




ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED CONSTRUCTION OF REGIONAL GIRLS SECONDARY SCHOOL AT BUSALE VILLAGE, BUSALE WARD, KYELA DISTRICT COUNCIL IN MBEYA REGIONAL



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EXECUTIVE SUMMARY

Introduction

The Government of United Republic of Tanzania (URT) in collaboration with the World Bank has prepared the Secondary Education Quality Improvement Project (SEQUIP). The objectives of SEQUIP are to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys.

In summary, activities under SEQUIP will be structured into four main components:

Component 1: Empowering Girls through Secondary Education and Life Skills

1.1 Creating Safe Schools: Implementation of the Safe Schools Program including:

- i. Trained school guidance and counselling teachers.
- ii. Students' life skills training through girls' and boys' clubs by the guidance and counselling teachers; In-service training of secondary school teachers on the teacher code of conduct and gender sensitive pedagogical approaches.
- iii. Training of school heads and School Boards on GBV, safe school issues etc.
- iv. School and classroom monitoring system for early identification of and intervention on girls at risk of drop out; and
- v. Community-based mechanism for safe passage to school.

1.2 Promoting Girls' Completion of Secondary Education through Quality Alternative Education Pathways including:

- i. Setting up an ICT-enabled system for tracking girls dropping out at national and District level to provide key information for AEP planning and implementation.
- ii. Alternative Education Centers and LGAs undertaking local outreach activities to out-of-school girls in the community, which will include activities such as AEP center-organized community meetings, information via local radio, flyers and brochures.
- iii. Enhancing access to Alternative Education Pathways through (i) expansion of the network of AEP centers; and (ii) tuition fee subsidies for vulnerable girls.
- iv. A quality package for strengthening student learning in Alternative Education Pathways will also be implemented
- v. Environmental and Social Management Framework –Tanzania - Secondary Education Quality Improvement Project (SEQUIP)

Component 2: Digitally enabled Effective Teaching and Learning

2.1 Effective Teaching and Learning

- i. Minimum package of critical teaching and learning resources for all schools: This package consists of an adequate number of textbooks and teacher guides in core subjects (English, Mathematics, and Sciences).
- ii. Equitable, gender-balanced teacher deployment to schools
- iii. In-service teacher training/continuous professional development (CPD) to improve classroom teaching practice for secondary English, Mathematics and Science teachers
- iv. Evaluate student learning in lower secondary to provide opportunities for remedial use: to allow for targeted early intervention to prevent girl dropout due to learning difficulties

2.2 Digitally enabled Teaching of Math Sciences and English:

- i. Development of an ICT in Education Strategy and plan for secondary education.
- ii. Digital content and connectivity package to facilitate the teaching of English, Mathematics and Science in phases.

Component 3: Reducing Barriers to Girls' Education through Facilitating Access to Secondary Schools
Expansion of the secondary school network to substantially reduce the distance to secondary schools through an expansion of the secondary school network, especially in rural areas. SEQUIP will disburse project funding based on the number of schools in each LGA meeting minimum infrastructure standards

Support upgrading existing secondary schools with the minimum infrastructure package (number of classrooms/students, adequate WASH facilities; multi-purpose science labs, electricity, etc.) with the

objective is that at least 50 percent of all existing schools in all LGAs will meet the minimum standards set.

Component 4: Technical Assistance, Impact Evaluation and Project Coordination Environmental and Social Management Framework –Tanzania - Secondary Education Quality Improvement Project (SEQUIP)

SEQUIP will be jointly implemented by the Ministry of Education, Science and Technology (MoEST) and the President's Office, Regional Administration and Local Government (PO-RALG. With that regard PO-RALG has contracted Tansheq Limited, a NEMC registered environmental consulting firm to supervise the SEQUIP implementation.

Project Description,

The Project will apply the Environmental and Social Standards (ESS's), as a requirement for the Bank financing. The Government has prepared this Environmental and Social Management Framework (ESMF) for the application of the following Environmental and Social Standards: Assessment and Management of Environmental and Social Risks and Impacts

The proposed project site is administratively located at Busale Village, Busale Ward in Kyela- Municipal-Mbeya Regional. It is located in the western part of Kyela District, Busale is bordered by three Wards in the District: Ngana to the south and southwest, Itope to the south and southeast, and Ipande to the east. It is also bordered by Ileje District to the north and to the west.

Location and Accessibility

Busale is a rural Ward in Kyela District of the Mbeya Regional of Tanzania with postcode number 53709. The proposed area is accessible via the Kyela trunk road, but construction is required due to inadequate infrastructure between the main road and the proposed area.

Project Planning and Design

The school construction and design will consist of a required infrastructure package based on the school construction and maintenance strategy (e.g. number of classrooms/students, adequate WASH facilities, especially important for girls; multi-purpose science labs, electricity, etc.). The construction package will involve the following buildings

No	Buildings	No. of Buildings	No. of rooms
	First construction phase		
1	Building with 2 classrooms	2	4
2	Building with 2 classrooms and one office	3	6
3	Building with 2 classrooms and 2 toilets	1	2
4	Building with Physics laboratory and Geography room	1	2
5	Building with Chemistry and Biology laboratory	1	2
6	Administration Building	1	1
7	Toilet building for students (girls)	1	16
8	Generator Room	1	1
9	Dining Hall	1	1
10	Teacher's house (3 rooms)	1	
11	Teacher's house (2 in 1)	1	
12	Dormitories @ 120	5	
Surrounding activities			
1	Water Tunnel (1050m)	1	1
2	Waste incinerators	1	1
3	Fence (chain link)- 350m	2	2
4	Underground water storage tanks (32,000 liters)	2	2

No	Buildings	No. of Buildings	No. of rooms
5	Water tank (hippo) and its pillars)	2	2
6	Manhole and gully trap	1	
7	Walkway & Paving		
Second construction phase			
1	building with 2 classrooms	2	4
2	Building with 2 classrooms and 1 office 3 6	3	6
3	ICT Room	1	1
4	Library	1	1
5	Master's Houses (3 Rooms)	4	
6	Dormitories @ 120 Students	4	

Project activities

Main activities of the project include preconstruction, Construction, Operations, and decommissioning.

Pre-Construction Activities

The mobilization phase of the project, which is estimated to take average of maximum three months, will entail the following activities:

Design finalization, establishment of construction camps, material and equipment storage areas, materials processing yards, including sanitation facilities. The following specific activities will be involved during this stage.

- Design finalization
- Equipment and labour mobilization
- Workers/ security temporarily house construction
- Bush clearing.
- Construction of Material and equipment storage areas
- Construction of sanitation facilities
- Installation of electrical infrastructure
- Installation of water and wastewater infrastructure

Identification of naturally occurring material borrow sites (sand, fill, gravel borrow and quarry sites), and identification of sources of water for domestic and construction works

Construction Phase

The construction phase of the project, which is estimates to take 12 month will encompass following major activities:

- Earth works to facilitate widening and re-alignment of the road. Earth works will entail the following activities: clearing and grubbing (clearing of vegetation, including trees).
- Extraction of naturally occurring construction materials. This will include:
 - a) Excavation and transport of natural sand, gravel, and sub-base materials to construction sites
 - b) Stone quarrying (including blasting), crushing and transport of crushed aggregates to construction sites
 - c) Transport and handling of fuel, lubricants etc. from their sources to the project site
- Transport of construction materials from source to site such as roof, steel, woods, nails, rope

Operation phase

The maintenance activities of the Overall SEQUIP will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways. The specific activities during

operation of the school will involve looking into social and community relation issues with regards to schools positive and negative impacts to the community and maintain a balance between the two.

Decommissioning Phase

The decommissioning will mainly be for the construction phase as for the school once operational we are not expecting to remove it unless there are some relevant government directives. After completion of construction, all the utilities which were used shall be reverted to the Municipal Director who will decide on their future use. The main activities during demobilization phase, will engross the following:

- Collection and disposal of storage facilities such as pallets, packing, boxes
- Collection and disposal of construction materials and wastes such as waste oil, sewage, solid wastes (plastics, wood, metal, papers, etc.) at the workshop, site office etc. to authorized dumpsite
- Restoration of material borrows areas to safer condition

Environmental and Social Management Framework

The ESF instruments that have been prepared for SEQUIP incorporate measures for project site Selection and to ensure designs and school construction align with the ESF requirements.

It has been agreed that civil works will follow building standards acceptable to the World Bank and required under the ESF; taking into account structural safety, universal access, changes in the standard drawings, water source availability and quality, efficient use of materials (wood) to reduce pressure on natural resources, Water and Sanitation for Health (WASH) and solid waste management at the schools, among other risks identified as part of the due diligence process. Site selection for school construction is very important to avoid possible direct and indirect environmental and social impacts and lack of water sources for construction and during operation.

Vulnerable group

Means a group of people who, due to their characteristics and circumstances, are likely to suffer more adverse impacts of natural disasters than other groups in the community.

Vulnerable Person means any person who by reason of age, infirmity, illness, disability or any other circumstance is in need of care or attention.

Vulnerable groups associated to SEQUIP

- Age group (children & elders)
- Indigenous
- Physical challenged group
- Women/Sexuality (Gender issue)

Project Cost

Total Project Cost is four billion Tanzanian shillings

National Legislation

Tanzania has ample legislation for the protection of the environment, health, safety and social welfare which is relevant for the application of the World Bank Environmental and Social Standards included in the ESF.

The main environmental, biodiversity, water, health, cultural resources, social and labour, policies and regulations relevant to SEQUIP and its commitment to this legislation during implementation has been discussed in this report, relevant legislation that applies to the project has been discussed too,

Baseline

To gauge the extent of impact, it is crucial to establish the status quo. The consulting team conducted the baseline study of the current level of impacts. This involved a study on flora and fauna, air, soil and

water. It also covered socioeconomic issues, noise, and vibration etc. The aim of ascertaining the baseline is to appreciate to what extent the proposed project can alleviate or exacerbate the current situation and Issues from Key Stakeholders.

Assessment of Impacts (Both Positive and Negative)

This critically reviews and analyses interaction between the proposed project and the existing environment. In this analysis, the consultant distinguished between significant positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts. The analysis of impacts also looked into the cumulative and negative impacts of the proposed project.

Impacts, which are unavoidable or irreversible, are also identified. Wherever possible, impacts are described quantitatively in terms of environmental costs and benefits.

Positive impacts

- Mitigating girls abuse which was a factor of distance they walk from home to schools
- Increased employment opportunities to workers and teachers
- Educational opportunities

Negative impacts

Mobilisation

- Impact on Air quality
- Exposure to Noise and vibration
- Habitat alteration and fragmentation
- Biodiversity loss
- Effect on Community Health, Safety and Security
- Displacement of people and properties
- Increased Spread of HIV Infection
- Impact on Cultural Heritage

Construction

- Impact on Air quality
- Impact on Noise and vibration
- Habitat alteration and fragmentation
- Surface water pollution and groundwater pollution (shallow wells)
- Biodiversity loss
- Risk of increased spread of Invasive Alien Species Infestation
- Effect on Community Health, Safety and Security
- Displacement of people and properties
- Increased Spread of HIV Infection
- Restrictions to Access Routes and to ecosystem services
- Impact on Cultural Heritage
- Increased level of waste generation
- Increase pressure of natural resources
- Non-compliance to Labour and Working Conditions
- Loss of employment at the conclusion of the construction phase
- Violation of Human rights

Operation

- Impact on community Health and Safety
- Increased level of waste generation
- Increase pressure of natural resources
- Human rights issues

Decommissioning

- Impacts on air quality

- Impacts on noise and vibration
- Impacts on community health and safety
- Loss of employment

Summary of Enhancement and Mitigation measures

- Equal opportunity in employment be given to all including women who have the requisite qualifications;
- Contractor shall develop and implement a gender equality and gender abuse policy;
- Confine construction work within the acquired project areas (right of way, sources of material and worker's camps)
- Use most effective and efficient machines and cars
- Provide PPE to all workers.
- Contractor to sort out all waste at source according to type;
- All hazardous waste should be treated at designated disposal sites;
- Where involuntary land acquisition is inevitable, undertake valuation of the affected properties and provide compensation as per the national laws as well as ESS 5 requirements;
- A Cultural Heritage Management Plan shall be developed which outlines the Projects approach to management of cultural and archaeological heritage in accordance with ESF and Tanzanian Grave yard removal requirements.

Consideration of Alternatives

This environmental assessment also involved an analysis of reasonable alternatives to meet the ultimate project objective. This analysis included any alternatives examined while developing the proposed project, and that from an environmental, socio-cultural, or economic point of view may be sounder than the proposed project.

This also includes the 'no action' alternative, which assesses environmental conditions without project. It is described how the alternatives compare in terms of potential impacts, costs, suitability under local conditions, as well as institutional, training, and monitoring requirements. To the extent possible, costs and benefits of each alternative are quantified, incorporating the estimated costs of any associated mitigating measures. Finally, this report described the reasons for selecting the proposed project over the other alternatives.

Developing an Environmental Management Plan

This report recommends feasible and cost-effective measures to prevent or reduce any significant negative impacts to levels that are acceptable. This involves:

Estimating the impacts and costs of those measures, and of the institutional and training requirements to implement them.

Preparing a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures. A management plan also covering the decommissioning phase of the project.

Developing an Environmental Monitoring Plan

This report contains a detailed plan to monitor the implementation of mitigation measures and the impacts of the project during its execution. This plan includes a cost estimate for carrying out the proposed monitoring plan

Decommissioning

The final stage of a project's life is decommissioning. It entails the completion of project activities and operations, as well as the restoration of the site to its original or nearly original condition. If there is a demand for it, the project is expected to continue; however, individual components of the plant will be decommissioned as needed.

Conclusion and recommendations

The project's impact on the environment and local communities will be both positive and negative. Measures have been proposed to increase the positive environmental and social impacts.

Mitigation measures have been proposed for the negative impacts in order to avoid or mitigate them to the greatest extent possible in order to maximize the benefits of the road project while minimizing the detriments of the project intervention to the communities.

ACKNOWLEDGEMENT

President's Office, Regional Administration and Local Government (PO-RALG) extends its heartfelt appreciation to the World Bank group for their positive support in creating an enabling environment for young girls to pursue their education in every possible way.

We thank and appreciate Mbeya Regional officials, Kyela municipal officials, the Ward executive officer for Busale Ward, the Village executive officer for Busale Village, and all community members for their remarkable opinions and contributions during the preparation of this study.

Lastly, we would like to acknowledge and sincerely appreciate the hard work and dedication of the staff at Tansheq Limited, without whom this project would not have been possible.

ACRONYMS AND ABBREVIATIONS

ADB	African Development Bank
AIDS	Acquired Immune Deficiency Syndrome
AEP	Alternative Education Program
CBOs	Community Based Organisations
CO	Carbon Monoxide
CDP	Community Development Program
CO2	Carbon Dioxide
dB	Decibels
DC	District Commissioner
DP	Development Partner
DEO	District Education Officer
DOE	Director Of Environment
DEMO	District Environment Management Officer
DED	District Executive Director
DRC	Democratic Republic of Congo
EMA	Environmental Management Act
EIA	Environment Impact Assessment
ESIA	Environment and Social Impact Assessment
ESS	Environment and Social Standards
ESDP	Education Sector Development Plan
ESF	Environment and Social Framework
EMP	Environmental Management Plan
EPFIs	Equator Principle Financial Institutions
ESMP	Environment and Social Management Plant
EBRD	European Bank for Reconstruction and Development
FI	Financial Intermediaries
FYDP	Five Year Development Plan
GDP	Gross Domestic Product
GBV	Gender Based Violence
GCA	Game Controlled Areas

GIIP	Good International Industry Practices
GCS	Geographic Coordinate System
GCLA	Government Chemistry Laboratory Authority
GS Pipe	Galvanized steel
HIPC	Heavily Indebted Poor Country
HIV	Human Immunodeficiency Virus
ICT	Information and Communications Technology
IFC	International Finance Institution
IST	Implementing Supporting Team
ISO	International Organization for Standardization
IPF	Investment Project Financing
IUCN	International Union for Conservation of Nature
LGAs	Local Government Authorities
LPG	Liquefied Petroleum Gas
MoEST	Ministry of Education, Science and Technology
MBEYA UWSA	Mbeya Water Supply & Sanitation Authority
NAPA	National Adaptation Programme Of Action
NEMC	National Environment Management Council
NEP	National Environment Policy
NGOs	Non-Governmental Organisation
NOx	Oxides of Nitrogen
NSGRP	National Strategy for Growth and Reduction of Poverty
OHS	Occupational Health and Safety
O	Oxygen
OP	Operational Policy
OIP	Other Interested Parties
OSHA	Occupational Safety and Health Authority
OSPAR	Oil Spill Prevention Administration and Response
OPC	Ordinary Portland Cement
PAP	Project Affected People
PDO	Project Development Objectives
pH	Potential of Hydrogen
PLONOR	Pose Little Or No Risk

PM	Particulate Matters
PoRAL	President office, Regional Administration and Local Government
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
RAS	Regional Administrative Secretary
RAO	Regional Academic Officer
RC	Regional Commissioner
REO	Regional Education Officer
REMO	Regional Environment Management Officer
SEP	Stakeholder Engagement Plan
SEQUIP	Secondary Education Quality Improvement Project
SO ₂	Sulfur dioxide
TANESCO	Tanzania Electric Supply Company
TDV	Tanzania Development Vision
ToR	Terms of Reference
URT	United Republic of Tanzania
VEC	Valued Environmental Component
VOCs	Volatile Organic Compounds
WB	World Bank
WBMS	World Bureau of Metal Statistics
WEO	Ward Executive Officer
WHO	World Health Organization

LIST OF LIST OF REGISTERED EXPERTS INVOLDED IN CONDUCTING THE STUDY

Firm Registration No: NEMC/EIA/0034





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CHAPTER ONE

1 INTRODUCTION

1.1 Background

The Government of the United Republic of Tanzania (URT) in co-operation with the World Bank developed the Secondary Education Quality Improvement Project (SEQUIP). The objectives of SEQUIP are to increase access to secondary education, provide responsive learning environments for girls and in result, improve completion of quality secondary education for girls and boys.

Although access to and completion of primary education has improved over the last decade and substantial progress has been made in secondary education, secondary student enrolment rates of girls and boys are still very low in Tanzania compared to other East African countries. The share of secondary students of the relevant school age population enrolled was only 28 percent in 2018, compared to 68 percent in Kenya, despite the recent enrolment surge. Secondary school attendance was 28 percent for girls and 27 percent for boys.

The three main challenges in secondary education are:

- (i) Access to and completion of quality secondary education for girls and boys;
- (ii) A safe, supportive learning environment to keep girls in school longer and delay early marriage; and
- (iii) Effective and clear Alternative Education Pathways (AEP) to enable girls and boys who drop out of lower secondary school, for various reasons including early pregnancy, to finish the lower secondary education cycle and enter upper secondary schools

The proposed project intends at enhancing the secondary education through delivery point's improvement by increasing access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys

The implementing Government Agencies are Ministry of Education, Science and Technology (MoEST) and the President's Office – Regional Administration and Local Government (PO-RALG). Both Ministries are responsible for implementation of school-level education activities through the Local Government Authority (LGA).

One of the key components to be implemented through SEQUIP is facilitating access to secondary schools and bringing schools closer to communities. The project plans to support construction of 1000 new schools and rehabilitation of additional facilities at existing secondary schools. The project will specifically have the following components.

- Component 1: Empowering Girls Through Secondary Education and Life Skills
- Component 2: Digitally-Enabled Effective Teaching and Learning
- Component 3: Reducing Barriers to Girls' Education through Facilitating Access to Secondary Schools
- Component 4: Project Coordination, Monitoring and Evaluation

The Secondary Education Quality Improvement Project (SEQUIP) will focus on enabling young girls to continue their secondary education despite social and economic barriers. More generally, SEQUIP will improve the completion of quality, learner-friendly secondary education for girls and boys. In 2018, 1,025,629 girls and 965,242 boys attended lower secondary school.

However, in the same year, a further 134,000 children, half of whom were girls, qualified to continue their schooling but were unable to because of lack of spaces in government secondary schools. Drop-out rates are high for both boys and girls with a quarter of students leaving before they complete their lower secondary schooling. In 2017, about 5,500 girls were not able to continue with their secondary education due to adolescent pregnancy and early motherhood. SEQUIP will contribute to addressing these key challenges by:

- (i) Creating a gender sensitive, learner-friendly school environment through investing in supportive structures in the school and community including trained school guidance counselors, stronger links with the community through Parent Teacher Associations and life skills training.
- (ii) Supporting female students to avoid dropping out of secondary school due to pregnancy through measures that include:

- (a) Encouraging community awareness of risks for girls;
- (b) Supporting safe passage and reducing the distance to schools to lower the risks of gender-based violence on the way to and from school; and supporting girls who become pregnant to access recognized, quality Alternative Education Pathways (AEPs) to obtain lower secondary certification and continue with upper secondary education or post-secondary education.
- (c) Improving the quality of secondary school teaching and learning environments through the hiring of additional qualified teachers in core subjects and providing textbooks in core subjects.
- (d) Increasing the number of secondary school spaces through the construction of new classrooms that meet minimum infrastructure standards and supporting the expansion of the school network to bring schools closer to communities.
- (e) Using innovative digital technology to facilitate mathematics and science teaching and improve learning.

These SEQUIP interventions are aligned with the Government's Education Sector Development Plan (ESDP) (2016/17–2020/21) and related strategies. SEQUIP design also draws on lessons learned from previous and ongoing World Bank and Development Partner (DP) support to education in Tanzania. Overall, SEQUIP will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways.

Over its lifetime, the Project will directly benefit about 6.5 million new and existing secondary school students, including 3.2 million girls. 1 SEQUIP will help more girl's transition from lower to upper secondary education, including girls who had to leave lower secondary government schools due to pregnancy

1.2 Project Objectives

The Program's objective is to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. The project interventions will:

- (i) Create a safe, gender sensitive and learner-friendly school environment,
 - (ii) Provide good quality alternative education opportunities for secondary school drop-outs including young mothers;
 - (iii) Improve the quality of secondary education by improving teacher skills, reducing class sizes and providing adequate teaching and learning materials;
 - (iv) Use innovative digital technology to improve mathematics and science teaching and;
 - (v) Increase access to secondary education by providing more schools closer to the homes of children.
- Over the project's lifetime, 6.5 million children (3.1 million girls) will benefit from project interventions and an additional 900,000 children are expected to successfully complete their secondary education.

A need and evidence-based approach will be used in identification and selecting locations and schools that will benefit

1.3 Scope of the Study

The ESIA was carried out in accordance with the guidelines established by the Environment Management Act of 2004 and its regulations, as well as the World Bank requirements outlined in the Environmental and Social Framework, which is broken down into ten environmental and social standards. Among the key considerations in its undertaking were the following:

- To ensure that environmental considerations are explicitly addressed and incorporated into the decision making process, with the aim to anticipate and avoid, minimize, or offset the adverse significant biophysical and social effects of the proposed project; and to protect the capacity of natural systems and ecological processes to maintain their functions.
- To promote development that is sustainable and optimizes resources use and management opportunities.

1.4 Land requirement for the project

Land is public property and rights to the land are issued in the form of residential leases and certificates of rights to occupancy. The construction of new schools in Mbeya will need enough land. Site selection will be important in minimizing the extent of resettlement including of informal land owners and or users who were present in an area prior to the selection of a site for a school.

The proposed land in Kyela was previous owned by the Village. As per construction directives from PO-RALG, specific land size requirement is 25 acres. However, the proposed site has a total 37 acres reserved for this project.

1.5 Study Approach And Methodology

The approach to this exercise was structured such as to cover the requirements under the Environment Impact Assessment and Audit Regulations, 2005. It involved largely an understanding of the project background, the preliminary designs and the implementation plan as well as commissioning. In addition, baseline information was obtained through physical investigation of the project site areas, desktop studies, and public consultations with members of the community in the project areas, survey, photography, and discussions with the project Proponent.

The methodology used in this study follows specific procedures and guidelines set by the EIA & Audit Regulations of 2005. The study adopted the approach of conducting Impact Assessment which is closely related to the flowchart in Figure 1-1.

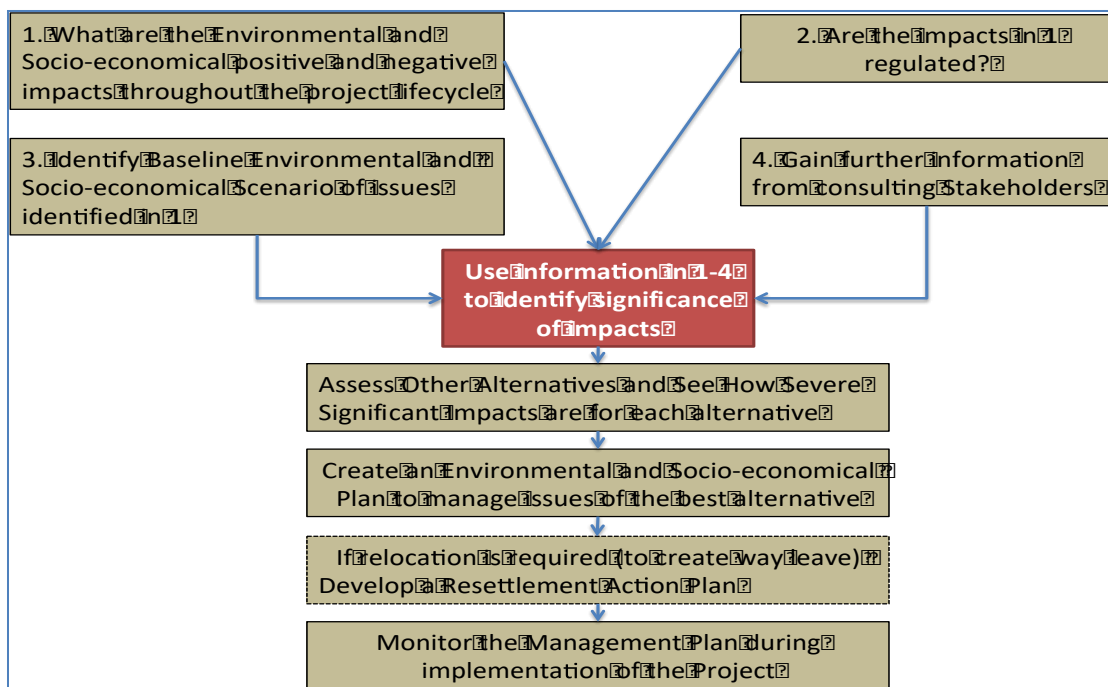


Figure 1-1: Impact Assessment Process

1.5.1 Issues Associated with the Proposed Project

Environmental and social Issues associated with school construction activities were identified based on previous history and detailed project activities. These are detailed in Chapter 2.

1.5.2 Regulatory Framework with Associated Issues

Description the relevant regulations and standards governing environmental quality, health and safety, protection of sensitive areas, sitting, land use control as detailed in CHAPTER THREE.

1.5.3 How the Situation is Currently (Baseline Situation)

To gauge the extent of impact, it is crucial to establish the status quo (CHAPTER). The consulting team conducted the baseline study of the current level of impacts. This involved a specialized study on flora and fauna, air, soil and water.

It also covered socioeconomic issues, noise, and vibration etc. The aim of ascertaining the baseline it to appreciate to what extent the proposed project can alleviate or exacerbate the current situation. Issues from Key Stakeholders

This EISA also reports on the following:

- A list of stakeholders consulted together with a stakeholder analysis.
- The method used to get their views and issues of concern raised.
- Issues raised by the stakeholders and the way they were addressed.
- Records of stakeholder meetings, communications, and comments.

1.5.4 Assessment of Impacts (Both Good and Negative)

This critically reviews and analyses interaction between the proposed project and the existing environment. In this analysis, the consultant distinguished between significant positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts. Impacts, which are unavoidable or irreversible, are also identified. Wherever possible, impacts are described quantitatively in terms of environmental costs and benefits.

1.5.5 Consideration of Alternatives

This environmental assessment also involved an analysis of reasonable alternatives to meet the ultimate project objective. This analysis included any alternatives examined while developing the proposed project, and that from an environmental, socio-cultural, or economic point of view may be sounder than the proposed project. This also includes the 'no action' alternative, which assesses environmental conditions without project.

It describes how the alternatives compare in terms of potential impacts, costs, suitability under local conditions, as well as institutional, training, and monitoring requirements. To the extent possible, costs and benefits of each alternative are quantified, incorporating the estimated costs of any associated mitigating measures. Finally, this report described the reasons for selecting the proposed project over the other alternatives.

1.5.6 Developing an Environmental Management Plan

This report recommends feasible and cost-effective measures to prevent or reduce any significant negative impacts to levels that are acceptable. This involves:

- Estimating the impacts and costs of those measures, and of the institutional and training requirements to implement them.
- Preparing a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures.
- A management plan also covering the decommissioning phase of the project.

1.5.7 Developing an Environmental Monitoring Plan

This report contains a detailed plan to monitor the implementation of mitigation measures and the impacts of the project during its execution. This plan includes a cost estimate for carrying out the proposed monitoring plan.

1.6 Content of the Report

This report is designed to meet the requirements of Regulation 18 of Environmental Impact Assessment and Audit Regulations (United Republic of Tanzania, 2005) and as per the process of conducting ESIA. This introductory chapter is followed by the subsequent chapters as detailed in Table 1-1.

Table 1-1: Content of the Report

Chapter	Description
1. Introduction	Overview and objective of the study, methodology and outline of the report
2. Project Background and Description;	This chapter describes: <ul style="list-style-type: none"> The executing entities of the project and their respective roles in the project The project's geographic location, preferably illustrated with appropriate maps Summary of the project (project objective(s), expected results/outcomes, outputs and main activities Implementation arrangements.
3. Policy, Administrative and Legal Framework;	Describe the policy, legal and administrative framework within which the project takes place and identify any laws and regulations that pertain to environmental and social matters relevant to the project. This includes regulations about environmental and/or social impact assessments to which the project must adhere as well as laws implementing host country obligations under international law. If applicable. Where pertinent, consider legal frameworks for promoting gender equality. Flag any areas where the project might fall short on compliance.
4. Baseline or Existing Conditions;	The main purpose of this section of the ESIA report is to provide an understanding of current environmental and social conditions that form the baseline against which project impacts can be predicted and measured during project implementation. For moderate-risk projects that require only a partial ESIA and no scoping study, this section also provides an opportunity to substantiate the results of the ESMS screening by confirming potential impacts and/or identifying other potential impacts.
5. Stakeholder Identification and Analysis	The purpose of the stakeholder identification and analysis is to understand potential impacts on stakeholders and to clarify who should be involved in the ESIA process and how. This should be able to elaborate: <ul style="list-style-type: none"> stakeholders' interests in and expectations from the project; how they might influence the project (positively or negatively); a first appraisal or estimation of how their livelihoods could be impacted by the project (positively or negatively); and How they should be involved in the ESIA based on the information in the three items above.
6. Assessment of Impacts and Identification of Alternatives	This step is the heart of the ESIA; it itemizes and describes the identified impacts, makes predictions in terms of their probability, and assesses their significance. When analyzing the risks not only direct impacts should be taken into consideration but also indirect impacts such as inadvertent knock-on effects or cumulative effects that materialize through interaction with other developments, impacts occurring at the project site or within the project's wider area of influence and impacts triggered over time The purpose of the analysis of alternatives is to identify other options, including not implementing the project, to achieve the project objectives

Chapter	Description
	and compare their impacts with the original proposal. This step is required only for high-risk projects where the identified impacts are very significant.
7. Impacts Management or Environmental Mitigation Measures	A main output of the ESIA process is a strategy for managing risks and mitigating impacts. The identification of mitigation measures is done in consultation with affected groups and is guided by the mitigation hierarchy. The mitigation hierarchy implies that all reasonable attempts must first be made to avoid negative social or environmental impacts. If avoidance is not possible without challenging the conservation objective of the project, measures should be taken to minimize the impacts to acceptable levels and address remaining residual impacts with adequate and fair compensation measures.
8. Environmental and Social Management Plan	This is a risk management strategy is documented in an Environmental and Social Management Plan (ESMP) that describes: the mitigation measures developed during the ESIA, an implementation schedule and required resources and responsibilities. The technical and operational feasibility, cultural adequacy and sustainability of proposed measures must be demonstrated as well as requirements for capacity building and institutional strengthening, where relevant.
9. Environmental and Social Monitoring Plan	The ESMP should also indicate how the measures designed to avoid impacts will be monitored for effectiveness.
10. Resource Evaluation or Cost Benefit Analysis	This chapters intends to internalize all costs associated with management of environmental and social impacts while comparing with the benefits which could be derived from implementation of the project
11. Decommissioning;	How decommissioning of the project shall be affected and restoration of the site
12. Summary and Conclusions	An overview of the study as well as conclusion from experts regarding the findings
13. References	List of all sources of information used in the report
14. Appendices	Detailed descriptions which are important for the study but cannot be included in the main body

1.7 Limitations of the Study

The process of conducting Environmental and Social Impact Assessment of the proposed SEQUIP projects faced the following key challenges: The process of conducting Environmental and Social Impact Assessment of the proposed SEQUIP projects faced the following key challenges:

- a) Limitation of alternative selections

The expert team had no chance to select the best site for school construction this limited the ESIA study

- b) Capacity of the team from the client involved in conducting ESIA

It has been evidenced from the site visit and call coordination from zonal coordinators emphasizing the municipal environment experts have limited understanding on the preparation of ESIA reports unless training of the same has to be done this can be resolved by maximum utilization of all municipal experts in this regard instead of selecting the few, this will help in exchanging professional experience and understating

- c) Non consideration of associated facilities

Associated facilities has been given less priority on the execution of the projects in result chances of project delay and supervision remain unturned these associated facilities are such as water and water utilities, power sources etc.

- d) Lack of cooperation from the zonal and site coordinators

We have been getting limited cooperation from zonal coordinators as it was expected because they are engaged in other government day to day activities, this leads to limited accessibilities of information from their respective zones this has to be resolved by the zonal coordinators assume their roles as it was described in initial stage of this project

e) Delay in response/ request of information

Government officials such as zonal coordinators have been delaying in providing the required information for the preparation of this EIS documents, this has gone down to Municipal Officials to resolve this the municipal expert team have to provide the required information on time

CHAPTER TWO

2 PROJECT BACKGROUND DESCRIPTION

2.1 Overview

The Project Development Objectives (PDOs) are to increase secondary education access, provide responsive learning environments for girls, and improve both girls' and boys' completion of quality secondary education. SEQUIP will help to address key barriers to education for both girls and boys, and this school will focus on girls' academic excellence. The project's goal is to reduce the time it takes to reach the following government targets: 3 km (or

The project will help to increase the total number of students in secondary education, including Alternative Education Pathways (AEP), by 250,000. It will directly benefit approximately 1.8 million secondary school students, including 920,000 girls, 95% of whom are enrolled in lower secondary. SEQUIP will assist more girls in transitioning from lower to upper secondary education, as girls are underrepresented at this level.

2.2 Project Location and Accessibility

The proposed project site is administratively located at Busale Village, Busale Ward in Kyela- District Council- Mbeya Regional with postcode 53709. It is located in the western part of Kyela District, Busale is bordered by three Wards in the District: Ngana to the south and southwest, Itope to the south and southeast, and Ipande to the east. It is also bordered by Ileje District to the north and to the west

2.2.1 Accessibility

Busale, with postcode 53709, is located in the western part of Kyela District Council and is bounded by three Wards: Ngana to the south and southwest, Itope to the south and southeast, and Ipande to the east. It is also bounded to the north and west by Ileje District.

The proposed location is reachable from the Kyela trunk road on the right; the distance from the accessibility road to the project site is around 2 kilometers.

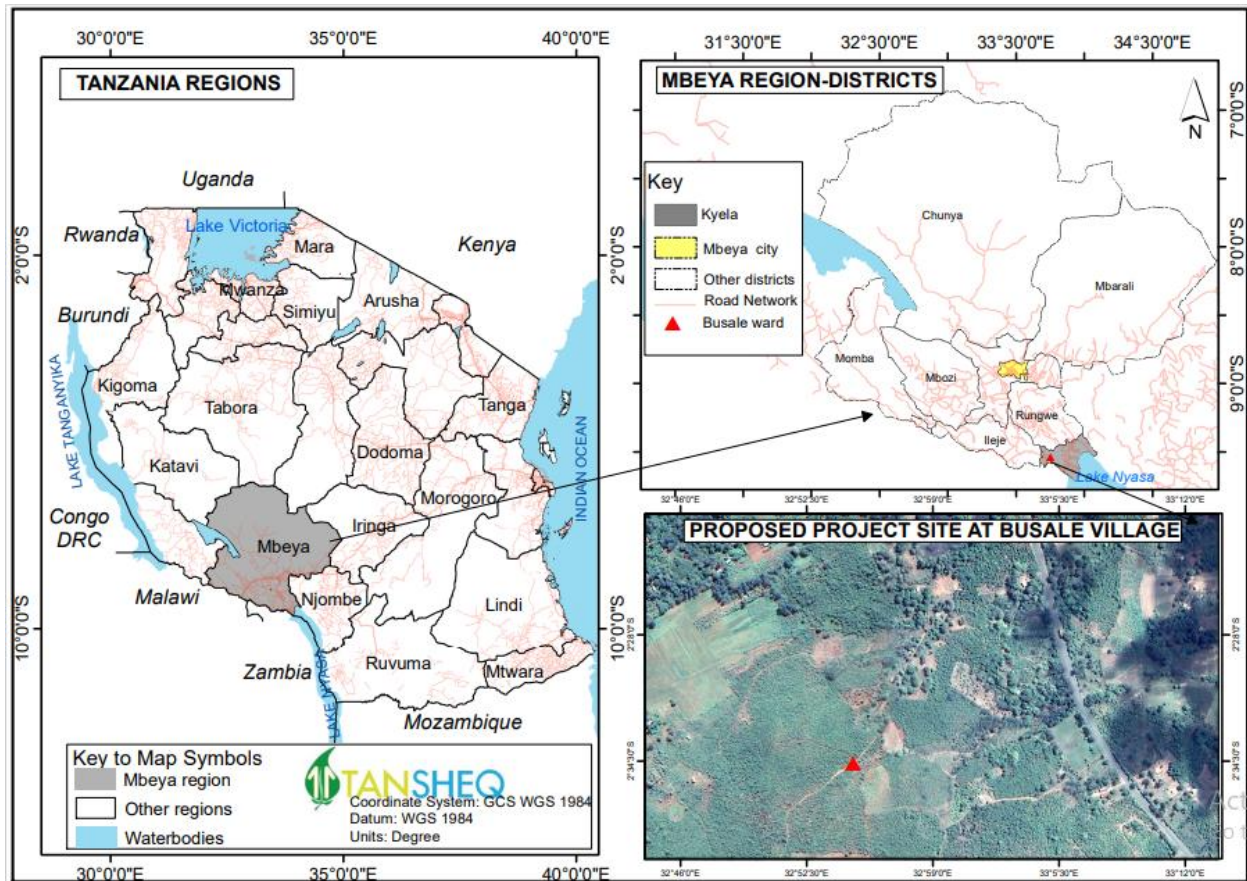


Figure 2-1: Site accessibility

This Ward has made great strides in development, its residents are very busy with business, banana & rice cultivation which earns them a lot of money. The proposed site cannot be easily accessed, and therefore it needs construction or improvement.

2.3 Project Planning and Design

2.3.1 Overview

Project planning and all designs are prepared as per SEQUIP design and the overall objective for the development is specified in the Environmental and Social Management Framework (ESMF). The design of the Girls' Regional School consists of required infrastructure package based on the school construction and maintenance strategy (e.g., number of classrooms/students, adequate WASH facilities, multi-purpose science labs, electricity, etc.).

The proposed construction of the school will be having both ordinary and advanced level with capacity of accommodating students between 1000 and 1100 students. The construction package will involve the following facilities:

The Education Global Practice Africa Regional report prepared by World Bank provides the following directives; Student classroom ratios of 50:1 or less, student to functioning latrine ratio of 25:1 for girls and 30:1 for boys, at least one multipurpose science laboratory, student textbook ratios in mathematics and science subjects of 1:1, teacher: teacher guide availability of 2:1. Figure 2-2 showing the proposed classroom design.

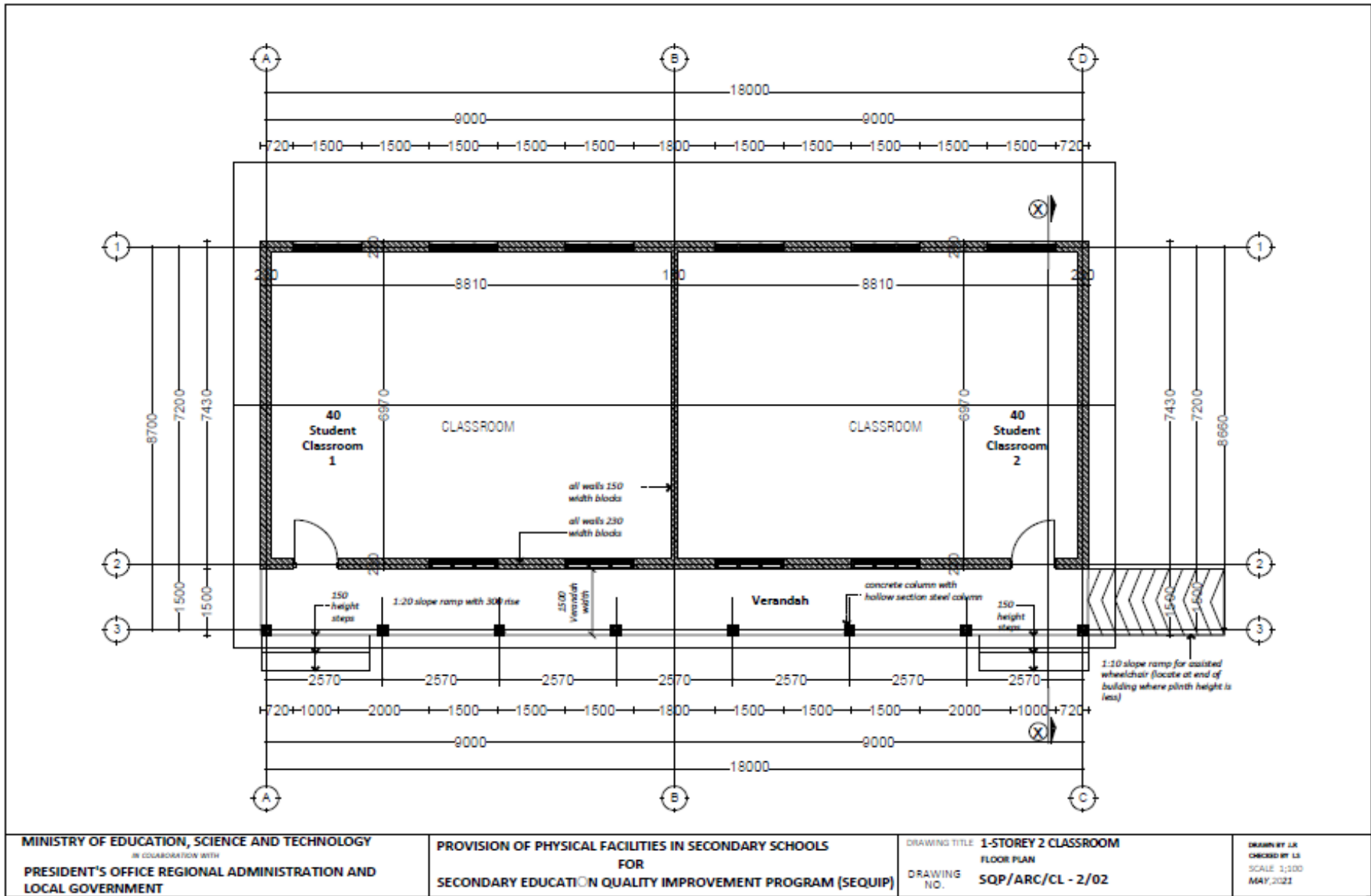


Figure 2-2: Classroom Design

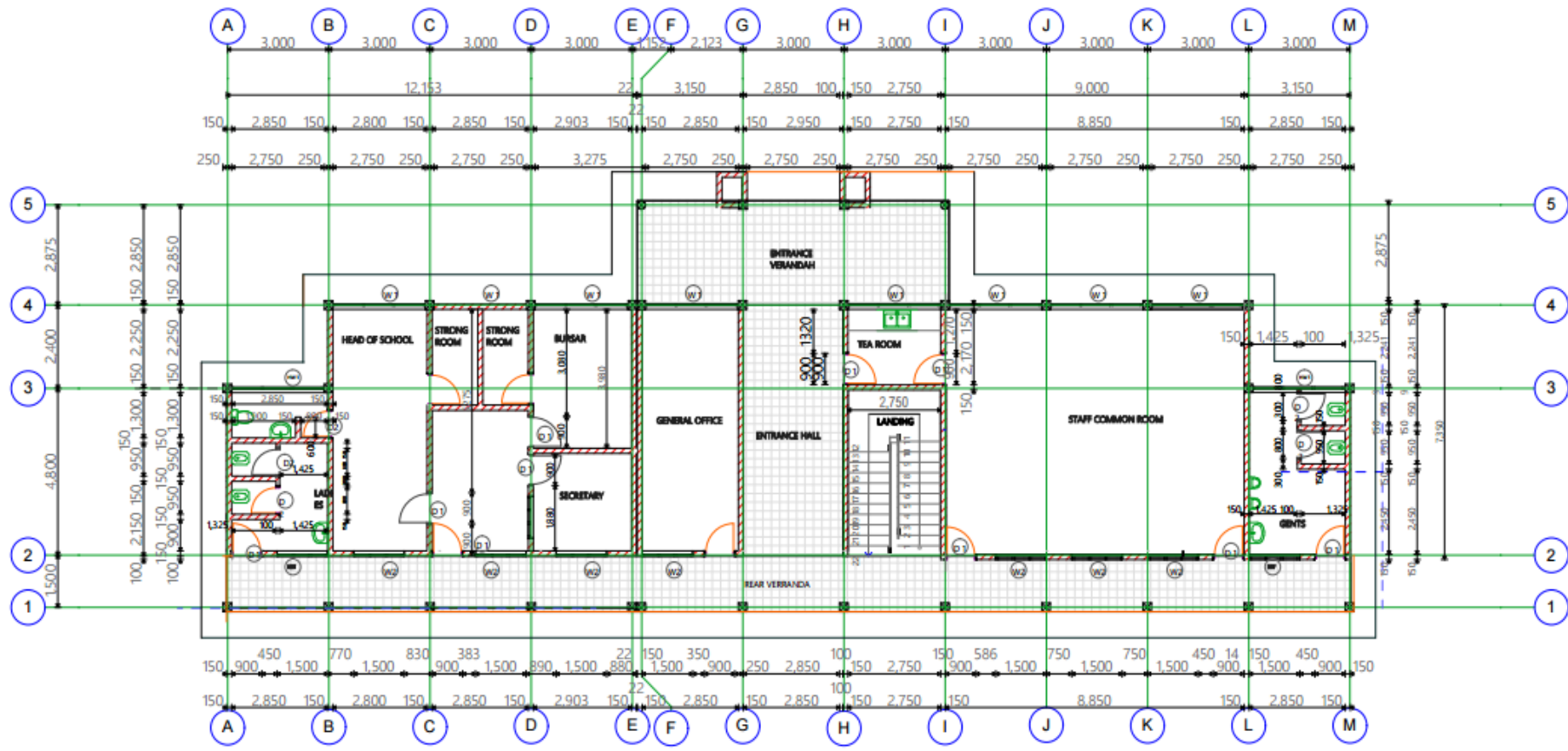


Figure 2-3: Proposed Design for School Administration block

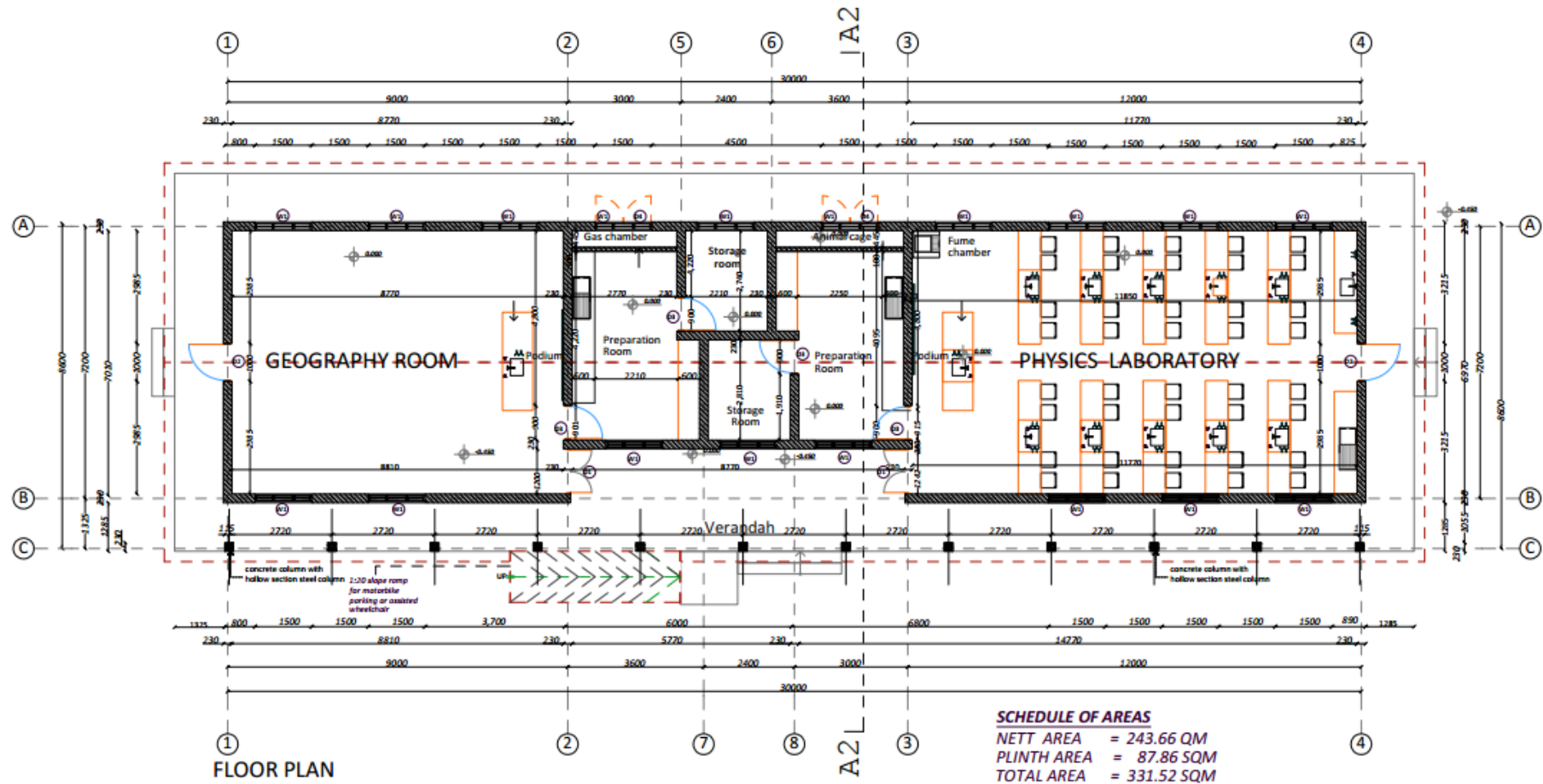


Figure 2-4: Proposed layout of the Laboratory room to be constructed

2.3.2 Laboratories

Education Bulletin number 1 of 2007 explain the capacity and set up of laboratory building for each level is 40 students. The scheduling of materials for project construction will adhere the bulletin as required the following laboratory rooms will be constructed

- Physics and geography lab
- Chemistry and biology lab,

Details on design of the laboratory can be accessed through <https://www.tamisemi.go.tz/michoro-ya-ujenzi> and the design layout is shown in Figure 2-4.

2.3.3 Administration blocks

The bulletin indicates for the school having capacity of 1000 student plus need to have not less than 40 teachers excluding other staffs such as school bursar, secretary etc. Figure 2-3 indicate the administration layout

2.3.4 Toilets

The proposed toilet facility will comprise of one block with 16 holes to be constructed standalone as scheduling shows, nevertheless, some of classrooms will be having sanitary rooms as designed, dormitory, and dining hall will be having sanitary also.

The method that will be used for the management of waste water from toilets is a septic system. Septic tanks will be constructed in appropriate places so as to collect wastewater from classroom toilets, dining hall toilets, and dormitory toilets.

2.3.5 Generator room

This room will be used for putting Generator. This generator will be an alternative source of power at school and the incorporated premises such as staff quarters. One generator room will be constructed.

2.3.6 Dining hall

The Dining Hall is a pivotal gathering space on School's campus and is emblematic of The Family Boarding School ideal. The school will be having enough dining space to all students since it is boarding school, meal will be served. According to the designs of the dining hall, it has the capacity of 2000 students.

2.3.7 Teachers' house

The teachers' houses were designed to attract teachers out to the countryside, as well as to increase teachers' morally to perform their duties unlike if they are coming far from the school. The design considers the staff house to have one (1) master bedroom, two (2) bedrooms with public toilet, Sitting room/dining, Kitchen and Store.

2.3.8 Dormitories

These dormitories are the place where students stay. The student housing must also aim to provide healthy and acoustically pleasant environments for the protection, comfort, and productivity of the students. The dormitories will be designed as per provided to meeting the SEQUIP objectives.

2.3.9 Library

The library is important because it affects cultures, it affects innovation, and it affects individuals. Because of all this, library architecture has the responsibility to enhance these effects by providing a knowledge center that is inspirational and conducive to good communication and teaching interactions.

According to designs, the library to be constructed will accommodate 52 students for reading and the computer learning room will accommodate 8 students.

Other components that will be constructed within school compounds area Water tunnel, Waste incinerators, Water tank (hippo) and its pillars), Manhole and gully trap, Walkway & Paving. Table 2-1 show the summary of buildings will be constructed

Table 2-1: Summary of buildings to be constructed.

CONSTRUCTION			
No	Buildings	No. of Buildings	No. of rooms
First construction phase			
1	Building with 2 classrooms	2	4
2	Building with 2 classrooms and one office	3	6
3	Building with 2 classrooms and 2 toilets	1	2
4	Building with Physics laboratory and Geography room	1	2
5	Building with Chemistry and Biology laboratory	1	2
6	Administration Building	1	1
7	Toilet building for students (girls)	1	16
8	Generator Room	1	1
9	Dining Hall	1	1
10	Teacher's house (3 rooms)	1	5
11	Teacher's house (2 in 1)	1	4
12	Dormitories @ 120	5	Cubicle 15
Surrounding activities			
1	Water Tunnel (1050m)	1	1
2	Waste incinerators	1	1
3	Waste incinerators	2	2
4	Underground water storage tanks (32,000 liters)	2	2
5	Water tank (hippo) and its pillars)	2	2
6	Manhole and gully trap	1	
7	Walkway & Paving		
Second construction phase			
1	building with 2 classrooms	2	4
2	Building with 2 classrooms and 1 office,	3	6
3	ICT Room	1	1
4	Library	1	1
5	Master's Houses (3 Rooms)	4	
6	Dormitories @ 120 Students	4	



Figure 2-5: Various Facilities to be constructed with the General layout in 3D

2.4 Project Activities

The envisaged project activities can be broadly categorized in three phases as listed in

Table 2-2

- Mobilization and Construction
- Operational phase
- Decommissioning phase

Table 2-2 : Project activities

Project Phase	Activities
Mobilization Phase	<ul style="list-style-type: none"> • Bush clearing. • Site levelling • Site marking • Temporary camp/shed for office
Construction phase	<ul style="list-style-type: none"> • Excavation of trenches for foundation • Alignment of blocks for Foundation • Concrete mixing • Setting up main door frame and other room door frames • Wall construction until window frame base • Setup ventilators for exhaust fans, bathroom ventilators if needed • Slabs formworks for Floors

Project Phase	Activities
	<ul style="list-style-type: none"> • Bar bending work for beams and roof • Electric pipes setup inside roof • Clear any blockage in the roof pipes • Laying electric pipes in the walls and setup electric boxes • Tiles laying on the floors and bathroom walls • Plastering of roof and walls indoors and outdoors • Finishing outside and plumbing work and tank • Painting • Electric wiring and switches setup • Compound wall/fence • Firefighting system installation • Water drainage system • Air cooling system installation
Operation phase	<ul style="list-style-type: none"> • Teaching services • Movement within dormitories, classrooms, dining, laboratory, offices and washrooms • Meeting and Conferences • Health, Safety and Security as well as Social issues.
Decommissioning phase	<ul style="list-style-type: none"> • Expansion and maintenance

2.4.1 Mobilization phase

The mobilization phase of the project, which is estimated to take average of one month and maximum three months, will entail the following activities:

- Establishment of construction of camps, material and equipment storage areas, materials processing yards, including sanitation facilities. The following activities will be involved during establishment of the camp.
 - ✓ Bush clearing.
 - ✓ Construction of Material and equipment storage areas
 - ✓ Construction of sanitation facilities
 - ✓ Installation of electrical infrastructure
 - ✓ Installation of water and wastewater infrastructure
- Identification of sources of construction material (borrow pits and quarry sites),
- Identification of sources of water for domestic and construction works

2.4.2 Pre-Construction Activities

The mobilization phase of the project, which is estimated to take average of maximum three months, will entail the following activities:

- Establishment of construction of camps, material and equipment storage areas, materials processing yards, including sanitation facilities. The following activities will be involved during establishment of the camp.
 - ✓ Bush clearing.
 - ✓ Construction of Material and equipment storage areas
 - ✓ Construction of sanitation facilities
 - ✓ Installation of electrical infrastructure
 - ✓ Installation of water and wastewater infrastructure
- Identification of naturally-occurring material borrow sites (sand, fill, gravel borrow and quarry sites),
- Identification of sources of water for domestic and construction works

2.4.2.1 Materials required during Mobilization Phase

The following materials will be required during mobilization phase of the project:

- Cement, sand, and aggregates for block and concrete works
- Water for general construction works and dust abatement
- Timber, galvanized iron sheets, paints, nails, etc. for roofing.
- Electrical works: conduits, cables, fitting
- Cement, galvanized iron sheets, nails, fence wire, electrical and plumbing utilities will mainly be obtained from either Dar es Salaam, while sand, aggregates, and timber will be obtained locally.

2.4.2.2 Equipment Required During Mobilization Phase

The major equipment which will be required during mobilization phase of the project will include:

- Bull dozers/motor graders, excavators for site clearing, excavation, and grading of the storage facilities construction at site
- Light duty vehicles and trucks for the transport of construction materials, small machines and staff
- Water pumps, block making machines, stationery concrete mixers and Trans mixers, etc. for making of blocks and concrete mixes for concrete works
- Electric power generator(s)

2.4.2.3 Waste Generated During Mobilization Phase

Mobilization phase of the project will generate the Waste shown in Table 2-3

Table 2-3: Waste likely to be generated During Mobilization Phase

Aspect	Solid Waste	Liquid Waste	Gaseous Waste
Site clearing and excavation	Earth, green cutting	None	Generation of air pollutants (dust)
Construction of foundation(s): block/concrete works	Concrete, blocks, hessian cement bags	Water slurry, wash-down water	None
Construction of the main Storage room	Cement bags, mortar, steel reinforcements, nails, timber, iron sheet Waste, etc.	Concrete slurry	Paint
Installation of electrical Infrastructure	conduit pipes, cables	None	None
Installation of water Infrastructure	PVC and GS pipes	None	None
Labour force	Plastic bottles/ bags, food Waste	Sanitary Waste	None
Servicing of construction Equipment	Used batteries, used tires, used metals parts, used oil and fuel filters, empty oil drums	Waste oil	None

2.4.2.4 Treatment and Disposal of Waste Generated

The treatment methods for the Waste generated during mobilization phase shall be based on re- using, re-cycling, burying, or burning, and on-site treatment.

- During site clearing, topsoil and green cutting shall disposed of in old borrow pits or other areas approved by the Engineer
- Concrete and cement blocks Waste shall be disposed of in borrow pits during their reinstatement as approved by the Engineer.
- Metal Waste such as GS pipes, nails, reinforcement bars, and used equipment parts shall be disposed of by recycling. They will be collected and stored; until enough quantities are obtained before being

disposed of by the Contractor. The metal scraps disposing companies shall be approved by the Engineer.

- Degradable materials such as paper cement bags and paper boxes shall be treated on site by either controlled burning.
- Non degradable Waste such as plastic, PVC pipes, and plastic bottles shall be collected and transported and given freely to plastic factories where they will be recycled.
- Used batteries, empty metals drums, used oil filters shall be disposed of through approved disposing companies.
- Temporary pit latrines shall be constructed at active mobilization sites (camp sites) for the disposal of sanitary Waste.

2.4.3 Construction Phase

The construction phase of the project, which is estimates to take 12 month for each of the phase one and will encompass following major activities:

- Earth works to facilitate widening and re-alignment of the road. Earth works will entail the following activities:
 - ✓ Clearing and grubbing (clearing of vegetation, including trees).
- Extraction of naturally-occurring construction materials. This will include:
 - ✓ Excavation and transport of natural sand, gravel, and sub-base materials to construction sites
 - ✓ Stone quarrying (including blasting), crushing and transport of crushed aggregates to construction sites
 - ✓ Transport and handling of fuel, lubricants etc. from their sources to the project site
 - ✓ Transport of construction materials from source to site such as roof, steel, woods, nails, rope,

2.4.3.1 Materials Required During Construction Phase

During the project construction, the following materials in Table 2-4 will be required:

Table 2-4: Materials required During Construction Phase

No	Material	Usage	Possible Source
1.	Ordinary Portland Cement (OPC) and Pozollana Portland Cement (PPC)	For construction purposes.	Twiga cement (Dar es salaam), Tanga cement (Tanga), and Mbeya cement (Mbeya)
2.	Sand	Production of mortar and general concrete works	Stone crusher dust and sand pits (to be established by Contractors)
3.	Crushed aggregate	Concrete works (Structural works) and construction	Local available
4.	Steel reinforcement bars	Reinforced concrete works construction of structures,	Dar /imported
5.	Steel shutters and form works	Concrete works	Dar
6.	Soft timber	Production of timber formworks and shutters	Locally
7.	Nails	Nails for fixing timber form	Dar es salaam
8	Water	Drinking, concrete works, dust suppression	Rivers, streams, Mbeya UWASA and boreholes

2.4.3.2 Waste Generated During Construction Phase

The Waste generated during construction phase of the project will result from operation of construction and equipment maintenance. The Waste which will be generated during construction phase of the project

are shown in Table 2-5.

Table 2-5: Waste likely to be generated during Construction Phase

Aspect	Solid Waste	Liquid Waste	Gaseous Waste	Hazardous Waste
Operations of Campsite				
	Paper	Sanitary waste	-	-
	Litter	-	-	-
	Toner, cartridges	-	-	-
	Paper litter	Sanitary waste	-	-
	Plastic bottles/bags	-	-	-
	Aluminum cans	-	-	-
	Food Waste	-		
				Biohazard Waste (medical Waste)
Machinery and equipment Maintenance				
	Plastic and glass (containers), used tyre, metal (used parts), plastic and cable parts, used lead-acid batteries,	Waste oil and grease, battery acid (dilute sulphuric acid)	-	Gases that are compressed, liquefied, or dissolved under pressure may be hazardous. Flammable liquids including oil, grease and petroleum compounds are also hazardous. Used lead-acid batteries, plastic containers

2.4.3.3 Treatment and Disposal of Waste Generated During Construction Phase

The treatment methods for the Waste generated during construction phase will depend on whether they are degradable, non-degradable, hazardous, or non-hazardous. Depending on the nature of the Waste, the Waste will either be re-used, re-cycles, buried, or burnt.

2.4.3.4 Water supply system

The project will require water for different activities for the project Water will be required for construction activities such as concrete works, earthworks, lying of some of the pavement layers, dust suppression, as well as domestic purposes at the camps. The amount of water required during the construction of the project estimated to be 18000 liters per day this use of water will be for both construction and dust suppression .during construction.

Domestic use at the construction site will depend on the number of people and the project expect to recruit about 50 local people and 10 personnel. The estimated amount of water to be consumed for 60 people is estimated to be 3600litres per day. Thus, the amount of water required during constructed is 21,600 liters per day. The water will be taped from Mbeya UWASA since the proposed site is nearby the standby supply pipe.

2.4.4 Operation phase

The operation activities of the Overall, SEQUIP will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways.

2.4.4.1 Material required during operation phase

Material required during the operation phase will include books, chalk, a printing and photocopy machine, laboratory equipment and specimens, and water.

2.4.4.2 Labour requirement during operation phase

Both skilled and unskilled labor are required in the operation phase of the project, which will include:

- Teachers
- Librarians
- Laboratory technician
- Security officer

2.4.4.3 Wastes generated during operation phase

The waste generated during the operation phase of the project is a result of different activities taking place during the operational phase of the project. Table 2-6 shows Waste generated during the project's operation phase and ways of managing waste.

Table 2-6: Waste Generated during operation Phase

Waste Generated	Ways of Managing Waste
Solid waste from the dining hall, kitchen, classroom, office,	<ul style="list-style-type: none"> • Solid waste separation, recycling, re-use, and proper disposal in a specific disposal area
Liquid waste from sanitary facilities, canteens, and kitchens	<ul style="list-style-type: none"> • Septic tanks will be constructed to collect waste water from canteens, kitchens and sanitary facilities
Hazardous waste such as sanitary pads	<ul style="list-style-type: none"> • Incinerator will be constructed for management of sanitary pads.

2.4.4.4 Water supply system

During operation phase, Water will be used for domestic uses, cleaning and for sanitation which will depend on the number of the student to be admitted to school at the specific time. Initially, for the first intake about 1060 students will be enrolled and 60 staff (teachers) will be employed. Thus, the estimated water usage for 1000 students is 63,600 liters per day. This means that each student will use approximately 60 liters per day, which includes drinking water, washing clothes, bathing, and flushing after using the restroom.

2.4.5 Decommissioning Phase

After completion of construction, all the utilities which were used shall be reverted to the Municipal Director who will decide on their future use. The main activities during demobilization phase, will engross the following:

- Collection and disposal of storage facilities such as pallets, packing, boxes
- Collection and disposal of construction materials and Waste such as waste oil, sewage, solid Waste (plastics, wood, metal, papers, etc.) at the workshop, site office etc. to authorized dumpsite
- Restoration of material borrows areas to safer condition.

2.4.5.1 Materials required During Demobilization Phase

Materials required during demobilization phase will include fuel for the operation of equipment, soils and tree seedlings for reinstatement of borrow pits. During this phase, labour, water, and energy will also be required.

2.4.5.2 Equipment Required During Demobilization Phase

The equipment required during demobilization phase will include vehicles and trucks for transport of Waste and remaining materials to be transported,

2.4.5.3 Waste Generated During Demobilization Phase

The following Waste will be generated during demobilization phase of the project:

- Hazardous waste such as used lubricants (oil and grease), used lead-acid batteries, empty plastic bottles, etc.
- Plastic and paper packing
- Used equipment parts

2.4.5.4 Treatment and Disposal of Waste Generated During Demobilization Phase

The treatment methods for the Waste generated during construction phase will depend on whether they are degradable, non-degradable, hazardous, or non-hazardous. Depending on the nature of the Waste, the Waste will either be re-used, re-cycles, buried, or burnt.

2.4.5.5 Lifespan of the project

The project lifecycle is the series of phases that a project goes through as it progresses. It includes initiation, planning, execution, and closure; thus, this project will take 12 months; however, the project life will be 50 years, followed by maintenance, based on the construction schedule and material life span of steel bricks. Throughout the project's operations

2.4.5.6 Decommissioning of Individual Components of the Project

Individual components of the project may be rendered redundant due to wear and tear or become obsolete due to technological advancement. These shall be removed after an environmental audit is conducted and a device appropriate environmentally friendly way (Environmental Management Plan, EMP) to deal with them.

Emphasis shall be on repairing so that parts can be reused or recycled of materials from defunct components to salvage important metals.

2.5 Project Associated Facilities

The ESF define associated facilities as facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable. The SEQUIP project in schools construction has identified the following as associated facilities;

- Water connection
- Energy (electricity, gas or charcoal)
- Health and safety
- Access roads

2.5.1 Water supply system

The project will require water for different activities for the project Water will be required for construction activities such as concrete works, earthworks, laying of some of the pavement layers, dust suppression, as well as for domestic purposes at the camps. The amount of water required during construction of the project estimated to be 30,000 litres per day when construction is at peak, and almost 18,000 for normal site uses including dust suppression.

During operation phase, Water will be used for domestic uses, cleaning and for sanitation which will depend on the number of the student to be admitted to school at the specific time. Water for construction works will be obtained from Mbeya UWASA and boreholes.

2.5.2 Power supply

The proposed project will source the electricity from the National grid (TANESCO). Also a standby generator will be installed. This will be used in case of main electricity interruption. Emission level of generation will be considered during installation to make sure the generator of low emission

It will necessitate Contractor to install dedicated diesel driven generators to supply power to site and for the operation of electrically operated equipment at work sites. Generator room will be constructed as source of power during project operation.

2.6 Environmental and Social Management Framework

The ESF instruments that have been prepared for SEQUIP incorporate measures for project site Selection and to ensure designs and school construction align with the ESF requirements.

It has been agreed that civil works will follow building standards acceptable to the World Bank and required under the ESF; taking into account structural safety, universal access, changes in the standard drawings, water source availability and quality, efficient use of materials (wood) to reduce pressure on natural resources, Water and Sanitation for Health (WASH) and solid waste management at the schools, among other risks identified as part of the due diligence process.

Site selection for school construction is very important to avoid possible direct and indirect environmental and social impacts and lack of water sources for construction and during operation.

2.6.1 Health and Safety

As the ESMF directives, the campaign has been conducted with the utmost regards for occupational health and safety requirements of local authorities, management system, and of recognized industry standards. As a rule, all activities that present a risk to employees, contractors, and or neighboring communities are planned and controls are implemented to limit exposure.

In addition, a Permit to Work system is in effect for risk-specific activities that is working at height. All EHS incidents, observations, near misses, etc. will be reported and investigated to prevent recurrence during construction phase and the proper way of reporting and registration during the operation phase will be employed as well. Regular emergency evacuation drills will be connected to test the training and response capacity of the workforce at the site during all phases of the project.

Occupational health and safety issues for further consideration in multi-storey office building construction and operation phases includes; Fire and collapse and Slippery

2.6.1.1 Fire

The project shall be designed, constructed, and operated according to standards for the prevention and control of fire hazards. The most effective way of preventing fires is to avoid any source of fires in inside the building, Use electrical equipment correctly, Check building Appliances and Wiring etc.

2.6.1.2 Collapse

The project must be designed, built, and operated in accordance with fall-hazard prevention and control standards. The most effective way to prevent falls is to keep reasonable weights of equipment and instruments, such as water storage tanks, on the top floor of the building, which should be designed in accordance with construction standards and building materials.

2.7 Project Cost

Total Project Cost is four billion Tanzanian shillings

CHAPTER THREE

3 POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

3.1 Introduction

The objective of this chapter is to describe the policy, legal and administrative framework within which the project takes place and identify any laws and regulations that pertain to environmental and social matters relevant to the project.

This includes regulations about environmental and/or social impact assessments to which the project must adhere as well as laws implementing host country obligations under international law. Explain the requirements of any co-financing partners, if applicable. Where pertinent, consider legal frameworks for promoting gender equality. Flag any areas where the project might fall short on compliance.

3.2 The Constitution of Tanzania, 1977-1995 (as revised) The Constitution of Tanzania, 1977-1995 (as revised)

The Constitution of the United Republic of Tanzania 1977 - 1995 (revised 1997) recognizes the basic rights and equality entitled, without any discrimination, protection, and equality of all persons before the law. The United Republic of Tanzania is committed to the conservation of the country's natural environment as is evident through the Constitution and various Mission Statements.

Article 11 (2): Every person has the right to access education, and every citizen shall be free to pursue education in a field of his choice up to the highest level according to his merits and ability.

Article 11 (3): The Government shall make efforts to ensure that all persons are afforded equal and sufficient opportunity to pursue education and vocational training in all levels of schools and other institutions of learning.

According to this statements the government of the United Republic of Tanzania has put more effort to ensure every citizen of Tanzania has a right to education by constructing girl's secondary school in Kyela District Mbeya Regional.

3.3 National Development Vision 2025

A Tanzanian who is born today will be fully grown up, will have joined the working population and will probably be a young parent by the year 2025. Similarly, a Tanzanian who has just joined the labour force will be preparing to retire by the year 2025.

What kind of society will have been created by such Tanzanians in the year 2025? What is envisioned is that the society these Tanzanians will be living in by then will be a substantially developed one with a high quality livelihood.

Abject poverty will be a thing of the past. In other words, it is envisioned that Tanzanians will have graduated from a least developed country to a middle income country by the year 2025 with a high level of human development. The economy will have been transformed from a low productivity agricultural economy to a semi-industrialized one led by modernized and highly productive agricultural activities which are effectively integrated and buttressed by supportive industrial and service activities in the rural and urban areas. A solid foundation for a competitive and dynamic economy with high productivity will have been laid. Consistent with this vision, Tanzania of 2025 should be a nation imbued with five main attributes;

- High quality livelihood.
- Peace, stability and unity.
- Good governance,
- A well-educated and learning society;
- A competitive economy capable of producing sustainable growth and shared benefits.

3.4 National Five-Year Development Plan 2021/22–2025/26

This third national five-year development plan (FYDP III) for the period 2021/2026 is a nationwide multisector document aiming at achieving the goals set in the national development vision 2025.

To increase the resilience of livelihoods to disasters, main interventions shall be:

- (i) strengthen environmental conservation and protection to mitigate adverse effects of climate change
- (ii) social development, including health and education, human settlements, clean and safe water, and environment, paying attention to equitable access, gender and people with disabilities
- (iii) strengthen sustainable use and management of oil and natural gas
- (iv) develop renewable energy sources for cooking to mitigate climate change
- (v) conserve marine and freshwater fisheries protected areas
- (vi) develop and implement strategies to combat poaching, illegal trade and illegal harvesting of wildlife, forest, bee and antiquities resources in the country
- (vii) promote biodiversity conservation;
- (viii) develop climate change adaptation and impacts mitigation measures and reduce land degradation;
- (ix) minimize environmental pollution and resultant adverse effects on the environment and human health;
- (x) establish programs and mechanisms for management, monitoring and assessment of water and wastewater quality
- (xi) Strengthen conservation and protection programs of water resources and water sources.

3.5 Relevant Policies

3.5.1 National Environmental Policy (2021)

The overarching governing Tanzania's environmental management are the National Environmental Policy (NEP) of 2021 and the Environmental Management Act (EMA) of 2004.

The NEP enables sectorial and cross-sectorial policy analysis to mainstream environmental considerations into all aspects of planning and development. The proponent will adhere to the policy through conducting EIA so as to conserve natural environment around the project site, which will help to minimize the occurrence of the environmental problems.

3.5.2 Cultural Policy, 1997

Section of the 3.2.1 of the Cultural Policy stipulates that "all land development shall be preceded by Cultural Resource Impact studies. Furthermore, Section 3.1.5 states that "mechanisms shall be established to enable the nation to identify, own and preserve national treasures e.g. art, objects, natural resources minerals as well as archaeological, paleontological and botanical remains".

Project proponent must abide with this policy during construction and operation phase in order to preserve indigenous culture.

3.5.3 Antiquities Policy of 2008

Antiquities Policy 2008 section defines Physical Cultural Resources as any tangible material that represent contemporary, historic, and pre-historic human life ways. Section 2. 1 of the Antiquities Policy points out that already discovered Physical Cultural Resources shall be preserved and conserved in the National Museum of Tanzania as stipulated in Museum Act of 1980. Furthermore, the Antiquities Policy of 2008 sections 4.2.1 to 6 elaborates on how stakeholders including government institutions, private sectors and the public should be involved in all activities of conservation and management of Physical Cultural Resources.

3.5.4 National Forest Policy, 1998

The overall goal of the National Forest Policy (1998) is to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations.

The Policy, among other aspects, recognizes the high value of forests due to the high potential for royalty collection, export, and tourism earnings as well as the recycling and sequestering of carbon and conservation of globally important biodiversity.

Furthermore, the policy emphasizes on biodiversity conservation; describes the importance of forest ecosystems for maintaining biodiversity and the threats to biodiversity. One of the main objectives envisaged in the policy focuses on ensured ecosystem stability through conservation of forest biodiversity, water catchments, and soil fertility.

3.5.5 National Water Policy, 2002

The main objective of the Policy is to develop a comprehensive framework for sustainable development and management of the nation's water resources. Specifically, on the environment the objective is to have a water management system that protects the environment, ecological system, and biodiversity. The policy emphasizes that water related activities will have to be planned to enhance or to cause least detrimental effects on the environment.

To protect ecological systems and biodiversity which, together, are important part of sustainable water resources system the policy provides a guide for determining water for the environment, in terms of quantity and quality, and levels, for both surface and groundwater resource.

The policy emphasizes the use of best available scientific information for both temporal and spatial water requirements to maintain the health and viability of riverine and estuary ecosystems, and associated flora and fauna. Public awareness on good land-use practices is insisted to contain the erosion problem.

3.5.6 National Energy Policy, 2015

The Policy, among others, focuses on utilization of various energy resources in a sustainable and environmentally friendly manner. The Policy recognizes that energy is a prerequisite for the proper functioning of all sub-sectors of the economy.

The Policy stresses the use of renewable and alternative energy sources such as wind, solar, mini hydropower generators and use of liquefied petroleum gas (LPG) as well as natural gas.

The use of alternative energy sources such as biogas, briquettes both for domestic and industrial uses is encouraged to minimize the use of charcoal and firewood to prevent massive deforestation.

3.5.7 National Health Policy, 2007

The overall objective of the National Health Policy, 2007 is to improve the health and well-being of all Tanzanians. In line with environmental health, Policy seeks to protect community health by enhancing sustainable environmental health.

The Policy emphasizes on community adherence to environmental health standards; Improvement of waste management systems including disposal of hospital wastes; educating health service providers on the importance of environmental health in their working areas; and putting in place laws and procedures for conservation and protection of the environment in the health sector.

3.5.8 Occupational Health and Safety Policy 2009

The main objectives of OHS Policy are to reduce the number of work-related accidents and diseases in Tanzania. This required the adoption and implementation of a culture to prevent OHS hazards by Government, Employers and Employees. The effective prevention of work - related accidents and ill- health will have enormous social and economic benefits.

These include improvements in productivity and competitiveness and the quality of life of the working population. The effective management of many safety hazards will contribute to improved levels of public health and safety.

The effective control at source in workplaces of hazardous substances will improve levels of public health and minimize environmental pollution the policy emphasizes on Sustainable safe and healthy working conditions

and environment at all workplaces for the entire diversity of the workforce contributing to broad based economic growth.

3.5.9 National Water Policy, 2002

The main objective of the Policy is to develop a comprehensive framework for sustainable development and management of the nation's water resources. Specifically, on the environment the objective is to have a water management system that protects the environment, ecological system, and biodiversity. The policy emphasizes that water related activities would have to be planned to enhance or to cause least detrimental effects on the environment. To protect ecological systems and biodiversity which, together, are important part of sustainable water resources system the policy provides a guide for determining water for the environment, in terms of quantity and quality, and levels, for both surface and groundwater resource. The policy emphasizes the use of best available scientific information for both temporal and spatial water requirements to maintain the health and viability of riverine and estuary ecosystems, and associated flora and fauna. Public awareness on good land-use practices is insisted to contain the erosion problem.

3.5.10 National Land Policy, 1995

The National Land Policy of 1995 aims at developing a coherent and comprehensive framework that defines land tenure and enables proper management and allocation of land in urban and rural areas. Among other things, the Policy advocates the protection of land resources from degradation, for sustainable development.

The policy addresses several environmental issues such as land use planning, which take into consideration the land capability, ensures proper management of land resources, promotes resource sharing and multiple land use techniques in areas of conflicting land use, and involve community in resource management, land use and conflict resolution.

3.5.11 National Human Settlements Development Policy, 2000

The Policy stresses on the need for ensuring that human settlements are kept clean and pollution effects of solid and liquid wastes do not endanger the health of residents. The policy advocates for a set of environmental quality standards of gaseous emissions from industries and vehicles

3.5.12 The Construction Industry Policy (2003)

This policy promotes among other things, application of cost effective and innovative technologies and practices to support socio-economic development including utilities and ensure application of practices, technologies and products which are not harmful to both the environment and human health.

Kyela District Council must use technologies and products not harmful to both the environmental and human health by providing feasible alternatives and appropriate mitigation measures.

3.5.13 The National HIV/AIDS Policy (2001)

The overall goal of this policy is to provide for a framework for leadership and coordination of the national multi-sectoral response to the HIV/AIDS pandemic.

This includes the formulation by all sectors of appropriate interventions which will be effective in preventing transmission of HIV/AIDS and other sexually transmitted infections, protecting and supporting vulnerable groups, and mitigating the social and economic impacts of HIV/AIDS. For project sustainability the project proponent will have to closely observe the above policy.

3.5.14 The National Employment Policy, 2008

The major aim of this policy is to promote employment mainly of Tanzania Nationals. Relevant sections of this policy are (i) 10, which lays down strategies for promoting employment and section 10.1 is particularly focusing on industry and trade sectors (ii) 10.6 which deals with employment of special groups i.e. women, youth,

persons with disabilities and (iii) 10.8 which deals with the tendencies of private industries to employ expatriates even where there are equally competent nationals.

3.5.15 National Population Policy, 2006

The Policy recognizes the impacts of population growth on natural resources and environment. The policy goal is to prepare and implement coordinated urban, rural and Regional development plans for rapid development in the country and to reduce the rate of rural-urban migration.

3.5.16 National Transport Policy, 2003

The main objective of this Policy is to enhance transport systems and promote environmental protection. The mission is to develop safe, reliable, effective, efficient and fully integrated transport infrastructure and operations that was to meet the needs of travel and transport by improving levels of services at lower costs. Ultimately, the development of a reliable transport network should drive human development in a manner that is economically and environmentally sustainable.

3.5.17 National Women and Gender Policy, 2000

The key objective of the Policy is to provide guidelines that will ensure that gender sensitive plans and strategies in all sectors and institutions are developed. While the Policy aims at establishing strategies to eradicate poverty, it emphasizes gender equality and equal opportunity for both men and women to participate in development undertakings and to value the role played by each member of society.

Specifically, this Policy advocates for opportunities for both men and women in projects including construction works and related activities, and for women to be involved at all levels of the project from planning to implementation.

On employment strategies for women, Section 30 of the Policy requires presence of equal employment opportunities between men and women depending on required qualifications at all level. In addition, there should be records of exact number of women and men at levels in order to assist monitoring and follow-ups, less bureaucratic special system in the provision of business licenses especially to women working in the informal sector.

The Client must adopt such an approach during all stages of the implementation of this project that is in line with the aims of this Policy.

3.5.18 The National Research and Development Policy, 2010

These policies focused on the promotion of the private sector as a major contributor to the national economy, singly or through public-private partnership. The increasingly globalized world requires nations to create an enabling environment that will facilitate active participation of the private sector in improving their respective economies.

3.5.19 Education and Training Policy 2014

This Education and Training Policy of 2014 is the result of the revitalization and finally the cancellation of the Education and Training Policy (1995), Policy on Vocational Education and Training (1996), Policy on National Higher Education (1999) and Information Technology Policy and Communication for Primary Education (2007).

The vision of this policy is having an educated Tanzanian with knowledge, skills, competencies, abilities and positive attitudes to be able to contribute in bringing about the development of the Nation.

The specific objectives of the Policy are to have:

- System, structures and flexible procedures to enable Tanzanians develop themselves in various ways in academic and professional streams;

- Education and training with quality standards recognized nationally, Regionally and internationally;
- Availability of various educational opportunities and training in the country;
- Increase of human resources according to priorities of the Nation;
- Effective management and operation of education and training in the country;
- Sustainable education funding system and training in the country; and
- Education and training system based on issues cross

3.5.20 National Biotechnology Policy, 2020

The general objective of this policy is to ensure that Tanzania has the capacity and capability to capture the proven benefits arising from health, agriculture, industry and environmental applications of biotechnology while protecting and sustaining the safety of the community and the environment

3.6 Legal Framework

3.6.1 Environmental Management Act, Cap.191;

The Environmental Management Act No. 20 of 2004 is the principal legislation governing environmental management in the country. The Environmental Management Act (EMA) recognizes "...the right of every citizen to a clean, safe and healthy environment, and the right of access to environmental resources for recreational, educational, health, spiritual, cultural and economic purposes."

Thus, the EMA "provides a legal framework for coordinating harmonious and conflicting activities by integrating those activities into overall sustainable environmental management systems by providing key technical support to Sector Ministries."

Section 81, subsection 1 in Part VI of the EMA requires a project proponent or developer to undertake an Environmental Impact Assessment (EIA) at his/her own cost prior to commencement or financing of a project or undertaking.

The EMA prohibits any development to be initiated without an Environmental Impact Assessment (EIA) Certificate. PO-RALG through undertaking this study complies with the requirement of the law.

3.6.2 The Education Act, Cap. 353

The act aims to provide a legal framework for the development, management, and regulation of education in Tanzania, with a focus on promoting quality education, inclusivity and equitable access for all.

The project complies with the act as it has ensured the designs and construction of the school facilities meet the standards and requirements specified for educational institutions such as providing adequate classrooms, laboratories, libraries and other necessary infrastructure to support the educational needs of the students.

Furthermore, the project aligns with the objectives of the act of "promoting gender equality" by constructing a girls secondary school thereby addressing gender differences in access to education and creating supportive and inclusive environment for girls to pursue their education.

3.6.3 Water Resource Management Act, Cap.331;

The Water Resource Management Act 2009 is a new principal legislation dealing with the protection of water resources and control of water extraction for different uses.

According to section 39 (1) of this Act, owner or occupier of land on which any activity or process is or was performed or undertaken, or any other situation exists which causes has caused or is likely to cause pollution of a water source, shall take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.

It is stated under section 39 (2) that a Basin Water Board may direct any person who fails to take the measures required under subsection (1) to:

- Commence taking measures before a given date;
- Diligently continue with those measures; and
- Complete the measures before a given date.

3.6.4 The Land Act, [Cap. 113 R. E. 2019].

The Land Act, provides basic legal requirements in relation to land other than Village land (see Village Land Act, 1999 below), the management of land, settlement of disputes and related matters.

The following are some of the main principals of the Land Act:

- ❖ To recognize that all land in Tanzania is public land vested in the President as trustee on behalf of all citizens;
- ❖ To ensure that existing rights in and recognized long standing occupation or use of land are clarified and secured by the law;
- ❖ To facilitate an equitable distribution of and access to land by all citizens;
- ❖ To regulate the amount of land that any one person or corporate body may occupy or use;
- ❖ To ensure that land is used productively and that any such use complies with the principles of sustainable development;
- ❖ To consider that an interest in land has value and that value is taken into consideration in any transaction affecting that interest; and
- ❖ To pay full, fair and prompt compensation to any person whose right of occupancy or recognized long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment by the state under this Act or is acquired under the Land Acquisition Act;

It is the duty of the Government Department or the Ministry, local or public authority or corporate body that applied for the way leave to pay the compensation.

3.6.5 The Village Land Act, [Cap 114 R. E. 2019]

The Village Land Act, of 2019 provides for the management and administration of land and matters related thereto in specifically Villages. The Village Land Act (in addition to the Land Act) have set clear procedures for compensation while acquiring Land from citizens.

3.6.6 Forest Act, (Cap.323 R.E.2022)

The Act provides for management of forests and requires carrying out of Environmental Impact Assessment (EIA) for certain development projects.

The Act obliges establishment of forest management plan for all types of forest to ensure sustainable management in the long-term. The Act provides for designation of Community Forest Reserves, Mangrove Forest Reserves and encourages community based management.

3.6.7 The Land Acquisition Act [Cap 118 R. E.2019]

The Land Acquisition Act, of 1967 (as amended in 1968) stipulates matters pertaining to compensation under part two division b, Section 11 and Section 12. Section 13 address disputes that might arise due to land acquisition.

3.6.8 The Electricity Act, Cap.131;

This Act main objective is to provide for the facilitation and regulation of generation, transmission, transformation, distribution, supply and use of electric energy, to provide for cross-border trade in electricity and the planning and regulation of rural electrification and to provide for related matters.

3.6.9 The Local Government (District Authorities) Act, Cap.287

The Local Government Acts of 2002 form an important legal basis for rural councils and rural authorities, which were reintroduced in the early 1980 and consist of Act No. 7 relating to District Authorities and Act No.8 relating to Urban Authorities.

These Acts establish and regulate District councils, township authorities and Village authorities. Important provisions are the subdivision of Districts into divisions and Wards and the establishment of Ward development committees along with procedures for implementation of schemes and programs at Ward level.

Section 118 deals with protection and management of the environment in addition to the First Schedule (Section 118 (4)) of Act No. 7. The District Councils are hereby required to take necessary measures to control soil erosion and desertification; to regulate the use of poisonous and noxious plants, drugs or poisons, regulate and control the number of livestock; maintain forests, manage wildlife, ensure public health, and provide effective solid and liquid refuse management.

If construction commences it will be the Developers responsibility to obtain permission from the District Councils for the disposal of solid and liquid waste. In addition, District council will also oversee and regulate the use and prevent the misuse or waste of, or any interference with, water.

3.6.10 Occupational Health and Safety Act, Cap.297

The Occupational Health and Safety Act of 2003 deals with the regulation of health, safety, and welfare of workers. Some of the provisions of this Act are relevant to the project. The Act covers economic activities in constructions, agriculture, commerce, and offices. In case of occupational accidents/illness, it is the responsibility of the labour department in the ministry to ensure the victim get compensated by the insurer of the employer. Moreover, the victim may also claim for work-injury benefit should he/she be a member of a social security scheme.

The OSHA is of particular importance for contractors that construct the proposed facility, and they should be aware of their obligations regarding the workforce health and safety measures stipulated in this Act.

There are specific Safety procedures and guidelines to be followed by both workers and their respective employers to ensure a Safe and conducive working environment.

3.6.11 The Public Health Act, Cap.242;

The Act provides for the promotion, conservation, and maintenance of public health with a view of ensuring comprehensive functional and sustainable public health services. The Act also prohibits discharges into a sewer or into drain that may cause malfunctioning of the drainage systems.

3.6.12 The Industrial and Consumer Chemicals (Management and Control) Act, Cap.182;

Comprehensive legislation on management and control of industrial and consumer chemicals. Divided into 6 parts. Part 1 contains preliminary provisions. Part 2 deals with administration. Part 3 regulates control of production, importation, exportation, transportation, storage and dealing in chemicals. Part 4 provides for management of industrial and consumer chemicals. Part 5 contains financial, and Part 6 miscellaneous provisions.

Provisions for management of industrial and consumer chemicals which are of relevance to APT include

- Labelling and safe handling
- Chemical and chemical waste
- Disposal of chemical wastes
- Prevention and management of accidents
- Decommissioning of plants

3.6.13 The Employment and Labour Relation Act, (Cap.366 R.E 2019)

The act mandates that employers:

- Promote equal opportunity in employment and strive to eliminate discrimination in any employment policy or practice"
- Prohibits direct or indirect discrimination by employers, trade unions and employers' associations on several grounds, including gender, pregnancy, marital status or family responsibility, disability, HIV and AIDS, and age
- Requires employers to take "positive steps" to guarantee women and men the right to a safe and healthy environment.

The project will employ skilled and unskilled labour

3.6.14 The Fire and Rescue Force Act, Cap 427

An Act to provide for the better organization, administration, discipline and operation of Fire and Rescue Force, the project will be subjected to fire and rescue act compliance

3.6.15 Water Supply and Sanitation Act, Cap.272

It has provisions to ensure water quality by protecting water works and storage facilities against pollution. It gives mandate to LGA to enact by-laws of water supply and sanitation.

3.6.16 Disaster Management Act No. 7 of 2015

The Act establishes the Disaster Management Department (DMD), disaster risk management, and coordination mechanism for disaster prevention, mitigation, preparedness, response and recovery.

The primary function of DMD is to coordinate of disaster management activities in the country. It seeks to ensure that appropriate response systems, procedures and resources are in place to assist those afflicted in times of disaster.

DMD is also in charge to coordinate disaster preparedness efforts and activities in order to minimize the adverse effects of hazards through effective precautionary measures and to ensure timely appropriate and efficient organization and delivery of emergency.

3.6.17 The HIV and AIDS (Prevention and Control) Act, Cap 431

The HIV/AIDS prevention and control Act (Act No. 28/08) Cap 431, calls for prevention, treatment, care, support and control of HIV and AIDS for promotion of public health in general. It also calls for appropriate treatment, care and support by using available resources to people living with or at risk of HIV and AIDS and to provide for related matters.

3.6.18 The Land Use Planning Act, Cap. 116;

The Act provides for the procedures for preparation, administration and enforcement of land use plans; to repeal the National Land Use Planning Commission and to provide for related matters. Clearly the Act has distinctive authorities of land use planning in Tanzania laid down with their functions and powers. The power vested to authorities which give them teeth to bite is to enforce approved land use plans including taking defaulters to court of law.

Appropriate local Community Societies will plan the project surrounding areas as per the requirement of the Act and regulations.

3.6.19 The Contractors Registration Act, Cap.235;

This Act requires Contractors at any site to abide by labour laws, and occupational health and safety regulations in construction industries. Furthermore, in the execution of the work, the Contractors are obliged to supply materials necessary for the work, and are authorized to exercise control over the type, quality and material used during Construction

3.6.20 The Law of the child act, cap 13 R.E 2019

This act aims to protect and promote the rights and welfare of children in Tanzania. By establishing a girls' secondary school, the project contributes directly to the realization of the Act's objectives.

The National Child Act recognizes the importance of education in the development of children. The construction of a girls' secondary school aligns with this principle by providing a safe and conducive learning environment specifically tailored to the needs of girls. It ensures that girls in the Mbeya Regional have access to quality education, empowering them to achieve their full potential.

Furthermore, the act emphasizes the elimination of gender disparities and discrimination against girls. The project addresses this objective by focusing on girls' education, bridging the gender gap and promoting gender equality. By providing equal opportunities for education, the construction of the school contributes to breaking down barriers and creating a more inclusive society.

Additionally, the National Child Act emphasizes the protection of children's rights, including their right to safety, health, and well-being. The construction of a dedicated girls' secondary school ensures that girls have a secure and protected learning environment. It takes into account the specific needs and vulnerabilities of girls, creating a space where they can thrive academically, socially, and emotionally.

The project involving the construction of a girls' secondary school in Mbeya Regional aligns with the National Child Act, Cap. 13 R.E of 2019. It promotes the rights and welfare of children by providing quality education, addressing gender disparities, and ensuring the safety and well-being of girls. By implementing this project, Tanzania takes a significant step towards realizing the objectives set forth in the National Child Act.

3.6.21 Engineers Registration Act, Cap 63;

The Act oversees the process of registration of engineers in Tanzania. The engineering registration Act is overseen by the Engineers Registration Board. The Board has been given the responsibility of monitoring and regulating engineering activities and the conduct of the engineers and engineering consulting firms in Tanzania through registration of engineers and engineering consulting firms. Under the law, it is illegal for an engineer or an engineering firm to practice the profession if not registered with the Board.

The Board has also been given legal powers and has the obligation to withdraw the right to practice from registered engineers if found guilty of professional misconduct or professional incompetence. Registration with the Board is, thus, a license to practice engineering in Tanzania.

Engineering is among the noble professions that have the privilege and responsibility of self-regulation. The Board has worked out a Code of Ethics which aims at regulating the engineering activities and conduct of engineers and engineering consulting firms. The Code thus forms the basis and framework for responsible professional practice as it prescribes standards of conduct to be observed by engineers and engineering consulting firms. The Code is based on broad tenets of truth, honesty and trustworthiness, respect for human life and welfare, fairness, openness, competence and accountability; engineering excellence, protection of the environment and sustainable development.

The Proponent and its Contractors and subcontractors will make use of engineers during construction and operation phases so as to meet the requirement of the law.

3.6.22 The Architects and Quantity Surveyors Act, Cap.267;

Similarly require architects and quantity surveyors (QS) to be registered with the Board before practicing. Institutions shall make sure that this law is obeyed.

3.6.23 Workers' Compensation Act, Cap.263

This is an Act which emphasis compensation to employees for disablement of death caused by or resulting from injuries or diseases sustained or contracted in the course of employment; to establish the Fund for administration and regulation of workers compensation and to provide for related matter.

The PO-RALG must ensure that this Act come into force during the operation of the project since promotes job security by helping employees recover and return to work, while emphasizing the importance of workplace safety and prevention measures.

3.6.24 The Persons with Disabilities Act, Cap 183

This legislation aims to promote inclusivity and equal opportunities for individuals with disabilities in Tanzania, in implementing this project it becomes crucial to consider the accessibility and accommodation needs of students and staff with disabilities.

The Act ensures that the school's design and infrastructure comply with accessibility standards, providing features like ramps, handrails, wheelchair-accessible entrances, and appropriate restroom facilities. Moreover, the Act mandates the provision of special educational services, assistive devices, and reasonable accommodations for students with disabilities, allowing them to fully participate in the educational experience.

The project should comply with the principles of the Persons with Disabilities Act into the construction of the girls' secondary school in order to promote inclusivity, enables equal access to education, and fosters a supportive environment for all students, including those with disabilities.

3.6.25 The Standards Act, Cap 130

This Act aims at the promotion of specifications of commodities and services, re-establish the Tanzania Bureau of Standards (TBS), the designated national standards authority established under the TBS Act 1975 and repealed by this act. TBS is responsible for developing all kinds of national standards, including environmental standards.

The Standards Act has established National Environmental Standards Compendium (NESC) which is a collection of various standards prepared at different times and recognized by EMA 2004. NESC is divided into three parts. Part 1 comprises of standards that require compulsory compliance. Compulsory standards are categorized as generic or specific. Specific standards cover those industries with peculiar effects to the environment while other industries without a specific standard for Tolerance Limits of Emissions discharge including water quality, discharge of effluent into water, air quality, control of noise and vibration pollution, sub-sonic vibrations, soil quality, control of noxious smells, light pollution, and electromagnetic waves and microwaves

Part 2 of NESC contains those standards that may be implemented on voluntary basis. These include guideline standards, codes of practice, and other such standards that may not necessarily be directly enforced, but whose results are implied in some legal requirements. One of such standards include the Environmental Management Systems (EMS) standards, like TZS 701/ISO 14001 whose compliance specifications include the relevant legal requirements. Part 2 thus has important requirements for companies and developers who wish to demonstrate their commitment to sustainable development by way of self-regulation mechanism. On the other hand, some companies or developers may be compelled to follow these standards because of requirements from mother companies and for other various reasons like certification requirements by environment friendly banks or tenders. Part 2 also includes standards used in evaluating environmental performance.

Part 3 has the requisite test methods that should be followed when testing for compliance. The test methods included are referred to in at least one of the specification standards appearing under Part 1. Although it is not stated in the Act, in the absence of national standards, project proponents are encouraged to use international standards such as those of the World Health Organisation (WHO), World Bank, British Standards (BS),

European Union (EU), American Public Health Association (APHA), United States Environmental Protection Agency (US EPA) etc. Standards set by the relevant sectors, which also make use of the international standards, are also applicable. Such standards include the environmental standards set under the Mining (Environmental Management and Control) Regulations, 1999. Relevant national environmental standards include:

- TZS 860: 2005 Municipal and Industrial Wastewaters – General Tolerance Limits for Municipal and Industrial Wastewaters: This standard provides permissible limits of important environmental parameters such as BOD, COD, pH, colour, temperature range, total suspended solids and turbidity. It also gives permissible limits of a range of inorganic and organic components. All effluents discharged from the project will need to comply with these specifications.
- TZS 845:2005 Air Quality – Specification: This standard gives permissible emission limits of sulphur oxides, carbon monoxide, hydrocarbons (as total organic carbon), dust, nitrogen oxides and lead. The emissions from earth moving equipment, power generation plant and other will include SO₂, CO, dust and NO_x; as such the project will have to observe these limits.
- TZS 983:2007 Air Quality - Vehicular Exhaust Emissions Limits: This standard is mainly derived from EU Directives 96/69/EC, 91/542/EEC and 97/24/EC. This Tanzania Standard gives permissible limits of some common substances found in exhaust emissions of motor vehicles, namely carbon monoxides, suspended particulate matter (PM), oxides of nitrogen, and hydrocarbons. The standard covers all types of vehicles namely, passenger cars, light commercial vehicles, heavy-duty vehicles, and two and four strokes motorcycles and scooters. In order to carry out quarrying activities and processing operations, the project will operate a fleet of heavy duty and light vehicles in addition to hiring other vehicular equipment. As such, the project will need to observe the provisions of these standards.
- TZS 932:2006: Acoustics - General Tolerance Limits for Environmental Noise: This standard focuses on urban environmental noise, and does not cover occupation environment. In the absence of other standards, it may be used to give indication of permissible noise levels in factory/workshop environment.
- TZS 789:2003 - Drinking (potable) water – Specification: This standard prescribes the quality requirements for drinking water other than packaged drinking water. It does not cover the requirements for natural mineral water. It prescribes the quality requirements for drinking water distributed in the food industry, domestic and catering purposes. It applies to bacteriological, biological, virological, physical, chemical and radiological quality criteria. It is intended also to community piped water supplies i.e. those water systems serving cities, municipalities and townships, community standpipes and wells and drinking water distributed by tankers.

3.6.26 The Occupier Liability Act, Cap 64

The Occupier Liability Act establishes the legal framework for determining the duty of care that an occupier owes to individuals who enter their premises. In the context of the school construction project, the act would be relevant in establishing the liability and responsibility of the parties involved in ensuring the safety of the premises.

Under the Occupier Liability Act, the organization or individuals responsible for the construction project would be considered occupiers of the premises during the construction phase. As occupiers, they have a legal duty to ensure that the construction site is reasonably safe for anyone who enters or may be affected by it. This includes the duty to take appropriate measures to prevent potential hazards, provide warnings where necessary, and maintain proper safety standards.

SEQUIP aligns with the Occupier Liability Act, Cap 64, as it emphasizes the legal responsibility of the occupiers to ensure the safety of the premises during construction and operation. Adhering to the provisions of the act will help mitigate risks and safeguard the well-being of all individuals associated with the school

Once the project is completed and operational, the Act will continue to be applicable. The school administration will become the occupiers of the premises, and they will have a duty of care towards the students, staff, and visitors. This duty involves maintaining the premises in a safe condition, addressing any potential hazards promptly, and implementing necessary safety protocols.

3.7 National Regulations

3.7.1 The Environmental Impact Assessment and Audit Regulations 2005 as amended 2018

The EMA outlines principles for management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance, and enforcement. It assigns environmental management responsibilities to sector ministries and their departments and agencies, including Regional and local authorities.

A National Environmental Advisory Committee advises all sectoral ministries, while the Minister of Environment has the power to approve or disapprove projects on environmental grounds. The key administrative responsibilities for environmental management in Tanzania rest with the Minister of Environment under the Vice President's Office.

However, environmental performance—that is, setting environmental standards and quality levels—also depends directly on the devolved responsibilities to key sector ministries in charge such as mining, transportation, agriculture, water, energy, natural resources, and tourism.

The National Environmental Management Council (NEMC), under the Vice President's Office, is the command-and-control agency in charge of environmental compliance, while the President's Office Regional Administration and Local Government (PO-RALG) is responsible for coordinating the implementation of all governing policies, acts, and regulations regarding environmental conservation at the local government authorities (LGAs) and monitoring the performance of LGAs. Sector ministries are responsible for ensuring that all activities are carried out in an environmentally sustainable manner.

3.7.2 Other Environmental Regulations

Other environmental regulations, which are enshrining environmental standards and crucial for implementation of environmental management plans, include:

3.7.2.1 Environmental Management (Air Quality Standards) Regulation, 2007:

Gives permissible emission limits of sulphur oxides, carbon monoxide, hydrocarbons (as total organic carbon), dust, nitrogen oxides and lead. The standard is used as criteria in the evaluation of impact significance.

3.7.2.2 Environmental Management (Soil Quality Standards) Regulation, 2007;

The objectives of the Soil Quality Standards Regulations are to set baseline parameters on soil limits for soil contaminations; enforce minimum soil quality standards prescribed by the National Environmental Standards Committee; prescribe measures designed to maintain, restore and enhance the sustainable productivity of the soil; prescribe minimum soil quality standards to maintain, restore and enhance the inherent productivity of the soil in the long term; enforce minimum soil standards prescribed by the National Environmental Standards Committee for such purposes as agricultural practices.

3.7.2.3 Environmental Management (Water Quality Standards) Regulation, 2007;

The objectives of the Water Quality Standards Regulations are to protect human health and conserve the environment; enforce minimum water quality standards prescribed by the National Environmental Standards Committee; enable the National Environmental Standards Committee to determine water usage for purposes of establishing environmental quality standards and values for each usage; and ensure all discharges of pollutants take account of the ability of the receiving waters to accommodate contaminants without detriment to the uses specified for the waters concerned.

3.7.2.4 Environmental Management (Control of Ozone Depleting Substances) Regulation, 2007;

The objectives of the Regulations for Control of Ozone Depleting Substances are to eliminate the production and consumption of ozone depleting substances in accordance with the phase out schedule of the Montreal

Protocol; to regulate the production, import, export, trade, disposal and use of ozone depleting substances and its products; to control and monitor the amount of ozone depleting substances entering or leaving the United Republic of Tanzania; to provide a system of data collection that will facilitate compliance with relevant reporting requirements under the protocol;

- To promote measures, strategies, programmes, incentives, equipment and technologies in favour of the use of ozone friendly substances,
- Products and equipment in line with national obligation specified by the Montreal Protocol; and to facilitate the link between the National Ozone Unit and the Ozone Secretariat of the Protocol.

3.7.2.5 Environmental Management (Biosafety) (Amendment) Regulations, 2015 (G.N. No. 41 of 2015);

These Regulations, made under sections 69 and 230(2)(o) of the Environmental Management, concern the import, export, deliberate release, confined use, contained use, transit and placing on the market of Genetically Modified Organisms (GMOs) and their products.

The Regulations implement in Tanzania provisions of the Cartagena Protocol of Biosafety. They designate the Ministry responsible for environment as the National Biosafety Focal Point for purposes of the Protocol and define its functions.

3.7.2.6 The Environmental Management (Hazardous Waste Control and Management) Regulation, 2021;

These regulations are specifically designed to control and manage hazardous waste to protect human health and the environment, The regulations require adherence to proper handling, storage, transportation, treatment, and disposal methods for hazardous materials such as chemicals, paints, solvents, and other potentially harmful substances.

The regulations promotes the responsible management of hazardous waste, including the use of eco-friendly alternatives, proper labeling and storage, and appropriate training for staff involved in handling these materials.

Contractor should comply with the regulations to ensure the implementation of appropriate measures to prevent pollution, minimize risks to human health, and safeguard the local ecosystem which will contributes to a safe and sustainable educational environment.

3.7.2.7 Environmental Management (Solid Waste Management) Regulation, 2009 as amended in 2016.

These regulations aim to establish guidelines for the effective management and disposal of solid waste to protect public health and the environment.

The regulations emphasize the adoption of sustainable waste management practices, including waste reduction, recycling, and proper disposal methods. The project should incorporate waste management infrastructure such as waste bins, recycling facilities, and composting areas within the school premises.

It also necessitates raising awareness among students, staff, and the community about the importance of responsible waste disposal and the benefits of recycling.

The contractor and PIT must comply with the regulations so as to promote a clean and healthy environment, reduces environmental pollution, and encourages a culture of waste reduction and recycling.

3.7.2.8 Environmental Management (Quality Standards for Controlling Noise and Vibrations Pollution) Regulation, 2007:

Focuses on urban environmental noise, and does not cover occupation environment. In the absence of other standards it may be used to give indication of permissible noise levels in factory/workshop environment.

3.7.2.9 The Environmental Management (Control and Management of Electrical and Electronic Equipment Waste) Regulations, 2021

These regulations are put in place to address the proper handling, disposal, and management of electrical and electronic waste (e-waste) to protect the environment and public health.

The regulations require adherence to environmentally responsible practices, including the proper disposal and recycling of electrical and electronic equipment. This ensures that any obsolete or damaged equipment, such as computers, printers, and other electronic devices, is managed in an environmentally friendly manner, minimizing the negative impact on the ecosystem.

Contractor should comply with regulations to ensure that the project promotes sustainable practices, reduces e-waste pollution, and contributes to the overall environmental well-being.

3.7.3 The Fire and Rescue Force (Fire Precautions in Buildings) Regulations, 2015

These regulations are designed to ensure the safety of occupants in buildings by establishing fire safety measures and standards. In the context of the school project, adherence to these regulations becomes imperative to create a secure learning environment.

The construction process must incorporate fire safety features such as fire-resistant materials, adequate emergency exits, fire alarm systems, and fire extinguishers in strategic locations throughout the school building, also the regulations emphasize the need for proper fire escape routes, clear signage, and training on evacuation procedures for students and staff.

Contractor should comply with the requirements and be equipped with the necessary fire safety measures, reducing the risk of fire-related incidents and safeguarding the well-being of all occupants.

3.7.4 The Fire and Rescue Force (Safety Inspection and Certificates) Regulations, 2008 As Amended In 2017

These regulations establish the legal framework for ensuring fire safety standards in buildings, including educational institutions. According to the regulations, a safety inspection must be conducted during the construction phase to assess compliance with fire safety standards.

This inspection verifies that the building materials, electrical systems, fire protection measures, and emergency exits meet the required safety codes. The project management team and contractors must ensure that all construction activities adhere to these regulations to minimize the risk of fire incidents.

Upon completion of the construction, the school will need to obtain a fire safety certificate, which is issued after a final inspection by the Fire and Rescue Force. This certificate serves as confirmation that the school's premises comply with the necessary fire safety standards and have adequate fire prevention and protection measures in place. It signifies that the building is safe for occupancy and that appropriate fire safety protocols have been implemented.

The regulations also require periodic inspections and renewal of the fire safety certificate to ensure ongoing compliance with fire safety standards. The school administration will be responsible for regularly reviewing and updating their fire safety measures to maintain a safe environment for students, staff, and visitors.

Contractor and PIT should comply with these regulations ensures that the construction and operation of the school prioritize fire safety and provide a secure environment for all occupants.

3.7.5 The Land (Compensation Claims) Regulations 2001

The Land Regulations 2001 were promulgated in terms of the Land Act, Act No. 4 of 1999 sections 12 & 179. The form of compensation is stipulated in Section 10 (1) of the Land Regulations 2001. Furthermore, the Regulations list the entities that are eligible for compensation and/or resettlement. If the person does not agree

with the amount or method of payment or is dissatisfied with the time taken to pay compensation, he /she may apply to the High Court.

The High Court shall determine the amount and method of payment and determine any additional costs for inconveniences incurred

3.8 The World Bank Environmental and Social Framework (ESF)

The World Bank's Environmental and Social Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social standards that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity.

The E&S Framework comprises of: (1) Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability; (2) The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank; and (3) The Environmental and Social Standards, together with their Annexes, which set out the mandatory requirements that apply to the Borrower and projects.

The World Bank Environmental and Social Policy for Investment Project Financing sets out the requirements that the Bank must follow regarding projects it supports through Investment Project Financing. The Environmental and Social Standards set out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts and mitigation measures associated with projects supported by the Bank through Investment Project Financing.

The E&S standards are expected to: (a) support Borrowers in achieving good international practice relating to environmental and social sustainability, (b) assist Borrowers in fulfilling their national and international environmental and social obligations; (c) enhance non-discrimination, transparency, participation, accountability and governance; and (d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

The ten ESSs as per the WB ESF are: ESS 1: Assessment and Management of Environmental and Social Risks and Impacts; ESS 2: Labor and Working Conditions; ESS 3: Resource Efficiency and Pollution Prevention and Management; ESS 4: Community Health and Safety; ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8: Cultural Heritage; ESS 9: Financial Intermediaries; and ESS 10: Stakeholder Engagement and Information Disclosure. Given the nature of activities of this project, with the exception of ESS 9: Financial Intermediaries almost all the ESSs will be relevant.

3.8.1 Project Classification According to the World Bank ESF

According to the WB ESF, The Bank will classify all projects (including projects involving Financial Intermediaries (FIs)) into one of four classifications: **High Risk, Substantial Risk, Moderate Risk or Low Risk.**

In determining the appropriate risk classification, the Bank takes into account relevant issues, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Borrower (including any other entity responsible for the implementation of the project) to manage the environmental and social risks and impacts in a manner consistent with the ESSs.

Other areas of risk may also be relevant to the delivery of environmental and social mitigation measures and outcomes, depending on the specific project and the context in which it is being developed. These could include legal and institutional considerations; the nature of the mitigation and technology being proposed; governance structures and legislation; and considerations relating to stability, conflict or security.

The Bank will disclose the project's classification and the basis for that classification on the Bank's website and in project documents. The Bank will review the risk classification assigned to the project on a regular basis, including during implementation, and will change the classification where necessary, to ensure that it continues to be appropriate. Any change to the classification will be disclosed on the Bank's website.

3.8.1.1 The main objectives of the ESF are:

- i. To inform decision makers of the nature of environmental and social risk.
- ii. To ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts.
- iii. To increase transparency and provide mechanisms for participation of stakeholders in decision making process for the project.

Table 3-1: The World Bank Environmental and Social Safeguards

S/N	Instrument for project implementation	The Environmental and Social Standards (ESS)	Purpose/Objectives	Reason for its Application in the Project
1.	Environmental and Social Management Framework (ESMF)	ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Identification of adverse impacts and respective mitigation measures	Sets out the Regional's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing (IPF), in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).
Enable screen and follow-up of remedies achieved through application of prevention, mitigation, and compensation measures				
Enable allocation of responsibilities and resources to implement required mitigation measures				
2		ESS2: Labour and Working Conditions	Ensure the healthy and safe working environment during projects implementation. Ensure the provision of fair working conditions.	Recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Developer can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.
3		ESS3: Resource Efficiency and Pollution Prevention and Management	To promote the sustainable use of resources including energy, water and raw materials. To avoid or minimize generation of hazardous and non-hazardous wastes.	Recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, Regional, and global levels. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle.
4		ESS4: Community Health and Safety	To manage potential risks to the community during construction and operation of school infrastructures.	Addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of the developer to avoid or minimize such risks and impacts, with particular attention to people who, because of their circumstances, may be vulnerable

S/N	Instrument for project implementation	The Environmental and Social Standards (ESS)	Purpose/Objectives	Reason for its Application in the Project
	Resettlement Policy Framework (RPF)	ESS5: Land Acquisition, Restriction on Land Use and Involuntary Resettlement	To avoid or minimize involuntary resettlement and to avoid forced eviction To mitigate unavoidable adverse impacts from land acquisition and restrictions on land use.	The Environmental and Social Standard on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5), requires Borrowers to: • Avoid or minimize involuntary resettlement by exploring project design alternatives • Avoid forced eviction • Mitigate unavoidable adverse impacts from land acquisition or restrictions on land use through timely compensation for loss of assets at replacement cost and assisting displaced persons in their efforts to improve, or at least restore, livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher
5		ESS6: Biodiversity Conservation and Sustainable Management of Living Resources	The SEQUIP project will avoid adverse impacts on biodiversity, habitats and ecosystem services. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 and with the requirements of the ESS6.	Recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, who's access to, or use of, biodiversity or living natural resources may be affected by implementation of the project.
6		ESS 7: Sub-Saharan Historically Underserved Traditional Local Communities	To enable VGs to participate in project activities while taking care of their sociocultural interests and hindrances	Ensures that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. ESS7 is also meant to avoid adverse impacts of projects on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.

S/N	Instrument for project implementation	The Environmental and Social Standards (ESS)	Purpose/Objectives	Reason for its Application in the Project
7		ESS8: Cultural Heritage	To enhance conservation of cultural heritage in both forms; tangible and intangible cultural heritage. To conserve ecological and socially sensitive places from possible impacts of project implementation.	Recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle.
8 9		ESS9: Financial Intermediaries	To set out how the FI will assess and manage environmental and social risks and impacts associated with the subprojects it finances To promote good environmental and social management practices in the subprojects the FI finances.	Recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction. FIs are required to monitor and manage the environmental and social risks and impacts of their portfolio and FI subprojects, and monitor portfolio risk, as appropriate to the nature of intermediated financing. The way in which the FI will manage its portfolio will take various forms, depending on a number of considerations, including the capacity of the FI and the nature and scope of the funding to be provided by the FI.
10.	Stakeholder Engagement Plan	ESS10: Stakeholder Engagement and Information Disclosure	To develop a systematic approach to stakeholder engagement to develop good relationships and gather their views on issues that could affect them. To provide stakeholders with a mechanisms through which to raise grievances.	Recognizes the importance of open and transparent engagement between developer and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

a. Other World Bank Instruments Applicable for SEQUIP

Environmental and Social Framework - Guidance Notes for Borrowers¹¹; The World Bank has developed several Guidance Notes to ensure the governments (borrowers) comply with the World Bank Environmental and Social Standards. This guidance are public documents that be accessed in the World Bank website¹². Among the applicable guidance notes for SEQUIP are:

b. International Agreements, Conventions and Treaties

Tanzania has ratified or acceded many international treaties and conventions. Among those the following are relevant to the project.

3.8.2 The 1991 Bamako Convention

On the ban of the Import in Africa and Control of Trans boundary Movement and Management of Hazardous wastes within Africa was ratified in 1993.

3.8.3 3.4.8 The 1989 Basel Convention

On Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal. The project shall adhere to both Bamako and Basel conventions to ensure that the ships do not bring into the country hazardous wastes by strictly abiding to the cargo declaration formalities.

3.8.4 1996 Convention on Biological Diversity,

Developer must cooperate with other related contracting parties for the conservation and sustainable use of biological diversity. Article 14 of the Convention concerns impact assessments and minimizing adverse impacts.

3.8.5 ILO Minimum Age Convention (C138), 1973.

The Convention is concerned with minimum age for admission to employment. The minimum age stated in Article 2 (3) of the Convention is not less than 15 years or 18 years' dependent on the nature of the work. The Convention prohibits child labor with a view to achieving the total abolition of child labour worldwide. Members of the Convention are committed to pursuing national policies that have been designed to ensure effective abolition of child labour and to increase progressively the minimum age for admission to employment or work to a level consistent with the fullest physical and mental development of young persons.

During construction and implementation of SEQUIP project the Contractor will abide by the provisions of this Convention.

3.8.6 Labour and Working Conditions

- To establish, maintain and improve the worker-management relationship.
- To promote the fair treatment, nondiscrimination and equal opportunity of workers, and compliance with national labour and employment laws.
- To protect the workforce by addressing child labour and forced labour.
- To promote safe and healthy working conditions, and to protect and promote the health of workers.

3.8.7 Resource Efficiency and Pollution Prevention

- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities
- To promote more sustainable use of resources, including energy and water
- To reduce project-related GHG emissions

3.8.8 Community, Health, Safety and Security

- To anticipate and avoid adverse impacts on the health and safety of the affected community during the project life from both routine and non-routine circumstances
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the affected communities

3.8.9 Land Acquisition and Involuntary Resettlement

- To avoid or, when avoidance is not possible, minimize displacement by exploring alternative project designs
- To avoid forced eviction
- To anticipate and avoid or, where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected
- To improve, or restore, the livelihoods and standards of living of displaced persons
- To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites

3.8.10 Biodiversity Conservation and Sustainable Management of Living Natural Resources

- To protect and conserve biodiversity
- To maintain the benefits from ecosystem services
- To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities

3.8.11 Indigenous Peoples

- Indigenous people must be identified and treated in the manner that their well-being is not affected by the project.

3.8.12 Cultural Heritage

- To protect cultural heritage from the adverse impacts of project activities and support its preservation
- To promote the equitable sharing of benefits from the use of cultural heritage

c. International Convention

3.8.13 Convention against Discrimination in Education (1960) ratified by United Republic of Tanzania in 1978-12-08

Article 2 (a) of convention stated the establishment or maintenance of separate educational systems or institutions for pupils of the two sexes, if these systems or institutions offer equivalent access to education, provide a teaching staff with qualifications of the same standard as well as school premises and equipment of the same quality, and afford the opportunity to take the same or equivalent courses of study.

3.8.14 International Covenant on Economic, Social and Cultural Rights, 1966

Article 13 (2)(a) of this convention emphasizes that "Primary education shall be compulsory and available free to all; and (2)(b) Secondary education in its different forms, including technical and vocational secondary education, shall be made generally available and accessible to all by every appropriate means, and in particular by the progressive introduction of free education".

3.8.15 Universal Declaration of Human Rights, 1948

Article 26 of this declaration states that “Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all based on merit”.

3.8.16 Convention on the Rights of the Child, 1989

The Convention recognize the right of the child to education and with a view to achieving this right progressively and based on equal opportunity. Where in Article 28(1) (a) of the convention stated that “Make primary education compulsory and available free to all”. Also, this convention emphasizes in international cooperation in education sector stated in Article 28 (3) promote and encourage international cooperation in matters relating to education, in particular with a view to contributing to the elimination of ignorance and illiteracy throughout the world and facilitating access to scientific and technical knowledge and modern teaching methods.

3.8.17 Convention on the Rights of Persons with Disabilities, 2006

Article 28 (2) (a) of the convention emphasizes the right of persons with disabilities to education which stated, “Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability”.

d. Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) are a set of global goals for fair and sustainable health at every level from planetary biosphere to local community. The aim is to end poverty, protect the planet and ensure that all people enjoy peace and prosperity, now and in the future. The table 3-1 below shows the Sustainable development goals which are relevant to this project

Table 3-2: Sustainable Development Goals (MDGs)

Goal	Target
Goal 1: End poverty in all its form everywhere	Target 1.1 By 2030, extremely eradicate poverty to all people everywhere, currently measured as people living on less than \$ 1.25 a day Target 1.4 By 2030, ensure that all women and men, in a particular the poor and the vulnerable have equal rights to economic resources, as well as access to basic services, ownership and control over land and other form of property, inheritance natural resources, appropriate new technology and financial services include microfinance
Goal 3: Ensure health lives and promote for all at all stage	Target 3.5. Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunity for all	Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and Goal-4 effective learning outcomes Target 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

Goal	Target
Goal 5 : Achieve gender equality and empower all women and girls	Target 5.1 End all forms of discrimination against all women and girls everywhere Target 5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
Goal 6: Ensure access to water and sanitation to all	Target 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all Target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all.	Target 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
Goal 13: Take urgent to combat climate change and its impact	Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Goal 14: Conserve and sustainably use of oceans, seas and marine resources	Target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
Goal 15: Sustainable manage forest, combat, desertification, halt reserve land degradation, halt biodiversity loss	Target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally Target 15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

e. Institutional Framework

Authorities, institutions and sectors directly or indirectly related to the project development have been identified geographically by political boundaries as well as through regulations, institutional mandates and structures. These entities are adequately consulted in the ESIA process as prescribed through the institutional framework for environmental management. The relevant institution for handling EIA requirements is the NEMC with input from the District Environment Management Committees; Ward Committees and Street Committees.

According to the EMA of 2004 the institutional set-up for environmental management from a national level to Village level includes:

- Minister Responsible for Environment;
- Director of Environment (DOE);
- National Environmental Management Council (NEMC);
- Sector Ministries;
- Regional Secretariats;
- Local Government Authorities, District, and Town Councils;
- Township, Village, Ward; Neighborhood (Kitongoji); and

- Street (Mtaa).

The DOE and NEMC are the main regulatory bodies for environmental management in Tanzania whilst the other sector ministries and agencies, play an important role in implementing and enforcing environmental decree. The environmental management functions of each institution are outlined in the Environmental Management Act.

3.8.18 Minister Responsible for Environment

The Minister is overall responsible for matters relating to environment and in that respect be responsible for articulation of policy guidelines necessary for the promotion, protection, and sustainable management of environment in Tanzania.

The Minister may issue general guidelines to the Sector Ministries, Government Departments, the Council, National Environment Advisory Committee, City, Municipal or District Environmental Management Committee, agency or any other public or private institution necessary for the purposes of implementation of or giving effect to the provisions of EMA.

The Minister may designate and shall, where appropriate, direct any of the before mentioned institutions and within specified time, to perform any function or do any activity or desist from performing any function or doing any activity because of which the environment or part of it is or may be seriously endangered or detrimentally affected.

3.8.19 Director of Environment (DOE)

The DOE heads the Office of the Division (Directorate) of Environment under the Office of the Vice President and is responsible for coordination, monitoring and assessment of various environmental activities. The DOE is responsible to coordinate various environment management activities being undertaken by other agencies and promote the integration of environment considerations into development policies, plans, programmes, strategies, projects and undertake strategic environmental assessment with a view to ensuring the proper management and rational utilization of environmental resources on a sustainable basis for the improvement of the quality of human life in Tanzania.

3.8.20 National Environment Management Council (NEMC)

The object and purpose for which the Council is established is to undertake enforcement, compliance, review and monitoring of environmental impact assessment and in that regard, shall facilitate public participation in environmental decision making, exercise general supervision and coordination over all matters relating to the environment assigned to the Council, under the EMA or any other written law.

The Director General of NEMC is appointed by the President. The Council and the Board of Directors consist of:

- A Chairperson appointed by the President;
- The Director of Environment;
- Seven members appointed by the Minister; and
- The Secretary to the Council (Director General).

3.8.21 Sector Ministries

An environmental sector sits within each Ministry. The duties of the sector include:

- Responsibility for ensuring compliance by the sector Ministry with the requirements of this Act;
- Responsibility for ensuring all environmental matters contained in other written law falling under sector ministry are implemented and report of their implementation is submitted to the Director of Environment; and

- Liaising with the Director of Environment and the Council on matters involving environment and all matters with respect to which cooperation or shared responsibility is desirable or required under this Act.

3.8.22 Regional Secretariats

The Regional Secretariat is responsible for co-ordination of all advice on environmental management in their respective Regionals and liaison with the Director of Environment and the Director- General on the implementation and enforcement of this Act. The Regional Secretariats are headed by a Regional Environment Management Expert. The expert is responsible for advising the local authorities on matters related to the implementation and enforcement of the EMA. Furthermore, the expert links the Regional with the Director of Environment and Director General of NEMC.

3.8.23 Local Government Authorities

A local government Environmental Management Officers are designated or appointed at each City, Municipal, District and Town Council. The responsibilities of the Environmental Management Officers among others, include:

- Ensuring enforcement of EMA.
- Advising the Environment Management Committee on all matters relating to the environment.
- Promoting environmental awareness relating to protection of the environment and the conservation of natural resources.
- Gathering and managing information on the environment and the utilization of natural resources.
- Preparing periodic reports on the state of the environment.
- The preparation, review and approval of environmental impact assessments for local investment by-laws on environmental management and on sector specific activities related to environment, and reporting to the Director of Environment and the Director General on the implementation of the EMA.
- The Environment Management Committee is responsible for functions set out under the Local Government Act. In addition, they perform functions as prescribed by the EMA and they may be assigned by the Minister to carry out directives related to the promotion and enhancement of sustainable management of the environment.

The Township Environment Management Committees are responsible for:

The proper management of the environment in respect of the area in which they are established.

- Performing duties as assigned under EMA or by the Minister or Council;
- Carrying out directives given by the Minister to promote and enhance sustainable management of the environment; and
- Performing any functions as set out under the Local Government (District) Authorities Act.

3.8.24 Ward/Mtaa/Kitongoji Level

The District Council designates an Environment Management Officer for each administrative area of a township, Ward, Village, kitongoji (neighbourhood/hamlet) and Mtaa (street). The Environmental Management Officers are responsible for coordinating all functions and activities related to the protection of the environment within their designated areas.

CHAPTER FOUR

4 BASELINE CONDITIONS

4.1 Introduction

The purpose of this Chapter is to provide a brief description of the environment in the project site which could potentially be affected by positive and negative impacts of the project discussed in Chapter 2. Impacts of lesser importance were screened out during scoping phase to ensure that the ESIA is focused on the potentially significant impacts.

The process of environmental baseline investigations included the combination of some/all the following tasks:

- An appropriate combination and balance of desktop studies, field surveys, site information collection and technical consultation.
- Consideration of all available documentary records, research papers and other relevant information.
- Use of recognized survey and analysis techniques.
- Identification and provision of appropriate (preferably quantitative) descriptions of the baseline environmental conditions.
- Identification of key environmental features that may enhance, constrain, or limit the direction and rate of environmental change.
- Explanation of links, interactions, and dependencies between environmental components.
- Verification of desktop and other information by systematic field surveys.
- Acknowledgement of the implications of gaps and limitations in information and data.

4.2 Project Core Area and Accessibility

Mbeya Regional, Kyela Municipality, and Busale Village will be the sites of this project's implementation. Mbeya was from the province of the Southern Highlands. The Regional is located between latitudes 7° and 9° south of the equator, or 31% south of the equator, and longitudes 32° and 35° east of Greenwich, England. Mbeya is 475 meters above sea level, with high peaks of 2981 meters at Rungwe. Mbeya borders Zambia and Malawi to the south, Rukwa Regional to the west, Mbeya and Singida Regionals to the north, and Iringa Regional to the east, with Tunduma and Kasumulu in Mbozi and Kyela Districts serving as the main entries and/or exit points into neighboring Malawi and Zambia.

Kyela is one of Mbeya's seven Districts. It is bounded to the north by Rungwe District, to the northeast by Njombe Regional, to the southeast by Lake Nyasa, to the south by Malawi, and to the west by Ileje District. The District had 244,108 people in 2016, up from 221,490 in 2012.

Kyela District is interconnected with a good network. A small part of town road system is covered by tarmac, about 40.5 km and about 125 km from Mbeya City to Kyela is a trunk road connecting the District to the Republic of Malawi. Many rural roads are gravel roads and are passable throughout the year

4.3 General Conditions

4.3.1 Current Uses and Activities at the Proposed Project Site

The proposed land site in Busale Village is 37 acres in size, and it is currently a bush area with no site activities.



Figure 4-1: The proposed area

4.3.2 Displacement and Relocation

No people relocation is envisaged for this location,

4.3.3 Neighboring Residences (Location and Distance from the Proposed Project)

The location is surrounded by farms in south, North, west and east

4.4 Socio-Economic Baseline

4.4.1 Background

A development envelope (Area of Interest - AOI) is situated at Busale Village, Busale Ward, Kyela District, and Mbeya Regional. Details of the study area for the Social Impact Assessment (SIA) is in Table.

Table 4-1: Study Areas for the SIA

Study Area	Definition	Areas included for this project
Site-specific study area	Area likely to experience impacts associated with project infrastructure and activities	The project footprint, excluding the access roads, etc. (to be defined at the conclusion of the scoping phase)
Local study area	Areas likely to experience impacts related to population influx, etc.	The neighboring settlements in Busale and Busale Villages

Study Area	Definition	Areas included for this project
Regional study area	Area likely to experience economic impacts of the project	Kyela (since most of the development envelope falls within this District). This is set against the backdrop of Mbeya Regional and Tanzania as a whole

4.4.2 Administrative Set up

Administratively, the Kyela District Council is divided into two divisions: Unyakyusa and Ntebela, each with 33 wards and 93 registered Villages. The Villages are further subdivided into 344 "hamlets," or sub-Villages, and 55 streets (Mitaa). However, the District council was formed after the District was separated from Rungwe District in 1972. Furthermore, Kyela District Council was re-established in 1984, following a series of landmark events that resulted in the passage of Local Government Act No. 7 (District Authorities) in 1982.

It is also worth noting that the law recognizes Kyela as having both rural and urban characteristics. Urban Wards include all Wards with a certain number of streets (Mitaa). The Kyela Township Authority is made up of the Wards with the most streets (Mitaa).

4.4.3 Demographic Condition

Key features of climatic conditions include temperature and rainfall. Kyela District Council lies at an altitude between 450 metres and 2400 metres above sea level. However, temperatures and rainfall vary with altitude. The average annual temperatures vary between 23 oC in the highlands and 32 oC in the lowlands. It experiences moderate temperatures of around 23 oC almost throughout the year.

The cool season normally runs from June to August. Kyela District Council experiences two rain seasons, namely the long rainfall season and the short rainfall season. The long rainfall season, which starts in March and ends in June (normally in April and May, the District council experiences heavy rainfall), while the short rainfall season starts in November and ends in February, also allows a wide range of crops to be grown, with some double planting of short seasonal crops such as maize. The average annual rainfall varies between 2000 mm and 3000mm. The average annual rainfall varies from year to year and between ecological zones.

Table 4-2: Population distribution in Kyela District census 2022

Council/Ward	Population 2022		
	Male	Female	Both Sexes
Kyela District Council	126,235	140,191	266,426
Lusungu	3,565	3,772	7,337
Makwale	7,157	7,960	15,117
Matema	5,762	6,469	12,231
Mwaya	5,892	6,230	12,122
Ndobo	2,976	3,230	6,206
Ipande	2,283	2,474	4,757
Ikama	2,281	2,451	4,732
Ipinda	13,057	14,608	27,665

Muongano	1,494	1,586	3,080
Talatala	2,616	3,937	5,723
Mababu	6,220	6,713	12,533
Nkokwa	1,653	1,789	3,422
Kajunjumele	3,255	3,366	6,621
Bujonde	3,367	3,721	7,088
Ikolo	2,230	2,417	4,647
Katumbasongwe	4,447	4,869	9,316
Ngana	4,170	4,524	8,694
Busale	3,506	4,071	7,637
Ngonga	3,764	3,948	7,712
Ikimba	8,197	9,332	17,529
Itope	2,754	3,144	5,898
Kyela	1,111	1,396	2,507
Mikoroshoni	1,192	1,423	2,615
Mbugani	2,920	3,353	6,273
Mwanganyanga	1,988	2,315	4,303
Serengeti	1,639	1,878	3,517
Itunge	4,919	5,515	10,434
Nkuyu	2,672	3,171	5,843
Ndandalo	4,083	4,685	8,768
Ipyana	2,775	3,107	5,882
Bondenii	4,789	5,237	10,006
Ibanda	1,548	1,759	3,307
Njisi	5,863	6,641	12,504

4.4.4 Ethnic Composition

Kyela District Council is among the fastest-growing District councils in Mbeya Regional, experiencing fast population growth by both indigenous and immigrants. As a result, more ethnic groups are found in the District council. However, among all people, the District council has five main ethnic groups, namely: Nyakyusa, Kinga, Ndali, Kisi, and Ngoni, that occupy most Wards of the District council. Nyakyusa is the largest ethnic group, followed by Kinga.

4.4.5 Economic Activities

According to various reports based on agriculture surveys, population and housing censuses, agriculture is still the main economic activity of the people in Kyela District Council. It is also the most important sector in the development of the District Council.

Most of the households are engaged in small-scale subsistence farming. The District produces a variety of both food and cash crops, major food crops grown in the District are bananas, Irish potatoes and paddy while the major cash crops are cocoa, coffee and tea. Food crops such as rice are sold from time to time as a source of income when there is a surplus in production.

4.4.5.1 Agriculture.

Agriculture is the main economic activity of the people in Kyela District, thus production of food and cash crops contributes much to the District gross domestic product, whereby arable land for agriculture is 55,000 hectares. Potential irrigable land is 12,600 hectares, out of which 170 ha. Are currently under traditional irrigation and 85 ha. Under improved schemes. The main food and cash crops grown are paddy, maize, cassava, cocoa, red palm oil and citrus fruits.

The majority of the people in the District depend on agriculture and the mostly cultivated food crops being paddy, maize, sweet potatoes and groundnuts. The major cash crops are cocoa and palm oil, it is believed that the two crops contribute significantly to the income of the people as well as to the District Gross Domestic Product.

4.4.5.2 Livestock.

Animal keeping industry is one of the sources of income among Kyela District residents. The main animals kept include cattle both indigenous and exotic, pigs, chicken, ducks, sheep and goats. Cattle have significant role in agriculture production system as an investment capital, farm power and social security, Chicken offer food and investment for most farm women almost every household possess a local chicken and pigs are potential source of households meat, cash and income. The pigs has fast growth rate, very prolific and have short reproductive cycle of 114 days.

In Kyela District animal keeping is pre-dominantly the source of income to the rural and urban dwellers. Animals kept are cattle, goats, chicken, pigs and sheep. About 37% of the population are engaged in animal husbandry where by the people and the District government get revenues by selling animals and animal products such as skins, hides, milk, meat and eggs.

4.4.5.3 Forestry

Tanzania has two main types of forests namely natural, and plantation forests. Natural forests found in Tanzania are of three main types namely miombo woodlands, montane forests and mangroves. Among the total land area (82,651.2 ha) in Kyela District, natural forests cover a total of 28,148.8 ha (34.1 percent).

4.4.5.4 Wildlife.

Kyela District Council has potential wildlife such as hippos, crocodiles, monkeys and snakes. Also Birds of different species such as flamingo are found in the District.

The abundance of hippos and crocodiles in Lufilyo River and along the shores of Lake Nyasa can impress and attract investors to establish game sanctuaries within the area. Also there is Matema area with 20 hectares of land which is suitable for crocodile farming.

4.4.5.5 Tourism

Kyela District has a very high potential for tourism because of the natural attractions within and in neighboring Districts. Kyela District Council has a great potential for tourism, which includes waterfalls,

natural bridges, mountains, hot water springs, caves, and crater lakes. Briefly, these include Lake Nyasa, the Livingstone Mountains, historical sites, hot water springs, beaches, arts and culture, waterfalls, caves, and crater lakes.

4.4.5.6 Fishing

Fishing is another important economic activity in the District it provides employment to the people living near or alongside the fishing area in the District. This is due to the fact that besides Lake Nyasa which is found in the District, there are other big rivers such as Kiwira, Songwe, Lufilyo and Mbaka which are also used for fishing purpose

Fishing takes place in Lake Nyasa. With regard to fish production by Ward, the largest quantity of fish production is reported in Kajunjumele Ward, followed by Matema Ward. The third Ward is Mwaya Ward, and the fourth is Katumbasongwe Ward. Other Wards were Lusungo, Ngonga, and Bujonde. A number of people are involved in fishing activities, and they make income from the activity.

4.4.5.7 Mining

Kyela District has potential areas for coal mining; currently, three companies are engaged in coal activities in the northern part of the District, specifically Ngana Ward. The distribution of existing mineral deposits and scale of mining by Ward in Kyela District Council, 2015, whereby there were three small-scale deposits, one medium-scale deposit, and one large-scale deposit.

Distribution by Ward and type is as follows: Matema Ward (one sand mine); coal on a large scale in Ngana Ward (one deposit); Sand on a small scale in Nkuyu Ward (one deposit); and sand on a small scale (two deposits) in Itope Ward.

4.4.5.8 Industry and Trade

There are no major manufacturing industries in the District. There are few small processing industries such as palm oil processing industries, carpentry and paddy husking industries. Other small industries in the District include timber and furniture manufacturing, milling machines, and palm oil making. According to the most recent Kyela District Investment Profile Report, a total of 123 industries are available by type. These are hulling and milling machines (83), Carnell oil filtration (14), soap making (10), and carpentry workshops (16).

4.4.6 Economic infrastructure

Kyela District is among of the 10 Districts in Mbeya Regional which has got opportunities in economic infrastructure; the main road going to Malawi is passing in Kyela District. The road helps to stimulate the business within the District. Also the roads within the District are passable throughout the year.

However the road networks in the District that are maintained by the central government through the Tanzania Road Agency (TANROAD) are classified as Trunk and Regional roads, and those maintained by the District council are called District, urban, and feeder road. Most of the roads in Kyela District Council are District roads and feeder roads, which are maintained by the District.

4.4.7 Education status

The literacy rate for people aged five and older in Kyela District Council is 80.4 percent, according to Population and Housing Census results (literacy in English is 1 percent, only 61.5 percent of people in Kyela District Council are literate in English, and 17.7 percent of people are literate in both Kiswahili and English).

In terms of education, the report also reveals that 40.1 percent of the results show that education status is higher among males (43.9 percent) than females (36.6 percent): roughly 7.5 percent (7.1 percent males and 8.0 percent females) have dropped out of school, and 40.0 percent have completed school (40.2 percent males and 39.9 percent females). The 12.3 percent of people who have never attended school is unfortunate because it shows that the proportion of those who have never attended school is higher among females (15.5 percent) than that of males (8.8 percent).

4.4.7.1 Pre-Primary Education

All children who are entitled to begin standard one must have completed pre-primary education, according to a requirement imposed by the Ministry of Education and Vacation Training. Most of these institutions ought to be connected to the grounds of government primary schools. Children who have reached the age of five can enrol in pre-primary school, which has a one-year cycle without a promotion exam.

There are currently six special pre-primary classrooms in Busale (2), Kyela (2), Ndandalo (1), and Ibanda (1). Of the available classrooms, 5 are owned by the government, while 1 is privately owned and is situated in Ndandalo. Pre-primary pupils are enrolled in all primary schools in the Kyela area, but there are no designated classrooms for them.

4.4.7.2 Primary Education

Primary school education is a basic right for every Tanzanian child of school-going age (7–13). To render this possible, the Government of Tanzania put in place the policy of Universal Primary Education (UPE) in 1974, making such education compulsory and setting out to make it available to every child. In order to achieve this goal, the government, in collaboration with local government authorities, mobilizes communities to play a part in providing this education.

There are currently 103 primary schools in Kyela District Council. Out of the total number of primary schools in the District, 99.0 percent are owned by the public sector (government). There was an insignificant increase in the number of primary schools between 2011 and 2015. They increased from 99 in 2011 to 102 in 2015. The slow increase in the number of schools is attributed to the lack of private sector participation, and hence there was only one private primary school in the District during the period from 2011 to 2015.

4.4.7.3 Secondary Education

The government's 'call' that each Ward in the country should have a secondary school aims to increase secondary school enrolment both in urban and rural areas. However, to a large extent, this government call helps improve the accessibility of secondary school education, especially in rural areas.

The total number of secondary schools in Kyela District in 2015 was 25 (88.0 percent public secondary schools and 12.0 percent private secondary schools).

4.4.8 Health Status

The District has 2 hospitals at Kyela Town and Matema, 1 health centre at Ipinda, and 29 dispensaries and 4 Voluntary Agency hospitals at Matema Lutheran Hospital, Uhai Baptist Makwale, Sabato at Kyela Town, and Ngamanga Dispensary and Parastatal Organization.

4.4.9 Sources of Energy

Kyela District is well served by National Electricity Grid and consumes around 1.5 Megawatts (MW), but Kyela District is enjoying another source of power from Kiwira Coal Mine which is about 1.5 Megawatts (MW) that covers almost 2,816 customers in Kyela.

4.4.10 Sanitation and water supply

Kyela District has an abundant of water sources acquired from five water schemes: Kanga, Ngamanga, Ngana, Makwale and Sinyanga which supply tape water to the 82 Villages out of 101 Villages in the District. About 80% of people get clean and safe water. Also the District has got 63 pump wells and 5 electronic wells which serve the whole Kyela Town.

4.4.11 Waste Management

Proper management of waste is among the important activities that have to be performed for controlling environmental pollution, particularly in urban areas where the population density is high compared to rural areas.

This activity is possible if local government authorities involve people through community participation to manage waste from households, hamlets, Villages, and up to Ward levels. Regular collection of waste accounted for 3.1 percent, and irregular collection of refuse accounted for 1.6 percent.

4.4.11.1 Liquid Waste Management

Existing sewerage services cover approximately 2% of all sewerage disposal facilities. The sewerage system primarily serves educational institutions and a few commercial businesses.

4.4.12 Climate and meteorological conditions

Kyela District receives main rainy seasons between November to June with a mean annual rainfall between 2000mm and 3000mm. Normally in April and May the District experiences heavy rainfall. The District has a warm and humid climate with mean daily temperature of 23o C. The natural vegetation is of tropical savanna forest and grass lands with lagoon vegetation on the swamps and river mouths to the Lakes.

4.5 Air Quality within the Project Area

4.5.1 Ambient air quality data

The consulting team conducted the actual monitoring of air quality at the project site using an Aeroqual Outdoor Air Quality Test Kit. This is a complete outdoor air monitoring kit for the measurement of criteria air pollutants and VOCs.

Features Aeroqual's proven Series 500 portable monitor with interchangeable sensor heads, measuring particulate matter (PM_{2.5}, PM₁₀), four gas pollutant gas sensors (NO₂, O₃, CO, VOCs), and a combined temperature and relative humidity sensor.

Suitable for use during wide area air quality surveys, personal exposure monitoring, and as part of a short-term fixed monitoring network. The equipment and collected data are shown in Figure 4-2 respectively.



Figure 4-2: Ambient Air Quality Monitoring equipment used at the project

4.5.2 Description of Sources and levels of project emission

Heavy construction is a source of dust emissions that may have substantial temporary impact on local air quality. Emissions during the construction of a building are associated with land clearing, ground excavation, cut and fill operations (i.e., earth moving), and construction of a particular facility itself. Table below shows the emission generating activities

Table 4-3: Ambient Air Quality data measured from different station in the vicinity of the project site

LOCATION	CO ppm	NO ₂ ppm	O ₃ ppm	VOC ppm	SO ₂ ppm	PM _{2.5} ppm	PM ₁₀ ppm
Project Site	0.00	0.038	0.00	0.00	0	0.001	0.001
Monitoring Point 1	0.00	0.017	0	0.00	0	0.013	0.010
Monitoring Point 2	0.00	0.011	0	0.00	0	0.001	0.002
Monitoring Point 3	0.00	0.011	0	0.00	0	0.000	0.001
Monitoring Point 4	0.00	0.08	0	0.06	0	0.002	0.002
Tanzania Standard [TZS 845:2005]	20	0.1	0.0	10	0.05	0.05- 0.08	0.05- 0.116

All data monitored were below standards with low detectable level so are of no significant. However, the data measured will be used for monitoring project intrusion during project implementation so as to trace how the project has affected the air quality. The air quality data analysis results trend is shown in Figure 4-3

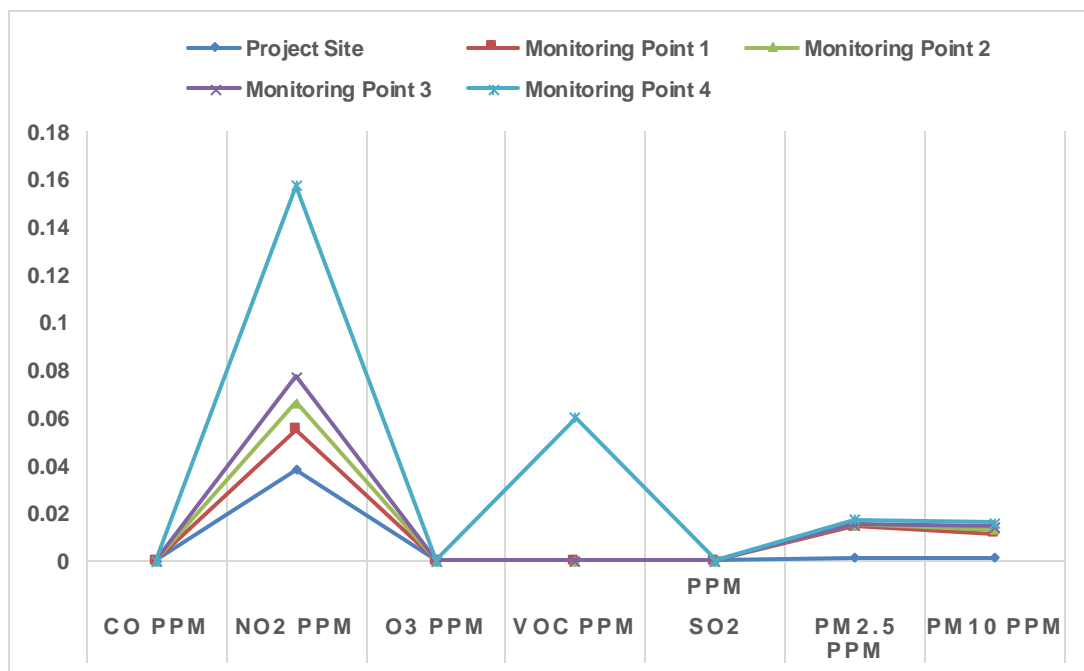


Figure 4-3: Ambient air quality data results trend (Source: Tansheq, 2022)

4.5.3 Noise and Vibration

The noise and vibration survey was conducted in terms of the provisions of International Finance Corporate Guidelines of 2007 (The measurement and rating of environmental noise with respect to annoyance and to speech communication) as well as Environmental Management (Noise and Vibration Standards) Regulations of 2015.

The following instruments were used in the noise and vibration survey as they are displayed in

- Sound Level meter – Lutron SL 4033SD Class 1;
- Free field microphone – Electric Condenser Microphone; and
- Sound Calibrator (94/114dB) – SC – 942.
- Vibration meter – VB8206SD

On taking measurements, the meter was set to the “A” weighed measurement scale, which enables the meter to respond in the same manner as the human ear. The “A” scale is applicable for workplace compliance testing, environmental measurement, and workplace design and law enforcement.

For, noise measurement the meter was held approximately 1.5 m above the ground surface and at least 0.5 m away from hard reflecting surfaces such as walls. A set of four readings were taken per point for averaging. The equipment used and data collected are shown in Figure 4-4



Figure 4-4: Noise and vibration level meters used to collect data on the project site

Table 4-4: Results on Noise and Vibration levels within the project site

Location	Noise Level [dBA]	Vibration [mm/s]
Project Site	43	1.9
Monitoring Point 1	45	1.1
Monitoring Point 2	37	1.5
Monitoring Point 3	33	0.7
Monitoring Point 4	36	0.9
Tanzanian Standards (TZS: [1471: 2015])	60-50	5

The noise and vibration level survey was executed during the day on the 6th October 2022 at 1300hrs. In this survey, 12:00 to 14:00 represented the daytime period.

The Noise level was measured over a representative sampling period, exceeding 30 minutes at a point for different location in the vicinity of the proposed site as the result is presented in Table 4-4

CHAPTER FIVE

5 STAKEHOLDERS IDENTIFICATION AND INVOLVEMENT

5.1 Introduction

This chapter describes the major stakeholders who have been identified and contacted thus far, as well as their primary concerns about the proposed development.

Stakeholder Engagement and Information (ESS10) the involvement of stakeholders in the project's sustainability is identified through disclosure.

Stakeholder engagement is an ongoing process that occurs throughout the project's life cycle. It promotes the development of strong, constructive, and responsive relationships, which are critical for the successful management of a project's environmental and social risks when properly designed and implemented. Stakeholder engagement is most effective when it begins early in the project development process and is integrated into early project decisions as well as the assessment, management, and monitoring of the project's environmental and social risks and impacts.

Stakeholders are defined as "those individuals and organizations who have a vested interest in the project's successful design, implementation, and sustainability and will be negatively, positively, or not at all impacted by the proposed development." Section 89 of the Environmental Management Act (EMA, 2004) specifies the importance of public participation in the ESIA. Section 17 of the EIA Regulations also contains information and procedures for public participation in the ESIA process.

Stakeholder participation aims to involve processes whereby all those with a stake in the outcome of a project actively participate in decisions on planning and management. Stakeholders may share information and knowledge, and contribute to the project, to enhance the success of the project and hence ultimately their own interest.

5.2 Stakeholder Engagement Process

The Constitution of United Republic of Tanzania recognizes the sovereignty of the people and that people possess the power to guide development within their areas either directly or indirectly. The public should therefore be involved in the evaluation process because the Environment Management Act (2004) demands it to be so.

The main objectives of the stakeholder engagement process are to:

- Inform the stakeholders about the proposed project and provide opportunities for influencing/amending the plans;
- Collect stakeholders' views on the proposed project including potential positive/negative impacts the stakeholders may associate with the project
- Get an idea of Stakeholders' preferred approaches to implementation of the project;
- Get local knowledge on any sensitive areas within the project area of influence (physical, environmental, cultural or proposed facilities); and
- Get expert advice on land use/ area zoning, water availability and supply, power and road infrastructure

Stakeholder consultation is initiated mainly during the scoping phase as various stakeholders are identified and then proceed throughout the EIA process. There are different levels of public participation. Table 5-1 shows the categories of public participation according to the goals.

Table 5-1: Levels of Public Participation

LEVELS OF PUBLIC PARTICIPATION GOALS	
Inform	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.
Consult	To obtain public feedback for decision-makers on analysis, alternatives and/or decisions.

LEVELS OF PUBLIC PARTICIPATION GOALS	
Involve	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered in decision-making processes.
Collaborate	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.
Empower	Inclusion of the public in the decision-making processes.

The team put in place a stakeholder engagement process, which helps to:

- Identify and involve all potentially affected stakeholders
- Generate a good understanding of the project amongst those that was affected
- Identify issues early in the project cycle that may pose a risk to the environment, project or its stakeholders
- Ensure that mitigation measures are appropriate (implementable, effective, and efficient)
- Establish a system for long-term communication between the project and communities that is of benefit to all parties.

The primary goal of the Stakeholder Engagement Process is to ensure **transparency and involvement** of individuals, groups and organizations affected by and/or interested in the project (to be called as stakeholders) in assessing and managing the potential environmental and social impacts of the project, and to provide relevant, timely and accessible information in an appropriate and understandable format (e.g., Project Information Document).

We discuss the different steps to be taken in the next sections. The process was reported in the stakeholder engagement plan.

The **Stakeholder Engagement Plan** is the public document, which presents plans for stakeholder engagement, consultation, and disclosure, and is to be updated for each phase of the project. Parts of the report need to be published through ESIA (public involvement and disclosure). The main purpose of this document is to:

- Define the consultation approach for stakeholders,
- set up a process to address public views and/or concerns,
- Identify resources and responsibilities for implementation and monitoring of the consultation program, and
- Set up a grievance mechanism for local stakeholders.

It consists of the following information:

- Introduction (project information, project program, summary of potential environmental and social impacts);
- National and international requirements;
- Consultation undertaken to date;
- Stakeholders;
- Disclosure of information and public consultation;
- Grievance management;
- Resources and responsibilities;
- Reporting; and
- Annexes: comment/complaint form; complaint action form

The purpose of the **SEP** is to engage with organisations and people who may be affected by the project(s) or who may be interested in the Project, as mentioned above. Each stakeholder will need a different level of engagement. Throughout the process, we will make clear the level for the respective stakeholder and take the necessary steps.

5.3 Stakeholder

Stakeholders are individuals or groups who are affected or likely to be affected by the project (project affected parties PAP) and who may have an interest in the project and/or the ability to influence its outcome, either positively or negatively (other interested parties OIPs).

The identification of stakeholders under project will be based on (a) their roles and responsibilities; (b) possible influence/interest on the project; and (c) their particular circumstances they may be disadvantaged or vulnerable in different ways from each other. Stakeholders' analysis involves identifying the stakeholder groups that are likely to affect or be affected by proposed project components and sorting them according to the potential impact the activities will have on them.

The preliminary stakeholder analysis has identified the various interests of stakeholder groups and the influence these groups may have on the project. The analysis also shaped the design of stakeholder consultation events and how to engage them. Stakeholders' interest is determined based on the extent to which they may be involved in implementing elements of the project, likelihood in being impacted (positively or negatively) or in which they may benefit from components

5.4 Stakeholder Identification and Consultation

Tansheq team started with stakeholder consultations in September 2022. The below bullets capture the process undertaken to date:

- Introductory meeting with RC (Regional Commissioner,) RAS, (Regional Administrative Secretary) Regional Education Officer, (REO), REMO,(Regional Environment Management Officer)
- District Executive Director (DED) in Kyela DEO, DEMO
- Initial meeting with Village government, Ward officials including WEO at Busale Village, Busale Ward
- Meeting with communities around the proposed project area.

Each representative had an opportunity to state their understanding of what is proposed, and they fully support the project and said that they welcomed the team to undertake the requisite study.

5.4.1 Institutional Stakeholders

Institutional stakeholders were identified based on their involvement in decisions that might affect the proposed development or the stakeholder. The Institutional stakeholders include:

- Ministry of Home Affairs (Tanzania Fire and Rescue Force- Mbeya Office)
- Ministry of Labour and Employment (Occupational Safety and Health Authority, OSHA- Mbeya Office)
- Government Chemist Laboratory Authority (GCLA- Mbeya Office)
- Regional Government Regional Commissioner (RC- Mbeya) RAS, (Regional administrative Secretary) and District Commissioner (DC-Kyela); and
- Local Government (Busale Ward/ Busale Villages).

5.4.2 Other Stakeholders

Individual stakeholders refer to those occupying, owning, living, or working within the AOI and surroundings that may be impacted upon resulting from project implementation. They include farm owners

5.5 Vulnerable group

Means a group of people who, due to their characteristics and circumstances, are likely to suffer more adverse impacts of natural disasters than other groups in the community.

Vulnerable Person means any person who by reason of age, infirmity, illness, disability or any other circumstance is in need of care or attention.

Vulnerable groups associated to SEQUIP area:

- Age group (children & elders)
- Indigenous
- Physical challenged group
- Women/Sexuality (Gender issue)

5.6 Main Concerns and Comments of Stakeholders

The comprehensive list of all stakeholders consulted is in appendix I. Main concerns and comments from the consultation process raised by stakeholder to date are in

Table 5-2 Stakeholder Consultation Views

Name of Stakeholders	Place	Dates	Comments, views and concerns from the stakeholders
Ernest Hinju (REO)	Mbeya Regional	06/10/2022	<ul style="list-style-type: none"> • A thorough education on all project elements and stages is required for all Regional officials. • He will see to it that everyone takes part completely in the execution. • It very important to follow all the procedures for project implementation including preliminary study.
Denis A Nyoni (RAO)	Mbeya Regional	06/10/2022	<ul style="list-style-type: none"> • With interest, they look forward to the project's execution.
Ezekiel Mahegema District Executive Director (DED)	Kyela District Council	06/10/2022	<ul style="list-style-type: none"> • They are aware of the project and have begun the implementation stage, e.g. preparing the project area, community awareness etc. • The Busale Village council gave them the land. • He believes that the ten World Bank standards should be known by all city official
Godwin Gosbert District Environmental Management Officer (DEMO)	Kyela District Council	06/10/2022	<ul style="list-style-type: none"> • He is aware of the undertaking; it is anticipated to begin in 2020.
SiteAdam A Kabeta (Ward councilor)	Busale Ward	06/10/2022	<ul style="list-style-type: none"> • They are aware of the project and prepared to carry it out.
Saidi M Balozi (WEO)	Busale Ward	06/10/2022	<ul style="list-style-type: none"> • They simply wait for the project to begin on behalf of the Busale Ward.
Bonifas K Minga (Village Chairman)	Busale Village	06/10/2022	<ul style="list-style-type: none"> • In order to determine how they would obtain adequate space for the proposed project, he got down with the neighborhood. As a result, a few Villagers handed up their farms freely. • They are eagerly anticipating the project since it will foster Village growth, the expansion of small businesses, and the growth of established industries like the hotel and rental of homes.
Ramadhani Mbisa (VEO)	Busale Village	06/10/2022	<ul style="list-style-type: none"> • Our neighborhood will benefit from this project. It will inspire parents as well as kids to value school more than they previously did.

Name of Stakeholders	Place	Dates	Comments, views and concerns from the stakeholders
Busale community	Busale Ward	06/10/2022	<ul style="list-style-type: none"> • They are looking forward to the project with excitement since it will encourage Village growth, the expansion of local companies, and the growth of well-established industries like the hotel and rental of homes • With this school, their kids will be driven to learn, and they enjoy it. • They simply wait for the project to begin
Jahnsen Bilaro (Chemist)	Mbeya Regional	10/10/2022	<ul style="list-style-type: none"> • Before building a lab, there are few things that need to be done. Their website contains a complete list of rules. He sent the link and some other suggestions
Faustine Uswage (AG Zonal Manager-SHE)	Mbeya Regional	10/10/2022	<ul style="list-style-type: none"> • The site layout must be submitted to OSHA for approval, and the contractor must be register with them. (free registration) • He said their website contains a complete list of rules and regulations. • OSHA requires the presence of a registered person on-site.



Figure 5-1: Consultation and site visit in Busale Village

5.7 Way ForWard

Stakeholder concerns must be verified and incorporated into the environmental and social impact assessment. All stakeholders, including the public and the community, took part in the Environmental and Social Impact Assessment process. The stakeholder engagement plan will detail and respond to all issues raised during consultation.

According to the consultations, people are optimistic about the project because it will increase employment, improve business opportunities, educational development, and social development. At all stages of the project, a Stakeholder Engagement Plan must be developed and implemented.

CHAPTER SIX

6 ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES.

6.1 Introduction

This section includes expected environmental and social impact assessment during the entire lifecycle of the school construction project. Methods used for impact assessment, as well as quantitative and qualitative criteria were developed to unify and standardize the assessment system, which ensures the objectivity of the assessment.

Impact assessment methodology preparation was based on the recommendations of the World Bank and other International Financial Institutions (EBRD, IFC, and ADB). The following scheme will be used for environmental and social impact assessment of the planned activities:

Step I: Determination of basic impact types

Determination of the impact is based on general analysis of activities, which may be important for these types of projects. This is incorporated in Chapter 2 in Page.

Step II: Study of the environmental baseline – search and analysis of the existing information

Analysis of the socioeconomic and environmental status quo of the project affected. This shall also involve identification of the receptors, which are expected to be affected by the planned activities, determination of sensitivity of the receptors

Step III: Characterization and assessment of the impact

Impact character, probability, significance other characteristic determination by considering the sensitive receptors, description of the expected changes in the environment and assessment of their significance. This is covered in this Chapter.

Step IV: Determination of the mitigation measures

Significant impact mitigation, prevention, or compensating measure determination. This is detailed in subsequent Chapter 7.

Step V: Residual impact assessment

Determination of the expected value of change in the environment after implementation of the mitigation measures

Step VI: Monitoring and management strategy development

Monitoring the effectiveness of the mitigation measures is needed to ensure, that the impact must not exceed the predetermined values, effectiveness of the mitigation measures must be confirmed, or the necessity of the corrective measures must be identified.

Table 6-1: Sources, Receptors and Magnitude of Environmental Impact all Planned Phases

Receptor \ Phase	Construction	Operation	Maintenance	Decommissioning
Air				
Soil				
Water				
Flora				
Fauna				
Protected area				
Landscape & visual impact				
Land ownership				
Infrastructure				
Traffic flow				
Cultural heritage				
Socioeconomic				

Key

Table 6-1 gives information about sources, receptors and magnitude of environmental impact for construction and operation phase of the proposed school structures.

6.2 Impact Receptors and their Sensitivity

Implementation of the works may cause such qualitative and quantitative characteristic changes of socioeconomic, physical and biological resources in the impact area, such as:

- Socioeconomic baseline
- Air quality and acoustic background of the environment.
- Soil stability and quality.
- Capacity and quality of surface and groundwater.
- Visual changes of the landscapes.
- Flora and fauna baseline.

The population, which may be impacted by the planned activity, includes people living, working, or involved in other activities (e.g., vocation, travel) nearby the designed facility. Facility staff is considered as a potential sensitive receptor.

Receptor sensitivity is related to the impact volume and ability of the receptor to counteract the change or restore after the change, as well as with its relative ecological, social, or economic value.

6.2.1 Impact Characterization

To estimate environmental impact major impact factors are identified for mobilization, commissioning, decommissioning, and demobilization phases. Anticipated impact is assessed according to the following classification:

- **Character** – positive or negative, direct, or indirect.
- **Magnitude** - insignificant, low, medium, high or very high.
- **Likelihood** – low, medium, or high risk.
- **Impact area** – working site, project area or Regional.
- **Duration** – short, mid, or long-term.
- **Reversibility** – reversible or irreversible.

That is, for both project phases and for each potential impact has been determined anticipated alteration of environment and its character, area and duration of impact, reversibility, and likelihood of occurrence; based on this information has been defined significance.

Some impact types were estimated quantitatively. Assessment of impact on environmental elements is based on relevant environmental quality standards, whenever appropriate. If qualitative assessment was impossible impact was estimated based on its characteristics and elaborated criteria. The criteria applied for environmental and social impact assessment is given in the below table. They are developed only for those receptors, which may experience significant changes.

6.3 Impact No. 1: Atmospheric Air Quality

6.3.1 Impact Description

This impact occurs in all phases of the project, i.e., mobilization, commissioning, construction, and decommissioning.

6.3.1.1 Mobilization and Commissioning Phases

Activities of mobilization and commissioning phase, which are causing impact, arise from emissions associated with stationary sources and vehicles – typically dust, Sulphur dioxide (SO₂) and oxides of nitrogen (NO_x).

Combustion related emissions (such as NO_x, SO₂, CO, and dust) will occur from stationary sources (generators) and vehicles; this can affect ambient air quality. But considering that works are temporary, and the infrastructure facilities will be supplied with energy via existing networks, which will reduce the necessity of diesel generators use to minimum, impact, should not be significant.

Dust distribution will be related to vehicles movement. Mechanical dust removal may take place by wind, or by temporary suspension of the vehicles.

6.3.2 Impact Characterization

Impact is expected during mobilization, commissioning, and decommissioning phases. Emissions related to mobilization may affect population of Busale Village 6.3

Table 6-2: Impact Characterization

Characterization \ Phase	Mobilization, Commissioning and Decommissioning	Operation/ construction.
Character	Direct Negative	Direct Negative
Magnitude	Medium	Low
Likelihood	High risk	High risk
Impact area	Busale Ward	Busale Ward
Duration	During mobilization and commissioning (2-4 months)	During operation (3-5 month)
Reversibility	Reversible	Reversible

Based on Table 6-2 the impact of dust shall be of **medium significance** during mobilization and commissioning and **low significance** during construction.

6.4 Impact No. 2: Noise Pollution

6.4.1 Impact Description

The effect of noise is highly subjective, and limits are designed to ensure that nuisance effects are minimal. Some people will consider lower sound levels to be a nuisance, while others will consider higher sound levels to not be a nuisance. There tends to be less perception of nuisance by people who are financially or otherwise involved in the project or have some other incentive.

Most international noise limits incorporate an absolute or “flat” limit that is applicable when the background noise is low, as well as a “background plus” limit to account for the masking effect of the background noise, requiring the noise to be no more than a margin, typically 5 dB(A), above background noise.

The noise effects of the proposed project development must be determined by the local circumstances, such as terrain and wind direction, and other site-specific factors. A typical (subjective) comparison of indicative noise levels are given in table 6.4 and an indication of noise levels.

Table 6-3: Comparison of indicative noise levels

Indicative Noise Level in dB (A)	
Threshold of pain	140
Jet aircraft at 150m	105
Pneumatic drill at 150m	95
Truck at 30mph at 100m	65
Busy general office	60
Car at 40mph at 100m	55
Rural night-time background	20-40
Quiet bedroom	20

Table 6-4 provides a summary of sources of noise during the project activities and their consequences.

Table 6-4: Summary of Source, Impacts and Consequences of Noise in all Project Phases

Phase	Source	Impacts	Consequences
Construction Grading, earthworks & construction, Construction of the structures, clean-up, and revegetation	Grader or bulldozer [about 85 dB(A)] Heavy-duty or medium-duty trucks	Noise level increase to the area about 80 to 90dBA	<ul style="list-style-type: none"> Hearing impairment is typically defined as a decrease in the threshold of hearing. Severe hearing deficits may be accompanied by tinnitus (ringing in the ears) difficulty in falling asleep; and Awakenings and alterations of sleep stages or depth Disturbance/Shifting of ecological system for animals living in the area Speech interference incapable of being understood during conversation
Operation	construction	The Sound level of the rigs ranged from 85dBA to a peak noise level of 105dBA when measured at 30m	
Decommissioning		Noise level increase to the area about 80 to 90dBA	

6.4.1.1 Construction Phase

The following activities have the potential to give rise to noise impacts during the construction phase:

- Grading and building of structures.

The noise impacts associated with each of the above are provided in table 6.4 the impacts to the area will be medium to the nearest farmhouses (locally) and the sources of noise will be vehicles and machines for excavating and clearing the area.

The impacts will be unavoidable and with some of significance; this will be mitigated by using Personal Protective Equipment for casual workers and personnel and chosen equipment must be well checked on noise levels to reduce it to the lowest level.

Table 6-5: Noise Impacts during the Construction Phase

Impact		Nature	Intensity	Extent	Duration	Probability	Confidence	Significance
Grading and building of access roads	Before Mitigation	Neutral	Medium	Local	Short-term	Highly probable	High	Medium
	After Mitigation	Neutral	Medium	Local	Short-term	Highly probable	High	Medium
earthworks & construction	Before Mitigation	Neutral	Medium	Local	Short-term	Highly probable	High	Medium
	After Mitigation	Neutral	Low	Local	Short-term	Probable	High	Low

6.4.1.2 Operational Phase

During the operational phase where the school is functioning, two aspects are important when considering potential noise impacts of a project:

- The increase in the noise level; and
- The overall noise level produced,

6.4.1.3 Decommissioning Phase

The following activities have the potential to give rise to noise impacts during the decommissioning phase:

- Removal of infrastructure; and
- Rehabilitation of areas.

The potential noise impacts identified for the decommissioning phase of the project are set out in table 6.5. The impact during the removal of infrastructure will be of neutral consequences although some of the mitigation measures will still be employed.

The impacts will be unavoidable and with some of significance, this will be mitigated by using Personal Protective Equipment for casual workers and personnel's and chosen equipment must be well checked on noise levels to reduce it to the lowest level. This will last until the end of the project though a small portion of area (nearby) will be affected by noise.

Table 6-6: Noise Impact Assessment during the Decommissioning Phase

Impact		Nature	Intensity	Extent	Duration	Probability	Confidence	Significance
Removal of infrastructure	Before Mitigation	Neutral	Medium	Local	Long-term	Highly probable	High	Medium
	After Mitigation	Neutral	Low	Local	Long-term	Probable	High	Low
Rehabilitation of areas	Before Mitigation	Neutral	Medium	Local	Long-term	Highly probable	High	Medium
	After Mitigation	Neutral	Low	Local	Long-term	Probable	High	Low

6.4.1.4 Assessment of compliance with limits

To assess compliance with a noise limit, it will, in general, be necessary to consider the average of several measurements. The noise levels measured should be within the standards as indicated in the Baseline.

6.4.1.5 Impact Characterization

The environment noise of the area surrounding by the proposed project is rural settings which is according to Standards is 55dBA and the existing noise levels at proposed site were below the guidelines for Rural Settings.

No significant noise impacts are expected during the Decommissioning Phase of the proposed project. This impact is expected to be Very Low and of short duration. At the end of the proposed project the noise levels within and around the site are expected to return to that existed prior to the operations. Therefore, no residual or latent noise impacts are expected.

6.5 Impact No. 3: Visual/Aesthetic Pollution

6.5.1 Impact Description

Visual elements comprise the aesthetic quality of an area. For example, structure with notable elevation, non-blending colors, shape or texture may degrade the visual quality of an area. Due to the fact that the area is not a tourist and recreational destination, project structures stand out in contrast to the surrounding environment might not create an eyesore. At night, the use of lighting may make contrasts more apparent.

6.5.2 Impact Characterization

According to Oberholzer (2005) a visual 'trigger' means a characteristic of either the receiving environment or the proposed project which indicates that visibility and aesthetics are likely to be key issues and may require a visual impact assessment.

The following potential visual indicators have been identified that could trigger a visual impact assessment based on the nature of the receiving environment and the nature of the project (Oberholzer 2005):

Table 6-7: The Potential Visual Indicators Identified That Could Trigger a Visual Impact Assessment Based on the Nature of the Receiving Environment

The Nature of the Receiving Environment	Presence in or Near AOI
Areas with protection status, such as national parks or nature reserves	No
Areas with proclaimed heritage sites or scenic routes	No
Areas with intact wilderness qualities, or pristine ecosystems	No
Areas with intact or outstanding rural or townscape qualities	No
Areas with a recognized special character or sense of place	Yes
Areas lying outside a defined urban edge line	Yes
Areas with sites of cultural or religious significance	Yes
Areas of important tourism or recreation value	Yes
Areas with important vistas or scenic corridors	Yes
Areas with visually prominent ridgelines or skylines	Yes

Table 6-8: The Potential Visual Indicators Identified that Could Trigger a Visual Impact Assessment Based on the Nature of the Project

The Nature of the Project	Potential Aspect of Project
High intensity type projects including large-scale infrastructure	Yes
A change in land use from the prevailing use	Yes
A use that is in conflict with an adopted plan or vision for the area	No

The Nature of the Project	Potential Aspect of Project
A significant change to the fabric and character of the area	Yes
A significant change to the townscape or streetscape	No
Possible visual intrusion in the landscape	Yes
Obstruction of views of others in the area	No

Based on the information above and the assessment of significant done in Table 6-9. The fair conclusion is that Impact is of **low significance** and the impact is not **cumulative** due to lack of other eyesore activities within the project area.

Table 6-9: Characterization of Visual Impact

Characterization	Phase	Commissioning	Operation/ construction
Character		Direct Negative	Direct Negative
Magnitude		Medium	Medium (especially during the night)
Likelihood		Low risk	Low
Impact area		Busale Village	Busale Village
Duration		During commissioning (1 month)	During operation (3 month)
Reversibility		Reversible	Reversible

6.6 Impact no. 4: Soil Pollution

6.6.1 Impact Description

Impact to soil is caused by leakages of hydrocarbons, waste (solid and wastewater) and disposal of lubricant during servicing of vehicles. The impact is bound to happen during mobilization and operational phase of the project.

6.6.2 Impact Characterization

Impact characterization shall be based on the criteria detailed in Table 6-10

Table 6-10: Impact Assessment Criteria on Soil

Category	Destruction of the fertile soil layer	Soil/Ground Pollution
Very low	Less than 3% of the project area has been destroyed for ever	Soil/ground background conditions have changed unnoticeably
Low	3%-10% of the project area has been destroyed for ever	The concentration of pollutants has increased by less than 25%, but less than the permitted value, 6 months will be needed for the soil/ground quality restoration
Medium	10%-30% of the project area has been destroyed forever	The concentration of pollutants has increased by 25-100%, but less than the permitted value, 612 months will be needed for the soil/ground quality restoration
High	30-50% of the project area has been destroyed forever; small areas are damaged outside of the project area, re-cultivation of which is possible after completion of the project activities	The concentration of pollutants has increased by more than 100%, or exceeds the permitted value, 12 years will be needed for the soil/ground quality restoration

Category	Destruction of the fertile soil layer	Soil/Ground Pollution
Very high	More than 50% of the project area has been damaged or destroyed; small areas are damaged outside of the project area, re-cultivation of which is possible after completion of the project activities	The concentration of pollutants has increased by more than 100%, or exceeds the permitted value, more than 2 years will be needed for the soil/ground quality restoration

Soil pollution is considered likely, rated **moderate significance** due to the possible Regional scale impact and possible longer length of time over which the impact may be felt.

6.7 Impact No. 5: Surface Water Pollution

Oil spoilage, chemicals and detergents will be used and stored within the storage room and building premises. Pollution also could be created by poor planning, management and designing of waste water and sewage disposal system during the construction and operation phases.

Experience has shown that excessive rainfall can result into the overflow of sewerage system that causes devastative environmental impacts on the land and surface water. The following mitigation measures are recommended to be considered during the project execution:

The extent of this impact is localized; however its intensity is low. It is likely that the impact will occur. The impact can be highly improved/eliminated with mitigation. Therefore, based on the criteria above, the impact is negative and of Low significance).

6.7.1 Impact Assessment Methodology

Assessment of impact is as detailed in Table 6-11

Table 6-11: Surface Water Impact Assessment Criteria

Category	Water Quality Deterioration
Very low	Background concentration of the substances and water turbidity has invisibly changed
Low	Concentration or turbidity of the water has changed by less than 50%, but does not exceed maximum permissible concentration
Medium	Concentration or turbidity of the water has changed by 50-100%, but does not exceed maximum permissible concentration
High	Concentration or turbidity of the water has changed by more than 100%, or exceeded maximum permissible
Very high	Concentration or turbidity of the water has changed by more than 200% and exceeded maximum permissible concentration

The impact of pollution and sediment at the nearby water bodies is thus considered, **minor significance** because the effects will be experienced only for short-term and at local scale, affecting valuable resources in the immediate area of activity. This impact will occur during construction phase and decommissioning phase

6.8 Impact no. 6: Impact on Terrestrial and Aquatic Ecology

This impact can occur throughout the project life span but high level of these impact will occur during construction and decommissioning phases. These impact can be referred as Habitant deteriorations

6.8.1 Impact Assessment Methodology

For terrestrial and aquatic impact assessment, qualitative criteria can be introduced for the following categories:

- Habitat integrity, where expected loss or fragmentation, reduce of potential capacity of ecosystem and impact on natural corridor are expected;

- Behavior of species, where the changes due to visual impacts, noise and emissions are estimated, also, impact on reproduction, coupling, daily or seasonal migration, activity and mortality is assessed;
- Habitat/species recovery abilities; and
- Protected habitats, protected areas, protected landscapes and nature sites.

For the assessment of importance of ecological impact following criteria was used:

- Probability, intensity, scope and duration of impact, which determines volume of impact;
- Sensitivity of habitats towards direct impacts or changes caused by impacts;
- Recovery ability of habitats and species

Table 6-12: Potential Environmental and Social Impact of Project by Phases

Activity	Receptor	Impact Source	Description of Impact
<p>Preparatory works</p> <ul style="list-style-type: none"> • Arrangement of construction site including water supply, sanitation and power supply • Parking of materials and special equipment • Material delivery and stocking. 	<ul style="list-style-type: none"> • Atmospheric air • Soil • Water • Flora • Fauna • Infrastructure • Population and personnel 	<ul style="list-style-type: none"> • Diesel generators • Personnel • Produced waste 	<ul style="list-style-type: none"> • Emission of dust and exhaust due to transportation • Emissions of diesel generators • Dust produced by ground works • Noise and vibration (machinery) • Noise (personnel) • Soil pollution (spilt fuel/oils, waste) • Soil tramping due to traffic • Damage of topsoil • Temporary change of land ownership type • Water pollution by split fuel/oils, sediments and waste (whenever construction operations occur next to surface waters) • Damage, clearance and tramping of vegetation (direct impact) • Damage of vegetation due to emissions, fuel/oil spills (indirect impact) • Fauna disturbance by personnel and vehicles • Impact of electric transmission line /electromagnetic field on fauna and other receptors (personnel, population) • Impact on downstream fauna due to surface water pollution throughout construction operations • Impact of electric transmission line /electromagnetic field on fauna and other receptors (personnel, population) • Waste – solid, liquid • Possible traumatism of personnel during works • Impact on infrastructure (e.g. road cover)
<p>Road arrangement rehabilitation</p>	<ul style="list-style-type: none"> • Atmospheric air • Soil • Water • Flora • Fauna • Infrastructure • Cultural heritage • Population and personnel 	<ul style="list-style-type: none"> • Vehicle movement. • Personnel • Produced waste 	<ul style="list-style-type: none"> • Emission of dust and exhaust due to transportation • Emissions of diesel generators • Dust produced by ground works • Noise and vibration (machinery) • Noise (personnel) • Soil pollution (spilt fuel/oils, waste) • Soil tramping due to traffic • Damage of topsoil • Soil (slope) stability risk • Change of land ownership type during construction of new roads

Activity	Receptor	Impact Source	Description of Impact
			<ul style="list-style-type: none"> • Water pollution by split fuel/oils, sediments and waste (whenever construction operations occur next to surface waters) • Damage, clearance and tramping of vegetation (direct impact) during construction of road segments • Damage, clearance and tramping of vegetation (direct impact) during construction of road segments • Damage of vegetation due to emissions, fuel/oil spills (indirect impact) • Fauna disturbance by personnel and machinery • Impact on traffic flow • Temporary restriction of traffic due to road rehabilitation activities • Possible traumatism of personnel during works • Disturbance due to landscape alteration • Impact on downstream inchyto fauna due to surface water pollution throughout construction operations • Opportunity to employ local population for construction operations or associated service (positive effect)
Construction phase	Atmospheric air	<ul style="list-style-type: none"> • Vehicle • Building machinery • Diesel generators 	<ul style="list-style-type: none"> • Dust and exhaust • Welding aerosols
	Soil	<ul style="list-style-type: none"> • Vehicle building machinery • Diesel generators • Ground works • Waste 	<ul style="list-style-type: none"> • Soil tramping by traffic and building machinery • Soil pollution (split fuel/oils, Waste including liquid ones) • Impact on soil stability • Topsoil damage • Temporary and permanent change of landownership type
	Water	<ul style="list-style-type: none"> • Vehicle/building machinery • Ground works • Waste 	Water pollution (split fuel/oils, Waste including liquid ones) Stream flow obstruction alteration of hydrological regime
	Flora and Fauna	<ul style="list-style-type: none"> • Vehicle/building machinery • Personnel 	Temporary and permanent fragmentation of habitats Noise and vibration

Activity	Receptor	Impact Source	Description of Impact
	Population and personnel	Vehicle/building machinery	<ul style="list-style-type: none"> Dust and exhaust Noise Disturbance due to landscape alternation Opportunity to employ local population for construction operations or associated service (positive effect)
Operation	Soil	Waste	Soil pollution in case of improper waste management
	Water	Waste	Water pollution in case of improper waste management
	Flora	Spillway/water intake Substation	Impact on floodplain vegetation/fauna during floods or water shallowness Cleaning area from vegetation cover during maintenance works
	Fauna		Possible impact on fish migration Noise Electromagnetic field
	Population and personnel		Noise Electromagnetic field Possible traumatism of personnel during works
Maintenance service/repairs	Impact of maintenance services /repairs will depend on specifics and volume of work and operation area. Possible impact of maintenance service will be similar to those of similar activities done during construction		
Decommissioning	<p>There are two possible options:</p> <ol style="list-style-type: none"> 1. Conservation – in this case all the existing structures are to be preserved. Territory should be enclosed and protected. 2. Decommissioning – in this case all the infrastructure and equipment should be dismantled, Waste removed/land filled, tunnel closed and territory cultivated. Though after lifespan period usually instead of liquidation the system is thoroughly rehabilitated and the object continues operation. <p>In case of decommissioning proper acting plan should be worked out. Anticipated impact will be similar to the potential impact of construction. Special attention should be paid to waste management including hazardous Waste. Cultivation plan for the area should be designed.</p>		

6.9 General Principals of ESIA Methodology

This section includes expected environmental and social impact assessment during construction and operation process of school in Mbeya. Methods used for impact assessment, as well as quantitative and qualitative criteria were developed to unify and standardize the assessment system, which ensures the objectivity of the assessment. Impact assessment methodology preparation was based on the recommendations of the World Bank and other International Financial Institutions (EBRD, IFC, and ADB).

In the quantitative criteria are used environmental quality indicators introduced by **Tanzania and IFC/WB** for various environmental bodies (air, water, soil, etc.). Wherever qualitative indicators are not preset for environmental factors (e.g. impact to ecosystems or population), the quantitative criteria are introduced analyzing the background data and considering value and sensitivity of impact recipients. If an impact cannot be estimated in quantitative terms, the qualitative criteria are developed envisaging international practices.

Impact on natural and social environment has been assessed in accordance with the determined criteria. During the assessment, special attention was paid to the impact which has been considered as significant in the given conditions.

In order to assess expected changes in natural and social environment, it is necessary to collect and analyze the information about the current situation in the project impact area. The volume of the expected changes is determined on the basis of obtained information, impact recipient objects – receptors would be identified and their sensitivity will be assessed, which is necessary for determining the importance of the impact. After determining the significance of the impact its acceptability is determined, alternative options with less negative impact, necessity of mitigation measures and mitigation measures themselves.

The following scheme will be used for environmental and social impact assessment of the planned activities:

Step I: Determination of basic impact types and research format

Determination of the impact based on general analysis of activities, which may be important for these types of projects.

Step II: Study of the environmental baseline – search and analysis of the existing information

Identification of the receptors, which are expected to be affected by the planned activities, determination of sensitivity of the receptors

Step III: Characterization and assessment of the impact

Impact character, probability, significance other characteristic determination by considering the sensitive receptors, description of the expected changes in the environment and assessment of their significance.

Step IV: Determination of the mitigation measures

Significant impact mitigation, prevention or compensating measure determination

Step V: Residual impact assessment

Determination of the expected value of change in the environment after implementation of the mitigation measures

Step VI: Monitoring and management strategy development

Monitoring the effectiveness of the mitigation measures is needed to ensure, that the impact must not exceed the predetermined values, effectiveness of the mitigation measures must be confirmed, or the necessity of the corrective measures must be identified.

6.9.1 Impact Receptors and their Sensitivity

Implementation of the works may cause such qualitative and quantitative characteristic changes of physical and biological resources in the impact area, such as:

- Air quality and acoustic background of the environment;
- Soil stability and quality;
- Capacity and quality of surface and groundwater;
- Visual changes of the landscapes;
- Amount of habitats, flora and fauna;
- Historical archaeological values of the study area; etc.

The population, which may be impacted by the planned activity, includes people living, working or involved in other activities (e.g. vocation, travel) nearby the designed facility. Facility staff is considered as a potential sensitive receptor.

Receptor sensitivity is related to the impact volume and ability of the receptor to counteract the change or restore after the change, as well as with its relative ecological, social or economic value.

Table 6-13: Terrestrial and Aquatic Ecology Impact Assessment Criteria

Range	Category	Impact on habitat integrity	Impact on behavior of species	Restoration ability of habitats/species	Impact on protected habitats
1	Very low	Insignificant impact on habitat integrity	No changes in behavior, death of small mammal/fish species of no importance is anticipated, no danger of invasive species spreading	Fully restored after re-cultivation works (<1 year)	No impact on protected areas of national or international importance
2	Low	Noticeable impact on low value habitat integrity, including loss of 10-20 ha land habitat	Changes in behavior can be detected using standard methods. Death of less valuable species of small mammals/fishes is expected. No danger of invasive species.	Restoration in 2 years after re-cultivation works	Temporary, short-term, small impact on protected areas of national or international importance, which will not cause long-term ecological integrity violation
3	Medium	Noticeable impact on integrity of habitats, reduction of valuable habitats, loss of less valuable lands (20-50 ha)	Changes in behavior of valuable species can be detected using standard methods, death of less valuable species, invasive species are expected	Restoration in 2-5 years after Recultivation works	Small impact on protected areas of national or international importance, but ecosystem will be restored within 3 years
4	High	Decrease of protected or locally important habitats, loss of 50-100 ha of less valuable habitats	Changes in behavior of valuable species can be detected using standard methods, death of valuable animal species is expected, invasive species spread	Restoration in 5-10 years after Re-cultivation works	Impact on protected areas of national or international importance is expected, mitigation measures will help to restore ecosystem, which will take around 5 years
5	Very high	Decrease of protected or locally important habitats or loss of >100 ha of less valuable habitats	Changes in behavior of valuable species can be detected using standard methods, death of valuable animal species is expected, invasive species spread	Restoration in more than 10 years after Re-cultivation works	Impact on protected areas of national or international importance is expected.

- Defensive and ecological value of impact receptors, such as species, populations, communities, habitats, landscapes and ecosystem;
- Impacts on protected receptors are high impacts.

Established criteria for assessment of ecological system impacts are given in the Table 6-13

6.9.2 Impact on Flora

This impact may happen in mobilization, commissioning, operation and decommissioning phase and may be direct (damage, loss) and indirect (emission) loss will involve the loss of plant habitats.

Activities of bush clearing on a proposed area, will result on massive cutting of different plant species, may damage the vegetation cover of the area. Project related impact on flora could be reduced with right organization/management of the works and via implementing corresponding mitigation measures.

This impact is considered, **medium significance** because the effects will be experienced only for short-term and at local scale, affecting valuable resources in the immediate area of activity. The impact is not cumulative as there are no other similar activities in the area.

6.9.3 Impact on Fauna

Mobilization, commissioning, and decommissioning phases are related to temporal disturbance of fauna and possible migration from areas of influence. These may affect animal biodiversity as follows:

- Vibration and noise levels will increase, plants will be covered with dust, which will affect feeding base for vertebrate and invertebrate species;
- Concern factors will increase for birds and bats living near the project area
- Cutting plants on some locations will destroy whereabouts of animals, this will especially affect bats, which live mainly in trees near the forest and snakes. Destruction of such trees will cause decrease of number of bats; number of plants and trees within the project to be cut is relatively not big;

Having said that, direct (collision/damage, fragmentation of habitats and destruction) and indirect (migration due to noise/vibration, emissions and etc.) impacts are expected. Sources of impacts are: Transport; Machinery; and people.

This impact is considered, **medium significance** because the effects will be experienced only for short-term and at local scale, affecting valuable resources in the immediate area of activity. The impact is not cumulative as there are no other similar activities in the area and it can happen during mobilization and construction phases of the project.

6.9.4 Impact Assessment Methodology

Impact on District Council landfills and sewage systems/treatment facilities as a result of project implementation is assessed here, which is connected to increase of their loading. The impact depends on the type and capacity of the formed Waste.

Table 6-14: Impact assessment criteria associated with the waste management

Range	Category	Description
1	Very low	Insignificant increase of load on the household/operational waste District landfill/waste recycling facility
2	Low	Increase of load up to 10% on the household/operational waste District landfill/waste recycling facility

Range	Category	Description
3	Medium	Increase of load from 10-50% on the household/operational waste District landfill/waste recycling facility, landfill expansion is not necessary
4	High	Increase of load from 50-100% on the household/operational waste District landfill/waste recycling facility, landfills expansion or arrangement of the new landfill may be necessary
5	Very high	Increase of load with more than 100% on the household/operational waste District landfill/waste recycling facility, landfills expansion or arrangement of the new landfill is necessary

6.9.5 Impact Description

Waste management measure must be implemented, to minimize generation of the waste during activities (mobilization, commissioning, and decommissioning), increase their recycling and reuse to maximum and finally, to dispose waste at appropriate locations.

Responsible person should be appointed for implementation of these measures, who will control temporary and final waste disposal processes and will keep the register. Among non-hazardous waste the following are likely to be generated:

- Waste due to vegetation clearance;
- Polyethylene waste (packaging/sealing materials);
- Ferrous and nonferrous scrap metal;
- Domestic waste, etc.

Household waste will be collected in adequately labelled lidded containers. Domestic waste will be delivered to the domestic waster utilization landfill. Waste generated will be delivered to Kyela District landfill. Generation of following types and volumes of hazardous waste is expected during implementation of project activities:

- Paint residues and cans under paints;
- Residues of fuels and lubricants;
- Oil filters from machinery and vehicle;
- Used rubber tires;

Soil/ground polluted with petroleum hydrocarbons due to accidental oil spills – volume depends on spill scale.

Hazardous waste generated shall be transported to the temporary storage facility by waste management personnel of a contractor using special vehicles (waste should be removed as accumulated, but at least once per three days interval).

Final waste management measures (taking put of temporary storage, neutralization, utilization, and disposal) should be carried out by correspondingly licensed contractor. Adoption of registering mechanism of such waste is a must. Violation of rules of above-mentioned waste management may cause a number of negative impacts on different environmental receptors, for example:

- Incorrect waste management (dumping into water, littering on the adjacent territory) may cause pollution of soil and water, as well as deterioration of sanitary conditions and negative visual changes;
- Disposition of scrap metal on the improper area, May lead to a road barricading and negative impact on traffic flows and etc.

Therefore, it is necessary to implement waste management rules. Hazardous waste management measures are given in the regulation for management of hazardous waste.

This impact is considered, **medium significance** because the effects will be experienced only for short-term and at local scale, affecting valuable resources in the immediate area of activity. The impact is not cumulative as there are no other similar activities in the area.

6.10 Impact No 8: Cultural Heritage Impacts

The potential impacts of the Project to indigenous heritage values during the construction phase are:

- Indirect contamination to indigenous heritage sites due to run-off, unintentional spills, erosion of contaminated soil and dust.
- Indirect contamination to indigenous heritage sites due to contamination of groundwater and surface water flows because of clearing, spills, run-off and contamination.
- Ground disturbance resulting in disturbance of known or unknown indigenous sites of significance; and
- Impact on indigenous landscape and cultural value.

6.11 Impact No. 9: Socioeconomic Impacts

6.11.1 Impact Assessment Methodology

During socioeconomic impact assessment both, negative and positive impacts are considered. Three category schemes are used for assessment of such impacts – low impact, medium impact, and high impact.

Table 6-15: Criteria for Socioeconomic Impact Assessment

Category	Socioeconomic impact
Low	<ul style="list-style-type: none"> • Short-term restriction of resources' and infrastructure accessibility, which will not affect income of local population; long-term negative impact on economic activity of local population also is not expected; • Short-term deterioration of living quality of local population, which will not result in long-term negative impact • No impact on health • Insignificant impact on safety • Long-term, although easy adoptable impact on environment; • Increase of local population by 1% due to migration □
Medium	<ul style="list-style-type: none"> • Short-term restriction of resources' and infrastructure accessibility, which will affect lifestyle of population for a short period of time, although this will not have long-term negative impact on economic activity of local population; • Short-term deterioration of living quality, which will not result in long-term negative impact; • Certain impact on health is expected, but mortality risk will not increase; • Certain safety related risks are expected; • Complaints regarding some impacts are expected; • Increase of population by 10-30% due to migration
High	<ul style="list-style-type: none"> • Some resources and infrastructure becomes unavailable for local population, due to which they have to change their lifestyle and this brings by long term negative impact on their economic activity; • Significant deterioration of local population life quality; • Significant impact on health, resulting in high mortality risk; • Certain safety related risks are expected • Corrupt deals regarding employment and nepotism are expected • Population constantly complains about impacts, resulting in conflict situations between population and staff • Local population increased by more than 30% due to migration, creating unacceptable cultural environment for local population, creation of new settlements is expected

6.11.2 Description of Impact

6.11.2.1 Health and Safety

During the activities (mobilization, commissioning, decommissioning, and demobilization) some health and safety related risks (for population and personnel) are expected. Impacts could be:

- Direct (e.g.: accidents, power stroke, falling from heights, injuries from mobilization and demobilization, commissioning and decommissioning); and
- Indirect (emissions, increased acoustic background, climate change, contamination of water and soil).

Social risks are also related to health and safety, namely risk of infectious diseases' spread (including AIDS and STDs). This risk is related to migration of personnel during all phases of the project. Appropriate preventive measures must be implemented. Considering, that most of personnel will be local population, this risk is minimum.

Population health and safety risks related to movement of transport would not be high, as for transportation operations only existing roads will be used and some footpaths might require to be widened to accommodate passage of wide loads.

6.11.2.2 Demographic Changes

Basically, residents will be employed both for all phases of the project. Correspondingly, no important demographic changes are expected at any stage of the project implementation.

6.11.2.3 Contribution to Economy

The positive impact of local population employment is also noteworthy. Also, due to influx of foreigners in the area, the hospitality and catering industry might experience a boom as requirement for good quality hospitality and catering establishment shall be required.

Publishing of the research report resulting from the project activities, might increase popularity of project area to scientific and academic communities hence might significantly increase influx of people with disposable income.

6.11.2.4 Road Damage, Traffic Load, Limited Movement

At present, the technical condition of roads is satisfying. Road damage is expected due to intense transport movement especially during mobilization and demobilization phases.

Less impact is expected on operation phase, namely during repair maintenance works, as traffic of heavy machinery will be less. To reduce the impact to minimum, proper planning of work sequences is important. During works and especially after, all damaged sections of roads must be rehabilitated and restored to their original condition.

Mitigation measures will reduce the impact even more, namely: routes must be predefined, which will limit use of roads in settled areas

Impacts on traffic flows on operation phase are very low and may be assessed as insignificant.

6.11.3 Impact Assessment

Table 6-16: Socioeconomic Impact

Impact and Impact Sources	Impact Recipients	Description and Assessment of Residual Impact
Mobilization/Commissioning/Decommissioning and Demobilization Phase		
Health deterioration and safety risks: Direct (e.g.: accidents, power stroke, falling from heights, traumatism, injuries from equipment, etc.); and Indirect (emissions, increased acoustic background, climate change, contamination of water and soil).	Personnel and local population	Direct or indirect impact. Duration – mobilization, commissioning, decommissioning and demobilization phases Certain impact on health and safety related risks <u>Significance:</u> Medium, considering implementation of mitigation measures very low
Changes in demography: Migration; Construction of settlements and migration of foreigners.	Local Population	Direct negative Increase of migration is not expected. <u>Significance:</u> low
<i>Contribution to economy and employment</i> Stimulation/development of catering/hospitality business and its satellites business activities Establishment of work places Increased budget receipts	Regional economics, including project activities and other businesses, local population	Direct positive temporary impact A number of impacts will be long-term (e.g. improvement of infrastructure) Increase of employment, income and budget receipts. Improved infrastructure <u>Significance:</u> High
Damage of road cover Movement of heavy machinery <i>Intensification of traffic</i> Movement of any machinery Limitation of movement Blocking roads for safe works	Local Infrastructure, population	Direct negative, duration – project activities phase Road infrastructure usage can be limited. Complaints expected from local population <u>Significance:</u> medium, considering implementation of mitigation measures low
Construction Phase		
Health deterioration and safety risks: Direct (e.g.: accidents, power stroke, falling from heights, traumatism, injuries from project activities, etc.); and Indirect (emissions, increased acoustic background, climate change, contamination of water and soil).	Mainly personnel involved in operation phase, as well as local population	Direct or indirect. Long-term impact. Impact on health is less expected. Safety related risks are insignificant. <u>Significance:</u> Low considering implementation of mitigation measures – very low

Impact and Impact Sources	Impact Recipients	Description and Assessment of Residual Impact
<i>Contribution to economy and employment and improve in tourism</i> Stimulation/development of hospitality/catering business and its satellite business activities Creation of new job opportunities Increased budgetary income.	State economic conditions, local production and population	Direct positive, temporary impact improvement of infrastructure which will improve living conditions for local population and promote country's economic development <u>Significance:</u> high 20 people will be employed during operation phase <u>Significance:</u> low
<i>Damage of road cover</i> Movement of heavy machinery required for maintenance/repairing works <i>Intensification of traffic</i> Movement of any machinery <i>Limitation of Movement</i> Not anticipate	Local Infrastructure population	Direct negative, impact Due to arranging of diversion pipeline impact may be long-term. Otherwise impact duration is maintenance works <u>Significance:</u> low, considering implementation of mitigation measures – very low

6.12 Residual Impacts

The impacts that remain once mitigation has been put in place will be described as residual impacts adversely affects one or more environmental and social receptors. The identified residual negative impacts were subjected to a critical assessment and review and ensure that they meet the residual impacts acceptability threshold.

The assessment of impacts was conducted in the identified categories these categories were subjected to all stages of project development from mobilisation, construction, operation, and decommissioning (where applicable).

The identified residual impacts are presented with respect to the specific development stage as derived from the interaction matrices. Table 6-17 presents the identified residual impacts.

Table 6-17: Identified Residual Impacts

S N	Stage	Nature	
		Positive	Negative
1	Mobilization		<ul style="list-style-type: none"> Biodiversity loss Habitat loss and/or alteration Habitat fragmentation
2	Construction		<ul style="list-style-type: none"> Change in landscape and aesthetics
3	Operation	<ul style="list-style-type: none"> Employment creation Provision of education Minimization of vulnerability to girls 	
4	Decommissioning		<ul style="list-style-type: none"> Loss of employment

6.13 Cumulative Residual Effects

Cumulative residual environmental effects are defined as the sum of residual environmental and social effects from all past, current, and reasonably foreseeable projects and/or activities on the physical, biological, and socio-economic components of the environment. These include not only residual risks and impacts associated with this project but also arising from other projects implemented or planned to be implemented in the Project Area of Influence.

The Project will implement mitigation measures to limit incremental environmental effects that might occur however, as noted above, implementation of mitigation measures is expected to result in minor changes to the biophysical and socio-economic environments from the Project relative to baseline conditions.

Therefore, the Project implementation arrangement should consider collaboration with other projects in the area to reduce the effect of the residual impacts in ways that are possible and feasible. Focusing on the development of a site-specific mitigation measures that will result to further reduce the potential cumulative residual risks and impacts.

6.14 Ergonomics impacts

Ergonomics is the way you use your body to work and fitting the job or task to you to reduce your risk of injury. These musculoskeletal injuries develop slowly over time and occur in the soft tissues of your body like the nerves, tendons, muscles, ligaments and joints.

Generally, the greater the exposure to a single risk factor or combination of risk factors, the greater the probability of an ergonomic injury or illness, also called Work-Related Musculoskeletal Disorders (WMSD). The big three ergonomic risk factors are

- Force (how much you lift/push/pull),
- Repetition (how often you perform the task), and
- Posture (body position).

Other potential ergonomic risk factors include vibration, contact stress, sustained exertions, and cold temperatures. Examples of these injuries are low back strain, carpal tunnel syndrome, and tendonitis. These injuries are called musculoskeletal disorders or MSDs. This impact is likely to occur to all phases of the project cycle, mobilization, implementation and decommissioning phases.

6.15 Activity Risk Assessment.

Risk Assessments are elaborated for all tasks performed at the work fronts, detailing the steps and frequency of the task, the known hazards and the appropriate precautionary measures, procedures/work releases, controls, environmental and industrial hygiene methods, collective and personal protective equipment to minimize or eliminate hazards.

The purpose of the Risk Assessment is to make it a routine to verify the safety items before the start of any activities, assisting with the detection and prevention of risks of accidents and with task planning. Table 6-18 shows the risk assessment criteria.

Table 6-18: Risk Assessment

S/N	Impact & Aspect Description	Nature	Magnitude	Extension	Duration	Significance of Impact	Probability of Occurrence	Risk
	Loss of biodiversity due to bush clearing	Direct	High	DIA	Long-term	Major	Definite	Significant Risk
	Air pollution due the emission of exhaust gases and dust from vehicles	Direct	Very low	IIA	Long-term	Moderate	Probable	Low Risk
	Soil pollution due to bush clearance	Direct	Very low	RIIA	Short-term	Minor	Probable	Low Risk
	Soil erosion due to bush clearance and vegetation cover	Indirect	Low	DIA	Short-term	Minor	Probable	Low Risk
	Climate change due to vehicle movement, bush clearance	Indirect	Very low	NIA	Long-term	Minor	Probable	Low Risk
6	Waste generation (solid and liquid waste) from construction materials, bush clearance and sanitary facilities	Direct	High	DIA	Short-term	Major	Definite	Significant Risk
7	Employment Opportunities (activities will require man power)	Direct	High	NIA	Short-term	Major	Definite	Negligible Risk
8	Conflict due to landownership	Indirect	Very low	DIA	Short-term	Minor	Probable	Low Risk
9	Safety of the workers due to heavy duties	Direct	Medium	DIA	Long-term	Major	Probable	Significant Risk
10	Public health and hazard (due to emission of dust and performance of heavy duties	Direct	Medium	NIA	Long-term	Major	Probable	Significant Risk
11	Noise and vibration pollution due to the transportation of material and equipment use	Direct	Low	DIA	Short-term	Minor	Probable	Low Risk
Construction Phase								
1	Loss of biodiversity due to site clearing	Direct	Medium	IIA	Long-term	Major	Definite	Significant Risk

S/N	Impact & Aspect Description	Nature	Magnitude	Extension	Duration	Significance of Impact	Probability of Occurrence	Risk
2	Air pollution due the emission of exhaust gases and dust from vehicles and earth work	Direct	High	DIA	Short-term	Major	Probable	Low Risk
3	Noise and vibration from vehicle movement, equipment and material use	Direct	Low	DIA	Short-term	Minor	Probable	Low Risk
4	Safety of the workers due to heavy duties	Direct	High	DIA	Long-term	Major	Definite	Significant Risk
5	Public health and hazard (due to emission of dust and performance of heavy duties	Direct	Medium	IIA	Short-term	Moderate	Probable	Low Risk
6	Employment Opportunities (activities will require man power)	Direct	High	NIA	Long-term	Major	Definite	Negligible Risk
7	Waste generation (solid and liquid waste) from construction materials, site clearance and sanitary facilities	Direct	High	DIA	Short-term	Major	Definite	Significant Risk
	Hazardous waste and e waste generation	Direct	High	IIA	Medium	Moderate	Probable	Low Risk
8	Unemployment due to decommissioning of construction activities	Indirect	Medium	NIA	Short-term	Moderate	Definite	Low Risk
Operation Phase								
1	Employment Opportunities	Direct	High	NIA	Long-term	Major	Definite	Negligible Risk
2	Waste generation from sanitary facilities ,classrooms, offices, Dormitories and dining	Direct	High	IIA	Long-term	Major	Definite	Significant Risk
3	Health and safety (due to fire outbreak and housekeeping)	Direct	Medium	DIA	Long-term	Moderate	Probable	Significant Risk
5	Benefit to the government (economic and man power)	Indirect	High	NIA	Long-term	Major	Very low	Negligible Risk
Decommissioning Phase								

S/N	Impact & Aspect Description	Nature	Magnitude	Extension	Duration	Significance of Impact	Probability of Occurrence	Risk
1	Abandoned infrastructure due to decommissioning of construction activities	Indirect	Medium	DIA	Medium-term	Minor	Probable	Low Risk
2	Unemployment due to decommissioning of construction activities	Direct	High	NIA	Short-term	Minor	Definite	Negligible Risk
3	Solid waste due to dismantling of buildings	Direct	Low	DIA	Long-term	Minor	Very low	Low Risk

CHAPTER SEVEN

7 CONSIDERATION OF ALTERNATIVES

7.1 Introduction

The EMA EIA regulations of 2005 requires that alternatives be identified during the scoping process. An important function of the Scoping Phase is to screen alternatives to derive a list of feasible alternatives that need to be assessed in further detail in the ESIA Phase. The environmental impact statement shall contain an assessment of impacts of the identified alternatives.

According to the EMA EIA regulations, analysis of alternatives includes project site, design and technologies and reasons for preferring the proposed site, design, and technologies. An alternative can be defined as a possible course of action, in place of another, that would meet the same purpose and need.

7.2 Project Site Alternative

The selection criteria for the location depends on the availability/ease access and ownership of the proposed land parcel for Mbeya Regional. In that regards various economic considerations which include the feasibility of the project in terms of financial and technical perspectives have been considered to select the project location.

Furthermore, the location shall not require demolition of property (houses and other infrastructure) to pave way for the construction and accessibility of the project site. In that regards, alternative location shall not be further considered in the EIS. Alternatives analysis in this project considered the following:

- a) No-Go alternative,
- b) Design and technological considerations

7.3 No-Go alternative

The assessment of alternatives must always include the “no-go” option as a baseline against which all other alternatives must be measured. The option of not implementing the activity must always be assessed and to the same level of detail as the other feasible and reasonable alternatives.

The no-go will see the status quo activities persist without the construction on the proposed site. The “no-go” option is taken to be the existing rights on the property, and this includes all the duty of care and other legal responsibilities that apply to the owner of the property.

CHAPTER EIGHT

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 Introduction

The sections that follow describe the steps that the contractor/project implementation team should take to ensure that the anticipated environmental and social impacts are avoided, mitigated, or remedied.

This layout the systematic plans packaged as the environmental management plan (EMP). The goal of the EMP developed is to address the key impacts identified in the preceding Chapter as well as setting the relevant policies and actions plans needed to achieve an environmentally sound and sustainable project venture.

Table 8-1: Impact Mitigation Measures

Approach	Example
Avoid	Change of route or site details, to avoid important ecological or archaeological features
Replace	Regenerate similar habitat of equivalent ecological value in different location
Reduce	Filters, precipitators, noise barriers, dust, enclosures, visual screening, wildlife corridors, and changed time of activities
Restore	Site restoration after construction
Compensate	Relocation of displaced communities, facilities for the affected communities, financial compensation for the affected individuals etc.

These mitigation measures will be incorporated into an Environmental Management Plan (EMP) to facilitate implementation during the planning, construction, operational and decommissioning phases. The EMP forms part of the final ESIA, as such its forms part of the authorization and thus its implementation will become binding on the project applicant and any contractors, should this project be authorized.

The EMPs for the project should consists of the following:

- Management Policies;
- Management Plans; and
- Decommissioning Plan

8.2 Environmental Management Policy

The environmental policy developed should be one that enables project implementers and Project management and sustainable utilization of environmental resources therein. The policy should therefore cover the following, among other issues:

- Ensure that all Project activities operate within legal requirements of all relevant national legislation covered in Chapter Four;
- That there are continuous environmental improvement and performance through monitoring of Project activities;
- Ensure that utilization of natural resources is optimal with measures in place to ensure resource availability for future generation;
- Awareness creation to the surrounding community regarding sustainable utilization of natural resources, protection of sensitive ecosystems and bio-diversity maintenance for communal livelihood; and
- Balancing between natural resource use, environmental conservation, and economic development.

8.2.1 Occupational Health and Safety Policy

The Occupational Health and Safety Policy developed for the Project should enable establishment of appropriate measures that ensure that the health, safety and welfare of all users is cared for as well as the health requirements of the local community in which the project is located. The policy should highlight on the following, among others:

- Medical examination of workers;
- Sanitation in the Project area;
- Proper liquid and solid waste management and disposal;
- Emergency preparedness;
- Fire safety;
- Necessity and availability of personal protective equipment
- Safety measures for cold storage equipment;
- Appropriate safety and rescue equipment are availed to Project users;
- Risk minimization of accidental damage, community, and environment; and
- Training in safety.

Preventive and protective measures should be introduced according to the following order of priority:

- Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc.;
- Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, machine guarding, acoustic insulating, etc.;
- Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc.
- Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE.

8.2.2 Local Community Policy

The Local Community Policy are developed by management of the Project to ensure that the management of the project develops and maintains sound relations with its all users and the local community on mutual respect and active partnership. The policy should highlight on ways the management should:

- Work with the local community and relevant government departments and agencies to achieve sustainability of the project;
- Come up with ways of enhancing information flow from management to the community and Project users, and vice versa;
- Active engagement of the local community in all Project activities that impact on the local community.

8.3 Coordination and Review of the EMP

The EMP forms the basis for environmental management on site. Based on the results of the performance assessment and review process, the EMP may be modified as the project progresses.

Modifications will only be permitted by the District Environmental Officer. Changes to the EMP will only be allowed:

- a) If alternative measures with equal or improved outcomes have been identified after the compilation of the report.
- b) Prior to non-compliance, therefore requiring pro-active evaluation.

8.4 Reporting

In addition to all reporting requirements identified in the EMP, records shall be kept by the District Environmental Officer of all monitoring results, monitoring reports, incident records, audit reports and management reviews. Minutes of all environmental project meetings shall be submitted to the Environmental officer.

Table 8-2: Summary of Environmental and Social Management Plans

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
Environmental Social Health and Safety: General			
<p>Obligatory environmental social health and safety induction (training programmed) for all personnel (well locations, suppliers). Induction materials delivered in written format and/or verbally with defined procedures, work instructions and responsibilities on key themes/project aspects:</p> <ul style="list-style-type: none"> • Contents of ESMP, H&S Policy etc.; • Use of PPE, fire facilities, good site practices and housekeeping; • Sound waste management (handling/clean-up of contaminating spills, storage, use and disposal of hazardous materials/Waste); • Economic, social and cultural sensitivities and values at project primary impact locations, areas in vicinity and area of influence; • Interactions with the resident local community; • Community awareness-raising (Information and Communication) programme - for various stakeholders and project affected parties and groups. 	<ul style="list-style-type: none"> • Local authorities and communities have been notified; • All legally required permits have been acquired. • Workers' PPE comply with good practice • Appropriate signposting of the sites will inform workers of key rules and regulations to follow. 	<p>RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi</p>	<p>30,000,000 (own source)</p>
Impact No. 1: Air Pollution– General			
<ul style="list-style-type: none"> • Combustion of solid waste on the territories of site and camps is prohibited; • A speed limit for trucks should be observed; • Prohibit of work without Personal Protective Equipment (masks, respirators) in the dusty work areas; • There will be no excessive idling of construction vehicles at sites • The surrounding environment shall be kept free of garbage and solid waste (clay) to minimize dust. 	<p>EMA Regulation on Air Quality (2010)</p>	<p>RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi</p>	<p>Part of Project Cost</p>
Impact No. 2: Noise (From Equipment, Vehicles and Activities)			
<ul style="list-style-type: none"> • Noise will be limited to restricted times agreed to in the permit • Machinery and equipment undergo regular inspection/maintenance; fitted with silencers and mufflers, use of noise insulation. 	<p>EMA Regulation on Environmental Noise (2010)</p>	<p>RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi</p>	<p>1,000,000 for PPEs</p>

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
<ul style="list-style-type: none"> Personal Protective Equipment: provide and enforce use by all personnel working in noisy zones; Provide education to crew about noise-sensitive aquatic life; Limit noise generating activities, 			
Impact No. 3: Visual and Aesthetic Impacts			
<ul style="list-style-type: none"> Maintenance and packaging Waste: incineration or disposal or recycling should be done at appropriate location Lighting shall be maintained at minimum necessary to fulfil operational and safety requirements during project activities 	As minimum visual/aesthetic impacts as possible	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	1,000,000 for waste management
Impact No. 4: Soil Pollution			
<ul style="list-style-type: none"> Inspection and preventive maintenance of equipment should be undertaken as per schedule to limit spillage of oils; and carried out at approved workshop (service station); Restriction of refueling/maintenance of the machinery/equipment on the sites. In case of urgent need, these activities should be carried out at least 60 m away from the water, with consideration of certain mitigation measures for preventing the spills (and consequently soil/water contamination); Control of the fuel/oil storage and usage rules; Proper waste management. Waste collection and temporal storing on the special allocated area; Restriction of machinery and equipment washing on the territory; In case of fuel/oil spill, localization of the spilled material and immediate cleaning of the contaminated area. Personnel should be provided with appropriate means (adsorbents, shovels, etc.) and personal security equipment; Contaminated soil and ground for further remediation should be taken out from the territory by the contractor holding an appropriate permit on these activities; Cleaning the territory and re-cultivation after completion of the project activities; and In case of fuel/oil spill, cleaning of the territory and withdrawal of the contaminated soil and ground for further remediation. 	EMA Regulation on Soil Quality Standard, 2010	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Costs
Impact No. 5: Surface Water Pollution			

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
<ul style="list-style-type: none"> Maintenance/repair work, change of oil or lubricant: carried out at approved workshop (service station) Inspection and preventive maintenance of equipment: undertaken regularly. 	EMA Regulation on Surface Water Quality (2010) (Turbidity, pH and TDS)	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cost
Impact No. 6.: Potential Impact on Terrestrial and Aquatic Ecology			
<ul style="list-style-type: none"> Use existing local paths and roads during mobilization and demobilization; Tree cutting and vegetation clearance should be kept to minimum (wherever possible, All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. Adjacent wetlands and streams shall be protected from construction site run-off with appropriate erosion and sediment control feature to include by not limited to hay bales and silt fences There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas 	Avoid all sensitive ecology as much as possible Maintain operations within planned sites.	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cost
Impact No. 7: Waste Discharge and Disposal (General and Hazardous Waste)			
<ul style="list-style-type: none"> Waste collection and disposal pathways and sites will be identified for all major waste types expected from all activities; Domestic Solid waste will be collected and disposed properly in accordance with Local Government Authority directives; The records of waste disposal will be maintained as proof for proper management as designed. Waste management must be conducted by properly trained personnel who will undertake training periodically; Hazardous waste must be removed from project site by the contractor having corresponding permission for the mentioned activity; Waste disposal is allowed only in hermetic packages, which must have proper labeling. Site vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies. 	EMA Regulation on Waste Management and Hazardous Waste Management	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Costs
Impact No 7.1: Waste Management,			

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
<ul style="list-style-type: none"> • Temporary small collection block to be constructed for storage of solid waste while waiting for contractor vehicle to come for disposal purposes in weekly basis • Make sure that sorting of waste materials is done at the source before taking them to the temporary collection point • Routine monitoring of solid waste generation sources and records the data. • All waste associated with electronic equipment will be segregated and handled over to the registered company for disposing or recycling. 	Environmental Management (Solid Waste Management) Regulations, 2009	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots
Impact No. 8: Cultural Heritage			
<ul style="list-style-type: none"> • Ensure that provisions are put in place so that any cultural artifacts or other possible “chance finds” encountered during field works are noted and registered, secured, responsible officials contacted, and further activities delayed or modified to account for such finds. 	Proper preservation of cultural artefacts	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots
Impact 9.1: Socioeconomic Impacts (General Health and Safety)			
<ul style="list-style-type: none"> • Prepare emergency response plan for all kind of emergencies such as well blowout; fire and explosions, hazardous gas etc.; • Corresponding warning, prohibiting and directing signboards must be arranged at the operational areas for personnel and local population, for health and safety purpose; • While working on height personnel must be secured with special ropes and locking carabineers; • Maximal implementation of safety rules during execution of transport operations; • Roads, passing through settlements, must be restricted during transport operations as much as possible; • HIV/AIDS Awareness Training; • Personnel medical insurance; • Procedures and guidelines: operations, certified operation equipment, work procedures. Inspections and Maintenance system; • Use trained/qualified and competent personnel: operators, mechanics, supervisors; 	Zero incidents and accidents Zero new cases of HIV and Zero discrimination	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
<ul style="list-style-type: none"> Personal Protective Equipment (PPE), reasonable working hours, safe working conditions and facilities; In-house health and safety manual /guidelines; Emergency Response Equipment and Procedures (especially for fire, drowning and snake bites); Registering of discontent/complaints from the local community, if any, and proper response. 			
Impact 9.2: Socioeconomic Impact (Traffic and Pedestrian Safety)			
<ul style="list-style-type: none"> Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. Ensuring safe and continuous access to office facilities, shops and residences during all phases of the project 	Zero incidents and accidents	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots
Impact 9.3: Socioeconomic Impacts (Infrastructure)			
<ul style="list-style-type: none"> Road rehabilitation during preparatory works – positive factor; All the damaged road objects must be rehabilitated after completion of works and it should have restored to their initial condition; Ensure minimal disturbance of the population/passenger movement during road rehabilitation; Ensure maximum limitation of machinery movement on public roads; Employ well qualified drivers (Class C for large vehicles and Class D for small vehicles and training certificates from approved driving schools); 	Infrastructure in same or better condition as before the project	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
<ul style="list-style-type: none"> • Due diligence on vehicles to ensure they are roadworthy (road safety sticker) and comprehensive insurance; • Zero tolerance of drugs and alcohol use for drivers and all staff during working hours; and • Population will be informed about time and period of mobilization and demobilization of large equipment. 			
Impact 9.4: Socioeconomic Impact (Employment)			
<ul style="list-style-type: none"> • Employ locals for most of unspecialized labour • Procure local for most consumables available within the District • Manage local expectations by not overpromising • Registering of discontent/complaints from the local community, if any, and proper response. 	Local procurement and Local employment	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots
Impact 9.5: Socioeconomic Impact (Land Leasing)			
<ul style="list-style-type: none"> • Researching and clarifying site ownership • Ensuring owners are paid rental fees before accessing site • Notification of owners of commencement of works, if required prepare and sign a works completion handover protocol • Notification of owners of all activities and any site damages • Notification of owners of termination of works, if required prepare and sign a works completion handover protocol 	Lack of grievances	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Part of Project Cots
Ergonomics impacts			
<ul style="list-style-type: none"> • Use a buddy system or the proper lifting device to carry heavy loads. To the extent feasible, use your legs to push up and lift the load, not the upper body or back. Do not twist the body during a lift - step to one side or the other to turn. • Design work activities so employees do not have to work on their knees. If the job requires it, use knee pads. Avoid repeatedly twisting the hands and wrists. Provide proper hand tools that are designed to keep the hand and wrist in a comfortable, neutral position. • Avoid stretching or unnecessary stress to do overhead work where possible. For example, adjust scaffolds to the 	Zero incidence	RAS, REO, RAO, DED, DEO, DEMO, SEQUIP zonal Coordinators, hired local contractor/ fundi	Project cost

Aspects/Impacts, Mitigation and Management Actions	Target Level	Responsibility	Estimate (TZS)
appropriate working height and use a lifting device to hold drywall or other material in place for overhead work.			

CHAPTER NINE

9 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

Environmental Management Plan (EMP) intends to set forth “environmental and social conditions” that are to be abided by the proponent. It aims at ensuring effective implementation of the proposed mitigation measures

The Project requires regular monitoring and auditing of key environmental, health and safety indicators to:

- assess the overall performance of the project;
- to comply with local environmental, health and safety legislation; and
- Benchmark its project with other similar projects for improved management.

Key environmental parameters of concern with the operation of such a project are:

- water consumption,
- energy consumption; and
- solid and liquid waste handling;

Additionally, the following social parameters need to be keenly monitored to ensure benefits to the community and its sustainability:

- Health status of workers;
- Employment opportunities to local community; and
- Corporate Social responsibility programs.

With these factors in mind, there are a need to put in place elaborate and sound environmental management system and mechanisms of monitoring on a continuous basis the environmental performance of the Project. Undertaking monitoring and auditing of key environmental parameters and putting in place of all approved recommendation of the environmental management plan and conditions of the EIA license achieved, this Monitoring undertaken are both active and reactive.

With increased urban development come the challenges of waste handling and disposal. The monitoring programme developed must consider possible impacts of solid waste disposal. All Waste emanating from the Project and its disposal must be monitored to ensure no environmental nuisance or degradation arises.

9.1 Parameters are Monitored

Monitoring involves measuring, observing, recording and evaluation of physical, socioeconomic and ecological variables within the project area and the neighborhood. This may include the following:

Summary of Environmental and Socioeconomic Management Plan

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
Pre-Construction	Atmospheric air pollution due to emissions of exhaust and fugitive gases	<ul style="list-style-type: none"> Combustion of solid waste on the territories of site and camps is prohibited; A speed limit for trucks should be observed Bush clearance through burning should be avoided 	CO-4.5g/kWh NOx-1.1 g/kWh HC-8.0 g/kWh PM-0.612 g/kWh Smoke 0.15g/m	DED Kyela District	1,000,000
	Loss of biodiversity (both Flora and Fauna)	<ul style="list-style-type: none"> Remove, without destroying, large Plants and ground cover where possible Replant recovered Plants and other flora from local ecosystem after construction The project proponent shall consult the experts for advice and for potential flora and stocks for re generation of disturbed vegetation in plant areas 	As minimum disturbance as possible	Kyela District	
	Climate change due to vehicle movement, bush clearance	<ul style="list-style-type: none"> Transition to Low-Emission Vehicles: Promote the adoption of low-emission vehicles, such as electric vehicles (EVs) or hybrid vehicles, which have lower or zero tailpipe emissions. Encourage incentives for purchasing EVs and develop charging infrastructure. Improve Fuel Efficiency: Encourage regular vehicle maintenance, proper tire inflation, and efficient driving practices to improve fuel efficiency and reduce emissions. Promote the use of cleaner fuels, such as biodiesel or renewable natural gas, where available. Restoration and Conservation: Support initiatives for the restoration 	As minimum emission of greenhouse gases into the atmosphere	Kyela District	Parts of Project cost

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
		and conservation of natural habitats and ecosystems, as intact ecosystems contribute to carbon sequestration and climate regulation			
Construction Phase	Atmospheric Air Pollution due to emissions of exhaust and fugitive gases	<ul style="list-style-type: none"> Combustion of solid waste on the territories of site and camps is prohibited; A speed limit for trucks should be observed Haul roads should be routinely maintained in good condition The project proponent shall plant indigenous trees and grasses over a period of time on area. This will prevent fine dust entering ambient area. The project proponent shall observe the standards for air quality throughout the operations and comply accordingly. Person Protective Equipment should be well observed 	CO-4.5g/kWh NOx-1.1 g/kWh HC-8.0 g/kWh PM-0.612 g/kWh Smoke 0.15g/m	Kyela District	20,000,000
	Hearing impairment due to increased noise levels from construction vehicles and machinery	<ul style="list-style-type: none"> Machinery and equipment undergo regular inspection/maintenance; fitted with silencers and mufflers, use of noise insulation. Personal Protective Equipment: provide and enforce use by all personnel working in noisy zones; The contractor should adhere to relevant noise regulations and guidelines set by the authorities. 	As minimum as possible	Kyela District	1,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
		<ul style="list-style-type: none"> Limiting the duration and intensity of noisy activities during sensitive hours. The contractor should also consider scheduling noisy activities during periods when they would cause the least disruption to nearby residents and businesses. 			
	Injuries and fatal accidents due to occupational health and safety issues	<ul style="list-style-type: none"> Noise will be limited to restricted times agreed to in the permit Machinery and equipment undergo regular inspection/maintenance; fitted with silencers and mufflers, use of noise insulation. Personal Protective Equipment: provide and enforce use by all personnel working in noisy zones; Provide education to crew about noise-sensitive aquatic life; Limit noise generating activities 	As minimum emission as possible	Kyela District	1,000,000 (for PPEs)
	Waste generation	<ul style="list-style-type: none"> Prepare site waste management plan prior to commencement of construction works Designate appropriate waste storage areas, Develop collection and removal schedule, Unusable construction waste will be disposed of at an approved dumpsite 	Environmental Management (Solid Waste Management) Regulations, 2009 as amended in 2016	Kyela District	Part of Project cost
	Employment Opportunity	<ul style="list-style-type: none"> Employ locals for most of unspecialized labour Procure local for most consumables available within the District Manage local expectations by not overpromising 	Local procurement and Local employment	Kyela District	Part of project cost

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
		<ul style="list-style-type: none"> Registering of discontent/complaints from the local community, if any, and proper response 			
Operation Phase	Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases	<ul style="list-style-type: none"> The school can adopt renewable energy sources, such as solar panels and gas to meet the energy needs of the school such as lighting and cooking. The school should prioritize energy-efficient designs and equipment within the school. This can involve the use of energy-efficient lighting systems, insulation materials, and energy-saving appliances. The school can promote sustainable transportation options such as organizing carpooling initiatives for their staffs. Develop a comprehensive cleaning program that includes regular dusting, vacuuming, and cleaning of surfaces to minimize dust, allergens, and contaminants. Use environmentally friendly and non-toxic cleaning products. Regular monitoring of air quality and implementation of appropriate air pollution control measures should also be undertaken. 	TZS 845:2005 Air Quality Specification; – TZS 983:2007 Air Quality - Vehicular Exhaust Emissions Limits	Kyela District	5,000,000
	Noise emissions	<ul style="list-style-type: none"> Installation of soundproofing materials in classrooms and common areas to reduce internal noise transmission. Strategic planning of school facilities, such as locating noisy areas away from residential areas or utilizing buffer zones, can help minimize the impact on nearby communities. Proper maintenance of equipment and facilities within the school premises can also contribute to noise reduction. 	45dBA during a day and 35dBA during night	Kyela District	5,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
		<ul style="list-style-type: none"> Regular monitoring of noise levels and compliance with relevant noise regulations and standards should be prioritized. This can involve periodic assessments and inspections to ensure that noise pollution levels remain within acceptable limits 			
	Waste Generation	<ul style="list-style-type: none"> Establishment of waste segregation systems, encouraging composting initiatives for the kitchen waste, and providing sufficient waste bins and collection points throughout the school premises. The school should establish dedicated storage areas for hazardous waste such as laboratory chemicals, faulty electrical appliances, ensuring they are secure, properly labeled, and equipped with appropriate safety measures. The school should also establish partnerships with authorized entities to ensure the waste is handled and disposed of in compliance with environmental regulations. Designate bins specifically for the disposal of sanitary pads. These bins should be placed in female restrooms and other private areas, and they should have lids to maintain hygiene and provide privacy. Construction of an incinerator for the management of the sanitary pads. 	Environmental Management (Hazardous Waste Control and Management) Regulations, 2021.	School Administration	15,000,000
	Employment Opportunity	<ul style="list-style-type: none"> Employ locals for most of unspecialized labour Procure local for most consumables available within the District 	Local procurement and Local employment	Kyela District	20,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
		<ul style="list-style-type: none"> • Manage local expectations by not overpromising • Registering of discontent/complaints from the local community, if any, 			
	General Health and Safety hazards	<ul style="list-style-type: none"> • Establishment of a comprehensive health and safety policy. • Conducting regular inspections to identify and mitigate any potential hazards, such as faulty electrical systems, structural weaknesses, or unsafe equipment within the school premises. • Adequate emergency preparedness plans should be in place, including fire safety measures, first aid provisions, and clear evacuation procedures. • The school should prioritize maintaining a clean and hygienic environment to prevent the spread of diseases and ensure the availability of adequate sanitation facilities. • Promoting health and wellness among students should also be a focus, with initiatives like health education programs, access to clean drinking water, and appropriate waste management practices. • Implement security measures such as fencing of the school premises. Establish anti-bullying policies and procedures to address and prevent bullying incidents. • 	Zero incidents and accidents	Kyela District	1,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level/Standard	Responsibility	Estimated Costs [TZS]
Decommissioning	Injuries and fatal accident	<ul style="list-style-type: none"> • Effective communication and coordination among project stakeholders, including contractors, workers, and relevant authorities, are vital for maintaining a safe working environment. • It is crucial for the contractor to prioritize safety measures and adhere to strict guidelines and regulations by implementing comprehensive safety protocols, providing appropriate personal protective equipment (PPE), conducting thorough risk assessments, and ensuring proper training for workers to significantly reduce the likelihood of accidents and injuries during the demolition activities. 	Zero accident	Kyela District	1,000,000
	Unemployment	<ul style="list-style-type: none"> • Preparing the workers to be employed anywhere else in the different sectors through provision of extensive training. • Preparing the workers for forced retirement by providing skills for self-employment, wise investment. • Ensuring that all employees are members of the National Social Security Fund and the employees should ensure that the Proponent contributions are made. 	All employees	Kyela District	N/A

CHAPTER TEN

10 RESOURCE EVALUATION/COST BENEFIT ANALYSIS

10.1 Introduction

Chapter 7 and 8 of this EIS report have documented the cost/impacts of the project to Mbeya Regional and the degree to which they can be substantially mitigated. Cost-benefit analysis is normally done in the framework of feasibility study of an activity.

The aim of cost-benefit analysis is to inform the project proponent to make a decision on: whether it makes economic sense to continue with the project; whether the chosen option is a cost-effective alternative; and the estimate of the size of a project. For this project, the costs will include: capital expenditures; operating and maintenance costs; staff costs; materials; research and development; and environment, health and other social costs.

Benefits may include: build on the achievements of previous projects in the education sector which have supported quality improvements. It will support the expansion of the secondary school network in order to substantially reduce travel distances by bringing secondary schools closer to children's homes through an expansion of the secondary school network. Construction will be guided by a minimum infrastructure package based on the School Construction and Maintenance Strategy and minimum construction standards aligned with the Projects Environmental and Social Framework.

10.2 Environmental cost and benefit analysis

Environmental cost benefit analysis is assessed in terms of the negative and positive impacts. Furthermore, the analysis is considering whether the impacts are mitigatable and the costs of mitigating the impacts are reasonable. As it has been mentioned in Chapters 7 and 8, the potential benefits of the project, in terms of economic advancement and social benefit are substantial.

The environmental impacts are reasonably mitigatable. So to mitigate negative impacts, when compared to the required data are relatively small.

10.3 Effect on the local community

The benefits from project development can be judged in terms of employment, social welfare, education development, and the local economy (wages, goods and services). Thus, there will be a substantial spread of the benefit within the community through the provision of food, accommodation and other regular services to the employees and students.

10.4 Infrastructure development

The upgrading, development and maintenance of local infrastructure are benefits that will extend far beyond the project's scope and lifetime. Also, during operation of the project there will be storage rooms and temporarily office that will be constructed with engineering standards at the site especially at Busale Village nearby or within project area

10.5 Advantages for the broader community and country

The earnings of the project will in the final analysis it will contribute the following,

- Creating a gender sensitive, learner-friendly school environment through investing in supportive structures in the school and community including trained school guidance counselors, stronger links with the community through Parent Teacher Associations and life skills training.
- Supporting female students to avoid getting pregnant and dropping out of secondary school through measures that include
 - Encouraging community awareness of risks for girls; and

- Supporting safe passage and reducing the distance to schools to reduce the risks of gender-based violence on the way to school.
 - Supporting girls who become pregnant to access recognized, quality Alternative Education Pathways (AEPs)
- To obtain lower secondary certification and continue with upper secondary education or post-secondary education.
- Improving the quality of secondary school teaching and learning environments through the hiring of additional qualified teachers in core subjects and providing textbooks in core subjects.
- Increasing the number of secondary school spaces through the construction of new classrooms that meet minimum infrastructure standards and supporting the expansion of the school network to bring schools closer to communities.
- Using innovative digital technology to facilitate mathematics and science teaching and improve learning

CHAPTER ELEVEN

11 DECOMMISSIONING PLAN

11.1 Introduction

Decommissioning is the last phase of project life. It involves terminating project activities and operations and rehabilitating site to or close to its original state. It is anticipated that the project shall continue as long as there is a demand for a project, however, individual components of the project shall be decommissioned as need be.

11.2 Components

This decommissioning plan presents a conceptual framework on how the Project can be demolished if need. The plan takes into consideration on how materials and equipment, support infrastructure and land on which the buildings are standing on can be handled.

11.3 Disposal/Demolition Of Project Storage Buildings

Decommissioning of project shall only involve dismantling of the temporary office and store room that will be constructed during construction phase.

11.4 Considerations

- All employees involved in the decommissioning and demobilization exercises must have proper protective gear throughout;
- Decommissioning and demobilization activities should be done during day time only unless it's an emergency;
- Waste resulting must be disposed at designated waste disposal sites;
- All relevant lead agencies must be involved in the exercise; and
- Emergency services such as first aid and ambulance services must be on standby in case of any eventualities.

CHAPTER TWELVE

12 CONCLUSION AND RECOMMENDATIONS

12.1 Conclusion

This ESIA report describes the proposed project in detail, includes a concept project description, and addresses a number of project-related issues. The issues and impacts have been assessed and described in detail in order to gain a comprehensive understanding of the project's potential environmental impacts and to develop mitigation measures in response to any negative aspects that have emerged.

By allowing the development of a deterministic model of climate change, the project will benefit both the scientific community and the human race as a whole.

Given the nature and location of the development, the conclusion is that the potential impacts associated with the proposed development are of a nature and extent that can be reduced, limited and eliminated by the application of appropriate mitigation measures.

The key findings of the ESIA study conducted by Tansheq Limited are as follows:

- The Project Development Objectives (PDOs) are to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. SEQUIP will contribute to addressing key challenges to girls and boys accessing education and this school will definitely target girls for their studying excel. The project aims to reduce distance to government target: 3km (or 45 minutes)
- The project will contribute to increasing the total number of students in secondary education including Alternative Education Pathways (AEP) by 250,000. It will directly benefit about 1.8 million secondary school students, including 920,000 girls, 95% of whom are enrolled in lower secondary. SEQUIP will help more girls' transition from lower to upper secondary education, as girls are underrepresented at this level

12.2 Recommendations

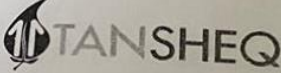


To ensure sustainability and achievement of the project's overall goal, the project should manage environmental, health, and safety issues in a systematic manner. This can only be accomplished if the ESMP and the Monitoring Plan developed herein are properly followed and improved upon whenever flaws are discovered.

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
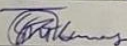
APPENDICES

Appendix I: list of the stakeholders consulted

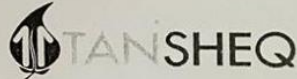






SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESMENT

Location: MBEYA / KYELA Date: 06/10/2022

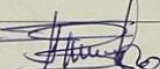
S/N	Name/ Jina	Title/ Cheo	Contacts/ Mawasiliano	Signature/ Sahihi
1.	EZEKIEL H. MAGEHERO	DED	0756944794	
2.	Guswiri Kuswa	DCM	0763518939	

KURUGENZI MTENDAJI KYELA

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESMENT

Location: GICLA - SHIZO MBEYA Date: 10/10/2022

S/N	Name/ Jina	Title/ Cheo	Contacts/ Mawasiliano	Signature/ Sahihi
1.	JANSEN BILARO	CHIFAUST	0713980514	

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESMENT

Location MBETA / KYELA / BUSALE Date 06/10/2022

N	Name/ Jina	Title/ Cheo	Contacts/ Mawasiliano	Signature/ Sahihi
1	ADAM -A. KABETA	DIWANI	0762214013	
2	SAIDI .M. BALOZI	WEO	0768645090	
3	BONIFAS .K. MINGA	M/KITI-BUSALE	0757687116	
4	ASSA .A. KAPANGA	MJUMBE	0762487087	
5	SHUKRAN MWAHOJO	MJUMBE	0767507723	S. HOJO'S
6	ROIDA KANYUMBA, MWANSA	MJUMBE HR	0747485212	
7	Semenu RASTAN MWAHOJO	MJUMBE	0757344407	S'nyen 89
8	ANEJI KASUMALI	MJUMBE	0747487720	Aeneji
9	RAMADHAN MBISA	M/Kibongoji	0759643055	Rimbisa
10.	KELVIN KAJELA	MJUMBE	0758065459	
11.	BOSCO .A. MWAMBE GELU	MJUMBE	0753695391	

Appendix II: Land ownership document indicating Land use

JAMHURI YA MUUNGANO WA TANZANIA
Fomu ya Ardhi ya Vijiji Na. 21

ATI NI 059 KYL/1807
 IRIESA JILA
 19/05/2023
 11:00 AM
 Namba ya Hati
 Ya Hatimiliki... 059 KYL/1807

SHERIA YA ARDHI YA VIJJI, 1999
 (Na. 5 YA 1999)

HATI YA HAKIMILIKI YA KIMILA
 (CHINI YA FUNGU LA 25)

Leo tarehe... 19 mwezi... 05 mwaka... 2023 Hii ni kuthibitisha kwamba Halmashauri ya Kijiji cha **BUSALE S.L.P 72, KYELA** imetoa kwa **HALMASHAURI YA WILAYA YA KYELA** (humu ndani ikirejewa kama "Mkazi") hakimiliki ya kimila (itaitwa "hakimiliki") juu ya ardhi iliyofafanuliwa katika jedwali (humu ndani itaitwa "ardhi") kwa kipindi kisicho na kikomo tangu Tarehe 19 mwezi 05 Mwaka 2023 Kwa maudhui na tafsiri halisi ya Sheria ya Ardhi ya Vijiji na kwa kuzingatia vipengele vyake na kanuni zote zinazotungwa chini ya sheria hiyo mbadala au marekebisho yake na kwa mujibu wa masharti yafuatayo:

- i. Mkazi atalipa kodi ya mwaka ya **Shs** kabla ya tarehe **1** ya mwezi **JULAI** kila mwaka (kama inahusika).
- ii. Ardhi itatumika kwa ajili ya **SHULE YA SEKONDARI**
- iii. Mkazi atawajibika kuhifadhi mazingira (ardhi na maji)
- iv. Mkazi atahakikisha kwamba mipaka ya ardhi ianalindwa na kutunzwa na idumu kuwa bayana kwa kipindi
- v. Mkazi ataheshimu na kuhifadhi haki za njia zilizopo.
- vi. Uhakilishi wa hakimiliki kwa mtu yeyote au kikundi chochote cha watu ambao kwa kawaida si wakazi wa kijiji lazima uidhinishwe na Halmashauri ya Kijiji.

JEDWALI
(Maelezo kamili ya eneo na mipaka yake)
UKA Na: KYL/BUSALE/LUPAKANO/.....
 Ardhi hii yenye ukubwa wa **EKARI 45.49**
 Iko katika Kitongoji cha **LUPAKANO**

ALAMA	KASK	MASH
BSL 1	8945370	582764
BSL 2	8945258	582726
BSL 3	8944977	582519
BSL 4	8944894	582301
BSL 5	8944885	582267
BSL 6	8945103	582197
BSL 7	8945256	582332
BSL 8	8945358	582434
BSL 9	8945426	582504
BSL 10	8945466	582526
BSL 11	8945505	582634

Kama inavyooneshwa katika mchoro/ ramani hapa kulia.

The map shows a polygonal plot of land with 11 boundary points labeled BSL 1 through BSL 11. The plot is situated between 'KASK' to the north, 'KAZA YA WILAYA' to the west, and 'KAZA YA WILAYA' to the south. The plot area is labeled 'EKARI 45.49'. A north arrow is present in the top left corner of the map area.

1. Jina kamili: **BONIFHASI KIPISONI MINGA**

Saini: 

Anuani **S. L. P 72, KYELA**

Wadhifa: **Mwenyekiti wa Kijiji**

Jina kamili: **LEAH M. KAHUKA**

Saini: 

Anuani **S. L. P 320, KYELA**

Wadhifa: **Afisa Mtendaji wa Kijiji**

MUHURI

WA

HALMASHAURI

YA KIJJI



2. Mmiliki (Taasisi): **HALMASHAURI YA WILAYA YA KYELA}**

Imegongwa Lakiri na **HALMASHAURI YA WILAYA YA KYELA}**

Na kusainiwa Leo Tarehe.....Mwaka 2023

Jina: **EZEKIEL H. MAGEHEMA** }

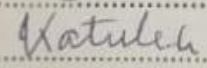
Sanduku la posta: **BOX 320 KYELA** }

Sahihi:  }

Wadhifa: **MKURUGENZI MTENDAJI** }

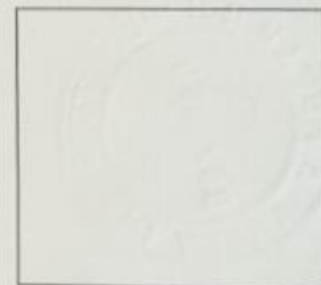
Jina: **KATULE G. KIWAMKANO** }

Sanduku la posta: **Box 320 KYELA** }

Sahihi:  }

Wadhifa: **M/KUJI HALMASHAURI KYELA** }

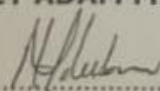
PICHA/MUHURI



3. Imegongwa Lakiri ya Halmashauri ya Wilaya ya **KYELA** na

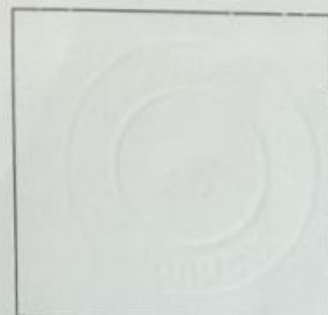
Kusainiwa leo Tarehe...19...Mwezi...05..Mwaka 2023}

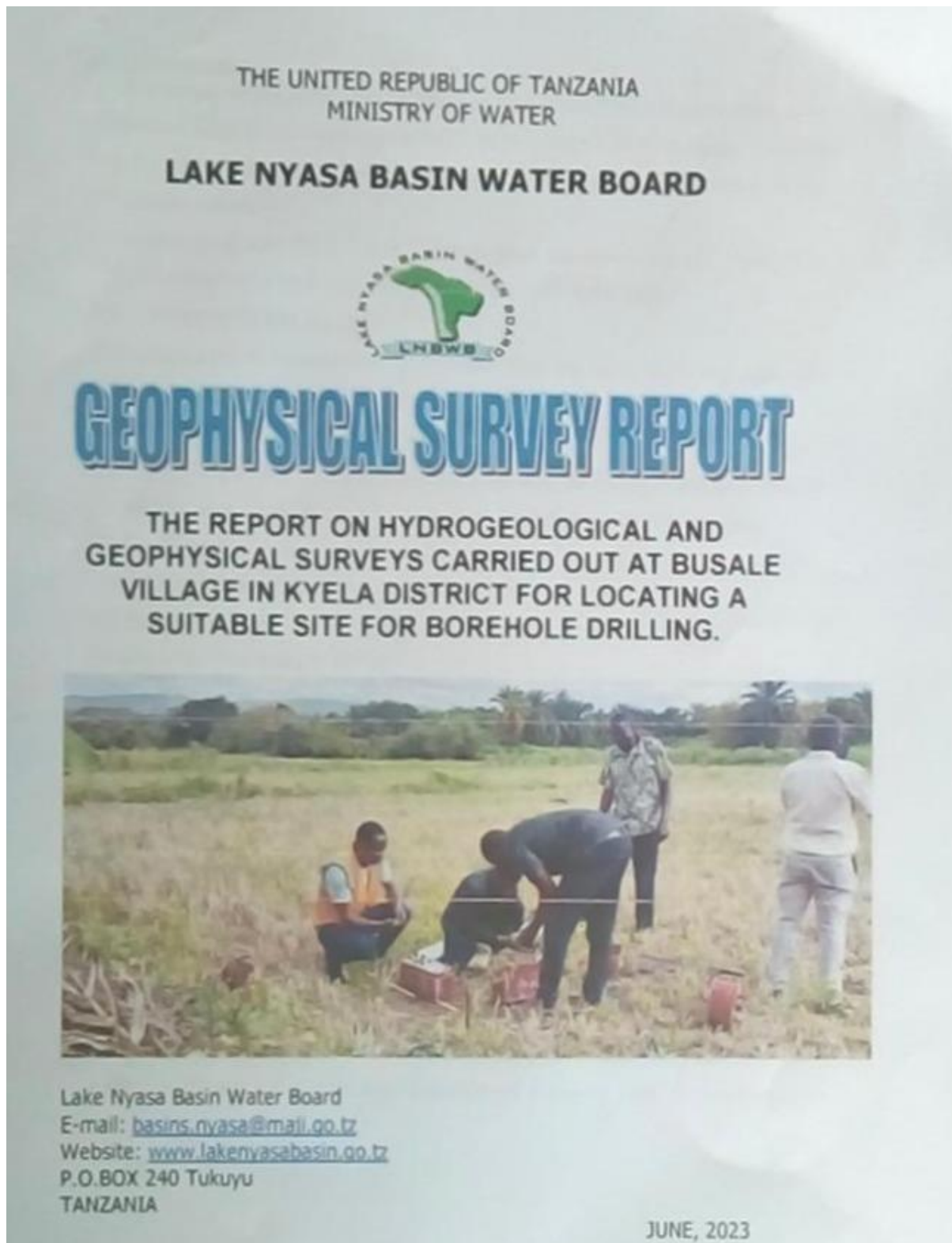
Jina: **GODFREY ADAM MDUBA**

Saini: 

Wadhifa: **Afisa Ardhi wa Wilaya**

LAKIRI





1.0 Introduction

Groundwater investigation was carried out by Eliofoo Hango, Anton Ndembeke and Petro Mligo (From Lake Nyasa Basin Water Board Office) to locate suitable site for boreholes drilling. The borehole will be used as source of water for the Secondary school.

Hydrogeological and Geophysical surveys were carried out on 26th June 2023 and interpretation of data and report writing on 27th June 2023.

2.0 Existing Water Supply:

The Community in project area gets water from the local hand dug well with 10metres depth.

3.0 Geomorphology and Drainage:

The topographic feature is covered by light silt, and sands which are seen almost all over the area. Also the area is covered by various species of bush trees.

4.0 Geology:

The rock types found at the area meta-sediments.

5.0. Hydrogeology:

Groundwater availability in the area is mainly from the overburden, mostly silts, sand, sediments and from unconsolidated solids. Groundwater recharge will Mainly be through the surface infiltration, rainfall is the main contributor towards groundwater.

6.0 Geophysical Survey:

6.1 Reconnaissance Survey

The aim of the reconnaissance survey was to select suitable area (s) for geophysical survey, considering the geological/hydrogeological, environmental and other physical conditions. The reconnaissance survey included the Geomorphological Survey of the Area, this includes the landscape and other physical features, Geological Survey to Determine the Formation of the Area and to Identify Possible Features and Selection of Traverse Line for Geophysical Survey.

6.2 Magnetic survey

The Geophysical survey was carried out by Using 19T Proton magnetometer instrument for determine weak zones and fractures.

Vertical electrical soundings (VES) surveys were carried out using ABEM AC TERRAMETER set, applying Schlumberger configuration. During the resistivity survey the maximum electrode separation (AB) was 320 meters. Interpretation of the field data was done by computer software using IPI2win program. The result obtained is shown in the table below. The curve obtained after interpretation of raw data,

Vertical Electrical sounding number one (VES 1) with coordinates -WGS84- Latitude -9.538830, Longitude 33.751050, Elevation 560m

Field Data VES 1

Electrode Spacing in Meters		Resistivity Readings in Ohms	Calculated Apparent Resistivity in Ohms M.	Geometric Factor (K)	Remarks
AB/2	MN/2				
1	0.5	77.8	183.61	2.36	
2		11.3	133.11	11.78	
3		4.3	118.21	27.49	
4		1.8	89.06	49.48	
4	1.0	3.75	88.35	23.56	
5		2.17	81.81	37.7	
6		1.4	76.97	54.98	
8		0.67	66.30	98.96	
10		0.37	57.54	155.51	
10	2.5	0.93	54.79	58.91	
15		0.33	45.36	137.45	
20		0.2	49.48	247.40	
25		0.09	34.99	388.77	
25	5.0	0.175	32.99	188.5	
30		0.11	30.24	274.89	
35		0.08	30.16	376.99	

40		0.06	29.69	494.80	
45		0.046	28.63	622.32	
50		0.037	28.77	777.54	
50	10.0	0.074	27.90	376.99	
60		0.048	26.39	549.78	
70		0.033	24.88	753.98	
80		0.026	20.53	789.60	
90		0.023	28.90	1256.09	
100		0.02	31.10	1555.09	
100	20.0	0.033	24.88	753.98	
120		0.023	25.29	1099.56	
140		0.0102	15.38	1507.96	
160		0.0081	16.03	1979.20	

Graph/curves and Layered Resistivity Model



Vertical Electrical sounding number one (VES 2) with coordinates -WGS84

Latitude -9 540008, Longitude 33 756393, and Elevation 581m

Field Data VES 2

Electrode Spacing in Meters		Resistivity Readings in Ohms	Calculated Apparent Resistivity in Ohms M	Geometric Factor (K)	Remarks
AB/2	MN/2				
1	0.5	46.8	110.45	2.36	
2		5.39	63.49	11.78	
3		1.73	47.56	27.49	
4		0.85	42.08	49.48	
4	1.0	1.78	41.94	23.58	
5		1.0	37.70	37.7	
6		0.65	35.74	54.98	
8		0.38	37.60	98.96	
10		0.25	38.88	155.51	
10	2.5	0.6	35.35	58.91	
15		0.24	32.99	137.45	
20		0.104	25.73	247.40	
25		0.057	22.16	388.77	
25	5.0	0.112	21.11	188.5	
30		0.071	19.52	274.89	
35		0.05	18.85	376.99	
40		0.039	19.30	494.80	
45		0.033	20.54	622.32	
50		0.025	19.44	777.54	
50	10.0	0.045	16.96	376.99	
60		0.035	19.24	549.78	
70		0.028	21.11	753.98	
80		0.023	18.16	789.60	
90		0.013	16.34	1258.09	

100		0.0106	16.48	1555.09	
100	20.0	0.0224	16.89	753.98	
120		0.0172	18.91	1099.56	
140		0.012	18.10	1507.96	
160		0.009	17.81	1979.20	

Graph/curves and Layered Resistivity Model



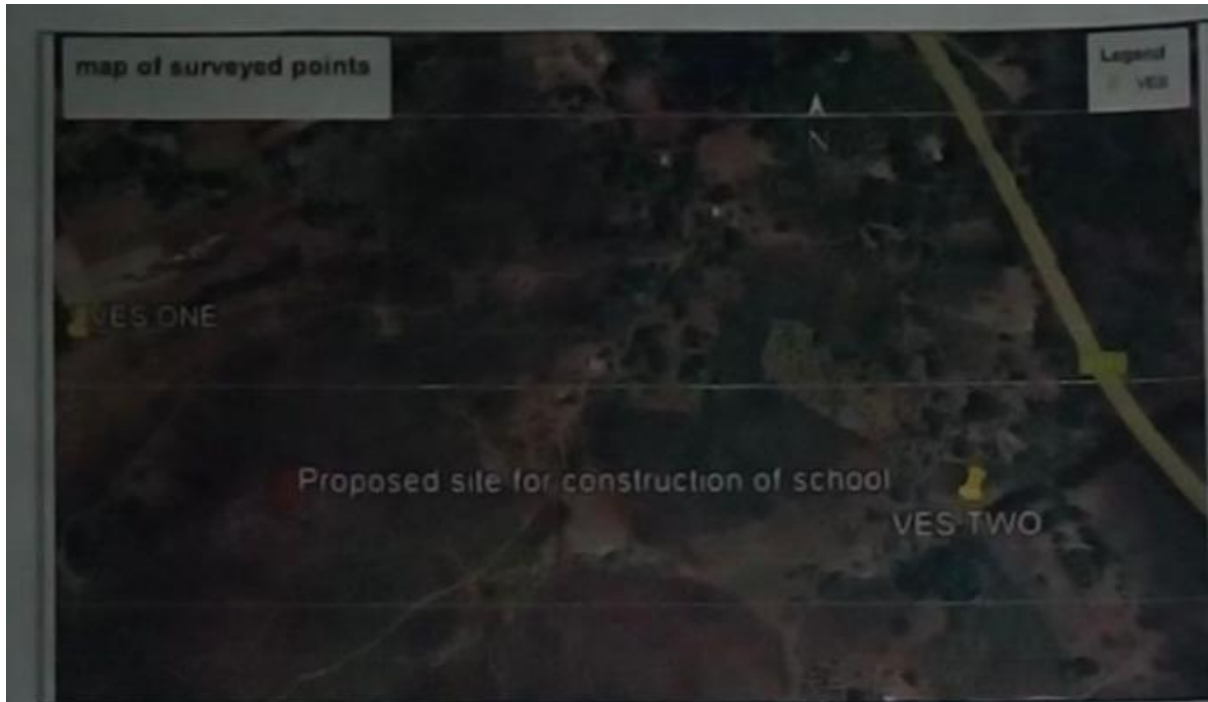


Figure 1: map showing surveyed point



Figure 2. Set up of Resistivity surveys using Vertical Electrical Technique

7.0 Conclusion and Recommendation:

According to Hydrogeological, geological, geophysical surveys and all other findings carried out at the area, the results indicate that both Surveyed points VES1 and VES2 have chance for ground water occurrence but VES1 selected as first choice with 75m drilling depth and VES2 as second Choice with 80m drilling depth.

- It is further recommended that the Hydro geologist should supervise the drilling activities and she/he will finally recommend the actual depth after studying the rock cuttings, the water strikes and quantity of water
- In case of successful drilled borehole, pumping test and laboratory water analysis are essential before water is commission for the intended use.
- Mud rotary drilling methods are recommended.
- The casings should be well packed with pure silica gravel pack of grain size between 1.5 and 6mm

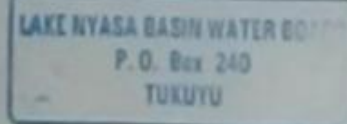
I beg to submit



Eliofoo Hango

For Basin Water Director

June 27th, 2023



Appendix IV: Terms of reference

1 TERMS OF REFERENCE

1.1 Introduction

During scoping, several key environmental issues of concern were identified after holding consultations with stakeholders of the project and after reviewing various literature related to the project. Similarly, expert opinion was sought on various key issues identified as requiring specialized knowledge.

The purpose of Terms of Reference (TOR) therefore, is to provide formal guidance to the Proponent /EIA Consultants of the proposed construction project on the range of issues that must be addressed in the EIA process. They form the basis for subsequent review process.

In these Terms of reference, strategies for addressing the issues identified during scoping have been incorporated to make the EIA focused.

1.2 Project Description

1.2.1 Design and Material

The proposed project will involve construction and operation of the following: - In construction phase different component of the project will be constructed which will include the following;

- Classrooms
- Administration buildings
- Dormitories
- Dining hall and Kitchen
- Two laboratory buildings
- Sanitation facilities.
- Water storage tanks
- Landscaping of the area

1.2.2 Objectives of EIA

The objectives of the EIA are:

- To establish baseline information on both natural and built environment including socio-economic conditions of the proposed project area.
- To identify, predict and evaluate foreseeable impacts, both beneficial and adverse, of the proposed construction of the school
- To develop mitigation measures that aim at eliminating or minimizing the potential negative effects and promote positive ones.
- To develop management clauses and monitoring aspects to be observed during project implementation.

This requirement clearly presents a broad challenge on what type of activity that is environmentally friendly need to be dealt with the construction, operation and decommissioning of the plant

1.3 Environmental Assessment Requirements

The Environmental Management Act, Cap 191 requires that EIA be undertaken for all new projects that may cause adverse environmental and social impacts.

Under the Environment Impact Assessment and Audit Regulations of 2005 as amended 2018, the proposed construction and operation of the project is categorized as an EIA obligatory project for which falls under Category Type A Project for which EIA is mandatory.

1.4 Study Area

Environmental Impact Assessment Scope of Work

Task 1: Description of the Proposed Project

The Consultant shall give details of:

- Location of all project-related development and operation sites
- General layout of the proposed project - diagrams, design basis, size, sources of utilities;
- pre-construction activities and construction activities;
- Organizational relationships, mandates and interactions among the different parties to be involved in the project

Task 2: Description of the Environment

The Consultant shall:

- i. Provide general description of the project environment and sources of information for anyone requiring a more extensive description (especially the EIA reviewers).
- ii. Identify those features that are particularly important in the project area –areas related to the project i.e. Maps/aerial photos at appropriate scales to illustrate the surrounding areas likely to be environmentally and social affected.
- iii. Identify areas that require special attention in the project implementation.

Environmental Impact Assessment shall specifically focus on these ecological components in the environment to ensure that the proposed development does not harm the well-being of these characteristics.

Task 3: Legislative and Regulatory Considerations

The Consultant shall:

Describe pertinent local, national and international regulations and standards governing environmental quality, health and safety, land use control etc. that the project developer requires to observe during the implementation of the project activities.

Task 4: Determination of Potential Impacts of the Proposed Project

Under this activity, the consultant shall:

- i. identify issues and concerns in order to find suitable remedies;
- ii. identify linkages among project components and the issues;
- iii. identify where project activities or elements interact with social and biophysical environment (direct impacts);
- iv. identify indirect impacts of the project on the environment;
- v. identify cumulative impacts that may be anticipated;
- vi. identify residual impacts if any;
- vii. predict probability, magnitude, distribution and timing of expected impacts;
- viii. for certain project components it might be necessary to carry out assessment at two or more sites (alternatives) in order to come out with the best option; and
- ix. Forecast what will happen to the affected environmental components if the project is implemented as is or if the alternatives are chosen.

Task 5: Estimation of the significance of the impacts

The consultant shall:

- i. determine which environmental components are mostly affected by the project or its alternatives;
- ii. list issues raised by the public and classify them according the level and frequency of concern whenever possible;
- iii. list regulatory standards, guidelines etc. that need to be met; and
- iv. Rank predicted impacts in order of priority for avoidance, mitigation, compensation and monitoring

By using the Interaction matrix and Leopold Matrix, the consultant will assess the impacts generated by the project to the environment.

Figure 1-1: Definition of Intensity ratings

Rating	Criteria	
	Negative impacts (Type of impact = -1)	Positive impacts (Type of impact = +1)
7	Irreparable damage to biophysical and / or social systems. Irreplaceable loss of species.	Noticeable, on-going benefits to which have improved the quality and extent of biophysical and / or social systems, including formal protection.
6	Irreparable damage to biophysical and / or social systems and the contravention of	Great improvement to ecosystem processes and services.

5	Very serious impacts and irreparable damage to components of biophysical and / or social systems.	On-going and widespread positive benefits to biophysical and / or social systems.
4	On-going damage to biophysical and / or social system components and species.	Average to intense positive benefits for biophysical and / or social systems.
3	Damage to biophysical and / or social system components and species.	Average, on-going positive benefits for biophysical and / or social systems.
2	Minor damage to biophysical and / or social system components and species. Likely to recover over time. Ecosystem processes not affected.	Low positive impacts on biophysical and / or social systems.
1	Negligible damage to individual components of biophysical and / or social systems.	Some low-level benefits to degraded biophysical and / or social systems.

*NOTE: Where applicable, the intensity of the impact is related to a relevant standard or threshold, or is based on specialist knowledge and understanding of that particular field.

Task 6: Development of Management Plan to Mitigate Negative Impacts and develop a monitoring plan.

The consultant shall:

- i. determine appropriate measures to avoid or mitigate undesirable impacts;
- ii. assess and describe the anticipated effectiveness of proposed measures;
- iii. ascertain regulatory requirements and expected performance standards;
- iv. determine and assess methods to monitor impacts for prediction accuracy remedial measures for effectiveness;
- v. determine and assess methods to monitor for early warning of unexpected effects;
- vi. re-assess project plans, design and project management structure;
- vii. describe follow-up scheme and post-project action plan for achieving EIA objectives; and
- viii. Assess the level of financial commitment by the project proponent for the management and monitoring plan, and follow up activities.

The consultant shall be guided by the cost-effectiveness principles in proposing amelioration measures. Estimation of costs of those measures shall be made. The assessment will provide a detailed plan to monitor the implementation of the mitigation measures and impacts of the project during construction and operation.

Task 7: Institutional set-up for

The Consultant shall review the institutional set-up - community, ward, District/ Regional and national levels - for implementation of the Management and Monitoring Plans recommended in the environmental assessment. The assessment shall identify who should be responsible for what and when.

Task 8: Drawing Recommendations

The consultant shall:

- i. highlight key concerns and considerations associated with the acceptance and implementation of recommended actions;
- ii. determine resources requirements for implementing recommendations;
- iii. determine capacity and resourcefulness of the client to meeting such commitment;
- iv. explain rationale for proposed development and benefits and costs vis-à-vis the no-project option;
- v. Ascertain degree of public acceptance of or reaction to recommendations.

Task 9: Environmental Impact Statement (EIS)

The assessment shall result into an EIS focusing on findings of the assessment, conclusions and recommended actions, supported by summaries of data collected etc. This shall be a concise document limited to significant environmental issues. The report format will be as per NEMC EIA guidelines.

Task 10: Review

The review report from NEMC may require further input (data collection, consultation inputs etc.). The consultant shall undertake to provide extra information and inputs until the project review is satisfactorily concluded.

Task 11: Public involvement

The assessment shall establish the level of consultation of the affected stakeholders before designing the project, level of involvement in the running and maintenance of the project facilities, as this is an important aspect for both environmental and project sustainability.

The assessment will provide a framework:

- for co-ordinating the environmental impact assessment with other government agencies, and
- For obtaining the views of affected groups, and in keeping records of meeting and other activities, communications, and comments and their disposition.

A people's participation report will be prepared as part of the EIS i.e. apart from the socio-economic and cultural impact report (which are dealing with consultants' perception and interpretation of issues). Consultation with various stakeholders have been conducted during the scoping and further consultation will be conducted during the EIA study.

Time Scale

It is expected that the study would be completed within a period of two months. However the effective consultancy period is 55 person-days (Including registration of the project, follow up of the review with NEMC on behalf of the Client).

Personnel Requirement

The consultants shall deploy consultants/experts with the demonstrable practical experience in conducting EIA studies. Specific experience in civil works, process engineering, and sociology.

Reporting and Report Presentation

The final draft of the EIS document should be concise, following the report writing guidelines in the National EIA Procedure and Guidelines (NEM, Draft 1997), for simplifying the review process.

Record of Meetings

The consultants shall provide record of the names of organizations, government, departments, and individuals whose views will obtain. The record will also provide description of views and information that will be obtained.

Outputs

The consultants shall submit to the Client, 3 original bound hard copies and electronic copies of the Scoping Report and the Environmental Impact Statement (EIS). The Consultant shall also make 10 copies for the review process as stipulated in the EMA 2004 (the costs for making such copies are included in the budget).

Appendix V: Schedule of Materials and Architectural Drawings

SCHEDULE OF MATERIALS

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for Two Classroom Block – Gable
Type

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	<u>SUB-STRUCTURE -PROVISIONAL</u>				
1	<u>Strip Foundation - Grade 15 Plain</u>				
	Aggregate (3/4")	10	M ³		
	Sand	5	M ³		
	Cement-50kgs -(42.5)	49	Bags		
2	<u>Foundation Walls</u>				
	6" Cement & Sand block -Minimum Strength 3.5 MPa	1,036	No		
	Sand	3	M ³		
	Cement -50kgs (42.5)	17	Bags		
	<u>ALTERNATIVE TO FOUNDATION WALL</u>				
	** If stone is applicable, then blockwork is not applicable.				
	Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or Stone) depending on availability and suitability of building materials.				
	Stone, complete with its cement and sand mortar (1:4)	18	M ³		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram (4.5m ³ lorry)	8	Trips		
	Hardcore 200mm thick - (4.5m ³ lorry)	7	Trips		
	Sand	5	M ³		
	Aldrin solution or other and equal approved (1000mls)	2	Bottle		
4	<u>Oversite Concrete 100mm thick - 15 grade ,Ground Beam and base column - 20 grade</u>				
	DPM	155	M ²		
	Cement -50kgs (42.5)	115	Bags		
	Aggregates (1/2")	19	M ³		
	Sand	10	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm2	35	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm2	33	PC'S		
	Binding Wire - 1kg	8	Kgs		
	A252 Mesh 200 x 200x 6.16kg/m2	4	PC'S		
	Timber 1" X 10 " (5.2m long)	15	PC'S		
	Timber 2" X 2"(5.2m long)	10	PC'S		
	Nails-4"	8	Kgs		
	Nails-3"	8	Kgs		
	Supporting props - 3m	5	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls & Ring beam</u>				
	6" Cement & Sand block (Minimum Strength 3.5 MPa) - 230mm	2,190	No		
	6" Cement & Sand block (Minimum Strength 3.5 MPa) - 150mm	198	No		
	DPC (30m long)	1	Roll		
	Sand	11	M ³		
	Cement-50kgs (42.5)	72	Bags		
	Aggregates (1/2")	4	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	25	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	27	PC'S		
	Binding Wire - 1kg	8	Kg		
	Timber 1" X 10" to Sides (5.2m long)	18	PC'S		
	Timber 1" X 5" (Plates)(5.2m long)	4	PC'S		
	Timber 2" X 2"(5.2m long)	10	PC'S		
	Supporting Props - 3m	15	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
	<i>ALTERNATIVE TO BLOCKWORK WALL</i>				
	<i>** If brickwork is applicable, then blockwork is not applicable.</i>				
	<i>Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or brickwork) depending on availability and suitability of building materials. Note that: Strictly do not use stretcher bond when using bricks, the acceptable bond is either Flemish or English or header.</i>				
	230mm thick One brick wall	158	m ²		
	150mm thick One brick wall	22	m ²		
C.	<u>ROOF STRUCTURE & COVERING</u>				
1	<u>Roof Structure - Provisional</u>				
	Timber 2" X 3" Purlins	50	PC'S		
	Timber 2" X 4" King Post, wall plate and struts	70	PC'S		
	Timber 2" X 6" Rafter and Tie beam	55	PC'S		
	Fascia board 1" X 10" -ref. Semi Hardwood (5.2m long)	14	PC'S		
	Nails -5"	50	Kgs		
	Nails -4"	30	Kgs		
	Nails -3"	20	Kgs		
	16mm diameter bolt, 500mm long	28	Pc's		
	NOTE: The above softwood timber structure should be pressure impregnated treated				
2	<u>Roof Covering</u>				
	28 G Resincoated Iron sheet size 900x3000mm long	103	PC'S		
	Hips/Ridge and valley - 28 G resin coat - 3m	8	PC'S		
	Aluminium Roofing Nails	23	Packet		
			C/F		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
			B/F		
3	<u>Gutter's</u>				
	Upvc 100mm half round (6m long)-5"	7	PC'S		
	Upvc 75mm diameter down pipe; Class B	2	PC'S		
	PVC outlet	2	PC'S		
	Gutter support bracket	32	PC'S		
	PVC bend 90'	2	PC'S		
	PVC bend 45'	4	PC'S		
	Gutter Clamp 3"	28	PC'S		
	Connector/reducer	8	PC'S		
	Connector outer	2	PC'S		
	Corner Inner	2	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	<u>CEILING</u>				
	Gypsum board -9mm thick	56	PC'S		
	Plain Cornice (8ft)	40	PC'S		
	Screw 1.25" 500pcs/box	3	Box		
	Gypsum powder -25kg	11	Bags		
	Fiber tape (90m)	1	Roller		
	Treated softwood Timber 2" X 2" (3.6m)	102	PC'S		
	Nails 4"	20	Kgs		
	Nails 3"	25	Kgs		
	SUB-TOTAL FOR CEILING				
E.	<u>DOOR</u>				
1	<u>40mm thick hardwood Panelled door shutter</u>				
	820 x 2100mm high	2	PC'S		
2	<u>45 x 145mm Frames (hardwood),Varnish</u>				
	900 x 2500 mm high frame	2	PC'S		
	5mm thick clear glass to Vents	1	m2		
	16mm diameter burglar bars -12m	1	Pcs		
	Brush 3"	3	Pcs		
	Sand paper (msasa) No.80	3	LM		
	Clear Varnish - 4Litres	1	TIN		
	Thinner for Varnish	3	Litres		
3	<u>Ironmongeries</u>				
	Mortice lock Three lever	2	No		
	Brass hinges - 100mm	3	Pairs		
	SUB-TOTAL FOR DOORS				
F.	<u>WINDOWS</u>				
	<u>Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs</u>				
	1500 X 1500mm high	10	PC'S		
	SUB-TOTAL FOR WINDOWS				

ARCHITECTURAL DRAWINGS

CLASSROOM BLOCK

ARCHITECTURAL DRAWING

2- Classroom Block only -Gable

JUNE 2023

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

**PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND
LOCAL GOVERNMENT**

**PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM**

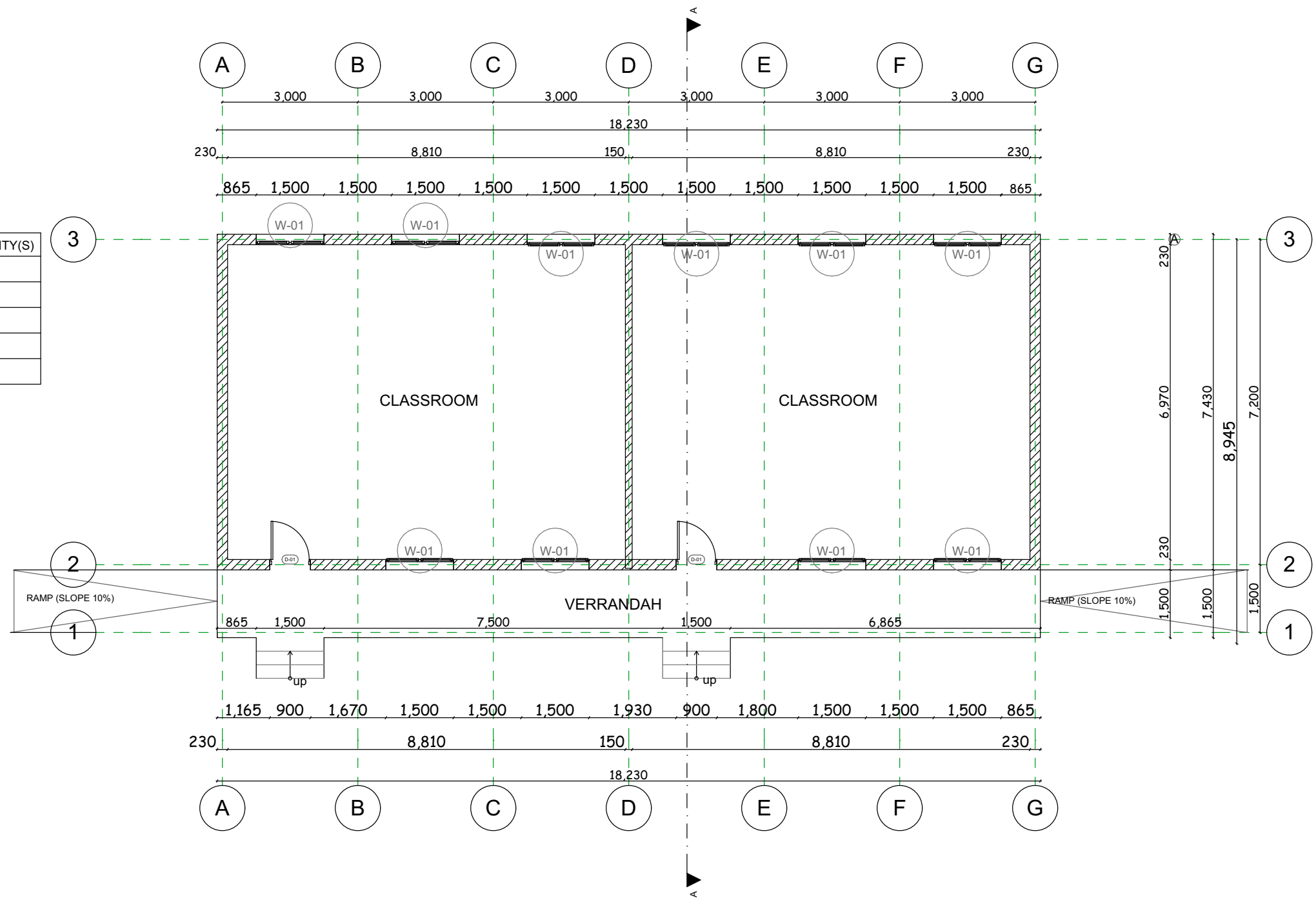
DRAWING TITLE: 2- CLASSROOMS BLOCK - GABLE

DRAWING NO: ARC/2CRG/00

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

WINDOW SCHEDULE

WINDOW TYPE	HEIGHT x WIDTH	QUANTITY(S)
W 01	1500mm x 1500mm	10
TOTAL		10
DOOR SCHEDULE		
D 1	2500mm x 900mm	2
TOTAL		2



TOTAL FLOOR AREA = 163 SQM

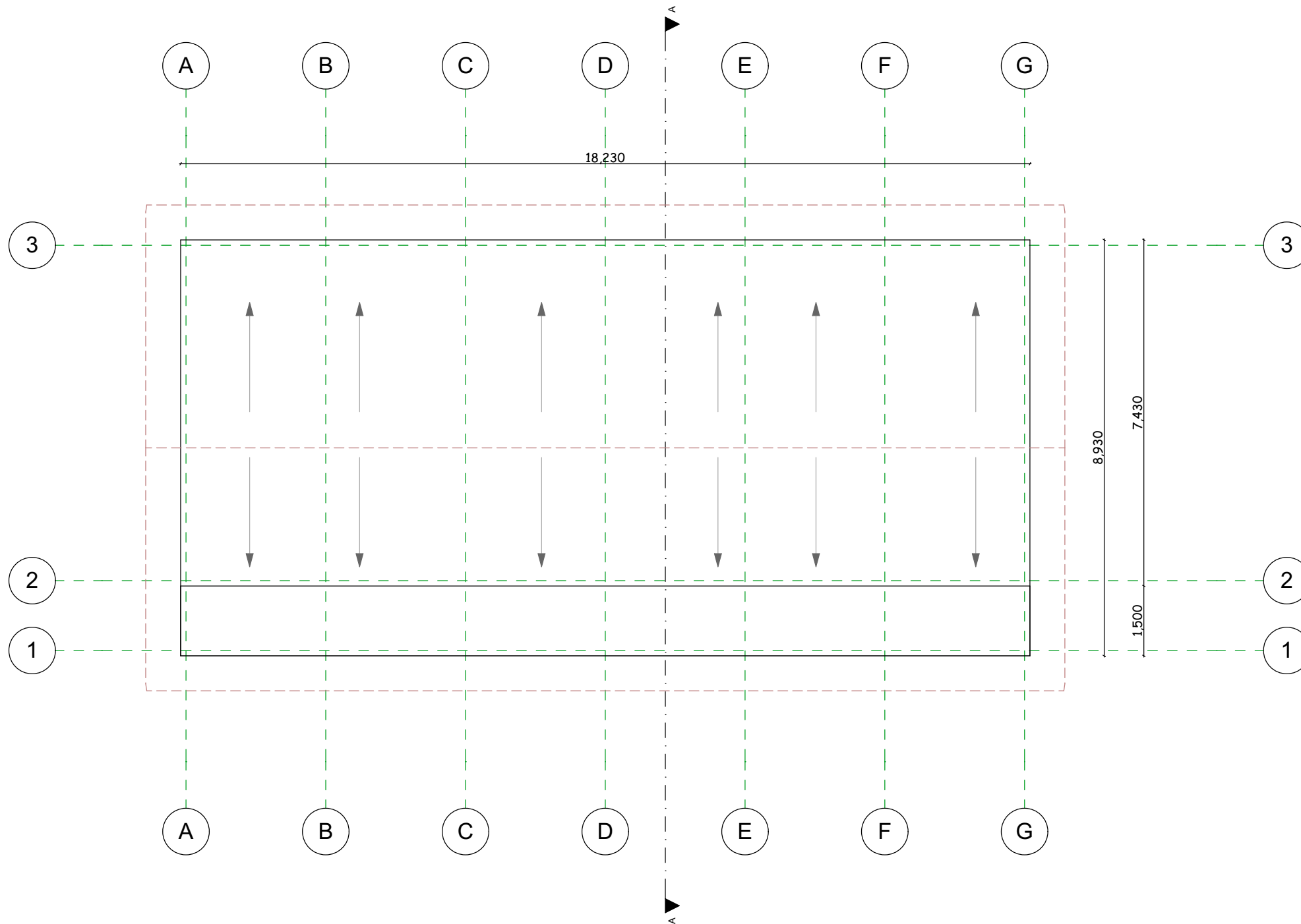
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
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PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS FOR SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: 2- CLASSROOMS BLOCK GABLED

FLOOR PLAN
 DRAWING NO: ARC/2CRG/01

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

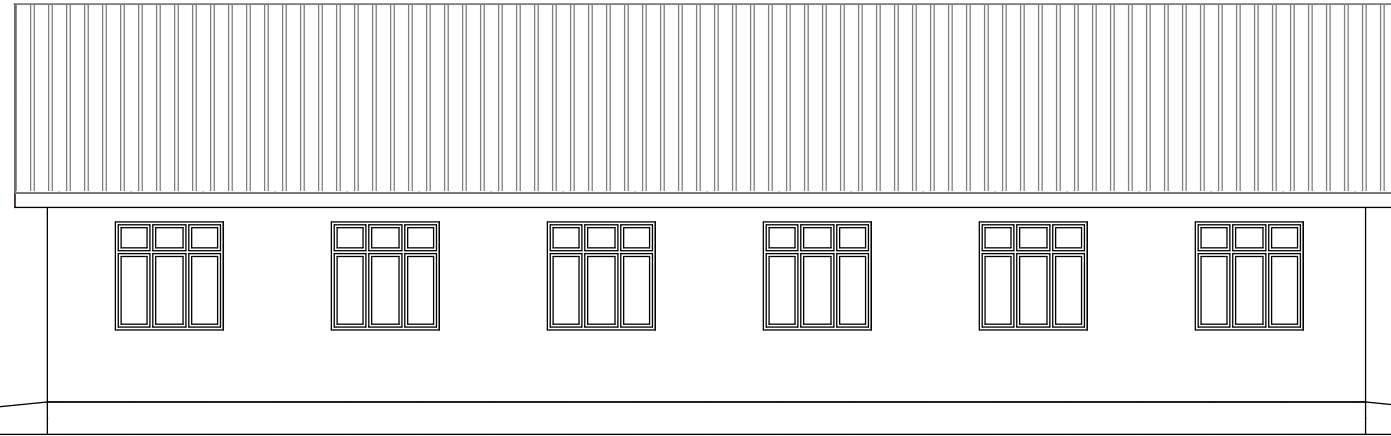


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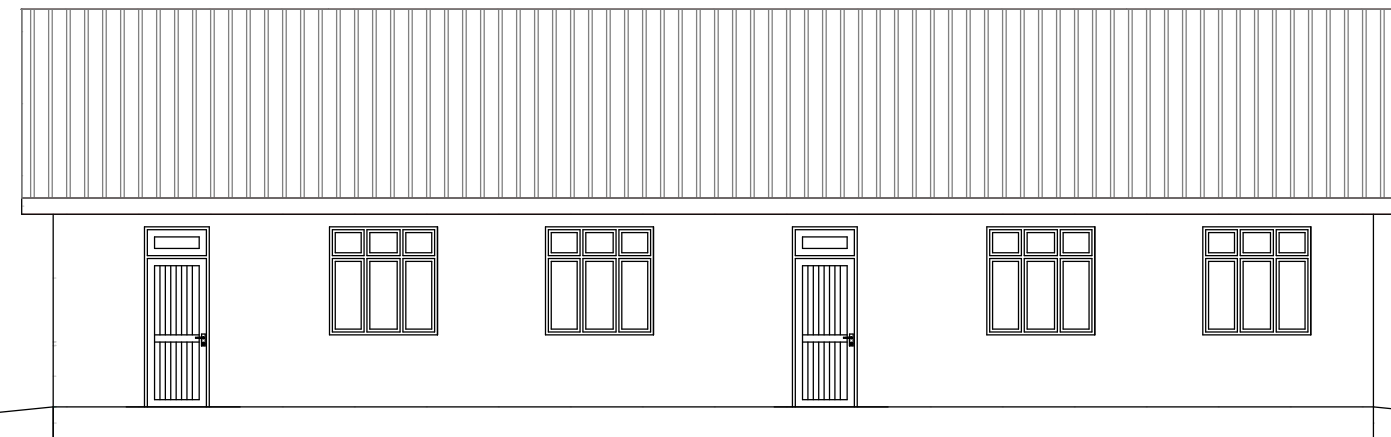
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: 2- CLASSROOMS BLOCK GABLED
ROOF PLAN GABLE
 DRAWING NO: ARC/2CRG/02

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit



REAR ELEVATION



FRONT ELEVATION

REVISED 1

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS FOR SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM
 PROPOSED 2- CLASSROOMS BLOCK GABLED

DRAWING TITLE:
ELEVATIONS GABLE
 DRAWING NO: ARC/2CRG/04

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for Administration Block (Girl's
National Schools)

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
5	<u>30m³ Oversight Concrete 100mm thick - 15 grade) + Ground Beam and column 34m³ - 20 grade</u>				
	DPM	303	M ²		
	Cement -50kgs (42.5)	324	Bags		
	Aggregates (1/2")	60	M ³		
	Sand	29	M ³		
	Reinforcement - 16mm diameter high tensile 460N/mm2	187	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm2	100	PC'S		
	Timber 1" X 10" (5.2m long)	12	PC'S		
	Timber 2" X 2"(5.2m long)	10	PC'S		
	Nails-4"	20	Kg		
	Nails-3"	30	Kg		
	Supporting props (3m)	40	PC'S		
	SUB-TOTAL SUBSTRUCTURE				
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls (451m²), Ring beam(35m³), Columns(12m³) & slab (14m³)</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	4,060	No		
	DPC (20m long)	10	Roll		
	Sand	46	M ³		
	Cement-50kgs (42.5)	434	Bags		
	Aggregates (1/2")	54	M ³		
	Reinforcement - 16mm diameter high tensile	205	PC'S		
	Reinforcement - 12mm diameter high tensile	130	PC'S		
	Reinforcement - 10mm diameter high tensile	3	PC'S		
	Reinforcement - 8mm diameter	250	PC'S		
	Binding Wire - 25kg	5	Roll		
	Timber 1" X 10" to Sides (5.2m long)	82	PC'S		
	Timber 1" X 5" (Plates)(5.2m long)	20	PC'S		
	Timber 2" X 2" (3.5m)	20	PC'S		
	Supporting Props (3m)	80	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
	<u>ALTERNATIVE TO BLOCKWORK WALL</u>				
	<i>** If brickwork is applicable, then blockwork is not applicable. Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or brickwork) depending on availability and suitability of building materials. Note that: Strictly do not use stretcher bond when using bricks, the acceptable bond is either Flemish or English or header.</i>				
	<u>Brickwork</u>				
	230mm thick One brick wall	451	m ²		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
D.	<u>CEILING</u>				
	Gypsum board -9mm thick	99	PC'S		
	Plain Cornice (2.5m)	80	PC'S		
	Screw 1.25" 500pcs/box	5	Box		
	Gypsum powder 25kg	24	Bags		
	Fibre tape (90m)	4	Roller		
	Treated softwood Timber 2" X 2"	5,682	ft		
	Nails 4"/3' (50Kg per Bag)	1	Bags		
	SUB-TOTAL FOR CEILING				
E.	<u>DOOR</u>				
1	<u>40mm thick hardwood paneled door shutter</u>				
	900 x2200mm high door	18	pc's		
	800 x2200mm high	1	pc's		
	800 x2200mm high	4	pc's		
2	<u>45 x 145mm Frames (hardwood),Varnish & Glass</u>				
	900 x2750mm high door including transome	18	pc's		
	800 x 2750mm high	1	pc's		
	800 x2100mm high	4	pc's		
	Brush 3"and 2.5"	4	pc's		
	Sand paper (msasa) No.80	8	LM		
	Clear Varnish - 4Litres	4	TIN		
	Thinner for Varnish	6	Litres		
3	<u>IronMongeries</u>				
	Mortice lock Three lever	19	No		
	Mortice lock Two lever	4	No		
	Heavy Dutty Door closer	19	No		
	5mm thick clear glass for vent to doors	10	m ²		
	25 x 30mm thick timber beads	56	m		
	Brass hinges - 100mm	34.50	Pairs		
	SUB-TOTAL FOR DOORS				

F.	<u>WINDOWS</u>				
1	<u>Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs</u>				
	Overallsize 2750 x 1750mm high	11	No		
	Overallsize 1500 x 1750mm high	9	No		
	Overall size 1500x 650 mm high	4	No.		

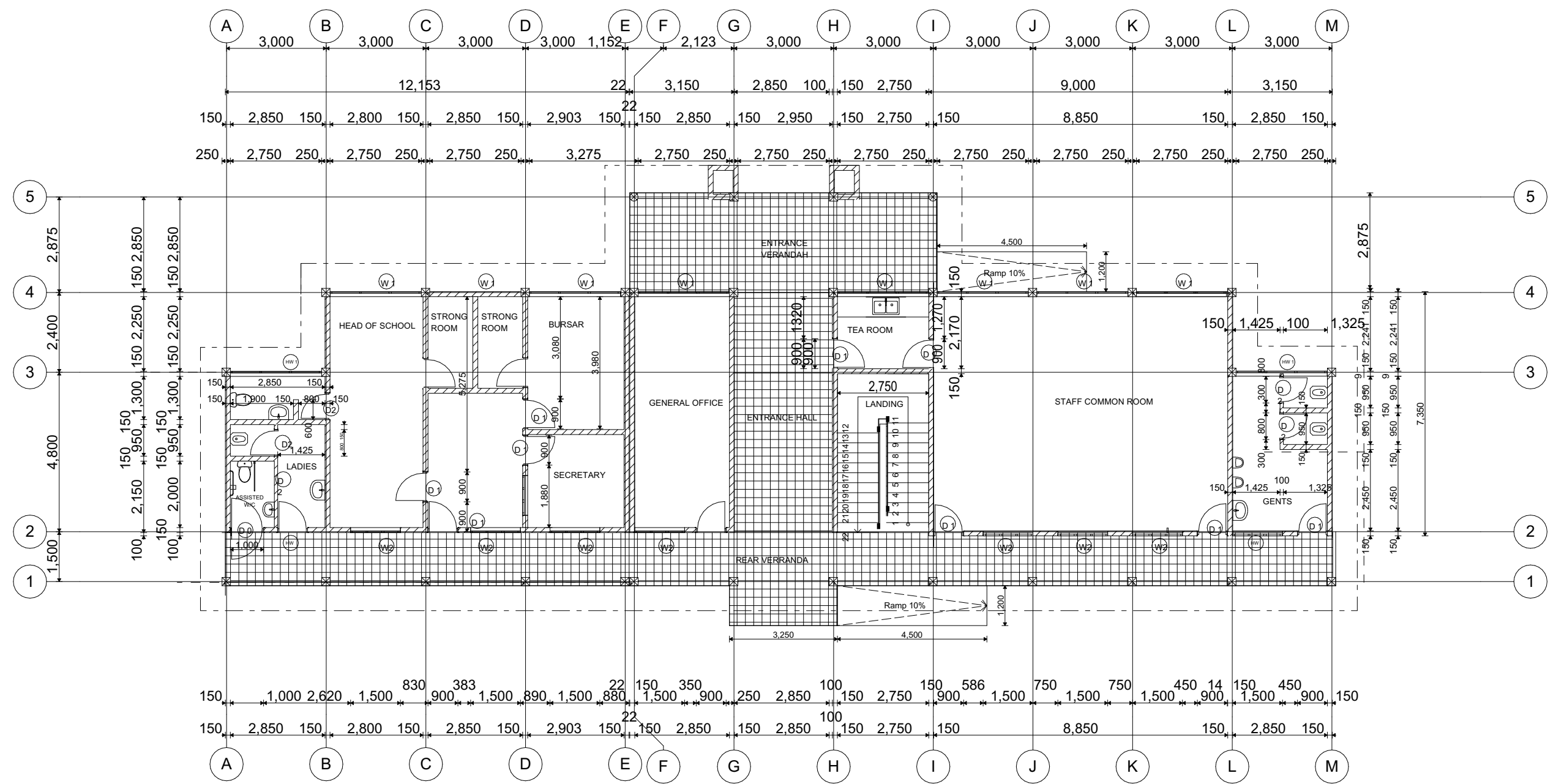
ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J.	<u>ELECTRICAL & AIRCONDITIONING INSTALLATION</u>				
	Single fluorescent fitting Complete,	37	No		
	Double switch socket	22	No		
	Main switch 4way,3PH with integral RCD 100A/300mA	1	No		
	NB: Wiring cables shall be copper have a minimum cross section area of 1.5sqmm and shall comply with an appropriate British or Harmonized standard for either thermoplastic or thermosetting insulated electric cables.				
	Single core wire 1.5sqmm - Red	4	ROLL		
	Single core wire 1.5sqmm - Black	4	Roll		
	Single core wire 1.5sqmm -green	4	Roll		
	Single core wire 2.5sqmm - red	2	Roll		
	Single core wire 2.5sqmm -Black	2	Roll		
	Single core wire 2.5sqmm green	2	Roll		
	Single core wire 4sqmm -Red	20	M		
	Single core wire 4sqmm -Black	20	M		
	Single core wire 4sqmm -Green	20	M		
	Ceiling fan National or other equal	12	PC's		
	3gang 1 way switch	1	No		
	1gang 1 way switch	5	No		
	2gang 1 way switch	11	No		
	1gang 2 way switch	1	No		
	4gang 1 way switch	1	No		
	DP switch 20A	3	No		
	Cooker control unit 45A	1	No		
	Ceiling light complete with energy saver 18W	6	No		
	Earth rod approved copper 16mm not less than 1200mm	2	No		
	Earth wire 4sqmm	20	M		
	Metal box twin	25	No		
	Metal box single	29	No		
	Junction box	50	No		
	Conduit pipe	250	PC's		
	Elbow	40	PC's		
	Conduit coupling	70	PC's		
	Round cover	60	PC's		
	Round box	10	PC's		
	Fine screw	2	Packet		
	12U rack cabinet,complete with accessories	1	PC		
	Patch panel cat 6 24 port	1	PC		
	Switch port 24	1	No		
	Dual Face plate RJ45 CAT 6	13	No		
	plastic clips 22mm	4	BOX		
	Cat 6 UTP Cable (300m)	1	Roll		
	TV switch	2	PCS		
	Handdrier	3	No		
2	<u>Air Conditioning</u>				
	18000BTU,LG A.C or other equal with all necessary accessories	1	No		
	TOTAL FOR ELECTRICAL & A.C INSTALLATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>PLUMBING AND DRAINAGE INSTALLATIONS.</u>				
	<u>Water Distribution System</u>				
	PPR Pipes				
	32mm Dia	7	PCS		
	25mm Dia	18	PCS		
	20mm Dia	6	PCS		
	15mm Dia	11	PCS		
	12mm Dia Flexible Pipe	36	PCS		
	Valves				
	32mm Dia	3	PCS		
	25mm Dia	11	PCS		
	20mm Dia	7	PCS		
	15mm Dia	8	PCS		
	15mm Dia Angle Valves	36	PCS		
	20mm Dia WATER TAPE WITH STOP COCK/PUSH COCK	1	PCS		
	Reducig Bush				
	Ø32 / 25mm	4	PCS		
	Ø32 / 20mm	2	PCS		
	Ø32 / 15mm	2	PCS		
	Ø25 / 20mm	8	PCS		
	Ø25 / 15mm	8	PCS		
	Ø20 / 15mm	8	PCS		
	90° Plain Elbow				
	Ø32mm	6	PCS		
	Ø25mm	11	PCS		
	Ø20mm	16	PCS		
	Ø15mm	18	PCS		
	90 Adaptor Elbow (Female)				
	Ø15mm	28	PCS		
	90 Adaptor Elbow (Male)				
	Ø15mm	10	PCS		
	T Plain				
	Ø32mm	5	PCS		
	Ø25mm	8	PCS		
	Ø20mm	11	PCS		
	Ø15mm	14	PCS		
	Socket				
	Dia. 15mm	16	PCS		
	Dia. 20mm	12	PCS		
	Dia. 25mm	18	PCS		
	Dia. 32mm	6	PCS		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>Sewage</u>				
	PIPING (uPVC PIPE)				
	100mm Dia	18	PCS		
	50mm Dia	4	PCS		
	40mm Dia	8	PCS		
	32mm Dia	8	PCS		
	Elbows	48	PCS		
	Bend	31	PCS		
	Bracket	36	PCS		
	Filter	13	PCS		
	<u>Fittings</u>				
	100mm Dia Y-Tee	6	PCS		
	50mm Dia Y-Tee	7	PCS		
	100mm Dia Inspection Tee	5	PCS		
	50mm Dia Inspection Tee	5	PCS		
	<u>Socket</u>				
	110mm Dia	12	PCS		
	50mm Dia	8	PCS		
	40mm Dia	8	PCS		
	32mm Dia	6	PCS		
	<u>90° Elbow</u>				
	110mm	5	PCS		
	50mm	4	PCS		
	40mm	5	PCS		
	32mm	3	PCS		
	<u>45° Elbow</u>				
	110mm	7	PCS		
	50mm	4	PCS		
	40mm	5	PCS		
	32mm	6	PCS		
	<u>Reducing Bush</u>				
	50mm/40mm	9	PCS		
	40mm/32mm	6	PCS		
	<u>Reducing Socket</u>				
	50mm/40mm	8	PCS		
	40mm/32mm	9	PCS		
	<u>Rain Water</u>				
	Piping (uPVC PIPE)				
	100mm Dia	20	PCS		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	100mm Dia Floor gully including all fittings.	10	PCS		
	Elbow	30	PCS		
	Bend	24	PCS		
	Bracket	16	PCS		
	Filter	4	PCS		
	<u>Sanitary Fittings</u>				
	White Vitreous China Floor Standing Back to Wall Rimless Water Closet	2	pcs		
	White Vitreous China SQUATTING PAN with TRAP as any approved equivalent with Dimenions 510mm x 410mm , complete with 9Litres Wall mounted Push Type flush tank	8	pcs		
	Bib Cock with Jet Spray or its equivalent approved	10	pcs		
	1000mm x 600mm Vanity Mirror	5	pcs		
	White Vitreous ChinaWall Hung Wash Hand Basin with Half Pedestal and quarter turn faucet as manufactured by any manufacturer approved with gurantee	5	pcs		
	100mm x 100mm PVC Floor Drain with Cover	6	pcs		
	Soap dispenser with Holder CERA or its equivalent approved	5	pcs		
	Wall Hung Urinal Bowl with push button flashing Valve or its approved equivalent	4	pcs		
	Timber / Ceramic Urinal separator	5	pcs		
	Stainless Steel FRANKE Nouveau Single Kitchen Sink Single bowl / Single drainer Kitchen Sink with dimensions 460mm x 800mm complete with basket strainer and all other accessories	1	pcs		
	Max Sink Sink Mixer Swivel Spout Chrome	1	pcs		
	Toilet Paper Holder	10	pcs		
	<u>Portable fire Extinguishers</u>				
	CO2, 9ltrs bottle as manufactured by NAFFCO or equal approved.	3	pcs		
	CO2, 9kg bottle as manufactured by NAFFCO or equal approved.	3	pcs		
	TOTAL FOR PLUMBING INSTALLATION				

***TWO STOREY ADMINISTRATION BLOCK
ARCHITECTURAL DRAWING***

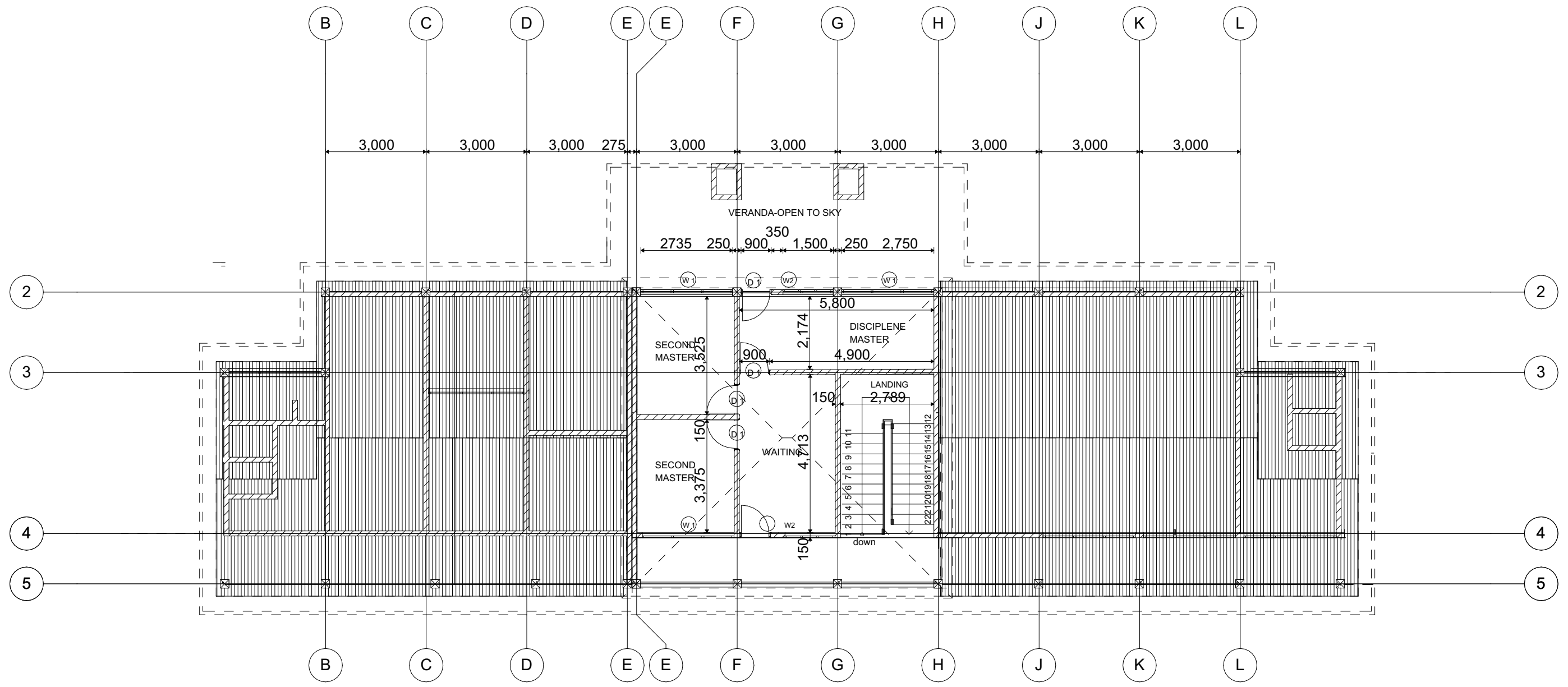


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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE **ADMINISTRATION BLOCK**
GROUND FLOOR PLAN - REVISED 2023
 DRAWING NO. **SQP/ARC/ADM/01**

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 SCALE 1:200
 June, 2023



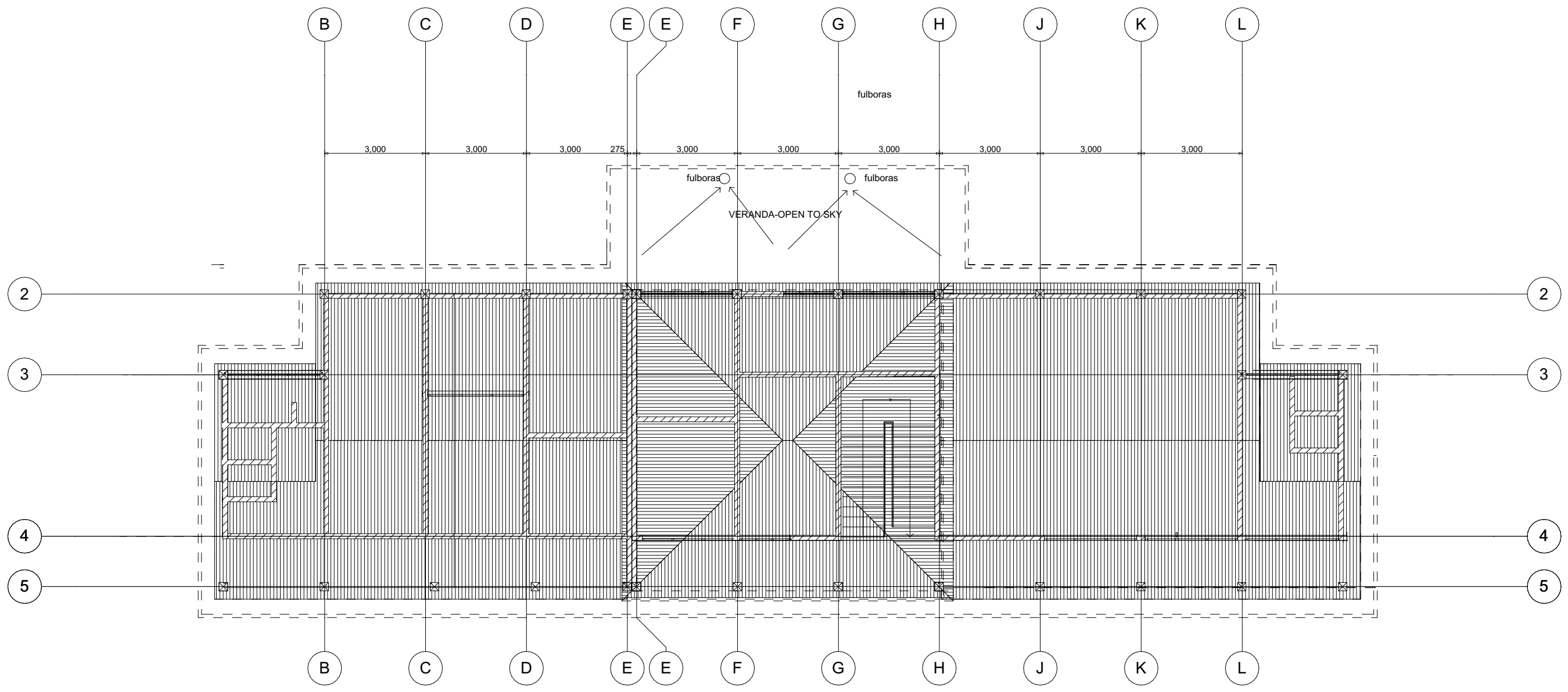
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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: ADMINISTRATION BLOCK
 FIRST FLOOR PLAN - REVISED 2023
 DRAWING NO.: SQP/ARC/ADM/02

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 June, 2023



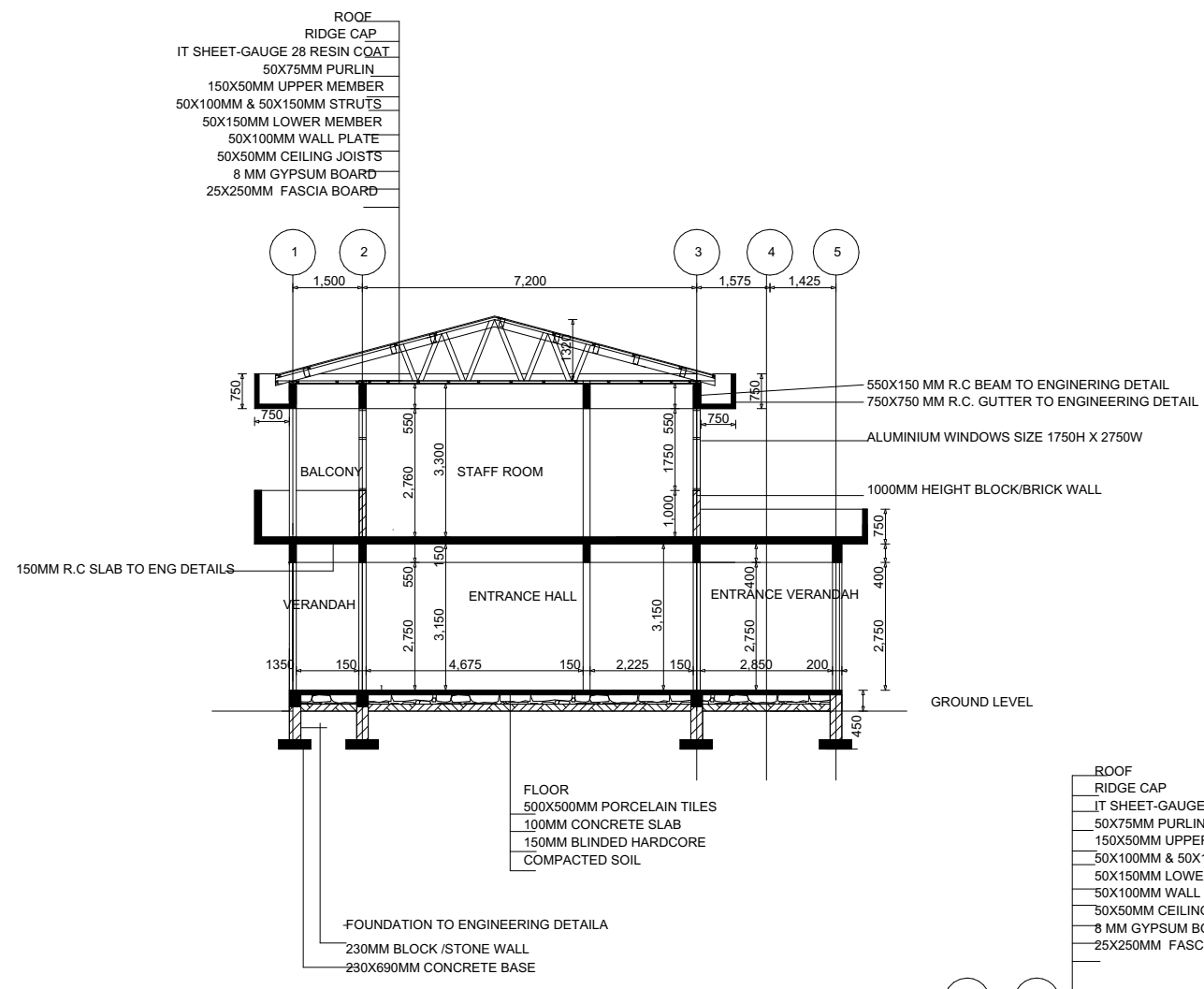
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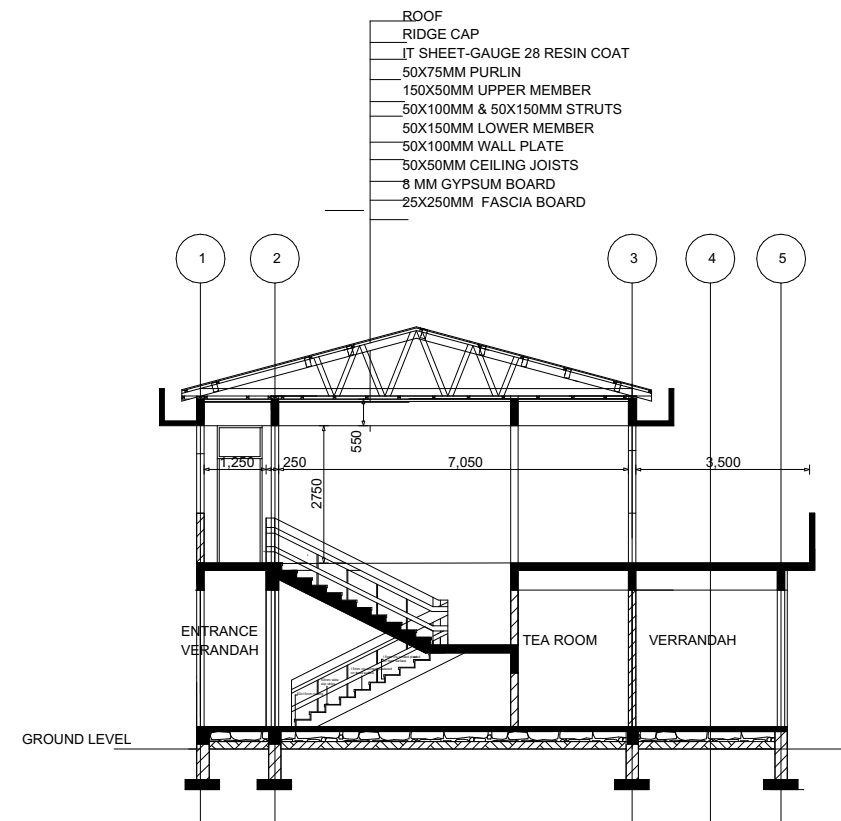
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 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

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 ROOF PLAN - REVISED 2023**
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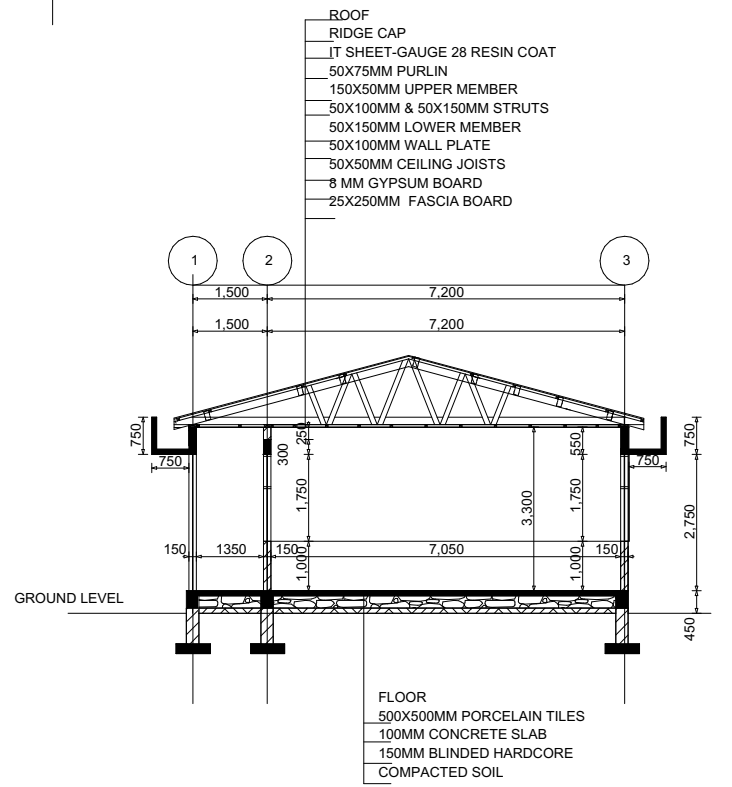
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SECTIONS THROUGH ENTRANCE HALL



SECTIONSTHROUGH STAIRCASE



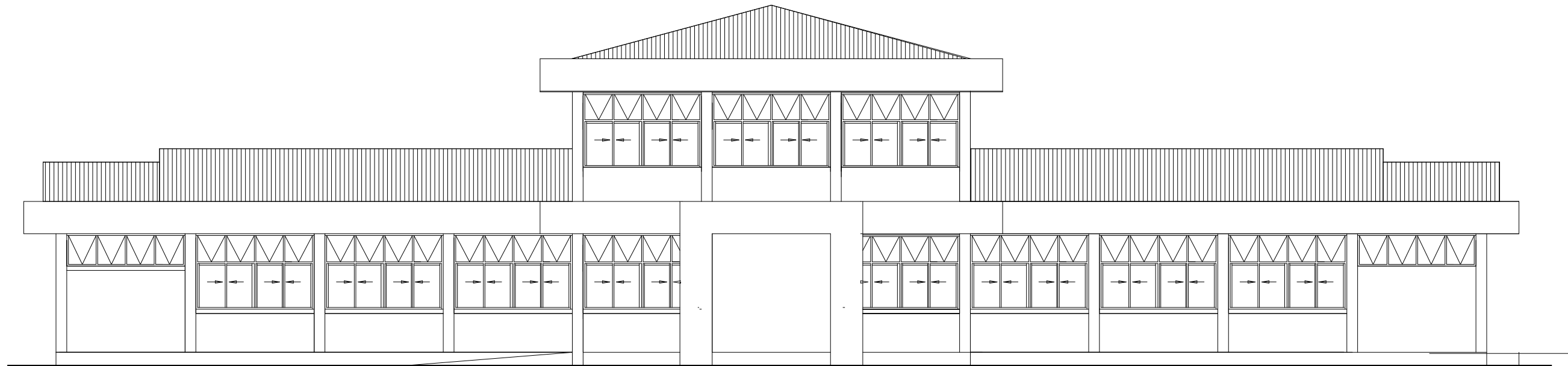
SECTIONS THROUGH SINGLE STOREY PART

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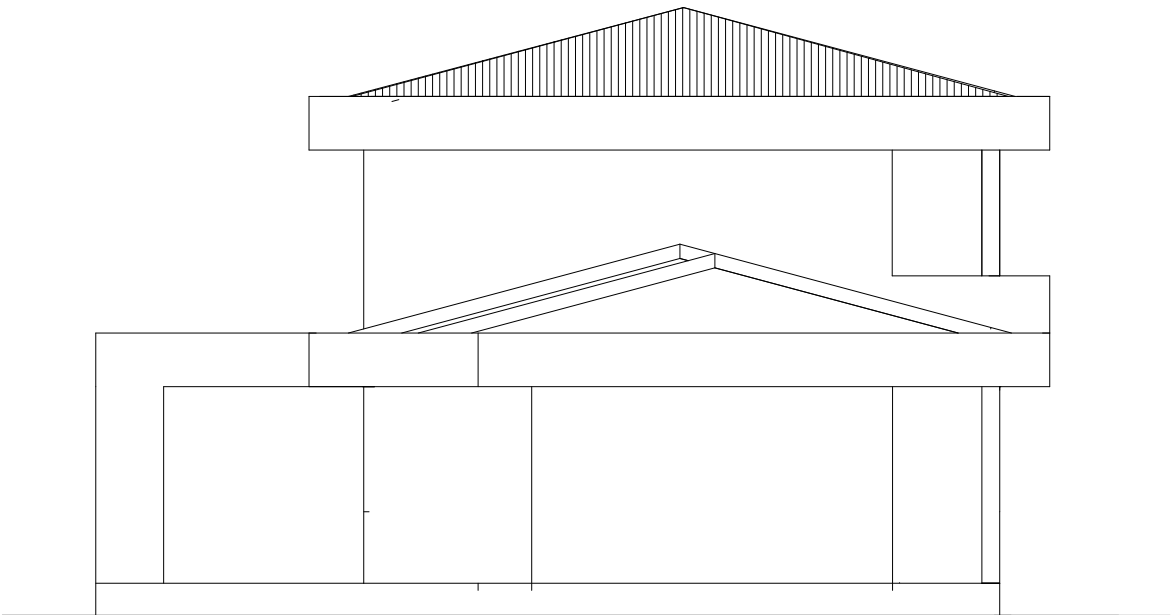
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DRAWING TITLE
 ADMINISTRATION BLOCK
 SECTIONS - REVISED 2023
 DRAWING NO.
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FRONT ELEVATION



TYPICAL SIDE ELEVATION

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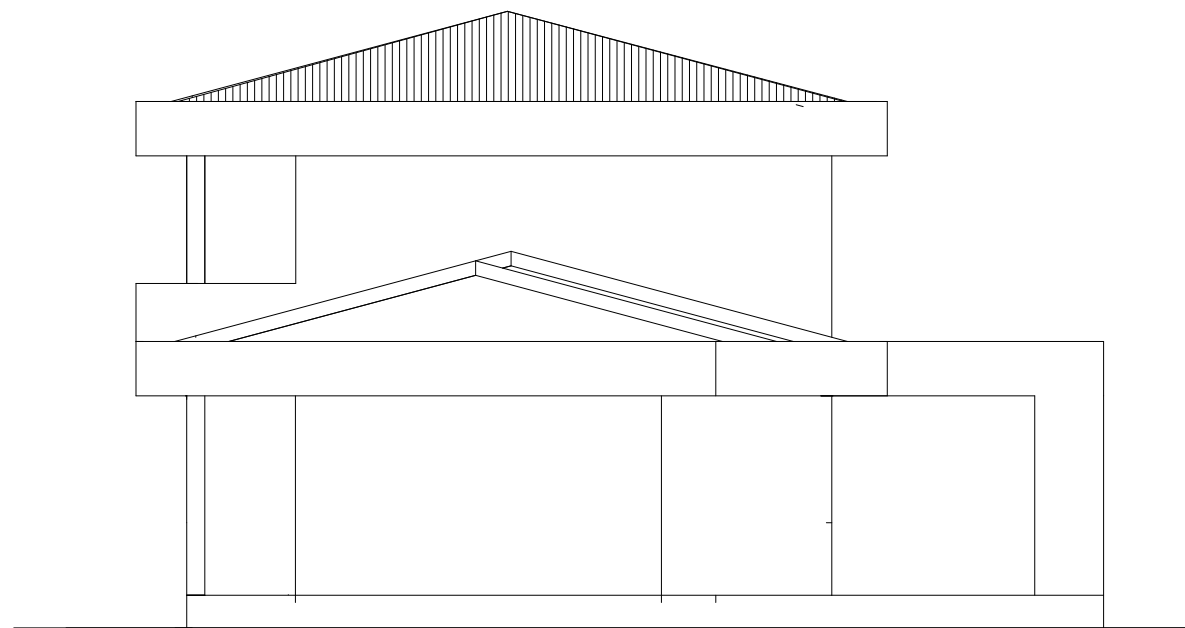
**PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)**

DRAWING TITLE **ADMINISTRATION BLOCK
 FRONT AND SIDE ELEVATION_REVID 2023**
 DRAWING NO. **SQP/ARC/ADM/05**

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 CHECKED BY C.I, H.N, & N.L
 SCALE 1:200
 June,2023



REAR ELEVATION



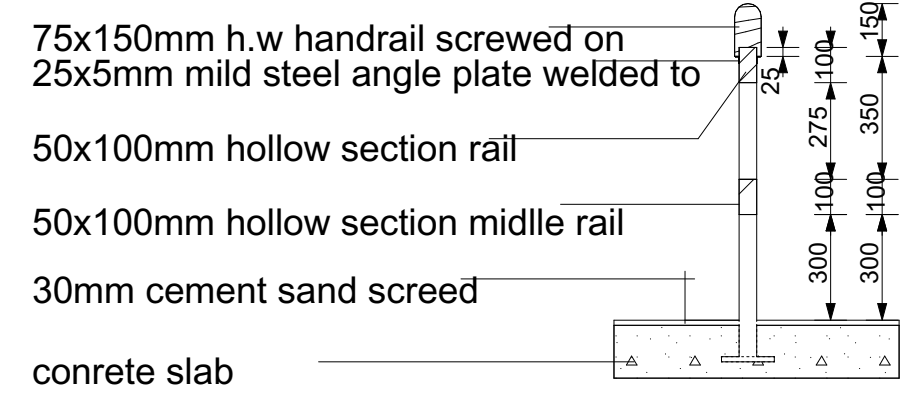
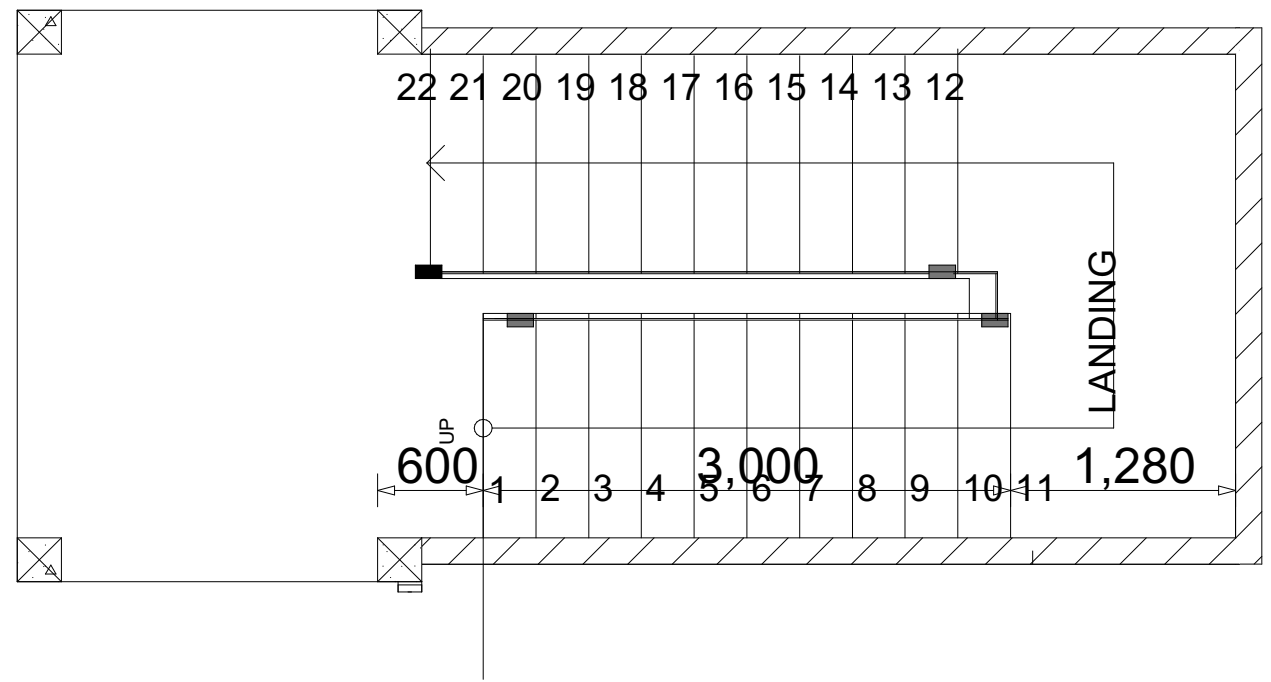
TYPICAL SIDE ELEVATION

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

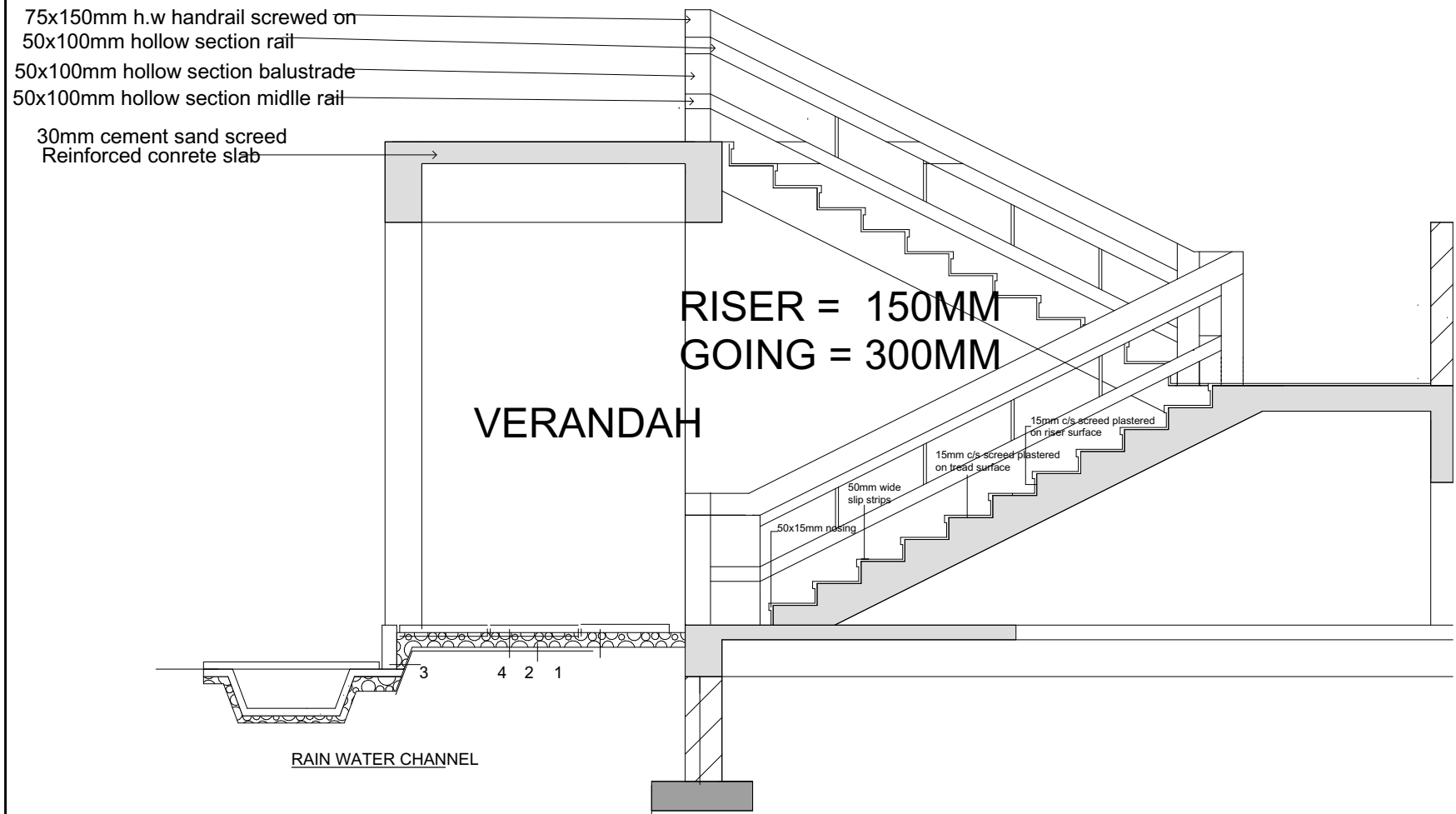
**PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)**

DRAWING TITLE **ADMINISTRATION BLOCK
 REAR AND SIDE ELEVATION _REVISED 2023**
 DRAWING NO. **SQP/ARC/ADM/06**

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 CHECKED BY C.I, H.N, & N.L
 SCALE 1:200
 June, 2023



SECTION B-B



SCHEDULE OF MATERIALS

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	<u>SUB-STRUCTURE -PROVISIONAL</u>				
1	<u>Strip Foundation - Grade 15 Plain (28m³)</u>				
	Aggregate (3/4")	28	M ³		
	Sand	13	M ³		
	Cement-50kgs (42.5)	112	Bags		
2	<u>Foundation Walls (81m²)</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	2,130	No		
	Sand	7	M ³		
	Cement -50kgs (42.5)	36	Bags		
	<u>ALTERNATIVE TO FOUNDATION WALL</u>				
	<i>** If stone is applicable, then blockwork is not applicable.</i>				
	<i>Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or stone) depending on availability and suitability of building materials.</i>				
	Stone, complete with its cement and sand mortar (1:4)	35	M ³		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram (4.5m ³ lorry)	14	Trips		
	Hardcore (4.5m ³ lorry) - 200mm thick	14	Trips		
	Sand	16	M ³		
	Aldrin solution or other and equal approved (1000mls)	3	Bottle		
4	<u>Oversite Concrete 100mm thick - 15 grade ,Ground Beam and base- 20 grade</u>				
	DPM	333	M ²		
	Cement -50kgs (42.5)	216	Bags		
	Aggregates (1/2")	40	M ³		
	Sand	20	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm2	58	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm2	56	PC'S		
	A252 Mesh 200 x 200x 6.16kg/m2	4	PC'S		
	Timber 1" X 10" (5.2m long)	46	PC'S		
	Timber 2" X 2"	20	PC'S		
	Nails-4"	40	Kgs		
	Nails-3"	45	Kgs		
	Supporting props (3m)	30	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls Ring beam & Columns</u>				
	6"Cement & Sand block-Minimum Strength 3. 5 MPa	3,500	No		
	DPC (30m long, 1m wide)	2	Roll		
	Sand	18	M ³		
	Cement-50kgs (42.5)	138	Bags		
	Aggregates (1/2")	8	M ³		
	Reinforcement - 12mm diameter high tensile	62	PC'S		
	Reinforcement - 8mm diameter high tensile	61	PC'S		
	Binding Wire - 25kg	1	Roll		
	<i>Re use substructure formwork</i>				
	Timber 1" X 10" to Sides (5.2m long)	10	Pc's		
	Timber 1" X 5" (Plates) (5.2m long)	11	Pc's		
	Timber 2" X 2" (3.5m)	20	Pc's		
	Supporting props (3m)	20	Pc's		
	SUB-TOTAL SUPER STRUCTURE				
	<i>ALTERNATIVE TO BLOCKWORK WALL</i>				
	<i>** If brickwork is applicable, then blockwork is not applicable. Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or brickwork) depending on availability and suitability of building materials. Note that: Strictly do not use stretcher bond when using bricks, the acceptable bond is either Flemish or English or header.</i>				
	<u>Brickwork</u>				
	230mm thick One brick wall	190	m ²		
	150mm thick One brick wall	90	m ²		
C.	<u>ROOF STRUCTURE & COVERING</u>				
1	<u>Roof Structure - Provisional - 5.2 m</u>				
	Timber 2 " X 3" Purlins	70	Pc's		
	Timber 2" X 4" Struts and wall plates	98	Pc's		
	Timber 2" X 6" Rafter, King post and Tie beam	95	Pc's		
	Fascia board 1" X 10" -ref. Semi Hardwood (5.2m long)	17	Pc's		
	Nails -5"	50	Kgs		
	Nails -4"	30	Kgs		
	Nails -3"	30	Kgs		
	16mm diameter mild steel bolt including nuts 500mm long	46	No		
	<u>NOTE:</u> The above softwood timber structure should be pressure impregnated treated				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
2	<u>Roof Covering</u>				
	28 G Resincoated Iron sheet	410	M ²		
	Ridge - 28 G - 3m long	12	PC'S		
	Roofing Nails	41	Packet		
3	<u>Gutter's</u>				
	Upvc 100mm half round (6m long)-5"	12	PC'S		
	Upvc 100mm diameter down pipe; Class B	4	PC'S		
	PVC outlet	8	PC'S		
	PVC bend 90'	8	PC'S		
	PVC bend 45'	8	PC'S		
	Gutter Clamp 3"	32	PC'S		
	Connector/reducer	8	PC'S		
	Connector outer	8	PC'S		
	Corner Inner	8	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	<u>CEILING</u>				
	Gypsum board -9mm thick (288m ²)	100	PC'S		
	Plain Cornice	65	PC'S		
	Screw 1.25" 500pcs/box	4	Box		
	Gypsum powder -	13	Bags		
	Fiber tape (90m)	3	Roller		
	Treated softwood Timber 2" X 2" - 5.2M Long	190	PC'S		
	Nails 4"	28	Kgs		
	Nails 3"	45	Kgs		
	SUB-TOTAL FOR CEILING				
E.	<u>DOOR</u>				
1	<u>40mm thick hardwood Matchboarded door shutter</u>				
	1500 x2100mm high double door	2	PC'S		
	900 x2100mm high	6	PC'S		
	750 x 1500mm high	2	PC'S		
2	<u>Frames (hardwood) & Varnish</u>				
	1500 x 2500mm high double door	2	PC'S		
	1000 x 2500mm high	6	PC'S		
	750 x 1500mm high	2	PC'S		
	Brush 3"	4	Pcs		
	Sand paper (msasa) No.80	4	LM		
	Clear Varnish - 4Litres	2	TIN		
	Thinner for Varnish	3	Litres		
3	<u>Ironmongeries - ref Union</u>				
	Mortice lock Three lever	8	No		
	Barrel bollt	2	No		
	Brass hinges - 100mm	15	Pairs		
	SUB-TOTAL FOR DOORS				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
F.	<u>WINDOWS</u>				
1	<u>Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs</u>				
	Overall size 1500x1500mm high	22	No		
2	<u>25 x 4mm thick flat bar grill painted red-oxide with 25 x 25mm square pipes frame and all necessary accessories</u>				
	Overall size 1500x1500mm high	22	No		
3	<u>25 X 25mm square pipe grill painted red-oxide with all necessary accessories</u>				
	1500 x 750mm high - door to gas chamber	2	PC'S		
	SUB-TOTAL FOR WINDOWS				
G.	<u>FINISHING</u>				
1	<u>Terrazo Floor finishing (1:1:1.5)</u>				
	Sand	5	M ³		
	Cement-50kgs (42.5R)	116	Bags		
	White Chipping	2	M3		
	Black Chipping	2	M3		
	Pink Chipping	2	M3		
	Red Chipping	2	M3		
	Terrazo colour (user's selection) - 25Kg	6	Bags		
	Concrete nails - 1"	4	Packet		
	Tina, Polish & Hardina for terrazo	2	Set		
	Strips	356	M		
2	<u>Wall Finishing 15mm thick (1:4)</u>				
	Sand	9	M ³		
	Cement-50kgs (42.5)	55	Bags		
	White cement - 40kg	8	Bags		
	Gypsum powder	15	Bags		
	Sand paper Msasa No.120	1	Roll		
3	<u>Service Trench</u>				
	Sand	2	M ³		
	Cement-50kgs (42.5)	20	Bags		
	Aggregates (1/2")	4	M ³		
	50 x 50 mm mesh	11	PC'S		
	SUB-TOTAL FOR FINISHING				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
H.	<u>PAINTING & DECORATION</u>				
	Emulsion Paint - 20 LTRS	13	buckets		
	Weather guard Paint - 20 LTRS	4	buckets		
	Washable paint -20 LTRS	5	buckets		
	Primer paint -20 LTRS	2	buckets		
	Solvent - 5LTRS	2	TIN		
	Brush 3"	6	Pcs		
	Roller	6	Pcs		
	Gloss paint-4LTR	2	TIN		
	Bitumen paint - 4Litres	4	TIN		
	SUB-TOTAL FOR PAINTING & DECORATION				
J.	<u>ELECTRICAL INSTALLATION</u>				
	Single fluorescent fitting Complete	30	No		
	Double switch socket	20	No		
	Main switch 6way,1PH with integral RCD 100A/300mA	1	No		
	NB: Wiring cables shall be copper have a minimum cross section area of 1.5sqmm and shall comply with an appropriate British or Harmonized standard for either thermoplastic or thermosetting insulated electric cables.				
	Single core wire 1.5sqmm - Brown	3	Roll		
	Single core wire 1.5sqmm - Black	3	Roll		
	Single core wire 1.5sqmm -green	3	Roll		
	Single core wire 2.5sqmm - Brown	2	Roll		
	Single core wire 2.5sqmm	2	Roll		
	Single core wire 2.5sqmm green	2	Roll		
	Ceiling fan National or other equal	14	PC's		
	3gang 1way switch	4	No		
	1gang 1way switch	3	No		
	2gang 1 way switch	2	No		
	4gang 1 way switch	1	No		
	DP switch 20A	1	No		
	Earth rod approved copper 16mm not less than	2	No		
	Earth wire 4sqmm	15	M		
	Metal box twin	20	No		
	Metal box single	11	No		
	Junction box	30	No		
	Conduit pipe	100	Pc's		
	Elbow	30	Pc's		
	Conduit coupling	20	Pc's		
	Round cover	50	Pc's		
	Round box	10	Pc's		
	Fine screw	1	Packet		
	Smoke ditector	2	No		
	plastic clips 22mm	3	Box		
	SUB-TOTAL FOR ELECTRICAL INSTALLATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
K.	<u>PLUMBING AND GAS INSTALLATIONS</u>				
	<u>Water Distribution System</u>				
	<u>PPR Pipes</u>				
	40mm Dia	4	Pcs		
	32mm Dia	6	Pcs		
	25mm Dia	9	Pcs		
	20mm Dia	14	Pcs		
	15mm Dia	19	Pcs		
	12mm Dia Flexible Pipe	29	Pcs		
	<u>Valves</u>				
	40mm Dia	4	Pcs		
	32mm Dia	9	Pcs		
	20mm Dia	17	Pcs		
	15mm Dia	9	Pcs		
	15mm Dia Angle Valves	29	Pcs		
	<u>Reducing Bush</u>				
	Ø40 / 32mm	4	Pcs		
	Ø40 / 25mm	4	Pcs		
	Ø40 / 20mm	3	Pcs		
	Ø40 / 15mm	3	Pcs		
	Ø32 / 25mm	11	Pcs		
	Ø32 / 20mm	9	Pcs		
	Ø32 / 15mm	10	Pcs		
	Ø25 / 20mm	16	Pcs		
	Ø25 / 15mm	8	Pcs		
	Ø20 / 15mm	10	Pcs		
	<u>90° Plain Elbow</u>				
	Ø40mm	3	Pcs		
	Ø32mm	3	Pcs		
	Ø25mm	5	Pcs		
	Ø20mm	21	Pcs		
	Ø15mm	31	Pcs		
	<u>90 Adaptor elbow (Female)</u>				
	Ø15mm	33	Pcs		
	<u>90 Adaptor elbow (Male)</u>				
	Ø15mm	10	Pcs		
	<u>T Plain</u>				
	Ø40mm	4	Pcs		
	Ø32mm	7	Pcs		
	Ø25mm	9	Pcs		
	Ø20mm	24	Pcs		

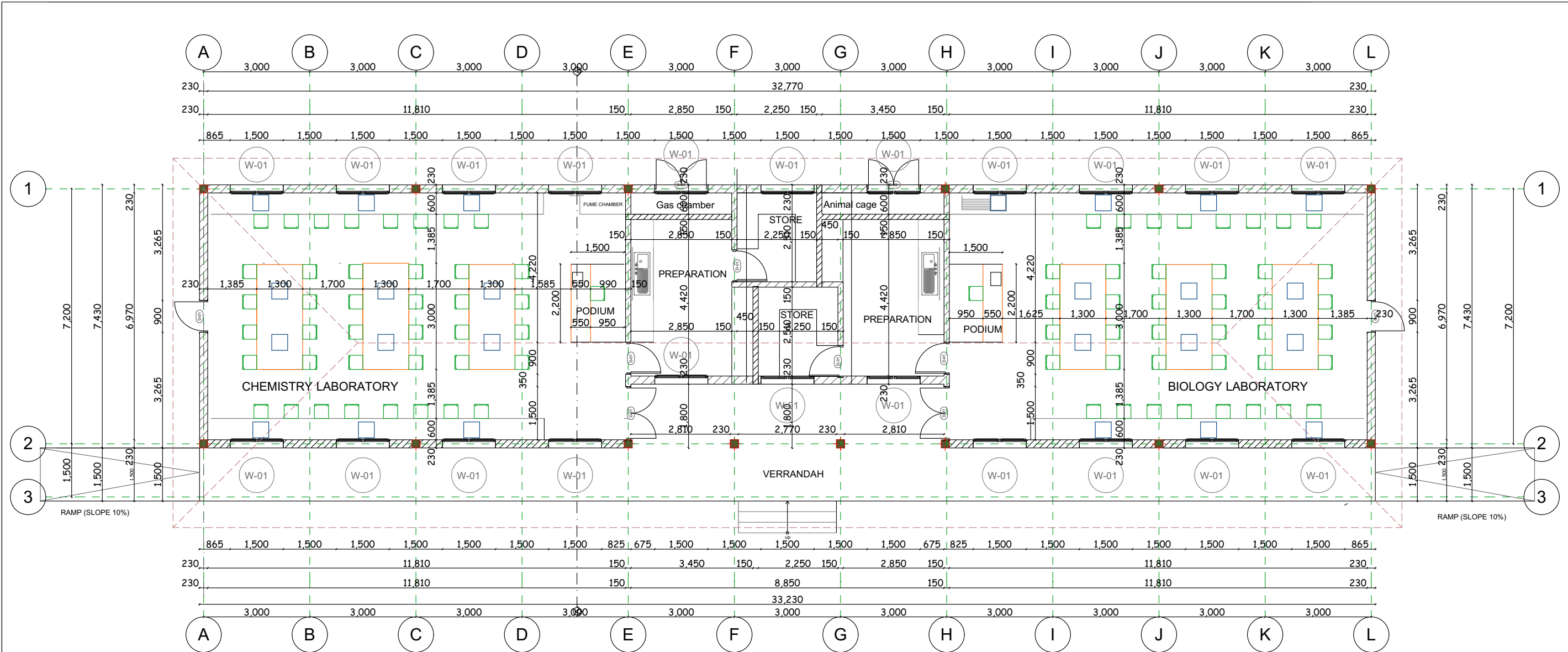
ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	Socket				
	Dia. 15mm	34	Pcs		
	Dia. 20mm	30	Pcs		
	Dia. 25mm	14	Pcs		
	Dia. 32mm	20	Pcs		
	Dia. 40mm	10	Pcs		
	Sewage				
	PIPING (uPVC PIPE)				
	100mm Dia	12	Pcs		
	50mm Dia	14	Pcs		
	40mm Dia	11	Pcs		
	32mm Dia	11	Pcs		
	Elbows	43	Pcs		
	Bend	34	Pcs		
	Bracket	30	Pcs		
	Filter	11	Pcs		
	Fittings				
	50mm Dia Y-Tee	17	Pcs		
	50mm Dia Inspection Tee	7	Pcs		
	Socket				
	110mm Dia	58	Pcs		
	50mm Dia	29	Pcs		
	40mm Dia	22	Pcs		
	32mm Dia	17	Pcs		
	90° Elbow				
	50mm Dia	9	Pcs		
	40mm Dia	9	Pcs		
	32mm Dia	6	Pcs		
	45° Elbow				
	50mm Dia	19	Pcs		
	40mm Dia	14	Pcs		
	32mm Dia	9	Pcs		
	Reducing Bush				
	50mm/40mm	25	Pcs		
	40mm/32mm	20	Pcs		
	Reducing Socket				
	50mm/40mm	20	Pcs		
	40mm/32mm	11	Pcs		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>Sanitary Installation</u>				
	350x 350x 200mm durapipe S&LP vulcathene sink or equal and approved type 604/1 complete with 38mm BSP Waste outlet type 504 and ant-siphon bottle trap type W561 with plug and chain Assemblies type 508	32	Pcs		
	Mild Steel/Copper pipes				
	12mm Dia	25	Pcs		
	Valves				
	12mm Dia	20	Nos.		
	Pressure Gauges				
	12mm Dia	4	Nos.		
	Gas Cylinder				
	Gas cylinder complete with double stage LPG regulator. Manifold with complete flexible and cylinder adoptors, proper signages and standing, 15 kg Butane/ propane	2	Nos.		
	Gas Taps				
	LPG deck or other equal approved mounted double outlet faucet gas tap. Body should be solid brass coated with high gloss epoxy powder resistant to most chemicals.	30	Nos.		
	<u>Fittings</u>				
	Non-Return Valves	64	No		
	Strainer	58	No		
	Ball valve	61	No		
	Socket	48	No		
	Reducer	60	No		
	Elbow	57	No		
	Tee	57	No		
	Pipe work support	28	No		
	Bressing set	44	No		
	Oxyacetylene gas	4	No		
	Fumes wood				
	Fume wood complet with all accessories as per engineer specification	3	No		
	<u>Chemical Disposal</u>				
	Emergency eye wash sink (VL2201) with two streams with ABS bowl fixed at side worktop	2	PCS		
	Dilution recovery trap type W612 complete with fixing accessories	2	PCS		
	<u>Portable fire extinguisher</u>				
	CO2, 9ltrs bottle as manufactured by NAFFCO or equal approved.	2	Nos		
	CO2, 9kg bottle as manufactured by NAFFCO or equal approved.				
	Fire Blankets	2	Nos		
	SUB-TOTAL PLUMBING AND GAS INSTALLATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
L	<u>Gully trap (3No) - 150 x 150</u>				
1	6"Cement & Sand block-Minimum Strength 3. 5 MPa	6	PC'S		
	Sand - (Lorry 4.5M3)	0.2	m3		
	Cement-50kgs	1	Bags		
3	<u>Neutralization/ Grease Chamber (2.2m x 1m x 1.5m deep)</u>				
	6"Cement & Sand block-Minimum Strength 3. 5 MPa	140	PC'S		
	Sand - (Lorry 4.5M3)	0.6	m3		
	Cement-50kgs (42.5)	2	Bags		
	Aggregates (1/2") - (Lorry 4.5M3)	0.3	m3		
	Coral stone (4.5m3 / trip)	1	Trip		
	Reinforcement - 10mm diameter high tensile	4	PC'S		
	Binding Wire -1kg	5	Kgs		
	Marine board - Size 4ft x 8ft x 18mm thick	1	PC'S		
	Timber 2" X 2" (3m long)	6	PC'S		
	Nails-4"	4	Kgs		
	Nails-3"	3	Kgs		
	Supporting Props	5	PC'S		
	450 X450mm Cast iron cover	1	PC'S		
	100mm diameter PVC vent pipe complete -CLASS B"	1	PC'S		
SUB-TOTAL GULLY TRAP & NEUTRALIZATION CHAMBER					

<u>GENERAL SUMMARY</u>					AMOUNT
					TZS
<u>CHEMISTRY AND BIOLOGY BLOCK</u>					
A.	SUB-STRUCTURE -PROVISIONAL				
B.	SUPERSTRUCTURE				
C.	ROOF STRUCTURE & COVERING				
D.	CEILING				
E.	DOOR				
F.	WINDOWS				
G.	FINISHING				
H.	PAINTING & DECORATION				
J.	ELECTRICAL INSTALLATION				
K.	PLUMBING AND GAS INSTALLATION				
L.	GULLY TRAP AND NEUTRALIZATION CHAMBER				
TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY					
<u>ADD:</u>					
LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)					
Note:					
i. Refer attached specification and number of Furniture(s) for Chemistry & Biology Laboratory					
ii. Refer General Summary for: Preliminary, Transportation and Supervision Costs					
iii. Preliminary cover the following item:					
- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,					
- Power for the works, Security, store, Materials test and signboard.					
iv. Supervision cost depend on guideline of the project					
v. Installation of Ceiling Fan is an option, depend on whether condition of specific area .					

ARCHITECTURAL DRAWINGS



WINDOW SCHEDULE		
WINDOW TYPE	HEIGHT x WIDTH	QUANTITY(S)
W 01	1500mm x 1500mm	22
TOTAL		22
DOOR SCHEDULE		
D 1	900mm x 2500mm	6
D 2	1500mm x 2500mm	2
D 3	7500mm x 1500mm	2
TOTAL		

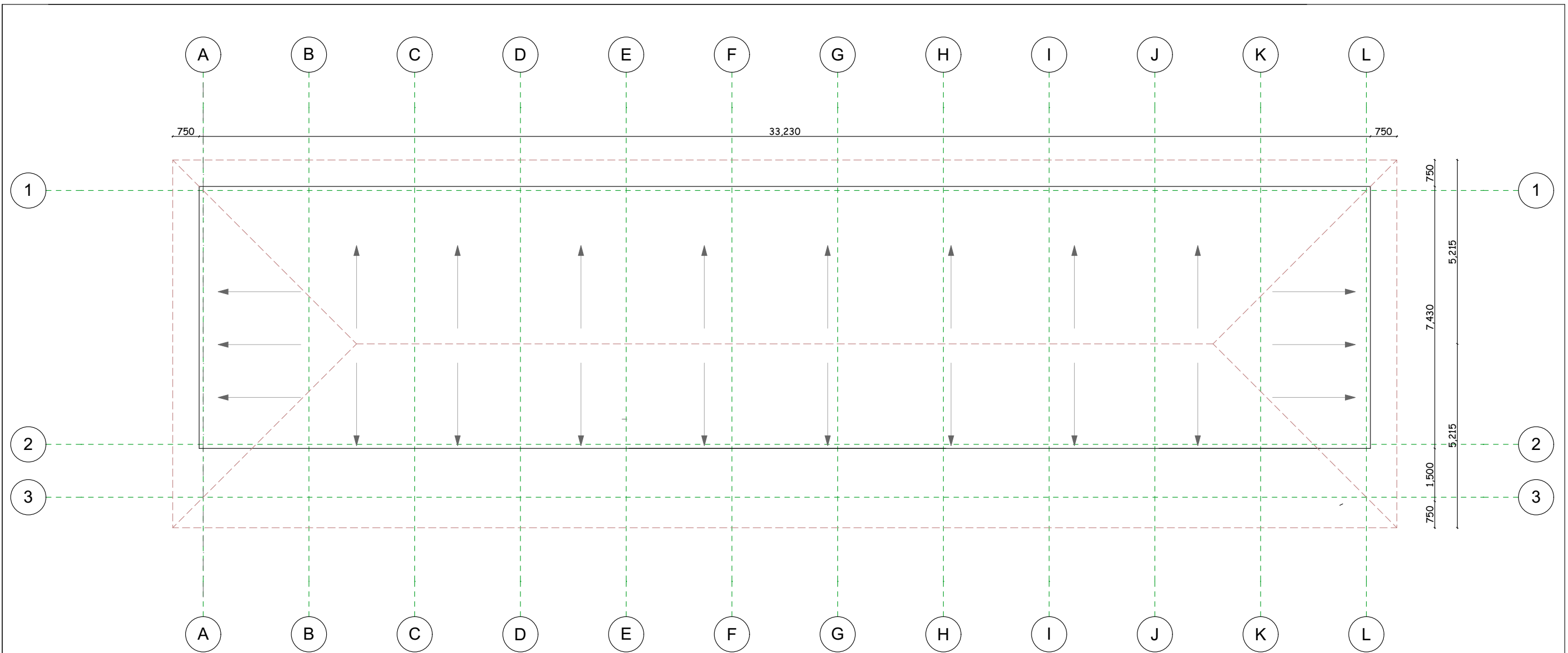
TOTAL FLOOR AREA = 298 SQM

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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: CHEMISTRY & BIOLOGY BLOCK
FLOOR PLAN
 DRAWING NO: ARC/CHB/LAB/01

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

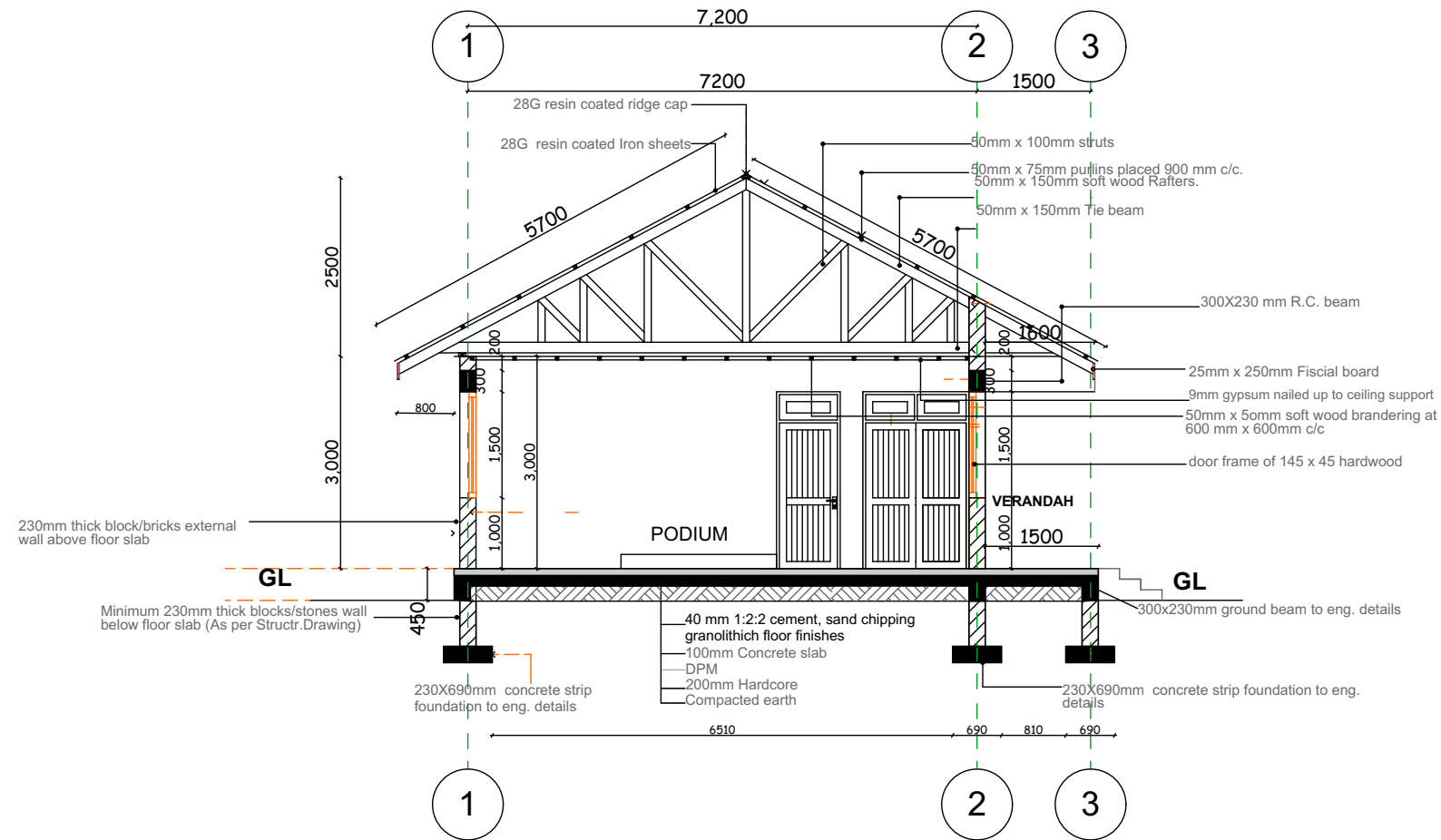


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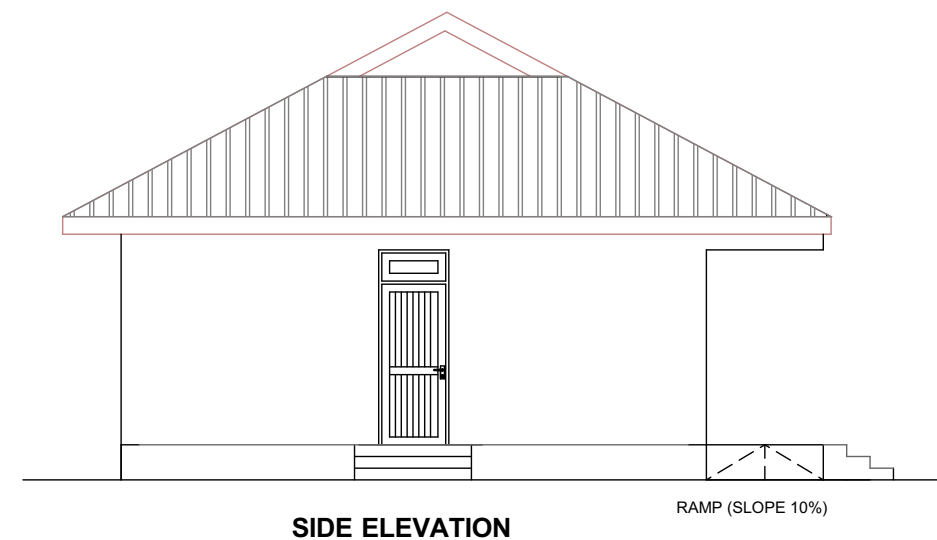
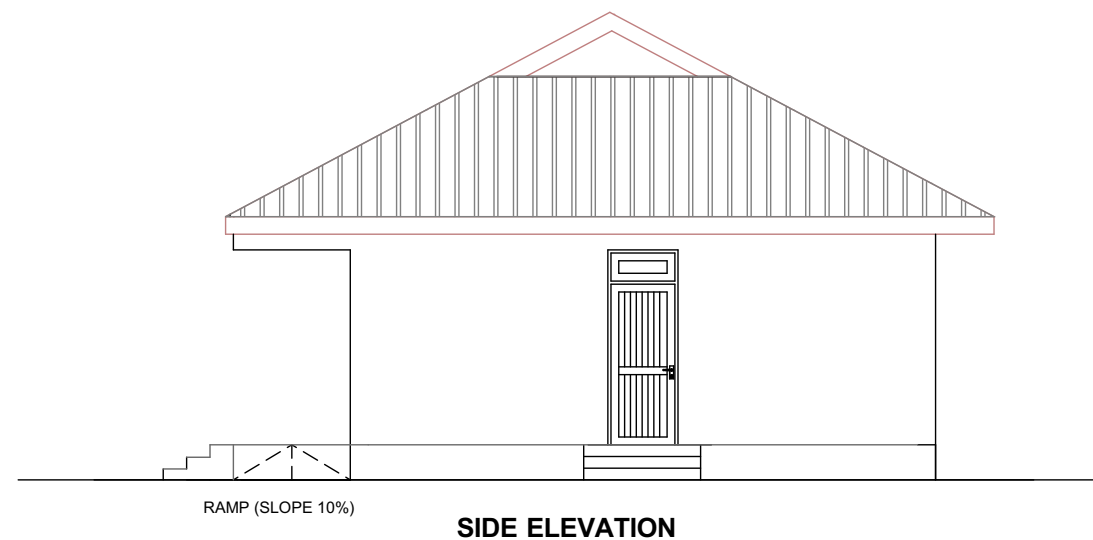
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DRAWING TITLE: CHEMISTRY & BIOLOGY BLOCK
ROOF PLAN
 DRAWING NO: ARC/CHB/LAB/02

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit



TYPICAL SECTION

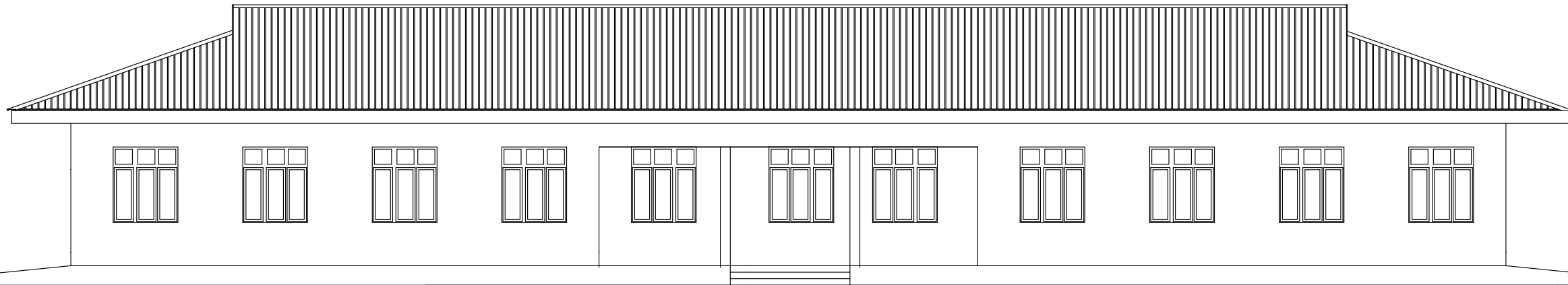


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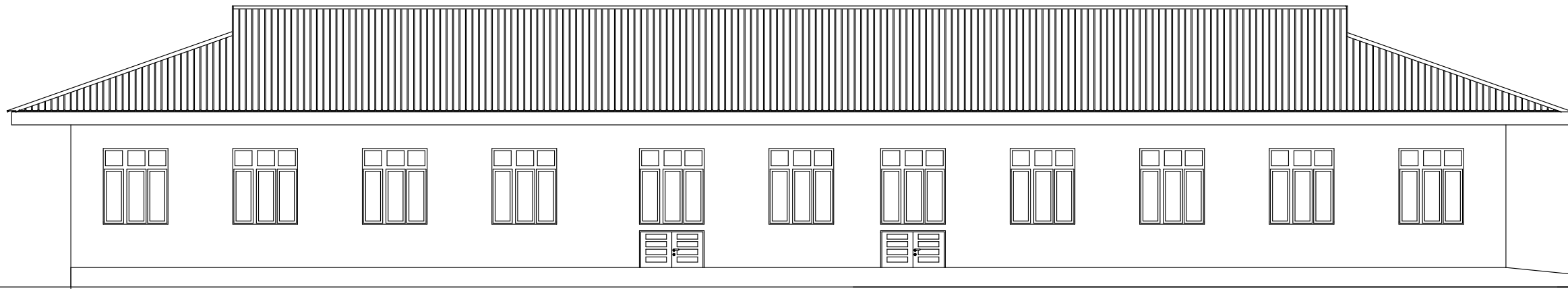
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS FOR SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: CHEMISTRY & BIOLOGY BLOCK
TYPICAL SECTION - SIDE ELEVATIONS
DRAWING NO: ARC/CHB/LAB/03

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit



FRONT ELEVATION



REAR ELEVATION

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
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**PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM**

DRAWING TITLE: CHEMISTRY & BIOLOGY BLOCK
ELEVATIONS
 DRAWING NO: ARC/CHB/LAB/04

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

SCHEDULE OF MATERIALS

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for Library Block – Gable Type

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

JUNE, 2023

MOEST/PO-RALG

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	<u>SUB-STRUCTURE -PROVISIONAL</u>				
1	<u>Strip Foundation - Grade 15 Plain</u>				
	Aggregate (3/4")	12	M ³		
	Sand	6	M ³		
	Cement-50kgs (42.5)	60	Bags		
2	<u>Foundation Walls</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	1,300	No		
	Sand	4	M ³		
	Cement -50kgs (42.5)	22	Bags		
	<u>ALTERNATIVE TO FOUNDATION WALL</u>				
	** If stone is applicable, then blockwork is not				
	applicable. Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or Stone) depending on availability and suitability of building materials.				
	Stone, complete with its cement and sand mortar (1:4)	21	M ³		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram (4.5m ³ lorry)	8	Trips		
	Hardcore 200mm thick - (4.5m ³ lorry)	7	Trips		
	Sand	6	M ³		
	Aldrin solution or other and equal approved (1000mls)	2	Bottle		
4	<u>Oversite Concrete 100mm thick - 15 grade ,Ground Beam - 20 grade</u>				
	DPM	162	M ²		
	Cement -50kgs	110	Bags		
	Aggregates (1/2")	18	M ³		
	Sand	9	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	30	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	31	PC'S		
	A252 Mesh 200 x 200x 6.16kg/m ²	4	PC'S		
	Binding Wire - 25kg	1	Roll		
	Timber 1" X 10 " (5.2m long)	25	PC'S		
	Timber 2" X 2"(5.2m long)	8	PC'S		
	Nails-4"	25	Kgs		
	Nails-3"	20	Kgs		
	Supporting Props - 3m	15	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls & Ring beam</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	1,801	No		
	DPC (30m long, 1m wide)	1	Roll		
	Sand	8.0	M ³		
	Cement-50kgs (42.5)	60	Bags		
	Aggregates (1/2")	4	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	25	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	24	PC'S		
	Binding Wire - 25kg	1	Roll		
	Timber 1" X 10" to Sides (5.2m long)	18	PC'S		
	Timber 1" X 5" (Plates) (5.2m long)	4	PC'S		
	Timber 2" X 2" (5.2m long)	12	PC'S		
	Supporting Props - 3m	15	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
	<i>ALTERNATIVE TO BLOCKWORK WALL</i>				
	<i>** If brickwork is applicable, then blockwork is not applicable.</i>				
	<i>Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or brickwork) depending on availability and suitability of building materials. Note that: Strictly do not use stretcher bond when using bricks, the acceptable bond is either Flemish or English or header.</i>				
	230mm thick One brick wall	116	m ²		
	150mm thick One brick wall	17	m ²		
C.	<u>ROOF STRUCTURE & COVERING</u>				
1	<u>Roof Structure - Provisional - 5.2 M</u>				
	Timber 2 " X 3" Purlins	40	Pcs		
	Timber 2" X 6" Rafter and Tie beam	56	Pcs		
	Timber 2 " X 4" Struts, wall plates	60	Pcs		
	Fascia board 1" X 10" -ref. Semi Hardwood (5.2m long)	11	PC'S		
	Nails -5"& 4"	45	Kgs		
	Nails -3"	40	Kgs		
	16mm diameter bolt, 500mm long	26	Kgs		
	<u>NOTE:</u> The above softwood timber structure should be pressure impregnated treated				
2	<u>Roof Covering</u>				
	28 G Resincoated Iron sheet	210	M ²		
	Aluminium Roofing Nails	15	Packet		
	Ridge - 28 G resin coat (3m long)	7	PC'S		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
3	<u>Gutter's (PVC)</u>				
	Upvc 100mm half round (6m long)-5"	7	PC'S		
	Upvc 75mm diameter down pipe; Class B	3	PC'S		
	PVC outlet	4	PC'S		
	Gutter support bracket	18	PC'S		
	PVC bend 90'	4	PC'S		
	PVC bend 45'	4	PC'S		
	Gutter Clamp 3"	16	PC'S		
	Connector/reducer	4	PC'S		
	Connector outer	4	PC'S		
	Corner Inner	4	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	<u>CEILING</u>				
	Gypsum board -9mm thick	58	PC'S		
	Plain Cornice (8ft)	55	PC'S		
	Screw 1.25" 500pcs/box	2	Box		
	Gypsum powder	9	Bags		
	Fiber tape (90m)	1	Roller		
	Treated softwood Timber 2" X 2" (5.2m)	104	Pcs		
	Nails 4"	20	Kgs		
	Nails 3"	25	Kgs		
	SUB-TOTAL FOR CEILING				
E.	<u>DOOR</u>				
1	<u>40mm thick hardwood Panelled door shutter</u>				
	900 x 2100mm high door	2	PC'S		
2	<u>Frames (hardwood) & Varnish</u>				
	900 x 2500mm high	2	PC'S		
	Brush 3"	2	Pcs		
	Sand paper (msasa) No.80	1	LM		
	Clear Varnish - 4Litres	1	TIN		
	Thinner for Varnish	1	Litres		
3	<u>Ironmongeries - ref Union</u>				
	Mortice lock Three lever	2	No		
	Brass hinges - 100mm	3.0	Pairs		
	SUB-TOTAL FOR DOORS				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
F.	<u>WINDOWS</u>				
1	<u>Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs</u>				
	1500 X 1500mm high	11	PC'S		
2	<u>25 x 4mm thick flat bar grill painted red-oxide with 25 x 25mm square pipes frame and all necessary accessories</u>				
	1500 X 1500mm high	11	PC'S		
	SUB-TOTAL FOR WINDOWS				
G.	<u>FINISHING</u>				
1	<u>Floor finishing</u>				
	Sand	7.0	m3		
	Cement-50kgs (42.5)	47	Bags		
	Marley flex PVC tiles with size 300 x 300 x 2.5mm thick(4.5m2 per Box)	36	Box		
	Skirting (600 mm long; 25No/Box)	10	Box		
	Grout (1kg/packet)	5	Packet		
	Spacer	2	Packet		
	Marley Solvent (250ML)	2	Bags		
2	<u>Wall Finishing 15mm thick (1:4)</u>				
	Sand	8	M ³		
	Cement-50kgs (42.5)	47	Bags		
	White cement - 40kg	4	Bags		
	Gypsum powder - 25kg	7	Bags		
	SUB-TOTAL FOR FINISHING				
H.	<u>PAINTING & DECORATION</u>				
	Emulsion Paint - 20 LTRS	6	buckets		
	Weather guard Paint - 20 LTRS	2	buckets		
	Washable paint -20 LTRS	3	buckets		
	Primer paint -20 LTRS	1	buckets		
	Solvent - 5LTRS	2	TIN		
	Brush 3"	4	Pcs		
	Roller	3	Pcs		
	Gloss paint-4LTR	1	TIN		
	Oil paint -4LTR	1	TIN		
	Bitumen paint - 4Litres	1	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J.	<u>ELECTRICAL INSTALLATION</u>				
	Single fluorescent fitting Complete	22	No		
	Double switch socket	11	No		
	Main switch 6way,1PH with integral RCD 100A/300mA	1	No		
	NB: Wiring cables shall be copper have a minimum cross section area of 1.5sqmm and shall comply with an appropriate British or Harmonized standard for either thermoplastic or thermosetting insulated electric cables.				
	Single core wire 1.5sqmm - Brown	1	Roll		
	Single core wire 1.5sqmm - Black	1	Roll		
	Single core wire 1.5sqmm - Green	1	Roll		
	Single core wire 2.5sqmm - Brown	1	Roll		
	Single core wire 2.5sqmm - Black	1	Roll		
	Single core wire 2.5sqmm - Green	1	Roll		
	Ceiling fan National or other equal	12	PC's		
	3gang 1way switch	4	No		
	1gang 1way switch	1	No		
	2gang 1 way switch	3	No		
	4gang 1 way switch	2	No		
	DP switch 20A	1	No		
	Earth rod approved copper 16mm not less than 1200mm	1	No		
	Earth wire 4sqmm	15	M		
	Metal box twin	11	No		
	Metal box single	8	No		
	Junction box	15	No		
	Conduit pipe	60	PC's		
	Elbow	15	PC's		
	Conduit coupling	10	PC's		
	Round cover	20	PC's		
	Round box	5	PC's		
	Fine screw	1	Packet		
	Data socket	3	No		
	CAT 6 UTP cable (300m)	1	box		
	Smoke detector	2	No		
	plastic clips 22mm	2	Box		
	SUB-TOTAL FOR ELECTRICAL INSTALLATION				

ARCHITECTURAL DRAWINGS

LIBRARY BLOCK

ARCHITECTURAL DRAWING

Library Block -Gable

JUNE 2023

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**PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM**

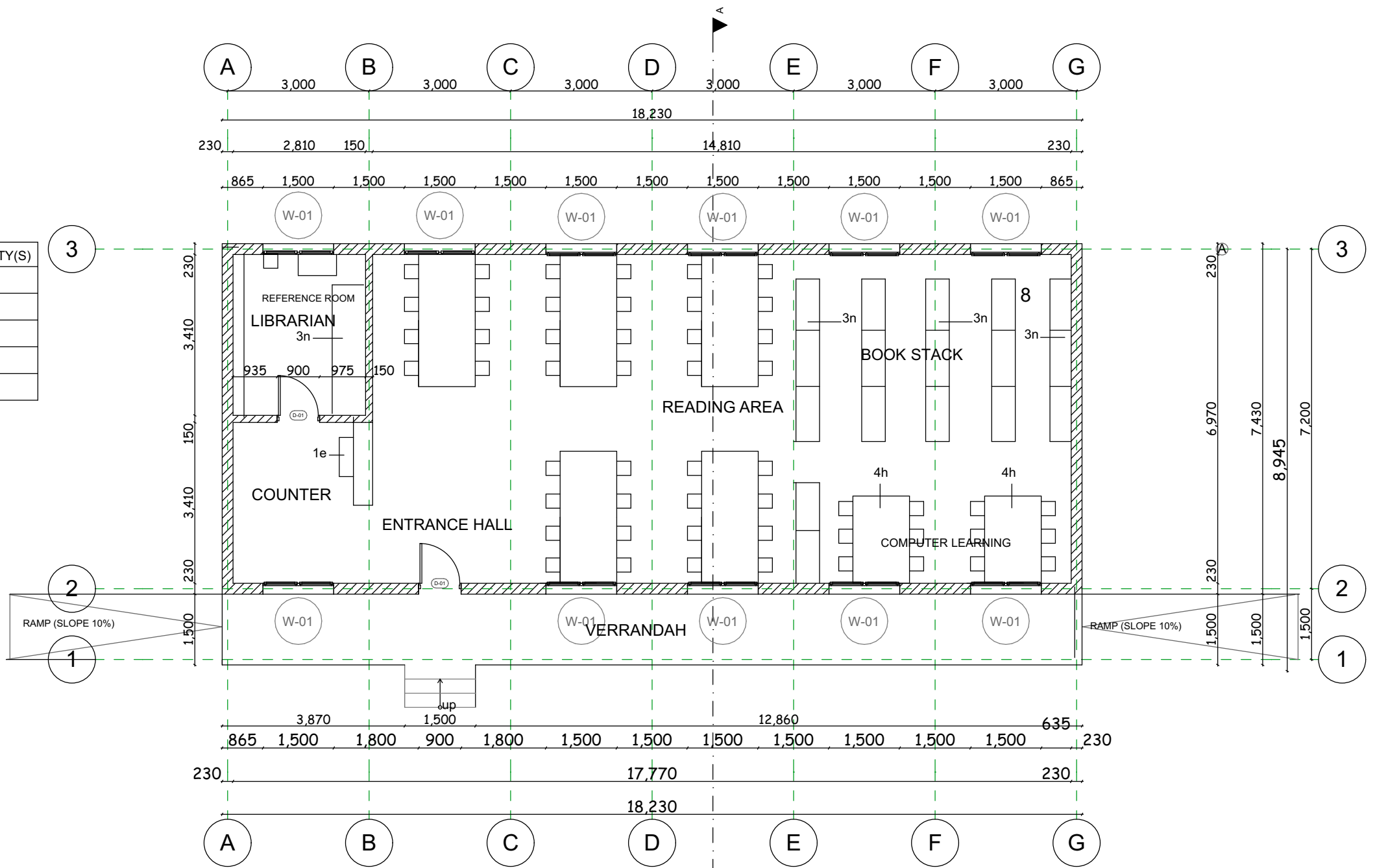
DRAWING TITLE: LIBRARY BLOCK- GABLE

DRAWING NO: ARC/LBR/00

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

WINDOW SCHEDULE

WINDOW TYPE	HEIGHT x WIDTH	QUANTITY(S)
W 01	1500mm x 1500mm	11
TOTAL		11
DOOR SCHEDULE		
D 1	2500mm x 900mm	2
TOTAL		2



FURNITURES
KEY ITEM

KEY ITEM	NO
1e cardex cabinet	1
2k pinboard	4
2x work bench	1
2w work bench	2
3g book case	2
3n library shelf	36
3r shelves unit	1
4a single desk	40
4h general tables	2
4k counter section	1
5a general chair	54
7b book trolley	1

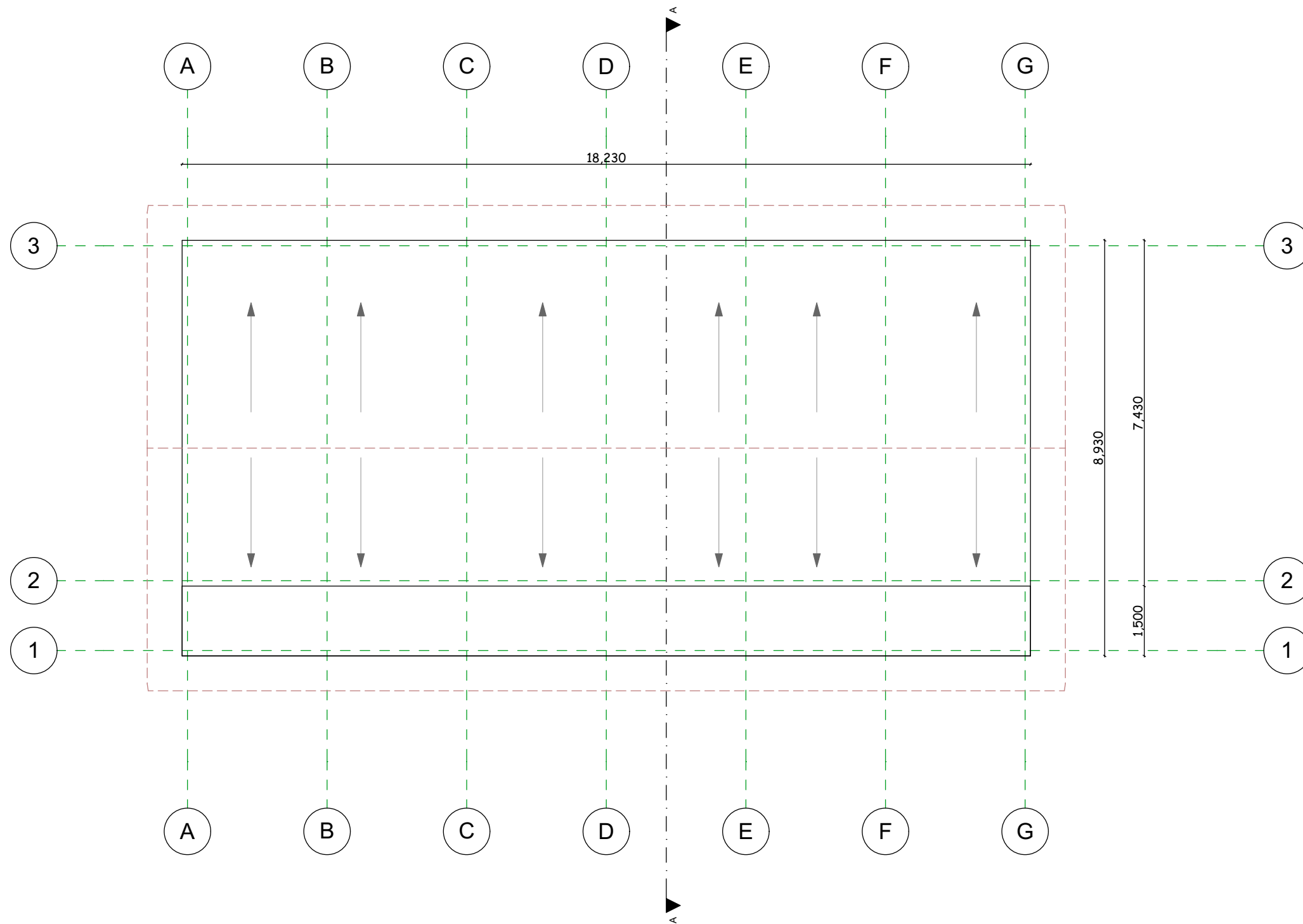
TOTAL FLOOR AREA = 163 SQM

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DRAWING TITLE: LIBRARY BLOCK GABLED
FLOOR PLAN GABLE
DRAWING NO: ARC/LBR/01

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

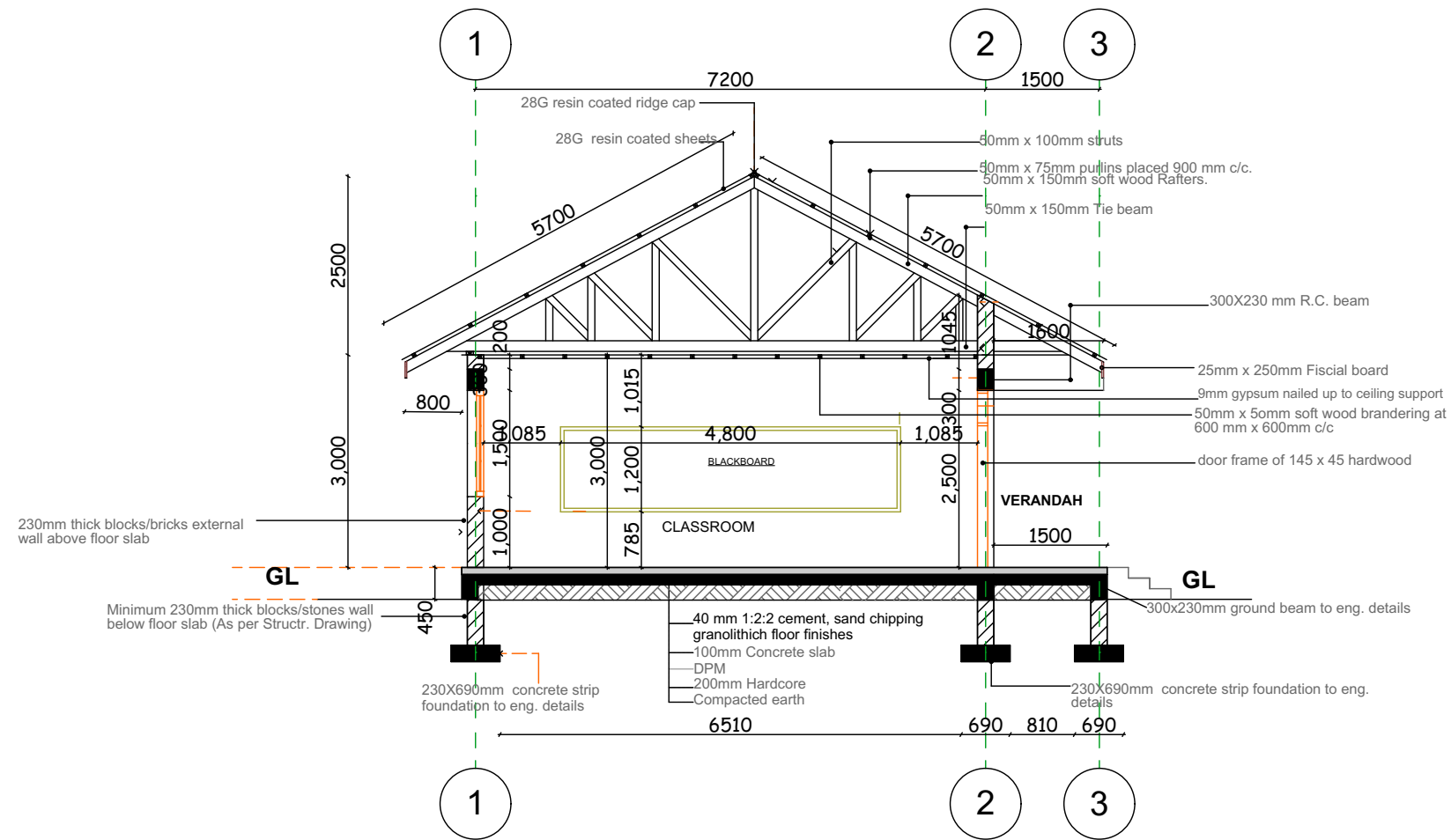


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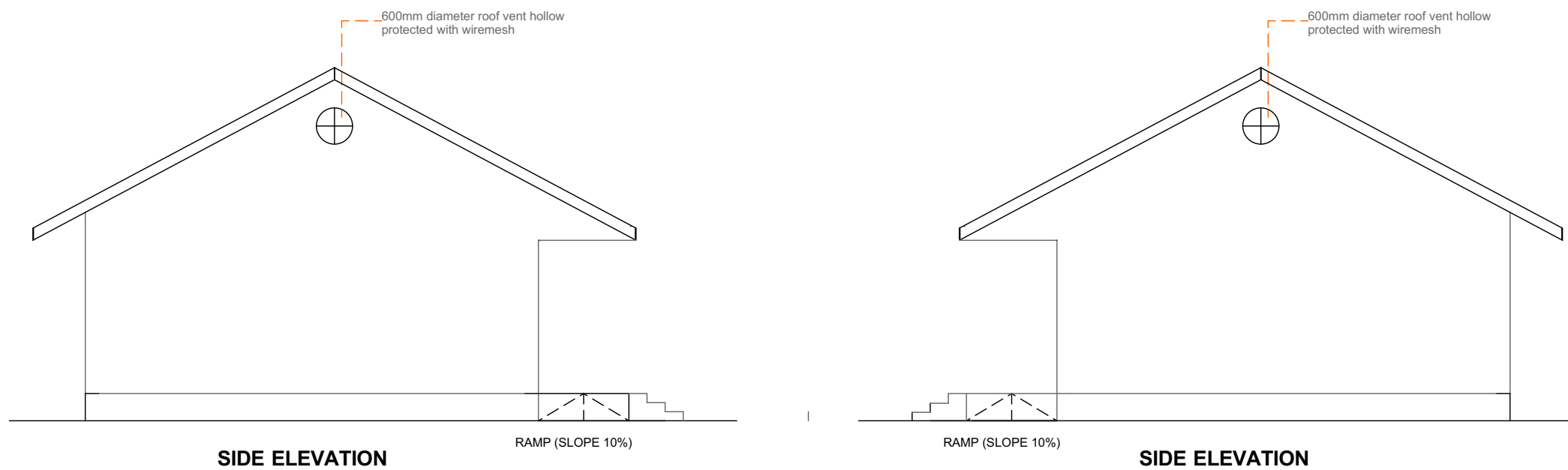
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: PROPOSED LIBRARY BLOCK GABLED
ROOF PLAN
 DRAWING NO: ARC/LBR/02

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit



TYPICAL SECTION

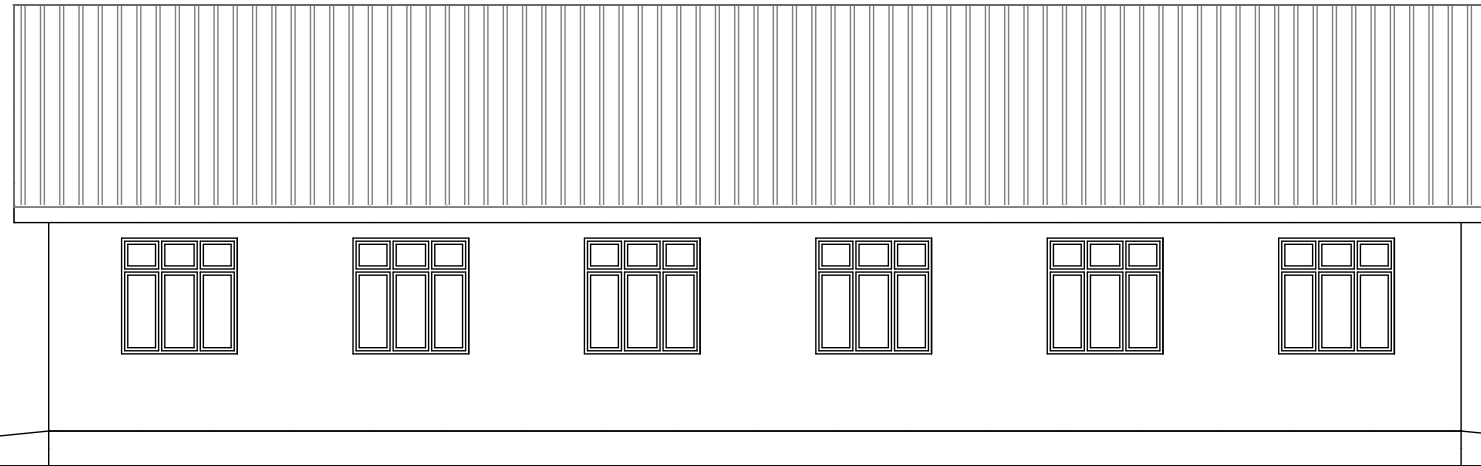


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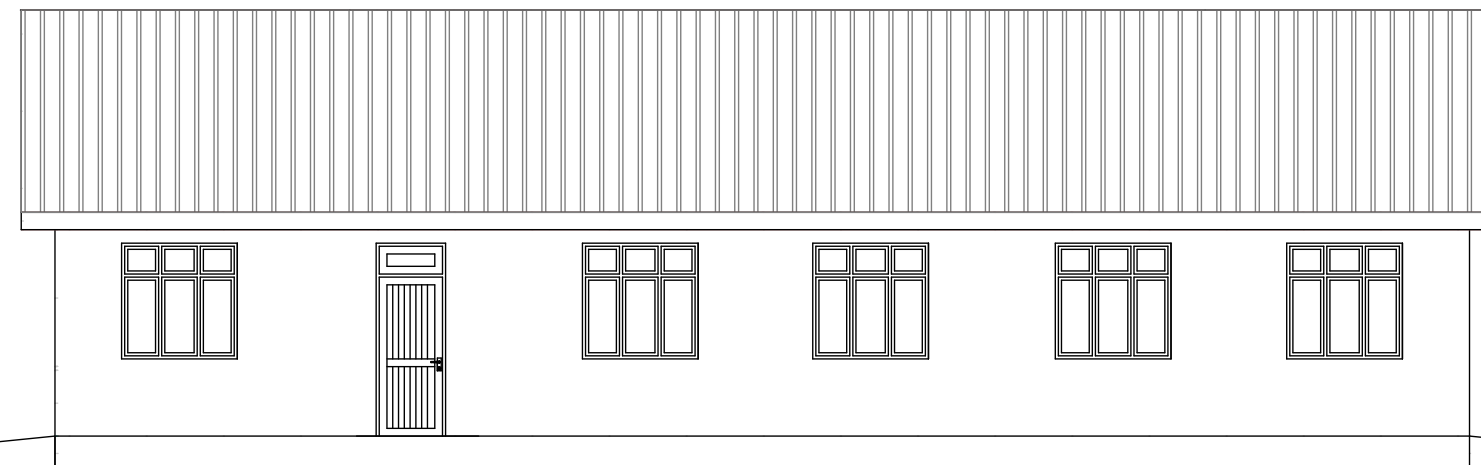
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM

DRAWING TITLE: LIBRARY BLOCK GABLED
 TYPICAL SECTION - SIDE ELEVATIONS
 DRAWING NO: ARC/LBR/03

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit



REAR ELEVATION



FRONT ELEVATION

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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS FOR SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM
 PROPOSED LIBRARY BLOCK GABLED

DRAWING TITLE: LIBRARY BLOCK GABLED
ELEVATIONS
 DRAWING NO: ARC/LBR/04

Date	June, 2023
Drawn by	IAS
Checked by	JR
Scale	To fit

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for 80 Students Dormitory Block

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

JUNE, 2023

MOEST/PO-RALG

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	SUB-STRUCTURE -PROVISIONAL				
1	<u>Strip Foundation - Grade 15 Plain</u>				
	Aggregate (3/4")	38	M ³		
	Sand	19	M ³		
	Cement-50kgs (42.5)	188	Bags		
2	<u>Foundation Walls</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	3,570	No		
	Sand	12.0	M ³		
	Cement-50kgs (42.5)	60	Bags		
	<u>ALTERNATIVE TO FOUNDATION WALL</u>				
	** If stone is applicable, then blockwork is not applicable.				
	Therefore Engineer must confirm to the Tenderer which				
	item to be priced (Blockwork or Stone) depending on				
	availability and suitability of building materials				
	Stone, complete with its cement and sand mortar (1:4)	59	M ³		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram average depth 150mm (4.5m ³ lorry)	14	Trips		
	Hardcore 200mm thick (4.5m ³ lorry)	19	Trips		
	Sand	21	M ³		
	Aldrin solution or equal -1000mls	3	Bottles		
4	<u>Oversite Concrete (100mm thick - 15 grade) & Ground Beam - 20 grade, Steps, Ramps</u>				
	DPM	412	M ²		
	Cement-50kgs (42.5)	342	Bags		
	Aggregates (1/2")	51	M ³		
	Sand	26	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	105	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	114	PC'S		
	Binding wire -25Kg	3	Roll		
	A252 Mesh 200 x200x6.16kg/m ²	4	PC'S		
	20mm styropol comprehensive materials (1200x2400mm)	5	PC'S		
	Timber 1" X 8" (5.2m long)	80	PC'S		
	Timber 2" X 2" (3.5m long)	20	PC'S		
	Nails-4"	20	Kgs		
	Nails-3"	20	Kgs		
	Supporting props	15	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
		B/F			
2	<u>Roof Covering</u>				
	28 G Resincoated Iron sheet	630	M ²		
	Hips/Ridge and valley - 28 G resin coat	38	PC'S		
	Aluminium Roofing Nails	63	Packet		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D	<u>CEILING</u>				
	Gypsum board -9mm thick	145	PC'S		
	Plain Cornice (8ft)	123	PC'S		
	Gypsum Screw 1" 800pcs/box	11	Box		
	Gypsum powder	6	Bags		
	Fibre tape-90m	3	Pcs		
	Treated softwood Timber 2" X 2" (5.2m)	340	Pcs		
	Nails 4"	40	Kgs		
	Nails 3"	45	Kgs		
	SUB-TOTAL FOR CEILING				
E	<u>DOOR</u>				
1	<u>40mm thick hardwood paneled door shutter</u>				
	1420 x 2100mm high double door shutter	4	PC'S		
	920 x 2100mm high	3	PC'S		
	920 x 1820mm high	1	PC'S		
	720 x 1820mm high	9	PC'S		
2	<u>Frames (hardwood),Varnish, Glass & Burglar bar</u>				
	1500 x 2500mm high frame for double door (D1)	4	PC'S		
	1000 x 2500mm high door frame	3	PC'S		
	1000 x 1820mm high door frame	1	PC'S		
	800 x 1820mm high	9	PC'S		
	5mm thick clear glass to Vents	5	M ²		
	16mm barglar bars to door vent (12m)	3	Pcs		
	Brush 3"	2	Pcs		
	Sand paper (msasa) No.80	5	LM		
	Clear Varnish - 4Litres	1	TIN		
	Thinner for Varnish -1Litres	1	Litres		
3	<u>IronMongeries</u>				
	Mortice lock Three lever	8	No		
	barrel bolt with indicator bolts	9	No		
	Brass hinges - 100mm	31.5	Pairs		
	Wood Screw	1	Box		
	SUB-TOTAL FOR DOORS				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
F	WINDOWS				
1	<u>Hardwood casement windows /Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs</u>				
	1500 X 1500mm high	20	No		
	2200 X 750mm high	5	No		
	SUB-TOTAL FOR WINDOWS				
G	FINISHING				
1	<u>Floor finishing 500x500x 10mm Porcelain Floor Tiles including bedding 30mm thick cement and sand</u>				
	Sand	20	m3		
	Cement-50kgs (42.5)	125	Bags		
	500 X 500 X 10mm thick- Non-slippery porcelain floor tiles - (1.75 sqm/Box)	250	Box		
	Epoxy - Grout (1kg/packet)	25	Bucket		
	Spacer	10	Packet		
	Skirting (600mm long; 25/Box)	20	Box		
2	<u>Wall Finishing</u>				
	Sand	36	M ³		
	Cement-50kgs (42.5)	215	Bags		
	White cement - 50kg	8	Bags		
	Gypsum powder	32	Bags		
	250 x 400mm x 9mm thick ceramic wall tiles (1.5Sqm/Box)	88	Box		
	Epoxy - Grout (1kg/packet)	15	Packet		
	Spacer	6	Packet		
	Sand paper Msasa No.120	10.0	m		
	SUB-TOTAL FOR FINISHING				
H	PAINTING & DECORATION				
	Emulsion Paint - 20 LTRS	15	buckets		
	Weather guard Paint - 20 LTRS	4	buckets		
	Washable paint -20 LTRS	6	buckets		
	Primer paint -20 LTRS	1	buckets		
	Solvent - 5LTRS	1	TIN		
	Brush 3"	3	Pcs		
	Roller	3	Pcs		
	Gloss paint-4LTR	2	TIN		
	Bitumen paint - 4Litres	6	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				

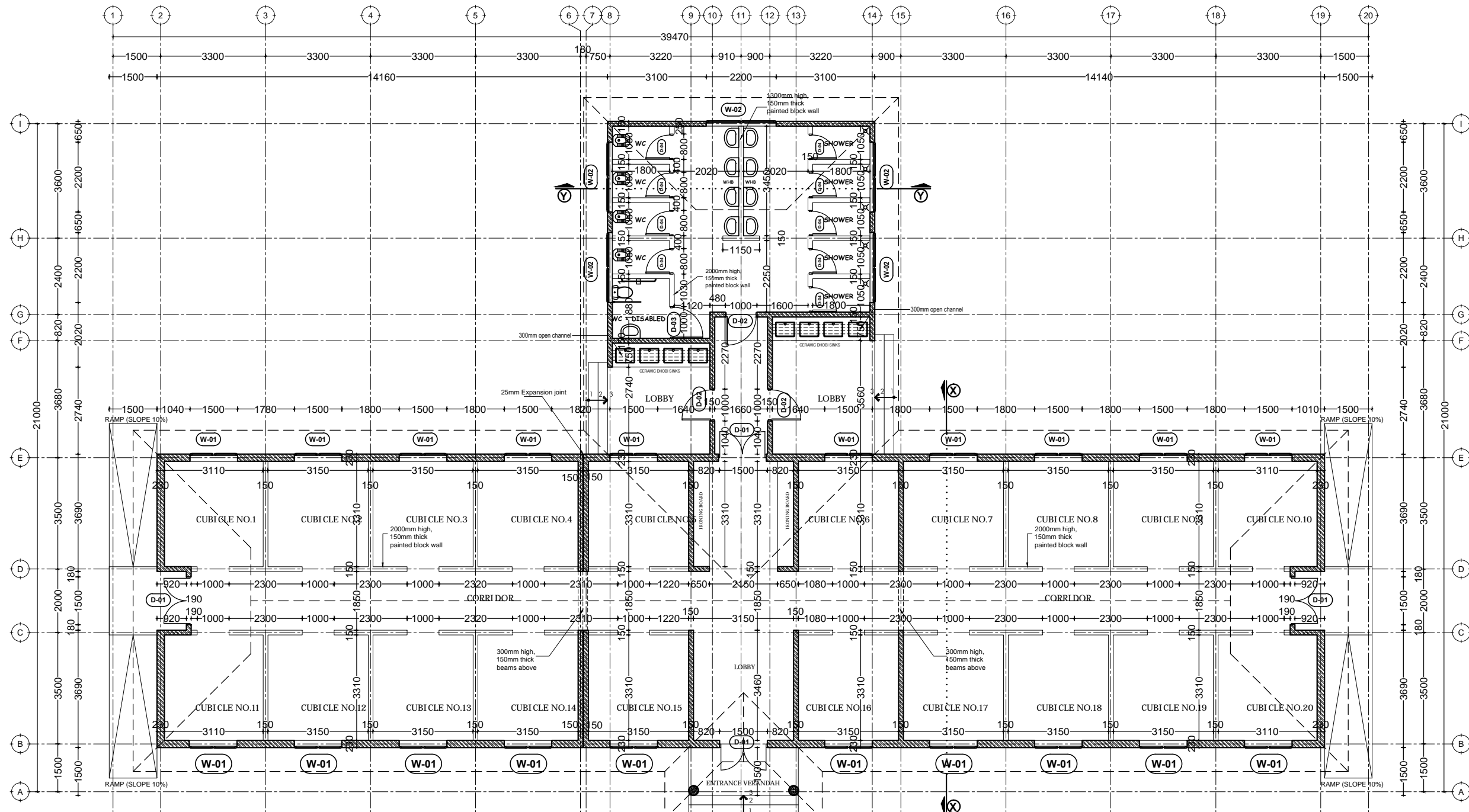
ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J	<u>PLUMBING AND ENGINEERING INSTALLATIONS:</u>				
	Western type low level W.C suite vitrious china to B.S 3402	1	No		
	White vitreous china Asian type size 450x530x210mm	4	No		
	Disabled toilets with HWB, grab rails, mixer, floor drainer and all necessary accessories	1	No		
	White vitreous china wash hand basin (HWB), size 750x440x200mm complete .	8	No		
	80mm Diameter high quality plastic floor drain trap built in concrete bed	8	No		
	600 x 900 x 6mm thick looking mirror	8	No		
	150mm long toilet roll holder (Ceramic), plugged and screwed to blockwall	5	No		
	20mmØ Chromium plated towel single rail, 600mm long	5	No		
	Shurtuff (Douche spray) 13mm diameter X 1000mm long flexible hose metal braided hose	5	No		
1	<u>COLD WATER INSTALLATION:</u>				
	<u>Pipes and fittings:</u>				
	25mmØ communication pipe HDPE to trench	70	m		
	Ditto; tee	8	No		
	Ditto; elbow	14	No		
	Ditto; male connector	8	No		
	32mmØ pipe to trench	32	m		
	Extra; elbow	5	No		
	Ditto; nipple MM	20	No		
	Ditto; nipple FF	20	No		
	Ditto; union	10	No		
	Ditto; reducing connector 32Ø × 25Ø	20	No		
	Ditto; reducing connector 25Ø × 19Ø	20	No		
	Ditto; nipple MM	20	No		
	Ditto; reducing connector 25Ø × 19Ø	8	No		
	Ditto; nipple MM	20	No		
	Ditto; reducing connector 19Ø × 13Ø	20	No		
	13mm diameter pipe in blockwall chase BS 1010 or 1212	40	m		
	Ditto; elbow.	50	No		
	Ditto; tee.	18	No		
	Extra: nipple MM	24	No		
	Extra: nipple FF	24	No		
	Ditto: union	24	No		
2	<u>WASTE AND VENT PIPES:</u>				
	<u>UPVC pipes;Class 'C:</u>				
	38mmØ; chase in block in concrete slab.	24	m		
	Extra; Equal tee	20	No		
	Extra; plain elbow	15	No		
	Extra; plugged elbow	15	No		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
3	<u>SOIL AND PIPES:</u>				
	<u>UPVC pipes and fittings; Class 'C'</u>				
	100mmØ pipe fixed to walls	12	m		
	Ditto; laid in trenches.	72	m		
	Ditto; plugged bend 90°.	10	No		
	Ditto; plain bend 90°.	10	No		
	<u>Ancillaries:</u>				
4	<u>Draw off taps; stop valves; copper alloy to BS 5154 or BS</u>				
	13mmØ stop valve	6	No		
	13mm Ø bib taps Chrome plated	6	No		
	13mmØ angle cork	30	No		
	19mmØ HWB Bib tap chrome plated , single lever	10	No		
5	<u>WATER STORAGE TANKS:</u>				
	Water storage tank "SIMTANK" of 10000 liters or equal and approved manufacturer	1	No		
	<u>EQUIPMENT:</u>				
6	<u>FIRE FIGHTING INSTALLATIONS:</u>				
	9Kg, dry powder 'NAFFCO' or 'ANGUS' any other equal and approved fire extinguishers	3	No		
	Stand Alone smoke detector	5	No		
	<u>FOUL WATER DRAINAGE</u>				
7	<u>MANHOLE:</u>				
	Construct standard manhole size 600 x 600mm average depth 750mm deep (10Nr.)				
	Cement-50kgs (42.5)	10	bag		
	Sand	3	M ³		
	Aggregate (2/3")	2	M ³		
	Cement and sand Block (450 x 230x 150)	150	no		
	Wire mesh size 2400x1200mm	1	Pcs		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
K.	ELECTRICAL INSTALLATION				
	<u>80 STUDENTS DORMITORY</u>				
	Single fluorescent fitting Complete	34	No		
	Double switch socket	4	No		
	Main switch 8way, 1PH with integral RCD 100A/300mA ABB other equal approved	1	No		
	NB: Wiring cables shall be copper have a minimum cross section area of 1.5sqmm and shall comply with an appropriate British or Harmonized standard for either thermoplastic or thermosetting insulated electric cables.				
	Single core wire 1.5sqmm - Red /Brown	3	Roll		
	Single core wire 1.5sqmm - Black	3	Roll		
	Single core wire 1.5sqmm -green	3	Roll		
	Single core wire 2.5sqmm - red/Brown	1	Roll		
	Single core wire 2.5sqmm - black	1	Roll		
	Single core wire 2.5sqmm green	1	Roll		
	1gang 1 way switch	27	No		
	Ceiling light complete with energy saver/LED 11w	1	No		
	Earth rod approved copper 16mm not less than 1200mm	2	No		
	Earth wire 4sqmm	30	M		
	Metal box twin	4	No		
	Metal box single	27	No		
	Junction box	40	No		
	Conduit pipe	180	PC's		
	Elbow	60	PC's		
	Conduit coupling	40	PC's		
	Round cover	50	PC's		
	Round box	9	PC's		
	Fine screw	2	PACKET		
	plastic clips 22mm	4	BOX		
	Bulk head light fitting	9	PCS		
	SUB-TOTAL FOR ELECTRICAL INSTALLATION				

<u>GENERAL SUMMARY</u>		AMOUNT
		TZS
<u>DOMITORY BLOCK --- 80 STUDENTS</u>		
A.	SUB-STRUCTURE -PROVISIONAL	
B.	SUPERSTRUCTURE	
C.	ROOF STRUCTURE & COVERING	
D.	CEILING	
E.	DOOR	
F.	WINDOWS	
G.	FINISHING	
H.	PAINTING & DECORATION	
J.	PLUMBING AND ENGINEERING INSTALLATIONS:	
K.	ELECTRICAL INSTALLATION	
TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY		
<u>ADD:</u>		
LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)		
Note:		
i. Refer attached specification and number of Furniture(s) for 80 Students Dormitory Block		
ii. Refer General Summary for: Preliminary, Transportation and Supervision Costs		
iii. Preliminary cover the following item:		
- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,		
- Power for the works, Security, store, Materials test and signboard.		
iv. Supervision cost depend on guideline of the project		
v. Installation of Ceiling Fan is an option, depend on whether condition of specific area .		

ARCHITECTURAL DRAWINGS



GROUND PLAN

SCALE: 1:100

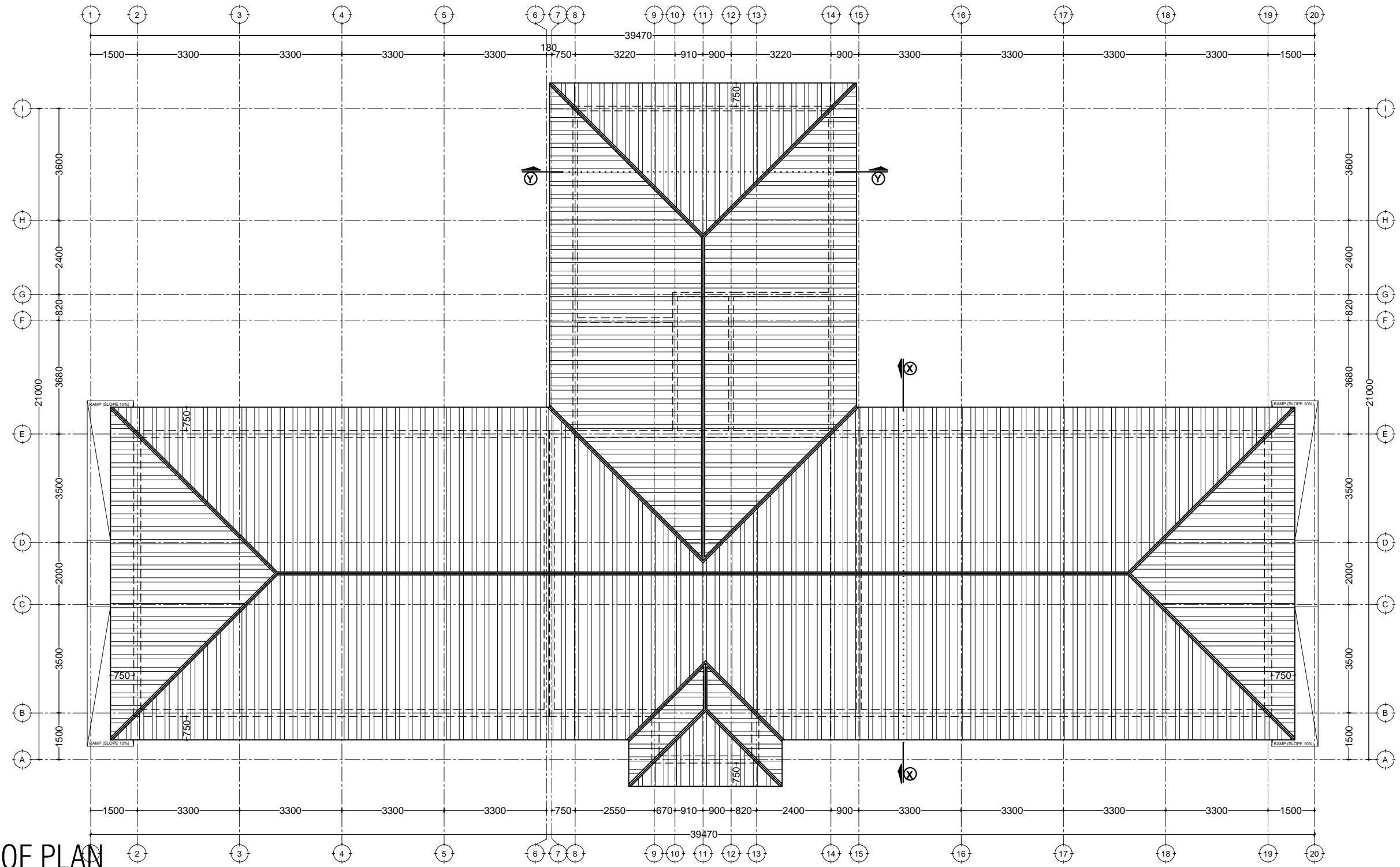
TOTAL AREA = 432sqm

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE: **80 STUDENTS DORMITORY**
FLOOR PLAN
 DRAWING NO: **SQP/ARC/DORM - 1/06**

DRAWN BY J.R
CHECKED BY I.S
 SCALE 1;100
 JUNE,2023



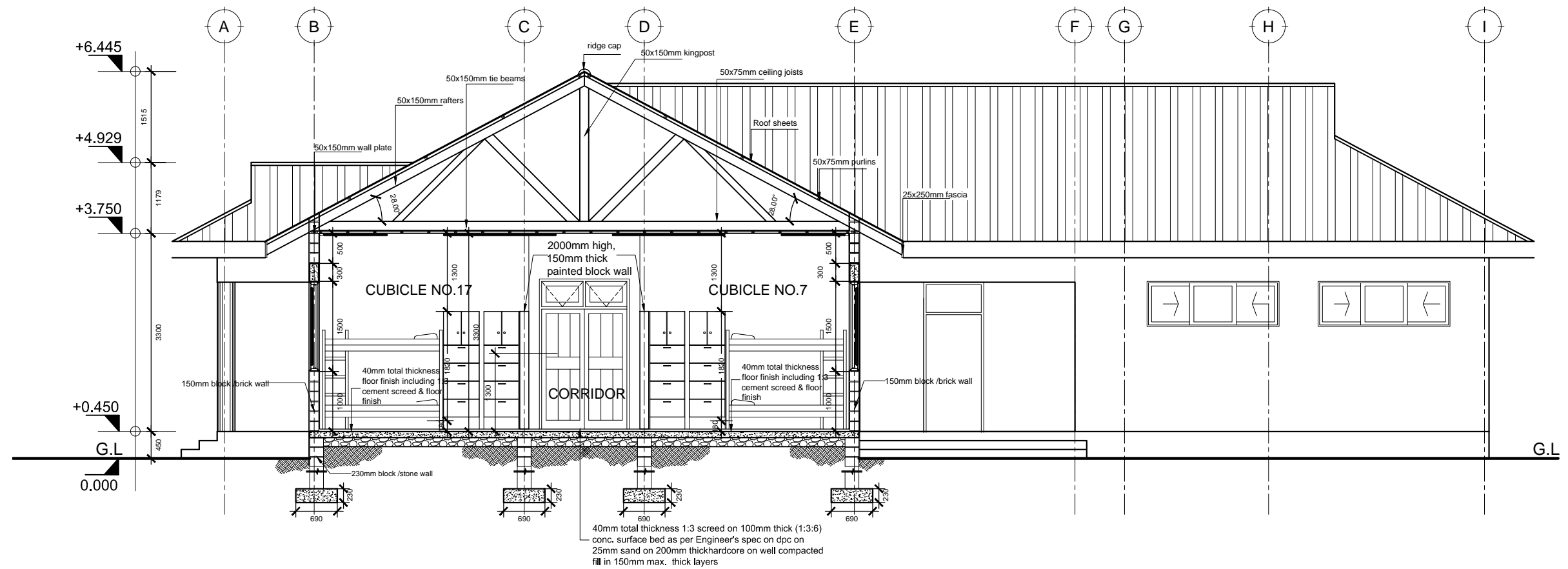
ROOF PLAN
SCALE: 1:100

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE: **80 STUDENTS DORMITORY**
ROOF PLAN
DRAWING NO: **SQP/ARC/DORM - 2/06**

DRAWN BY J.R
CHECKED BY I.S
SCALE 1;100
JUNE,2023



SECTION Y:Y
SCALE: 1:75

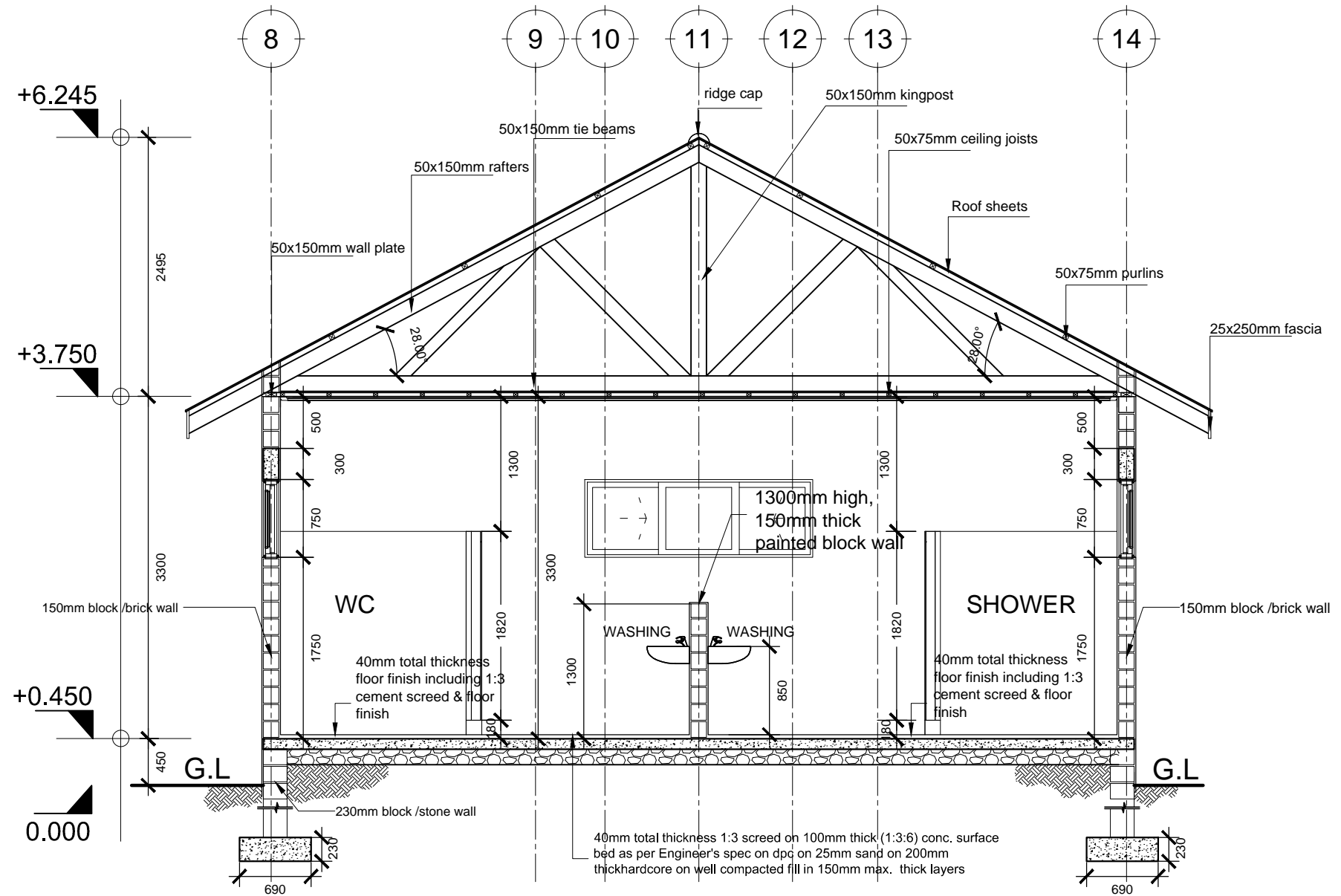
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PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE: **80 STUDENTS DORMITORY**
SECTION Y:Y
DRAWING NO: **SQP/ARC/DORM - 3/06**

DRAWN BY J.R
CHECKED BY I.S
SCALE 1;75
JUNE,2023

DOOR & WINDOW SCHEDULE			
NO.	WIDTH	HEIGHT	TOTAL
D1	1500mm	2500mm	4
D2	1000mm	2500mm	3
D3	1000mm	1820mm	1
D4	800mm	1820mm	9
W1	1500mm	1500mm	20
W1	2200mm	750mm	5



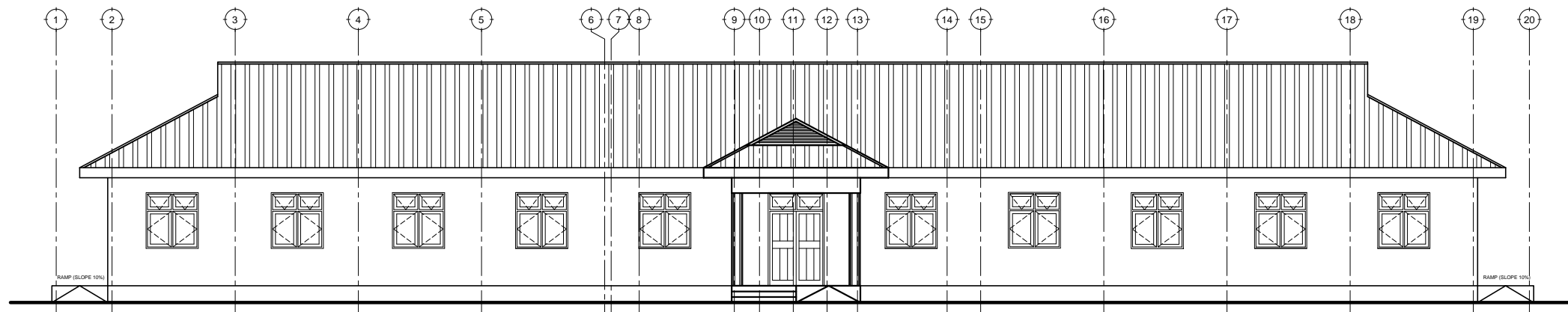
SECTION X:X
SCALE: 1:50

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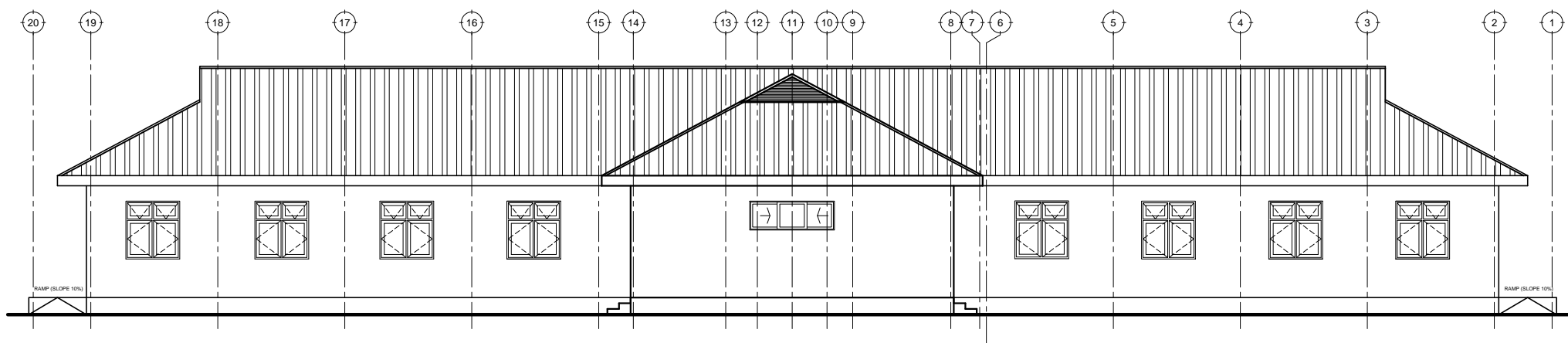
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE: **80 STUDENTS DORMITORY**
SECTION X:X
DRAWING NO: **SQP/ARC/DORM - 4/06**

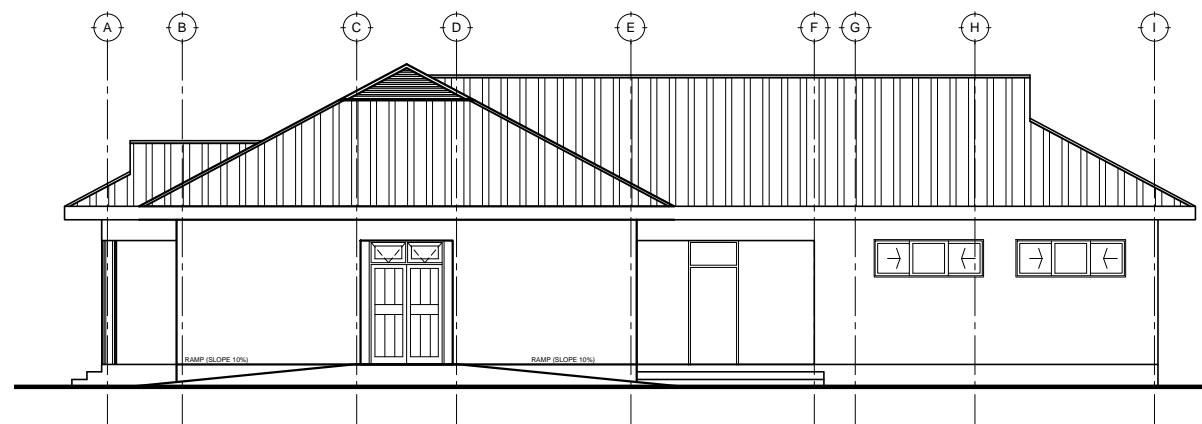
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SCALE 1;50
JUNE,2023



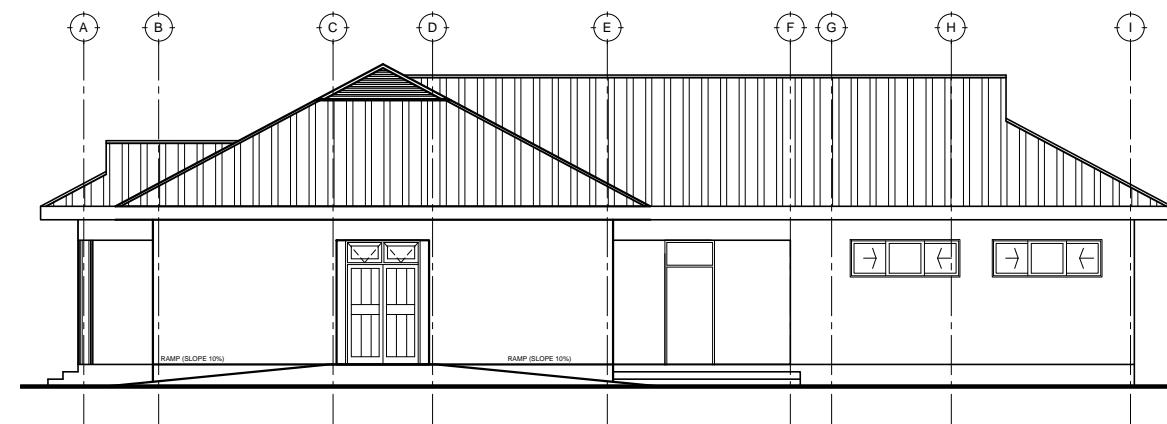
FRONT ELEVATION



FRONT ELEVATION



RIGHT SIDE ELEVATION



RIGHT SIDE ELEVATION

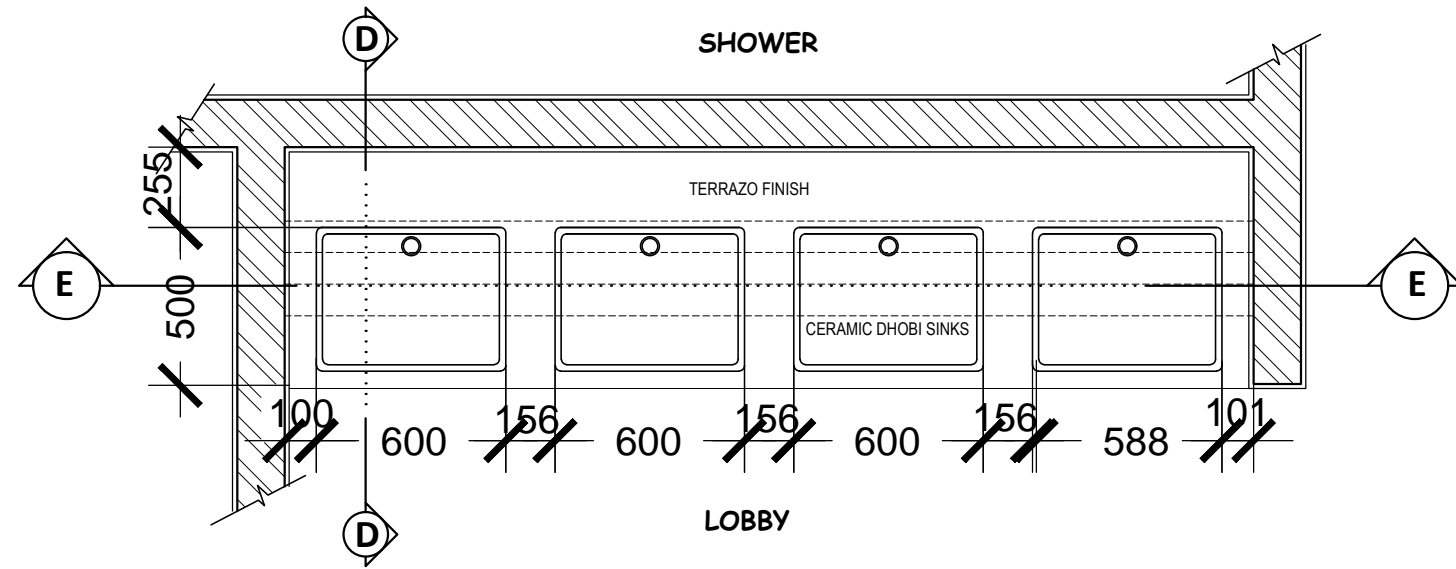
ELEVATIONS
SCALE: 1:100

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LOCAL GOVERNMENT

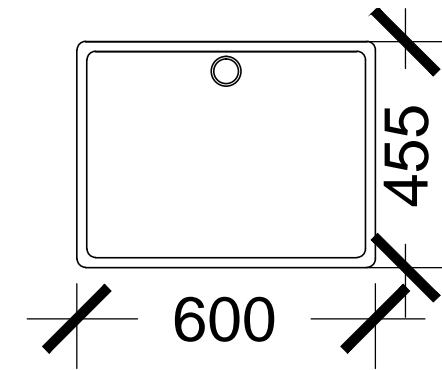
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE: **80 STUDENTS DORMITORY**
ELEVATIONS
DRAWING NO: **SQP/ARC/DORM - 5/06**

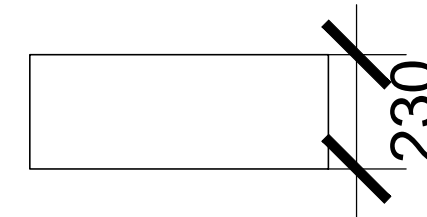
DRAWN BY J.R
CHECKED BY I.S
SCALE 1;50
JUNE,2023



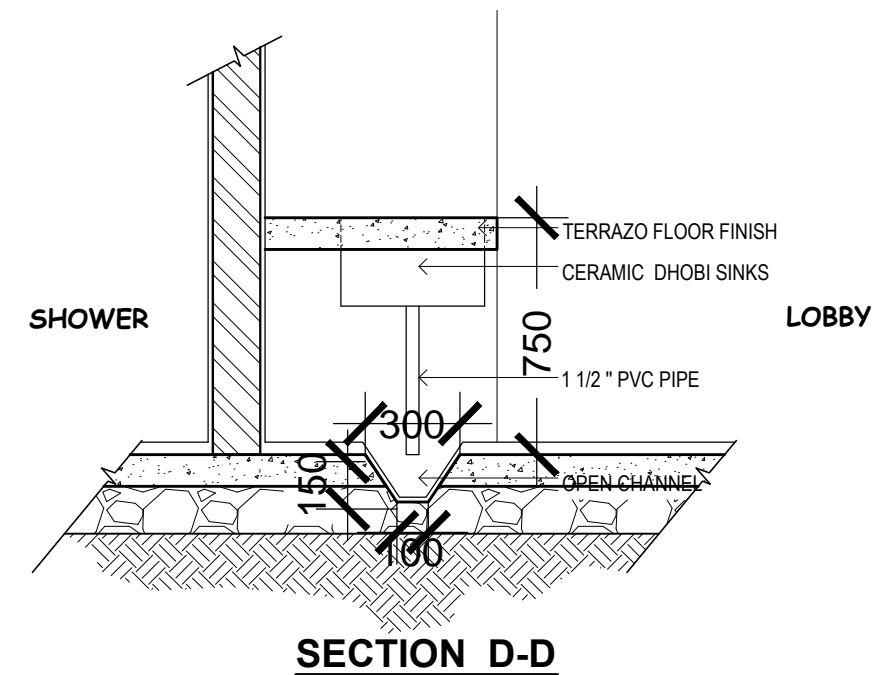
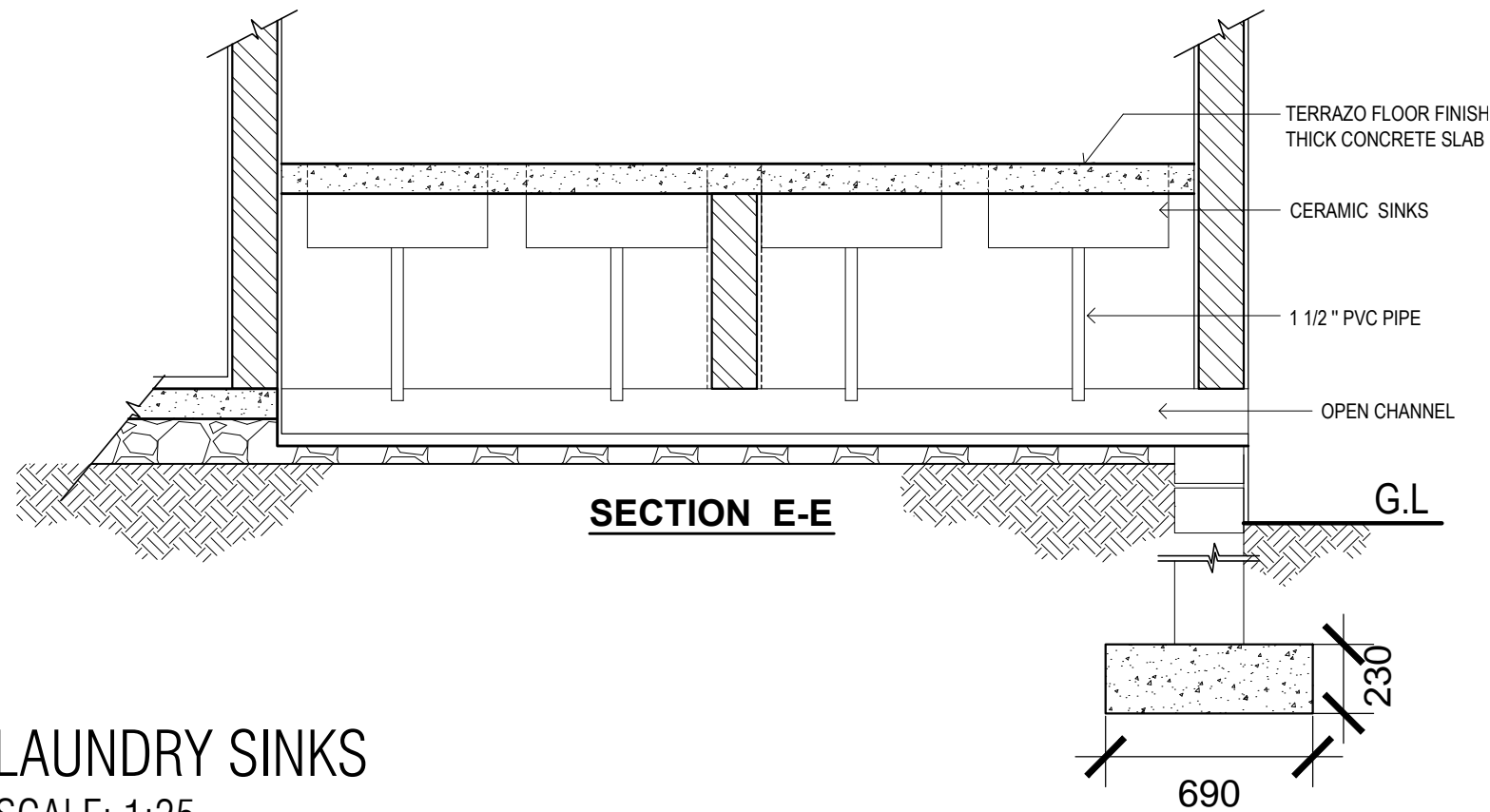
LAUNDRY SINKS LAYOUT PLAN



SINK PLAN



SINK ELEVATION



LAUNDRY SINKS
SCALE: 1:25

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE: **80 STUDENTS DORMITORY**
LAUNDRY SINKS LAYOUT
DRAWING NO: **SQP/ARC/DORM - 6/06**

DRAWN BY J.R
CHECKED BY I.S
SCALE 1;25
JUNE,2023

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for Dinning Hall

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

JUNE, 2023

MOEST/PO-RALG

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	<u>SUB-STRUCTURE -PROVISIONAL</u>				
1	<u>Strip Foundation - Grade 15 Plain (79m³)</u>				
	Aggregate (3/4")	79	M ³		
	Sand	40	M ³		
	Cement-50kgs (42.5)	356	Bags		
2	<u>Foundation Walls (457m²)</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	6,398	No		
	Sand	20	M ³		
	Cement -50kgs (42.5)	107	Bags		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram (4.5m ³ lorry)	144	Trips		
	Hardcore 150mm thick - (4.5m ³ lorry)	72	Trips		
	Sand	108	M ³		
	Aldrin solution or other and equal approved (1000mls)	15	Bottle		
4	<u>Blinding(4m³) 50mm thick -grade 10, Oversight Concrete (216m³) 100mm thick - 15 grade ,Ground Beam column and base column (95m³) - 25 grade</u>				
	DPM	2,162	M ²		
	Cement -50kgs (42.5)	1,737	Bags		
	Aggregates (1/2")	299	M ³		
	Sand	149	M ³		
	Reinforcement - 16mm diameter high tensile 460N/mm ²	368	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	361	PC'S		
	Binding Wire - 25kg	6	Roll		
	Timber 1" X 10 " (5.2m long)	82	PC'S		
	Timber 2" X 2"	35	PC'S		
	Marine plywood 12mm thick size 2400 x 1200mm	50	PC'S		
	Nails-4"--- 45KG Per Bags	3	Bags		
	Nails-3"	2	Bags		
	20 mm styropol compressive expansion joint material or other equal and approved	24	PC'S		
	Supporting props 3m	80	PC'S		
	SUB-TOTAL SUBSTRUCTURE				
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls (902m²), beam, roof beam & Columns (146m³)</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	14,661	No		
	Louver Block /Vent block	765	No		
	DPC (30m long, 1m wide)	8	Roll		
	Sand	135	M ³		
	Cement-50kgs (42.5)	1,554	Bags		
	Aggregates (1/2")	122	M ³		
	Reinforcement - 16mm diameter high tensile 460N/mm ²	599	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	673	PC'S		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	Binding Wire - 25kg	10	Roll		
	Timber 1" X 10" to Sides (5.2m long)	80	PC'S		
	Timber 1" X 5" (Plates)	42	PC'S		
	Timber 2" X 2"	75	PC'S		
	Marine plywood 12mm thick size 2400 x 1200mm	131	PC'S		
	Steel supporting scaffolding(6m high) including accessories	52	PC'S		
	Supporting Props	120	PC'S		
	20 mm styropol compressive expansion joint material or other equal and approved	12	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
C.	<u>ROOF STRUCTURE & COVERING</u>				
1	<u>Roof Structure - Provisional</u>				
	Timber 2 " X 3" Purlins (5.2m long)	145	PC'S		
	Timber 2" X 4" wall plate and struts(5.2m long)	155	PC'S		
	Timber 2" X 6" Rafter and Bottom beam (5.2m long)	166	PC'S		
	Fascia board 1" X 10" -ref. Semi Hardwood (5.2m long)	30	PC'S		
	Nails -5"	50	Kgs		
	Nails -4"	60	Kgs		
	Nails -3"	40	Kgs		
	16mm diameter bolt, 750mm long	376	PC'S		
	12mm diameter bolt, with and including nuts and washer	94	PC'S		
	300x150x3mm mild steel plate	94	PC'S		
	150x50x3mm mild steel plate	141	PC'S		
	NOTE: The above softwood timber structure should be pressure impregnated treated				
2	<u>Steel Structure - Provisional</u>				
	76.1 x 5.0 x 8.8 kg/m steel top and bottom chord (6m)	240	PC'S		
	48.3 x 5.0 x 5.3kg/m steel structural internal members(6m)	270	PC'S		
	33.7 x 4.0 x 2.9kg/m steel structural longitudinal tie (6m)	24	PC'S		
	150x 50 x 2x2mm Z -Purlin	780	m		
	150 x 120 x60x 10mm thick mild steel plate	38	PC'S		
	300 x 250 x10mm thick mild steel plate	38	PC'S		
	195 x 100 x75 x 10mm thick mild steel plate	38	PC'S		
	10mm thick mild steel plate with internal diameter 600mm	1	PC'S		
	200 x 400 x10mm thick mild steel plate	38	PC'S		
	75 x 80 x 6mm thick mild steel plate	532	PC'S		
	20mm Diameter Black bolts with nuts and washers	228	PC'S		
	16mm Diameter Anchor bolts 750mm long	152	PC'S		
	12mm diameter bolt, with and including nuts and washer	2,128	PC'S		
	100x80x6mm mild steel plate	532	PC'S		
3	<u>Roof Covering</u>				
	28G Resin coated Iron sheet	2,078	M ²		
	28 G Resin coated Roof ridge/Valley	20	PC'S		
	Aluminium Roofing Nails/Hooks	100	Packet		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
4	Roof slab and Roof concrete Gutter's				
	Cement -50kgs (42.5)	885	Bags		
	Water proofing cement (20Litres Bucket)	15	Bucket		
	Aggregates (1/2")	93	M ³		
	Sand	46	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm2	215	PC'S		
	Reinforcement - 10mm diameter high tensile 460N/mm2	213	PC'S		
	12mm thick Marine Plywood	95	PC'S		
	Timber 1" X 10 " (5.2m long)	41	PC'S		
	Timber 2" X 2"	30	PC'S		
	Nails-4" (45kg Per Bag)	4	Bags		
	Nails-3" (45 Kg Bag)	5	Bags		
	Supporting props (5m)	150	PC'S		
	Upvc 100mm diameter down pipe; Class B	60	PC'S		
	PVC bend 90'	42	PC'S		
	PVC bend 45'	42	PC'S		
	Gutter Clamp 3"	42	PC'S		
	Connector/reducer	42	PC'S		
	Connector outer	42	PC'S		
	Corner Inner	42	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	CEILING				
	Gypsum board -9mm thick	230	PC'S		
	Plain Cornice (8ft)	242	PC'S		
	Screw 1.25" 500pcs/box	12	Box		
	Gypsum powder -25kg	40	Bags		
	Fiber tape (90m)	6	Roller		
	Treated softwood Timber 2" X 2" (5.2 m)	400	PC'S		
	Nails 4"	50	Kgs		
	Nails 3"	45	Kgs		
	SUB-TOTAL FOR CEILING				
E.	DOOR				
1	Grill door Mild steel				
	4800 x 2100mm high complete with frame and accessories	1	PC'S		
1	40mm thick hardwood paneled door shutter				
	2000 x 2100mm high	6	PC'S		
	1800 x 2100mm high	9	PC'S		
	1850 x 2100mm high	1	PC'S		
	1200 x 2100mm high	2	PC'S		
	1000 x 2100mm high	3	PC'S		
	900 x 2100mm high	17	PC'S		
	800 x 2100mm high	21	PC'S		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
2	<u>Frames (hardwood) & Varnish</u>				
	2000 x 2700mm high	6	PC'S		
	1800 x 2700mm high	9	PC'S		
	1850 x 2700mm high	1	PC'S		
	1200 x 2700mm high	2	PC'S		
	1000 x 2700mm high	3	PC'S		
	900 x 2700mm high	17	PC'S		
	800 x 2700mm high	21	PC'S		
	Brush 3"	20	Pcs		
	Sand paper (msasa) No.80	25	LM		
	Clear Varnish - 4Litres	2	TIN		
	Thinner for Varnish	2	Litres		
3	<u>Ironmongeries</u>				
	Mortice lock Three lever	35	No		
	Mortice indicator lock set two lever	21	No		
	Brass hinges - 100mm	111	Pairs		
	SUB-TOTAL FOR DOORS				
F.	<u>WINDOWS</u>				
1	<u>Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs</u>				
	2000 X 1500mm high	3	PC'S		
	1500 X 1500mm high	5	PC'S		
	1500 X 2700mm high	26	PC'S		
	1500 X 1400mm high	26	PC'S		
	1800 X 2700mm high	4	PC'S		
	900 x 1030mm high	6	PC'S		
	1500 x 1200mm high	2	PC'S		
	2000 x 2700mm high	5	PC'S		
	900 x 2700mm high	1	PC'S		
	2000 x 1200mm high	2	PC'S		
	600 x 900mm high	1	PC'S		
	1500 x 1200mm high	4	PC'S		
	1200 x 2700mm high	1	PC'S		
	2000 X 1500mm high	1	PC'S		
	4530 x 2700mm high	1	PC'S		
	4520 x 2700mm high	1	PC'S		
	Fixed windows/High Level window				
	1800 x 1200mm high	10	PC'S		
	2000 x 1200mm high	6	PC'S		
	1200 x 1200mm high	2	PC'S		
	900 x 1200mm high	17	PC'S		
	1000 x 1200mm high	3	PC'S		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
2	<u>25 x 4mm thick flat bar grill painted red-oxide with 25 x 25mm square pipes frame and all necessary accessories</u>				
	2000 X 1500mm high	3	PC'S		
	1500 X 1500mm high	5	PC'S		
	1500 X 2700mm high	26	PC'S		
	1500 X 1400mm high	26	PC'S		
	1800 X 2700mm high	4	PC'S		
	900 x 1030mm high	6	PC'S		
	1500 x 1200mm high	2	PC'S		
	2000 x 2700mm high	5	PC'S		
	900 x 2700mm high	1	PC'S		
	2000 x 1200mm high	2	PC'S		
	600 x 900mm high	1	PC'S		
	1500 x 1200mm high	4	PC'S		
	1200 x 2700mm high	1	PC'S		
	2000 X 1500mm high	1	PC'S		
	4530 x 2700mm high	1	PC'S		
	4520 x 2700mm high	1	PC'S		
	High level grills				
	1800 x 1200mm high	10	PC'S		
	2000 x 1200mm high	6	PC'S		
	1200 x 1200mm high	2	PC'S		
	900 x 1200mm high	17	PC'S		
	1000 x 1200mm high	3	PC'S		
	SUB-TOTAL FOR WINDOWS				
G.	<u>FINISHING</u>				
1	<u>Floor finishing</u>				
	<u>Bedding/Backing; cement sand and Chipping (1:2:2); to steel finishing</u>				
	50mm Thick granolithic floor screed steel trowelling to smooth finishing				
	Sand	35	M ³		
	Cement-50kgs (42.5)	672	Bags		
	Chipping	36	M ³		
2	<u>Tiles finishing</u>				
	Sand	7	M ³		
	Cement-50kgs (42.5)	46	Bags		
	400 X400 X 8mm thick - Non-slippery porcelain floor tiles - (1.92sqm/Box)	83	Box		
	Grout (1kg/packet)	10	Packet		
	Spacer	4	Packet		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
3	Wall tiles				
	Sand	2	M ³		
	Cement-50kgs (42.5)	12	Bags		
	250 X 400 X 8mm Wall tiles (1.5Sqm/Box)	125	Box		
4	Wall Finishing - 15mm thick (1:4)				
	Sand	42	M ³		
	Cement-50kgs (42.5)	302	Bags		
	White cement - 40kg	33	Bags		
	Gypsum powder -25kg	70	Bags		
	SUB-TOTAL FOR FINISHING				
H.	<u>PAINTING & DECORATION</u>				
	Emulsion Paint - 20 LTRS	94	buckets		
	Weather guard Paint - 20 LTRS	32	buckets		
	Washable paint -20 LTRS	64	buckets		
	Primer paint -20 LTRS	28	buckets		
	Solvent - 5LTRS	48	TIN		
	Brush 3"	30	Pcs		
	Roller	20	Pcs		
	Gloss paint-4LTR	10	TIN		
	Bitumen paint - 4Litres	10	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				
J	<u>WATER CHANNEL & PAVING BLOCK (PROVISIONAL)</u>				
1	Water Channel (96m long)				
	Cement (42.5)	64	Bags		
	Sand	8	m3		
	Aggregates	16	m3		
	2400x1200mm BRC Mesh	27	Pcs		
	25 x 50 square pipe	98	Pcs		
	Red-Oxide -5LTRS	3	TIN		
	Solvent -5LTRS	1	TIN		
	Welding electrode	4	Box		
	Gloss paint-4LTR	4	TIN		
2	Paving Blocks				
	Paving blocks Class 45 size 200 x 110 x 80mm thick	138	M ²		
	Sand	18	M ³		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
K	<u>ELECTRICAL INSTALLATION & AIR CONDITION</u>				
	<u>DINNING/ASSEMBLY HALL</u>				
	Single fluorescent fitting 4 FT Complete	29	No		
	High bay lighting complete with 18w LED bulb	29	No		
	LED fluorescent fitting 60mm cassette type	0	No		
	Twin switch socket floor mounted	0	No		
	Twin switch socket	22	No		
	Hand drier 40W	6	No		
	Single switch socket	0	No		
	Main switch 6way,TPN with integral RCD 100A/300mA	1	No		
	NB: Wiring cables shall be copper have a minimum cross section area of 1.5sqmm and shall comply with an appropriate British or Harmonized standard for either thermoplastic or thermosetting insulated electric cables.				
	Single core wire 1.5sqmm - Red	9	Roll		
	Single core wire 1.5sqmm - Black	9	Roll		
	Single core wire 1.5sqmm -green	9	Roll		
	Single core wire 2.5sqmm - red	5	Roll		
	Single core wire 2.5sqmm -Black	5	Roll		
	Single core wire 2.5sqmm green	5	Roll		
	Single core wire 4sqmm -Red	30	M		
	Single core wire 4sqmm -Black	30	M		
	Single core wire 4sqmm -Green	30	M		
	16sqmm, urmoured cable	0	M		
	Ceiling fan National or other equal	16	PC's		
	3gang one way switch	2	No		
	1gang 1way switch	17	No		
	2gang 1way switch	6	No		
	Cable tray 150 x3000mm	70	PC		
	DP switch 20A	6	No		
	Cooker control unit 45A	1	No		
	Ceiling light complete with energy saver 18W	21	No		
	Earth rod approved copper 16mm not less than 1200mm	4	No		
	Earth wire 4sqmm	60	M		
	Metal box twin	22	No		
	Metal box single	31	No		
	Junction box	20	No		
	Conduit pipe	320	PC's		
	Elbow	120	PC's		
	Conduit coupling	120	PC's		
	Round cover	2	PACKET		
	Round box	16	No		
	Fine screw	2	PACKET		
	TV socket	1	No		
	Smoke ditector	0			
	plastic clips 22mm	6	Box		
	Bulk head light fitting	16	PCS		
	SUB-TOTAL FOR ELECTRICAL INSTALLATION				

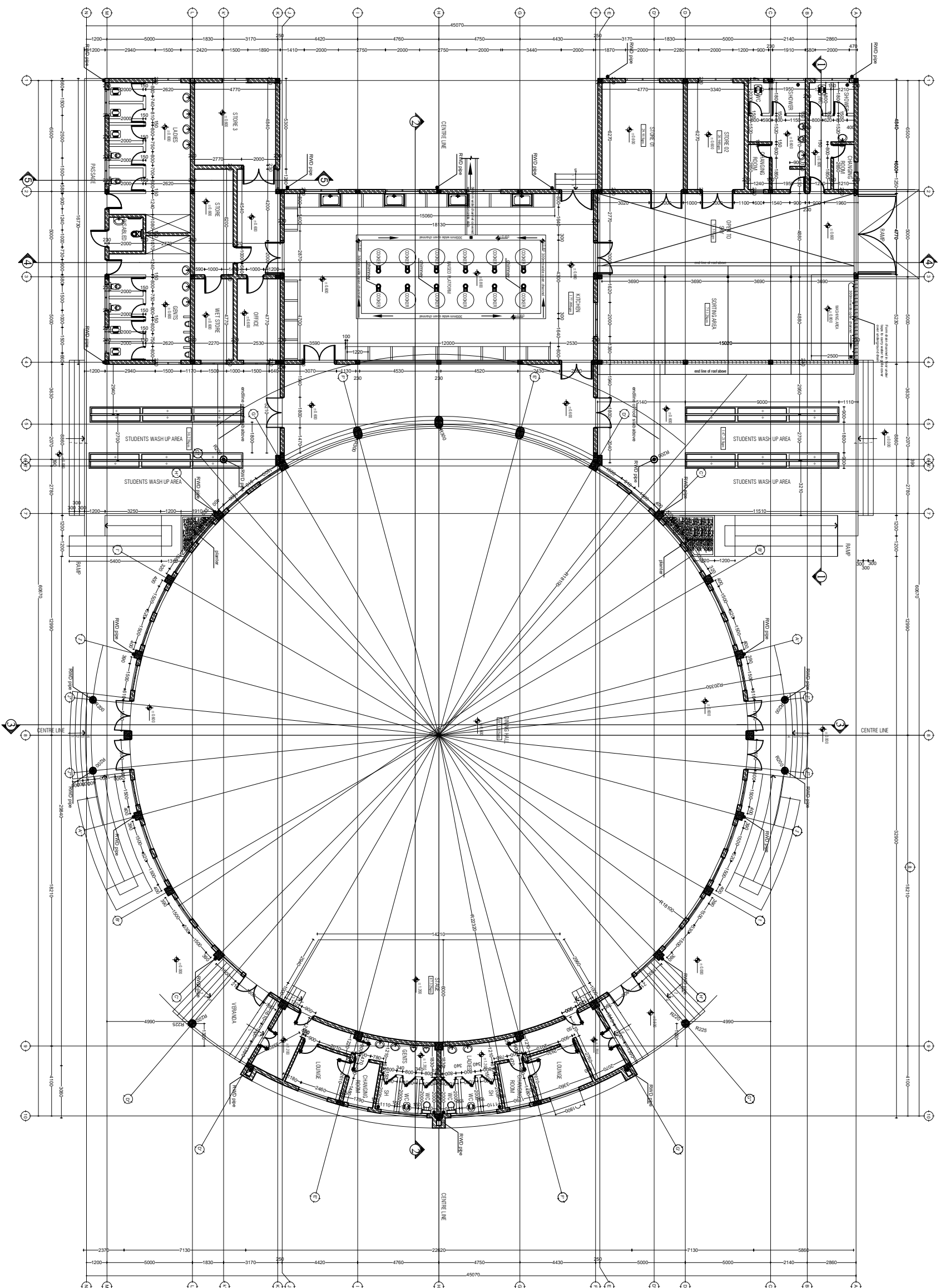
ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
L.	PLUMBING AND SANITARY INSTALLATION				
	<u>WATER DISTRIBUTION SYSTEM</u>				
	<u>PPR Pipes</u>				
	50mm Dia	29	Pcs		
	40mm Dia	11	Pcs		
	32mm Dia	18	Pcs		
	25mm Dia	46	Pcs		
	20mm Dia	36	Pcs		
	15mm Dia	93	Pcs		
	12mm Dia Flexible Pipe	64	Nos.		
	VALVES				
	50mm Dia	2	Nos.		
	40mm Dia	6	Nos.		
	32mm Dia	14	Nos.		
	20mm Dia	9	Nos.		
	15mm Dia	26	Nos.		
	15mm Dia Angle Valves	84	Nos.		
	20mm Dia WATER TAPE WITH STOP COCK/PUSH COCK	58	Nos.		
	REDUCING BUSH				
	Ø50 / 40mm	2	Nos.		
	Ø50 / 32mm	3	Nos.		
	Ø50 / 25mm	8	Nos.		
	Ø50 / 20mm	2	Nos.		
	Ø50 / 15mm	2	Nos.		
	Ø40 / 32mm	3	Nos.		
	Ø40 / 15mm	4	Nos.		
	Ø32 / 25mm	8	Nos.		
	Ø32 / 20mm	5	Nos.		
	Ø32 / 15mm	6	Nos.		
	Ø25 / 20mm	189	Nos.		
	Ø25 / 15mm	68	Nos.		
	Ø20 / 15mm	58	Nos.		
	90° PLAIN ELBOW				
	Ø50mm	8	Nos.		
	Ø40mm	8	Nos.		
	Ø32mm	17	Nos.		
	Ø25mm	33	Nos.		
	Ø20mm	22	Nos.		
	Ø15mm	66	Nos.		
	90 ADAPTOR ELBOW (Female)				
	Ø15mm	84	Nos.		
	90 ADAPTOR ELBOW (Male)				
	Ø15mm	18	Nos.		
	T PLAIN				
	Ø50mm	8	Nos.		
	Ø40mm	8	Nos.		
	Ø32mm	17	Nos.		
	Ø25mm	33	Nos.		
	Ø20mm	22	Nos.		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	SOCKET				
	Dia. 15mm	186	Nos.		
	Dia. 20mm	72	Nos.		
	Dia. 25mm	92	Nos.		
	Dia. 32mm	28	Nos.		
	Dia. 40mm	16	Nos.		
	Dia. 50mm	58	Nos.		
	SEWARAGE				
	PIPING (uPVC PIPE)				
	150mm Dia	22	Pcs		
	100mm Dia	36	Pcs		
	50mm Dia	23	Pcs		
	40mm Dia	36	Pcs		
	32mm Dia	48	Pcs		
	Elbows, Bends Connector traps etc to suite the above installation.		Item		
	FITTINGS				
	100mm Dia Y-Tee	46	Nos.		
	50mm Dia Y-Tee	28	Nos.		
	100mm Dia Inspection Tee	18	Nos.		
	50mm Dia Inspection Tee	39	Nos.		
	SOCKET				
	150mm Dia Socket	44	Nos.		
	110mm Dia Socket	72	Nos.		
	50mm Dia Socket	46	Nos.		
	40mm Dia Socket	21	Nos.		
	32mm Dia Socket	21	Nos.		
	90° ELBOW				
	110mm	17	Nos.		
	50mm	16	Nos.		
	40mm	6	Nos.		
	32mm	10	Nos.		
	45° ELBOWS				
	110mm	24	Nos.		
	50mm	18	Nos.		
	40mm	11	Nos.		
	32mm	13	Nos.		
	REDUCING BUSH				
	50mm/40mm	20	Nos.		
	40mm/32mm	20	Nos.		
	REDUCING SOCKET				
	50mm/40mm	10	Nos.		
	40mm/32mm	16	Nos.		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	EXTERNAL SEWERAGE				
	Construction of Manhole of internal dimension 600 x 600mm, depth to invert level not exceeding 0.5m with medium duty cast iron frame and cover.	10	Nos.		
	Ditto but with Size 800mm x 800mm	8	Nos.		
	Allow for Gully trap, size 150 x 150mm	20	Nos.		
	Construction of Grease Trap of internal dimension 2,500 x 1,500mm, depth to invert level not exceeding 0.5m with medium duty cast iron frame and cover.	1	Nos.		
	RAIN WATER HARVESTING SYSTEM				
	RAIN WATER Piping (uPVC PIPE)				
	100mm Dia	36	Pcs		
	100mm Dia Floor gully including all fittings.	36	Pcs		
	Elbows, bend, brackets, filters and all other fittings		Item		
	SANITARY FITTINGS				
	White Vitreous China Floor Standing Back to Wall Rimless Water Closet as manufactured by CERA or equivalent approved	6	Pcs		
	White Vitreous China SQUATTING PAN with TRAP as manufactured by CERA or approved equivalent with Dimenions 510mm x 410mm	9	Pcs		
	Wall mounted Push Type flush tank as manufactured by KARIBA or equivalent with 4.5 Litres Volume	9	Pcs		
	Overhead Brass Shower with Pressure Balance Valve as manufactured by CERA or equivalent approved	4	Pcs		
	CERA Bib Cock with Jet Spray or its equivalent approved	38	Pcs		
	1000mm x 600mm Vanity Mirror	6	Pcs		
	White Vitreous China Wall Hung Wash Hand Basin with Half Pedestal and quarter turn faucet as manufactured by CERA or its equivalent	14	Pcs		

	<u>GENERAL SUMMARY</u>				AMOUNT -TZS
	<u>DINNING/ASSEMBLY HALL (750 No STUDENTS)</u>				
A.	SUB-STRUCTURE -PROVISIONAL				
B.	SUPERSTRUCTURE				
C.	ROOF STRUCTURE & COVERING				
D.	CEILING				
E.	DOOR				
F.	WINDOWS				
G.	FINISHING				
H.	PAINTING & DECORATION				
J	WATER CHANNEL & PAVING BLOCK (PROVISIONAL)				
K	ELECTRICAL INSTALLATION & AIR CONDITION				
L	PLUMBING INSTALLATION				
	TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY				
	ADD:				
	LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)				
	Note:				
	i. Refer attached specification and number of Furniture(s) for Dining/Assembly Hall				
	ii. Refer General Summary for: Preliminary, Transportation and Supervision Costs				
	iii. Preliminary cover the following item:				
	- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,				
	- Power for the works, Security, store, Materials test, levelling, holdings and removal of rubbish.				
	iv. Supervision cost depend on guideline of the specific project				
	v. Installation of Ceiling Fan is an option, depend on whether condition of specific area .				

ARCHITECTURAL DRAWINGS

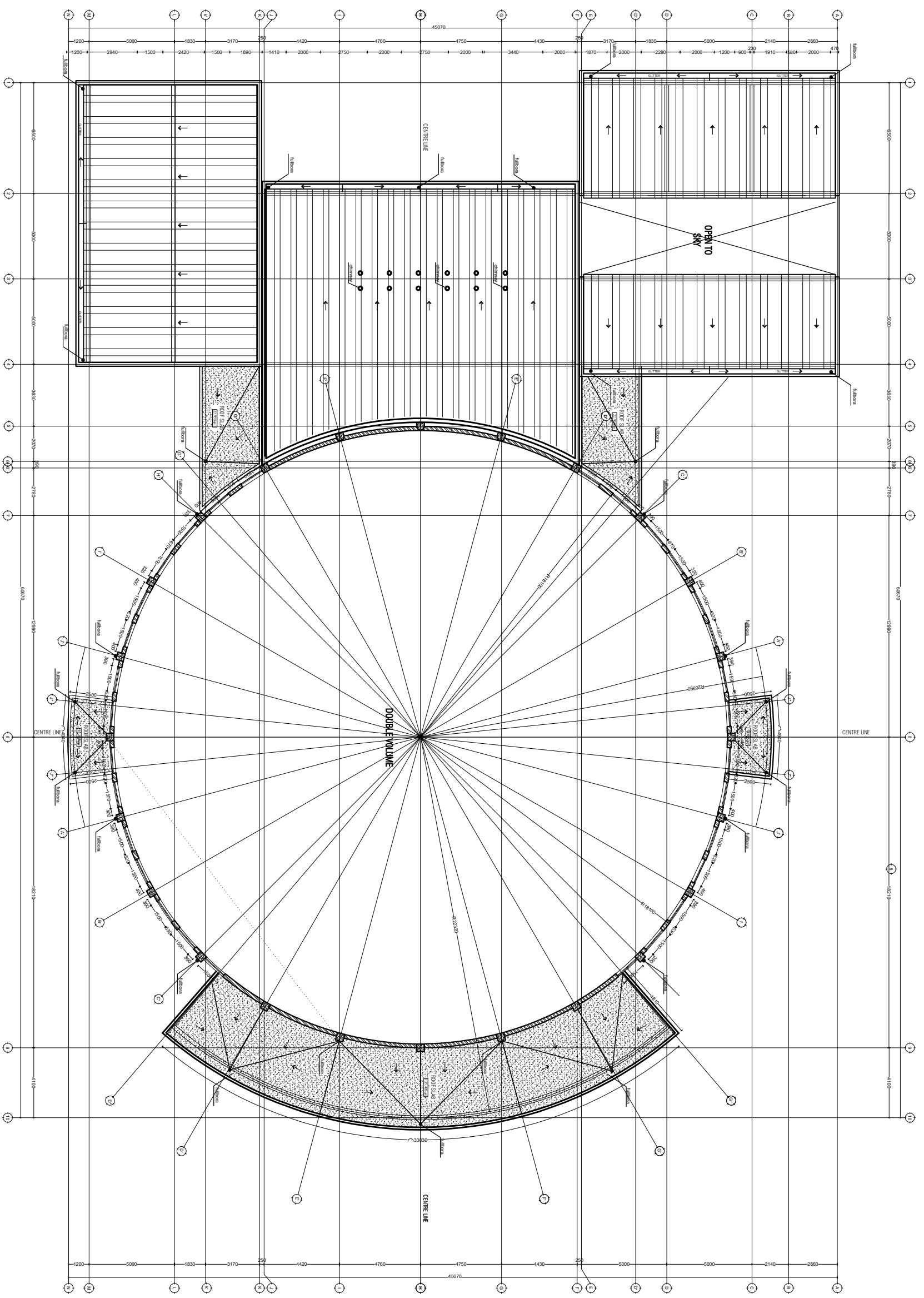


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DRAWING TITLE
DINING HALL FLOOR PLAN
 DRAWING NO. **SQP/DW/01**

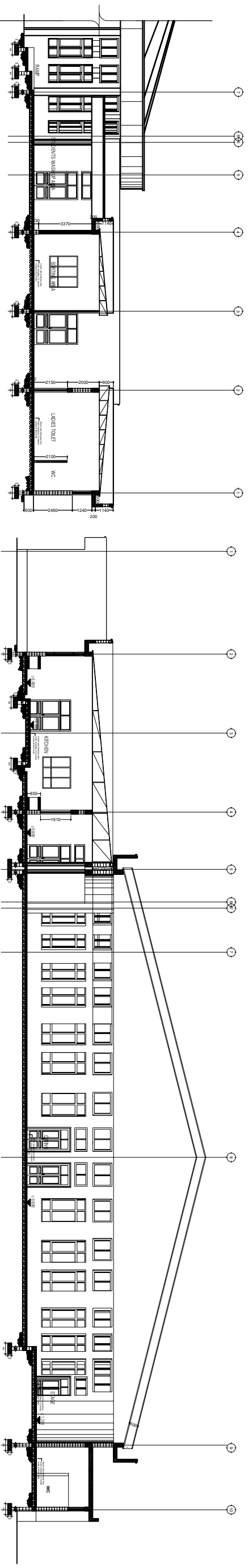
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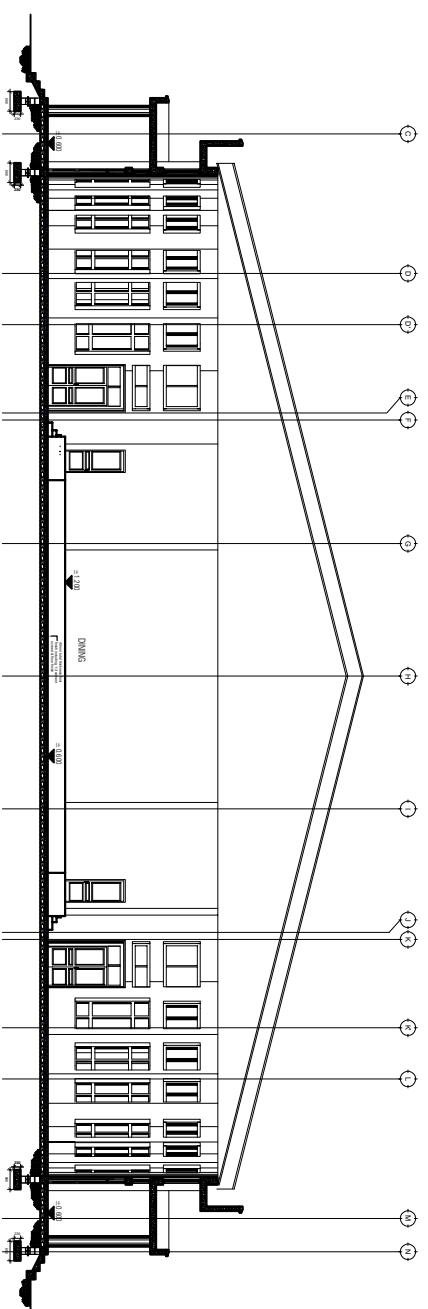
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DRAWING TITLE: DINING HALL ROOF PLAN - 1
 DRAWING NO.: SQP/DW/02
 DRAWN BY: J.R.
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SECTION 1:1

SECTION 2:2



SECTION 3:3

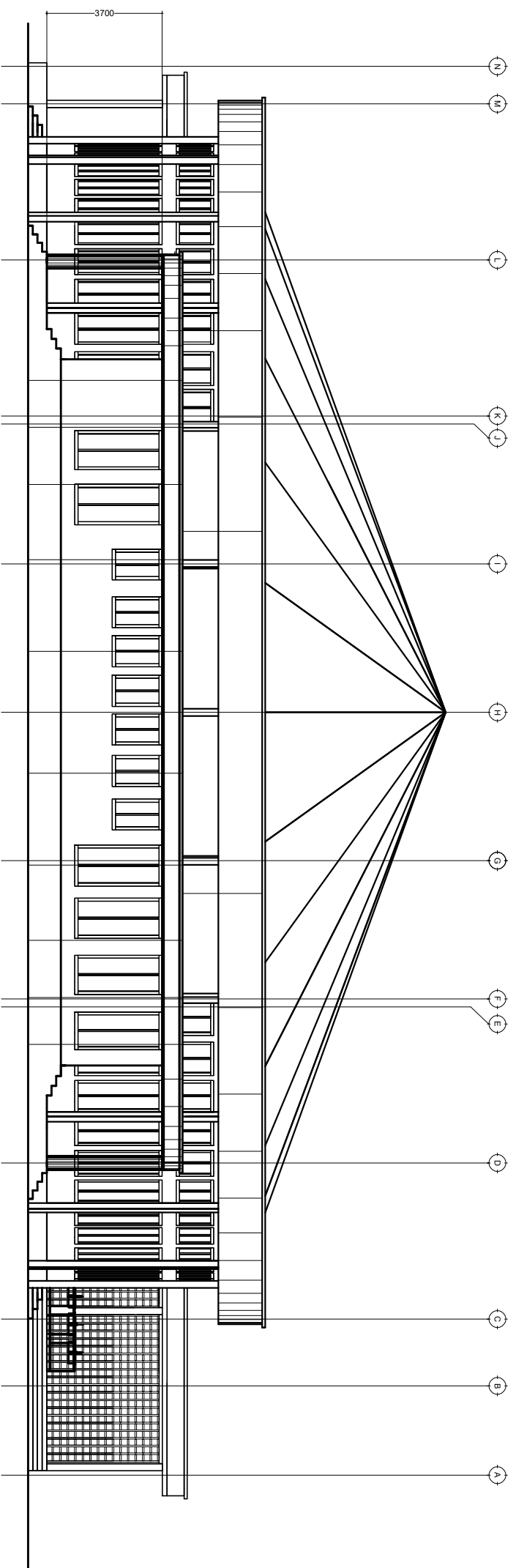
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DRAWING TITLE **DINING HALL SECTIONS**

DRAWING NO. **SQP/DW/04**

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FRONT ELEVATION

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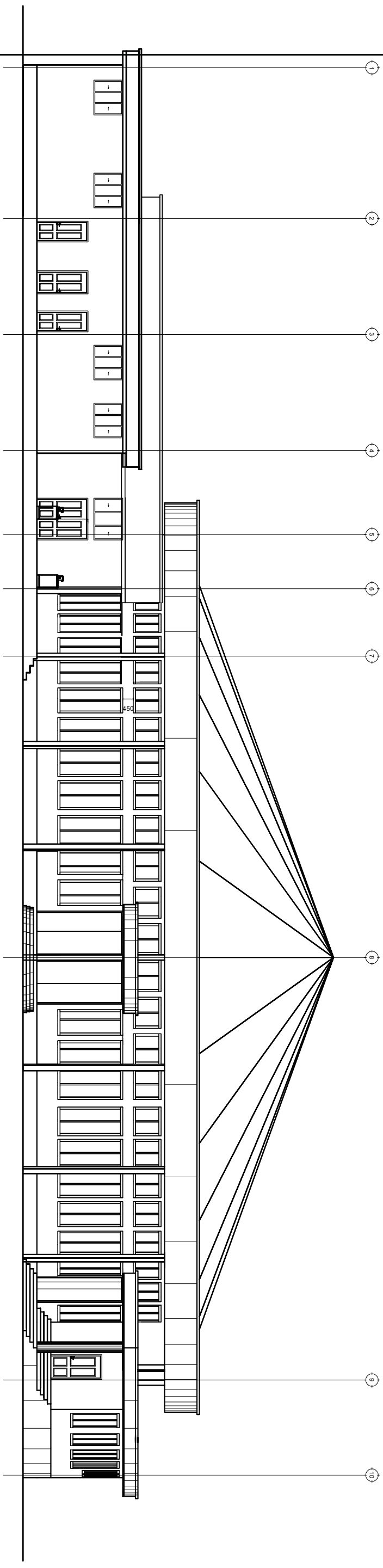
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DRAWING TITLE **DINING HALL FRONT ELEVATION**

DRAWING NO. **SQP/DW/05**

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LEFT SIDE ELEVATION

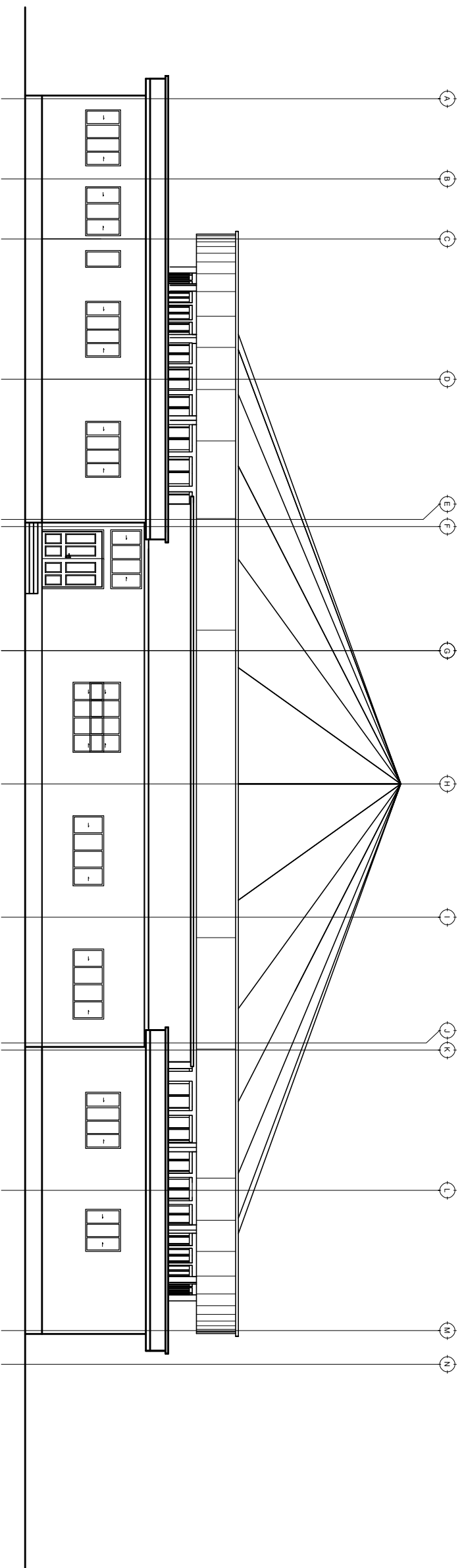
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DRAWING TITLE **DINING HALL LEFT ELEVATION**

DRAWING NO. **SQP/DW/08**

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REAR ELEVATION

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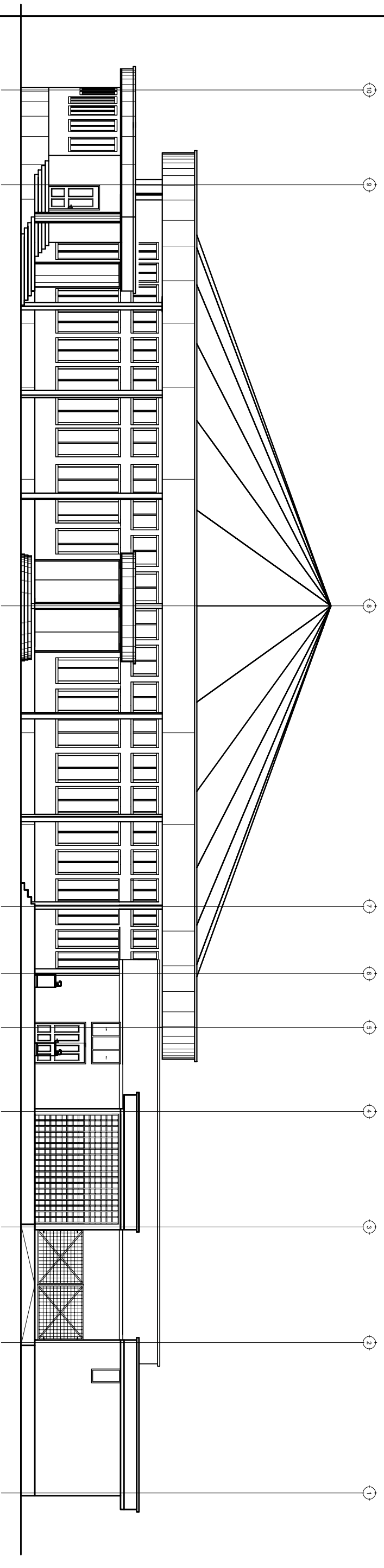
DRAWING TITLE

DINING HALL REAR ELEVATION

DRAWING NO.

SQP/DW/06

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RIGHT SIDE ELEVATION

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DRAWING TITLE **DINING HALL RIGHT ELEVATION**

DRAWING NO. **SQP/DW/07**

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JUNE, 2023

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for Sickbay

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

JUNE, 2023

MOEST/PO-RALG

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	MATERIALS				
A	SUB-STRUCTURE -PROVISIONAL				
1	Strip Foundation - Grade 15 Plain (14m³)				
	Aggregate (3/4")	9	M ³		
	Sand	5	M ³		
	Cement-50kgs (42.5)	56	Bags		
2	Foundation Walls				
	6" Block - Cement & Sand	1,456	No		
	Sand	5	M ³		
	Cement -50kgs (42.5)	37	Bags		
	ALTERNATIVE TO FOUNDATION WALL				
	** If stone is applicable, then blockwork is not applicable. Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or stone) depending on availability and suitability of building materials.				
	Stone, complete with its associated mortar etc	30	M ³		
3	Moram, Hardcore & Site sterilization				
	Moram (4.5m ³ lorry)	8	Trips		
	Hardcore 150mm thick - (4.5m ³ lorry)	5	Trips		
	Sand	4	M ³		
	Aldrin solution or other and equal approved (1000mls)	2	Bottle		
4	Oversite Concrete 100mm thick - 15 grade ,Ground Beam - 20 grade				
	DPM	126	M ²		
	Cement -50kgs (42.5)	90	Bags		
	Aggregates (1/2")	15	M ³		
	Sand	8	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	38	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	35	PC'S		
	Timber 1" X 10 " (5.2m long)	8	PC'S		
	Timber 2" X 2"(3.5m)	5	PC'S		
	Nails-4"	15	Kgs		
	Nails-3"	10	Kgs		
	Supporting props (3m)	12	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls & Ring beam</u>				
	6" Block - Cement & Sand	2,400	No		
	DPC (30m long, 1m wide)	2	Roll		
	Sand	13	M ³		
	Cement-50kgs (42.5)	94	Bags		
	Aggregates (1/2")	5	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	32	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	30	PC'S		
	Binding Wire -1kg	3	PC'S		
	Timber 1" X 10" to Sides (5.2m long)	7	PC'S		
	Timber 1" X 5" (Plates)	5	PC'S		
	Timber 2" X 2" (3.5m)	5	PC'S		
	Supporting Props 3m	5	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
	<u>ALTERNATIVE TO BLOCKWORK WALL</u>				
	<i>** If brickwork is applicable, then blockwork is not applicable. Therefore Engineer must confirm to the Tenderer which item to be priced (Blockwork or brickwork) depending on availability and suitability of building materials. Note that: Strictly do not use stretcher bond when using bricks, the acceptable bond is either Flemish or English or header.</i>				
	<u>Brickwork</u>				
	230mm thick One brick wall	256	m ²		
C.	<u>ROOF STRUCTURE & COVERING</u>				
1	<u>Roof Structure - Provisional</u>				
	Timber 2" X 3" Purlins	480	ft		
	Timber 2" X 4" Struts	861	ft		
	Timber 2" X 6" Rafter, Kingpost and Tie beam	717	ft		
	Fascia board 1" X 10" -ref. Semi Hardwood (5.2m long)	11	PC'S		
	Nails -5"	25	Kgs		
	Nails -4"	20	Kgs		
	Nails -3"	15	Kgs		
	16mm diameter bolt, 500mm long	26	Pc's		
	<u>NOTE:</u> The above softwood timber structure should be pressure impregnated treated				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
2	<u>Roof Covering</u>				
	28G resin coated Iron sheet	192	M ²		
	Ridge - 28 G	6	PC'S		
	Aluminium Roofing Nails	19	Packet		
3	<u>Gutter's</u>				
	Upvc 100mm half round (6m long)-5"	6	PC'S		
	Upvc 75mm diameter down pipe; Class B	4	PC'S		
	PVC outlet	8	PC'S		
	PVC bend 90'	8	PC'S		
	PVC bend 45'	8	PC'S		
	Gutter support bracket	8	PC'S		
	Gutter Clamp 3"	32	PC'S		
	Connector/reducer	8	PC'S		
	Connector outer	8	PC'S		
	Corner Inner	8	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	<u>CEILING</u>				
	Gypsum board -9mm thick	40	PC'S		
	Plain Cornice (2.5m)	33	PC'S		
	Screw 1.25" 500pcs/box	4	Box		
	Gypsum powder - kg	7	Bags		
	Fibre tape (90m)	1	Roller		
	Treated softwood Timber 2" X 2" - 3.5m	1,320	ft		
	Nails 4"	15	Kgs		
	Nails 3"	27	Kgs		
	SUB-TOTAL FOR CEILING				

E.	<u>DOOR</u>				
1	<u>40mm thick hardwood paneled door shutter</u>				
	920 x2100mm high	6	PC'S		
	720 x2100mm high	4	PC'S		
2	<u>45 x 145mm Frames (hardwood),Varnish & Glass</u>				
	1000 x 2500mm high frame	6	PC'S		
	800 x 2500mm high frame	4	PC'S		
	Brush 3"	3	Pcs		
	5mm thick clear glass to Vents	3.0	M ²		
	13 X15 mm glass beads	21	M		
	Sand paper (msasa) No.80	5	LM		
	Clear Varnish - 4Litres	2	TIN		
	Thinner for Varnish	5	Litres		
3	<u>IronMongeries - ref Union</u>				
	Mortice lock Three lever	6	No		
	Mortice lock set - Two lever with indicator bolt	4	No		
	Brass hinges - 100mm	15.0	Pairs		
	SUB-TOTAL FOR DOORS				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
F.	<u>WINDOWS</u>				
1	<u>Aluminium sliding Window comprising 100mm x 1.2mm thick</u>				
	1500 X 1500mm high	8	PC'S		
	1500 X 600mm high	2	PC'S		
2	<u>25 x 4mm thick flat bar grill painted red-oxide with 25 x 25mm square pipes frame and all necessary accessories</u>				
	1500 X 1500mm high -Dispencing, room	1	PC'S		
	1500 X 1500mm high -Injection room	1	PC'S		
	1500 X 1500mm high -Consulting room	1	PC'S		
	900 X 2500mm high High level to doors	3	PC'S		
	SUB-TOTAL FOR WINDOWS				
G.	<u>FINISHING</u>				
	Sand - (Lorry 4.5M3)	6	m3		
	Cement-50kgs	38	Bags		
	500 X 500 X 8mm thick - Non-slippery porcelain floor tiles - (1.75sqm/Box)	75	Box		
	Grout (1kg/packet)	8	Packet		
	Spacer	3	Packet		
	Skirting (600mm long; 25/Box)	6	Box		
2	<u>Wall Finishing (404m²) -15mm thick (1:4)</u>				
	Sand	11	M ³		
	Cement-50kgs (42.5)	61	Bags		
	White cement - 40kg	4	Bags		
	Gypsum powder - 25kg	13	Bags		
	Sand paper Msasa No.120	1	Roll		
	SUB-TOTAL FOR FINISHING				
H.	<u>PAINTING & DECORATION</u>				
	Emulsion Paint - 20 LTRS	6	buckets		
	Weather guard Paint - 20 LTRS	2	buckets		
	Washable paint -20 LTRS	4	buckets		
	Primer paint -20 LTRS	2	buckets		
	Solvent - 5LTRS	2	TIN		
	Brush 3"	4	Pcs		
	Roller	3	Pcs		
	Gloss paint-4LTR	1	TIN		
	Bitumen paint - 4Litres	2	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J.	ELECTRICAL INSTALLATION				
	Singlefluorescent fitting Complete,	13	No		
	Double switch socket	8	No		
	Main switch 8way,1PH with integral RCD 100A/300mmA	1	No		
	NB: Wiring cables shall be copper have a minimum cross				
	Single core wire 1.5sqmm - Red	2	Roll		
	Single core wire 1.5sqmm - Black	2	Roll		
	Single core wire 1.5sqmm -green	2	Roll		
	Single core wire 2.5sqmm - red	1	Roll		
	Single core wire 2.5sqmm -Black	1	Roll		
	Single core wire 2.5sqmm green	1	Roll		
	Single core wire 4sqmm -Red	15	M		
	Single core wire 4sqmm -Black	15	M		
	Single core wire 4sqmm -Green	15	M		
	Ceiling fan National or other equal	6	PC's		
	3gang 1 way switch	1	No		
	1gang 1 way switch	1	No		
	2gang 1way switch	7	No		
	DP switch 20A	3	No		
	Cooker control unit 45A	1	No		
	Ceiling light complete with energy saver 18W	7	No		
	Earth rod approved copper 16mm not less than 1200mm	1	No		
	Earth wire 4sqmm	15	M		
	Metal box twin	8	No		
	Metal box single	11	No		
	Junction box	4	No		
	Conduit pipe	60	PC's		
	Elbow	10	PC's		
	Conduit coupling	10	PC's		
	Round cover	20	PC's		
	Round box	5	PC's		
	Fine screw	2	PACKET		
	plastic clips 22mm	3	BOX		
	Bulk head light fitting	4	PCS		
	Handdrier	3	No		
	SUB-TOTAL FOR ELECTRICAL INSTALLATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	PLUMBING AND SANITARY INSTALLATIONS				
	WATER DISTRIBUTION SYSTEM				
	PPR Pipes				
	25mm Dia	4	PCS		
	20mm Dia	8	PCS		
	15mm Dia	14	PCS		
	12mm Dia Flexible Pipe	19	PCS		
	VALVES				
	25mm Dia	2	PCS		
	20mm Dia	3	PCS		
	15mm Dia	9	PCS		
	15mm Dia Angle Valves	23	PCS		
	20mm Dia WATER TAPE WITH STOP COCK/PUSH COCK	1	PCS		
	REDUCING BUSH				
	Ø25 / 20mm	4	PCS		
	Ø25 / 15mm	5	PCS		
	Ø20 / 15mm	11	PCS		
	90° PLAIN ELBOW				
	Ø25mm	8	PCS		
	Ø20mm	14	PCS		
	Ø15mm	18	PCS		
	90 ADAPTOR ELBOW (Female)				
	Ø15mm	28	PCS		
	90 ADAPTOR ELBOW (Male)				
	Ø15mm	9	PCS		
	T PLAIN				
	Ø25mm	8	PCS		
	Ø20mm	11	PCS		
	Ø15mm	14	PCS		
	SOCKET				
	Dia. 15mm	26	PCS		
	Dia. 20mm	12	PCS		
	Dia. 25mm	5	PCS		
	SEWARAGE				
	PIPING (uPVC PIPE)				
	100mm Dia	12	PCS		
	50mm Dia	5	PCS		
	40mm Dia	5	PCS		
	32mm Dia	5	PCS		
	Elbows	46	PCS		
	Bend	28	PCS		
	Bracket	35	PCS		
	Filter	17	PCS		
	FITTINGS				
	100mm Dia Y-Tee	6	PCS		
	50mm Dia Y-Tee	6	PCS		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	100mm Dia Inspection Tee	8	PCS		
	50mm Dia Inspection Tee	9	PCS		
	SOCKET				
	110mm Dia	12	PCS		
	50mm Dia	8	PCS		
	40mm Dia	8	PCS		
	32mm Dia	6	PCS		
	90° ELBOW				
	110mm	5	PCS		
	50mm	4	PCS		
	40mm	5	PCS		
	32mm	3	PCS		
	45° ELBOWS				
	110mm	7	PCS		
	50mm	4	PCS		
	40mm	5	PCS		
	32mm	6	PCS		
	REDUCING BUSH				
	50mm/40mm	9	PCS		
	40mm/32mm	6	PCS		
	REDUCING SOCKET				
	50mm/40mm	8	PCS		
	40mm/32mm	9	PCS		
	SANITARY FITTINGS				
	White Vitreous China SQUATTING PAN with TRAP as manufactured by with Dimenions 510mm x 410mm , complete with flush tank 9litres	3	PCS		
	Overhead Brass Shower with Pressure Balance Valve	1	PCS		
	Overhead Shower with Single Lever Faucet Mixer	1	PCS		
	Bib Cock with Jet Spray or its equivalent approved	3	PCS		
	1000mm x 600mm Vanity Mirror	5	PCS		

	<u>GENERAL SUMMARY</u>				AMOUNT -TZS
	<u>SICKBAY BLOCK</u>				
A.	SUB-STRUCTURE -PROVISIONAL				
B.	SUPERSTRUCTURE				
C.	ROOF STRUCTURE & COVERING				
D.	CEILING				
E.	DOOR				
F.	WINDOWS				
G.	FINISHING				
H.	PAINTING & DECORATION				
J.	ELECTRICAL INSTALLATION				
K.	PLUMBING INSTALLATION				
TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY					
<u>ADD:</u>					
LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)					
Note:					
i. Refer attached specification and number of Furniture(s) for Sick bay					
ii. Refer General Summary for: Preliminary, Transportation and Supervision Costs					
iii. Preliminary cover the following item:					
- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,					
- Power for the works, Security, store, Materials test and signboard.					
iv. Supervision cost depend on guideline of the project					
v. Installation of Ceiling Fan is an option, depend on whether condition of specific area .					

ARCHITECTURAL DRAWINGS

SICK BAY

ARCHITECTURAL DRAWING

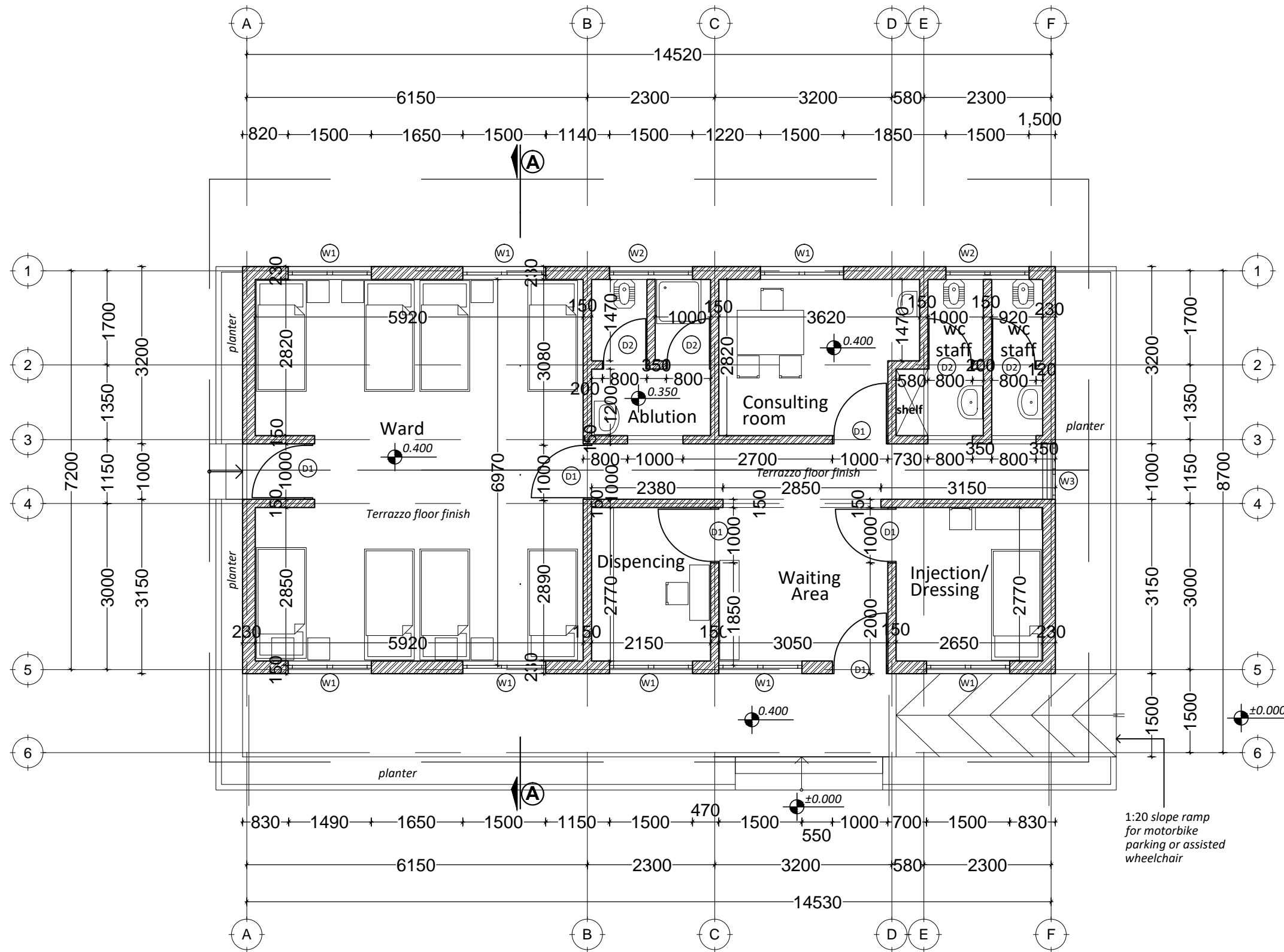
JUNE 2023

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY (MoEST)
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND
LOCAL GOVERNMENT (PO - RALG)

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE **SICK BAY**
DRAWING NO. **SQP/ARC/SB/01**

DRAWN BY J.R
CHECKED BY I.S
SCALE 1:200
JUNE, 2023



GROUND PLAN

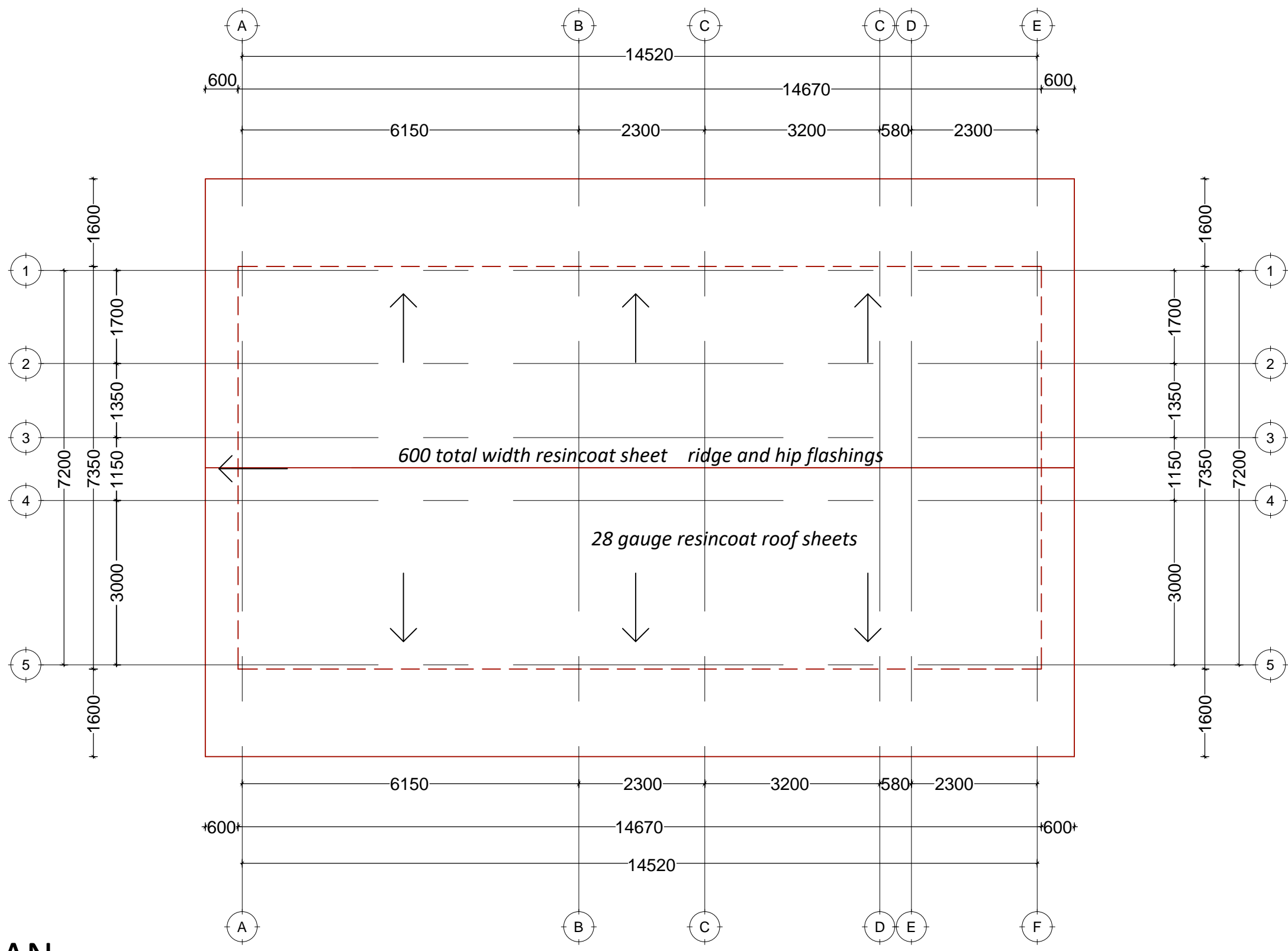
BLDG NO. 3

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY (MoEST)
IN COLLABORATION WITH
 PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND
 LOCAL GOVERNMENT (PO - RALG)

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE **SICK BAY
GROUND PLAN**
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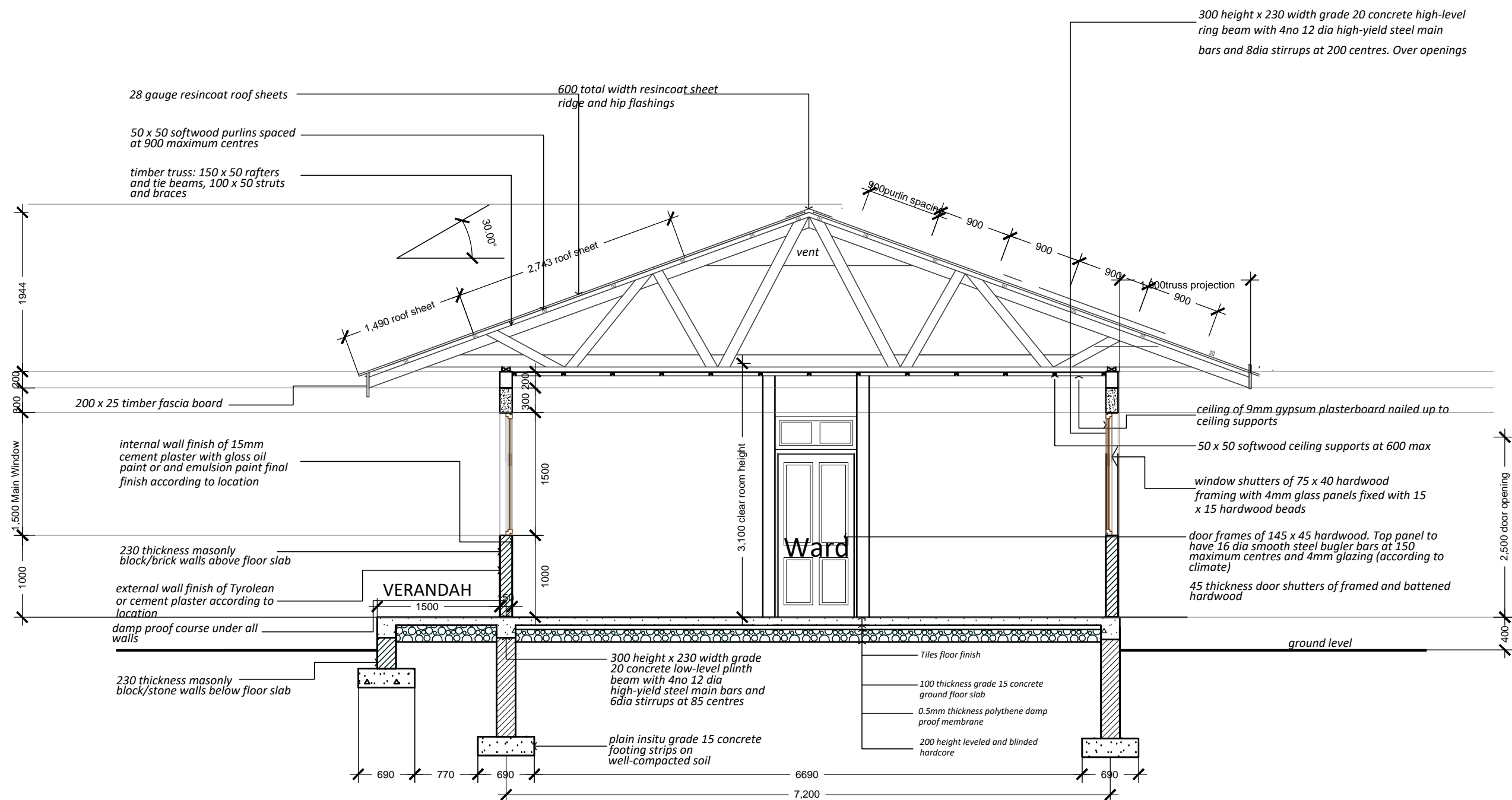
DRAWN BY J.R.
 CHECKED BY I.S.
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 JUNE, 2023



ROOF PLAN

BLDG NO. 3

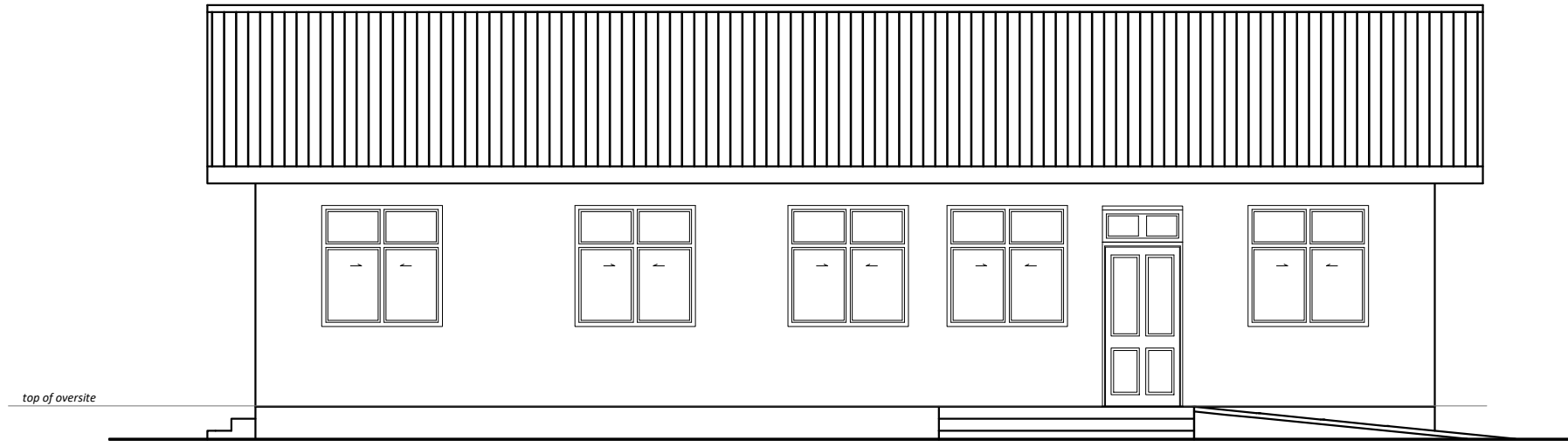
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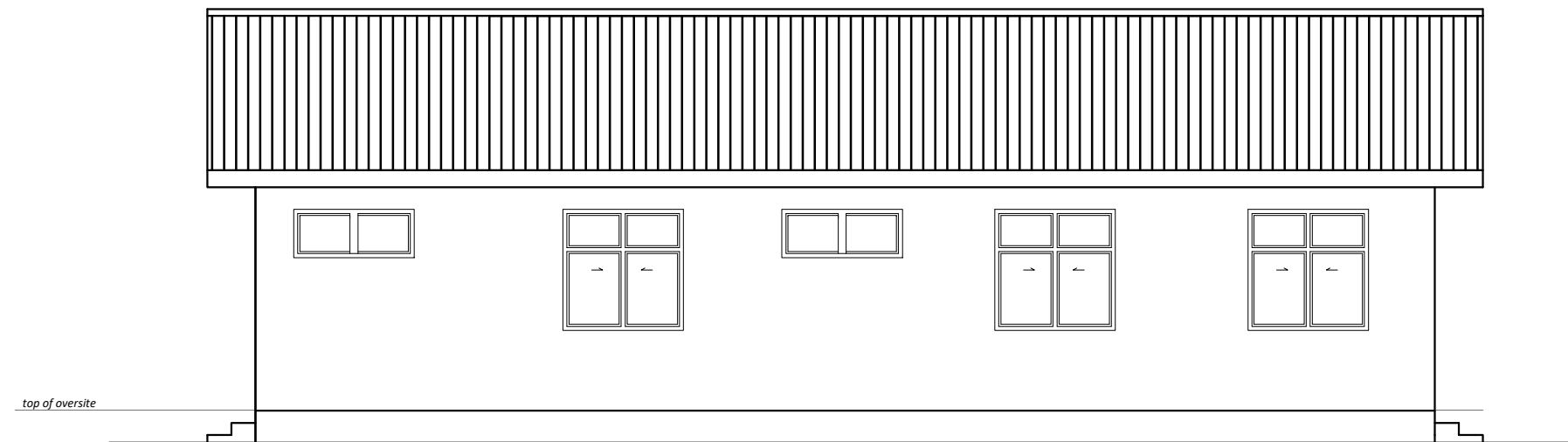
SECTION A-A

BLDG NO. 3

<p>MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY (MoEST) <small>IN COLLABORATION WITH</small> PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PO - RALG)</p>	<p>PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS FOR SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)</p>	<p>DRAWING TITLE SICK BAY SECTION DRAWING NO. SQP/ARC/SB/04</p>	<p>DRAWN BY J.R. CHECKED BY I.S. SCALE 1:200 JUNE, 2023</p>
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front elevation

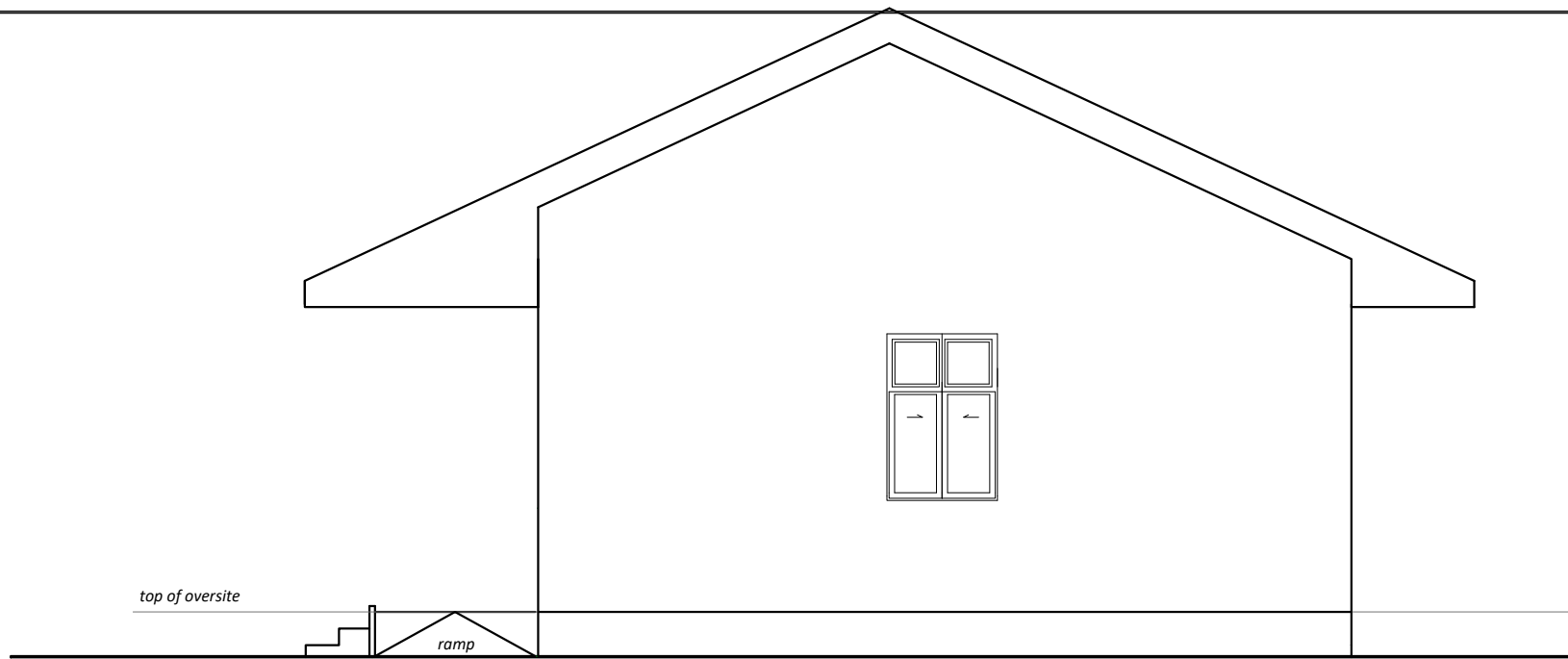


rear elevation

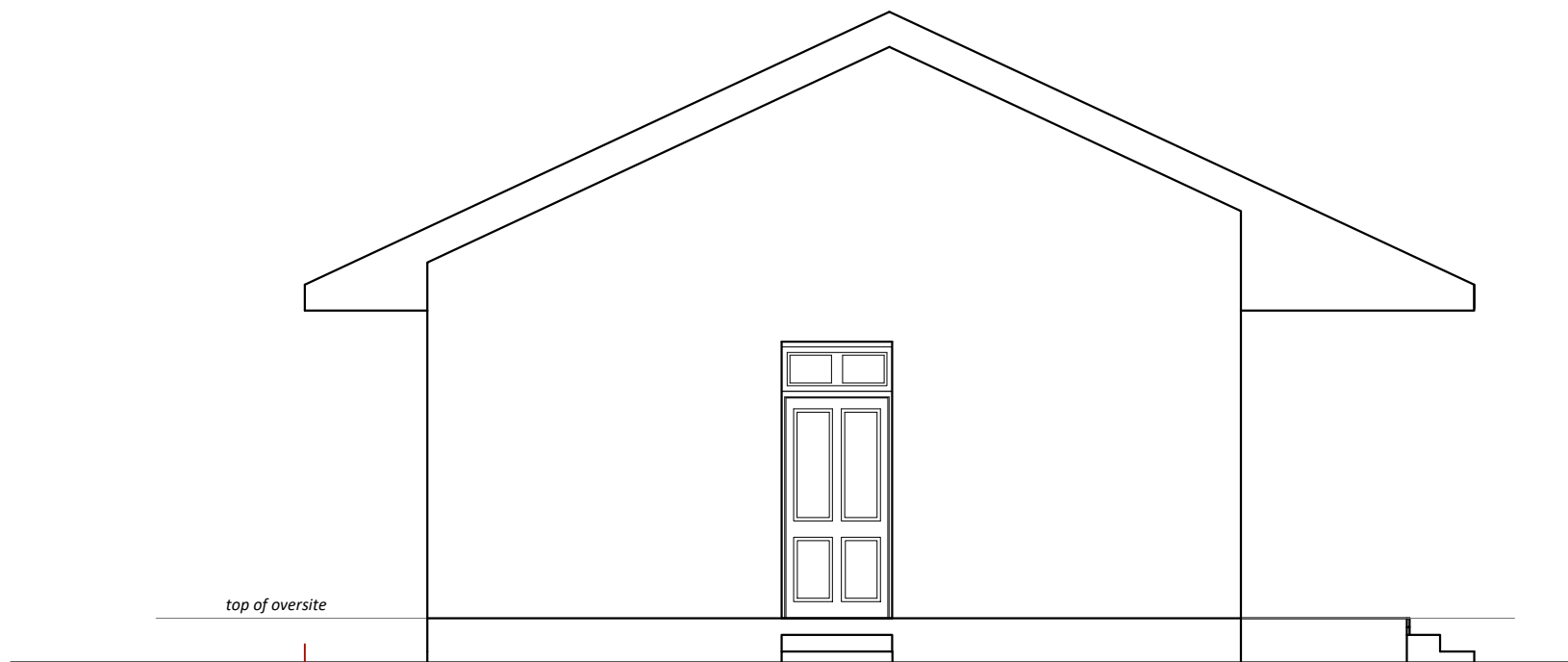
ELEVATIONS

BLDG NO. 3

<p>MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY (MoEST) <small>IN COLLABORATION WITH</small> PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PO - RALG)</p>	<p>PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS FOR SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQIP)</p>	<p>DRAWING TITLE SICK BAY ELEVATIONS DRAWING NO. SQP/ARC/SB/05</p>	<p><small>DRAWN BY J.R. CHECKED BY I.S. SCALE 1:200 JUNE,2023</small></p>
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right side elevation



left side elevation

ELEVATIONS

BLDG NO. 3

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY (MoEST)
IN COLLABORATION WITH
 PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND
 LOCAL GOVERNMENT (PO - RALG)

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

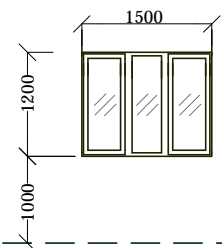
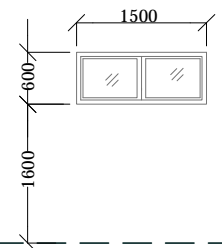
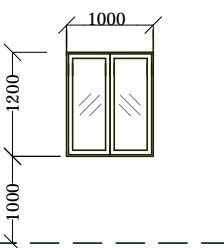
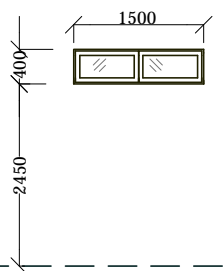
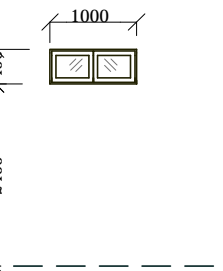
DRAWING TITLE **SICK BAY
 ELEVATIONS**
 DRAWING NO. **SQP/ARC/SB/06**

DRAWN BY J.R
 CHECKED BY I.S
 SCALE 1:200
 JUNE, 2023

SCHEDULE OF FINISHES

S/N	ELEMENTS	LOCATION	BASE FINISH	FINAL FINISH
1	WALLS	External walls	15mm thick cement and sand plaster ratio (1:3)	2-coat bitumen paint to all plinth
			24mm 2-coat Tyrolean rendering	Colour in Tyrolean mix above the plinth level
		Internal walls and Verandah	15mm thick cement and sand plaster ratio (1:3)	1 coat white cement skim, 1 emulsion under coat, 2 coats gloss oil paint up to dado line 1500 above the ground
				1 coat white cement skim, 1 emulsion under coat, 2 coats acrylic emulsion 1500 above the Dado line
Internal walls toilets	15mm thick cement and sand plaster ratio (1:3)	Ceramic wall tiles up to dado line 1800 above the ground		
		1 coat white cement skim, 1 emulsion under coat, 2 coats acrylic emulsion 1800 above the Dado line		
2	FLOORS	External Floors	30mm thick cement and sand plaster ratio (1:4) bedding	Non slippery porcelain floor tiles
		Internal Floors	30mm thick cement and sand plaster ratio (1:4) bedding	
3	CEILING	In 1 storey building (timber roof structure)	9mm thick Gypsum ceiling; fixed to branderling using screws including joint tapes gypsum powder.	Prepare and apply 1 undercoat and 2 finishing coats of Emulsion paint

WINDOW SCHEDULE

LOCATION	Refer to Ground Plan	Refer to Ground Plan	Refer to Ground Plan	Refer to Ground Plan	Refer to Ground Plan																														
	Type: W-01	Type: W-01	Type: W-03	Type: High level window	Type: High level window																														
ELEVATION																																			
Reference/ Location	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 8</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Req.8</td> </tr> </table>	Ground Floor	Nos. 8	First Floor	Nil	Total Req.8		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 2</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Req.2</td> </tr> </table>	Ground Floor	Nos. 2	First Floor	Nil	Total Req.2		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 1</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Req.1</td> </tr> </table>	Ground Floor	Nos. 1	First Floor	Nil	Total Req.1		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 10</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Req.10</td> </tr> </table>	Ground Floor	Nos. 10	First Floor	Nil	Total Req.10		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 3</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Req.3</td> </tr> </table>	Ground Floor	Nos. 3	First Floor	Nil	Total Req.3	
Ground Floor	Nos. 8																																		
First Floor	Nil																																		
Total Req.8																																			
Ground Floor	Nos. 2																																		
First Floor	Nil																																		
Total Req.2																																			
Ground Floor	Nos. 1																																		
First Floor	Nil																																		
Total Req.1																																			
Ground Floor	Nos. 10																																		
First Floor	Nil																																		
Total Req.10																																			
Ground Floor	Nos. 3																																		
First Floor	Nil																																		
Total Req.3																																			
Specification and Finishes.	Casement window frame 145mm x 45mm Mkongo hardwood frames polished fixed glazed panes with 5mm thick clear glass including all necessary accessories, ironmongery, cutting and pinning lugs and bedding frame in cement mortar		Casement window frame 145mm x 45mm Mkongo hardwood frames polished fixed glazed panes with 5mm thick clear glass including all necessary accessories, ironmongery, cutting and pinning lugs and bedding frame in cement mortar		Casement window frame 145mm x 45mm Mkongo hardwood frames polished fixed glazed panes with 5mm thick clear glass including all necessary accessories, ironmongery, cutting and pinning lugs and bedding frame in cement mortar																														

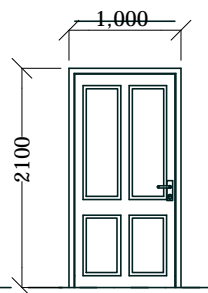
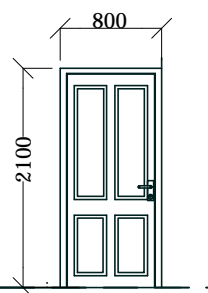
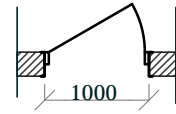
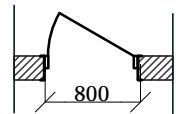
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY (MoEST)
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PO - RALG)

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE **SICK BAY WINDOW SCHEDULE**
 DRAWING NO. **SQP/ARC/SB/08**

DRAWN BY J.R
 CHECKED BY I.S
 SCALE 1:200
 JUNE, 2023

DOOR SCHEDULE

LOCATION	Refer to Ground to Fifth Floor Plan	Refer to Ground to Fifth Floor Plan				
	Type D-01	Type D-02				
ELEVATION						
PLAN						
Reference/ Location	Ground Floor	Nos. 6	Total Req.6	Ground Floor	Nos. 4	Total Req.4
	First Floor	Nil		First Floor	Nil	
Specification and finishes	<p>Iron mongery: 3pairs 150mm long brass butt hinges 1nos. 3 lever UNION mortice lockset complete - 2nos. UNION rubber door stoppers 38mm dia.</p> <p>Specifications: 40mm thick;1000mm x 2500mm high Mkongo hardwood panelled door comprising of 125mm wide stiles and top rail; 180mm wide bottom rail; polished 3 coats of polyurethane varnish.</p> <p>145mm x 45mm Mkongo hardwood frames polished 3 coats of polyurethane varnish</p>		<p>Iron mongery: 3pairs 150mm long brass butt hinges 1nos. 3 lever UNION mortice lockset complete</p> <p>Specifications: 40mm thick;900mm x 2500mm high Mkongo hardwood panelled door comprising of 125mm wide stiles and top rail; 180mm wide bottom rail; polished 3 coats of polyurethane varnish.</p> <p>145mm x 45mm Mkongo hardwood frames polished 3 coats of polyurethane varnish</p>			

MINISTRY OF EDUCATION,SCIENCE AND TECHNOLOGY (MoEST)
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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE **SICK BAY DOOR SCHEDULE**
 DRAWING NO. **SQP/ARC/SB/09**

DRAWN BY J.R
 CHECKED BY I.S
 SCALE 1;200
 JUNE,2023

SCHEDULE OF MATERIALS

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for 16 Stances Toilet Block (Girl's
National Schools)

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	<u>SUB-STRUCTURE -PROVISIONAL</u>				
1	<u>Strip Foundation - Grade 15 Plain (5.43M3)</u>				
	Aggregate (3/4")	6	M ³		
	Sand	3	M ³		
	Cement-50kgs (42.5)	22	Bags		
2	<u>Foundation Walls (37m2)</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	512	No		
	Sand	2	M ³		
	Cement -50kgs (42.5)	9	Bags		
	<u>ALTERNATIVE TO FOUNDATION WALL</u>				
	<u>** If stone is applicable, then blockwork is not applicable.</u>				
	<u>Therefore Engineer must confirm to the Tenderer</u>				
	<u>which item to be priced (Blockwork or Stone) depending</u>				
	<u>on availability and suitability of building materials.</u>				
	Stone, complete with its cement and sand mortar (1:4)	10	M ³		
3	<u>Moram, Hardcore & Site sterilization (12M3)</u>				
	Moram (4.5m ³ lorry)	3	Trips		
	Hardcore 150mm thick (4.5m ³ lorry)	4	Trips		
	Sand	2	M ³		
	Aldrin solution or other and equal approved (1000mls)	1	Bottle		
4	<u>Oversite Concrete 100mm thick - 15 grade 7.3M3 and Ground Beam - 20 grade (4m3)</u>				
	Cement -50kgs (42.5)	51	Bags		
	Aggregates (1/2")	12	M ³		
	Sand	6	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	18	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	15	PC'S		
	A252 Mesh 200 x200x6.16kg/m ²	1	PC'S		
	Timber 1" X 8" (5.2m long)	10	PC'S		
	Timber 2" X 2"	6	PC'S		
	Nails-4"	10	Kg		
	Nails-3"	10	Kg		
	Supporting props (3m)	10	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
B.	<u>SUPERSTRUCTURE</u>				
1	<u>Walls & Ring beam</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	1,908	No		
	Sand	13	M ³		
	Cement-50kgs (42.5)	54	Bags		
	Aggregates (1/2")	3	M ³		
	Reinforcement - 12mm diameter high tensile 460N/mm ²	16	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm ²	12	PC'S		
	Binding Wire	5	Kg		
	Timber 1" X 10" to Sides (5.2m long) - re use of sunstructure	0	PC'S		
	Timber 1" X 5" (Plates)-	4	PC'S		
	Timber 2" X 2" (3.5m)	10	PC'S		
	Supporting Props	8	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
	<u>ALTERNATIVE TO BLOCKWORK WALL</u>				
	<i>** If brickwork is applicable, then blockwork is not applicable.</i>				
	<i>Therefore Engineer must confirm to the Tenderer which item</i>				
	<i>to be priced (Blockwork or brickwork) depending on availability</i>				
	<i>and suitability of building materials. Note that: Strictly do not</i>				
	<i>use stretcher bond when using bricks, the acceptable</i>				
	<i>bond is either Flemish or English or header.</i>				
	150mm thick One brick wall	212	m ²		
C.	<u>ROOF STRUCTURE & COVERING</u>				
1	<u>Roof Structure - Provisional</u>				
	Timber 2" X 3" Purlin	320	ft		
	Timber 2" X 4" Struts	103	ft		
	Timber 2" X 6" Rafter, and Tie beam	459	ft		
	Timber 2" X 4" Wall plate	126	ft		
	Fascia board 1" X 10" (5.2m long)	9	PC'S		
	Nails -4" & 3"	20	Kg		
	16mm Anchor Bolts, 250mm long	14	Nr.		
	12mm diameter bolts with washer and nuts	7	Nr.		
	20mm diameter of bolts	7	Nr.		
	150 x 150 x 100x3mm mild steel plate	7	Nr.		
	<u>NOTE:</u> The above softwood timber structure should be				
2	<u>Roof Covering</u>				
	28G Resin coated Iron sheet	100	M ²		
	Hips/Ridge and valley - 28 G resin coated	4	PC'S		
	Roofing Nails	5	Packet		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
3	<u>Gutter's</u>				
	Upvc 100mm half round (6m long)-5"	5	PC'S		
	Upvc 100mm diameter down pipe; Class C	3	PC'S		
	PVC outlet	4	PC'S		
	Gutter support bracket	7	PC'S		
	PVC bend 90'	4	PC'S		
	PVC bend 45'	4	PC'S		
	Gutter Clamp 3"	12	PC'S		
	Connector/reducer	3	PC'S		
	Connector outer	4	PC'S		
	Corner Inner	4	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	<u>CEILING</u>				
	Gypsum board -9mm thick	26	PC'S		
	Plain Cornice (2.5m)	30	PC'S		
	Screw 1.25" 500pcs/box	2	Box		
	Gypsum powder - 25kg	5	Bags		
	Fibre tape (90m)	1	Roller		
	Treated softwood Timber 2" X 2"	848	ft		
	Nails 4"/3'	20	kg		
	PVC pipe class B; 100mm diameter venti pipe 3m	1	PC'S		
	SUB-TOTAL FOR CEILING				
E.	<u>DOOR</u>				
1	<u>40mm thick hardwood paneled door shutter</u>				
	920 x 2100mm high door	3	pc's		
	720 x 2100mm high	15	pc's		
2	<u>Frames (hardwood),Varnish & Glass</u>				
	1000 x2750mm high	3	pc's		
	800 x2200mm high	15	pc's		
	Brush 3"and 2.5"	5	pc's		
	Sand paper (msasa) No.80	8	LM		
	Clear Varnish - 4Litres	2	TIN		
	Thinner for Varnish	6	Litres		
3	<u>IronMongeries</u>				
	Mortice lock Three lever	3	No		
	Mortice lock Two lever with indicator bolts	15	No		
	Brass hinges - 100mm	27	Pairs		
	SUB-TOTAL FOR DOORS				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
F.	<u>WINDOWS</u>				
	<u>25 x 4mm thick flat bar grill painted red-oxide with 25 x 25mm square pipes frame and all necessary accessories</u>				
	Overall size 900 x 500 mm high	22	No.		
	SUB-TOTAL FOR WINDOWS				
G.	<u>FINISHING</u>				
1	<u>Terrazo Floor finishing (78m2)</u>				
	Sand	1	M ³		
	Cement-50kgs (42.5)	35	Bags		
	Chipping White	1	M3		
	Red chipping	1	M3		
	Pink chipping	1	M3		
	Black	1	M3		
	Terrazo colour (user's selection)	2	Bags		
	Concrete nail 1"	3	Packet		
	Tina, Polish, & Hardina for Terrazo	2	Set		
	2mm thick plastic Strips	96	M		
2	<u>Wall Finishing -15mm thick (1:4)</u>				
	400 x 250mm ceramic Wall tiles	96	Box		
	Grouts (20Pkt per Box)	2	Box		
	Sand	14	M ³		
	Cement-50kgs (42.5)	50	Bags		
	White cement - 40kg	10	Bags		
	Gypsum powder -25kg	10	Bags		
	Sand paper Msasa No.120	10	m		
	SUB-TOTAL FOR FINISHING				
H.	<u>PAINTING & DECORATION</u>				
	Emulsion Paint - 20 LTRS	15	buckets		
	Weather guard Paint - 20 LTRS	2	buckets		
	Washable paint -20 LTRS	2	buckets		
	Primer paint -20 LTRS	2	buckets		
	Solvent - 5LTRS	2	TIN		
	Brush 3"	3	Pcs		
	Roller	3	Pcs		
	Gloss paint-4LTR	2	TIN		
	Bitumen paint - 4Litres	2	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J.	<u>INCINERATOR</u>				
	Fire brick 65 X 110X230mm	270	Nr.		
	Fire cement	9	Bag		
	Burnt brick 65 x 110x230mm	1,000	Nr.		
	Clay soil	2	M3		
	Sand	5	M ³		
	Cement-50kgs (42.5)	30	Bags		
	Agregates 1/2'	5	M3		
	Lime 25kg	3	Bags		
	450 x 200mm Peeping door mildsteel complete as per drawing	1	Nr.		
	Steel metal door size 800 x 600mm high ditto	1	Nr.		
	450 x 150mm mild steel pipe for Ashes filter ditto	1	Nr.		
	Mild steel Flue cover (Flexible openable)	1	Nr.		
	200mm diameter metal Chimney Pipe 7m high including cover	1	Nr.		
	SUB-TOTAL FOR INCINERATOR				
A.	<u>ELECTRICAL INSTALLATION</u>				
	Single fluorescent fitting Complete	7	No		
	NB: Wiring cables shall be copper have a minimum cross section area of 1.5sqmm and shall comply with an appropriate British or Harmonized standard for either thermoplastic or thermosetting insulated electric cables				
	Single core wire 1.5sqmm - Red	0.5	Roll		
	Single core wire 1.5sqmm - Black	0.5	Roll		
	Single core wire 1.5sqmm -green	0.5	Roll		
	1gang 1way switch	1	No		
	2gang 1way switch	2	No		
	Junction box	20	No		
	Conduit pipe	100	PC's		
	Elbow	30	PC's		
	Conduit coupling	20	PC's		
	Round cover	36	PC's		
	Round box	16	PC's		
	Fine screw	2	Packet		
	plastic clips 22mm	3	Box		
	SUB-TOTAL ELECTRICAL				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
K	<u>PLUMBING AND SANITARY INSTALLATION</u>				
	WATER DISTRIBUTION SYSTEM				
	PPR Pipes				
	40mm Dia	4	pcs		
	32mm Dia	13	pcs		
	25mm Dia	8	pcs		
	20mm Dia	3	pcs		
	15mm Dia	19	pcs		
	12mm Dia Flexible Pipe	30	pcs		
	VALVES				
	40mm Dia	4	pcs		
	32mm Dia	9	pcs		
	20mm Dia	14	pcs		
	15mm Dia	10	pcs		
	15mm Dia Angle Valves	41	pcs		
	20mm Dia water tap with stopcock/push	18	pcs		
	REDUCING BUSH				
	Ø40 / 32mm	8	pcs		
	Ø40 / 25mm	6	pcs		
	Ø40 / 20mm	2	pcs		
	Ø40 / 15mm	2	pcs		
	Ø32 / 25mm	9	pcs		
	Ø32 / 20mm	9	pcs		
	Ø32 / 15mm	43	pcs		
	Ø25 / 20mm	23	pcs		
	Ø25 / 15mm	17	pcs		
	Ø20 / 15mm	29	pcs		
	90° PLAIN ELBOW				
	Ø40mm	6	pcs		
	Ø32mm	6	pcs		
	Ø25mm	9	pcs		
	Ø20mm	22	pcs		
	Ø15mm	62	pcs		
	90 ADAPTOR ELBOW (Female)		pcs		
	Ø15mm	55	pcs		
	90 ADAPTOR ELBOW (Male)				
	Ø15mm	14	pcs		

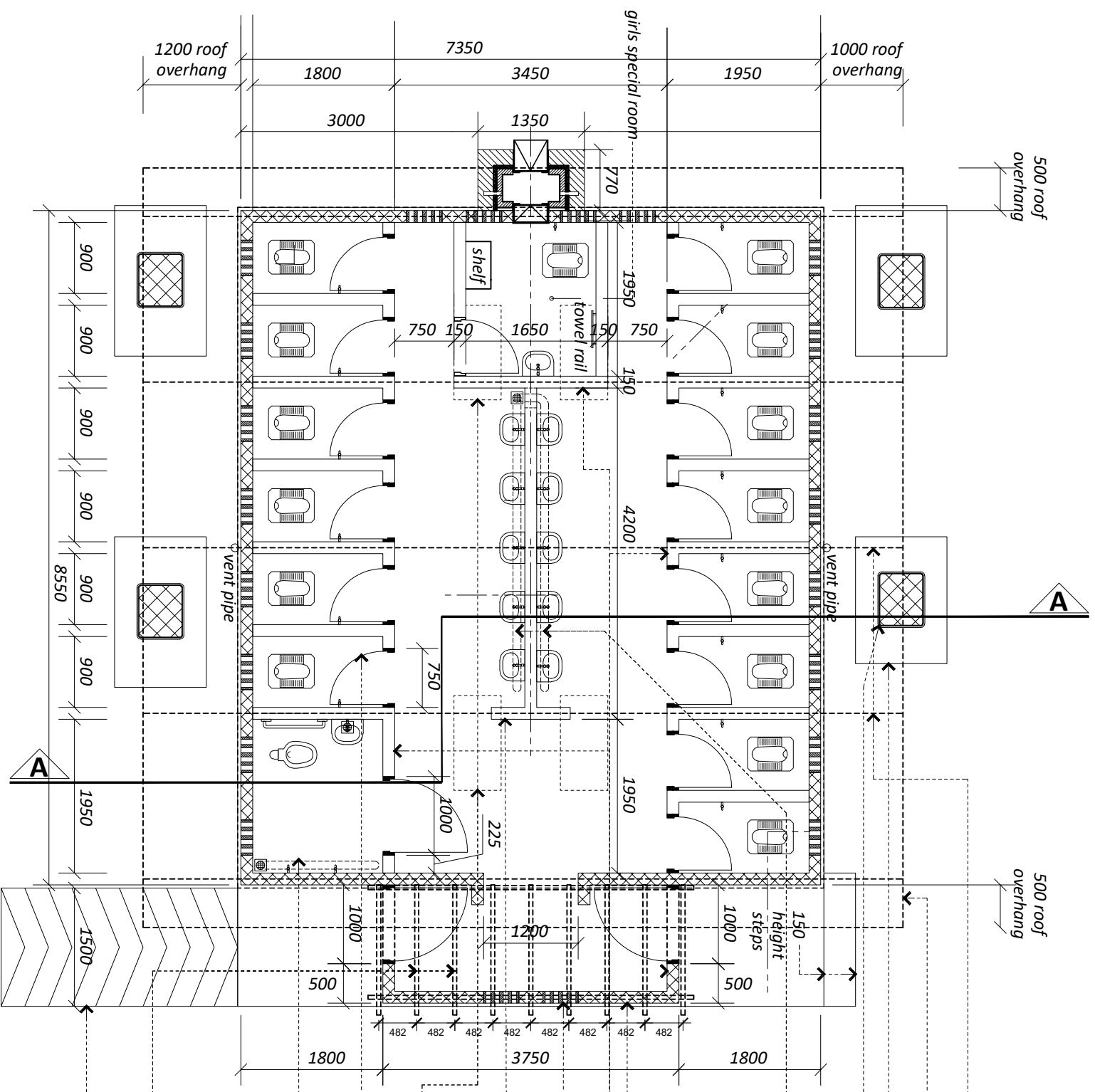
ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	T PLAIN				
	Ø40mm	6	pcs		
	Ø32mm	36	pcs		
	Ø25mm	14	pcs		
	Ø20mm	24	pcs		
	SOCKET				
	Dia. 15mm	88	pcs		
	Dia. 20mm	29	pcs		
	Dia. 25mm	21	pcs		
	Dia. 32mm	38	pcs		
	Dia. 40mm	14	pcs		
	SEWORAGE				
	PIPING (uPVC PIPE)				
	150mm Dia	4	pcs		
	100mm Dia	9	pcs		
	50mm Dia	13	pcs		
	40mm Dia	13	pcs		
	32mm Dia	12	pcs		
	Elbows, Bends Connector traps etc to suite the above installation.				
	FITINGS				
	100mm Dia Y-Tee	24	pcs		
	50mm Dia Y-Tee	14	pcs		
	100mm Dia Inspection Tee	12	pcs		
	50mm Dia Inspection Tee	9	pcs		
	SOCKET				
	150mm Dia	8	pcs		
	110mm Dia	21	pcs		
	50mm Dia	11	pcs		
	40mm Dia	17	pcs		
	32mm Dia	19	pcs		
	90° ELBOW				
	110mm	12	pcs		
	50mm	12	pcs		
	40mm	10	pcs		
	32mm	12	pcs		
	45° ELBOWS				
	110mm	10	pcs		
	50mm	12	pcs		
	40mm	9	pcs		
	32mm	9	pcs		
	REDUCING BUSH				
	50mm/40mm	78	pcs		
	40mm/32mm	78	pcs		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	REDUCING SOCKET				
	50mm/40mm	27	pcs		
	40mm/32mm	17	pcs		
	<u>SCHEDULE NO. 4, SANITARY FITTINGS</u>				
	White Vitreous China SQUATTING PAN with TRAP with Dimenions 510mm x 410mm				
	Wall mounted Push Type flush tank with 4.5 Litres Volume	16	pcs		
	Bib Cock with Jet Spray or its equivalent	2	pcs		
	1000mm x 600mm Vanity Mirror	2	pcs		
	White Vitreous China Wall Hung Wash Hand Basin with Half Pedestal and quarter turn faucet	16	pcs		
	Special needs (HANDICAPPED) WC complete with Raised height WC Pan , Wash hand Basin with faucet, and Grab Bar/Grab Rails	2	pcs		
	100mm x 100mm PVC Floor Drain with Cover	2	pcs		
	Soap dispenser with Holder or its equivalent	2	pcs		
	Toilet Paper Holder	1	pcs		
	SUB-TOTAL PLUMBING INSTALLATION				

<u>GENERAL SUMMARY</u>					AMOUNT -TZS
<u>TOILET BLOCK</u>					
A.	SUB-STRUCTURE -PROVISIONAL				
B.	SUPERSTRUCTURE				
C.	ROOF STRUCTURE & COVERING				
D.	CEILING				
E.	DOOR				
F.	WINDOWS				
G.	FINISHING				
H.	PAINTING & DECORATION				
J	INCINARATOR				
K	ELECTRICAL INSTALLATION				
L.	PLUMBING AND GAS INSTALLATION				
TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY					
<u>ADD:</u>					
LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)					
Note:					
i Refer General Summary for: Preliminary, Transportation and Supervision Costs					
ii. Preliminary cover the following item:					
- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,					
- Power for the works, Security, store, Materials test, levelling, holdings and removal of rubbish.					
iii. Supervision cost depend on guideline of the specific project					

ARCHITECTURAL DRAWINGS

floor plan



- lines of roof trusses above
- lines of roof gutter above
- drain inspection chambers
- 900 x 900 cast iron inspection chamber covers
- form drain channel in floor under washbasins to carry water to grille cover over underground drain
- all walls to be 150 solid concrete blocks
- 2000 height cubicle walls
- all window openings to be 450 length ventilated concrete blocks at high level
- 1000 height 150 block washbain support wall
- sloping corrugated fibreglass roof lights
- all cubicle doors to be 750 width
- disabled toilet cubicle with washing taps on wall. Form drain channel in floor under taps to carry water to grille cover over underground drain
- pagola
- 1:20 slope ramp for assisted wheelchair (locate at end of building where plinth height is less)

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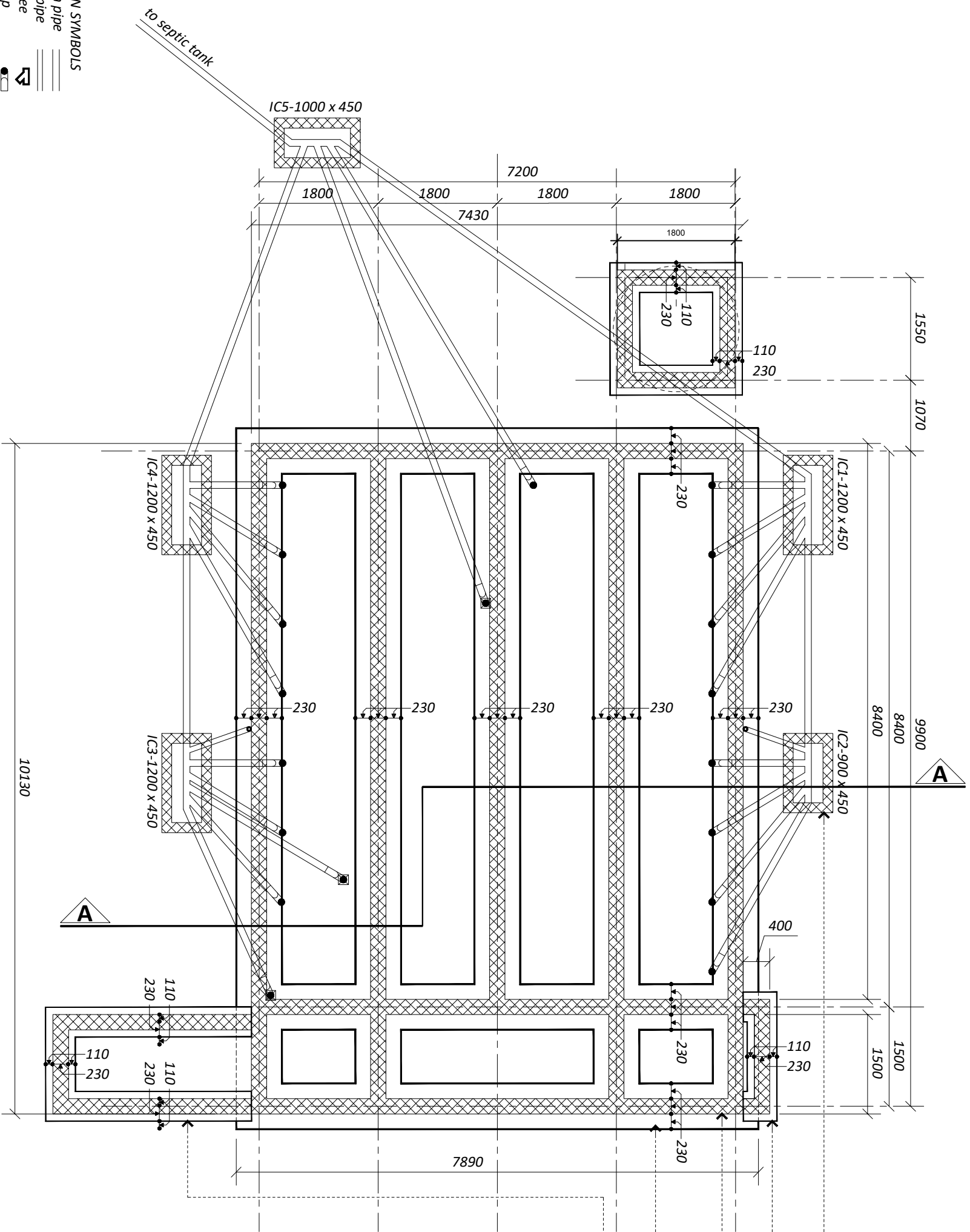
PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE
 FLOOR PLAN
 DRAWING NO. SQP/ARC/TLT/02

DRAWN BY J.R.
 CHECKED BY I.S.
 SCALE 1:200
 JUNE, 2023

BLDG NO. 10

- KEY TO DRAIN SYMBOLS**
- 100 dia drain pipe
 - 75 dia drain pipe
 - 100 dia 45° tee
 - 100 dia P-trap
 - 75 dia P-trap
 - 75 dia vent pipe
 - floor drain grille cover



- drain inspection chambers of 150 width solid concrete blockwork
- steps foundations 450 x 150 concrete
- all foundation walls 230 width solid concrete blockwork
- main foundations 690 x 230 concrete
- ramp foundations 450 x 150 concrete

foundation plan

BLDG NO. 10

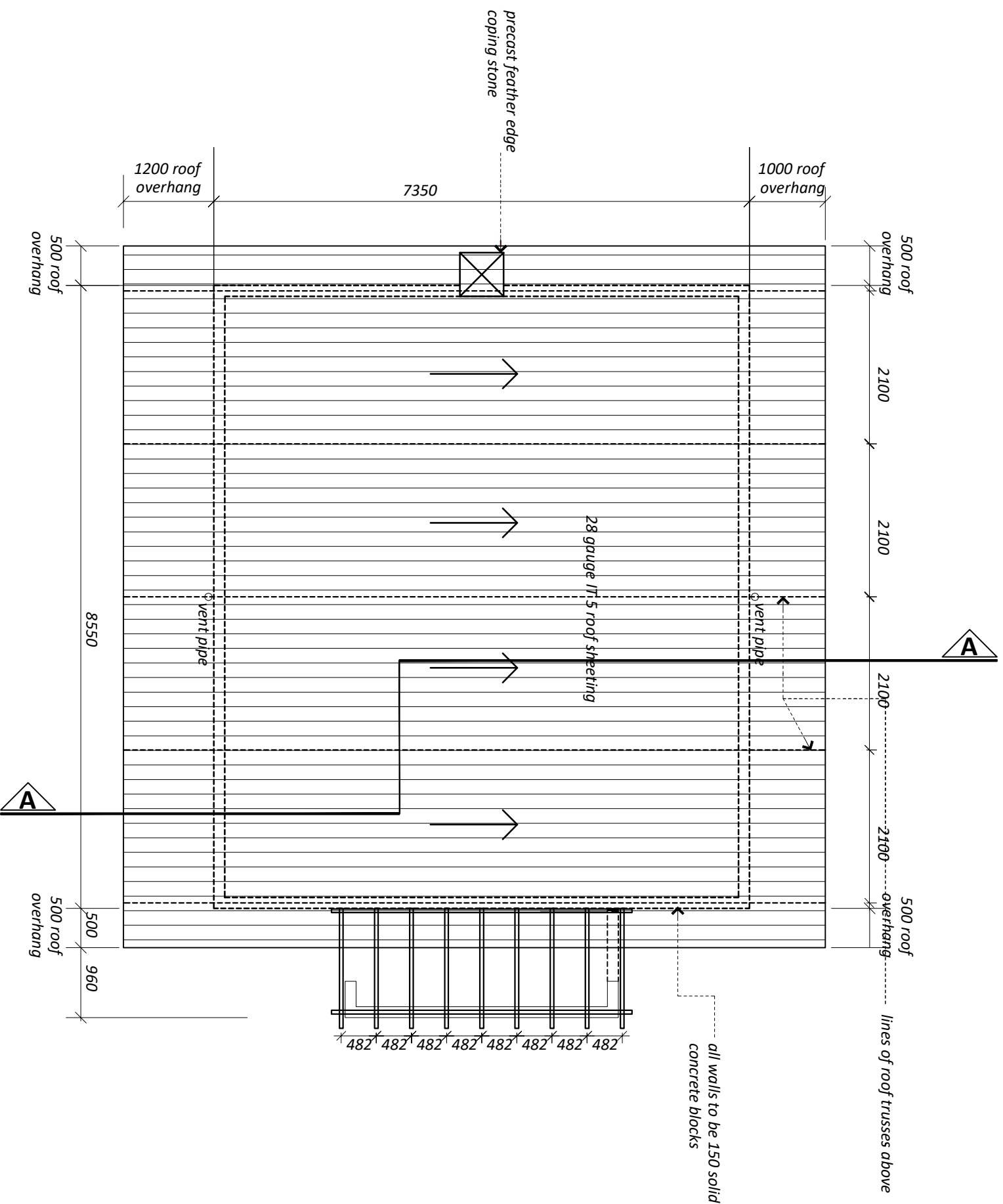
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DRAWING TITLE
FOUNDATION PLAN
DRAWING NO. SQP/ARC/TLT/04

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roof plan



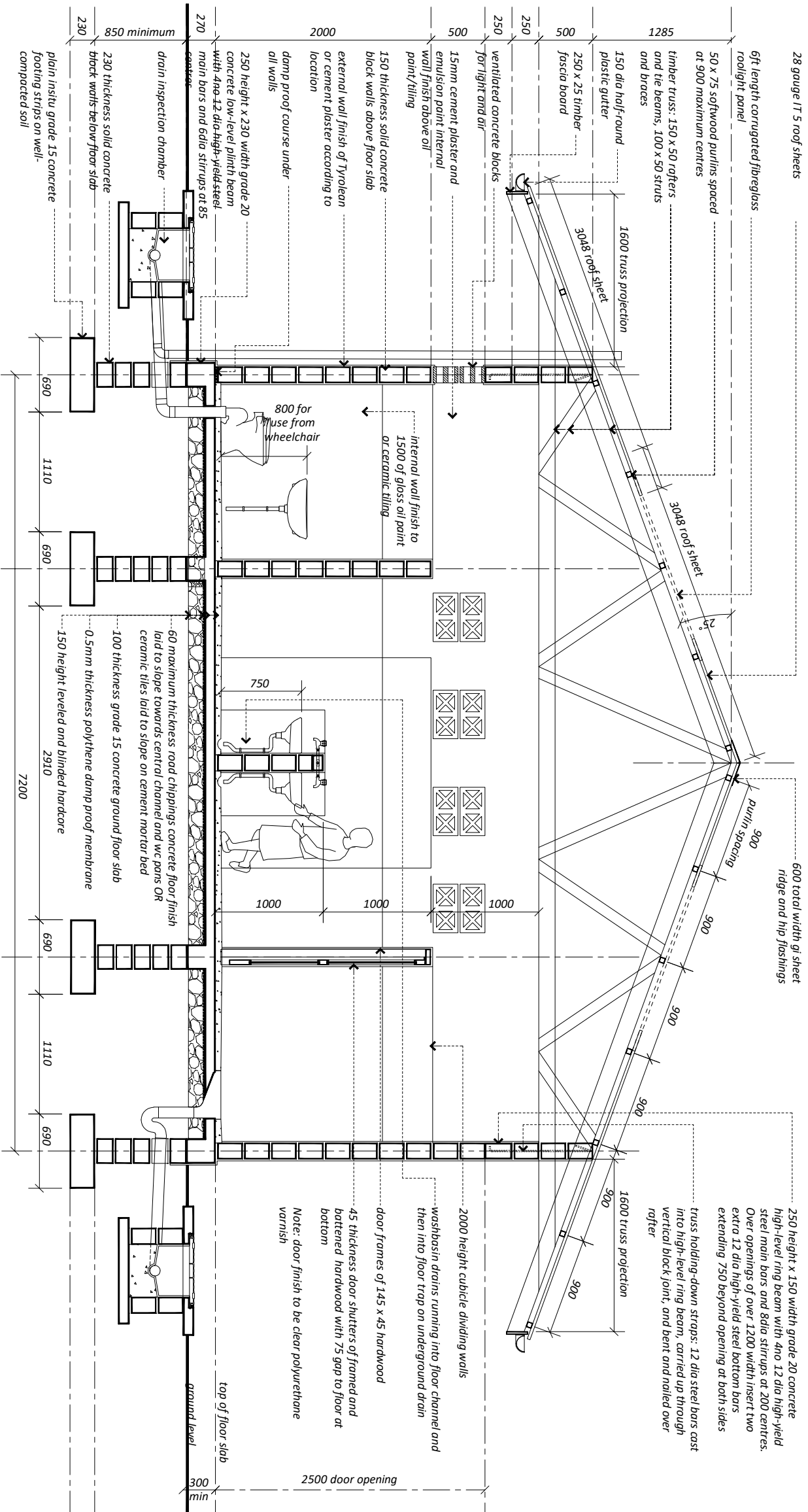
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DRAWING TITLE
ROOF PLAN
DRAWING NO. SQP/ARC/TLT/03

DRAWN BY J.R.
CHECKED BY I.S.
SCALE 1:200
JUNE, 2023



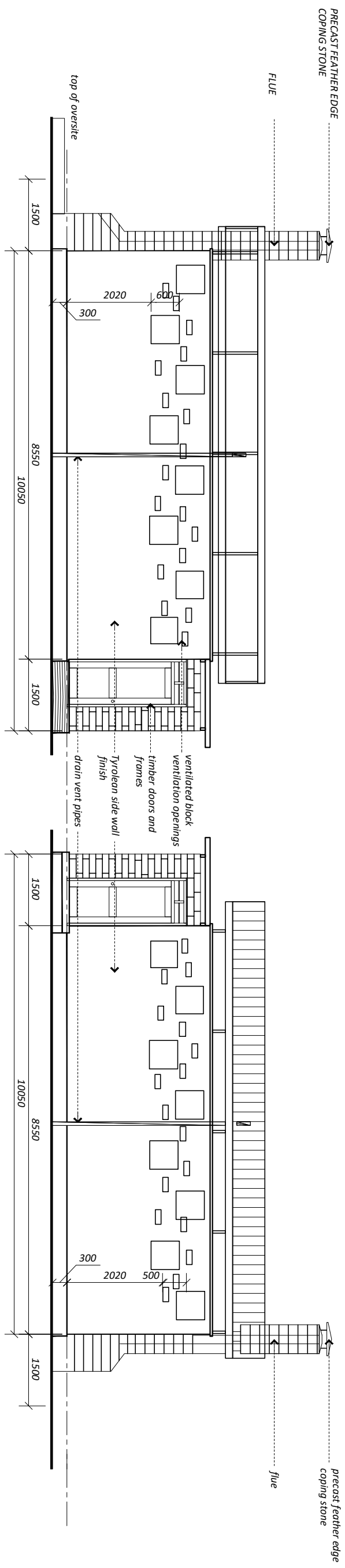
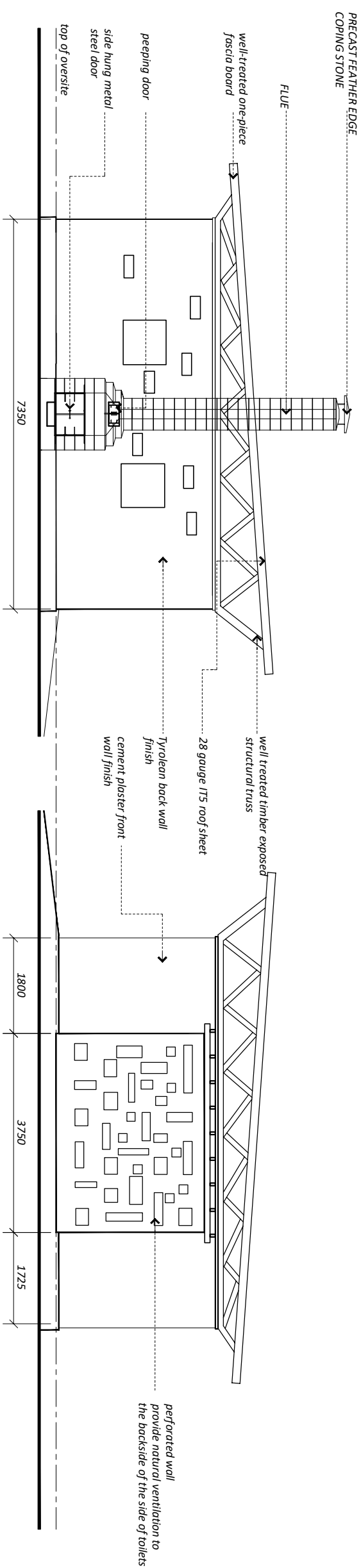
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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE SECTION
 DRAWING NO. SQP/ARC/TLT/05

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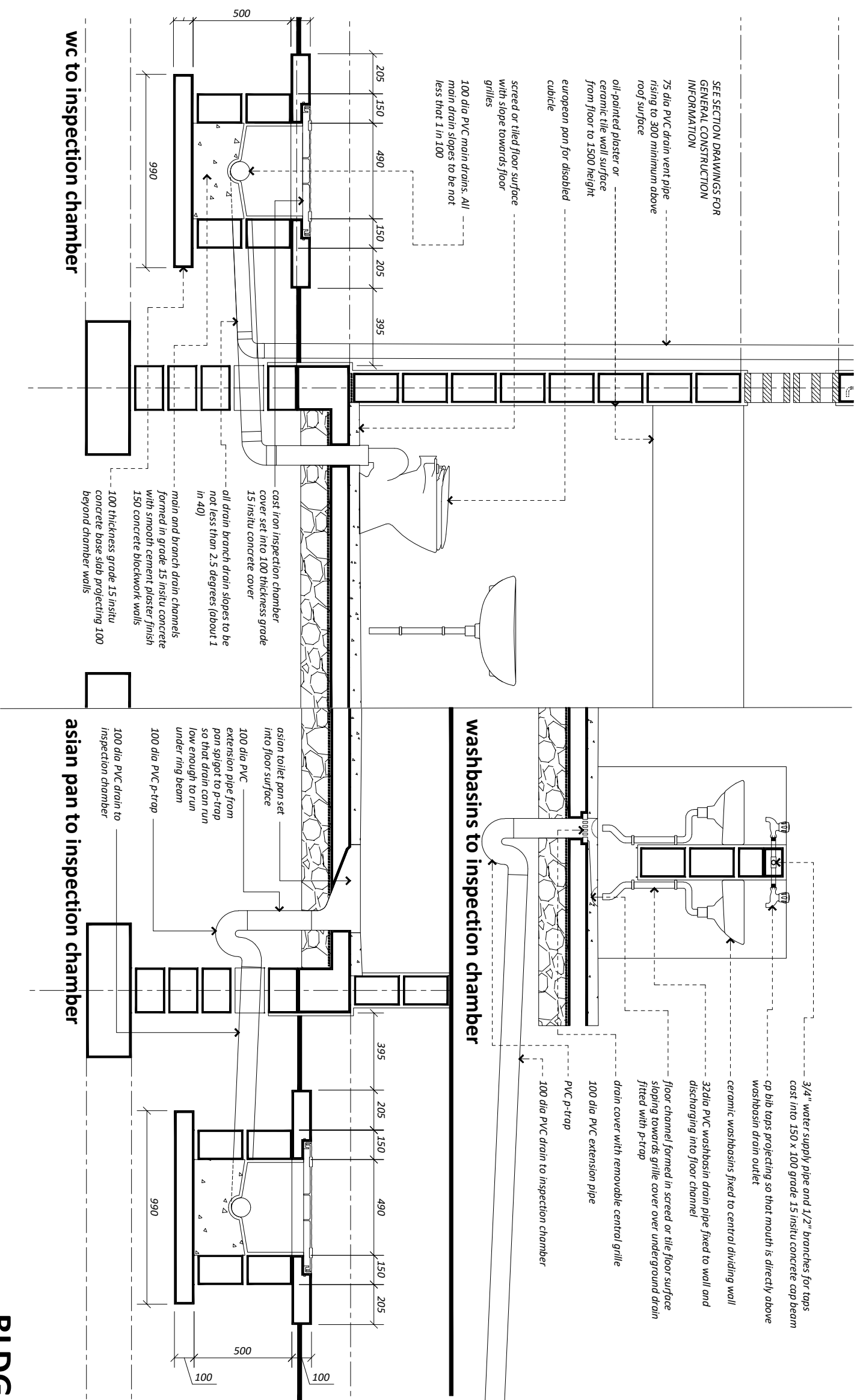
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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
 FOR
 SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE PIPED WATER TOILET FOR 320 GIRLS
 ELEVATIONS
 DRAWING NO. SQP/ARC/TLT/06

DRAWN BY J.R.
 CHECKED BY I.S.
 SCALE 1:200
 JUNE, 2023



BLDG NO. 10

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PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
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SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

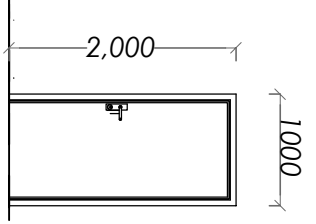
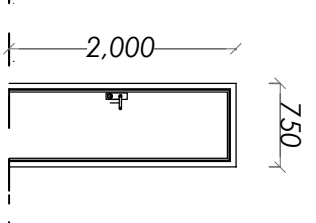
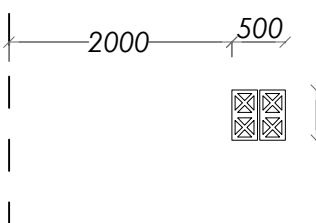
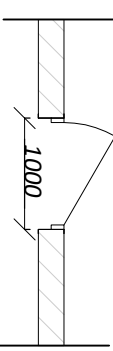
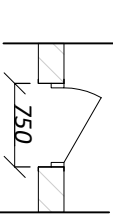
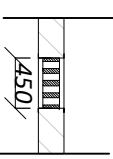
DRAWING TITLE
DETAILS
PIPED WATER TOILET FOR 320 GIRLS

DRAWING NO.
SQP/ARC/TLT/07

DRAWN BY J.R.
CHECKED BY I.S.
SCALE 1:200
JUNE, 2023

DOOR AND WINDOW SCHEDULE

WINDOW SCHEDULE

LOCATION	Refer to Ground to Fifth Floor Plan Type D-01	Refer to Ground to Fifth Floor Plan Type D-02	Refer to Ground Plan Type W-01															
ELEVATION																		
PLAN																		
Reference/ Location	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 3</td> <td rowspan="2" style="text-align: center;">Total Req. 3</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> </table>	Ground Floor	Nos. 3	Total Req. 3	First Floor	Nil	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 15</td> <td rowspan="2" style="text-align: center;">Total Req. 15</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> </table>	Ground Floor	Nos. 15	Total Req. 15	First Floor	Nil	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Ground Floor</td> <td style="width: 50%;">Nos. 22</td> <td rowspan="2" style="text-align: center;">Total Req. 22</td> </tr> <tr> <td>First Floor</td> <td>Nil</td> </tr> </table>	Ground Floor	Nos. 22	Total Req. 22	First Floor	Nil
Ground Floor	Nos. 3	Total Req. 3																
First Floor	Nil																	
Ground Floor	Nos. 15	Total Req. 15																
First Floor	Nil																	
Ground Floor	Nos. 22	Total Req. 22																
First Floor	Nil																	
Specification and finishes	<p>Iron mongery: 5 pairs 150mm long brass butt hinges 3 nos. 3 lever UNION mortice lockset complete - 3 nos. 150mm long aluminium flush bolts</p> <p>Specifications: 40mm thick;1000mm x 2000mm high Mkongo hardwood panelled door comprising of 125mm wide stiles and top rail; 180mm wide bottom rail; polished 3 coats of polyurethane varnish.</p> <p>145mm x 45mm Mkongo hardwood frames polished 3 coats of polyurethane varnish top light provide 6mm clear glass, 16mm m.s horizontal ioxide bars with 50mm x 25mm hardwood beads</p>	<p>Iron mongery: 23pairs 150mm long brass butt hinges 15nos. 3 lever UNION mortice lockset complete - 15nos. 150mm long aluminium flush bolts</p> <p>Specifications: 40mm thick;750mm x 2000mm high Mkongo hardwood panelled door comprising of 125mm wide stiles and top rail; 180mm wide bottom rail; polished 3 coats of polyurethane varnish.</p> <p>145mm x 45mm Mkongo hardwood frames polished 3 coats of polyurethane varnish top light provide 6mm clear glass, 16mm m.s horizontal ioxide bars with 50mm x 25mm hardwood beads</p>	<p>Ventilated concrete blocks bedded and jointed in cement/sand mortar. Finished with one under coat and two full coats of oil paint</p>															

door & window schedule

BLDG NO. 10

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND
LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE
DRAWING NO.

PIPED WATER TOILET FOR 320 GIRLS
DOOR AND WINDOW SCHEDULE
SQP/ARC/TLT/08

DRAWN BY J.R.
CHECKED BY I.S.
SCALE 1:200
JUNE, 2023

SCHEDULE OF FINISHES

S/N	ELEMENTS	LOCATION	BASE FINISH		FINAL FINISH
			15mm thick cement and sand plaster ratio (1:3)	24mm 2-coat Tyrolean rendering	2-coat bitumen paint to all plinth Colour in Tyrolean mix above the plinth level
1	WALLS	Internal walls and Verandah	Nil	Nil	Nil
					Nil
2	FLOORS	External Floors toilets	Nil	Nil	300 x 300 x 8mm thick Non Slippery Ceramic floor tiles bedded to cement and sand base mortar (1:4) ; and jointing with grouting
		Internal Floors toilets			
3	REINFORCED STRUCTURE	External Columns	Nil	Nil	Nil
		Internal Columns and all beams			
4	CEILING	In 2 storey building (Concrete slab ceiling)	Nil	Nil	Nil
		In 1 storey building (timber roof structure)			
		Eave ceiling			
5	STAIRS & RAMPS	handrails and brackets	Nil	Nil	Nil

BLDG NO. 10

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN SECONDARY SCHOOLS
FOR
SECONDARY EDUCATION QUALITY IMPROVEMENT PROGRAM (SEQUIP)

DRAWING TITLE **PIPED WATER TOILET FOR 320 GIRLS**
DRAWING NO. **SCP/ARC/TLT/09**
SCHEDULE OF FINISHES

DRAWN BY J.R
CHECKED BY I.S
SCALE 1:200
JUNE, 2023

ARCHITECTURAL DRAWINGS

Drawing Print Set for

INCINERATOR

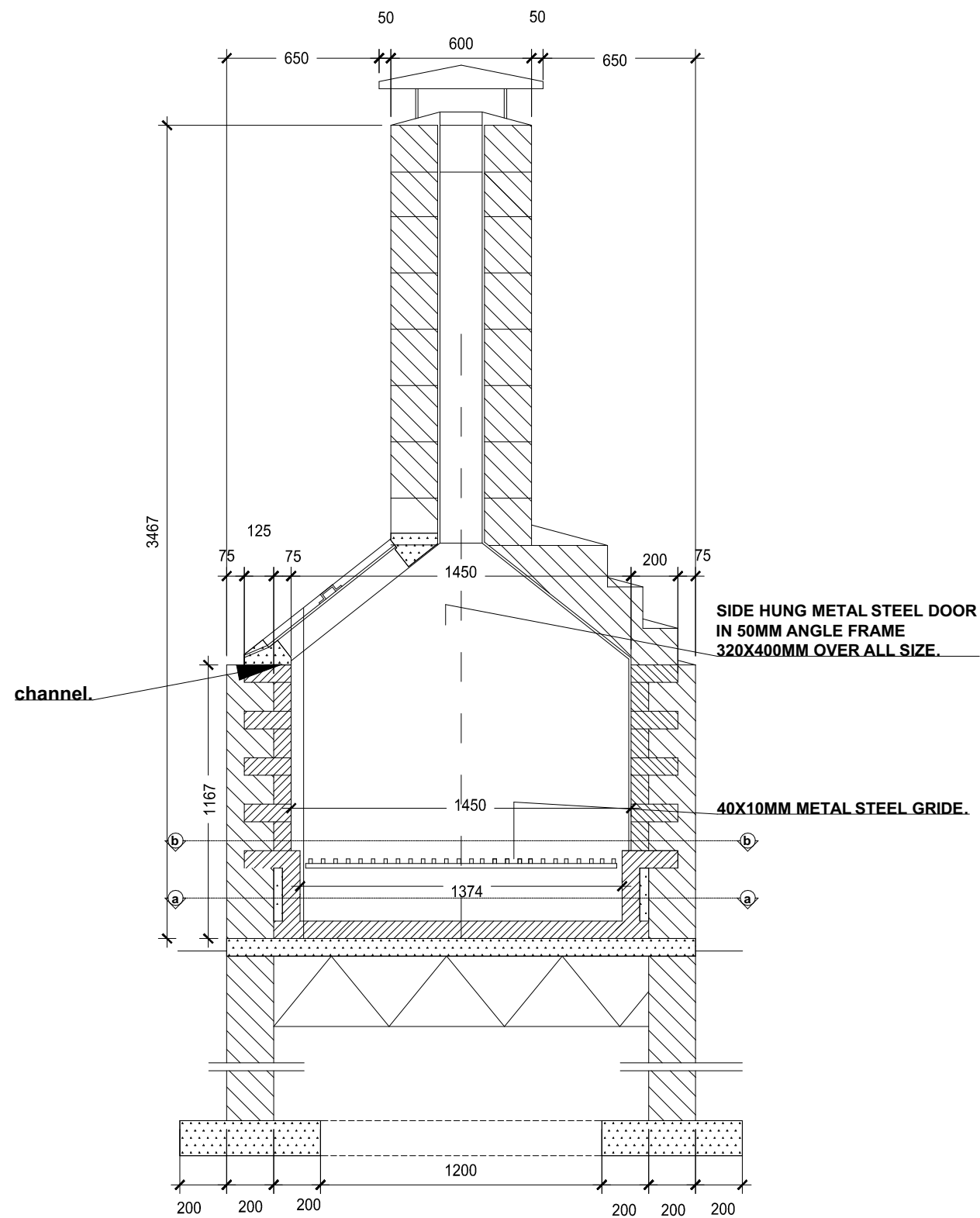
JUNE; 2023

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
PHYSICAL FACILITIES STANDARDS SECTION

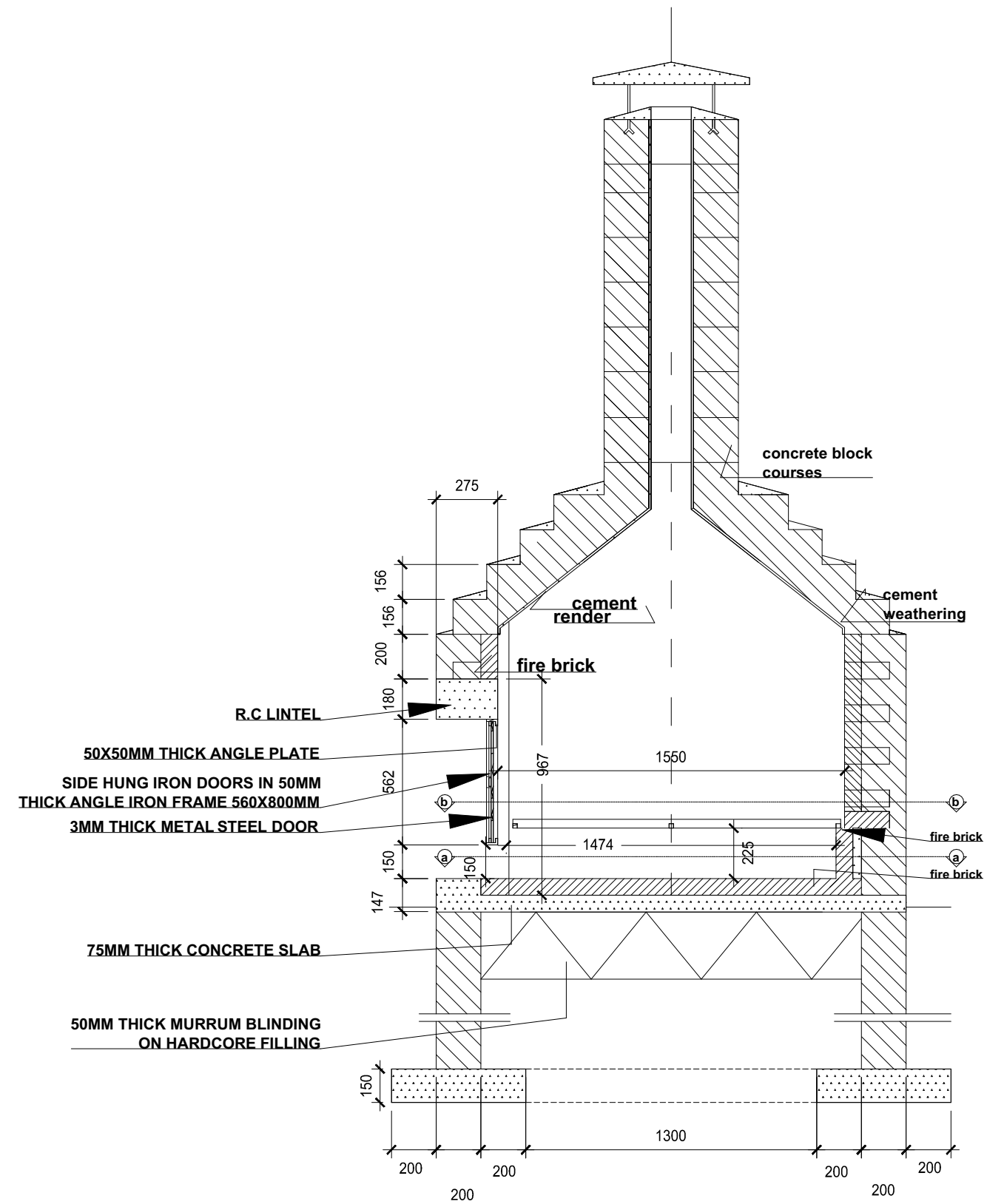
PRIMARY & SECONDARY DESIGN GUIDELINES

DRAWING TITLE **INCINERATOR**
SECTION - REVISED 2023
DRAWING NO. **SDP/ARC/CRB 1/00**

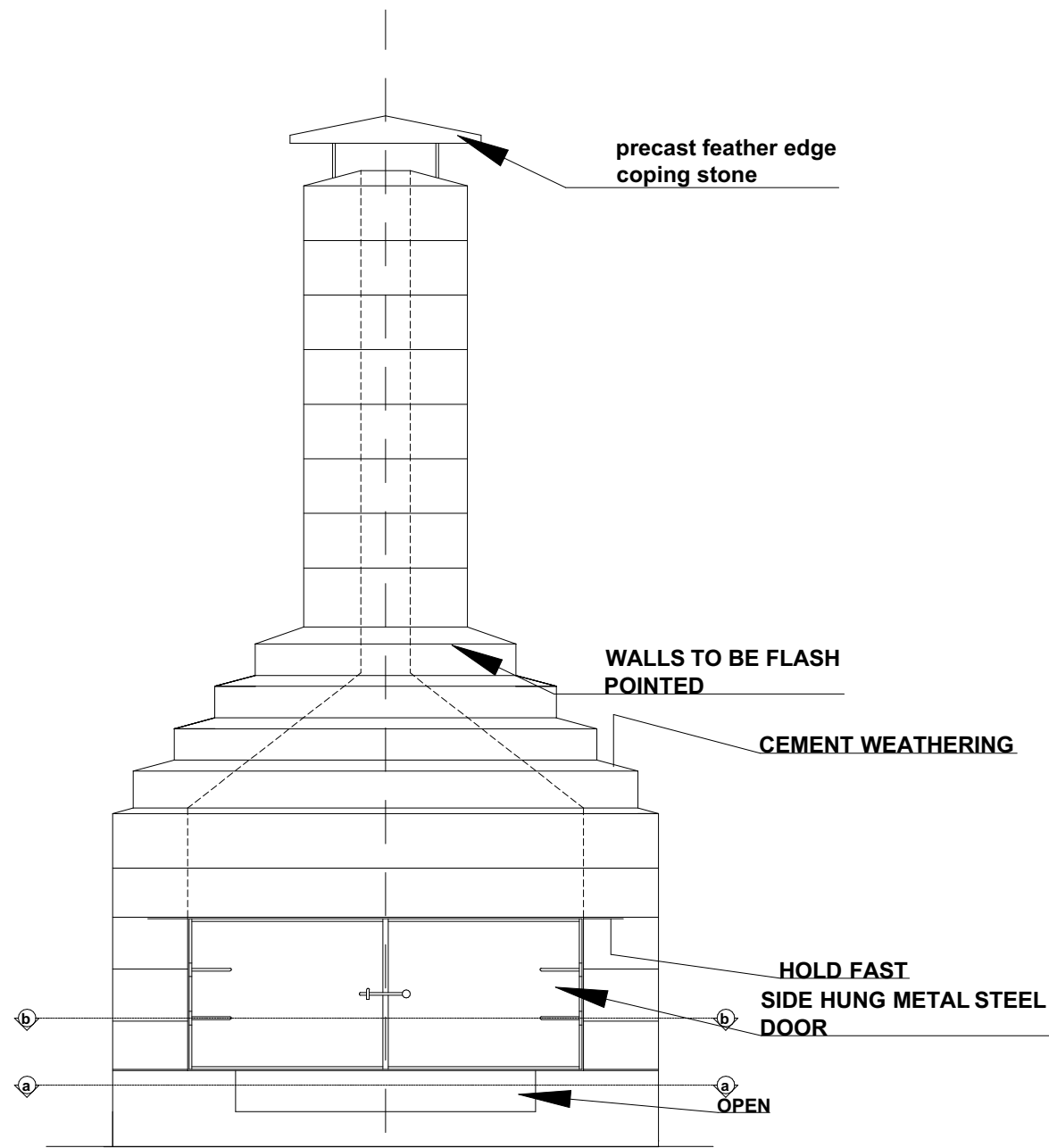
DRAWN BY: JCR
CHECKED BY NM
SCALE 1;25
JUNE,2023



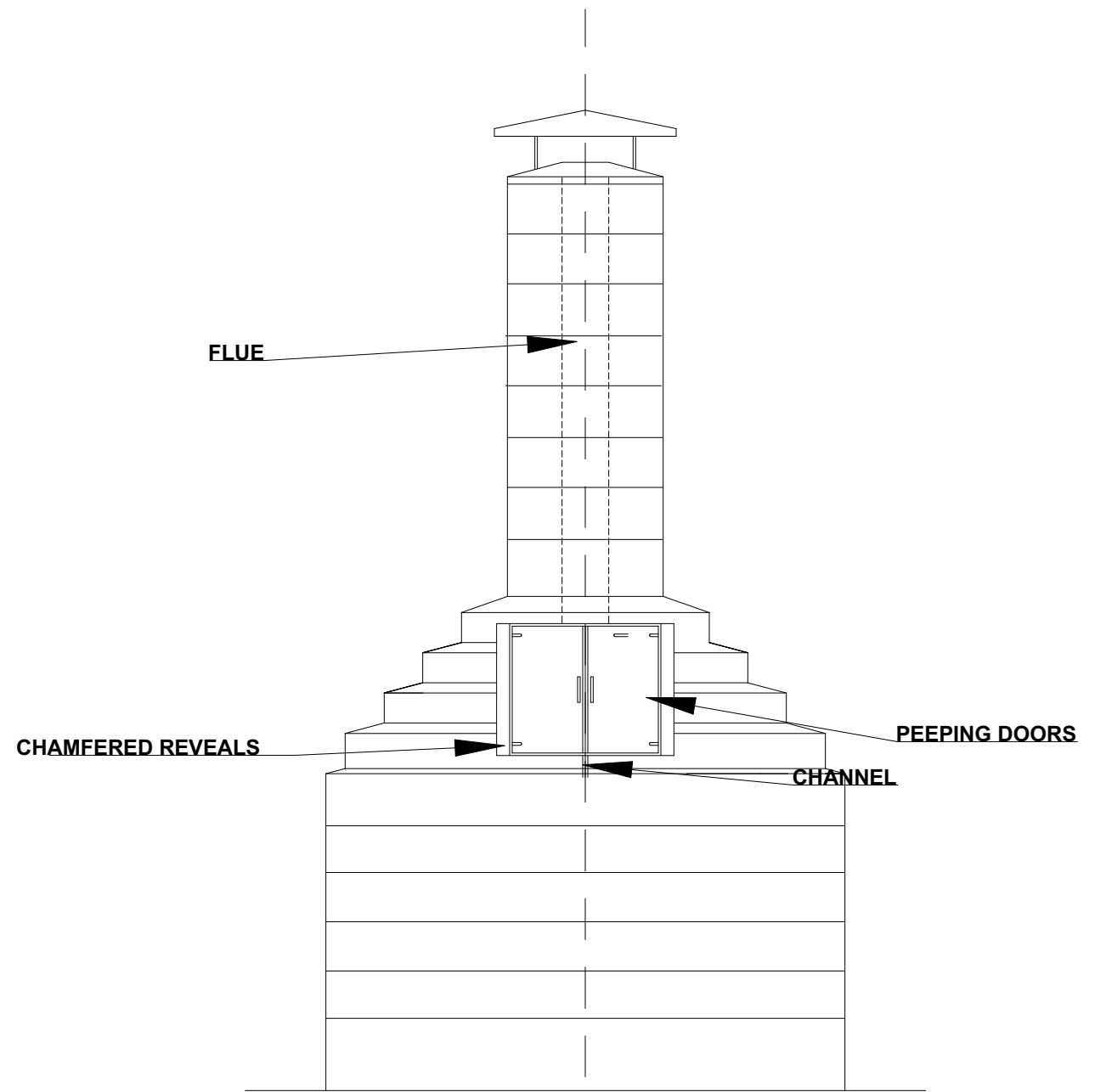
cross section c-c



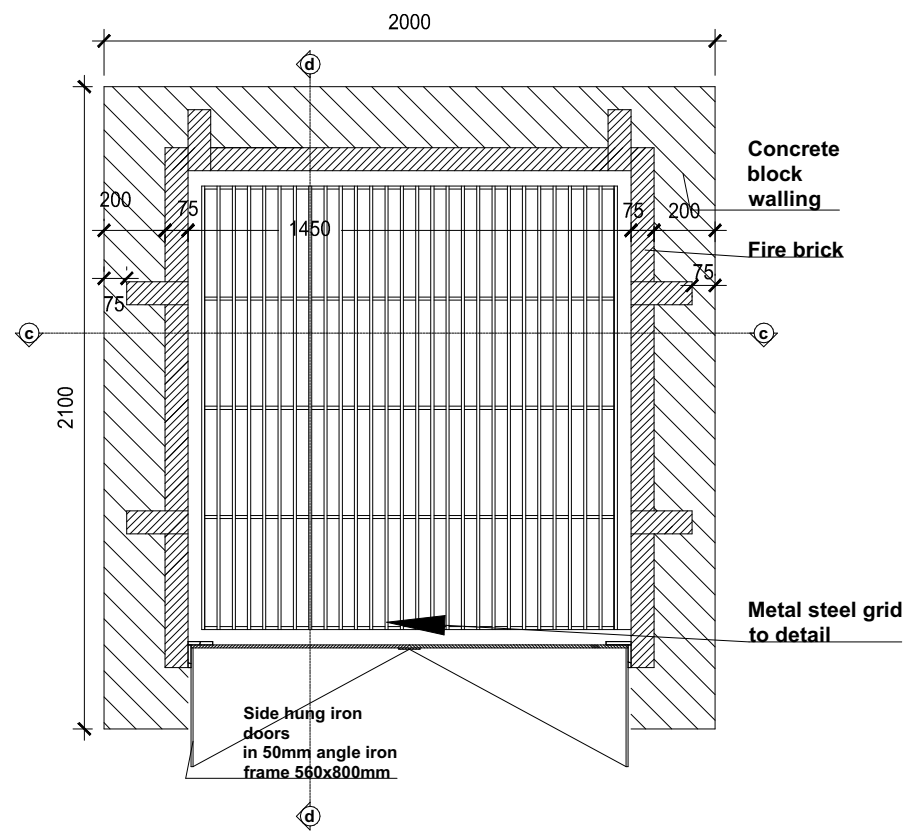
cross section d-d



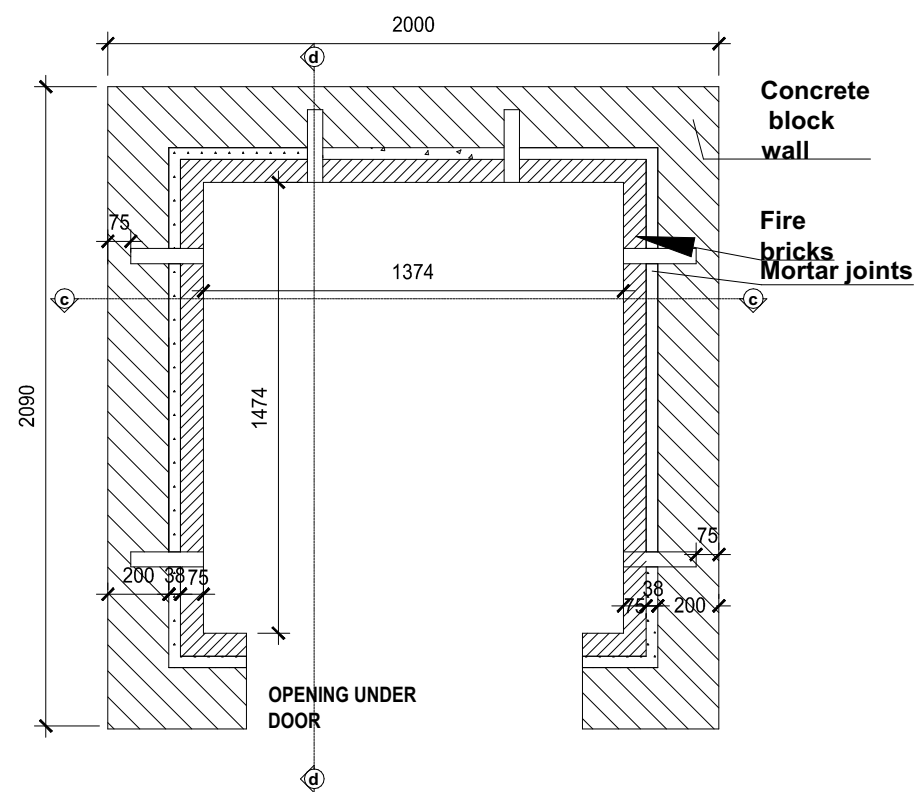
front elevation



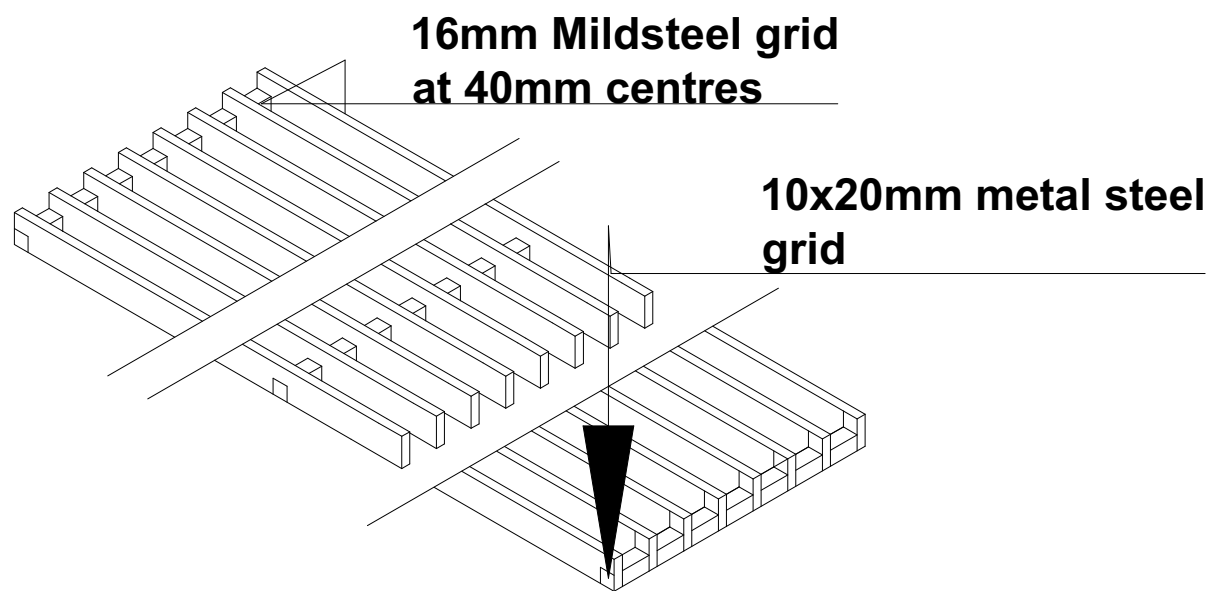
back elevation



PLAN AT b-b



PLAN AT a-a



Isometric view of grid

SCHEDULE OF MATERIALS

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SEQUIP

Schedule of Materials & Labour for Incinerator

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,
Government City - Mtumba,
AFYA Street,
P.O Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

JUNE, 2023

MOEST/PO-RALG

SCHEDULE OF MATERIALS FOR THE CONSTRUCTION OF INCINERATOR

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	SUB-STRUCTURE -PROVISIONAL				
1	<u>Strip Foundation - Grade 15 Plain</u>				
	Aggregate (3/4")	0.5	M3		
	Sand	0.45	M3		
	Cement-50kgs(42.5)	2	Bags		
2	<u>Foundation Walls</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	70	No		
	Sand	1	M3		
	Cement -50kgs	5	Bags		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram (4.5m3 lorry)	1	M3		
	Hardcore (4.5m3 lorry)	1	Trips		
	Adrian 0.5% solution applied at a rate of 7 liters per square meter- 500mls	1	Bottle		
4	<u>Concrete work - Grade 20</u>				
	Cement -50kgs(42.5)	27	Bags		
	Aggregates (1/2")	2	M3		
	Sand	1	M3		
	Reinforcement - 12mm diameter high tensile 460N/mm2	1	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm2	1	PC'S		
	Timber 1" X 8" (3.6m long)	3	PC'S		
	Timber 2" X 2" (3.6m long)	2	PC'S		
	Nails-4"	1	Kgs		
	Nails-3"	1	Kgs		
	Supporting props	3	PC'S		
5	<u>Blocks. Fire Bricks & Ring beam & Metal works</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	80	No		
	Sand	1	M3		
	Cement-50kgs(42.5)	5	Bags		
	Fire bricks 230mm x 115 x 75mm thick	320	pcs		
	Refractory fire cement	3	bag		
	Refractory fire clay 25kg @ bag	1	bag		
	Chimney shaft stainless steel rolled plate 4mm thick. 7.7 ft length	1	Pcs		
	Steel rods Stainless steel for grate fabrication 12mm thick @ 4m length	2	Pcs		

