



SCOPE OF WORKS FOR: CONSTRUCTION OF 1 × GUARD HOUSE AT MANGWAZANA HIGH SCHOOL

TRANSNET ENGINEERING

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1. DOCUMENT AUTHORITIES

Department	Mangwazana high school
Effective date	OCTOBER 2024
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Signature & Date	 15/10/2024
Reviewed by	Stanley Mchunu
Designation	Project Manager
Signature & Date	 15.10.2024
Approved by	Mary Khumalo
Designation	Executive Manager
Signature & Date	 17/10/2024

2. TECHNICAL REQUIREMENTS

The main deliverables would be as per the scope of works, in summary, to be carried out is as follows and to be read in conjunction with part C3 of the scope of works:

SCOPE OF WORK

GUARD HOUSE

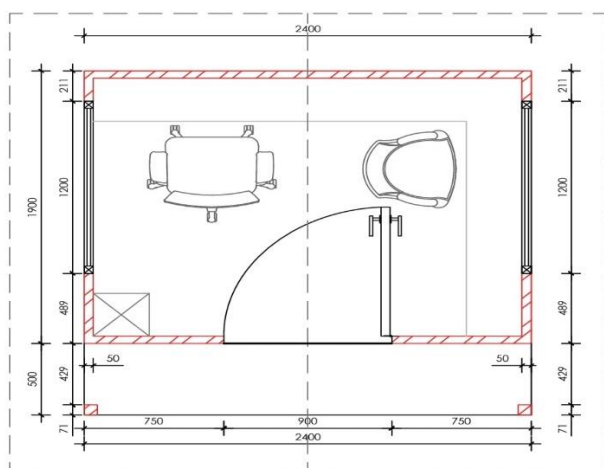
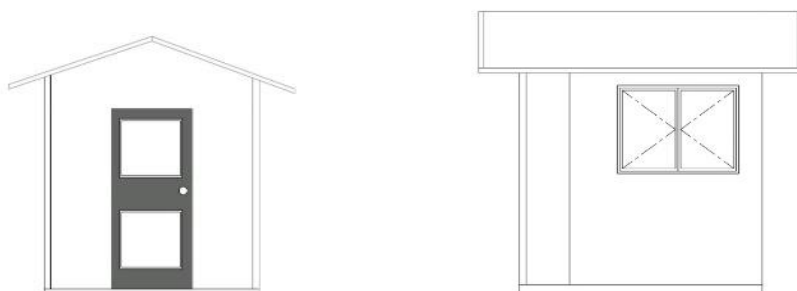
Item no.	REQUIREMENTS
A	SITE CLEARANCE
2.1.1	Before the earthwork is started, the area coming under the cutting and filling shall be cleared of all obstruction. Demolish the existing guardhouses and chop down or cut down existing tree including all roots (tree must be uprooted). Dispose to any dumping site.
B	EXCAVATION
2.2.1	The contractor shall notify the Engineer-in-charge before starting excavation and before the ground is disturbed, to enable him to take existing level for the purpose of measurements.
2.2.2	The ground levels shall be taken at 1 to 3 metres intervals in uniformly sloping
2.2.3	The ground levels shall be recorded in field books and plotted on plans, which shall be signed by the Contractor and the Engineer-in-charge, before the earthwork is started.
2.2.4	The Contractor shall perform excavation in all types of soils including removal of roots.
2.2.5	Excavation for Strip foundation 2.4m×0.3m×0.35m Excavation must be excavated to the required depth of 350mm including 100mm for the concrete slab. Note: There are roots. So, during excavation all roots must be chop or cut off.
2.2.6	Excavation dimension: 2.4m×0.3m×0.35m strip foundation.
2.2.7	After the excavation is completed, the contractor shall notify the Engineer-in-charge to that effect and no further work shall be taken up until the Engineer-in-charge has approved the depth, dimensions and the nature of foundation materials, levels and measurements shall also be recorded prior to taking up any further work.
C	DISPOSAL OF EXCAVATED MATERIALS: ANTIQUITIES
2.3.1	Any finds of archeological interest such as relics of antiquity, coins, fossils, or other articles of value shall be delivered to the Engineer-in-charge and shall be the property of the school.

D	USEFUL MATERIALS
2.4.1	Any material obtained from the excavation which in the opinion of the Engineer-in charge is useful, shall be stacked separately in regular stacks as directed by the Engineer-in charge and shall be the property of the school.
2.4.2	No material excavated from foundation of whatever kind may be placed even temporarily nearer than about 3m from the outer edge of excavation. Discretion of the Engineer-in-charge in such cases is final.
2.4.3	The site shall be left clean of all debris and levelled on completion
E	BACKFILLING IN SIDES OF FOUNDATIONS
2.5.1	Use G5 material to backfill in foundation and for slab preparation. Backfill should be compacted to 95% AASHTO.
2.5.2	Where suitable excavated material is to be used for backfilling, it shall be brought from the place where it was temporarily deposited and shall be used in backfilling.
2.5.3	The backfill shall be uniform in character and free from large lumps, stones, shingle or boulder not larger than 75mm. in any direction, salt, clods, organic or other foreign materials which might rot. The backfilling in plinth and under floor shall be well consolidated by means of mechanical or hand operated rammers as specified to achieve the required density.
F	CONCRETE FLOOR SLAB AND FOUNDATION CONSTRUCTION PROCESS
2.6.1	<ol style="list-style-type: none"> 1. Assemble and Erect Formwork 2. Prepare and Place Reinforcement 3. Pour, Compact and Finish Concrete 4. Curing Concrete and Remove Formwork <p>Note: Every layer must have a compaction result before continuing with the next one.</p>
G	ASSEMBLE AND ERECT FORMWORK
2.7.1	The formwork shall be designed to withstand construction loads such as fresh concrete pressure and weight of workers and operators
H	PREPARE AND PLACE REINFORCEMENT
2.8.1	<p>Reinforcement design for strip foundation. This must be designed by the engineer in charge.</p> <p>Use Heavy-duty mesh wire (50x50x3.15 mm, SPECIMESH 2400x1200 REF 245) serves as reinforcement for the slab.</p> <p>Concrete must be evenly poured and levelled.</p>

	<p>Use a concrete vibrator to compact and ensure no voids and prevent honeycombing 2.7- Curing</p> <p>Concrete must be cured for a minimum of 28 days. Spread a layer of river sand onto the concrete and mist it with water for the first 14 days to allow it to cure.</p>
I	POUR, COMPACT AND FINISHING CONCRETE FLOOR SLAB AND FOUNDATION
2.9.1	Mixing, transporting, and handling of concrete shall be properly coordinated with placing and finishing works. In floor slab, begin concrete placing along the perimeter at one end of the work with each batch placed against previously dispatched concrete.
2.9.2	Concrete should be deposited at, or as close as possible to, its final position to prevent segregation.
2.9.3	<p>The required strength of Concrete mix is 25Mpa which should be properly mix and tested to see if it meets the required strength.</p> <p>Test of concrete must be SANS approved cub test.</p> <p>Cub test must be done in the following sequence:</p> <ul style="list-style-type: none"> • First 7 days – should reach 75% of its required strength • Second 14 days – should require more then 80% of its required strength • Third 28 days – should reach is required strength
2.9.4	<p>Concrete must be evenly poured and levelled.</p> <p>Use a concrete vibrator to compact and ensure no voids and prevent honeycombing</p>
J	CURING CONCRETE AND REMOVE FORMWORK
2.10.1	After finishing ended, suitable technique shall be used to cure the concrete adequately. Slab curing methods such as water cure; concrete is flooded; ponded; or mist sprayed.
2.10.2	In addition to water retaining method in which coverings such as sand; canvas; burlap; or straw used to keep slab surface wet continuously, chemical Membranes, and waterproof paper or plastic film seal
K	ELECTRICAL INSTALLATION
2.11.1	<p>The installation shall include the following:</p> <ol style="list-style-type: none"> a. Power cable b. Cable sleeves c. Security lights d. Inside lights

	<p>e. Plug socket/adaptor.</p> <p>f. Light switches</p>
2.11.2	Electrical contractor shall do the electrical installation and connection to the nearest power mains, test and issue a COC in accordance with SANS10142-1.
L	DETAILS OF SECURITY GUARD HOUSE
2.12.1	<p>2.4M X 2.4M SECURITY GUARD HOUSE WITH A VERANDA (FACEBRICK)</p> <p>*Wall Height 2m and Roof Height 2,4m</p> <p>* Coral Peach Face Brick wall with a Blue Roof (IBR 0.8 mm thickness)</p> <p>*Colour codes: Blue (Dodger Blue #1E90FF) :Coral Peach (#FBD5AB)</p> <p>* Alububble 4mm Roof Insulation (Internal)</p> <p>* 2 Opening Glass Windows - 800mm x 1200mm (aluminium)</p> <p>* 2 Fixed toughened window in door</p> <p>* 1 Lockable aluminium door - cylindrical door handle</p> <p>* Colour plus Steel Framed floor with Shutter Board and 3mm</p> <p>* Rubber studded Flooring</p>
M	COMMISSIONING
2.13.1	A performance test to the satisfaction of the stakeholders shall be conducted by the contractor.
2.13.2	The contractor shall undertake to repair all faults due to bad workmanship and/or faulty materials during a period of twelve calendar months, calculated from the date that the project is accepted by Transnet Engineering.
2.13.4	Any defects that become apparent during the guarantee period shall be rectified to the satisfaction of Transnet Engineering at the cost of the supplier.

3. LAYOUT



4. HEALTH AND SAFETY REQUIREMENTS

- 4.1 All equipment and installation whether detailed in this specification or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended and all other applicable legislation including specific set of regulations and local authority bylaws where applicable.
- 4.2 The contractor shall hold monthly safety meetings with staff and records of minutes. shall be kept on file on site.
- 4.3 The contractor shall be available for monthly meetings with Transnet Management. A schedule for these meetings may be agreed upon.

5. SHE SPECIFICATION

- Prior to commencement of contract, the contractor shall be issued with a SHE specification to compile a SHE files in line with TE requirements.
- Prior to establishing on site, it is an explicit requirement of this contract that all the Contractor's personnel directly involved with this contract, including those of sub-contractors, attend a **Safety**

induction course. Transnet will provide the course free of charge and attendance is compulsory for all personnel under the control of the Contractor who, during the duration of the contract, will be present on site whether on a full time or adhoc basis.

- The contractor must allow for all additional charges because of these requirements as no claims for extras will be accepted in connection with the foregoing.

6. AS PART OF THE LEGISLATIVE AND TE SHE REQUIREMENTS.

- The successful contractor is required to conduct a Risk assessment to ascertain all potential risks associated with this project. The completed risk assessment is to potential risks associated with this project. The completed risk assessment is to be formally submitted to the Risk department via the project manager at least two weeks prior to the commencement of the actual project.
- A safety file and associated documents will be required from a successful tenderer, and such will be communicated by the Risk department.