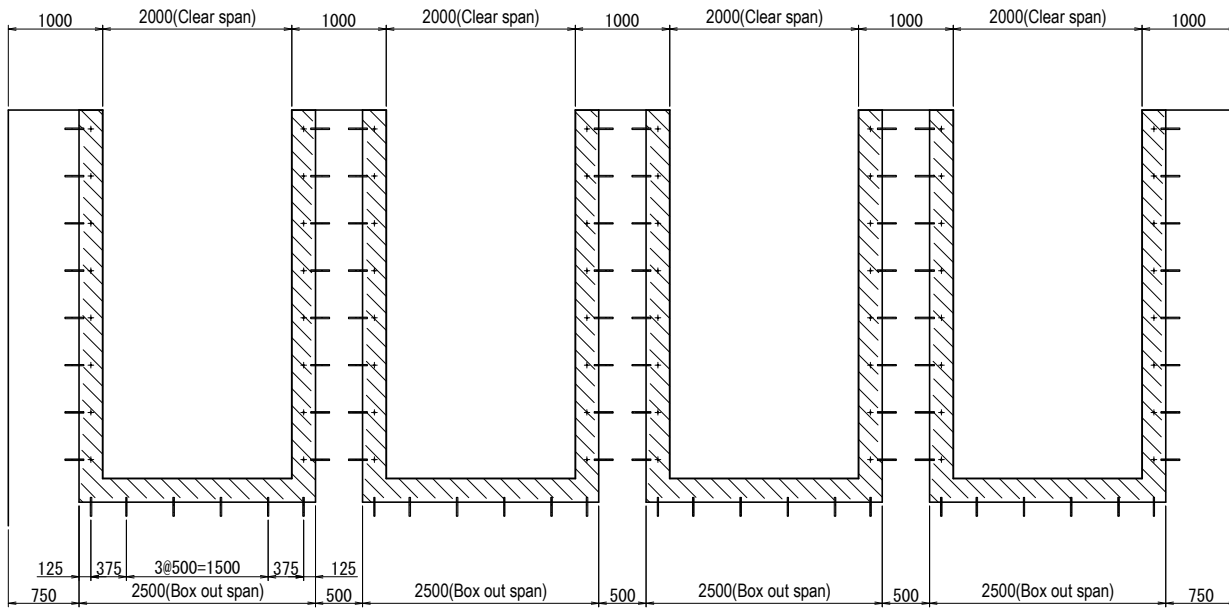
SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____

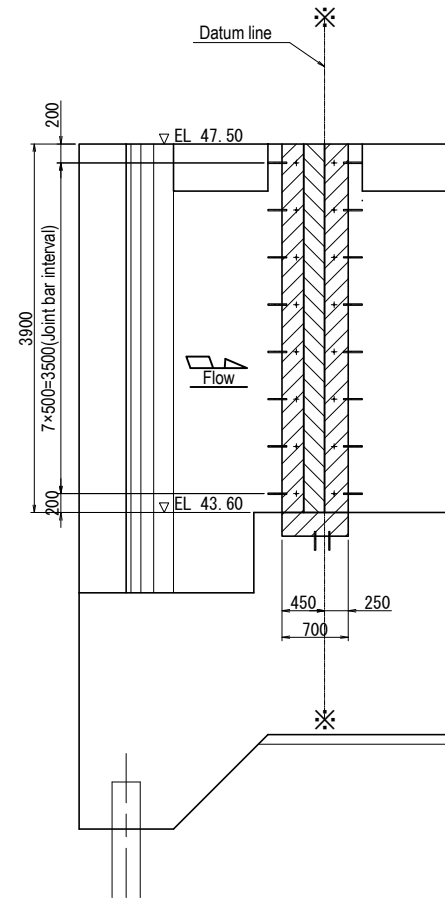
Blockout and anchors for Abo Gabal

Upstream side

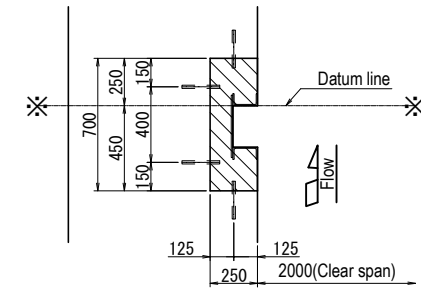
Front view Scale A



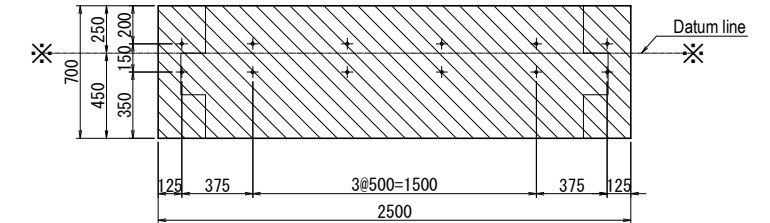
Side view Scale A



Side sectional view Scale B
(Upstream and downstream side)

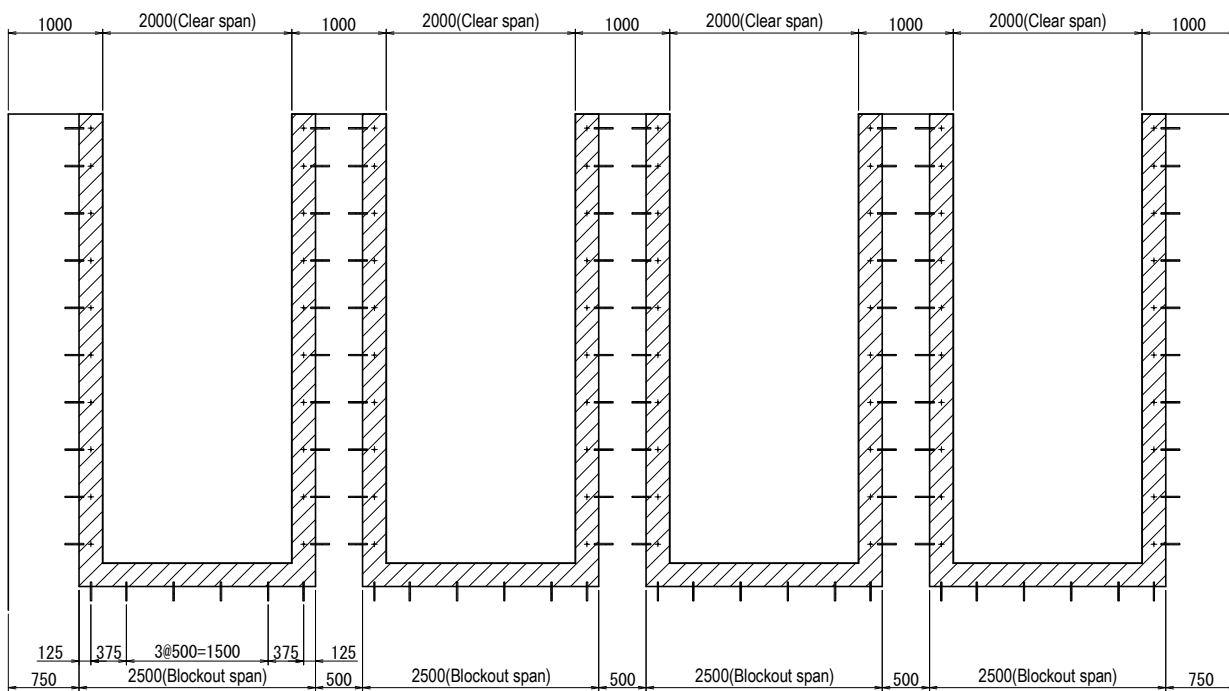


Bottom view Scale B
(Upstream and downstream side)

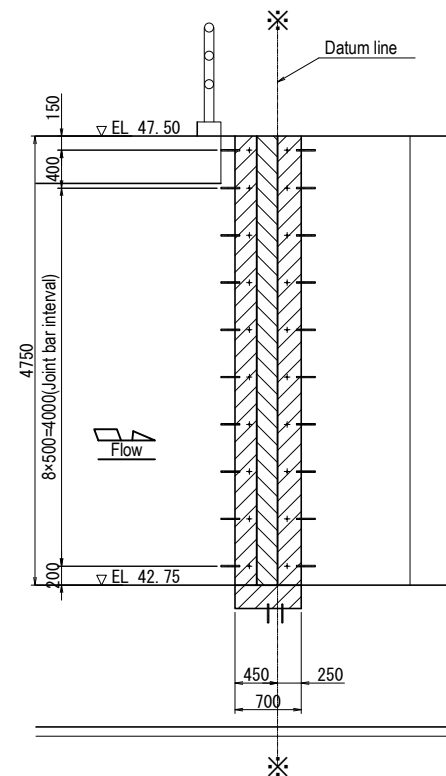


Downstream side

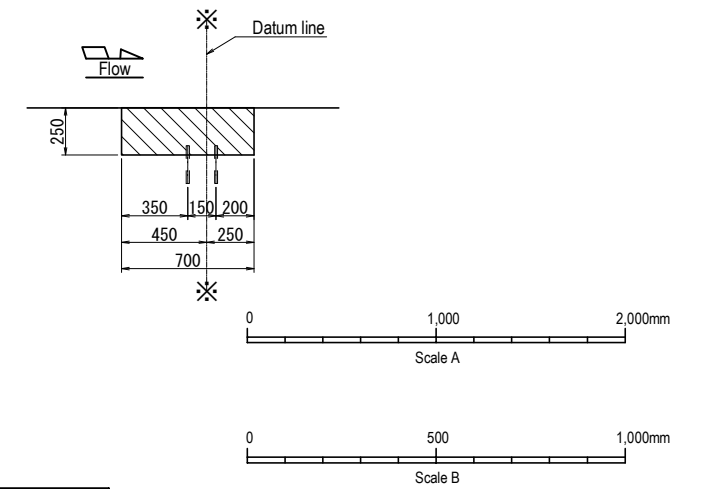
Front view Scale A



Side view Scale A



Bottom sectional view Scale B
(Upstream and downstream side)



Joint bar		
	Upstream	Downstream
Detail		
Number	76 pcs	92 pcs
Total	304 pcs	368 pcs

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Stop logs for small Regulators
BBlockout and anchors (3/4)

DRW. NO.
ML-19

SANYU CONSULTANTS INC.

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DATE: _____ DATE: _____ DATE: _____ DATE: _____

Blockout and anchors for Sahelyia

Upstream side

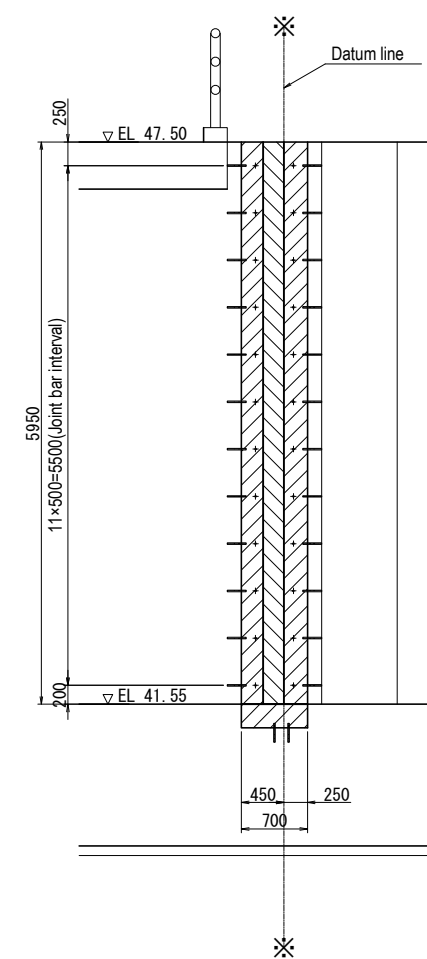
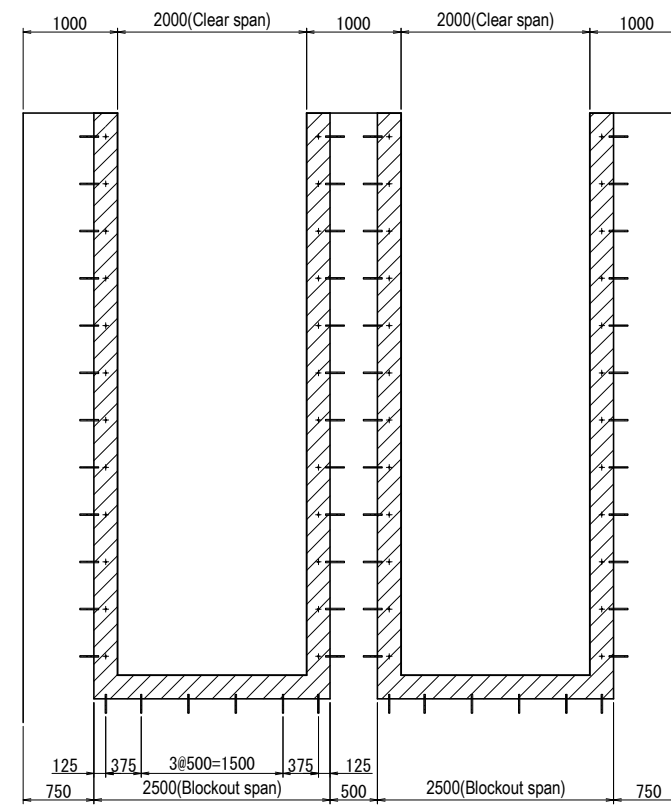
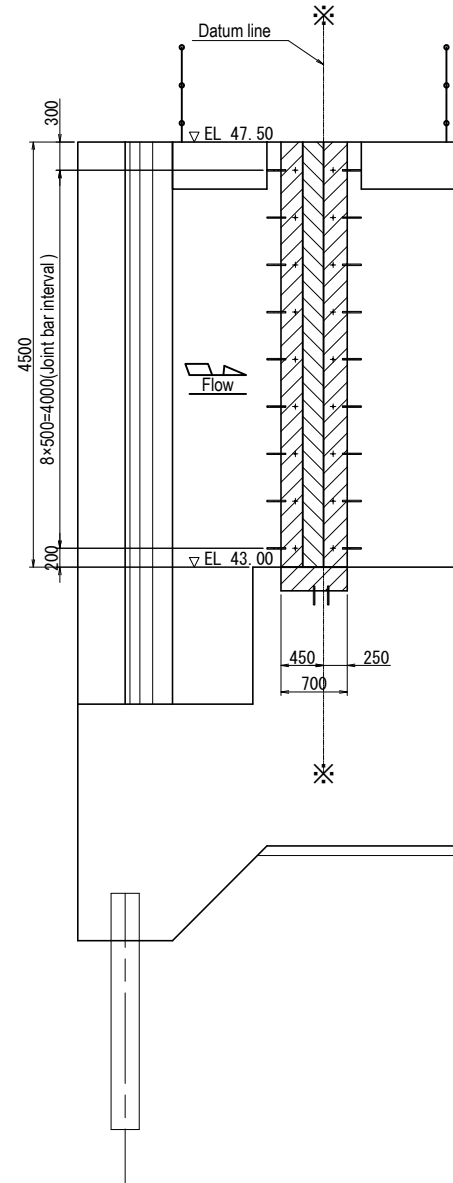
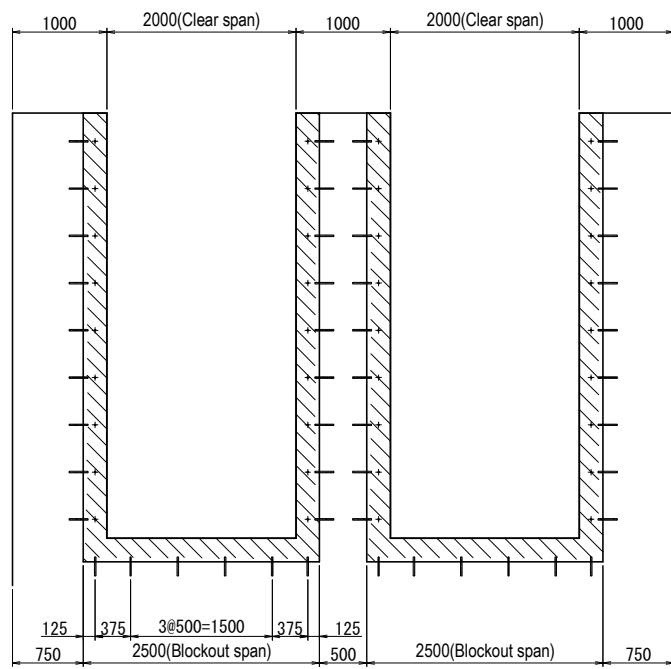
Downstream side

Front view Scale A

Side view Scale A

Front view Scale A

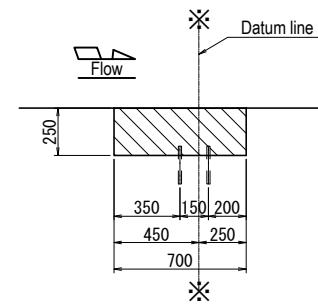
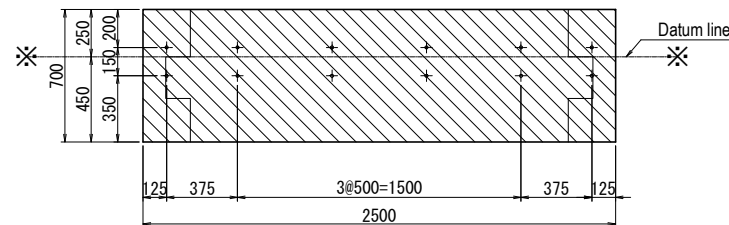
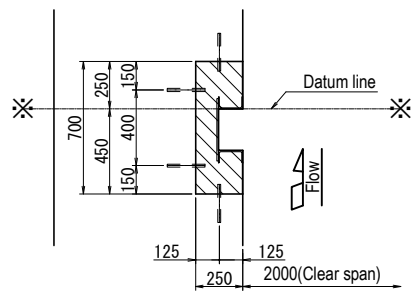
Side view Scale A



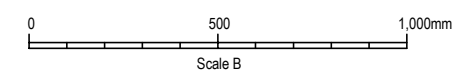
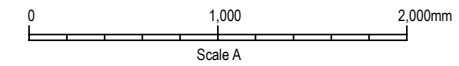
Side sectional view Scale B
(Upstream and downstream side)

Bottom view Scale B
(Upstream and downstream side)

Bottom sectional view Scale B
(Upstream and downstream side)



Joint bar		
	Upstream	Downstream
Detail		
Number	84 pcs	108 pcs
Total	168 pcs	216 pcs



Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

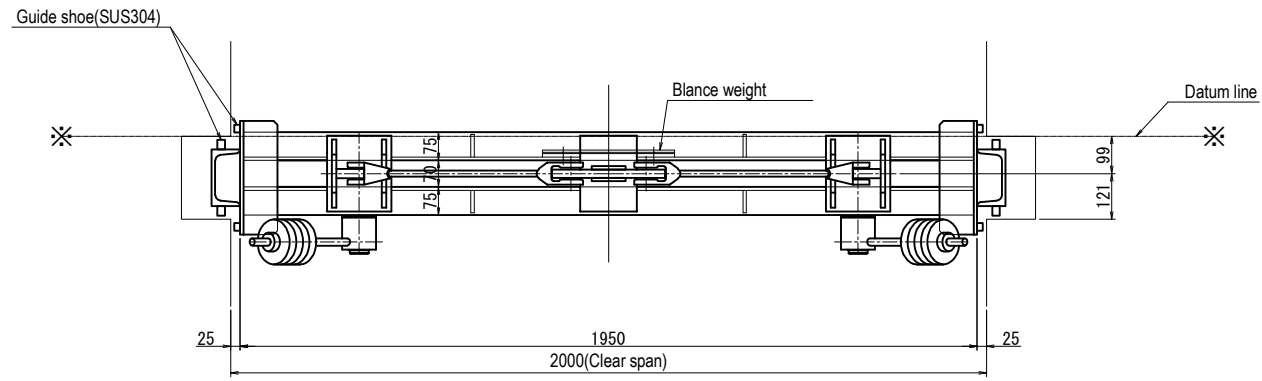
Stop logs for small Regulators
Blockout and anchors (4/4)

DRW. NO.
ML-20

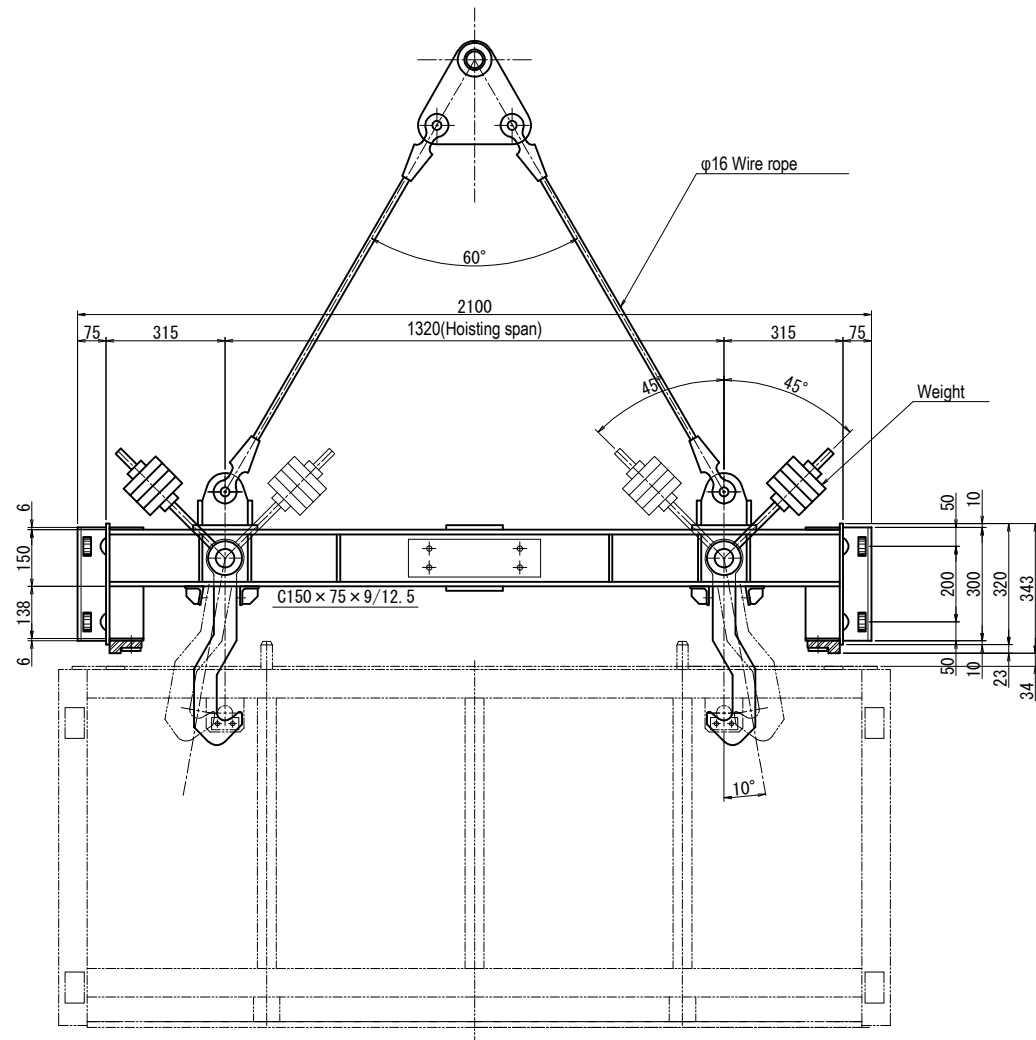
SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____
DATE: _____ DATE: _____ DATE: _____ DATE: _____

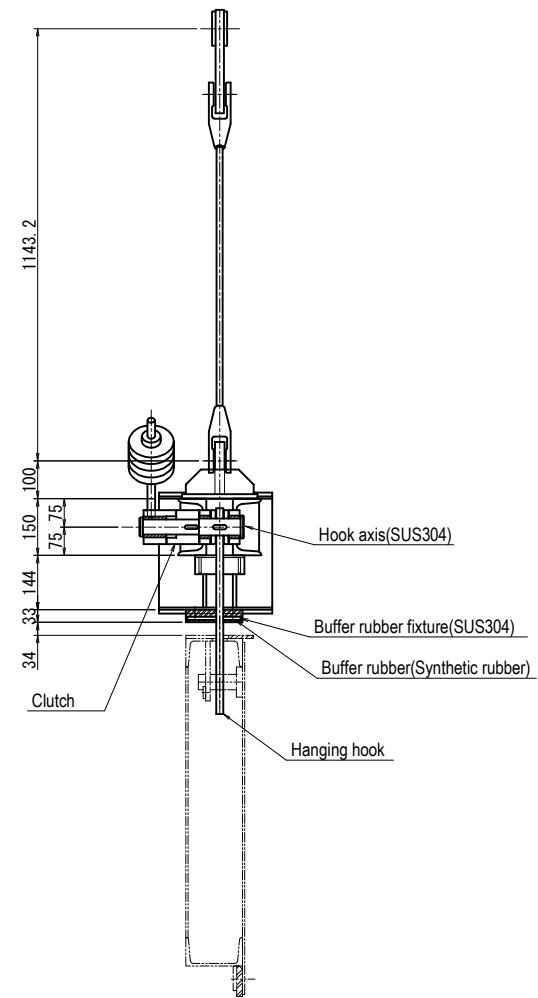
Plan



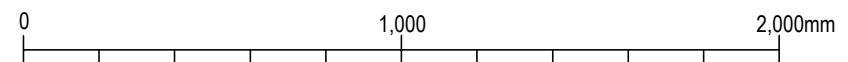
Front view



Side view

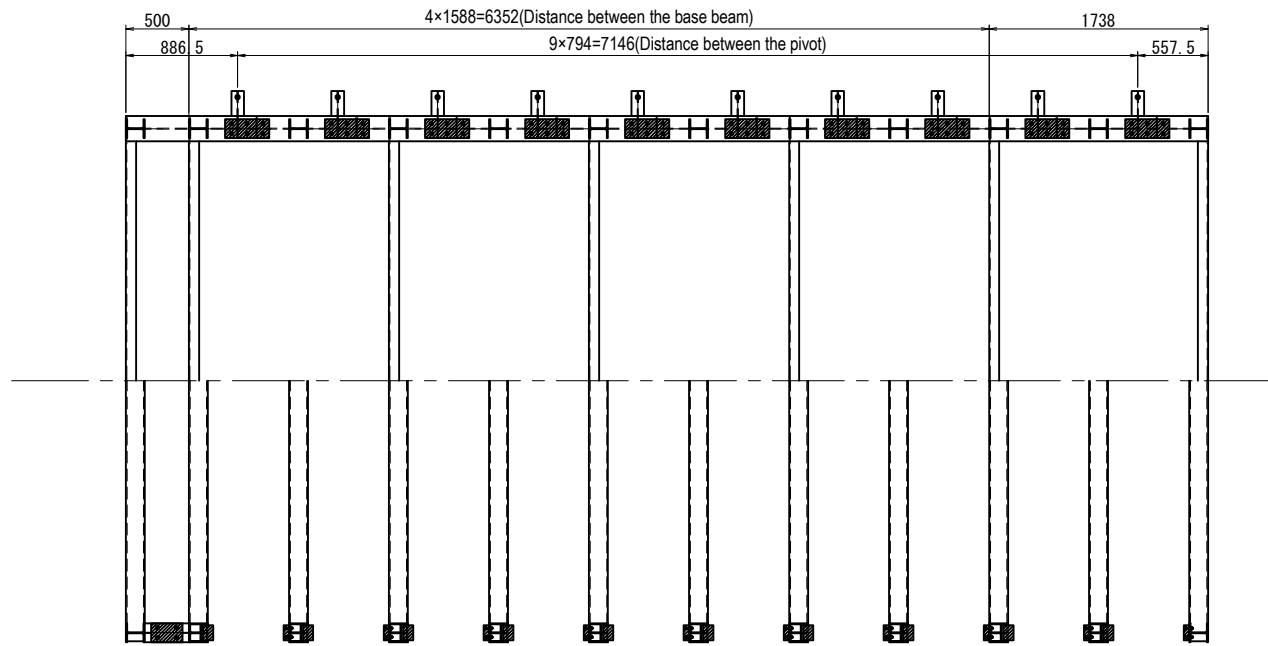


Note:
-Material is SS400 if not otherwise specified.

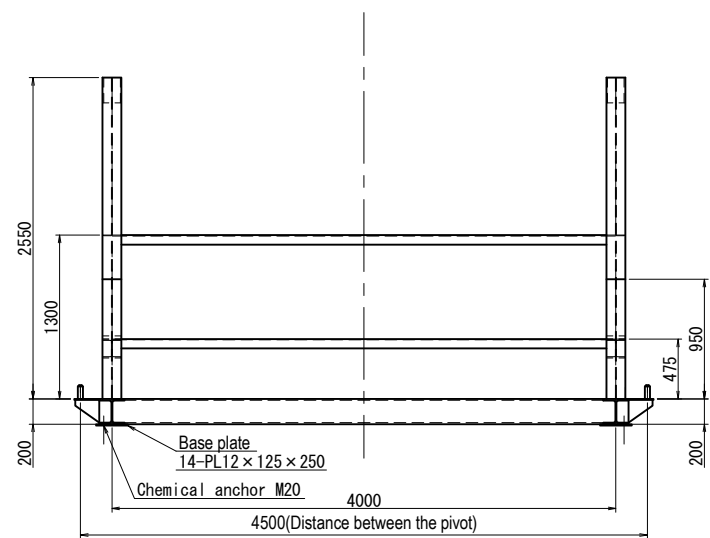


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs for small Regulators Lifting beam			DRW. NO ML-21
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

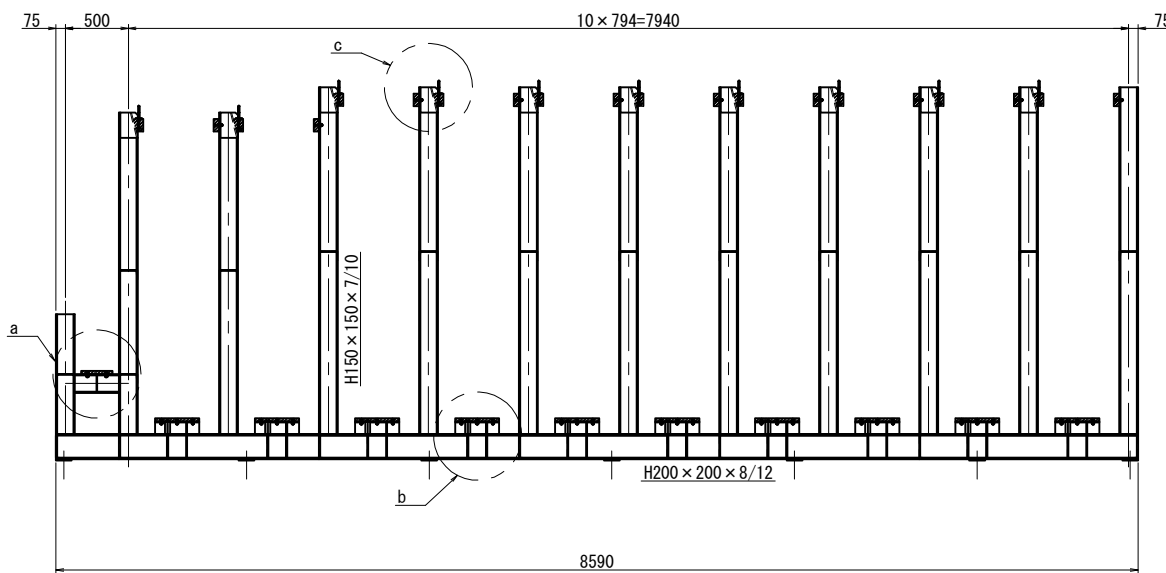
Plan Scale A



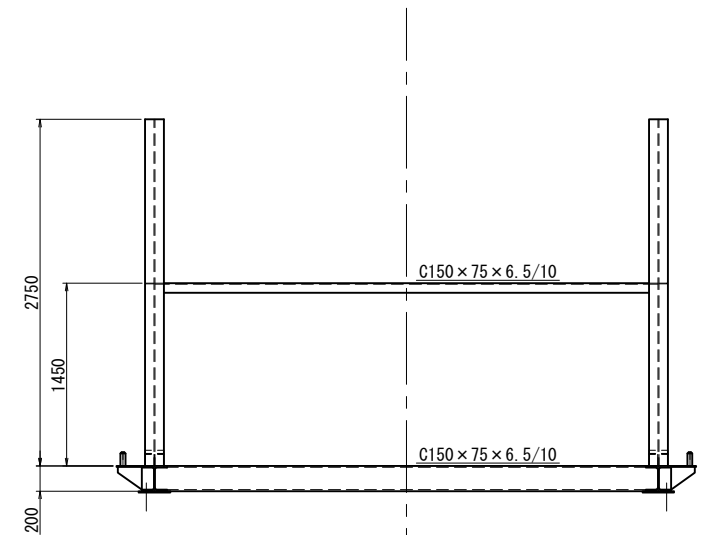
Front view Scale A



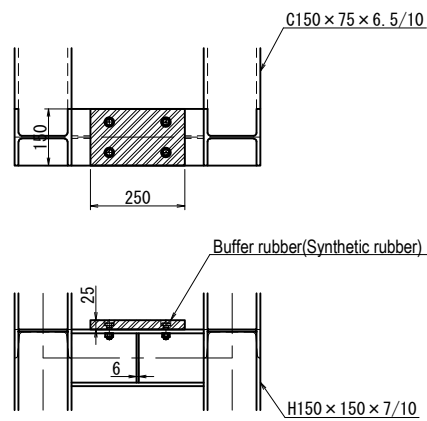
Side view Scale A



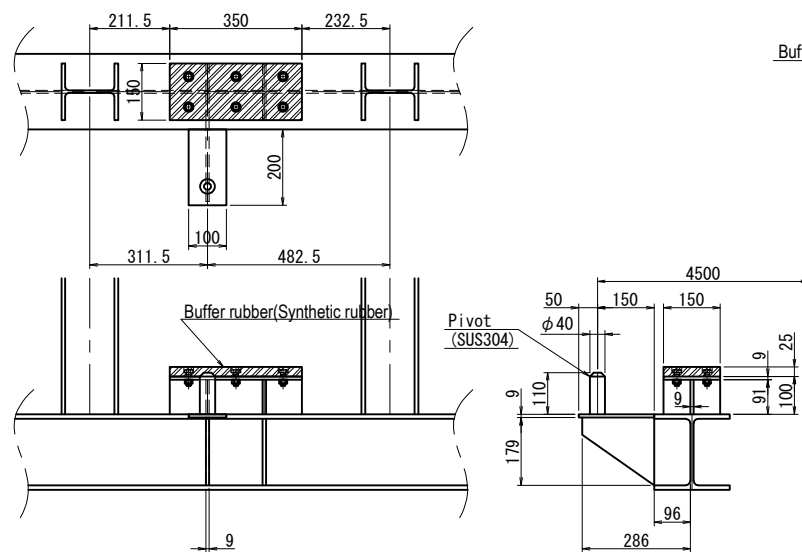
Back view Scale A



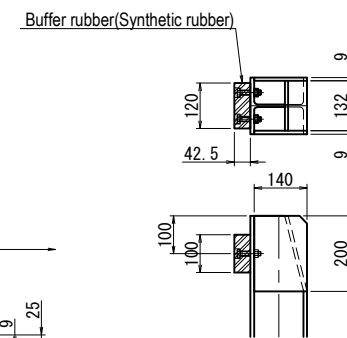
Detail of "a" Scale B



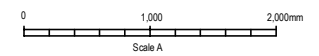
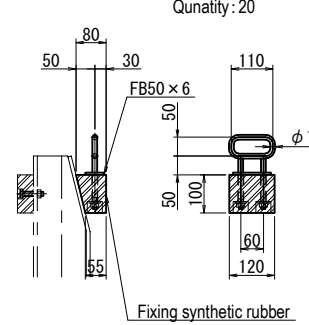
Detail of "b" Scale B



Detail of "c" Scale B



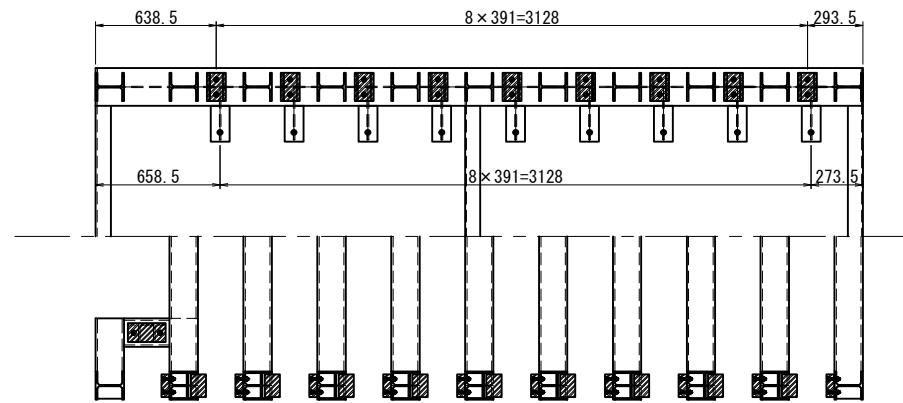
Detail of gate fixing material Scale B



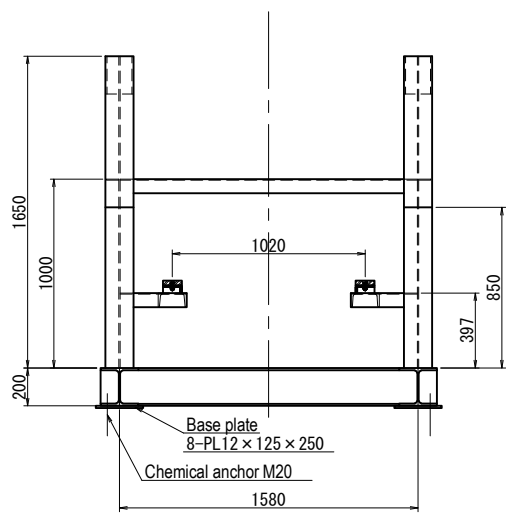
Note:
-Material is SS400 if not otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs storage stand assembling (1/2)			DRW. NO. ML-22
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

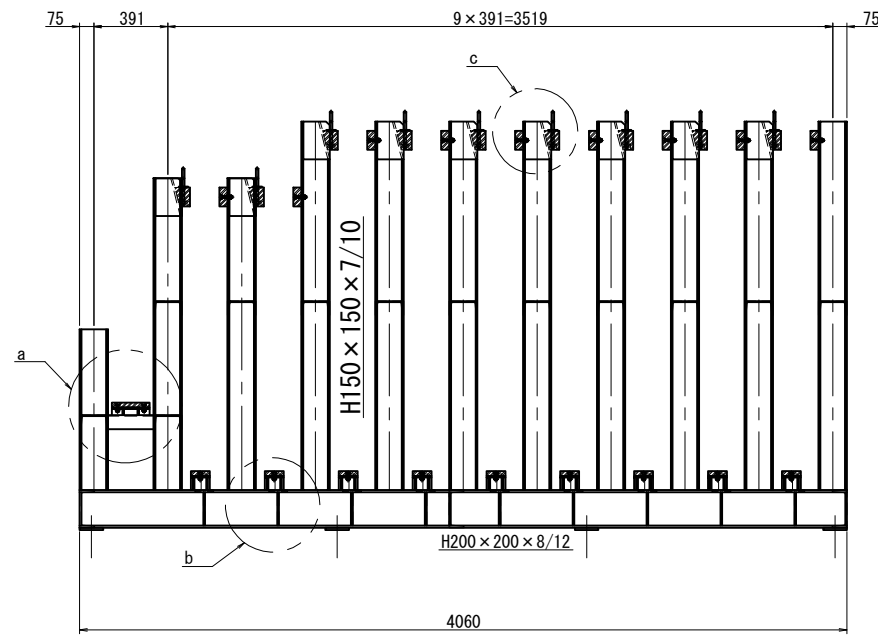
Plan Scale A



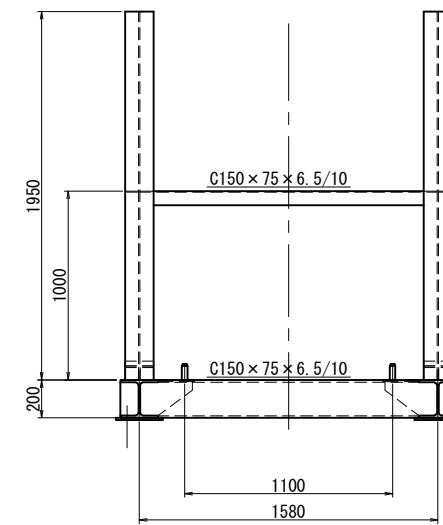
Front view Scale A



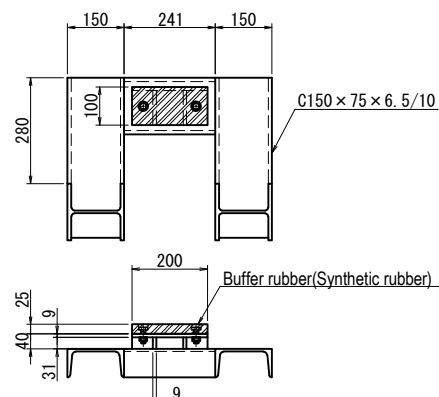
Side view Scale A



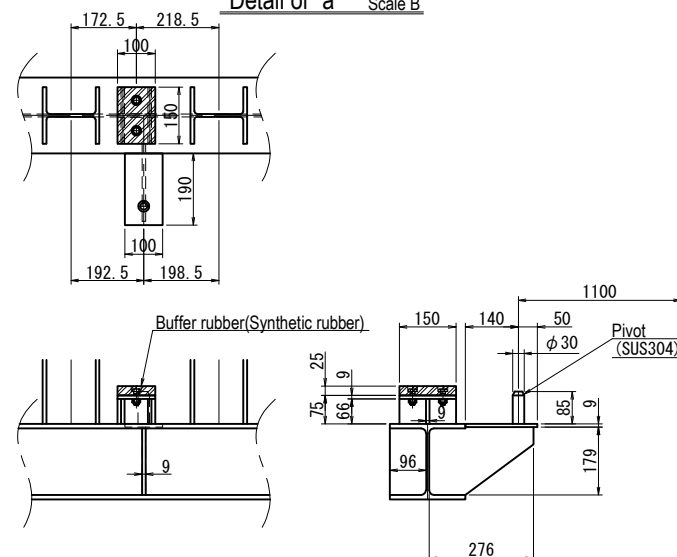
Back view Scale A



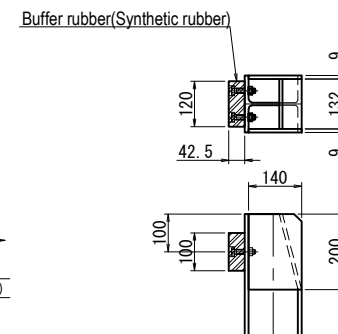
Detail of "a" Scale B



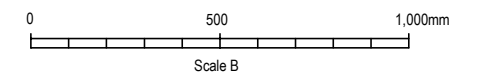
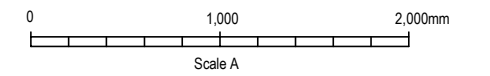
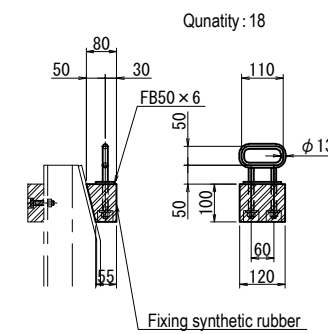
Detail of "a" Scale B



Detail of "c" Scale B



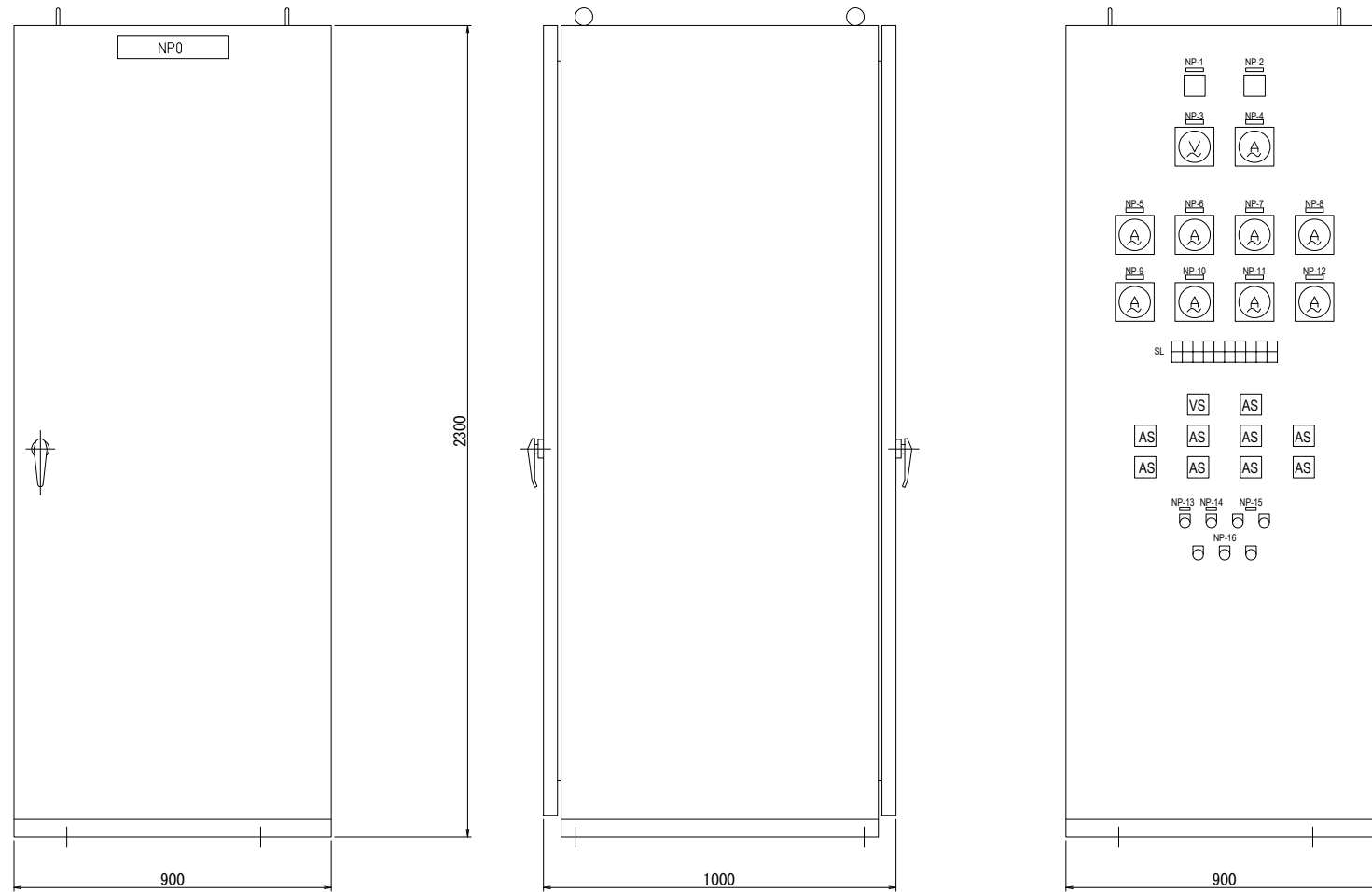
Detail of gate fixing material Scale B



Note
 - Material is SS400 if not otherwise specified.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Stop logs storage stand assembling (2/2)			DRW. NO. ML-23
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Power receiving and distribution panel (Control house)



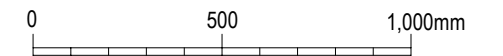
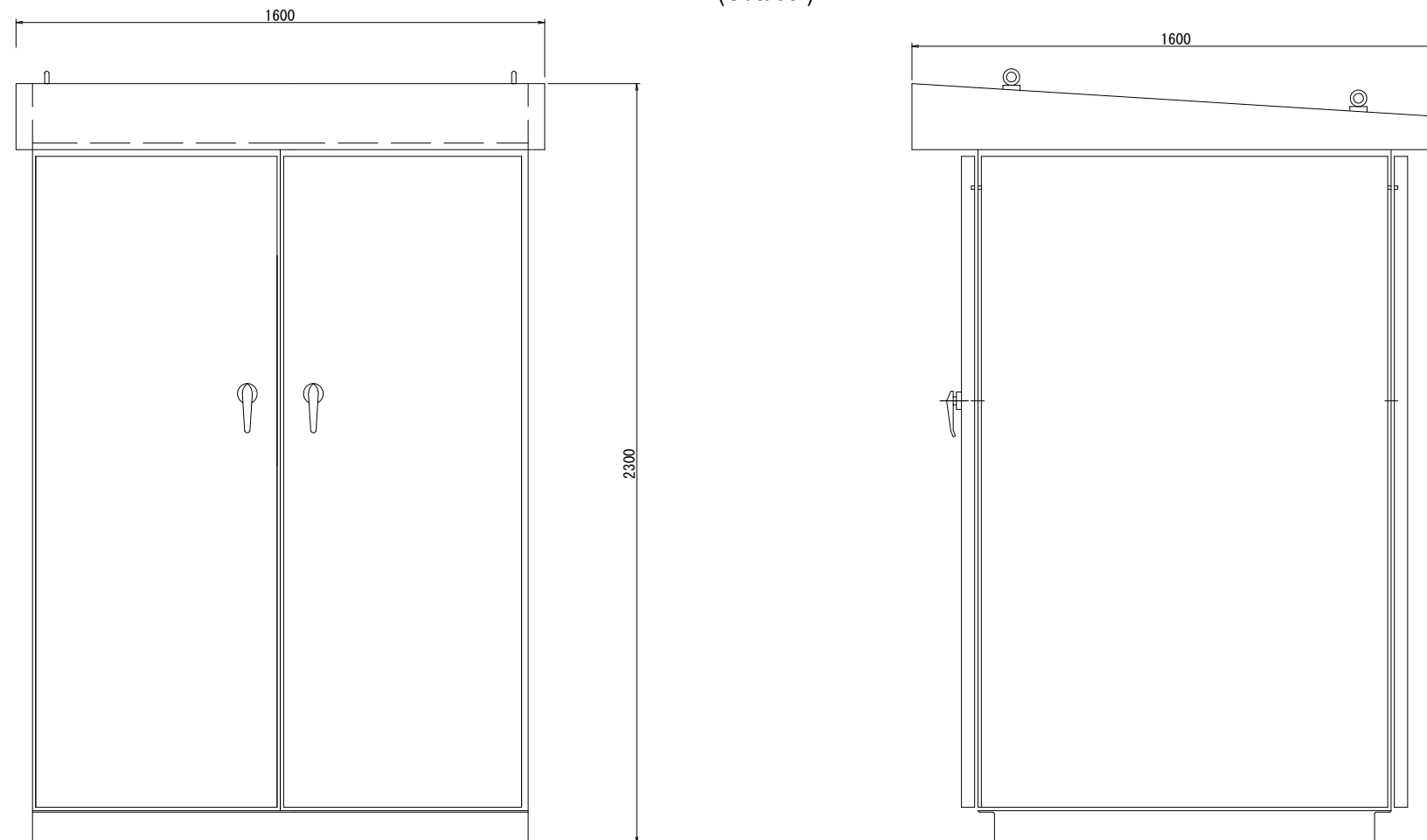
LEGEND

Name	Mark	Letter
NP-0		LOW-VOLTAGE SWITCHBOARD
NP-1	W	COMMERCIAL POWER(LAMP)
NP-2	W	GENERATOR POWER(LAMP)
NP-3	V	MAIN POWER VOLTAGE
NP-4	A	MAIN CURRENT
NP-5	A	LOCAL CONTROL PANEL (BAHR YUSEF)
NP-6	A	LOCAL CONTROL PANEL (IBRAHIMIA)
NP-7	A	HYDRAULIC POWER UNIT (BAHR YUSEF)
NP-8	A	HYDRAULIC POWER UNIT (IBRAHIMIA)
NP-9	A	LOCAL CONTROL PANEL (ABO GABAL)
NP-10	A	LOCAL CONTROL PANEL (BADRAMAN)
NP-11	A	LOCAL CONTROL PANEL (DITOUTIAH)
NP-12	A	LOCAL CONTROL PANEL (SAHELYIA)
NP-13	SW	MANUAL-AUTO
NP-14	SW	COMMERCIAL-GENERATOR
NP-15	PB	GENERATOR ON-OFF
NP-16	PB	LAMP TEST
	PB	BUZZER STOP
	PB	COMMERCIAL-GENERATOR

INDICATING LAMP

SL									
LOCAL	AUTO	COMMERCIAL	GENERATOR ON		EARTH LEAKAGED BAHR YUSEF	EARTH LEAKAGED ABO GABAL	EARTH LEAKAGED DIROUTIAH	EARTH LEAKAGED HOUSE	MCCB TRIP
REMOTE	MANUAL	GENERATOR	GENERATOR TROUBLE		EARTH LEAKAGED IBRAHIMIA	EARTH LEAKAGED BADRAMAN	EARTH LEAKAGED SAHELYIA		

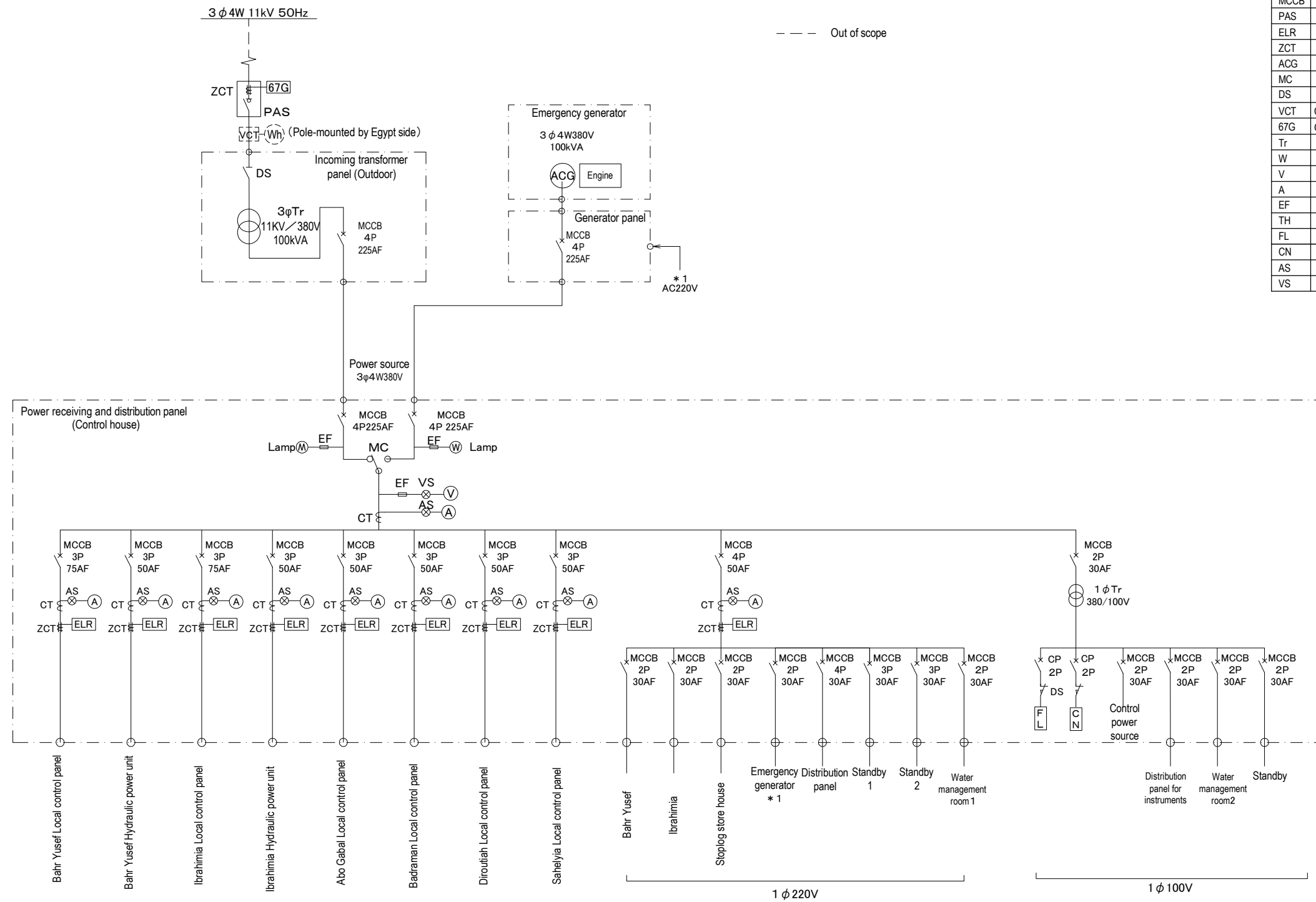
Incoming transformer panel (Outdoor)



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Outline drawing of power distribution panels			DRW. NO. ML-24
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

SYMBOL LEGEND

Mark	Name
MCCB	Molded Case Circuit Breaker
PAS	Pole mounted Air-break Switch
ELR	Earth Leakage Relay
ZCT	Zero-phase-sequence Current Transformer
ACG	Alternating Current Generator
MC	Electromagnetic Contactor
DS	Disconnecting Switch
VCT	Combined Voltage and Current Transformer
67G	Ground Direction Relay
Tr	Transformer
W	Wattmeter
V	Voltmeter
A	Ammeter
EF	Enclosed Fuse
TH	Thermostat
FL	Fluorescent Lamp
CN	Socket Outlet
AS	Ammeter change-over Switch
VS	Voltmeter change-over Switch

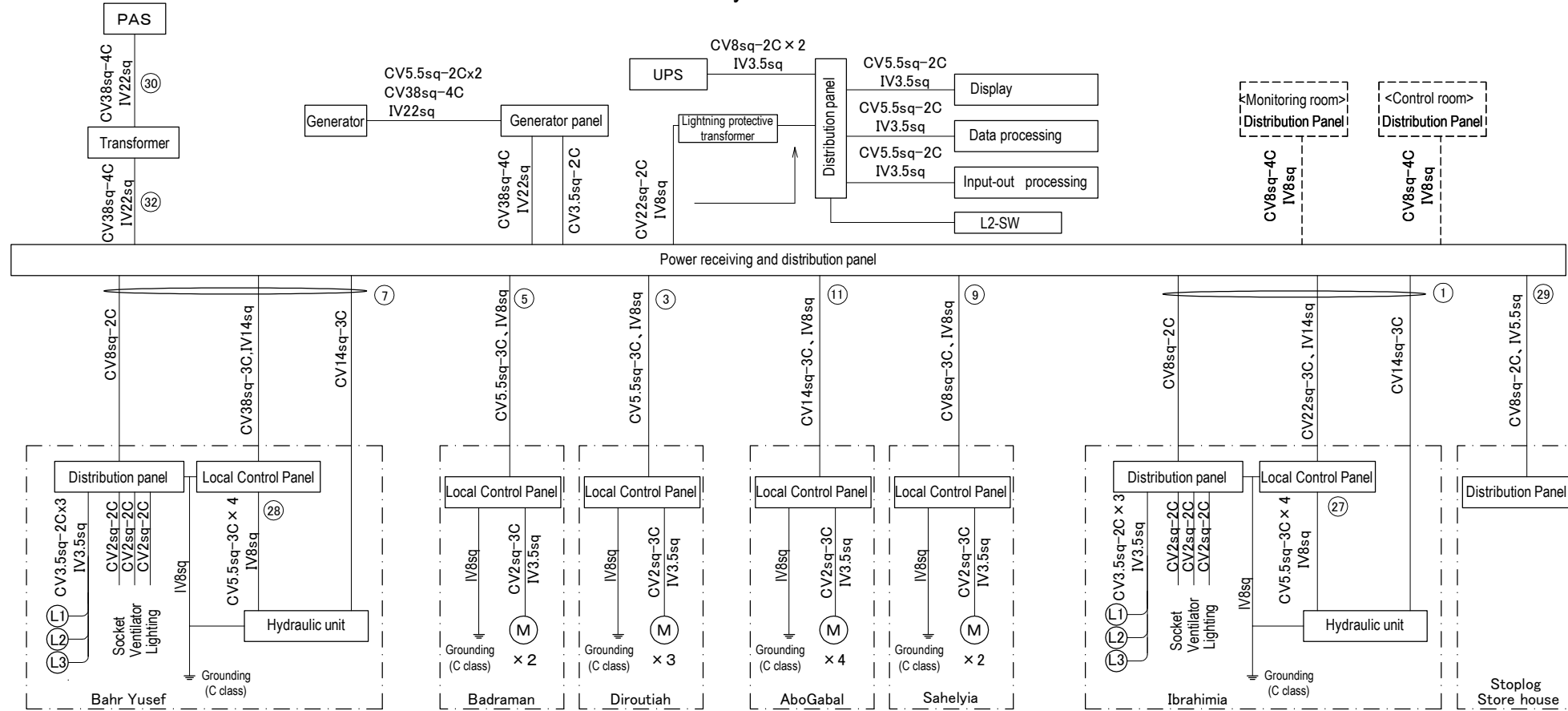


Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

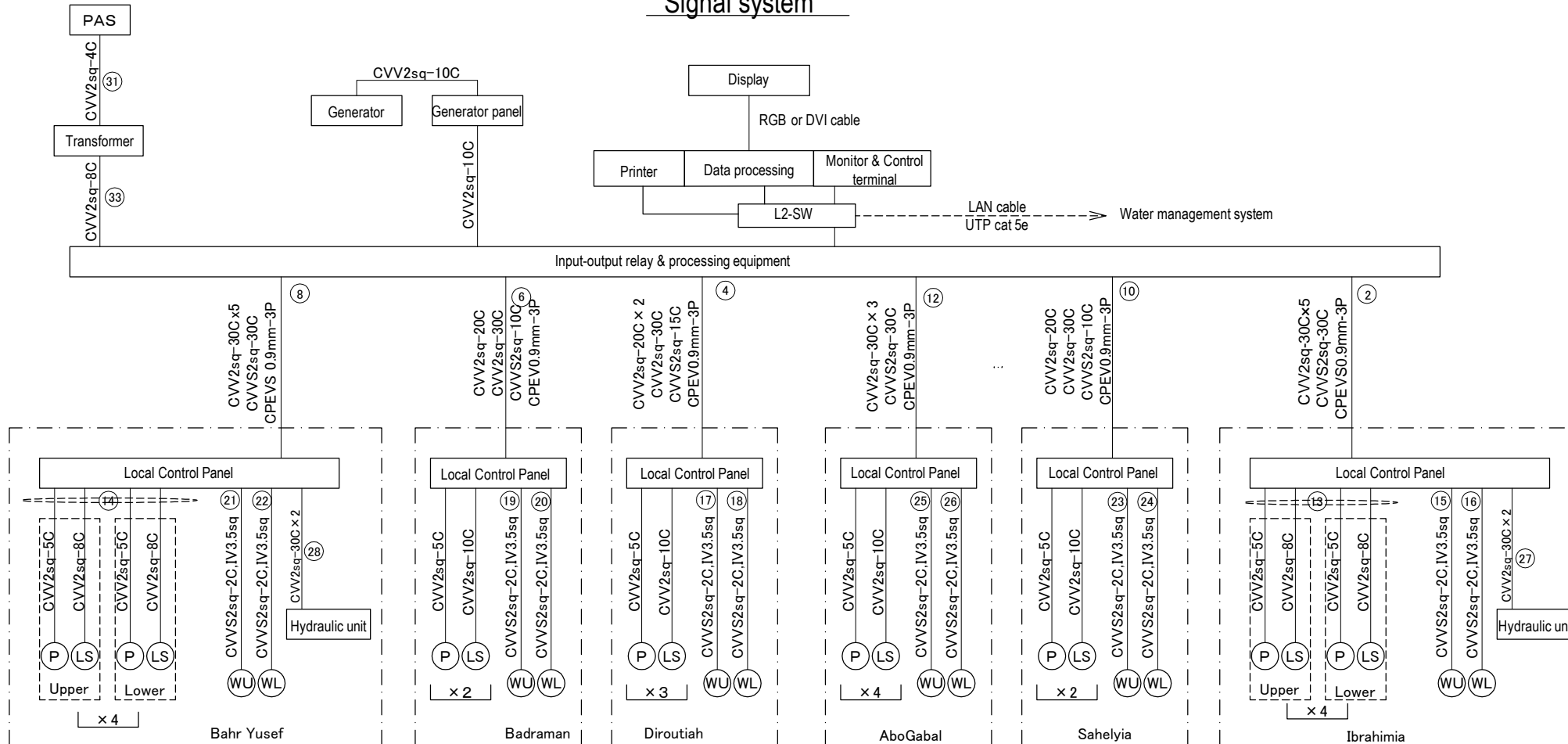
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Power source single line diagram	DRW. NO ML-25
SANYU CONSULTANTS INC.	
PREPARED BY:	CHECKED BY:
DATE:	DATE:
APPROVED BY:	DATE:

Power system



Signal system



No	Cable type	Pcs	Conduit
①	CV22sq-3C	1	FEP65
	CV14sq-3C	1	
	CV8sq-2C	1	
	IV14sq	1	
②	CVV2sq-30C	5	FEP125
	CVVS2sq-30C	1	
③	CPEV0.9-3P	1	FEP40
	CV5.5sq-3C	1	
④	IV8sq	2	FEP100
	CVV2sq-20C	1	
	CVV2sq-30C	1	
⑤	CVVS2sq-15C	1	FEP40
	CPEV0.9-3P	1	
	CV5.5sq-3C	1	
⑥	IV8sq	1	FEP80
	CVV2sq-20C	1	
	CVV2sq-30C	1	
	CVVS2sq-10C	1	
⑦	CPEV0.9-3P	1	FEP80
	CV38sq-3C	1	
⑧	CV14sq-3C	1	FEP125
	CV8sq-2C	1	
	IV14sq	1	
⑨	CVV2sq-30C	5	FEP40
	CVVS2sq-30C	1	
	CPEV0.9-3P	1	
⑩	CV8sq-3C	1	FEP80
	IV8sq	1	
	CVV2sq-20C	1	
	CVV2sq-30C	1	
⑪	CVVS2sq-10C	1	FEP100
	CPEV0.9-3P	1	
	CV14sq-3C	1	
⑫	IV8sq	1	FEP125
	CVV2sq-30C	3	
⑬	CVV2sq-8C	8	FEP30
	CVV2sq-5C	8	
⑭	CVV2sq-2C	1	FEP80
	IV3.5sq	1	
⑮	CVV2sq-20C	3	FEP80
	CV5.5sq-3C	4	
⑯	IV8sq	1	FEP30
	CV8sq-2C	1	
⑰	IV5.5sq	1	FEP65
	CV38sq-4C	1	
⑱	IV22sq	1	FEP30
	CVV2sq-4C	1	
⑲	CV38sq-4C	1	FEP65
	IV22sq	1	
⑳	CVV2sq-8C	1	FEP30
	CVV2sq-5C	1	

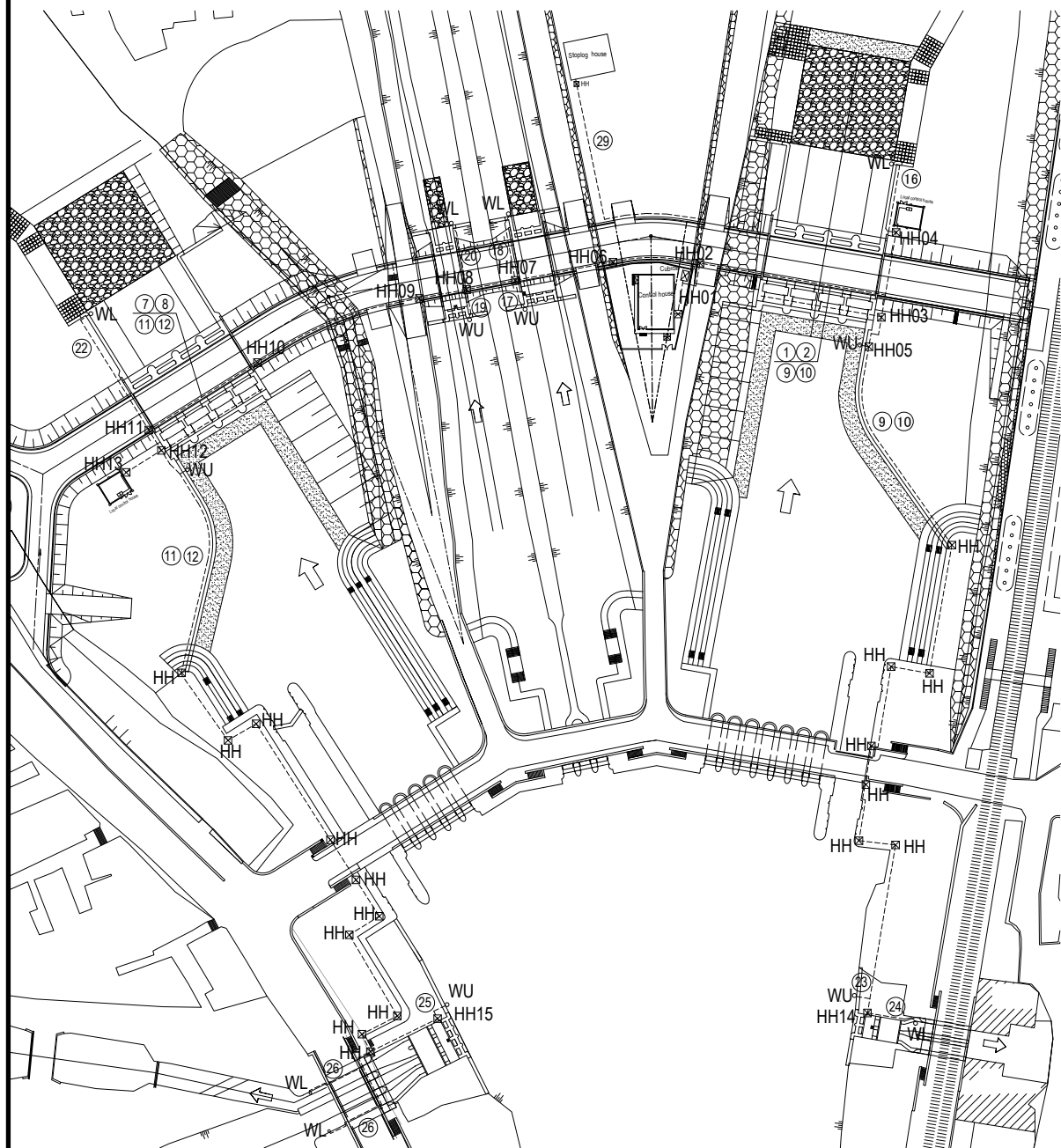
- (WU) : Water level gauge (upstream)
- (WL) : Water level gauge (downstream)
- (P) : Gate opening indicator
- (LS) : Limit switch
- (M) : Motor
- (L) : Lighting

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

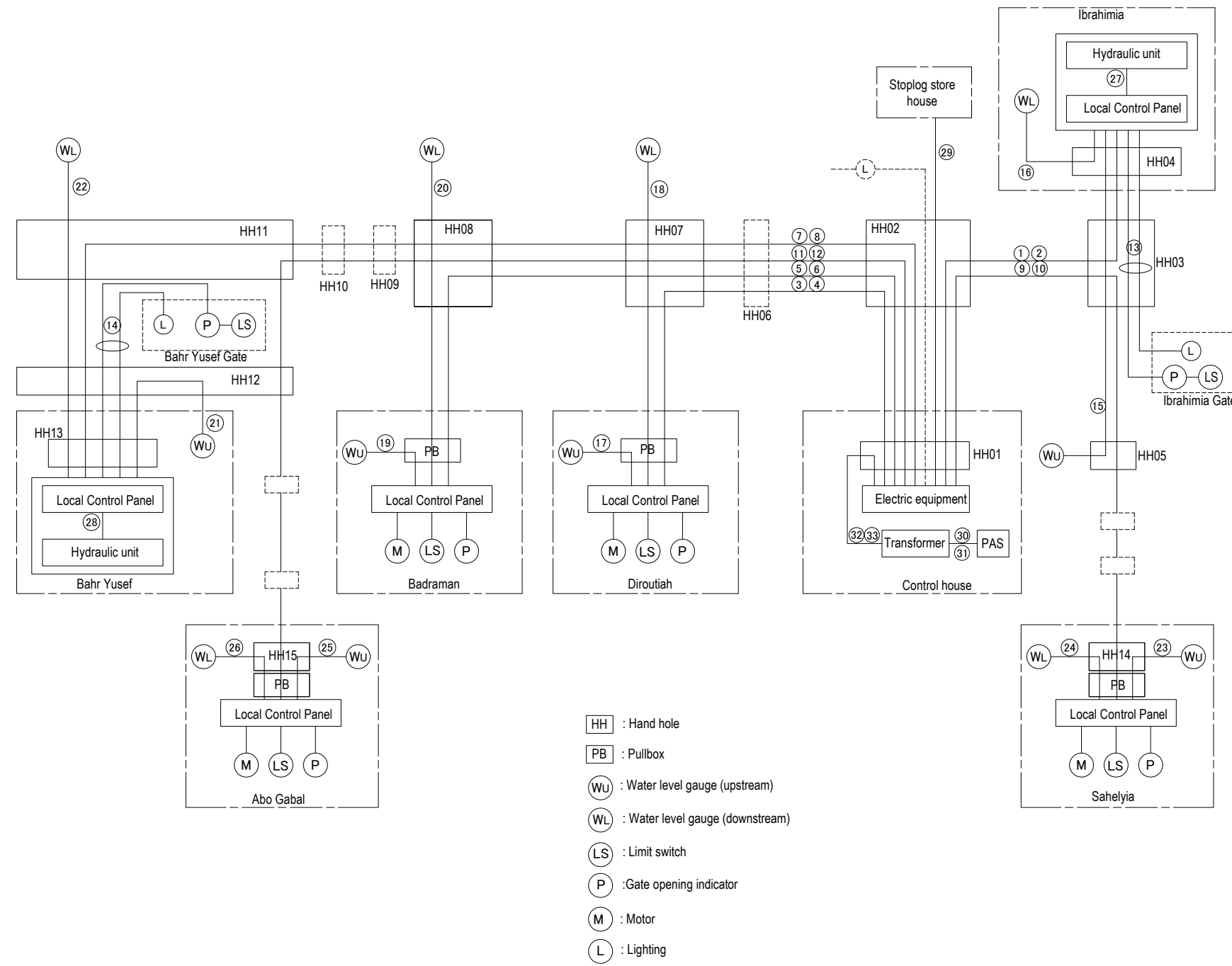
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

General plan of wiring (1/2)	DRW.NO ML-26
SANYU CONSULTANTS INC.	
PREPARED BY :	CHECKED BY :
DATE :	DATE :
APPROVED BY :	DATE :

Layout plan of electric cables

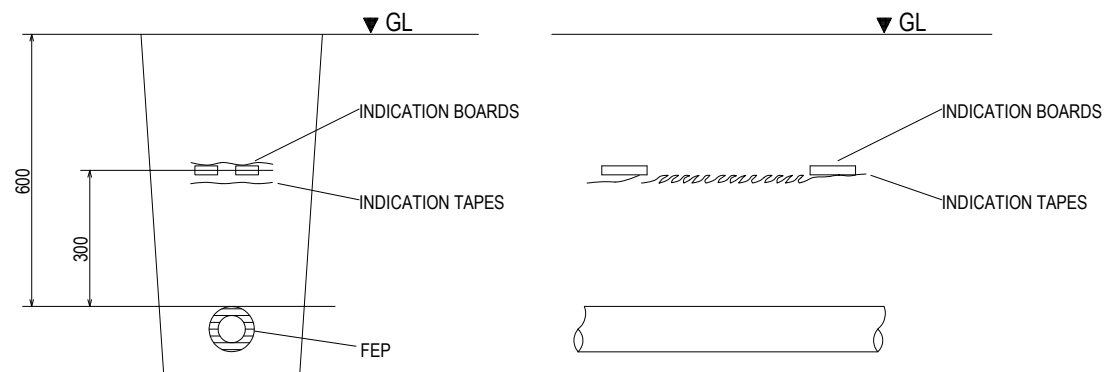


Wiring system diagram



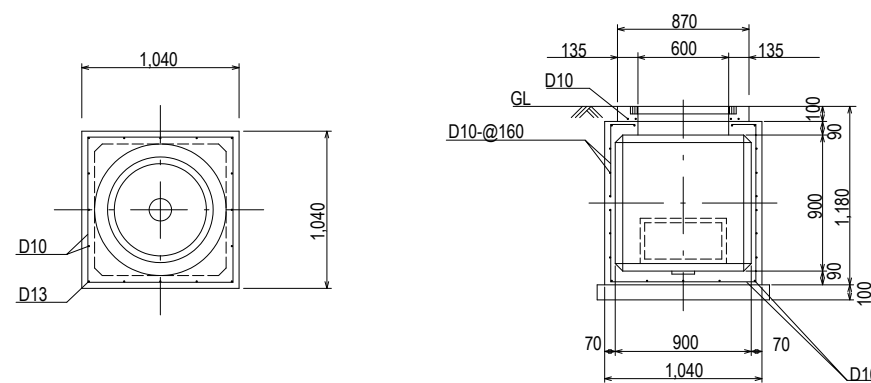
Standard burying method

No Scale



Hand Holes

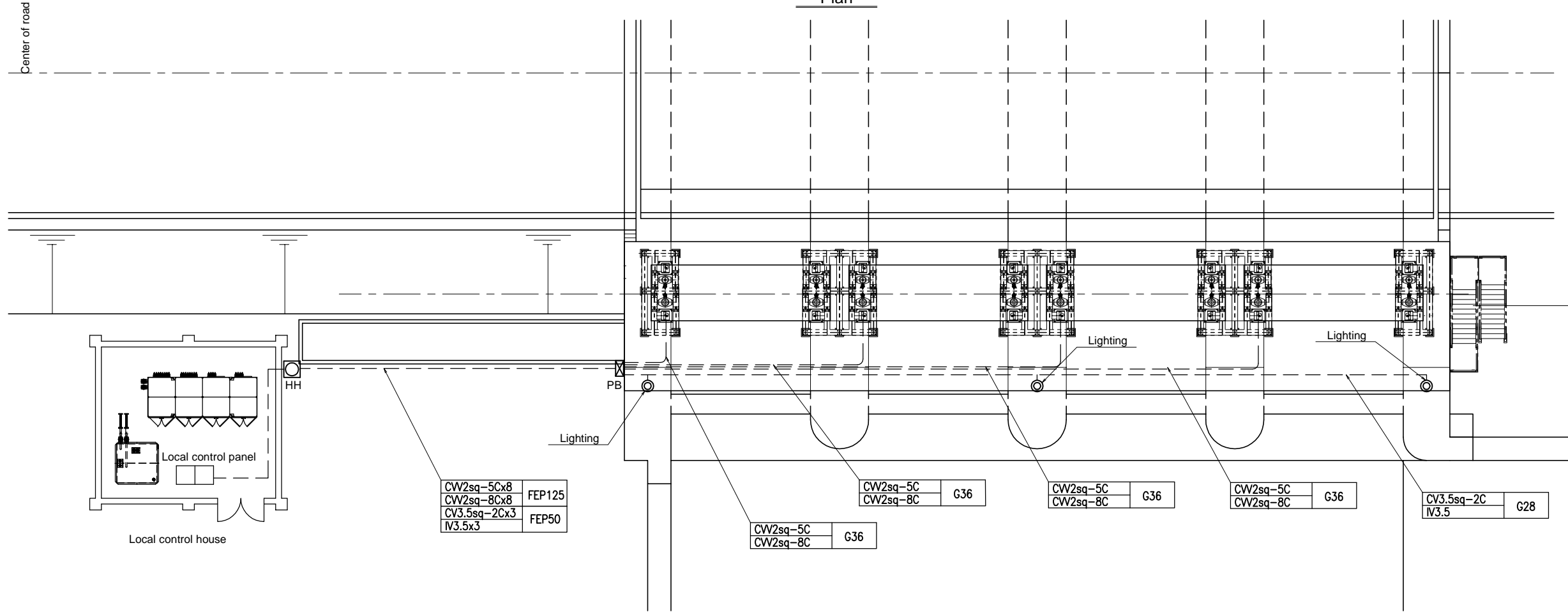
No Scale



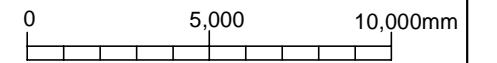
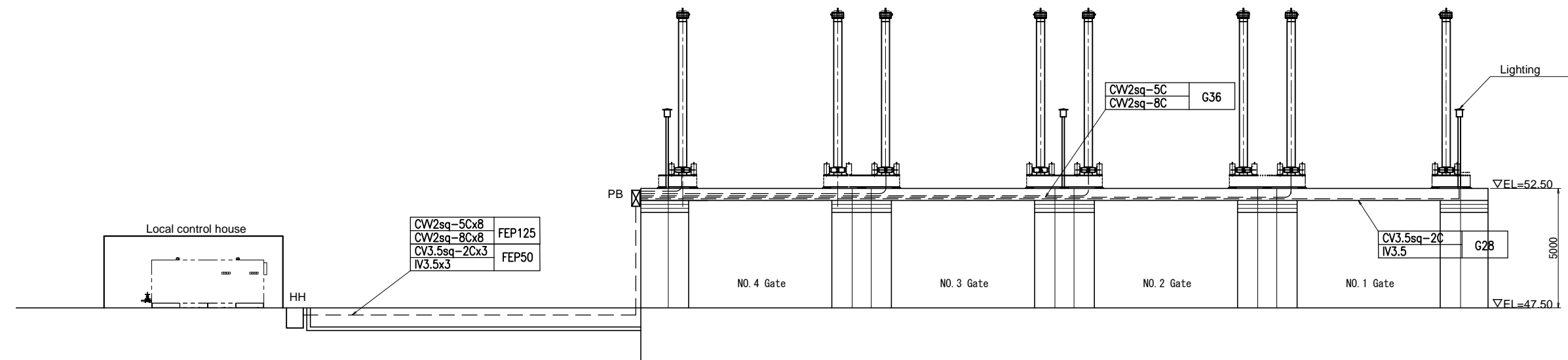
PROJECT: Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TITLE: General plan of wiring (2/2)			DRW. NO. ML-27
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Bahr Yusef regulator

Plan



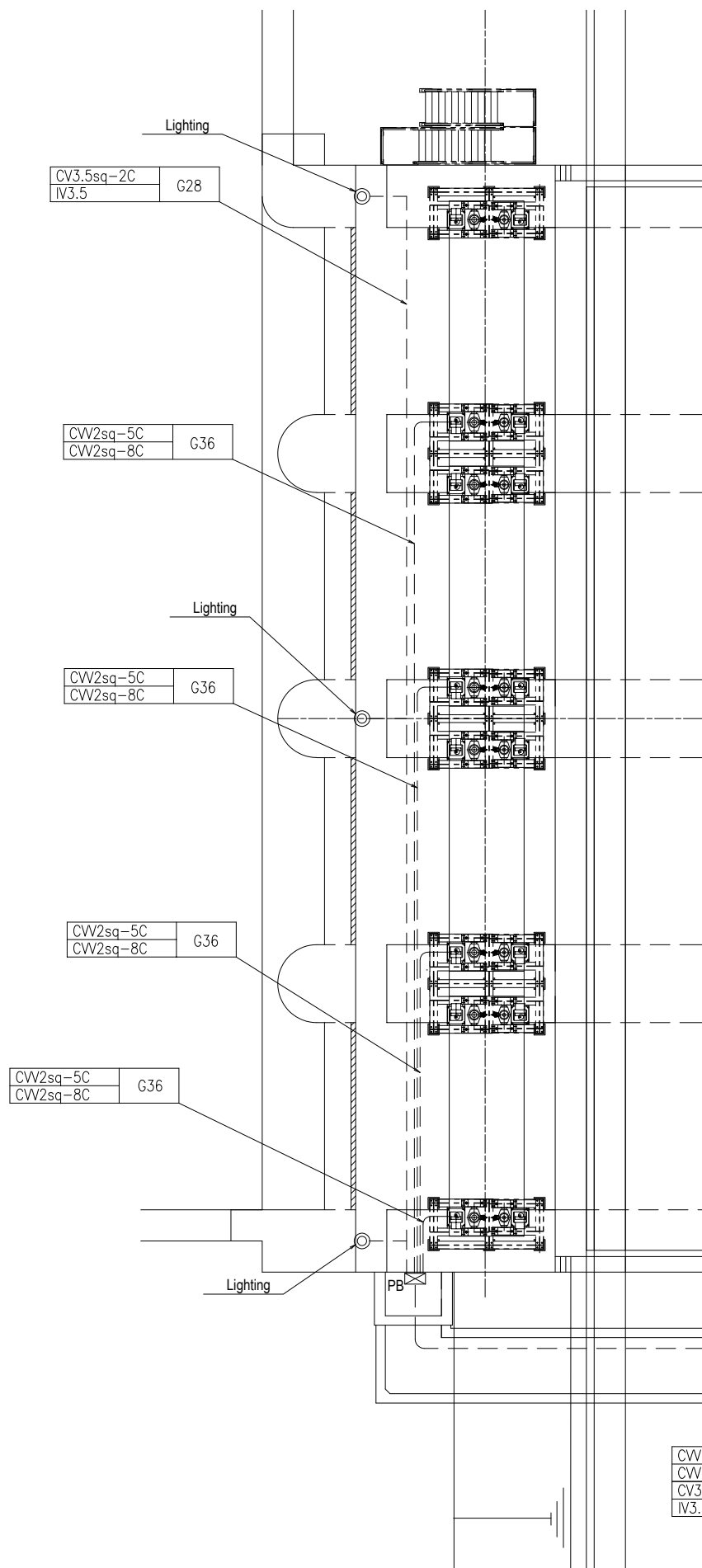
Front view



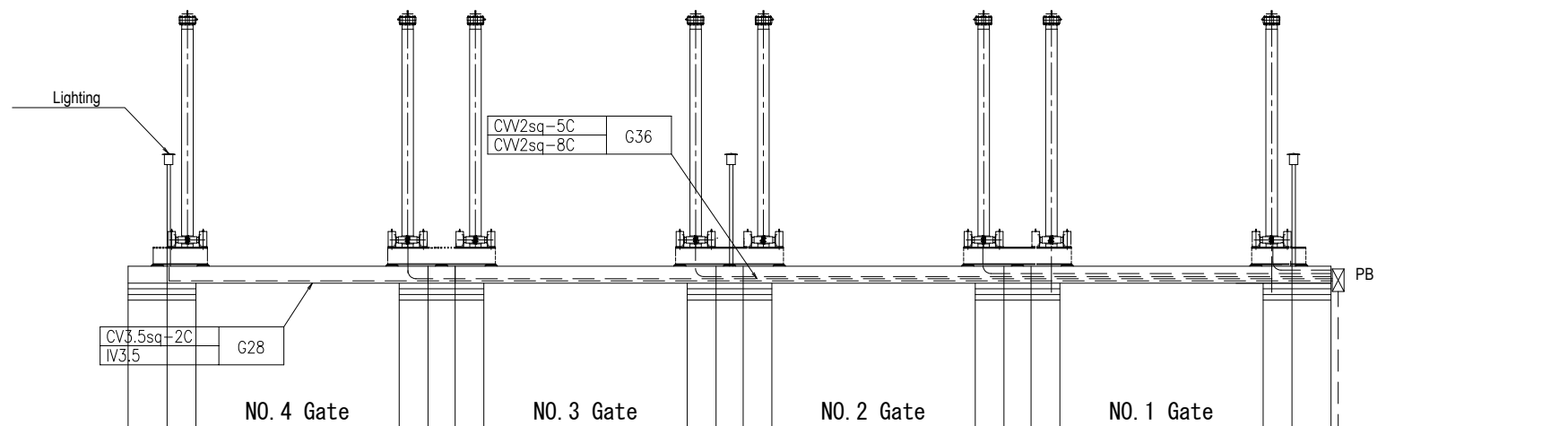
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Layout of local wiring (1/3)			DRW. NO. ML-28
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Ibrahimia regulator

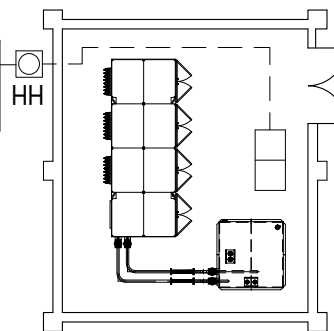
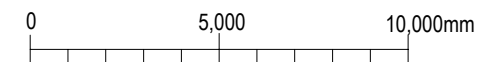
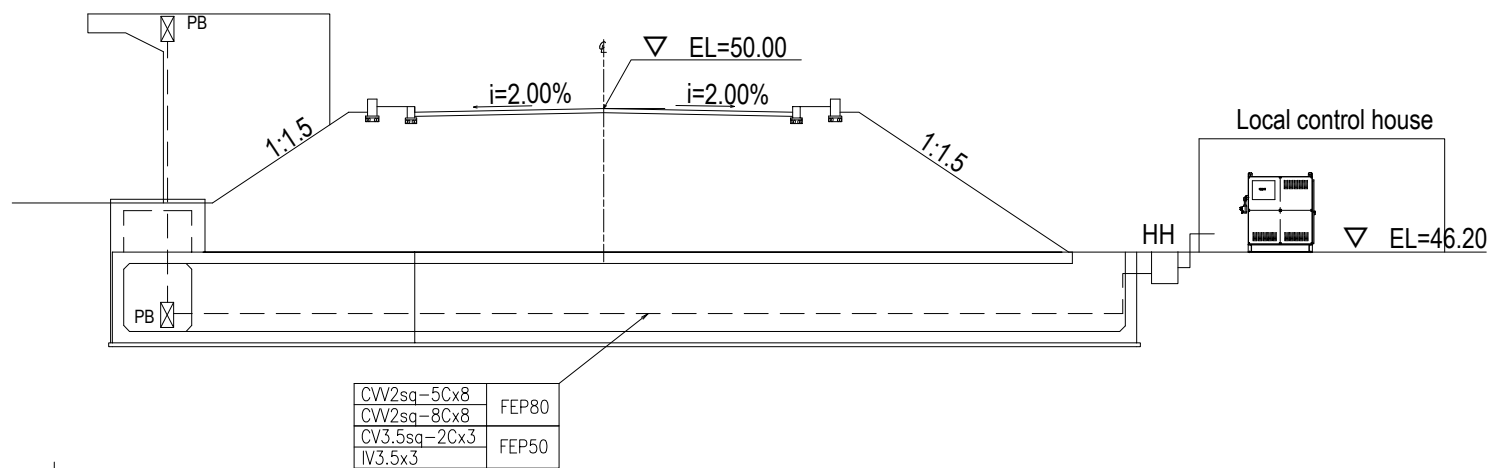
Plan



Front view



Side view



Local control house

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

Layout of local wiring (2/3)

DRW. NO.

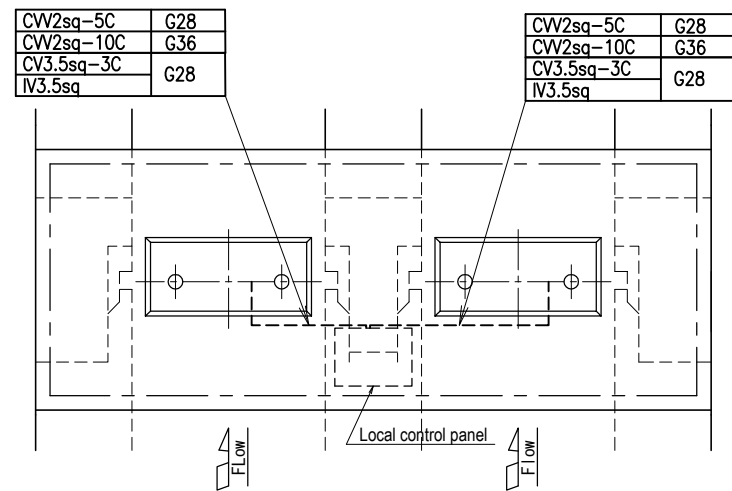
ML-29

SANYU CONSULTANTS INC.

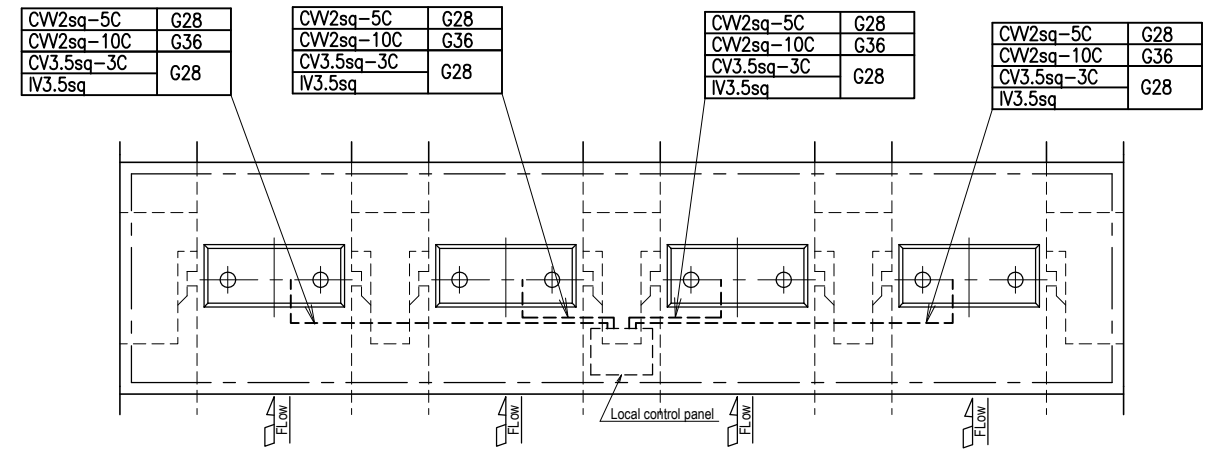
PREPARED BY :	CHECKED BY :	APPROVED BY :
DATE :	DATE :	DATE :

Small scale regulators

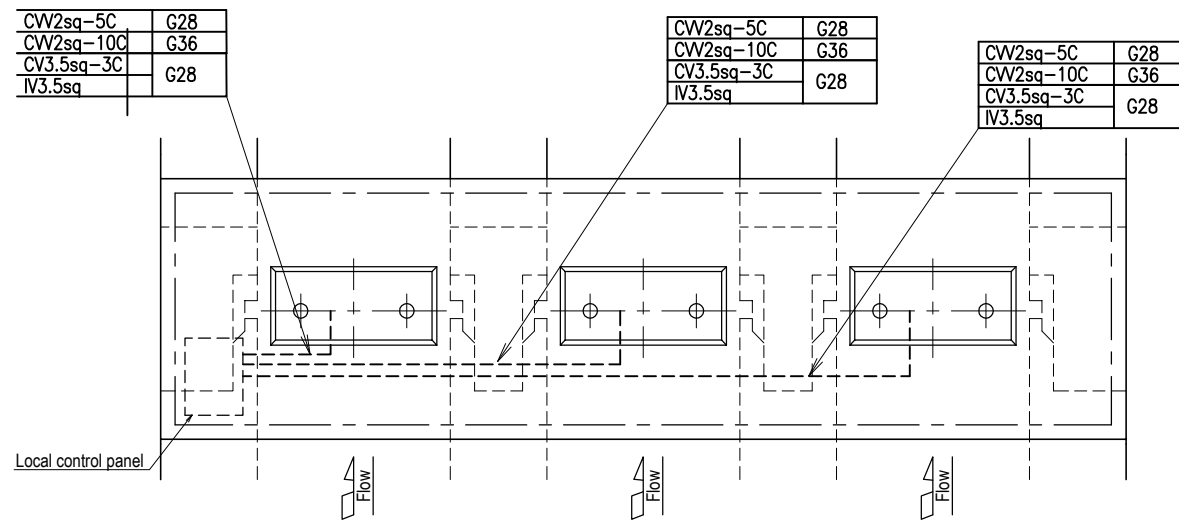
Badraman Regulator(Badraman)



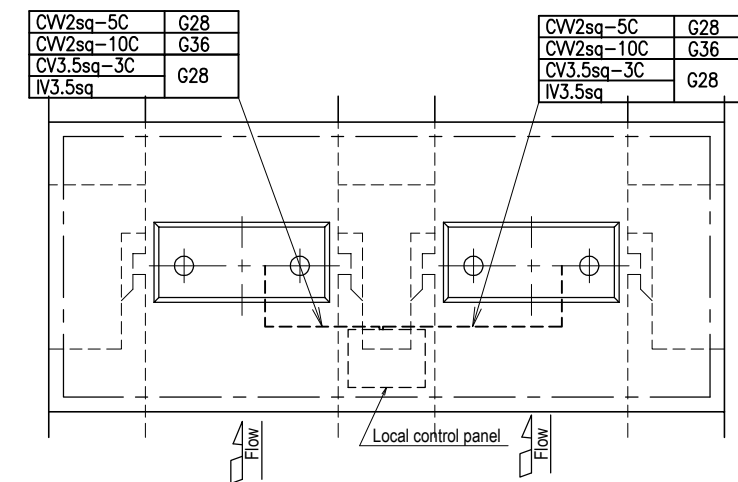
Abo Gabal Regulator



Badraman Regulator(Diroutiah)

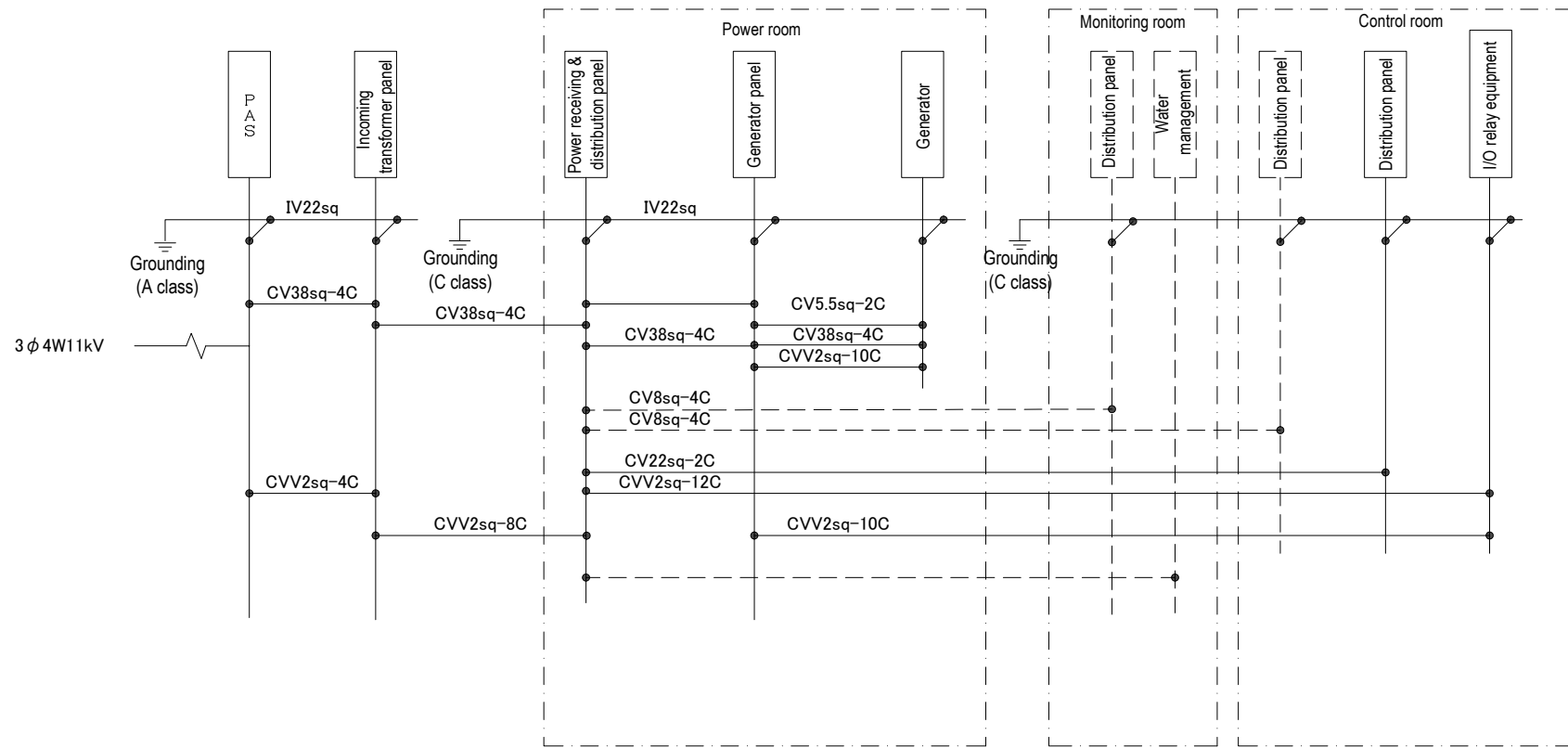


Saheyliya Regulator

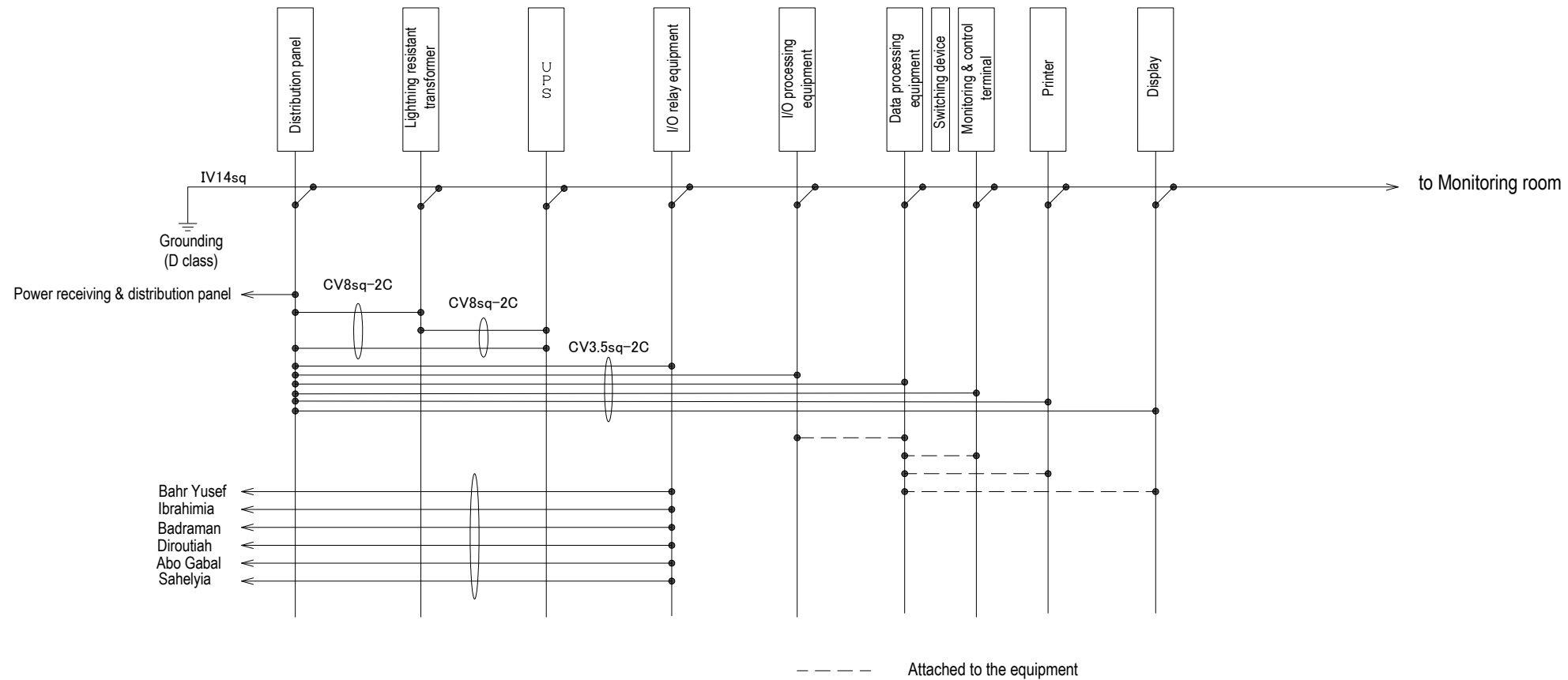


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Layout of local wiring (3/3)			DRW. NO ML-30
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	DATE:

Wiring of power receiving and distribution system



Wiring in Control room

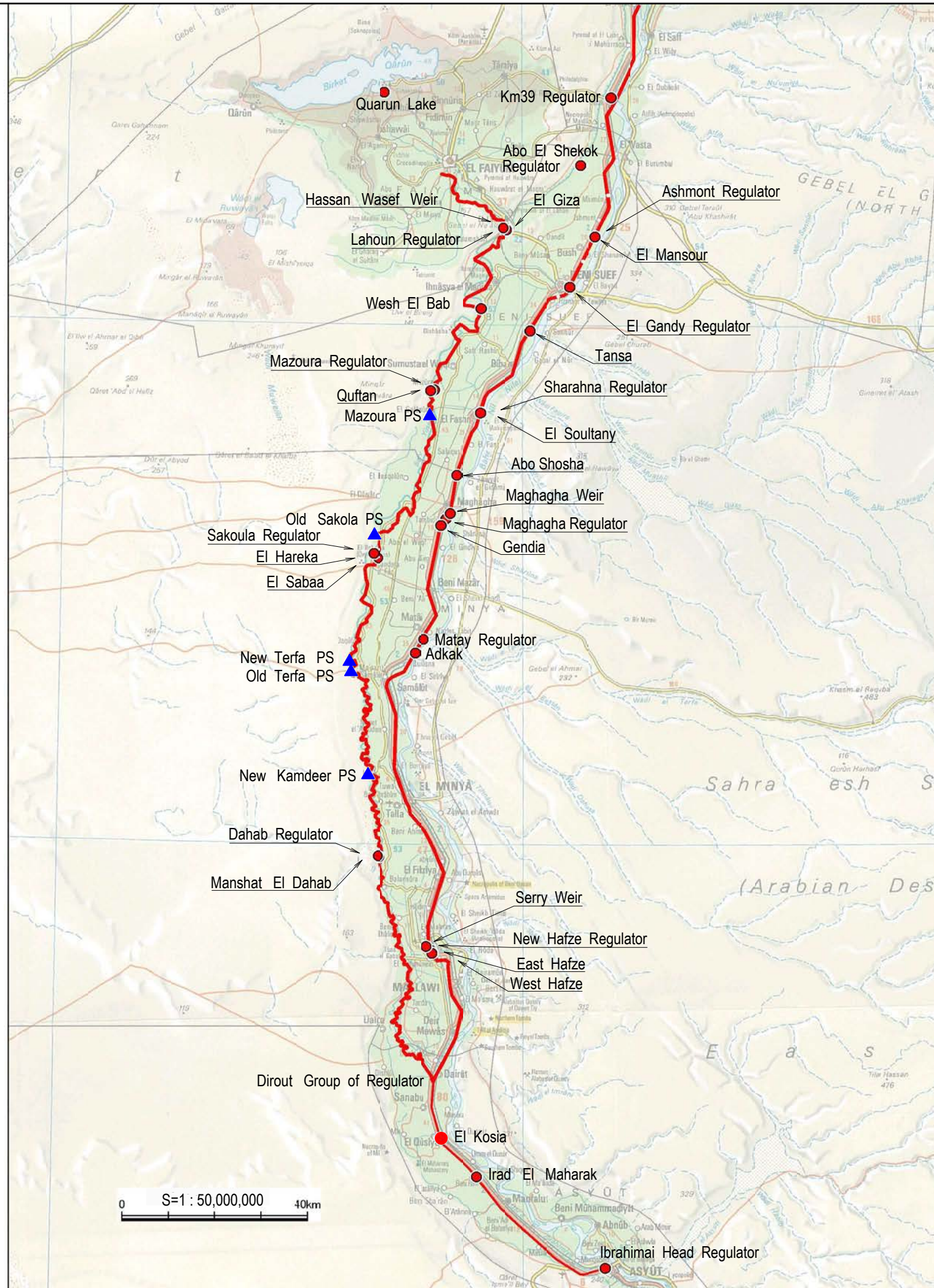


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Wiring diagram			DRW. NO. ML-31
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

PART V WATER MANAGEMENT SYSTEM

Project Location Map

S=1 : 50,000,000



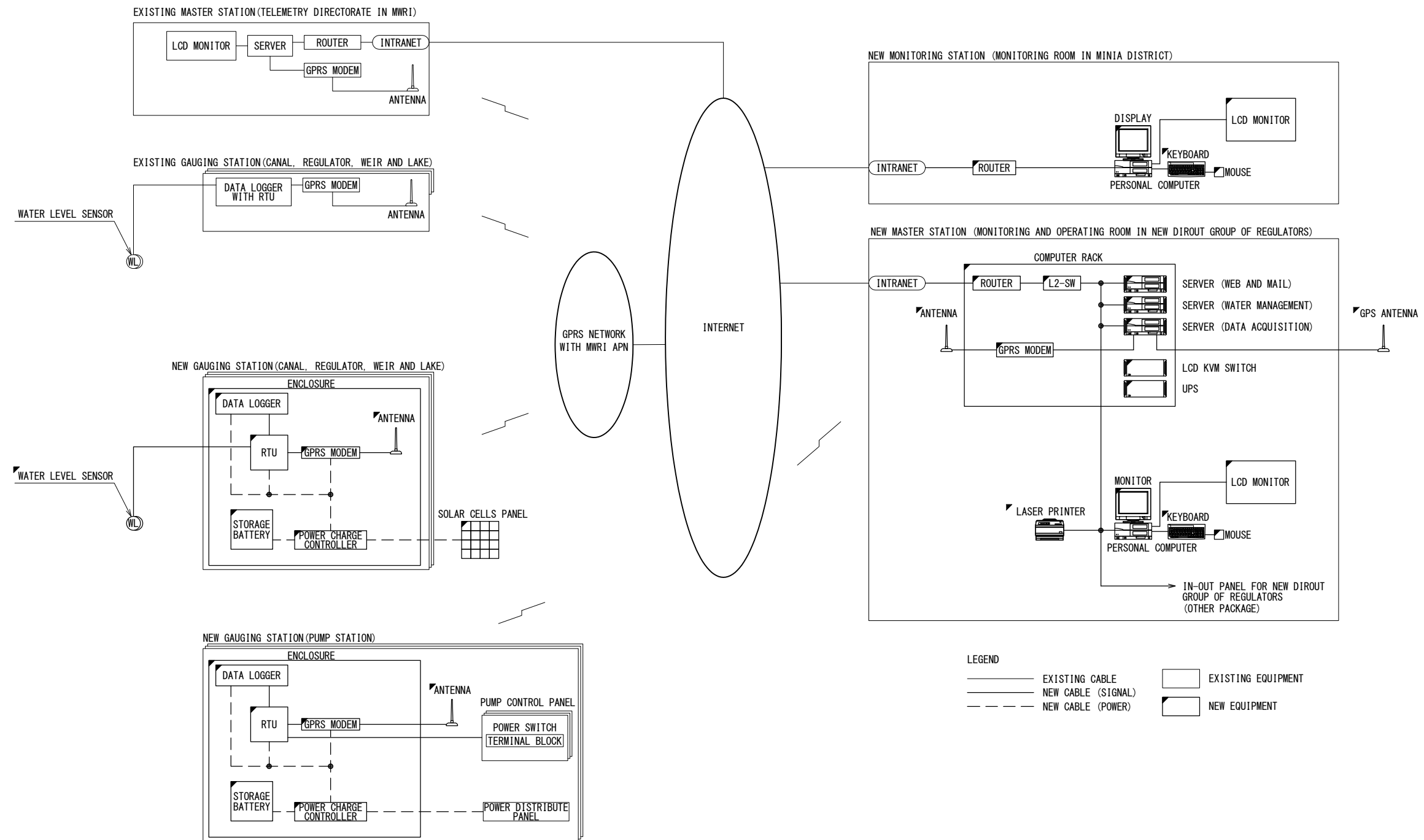
LEGEND

- : MAIN CANAL
- : REGULATOR, INTAKE, WEIR, LAKE
- ▲ : PUMP STATION



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Project Location Map	DRW. NO. WM-1	
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

SYSTEM DIAGRAM



TYPE-A (ONE WATER LEVEL SENSOR)			TYPE-B (TWO WATER LEVEL SENSORS)			TYPE-PUMP	
	IBRAHIMIA	BAHR YUSEF		IBRAHIMIA	BAHR YUSEF		BAHR YUSEF
ASSIUT	0	0	ASSIUT	3	0	ASSIUT	0
WEST MINIA	1	0	WEST MINIA	0	5	WEST MINIA	3
EAST MINIA	1	0	EAST MINIA	7	0	EAST MINIA	0
BENI SUEF	0	1	BENI SUEF	7	7	BENI SUEF	2
FAYOUM	0	1	FAYOUM	0	0	FAYOUM	0

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

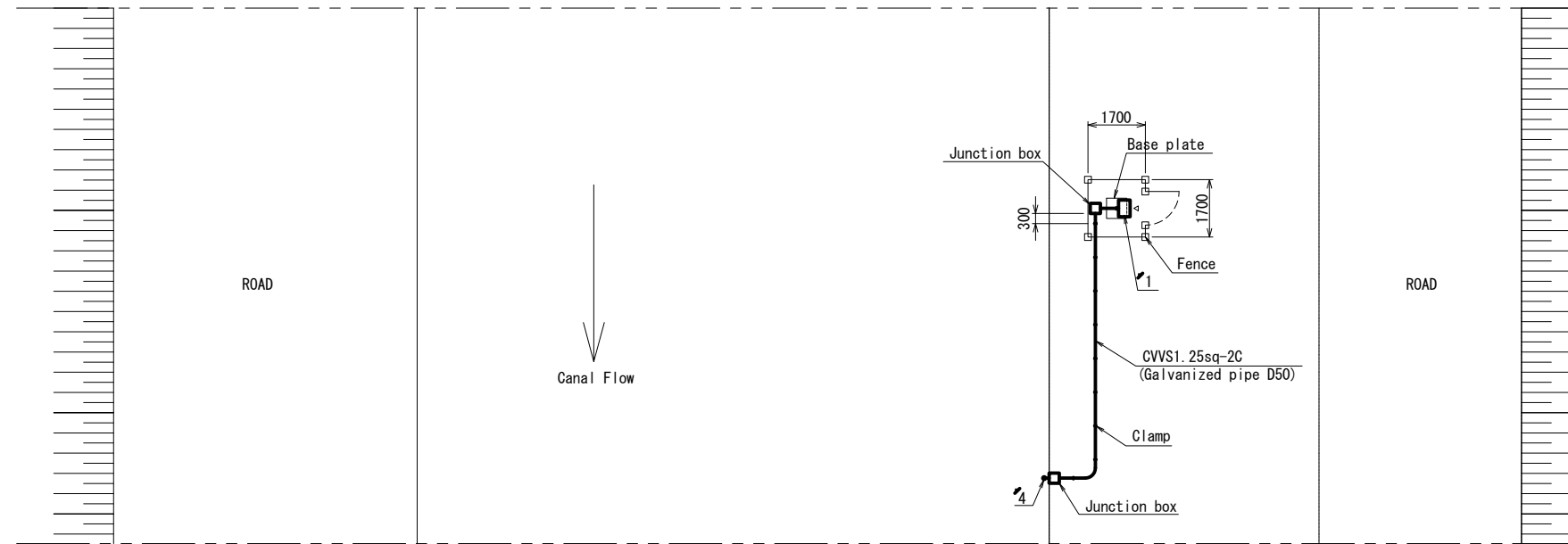
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

SYSTEM DIAGRAM DRW. NO.
WM-2

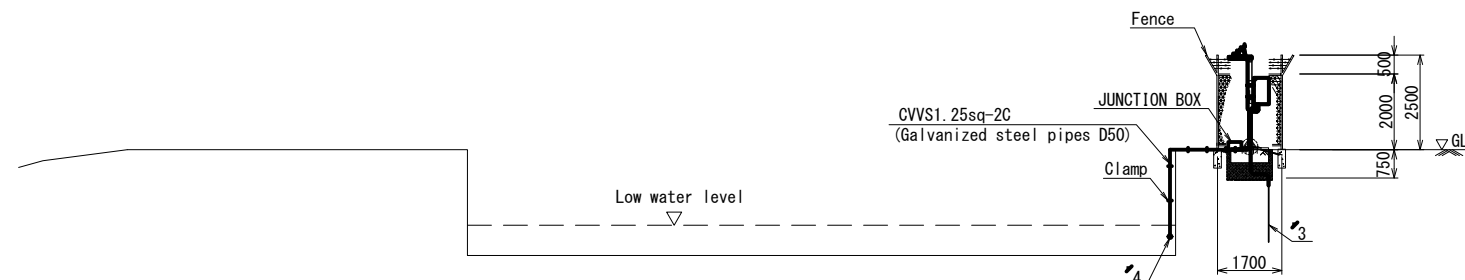
SANYU CONSULTANTS INC.

PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

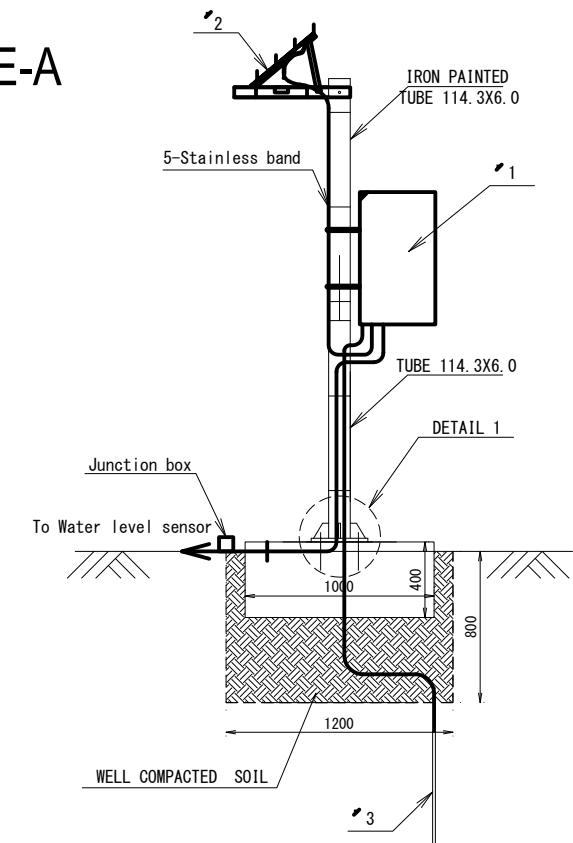
TYPICAL FACILITY LAYOUT PLAN FOR GAUGING STATION TYPE-A



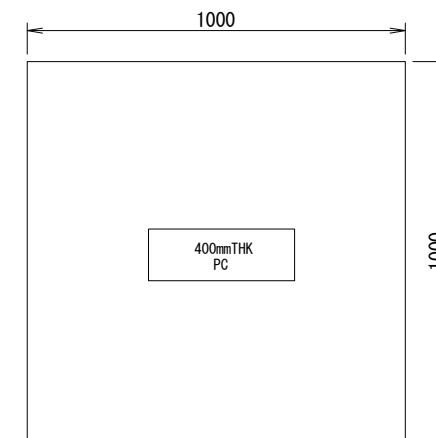
TYPICAL LOCATION
(1:100)



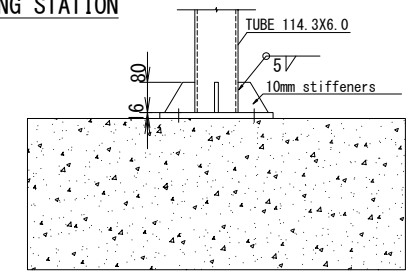
CROSS SECTION
(1:100)



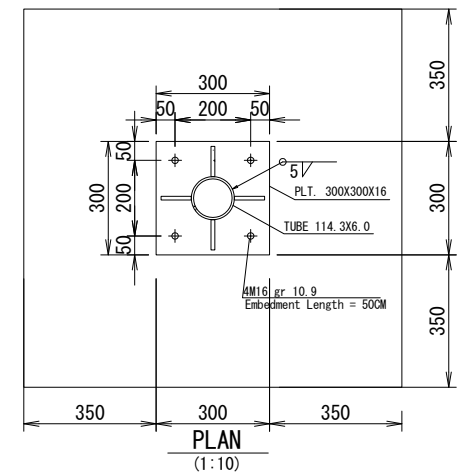
ELEVATION OF GAUGING STATION
(1:20)



PLAIN CONCRETE DIMENSIONS
(1:10)



ELEVATION
(1:10)



PLAN
(1:10)

- NOTE :
- Fence must be set around the gauging station
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily
 - Outdoor wiring of cable must use the pipe or the cable trough
 - Indoor wiring of cable must use the cable duct or pipe
 - JUNCTION BOX must be set up when there is bending of the cable three times
 - Pipe must be the stainless steel or the galvanizing steel
 - The total amount of the sectional area of the cable must be adjusted to 30[%] or less of the sectional area in pipe, duct and trough
 - Pipe must be clasped by holdfast. And, holdfast should be clamped with the anchor bolt.
 - Clamping pipe by the holdfast from JUNCTION BOX within 500[mm]
 - The holdfast is clasped by intervals within 1500[mm]
 - Length of cable must be less than 100[m]
 - Copper plate for the grounding should be installed near the station, and laid on underground 700 mm or more
 - Resistance of copper plate should be less than 100 [ohm]
 - Solar panel should be set up in the direction where the cell side is facing to the sun
 - Irradiating sunlight onto cell side of solar panels should not be obstructed
 - The inclination angle of solar panel must be adjusted after installed
 - Equipments must protect from the induced lightning

LIST OF EQUIPMENT

No	ITEM	REMARK
1	ENCLOSURE	
2	SOLAR PANEL	
3	GROUNDING ROD	
4	WATER LEVEL SENSOR	

LEGEND :

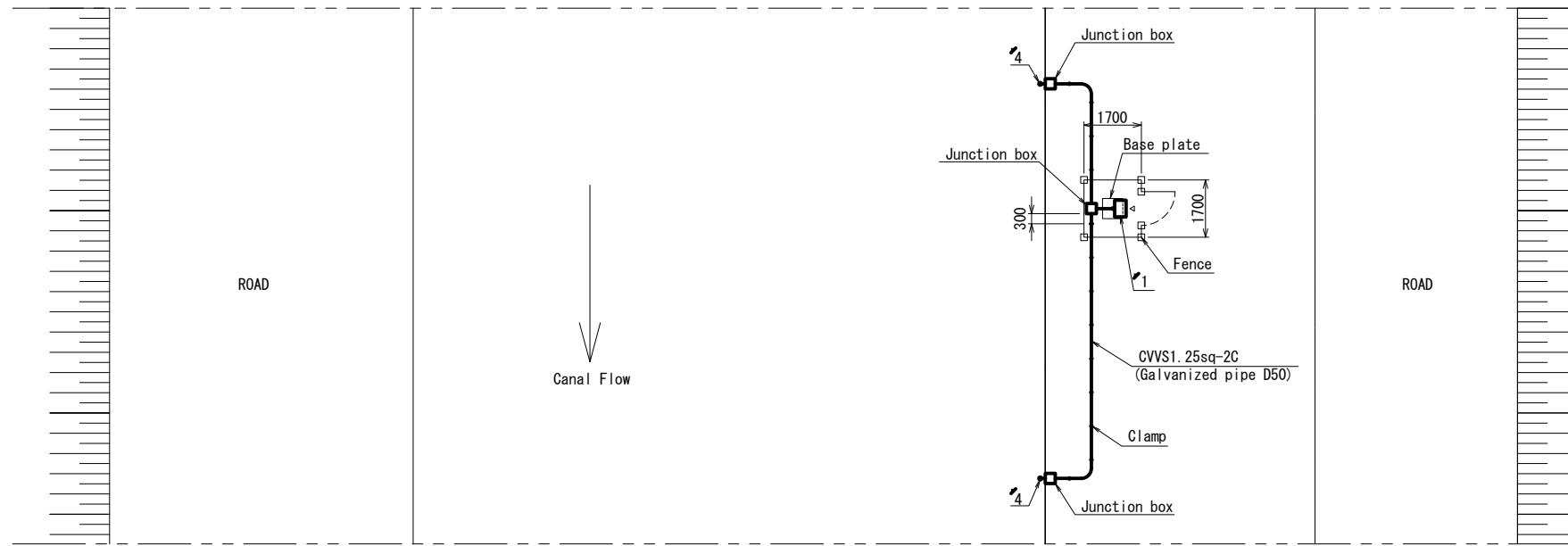
- NEW CABLE
- NEW EQUIPMENT

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Reservoir and Grand Barrages Sector

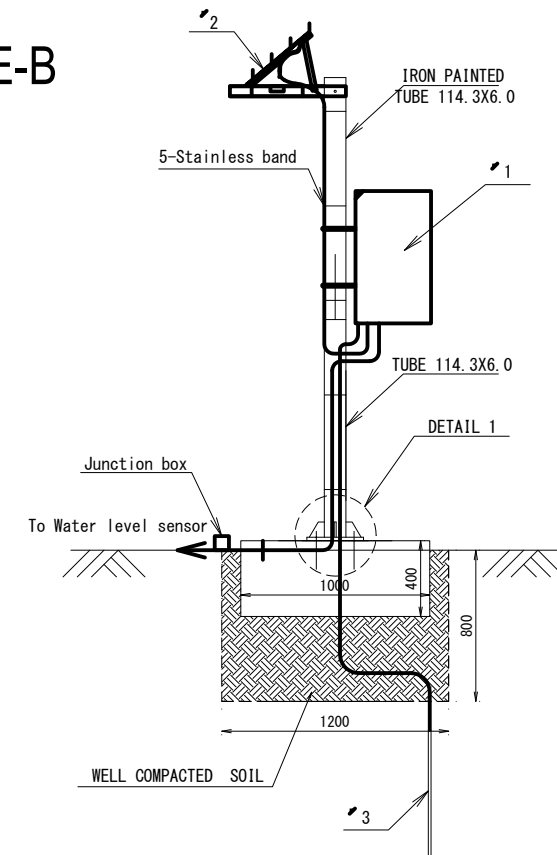
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

TYPICAL FACILITY LAYOUT PLAN FOR GAUGING STATION TYPE-A	DRW. NO. WM-3
SANYU CONSULTANTS INC.	
PREPARED BY :	CHECKED BY :
APPROVED BY :	
DATE :	DATE :

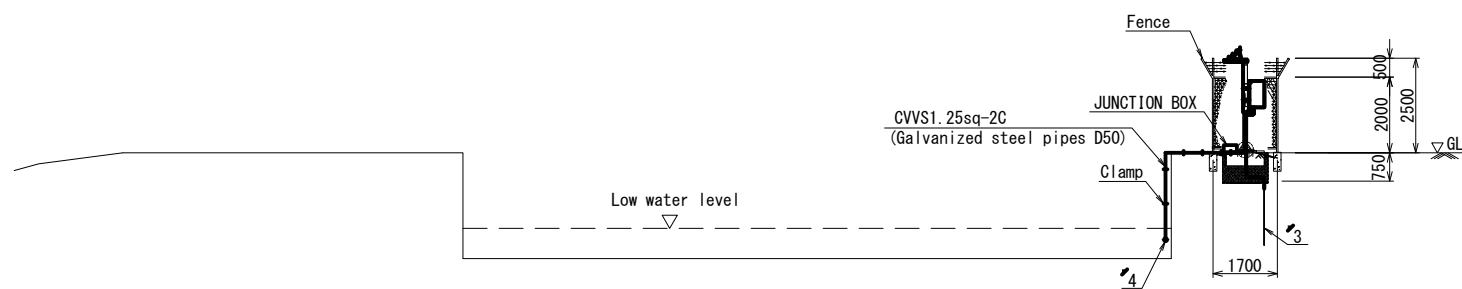
TYPICAL FACILITY LAYOUT PLAN FOR GAUGING STATION TYPE-B



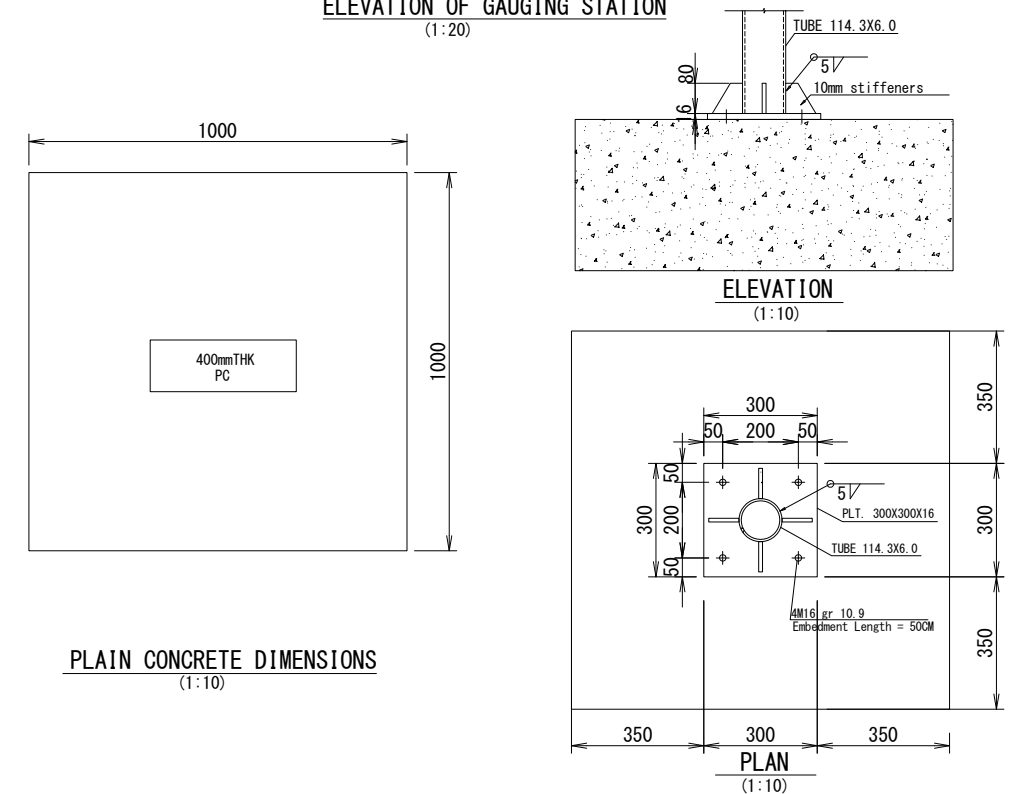
TYPICAL LOCATION
(1:100)



ELEVATION OF GAUGING STATION
(1:20)



CROSS SECTION
(1:100)



PLAIN CONCRETE DIMENSIONS
(1:10)

- NOTE :**
- a) Fence must be set around the gauging station
 - b) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself
 - c) Especially, the measurement device installed on the outside must set up where it is not stolen easily
 - d) Outdoor wiring of cable must use the pipe or the cable trough
 - e) Indoor wiring of cable must use the cable duct or pipe
 - f) JUNCTION BOX must be set up when there is bending of the cable three times
 - g) Pipe must be the stainless steel or the galvanizing steel
 - h) The total amount of the sectional area of the cable must be adjusted to 30[%] or less of the sectional area in pipe, duct and trough
 - i) Pipe must be clasped by holdfast. And, holdfast should be clamped with the anchor bolt.
 - j) Clamping pipe by the holdfast from JUNCTION BOX within 500[mm]
 - k) The holdfast is clasped by intervals within 1500[mm]
 - l) Length of cable must be less than 100[m]
 - m) Copper plate for the grounding should be installed near the station, and laid on underground 700 mm or more
 - n) Resistance of copper plate should be less than 100 [ohm]
 - o) Solar panel should be set up in the direction where the cell side is facing to the sun
 - p) Irradiating sunlight onto cell side of solar panels should not be obstructed
 - q) The inclination angle of solar panel must be adjusted after installed
 - r) Equipments must protect from the induced lightning

LIST OF EQUIPMENT

No	ITEM	REMARK
1	ENCLOSURE	
2	SOLAR PANEL	
3	GROUNDING ROD	
4	WATER LEVEL SENSOR	

- LEGEND :**
- NEW CABLE
 - ▭ NEW EQUIPMENT

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

TYPICAL FACILITY LAYOUT PLAN FOR
GAUGING STATION TYPE-B

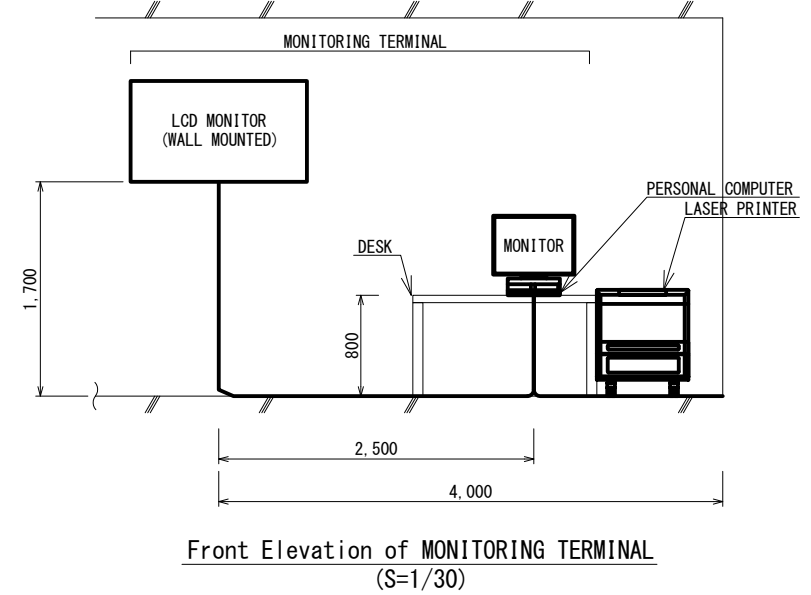
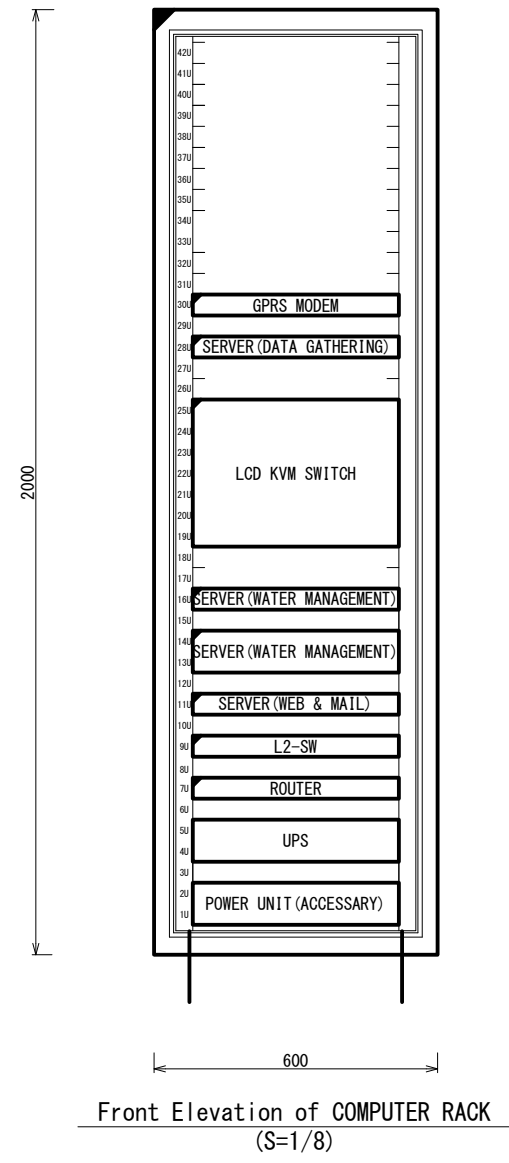
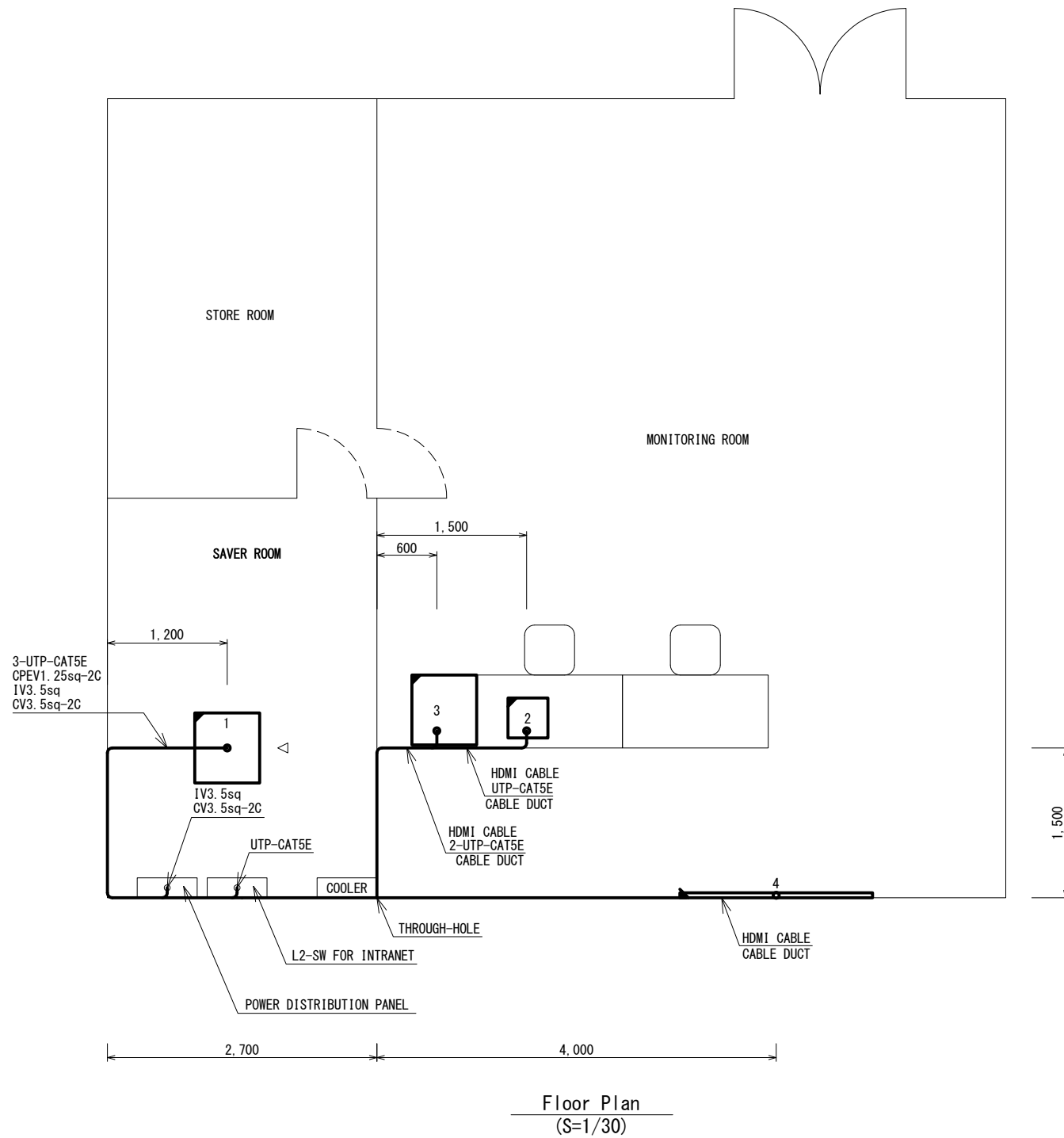
SANYU CONSULTANTS INC.

PREPARED BY: _____ CHECKED BY: _____ APPROVED BY: _____

DATE: _____ DATE: _____ DATE: _____

DRW. NO.
WM-4

FLOOR PLAN FOR MONITORING AND OPERATING ROOM



LIST OF EQUIPMENT

No.	NAME OF EQUIPMENT	REMARKS
1	COMPUTER RACK	
2	PERSONAL COMPUTER (MONITORING TERMINAL)	
3	LASER PRINTER	
4	LCD MONITOR (60 INCH)	WALL MOUNTED

LEGEND

: NEW EQUIPMENT : NEW CABLE
 : EXISTING EQUIPMENT

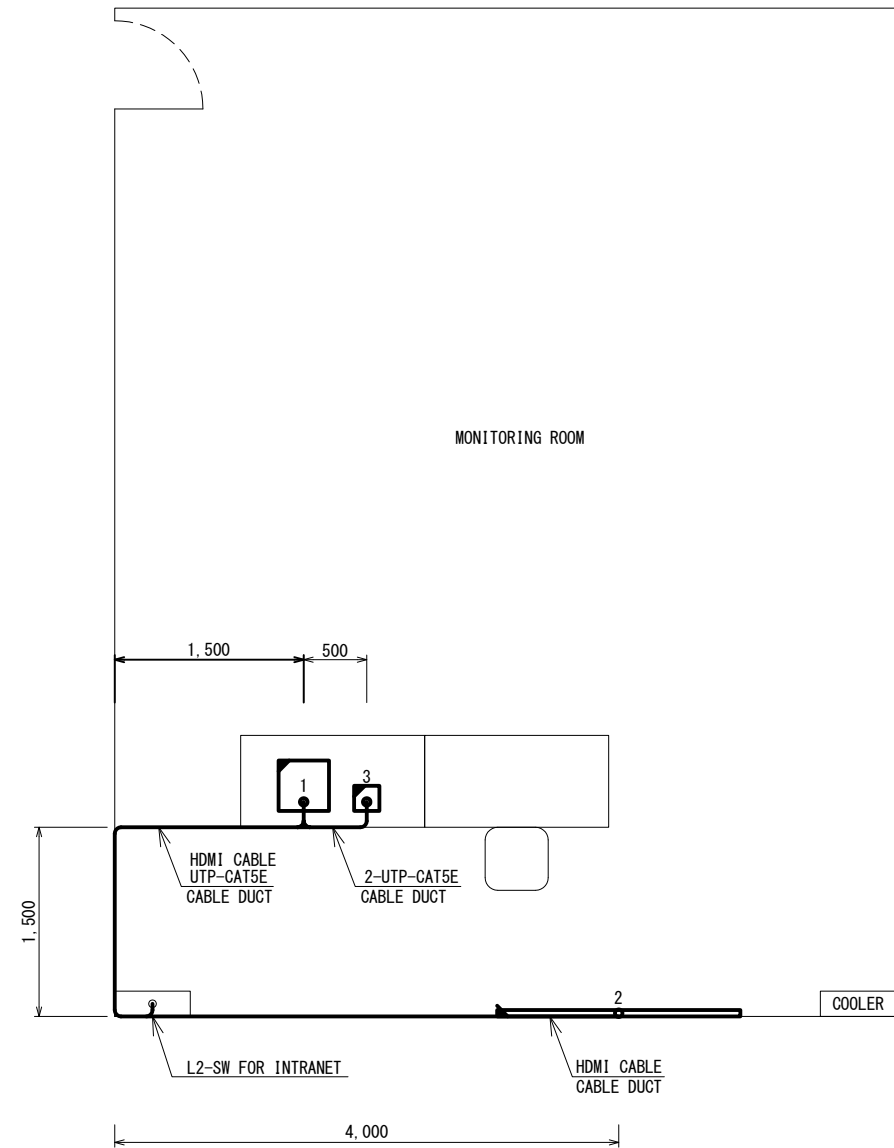
- NOTE :**
- Outdoor wiring of cable must use the pipe or the cable trough
 - Indoor wiring of cable must use the cable duct or pipe
 - JUNCTION BOX must be set up when there is bending of the cable three times
 - Pipe must be the stainless steel or the galvanizing steel
 - The total amount of the sectional area of the cable must be adjusted to 30[%] or less of the sectional area in pipe, duct and trough
 - Pipe must be clasped by holdfast. And, holdfast should be clamped with the anchor bolt.
 - Clamping pipe by the holdfast from JUNCTION BOX within 500[mm]
 - The holdfast is clasped by intervals within 1500[mm]
 - Length of Metallic LAN Cable Length must be less than 100[m]
 - Equipments must protect from the induced lightning
 - Put neither wiring cable for the signal nor the wiring cable for the electric power in the same pipe
 - The facility set up must adopt the requirement which means earthquake-proof, shockproof, water-proof and any proof the government required.
 - The facility must be painted from surroundings of the site in an unremarkable color.

Arab Republic of Egypt
Ministry of Water Resources and Irrigation
Reservoir and Grand Barrages Sector

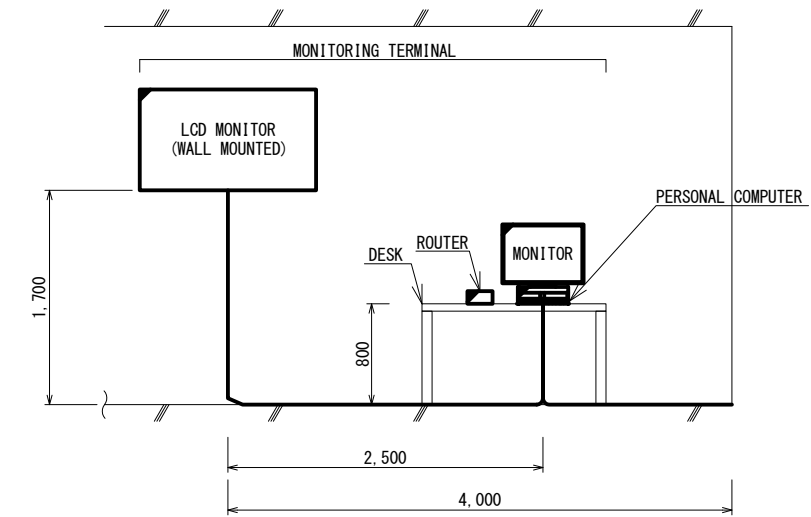
Detailed Design Study on the Project for
Construction of the New Dirout Group of Regulators

FLOOR PLAN FOR MONITORING AND OPERATING ROOM		DRW. NO. WM-5
SANYU CONSULTANTS INC.		
PREPARED BY :	CHECKED BY :	APPROVED BY :
DATE :	DATE :	DATE :

FLOOR PLAN FOR MONITORING ROOM IN MINIA



Floor Plan
(S=1/30)



Front Elevation of MONITORING TERMINAL
(S=1/30)

LIST OF EQUIPMENT

No.	NAME OF EQUIPMENT	REMARKS
1	MONITORING TERMINAL	
2	LCD MONITOR	
3	ROUTER	

LEGEND

: NEW EQUIPMENT — : NEW CABLE
 : EXISTING EQUIPMENT

NOTE :

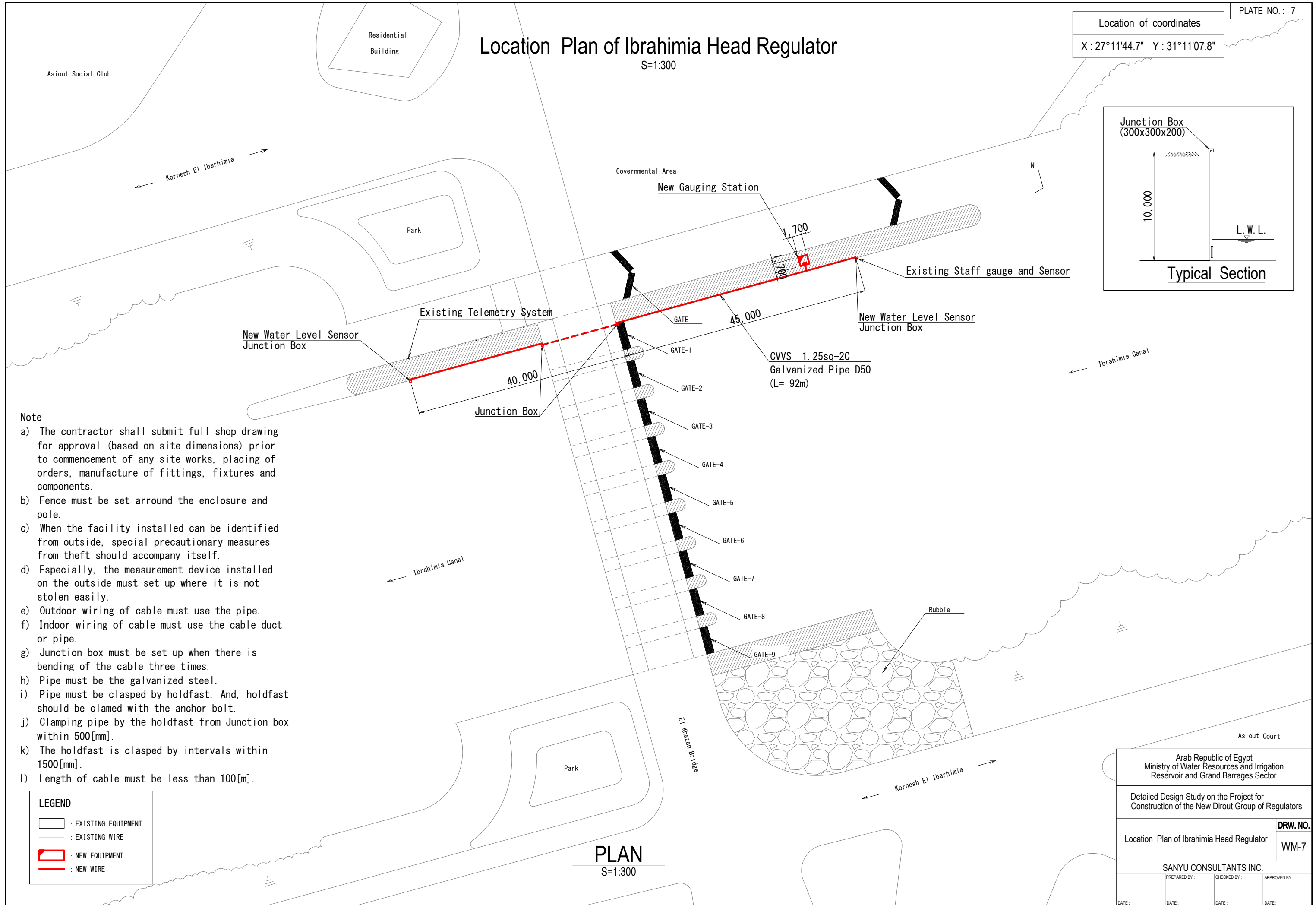
- a) Outdoor wiring of cable must use the pipe or the cable trough
- b) Indoor wiring of cable must use the cable duct or pipe
- c) JUNCTION BOX must be set up when there is bending of the cable three times
- d) Pipe must be the stainless steel or the galvanizing steel
- e) The total amount of the sectional area of the cable must be adjusted to 30[%] or less of the sectional area in pipe, duct and trough
- f) Pipe must be clasped by holdfast. And, holdfast should be clamped with the anchor bolt.
- g) Clamping pipe by the holdfast from JUNCTION BOX within 500[mm]
- h) The holdfast is clasped by intervals within 1500[mm]
- i) Length of Metallic LAN Cable Length must be less than 100[m]
- j) Equipments must protect from the induced lightning
- k) Put neither wiring cable for the signal nor the wiring cable for the electric power in the same pipe
- l) The facility set up must adopt the requirement which means earthquake-proof, shockproof, water-proof and any proof the government required.
- m) The facility must be painted from surroundings of the site in an unremarkable color.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
FLOOR PLAN FOR MONITORING ROOM IN MINIA			DRW. NO. WM-6
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	
DATE :	DATE :	DATE :	DATE :

Location Plan of Ibrahimia Head Regulator

S=1:300

Location of coordinates
X: 27°11'44.7" Y: 31°11'07.8"

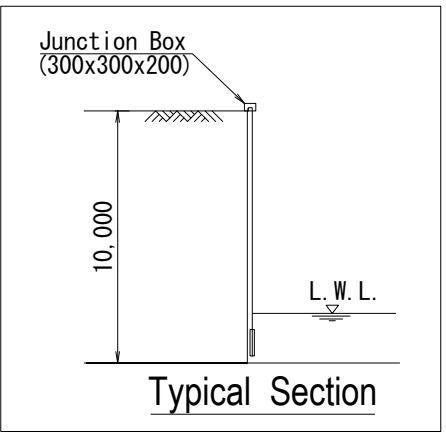


Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- e) Outdoor wiring of cable must use the pipe.
- f) Indoor wiring of cable must use the cable duct or pipe.
- g) Junction box must be set up when there is bending of the cable three times.
- h) Pipe must be the galvanized steel.
- i) Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
S=1:300

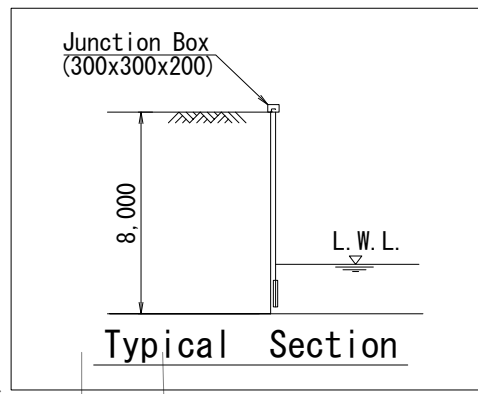
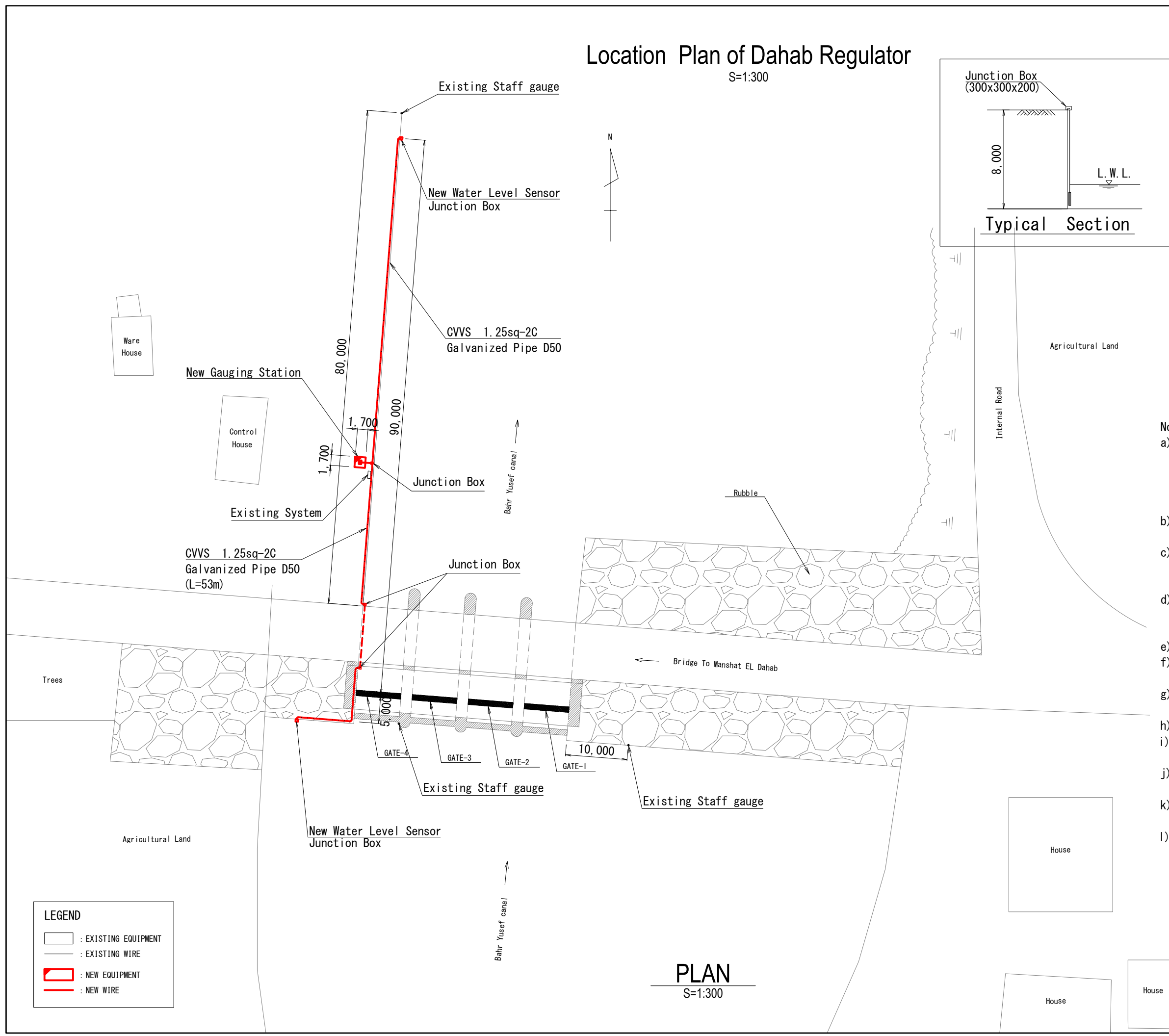


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Ibrahimia Head Regulator			DRW. NO. WM-7
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 27°59'45.5" Y : 30°41'25.84"

Location Plan of Dahab Regulator

S=1:300



Note

- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- Fence must be set around the enclosure and pole.
- When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- Outdoor wiring of cable must use the pipe.
- Indoor wiring of cable must use the cable duct or pipe.
- Junction box must be set up when there is bending of the cable three times.
- Pipe must be the galvanized steel.
- Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
- Clamping pipe by the holdfast from Junction box within 500[mm].
- The holdfast is clasped by intervals within 1500[mm].
- Length of cable must be less than 100[m].

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

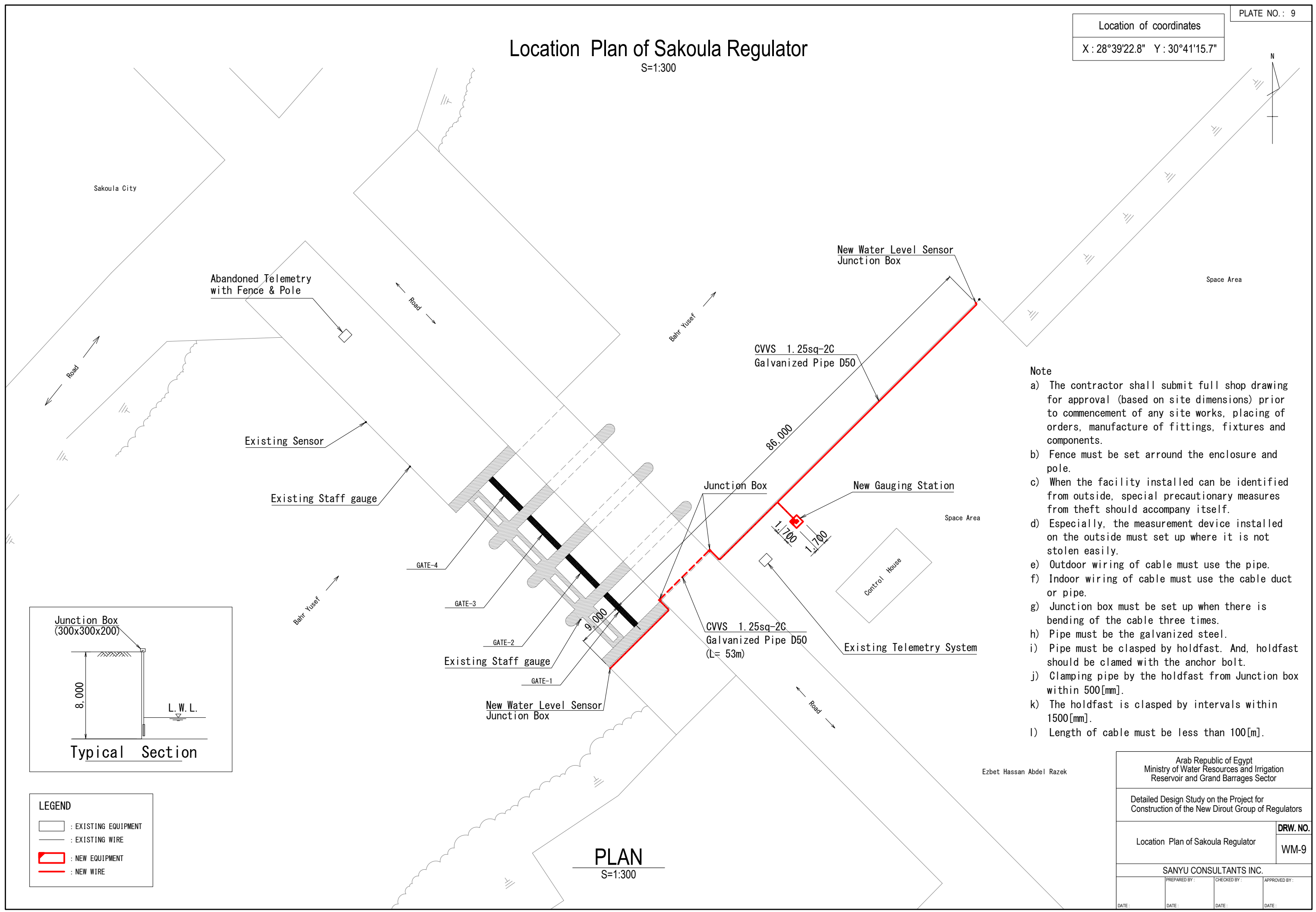
PLAN
 S=1:300

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Dahab Regulator			DRW. NO. WM-8
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

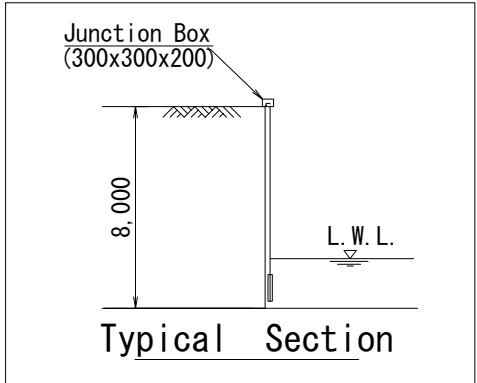
Location Plan of Sakoula Regulator

S=1:300

Location of coordinates
X : 28°39'22.8" Y : 30°41'15.7"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].



LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
S=1:300

Ezbet Hassan Abdel Razek

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Sakoula Regulator			DRW. NO. WM-9
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

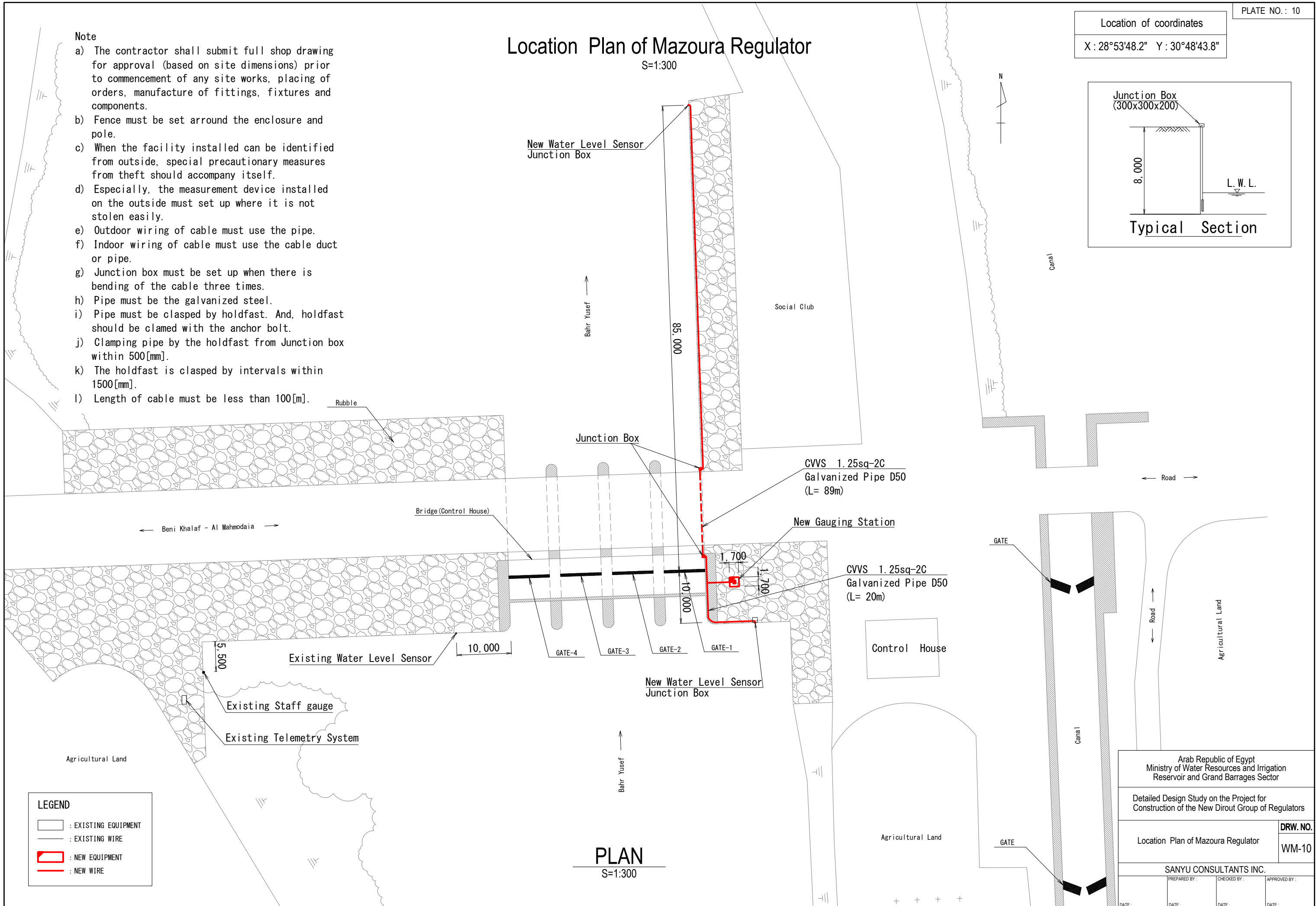
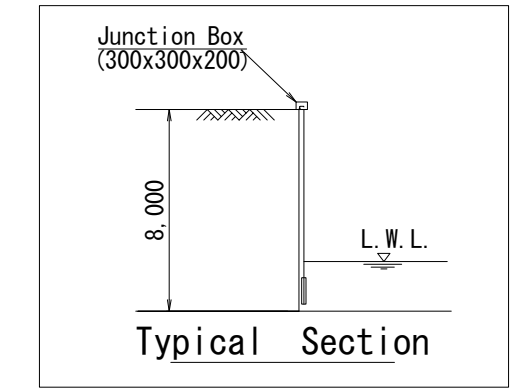
Location of coordinates
 X : 28°53'48.2" Y : 30°48'43.8"

Location Plan of Mazoura Regulator

S=1:300

Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- e) Outdoor wiring of cable must use the pipe.
- f) Indoor wiring of cable must use the cable duct or pipe.
- g) Junction box must be set up when there is bending of the cable three times.
- h) Pipe must be the galvanized steel.
- i) Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].



LEGEND

- : EXISTING EQUIPMENT
- : EXISTING WIRE
- : NEW EQUIPMENT
- : NEW WIRE

PLAN
 S=1:300

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Location Plan of Mazoura Regulator		DRW. NO. WM-10
SANYU CONSULTANTS INC.		
PREPARED BY :	CHECKED BY :	APPROVED BY :
DATE :	DATE :	DATE :

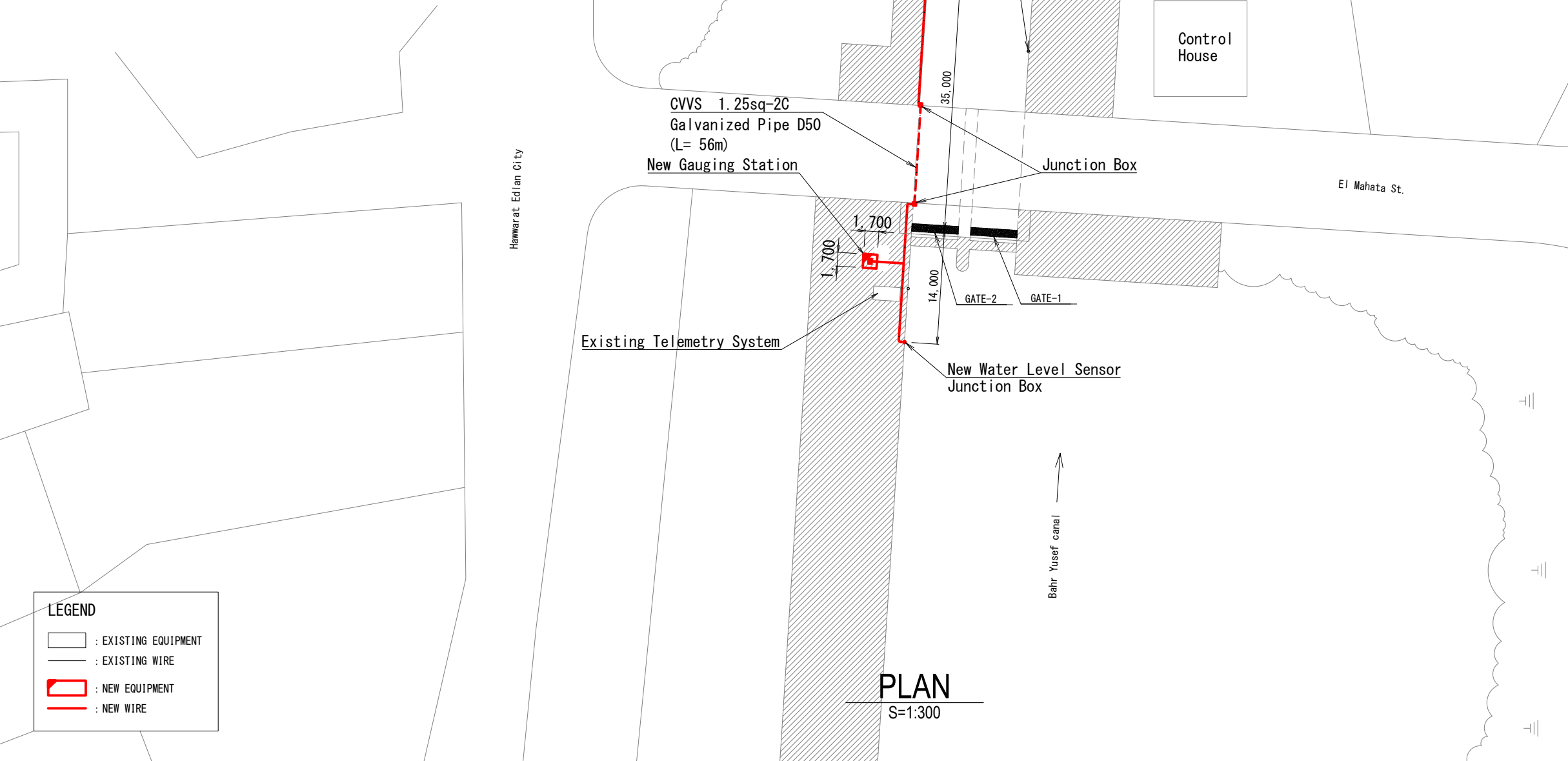
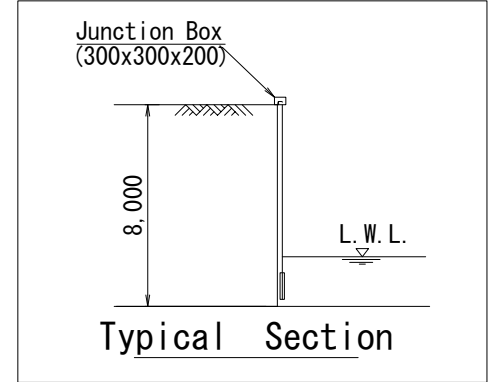
Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- e) Outdoor wiring of cable must use the pipe.
- f) Indoor wiring of cable must use the cable duct or pipe.
- g) Junction box must be set up when there is bending of the cable three times.
- h) Pipe must be the galvanized steel.
- i) Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

Location Plan of Lahoun Regulator

S=1:300

Location of coordinates
X : 29°12'22.0" Y : 30°58'15.7"



PLAN
S=1:300

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Lahoun Regulator			DRW. NO. WM-11
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

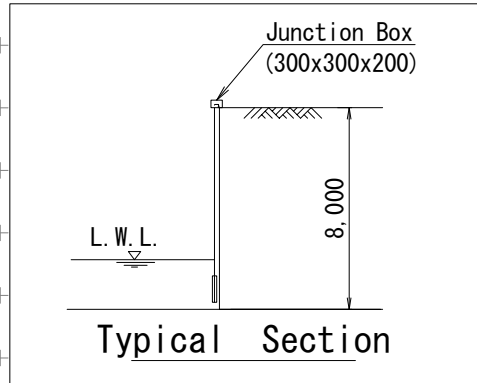
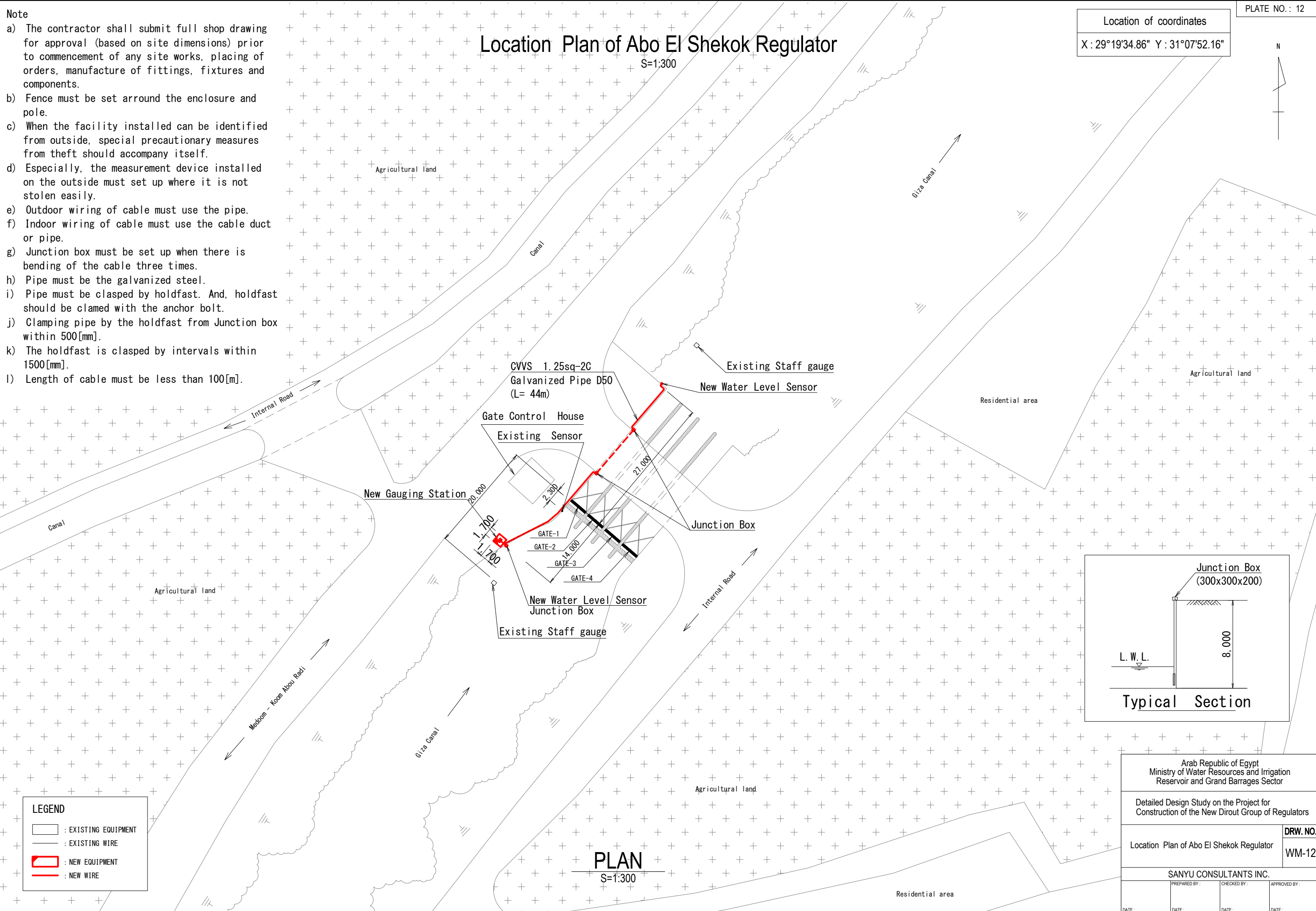
Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- e) Outdoor wiring of cable must use the pipe.
- f) Indoor wiring of cable must use the cable duct or pipe.
- g) Junction box must be set up when there is bending of the cable three times.
- h) Pipe must be the galvanized steel.
- i) Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

Location Plan of Abo El Shekok Regulator

S=1:300

Location of coordinates
X : 29°19'34.86" Y : 31°07'52.16"



LEGEND

- : EXISTING EQUIPMENT
- : EXISTING WIRE
- : NEW EQUIPMENT
- : NEW WIRE

PLAN
S=1:300

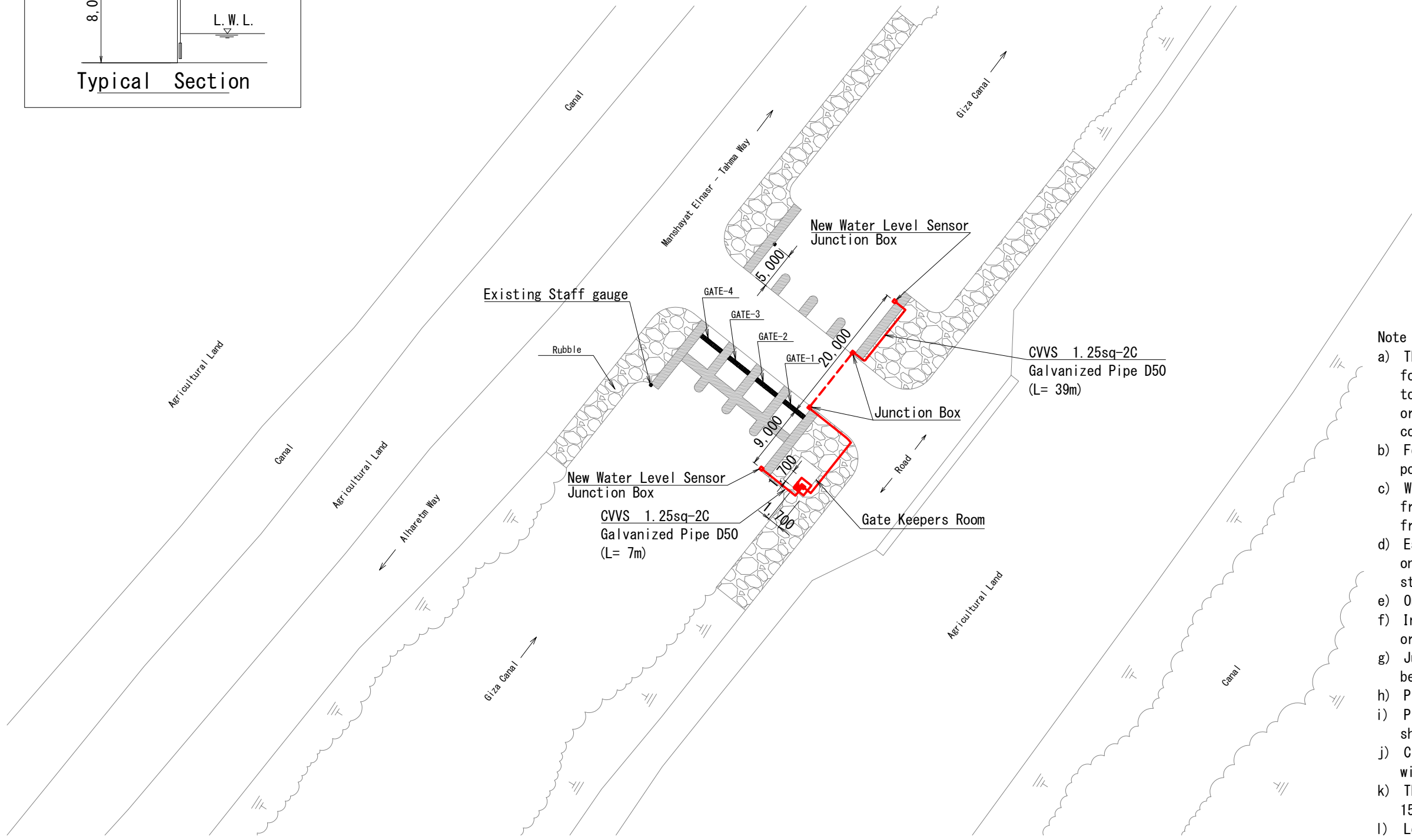
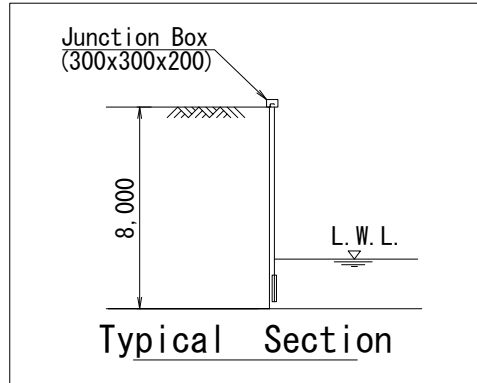
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Abo El Shekok Regulator			DRW. NO. WM-12
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 29°27'23.07" Y : 31°11'52.52"



Location Plan of Regulator km39

S=1:300



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clamped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clamped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

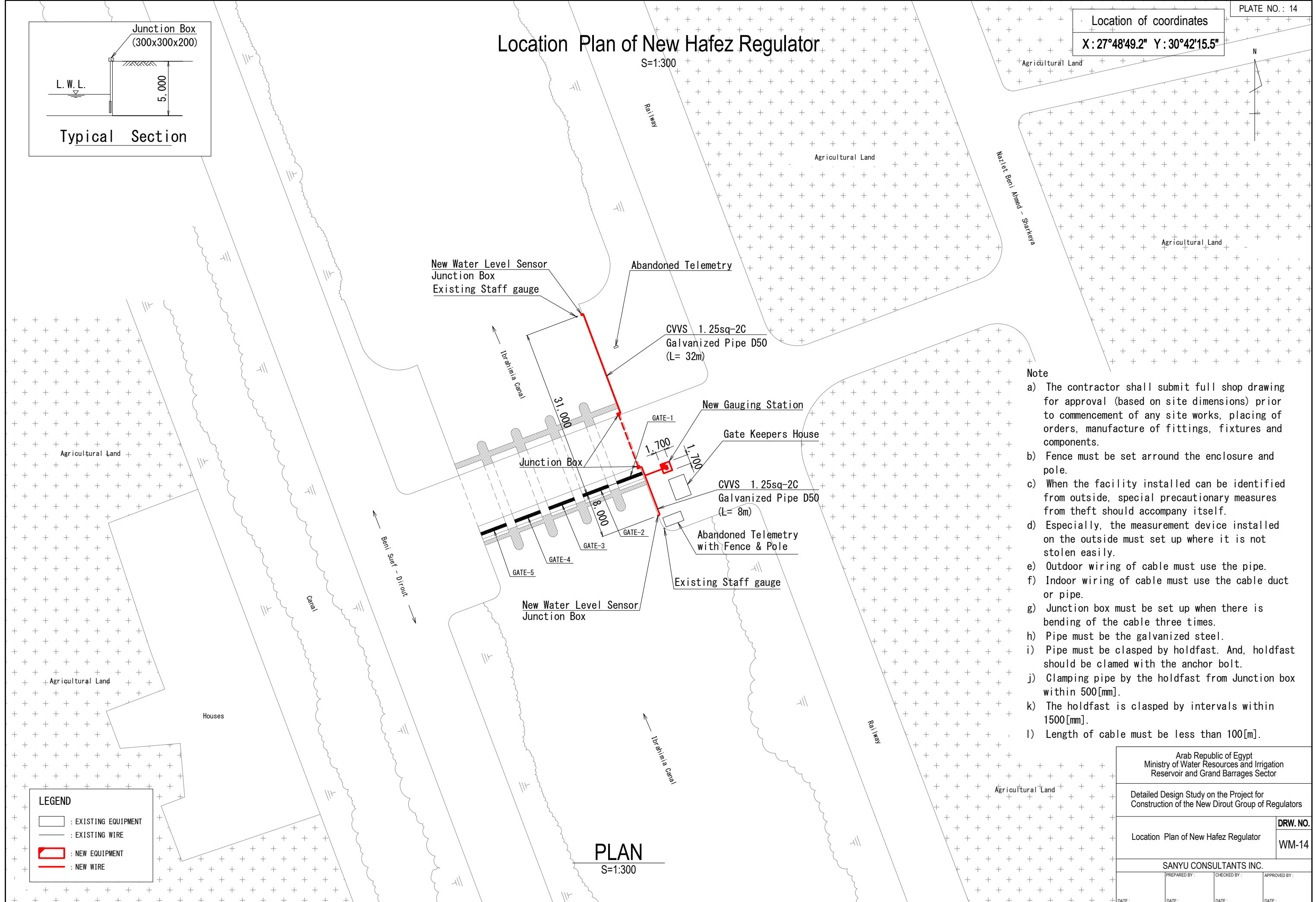
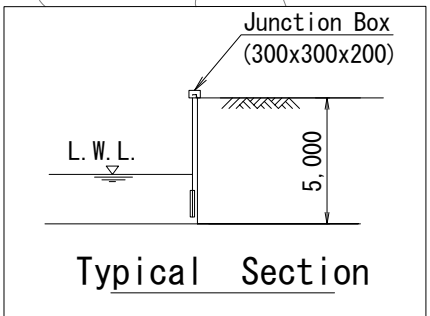
LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
 S=1:300

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Regulator km39			DRW. NO. WM-13
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of New Hafez Regulator

Location of coordinates
 X: 27°48'49.2" Y: 30°42'15.5"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

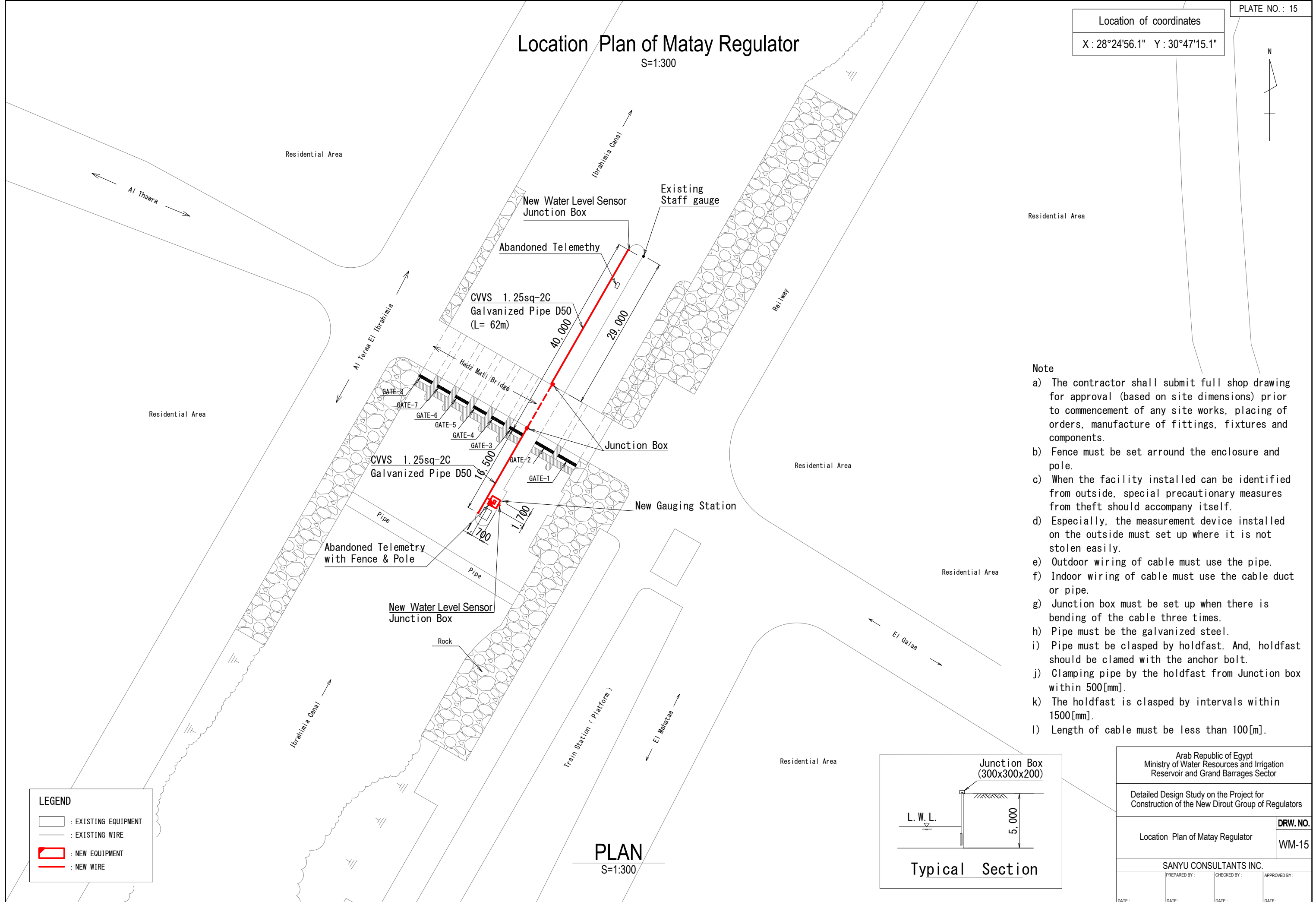
PLAN
 S=1:300

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of New Hafez Regulator			DRW. NO. WM-14
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of Matay Regulator

S=1:300

Location of coordinates
X: 28°24'56.1" Y: 30°47'15.1"

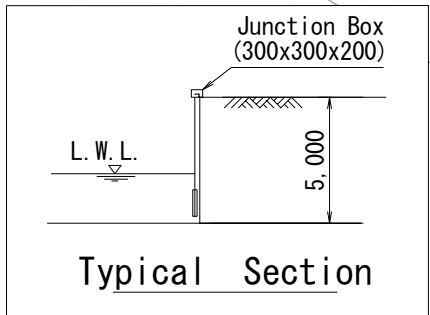


- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500 [mm].
 - The holdfast is clasped by intervals within 1500 [mm].
 - Length of cable must be less than 100 [m].

LEGEND

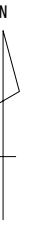
- : EXISTING EQUIPMENT
- : EXISTING WIRE
- : NEW EQUIPMENT
- : NEW WIRE

PLAN
S=1:300



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Matay Regulator			DRW. NO. WM-15
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 28°38'54.9" Y : 30°50'14.3"

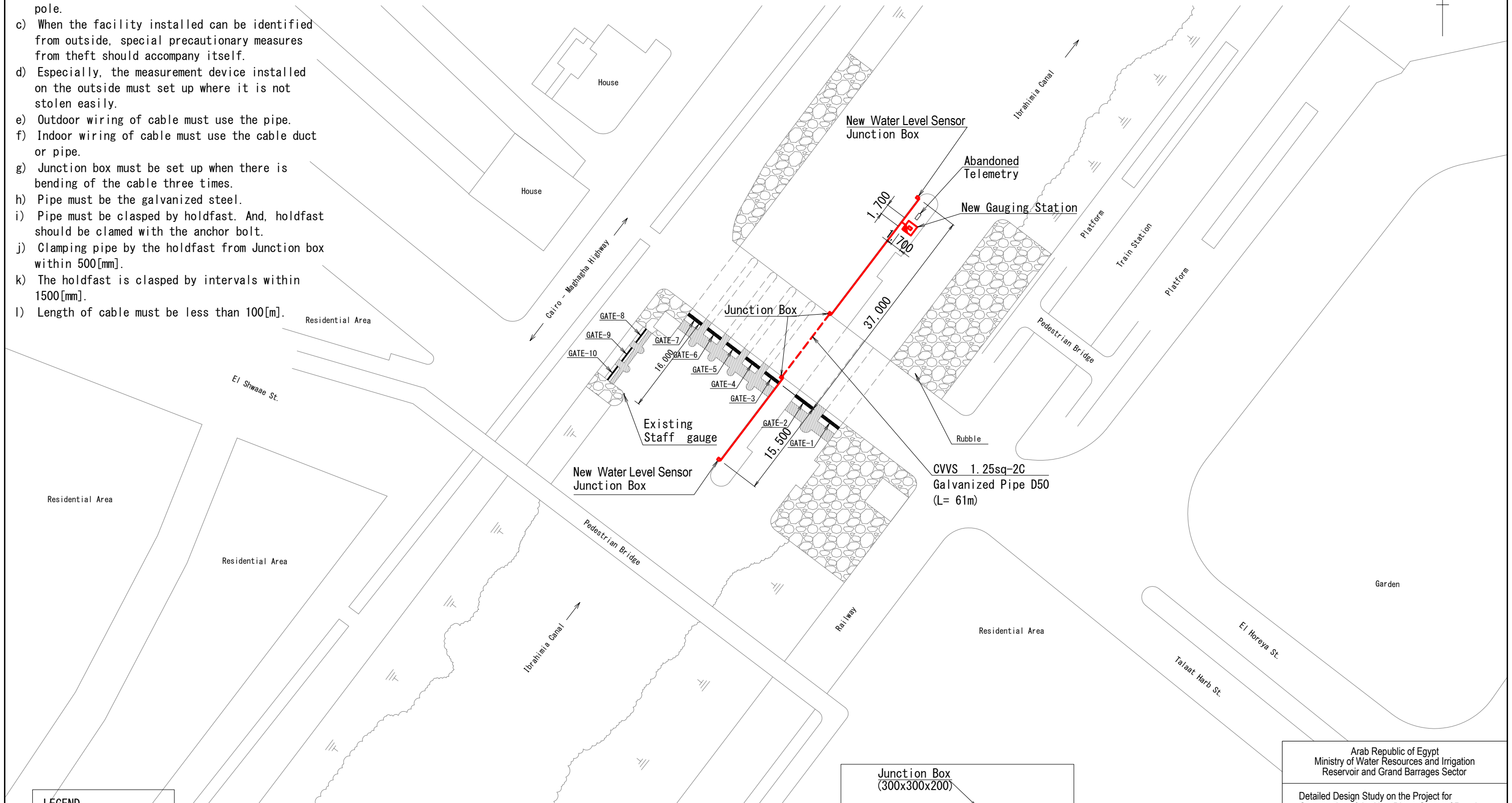


Location Plan of Maghagha Regulator

S=1:300

Note

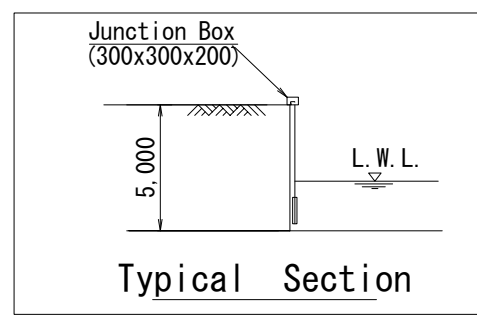
- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
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- e) Outdoor wiring of cable must use the pipe.
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- h) Pipe must be the galvanized steel.
- i) Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].



LEGEND

- : EXISTING EQUIPMENT
- : EXISTING WIRE
- : NEW EQUIPMENT
- : NEW WIRE

PLAN
S=1:300



Arab Republic of Egypt
 Ministry of Water Resources and Irrigation
 Reservoir and Grand Barrages Sector

Detailed Design Study on the Project for
 Construction of the New Dirout Group of Regulators

Location Plan of Maghagha Regulator

DRW. NO.
WM-16

SANYU CONSULTANTS INC.

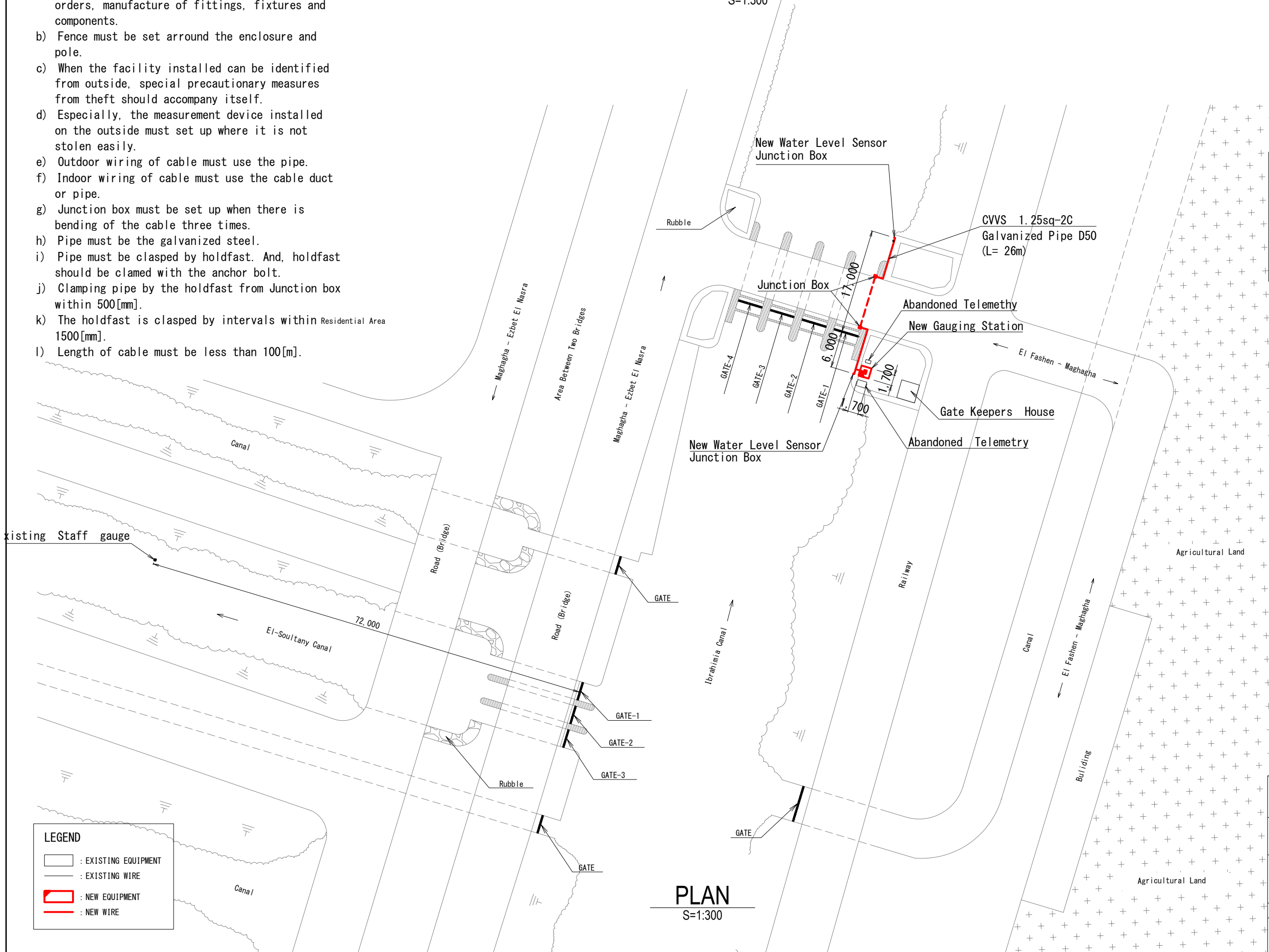
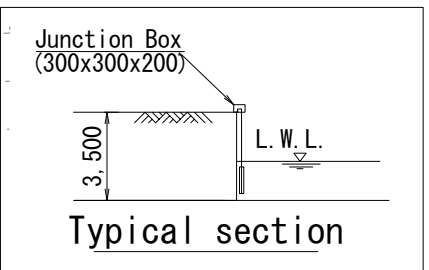
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 28°51'07.88" Y : 30°54'48.29"

Location Plan of Sharahna Regulator

S=1:300

- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within Residential Area 1500[mm].
 - Length of cable must be less than 100[m].



PLAN
 S=1:300

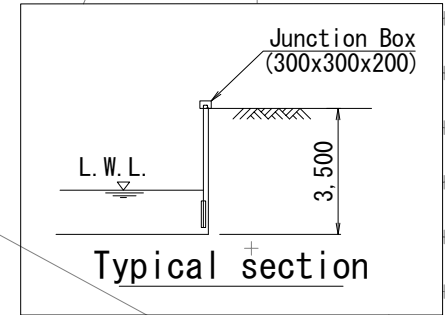
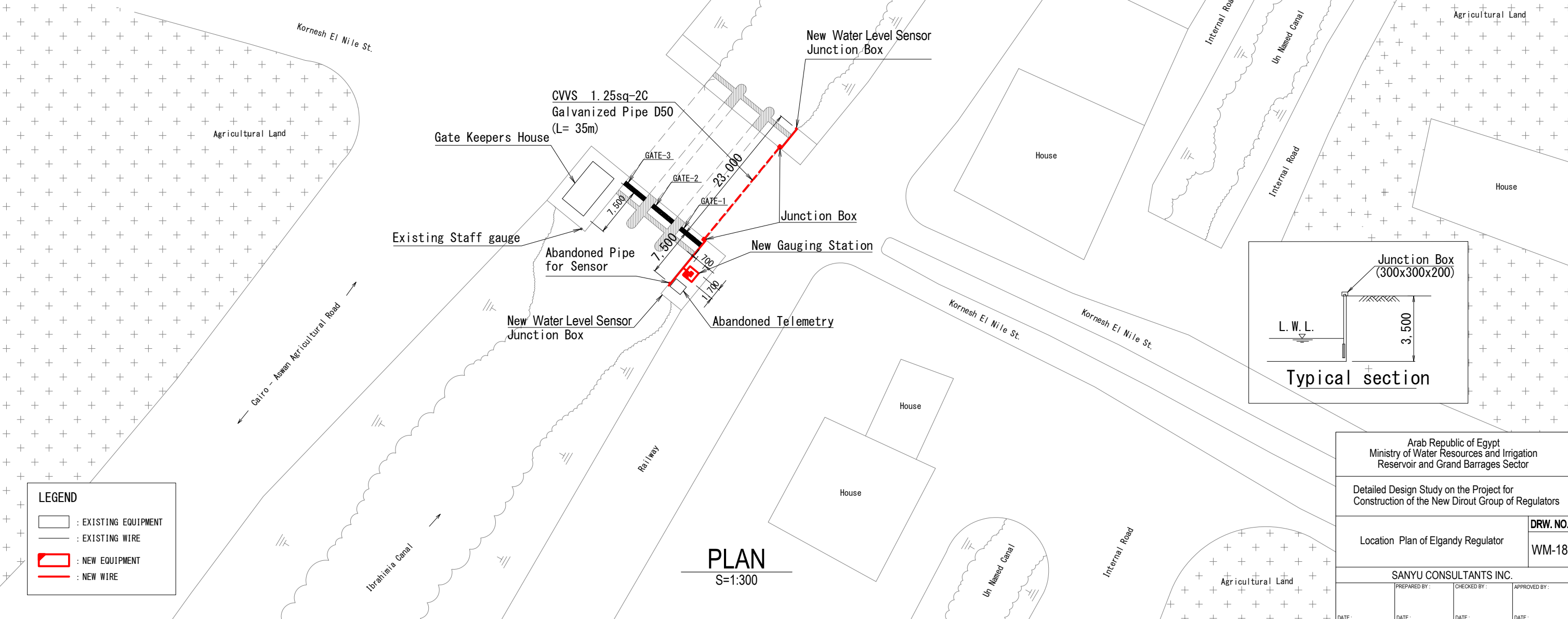
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Location Plan of Sharahna Regulator		DRW. NO. WM-17
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Location of coordinates
 X : 29°05'36.00" Y : 31°06'29.03"

Location Plan of Elgandy Regulator

S=1:300

- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
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 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].



LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
 S=1:300

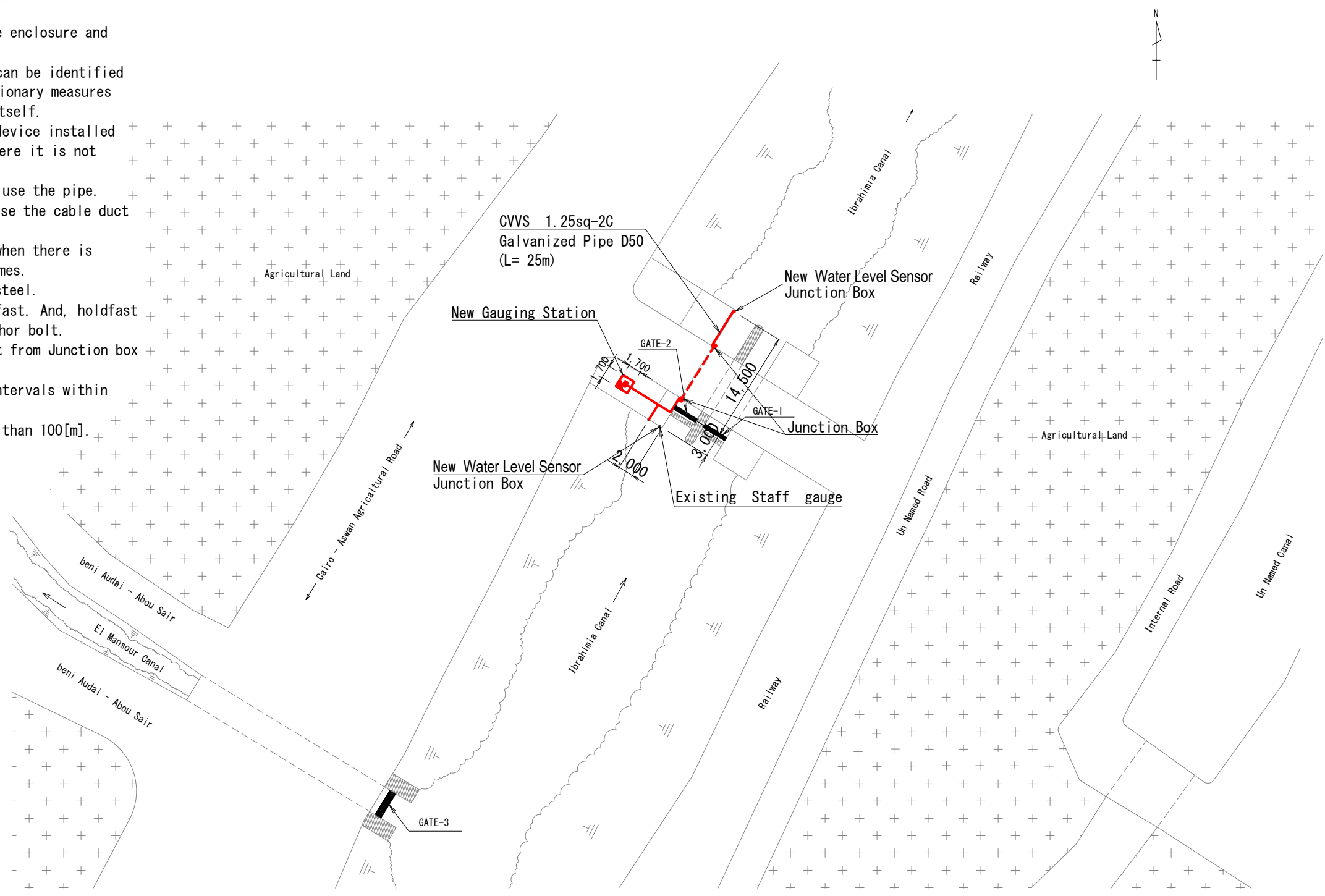
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Elgandy Regulator			DRW. NO. WM-18
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 29°11'25.2" Y : 31°09'49.9"

Location Plan of Ashmont Regulator

S=1:300

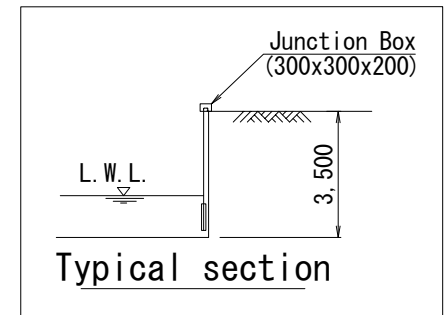
- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
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 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].



Note : Ashmont Regulator and El-Mansour Canal in the Same Layout

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
 S=1:300

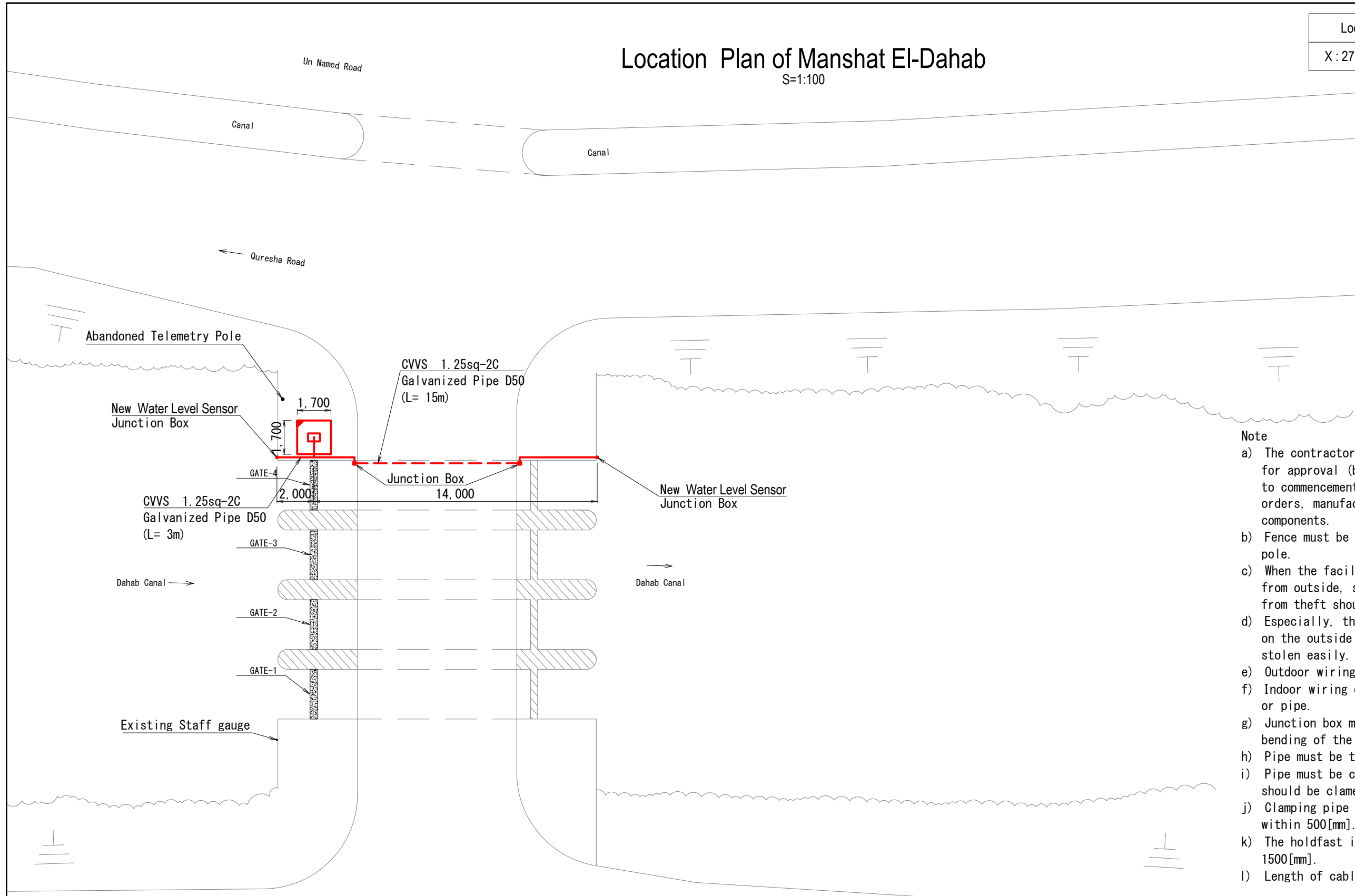


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Ashmont Regulator			DRW. NO. WM-19
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	
DATE :	DATE :	DATE :	DATE :

Location of coordinates
 X : 27°59'52" Y : 30°41'25"

Location Plan of Manshat El-Dahab

S=1:100



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
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 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

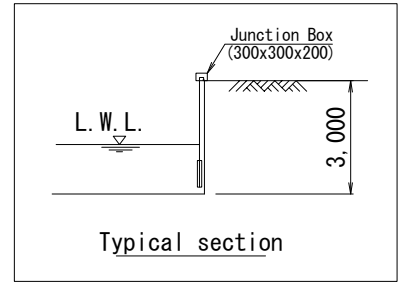
Tokh - Bani Ibrahim

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN

S=1:100

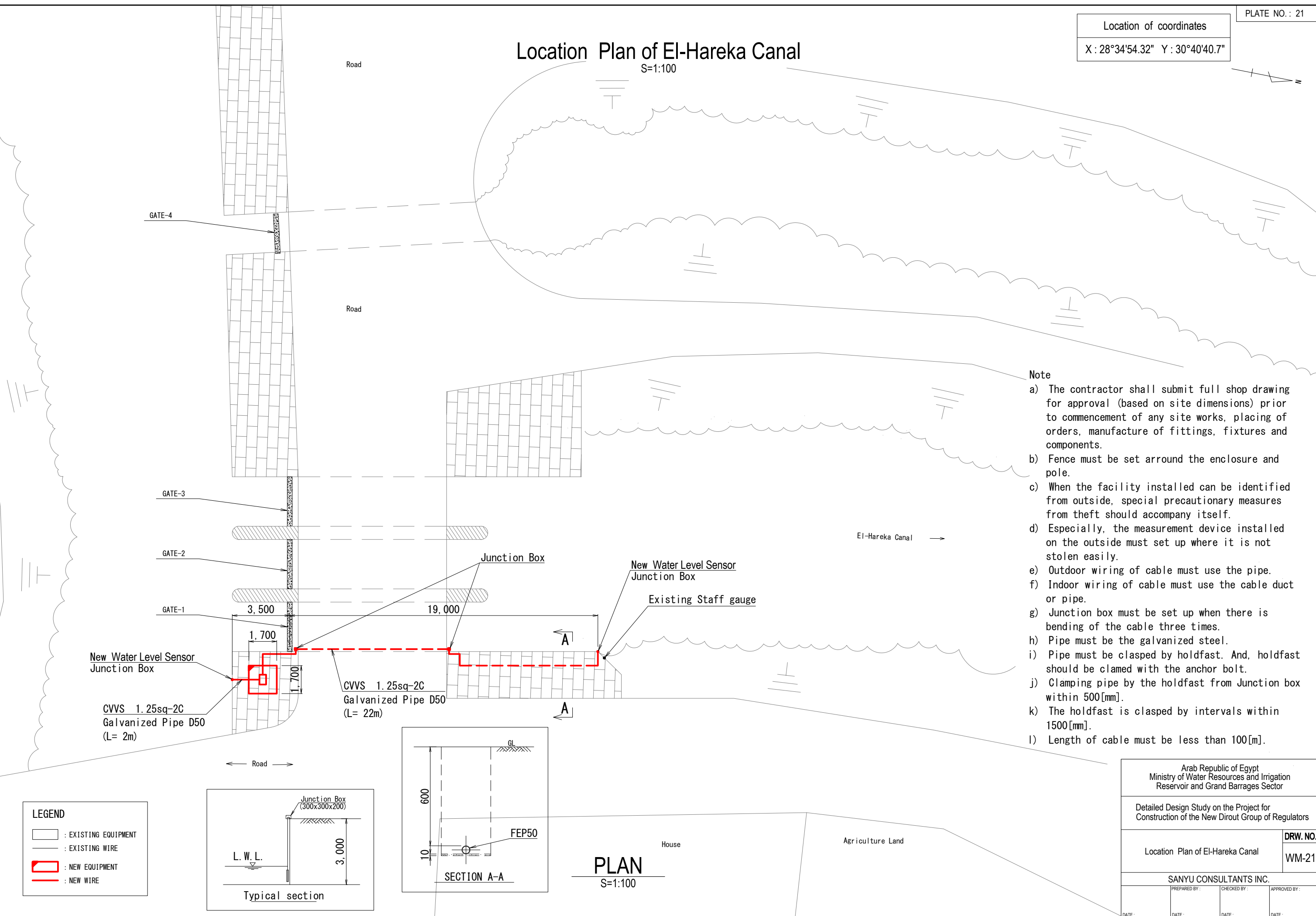


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Manshat El-Dahab			DRW. NO. WM-20
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 28°34'54.32" Y : 30°40'40.7"

Location Plan of El-Hareka Canal

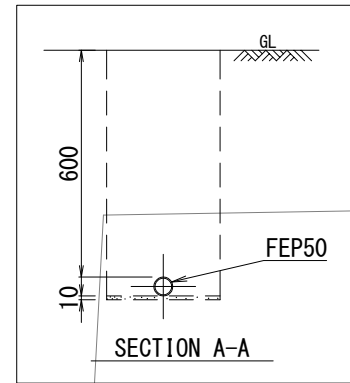
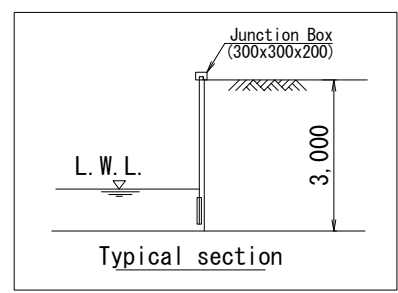
S=1:100



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
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 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



PLAN
S=1:100

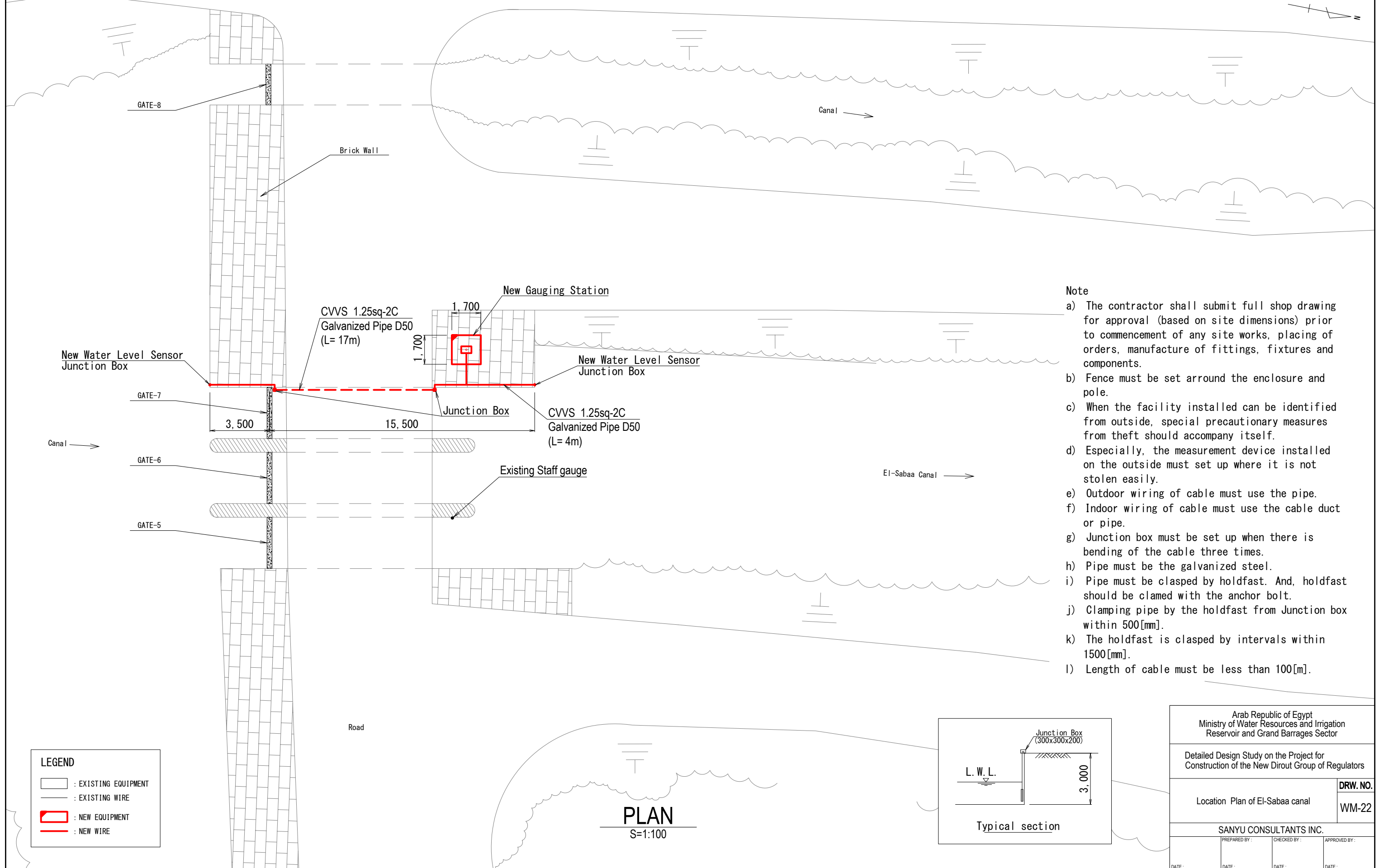
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of El-Hareka Canal			DRW. NO. WM-21
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 28°34'53.9" Y : 30°40'39.2"

Location Plan of El-Sabaa canal

S=1:100

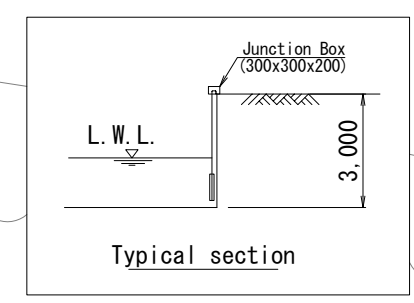
Space Area



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



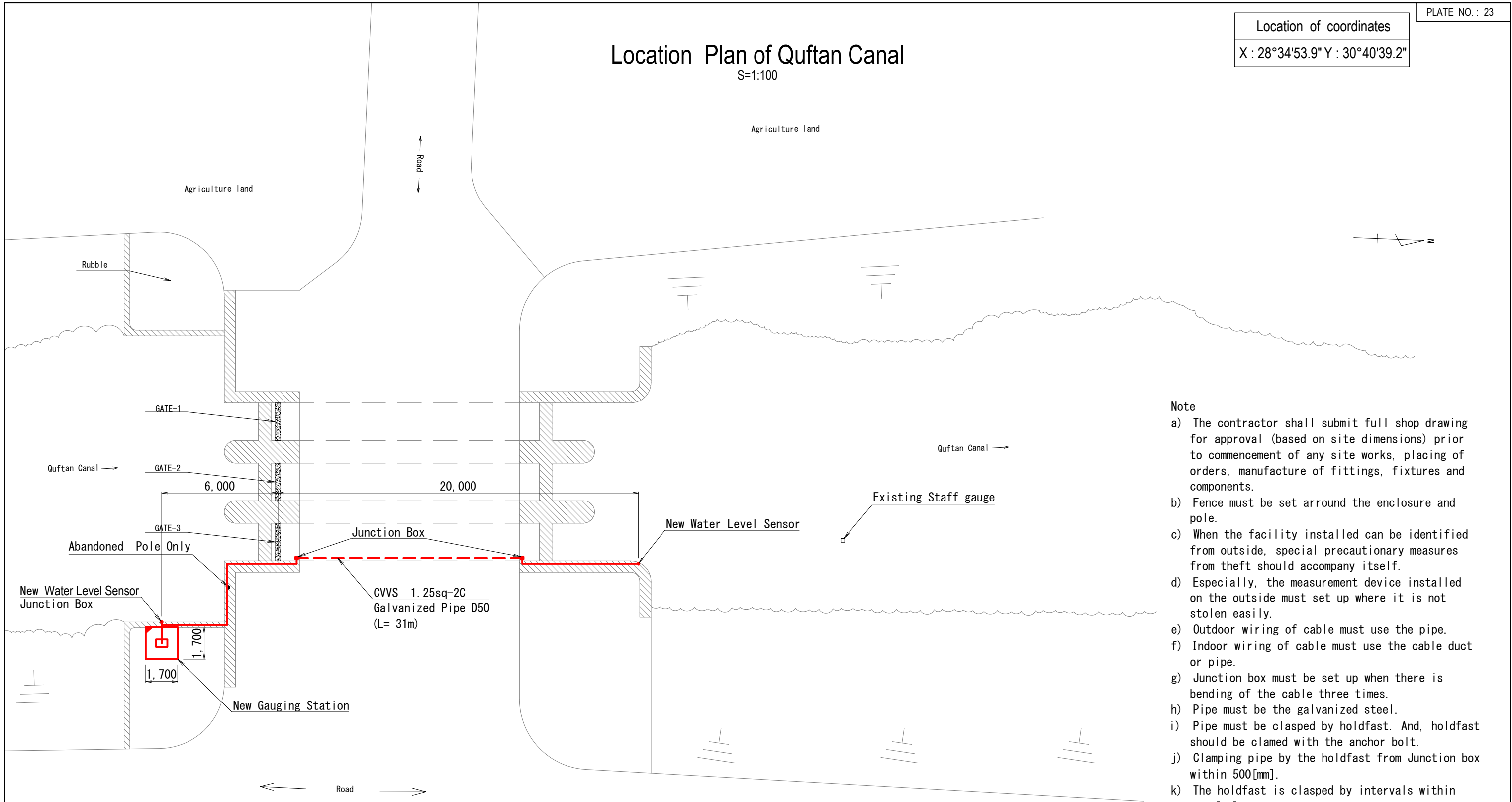
PLAN
S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of El-Sabaa canal			DRW. NO. WM-22
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 28°34'53.9" Y : 30°40'39.2"

Location Plan of Quftan Canal

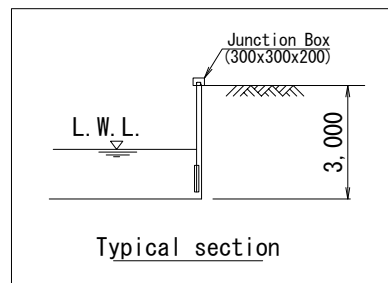
S=1:100



Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
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- f) Indoor wiring of cable must use the cable duct or pipe.
- g) Junction box must be set up when there is bending of the cable three times.
- h) Pipe must be the galvanized steel.
- i) Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

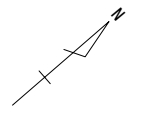


PLAN

S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Quftan Canal			DRW. NO. WM-23
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

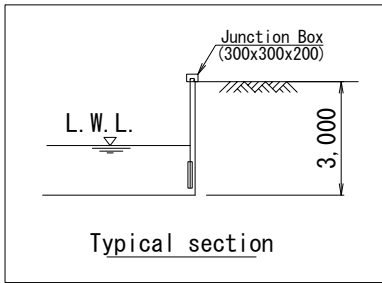
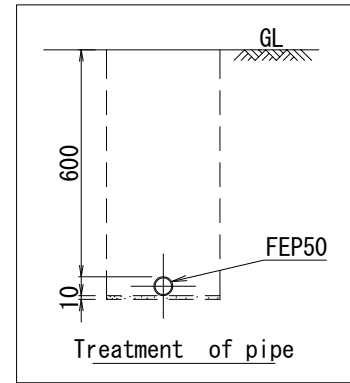
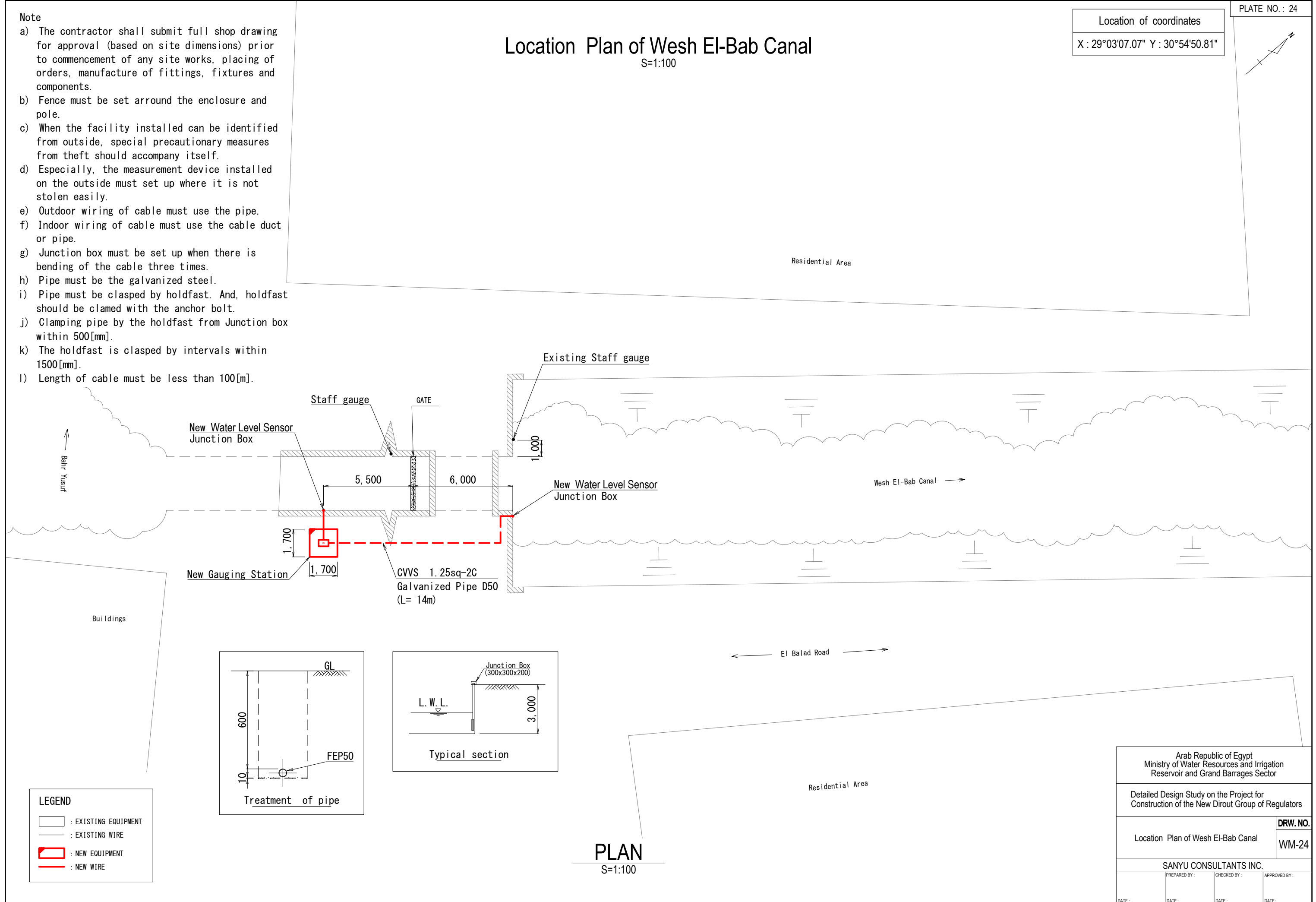
Location of coordinates
 X : 29°03'07.07" Y : 30°54'50.81"



Location Plan of Wesh El-Bab Canal

S=1:100

- Note**
- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - b) Fence must be set around the enclosure and pole.
 - c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - e) Outdoor wiring of cable must use the pipe.
 - f) Indoor wiring of cable must use the cable duct or pipe.
 - g) Junction box must be set up when there is bending of the cable three times.
 - h) Pipe must be the galvanized steel.
 - i) Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
 - j) Clamping pipe by the holdfast from Junction box within 500[mm].
 - k) The holdfast is clasped by intervals within 1500[mm].
 - l) Length of cable must be less than 100[m].



LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

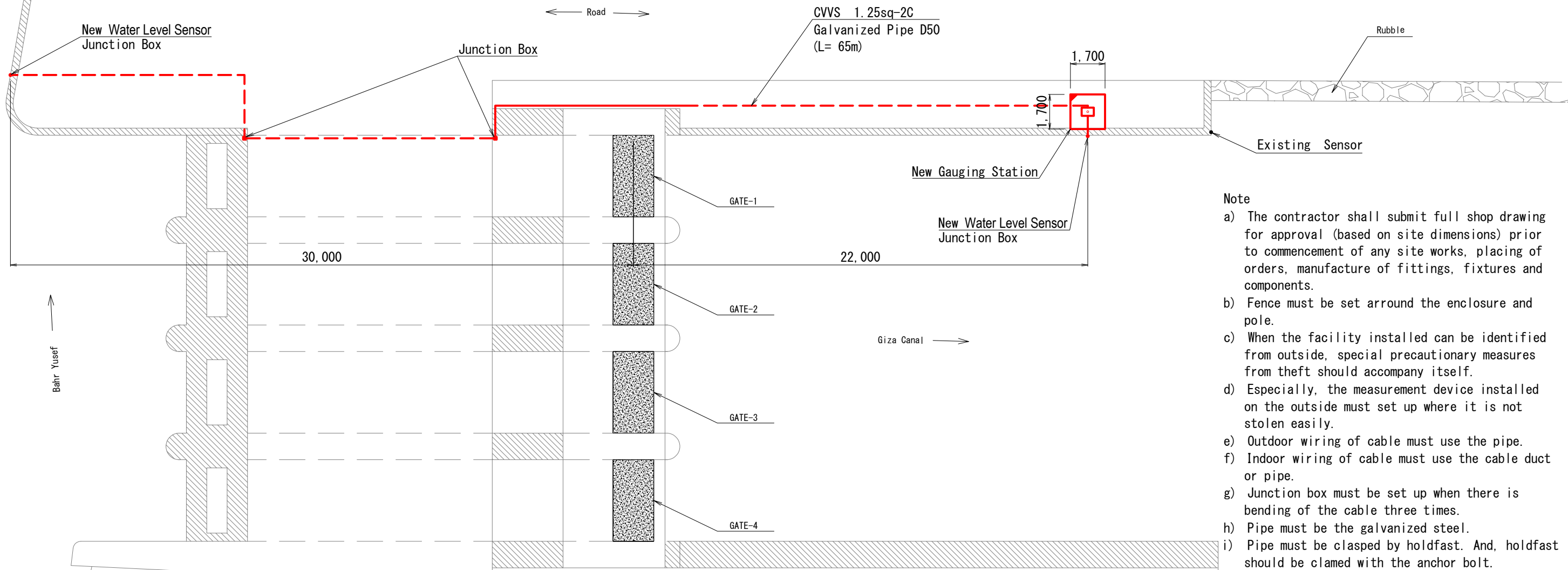
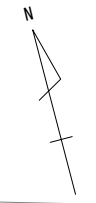
PLAN
S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Wesh El-Bab Canal			DRW. NO. WM-24
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	DATE:
DATE:	DATE:	DATE:	DATE:

Location Plan of El-Giza Canal Intake

S=1:100

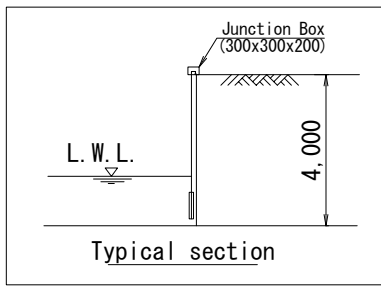
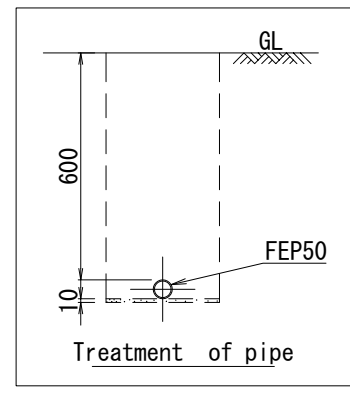
Location of coordinates
 X : 29°12'22" Y : 30°58'15.7"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



PLAN
S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of El-Giza Canal Intake			DRW. NO. WM-25
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of Hassan Wasef Weir

S=1:100

Location of coordinates
 X : 29°12'11.88" Y : 30°58'11.44"

- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
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 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

11,500

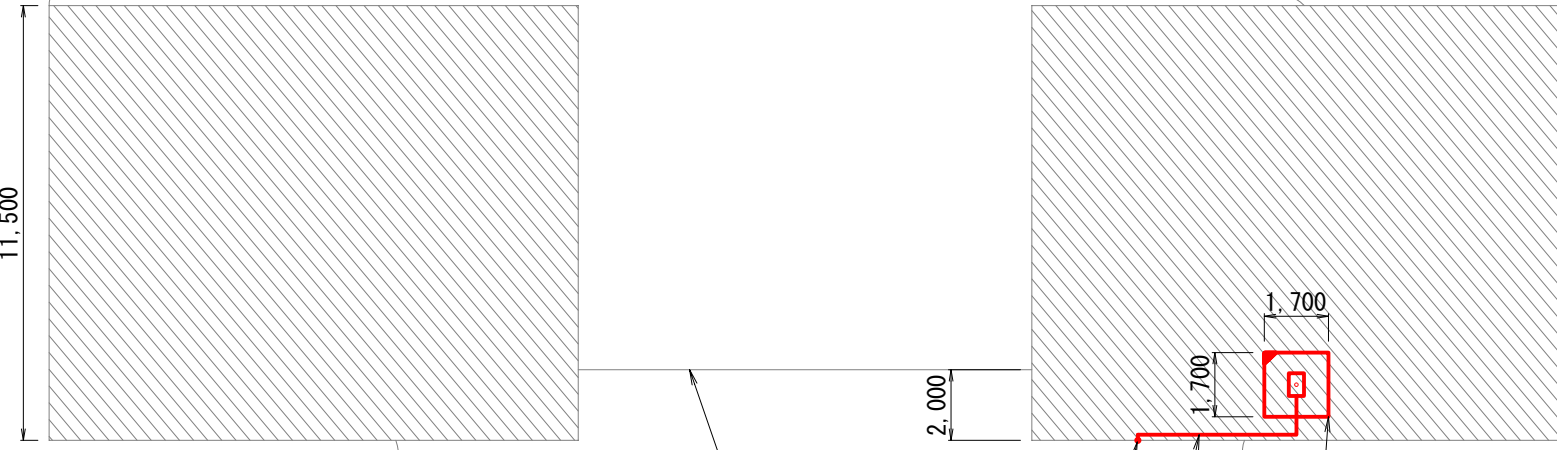
Road

Hassan Wasef Canal

Fayoum - Beni Suef Way

Agricultural Land

Residential Area



The Weir

New Water Level Sensor Junction Box

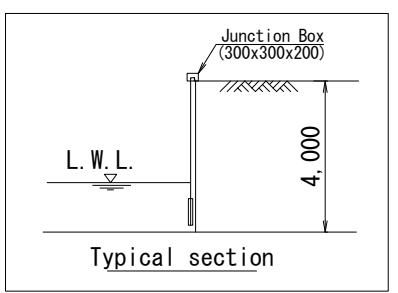
New Gauging Station

CVVS 1.25sq-2C
 Galvanized Pipe D50
 (L= 6m)

Hassan Wasef Canal

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



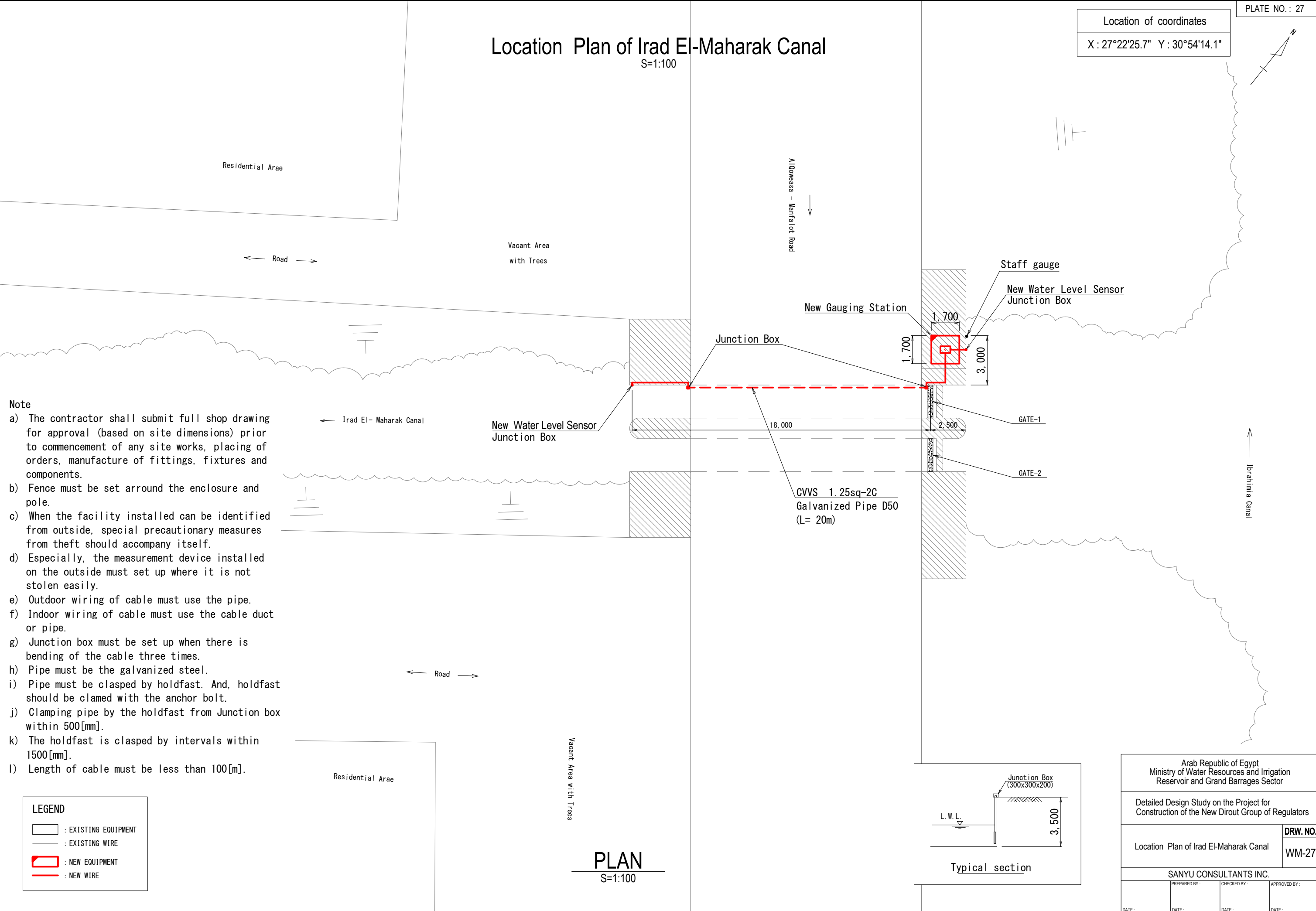
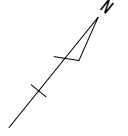
PLAN
 S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Hassan Wasef Weir			DRW. NO. WM-26
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of Irad El-Maharak Canal

S=1:100

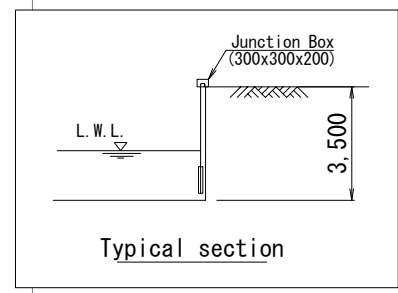
Location of coordinates
X : 27°22'25.7" Y : 30°54'14.1"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
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 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clasped with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
S=1:100

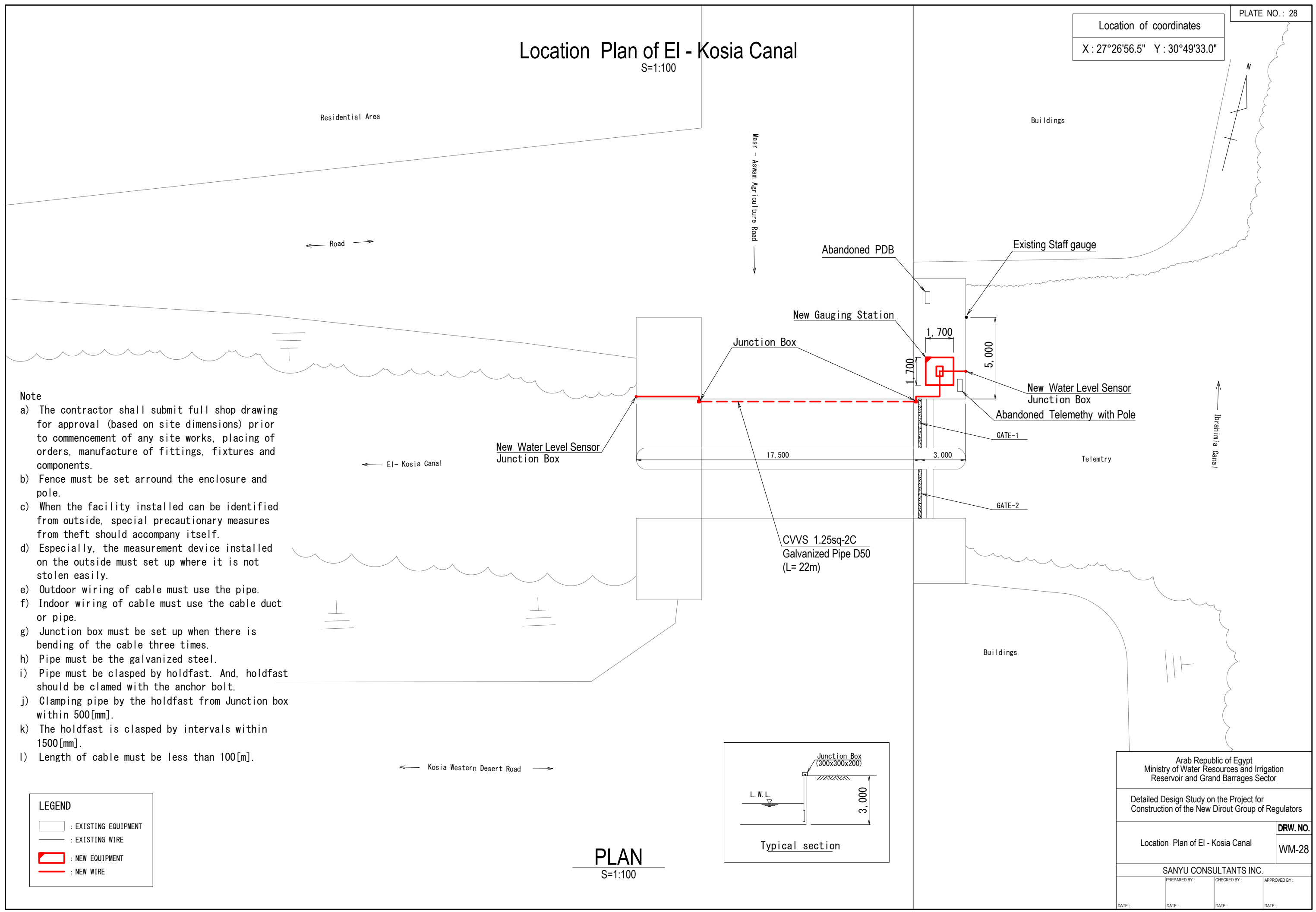


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Irad El-Maharak Canal			DRW. NO. WM-27
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of El - Kosia Canal

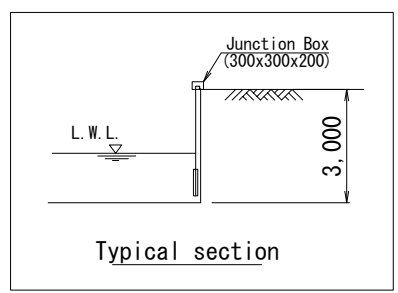
S=1:100

Location of coordinates
 X : 27°26'56.5" Y : 30°49'33.0"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
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 - Length of cable must be less than 100[m].

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



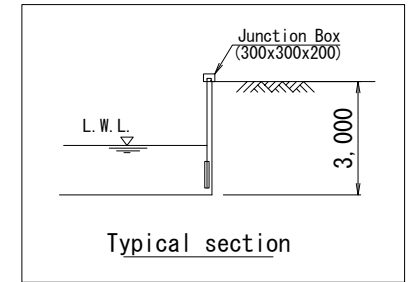
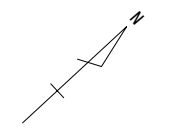
PLAN
S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of El - Kosia Canal			DRW. NO. WM-28
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	
DATE :	DATE :	DATE :	DATE :

Location Plan of East Hafze Canal

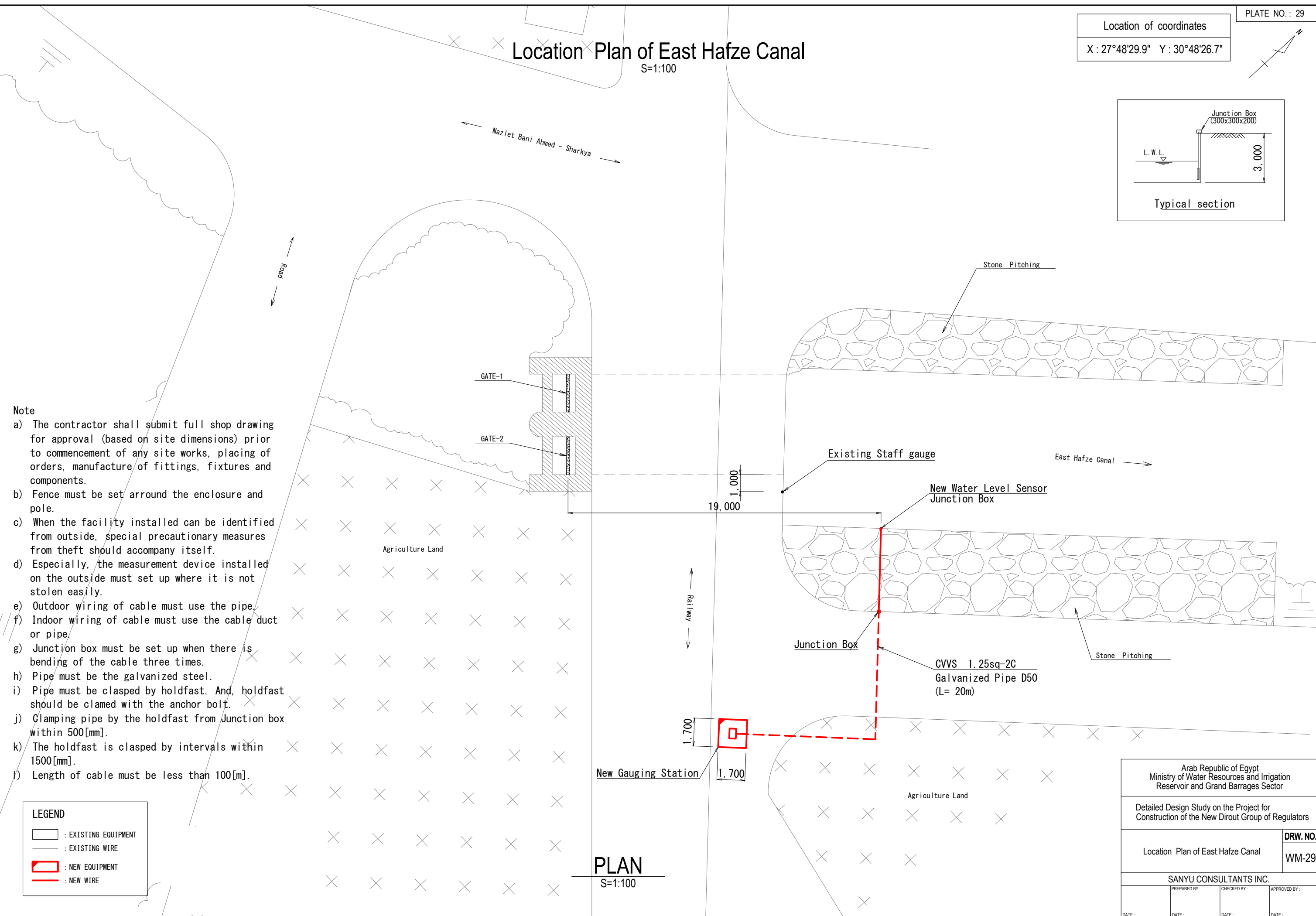
S=1:100

Location of coordinates
 X : 27°48'29.9" Y : 30°48'26.7"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
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 - Length of cable must be less than 100[m].

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



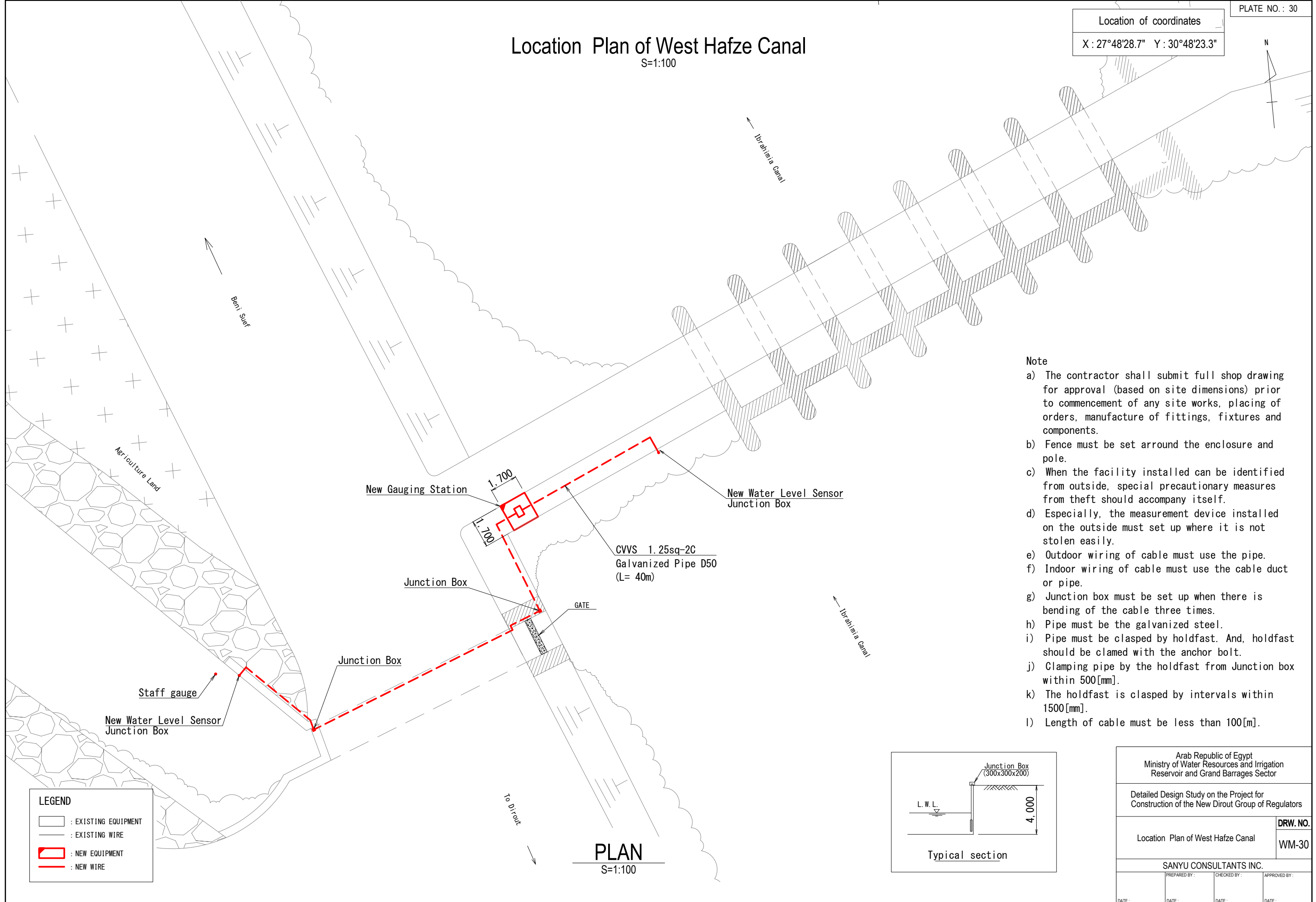
PLAN
S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of East Hafze Canal			DRW. NO. WM-29
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of West Hafze Canal

S=1:100

Location of coordinates
 X : 27°48'28.7" Y : 30°48'23.3"

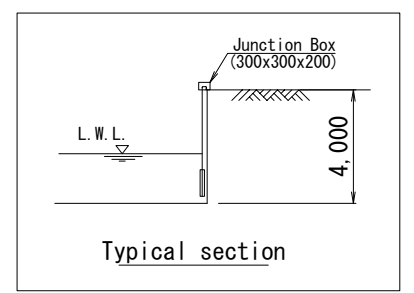


- Note**
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 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
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LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
S=1:100

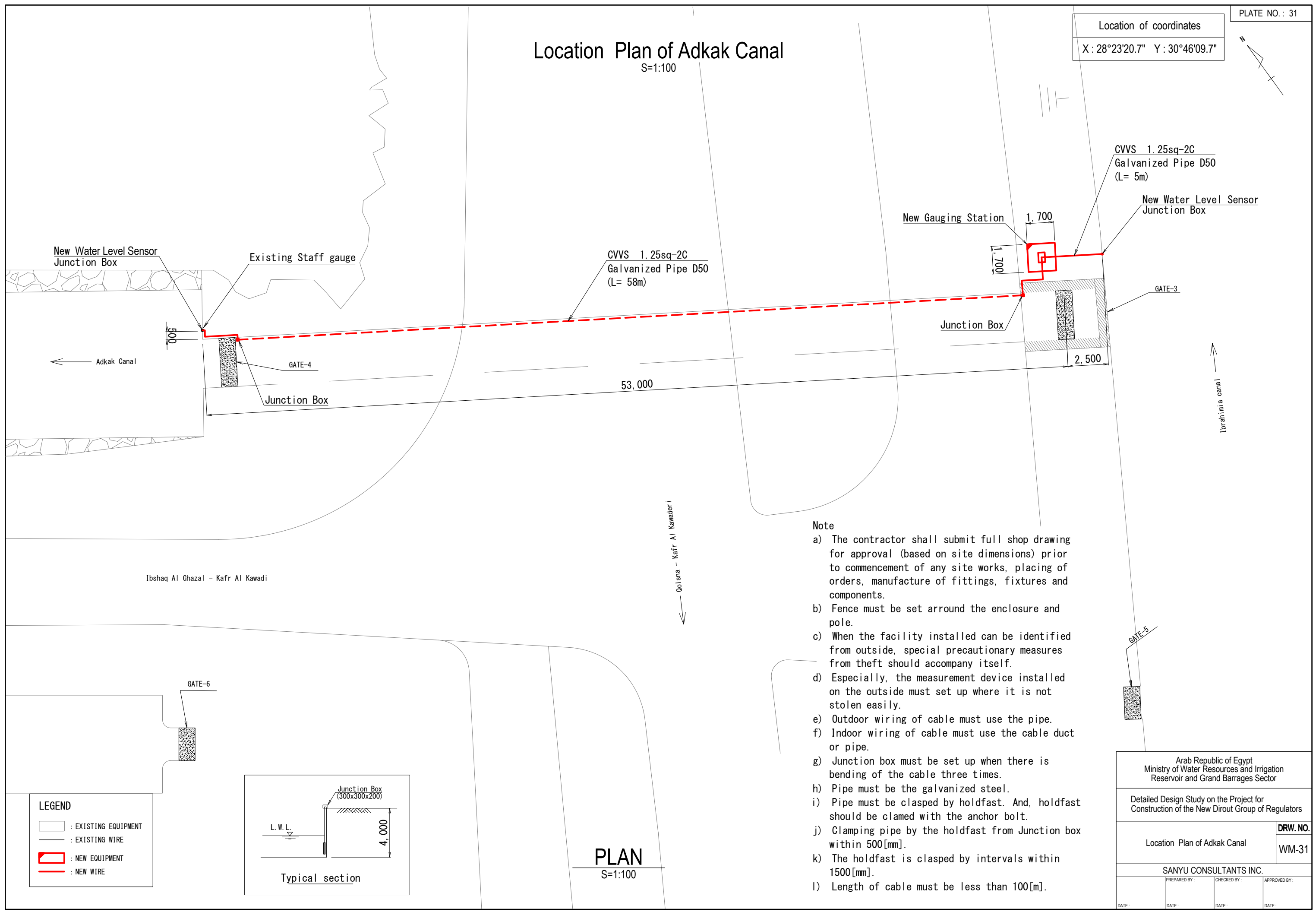
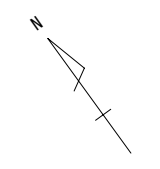


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of West Hafze Canal			DRW. NO. WM-30
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of Adkak Canal

S=1:100

Location of coordinates
X : 28°23'20.7" Y : 30°46'09.7"



New Water Level Sensor Junction Box

Existing Staff gauge

CVVS 1.25sq-2C
Galvanized Pipe D50
(L= 58m)

New Gauging Station

CVVS 1.25sq-2C
Galvanized Pipe D50
(L= 5m)

New Water Level Sensor Junction Box

500

1,700
1,700

Junction Box

GATE-3

2,500

53,000

Adkak Canal

GATE-4

Junction Box

Ibshaq Al Ghazal - Kafr Al Kawadi

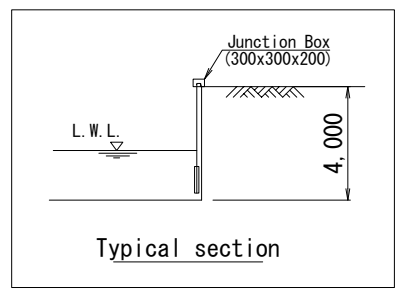
Qolsna - Kafr Al Kawader i

Ibrahimia canal

GATE-5

GATE-6

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE



PLAN
S=1:100

Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
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- i) Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

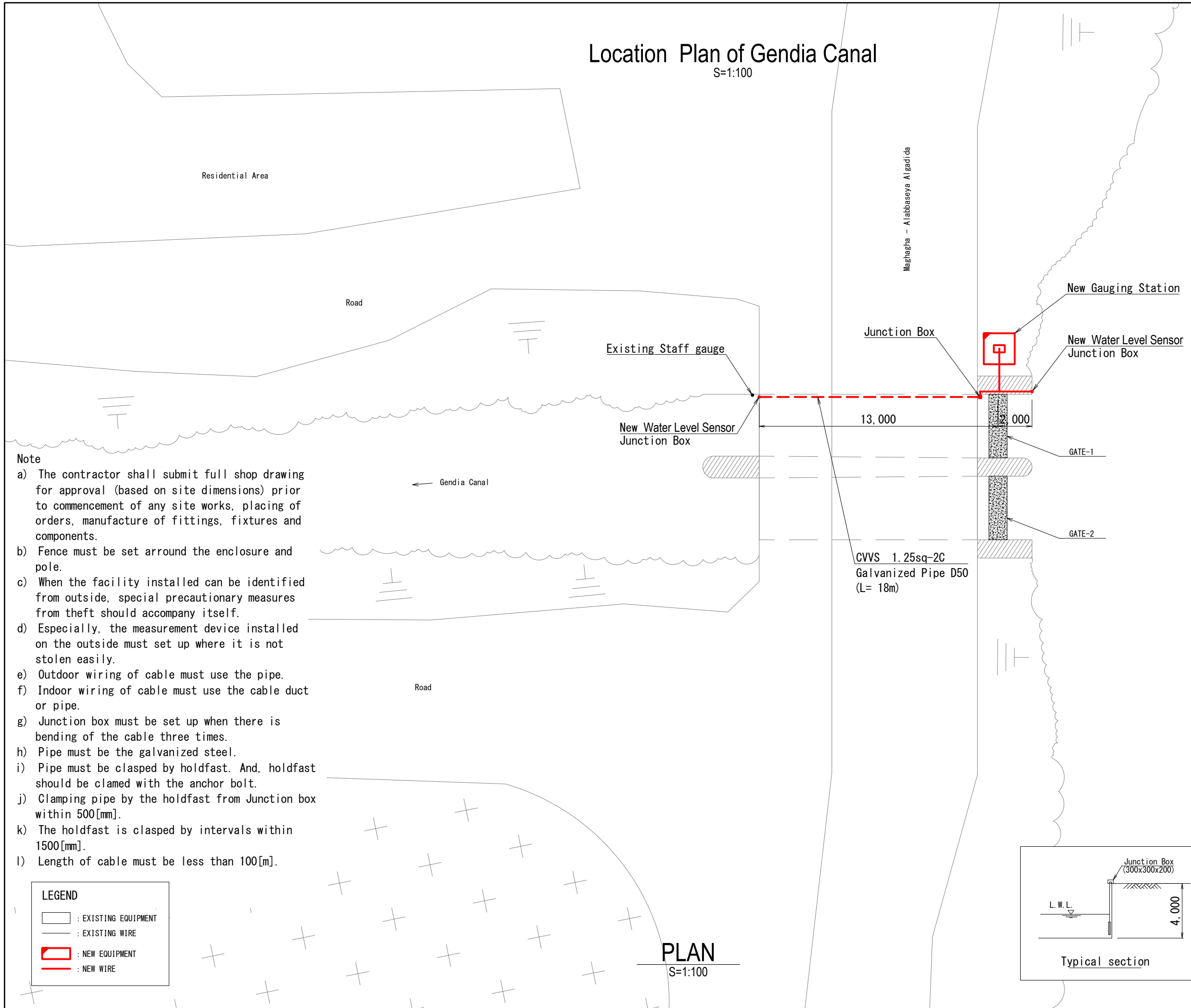
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Adkak Canal			DRW. NO. WM-31
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 28°38'07.1" Y : 30°49'39.13"



Location Plan of Gendia Canal

S=1:100



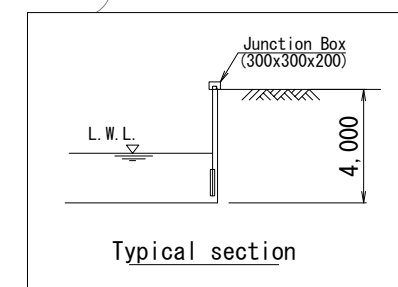
Note

- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
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- k) The holdfast is clasped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

LEGEND

- : EXISTING EQUIPMENT
- : EXISTING WIRE
- : NEW EQUIPMENT
- : NEW WIRE

CVWS 1.25sq-2C
 Galvanized Pipe D50
 (L= 18m)



PLAN

S=1:100

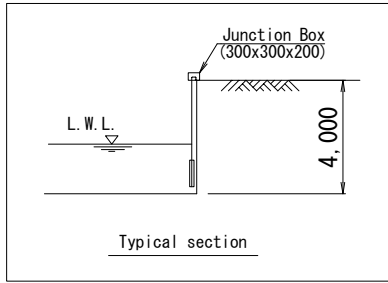
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector		
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators		
Location Plan of Gendia Canal		DRW. NO. WM-32
SANYU CONSULTANTS INC.		
PREPARED BY:	CHECKED BY:	APPROVED BY:
DATE:	DATE:	DATE:

Location of coordinates
 X : 28°49'54.14" Y : 30°54'23.09"

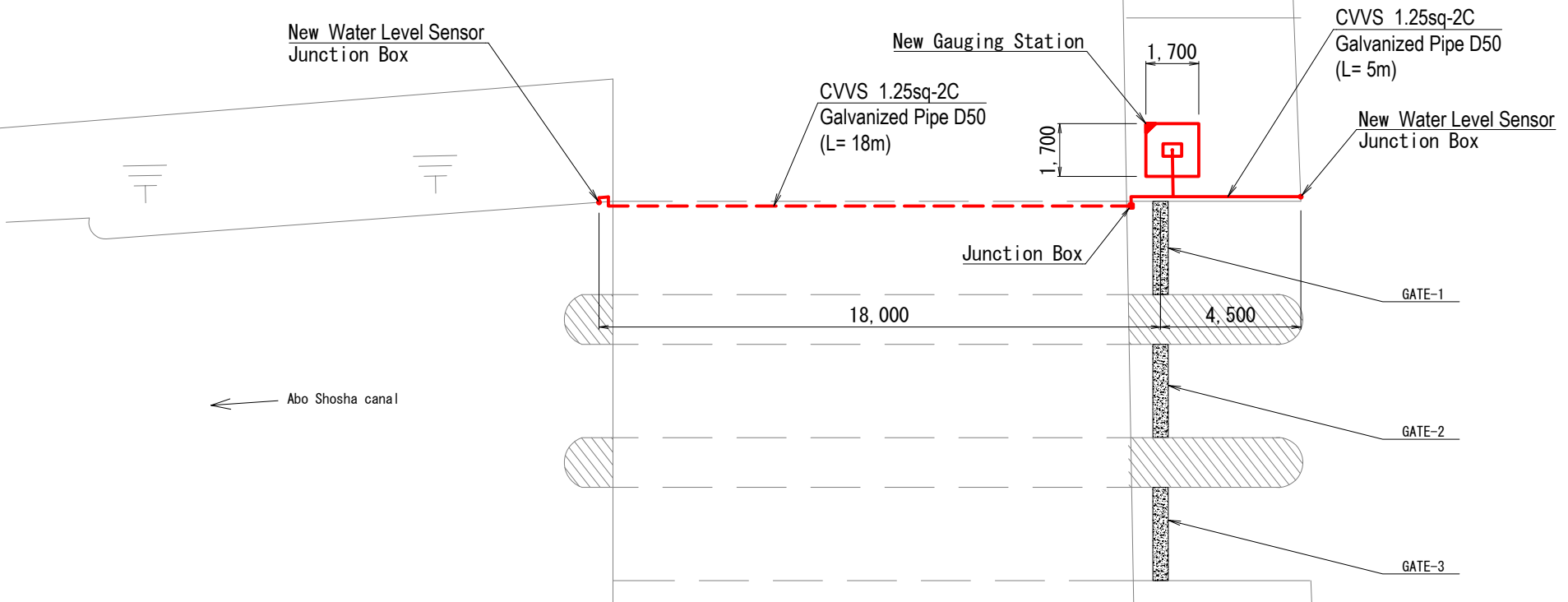


Location Plan of Abo Shosha canal

S=1:100



- Note
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
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 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].



LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

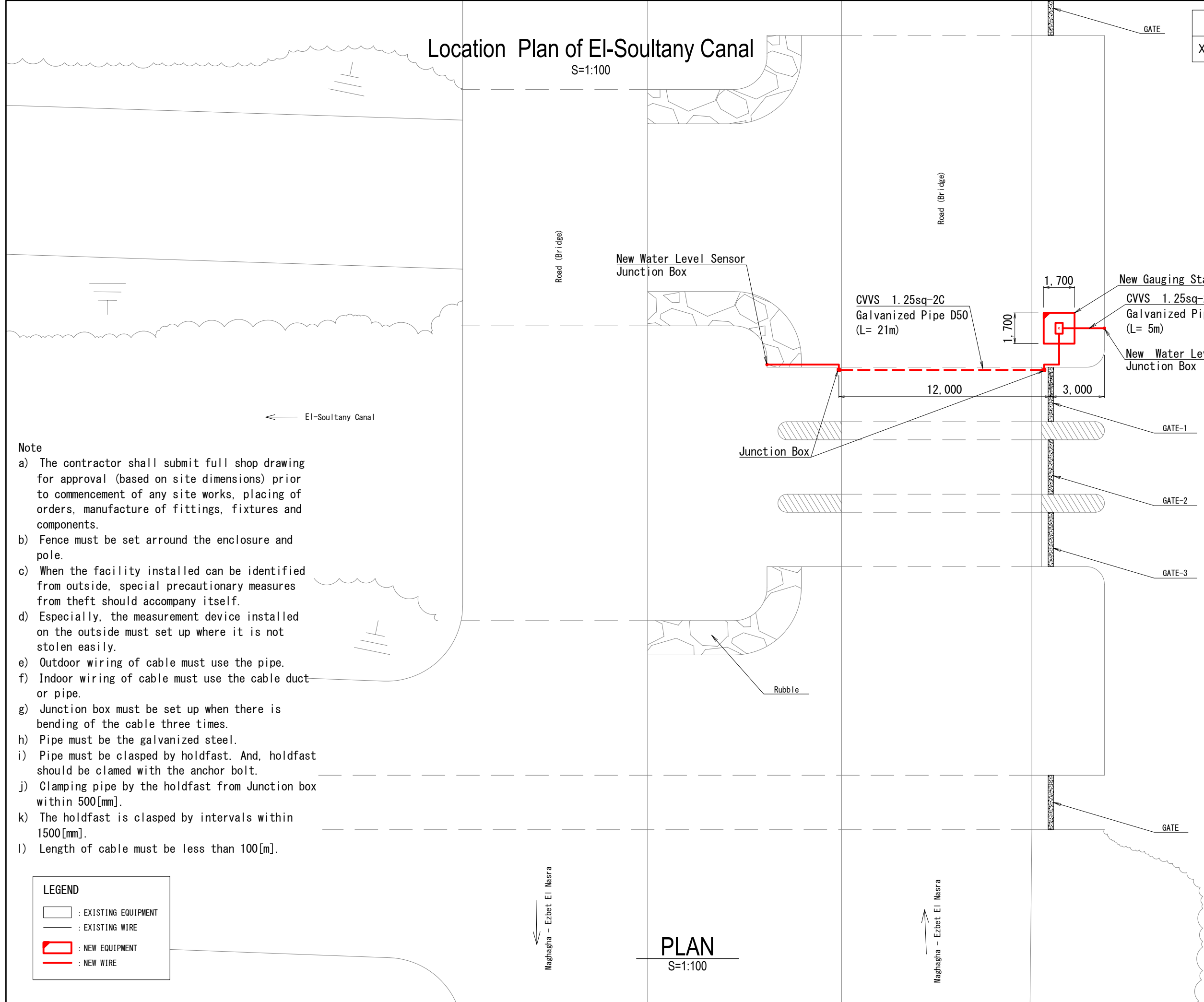
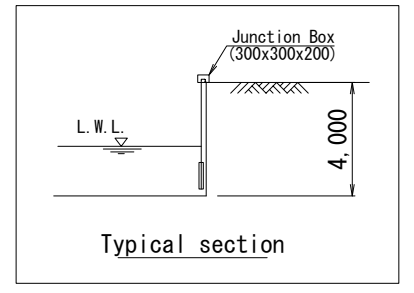
PLAN
 S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Abo Shosha canal			DRW. NO. WM-33
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of El-Soultany Canal

S=1:100

Location of coordinates
X : 28°51'05.37" Y : 30°54'46.45"



- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
S=1:100

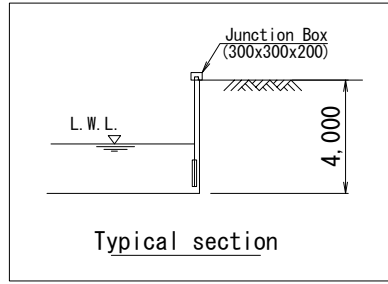
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of El-Soultany Canal			DRW. NO. WM-34
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location of coordinates
 X : 29°00'34.56" Y : 31°01'14.01"



Location Plan of Tansa canal

S=1:100



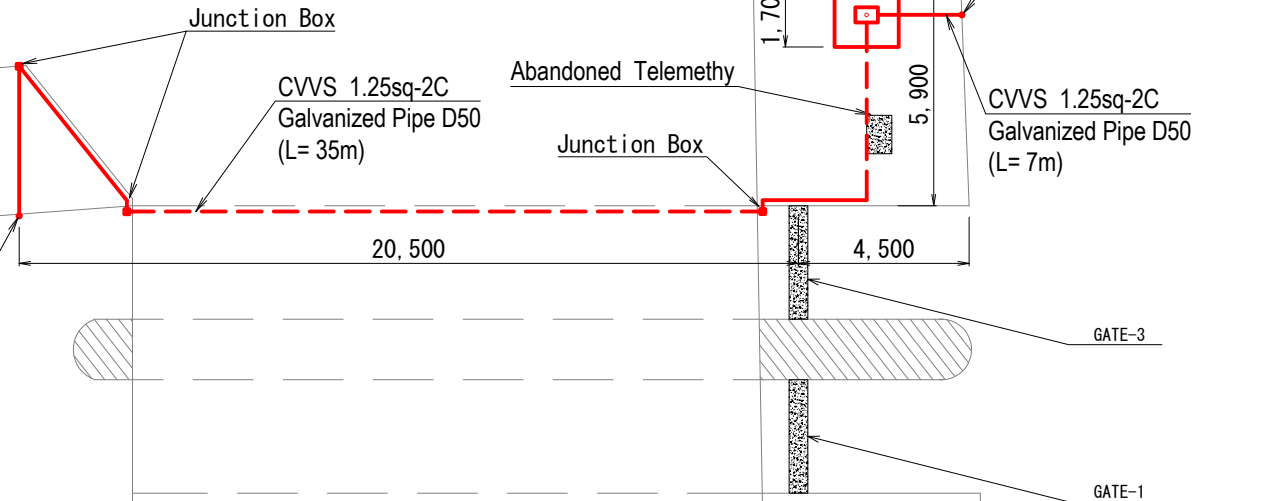
← To Tuwah

Note

- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- Fence must be set around the enclosure and pole.
- When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- Outdoor wiring of cable must use the pipe.
- Indoor wiring of cable must use the cable duct or pipe.
- Junction box must be set up when there is bending of the cable three times.
- Pipe must be the galvanized steel.
- Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
- Clamping pipe by the holdfast from Junction box within 500 [mm].
- The holdfast is clasped by intervals within 1500 [mm].
- Length of cable must be less than 100 [m].

← Tansa canal

← To Al Masharqah



LEGEND	
	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
 S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Tansa canal			DRW. NO. WM-35
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

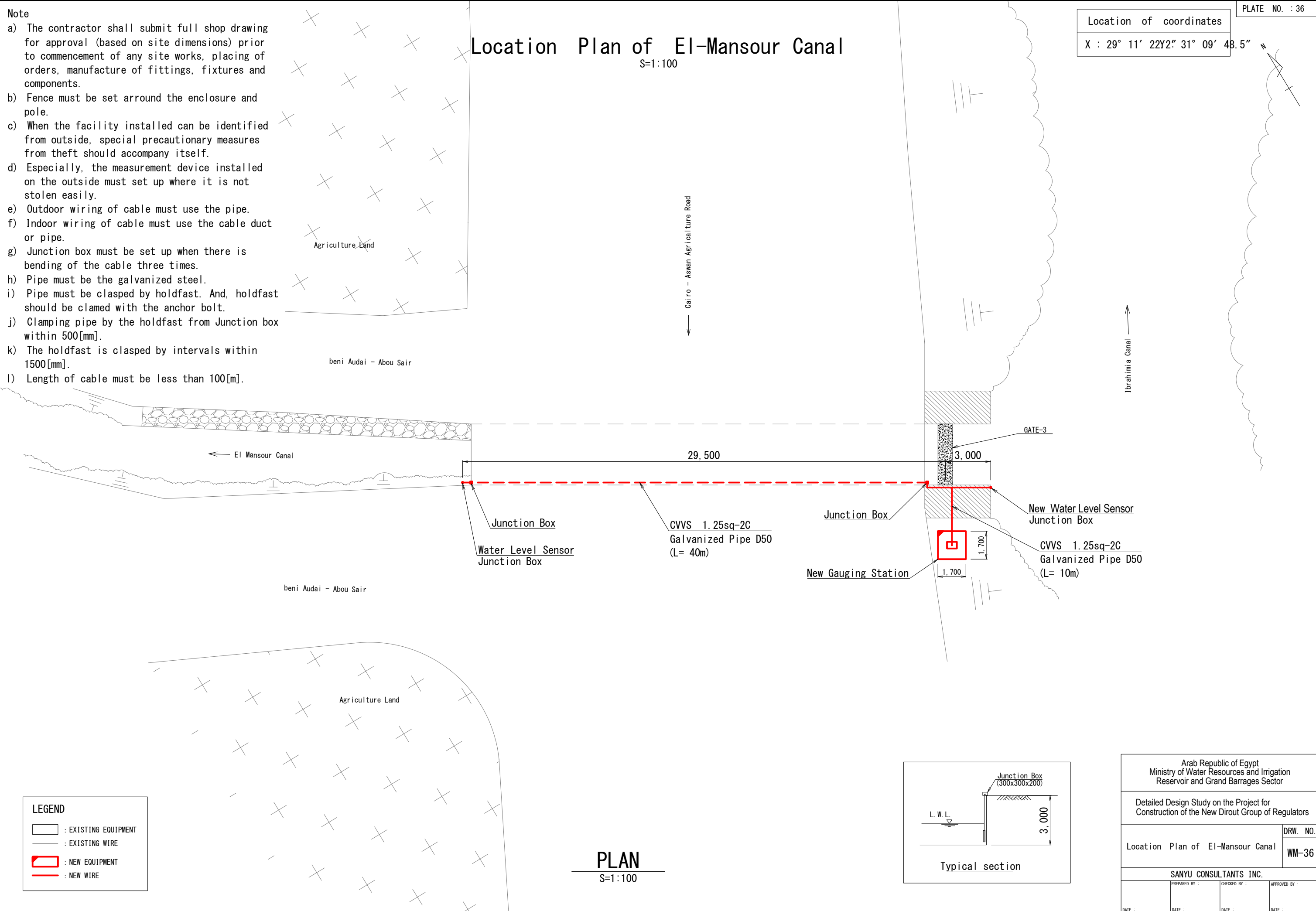
- Note**
- The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - Fence must be set around the enclosure and pole.
 - When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - Outdoor wiring of cable must use the pipe.
 - Indoor wiring of cable must use the cable duct or pipe.
 - Junction box must be set up when there is bending of the cable three times.
 - Pipe must be the galvanized steel.
 - Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - Clamping pipe by the holdfast from Junction box within 500[mm].
 - The holdfast is clasped by intervals within 1500[mm].
 - Length of cable must be less than 100[m].

Location Plan of El-Mansour Canal

S=1:100

Location of coordinates

X : 29° 11' 22Y2" 31° 09' 48.5"

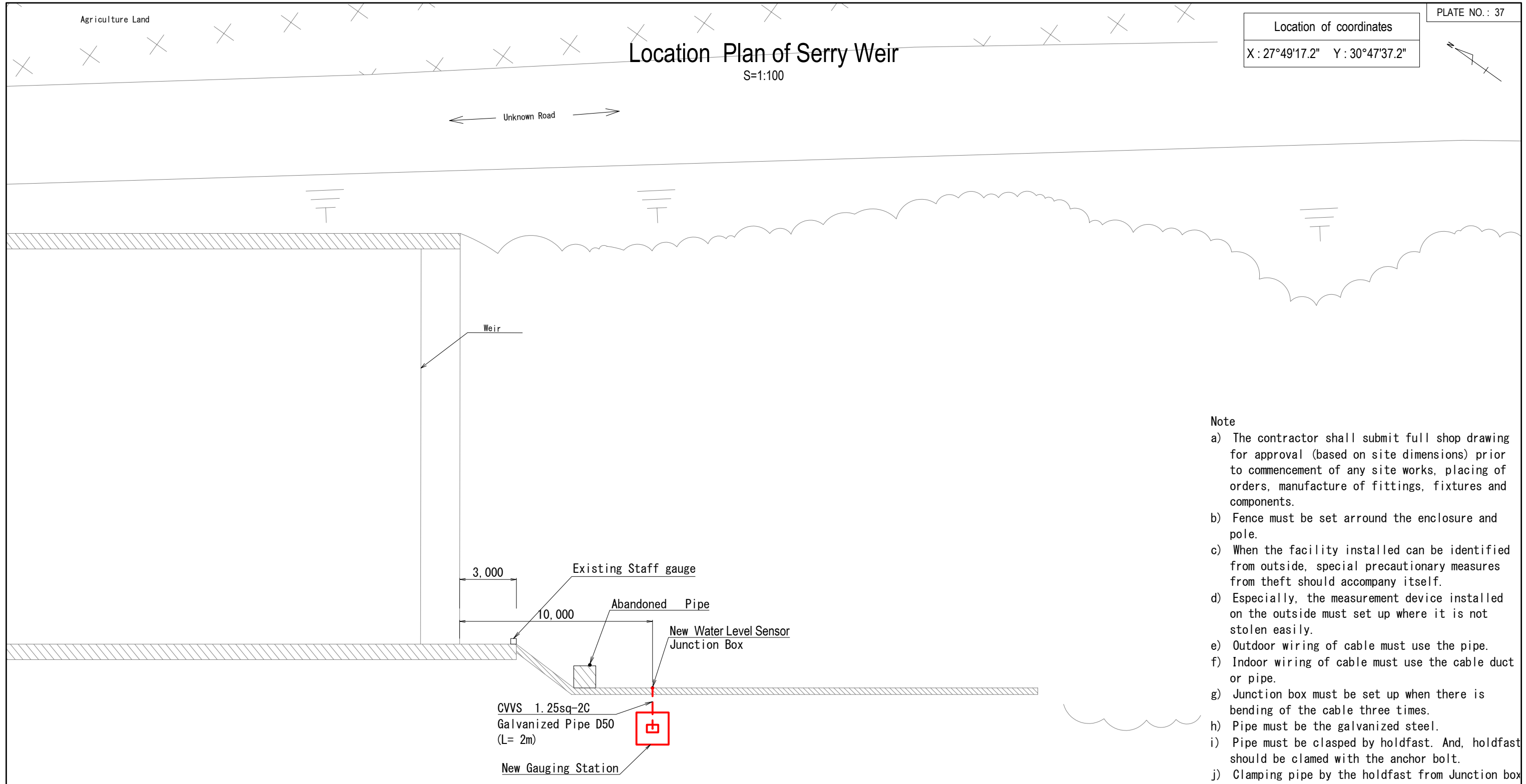


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of El-Mansour Canal			DRW. NO. WM-36
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	DATE :
DATE :	DATE :	DATE :	DATE :

Location of coordinates
 X : 27°49'17.2" Y : 30°47'37.2"

Location Plan of Serry Weir

S=1:100



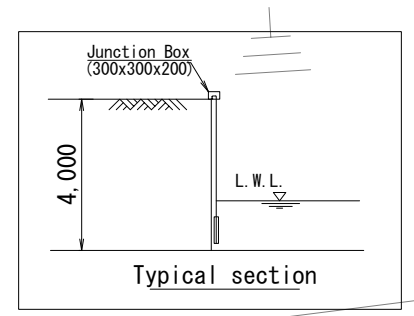
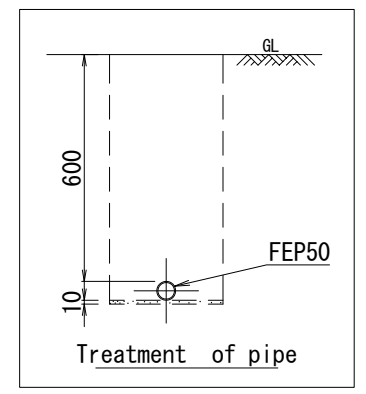
CVVS 1.25sq-2C
 Galvanized Pipe D50
 (L= 2m)
 New Gauging Station

- Note**
- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
 - b) Fence must be set around the enclosure and pole.
 - c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
 - d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
 - e) Outdoor wiring of cable must use the pipe.
 - f) Indoor wiring of cable must use the cable duct or pipe.
 - g) Junction box must be set up when there is bending of the cable three times.
 - h) Pipe must be the galvanized steel.
 - i) Pipe must be clasped by holdfast. And, holdfast should be clamed with the anchor bolt.
 - j) Clamping pipe by the holdfast from Junction box within 500[mm].
 - k) The holdfast is clasped by intervals within 1500[mm].
 - l) Length of cable must be less than 100[m].

LEGEND

	: EXISTING EQUIPMENT
	: EXISTING WIRE
	: NEW EQUIPMENT
	: NEW WIRE

PLAN
S=1:100

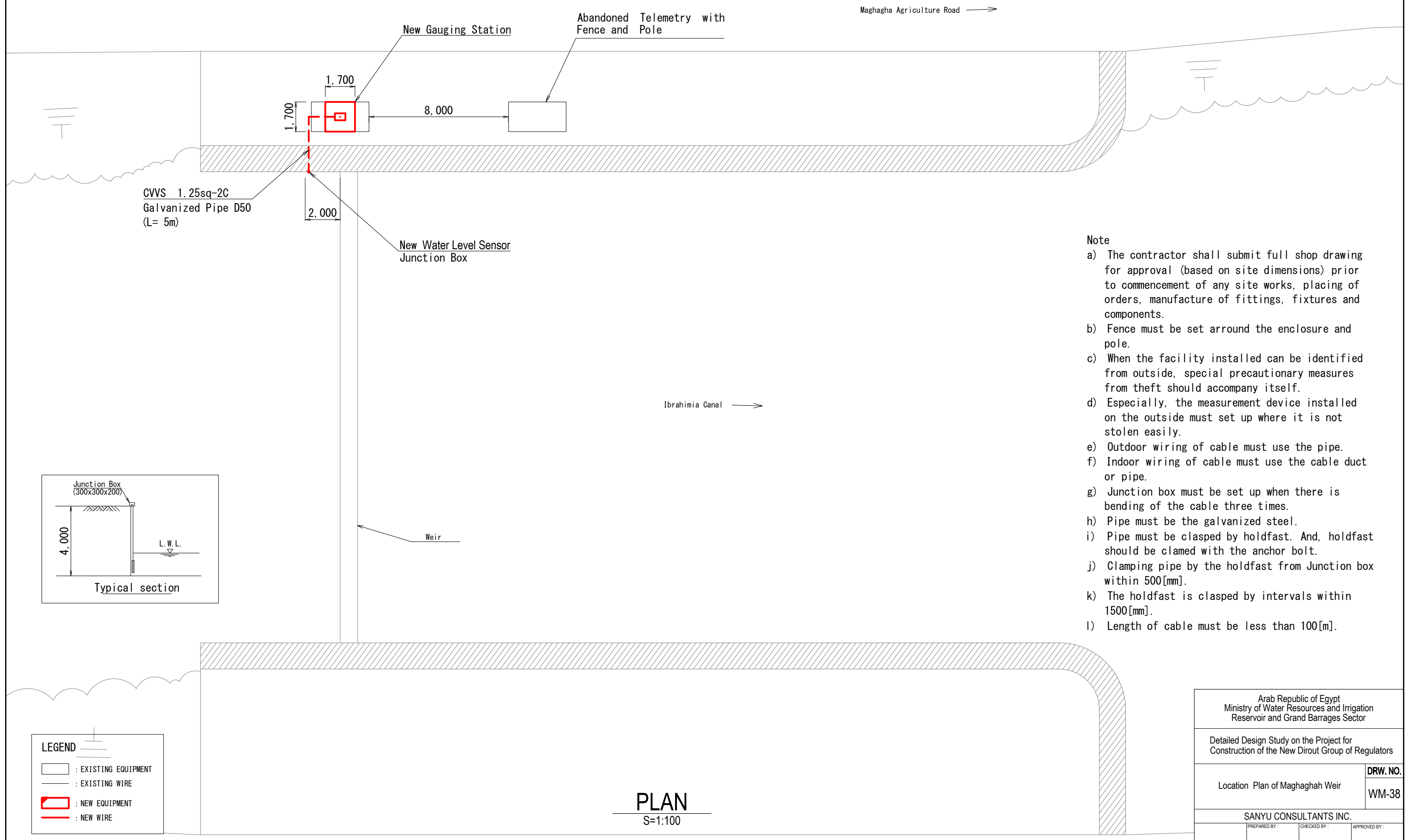
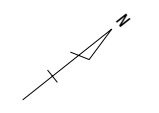


Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Serry Weir			DRW. NO. WM-37
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

Location Plan of Maghaghah Weir

S=1:100

Location of coordinates
X : 28°39'30.2" Y : 30°50'45.1"



CVVS 1.25sq-2C
Galvanized Pipe D50
(L= 5m)

New Water Level Sensor
Junction Box

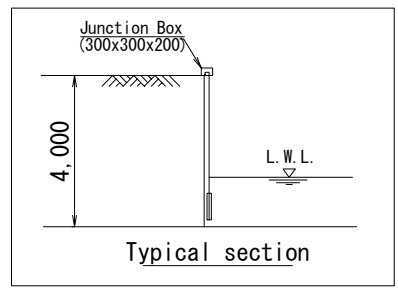
New Gauging Station

Abandoned Telemetry with
Fence and Pole

Maghagha Agriculture Road →

Ibrahimia Canal →

Weir



Note

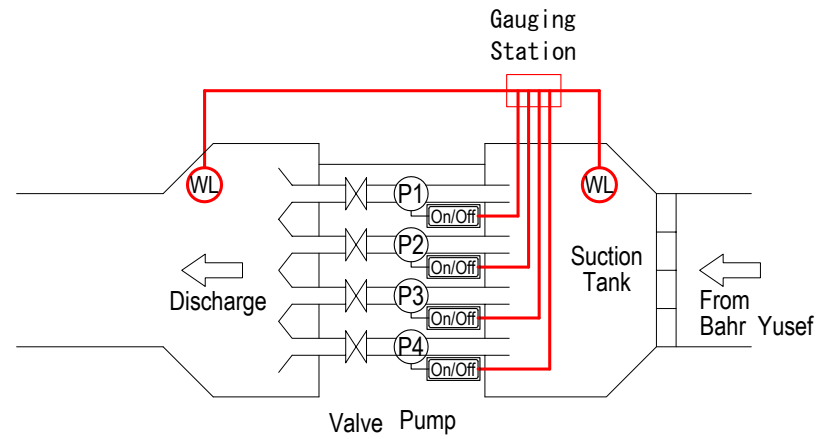
- a) The contractor shall submit full shop drawing for approval (based on site dimensions) prior to commencement of any site works, placing of orders, manufacture of fittings, fixtures and components.
- b) Fence must be set around the enclosure and pole.
- c) When the facility installed can be identified from outside, special precautionary measures from theft should accompany itself.
- d) Especially, the measurement device installed on the outside must set up where it is not stolen easily.
- e) Outdoor wiring of cable must use the pipe.
- f) Indoor wiring of cable must use the cable duct or pipe.
- g) Junction box must be set up when there is bending of the cable three times.
- h) Pipe must be the galvanized steel.
- i) Pipe must be clamped by holdfast. And, holdfast should be clamped with the anchor bolt.
- j) Clamping pipe by the holdfast from Junction box within 500[mm].
- k) The holdfast is clamped by intervals within 1500[mm].
- l) Length of cable must be less than 100[m].

LEGEND	
□	: EXISTING EQUIPMENT
—	: EXISTING WIRE
□ (red border)	: NEW EQUIPMENT
— (red)	: NEW WIRE

PLAN
S=1:100

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Maghaghah Weir			DRW. NO. WM-38
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

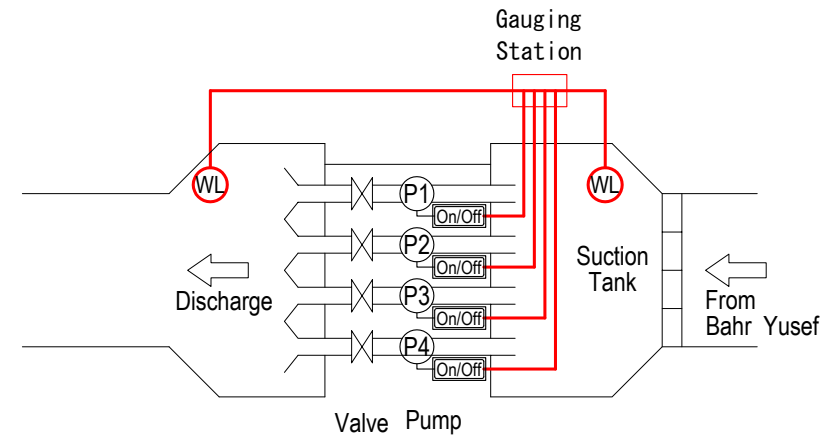
Location Plan of Five Monitoring Pump Stations



New Kamdeer Pump Station

Location of coordinates
 X : 28°9'25.41" Y : 30°39'53.91"

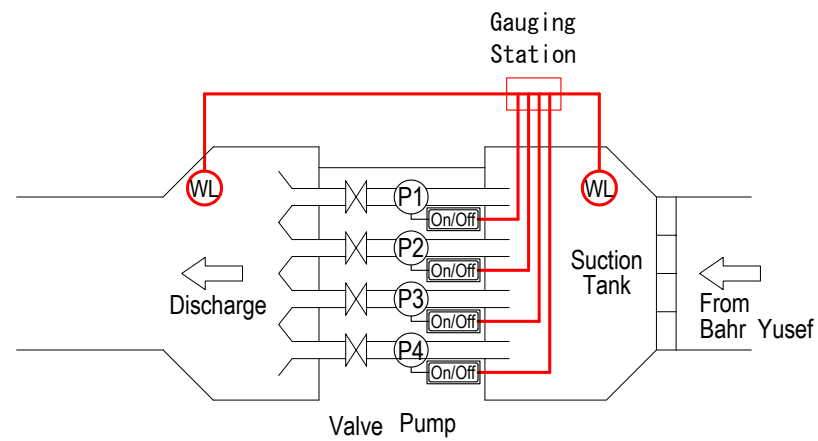
Number of Pumps : 4
 Water Level Sensor : 2



New Terfa Pump Station

Location of coordinates
 X : 28°21'23.32" Y : 30°37'40.31"

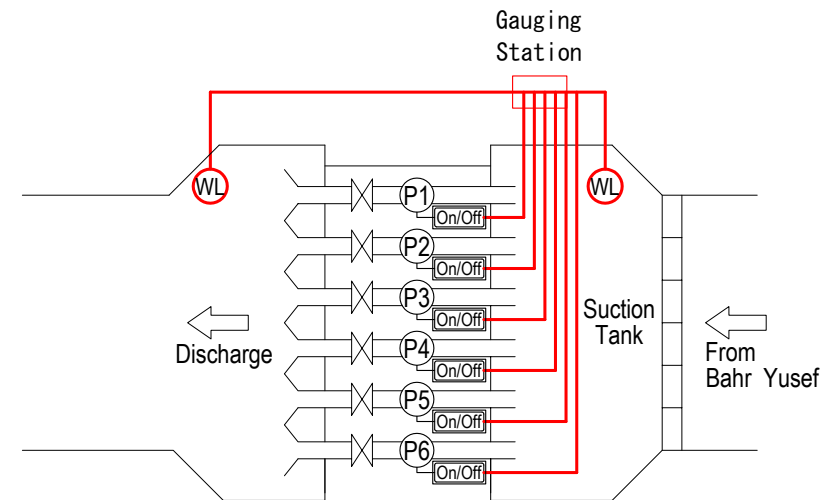
Number of Pumps : 4
 Water Level Sensor : 2



Old Sakoula Pump Station

Location of coordinates
 X : 28°37'13.43" Y : 30°40'43.50"

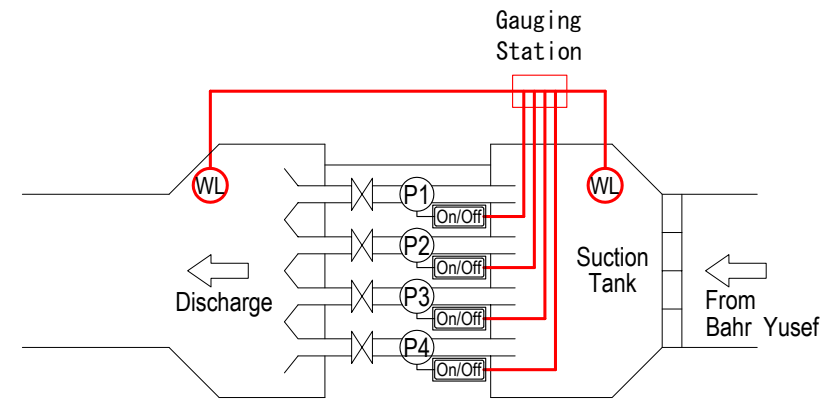
Number of Pumps : 4
 Water Level Sensor : 2



Old Terfa Pump Station

Location of coordinates
 X : 28°21'22.01" Y : 30°37'39.99"

Number of Pumps : 6
 Water Level Sensor : 2



Mazoura Terfa Pump Station

Location of coordinates
 X : 28°50'57.71" Y : 30°48'2.64"

Number of Pumps : 4
 Water Level Sensor : 2

LEGEND

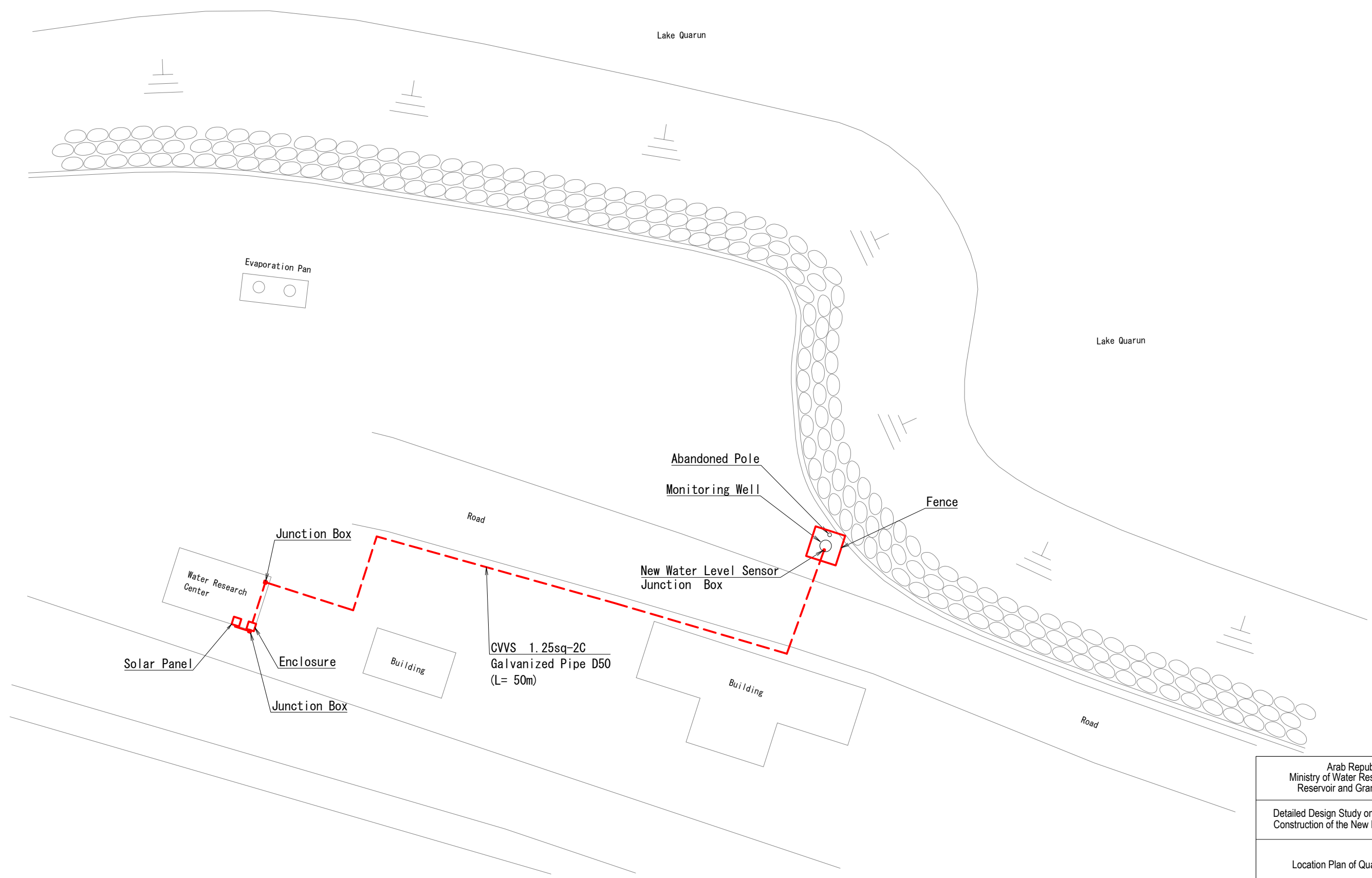
- Enclosure : TELEMTRY STATION
- WL : WATER LEVEL SENSOR
- On/Off : CONTROL PANEL

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Plan of Five Monitoring Pump Stations			DRW. NO. WM-39
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	DATE :
DATE :	DATE :	DATE :	DATE :

Location of coordinates
X : 29°28'1.08" Y : 30°42'6.69"

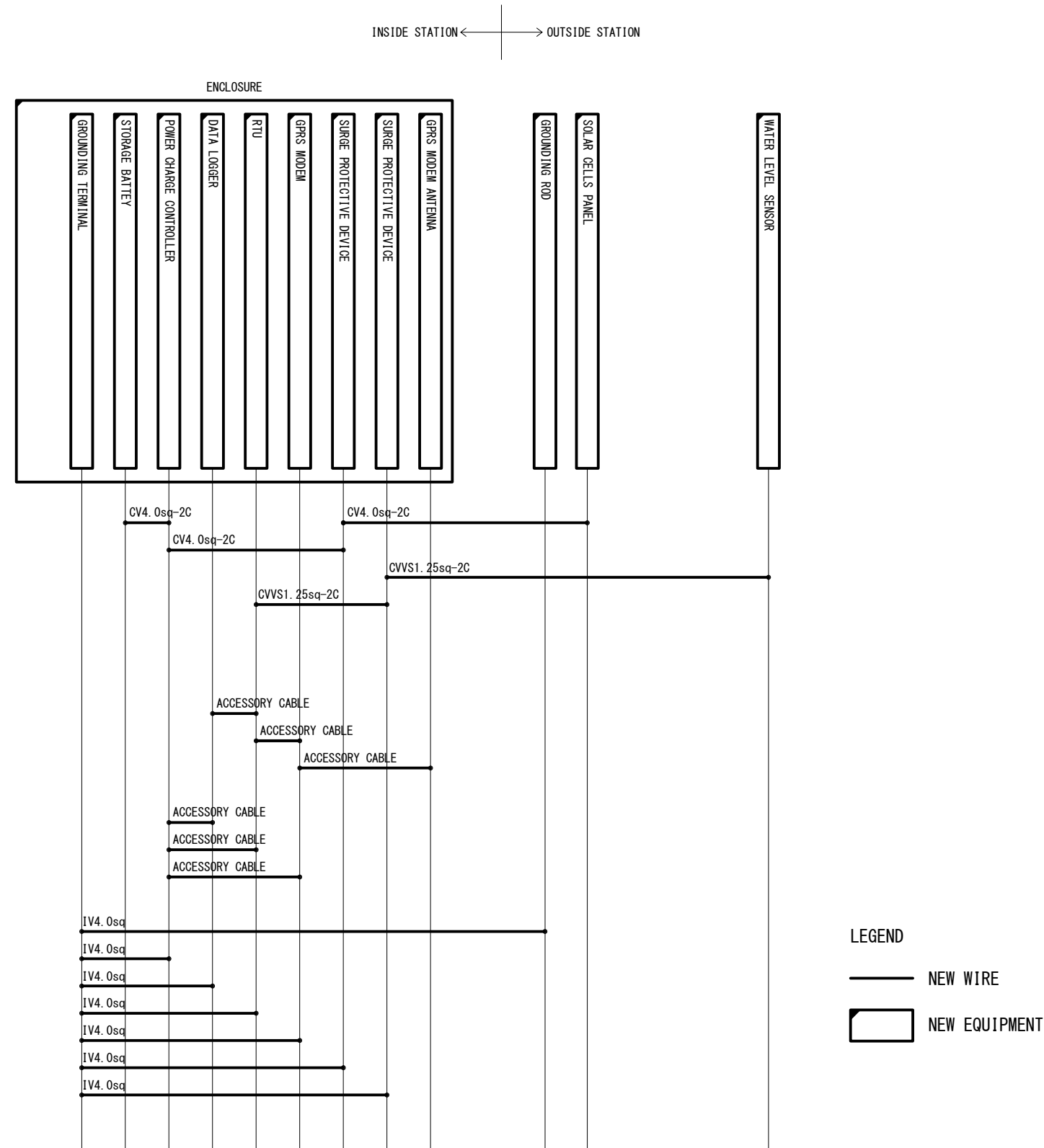
Location Plan of Quarun Lake

S=No scale



Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
Location Plan of Quarun Lake			DRW. NO. WM-40
SANYU CONSULTANTS INC.			
PREPARED BY:	CHECKED BY:	APPROVED BY:	
DATE:	DATE:	DATE:	DATE:

TYPICAL WIRING DIAGRAM FOR GAUGING STATION TYPE-A

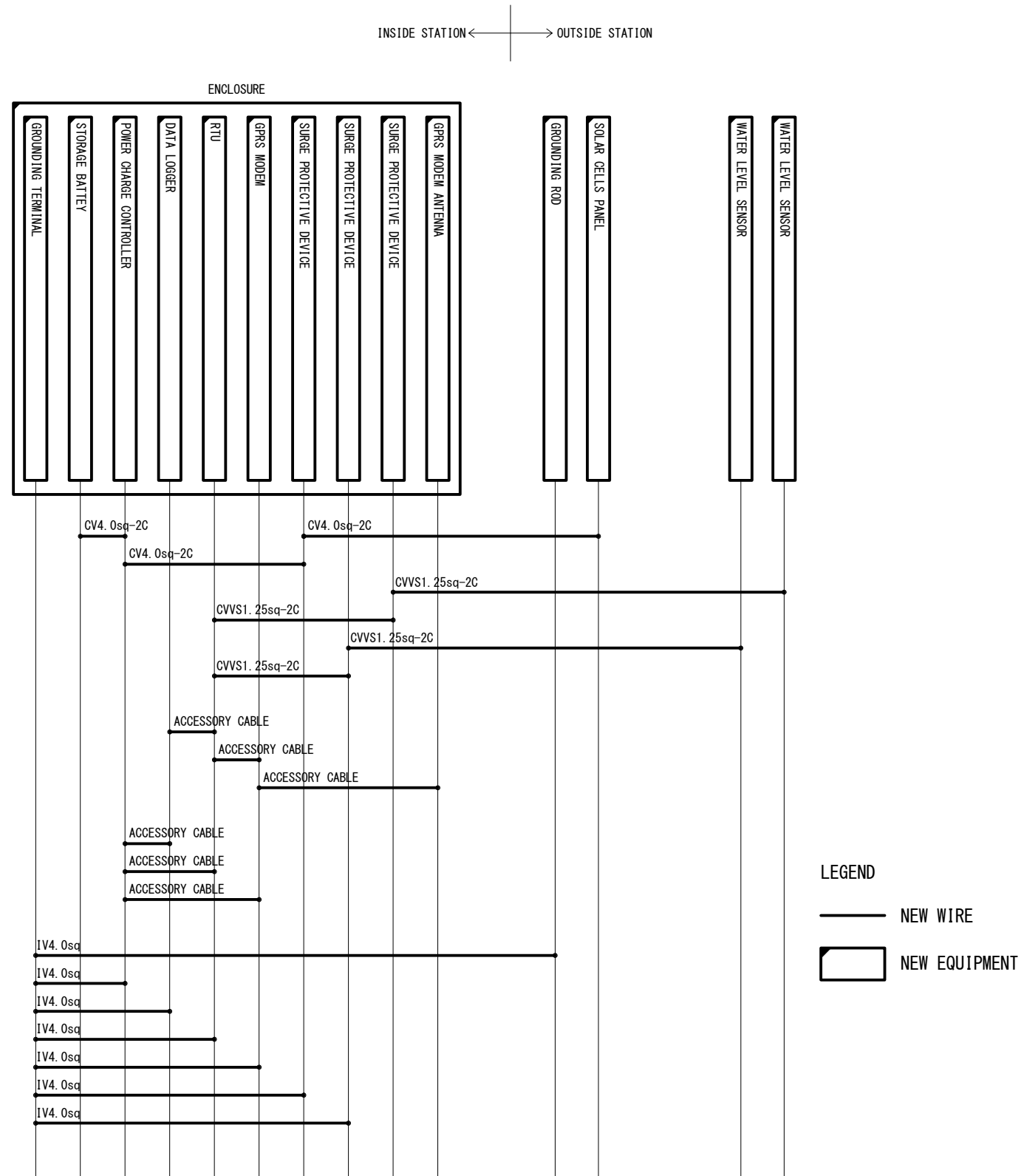


NOTE :
A) THIS DRAWING IS FOR REFERENCE OF BIDDER.

LEGEND
 NEW WIRE
 NEW EQUIPMENT

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TYPICAL WIRING DIAGRAM FOR GAUGING STATION TYPE-A			DRW. NO. WM-41
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	
DATE :	DATE :	DATE :	DATE :

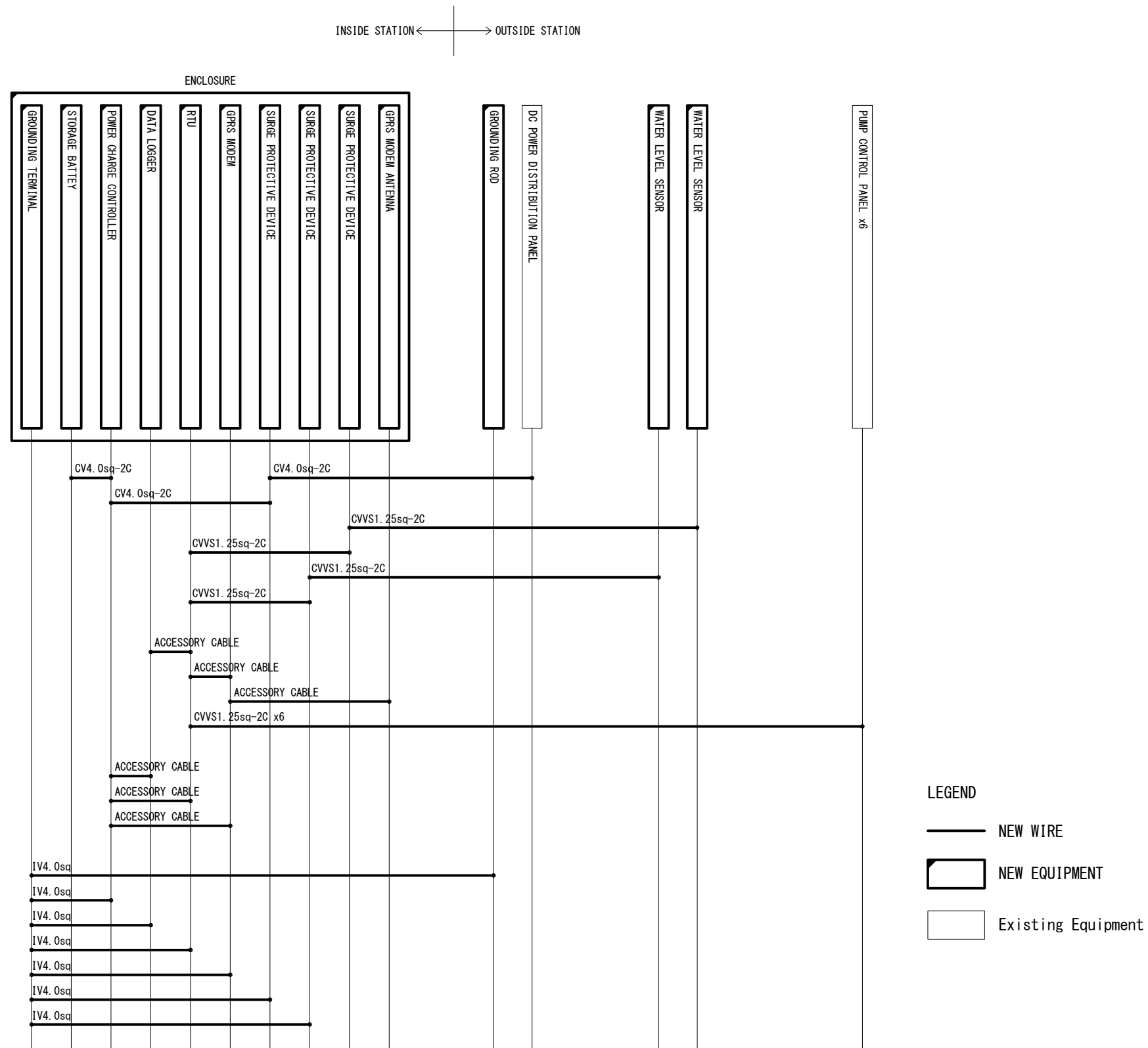
TYPICAL WIRING DIAGRAM FOR GAUGING STATION TYPE-B



NOTE :
A) THIS DRAWING IS FOR REFERENCE OF BIDDER.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TYPICAL WIRING DIAGRAM FOR GAUGING STATION TYPE-B			DRW. NO. WM-42
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	DATE :
DATE :	DATE :	DATE :	DATE :

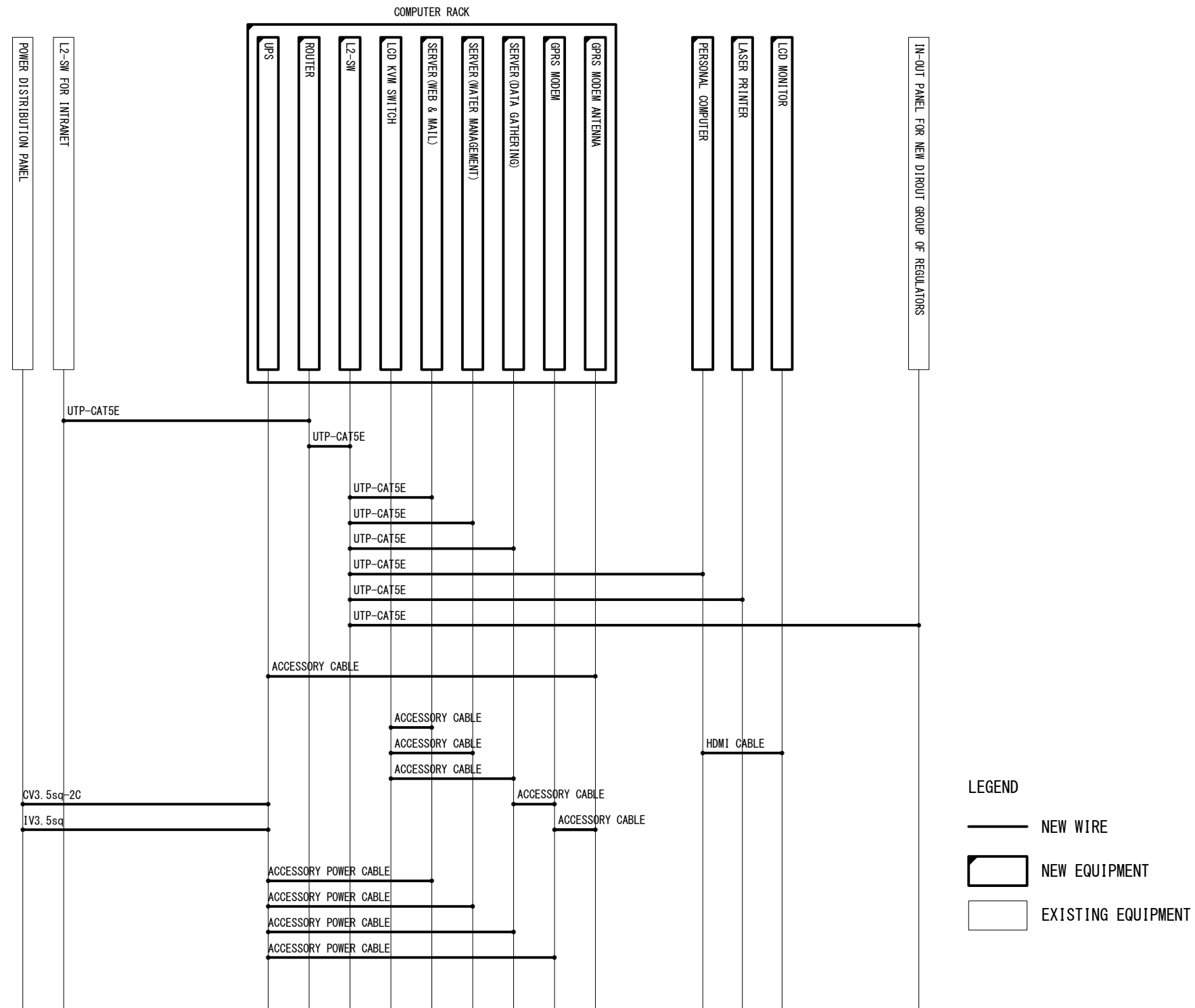
TYPICAL WIRING DIAGRAM FOR GAUGING STATION FOR PUMP STATION



NOTE :
A) THIS DRAWING IS FOR REFERENCE OF BIDDER.

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TYPICAL WIRING DIAGRAM FOR GAUGING STATION FOR PUMP STATION			DRW. NO. WM-43
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	DATE :
DATE :	DATE :	DATE :	DATE :

TYPICAL WIRING DIAGRAM FOR MONITORING AND OPERATING ROOM



LEGEND

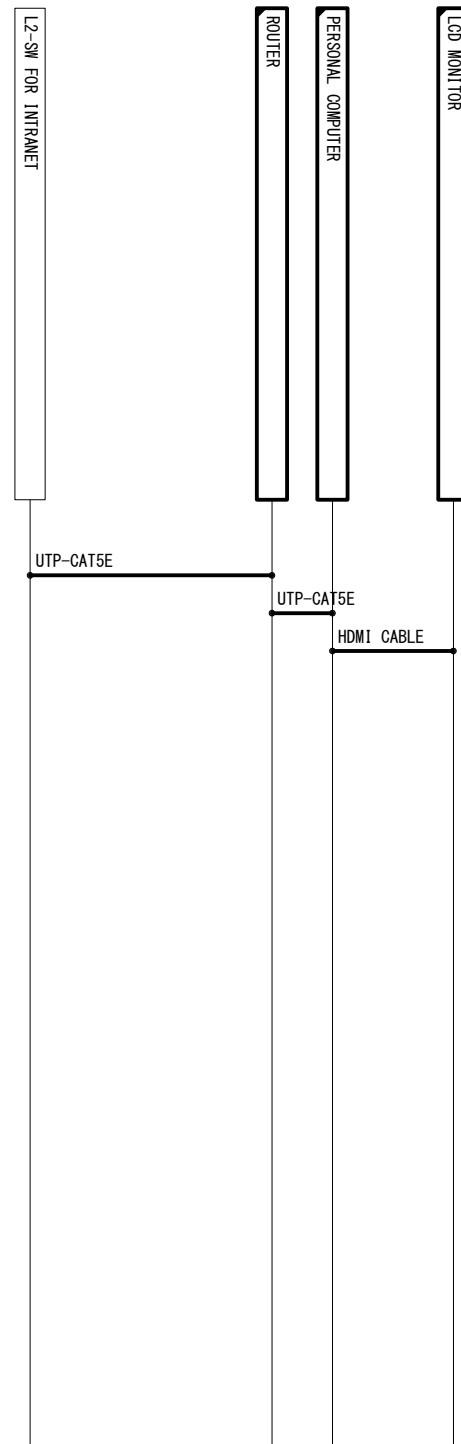
- NEW WIRE
- ▭ NEW EQUIPMENT
- ▭ EXISTING EQUIPMENT

NOTE :




a) This drawing is for reference of bidder

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TYPICAL WIRING DIAGRAM FOR MONITORING AND OPERATING ROOM			DRW. NO. WM-44
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	DATE :
DATE :	DATE :	DATE :	DATE :

TYPICAL WIRING DIAGRAM FOR MONITORING ROOM IN MINIA



LEGEND

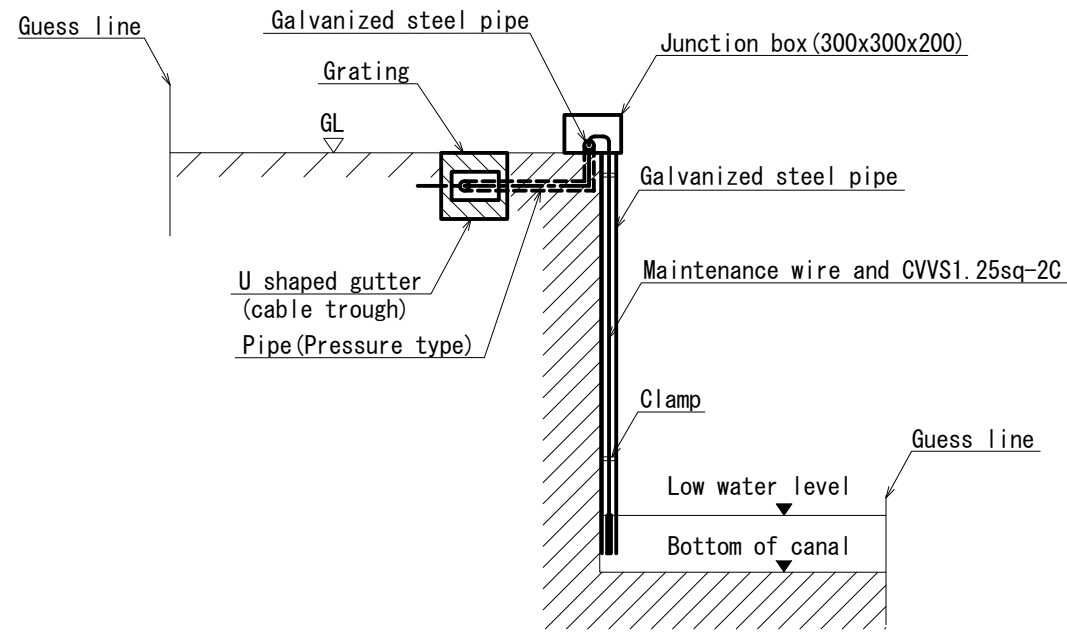
-  NEW WIRE
-  NEW EQUIPMENT
-  EXISTING EQUIPMENT

NOTE :

a) This drawing is for reference of bidder

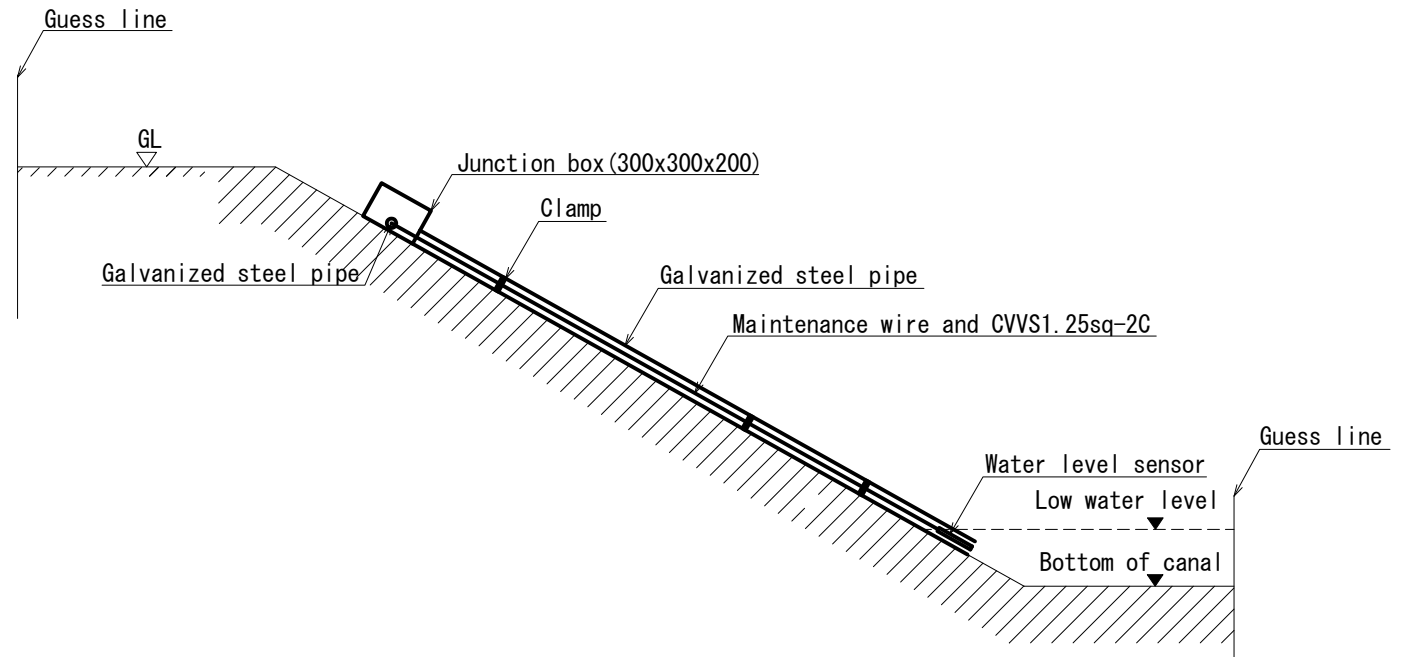
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TYPICAL WIRING DIAGRAM FOR MONITORING ROOM IN MINIA			DRW. NO. WM-45
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	
DATE :	DATE :	DATE :	DATE :

TYPICAL INSTALLATION OF WATER LEVEL SENSOR



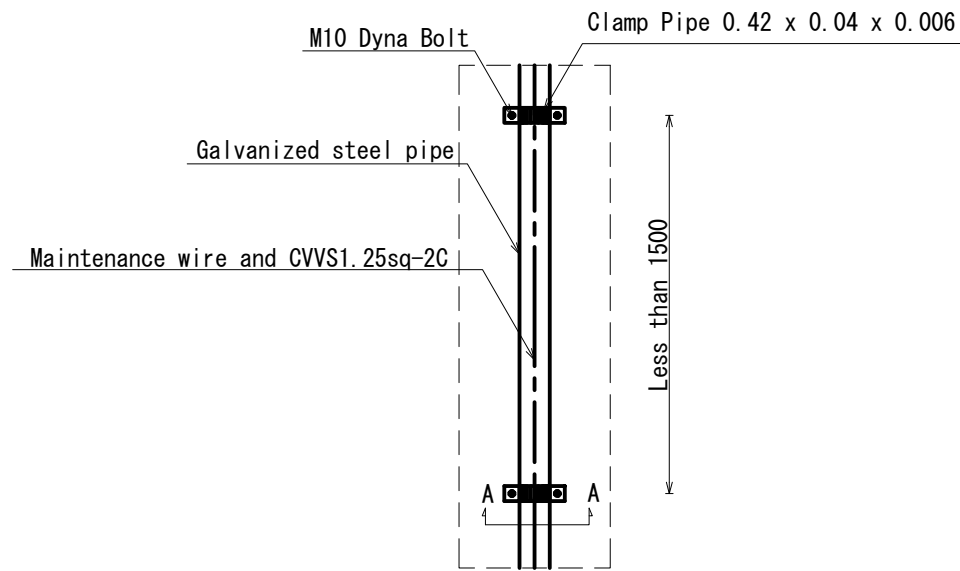
Typical Position of water level gauge on Vertical structure

(1:20)



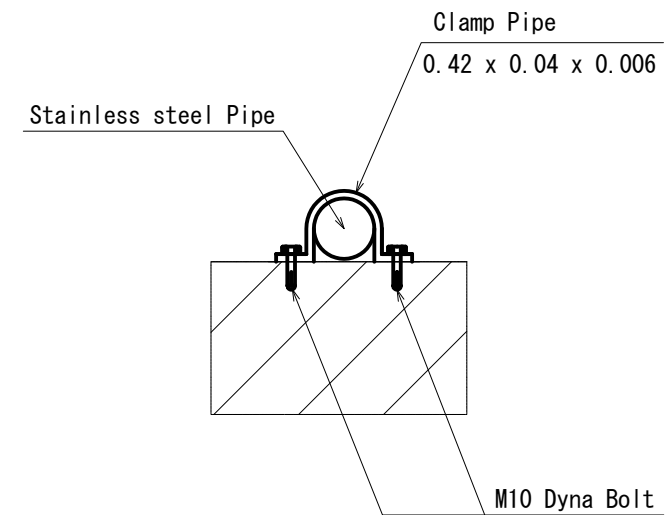
Typical Position of water level gauge on sloop structure

(1:20)



Installation of clamp

(1:10)



Section D - D

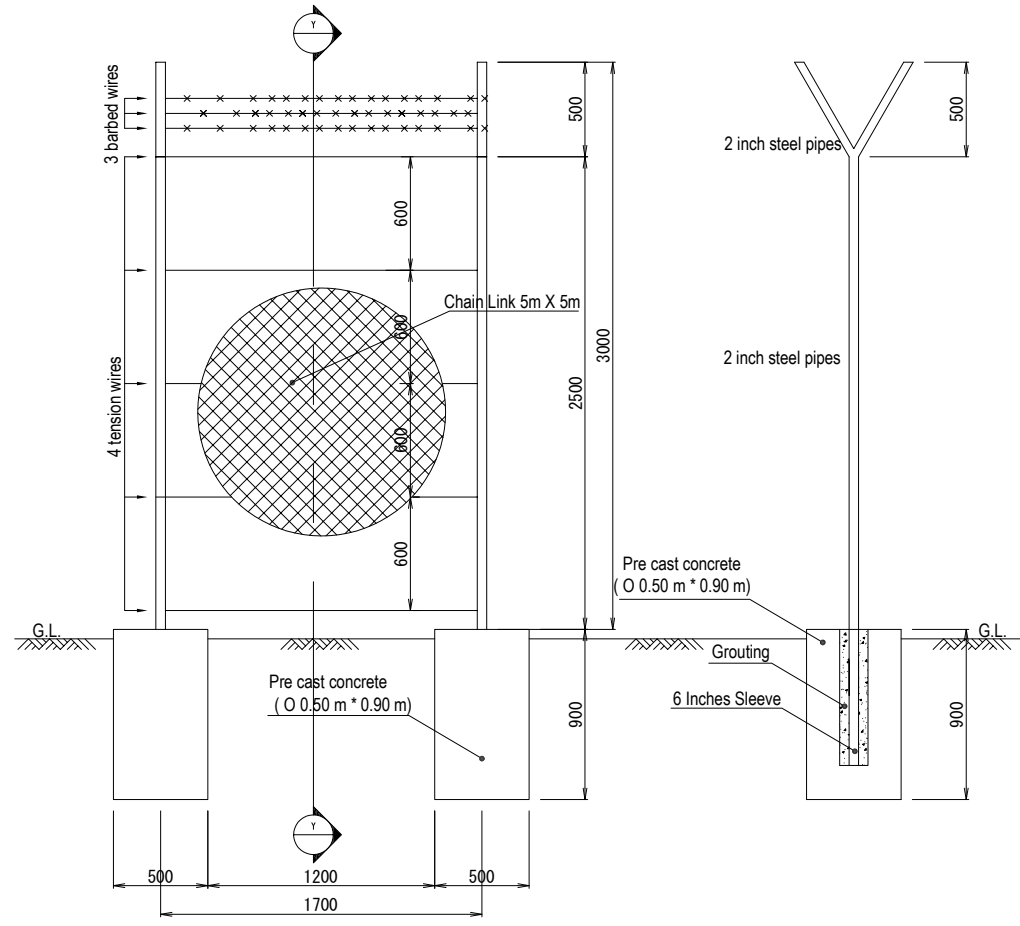
(1:5)

NOTE :

a) This drawing is for reference of bidder

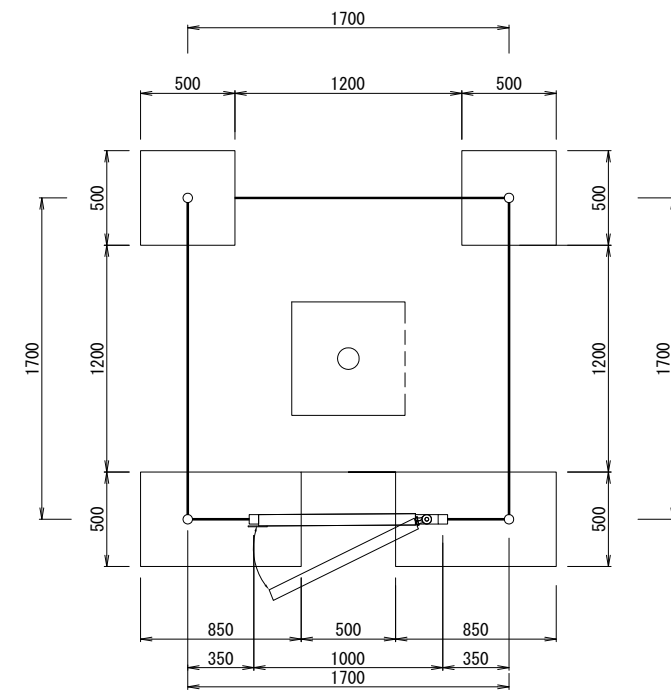
Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
TYPICAL INSTALLATION OF WATER LEVEL SENSOR			DRW. NO. WM-46
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	
DATE :	DATE :	DATE :	DATE :

FENCE AND OPENING DETAILS FOR GAUGING STATION

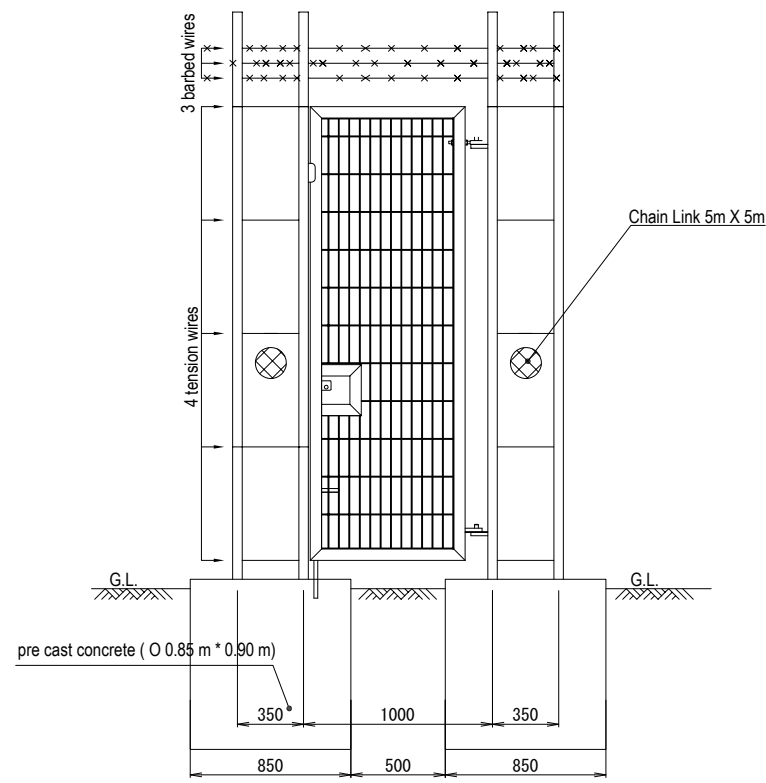


ELEVATION
(1:20)

SECTION Y-Y
(1:20)



PLAN
(1:20)



FRONT ELEVATION
(1:20)

Arab Republic of Egypt Ministry of Water Resources and Irrigation Reservoir and Grand Barrages Sector			
Detailed Design Study on the Project for Construction of the New Dirout Group of Regulators			
FENCE AND OPENING DETAILS FOR GAUGING STATION			DRW. NO. WM-47
SANYU CONSULTANTS INC.			
PREPARED BY :	CHECKED BY :	APPROVED BY :	DATE :
DATE :	DATE :	DATE :	DATE :