

PHILIPPINE BIDDING DOCUMENTS
(As Harmonized with Development Partners)

**Procurement of
INFRASTRUCTURE
PROJECTS**

Government of the Republic of the Philippines

**Upgrading/Repair/Improvement of Hospital Building at Manuel
A. Roxas District Hospital, Roxas, Isabela**

**Sixth Edition
March 2021**

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the “Works”) through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

The PBDs are intended as a model for admeasurements (unit prices or unit rates in a bill of quantities) types of contract, which are the most common in Works contracting.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv) the obligations, duties, and/or functions of the winning Bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Works to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.
- d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

TABLE OF CONTENTS

| | |
|--|-----------|
| Glossary of Terms, Abbreviations, and Acronyms | 5 |
| Section I. Invitation to Bid..... | 8 |
| Section II. Instructions to Bidders | 11 |
| 1. Scope of Bid..... | 12 |
| 2. Funding Information | 12 |
| 3. Bidding Requirements..... | 12 |
| 4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices | 12 |
| 5. Eligible Bidders..... | 13 |
| 6. Origin of Associated Goods | 13 |
| 7. Subcontracts | 13 |
| 8. Pre-Bid Conference..... | 13 |
| 9. Clarification and Amendment of Bidding Documents..... | 13 |
| 10. Documents Comprising the Bid: Eligibility and Technical Components | 14 |
| 11. Documents Comprising the Bid: Financial Component | 14 |
| 12. Alternative Bids | 15 |
| 13. Bid Prices | 15 |
| 14. Bid and Payment Currencies..... | 15 |
| 15. Bid Security..... | 15 |
| 16. Sealing and Marking of Bids..... | 15 |
| 17. Deadline for Submission of Bids | 16 |
| 18. Opening and Preliminary Examination of Bids | 16 |
| 19. Detailed Evaluation and Comparison of Bids | 16 |
| 20. Post Qualification..... | 16 |
| 21. Signing of the Contract | 17 |
| Section III. Bid Data Sheet | 18 |
| Section IV. General Conditions of Contract..... | 20 |
| 1. Scope of Contract..... | 21 |
| 2. Sectional Completion of Works | 21 |
| 3. Possession of Site | 21 |
| 4. The Contractor’s Obligations..... | 21 |
| 5. Performance Security | 22 |
| 6. Site Investigation Reports | 22 |

| | | |
|-----|---|------------|
| 7. | Warranty..... | 22 |
| 8. | Liability of the Contractor..... | 22 |
| 9. | Termination for Other Causes..... | 22 |
| 10. | Dayworks | 23 |
| 11. | Program of Work..... | 23 |
| 12. | Instructions, Inspections and Audits | 23 |
| 13. | Advance Payment..... | 23 |
| 14. | Progress Payments | 23 |
| 15. | Operating and Maintenance Manuals..... | 23 |
| | Section V. Special Conditions of Contract..... | 25 |
| | Section VI. Specifications | 27 |
| | Section VII. Drawings..... | 97 |
| | Section VIII. Bill of Quantities | 98 |
| | Section IX. Checklist of Technical and Financial Documents | 100 |

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term “related” or “analogous services” shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria.

The IB should be incorporated into the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.

PROVINCIAL GOVERNMENT OF ISABELA

Invitation to Bid for Upgrading/Repair/Improvement of Hospital Building at Manuel A. Roxas District Hospital, Roxas, Isabela

1. The *Provincial Government of Isabela*, through the *DOH Trust Fund (HPEF 2020)* intends to apply the sum of ***One Million Nine Hundred Sixty Nine Thousand Nine Hundred Ninety Nine and 18/100 Pesos (Php 1,969,999.18)*** for the ***Upgrading/Repair/Improvement of Hospital Building at Manuel A. Roxas District Hospital, Roxas, Isabela and Project Identification Number 021-05 Lot 2***, being the Approved Budget for the Contract (ABC) to payments under the contract for each lot. Bids received in excess of the ABC for each lot shall be automatically rejected at bid opening.
2. The *Provincial Government of Isabela* now invites bids for the above Procurement Project. Completion of the Works is required *within Sixty (60) calendar 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 *Bids and Awards Committee (BAC)* and inspect the Bidding Documents at the address given below from 8:00 a.m. to 5:00 p.m.
5. A complete set of Bidding Documents may be acquired by interested bidders on *March 18, 2021* from given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, *in the amount of Five Thousand Pesos (Php 5,000.00)*. The Procuring Entity shall allow the bidder to present its proof of payment for the fees to be presented in person.
6. The *Provincial Government of Isabela* will hold a Pre-Bid Conference¹ on *March 25, 2021 at 10:00 a.m.* at BAC office, PGSO Bldg., Alibagu, City of Ilagan, Isabela, if applicable, and/or through videoconferencing/webcasting *via Zoom*, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below, on or before *10:00 A.M., April 06, 2021*. Late bids shall not be accepted.

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.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. Bid opening shall be on *10:30 A.M., April 06, 2021* at the given address below. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The *Provincial Government of Isabela* 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.
11. For further information, please refer to:

MARYANN T. BALLESTEROS
BAC Office, PGSO Bldg.,
Capitol City of Ilagan, Isabela
078-323-0570
pgso.isabelaprovince@yahoo.com.ph
12. You may visit the following websites:

For downloading of Bidding Documents: *PhilGEPS Bid Opportunities of the Province of Isabela.*

March 18, 2021

(Sgd.) RODRIGO T. SAWIT

BAC Chairman

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

1. Scope of Bid

The Procuring Entity, *Provincial Government of Isabela* invites Bids for the *Upgrading/Repair/Improvement of Hospital Building at Manuel A. Roxas District Hospital, Roxas, Isabela*, with Project Identification Number *021-05 Lot 2*.

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 *EDF 2020(Reprogramming)* in the amount of *One Million Nine Hundred Sixty Nine Thousand Nine Hundred Ninety Nine and 18/100 Pesos (Php 1,969,999.18)*.

2.2. The source of funding is:

a. 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:

- a. Subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address at BAC office, PGSO Bldg., Alibagu, City of Ilagan, Isabela, if applicable, and/or through videoconferencing/webcasting} 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:*

- a. 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 until **March 16, 2021**. 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 and time and either at its physical address or through online submission 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

Notes on the Bid Data Sheet (BDS)

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

- a. Information that specifies and complements provisions of the ITB must be incorporated.
- b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

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: <i>Item 1007 – Aluminum Glass Door</i> <i>Item 1010(2)a – Hollow Core Flush Door</i> <i>Item 1010(2)b – Wooden Panel Door</i> <i>Item 1006 – Grille Door (Gate)</i> <i>Item 1008 – Aluminum Glass Window</i> <i>Item 1009(1)a – Jalousie Window</i> <i>Item SPL B – Aluminum Screen Window</i> <i>Item 1032 – Painting Works</i> <i>Item 803 – Structure Excavation</i> <i>Item 804 – Embankment</i> <i>Item 900 – Structural Concrete</i> <i>Item 902 – Reinforcing Steel Bars</i> <i>Item 903 – Formworks</i> <i>Item 1046 – Masonry Works</i> <i>Item 1027 – Cement Plaster Finish</i> <i>Item 1018 - Tileworks</i> | | |
| 7.1 | <i>Subcontracting is not allowed.</i> | | |
| 10.3 | <i>No Further Instructions</i> | | |
| 10.4 | The key personnel must meet the required minimum years of experience set below: | | |
| | <u>Key Personnel</u> | <u>General Experience</u> | <u>Relevant Experience</u> |
| | 1. Project Engineer (PE) | Minimum of five (5) years' experience as Licensed Civil | With a minimum of two (2) Building Construction/Improvement projects handled as Project Engineer |
| | 2. Materials Engineer (ME) | Licensed Civil Engineer | Materials Engineer duly accredited by DPWH |
| 10.5 | The minimum major equipment requirements are the following: | | |
| | Minimum Required Equipment | Owned | Leased |
| | 1. One Bagger Mixer | 1 | 0 |
| | 2. Concrete Vibrator | 1 | 0 |
| | 3. Bar Cutter | 1 | 0 |
| | TOTAL | 3 | 0 |
| 12 | <i>No Further Instructions</i> | | |
| 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 <i>Thirty Nine Thousand Four Hundred</i> | | |

| | |
|------|--|
| | <p><i>Pesos (Php 39,400.00)</i>, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;</p> <p>b. The amount of not less than <i>Ninety Eight Thousand Five Hundred Pesos (Php98,500.00)</i> if bid security is in Surety Bond.</p> |
| 19.2 | <p>Partial bids are allowed, as follows: <i>[Partial bids not allowed]</i></p> |
| 20 | <p><i>Latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS)</i></p> |
| 21 | <p>Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the DOLE, and other acceptable tools of project scheduling.</p> |

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Contractor, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special 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

4.1. 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.

4.2. 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

Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Works procured. In preparing this Section, the following aspects should be checked:

- a. Information that complements provisions of the GCC must be incorporated.
- b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

Special Conditions of Contract

| GCC Clause | |
|------------|--|
| 2 | <i>Intended Completion date is Sixty Calendar Days (60) starting seven (7) calendar days upon receipt of Notice to Proceed.</i> |
| 4.1 | <i>Upon receipt of Notice to Proceed.</i> |
| 6 | The site investigation reports are: <i>The site is cleared of any obstruction and right of way issues.</i> |
| 7.2 | <i>[In case of permanent structures, such as buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures:] Fifteen (15) years.</i> |
| 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 <i>Thirty (30)</i> 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 <i>[1/10 of 1% of Contract Amount]</i> . |
| 13 | The amount of the advance payment is <i>[15% of the total contract price and schedule of payment]</i> . |
| 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 is <i>[One year after completion date]</i> . The date by which "as built" drawings are required is <i>[within thirty days upon completion]</i> . |
| 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 <i>[1/10 of 1% of Contract Amount]</i> . |

Section VI. Specifications

TABLE OF CONTENT

| ITEM NO. | DESCRIPTION |
|----------|--|
| B.5 | Project Billboards/Signboards |
| B.7 | Occupational safety and Health |
| B.9 | Mobilization/Demobilization |
| SPL A | Removal of Glass on Existing Windows |
| 803(1) | Structure Excavation (Common Soil) |
| 804(1) | Embankment |
| 900(1) | Structural Concrete |
| 902(1) | Reinforcing Steel Bars |
| 903(2) | Formworks and Falseworks |
| 1006 | Grille Door (Gate) |
| 1007 | Aluminum Glass Door |
| 1008 | Aluminum Glass Window |
| 1009(1) | Jalousie Window |
| SPL B | Aluminum Screen Window |
| 1018 | Unglazed Tiles |
| 1027 | Cement Plaster Finish |
| 1032 | Painting Works |
| 1046 | 100mm CHB Non-Load Bearing (including Reinforcing Steel) |

B.5 PROJECT BILLBOARD

Description

This Item shall consist of furnishing and installing project billboard in accordance with this Specification and details shown on the Plans, or as required by the Engineer.

The project billboard shall comply in all respects with the "COA Circular No. 2013-004" dated January 30, 2013. The information and publicity on projects of Government Agencies including Foreign Funded Projects are being guided by this Circular.

The project billboard will be erected as soon as the award has been made. It will be located at the beginning and at the end of the subproject throughout the project duration.

The size, materials and design to be used for the project signboard will specifically adhere to the General Guidelines No. 2.2.3 of the Circular while the content of the information shall conform to the General Guidelines No. 2.2.6 and the sample format shown in "Annex A" of the Circular.

Material Requirements

Tarpaulin

The design and format of the tarpaulin shall have the following specifications:

Color : White

Size : 8 ft. x 8 ft.

Resolution : 70 dpi

Font : Helvetica

Font Size of Main Information : 3 inches

Font Size of Sub-Information : 1 inch

Font Color: Black

Suitable Frame : Rigid wood frame with post;
and Posting: Outside display at the project location after award has been made.

**ANNEX 14
PROJECT BILLBOARD**

| Project: _____ Location: _____ Implementing Agency/ies: _____ Development Partner/s: _____ Contractor/Supplier: _____ Brief Description of Project: _____ | | Name of Agency Business Address Cost: _____ Fund Source/s: LP, GOP, LGU | PLGU LOGO | | | | |
|--|---------|--|--------------------------|--------------|-----------------------|---------|----------------|
| Project Details: | | | | | | | |
| Project Date | | | Project Status | | | Remarks | |
| Duration | Started | Target Date of Completion | Percentage of Completion | As of (Date) | Cost Incurred to Date | | Date Completed |
| | | | | | | | |
| | | | | | | | |

For particulars or complaints about this project, please contact the Regional Office or Cluster which has audit jurisdiction on this project.

COA Regional Office No./Cluster: _____
 Address: _____
 Contact No.: _____ or Text COA Citizen's Desk at 0915-5391957

World Bank Anti-Corruption Hotline: 105-11-1-800-831-0463

The information shall contain but not limited to i.) logo of the funding agencies, ii.) the name of implementing agencies, iii.) name of contractor, iv.) subproject's title, location, cost and description, v.) project details to include duration, date started, target date of completion and project status, and vi.) COA and WB Anti-corruption Hotline.

The display/and or affixture of the picture, image, motto, logo, color motif, initials or other symbol or graphic representation associated with the top leadership of the project proponent or implementing agency/unit/office, on project billboard, is considered unnecessary. (General Guidelines No. 2.2.6)

Post and Frame

Posts and frames/braces shall be made from good lumber with a 2X3 and 2x2 inches size respectively and shall be well-seasoned, straight and free of injurious defects. The frame will be covered with 2 pieces ¼ inch thick marine plywood where the tarpaulin will be attached.

Concrete Foundation Blocks

The concrete for the foundation blocks shall be Class A in accordance with Item 405, Structural Concrete and shall be of the size shown on the Plans.

Construction Requirements

Excavation and Backfilling

Holes shall be excavated to the required depth to the bottom of the concrete foundation as shown on the Plans.

The space around the post shall be backfilled to the ground line with approved material in layers not exceeding 100 mm and each layer shall be moistened and thoroughly compacted. Surplus excavated material shall be disposed of by the Contractor as directed by the Engineer.

Erection of Posts

The posts shall be erected vertically in position inside the formwork of the foundation block prior to the placing of the concrete and shall be adequately supported by bracing to prevent movement of the post during the placing and setting of concrete. The posts shall be located at the positions shown on the Plans.

Tarpaulin Installation

Tarpaulin shall be installed in accordance with the details shown on the Plans. The frame should be covered with the marine plywood before the tarpaulin is attached.

Method of Measurement

The quantities of project billboard shall be in pieces of such signs of the size specified, including the necessary posts and supports erected and accepted.

Basis of Payment

The quantities measured as determined in the Method of Measurement, shall be paid for at the contract unit price for the Pay Items shown in the Bid Schedule which price and payment shall be full compensation for furnishing and installing project billboard, for excavation, backfilling and construction of foundation blocks, and all labor, equipment, tools and incidentals necessary to complete the Item.

Payment will be made under:

| Pay Item No. | Description | Unit of Measurement |
|--------------|-------------------|---------------------|
| B.5 | Project Billboard | Each |

B.7 CONSTRUCTION SAFETY & HEALTH PROGRAM

The following shall be the minimum requirements for the approval of a Construction Safety and Health Program (CSHP) under the Department of Labor and Employment (DOLE) Department Order No. 13, Series 1998.

1.1 Company Safety and Health Policy. The following shall apply:

A Company Safety Policy which shall serve as the general guiding principles in the implementation of safety and health on site duly signed by the highest company official or his duly authorized representative who has the over---all control of project execution and should include the contractor's general policy towards occupational safety, worker's welfare and health, and environment.

A Safety policy, which shall include the commitment that the contractor shall comply with DOLE minimum safety requirements, including reporting requirements of the Occupational Health and Safety Standards (OSHS), and other relevant DOLE issuances. These may include, but are not limited to the following:

- a. Registration (Rule 1020 and DO 18---02)
- b. Report of Safety Committee Organization (Rule 1040)
- c. Notification of Accidents and Occupational Illnesses (Rule 1050)
- d. Annual Work Accident/Illness Exposure Data Report (Rule 1050)
- e. Application for installation of mechanical/electrical equipment for construction of structure for industrial use (Rule 1070 and 1160)
- f. Annual Medical Report (Rule 1960)

1.2 Specific Construction Safety and Health Program shall contain the tendering agency's requirements in addition to the minimum requirements under the appropriate sections of D.O. No. 13 whenever deemed as applicable.

1.3 Composition of Construction Safety and Health Committee.

A structure and membership of the construction safety and health committee which shall be consistent with the minimum requirements of Section 11 of D.O. 13, series of 1998.

1.4 Safety and Health Personnel. The following shall apply:

- a. All appointed first---aiders shall be duly trained and certified by the Philippine National Red Cross and shall possess a Certificate of Basic First Aid Training Course (Standard) with a valid PNRD ID Card.
- b. All appointed Safety Officers shall have completed the 40---hour BWC prescribed safety and health course as required by Rule 1030 of the OSHS, as amended by D.O. 16. All full---time safety personnel shall be accredited by the BWC pursuant to D.O. 16.
- c. All physicians and nurses assigned at the project site shall have completed the Bureau prescribed course on occupational safety and health course, pursuant to Rule 1960 of the OSHS.

1.5 Specific duties and responsibilities of the Safety Officer. The following shall apply:

- a. Specific duties and responsibilities shall comply with the outlined duties and responsibilities in Rule 1047 of the OSHS; and

- b. Procedure on the required performance of the assigned duties and responsibilities of safety officers in the construction site.

1.6 Applicable In-plant Safety and Health Promotion and Continuing Information Dissemination. The following shall apply:

- a. Detailed information dissemination or advisories to the new employees prior to on-site assignment, e.g. conduct of safety orientation, company's health and safety policies, hazards related to the job safety measures, safe work procedures.
- b. Detailed programs on continuing education such as trainings and seminars, if any, that shall be given to employees, e.g. BOSH, refresher course, first aid training, refresher course toolbox meeting, construction safety training for site safety officers, 80-hour advance safety course prescribe.
- c. Arrangements for conveying information on safety and health IEC materials e.g. Posters/comics/flyers, safety signages, handbooks/manuals, bulletin boards
- d. Arrangements for setting up sub-committees on safety and health, where necessary.
- e. Schedule of safety related activities, e.g. toolbox meeting, health and safety committee meeting

1.7 Accident and incident investigation, recording, and reporting. The following shall apply:

- a. All accidents or incidences shall be investigated and recorded.
- b. All work related accidents resulting to disabling injuries and dangerous occurrences as defined in OSH Standards (Rule 1050) shall be reported.
- c. Responsible or duly authorized officer for accident or incident investigation recording and reporting who are either the employer/owner/project manager/safety officer
- d. Accident Report shall contain the minimum information as required in DOLE/BWC/OHSD/IP-6.
- e. Shall notify the appropriate DOLE Regional within 24 hours in case of fatal accidents. An accident investigation shall be conducted by the Regional Office within forty eight (48) hours after receipt of initial report of the employer.

1.8 Provisions for the protection of the general public within the vicinity of the company premises during construction and demolition. The following shall apply:

- a. Measures in order to ensure the safety of the general public shall be pursuant to Rule 11 of the National Building Code-Implementing Rules and Regulations: Protection of Pedestrians During Construction or Demolition
- b. Appropriate provisions and rules of OSHS
 - Rule 1412.09: Protection of the Public
 - Rule 1412.12: Protection against collapse of Structure
 - Rule 1412.16: Traffic Control
 - Rule 1413: Excavation

- Rule 1417: Demolition
- Rule 1060: Premises of Establishments
- D.O. 13, Section 9: Construction Safety Signs
- Other relevant provisions of OSHS.

1.9 General safety within construction premises. The following shall apply:

The provisions for danger signs, barricades, and safety instructions for workers, employees, public, and visitors such as, housekeeping; walkway surfaces; means of access i.e. stairs, ramps, floor openings, elevated walkways, runways and platforms; and, light.

1.10 Environmental Control (Rule 1070 of the Standards). The following shall apply:

- a. Monitoring and control of hazardous noise, vibration and air---borne contaminants such as gases, fumes, mists and vapors.
- b. Provisions to comply with minimum requirements for lighting, ventilation and air movement.

1.11 Guarding of hazardous machinery (Rule 1200 of the Standards). The following shall apply:

- a. Provisions for installation/design of built---in machine guards.
- b. Provisions for built---in safety in case of machine failure.
- c. Provisions for guarding of exposed walkways, access---ways, working platforms.

1.12 Provisions for and use of Personal Protective Equipment (PPE) --- (Rule 1080 of the Standards). The following shall apply:

- a. Appropriate types and duly tested PPEs to be issued to workers after the required training on their use.
- b. Provisions for maintenance, inspection and replacement of PPEs.
- c. In all cases the basic PPE commonly required for all types of construction projects are hard hats, safety shoes and working gloves. Other PPEs shall be required depending on the type of work and hazards.

1.13 Handling of Hazardous Substances - (Rule 1090 of the Standards). The following shall apply:

Provision for identification, safe handling, storage, transport and disposal of hazardous substances and emergency procedure in accordance with Material Safety Data Sheet (MSDS) in cases of accidents.

1.14 General materials handling and storage procedures. - (Rule 1150 of the Standards). The following shall apply:

- Safe use of mechanical materials handling equipment
- Secured and safe storage facilities
- Regular housekeeping as necessary so as not to constitute and/orresent hazards
- Clearly marked clearance limits

--- Proper area guarding of storage facilities

1.15 Installation, use and dismantling of hoist and elevators.---**Rule 1415.10 Testing and Examination of Lifting Appliance, Rule 1220 Elevators and Related Equipment.** The following shall apply:

- a. Provisions to ensure safe installation, use and dismantling of hoist and elevator;
- b. Periodic inspection of hoists and elevators.

1.16 Testing and inspection of electrical and mechanical facilities and equipment. The following Rules of the Occupational Safety and Health Standards shall apply: **Rule Coverage**

- a. Rule 1160 --- Boiler
- b. Rule 1170 --- Unfired Pressure Vessels
- c. Rule 1210 --- Electrical Safety
- d. Rule 1220 --- Elevators and Related Equipment
- e. Rule 1410 --- Construction Safety
- f. Rule 1415.10 – Training and Examination of Lifting Appliance

1.17 Workers skills and certification. The following shall apply:

- a. Provisions to ensure that workers are qualified to perform the work safely.
- b. Provisions to ensure that only qualified operators are authorized to use and operate electrical and mechanical equipment.

1.18 Provisions for emergency transportation facilities for workers. The following shall apply:

Rule 1963.02 of the Occupational Safety and Health Standards – Emergency Medical and Dental Services

1.19 Fire Protection Facilities and Equipment. The following rule shall apply:

- a. Fire protection facilities and equipment as required under Rule 1940 of the OSHS
- b. Proposed structure and membership of fire brigade
- c. Provision for training on emergency preparedness

1.20 First aid and health care medicines, equipment and facilities.

- a. Identification of the proposed first aid and health care facilities that the employer shall provide satisfying the minimum requirements of OSHS.
- b. Identification of the medical and health supplies, such as medicines and equipment to be provided.
- c. In all cases, the provision of first aid medicines and emergency treatment shall be mandatory.
- d. In the absence of the required on site health care facilities, the employer shall attach a copy of a written contract with a recognized emergency health provider as required under the OSHS.

1.21 Workers Welfare Facilities. The following shall apply:

- a. Provisions for toilet and sanitary facilities
- b. Proposed bathing, washing, facilities
- c. Proposed facilities for supplying food and eating meals
- d. Proposed facilities for supplying potable water for drinking and for washing
- e. Proposed facilities for locker rooms, storing and changing of clothes for workers.

1.22 Proposed Hours of Work and Rest and Rest Breaks. The following shall apply:

- a. Work schedules, working hours, shifting schedules
- b. Frequency and length of meals and breaks
- c. Schedule of rest periods

1.23 Waste Disposal. The following shall apply:

- a. Proposed method of clearing and disposal of waste.
- b. Provisions for permits and clearance where require in disposal of hazardous wastes.

1.24 Disaster and Emergency Preparedness Contingency

1.25 Safety Program . The Safety Programs shall contain the following:

- a. Standard work procedures.
- b. Job hazard analysis for the following activities as applicable to the project.
- c. Other hazardous work, not outline herein but will be performed during project execution must also be included.

The activities may consist of any number of the following, depending on the nature of the project, vis-à-vis exposure to hazards:

- a. Site Clearing
- b. Excavations
- c. Erection and dismantling of scaffolds and other temporary working platforms
- d. Temporary electrical connections/installations
- e. Use of scaffolds and other temporary working platforms
- f. Working at unprotected elevated working platforms or surfaces
- g. Work over water
- h. Use of power tools and equipment
- i. Gas and electric welding and cutting operations
- j. Working in confined spaces
- k. Use of internal combustion engines
- l. Handling hazardous and/or toxic chemical substances
- m. Use of hand tools

- n. Working with pressurized equipment
- o. Working in hot or cold environments
- p. Handling, storage, usage and disposal of explosives
- q. Use of mechanized lifting appliances for movement of materials
- r. Use of construction heavy equipment
- s. Demolition

The hazard analysis shall contain the following:

- a. Identification of possible hazards for a particular activity.
- b. Identification of any company permits or clearances needed prior to the performance of the activity together with the name of person/s who is authorized to issue such permit or clearance.
- c. Identification of the proposed improvement in work standard procedures that shall be followed during implementation of a particular activity.
- d. Company inspection procedures to ensure safety during the execution of a particular activity.
- e. Identification of emergency procedures in case of accidents or any untoward incident while performing a particular activity.

1.26 Company Penalties/Sanctions for Violation/s of the Provision/s of Safety and Health Program – The appropriate penalties or sanctions for violation of company rules and regulations or those stipulated in the CHSP and the observance of due process.

2. Personal Protective Equipment by Type of Project

2.1 General Building Construction Project (GBC). The following classifications shall apply:

Classification: Air Navigation Facilities, Power Transmission & Distribution, Building and Housing, Communication facilities, Sewerage, water treatment plants and Site/Land development.

2.2 General Engineering Construction Project. The following classifications shall apply:

Classifications: Roads and Airports (Horizontal structure), bridges, irrigation system, flood control and drainages, dams, tunneling, ports and harbor, water supply

2.3 Specialty Construction Project. The following classifications shall apply:

Classifications: Electrical work, mechanical work, plumbing and sanitary work, air conditioning or refrigeration, water proofing work, painting work, communication facilities, foundation or piling work, structural steel work, concrete pre---cast, elevator or escalator, well drilling work, navigational equipment and instrument installation, electromechanical work, metal roofing and siding installation, structural demolition and landscaping.

3. Safety Personnel and Skilled Worker. The following shall apply: **3.1 Minimum Required Safety Personnel.** The following shall apply:

- a. The General Constructor shall provide for a full time officer, who shall be assigned as the general construction safety and health officer to oversee full time the overall

management of the Construction Safety and Health Program.

- b. The General Constructor shall provide for additional Construction Safety and Health Officer/s in accordance with the requirements for Safety Officer of D.O. 16, s. 2001, depending of the total number of personnel assigned to the construction project site.
- c. The General Constructor shall provide for one (1) Construction Safety and Health Officer for every ten (10) units of heavy equipment assigned to the project site.
- d. Each construction contractors/subcontractors shall provide for the required number of safety officers in accordance with the requirements of D.O. 16 series 2001.

3.2 Qualification and Training of Safety and Health Personnel and Skilled Workers. The following shall apply:

- a. Training of OSH Personnel shall be pursuant to D.O. 16 series of 2001 and its Procedural Guidelines.
- b. Worker Skills Certification for the critical operations/occupations shall be pursuant to D.O. 13 and D.O. 19 as well as the TESDA requirements on worker competency.

4. Construction Heavy Equipment. The following shall apply:

4.1 Accreditation of Organization for Testing of Construction Heavy Equipment shall be pursuant to D.O. No. 16 and its Implementing Guidelines and Procedural Guidelines on Accreditation and Performance Audit of Testing Organization for Construction Heavy Equipment.

4.2 Conduct of Inspection and Test of Construction Heavy Equipment shall be pursuant to Sec. 10 of D.O. No. 13 and its Procedural Guidelines. The following shall apply:

- a. Procedural Guidelines on Accreditation and Performance Audit of Testing Organization for Construction Heavy Equipment
- b. Standard Checklist for Testing and Inspection of Construction Heavy Equipment.
- c. Inspection Procedures for DOLE Inspectors

4.3 TESDA Certification Requirements for Operators. Certification for Operators shall be in accordance with the requirements of TESDA on worker competency.

4.4 Monitoring and Evaluation of CHE Test/Inspection conducted shall be pursuant to the Procedural Guidelines on Accreditation and Performance Audit of Testing Organization for Construction Heavy Equipment.

5. Signages and Barricades. The following shall apply:

Construction Safety Signages shall be provided as a precaution and to advise the workers and the general public of the hazards existing in the worksite.

5.1 Signage Procedures: The signages shall be:

- a. Posted in prominent positions and at strategic locations.
- b. As far as practicable, be in the language understandable to most of the workers employed in the site.
- c. For non-raised floor areas, the attached yellow CAUTION sign shall be used when

using yellow CAUTION tape.

- d. For non-raised floor areas , the attached red DANGER sign shall be used when using the red DANGER tape.
- e. Placed in designated areas at four (4) feet from ground level, if there is no other more practicable height placement.
- f. Regularly inspected and maintained in good condition to achieve its purpose. Signages that are damaged; illegible or that no longer apply as to purpose, site or language, shall be removed or be replaced by the safety officer when needed.
- g. Removed after the hazard is completely eliminated. If upon work completion the hazard is still present, the signage shall remain in place.
- h. Designed and constructed following the Overall Dimensions of Safety Signs Formula as required by the OSHS
- i. Specific with the type of hazard and should indicate the name of the contaminant/ substance involved (for chemical hazards), and the type of PPE or respiratory equipment to be worn.

5.2 Posting of Signages shall include, but not limited to the following places:

- a. Areas where there are risks of falling objects.
- b. Areas where there are risks of falling, slipping, tripping among workers and the public
- c. Prior to entry in project sites, locations and its perimeter.
- d. Where there is mandatory requirement on the usage of PPEs.
- e. Areas where explosives and flammable substances are used or stored
- f. Approaches to working areas where danger from toxic or irritant airborne contaminants/ substances may exist,
- g. All places where contact with or proximity to electrical facility/equipment can cause danger
- h. All places where workers may come in contact with dangerous moving parts of machinery or equipment
- i. Locations of fire alarms and fire-fighting equipment
- j. Locations for instructions on the proper usage of specific construction equipment, tools.

5.3 Barricading Procedures: The following shall apply:

- a. The contractor shall provide all necessary barricades, safety tapes, safety cones or safety lines as required in isolating or protecting an unsafe work area from other workers, pedestrians or vehicular traffic.
- b. Barricades shall completely enclose the hazardous area and effectively limit unintentional or casual entry.
- c. Barricades shall be three (3) feet vertical height from the ground, when no other more practical height specification is available.

- d. Barricades shall be maintained in good condition to achieve its purpose.
- e. Barricades that are damaged; faded or that no longer apply as to purpose, site or meaning, shall be removed or shall be replaced by the safety officer.
- f. Barricade tape shall not be used on the floor as this presents a slipping hazard of its own.
- g. In addition to using the proper warning tape, the contractor shall use the appropriate safety signage when barricading an area.
- h. All barricades shall be removed after the hazard is completely eliminated.

I. Upon work completion, if the hazard is still present, the barricade shall remain in place.

5.4 Installation of barricades shall include, but not limited to the following worksites conditions:

- a. hazardous areas
- b. trip hazard
- c. robotic movement
- d. energized electrical works
- e. overhead suspended load test
- f. critical high pressure test
- g. chemical introduction
- h. fall exposure
- i. Emergency Response Zone
- j. Unsafe condition zone
- k. Danger zone
- l. Confined and enclosed space

6. Construction Safety and Health Committee. The following shall apply:

6.1 Composition

- a. Project Manager or his representative as chairperson ex-officio
- b. General Construction Safety and Health Officer
- c. Construction Safety and Health Officers
- d. Safety representatives (SAFETY OFFICER) from each subcontractor.

If DOLE's minimum requirements based on the number of workers of the contractor requires only a part time safety officer, the safety officer need not be an accredited safety practitioner or consultant.

- e. Doctors, nurses and other health personnel pursuant to the requirements stated in Rule 1042 of the OSHS
- f. Workers' representatives

If there are no contractor's sub---contractors or the constructor is a subcontractor, the safety and health committee shall be in accordance with the requirements of Rule 1040 of the Occupational Safety and Health Standards.

6.2 Duties and responsibilities

- a. The Project Manager or his representative shall act as the Chairperson of the committee.
- b. The committee shall conduct safety meetings at least once a month.
- c. The persons constituting the Safety and Health Committee shall, as far as practicable, be at the construction site whenever construction work is being undertaken.
- d. The committee shall continually plan and develop accident prevention programs.
- e. The committee shall review reports of inspection, accident investigation and monitor implementation of the safety program.
- f. The committee shall provide necessary assistance to government authorities authorized to conduct inspection in the proper conduct of their activities
- g. The committee shall initiate and supervise safety trainings for its employees
- h. The committee shall conduct safety inspection at least once a month, and shall conduct investigation of work accidents and shall submit a regular report to DOLE.
- i. The committee shall initiate and supervise the conduct of daily brief safety meetings or toolbox meetings.
- j. The committee shall prepare and submit to DOLE, reports on said committee meetings.
- k. The committee shall develop a disaster contingency plan and organize such emergency service units as may be necessary to handle disaster situations.

7. Construction Safety and Health Reports. The following shall apply:

7.1 The Construction Safety and Health Report shall include:

- a. Monthly summary of all safety and health committee meetings
- b. Summary of all accident investigations /reports
- c. Corrective/Preventive measures/action for each hazard
- d. Periodic hazards assessment with corresponding remedial measures for new hazards
- e. Safety promotions and trainings conducted/attended

7.2 Submission of Reports. The following shall apply:

- a. All general constructors shall be required to submit a monthly construction safety and health report to the BWC copy furnished the DOLE Regional Office concerned.
- b. In case of any dangerous occurrence or major accident resulting in death or permanent total disability, the concerned employer shall notify the appropriate DOLE Regional Office within twenty---four (24) hours from occurrence.
- c. After the conduct of investigation by the concerned construction safety and health

officer, the employer shall report all disabling injuries to the DOLE Regional Office on or before the 20th of the month following the date of occurrence of accident using the DOLE/BWC/HSD---IP---6 form.

8. Cost of Construction Safety and Health Program. The following shall apply:

8.1 The total cost of implementing a Construction Safety and Health Program shall be mandatory and shall be made an integral part of the project's construction cost as a separate pay item, duly quantified and reflected in the Project's Tender Documents and likewise reflected in the Project's Construction Contract Documents.

8.2 The cost of the following PPEs: helmet, eye goggles, safety shoes, working gloves, rain coats, dust mask, ear muffs, rubber boots, and other similar PPE's shall be indicated/enumerated per cost, per worker, foreman, leadman, jackhammer operator, carpenter, electrician, mason, steelman, painter, mechanic, welder, plumber, heavy equipment operator, physician/inspector, and other such personnel.

8.3 The PPEs shall be sufficient in number for all workers particularly where simultaneous construction activities/operations in different areas are being undertaken.

8.4 The cost of the minimum required inventory of medicines, supplies and equipment as indicated in "Attachment C" of the OHS Standards shall be included.

8.5 The safety personnel manpower cost salaries/wages, benefits shall be included.

8.6 Cost of safety promotions/activities, training conducted and salaries of safety and health personnel, medical personnel employed or engaged by constructor.

9. Safety and Health Information. The following shall apply:

9.1 Workers shall be adequately and suitably:

- a. Informed of potential safety and health hazards to which they may be exposed at their workplace.
- b. Instructed and trained on the measures available for the prevention, control and protection against those hazards.

9.2 Every worker shall receive instruction and training regarding general safety and health common to construction sites which shall include, but not limited to the following:

- a. The basic rights and duties of the workers at the construction site.
- b. The means of access and egress, both during normal work and in emergency situations.
- c. The measures for good housekeeping.
- d. The location and proper use of welfare and first---aid facilities.
- e. The proper care and use of the items or personal protective equipment and protective clothing provided the workers.
- f. The general measures for personal hygiene and health protection.
- g. The fire precautions to be taken.
- h. The action to be taken in case of any emergency.

- i. The requirements of relevant health and safety rules and regulations.

9.3 *The instruction, training and information materials provided shall be given in a language or dialect understood by the worker.*

Written, oral, visual and participative approaches shall be used to ensure that the worker has understood and assimilated the information.

9.4 Each supervisor or any person e.g. foreman, lead man, gangboss, and other similar personnel shall conduct daily tool box or similar meetings prior to the start of the operations for the day to discuss with the workers and to anticipate safety and health problems related.

9.5 No person shall be deployed in a construction site unless he has undergone a safety and health awareness seminar conducted by safety professionals or accredited organizations or other institutions recognized by DOLE.

9.6 *Specialized instruction and training shall be provided to the following:*

- a. Drivers and operators of lifting appliances, transport, earth---moving and materials---handling equipment and machinery; or any equipment of specialized or dangerous nature.
- b. Workers engaged in the erection or dismantling of scaffolds.
- c. Workers engaged in excavations at least one (1) meter deep or deep enough to cause danger, shafts, earthworks, underground works or tunnels.
- d. Workers handling explosives or engaged in blasting operations.
- e. Workers engaged in pile---driving.
- f. Workers in compressed air cofferdams and caissons.
- g. Workers engaged in the erection of prefabricated parts of steel structural frames and tall chimneys, and in concrete work, form work and other such type of work.
- h. Workers handling hazardous substances and materials.
- i. Workers as signalers and riggers.
- j. Other types of workers as may be categorized by TESDA

10. Welfare Facilities. The following shall apply:

The employer shall provide the following welfare facilities in order to ensure humane working conditions:

10.1 *Adequate supply of safe drinking water:*

- a. If the water is used in common drinking areas, it shall be stored in closed containers from which the water is dispensed through taps or cocks. Such containers shall be cleaned and disinfected at regular intervals but not exceeding fifteen (15) days.
- b. Notices shall be posted conspicuously in locations where there is water supply that is not for drinking purposes

10.2 *Adequate sanitary and washing facilities:*

- a. Adequate facilities for changing and for the storage and drying of work clothes.

- b. Adequate accommodation facilities for taking meals and for shelter.
- c. Adequate washing facilities regardless of sex for every 25 employees up to the first 100 and an additional of one (1) facility for every 40 additional workers.
- d. Suitable living accommodation for workers and as may be applicable for their families, such as separate sanitary, washing and sleeping facilities for men and women workers.

10.3 Adequate and suitable toilet and bath facilities for both male and female workers at the following ratio:

- a. Where the number of female workers exceeds 100, one (1) toilet and bath facilities for every 20 female workers up to the first 100 and one (1) toilet and bath facilities for every 30 additional female workers.
- b. Where the number of male workers exceeds 100 and sufficient urinals have been provided, one (1) toilet and bath facilities for every 25 sales up to the first 100 and one (1) more for every 40 additional male workers.
- c. Every toilet shall be provided with enclosure, partitioned off so as to provide/ensure privacy. If feasible, shall have a proper door and fastenings, so doors shall be tight fitting and self---closing.
- d. Urinals shall be placed or screened so as not to be visible from other parts of the site, or other workers.
- e. Rest rooms shall be so arranged so as to be conveniently accessible to the workers and shall be kept clean and orderly at all times.
- f. Adequate hand---washing facilities shall be so provided within or adjacent to the toilet facilities
- g. In cases where persons of both sexes are employed, toilet and bath facilities for each sex shall be situated or partitioned so that the interior will not be visible even when the door of any facility is opened from any place where persons of the other sex have to work or pass.
- h. If toilet and bath facilities for one sex adjoin those for the other sex, the approaches shall be separate, and toilet and bath facilities for each sex shall be properly indicated.

Mode of Measurement

Method of Measurement shall be paid for at the contract unit price for the Pay Items shown in the Bid Schedule which price and payment shall be full compensation for the provision of Personal Protective Equipment (PPE) and Devices, Medicines, Medical Supplies and other incidentals necessary to complete the item.

Basis of Payment

Payment shall be made on a proportional basis, calculated by multiplying the percentage rate of physical progress to the total lump sum amount every progress billing.

Payment will be made under:

| | | |
|--------------|-------------------------------------|---------------------|
| Pay Item No. | Description | Unit of Measurement |
| B.7 | Construction Safety &Health program | Lump Sum |

ATTACHMENT C

Estimates of Medicines, Supplies and Facilities for Non-Hazardous Workplaces

| | <i>Number of Workers</i> | | | | | |
|---|--------------------------|--------------|----------------|----------------|------------------|--------------|
| | 1-50 | 51-99 | 100-199 | 200-600 | 601-2,000 | 2,001 |
| I. Medicines | | | | | | |
| 1. Topical Antiseptic, cc. | 60 | 60 | 60 | 120 | 240 | 240 |
| 2. Antiseptic eyewash, cc. | - | - | - | - | - | - |
| 3. 70% Isopropyl Alcohol, cc. | 240 | 240 | 240 | 240 | 500 | 500 |
| 4. Aromatic Spirit of Ammonia, cc | 30 | 30 | 30 | 30 | 30 | 30 |
| 5. Toothache drops, cc | 15 | 15 | 30 | 30 | 30 | 30 |
| 6. Hydrogen peroxide soln, cc. | 120 | 120 | 120 | 240 | 240 | 240 |
| 7. Burn ointment, tube | - | - | 1 | 1 | 1 | 1 |
| 8. Analgesic/ Antipyretic, tablets | 10 | 10 | 10 | 20 | 30 | 40 |
| 9. Anti-histaminic tablets | - | - | 10 | 20 | 30 | 40 |
| 10. Antacid tablets | 10 | 10 | 10 | 20 | 30 | 40 |
| 11. Anti-diarrhea tablets | 10 | 10 | 10 | 20 | 30 | 40 |
| II. Medical Supplies & Equipment | | | | | | |
| | <i>Number of Workers</i> | | | | | |
| | 1-50 | 51-99 | 100-199 | 200-600 | 601-2,000 | 2,001 |
| 1. First Aid pamphlet | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. First Aid box | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. Thermometer | 1 | 1 | 1 | 1 | 2 | 2 |
| 4. Stethoscope | - | - | 1 | 1 | 1 | 1 |
| 5. Sphygmomanometer | - | - | 1 | 1 | 1 | 1 |
| 6. Sterile gauze pads | 5 | 5 | 5 | 10 | 20 | 20 |
| 7. Gauze, bandage, roll | 1 | 1 | 1 | 1 | 2 | 2 |
| 8. Adhesive tape, roll | 1 | 1 | 1 | 1 | 1 | 1 |
| 9. Absorbent cotton | * | * | * | * | * | * |
| 10. Bandage scissors | 1 | 1 | 1 | 1 | 1 | 1 |

| | | | | | | | |
|--|-------------|--------------|----------------|----------------|------------------|-----------------|--|
| 11.Triangular bandage | - | 1 | 1 | 1 | 2 | 2 | |
| 12.Safety pins | - | * | * | * | * | * | |
| 13.Tongue depressors, wooden | - | - | 100 | 100 | 100 | 100 | |
| 14.Hot water bag | 1 | 1 | 1 | 1 | 1 | 1 | |
| 15.Ice bag | 1 | 1 | 1 | 1 | 1 | 1 | |
| 16.Disposable hypodermic syringes w/needles, 2.5cc | - | - | 10 | 10 | 10 | 20 | |
| 17.Rubber tourniquet | 1 | 1 | 1 | 1 | 1 | 1 | |
| 18.Venoclysis set (IV tubing butterfly) | - | 1 | 1 | 2 | 2 | 2 | |
| 19. Minor Surgical Instruments | - | - | * | * | * | * | |
| 20.Forceps | - | * | * | * | * | * | |
| 21. Sterilizer | - | - | - | - | 1 | 1 | |
| 22.Waste pail | 1 | 1 | 1 | 1 | 1 | 1 | |
| 23.Soap cake | * | * | * | * | * | * | |
| 24.Examining table | - | - | - | 1 | 1 | 1 | |
| 25.Linens | - | - | - | * | * | * | |
| 26.Bed | - | - | - | 1 | 1 | 1 | |
| 27.Stretchers | - | - | - | 1 | 1 | 1 | |
| 28.Cabinet for medicine &supplies | - | - | 1 | 1 | 1 | 1 | |
| III. Medical Facilities | | | | | | | |
| Number of Workers | | | | | | | |
| | 1-50 | 51-99 | 100-199 | 200-600 | 601-2,000 | 2,001 up | |
| Treatment Room | | X | X | X | | | |
| 2. Emergency Clinics | | | | | X | X | |
| 3. Emergency Hospital/Infirmary | | | | | | | |
| 4. Dental Clinic | | | | | | X | |

ITEM SPL A –REMOVAL OF GLASS ON EXISTING WINDOW

100.1 Description

This item shall consist of removing and disposing all existing broken glass as designated in the Contract, except those objects that are designated to remain in place or are to be removed in consonance with other provisions of this Specification. The work shall also include the preservation from injury or defacement of all objects

designated to remain.

If perishable material is burned, it shall be burned under the constant care of component 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. If permitted, burning shall be done in accordance with applicable laws, ordinances, and regulation.

The Contractor shall use high intensity burning procedures, (i.e., incinerators, high stacking or pit and ditch burning with forced air supplements) that produce intense burning with little or no visible smoke emission during the burning process. At the conclusion of each burning session, the fire shall be completely extinguished so that no smoldering debris remains.

In the event that the Contractor is directed by the Engineer not to start burning operations or to suspend such operations because of hazardous weather conditions, material to be burned which interferes with subsequent construction operations shall be moved by the Contractor to temporary locations clear of construction operations and later, if directed by the Engineer, shall be placed on a designated spot and burned.

Materials and debris which cannot be burned and perishable materials may be disposed off by methods and at locations approved by the Engineer, on or off the project. If disposal is by burying, the debris shall be placed in layers with the material so disturbed to avoid nesting. Each layer shall be covered or mixed with earth material by the land-fill method to fill all voids. 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 project, 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 project. 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.

100.4 Basis of Payment

The accepted quantities, measured as prescribed in Section 100.3, shall be paid for at the Contract unit price for each of the Pay Items listed below that is included in the Bill of Quantities, which price and payment shall be full compensation for furnishing all labor, equipment, tools and incidentals necessary to complete the work prescribed in this Item.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|--------------------------------------|---------------------|
| SPL A | Removal of Glass on Existing Windows | Sq.m. |

B.9 MOBILIZATION AND DEMOBILIZATION

General

Work under this Contract shall be in accordance with the terms and conditions stipulated in the Bid Documents.

Scope of Work

This Section includes mobilization, demobilization, assembly, and disassembly of all proposed minimum equipment including incidentals necessary to complete the work. It shall be computed based on the equipment requirements of the project stipulated in the proposal and contract booklet. In no case shall mobilization and demobilization exceed 1% of the Estimated Direct Cost (EDC) of the civil works items

Mobilization

- a) The Contractor shall mobilize and put into operation all equipment required to undertake the Bid Documents, which is the Bill of Quantities and all associated work items.
- b) Mobilization shall include the transferring to the job-sites of all equipment necessary for the execution and completion of the work subject to the confirmation of the LGU.
- c) Equipment encountering breakdowns must be repaired at the most expeditious method possible at no cost to the LGU. In the event that the equipment call for major repair works that cannot be undertaken at the site, the Contractor shall replace such equipment with equal or better performance capacity at no additional mobilization costs to the LGU, and the Contractor shall not be entitled to any time extension.
- d) The Contractor will be held responsible for any damage to existing structures, works, materials, or equipment because of his operations. The Contractor shall repair or replace any damaged structures, works, materials, or equipment to the satisfaction of the LGU, and at no additional cost to the Procuring Entity.
- e) The Contractor shall be responsible for all damage to streets, roads, railroads, curbs, sidewalks, highways, shoulders, ditches, embankment, culverts, bridges, or other public or private property, which may be caused by the transport of equipment to or from the Works.
- f) All construction equipment provided by the Contractor shall, when brought on to the Site, be deemed to be exclusively intended for the construction and completion of the Works and the Contractor shall not remove the same or any part thereof without the approval of the LGU.
- g) The LGU shall not at any time be liable for the loss or damage to any of the said construction plant and equipment provided by the Contractor.

Demobilization

Demobilization upon request of the Contractor and approval by the LGU shall include the following:

- a) The dismantling, preparation and loading for removal and shipment of all Contractors' equipment at the site after completion of the works.
- b) Transportation of all the above equipment from the site to the Contractor's home station or somewhere else outside the sites.
- c) Removal of all supplementary markers furnished and installed by the Contractor, provided that the LGU has not taken the option to retain the markers.
- d) The clean-up of the Site and the removal of materials, debris, waste, etc., and making good damages or temporary alterations, to the satisfaction of the LGU.
- e) The restoration, up to a degree acceptable to the LGU, of damage to the surrounding area (including vegetation, minor structures etc.) resulting from the construction or construction-related activities

Method of Measurement

The Lump sum price shall provide for the mobilization and demobilization of all Contractor's equipment to cover all costs for mobilization and demobilization, transportation, insurance during transportation, port fees, taxes, utilities, operators and all other incidentals.

The payment shall cover the dismantling of the work site by the Contractor, with removal of all the alterations, construction equipment, so that the site is restored to the state it was in before the installations and equipment were placed there.

Basis of Payment

All costs associated with and necessary for compliance with this Specification shall be included in the Lump Sum price. No additional or separate payment will be made in this regard.

The LGU may at any time withhold payment if in the opinion of the Engineer, the requirements of this Specification section are not provided.

The Lump Sum payments will be paid following the schedule below:

- 50 % of the lump sum cost will be paid for mobilization and 50% for demobilization.
- The progress billing for mobilization is computed by dividing the number of equipment mobilized at the site over the total minimum number of equipment required in the bidding documents multiplied by 50% of the lump sum cost. Likewise, payment for demobilization will follow the computation process for mobilization but only after the completion of the works assigned to the equipment and site restored in good condition.

| <u>Pay Item</u> | <u>Description</u> | <u>Unit</u> |
|-----------------|---------------------------------|-------------|
| B.9 | Mobilization and Demobilization | lump sum |

ITEM 803 – STRUCTURE EXCAVATION

803.1 Description

This Item shall consist of the necessary excavation for foundation 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 surplus 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.

803.2 Construction Requirements

803.2.1 Clearing and Grubbing

Prior to starting excavation operations in any area, all necessary clearing and grubbing in that area shall have been performed in accordance with Item 100, Clearing and Grubbing.

803.2.2 Excavation

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.

- (2) Structures other than pipe culverts. All rock or other hard foundation materials shall be cleaned 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 not 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) Pipe Culverts. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe.

Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the foundation grade for a depth of at least 300 mm or 4 mm for each 100 mm of fill over the top of pipe, whichever is greater, but not to exceed three-quarters of the vertical inside diameter of the pipe. The width of the excavation shall be at least 300 mm (12 inches) greater than the horizontal outside diameter of the pipe. The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 150 mm (6 inches) in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, such unstable soil under the pipe and for a width of at least one diameter on each side of the pipe shall be removed to the depth directed by the Engineer and replaced with approved granular foundation fill material properly compacted to provide adequate support for the pipe, unless other special construction methods are called for on the Plans.

The foundation surface shall provide a firm foundation of uniform density throughout the length of the culvert and, if directed by the Engineer, shall be

cambered in the direction parallel to the pipe centerline.

Where pipe culverts are to be placed in trenches excavated in embankments, the excavation of each trench shall be performed after the embankment has been constructed to a plane parallel to the proposed profile grade and to such height above the bottom of the pipe as shown on the Plans or directed by the Engineer.

803.2.3 Utilization of Excavated Materials

All excavated materials, so far as suitable, shall be utilized as backfill or embankment. The surplus materials shall be disposed off in such manner as not to obstruct the stream or otherwise impair the efficiency or appearance of the structure. No excavated materials shall be deposited at any time so as to endanger the partly finished structure.

803.2.4 Cofferdams

Suitable and practically watertight cofferdams shall be used wherever water-bearing strata are encountered above the elevation of the bottom of the excavation. If requested, the Contractor shall submit drawings showing his proposed method of cofferdam construction, as directed by the Engineer.

Cofferdams or cribs for foundation construction shall in general, be carried well below the bottoms of the footings and shall be well braced and as nearly watertight as practicable. In general, the interior dimensions of cofferdams shall be such as to give sufficient clearance for the construction of forms and the inspection of their exteriors, and to permit pumping outside of the forms. Cofferdams or cribs which are tilted or moved laterally during the process of sinking shall be righted or enlarged so as to provide the necessary clearance.

When conditions are encountered which, as determined by the Engineer, render it impracticable to dewater the foundation before placing the footing, the Engineer may require the construction of a concrete foundation seal of such dimensions as he may consider necessary, and of such thickness as to resist any possible uplift. The concrete for such seal shall be placed as shown on the Plans or directed by the Engineer. The foundation shall then be dewatered and the footing placed. When weighted cribs are employed and the mass is utilized to overcome partially the hydrostatic pressure acting against the bottom of the foundation seal, special anchorage such as dowels or keys shall be provided to transfer the entire mass of the crib to the foundation seal. When a foundation seal is placed under water, the cofferdams shall be vented or ported at low water level as directed.

Cofferdams shall be constructed so as to protect green concrete against damage from sudden rising of the stream and to prevent damage to the foundation by erosion. No timber or bracing shall be left in cofferdams or cribs in such a way as to extend into substructure masonry, without written permission from the Engineer.

Any pumping that may be permitted from the interior of any foundation enclosure shall be done in such a manner as to preclude the possibility of any portion of the concrete material being carried away. Any pumping required during the placing of concrete, or for a period of at least 24 hours thereafter, shall be done from a suitable sump located outside the concrete forms. Pumping to dewater a sealed cofferdam shall not commence until the seal has set sufficiently to withstand the hydrostatic pressure.

Unless otherwise provided, cofferdams or cribs, with all sheeting and bracing involved therewith, shall be removed by the Contractor after the completion of the substructure. Removal shall be effected in such manner as not to disturb or mar finished masonry.

803.2.5 Preservation of Channel

Unless otherwise permitted, no excavation shall be made outside of caissons, cribs, cofferdams, or sheet piling, and the natural stream bed adjacent to structure shall not be disturbed without permission from the Engineer. If any excavation or dredging is made at the side of the structure before caissons, cribs, or cofferdams are sunk in place, the Contractor shall, after the foundation base is in place, backfill all such excavations to the original ground surface or stream bed with material satisfactory to the Engineer.

803.2.6 Backfill and Embankment for Structures Other Than Pipe Culverts

Excavated areas around structures shall be backfilled with free draining granular material approved by the Engineer and placed in horizontal layers not over 150 mm (6 inches) in thickness, to the level of the original ground surface. Each layer shall be moistened or dried as required and thoroughly compacted with mechanical tampers.

In placing backfills or embankment, the material shall be placed simultaneously in so far as possible to approximately the same elevation on both sides of an abutment, pier, or wall. If conditions require placing backfill or embankment appreciably higher on one side than on the opposite side, the additional material on the higher side shall not be placed until the masonry has been in place for 14 days, or until tests made by the laboratory under the supervision of the Engineer establishes that the masonry has attained sufficient strength to withstand any pressure created by the methods used and materials placed without damage or strain beyond a safe factor.

Backfill or embankment shall not be placed behind the walls of concrete culverts or abutments or rigid frame structures until the top slab is placed and cured. Backfill and embankment behind abutments held at the top by the superstructure, and behind the sidewalls of culverts, shall be carried up simultaneously behind opposite abutments or sidewalls.

All embankments adjacent to structures shall be constructed in horizontal layers

and compacted as prescribed in Subsection 104.3.3 except that mechanical tampers may be used for the required compaction. Special care shall be taken to prevent any wedging action against the structure and slopes bounding or within the areas to be filled shall be benched or serrated to prevent wedge action. The placing of embankment and the benching of slopes shall continue in such a manner that at all times there will be horizontal berm of thoroughly compacted material for a distance at least equal to the height of the abutment or wall to the backfilled against except insofar as undisturbed material obtrudes upon the area.

Broken rock or coarse sand and gravel shall be provided for a drainage filter at weepholes as shown on the Plans.

803.2.7 Bedding, Backfill, and Embankment for Pipe Culverts

Bedding, Backfill and Embankment for pipe culverts shall be done in accordance with Item 500, Pipe Culverts and Storm Drains.

803.3 Method of Measurement

803.3.1 Structure Excavation

The volume of excavation to be paid for will be the number of cubic metres measured in original position of material acceptably excavated in conformity with the Plans or as directed by the Engineer, but in no case, except as noted, will any of the following volumes be included in the measurement for payment:

- (1) The volume outside of vertical planes 450 mm (18 inches) outside of and parallel to the neat lines of footings and the inside walls of pipe and pipe- arch culverts at their widest horizontal dimensions.
- (2) The volume of excavation for culvert and sections outside the vertical plane for culverts stipulated in (1) above.
- (3) The volume outside of neat lines of underdrains as shown on the Plans, and outside the limits of foundation fill as ordered by the Engineer.
- (4) The volume included within the staked limits of the roadway excavation, contiguous channel changes, ditches, etc., for which payment is otherwise provided in the Specification.
- (5) Volume of water or other liquid resulting from construction operations and which can be pumped or drained away.
- (6) The volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed ground.
- (7) the volume of any material rehandled, except that where the Plans indicate or the Engineer directs the excavation after embankment has been placed and except that when installation of pipe culverts by the imperfect trench method

specified in Item 500 is required, the volume of material re-excavated as directed will be included.

- (8) The volume of excavation for footings ordered at a depth more than 1.5 m (60 inches) below the lowest elevation for such footings shown on the original Contract Plans, unless the Bill of Quantities contains a pay item for excavation ordered below the elevations shown on the Plans for individual footings.

803.3.2 Bridge Excavation

The volume of excavation, designated on the Plans or in the Special Provisions as "Bridge Excavation" will be measured as described below and will be kept separate for pay purposes from the excavation for all structures.

The volume of bridge excavation to be paid shall be the vertical 450 mm (18 inches) outside of and parallel to the neat lines of the footing. The vertical planes shall constitute the vertical faces of the volume for pay quantities regardless of excavation inside or outside of these planes.

803.3.3 Foundation Fill

The volume of foundation fill to be paid for will be the number of cubic metres measures in final position of the special granular material actually provided and placed below the foundation elevation of structures as specified, complete in place and accepted.

803.3.4 Shoring, Cribbing, and Related Work

Shoring, cribbing and related work whenever included as a pay item in Bill of Quantities will be paid for at the lump sum bid price. This work shall include furnishing, constructing, maintaining, and removing any and all shoring, cribbing, cofferdams, caissons, bracing, sheeting water control, and other operations necessary for the acceptable completion of excavation included in the work of this Section, to a depth of 1.5 m below the lowest elevation shown on the Plans for each separable foundation structure.

803.3.5 Basis of Payment

The accepted quantities, measured as prescribed in Section 103.3, shall be paid for at the contract unit price for each of the particular pay items listed below that is included in the Bill of Quantities. The payment shall constitute full compensation for the removal and disposal of excavated materials including all labor, equipment, tools and incidentals necessary to complete the work prescribed in this Item, except as follows:

- (1) Any excavation for footings ordered at a depth more than 1.5 m below the lowest elevation shown on the original Contract Plans will be paid for as provided in Part K, Measurement and Payment, unless a pay item for

excavation ordered below Plan elevation appears in the Bill of Quantities.

- (2) Concrete will be measured and paid for as provided under Item 405, Structural Concrete.
- (3) Any roadway or borrow excavation required in excess of the quantity excavated for structures will be measured and paid for as provided under Item 102.
- (4) Shoring, cribbing, and related work required for excavation ordered more than 1.5 m (60 inches) below Plan elevation will be paid for in accordance with Part K.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|-------------------------------------|---------------------|
| 803(1)a | Structural Excavation (Common Soil) | Cubic meter |

ITEM 804 - EMBANKMENT

804.1 Description

This Item shall consist of the construction of embankment in accordance with this Specification and in conformity with the lines, grades and dimensions shown on the Plans or established by the Engineer.

804.2 Material Requirements

Embankments shall be constructed of suitable materials, in consonance with the following definitions:

1. Suitable Material – Material which is acceptable in accordance with the Contract and which can be compacted in the manner specified in this Item. It can be common material or rock.

Selected Borrow, for topping – soil of such gradation that all particles will pass a sieve with 75 mm (3 inches) square openings and not more than 15 mass percent will pass the 0.075 mm (No. 200) sieve, as determined by AASHTO T 11. The material shall have a plasticity index of not more than 6 as determined by ASSHTO T 90 and a liquid limit of not more than 30 as determined by AASHTO T 89.

2. Unsuitable Material – Material other than suitable materials such as:
 - (a) Materials containing detrimental quantities of organic materials, such as grass, roots and sewerage.

- (b) Organic soils such as peat and muck.
- (c) Soils with liquid limit exceeding 80 and/or plasticity index exceeding 55.
- (d) Soils with a natural water content exceeding 100%.
- (e) Soils with very low natural density, 800 kg/m³ or lower.
- (f) Soils that cannot be properly compacted as determined by the Engineer.

804.3 Construction Requirements

804.3.1 General

Prior to construction of embankment, all necessary clearing and grubbing in that area shall have been performed in conformity with Item 100, Clearing and Grubbing.

Embankment construction shall consist of constructing roadway embankments, including preparation of the areas upon which they are to be placed; the construction of dikes within or adjacent to the roadway; the placing and compacting of approved material within roadway areas where unsuitable material has been removed; and the placing and compacting of embankment material in holes, pits, and other depressions within the roadway area.

Embankments and backfills shall contain no muck, peat, sod, roots or other deleterious matter. Rocks, broken concrete or other solid, bulky materials shall not be placed in embankment areas where piling is to be placed or driven.

Where shown on the Plans or directed by the Engineer, the surface of the existing ground shall be compacted to a depth of 150 mm (6 inches) and to the specified requirements of this Item.

Where provided on the Plans and Bill of Quantities the top portions of the roadbed in both cuts and embankments, as indicated, shall consist of selected borrow for topping from excavations.

804.3.2 Methods of Construction

Where there is evidence of discrepancies on the actual elevations and that shown on the Plans, a preconstruction 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 embankment materials.

When embankment is to be placed and compacted on hillsides, or when new embankment is to be compacted against existing embankments, or when embankment is built one-half width at a time, the existing slopes that are steeper than 3:1 when measured at right angles to the roadway shall be continuously benched over those areas as the work is brought up in layers. Benching will be subject to the Engineer's approval and shall be of sufficient width to permit operation of placement and compaction equipment. Each horizontal cut shall begin at the intersection of the original ground and the vertical sides of the previous

cuts. Material thus excavated shall be placed and compacted along with the embankment material in accordance with the procedure described in this Section.

Unless shown otherwise on the Plans or special Provisions, where an embankment of less than 1.2 m (4 feet) below subgrade is to be made, all sod and vegetable matter shall be removed from the surface upon which the embankment is to be placed, and the cleared surfaced shall be completely broken up by plowing, scarifying, or steeping to a minimum depth of 150 mm except as provided in Subsection 102.2.2. This area shall then be compacted as provided in Subsection 104.3.3. Sod not required to be removed shall be thoroughly disc harrowed or scarified before construction of embankment. Wherever a compacted road surface containing granular materials lies within 900 mm (36 inches) of the subgrade, such old road surface shall be scarified to a depth of at least 150 mm (6 inches) whenever directed by the Engineer. This scarified materials shall then be compacted as provided in Subsection 104.3.3.

When shoulder excavation is specified, the roadway shoulders shall be excavated to the depth and width shown on the Plans. The shoulder material shall be removed without disturbing the adjacent existing base course material, and all excess excavated materials shall be disposed off as provided in Subsection 102.2.3. If necessary, the areas shall be compacted before being backfilled.

Roadway embankment of earth material shall be placed in horizontal layers not exceeding 200 mm (8 inches), loose measurement, and shall be compacted as specified before the next layer is placed. However, thicker layer maybe placed if vibratory roller with high compactive effort is used provided that density requirement is attained and as approved by the Engineer. Trial section to this effect must be conducted and approved by the Engineer. Effective spreading equipment shall be used on each lift to obtain uniform thickness as determined in the trial section prior to compaction. As the compaction of each layer progresses, continuous leveling and manipulating will be required to assure uniform density. Water shall be added or removed, if necessary, in order to obtain the required density. Removal of water shall be accomplished through aeration by plowing, blading, discing, or other methods satisfactory to the Engineer.

Where embankment is to be constructed across low swampy ground that will not support the mass of trucks or other hauling equipment, the lower part of the fill may be constructed by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers.

When excavated material contains more than 25 mass percent of rock larger than 150 mm in greatest diameter and cannot be placed in layers of the thickness prescribed without crushing, pulverizing or further breaking down the pieces resulting from excavation methods, such materials may be placed on the embankment in layers not exceeding in thickness the approximate average size of the larger rocks, but not greater than 600 mm (24 inches).

Even though the thickness of layers is limited as provided above, the placing of individual rocks and boulders greater than 600 mm in diameter will be permitted provided that when placed, they do not exceed 1200 mm (48 inches) in height and provided they are carefully distributed, with the interstices filled with finer material to form a dense and

compact mass.

Each layer shall be leveled and smoothed with suitable leveling equipment and by distribution of spalls and finer fragments of earth. Lifts of material containing more than 25 mass percent of rock larger than 150 mm in greatest dimensions shall not be constructed above an elevation 300 mm (12 inches) below the finished subgrade. The balance of the embankment shall be composed of suitable material smoothed and placed in layers not exceeding 200 mm (8 inches) in loose thickness and compacted as specified for embankments.

Dumping and rolling areas shall be kept separate, and no lift shall be covered by another until compaction complies with the requirements of Subsection 104.3.3.

Hauling and leveling equipment shall be so routed and distributed over each layer of the fill in such a manner as to make use of compaction effort afforded thereby and to minimize rutting and uneven compaction.

804.3.3 Compaction

Compaction Trials

Before commencing the formation of embankments, the Contractor shall submit in writing to the Engineer for approval his proposals for the compaction of each type of fill material to be used in the works. The proposals shall include the relationship between the types of compaction equipment, and the number of passes required and the method of adjusting moisture content. The Contractor shall carry out full scale compaction trials on areas not less than 10 m wide and 50 m long as required by the Engineer and using his proposed procedures or such amendments thereto as may be found necessary to satisfy the Engineer that all the specified requirements regarding compaction can be consistently achieved. Compaction trials with the main types of fill material to be used in the works shall be completed before work with the corresponding materials will be allowed to commence.

Throughout the periods when compaction of earthwork is in progress, the Contractor shall adhere to the compaction procedures found from compaction trials for each type of material being compacted, each type of compaction equipment employed and each degree of compaction specified.

Earth

The Contractor shall compact the material placed in all embankment layers and the material scarified to the designated depth below subgrade in cut sections, until a uniform density of not less than 95 mass percent of the maximum dry density determined by AASHTO T 99 Method C, is attained, at a moisture content determined by Engineer to be suitable for such density. Acceptance of compaction may be based on adherence to an approved roller pattern developed as set forth in Item 106, Compaction Equipment and Density Control Strips.

The Engineer shall during progress of the Work, make density tests of compacted material in accordance with AASHTO T 191, T 205, or other approved field density tests,

including the use of properly calibrated nuclear testing devices. A correction for coarse particles may be made in accordance with AASHTO T 224. If, by such tests, the Engineer determines that the specified density and moisture conditions have not been attained, the Contractor shall perform additional work as may be necessary to attain the specified conditions.

At least one group of three in-situ density tests shall be carried out for each 500 m of each layer of compacted fill.

Rock

Density requirements will not apply to portions of embankments constructed of materials which cannot be tested in accordance with approved methods.

Embankment materials classified as rock shall be deposited, spread and leveled the full width of the fill with sufficient earth or other fine material so deposited to fill the interstices to produce a dense compact embankment. In addition, one of the rollers, vibrators, or compactors meeting the requirements set forth in Subsection 106.2.1, Compaction Equipment, shall compact the embankment full width with a minimum of three complete passes for each layer of embankment.

804.3.4 Protection of Roadbed during Construction

During the construction of the roadway, the roadbed shall be maintained in such condition that it will be well drained at all times. Side ditches or gutters emptying from cuts to embankments or otherwise shall be so constructed as to avoid damage to embankments by erosion.

804.3.5 Protection of Structure

If embankment can be deposited on one side only of abutments, wing walls, piers or culvert headwalls, care shall be taken that the area immediately adjacent to the structure is not compacted to the extent that it will cause overturning of, or excessive pressure against the structure. When noted on the Plans, the fill adjacent to the end bent of a bridge shall not be placed higher than the bottom of the backfill of the bent until the superstructure is in place. When embankment is to be placed on both sides of a concrete wall or box type structure, operations shall be so conducted that the embankment is always at approximately the same elevation on both sides of the structure.

804.3.6 Rounding and Warping Slopes

Rounding-Except in solid rock, the tops and bottoms of all slopes, including the slopes of drainage ditches, shall be rounded as indicated on the Plans. A layer of earth overlaying rock shall be rounded above the rock as done in earth slopes.

Warping-adjustments in slopes shall be made to avoid injury in standing trees or marring of weathered rock, or to harmonize with existing landscape features, and the transition to such adjusted slopes shall be gradual. At intersections of cuts and fills, slopes shall be adjusted and warped to flow into each other or into the natural ground surfaces

without noticeable break.

804.3.7 Finishing Roadbed and Slopes

After the roadbed has been substantially completed, the full width shall be conditioned by removing any soft or other unstable material that will not compact properly or serve the intended purpose. The resulting areas and all other low sections, holes or depressions shall be brought to grade with suitable selected material. Scarifying, blading, dragging, rolling, or other methods of work shall be performed or used as necessary to provide a thoroughly compacted roadbed shaped to the grades and cross-sections shown on the Plans or as staked by the Engineer.

All earth slopes shall be left with roughened surfaces but shall be reasonably uniform, without any noticeable break, and in reasonably close conformity with the Plans or other surfaces indicated on the Plans or as staked by the Engineer, with no variations therefrom readily discernible as viewed from the road.

804.3.8 Serrated Slopes

Cut slopes in rippable material (soft rock) having slope ratios between 0.75:1 and 2:1 shall be constructed so that the final slope line shall consist of a series of small horizontal steps. The step rise and tread dimensions shall be shown on the Plans. No scaling shall be performed on the stepped slopes except for removal of large rocks which will obviously be a safety hazard if they fall into the ditchline or roadway.

804.3.9 Earth Berms

When called for in the Contract, permanent earth berms shall be constructed of well graded materials with no rocks having a diameter greater than 0.25 the height of the berm. When local material is not acceptable, acceptable material shall be imported, as directed by the Engineer.

Compacted Berm

Compacted berm construction shall consist of moistening or drying and placing material as necessary in locations shown on the drawings or as established by the Engineer. Material shall contain no frozen material, roots, sod, or other deleterious materials. Contractor shall take precaution to prevent material from escaping over the embankment slope. Shoulder surface beneath berm will be roughened to provide a bond between the berm and shoulder when completed. The Contractor shall compact the material placed until at least 90 mass percent of the maximum density is obtained as determined by AASHTO T 99, Method C. The cross-section of the finished compacted berm shall reasonably conform to the typical cross-section as shown on the Plans.

Uncompacted Berm

Uncompacted berm construction shall consist of drying, if necessary and placing material in locations shown on the Plans or as established by the Engineer. Material shall contain no frozen material, roots, sod or other deleterious materials. Contractor shall take

precautions to prevent material from escaping over the embankment slope.

804.4 Method of Measurement

The quantity of embankment to be paid for shall be the volume of material compacted in place, accepted by the Engineer and formed with material obtained from any source.

Material from excavation per Item 802 which is used in embankment and accepted by the Engineer will be paid under Embankment and such payment will be deemed to include the cost of excavating, hauling, stockpiling and all other costs incidental to the work.

Material for Selected Borrow topping will be measured and paid for under the same conditions specified in the preceding paragraph.

804.5 Basis of Payment

The accepted quantities, measured as prescribed in Section 804.4, shall be paid for at the Contract unit price for each of the Pay Items listed below that is included in the Bill of Quantities. The payment shall continue full compensation for placing and compacting all materials including all labor, equipment, tools and incidentals necessary to complete the work prescribed in this Item.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|--------------------------------------|---------------------|
| 804(1)a | Embankment from Structure Excavation | Cubic Meter |
| 804(1)b | Embankment from Borrow | Cubic Meter |

ITEM 900 - REINFORCED CONCRETE

900.1 Description

This Item shall consist of furnishing, placing and finishing concrete in buildings and related structures, flood control and drainage, ports, and water supply structures in accordance with this specification and conforming to the lines, grades, and dimension shown on the plans.

900.2 Materials Requirements

900.2.1 Portland Cement

This shall conform to the requirement of ITEM 700, Volume II (Blue Book), Hydraulic cement.

900.2.2 Concrete Aggregates

Concrete aggregate shall conform to the requirements of subsection 311.2.2 and 311.2.3 under Item 311 of Volume II, (Blue Book) and ASTM C 33 for lightweight aggregates, except that aggregates failing to meet these specifications but which have been shown by special test or actual service to produce concrete of adequate strength and durability may be used under method (2) of determining the proportion of concrete, where authorized by the Engineer.

Except as permitted elsewhere in this section, the maximum size of the aggregate shall be not larger than one-fifth (1/5) of the narrowest dimensions between sides of forms of the member for which the concrete is to be used nor larger than three-fourths of the minimum clear spacing between individual reinforcing bars or bundles of bars or pre-tensioning strands.

900.2.2.1 Aggregate Tests

Samples of the fine and coarse aggregates to be used shall be selected by the Engineer for tests at least 30 days before the actual concreting operations are to begin. It shall be the responsibility of the contractor to designate the source or sources of aggregate to give the Engineer sufficient time to obtain the necessary samples and submit them for testing.

No aggregate shall be used until official advice has been received that it has satisfactorily passed all test, at which time written authority shall be given for its use.

900.2.3 Water

Water used in mixing concrete shall conform to the requirement of subsection 311.2.4 under Item 311, Part E of Volume II, (Blue Book).

900.2.4 Metal Reinforcement

Reinforcing steel bars shall conform to the requirements of the following Specifications:

Deformed & Plain Billet Steel Bars for concrete Reinforcement (ASTM A 615)

Bars for concrete Reinforcement AASHTO M 31

Deformed Rail - Steel and Plain

Bars for Concrete Reinforcement ASTM A 616

Deformed A x b - Steel and Plain

Bars for Concrete Reinforcement ASTM A 617

If reinforcing bars are to be welded, these ASTM specifications shall be supplemented by requirements assuring satisfactory weldability.

Bar and rod mats for concrete reinforcement ASTM A 187

Cold-Drawn Steel Wire for (ASTM A 82)

| | |
|---|--------------|
| concrete reinforcement | AASHTO M 32 |
| Welded steel wire fabric | (ASTM A 185) |
| for concrete reinforcement | AASHTO M55 |
| except that the weld shear strength requirement of those specification shall be extended to include a wire size differential up to and including six gages. | |
| Wire and Strands for prestressed | ASTMA416 |
| Concrete | ASTM A 421 |

Used in making strands for post-tensioning shall be cold- drawn and either stress-relieved in the case of uncoated strands, or hotdip galvanized in the case of galvanized strands.

High strength alloy steel bar for post- tensioning shall be proofstressed to 90 % of the granted tensile strength. After proofstressing, the bars shall conform to the following minimum properties:

| | |
|--------------------------------|-------------|
| Tensile strength f_s' | 1000 MPa |
| Yield strength (0.2 offset) | 0.90 f_s' |
| Elongation at rupture in | |
| 20 diameter | 4 percent |
| Reduction of area at rupture | 25 percent |
| Structural steel | ASTM A 36 |
| Steel Pipe for concrete-filled | ASTM A 53 |
| pipe columns | |
| Cast-Iron Pipe for composite | ASTM A 377 |
| columns | |

900.2.5 Admixtures

Air-entraining admixtures, if used, shall conform to ASTM C 260.

Water-reducing admixtures, retarding admixtures, water-reducing and retarding admixtures and water reducing and accelerating admixtures, if used, shall conform to the requirements of ASTM C 494.

900.2.6 Storage of Materials

Cement and aggregates shall be stored in such a manner as to prevent their deterioration or the intrusion of foreign matter. Cement shall be stored, immediately upon arrival on the site of the work, in substantial, waterproof bodegas, with a floor raised from the ground sufficiently high to be free from dampness. Aggregates shall be stored in such a manner as to avoid the inclusion of foreign materials.

900.3 Construction Requirements

Notations: The notations used in these regulations are defined as follows:

$f'c$ = compressive strength of concrete

F_{sp} = ratio of splitting tensile strength to square root of compressive strength.

900.3.1 Concrete Quality

All plans submitted for approval or used for any project shall clearly show the specified strength, $f'c$, of concrete of the specified age for which each part of the structure was designed.

Concrete that will be exposed to sulfate containing or other chemically aggressive solutions shall be proportioned in accordance with "Recommended Practice for Selecting Proportions for Concrete (ACI 613)" and Recommended Practice for Selecting Proportions for Structural Lightweight Concrete (ACI 613A)."

900.3.2 Methods of Determining the Proportions of Concrete

The determination of the proportions of cement, aggregate, and water to attain the required strengths shall be made by one of the following methods, but lower water-cement ratios may be required for conformance_ with the quality of concrete.

Method 1, Without preliminary test

Where preliminary test data on the materials to be used in the concrete have not been obtained the water-cement ratio for a given strength of concrete shall not exceed the values shown in Table 900.1.' When strengths- in excess of 281 kilograms per square centimeter (4000 pounds per square inch) are required or when light weight aggregates or admixtures (other than those exclusively for the purpose of entraining - air) are used, the required water-cement ratio shall be determined in accordance with Method 2.

Method 2.For combination of materials previously evaluated or to be established by trial mixtures.

Water-cement ratios for strengths greater than that shown in Table I 900.1 may be used provided that the relationship between strength and I water-cement ratio for the materials to be used has been previously established by reliable test data and the resulting concrete satisfies the .requirements of concrete quality.

Where previous data are not available. Concrete trial mixtures having proportions

and consistency suitable for the work shall be made using at least three different water-cement ratios (or cement content in the case of lightweight aggregates) which will produce a range of strengths encompassing those required for the work. For each water-cement ratio (or cement content) at least three specimens for each age to be tested shall be made, cured and tested for strength in accordance with ASTM C 39 and C 192.

The strength test shall be made at 7, 14 and 28 days at which the concrete is to receive load, as indicated on the plans. A curve shall be established showing the relationship between water-cement ratio (or cement content) and compressive strength. The maximum permissible water-cement ratio for the concrete to be used in the structure shall be that shown by the curve to produce an average strength to satisfy the requirements of the strength test of concrete provided that the water-cement ratio shall be no' greater than that required by concrete quality when concrete that is to be subjected to the freezing temperatures which weight shall have a water-cement ratio not exceeding 6 gal per bag and it shall contain entrained air.

Where different materials are to be used for different portions of the work, each combination shall be evaluated separately.

TABLE 900.1 MAXIMUM PERMISSIBLE WATER-CEMENT RATIOS FOR CONCRETE (METHOD NO.1)

| Specified compressive strength at 28 days, psi fc | Maximum permissible water-cement ratio | | | |
|---|--|--------------------------|-------------------------------------|--------------------------|
| | Non air-entrained concrete | | Air-entrained concrete | |
| | U.S. gal. per 42.6 kg. bag of cement | Absolute ratio by weight | U.S. gal per 42.6 kg. bag of cement | Absolute ratio by weight |
| 2500 | 7 ¼ | 0.642 | 6 ¼ | 0.554 |
| 3000 | 6 ½ | 0.576 | 5 ¼ | 0.465 |
| 3500 | 5 ¾ | 0.510 | 4 ½ | 0.399 |
| 4000 | 5 | 0.443 | 4 | 0.354 |

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

900.3.3 Concrete Proportions and Consistency

The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the form and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The methods of measuring concrete materials shall be such that the proportions can be accurately controlled and easily checked at any time during the work.

900.3.4 Sampling and Testing of Structural Concrete

As work progress, at least one (1) set of sample consisting of three (3) concrete cylinder test specimens, 150 x 300 mm shall be taken from each class of concrete placed each day, and each set to represent not more than 75 cu m of concrete.

900.3.5 Consistency

Concrete shall have a consistency such that it will be workable in the required position. It shall be such a consistency that it will flow around reinforcing steel but individual particles of the coarse aggregate when isolated shall show a coating or mortar containing its proportionate amount of sand. The consistency of concrete shall be gauged by the ability of the equipment to properly placed it and not by the difficulty of mixing water shall be determined by the Engineer and shall not be varied without his consent. Concrete as dry as it is practical to place with the equipment specified shall be used.

900.3.6 Strength Test of Concrete

When strength is a basis for acceptance, each class of concrete shall be represented by at least five test (10 specimens). Two specimens shall be made for each test at a given age, and not less than one test shall be made for each 150 cu yd of structural concrete, but there shall be at least one test for each days concreting. The Building Official may require a reasonable number of additional tests during the progress of the work. Samples from which compression test specimens are molded shall be secured in accordance with ASTM C 172. Specimens made to check the adequacy of the proportions for strength of concrete or as a basis for acceptance of concrete shall be made and laboratory-cured in accordance with ASTM C 31. Additional test specimens cured entirely under field conditions may be required by the Building Official to check the adequacy of curing and protection of the concrete. Strength tests shall be made in accordance with ASTM C 39.

The age for strength tests shall be 28 days or, where specified, the earlier age at which the concrete is to receive its full load or maximum j stress. Additional test may be made at earlier ages to obtain advance information on the adequacy of strength development where age-strength relationships have been established for the materials and proportions used.

To conform to the requirements of this Item:

1. For structures designed in accordance with the working stress design method of this chapter, the average of any five consecutive strength tests of the laboratory-cured specimens representing each class of concrete shall be equal on or greater than the specified strength, f_c' , and not more than 20 percent of the strength test shall have values less than that specified.

2. For structures designed in accordance with the ultimate strength design method of this chapter, and for prestressed structures the average of any three consecutive strength test of the laboratory, cured specimens representing each class of concrete shall be equal to or greater than the specified strength, f_c' and not more than 10 percent of the strength tests shall have values less than the specified strength.

When it appears that the laboratory-cured specimens will fail to conform to the requirements for strength, the Engineer shall have the right to order changes in the concrete sufficient to increase the strength to meet these requirements. The strengths of the specimens cured on the job are intended to indicate the adequacy of protection and curing of the concrete and may be used to determine when the forms may be stripped, shoring removed, or the structure placed in service. When, in the opinion of the Building Official, the strengths of the job-cured specimens, the contractor may be required to improve the procedures for protecting and curing the concrete, or when test of field-cured cylinders indicate deficiencies in protection and curing, the Engineer may require test in accordance with ASTM Specification C 42 or order load tests as outlined in the load tests of structures for that portion of the structure where the questionable concrete has been placed.

900.3.7 Splitting Tensile Test of Concrete

To determine the splitting ratio, F_{sp} , for a particular aggregate, test of concrete shall be made as follows:

1. Twenty four (24) 15 cm. dia. by 30 cm long (6 in. dia. by 12 in. long) cylinders shall be made in accordance with ASTM C 192, twelve at a compressive strength level of approximately 210 kilograms per square centimeter (3000 psi) and twelve at approximately 280 kilograms per square centimeter (4000 psi) or 350 kilograms per square centimeter (5000 psi). After 7 days moist curing followed by 21 days drying at 23C (73F) and 50 percent relative humidity, eight of the test cylinders at each of the two strength levels shall be tested for splitting strength and four for compressive strength.

2. The splitting tensile strength shall be determine in accordance with ASTM C 496, and compressive strength in accordance with ASTM C 39.

The ratio, F_{sp} , of splitting tensile strength to the square root of compressive strength shall be obtained by using the average of all 16 splitting tensile test and all 8 compressive tests.

Minimum Strength, Concrete other than fill, shall have a minimum compressive

strength at 28 days of 140 kilograms per square centimeter (2000 psi).

900.3.8 Batching

Batching shall conform to the requirements of Item 405, Structural Concrete.

900.3.9 Mixing and Delivery

Mixing and delivery shall conform to the requirements of Item 405, Structural Concrete.

900.4 Concrete Surface Finishing: General

This shall be in accordance with Item 407, Concrete Structures.

900.5 Curing Concrete (See subsection 407)

900.6 Acceptance of Concrete

The strength of concrete shall be deemed acceptable if the average of 3 consecutive strength test results is equal to or exceed the specified strength and no individual test result falls below the specified strength by more than 15 %.

Concrete deemed to be not acceptable using the above criteria may be rejected unless contractor can provide evidence, by means of core tests, that the quality of concrete represented by the failed test result is acceptable in place. Three (3) cores shall be obtained from the affected area and cured and tested in accordance with AASHTO T24.

Concrete in the area represented by the cores will be deemed acceptable if the average of cores is equal to or at least 85 % and no sample core is less than 75 % of the specified strength otherwise it shall be rejected.

900.7 Method of Measurement

The quantity of concrete to be paid shall be the quantity shown in the Bid Schedule, unless changes in design are made in which case the quantity shown in the Bid Schedule will be adjusted by the amount of the change for the purpose of payment. No deduction will be made for the volume occupied by the pipe less than 101 mm (4") in diameter nor for reinforcing steel, anchors, weepholes or expansion materials.

900.8 Basis of Payment

The accepted quantities of structural concrete completed in place will be paid for at the contract unit price for cubic meter as indicated on the Bid Schedule.

| Pay Item Number | Description | Unit of Measurement |
|-----------------|---|---------------------|
| 900(1) | Structural Concrete for Footing Tie Beam, Column, | Cu.m. |

| | | |
|----------|--|-------|
| | Suspended Slab, Girder/Beam (Class A 28 days) | |
| 900(1)c2 | Structural Concrete for Footing & Slab on Fill (Class A 28 days) | Cu.m. |

Such prices and payment shall be full compensation for furnishing all materials, including metal water stops, joints, joint fillers, weep holes, and rock backing and timber bumpers; for all form and false work; for mixing, placing, furnishing, and curing the concrete; and for all labor, materials, equipment, tools and incidentals necessary to complete the item, except that reinforcing steel shall be paid for at the contract unit price per kilogram for reinforcing steel metal pipes and drains, metal conduits and ducts, and metal expansion angles shall be paid for as structural steel that when the proposal does not include an item for structural steel these miscellaneous metal parts shall be paid for as reinforcing steel.

ITEM 902 - REINFORCING STEEL BARS

404.1 Description

This Item shall consist of furnishing, bending, fabricating and placing of steel reinforcement of the type, size, shape and grade required in accordance with this Specification and in conformity with the requirements shown on the Plans or as directed by the Engineer.

404.2 Material Requirements

Reinforcing steel shall meet the requirements of item 710, Reinforcing Steel and Wire Rope.

4.4.3 Construction Requirements

404.3.1 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.

404.3.2 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 requirements for the size and grade of steel specified.

404.3.3 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.

404.3.4 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 300mm 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 6mm. 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 40mm. 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 1.8m intervals.

404.3.5 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 40 min. lap | Grade 60 min. 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 coarse 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.

404.3.6 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 ends and edges. The overlap shall not be less than one mesh in width.

404.4 Method of Measurement

The quantity of reinforcing steel to be paid for will be the final quantity placed and accepted in the completed structure.

No allowance will be made for tie-wires, separators, wire chairs and other material used in fastening the reinforcing steel in place. If bars are substituted upon the Contractor’s request and approved by the Engineer and as a result thereof more steel is used than specified, only the mass specified shall be measured for payment.

No measurement or payment will be made for splices added by the Contractor unless directed or approved by the Engineer.

When there is no item for reinforcing steel in the Bill of Quantities, costs will be considered as incidental to the other items in the Bill of Quantities.

404.5 Basis of Payment

The accepted quantity, measured as prescribed in Section 404.4, shall be paid for at the contract unit price for Reinforcing Steel which price and payment shall be full compensation for furnishing and placing all materials, including all labor, equipment, tools and incidentals necessary to complete the work prescribed in this Item.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|------------------------|---------------------|
| 902(1) | Reinforcing Steel Bars | Kilogram |

ITEM 903(2) – FORMS AND FALSEWORKS

903.01 Description

This Item shall consist of furnishing, assembling and placing of forms and scaffoldings of the type, size, shape and grade required in accordance with this Specification and in conformity with the requirements shown on the Plans or as directed by the Engineer.

903.02 Material Requirements

Marine Plywood (1/4” or 1/2”) for forms or equivalent or as approved by the engineer and Lumber or steel scaffoldings or a combination hereof were the materials required under this section.

903.03 Basis of Payment

The accepted quantity, measured as prescribed in this Section , shall be paid for at the contract unit price for Forms and Scaffoldings which price and payment shall be full compensation for furnishing and placing all materials, including all labor, equipment, tools and incidentals necessary to complete the work prescribed in this Item.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|--------------------------|---------------------|
| 903(2) | Formworks and Falseworks | Sq.m. |

ITEM 1006 - STEEL DOORS AND FRAMES

1006.1 Description

This Item shall consist of furnishing and installing all fabricated steel doors and frames equipped with fixing accessories and locking devices in accordance with the Plans and/or shop drawings and as herein specified.

1006.2 Material Requirements

All door cladding plates or panels shall be formed from gauge 20 cold-rolled, prime quality steel. Frames shall be formed from gauge 16 cold-rolled steel. The materials used shall conform to the specification requirement of ASTM-A505.

1006.2.1 Tubular Door (Casement/Sliding)

a. Hollow steel doors shall be custom built of size and details as indicated on the Plans and/or shop drawings. Cladding of doors shall be flush or louver type. Doors shall be 44 mm thick, side hinged or overhead hung, as called for on the Plans.

b. Flush doors shall be constructed from two outer steel sheets not lighter than gauge 20, with edges welded and finished flush. The outer face sheets shall be reinforced with gauge 24 vertical channels or interlocking zee members. Sound insulation fillers of cork fiberboard, mineral wool board or asbestos shall be placed full height in spaces between reinforcing channels. Doors shall have smooth, flush surfaces without any visible joints or seams on exposed faces or stile edges except around glazed or louvered pane inserts. Top and bottom frame of doors shall have continuous reinforcing channels welded to face sheets. The channel for exterior doors shall be inverted type, not lighter than gauge 16, constructed to form a weather seal. Glazed opening shall be provided where indicated and molding around glazed openings shall not be lighter than gauge 20 metal.

1006.2.2 Grille doors shall be of flat, square or round bars (wrought iron) as indicated on the Plans framed on galvanized black iron pipe or flat wrought iron bars, of the design shown on the Plans.

1006.2.3 Tubular steel frames shall be machine pressed true to details, to size and shape as shown on the Plans and shall have full welded unit or knockdown field assembled type construction at corners and other joints.

1006.2.4 Steel Louvers

Louvers shall be machine pressed conforming to the size and design indicated on the Plans with removable louver pane formed to fit the metal sub frame of openings. The steel

sheets shall meet the requirement of ASTM 505, rivets of ASTM B 316, screws, bolts, nuts and washers of ASTM B 211.

1006.2.5 Anchors and Fasteners

Anchors shall be steel, zinc coated or coated or painted with rust inhibitive paint, of sizes, shapes and design per manufacturer's standards.

Floor anchors shall not be lighter than gauge 18, with exception of jamb anchors for installing door frames in metal latch and plaster assemblies which shall be minimum of gauge 16 and shall not extend no more than 20 mm out of the back of the jamb.

1006.3 Construction Requirements

1006.3.1 Fabrication

Corner joints of frames shall be mitered and welded conforming to manufacturer's standard manual for metal doors. All contact edges be closed tight. Welds on exposed surface shall be ground smooth and shall be neat in appearance.

Joints for knock-down type frame corners shall be designed for simple field assembly of header to jamb members by concealed tenon, splice plates, or other type concealed in interlocking joint that will produce square and rigid corners. Joints shall be securely locked in place during erection and the alignment of adjoining members shall be maintained. All bolted connections shall be provided with lock units.

1006.3.2 Shop Finish

a. Hot or Cold Phosphate Surface Treatment

All steel doors, frames and louvers shall be cleaned thoroughly, phosphate-treated to assure maximum paint adherence and prime finish, in accordance with the following operations:

1. After fabrication, grease and dirt shall be removed by a hot alkali solution and rinsed with hot water.

2. After cleaning, all parts shall be immersed in hot or cold phosphate solution and rinsed with a diluted solution or chronic acid.

3. After drying under controlled temperature, one coat of shop primer shall be applied by dipping type especially developed for materials treated with phosphates.

The cleaning, phosphate, dipping or spraying of shop primer and even drying shall be done on a continuous operation in the factory.

1006.3.3 Installation

Steel doors, frames and louvers shall be set plumb and true in "The joint between frame and masonry shall be carefully contacts between door/frame and adjacent steel shall

be sealed with mastic.

1006.3.4 Wall Anchors

A minimum of three anchors shall be provided for each jamb. Anchors shall be located opposite the top and bottom hinges and midway between top and bottom anchors.

Anchors for fastening frames to masonry shall be adjustable, and perforated and shall extend not less than 200 mm into masonry.

Anchors for fastening frames to metal or wood stud partitions shall be welded to metal or nailed to wood studs respectively.

Anchors for fastening frames to previously placed concrete or masonry shall be secured to existing construction with expansion bolts. Frames shall be fastened securely with anchors.

Anchors for fastening frames to partitions of plaster on metal lathe shall be secured firmly to back of frames that shall receive the latch. Adjustable strut anchors shall be provided on each side of frame for fastening to the structural members of the partition and of the ceiling framing above. The size and type of strut anchors shall be as recommended by the metal door manufacturer.

1006.3.5 Floor Anchors

Floor anchors shall be provided at the bottom of each jamb member, anchors shall be fixed/adjustable and drilled for 10mm diameter anchor bolts.

Where floor fill occurs, the bottom of frames shall terminate at the indicated finished floor levels and shall be supported by adjustable extension clips resting on and anchored to the structural slab.

1006.3.6 Hardware

Side bronze butts for side hung doors, overhead pocket hardware for track and roller types and locksets shall be suitable for the service required and subject to the approval of the Engineer and as provided in Item 1004, Hardware.

1006.4 Method of Measurement

Steel doors, frames, louvers, accessories and hardware shall be measured in square meters/per set as shown on the Plans. A set shall consist of metal door, jambs, anchors and hardware except locksets.

1006.5 Basis of Payment

The area in m² for every hollow steel door, flush door, grille door and steel louver installed ready for service shall be the basis of payment based on the unit bid or contract unit price

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|---|-------------|---------------------|
| 1006 (c) | Grille Door | set |
| ITEM 1007 - ALUMINUM GLASS DOORS | | |
| 1007.1 Description | | |
| <p>This Item shall consist of furnishing all aluminum glass door materials, labor, tools and equipment required in undertaking the proper installation as shown on the Plans and in accordance with this Specification.</p> | | |
| 1007.2 Material Requirements | | |
| <p>1007.2.1 Frame and panel members shall be fabricated from extruded aluminum sections true to details with clean, straight, sharply defined profiles and free from defects impairing strength or durability. Extruded aluminum sections shall conform to the specification requirements as defined in ASTM B 211.</p> | | |
| <p>1007.2.2 Screws, nuts, washers, bolts, rivets and other miscellaneous fastening devices shall be made of non-corrosive materials such as aluminum, stainless steel, etc.</p> | | |
| <p>1007.2.3 Hardware for fixing and locking devices shall be closely matched to the extruded aluminum section and adaptable to the type and method of opening.</p> | | |
| <p>1007.2.4 Vinyl weather strip shall be first class quality flexible vinyl forming an effective seal and without adverse deformation when installed.</p> | | |
| <p>1007.2.5 Pile weather strip shall be silicon treated and free from residual wetting agents and made of soft fine hair as on wool, fur, etc.</p> | | |
| <p>1007.2.6 Glazing shall conform to the requirement specified in Item 1012 - Glass and Glazing.</p> | | |
| 1007.3 Construction Requirements | | |
| <p>For all assembly and fabrication works the cut ends shall be true and accurately jointed, free of burrs and rough edges. Cut-out recesses, mortising, grinding operation for hardware shall be accurately made and properly reinforced when necessary.</p> | | |
| 1007.3.1 Installation Procedure | | |
| <p>1007.3.1.1 Main frame shall consist of head sill and jamb stiles specifically designed and machined to interfit and are joined at corners with self threading screws.</p> | | |
| <p>1007.3.1.2 Frame sill shall be stepped and sloped with offset weep holes for efficient drainage to the exterior.</p> | | |
| <p>1007.3.1.3 Door panel shall be accurately jointed at corners assembled and fixed rigidly to</p> | | |

ensure weather tightness.

1007.3.1.4 Aluminum glass door and main frame shall be installed in a prepared opening to be set plumb, square. Level and true to details.

1007.3.1.5 All joints between metal surface and masonry shall be fully caulked to ensure weather tightness.

1007.3.1.6 Sliding type door panel shall be equipped with concealed roller overhead tracks with bottom guide.

1007.3.1.7 Double action type door panel shall be equipped with heavy duty hinges that will control the door leaf in a close or open position.

1007.3.1.8 Weather-strip shall be furnished on edges at the meeting stiles of doors.

1007.3.1.9 Where aluminum is to be in contact with steel concrete cinder, block, tile, plaster or other similar masonry construction the aluminum surface shall be back painted before erection with a bituminous paint.

1007.3.2 Shop Finish E

Exposed aluminum surfaces shall be electro type hard coats.

1007.3.3 Protection

a. All aluminum parts shall be protected adequately to ensure against damaged during transit and construction operations.

b. Aluminum parts in contact with steel members shall be properly insulated by a coat of zinc chromate primer applied to the steel or by application of bituminous paint.

1007.3.4 Cleaning

a. The Contractor does not only protect all entrance units during construction but also responsible for removal of protective materials and cleaning aluminum surfaces.

b. Aluminum shall be thoroughly cleaned with plain water with kerosene or gasoline and then wipe surfaces using clean cotton fabric. No abrasive cleaning agents shall be permitted.

1007.4 Method of Measurement

Aluminum glass door, fully equipped with fixing accessories and locking devices shall be measured in square meters base on actual in place installed as shown on the Plans accepted to the satisfaction of the Engineer.

1007.5 Basis of Payment

The area in square meters of aluminum glass doors installed including main frame

and ready for service as provided in Item 1007.4 shall be the basis of payment based on the unit bid or contract unit price.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|---|---------------------|
| 1007 | Aluminum glass door sliding type, designated as D - on the schedule | m ² |

ITEM 1008 - ALUMINUM GLASS WINDOWS

1008.1 Description

This Item shall consist of furnishing all aluminum glass window materials, labor, tools and equipment required in undertaking the proper installation as shown on the Plans and in accordance with this Specification.

1008.2 Material Requirements

1008.2.1 Frame and panel members shall be fabricated from extruded aluminum section true to details with clean, straight, sharply defined profiles and free from defects impairing strength or durability. Extruded aluminum section shall conform to the specification requirements defined in ASTM B 211.

1008.2.2 Screws, nuts, washers, bolts, rivets and other miscellaneous fastening devices shall be made of non-corrosive materials such as aluminum, stainless steel, etc.

1008.2.3 Hardware for fixing and locking device shall be closely matched to the extruded aluminum section and adaptable to the type and method of opening.

1008.2.4 Weather-strip shall be first class quality flexible vinyl forming an effective seal and without adverse deformation when installed.

1008.2.5 Glazing shall conform to the requirements specified in Item 1012.

1008.2.6 Pile weatherstrip shall be silicon treated and free from residual wetting agents made of soft fine hair as on wool, fur, etc.

1008.3 Construction Requirements

For all assembly and fabrication works the cut end shall be: true and accurate, free of burrs and rough edges. Cut-outs recesses, mortising and grinding operation for hardware shall be accurately made and properly reinforced.

1008.3.1 Installation Procedure

1008.3.1.1 Main frame shall consist of head, sill and jamb.

1008.3.1.2 Window sash

1008.3.1.3 Window panel shall be jointed at corners with miter and fixed rigidly to ensure weather tightness.

1008.3.1.4 Sliding windows shall be provided with nylon sheave. Sliding panels shall be suspended with concealed roller overhead tracks with bottom guide pitch outward and slotted for complete drainage. The sliding panels shall be provided with interior handles. The locking device shall be a spring loaded extruded latch that automatically engage~ special frame hips.

1008.3.1.5 Casement window type shall be provided with two hinges fabricated from extruded aluminum alloy. They shall open on stay arms having adjustable sliding friction shoes to control window panel operations. Locking device shall be one arm action handle for manual operations complete with strike plate.

1008.3.1.6 All joints between metal surface and masonry shall be fully caulked.

1008.3.1.7 Aluminum parts in contact with steel members shall be properly insulated by a coat of zinc chromate, primer/bituminous paint applied to the steel surface.

1008.3.1.8 Weatherstrip shall be furnished on edges at the meeting stiles.

1008.3.2 Shop Finish

Exposed aluminum surfaces shall be electrotype hard coats such as anodize, satin, etc.

1008.3.3 Protection

All aluminum parts shall be protected adequately to ensure against damage during transit and construction phase.

1008.3.4 Cleaning

1008.3.4.1 The contractor does not only protect all entrance units during the construction phase but shall also be responsible for removal of protective materials and cleaning the aluminum surface including glazing before work is accepted by the Engineer.

1008.3.4.2 Aluminum shall be thoroughly cleaned with kerosene or gasoline diluted with water and then wiper surface using clean cloth rags.

1008.3.4.3 No abrasive cleaning materials shall be permitted in cleaning surface.

1008.4 Method of Measurement

Aluminum glass window fully equipped with fixing accessories and locking devices shall be measured in square meters actually installed in place and accepted to the satisfaction of the Engineer.

1008.5 Basis of Payment

The area of aluminum glass windows in square meters ready for service as provided in the Bill of Quantities shall be the basis of payment based on the unit bid or contract unit price which price and payment constitute all materials, labor including incidentals.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|-------------------------|---------------------|
| 1008(1) | Aluminum Glass Windows | m ² |
| SPL B | Aluminum Screen Windows | m ² |

ITEM 1009 - JALOUSIE WINDOWS

1009.1 Description

This Item shall consist of furnishing all jalousie window materials, labor, tools and equipment required as shown on the Plans and undertaking the proper installation in accordance with this Specification.

1009.2 Material Requirements

1009.2.1 Jalousie metal frame shall be made of extruded aluminum section true to details conforming to the specifications requirements defined in ASTM B 211. .

1009.2.2 Glass slats shall be 5.6 mm thick clear view of 100 mm wide smooth edge glass.

1009.2.3 Wood slats shall be fabricated from kiln-dried tanguile with provision of interlocking grooves to prevent penetration of rain water.

1009.2.4 Insert screens shall be aluminum cloth and installed as insert overlap type.

1009.2.5 Wrought iron grilles shall be manufactured from 12 mm square bars or round bars conforming to the shop drawing submitted and approved by the Engineer.

1009.2.6 Wood jalousie window assembly shall be fabricated of kiln dried wood boards consisting of the following members:

a. Vertical operating mechanism shall be of paired zigzag cut member one fixed to the wood jambs.

b. Slats/blades are made with interlocking grooves. It shall be of kiln-dried tanguile 15.8 mm thick by 100 mm wide.

c. Lever handles are made of wrought iron flat bars that should lock the unit in closed position.

1009.2.7 Wood jambs shall be fabricated from well seasoned wood specie conforming to Item 1003, Carpentry and Joinery requirements.

1009.3 Construction Requirements

1009.3.1 All window frames shall be in place and rigidly anchored in a prepared opening before any installation work is commenced.

1009.3.2 Window openings shall fit commercial height of the vertical operating mechanism/jalousie metal frames to avoid cutting of members.

1009.3.3 Installation Procedures

1009.3.3.1 Glass Jalousie Windows

a. Jalousie metal frames shall be temporarily fixed at bottom and top ends using wood screw.

b. Place glass slats into the slat clips starting below until the whole units are entirely glazed.

c. Operate units and make adjustment where required taking, into consideration that all units are properly aligned and satisfactory operational.

d. Close the slats clips in a manner that the glass slats are securely fixed them permanently fix all units with wood screws.

1009.3.3.2 Wood Jalousie Windows

a. Fit each unit into the prepared window opening and temporarily fix with nails at bottom and top ends of vertical operating mechanism.

b. Operate units and make adjustments where required.

c. Fix all units permanently and properly align each unit.

1009.4 Method of Measurement

All works performed under this Item shall be measured in square meters or number of units installed complete with glass, wood slats and ready for service.

1009.5 Basis of Payment

The completed work, measured in accordance with Sub-section 1009.4 and accepted by the Engineer, shall be the basis for payments which price and payment constitute full compensation for furnishing all materials fabricated wood products, tools, equipment, labor and incidentals necessary to complete this Item.

Payment shall be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|------------------------|---------------------|
| 1009(1) | Glass Jalousie Windows | m ² |

ITEM 1010 - DOORS AND WINDOWS

1010.1 Description

This Item shall consist of furnishing all materials, hardware, plant, tools, labor and services necessary for complete fabrication and installation of wooden doors and windows of the type and size as shown I on the Plans and in accordance with the following specifications and I applicable specifications under Item 1003 on Carpentry and Joinery I Works.

1010.2 Material Requirements

1010.2.1 Lumber

Lumber of doors, windows and jambs, and panels when required, shall be kiln-dried with moisture content of not more than 14% and shall be of the specie indicated on the Plans and/or specified under Item 1003 on Carpentry and Joinery Works.

1010.2.2 Plywood.

Plywood for veneer of solid core and hollow core flush doors shall be 3-ply, rotary cut, 6mm thick ordinary plywood, Class B grade. Marine or waterproof plywood, rotary cut, 3-ply, 6 mm thick shall be used for flush doors at toilets and bathrooms or at places where these are exposed to moisture.

1010.2.3 Adhesive

Adhesive shall be water resistant resins and shall be non-staining.

1010.2.4 Glass

Glass for window panes shall be 3 mm thick, smoked or Industry type unless otherwise shown on the Plans or indicated in the Schedule of Doors and Windows.

1010.2.5 Capiz Shells

Capiz shells, when required for window sashes, shall be of selected quality, free from dirt or blemishes and shall be large enough to obtain flat square piece.

1010.2.6 Hardware

Hardware shall be as specified under Item 1004 on Building Hardware.

1010.3 Construction Requirements

1010.3.1 Fabrication

Wooden doors and windows, including frames, shall be fabricated in accordance with the designs' and sizes shown on the Plans. The fabricated products shall be finished square, smoothly sanded and free from damage or war page.

a. Flush Type Hollow Core Doors

Flush type hollow core doors shall be adequately framed with stiles and top and bottom rails having a minimum thickness of 44 mm and width of 75 mm. Two intermediate rails at least 44 mm wide shall be provided for stiffness.

The stiles and the top and bottom rails shall be rebuted at least 10 mm wide to receive the 6 mm thick plywood veneer. A lock block shall be provided at each stile, long enough to connect to the two intermediate rails and at least 75 mm wide for mounting the lockset.

The plywood veneer shall be glued and nailed to the framing with 25 mm long finishing nails space at not more than 150 mm on centers.

b. Flush Type Solid Core Doors

Flush type solid core doors shall be fabricated in the same manner as the hollow core type except that spaces between stiles and rails shall be filled and fitted with wood blocks of the same specie and of uniform thickness thinner by about the thickness of the plywood veneers. The filler blocks shall be secured to either stiles or rails by nails. Stiles and rails of flush type doors shall be joined by means of blind mortise and tenon joint, tightly fitted, glued and locked with bamboo pin 5 mm round.

c. Panel doors

Stiles and rails of panel doors shall have a minimum thickness of 44 mm and width of 140 mm.

Stiles minimum thickness of 44 mm and width of 140 mm. Rails shall be framed to stiles by mortise and tenon joints. Rabbets or grooves of stiles by mortise and tenon joints. Rabbets or grooves of stiles and rails to receive panels shall be 6.5 mm wide and 20 mm deep. Integral moldings formed on both faces of stiles and rails framing the panels shall be true to shape and well defined. Intersections of moldings shall be mitered and closely fitted.

Panels of the same specie and having a minimum thickness of 20 mm shall be beveled around its edges up to a minimum width of 50 mm, both faces. The beveled edges shall closely fit into the grooves of stiles and rails, but free to move to prevent splitting when shrinkage occurs.

d. Window Sashes with Glass Panes or Wood Panels

Window sashes shall be fabricated in conformity with the design, .1 size and type of installation shown on the Plans. Unless otherwise shown on the Plans, stiles and rails shall be Tanguile with minimum I thickness of 30 mm and width of 70 mm. Jointing of stiles and rails shall I be mortise and tenon secured with glue and bamboo pin. Stiles and rails shall rebut at the exterior face for mounting glass panes or wood I panels. Integral moldings formed as frames for panes or panels shall be true to shape, sharply defined and mitered at joints. Separate moldings, Of the same design shall be provided for fixing glass panes and wood panel from the outside.

e. Window Sashes with Capiz Shells

Stiles and rails shall be of the same sizes specified under Item 1010.3.1 (d) and assembled with mortise and tenon joint. Unless otherwise indicated on the Plans, lattices for framing capiz shall be tanguile, 8 mm thick and 15 mm wide, spaced at not more than 60 mm on centers both ways. Grooves 2 mm wide and 5 mm shall be made at sides of lattices to receive the preformed capiz shells.

The lattices shall be assembled with half lap joints at their intersections and the assembled lattices containing the capiz shells shall be framed into the stiles and rails.

Selected capiz shells shall be washed to remove dirt and blemishes and drier under the sun for bleaching effect. Capiz shells shall be cut square to required sizes with sharp bench cutter to produce non-serrated and non-peeling edges.

f. Sliding Type Window Sashes

Stiles of sliding type window sashes shall be framed to the top and bottom rails with mortise and tenon joints. Tenons shall be formed on the stiles. Joints shall be tightly fitted, glued and locked with bamboo pins. Top and bottom rails shall be 10 mm wider than the stiles. Top rails shall be rabbeted to form tongue flush with the outer face, with width of 8 mm and height of 10 mm. The stiles and rails shall be rabbeted as specified under Item 1010.3.1 (d) to receive glass panes or wood panels.

g. Awning Type Window Sashes

Tenons of rails shall be fitted into the mortises formed on the stiles and the joints glued and locked. The stiles and rails shall be rabbeted as specified under Item 1010.3.1 (d) for mounting of glass panes. Series of sashes to be installed vertically shall have their meeting rails rabbeted for half lapping when in closed position.

h. Casement Type Window Sashes

Rails of casement type window sashes shall be fitted to stiles with mortise and tenon joint. Tenons shall be formed in the rails. Meeting rails shall be rabbeted to provide for half lapping when in closed position. The stiles and rails shall be rabbeted as specified under Item 1010.3.1 (d) for mounting of glass panes or wood panels.

i. Door and Window Frames

Framing of the specie(s) specified under Item 1003 shall be fabricated in conformity with the profile and sizes shown on the Plans. Frames shall be assembled with tightly fitted tongue and groove joint mitered at both sides, and nailed. The assembled frames shall be finished square and flat on the same plane. Assembled frames shall be braced temporarily to prevent their distortion during delivery to the site and installation.

1010.3.2 Installation

a. Frames shall be set plumb and square in concrete/masonry work or framework of walls or partitions. Frames set in concrete or masonry shall be painted with hot asphalt at its contact surface and provided with two rows of common wire nails 100 mm long for anchorage. The nails shall be staggered and spaced at 300 mm on center along each row. Frame set in concrete shall be installed in place prior to concrete work.

Frames set in masonry work may be installed after laying of hollow concrete blocks, bricks or adobe. Space between frames and masonry shall be fully filled with cement mortar proportioned 1:3.

b. Hinged Doors

Hinged doors, whether panel or flush type with standard height of 2100 mm and width of not more than 900 mm shall be hung with four loose-pin butt hinges, 100 mm x 100 mm. Swing out exterior doors shall be hung with four fast-pin butt hinges. Two hinges shall be fitted 150 mm from top and bottom edge of door. The other two hinges shall be fitted at third points between top and bottom hinges. Care should be taken to ensure that the hinges are fitted such that their pins are aligned for ease of pin insertion and smoothness of operation. For added smoothness pins should be lightly greased. Hammering of hinges to attain proper, alignment shall not be allowed.

For wider and heavier doors such as narra panel doors, an additional hinge shall be fitted 100 mm below the top hinge to counteract the door tilting action.

Mounting screws shall be screwed in place in their entire length, not forced into place by hammering. Hammering of screw into place shall not be permitted.

c. Sliding Doors

Overhead tracks, standard, locally manufactured as per Plans shall be installed level and mounting bracket secured in place with lag screws supplied with the set. Bracket shall be spaced 1000 mm 'on centers. Hangers, two each per door leaf, shall be per fitted and bolted to the door rail. For panel doors the hangers shall be centered on the door stiles. For flush doors, the hangers shall be centered 100 mm from the edges of the door. If there is no adequate space for installing the door with its attached rollers, through either end of the track the per fitted hangers shall be

disassembled for connection to the rollers.

After installation on the track, set the door plumb and in alignment by means of the adjustment mechanism integrated with the roller assembly.

d.Lock Installation

Locks of doors shall be fitted at the same height, centered 1000 mm above the finished floor level. Locks shall be installed in conformity with the templates and instructions supplied with locksets. Holes for mounting locks shall be properly formed to provide snug fit and rigid attachment of the locks to the doors. Strike plates shall be fitted on the door frame in true alignment with the lock latch.

e.Sliding Type Window Sashes

Sashes shall be trimmed to fit height of opening. A clearance of 2 mm shall be provided between the tongue's base at the top rail and the bottom of the window head. Paraffin wax shall be applied to contacts of sliding surfaces. The bottom rails shall be fitted with standard brass guided spaced 75 mm from both ends of the rail, mounted flush with the inner face and secured with three brass screws each guide.

f.Casement Type Window Sashes

Sashes shall be trimmed to fit size of opening, with provision for half lapping of meeting stiles. Right side sash shall lap onto the left side sash. Sashes shall be fitted with two brass-plated narrow hinges, 50 mm x 75 mm, spaced 150 mm from top and bottom of stiles. In lieu of hinges, sashes maybe hung with cadmium-plated steel casement adjusters 200 mm long, subject to prior approval of the Engineer. The top and bottom rails of casement type window sashes shall be milled to provide for the installation of adjusters.

g.Awning type Window Sashes

Installation of awning type sashes shall be by means of casement adjusters specified under Item 1010.3.2 (f).

1010.4 Measurement and Payment

Frames of doors and windows shall be measured and paid for on the basis of number of sets completely installed and accepted by the Engineer.

Doors and windows shall be measured and for based on the number of square meters involved in the completed and accepted installation. Payment per square meter shall include cost of required hardware and all incidental expenses, but exclusive of locks for doors. Locks shall be paid for per set completely installed.

The different pay items under Wooden Doors and Windows shall be designated the following number, description and unit of measure:

| Pay Item | Description | Unit of |
|----------|-------------|---------|
|----------|-------------|---------|

| Number | | Measurement |
|-----------|------------------------|-------------|
| 1010 (2)a | Hollow Core Flush Door | m2 |
| 1010 (2)b | Wooden Panel Doors | m2 |

ITEM 1018 - CERAMIC TILES

1018.1 Description

This Item shall consist of furnishing all ceramic tiles and cementitious materials, tools and equipment including labor required in undertaking the proper installation of walls and floor tiles as shown on the Plans and in accordance with this Specification.

1018.2 Material Requirements

1018.2.1 Ceramic tiles and trims shall be made of clay, or a mixture of clay and other materials which is called the body of the tile. Tile bodies are classified by ASTM C 242 as to their degree of water absorption. Ceramic tiles and trims are manufactured either by dust-pressed process in which the clays are ground to dust mixed with a minimum of water shaped in steel dies and then fired or by plastic process in which the clays are made plastic by mixing with water, shaped by extrusion or in molds and then fired.

1018.2.1.1 Glazed Tiles and Trims

Glazed tiles' and trims shall have an impervious face of ceramic materials fused onto the body of the tiles and trims. The glazed surface may be clear white or colored depending on the color scheme approved by the Engineer. Standard glazes may be bright (glossy) semimatte (Less glossy) matte (dull) or crystalline (mottled and textured; good resistance to abrasion). Glazed tiles are used principally for walls; crystalline glazed tiles may be used for floors provided however that these are used as light duty floors.

1018.2.1.2 Unglazed Tiles

Unglazed tiles shall be hard dense tile of homogeneous composition.

Its color and characteristics are determined by the materials used in the body, the method of manufacture and the thermal treatment. It is used primarily for floors and walks.

1018.2.1.3 Trims

Trims are manufactured to match wall tile color, texture and to coordinate with it in dimension. These are shaped in various ceramic trim units such as caps, bases, coves, bullnoses, corners, angles, etc.that are necessary for edging or making a transition between intersecting planes.

1018.2.1.4 Accessories

Accessories like some soap holders and shall be made wall mounted type with colors to reconcile with the color of the adjacent wall tiles.

1018.2.1.5 Cement

Cement shall be Portland conforming to the specification requirements defined in Item 700, Hydraulic Cement.

1018.2.1.6 Sand

Sand shall be well graded fine aggregate clean river sand, free from soluble salts and organic impurities.

1018.2.1.7 Lime

Lime shall be hydrated lime with free un hydrated oxide and magnesium oxide content not to exceed 8 percent by weight.

1018.3 Construction Requirements

Tile work shall not be started until roughing-ins for plumbing, electrical and other trades have been completed and tested. The work of all other trades shall be protected from damage.

1018.3.1 Surface Preparation

a) Mortar mix for scratch coat and setting bed shall consist of one part Portland cement 1/4 part lime and 3 parts sand by volume. Surface to receive tile must be level, true to elevation, dry, free from dirt, oil and other ointments. Allow at least seven days curing of scratch coat and setting bed.

Installation work shall not be allowed to proceed until unsatisfactory conditions are corrected.

b) Bond coat shall be portland cement paste.

1018.3.1.1 Thoroughly dampen surfaces of masonry or concrete walls before scratch coat is applied.

1018.3.1.2 On masonry or concrete surface first apply a thin coat with pressure, then bring it out sufficiently to compensate for the major irregularities of the surface to a thickness not less than 10 mm. at any point.

1018.3.1.3 Evenly rate scratch coat to provide good mechanical key before the mortar mix has fully hardened.

1018.3.2 Installation Procedure

Ceramic tiles shall be soaked in clean water prior to installation for a minimum of one hour

1018.3.2.1 Ceramic Glazed Wall Tiles

- a) Determine and mark layout of ceramic tiles, joint location, position of trims and fixtures so as to minimize cut less than one-half tile in size.
- b) Thoroughly dampen surface of wall but do not saturate surface.
- c) Apply a bond coat mix with consistency of cream paste 1.5 mm thick to the wall surface or to the back of the tile to be laid.
- d) Lay the tiles true to profile then exert pressure and tamp tile surface before the bond coat mix has initially set.
- e) Continue with the next full tile to be laid and pressed firmly upon the setting bed tamped until flush and in place of the other tiles.
- f) Intersections and returns shall be formed accurately using the appropriate trims.
- g) All lines shall be kept straight and true to profiles, plumbed and internal corners rounded using the appropriate trims.

1018.3.2.2 Vitrified Unglazed Floor Tiles

- a) Before tile is applied the floor surface shall be tested for levelness or uniformity of slope by 'flooding it with water. Area where water ponds are filled or levelled, shall be retested before the setting bed is applied.
- b) Establish lines of borders and center of the walls at the field work in both direction to permit the pattern to be laid with a minimum of cut tiles.
- c) Clean concrete subfloor then moisten but do not soak. Then sprinkle dry cement over the surface and spread the mortar on the setting bed.
- d) Apply and spread mortar mix for setting bed and tamp to assure good bond over the entire area to be laid with tile.
- e) Pitch floor to drain as shown on Plans or as directed by the Engineer
- f) Allow the setting bed to set sufficiently to be worked over then spread a bond coat over the surface and lay tile in accordance with Items 1019'.3.2.1 a, b, c,d, e, f, g.

1018.3.3 Grouting and Pointing

1018.3.3.1 Tiles shall have laid in place for at least 24 hours before grouting of the joints is started. Grouting mortar shall be white Portland cement or blended with pigments to acquire the color appropriate for the ceramic tile.

1018.3.3.2 Grouting mortar shall be applied over the tile by float or squeegee stroked diagonally across the joints. Remove excess mortar with a wet sponge stroked diagonally or

in a circular motion after 12-15 minutes. Follow with a barely damp or dry sponge to remove remaining haze while smoothing all grouted joints.

1018.3.3 Cleaning

- a) Clean ceramic tile surfaces thoroughly as possible upon completion of grouting.
- b) Remove all grout haze, observing tile manufacturers recommendations as to use of acid or chemical cleaners.
- c) Rinse tile thoroughly with clean water before and after using chemical cleaners.
- d) Polish surface of tile with soft cloth.

1018.3.4 Protection from Construction Dirt

- a) Apply a protective coat of neutral cleanser solution diluted with water in the proportion of 1:4 or 1 liter cleanser concentrate to 1 gallon water.
- b) In addition, cover tile flooring with heavy-duty no staining construction paper, taped in place.
- c) Just before final acceptance of the work remove paper and rinse protective coat of neutral cleaner from tile surface. Do not let protective paper get torn or removed.

1018.4 Method of Measurement

All works performed under this Item shall be measured in square meters for areas actually laid with ceramic tiles and accepted to the satisfaction of the Engineer.

1018.5 Basis of Payment

Ceramic tile work determined and provided in the Bill of Bill of Quantities shall be paid for based at the unit bid price which price and payment constitute full compensation for furnishing all materials, tools, equipment and other incidentals necessary to complete this Item.

Payment shall be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|----------------|---------------------|
| 1018 | Unglazed tiles | m ² |

ITEM 1027 - CEMENT PLASTER FINISH

1027.1 Description

This Item shall consist of furnishing all cement plaster materials, labor, tools and equipment required in undertaking cement plaster finish as shown on the Plans and in accordance with this Specification.

1027.2 Material Requirements

Manufactured materials shall be delivered in the manufacturer's original unbroken packages or containers which are labelled plainly with the manufacturer's name and trademark.

1027.2.1 Cement

Portland cement shall conform with the requirements as defined in Item 700, Hydraulic Cement.

1027.2.2 Hydrated Lime

Hydrated lime shall conform with the requirements as defined in item 701, Hydrated Lime.

1027.2.3 Fine Aggregates

Fine aggregates shall be clean, washed sharp river sand and free from dirt, clay, organic matter or other deleterious substances. Sand derived from crushed gravel or stone may be used with the Engineer's approval but in no case shall such sand be derived from stone unsuitable for use as coarse aggregates.

1027.3 Construction Requirements

1027.3.1 Mixture

- a) Mortar mixture for brown coat shall be freshly prepared and uniformly mixed in the proportion by volume of one part Portland Cement, three (3) parts sand and one fourth (1/4) part hydrated lime.
- b) Finish coat shall be pure Portland Cement properly graded conforming to the requirements of Item 700, Hydraulic Cement and mixed with water to approved consistency and plasticity.

1027.3.2 Surface Preparation

- a) After removals of formworks reinforced concrete surfaces shall be roughened to improve adhesion of cement plaster.
- b) Surfaces to receive cement plaster shall be cleaned of all projections, dust, loose particles, grease and bond breakers. Before any application of brown coat is commenced all surfaces that are to be plastered shall be wetted thoroughly with clean water to produce a uniformly moist condition.

1027.3.3 Application

- a) Brown coat mortar mix shall be applied with sufficient pressure starting from the lower portion of the surface to fill the grooves and to prevent air pockets in the reinforced concrete/masonry work and avoid mortar mix drooping. The brown coat shall be lightly broomed/ or scratch before surface had properly set and allowed to cure.
- b) Finish coat shall not be applied until after the brown coat has seasoned for seven days and corrective measures had been done by the Contractor on

surfaces that are defective. Just before the application of the finish coat, the brown coat surface shall be evenly moistened with potable water. Finish coat shall be floated first to a true and even surface, then troweled in a manner that will force the mixture to penetrate into the brown coat. Surfaces applied with finish coat shall then be smooth with paper in a circular motion to remove trowel marks, checks and blemishes. All cement plaster finish shall be 10 mm thick minimum on vertical concrete and/or masonry walls.

Wherever indicated on the Plans to be "Simulated Red Brick Finish", the Contractor shall render brick design on plaster surface before brown coat had properly set and then allowed to dry. Cement plaster shall not be applied directly to:

- a) Concrete or masonry surface that had been coated with bituminous compound and,
- b) Surfaces that had been painted and previously plastered.

1027.3.4 Workmanship

Cement plaster finish shall be true to details and plumb. Finish surface shall have no visible junction marks where one (1) Day's work adjoins the other. Where directed by the Engineer or as shown on the Plans vertical and horizontal groove joints shall be 25 mm wide and 10 mm deep.

1027.4 Method of Measurement

All cement plaster finish shall be measured in square meters or part thereof for work actually completed in the building.

1027.5 Basis of Payment

The work quantified and determined as provided in the Bill of Quantities shall be paid for at the Contract Unit Price which price constitutes full compensation including labor, materials, tools and equipment and incidentals necessary to complete this Item.

Payment will be made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|-----------------------|---------------------|
| 1027 | Cement Plaster Finish | Sq.m. |

ITEM 1032 - PAINTING, VARNISHING AND OTHER RELATED WORKS

1032.1 Description

This Item shall consist of furnishing all paint materials, varnish and other related products, labor, tools, equipment and plant required in undertaking the proper application of painting, varnishing and related works indicated on the Plans and in accordance with this Specification.

1032.2 Material Requirements

1032.2.1 Paint Materials

All types of paint material, varnish and other related product shall be subject to random test as to material composition by the Bureau of Research and Standard, DPWH or the National Institute of Science and Technology. (Use the following approved and tested brand name: Boysen, Davies, Dutch Boy, Fuller O Brien, or any approved equal).

1032.2.2 Tinting Colors

Tinting colors shall be first grade quality, pigment ground in alkyd resin that disperses and mixes easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body.

1032.2.3 Concrete Neutralizer

Concrete neutralizer shall be first grade quality concentrate diluted with clean water and applied as surface conditioner of new interior and exterior walls thus improving paint adhesion and durability.

1032.2.4 Silicon Water Repellant

Silicon water repellant shall be transparent water shield especially formulated to repel rain and moisture on exterior masonry surfaces.

1032.2.5 Patching Compound

Patching compound shall be fine powder type material like calciumine that can be mixed into putty consistency, with oil base primers and paints to fill minor surface dents and imperfections.

1032.2.6 Varnish

Varnish shall be a homogeneous solution of resin, drying oil, drier and solvent. It shall be extremely durable clear coating, highly resistant to wear and tear without cracking, peeling, whitening, spotting, etc. with minimum loss of gloss for a maximum period of time.

1032.2.7 Lacquer

Lacquer shall be any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvent are acetates, alcohols and ketones. Although lacquers were generally based on nitrocellulose, manufacturers currently use, vinyl resins, plasticizers and reacted drying oils to improve adhesion and elasticity.

1032.2.8 Shellac

Shellac shall be a solution of refined lac resin in denatured alcohol. It dries by evaporation of the alcohol. The resin is generally furnished in orange and bleached grades.

1032.2.9 Sanding Sealer

Sanding sealer shall be quick drying lacquer, formulated to provide quick dry, good holdout of succeeding coats, and containing sanding agents such as zinc stearate to allow dry sanding of sealer.

1032.2.10 Glazing Putty

Glazing putty shall be alkyd-type product for filling minor surface unevenness.

1032.2.11 Natural Wood Paste Filler

Wood paste filler shall be quality filler for filling and sealing open grain of interior wood. It shall produce a level finish for following coats of paint varnish/lacquer and other related products.

1032.2.12 Schedule

Exterior

- | | |
|--|---|
| a) Plain cement plastered finish to be painted | -3 coats Acrylic base masonry paint |
| b) Concrete exposed aggregate &/or tool finish | -1 coat water repellent |
| c) Ferrous metal | -1 coat primer and 2 coats enamel paint |
| d) Galvanized metal | -1 coat zinc chromate primer and 2 coats portland cement paint |
| e) Wood painted finish | -3 coats oil based paint |
| f) Wood varnished finish | -varnish water repellent |

Interior

- | | |
|--|--|
| a) Plain cement plastered finish to be painted | - 2 coats acrylic base masonry paint |
| b) Concrete exposed aggregate &/or tool finish | - clean surface |
| c) Ferrous metal | -1 coat primer and 2 coats enamel paint |
| d) Woodwork sea-mist lacquer | -3 coats of 3 parts thinner 1 part lacquer |
| e) Woodwork varnish | - 1st coat, of one part sanding sealer to one part solvent 2nd coat of 2/3 sanding sealer to 1/3 solvent |
| f) Woodwork painted | - 3 coats of oil base paint finish 109 |
| g) Ceiling boards textured finish | -1 coat oil based paint allow to dry then patch surfaces unevenness and apply |

1032.3 Construction Requirements

The Contractor prior to commencement of the painting, varnishing and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.

1032.3.1 Surface Preparation

All surfaces shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knotholes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint.

Interior woodworks shall be sandpapered between coats. Cracks, holes of imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces.

Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound.

After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).

Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Wash unprimed galvanized metal with etching solution and allow it to dry. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer.

In addition the Contractor shall undertake the following:

1. Voids, cracks, nick etc. will be repaired with proper patching material and finished flush with surrounding surfaces.
2. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
3. Painting and varnishing works shall not be commenced when it is too hot or cold.
4. Allow appropriate ventilation during application and drying period.
5. All hardware will be fitted and removed or protected prior to painting and varnishing works.

1032.3.2 Application

Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint. Brush marks shall flaw out after application of paint.

Paints made for application by roller must be similar to brushing paint. It must be nonstick when thinned to spraying viscosity so that it will break up easily into droplets.

Paint is atomized by high pressure pumping rather than broken up by the large volume of air mixed with it. These procedures change the required properties of the paint.

1032.3.3 Mixing and Thinning

At the time of application paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions, but not in excess of 1 pint of suitable thinner per gallon of the paint.

1032.3.4 Storage

All material to be used under this Item shall be stored in a single place to be designated by the Engineer and such place shall be kept

neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.

1032.3.5 Cleaning

All cloths and cotton waste which constitute fire hazards shall be placed in metal containers or destroyed at the end of daily works. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

1032.3.6 Workmanship in General

- a) All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- b) All coats shall be thoroughly dry before the succeeding coat is applied.
- c) Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coats as may be required shall be applied to attain the desired evenness of surface without extra cost to the owner.
- d) Where surface is not in proper condition to receive the coat the Engineer shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed is ordered by , the Engineer.
- e) Hardware, lighting fixture and other similar items shall be removed or 'protected during the painting varnishing and related work operations and re-installed after completion of the work.

1032.3.7 Procedure for Sea-Mist Finish

- a) Depress wood grain by steel brush and sand surface lightly.
- b) Apply sanding sealer.
- c) Apply two coats of industrial lacquer paint.
- d) Spray last coat of industrial lacquer paint mixed with sanding sealer.
- e) Apply wood paste filler thinned with turpentine or paint thinner into the wood

surface.

- f) Wipe off wood paste filler immediately.
- g) Spray flat or gloss lacquer whichever is specified.

1032.3.8 Procedure for Varnish Finish

- a) Sand surface thoroughly.
- b) Putty all cracks and other wood imperfections with wood paste filler.
- c) Apply oil stain.
- d) Apply lacquer sanding sealer.
- e) Sand surface along the grain.
- f) Spray three (3) coats of clear dead flat lacquer.
- g) Polish surface coated using cloth pad.
- h) Spray gloss lacquer or flat lacquer whichever is desired or specified.

1032.3.9 Procedure for Ducco Finish

- a) Sand surface thoroughly.
- b) Apply primer surface white or gray by brush or spray.
- c) Apply lacquer spot putty in thin coat. Allow each coat for become thoroughly dry before applying next coat.
- d) Apply primer surfaces and then allow drying in two (2) hours before applying the next coat.
- e) Apply a coat of flat tone semi-gloss enamel as per color scheme submitted and approved by the Engineer.

1032.4 Method of Measurement

The areas of concrete, wood and metal surfaces applied with varnish, paint and other related coating materials shall be measured in square meters as desired and accepted to the satisfaction of the Engineer.

1032.5 Basis of Payment

The accepted work shall be paid at the unit bid price, which price and payment constitute full compensation for furnishing all materials, labor, equipment, tools and other incidental necessary to complete this Item.

Payment will made under:

| Pay Item Number | Description | Unit of Measurement |
|-----------------|--------------------------|---------------------|
| 1032(1)a | Painting Works (Masonry) | Square Meters |
| 1032(1)b | Painting Works (Wooden) | Square Meters |
| 1032(1)c | Painting Works (Metal) | Square Meters |



Section VII. Drawings

[Insert here a list of Drawings. The actual Drawings, including site plans, should be attached to this section, or annexed in a separate folder.]

Section VIII. Bill of Quantities

| Item No. | Scope of Work | Unit | Quantity | Unit Price | TOTAL |
|----------|---------------------------------------|-------|----------|------------|-------|
| B.5 | Project Billboard/Signboard | Each | 1.00 | | |
| B.7 | Occupational Safety & Health | Mos. | 2.00 | | |
| B.9 | Mobilization/Demobilization | L.S. | 1.00 | | |
| | Rehabilitation of Doors and Windows | | | | |
| SPL A | Removal of Glass on Existing Windows | Sq.m. | 100.49 | | |
| 1007 | Aluminum Glass Door | Sq.m | 90.74 | | |
| 1010(2)a | Hollow Core Flush Door | Sq.m | 60.06 | | |
| 1010(2)b | Wooden Panel Door | Sq.m | 3.36 | | |
| 1006 | Grille Door (Gate) | Set | 2.00 | | |
| 1008 | Aluminum Glass Window | Sq.m | 75.17 | | |
| 1009(1)a | Jalousie Window (Glass) | Sq.m | 2.00 | | |
| SPL B | Aluminum Screen Window | Sq.m | 57.20 | | |
| 1032(1)c | Painting Works (Metal Painting) | Sq.m | 75.38 | | |
| 1032(1)b | Painting Works (Wood Painting) | Sq.m | 126.84 | | |
| | Extension of Chief of Hospital Office | | | | |
| 803(1)a | Structure Excavation (Common Soil) | Cu.m. | 4.14 | | |
| 804(1)a | Embankment from Structure | Cu.m. | 2.66 | | |

| | | | | | |
|------------------------|---|-------|--------|--|--|
| | Excavation | | | | |
| 804(1)b | Embankment from Common Borrow | Cu.m. | 5.40 | | |
| 900(1)c2 | Structural Concrete for Footing and Slab on Fill (Class A, 28 days) | Cu.m. | 2.28 | | |
| 900(1) | Structural Concrete for Footing Tie Beam, Column, Suspended Slab, Girder, Beam (Class A, 28 days) | Cu.m. | 2.17 | | |
| 902(1) | Reinforcing Steel of Reinforced Concrete Structures for One Storey | Kgs. | 533.83 | | |
| 903(2) | Formworks and Falseworks (For one storey) | Sq.m. | 20.72 | | |
| 1046 | 100mm CHB Non-Load Bearing (including Reinforcing Steel) | Sq.m. | 15.30 | | |
| 1027(1) | Cement Plaster Finish | Sq.m. | 22.50 | | |
| 1032(1)a | Painting Works (Masonry Painting) | Sq.m. | 22.50 | | |
| 1018 | Unglazed Tiles | Sq.m. | 9.00 | | |
| TOTAL BID PRICE | | | | | |

Amount in Words: _____

_____.

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);
or
- ☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;
and
- ☐ (c) Mayor’s or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;
and
- ☐ (e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

- ☐ (f) 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**
- ☐ (g) 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
- ☐ (h) Philippine Contractors Accreditation Board (PCAB) License;
or
Special PCAB License in case of Joint Ventures;
and registration for the type and cost of the contract to be bid; **and**
- ☐ (i) 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**
- ☐ (j) 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**
- ☐ (k) 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

- ☐ (l) The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; **and**
- ☐ (m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

- ☐ (n) 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

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

Other documentary requirements under RA No. 9184

- ☐ (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- ☐ (q) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- ☐ (r) Cash Flow by Quarter.

