



REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION
REGION VII

LOWER MANTUYOP SIP

**(CONSTRUCTION OF MAIN CANAL &
PIPELINE),
SIATON, NEGROS ORIENTAL**

NOSO-LMC-SIP-13-2022

09 March 2022

TABLE OF CONTENTS

Glossary of Terms, Abbreviations, and Acronyms	4
Section I. Invitation to Bid.....	7
Section II. Instructions to Bidders	10
1. Scope of Bid.....	11
2. Funding Information	11
3. Bidding Requirements	11
4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices	11
5. Eligible Bidders.....	12
6. Origin of Associated Goods	12
7. Subcontracts.....	12
8. Pre-Bid Conference.....	13
9. Clarification and Amendment of Bidding Documents.....	13
10. Documents Comprising the Bid: Eligibility and Technical Components.....	13
11. Documents Comprising the Bid: Financial Component	14
12. Alternative Bids	14
13. Bid Prices.....	14
14. Bid and Payment Currencies	14
15. Bid Security	15
16. Sealing and Marking of Bids	15
17. Deadline for Submission of Bids	15
18. Opening and Preliminary Examination of Bids	15
19. Detailed Evaluation and Comparison of Bids	15
20. Post Qualification.....	16
21. Signing of the Contract.....	16
Section III. Bid Data Sheet	17
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.....	22
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	28
Section VII. Drawings.....	56
Section VIII. Bill of Quantities	57
Section IX. Local Condition	59
Section X. Checklist of Technical and Financial Documents	59
Section XI. Bidding Forms	59

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



REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION
REGION VII

INVITATION TO BID

FOR LOWER MANTUYOP SIP (Construction of Main Canal and Pipeline), SIATON, NEGROS ORIENTAL

1. National Irrigation Administration – Regional Office 7 (NIA-RO7), through the General Appropriation Act – Small Irrigation Project (GAA-SIP) for Calendar Year (CY) 2022 intends to apply the sum of **Two Million Six Hundred Fifty Thousand Three Hundred Thirty-Four pesos and 00/100 (₱ 2,650,334.00) only** being the Approved Budget for the Contract (ABC) to payment under contract for **Lower Mantuyop SIP (Construction of Main Canal and Pipeline), Siaton, Negros Oriental** with Contract No. **NOSO-LMC-SIP-13-2022**. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The NIA-RO7 now invites bid for the above Procurement Project. Completion of the Work is required **One Hundred Twenty (120) 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. Instruction 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 the NIA-RO7 and inspect Bidding Documents at the address given below from 8:00 A.M. to 5:00 P.M. except during declared (special & regular) holidays and weekends.
5. A complete set of Bidding Documents may be acquired by interested Bidders who were able to log-in in the Philippine Government Electronic Procurement System (PhilGEPS) wherein the name of the company will be reflected in the Documents Request List of the Bid Notice Abstract of the Procuring Entity, from **March 09, 2022, 8:00 A.M. to March 31, 2022, 8:30 A.M.** during office hour from the given address and website(s) below and upon presentation of the payment from NIA - Negros Oriental Satellite Office Special Collecting Officer of nonrefundable fee of **Three Thousand pesos (₱ 3,000.00) only** its proof of payment for the fees in person, by facsimile, or through electronic means.

Interested Bidders' representatives must also present a letter duly signed by the General Manager/Owner, if Sole Proprietorship, or authorized Signatory if Corporation, authorizing him/her to acquire the Bidding Documents.

6. The NIA-RO7 will hold a Pre-Bid Conference on **March 17, 2022, 3:30 P.M.** at **Central Visayas Training Center (CVTC), NIA-RO7, Dao District, Tagbilaran City, Bohol** and/or through videoconferencing/webcasting via Google Meet, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat through manual submission at the **NIA Regional Office 7, Dao District, Tagbilaran City, Bohol** on or before **March 31, 2022, 9:00 A.M.** Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 15.
9. Bid opening shall be on **March 31, 2022, 9:00 A.M. at Central Visayas Training Center (CVTC), NIA-R07, Dao District, Tagbilaran City, Bohol** and/or through videoconferencing/webcasting via Google Meet. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The NIA-R07 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:
NIA-Negros Oriental Satellite Office
C/O The BAC Secretariat
Osmeña St., Poblacion, Sibulan
Negros Oriental
Telephone No. (035) 419-9590
Email Address: nianegrosoriental@gmail.com
12. You may visit the website (region7.nia.gov.ph) for downloading of Bidding of Documents.



ENGR. ORENCIO M. APALE
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

The National Irrigation Administration - Regional Irrigation Office No.7(NIA-RO7) invites Bids for the **Lower Mantuyop SIP (Construction of Main canal and Pipeline), Siaton, Negros Oriental** with Project Identification Number **NOSO-LMC-SIP-13-2022**.

[Note: The Project Identification Number is assigned by the Procuring Entity based on its own coding scheme and is not the same as the PhilGEPS reference number, which is generated after the posting of the bid opportunity on the PhilGEPS website.]

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 GAA-SIP CY 2022 in the amount of **PhP 2,650,334.00**.

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.

- 7.1. *[If Procuring Entity has determined that subcontracting is allowed during the bidding, state:]* The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criteria stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.
- 7.2. *[If subcontracting is allowed during the contract implementation stage, state:]* The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary

requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

- 7.3. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

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 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 tradable 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 *120 calendar days from opening of bid*. 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

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>Canalization and Canal Structures.</i>																
7.1	<i>Sub-contracting is not allowed.</i>																
10.3	<i>[Specify if another Contractor license or permit is required.] None</i>																
10.4	<p>The key personnel must meet the required minimum years of experience set below:</p> <table> <tr> <th><u>Key Personnel</u></th><th><u>Relevant Experience</u></th></tr> <tr> <td>1 – Project Manager</td><td>– Preferably Technical individual with at least three (3) years’ experience as Project Manager;</td></tr> <tr> <td>1 – Project Engineer</td><td>– A licensed Civil Engineer with at least two (2) years’ experience as Project Engineer in similar works;</td></tr> <tr> <td>1 – Materials Engineer</td><td>– With at least two (2) years’ experience as Materials Engineer duly accredited by the DPWH provided that the limits of assignment are the following:</td></tr> <tr> <td>Materials Engineer II</td><td>- Two (2) projects located within the same province for simultaneous assignments, with an aggregate cost of not more than P150M</td></tr> <tr> <td>Materials Engineer I</td><td>- Four (4) projects located within the same province for simultaneous assignments, with an aggregate cost of not more than P 50M</td></tr> <tr> <td>1 – Safety/Health Officer</td><td>– With Training Certificate and with at least two (2) years’ experience as Safety Officer.</td></tr> <tr> <td>1 - Foreman</td><td>– with at least two (2) years’ experience as Foreman for Earthworks, concreting and/or other related works;</td></tr> </table>	<u>Key Personnel</u>	<u>Relevant Experience</u>	1 – Project Manager	– Preferably Technical individual with at least three (3) years’ experience as Project Manager;	1 – Project Engineer	– A licensed Civil Engineer with at least two (2) years’ experience as Project Engineer in similar works;	1 – Materials Engineer	– With at least two (2) years’ experience as Materials Engineer duly accredited by the DPWH provided that the limits of assignment are the following:	Materials Engineer II	- Two (2) projects located within the same province for simultaneous assignments, with an aggregate cost of not more than P150M	Materials Engineer I	- Four (4) projects located within the same province for simultaneous assignments, with an aggregate cost of not more than P 50M	1 – Safety/Health Officer	– With Training Certificate and with at least two (2) years’ experience as Safety Officer.	1 - Foreman	– with at least two (2) years’ experience as Foreman for Earthworks, concreting and/or other related works;
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10.5	<p>The minimum major equipment requirements are the following:</p> <table><tr><th colspan="2">Equipment</th><th>Capacity</th><th>Number of Units</th></tr><tr><td>1.</td><td>Dump Truck</td><td></td><td>1</td></tr><tr><td>2.</td><td>Cargo Truck</td><td></td><td>1</td></tr><tr><td>3.</td><td>Backhoe</td><td></td><td>1</td></tr><tr><td>4.</td><td>Concrete Mixer</td><td>1 bagger</td><td>2</td></tr><tr><td>5.</td><td>Concrete Vibrator</td><td></td><td>2</td></tr><tr><td>6.</td><td>Bar Cutter</td><td></td><td>1</td></tr><tr><td>7.</td><td>Survey Instrument (set)</td><td></td><td>1</td></tr><tr><td>8.</td><td>Plate Compactor</td><td></td><td>1</td></tr></table>	Equipment		Capacity	Number of Units	1.	Dump Truck		1	2.	Cargo Truck		1	3.	Backhoe		1	4.	Concrete Mixer	1 bagger	2	5.	Concrete Vibrator		2	6.	Bar Cutter		1	7.	Survey Instrument (set)		1	8.	Plate Compactor		1
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6.	Bar Cutter		1																																		
7.	Survey Instrument (set)		1																																		
8.	Plate Compactor		1																																		
12	<i>[Insert Value Engineering clause if allowed.]</i>																																				
15.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <p>a. The amount of not less than 2% of the ABC, 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 5% of the ABC if bid security is in Surety Bond.</p>																																				
19.2	Partial bids are not allowed:																																				
20	<i>None</i>																																				
21	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.																																				

Section IV. General Conditions of Contract

1. Scope of Contract

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

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

2. Sectional Completion of Works

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

3. Possession of Site

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

Special Conditions of Contract

GCC Clause	
2	<i>[If different dates are specified for completion of the Works by section, i.e. “sectional completion,” these dates should be listed here.]</i>
4.1	<i>[Specify the schedule of delivery of the possession of the site to the Contractor, whether full or in part.]</i>
6	The site investigation reports are: <i>[list here the required site investigation reports.]</i>
7.2	<i>[In case of semi-permanent structures, such as buildings of types 1, 2, and 3 as classified under the National Building Code of the Philippines, concrete/asphalt roads, concrete river control, drainage, irrigation lined canals, river landing, deep wells, rock causeway, pedestrian overpass, and other similar semi-permanent structures:]</i> Five (5) years.
10	a. 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 7 days of delivery of the Notice to Proceed.
11.2	The amount to be withheld for late submission of an updated Program of Work is <i>[insert amount]</i> .
13	<p>The amount of the advance payment is 15% of the Contract Price and to be recouped every progress billing, to be made as per herein schedule:</p> <p>a. First (1st) Installment – 7.5% of the Contract Price – upon submission to and acceptance by NIA of an Irrevocable Standby Letter of Credit of equivalent value issued by a commercial bank, a bank guarantee or surety bond, callable upon demand, issued by a surety or insurance company duly accredited by the Insurance Commission and confirmed by NIA.</p> <p>b. Second (2nd) Installment – 7.5% of the Contract Price – upon submission to and acceptance by NIA of an Irrevocable Standby Letter of Credit of equivalent value issued by a commercial bank, a bank guarantee or surety bond, callable upon demand, issued by a surety or insurance company duly accredited by the Insurance Commission and confirmed by NIA (if amount is not included in the first Installment), and after Contractor has fully mobilized the initial equipment requirement and Key Personnel indicated in its Manpower Utilization Schedule.</p>
14	Materials and equipment delivered on the site but not completely put in place shall not be included for payment.
15.1	<p>The date by which operating and maintenance manuals are required is <i>[date]</i>.</p> <p>The date by which “as built” drawings are required is <i>[date]</i>.</p>

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>[amount in local currency]</i> .
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Section VI. Specifications

STRUCTURE EXCAVATION

SCOPE

Structure excavation includes the removal of all materials within the structure lines including necessary dewatering operations not otherwise specified. It shall also include additional excavation within the vicinity of the structure in order to shape the ground shown on the Drawing or as directed by the Engineer.

CLASSIFICATION

Structure excavation shall be classified in accordance with paragraph 402.

CONSTRUCTION REQUIREMENTS

All excavation requirements described in 403 are applicable under this section.

METHOD OF CONSTRUCTION

All structure where practicable shall be constructed in open excavation. The method of construction or excavations shall be in accordance with the applicable provisions of paragraph 404 and the following requirements.

Foundation shall be excavated according to the outline of the footing and floors of structure as shown on the Drawings or as directed by the Engineers, and shall be of sufficient size to permit free movement of workers.

On excavation of common materials, the foundation bed upon which structures are to be placed shall be finished accurately to the established lines and grades after a thorough compaction and trimming of the foundation with the use of suitable tools and equipment. As soon as the foundation excavations have been trimmed to their final level, it should be protected from degradation by weathering. Should the foundation materials soften exposure then the soft materials shall be removed and replaced at the Contractor's expense. If at any point, material is excavated beyond the lines and grades of any part of the structure, the over-excavation shall be more filled with selected materials approved by the engineer and shall be placed in the layers of not more than 20 centimeters thick, moistened and thoroughly compacted by special roller mechanical tampers or by other approved methods. A density not less than 90% of the maximum dry density determined by ASTM test D-698 is required. The cost of filling over-excavation ordered by the Engineer shall be borne by the contractor.

On excavation of rock materials, the bottom and side surfaces of excavated rock excavation upon or against which concrete and weep holes are to be placed shall conform to the required grades and dimensions as shown on the drawings or as established by the engineer. If at any point, materials are excavated beyond the required limits the over-excavation shall be filled with concrete at the expense of the Contractor including the cost of all materials required.

When concrete is to be placed upon or against rock, the excavation shall be of sufficient depth to provide for the minimum thickness of concrete at all points and any deviation from the required minimum thickness of concrete shall be avoided as much as possible. The surface on which concrete will be laid shall be trimmed and thoroughly cleaned as directed by the engineer.

When excavation of rock materials reaches the surface upon or against which concrete is to be placed, blasting

On excavation of rock materials, the bottom and side surfaces of excavated rock excavation upon or against which concrete and weep holes are to be placed shall conform to the required grades and dimensions as shown on the drawings or as established by the engineers. If they are filled with concrete at the expense of the contractor including the cost of all materials required.

When concrete is to be placed upon or against rock, the excavation shall be of sufficient depth to provide for the minimum thickness of concrete at all points and any deviation from the required minimum thickness of concrete shall be avoided as much as possible. The surface on which concrete will be laid shall be trimmed and thoroughly cleaned as directed by the Engineer.

When excavation of rock materials reaches the surface upon or against which concrete is to be placed, blasting shall be stopped and the remaining mass of rocks shall be carefully removed by means of jack-hammer or any appropriate hand tool. The point beyond which blasting will not be allowed shall be determined by the engineer. All damages to the rock foundation caused by improper blasting operation shall be repaired by the contractor at his own expense in a manner acceptable to the engineer.

All foundations for bridge pier footing shall be excavated to such depths as may be necessary to secure stable bearing for the structure. Whenever the safe bearing power of the soil as uncovered is less than that called for on the drawing, pilings or appropriate spread footings will be used. The elevations of the bottoms of footings, as shown in the drawings shall be considered as approximate, and the engineers may order, in writing, such changes in elevations and dimensions of footings as may be necessary to ensure a satisfactory foundation. Bearing test, upon written order of the engineer, shall be taken to determine the supporting power of the soil. Cost of bearing test will be paid as "Extra work".

If, in the opinion of the engineer, the material at the base of the excavation is unsuitable for the foundation he shall instruct the contractor to either a) carry out additional excavation to a depth of 50 cm. below the proposed bottom of concrete shown on the drawings and to maximum depth of 60 cm. outside of the outermost lines of said base and replace with backfill compacted to at least 90% of the maximum dry density or b) strengthen the soft materials by ramming in gravel and cobbles until a firm foundation is obtained. Measurement and payment for the backfill shall be made under section XII, "Structure backfill".

METHOD OF MEASUREMENT

Structure excavation shall be measured by the cubic meter in its original position before being excavated in accordance with the drawings, or as may be ordered by the engineer, no excavation beyond the pay lines shown on the drawings will be measured for payment. For canal structures, the limit of measurement along the lines perpendicular to the flow of water shall be the vertical planes at the outer edges of the inlet cut-off walls. The upper limits of the solid, measured for payment shall be the canal bottom for canal structures of the original ground surface in case of diversion structures. The lower limits shall be the bottom of the required excavation. Excavated materials not vertically above the boundaries as specified above shall not be measures for payment. The volume measured shall not include water and other liquids removable by pumping. Such materials as mud, quagmire and other similar semi-solid not removable by ordinary pumping shall be considered pay quantities and shall be measured and paid for as "Structure Excavation".

However, in case of structure excavation for canal structures is done before canal excavation, the upper limit of the solid measured for payment shall be the original ground surface in accordance with the surface in accordance with the structure excavation pay lines.

BASIS OF PAYMENT

The volume measured as provided above will be paid per cubic meter, which price and payment shall constitute full compensation for furnishing all materials, supplies, labor, equipment, tools and accidents and subsidiary works necessary to complete the work described under this section.

For diversion works, canal siphons and bridge structure excavations, the cost of the dewatering operation unless otherwise specified in the Bill of Quantities shall be paid under a separate item in the Bill of Quantities. For all other structure excavations, dewatering operations involved are considered subsidiary work and the cost thereof shall be considered included in the unit price of structure excavation.

The contractor shall be paid sixty percent [60%] of the pay quantities of the actual excavation acceptably accomplished in accordance with the pay lines as shown on the drawings or as directed by the engineer. The remaining forty percent [40%] will be paid upon pouring of concrete for the foundation or upon placing the riprap, gravel blanket or grouted riprap in accordance with drawing and specifications.

STRUCTURE BACKFILL WITH COMPACTION

SCOPE

The work under this section shall include hauling [if necessary] and backfilling with suitable materials taken either from Structure excavation, canal excavation, side borrow or borrow haul all spaces excavated and not occupied by the structure and spaces between the natural ground surface and the finished lines indicated to be filled and all other sections directed to be filled by the engineer, all in accordance with these specifications and in conformity with the lines, grades and dimensions shown in the drawings or as ordered by the engineer. It shall also include the dewatering and removal of all unsuitable materials as ordered by the Engineer from the spaces to be backfilled or filled.

METHOD OF CONSTRUCTION

All spaces to be backfilled or filled shall be cleared of all rubbish and other objectionable matter. The excavation pit to be backfilled shall be dewatered and all mud and loose materials shall be removed before backfilling. The filling materials, with the proper moisture content determined by the Engineer, shall be deposited loose and in layers not exceeding 30 centimeters and then thoroughly compacted by ramming rolling or by means of mechanical tampers or portable vibratory compactors to obtain at least 85% compaction bridge abutments, increasing to at least 90% compaction up to the surface of the roadway in the case of approaches to bridges, Road Crossing or Culvert Structures. The time when to start backfilling operation shall be determined by the Engineer.

METHOD OF MEASUREMENT

Backfill with compaction shall be measured in cubic meters in its final compacted and uncompact position within the limits of structure excavation pay lines and surfaces of concrete in contact with the backfilled materials as shown on the drawings or directed by the engineer. Volumes occupied by the structure and other features will not be included.

BASIS OF PAYMENT

Backfill with compaction will be paid for at the contract unit price cubic meter, which price and payment shall constitute full compensation for side borrow, borrow haul and overhaul operations and for furnishing all labor, equipment, tools and all incidentals and subsidiary works necessary for the successful completion of the work under this section.

CONCRETING WORKS

SCOPE

This section covers all the materials as cement, aggregates, water admixtures and proportioning, mixing, transporting, placing, finishing, curing, and protection of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works.

All the applicable provisions of the latest version revision of the ACI Building Code [ACI-318-63] and American Society for Testing Materials [ASTM] shall govern in all cases not specifically provided for herein.

CONCRETE COMPOSITION

Concrete shall be composed of Portland cement, fine and coarse aggregates, water, and if necessary, admixtures or agents approved by NIA. The design of concrete mixtures and consistency shall be as specified in this Section.

CEMENT

- a. General -the cement shall conform to the requirement of the standard specifications for Portland cement [ASTM: C-150 Type 1]. Special cement may be used subject to the approval of the engineer

provided it meets the requirements of Portland cement with regards to strength, soundness and setting time.

- b. Storage - Contractor shall, immediately upon delivery of cement to the jobsite, store the same in a dry, weather tight and properly ventilated structure with adequate provisions for the prevention of absorption of moisture. All storage facilities shall be subject to the approval of the Engineer and shall be such as to permit easy access for inspection and identification. The Contractor's method of handling and storing cement shall be subject to the approval of the Engineer. The Contractors shall not use any cement which is stored at the site for the period more than three (3) months. Not more than fourteen (14) sacks of cement shall be permitted to be piled up and this number shall be limited to seven (7) each, when the storage is expected to be longer than two (2) months; these sacks of cement shall be piled up or stored so as to permit easy access for identification, inspection and testing.
- c. Payment -payment for cement shall be considered included in the contract unit price for the various items of concrete in the Bill of Quantities for which cement is used.

WATER

The water used in concrete, mortar and grout shall be free from objectionable quantities of silt, organic matter, alkali, salts and other impurities. The recommendation of the seventh edition of the U.S Bureau of Reclamation Concrete Manual for mixing water shall be followed.

FINE AGGREGATES

- a. General. The term "Fine Aggregates" is used to designate aggregates in which the maximum size of the particles is 5 millimeters. Fine aggregates for concrete, mortar and grout shall be provided by the Contractor and shall consist of natural sand, manufactured- sand, or a combination of both. The different components shall be batched separately, or subject to the written approval of the Engineer, or blended prior to delivery to the batching plant.

As means of providing moisture control, the Contractor may be required to stockpile the fine aggregates over porous storage to drain excessive water and to stabilize moisture content.

- b. Quality. Fine aggregates shall conform to the requirements of ASTM C-33 and shall consist of hard, tough, durable, uncoated rock particles. The Contractor shall exercise every possible precaution in transporting, washing, and screening operations to prevent contamination of sand particles. Fine aggregates shall conform to the following requirements:

- 1. Grading - it is assumed that the sand available in natural deposits will require processing to provide a suitable gradation. Regardless of the source, the fine aggregates shall be well graded from fine to coarse and the gradation as delivered to the mixers shall conform to the following requirements unless otherwise approved:

Sieve Designation US Standard Square M e s h	Percent by Weight Passing Individual Sizes
3/8" [9.50mm]	100
No. 4 [4.75 mm]	95-100
No. 8 [2.36 mm]	85-95
No. 16 [1.18 mm]	60-85
No. 30 [600 um]	25-60
No. 50 [300 um]	10-30
No. 100 [150 um]	2-10

In addition to the grading limits shown above, the fine aggregates as delivered to the mixer shall have the fineness modulus of not less than 2.30 or more than 3.00. The grading of the fine aggregates also shall be controlled so that the fineness moduli of at least 9 to 10 test samples of the fine aggregates as delivered to the mixer shall not vary more than 0.10 from

the average fineness modulus of all samples previously taken. The fineness modulus shall be determined by dividing by 100, the sum of the cumulative percentages retained on US Standard sieves No. 4, 8, 16, 30, 50 and 100. At the option of the Contractor fine aggregates may be separated into two or more sizes or classifications, but resulting sand when combined before entering the concrete mixer shall be of uniform grading within the limits specified above.

2. Particle Shape. The shape of the particles shall be generally spherical or cubical and reasonably free from flat and elongated particles is defined as a particle having a maximum dimension in excess of five times the minimum dimension. Rocks which break down into such shape, regardless of the type of processing equipment used, will not be approved for use in the production of fine aggregates.
3. Deleterious Substances. The maximum percentages of deleterious substances in the fine aggregates as delivered to the mixer shall not exceed to the following values:

	Percent by Weight
Materials passing No. 200 Screen [Designation 16] *	3
Shale [Designation 17]	1
Clay [Designation 13]	1
Total of other deleterious substances Such as alkali, mica, soft, flaky, particles and loam	2

- the designation in parenthesis refers to methods of testing described in seventh [7th] edition of the US Bureau of Reclamation Concrete Manual and ASTM.

The sum of the percentages of all deleterious substances shall not exceed 5% by weight. Fine aggregates producing a color darker than the standard in the colometric test for organic impurity [USBR designation 14 or ASTM C-40] may be rejected. Fine aggregate having specific gravity [USBR designation 9 or ASTM C- 128, saturated surface dry basis] of less than 2.60 may be rejected. The fine aggregate may be rejected if the portion retained on No. 50 [300 um] screen, when subjected to five cycles of sodium sulphate test for soundness [USBR designation 19 or ASTM C-88] shows an average loss of more than 18% by weight. Fine aggregates delivered to the batching plant may be rejected if it contains more than 0.15% soluble sulphate for any one sample or more than 0.10% for an average of at least 9 out of 10 consecutive test samples of finished sand, when samples are taken hourly. The percent soluble sulphate in the fine aggregates shall be determined in accordance with the method of test prescribed in sub-paragraph 4 below.

4. Sampling- sampling of fine and coarse aggregates shall be done in accordance with Aggregate Sampling and Testing. The source from which fine and coarse aggregates is to be obtained shall be selected well in advance of the time when the materials will be required in the work. Unless otherwise specified, all test samples shall be taken under the supervision of the engineer in sufficient time as approved to permit adequate testing and examination of results sufficiently in aggregates at various in the processing operation shall be made. The approval of a source shall not be construed as containing approval of the materials from the source, the Contractor will be held responsible for the specified quality of all materials used in the work.
- c. Storage - fine aggregates shall be stored in such a manner as to avoid the inclusion of any foreign materials in the concrete. The storage or stockpile shall be constructed so as to prevent segregation. Depositing of materials in storage and its removal there from shall be done in such a manner as to result in increasing the uniformity of the grading insofar as this is practicable. All fine aggregates shall remain in free drainage storage for at least seventy-two [72] hours prior to use. Sufficient live storage shall be maintained at all times to permit continuous placement of concrete.

- d. Measurement and Payment.- fine aggregates will not be measured for payment. The cost of excavation, stockpiling, transporting, processing, blending, handling and other cost for providing fine aggregates shall be considered in the unit price bid for the various items in the Bill of Quantities for which fine aggregates are used.

COARSE AGGREGATES

- a. General - the term "Coarse Aggregates" is used to designate of such size to fall within the range of 0.5 cm. to 7.5 cm or any or range of sizes within such limits. The coarse aggregates shall be reasonably well graded within the nominal size ranges hereinafter specified. Coarse aggregate for concrete shall be furnish by the Contractor and shall consist of crushed rock or mixture of natural gravel and crushed rock as provided in paragraph 1508. Coarse aggregate, as delivered to the batching plant shall have uniform and stable moisture content. Any rewashing found necessary to provide clean aggregates shall be done prior to finish screening. Rewashing shall not be performed in finish screen.
- b. Quality - Coarse aggregates shall conform to the requirements of ASTM C-33 and shall consist of hard, dense, uncoated durable rock fragments.
1. Grading - the coarse aggregates shall be well graded from fine to coarse. It shall be separated into the following specific size groups. The grading of the aggregates within the separate size groups as delivered to the mixer shall be as follow:

	SIZE GROUPS				
Sieve Size	Percent by Weight		Passing Individuals		Size
US Std. Sq. Mesh	12.5 mm Size	18 mm Size	37.5 mm size	50 mm size	75 mm
6" [150mm]	-	-	-	-	
3" [75mm]	-	-	-	-	
2½" [63mm]	-	-	-	100	90
2" [50mm]	-	-	100	95-100	35
1½" [37.5mm]	-	-	90-100	-	0
1" [25mm]	-	100	20-55	35.7	
¾" [19mm]	100	90-100	0-15	-	
½" [12.5mm]	90-100	-	-	10-30	
3/8" [9.5mm]	40-70	20-55	0.5	-	
No. 4 [4.75mm]	0.15	0-10		-	0-5

Coarse aggregates shall not contain more than 1.5 percent of materials padding the No. 200 sieve by meshing, nor 5% of soft fragments.

It shall have an abrasion loss of not more than 45 percent at 500 revolutions.

Unless otherwise directed, the maximum sizes of aggregates to be used in concrete for the various parts of the works shall be in accordance with the following:

General Use	Maximum Aggregate Diameter
Lean Concrete to control water Intrusion and other miscellaneous uses	37.5 mm
Concrete for Footing, Walls, Slabs Beams, 0.22 to 0.75 meters thick	37.5 mm
Concrete for thin wall, slabs, beams, less than 0.22 meters thick	19 mm
Concrete for reinforced concrete pipes	12.5 mm

In all cases, the diameter of the aggregated shall not exceed $\frac{1}{2}$ the distance between the reinforcing steel bars of the members being placed.

2. Particle Shape - the particle shape of the crushed coarse aggregate shall be generally spherical or cubical and reasonably free from flat or elongated particles. A flat or elongated particle is defined as the particle having a maximum dimension such shape will not be approved for the production of aggregate.
3. Deleterious Substances- the deleterious substances in any size of coarse aggregate, as delivered to the mixer, shall not exceed the following values:

	Percent By Weight
Material Passing no. 200	$\frac{1}{2}$
Shale [Designation 18]	1
Clay Lumps [Designation 13]	$\frac{1}{2}$
Other deleterious substances	1

- The designations in parenthesis refer to methods of Testing described in the seventh edition of the US Standard of Reclamation Manual and ASTM.

The sum of the percentages of all deleterious substances in any size, as delivered to the mixer, shall not exceed 3% by weight. Coarse aggregate may be rejected if it fails to meet the following:

1. Petrographic Examination - If more than 10% of poor aggregate particles can be identified in physical test in case 20% of the particles would be classified with respect to the chemical quality [USBR Designation 7 or ASTM C- 295].
 2. Sodium-sulphate test for soundness [USBR Designation 9 or ASTM C-88]- if the weighted average loss, after 5 cycles is more than 10% by weight.
 3. Specific Gravity [USBR Designation 10 or ASTM C-127] - If the specific gravity [saturate surface-dry basis] is less than 2.60.
 4. Sampling - all sampling of coarse aggregates shall be in accordance to Mixture Composition.
- c. Storage- coarse aggregate storage or stockpiles shall be built in such a manner as to avoid the inclusion of any foreign materials in the concrete and to prevent segregation and excessive breakage. Water sprayers shall be installed to keep that portion of the coarse aggregate stockpile saturated which is for immediate use in the concrete. Sufficient live storage shall maintain at all times to permit continuous placement of concrete.]
 - d. Measurement and Payment - Coarse aggregates will not be measured for payment. The cost of excavation stockpiling, processing, blending, handling and other cost for providing coarse aggregates shall be considered included in the unit price bid for the various items in the Bill of Quantities for which coarse aggregates are used.

AGGREGATE SAMPLING AND TESTING

Sampling of the aggregate materials approved for use in the work, shall be done by the contractor in accordance with ASTM Sampling Method at 10 days in advance of time when placing of concrete is expected to begin. Aggregate studies and test will be made by the contractor at its own expense. It shall be the responsibility of the contractor to designate the source[s] of aggregates early enough to give NIA sufficient time to obtain the necessary samples and have them subjected to tests.

The samples of aggregates shall be obtained and tested in accordance with the following ASTM standard methods:

Sampling aggregate

- C 75

Sieve Analysis	- C 136
Amount of material finer than 200 sieve	- C 117
Organic impurities	- C 40
Mortar Strength	- C 87
Soundness	- C 88
Soft Particles	- C 235
Abrasion	- C 131
Clay lumps	- C 142

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. Material from source which has been previously tested and shown satisfactory compliance with all the requirements given herein may be used without further testing upon written permission of NIA. Test reports for previous tests must be available before approval can be given.

During construction, aggregates will be sample as delivered to the mixer to determine compliance with specification provisions. Test shall be made in accordance with the applicable ASTM Standards. Routine control test and analysis of aggregates at various stages in processing Contractor shall provide such facilities as may be considered necessary for the ready procurement of representative test samples. All tests will be made by the contractor under the supervision of NIA.

CLASSIFICATION AND PROPORTIONING OF CONCRETE MIXTURES

- a. Classification and Design Mixtures. The mixture for all classes of concrete shall be designed by the contractor and approved by NIA to obtain the compressive strength at the age of 28 days as specified below:

Class	Minimum Strength [kg/cm ²]	Maximum Aggregate Size [mm]	Minimum Cement [kg/m ³]	Maximum Water/ Cement Ratio
X	300	19	375	0.55
Y	210	12.5	350	0.60
AA	210	19	325	0.60
A	210	37.5	300	0.60
B	170	50	250	0.70
C	170	75	225	0.70
Z	140	75	200	0.85
Blinding 70		37.5	150	No limit [Concrete]

- b. Aggregate Content - Concrete mixtures shall be designed to use the largest size and the maximum amount of coarse aggregate as practicable for the intended use of the concrete.
- c. Consistency. - the amount of water to be used in the concrete shall be regulated as required to secure concrete of the proper consistency and to adjust for any variation in the moisture content or grading of the aggregates as they enter the mixer.

It shall be such consistency that it will flow around reinforcing steel bar but individual particles of the coarse aggregate when isolated shall have coating of mortar containing its proportionate amount of sand. The consistency shall be gauged by the ability of the equipment to properly place it and not by the difficulty in mixing or transporting. Addition of water to compensate for stiffening of the concrete before placing will not be permitted. Uniformity in concrete consistency from batch to batch will be required.

The slump of the concrete at the time of placing shall not exceed 5 centimeters in heavy concrete sections and at top of walls, piers and parapets, 10 centimeters for pumped or air placed concrete, and 7.5 centimeters for concrete elsewhere.

The engineer reserves the right to require a lesser slump whenever concrete of lesser slumps can be consolidated easily into placed by means of the vibration specified in Paragraph Construction Joints.

- d. Notwithstanding the approval of the Engineer of the design mixtures and minimum cement content for different classes or gradation of aggregates, the Contractor shall be responsible that all the concrete meet the designed strength.

SAMPLING AND TESTING OF CONCRETE

The Contractor shall at his expense perform sampling and testing of concrete materials in accordance with the latest Japanese Industrial Standards and the Manual of Concrete Quality Control to be prepared by NIA.

All the tests designated in the manual shall be carried out at the Project site by the Contractor under the direction of the Engineer. The Contractor shall furnish all materials and labor for testing and shall provide own laboratory, tools and equipment for testing except compression machine.

Concrete sampling shall be carried out during concrete operations at the rate of one standard sample for each 75 cubic meters of concrete or fraction thereof placed during each continuous placing operations but in no case shall there be less than one sample for each day of concreting. Each standard sample shall consist of three (3) standard cylinders 6-inch (15 cm) diameter by 12 inches (30 cm) high.

The Contractor shall keep a record of the samples and the portion of the structures and volume represented which shall be available to NIA on demand.

Superintendents, testing equipment and tools to be provided by the Contractor for quality control of the construction shall be subject to the prior approval of the Engineer.

FAILURE TO CURE

The engineer shall have the authority to suspend the work whole or in part, by written order, for such period as he may deem necessary for failure on the part of the Contractor to perform proper curing of the concrete work and withhold payment for the corresponding work pending results of tests, that shall subsequently be made on these concrete works. The contractor shall immediately secure more samples of such members and from part of the structure as shall be designated by the engineer and shall have been tested in a Testing Laboratory approved by the NIA. If the results of tests are found satisfactory, payment of the concrete in question shall be made and the work ordered resumed, but if the results of tests are unsatisfactory to meet the structural requirements, the contractor shall remove, wholly or partly, the concrete work in question at the discretion and upon written order of the Engineer and the Contractor shall replace such parts at his own expense.

FAILURE TO MEET CONCRETE REQUIREMENTS

If the specified strengths have not been met, the Contractor shall remove and replace the concrete concerned or take such other remedial measures as the Engineer order, all at his own expense.

Before proceeding with the remedy, the Contractor shall subject for approval of the Engineer details of the action proposed to ensure that the concrete and steel to be placed in the works will comply with the Specifications.

PROTECTION OF CONCRETE WORKS

The Contractor shall protect all concrete against injury until final acceptance by NIA. Final acceptance shall be considered to mean acceptance of the whole after the Contract has been completed or satisfactorily terminates.

MEASUREMENT AND PAYMENT

- (1) Concrete

Measurement and payment of concreting works shall be made separately for every class specified in the Bill of Quantities. Measurement for payment of concreting works for each class shall be made by volume in cubic meter for

respective items of various works in the Bill of Quantities, unless otherwise stipulated. It shall be computed to the neat lines as if these works were constructed to the details shown on the Drawings or as established by the Engineer. In measuring concrete for payment, volume of all cavities, depressions, openings, embedded wood works and metal works, except reinforcement bar, anchor bolts and bars, and dowel bars, will be deducted. Payment for concrete works measured as provided above shall be made at the unit prices per cubic meter bid therefore in the Bill of Quantities, which price and payment shall include the cost of all labor, materials and equipment, furnishing and handling of cement, aggregates and admixtures, mixing hauling, placing and finishing concrete furnishing of forms and subsequent removal of form works and necessary false work (unless otherwise stipulated), construction of joint (excluding furnishing and placing such joint materials as waterstops, dowel bars, etc., as specified in Section XVI "Concrete Joints and Joints Materials"), dewatering and keeping dry during pouring concrete, and all necessary items incidental thereto for the successful completion of the work described in the Drawings and these Specifications, except for payments for furnishing and placing reinforcement bars and joint materials which shall be separately made at appropriate unit prices therefore in the Bill of Quantities

REINFORCING STEEL BARS

SCOPE

All reinforcing steel bars required for the works as detailed in the construction drawings or as directed by the engineer shall be furnished by the contractor.

The work under this section includes the hauling of all reinforcing steel bars required for the works to the project site, storing, cutting, bending and proper placing, all in accordance with the drawings in these Specifications.

The length for each size of reinforcing steel bar to be furnished by the contractor shall be computed by taking the theoretical length required for the work. All reinforcing steel bars shall be furnished in commercial standard lengths and the contractor shall cut and bend the reinforcing steel bars to the detail and dimensions shown on the drawings.

MATERIALS

All reinforcing steel bars to be furnished by the contractor shall be Grade 40 or PS 275, deformed type and conforming to the requirements of ASTM A-615. The nominal dimensions and unit weights of bars designation shall be in accordance with the following table:

Nominal Perimeter Bar Diameter	Unit wt. Kg/m. Area (sq. mm.)	Nominal Dimensions Cross Section	(mm.)
6 mm	0.222	28.27	18.85
8 mm	0.395	50.27	25.13
10 mm.	0.616	78.54	31.42
12 mm.	0.888	113.10	37.70
16 mm.	1.579	201.10	50.17
20 mm.	2.466	314.20	62.83
25 mm.	3.854	491.90	78.54
28 mm.	4.833	615.75	87.96
32 mm.	6.313	804.15	113.10
36 mm.	7.991	1,017.90	113.10

The nominal diameter of a deformed bar is equivalent to the diameter of a plain bar having the same weight per unit length of the deformed bar.

CONSTRUCTION REQUIREMENT

Workmanship shall be the highest grade and shall be in accordance with the latest standard practice of the industry.

1. Cutting and Bending - Cutting and bending of reinforcing bars may be done in shop or at the job site. All bending works shall be in accordance with the latest standard practice and by approved machine methods. Radii for bends and hooks will be specified on the approved detailed reinforcement drawings in accordance with sound design procedures.
2. Placing - Reinforcement shall be laid, anchored and embedded in the concrete as shown on the drawings or as directed by the engineer. Unless otherwise directed, the spacing of reinforcement bars shall be measured along the center line of the bars. Reinforcement shall be inspected for compliance with requirements as to size, length, splicing, position and number after placement based on the approved reinforcement drawings.

Before reinforcement are placed, the surfaces of the bars and the surfaces of any metal support shall be cleaned of heavy flaky rust, loose scales, dirt, grease or other foreign substances which, in the opinion of the Engineer, are objectionable. Heavy flaky rust that can be removed by firm rubbing with burlap or equivalent treatment is considered objectionable. After being placed, the reinforcing bars shall be maintained in a clean condition until in a clean condition until completely embedded in concrete.

Reinforcing bars shall be accurately placed and secured in position so as to avoid displacement during the pouring of concrete. Special care shall be exercised to prevent any disturbance of the embedded reinforcement during the setting of concrete. Metal chairs, hangers, spacers or other approved support may be used by the Contractor for supporting bars. Metal supports shall be galvanized when they are to be exposed to view on completed concrete surfaces or where it is contribute in any way to discoloration or deterioration of the concrete.

3. Relation of Bars to concrete surfaces - the minimum cover for all reinforcements shall conform to the dimensions shown on the reinforcement drawings.
4. Splicing - all splices in reinforcement shall be as shown on the drawings or as directed by the Engineer. The lapped ends bars shall be either supported sufficiently to permit the embedment of the entire surface of each bar in concrete or shall be securely wired.
5. Welding - welding of bars shall be performed only where shown on the Drawings or as authorized in writing by the Engineer and shall conform to the requirements of LAWS: D12.1, latest revision. All welders employed shall be shown proof of their welding qualifications to the engineer. All welding shall be done using metal arc welding, pressure gas welding, submerged arc welding or thermo welding. An electric shall be acceptable to NIA. Covering of low
6. Protection - Reinforcement to remain exposed and intended for future concrete embedment shall be protected from corrosion or other damages in an approved manner where directed. The reinforcement protection shall be of such nature that it can be thoroughly cleaned without difficulty prior to encasement in concrete.

PREPARATION OF REINFORCEMENT DRAWINGS

Contractor shall submit for the approval of NIA detailed reinforcement drawings. These drawings will include bar-placing drawings, bar bending drawings, bar list, and any other reinforcement drawings as may be required to facilitate placement and checking of reinforcing bars. No work shall be done by contractor until such approval has been secured from NIA.

The reinforcement drawings submitted shall show the name of the structure location by stationing where the reinforcement drawings is intended and all the necessary information required by NA. It shall likewise bear the stamp or seal of Contractor as evidence that the drawings have been checked by contractor.

Contractor shall be held responsible for any delay in the progress of the work occasioned by his failure to observe the requirements and the time for the completion of the contract will not be extended on account of his failure to promptly submit said drawings in strict adherence herewith.

SAMPLING FOR TESTING AND ACCEPTANCE OF MATERIALS THAT FAIL TO MEET CONTRACT REQUIREMENTS (FOR STEEL BARS FURNISHED BY CONTRACTOR)

Sampling of reinforcing steel bars furnished by the contractor for incorporation in the Permanent Works shall be carried out by NIA at the Manufacturer's stockyard before delivery to the project site. The NA authorized representative shall, at random, take three (3) representative samples of reinforcing steel bars per lot covered by the manufacturer's mill certificate. A lot shall consist of all steel bars of the same heat or blow as shown in the mill certificate, and the same nominal cross-section and grade. Samples shall be tested at the manufacturer's testing laboratory, if any, or to any approved Government testing laboratory at Contractor's expense. A lot or lots represented by samples tested which failed to meet specified requirements shall be rejected and will not be counted for delivery to the project site. Sampling and testing shall be in accordance with ASTM requirements. All deliveries shall be subject to prior approval of NIA.

The NIA reserves the right to accept steel bars that fail to meet the contract requirement provided that the deficiency is not more than nine percent (9%) of the requirement per each type of test and provided further that a corresponding reduction in the unit price will be made. The percentage of reduction equal to the percentage of deficiency based on the minimum requirement of the ASTM A-615 Standard. For example, if the value of the test result for one type of test is five percent (5%) below the minimum requirement, the unit price for payment will be reduced by 5%. If the non-compliance with the test requirements is on two or more tests, the price reduction will be the summation of the percentage of the deficiencies.

METHOD OF MEASUREMENT

a. Cutting Bending and Placing. Measurement for payment of reinforcing steel bars will be made on the weight of reinforcing steel bars actually placed with the concrete structure and drilled holes for anchorage in accordance with the Drawings and Bar Schedule approved by NIA or as directed by the Engineer and weights will be computed based on the published manufacturer's weights or in the absence thereof, on the weights specified in the table presented in Paragraph 902. Steel bars in laps or splices indicated in the approved reinforcement Drawings, as required by NIA will be measured for payment. Additional steel bars in laps which are authorized for the convenience of the Contractor and such items as measured for payment. Where weld splices are specified on the Drawings, weld splices will not be measured for payment. Where contractor chooses to weld reinforcement bars for his convenience and welding is not specified, no separate payment will be made for such welds. Where Contractor substitute welded splices for lapped splices, separate payment will not be made for such welds, but instead the weight for the lapped splices shown on the Drawings will be measured for payment.

BASIS OF PAYMENT

Payment for reinforcing steel bars measured as provided above, will be paid for at the contract unit price per kilogram which price and payment shall constitute full compensation for furnishing all labor, tools, equipment and all incidentals and subsidiary works necessary for the successful completion of the work described under this Section

OVERHAUL

SCOPE

Overhaul shall include the hauling of materials excavated from Canal Excavation or structure excavation and to be disposed either for roadway embankment, normal embankment, freeboard embankment, fill, structure backfill, or for disposal to waste disposal areas suggested by NIA or at the Contractor's choice including acquisition of right-of-ways thereto.

DISPOSAL OF EXCAVATED MATERIALS

a. general

NIA shall determine the suitability of all excavated materials in the various portions for the work in accordance with the provisions specified herein.

b. Compacted Embankment

Materials from excavation which are suitable for compacted embankment [such as canal embankments, protection dikes, etc.] shall be dense and homogeneous when compacted. The materials shall be free from all organic material larger than 12 centimeters in maximum dimension.

Materials suitability for the construction of compacted embankment shall be those solid having a classification as determined by the Engineer in the following order of preference: GC [Clayey Gravel], SC [Clayey Sand], C [Inorganic Clay], SM [Silty Sand] or ML [Inorganic Silt].

c. Compacted Backfill

Materials from excavation which are suitable for compacted backfill shall be same as those which are suitable for compacted embankment, except that it shall be free of all materials larger than 7.5 centimeters in maximum dimension and that compacted backfill behind bridge abutment and retaining walls shall conform to the materials specified in the drawings.

d. Free Board Embankment

All excavated materials that are free of oversized materials and of organic matter as determined by the engineer may be utilized for the construction of free board embankment.

e. Waste materials

Waste materials consisting of all excess excavated suitable materials and objectionable materials for canal embankment, and compacted backfill shall be placed in waste disposal areas outside the NIA right-of-way chosen by the contractor, leveled and sloped to drain as directed.

METHOD OF MEASUREMENT

Overhaul of waste materials will be measured by the cubic meter. The volume of waste materials to be measured for payment shall be computed based on the Net End Area versus Stationing Diagram and Mass diagram for each Lateral or canal which shall be submitted by the Contractor to the Administrator for approval.

Overhaul for canal embankment is a subsidiary work under Embankment Construction and compaction [ECC] hence, it will not be measured for payment, as the cost is already considered included in the contract unit price of ECC.

BASIS OF PAYMENT

Payment for overhaul for waste materials shall be per cubic-meter, which price and payment shall constitute full compensation for furnishing all labor, supplies, tools, equipment and all incidents necessary for the successful completion of the work including acquisition of right-of-way and access thereto for disposal areas chosen by the Contractor. Payment for overhaul for waste materials shall only be made when said Net End Area versus Stationing Diagram and Mass Diagram, where the volume measured for payment are based has been approved by the Administrator.

If during the implementation of the project, the waste disposal areas differ from those chosen by the Contractor considered in the derivation of his unit bid price for overhaul, the contractor shall not be entitled to any claim for unit price adjustment as a result of such alteration of disposal areas.

MISCELLANEOUS METALWORKS AND MATERIALS

SCOPE

The work under this Section shall include furnishing, delivering and installing all miscellaneous metalworks and materials shown on the drawings which shall include but not limited to the following:

1. Trashracks or screens including frames, guides and anchors
2. Steel ladder rungs
3. Steel gratings including frames, guides and anchors
4. G.I. Pipes guardrails and handrails
5. Bearing plates for bridges
6. Bearing pads and filler board for bridges
7. Perforated drain pipes
8. Embedded metals including plates, anchors, angles, strap anchors, bolts, nuts washers, flanges, fittings, bends, tees, cross, elbow and other metals or materials which are not paid for under other items in the Bill of Quantities
9. Timber

All metalworks treated in this Section shall conform to the following standards or their approved equivalent standards:

ASTM AG	General requirements for delivery of rolled steel plates, shapes, sheet piling bars for structural use
ASTM A36	Structural Steel
AWS D1-1	Structural Welding Code
AWS	Code for Arc and Gas Welding in Building construction
ASTM A307	Specification for Low-Carbon Steel Externally and Internally Threaded Std. Fasteners
ASTM A325	High Strength Bolts for Structural Steel Joints including Suitable Nuts and Plain Hardened Washers
ASTM A108	Cold Finish Carbon Steel Bars and Shafting
AISC	Manual of Steel Construction
ASTM A123	Zinc (Hot Galvanized) Coatings on products fabricated from rolled, pressed and forged steel shapes, plates, bars and strips
ASTM A53	Welded and Seamless Steel Pipe
Metal Grating	Metal Grating Institute Handbook Pittsburg, Pa. U.S.A
ASTM 120	Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses
AISC	Specification for Design, Fabrication and Erection of Structural Steel for Buildings
ASTM A153	Galvanized Steel Pipes

FABRICATION

Details of design and fabrication not covered by the drawings nor by these specifications shall conform to the applicable provisions of the latest "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" including all supplementary provisions of the American Institute of Steel Construction.

All metalworks and materials furnished by the Contractor and all works performed will be subject to rigid inspection. No metalworks or materials shall be delivered to the jobsite until inspection at the Contractor's fabricating plant has been made, in accordance with the provisions of these specifications.

Shearing and cutting by torch or electric arc shall be performed carefully, and all portions of the work which will be exposed to view after completion shall be finished neatly. Re-entrant cuts and copes shall be shaped notch-free to a radius of at least 12 millimeters.

In bolted connections, all holes shall be cylindrical, unless otherwise shown on the drawings, perpendicular to the members, and clean cut and without burned or ragged edges. Holes in materials more than 20 mm thick shall be drilled. All other holes may be punched or drilled to full size. Unless otherwise shown on the drawings, drilled holes shall be 1 mm larger than the nominal diameter of the bolt. Outside burrs resulting from drilling shall be removed with a tool making a 1 mm bevel. Likewise, for punched holes, unless otherwise shown on the drawings, the diameter of the punch for punching to full size shall also be 1 mm larger than the nominal diameter of the bolt. The diameter of the die shall be not more than 1.50 mm larger than the diameter of the punch.

Welding shall be done by the shielded-arc method except where otherwise specifically permitted by the Engineer. Welding rods shall be furnished by the Contractor and shall be of heavily coated type designated for all position welding, and the size, type and nomenclature of the rods shall be subject to approval by NIA. Welds shall be made as indicated on the drawings and in accordance with the conventional symbols of the American Welding Society (AWS). Welding shall be done in accordance with Sections 3, 4, 5 and 6 of the AWS' code for Arc Welding and Gas Welding in Building Construction, latest revision. All butt welds shall have complete penetration. Teeming of multiple layer welds will not be permitted.

INSTALLATION

All metalworks and materials shall be installed in accordance with the details shown on the Drawings. Care shall be taken to insure that all parts of metalworks are installed in correct position and alignment. Metalworks to be embedded in concrete shall be located accurately and shall be held in correct position and alignment during placing and setting of the concrete. Anchor bolts shall be set and held in position before concrete is placed, unless otherwise approved. Where it is impractical to embed anchor bolts or ladder, stairways or other comparatively light metal work before the concrete is placed and when it is necessary to anchor parts where inserts or anchor bolts have not been provided, holes shall be drilled in the concrete and expansion anchors with bolts shall be installed as directed. The surfaces of all metalworks to be in contact with or embedded in concrete or grouting mortar shall be cleaned.

Suitable blockouts shall be constructed in the concrete where required for installation of railing posts and other metalworks. After installation of the metalworks, blockouts shall be filled with concrete or grout as shown on the drawings. Contractor shall drill or drill and tap, as required all holes in metalwork required for installation of the metalwork.

Contractor shall drill all holes in concrete required for the installation of expansion anchors. Contractor shall slot or cut or split metalwork in the field as required for installation.

TRASHRACKS OR SCREENS

Trashracks or screens shall be a substantial all welded sectionalized steel structure, generally as shown on the drawings. Special care shall be taken to insure that all members shall be in exact position and alignment. Vertical members shall be welded to horizontal members. Trashracks shall be prime coated and painted in accordance with Section XXXVI, Painting Metalworks.

STEEL LADDER RUNGS

Steel ladder rungs shall be furnished and installed in accordance with details shown on the drawings. Bars used for steel ladder rungs shall be cold drawn steel wire conforming to the provisions of ASTM Designation A32 or its latest revision. The wire gage or bar size and spacing shall be as designated on the Drawings.

Ladder rungs embedded in concrete shall be free of mortar, oil dirt, loose mil scale, loose rust and other coatings that would destroy or reduce the bond. Bars shall conform to the dimensions shown on the drawings. Bars with links or improper bends or other deformations shall not be used or made as rungs.

STEEL GRATINGS

Gratings shall be provided as indicated on the drawings. Steel gratings shall be fabricated from steel shapes and flat bars provided with stiffeners and welded to form a rigid structure as shown on the drawings.

Flat bars of sizes and spaces shown on the drawings shall be welded at their ends into continuous rolled steel angles and provided with stiffeners. The sizes and dimensions of angles or stiffeners shall not be less than those shown on the drawings.

Steel gratings used as cover for the intake barrel manhole shall be provided with rollers on both ends as shown on the drawings, such that this cover could be opened by sliding. Roller guides shall not be shorter than the length shown on the drawings.

GALVANIZED IRON PIPE GUARDRAILS AND HANDRAILS

Galvanized iron pipe guardrail and handrail shall be provided at operating platforms and other places shown on the drawings. Sizes and dimensions shall be as shown in detail on the drawings. All railings shall be of threaded ends and furnished with complete joint fittings.

Vertical members for guardrails shall be installed plumbed and horizontal members parallel to the surface of anchorage. Vertical members shall be installed in prepared sockets, braced in true alignment and secured permanently by either threaded floor flange which is anchored to the concrete structure by means of expansion bolts as shown on the drawings or by cement grout consisting of 1 part cement and 3 parts sand (by wt.) mixed to a consistency as directed by the Engineer. Bolts in bolted connections shall be firmly tightened.

Galvanized surfaces that are abraded or damaged during installation shall be thoroughly wire brushed removing all loose and cracked coating and then painted with two coats of high zinc- dust content paint conforming to the requirements of Federal Specification MIL-P-21035 or approved equal.

BEARING PLATES FOR BRIDGES

Bearing plates, bars, rockers, assemblies, and other expansion or fixed devices for bridges shall be constructed in accordance with the details shown on the Drawings and shall be hot-dip galvanized after fabrication conforming to ASTM Designation A120 or its latest revision.

The bearing plates shall be set level and the rockers and other expansion devices shall be set to conform to the temperature at the time of erection or to the setting specified.

When bearing assemblies or masonry plates are shown on the Drawings to be placed (not embedded) directly on concrete, the concrete bearing area shall be constructed slightly above grade and shall be finished by grinding or other approved means to a true level plane which shall not vary perceptively from a straight edge placed in any direction across the area. The finished plane shall not vary more than 0.30 centimeter from the elevation shown on the Drawings.

When elastic bearing pads, or preformed fabric pads are shown on the Drawings, the concrete surface on which pads or packing are to be placed shall be wood float finished to a level plane which shall not vary more than 0.40

centimeter from a straight edge placed in any direction across the area. The finished plane shall not vary more than 0.30 centimeter from the elevation shown on the Drawings.

BEARING PADS AND FILLER BOARDS

Bearing pads of sizes indicated on the Drawings shall be neophrene, hardness 60 and filler boards shall be canex board or as indicated on the Drawings. The concrete surfaces on which bearing pads are to be placed shall be wood float finished to a level plane which shall not vary more than 0.15 centimeter from a straight edge placed in any direction across the area. The finished plane shall not vary more than 0.30 centimeter from the elevation shown on the Drawings.

PERFORATED DRAIN PIPES

Perforated drain pipes shall be installed at locations shown on the drawings and as directed by the Engineer. The sizes and type of materials to be used shall be as indicated on the drawings.

BOLTS, ANCHORS, ANGLES, NUTS, WASHERS AND OTHER METALS

Except for studbolts, the length of connection bolts shall be in 6 mm variations and when in the structure, the bolts shall extend at least six millimeters beyond the nuts. Anchor bolts and studbolts shall be as shown on the Drawings. Threads of anchor bolts shall be given a heavy coat of rust preventive compound in the shop. Washers shall be used under heads of all connection bolts where shown or called for on the drawings. Bevelled washers shall be used on sloping flanges.

GROUT AND MORTAR

Grout and mortar for miscellaneous metalworks shall be mixed in the proportions and to the specified consistency in accordance with the requirements of Section XV, Concrete. Before placing grout and mortar, the surfaces of concrete on which grout will be placed shall be roughened and shall be cleaned of all laitance, loose or defective concrete coatings and other foreign materials by effective means followed by thorough washing and such surfaces shall be kept moist for at least 24 hours.

TIMBER

This work shall consist of timber structures constructed to the dimension, lines and grades shown on the Drawings and in accordance with the specification. The timber shall be treated or kiln dried.

In handling treated timber, care shall be exercised so as not to break or penetrate the treatment with any tool or handling equipment. Any damage timber shall be replaced without any extra compensation. Any cut made or hole bored in treated timber that exposes untreated wood shall be given 3-coats of hot creosote oil before the exposed part is assembled.

All timber shall be of the specie specified in the drawing, shall be sound, free from knots, splits, ring separation, wormholes or any defects which will impair its strength or render it unfit for its intended use.

All timber which is to be stored on the job for any length of time, prior to its use in the structure, shall be neatly stacked in piles to prevent warping or distortion. Untreated timber shall be open stacked at least 300 mm above the ground and shall be close-stacked and piled to prevent warping. The ground underneath and in the vicinity of all piles shall be cleared of all weeds and rubbish.

METHOD OF MEASUREMENT

Measurement for payment of miscellaneous metalwork and materials will be made either on the weight of metalwork in kilogram or on the number of assembly or pieces actually installed in accordance with the table as follows:

<u>Metal/Material</u>	<u>Measurement</u>
1. Trashrack or screens including frames, guides and anchors	Kilogram/Set
2. Steel ladder rungs	Kilogram
3. Steel grating, including frames guides and anchors	Kilogram
4. G.I. Pipe guardrails and handrails	Kilogram/L.M.
5. Bearing Plates for Bridges	Piece
6. Bearing Pads and Filler Boards for Bridges	Piece
7. Perforated drain pipes	Kilogram/L.M.
8. Embedded metals including plates, anchors, angles, strap anchors, bolts, nuts and washers, flanges, fittings, bends, tees, cross, elbows and other metals or materials which are not paid under other items in the Bill of Quantities	Kilogram/Lump sum
9. Timber	Set/Assembly or bd. ft.

Weights shall be computed based on the theoretical weight of such material duly certified by the manufacturer.

BASIS OF PAYMENT

Payment for miscellaneous metalwork will be made at the contract unit price per kilogram, per piece, or per assembly whichever is called for in the Bill of Quantities which price and payment shall constitute full compensation for furnishings all labor tools, materials and all incidentals and subsidiary works necessary for the successful completion of the miscellaneous metalworks and materials described under this Section.

CANAL EXCAVATION

SCOPE

The work under this Section shall consist of excavating and removal of all classes of materials in canal prism including placing into canal embankments with excavated suitable materials, stockpiling of excavated materials suitable for embankment and backfilling, and trimming of side slopes inside canal prism and canal beds except on portion of the canal where concrete lining is required (trimming of the foundation bed will be considered included under Section XX, Concrete Canal Lining) all in accordance with the Drawings and these Specifications or as directed by the Engineer.

All excavations shall be true to lines, grades, slopes and profiles shown on the Drawings or as required by the Engineer.

CLASSIFICATION

All excavated materials under this Section will be classified as follows:

1. **Rock Excavation** - For purposes of classification of excavation, rock is defined as sound and solid masses or formation, layers or ledges of mineral matter in place of such hardness and texture that:

- a) Cannot be effectively loosened or broken down by ripping in a single pass with a latest model tractor mounted hydraulic ripper equipped with one digging point of standard manufacturer's design adequately sized for use with and propelled by a crawler-type tractor above 305 HP.
- b) In the areas where it is impracticable to classify the use of the ripper described above, rock is defined as sound and solid material of such hardness and texture which cannot be loosened or broken by a 2.72 kg. (6 pound) drifting pick.
- c) Can only be loosened or broken by a special equipment such as jack hammer and pencil hammer attached to an excavator.

All formation of materials as defined above whose volume is one (1) cubic meter or more will be classified as rock.

2. **Common Excavation** - Excavation of any materials and boulders (whose volume is less than one cubic meter) that can be ripped to be loosened by, a dozer of equal or below 305 HP capacity.

CONSTRUCTION REQUIREMENTS

(a) Explosives and Blasting

1) Explosives

Caps or other exploders or fuses shall in no case be stored in the same place in which dynamite or other explosives are stored, transported or kept. The location and design of powder magazines, the methods of transporting explosives and the precautions taken to prevent accidents shall be in accordance with the provisions of all laws, orders, regulations and decrees that are in force in the Philippines or may be issued from time to time by the Government.

The Contractor shall maintain an inventory for storage and withdrawal of powder stocks and detonators. The NIA shall be notified immediately of any loss or theft of explosives. The Contractor shall provide such reasonable and adequate protective subversive action or sabotage to any property. Only reliable personnel shall be permitted to store and handle explosives.

Explosives, if used, shall be of such quantity and power and shall be used in such locations so as to minimize opening of seams and disturbing of material outside the prescribed limits of excavation. As excavation approaches its final limits, the depth of holes for blasting and the quantity of explosives used for each hole shall be reduced so that the underlying or adjacent material will not be disturbed or shattered. Whenever further blasting might injure the surface of the final excavation, as determined by the Engineer, the use of explosives shall be discontinued.

The cost of furnishing, hauling, storing and handling all explosives shall be included in the contract unit price of the work for which they are required.

2) Blasting

Blasting will be permitted only when proper precautions are taken for the protection of persons, the works, and public or private property. The Contractor shall satisfactorily cover all shots in deep cut excavations and shall take extra precautions on all blasting work as maybe required by the NIA. The Contractor shall blast to the extent necessary and in such a manner that the excavation will not be

unduly large or irregular, nor unduly disturb the ground and make it unstable, nor shatter the rock, if encountered, upon or against which concrete is to be placed, nor injure concrete already placed or existing structures at the site or in the vicinity thereof. Whenever, in NIA's opinion, the Contractor's operations are liable to result in unduly large excavations or unstable ground, as to injure the rock, concrete or structures, the Contractor shall drill shorter holes and use lighter charges. Approval by the NIA of any of the Contractor's blasting operations shall not relieve the Contractor of his responsibility under this paragraph.

The Contractor shall submit his drilling and blasting operations for approval of the Engineer before commencing with his blasting works. No blasting operations shall be undertaken without the approval of the Engineer.

When concrete is to be placed upon or against rock, the excavation shall be of sufficient depth to provide for the minimum thickness of concrete at all points and any deviation from the required minimum thickness of concrete shall be avoided as much as possible. The surface on which concrete will be laid shall be trimmed and thoroughly cleaned as directed by the Engineer.

When excavation of rock materials reaches the surface upon or against which concrete is to be placed, blasting shall be stopped and the remaining mass of rock shall be carefully removed by means of jack-hammer or any appropriate hand tool. The point beyond which blasting will not be allowed shall be determined by the Engineer. All damages to the rock foundation caused by improper blasting operation shall be repaired by the Contractor at his own expense in a manner acceptable to the Engineer.

(b) Sections and Slopes

Excavation sections, profiles and slopes shall be cut true and straight in conformity with the lines and grades shown on the Drawings within the following tolerances, measured normal to the excavated surfaces:

Item	Tolerances
1. Side slopes above minimum elevation of operating roads	+ 30 cms.
2. Profile of operating roads, access roads and protection dike	+ 9 cms.
3. Profile of invert of canals	+ 3 cms.
4. Side slopes inside canal prism for canals and laterals	+ 15 cms.
5. Side slopes outside canal prism for canals and laterals	+ 15 cms.

The extreme of the above tolerances shall not be continuous over a distance of 40 meters measured at any place, in any direction, parallel to the excavated surface.

(c) Excavation Beyond Established Lines

Precautions shall be taken to preserve, in an undisturbed condition, materials beyond the designated limits of excavations as shown on the Drawings except unsuitable materials ordered removed by the Engineer. Materials loosened beyond the excavation limits as a result of excavation operations shall be considered defective work and shall be compacted or removed and replaced with compacted embankment at the Contractor's expense, as directed by the Engineer.

METHOD OF CONSTRUCTION

Canal excavation shall include all excavation works in the canal prism whether common, indurated or rock materials, except additional excavations at structure sites which is specified to be done and measured for payment under excavation for structure.

The Contractor shall only excavate after the area of operation is acceptably cleared and grubbed in accordance with Section II, "Clearing and Grubbing". Excavation of all canals shall be in accordance with the cross section, lines and grades shown on the Drawings. On portion of the canal where concrete lining is required, canal excavation shall not extend beyond the neat lines of the underside face of the canal lining as shown on the Drawings. The Contractor must exercise care not to extend his excavation beyond the limits called for in the Drawings. Excavation operations shall be such that all materials suitable for embankment or back filling and filling shall be separated from objectionable materials which are to be wasted. All surfaces from excavation shall be trimmed to the required slopes and grades within the specified tolerances under paragraph 403 (b). Blasting if permitted by the NIA, shall be in accordance with paragraph 403 (a), "Explosives and Blasting".

In sections of deep cut in which the canal section is continuous with the roadway section and its side slopes, excavation for roadway shall be included under this Section. If slides occur on excavated slopes or if run-off flows deposit additional materials in excavations before acceptance of the works, the removal of said slides and/or deposits shall be at the expense of the Contractor.

Large canals like main canals should preferably be excavated with the use of motorized scrapers, excavating in successive layers of about 30 centimeters followed subsequently by trimming of the side slopes using a Grader. Medium sized canals like laterals should preferably be excavated by initially using a D-6 or D-7 Bulldozer for the upper layers and then excavating the bottom layers and side slopes with the use of a Backhoe. Should the Contractor proposes to do excavation works by some other means, prior approval of the Engineer must be secured.

FINISHING CANAL AND ROADWAYS

Upon completion of all construction operations, the canal section, including slopes of canal embankments, and roadway embankments, shall be finished as specified and shown on the Drawings. Canal beds, canal embankments and side slopes shall be trimmed and shaped to the finished cross-section to produce smooth surfaces and slopes, and uniform cross-sections.

Stockpiling of materials on finished canal sections, roadways and embankments shall not be permitted. All finished works and surfaces shall be cleaned of all dirt and foreign materials.

The Contractor shall also be required to clear the entire right-of-way and areas outside the limits of the right-of-way for all excess of objectionable materials, if such excess or objectionable materials are the result of the Contractor's operation as determined by the Engineer.

All weeds and other objectionable growth, roots, excess earth, debris, loosened rock larger than 7.5 centimeters shall be removed and disposed off in approved sites outside the right-of-way as specified or directed by the Engineer.

The entire canal sections including roadways, side slopes and structure approaches shall be left in a neat and presentable condition.

METHOD OF MEASUREMENT

Canal Excavation will be measured for every cubic meter of material excavated from the canal prism. Measurement shall be made in its original position after undertaking clearing and grubbing including stripping operations and computed by the Average-End Area method for every 20-meter section of finished canal within the paylines or neat lines shown on the Drawings, acceptably excavated and formed into embankments or used for structure backfill, or wasted as directed.

Hauling of excavated materials within the free haul distance of 200 meters for disposal to waste areas and trimming of side slopes in canal prism and canal beds except on portion of the canal where concrete lining is required, are considered subsidiary works under canal excavation, thus, shall be paid under this Section and the cost thereof shall be considered included in the contract unit price for Canal Excavation. Hauling beyond the free haul distance of 200 meters (for waste materials only) and spreading of excavated materials into canal and roadway embankments and structure backfill shall be paid under Sections IX & XII, respectively. Hauling or overhauling for disposal of excavated

materials into canal embankments is a subsidiary work for Embankment Construction and Compaction, thus, it will not be measured for payment and the cost thereof is considered included in the contract unit price for Embankment Construction and Compaction.

BASIS OF PAYMENT

The volume measured as provided above shall be paid per cubic meter, which price and payment shall constitute full compensation for furnishing all materials, supplies, labor, equipment, tools and all incidentals necessary for the successful completion of the work described under this Section and for all subsidiary works except for hauling of excavated materials beyond the free haul distance of 200 meters for disposal to waste areas which shall be paid under Section IX, OVERHAUL, and except for trimming of side slopes on portion of canals where concrete lining is required which shall be considered as a subsidiary work under Section XX, Concrete Canal Lining.

SIDE BORROW

SCOPE

When suitable materials from canal excavation are not sufficient to form the required section of canal embankment, roadway embankment (especially at stretches of canal where both cut and fill are encountered), additional suitable materials from the adjacent sides of the embankment within 60 meters from the center line of the canal shall be obtained by side borrowing as directed by the Engineer. Side borrow may also be done to form the required section of bridge abutment approaches.

The work under this Section shall include clearing and grubbing and stripping of the top soil on the side borrow area; excavation and placing or dumping of the side borrow materials to canal embankment, roadway embankment or dike and returning and spreading the stripped top soil after the side borrow operations.

METHOD OF OPERATION

After having been determined that materials obtainable from side borrow areas are suitable for embankment construction in accordance with Paragraph 902 (b), these side borrow areas shall be cleared, grubbed and stripped to about 10 cm. thick top soil before starting any excavation, pushing and dumping operation. The cleared and grubbed materials and/or stripped top soil shall be placed outside the limits of the entire canal right-of-way and side borrow areas as directed by the Engineer, all in accordance with the provisions of Section II, Clearing and Grubbing.

Excavation of side borrow materials needed for the construction of embankments shall be made more or less uniform in depth within the limits staked by the Engineer and shall in no case exceed a depth of 30 cm. measured from the original ground surface; a berm of not less than five meters in width shall be left between the outside toe of the embankment and the edge of the borrow pit with side slope provisions not steeper than 3:1 or unless otherwise shown on the Drawings or as directed by the Engineer.

Materials from side borrow areas shall be placed and/or spread in the canal embankment or roadway embankment and subsequently compacted in accordance with the applicable provisions of Section XIII, Embankment Construction and Compaction.

Before the Contractor leaves any particular work after completion of side borrow operations, the side borrow area shall be releveled and destroyed paddy dikes restored; and the cleared and grubbed materials or stripped top soil deposited outside work area shall be returned and spread uniformly throughout the borrow area to the satisfaction of the Engineer. The Contractor shall not be allowed to shift his operation to another work area unless said works are completed and approved by the Engineer.

MEASUREMENT AND PAYMENT

Side borrow is a subsidiary work for Embankment Construction and Compaction, thus it will not be measured for payment. The cost of which is considered included in the contract unit price for Embankment Construction and Compaction or for Structure Backfill as the case maybe.

EMBANKMENT CONSTRUCTION AND COMPACTION

SCOPE

The work under this Section shall consist of spreading materials taken from canal excavation, structure excavation, side borrow and borrow haul into canal embankments or protection dikes or approaches to bridges and road crossings and into all other embankments indicated on the drawings; moisture conditioning and then compacting said materials into the desired degree of compaction, all in accordance with the drawings and these specifications or as directed by the Engineer. All works associated with Side Borrow and Borrow Haul Operations, and Overhaul for canal embankment are considered subsidiary works for Embankment Construction and Compaction.

SOURCES OF MATERIALS

Materials for embankment and structure backfill for canal and diversion structures may be taken from canal or structure excavation in accordance with Sections IV and VI. In case where excavated materials from canal prism or from structure excavations are insufficient or unsuitable for embankment formation, additional materials may be taken from side borrow or borrow haul areas not necessarily designated by NIA including acquisition of necessary right-of-way and access thereto. Likewise, materials for protection dikes and approaches to bridges and road crossing may be taken from sources at the Contractor's choice including acquisition of necessary right-of-way. However, possible borrow areas are indicated in the Bid Drawings or as suggested by the Engineer.

COMPACTION EQUIPMENT

Compaction of canal or roadway embankments, protection dikes or approaches to bridges and road crossings or for backfill (if applicable) may be done by the use of the sheepfoot roller, pneumatic rollers, vibratory compactors or other type of compaction equipment at the Contractor's option as approved by the Engineer. The suitability of the proposed compaction equipment to achieve the desired degree of compaction must be demonstrated during the initial phases of compaction operations. The Engineer shall have the right to require the Contractor to change compaction equipment if such equipment is deemed unsuitable in achieving the specified degree of compaction within a reasonable period of time.

Watering equipment for moisture conditioning of the embankment materials, prior to compaction, shall be designed to apply water uniformly at the rates required by NIA. Water tank trucks shall be equipped with positive shut-off valves such that no leakage will result from the nozzle when the equipment is not in used.

METHOD OF CONSTRUCTION

This paragraph covers the construction of all embankments designated on the drawings as compacted embankment including the placing of embankment materials to the low and over excavated areas in the canal. All compacted embankments shall be constructed to the lines, grades and dimensions shown on the drawings, or established by the NIA on a properly prepared foundations approved by the NIA. No objectionable materials shall be placed on the embankments.

Ground surface upon which the embankment is to be constructed shall be scarified to a depth of at least 15 cm. after clearing and grubbing, moisture conditioned, and compacted to not less than the required degree of compaction as shown in Table A below. Materials unsuitable for embankment foundations shall be removed as directed and replaced with suitable materials and compacted as compacted embankment.

Where canal embankment is to be constructed across low swampy ground or where the top soil is not satisfactory for foundation as determined by the Engineer, stripping of top soil of the foundation area and compaction will be ordered before construction of the embankment, stripping and disposal of the stripped material is subsidiary work and will not be measured for payment; Provided, however, that when stripping to a depth beyond 10 centimeters from the natural ground surface is ordered by the Engineer, the stripped materials below the 10 centimeters free stripping depth will be paid for under "Canal Excavation". In case stripping of the top soil exceeds 10 centimeters, the Contractor should request to NIA for a re-survey to determine the actual volume subject for payment. Verification and approval by the Administrator should be obtained first before proceeding with the stripping operation.

Embankments shall be constructed to the lines, grades and dimensions shown on the Drawings or as established by the Engineer. Embankments shall be constructed in horizontal layers which extend the full width of the embankment. Thickness of the layers shall not exceed 15 cm. after compaction. The moisture content of the material at the start of compaction shall have plus or minus 3% of the optimum moisture content as determined by the standard laboratory compaction test on soils (ASTM Designation D698). Embankment material which does not contain sufficient moisture for compaction in accordance with the above requirement shall be thoroughly mixed with additional water as directed by the Engineer. Embankment material containing excess moisture shall be permitted to dry to the proper consistency before being compacted. After a layer has been spread for the full width of the cross-section and brought to a satisfactory moisture content, it shall be compacted. The degree of compaction in each layer shall be determined by the standard field density test ASTM D-1556. Each layer should attain the required percentage of compaction before the succeeding layer is allowed to be placed. The compaction requirements for the different types of soil placed in embankments are as shown in the following table:

TABLE

Soil Classification and/or Maximum Dry Density Obtained	Proctor	Minimum Compaction Required Percent of Inplace Density with Respect to Proctor Maximum Dry Density For	
		Roads, Dikes and Canal Embankments with roadway	Normal Embankment (without Roadway and Intrasite or Feeder Roads)
L, SM & ML, 85-89			100%
CL, SM & ML, 90-99		100%	95%
SC, 100-109.9		95%	90%
CG, 110-119.9		95%	85%
GC, 120-129.9		90%	80%
GC, 130-and above		90%	80%

When embankments are to be made on hillsides, whether paralleling a hillside, abutting into a hillside or crossing over a hill, the slope of the original hillside shall be cut horizontally as the work is brought up in layers. Material thus cut shall be recompacted along with the new embankment material.

During construction, the Contractor shall keep the top of the embankments at such elevation and section to provide natural surface drainage at all times. If the Contractor stops work on any portion of the embankment on account of rain or impending rain, the surface shall be graded to facilitate drainage and the surfaces shall be sealed by passing rubber-tired equipment or flat drum rollers over the surface. Before work is resumed on the area, the surface shall be scarified to a minimum depth of not less than 15 cm., releveled, moisture conditioned, and recompacted to the specified density.

Should the NIA determine that any portion of the surface of the embankment has become so dry or glazed during construction that bond with the succeeding layer to be placed thereon cannot be obtained, or should ruts develop on the embankment, such surface shall be scarified to a minimum depth of 15 cm., releveled, moisture conditioned and recompacted to the specified density just prior to placing of the succeeding layer of the embankment.

All surfaces of the compacted embankment shall be compacted to the lines, and grades shown on the Drawings or as directed by the Engineer with the tolerances in accordance with Paragraph 403 (b) for slopes and surfaces and a tolerance of + 10 cm. for profile surfaces and shall be graded to a uniform slope.

Canal embankments for roadways shall be constructed only up to the elevation of the base of the road surfacing material. The road shoulders shall be placed and compacted together with the road surfacing materials.

METHOD OF MEASUREMENT

Measurement shall be done by the cubic meter of embankment in its final accepted, compacted position less the volume for road surfacing materials if any, regardless of the origin of materials and the required degree of compaction. Computation shall be by the Average End Area Method for every 20 M station or by the applicable method suitable for the work involved. The volume shall be the theoretical volume of the embankment as computed based on the neat lines or paylines shown on the Drawings. The lower limit shall be the elevation of the ground surface after stripping and the upper limit shall be the top of the embankment.

BASIS OF PAYMENT

The volume measured for embankment as provided above shall be paid at the contract unit price per cubic meter, the price and payment shall constitute full compensation for any side borrow, borrow haul and overhaul operations made, stripping of foundations (where necessary), spreading, blending, moisture conditioning and compaction and trimming side slopes (where necessary) including all labor, tools, equipment and all incidentals and subsidiary works, necessary for the successful completion of the work described under this Section. Provided, however, that payment shall only be made after presentation by the Contractor of a certification issued by the NIA Materials Testing Engineer to the effect that the constructed embankment measured and covered by such progress payment has attained

CONCRETE DEMOLITION WORK

SCOPE

The work under this Section shall include demolition, removal and disposal in a manner approved by the Engineer of all portions of the existing structures indicated to be demolished, all in accordance with the Drawings and these Specifications. All other objectionable materials shall be disposed off to the designated disposal areas as ordered by the Engineer.

METHOD OF CONSTRUCTION

Contractor shall submit for approval his proposed plans and operations for undertaking the demolition of structures. The proposed plans shall show details of the proposed method of demolition, removal and disposal of materials, blasting, drilling, and other devices the Contractor may propose. The work shall conform to the lines and grades as shown on the Drawings, or as directed by the Engineer. In cases of modification or renovation of an existing concrete structure where partial demolition or chipping on the surfaces of existing structure may be required, Contractor shall perform his chipping or demolition operation in such a manner as to avoid chipping or over demolition or damage of the entire structure. Over chipping or over demolition or entirely damage structures shall be restored at the expense of Contractor in a manner satisfactory to NIA.

METHOD OF MEASUREMENT

Concrete demolition of existing structures will be measured by the number of cubic meter in its original position before demolition. Measurement will be made only to acceptably demolished structures with all materials disposed off to designated disposal areas. No material demolished by Contractor beyond the lines and grades indicated on the Drawings will be included for measurement unless additional demolition has been previously authorized by the Engineer in writing.

BASIS OF PAYMENT

Concrete demolition of existing structures measured as provided above shall be paid for at the contract unit price per cubic meter, which price and payment shall constitute full compensation for furnishing labor, supplies, tools

and equipment and other incidentals or subsidiary works necessary for the successful completion of the work described under this Section.

CONSTRUCTION SAFETY AND HEALTH

BASIC PPE'S FOR WORKERS:

1. Helmet/Safety Hardhat
2. Safety Shoes
3. Rubber Boots
4. Working Gloves
5. Rain Coats

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

Bill of Quantities

Contract No: NOSO-LMC-SIP-13-2022

Description of Contract: Lower Mantuyop SIP (Construction of Main Canal and Pipeline)

Location: Siaton, Negros Oriental

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT BID PRICE IN WORDS & IN FIGURES	TOTAL
Canalization					
1	Common Excavation (mech.)	48.00	cu.m.	₱	₱
2	Rock Excavation (mech.)	29.00	cu.m.	₱	₱
3	Common Excavation (hard) (mech.)	19.00	cu.m.	₱	₱
4	Side Borrow w/Compaction (man.)	160.00	cu.m.	₱	₱
5	2,400 psi reinforced Concrete	49.00	cu.m.	₱	₱
Canal Structures					
1	Common Structure Excavation (mech.)	170.00	cu.m.	₱	₱
2	Rock Structure Excavation (mech.)	68.00	cu.m.	₱	₱
3	3,000 psi Reinforced Concrete	31.00	cu.m.	₱	₱
4	Common Struct. Excav. (hard) (mech.)	102.00	cu.m.	₱	₱
5	Backfill with Compaction (man.)	255.00	cu.m.	₱	₱
6	Fab./Inst. Of 14"Ø x 6 m. HDPE Pipes	96.00	pcs.	₱	₱
7	Ladder Rung	237.00	kgs.	₱	₱
8	Concrete Demolition	24.00	cu.m.	₱	₱
9	Health & Safety	1.00	lot	₱	₱
	TOTAL AMOUNT OF BIDS			₱	₱
	(In Words and Figures)			₱	₱

The undersigned bidder hereby certifies that he has fully informed himself of all condition, local and otherwise affecting the carrying out of the Contract Works and that his bid has been prepared strict accordance with the terms and condition.

Name of Firm: _____

Name in Print & Signature of Bidder

Section IX. Local Condition

LC-01 PROJECT LOCATION

Lower Mantuyop SIP is located in Siaton, Negros Oriental. The Project is approximately 54 kilometers from Dumaguete City.

LC-02 ACCESS TO THE SITE

The contract work is located at Siaton, Negros Oriental. It is accessible by land through concrete/bituminous roads and highways, as well as air and water transportation through airport and seaport of Dumaguete City. During dry season, access roads to the project site are passable, but it is hard to access during rainy season. Passing through different service roads by fairly to well graveled road which may deteriorate if used during rainy days. Maintenance and repair of these service roads by the contractor is necessary if so, used by them. The cost of maintenance and repair shall be included in the unit bid price of the contractor.

LC-03 FUEL AND POWER SUPPLIES

The major fuel station outlets such as Petron, Caltex and Shell are found in the nearest city of the project and other surrounding municipalities.

The main source of energy is supplied by the Negros Oriental Electric Cooperative II (NORECO II) and locally distributed to the consumers and is presently available at the above-stated address of the project site.

LC-04 CLIMATE AND HYDROLOGY

Using the Corona Climate classification System, Negros Oriental falls within the Type III classification, which is characterized by seasons not very pronounced relatively dry from November to April.

Rainfall summarized in the following table, but NIA will assume no responsibility whatsoever for the accuracy of these data. Any risk arising from the interpretation of such data is to be entirely borne by the Contractor.

CLIMATE

Month	Rainfall in Dumaguete PAG ASA Station/1 (mm)	Rainy Days Dumaguete PAG ASA Station/2
Jan.	123.1	8
Feb.	232.9	5
March	46.6	3
April	56.9	4
May	124.1	9
June	85.4	4
July	123.2	8
Aug.	162.8	9
Sept.	183.7	11
Oct.	240.5	11
Nov.	314.5	12
Dec.	152.3	5
Total	1846.00	89

/1: Dumaguete PAGASA Station is the rainfall station close to the project area.

/2: Daily rainfall less than 5 mm is deemed zero and not counted as rainy day.

LC-05 BANKING FACILITIES

Most rural banks are available at nearby of the project area while major banking facilities are found in Dumaguete City like; Development Bank of the Philippines, Land Bank of the Philippines, Philippine National Bank, Bank of the Philippine Island, Allied Bank, Bank of Commerce, Metro Bank and other private banks.

LC-06 COMMUNITY AND FIRST AID FACILITIES

The Contractor is advised that the NIA will take no direct part in providing community facilities such as churches, shops, community center and recreation facilities for Contractor's employees. The Contractor shall make his own arrangements for such as he considers being necessary for the approval of the NIA and shall meet all codes or regulations in effect. It shall be the responsibility of the Contractor to furnish and operate first aid for his personnel. Such facilities may be integrated with the NIA facilities, if any, upon mutual agreement.

LC-07 CONTRACTOR'S WORKING AREA AND SITE OFFICE

The Contractor shall, at his own expense, be responsible for housing, feeding and accommodation of all his employees for the execution of the Contract Work. Construction equipment, materials, tools, supplies, and other incidentals, and all cost incurred for the protection and safety shall be borne by him.

LC-08 WATER SUPPLY

The Contractor shall, at his own expense, be responsible for the provision or installation, operation and maintenance of a safe, adequate and temporary supply of drinking and domestic water, and the adequate water supply for his construction purposes.

LC-09 RIGHT OF WAY

The NIA will provide all right of way, free of charge to the contractor, which, in the opinion of the Regional Manager, necessary for carrying out the contract work.

LC-10 SITE INVESTIGATION

It is the responsibility of the Contractor to visit the work site to make their own investigation to satisfy themselves as to the existing conditions affecting the work to be done under these Specifications.

The Contractor shall assume all responsibilities for deduction and conclusions that he may obtain or arrive at from the site inspection.

INFORMATION AND DATA REFERRED TO IN THESE BID DOCUMENTS

PROJECT: Lower Mantuyop SIP (Construction of Main Canal and Pipeline), Siaton, Negros Oriental

1. Site Visit and Inspection
Register at NIA-Negros Oriental Satellite Office, Osmeña St., Poblacion, Sibulan, Negros Oriental
2. Wet Season Period, Article LC-04
3. Contract Duration, Article SCC 1.16, ITB
120 calendar days
4. List of Officers/Offices to be furnished correspondence from the Contractor

The Deputy Administrator
For Engineering & Operations
National Irrigation Administration
5th Floor, NIA Complex
EDSA, Diliman, Quezon City

The Regional Manager
NIA Regional Office 7
Dao District, Tagbilaran City

5. Minimum Equipment Requirement for the Contract:

	Equipment	Capacity	Number of Units
1.	Dump Truck		1
2.	Cargo Truck		1
3.	Backhoe		1
4.	Concrete Mixer	1 bagger	2
5.	Concrete Vibrator		2
6.	Bar Cutter		1
7.	Survey Instrument (set)		1
8.	Plate Compactor		1

6. List of Initial Equipment required to be mobilized within ten (7) calendar days after receipt of Notice to Proceed

Equipment		Capacity	Number of Units
1.	Dump Truck		1
2.	Cargo Truck		1
3.	Backhoe		1
4.	Concrete Mixer	1 bagger	2
5.	Concrete Vibrator		2
6.	Bar Cutter		1
7.	Survey Instrument (set)		1
8.	Plate Compactor		1

Section X. Checklist of Technical and Financial Documents

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.

Section XI. BIDDING FORMS

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

BID SECURING DECLARATION
Project Identification No.: **NOSO-LMC-SIP-13-2022**

To: Engr. Reyne B. Ugay
Acting Regional Manager
National Irrigation Administration
NIA, Regional Office 7, J.A. Clarin St., Dao,
Tagbilaran City, Bohol, PHILIPPINES

I/We, the undersigned, declare that:

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

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

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

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

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

NAME OF NOTARY PUBLIC

Serial No. of Commission _____

Notary Public for _____ until _____

Roll of Attorneys No. _____

PTR No. _____ *[date issued]*, *[place issued]*

IBP No. _____ *[date issued]*, *[place issued]*

Doc. No. _____

Page No. _____

Book No. _____

Series of _____

Omnibus Sworn Statement

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

AFFIDAVIT

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

1. [Select one, delete the other:]

[If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

[If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. [Select one, delete the other:]

[If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

[If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

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

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

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. [Select one, delete the rest:]

[If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a partnership or cooperative:] None of the officers and members of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. [Name of Bidder] complies with existing labor laws and standards; and
8. [Name of Bidder] is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
 - a. Carefully examining all of the Bidding Documents;
 - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
 - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
 - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the [Name of the Project].
9. [Name of Bidder] did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

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

[Insert NAME OF BIDDER OR ITS AUTHORIZED
REPRESENTATIVE]

[Insert signatory's legal capacity]
Affiant

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

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

NAME OF NOTARY PUBLIC

Serial No. of Commission _____

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Doc. No. _____

Page No. _____

Book No. _____

Series of _____

BID FORM

Date : _____

Project Identification No: NOSO-LMC-SIP-13-2022

To: Engr. Reyne B. Ugay
Acting Regional Manager
National Irrigation Administration
NIA, Regional Office 7, J.A. Clarin St., Dao,
Tagbilaran City, Bohol, PHILIPPINES

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

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: [insert name of contract];
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: [insert information];
- d. The discounts offered and the methodology for their application are: [insert information];
- e. The total bid price includes the cost of all taxes, such as, but not limited to: [specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties], which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of [insert percentage amount] percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines¹² for this purpose;
- h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].
- l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

National Irrigation Administration
Region 7

Contact Ref. No : NOSO-LMC-SIP-13-2022
Name of Contract : LOWER MANTUYOP SIP
(CONSTRUCTION OF MAIN CANAL
AND PIPELINE)
Location : Siaton, Negros Oriental

**STATEMENT OF THE BIDDERS OF ALL ITS ON-GOING GOVERNMENT & PRIVATE CONTRACTS
INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED**

Business Name : _____

Business Address : _____

NAME OF CONTRACT	CONTRACT DATE	CONTRACT PERIOD	CONTRACT AMOUNT	Amount or Value of Outstanding Works or Unperformed Portion
<u>Government</u>				
<u>Private</u>				

Submitted by : _____
(Printed Name & Signature)

Designation : _____

Date : _____

National Irrigation Administration
Region 7

Contact Ref. No
Name of Contract

: NOSO-LMC-SIP-13-2022
: LOWER MANTUYOP SIP
(CONSTRUCTION OF MAIN CANAL
AND PIPELINE)

Location

: Siaton, Negros Oriental

**STATEMENT OF THE BIDDERS'S SINGLE LARGEST COMPLETED CONTRACTS (SLCC) SIMILAR TO
THE CONTRACT TO BE BID**

Business Name : _____

Business Address : _____

NAME OF COMPLETED CONTRACT	DATE OF CONTRACT	CONTRACT DURATION	CONTRACT AMOUNT
<u>Government</u>			
<u>Private</u>			

Note: This statement shall be supported with:

Owners' Certificate of Final Acceptance or a final rating of at least Satisfactory in the CPES

Submitted by : _____
(Printed Name & Signature)

Designation : _____

Date : _____

