PHILIPPINE BIDDING DOCUMENTS

CONSTRUCTION OF TWO (2)-UNIT TOWER OBSERVATORY SPACE FOR TELESCOPE OF THE BANGSAMORO DARU'L IFTA (RE-BID)

Government of the Republic of the Philippines

Sixth Edition
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Republic of the Philippines
BANGSAMORO AUTONOMOUS REGION IN MUSLIM MINDANAO
OFFICE OF THE CHIEF MINISTER
BIDS AND AWARDS COMMITTEE
Bangsamoro Government Center, Governor Gutierrez Avenue, Rosary Heights VII, Cotabato City 9600

Invitation to Bid

Construction of Two (2)-unit Tower Observatory Space for Telescope of the Bangsamoro Daru'l Ifta

IB No.: BDI-042024-01

1. The **Office of the Chief Minister, Bangsamoro Autonomous Region in Muslim Mindanao (OCM-BARMM)**, through the **General Appropriations Act of the Bangsamoro of 2022** intends to apply the sum of **One Million Eight Hundred Ten Thousand Six Hundred Ten Pesos (PHP 1,810,610.00)** being the Approved Budget for the Contract (ABC) to payments under the contract for the **Construction of Two (2)-unit Tower Observatory Space for Telescope of the Bangsamoro Daru'l Ifta (Re-bid).**

   Bids received in excess of the ABC for each lot shall be automatically rejected during the bid opening.

2. The **OCM-BARMM** now invites bids for the above Procurement Project. Completion of the Works is required within **120 working Days**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

4. Interested bidders may obtain further information from **OCM-BARMM** and inspect the Bidding Documents at the address given below from **8:00 AM – 5:00 PM**.

5. A complete set of Bidding Documents may be acquired by interested Bidders from **April 29 to May 20, 2024, 8:30 a.m.,** from the given address and website(s) below upon payment of the applicable fee for the Bidding Documents, in the amount of **Five Thousand Pesos (PHP 5,000.00)**, pursuant to the latest Guidelines issued by the GPPB. The Procuring Entity shall allow the bidder to present its proof of payment for the fees in person.

The bidder or its duly authorized representative shall present the following documents when purchasing the bidding documents, to wit:

a. Letter of Intent;
b. Proof of Authority. i.e., Special Power of Attorney or Secretary's Certificate; and
c. Valid Government issued I.D of the owner or its duly authorized representative.

6. The OCM-BARMM will hold a **Pre-Bid Conference**[1] on **May 7, 2024, 9:00 a.m.via Zoom Teleconference**. The Zoom details may be requested at ocmbac@bangsamoro.gov.ph.

7. Bids must be duly received by the BAC Secretariat through **manual submission at Bangsamoro Planning and Development Authority (BPDA) Conference Hall 1, 3rd Floor, BPDA, Bangsamoro Government Center, Cotabato City, on or before May 20, 2024, 8:30 a.m**. Late bids shall not be accepted.

   All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 14.

8. **Bid opening shall be on May 20, 2024, 9:00 a.m. at Bangsamoro Planning and Development Authority (BPDA) Conference Hall 1, 3rd Floor, BPDA, Bangsamoro Government Center, Cotabato City**. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

9. The **OCM-BARMM** reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

10. **For further information, please refer to:**

a. Sale of Bidding b. Query on How to submit bids c. Links for online connectivity for procurement activities d. Written Clarifications on the project	**Bids and Awards Committee Secretariat** ocmbac@bangsamoro.gov.ph 0917-831-7214

[1] May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a Pre-Bid Conference.

Plans, Drawings, and Bill of Quantities	**Bangsamoro Daru'l Ifta**

11. You may visit the following websites:

For downloading of Bidding Documents:

https://bangsamoro.gov.ph/transparency/bids-and-awards-commitee/#ITB

Sgd.
MOHD ASNIN K. PENDATUN
Chairperson**,** Bids and Awards Committee

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, **OCM-BARMM** invites Bids for the **Construction of Two (2)-unit Tower Observatory Space for Telescope of the Bangsamoro Daru'l Ifta (Re-bid)**, with Project Identification Number BDI-042024-01.

The Procurement Project (referred to herein as "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for **GAAB 2022** in the amount of **PHP 1,810,610.00**.

2.2. The source of funding is: **NGA, the General Appropriations Act or Special Appropriations.**

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive,

coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that: **Subcontracting is not allowed.**

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date, time and place as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail

indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.

10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.

10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. Payment of the contract price shall be made in: Philippine Pesos.

15. Bid Security

15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

15.2. The Bid and bid security shall be valid for *180 calendar days counted from the date of opening of bids*. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date, time and place as indicated in paragraph 7 of the **IB.**

18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "passed" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.

19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the

Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause	
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: a. Construction of Tower Observatory Space or any other contracts analogous thereto; and b. at least equivalent to the 50% of the ABC. However, contractors under Small A and Small B categories without similar experience on the contract to be bid may be allowed to bid if the cost of such contract is not more than the Allowable Range of Contract Cost (ARCC) of their registration based on the guidelines as prescribed by the PCAB.
7.1	Not applicable.
10.3	PCAB License Requirement is: Size Range : Small B License Category: C&D
10.4	The key personnel must meet the required minimum years of experience set below:

Key Personnel	General Experience	Relevant Experience
1 Project Engineer	Construction	3 years
1 Material Engineer	Material Testing	3 years
1 Safety Officer	Safety Management	2 years
1 Construction Foreman	Supervision	2 years
3 Skilled Laborers	Skilled Personnel	2 years
1 Health Personnel	Health in Construction	2years

10.5	The minimum major equipment requirements are the following:

Equipment	Number of Units
Bar Cutter	2
Bar Bender	2
Plate Compactor	2
One Bagger Mixer	2
Dump truck	2
Backhoe (0.80m^2)	2
Welding Machine	2
Cutting Outfit	2

12	Not applicable.
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than **two percent (2%) of the ABC for each LOT**, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than **five percent (5%) of the ABC for each LOT** if bid security is in Surety Bond.

16	Each Bidder are requested to submit one (1) original copy and two (2) certified true copies certified by the owner or its duly authorized representative whose full name and designation should be indicated below the signature. Documents that are emanating from the bidder should be originally signed by the owner or its duly authorized representative, to wit: Statement of all ongoing government and private contract, Statement of Single Largest Completed Contract, Bid Securing Declaration, Technical Specifications, Omnibus Sworn Statement, Net Financial Contracting Capacity, Bid Form, Bill of Quantities, Detailed Estimates including summary sheet, and Cash Flow by Quarter. Each bidder shall submit its bid proposal to a one mother envelope that shall contain 3 more envelopes containing 3 copies of its technical and financial documents. Each of the 3 envelopes shall contain two more envelopes labeled as technical and financial component. The envelopes must be properly and separately marked and sealed.
19.2	Partial bids are not allowed.
21	**The following documents shall be submitted by the winning bidderwithin ten (10) calendar days from receipt of the Notice of Award:** 1. Program of Works 2. Manpower schedule; 3. Equipment/tools utilization schedule; 4. Construction safety and health program approved by MOLE; 5. S-Curve; and 6. PERT-CPM.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

2. Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Possession of Site

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC,** which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

7. Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined prima facie by the Procuring Entity that the Contractor has engaged, before, or during the

implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC.** If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the **SCC**,

materials and equipment delivered on the site but not completely put in place shall not be included for payment.

15. Operating and Maintenance Manuals

15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC.**

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	n/a
4.1	n/a
7.2	Fifteen (15) years.
10	Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	The Contractor shall submit the **Program of Work** to the Procuring Entity's Representative within **ten (10)** days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is [insert amount].
13	The amount of the advance payment **shall not exceed 15% of the total contract price and schedule of payment.**
14	Materials and equipment delivered on the site but not completely put in place shall not be included for payment.
15.1	The date by which operating and maintenance manuals are required **upon substantial completion**. The date by which "as built" drawings are required **upon substantial completion**.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is [amount in local currency].

Section VI. Specifications

TECHNICAL SPECIFICATIONS

1. SITE WORKS

16. 1.1 General

The Engineer will establish the limits of work and designate all trees, shrubs, plants and other things to remain. The Contractor shall preserve all objects designated to remain.

17. 1.2 Clearing and Grubbing

All surface objects and all trees, stamps, roots and other protruding obstructions, not designated to remain, shall be cleared and/or grubbed, including mowing as required, except as provided below:

(1) Removal of undisturbed stumps and roots and nonperishable solid objects with a minimum of 900 mm (36 inches) below subgrade or slope of embankments will not be required.

(2) In areas outside of the grading limits of cut and embankment areas, stumps, and nonperishable solid objects shall be cut off not more than 150 mm (6 inches) above the ground line or low water level.

(3) In areas to be rounded at the top of cut slopes, stumps shall be cut off flush with or below the surface of the final slope line.

(4) Grubbing of pits, channel changes, and ditches will be required only to the depth necessitated by the proposed excavation within such areas.

Except in areas to be excavated, stump holes and other holes from which obstructions are removed shall be backfilled with suitable material and compacted to the required density.

If perishable material is burned, it shall be burned under the constant supervision of competent watchmen at such times and in such a manner that the surrounding vegetation, other adjacent property, or anything designated to remain on the right of way will not be jeopardized.

Materials, debris and perishable materials may be disposed off by methods and at locations approved by the Engineer, on or off the subproject. If the disposal is by burying, the debris shall be placed with the material so disturbed so as to avoid nesting. The top layer of material buried shall be covered with at least 300 mm (12 inches) of earth or other approved material and shall be graded, shaped and compacted to present a pleasing appearance. If the disposal location is off the subproject the Contractor shall make all necessary arrangements with property owners in writing for obtaining suitable disposal locations which are outside the limits of view from the subproject. The Cost involved shall be included in the unit bid price. A copy of such agreement shall be furnished to the Engineer. The disposal areas shall be seeded, fertilized, and mulched at the Contractor's expense.

Woody material may be disposed off by chipping. The wood chips may be used for mulch, slope erosion control, or may be uniformly spread over selected areas as directed by the Engineer. Wood chips used as mulch for slope erosion control shall have a maximum thickness of 12 mm (1/2 inch) and faces not exceeding 3900 sq mm (6 square inches) on any individual surface area. Wood chips not designated for use under other sections shall be spread over the designated areas in layers not to exceed 75 mm (3 inches) loose thickness. Diseased trees shall be buried or disposed off as directed by the Engineer.

All merchantable timber in the clearing area that has not been removed from the right of way prior to the beginning of construction shall become the property of the Proponent/Beneficiaries, unless otherwise provided.

Low hanging branches and unsound or unsightly branches on trees or shrubs designated to remain shall be trimmed as directed. Branches of trees extending over the roadbed shall be trimmed to give a clear height of 6 m (20 feet) above the roadbed surface. All trimming shall be done by skilled workmen and in accordance with good tree surgery practices.

Individual trees or stumps designated by the Engineer for removal and located in areas other than those established for clearing, grubbing and roadside cleanup shall be removed and disposed off except trees removed shall be cut as nearly flush with the ground as practicable without removing stumps.

All designated salvable material shall be removed, without unnecessary damage, in sections or pieces which may be readily transported, and shall be stored by the Contractor at specified places on the subproject or as otherwise shown in the Special Provisions. Perishable and non-perishable materials shall be handled as directed by the Engineer. Basements or cavities left by structure removal shall be filled with acceptable material to the level of the surrounding ground and, if within the prism of construction, shall be compacted to the required density.

2. EARTHWORKS

Prior to starting excavation operations in any area, all necessary clearing and grubbing in that area shall have been performed in conformance with Item 1, Clearing and Grubbing.

The Contractor shall notify the Engineer sufficiently in advance of the beginning of any excavation so that cross sectional elevations and measurements may be taken on the undisturbed ground. The natural ground adjacent to the structure shall not be disturbed without permission of the Engineer.

Trenches or foundation pits for structures or structure footings shall be excavated to the lines and grades or elevations shown on the Plans or as staked by the Engineer. They shall be of sufficient size to permit the placing of structures or structure footings of the full width and length shown. The elevations of the bottoms of footings, as shown on the Plans, shall be considered as approximate only and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary, to secure a satisfactory foundation.

Boulders, logs, and other objectionable materials encountered in excavation shall be removed.

After each excavation is completed, the Contractor shall notify the Engineer to that effect and no footing, bedding material or pipe culvert shall be placed until the Engineer has approved the depth of excavation and the character of the foundation material.

18. 2.1 Roadway Excavation

Roadway excavation will include excavation and grading for roadways, parking areas, intersections, approaches, slope rounding, benching waterways and ditches; removal of unsuitable material from the roadbed and beneath embankment area; and excavating selected material found in the roadway as ordered by the Engineer for specific use in the improvement. Roadway excavation will be classified as "unclassified excavation", "rock excavation", "common excavations", or "muck excavation" as indicated in the Bill of Quantities and hereinafter described

(1) Unclassified Excavation. Unclassified excavation shall consist of the excavation and disposal of all materials regardless of its nature, or not classified and included in the Bill of Quantities under other pay item.

(2) Rock Excavation. Rock excavation shall consist of igneous, sedimentary, and metamorphic rock which cannot be excavated without blasting or the use of rippers, and all boulders or other detached stones each having a volume of 1 cubic meter or more as determined by physical measurements or visually by the Engineer.

(3) Common Excavation. Common excavations are those not included in the Bill of Quantities under "rock excavations" or other pay item.

(4) Muck Excavation. Muck excavation shall consist of the removal and disposal of deposits of saturated or unsaturated mixtures of soils and organic matter not suitable for foundation materials regardless of moisture content.

19. 2.2 Borrow Excavation

Borrow excavation shall consist of the excavation and utilization of approved material required for the construction of embankments or for other portions of the work, and shall be obtained from sources approved by the Engineer and the following:

(1) Borrow, Case 1. Borrow Case 1 will consist of material obtained from sources designated on the Plans or in the Special Provisions.

(2) Borrow, Case 2. Borrow, Case 2 will consist of material obtained from sources provided by the Contractor.

The material shall meet the quality requirements determined by the Engineer unless otherwise provided in the Contract.

2.3 Structure Excavation

This Item shall consist of the necessary excavation for foundations of bridges, culverts, underdrains, and other structures not otherwise provided for in the Specifications. Except as otherwise provided for pipe culverts, the backfilling of completed structures and the disposal of all excavated materials shall be in accordance with these Specifications and in reasonably close conformity with the Plans or as established by the Engineer.

This Item shall include necessary diverting of live streams, bailing, pumping, draining, sheeting, bracing, and the necessary construction of cribs and cofferdams, and furnishing the materials therefore, and the subsequent removal of cribs and cofferdams and the placing of all necessary backfill.

It shall also include the furnishing and placing of approved foundation fill material to replace unsuitable material encountered below the foundation elevation of structures.

No allowance will be made for classification of different types of material encountered.

7.2. 2.3 Construction Requirements

20. 2.3.1 General

When there is evidence of discrepancies on the actual elevations and those shown on the Plans, a pre-construction survey referred to the datum plane used in the approved Plan shall be undertaken by the Contractor under the control of the Engineer to serve as basis for the computation of the actual volume of the excavated materials.

All excavations shall be finished to reasonably smooth and uniform surfaces. No materials shall be wasted without authority of the Engineer. Excavation operations shall be conducted so that material outside of the limits of slopes will not be disturbed. Prior to excavation, all necessary clearing and grubbing in that area shall have been performed.

21. 2.3.2 Conservation of Topsoil

Where provided for on the Plans or in the Special Provisions, suitable topsoil encountered in excavation and on areas where embankment is to be placed shall be removed to such extent and to such depth as the Engineer may direct. The removed topsoil shall be transported and deposited in Storage piles at locations approved by the Engineer. The topsoil shall be completely removed to the required depth from any designated area prior to the beginning of regular excavation or embankment work in the area and shall be kept separate from other excavated materials for later use.

22. 2.3.3 Utilization of Excavated Materials

All suitable material removed from the excavation shall be used in the formation of the embankment, subgrade, shoulders, slopes, bedding, and backfill for structures, and for other purposes shown on the Plans or as directed.

The Engineer will designate as unsuitable those soils that cannot be properly compacted in embankments. All unsuitable material shall be disposed off as shown on the Plans or as directed without delay by the Contractor.

Only approved materials shall be used in the construction of embankments and backfill. All unsuitable materials shall be disposed off as shown on the Plans or as directed.

All excess material, including rock and boulders that cannot be used in embankments, shall be disposed off as directed.

Material encountered in the excavation and determined by the Engineer as suitable for topping, road finishing, slope protection, or other purposes shall be conserved and utilized as directed by the Engineer.

Borrow material shall not be placed until after the readily accessible roadway excavation has been placed in the fill, unless otherwise permitted or directed by the Engineer. If the Contractor places more borrow than is required and thereby causes a waste of excavation, the amount of such waste will be deducted from the borrow volume.

23. 2.3.4 Pre-watering

Excavation areas and borrow pits may be pre-watered before excavating the material. When pre-watering is used, the areas to be excavated shall be moistened to the full depth, from the surface to the bottom of the excavation. The water shall be controlled so that the excavated material will contain the proper moisture to permit compaction to the specified density with the use of standard compacting equipment. Pre-watering shall be supplemented where necessary, by truck watering units to assure that the embankment material contains the proper moisture at the time of compaction.

The Contractor shall provide drilling equipment capable of suitably checking the moisture penetration to the full depth of the excavation.

24. 2.3.5 Presplitting

Unless otherwise provided in the Contract, rock excavation, which requires drilling and shooting, shall be presplit.

Presplitting to obtain faces in the rock and shale formations shall be performed by: (1) drilling holes at uniform intervals along the slope lines, (2) loading and stemming the holes with appropriate explosives and stemming material, and (3) detonating the holes simultaneously.

Prior to starting drilling operations for presplitting, the Contractor shall furnish the Engineer a plan outlining the position of all drill holes, depth of drilling, type and explosives to be used, loading pattern and sequence of firing. The drilling and blasting plan is for record purposes only and will not absolve the Contractor of his responsibility for using proper drilling and blasting procedures. Controlled blasting shall begin with a short test section of a length approved by the Engineer. The test section shall be presplit, production drilled and blasted, and sufficient material excavated whereby the Engineer can determine if the Contractor's methods are satisfactory. The Engineer may order discontinuance of the presplitting when he determines that the materials encountered have become unsuitable for being presplit.

The holes shall be charged with explosives of the size, kind, strength, and at the spacing suitable for the formations being presplit, and with stemming material which passes a 9.5 mm (3/8 inch) standard sieve and which has the qualities for proper confinement of the explosives.

The finished presplit slope shall be reasonably uniform and free of loose rock. Variance from the true plane of the excavated back slope shall not exceed 300 mm (12 inches). However, localized

irregularities or surface variations that do not constitute a safety hazard or an impairment to drainage courses or facilities will be permitted.

A maximum offset of 600 mm (24 inches) will be permitted for a construction working bench at the bottom of each lift for use in drilling the next lower presplitting pattern.

25. 2.3.6 Excavation of Ditches, Gutters, etc.

All materials excavated from side ditches and gutters, channel changes, irrigation ditches, inlet and outlet ditches, toe ditches, furrow ditches, and such other ditches as may be designated on the Plans or staked by the Engineer.

Ditches shall conform to the slope, grade, and shape of the required cross-section, with no projections of roots, stumps, rock, or similar matter. The Contractor shall maintain and keep open and free from leaves, sticks, and other debris all ditches dug by him until final acceptance of the work.

Furrow ditches shall be formed by plowing a continuous furrow along the line staked by the Engineer. Methods other than plowing may be used if acceptable to the Engineer. The ditches shall be cleaned out by hand shovel work, by ditcher, or by some other suitable method, throwing all loose materials on the downhill side so that the bottom of the finished ditch shall be approximately 450 mm (18 inches) below the crest of the loose material piled on the downhill side. Hand finish will not be required, but the flow lines shall be in satisfactory shape to provide drainage without overflow.

26. 2.3.7 Excavation of Roadbed Level

Rock shall be excavated to a depth of 150 mm (6 inches) below subgrade within the limits of the roadbed, and the excavation backfilled with material designated on the Plans or approved by the Engineer and compacted to the required density.

When excavation methods employed by the Contractor leave undrained pockets in the rock surface, the Contractor shall, at his own expense, properly drain such depressions or when permitted by the Engineer fill the depressions with approved impermeable material.

Material below subgrade, other than solid rock shall be thoroughly scarified to a depth of 150 mm (6 inches) and the moisture content increased or reduced, as necessary, to bring the material throughout this 150 mm layer to the moisture content suitable for maximum compaction. This layer shall then be compacted.

27. 2.3.8 Borrow Areas

The Contractor shall notify the Engineer sufficiently in advance of opening any borrow areas so that cross-section elevations and measurements of the ground after stripping may be taken, and the borrow material can be tested before being used. Sufficient time for testing the borrow material shall be allowed.

All borrow areas shall be bladed and left in such shape as to permit accurate measurements after excavation has been completed. The Contractor shall not excavate beyond the dimensions and elevations established, and no material shall be removed prior to the staking out and

cross-sectioning of the site. The finished borrow areas shall be approximately true to line and grade established and specified and shall be finished as prescribed in these Specifications. When necessary to remove fencing, the fencing shall be replaced in at least as good condition as it was originally. The Contractor shall be responsible for the confinement of livestock when a portion of the fence is removed.

28. 2.3.9 Removal of Unsuitable Material

Where the Plans show the top portion of the roadbed to be selected topping, all unsuitable materials shall be excavated to the depth necessary for replacement of the selected topping to the required compacted thickness.

Where excavation to the finished graded section results in a subgrade or slopes of unsuitable soil, the Engineer may require the Contractor to remove the unsuitable material and backfill to the finished graded section with approved material. The Contractor shall conduct his operations in such a way that the Engineer can take the necessary cross-sectional measurements before the backfill is placed.

The excavation of muck shall be handled in a manner that will not permit the entrapment of muck within the backfill. The material used for backfilling up to the ground line or water level, whichever is higher, shall be rock or other suitable granular material selected from the roadway excavation, if available. If not available, suitable material shall be obtained from other approved sources. Unsuitable material removed shall be disposed off in designated areas shown on the Plans or approved by the Engineer.

2.3.10 Structures other than pipe culverts. All rock or other hard foundation materials shall be cleaned of all loose materials and cut to a firm surface, either level, stepped, or serrated as directed by the Engineer. All seams or crevices shall be cleaned and grouted. All loose and disintegrated rocks and thin strata shall be removed. When the footing is to rest on material other than rock, excavation to final grade shall riot be made until just before the footing is to be placed. When the foundation material is soft or mucky or otherwise unsuitable, as determined by the Engineer, the Contractor shall remove the unsuitable material and backfill with approved granular material. This foundation fill shall be placed and compacted in 150 mm (6 inches) layers up to the foundation elevation.

When foundation piles are used the excavation of each pit shall be completed before the piles are driven and any placing of foundation fill shall be done after the piles are driven. After the driving is completed, all loose and displaced materials shall be removed, leaving a smooth, solid bed to receive the footing.

3. REINFORCEMENT BARS

7.3. 3.1 Material Requirements

Unless otherwise specified the reinforcing steel bars shall meet the requirements AASHTO M 31 grade 33 (230mpa) testing shall be in accordance with AASHTO T-68 prior to deliver on site.

Steel reinforcement shall be stored above the surface of the ground, platform or other supports provided to make it free from mechanical injury and corrosion.

7.4. 3.2 Construction Requirements

29. 3.2.1 Order Lists

Before materials are ordered, all order lists and bending diagrams shall be furnished by the Contractor, for approval of the Engineer. The approval of order lists and bending diagrams by the

Engineer shall in no way relieve the Contractor of responsibility for the correctness of such lists and diagrams. Any expense incident to the revisions of materials furnished in accordance with such lists and diagrams to make them comply with the Plans shall be borne by the Contractor.

30. 3.2.2 Protection of Material

Steel reinforcement shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected as far as practicable from mechanical injury and surface deterioration caused by exposure to conditions producing rust. When placed in the work, reinforcement shall be free from dirt, detrimental rust, loose scale, paint, grease, oil or other foreign materials. Reinforcement shall be free from injurious defects such as cracks and laminations. Rust, surface seams, surface irregularities, or mill scale will not be cause for rejection, provided the minimum dimensions, cross-sectional area and tensile properties of a hand wire brushed specimen meets the physical requirement for the size and grade of steel specified.

31. 3.2.3 Bending

All reinforcing bars requiring bending shall be cold-bent to the shapes shown on the Plans or required by the Engineer. Bars shall be bent around a circular pin having the following diameters (D) in relation to the diameter of the bar (d).

Nominal diameter (d), mm	Pin diameter (D)
10 to 20	6d
25 to 28	8d
32 and greater	10d

Bends and hooks in stirrups or ties may be bent to the diameter of the principal bar enclosed therein.

32. 3.2.4 Placing and Fastening

All steel reinforcement shall be accurately placed in the position shown on the Plans or required by the Engineer and firmly held there during the placing and setting of the concrete. Bars shall be tied at all intersections except where spacing is less than 300 mm in each direction, in which case, alternate intersections shall be tied. Ties shall be fastened on the inside.

Distance from the forms shall be maintained by means of stays, blocks, ties, hangers, or other approved supports, so that it does not vary from the position indicated on the Plans by more than 6 mm. Blocks for holding reinforcement from contact with the forms shall be precast mortar blocks of approved shapes and dimensions. Layers of bars shall be separated by precast mortar blocks or by other equally suitable devices. The use of pebbles, pieces of broken stone or brick, metal pipe and wooden blocks shall not be permitted. Unless otherwise shown on the Plans or required by the Engineer, the minimum distance between bars shall be 40 mm. Reinforcement in any member shall be placed and then inspected and approved by the Engineer before the placing of concrete begins. Concrete placed in violation of this provision may be rejected and removal may be required. If fabric reinforcement is shipped in rolls, it shall be straightened before being placed. Bundled bars shall be tied together at not more than 1.8 m intervals.

33. 3.2.5 Splicing

All reinforcement shall be furnished in the full lengths indicated on the Plans. Splicing of bars, except where shown on the Plans, will not be permitted without the written approval of the Engineer. Splices shall be staggered as far as possible and with a minimum separation of not less than 40 bar diameters. Not more than one-third of the bars may be spliced in the same cross-section, except where shown on the Plans.

Unless otherwise shown on the Plans, bars shall be lapped a minimum distance of.

Splice Type	Grade 33 minimum lap	Grade 40 minimum lap	But not less than
Tension	24 bar dia	36 bar dia	300 mm
Compression	20 bar dia	24 bar dia	300 mm

In lapped splices, the bars shall be placed in contact and wired together. Lapped splices will not be permitted at locations where the concrete section is insufficient to provide minimum clear distance of one and one-third the maximum size of course aggregate between the splice and the nearest adjacent bar. Welding of reinforcing, steel shall be done only if detailed on the Plans or if authorized by the Engineer in writing. Spiral reinforcement shall be spliced by lapping at least one and a half turns or by butt welding unless otherwise shown on the Plans.

34. 3.2.6 Lapping of Bar Mat

Sheets of mesh or bar mat reinforcement shall overlap each other sufficiently to maintain a uniform strength and shall be securely fastened at the end and edges. The overlap shall not be less than one mesh in width.

4. CONCRETE WORKS

4.1 Structural Concrete

This Item shall consist of furnishing, placing, and finishing concrete in all structures except pavements in accordance with this Specification and conforming to the lines, grades, and dimensions shown on the Plans. Concrete shall consist of a mixture of Portland Cement, fine aggregate, coarse aggregate, admixtures when specified, and water mixed in the proportions specified or approved by the Engineer.

35. 4.2 Classes and Uses of Concrete

Five classes of concrete are provided for in this Item, namely: A, B, C, P, and Seal. Each class shall be used in that part of the structure as called for on the Plans.

The classes of concrete will generally be used as follows.

Class A - All superstructures and heavily reinforced substructures. The important parts of the structure included are slabs, beams, girders, columns, arch ribs, box culverts, reinforced abutments, retaining walls, reinforced footings, and large-diameter cast-in-place reinforced concrete piles (bored piles).

Class B - Footings, pedestals, massive pier shafts, pipe bedding, and gravity walls, unreinforced or with only a small amount of reinforcement.

Class C -Thin reinforced sections, railings, precast R. C. piles and cribbing, and for filler in steel grid floors.

Class P – Pre-stressed concrete structures and members.

Seal - Concrete deposited in water.

7.5. 4.3 Material Requirements

36. 4.3.1 Portland Cement

37. The cement shall be Portland cement Type I, complying in all respects with ASTM C150 (AASHTO M85). All cement shall be manufacturer's standard grey cement unless otherwise specified on the Drawings. One brand of cement as approved by the Engineer shall be used for all concrete works throughout the project unless otherwise authorized by the Engineer in writing.

38. 4.3.2 Fine Aggregate

39. Fine aggregates shall be river-run, clean, hard course river sand or crushed river sand free from injurious amount of clay, loam and/or other vegetable.

40. 4.3.3 Coarse Aggregate

The gradation of the coarse aggregate shall conform to Table 4.3.3.

Table 4.3.3 - Grading Requirements for Coarse Aggregate

Sieve Designation		Mass Percent Passing				
Standard mm	Alternate US Standard	Class A	Class B	Class C	Class P	Class Seal
63	2 ½ "		100			
50	2"	100	95-100			
37.5	1 ½ "	95-100	-			100
25	1"	-	35-70	100	100	95-100
19.0	¾ "	35-70	-	100	95-100	-
12.5	½ "	-	10-30	90-100	-	25-60
9.5	3/8"	10-30	-	40-70	20-55	-
4.75	No. 4	0-5	0-5	0-15*	0-10*	0-10*

*The measured cement content shall be within plus or minus 2 mass percent of the design cement content.

4.3.4 Reinforcing steel

It shall conform to the requirements set in Item 3.

4.3.5 Water

Water shall be clean, potable and free from deleterious amount of acids, alkalis, oil or other organic matter.

7.6. 4.4 Production Requirements

41. 4.4.1 Proportioning and Strength of Structural Concrete

The concrete materials shall be proportioned in accordance with the requirements for each class of concrete as specified in Table 4.4.1, using the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1, "Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete". Other methods of proportioning may be employed in the mix design with prior approval of the Engineer. The mix shall either be designed or approved by the Engineer. A change in the source of materials during the progress of work may necessitate a new mix design.

Table 4.4.1 - Composition and Strength of Concrete for Use in Structures

Class of Concrete	Minimum Cement Content per m^3 kg (bag**)	Maximum Water/ Cement Ratio kg/kg	Consistency Range in Slump mm (inch)	Designated Size of coarse Aggregate Square Opening Std. mm	Minimum Compressive Strength of 150 x300 mm concrete cylinder specimen at 28 days MN/m^2 (psi)
A	360 (9 bags)	0.53	50-100 (2-4)	37.5-4.75 (1½" -No. 4)	20.7 (3000)
B	320 (8 bags)	0.58	50-100 (2-4)	50-4.75 (2"-No.4)	16.5 (2400)
C	380 (9.5 bags)	0.55	50-100 (2-4)	12.5-4.75 (½" -No. 4)	20.7 (3000)

P	440 (11 bags)	0.49	100 max. (4 max.)	19.0-4.75 (3/4" -No. 4)	37.7 (5000)
Seal	380 (9.5 bags)	0.58	100-200 (4-8)	25-4.75 (1" -No. 4)	20.7 (3000)

* The measured cement content shall be within plus or minus 2 mass percent of the design cement content.

□□ Based on 40 kg bag

In any case, strength of the sample tested is accounted. Admixture is applicable if necessary to attain the specified strength. As work progresses, at least one(1) set consisting of four (4) concrete cylinder test specimens shall be obtained per class of concrete or as directed by the Engineer. The cylinder shall be prepared, cured and tested at the specified date. A minimum compressive strength of 2130 psi is required for 7 day strength of trial mix sample in order to proceed the casting to any concrete works. Structures represented by concrete cylinder sample deficient by more than 10 percent of its required strength are subject for removal and replacement at Sub-Contractor's expense. Remove and replace for concrete below 2700 psi after 28th days.

Concrete shall have a consistency such that it will be workable in the required position and will flow around reinforcing steel. The reasonable range of slump for various type of concrete construction is as shown below:

Class of Concrete	*Consistency Range in Slump, mm (inch)*
A	*50-100 (2-4)*
B	*50-100 (2-4)*
Seal	*100-200(4-8)*

4.4.2 Mixing Concrete: General

Concrete shall be thoroughly mixed in a mixer of an approved size and type that will insure a uniform distribution of the materials throughout the mass.

All concrete shall be mixed in mechanically operated mixers. No hand mixing shall be allowed. Mixing plant and equipment for transporting and placing concrete shall be arranged with an ample auxiliary installation to provide a minimum supply of concrete in case of breakdown of machinery or in case the normal supply of concrete is disrupted. The auxiliary supply of concrete shall be sufficient to complete the casting of a section up to a construction joint that will meet the approval of the Engineer.

Equipment having components made of aluminum or magnesium alloys, which would have contact with plastic concrete during mixing, transporting, or pumping of Portland Cement concrete shall not be used.

Concrete mixers shall be equipped with adequate water storage and a device for accurately measuring and automatically controlling the amount of water used.

Materials shall be measured by weighing. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. The accuracy of all weighing devices except that for water shall be such that successive quantities can be measured to within one percent of the desired amounts. The water measuring device shall be accurate to plus or minus 0.5 mass percent. All measuring devices shall be subject to the approval of the Engineer. Scales and measuring devices shall be tested at the expense of the Contractor as frequently as the Engineer may deem necessary to insure their accuracy.

Weighing equipment shall be insulated against vibration or movement of other operating equipment in the plant. When the entire plant is running, the scale reading at cut-off shall not vary from the weight designated by the Engineer more than one mass percent for cement, 1½ mass percent for any size of aggregate, or one mass percent for the total aggregate in any batch.

Concrete mixers may be of the revolving drum or the revolving blade type. The mixing drum or blades shall be operated uniformly at the mixing speed recommended by the manufacturer. The pick-up and throw-over blades of mixers shall be restored or replaced when any part of section is worn 20 mm or more below the original height of the manufacturer's design. Mixers and agitators which have an accumulation of hard concrete or mortar shall not be used.

When bulk cement is used and volume of the batch is 0.5 m^3 or more, the scale and weigh hopper for Portland cement shall be separate and distinct from the aggregate hopper or hoppers. The discharge mechanism of the bulk cement weigh hopper shall be interlocked against opening before the full amount of cement is in the hopper. The discharging mechanism shall also be interlocked against opening when the amount of cement in the hopper is underweight by more than one mass percent or overweight by more than 3 mass percent of the amount specified.

When the aggregate contains more water than the quantity necessary to produce a saturated surface dry condition, representative samples shall be taken and the moisture content determined for each kind of aggregate.

The batch shall be charged into the mixer so that some water will enter in advance of cement and aggregate. All water shall be in the drum by the end of the first quarter of the specified mixing time.

Cement shall be batched and charged into the mixer so that it will not result in loss of cement due to the effect of wind, or in accumulation of cement on surfaces of conveyors or hoppers, or in other conditions which reduce or vary the required quantity of cement in the concrete mixture.

The entire content of a batch mixer shall be removed from the drum before materials for a succeeding batch are placed therein. The materials composing a batch, except water, shall be deposited simultaneously into the mixer.

All concrete shall be mixed for a period of not less than 1½ minutes after all materials, including water, are in the mixer. During the period of mixing, the mixer shall operate at the speed for which it has been designed.

Mixers shall be operated with an automatic timing device that can be locked by the Engineer. The time device and discharge mechanics shall be so interlocked that during normal operation no part of the batch will be discharged until the specified mixing time has elapsed.

The first batch of concrete materials placed in the mixer shall contain a sufficient excess of cement, sand, and water to coat the inside of the drum without reducing the required mortar content of the mix. When mixing is to cease for a period of one hour or more, the mixer shall be thoroughly cleaned.

As the program calls to generate local labor employment, concrete mixing shall be with the use of one-bagger mixer and shall be continued at least 1 ½ min. after all materials are in the mixing drum.

42. 4.4.3 Curing Concrete

All newly placed concrete shall be cured in accordance with this Specification unless otherwise directed by the Engineer. The curing method shall be one or more of the following.

Thru a "water method", the concrete shall be kept continuously wet by the application of water for a minimum period of **7 days** after the concrete has been placed.

The entire surface of the concrete shall be kept damp by applying water with an atomizing nozzle. Cotton mats, rugs, carpets, or earth or sand blankets maybe used to retain the moisture. At the expiration of the curing period the concrete surface shall be cleared of the curing medium.

The curing compound method may be used on concrete surfaces which are to be buried underground, surfaces where only Ordinary Surface Finish is to be applied and on which a uniform color is not required, and which will not be visible from public view.

The top surface of highway bridge decks shall be cured by either the curing compound method or the water method. The compound curing shall be applied progressively during the deck finishing operations. The water cure shall be applied not later than 4 hours after completion of the deck finishing.

When deemed necessary by the Engineer during periods of hot weather, water shall be applied to concrete surface being cured by the curing compound method or by the forms-in-place method until the Engineer determines that a cooling effect is no longer required.

Thru a "Waterproof Membrane Method", the exposed finished surfaces of concrete shall be sprayed with water using a nozzle that atomizes the flow so that a mist and not a spray is formed until the concrete has set, after which a curing membrane of waterproof paper or plastic sheeting shall be placed. The curing membrane shall remain in place for a period of not less than 72 hours. Waterproof paper and plastic sheeting shall conform to the specification of AASHTO M 171. The waterproof paper or plastic sheeting shall be formed into sheets of such width as to cover completely the entire concrete surface.

All joints in the sheets shall be securely cemented together in such a manner as to provide a waterproof joint. The joint seams shall have a minimum lap of 100 mm.

The sheets shall be securely weighed down by placing a bank of earth on the edges of the sheets or by other means satisfactory to the Engineer.

Should any portion of the sheets be broken or damaged within 72 hours after being placed, the broken or damaged portions shall be immediately repaired with new sheets properly cemented into place.

In sections of membrane which have lost their waterproof qualities or have been damaged to such an extent as to render them unfit for curing, the concrete shall not be used.

If the "Forms-in-place method" will be adopted, formed surfaces of concrete may be cured by retaining the form in place. The forms shall remain in place for a minimum period of 7 days after the concrete has been placed, except that for members over 50 cm in least dimensions, the forms shall remain in place for a minimum period of 5 days. Wooden forms shall be kept wet by watering during the curing period.

43. 4.4.4 Construction Joints

Construction joints shall be made only where shown on the Plans or called for in the pouring schedule, unless otherwise approved by the Engineer. Shear keys or reinforcement shall be used, unless otherwise specified, to transmit shear or to bond the two sections together.

Before depositing new concrete on or against concrete which has hardened, the forms shall be retightened. The surface of the hardened concrete shall be roughened as required by the Engineer, in a manner that will not leave loose particles of aggregate or damage concrete at the surface. It shall be thoroughly cleaned of foreign matter and laitance. When directed by the Engineer, the surface of the hardened concrete which will be in contact with new concrete shall be washed with water to his satisfaction. To ensure an excess of mortar at the juncture of the hardened and the newly deposited concrete, the cleaned and saturated surfaces, including vertical and inclined surfaces, shall first be thoroughly covered with a coating of mortar of the same proportion of sand and cement as the class of concrete used against which the new concrete shall be placed before the grout or mortar has attained its initial set.

The placing of concrete shall be carried continuously from joint to joint. The face edges of all joints which are exposed to view shall be carefully finished true to line and elevation.

44. 4.4.5 Compaction of Concrete

Concrete during and immediately after placing shall be thoroughly compacted. The concrete in walls, beams, columns, and the like shall be placed in horizontal layers not more than 30 cm thick except as hereinafter provided. When less than a complete layer is placed in one operation, it shall be terminated in a vertical bulkhead. Each layer shall be placed and compacted before the preceding layer has taken initial set to prevent injury to the green concrete and avoid surfaces of separation between the layers. Each layer shall be compacted so as to avoid the formation of a construction joint with a preceding layer.

The compaction shall be done by mechanical vibration. The concrete shall be vibrated internally unless special authorization of other methods is given by the Engineer or is provided herein. Vibrators shall be of a type, design, and frequency approved by the Engineer. The intensity of vibration shall be such as to visibly affect a mass of concrete with a 3 cm slump over a radius of at least 50 cm. A sufficient number of vibrators shall be provided to compact each batch properly immediately after it is placed in the forms. Vibrators shall be manipulated so as to thoroughly work the concrete thoroughly around the reinforcement and embedded fixtures and into the corners and angles of the forms. It shall be applied at the point of placing and in the area of friable placed concrete. The vibrators shall be inserted into and withdrawn from the concrete slowly. The vibration shall be of sufficient duration and intensity to compact the concrete thoroughly but

shall not be continued so as to cause segregation at any one point to the extent that localized areas of grout are formed. Application of vibrators shall be at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective. Vibration shall not be applied directly or through the reinforcement to sections or layers of concrete that have hardened to the degree that the concrete ceases to be plastic under vibration. It shall not be used to make concrete flow in the forms over distances so great as to cause segregation, and vibrators shall not be used to transport concrete in the forms of troughs or chutes.

4.4.6 Placing Concrete in Water

Concrete shall not be placed in water except with the approval of the Engineer and under his immediate supervision. In this case the method of placing shall be hereinafter specified.

Concrete deposited in water shall be Class A concrete with a minimum cement content of 400 kg/m^3 of concrete. The slump of the concrete shall be maintained between 10 and 20 cm. To prevent segregation, concrete shall be carefully placed in a compact mass, in its final position, by means of a tremie, a bottom-dump bucket, or other approved means, and shall not be disturbed after being placed.

A “tremie” shall consist of a tube having a diameter of not less than 250 mm constructed in sections having flanged couplings fitted with gaskets with a hopper at the top. The tremie shall be supported so as to permit free movement of the discharge and over the entire top surface of the work and so as to permit rapid lowering when necessary to retard or stop the flow of concrete. The discharge end shall be closed at the start of work so as to prevent water entering the tube and shall be completely submerged in concrete at all times. The tremie tube shall be kept full to the bottom of the hopper. When a batch is dumped into the hopper, the flow of concrete shall be induced by lightly raising the discharge end, but always kept in the placed concrete. The flow shall be continuous until the work is completed.

When the concrete is placed with a bottom-dump bucket, the top of the bucket shall be open. The bottom doors shall open freely downward and outward when tripped. The buckets shall be completely filled and slowly lowered to avoid backwash. It shall not be dumped until it rests on the surface upon which the concrete is to be deposited and when discharged shall be withdrawn slowly until well above the concrete.

45. 4.4.7 Casting Sections and Construction Joints

The concrete in each form shall be placed continuously. Placing of concrete on any such form shall not be allowed to commence unless sufficiently inspected, approved materials for the concrete are at hand, and labor and equipment are sufficient to complete the pour without interruption.

Joints in the concrete due to stopping work shall be avoided as much as possible. Such joints when necessary shall be constructed to meet the approval of the Engineer.

When the placing of concrete is temporarily discontinued, the concrete, after becoming firm enough to retain its shape, shall be cleaned of laitance and other objectionable material to a sufficient depth to expose sound concrete. Where a "faster edge" might be produced at a construction joint, as in the sloped top surface of a wingwall, an inset formwork shall be used to produce an edge thickness of not less than 15 cm in the succeeding layer. Work shall not be discontinued within 50 cm of the top of any face, unless provision has been made for a coping less than 50 cm thick, in which case if permitted by the Engineer, the construction joint may be made at the underside of coping.

Immediately following the discontinuance of placing concrete, all accumulations of mortar splashed upon the reinforcing steel and the surfaces of forms shall be removed. Dried mortar chips and dust shall not be puddled into the unset concrete. Care shall be exercised during the cleaning of the reinforcing steel not to injure or break the concrete steel bond at or near the surface of the concrete.

5. SIGNAGES

5.1 Project Signage

Within one (1) week from commencement of project implementation, contractor shall provide one temporary signboard at the project site. The signboard will be temporary erected using coco lumber as frame. Lay-out will be provided by MAFAR REGIONAL ENGINEERING SECTION.

Detailed in the engineering drawing, a permanent signboard shall be firmly attached to two (2) pedestals. Lay-out will be provided by MAFAR REGIONAL ENGINEERING SECTION..

6. PROJECT SAFETY

6.1 Temporary Protection of Streets and Sidewalks

Protection of streets, private roads and sidewalks shall be maintained them during the course of the work. In the event of damages incurred as cause of undertaking works, repair of the damages shall immediately be done.

The works must comply with local rules and regulations in connection with the use of streets.

6.2 Job Safety

The formulation and enforcement of an adequate safety program shall be the obligation of the Contractor with respect to all work under this contract.

The Contractor shall, as soon as practicable after commencement of the work, meet with the Engineer to present and discuss his plan for the establishment of such safety measures as may be necessary to provide all guard rails, barriers, or any other form of special protection to adjoining property, persons, vehicles and the like from injury and shall provide adequate barriers and other protection necessary to protect the general public.

6.3 Housekeeping

During the period of construction activity the contractor shall maintain the Works free from accumulation of Waste and surplus materials, rubbish, tools, equipment and machinery shall be removed, all sight-exposed surfaces shall be cleaned. The Contractor must ensure to:

- Execute regular cleaning to ensure that the site works, structures and accommodation quarters, are maintained free from accumulation of waste materials, rubbish, and other debris resulting from the site work operations and maintain the site in a neat and orderly condition at all times;
- Maintain drainage system. Free of debris and loose materials and is in an operation condition at all times;
- Dispose waste material, debris and rubbish at designated dumping areas, and in accordance with National and Provincial ordinances and anti-pollution laws

The project shall be left in condition ready for occupancy to the satisfaction of the Engineer.

7. PROJECT SUPERVISION

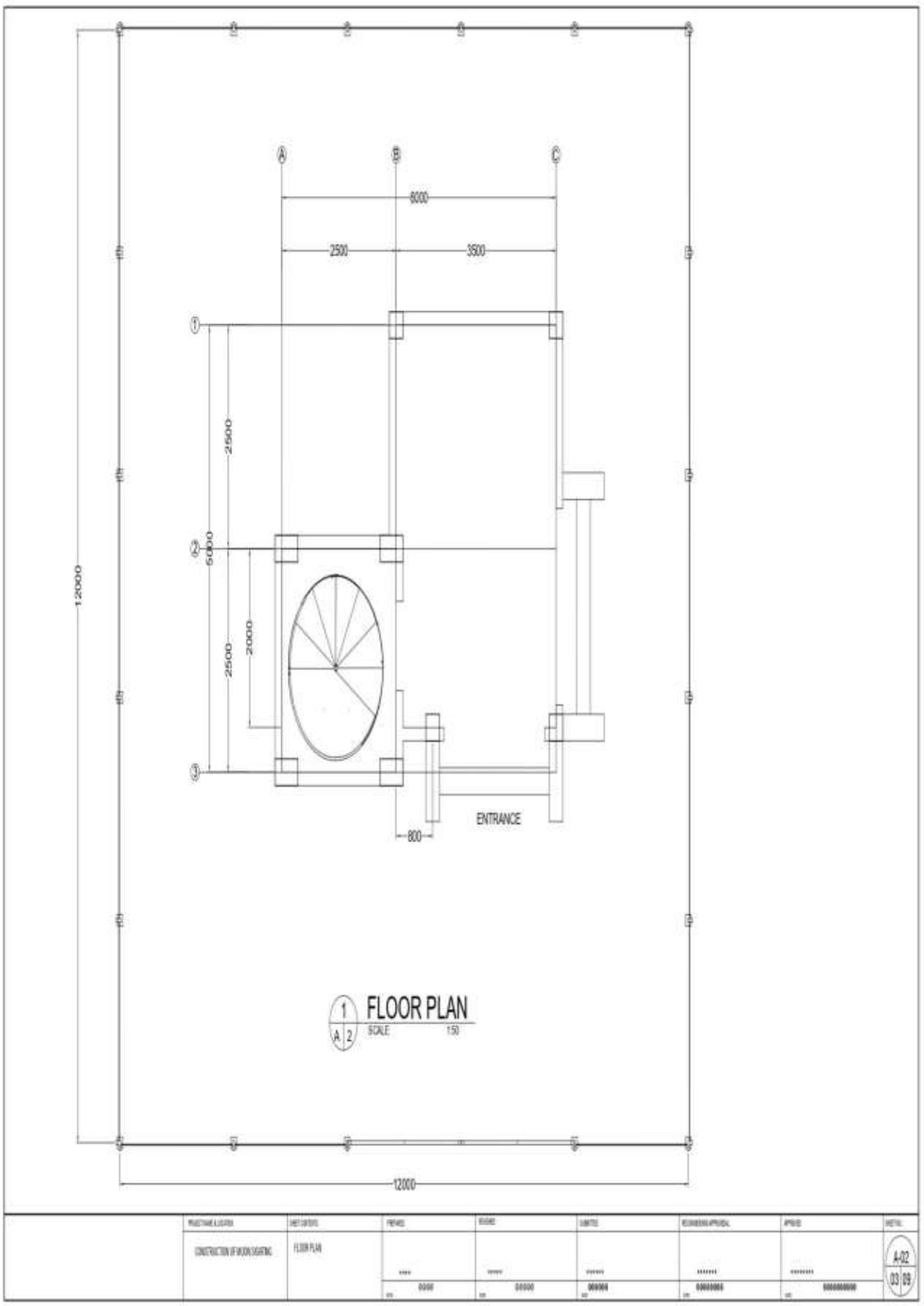
7.1 Site Supervisors

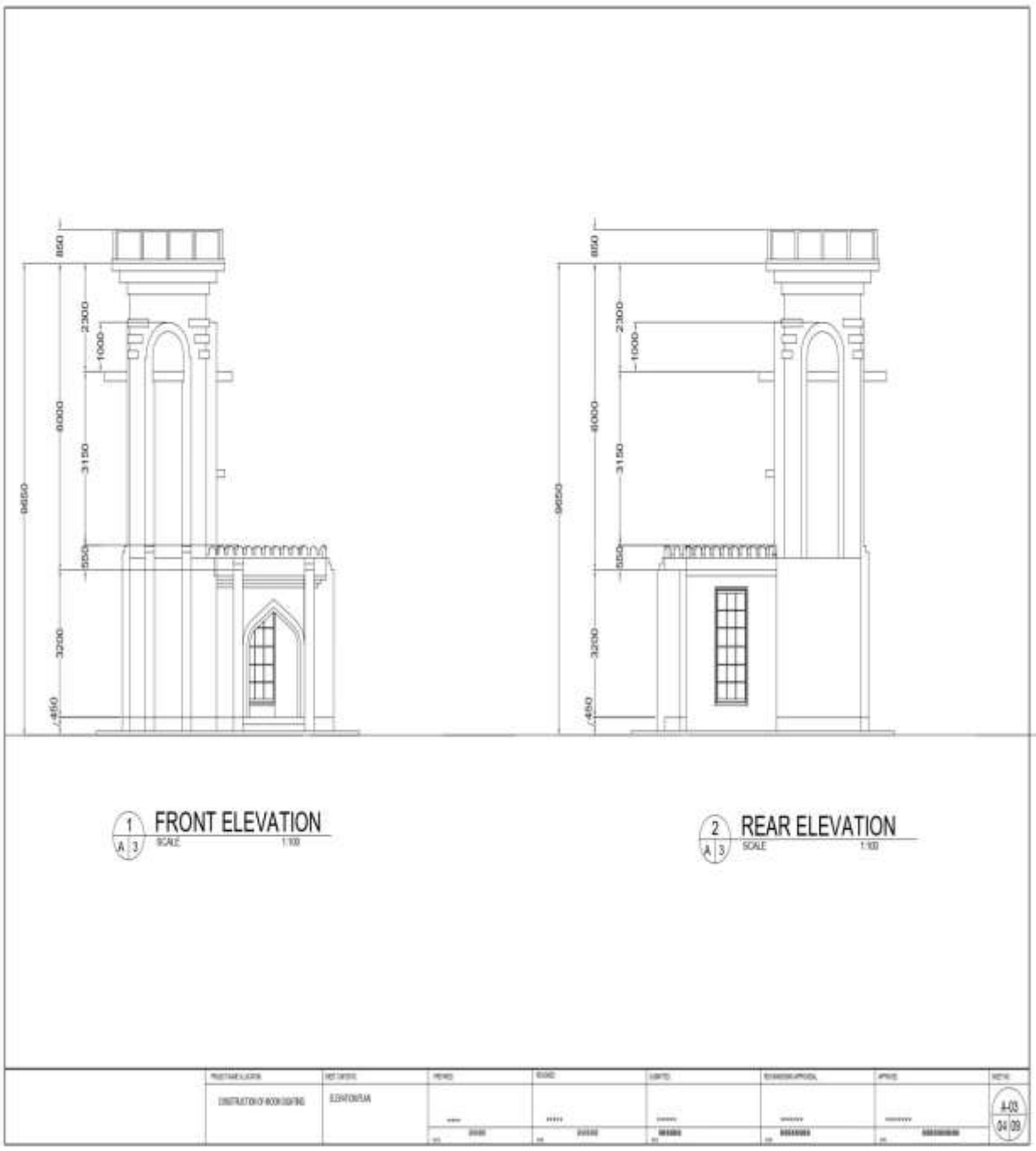
Provide Competent, Licensed Civil Engineer, duly accredited by the PRC. A Site Engineer of the contractor will be responsible for the direct supervision of the construction. He/She will lead the construction activities on field.

Foreman shall be likewise competent.

Section VII. Drawings

Perspective

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1
A 3
FRONT ELEVATION
SCALE 1:100
2
A 3
REAR ELEVATION
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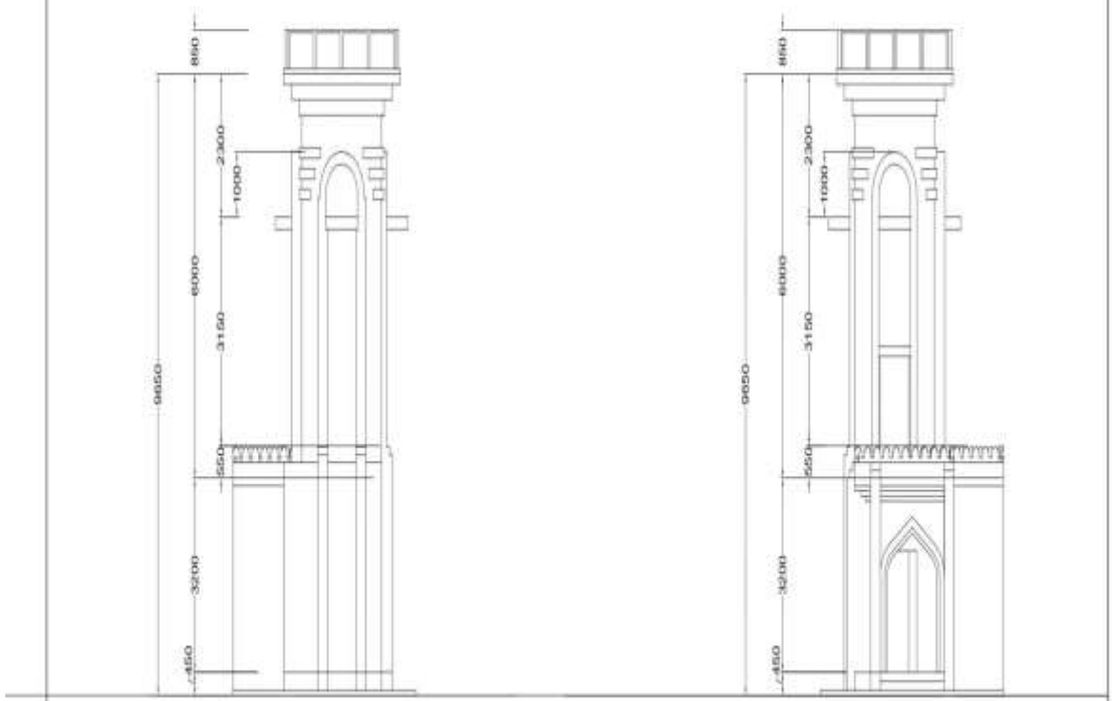
A-03
04 09



1 A4 LEFT ELEVATION
SCALE 1:100

2 A4 RIGHT ELEVATION
SCALE 1:100

	CONSTRUCTION OF WOOD SHOPING	ELEVATION PLAN	****	****	*****	*****	******	A-04 05 09

GENERAL CONSTRUCTION NOTES

GENERAL NOTES

1. IN THE INTERPRETATION OF THE DRAWING, INDICATED DIMENSIONS SHALL GOVERN AND DISTANCES AND SIZES SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
2. AS REFERENCE TO OTHER DRAWINGS, SEE ARCHITECTURAL DRAWINGS FOR DEPRESSIONS IN FLOOR SLABS, OPENINGS IN THE WALLS AND SLABS, INTERIOR PARTITIONS, LOCATION OF DRAINS ETC.
3. IN CASE OF DISCREPANCIES AS TO THE LAYOUT, DIMENSIONS, AND ELEVATIONS BETWEEN THE STRUCTURAL PLANS, AND ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL NOTIFY BOTH THE STRUCTURAL ENGINEER AND THE ARCHITECT.
4. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE ACI-318 _05_ BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND ALL STRUCTURAL STEEL WORK ACCORDING WITH AISC SPECIFICATION (8th EDITION) IN SO FAR AS THEY DO NOT CONFLICT WITH THE LOCAL BUILDING CODE REQUIREMENT.
5. ACI REFERS TO AMERICAN CONCRETE INSTITUTE, AISC TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND ASTM TO AMERICAN SOCIETY FOR TESTING MATERIALS.
6. CONSTRUCTION NOTES AND TYPICAL DETAILS APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED. MODIFY TYPICAL DETAILS AS DIRECTED TO MEET SPECIAL CONDITIONS.
7. SHOP DRAWINGS WITH ERECTION AND PLACING DIAGRAMS OF ALL STRUCTURAL STEEL, MISCELLANEOUS IRON, PRE-CAST CONCRETE, ETC. SHALL BE SUBMITTED FOR CONCRETE APPROVAL BEFORE FABRICATION.
8. CONTRACTOR SHALL NOTE AND PROVIDE ALL MISCELLANEOUS SLEEVES, SILLS, STOOLS, CLEANOUTS AND MECHANICAL INSERTS THAT ARE REQUIRED BY THE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS.
9. ALL RESULTS OF MATERIAL TESTING FOR CONCRETE, REINFORCING BARS, & STRUCTURAL STEEL MUST BE NOTED & APPROVED BY THE STRUCTURAL DESIGNER.

NOTES ON CONCRETE MIXES & PLACING

1. ALL CONCRETE SHALL DEVELOP A MIN. COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT (28) DAYS W/ CORRESPONDING MAXIMUM SIZE AGGREGATE & SLUMPS AS FOLLOWS:

LOCATION	28 DAYS STRENGTH	MAX. SIZE OF AGGREGATE	MAX. SLUMP
ALL OTHERS, INCLUDING SUSPENDED SLABS,	4000 PSI (27.6 MPa)	20mm	100mm
COLUMNS	4000 PSI (27.6 MPa)	20mm	100mm
BEAMS, SLABS	4000 PSI (27.6 MPa)	20mm	100mm
SLAB ON FILL	3000 PSI (27.6 MPa)	20mm	100mm

2. MINIMUM MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:
   - SUSPENDED SLABS ---------- 20mm
   - SLAB ON GRADE ---------- 40mm
   - WALLS ABOVE GRADE ---------- 20mm
   - BEAM STIRRUPS AND COLUMN TIES ---------- 40mm
   - WHERE CONCRETE IS EXPOSED TO EARTH BUT POURED AGAINST FORMS ---------- 50mm
   - WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST EARTH ---------- 75mm
3. CONCRETE SHALL BE DEPOSITED IN ITS FINAL POSITION WITHOUT SEGREGATION. RE-HANDLING OF PLACING SHALL BE DONE PREFERABLY WITH BUCKETS, BUCKETS OR WHEELBARROWS. NO CHUTES WILL BE ALLOWED EXCEPT TO TRANSFER CONCRETE FROM HOPPERS TO BUCKETS, WHEELBARROWS OR BUCKETS IN WHICH SIDE TWO SHALL NOT EXCEED SIX (6) METERS IN AGGREGATE LENGTH.
4. NO DEPOSITING OF CONCRETE SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS UNLESS AUTHORIZED IN WRITING BY THE DESIGNATED AND ONLY FOR UNUSUAL CONDITIONS WHERE VIBRATION IS EXTREMELY DIFFICULT TO ACCOMPLISH.
5. ALL ANCHOR BOLTS, DOWELS, AND OTHER INSERTS, SHALL BE PROPERLY POSITIONED & SECURED IN PLACE PRIOR TO PLACING OF CONCRETE.
6. ALL CONCRETE SHALL BE KEPT MOIST FOR A MINIMUM OF SEVEN CONSECUTIVE DAYS IMMEDIATELY AFTER POURING BY THE USE OF WET BURLAP, FOG SPRAYING, CURING COMPOUNDS OR OTHER APPROVED METHODS.
7. STRIPPING OF FORMS AND SHORES:
   - FOUNDATION ---------- 24 HRS.
   - SUSPENDED SLAB EXCEPT WHEN ADDITIONAL LOADS ARE IMPOSED ---------- 6 DAYS
   - WALLS ---------- 2 DAYS
   - BEAMS ---------- 14 DAYS
   - COLUMNS ---------- 2 DAYS
8. THE CONTRACTOR SHALL SUBMIT THE SCHEDULE OF POURING AND THE LOCATION OF THE CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER AT LEAST (4) DAYS PRIOR TO THE POURING FOR APPROVAL.
9. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ADEQUATE FORMS AND SHORINGS UNTIL THE CONCRETE MEMBERS HAVE ATTAINED THEIR WORKING STRENGTH AND STRENGTH.

NOTES ON FOOTINGS

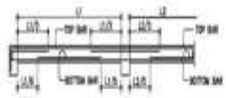
1. FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF _30_ KPa (_1000_ psf). CONTRACTOR SHALL REPORT TO THE ENGINEER, IN WRITING, THE ACTUAL SOIL CONDITIONS UNCOVERED AND CONFIRM ACTUAL BEARING CAPACITY OF SOIL BEFORE DEPOSITING CONCRETE.
2. FOOTING SHALL REST AT LEAST 150mm BELOW NATURAL GRADE LINE UNLESS OTHERWISE INDICATED IN PLANS. NO FOOTING SHALL REST ON FILL.
3. MINIMUM CONCRETE PROTECTION FOR REINFORCEMENTS SHALL BE 75mm CLEAR FOR CONCRETE DEPOSITED ON THE GROUND AND 50mm FOR CONCRETE DEPOSITED AGAINST A FORMWORK.

NOTES ON REINFORCEMENT

1. UNLESS OTHERWISE NOTED IN PLANS, THE YIELD STRENGTH OF REINFORCING BARS SHALL BE:
   - A. FOOTINGS, FOOTING BEAMS AND GIRDERS ---------- fy = 275 MPa (40,000 psi)
   - B. COLUMNS AND SHEAR WALLS ---------- fy = 275 MPa (40,000 psi)
   - C. BEAMS AND GIRDER ---------- fy = 275 MPa (40,000 psi)
   - D. NON-LOAD BEARING WALL, PARTITIONS, RIDGED SLABS, FLOOR & ROOF SLABS, PARAPETS, EARTH BARRIER, RETAINING WALL ---------- fy = 227.5 MPa (33,000 psi)
2. ALL REINFORCING BARS SIZE 13mm OR LARGER SHALL BE DEFORMED IN ACCORDANCE WITH ASTM A 706. BARS SMALLER THAN 13mm MAY BE PLAIN.
3. SPLICES SHALL BE SECURELY WIRED TOGETHER & SHALL LAP OR STAGGER IN ACCORDANCE W/ TABLE A & TABLE B CHART OF LAP SPLICE & ANCHORAGE LENGTH UNLESS OTHERWISE SHOWN ON DRAWINGS. SPLICES SHALL BE STAGGERED WHENEVER POSSIBLE.

NOTES ON CONCRETE SLABS

1. ALL SLAB REINFORCEMENTS SHALL BE 20mm CLEAR MINIMUM FROM BOTTOM AND FROM THE TOP OF SLAB.
2. UNLESS OTHERWISE SHOWN, REINFORCEMENT IN CONTINUOUS EQUATED SLAB SHALL BE CUT AS FOLLOWS:

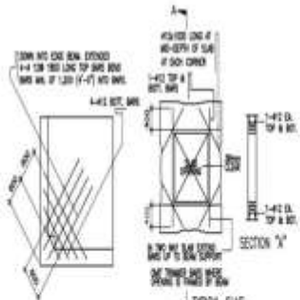


TYPICAL BAR BENDING AND CUTTING DETAILS FOR SLABS

3. IF SLABS ARE REINFORCED BOTHWAYS BARS ALONG THE SHORTER SPAN SHALL BE PLACED BELOW THOSE ALONG THE LONG SPAN AT THE CENTER AND OVER THE LONGER SPAN FOR REINFORCING BARS NEAR THE SUPPORTS. THE SPACING OF THE BARS AT THE COLUMN STRIPS SHALL NOT BE MORE THAN ONE AND A HALF (1 1/2) SLAB THICKNESS
4. TEMPERATURE BARS FOR SLAB SHALL BE GENERALLY PLACED NEAR THE FACE IN TENSION AND SHALL NOT BE LESS THAN 0.0020 x GROSS CROSS-SECTIONAL AREA (Ag) OF THE SLAB (SEE SCHEDULE BELOW)

SCHEDULE OF MINIMUM SLAB REINFORCEMENT	
THICKNESS	MINIMUM TEMPERATURE BARS
100 mm	10 mm ø @ 300mm O.C.E.W.
125 mm	12 mm ø @ 300mm O.C.E.W.
150 mm	12 mm ø @ 150mm O.C.E.W.
175 mm	12 mm ø @ 150mm O.C.E.W.
200 mm	12 mm ø @ 150mm O.C.E.W.

5. UNLESS OTHERWISE NOTED IN THE PLANS ALL BOOKED SLABS SHALL BE REINFORCED WITH 10mm ø AT 250mm C.C. EACH WAY TO CONTROL OF SLAB AND CONSTRUCTION JOINTS FOR SLABS SHALL NOT BE LESS THAN 2.40 METERS APART.
6. PROVIDE EXTRA REINFORCEMENTS FOR CORNER SLAB (TWO ADJACENT DISCONTINUOUS EDGES) AS SHOWN BELOW.
7. CONCRETE SLAB REINFORCEMENTS SHALL BE PROPERLY SUPPORTED WITH 10mm ø STEEL CHAIR OR APPROVED EQUIVALENT SPACED AT 1.0 METER ON CENTER BOTHWAYS

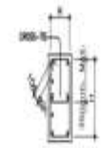


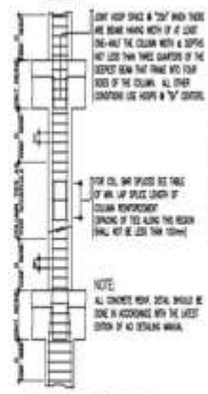
TYPICAL CORNER SLAB DETAIL

TYPICAL SLAB OPENING DET.

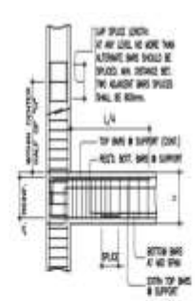
NOTES ON COLUMNS

1. PROVIDE EXTRA SETS OF TIES AT 100mm O.C. FOR TIES COLUMN REINFORCEMENT ABOVE AND BELOW BEAM-COLUMN CONNECTIONS FOR A DISTANCE FROM FACE OF CONNECTION EQUAL TO THE GREATER OF THE OVERALL THICKNESS OF COLUMN, L/6 THE CLEAR HEIGHT OF COLUMN OR 450mm.
2. COLUMN TIES SHALL BE PROTECTED EVERYWHERE BY A COVERING OF CONCRETE CAST MONOLITHICALLY WITH THE CORE WITH THE MINIMUM THICKNESS OF 40mm AND NOT LESS THAN 40 TIMES THE MINIMUM SIZE OF LONGEST AGGREGATE IN MILLIMETERS.
3. WHERE COLUMNS CHANGE IN SIZE, VERTICAL REINFORCEMENTS SHALL SHALL BE OFFSET AT A SLOPE OF NOT MORE THAN 1 IN 6 AND EXTRA 13mm TIES AT 150mm SHALL BE PROVIDED THRU OUT THE OFFSET REGION.
4. UNLESS OTHERWISE INDICATED IN THE PLANS, LAP SPLICES FOR VERTICAL COLUMN REINFORCEMENT SHALL BE MADE WITHIN THE CENTER HALF OF COLUMN HEIGHT, AND THE SPLICE LENGTH SHALL NOT BE LESS THAN 40 BAR DIAMETERS. WELDING OR APPROVED MECHANICAL DEVICES MAY BE USED PROVIDED THAT NOT MORE THAN ALTERNATE BARS ARE WELDED OR MECHANICALLY SPLICED AT ANY LEVEL AND THE VERTICAL DISTANCE BETWEEN THESE WELDS OR SPLICES OF ADJACENT BARS IS NOT LESS THAN 600mm.





TYPICAL COLUMN ELEV. SHOWING DOWELS AND TIES SPACING



TYP. DETAIL OF COL. LAP SPLICE & EXT. GIRDER TO COL. CONNECT.

NOTES ON BEAMS AND GIRDERS

1. UNLESS , OTHERWISE NOTED IN PLANS, CORNER ALL BEAMS AND GIRDER AT LEAST 6mm FOR EVERY 4.50m OF SPAN , EXCEPT CANTILEVERS FOR WHICH THE CAMBER SHALL BE AS NOTED IN PLANS OR AS DIRECTED BY THE ENGINEER BUT IN NO CASE LESS THAN 25mm FOR EVERY 3.0m OF FREE SPAN.
2. TYPICAL BARS BENDING AND CUTTING DETAILS FOR BEAMS SHALL BE AS SHOWN IN FIG. B-1.

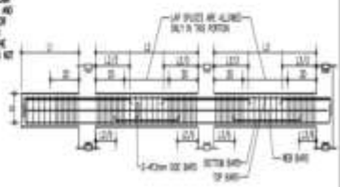


FIG. B-1

TABLE V
TENSION BARS
EMBEDMENT LENGTHS AND LAPPED SPLICES IN MILLIMETERS

BAR SIZE (DIAMETER)	f'c= 21MPa(3000psi)		f'c= 27.5MPa(4000psi)	
	EMBEDMENT	LAPPED	EMBEDMENT	LAPPED
10mm ø	320	420	280	360
12mm ø	380	500	330	430
16mm ø	510	660	440	570
20mm ø	640	830	550	720
25mm ø	800	1040	690	900
28mm ø	900	1170	770	1000
32mm ø	1020	1330	880	1140

NOTE : TOP BARS (BARS , MULTIPLY VALUE BY 1

TABLE V
COMPRESSION BARS
EMBEDMENT LENGTHS AND LAPPED SPLICES IN MILLIMETERS

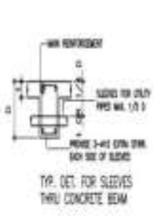
BAR SIZE (DIAMETER)	f'c= 21MPa(3000psi)		f'c= 27.5MPa(4000psi)	
	EMBEDMENT	LAPPED	EMBEDMENT	LAPPED
10mm ø	220	280	190	240
12mm ø	270	340	230	290
16mm ø	350	450	300	390
20mm ø	440	560	380	480
25mm ø	550	700	470	600
28mm ø	620	790	530	670
32mm ø	700	900	600	770

NOTE : TOP BARS (BARS , MULTIPLY VALUE BY 1

VALUES GIVEN ABOVE CAN ALSO BE USED FOR COLUMNS.

1. IF THE BEAM REINFORCING BARS END IN A WALL THE CLEAR DISTANCE FROM THE BAR TO THE FARTHER FACE OF THE WALL NOT BE LESS THAN 20mm. EMBEDMENT LENGTH SHALL BE AS SHOWN IN A TABLE V FOR TENSION BARS AND TABLE VI FOR COMPRESSION BARS UNLESS SPECIFIED IN PLAN. TOP BAR SHALL NOT BE SPLICED WITHIN THE COLUMN OR WITHIN A DISTANCE TIMES THE HOOKED DEPTH FROM THE FACE OF THE COLUMN. AT LEAST TWO STIRRUPS SHALL BE PROVIDED AT ALL SPLICES
6. IF THERE ARE TWO OR MORE LAYERS OF REINFORCING BARS, USE 25mm ø BAR SEPARATORS SPACED AT 1.0m ON CENTER. IN NO CASE SHALL THERE BE LESS THAN TWO (2) SEPARATORS BETWEEN TWO LAYERS OF BARS.
5. MINIMUM CONCRETE PROTECTION FOR REINFORCING BARS OR STEEL SHAPES SHALL BE AS SHOWN IN FIG. B-2 UNLESS SPECIFIED ELSEWHERE.

FIG. B-2

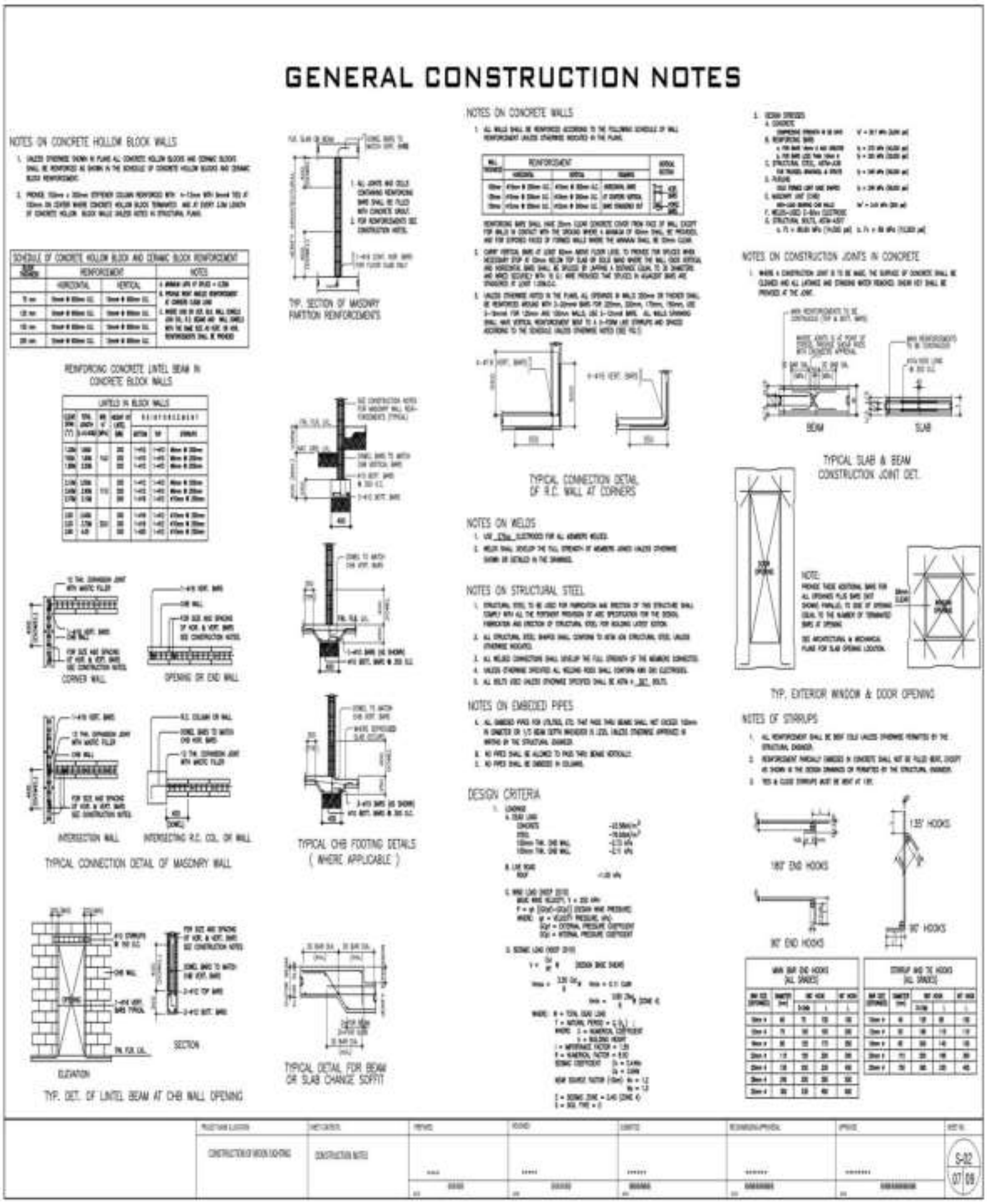


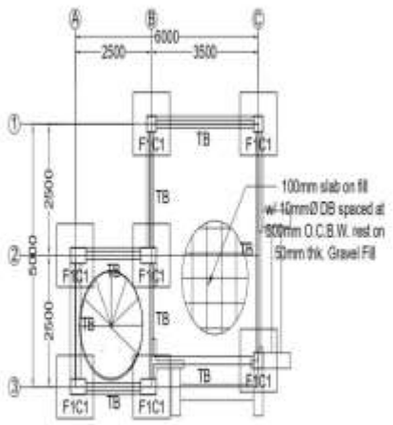
TYP. DET. FOR SLEEVES THRU CONCRETE BEAM

FIG. B-3

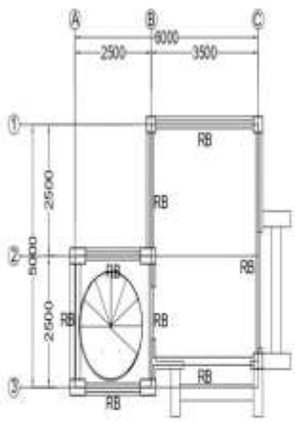
8. WHEN A BEAM CROSSES A GIRDER, REST BEAM ON TOP OF GIRDER BARS, BEAM REINFORCING BAR SHALL BE SYMMETRICAL ABOUT CENTER LINE WHENEVER POSSIBLE.
7. GENERALLY NO SPLICES SHALL BE PERMITTED AT POINTS WHERE CRITICAL BENDING STRESSES OCCUR. SPLICES WHERE TO PERMITTED SHALL BE PROVIDED IN THE TABLE V AND VI. WELDED SPLICES SHALL DEVELOP IN TENSION AT LEAST 125 % OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION IS ALLOWED TO BE SPLICED THERE.

PROJECT NAME & LOCATION	SHEET CONTENTS	PREPARED	REVISED	CHECKED	RECOMMENDING APPROVAL	APPROVED	SHEET NO.
CONSTRUCTION OF WOOD SHOPPING	CONSTRUCTION NOTES	----	-----	------	-------	--------	S-01
		DATE: 0000	DATE: 00000	DATE: 000000	DATE: 0000000	DATE: 00000000	06/09

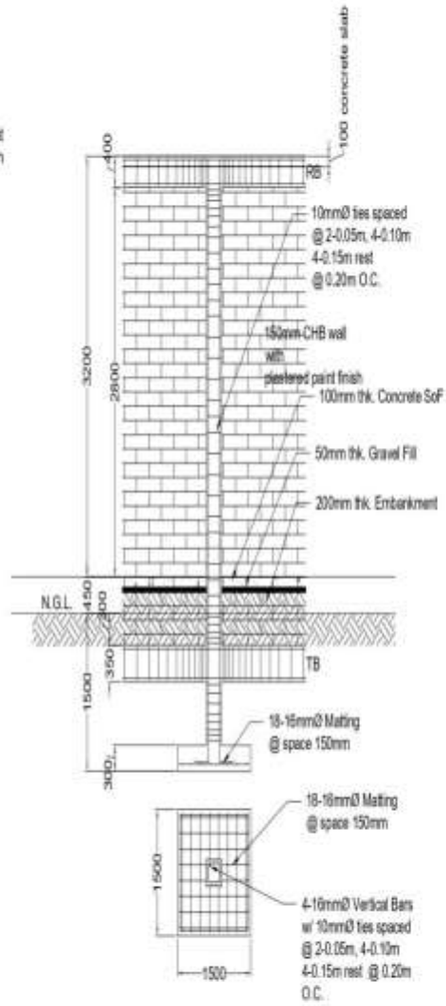

GENERAL CONSTRUCTION NOTES
NOTES ON CONCRETE HOLLOW BLOCK WALLS
NOTES ON CONCRETE WALLS
TYP. SECTION OF MASONRY PARTITION REINFORCEMENTS
TYPICAL CONNECTION DETAIL OF R.C. WALL AT CORNERS
NOTES ON CONSTRUCTION JOINTS IN CONCRETE
TYPICAL SLAB & BEAM CONSTRUCTION JOINT DET.
NOTES ON WELDS
NOTES ON STRUCTURAL STEEL
NOTES ON EMBEDDED PIPES
DESIGN CRITERIA
TYP. EXTERIOR WINDOW & DOOR OPENING
NOTES OF STIRRUPS
CORNER WALL
OPENING OR END WALL
INTERSECTION WALL
INTERSECTING R.C. COL. OR WALL
TYPICAL CONNECTION DETAIL OF MASONRY WALL
TYPICAL CHB FOOTING DETAILS (WHERE APPLICABLE)
135° HOOKS
180° END HOOKS
90° END HOOKS
90° HOOKS
ELEVATION
SECTION
TYP. DET. OF LINTEL BEAM AT CHB WALL OPENING
TYPICAL DETAIL FOR BEAM OR SLAB CHANGE SOFFIT
S-02



1 S 3 FOUNDATION PLAN
SCALE 1:100



2 S 3 ROOF BEAM FRAMING PLAN
SCALE 1:100



3 S 3 F1C1 DETAILS PLAN
SCALE 1:50

BEAM SCHEDULE

	MID SPAN	END SPAN
ROOF BEAM (RB)		
	300 x 400 7-Ø16mm 10mmØ STIRRUPS SPACE @ 3-50mm, 5-100mm, 12-150mm AND REST @ 200mm O.C.	300 x 400 7-Ø16mm 10mmØ STIRRUPS SPACE @ 3-50mm, 5-100mm, 12-150mm AND REST @ 200mm O.C.
LINTEL BEAM		
	200 x 250 4-Ø16mm 10mmØ STIRRUPS SPACE @ 3-50mm, 5-100mm, 12-150mm AND REST @ 200mm O.C.	200 x 250 4-Ø16mm 10mmØ STIRRUPS SPACE @ 3-50mm, 5-100mm, 12-150mm AND REST @ 200mm O.C.
TB		
	350 x 350 6-Ø16mm 10mmØ STIRRUPS SPACE @ 3-50mm, 5-100mm, 12-150mm AND REST @ 200mm O.C.	350 x 350 6-Ø16mm 10mmØ STIRRUPS SPACE @ 3-50mm, 5-100mm, 12-150mm AND REST @ 200mm O.C.

PROJECT NAME & LOCATION	SHEET CONTENTS	PREPARED	REVIEWED	SUBMITTED	RECOMMENDING APPROVAL	APPROVED	SHEET NO.
CONSTRUCTION OF WOOD SIGHTING	FOUNDATION PLAN ROOF BEAM FRAMING PLAN FOOTING DETAILS COLUMN DETAILS BEAM SCHEDULE	.....	.....	.....	.....	.....	S-03 06/09

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⌖	DROP LIGHT FIXTURE	——	RACEWAY CONDUIT CONCEALED ON CEILING (EMT/PVC)
O	PHILLIGHT OUTLET (CONCEALED LIGHT)	▰	PANEL BOARD
═══	AMR FRIGHT	⌒	CIRCUIT BRE AKER, RATING AS SHOWN ON SLD
F	CEILING FAN OUTLET	⇉	TAMPERED PROOF 3G PLUS CONVENIENCE OUTLET, GROUNDING TYPE 15 AMPS, 230V 1Ø PLATE COVER
S123	THREE GANG DEVICE SWITCH	⌖	CIRCUIT HOMERUN
S12	TWO GANG DEVICE SWITCH	M	SERVICE METER
S1	ONE GANG DEVICE SWITCH	⇥	SERVICE ENTRANCE
Sf	FAN CONTROL SWITCH	B	FIRE ALARM BELL
——	RACEWAY CONDUIT CONCEALED ON CEILING (POWERLINE)	☐	FIRE ALARM STATION OUTLET
⌖	ACU OUTLET	☐	FIRE ALARM CONTROL PANEL

(1/E1) SWITCH & LIGHTING LAYOUT

SCALE 1:100

(2/E1) POWER LAYOUT

SCALE 1:100

ELECT.GENERAL NOTES

1. ALL ELECTRICAL WORKS SHALL COMPLY IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE (PEC), THE RULES AND REGULATION OF THE LOCAL ENFORCING AUTHORITY AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY. THE ELECTRICAL WORKS SHALL BE UNDER IMMEDIATE SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.

2. THE ELECTRICAL SERVICE POWER IS 1-PHASE, 2-WIRE, 230V AC, 60 Hz.

3. WIRING METHOD SHALL BE AS FOLLOWS:
   a. FEEDERS AND RISERS - INTERMEDIATE METALLIC CONDUIT
   b.LIGHTING, POWER RECEPTACLE - POLYVINYL CHLORIDE CONDUIT
   BRANCH BKT., & AUXILIARY SCH. 40

4. ALL WIRES SHALL BE COPPER AND THERMOPLASTIC ISOLATED TYPE "THW" UNLESS OTHERWISE INDICATED IN THE PLAN. THE MINIMUM SIZE OF WIRE FOR POWER AND LIGHTINGS CIRCUIT HOMERUN SHALL BE 3.5mm AND INSULATED FOR 600 VOLTS. THE SMALLEST RACEWAY SHALL BE 15mm TRADE/NOMINAL SIZE.

5. ALL OUTLET BOXES SHALL BE GALVANIZED GAUGE NO. 16 DEEP TYPE WITH FACTORY KNOCKOUTS.

6. ALL MATERIALS TO BE USED SHALL BRAND NEW AND APPROVED TYPE FOR THE PARTICULAR LOCATION AND PURPOSE OF USAGE.

7. GROUNDING SYSTEM SHALL BE PROVIDED TO ALL LIGHTING AND POWER CIRCUIT AS PER PHILIPPINE ELECTRICAL CODE REQUIREMENT.

8. MOUNTING HEIGHT OF WIRING DEVICES SHALL BE AS FOLLOWS:
   a. LIGHT SWITCH - 1.20 M. ABOVE FINISH FLOOR
   b. CONVENIENCE OUTLET - 0.30 M. ABOVE FINISH FLOOR
   c. PANEL BOARD - 1.50 M. ABOVE FINISH FLOOR

SCHEDULE OF LOADS & COMPUTATION

PANELBOARD : PB-1F

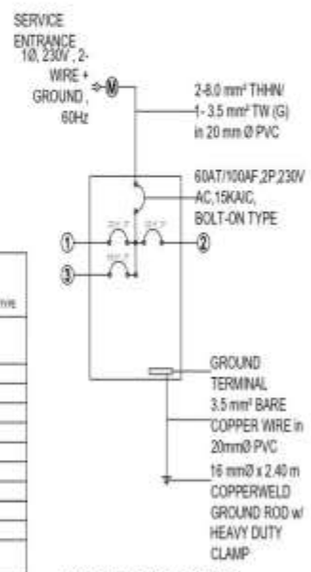
MOUNTING : FLUSH TYPE: FLUSH MAIN 60AT/100AF,2P,230V,10KAIC BOLT-ON TYPE

CIRCUIT NO	DESCRIPTION	V-A LOAD	AMPS	CIRCUIT BREAKER VOLT	POLE	AT	AF	WIRE AND CONDUIT SIZE
1	LIGHT OUTLET - 7 x 30 W	210	0.91	230	1	20	100	2-3.5mm² THHN IN 20mm Ø PVC
2	CONV. OUTLET - 5 x 180 W	900	4.10	230	1	20	100	2-3.5mm² THHN IN 20mm Ø PVC
3	SPARE	1500	6.63	230	1	30	100	
	TOTAL	2,610 VA	11.64 A					

17.5 kW - 12 x 80% = 1.5k
+ 100% (42) = 41.24 Amperes

FEEDER : 2-8.0mm² THHN + 1 - 5.5 mm² TW - (G) IN 25mm Ø PVC
PROTECTION: MAIN : 60AT/100AF,2P,230V, 10kAIC, BOLT-ON
BRANCH : 1x 20AT,2P BOLT-ON IN REMA T ENCLOSURE

RISER DIAGRAM



	CONSTRUCTION OF MOON LIGHTING	SWITCH & LIGHTING LAYOUT POWER LAYOUT	PREPARED:	REVISED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SHEET NO. E-01 09/09

Section VIII. Bill of Quantities

Notes on the Bill of Quantities

Objectives

The objectives of the Bill of Quantities are:

a. to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and

b. when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

Daywork Schedule

A Daywork Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Entity of the realism of rates quoted by the Bidders, the Daywork Schedule should normally comprise the following:

a. A list of the various classes of labor, materials, and Constructional Plant for which basic daywork rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a daywork basis.

b. Nominal quantities for each item of Daywork, to be priced by each Bidder at Daywork rates as Bid. The rate to be entered by the Bidder against each basic Daywork item should include the Contractor's profit, overheads, supervision, and other charges.

Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the SCC should state the manner in which they will be used, and under whose authority (usually the Procuring Entity's Representative's).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Procuring Entity to select such specialized contractors. To provide an element of competition among the Bidders in respect of any facilities, amenities, attendance, etc., to be provided by the successful Bidder as prime Contractor for the use and convenience of the specialist contractors, each related provisional sum should be followed by an item in the Bill of Quantities inviting the Bidder to quote a sum for such amenities, facilities, attendance, etc.

Signature Box

A signature box shall be added at the bottom of each page of the Bill of Quantities where the authorized representative of the Bidder shall affix his signature. Failure of the authorized representative to sign each and every page of the Bill of Quantities shall be a cause for rejection of his bid.

These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final documents.

Republic of the Philippines
Bangsamoro Autonomous Region in Muslim Mindanao
OFFICE OF THE CHIEF MINISTER
SUPPORT TO LOCAL MORAL GOVERNANCE
Bangsamoro Government Center, Governor Gutierrez Avenue, Rosary Heights VII, Cotabato City 9600

IB NO. :
CONTRACT NAME : CONSTRUCTION OF TOWER OBSERVATORY SPACE FOR TELESCOPE OF THE BANGSAMORO DARU'L IFTA
LOCATION :
ABC :

BILL OF QUANTITIES

Part No. I **Description: OTHER GENERAL REQUIREMENTS**

ITEM NO.	DESCRIPTION	UNITS	QUANTITY	UNIT COST (Pesos)	AMOUNT (Pesos)
(1)	(2)	(3)	(4)	(5)	(6)
A.1.1(8)	Provision of Filed Office for the Engineer (Rental Basis)	mo	3	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
8.5	Project Billboard/ Signboard	mo	2	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
8.7(1)	Occupational Safety & Health Program	each	3	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
8.9	Mobilization/Demobilization	Ls	1	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
Part No. II					
803(1)a	Structure Excavation (Common Soil)	cu.m	19.5	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
804(1)a	Embankment from Structure Excavation (Common Soil)	cu.m	15.6	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
804(1)b	Embankment (from Borrow)	cu.m	10	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
804(4)	Gravel Fill	cu.m	2.9	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php

Prepared by:

Name of the Representative of the Bidder

Position

Name of the Bidder

Date:

Submitted by:

Name of the Representative of the Bidder

Position

Name of the Bidder

Date:

Republic of the Philippines
Bangsamoro Autonomous Region in Muslim Mindanao
OFFICE OF THE CHIEF MINISTER
SUPPORT TO LOCAL MORAL GOVERNANCE
Bangsamoro Government Center, Governor Gutierrez Avenue, Rosary Heights VII, Cotabato City 9600

IB NO. :
CONTRACT NAME : CONSTRUCTION OF TOWER OBSERVATORY SPACE FOR TELESCOPE OF THE BANGSAMORO DARU'L IFTA
LOCATION :
ABC :

BILL OF QUANTITIES

Part No. III **Description: OTHER GENERAL REQUIREMENTS**

ITEM NO.	DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT (Pesos)
(1)	(2)	(3)	(4)	(5)	(6)
900(1)c1	Structural Concrete (Class A, 28 days)	cu.m	21.36	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
902(1)a	Reinforcing Steel (Grade 40)	kg	2676.96	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
903(2)	Formworks & Falseworks (Column& Roof Beam)	m²	91.85	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
Part No. IV					
1001(8)	Sewer Line Works	Ls	1	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1003(1)	4.5mmTHK Fiber Cement Board on Metal Ceiling Frame	m²	26.25	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1008(1)a	Aluminum Glass Windows (Sliding Type with Steel Grill)	m²	3.6	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1018(1)	Glazed Tiles and Trim	m²	20		
1027(1)	Plain Cement Plaster Finish	m²	266.07	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php

Prepared by:

Name of the Representative of the Bidder

Position

Name of the Bidder

Date:

Submitted by:

Name of the Representative of the Bidder

Position

Name of the Bidder

Date:

Republic of the Philippines
Bangsamoro Autonomous Region in Muslim Mindanao
OFFICE OF THE CHIEF MINISTER
SUPPORT TO LOCAL MORAL GOVERNANCE
Bangsamoro Government Center, Governor Gutierrez Avenue, Rosary Heights VII, Cotabato City 9600

IB NO. :
CONTRACT NAME : CONSTRUCTION OF TOWER OBSERVATORY SPACE FOR TELESCOPE OF THE BANGSAMORO DARUL IFTA
LOCATION :
ABC :

BILL OF QUANTITIES

Part No. III **Description: OTHER GENERAL REQUIREMENTS**

ITEM NO.	DESCRIPTION	UNITS	QUANTITY	UNIT COST (Pesos)	AMOUNT (Pesos)
(1)	(2)	(3)	(4)	(5)	(6)
1032(1)a	Painting Works (Masonry Painting)	m^2	266.07	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1032(1)c	Painting Works (Metal Painting)	m^2	12.44	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1046(2)a1	100mmTHK CHB Non Load Bearing (Including Reinforcing Steel)	m^2	129.79	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1047(1)	Structural Steel (Spiral Steel Stairs, Hogwire fence and Steel gate)	Ls	1		
Part No. V					
1100(10)	Conduits, Boxes & Fittings (Conduit Works/Conduit Rough-in)	Ls	1	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1101(33)	Wires and Wiring Devices	Ls	1	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1102(1)	Panel board with Main & Branch Breaker	Ls	1	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php
1103(1)	Lightning Fixtures and Lamps	Ls	1	In Words: Pesos: In Figures: Php	In Words: Pesos: In Figures: Php

Prepared by:

Name of the Representative of the Bidder

Position

Name of the Bidder

Date:

Submitted by:

Name of the Representative of the Bidder

Position

Name of the Bidder

Date:

1

Section IX. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or

b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

Technical Documents

☐ (e) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (f) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**

☐ (g) Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid; **and**

☐ (h) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration; **and**

(i) Project Requirements, which shall include the following:

☐ a. Organizational chart for the contract to be bid;

☐ b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;

☐ c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**

☐ (j) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

☐ (k) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

☐ (l) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence **or**

duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

☐ (m) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

☐ (n) Original of duly signed Bid Prices in the Bill of Quantities; **and**

☐ (o) Duly accomplished Detailed Estimates Form, including a summary shee indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**

☐ (p) Cash Flow by Quarter.

Section X. Bidding Forms

Bid Form for the Procurement of Infrastructure Projects

[shall be submitted with the Bid]

BID FORM

Date : _____

Project Identification No. : _____

To: ***OFFICE OF THE CHIEF MINISTER***
Bangsamoro Government Center, Cotabato City

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers],* the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract];*

b. We offer to execute the Works for this Contract in accordance with the PBDs;

c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;

d. The discounts offered and the methodology for their application are: *[insert information]*;

e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties],* which are itemized herein and reflected in the detailed estimates,

f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;

g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines[2] for this purpose;

---

[2] currently based on GPPB Resolution No. 09-2020

h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity*].*

l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____
Legal Capacity: _____
Signature: _____
Duly authorized to sign the Bid for and behalf of: _____
Date: _____

Bid Securing Declaration Form

[shall be submitted with the Bid if bidder opts to provide this form of bid security]

_____

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

BID SECURING DECLARATION
Project Identification No.: *[Insert number]*

To: *Office of the Chief Minister*
Bangsamoro Government Center, Cotabato City

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f),of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
   a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
   b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
   c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of *[month] [year]* at *[place of execution]*.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

SUBSCRIBED AND SWORN to before me this ___ day of [month] [year] at [place of execution], Philippines. Affiant/s is/are personally known to me and was/were identified by

me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ___ day of [month] [year].

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____ [date issued], [place issued]
IBP No. _____ [date issued], [place issued]

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

Omnibus Sworn Statement (Revised)
[shall be submitted with the Bid]

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, **[Name of Affiant]**, of legal age, **[Civil Status], [Nationality**], and residing at [**Address of Affiant]**, after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*
   [If a sole proprietorship:] I am the sole proprietor or authorized representative of [**Name of Bidder]** with office address at [**address of Bidder];**
   [If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [**Name of Bidder**] with office address at [address of Bidder];

2. *[Select one, delete the other:]*
   [If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [**Name of Bidder],** I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [**Name of the Project**] of the Office of the Chief Minister, as shown in the attached duly notarized Special Power of Attorney;
   [If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [**Name of the Project]** of the Office of the Chief Minister, as shown in the attached [**state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];**

3. **[Name of Bidder]** is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [**Name of Bidder]** is authorizing the Head of the Procuring Entity or its duly authorized

representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*
   [If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
   [If a partnership or cooperative:] None of the officers and members of ***[Name of Bidder]*** is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
   [If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of ***[Name of Bidder]*** is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[**Name of Bidder**]* complies with existing labor laws and standards; and

8. *[**Name of Bidder**]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:

   a. Carefully examining all of the Bidding Documents;
   b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
   c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
   d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the ***[Name of the Project]*****.**

9. ***[Name of Bidder]*** did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

SUBSCRIBED AND SWORN to before me this ___ day of [month] [year] at [place of execution], Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ___ day of [month] [year].

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____ [date issued], [place issued]
IBP No. _____ [date issued], [place issued]

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

Statement of Single Largest Completed Contract Similar to the Contract to be bid

Name/Title of the Single Contract:

_____
_____
_____

Parties to the Contract:

a. _____; and
b. _____

Amount of the Contract: _____ (inclusive of all applicable taxes and other charges/VAT exclusive)
Date of Completion: _____
Contract Period/Duration: _____

Description of Similar Contract: (description should show similarity with the requirement) _____
_____
_____
_____
_____
_____

Supporting Documents attached showing the above information. Please put a check (√) mark on the document submitted:

☐ Contract
☐ Job Order
☐ Purchase Order
☐ Notice of Award
☐ Notice to Proceed
☐ Sales Invoice
☐ Official Receipt
☐ Certificate of Completion
☐ Certificate of Acceptance
☐ Certificate of Satisfactory Performance, *if available*
☐ Statement of Account showing payment
☐ Delivery Receipt
☐ Others:_____

For purpose of validating the similar contract, the bidder shall provide the following:

a. **Name of Contact Person**: _____
b. **Active/Working Telephone (landline/mobile number/s) and Fax number/s:**
_____
c. **Active/Working E-mail address/es**:_____

Submitted by:

NAME OF THE BIDDER OR ITS AUTHORIZED REPRESENTATIVE AND ITS SIGNATURE
Designation

STATEMENT OF ALL ONGOING GOVERNMENT AND PRIVATE CONTRACTS

Name of the Company: _____
Address: _____

STATEMENT OF ALL ONGOING GOVERNMENT AND PRIVATE CONTRACTS, INCLUDING AWARDED BUT NOT YET STARTED

Name of Contract	a. Name of the Procuring Entity; b. Contact Person; c. Address; d. Contact Nos:	a. Contract References (PO/Contract); b. Contract Date c. Contract Duration	a. Estimated Completion or Delivery	Contract Amount	% of Accomplishment		Value of Outstanding Works/Undelivered Portion
					Planned	Actual	
GOVERNMENT							
PRIVATE							
					Total Cost		

This statement shall be supported by:

1. Notice of Award;
2. Contract, if applicable; and
3. Notice to Proceed, if applicable.

Submitted by:

NAME OF THE BIDDER OR ITS AUTHORIZED REPRESENTATIVE AND ITS SIGNATURE
Designation


Republic of the Philippines
gppb
Government Procurement Policy Board