



REPUBLIC OF KENYA



WAJIR WATER AND SEWERAGE COMPANY LIMITED

WATER AND SANITATION DEVELOPMENT PROJECT

IMMEDIATE URGENT WORKS

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

TENDER No. **[To be inserted]**

BIDDING DOCUMENT

VOLUME III

CONTENTS

ENGINEERING DRAWINGS

Employer:

[To be Inserted]

Wajir Water and Sewerage Company
Neyrus House, Airport Road Opp. Senator
+254- 724 346 363,
wajwasco@gmail.com

Engineer:

[To be Inserted]

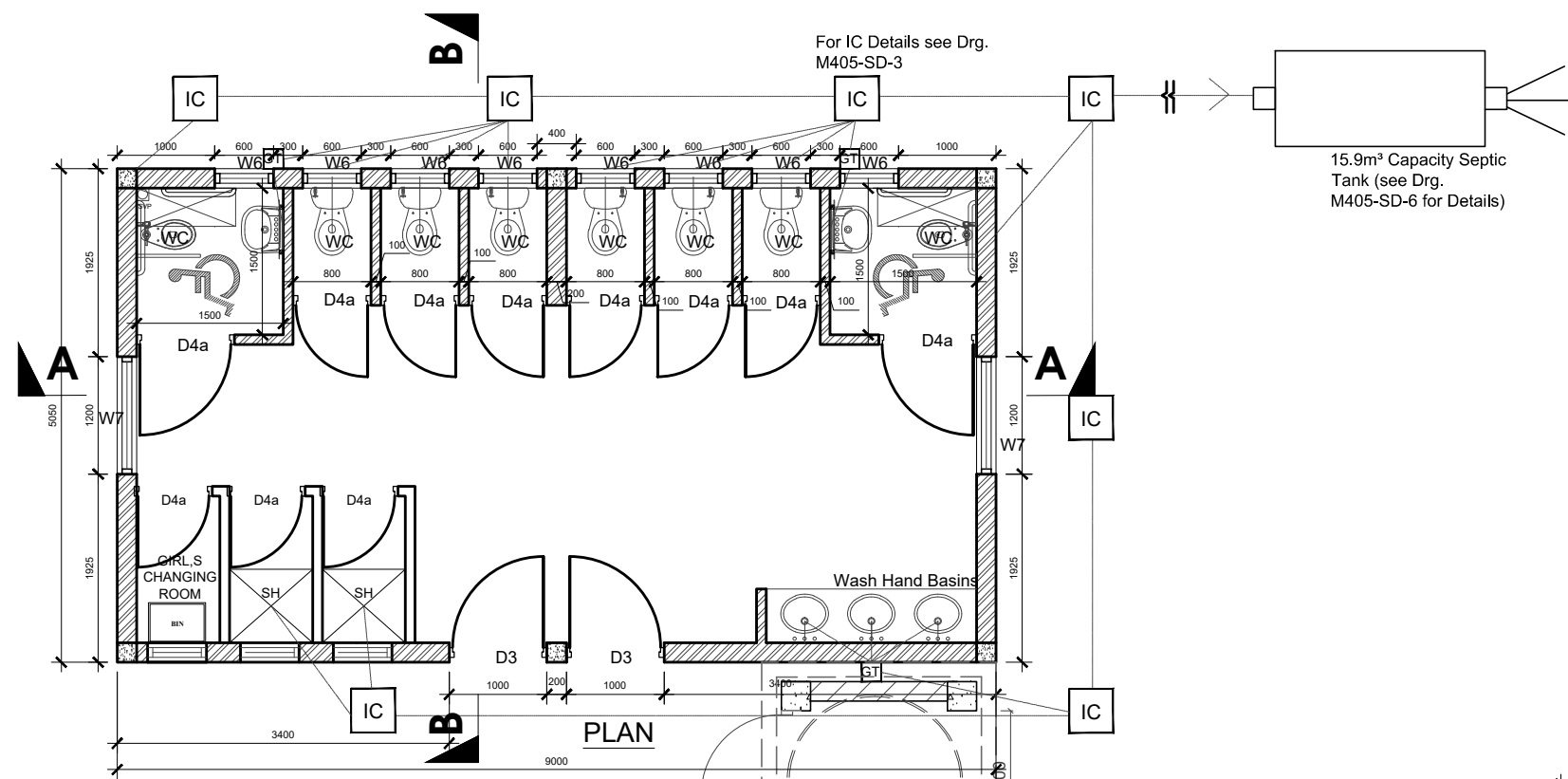
APRIL 2020

WATER AND SANITATION DEVELOPMENT PROJECT
CONSTRUCTION OF ON-SITE SANITATION FACILITIES
IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

TENDER No.....

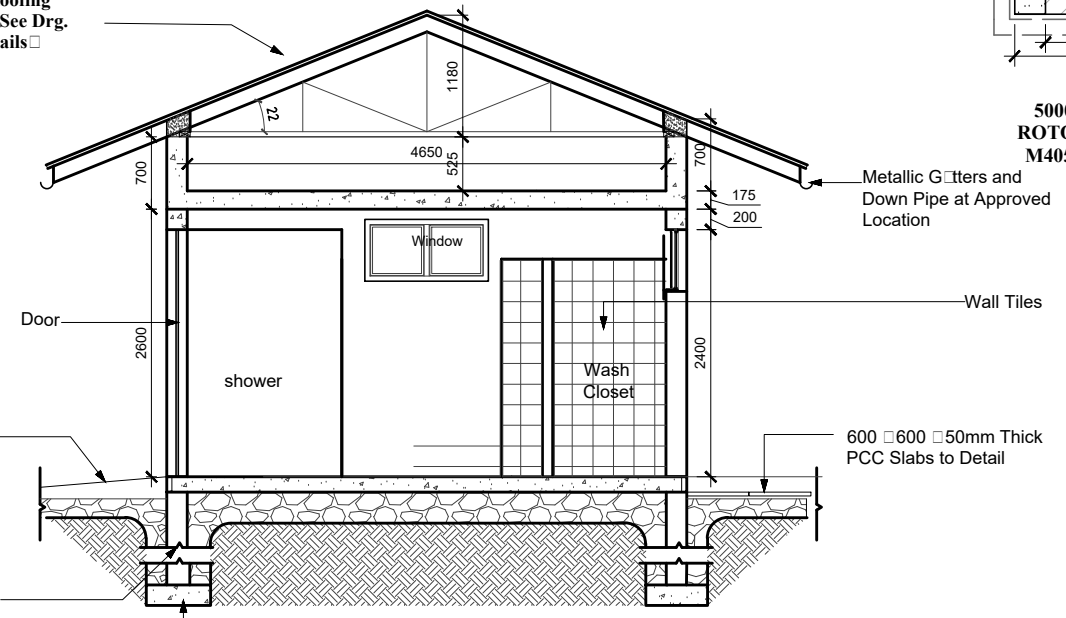
SCHEDULE OF ENGINEERING DRAWINGS

<u>DRG NO.</u>	<u>DESCRIPTION</u>
AB	<u>ABLUTION BLOCKS</u>
M405-WA-AB-01	ABLUTION BLOCK - GIRL'S SCHOOL (8Nr. USERS) - PLAN AND SECTION
M405-WA-AB-02	ABLUTION BLOCK - GIRL'S SCHOOL (8Nr. USERS) - ELEVATION AND ROOF
M405-WA-AB-03	ABLUTION BLOCK - BOY'S SCHOOL (8Nr. USERS) - PLAN AND SECTION
M405-WA-AB-04	ABLUTION BLOCK - BOY'S SCHOOL (8Nr. USERS) - ELEVATION AND ROOF
M405-WA-AB-05	ABLUTION BLOCK HOSPITAL - LADIES (8Nr. USERS) - PLAN AND SECTION
M405-WA-AB-06	ABLUTION BLOCK HOSPITAL - LADIES (8Nr. USERS) - ELEVATION AND ROOF
M405-WA-AB-07	ABLUTION BLOCK HOSPITAL - GENT'S (8Nr. USERS) - PLAN AND SECTION
M405-WA-AB-08	ABLUTION BLOCK HOSPITAL - GENT'S (8Nr. USERS) - ELEVATION AND ROOF
M405-WA-AB-09	ABLUTION BLOCK - ROOF AND WALL DETAILS
M405-WA-AB-10	ABLUTION BLOCK - RAISED TANK DETAILS
M405-WA-AB-11	ABLUTION BLOCK TEACHER - PLAN AND SECTIONS
ES	<u>ECOSAN</u>
M405-WA-ES-01	IMPROVED ECOSAN TOILET - PLAN, ELEVATIONS AND SECTION
M405-WA-ES-02	IMPROVED ECOSAN TOILET - SECTIONS
M405-WA-ES-03	IMPROVED ECOSAN TOILET - ELEVATIONS AND SECTION
	<u>STANDARD DRAWINGS (SD)</u>
M405-SD-01	PROJECT SIGNBOARD DETAILS
M405-SD-02	RESIDENT ENGINEER OFFICE - PLAN, SECTIONS AND ELEVATIONS
M405-SD-03	DETAILS OF MANHOLES AND INSPECTION CHAMBERS (SHEET 1 OF 2)
M405-SD-04	DETAILS OF MANHOLES AND INSPECTION CHAMBERS (SHEET 2 OF 2)
M405-SD-05	DETAILS OF BEDDING AND HAUNCHES FOR PIPES, Y-JUNCTION DETAILS & SOAK AWAY PIT DETAILS
M405-SD-06	DETAILS OF SEPTIC TANK
M405-SD-07	TYPICAL ROAD CROSS SECTION DETAILS
M405-SD-08	DETAILS OF INVERT BLOCK DRAINS AND HEAD WALL
M405-SD-09	DETAILS OF STORM WATER CATCH PIT AND EARTH DRAINS
M405-SD-10	DETAILS OF FENCING POSTS
M405-SD-11	DETAILS OF GATES (SHEET 1 OF 2)
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M405-SD-13	WINDOW SCHEDULE
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M405-SD-16	STREET LIGHTING CONTROL PILLAR AND LIGHTING COLUMN
M405-SD-17	DETAILS OF G.M.S. LADDER AND GUARD RAILING

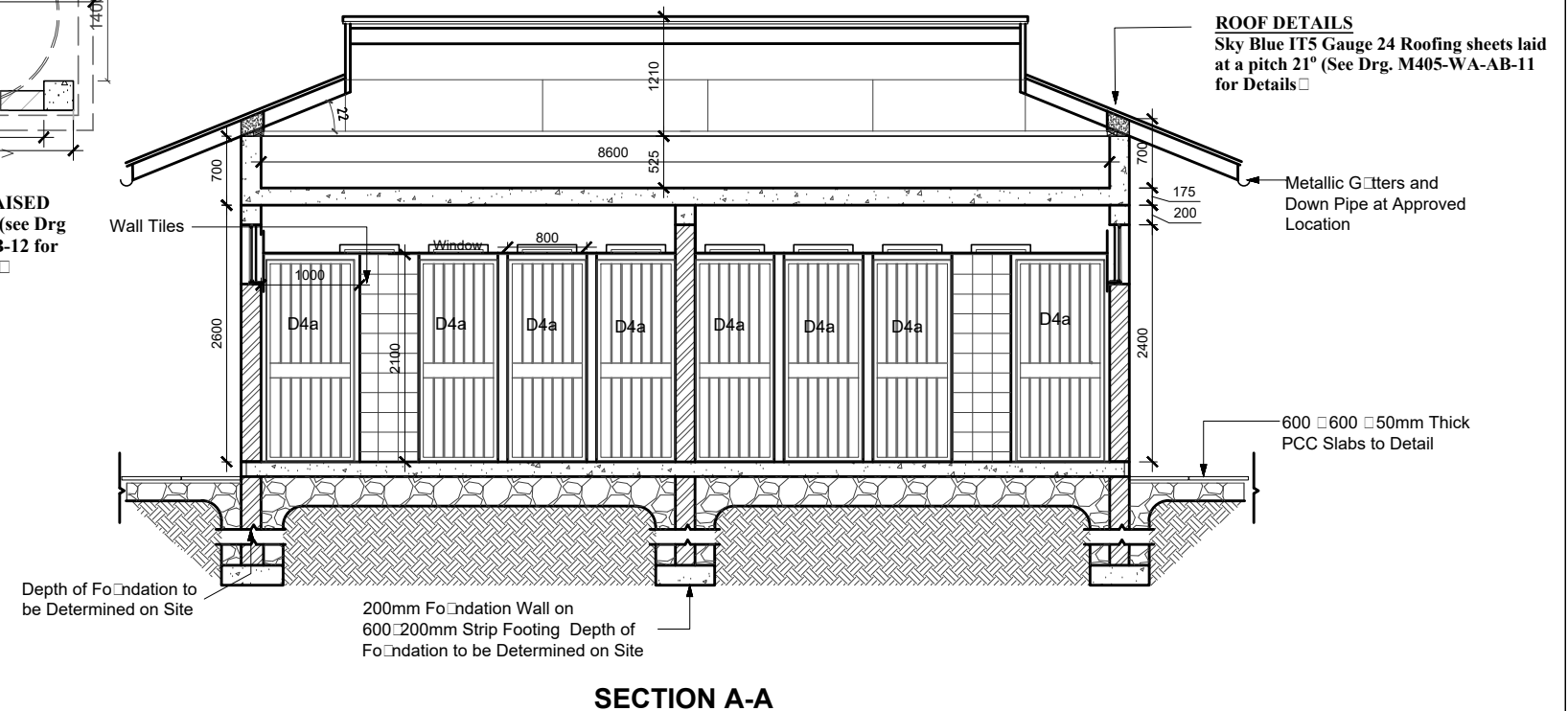


- NOTES**
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED
 2. ALL LEVELS TO BE CHECKED ON SITE BEFORE COMMENCEMENT OF WORKS.
 3. DEPTH OF FOUNDATION TO BE DETERMINED ON SITE. FOUNDATION TO BE CARRIED DOWN TO HARD BASE TO THE APPROVAL OF THE ENGINEER AND ALL SOILS TO BE EXCAVATED AND THE OPENING FILLED WITH HARD CORE.
 4. FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALE.
 5. CONTRACTOR TO SUBMIT PLUMBING DETAILS FOR APPROVAL
 6. THREE PLY TROPICAL PLUVEX BITUMINOUS FELT D.P.C. UNDER ALL WALLS TO BE RENDERED IN HOT BITUMEN.
 7. ALL WALLS TO BE REINFORCED WITH HEAVY GAUGE HOOP IRON AT EVERY ALTERNATIVE COURSE.
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 23. SEE DRG. No. M405-SD-13 FOR WINDOWS DETAILS SEE DRG. No. M405-SD-14 FOR DOORS DETAILS
 24. ALL TIMBER WORKS TO HAVE PRIMER AND PAINTED WITH 3 COATS GLOSS PAINT.
- FINISHES SCHEDULE**
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 SKIRTINGS- COLOURED GRANO
 WALLS- PLASTERED AND PAINTED
 CORNICES- TIMBER AND PAINTED
EXTERNAL FINISHES
 WALLS- PLASTERED AND PAINTED

ROOF DETAILS
 Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)



5000 LTS RAISED ROTO TANK (see Drg. M405-WA-AB-12 for Details)



WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

Client/Employer:
THE MANAGING DIRECTOR
 WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA

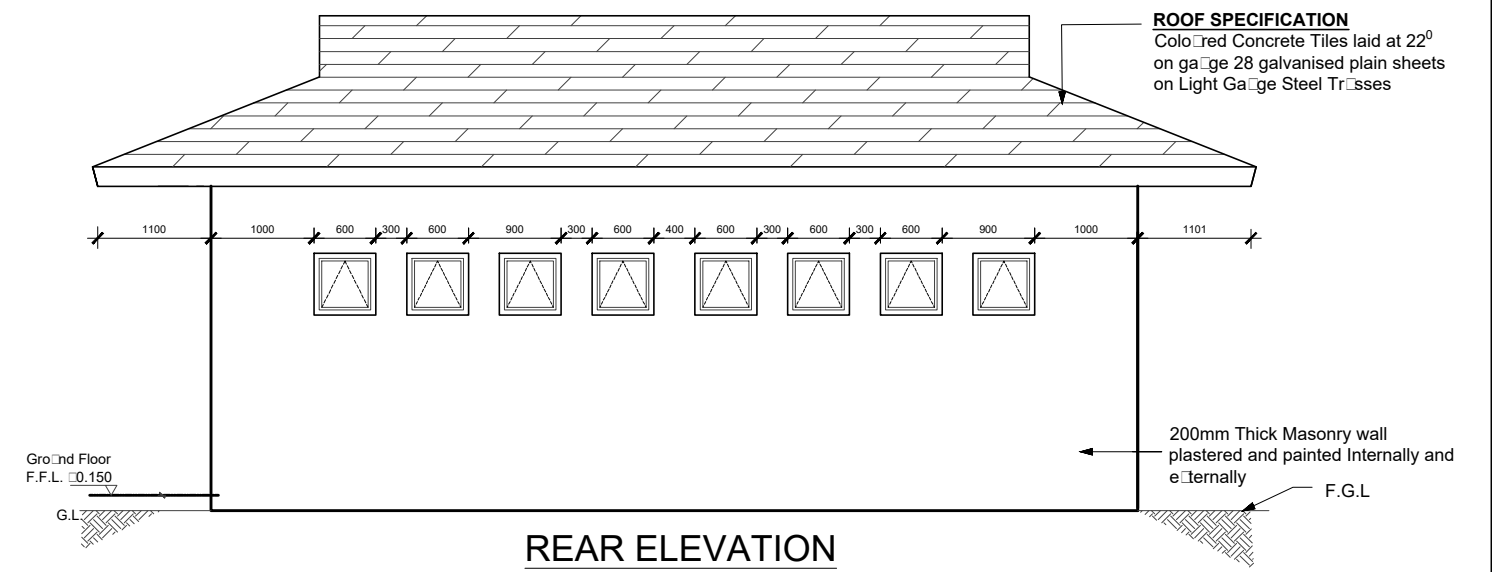
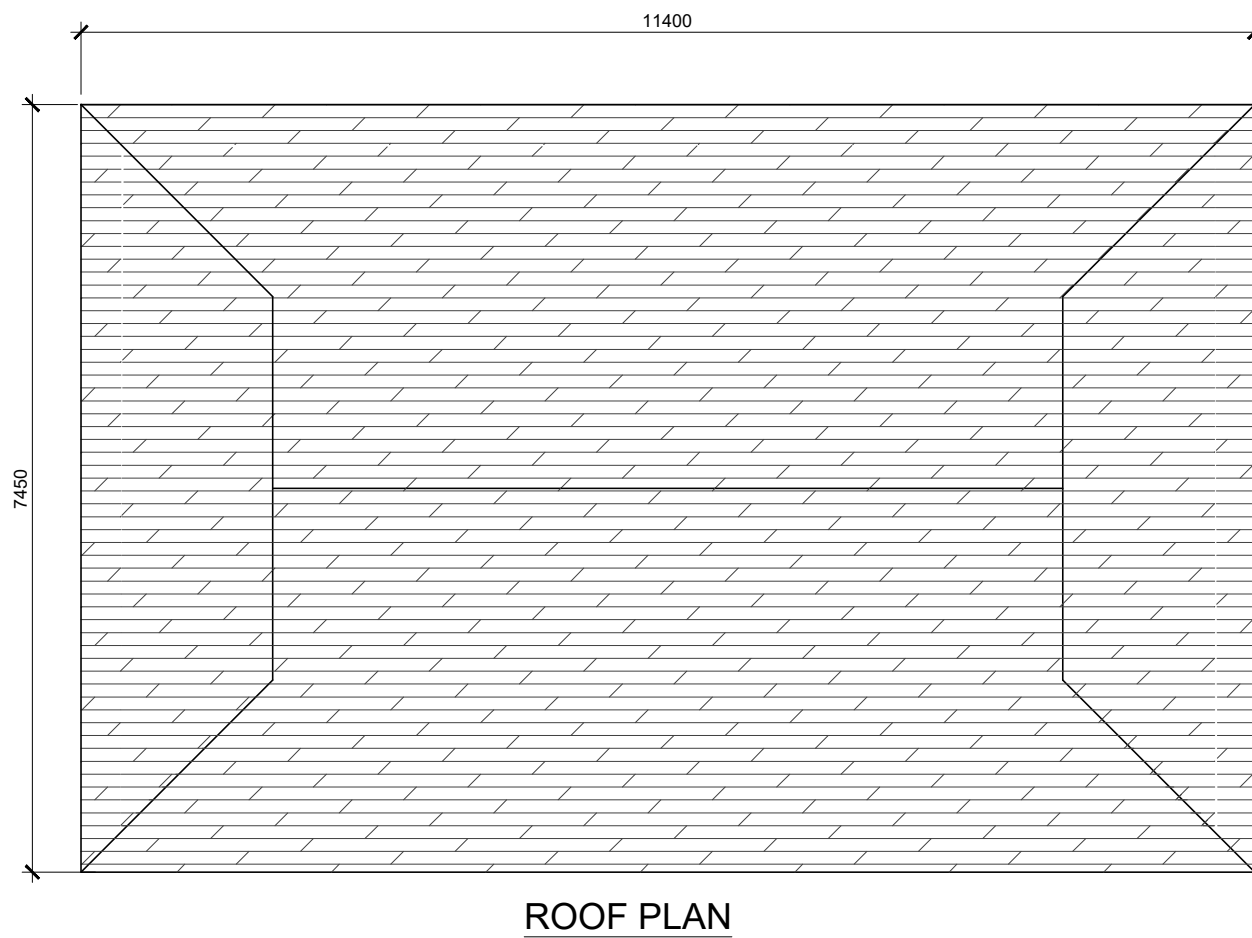
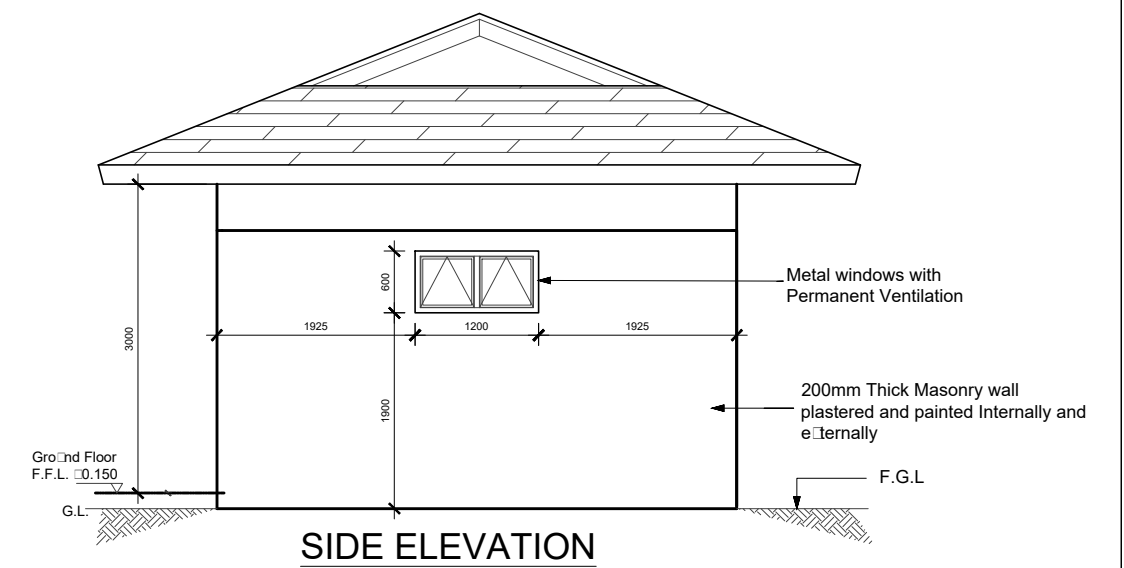
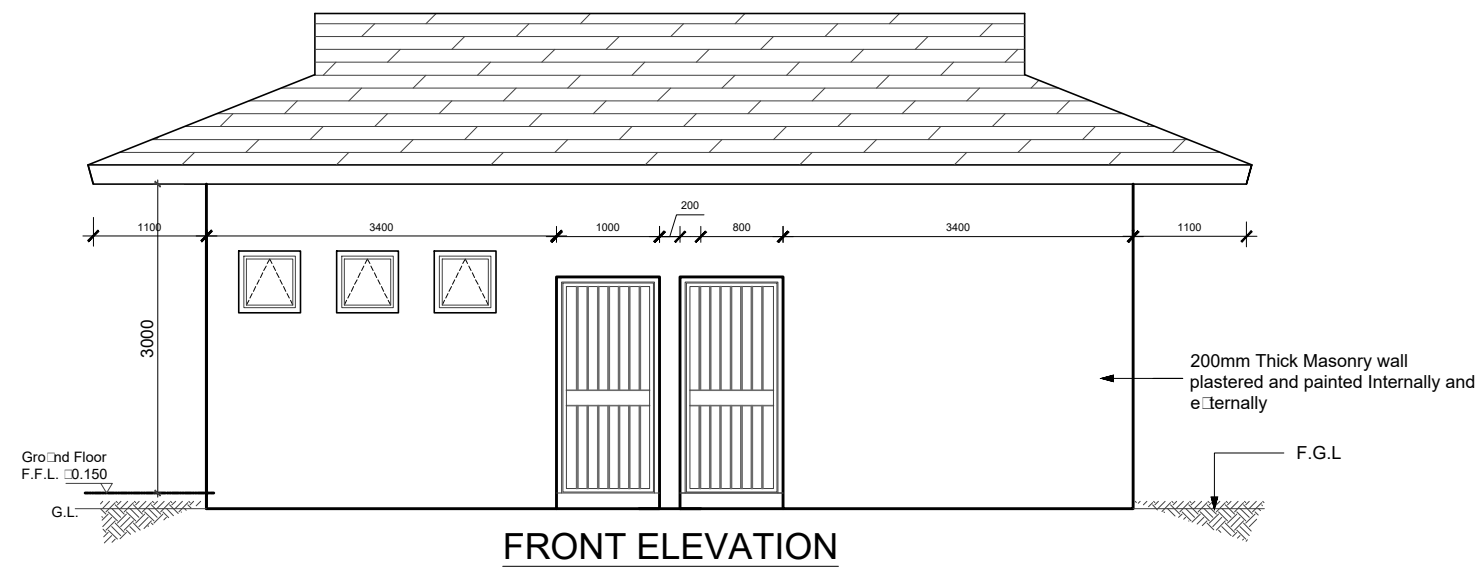
Revisions:

REV.	DATE	REMARKS

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SCALES:	1:75

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA		
Drawing Title: ABLUTION BLOCK - GIRL'S SCHOOLS (8Nr USERS)		
PLAN AND SECTIONS		
Date: MARCH 2020	Drg. No. M405-WA-AB-01	Rev.



ROOF SPECIFICATION
 Colored Concrete Tiles laid at 22°
 on gauge 28 galvanised plain sheets
 on Light Gauge Steel Trusses

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

**ABLUTION BLOCK - GIRL'S SCHOOLS
 (8Nr USERS)
 ELEVATIONS AND ROOF PLAN**

Client/Employer:
THE MANAGING DIRECTOR
 WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA

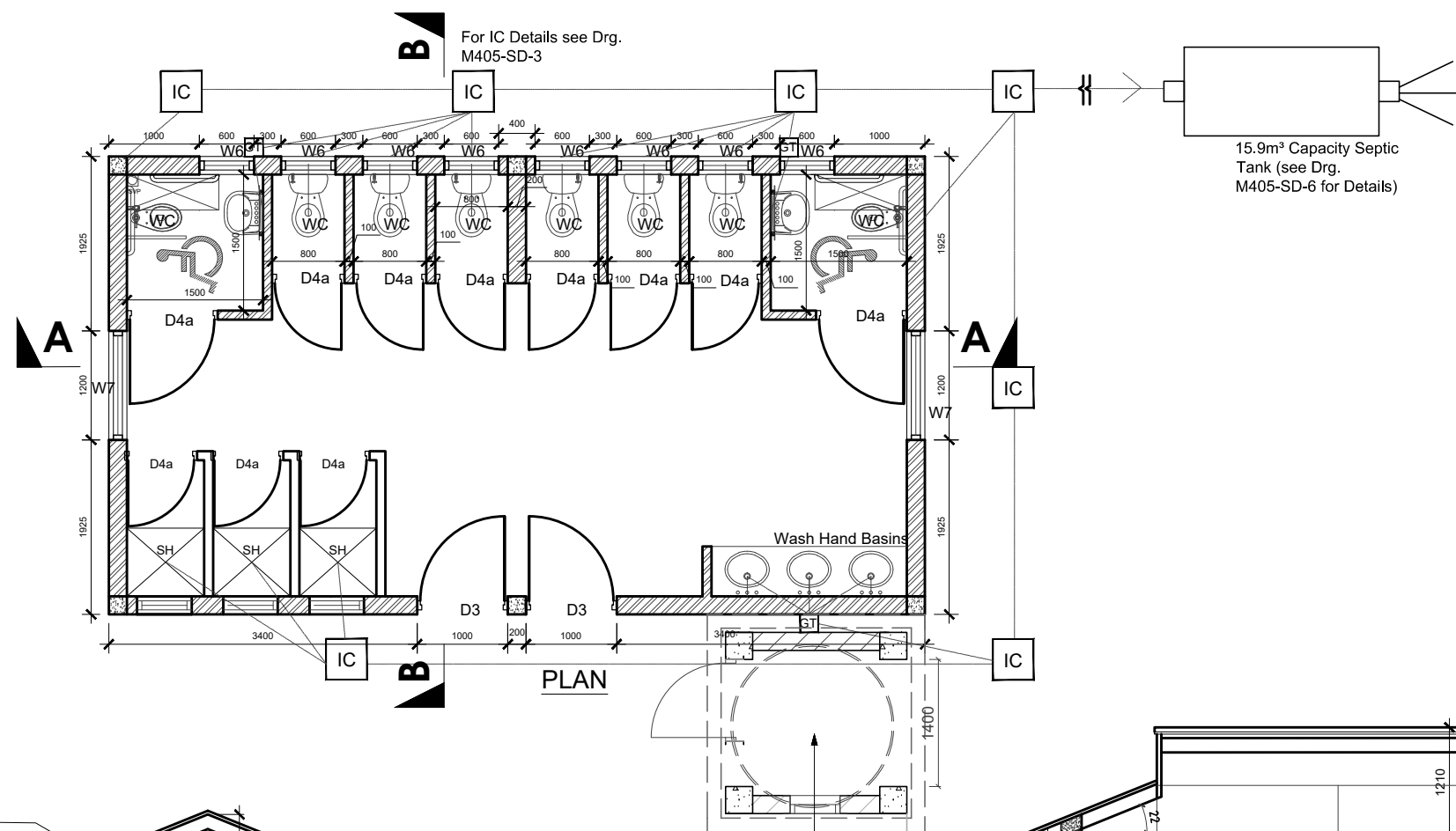


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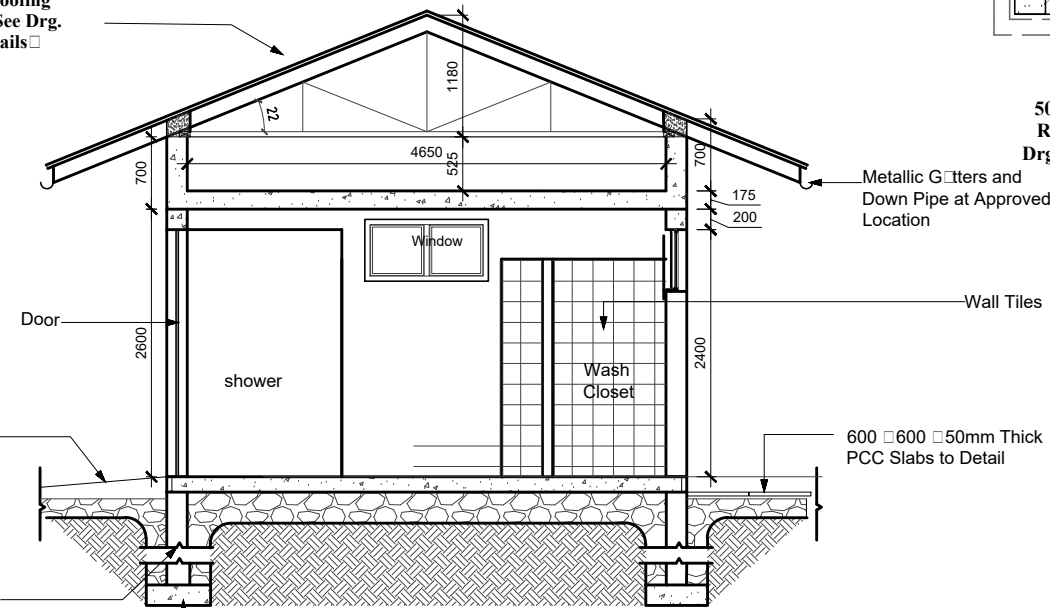
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Drawing Title:
 Date: MARCH 2020
 Drg. No. **M405-WA-AB-02**
 Rev.



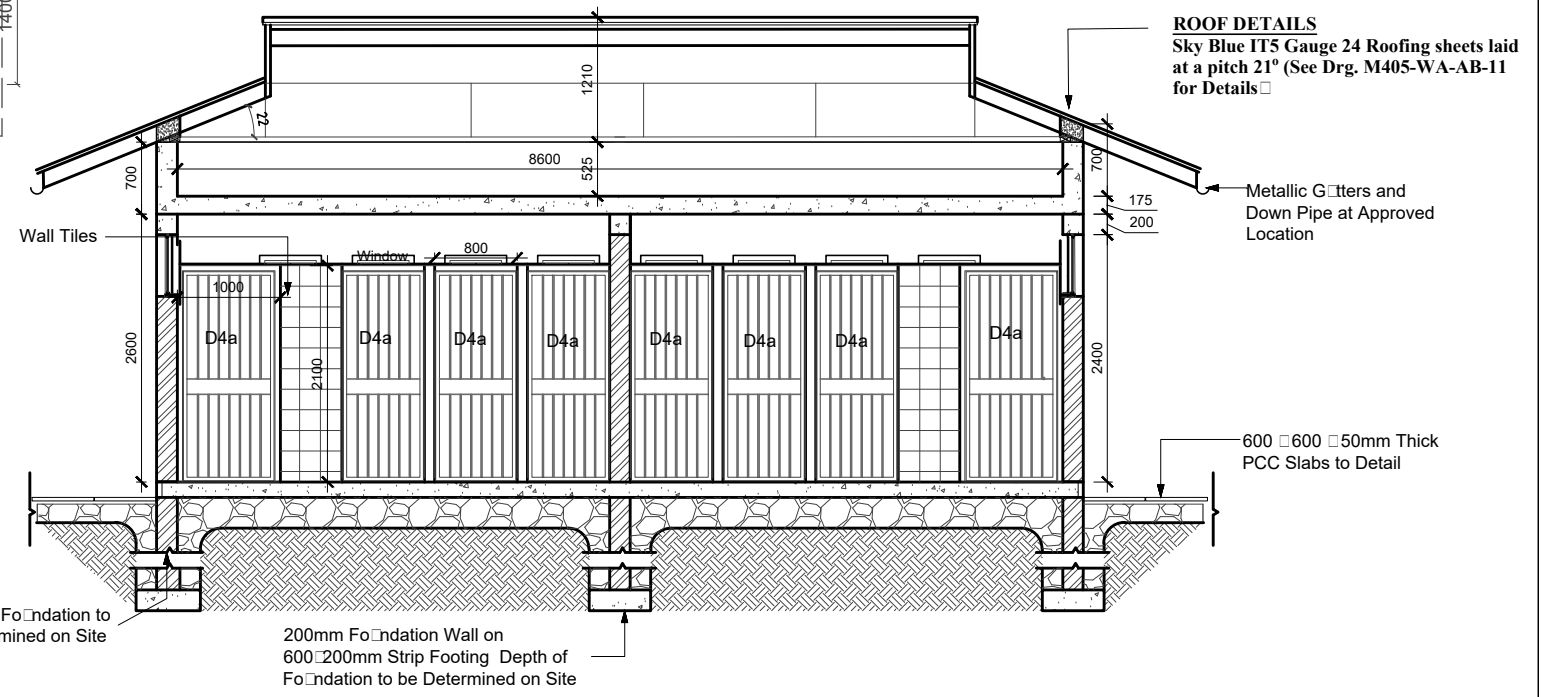
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ROOF DETAILS
Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)



SECTION B-B

5000 LTS RAISED ROTO TANK (see Drg M405-WA-AB-12 for Details)



SECTION A-A

ROOF DETAILS
Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

ABLUTION BLOCK - BOYS (8Nr USERS)

PLAN AND SECTIONS

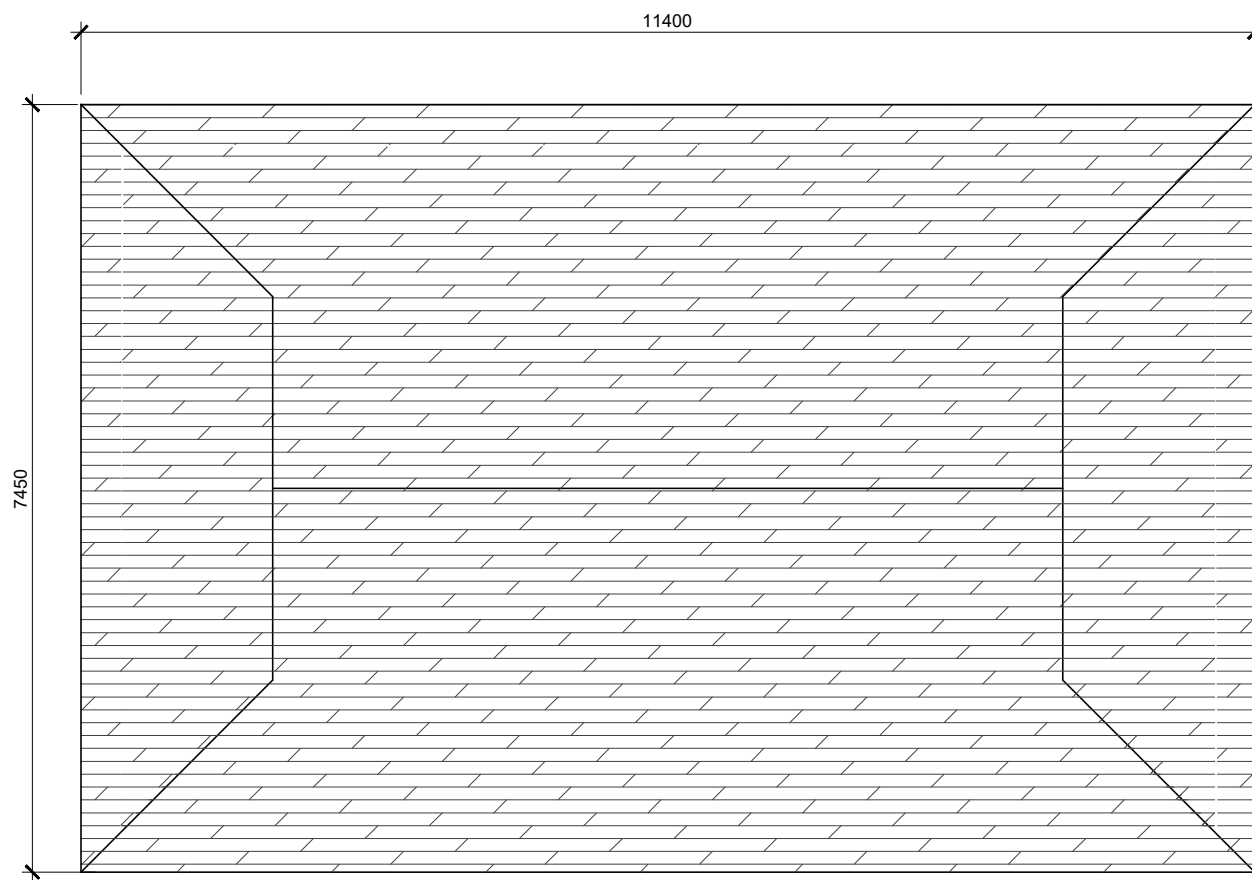
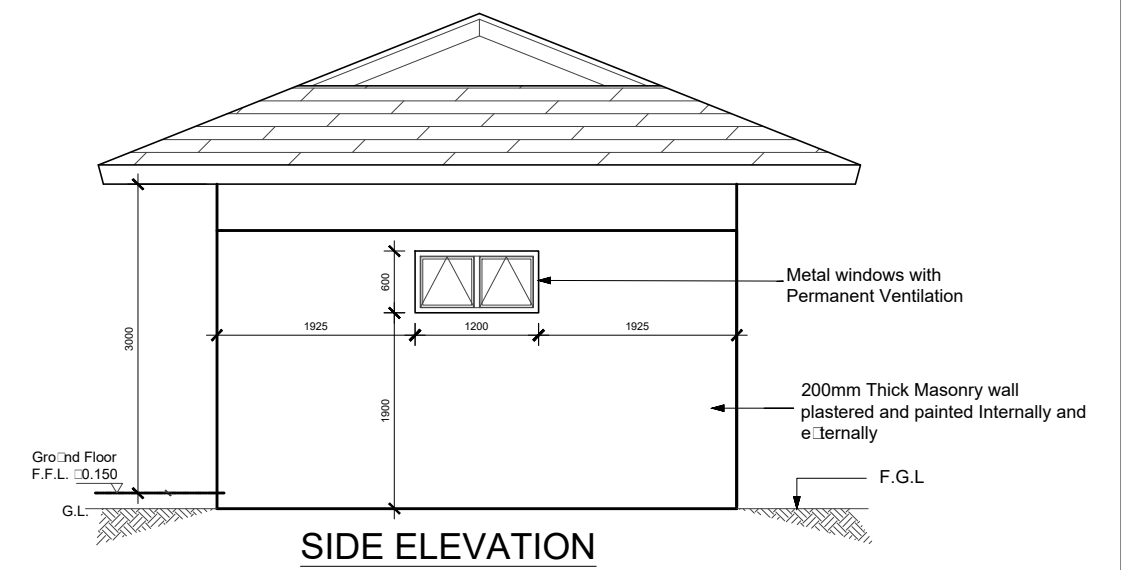
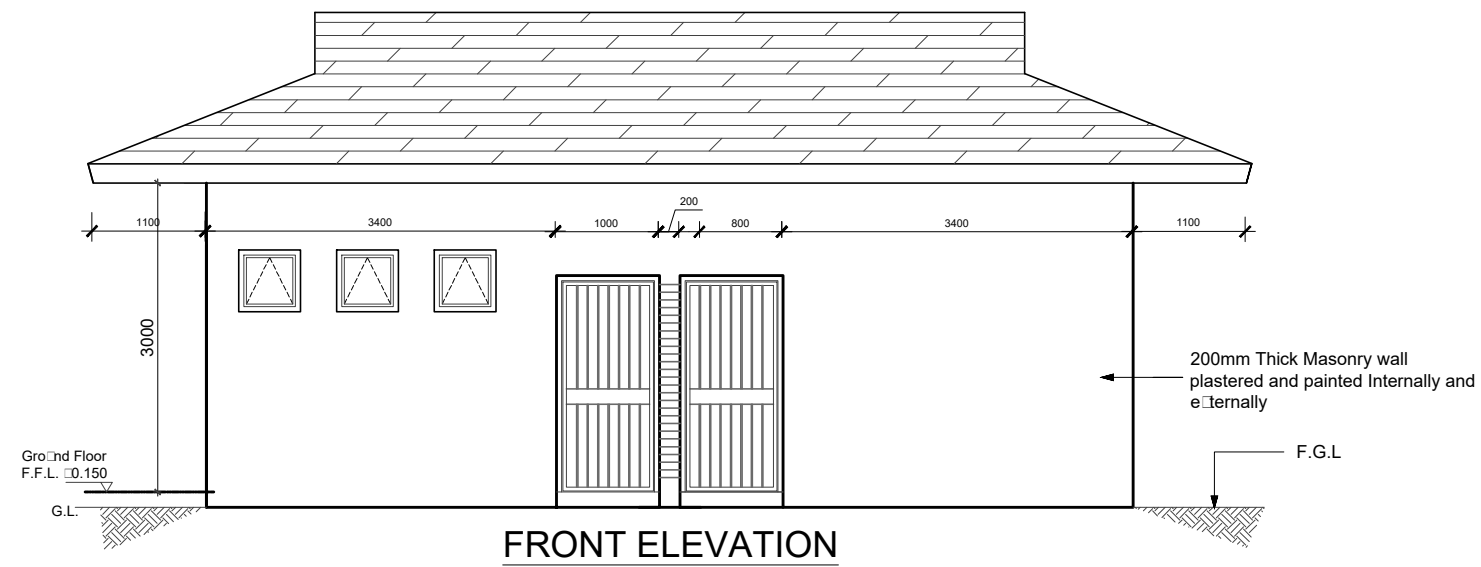
Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

REV.	DATE	REMARKS

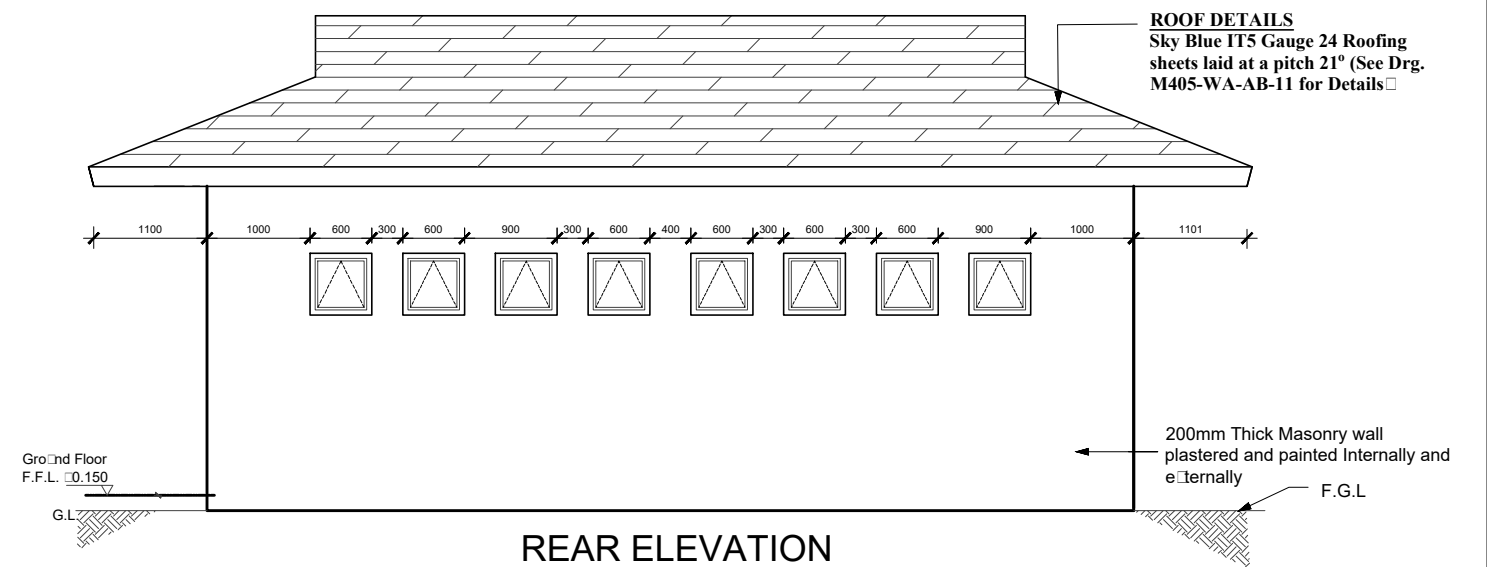
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Date:	MARCH 2020	Drg. No.	M405-WA-AB-05	Rev.	
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(See Drg. M405-WA-AB-09 for Details)



ROOF DETAILS
Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

ABLUTION BLOCK - BOY'S SCHOOLS (8Nr USERS)
ELEVATIONS AND ROOF PLAN

Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA



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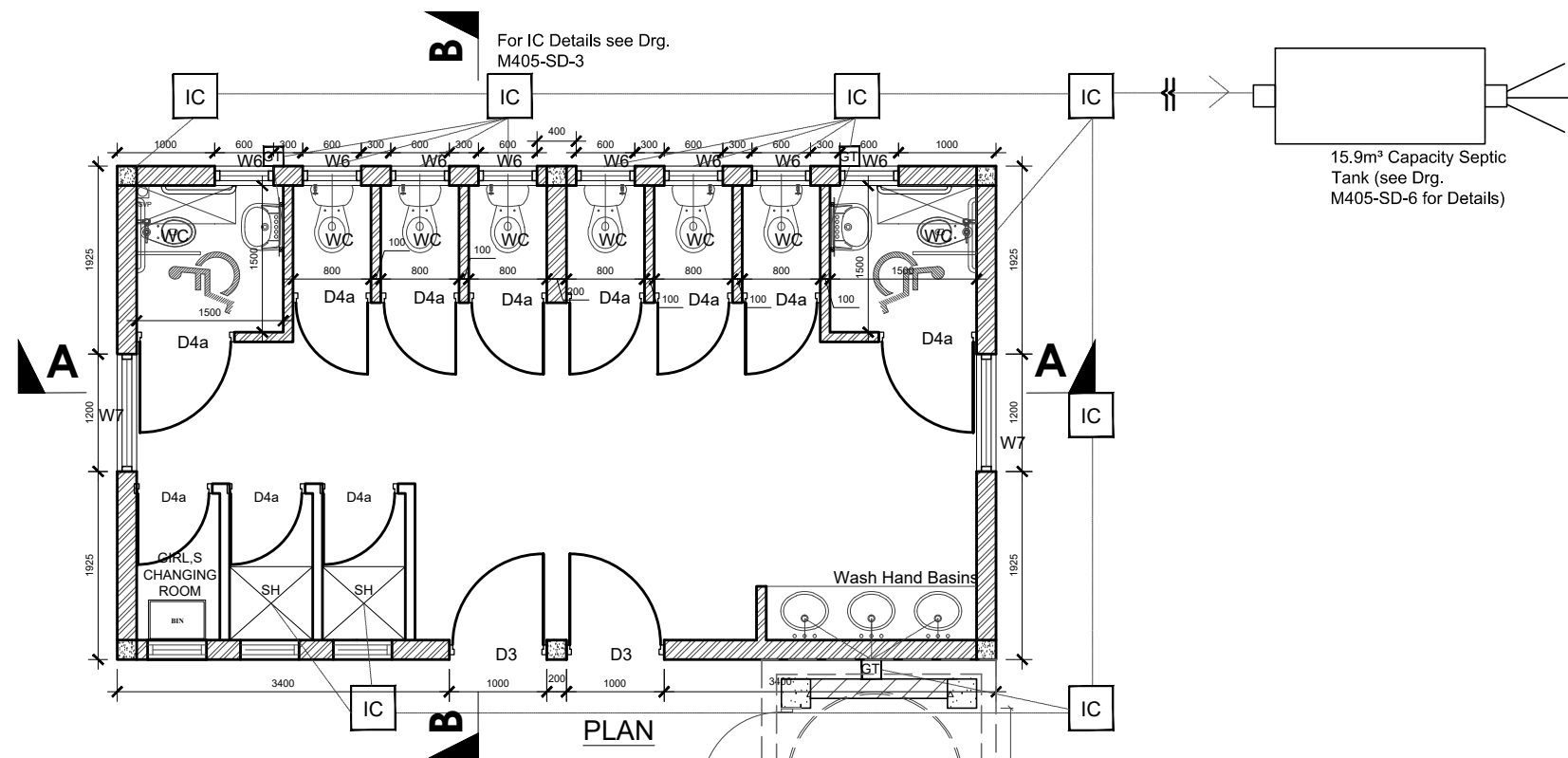
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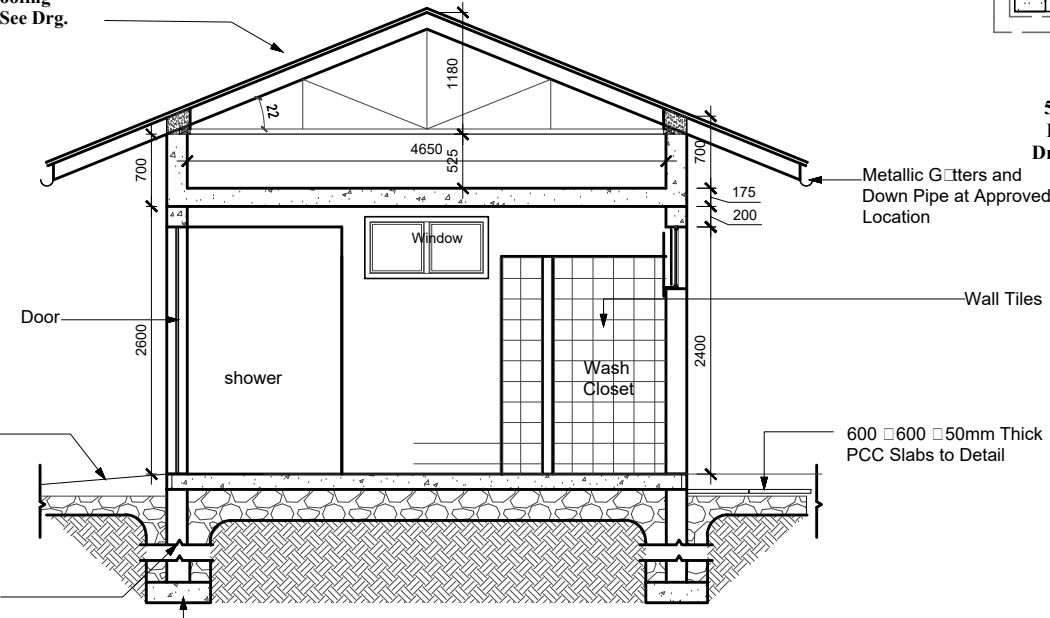
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Rev.



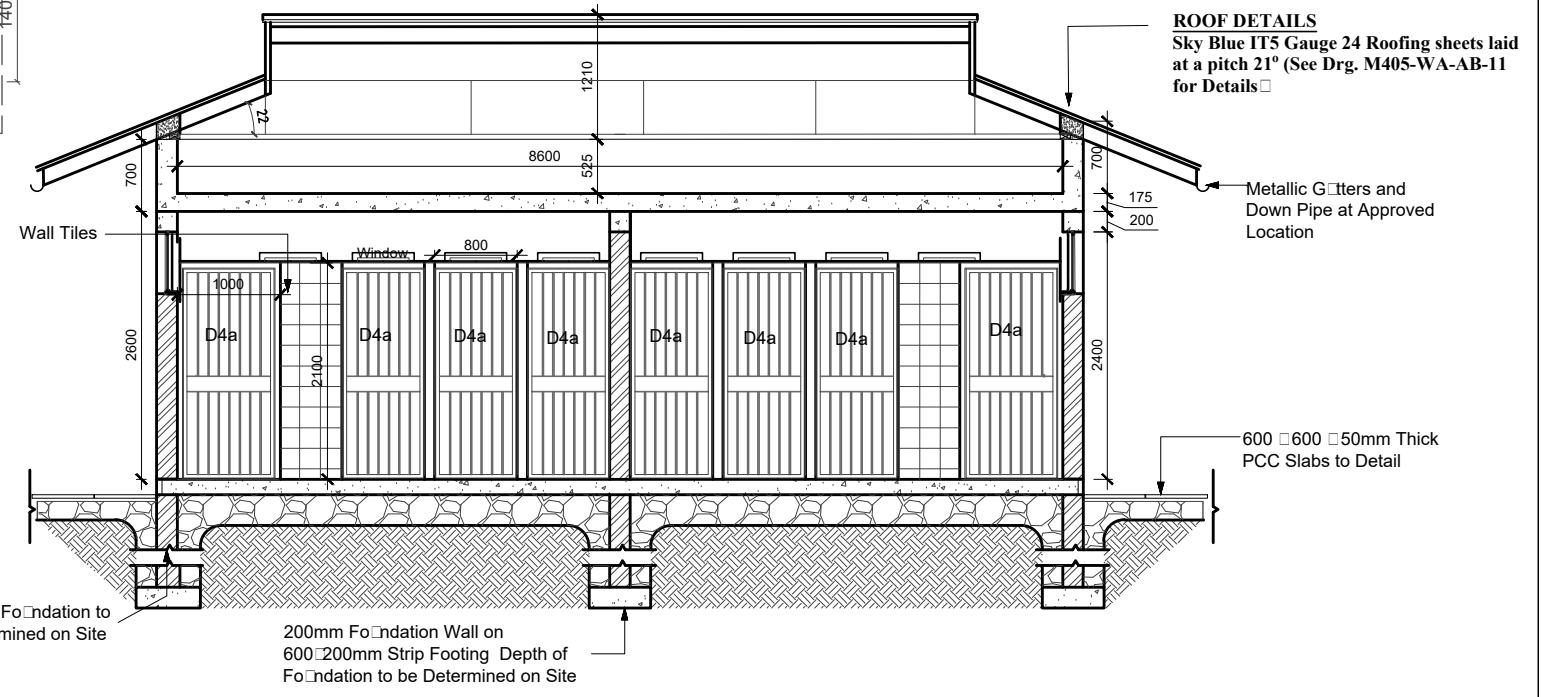
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 - WALLS- PLASTERED AND PAINTED
 - CORNICES- TIMBER AND PAINTED
- EXTERNAL FINISHES**
- WALLS- PLASTERED AND PAINTED

ROOF DETAILS
Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11)



SECTION B-B

5000 LTS RAISED ROTO TANK (see Drg M405-WA-AB-12 for Details)



SECTION A-A

ROOF DETAILS
Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

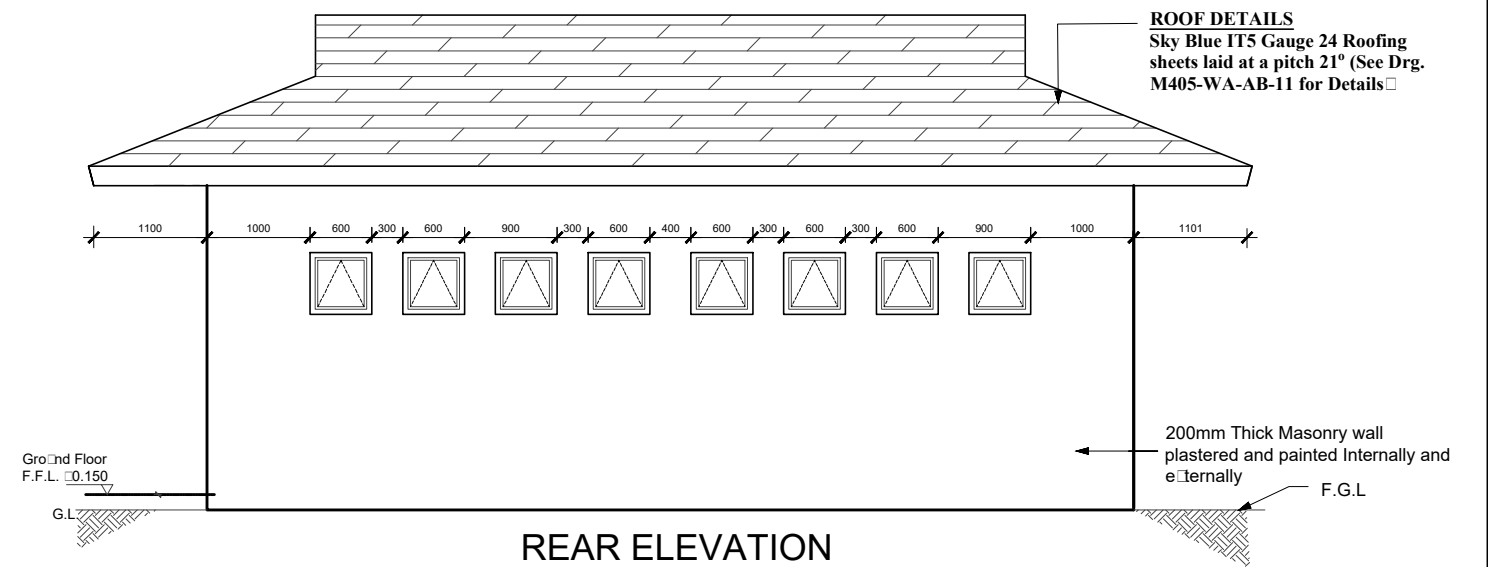
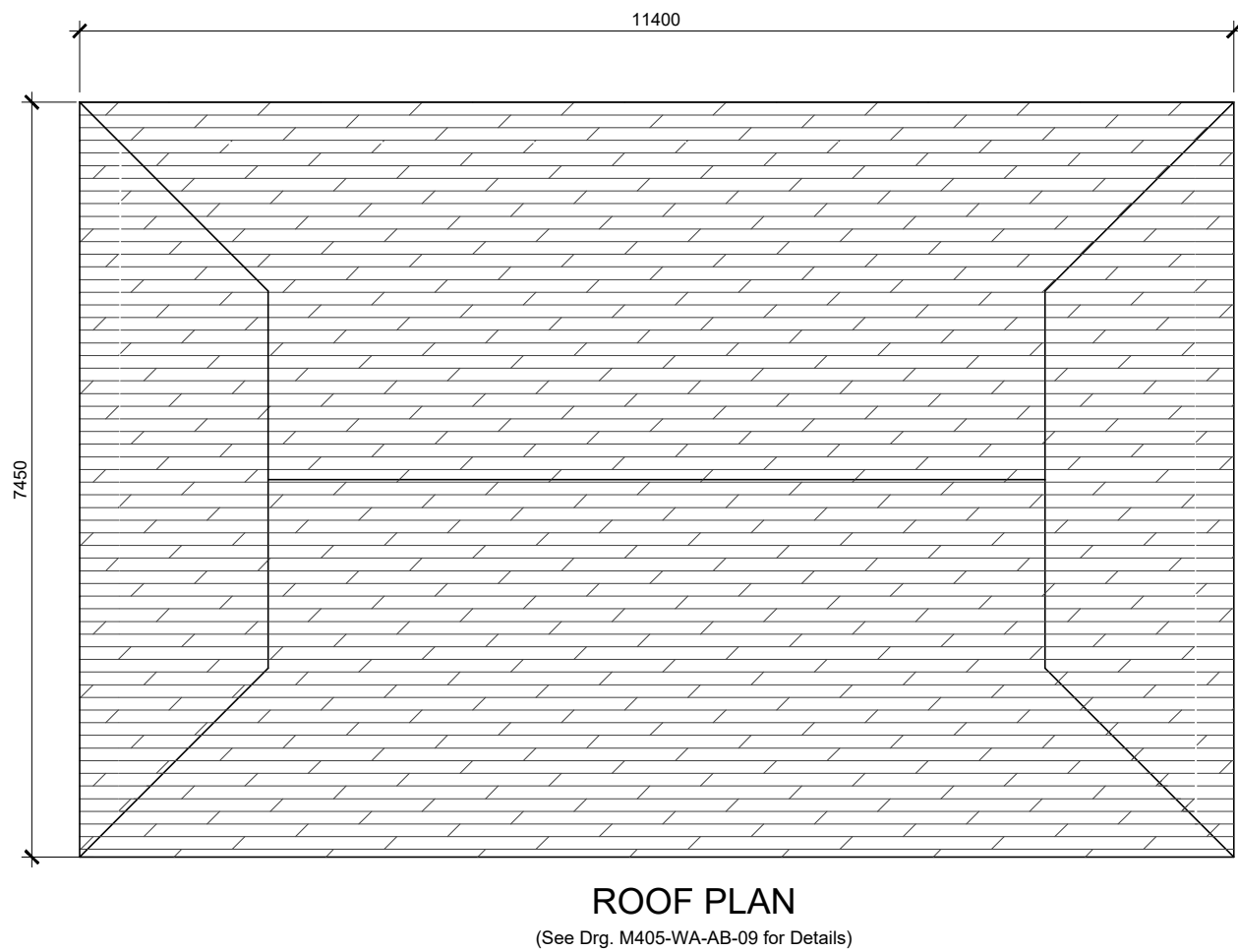
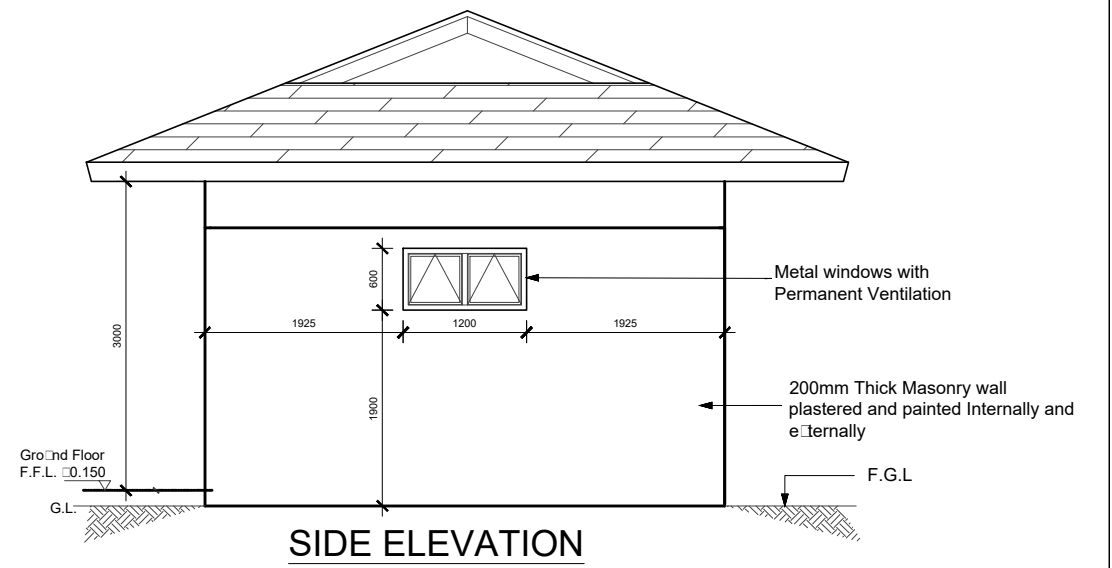
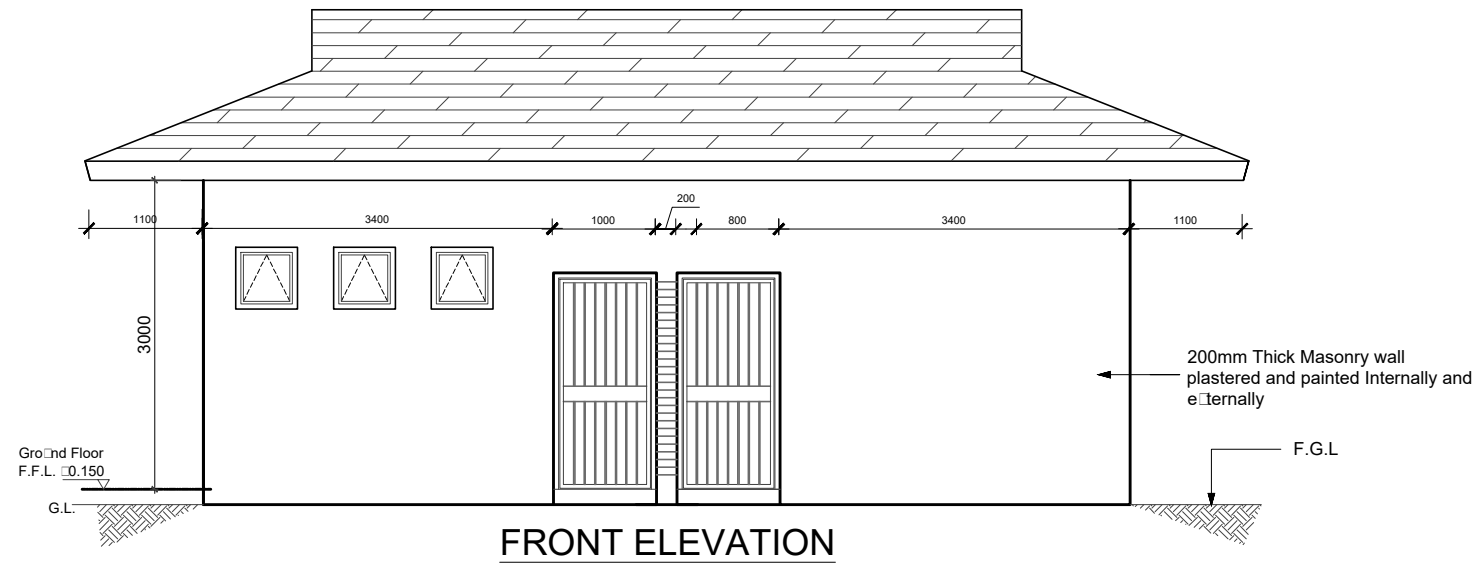


REV.	DATE	REMARKS

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SCALES:	1:75

Drawing Title: ABLUTION BLOCK HOSPITAL - LADIES (8Nr USERS) PLAN AND SECTIONS		
Date: MARCH 2020	Drg. No. M405-WA-IJW-07	Rev.




WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

**ABLUTION BLOCK HOSPITAL - LADIES
(8Nr USERS)
ELEVATIONS AND ROOF PLAN**

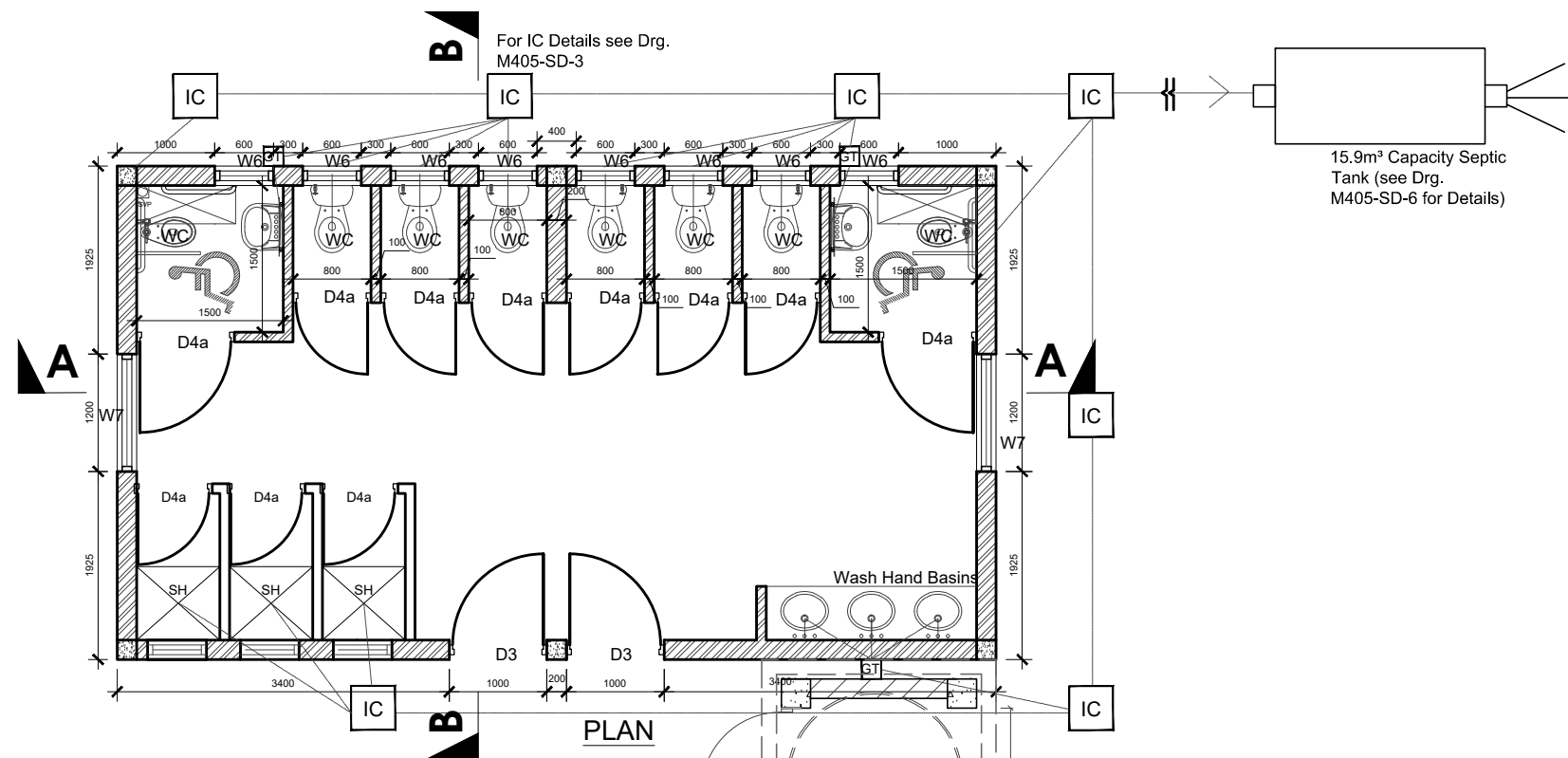
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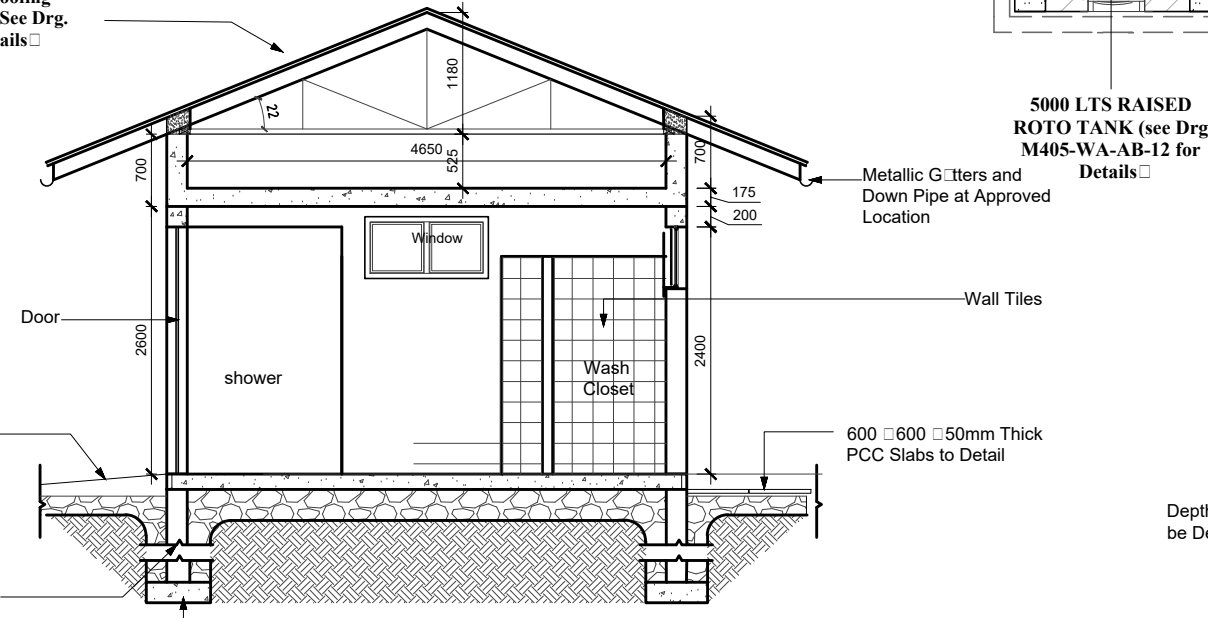
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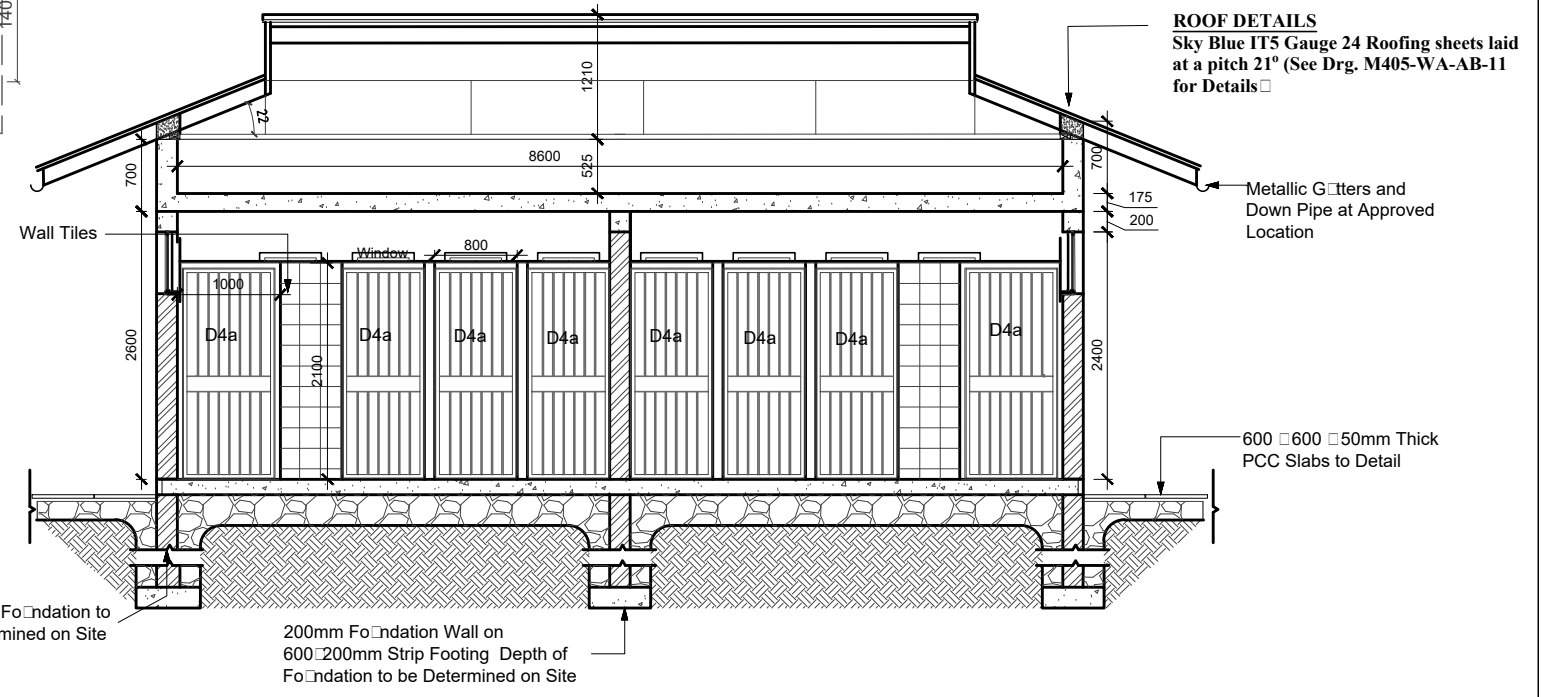
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 5. CONTRACTOR TO SUBMIT PLUMBING DETAILS FOR APPROVAL
 6. THREE PLY TROPICAL PLUVEX BITUMINOUS FELT D.P.C. UNDER ALL WALLS TO BE RENDERED IN HOT BITUMEN.
 7. ALL WALLS TO BE REINFORCED WITH HEAVY GAUGE HOOP IRON AT EVERY ALTERNATIVE COURSE.
 8. P.V. DENOTES PERMANENT VENT TO BE PROVIDED TO ALL HABITABLE ROOMS AND AS SHOWN ON PLAN.
 9. ALL DRAIN PIPES TO ENGINEER'S SATISFACTION.
 10. WHERE DRAIN PASSES UNDER THE BUILDING OR DRIVEWAY IT SHALL BE OF CAST IRON AND ENCASED IN 150mm WEAK CONCRETE ALL ROUND.
 11. SANITARY FITTINGS: WHITE VITEROUS HIGH LEVEL WASHDOWN W.C SUITE COMPLETE AS "TWYFORDS CLASSIC 10003" COMPRISING CLOSET WITH "S" TRAP, NO. 12030 CISTERN 9 LITRES CAPACITY, NO. 52120 VALVELESS FITTINGS WITH PLASTIC SYPHON AND FLUSH BEND, CISTERN SUPPORTS, NO. 50219 INLET CONNECTION AND NO. 50302 PLASTIC SEAT AND COVER PAN PLUGGED AND SCREWED TO FLOOR AND CISTERN TO WALL.
 12. ALL SANITARY WORKS TO BE CARRIED OUT IN ACCORDANCE TO THE COUNTY RULES AND REGULATIONS AND AS FROM SEWERAGE AND SANITATION SERVICES MANUAL IN KENYA.
 13. MANHOLES IN DRIVEWAY TO HAVE HEAVY DUTY COVERS SET IN CART GREASE.
 14. POSITION AND PIPE WORK OF THE 5m³ TANK ON ROOF SLAB TO BE AS DIRECTED BY ENGINEER
 15. ALL REINFORCED CONCRETE WORK TO STRUCTURAL ENGINEER'S DETAIL DRGS.
 16. ALL STEEL GLAZED WINDOWS TO HAVE BUGLAR PROOFING.
 17. EXTERNAL DOORS TO HAVE DRIPS.
 18. 600X450mm MIRRORS OVER ALL W.H.B.s.
 19. CONCRETE WINDOW CILLS TO HAVE DRIPS.
 20. ALL STEEL GLAZED WINDOWS TO HAVE BUILT-IN MOSQUITO PROOF GREENVAC PERMANENT VENTS.
 21. ROOF EAVES SOFIT 50X25mm TIMBER BATTENS AND WIRE GAUZE WITH COFFEE TRAY WIRE.
 22. 1000 GAUGE POLYTHENE SHEET BELOW FLOOR SLAB.
 23. SEE DRG. No. M405-SD-13 FOR WINDOWS DETAILS SEE DRG. No. M405-SD-14-15 FOR DOORS DETAILS
 24. ALL TIMBER WORKS TO HAVE PRIMER AND PAINTED WITH 3 COATS GLOSS PAINT.
- FINISHES SCHEDULE**
INTERNAL FINISHES
 FLOOR- COLOURED GRANO
 SKIRTINGS- COLOURED GRANO
 WALLS- PLASTERED AND PAINTED
 CORNICES- TIMBER AND PAINTED
EXTERNAL FINISHES
 WALLS- PLASTERED AND PAINTED

ROOF DETAILS
 Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)



SECTION B-B

5000 LTS RAISED ROTO TANK (see Drg. M405-WA-AB-12 for Details)



SECTION A-A

ROOF DETAILS
 Sky Blue IT5 Gauge 24 Roofing sheets laid at a pitch 21° (See Drg. M405-WA-AB-11 for Details)

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

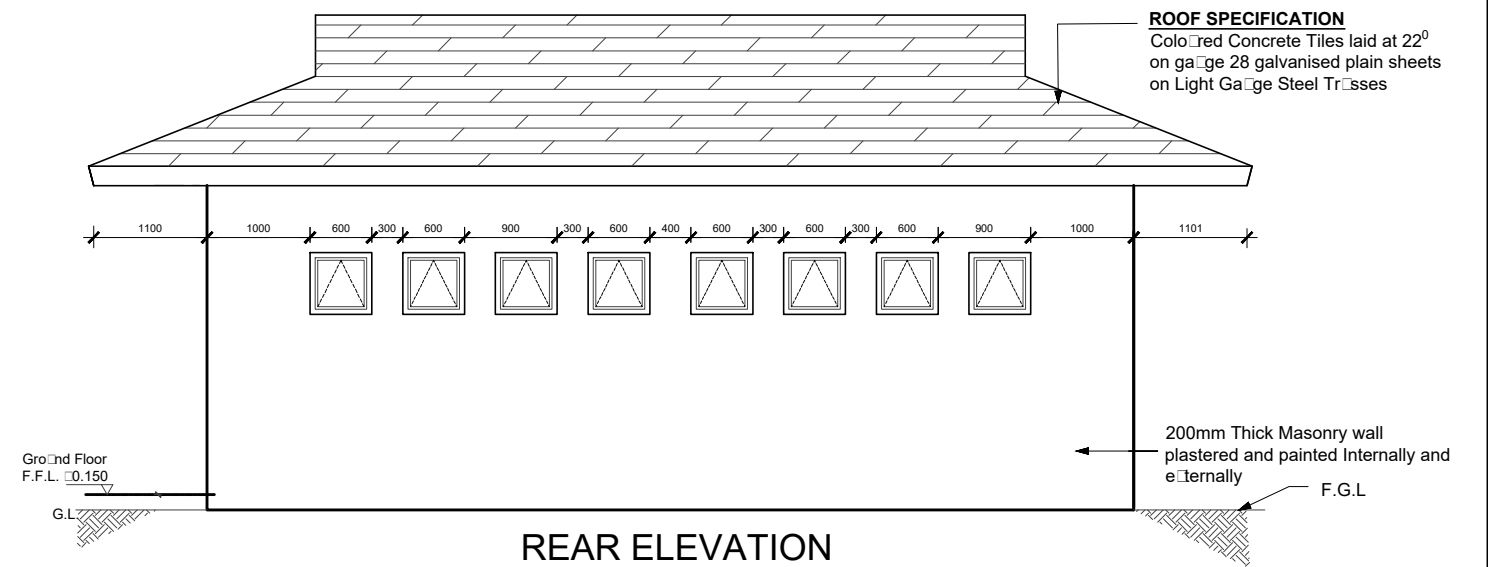
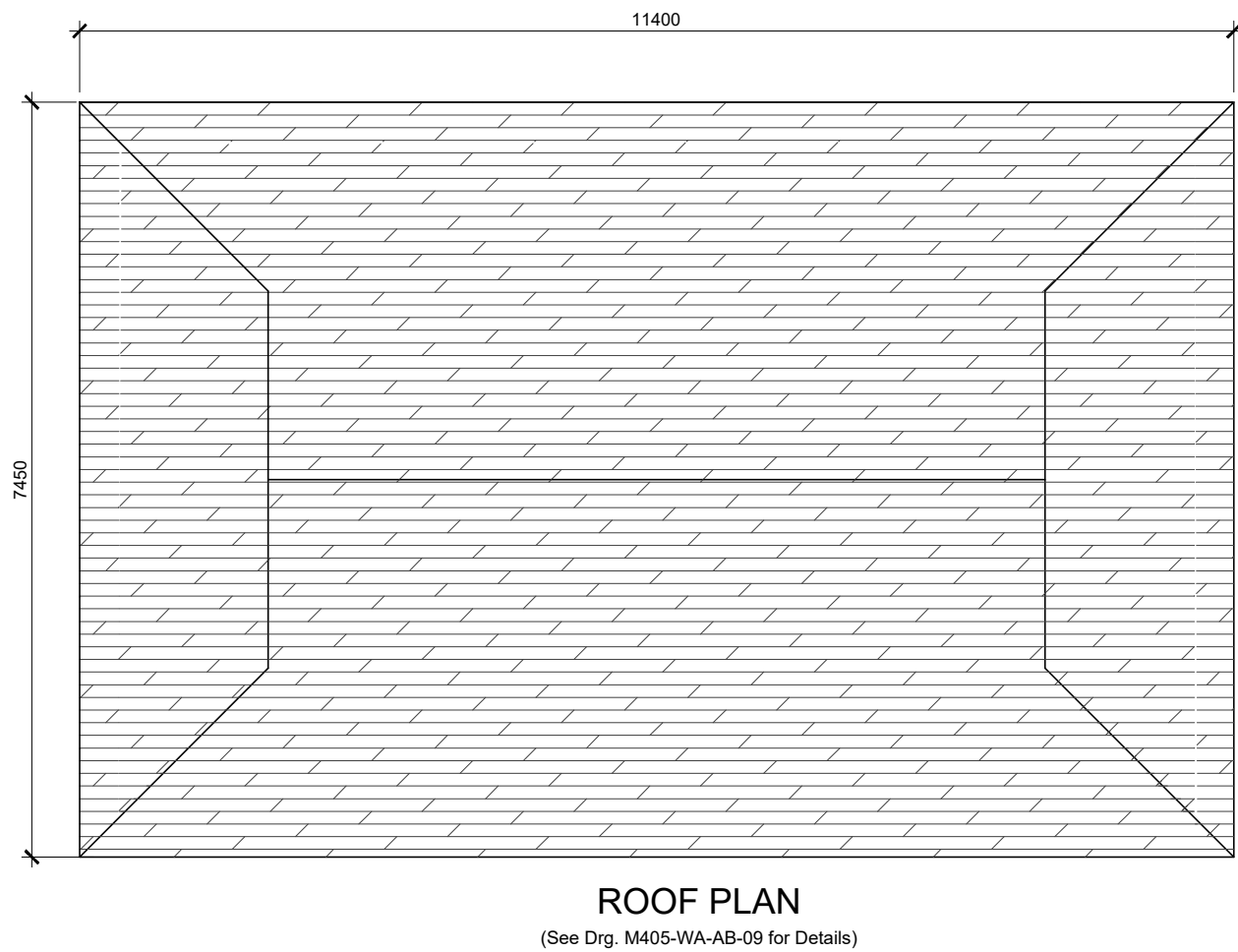
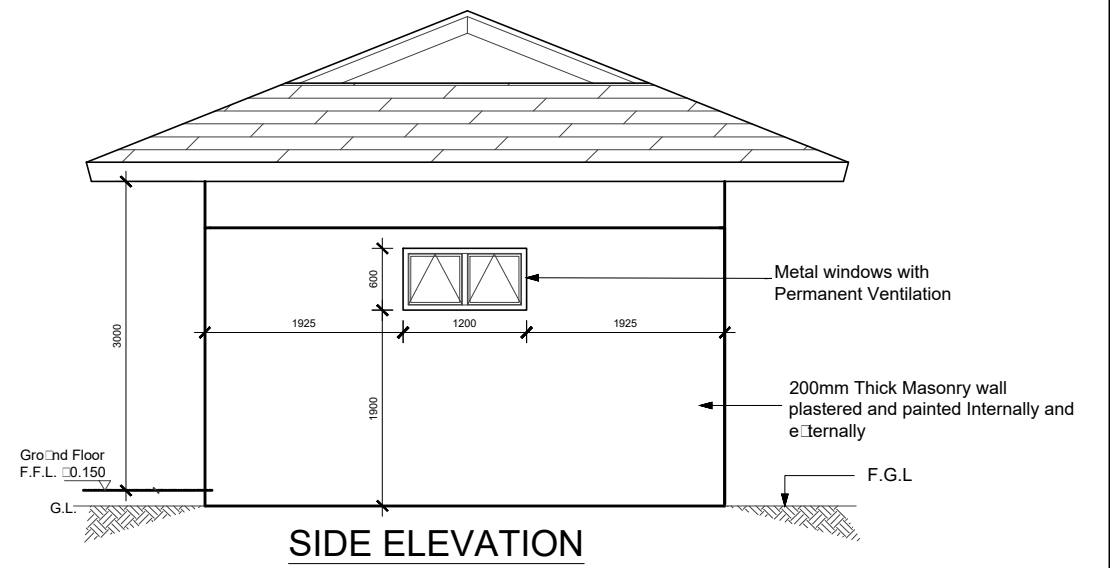
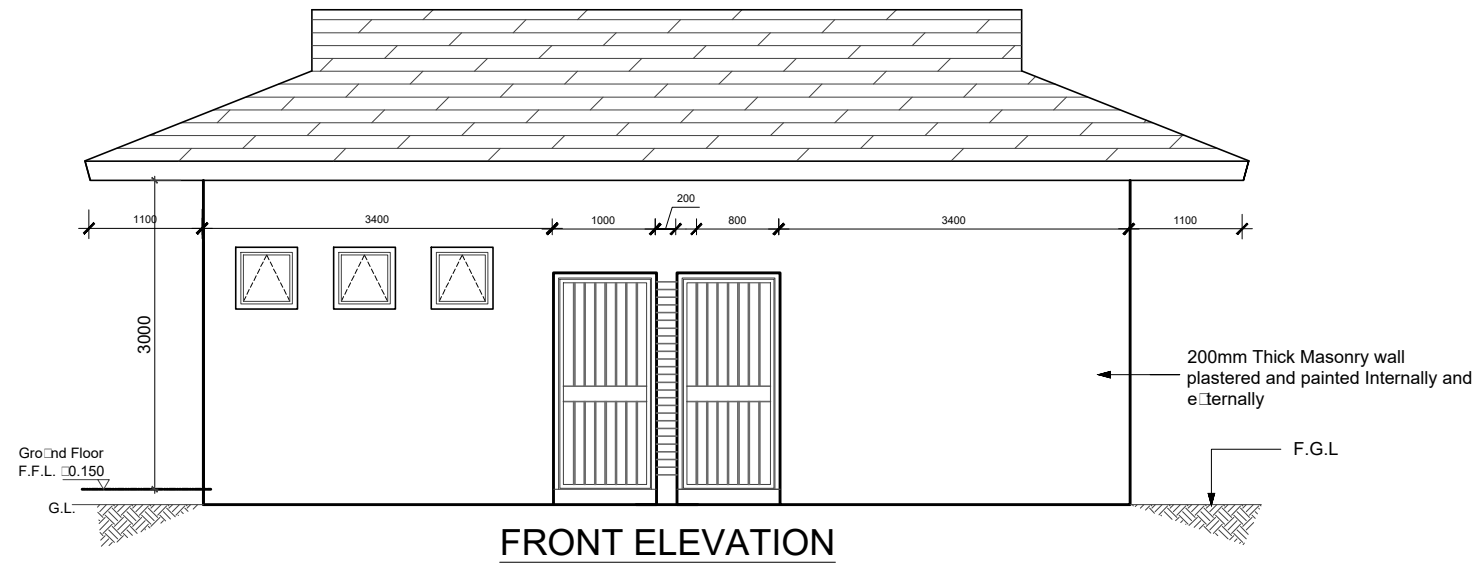
Client/Employer:
THE MANAGING DIRECTOR
 WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA

REV.	DATE	REMARKS

Notes:
 All dimensions in mm. Unless otherwise stated.

SURVEYED BY:
 DESIGNED BY:
 DRAWN BY:
 CHECKED BY:
 APPROVED BY:
 SCALES: 1:75

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA
 Drawing Title:
ABLUTION BLOCK HOSPITAL - GENTS (8Nr USERS)
PLAN AND SECTIONS
 Date: MARCH 2020
 Drg. No. **M405-WA-AB-09**
 Rev.



WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Drawing Title:
**ABLUTION BLOCK HOSPITAL - GENTS
(8Nr USERS)
ELEVATIONS AND ROOF PLAN**

Client/Employer:



THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

Revisions:

REV.	DATE	REMARKS

Notes:

All dimensions in mm. Unless otherwise stated.

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DESIGNED BY:

DRAWN BY:

CHECKED BY:

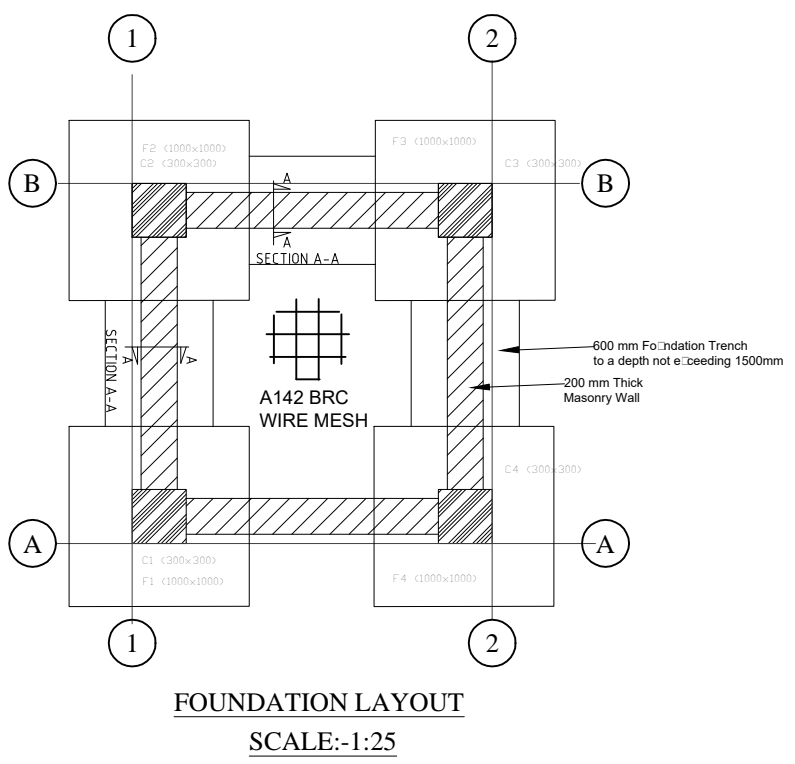
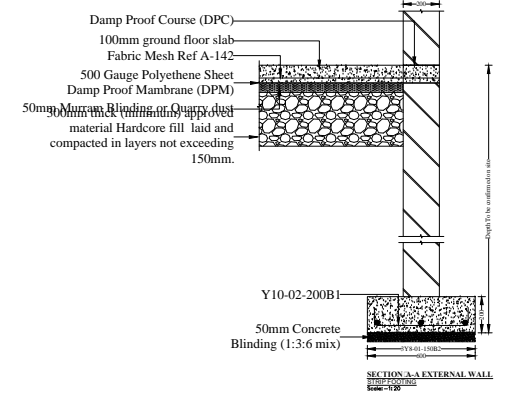
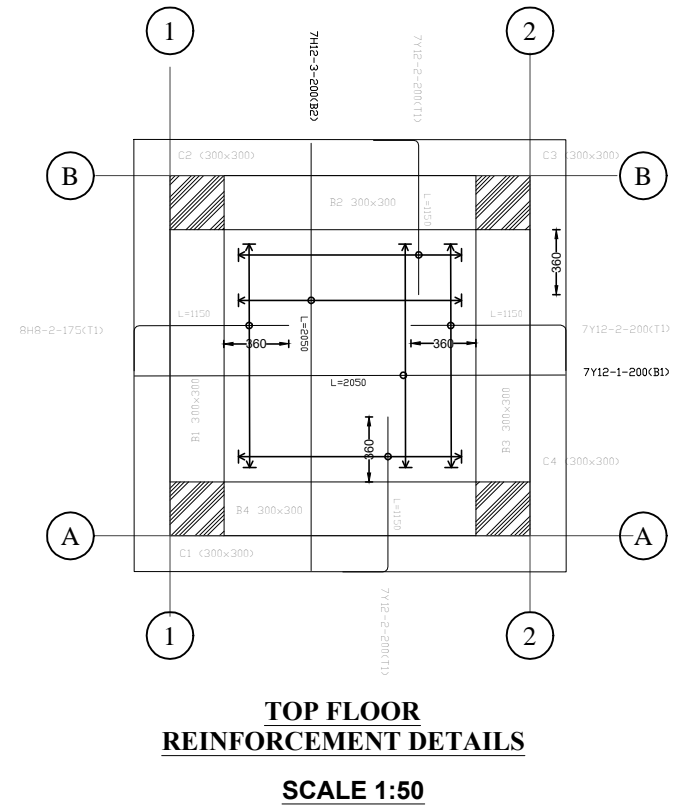
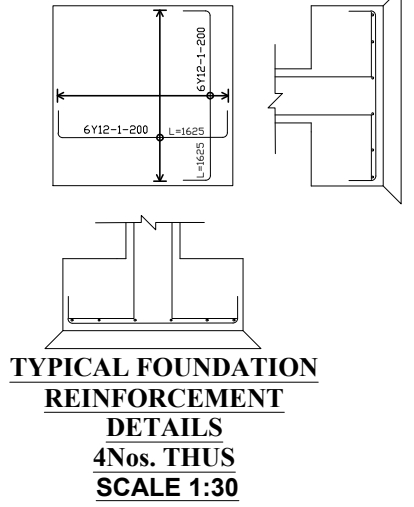
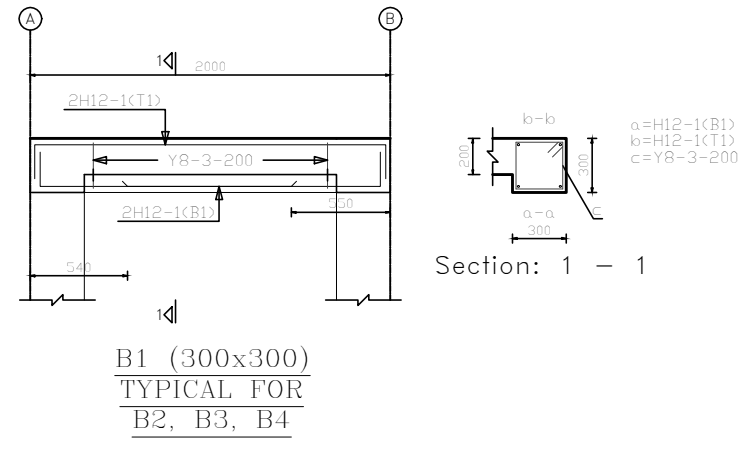
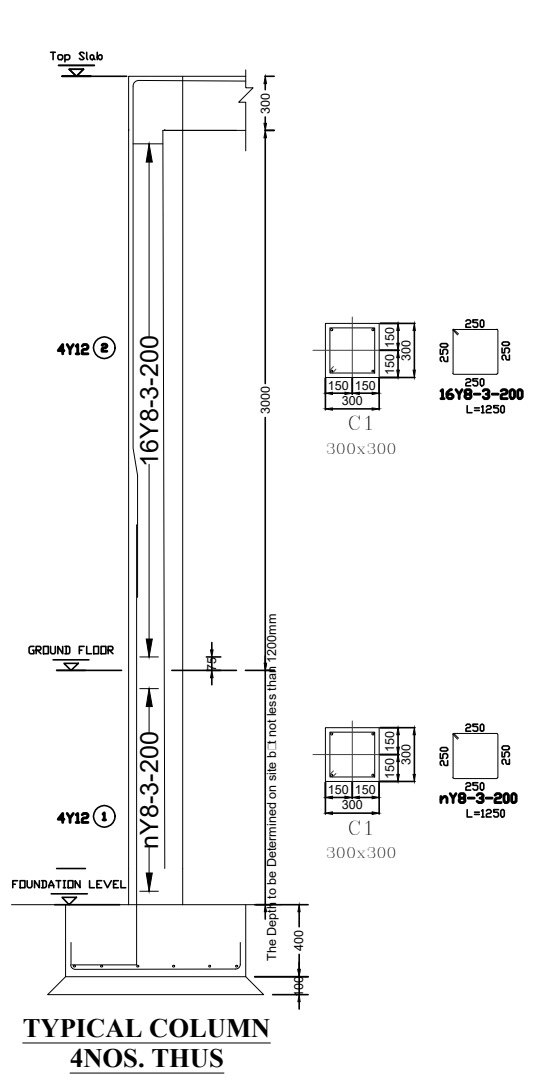
APPROVED BY:

SCALES: 1:75

Date: MARCH 2020

Drg. No. **M405-WA-AB-10**

Rev.



- STRUCTURAL NOTES**
- ALL DIMENSIONS ARE IN MILLIMETERS
 - ALL STRUCTURAL MEMBERS TO BE CAST WITH VIBRATED REINFORCED CONCRETE CLASS C25.20 (1:1.5:3)
 - THE MASONRY WALL TO BE 200MM THICK BLOCKS BEDDED ON 1:4 CEMENT SAND MORTAR AND REINFORCED WITH 20:2G HOOP IRON EVERY TWO ALTERNATE COURSE.
 - COVERS TO REINFORCEMENT:**
 - SLAB:- 20mm
 - BEAMS:- 25mm
 - COLUMNS:- 25mm
 - FOUNDATIONS:- 40mm or AS SHALL BE SPECIFIED BY STRUCTURAL ENGINEER
 - THE DRAWINGS TO BE READ INCONJUNCTION WITH ARCHITECTURAL DRAWINGS.

**WATER AND SANITATION SERVICES IMPROVEMENT PROJECT - ADDITIONAL FINANCING
(WaSSIP - AF)**

PREPARATION OF SANITATION PLANS, FEASIBILITY STUDIES AND PRELIMINARY DESIGNS FOR WAJIR AND DADAAB TOWNS

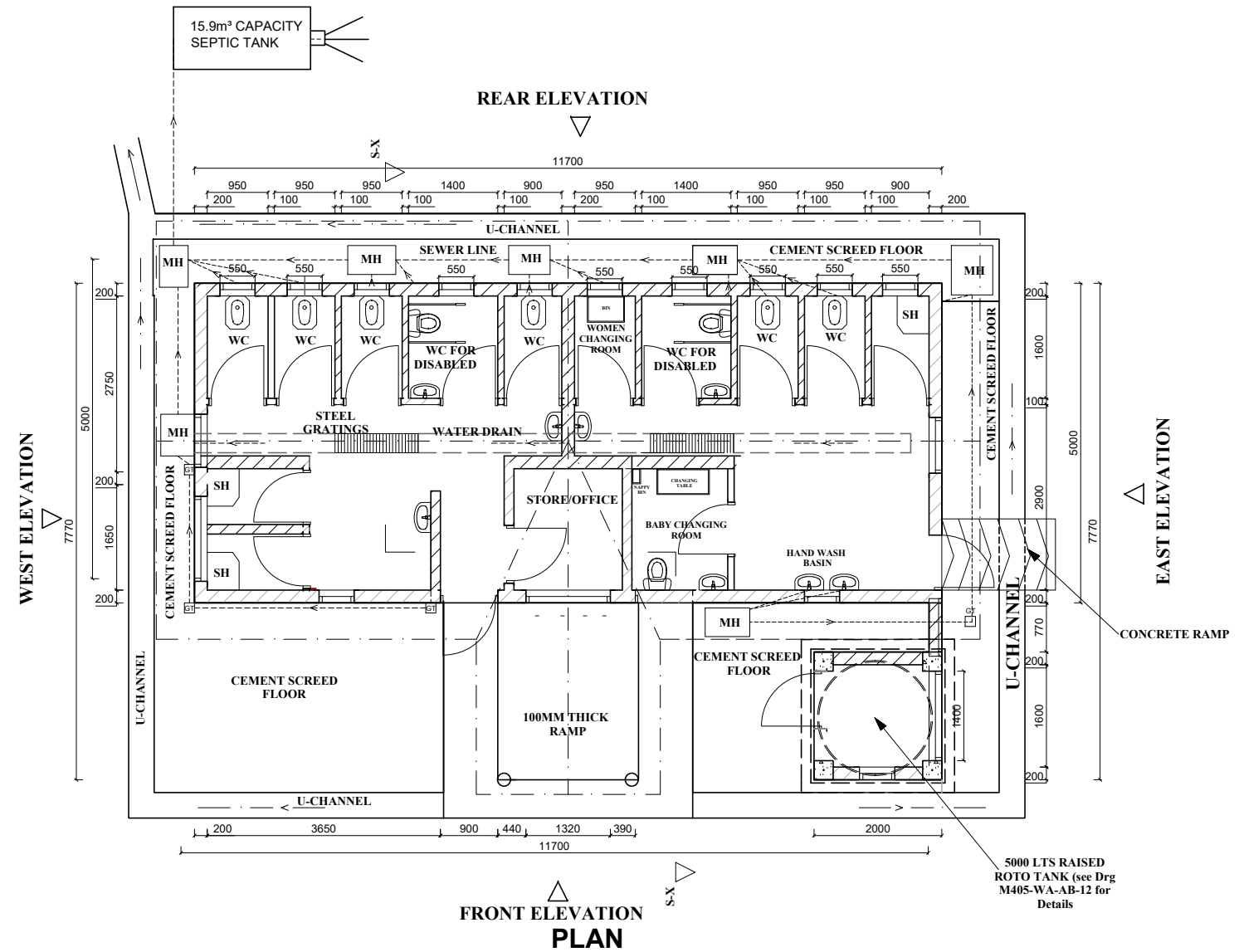
Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

REV.	DATE	REMARKS

Revisions:
Notes:

SURVEYED BY:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALES: AS SHOWN

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA
Drawing Title: **RAISED TANK DETAILS**
TYPICAL STRUCTURAL DRAWINGS
Date: MARCH 2020
Drg. No. **M405-WA-AB-12**
Rev.



NOTE:
1. DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED

REVISIONS	BY	SIGN	DATE	APPROVED
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			

CLIENT:

THE MANAGING DIRECTOR
 WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O. BOX 708, 70200, WAJIR, KENYA

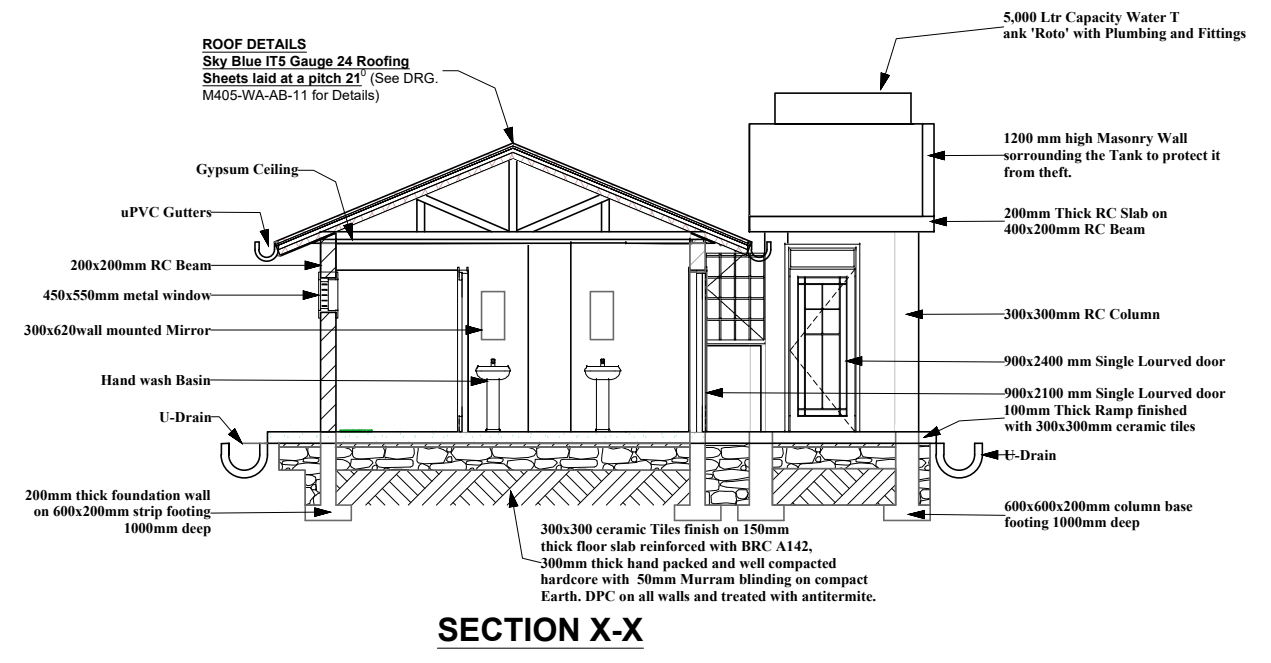
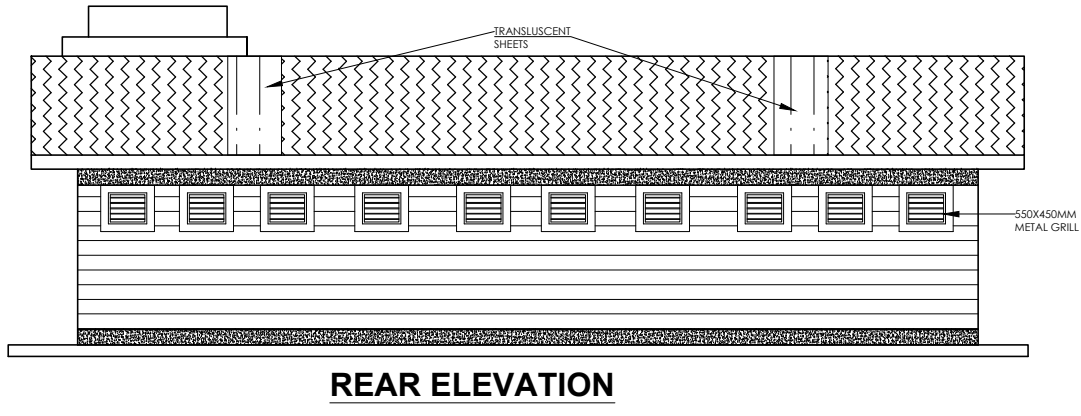
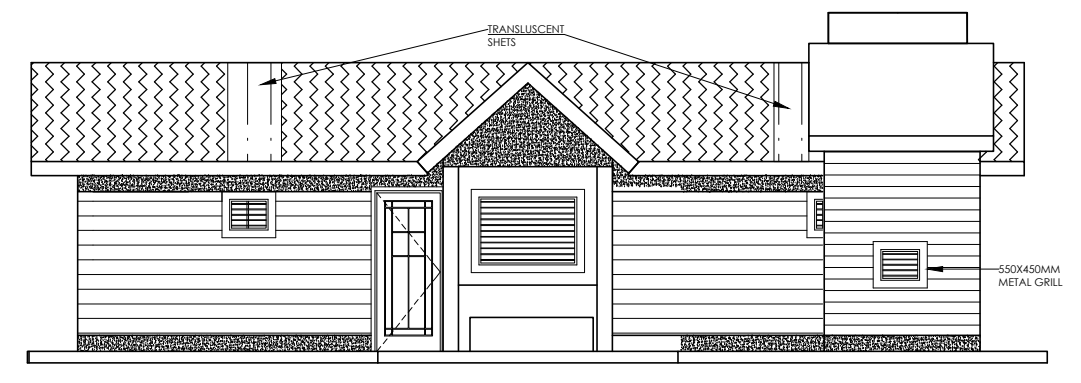
PROJECT TITLE:
WATER AND SANITATION DEVELOPMENT PROJECT

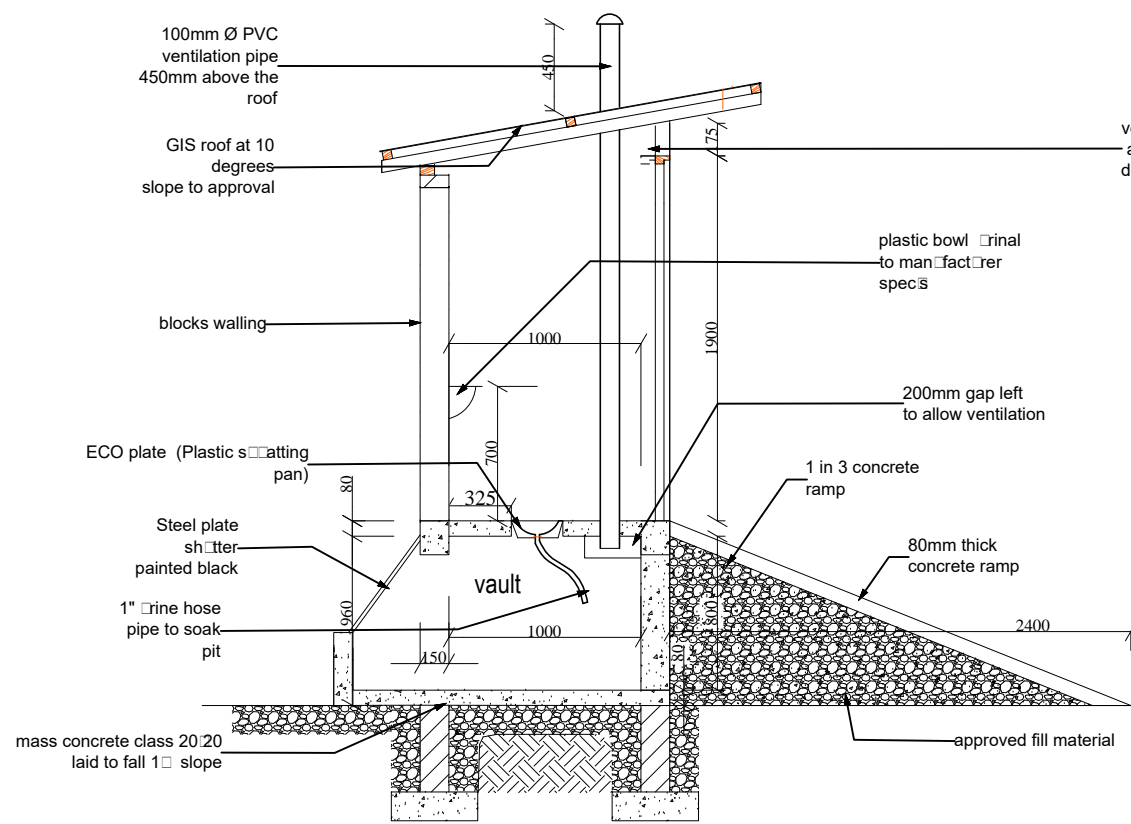
CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

DRAWING TITLE:
**ABLUTION BLOCK FOR TEACHERS
 PLAN, LAYOUT AND SECTIONS**

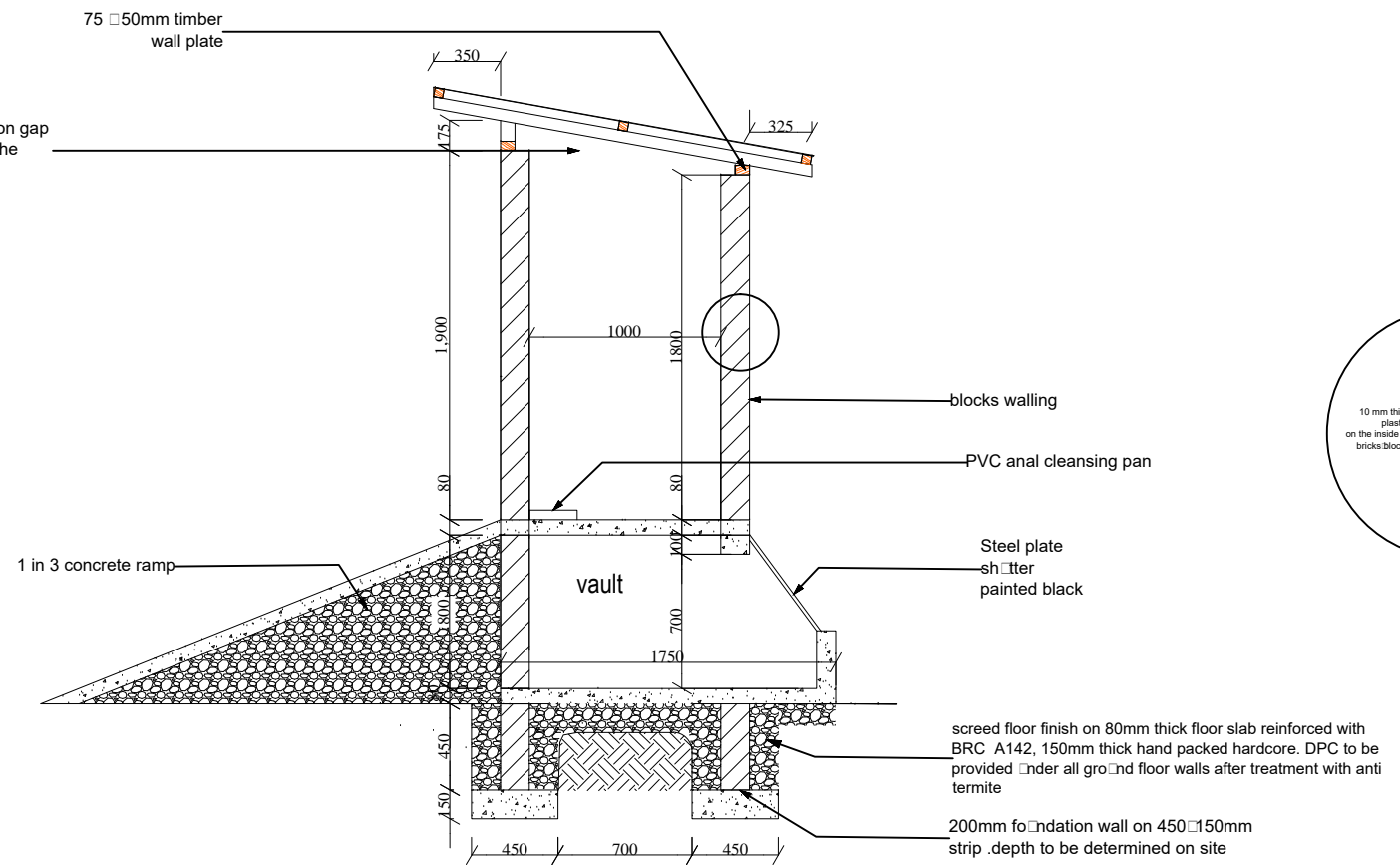
Designed by: _____ Drawn by: _____
 Checked by: _____ Approved by: _____
 Scale: 1:100 Date: MAR 2020

DRG No. **M405-WA-AB-14** REV

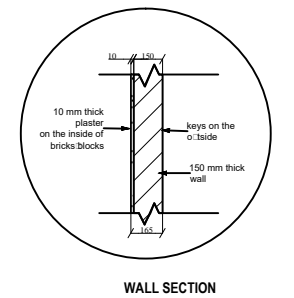




SECTION Y - Y



SECTION X - X



WALL SECTION

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:



THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

Revisions:

REV.	DATE	REMARKS

Notes:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

SCALE: A3 1:40

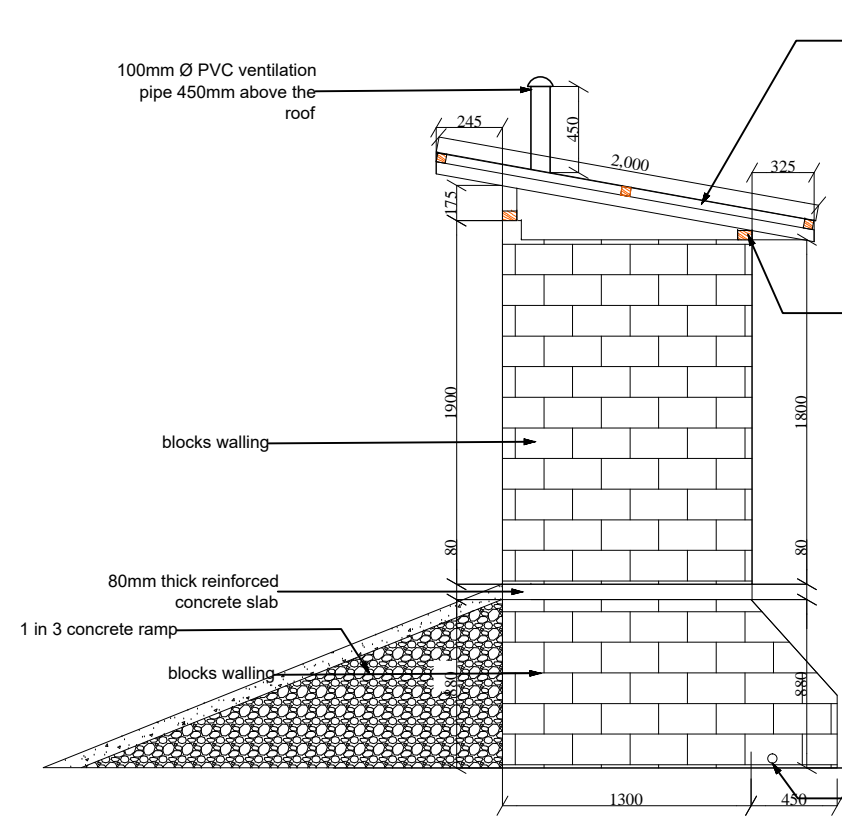
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IMPROVED ECOSAN TOILETS SECTIONS

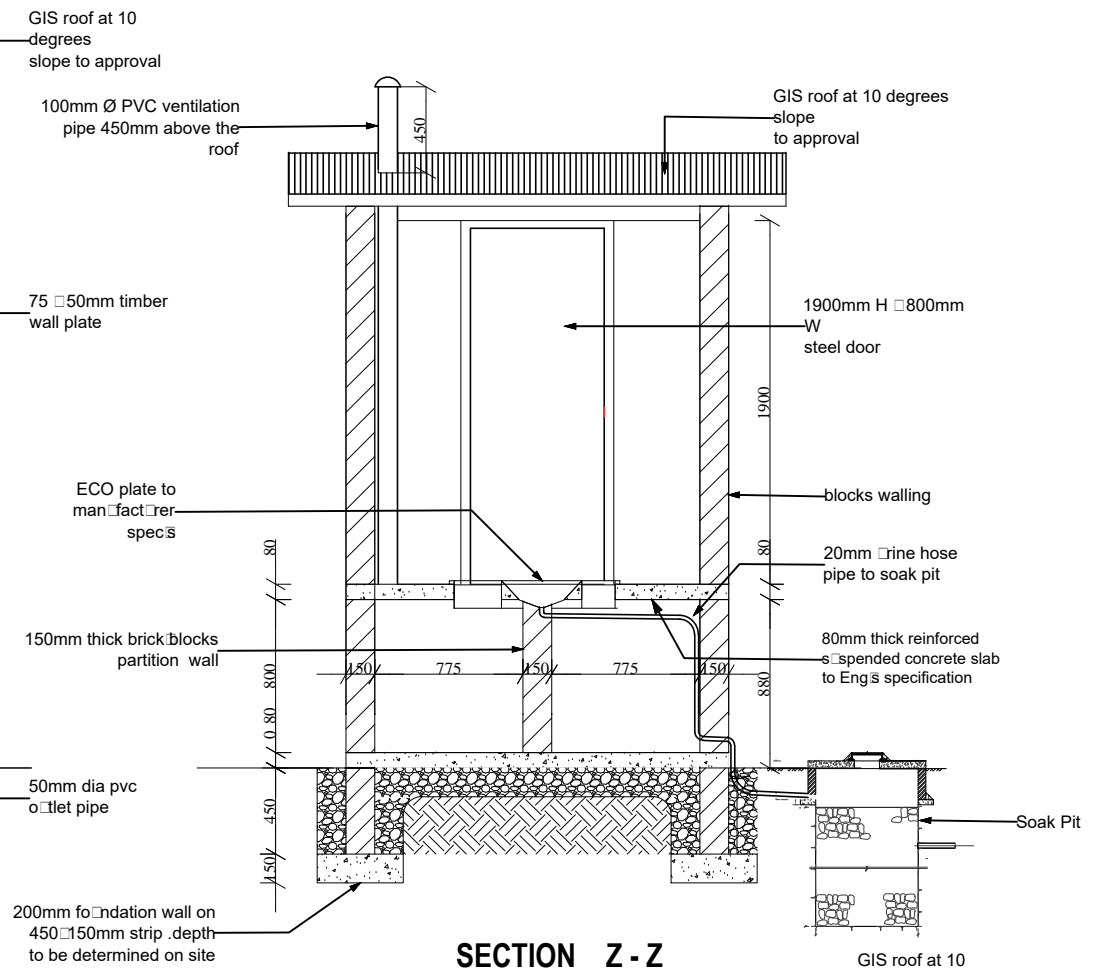
Date: MAR 2020

Drg. No. M405-WA-ES-02

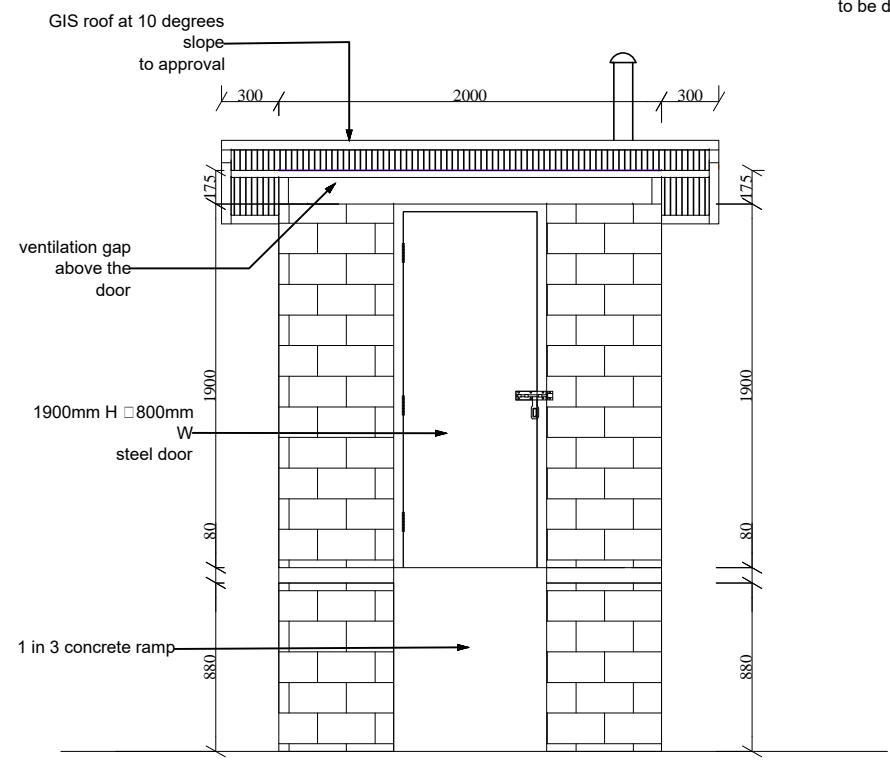
Rev.



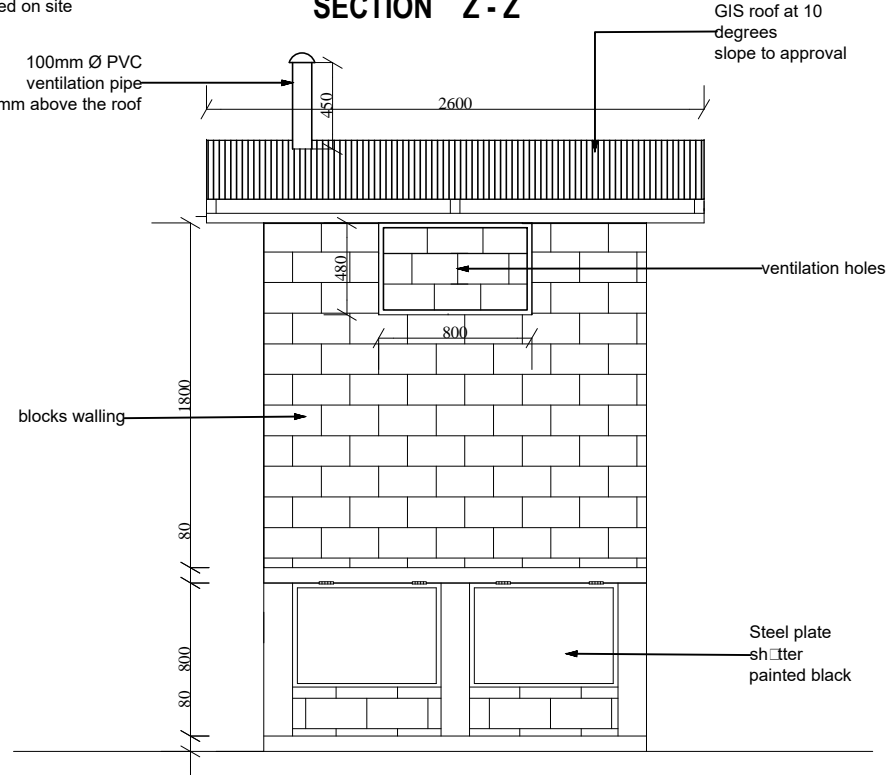
ELEVATION 02



SECTION Z-Z



ELEVATION 01



ELEVATION 03

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA



REV.	DATE	REMARKS

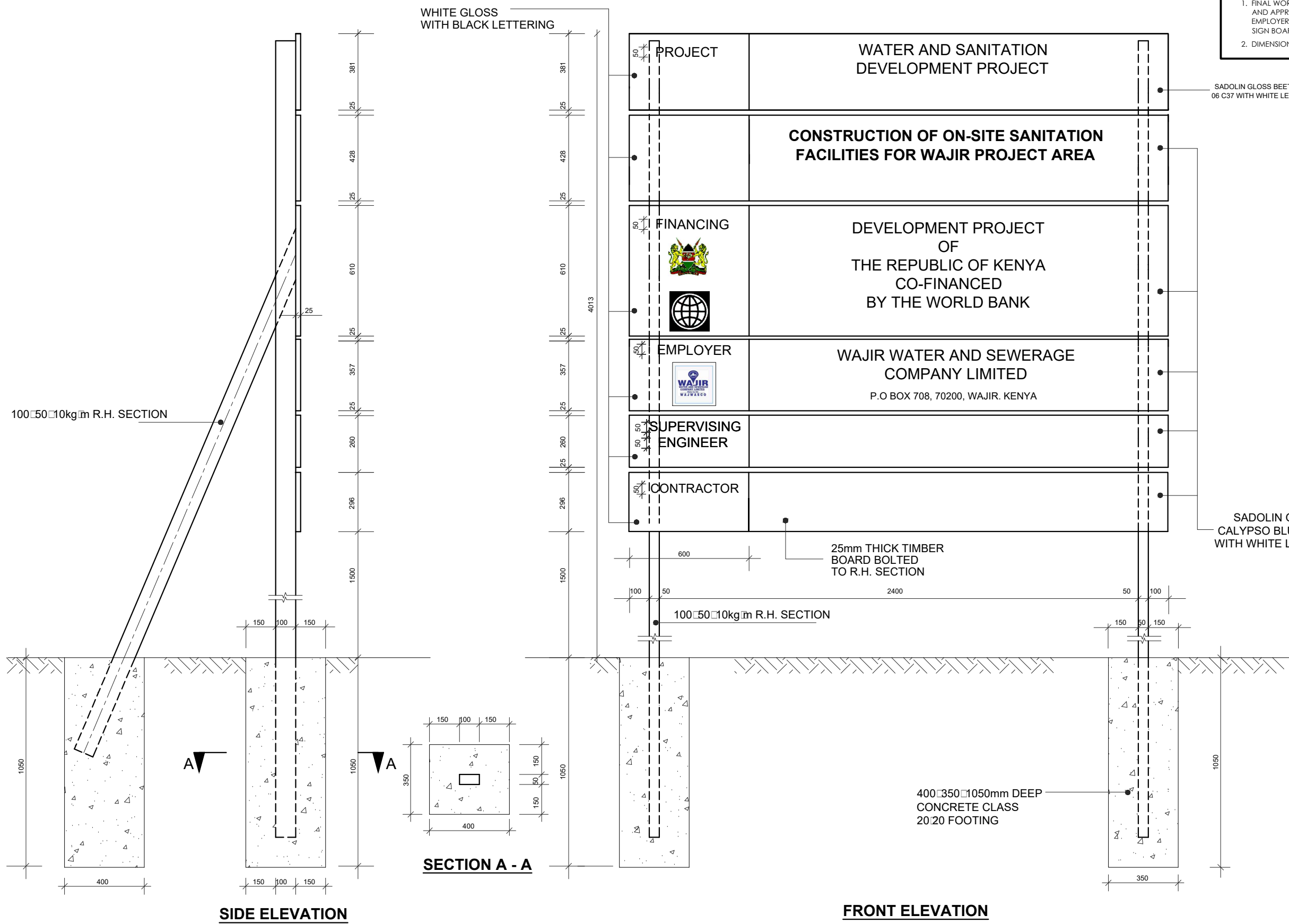
Notes:

DESIGNED BY:
 DRAWN BY:
 CHECKED BY:
 APPROVED BY:
 SCALE: A3 1:40

Drawing Title:
IMPROVED ECOSAN TOILETS ELEVATIONS AND SECTION

Date: MAR 2020 Drg. No. **M405-WA-ES-03** Rev.

NOTES
 1. FINAL WORDING ON SIGN BOARD TO BE DECIDED AND APPROVED IN CONSULTATION WITH THE EMPLOYER PRIOR TO FABRICATION OF THE SIGN BOARD
 2. DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED




SIDE ELEVATION

FRONT ELEVATION

WATER AND SANITATION DEVELOPMENT PROJECT

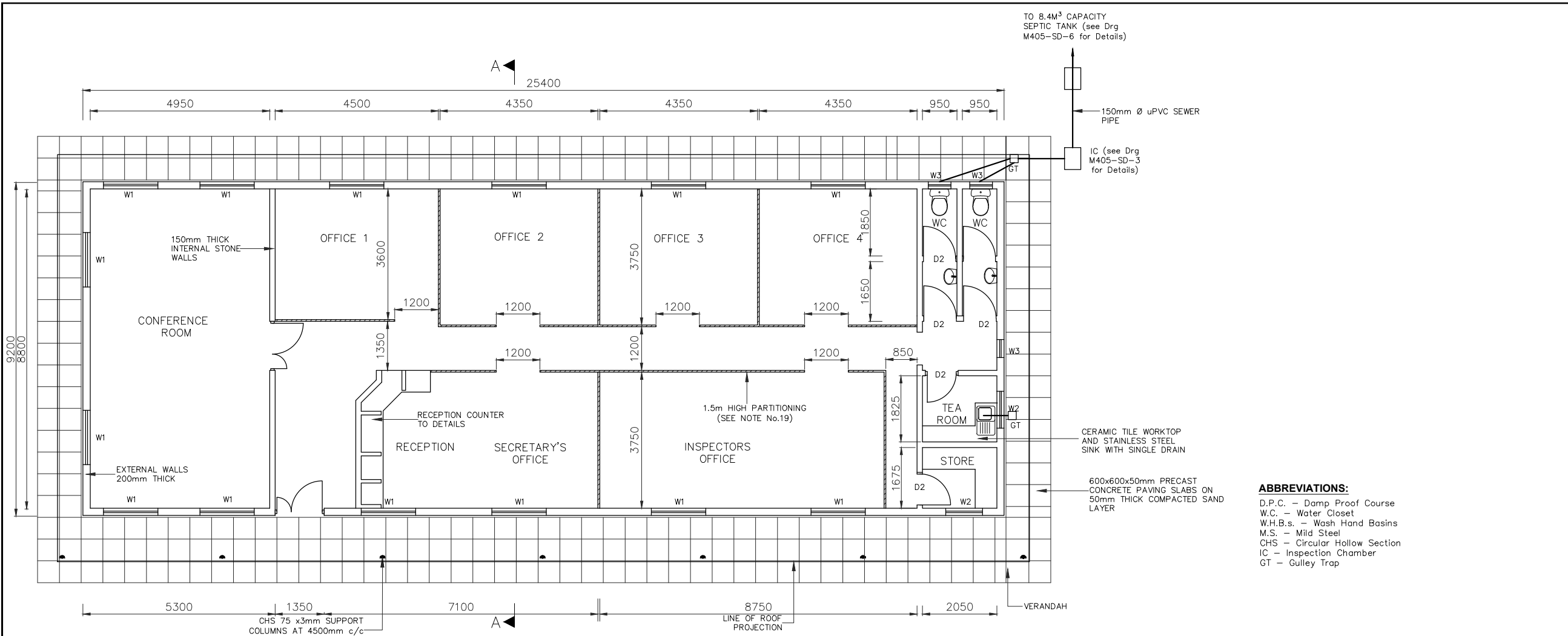
CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA
IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:
 THE MANAGING DIRECTOR
 WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA

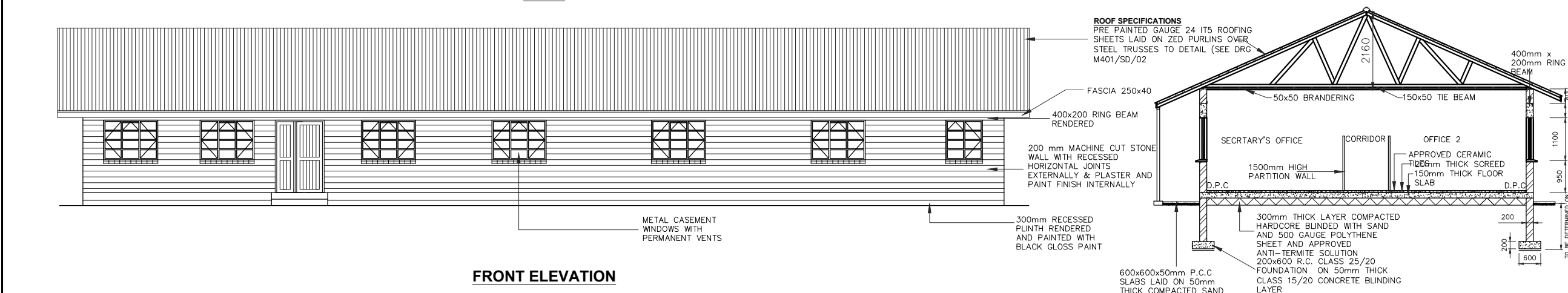
REV.	DATE	REMARKS

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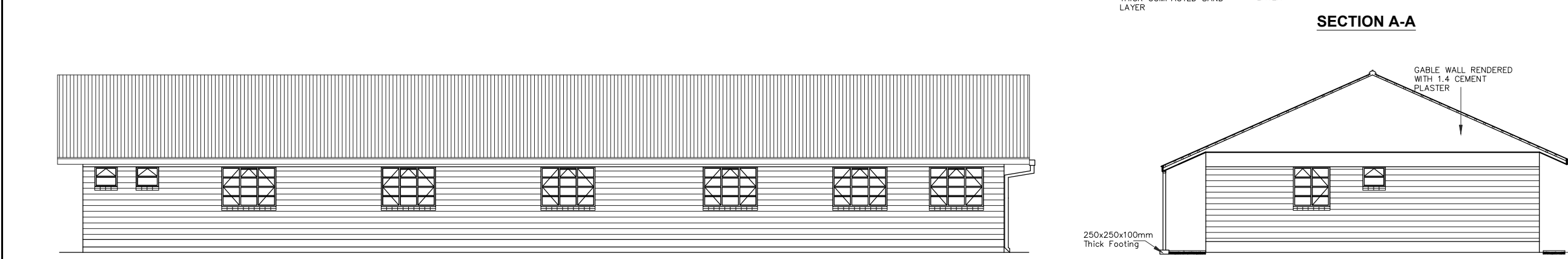
Drawing Title:
 STANDARD DRAWINGS
 PROJECT SIGN BOARD DETAILS
 Date: MAY 2018
 Drg. No. **M405-SD-01**
 Rev.



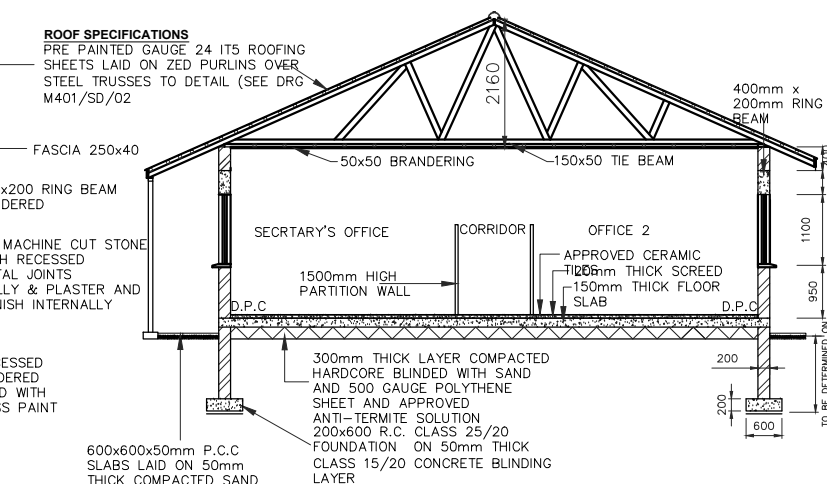
PLAN



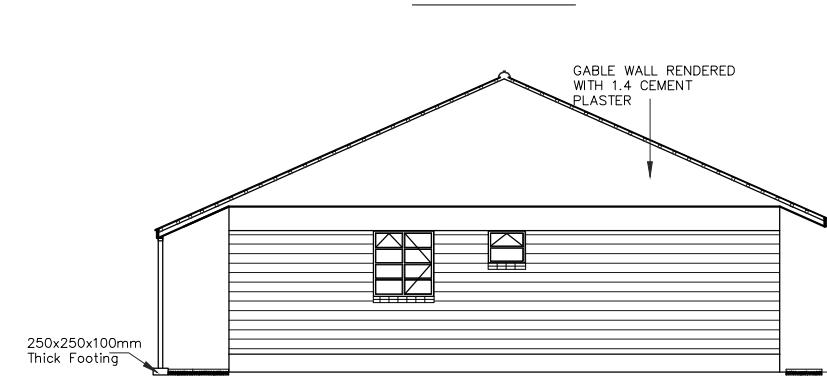
FRONT ELEVATION



REAR ELEVATION



SECTION A-A



SIDE ELEVATION

- NOTES:**
- All dimensions in mm unless otherwise specified.
 - All levels to be checked on site before commencement of works.
 - Depth of foundation to be determined on site. Foundation to be carried down to hard base to the approval of the Engineer and all unsuitable soils to be excavated and the openings filled with hardcore.
 - Contractor to submit plumbing details for approval.
 - Sanitary fittings; white vitreous high level washdown w.c suite complete as "TWYFORDS CLASSIC 10003" comprising closet with "s" trap, no. 12030 cistern 9 litres capacity, no. 52120 valveless fittings with plastic syphon and flush bend, cistern supports, no. 50219 inlet connection and no. 50302 plastic seat and cover; pan plugged and screwed to floor and cistern to wall.
 - White vitreous china washbasin complete as "TWYFORDS CLASSIC 14003" with one no. 54200 aztec tap 15mm, no. 54351 chain waste, no. 56005 fixing brackets including all necessary fixing.
 - Three ply tropical 'pluvex' bituminous felt D.P.C under all walls to be rendered in hot bitumen.
 - All walls to be reinforced with heavy duty gauge hoop iron at every alternative course and jointed in 1:3 cement sand mortar.
 - All drain pipes to be carried out in accordance to the County rules and regulations and as from Sewerage and Sanitation Services Manual in Kenya.
 - Reinforced concrete work as follows:
 - Blinding under foundation class 15/20
 - Foundation class 25/20 reinforced with T12 @ 200mm both ways
 - Floor slab class 25/20 reinforced with BRC mesh A142
 - Ring beam class 25/20 reinforced with 4 Nr. T12 and R 8 @150mm c/c
 - 600x450mm mirrors over all W.H.B.s.
 - Concrete window cills to have drips.
 - For all windows provide 150x50mm cypress pelmet boxes painted and with curtain rails.
 - Roof eaves soffits 50x50mm timber battens and T&G filling.
 - Rain water harvesting: Rear gutter and down pipe and a 2300 Litres plastic tank on a suitable approved plinth.
 - All timber work to have primer and painted with 3 coats Gloss paint.
 - Finishes schedule Internal Finishes
 - Floor - 300x300 Ceramic tiles
 - Skirtings - Ceramic tiles (150mm high)
 - Walls - Plastered with 12.5 mm thick cement plaster and painted with three coats of paint
 - Ceiling - 12mm thick chipboard(480 - 640kg/m²) painted
 - Cornices - Timber and painted
 - External Finishes
 - Natural stone with horizontal joints raked
 - Walls below windows, ring beam and gable walls to be rendered with 1:4 cement sand plaster

- ABBREVIATIONS:**
- D.P.C. - Damp Proof Course
 - W.C. - Water Closet
 - W.H.B.s. - Wash Hand Basins
 - M.S. - Mild Steel
 - CHS - Circular Hollow Section
 - IC - Inspection Chamber
 - GT - Gully Trap

EMPLOYER:

**THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE
COMPANY LIMITED**

P.O BOX 708 - 70200 WAJIR, KENYA

PROJECT:

**WATER AND SANITATION
DEVELOPMENT PROJECT**

**CONSTRUCTION OF ON-SITE SANITATION
FACILITIES FOR WAJIR PROJECT AREA**

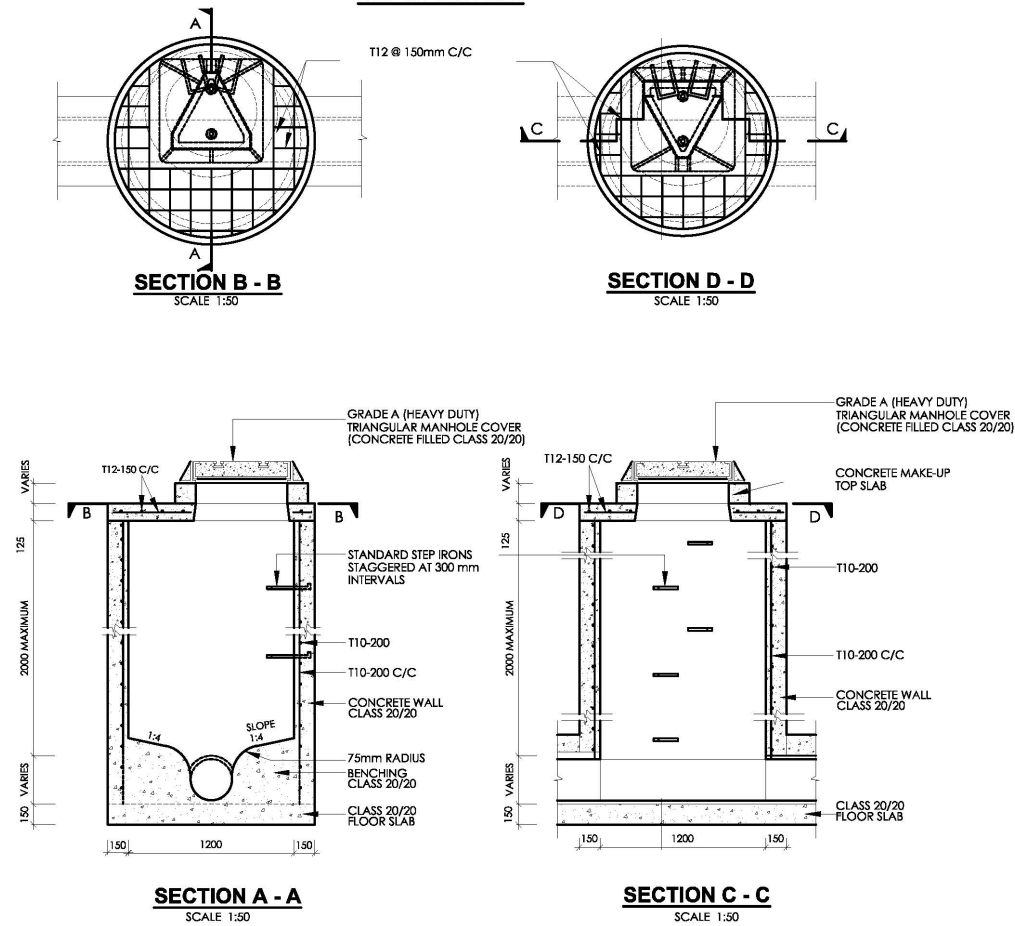
IMMEDIATE URGENT WORKS - WAJIR
PROJECT AREA

DRAWING TITLE:

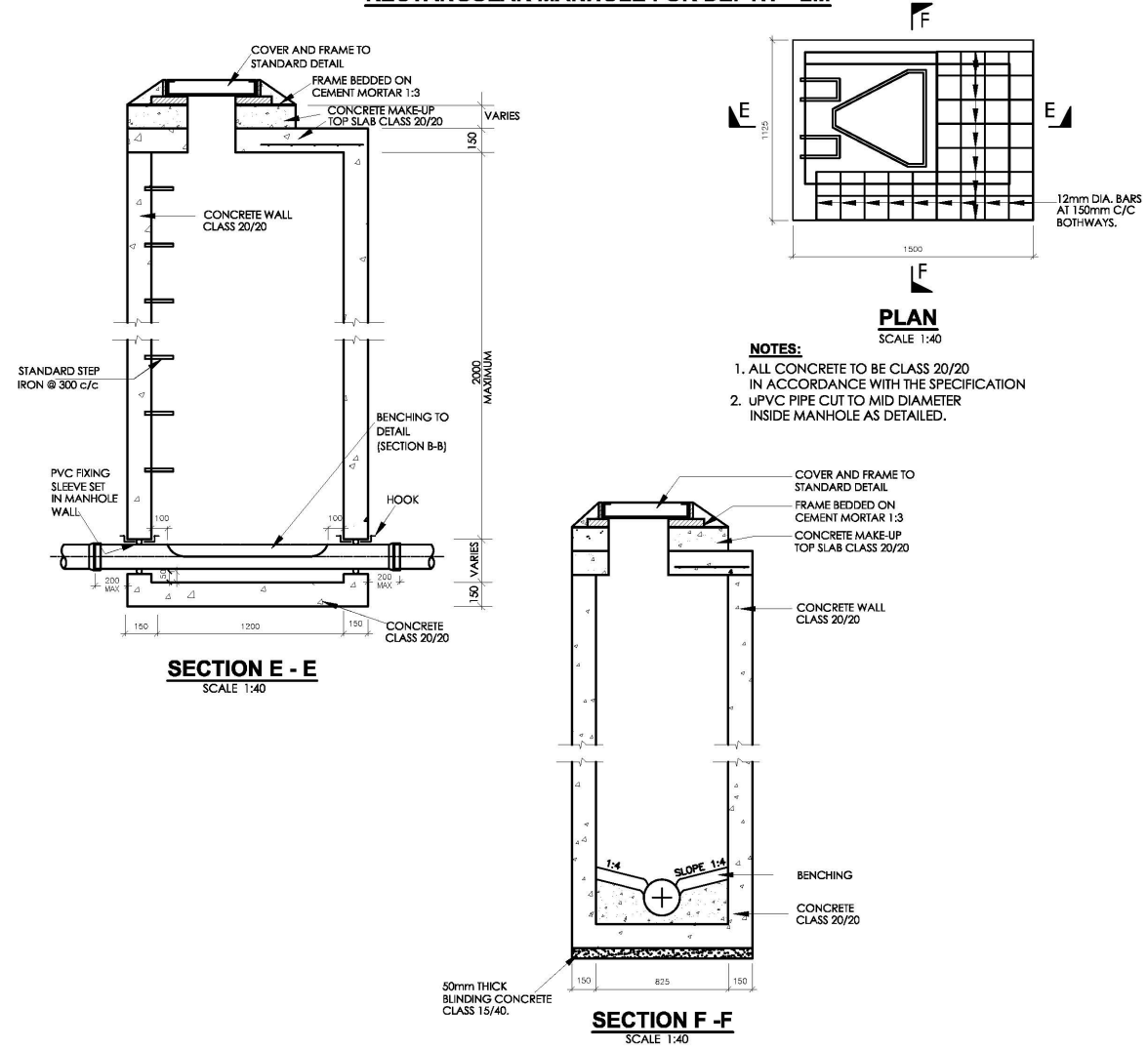
**RESIDENT ENGINEER'S OFFICE
PLAN, SECTIONS AND
ELEVATIONS**

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:
SCALE: 1:125	DATE: MARCH, 2020
DRAWING No. M401-SD-02	

REINFORCED CONCRETE CIRCULAR MANHOLE & COVER
DEPTH n.e. 2.0m



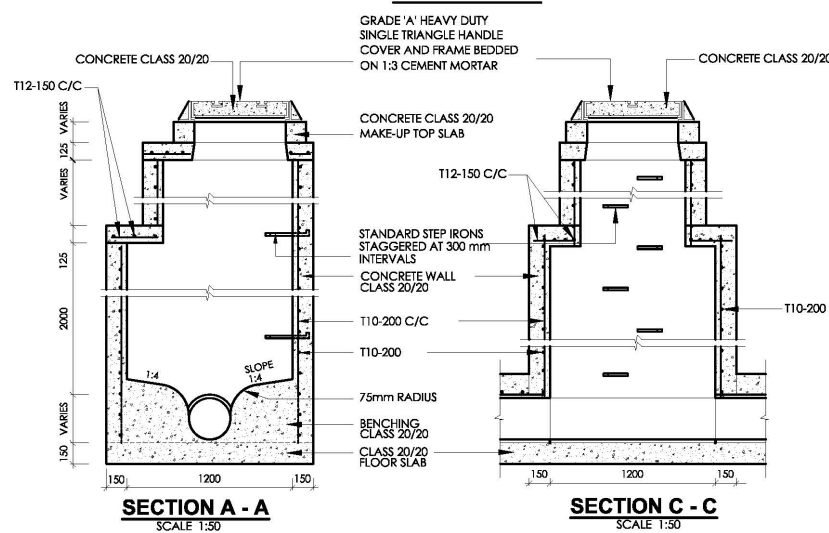
RECTANGULAR MANHOLE FOR DEPTH < 2M



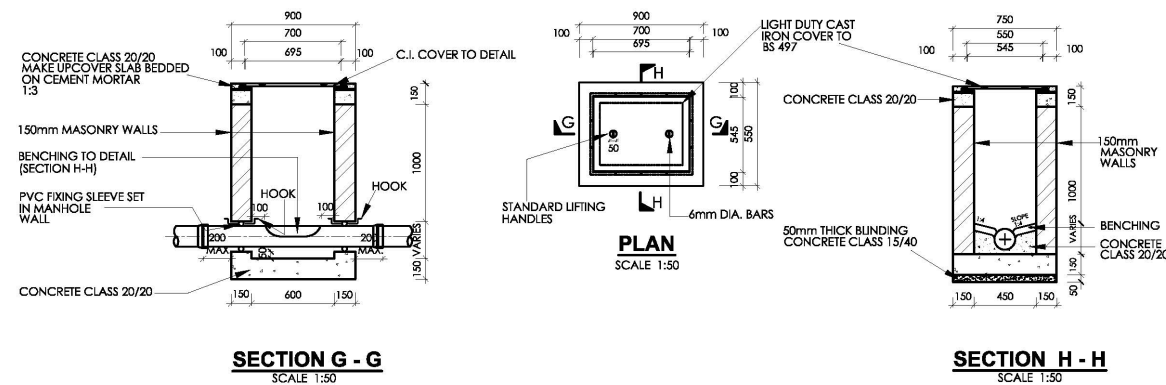
- NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED
 2. ALL CONCRETE TO BE CLASS 20/20
 3. ALL PRECAST CONCRETE UNITS TO BS 556
 4. CONCRETE FILLING CLASS 25/20 VIBRATED AND CURED IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION CLAUSES.
 5. TOLERANCE ON OVERALL SIZE 3mm
 6. ALL HAUNCHES ARE CLASS 15/40 CONCRETE AS INDICATED ON THE SPECIFICATION OVER EXCAVATION TO BE MADE GOOD IN CONCRETE CLASS 15/40.

- ABBREVIATIONS**
- n.e - NOT EXCEEDING
 - c/c - CENTRE TO CENTRE
 - MIN - MINIMUM
 - G.L - GROUND LEVEL
 - mm - MILLIMETER
 - m - METER
 - EXT. DIA - EXTERNAL DIAMETER
 - O.D - OUTSIDE DIAMETER
 - ND - NOMINAL DIAMETER
 - RC - REINFORCED CONCRETE
 - T10 - TWISTED BAR 10mm SIZE
 - NTS - NOT TO SCALE
 - CI - CAST IRON
 - CU.M PER LIN. METER - CUBIC METER PER LINEAR METER

REINFORCED CONCRETE MANHOLE & COVER
DEPTH > 2.0m



INSPECTION CHAMBER DETAILS



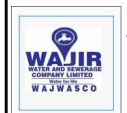
- NOTES:**
1. INSPECTION CHAMBER SHOULD BE SIZE 600x450mm UPTO DEPTH OF 1000mm
 2. FOR INSPECTION CHAMBER EXCEEDING DEPTH 1000mm SIZE SHOULD BE 850x1200mm
 3. WALLS OF INSPECTION CHAMBER TO BE OF MASONRY

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR. KENYA



REV.	DATE	REMARKS

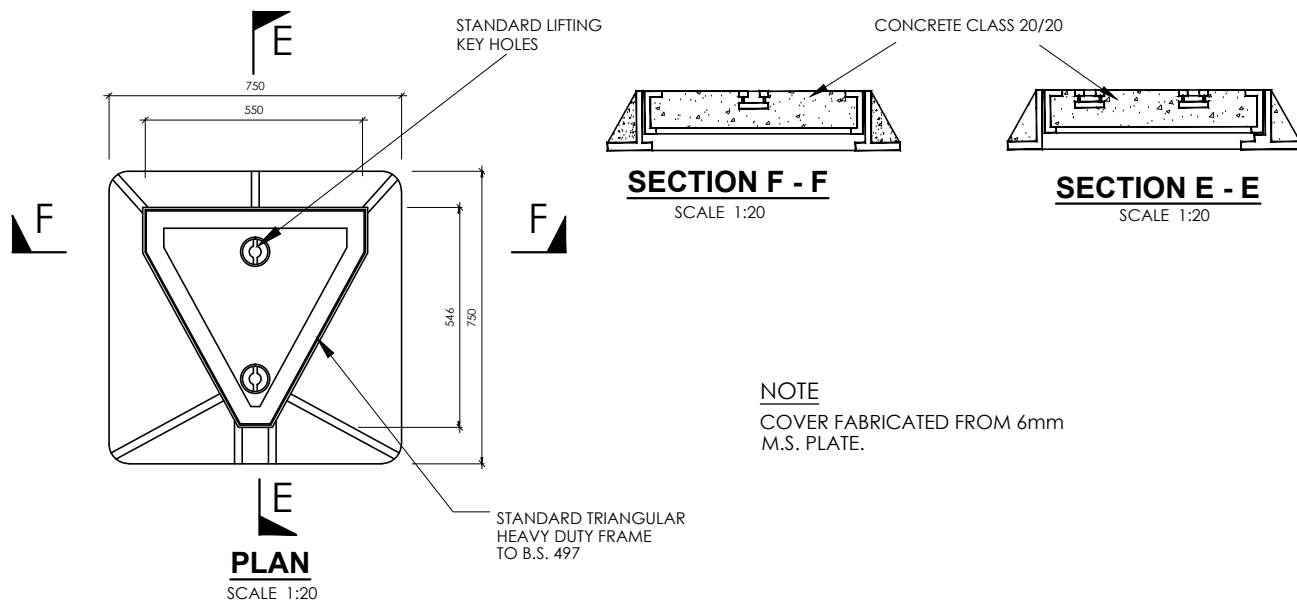
Notes:

SURVEYED BY: _____
DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
APPROVED BY: _____
SCALE: AS SHOWN

Drawing Title: **STANDARD DRAWINGS**
DETAILS OF MANHOLES AND INSPECTION CHAMBERS (SHEET 1 OF 2)

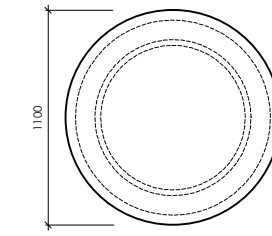
Date: MAR 2020 Drg. No. M405-SD-03 Rev. _____

DETAILS OF TRIANGULAR CONCRETE FILLED MANHOLE COVER FOR FOUL SEWER

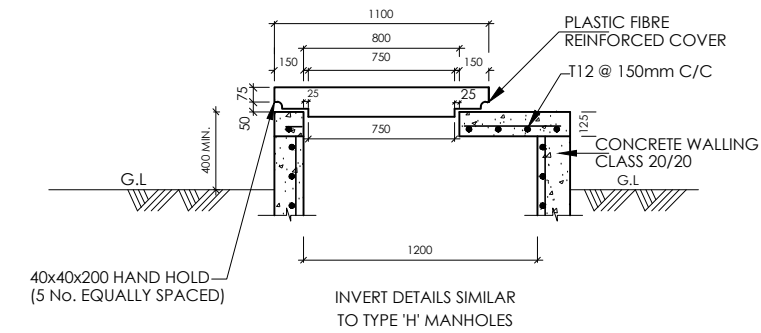


NOTE
COVER FABRICATED FROM 6mm M.S. PLATE.

PLASTIC FIBRE REINFORCED COVER FOR MANHOLES



SECTIONAL ELEVATION
SCALE 1:40



PLASTIC FIBRE REINFORCED COVER - PLAN
SCALE 1:40

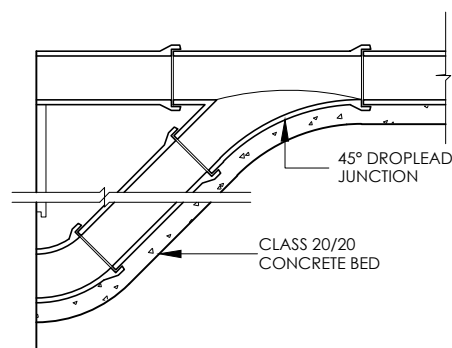
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED
2. ALL CONCRETE TO BE CLASS 20/20
3. ALL PRECAST CONCRETE UNITS TO BS 556
4. CONCRETE FILLING CLASS 25/20 VIBRATED AND CURED IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION CLAUSES.
5. TOLERANCE ON OVERALL SIZE 3mm
6. ALL HAUNCHES ARE CLASS 15/40 CONCRETE AS INDICATED ON THE SPECIFICATION OVER EXCAVATION TO BE MADE GOOD IN CONCRETE CLASS 15/40.

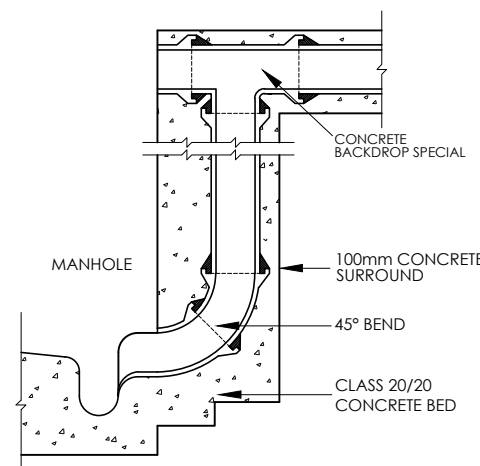
ABBREVIATIONS

- n.e - NOT EXCEEDING
- mm - MILLIMETER
- m - METER
- P.C.C - PRECAST CEMENT CONCRETE
- B.S - BRITISH STANDARD
- c/c - CENTRE TO CENTRE
- T12 - TWISTED BAR 12mm SIZE
- CI - CAST IRON

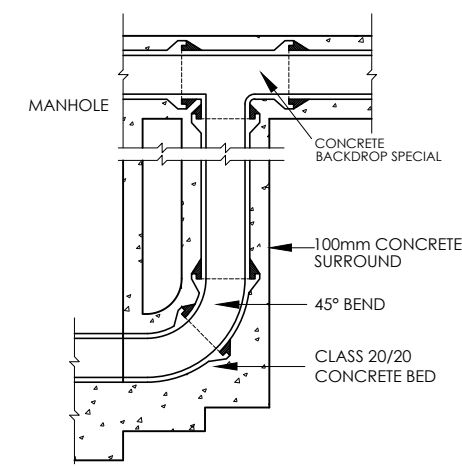
DETAILS OF BACKDROPS FOR MANHOLES



MANHOLE DROPLEAD
SCALE 1:20



SIDE ENTRANCE BACKDROP
SCALE 1:20



END ENTRANCE BACKDROP
SCALE 1:20

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA



REV.	DATE	REMARKS

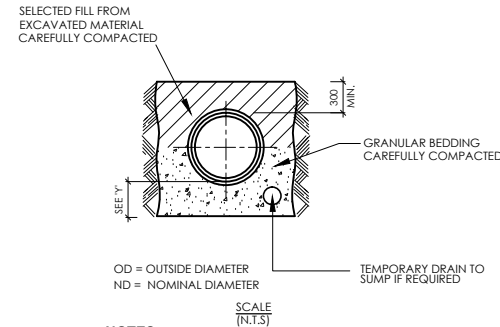
Notes:

SURVEYED BY:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALE: AS SHOWN

Drawing Title: **STANDARD DRAWINGS**
DETAILS OF MANHOLES AND INSPECTION CHAMBERS (SHEET 2 OF 2)

Date: MAR 2020 Drg. No. **M405-SD-04** Rev.

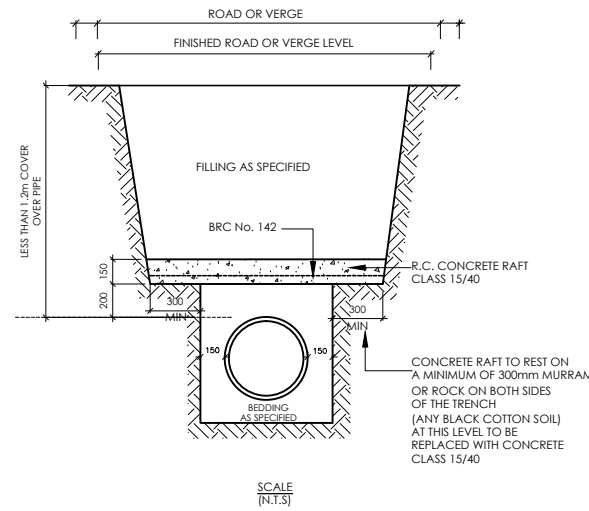
BEDDING AND JOINTING OF FLEXIBLE JOINTED CONCRETE PIPES - TYPE 'BO'



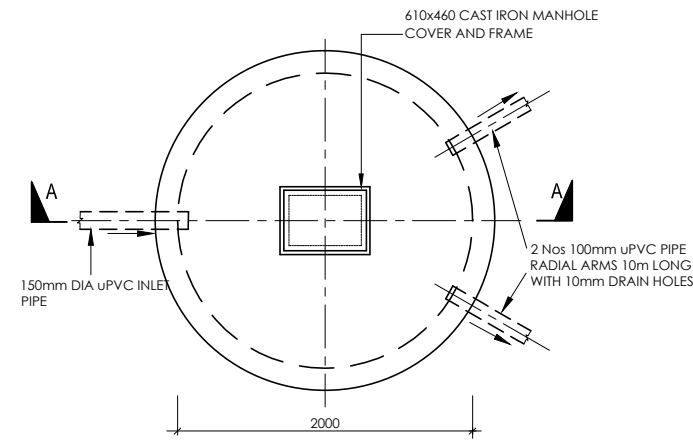
NOTES:

1. DIMENSION 'Y' IN ROCK OR MIXED SOILS CONTAINING ROCK BANDS BOULDERS OR STONES OR OTHER IRREGULAR HARD SPOTS. Y = 1/4 OD UNDER BARRELS WITH MIN. 150mm (PLUS 12mm PER 300mm OF COVER IN EXCESS OF 4.85m) UNDER BOTH BARRELS AND SOCKETS IN MACHINE DUG UNIFORM SOILS Y = OD UNDER BARRELS WITH MIN. 100mm UNDER BOTH BARRELS AND SOCKETS
2. FOR GRANULAR BED AND SURROUND TO PIPES UNIFORMLY GRADED GRANULAR MATERIAL SUCH AS GRAVEL OR BROKEN STONE TO BE USED. IT SHOULD PASS 12mm SIEVE OR SHALL BE RETAINED ON 5mm SIEVE.
3. TRENCHES MUST BE KEPT TO DESIGN WIDTH

FLEXIBLY JOINTED CONCRETE PIPES UNDER ROAD OR VERGE



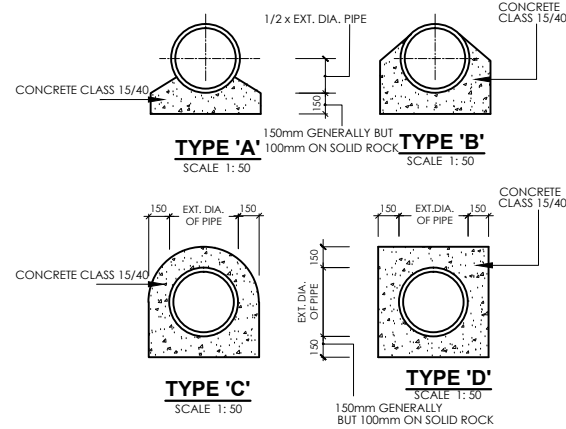
DETAILS OF SOAK AWAY PIT



PLAN OF SOAK AWAY PIT

SCALE 1:50

CONCRETE PIPE BEDS AND HAUNCHES



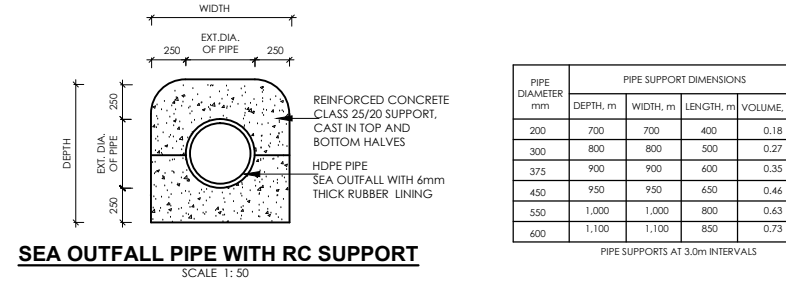
PIPE DIAMETER mm	PIPE WALL THICKNESS mm	HAUNCH TYPE							
		'A'		'B'		'C'		'D'	
100	25.4	0.0556	0.0791	0.0799	0.1034	0.1431	0.1666	0.1653	0.1888
150	25.4	0.0642	0.0904	0.0845	0.1107	0.1706	0.1968	0.1981	0.2242
225	28.57	0.0783	0.1053	0.1262	0.1557	0.2155	0.2450	0.2525	0.2821
300	31.75	0.0929	0.1277	0.1557	0.1905	0.2617	0.2965	0.3100	0.3448
375	34.92	0.1080	0.1470	0.1844	0.2255	0.3094	0.3485	0.3702	0.4093
450	38.10	0.1253	0.1689	0.2208	0.2844	0.3623	0.4059	0.4382	0.4818
525	44.45	0.1433	0.1916	0.2564	0.3046	0.4169	0.4652	0.5052	0.5536
600	50.80	0.1619	0.2147	0.2943	0.3471	0.4731	0.5259	0.5844	0.6372
675	53.98	0.1804	0.2375	0.3310	0.3880	0.5270	0.5841	0.6570	0.7141
750	57.15	0.1986	0.2600	0.3582	0.4295	0.5823	0.6436	0.7325	0.7938
900	63.50	0.2378	0.3077	0.4479	0.5161	0.6973	0.7672	0.8922	0.9620
1050	69.85	0.2810	0.3605	0.4945	0.5741	0.8181	0.8977	1.0635	1.1431
1200	76.20	0.3291	0.4161	0.6230	0.7101	0.9448	1.0318	1.2466	1.3336

CONCRETE QUANTITIES IN BED AND SURROUNDS FOR O. G. CONCRETE PIPES (CU.M.PER LIN. METER)

DEPTH TO THE TOP OF PIPE	PIPE DIAMETER IN mm								
	150	225	300	375	450	525	600	675	750
<1.25M IN ROADS <1.00M ELSEWHERE	TYPE 'C'								
<4.00M	TYPE 'A' (CONCRETE BED) MAY BE DELETED AT THE DISCRETION OF THE ENGINEER				TYPE 'B'				
>4.00M	TYPE 'B'								
>6.00M OR IN HEADING	TYPE 'C' OR 'D' AS DIRECTED								

TYPE OF BED AND HAUNCH TO BE USED

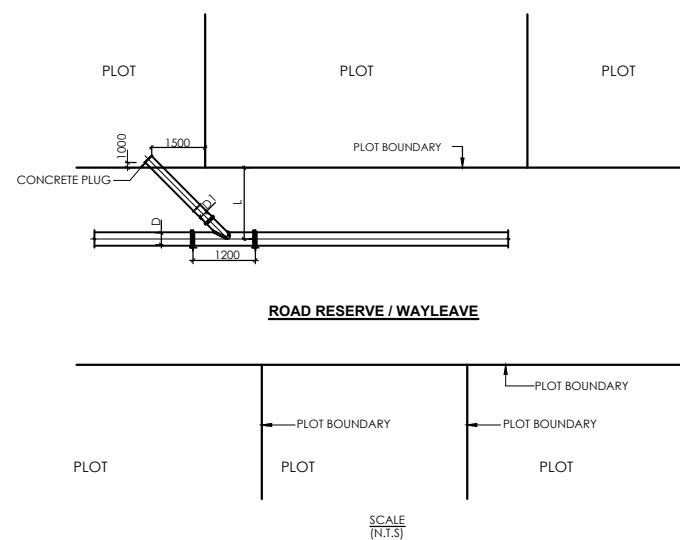
SEA OUTFALL PIPE SUPPORT



SEA OUTFALL PIPE WITH RC SUPPORT

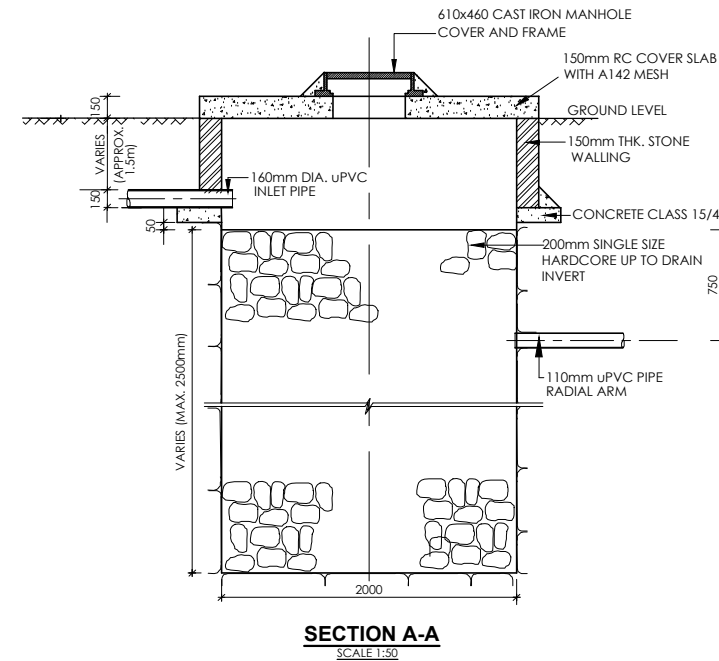
SCALE 1:50

Y - JUNCTION DETAILS



NOTES:

1. L - TO BE DETERMINED ON SITE
2. D - VARIES BETWEEN 160 - 250mm
3. D1 - 160mm DIA uPVC SEWER PIPE



SECTION A-A

SCALE 1:50

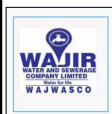
WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:

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WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

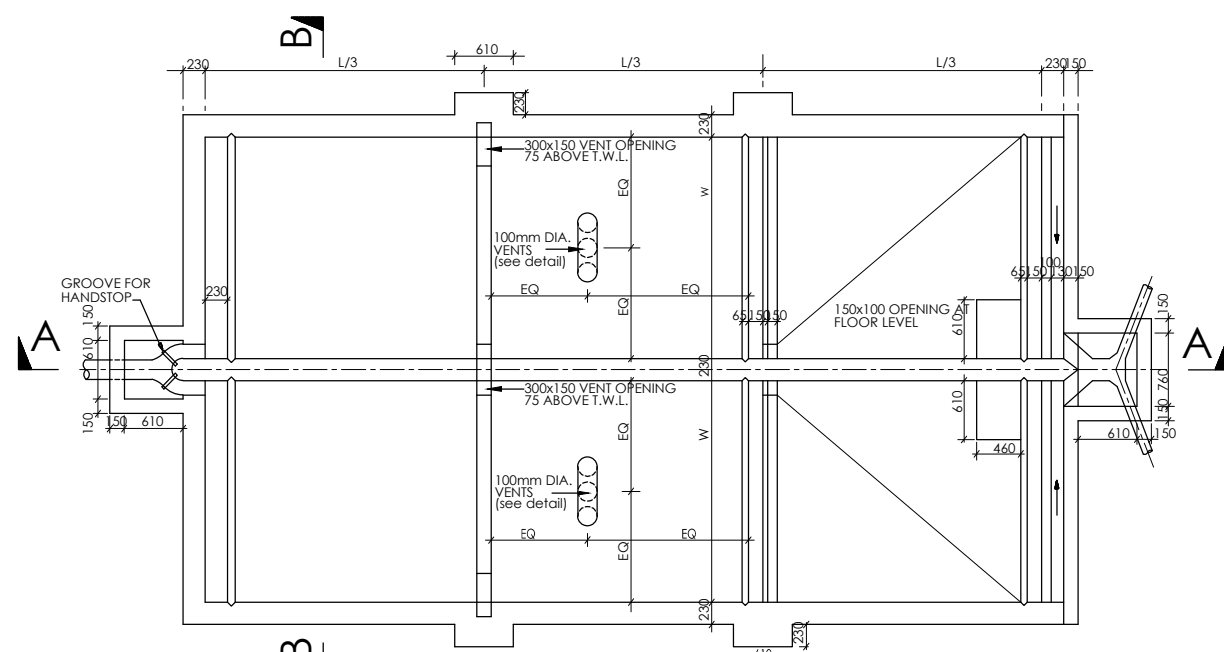


REV.	DATE	REMARKS

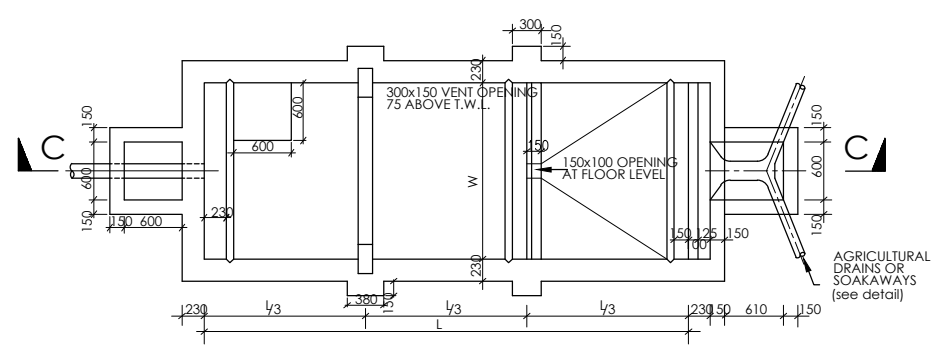
Notes:
1. ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED
2. ALL REINFORCED CONCRETE TO BE CLASS 25/20 EXCEPT WHERE OTHERWISE SPECIFIED
3. ALL EXPOSED CONCRETE EDGES TO HAVE 25mm 25mm CHAMFER
4. ABBREVIATIONS:
TWL - TOP WATER LEVEL
M.S - MILD STEEL
FGL - FINISHED GROUND LEVEL
FFL - FINISHED FLOOR LEVEL

SURVEYED BY:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALE: AS SHOWN

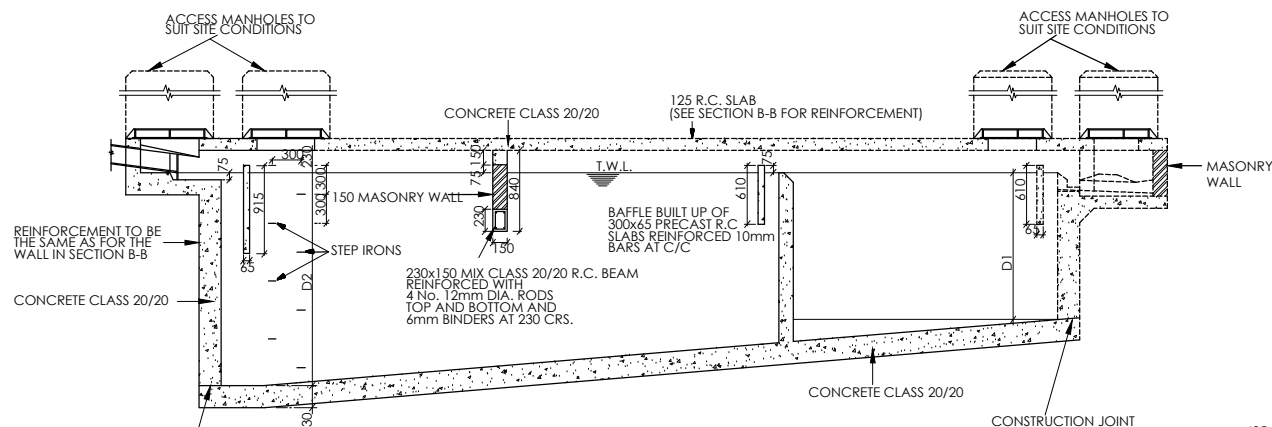
Drawing Title: **STANDARD DRAWINGS**
DETAILS OF BEDDING AND HAUNCHES FOR PIPES, Y - JUNCTION DETAILS & SOAK AWAY PIT DETAILS
Date: MAR 2020
Drg. No. **M405-SD-05**
Rev.



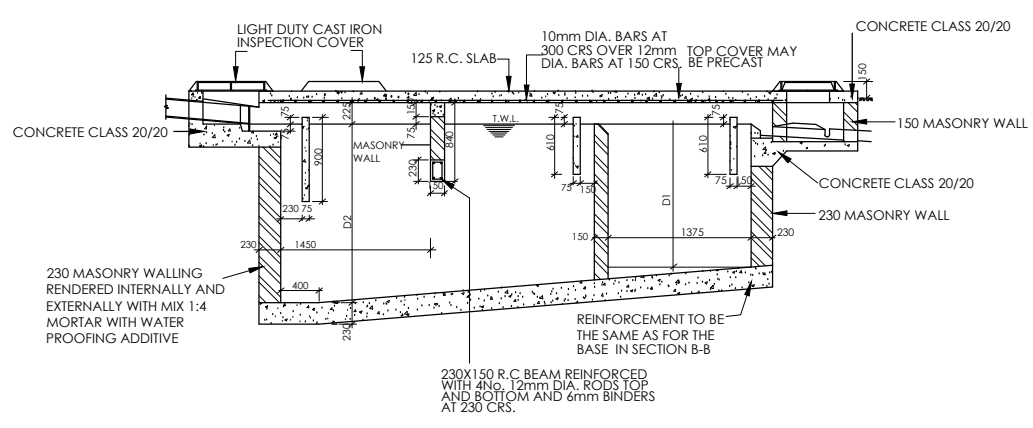
PLAN OF TWIN SEPTIC TANK
SCALE: 1:75



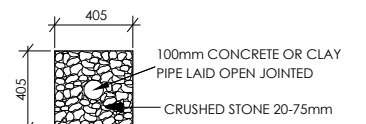
PLAN OF SINGLE SEPTIC TANK
SCALE: 1:75



SECTION A - A
SCALE: 1:75



SECTION C - C
SCALE: 1:75

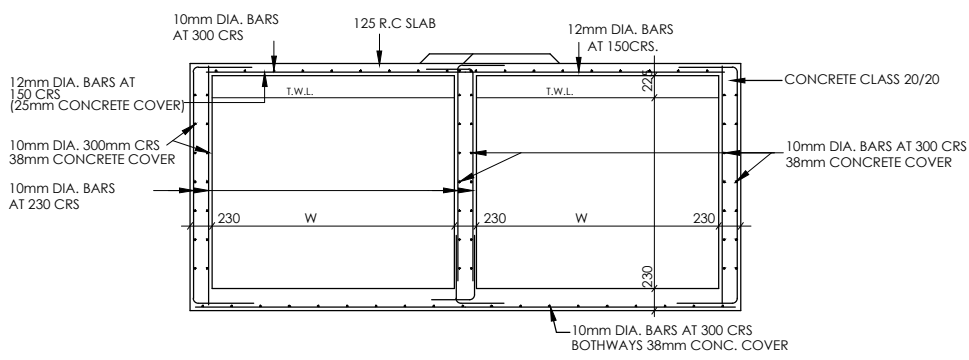


SECTION AT AGRICULTURAL DRAIN
NTS

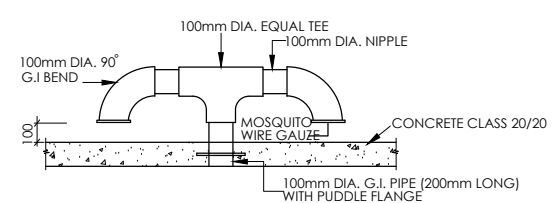
NOTES
1. ALL CONCRETE TO BE CLASS 20/20.
2. COVERS TO MAIN REINFORCEMENT 38mm.

SINGLE TANK CAPACITY CU METRES	SINGLE TANK CAPACITY				TWIN TANK CAPACITY CU METRES
	L/3	W	D1	D2	
4.75	915	1070	1525	1715	9.50
6.50	1070	1220	1525	1755	13.00
8.40	1220	1220	1525	1790	16.80
10.50	1370	1525	1525	1830	21.00
13.15	1525	1675	1525	1865	26.30
15.90	1675	1830	1525	1905	31.80
18.85	1830	1980	1525	1940	37.70
21.50	1980	2055	1525	1980	43.00
24.30	2135	2135	1525	2020	48.60
27.25	2210	2210	1525	2060	54.50
30.45	2440	2285	1525	2095	60.90
33.65	2570	2360	1525	2135	67.30
37.30	2740	2440	1525	2170	74.60
41.00	2895	2515	1525	2210	82.00
44.80	3050	2590	1525	2245	89.60
48.45	3200	2665	1525	2285	97.70

NOTES
1. ALL CONCRETE MIX TO BE CLASS 20/20 UNLESS OTHERWISE SPECIFIED
2. COVER TO ALL REINFORCEMENT 40mm WALLS AND BASE, 25mm



SECTION B - B



VENT PIPE DETAIL

NOTES
1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. ALL CONCRETE TO BE CLASS 20/20 TO BS 556
3. ALL PRECAST CONCRETE UNITS TO BS 556
4. CONCRETE FILLING CLASS 25/20 VIBRATED AND CURED IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION CLAUSES.
5. TOLERANCE ON OVERALL SIZE 3mm
6. ALL HAUNCHES ARE CLASS 15/40 CONCRETE AS INDICATED ON THE SPECIFICATION OVER EXCAVATION TO BE MADE GOOD IN CONCRETE CLASS 15/40.

ABBREVIATIONS
n.o. - NOT EXCEEDING
c/c - CENTRE TO CENTRE
MIN - MINIMUM
G.L. - GROUND LEVEL
mm - MILLIMETER
m - METRE
EXT. DIA. - EXTERNAL DIAMETER
OD - OUTSIDE DIAMETER
ND - NOMINAL DIAMETER
RC - REINFORCED CONCRETE
T10 - TWISTED BAR 10mm SIZE
NTS - NOT TO SCALE
CU.M PER LIN. METER - CUBIC METER PER LINEAR METER
CI - CAST IRON

WATER AND SANITATION DEVELOPMENT PROJECT

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WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

Revisions:

REV.	DATE	REMARKS

Notes:

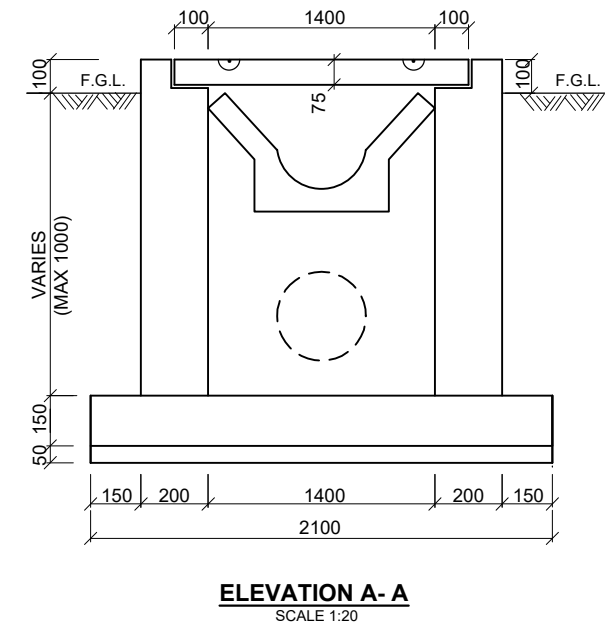
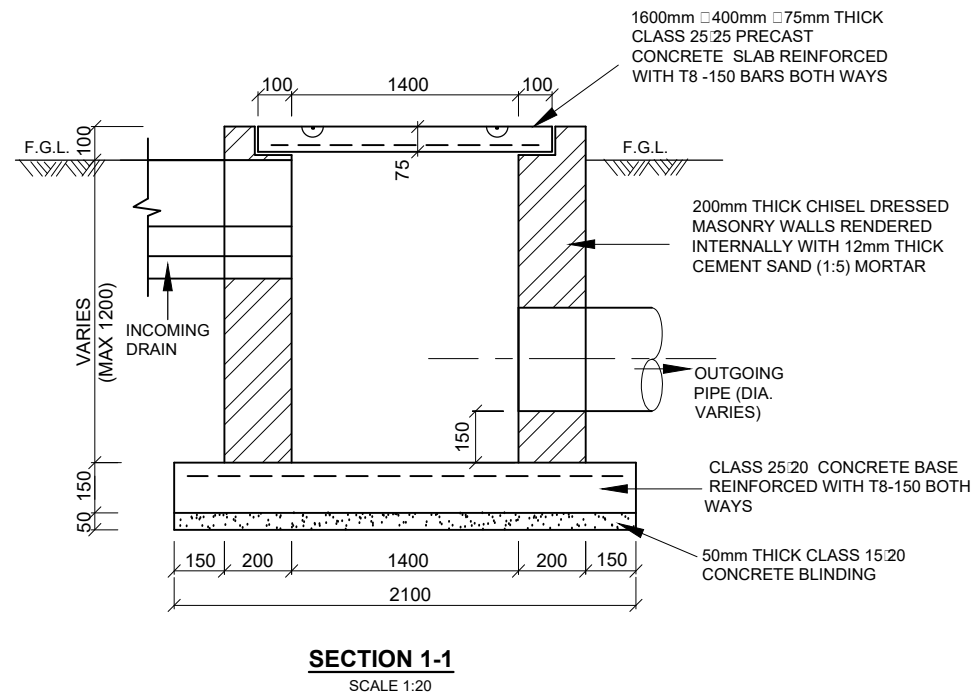
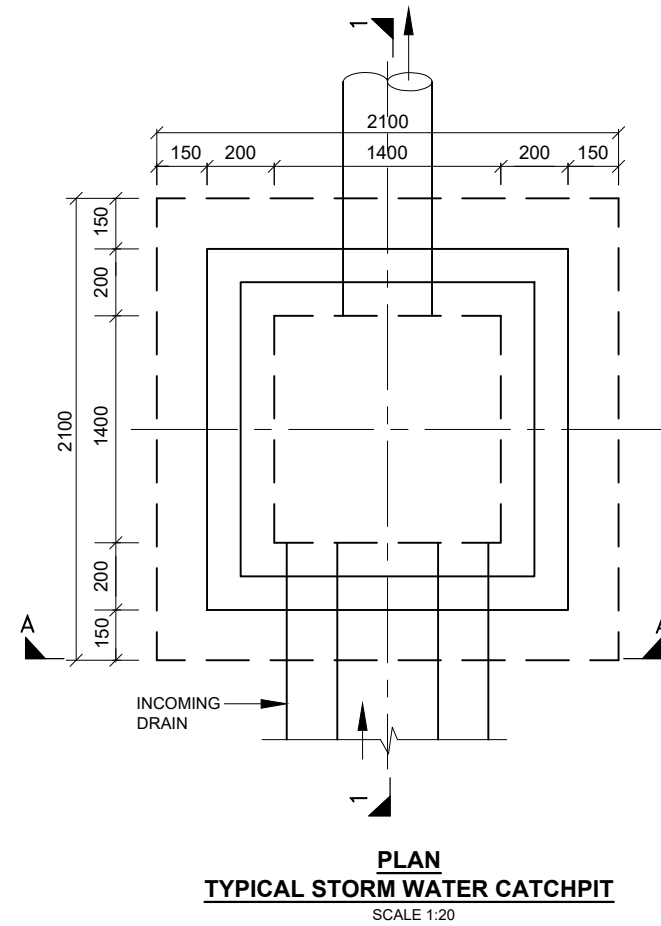
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DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALES: AS SHOWN

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Drawing Title: **SEPTIC TANK DETAILS**

Date: MARCH 2020 Drg. No. **M405/SD/6** Rev.

DETAILS OF STORM WATER CATCHPIT



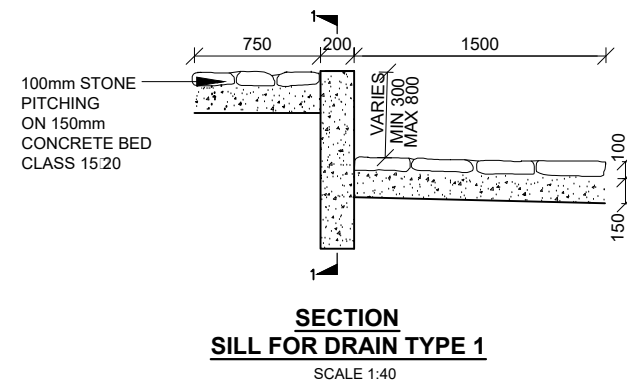
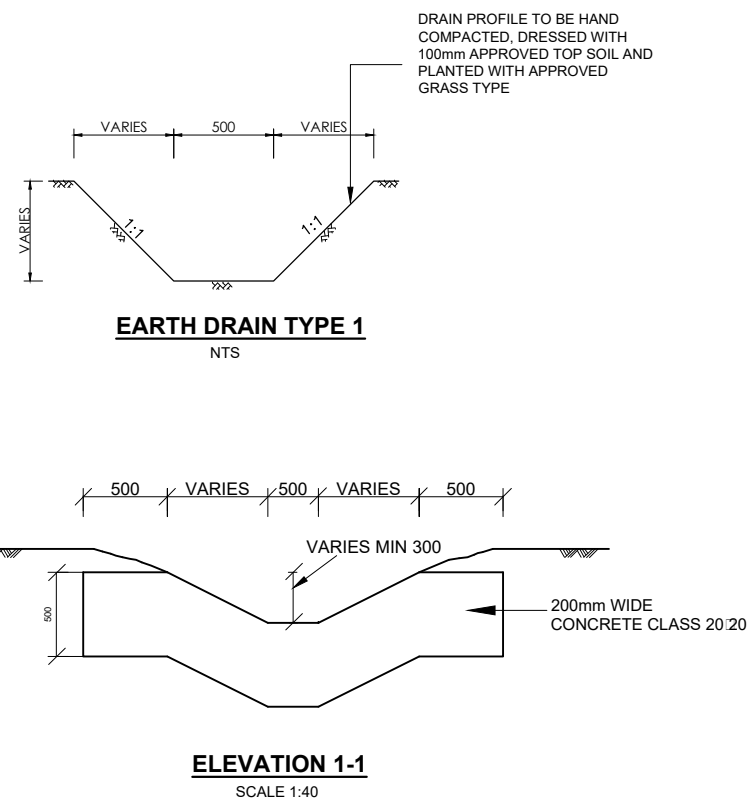
NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. LENGTH OF EACH CASCADE TO BE 1000mm

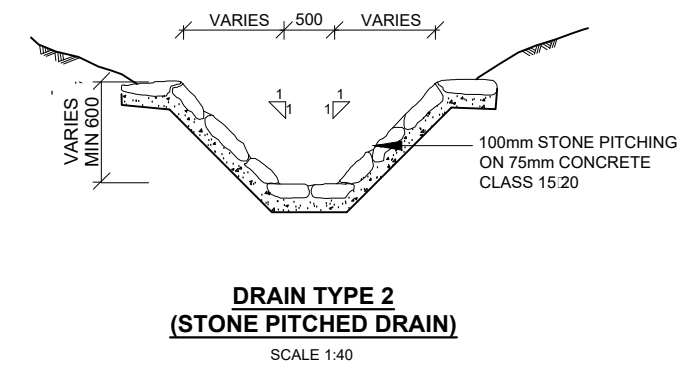
ABBREVIATIONS

- I.B. - INVERT BLOCK
- I.B.D. - INVERT BLOCK DRAIN
- DIA - DIAMETER
- mm - MILLIMETER
- F.G.L. - FINISHED GROUND LEVEL

DETAILS OF EARTH DRAIN TYPE '1'



DETAILS OF DRAIN TYPE '2' (STONE PITCHED DRAIN)



WATER AND SANITATION DEVELOPMENT PROJECT

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P.O BOX 708, 70200, WAJIR, KENYA

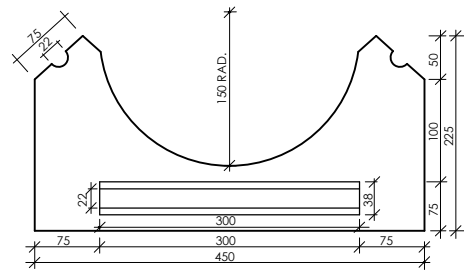


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DRAWN BY:
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APPROVED BY:

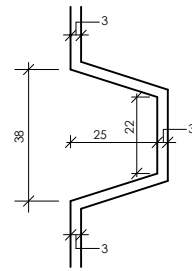
REVISIONS:

Drawing Title:		
STANDARD DRAWINGS		
DETAILS OF STORMWATER CATCH PIT AND EARTH DRAINS		
Date:	Drg. No.	Rev.
MAR 2020	M405-SD-09	



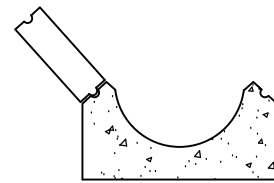
**PRECAST CONCRETE
TYPE 'A' INVERT BLOCK**

SCALE 1:4



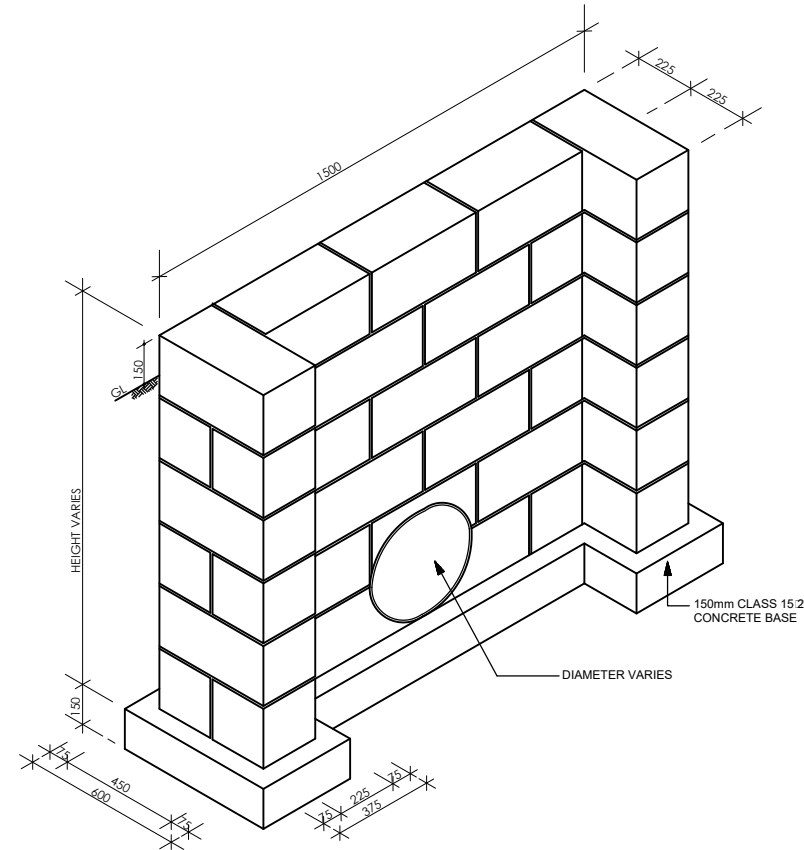
DETAIL OF JOINT

SCALE 1:1



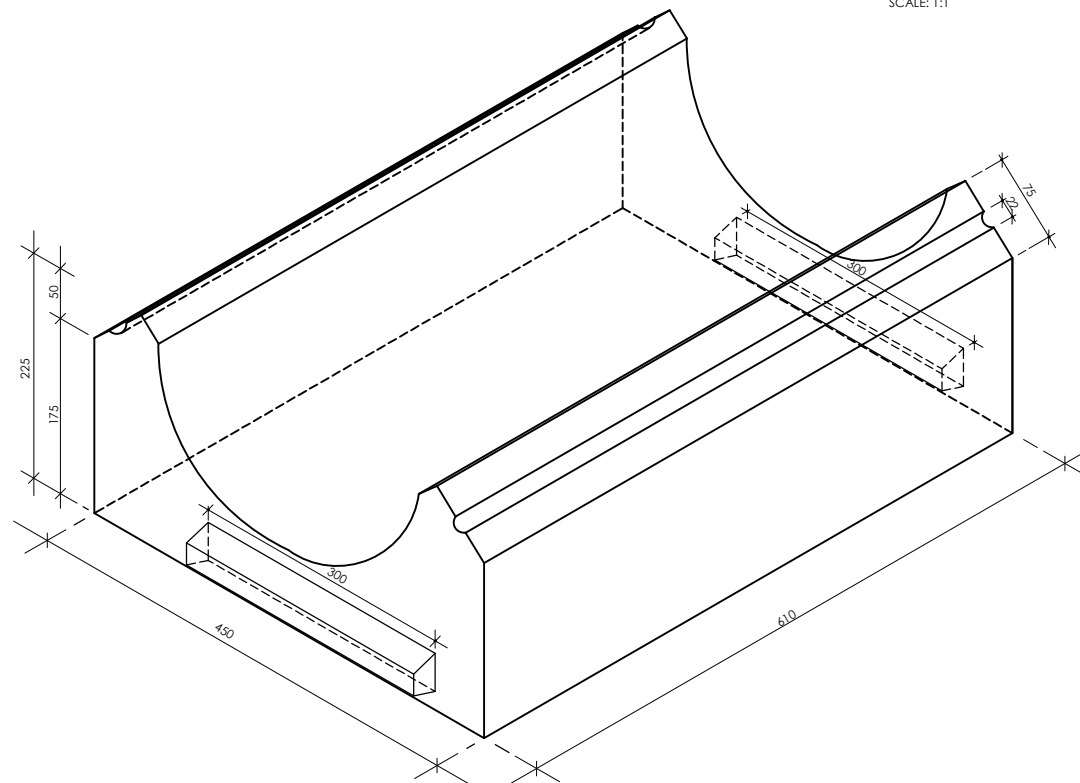
**TYPE 'A' INVERT BLOCK
AND ONE COURSE**

SCALE 1:8



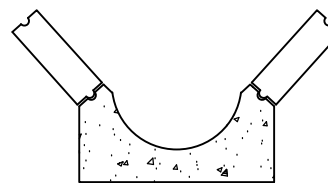
DETAIL OF HEAD WALL

SCALE 1:30



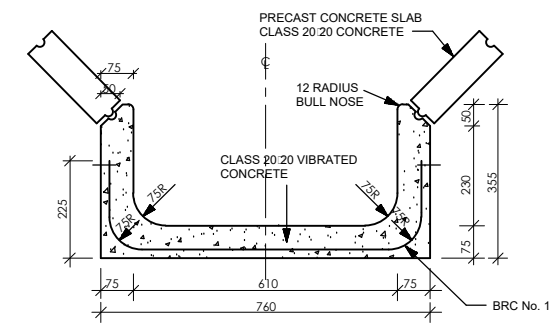
ISOMETRIC VIEW OF INVERT BLOCK TYPE 'A'

NTS



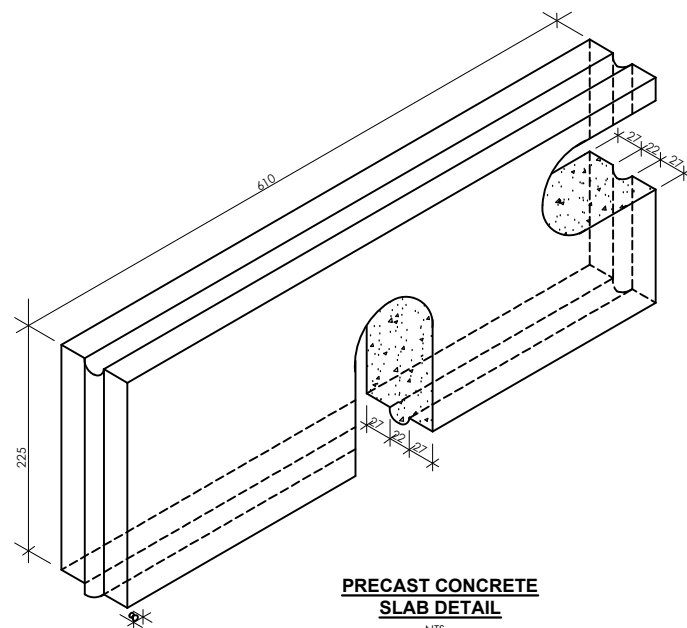
**INVERT BLOCK TYPE 'A'
AND TWO COURSES**

SCALE 1:8



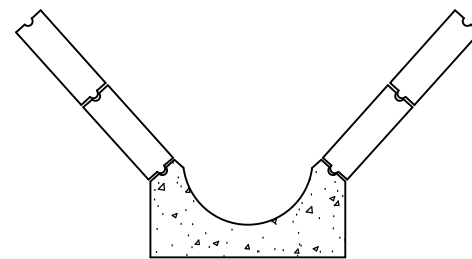
SECTION - I.B.D. TYPE 'B'

SCALE 1:8



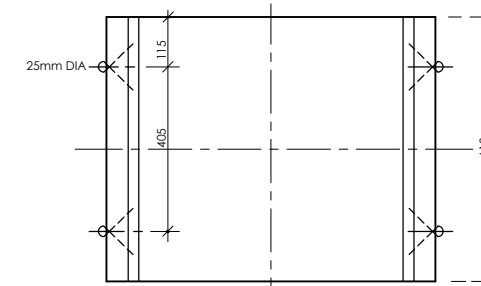
**PRECAST CONCRETE
SLAB DETAIL**

NTS



**INVERT BLOCK TYPE 'A'
AND FOUR COURSES**

SCALE 1:16



**PLAN
DETAILS OF INVERT BLOCK TYPE 'B'**

SCALE 1:8

NOTES
ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED

ABBREVIATIONS

RAD - Radius
G.L. - Ground Level
mm - Millimetres
R - Radius

WATER AND SANITATION DEVELOPMENT PROJECT

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IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

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P.O BOX 708, 70200, WAJIR, KENYA



Revisions:

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APPROVED BY:
SCALES: AS SHOWN

Drawing Title:

STANDARD DRAWINGS

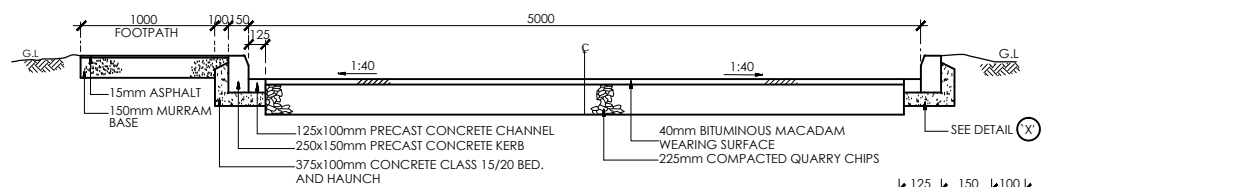
DETAILS OF INVERT BLOCK DRAINS AND HEADWALL

Date:
MAR 2020

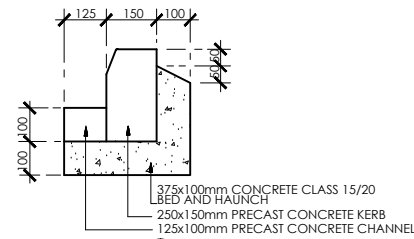
Drg. No.
M405-SD-08

Rev.

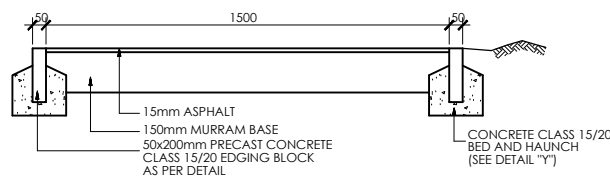
TYPICAL BITUMINOUS ROAD DETAILS



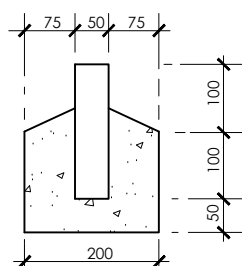
TYPICAL SECTION OF BITUMINOUS ROAD
SCALE 1:50



DETAIL (X)
SCALE 1:20

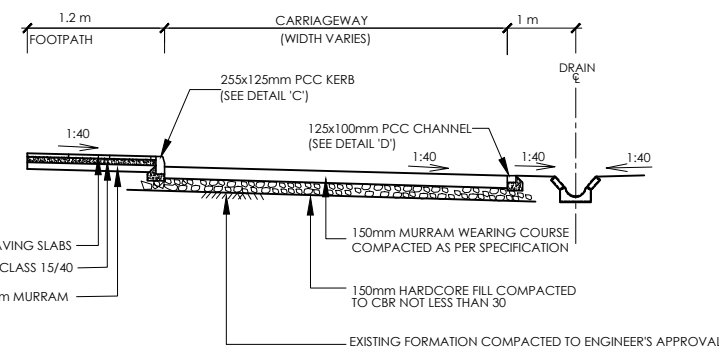


TYPICAL SECTION OF FOOTPATH
SCALE 1:25

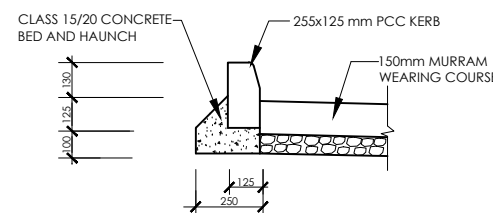


DETAIL (Y)
SCALE 1:10

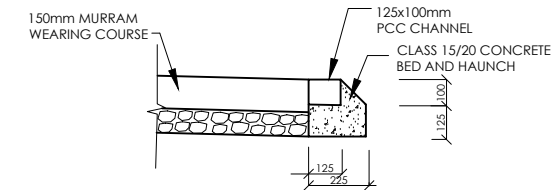
TYPICAL MURRAM ROAD DETAILS



TYPICAL SECTION OF MURRAM ROAD
SCALE 1:50



DETAIL (C)
TYPICAL DETAIL OF KERB
SCALE 1:25



DETAIL (D)
TYPICAL DETAIL OF CHANNEL
SCALE 1:25

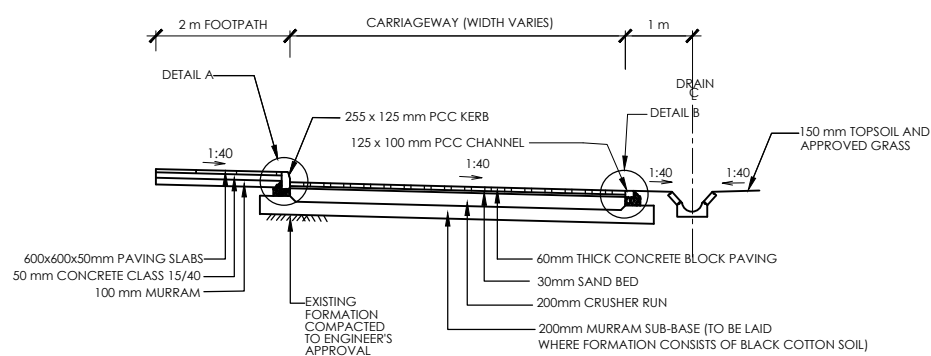
NOTE

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED

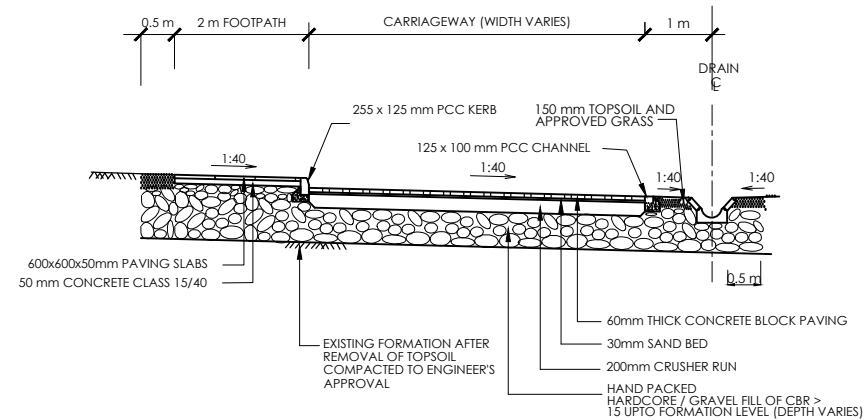
ABBREVIATIONS

- CL - CENTRE LINE
- mm - MILLIMETER
- G.L. - GROUND LEVEL
- m - METER
- PCC - PRECAST CEMENT CONCRETE

TYPICAL CONCRETE BLOCKS SURFACE ROAD DETAILS

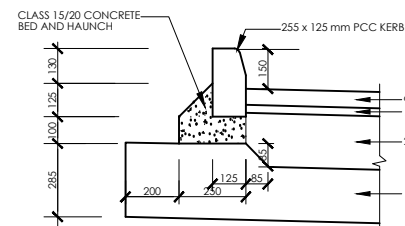


TYPICAL CROSS SECTION FOR CARRIAGEWAY IN CUT
SCALE 1:100



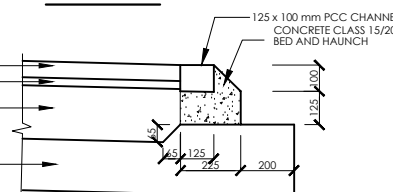
TYPICAL CROSS SECTION FOR CARRIAGEWAY IN FILL
SCALE 1:100

DETAIL A



DETAIL OF KERB
SCALE 1:25

DETAIL B



DETAIL OF CHANNEL
SCALE 1:25

WATER AND SANITATION DEVELOPMENT PROJECT

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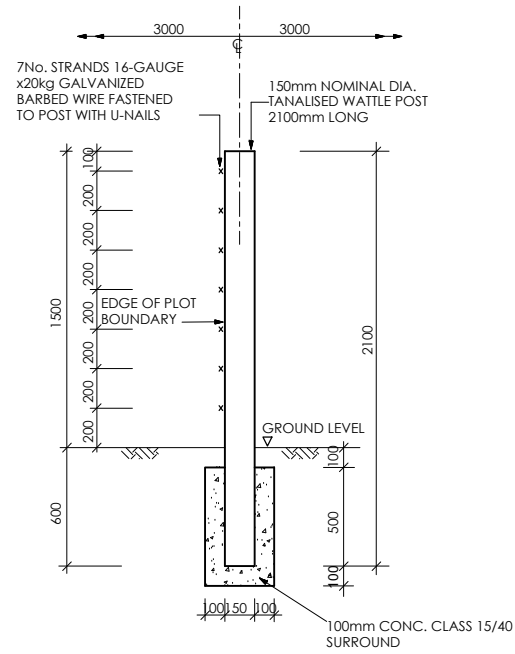
REV.	DATE	REMARKS

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DRAWN BY:
CHECKED BY:
APPROVED BY:

Notes:
SURVEYED BY:
DESIGNED BY:
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APPROVED BY:
SCALES: AS SHOWN

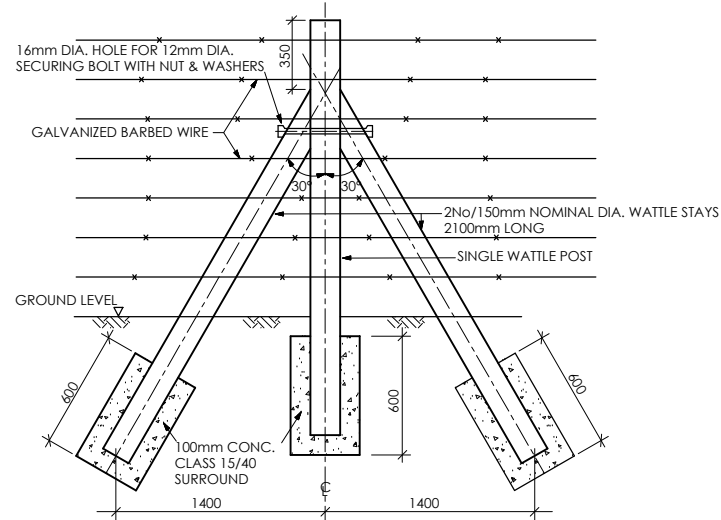
Drawing Title:	STANDARD DRAWINGS	
	TYPICAL ROAD CROSS-SECTION DETAILS	
Date:	Mar 2020	Rev.
Drg. No.	M405-SD-07	

DETAILS OF WATTLE POSTS FOR BARBED WIRE FENCE



**TYPICAL END ELEVATION - SINGLE POST
(TO BE AT 3.0m CENTRES)**

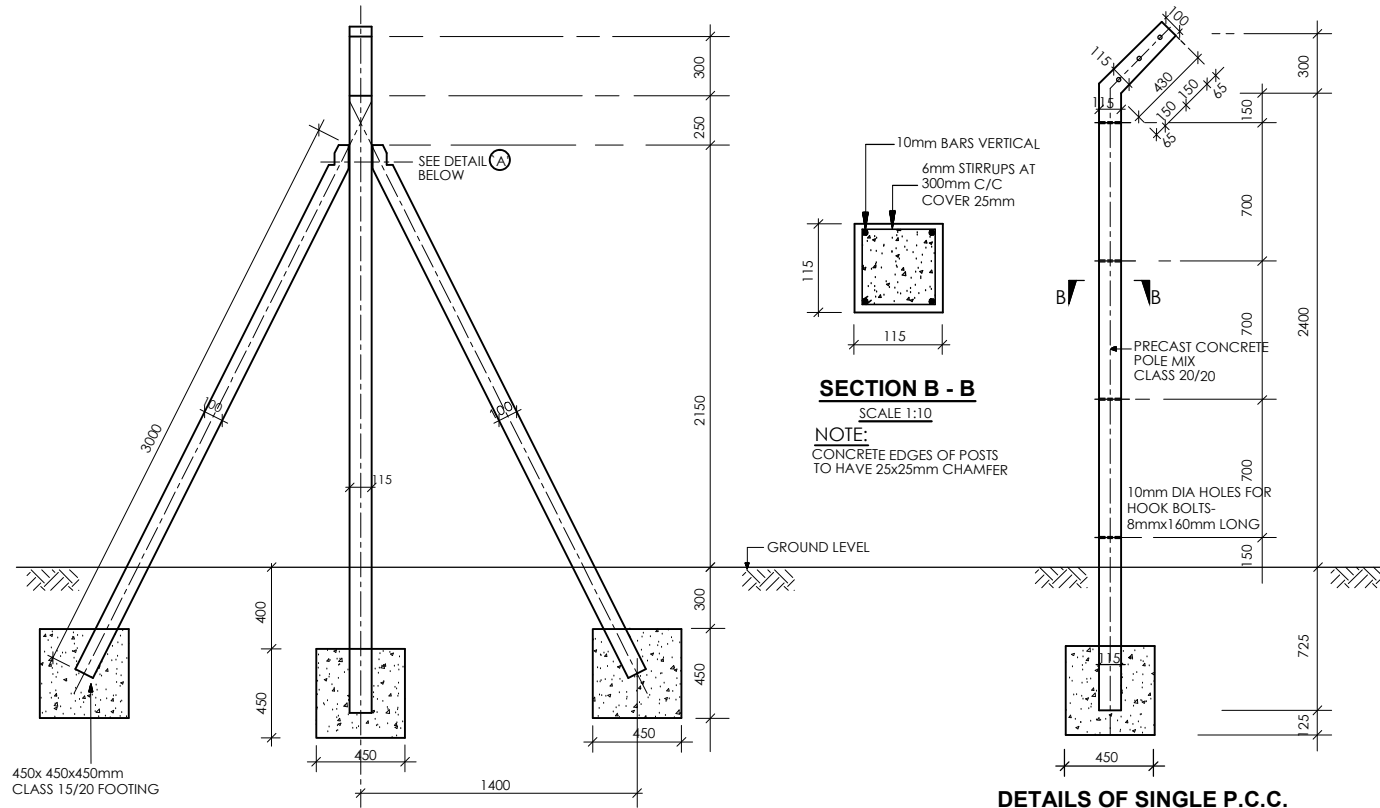
[NTS]



**TYPICAL FRONT ELEVATION - STAYED POST
(STAYS TO BE PROVIDED AT 30.0m c/c AND AT
CORNERS)**

[NTS]

DETAILS OF PRECAST CONCRETE POSTS FOR CHAIN LINK FENCE

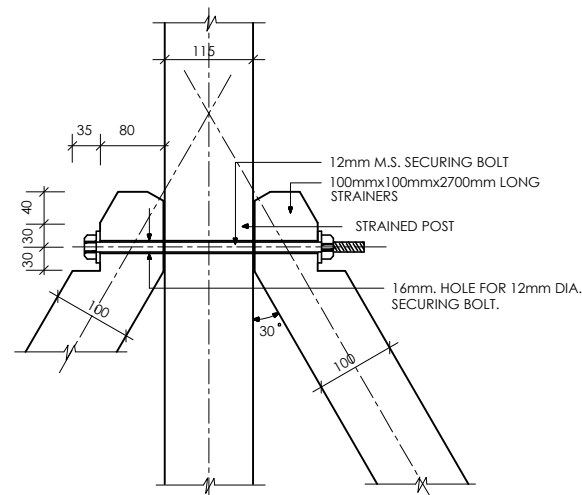


**DETAILS OF STRAINING POST FOR
CHAIN LINK FENCE AT 33.3m Cts.**

SCALE 1:40

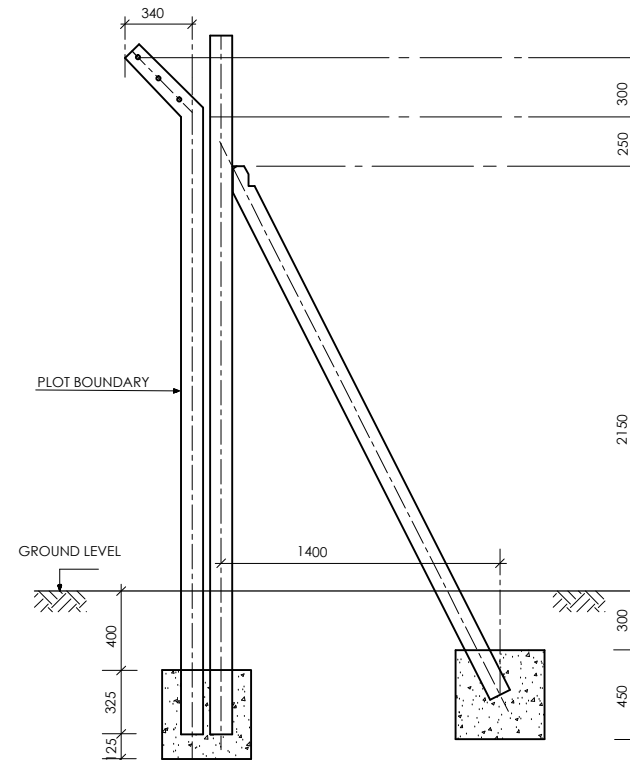
**DETAILS OF SINGLE P.C.C.
POST AT 3.30m Cts.**

SCALE 1:40



DETAIL (A)

SCALE 1:10



DETAILS OF CORNER POSTS

SCALE 1:40

NOTES

- CONCRETE MIXES TO BE AS FOLLOWS:
 - POSTS CLASS 20/20
 - STRAINER POSTS CLASS 20/20
 - FOUNDATION BLOCK CLASS 15/20 CONC.
- CHAIN LINK TO BE IN GAUGE 12 GALVANISED STEEL WIRE.
- STRAINING WIRES TO BE 12 GAUGE GALVANISED STEEL PLAIN WIRES.
- WIRES ON CRANK TO BE 12 GAUGE GALVANISED STEEL BARBED WIRE.
- ALL STRUCTURAL OPENING DIMENSIONS TO BE CONFIRMED ON SITE BEFORE COMMENCING ANY FABRICATION
- STRAINING WIRES TO BE FIXED TO POST WITH GALVANIZED HOOK BOLTS 8mm DIA. x 60mm LONG
- WHERE THE POST ENCLOSES PRIVATE LAND THE FENCE SHOULD BE ERECTED WITH CRANK POINTING INTO THE SITE.
- ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE STATED.
- ALL EXPOSED CONCRETE EDGES OF POSTS TO HAVE 25x25mm CHAMFER

ABBREVIATIONS

- C/C = CENTRE TO CENTRE.
 Cts. = CENTRES.
 M.S. = MILD STEEL.
 P.C.C. = PRECAST CEMENT CONCRETE.
 CONC. = CONCRETE
 mm - MILLIMETER
 uPVC - UNPLASTICISED POLYVINYL CHLORIDE
 Dia. - DIAMETER
 Kg - KILOGRAMME
 C - CENTRE LINE
 m - METRE
 NTS - NOT TO SCALE
 Nr. - NUMBER

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:

THE MANAGING DIRECTOR
 WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA



Revisions:

REV.	DATE	REMARKS

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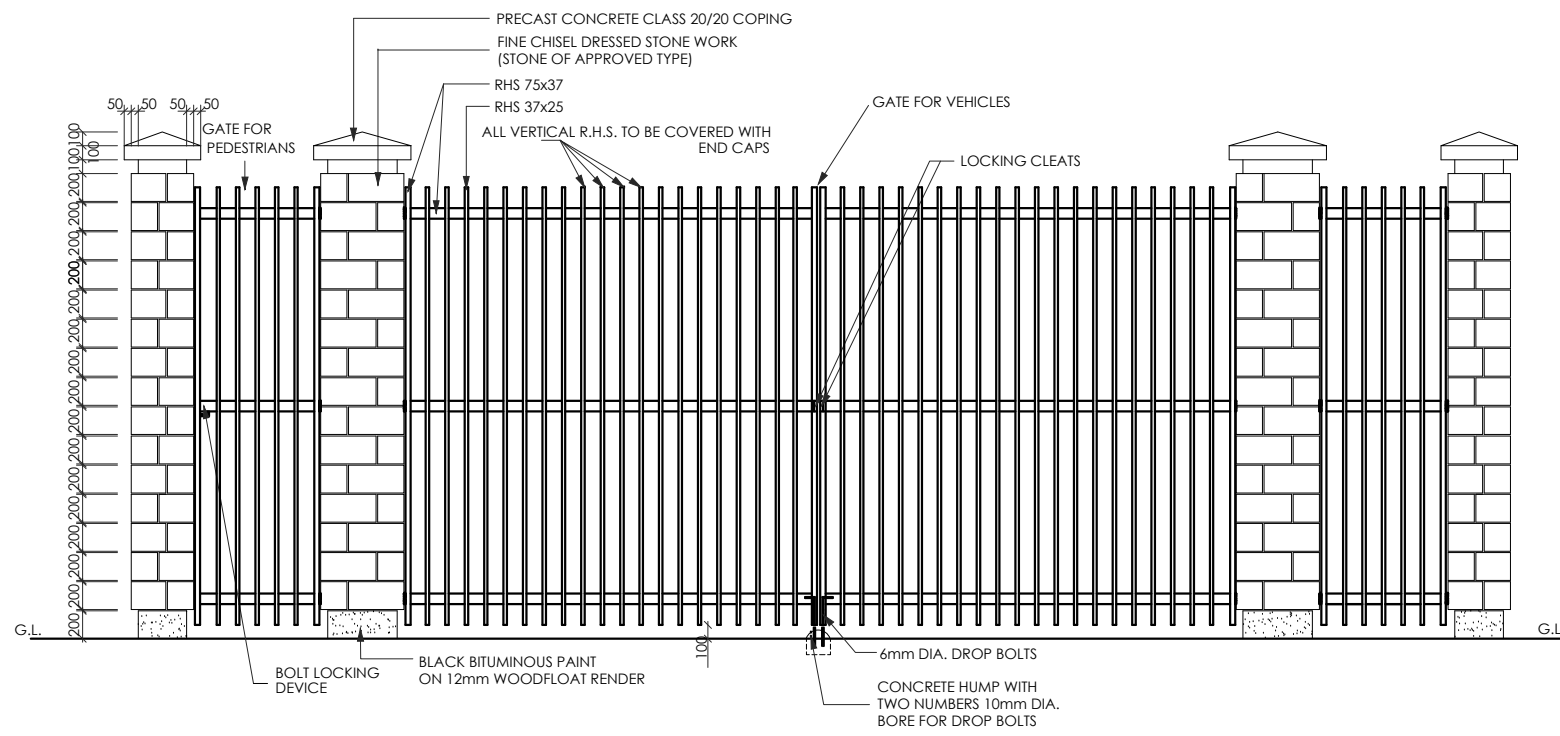
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**STANDARD DRAWINGS
 DETAILS OF FENCING POSTS**

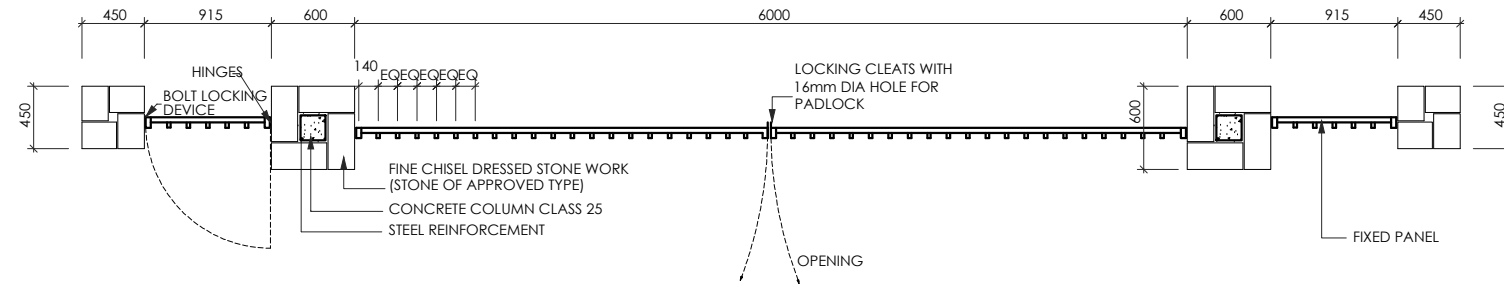
Date:
 MAR 2020

Drg. No.
M405-SD-10

Rev.



ELEVATION
SCALE: 1: 50



PLAN
SCALE: 1: 50

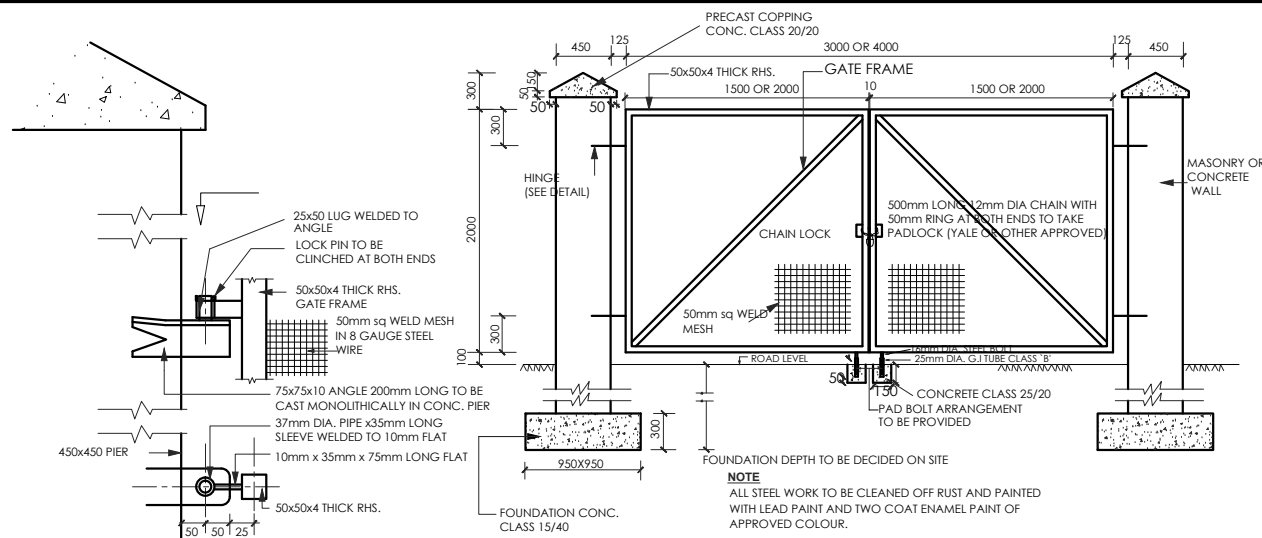
DETAILS OF 6m WIDE GATE

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED

ABBREVIATIONS

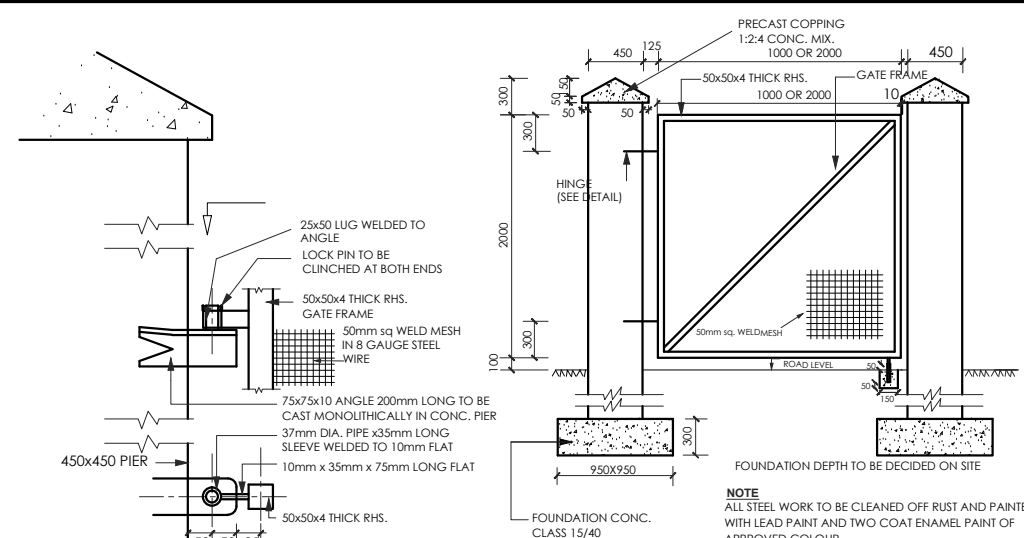
- mm - MILLIMETER
- DIA. - DIAMETER
- G.L. - GROUND LEVEL
- E.Q. - EQUAL
- sq - SQUARE
- CONC. - CONCRETE



DETAILS OF HINGE (VIEW AT Y - Y)
SCALE 1:5

ELEVATION
SCALE 1:20

DETAILS OF 3m & 4m WIDE GATE



DETAILS OF HINGE (VIEW AT Y - Y)
SCALE 1:5

ELEVATION

DETAILS OF 1m WIDE & 2m WIDE GATE

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

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WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA



Revisions:

REV.	DATE	REMARKS

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Drawing Title:

STANDARD DRAWINGS
DETAILS OF GATES (SHEET 1 OF 2)

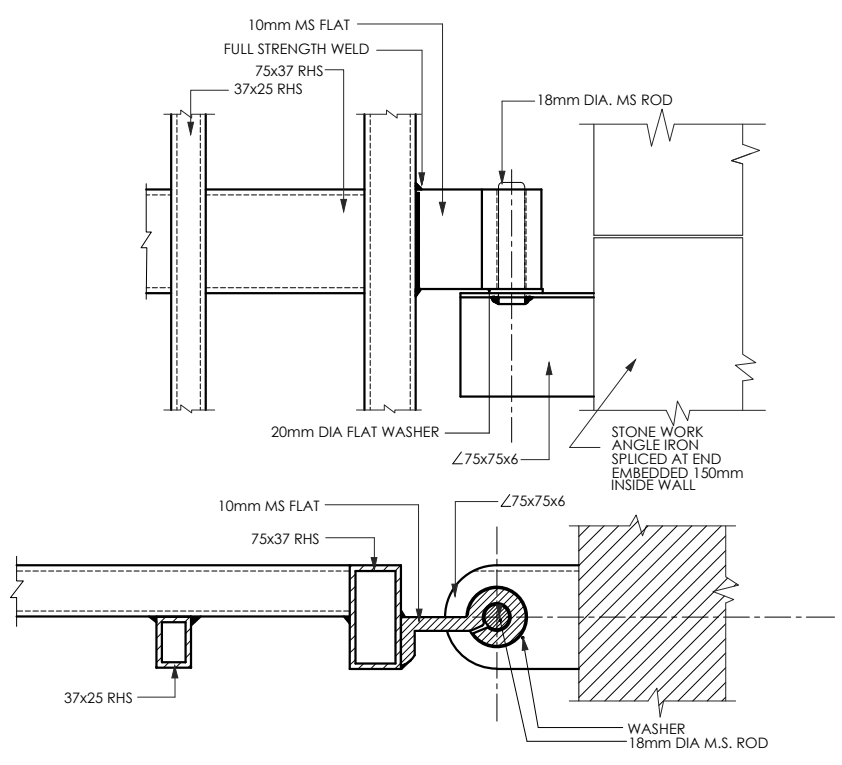
Date: MAR 2020

Drg. No. **M405-SD-11**

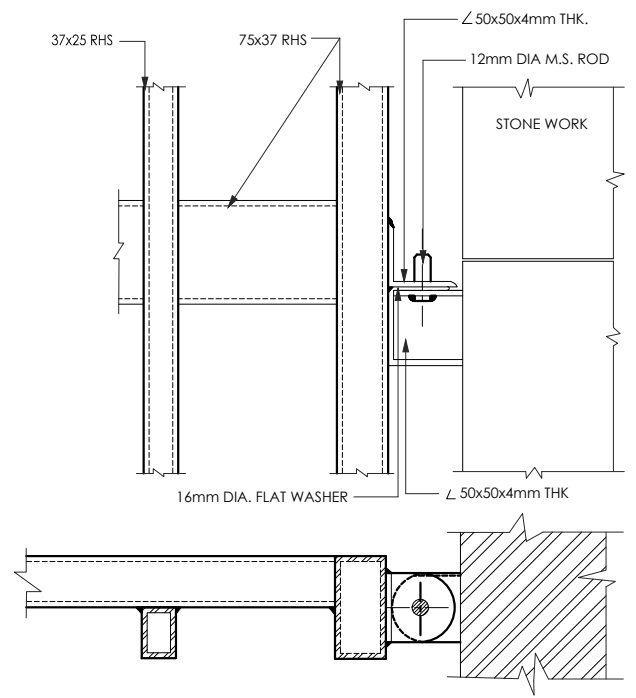
Rev.

NOTES
1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED

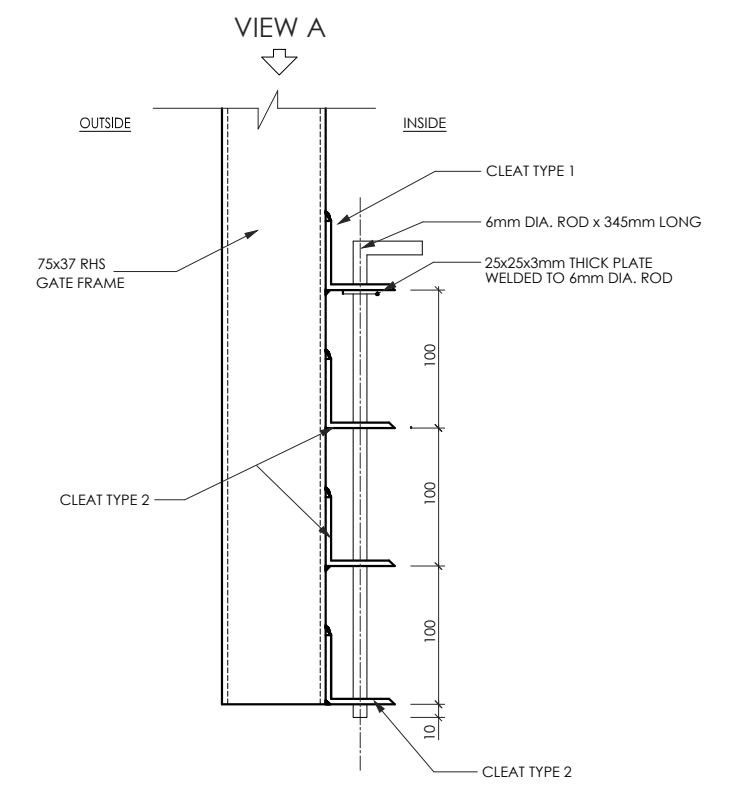
ABBREVIATIONS
mm - MILLIMETER
DIA. - DIAMETER
M.S. - MILD STEEL
E.Q. - EQUAL
L - ANGLE IRON
THK. - CONCRETE



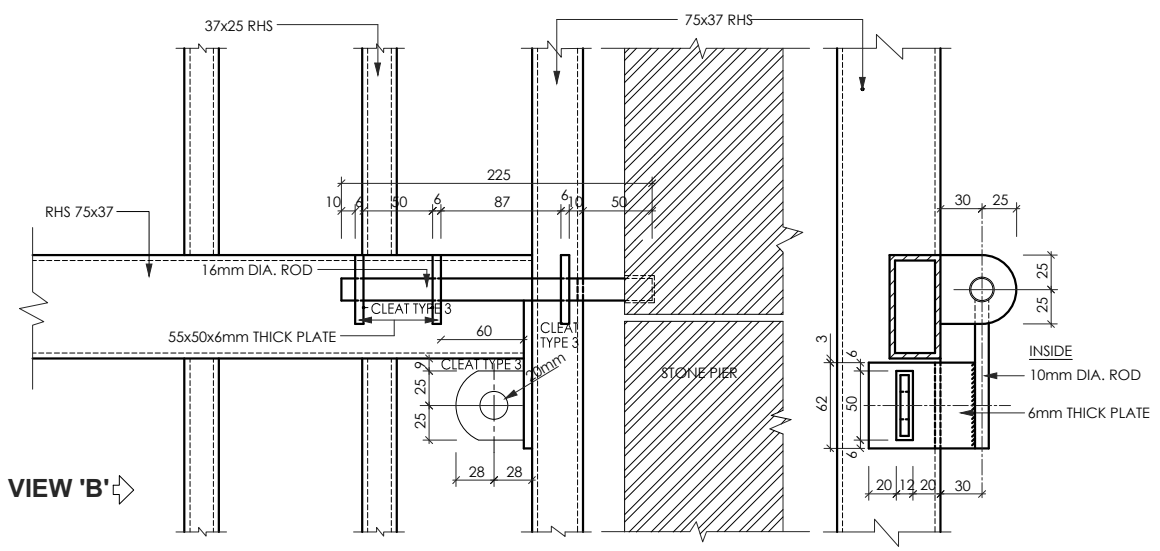
DETAIL OF HINGE FOR LARGE GATE
SCALE: 1:5



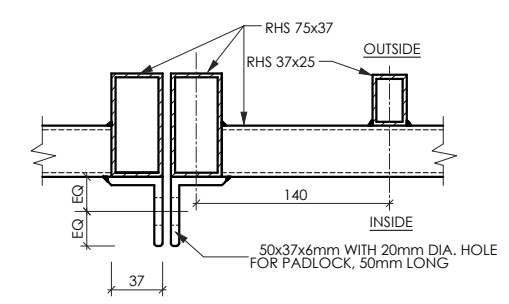
DETAIL OF HINGE FOR SMALL GATE
SCALE: 1:5



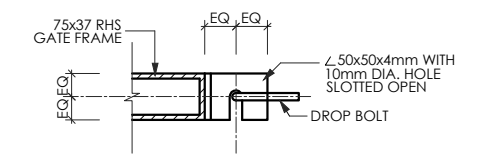
DETAIL OF DROP BOLT FOR LARGE GATE
SCALE: 1:5



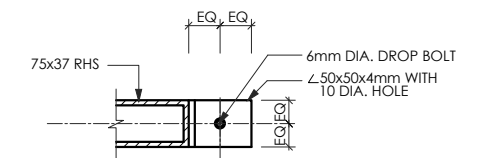
DETAIL OF LOCKING BOLT FOR SMALL GATE
SCALE: 1:5



DETAIL OF LOCKING CLEATS FOR LARGE GATE
SCALE: 1:5



CLEAT TYPE 1



CLEAT TYPE 2

DETAIL OF LOCKING BOLT FOR LARGE GATE
VIEW A
SCALE: 1:5

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA
IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:
THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA



REV.	DATE	REMARKS

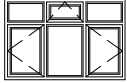
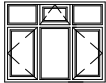
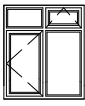





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DRAWN BY:
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APPROVED BY:
SCALES: AS SHOWN

Drawing Title:
STANDARD DRAWINGS
DETAILS OF GATES (SHEET 2 OF 2)
Date: MAR 2020
Drg. No. **M405-SD-12**
Rev.

NOTES:

1.All windows to be fitted with burglar proofing grille fabricated from 12x12mm m.s. square bars at 150mm c/c vertically and 200mm c/c horizontally, and fixed internally to surrounding wall with 12mm m.s. fish tail lugs at centres not exceeding 600mm.

WINDOW TYPES	DESCRIPTION	STRUCTURAL OPENING	LOCATION	NO. REQUIRED
 W 1	1797 X 1197 mm steel casement window in 3 equal panels, with upper part having 2 no. fixed and 1 no. top - hinged ventilator, and lower half having 2 no.side-hinged panels opening outwards, and 1 no. fixed panel.	1800 □ 1200 mm		
 W 2	1597 X 1197 mm PVC window in 3 equal panels, with upper part having 2 no. fixed and 1 no. top - hinged ventilator, and lower half having 2 no.side-hinged panels opening outwards, and 1 no. fixed panel. Window 2a Similar but PVC casement window size 1197 □ 1197mm Window 2b Similar but PVC casement window size 1597 □ 1197mm	1600 □ 1200 mm 1200 □ 1200 mm 1600 □ 1200 mm		
 W 3	1197 X 1397 mm steel casement window in 2 equal panels, with upper part having 1 no. fixed and 1 no. top - hinged ventilator, and lower half having 1 no.side-hinged casement opening outwards, and 1 no. fixed panel with coupling mullions.	1200 □ 1400 mm		
 W 4	597 X 1197 mm steel casement window, with upper part having 1 no. top - hinged ventilator, and lower half having 1 no.side-hinged panel opening outwards.	600 □ 1200 mm		
 W 5	1797 □ 597 mm steel casement window in 3 equal panels with 1 no. fixed and 2 no. top-hinged panels opening outwards. Window 5a similar but to be PVC casement Window	1800 □ 600 mm		
 W 6	As window type W 5a, but overall size of window to be 597 □ 597 mm	600 □ 600 mm		
 W 7	1197 X 597 mm steel casement window in 2 equal panels, with 1 no. fixed and 1 no. top - hinged ventilator.	1200 □ 600 mm		
 W 8	1197 X 597 mm PVC window in 2 equal panels, with 2 no. top - hinged ventilators.	1200 □ 600 mm		

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:



THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

Revisions:

REV.	DATE	REMARKS

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APPROVED BY:

SCALES: 1:100

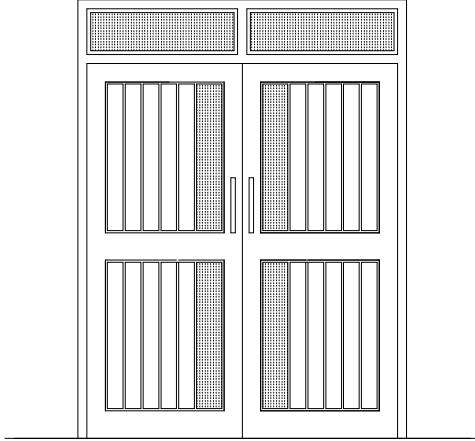
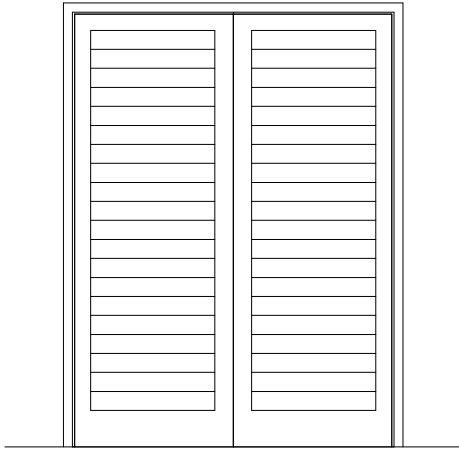
Drawing Title:

STANDARD DRAWINGS
WINDOW SCHEDULE

Date: MAR 2020

Drg. No. **M405-SD-13**

Rev.

DOOR TYPES	DESCRIPTION	STRUCTURAL OPENING	LOCATION	NOS. REQUIRED
 <p style="text-align: center;">D 1</p>	<p>1800 x 2030 mm timber double door with ex 100 x 50 mm stiles and top rails, ex 150 x 50 mm middle and bottom rails, and infill panels in ex 100 x 50 mm t & g battens, all in prime grade cypress.</p>	<p>1800 x 2400 mm</p>		
 <p style="text-align: center;">D 2</p>	<p>1800 x 2400 mm press metal louvre double door</p> <p>Door Type D 2a similar, but door size to be 1600 x 2400 mm .</p> <p>Door Type D 2b similar, but door size to be 1200 x 2400 mm .</p> <p>Door Type D 2c similar, but to be single Door Size 900 x 2400 mm .</p>	<p>1800 x 2400 mm</p> <p>1600 x 2400 mm</p> <p>1200 x 2400 mm</p> <p>900 x 2400 mm</p>		

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Drawing Title: **STANDARD DRAWINGS**

**DOOR SCHEDULE
(SHEET 1 OF 2)**

Client/Employer:



THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
 P.O BOX 708, 70200, WAJIR, KENYA

Revisions:

REV.	DATE	REMARKS

Notes:

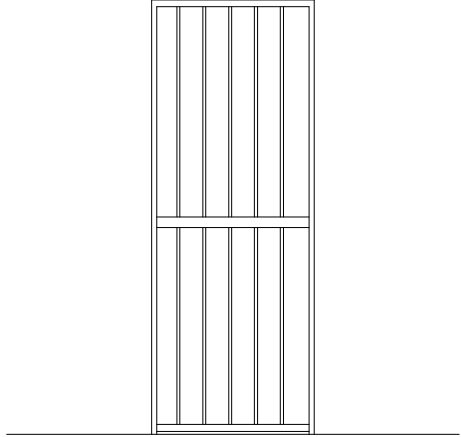
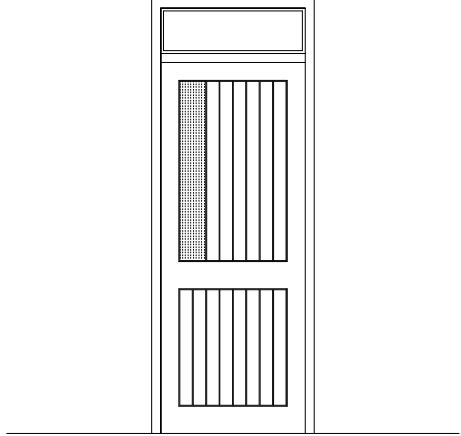
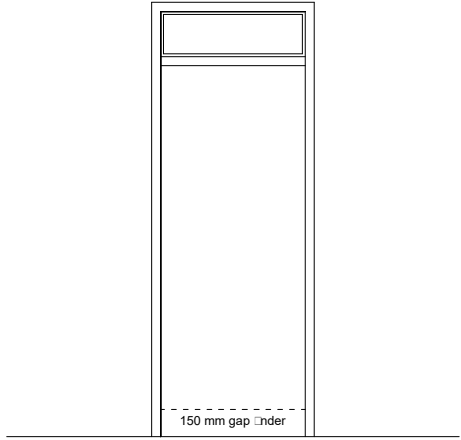
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 APPROVED BY: _____

SCALES: N.T.S

Date: MAR 2020

Drg. No. **M405-SD-14**

Rev.

DOOR TYPES	DESCRIPTION	STRUCTURAL OPENING	LOCATION	NOS. REQUIRED
 <p style="text-align: center;">D 3</p>	<p>900x2030mm metal security gridded door with ex 100 x 50mm stiles and top rails, ex 150 x 50mm middle and bottom rails and 25 x 25mm mild steel square bars at 150mm centres</p>	<p>900x2400mm</p>		
 <p style="text-align: center;">D 4 / D 4a</p>	<p>800 x 2030 mm timber door with ex 100 x 50 mm stiles and top rails, ex 150 x 50 mm middle and bottom rails, and infill panels in ex 100 x 50 mm t & g battens, all in prime grade cypress.</p> <p>990 x 140 mm georgian wired clear glass panel in upper half, and glazed fanlight over.</p> <p>D 4a similar, but without georgian wired glass panel & fanlight over.</p>	<p>900 x 2400 mm</p> <p>900 x 2200 mm</p>		
 <p style="text-align: center;">D 5 / D 5a</p>	<p>800 x 2030 mm semi - solid core flush door with hardwood lipping all round, painted. Glazed fanlight over ex 125 x 50 mm prime grade cypress door frame.</p> <p>Door Type D 5a similar, but door size to be 800 x 1880 mm .</p>	<p>900 x 2400 mm</p> <p>800 x 2400 mm</p>		

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA

IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

Client/Employer:



THE MANAGING DIRECTOR
WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

Revisions:

REV.	DATE	REMARKS

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SCALES: N.T.S

Drawing Title:

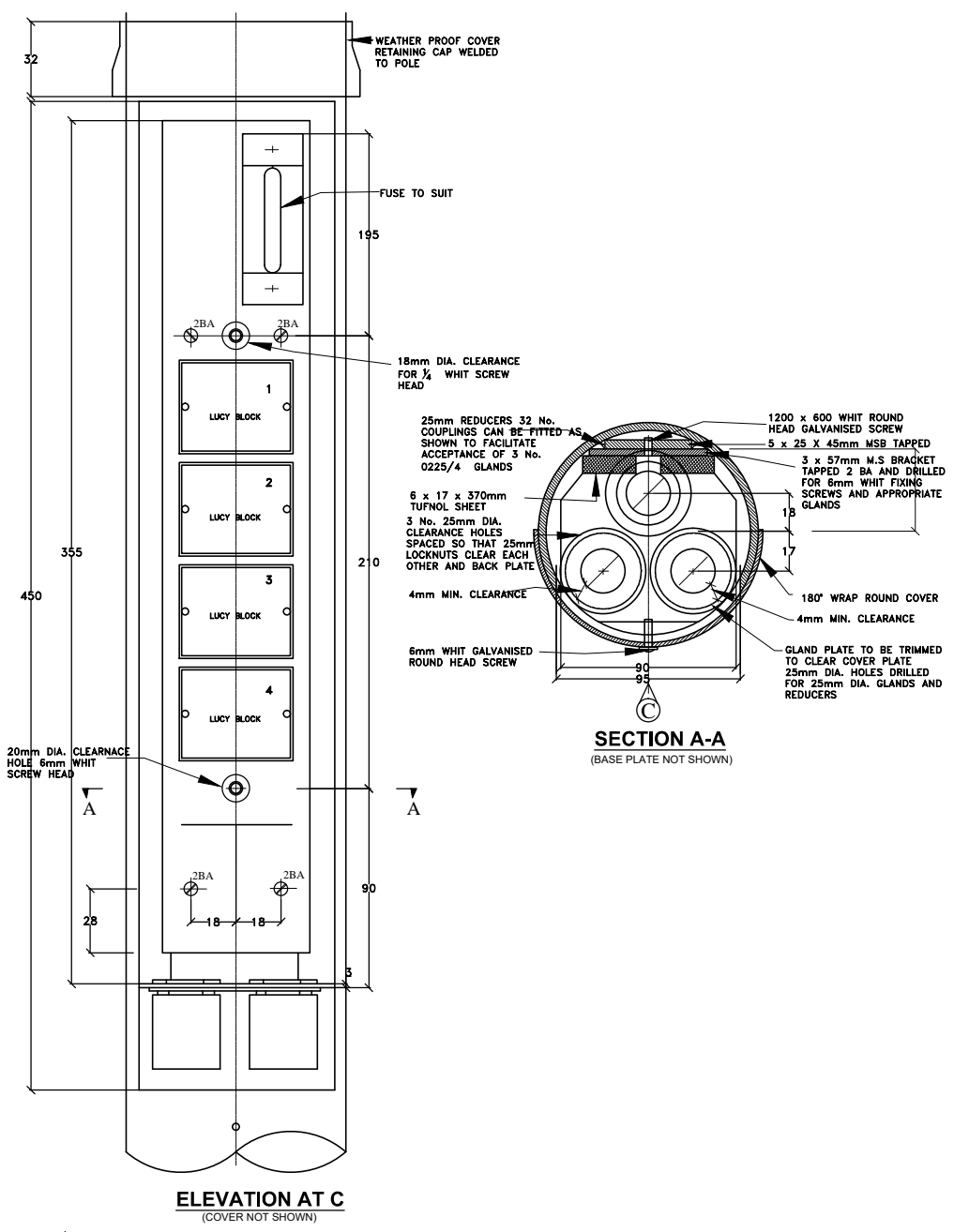
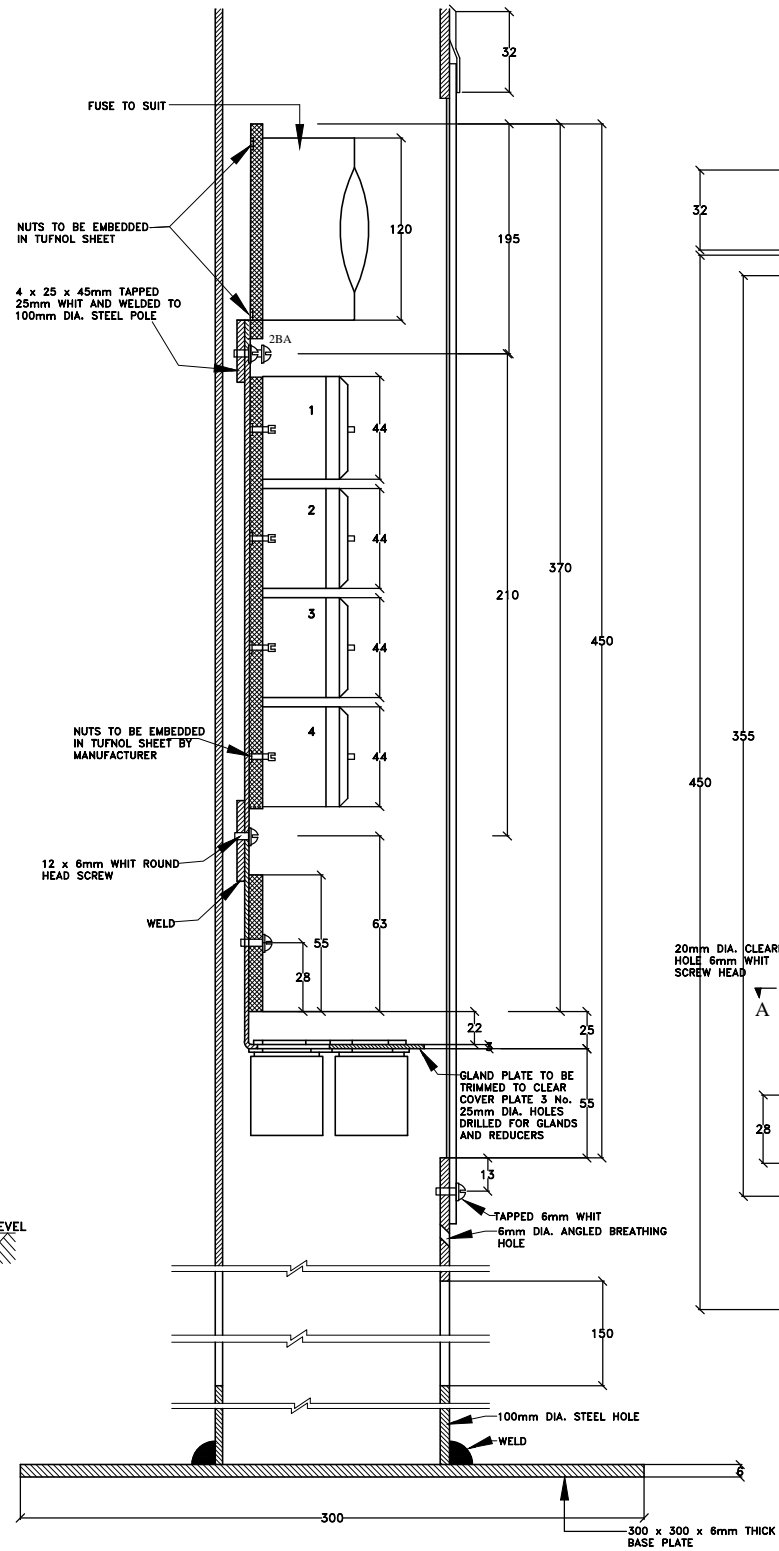
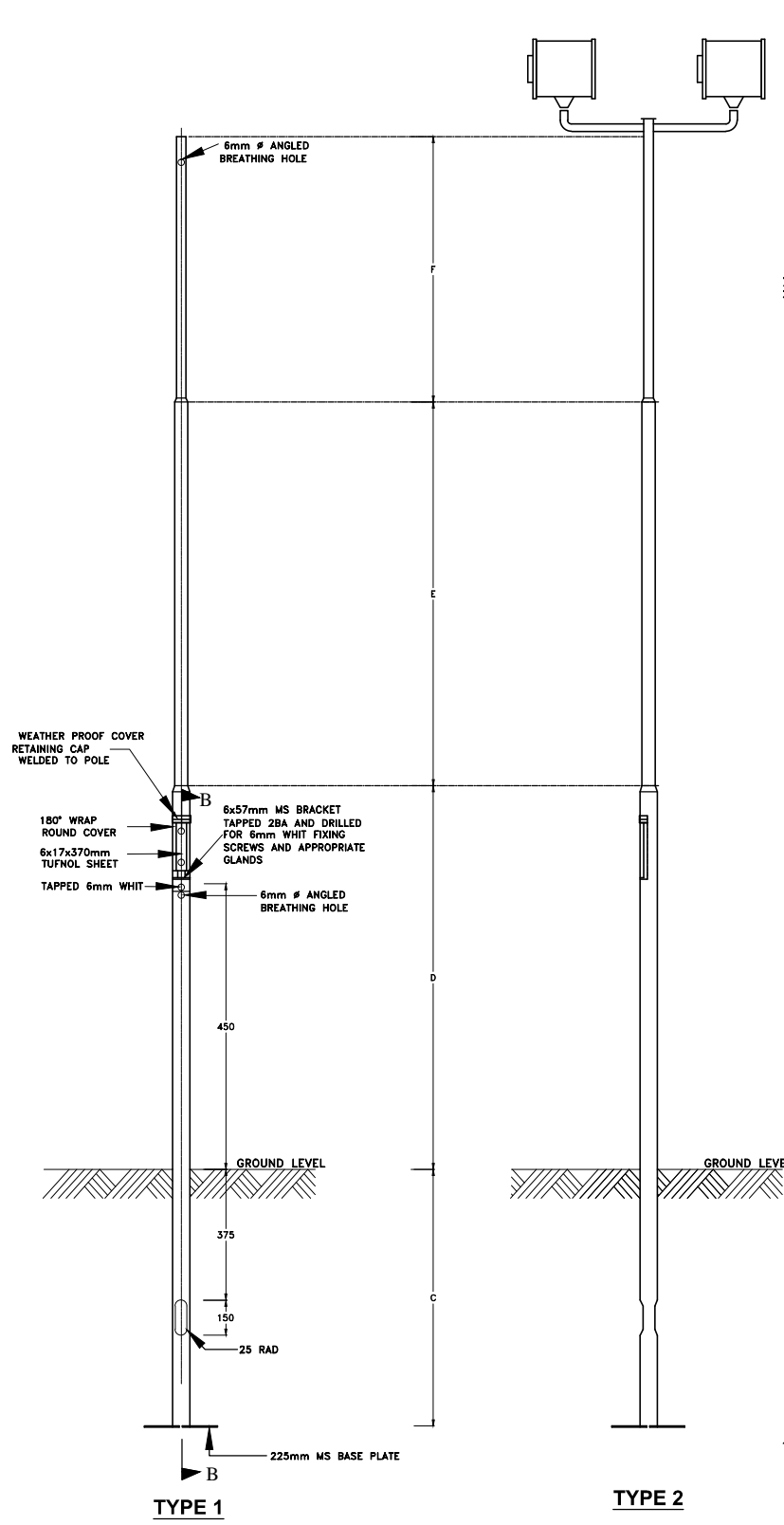
STANDARD DRAWINGS

**DOOR SCHEDULE
(SHEET 2 OF 2)**

Date: MAY 2018

Drg. No. **M405-SD-15**

Rev.



TYPES 1 AND 2	LENGTHS OF SECTIONS (m)				REMARKS
	C	D	E	F	
4m	0.75	1.6	1.2	1.2	
5m	0.75	1.8	1.6	1.6	
6m	1.05	1.8	2.1	2.1	
7.5m	1.35	2.4	2.4	2.7	
9m	1.65	3.0	3.0	3.0	

- NOTES**
1. THE PILLARS ARE TO BE CONSTRUCTED FROM 100mm, 75mm AND 50mm Ø CLASS B HEAVY GAUGE WATER PIPE UNLESS INSTRUCTED OTHERWISE
 2. THE POLES ARE TO BE PAINTED DARK GREY UNLESS INSTRUCTED OTHERWISE
 3. ORDERS MUST SPECIFY TYPE CLEARLY i.e. TYPE 1 5m, TYPE 3 5m AND GIVE ANY DETAILS OF ANY NIPPLE OR OTHER TERMINATION REQUIREMENTS AND DIMENSIONS G.O.R.H.
 4. NORMALLY COLUMN COVERS AND STEEL BRACKETS WITH GLAND PLATES WILL BE SUPPLIED BY STEEL WORKS CONTRACTOR WHILE GLANDS AND TERMINATION UNITS MOUNTED ON TUFNOL SHEET WILL BE SUPPLIED AND FITTED BY ELECTRICAL SUB- CONTRACTOR
 5. LIGHTING FITTINGS INCLUDING BALLAST UNITS ARE TO BE OF A TYPE WHICH INCORPORATES THESE IN THE FITTING
 6. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED

WATER AND SANITATION DEVELOPMENT PROJECT

CONSTRUCTION OF ON-SITE SANITATION FACILITIES FOR WAJIR PROJECT AREA
IMMEDIATE URGENT WORKS - WAJIR PROJECT AREA

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WAJIR WATER AND SEWERAGE COMPANY LIMITED
P.O BOX 708, 70200, WAJIR, KENYA

REV.	DATE	REMARKS

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SCALES: 1:100

Drawing Title: STANDARD DRAWINGS
STREET LIGHTING CONTROL PILLAR AND LIGHTING COLUMN
Date: MAR 2020
Drg. No. M405-SD-16
Rev.