



NW SYRIA X-BORDER **SHELTER/NFI CLUSTER**

Coordinating Humanitarian Shelter and Settlements

Dignified Shelter Options for IDP Sites in Northwest Syria May 2024



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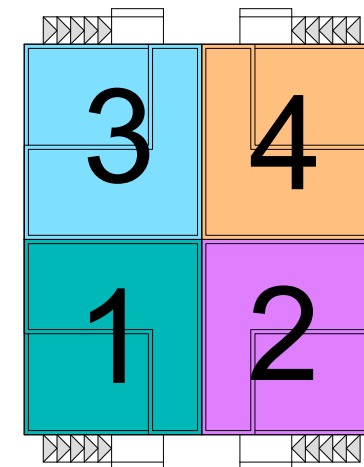
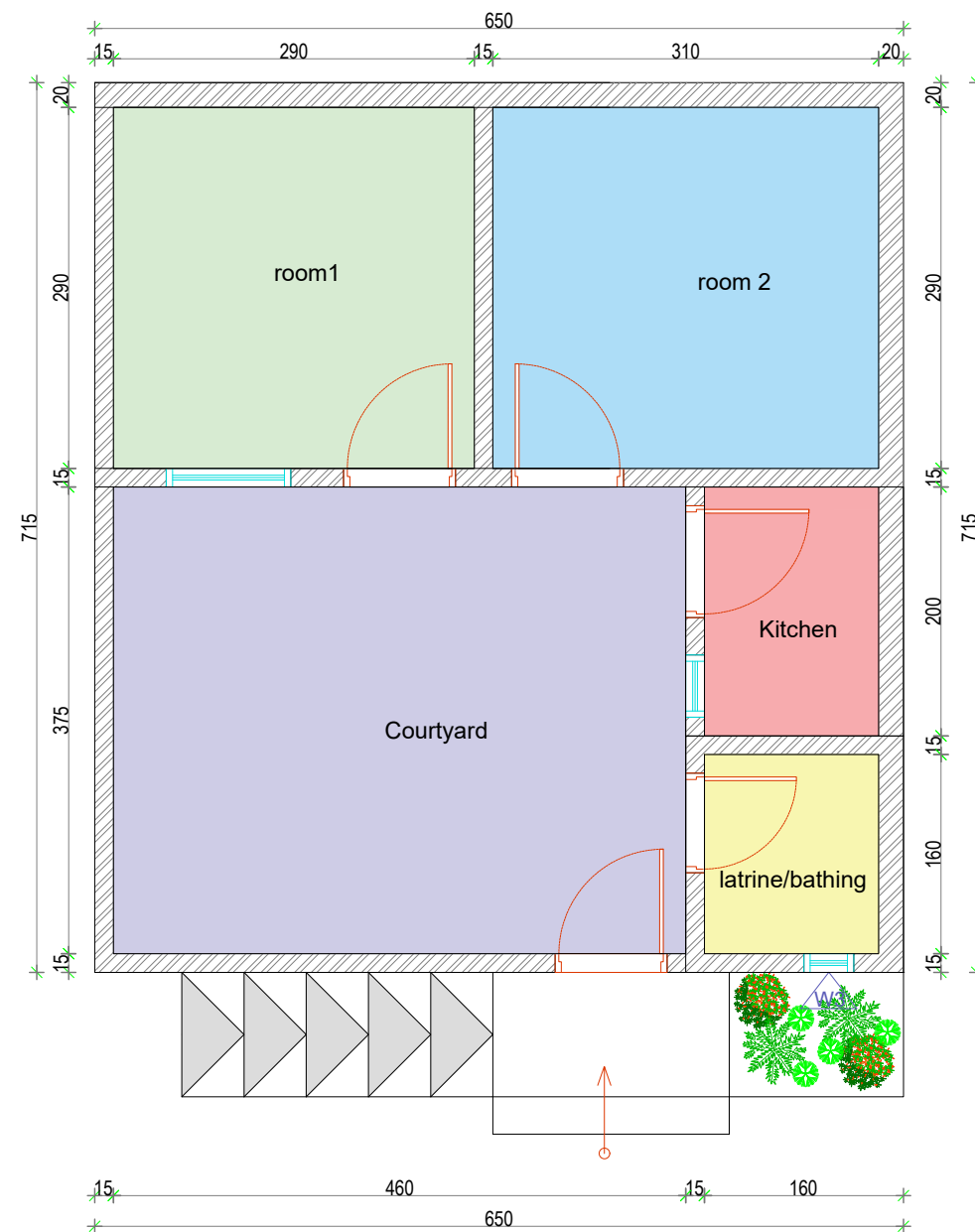
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Dignified shelter-For average size family

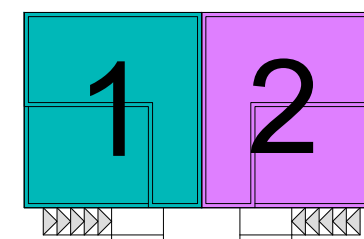
Concrete Block Shelter Unit



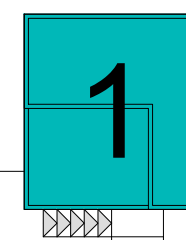
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FOUR CONNECTED UNITS



TWO CONNECTED UNITS



SINGLE UNIT



Concrete block



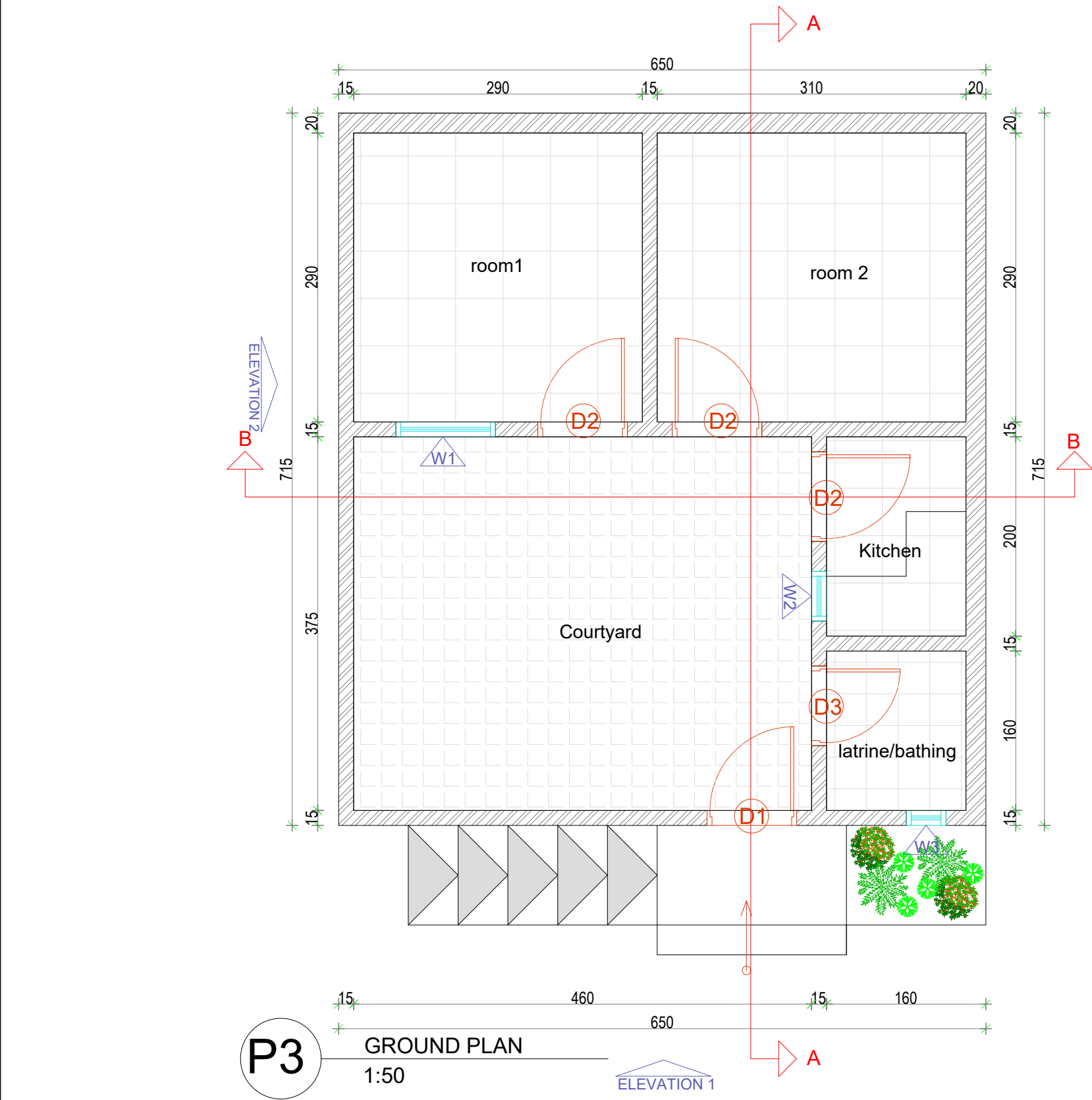
SINGLE UNIT



TWO CONNECTED UNITS



FOUR CONNECTED UNITS

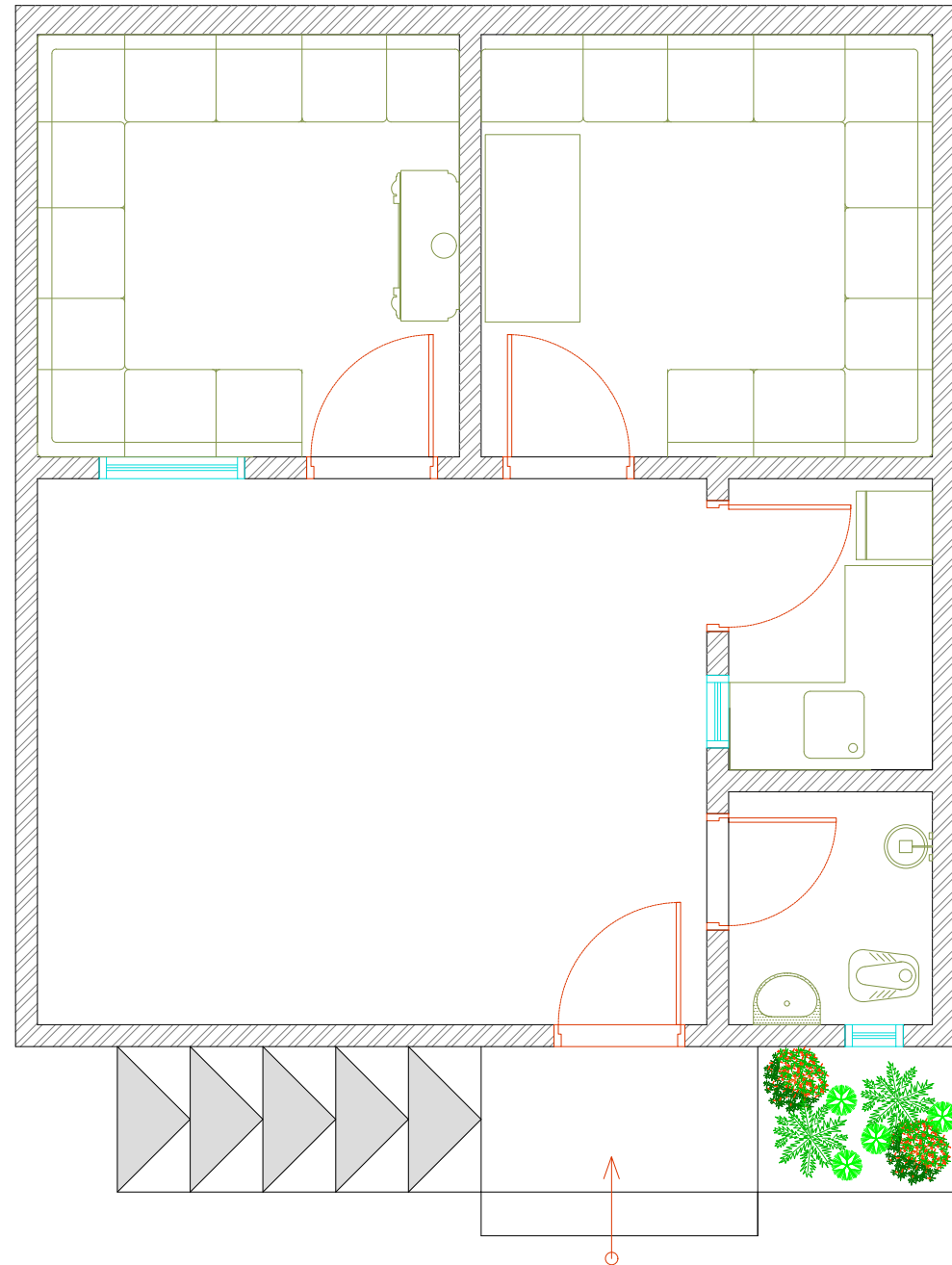


SUMMARY INFORMATION

Covered living space in m2 (excluding separate WASH facilities or separate cooking areas and private enclosed outdoor spaces)	17.5 m2
Area of WASH facilities	2.2m2
Area of kitchen facilities	2.8m2
Private outdoor area	Yes
Household private WASH facilities	Yes
Household cooking facilities	Yes
Materials	Base: Concrete mixture with crushed stone. Walls: Cement bricks Roof: Reinforced Concrete Main door: Iron Internal doors and windows: PVC Plastering: Internal walls
Time to build	250 Units in 12 Weeks 1000 Units in 40 Weeks Including the site preparation and infrastructure works
Anticipated life span	10 years
Total cost	2,400 to 2600 USD
Cost per m2	54 USD

DOOR SCHEDULE				
Mark	Count	Width	Height	Martial
D1	1	90	200	Metal
D2	3	90	200	PVC
D3	1	80	200	PVC

WINDOWS SCHEDULE					
Mark	Count	Width	Height	Sill Height	Martial
W1	1	100	110	90	PVC
W2	1	50	110	90	PVC
W3	1	40	40	180	PVC



P4 FURNITURE PLAN
1:50



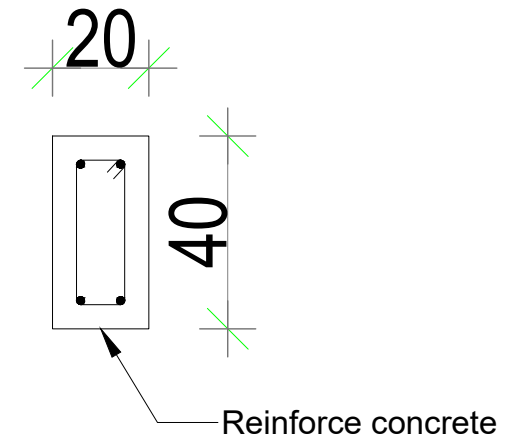
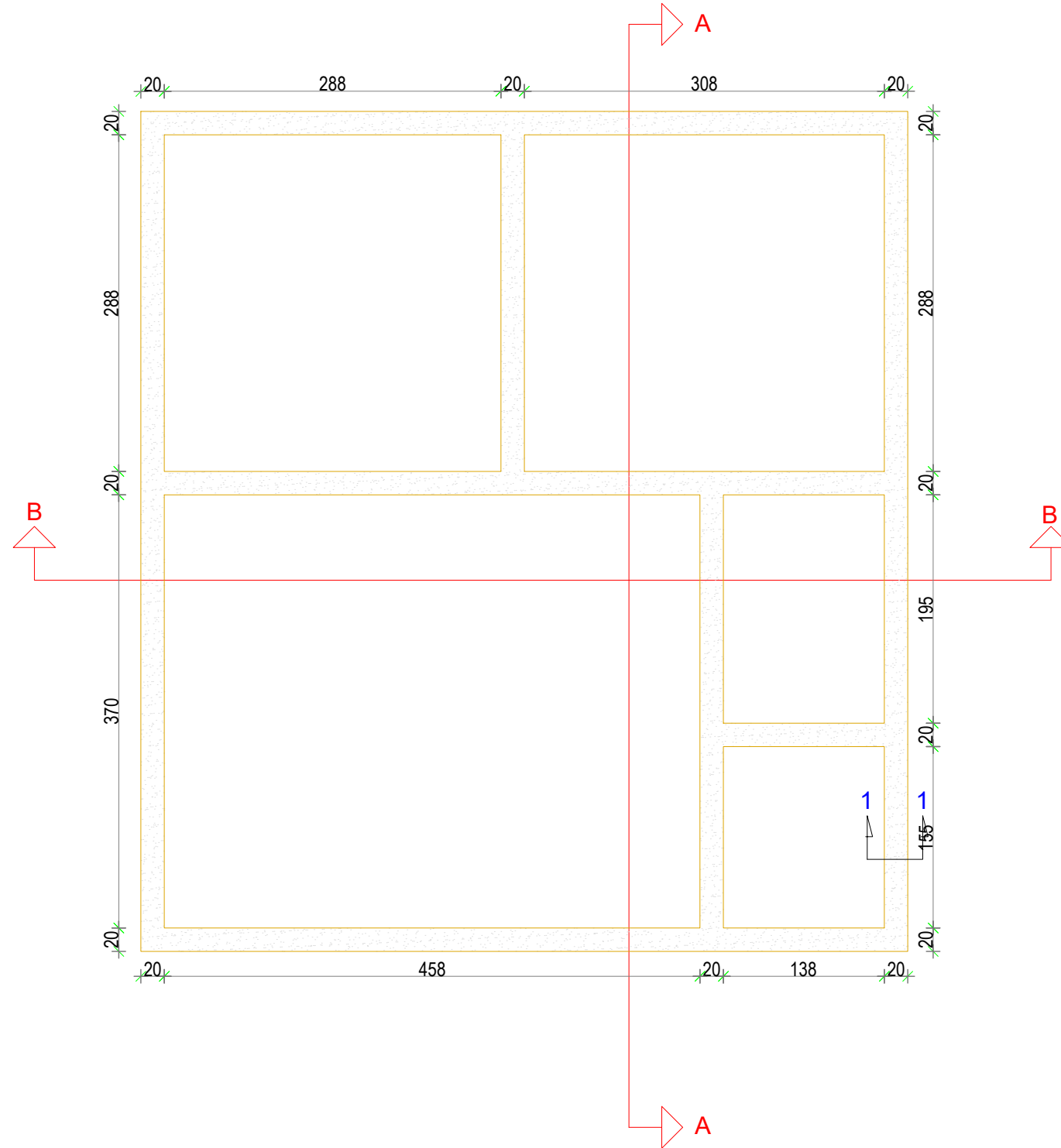


 **NW SYRIA X-BORDER
SHELTER/NFI CLUSTER**
Coordinating Humanitarian Shelter and Settlements

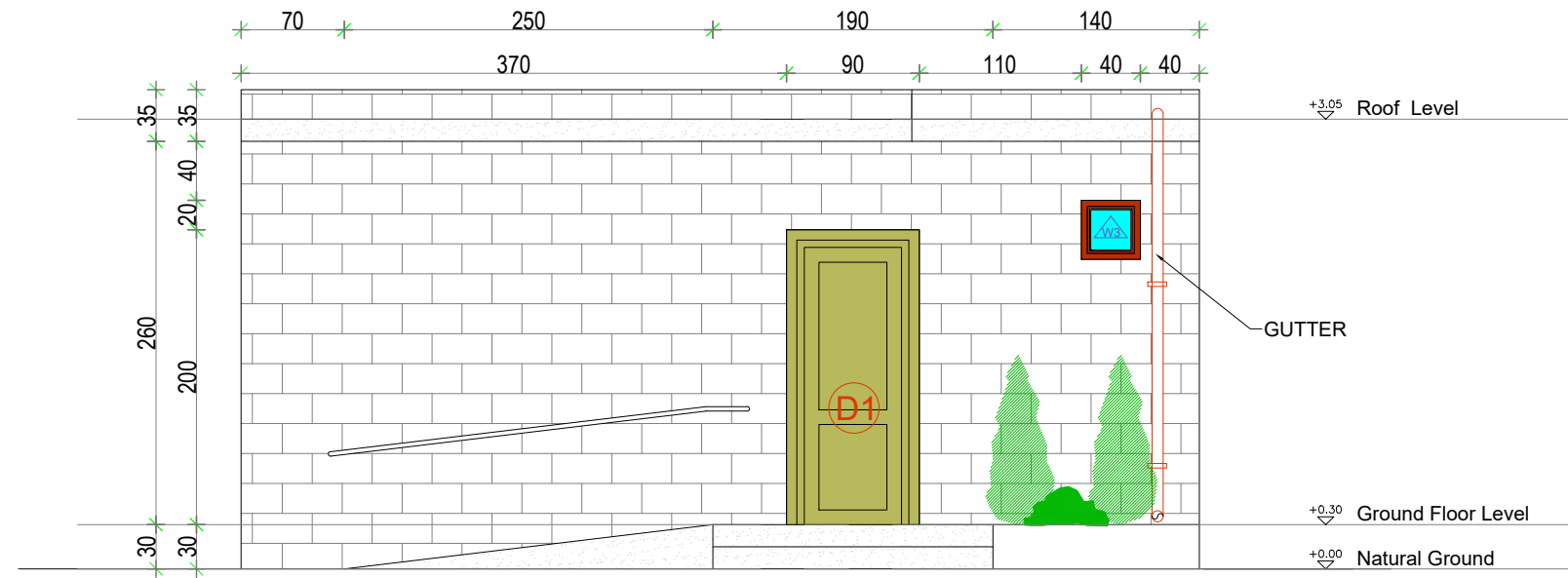
Date :	May 2024
Checked by :	SNFI Cluster team

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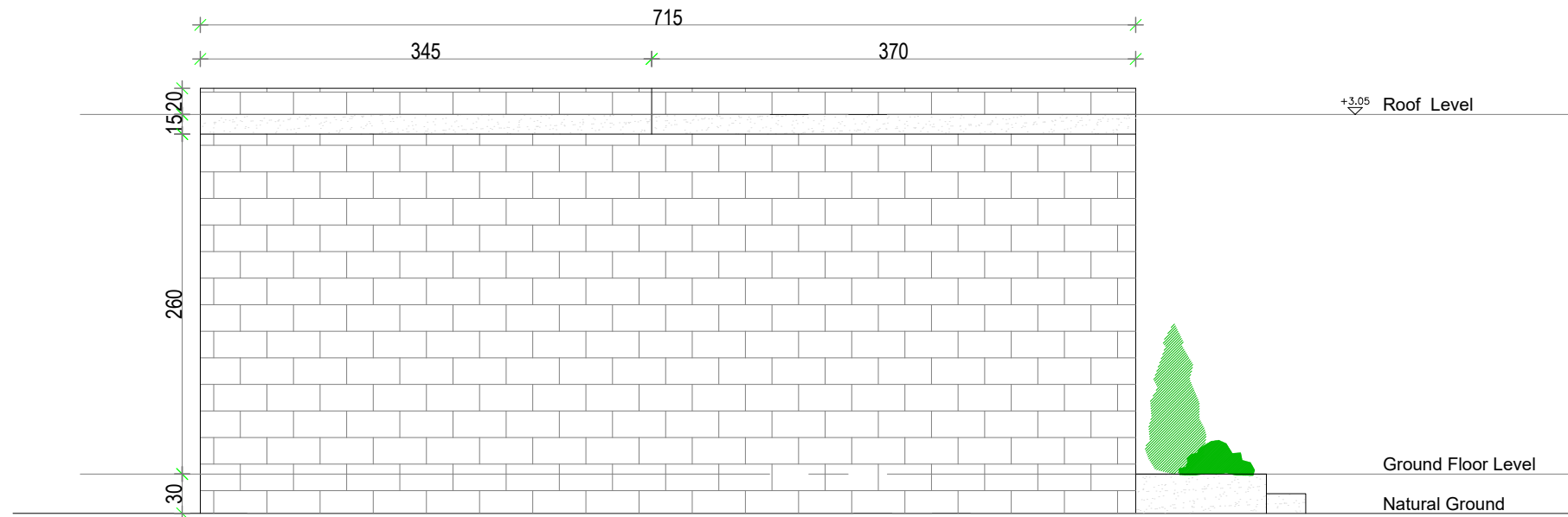
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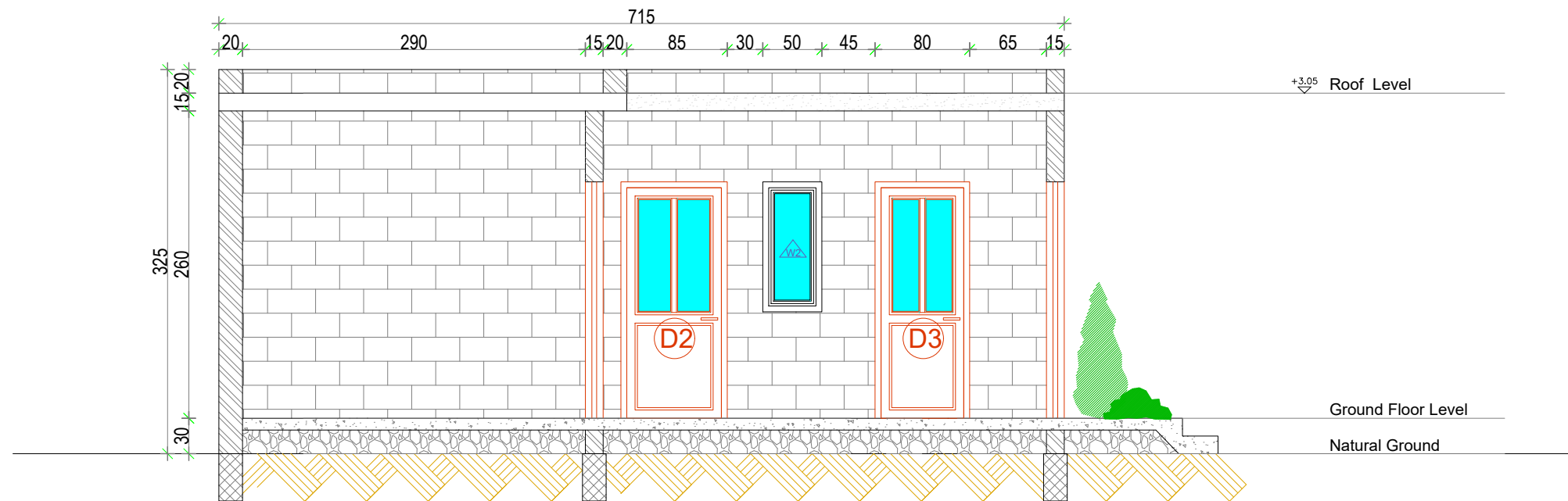
P6 BASE DETAILS
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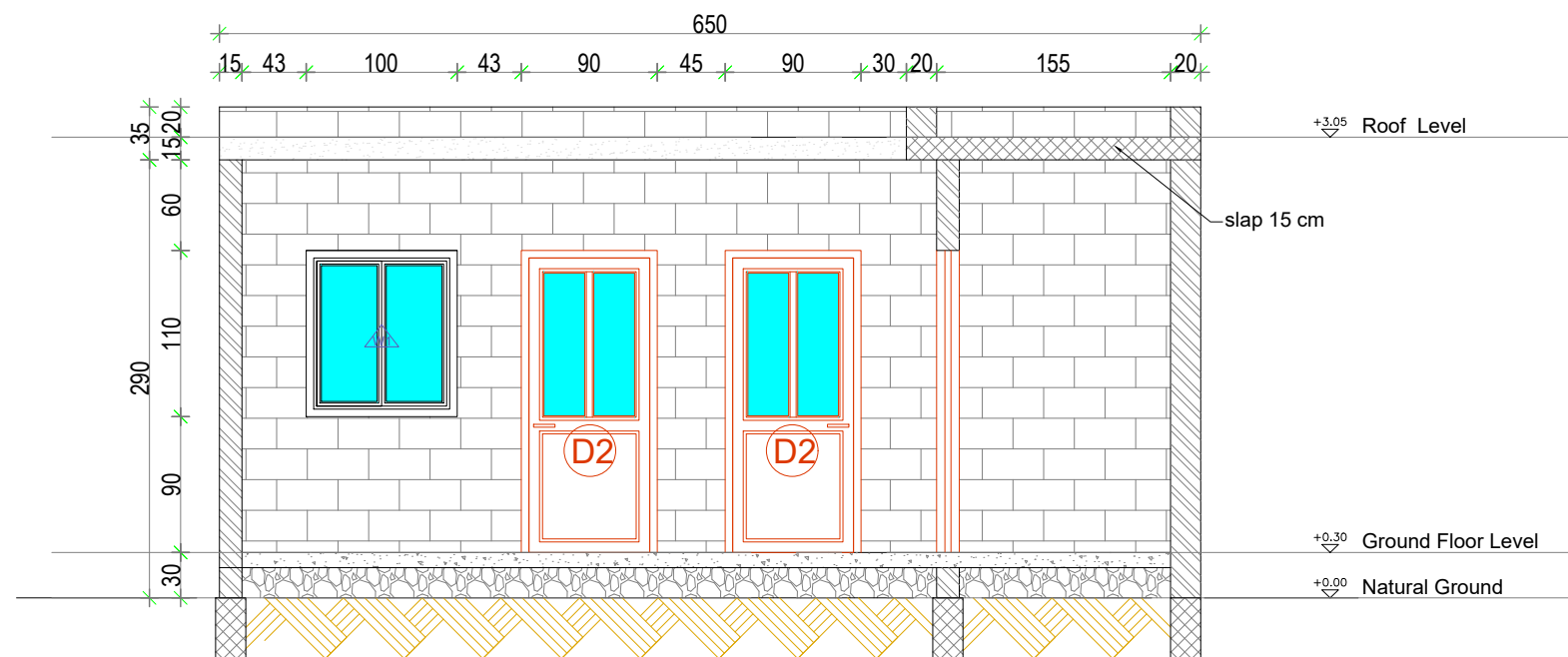
P7 ELEVATION 1
1:50



P7 ELEVATION 2
1:50



P8 SECTION A
1:50



P8 SECTION B
1:50

BOQ-Dignified shelter/Concrete Block Shelter Unit - APPROXIMATED				
#	ITEM	DESCRIPTION	UNIT	QUANTITY
1	BASE			
1.1	BEDDING	UNDER SLAB ON GRADE - gravel with a size between 0 to 5 cm	M3	8.50
1.2	REINFORCED CONCRETE	(20*40) CM - GROUND BEAMS	M3	3.70
1.3	PLAIN CONCRETE	(20*40) CM - GROUND BEAMS	M3	0.14
1.4	PLAIN CONCRETE	(5) CM THICKNESS - SLAB ON GRADE - 45 m2 area	M3	2.25
2	SHELTER STRUCTURE Including WASH Facilities			
2.1	HOLLOW CONCRETE BLOCKS	(15) CM THICKNESS	M2	96.00
2.2	REINFORCED CONCRETE ROOF	(30.42) M2 - (15) CM THICKNESS - SLAB	M3	4.57
3	SHELTER UNIT-INTERNAL			
3.1	PLASTER - (Kitchen WASH Area)	INTERNAL THREE COATING (BLACK PLASTER)	M2	60.00
3.2	CERAMIC TILE - (Kitchen)	50cm over the wash basin	M2	0.60
3.3	Door Threshold	Under kitchen door (3cm high)	ML	0.80
3.4	CERAMIC FLOOR TILE - (Bathroom)	Full floor surface of bathroom	M2	2.40
3.5	Door Threshold	Under bathroom door (3cm high)	ML	0.80
4	FITTINGS AND DOORS			
4.1	Main Door	Iron profiles and metal Sheets	KG	40
4.2	PVC Windows and Doors	(PVC) doors and Windows with frame, first class white color. Section of structural parts min. 6 cm and 2 cm for panels; PVC material should include 1 mm steel along the section, with frame from same specifications, first class metal lock, four metal hinges, first class metal handles, embossed glass thickness 3.5 mm, with thick good quality adhesive cover sheet and PVC lower panel.	m2	8.8
4.3	Squat toilet	CERAMIC squat toilet with all necessary accessories	Pc	1
4.4	Squat Tap	1\2 inch coppered-core	Pc	1
4.5	Wash Basin	CERAMIC Ceramic washbasin (50*40cm) with pedestal, copper drain and hose	Pc	1
4.6	Handwash Water Tap	stainless steel tab, coppered-core, with neck (single input faucet)	Pc	1
4.7	Shower	Two taps shower head coppered-core along with the hot water-cold water mixer, including a water hose/column	Pc	2
4.8	Shower Drainage Hole & Cover	Stainless steel with PVC cover	Pc	2
4.9	Kitchen Sink	STAINLESS STEEL 40 X 60CM one-piece sink, marble 1 mm and concrete layer; the overall thickness is no less 4.5 cm; size 60*120 cm with necessary connections	Pc	1
4.10	Marble Concrete Table	FOR SINK kitchen table (for sink) of 1 cm marble layer and min. 4.5 cm concrete layer (60 cm width) fixed by marble adhesive	ML	1
4.11	Marble Concrete Stand (stone for sink stand)	4 cm stone (width 60cm and height 80-90) for sink standing	Pc	3
4.12	Water supply pipe	drinking water pipelines (PPR) 1/2 inch 20 bar	m	10
4.13	Sewerage pipe	4" wastewater pipelines (PVC) min 2.5mm-thick	m	8.4
4.14	Water tank	500 litre 500 litre, galvanized steel water tank, 1.2 mm thickness	pc	1
5	LIGHTING SYSTEM			
5.1	SOLAR LIGHTING	SOLAR LIGHTING SYSTEM 1X EXTERNAL SOLAR LIGHTING POINT ABOVE THE DOOR. 4X INTERNAL SOLAR LIGHTING IN LIVING SPACE, KITCHEN AND BATHROOM.	Lump Sum	1

For Excel File Click [Here](#)

Concrete Blocks Shelter

- **Living area and WASH facilities:**
 - Walls: Concrete blocks
 - Roof: Reinforced concrete

This shelter type can be constructed using locally available skills and materials. Installation of the shelter should be conducted through an experienced contractor as it requires skilled labour and supervision.

The shelter has strong durability and resistance to high winds, heavy snow, seismic and heavy rains, with low risk of collapse (so long as the shelter unit is not structurally altered from its original design).

- **The walls** consist of 15 cm concrete blocks (usually covered with cement plaster), providing protection against severe weather conditions with significantly improved sound insulation compared to tent shelters. While the shelter provides good performance in very hot conditions, further thermal insulation can be added to walls, ceiling, and floors by beneficiaries to provide greater thermal comfort throughout the year.
- **The roof** is made of reinforced concrete with a minimum strength of **25 MPA** to carry and resist the design loads. It is recommended that the roof is sealed and protected to prevent moisture and weather resistance using bitumen sheets, or alternatively asphalt roll or corrugated metal sheets can be used, depending on availability of materials and budget.
- **Water proofing:** The shelter includes effective waterproofing measures to protect against water infiltration. Proper drainage systems, including downspouts and drains, should be installed to channel rainwater away from the shelter. Rainwater gutters should be incorporated into the roof design.

The shelter offers suitable privacy and protection, thanks to the materials and to the lockable door.

The shelter unit can be connected to sewage and water networks and can be fitted with a 1000-liter water tank placed on the roof over the WASH facilities.

The example layout includes a private enclosed outdoor area which is unshaded. This can be covered by the beneficiaries themselves in the future if required.

- **Maintenance requirements:** No need for regular maintenance, may be needed to ensure the structural integrity, and any necessary repairs should be conducted promptly.
- **Can be disassembled & portable or not?** This shelter is not portable, need to be demolishing and may use the debris for roads paving or site levelling in common areas.
- **Ability for expansion:** The design could be expanded but it requires an engineering guidance and advice.

Modality: Contractor-Cash for Shelter-Cash for work.

For more details see the 3D-video [Here](#)

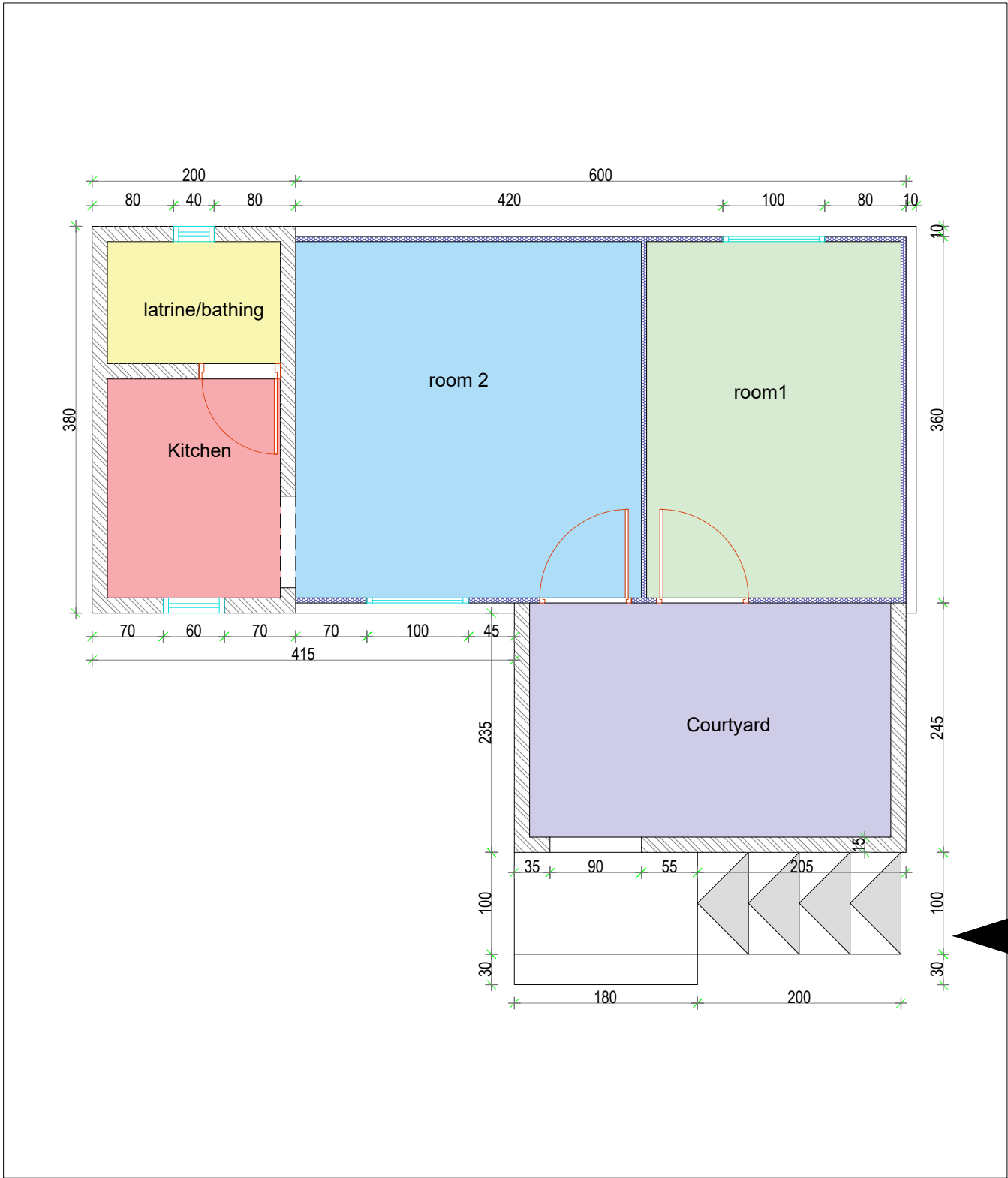
 NW SYRIA X-BORDER SHELTER/NFI CLUSTER Coordinating Humanitarian Shelter and Settlements	AVERAGE SIZED FAMILY SHELTER		SUMMARY SHEET	P10
	Date :	May 2024		
	Checked by :	SNFI Cluster team	Scale :	

Dignified shelter-For average size family

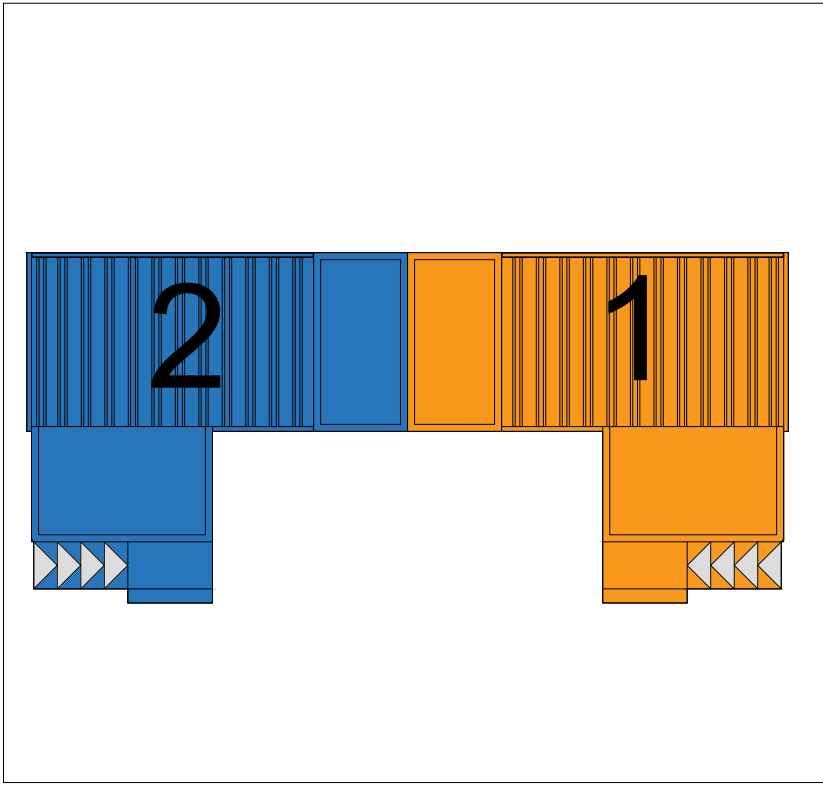
Hybrid Shelter Unit Type 1



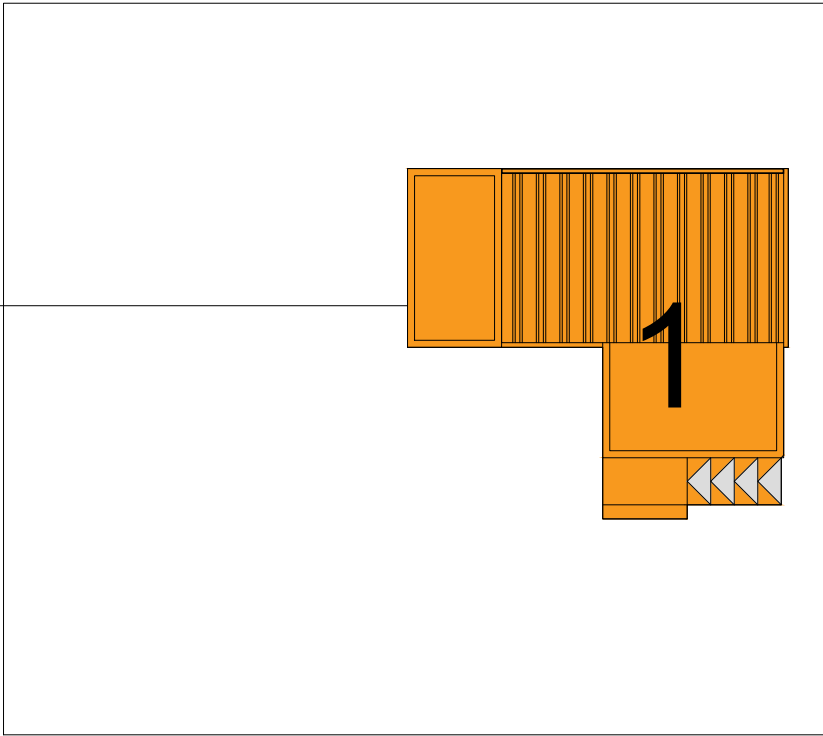
SHEET INDEX	
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Hybrid Shelter Unit Type 1



TWO CONNECTED UNITS



SINGLE UNIT





TWO CONNECTED UNITS



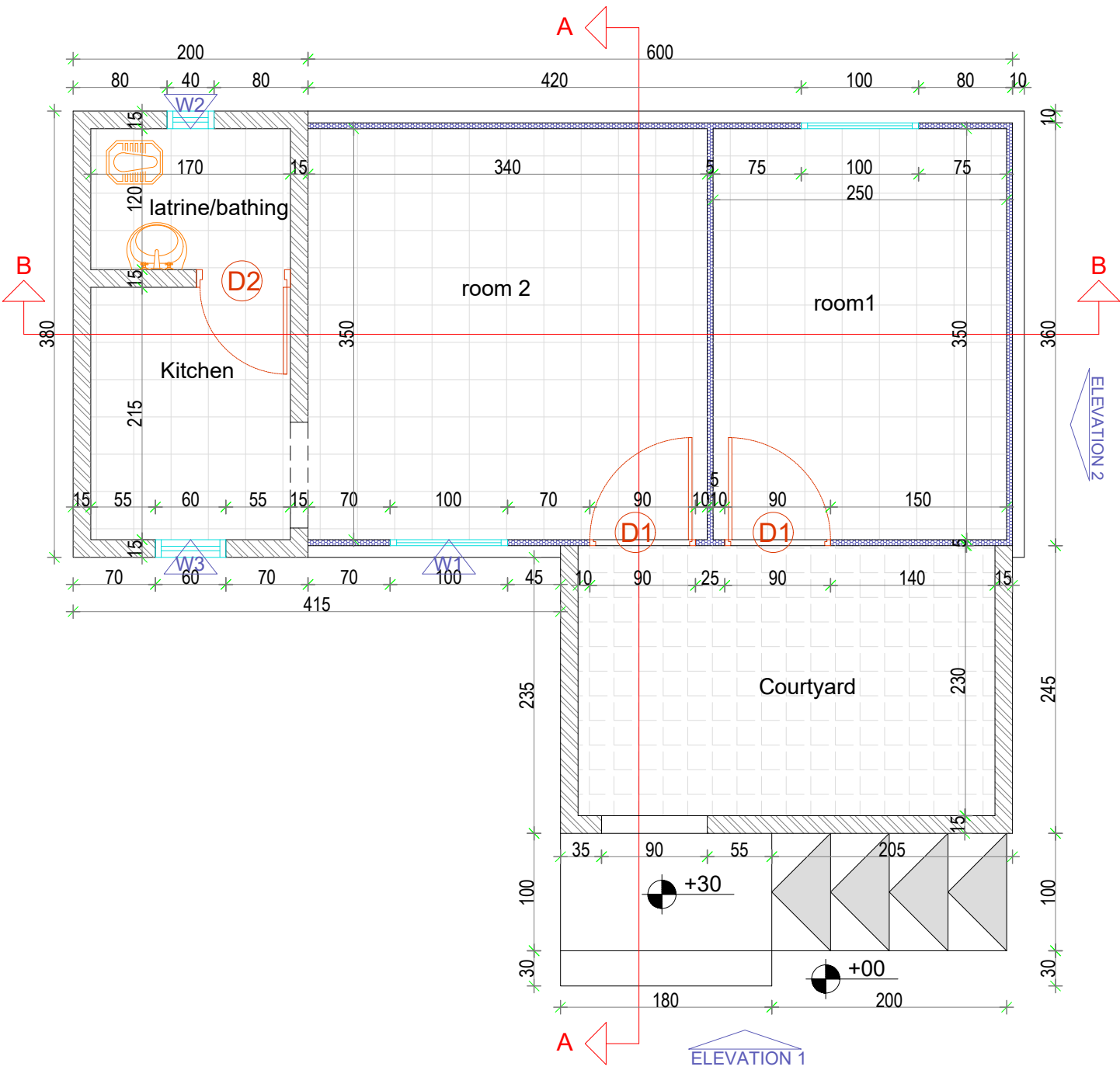
SINGLE UNIT

SUMMARY INFORMATION

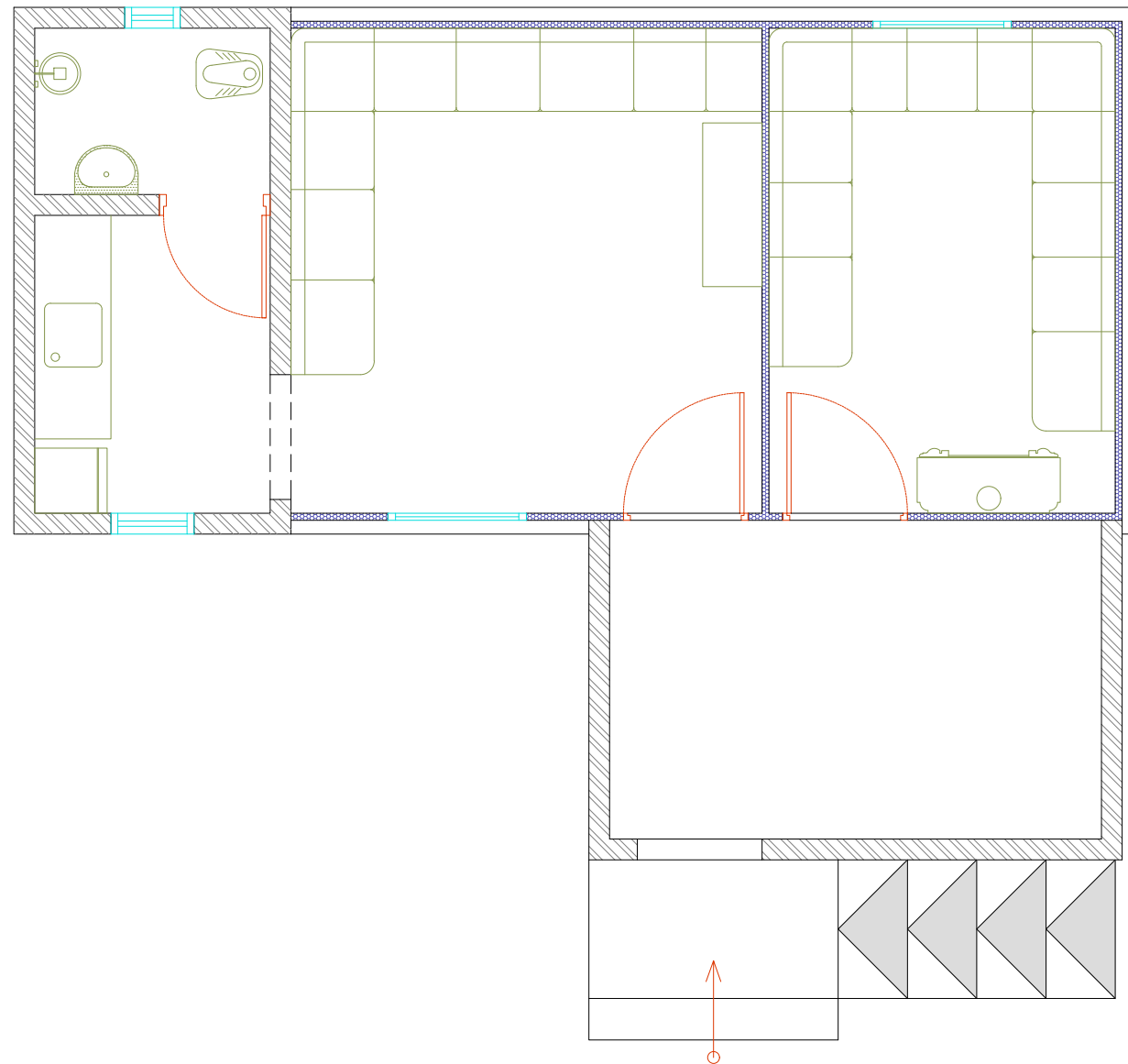
Covered living space in m2 (excluding separate WASH facilities or separate cooking areas and private enclosed outdoor spaces)	21 m2
Area of WASH facilities	2.7 m2
Area of kitchen facilities	4.8 m2
Private outdoor area	Yes
Household private WASH facilities	Yes
Household cooking facilities	Yes
Materials	Base: Concrete mixture with crushed stone. Walls: Sandwich panel Roof: Sandwich panel + Reinforced Concrete (For WASH facilities) Main door: Metal and sandwich panel Internal doors and windows: PVC Plastering: Internal walls
Time to build	7 Days
Anticipated life span	10 years
Total cost	2,800 to 2,900 USD
Cost per m2	74 USD

DOOR SCHEDULE				
Mark	Count	Width	Height	Martial
D1	2	90	200	Metal
D2	1	80	200	PVC

WINDOWS SCHEDULE					
Mark	Count	Width	Height	Sill Height	Martial
W1	2	100	110	90	PVC
W2	1	40	40	180	PVC
W3	1	60	80	140	PVC

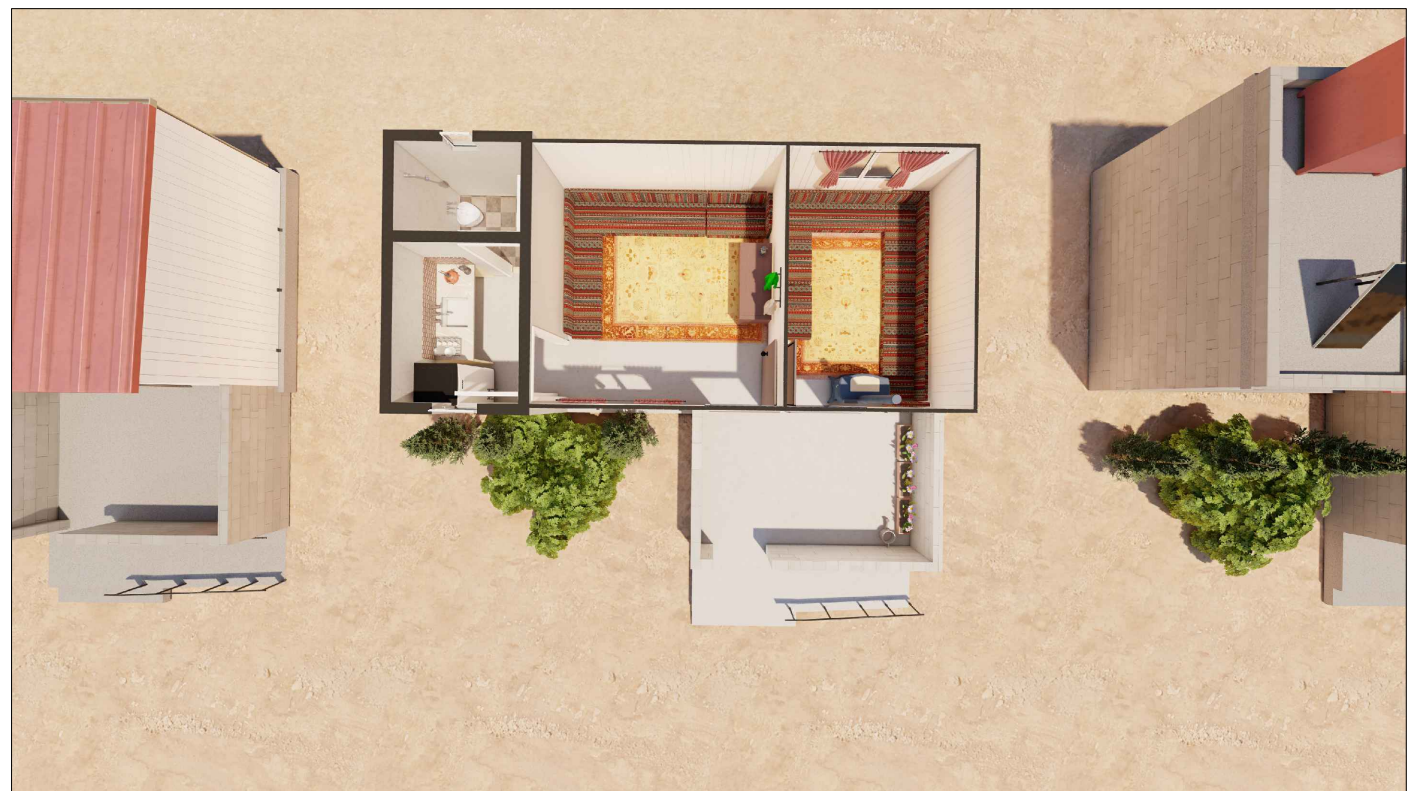


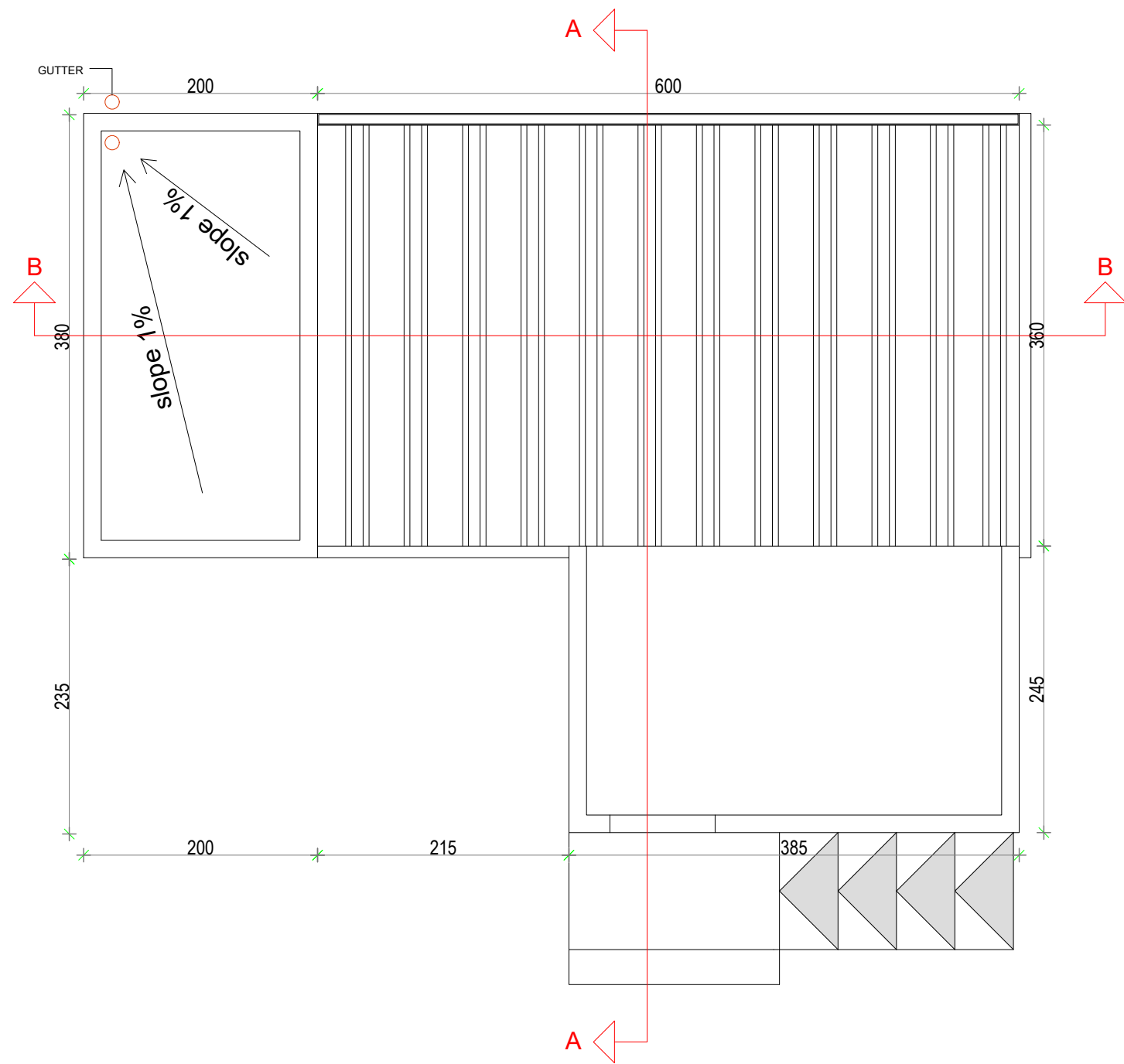
P14 GROUND PLAN
1:50



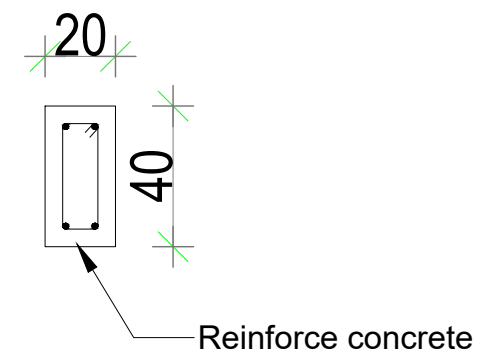
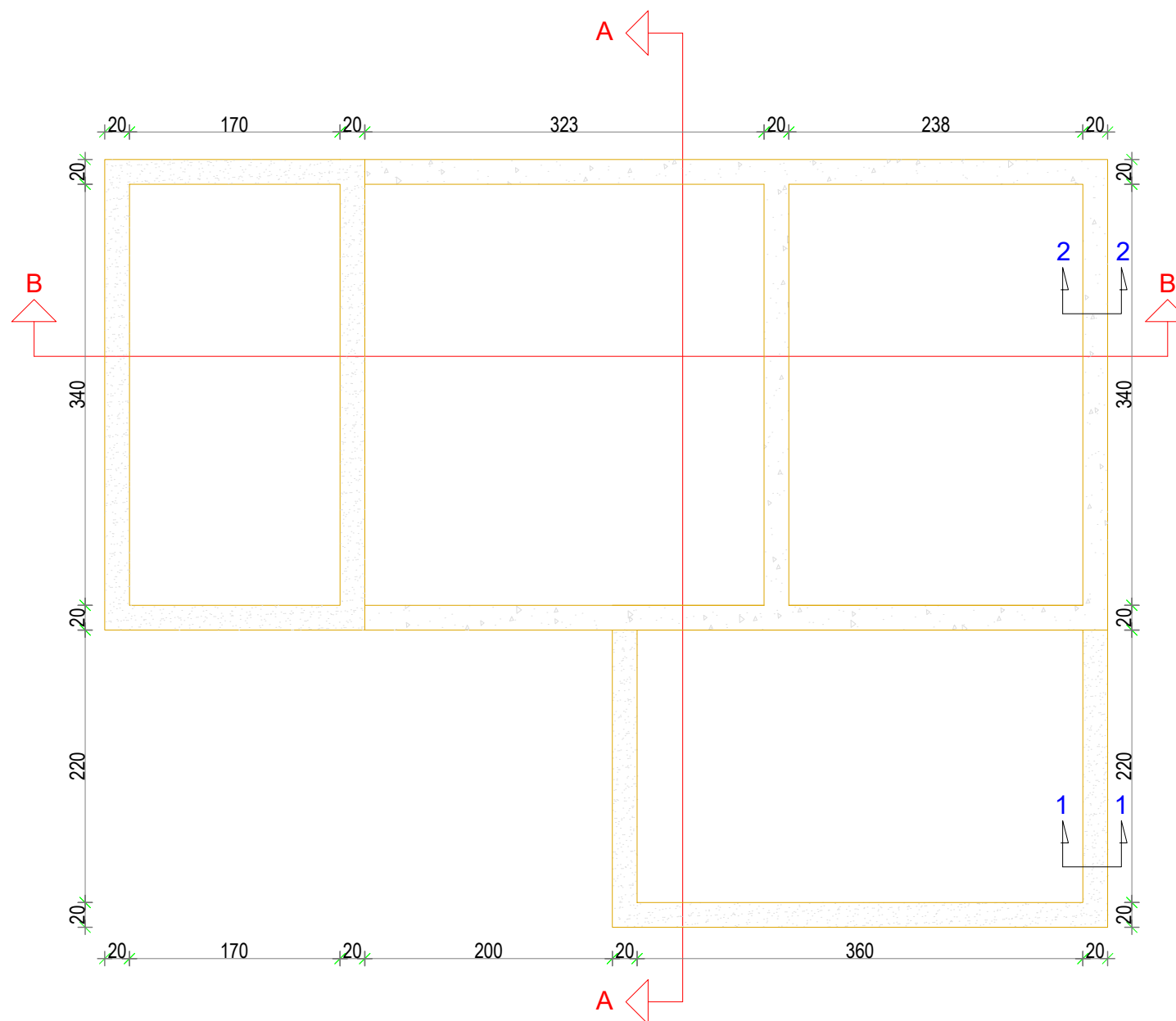
P15

FURNITURE PLAN
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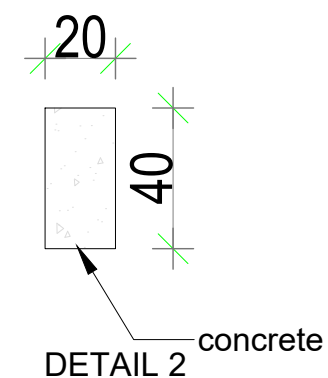




P16 ROOF PLAN
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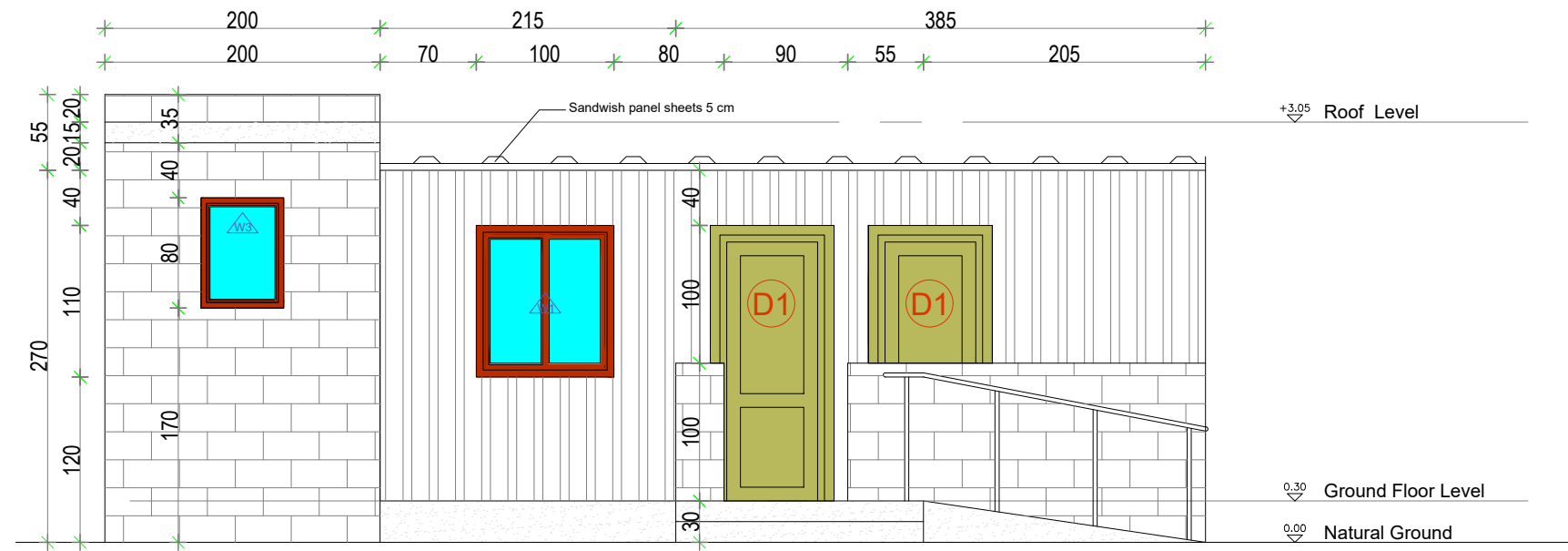


DETAIL 1



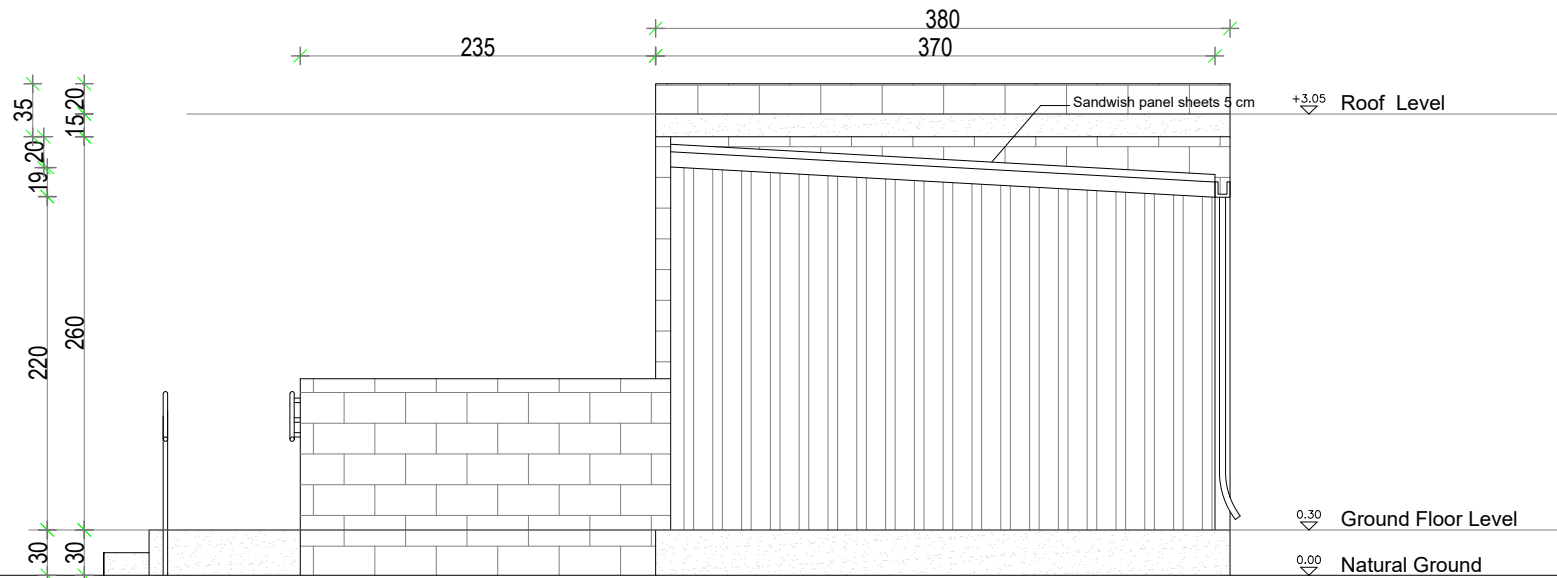
DETAIL 2

P17 BASE DETAILS
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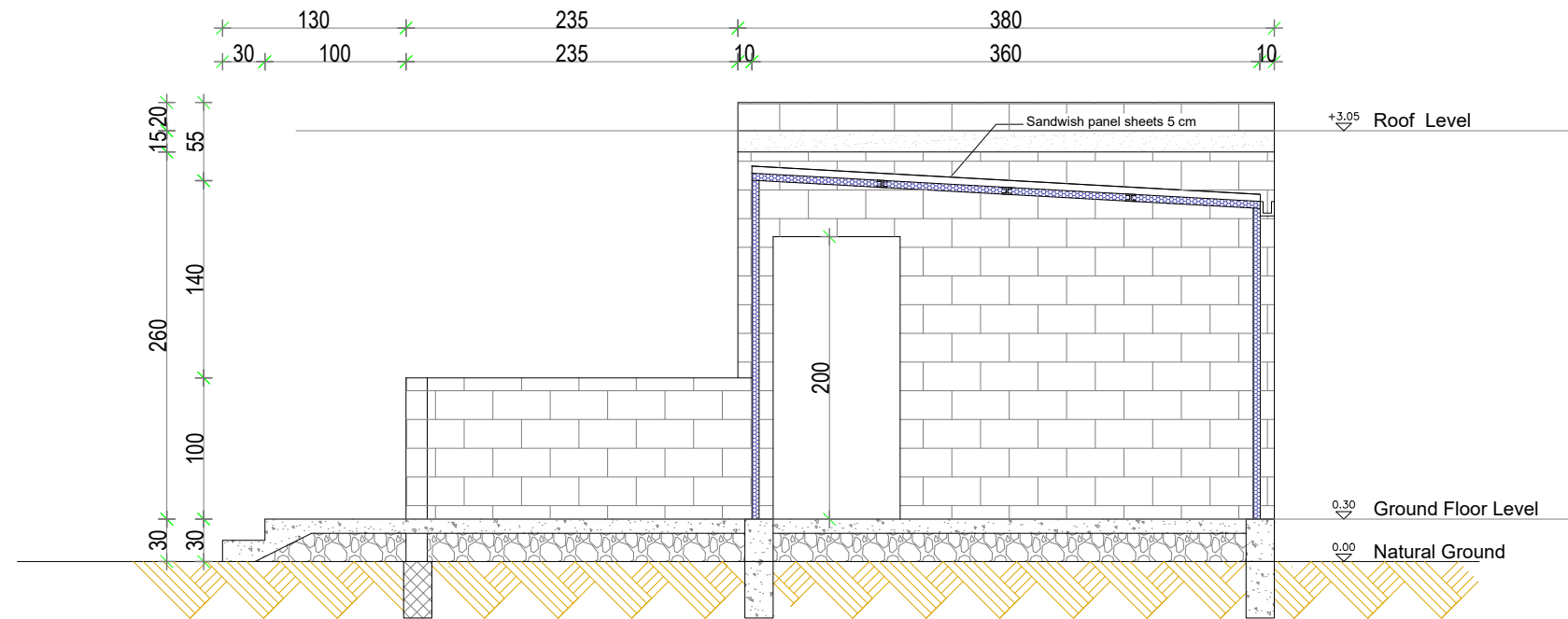
P18

ELEVATION 1
1:50



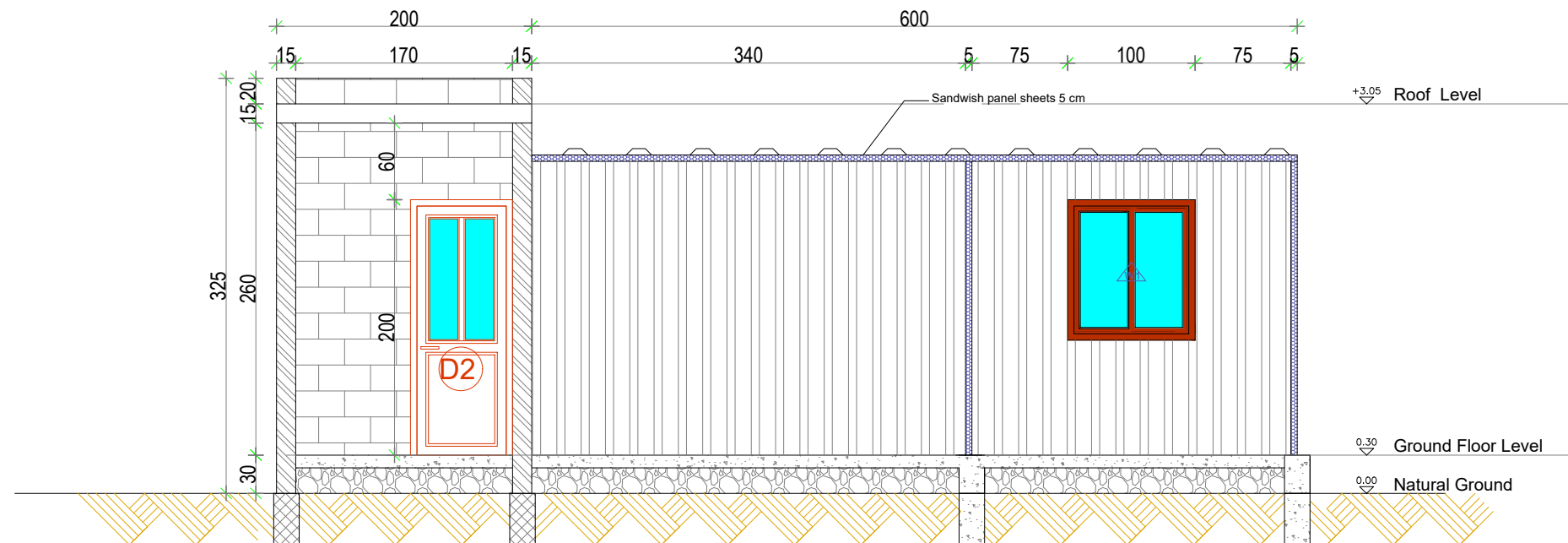
P18

ELEVATION 2
1:50



P19

SECTION A
1:50



P19

SECTION B
1:50

BOQ-Dignified shelter/Hybrid Shelter Unit Type 1 - APPROXIMATED				
#	ITEM	DESCRIPTION	UNIT	QUANTITY
1	BASE			
1.1	BEDDING (Living Area)+(Kitchen WASH Area)+(Side area)	UNDER SLAB ON GRADE - gravel with a size between 0 to 5 cm	M3	7.00
1.2	REINFORCED CONCRETE (Kitchen WASH Area)+(Side area)	(20*40) CM - GROUND BEAMS	M3	1.70
1.3	PLAIN CONCRETE (Living Area)	(20*40) CM - GROUND BEAMS	M3	1.35
1.4	PLAIN CONCRETE (Living Area)+(Kitchen Area)+(Side area)	(5) CM THICKNESS - SLAB ON GRADE - 39.6 m2 area	M3	0.74
2	WASH BLOCK STRUCTURE			
2.1	HOLLOW CONCRETE BLOCKS (Wet Block)	(15) CM THICKNESS	M2	31.70
2.2	HOLLOW CONCRETE BLOCKS (Side area)	(15) CM THICKNESS - Short wall (100 cm high)	M2	7.60
2.3	REINFORCED CONCRETE ROOF	(8.4) M2 - (15) CM THICKNESS - SLAB	M3	1.26
3	WASH BLOCK INTERNAL			
3.1	PLASTER - (Kitchen WASH Area)	INTERNAL THREE COATING (BLACK PLASTER)	M2	33.00
3.2	CERAMIC TILE - (Kitchen)	50cm over the wash basin	M2	0.60
3.3	Door Threshold	Under kitchen door (3cm high)	ML	0.80
3.4	CERAMIC FLOOR TILE - (Bathroom)	Full floor surface of bathroom	M2	2.04
3.5	Door Threshold	Under bathroom door (3cm high)	ML	0.80
4	LIVING AREA STRUCTURE			
4.1	PUR SANDWICH PANELS FOR ROOF	(3) RIBBED POLYURETHANE ROOF PANEL (PUR) WITH ALL NEEDED ACCECORIES FOR INSTALLING (SCREWS, etc.) (40) MM INSULATION THICKNESS (0.30) MM INTERNAL RAL 9002 Prepainted galvanized steel (0.30) MM EXTERNAL RAL 9002 Prepainted galvanized steel DENSITY (40) (+ -) (2) KG/M3 FIRE CLASS (B S2 d0) (TS EN 13501-1).	M2 SURFACE AREA	20.47
4.2	PUR SANDWICH PANELS FOR WALL	POLYURETHANE WALL PANEL (PUR) WITH ALL NEEDED ACCECORIES FOR INSTALLING (SCREWS, etc.) (40) MM INSULATION THICKNESS (0.30) MM INTERNAL RAL 9002 Prepainted galvanized steel (0.30) MM EXTERNAL RAL 9002 Prepainted galvanized steel DENSITY (40) (+ -) (2) KG/M3 FIRE CLASS (B S2 d0) (TS EN 13501-1).	M2 SURFACE AREA	29.30
4.3	Steel Frame	Galvinized Steel (2 MM Thickness)	KG	350.00
4.4	Fixings	Bolt, Screw, EPDM Gasket, Silicone	LS	1
5	LIVING AREA FITTINGS AND DOORS			
5.1	Metal chimney outlet	Metal collar and cap for flue hole (4-6 inch)	pc	1
5.2	Main Door	POLYURETHANE WALL PANEL (PUR) DOOR. As per wall specification.	pc	1
5.3	PVC Windows and Doors	(PVC) doors and Windows with frame, first class white color. Section of structural parts min. 6 cm and 2 cm for panels; PVC material should include 1 mm steel along the section, with frame from same specifications, first class metal lock, four metal hinges, first class metal handles, embossed glass thickness 3.5 mm, with thick good quality adhesive cover sheet and PVC lower panel.	m2	1.4
6	WASH BLOCK FITTINGS AND DOORS			
6.1	Squat toilet	CERAMIC squat toilet with all necessary accessories	Pc	1
6.2	Squat Tap	1½ inch coppered-core	Pc	1
6.3	Wash Basin	CERAMIC Ceramic washbasin (50*40cm) with pedestal, copper drain and hose	Pc	1
6.4	Handwash Water Tap	stainless steel tab, coppered-core, with neck (single input faucet)	Pc	1
6.5	Shower	Two taps shower head coppered-core along with the hot water-cold water mixer, including a water hose/column	Pc	2
6.6	Shower Drainage Hole & Cover	Stainless steel with PVC cover	Pc	2
6.7	Kitchen Sink	STAINLESS STEEL 40 X 60CM one-piece sink, marble 1 mm and concrete layer; the overall thickness is no less 4.5 cm; size 60*120 cm with necessary connections	Pc	1
6.8	Marble Concrete Table	FOR SINK kitchen table (for sink) of 1 cm marble layer and min. 4.5 cm concrete layer (60 cm width) fixed by marble adhesive	ML	1
6.9	Marble Concrete Stand (stone for sink stand)	4 cm stone (width 60cm and height 80-90) for sink standing	Pc	3
6.10	Water supply pipe	drinking water pipelines (PPR) 1/2 inch 20 bar	m	10
6.11	Sewerage pipe	4" wastewater pipelines (PVC) min 2.5mm-thick	m	8.4
6.12	Water tank	500 litre 500 litre, galvanized steel water tank, 1.2 mm thickness	pc	1
6.13	Bathroom Window	PVC louvred. PVC louvred thickness of 1.2 mm.	pc	1
6.14	Bathroom Door	PVC Door	m2	2
6.15	Kitchen Window	PVC 60x80cm, first class white color. Section of structural parts min. 6 cm; PVC material should include 1 mm steel along the section, with frame from same specifications, first class metal lock, min. 2 metal hinges for each sash, first class metal handles, embossed glass thickness 3.5 mm, with thick good quality adhesive cover sheet and PVC lower panel.	m2	0.5
7	LIGHTING SYSTEM			
7.1	SOLAR LIGHTING	SOLAR LIGHTING SYSTEM 1X EXTERNAL SOLAR LIGHTING POINT ABOVE THE DOOR. 4X INTERNAL SOLAR LIGHTING IN LIVING SPACE, KITCHEN AND BATHROOM.	Lump Sum	1

For Excel File Click [Here](#)

Hybrid Shelter Unit Type 1

- **Living area:**
 - Walls: sandwich panels
 - Roofing: sandwich panels
- **WASH area:**
 - Walls: Concrete blocks
 - Roof: Reinforced concrete

Shelters that combine different construction methods and materials, such as sandwich panels, steel frames, and concrete blocks. It is locally resourced, and the composite frame ensures durability and weather resistance.

The shelter has strong durability and resistance to high winds, heavy snow, seismic and heavy rains, with low risk of collapse (so long as the shelter unit is not structurally altered from its original design). The shelter provides high levels of thermal and sound insulation.

It is recommended that the Shelter unit be positioned on a reinforced concrete foundation, elevated at least 20 cm above the ground to effectively mitigate risks from wet weather.

- The sandwich panel walls, and roof consist of:
 - Preferable metal sheet 0.3 to 0.8mm thickness
 - Foam panel thickness minimum 40mm between metal sheets.
 - Foam density minimum 38kg/m³
 - Fire resistance: European standard Fire Class, minimum B2 fire resistance.
- **Water proofing:** The shelter includes effective waterproofing measures to protect against water infiltration. Joints must be sealed effectively using flashing at vulnerable points.
- Proper drainage systems, including downspouts and drains, should be installed to channel rainwater away from the shelter.
- Rainwater gutters should be incorporated into the roof design.

The WASH facilities made of concrete blocks consist of 15 cm concrete blocks providing protection and adequate privacy.
The roof of the WASH facilities includes reinforced concert Caliber 350 kg/m³; thickness 10 cm, and reinforcement not less than 60 kg/m³. This is suitable to hold a 1,000-liter water tank.

The shelter offers suitable privacy and protection, thanks to the materials and to the lockable door.

The example layout includes an outdoor unshaded courtyard in front of the shelter. This can be further enclosed and covered by beneficiaries themselves in future if required.

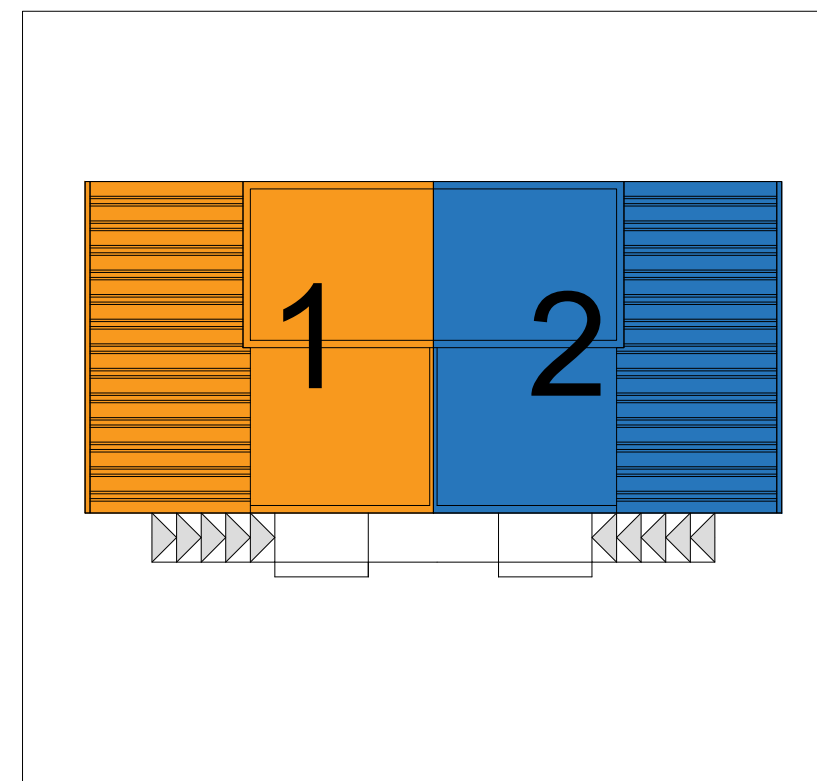
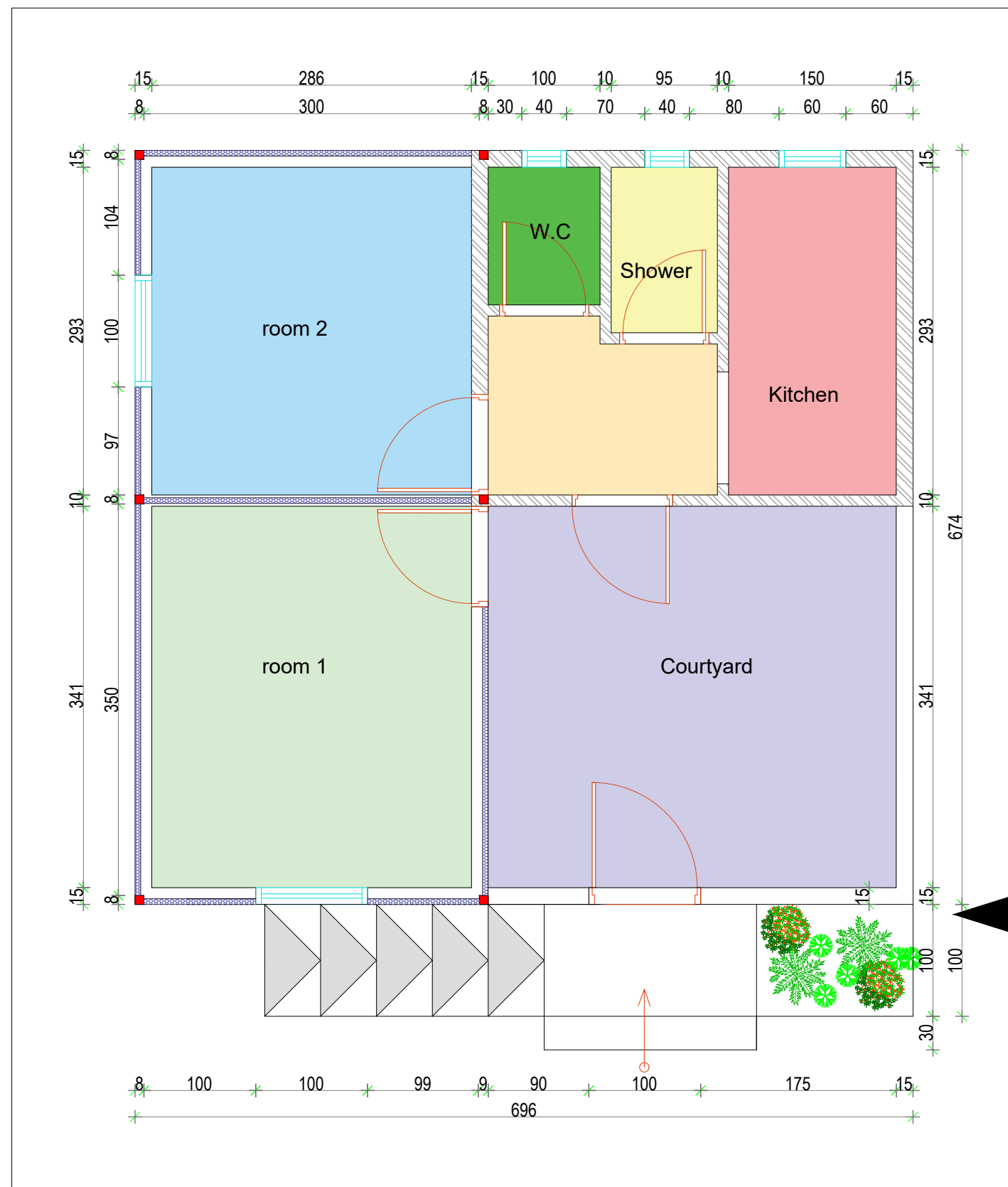
- **Maintenance requirements:** Regular inspections may be needed to ensure the structural integrity, and any necessary repairs or replacements should be conducted promptly.
- **Can be disassembled & portable or not?** Compared to the other shelter material options, this shelter can more easily be disassembled and portable, providing flexibility in relocation or storage.
- **Ability for expansion:** The design allows for the ability to expand, providing scalability for future needs. This could involve adding additional units or modifying the existing structure to accommodate changing requirements.
- **Modality:** Contractor-Cash for Shelter-Cash for work.

For more details see the 3D-video [Here](#)

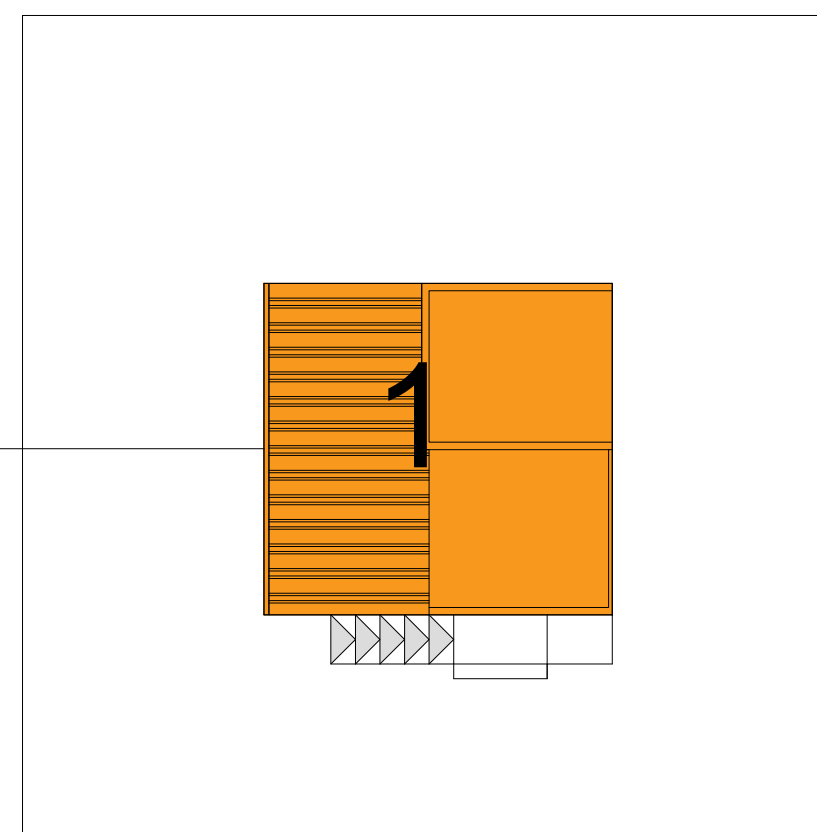
Dignified shelter-For average size family
Hybrid Shelter Unit Type 2



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TWO CONNECTED UNITS



SINGLE UNIT



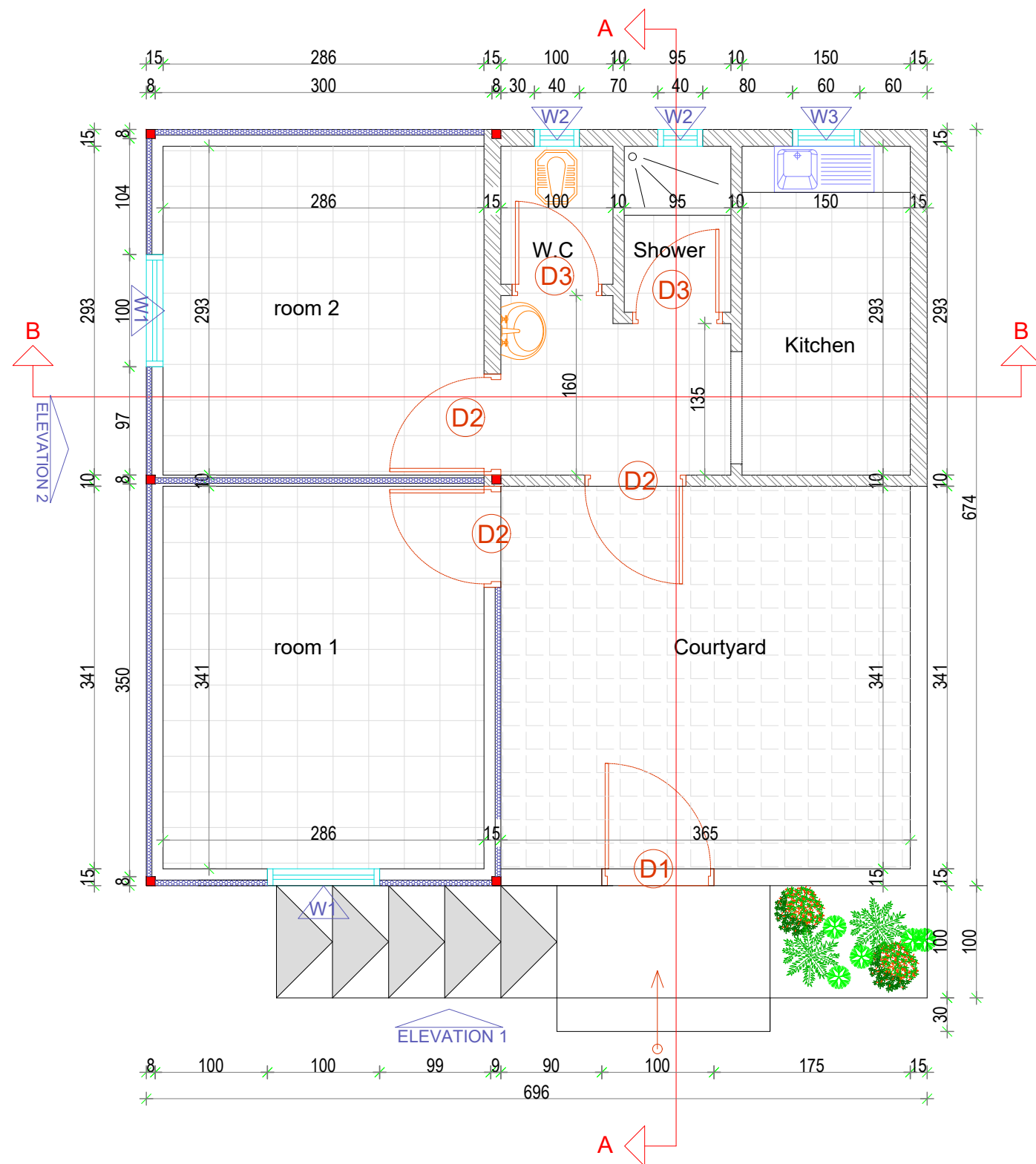
Hybrid Shelter Unit Type 2



TWO CONNECTED UNITS



SINGLE UNIT



P25

GROUND PLAN

1:50

SUMMARY INFORMATION

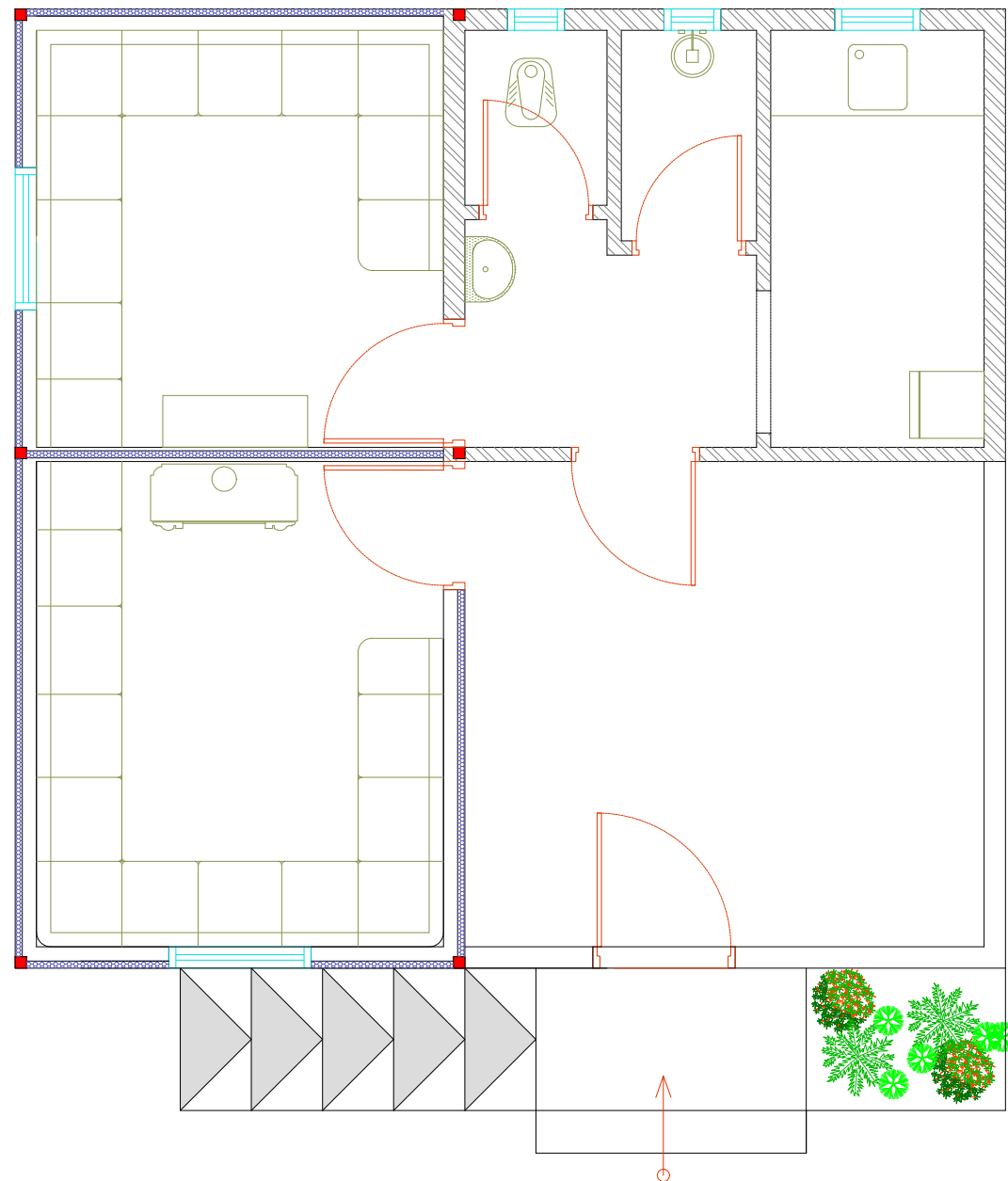
Covered living space in m2 (excluding separate WASH facilities or separate cooking areas and private enclosed outdoor spaces)	21.5 m2
Area of WASH facilities	3.5m2
Area of kitchen facilities	4.8m2
Private outdoor area	Yes
Household private WASH facilities	Yes
Household cooking facilities	Yes
Materials	Base: Concrete mixture with crushed stone. Walls: Cement bricks + Sandwich panel Roof: Sandwich panel + Reinforced Concrete (For WASH facilities) Main door: Iron Internal doors and windows: PVC Plastering: Internal walls
Time to build	12 Days
Anticipated life span	10 years
Total cost	2,700 to 2900 USD
Cost per m2	62.5 USD

DOOR SCHEDULE

Mark	Count	Width	Height	Martial
D1	1	100	200	Metal
D2	3	90	200	PVC
D3	2	80	200	PVC

WINDOWS SCHEDULE

Mark	Count	Width	Height	Sill Height	Martial
W1	2	100	110	90	PVC
W2	2	40	40	180	PVC
W3	1	60	80	140	PVC

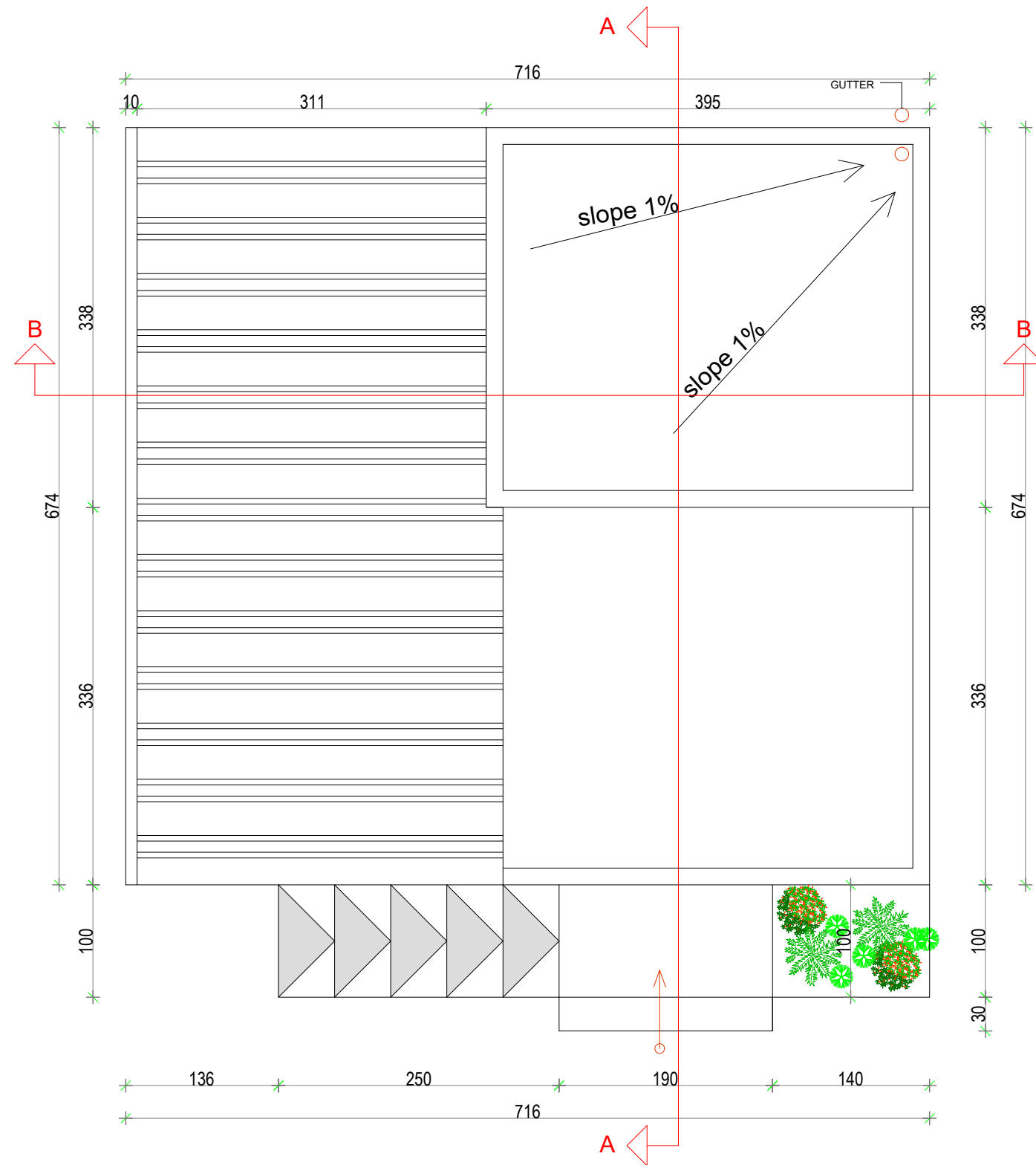


P26

FURNITURE PLAN

1:50

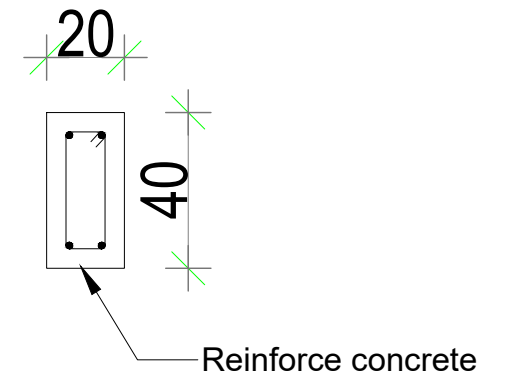
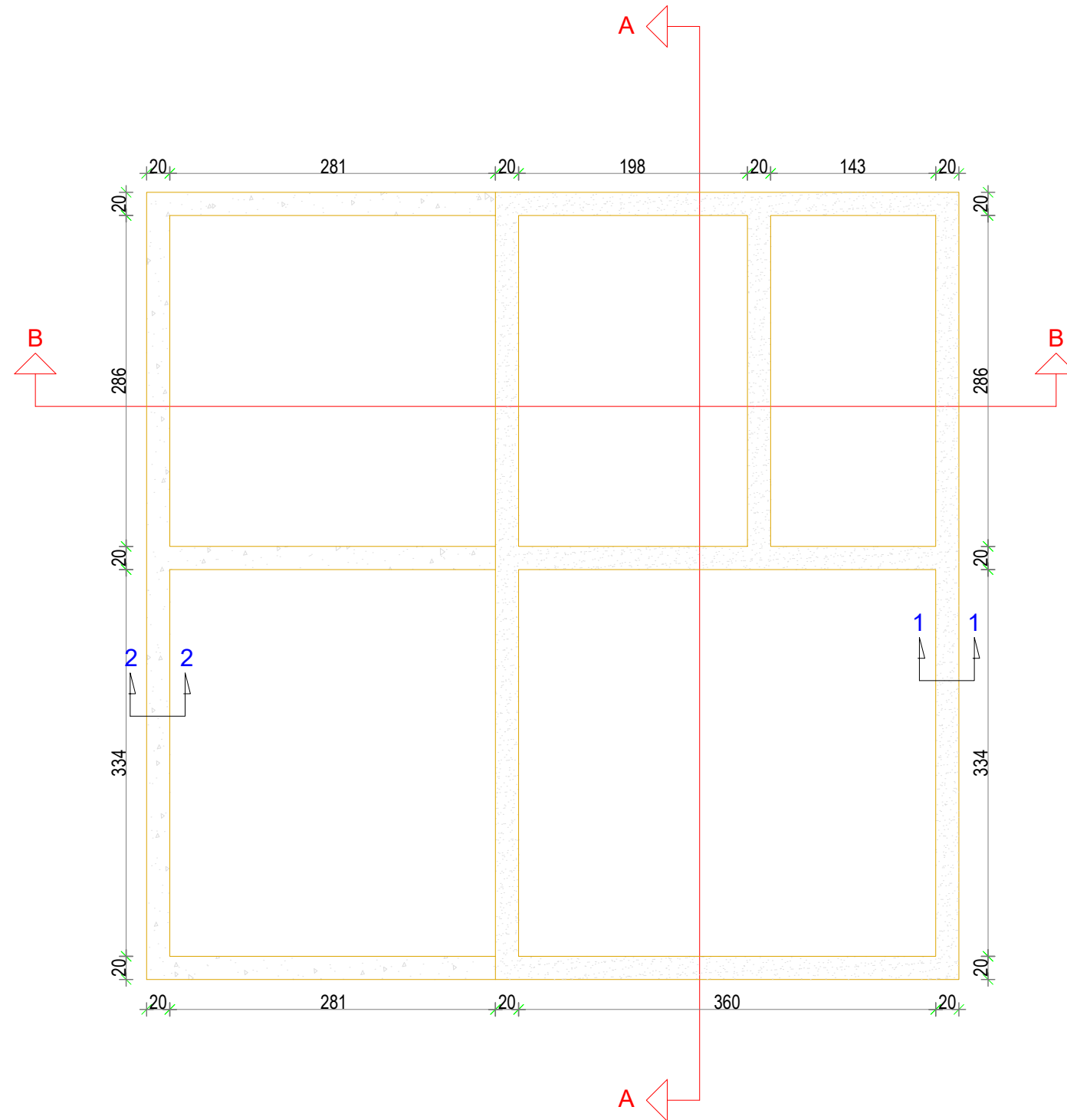




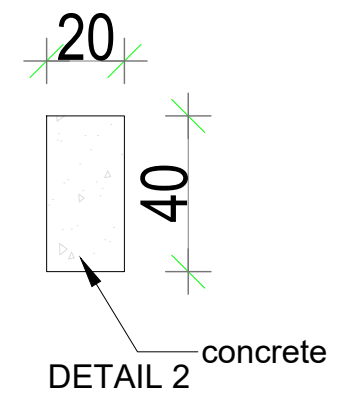
P27

ROOF PLAN
1:50





DETAIL 1



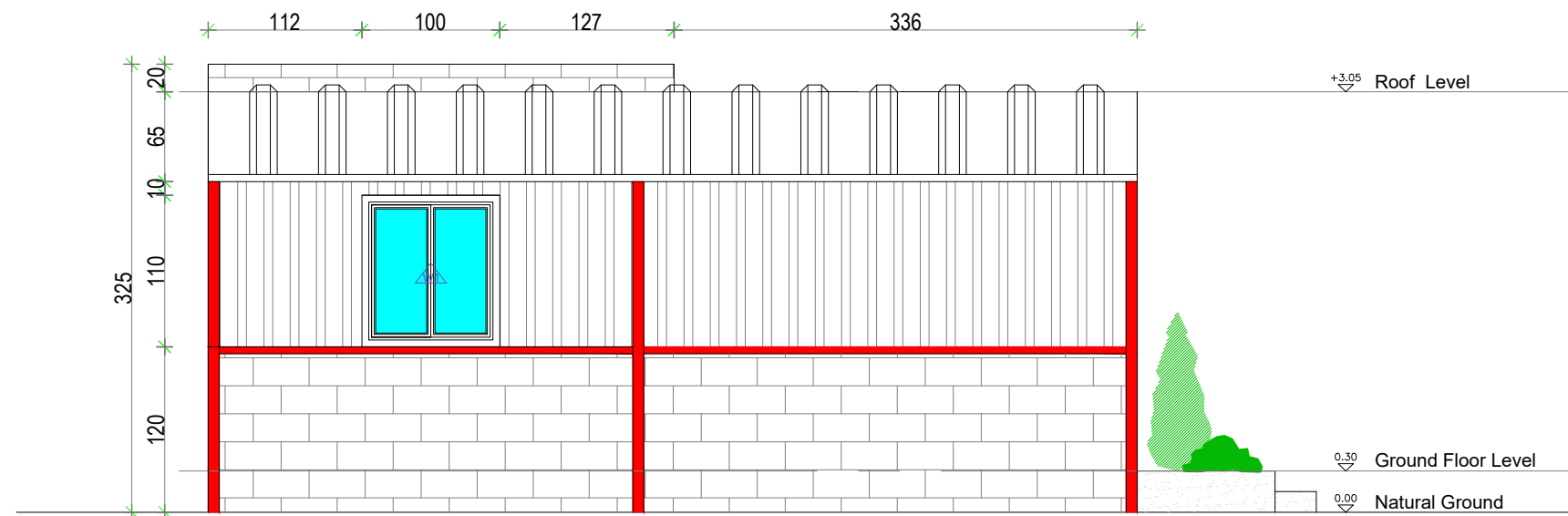
DETAIL 2

P28 BASE DETAILS
1:50



P29

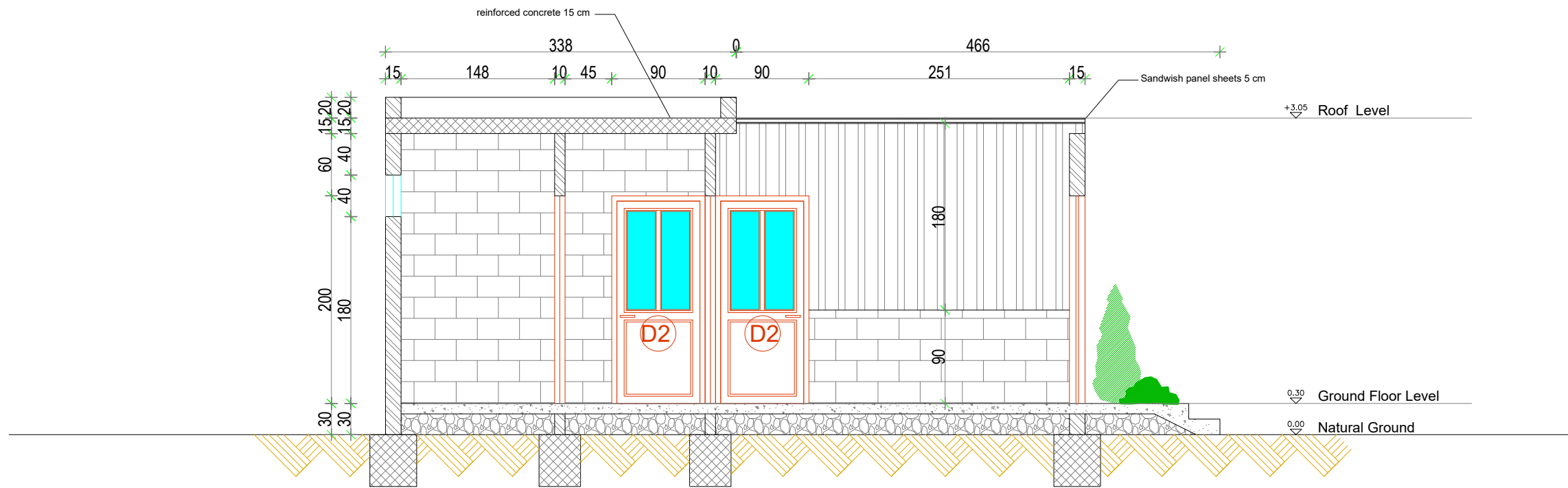
ELEVATION 1
1:50



P29

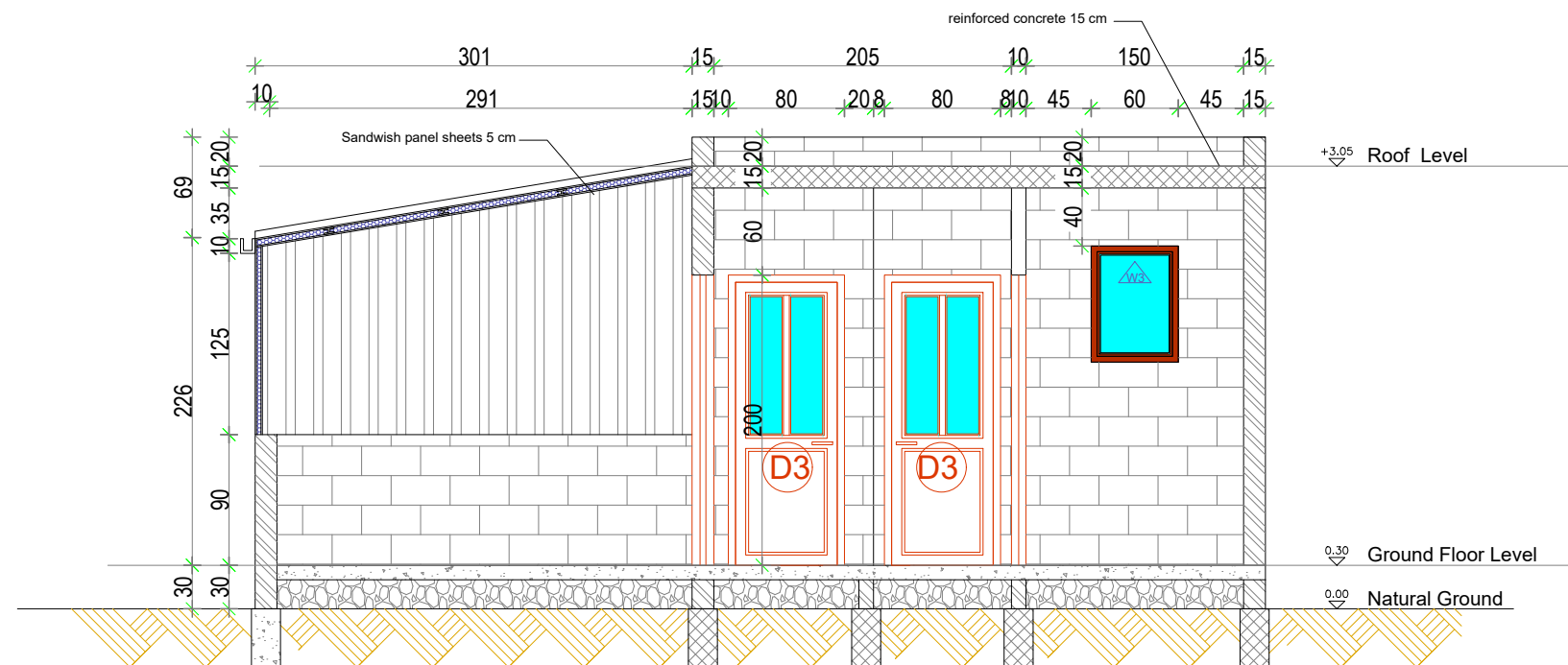
ELEVATION 2
1:50





P30

SECTION A
1:50



P30

SECTION B
1:50



NW SYRIA X-BORDER
SHELTER/NFI CLUSTER

Coordinating Humanitarian Shelter and Settlements

AVERAGE SIZED FAMILY SHELTER

Date : May 2024

Checked by : SNFI Cluster team

P29

Scale : 1:50

SECTIONS A&B

P30

BOQ-Dignified shelter/Hybrid Shelter Unit Type 2 - APPROXIMATED				
#	ITEM	DESCRIPTION	UNIT	QUANTITY
1	BASE			
1.1	BEDDING (Living Area)+(Kitchen WASH Area)+(Courtyard)	UNDER SLAB ON GRADE - gravel with a size between 0 to 5 cm	M3	6.20
1.2	REINFORCED CONCRETE (Kitchen WASH Area)+(Courtyard)	(20*40) CM - GROUND BEAMS	M3	2.45
1.3	PLAIN CONCRETE (Kitchen WASH Area)	(20*40) CM - GROUND BEAMS	M3	0.48
1.4	PLAIN CONCRETE (Living Area)+(Kitchen Area)+(Courtyard)	(5) CM THICKNESS - SLAB ON GRADE - 43.5 m2 area	M3	0.87
2	WASH BLOCK+Courtyard STRUCTURE			
2.1	HOLLOW CONCRETE BLOCKS (Wet Block)	(15) CM THICKNESS	M2	25.00
2.2	HOLLOW CONCRETE BLOCKS (Wet Block)	(10) CM THICKNESS	M2	18.50
2.3	HOLLOW CONCRETE BLOCKS (Courtyard)	(15) CM THICKNESS - (260 cm high)	M2	16.80
2.4	REINFORCED CONCRETE ROOF	(14.3) M2 - (15) CM THICKNESS - SLAB	M3	2.14
3	WASH BLOCK INTERNAL			
3.1	PLASTER - (Kitchen WASH Area)	INTERNAL THREE COATING (BLACK PLASTER)	M2	43.25
3.2	CERAMIC TILE - (Kitchen)	50cm over the wash basin	M2	0.60
3.3	Door Threshold	Under all doors of wet block (3cm high)	ML	4.00
3.4	CERAMIC FLOOR TILE - (Bathroom)+(WC)	Full floor surface of bathroom and WC	M2	2.50
4	LIVING AREA STRUCTURE			
4.1	PUR SANDWICH PANELS FOR ROOF	(3) RIBBED POLYURETHANE ROOF PANEL (PUR) WITH ALL NEEDED ACCECORIES FOR INSTALLING (SCREWS, etc.) (40) MM INSULATION THICKNESS (0.30) MM INTERNAL RAL 9002 Prepainted galvanized steel (0.30) MM EXTERNAL RAL 9002 Prepainted galvanized steel DENSITY (40) (+ -) (2) KG/M3 FIRE CLASS (B S2 d0) (TS EN 13501-1).	M2 SURFACE AREA	21.90
4.2	PUR SANDWICH PANELS FOR WALL	POLYURETHANE WALL PANEL (PUR) WITH ALL NEEDED ACCECORIES FOR INSTALLING (SCREWS, etc.) (40) MM INSULATION THICKNESS (0.30) MM INTERNAL RAL 9002 Prepainted galvanized steel (0.30) MM EXTERNAL RAL 9002 Prepainted galvanized steel DENSITY (40) (+ -) (2) KG/M3 FIRE CLASS (B S2 d0) (TS EN 13501-1).	M2 SURFACE AREA	13.50
4.3	Steel Frame	Galvinized Steel (2 MM Thickness)	KG	315.00
4.4	HOLLOW CONCRETE BLOCKS	(15) CM THICKNESS - (100 cm high)	M2	9.80
4.5	HOLLOW CONCRETE BLOCKS	(10) CM THICKNESS - Partition wall	M2	6.00
4.6	Fixings	Bolt, Screw, EPDM Gasket, Silicone	LS	1
5	LIVING AREA FITTINGS AND DOORS			
5.1	Metal chimney outlet	Metal collar and cap for flue hole (4-6 inch)	pc	1
5.2	Main Door	POLYURETHANE WALL PANEL (PUR) DOOR. As per wall specification.	pc	1
5.3	PVC Windows and Doors	(PVC) doors and Windows with frame, first class white color. Section of structural parts min. 6 cm and 2 cm for panels; PVC material should include 1 mm steel along the section, with frame from same specifications, first class metal lock, four metal hinges, first class metal handles, embossed glass thickness 3.5 mm, with thick good quality adhesive cover sheet and PVC lower panel.	m2	5.8
6	WASH BLOCK FITTINGS AND DOORS			
6.1	Squat toilet	CERAMIC squat toilet with all necessary accessories	Pc	1
6.2	Squat Tap	1\2 inch coppered-core	Pc	1
6.3	Wash Basin	CERAMIC Ceramic washbasin (50*40cm) with pedestal, copper drain and hose	Pc	1
6.4	Handwash Water Tap	stainless steel tab, coppered-core, with neck (single input faucet)	Pc	1
6.5	Shower	Two taps shower head coppered-core along with the hot water-cold water mixer, including a water hose/column	Pc	2
6.6	Shower Drainage Hole & Cover	Stainless steel with PVC cover	Pc	2
6.7	Kitchen Sink	STAINLESS STEEL 40 X 60CM one-piece sink, marble 1 mm and concrete layer; the overall thickness is no less 4.5 cm; size 60*120 cm with necessary connections	Pc	1
6.8	Marble Concrete Table	FOR SINK kitchen table (for sink) of 1 cm marble layer and min. 4.5 cm concrete layer (60 cm width) fixed by marble adhesive	ML	1
6.9	Marble Concrete Stand (stone for sink stand)	4 cm stone (width 60cm and height 80-90) for sink standing	Pc	3
6.10	Water supply pipe	drinking water pipelines (PPR) 1/2 inch 20 bar	m	10
6.11	Sewerage pipe	4" wastewater pipelines (PVC) min 2.5mm-thick	m	8.4
6.12	Water tank	500 litre 500 litre, galvanized steel water tank, 1.2 mm thickness	pc	1
6.13	Bathroom Window	PVC louvred. PVC louvred thickness of 1.2 mm.	pc	1
6.14	Bathroom Door	PVC Door	m2	2
6.15	Kitchen Window	PVC 60x80cm, first class white color. Section of structural parts min. 6 cm; PVC material should include 1 mm steel along the section, with frame from same specifications, first class metal lock, min. 2 metal hinges for each sash, first class metal handles, embossed glass thickness 3.5 mm, with thick good quality adhesive cover sheet and PVC lower panel.	m2	0.5
7	LIGHTING SYSTEM			
7.1	SOLAR LIGHTING	SOLAR LIGHTING SYSTEM 1X EXTERNAL SOLAR LIGHTING POINT ABOVE THE DOOR. 4X INTERNAL SOLAR LIGHTING IN LIVING SPACE, KITCHEN AND BATHROOM.	Lump Sum	1

For Excel File Click [Here](#)

Hybrid Shelter Unit Type 2

- **Living area:**
 - Walls: Concrete bricks and sandwich panels
 - Roofing: sandwich panels
- **WASH area:**
 - Walls: Concrete blocks
 - Roof: Reinforced concrete

Shelters that combine different construction methods and materials, such as sandwich panels, steel frames, and concrete blocks. It is locally resourced, and the composite frame ensures durability and weather resistance.

In the example provided, the composite frame is made of steel and concrete, which provides strength and stability to the shelter. The main steel structure is made of square tube 80*80* 2mm, in addition to the columns bolted to concrete reinforced bases **40*20 cm** concrete calibre 300 kg/m³ which makes the unit resistant to earthquakes. The sandwich panels provide high levels of thermal insultation during summer and winter.

- The sandwich panel walls, and roof consist of:
 - Preferable metal sheet 0.3 to 0.8mm thickness
 - Foam panel thickness minimum 40mm between metal sheets.
 - Foam density minimum 38kg/m³
 - Fire resistance: European standard Fire Class, minimum B2 fire resistance.
- Concrete block walls for living area (20*40*15cm) block, Caliber 150 kg / m³; and a height of 80 cm.
- **Water Proofing measures:**
 - **Special attention should be made to ensure waterproofing is secured between concrete blocks and sandwich panel materials.** The shelter incorporates a composite frame with a steel structure and sandwich panel cladding. To ensure robust waterproofing, flashing is installed at vulnerable points on the roof. This includes intersections with walls and points where two roof slopes meet. The flashing should be positioned with appropriate overlaps and sealed effectively to create a water-proof barrier. This prevents water from infiltrating underneath the roof. As an additional measure, the roof should have an appropriate slope to facilitate water runoff. Proper drainage systems, including downspouts and drains, should be installed to channel rainwater away from the shelter. Rainwater gutters should be incorporated into the roof design.
 - The exterior cladding of the shelter, comprising of sandwich panels should be sealed at the joints. These sealed joints serve as a protective barrier against water infiltration and contribute to the overall waterproofing strategy. The exterior cladding not only enhances the structural integrity of the shelter but also provides insulation from the external weather elements.
- **Maintenance requirements:** Regular inspections may be needed to ensure the structural integrity, and any necessary repairs or replacements should be conducted promptly.
- **Can be disassembled & portable or not?** Compared to the other shelter material options, this shelter can more easily be disassembled and portable, providing flexibility in relocation or storage.
- **Ability for expansion:** The design allows for the ability to expand, providing scalability for future needs. This could involve adding additional units or modifying the existing structure to accommodate changing requirements.
- **Modality:** Contractor-Cash for Shelter-Cash for work.

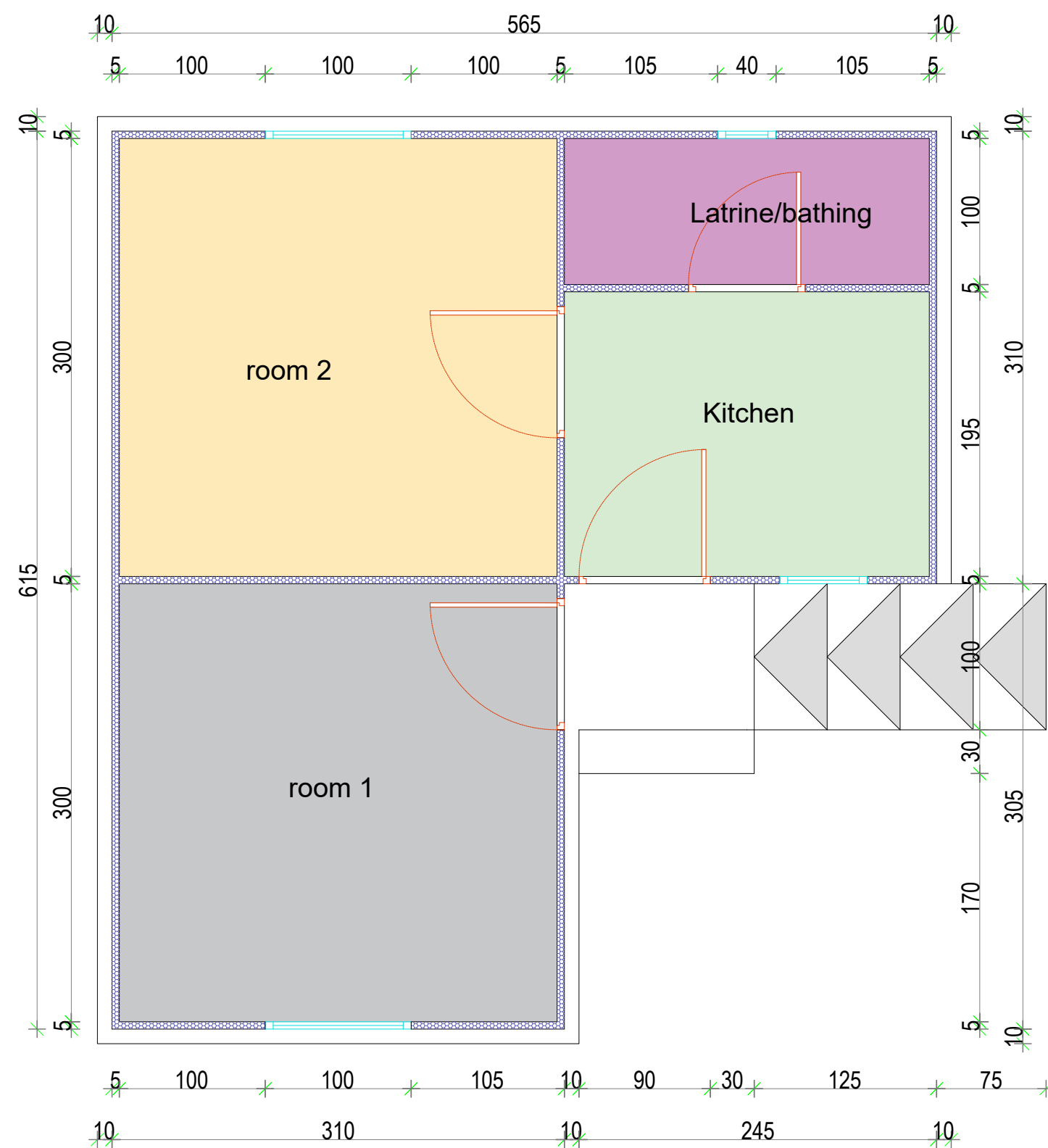
For more details see the 3D-video [Here](#)

 NW SYRIA X-BORDER SHELTER/NFI CLUSTER Coordinating Humanitarian Shelter and Settlements	AVERAGE SIZED FAMILY SHELTER		SUMMARY SHEET	P32	
	Date :	May 2024			P31
	Checked by :	SNFI Cluster team			Scale :

Dignified shelter-For average size family
Prefabricated Shelter Unit



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P38	ROOF PLAN
P39	BASE DETAILS
P40	ELEVATION 1&2
P41	SECTIONS A&B
P42	BOQ
P43	SUMMARY SHEET

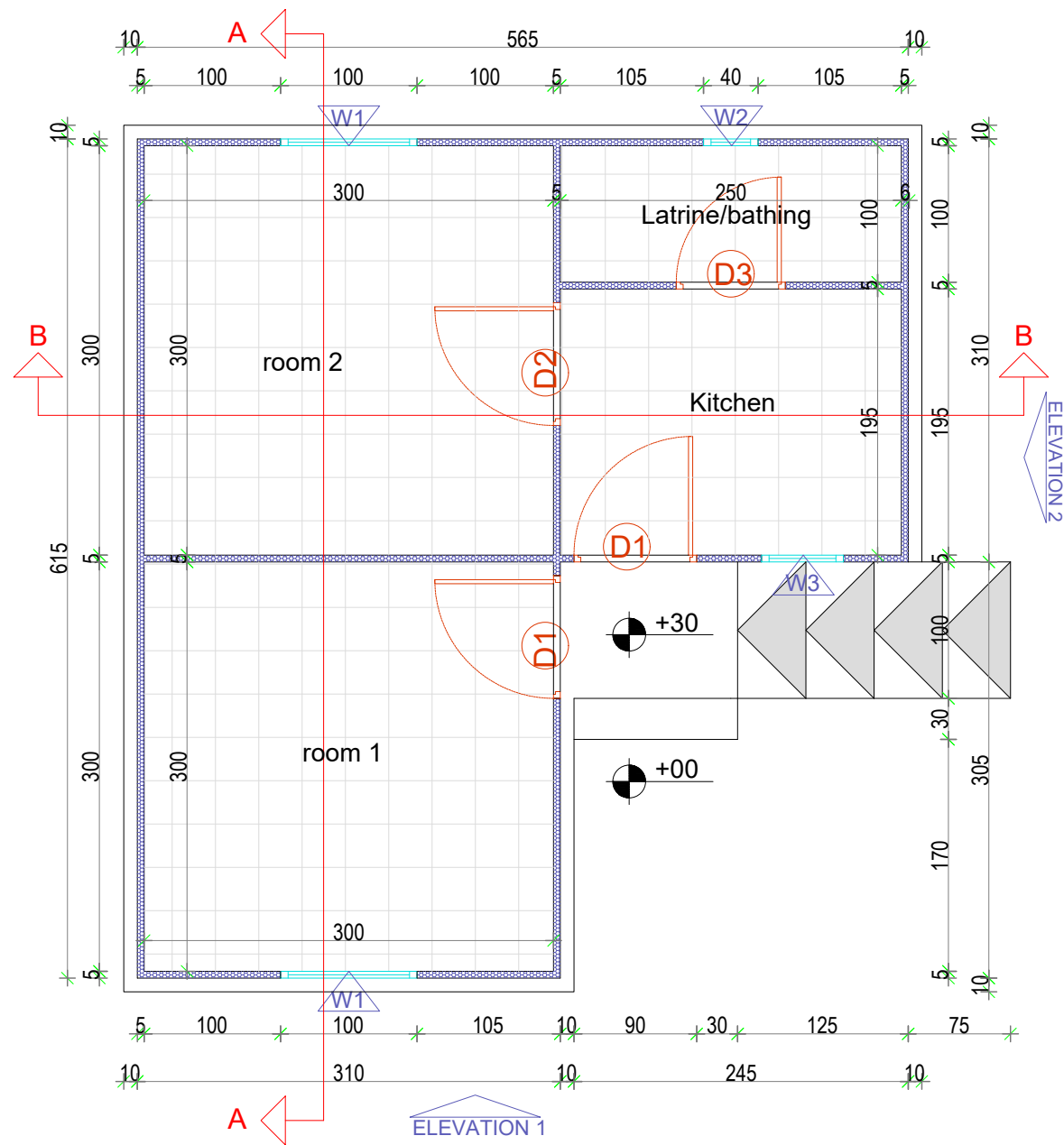


TYPE UNIT 4





SINGLE UNIT



SUMMARY INFORMATION

Covered living space in m2 (excluding separate WASH facilities or separate cooking areas and private enclosed outdoor spaces)	18 m2
Area of WASH facilities	2.5 m2
Area of kitchen facilities	4.9 m2
Private outdoor area	No
Household private WASH facilities	Yes
Household cooking facilities	Yes
Materials	Base: Concrete mixture with crushed stone. Walls: Sandwich panel Roof: Sandwich panel Main door: Metal and sandwich panel Internal doors and windows: PVC
Time to build	5 Days
Anticipated life span	5 years
Total cost	4000 USD
Cost per m2	157 USD

DOOR SCHEDULE

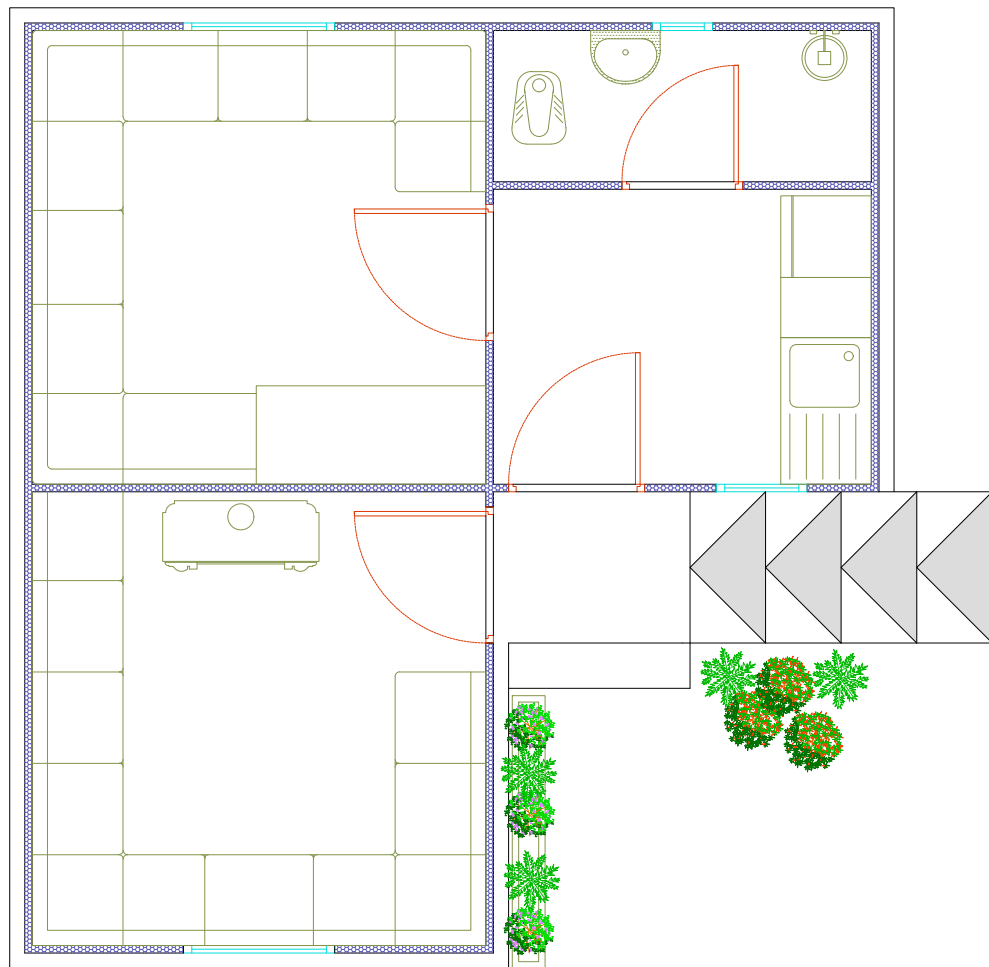
Mark	Count	Width	Height	Martial
D1	2	90	200	Metal
D2	2	90	200	PVC
D2	1	80	200	PVC

WINDOWS SCHEDULE

Mark	Count	Width	Height	Sill Height	Martial
W1	2	100	110	90	PVC
W2	1	40	40	160	PVC
W3	1	60	80	120	PVC

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GROUND PLAN
1:50

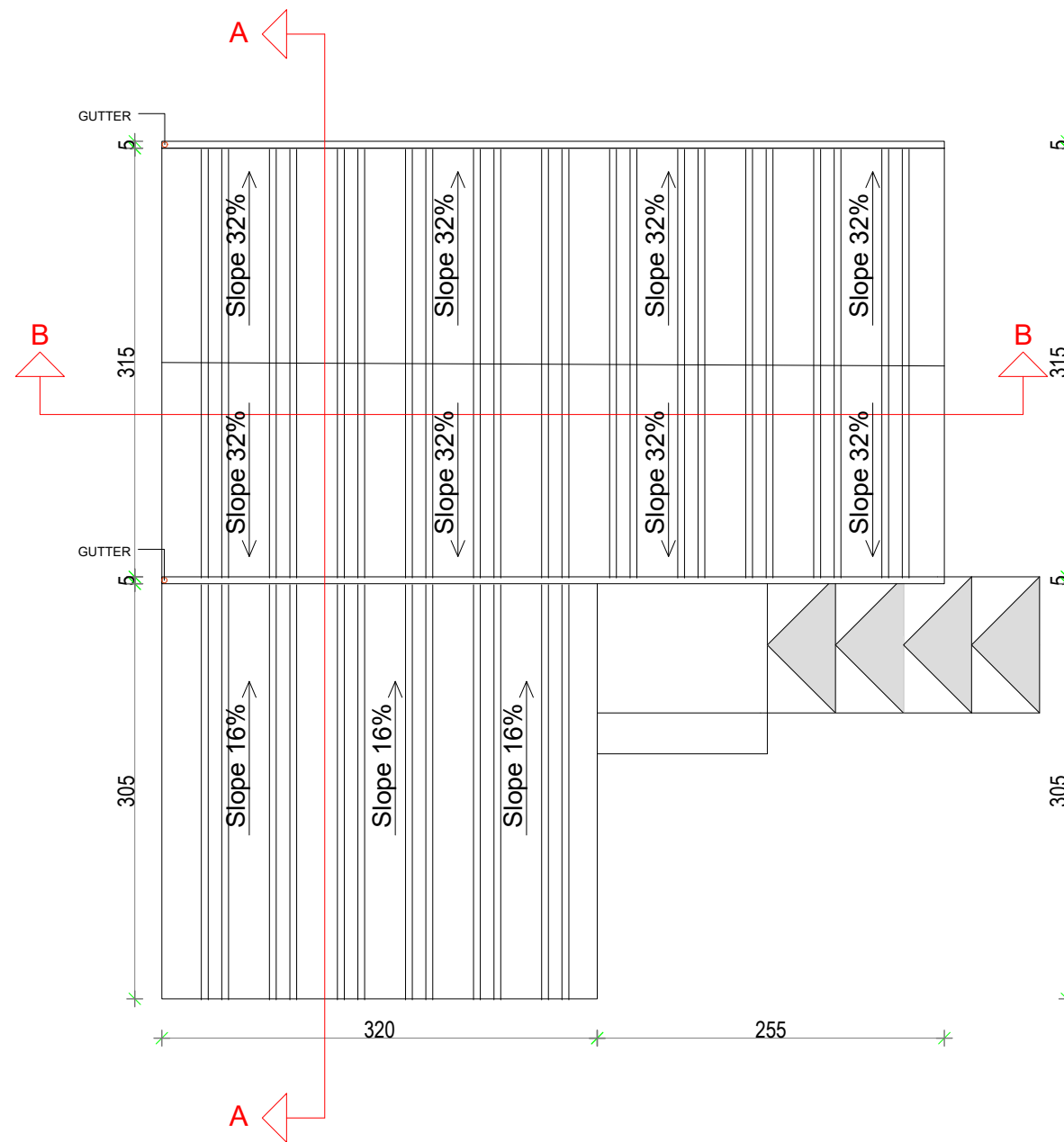


P37

FURNITURE PLAN

1:50

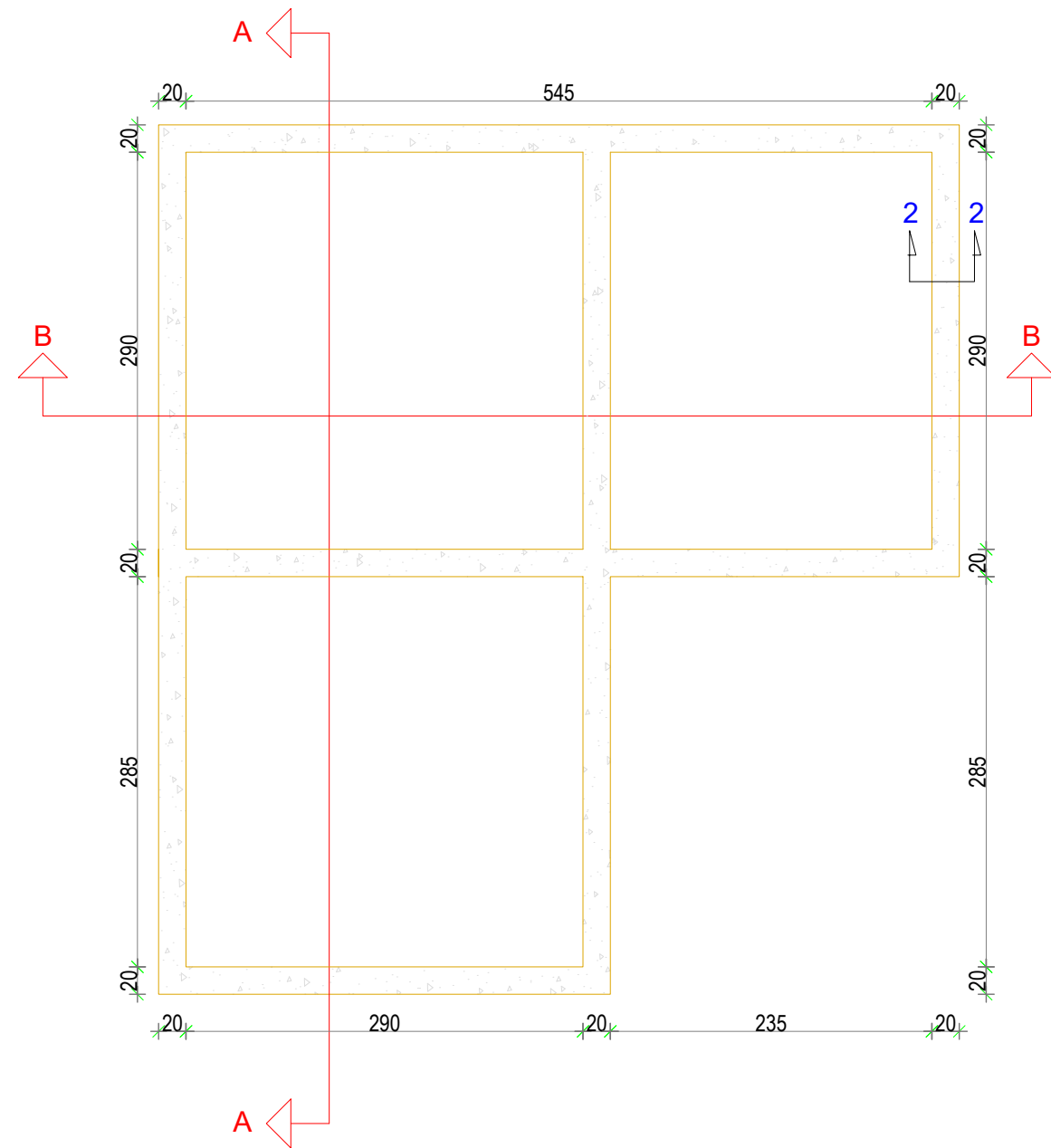




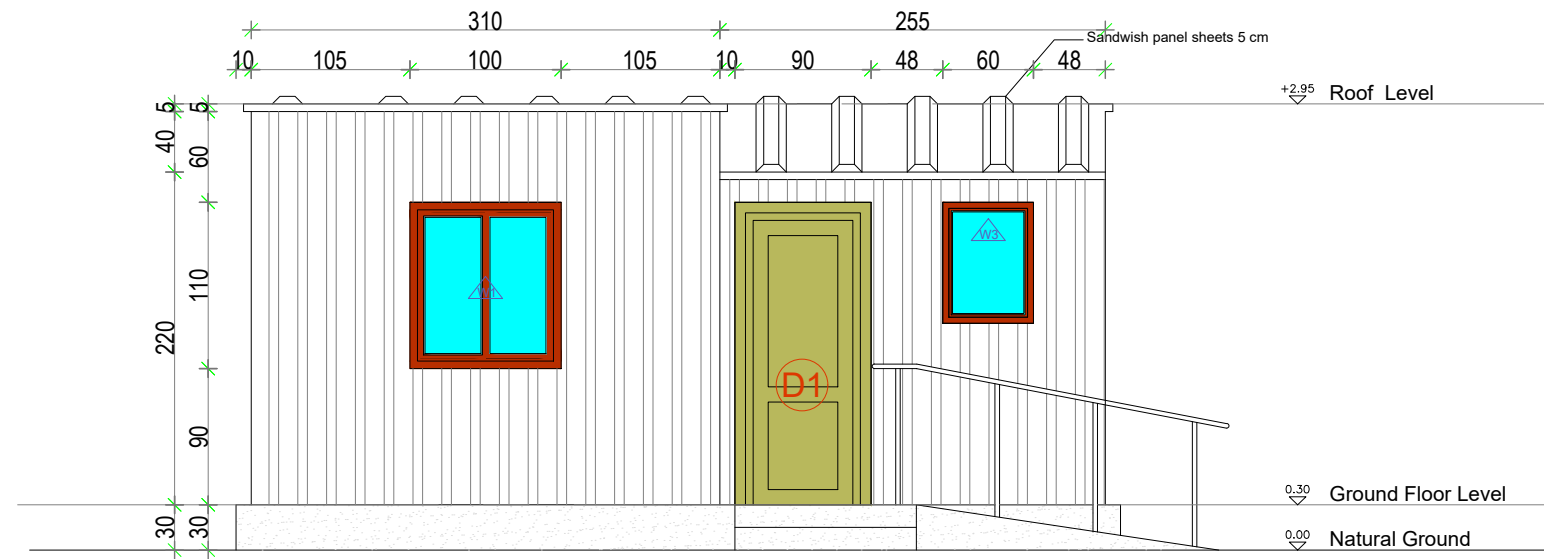
P38

ROOF PLAN
1:50

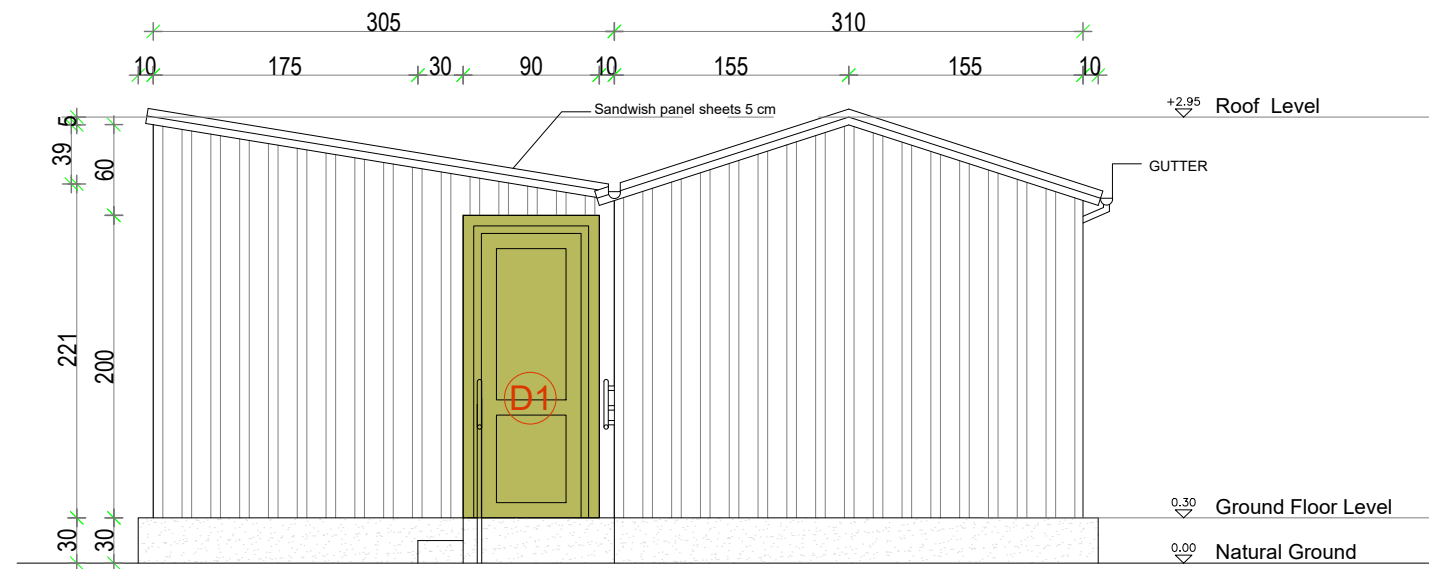




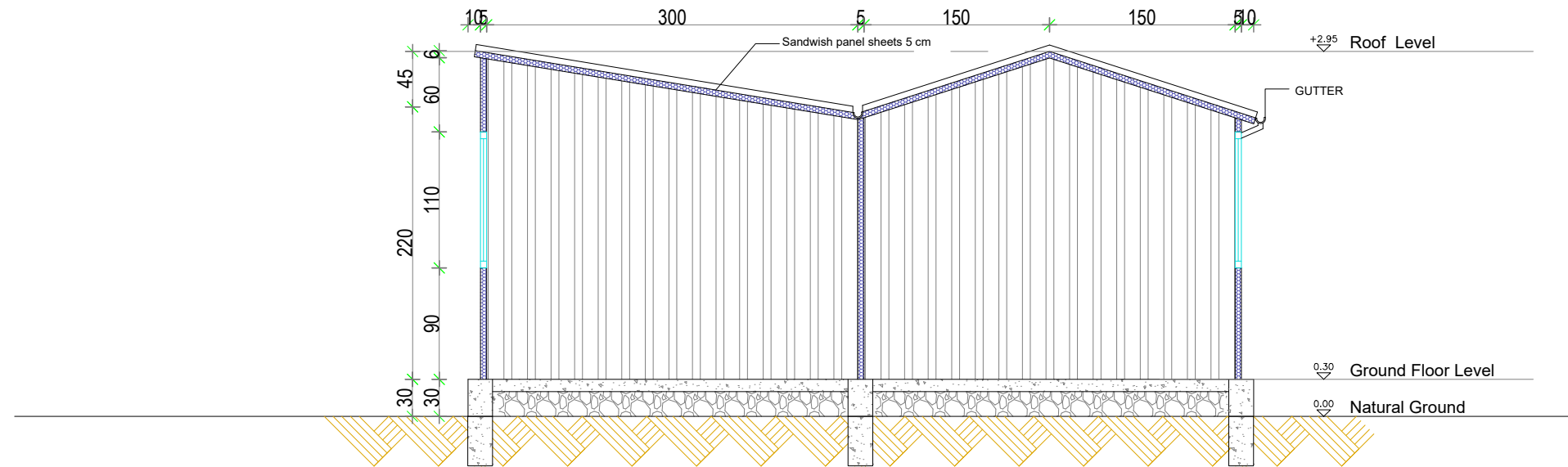
P39 BASE DETAILS
1:50



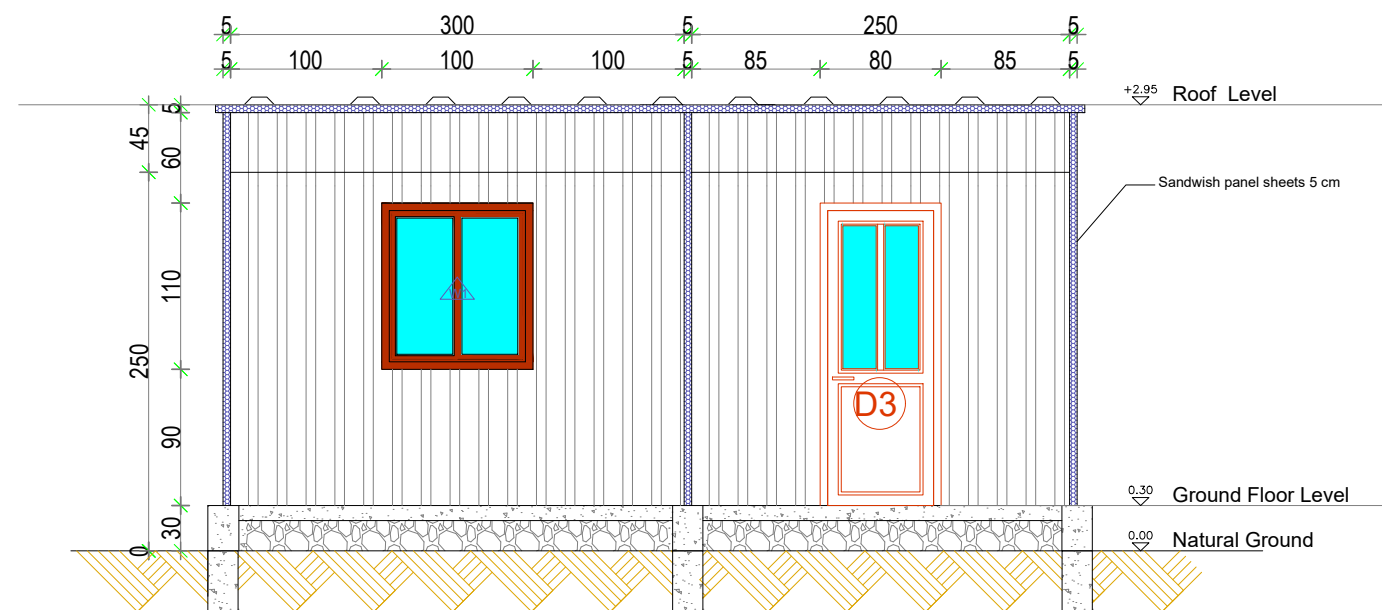
P40 ELEVATION 1
1:50



P40 ELEVATION 2
1:50



P41 SECTION A
1:50



P41 SECTION B
1:50

BOQ-Dignified shelter/Prefabricated Shelter Unit - APPROXIMATED				
#	ITEM	DESCRIPTION	UNIT	QUANTITY
1	CONCRETE BASE			
1.1	BEDDING	UNDER SLAB ON GRADE - gravel with a size between 0 to 5 cm	M3	5.50
1.2	REINFORCED CONCRETE	(20*40) CM - GROUND BEAMS	M3	2.12
1.3	PLAIN CONCRETE	(5) CM THICKNESS - SLAB ON GRADE - 26 m2 area	M3	1.30
2	SHELTER STRUCTURE Including WASH Facilities			
2.1	PUR SANDWICH PANELS FOR ROOF	(3) RIBBED POLYURETHANE ROOF PANEL (PUR) WITH ALL NEEDED ACCECORIES FOR INSTALLING (SCREWS, etc.) (40) MM INSULATION THICKNESS (0.35) MM INTERNAL RAL 9002 Prepainted galvanized steel (0.45) MM EXTERNAL RAL 9002 Prepainted galvanized steel DENSITY (40) (+ -) (2) KG/M3 FIRE CLASS (B S2 d0) (TS EN 13501-1).	M2 SURFACE AREA	34.00
2.2	PUR SANDWICH PANELS FOR WALL	POLYURETHANE WALL PANEL (PUR) WITH ALL NEEDED ACCECORIES FOR INSTALLING (SCREWS, etc.) (40) MM INSULATION THICKNESS (0.35) MM INTERNAL RAL 9002 Prepainted galvanized steel (0.45) MM EXTERNAL RAL 9002 Prepainted galvanized steel DENSITY (40) (+ -) (2) KG/M3 FIRE CLASS (B S2 d0) (TS EN 13501-1).	M2 SURFACE AREA	68.76
2.3	Steel Frame	Galvinized Steel (2 MM Thickness)	KG	450.00
2.4	Fixings	Bolt, Screw, EPDM Gasket, Silicone	LS	1
3	FITTINGS AND DOORS			
3.1	Metal chimney outlet	Metal collar and cap for flue hole (4-6 inch)	pc	2
3.2	Main Door	POLYURETHANE WALL PANEL (PUR) DOOR. As per wall specification.	pc	2
3.3	PVC Windows and Doors	(PVC) doors and Windows with frame, first class white color. Section of structural parts min. 6 cm and 2 cm for panels; PVC material should include 1 mm steel along the section, with frame from same specifications, first class metal lock, four metal hinges, first class metal handles, embossed glass thickness 3.5 mm, with thick good quality adhesive cover sheet and PVC lower panel.	m2	8.1
3.4	Squat toilet	CERAMIC squat toilet with all necessary accessories	Pc	1
3.5	Squat Tap	1\2 inch coppered-core	Pc	1
3.6	Wash Basin	CERAMIC Ceramic washbasin (50*40cm) with pedestal, copper drain and hose	Pc	1
3.7	Handwash Water Tap	stainless steel tab, coppered-core, with neck (single input faucet)	Pc	1
3.8	Shower	Two taps shower head coppered-core along with the hot water-cold water mixer, including a water hose/column	Pc	2
3.9	Shower Drainage Hole & Cover	Stainless steel with PVC cover	Pc	2
3.10	Kitchen Sink	STAINLESS STEEL 40 X 60CM one-piece sink, marble 1 mm and concrete layer; the overall thickness is no less 4.5 cm; size 60*120 cm with necessary connections	Pc	1
3.11	Marble Concrete Table	FOR SINK kitchen table (for sink) of 1 cm marble layer and min. 4.5 cm concrete layer (60 cm width) fixed by marble adhesive	ML	1
3.12	Marble Concrete Stand (stone for sink stand)	4 cm stone (width 60cm and height 80-90) for sink standing	Pc	3
3.13	Water supply pipe	drinking water pipelines (PPR) 1/2 inch 20 bar	m	15
3.14	Sewerage pipe	4" wastewater pipelines (PVC) min 2.5mm-thick	m	8.4
3.15	Water tank	500 litre 500 litre, galvanized steel water tank, 1.2 mm thickness with metal stand and base	pc	1
4	LIGHTING SYSTEM			
4.1	SOLAR LIGHTING	SOLAR LIGHTING SYSTEM 1X EXTERNAL SOLAR LIGHTING POINT ABOVE THE DOOR. 4X INTERNAL SOLAR LIGHTING IN LIVING SPACE, KITCHEN AND BATHROOM.	Lump Sum	1

For Excel File Click [Here](#)

Prefabricated Shelter Unit

- **Living area and WASH facilities:**
 - Walls: Sandwich Panel with Metal Galvanized frame
 - Roof: Sandwich Panel with Metal Galvanized frame

This shelter type can be constructed using locally available skills and materials. Installation of the shelter should be conducted through an experienced contractor as it requires skilled labour and supervision.

In the example provided, the frame is made of steel, which provides strength and stability to the shelter. The main steel structure is made of square tube 80*80*2 mm, in addition to the columns bolted to concrete bases **40*20 cm** concrete caliber 300 kg/m³; which makes the unit resistant to earthquakes. Sandwich panels, comprising of high-density insulating material, are used for walls and roofs, providing superior insulation against harsh weather conditions prevalent in both winter and summer and lower risk of harm from earthquakes compared to concrete. These materials are carefully chosen to withstand the test of time, reducing maintenance needs, and ensuring the well-being of beneficiaries while minimizing environmental impact through their efficiency.

- **External wall and roof specifications**
 - Preferable metal sheet 0.3 to 0.8 mm thickness
 - Foam panel thickness minimum 40 mm between metal sheets
 - Foam density minimum 38 kg/m³
 - Fire resistance: European standard Fire Class, minimum B2 fire resistance.

The option is to add two iron holes in the walls for the chimney of the heater, a hole in each room.

- **Water proofing:** The shelter includes effective waterproofing measures to protect against water infiltration. Joints must be sealed effectively using flashing at vulnerable points. Proper drainage systems, including downspouts and drains, should be installed to channel rainwater away from the shelter. Rainwater gutters should be incorporated into the roof design.
- **Maintenance requirements:** Regular inspections may be needed to ensure the structural integrity, and any necessary repairs or replacements should be conducted promptly.
- **Can be disassembled & portable or not?** Compared to the other shelter material options, this shelter can more easily be disassembled and portable, providing flexibility in relocation or storage.
- **Ability for expansion:** The design allows for the ability to expand, providing scalability for future needs. This could involve adding additional units or modifying the existing structure to accommodate changing requirements.
- Modality: Contractor-Cash for Shelter-Cash for work.

For more details see the 3D-video [Here](#)



NW SYRIA X-BORDER SHELTER/NFI CLUSTER

Coordinating Humanitarian Shelter and Settlements

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