



**Republic of Maldives**

**EMPLOYER'S REQUIREMENT**

**for**

**Design and Construction of  
100 Housing Units at Th.Vilufushi**

**Ministry of National Planning, Housing and Infrastructure  
Issued on: January 2021**

## **1.0 Employers Requirement**

### **1.1 Scope of Works**

The project consists of two components

#### **1 Remedial works and Completion of 64 Housing Units**

- a) This project includes Housing units terminated at different stages of construction. The stages are categorized into Red (48 units) and Green (16 units) respectively based on the progress of work. A typical floor plan is given in annex 1. Progress of each of these housing units is presented in annex 2. Green Category is the nearest to completion. Location of these units are given in annex 3
- b) The Works shall be carried out in accordance with the approved drawings, Bill of Quantities and standard technical specifications
- c) The Contractor shall be responsible for acquiring all the materials required for the completion of the housing units.
- d) 64 housing unit completions is a continuation of a partially completed structures, thus the Contractor is required to do a detailed assessment of the remaining works when submitting the bid.
- e) Contractor is required to submit detailed drawings for the existing structures. The contractor shall submit the raw soft copies of all the below mentioned detailed design documents
  - a. Architectural drawings
  - b. Electrical drawings including wiring diagrams, lighting fixtures, control panels, etc.
  - c. Mechanical, including provisions for air conditioning and/or ventilation systems
  - d. Plumbing layout including pipe diagrams and schedules, fixtures, etc.
- f) The Works shall be carried out in accordance with the approved drawings, Bill of Quantities and standard technical specifications
- g) The Contractor shall be responsible for acquiring all the materials required for the completion of the housing units.
- h) Contractor is required to propose appropriate solutions and submit work methodology for repair of the existing structures which includes mould remediation, cracks, corrosion of exposed steel bars and repair of damp patches.

- i) Contractor is required to remove all fixed elements of the units which are not complying structural standards
- j) All purlins and rafters which are defected must be removed and replaced with an appropriate material and specification
- k) All existing roofing sheets must be removed and replaced with an appropriate Lysaght sheets or equivalent specification
- l) All Rockwool insulations which are defected must be removed and replaced with an appropriate material and specification
- m) Finishing works are to be carried out as per sub-clauses 1.2.1
- n) An elementary Bill of Quantities for the housing units are required to be submitted by the bidders as per the format attached at annex 6
- o) Final drawings, detailed BOQ and technical specifications shall be provided by the Contractor and shall include provisions for all civil, architectural, structural, electrical, plumbing and firefighting disciplines, once detailed drawings are approved by the employer.
- p) Contractor is required to remove and transport all construction waste and debris including the existing construction waste and debris to a waste management facility such as K.Thilafushi or a facility arranged by island council.

## **2- Design and Construction of 36 Housing Units**

The project requires design and Construction of 36 single Housing Units. Proposed location of the housing units are given on annex 4. The development area is as per the given concept drawings given on annex 5. Setbacks, accessibility and such should be taken into consideration and the project should be designed and constructed in accordance with the local and internationally accepted building codes and standards.

### **2.1 Design and Preparation of Architectural, Structural and Services drawings, Bill of Quantities and Technical specifications**

- a. Design requirement are as follows;
  - Design and construction of 48 housing units
  - The Contractor shall accommodate for any amendments regarding the layout and the distribution of the blocks as requested by the Client.

- Site investigations including site surveying, soil investigation and appropriate geotechnical surveys where applicable and the reports are to be submitted for approval.
  - Prepare detailed architectural, structural, services drawings (electrical, plumbing based on the concept drawings provided.
- b. An elementary Bill of Quantities for the housing units are required to be submitted by the bidders as per the format attached at annex 7
- c. Concept and Final drawings, detailed BOQ and technical specifications shall be provided by the Contractor and shall include provisions for all civil, architectural, structural, electrical, plumbing and firefighting disciplines, once detailed drawings are approved by the employer.
- d. All plans and specifications must be in English.
- e. Design drawings, BOQ and detailed technical specifications shall include all considerations and details necessary for a builder to construct the Works, such as, but not limited to:
- i) Site Work, sewage disposal system, storm drainage, etc.
  - ii) Architectural, including plans, elevations, wall sections, construction details, hardware and finishing schedules, waterproofing, sundries, etc.
  - iii) Structural, including framing and concrete reinforcement layout, bar schedules and bending diagrams, bearings and connection details, etc.
  - iv) Electrical, Security, and Communications including wiring diagrams, lighting fixtures, control panels, etc.
  - v) Mechanical, including provision for air conditioning and/or ventilation systems, as may be applicable.
  - vi) Plumbing, including pipe diagrams and schedules, fixtures, etc.
- f. For interior space management of the buildings, the Contractor shall maintain overall uses specified in the Specific Requirements. However Contractor may redesign any component of the building/s based on the Design team's recommendations, and subject to prior approval of the Employer.
- g. The Contractor shall make a minimum of seven amendments to the design proposed at no additional cost, upon receipt of comments and requests for the amendment of the prepared detailed drawings, the BOQ and the Technical Specification.
- h. The contractor shall submit the raw soft copies of all the detailed design documents,

including but not limited to drawings in AutoCAD format, the Technical Specifications in MS Word format, the BOQ and the Structural Calculations in MS Excel.

- i. The Contractor shall provide one hard copy of the finalized approved drawings complete with architectural checker stamp, structural checker stamp, along with all other permits and stamps required, from the relevant authorities.
- j. All the major materials, fixtures and fittings shall be submitted to the Client for approval prior to installation or application.
- k. The contractor shall submit a hardcopy of the BOQ and the Technical Specifications.
- l. The Contractor shall apply for and obtain the Environmental Impact Assessment (EIA) permit if required.

#### **2.1.1 General guideline:**

- a) **Electrical installation:** Wiring for lighting and power shall be concealed conduit except for spaces within DB's closet and area above false ceiling, which shall be exposed conduit/trunking. In each housing unit minimum of three electric sockets in each room and one data/media and telephone points shall be provided. All electrical wiring shall be in accordance with the guidelines set out by the State Electric Company Ltd (STELCO).
- b) **Fire Rating:** structural members and walls are to be designed to accommodate the requirement of the local fire department.
- c) **Fire Protection System:** Portable fire extinguishers
- d) **Soil Investigation:** Bidders shall carry out soil investigation at their own cost, prior to commencement of detail design of the sub-structure.
- e) **Site Visit:** The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.
- f) **Supervision, inspection & test plan:** the supervision, inspection and testing of the materials and works shall be carried out in accordance to normal industrial standards and practice, specifications, manuals and guidelines used in Maldives and as approved by MNPHI

**g) Earthing System:** shall be installed in accordance with the requirement of BS Code of Practice BS 7430, IEC 62305 and Rules and Regulations of “STELCO” and “MEA” to provide a low impedance earthing systems and connections for equipment earthing.

**h) Approval of Materials and Systems**

The materials and systems to be used in the building shall be approved by the Employer prior to use or installation.

**i) Luminaires**

Adequate lighting shall be installed and the illumination levels shall generally be in accordance to international IES and IEC standards.

Sitting Room / Dining Room / Kitchen / Toilets	300 - 500 lux
Services Room / Garbage Room	200 lux
Corridor / Lobby	150 lux
Premises within Landscaped area	100-150 lux at working plane of 0.2m

**2.1.2 Specific requirements:**

- Installation of ground well and connection of utilities (electricity, water & sewerage) to that main lines shall be included for each individual units
- Boundary demarcation for individual units must be provided with concrete marking pegs at all corners of the boundary. Boundary demarcation for the continuation of 48 housing units to be provided as the given drawings. Boundary demarcations for the proposed newly constructed units are to be provided as per the approved drawings based on the layout drawings submitted by the contractor.
- Site clearing and demarcation of work zones and bypasses. Contractor is required to remove and transport all construction waste and debris including the existing construction waste and debris to a waste management facility as instructed by the Island Council.
- For additional Information, submit the sectional drawings with the dimensions.
- Label the roads on site plans.

### **2.1.3 Minimum Requirements for 3-bedroom Social Housing Units**

This residential development should consist of the individual housing units covering a minimum built up area of 1300sqft.

All designs shall comply with the Building Act/ National Planning regulation and all the regulations stipulated under the Act/Regulation as well or equivalent to British Standards (BS Code)

It should be ventilated, well-lit and designed to be protected from weather conditions. The main entrance of the housing unit should be minimum 900mm wide.

Height of the buildings should not exceed 4m in height up to roof apex level. Roofing sheets should be of “Lysaght” brand or of any equivalent material and specification

The building should be elevated for 0.2m from ground level (the finished floor level of ground floor should be 0.3m from the ground level).

Minimum clear height (floor to ceiling height) for all areas (except toilets) shall be 2.7m. The contractor must comply with all relevant existing laws and regulations of Maldives, including the Planning Guidelines, social housing development guidelines of Ministry of National Planning, Housing and Infrastructure

Materials, fixtures and fittings used on exterior walls and surfaces shall be weather-proof, external finishing materials, including fixtures and fittings.

The built-up Area should not be less than 1300 square feet and must include:

- i. Sitting, Dining, Kitchen and laundry area
- ii. 03 bedrooms (one master room & two small rooms).
- iii. 03 toilets (attached).
- iv. Garbage room, outdoor area

#### **1. Bedrooms**

a. Minimum size of Master bedroom shall be Master bedroom- 13 feet x 12 feet (14.5 sqm)

b. Minimum size of other bedrooms shall be 11.5 Sqm Minimum

#### **1.1 Finishes**

Walls shall have preparatory sealer and two coats of emulsion paint finish equivalent to Nippon brand

Ceiling shall be smoothed and finished with preparatory sealer and two coats of emulsion paint equivalent to Nippon Brand.

Floors shall be of Homogenous Porcelain tiles of size 600mm x 600mm. Skirting of Homogenous Porcelain tiles should be provided.

Windows: Powder coated aluminum frame with tinted frosted glass

Doors: Timber door frame with timber panels

## **1.2 Services**

Adequate lighting must be provided for each room. (Preferably two light points)

A fan and three socket outlets shall be provided for each room (one 15A socket shall be provided at 2.4m height for possible future air-conditioning need).

## **1.3 Ventilation**

Ventilation should comply with planning regulations

## **2. Toilets:**

a. Area & dimensions:

Minimum width of the toilet or a bath room should be 1.2m.

- Master bedroom toilet- 4' x 8' - 10"
- Bedroom 2 & Bedroom 3 toilet- 4' x 7' - 7"

Minimum clear height (floor to ceiling height) for toilets shall be 2.4m.

### **2.1 Finishes**

Interior of walls shall have ceramic wall tiling of size 300mm x 600mm.

A suspended Fibrous plaster board ceiling, concealing the plumbing pipeline shall be smoothed and finished with preparatory sealer and two coats emulsion paint equivalent to Nippon Paint

Floors shall be of non-slippery homogeneous tile finish of size 300mm x 600mm.

Toilets shall have adequate waterproofing.

Windows: Powder coated aluminum frame with tinted frosted glass

Doors: PVC doors

### **2.2 Services**

Adequate lighting must be provided for each toilet (minimum two light

All relevant fixtures (WC, wash basin, Muslim shower, water tap, etc.) must be provided

Water connection must be provided to relevant toilet fixtures.



Well water connection shall be provided to WC

### **2.3 Ventilation**

Each toilet shall have ventilation window with the opening as per planning regulations.

## **3. Sitting/Kitchen and Dining**

### **a. Area & dimensions:**

- Minimum area for sitting area shall be 18 sqm.
- Minimum area for Kitchen & Dining shall be 15 sqm. (Preferably separated area for Kitchen)
- Minimum clear height for shall be 2.7m (floor to ceiling height).

### **3.1 Finishes**

Walls shall have preparatory sealer and two coats of emulsion paint finish equivalent to Nippon brand

Ceiling should be a suspended Fibrous plaster board

Floors shall be of Homogenous Porcelain tiles of size 600mm x 600mm. Skirting of Homogenous Porcelain tiles should be provided.

Windows: Powder coated aluminum frame with tinted frosted glass

Doors: Timber door frame with timber panels

### **3.2 Services**

Adequate lighting must be provided for the entire area.

Provisions for cable TV, and internet should be provided.

Fans and sockets outlets at relevant location shall be provided for the general home appliances at sitting, kitchen and dining area.

Kitchen fixtures, such as sink, bench, cupboards/ kitchen cabinets, etc. must be provided. Water connection must be provided to relevant kitchen fixtures.

### **3.3 Ventilation**

Each space shall have window(s), with the opening area as per the planning regulations

## **4. Laundry**

Washing space shall be provided to accommodate one washing machine.

Minimum clear height shall be 2.4m

#### 4.1 Finishes

Walls shall have ceramic wall tiling (300mm x 600mm) up to 1.8m high from floor finish level. The rest of the walls may be paint finished with preparatory sealer and two coats of emulsion paint equivalent to Nippon brand.

Floors shall be of homogeneous porcelain tile finish of 600mmx 600mm.

#### 4.2 Services

Adequate lighting must be provided (minimum one light point).

Water connection shall be provided.

Weather proof two socket outlets (13A) shall be provided.

#### 4.3 Ventilation

Laundry space shall have window(s), with the opening area equal to 10% of the floor area.

### 5. Garbage area, Outdoor area, Entrance

Garbage collection area should be separated from common area. A central collection area at ground floor with ease of loading/unloading. vehicular access should be provided.

#### 5.1 Finishes

Walls shall have preparatory sealer and two coats of emulsion paint finish equivalent to Nippon brand

Ceiling of entrance/parking area should be of a suspended ceiling of fibrous plaster board.

Ceiling of Garbage room shall be smoothed and finished with preparatory sealer and two coats of emulsion paint equivalent to Nippon Brand

Location/ Area	Floor	Skirting	Wall	Ceiling	Partition	Doors/window
<b>Garbage room</b>	Homogeneous tiles (600mm x 600mm) + 2 coats of waterproofing (brush bond)	-	Homogeneous/Porcelain tiles (300mm x 600mm)	-	Brick wall	Powder coated aluminum frame with aluminum panels

<b>Outdoor tiled area</b>	Homogeneous tiles (600mm x 600mm) + 2 coats of waterproofing (brush bond)	Homogeneous tiles	Ceramic wall tiles (300mm x 600mm)	Fibrous plaster board ceiling	Concrete / Brick wall	Powder coated aluminum frame with tinted / clear glass
<b>Entrance</b>	Epoxy flooring system		Matte wall paint	Fibrous plaster board ceiling	Brick wall	Powder coated aluminum frame with tinted / clear glass

## **2.2 Additional Information**

- 1 Final price should be inclusive of the import duty for any imported construction material, equipment, machinery, etc.
- 2 The price also should include electricity and water required for the project.
- 3 Project costing - The project is a lump sum contract. The Contractor shall submit a work breakdown schedule within ten working days from project award, indicating the price break down and the durations for each task. The work breakdown schedule will then be used as a basis for measuring the works completed in order to issue the interim payments.
- 4 It is contractors' responsibility to allow for and obtain all the permits required from regulatory authorities / service providers etc.
- 5 Demolition waste and debris shall be transported to designated waste management site as instructed by island council
- 6 Finalized work schedule- The contractor shall submit a finalized work schedule within 10 days from the date of receipt of the Letter of Acceptance.
- 7 Detailed design and 3D rendered images of the exterior of the buildings and the development as a whole, to be submitted in accordance with the timeline agreed with the Employer after signing of the Contract.

## **2.3 General Design Obligations of the Contractor**

1. The Contractor shall carry out, and be responsible for the design of the Works. Basic design shall be in accordance with the concept drawings provided. Detail Design shall be prepared by qualified designers who comply with the following criteria:

### **a) Architect**

- i. A registered architect at his/her country with minimum 05 years of architectural design experience. Must have designed at least 2 buildings of similar scale within this period.

**b) Civil/Structural Engineer**

- i. A registered engineer at his/her country with 05 years of experience in structural design of buildings of similar scale.

**c) Services Engineer**

- i. Minimum bachelor's degree and 05 years of experience in service design of buildings of similar scale.

**2.3.1 Tests on Completion**

Upon completion of the building Contractor shall allow for testing of the services installed in the building as part of commissioning.

**2.3.2 Contractors' Documents**

The Contractor shall submit an assessment report which includes defects and work methodology for repair of the existing structures for approval of the Employer.

The Contractor shall submit preliminary designs, which includes floor plans, sections and elevations for the approval of the Employer. Once the preliminary design is approved the Contractor shall submit detailed design for approval. The detail design shall be signed by a locally registered Architect and Engineer and shall be certified by accredited architectural and structural checkers if required. Upon completion of civil work, contractor is required to submit as-built drawings and final progress payment will be released upon approval of the as-built drawings. The materials used for construction shall be of good quality, with a design life of 50 years and where necessary design shall incorporate renewable energy and sustainable design components where practical.

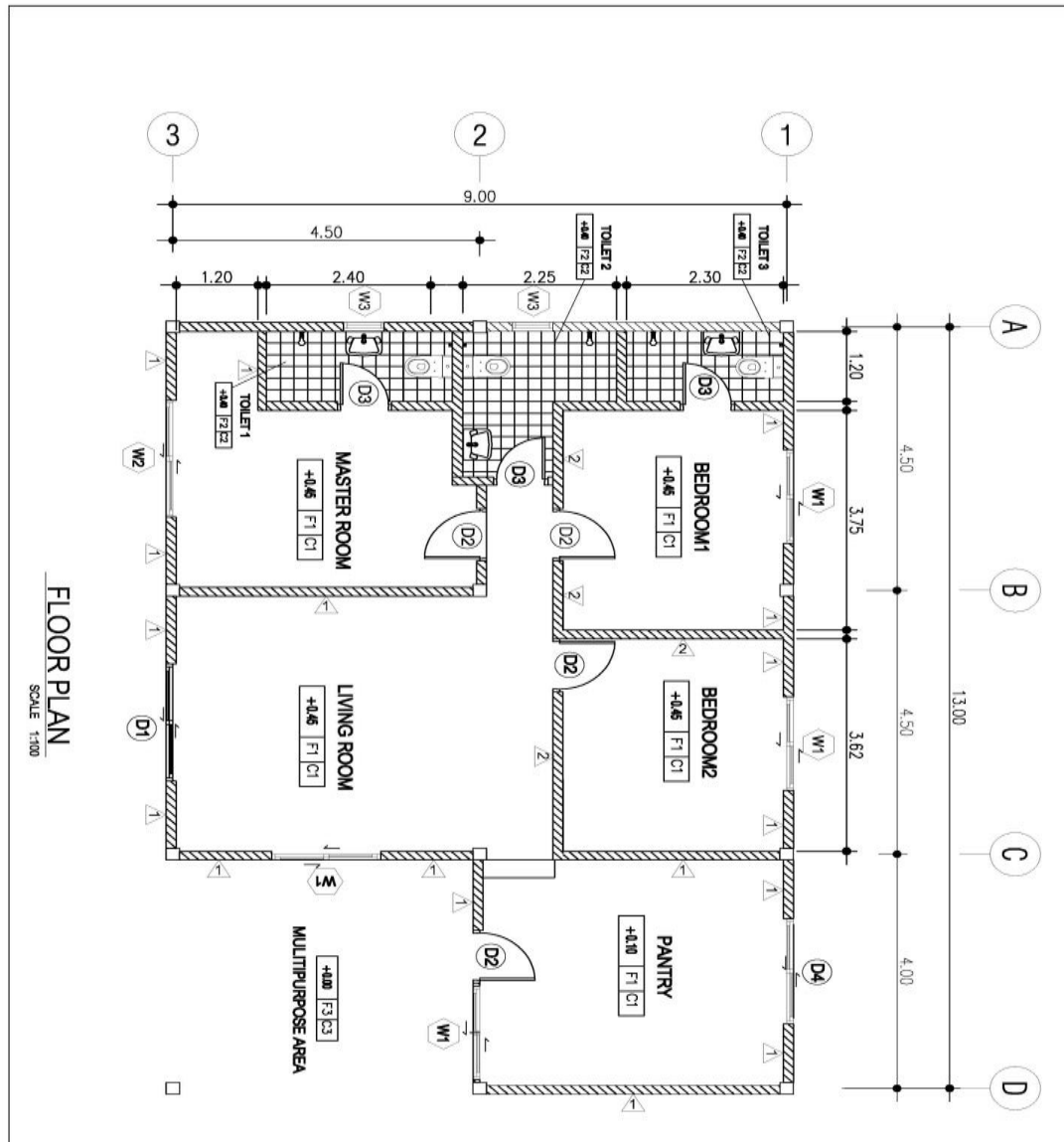
**2.3.3 The Bidder shall submit the following with the bid**

1. Elementary Bill of Quantities as per the given format
2. Conceptual layout drawings of the proposed buildings and a site plan of the development.
3. Conceptual 3D drawings of the buildings and the development.
4. The floor plans attached with the proposal should be to a scale of 1:100 or 1:200, and shall include the furniture layout, fixtures, fittings and the column positions.

5. Proposed equipment for works and work methodology.
6. Preliminary work schedule - The contractor shall submit a proposed work schedule with the bid. This work schedule shall indicate the major works to be carried out under the scope of the project. The work schedule shall clearly show the proposed start and end dates for all the project stages and the total project duration proposed.

# ANNEX - 01

## TYPICAL FLOOR PLAN – REMEDIAL WORKS AND COMPLETION OF 64 HOUSING UNITS

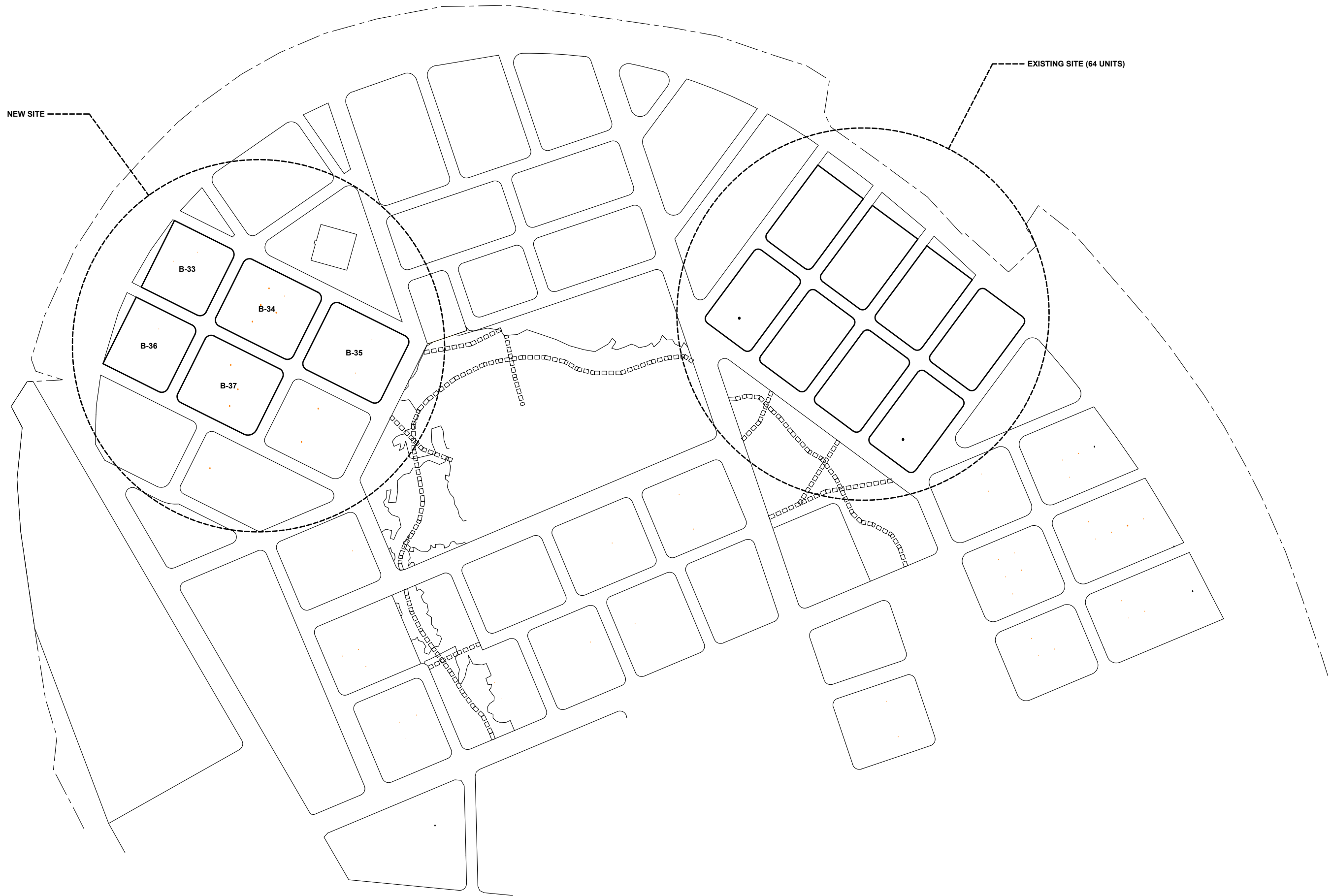
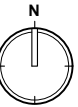


## Annex -02

### Progress for 64 Housing Units - Remedial works and completion of 64 Housing Units

[illegible]





MINISTRY OF HOUSING AND  
URBAN DEVELOPMENT

AMENDMENTS:		
REV #	DATE	DESCRIPTION

PROJECT: DESIGN AND CONSTRUCTION OF 100 HOUSING UNITS	DESIGN: 	ENGINEER: 
DRAWING TITLE: <b>VILUFUSHI LOCATION PLAN</b>	DRAFTING: 	APPROVED BY: 
	DATE: 20 JAN 2020	DRAWING NO. <b>A01</b>
	SCALE: 1:2000	

ANNEX 3

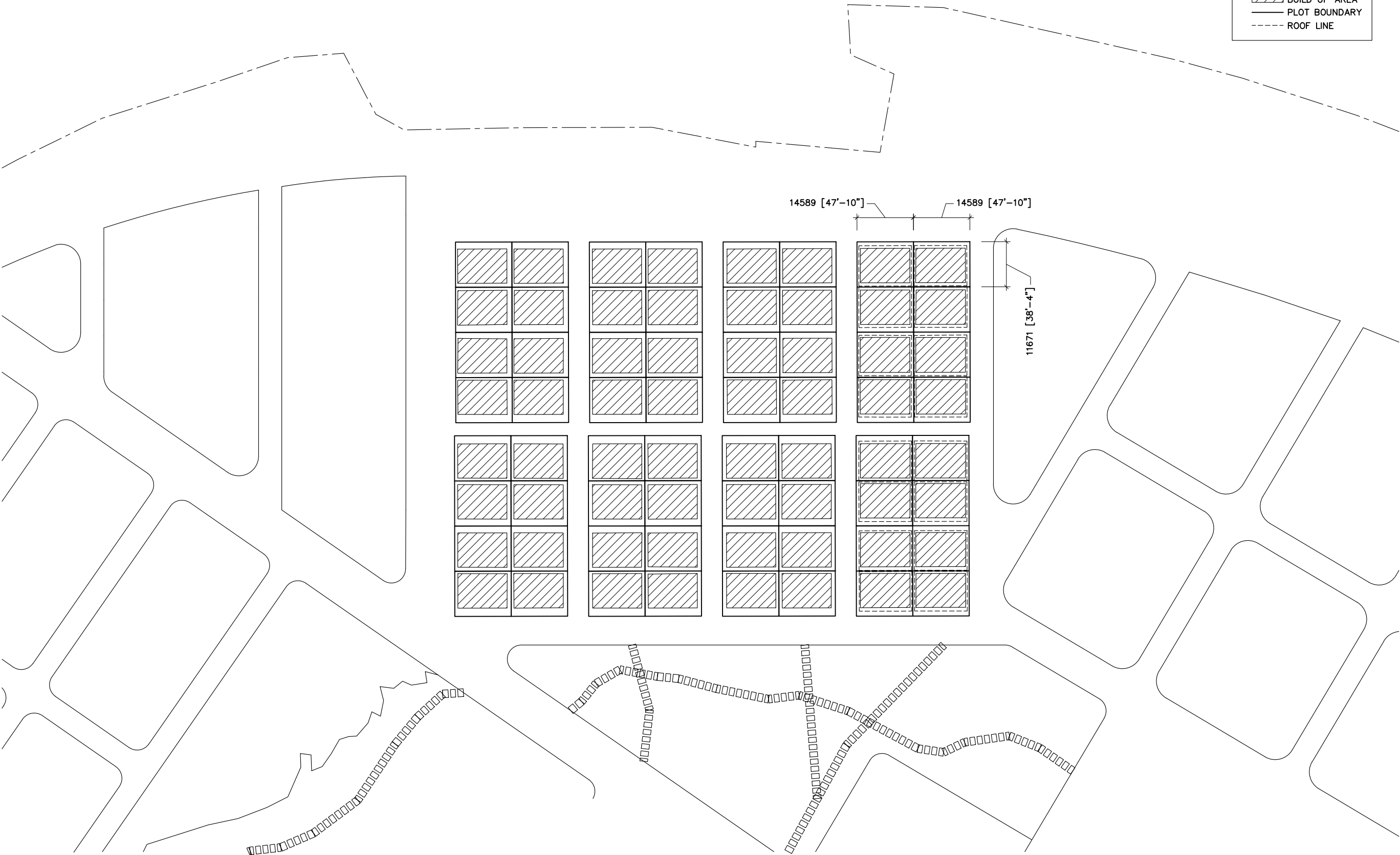



LEGEND

BUILD UP AREA

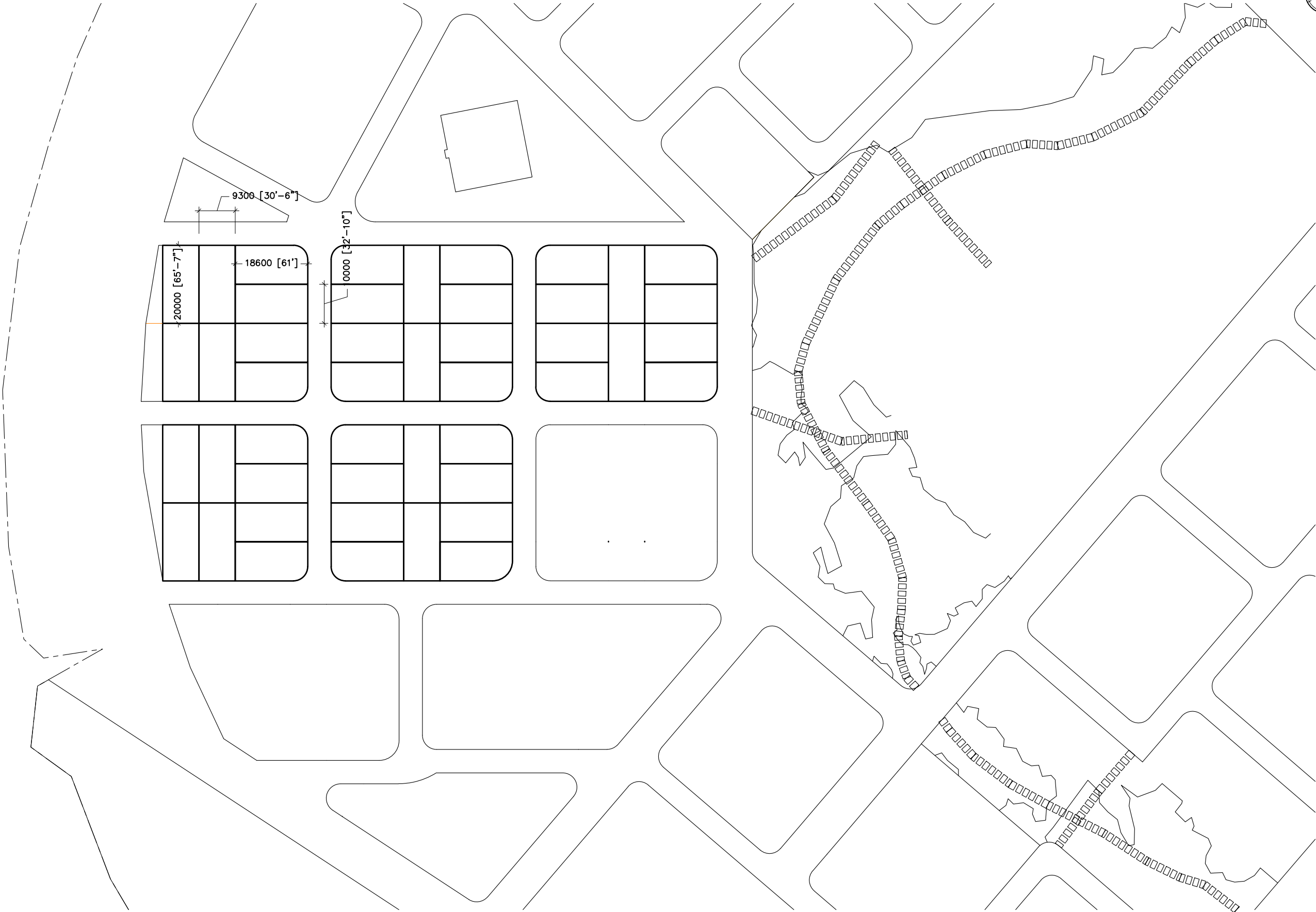
PLOT BOUNDARY


ROOF LINE



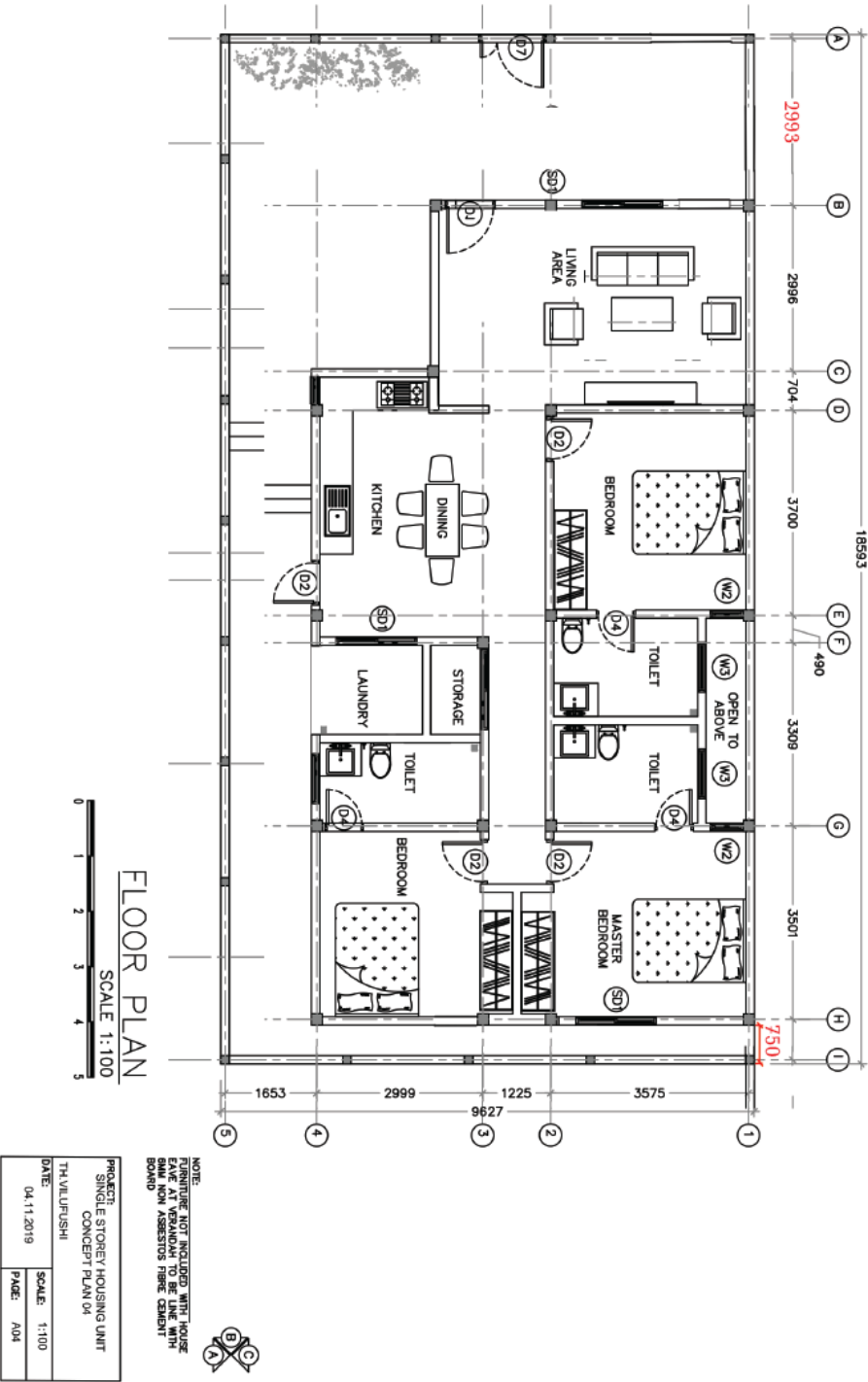
 MINISTRY OF HOUSING AND URBAN DEVELOPMENT	AMENDMENTS:			PROJECT: DESIGN AND CONSTRUCTION OF 100 HOUSING UNITS  DRAWING TITLE: <b>ANNEX 3 (EXISTING SITE)</b>	DESIGN:	ENGINEER:
	REV #	DATE	DESCRIPTION		DRAFTING:	APPROVED BY:
					DATE: 20 JAN 2020 SCALE: 1:1000	DRAWING NO. <b>A02</b>

ANNEX 4



 MINISTRY OF HOUSING AND URBAN DEVELOPMENT	AMENDMENTS:			PROJECT: DESIGN AND CONSTRUCTION OF 100 HOUSING UNITS		DESIGN:	ENGINEER:
	REV #	DATE	DESCRIPTION			DRAFTING:	APPROVED BY:
						DATE: 20 JAN 2020	DRAWING NO. <b>A03</b>
				DRAWING TITLE: <b>ANNEX 4 (NEW SITE)</b>		SCALE: 1:1000	

CONCEPT DRAWING FOR DESIGN AND CONSTRUCTION OF 36 HOUSING UNITS



ANNEX - 6

**REMEDIAL WORKS AND COMPLETION OF 64 HOUSING UNITS**  
**ELEMENTARY BILL OF QUANTITIES**

No	Item	Amount
1.1	Detail assesment of remaining works and submission of defects report	
1.2	Detailed drawings, Bill of quantities and Technical Specification	
1.3	Preliminaries	
1.4	Ground works	
1.5	Concrete works	
1.6	Masonry and Plastering works	
1.7	Doors and windows	
1.8	Ceiling Works and Wood Works	
1.9	Floor and Wall Finishes	
2.0	Painting works	
2.1	Roofing works	
2.2	Electrical Installations	
2.3	Hydraulics and Drainage	
2.4	Fire Protection System	
2.5	External works	
2.6	Additions/Omissions	
<b>SUBTOTAL</b>		
G.S.T 6%		
<b>GRAND TOTAL</b>		

ANNEX - 07

**DESIGN AND CONSTRUCTION OF 36 HOUSING UNITS**  
**ELEMENTARY BILL OF QUANTITIES**

No	Item	Amount
1.1	Site Survey and Soil Investigations	
1.2	Detailed drawings, Bill of quantities and Technical Specification	
1.3	Preliminaries	
1.4	Concrete works	
1.5	Masonry and Plastering works	
1.6	Doors and windows	
1.7	Ceiling Works and Wood Works	
1.8	Floor and Wall Finishes	
1.9	Painting works	
2.0	Roofing works	
2.1	Electrical Installations	
2.2	Hydraulics and Drainage	
2.3	Fire Protection System	
2.4	External works	
2.5	Additions/Omissions	
<b>SUBTOTAL</b>		
G.S.T 6%		
<b>GRAND TOTAL</b>		