**SCOPE OF WORKS AND TECHNICAL SPECIFICATION**

1. **SCOPE OF WORKS**

This document shall be read and understood in conjunction with the BOQ and design drawings provided. The contractor shall consult the supervising Civil Engineer where clarification is required.

The project is located at Ngarannam, Mafa LGA, Borno State (Lat: 11.916924°; Long: 13.573721°). The scope of work consists of construction of school buildings, VIP toilets, fence works, and external work as stated in the BoQ. The works include:

**Preliminaries:**

HSE gears, sanitary conveniences, temporal hoardings, logistics, site office, reporting & records etc.

**School Blocks**

There are 6 blocks of classroom with 2 classrooms, a store and an office space each in a block. One school block measures 189m2 with external walls and partitions made up of sandcrete blocks.

**VIP toilets**

There are 4 Blocks of VIP toilet situated in the school compound with 3 drop holes each. 1 no. of block measures 11.75m2 with external walls and partitions made up of sandcrete blocks.

**Perimeter Fence and Gates**

The perimeter fencing is 284,600m made up of sandcrete hollow blocks as described in the site plan and two metal gates.

**Visibility Signboards and Signages**

Two no. of Signboards shall be provided at strategic locations on the project site**.**

1. **DELIVERY PERIOD**

The delivery period for all the items mentioned in the scope of works, BOQs and drawings is Twelve (12) Weeks as per the below schedule

1. **CONTRACT DURATION**

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| **Activity** | **Duration /Time** | **Responsible Unit/Reporting** |
| **Signing the contract** | Within 1-week of awarding the contract | Procurement/Vendor |
| **Handing over the site**  | Within 1-week after signed contract  | Engineering Team/Govt. Partner |
| **Mobilization** | Within 15 days of site handover  | Contactor and engineering team |
| **Contract commencement date** | End of Mobilization Period | Engineering Team/Procurement |
| **Contact Duration** | 9 weeks from site handover date | Contractor/Supervising Engineers |
| **Substantial Completion of the project** | 10 weeks from site handover | Contractor and the supervising engineer |
| **Project Handover and closing**  | Within 1 week after the substantial completion. | Contactor and UNDP engineering team and Government partners. |

1. **TECHNICAL SPECIFICATIONS**
2. All works and processes shall be carried out using equipment, tools and methods that comply with applicable construction Health, Safety and Environmental regulations, standards, and policies. The use of PPE, safety caution tapes and symbols are mandatory. Safety first!!
3. Provide site office and storage to accommodate construction materials safe from harsh weather conditions.
4. All excavations, demolition works, removal & arranged construction materials must be clearly encircled with safety caution tapes during works
5. All excavations shall be done in accordance to the structural drawings provided
6. Filling around foundations etc. is to be of selected earth obtained from the excavation and is to be filled in 150mm layers, each layer well rammed and consolidated
7. All formation level must be compacted before concrete blinding as specified in the structural drawings
8. All blockwork at substructure level shall be filled solid with concrete mix 1:3:6 while the use of broken blocks, laterite or mortar as a substitute shall not be accepted.
9. Laterite shall be approved rock laterite or other suitable materials are to be free from dust or other foreign matter and broken to pass a 75mm ring and to be retained on a 50mm ring and deposited in layers not exceeding 150mm thick, each layer being well consolidated by rolling or ramming and well-watered.
10. Hardcore is to be selected broken brick, concrete, sandcrete blocks or other clean hard and dry material.
11. Provide damp-proof membrane not less than 0.3mm to cover the total surface of the foundation.
12. Ordinary Portland cement shall be used for all masonry and concrete works and must be lump free
13. Fine aggregates shall be sieved and free of organic matter and other impurities
14. Well-graded crushed granite shall be used as coarse aggregate (should not exceed 20mm for reinforced concrete and 35-40mm for mass concrete)
15. Water-Cement ratio by weight shall not exceed 0.55. The quantity of water used in the mixing of the concrete must be adequate to ensure proper hydration of the cement and to bring the mass to a proper consistency and to a workable mix.
16. Batching of concrete shall be by volume and Tilting Mixer shall be employed for mixing of fresh concrete
17. Concrete shall be placed gently and not tipped or dropped from a height, it shall then be thoroughly rammed into positions to fill the forms and surround the reinforcement without displacing it and without the formation of voids or cavities.
18. Compaction of fresh concrete shall be done with a poker vibrator for adequate compaction.
19. The use of BRC wire-mesh for ground floor slab is mandatory in new construction works and photographs are to be shared with Supervising Civil Engineer as evidence of same
20. Curing of concrete shall be in accordance with the recommendation set out in the B.S. Code of Practice and all surfaces shall be kept continually wet after concreting and protected from the sun and drying winds by covering with wet sacking, etc. for not less than one week.
21. 28-day compressive strength shall be C15 (1:3:6 mix ratio) for mass concrete and C25 (1:1.5:3 mix ratio) for reinforced concrete
22. Concrete cover of 50mm shall be provided to reinforcement in foundation.
23. Hollow sandcrete blocks (225mm X 225mm X 450mm) shall be machine-molded and not hand molded
24. Minimum crushing strength of sandcrete blockwork shall not be less than 2.5N/mm² (cement-sand ratio of 1:6 by volume; no of blocks must not exceed 25 per 50kg bag of cement during fabrication).
25. Formwork shall be removed without damage to the concrete.
26. A schedule of suggested minimum striking times is given below:
27. Walls, sides of R.C beams sides of columns- 2 days after concreting
28. Soffits of slabs and soffits of casting to steel beams- 7 days after concreting
29. Soffits to R.C beam- 14 days after concreting
30. The mortar used shall be composed of cement and sand and approved to give a strength equal to the strength of the blocks
31. All reinforcement shall comply with BS 4449 and associated codes with regards to bending, lapping, binding and cranking
32. Reinforcement shall be kept free of oil, mud, rust prior to use
33. Concrete cover of 25mm shall be provided to reinforcement in beams and column
34. High yield steel (tensile strength of 410N/mm²) of specified size shall be used for both main reinforcements and links/stirrups.
35. The sand for plastering/rendering shall comply with B.S 1199.
36. The internal and external renderings shall be carried out in accordance to the specification provided in the architectural drawings.
37. All concrete surfaces which are to be rendered are to be carefully and thoroughly hacked with a suitable tool to provide an adequate and suitable keyed surface. All block walling which is to be rendered shall have the joints raked out to provide an adequate and suitable keyed surface.
38. Plaster work and paintings which does not thoroughly adhere to any surface shall be removed and re-executed in a proper manner. Such hollowness, cracks, blisters, and any other defects will be considered a defect under the Defects Liability Clause of the Contract.
39. Ceiling fan hooks must be properly anchored on roof noggins and provided in all buildings, offices and stores.
40. The roofing sheet shall be 0.55mm long span aluminum sheet, colour as specified by Architect’s instruction.
41. 0.5mm synthetic woven mat attached to purlins. color to Architect’s further specification
42. Evidence of compliance with specified roof gauge must be provided
43. All roofing sheets must be lapped with 2 corrugation at both ends
44. Timber Specifications for roof rafter, struts, purlins, and fascia board as provided in BOQ and Architectural drawings.
45. Defective or poorly seasoned timber shall not be used for roof carcass or fascia
46. All roof timber structure members including fascia shall be treated with approved chemicals.
47. Materials and specifications for windows and doors shall be according to BOQ and Architectural drawings
48. All internal doors shall have 25mm undercut to avoid internal pressure build up.
49. Door-post labelling and designation shall be made with plastic plague as directed by the supervising Engineer.
50. Floor finishes as provided in architectural drawings for different rooms. 50mm screed to concrete slab installed to a shine for classrooms and 400X400mm Matt tiles with 100mm skirting on 40mm screed shall be provided in the offices and stores.
51. Electrical wiring shall be full conduit, inter-connected of buildings and a main distribution board and changeover switch provided at designated location as instructed by supervising engineer.
52. All lamps must be energy-saver type of approved quality not exceeding 20W rating.
53. All sockets outlets for General A.C supplies shall be 13AMP 3-pin type and shall comply fully with B.S.S 1362 and 1363 and supplements as applicable.
54. 10 Ceiling fans shall be provided in each block as instructed by supervising engineer.
55. All electrical installations must be earthed, and fittings must be tested and commissioned using a power generator prior to handover of project.
56. All Paint materials shall be the best quality of their respective kinds and in accordance with their latest British Standards and obtained from an approved manufacturer. No dilution of painting materials will be allowed, except strictly in accordance with the manufacturer’s directions, or as described in their literature.
57. 12mm cement screed finish with average gauge Tyrolean finish with cement: sharp sand: laterite as 0.25:1:2 with woodoc sealant or its equivalent to Architect’s further specification for external walls at the back and sides of building. 12mm cement screed finish with weatherproof paint to Architect’s further specification. Internal walls shall be 12mm cement screed finish with two coats of sheen finish paint, color to Architect
58. ’s further instruction.
59. Painting on exterior work shall not be done in wet weather or upon any surface which are not thoroughly dry and free from rust or dust.
60. Gloss paint of similarly approved colours shall be on woodwork or metal work after necessary preparations.
61. All details provided in the architectural drawings as provided in the fence walls shall be adhered to during the implementation without deviation.
62. The design for the metal gates for the fence shall be approved by supervising engineer before fabrication.
63. Reinforced concrete columns shall be provided at 3250mm interval for the fence walls.
64. All specifications provided in the SOW, BOQ and Working Drawings shall be respected and where in doubt, the contractor shall seek clarification from the supervising engineer.
65. **CONDITIONS FOR RELEASE OF PAYMENT**

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| **Milestone**  **No.** | **Milestone’s Description and Required Activities & Documentations** | **Payment Amount (NGN)** | **Completion Date** |
| **Milestone No. 1** | **20% progress payment upon submission of signed Contract plus;*** Signing and Submission of Contract.
* Submission of Performance Bond.
* Attend entrance meeting in UNDP Sub-Office via Zoom, upon presenting signed contract.
* Submit updated project work plan/schedule and proposed list of staffs and get the approval of the engineer
* Handing over of site/Taking over of site Mobilization of equipment and staff to site.
* Completion of not less than 20% rate of the total scope of work, duly certified by the UNDP authorized Civil Engineer to qualify for Submit progress report including a summary of activity progress with photographs showing works completed.
* payment. Whereas the contractor wishes to receive the advance payment of 20% of contract amount, the contractor shall submit an Advance Payment Bank Guarantee equivalent to (20%) of contract amount.
* Submission of Invoice to Procurement Unit for payment processing (20%) of the total contract amount.
 | 20% | (1-4 weeks from the commencement of contract) |
| **Milestone No. 2** | **40% payment of the total contract amount. Upon;*** Complete not less than 60% rate of the total scope of work to include work activities as per the approved project work schedule which is to be valuated and certified by UNDP Engineer to qualify for payment
* Submit progress report including a summary of activity progress with photographs showing works completed.
* Submit list of workers (not less than 70 with 10-15% being women) who MUST have worked minimum of 10days on the project
* Submit hardcopy of invoice
* Site walk along with UNDP Engineer to inspect and certify completed milestone item of works
 | 40% | (Within Week 4- 7 of Contract commencement date) |
| **Milestone No. 3** | **35% payment upon completion of the outstanding items thus completing 100% works in the BoQ, duly certified by the UNDP Civil Engineer.*** Complete 100% of all outstanding items of work in the SoW as detailed in the BoQ/checklist.
* General paintings, finishes, clearing of site, washing & cleaning of the buildings and installation of visibilities with artistic works for gender segregation
* General testing of electrical fittings, plumbing and associated works
* Submit list of workers (not less than 30 with 10-15% being women) who MUST have worked minimum of 10days on the project
* Submit 35% invoice and project completion report
 | 35% | (Within 7-9 weeks after the commencement date) |
| Millstone No. 4 | Final payment. Retention of 5% shall be paid after post-completion inspection and certification report by the authorized UNDP nominated engineer that defects which occurred within 6 months of practical completion have been satisfactorily repaired. | 5% | 24 weeks after the substantial completion date. |

1. **TECHNICAL TEAM**
2. **Two (2) Civil Engineers**–A minimum of 5 years work experience in the rehabilitation/construction works & must have handled at least 3 projects of similar nature and complexity equivalent to this assignment. Should have a Degree in Civil Engineering. COREN Registered. CV and certificates should be provided.
3. **Three (3) Foremen:** A Qualified Foremen with 7 years of experience in civil works (construction/rehabilitation), should have a Higher Diploma in Civil Engineering/building as minimum. CV and certificates should be provided.
4. **One (1) HSSE Officer:** A minimum of 3 years’ relevant work experience in the rehabilitation/Renovation/construction works. Must have handled at least two (02) similar project in nature and complexity. Must present relevant qualification (Should have a Degree in Natural/Environmental Engineering or equivalent). Professional certification in Health Safety Security & Environment. CV and certificates should be provided.
5. **One (1) Site Electrical Engineer:** A minimum of 5 years’ work experience in the power rehabilitation/construction works & must have handled at least two (02) projects of similar in nature and complexity equivalent to this assignment. Should have a Degree in Electrical Engineering. COREN Registered. CV should be attached in Format provided in ITB Document. CV and certificates should be provided.
6. **CONSTRUCTION EQUIPMENT/MACHINERY PROPOSED IS AS FOLLOWS**

| **S/N** | **EQUIPMENT** | **QUANTITY** |
| --- | --- | --- |
| 1 | Concrete mixer 10 m3 | 3 |
| 2 | Levelling Equipment/Survey tools | 1 |
| 3 | Poker Vibrator | 3 |
| 4 | Water tank 10,000 Ltr. | 3 |
| 5 | 3 kVA Generator  | 2 |
| 6 | Operational Project Vehicle (Toyota Hilux or equivalent)  | 1 |
| 7 | High Resolution Digital Camera | 1 |

1. **Previous Experience & Financial Standing**

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| Minimum 5 years of relevant experience (Renovation /Construction/Rehabilitation works).Evidence of Minimum 5 contracts of similar value, nature and complexity implemented over the last 5 years. One of the contracts must exceed NGN 100,000,000.Statement of Satisfactory Performance from the Top three (3) Clients in terms of Contract Value for similar assignments over the last 5 years. |
| Please submit Latest Audited Financial Statement (Income Statement and Balance Sheet) including Auditor’s Report for the past three years **[2017-2018-2019].**Bidders having completed and certified Audited Financial Statements for 2020 can also submit to be considered for evaluation. Minimum annual turnover of **NGN 100,000,000** in any single year in the last 4 years.  |

1. **General Requirements**

 Reports, Meetings and Work-Plan (Time-schedule)

The contractor is expected to submit weekly progress report, mentioning in the report the following:

• The activities which have been done during that week,

• The materials provided to the site.

• The weather conditions

• The challenges and delay in the project.

• The number of labors for each day of the week.

• Progress of work related to the quantities.

• Photographs showing progress of works.

There will weekly meeting between UNDP engineer and the contractor.

The contractor is expected to follow submitted and approved work schedule (work-plan) and changes should be communicated and approved by Supervising Engineer before proceeding.

The contractor must submit the milestone progress report with each request for milestone payment. The As-built drawings should be submitted with the progress report of milestone No. 3.

**Health and Safety**

The contractor is fully responsible for the safety of operations in the site. Contractor must follow the below:

* Provide his staff with PPE, helmet, vest and safety shoes.
* Provide the project site and the holes with safety tape.
* Provide first Aid kit to the site.

**COVID 19**

The contractor must provide staffs with face masks and keep the social distance at work.