

# Guidelines for Transitional Shelter Construction

Jijiga - Somali Region, Ethiopia

2017 - 2020



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<b>Time period covered</b>	<i>October 2017 to 31 December 2020</i>
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*Implementation of the proposed shelter structures in this Transitional Shelter Guidelines will depend on availability of funds.*

## Table of Contents

<b>1. Introduction .....</b>	<b>3</b>
<b>2. Refugee camps.....</b>	<b>3</b>
<b>3. Objectives.....</b>	<b>3</b>
<b>4. Planning and implementation.....</b>	<b>4</b>
<b>5. Methodology.....</b>	<b>4</b>
<b>5.1. Stakeholders and their roles .....</b>	<b>4</b>
<b>5.2. Guiding principles .....</b>	<b>5</b>
<b>5.3. Protection vulnerability and beneficiary selection criteria.....</b>	<b>5</b>
<b>a) Protection vulnerability criteria and beneficiary selection criteria for shelter construction without contribution by the families:.....</b>	<b>5</b>
<b>b) Beneficiary selection criteria with contribution by the families:.....</b>	<b>6</b>
<b>5.4. Shelter construction .....</b>	<b>6</b>
<b>5.5. Skill training .....</b>	<b>7</b>
<b>5. Work plan.....</b>	<b>7</b>
<b>6. Budget .....</b>	<b>7</b>
<b>7. Annexes.....</b>	<b>10</b>
<b>I. Camp overview .....</b>	<b>11</b>
<b>II. Camp layout Awbarre refugee camp .....</b>	<b>12</b>
<b>III. Camp layout Sheder refugee camp .....</b>	<b>13</b>
<b>IV. Drawings 1.....</b>	<b>14</b>
<b>V. Drawings 2.....</b>	<b>15</b>
<b>VI. Drawings 3.....</b>	<b>16</b>

## 1. Introduction

These guidelines for transitional shelter construction in the Jijiga camps are meant to cover the period from 2017 to the end of 2020, and shall guide the UNHCR shelter and settlement activities in the refugee camps around Jijiga, Somali Region, based on the directions set out by the UNHCR/ARRA Shelter Strategy 2017 - 2020.

For a start, the guidelines apply to two of the three refugee camps in Jijiga namely, Aw-barre and Sheder. A shelter solution for the third refugee camp, Kebribeyah, will be considered when there is better clarity on the future of the camp in view of implementation of local integration as pledged by the Government of Ethiopia. Aw-barre and Sheder refugee camps are located at 43.21610 E /9.78330 N and 43.13000 E/9.70000 N, respectively in the Ethiopian Somali National Regional State. Aw-barre and Sheder are the nearest Woreda and Kebele adjacent to the respective refugee camps respectively. The nearest major town is Jijiga which is 70 km from Aw-barre refugee camp and 52km from Sheder refugee camp. Camp planning has been undertaken for Aw-barre and Sheder refugee camps, which were established in 2007 and 2008 respectively.

The existing shelters in both camps are constructed from plastic sheets, wooden sticks, cloths and some plastered mud wall. The life span of these shelters depends on frequent maintenance of the construction materials like plastic sheet, wooden stick and cloths. However, UNHCR Sub-Office Jijiga (SOJ) was unable to distribute plastic sheets to the refugees since 2012 due to budget constraints, leading refugees to use their own cloth to cover their roofs and degrade the forest by using wood in order to maintain their shelter, which is not durable and need frequent replacement.

UNHCR, in collaboration with ARRA, SEE and the refugee community, started constructing transitional shelters in Aw-barre and Sheder refugee camp in 2013.

## 2. Refugee camps

Camps, population and gaps	Sheder	Awbarre	Kebribeyah
Year of camp establishment	2008	2007	1991
Refugee origin	Somalia	Somalia	Somalia
Individuals	10,939	11,880	14,369
Households	2,242	1,879	2,078
Transitional shelter, Concrete Hollow Block	233	233	-
Transitional shelter, Mudplastered	-	-	10
Shelter gap	2,009	1,646	2,068
Shelter partner	Safe the environment Ethiopia (SEE)	Safe the environment Ethiopia (SEE)	Non

## 3. Objectives

The main objectives of the improved shelter pilot project are:

- To provide transitional shelters, which protect refugees from the elements like rain, wind, animals, theft and flood;
- To ensure the dignity and privacy of parents and children, especially for large size families.
- To provide adequate shelters for identified vulnerable groups.
- To reduce deforestation of the environment.

#### 4. Planning and implementation

As Cash-based interventions, CBIs, have been selected as a modality for shelter construction in the Jijiga camps, these guidelines should be read in conjunction with the cash based interventions Standard Operating Procedures (SOPs) produced by UNHCR on Jan 01-2018. The CBIs SOPs describe the process of implementation of the shelters based on resource transfer to the target refugees to purchase shelter construction materials from the local markets either through cash transfers or through vouchers, including the cash component to be provided to the shelter assistance beneficiaries based on the modalities being put in place, i.e. refugees contributing or not contributing to construction, and the roles of each stakeholder in the provision of shelter support to refugees.

The transitional shelters will be constructed from Concrete Hollow Blocks [CHB]. In this project the following main activities will be covered within the allocated budget

- Construction of stone masonry foundation;
- Production and Construction of hollow concrete block wall.
- Corrugated iron sheets roof cover including wooden truss.
- Production and fitting of doors and windows.
- Applying two coats of plastering for internal wall and pointing for external wall.
- Wooden panel lintel 20 x 2.5 cm can be used for window and door lintel beam.

#### 5. Methodology

All stakeholders will be involved in constructing and monitoring the transitional shelters. UNHCR, ARRA, Save the Environment Ethiopia, Refugee Central Committee (RCC) and the entire refugees are the stakeholders who will be involved in the implementation of the transitional (CHB) shelter construction and monitoring, including beneficiaries' selection in both Aw-barre and Sheder refugee camps.

All stakeholders are required to identify and select the beneficiaries within the first quarter of each implementing year- if possible within one month of the first quarter.

##### 5.1. Stakeholders and their roles

**UNHCR:** works closely with the implementing partners; allocates budgets; provides technical support and monitors the supervision work by assigning a construction engineer.

**ARRA:** Coordinates and supports the stakeholders in identifying and selecting beneficiaries'; verifies and approves the selected beneficiaries to complete the construction work according to an agreed plan and schedule.

**Shelter partner:** The partner will receive budget from UNHCR and will be involved in upstream and downstream activities of the CBI. The key responsibilities of the partner include:

- Ensureing that the implementation of the shelter voucher programme is in accordance with the UNHCR guidelines;
- Conducting household visits to identify shelters that are in need of repair and inform UNHCR accordingly.
- Conducting training and demonstrations on the use of the vouchers to access required shelter construction materials.
- Overseeing of availability and prices of construction materials on the market.
- Distributing vouchers for the shelter construction materials to the eligible refugees.

- Distributing cash for the targeted groups for the two approaches of shelter support.
- Arranging transport of construction materials for vulnerable households that need such support.
- Providing and supervising qualified personnel and ensuring adequate means necessary for the implementation and supervision of the operation and activities.
- Facilitating UNHCR programme monitoring; such as post-distribution monitoring and verification of each stage of construction to allow release of second vouchers.
- Providing technical expertise and supervision in the construction of the improved shelters.
- Implementing the complaints and feedback mechanism as described in the CBI SOPs.
- Dedicate a focal point to manage the day-to-day implementation of the shelter vouchers project. The IP focal point will be UNHCR's direct contact person for operational and technical issues.
- Reporting as agreed in the signed Project Partnership Agreement (PPA).

**RCC**, (Refugee Central Committee): assists the shelter working team by giving initial background information on refugees and participating in the beneficiary identification and selection process; create awareness on the importance of this project to the community and coordinate and register the beneficiaries.

**Refugees:** Those beneficiaries selected with contribution should at least construct a 4 m x 7 m two-room shelter from hollow concrete blocks. The cost of labour and other miscellaneous cost like floor finishing material will be covered by themselves since it is a cost sharing approach. The beneficiaries have to complete the following tasks with the provided basic tools and construction materials mentioned above:

- Construction of 40 cm wide stone masonry foundation not exceeding 60 cm;
- Production of Hollow concrete blocks.
- Construction of Hollow Concrete block walls.
- Putting corrugated iron sheet roof cover including wooden truss.
- Fabricating and fixing windows and doors from corrugated iron sheet and wooden pool.
- Applying two coats of plastering for internal wall and pointing or optional plastering to external walls.
- Compact the floor with hand compactor to make ready for floor finishing material.

## 5.2. Guiding principles

Reference is made to the National Shelter Strategy.

## 5.3. Protection vulnerability and beneficiary selection criteria

The 'protection vulnerability' as well as 'beneficiary selection criteria' outlined below form the basis of these Transitional Shelter Guidelines and are key for the shelter implementation in the various regions, including in Jijiga, Somali region.

### a) Protection vulnerability criteria and beneficiary selection criteria for shelter construction without contribution by the families:

1. Women at risk, such as female-headed households, single and/or separated, divorced and widowed women;
2. Children at risk, such as children-headed households, unaccompanied children, child parents, child spouses, children engaged in the worst form of labour and children associated with armed forces.
3. Survivors of trafficking, sexual and gender based violence, kidnapping, torture and trauma.

4. Older persons at risk, such as older persons with children, unaccompanied older persons, and older persons not able to care for themselves.
5. Persons with physical and mental disabilities.
6. Large family, i.e. +10 persons/fam.
7. Persons with critical medical conditions.

**b) Beneficiary selection criteria with contribution by the families:**

1. Capacity to contribute labour;
  2. Willingness to contribute labour.
  3. Large family, i.e. +10 persons/family.
  4. Agreement to follow the construction standards outlined in these Transitional Shelter Guidelines.
- Attention should be given to all different locations within the camp.

#### **5.4. Shelter construction**

Two different agreed set of criteria were drafted by all the stakeholders to select the beneficiaries in two different groups.

- **In the First group** are those vulnerable refugee households that cannot contribute labour to the construction of their shelters.
- **In the Second group** are those households that can contribute labour to the construction of their shelters.

Scope of work for both groups either directly by themselves or through hired labour will include:

- Excavation of trenches for masonry wall to depth not exceeding 60 cm;
- Construction of 40 cm wide masonry foundation.
- Backfilling around the foundation.
- Production of Hollow Concrete Blocks with minimum curing for five days.
- Construct Hollow Concrete Block walls and make sure each of the intersections and corner points interlock each other from both directions.
- Construct windows and doors lintel from 20 x2.5 cm wooden board.
- Apply two coats of plastering for internal and external walls or pointing (optional one of the two should be selected).
- Construct the roof truss. Use 12 mm diameter wooden pole for bottom horizontal and top inclined truss members and 8mm diameter for vertical and inclined truss members. Also use band iron to strengthen the connection of pole.
- Nail 8 mm  $\varnothing$  wooden pole or 5 x 7cm purline whichever is available on top of truss.
- Then nail the corrugated iron sheet on top of purlin to cover the roof.
- Prepare doors and windows on site and fix them.
- Use hand tools to compact the floor and prepare for floor finishing material either concrete floor or plastic mat.

### 5.5. Skill training

Training for interested youth groups on various construction works, such as masonry, carpentry, joinery, concrete hollow block production and construction as well as plastering and finishing works will be provided prior to and during the course of the construction. This approach is thought to be implemented by the relevant shelter partner and aims to reduce cost of the construction and creating livelihood opportunity for the relevant refugees.

### 5. Work plan

The work plan shown below is a guideline and draft work schedule per shelter.

Improved Shelter work Plan									
Sr.No	Description of activities	Days	Precedence activities	week 1	week 2	week 3	week 4	week 5	week 6
1	Trench excavation for masonry foundation	1.5		■					
2	Construction of Masonary foundation	2	1	■					
3	Production and curing of Hollow concrete block	6		■	■				
4	Construction of Hollow concrete block wall	4	3		■	■			
5	Plastering and pointing HCB wall	2	4			■			
6	Curing plaster wall at least 5 days	5	5				■		
7	Roof truss member preparation	1	6					■	
8	Construction of Roof Cover	1	7					■	
9	Production and fix window and door	1	8					■	
10	Compact the floor soil with hand tool compactor	1	9					■	
10	Contingency time extension for delay	5							■

### 6. Budget

The Transitional Shelter constructions will be addressed through the below two different approaches and according to the beneficiaries list, which is based on the protection vulnerability criteria as well as the beneficiary selection criteria.

**1) With contribution of labour by the refugees.**

**2) Without contribution of labour by the refugees.**

The refugees will access the construction materials through vouchers from pre-selected vendors for both of the situations. The implementing partner will cover the cost of labour for the vulnerable group. The detail cost per shelter is shown below for both cases.



## Part 1: Transitional Shelter with and without contribution of labor by the refugee families

Shelter with contribution					Exch. Rate		27
	Material description	Unit	QTY	Unit Rate	ETB	USD	
1	Corrugated Galvanized Iron Sheet (CGI 32)	pcs	28	234	6,552	242.67	
2	10-12 cm diam wooden pole (1 pcs =7m)	pcs	14	90	1,260	46.67	
3	8 cm diam wood pole (1pcs =4m)	pcs	10	71	710	26.30	
4	Purlin 5x4 cm	pcs	4	85	340	12.59	
5	Door and window hinges	pcs	8	21	168	6.22	
6	Door and window lock	pcs	4	29	116	4.30	
7	Cement (1 bag = 50 Kg)	bag	32	150	4,800	177.78	
8	Sand, 4 m3/truck	truck	4	1033	4,132	153.04	
9	Stone, 4m3/truck	truck	1	1278	1,278	47.33	
10	Nails different sizes	kg	8	66	528	19.56	
<b>Total Material</b>					<b>19,884</b>	<b>736.44</b>	
Shelter without contribution					Exch. Rate		27
	Material description	Unit	QTY	Unit Rate	ETB	USD	
1	Corrugated Galvanized Iron Sheet (CGI 32)	pcs	28	234	6,552	242.67	
2	10-12 cm diam wooden pole (1 pcs =7m)	pcs	14	90	1,260	46.67	
3	8 cm diam wood pole (1pcs =4m)	pcs	10	71	710	26.30	
4	Purlin 5x4 cm	pcs	4	85	340	12.59	
5	Door and window hinges	pcs	8	21	168	6.22	
6	Door and window lock	pcs	4	29	116	4.30	
7	Cement (1 bag = 50 Kg)	bag	32	150	4,800	177.78	
8	Sand, 4 m3/truck	truck	4	1033	4,132	153.04	
9	Stone, 4m3/truck	truck	1	1278	1,278	47.33	
10	Nails different sizes	kg	8	66	528	19.56	
11	Loading and unloading	LS	1	500	500	18.52	
<b>Total Material</b>					<b>20,384</b>	<b>754.96</b>	
<b>Total Labour</b>					<b>10,495</b>	<b>388.70</b>	

## Part 2: Summary of labour cost

Description		Unit	Qty	Unit Rate	ETB	USD
<b>A</b>	<b>Substructures</b>				Exch. Rate	<b>27</b>
	<b>Excavation &amp; Erathworks</b>					
1.1	Clear the site & remove top soil, average depth of 20 cm	m2	54	7	378.00	14.00
1.2	Trench excavation for masonry foundation, max. 50 cm depth	m3	8.26	35	289.10	10.71
1.3	Back fill excavated material if material quality allows, decision by site supervisor	m3	3.54	35	123.90	4.59
1.4	Cart away surplus excav. Material, max, 2 km from the site	m3	15.52	38	589.76	21.84
<b>Total Sub Structures</b>					<b>1,380.76</b>	<b>51.14</b>
<b>2</b>	<b>Masonry work</b>					
2.1	40cm thick stone masonry foundation wall bedded in cement a) below and above ground level	m3	6.608	180	1,189.44	44.05
<b>Total Sub Structures</b>					<b>1,189.44</b>	<b>44.05</b>
<b>B</b>	<b>Superstructure</b>					
<b>3</b>	<b>Blockwork</b>					
3.1	20x20x40 cm hollow concrete block wall bedded in cement mortar	m2	60.73	20	1,214.60	44.99
3.2	15x20x40 cm hollow concrete block wall bedded in cement mortar	m2	10.11	20	202.20	7.49
3.3	Production of HCB 20x20x40cm & 15x20x40 cm	pcs	920.92	1.5	1,381.38	51.16
<b>Total Sub Structures</b>					<b>2,798.18</b>	<b>103.64</b>
<b>4</b>	<b>Roofingworks</b>					
4.1	Roof cover G32 corrugated galvanized iron sheet nailed to 5cmx 7cm zigba/wooden purlin c/c 90cm including roof ridge cover. roof cover measured in horizontal projection truss and purlin measured separately	m2	48	18	864.00	32.00
<b>Total Sub Structures</b>					<b>864.00</b>	<b>32.00</b>
<b>5</b>	<b>Carpentry / Joinery</b>					
5.1	<b>Carpentry</b>					
	All structural members shall be painted 2 coats of anti termite solution each truss shall be firmly fixed to wall with thick band					
	a) Upper and lower cords member size 10 -12 cm dia.	m'	91	1.5	136.50	5.06
	b) Vertical & diagonal members size 8-10 cm dia.	m'	70	1.5	105.00	3.89
	c) 7x5 cm zigba wooden purlin or 8 mm diam wooden pool	m'	80	1.5	120.00	4.44
<b>6</b>	<b>Joinery</b>					
6.1	a) Supply and fix on site wooden doors covered with corrugated iron sheet size 90cm x 210cm	No	2	150	300.00	11.11
	b) Supply and fix on site wooden window covered with corrugated iron sheet size 70cm x 70cm	No	2	150	300.00	11.11
<b>Total Sub Structures</b>					<b>961.50</b>	<b>35.61</b>
<b>Total 1-6</b>					<b>7,193.88</b>	<b>266.44</b>
<b>7</b>	<b>Plastering &amp; Finishing</b>					
7.1	Apply two coats of plaster in cement mortar 1:3 to all internal wall surface	M <sup>2</sup>	74	25	1,849.95	68.52
7.2	Apply pointing to HCB wall in cement sand mortar 1:3 mix to all external HCB wall.	M <sup>2</sup>	66	22	1,452.00	53.78
<b>Total Sub Structures</b>					<b>3,301.95</b>	<b>122.29</b>
<b>Total BoQ 1-7</b>					<b>10,495.83</b>	<b>388.73</b>

## Part 3: Cost analysis and comparison

Shelter Cost comparison and analysis				
	Cost analysis	Traditional emergency shelter	Transitional CHB Shelter	
		Cost in USD	Cost in USD	
		with sticks, mud plaster, PVC roof cover	with contribution by refugee families, labour	without contribution by refugee families, labour
1	Minmum durability of shelter without maintainance	6month	5 year	5 years
2	Cost of new construction	387.93	736.44	1,143.67
3	Maintenance cost per 2 years	194.44	no maintenace required	no maintenace required
4	Maintenance cost per 5 years	194.44 per 2 year*2 = 388.88 USD	no maintenace required	no maintenace required
5	Total cost of shelter in 5 years	388.88 + 387.93 = 776.81 USD	<b>736.44</b>	<b>1,143.67</b>
Additional considerations for analysis				
1	Living conditions for refugees, e.g dignity and privacy	One single room does not provide privacy	Two rooms ensures privacy of partners with children	Two rooms ensures privacy with children
2	protection from weather elements	less resistant	high resistance	high resistance
3	enivronmental degradation and deforestation	very high	no effect	no effect
4	Potential health problem	it is to transmit the disease	it is possible to have separete room	it is possible to have separete room
5	Educational effect	it is difficult childrens to study and wait the partners to sleep	at least students can use their room to study	at least students can use their room to study
6	Refugees satisfaction	less satisfied	very satisfied	very satisfied
7	Opportunity for livelihood and skill development	less	very high	very high
8	Peaceful co-existance with host community	create less market for host community suppliers	create high market demand for host community suppliers	create high market demand for host community suppliers

Annotation: The above shelter cost analysis and comparison, incl. the additional considerations, suggests that the CHB (Concrete Hollow Block) shelter approach as stipulated in this *Transitional Shelter Guidelines* is coherent with the *National Shelter Strategy*.

## 7. Annexes

### I. Camp overview

### II. Camp layout Awbarre refugee camp

### III. Camp layout Sheder refugee camp

### IV. Drawings 1

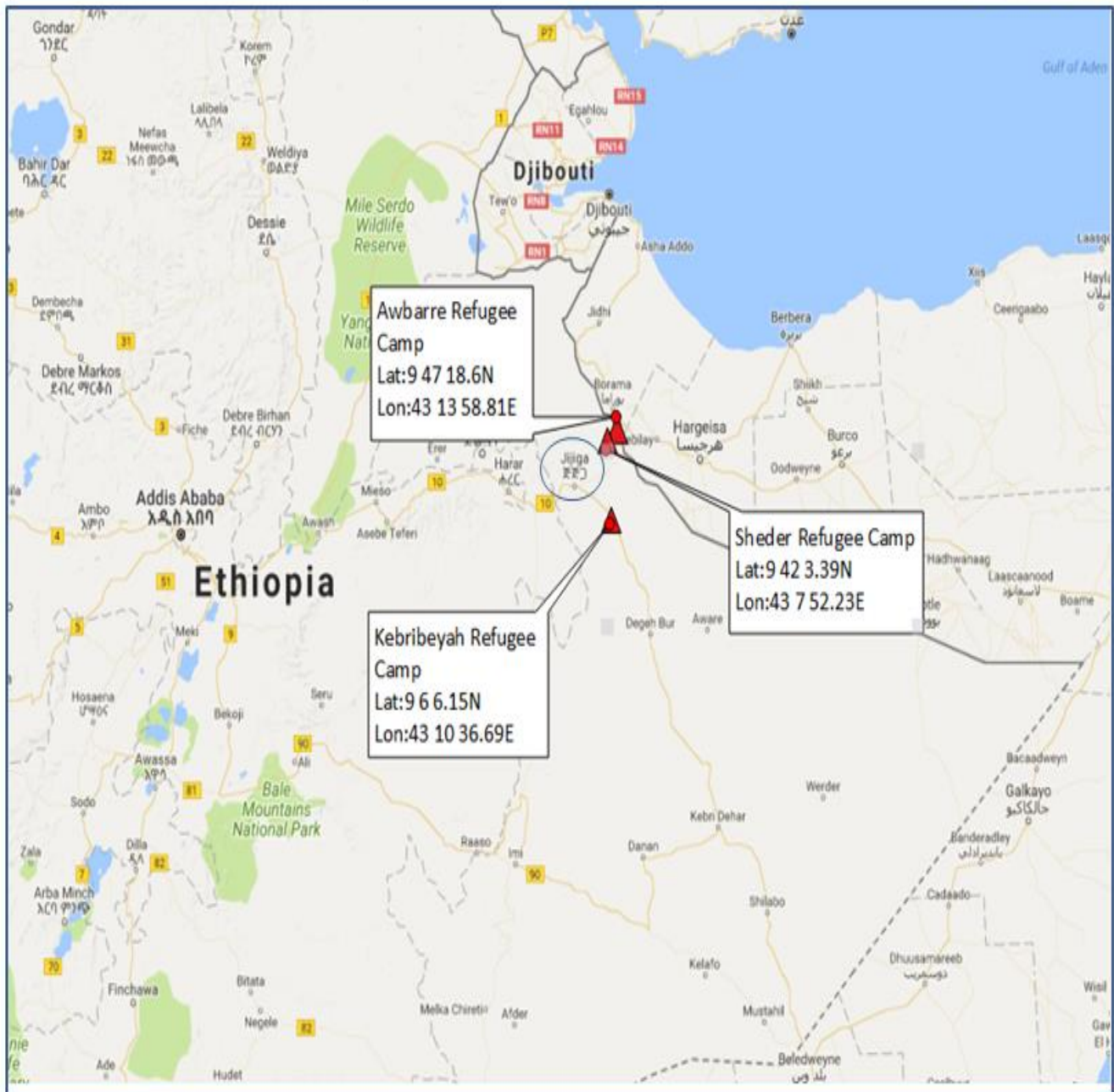
### V. Drawings 2

### VI. Drawings 3

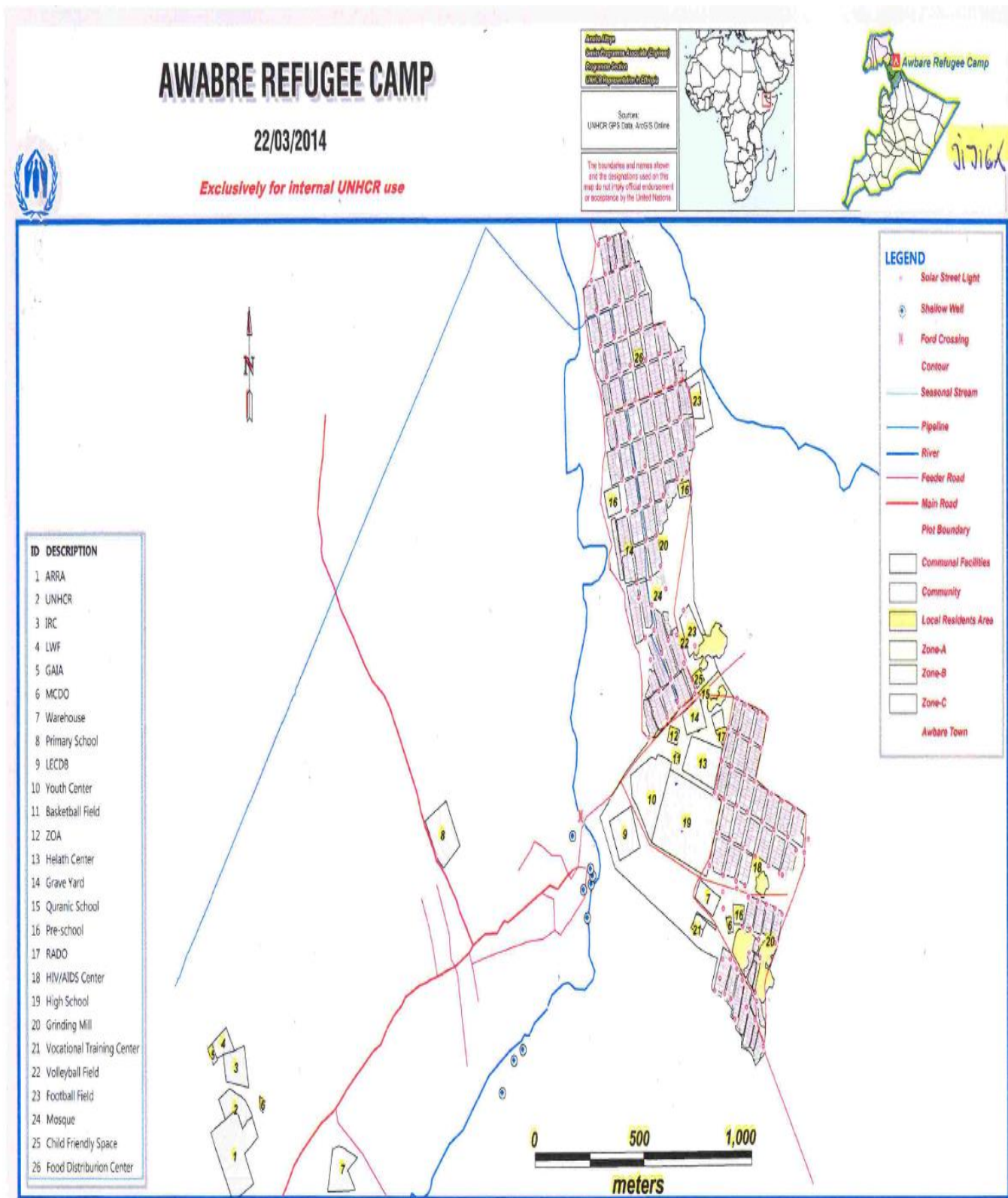
I. Camp overview

Ethiopia UNHCR Sub Office Jijiga

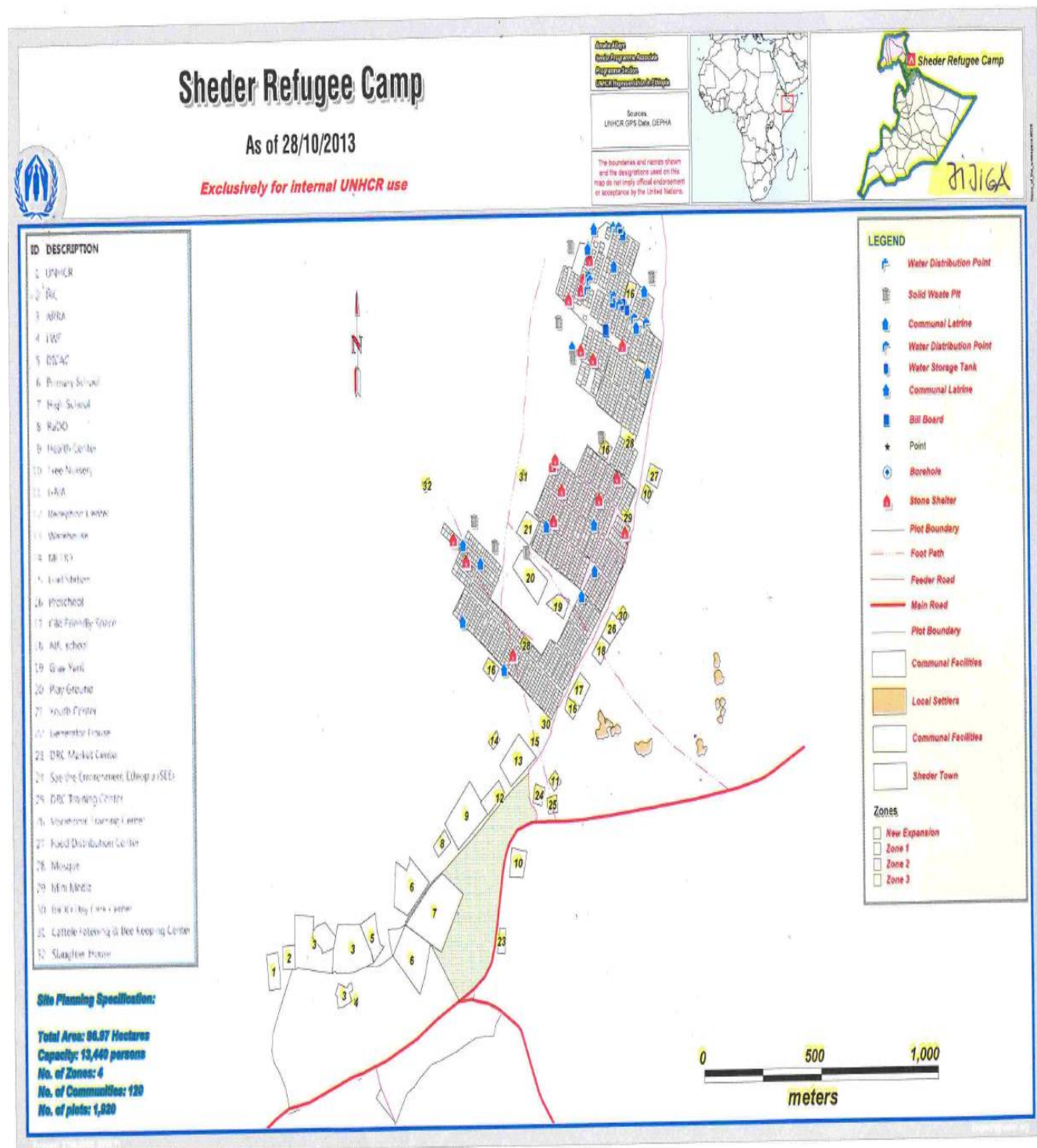
Camps Overview, 2017



II. Camp layout Awbarre refugee camp



III. Camp layout Sheder refugee camp



IV. Drawings 1

**Ethiopia East Region Jijiga - Melekadida  
Improved Hollow Concrete Block /HCB/ Shelter Type**

**Floor Plan**

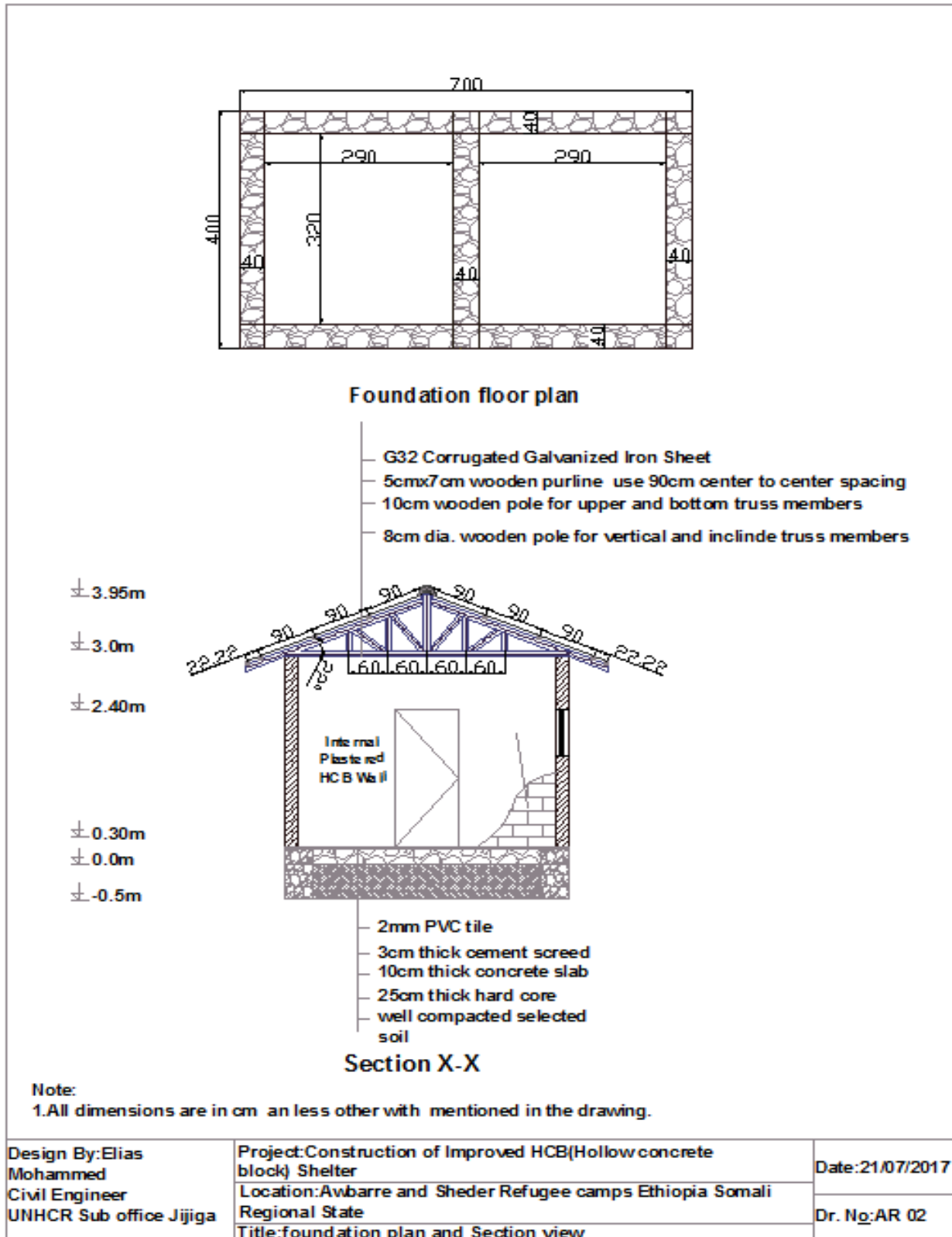
**Front View**

**Left side View**

**Section X-X**

<p><b>Notes-</b></p> <p>1. All drawings are correct unless otherwise stated.</p> <p>2. All materials for construction must be checked and approved before commencing.</p> <p>3. Design work has provided with bearing dimensions with HCB and approval of the engineering in site condition.</p>		<p style="text-align: center;"><b>Improved Hollow Concrete Block/HCB</b></p> <p style="text-align: center;"><b>Jijiga Melekadida Operation</b></p> <p style="text-align: center;"><b>Ethiopia Somali Regional State</b></p>	<p><b>Title: Improved Hollow Concrete Block Shelter Design for Jijiga Somalia IDP Camps</b></p> <p>Drawn by: <b>Musa Mohamed</b>      August 2017</p> <p>Scale: <b>As-shown to 1/20-00000</b></p> <p>Approved by: _____</p>
<p>Site: _____</p> <p>Drawn/Approved: _____</p> <p>Scale: _____</p> <p>Approved: _____</p>			

V. Drawings 2





VI. Drawings 3

