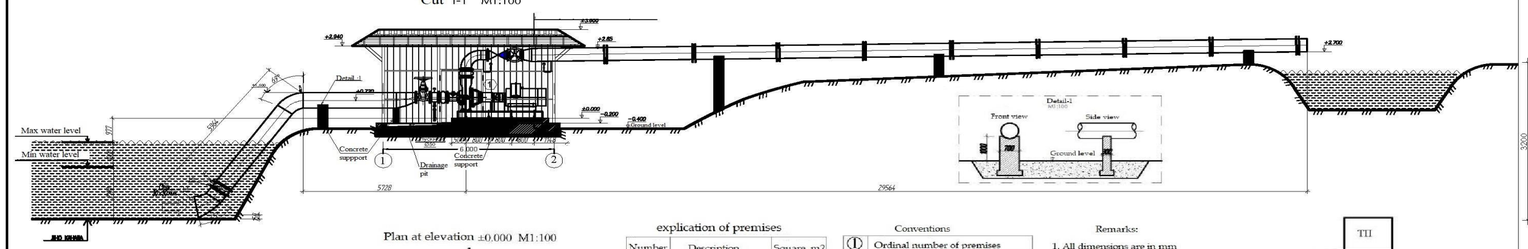
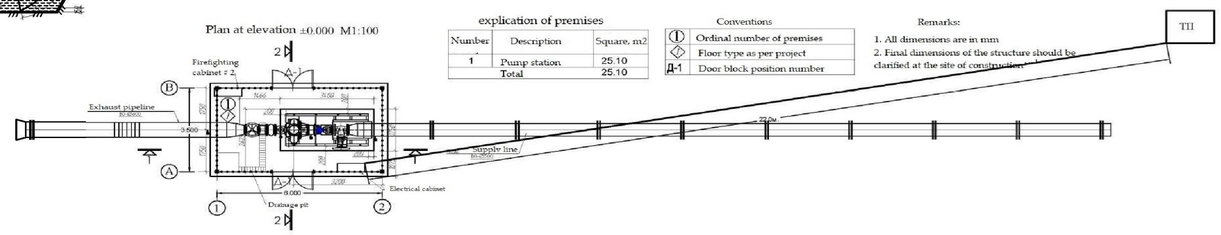
Cut 1-1 M1:100



Plan at elevation ±0.000 M1:100



explication of premises

Number	Description	Square, m2
1	Pump station	25.10
	Total	25.10

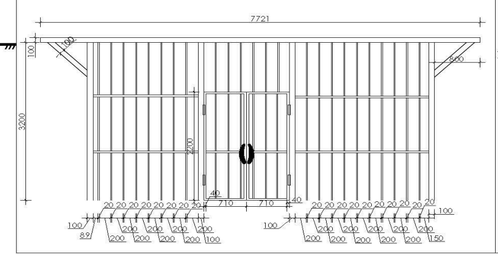
Conventions

①	Ordinal number of premises
◇	Floor type as per project
Д-1	Door block position number

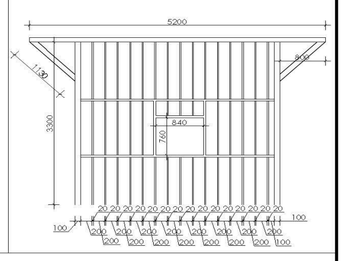
Remarks:

1. All dimensions are in mm
2. Final dimensions of the structure should be clarified at the site of construction

Fragment of the crate of metal. profiles per element M 1:50



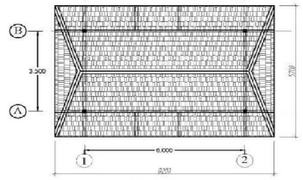
Fragment of the crate of metal. profiles per element M 1:50



Remarks:

1. All dimensions are in mm.
2. The final dimensions should be specified at the place of construction

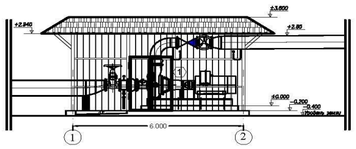
Roof plan M1:100



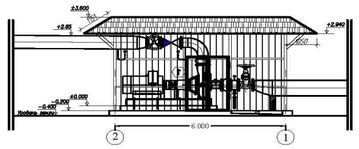
Remarks:

1. Roof - metal tile for metal purlins - 52,70 m2

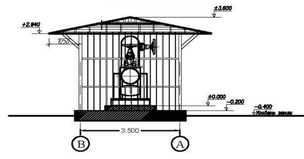
Facade along the axes 1-2 M1:100



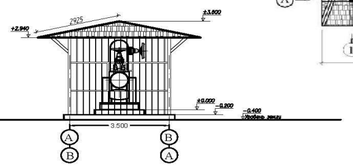
Facade along the axes 2-1 M1:100



Cut 2-2 M1:100



Facade along the axes A-B, B-A M1:100



EXPOSITION OF FLOORS

Number of premise on plan	Floor type as per the project	Scheme of floor or number of node on serial	Floor elements	Square
1	2	3	4	5
1	①		- Screed from a cement-sand mortar M150 (on a slope) -200mm. (max) - Waterproofing layer - Underlying layer of concrete grade M100-150mm. - Primer ground with gravel or crushed gravel 40mm	25.10

AC

Installation of a pumping station in the village of Sumbar in the Etrap of Magtymguly. 1030 km. the Karakum River (vel. Balkan)

Pumping station

Stage	Sheet	Sheets

The plan is at the mark of ± 0.000, the facade along the axes A-B, B-A, Section 1-1, Section 2-2, Facade along the axes 1-2, - Facade along the axes 2-1, Roof plan M1: 100

Инв. N подл. | Подп. и дата | Взам. инв. N

A-4 Format

ELECTRIC POWER SUPPLY

Pumping house

The aim of this project is to provide for power supply to the pumping station in the Sumbar village of Magtymguly etrap. 1030 km. of the Karakum river (vel. Balkan).

By the degree of reliability and continuity of power supply the projected facility belongs to the consumer of the III category. The project provides for connecting the pump from the existing complete transformer.

In this project a cable version of 0.4 kV indoor networks is adopted. Cable lines 0.4 kV. They are laid in a trench at a depth of 0.7 m from the planning land mark by NYY-1 kV cables.
In the intersection of cable lines with engineering facilities the cable is laid in asbestos-cement pipes-sleeves.

Power electrical equipment section and electrical lighting pumping developed on the basis of the architectural and construction section of the project in compliance with existing electrical codes and regulations.

As a power control board the power shield with automatic switches and built-in start-up protection equipment for units not equipped with its own automation panel was adopted.

Power supply is 380/220 V. The power input is conducted with a cable with copper wires NYY.
Working lighting is provided for the project.
The voltage of the main supplies for lighting lamps is 220V. The methods and locations of the luminaires are shown on the plan. The lighting control is provided by switches in place.
To protect the operating personnel from electric shock in the event of touching the metal parts of electrical installations that are not under voltage but which could be placed under it as a result of insulation damage the protective earthing is provided. Earthing shall be implemented by connecting the equipment body frame to the earthing strip of the protective external loop set consisting of 0 22 mm round steel electrodes and steel strip 40x4mm.
Production of all the works should be conducted in strict accordance with the RIEE (rules of installation of electric equipment) and the construction norms of Turkmenistan.

WORK SHEET OF WORKING DRAWINGS OF THE BASIC SET PSEEL

Sheet	Denomination	Note
1	General data	
2	Electric lighting plan. Plan of power networks. Calculation scheme. Earthing.	

WORK SHEET OF REFERENCE AND SUPPLIED DOCUMENTS

Designation	Denomination	Note
REFERENCE DOCUMENTS		
RIEE -87. Edition.6	Rules for the installation of electrical equipment	
BCN 59-88	Electric equipment of residential and public buildings	
ATTACHED DOCUMENTS		
	Specification of equipment for working drawings of "EM"	On sheet 1

Graphical symbols

Designation	Denomination	Note
B	Power distribution shield	
47	Wall mounted lamp wall with incandescent lamp with power 60 watt	
b	Single-pole circuit breaker for current 10A, 250V	
	Cable line of power supply	

The project is developed in accordance with acting regulations and rules, and provides for activities that provide explosive, fire and fire safety in the operation of the building.

The chief architect of the project

GENERAL INSTRUCTIONS

Pumping house

The purpose of this project is to provide power supply to the pumping station in the Sumbar village of Magtymguly etrap. 1030 km. of the Karakum river (vel. Balkan).

In terms of reliability and continuity of power supply, the projected facility belongs to the Ill-category consumer. The project provides for connecting the pump from the existing complete transformer.

In this project, a cable version of 0.4 kV indoor networks is adopted. Cable lines 0.4 kV. They are laid in a trench, at a depth of 0.7 m from the planning land mark by NYY-1 kV cables. In the intersection of cable lines with engineering facilities, the cable is laid in asbestos-cement pipes-sleeves.

Section power electrical equipment and electrical lighting pumping developed on the basis of the architectural and construction section of the project in compliance with existing electrical codes and regulations.

As a power administrative shield, a power shield with automatic switches and integrated starter protection equipment for units that are not equipped with their own automation panel is accepted.

Power supply is 380/220 V. The power input is conducted with a cable with copper wires NYY.

The working lighting is provided by the project.

The voltage of the mains supply for lighting lamps is 220V. The methods and locations of the luminaires are shown on the plan. The lighting control is provided by switches on place.

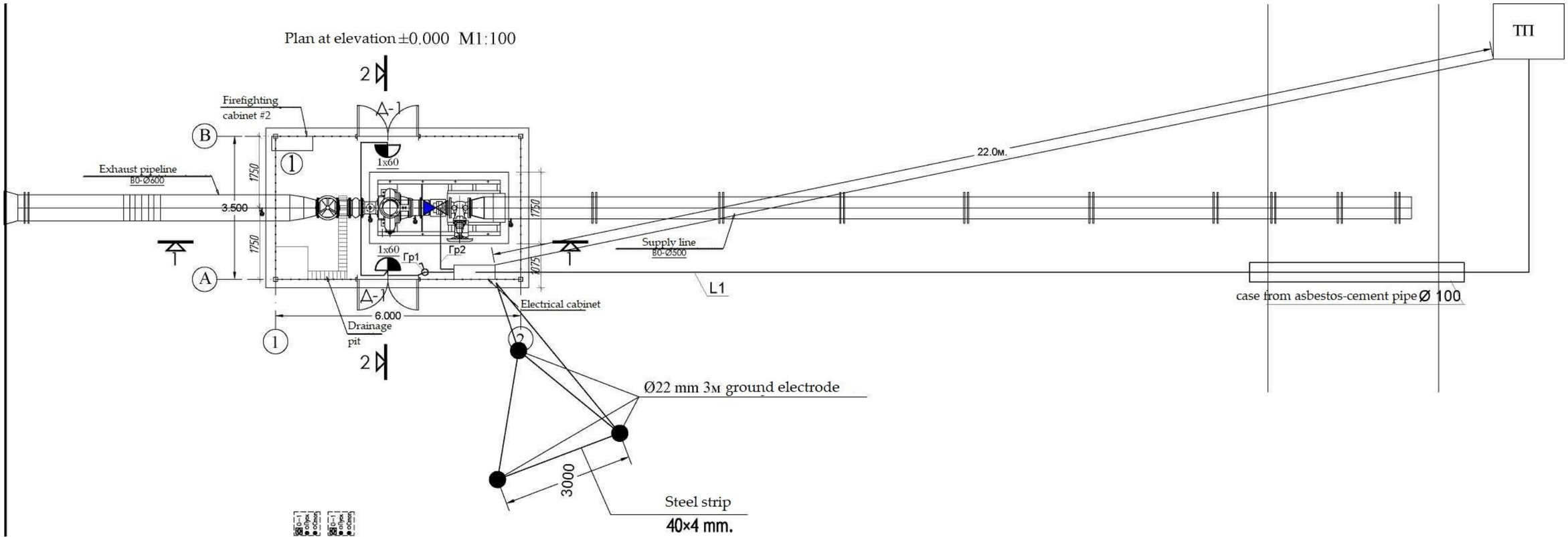
To protect the operating personnel from electric shock in case of touching the metal parts of electrical installations that are not under voltage but which could be placed under it as a result of insulation damage the protective earthing is provided. Earthing is implemented by connecting the equipment housings to the earthing strip of the protective external loopset which consists of 0 22 mm round steel electrodes and a steel strip 40x4mm.

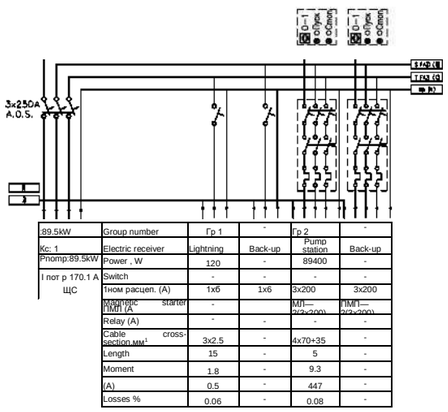
Production of all the works should be conducted in strict accordance with the RIEE (rules of installation of electric equipment) and the construction norms of Turkmenistan.

				Installation of a pumping station in the village of Sumbar in the Etrap of Magtymguly. 1030 km. the Karakum River (vel. Balkan)		
Н3М.N уч	Sheet N	Signature	Date			
				Pumping house	Stage	Sheet	Sheets
PMG					РП	**1**	**2**
Eng.							
				General data		

Format- A3

Specification of main equipment			
Position #	Name	Quantity	Note
1	Water booster system	1 worker	
	Q=1800.0m3/hour, H=5.0м		





89.5kW	Group number	Гр 1	-	Гр 2	-
Кс: 1	Electric receiver	Lightning	Back-up	Pump station	Back-up
Pnomp:89.5kW	Power , W	120	-	89400	-
I пог р 170.1 A	Switch	-	-	-	-
ЩС	Тном расцеп. (А)	1х6	1х6	3х200	3х200
	Magnetic starter ПМЛ (А	-		ПМ)— 2(3х200)	ПМ)— 2(3х200)
	Relay (A)	-	-	-	-
	Cable cross-section,мм²	3х2.5	-	4х70+35	-
	Length	15	-	5	-
	Moment	1.8	-	9.3	-
	(A)	0.5	-	447	-
	Losses %	0.06	-	0.08	-

1. All dimensions are given in mm.

2. The final dimensions of the construction shall be clarified by the place of construction

Cable #	Beginning (name of building and shield designation)	End (same)	Brand	Cable: Quantity of section in mm²	Pipe: Length, m	Pipe: Brand	Pipe: Length, m	Load: Established power kV	Load: Calculated power, kV	Load: cos < 1	Loss: cos φ	Loss: Moment, kV - м	Loss: %	Note
POWER CABLES 0,4 kV electric supply of the territory from TP technical premise)														
L1	РУ-0,4 kVa ктп	Pumping house	NYY	3x95+1x50	45	In tranch	35	89.5	89.5	170.1	0,95	4027.5	0.6	
						a/c Ø100	10							

				- - ЭС
				Installation of a pumping station in the village of Sumbar in the Etrap of Magtymguly. 1030 km. the Karakum River (vel. Balkan)
Н3М.N	Sheet # measure	Signature	Date	
				Pumping house — Stage: РП; Sheet: 2; Sheets: 2
Execution.				
				Plan of electric lighting. Plan of power supply networks. The calculation scheme. Earthing.

Формат А4

Position	Denomination and technical characteristics	Type, brand, designation of the document, questionnaire	Code of equipment, unit, material	Factory-manufacturer	Unit measure	Quantity	Unit mass kg	Note
1		3	4	5	6	7	8	9
	Equipment and materials							
	Stations, shields, boxes							
1	Power distribution shield with inductive aut. 1p=3x250A.							
	- with aut.line 1x6A-2pcs, 3x200A-2pcs.							
	- with magnetic starter 3x200A-2pcs.							
	- two-button control button -2pcs.	Individual manufacturer			set.	1		S (power shield)
2	Circuit breaker of RPS 2-250 type for substation unit				piece	1		
	Lighting equipment							
3	Wall Lamp LED 7 Vt				piece	2		
4	LED lamp 7 Vt				piece	2		
	Wiring device							
5	Single-pole breaker for current 10A, 250 V external device is leakproof				piece	48		
	Cableware							
	Power cable with copper conductors, PVC insulated, sec:							
6	3x2,5	NYM			m	15		
7	4x70+35	NYM			m	5		
8	3x95+1x50	NYM			m	45		
	Earthing							
9	Vertical electrode 022mm, Ь=3m				piece	3		
10	Flat steel 40x4mm				m	25		
	PVC pipes							
11	Vinyl plastic pipe with outside diameter 20 mm	PVC REB 20			m	15		
12	Asbestos-cement pipe with external diameter 100 mm	a/c 0 100			m	10		

lectric equipment and electric ghting | tage | heet | heets

P (distribution point) | 1 | 1

quipment specification

Work sheet of volume of construction and electrical works.

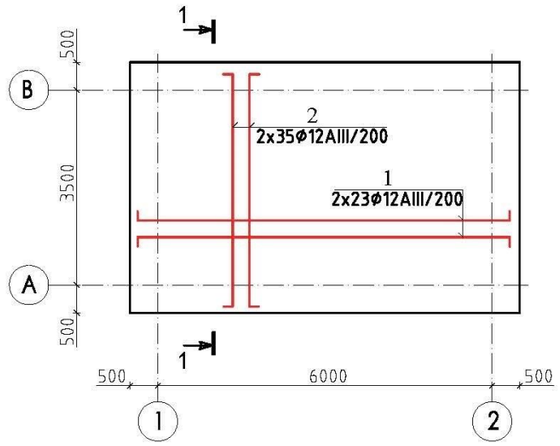
№	Denomination	Unit measure	Quantity	Note
1	Construction length of trench T 1		30	
2	Trench excavation T 1 for cabling of 1m 0,31m^3		9.3	
3	Backfilling of trenches T 1 for 1m 0,23m^3		6.9	
4	Arrangement of sand bed T 1		2.4	
5	Covering of cable with bricks (8 pcs/м) T1		240	
6	Cabling in trench		30	
7	Cabling in buildings		20	
8	Cabling in pipes		10	
9	Cabling in TP		5	
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

				-ЭС.ВОР			
				Installation of pumping house #3 bis in Ashgabat city along bypass (Gurtly)			
Position	*Name, Family name*	*Signature*	*Date*				
				Electrical supply	*Stage*	*Sheet*	*Sheets*
						1	*1*
Prepared							
				Work sheet of volume of construction and electrical works.			

Form A-4

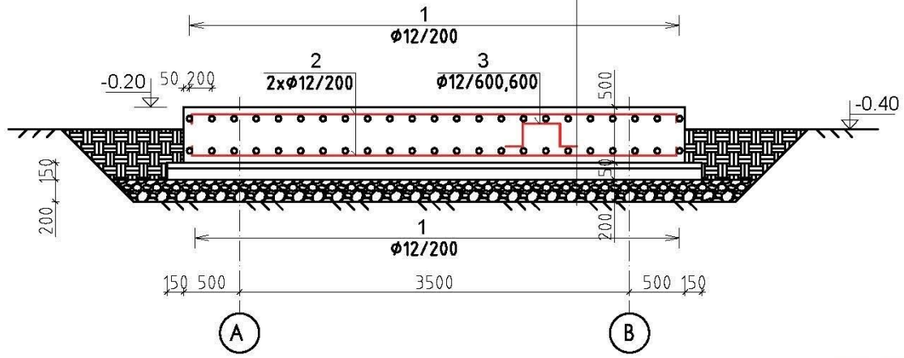
Plan and reinforcement of the base plate

M1:100



Cross section 1-1.

M1:50



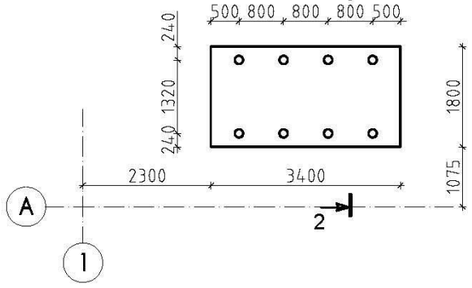
Basement
Cement strainer M100 · thk. 50мм.
Isogam in 2 layers
Concrete preparation with thk 100 mm
Gravel-sand mixture with a thickness of 20 cm (compacted)
Compacted soil base

Reinforced monolith concrete specification

Pos.	Sketch	Ø мм,	Length, mm	Q-ty	Weight, kg
Base Plate (1 pcs)					
1	6900 (150 … 150)	12 AIII	7200	46	6.39
2	4400 (150 … 150)	12 AIII	4700	70	4.17
3	500, 390, 390, 400, 400	12 AIII	2080	81	1.85
Concrete grade B20					15.75 м³.

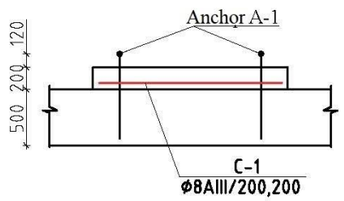
Basement plan for equipment

M1:100

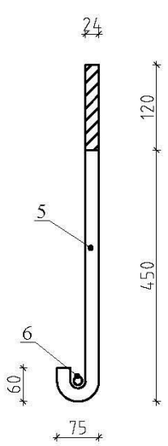


Cross-section 2-2.

M1:50



Anchor A-1



Steel flow sheet

Element brand	Rebar products, kg							
	Rebar grade							Total
	A-I		AIII					
	TDS 5781-82*		TDS 5781-82*					
	Ø8	Sub-total	Ø12	Ø16	Ø20	Ø25	Sub-total	
Base plate	---	---	721.10	---	---	---	721.10	721.10

Metal specification (per unit)

Position	Designation	Description	Q-ty	Weight, kg	Remarks
5	TDS 24379.1-80	Bolt 2.1 M24x630, Вст3 КП2	8	2.12	16.96
6	TDS 5781-82	Ø 22A-I, L=90	8	0.27	2.16
		Concrete grade B15			1.22 м³.

Remarks

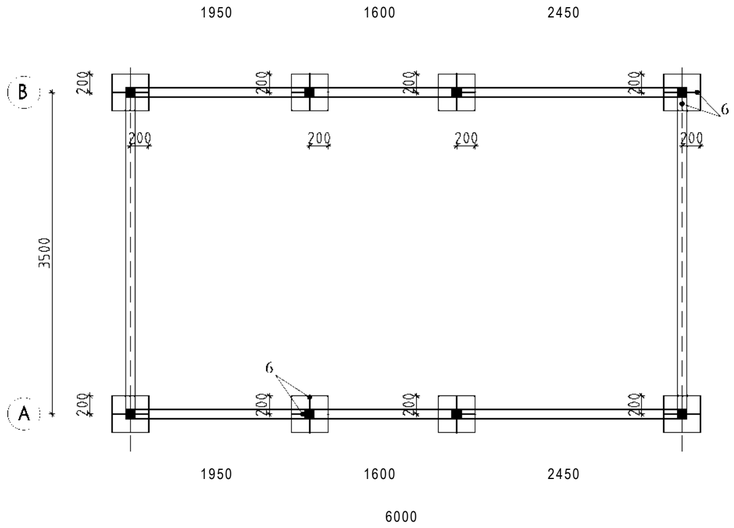
1. Work together with l. AC-
2. The bending radii for the working armature take 6d.
3. All designs touching the ground perform on sulphate-resistant cement and cover with bituminous mastic for 2 times.
4. On the foundation plan, concrete preparation is not shown conditionally.
5. Fittings pos. 3 (lock) set in staggered order.
6. Protective layer for concrete for the upper fitting is 25mm, and for the lower reinforcement 35mm.
7. Cement screed M100 thick. 50 mm. is 1.75 m3., the volume of concrete preparation class B 10 thick. 100mm is 3.50 m3.
8. The area of the roll waterproofing Izogam - 35.04 m2.
9. The area of the bitumen mastic coating is 6.90 m2.
10. The total volume of GPS is 7.80 m3. The volume of excavated soil is 40.00 m3
11. The total flow rate of the C-1 grid reinforcement is: 3.95 kg / m2, the total area is 6. The total volume of concrete B is 15 - 1.22 m3.
12. Installation of anchors should be made for specific equipment.

Pumping Stattion	Stage	Page / Sheets
	РП	4
Plan and reinforce of the base plate Section 1-1. Specification		

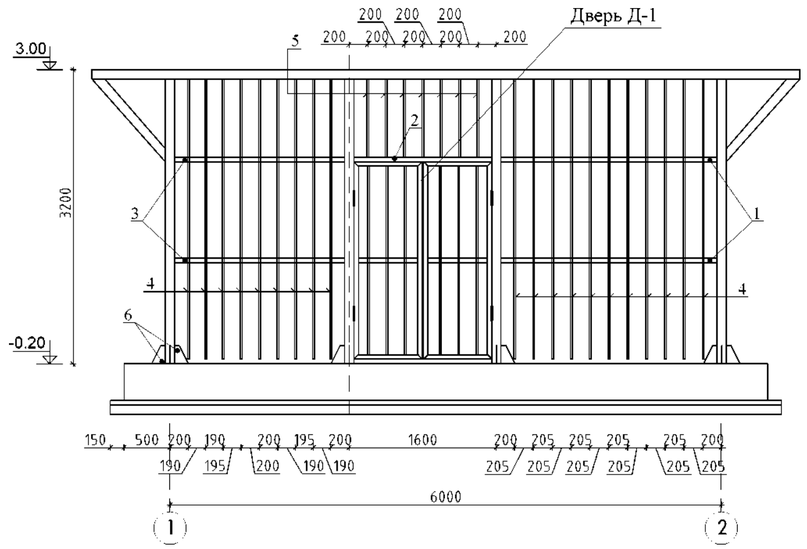
Format-A3

Format-A3

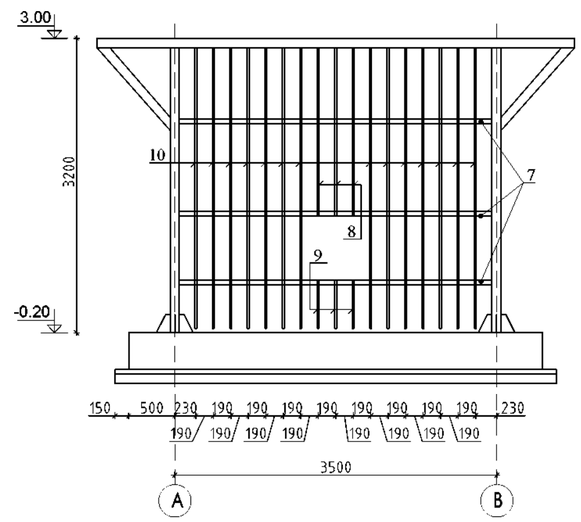
Plan of layout of embedded parts and racks M1:50



View A-A
M1:50



View B-B
M1:50

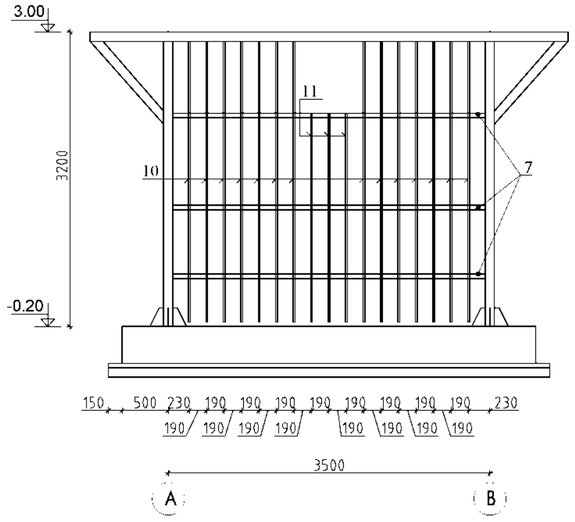


Specification of metal (per unit).

Position	Designation	Denomination	Quantity	Unit mass, kg	Note
	View A-A		2		
1	TDS 30245-2003	Square pipe O 50x50x3, L=2350	2	9.98	19.96
2	TDS 30245-2003	Square pipe O 50x50x3, L=1500	2	6.37	12.74
3	TDS 30245-2003	Square pipe O 50x50x3, L=1850	2	7.86	15.72
4	TDS 8639-82	Square pipe O 25x25x3, L=3100	20	6.05	121.00
5	TDS 8639-82	Square pipe O 25x25x3, L=900	7	1.75	12.25
6	TDS 103-76	Strip $\frac{150x8[TDS]}{C275\ TDS\ 27772\text{-}88*}$ L=200	14	1.25	17.50
		O 50x50x3		КГ	48.42
		O 25x25x3		КГ	133.25
		Sheet steel t = 8 mm		кг	17.50
		Totally:			216.70
		Totally deposited metal 2%:			4.30
		Totally:			221.00
	View B-B		1		
7	TDS 30245-2003	Square pipe O 50x50x3, L=3400	3	14.50	43.50
8	TDS 8639-82	Square pipe O 25x25x3, L=1900	3	3.70	11.10
9	TDS 8639-82	Square pipe O 25x25x3, L=900	3	1.75	5.25
10	TDS 8639-82	Square pipe O 25x25x3, L=3100	14	6.05	84.70
		O 50x50x3		kg	43.50
		O25x25x3		kg	101.05
		Totally:			144.55
		Totally deposited metal 2%:			2.90
		Totally:			147.45

Position 6
M 1:10

View B-B
M1:50



Specification of metal (per unit).

Position	Designation	Denomination	Quantity	Unit mass, kg	Note
	View B-B		1		
7	TDS 30245-2003	Square pipe O 50x50x3, L=3400	3	14.50	43.50
10	TDS 8639-82	Square pipe O 25x25x3, L=3100	14	6.05	84.70
11	TDS 8639-82	Square pipe O 25x25x3, L=2300	3	4.50	13.50
		O 50x50x3		kg	43.50
		O25x25x3		kg	98.20
		Totally:			141.70
		Totally deposited metal 2%:			2.80
		Totally:			144.50

Note:

1. Work together with sheets AC-
2. For the details, steel C2 75 (VStZPsb) according to TDS 27772-88 * is used.
3. Joints of metal structures to be produced by manual electric arc welding with TDS 5264-80 electrodes type E42 according to TDS9467-75. The height of the leg of all welded seams except for those indicated in the drawings is taken by the smallest thickness of the welded elements.
4. The maximum permissible clearance between the edges of the joined elements is-2mm.
5. All welds must be cleaned of slag.
6. All metal structures painted with nitro-enamel paint 2 times.
7. All dimensions of metal structures are given in millimeters (mm).
8. To fix the metal tile to the girders using self-tapping screws, and each tile is fastened with combined rivets (300 mm pitch).

Position	Name, Last name	Signature	Date				
				Pumping house	Stage	Sheet	Stages
						4	
				Layout of embedded parts and racks. View “A-A”, “B-B” and “B-B”. Specification.			

Формат-А2

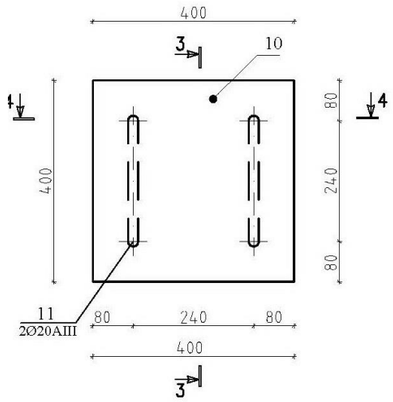
Specification of metal (for unit).

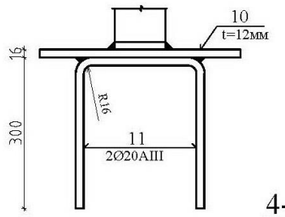
Position	Designation	Denomination	Quantity	Unit mass, kg	Note
	Metal door D-1		2		
1	TDS 30245-2003	Square pipe O 50x50x3, L=2150	4	9.14	36.56
2	TDS 30245-2003	Square pipe O 50x50x3, L=745	4	3.16	12.64
3	TDS 30245-2003	Square pipe O 50x50x3, L=650	2	2.76	5.52
4	TDS 8639-82	Square pipe O 25x25x3, L=2100	6	4.10	24.60
5		Loop by series 3.017-1.05.110.100	4		
6		Handle by series 3.017-1.05.110.300	2		
		O 50x50x3		кг	54.72
		O 25x25x3		кг	24.60
		Total:			79.32
		Total deposited metal 2%:			1.60
		Total:			80.92

3 - 3

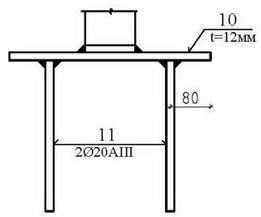
Backing detail ЗД-1

M 1:10





4-4

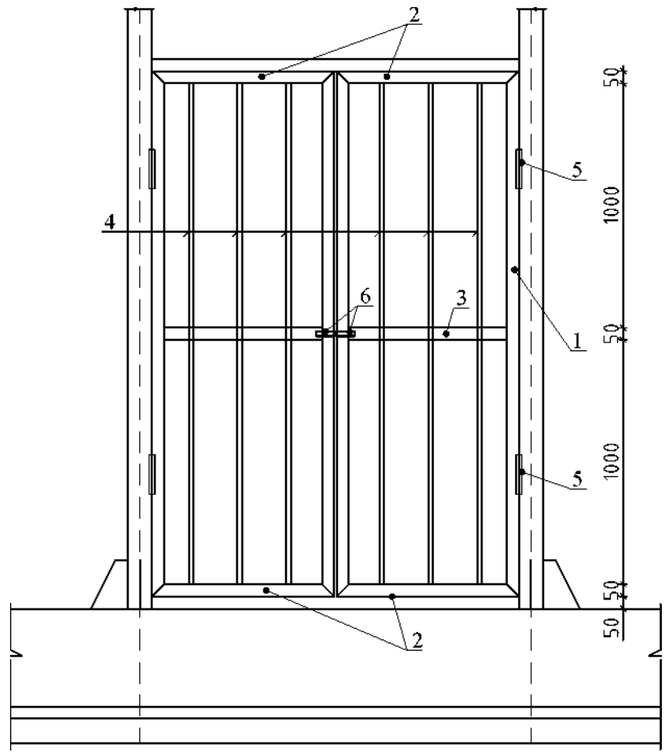


Remarks:

1. Work together with AC sheets-
2. For the details, steel C275 (VStZPsb) according to TDS 27772-88 * is used.
3. Joints of metal structures to be produced by manual electric arc welding with TDS 5264-80 electrodes type E42 according to TDS9467-75. The height of the leg of all welded seams except for those indicated in the drawings is taken by the smallest thickness of the welded elements.
4. The maximum permissible clearance between the edges of the joined elements is-2mm.
5. All welds must be cleaned of slag.
6. All the metal structures should be painted with nitro-enamel paint for 2 times
7. All dimensions of metal constructions are given in mm.

Door D-1

M1:25



SPECIFICATION OF METAL ELEMENTS

Position	Designation	Description	Q-ty	Weight unit, kg	Note
		Folding part ZD-1	8		
10	TDS 103-76	Stripe 400x12 fTDS1 L-400 Stripe C275 TDS **27772-88***	1	15.10	15.10
11	TDS 5781-82*	02OA-III L=620	2	1.53	3.06

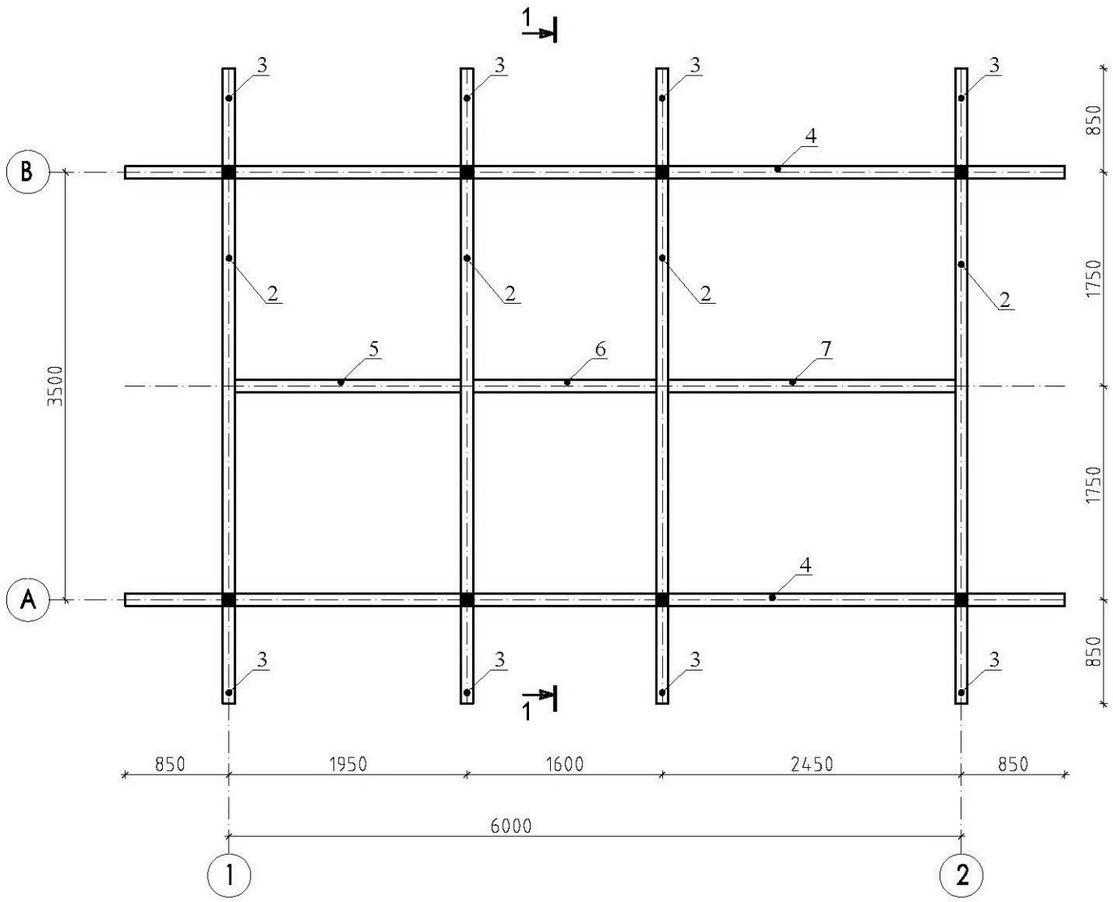
POSITION	Name, Last name	Signature	Date			
				Pumping house	Stage	Stork	Sheets
					РП	4	
				Metal door D-1. __Folding part__ZD-1. Specification.			

Format-A3

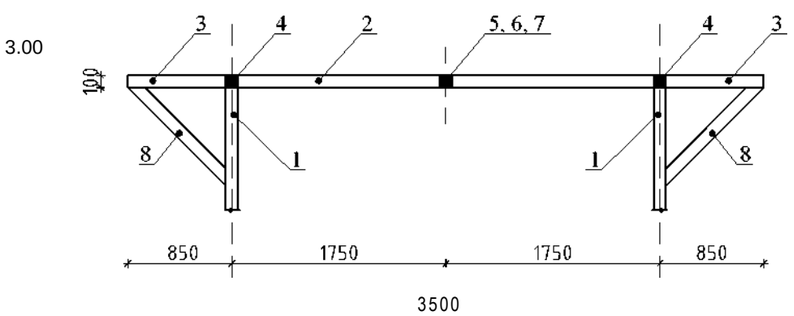
Plan of elements disposition on the mark 3.00.

M1:50

1



3.00



Specification of metal (for unit)

Position	Designation	Denomination	Q-ty	Weight unit, kg	Note
1	TDS 25577-73*	square pipe O 100x100x5, L=3100	8	43.21	345.68
2	TDS 25577-73*	square pipe O 100x100x5, L=3400	4	47.39	189.56
3	TDS 25577-73*	square pipe O 100x100x5, L=800	8	11.15	89.20
4	TDS 25577-73*	square pipe O 100x100x5, L=7700	2	107.33	214.66
5	TDS 25577-73*	square pipe O 100x100x5, L=1850	1	25.78	25.78
6	TDS 25577-73*	square pipe O 100x100x5, L=1500	1	20.91	20.91
7	TDS 25577-73*	square pipe O 100x100x5, L=2350	1	32.76	32.76
8	TDS 25577-73*	square pipe O 100x100x4, L=1030	12	11.88	142.56
		O100x100x5		КГ	918.54
		O 100x100x4		кг	142.56
		Total:			1061.10
		Total deposited metal 2%:			21.20
		Total:			1082.30

Note:

1. Work together with sheets AC-
2. For the details, steel C2 75 (VStZPsb) according to TDS 27772-88 * is used.
3. Joints of metal structures to be produced by manual electric arc welding with TDS 5264-80 electrodes type E42 according to TDS9467-75. The height of the leg of all welded seams, except for those indicated in the drawings, the smallest thickness of the welded elements.
4. The maximum permissible clearance between the edges of the joined elements is-2mm.
5. All welds must be cleaned of slag.
6. All the metal structures painted with nitro-enamel paint for 2 times.
7. All dimensions of metal structures are given in millimeters (mm).
8. Secure the metal tile to the girders using self-tapping screws, and each tile is fastened with combined rivets (300 mm pitch).

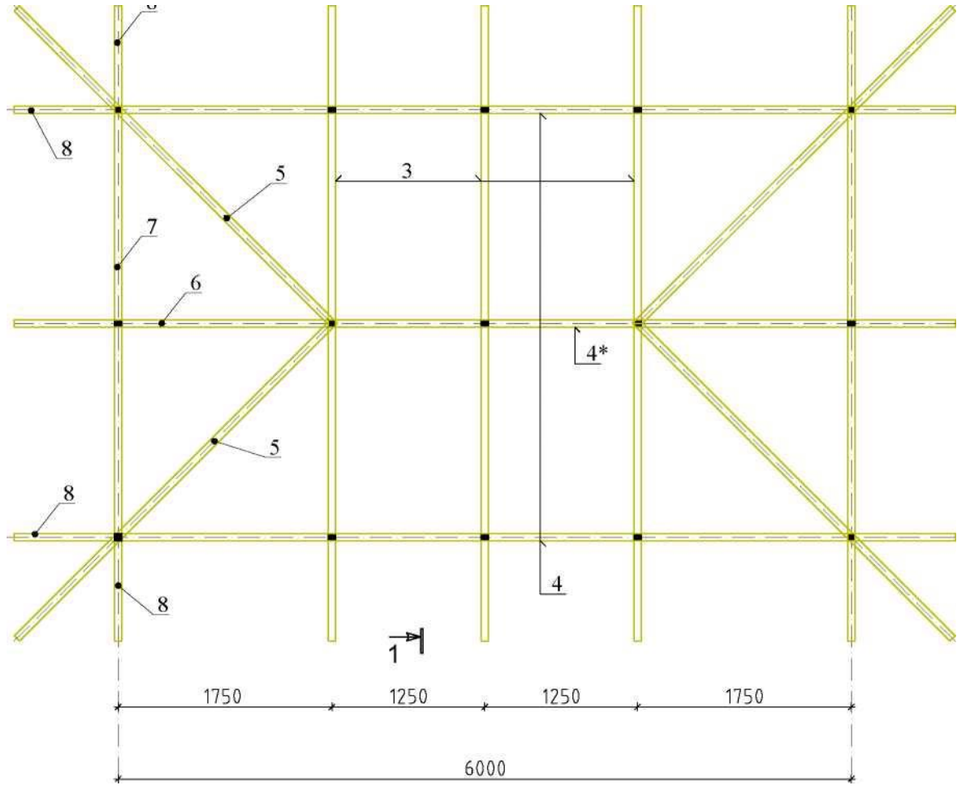
Position	Name, Last name	Signature 1	Date			
				Pumping house	Stage	Sheet	Sheets
					РП	4	
				Plan of elements disposition on mark 3.00. Cross-section 1-1. Specification.		

Формат-А3

Plan of disposition of elements of roof Kp-1.

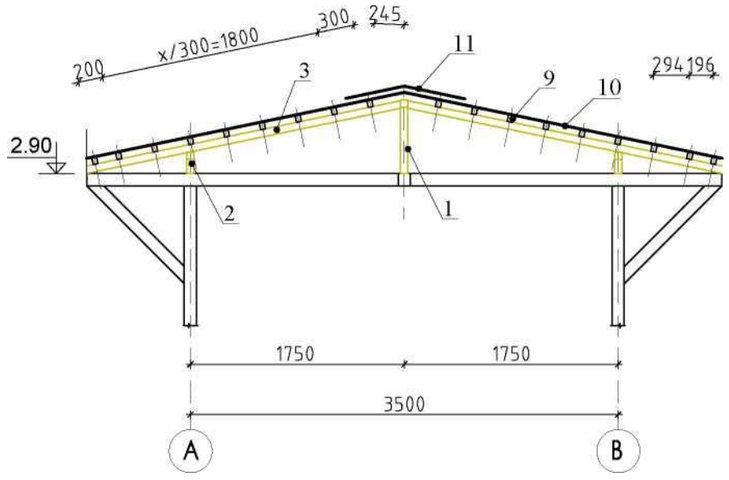
M1:50

1



Section 1-1

M1: 50



Specification of metal (for unit).

Position	Designation	Denomination	Q-ty.	Weight unit, kg	Note
1	TDS 30245-2003	square pipe O 60x60x5, L=540	3	4.39	13.17
2	TDS 30245-2003	square pipe O 60x60x5, L=180	12	1.46	17.52
3	TDS 30245-2003	square pipe O 60x60x5, L=2620	6	25.36	152.16
4	TDS 30245-2003	square pipe O 60x60x5, L=5940	2	48.29	96.58
4*	TDS 30245-2003	square pipe O 60x60x5, L=2440	1	19.83	19.83
5	TDS 30245-2003	square pipe O 60x60x5, L=3700	4	30.08	120.32
6	TDS 30245-2003	square pipe O 60x60x5, L=2680	2	21.78	43.56
7	TDS 30245-2003	square pipe O 60x60x5, L=3440	2	27.96	55.92
8	TDS 30245-2003	square pipe O 60x60x5, L=875	8	7.11	56.88
9	TDS 30245-94	square pipe O 60x40x3, h=147.80 m.	---	4.25	628.10
10	Metal tile roofing	t=0.5 mm	---	---	45.40 м2 204.30 кг
11	Steel TDS 14918-80	t=0.7mm, L=2000x500	9	5.50	47.41
		O 60x60x5		КГ	575.90
		O 60x40x3		кг	628.10
		Total:			1204.00
		Total deposited metal 2%:			24.10
		Total:			1228.10

Note:

1. Work together with sheets AC-
2. For the details, steel C275 (VStZPsb) according to TDS 27772-88 * is used.
3. Joints of metal structures to be produced by manual electric arc welding according to TDS 5264-80 with electrodes type E42 according to TDS9467-75. The height of the leg of all welded seams except for those indicated in the drawings is taken by the smallest thickness of the welded elements.
4. The maximum permissible clearance between the edges of the joined elements is-2mm.
5. All welds must be cleaned of slag.
6. All the metal structures painted with nitro-enamel paint for 2 times.
7. All dimensions of metal structures are given in millimeters (mm).
8. Metal tile fasten to the girders by means of screws, and each tile is fastened with combined rivets (step 300mm).

Position	Name, last name	Signature	Date			
				Pumping house	Stage	Sheet	Sheets
					РП	4	
				Plan for the location of roof elements Kr-1. Section 1-1. Specification.		

Format-A3

WORK SHEET OF VOLUMES OF CONSTRUCTION AND INSTALLATION WORKS

(number of unit)

1	2	3	4	5	6
		Square pipe 100x5	**kg**	**918.54**	
		Square pipe 100x4	**kg**	**142.56**	
		Square pipe 60x5	**kg**	**575.90**	
		Square pipe 60x40x3	**kg**	**628.10**	
		Square pipe 50x3	**kg**	**293.30**	
		Square pipe 25x3	**kg**	**514.95**	
		Sheet t= 12 mm	**kg**	**120.80**	
		Sheet t=8 mm	**kg**	**35.00**	
		Sheet t=0.7 mm	**kg**	**47.41**	
		Armature AIII	**kg**	**48.70**	
		Metal tile	**kg**	**204.30**	
		Concrete B10	**m^3**	**3.50**	
		Concrete B20	**m^3**	**15.75**	
		Cement strainer	**m^3**	**1.75**	
		Isogam	**m^2**	**35.04**	
		Bituminous bitumen coating for 2 times	**m^2**	**6.90**	
		Drawn soil	**m^3**	**40.00**	
		GGS (gas generator system)	**m^3**	**7.80**	
		Concrete B15	**m^3**	**1.22**	

WORK SHEET OF WORKING DRAWINGS OF THE BASIC SET

Sheet	Denomination	Note
01	General data	TX
02	Plan of pumping house on mark ±0,000.	TX
03	Section 1-1 with sites M1:50.	TX
04	Axonometric diagram of the VO networks.	TX

WORK SHEET OF REFERENCE AND SUPPLIED DOCUMENTS

DESIGNATION	DENOMINATION	NOTE
Reference documents		
SNT 2.04.02-00	Water supply. External networks and facilities.	
SNT 2.04.01-98	Internal water supply and sewerage system	
	Attached documents	
TX.C	Equipment Specification	On sheet 1

MAIN INDICATORS FOR DRAWINGS OF WATER SUPPLY AND SEWERAGE

System denomination	Estimated expense			Installed power el.engine	Note
	m3 / day	m3 /hour	l/sec		
B1	32400	1800.0	500.0		

The project has been developed in accordance with acting regulations and rules and provides for activities that provide an explosive, explosion and fire safety during operation of a building.

Chief Engineer of the project

General Data

In this part of the project the technological solutions for the installation of the pump are presented.

The work of the pumping house is provided without permanent staff on duty. Control of the pump is implemented automatically.

Technical solutions are taken with account of above-ground execution and installation of pumps under the bay from the calculated level.

The pumping station for pumping water provides installation from a single pump with a capacity of Q = 1800m^3/h,
H = 5.0m.

- The exhaust pipeline is introduced into the channel at an angle of 45 ° and is a steel pipe 0630x14.0 mm with an input section equipped with a containment grate. The exhaust pipe is obligatory equipped with a gate valve, a mechanical filter, a compensator and manometers.

After installation, the steel pipelines and pipeline valves should be painted on the surface of the PF-133 or PF-155 enamel, cleaned of rust, 1 layer of GF-0119 primer. Insulation of the outer surface of steel pipelines outside the pumping station should be "highly enhanced" based on bitumen mastics or polymer adhesive tapes in accordance with GOST 9.602-89. In places where pipelines pass through the walls of tanks, a device of ribbed branch pipes with flexible inserts is provided.

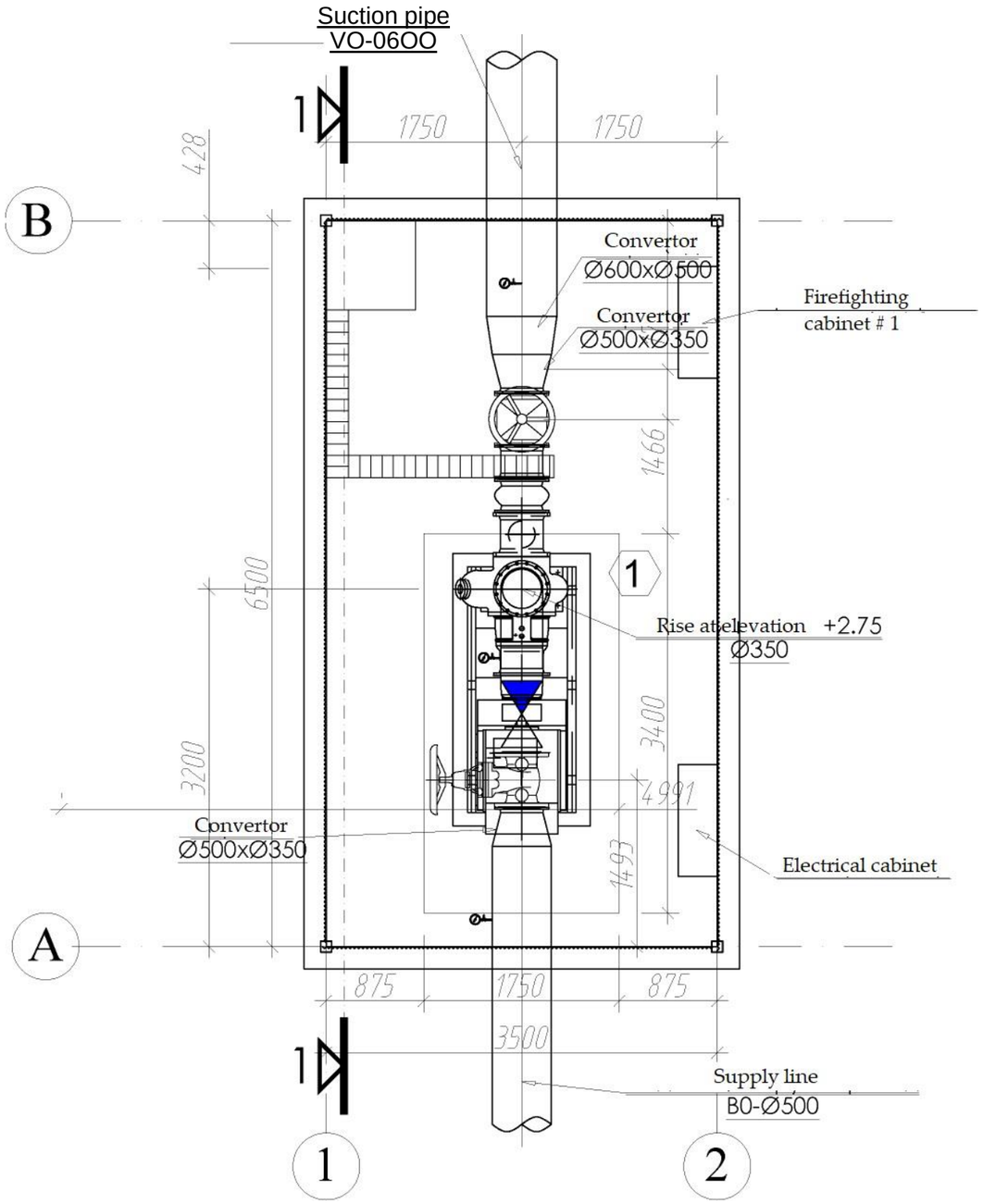
Installation of the systems and mandatory intermediate acceptance of the performed work shall be carried out in accordance with SNIP 3.05.01-85.

The pump station is equipped with two fireproof cabinets and two powder OP-6 and carbon dioxide OU-6 fire extinguishers. The project provides for the installation of equipment supplied complete with units with shut-off, safety and control valves, control devices, as well as control and automation panels.

Mea	Q-ty.	Sheet		Signature	Date			
Impl.						Pumping of the 1st lift	Stage	Sheet	Sheets
							РП	1	4
						General data			

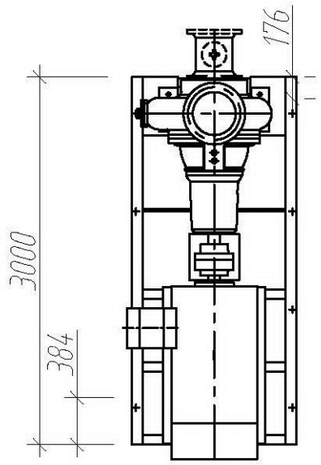
Format A3

Plan of pumping house



SPECIFICATION OF MAIN EQUIPMENT

№ of position	Denomination	Quantity	Note
1	Pressure boosting unit	1worker	
	Q = 1800.0 m³ / h, H = 5.0 m		

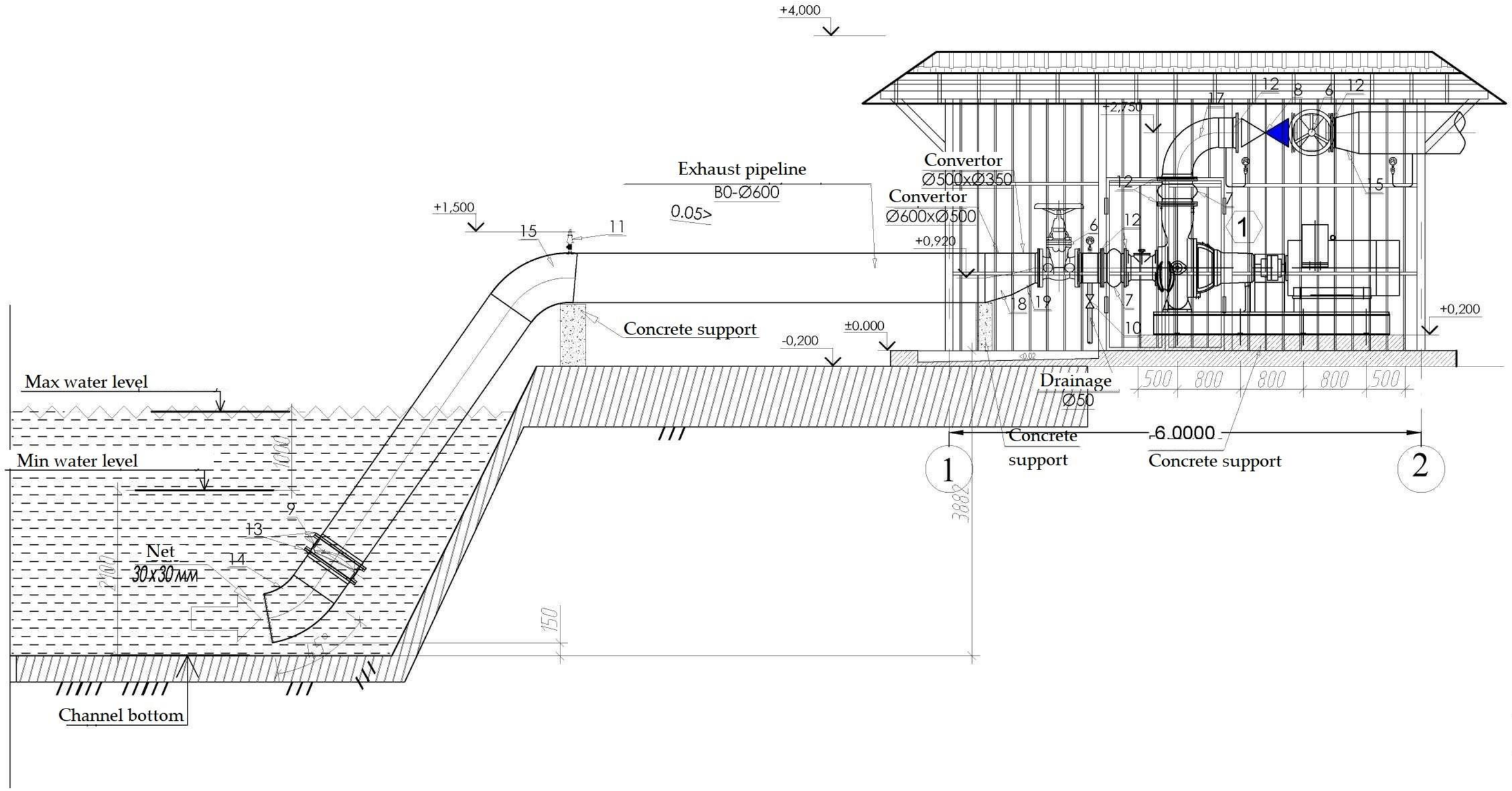


Mea	Q-TY	Sheet		Signature	Date	Pumping house of the 1st lift	Stage	Sheet	Sheets
Impl.							РП	2	4
						Plan of pumping housing on mark. ±0,000.			

Формат А3

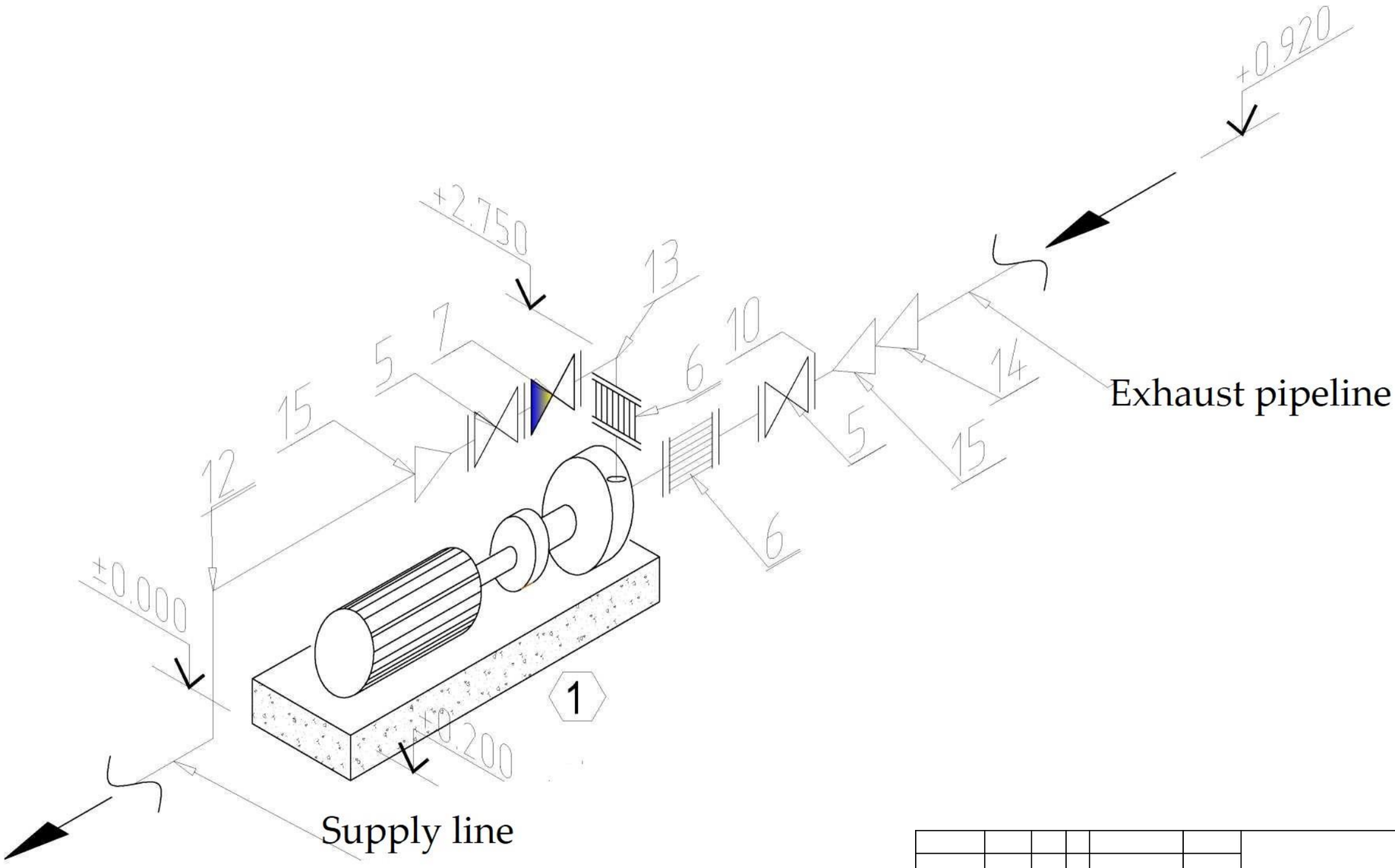
Cut 1-1

M1:100



Формат А2

Axonometric
scheme of PS (package system) networks



Measure.	Q-ty.			Signature.	Date			
						Pumping house of the 1st lift	Stage	Sheet	Sheets
Impl.							РП	4	4
						Axonometric diagram of the VO networks.			

Position	Name and technical characteristics	Type, mark, designation of the document, questionnaire	Code of equipment, products, material	Manufacturer.	Unit measure	Quantity	Weight of unit, kg	Note
1	2	3	4	5	6	7	8	9
	Water supply system - VO							
1	Pressure boosting unit				set	1	On request	1 worker
	Q = 1800.0 m3/h, H = 5.0 m							
2	Steel electric welded pipe DN630xl4.0 (600)	TDS 10704-91			m	12.0±1.0	212,68	
3	Steel electric welded pipe DN530xl2,0 (500)	TDS 10704-91			m	29.5±1.0	153,30	The longest 29,5m The shortest 9,0m.
4	Steel electric welded pipe DN377x9,0 (350)	TDS 10704-91			m	10,0	81,68	
5	Steel electrically welded pipe DN57x3.5 (50)	TDS 10704-91			m	1.0	4.26	
6	Flanged iron gate valve PN10 / DN350		02-350-75*		piece	2	320,0	
7	Rubber expansion joint (flexible insert), flanged PN 10 / DN 350				piece	2	39,7	
8	Check valve reversible full-bore with metal disk for contaminated liquids DN350		302,0x		piece	1	250,0	
9	Reverse valve with rotary disk, flanged PN-1,0MPa 0600mm				piece	1	200,0	
10	Valve DN50				piece	1	7,6	
11	The valve air Py1,0 МПа DN50 combined				piece	2	17,50	
12	Flange steel PN10 DN350	TDS12821-80*			piece	8	24,0	
13	Flange steel PN10 DN600	TDS12821-80*			piece	2	48,8	
14	Bend ст. 45° DN600	TDS17375-2001			piece	1	133,0	
15	Bend ст. . 60° DN600	TDS17375-2001			piece	1	177,3	
16	Bend ст. 90° DN500	TDS17375-2001			piece	2	162,0	
17	Bend ст. 90° DN350	TDS17375-2001			piece	3	78,0	
18	Adapter ст. DN600x500	TDS17378-2001			piece	1	94,0	
19	Adapter ст DN500x350	TDS17378-2001			piece	2	65,0	
20	Manometer showing (0/16 kg / cm2)	TDS 8625-77			piece	3	0,9	
21	Staining of steel pipes with 2 layers of enamel PF-133 or PF-155 on the primer layer GF-0119	TDS 926-82* /GOST 23343-78*			m^2.	252,5 / 252,5		
22								

Signature and date

Inv. No.

meas		Sheet	doc.	Measure	Date
Impl.					

Pumping house of the 1st lifting	Stage	Sheet	Sheets
	РП	1	1
Specification of materials and equipment			

Формат А3