



# DETAILED DESIGN FOR PROPOSED ADMINISTRATION OFFICE IN BANDIIRADLEY DISTRICT, MUDUG REGION

## PROJECT:

Detailed Design for Proposed  
Development of Administration Offices  
in Bandiiradley District,  
Mudug Region

## CLIENT:



THE FEDERAL REPUBLIC  
OF SOMALIA



GOVERNMENT OF GALMUDUG STATE -  
BANDIIRADLEY DISTRICT

## FINANCED BY:



## IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

## CONSULTANT:



ECOTECH LIMITED

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Web: [www.ecotech.co.ke](http://www.ecotech.co.ke)

Location: Ecotech House, Woodlands Road,  
off Lenana Road, Nairobi - Kenya



DETAILED DESIGN FOR PROPOSED ADMINISTRATION OFFICE IN  
BANDHIRADLEY DISTRICT, MUDUG REGION

CONTRACT N<sup>o</sup>: **MOF/SFF/SERV/08**

SFF-LD GRANT N<sup>o</sup>: **TF0A1715**

JULY 2017

DRAWING INDEX

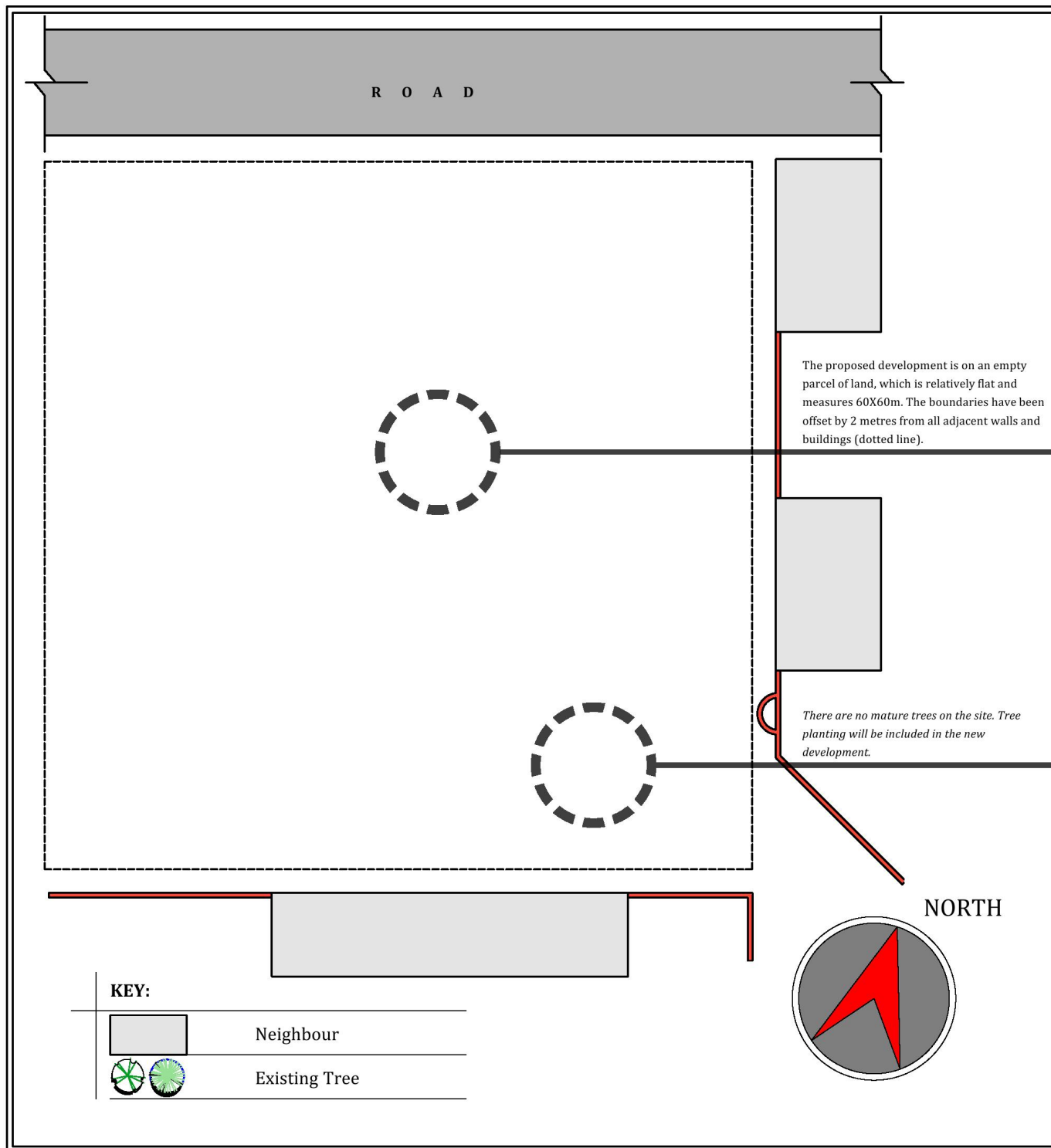
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SIGNED & STAMPED:

*Almeed Limish*





## SITE PHOTOS



A view of the neighbours' development to the east of the site.



The site is relatively flat.



A view of the neighbours' development to the east of the site.



Except for a few shrubs on the site, there are no mature trees.



View towards the North.



View towards the East.



View towards the Northwest.



View of existing neighbour's development, South of the site.



View of neighbours on the East, and neighbours on the South (beyond).



View towards the East.

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3. All construction work to comply with the international standards codes protection.
4. The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
5. All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
6. All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

## REVISIONS.

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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANSHEERUWEE DISTRICT,  
MURUGU REGION

Drawing Title:

**SITE ANALYSIS**

Sheet Content:

**SITE ANALYSIS**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-  
SITE ANALYSIS-01**

Project No:

**MOF/SFF/SERV/OR**

Sheet No:

**01/23**

A3





On-going deliberations among stakeholders.



Site is relatively flat.



Site is relatively flat.



View of Northern access road.



Deliberations between Ecotech, PIU and local stakeholders.



Deliberations with Mayor (on the left).



Site is relatively flat.



Photo of locals assisting in measurement.



Site is relatively flat.



Photo of site assessment in progress.



Deliberations between Ecotech, PIU and local stakeholders.



Photo of site assessment in progress.

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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANSHEERLEY DISTRICT,  
MUDUJA REGION

Drawing Title:

**SITE PHOTO**

Sheet Content:

**SITE PHOTO**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

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Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

31371-553-  
**SITE PHOTO-02**

Project No:

MOF/SFF/SERV/08

Sheet No:

**02/23**

A3



MAIN ROAD

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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN GARDHAAAYLE DISTRICT,  
MUDUG REGION

Drawing Title:

**MASTER PLAN**

Sheet Content:

MASTER PLAN

Scale:

N.T.S (NOT TO SCALE)

Date:

JULY 2017

PREPARED BY:

JEFFREY LUTZURIAGA

REVIEWED & APPROVED BY:

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Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

31371-553-  
MASTER PLAN-03

Project No:

MOF/SFF/SERV/08

Sheet No:

03/23  
A3

Medium density concrete interlocking paving blocks on 300mm compacted hardcore base (compacted in 150mm layers) and 25mm coarse-sand underlayment.

RC ramps to SE detail; slope 1:11, serrated concrete finish with approved hardener.

2,400x400mm masonry Boundary wall

MAIN BUILDING (ADMINISTRATION BLDG.)

DRIVE WAY

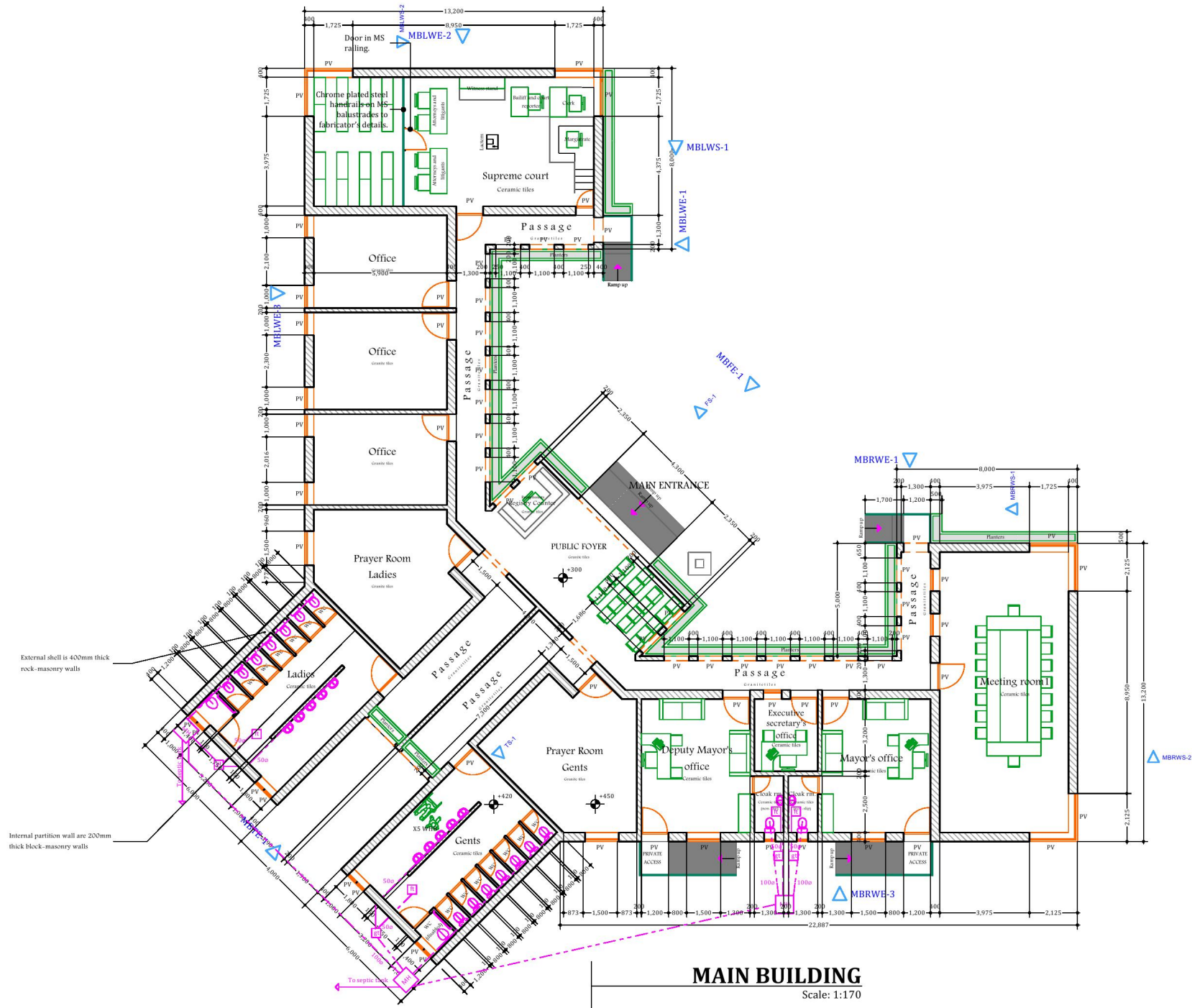
FUTURE EXPANSION

Provide storm water drainage RC 600x450mm bedded in 1:3 CS mortar laid to fall, granular backfill with PC slabs cover. Storm water reticulates from RVP through trapped gulleys to drainage channel and conservancy tank.

RC ramps to SE detail; slope 1:10, serrated concrete finish with approved hardener.

## MASTER PLAN

Scale: 1:280



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Project Title:  
DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BARDEREALE DISTRICT,  
MURUGA REGION

Drawing Title:  
**GROUND FLOOR PLAN**

Sheet Content:  
**GROUND FLOOR PLAN**

Scale:  
**N.T.S (NOT TO SCALE)**

Date:  
**JULY 2017**

PREPARED BY: **JETREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH  
Regional Director Ecotech Ltd.

ENG. ALI HUSSEIN  
Managing Director Ecotech Ltd.

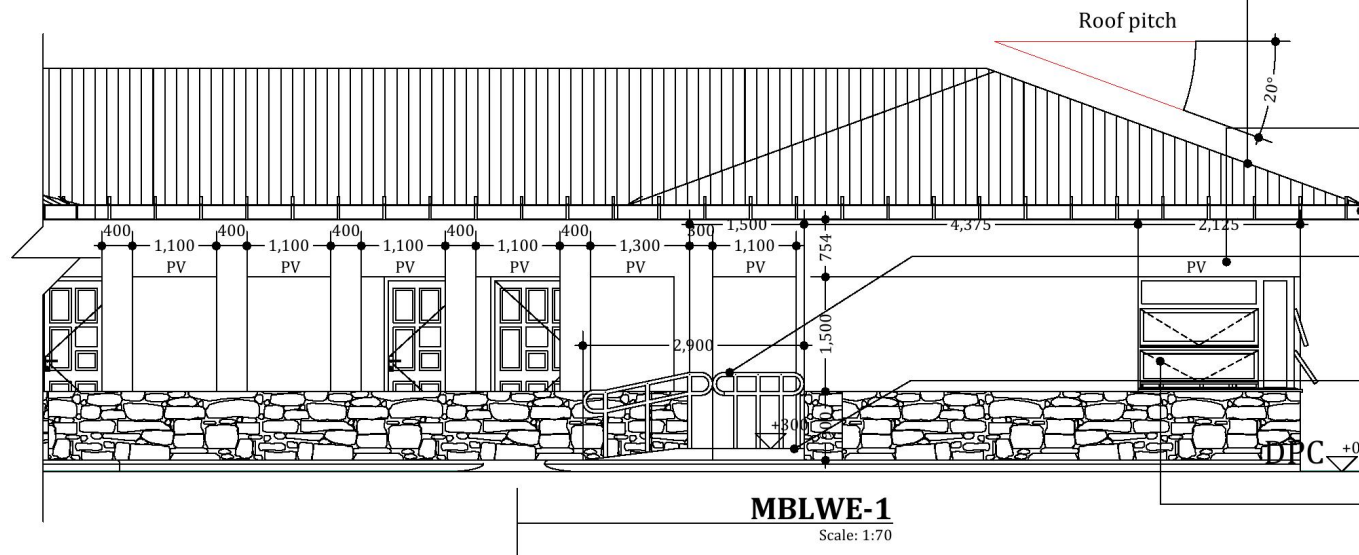
Drawing No:  
**31371-553-  
GROUND FLR-04**

Project No:  
**MOF/SFF/SERV/08**

Sheet No:  
**04/23**  
A3



# MAIN BUILDING LEFT WING ELEVATION



Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW fascia (painted).

400mm thick rock-masonry external shell walls with exterior quality emulsion paint on wood-float render to approval.

1000mm height 75mmØ Chrome plated steel handrails on MS balustrades to fabricator's details.

RC ramps to SE detail; slope 1:12, serrated concrete finish with approved hardener.

5mm clear glass panes on aluminium framework to manufacturer's details.

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MURUGU REGION

Drawing Title:  
**ELEVATION PLAN**

Sheet Content:  
**ELEVATION PLAN**

Scale:  
**N.T.S (NOT TO SCALE)**

Date:  
**JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

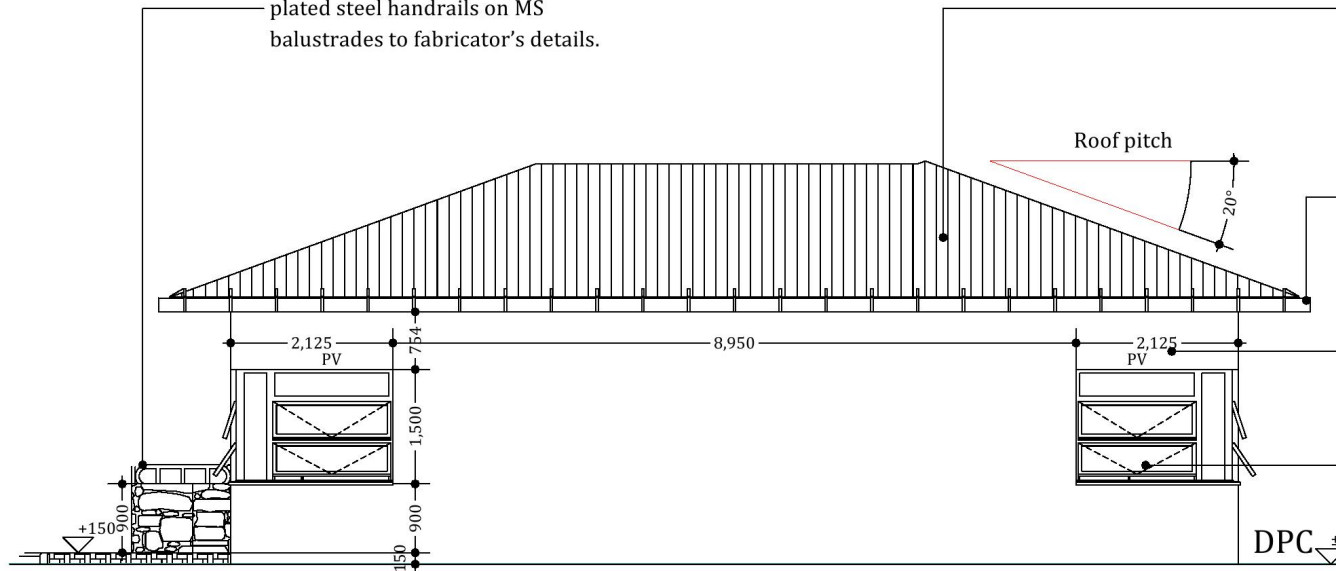
Drawing No:  
**31371-553-  
ELEVATION-05**

Project No:  
**MOF/SFF/SERV/08**

Sheet No:  
**05/23**

## MAIN BUILDING LEFT WING ELEVATION

1000mm height 75mmØ Chrome plated steel handrails on MS balustrades to fabricator's details.



**MBLWE-2**

Scale: 1:70

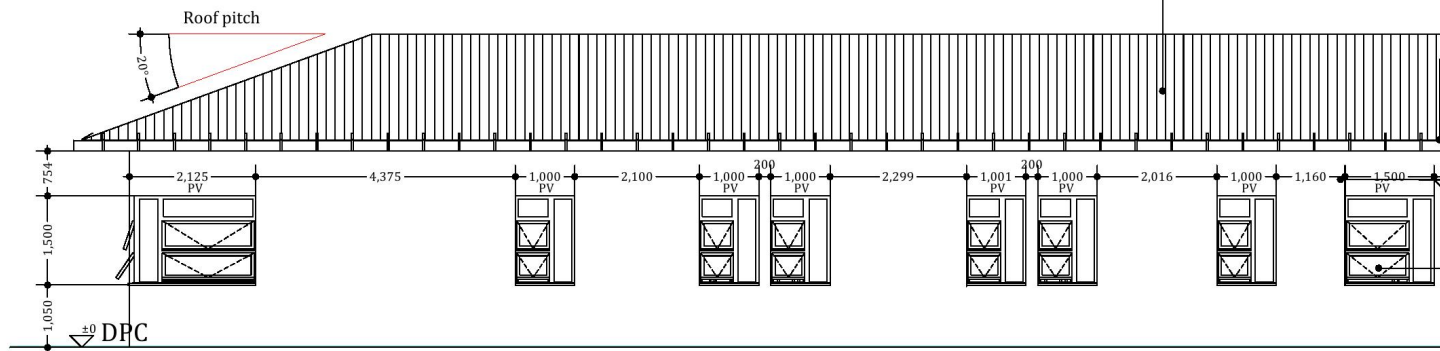
Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW fascia (painted).

400mm thick rock-masonry external shell walls with exterior quality emulsion paint on wood-float render to approval.

5mm clear glass panes on aluminium framework to manufacturer's details.

DPC ±0



**MBLWE-3**

Scale: 1:90

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW fascia (painted).

400mm thick rock-masonry external shell walls with exterior quality emulsion paint on wood-float render to approval.

5mm clear glass panes on aluminium framework to manufacturer's details.

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MURUGU REGION

Drawing Title:

**ELEVATION PLAN**

Sheet Content:

**ELEVATION PLAN**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JETREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-  
ELEVATION-06**

Project No:

**MOF/SFF/SERV/08**

Sheet No:

**06/23**  
A3



## MAIN BUILDING RIGHT WING ELEVATION

Corrugated GI sheets gauge 32, fixed on  
celcurised cypress structure: 50x50mm  
3 battens on 200X50mm Rafters @700mm, on  
100X50mm Wall-plate bolted @ 1200mm  
centres; structure to SE details. GI lining on  
ridges and cut-outs.

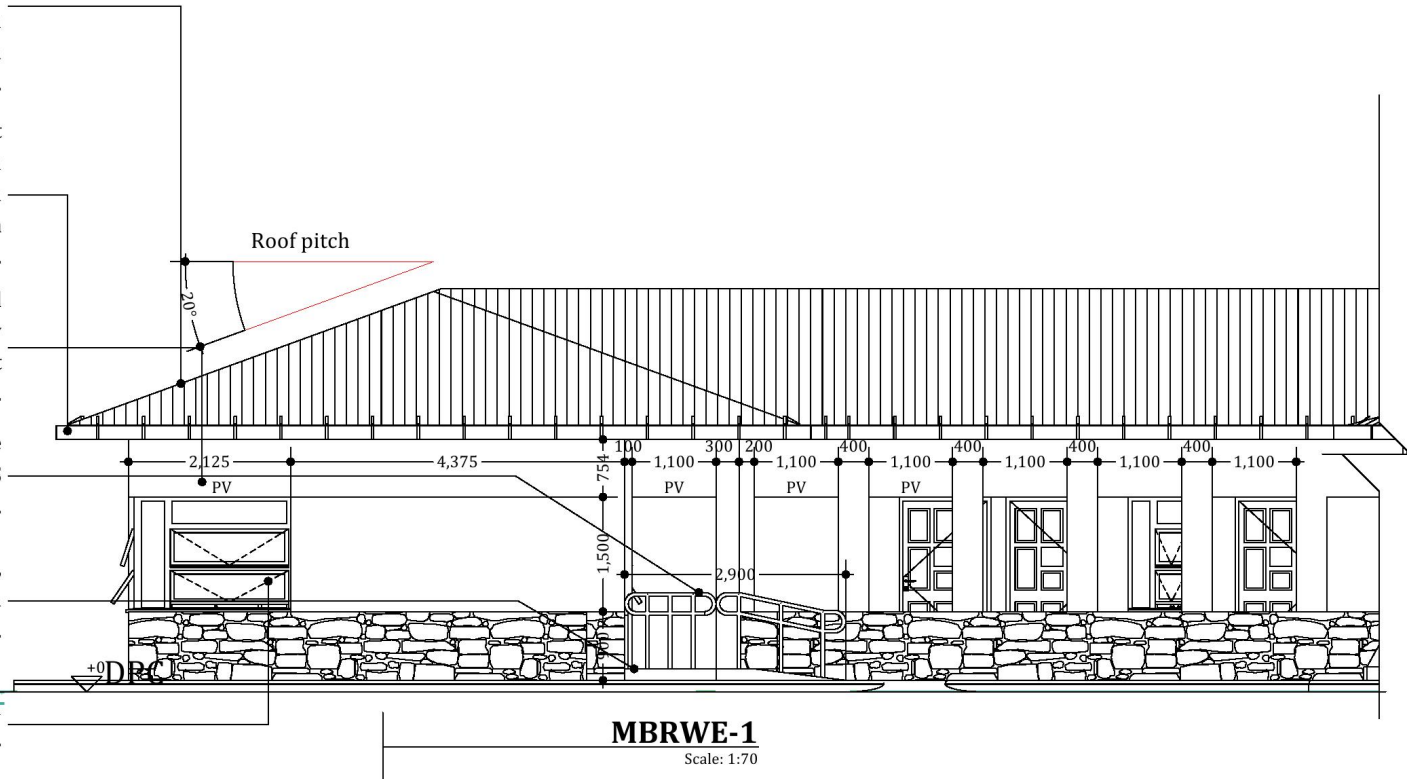
Gauge 28, 250mm girth bent  
twice GI gutters fixed with  
and including brackets on  
150X25mm HW fascia  
(painted).

400mm thick rock-masonry external  
shell walls with exterior quality  
emulsion paint on wood-float  
render to approval.

1000mm height 75mmØ Chrome  
plated steel handrails on MS  
balustrades to fabricator's details.

RC ramps to SE detail; slope 1:12,  
serrated concrete finish with  
approved hardener.

5mm clear glass panes on aluminium framework to manufacturer's details.



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NO:	DATE:	DESCRIPTION:

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MUDUG REGION

Drawing Title:

### ELEVATION PLAN

Sheet Content:

ELEVATION PLAN

Scale: N.T.S (NOT TO SCALE)

Date:	JULY 2017
-------	-----------

PREPARED BY: JEFFREY LUZURIAGA

REVIEWED &amp; APPROVED BY:

ENG. AHMED KIRISH

ENG. AHMED KIRISH      ENG. ALI HUSSEIN

Regional Director, Leontech Ltd.

Managing Director, Ecorech Ltd.

Drawing No:

Project No:

31371-553-  
ELEVATION.-07

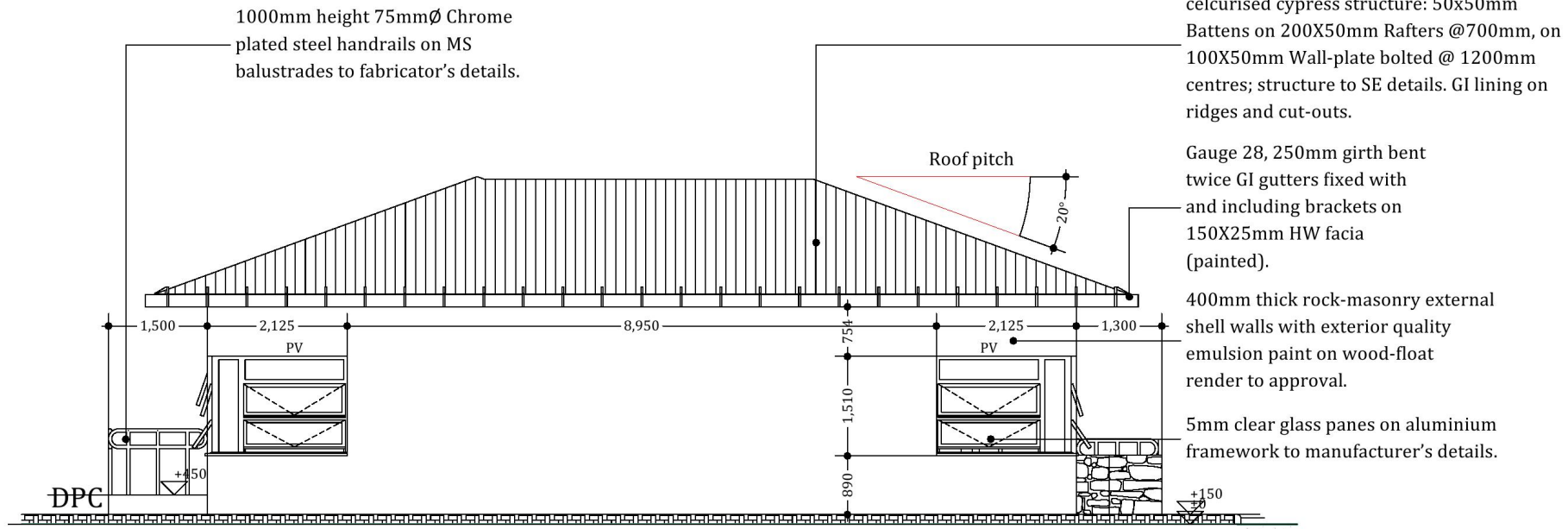
MOF/SFF/SERV/08

Sheet No:

07/23<sub>A3</sub>

Page 10 of 10

## MAIN BUILDING RIGHT WING ELEVATION



**MBRWE-2**

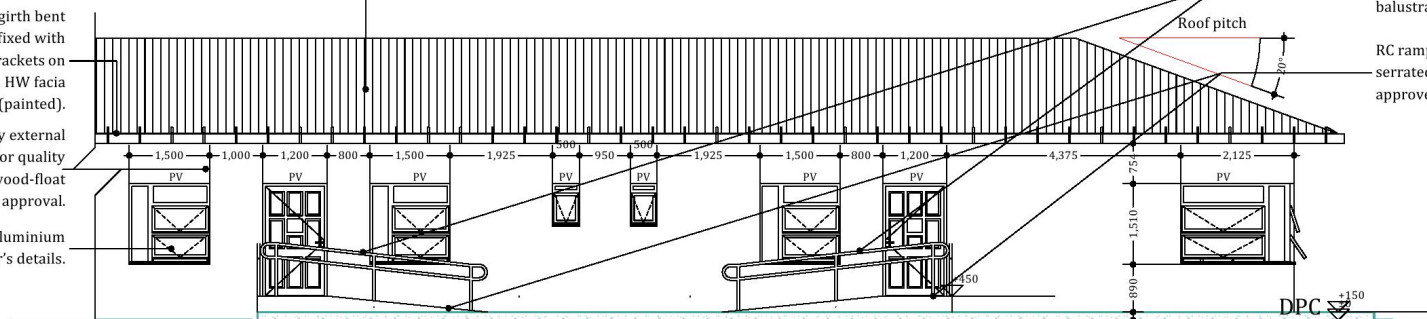
Scale: 1:70

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW fascia (painted).

400mm thick rock-masonry external shell walls with exterior quality emulsion paint on wood-float render to approval.

5mm clear glass panes on aluminium framework to manufacturer's details.



**MBRWE-3**

Scale: 1:100

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Drawing Title:  
**ELEVATION PLAN**

Sheet Content:  
**ELEVATION PLAN**

Scale:  
**N.T.S (NOT TO SCALE)**

Date:  
**JULY 2017**

PREPARED BY:  
**JEFFREY LUTZURIGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH  
Regional Director Ecotech Ltd.

ENG. ALI HUSSEIN  
Managing Director Ecotech Ltd.

Drawing No:  
**31371-553-  
ELEVATION-08**

Project No:  
**MOF/SFF/SERV/08**

Sheet No:  
**08/23**  
A3



## MAIN BUILDING LEFT WING SECTION

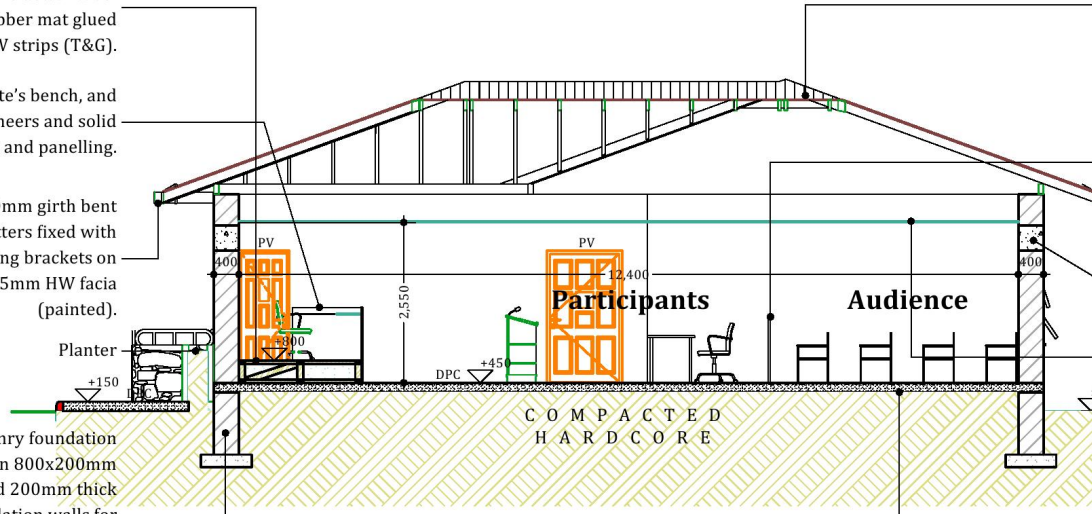
100X50mm HW framework; set on DPC and bolted to RC slab to carpenter's detail. Wool carpet with high-density foam rubber mat glued onto 100X20mm HW strips (T&G).

MDF and HW fixtures at magistrate's bench, and stands. Provide premium-grade HW veneers and solid trims for interior partitions and panelling.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW fascia (painted).

Planter

400mm thick rock-masonry foundation walls for external shell, on 800x200mm RC strip foundation, and 200mm thick block-masonry foundation walls for internal partition walls, on 600x200mm RC strip foundation; depth determined on site to SE approval.



**MBLWS-1**

Scale: 1:85

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Chrome plated steel handrails on MS balustrades to fabricator's details.

RC structure to SE details.

12mm thick chip-board ceiling on 50X50mm cypress brandlering at 600 mm centres.

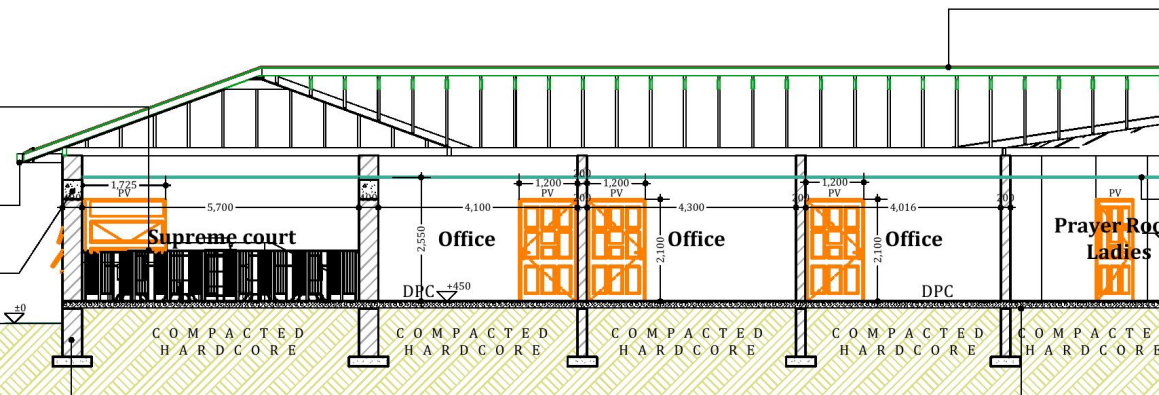
150mm thick floor slab reinforced with mesh on 1000 gauge DPM polyethylene on 50mm thick stone dust blinding on 300mm thick well compacted hardcore with anti-termite treatment; see SE details.

Chrome plated steel handrails on MS balustrades to fabricator's details.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW fascia (painted).

RC structure to SE details.

400mm thick rock-masonry foundation walls for external shell, on 800x200mm RC strip foundation, and 200mm thick block-masonry foundation walls for internal partition walls, on 600x200mm RC strip foundation; depth determined on site to SE approval.



**MBLWS-2**

Scale: 1:110

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on cut-outs.

12mm thick chip-board ceiling on 50X50mm cypress brandlering at 600 mm centres.


150mm thick floor slab reinforced with mesh on 1000 gauge DPM polyethylene on 50mm thick stone dust blinding on 300mm thick well compacted hardcore with anti-termite treatment; see SE details.

### NOTES:


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3. All construction work to comply with the international standards codes protection.
4. The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
5. All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
6. All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION
REVISIONS.		

FINANCED BY:



CLIENT:



IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

CONSULTANT:



**ECOTECH LIMITED**

P.O. Box 5527-00100,  
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Fax: +254 709 838222  
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www.ecotech.co.ke  
Web: Ecotech House, Woodlands Road,  
off Lenax Road, Nairobi - Kenya

Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANDEIRA DISTRICT,  
MURUGA REGION

Drawing Title:

**SECTION PLAN**

Sheet Content:

**SECTION PLAN**

Scale:

**N.T.S (NOT TO SCALE)**

Date:

**JULY 2017**

PREPARED BY:

**JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-**  
**SECTION -09**

Project No:

**MOF/SFF/SERV/08**

Issue No:

**09/23**  
A3

## MAIN BUILDING RIGHT WING SECTION

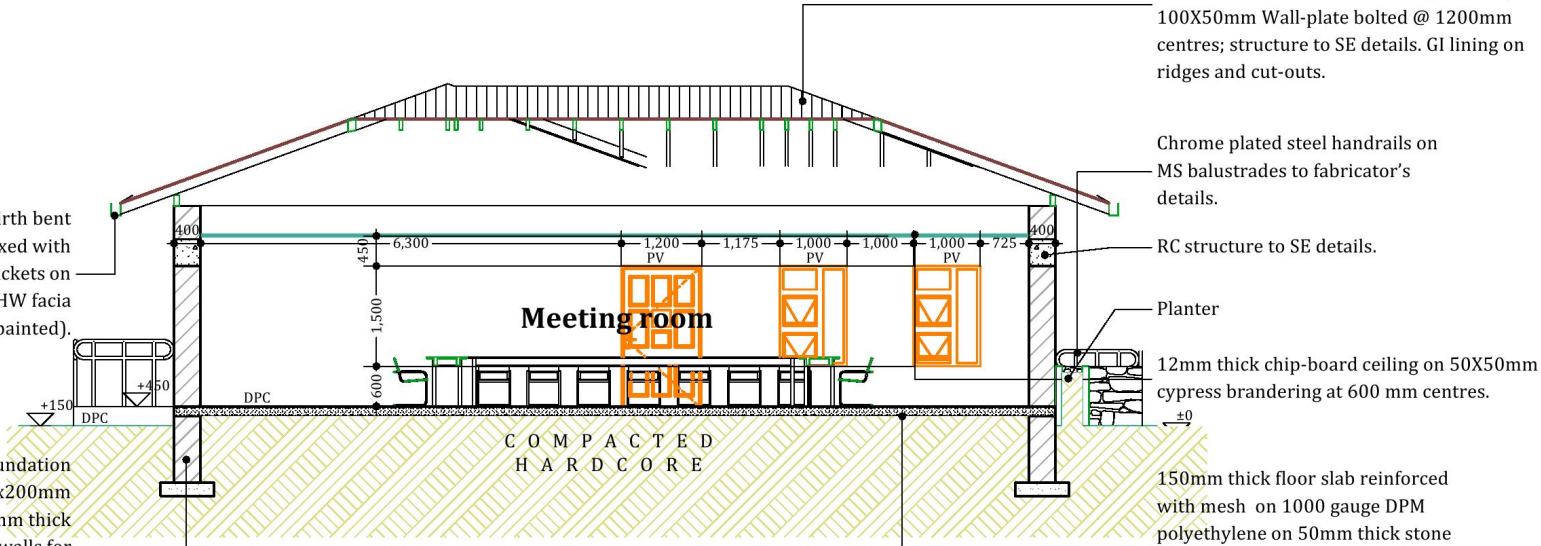
Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges at

12mm thick chip-board ceiling on 50X50mm cypress brandering at 600 mm centres.

150mm thick floor slab reinforced with mesh on 1000 gauge DPM polyethylene on 50mm thick stone dust blinding on 300mm thick well compacted hardcore with anti-termite treatment; see SE details.

400mm thick rock-masonry foundation walls for external shell, on 800x200mm RC strip foundation, and 200mm thick block-masonry foundation walls for internal partition walls, on 600x200mm RC strip foundation; depth determined on site to SE approval.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW facia (painted).



**MBRWS-1**

Scale: 1:80

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

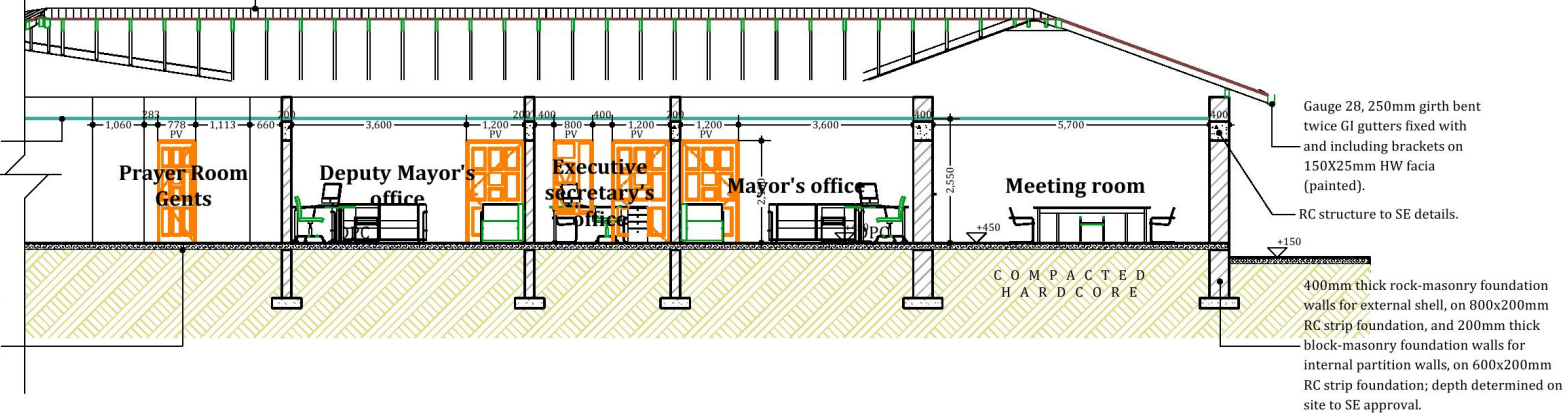
Chrome plated steel handrails on MS balustrades to fabricator's details.

RC structure to SE details.

Planter

12mm thick chip-board ceiling on 50X50mm cypress brandering at 600 mm centres.

150mm thick floor slab reinforced with mesh on 1000 gauge DPM polyethylene on 50mm thick stone dust blinding on 300mm thick well compacted hardcore with anti-termite treatment; see SE details.



**MBRWS-2**

Scale: 1:110

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3. All construction work to comply with the international standards codes protection.
4. The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
5. All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
6. All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION
REVISIONS.		

FINANCED BY:	
CLIENT:	
IMPLEMENTED BY:	<b>SFF SOMALIA</b> Special Financing Facility

CONSULTANT:	
ECOTECH LIMITED	P.O. Box 5527-00100, Nairobi - Kenya Tel: +254 712 388815 Fax: +254 709 838222 Email: info@ecotech.co.ke Web: www.ecotech.co.ke Location: Ecotech House, Woodlands Road, off Lenana Road, Nairobi - Kenya

Project Title:	DETAILED DESIGN FOR PROPOSED ADMINISTRATIVE OFFICE IN BANDEIRA DISTRICT, MURANGA REGION
Drawing Title:	<b>SECTION PLAN</b>
Sheet Content:	<b>SECTION PLAN</b>
Scale:	N.T.S (NOT TO SCALE)
Date:	JULY 2017
PREPARED BY:	JEFFREY LUTZURIAGA
REVIEWED & APPROVED BY:	ENG. AHMED KIRISH      ENG. ALI HUSSAIN Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:	31371-553- SECTION - 10
Project No:	MOF/SFF/SERV/OR
Sheet No:	<b>10/23</b> A3



## TOILET SECTION

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW facia (painted).

12mm thick chip-board ceiling on 50X50mm cypress brandering at 600 mm centres.

150mm thick floor slab reinforced with mesh on 1000 gauge DPM polyethylene on 50mm thick stone dust blinding on 300mm thick well compacted hardcore with anti-termite treatment; see SE details.

22800mm height 150mm thick masonry partition walls; paint to approval.

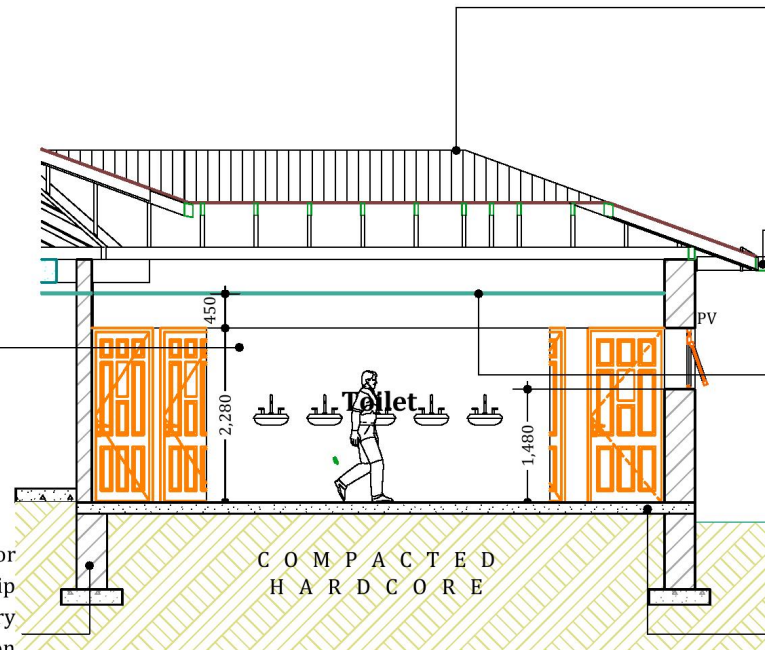
400mm thick rock-masonry foundation walls for external shell, on 800x200mm RC strip foundation, and 200mm thick block-masonry foundation walls for internal partition walls, on 600x200mm RC strip foundation; depth determined on site to SE approval.

Corrugated GI sheets gauge 32, fixed on celcurised cypress structure: 50x50mm Battens on 200X50mm Rafters @700mm, on 100X50mm Wall-plate bolted @ 1200mm centres; structure to SE details. GI lining on ridges and cut-outs.

Gauge 28, 250mm girth bent twice GI gutters fixed with and including brackets on 150X25mm HW facia (painted).

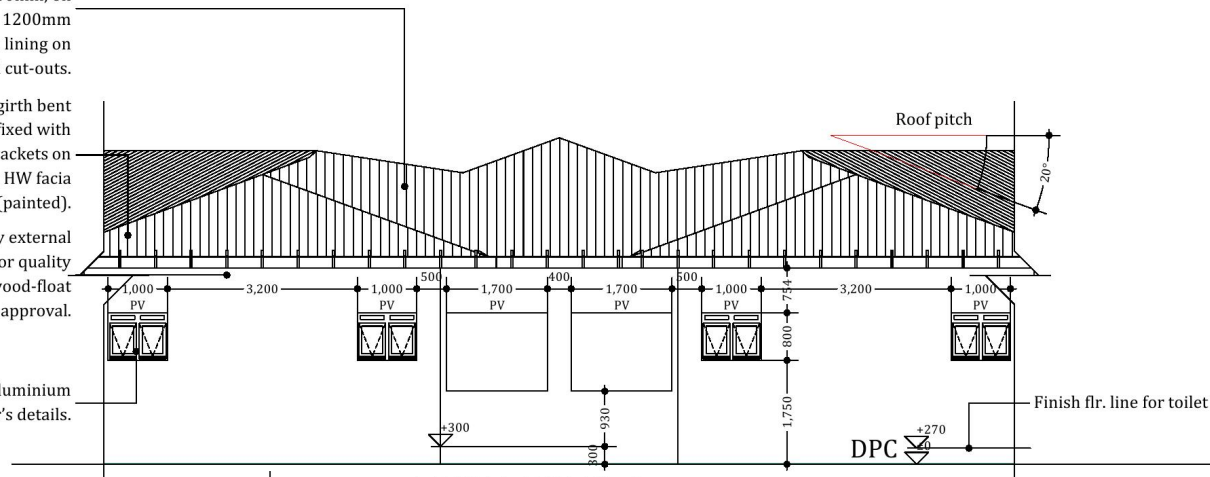
400mm thick rock-masonry external shell walls with exterior quality emulsion paint on wood-float render to approval.

5mm clear glass panes on aluminium framework to manufacturer's details.



**TOILET SECTION-1**

Scale: 1:70



**TOILET ELEV.-1**

Scale: 1:90

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4. The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
5. All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
6. All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

### REVISIONS.

FINANCED BY:	
CLIENT:	
IMPLEMENTED BY:	

CONSULTANT:	
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Web: <a href="http://www.ecotech.co.ke">www.ecotech.co.ke</a>	
Location: Ecotech House, Woodlands Road, off Lenana Road, Nairobi - Kenya	

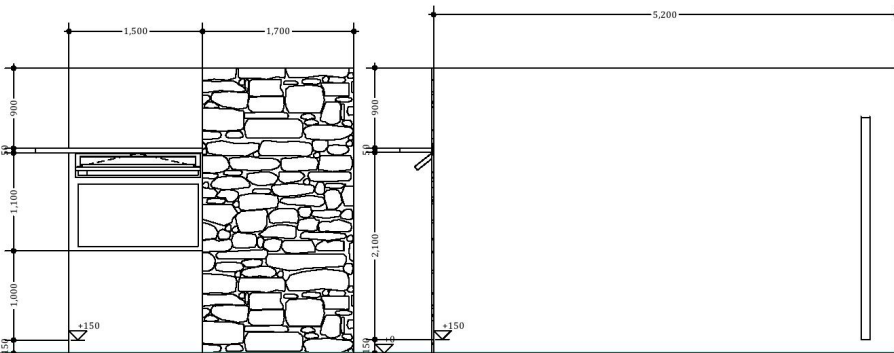
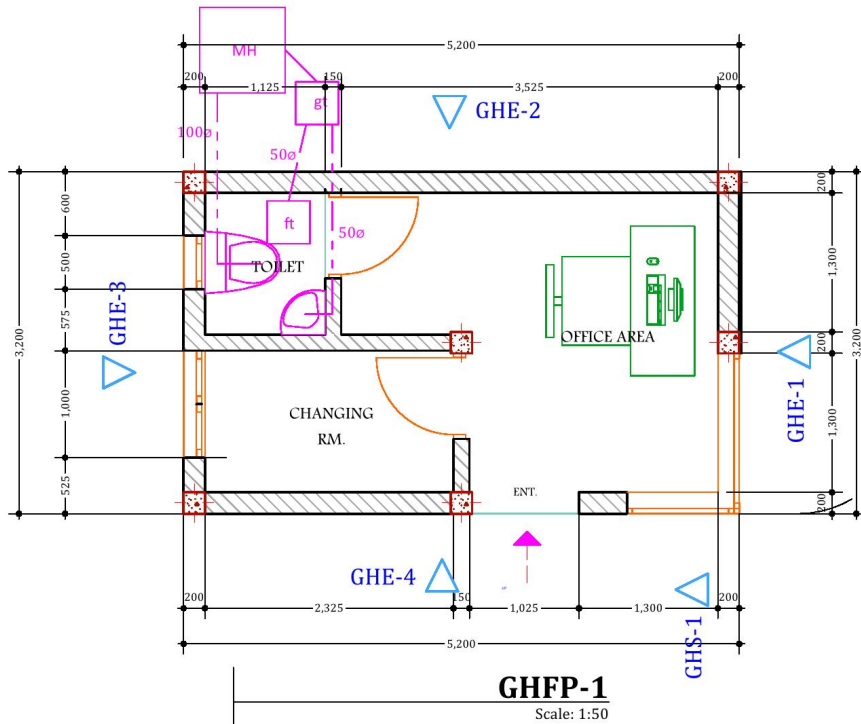
Project Title:	DETAILED DESIGN FOR PROPOSED ADMINISTRATIVE OFFICE IN BAKURADU DISTRICT, MURUGA REGION
Drawing Title:	<b>SECTION PLAN</b>
Sheet Content:	<b>SECTION PLAN</b>
Scale:	N.T.S (NOT TO SCALE)
Date:	JULY 2017
PREPARED BY:	JEFFREY LUTZURAGA
REVIEWED & APPROVED BY:	ENG. AHMED KIRISH      ENG. ALI HUSSEIN Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:	31371-553- SECTION - 11
Project No:	MOF/SFF/SERV/OR
Sheet No:	<b>11/23</b>



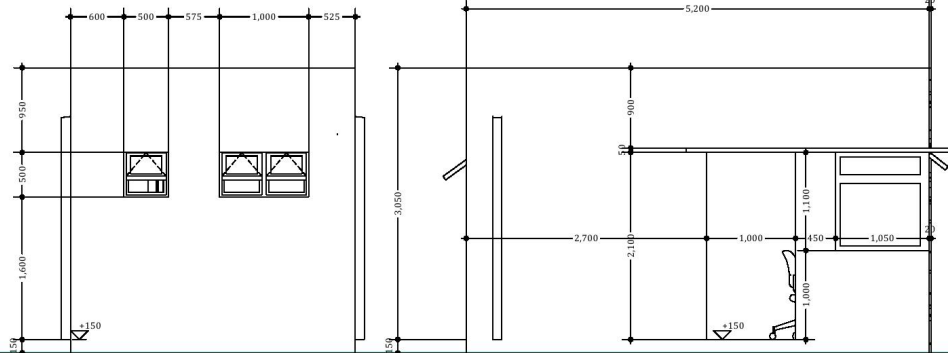
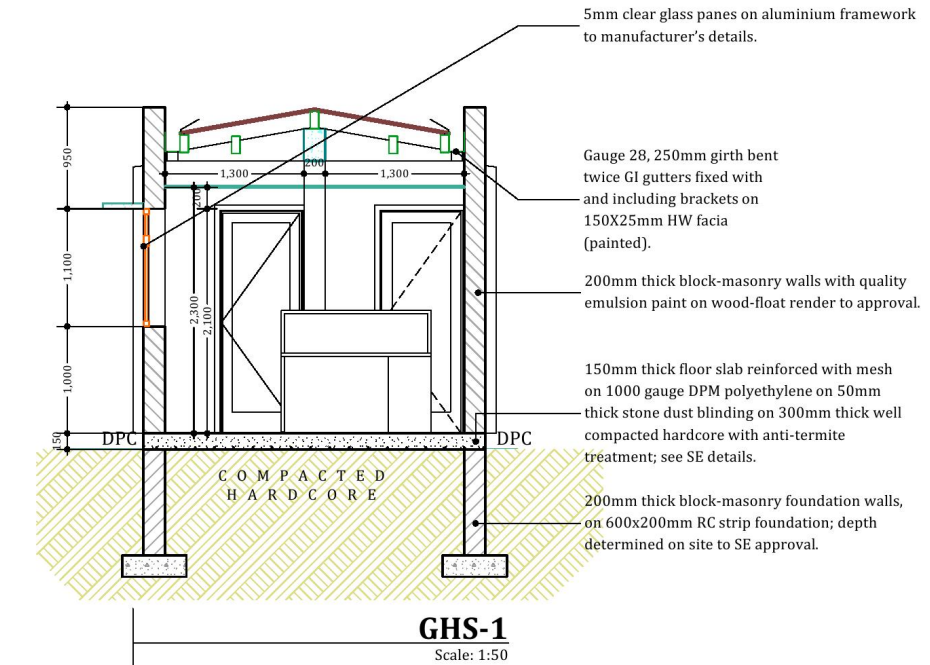


# GUARD HOUSE



**GHE-1** Scale: 1:60

**GHE-2** Scale: 1:60



**GHE-3** Scale: 1:60

**GHE-4** Scale: 1:60

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- All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

**REVISIONS.**

FINANCED BY:

CLIENT:

THE FEDERAL REPUBLIC OF SOMALIA

GOVERNMENT OF GALIUDUUD REGION

IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

CONSULTANT:

**ECOTECH**  
ECOTECH LIMITED

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Project Title:  
DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANSHEERUWEE DISTRICT,  
MURUGA REGION

Drawing Title:  
**GUARD HOUSE**

Sheet Content:  
**GUARD HOUSE**

Scale:  
**N.T.S (NOT TO SCALE)**

Date:  
**JULY 2017**

PREPARED BY: **JEFFREY LUTURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH  
Regional Director Ecotech Ltd.

ENG. ALI HUSSEIN  
Managing Director Ecotech Ltd.

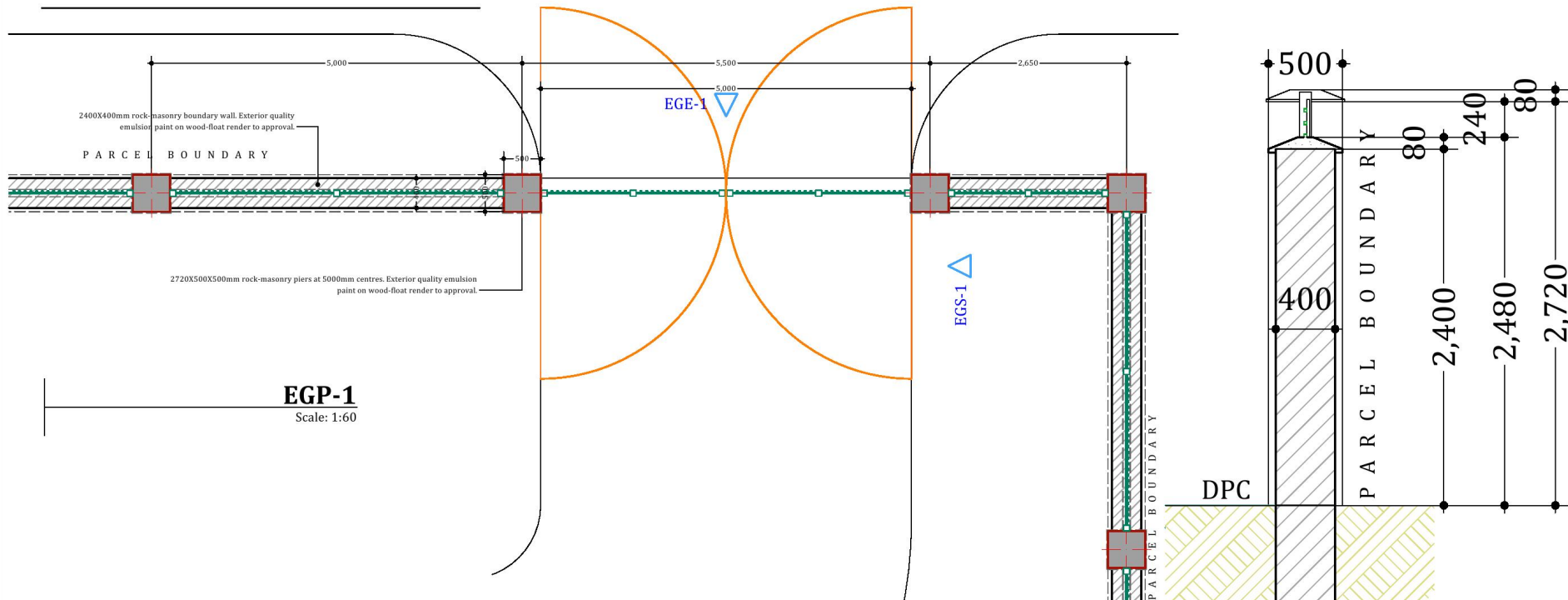
Drawing No:  
**31371-553-  
G-HOUSE-13**

Project No:  
**MOF/SFF/SERV/08**

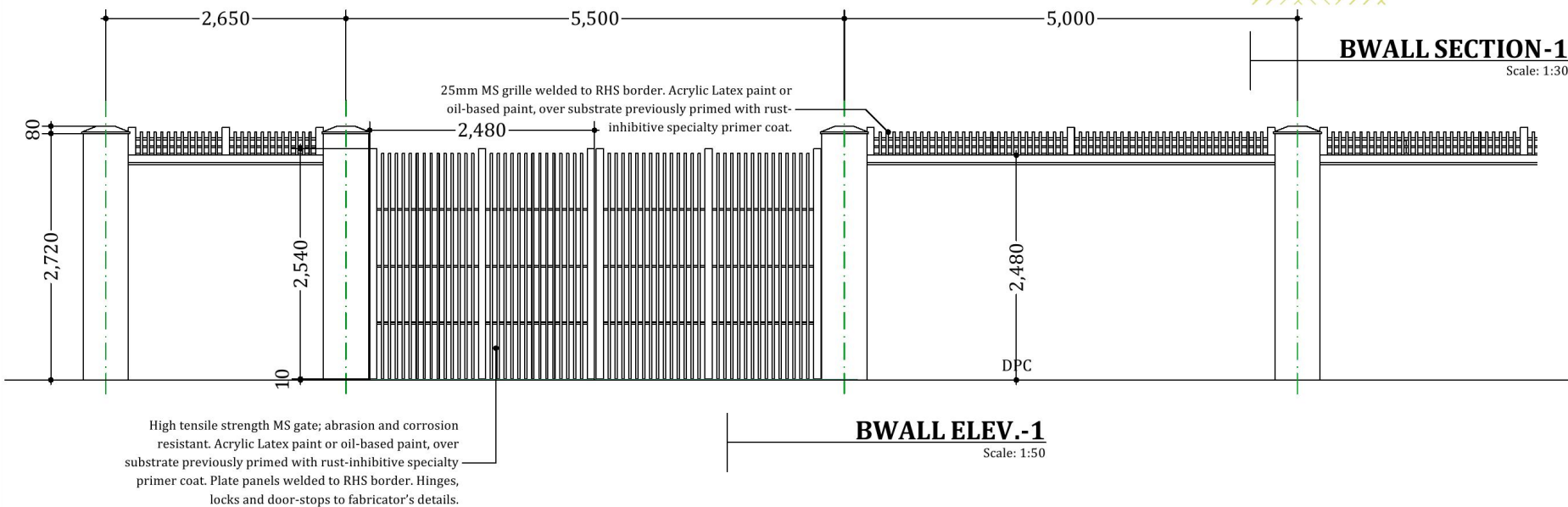
Sheet No:  
**13/23**



# ENTRANCE GATE BOUNDARY WALL



**EGP-1**  
Scale: 1:60



**BWALL ELEV.-1**  
Scale: 1:50

**BWALL SECTION-1**  
Scale: 1:30

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NO.	DATE	DESCRIPTION

## REVISIONS.

FINANCED BY:



CLIENT:



THE FEDERAL REPUBLIC OF SOMALIA  
GOVERNMENT OF GARBHE STATE  
BANDIRABAY DISTRICT

IMPLEMENTED BY:

**SFF SOMALIA**  
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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANDIRABAY DISTRICT,  
MURUGU REGION

Drawing Title:

**BOUNDARY WALL**

Sheet Content:

**BOUNDARY WALL**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH  
Regional Director Ecotech Ltd.

ENG. ALI HUSSEIN  
Managing Director Ecotech Ltd.

Drawing No:

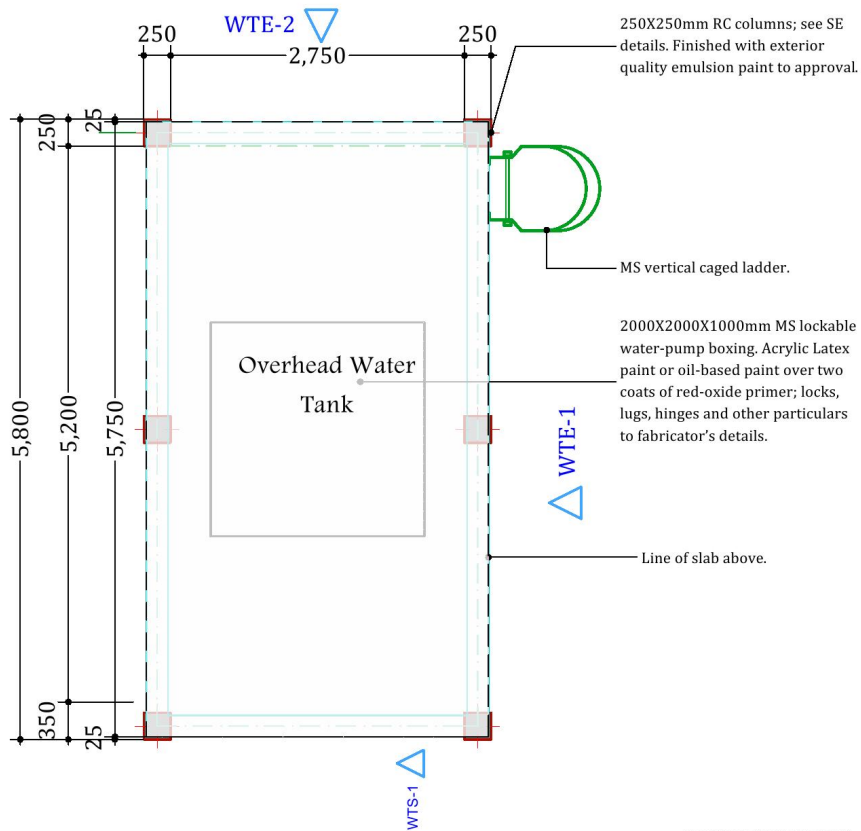
31371-553-  
B-WALL-14

Project No:

MOF/SFF/SERV/08

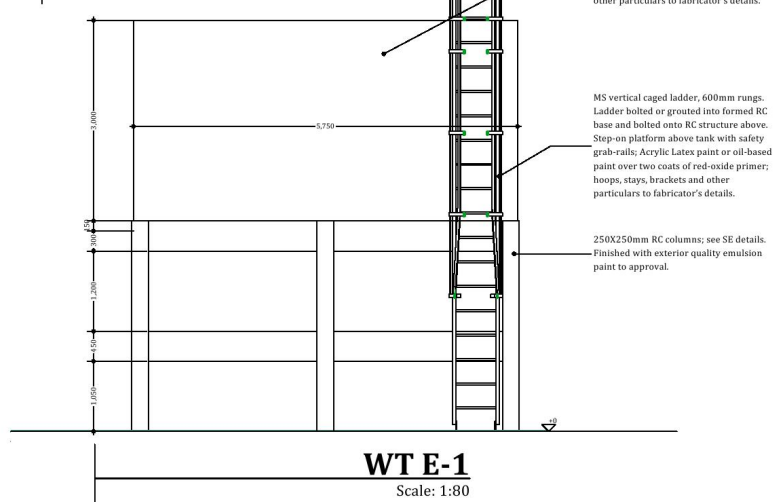
Sheet No:

**14/23**  
A3



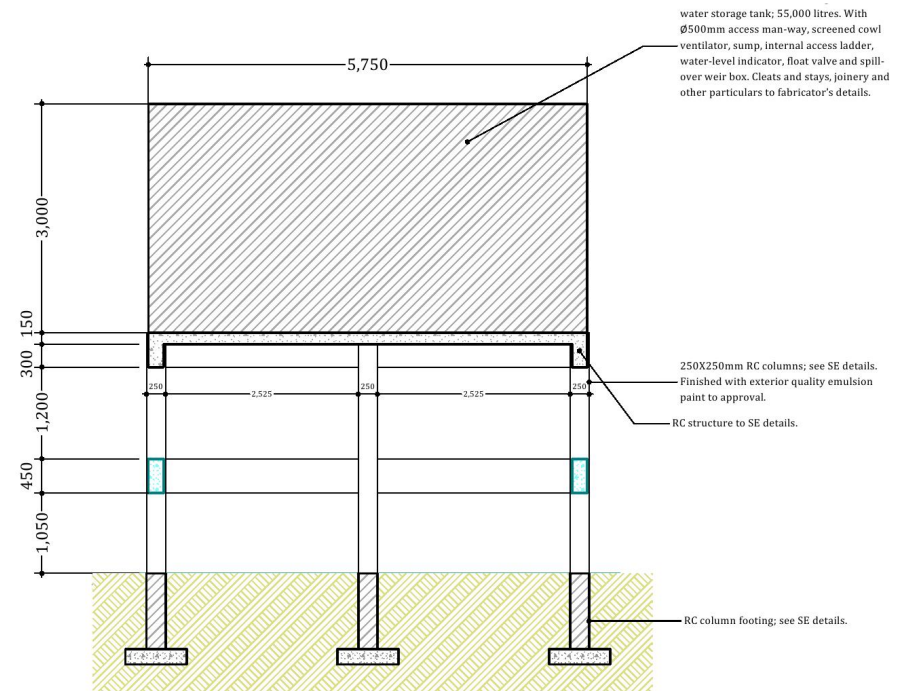
## WATER TANK

Scale: 1:50



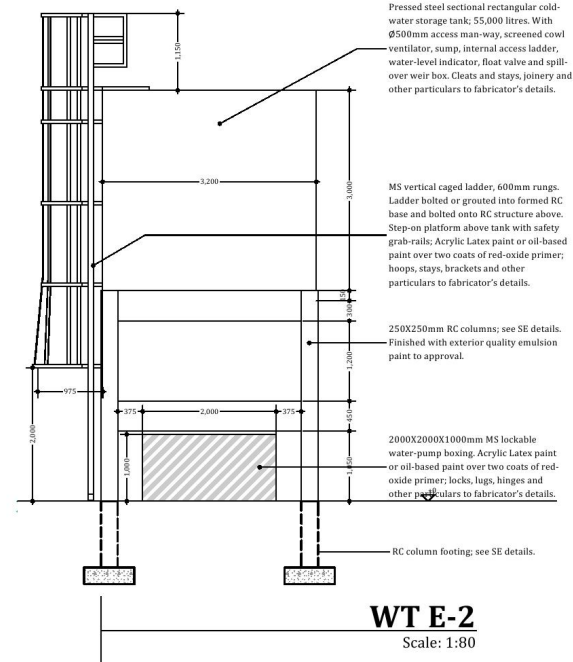
## WTE-1

Scale: 1:80



## WATERTANKSECTION-1

Scale: 1:70



## WTE-2

Scale: 1:80

### NOTES:

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NO.	DATE	DESCRIPTION

### REVISIONS.

FINANCED BY:



CLIENT:



IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

CONSULTANT:



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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANSHEERUQ DISTRICT,  
MURUGA REGION

Drawing Title:

**WATER TANK**

Sheet Content:

**WATER TANK**

Scale: **N.T.S (NOT TO SCALE)**  
Date: **JULY 2017**  
PREPARED BY: **JEFFREY LUTZURIAGA**  
REVIEWED & APPROVED BY:  
ENG. AHMED KIRISH      ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

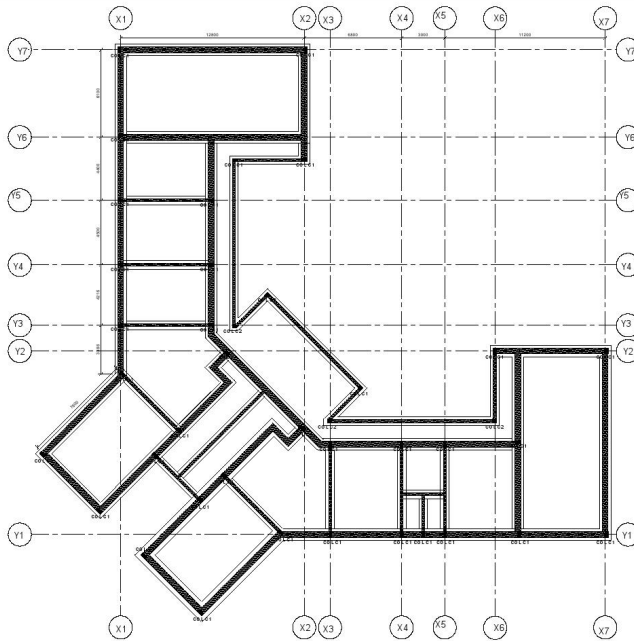
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**WATER TANK-15**

Project No:

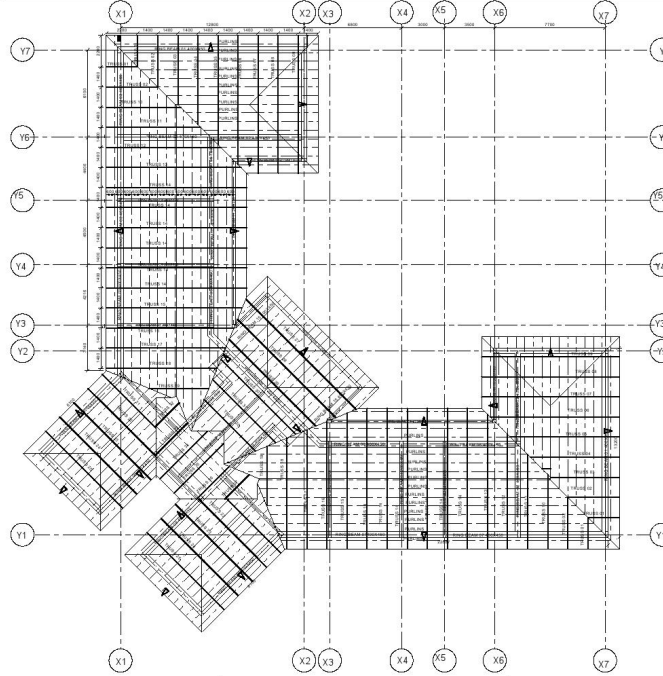
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Sheet No:

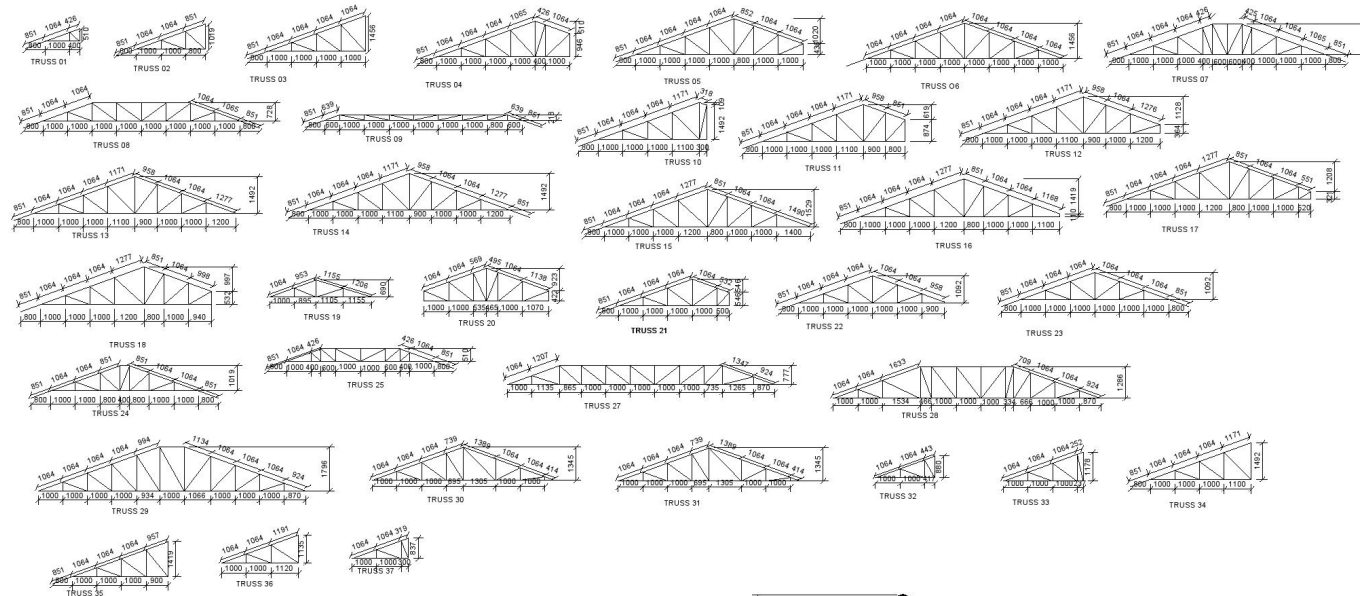
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A3



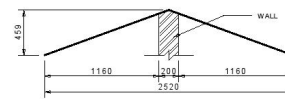
FOUNDATION LAYOUT



TRUSS LAYOUT SCALE 1:100



TRUSS DETAILS (ALL MEMBERS ARE 50mmX100mm/2 inches X 4 inches)



GUARD HOUSE RAFTER 01

## NOTES ON CONCRETE WORK

- These notes shall be deemed to apply to all structural drawings.
- The structural drawings shall be read in conjunction with the architectural drawings and in event of any discrepancies, the engineer and the architect shall be notified before proceeding with the work.
- All dimensions shall be verified by the contractor and drawings shall not be scaled off.
- Concrete shall have 20mm. Maximum size of aggregates and shall be adequately vibrated and cured.
- Concrete grade shall be class 25 for beams & slabs and class 25 for columns & foundations.
- Bleeding concrete shall be 1:4:8 mix and shall be 50 mm. Thick unless otherwise stated.
- Building blocks shall be adequately bonded and set in 3:1 sand/cement mortar.
- Steel reinforcement shall be cold worked bars to b.S 4463 ref. Y and round mild bars to b.S 4448 ref. R.
- Concrete covers shall be as follows:-
  - 50 mm. For foundations
  - 40 mm. For columns
  - 20 mm. For slabs and staircases
  - 25 mm. For beams
- Contractor shall verify the dimensions given in the bending schedules before cutting and bending steel reinforcement.
- These notes do not supersede the specifications and the contractor shall consult the engineer in event of any contradictions.
- Safe bearing pressure of soil is 150 kN/sq.m
- Structural timber shall be well seasoned timber stress grade s3 cypress (bs 5268-2:2002) with min. Moisture content of 12%

MEMBER	R#	BARS PER OF	DIA.	LENGTH	TOTAL NUM. REB.	MARK	S	C	BENDING				
									A	B	C	D	Eh
RING BEAM 01	1	2	10	2100	2	10	34	2000					
		2	10	12400	2	10	42	1000	250	10450	46		
		2	10	2100	2	10	34	2000					
		2	10	12400	2	10	42	1000	250	10450	46		
RING BEAM 02	1	2	10	1550	48	9	61	390	340				
		2	10	4875	2	10	34	4770	250	10010	40	(1200)	
		2	10	12900	2	11	43	1190					
		2	10	7500	2	13	34	7500					
RING BEAM 03	1	2	10	4875	2	14	34	4770					
		2	10	12900	16	43	1190		250	10010	40	(1200)	
		2	10	7500	2	16	34	7500					
		2	10	1550	90	17	61	990					
RING BEAM 04	1	2	10	6800	2	18	35	6600					
		2	10	6800	24	20	35	6600					
		2	10	1150	24	20	61	990	140				
		2	10	12725	2	21	43	1250	250	8860	40	(1100)	
RING BEAM 05	1	2	10	12725	2	22	43	1250	250	8870	40	(1100)	
		2	10	1400	2	23	34	2090					
		2	10	1400	2	25	34	1300					
		2	10	2200	2	26	34	2090					
RING BEAM 06	1	2	10	2250	2	29	34	2140					
		2	10	1800	31	34	1700						
		2	10	12700	2	30	43	1300					
		2	10	2250	2	33	43	1300	250	9610	40	(1200)	
RING BEAM 07	1	2	10	12725	2	33	43	1300					
		2	10	1800	2	34	34	1700					
		2	10	1050	56	35	61	990	340				
		2	10	1550	55	36	61	990	340				
RING BEAM 08	1	2	10	4975	2	37	34	4980					
		2	10	12900	2	38	43	1300	250	9800	40	(1300)	
		2	10	7700	2	39	34	7000					
		2	10	4975	2	40	34	4980					
RING BEAM 09	1	2	10	12900	41	43	1300	250	9800	40	(1300)		
		2	10	7700	2	42	34	7000					
		2	10	1550	67	43	35	8000					
		2	10	8200	2	44	35	8000					
RING BEAM 10	1	2	10	8200	2	45	35	8000					
		2	10	1550	32	46	61	990	340				
		2	10	1700	2	47	34	1600					
		2	10	12650	2	48	43	1400	250	9450	40	(1300)	
RING BEAM 11	1	2	10	1450	2	49	34	1350					
		2	10	1700	2	50	34	1600					
		2	10	12650	2	51	43	1400	250	9450	40	(1300)	
		2	10	1450	2	52	43	1400					
RING BEAM 12	1	2	10	1550	62	53	61	990	340				
		2	10	5300	2	54	35	5100					
		2	10	1150	19	56	61	990	140				
		2	10	1150	19	56	61	990	140				

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- All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

### REVISIONS.

FINANCED BY:

CLIENT:

IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

CONSULTANT:

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Email: info@ecotech.co.ke  
Web: www.ecotech.co.ke  
Location: Ecotech House, Woodlands Road,  
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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANDEBULU DISTRICT,  
MURUGA REGION

Drawing Title:

**STRUCTURAL**

Sheet Content:

**STRUCTURAL**

Scale:

**N.T.S (NOT TO SCALE)**

Date:

**JULY 2017**

PREPARED BY:

**JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-  
STRUCTURAL-16**

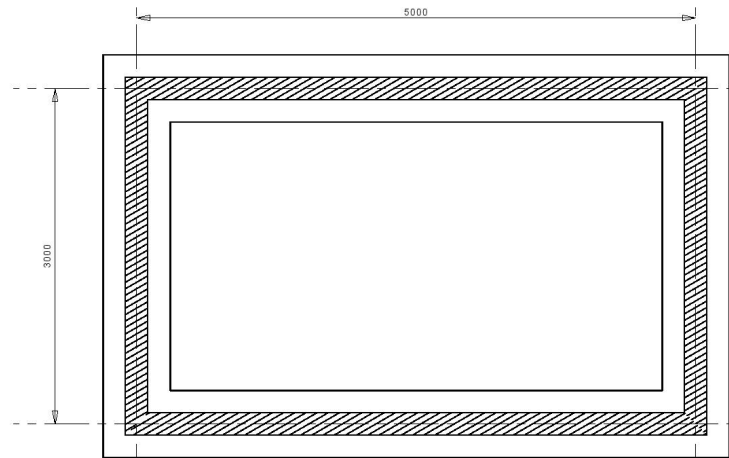
Project No:

**MOF/SFF/SERV/08**

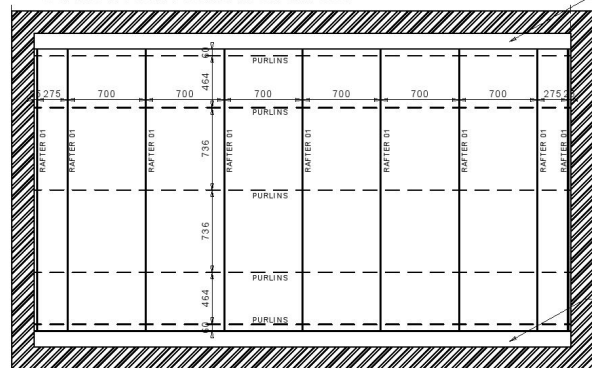
Sheet No:

**16/23**

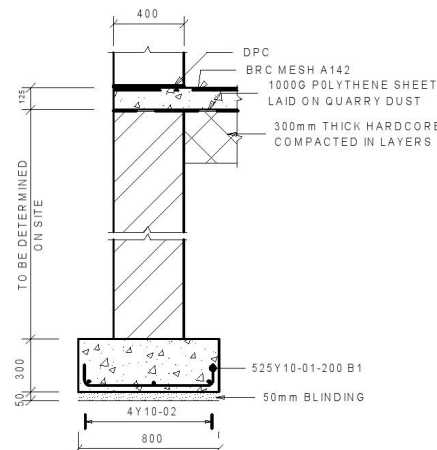




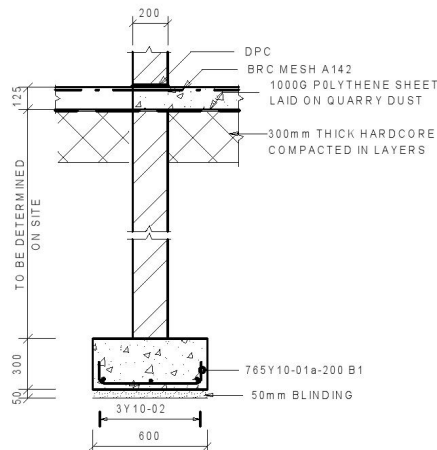
GUARD HOUSE FOUNDATION LAYOUT



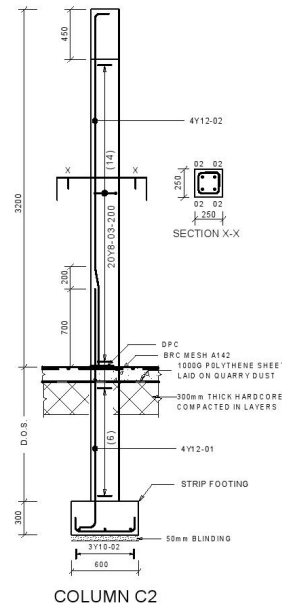
GUARD HOUSE ROOF LAYOUT



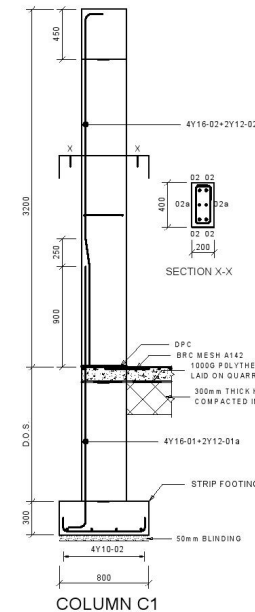
EXTERNAL WALL STRIP FOOTING



INTERNAL WALL STRIP FOOTING



COLUMN C2



COLUMN C1

## NOTES ON CONCRETE WORK

- These notes shall be deemed to apply to all structural drawings
- The structural drawings shall be read in conjunction with the architectural drawings and in event of any discrepancies, the engineer and the architect shall be notified before proceeding with the work.
- All dimensions shall be verified by the contractor and drawings shall not be scaled off.
- Concrete shall have 20mm. Maximum size of aggregates and shall be adequately vibrated and cured.
- Concrete grade shall be class 25 for beams & slabs and class 25 for columns & foundations
- Blinding concrete shall be 1:4:8 mix and shall be 50 mm. Thick unless otherwise stated.
- Building blocks shall be adequately bonded and set in 3:1 sand/cement mortar.
- Steel reinforcement shall be cold worked bars to B.S 4461 ref. Y and round mild bars to B.S 4448 ref. Z.
- Concrete covers shall be as follows:-  
- 50 mm. For foundations  
- 40 mm. For columns  
- 20 mm. For slabs and staircases  
- 25 mm. For beams
- Contractor shall verify the dimensions given in the bending schedules before cutting and bending steel reinforcement.
- These notes do not supersede the specifications and the contractor shall consult the engineer in event of any contradictions.
- Safe bearing pressure of soil is 150 kN/sq.M
- Structural timber shall be well seasoned timber stress grade S3 cypress (to S268-2:2002) with min. Moisture content of 12%

MEMBER	No OF MEMB	BAR PER MEMB	DIA	LENGTH	TOTAL NUM. BAR	MARK	S	C	BENDING				
									A	B	C	D	E
RING BEAM 01	1	2	Y16	2100	2	5	34	2000					
		2	Y16	12400	2	5	42	1000	250	10450	46		
		2	Y16	2100	2	7	34	2000					
		48	Y8	1550	48	9	61	390	340				
RING BEAM 02	1	2	Y16	12400	2	11	43	1190	250	10010	40		(1200)
		2	Y16	12900	2	11	43	1190	250	10010	40		(1200)
		2	Y16	7600	2	13	34	7500					
		2	Y16	4875	2	14	34	4770	250	10010	40		(1200)
RING BEAM 03	1	2	Y16	12900	2	15	43	1190	250	10010	40		(1200)
		2	Y16	7600	2	16	34	7500					
		80	Y8	1550	80	17	61	390	340				
		24	Y8	6900	24	18	35	6600					
RING BEAM 04	1	2	Y16	6900	2	19	35	6600					
		2	Y16	1150	2	20	61	900	140				
		2	Y16	12725	2	21	43	1250	250	9860	40		(1100)
		2	Y16	12725	2	22	43	1250	250	9870	40		(1100)
RING BEAM 05	1	2	Y16	2200	2	23	34	2090					
		2	Y16	1400	2	25	34	1300					
		2	Y16	2200	2	26	34	2090					
		2	Y16	2250	2	29	34	2140					
RING BEAM 06	1	2	Y16	1800	2	31	34	1700					
		2	Y16	12700	2	32	43	1300	250	9610	40		(1200)
		2	Y16	2250	2	32	34	2140					
		2	Y16	12725	2	33	43	1300	250	9610	40		(1300)
RING BEAM 07	1	2	Y16	1800	2	34	34	1700					
		85	Y8	1550	85	35	61	390	340				
		2	Y16	4975	2	37	34	4880					
		2	Y16	12900	2	38	43	1300	250	9800	40		(1300)
RING BEAM 08	1	2	Y16	7700	2	39	34	7600					
		2	Y16	4975	2	40	34	4880					
		2	Y16	12900	2	41	43	1300	250	9800	40		(1500)
		67	Y16	1650	67	43	61	390	340				
RING BEAM 09	1	2	Y16	8000	2	44	35	8000					
		2	Y16	8000	2	45	35	8000					
		32	Y8	1550	32	46	61	390	340				
		2	Y16	1700	2	47	34	1600					
RING BEAM 10	1	2	Y16	12500	2	48	43	1400	250	9450	40		(1300)
		2	Y16	1450	2	49	34	1350					
		2	Y16	1700	2	50	34	1600					
		2	Y16	12600	2	51	43	1400	250	9450	40		(1300)
RING BEAM 11	1	2	Y16	1450	2	52	33	61					
		2	Y16	1550	2	53	61	390	340				
		2	Y16	2500	2	54	35	5100					
		19	Y8	1150	19	56	61	390	140				

**NOTES:**

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- All dimensions are to be checked on site. Any discrepancy in dimensions is to be reported to the Ecotech architect before any work commences. The Architect's drawings and specifications overrule any other.
- All construction work to comply with the international standards codes protection.
- The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
- All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
- All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO. DATE DESCRIPTION

REVISIONS.

FINANCED BY:

CLIENT:

THE FEDERAL REPUBLIC OF SOMALIA GOVERNMENT OF GALICADUUD REGION KAYSHADU DISTRICT

IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

CONSULTANT:

**ECOTECH LIMITED**

P.O. Box 5527-00100,  
Nairobi - Kenya  
Tel: +254 712 388815  
Fax: +254 700 838222  
Email: info@ecotech.co.ke  
www.ecotech.co.ke  
Web: Ecotech House, Woodlands Road,  
off Lenana Road, Nairobi - Kenya

Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANDEBULU DISTRICT  
MURUGU REGION

Drawing Title:

**STRUCTURAL**

Sheet Content:

**STRUCTURAL**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

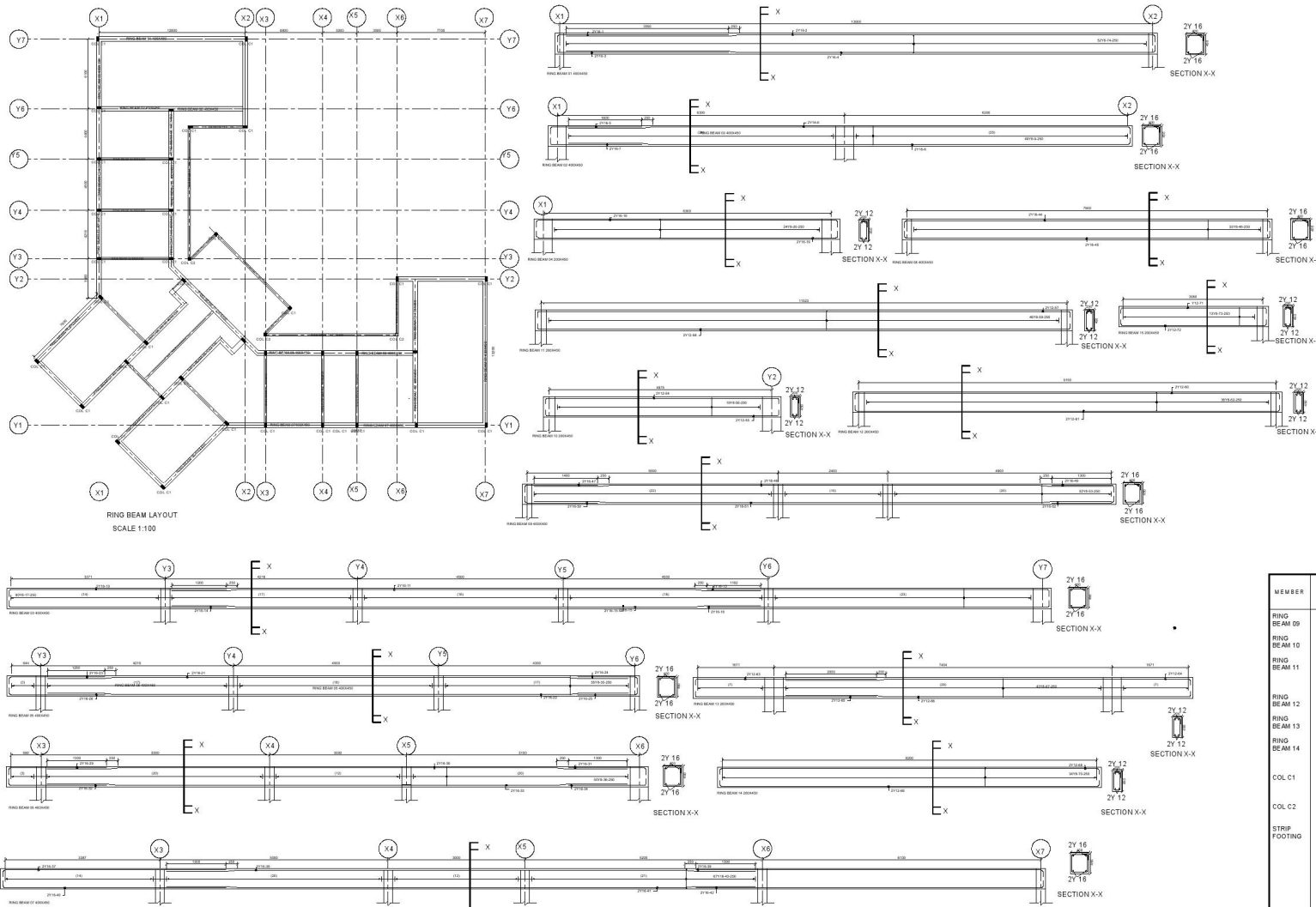
REVIEWED & APPROVED BY:

ENG. AHMED KIRISH ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd. Managing Director Ecotech Ltd.

Drawing No: **31371-553-  
STRUCTURAL-17**

Project No: **MOF/SFF/SERV/08**

Sheet No: **17/23**



# NOTES ON CONCRETE WORK

- These notes shall be deemed to apply to all structural drawings.
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- Concrete grade shall be class 25 for beams & slabs and class 25 for columns & foundations.
- Blinding concrete shall be 1:4:8 mix and shall be 50 mm. Thick unless otherwise stated.
- Building blocks shall be adequately bonded and set in 3:1 sand/cement mortar.
- Steel reinforcement shall be cold worked bars to S 4461 ref. Y and round mild bars to S 4468 ref. Z.
- Concrete covers shall be as follows:-  
- 50 mm. For foundations  
- 40 mm. For columns  
- 20 mm. For slabs and staircases  
- 25 mm. For beams
- Contractor shall verify the dimensions given in the bending schedules before cutting and bending steel reinforcement.
- These notes do not supercede the specifications and the contractor shall consult the engineer in event of any contradictions.
- Safe bearing pressure of soil is 150 kN/sq.M
- Structural timber shall be well seasoned timber stress grade S3 cypress (to S268-2:2002) with min. Moisture content of 12%

## NOTES:

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- All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
- All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION
REVISIONS.		

FINANCED BY:

CLIENT:

THE FEDERAL REPUBLIC OF SOMALIA  
GOVERNMENT OF GALMUDUG REGION  
BARDIIRAAH DISTRICT

IMPLEMENTED BY:

**SFF SOMALIA**  
Special Financing Facility

CONSULTANT:

**ECOTECH LIMITED**  
P.O. Box 5527-00100,  
Nairobi - Kenya  
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Email: info@ecotech.co.ke  
www.ecotech.co.ke  
Web: Ecotech House, Woodlands Road,  
off Lenana Road, Nairobi - Kenya

MEMBER	N <sup>o</sup> OF	BARS PER MEMB	DIAL	LENGTH	TOTAL QUAN- TITY	MARK	SECTION	BENDING					EH
								A	B	C	D		
RING BEAM 09	1	2	Y12	11875	2	57	35	11670					
RING BEAM 10	1	2	Y12	11875	2	58	35	11670					
RING BEAM 11	1	2	Y12	8950	2	60	35	8900					
RING BEAM 12	1	2	Y12	8950	2	61	35	8900					
RING BEAM 13	1	2	Y12	8950	2	62	35	8900					
RING BEAM 14	1	2	Y12	8950	2	63	35	8900					
COL C1	34	4	Y16	2450	136	01	37	2330					
COL C2	12	4	Y12	3275	68	02	42	600					
STRIP FOOTING	25	4	Y10	4000	100	02	20	4000					
	36	3	Y10	4000	108	02	20	4000					
	712	1	Y10	775	712	01a	35	580					
	3295	1	Y10	825	3295	01	35	730					

Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BARDIIRAAH DISTRICT,  
MUDUG REGION

Drawing Title:

**STRUCTURAL**

Sheet Content:

**STRUCTURAL**

Scale:

**N.T.S (NOT TO SCALE)**

Date:

**JULY 2017**

PREPARED BY:

**JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH  
Regional Director Ecotech Ltd.

ENG. ALI HUSSEIN  
Managing Director Ecotech Ltd.

Drawing No:

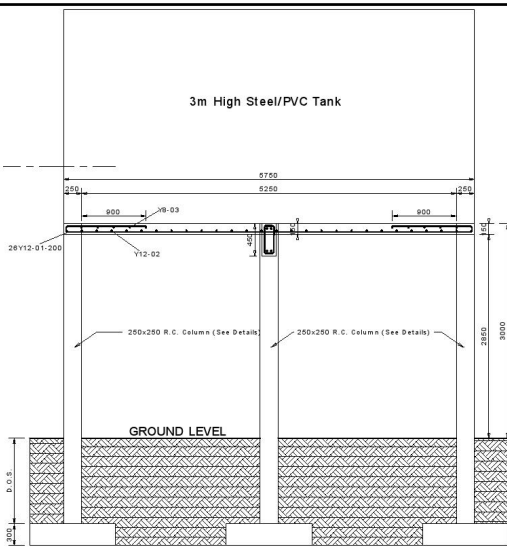
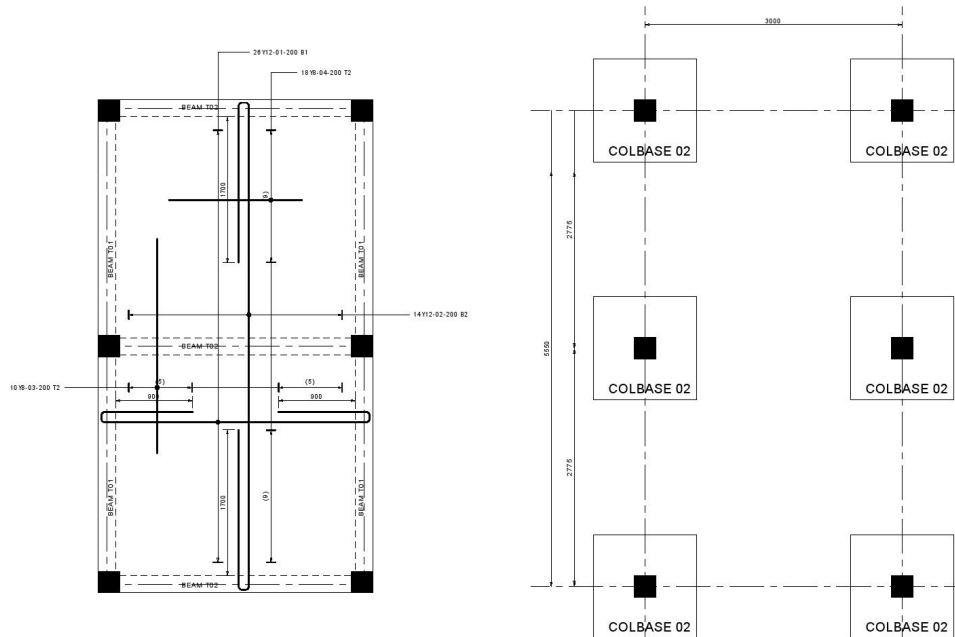
**31371-553-  
STRUCTURAL-18**

Project No:

**MOF/SFF/SERV/08**

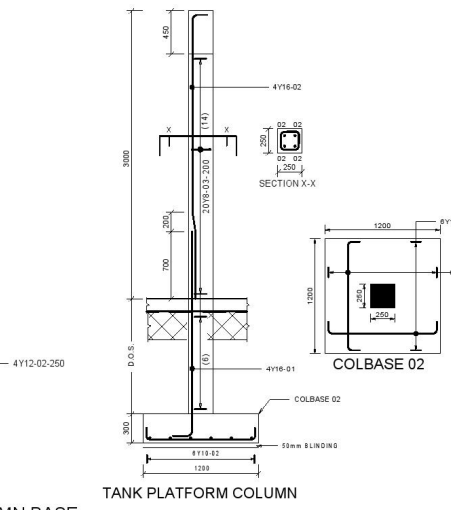
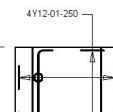
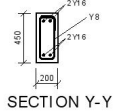
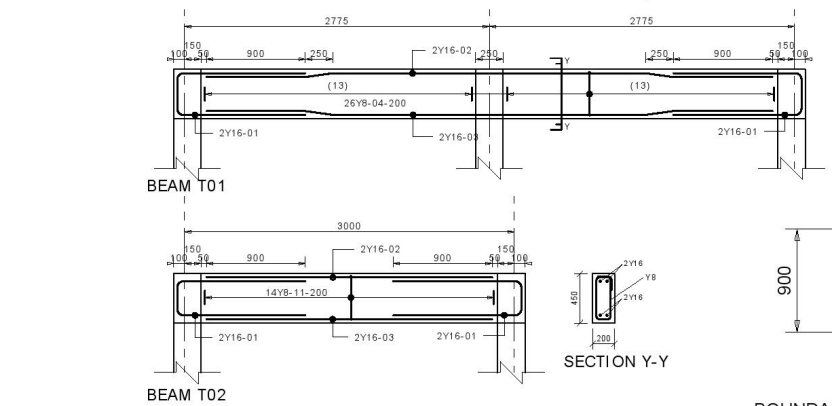
Sheet No:

**18/23**



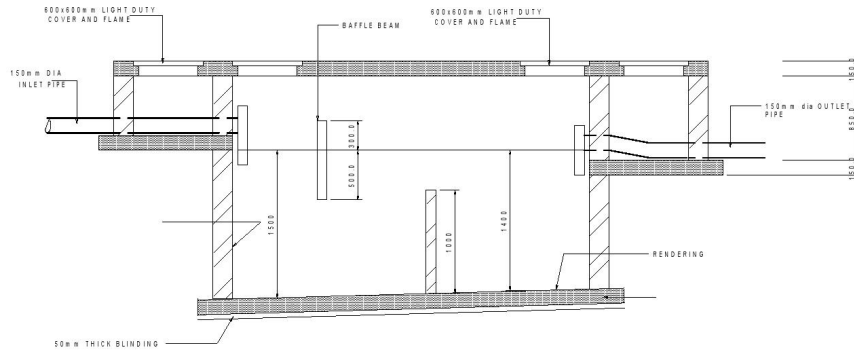
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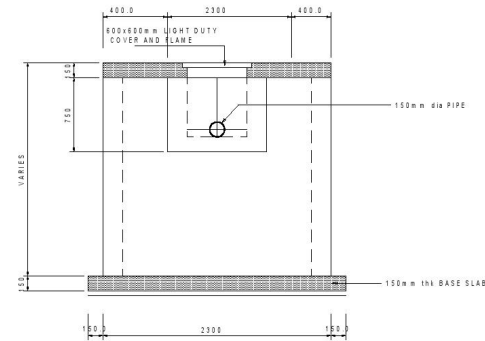


MEMBER	NO OF PER MEMBER	DIA.	LENGTH	TOTAL NUM- BER	MARK	S	BENDING						
							A	B	C	D	E/I		
TANK SLAB	1	26	Y12	9025	26	01	55	1215	120	3380	120	(1215)	
	14	Y12	10075	14	02	55	2015	120	9900	120	(2015)		
		10	Y8	2500	10	03	20	(2500)					
		18	Y8	1550	18	04	20	(1550)					
		6	Y12	1325	6	01	35	1130					
B WALL COLLAGE	36	6	Y12	1325	6	02	35	1130					
		4	Y12	1050	144	01	35	840					
		4	Y12	1050	144	02	35	840					
		4	Y10	3500	144	02	20	(3500)					
	3	Y10	3500	108	02	42	700						
B WALL FOOTING	6	4	Y16	2300	24	01	37	2130	(200)				
		4	Y16	3075	24	02	42	700	2000	47			
		20	Y8	825	120	03	61	180					
		4	Y16	2625	4	01	38	1165	380	(1165)			
	2	Y16	2510	4	02	43	900	250	2650	50	(905)	50	
TANK FLTRM	2	2	Y16	5150	4	03	43	900	250	2650	50	(905)	50
		4	Y16	2625	4	01	38	1165	380	(1165)			
		26	Y8	1125	52	04	61	380	130				
		4	Y16	2575	12	01	38	1165	310	(1165)			
	2	Y16	2600	6	02	20	(2600)						
COLLS BEAM T01	2	2	Y16	2600	6	03	20	(2600)					
		14	Y8	1125	42	11	61	380	130				
		8	Y10	3500	108	02	42	700					
		4	Y16	2300	24	01	37	2130					
	4	Y16	2300	24	02	37	2130						
COLLS BEAM T02	3	2	Y16	825	120	03	61	180					
		4	Y16	2625	4	01	38	1165	380	(1165)			
		4	Y16	2510	4	02	43	900	250	2650	50	(905)	50
		4	Y16	2510	4	03	43	900	250	2650	50	(905)	50
	4	Y16	3025	4	01	38	1165	380	(1165)				
COLLS BEAM T03	36	Y8	1125	52	04	61	380	130					
		4	Y16	2575	12	01	38	1165	310	(1165)			
		4	Y16	2600	6	02	20	(2600)					
		6	Y16	2600	6	03	20	(2600)					
	14	Y8	1125	42	11	61	380	130					
COLLS BEAM T04	8	Y10	3500	108	02	42	700						
		4	Y16	2300	24	01	37	2130					
		4	Y16	2300	24	02	37	2130					
		2	Y16	825	120	03	61	180					
	4	Y16	2625	4	01	38	1165	380	(1165)				
COLLS BEAM T05	4	Y16	2510	4	02	43	900	250	2650	50	(905)	50	
		4	Y16	2510	4	03	43	900	250	2650	50	(905)	50
		4	Y16	3025	4	01	38	1165	380	(1165)			
		36	Y8	1125	52	04	61	380	130				
	4	Y16	2575	12	01	38	1165	310	(1165)				
COLLS BEAM T06	4	Y16	2600	6	02	20	(2600)						
		6	Y16	2600	6	03	20	(2600)					
		14	Y8	1125	42	11	61	380	130				
		8	Y10	3500	108	02	42	700					
	4	Y16	2300	24	01	37	2130						
COLLS BEAM T07	4	Y16	2300	24	02	37	2130						
		2	Y16	825	120	03	61	180					
		4	Y16	2625	4	01	38	1165	380	(1165)			
		4	Y16	2510	4	02	43	900	250	2650	50	(905)	50
	4	Y16	2510	4	03	43	900	250	2650	50	(905)	50	
COLLS BEAM T08	4	Y16	3025	4	01	38	1165	380	(1165)				
		36	Y8	1125	52	04	61	380	130				
		4	Y16	2575	12	01	38	1165	310	(1165)			
		4	Y16	2600	6	02	20	(2600)					
	6	Y16	2600	6	03	20	(2600)						
COLLS BEAM T09	14	Y8	1125	42	11	61	380	130					
		8	Y10	3500	108	02	42	700					
		4	Y16	2300	24	01	37	2130					
		4	Y16	2300	24	02	37	2130					
	2	Y16	825	120	03	61	180						
COLLS BEAM T10	4	Y16	2625	4	01	38	1165	380	(1165)				
		4	Y16	2510	4	02	43	900	250	2650	50	(905)	50
		4	Y16	2510	4	03	43	900	250	2650	50	(905)	50
		4	Y16	3025	4	01	38	1165	380	(1165)			
	36	Y8	1125	52	04	61	380	130					
COLLS BEAM T11	4	Y16	2575	12	01	38	1165	310	(1165)				
		4	Y16	2600	6	02	20	(2600)					
		6	Y16	2600	6	03	20	(2600)					
		14	Y8	1125	42	11	61	380	130				
	8	Y10	3500	108	02	42	700						
COLLS BEAM T12	4	Y16	2300	24	01	37	2130						
		4	Y16	2300	24	02	37	2130					
		2	Y16	825	120	03	61	180					
		4	Y16	2625	4	01	38	1165	380	(1165)			
	4	Y16	2510	4	02	43	900	250	2650	50	(905)	50	
COLLS BEAM T13	4	Y16	2510	4	03	43	900	250	2650	50	(905)	50	
		4	Y16	3025	4	01	38	1165	380	(1165)			
		36	Y8	1125	52	04	61	380	130				
		4	Y16	2575	12	01	38	1165	310	(1165)			
	4	Y16	2600	6	02	20	(2600)						
COLLS BEAM T14	6	Y16	2600	6	03	20	(2600)						
		14	Y8	1125	42	11	61	380	130				
		8	Y10	3500	108	02	42	700					
		4	Y16	2300	24	01	37	2130					
	4	Y16	2300	24	02	37	2130						
COLLS BEAM T15	2	Y16	825	120	03	61	180						
		4	Y16	2625	4	01	38	1165	380	(1165)			
		4	Y16	2510	4	02	43	900	250	2650	50	(905)	50
		4	Y16	2510	4	03	43	900	250	2650	50	(905)	50
	4	Y16	3025	4	01	38	1165	380	(1165)				
COLLS BEAM T16	36	Y8	1125	52	04	61	380	130					
		4	Y16	2575	12	01	38	1165	310	(1165)			
		4	Y16	2600	6	02	20	(2600)					
		6	Y16	2600	6	03	20	(2600)					
	14	Y8	1125	42	11	61	380	130					
COLLS BEAM T17	8	Y10	3500	108	02	42	700						
		4	Y16	2300	24	01	37	2130					
		4	Y16	2300	24	02	37	2130					
		2	Y16	825	120	03	61	180					
	4	Y16	2625	4	01	38	1165	380	(1165)				
COLLS BEAM T18	4	Y16	2510	4	02	43	900	250	2650	50	(905)	50	
		4	Y16	2510	4	03	43	900	250	2650	50	(905)	50
		4	Y16	3025	4	01	38	1165	380	(1165)			
		36	Y8	1125	52	04	61	380	130				
	4	Y16	2575	12	01	38	1165	310	(1165)				
COLLS BEAM T19	4	Y16	2600	6	02	20	(2600)						
		6	Y16	2600	6	03	20	(2600)					
		14	Y8	1125	42	11	61	380	130				
		8	Y10	3500	108	02	42	700					
	4	Y16	2300	24	01	37	2130						
COLLS BEAM T20	4	Y16	2300	24	02	37	2130						
		2	Y16	825	120	03	61	180					
		4	Y16	2625	4	01	38	1165	380	(1165)			
		4	Y16	2510	4	02	43	900	250	2650	50	(905)	50
	4	Y16	2510	4	03	43	900	250	2650	50	(905)	50	
COLLS BEAM T21	4	Y16	3025	4	01	38	1165	380	(1165)				
		36	Y8	1125	52	04	61	380	130				
		4	Y16	2575	12	01	38	1165	310	(1165)			
		4	Y16	2600	6	02	20	(2600)					
	6	Y16	2600	6	03	20	(2600)						
COLLS BEAM T22	14	Y8	1125	42	11	61	380	130					
		8	Y10	3500	108	02	42	700					
		4	Y16	2300	24	01	37	2130					
		4	Y16	2300	24	02	37	2130					
	2	Y16	825	120	03	61	180						
COLLS BEAM T23	4	Y16	2625	4	01	38	1165	380	(1165)				
		4	Y16	2510	4	02	43	900	250	2650	50	(905)	50
		4	Y16	2510	4	03	43	900	250	2650	50	(905)	50
		4	Y16	3025	4	01	38	1165	380	(1165)			
	36	Y8	1125	52	04	61	380	130					
COLLS BEAM T24	4	Y16	2575	12	01	38	1165	310	(1165)				
		4	Y16	2600	6	02	20	(2600)					
		6	Y16	2600	6	03	20	(2600)					
		14	Y8	1125	42	11	61	380	130				
	8	Y10	3500	108	02	42	700						
COLLS BEAM T25	4	Y16	2300	24	01	37	2130						
		4	Y16	2300	24	02	37	2130					
		2	Y16	825									

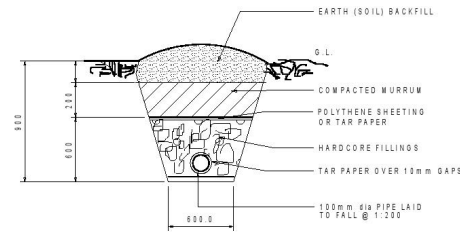




SECTION 2 - 2



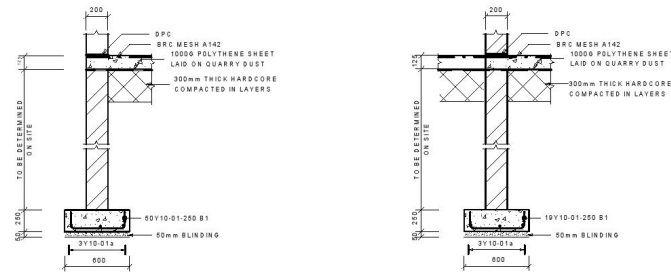
ELEVATION SECTION 1 - 1



FRENCH DRAIN

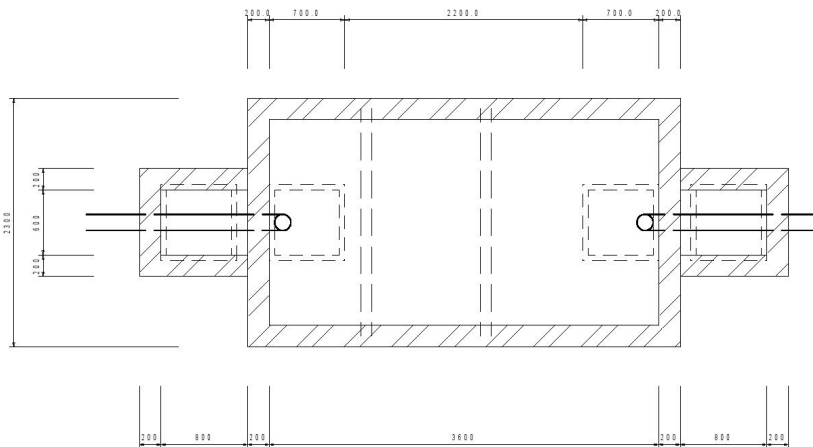
#### NOTES ON CONCRETE WORK

- THESE NOTES SHALL BE DEEMED TO APPLY TO ALL STRUCTURAL DRAWINGS
- THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND IN EVENT OF ANY DISCREPANCIES, THE ENGINEER AND THE ARCHITECT SHALL BE NOTIFIED BEFORE PROCEEDING WITH THE WORK.
- ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AND DRAWINGS SHALL NOT BE SCALED OFF.
- CONCRETE SHALL HAVE 20MM MAXIMUM SIZE OF AGGREGATES AND SHALL BE ADEQUATELY VIBRATED AND CURED. CONCRETE GRADE SHALL BE CLASS 25 UNLESS OTHERWISE STATED BY THE ENGINEER.
- BLINDING CONCRETE SHALL BE 1:4:8 MIX AND SHALL BE 50 MM THICK UNLESS OTHERWISE STATED.
- BUILDING BLOCKS SHALL BE ADEQUATELY BONDED AND SET IN 3:1 SAND/CEMENT MORTAR.
- STEEL REINFORCEMENT SHALL BE COLD WORKED BARS TO B S 4461 REF. Y AND ROUND MILD BARS TO B S 4448 REF. R.
- UNLESS OTHERWISE STATED, CONCRETE COVERS SHALL:
  - 50 MM. FOR FOUNDATIONS
  - 40 MM. FOR COLUMNS
  - 20 MM. FOR SLABS AND STAIRCASES
  - 25 MM. FOR BEAMS
- CONTRACTOR SHALL VERIFY THE DIMENSIONS GIVEN IN THE BENDING SCHEDULES BEFORE CUTTING AND BENDING STEEL REINFORCEMENT.
- THESE NOTES DO NOT SUPERCEDE THE SPECIFICATIONS AND THE CONTRACTOR SHALL CONSULT THE ENGINEER IN EVENT OF ANY CONTRADICTIONS.
- CUBE TESTS SHALL BE DONE FOR EVERY CONCRETING. ANY CONCRETE WORK THAT FAILS TESTS SHALL BE DEMOLISHED AND REDONE AT THE COST OF THE CONTRACTOR.

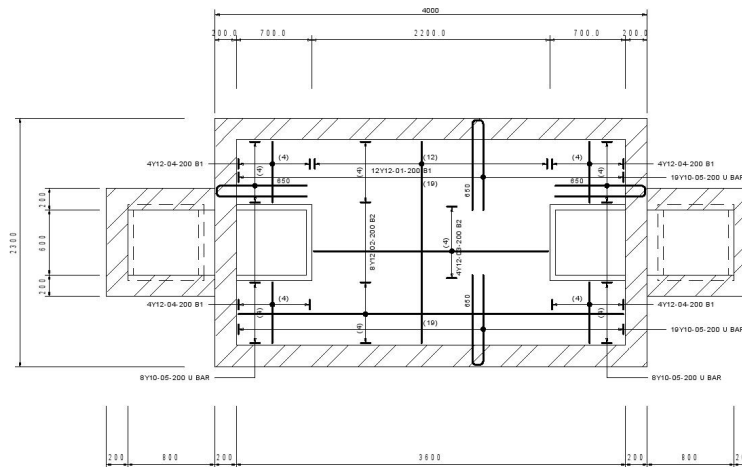


EXTERNAL WALL STRIP FOOTING

INTERNAL WALL STRIP FOOTING



ROOF LAYOUT



TOP SLAB REINFORCEMENT

## SEPTIC TANK DETAIL-1

Scale: 1:1

#### NOTES:

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- All construction work to comply with the international standards codes protection.
- The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
- All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
- All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

#### REVISIONS.

FINANCED BY:

CLIENT:

IMPLEMENTED BY:

**SFF SOMALIA**  
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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANSHEBALE DISTRICT,  
MURUGA REGION

Drawing Title:

**SEPTIC TANK DETAIL**

Sheet No:

**SEPTIC TANK DETAIL**

Scale:

**N.T.S (NOT TO SCALE)**

Date:

**JULY 2017**

PREPARED BY:

**JETREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSEIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-  
SEPTIC TANK-20**

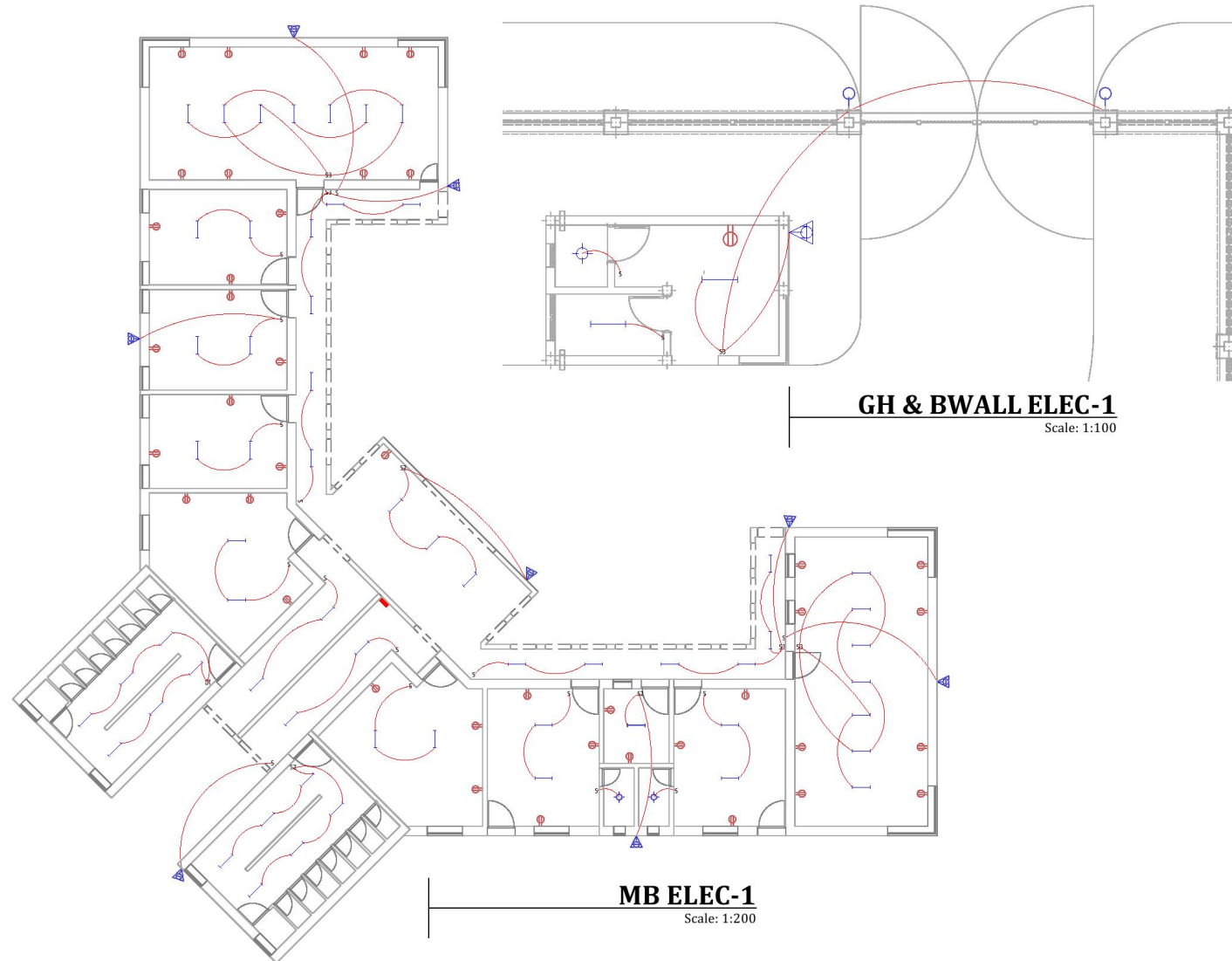
Project No:

**MOF/SFF/SERV/08**

Sheet No:

**20/23**

SYMBOL	MEANING
	CEILING MOUNTED LIGHT FIXTURE.
	CEILING MOUNTED LIGHT FIXTURE (PENDANT)
	WALL MOUNTED LIGHT FIXTURE
	RECESSED SPOT LIGHT
	FLUORESCENT LIGHT FIXTURE
	FLUORESCENT LIGHT FIXTURE UNDER FALSE CEILING
	WIRING CONNECTION
	FLUORESCENT LIGHT FIXTURE WITH SHAVER SOCKET & LOCALISED SWITCH
	FLUORESCENT LIGHT FIXTURE WITH LOCALISED SWITCH
	SINGLE PLEX RECEPTACLE
	DUPLEX RECEPTACLE
	SPECIAL RECEPTACLE & OUTLET (WITH PILOT LIGHT)
	WATER PROOF RECEPTACLE (SINGLE)
	CONSUMER UNIT
	TELEPHONE/TV JACK
	ALARM KEYPAD
	DOORBELL PUSH BUTTON
	DOORBELL TRANSFORMER
S3	3 gang switch
S2	2 gang switch
S	Single pole switch
	Flood lamp



## MAIN BLDG & GUARD HOUSE ELECTRICAL

### NOTES:

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3. All construction work to comply with the international standards codes protection.
4. The PV denotes permanent ventilation and must be provided above all doors and windows where indicated.
5. All walls less than 200mm thick are to be reinforced with hoop iron sheet every alternate course.
6. All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

### REVISIONS.

FINANCED BY:



CLIENT:



IMPLEMENTED BY:

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CONSULTANT:



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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANSHEERUWEE DISTRICT,  
MURUGU REGION

Drawing Title:

**ELECTRICAL PLAN**

Sheet Content:

**ELECTRICAL PLAN**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

ENG. AHMED KIRISH      ENG. ALI HUSSIN  
Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-  
ELECTRICAL-21**

Project No:

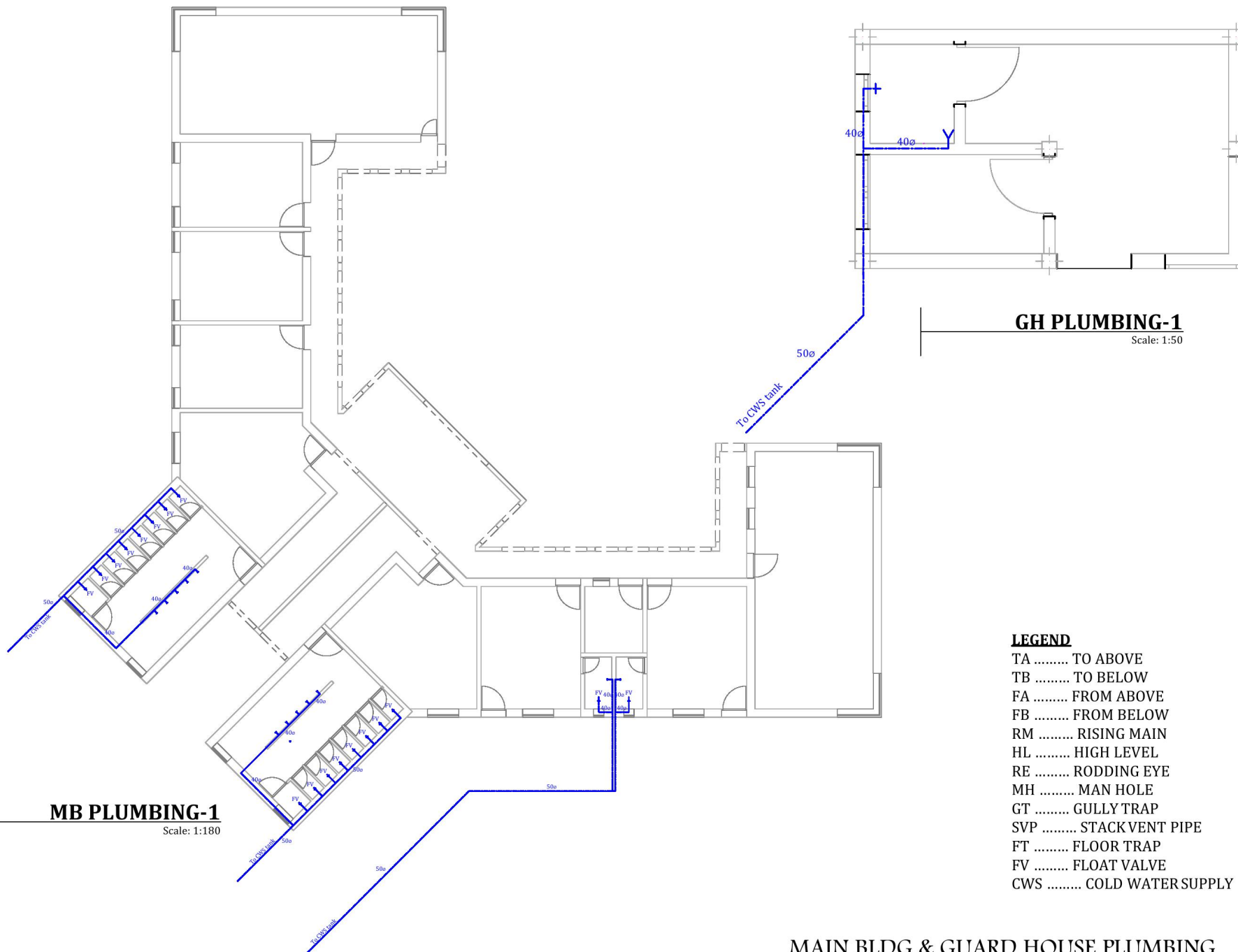
**MOF/SFF/SERV/OR**

Sheet No:

**21/23**

A3





**MB PLUMBING-1**  
Scale: 1:180

**GH PLUMBING-1**  
Scale: 1:50

### LEGEND

TA ..... TO ABOVE  
TB ..... TO BELOW  
FA ..... FROM ABOVE  
FB ..... FROM BELOW  
RM ..... RISING MAIN  
HL ..... HIGH LEVEL  
RE ..... RODDING EYE  
MH ..... MAN HOLE  
GT ..... GULLY TRAP  
SVP ..... STACK VENT PIPE  
FT ..... FLOOR TRAP  
FV ..... FLOAT VALVE  
CWS ..... COLD WATER SUPPLY

## MAIN BLDG & GUARD HOUSE PLUMBING

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NO.	DATE	DESCRIPTION

### REVISIONS.

FINANCED BY:



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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATIVE OFFICE IN BANDEIRA DISTRICT,  
MURUGA REGION

Drawing Title:

**PLUMBING PLAN**

Sheet Content:

**PLUMBING PLAN**

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

REVIEWED & APPROVED BY:

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Regional Director Ecotech Ltd.      Managing Director Ecotech Ltd.

Drawing No:

**31371-553-  
PLUMBING-22**

Project No:

**MOF/SFF/SERV/OR**

Sheet No:

**22/23**  
A3



FRONT VIEW MAIN ENTRANCE



GUARD POST VIEW



REAR VIEW (PRIVATE ACCESS)



AERIAL VIEW

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6. All reinforced concrete works to be done according to the Ecotech Structural Engineers detail drawings.

NO.	DATE	DESCRIPTION

#### REVISIONS.

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Project Title:

DETAILED DESIGN FOR PROPOSED  
ADMINISTRATION OFFICE IN BANDIRADLEY DISTRICT,  
MUDUJA REGION

Drawing Title:

**PERSPECTIVE VIEW**

Sheet Content:

PERSPECTIVE VIEW

Scale: **N.T.S (NOT TO SCALE)**

Date: **JULY 2017**

PREPARED BY: **JEFFREY LUTZURIAGA**

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Drawing No:

**31371-553-  
PERSPECTIVE - 2/3**

Project No:

**MOF/SFF/SERV/OR**

Sheet No:

**23/23**  
A3