

World Vision International World Vision Afghanistan Faryab Zonal Office



WASH Sector
DAWAM WASH PROJECT

Design and Estimation of Water Supply Project
Project Name: Jar Qala Pipe Scheme with Solar Pump System

Village: Jar Qala
District: Dawlat Abad
Province: Faryab

Contents:

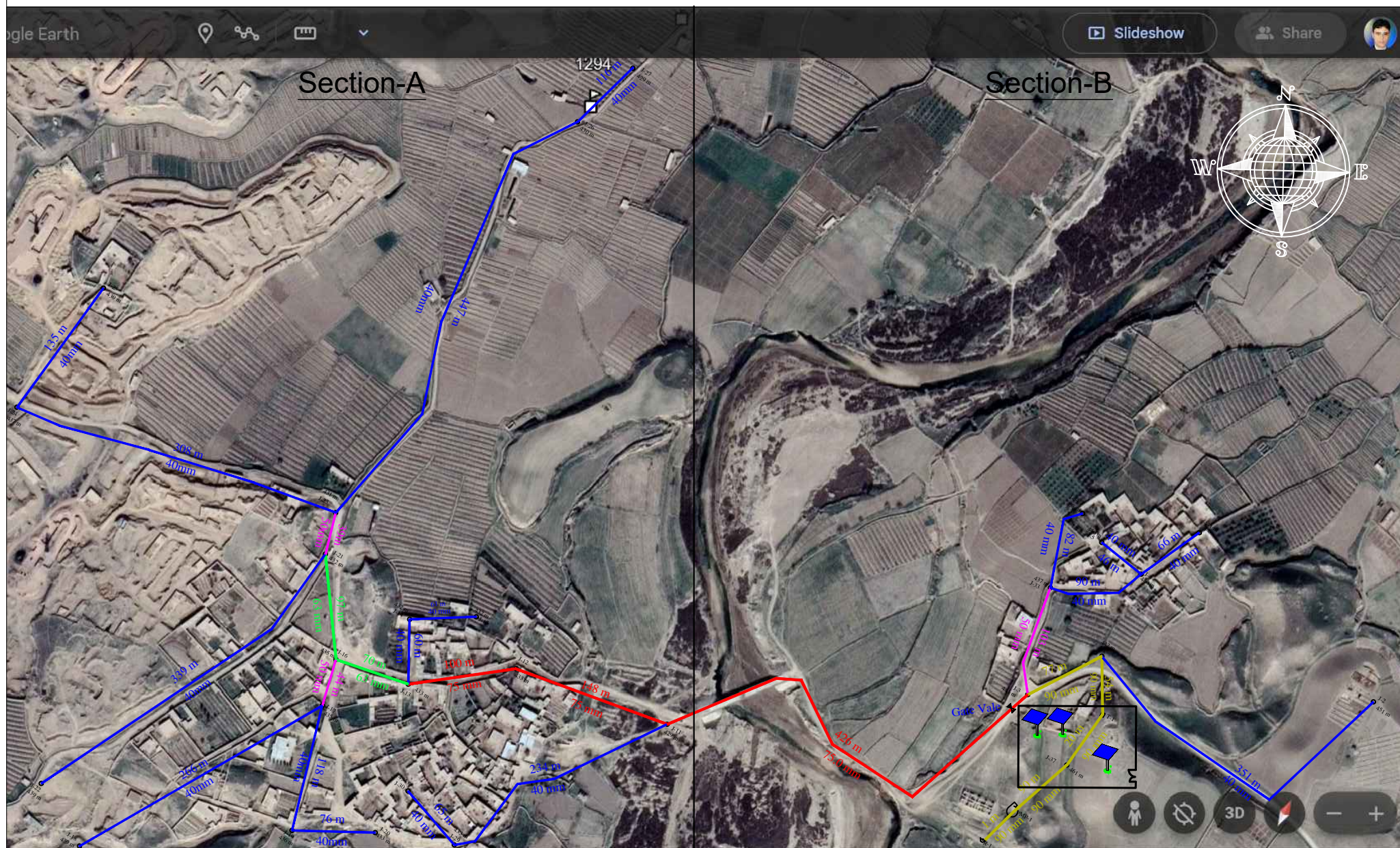
➤ Summary of work	7	Sheets
➤ Term of reference	3	Sheets
➤ Site plan	3	Sheet
➤ Hydraulic design	3	Sheets
➤ 40m ³ RCC reservoir drawings	4	Sheets
➤ Boundary wall drawings	1	Sheets
➤ Well Design and drawings	1	Sheets
➤ Tap Details	1	Sheet
➤ Bill of Quantity	3	Sheets
➤ Cost Bill Of Quantity	3	Sheets
➤ Work plan	1	Sheet
➤ Official document		Sheets

Brief Information

- ✓ No. of Family: 197
- ✓ Estimated well Discharge: 2.93 lit/sec
- ✓ No. Of House connection/meter = 110
- ✓ Length of network= 4018 m
- ✓ Solar panels Power = 8100 Watts
- ✓ Work days = 90 days
- ✓ RCC Reservoir = 40 M3
- ✓ Depth of Well =100

Prepared by:

Jar Qala Village Water Supply Network Site Plan



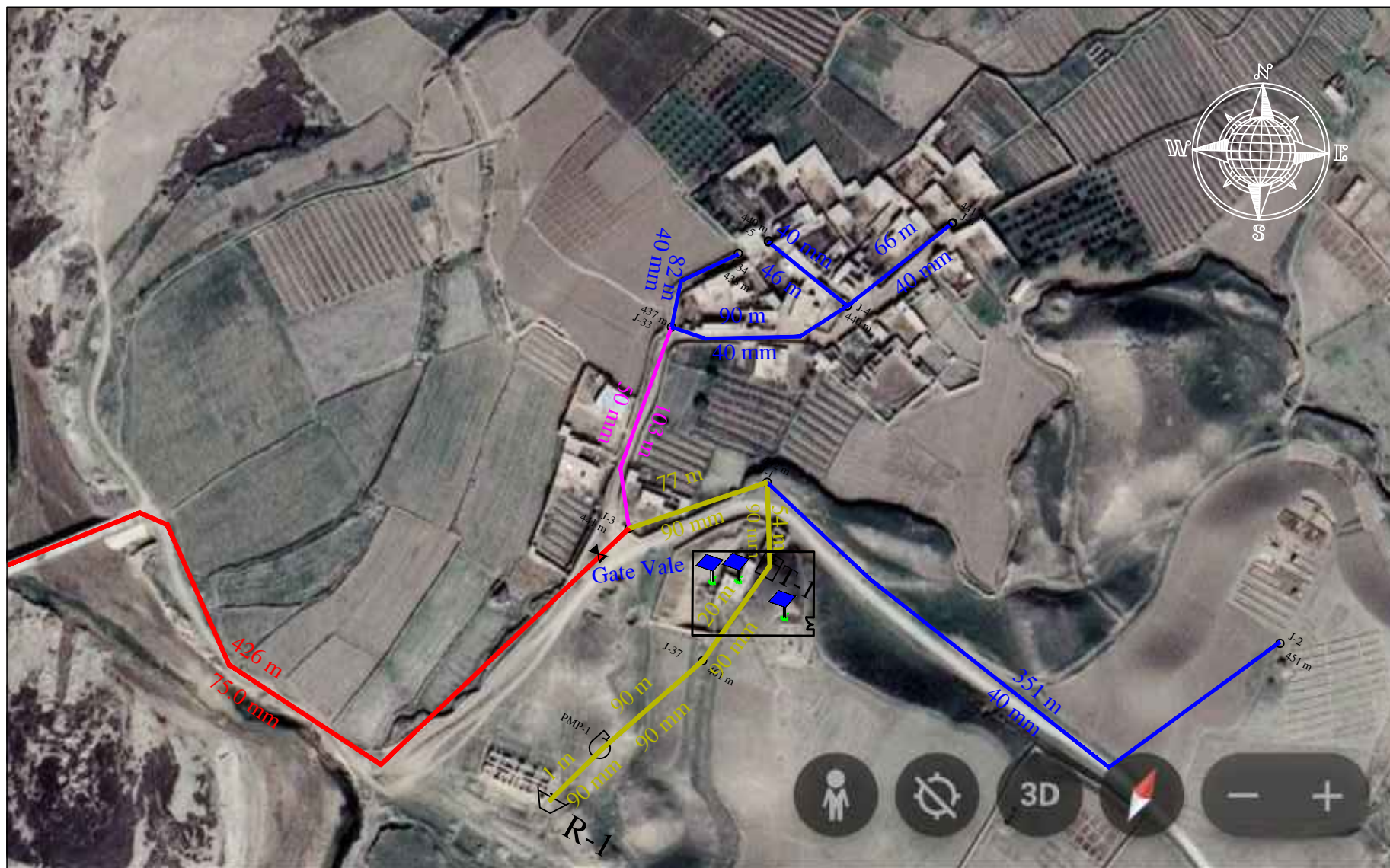
WORLD VISION AFGHANISTAN			World Vision ورلد ویژن		
DAWAM WASH Project					
Province: Faryab		District: Dawlat Abad		Village: Jar Qala	
Project ID Number: A221873					
Designed by: Sayed Masoud Tural		Drawn by: Sayed Masoud Tural		Checked By: WASH Coordinator	
Reviewed by WASH A-Manager		Approved by Project Director/Manager			
					
BOOK SIGN 402551952-428262138		BOOK SIGN 402551952-428262138		BOOK SIGN 402551952-428262138	
Aug 8, 2024		Aug 8, 2024		Aug 11, 2024	

Jar Qala Village Water Supply Network Site Plan Section-A



WORLD VISION AFGHANISTAN			World Vision	
DAWAM WASH Project			ورلد ویژن	
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by: Masoud Masoud Tural	Drawn by: Masoud Masoud Tural	Checked By: WASH Coordinator	Reviewed by Masoud Masoud Tural	Approved by Project Director/Manager
				
Aug 8, 2024	Aug 8, 2024	Aug 8, 2024	Aug 11, 2024	Plot Scale

Jar Qala Village Water Supply Network Site Plan Section-B

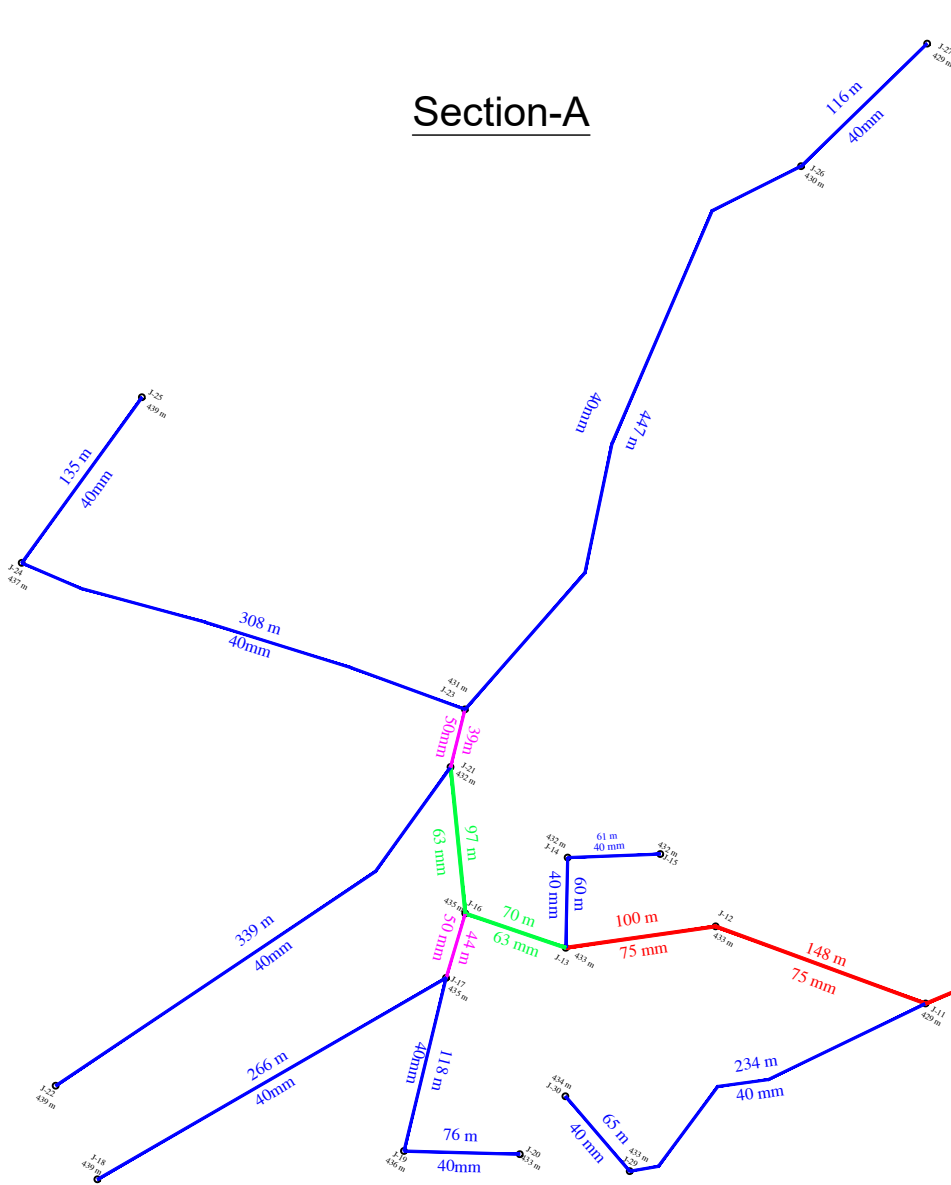


Legend	
—	Ø750mm
—	Ø630mm
—	Ø500mm
—	Ø90mm
—	Ø40mm

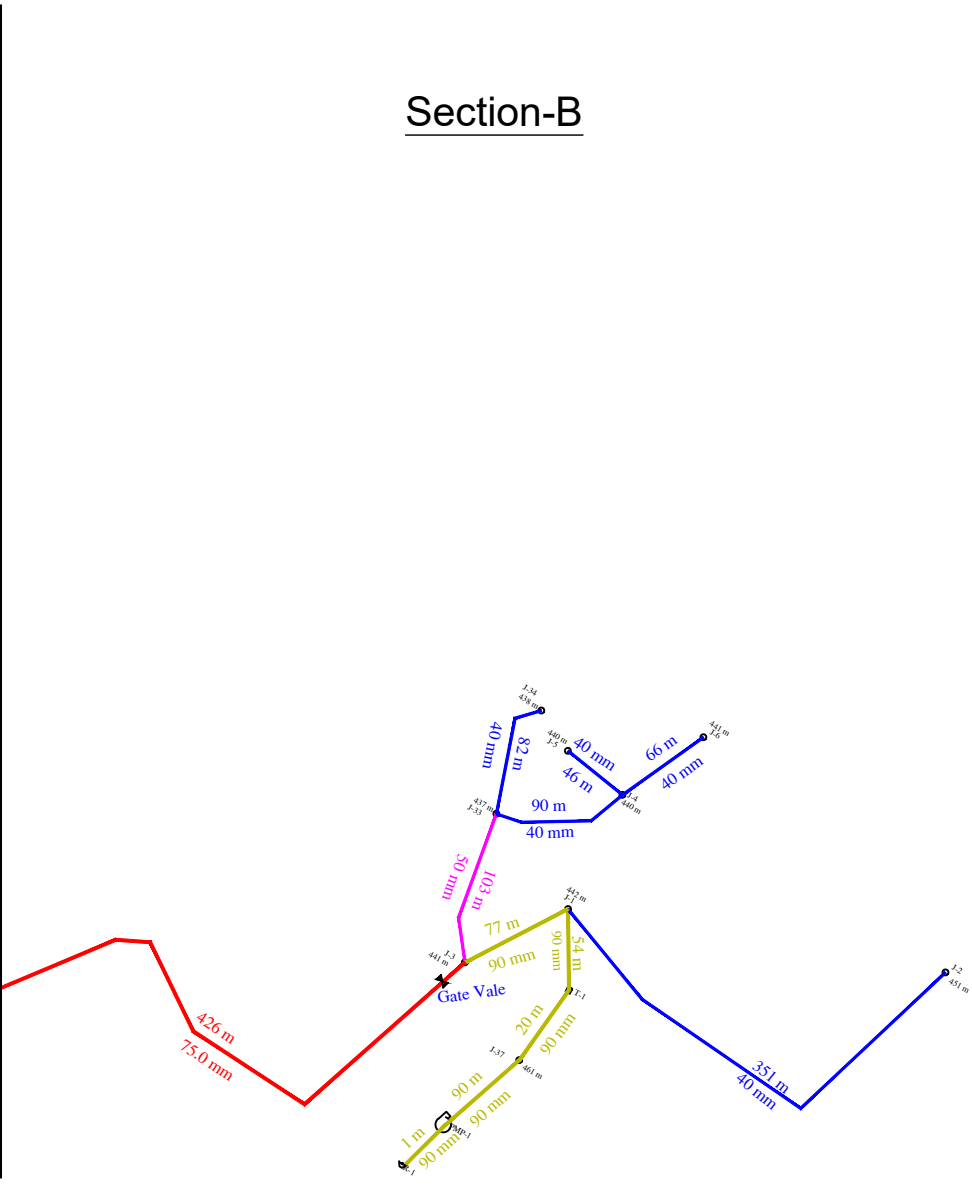
WORLD VISION AFGHANISTAN DAWAM WASH Project				World Vision ورلد ویژن
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by: <i>Sayed Masoud Tural</i>	Drawn by: <i>Sayed Masoud Tural</i>	Checked By: <i>WASH Coordinator</i>	Reviewed by: <i>M.A. Agha</i>	Approved by: <i>Project Director/Manager</i>
<i>Sayed Masoud Tural</i>	<i>Sayed Masoud Tural</i>	<i>WASH Coordinator</i>	<i>M.A. Agha</i>	<i>Project Director/Manager</i>
40255192-42826138	40255192-42826138	40255192-42826138	40255192-42826138	40255192-42826138
Aug 8, 2024	Aug 8, 2024	Aug 8, 2024	Aug 11, 2024	Plot Scale

Jar Qala Village Water Supply Network Site Plan

Section-A



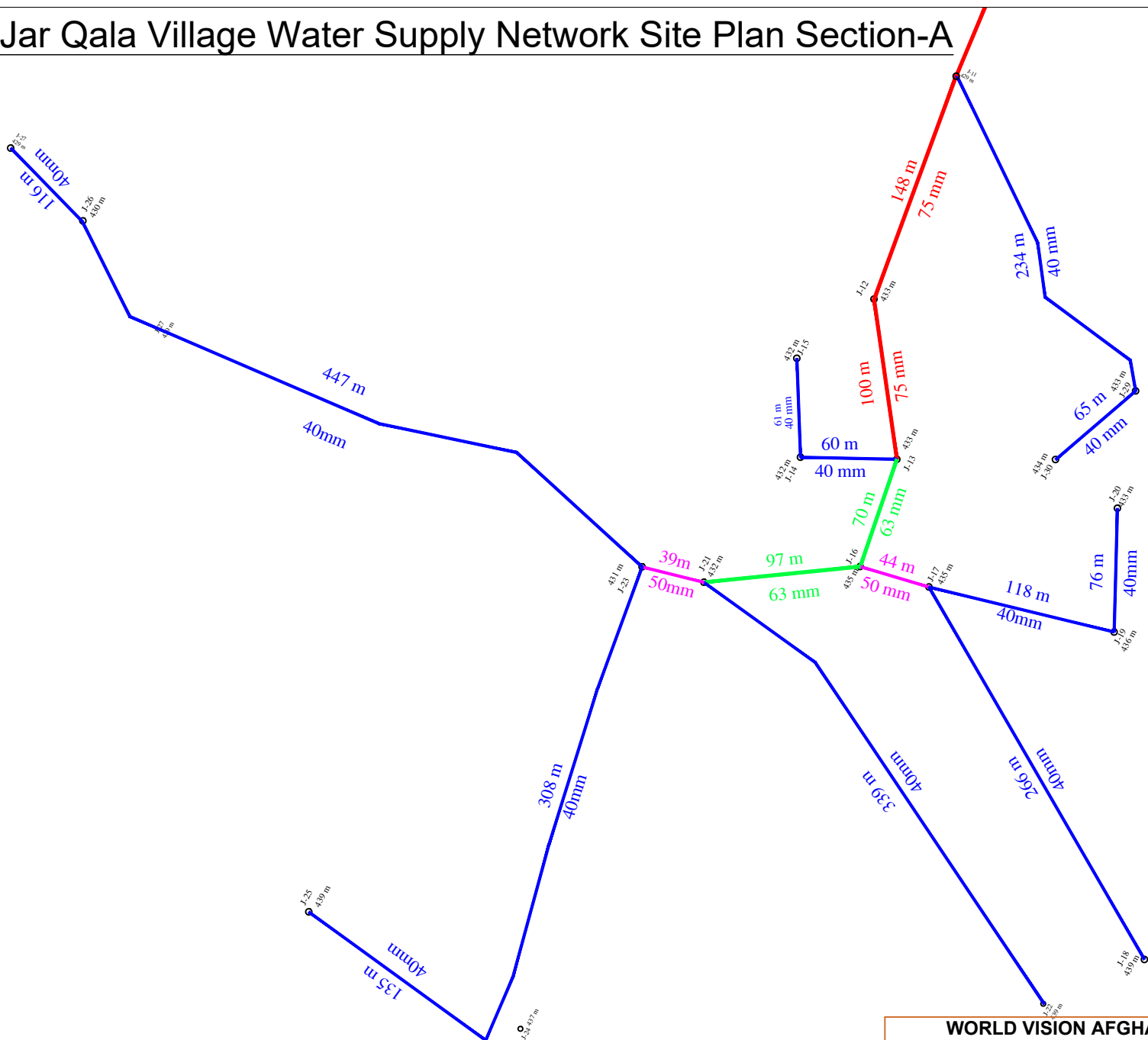
Section-B



WORLD VISION AFGHANISTAN				World Vision ورلد ويزن	
DAWAM WASH Project					
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873		
Designed by: Sayed Masoud Tural	Drawn by: Sayed Masoud Tural	Checked By: WASH Coordinator	Reviewed by MASOUD A. AGHA	Approved by Project Director/Manager	
					
box SIGN	402551502-42826XLB	box SIGN	402551502-42826XLB	Sign Date	Plot Scale
Aug 8, 2024					

Site Plan

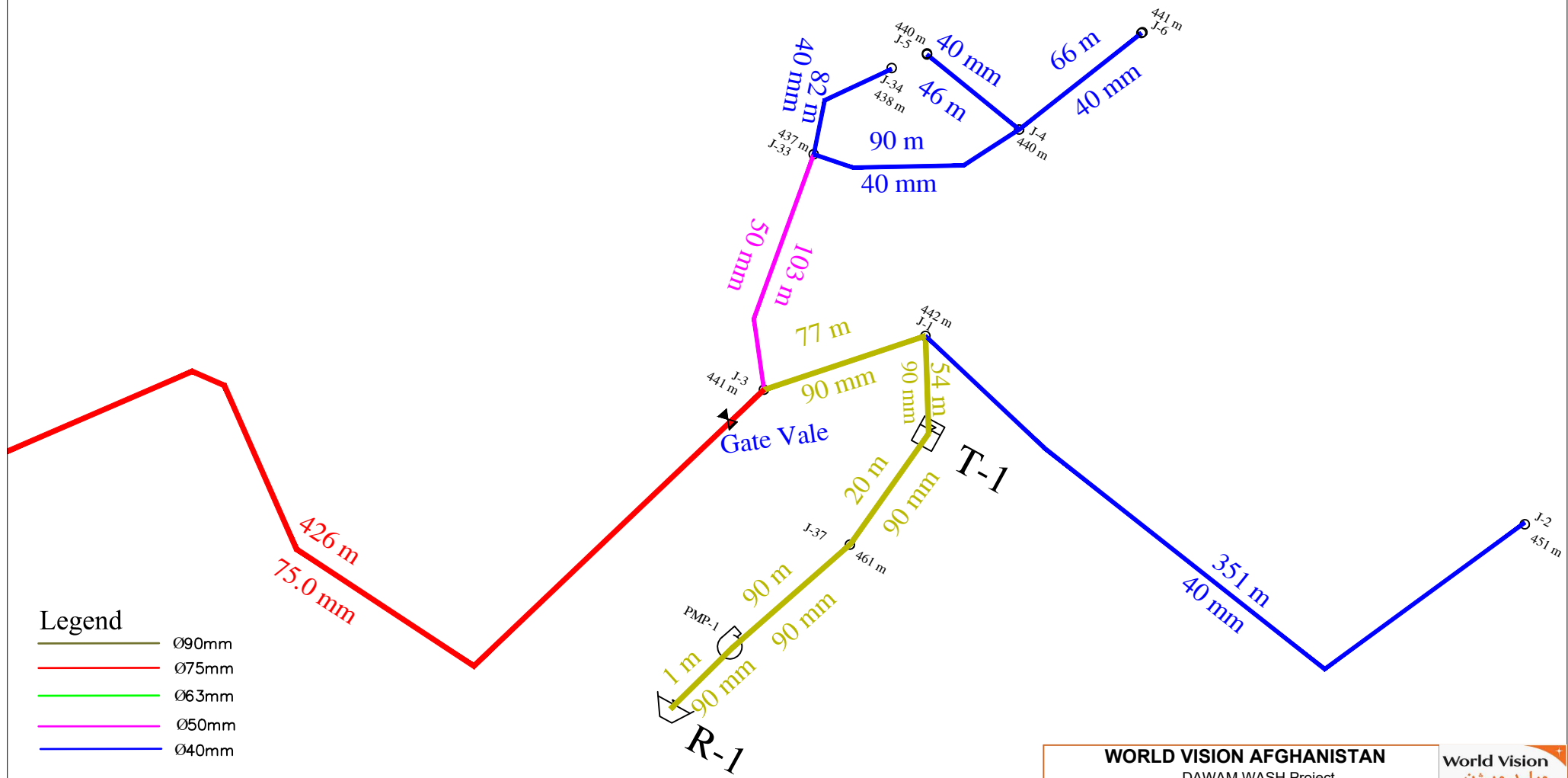
Jar Qala Village Water Supply Network Site Plan Section-A



WORLD VISION AFGHANISTAN			World Vision	
DAWAM WASH Project			ورلد ویژن	
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by: Sayed Masoud Tural	Drawn by: Sayed Masoud Tural	Checked By: WASH Coordinator	Reviewed by MASOUD A. Agha	Approved by Project Director/Manager
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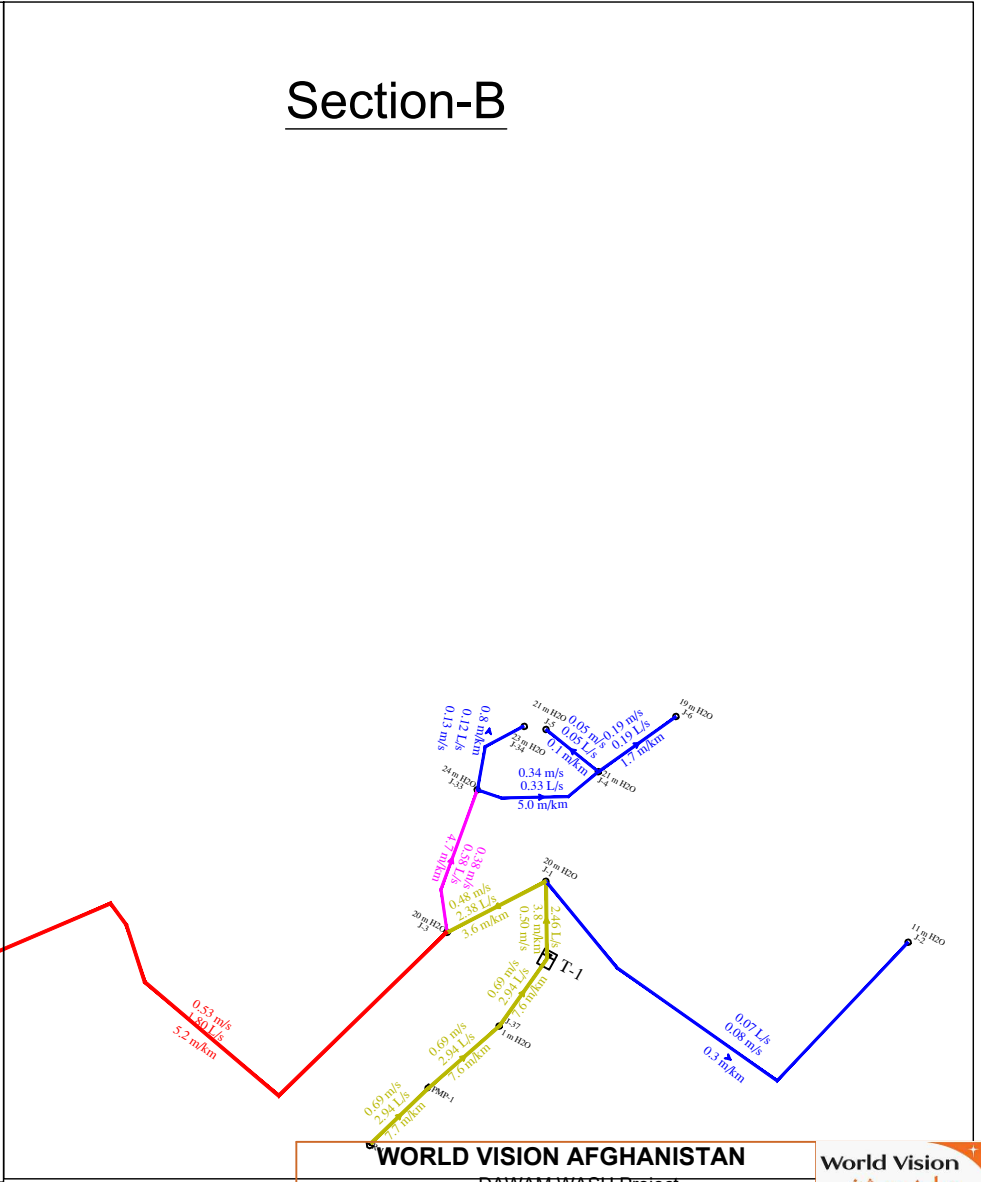
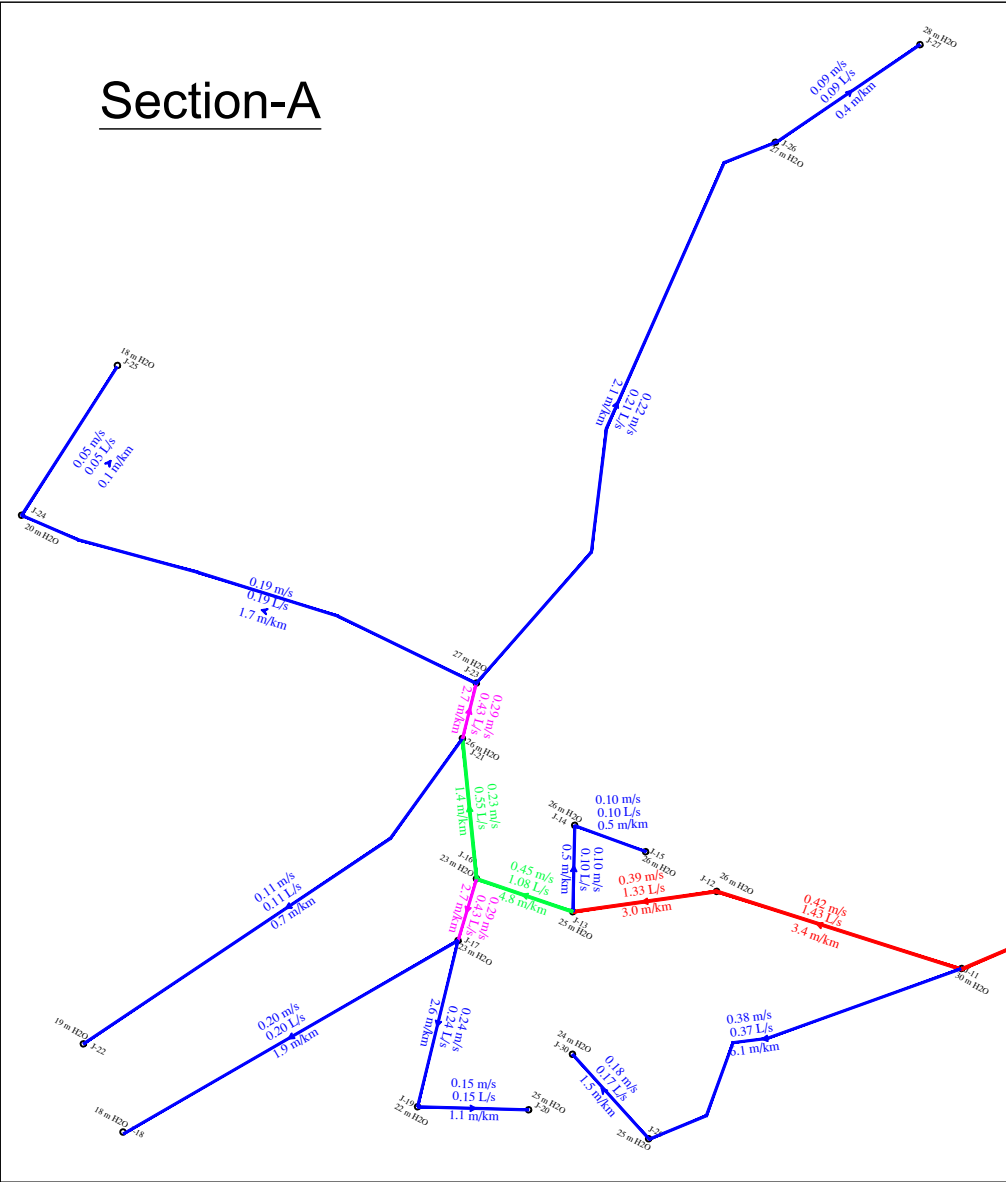
Aug 8, 2024 Aug 8, 2024 Aug 11, 2024 Plot Scale


Jar Qala Village Water Supply Network Site Plan Section-B



WORLD VISION AFGHANISTAN DAWAM WASH Project			World Vision ورلد ویژن	
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by: Sayed Masoud Tural	Drawn by: Sayed Masoud Tural	Checked By: WASH Coordinator	Reviewed by: WASH A-Officer	Approved by: Project Director/Manager
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Aug 8, 2024	Aug 8, 2024	Aug 8, 2024	Aug 11, 2024	Plot Scale

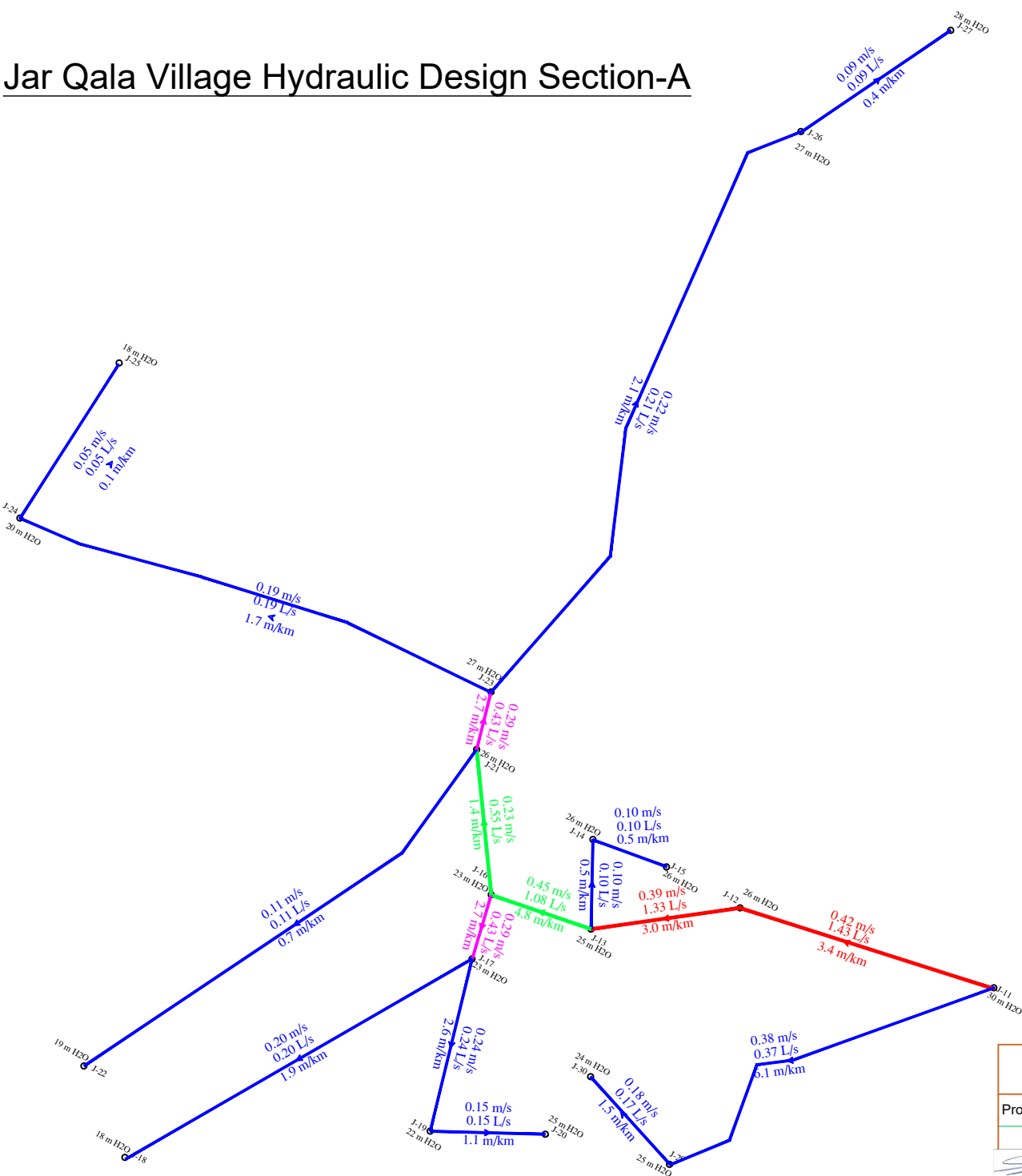
Jar Qala Village Hydraulic Design



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DAWAM WASH Project				
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by: Sayed Masoud Tural	Drawn by: Sayed Masoud Tural	Checked By: WASH Coordinator	Reviewed by WASH A-Officer	Approved by Project Director/Manager
				
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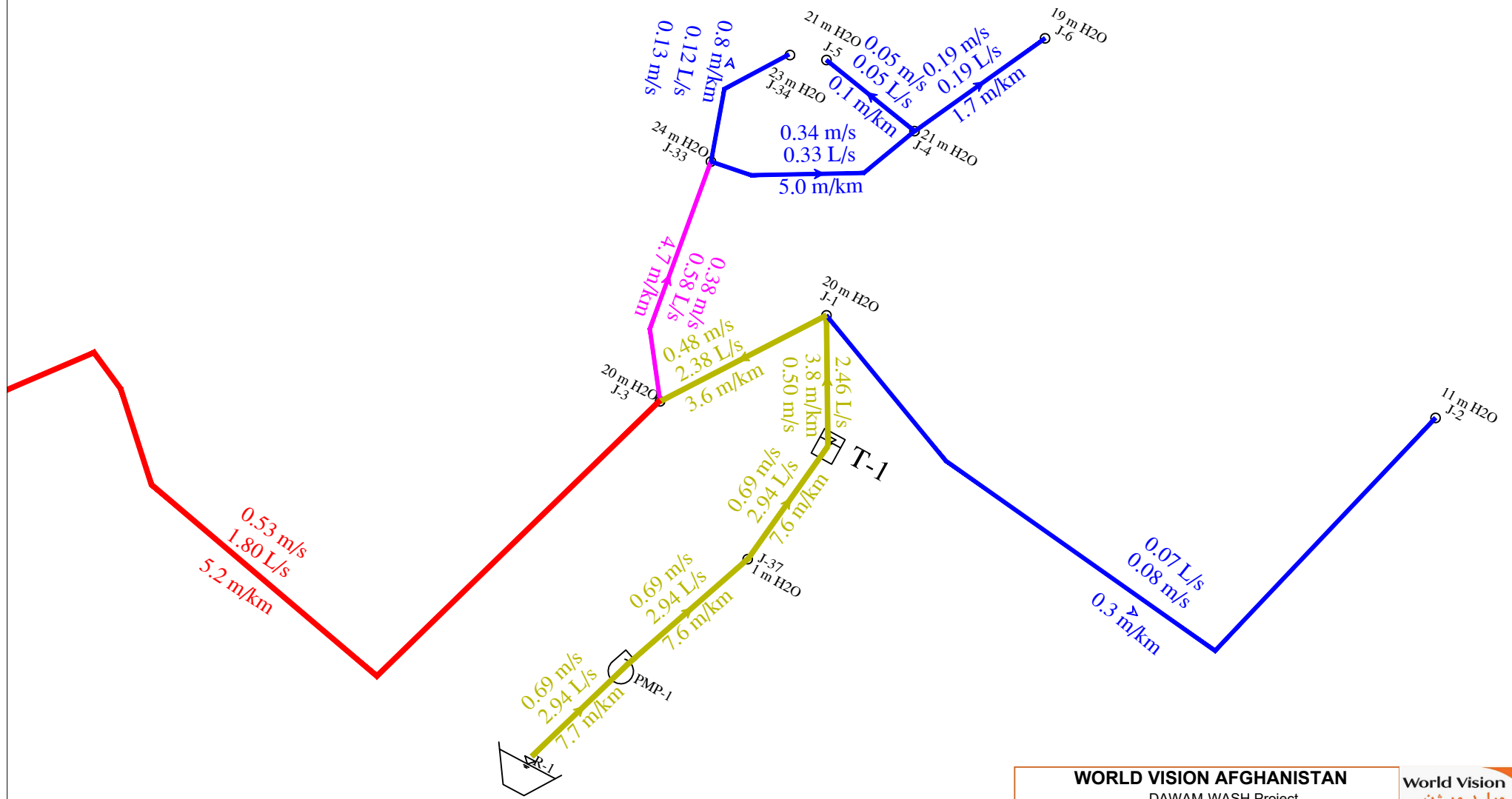
Aug 8, 2024 Aug 8, 2024 Aug 11, 2024 Plot Scale

Jar Qala Village Hydraulic Design Section-A



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DAWAM-WASH Project					
Province: Faryab		District: Dawlat Abad		Village: Jar Qala	
Project ID Number: A221873					
Designed by:		Drawn by:		Checked By:	
				WASH Coordinator	
Reviewed by		Approved by			
RUSCWA-A-Project		Project Director/Manager			
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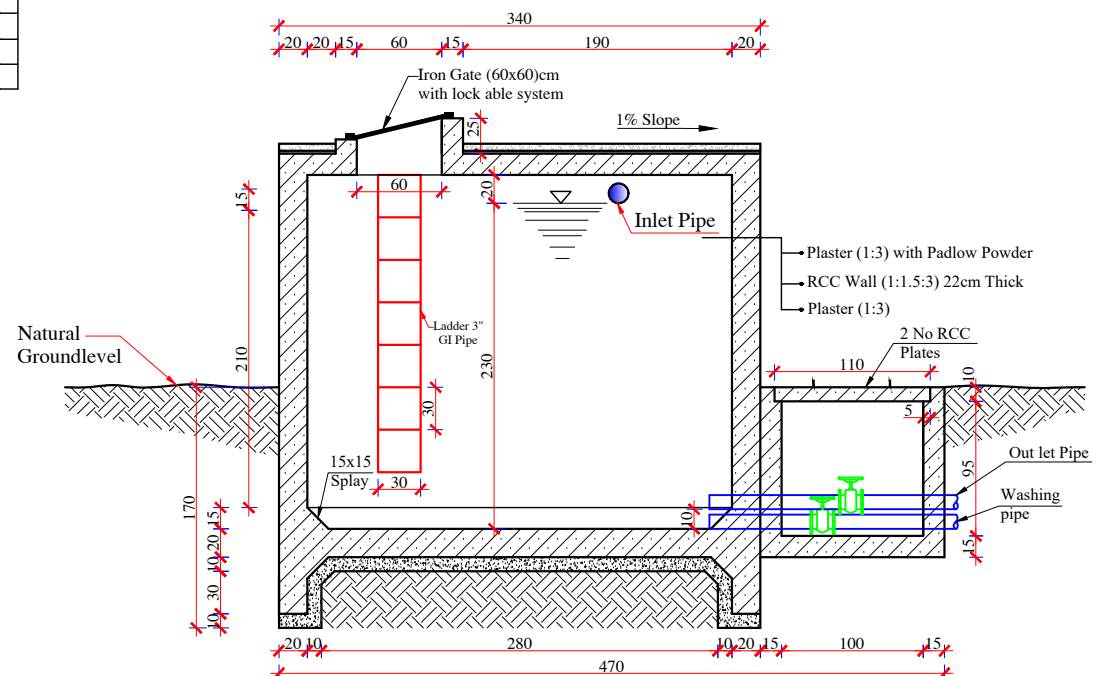
Jar Qala Village Hydraulic Design Section-B



WORLD VISION AFGHANISTAN			World Vision ورلد ویژن	
DAWAM-WASH Project				
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by:	Drawn by:	Checked By:	Reviewed by:	Approved by:
		WASH Coordinator	WASH A-Engineer	Project Director/Manager
	Bayat Masoud			
	40255192-42826138		40255192-42826138	
Aug 8, 2024 Aug 8, 2024 Aug 11, 2024				
Hydraulic design Section 1				

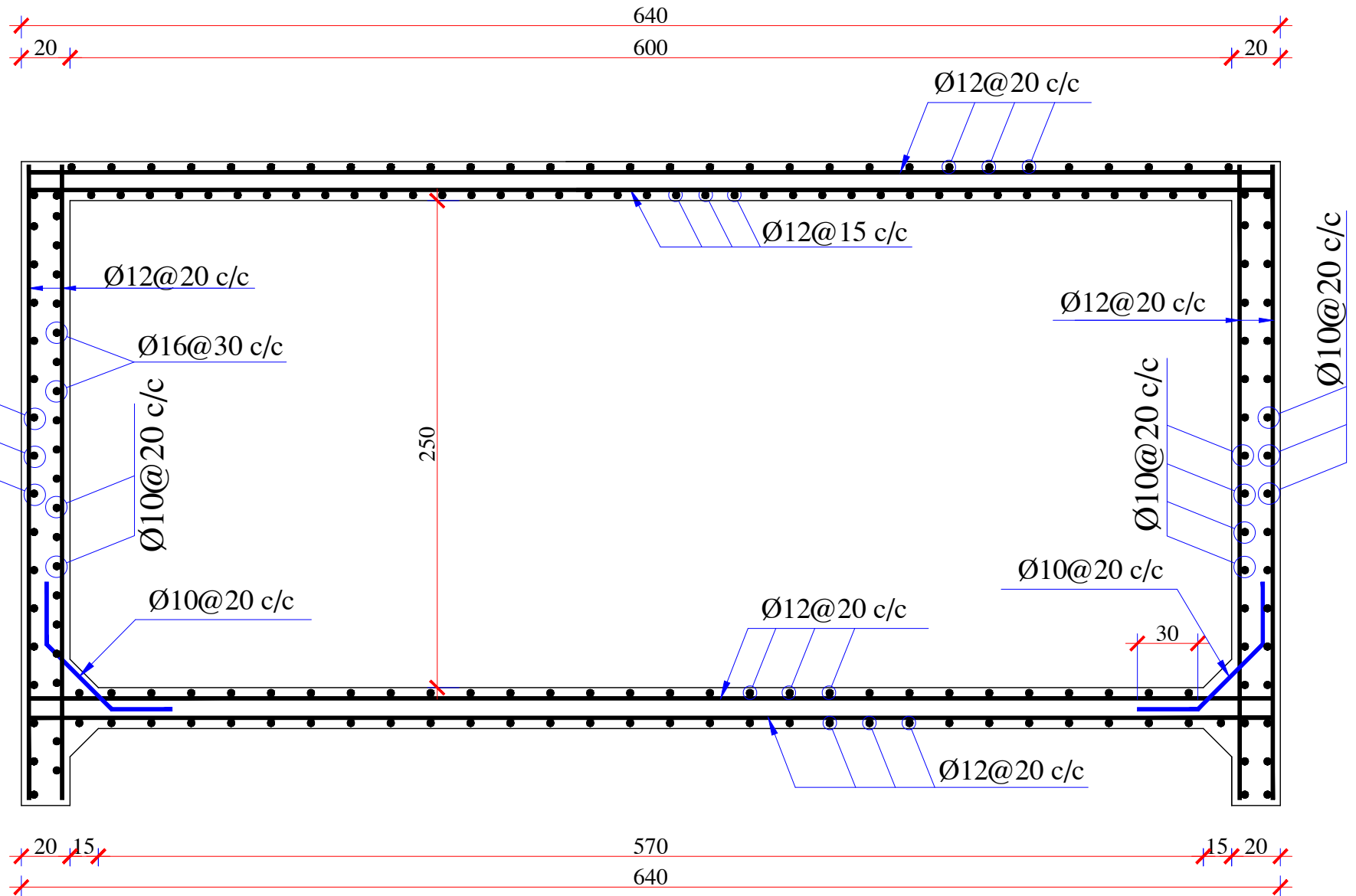


SECTION A-A



Reservoir 40m³

SECTION D-D



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DAWAM-WASH Project

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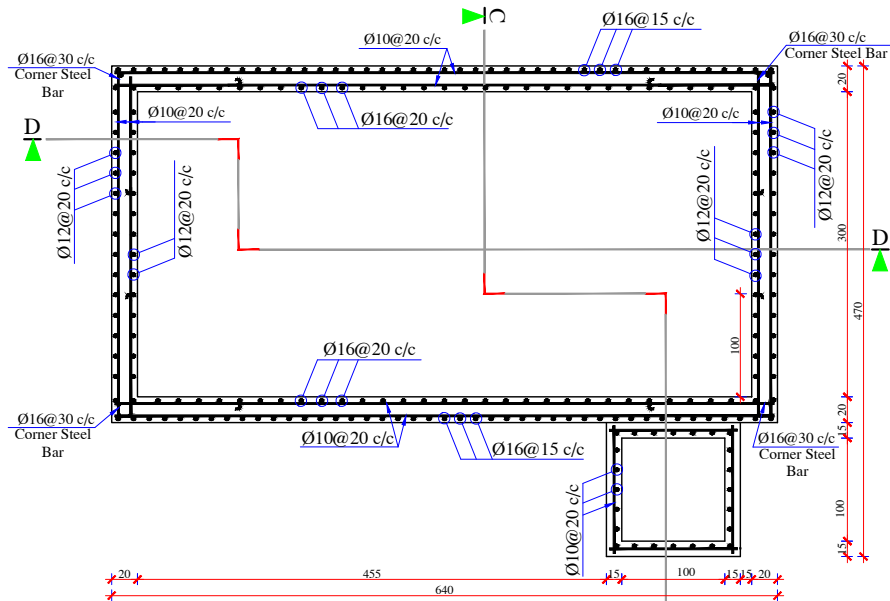
Province: **Faryab** District: **Dawlat Abad** Village: **Jar Qal** Project ID Number: **A221873**

Designed by: **Sayed Masoud Tural** Drawn by: **Sayed Masoud Tural** Checked by: **WASH Coordinator** Reviewed: **WASH Adviser** Approved by: **Project Director/Manager**

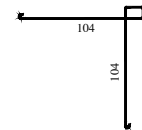
Signature: *Sayed Masoud Tural* Signature: *Gyana Housadmal* Signature: *WASH Adviser*

Date: **Aug 8, 2024** Date: **Aug 8, 2024** Date: **Aug 11, 2024**

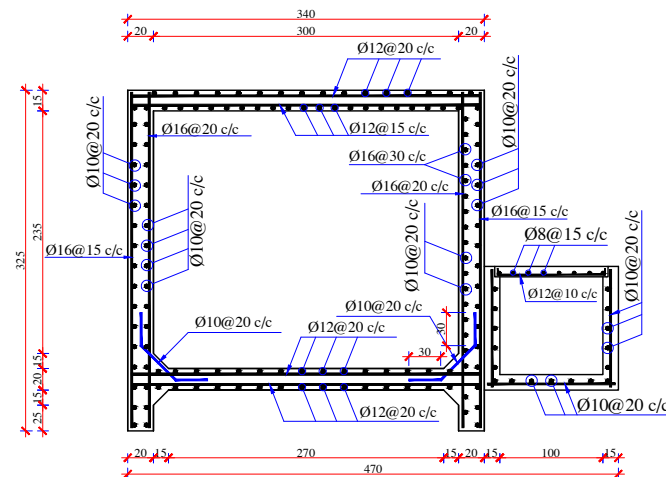
Plot Scale: **1:100**



REINFORCEMENT PLAN



Corner Steel Bar Ø16 @30 c/c
L=250cm



SECTION C-C

WORLD VISION AFGHANISTAN

DAWAM-WASH Project



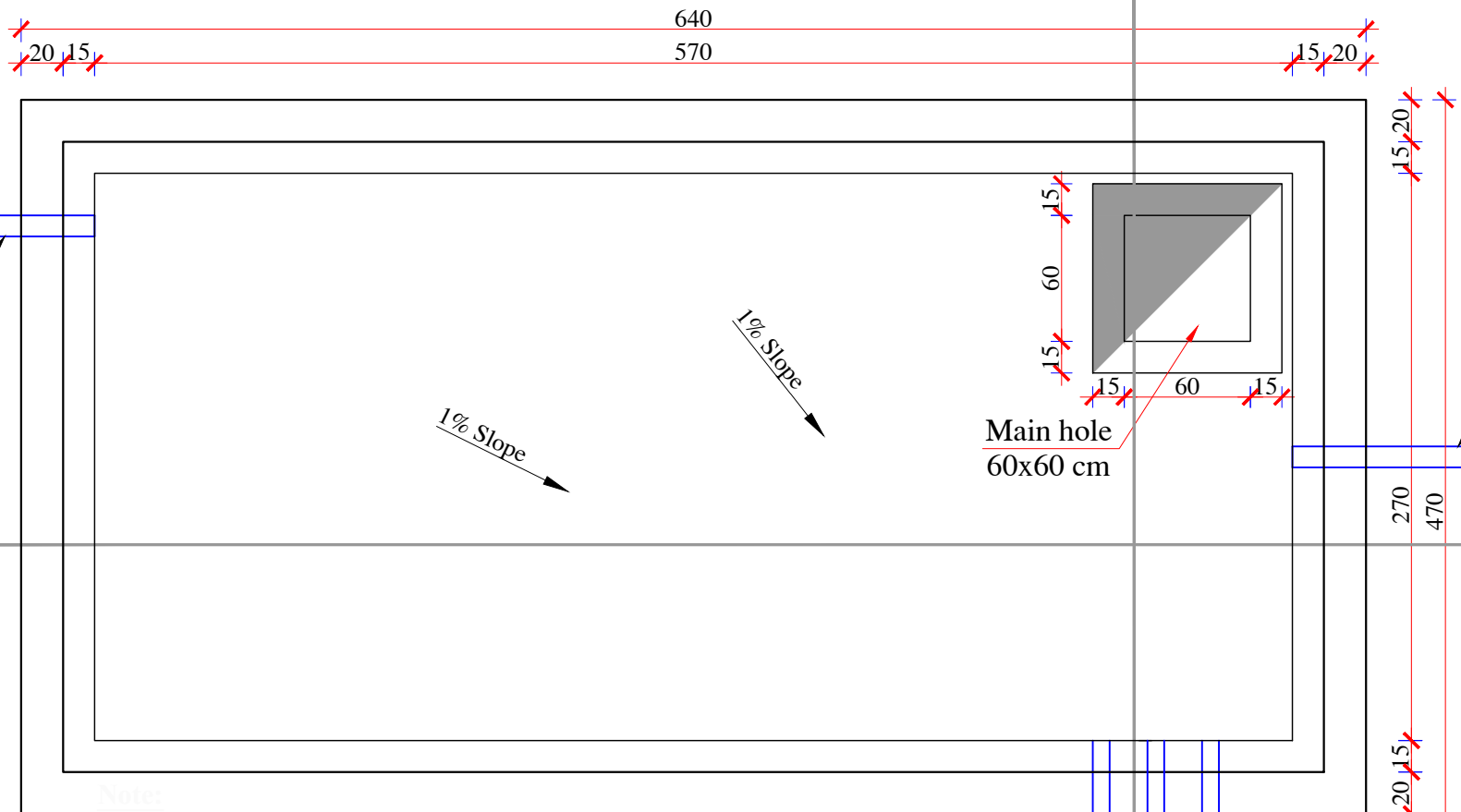
Province: **Faryab** District: **Dawlat Abad** Village: **Jar Qala** Project ID Number: **A221873**

Designed by: Sayed Masoud Turali	Drawn by: Sayed Masoud Turali	Checked By: WASH Coordinator	Reviewed by: WASH Adviser	Approved by Project Director/Manager

Aug 8, 2024 Aug 8, 2024 Aug 11, 2024

Reservoir 40m³

PLAN



Note:

- 1- All dimensions are in cm unless otherwise stated.
- 2- During RCC work vibrator must be used to avoid water leakage from reservoir.
- 3- All PCC works should be with 1:2:4 mortar unless otherwise stated.
- 4- All RCC works should be with 1:1.5:3 mortar.
- 5- Isolation material is glass wool.
- 7- Curing must be continued upto 28 days.
- 8- Clear and Clean water must be used every where.
- 9- The inlet, outlet, overflow and washing pipes should be adjusted

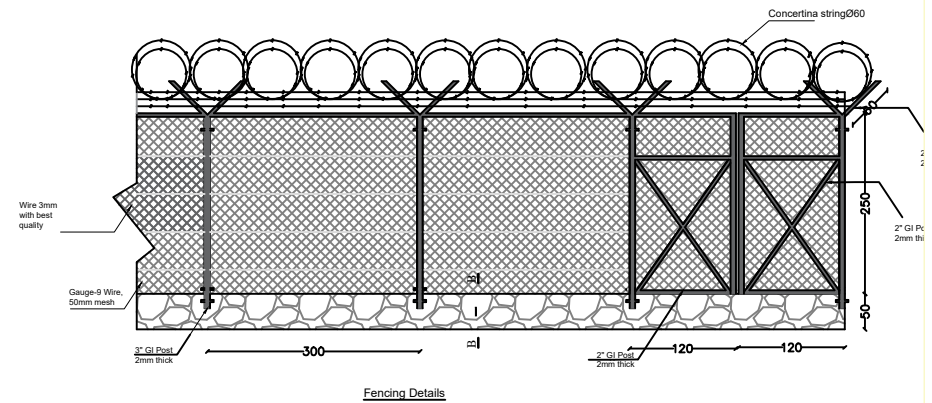
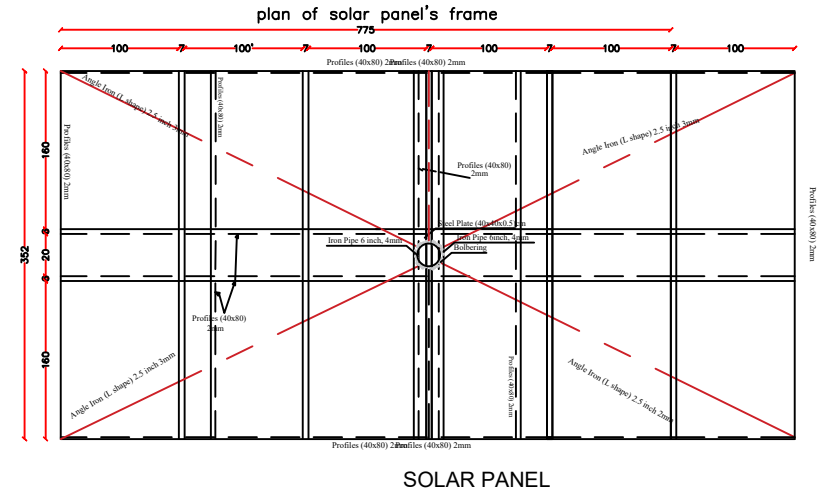
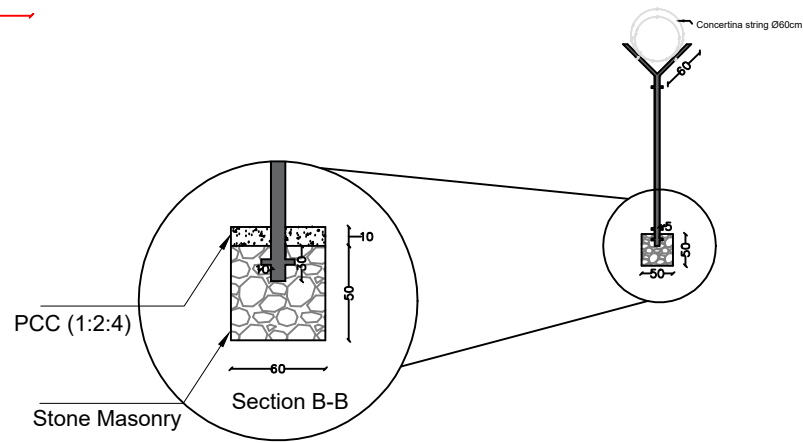
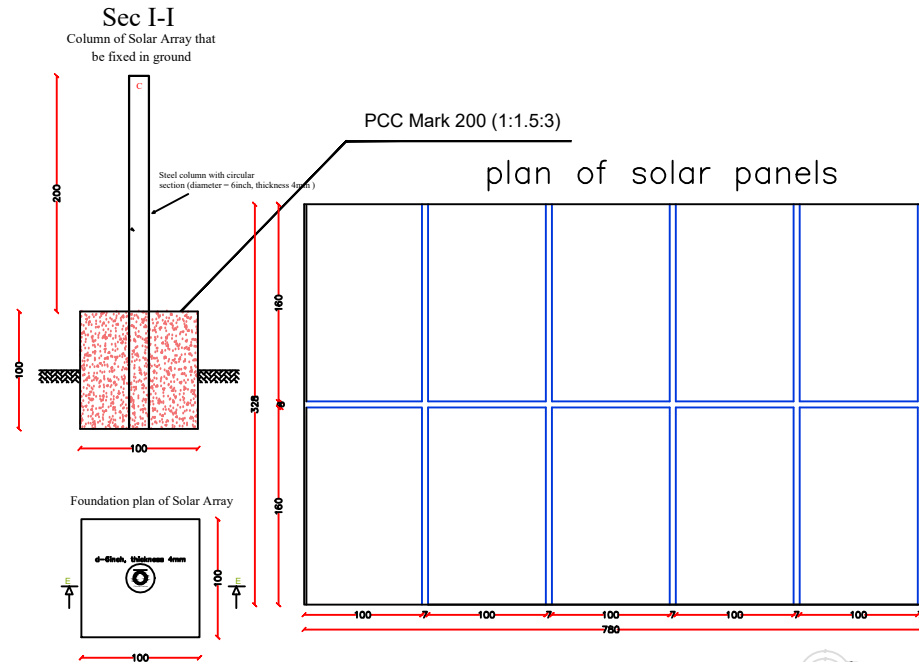
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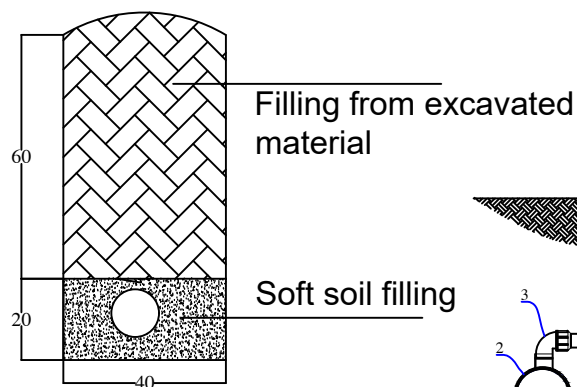
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
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Aug 8, 2024	Aug 8, 2024	Aug 8, 2024	Aug 11, 2024	

Reservoir 40m³

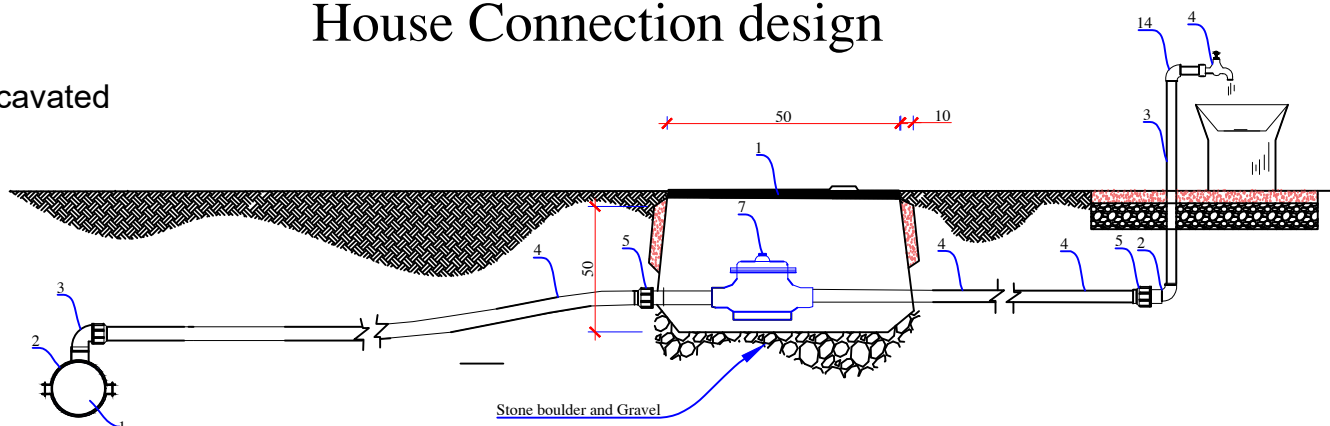


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AHF WASH Project				
Province: Faryab	District: Dawlat Abad	Village: Jar Qala	Project ID Number: A221873	
Designed by: Sayed Masoud Tural	Drawn By: Sayed Masoud Tural	Checked by: WASH Coordinator	Reviewed by: WASH Adviser	Approved by: Project Director/Manager
Aug 8, 2024	Aug 8, 2024	Aug 11, 2024	Plot Date:	Plot Scale:

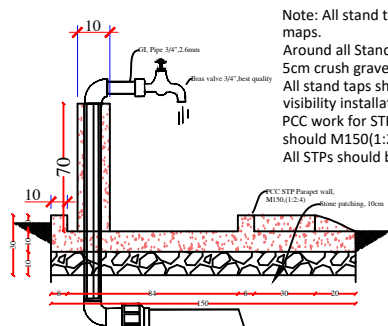
Branch pipe section



House Connection design



1	Under ground meter Box resistant to pressure and impact	No	1	110
2	90 Elbow with threaded female off take (20x1/2")	No	1	110
3	Galvanized Pipe 1/2"	LM	2	220
4	Water Tap 1/2"	No	1	110



Note: All stand taps should be made according to the maps.
Around all Stand taps should be backfilling and use 5cm crush gravel.
All stand taps should be uncoiled painting, and for better visibility installation of Logos.
PCC work for STP and Apron Parapet wall should be M150(1:2:4).
All STPs should be curing 7 days.

Stand Tap Section A - A

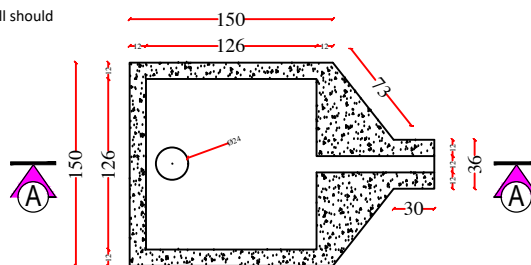


Table -1 (STP FITTINGS DETAILS for STP 1 & 110)					
No	Descriptions	Unite	Quantity/ Tap	Total	Remark
1	Supply main Pipe	LM			
2	saddle size (main pipe 1/2")	No	1	110	
3	90 Elbow with threaded male off take (20x1/2")	No	1	110	
4	Service PE Pipe 20mm, PE 100, PN20	LM	110	2200	
5	Female threaded adaptor (20x1/2")	No	3	330	
6	Domestic water meter 1/2" and 1" PN16	No	1	110	

WORLD VISION AFGHANISTAN

DAWAM-WASH Project

World Vision

ورلد ویژن

Province: **Faryab** District: **Dawlat Abad** Village: **Jar Qala** Project ID Number: **A221873**

Designed by: **Sayed Masoud Tural** Drawn by: **Sayed Masoud Tural** Checked by: **WASH Coordinator** Reviewed by: **WASH Adviser** Approved by: **Project Director/Manager**

Sayed Masoud
60255150-4020138

Yyana Havadmal
60255150-4020138

W
60255150-4020138

Aug 8, 2024

Aug 8, 2024

Aug 11, 2024

Plot Date:

Plot Scale:

NTS

Stand Taps Drawing

Submittal Data

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

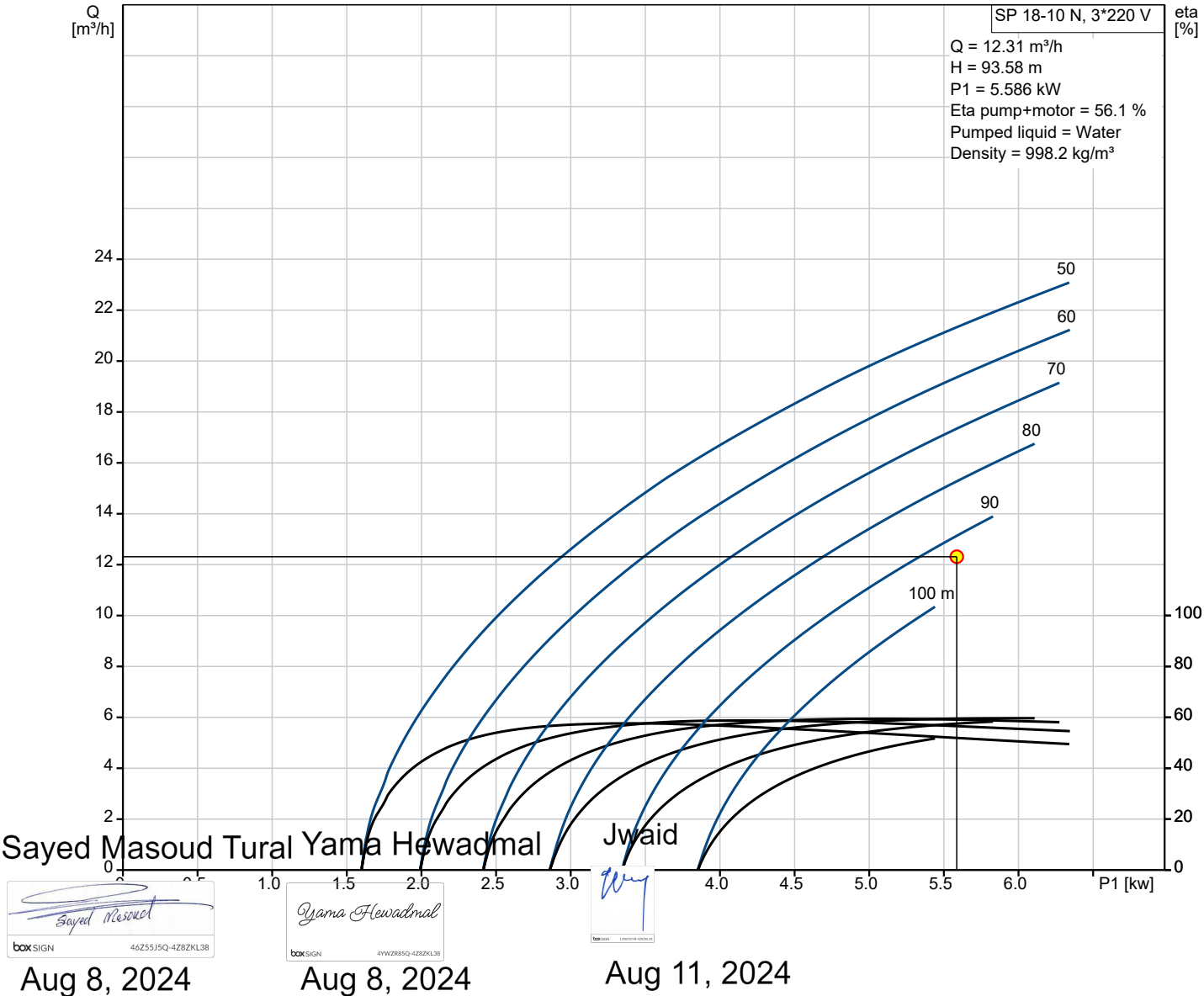


SP 18-10 N

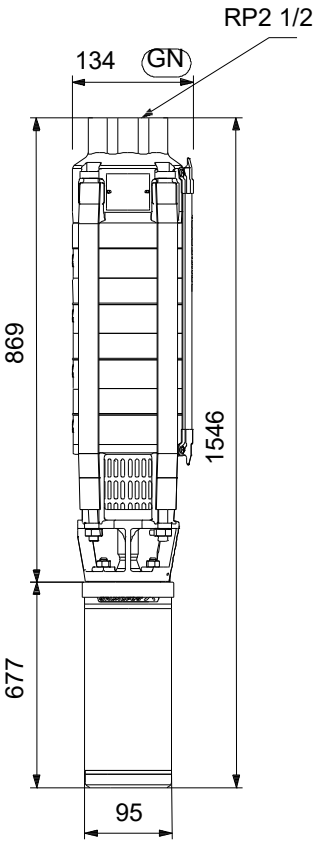
Grundfos SP are submersible borehole pumps, designed for pumping groundwater. Grundfos SP are all stainless-steel pumps, and they are available in 3 material grades. The pumps are suitable for boreholes in sizes ranging from 4" over 6" and 8" to 10". The motor sizes for the pumps are available in 0.37-250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

Note! Product picture may differ from actual product

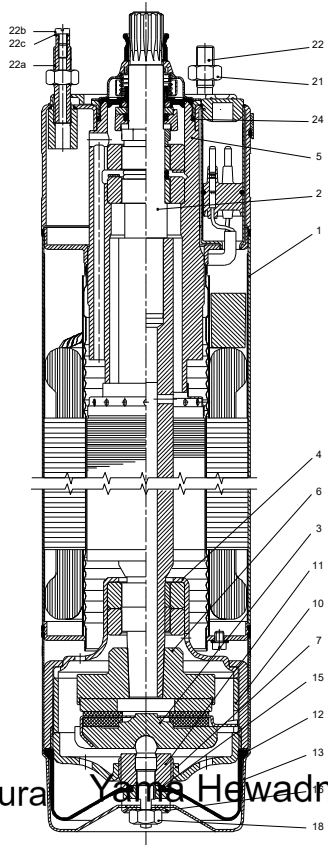
Conditions of Service	Pump Data	Motor Data
Liquid: Water	Liquid temperature range: -15 .. 40 °C	Mains frequency: 50 Hz
	Product number: 92952551	Enclosure class: IP68



Submittal Data



Materials:
Impeller: Stainless steel
Impeller: AISI 316
Impeller: EN 1.4401



Sayed Masoud Tura Yama Hewadmal

Jwaid


box SIGN 46Z55JSQ-4Z8ZKL38


box SIGN 4YVWZ85SQ-4Z8ZKL38


box SIGN 4YVWZ85SQ-4Z8ZKL38

Aug 8, 2024

Aug 8, 2024

Aug 11, 2024

Qty. Description

1 SP 18-10 N



Note! Product picture may differ from actual product

Product No.: 92952551

Submersible borehole pump, suitable for pumping clean water. Can be installed vertically or horizontally. All steel components are made in stainless steel, EN 1.4401 (AISI 316), that ensures high corrosive resistance.

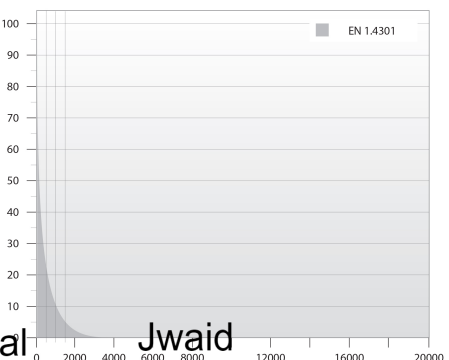
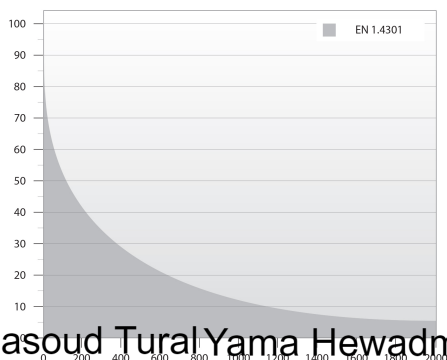
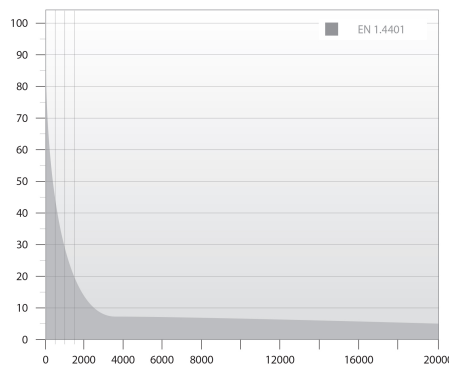
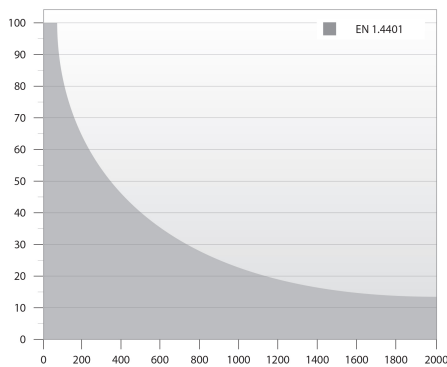
Further product details

The pump is suitable for applications similar to the following:

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

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).



Sayed Masoud Tural Yama Hewadmal Jwaid

Sayed Masoud

Yama Hewadmal

Jwaid



Company name:

Created by:

Phone:

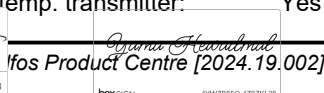
Date:

15/05/2024

Qty.	Description
1	<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>Motor</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:</p> <p>Pumped liquid: Water</p> <p>Liquid temperature range: -15 .. 40 °C</p> <p>Technical:</p> <p>Pump speed on which pump data are based: 2900 rpm</p> <p>Rated flow: 18 m³/h</p> <p>Rated head: 76 m</p> <p>Approvals: CE,EAC,UKCA,SEPRO,MOROCCO</p> <p>Approvals for motor: CE,EACMOROCCO,UKCA,SEPRO</p> <p>Curve tolerance: ISO9906:2012 3B</p> <p>Motor version: T40</p> <p>Return valve: YES</p> <p>Materials:</p> <p>Pump: Stainless steel EN 1.4401 AISI 316</p> <p>Impeller: Stainless steel EN 1.4401 AISI 316</p> <p>Motor: Stainless steel EN 1.4539</p> <p>Shaft seal: SiC/SiC</p> <p>Installation:</p> <p>Maximum ambient pressure: 60 bar</p> <p>Maximum operating pressure: 60 bar</p> <p>Maximum outlet pressure: 11.1 bar</p> <p>Type of connection: Rp</p> <p>Size of connection: 2 1/2 inch</p> <p>Motor diameter: 4 inch</p> <p>Minimum borehole diameter: 140 mm</p> <p>Electrical data:</p> <p>Motor type: MS4000</p> <p>Motor flange design: Grundfos</p> <p>Rated power - P2: 5.5 kW</p> <p>Power (P2) required by pump: 5.5 kW</p> <p>Mains frequency: 50 Hz</p> <p>Rated voltage: 3 x 220-230 V</p> <p>Rated current: 23.6-24.2 A</p> <p>Starting current: 500-510 %</p> <p>Cos phi - power factor: 0.81</p> <p>Rated speed: 2860-2880 rpm</p> <p>Method of start: Direct-on-line (DOL)</p> <p>Enclosure class (IEC 34-5): IP68</p> <p>Insulation class (IEC 85): F</p> <p>Built-in motor protection: NONE</p> <p>Service protection: External</p> <p>Built-in temp. transmitter: Yes</p>

Sayed Masoud Tural Yama Hewadmal

Jwaid



Aug 8, 2024

Aug 8, 2024

Aug 11, 2024



Company name:

Created by:

Phone:

Date:

15/05/2024

Qty. Description

1 Length of cable: 1.7 m
Power cable type: FLAT
Motor No: 7C103711
Windings: Enameled

Others:

Minimum efficiency index, MEI \geq : 0.70

Net weight: 43.6 kg

Gross weight: 69.3 kg

Shipping volume: 0.2 m³

Environmental approvals: WEEE

Sayed Masoud Tural Yama Hewadmal

Jwaid



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Aug 11, 2024

Qty. Description

30

GF 270



Note! Product picture may differ from actual product

Product No.: [99299012](#)

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.

Liquid:

Pumped liquid: Water

Installation:

Range of ambient temperature: -40 .. 85 °C

Electrical data:

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

Others:


Brand: GRUNDFOS

Net weight: 18.3 kg

Shipping volume: 2 m³

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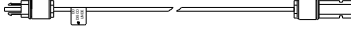



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box SIGN 18950YK-4Z8ZKL38

Aug 8, 2024

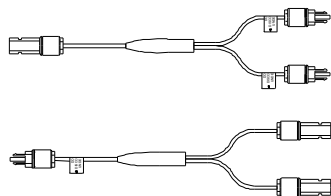
Aug 8, 2024

Aug 11, 2024

Qty.	Description
1	<p>Product name: Wire kit array to control box (MC4)</p>  <p>Note! Product picture may differ from actual product</p> <p>Product No.: 98257868</p> <p>Product No: 98257868</p> <p>EAN number: 5711492200964</p>
	<p>Sayed Masoud Tural Yama Hewadmal</p>  <p>Aug 8, 2024</p>
	<p>Jwaid</p>  <p>Aug 11, 2024</p>

Qty.	Description
------	-------------

2	Product name: Wire kit array to array (MC4)
---	--



Note! Product picture may differ from actual product

Product No.: [98257892](#)

Product No: 98257892

EAN number: 5711492201152

Qty. Description

1 RSI 3x208-240V IP66 5.5kW 24.2



Note! Product picture may differ from actual product

Product No.: 99090636

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: 5.5 kW

Mains frequency: 50 / 60 Hz

Rated voltage: 3 x 208 - 240 V

Enclosure class (IEC 34-5): IP66

Rated voltage output AC: 220 V

Voltage input DC: 400 V

Rated current output AC: 24 A

Udc: 230 V

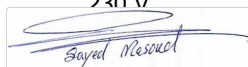
Others:

Net weight:

Gross weight:

Sayed Masoud Tural Yama Hewadmal

Jwaid


box SIGN 8.8 kg 46Z55JSQ-4Z8ZKL38


box SIGN 9.8 kg 4YVZ885Q-4Z8ZKL38

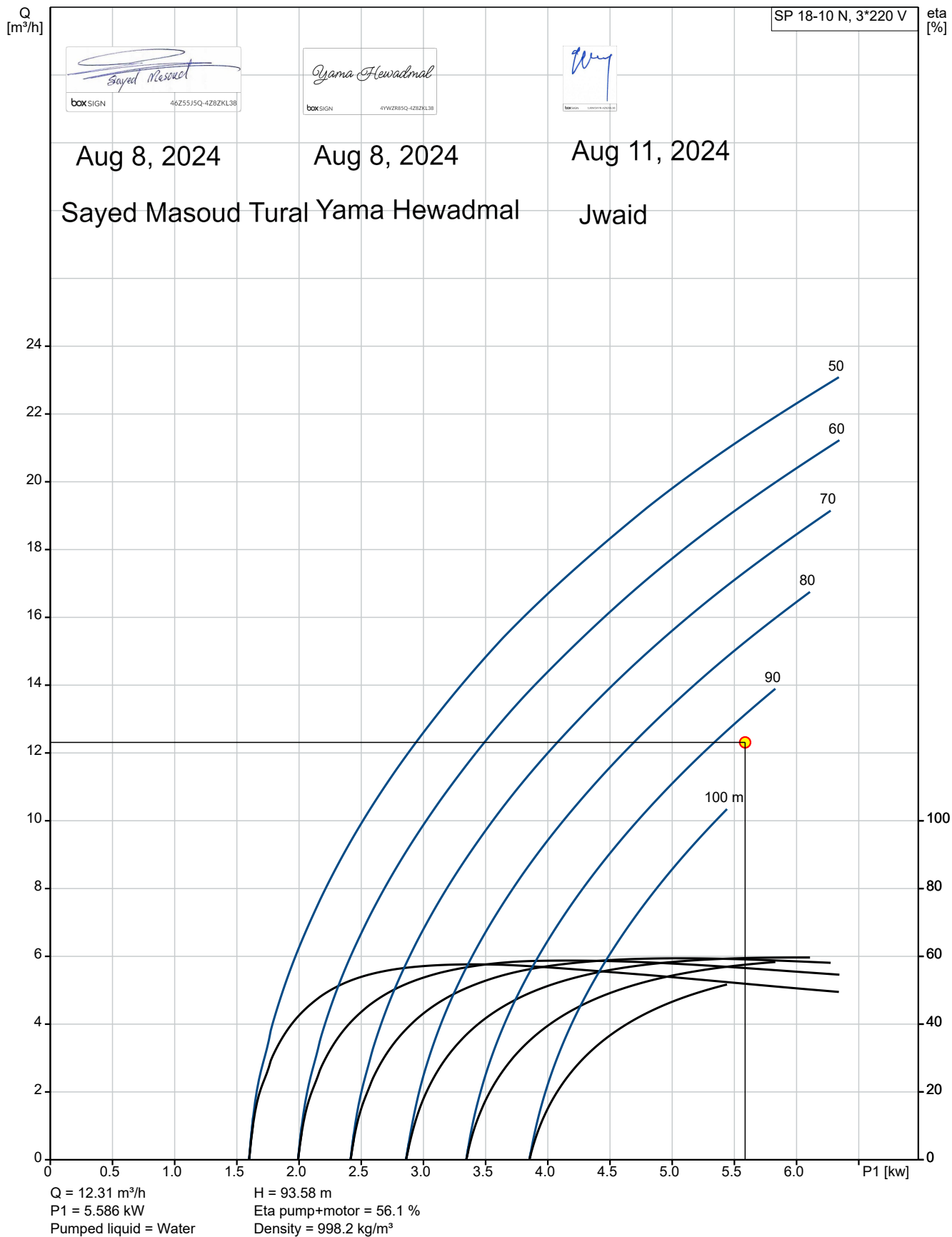

box SIGN 9.8 kg 4YVZ885Q-4Z8ZKL38

Aug 8, 2024

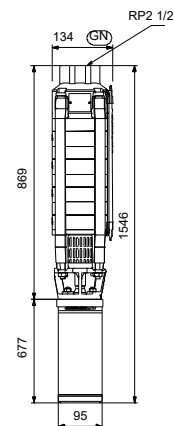
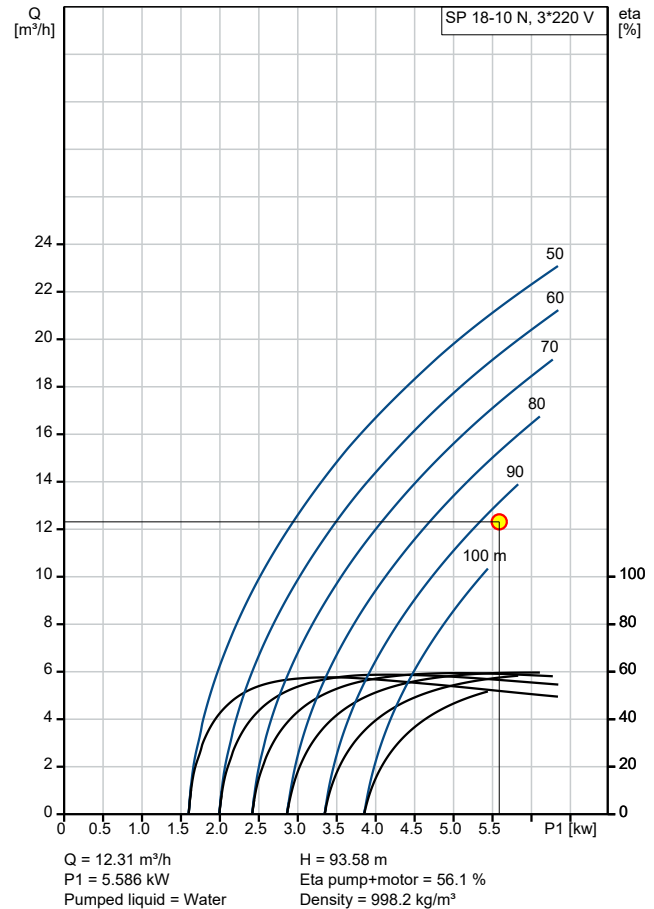
Aug 8, 2024

Aug 11, 2024

92952551 SP 18-10 N



Description	Value
General information:	
Product name:	SP 18-10 N
Product No:	92952551
EAN number:	5715122078459
Technical:	
Pump speed on which pump data are based:	2900 rpm
Rated flow:	18 m³/h
Rated head:	76 m
Stages:	10
Number of reduced-diameter impellers:	NONE
Approvals:	CE,EAC,UKCA,SEPRO,MOR OCCO
Approvals for motor:	CE,EACMOROCCO,UKCA,SEPRO
Curve tolerance:	ISO9906:2012 3B
Model:	B
Motor version:	T40
Return valve:	YES
Materials:	
Pump:	Stainless steel
Pump:	EN 1.4401
Pump:	AISI 316
Impeller:	Stainless steel
Impeller:	EN 1.4401
Impeller:	AISI 316
Motor:	Stainless steel
Motor:	EN 1.4539
Shaft seal:	SiC/SiC
Installation:	
Maximum ambient pressure:	60 bar
Maximum operating pressure:	60 bar
Maximum outlet pressure:	11.1 bar
Type of connection:	Rp
Size of connection:	2 1/2 inch
Motor diameter:	4 inch
Minimum borehole diameter:	140 mm
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-15 .. 40 °C
Electrical data:	
Motor type:	MS4000
Motor flange design:	Grundfos
Rated power - P2:	5.5 kW
Power (P2) required by pump:	5.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-230 V
Rated current:	23.6-24.2 A
Starting current:	500-510 %
Cos phi - power factor:	0.81
Rated speed:	2860-2880 rpm
Method of start:	Direct-on-line (DOL)
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Thermal protection:	External
Built-in temp. transmitter:	Yes
Length of cable:	1.7 m



Sayed Masoud Tural

Sayed Masoud
boxSIGN 46Z55J5Q-4Z8ZKL38

Aug 8, 2024

Yama Hewadmal

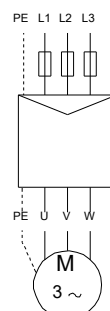
Yama Hewadmal
boxSIGN 4YWZ885Q-4Z8ZKL38

Aug 8, 2024

Jwaid

Jwaid
boxSIGN 4YVZ885Q-4Z8ZKL38

Aug 11, 2024





Company name:

Created by:

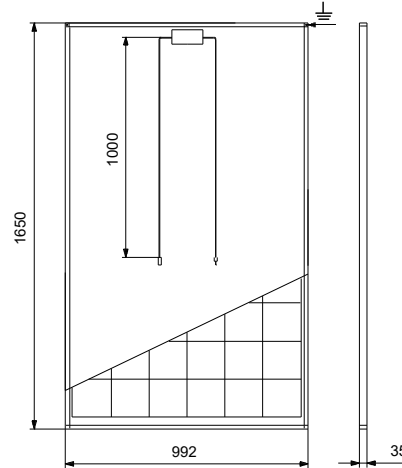
Phone:

Date:

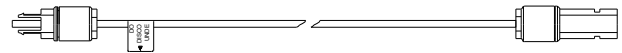
15/05/2024

Description	Value
Power cable type:	FLAT
Motor No:	7C103711
Cable number:	99411278
Windings:	Enameled
Others:	
Minimum efficiency index, MEI \geq :	0.70
Net weight:	43.6 kg
Gross weight:	69.3 kg
Shipping volume:	0.2 m ³
Environmental approvals:	WEEE

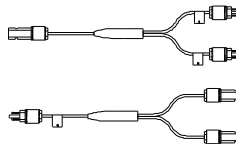
Description	Value
General information:	
Product name:	GF 270
Product No:	99299012
EAN number:	5713826826093
Installation:	
Range of ambient temperature:	-40 .. 85 °C
Liquid:	
Pumped liquid:	Water
Electrical data:	
Maximum power point voltage:	31.6 V
Open circuit voltage:	38.4 V
Max power point current:	8.76 A
Module shortcut current:	9.11 A
Maximum power output:	270 W
Solar module type:	POLYCRYSTALLINE
Others:	
Brand:	GRUNDFOS
Net weight:	18.3 kg
Shipping volume:	2 m³



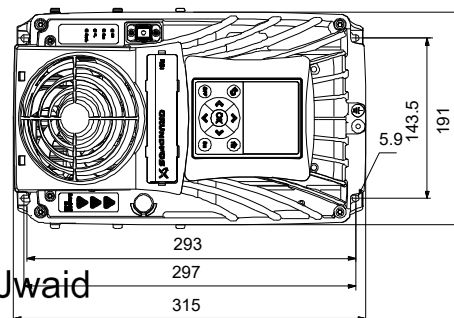
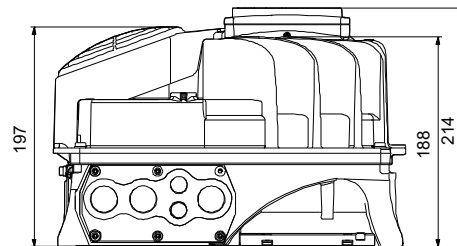
Description	Value
General information:	
Product name:	Wire kit array to control box (MC4)
Product No:	98257868
EAN number:	5711492200964



Description	Value
General information:	
Product name:	Wire kit array to array (MC4)
Product No:	98257892
EAN number:	5711492201152



Description	Value
General information:	
Product name:	RSI 3x208-240V IP66 5.5kW 24.2
Product No:	99090636
EAN number:	5712606580446
Technical:	
Approvals and markings:	CE
Installation:	
Range of ambient temperature:	-10 .. 60 °C
Relative humidity:	100 %
Liquid:	
Pumped liquid:	Water
Electrical data:	
Rated power - P2:	5.5 kW
Mains frequency:	50 / 60 Hz
Rated voltage:	3 x 208 - 240 V
Enclosure class (IEC 34-5):	IP66
Rated voltage output AC:	220 V
Voltage input DC:	400 V
Rated current output AC:	24 A
Udc:	230 V



Sayed Masoud Tural Yama Hewadmal

Signature of Sayed Masoud Tural Yama Hewadmal

Signature of Yama Hewadmal

Signature of Jwaid

Aug 8, 2024

Aug 8, 2024

Aug 11, 2024



Company name:

Created by:

Phone:

Date:

15/05/2024

Description	Value
-------------	-------

General information:

Product name: OTDCP16, Circuit Breaker, 16Amp

Product No: 98341686

EAN number: 5711493289296

Description	Value
-------------	-------

General information:

Product name: OVR PV 40-1000 P, Surge Protection

Product No: 98341687

EAN number: 5711493289302

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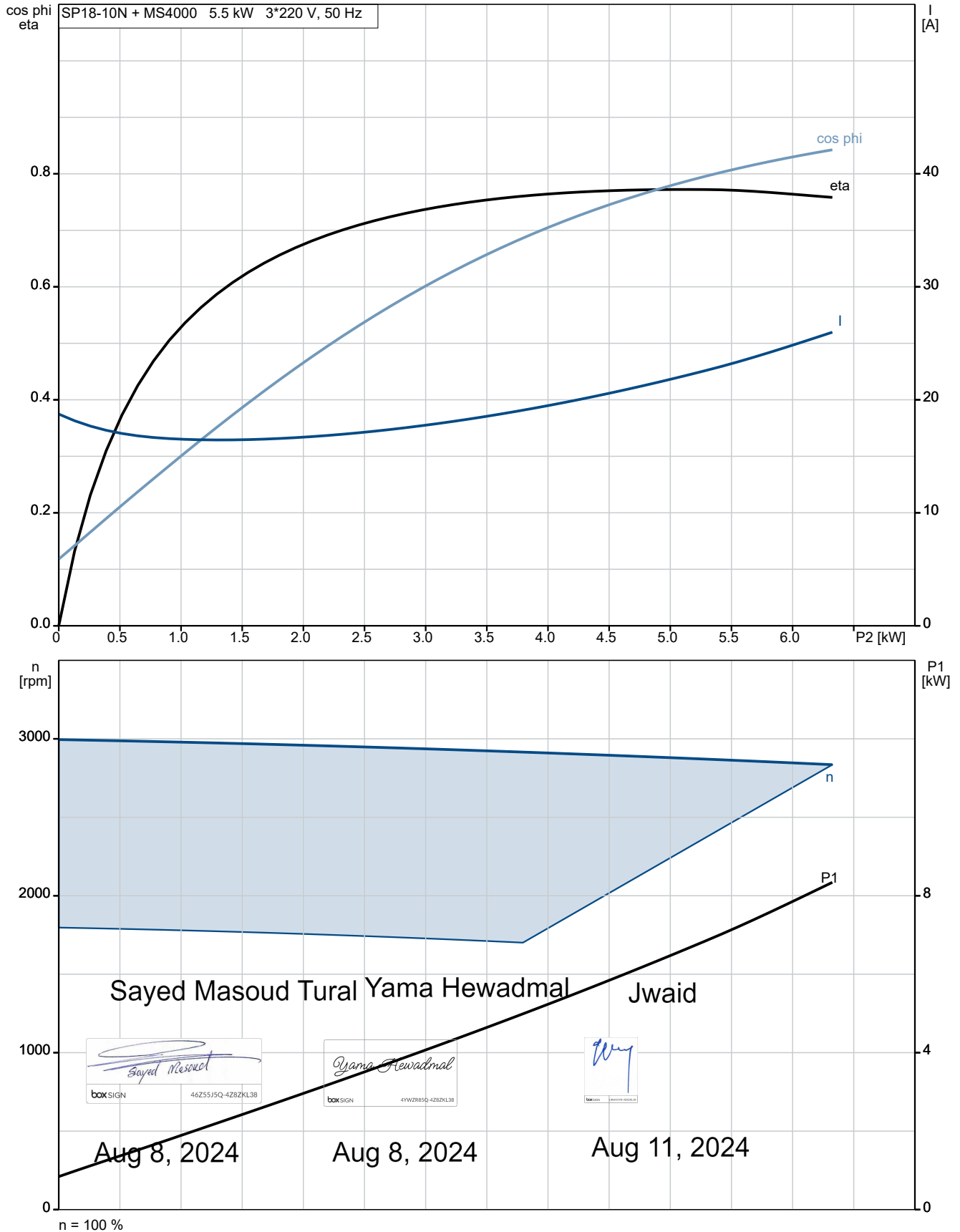


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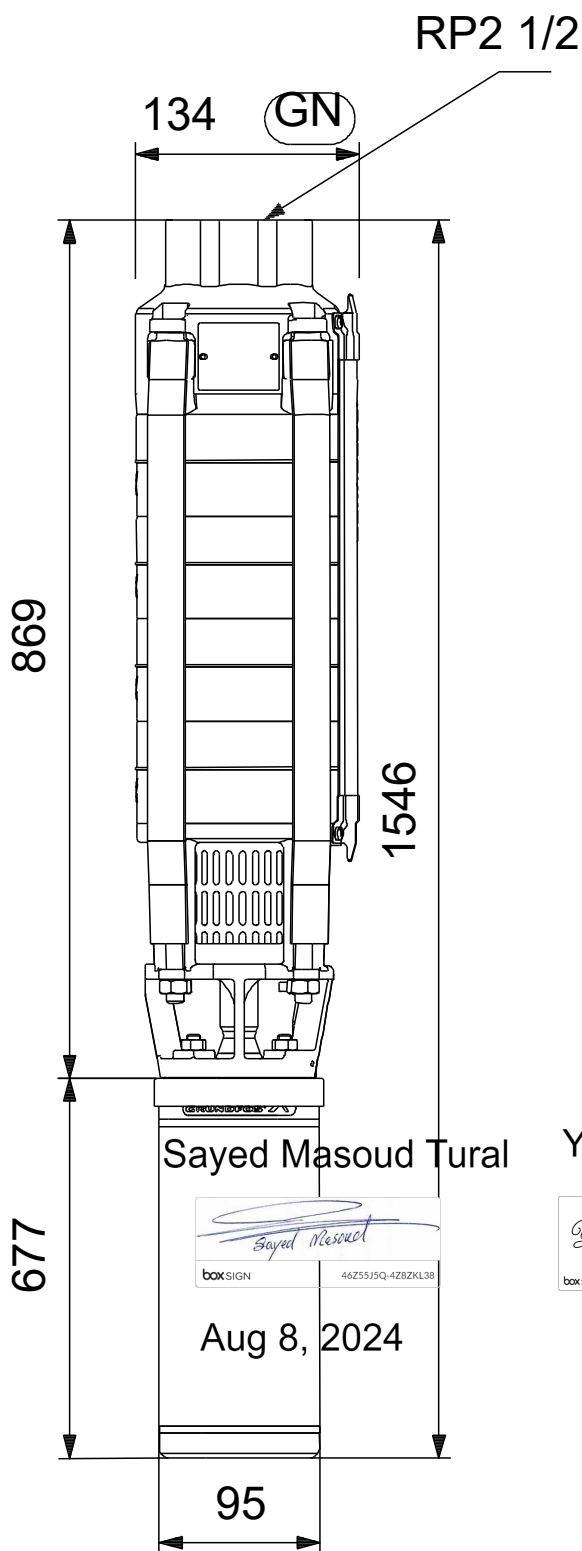
Aug 8, 2024

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92952551 SP 18-10 N




92952551 SP 18-10 N



Sayed Masoud Tural

Yama Hewadmal

Jwaid


box SIGN 46Z55J5Q-4Z8ZKL38


box SIGN 4YVZ8B5Q-4Z8ZKL38

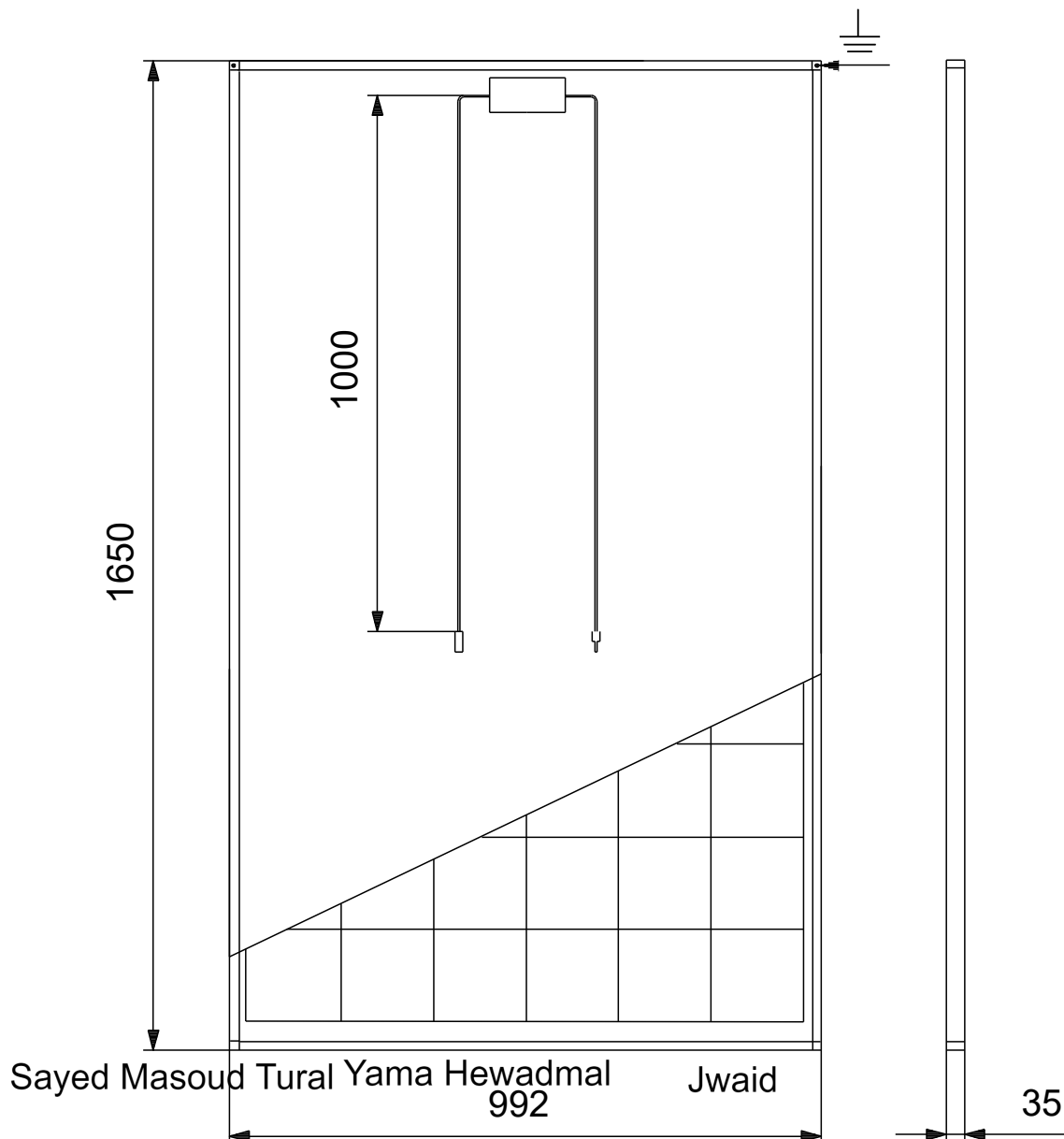

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Aug 8, 2024

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Aug 11, 2024

99299012 GF 270




box SIGN 46Z55J5Q-4Z8ZKL38


box SIGN 4YWZB5Q-4Z8ZKL38


box SIGN 4YWZB5Q-4Z8ZKL38

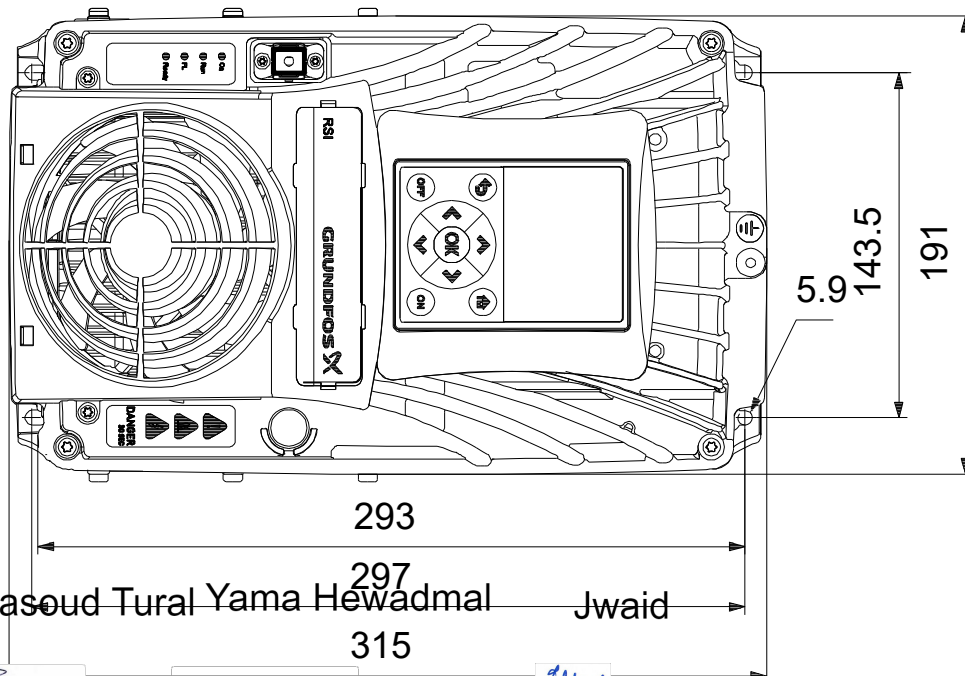
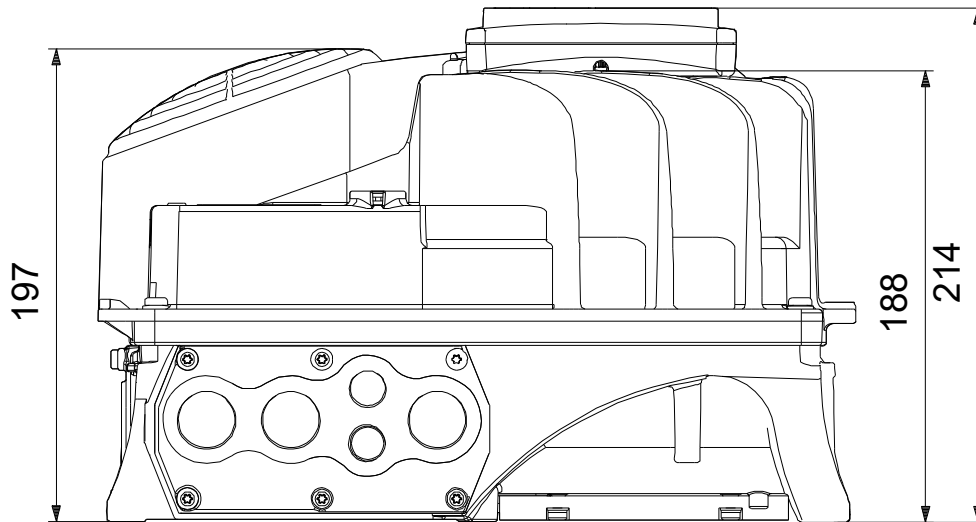
Aug 8, 2024

Aug 8, 2024

Aug 11, 2024

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

99090636 RSI 3x208-240V IP66 5.5kW 24.2



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Jwaid



Aug 8, 2024

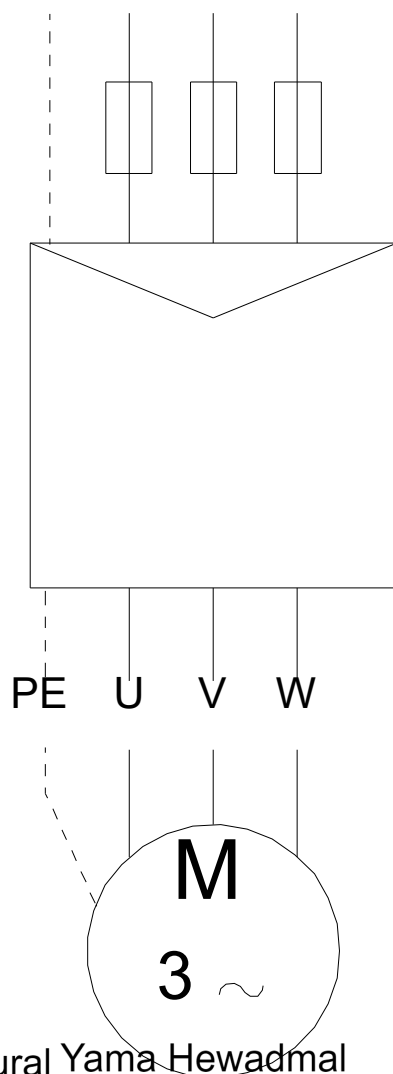
Aug 8, 2024

Aug 11, 2024

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

92952551 SP 18-10 N

PE L1 L2 L3



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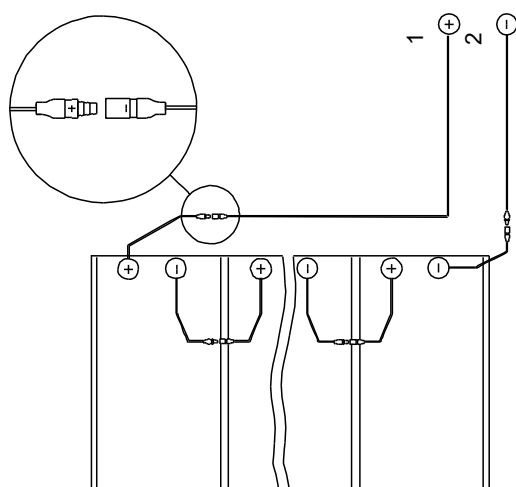
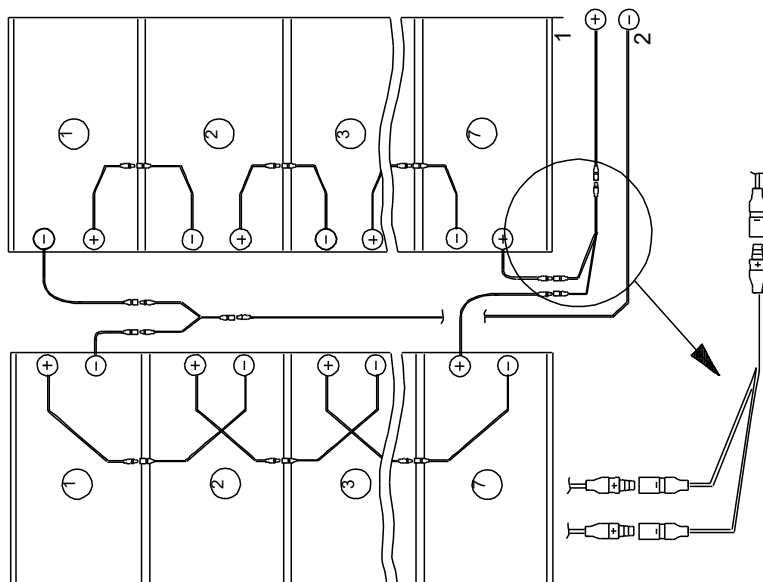
Aug 8, 2024

Aug 8, 2024

Aug 11, 2024

Note! All units are in [mm] unless others are stated.

99299012 GF 270



Note! All units are in [mm] unless others are stated.

92952551 SP 18-10 N

Input - summary

Flow: 84m³/day, 10.5m³/h (8h - 16h, limit m³/h)
 Month for sizing: July
 Static lift above ground: 3 m
 Dynamic water level: 90 m
 Sun tracking: Yes (single (polar) axis)
 Location: دابا تلود, Faryab, Afghanistan
 Latitude: 36.4374 DD, Longitude: 64.8942 DD

Products

Pump: SP 18-10 N, 1 x 92952551
 Solar module: GF 270, 30 x 99299012
 Wire kit, array to control box: 1 x 98257868
 Wire kit, array to array: 2 x 98257892
 Switch box / control unit: RSI 3x208-240V IP66 5.5kW 24.2, 1 x 99090636
 Switch box / control unit: OTDCP16, Circuit Breaker, 16Amp, 3 x 98341686
 Switch box / control unit: OVR PV 40-1000 P, Surge Protection, 1 x 98341687

Sizing results - summary

Water production, Peak flow and Price

Total water production per year: 31900 m³
 Avg. water production per day: 87.3 m³/day
 Average water production per watt per day: 10.8 l/Wp/day

Typical performance at solar radiation 800 W/m²

Flow: 12.3 m³/h
 Total head: 93.6 m

Solar module configuration:

Number of solar modules in series: 10, in parallel: 3
 Solar array rated power: 8.1 kW
 Solar array rated volts: 316 V
 Sun tracking: Yes (single (polar) axis)
 Tilt angle: 37 deg.

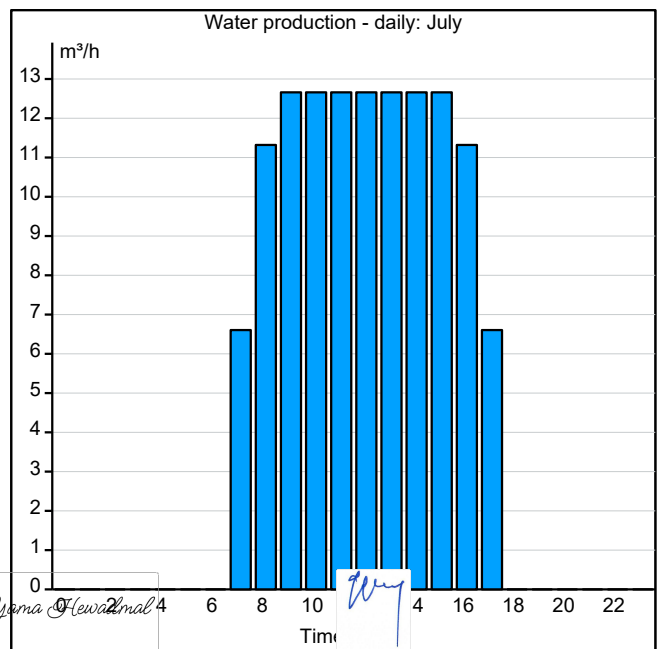
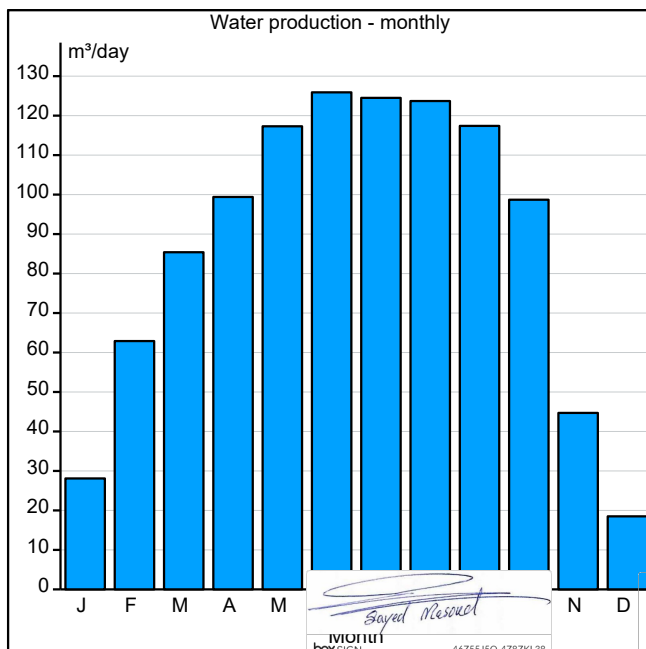
Cables and pipes:

Pump cable length: 100 m
 Pump cable size: 16 mm²
 Total cable loss: 1.6 %
 Material, riser pipe: PEH
 Pipe size (inner diameter), riser pipe: Ø 90 (79.2 mm)
 Pipe length of riser pipe: 90 m
 Friction losses: 0.585 m

System performance - monthly average

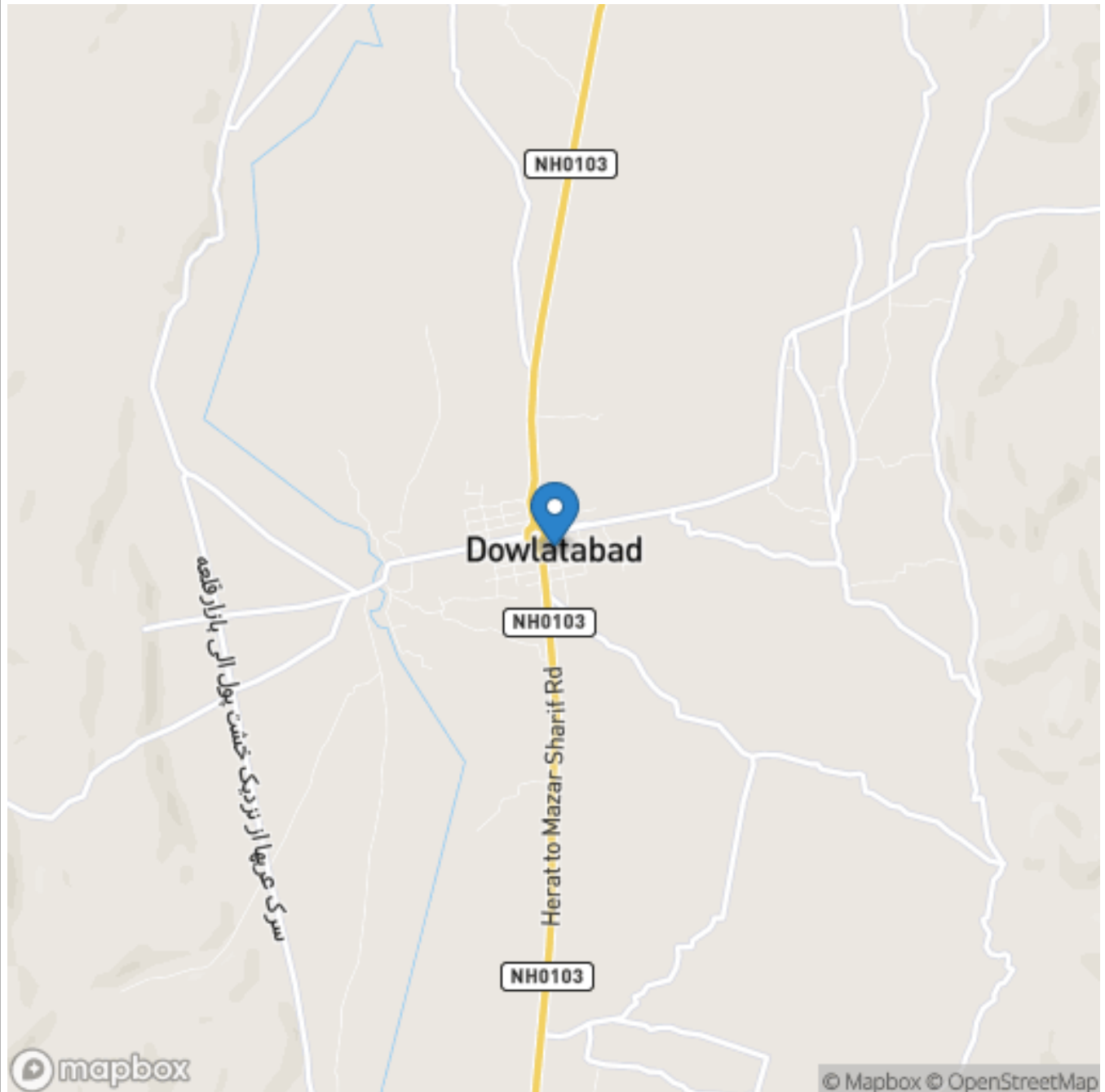
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Water production [m ³ /day]	28.1	62.9	85.4	99.4	117.3	125.9	124.5	123.7	117.4	98.7	44.7	18.5
Energy production Solar [kWh/day]	29.7	41.9	51.0	59.9	67.0	76.0	75.1	72.5	71.8	57.6	36.6	27.7
Radiation horizontal [kWh/m ² day]	2.4	3.5	4.9	6.3	7.8	8.8	8.6	7.9	6.7	4.8	2.9	2.2
Radiation tilt [kWh/m ² 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



92952551 SP 18-10 N

Location Map



Location: دابا تلود, Faryab, Afghanistan
Latitude: 36.4374 DD, Longitude: 64.8942 DD

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Jwaid


box SIGN 46Z55JSQ-4Z8ZKL38


box SIGN 4YWZ8BSQ-4Z8ZKL38

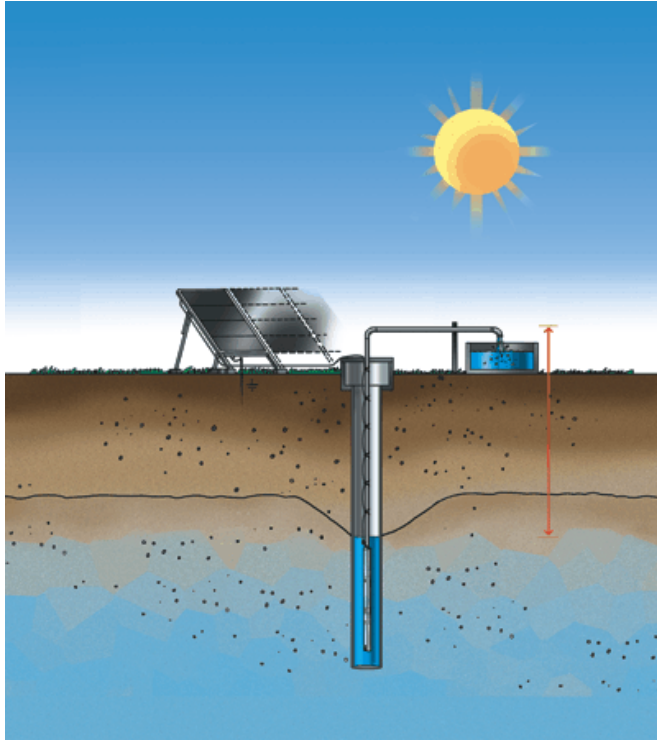

box SIGN 4YVWZ8BSQ-4Z8ZKL38

Aug 8, 2024

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Aug 11, 2024

Installation and Input



Sizing Results

Water production, Peak flow and Price

Total water production per year: 31900 m³

Avg. water production per day: 87.3 m³/day

Average water production per watt per day: 10.8 l/Wp/day

Solar module configuration:

Number of solar modules in series: 10, in parallel: 3

Solar array rated power: 8.1 kW

Solar array rated volts: 316 V

Sun tracking: Yes (single (polar) axis)

Tilt angle: 37 deg.

Typical performance at solar radiation 800 W/m²

Flow: 12.3 m³/h

Total head: 93.6 m

Cables and pipes:

Pump cable length: 100 m

Pump cable size: 16 mm²

Total cable loss: 1.6 %

Material, riser pipe: PEH

Pipe size (inner diameter), riser pipe: Ø 90 (79.2 mm)

Pipe length of riser pipe: 90 m

Friction losses: 0.585 m

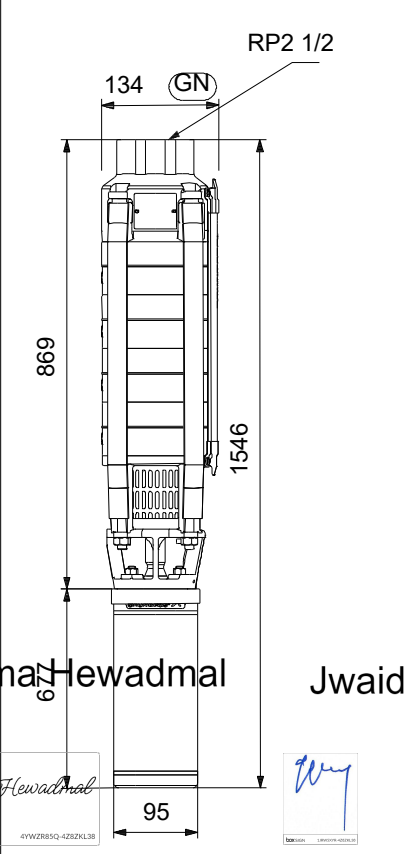
Location: دابآ تلود, Faryab, Afghanistan

Latitude: 36.4374 DD, Longitude: 64.8942 DD

Pump Curve



Dimensional Drawing

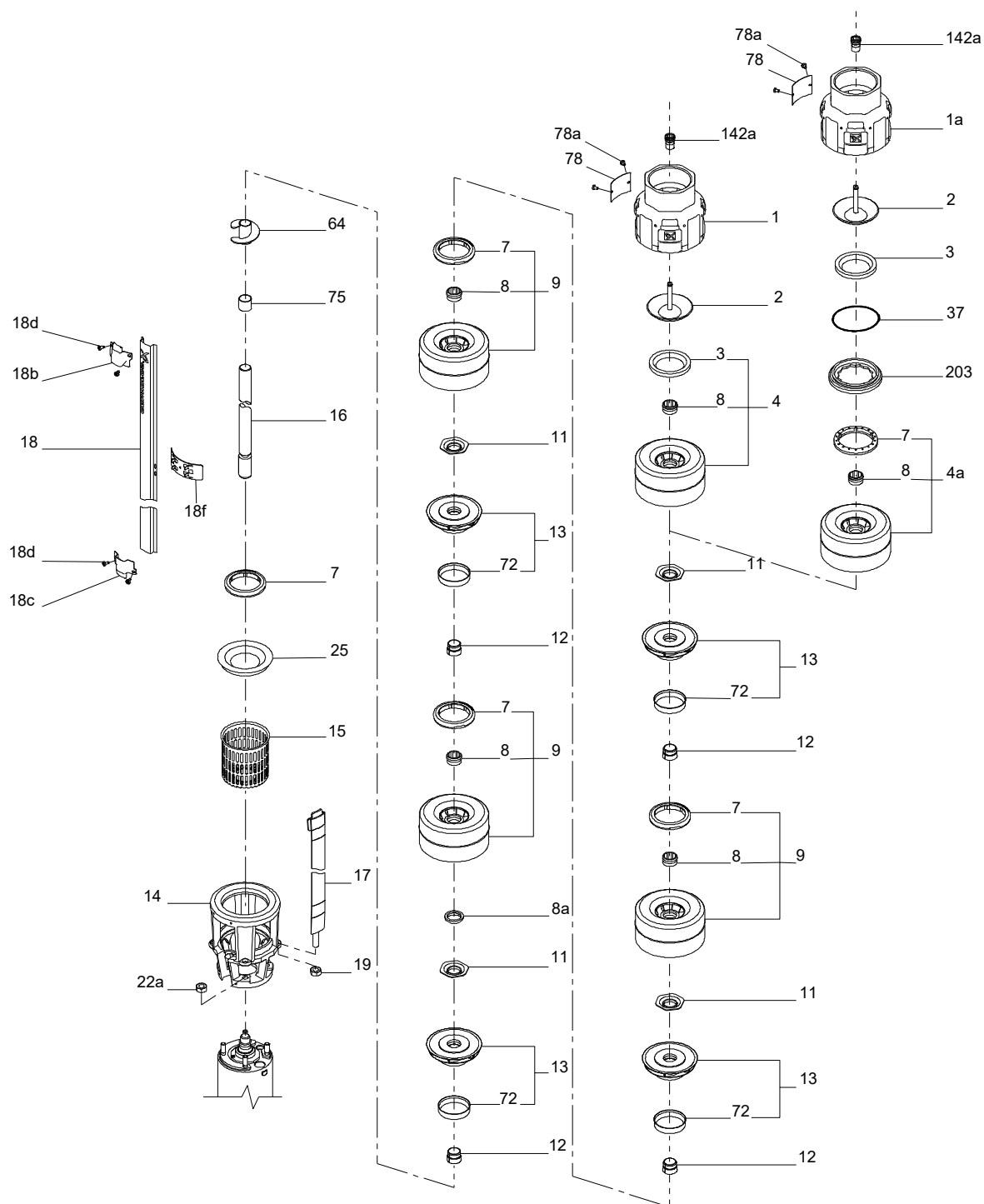


15/05/2024

Order Data:

Position	Your pos.	Product name	Amount	Product No	Total
		SP 18-10 N	1	92952551	
		GF 270	30	99299012	
Wire_Kit ToControl		Wire kit array to control box (MC4)	1	98257868	
Wire_Kit Array_Arr ay		Wire kit array to array (MC4)	2	98257892	
Box		RSI 3x208-240V IP66 5.5kW 24.2	1	99090636	
Box		OTDCP16, Circuit Breaker, 16Amp	3	98341686	
Box		OVR PV 40-1000 P, Surge Protection	1	98341687	

(TM083264 for SP18)



WVA- DAWAM Project

Produced After 2407 (production year and week number)

Pos	Description	Annotation	Classification	Data	Part no.	Qty.	Unit
-	Kit, Clamp				99104988	1	pcs
18d	Combi Torx screw					4	pcs
18b	Clamp					2	pcs
-	Kit, Non-return valve				99104846	1	pcs
2	Valve					1	pcs
3	Valve seat					1	pcs
37	O-ring					1	pcs
142a	Bearing					1	pcs
-	Kit, Wear parts				92882649	1	pcs
	Wear ring					12	pcs
3	Valve seat					1	pcs
7	Seal ring					12	pcs
8a	Washer					1	pcs
8	Bearing					12	pcs
142a	Bearing					1	pcs
	Motor					1	pcs
1	Valve casing				97937788	1	pcs
2	Valve				97937828	1	pcs
7	Bulk, Seal ring (10 PC)				96535344	1	pcs
8a	Bulk, Washer (5 PC)				96551283	1	pcs
15	Strainer				99179108	1	pcs
- 16	Shaft cpl.				97945210	1	pcs
64	Priming screw				99451147	1	pcs
75	Spacer ring				99499617	1	pcs
18d	Bulk, Combi Torx screw (4 PC)				98653089	4	pcs



Company name:

Created by:

Phone:

Date: 15/05/2024

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
36	Bulk, Hex nut (200 PC)			99052655	4	pcs
142a	Bearing			98131949	1	pcs