

**World Vision International**

**World Vision Afghanistan**

**Faryab Zonal Office**

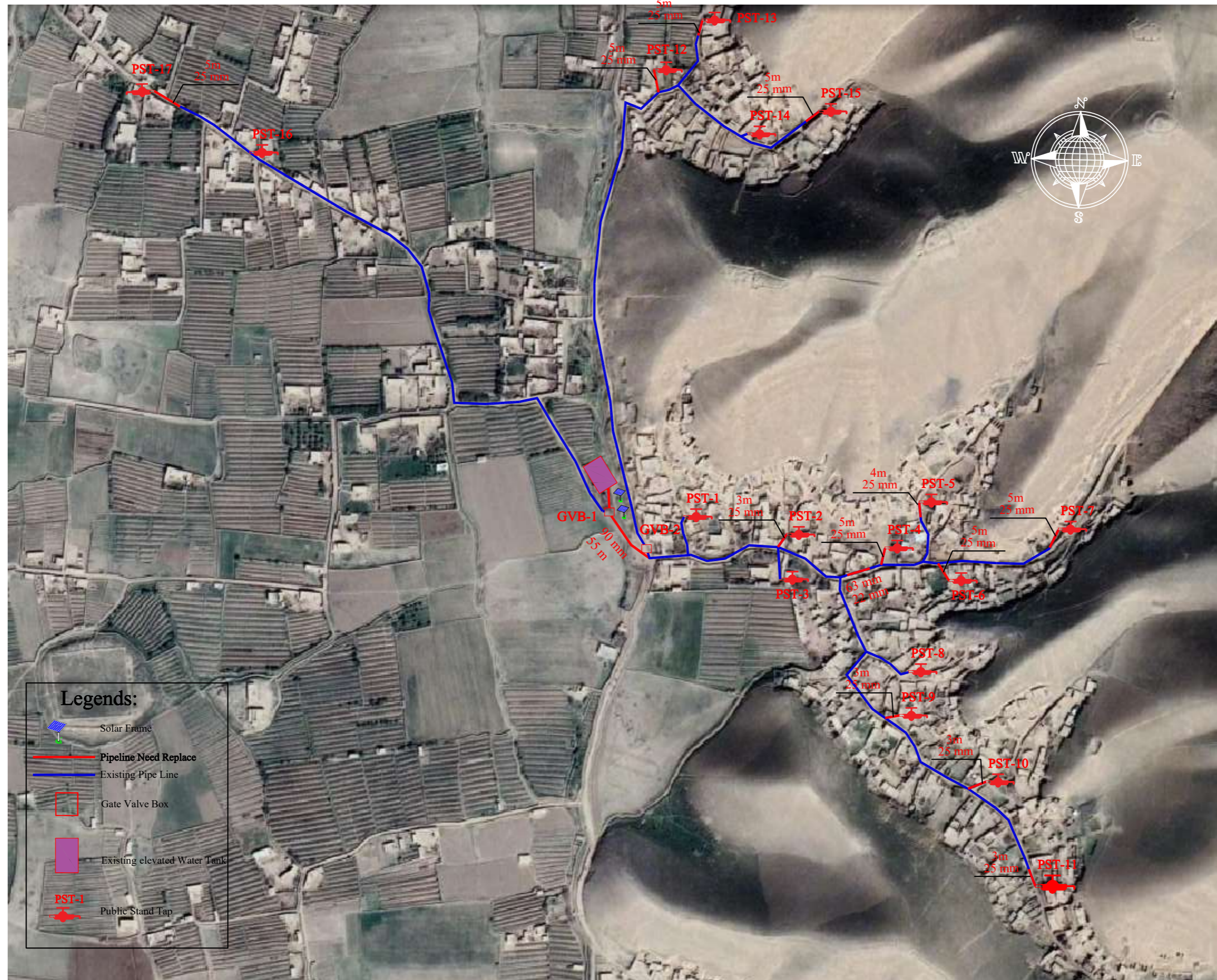
WASH Sector

DAWAM WASH Project

Drawing and Estimation of Solar Powered Water Supply Network

**Project Name: Zarin Naw Abad Rehabilitation Water Supply System**

# Site Plan



## Legends:

- Solar Frame
- Pipeline Need Replace
- Existing Pipe Line
- Gate Valve Box
- Existing elevated Water Tank
- PST-1 Public Stand Tap

box SIGN 18L92W6-1PYL5VP3

Sep 2, 2024

*Yama Hewadmal*

box SIGN 4YWZ89Q-1PYL5VP3

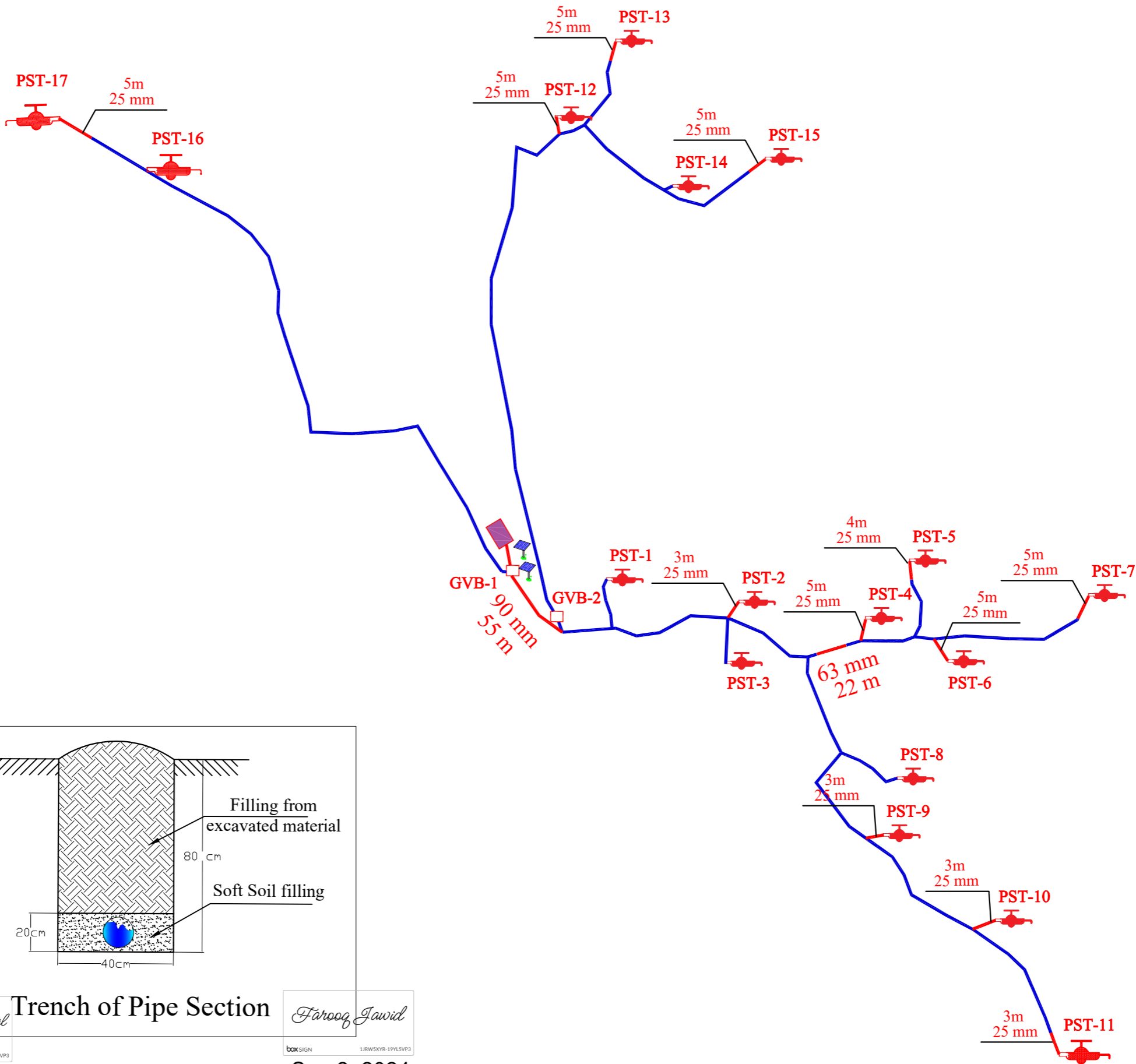
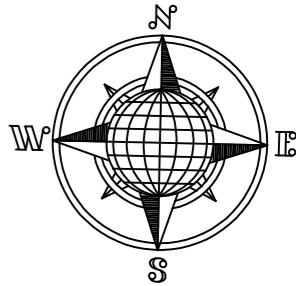
Sep 2, 2024

*Farooq Jawid*

box SIGN 1JRW5XYR-1PYL5VP3

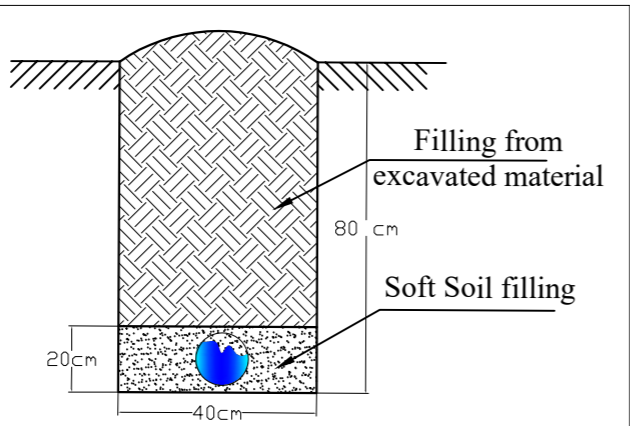
Sep 2, 2024

# Site Plan



## Legends:

- Solar Frame
- Pipeline Need Replace
- Existing Pipe Line
- Gate Valve Box
- Existing elevated Water Tank
- Public Stand Tap



Trench of Pipe Section

*[Signature]*  
18L933W6-2P1L5VP3

Sep 2, 2024

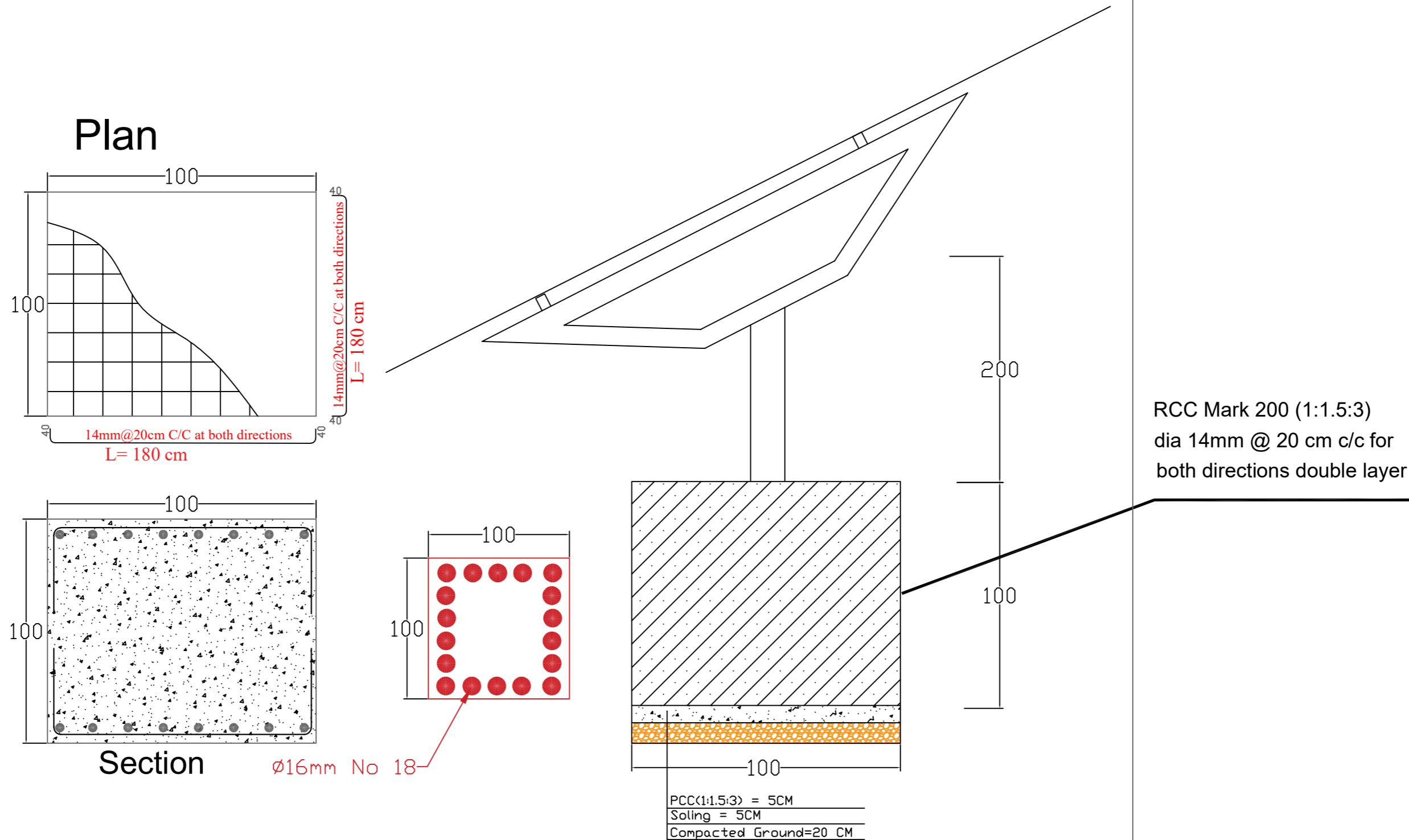
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4YWZ88SQ-1P1L5VP3

Sep 2, 2024

*[Signature]*  
1JRW5XYR-1P1L5VP3

Sep 2, 2024

Solar Panel and Stand Details



Ansar Kazimi

Yama Hewadmal

Farooq Jawid

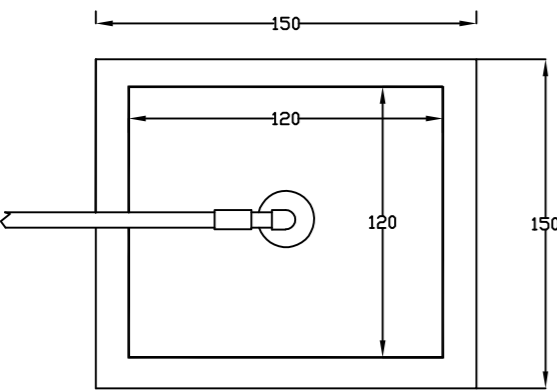
Sep 2, 2024

Sep 2, 2024

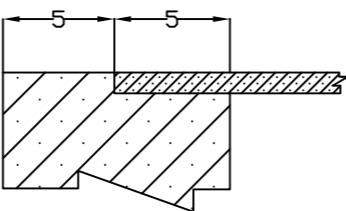
Sep 2, 2024

# Well Protection & Gate Valve Box Details

## Well Protection Box

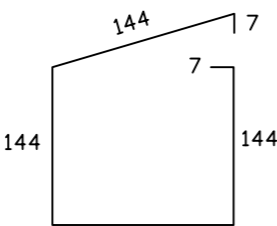


Well Protection Box Plan

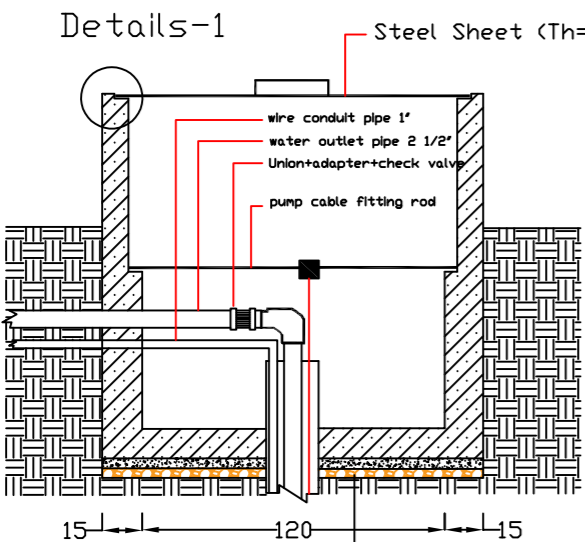


Details-1

Strips 808@20 cm/cm

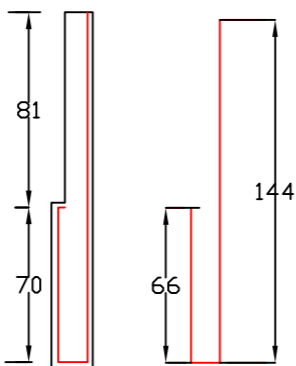


Steel bar 808 @ 20 cm/cm



Details-1

Steel Sheet (Th=3mm, Lockable)

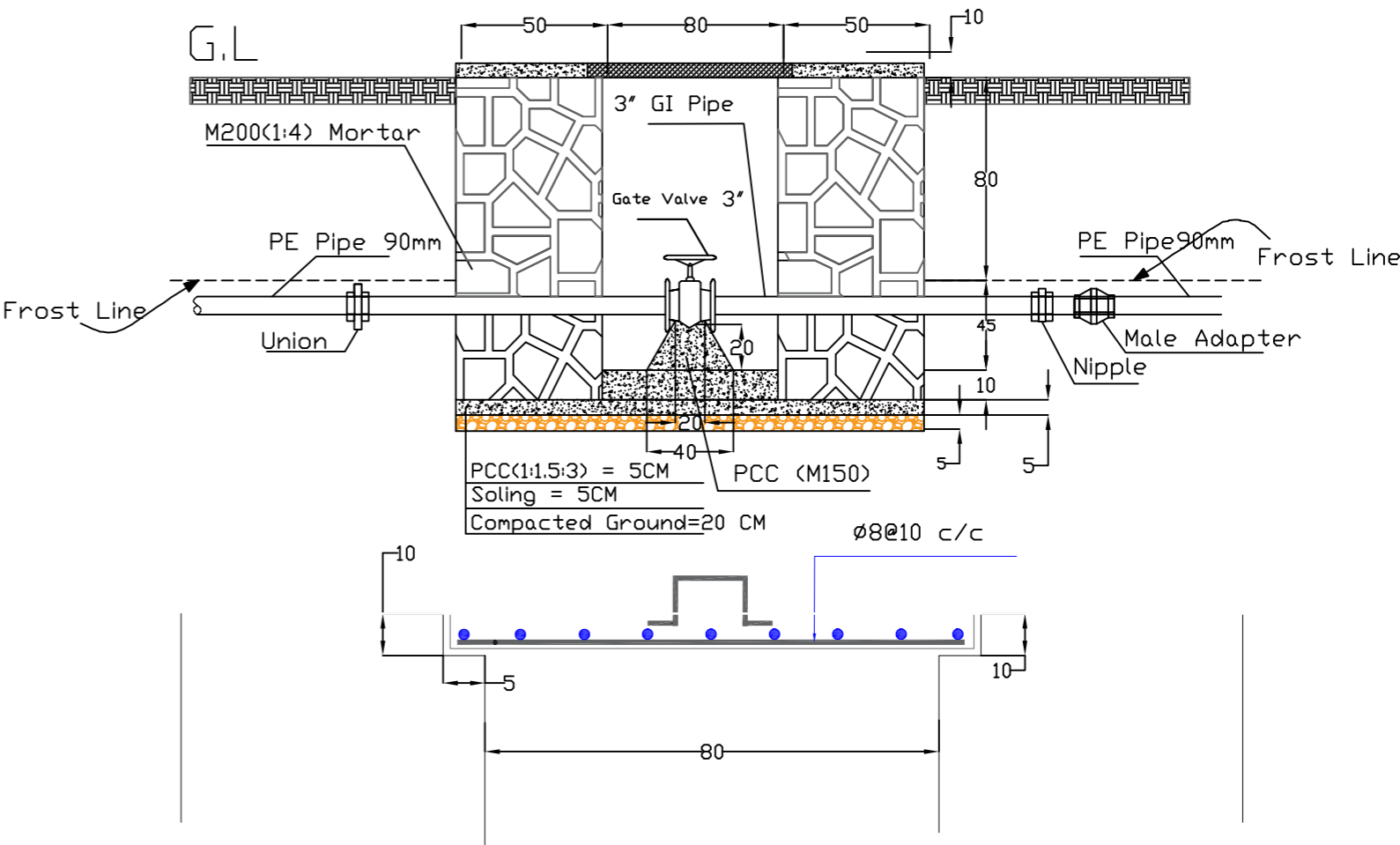
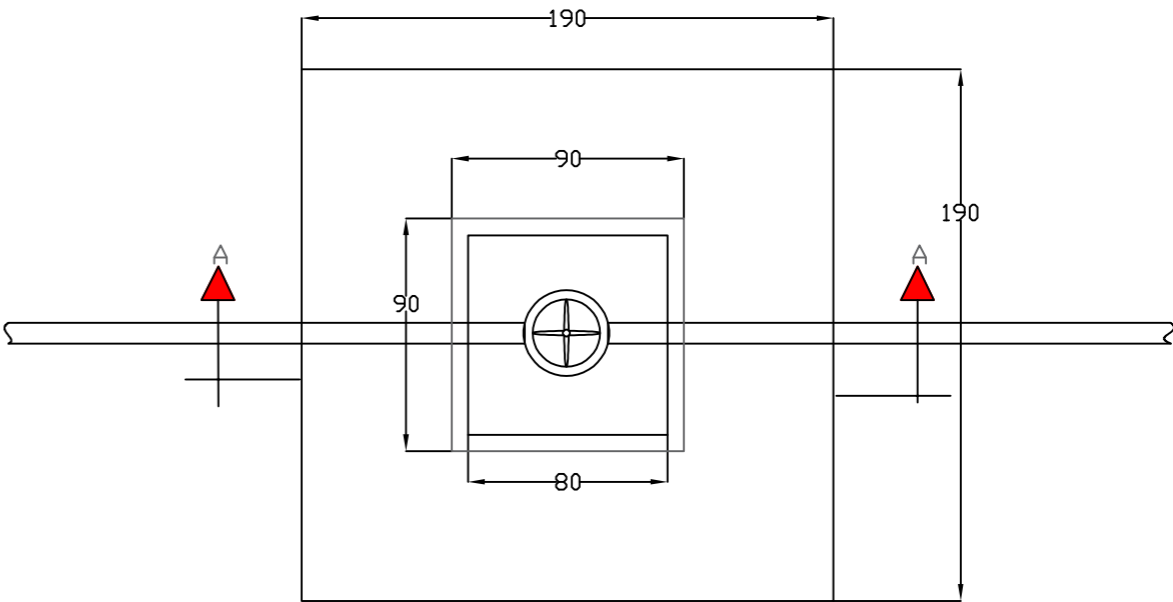


Steel bar 2708 @ 20 cm/cm

RCC(1:1.5:3) = 15 CM  
PCC(1:1.5:3) = 5 CM  
Soling = 5 CM  
Compacted Ground=20 CM

Well Protection Box Section View

## Gate Valve



Ansar Kazimi

Sep 2, 2024

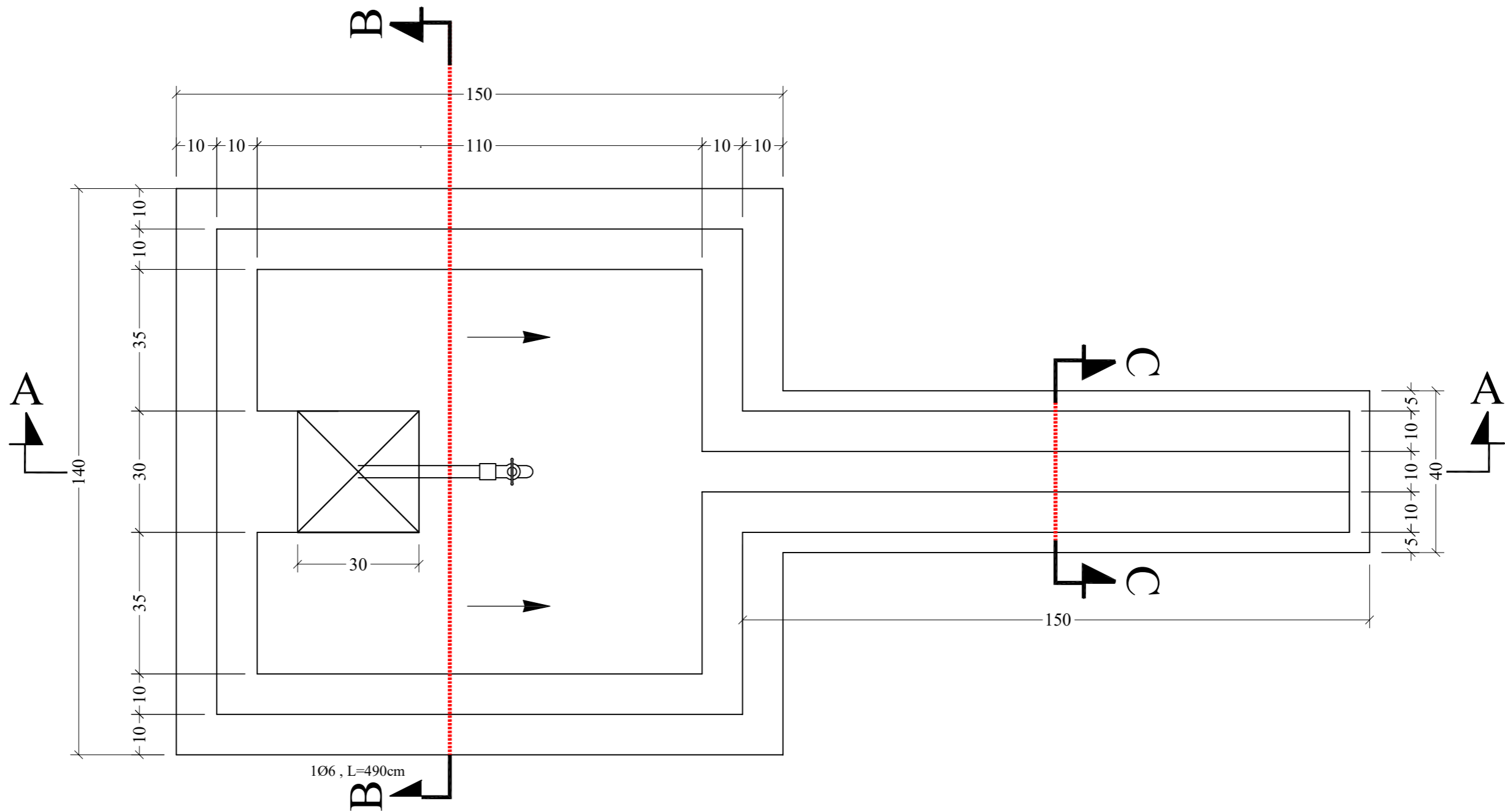
Ansar Kazimi

Sep 2, 2024

Farooq Jawid

Sep 2, 2024

# Stand Tap Plan



*Ansar Kazimi*  
box SIGN 1BL932W6-1PYLSVP3

Sep 2, 2024

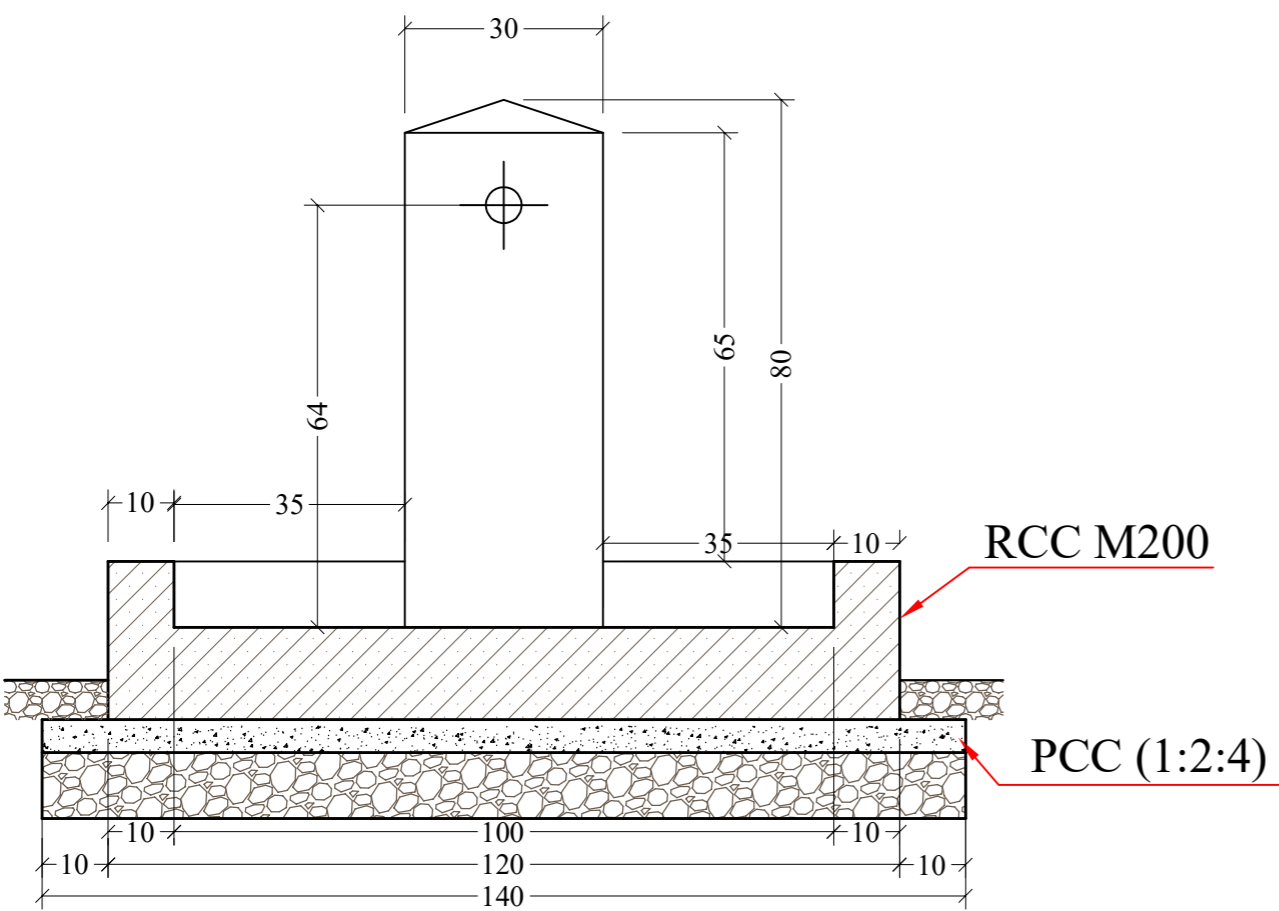
*Yama Hewadmal*  
box SIGN 4YWZ85Q-1PYLSVP3

Sep 2, 2024

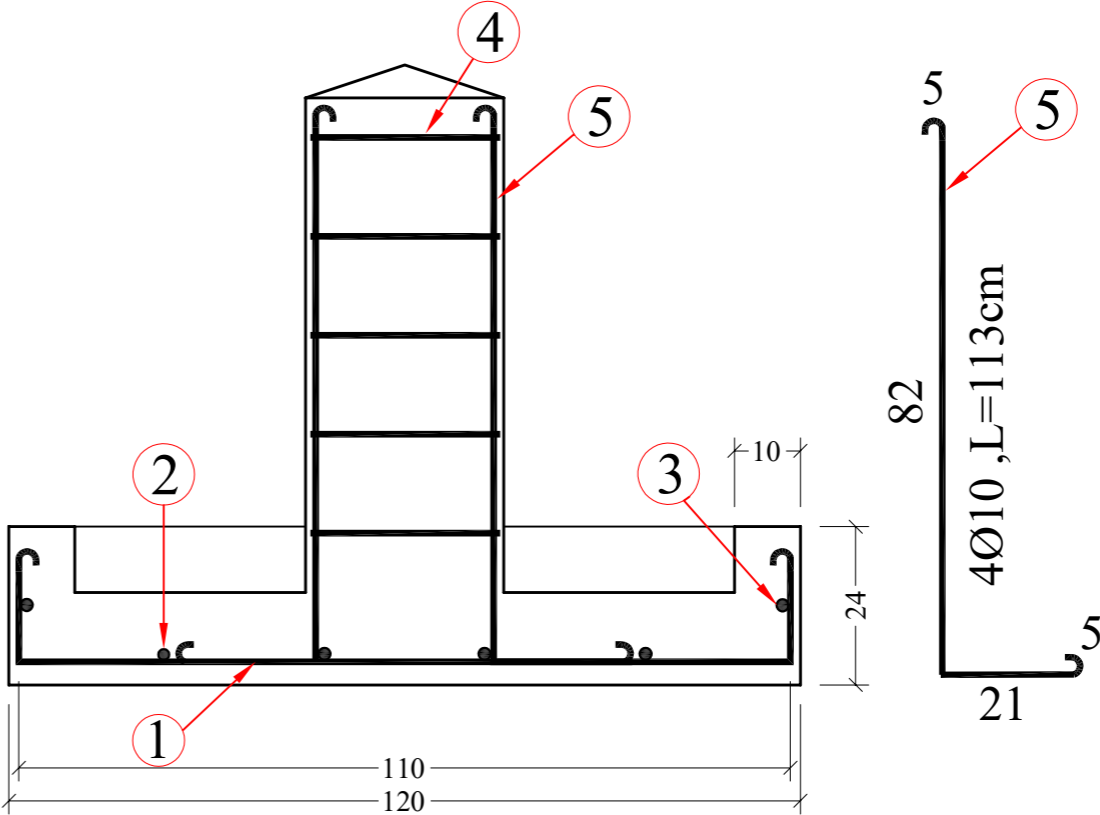
*Farooq Jawid*  
box SIGN 1JRW5XYR-1PYLSVP3

Sep 2, 2024

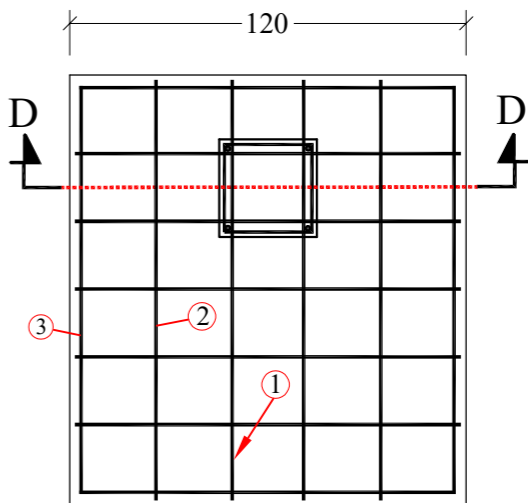
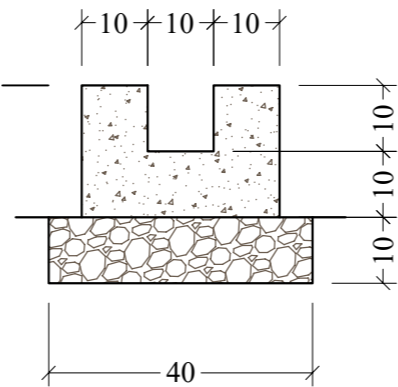
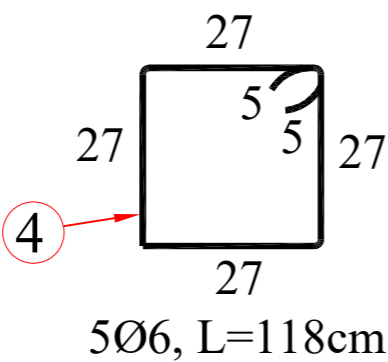
# Stand Tap Section



Section B-B



Section D-D



Ansar Kazimi

Sep 2, 2024

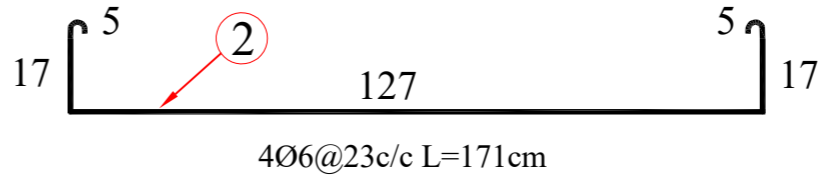
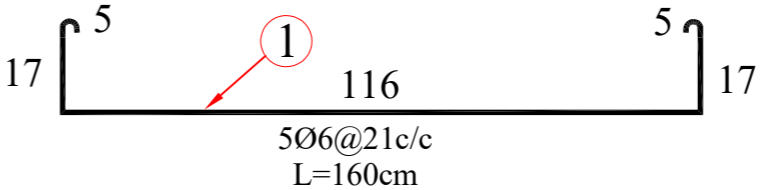
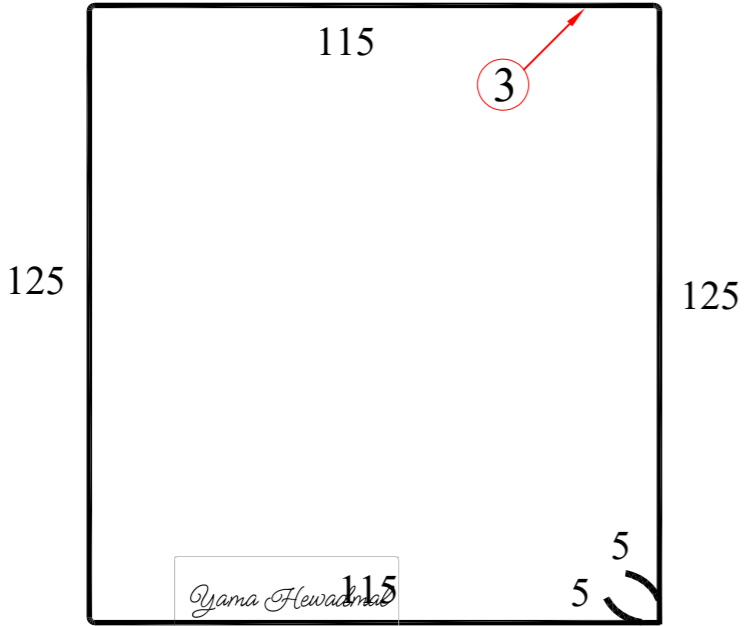
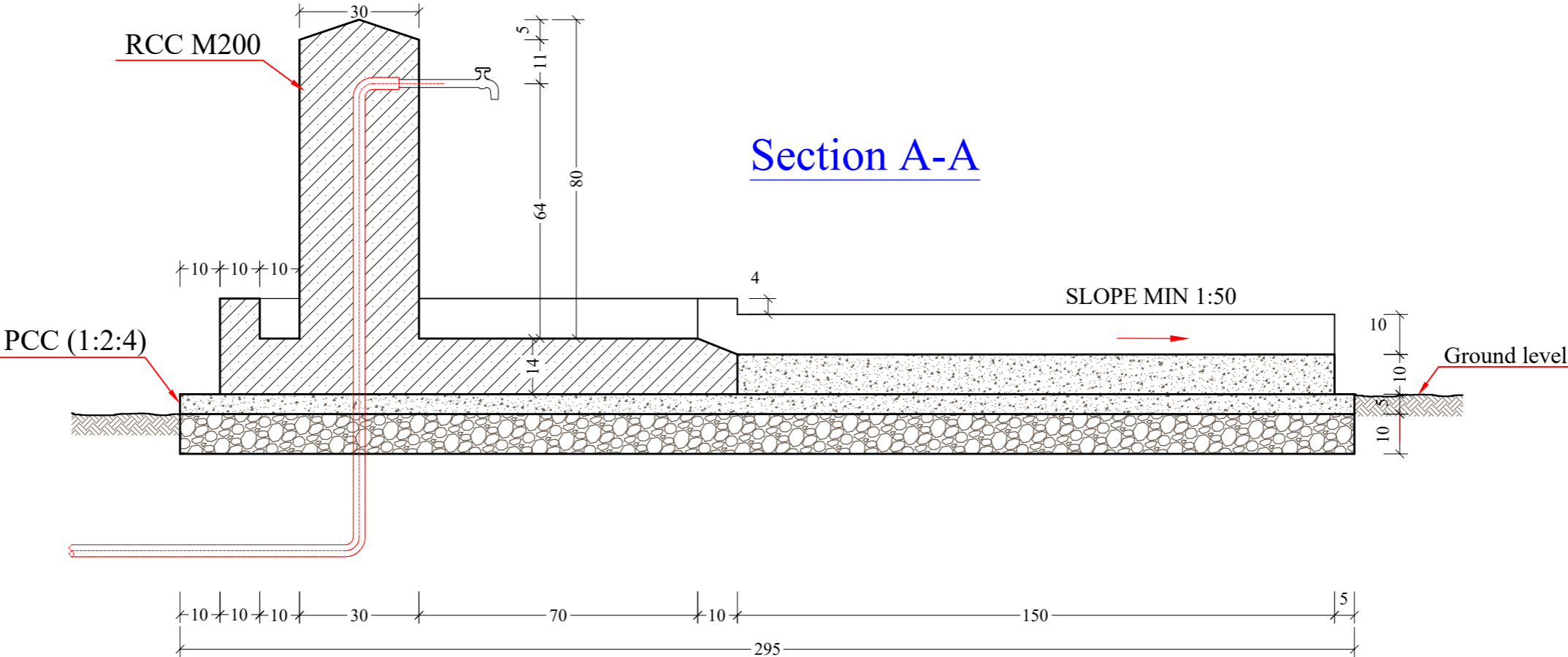
Yama Hewadmal

Sep 2, 2024

Farooq Jawid

Sep 2, 2024

Stand Tap Section



Ansar Kazimi

Sep 2, 2024

Yama Hewadma

Sep 2, 2024

Farooq Jawid

Sep 2, 2024

Submittal Data

PROJECT:	UNIT TAG:	QUANTITY:
REPRESENTATIVE: _____	TYPE OF SERVICE:	DATE: _____
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:
	ORDER NO.:	DATE:

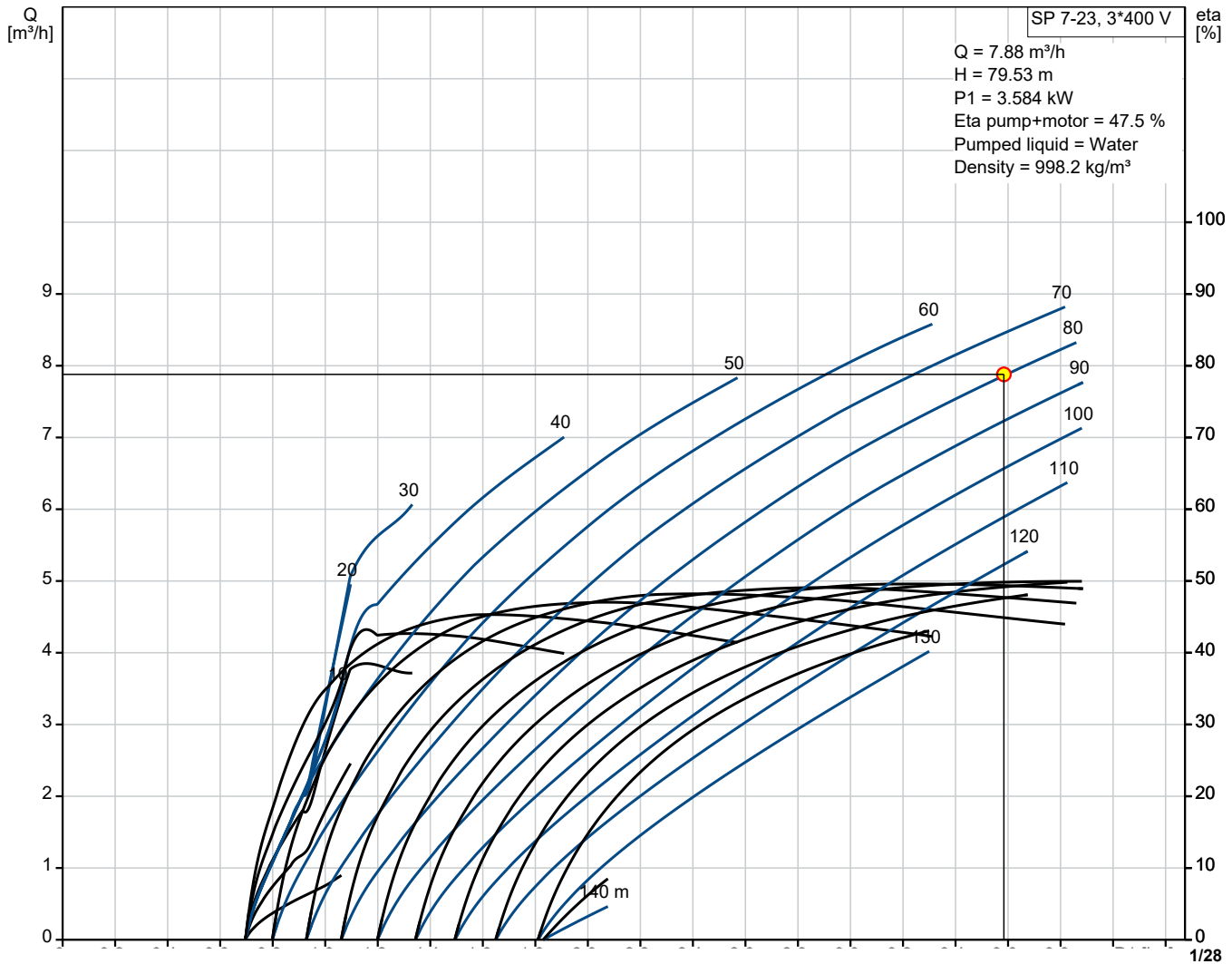


SP 7-23

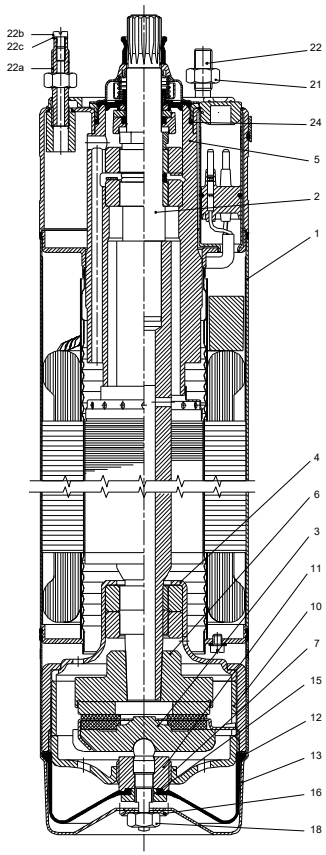
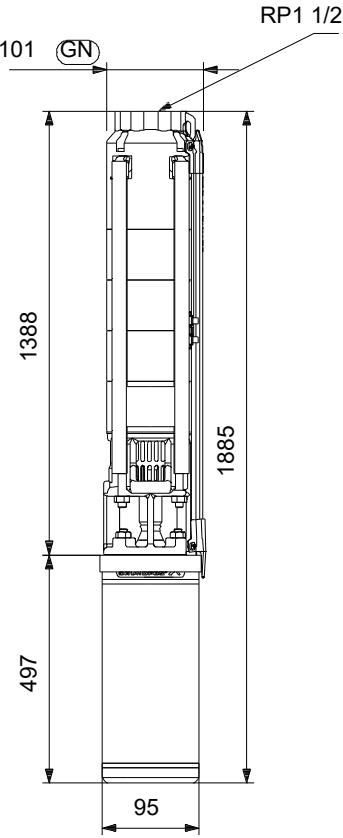
Grundfos SP are submersible borehole pumps, designed for pumping groundwater. Grundfos SP are all stainless-steel pumps, and they are available in 3 material grades. The pumps are suitable for boreholes in sizes ranging from 4" over 6" and 8" to 10". The motor sizes for the pumps are available in 0.37-250 kW.

Note! Product picture may differ from actual product

Conditions of Service	Pump Data	Motor Data
Liquid: Water	Liquid temperature range: -15 .. 40 °C Product number: 98699190	Mains frequency: 50 Hz Enclosure class: IP68



# Submittal Data



**Materials:**  
Impeller: Stainless steel  
Impeller: AISI 304  
Impeller: EN 1.4301

Project:  
Reference Number:

Client:  
Client Number:  
Contact:

Qty.	Description
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1	SP 7-23
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Note! Product picture may differ from actual product

Product No.: [98699190](#)

Submersible borehole pump, suitable for pumping clean water. Can be installed vertically or horizontally. All steel components are made in stainless steel, EN 1.4301 (AISI 304), that ensures high corrosive resistance. This pump carries drinking water approval.

### Further product details

The pump is suitable for applications similar to the following:

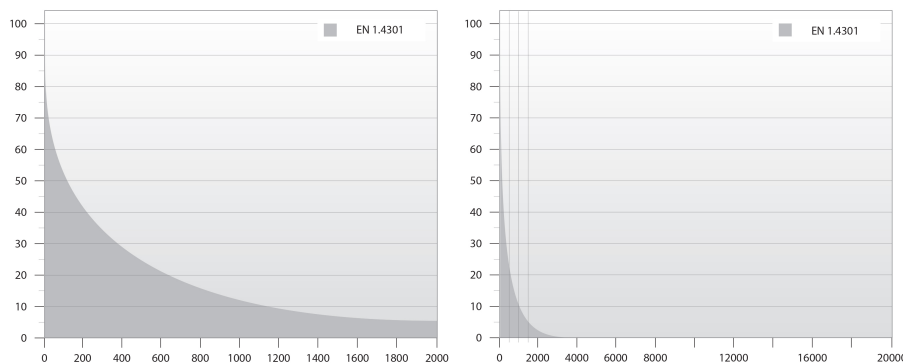
- raw-water supply
- irrigation
- groundwater lowering
- pressure boosting
- fountain applications.

The Grundfos SP pump is renowned for its high efficiency and already complies with the requirements of the Minimum Efficiency Index, and therefore Grundfos is amongst the best in class within submersible pumps.



### Pump

All pump surfaces that are in contact with pumped liquids are made in stainless steel which makes them corrosion- and wear-resistant. The corrosion diagram below shows the capabilities of the pump and motor in relation to the temperature in Celsius (y-axis) and the concentration of chloride in ppm (x-axis).



The elastomer parts in the pump offer good wear resistance and long service intervals.

The bearings are made of LSR (Liquid Silicone Rubber), sealing rings are made of TPU (Thermoplastic Poly-Urethane) and the non-return valve is made of NBR (Nitrile-Butadiene Rubber).

The special elastomer material of the bearings offers increased resistance to sand and other abrasive particles (from 50 to 150 mg/l).



**Company name:** World Vision International  
**Created by:** DAWAM WASH Team  
**Phone:**

**Date:** 07/06/2024

**Project:**  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

Qty.	Description
1	<p>In case the pump is used for pumping water with high content of hydrocarbons or solvents, Grundfos offers FKM rubber parts (Fluorocarbon) which are oil and temperature-resistant up to 90 °C.</p> <p>The pump is built with octagonal bearings with sand flush channels that minimise wear. As wear of the pump is inevitable, the pump design allows for easy replacement of all internal wear parts (bearings, impeller, wear rings and seal rings) to maintain high performance and a long lifetime.</p> <p>The suction interconnector is fitted with a strainer to prevent large particles from entering the pump. The suction interconnector is designed to comply with NEMA standards for motor mounting/dimensions.</p> <p><b>Motor</b></p> <p>The stator is hermetically encapsulated in stainless steel and the windings are embedded in polymer compound. This results in high mechanical stability, optimum cooling and reduces the risk of short circuits in the windings.</p> <p>Liquid: Pumped liquid: Water Liquid temperature range: -15 .. 40 °C</p> <p>Technical: Pump speed on which pump data are based: 2900 rpm Rated flow: 7 m³/h Rated head: 105.5 m Approvals: CE,EAC,UKCA,SEPRO,MOROCCO Approvals for motor: CE,EAC,C_UL_US_NSF372MOROCCO,UKCA,SEPRO,RCM Approvals for drinking water: ACS,DM174 Curve tolerance: ISO9906:2012 3B Motor version: T40 Return valve: YES</p> <p>Materials: Pump: Stainless steel EN 1.4301 AISI 304 Impeller: Stainless steel EN 1.4301 AISI 304 Motor: Stainless steel EN 1.4301 Shaft seal: HM/Ceramics</p> <p>Installation: Maximum ambient pressure: 60 bar Maximum operating pressure: 60 bar Maximum outlet pressure: 14.4 bar Type of connection: Rp Size of connection: 1 1/2 inch Motor diameter: 4 inch Minimum borehole diameter: 105 mm</p> <p>Electrical data: Motor type: MS4000 Motor flange design: NEMA Rated power - P2: 3 kW Power (P2) required by pump: 3 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-400-415 V Rated current: 7.7-7.9-8.1 A</p>



Company name: World Vision International  
Created by: DAWAM WASH Team  
Phone:

Date: 07/06/2024

Project:  
Reference Number:

Client:  
Client Number:  
Contact:

Qty.	Description
1	<div>Starting current: 430-450-460 %</div> <div>Cos phi - power factor: 0.86-0.81-0.77</div> <div>Rated speed: 2830-2850-2870 rpm</div> <div>Method of start: Direct-on-line (DOL)</div> <div>Enclosure class (IEC 34-5): IP68</div> <div>Insulation class (IEC 85): F</div> <div>Built-in motor protection: NONE</div> <div>Thermal protection: External</div> <div>Built-in temp. transmitter: No</div> <div>Length of cable: 2.5 m</div> <div>Power cable type: FLAT</div> <div>Motor No: 7C192508</div> <div>Windings: Enameled</div> <div>Others:</div> <div>Minimum efficiency index, MEI ≥: 0.70</div> <div>Net weight: 34.2 kg</div> <div>Gross weight: 39.8 kg</div> <div>Shipping volume: 0.068 m³</div> <div>Environmental approvals: WEEE</div>

**Project:**  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

Qty.	Description
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19	<p><b>GF 270</b></p>  <p><b>Note! Product picture may differ from actual product</b></p> <p>Product No.: <a href="#">99299012</a></p> <p>The GF 270 is a polycrystalline solar module. The module is equipped with MC4 plugs for easy connection and comes as 30 pieces per pallet without individual packing.  It must be mounted on a support structure, tilted at an angle ensuring optimum utilization of the solar energy.</p> <p><b>Liquid:</b>  Pumped liquid: Water</p> <p><b>Installation:</b>  Range of ambient temperature: -40 .. 85 °C</p> <p><b>Electrical data:</b>  Maximum power point voltage: 31.6 V  Open circuit voltage: 38.4 V  Max power point current: 8.76 A  Module shortcut current: 9.11 A  Maximum power output: 270 W  Solar module type: POLYCRYSTALLINE</p> <p><b>Others:</b>  Brand: GRUNDFOS  Net weight: 18.3 kg  Shipping volume: 2 m³</p>
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Company name: World Vision International  
Created by: DAWAM WASH Team  
Phone:

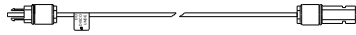
Date: 07/06/2024

Project:  
Reference Number:

Client:  
Client Number:  
Contact:

Qty.	Description
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1	Product name: Wire kit array to control box (MC4)
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Note! Product picture may differ from actual product

Product No.: [98257868](#)

Product No: 98257868

EAN number: 5711492200964

**Project:**  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

Qty.	Description
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1	RSI 3x380-440V IP66 3kW 8.0A
---	------------------------------



Note! Product picture may differ from actual product

Product No.: [99044349](#)

Renewable Solar Inverter RSI is an off-grid solar inverter to enable end-user to use solar power for a wide range of water applications.

RSI is customized specifically to be compatible with Grundfos pumps.

With the built-in MPPT and various protection software, it delivers an efficient and reliable solar system solution.

- 3-phase 208V, 380V or 440V
- Quick setup wizard
- Preconfigured inputs
- Build-in MPPT (Maximum power point tracking)
- AC and DC power source compatible
- Solar solution for up to 250kW

RSI offers the following inputs and output:

- RS-485 Modbus RTU/TCP
- 6 Digital inputs, preconfigured for solar application
- 2 Signal relays, RUN/FAULT

Liquid:

Pumped liquid: Water

Technical:

Approvals and markings: CE

Installation:

Range of ambient temperature: -10 .. 60 °C

Relative humidity: 100 %

Electrical data:

Rated power - P2: 3 kW

Mains frequency: 50 / 60 Hz

Rated voltage: 3 x 380 - 440 V

Enclosure class (IEC 34-5): IP66

Rated voltage output AC: 380 V

Voltage input DC: 800 V

Rated current output AC: 8 A

Udc: 400 V

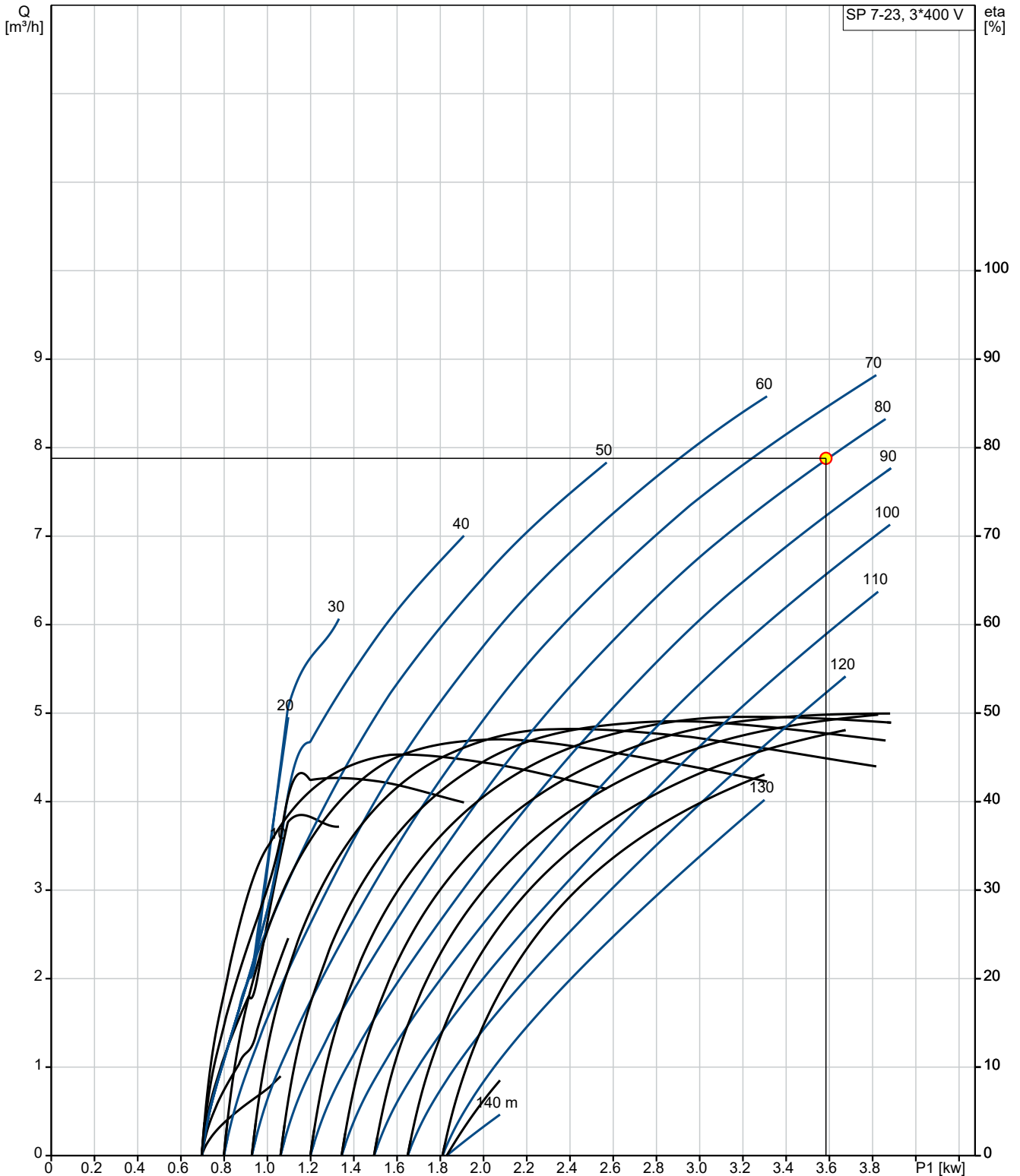
Others:

Net weight: 8.8 kg

Gross weight: 9.8 kg



## 98699190 SP 7-23

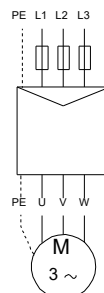
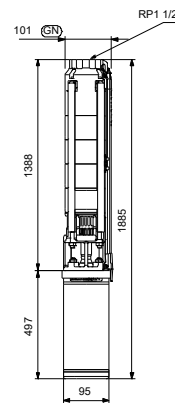
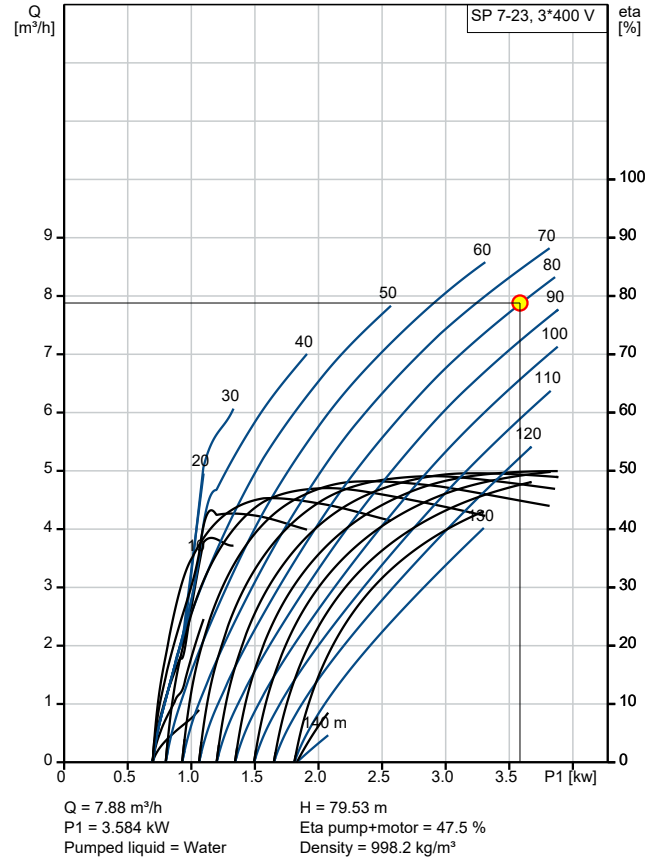


$Q = 7.88 \text{ m}^3/\text{h}$   
 $P_1 = 3.584 \text{ kW}$   
Pumped liquid = Water  
 $H = 79.53 \text{ m}$   
Eta pump+motor = 47.5 %  
Density =  $998.2 \text{ kg/m}^3$

**Project:**  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

Description	Value
<b>General information:</b>	
Product name:	SP 7-23
Product No:	98699190
EAN number:	5712600108639
<b>Technical:</b>	
Pump speed on which pump data are based:	2900 rpm
Rated flow:	7 m³/h
Rated head:	105.5 m
Stages:	23
Number of reduced-diameter impellers:	NONE
Approvals:	CE,EAC,UKCA,SEPRO,MOROCO
Approvals for motor:	CE,EAC,C UL US NSF372MOR OCCO,UKCA,SEPRO,RCM
Approvals for drinking water:	ACS,DM174
Curve tolerance:	ISO9906:2012 3B
Model:	B
Motor version:	T40
Return valve:	YES
<b>Materials:</b>	
Pump:	Stainless steel
Pump:	EN 1.4301
Pump:	AISI 304
Impeller:	Stainless steel
Impeller:	EN 1.4301
Impeller:	AISI 304
Motor:	Stainless steel
Motor:	EN 1.4301
Shaft seal:	HM/Ceramics
<b>Installation:</b>	
Maximum ambient pressure:	60 bar
Maximum operating pressure:	60 bar
Maximum outlet pressure:	14.4 bar
Type of connection:	Rp
Size of connection:	1 1/2 inch
Motor diameter:	4 inch
Minimum borehole diameter:	105 mm
<b>Liquid:</b>	
Pumped liquid:	Water
Liquid temperature range:	-15 .. 40 °C
<b>Electrical data:</b>	
Motor type:	MS4000
Motor flange design:	NEMA
Rated power - P2:	3 kW
Power (P2) required by pump:	3 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-400-415 V
Rated current:	7.7-7.9-8.1 A
Starting current:	430-450-460 %
Cos phi - power factor:	0.86-0.81-0.77
Rated speed:	2830-2850-2870 rpm
Method of start:	Direct-on-line (DOL)
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	F





**Company name:** World Vision International  
**Created by:** DAWAM WASH Team  
**Phone:**

**Date:** 07/06/2024

**Project:**  
**Reference Number:**

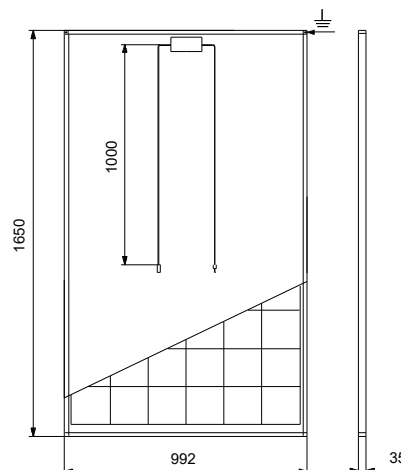
**Client:**  
**Client Number:**  
**Contact:**

Description	Value
Built-in motor protection:	NONE
Thermal protection:	External
Built-in temp. transmitter:	No
Length of cable:	2.5 m
Power cable type:	FLAT
Motor No:	7C192508
Cable number:	99410241
Windings:	Enameled
<b>Others:</b>	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	34.2 kg
Gross weight:	39.8 kg
Shipping volume:	0.068 m³
Environmental approvals:	WEEE

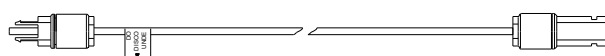
Project:  
Reference Number:

Client:  
Client Number:  
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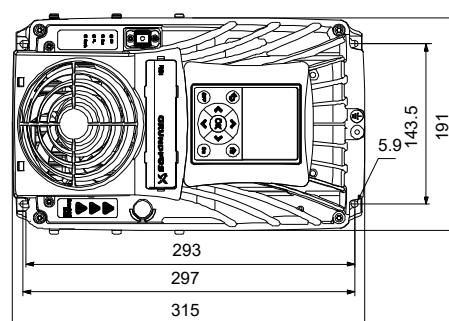
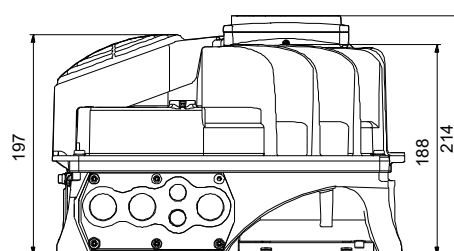
Description	Value
<b>General information:</b>	
Product name:	GF 270
Product No:	99299012
EAN number:	5713826826093
<b>Installation:</b>	
Range of ambient temperature:	-40 .. 85 °C
<b>Liquid:</b>	
Pumped liquid:	Water
<b>Electrical data:</b>	
Maximum power point voltage:	31.6 V
Open circuit voltage:	38.4 V
Max power point current:	8.76 A
Module shortcut current:	9.11 A
Maximum power output:	270 W
Solar module type:	POLYCRYSTALLINE
<b>Others:</b>	
Brand:	GRUNDFOS
Net weight:	18.3 kg
Shipping volume:	2 m <sup>3</sup>



Description	Value
<b>General information:</b>	
Product name:	Wire kit array to control box (MC4)
Product No:	98257868
EAN number:	5711492200964



Description	Value
<b>General information:</b>	
Product name:	RSI 3x380-440V IP66 3kW 8.0A
Product No:	99044349
EAN number:	5712605678540
<b>Technical:</b>	
Approvals and markings:	CE
<b>Installation:</b>	
Range of ambient temperature:	-10 .. 60 °C
Relative humidity:	100 %
<b>Liquid:</b>	
Pumped liquid:	Water
<b>Electrical data:</b>	
Rated power - P2:	3 kW
Mains frequency:	50 / 60 Hz
Rated voltage:	3 x 380 - 440 V
Enclosure class (IEC 34-5):	IP66
Rated voltage output AC:	380 V
Voltage input DC:	800 V
Rated current output AC:	8 A
Udc:	400 V
<b>Others:</b>	
Net weight:	8.8 kg
Gross weight:	9.8 kg



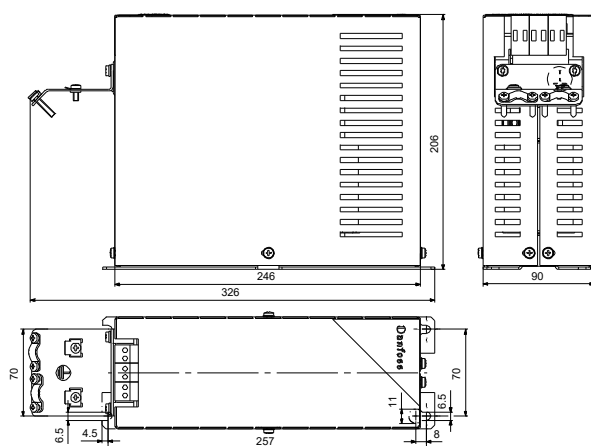
Project:  
Reference Number:

Client:  
Client Number:  
Contact:

Description	Value
<b>General information:</b>	
Product name:	OTDCP16, Circuit Breaker, 16Amp
Product No:	<a href="#">98341686</a>
EAN number:	5711493289296

Description	Value
<b>General information:</b>	
Product name:	OVR PV 40-1000 P, Surge Protection
Product No:	<a href="#">98341687</a>
EAN number:	5711493289302

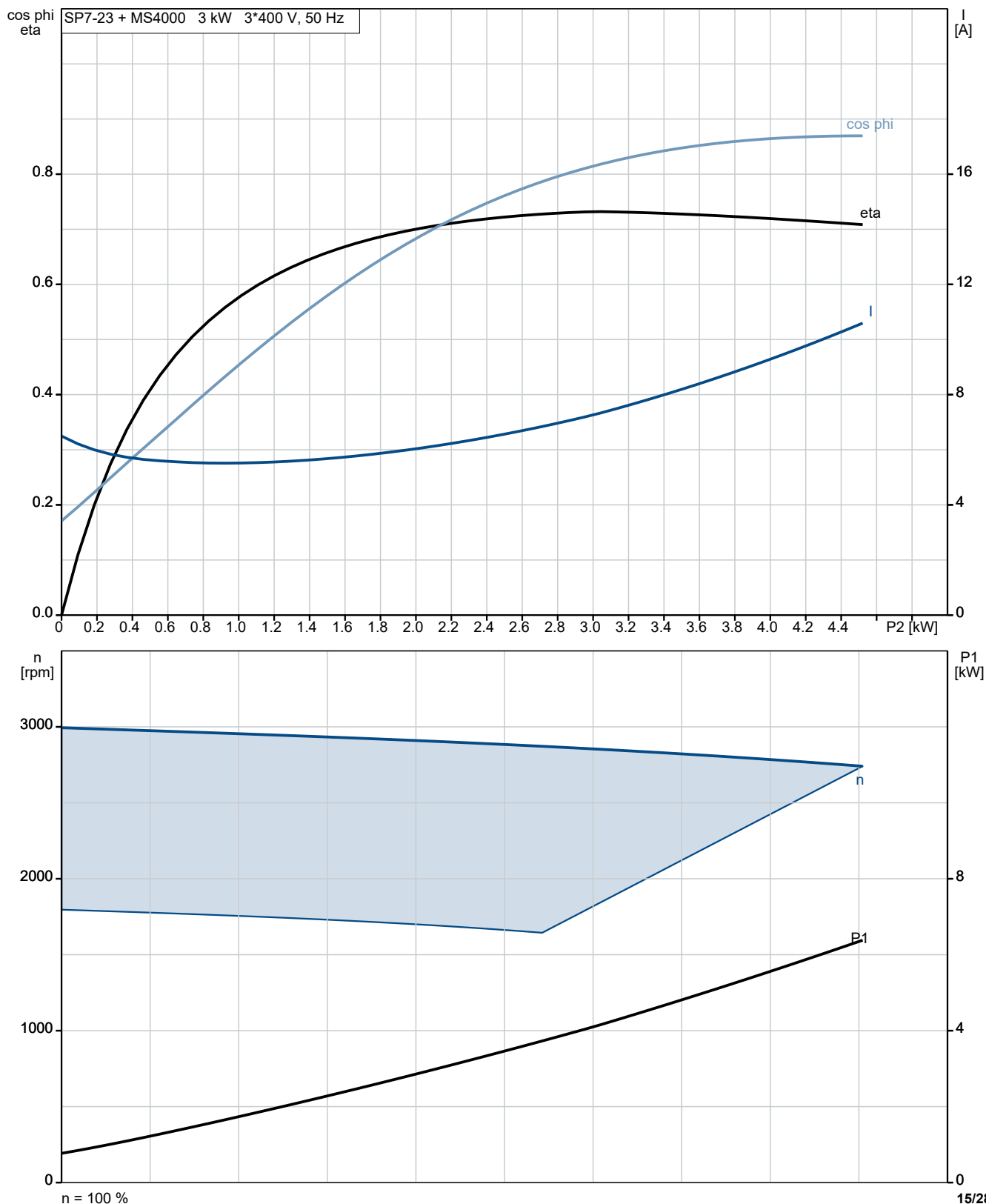
Description	Value
<b>General information:</b>	
Product name:	Sine-wave filter
Product No:	<a href="#">96754973</a>
EAN number:	5700838640731
<b>Installation:</b>	
Mounted on:	Wall
<b>Electrical data:</b>	
Mains frequency:	50 Hz
Rated voltage:	x 200-500 V
Rated current:	8 A
Rated current at 100 Hz:	5.5 A
Enclosure class (IEC 34-5):	IP20
Cable size:	4 mm <sup>2</sup>
Inductor loss:	80 W
<b>Others:</b>	
Net weight:	5.8 kg
Danish VVS No.:	382997008
Finnish LVI No.:	9414024



Project:  
Reference Number:

Client:  
Client Number:  
Contact:

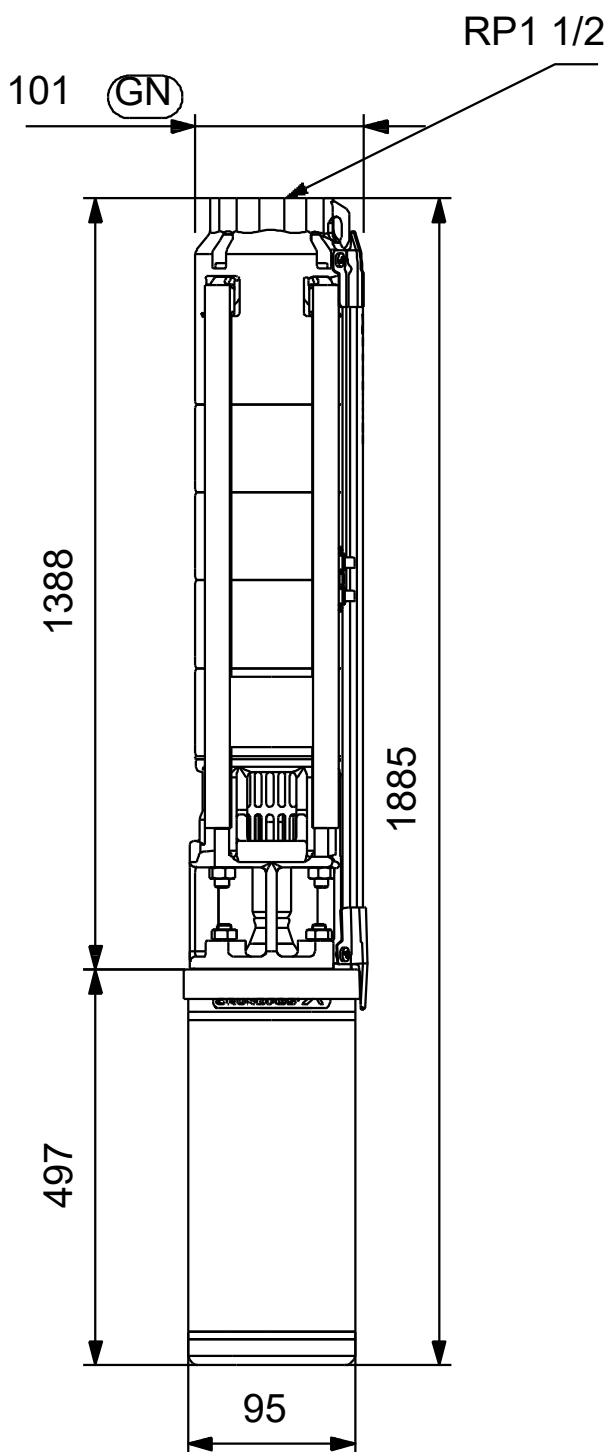
## 98699190 SP 7-23



Project:  
Reference Number:

Client:  
Client Number:  
Contact:

**98699190 SP 7-23**





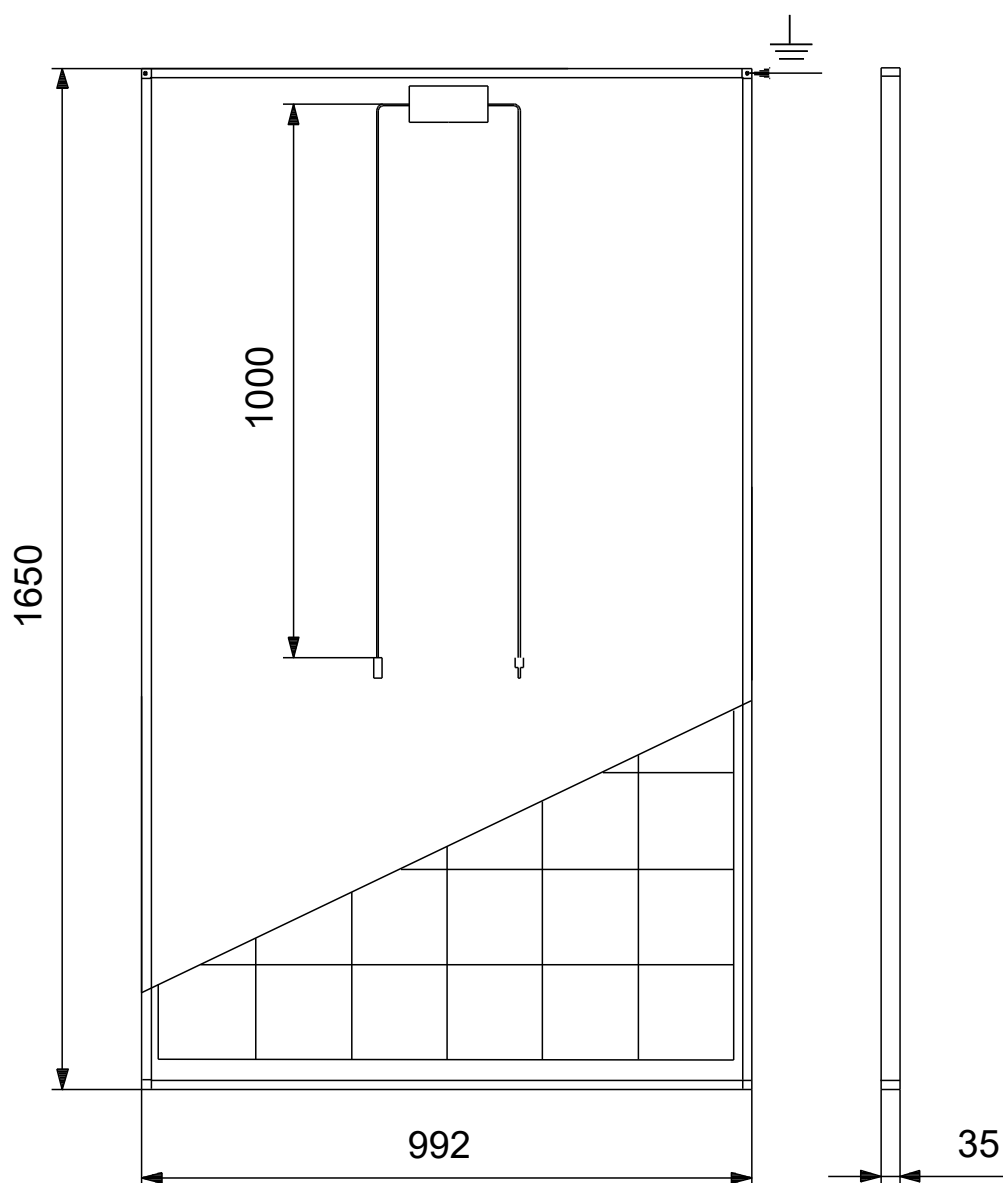
Company name: World Vision International  
Created by: DAWAM WASH Team  
Phone:

Date: 07/06/2024

Project:  
Reference Number:

Client:  
Client Number:  
Contact:

**99299012 GF 270**

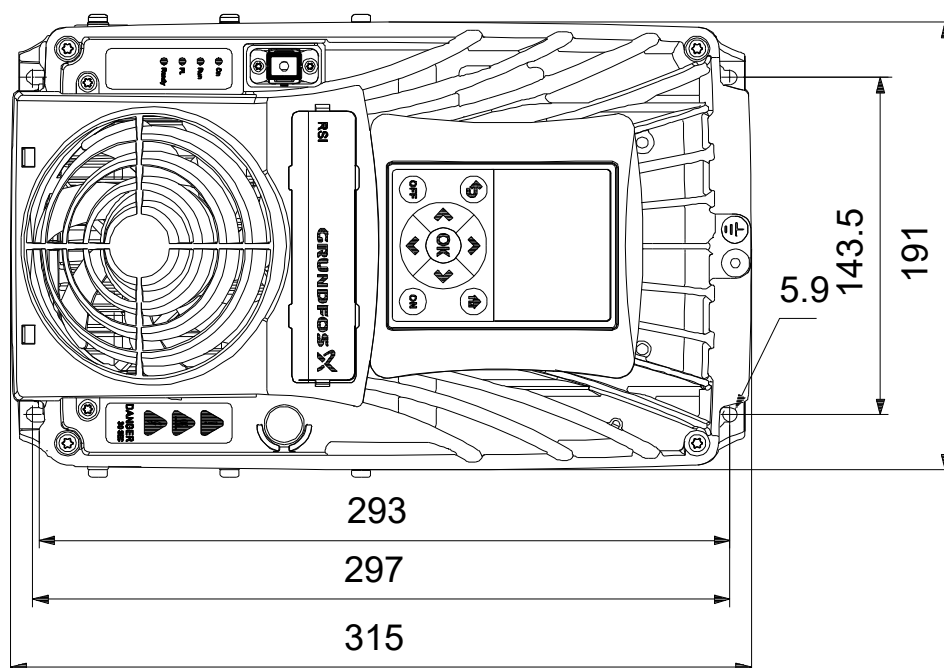
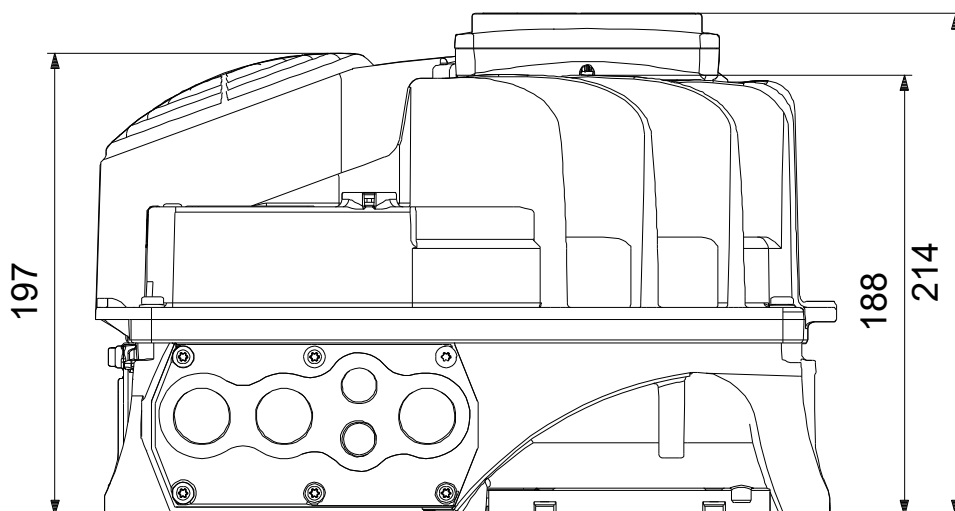


Note! All units are in [mm] unless others are stated.  
Disclaimer: This simplified dimensional drawing does not show all details.

Project:  
Reference Number:

Client:  
Client Number:  
Contact:

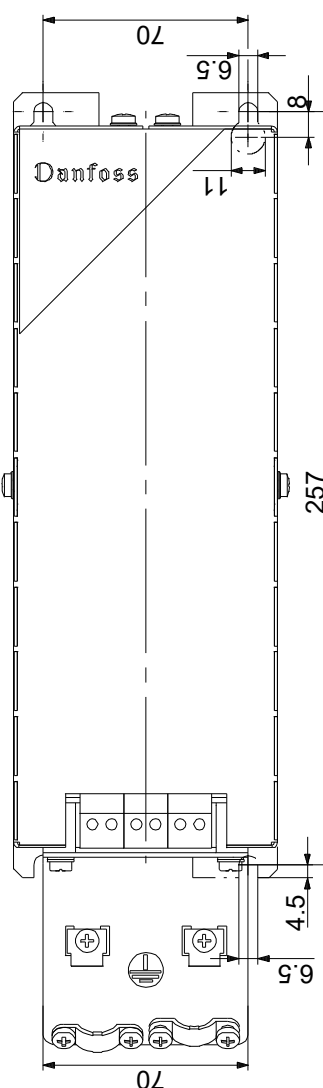
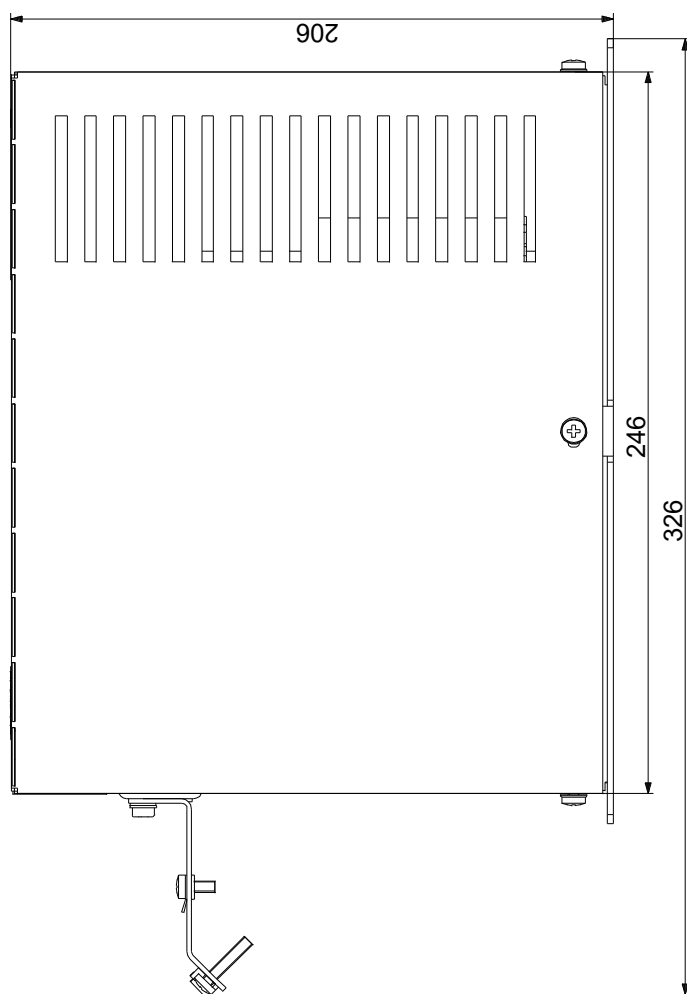
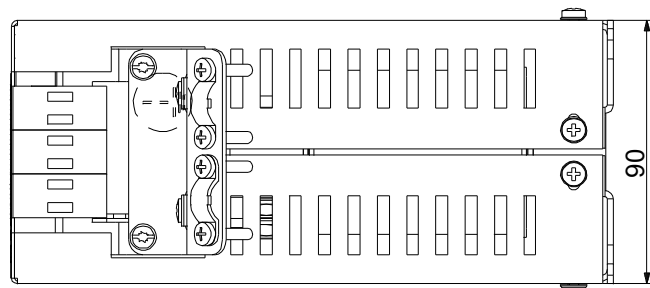
## 99044349 RSI 3x380-440V IP66 3kW 8.0A



Project:  
Reference Number:

Client:  
Client Number:  
Contact:

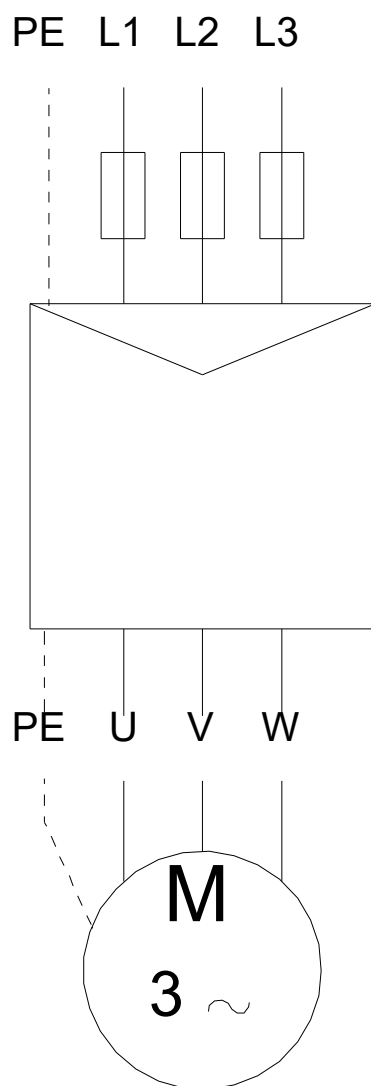
## 96754973 Sine-wave filter



Project:  
Reference Number:

Client:  
Client Number:  
Contact:

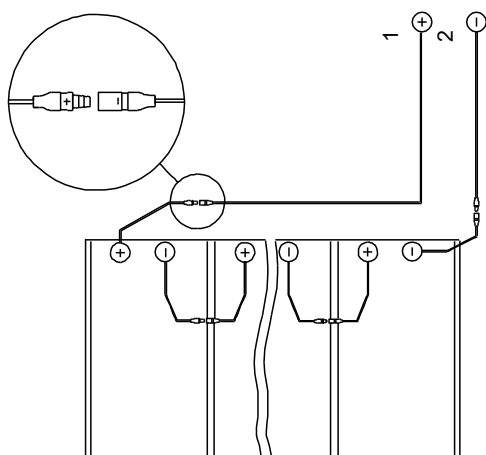
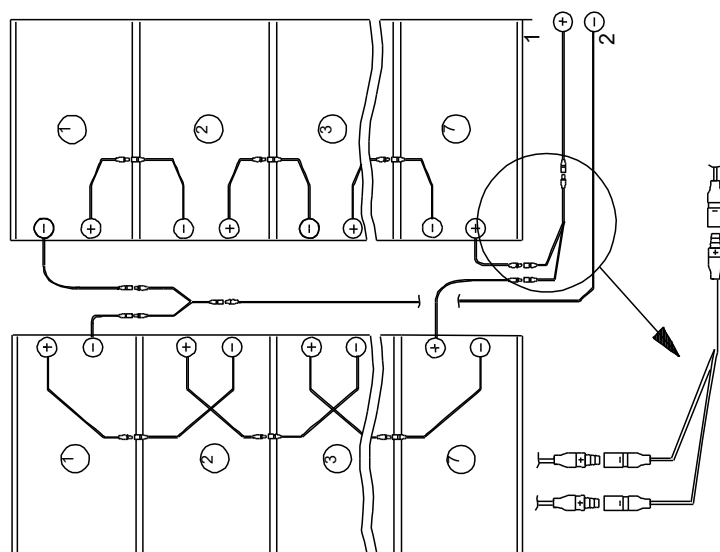
**98699190 SP 7-23**



Project:  
Reference Number:

Client:  
Client Number:  
Contact:

**99299012 GF 270**





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**Phone:**

**Date:** 07/06/2024

**Project:**  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

## 98699190 SP 7-23

### Input - summary

Water volume (max): 90 m<sup>3</sup>/day  
Month for sizing: July  
Static lift above ground: 14 m  
Dynamic water level: 65 m  
Sun tracking: Yes (single (polar) axis)  
Location: Dawlat Abad, Faryab, Afghanistan  
Latitude: 36.4206 DD, Longitude: 64.8964 DD

### Products

Pump: SP 7-23, 1 x 98699190  
Solar module: GF 270, 19 x 99299012  
Wire kit, array to control box: 1 x 98257868  
Switch box / control unit: RSI 3x380-440V IP66 3kW 8.0A, 1 x 99044349  
Switch box / control unit: OTDCP16, Circuit Breaker, 16Amp, 1 x 98341686  
Switch box / control unit: OVR PV 40-1000 P, Surge Protection, 1 x 98341687  
Others: Sine-wave filter, 1 x 96754973

### Sizing results - summary

#### Water production, Peak flow and Price

Total water production per year: 26200 m<sup>3</sup>  
Avg. water production per day: 71.9 m<sup>3</sup>/day  
Average water production per watt per day: 14 l/Wp/day

#### Solar module configuration:

Number of solar modules in series: 19, in parallel: 1  
Solar array rated power: 5.13 kW  
Solar array rated volts: 600 V  
Sun tracking: Yes (single (polar) axis)  
Tilt angle: 37 deg.

#### Typical performance at solar radiation 800 W/m<sup>2</sup>

Flow: 7.9 m<sup>3</sup>/h  
Total head: 79.5 m

#### Cables and pipes:

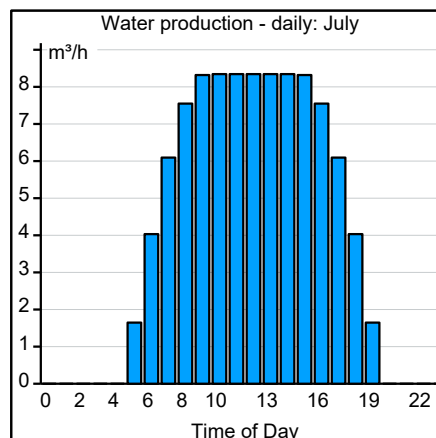
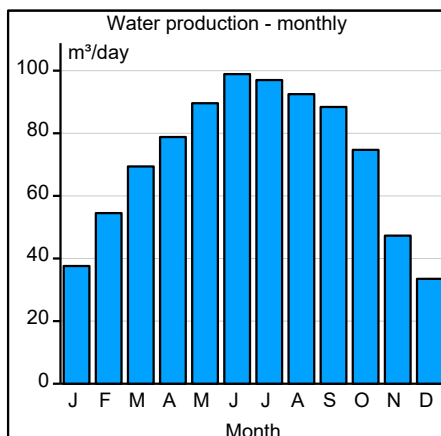
Pump cable length: 75 m  
Pump cable size: 10 mm<sup>2</sup>  
Total cable loss: 0.3 %

Material, riser pipe: PEH  
Pipe size (inner diameter), riser pipe: Ø 75 (66 mm)  
Material, discharge pipe: PEH  
Pipe size (inner diameter), discharge pipe: Ø 75 (66 mm)  
Pipe length of riser pipe: 65 m  
Pipe length of discharge pipe: 10 m  
Friction loss, discharge pipe: 0.134 m  
Friction losses: 0.53 m

### System performance - monthly average

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Water production [m <sup>3</sup> /day]	37.6	54.5	69.4	78.8	89.6	98.9	97	92.5	88.4	74.7	47.3	33.5
Energy production Solar [kWh/day]	18.9	26.8	32.6	38.4	42.9	48.8	48.2	46.5	46.1	36.9	23.4	17.6
Radiation horizontal [kWh/m <sup>2</sup> day]	2.4	3.5	4.9	6.3	7.8	8.8	8.6	7.9	6.7	4.8	2.9	2.2
Radiation tilt [kWh/m <sup>2</sup> day]	3.9	5.5	6.9	8.3	9.5	11.1	11.0	10.5	10.2	8.0	4.9	3.7
Avg. Temp. [°C]	3.0	5.9	11.9	19.5	25.3	30.0	31.4	29.4	23.4	16.2	10.4	5.4

Data location: Latitude: 37 DD, Longitude: 65 DD





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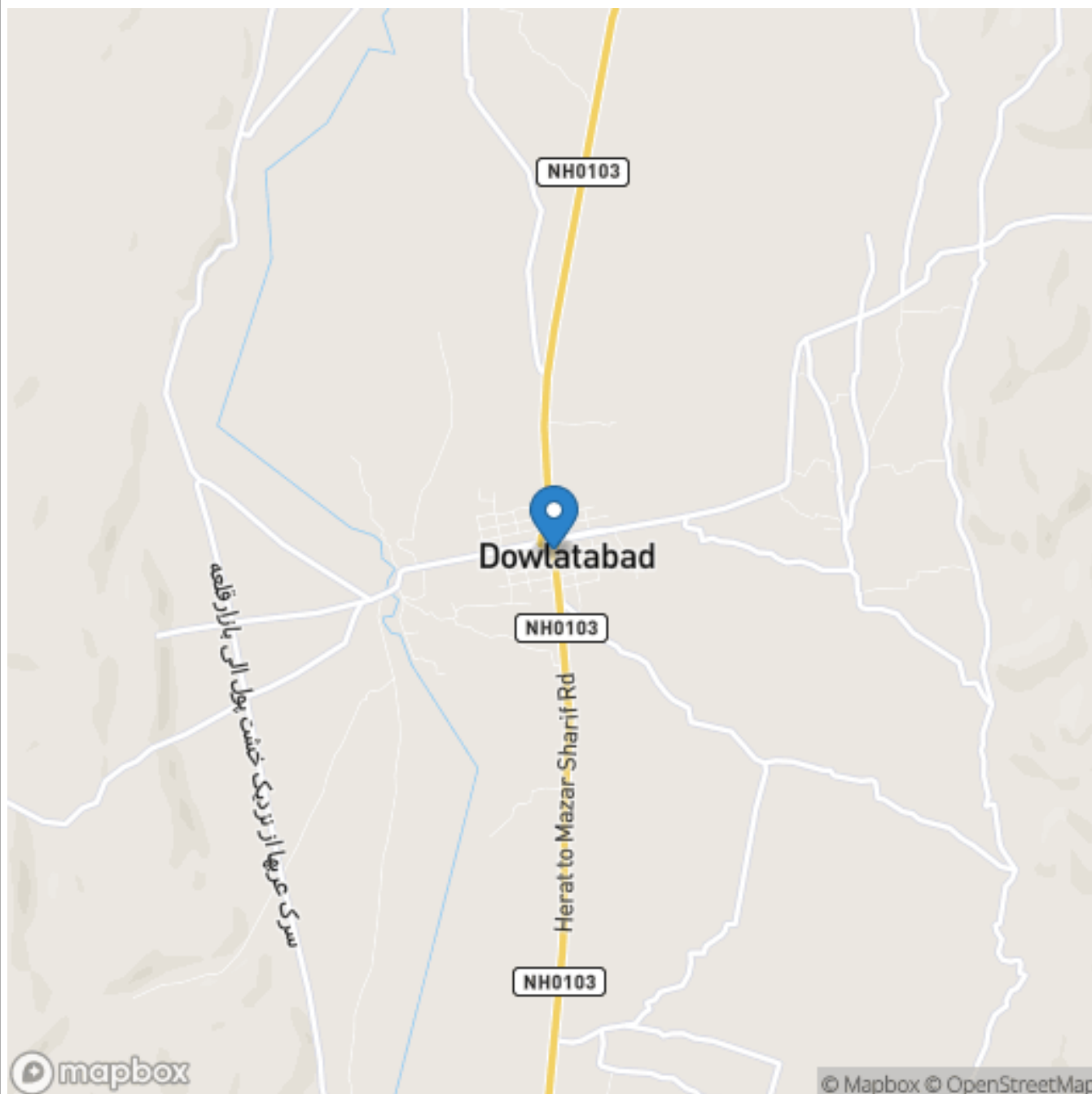
Date: 07/06/2024

Project:  
Reference Number:

Client:  
Client Number:  
Contact:

**98699190 SP 7-23**

#### Location Map

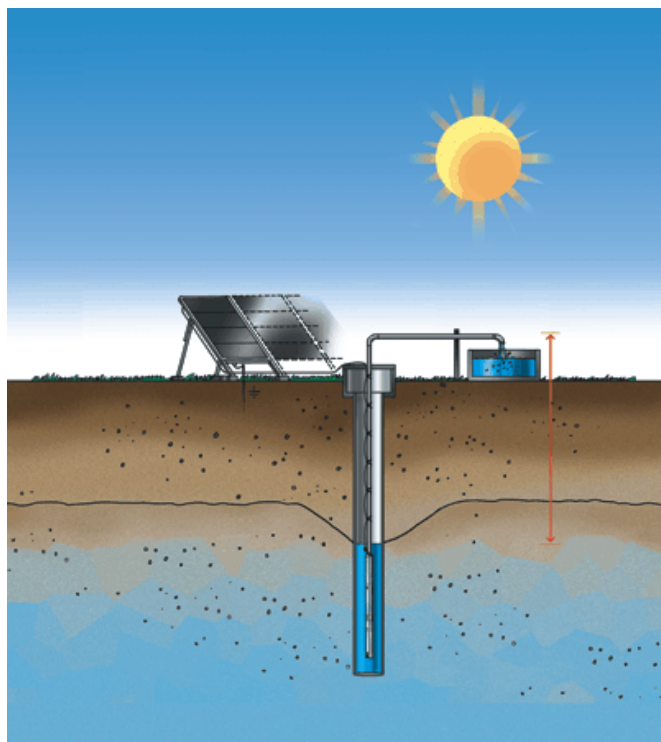


Location: Dawlat Abad, Faryab, Afghanistan  
Latitude: 36.4206 DD, Longitude: 64.8964 DD

**Project:**  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

## Installation and Input



## Sizing Results

### Water production, Peak flow and Price

Total water production per year: 26200 m<sup>3</sup>  
 Avg. water production per day: 71.9 m<sup>3</sup>/day  
 Average water production per watt per day: 14 l/Wp/day

### Solar module configuration:

Number of solar modules in series: 19, in parallel: 1  
 Solar array rated power: 5.13 kW  
 Solar array rated volts: 600 V  
 Sun tracking: Yes (single (polar) axis)  
 Tilt angle: 37 deg.

### Typical performance at solar radiation 800 W/m<sup>2</sup>

Flow: 7.9 m<sup>3</sup>/h  
 Total head: 79.5 m

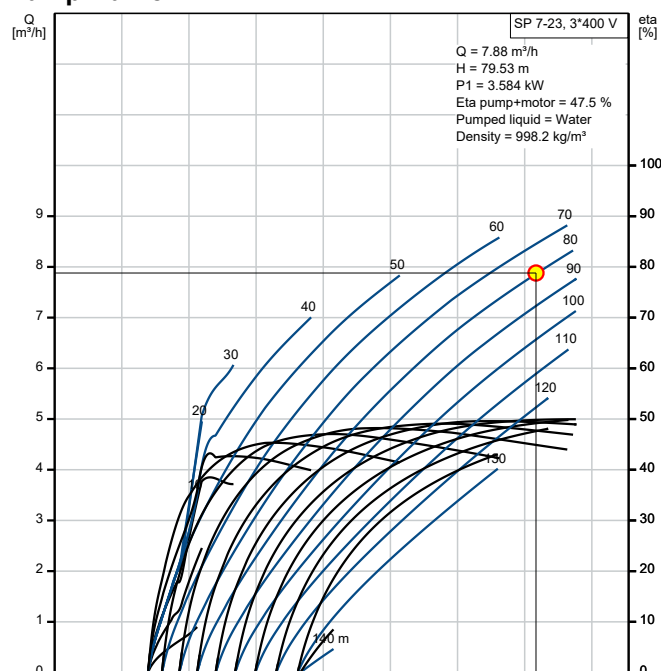
### Cables and pipes:

Pump cable length: 75 m  
 Pump cable size: 10 mm<sup>2</sup>  
 Total cable loss: 0.3 %

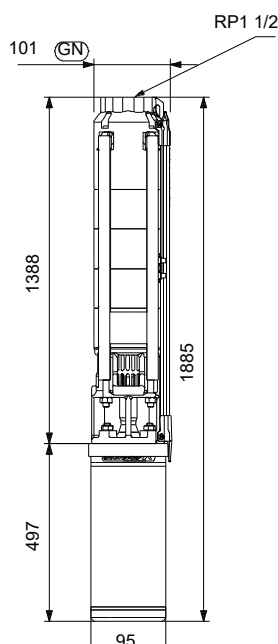
Material, riser pipe: PEH  
 Pipe size (inner diameter), riser pipe: Ø 75 (66 mm)  
 Material, discharge pipe: PEH  
 Pipe size (inner diameter), discharge pipe: Ø 75 (66 mm)  
 Pipe length of riser pipe: 65 m  
 Pipe length of discharge pipe: 10 m  
 Friction loss, discharge pipe: 0.134 m  
 Friction losses: 0.53 m

Location: Dawlat Abad, Faryab, Afghanistan  
 Latitude: 36.4206 DD, Longitude: 64.8964 DD

## Pump Curve



## Dimensional Drawing

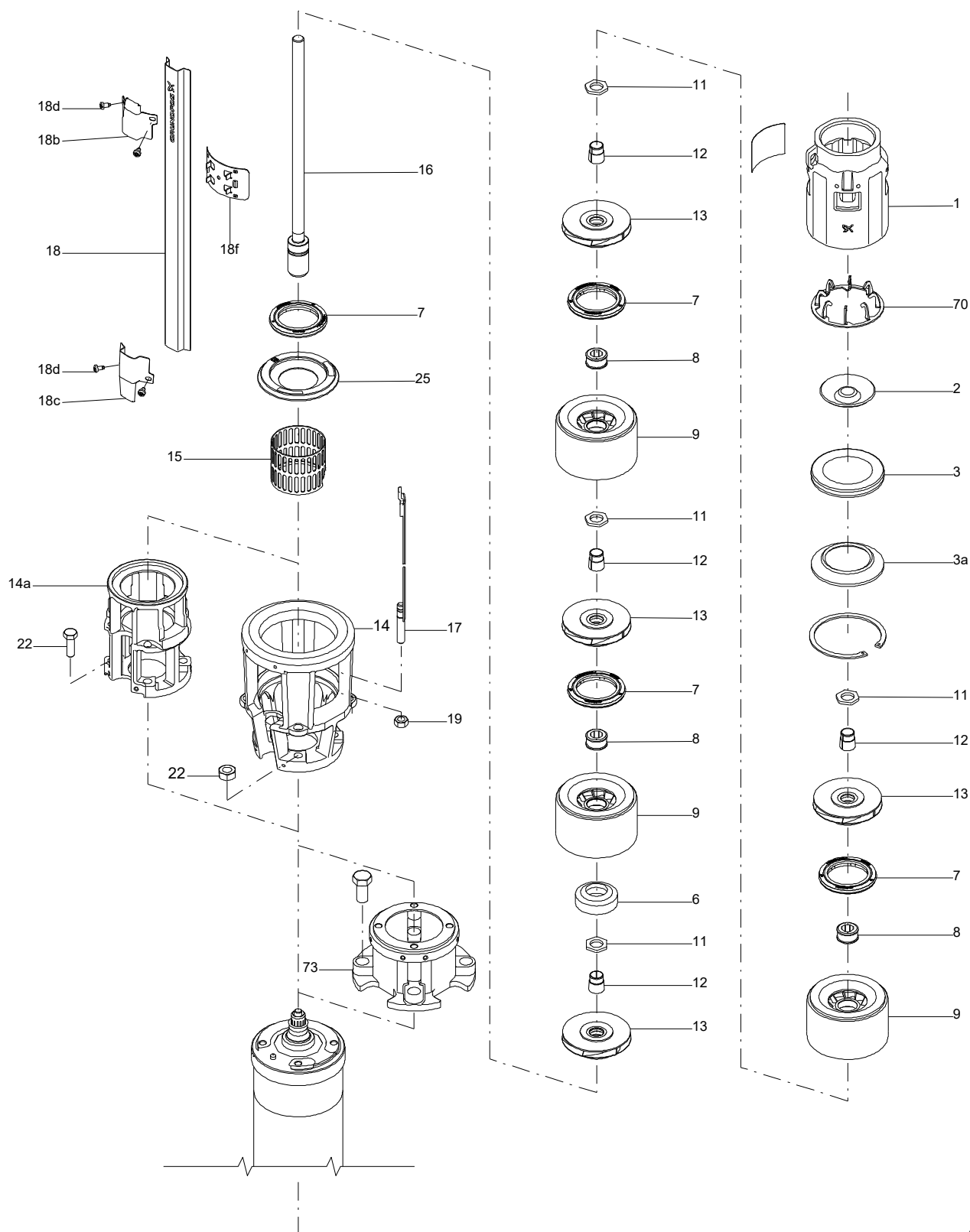




Project:  
Reference Number:

Client:  
Client Number:  
Contact:

( TM061865 for SP middle range )





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Project:  
Reference Number:

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Contact:

**Ganj WSN Solar Sizing**  
**Produced After 2407 (production year and week number)**

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Bulk, Impeller 10 pcs (10 PC)			98767030	1	pcs
11	Split cone nut				10	pcs
12	Split cone				10	pcs
13	Impeller cpl.				10	pcs
-	Bulk, Impeller 25 pcs (25 PC)			98767042	1	pcs
11	Split cone nut				25	pcs
12	Split cone				25	pcs
13	Impeller cpl.				25	pcs
-	Bulk, Impeller 5 pcs (5 PC)			98767018	1	pcs
11	Split cone nut				5	pcs
12	Split cone				5	pcs
13	Impeller cpl.				5	pcs
-	Kit, Non-return valve			98766949	1	pcs
2	Valve cone				1	pcs
3a	Valve				1	pcs
3	Valve seat				1	pcs
37	Lock ring				1	pcs
70	Valve guide				1	pcs
-	Kit, Wear parts 1 Stg			98766923	1	pcs
3a	Valve seat				1	pcs
7	Seal ring				2	pcs
8	Bearing				1	pcs
-	Kit, Wear parts 10 Stg			98766935	1	pcs
3a	Valve seat				1	pcs
7	Seal ring				11	pcs
8	Bearing				10	pcs
-	Kit, Wear parts 25 Stg			98766941	1	pcs
3a	Valve seat				1	pcs
7	Seal ring				26	pcs
8	Bearing				25	pcs
-	Kit, Wear parts 5 Stg			98766929	1	pcs
3a	Valve seat				1	pcs
7	Seal ring				6	pcs
8	Bearing				5	pcs
	Motor			92960049	1	pcs
1	Valve casing			98766957	1	pcs
2	Valve cone			96550791	1	pcs
6	Upthrust bearing			98766982	1	pcs
7	Bulk, Seal ring (20 PC)			99964151	1	pcs
9	Bulk, Chamber cpl. (5 PC)			98767000	1	pcs
9	Bulk, Chamber cpl. (10 PC)			98767006	1	pcs



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**Contact:**

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
9	Bulk, Chamber cpl. (25 PC)			98767012	1	pcs
11	Bulk, Split cone nut (10 PC)			96551289	1	pcs
14	Suction interconnector			98766984	1	pcs
15	Strainer			98766969	1	pcs
16	Shaft cpl.			98766337	1	pcs
17	Bulk, Strap cpl. (4 PC)			98766677	4	pcs
18f	Bracket			99156147	1	pcs