Section VI.

Specifications
PART I - CIVIL WORKS

A.  LAYOUT WORK

A.01  Layout and Installation of Markers

The Contractors shall layout the works and shall be solely responsible for the accuracy of such laying-out. The Contractor shall provide, fix and maintain all stakes marks or the like which are necessary for the accurate laying out of the works and shall take all necessary precautions to prevent their removal or disturbances, all as approved by the Owner. The Contractor shall provide suitable range in the water to indicate the face lines of structure.

Laying out of works shall include verification of position of all markers and the supply and installation of any and all other markers which the contractors may require for the proper executions and completion of the work, and shall also include the repositioning of the Owner’s marker if such repositioning is deemed necessary by the Contractor and approved by the Owner.

A.02  Construction Survey Requirements

The Contractor shall establish the following:

a.  Column/grid reference system of the building
b.  Boundary or primary perimeter lines of the building
c.  Entrance points of all utilities in the project area
d.  Reference mark to control the floor elevation and other finish grades.

A.02  Interior Layout Work

As the work progresses, the contractor shall provide the reference points throughout each interior area, which are necessary to facilitate detailed layout of partitions, doors, windows, equipment foundation, ceilings and other structures.

All layouts, locations and dimensions shall be rechecked and verified in the plans by the contractor before starting any work items of the project.

B.  EXCAVATION AND BACKFILLING FOR BUILDINGS

B.01  Scope of Work

The Contractor shall furnish all labor, materials, equipment, plant and other facilities and perform all work necessary to complete the preparation of site, excavation, filling and grading in strict compliance with the applicable drawings and as specified herein.

B.02  Stake and Batter Boards

The Contractor shall stake out the buildings accurately and establish grades, after which the approval of the Owner shall be secured before any excavation work is started.

Basic batter boards and basic reference marks shall be erected at the expense of the Contractor, at such places where they will not be disturbed during construction.
Materials shall be stored and work shall be conducted in such manner as to preserve all reference marks set.

The Contractor shall construct two (2) permanent benchmarks of previously known elevations near or within the site of construction for determining any settlement that may occur during the progress of construction.

Elevation reading shall be taken on at least four (4) points in the buildings and other related structures. A permanent record of the weekly reading shall be kept at construction site and monthly report thereof shall be submitted to the Owner unless some unusual reading is observed in which case report shall be made immediately.

**B.03 Excavation**

Excavation work shall commerce after the fill has thoroughly compacted and attained the required elevation.

The Contractor shall make all necessary excavation for foundations to grade indicated on the Drawings. All trenches shall be excavated at a neat size, leveled to a line at the bottom, which is ready to receive the foundation. The Contractor shall not excavate to a depth below elevations shown on the Drawings. Work that is excavated to a greater depth than required by the drawings and this specification shall be filled with lean concrete (fc' = 13.8 Mpa) at the expense of the Contractor.

All excavations shall be made with proper allowance made for floor slabs and forms. Bottom of footing and foundations shall be approximately level, clean and clear of loose materials with the lower section true to size.

All excavation for drainage, sewer and water services, and other underground utilities, which are within the property line or scope of work indicated on the Plans, are included.

Sheathing shall be driven below the bottom of excavation deep enough. Where walls or footings are to be poured without forms, trench sides shall be sharp and true.

The Contractor, at all times protects the excavation and trenches from damage due to water. He shall provide pumps and equipment, build enclosures and shall construct and maintain temporary drainage and do all pumping necessary to keep the excavation free of water. Sheet piling if needed shall be provided and tightly driven, shored and braced to maintain its position until removed.

**B.04 Utilities**

When encountered in work or as indicated, protect the existing active sewer, water, gas, electric, other utility services, and structures, when required for proper execution of work, relocate them as directed. If encountered, requiring protection or relocation, request in writing for decision of the Owner. Do not proceed until written instructions are obtained.

**B.05 Backfilling, Grading and Compaction**

After forms have been removed from footings, beams, foundations, walls, etc., and when the concrete work has attained full designed strength, backfill shall be placed free from waste and objectionable matters. After the backfill has settled, the Contractor shall fill all shallow places to bring the backfill area to grade.
The Contractor shall grade the site within the area indicated in the scope of work.

All filling materials shall be placed in layers not exceeding 150 mm in thickness, each layer being thoroughly wetted and compacted by rolling or tamping. All fills shall have 95% compaction.

The types of filling materials for buildings shall be selected earthfill and the source shall be approved by the Engineer.

C. CONCRETE WORKS

C.01 Scope of Work
The work shall include all labor, materials, equipment, plant and other facilities for the satisfactory performance of all work necessary to complete all concrete and reinforced concrete work shown on the Drawing and specified herein.

C.02 Concrete and Reinforced Concrete
All concrete and reinforced concrete work shall be done in accordance with the DPWH Standard Specifications for Highways and Bridges revised 1988 and the current American Concrete Institute "BUILDING CODE REQUIREMENTS FOR THE REINFORCED CONCRETE (ACI 318 – 76)".

C.03 Concrete Materials

Portland Cement shall be Type I and shall conform to “Specification for Portland cement (ASTM – C – 150-76a)".

Concrete aggregates shall be well-graded particles of gravel or crushed rock conforming to the “Specification for Concrete Aggregates (ASTM C33 – 74a)".

The maximum size of the aggregates shall not be larger than 1/5 of the narrowest dimension between forms nor larger than 3/4 of the minimum clear spacing between reinforcing bars nor larger than 25 mm in diameter.

Larger diameters of aggregates may be allowed in massive concreting with written permissions from the Owner.

Water used in mixing concrete shall be clean and free from injurious amount of oil, acid, alkali, salt, organic matter or other deleterious substances.

All reinforcing bars used shall be deformed and shall be free from rust, oil, defects, grease or kinks.

All reinforcing steel bars shall conform to the PHILIPPINE STANDARD GRADE DSB 275.

C.04 Forms
The Contractor shall provide forms that will produce correctly aligned concrete. Plastering in general shall not be allowed so that extra care shall be exercised by the Contractor in choice of fitting, and rigid supporting of the forms. Plywood, metal or surfaced lumber forms shall be used for all exposed concrete works.
Column forms shall be checked for plumpness before concrete is poured. Handholds shall be provided in column forms at lowest points of per lifts to render this space accessible for cleaning.

Forms and shoring shall not be removed until the concrete is adequately set and strong enough to withstand anticipated loading, and in no case less than seven (7) days after pouring.

All girders, beams, centering shall be crowned at least 25 mm in all direction from every eight (8) meters span. However, chambers for all cantilevers shall be as indicated in Plans or obtained from the Owner.

C.05 Storage of Materials

Cement shall be stored immediately upon arrival at the site in substantial, weatherproof bodegas, with a floor raised from the ground sufficiently high to be free from dampness.

Aggregates shall be stored in such a manner as to avoid the inclusion of other/foreign materials.

Reinforcing bars shall be placed in racks raised above the ground and protected from moisture and vegetation.

C.06 Samples and Testing

Testing except as otherwise specified herein shall be performed by an approved testing agency as proposed by the Contractor and approved by the Owner at no additional cost to the Owner.

Cement: Sampled either at the mill or at the site of the work and tested by an approved independent commercial or national testing laboratory at no additional cost to the Owner. Certified copies of laboratory test reports shall be furnished for each lot of cement and shall include all test data results and certificates that the sampling and testing cement shall be used until notice has been given by the Owner that the test results are satisfactory. Cement that has been stored, other than in bins at the mills, for more than four (4) months after delivery to the site shall be retested before use. Cement delivered at the site and later found under the test to be unsuitable shall not be incorporated into the permanent works.

Aggregates: Tested as prescribed in ASTM C 33.

Reinforcement: Certified copies of mill certificates of tests shall accompany deliveries of steel bar reinforcement. If requested by the Owner, additional testing of the materials shall be made at the Contractor expense.

Concrete Test: Provide for test purposes three sets of test specimens taken under the instructions of the Owner from each 50 cu. m. or fraction thereof of each class of concrete placed. At least one set of test specimens shall be provided for each Class of concrete placed in each 8-hour shift. Each shall consist of two specimens, and shall be made from separate batch. Samples shall be secured in conformity with ASTM C 172. Test specimens shall be made, cured and packed for shipment in accordance with ASTM C 31. Cylinders will be tested by and at the expense of the Contractor in accordance with the ASTM C 39. Test specimens will be evaluated separately by the
Owner for meeting strength level requirements for each cylinder with CONCRETE QUALITY of ACI 318. The standard age of test shall be 28 days, however 7 days tests may be allowed, with the permission of the Owner provided that the relation between the 7 day and the 28 day strengths on the concrete is established by tests for the materials and proportions used. When samples fail to conform to the requirements for strength, the Owner shall have the right to order a change in the proportions of the concrete mix for the remaining portions of the work at no additional cost to the Owner.

C.07 Proportioning of Concrete Work

Trial design batches and testing to meet requirements of the classes of concrete specified shall be the responsibility of the Contractor. The design mix shall be of consistencies specified herein after in PART I. C – CONCRETE WORKS/Test for slump, unit weight, and air content shall be performed in the field under the presence of the Owner.

Concrete Proportioning: Samples of approved aggregate shall be obtained in accordance with the requirements of ASTM D 75. Samples of materials other than aggregate shall be representative of those proposed for the project and shall be accompanied by the manufacturer’s test reports indicating compliance with applicable specified requirements. Trial mixes shall have proportions, consistencies, and air content suitable for the work. Trial mix shall be designed for maximum permitted slump and air content. The temperature of concrete in each trial batch shall be reported. For concrete in each water-cement ratio, at least three test cylinders for each test age shall be made and cured in accordance with ASTM C 39. From these test results, a curve shall be plotted showing the relationship between water-cement.

C.08 Strength Requirement

All concrete, unless otherwise indicated, shall develop a minimum 28 - day cylinder strength of 20.70 MPa.

The Contractor shall submit mix design obtained from at least three standard cylinder samples made in accordance with Section 5.4 of the NSCB, 1991, for the strength required stating the proposed slump and the proportional weights of cement, aggregates and water. The mixes shall be approved by preliminary tests fourteen (14) days before concreting and shall show the required strength. No substitutions shall be made in the materials or mix without additional tests to show that the quality for concrete is satisfactory.

Slump: Tests shall be made in conformity with ASTM C 143, and unless otherwise specified by the Owner slump shall be within the following limits:

<table>
<thead>
<tr>
<th>Structural Element</th>
<th>Slump of Vibrated Concrete</th>
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<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>Concrete</td>
<td>50 mm</td>
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<tr>
<td>Wall, Column and girder, beam, 25 cm maximum thickness</td>
<td>50 mm</td>
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<tr>
<td>All other concrete</td>
<td>50 mm</td>
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C.09 Joints

No reinforcement, corner protection angles or other fixed metal items shall be run continuous through joints containing expansion – joint filler, through crack - control joints in slabs on grade and vertical surfaces.

Pre – molded Expansion Joint Filler

**Joints with Joint Sealant:** At expansion joints in concrete slabs to be exposed, and at the other joints indicated to receive joint sealant, pre–molded expansion joint filler strips shall be installed at the proper level below the elevation with a slightly tapered, dressed and wood strip temporarily secured to the top thereof to form a groove, when surface dry, shall be cleaned of foreign matter, loosed particles, and concrete protrusions, there filled approximately flush with joint sealant so as to be slightly concave after drying.

**Finish of Concrete at Joints:** Edges of exposed concrete slabs along expansion joints shall be nearly finished with slightly rounded edging tools.

**Construction Joints:** Unless otherwise specified herein, all construction joints shall be subject for approval of the Owner. Concrete shall be placed continuously to form a monolithic construction. Fresh concrete may be placed against adjoining units, provided the set concrete is sufficiently hard not to be injured thereby. Joints not indicated shall be made and located in a manner not to impair strength and appearance of the structure.

Placement of concrete shall be at such rate that surfaces of concrete not carried to joint levels will not have attained initial set before additional concrete is placed thereon. Lifts shall terminate at such levels as indicated by structural requirements as directed. If horizontal construction joints are required, a strip of 25 mm square – edge lumber, leveled to facilitate removal shall be taken to the inside the forms at the construction joint. Concrete shall be placed to a point 25 mm above the underside of the strip. The strip shall be removed (1) one hour after the concrete has been placed, any irregularities in the joint lines shall be leveled off with a wood float, and all laitance removed. Prior to placing additional concrete, horizontal constructed joints shall be prepared as specified in **BONDING**.

Crack control joints in slabs on grade are specified in **Part I. C – CONCRETE WORKS/SLABS ON GRADE**.

C.10 Placing Concrete

Concrete shall be transport from mixer to the place of final deposit in a continuous manner, as rapidly as practicable without segregation or loss of ingredient until the approved unit of work is completed. Placing will not be permitted when the sun, heat, wind or limitations of facilities furnished by the Contractor, prevent proper finishing and curing of the concrete. Concrete shall be placed in the forms, as closed as possible in the final position, in uniform approximately horizontal layers not over 300 mm deep. Forms splashed with concrete of form coating shall be cleaned in advance of placing subsequent lifts. Concrete shall not be allowed to drop freely more than 10 m in unexposed work not more than 1.0 m in exposed work; where greater drops are required, tremie or other approved means shall be employed. The discharge of the tremies shall be controlled so that the concrete may be effectively compacted into horizontal layers no more than 300 mm thick, and spacing o the tremies shall be such that segregation does not occur. Concrete to receive other construction shall be
screeded to the proper level to avoid excessive skimming or grouting. Conduits and pipes shall not be embedded in concrete unless specifically indicated or as directed by the Owner.

**Time Interval Between Mixing and Placing:** Concrete mixed in stationary mixers and transported by non-agitating equipment shall be placed in the forms within 45 minutes from the time ingredients are charge into the mixing drum. Concrete transported in truck mixers or truck agitator shall be delivered to the site of work discharge in the forms within 45 minutes from the time that the ingredients are discharge into the mixing drum. Concrete shall be placed in the forms within 45 minutes after discharge from the mixer at the jobsite.

**Earth – foundation Placement:** Leveling concrete for concrete foundations, exterior slabs and exterior foundations receiving equipment or machinery shall be placed upon undisturbed surfaces conforming to *Part I. B – EXCAVATION AND BACKFILLING FOR BUILDINGS.* The surfaces shall be clean, free from mud and water. The concrete foundations maybe placed over the leveling concrete surfaces.

**Conveying Concrete by Chute, Conveyor or Pump:** Concrete may be conveyed by chute, conveyor, or pump if approved in writing. In requesting approval, the Contractor shall submit his entire plan of operation for time of discharge of concrete from the mixer to final placement in the forms, and the steps to be taken to prevent the formation of cold joints, in case the transporting of concrete by chute, conveyor or pump is disrupted. Conveyor and pump shall be capable of expeditiously placing concrete at the rate most advantageous to good workmanship. Approval will not be given for chutes or conveyors requiring changes in the concrete materials or design mix for efficient operation.

a. **Chutes and Conveyors:** Chutes shall be of steel or steel line wood, rounded in cross section rigid in construction, and protected from over flow. Conveyors shall be designed and operated and chute section shall be set, to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredients, loss of mortar, or change in slump. The discharge portion of each chute or conveyor shall be provided with a device to prevent segregation. The chute and conveyor shall be thoroughly cleaned before and after each run. Waste material and flushing water shall be discharge outside the forms. When using tilted chutes, the inclination should not be flatter than one (1) vertical and two (2) horizontal. From the outlet/mouth of the chute to the concrete surface, the maximum allowable height shall be 1.50 m.

b. Pumps shall be operated and maintained so that a continuous stream of concrete is delivered into the forms without air pocket, segregation of change in slump. When pumping is completed, concrete remaining in the pipeline shall be ejected, wasted without contamination of concrete already.

c. After each operation, equipment shall be thoroughly cleaned and the flushing water shall be splashed outside the forms.

d. **Placing Concrete Reinforcement:** Where congestion of the steel or other conditions will make placing or compaction of concrete difficult, a layer of mortar shall be first deposited in forms to a depth of approximately 25 cm. Mortar proportions shall be the same as the concrete minus the coarse aggregate.
C.11  **Compaction**

Immediately after placing, each layer of concrete shall be compacted by internal concrete vibrators supplemented by handspading, rodding and tamping. Tapping or other external vibration of forms will not be permitted unless specifically approved by the Owner. Vibrators shall not be used to transport concrete inside forms. Internals vibrators submerged in concrete shall maintain a speed of not less than 7,000 impulses per minute. The vibrating equipment at all times shall be adequate in number of units and power to properly consolidate all concrete.

Spare units shall be on hand as necessary to insure such adequacy. Duration of vibrating equipment shall be limited to time necessary to produce satisfactory consolidation without causing objectionable segregation. The vibrators shall not be inserted into lower courses that have begun to set.

Vibrators shall be applied at uniformity spaced points not further apart that the visible effectiveness of the machine.

C.12  **Bonding**

Bonding/depositing new concrete on or against concrete that has set; The surfaces of the set concrete shall be thoroughly cleaned so as to expose the coarse aggregate and be free of laitance, coatings, foreign matter and loose particles. Forms shall be retightened. The cleaned surfaces shall be moistened, but shall be without free flowing water when concrete is placed.

C.13  **Slabs on Grade**

Capillary water barrier or surged shall conform to **PART I. B – EXCAVATION AND BACKFILLING FOR BUILDINGS.**

Concrete shall be compacted, screeded to grade, and prepared for the specified finish. Concrete shall be placed continuously so that each unit of operation will be monolithic in construction. Concrete shall be placed in alternate check board pattern terminating at crack-control joints or construction joints or may be placed in alternative paving lanes as limited by expansion, and contraction joints. Crack-control joints shall be expansion, contraction, or construction joints. Joints not shown shall be lifted at column centerlines and at intermediate intervals so that such panel is shall not be more than 55 sq.m. Panels shall be approximately square with dimensioning of one side not more than 7.5 m. Forms shall remain in place for at least 12 hours after complete placement.

Construction joints may be formed by the insertion of hard pressed fiberboard strips inserted in the plastic concrete or may be cut with an approved concrete sawing machine, after the concrete has set. Unless otherwise indicated or directed the joints shall be 3 mm wide and depth equal to approximately 1/4 of the slab thickness of the maximum size of the coarse aggregate whichever is greater.

C.14  **Finishes of Concrete**

Within 12 hours after forms are removed, surface defects shall be remedied as specified herein. Fine and loose material shall be removed. Honeycomb, aggregate pockets, voids over 13 mm in diameter, and holes left by the rods or bolts shall be cut out to solid concrete, reamed, thoroughly wetted, brush-coated with neat cement rout, and filled with mortar. Mortar shall be a stiff mix of 1 part portland cement to not more...
than 2 parts fine aggregates passing the no. 16 mesh sieve, and minimum amount of water. The color of the mortar shall match the adjoining concrete color. Mortar shall be thoroughly compacted in place.

Holes passing through walls shall be completely filled from the inside face by forcing mortar through to the outside face. Holes, which do not pass entirely through wall, shall be packed full.

Patchwork shall be finished to match adjoining surfaces in texture and color. Patchworks shall be damp curing for 72 hours. Ambient temperature shall not be less than 10 degrees C. Dusting of finish surfaces with dry material or adding water to concrete surfaces will not be permitted.

C.15 Concrete Finished for Slabs

Slabs Receiving Concrete Paving: After concrete is placed and consolidated, slab shall be screed or struck off and no further finish is required.

Smooth Finish: Required only when specified; screed concrete and floats to required level with no coarse aggregate visible. After surface moisture has disappeared and laitance has been removed the surface shall be finished by float and steel trowel.

Broom Finish: Required for paving, stairs and landings; the concrete shall be screed and floated to required finish level with no coarse aggregate visible. After the surface moisture has disappeared and laitance has been removed, surface shall be float finished to an even, smooth finish. The floated surfaces shall be broom with a fiber bristle brush in a direction transverse to the direction of the main traffic.

Tolerance: Smooth and broom finished surfaces shall be true to plane with no deviation in excess of 3 mm in any direction when tested with a 3.0 m. straight edge.

C.16 Finishes of Concrete other than Floor Slabs

Within 12 hours after forms are removed, surfaced defects shall be remedied as specified herein. Honeycomb, aggregate, pockets, voids over 12 mm in diameter, and holes left by the rods or bolts shall be cut out to, reamed and thoroughly wetted, brush coated with next cement grout and filed with mortar.

Mortar shall be a stiff mix of 1 part portland cement and not more than 2 parts fine aggregates passing the no. 16 mesh sieve. Minimum amount of water using white portland cement for all or part of the cement so that when dry, the color of the mortar shall be thoroughly compacted in place. Holes passing entirely through walls shall be completely filled from the inside face by forcing mortar through the wall shall be packed full. Patchwork shall be damp cured for 72 hours protruding portions of bar supports shall be ground flush with concrete surfaces that will be exposed, painted or plastered directly.

Smooth Finish: After the above operations have been completed, smooth finish shall be given to interior and exterior concrete surfaces that are to be painted or exposed to view. Smooth finished shall consist of thoroughly wetting and then brush-coating the surfaces with cement grout composed by volume of 1 part fine aggregate passing the no. 30 mesh sieve and mix with water to the consistency of thick mixes, so that the final color of grout when dry, will be approximately the same as the color of the surrounding concrete. Grout shall be cork or wood-floated to fill all pits and air bubbles; visible grout film. The grout shall be kept damp by means of fog spray during
the setting period. The finish of any area shall be completed in the same day and the
limits of a finished area shall be made at natural breaks in the finished surface.

*Rough Slab Finish:* Slabs to receive full and mortar setting beds shall be screeded
with straightedges to bring the surface to the required finish plane with no aggregate
visible.

*Broom Finish* shall be given to exterior surfaces except concrete stairs treads,
entrances, and landings for buildings. The concrete shall be screeded and floated to
the required finish level with no coarse aggregate visible. After the surface moisture
has disappeared and laitance has been removed, surfaces shall be still troweled to an
even, smooth finish. The trowled surfaces shall be broomed with a fiber bristle brush
in a direction transverse to that of the main traffic.

C.17 Curing

Concrete shall be protected against moisture loss, rapid temperature change,
mechanical injury from rain or flowing water, for a minimum period of 7 days.

Concrete shall be maintained in a moist condition at temperature above 10 degrees C
throughout the specified curing period and until remedied work started under *Part I. C – CONCRETE WORKS/FINISHES OF CONCRETE.* Curing activities shall be started
as soon as free water has disappeared from the surface of the concrete after placing
and finishing. Form under surfaces shall be moist cured with forms in place for the full
curing period or, if other removes forms prior to the end of the curing period approved
means. Curing shall be accomplished by any of the following methods of combination
thereof, as approved.

*Water:* Water used in curing shall be reasonably cleaned and free of oil, salt, acid,
alkali, or other substances injurious to the concrete. Drinking water may be used for
curing test.

*Moist Curing:* Uniformed surfaces shall be covered with burlap or mats, wetted
before placing and over-lap at least 150 mm. Burlap or mats shall be kept continually
wet and in intimate contact with the surface. If the forms are removed before the end
of the curing period, curing shall be continued on uniformed surfaces, using suitable
materials.

D. CONCRETE WATER PROOFING

D.01 Scope of Work

This item shall consist of furnishing all water proofing materials, labor, tools,
equipment and other facilities and undertaking the proper work required as shown on
the plan and in accordance with this specification and as directed by the Engineer.

D.02 Material Requirements

Liquid water proofing materials shall be Multi-high Quality Water Proofing Film (Castle
Brand or equivalent materials) applied in liquid form and shall be approved by the
Engineer.

Integral water proofing shall be in accordance with the approved manufacture’s
recommended amount/ratio of admixture for cement.
D.03 Construction Requirements

D.03.1 Submittals

The Contractor shall submit for approval of the Engineer the manufacturer's recommended method of waterproof installation/construction.

D.03.2 Surface Preparation

Concrete surface to be applied with waterproofing shall be structurally sound, clean and free of dirt, loose mortar particles, paints, oil, protective coats, etc.

All defects shall be properly corrected and carefully formed to provide smooth surface that is free of marks and properly cured prior to application works.

Inside corners where vertical and horizontal structure meet shall be provided with cants measuring 50 mm. or rounded at corners a minimum of 50 mm. radius.

Concrete slabs shall be properly graded to drain rainwater. Provide a minimum pitch of 1 on 100 to satisfactorily drain rainwater freely into the drainage lines, gutters and downspout.

Drainage connections and weep holes shall be set to permit the free flow of water.

Any expansion and contraction joint shall be cleaned, primed, fitted with a backing rod and caulked with sealant. Provide reglets of about 40 mm. deep by 40 mm. wide and 250 mm. above floor along walls or parapets for the termination of the membrane.

Prepared surface shall be cured and kept wet by sprinkling with water at regular intervals for a period of at least three days and allow surface to actually set within seven (7) days.

Ensure that the prepared surface has completely set and all defects repaired.

D.03.3 Application Procedure

Prior to application of multi-high quality water proofing film, concrete surfaces should be sound and cured without the use of curing compound. Apply a coat neutralizer to remove oil, dirt and other contaminants.

Apply a primer coat of Cement and Mortar Intensifier (Castle Brand, PME 901) or equivalent (coating of the manufacturer at the rate of 25 square meter per gallon over the surface area to be applied by brush or roller brush (Make mix of PME 901 and 150% of water perfectly).
The prime coat shall be allowed to dry in 40 to 60 minutes, before applying the main waterproofing materials.

Apply three (3) coats of Multi-high Quality Water Proofing Film (Castle Brand, PME 202) or equivalent by using brush or roller at the rate of three (3) to four (4) square meters per gallon for three (3) coats at a film dry thickness of 1.0 mm. to 1.2 mm.

Water proofing application/procedure shall conform to manufacturer’s specification.

D.03.4 Flood Testing

Flood test for duration of 24 hours shall be undertaken upon completion of water proofing installation to determine any leakage or defect on the materials and/or workmanship.

The actual flood testing shall be conducted together with the Owner’s Engineer to ensure authenticity of test.

E. CEMENT AND MASONRY

E.01 Scope of Work

The work under this section shall include all labor, materials, equipment, plant and other facilities and the satisfactory performance of all work necessary to complete all cement and masonry work shown on the Drawings and as specified herein.

Unless otherwise indicated on the Drawings, or specified herein; all materials or work under this section shall be subject to provision under Part I. C – CONCRETE WORKS.

E.02 Mortar

Cement mortar shall be one (1) part portland cement and three (3) parts of sand by volume.

Re-tampering is not permitted. No mortar that has stood for more than one (1) hour shall be used. Works shall not be permitted on mortar that has reached its initial set.

E.03 Concrete Hollow Blocks

Concrete hollow blocks shall have a minimum compressive strength of 350 psi. computed from the average of five (5) units based on the average gross area and a minimum of 300 psi. for individual unit. Samples shall be taken at random for every batch/delivery of at least 2,000 pieces and upon the discretion of the Engineer.

E.04 Laying of Concrete Hollow Blocks

Do not wet blocks before using. Blocks must be dry when laid.

The first row of blocks must be thoroughly anchored to concrete walls, columns or slabs. Courses shall be laid straight and uniform with regular running bond and vertical faces truly vertical and set true to line. Each block shall be adjusted to its position in the wall while the mortar is still soft and plastic enough to ensure good bond. The
position of the block shall never be shifted after the mortar has stiffened. No re-
alignment of a block shall be attempted after a higher or following course has been
laid.

All horizontal and vertical reinforcing bars shall be anchored 20 diameters into the
cement walls, columns and slabs.

Dowel bars properly spaced are placed into walls, columns or slabs during pouring
and hooked to the vertical bar, leaving bar diameter exposed to splice with the
reinforcing bars of the hollow block walls during construction.

All units shall be laid with mortar composed of one (1) part portland cement and three
(3) parts of sand. Unless otherwise specified or detailed on the drawings, horizontal
and vertical joints shall be 10 mm thick with full mortar coverage on the face shells
and on the web surrounding the cells to be filled.

Reinforcing bars shall have a lap of 40 bar diameters. All horizontal reinforcement
must be tied to the vertical reinforcement at their intersection.

After each days work, uncompleted wall shall be covered with waterproof materials to
keep the inside of the blocks dry in case of rain.

E.05  Plain Cement Plaster Finish

All concrete columns, beams, roof beams, exposed concrete hollow block walls and
floor surfaces to be applied with plain cement finish shall be clean and evenly wet,
slushed with a wash or neat cement and followed by cement mortar 5mm thick which
shall be applied with a wooden float to leave the surface straight, true, smooth, plumb
and even, and all corner angles and all intersections shall be straight, true and
rounded slighted. The use of an approved bond fluid is suggested.

E.06  Vitrified Tiles

E.06.1  Description

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

E.06.2  Material Requirement

Glazed tiles and trims shall have an impervious face of vitrified
materials fused onto the color scheme approved by the Owner.

Walls to be finished with glazed tile wainscoting or elsewhere
indicated as shown on Drawings, shall be chipped off, cleaned
thoroughly with a wire brush, wetted with clean water and then
pointed up solid with 1:2 cement mortar before applying the tile
wainscoting.

Unglazed tiles shall be hard dense tile of homogeneous composition,
The materials used in the body, the method of manufacture and the
thermal treatment determine its color and characteristics.
Vitrified unglazed floor tiles shall be applied in the areas shown in the Plan. Floor tiles installation shall not be started in spaces requiring wall tile until the wall has been installed.

Floor and wall tiles and their accessories shall be first quality free from lamination, serrated edges, chipped-off corners and other imperfections affecting their quality, appearance and strength. Tiles shall conform to samples approved by the Owner.

Floor and wall tiles shall be of locally manufacture’s brand, EURO TILES or equivalent.

Samples of all floor and wall tiles shall be submitted to the Owner for approval as to color, texture and quality.

F. CARPENTRY WORKS

F.01 Scope of Work

The scope of work shall consist of furnishing all tools, labor, equipment, and materials, unless otherwise specified to complete all carpentry and joinery works shown on the Drawings and specified herein.

F.02 General Provisions

Lumber shall be approved quality of the respective kinds required for the various parts of the work, well seasoned, thoroughly dry and free from large, loose or unsound knots, sap shakes or other imperfections impairing its strength, durability or appearance.

Framing lumber shall be of the rough dimensions unless otherwise shown on the Drawings.

All exposed woodwork shall be smoothly dressed and sandpapered.

ANY LUMBER equally good for the purpose intended may be substituted for the kinds specified, subject to the approval of the Owner. Provided, however, that in the substitution of the cheaper kind of lumber that specified, a reduction in the contract price equal to the difference in the cost of the cost of the two kinds of lumber will be made.

Note: All painting works shall conform to the provision of Part I. 1 – PAINTING.

F.03 Fastenings

Fastenings shall be common nails, glue as specified, flat-head wood screws (F.H.W.S), round-head wood screws (R.H.W.S), bolts or lag screws where specified or called for shall be used.

Conceal fastening as much as possible, or if not possible, locate them in inconspicuous places. Where nailing is permitted through woodwork smooth-finished face, conceal nail heads.
F.04 Protection and Storage

Lumber shall be protected and kept under cover both in transit and all at the job site, and shall be carefully piled off the ground and be insured of proper drainage, ventilation, and protection from the weather. Surface of wood framework, and other wood members coming in contact with or embedded in concrete shall be painted with two (2) coats of hot applied asphalt.

The Contractor shall protect all finished wood work and millwork from injury after it has been set in place until the completion and final acceptance of work.

Temporary Supports: Make or provide wood centering or other necessary supports for openings in masonry walls accurately, strongly and well braced and secured in position until masonry has set thoroughly.

F.05 Wooden Materials

Unless otherwise shown on the drawings, the Contractor shall use the following lumber in accordance with the schedule below:

a. Apitong/Tanguile (common grade) for ceiling joist, hangers and nailers.
b. 6mm Marine Plywood for ceiling board.
c. Coco Lumber for scaffoldings, shoring and bracing only.

G. DOORS

G.01 Scope of Work

The work under this Section shall include all labor, materials, hardware, painting, equipment, and other facilities and the satisfactory performance of all work necessary to complete all doors shown on the Drawings and as specified herein.

G.02 Doors

All lumbers for doors and all woodwork of similar nature shall be kiln dried (KD) with not more than fourteen percent (14%) moisture content. All doors shall be done in accordance with full sized details which will be furnished, hereafter to the contractor. Door shall have one and three fourth (1 ¾) inch finished thickness.

All doors shall be guaranteed against warping, twisting or cracking for a period of twelve (12) months from the date of final acceptance of the finished building. This obligates the Contractor to make good such defects or replace entirely any and all such defective doors.

All doors for shall be panel type complete with jambs and accessories, kiln dried (KD) and shall be provided with loose pin hinges 3 ½” x 3 ½”, door lockset “Schlage” brand.

H. WINDOWS

H.01 Scope of Work

The work under this Section shall include all labor, materials, hardware, equipment, and other facilities and the satisfactory performance of all work necessary to complete all aluminum framed glass windows shown on the Drawings and as specified herein.
H.02 Materials Requirements (Aluminum Framed Glass Windows) Analok Type

- Frame and panel members shall be fabricated from extruded aluminum sections true to details with clean, straight, sharply defined profiles and free from defects impairing strength of durability. Extruded aluminum sections shall conform to the specifications requirements as defined in ASTM B211.

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

- Hardware for fixing and locking devices shall be closely match to the extruded aluminum section and adaptable to the type and method of opening.

- Weather strips shall be provided with good quality

- All Aluminum Framed Windows shall be provided with brown aluminum screen assembly, sliding type complete with accessories.

- For Aluminum Framed Glass Windows use 6mm thick glass

H.03 Construction Requirements

- For all assembly and fabrication works and cut ends shall be true and accurately jointed, free of burrs and rough edges. Cut-out recesses, mortising, grinding operation for hardware shall be accurately made and properly reinforced when necessary.

- Installation procedure:

  Main frame shall consist of head sill and jamb stiles specifically designed and machined to inter fit and be joined at corners with self-threading screw.

  Sliding window shall be provided with nylon sheave. Sliding panel shall be suspended with concealed roller overhead tracks with bottom guide pitch outward and slotted to complete drainage. The sliding panels shall be provided with interior handles. The locking devices shall be spring loaded extruded latch that automatically engages special frame hips.

  All joints between metal surfaces and masonry shall be properly caulked.

H.04 Protection

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

I. PAINTING

I.01 Scope of work

The work under this Section shall include all labor, materials, equipment, plant and other facilities and the satisfactory performance of all work necessary to complete all field painting and as specified herein.
I.02 General

Color schemes for the painting of the whole building, complete both inside and outside shall be furnished by the Architect to the Contractor upon request. Color scheme samples required by these Specifications shall be submitted by the Contractor to the Owner for approval. Expenses for sample of color schemes shall be at Contractor’s expense.

All exposed work shall be protected while the building is being painted. Any dirt, smears, etc., shall be removed by the Contractor to the satisfaction of the Owner.

I.03 Material

All paint materials shall meet the requirements of the standard specifications of the Standardization Committee on supplies and shall be in accordance with latest Classification Class “A” of the Institute of Science, Manila, Philippines, and shall be delivered on the work in the original containers, with labels intact and seals unbroken.

*Dutch Boy, Boysen Paint* or approved equivalent shall be used on all surfaces to be painted and certificate of origin and quality shall be submitted to the Owner for inspection and approval before using any of the paint materials.

The use of ready mixed paint may be allowed in this project, provided, however, that such paint is in accordance with the standard Specification No. 13 of the Philippine Government and that ready mixed paints shall be those listed under “Good Substitutes” only.

Tinting colors for latex shall be the highest grade obtainable. Tinting colors for oil paint shall be color in oil ground in pure linseed oil. Color shall be non fading. Color pigments shall be used to produce the exact shades of paint which shall conform to the approved color scheme of the building. Except as otherwise noted, color of priming coat shall be white.

All materials to be used in the work shall be stored in a place to be designated by the Owner, and such place shall be kept neat and clean at all times. Any damage on this place and its surroundings shall be rectified. All precautions to avoid danger of fire must be observed by removing oily rags, waste, etc., from the building at the end of daily work.

I.04 Inspection and Preparation of Surface

The Contractor shall inspect all surfaces to be painted and all defects shall be remedied before starting work.

No work shall be started unless the Contractor shall have made certain as to the dryness of surface. Tests shall be made, in the presence of the Owner, to verify dryness of surface to be painted.

Before painting is started, all spaces shall be broom clean and all dust, dirt, plaster, grease and other extraneous matter that would affect the finish work shall be removed.

I.05 Workmanship
All painting work shall be done in workmanlike manner by skilled house painters only.

All materials shall be evenly applied on, so as to form a film of uniform thickness, free from sags, runs, crawl, or other defects. The use of a heavy brush (nylon brushes for oil paints) is required and they shall always be clean and in good condition. Light brushes shall not be permitted. Paint shall be thoroughly stirred so as to keep the pigment evenly in suspension while paint is being applied.

In general and unless otherwise specified, and/or instructed by the Owner or due to actual conditions on the job, not less than 3 days time shall elapse between application of succeeding coats.

Each coat of paint shall be allowed to dry thoroughly and inspected for approval before the succeeding coat is applied. No painting shall be done in damp weather. No work shall be done under conditions that are unsuitable for the production of good results. No painting shall be done while plastering is in process or is drying.

Except where otherwise noted or specified, all paints shall be applied in three (3) coats (priming, body and finish). Each coat shall be brush applied (except as otherwise noted), spread evenly and in full covering body.

Surfaces which cannot be satisfactory finished on the number of coats specified shall have such additional coats, or such preparatory coats and subsequent coats as may be required to produce satisfactory finished work.

Spray gun application shall be used where indicated in color scheme schedule.

Before any painting is started, the Contractor shall furnish the Owner the paint manufacturer’s detailed painting recommendation as to surface preparations and applications plus relevant information regarding the use of the paint.

**I.06 Concrete and Masonry Surfaces**

**Surface Preparation**

*For New Surfaces:* Scrape off loose cement, chalk, dust and other surface deposits. Treat the surface with Dutch Boy 61-135 Acri-Free Concentrate. Mix one (1) liter Acri-Free Concentrate with ten (10) liters of water. Apply by brush and make sure that the alkaline surfaces are completely neutralized. In case of doubt, test the surface with red litmus paper. If it turns blue, then the second neutralization will be necessary. Let dry thoroughly. Do not rinse.

*For areas affected by high alkalinity,* apply one coat of Concentrate Sealer. Allow to dry at least four (4) hours before applying succeeding coats.

**Application**

*Apply Flat Nalcrete as primers.* Thin with water if necessary. First coat may be tinted with Acrytint to the desired color of topcoat. Dry for at least 2-4 hours.

Repair minor surface imperfection with suitable putty. Dry for 24 hours, sand then spot coat with top coat color.

Apply two (2) coats Gloss Nalcrete for interior/exterior. Tint with Acrytint to the desired color.
I.07 Wood Preservative

Apply two (2) coats of wood preservatives for all wood surfaces such as jambs, ceiling joist and roof framing members.

I.08 Protection and Cleaning

Protection

a. Lighting fixtures shall be loosened and removed from contact with surfaces covered and protected, and reset upon completion.

b. Remove all electric plates, surface hardware, etc., before painting, protected and replace when completed.

c. The Contractor at his own expense shall make all undue damage to any part or parts of present structure caused by the Contractor, during the execution of the work good.

The Contractor shall, upon completion of work remove all paint, where it has been spilled, splashed, or splattered on the surface, remove all surplus materials, scaffolds, etc., so as to leave premises in perfect condition, acceptable to the Owner.

Finished surfaces shall be solid, even colors; and finished texture free from drops, runs, lumps, brush marks, discoloration and other defects. Before final inspection, any work that has become damaged or discolored shall be touched up or refinished in a satisfactory manner.

All other items or work to painted and not specified herein, but necessary to complete the work shall be painted with appropriate first quality paint and suited to the service and nature of the surface and material in accordance with these Specifications.

J. WELDING AND METAL WORKS

J.01 Scope of Work

This section covers the furnishing of all work, equipment, materials labor and supervision required to complete the items in full compliance with the Drawing and this Specifications.

J.02 Material Provisions

All welding works shall conform to the “AWS CODE FOR ARC AND GAS WELDING IN BUILDING” and as herein specified or any other welding standards approved by the Owner’s Engineer’s.

All metal works shall be done in accordance with all related publications of American Institute of Steel Construction (AISC), American Society of Testing Materials (ASTM) and American Welding Society (AWS).
Use only welding equipment, electrodes welding wire and fluxes capable of producing satisfactory when used in a qualified welding procedure.

The Contractor shall be responsible for all errors of detailing for correct fitting of the structural members.

J.03 Storage of Materials

The materials shall be stored out of contact with the ground and in a manner and location that will minimize contamination and deterioration.

J.04 Materials

All materials shall be new stock, free from surface imperfections and shall conform to the applicable ASTM Specifications and equivalent standards.

J.05 Shop Connections

As detailed in the drawing or as approved by the Owner's Engineer.

J.06 Field Connections

Provide welded connections as shown in the drawing or as approved by the Owner's Engineer.

K. PLUMBING WORKS

K.01 General

a. The Contractor shall provide all items, articles, materials, operations, or methods listed, mentioned, or schedule on the drawings and/or herein specified, including all labor, materials, equipment and incidental necessary and required for their completion.

b. All fittings, connections, piping, hidden or embedded in concrete shall be subject to inspection by the Owner before covering.

c. The drawings and these Specifications as complementary to each other, and any labor or materials called for by either, whether or not called for by both, if necessary for the successful operation of any of the particular type of equipment shall be furnished and installed by the Contractor without additional cost to the Owner. All dimensional locations of fixture, floor drains, risers and pipe chases shall be verified on the architectural drawings and manufacturer's catalogue.

d. Intent – It is not intended that the drawings shall show every pipe, fitting, valve and appliance. All such items, whether specifically mentioned or not, or indicated on the drawings, shall be furnished and installed if necessary to complete the system in accordance with the best practice of the plumbing trade and to the satisfaction of the Owner.

K.02 Work Included

a. Work included under this Section shall consist of furnishing all labor, tools, equipment, appliances and materials necessary for complete installation
testing and operation of the plumbing system in accordance with these Specifications and all applicable drawings in the contract.

b. Inside potable water distribution and supply pipes to fixtures and hose bibs/faucets. The Contractor shall furnish all piping materials and accessories of all water supply line located inside the building structures.

c. Sanitary sewers from the building and their connections to the point of discharge including septic vault as shown in the plans.

d. Drainage system for the entire building of the point of discharge including pipes, drainage canals, screening tank and catch basin.

e. Soil, waste and vent pipe system within the building

f. Plumbing fixtures, trims and accessories.

g. Furnishing of water meter, gate valves, check valves and related accessories.

h. Hydrostatic testing and reliability testing.

K.03 Materials

a. All materials to be used shall conform with the standards below. Use of material shall further be governed by other requirements imposed on other sections of these Specifications.

For Water Pipes

Blue uPVC Potable Water Pipes and Fittings shall conform with ASTM and ISO Standards with nominal pressure of 230 psi., Pipe fittings as per manufacturer’s specification.

For Sewer Lines

Orange uPVC Sanitary Pipe (for 100mm Diameter and below) uPVC Pipe shall conform with ASTM 2729. Pipes and fittings are specified with integral push on bell complete with elastomeric neoprene O-ring gasket on one end and plain leveled on the other end.

Orange Gravity Sewer Pipe (for above 100mm Diameter)

uPVC Pipe shall conform with the Standard Specification of ISO R-161/ISO 4435, SDR-41 Jointing method shall be solvent cement jointing/rubber ring on joint. Pipe fittings shall be as per manufacturer’s specifications.

Alternative Materials – Use of materials not specified in these Specifications may be allowed provided such alternative has been approved by the Owner and provided further that tests, if required, shall be done by an approved agency in accordance with generally accepted standards.

Identification of Materials – each length of pipe, fittings, traps, fixtures and devices used in the plumbing system shall have cast, stamped or indelibly marked on it, the manufacturer’s trademark or name, the weight, type and classes of product when required by the standards mentioned above.
K.04  **Make of Fixtures**

Unless otherwise indicated, water closet (model: C54337, closed coupled, jupiter savi type), lavatory (single hole, 480mm. x 480mm. x 225mm., jupiter savi type) and glass mirror (6mm thk. x 400mm x 600mm) including soap and tissue holders shall be HCG brand or equivalent compete with accessories.

Urinals shall be done as shown on the plan, HCG brand “U-999 Model” or equivalent. Push valve type.

Lavatory, faucet shall be knob type, LF3184 Px, Amazona Model, HCG or equivalent.

Faucets shall be chrome plated, U.S. made.

K.05  **Soil, Water, Drain and Vent Pipes**

(For Sanitary Sewer Lines)

Underground soil, waste pipes and fittings shall be uPVC Sanitary Pipe, Orange or Brown.

All main vent stacks shall be extended to full size to end above the roofline except where otherwise specifically indicated.

Vent pipes in roof spaces shall run as close as possible to underside of roof, with horizontal piping pitched down to stacks without forming traps. Vertical vent pipes maybe connected into one main vent riser above the highest vented fixtures.

Where end or circuit vent pipe from any fixtures or line of fixtures is connected to a vent line serving other fixtures, the connections shall be at least 1,200 mm above the floor on which the fixtures are located, to prevent the use of any vent line as waste pipe, unless indicated otherwise.

Horizontal waste lines receiving the discharge from two or more fixtures shall be provided with end vents, unless separate venting of fixture is noted.

Rough in for pipes and fixtures shall be carried along the building construction. Correctly located opening of proper sizes shall be provided where required in the walls and floor for the passage of pipes. All items to be embedded in concrete shall be thoroughly cleaned and free from all rust scale and paint.

K.06  **Cleanout, Plugs, Test and Traps**

Cleanouts shall be the same size as the pipe but cleanouts larger than 100 mm shall not be required.

Every plumbing fixtures or equipment requiring connection to the sanitary drainage system shall be equipped with a trap. Each trap shall be placed as near the fixture as possible. No fixture shall be double-trapped.

K.07  **Valves and Faucets for Building**

Valves shall be KITZ or equivalent and shall be provided on all supplied fixtures as specified.
All valves shall be gate valves, check valves and ball valves unless otherwise specified or noted on the drawings.

Valves up to and including 50 mm dia. shall be brass with threaded ends, rough bodies and finished trimmings.

Faucets shall be U.S. made, chrome plated.

**K.08 Fixtures and Equipment Supports and Fastenings**

Stub-outs for sanitary lines, and vents shall be 300 mm above the floor line, and properly capped or else installed ready to receive the fixtures. The entire comfort room shall be properly tiled and finished, complete with doors and windows.

All fixtures shall be supported and fastened in a safe and in satisfactory manner.

Bolts and nuts shall be horizontal and exposed. Bolts, nuts, cap nuts and screw shall be chromium plated and provided with chromium plated brass washer.

**K.09 Drains and Floor Sinks**

Floor drains and floor sinks shall be made of high-grade, strong tough and even grained metals.

**K.10 Cleaning**

All exposed metal surfaces shall be rid of grease, dirt or other foreign materials.

All plumbing fixtures shall be properly protected from use and drainage during the construction period. At the end of the work and prior to approval, the fixture shall be cleaned as per manufacturer’s recommendations to the satisfaction of the Owner.

All pipes, valves and fittings shall be cleaned of grease and sludge, which may have accumulated. The Contractor shall repair any stoppage or discoloration or other damage to parts of the building, its finished or furnishing due to the system without additional cost to the Owner.

**K.11 Defective Work**

If inspection or test show any defect, such defect work or matter shall be replaced by the Contractor and inspection and tests repeated until satisfactory to the Owner.

**K.12 Septic Vault/Tank and Holding Tank**

Dimensions and locations are indicated in the plan, cement plaster for all inner linings.

Construction shall conform to Sanitary and Plumbing Code of the Philippines.

Septic vault/tank and holding tank outlets shall be connected to the nearest drainage system.

The work shall conform to the applicable provision of *PART I. C – CONCRETE WORKS AND PART I. D – CEMENT AND MASONRY WORKS.*
K.13  **Galvanized Pipes and Fittings**

Galvanized steel pipe shall conform to the requirements of “AST M – 120”, and shall be Schedule 40. Fittings for galvanized pipe shall be galvanized malleable iron.

K.14  **Water Meter**

Water meter must be “ARAD” or Asahi brand, or approved equivalent, screw type brass bodied with operating pressure conforming to standard specifications of MWSS or LWUA.

The Contractor shall submit certification of calibration issued by authorized government water utility agencies prior to acceptance of the required equipment.

K.15  **Testing Requirements**

Pressure testing of the piping system shall be performed as work progresses to detect leaks especially at the pipe joints. Testing shall be done prior to backfilling. Testing shall be made only after all the pipes are properly anchored. Test pressures and procedures as approved by the Engineer.

Pump test shall also be performed to check its performance under actual operating condition. This is done after the installation works so that the whole system including its controls shall be subjected to demonstration test to prove that they operate and function satisfactorily.

All pipes, fittings, valves, joints and couplings found to be defective or cracked during the test should be removed and replaced by the Contractor at his own expense.

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**PART - II ELECTRICAL WORKS**

A.  **GENERAL**

GENERAL REQUIREMENTS contain requirements essential to these specifications and apply whether or not individually referred to under this section.

B.  **SCOPE OF WORK**

The work shall consist of the supply of labor, materials, equipment and other facilities necessary to complete the Electrical Works

All works herein shall comply with the pertinent provisions of the latest edition of the Philippine Electrical Code and is hereby made part of the Contract.

Compliance with the provisions herein shall be Contractor's responsibility to provide as part of the Contract Work and without separate payment therefore.

Expenses for the power connection/tapping from the existing local Electric Cooperative including electric meter deposit, billing deposit, drop wires and other accessories necessary for the energization, of the project shall be provided by the Local Government Unit concerned.
C. PRINCIPAL MATERIALS AND EQUIPMENT TO BE FURNISHED BY THE CONTRACTOR

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fish Trading Hall Lighting Fixture</td>
<td>300 mm diameter Acrilux reflector in clear polymethylmethacrylate with bell socket complete with 14 watts LED Lamp</td>
</tr>
<tr>
<td>2. CR and Multi Purpose Room Lighting Fixture</td>
<td>150 mm diameter recessed mounted downlight lighting fixture complete with aluminum reflector, glass cover and 18 watts CFL lamp.</td>
</tr>
<tr>
<td>3. Floodlighting Fixture</td>
<td>65 watts CFL lamp in die cast aluminum floodlighting fixture similar to “Amco Model C-80-S.</td>
</tr>
<tr>
<td>4. Switches</td>
<td>5A/230 volts, National Brand</td>
</tr>
<tr>
<td>5. Wires</td>
<td>Sizes as specified in the plans, Philflex, American Wire or Columbia Brand.</td>
</tr>
<tr>
<td>6. Panelboards</td>
<td>as specified in the plan.</td>
</tr>
</tbody>
</table>

D. EXECUTION AND INSTALLATION WORKS

The work under this contract shall be done in accordance with the provision of the latest edition of the Philippine Electrical Code, the Rules and Regulations of the Bureau of Labor and Standards and in compliance with the requirements of the local utility company. Nothing contained in these Specifications or shown in the drawing shall be construed as to conflict with national and local ordinance or laws governing the installation of electrical works and all such laws and ordinances are hereby made part of these specifications. The contractor is required to meet the requirement thereof.

D.01 Guarantee

The Contractor shall guarantee that the electrical system are free from all grounds and from all defective workmanship and will remain so for a period of one year from the date of acceptance of the work. The Contractor at his owns expense shall remedy any defects, appearing within the aforesaid period.

E. WORKMANSHIP

The work throughout shall be executed in the best and most thorough manner under the direction of and to the satisfaction of the Owner’s representative who will interpret the meaning of the Drawings and Specifications and shall have power to reject any work and materials that in his judgment are not in full accordance therewith.
E.01 Standard of Materials

All materials shall be new and shall conform to the standards of Underwriter's Laboratories, Inc., IEEE, NEMA and Philippine Standard Agency (PSA) for every case where such a standard has been established for the particular type of materials in questions.

All materials on all systems shall comply with the specifications, and all material, which is not specified, shall be of the best of their respective kind.

E.02 Ground Test

The entire installation shall be free from improper grounds and from short circuits. Test shall be made in the presence of the Owner's representative. Each panel shall be tested with mains connected to the feeder and branches, and all switches closed all fixtures in place and permanently connected, lamps removed or omitted from the sockets and all switches closed. Each individual power feeder shall be tested with the power equipment connected for proper and intended operation. In no case shall the resistance be less than that allowed by the Regulations for Electrical Equipment of Buildings. Failure shall be corrected in a manner satisfactory to the Owner's representative.

E.03 Performance Test

It shall be the responsibility of the Contractor to test all system of the entire electrical installation for proper operational condition. This condition shall apply to the power and lighting installation. Where sequence operation is required, the Contractor shall test for proper sequence of the entire electrical installation for satisfactory working condition as approved by the Owner.

E.04 Completion Requirements

Remove waste and debris resulting from this work, as work progresses and upon completion.

Touch-up abraded or damaged prime paintings or galvanizing and leave clean and ready for finishing work required.

E.05 Trade/Brand Names

Trade/Brand names of materials are intended only to show the degree of standardization on which the design of the particular work is based and also to avoid ambiguous description of the materials. The indication of the trade/brand names therefore shall in no way be considered to limit the acceptability of other products of equal or better performances, functions, reliability and durability.

F. LIGHTING SYSTEM

The lighting system shall be complete in every aspect, all as indicated in the plans.

If anything has been omitted in any item of work or material usually furnished which are necessary for the completion of the lighting system work as outline hereunder, then such item must be and hereby included in this section of the work.

Each lighting outlet shall have standard deep 100 mm. Octagonal or square box for each
ceiling and bracket fixture installation. Each box shall finish flush against concrete and plaster walls or ceiling, except for exposed work.

The Contractor shall provide and install all lighting fixtures of the size and type as indicated in the drawings. All fixtures shall be wired and installed completely including all lamps and/or tubes, transformers, ballast, supports, canopies, globes, and other parts and devices necessary for the complete installation and operation.

F.01 Relamping

The Contractor shall furnish and install all lamps for the entire lighting fixture installations and shall replace all broken or burned out lamps up to the time that the owner takes final acceptance of the work.

F.02 Switches

Wall switches shall be rated at 5 amperes, 230 volts, one-way or three-way as required. The type of switch shall be tumbler or snap-on as required, National brand. Where switches are installed surface mounted, they shall be installed in type FS conduit fittings and provided with surface mounting covers.

Switches shall not arc during switching operations.

Wall switches shall be mounted 1400 mm. from finish floor.

F.03 Receptacles

Receptacles outlets shall be for flush mounting, duplex rated at 15 Amperes, 230-volt connection, National Brand or equivalent. Type and color of receptacle outlet plates shall be as selected by the Engineer and appropriate samples of outlet and plates shall be submitted prior to purchase of device.

Weatherproof shall be National brand. Wall receptacles shall be mounted 300 mm from floor finish unless otherwise indicated in the plan.

F.04 Outlet and Switch Boxes

At all outlets or whatever kind for all systems, there shall be provided suitable outlet boxes or other fittings specially designed to receive the type of devices to be mounted thereon.

All outlet boxes shall be uPVC.

Boxes installed in damp or wet locations shall be specifically approved for the purpose and shall be so placed and constructed as to prevent moisture from entering or accumulating within the box.

In walls or ceiling constructed of wood, concrete of other similar materials, boxes and covers shall be flush with finished surfaces. Number of wires and devices contained in the box shall be in accordance with the code. Where necessary flush square outlet boxes shall be fitted with extension rings or raised cover plates.

Boxes shall be securely and rigidly fastened to surface upon which they are mounted or embedded in concrete or masonry, and shall be supported from a structural member of building either directly or by using substantial and approved metal braces.
Standard outlet boxes shall be of the octagonal, square or rectangular shapes and only deep types no less than 54 mm. depth shall be used for all installations.

G. PULLBOXES AND WIRE GUTTERS

Pull boxes and wire gutters for the pulling or concealment of wires or cables shall be provided where indicated and also where required though not indicated. It shall be made of steel sheets, thickness not less than gauge 16, galvanized and painted with anti-rust primer.

Pull boxes shall be provided on all conduit runs exceeding 30 meters between outlets, and shall be sufficiently set by bolts braces and fasteners. In large pull boxes, cables shall be tied or racked in an approved manner.

H. CONDUITS

All conduits shall be unplasticized Polyvinyl Chloride (uPVC), schedule 40, and uniformed wall thickness. It shall be compression and impact resistant, non-corrosive, weatherproof as manufactured by Emerald, Neltex or its approved equal. The material shall not support combustion and shall not deteriorate when exposed to sunlight, rain and other elements.

H.01 Installation of Conduit System

Conduits shall be installed and supported in a rigid and satisfactory manner.

No conduits shall be used in any system smaller than 15 mm. (1/2 inch.) diameter trade size, nor shall have more than four quarter bends in any one run between outlets and/or fittings. When necessary pull boxes shall be provided as directed by the Engineer.

All cut ends of conduit shall be reamed to remove rough edges. Where a conduit enters a box or fitting, bushing shall be provided to protect wire from abrasion, unless design of box or fitting is such as to afford equivalent protection.

Raceways shall be installed at right angles or parallel to building lines. Conduit shall be firmly fastened within 0.3 m. of each outlet box fitting or cabinet by means of standard clamps and intermediately spaced no more than 1.0 meter. All clamps, bolts, straps, etc. shall be galvanized and painted metal.

Support and braces may be welded to structural steel with the specific approval of the Engineer. When running over concrete surfaces, the screws shall be held in place by expansion sleeves.

I. WIRES AND CABLES

600 Volt grade wire shall be copper, hard drawn and annealed and shall be of 98% conductivity.

Wire or cable for lighting and power systems shall be plastic insulated type TW, THW, or THHN as noted on plans or as specified. All wires 8.0 sq. mm. and larger shall be stranded unless noted on plans.

No wire smaller than 2.0 sq. mm. shall be used except where otherwise specified. Control leads for motors shall be types THW, unless otherwise indicated.
All wires shall be color coded (Black, Red, Yellow, Green) and shall be as manufactured by Phelps Dodge, Philflex, Columbia or its approved equal.

Ungrounded conductors shall have distinct insulation color from grounded and grounding wires. Grounding wires and cables shall be colored green or white or as approved by the Engineer.

I.01 Cable Connectors

The connection of conductors from sizes 8 sq. mm. and larger shall be made with copper, solderless, pressure type connectors. Connection shall be done without damaging the individual cable strands. Connectors shall be provided insulators or fish paperboard separators.

I.02 Installation of Wire and Cables

Conductors or cable shall not be installed in conduits, raceway until such systems has been completed, nor it be installed until the inside of conduit has been cleaned.

The Contractor shall exercise due care to prevent damage to conductors, insulation or sheathing when pulling wires and cables.

All feeder cables installed shall be continuous from origin to panel or equipment terminations without running splices in Hand Hole or pull box except where taps and splices are approved by the Engineer using suitable connectors.

Wires and cables for power and lighting shall be in separate conduit from any wires or cables for communication and signal systems.

Where cable passes through building exterior walls and underground identification tags of non-corrosive materials shall be stamped on each end and every route.

Wires and cables inside panelboards and control boxes shall be binded by means of plastic straps in a neat and orderly manner.

J. LIGHTING PANELBOARD

Panelboard shall be as specified in the approved plans.

All protective devices shall meet NEMA and Underwriter Laboratories Inc. specifications. In multiple circuit breakers, all poles shall be interrupted simultaneously during fault conditions.

All busbars and current carrying parts shall be high conductivity copper and shall have current density not more than 1.5 amperes per sq.m. of cross sectional area and shall be heavier where required for mechanical strength. Supply with non-ferrous or galvanized bolts, nuts, washers and other required attachment devices.

Each and every panel shall be provided on the inside of the door, with directory frame protected by a transparent plastic window, containing typed card indicating the member and designation of the circuits.

All panels shall have grounding bus or lugs with pressure type terminals of sufficient quantity and size and so located inside as to permit easy termination of cables.
K. **CIRCUIT BREAKERS**

Circuit breakers shall consist of quick-make, quick break operating mechanism, thermal magnetic trip unit on each pole and enclosed in a molded phenolic case. The thermal magnetic trip unit shall provide time delay overload protection in case of overload and instantaneous trip for short circuit condition in any one pole.

Rating of circuit breaker shall be suitable for each service application and shall be specified as to rated voltage, current, type, frame, size and frequency as manufactured by Westinghouse.

Enclosure of individual circuit breakers or knife switches shall be general purpose NEMA type 1 or rain tight NEMA type 3R or as required according to the specific duty called for.

L. **INSPECTION TEST**

The Contractor in the presence of the owner’s representative shall conduct inspection and tests. These tests shall be for the normal operation of the entire electrical system of the project. The decision made by the owner’s representative for correction on any item of work, alteration of incorrect installation, or replacement of defective materials, or any other defects as found by him shall be final and must be complied with by the Contractor within forty-eight (48) hours after receipt of the official written communication before final acceptance can be made.

M. **TEMPORARY LIGHT AND POWER**

The Contractor shall provide, install and maintain adequate incoming service, light feeders, branch circuits, outlets, lamps and fixtures, as required for performance of the work by all trades engaged in the construction of the building structures and installation.

**PART III – MOBILIZATION/DEMOBILIZATION OF EQUIPMENT**

**SCOPE OF WORK**

A.01 The contractor shall mobilized and demobilized all equipment necessary to complete the work of the project.

A.02 Mobilization and demobilization shall be treated as a separate item. It shall be computed based on the cost of transportation of equipment of the contractor to complete the project.
Section VII. Drawings

(Please secure blueprints upon purchase of Bidding Documents)
Section VIII.

Bill of Quantities
## Construction of Community Fish Landing Center

**BRGY. ____________________________**

*Project Name and Location*

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>DESCRIPTION OF WORKS</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Mobilization / Demobilization of Equipment</td>
<td>1.00</td>
<td>lot</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL OF I</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II.</td>
<td><strong>BUILDING FACILITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td><strong>Trading Hall/Admin./Public Toilets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>Earthworks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Ordinary Excavation</td>
<td>52.00</td>
<td>cu.m.</td>
</tr>
<tr>
<td></td>
<td>b. Backfilling and Compaction</td>
<td>34.00</td>
<td>cu.m.</td>
</tr>
<tr>
<td></td>
<td>c. Selected Earthfill</td>
<td>40.00</td>
<td>cu.m.</td>
</tr>
<tr>
<td></td>
<td>d. Gravel Bedding</td>
<td>10.00</td>
<td>cu.m.</td>
</tr>
<tr>
<td>2.0</td>
<td>Concrete and Masonry Works</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Concrete, 20.70 Mpa.</td>
<td>81.30</td>
<td>cu.m.</td>
</tr>
<tr>
<td></td>
<td>b. Rebars and Tire Wire</td>
<td>7,426.00</td>
<td>kgs.</td>
</tr>
<tr>
<td></td>
<td>c. 150mm thk., 350 psi. CHB (Include mortar and rebars)</td>
<td>95.00</td>
<td>sq.m.</td>
</tr>
<tr>
<td></td>
<td>d. 100mm thk., 350 psi. CHB (Include mortar and rebars)</td>
<td>11.00</td>
<td>sq.m.</td>
</tr>
<tr>
<td></td>
<td>e. Plain Cement Plaster Finish (For columns, parapet, beams and walls)</td>
<td>312.00</td>
<td>sq.m.</td>
</tr>
<tr>
<td></td>
<td>f. Concrete Moulding</td>
<td>1.00</td>
<td>lot</td>
</tr>
<tr>
<td></td>
<td>g. Vitrified Floor Tiles, 16&quot; x 16&quot;</td>
<td>13.60</td>
<td>sq.m.</td>
</tr>
<tr>
<td></td>
<td>h. Vitrified Glazed Tiles, 12&quot; x 12&quot;</td>
<td>25.90</td>
<td>sq.m.</td>
</tr>
<tr>
<td></td>
<td>i. Vitrified Unglazed Tiles, 12&quot; x 12&quot;</td>
<td>8.90</td>
<td>sq.m.</td>
</tr>
<tr>
<td>3.0</td>
<td>Water Proofing Works</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Integral Waterproofing</td>
<td>171.00</td>
<td>sq.m.</td>
</tr>
<tr>
<td>4.0</td>
<td>Carpentry and Other Related Works</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 6.00 mm. thk. Marine Plywood Ceiling and on 50 mm. x 50 mm.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ceiling Joist, Hangers and 3&quot; Wood Cornice</td>
<td>22.70</td>
<td>sq.m.</td>
</tr>
<tr>
<td></td>
<td>b. 0.90 m x 2.10 m Aluminum Screen Door (Include automatic door closer and accessories in the unit cost)</td>
<td>1.00</td>
<td>set</td>
</tr>
<tr>
<td></td>
<td>c. 0.90 m x 2.10 m Wooden Panel Type Door (Include door jamb, automatic door closer, lockset and painting in the unit cost)</td>
<td>3.00</td>
<td>sets</td>
</tr>
</tbody>
</table>

Construction of Community Fish Landing Center
<table>
<thead>
<tr>
<th>5.0</th>
<th>Drainage and Sewerage Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Reinforced Concrete Canal w/ Concrete Cover</td>
</tr>
<tr>
<td>(Include rebars, concrete &amp; forms in the unit cost)</td>
<td>1.00 lot</td>
</tr>
<tr>
<td>b.</td>
<td>Screening Tank</td>
</tr>
<tr>
<td>(Include rebars, concrete &amp; forms in the unit cost)</td>
<td>1.00 lot</td>
</tr>
<tr>
<td>c.</td>
<td>Catch Basin (Include 100 mm dia. pvc pipe, 75mmØ downspout, strainer and accessories)</td>
</tr>
<tr>
<td></td>
<td>4.00 unit</td>
</tr>
<tr>
<td>d.</td>
<td>Septic Vault/Tank</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
<tr>
<td>e.</td>
<td>5.0 cu.m. Holding Tank</td>
</tr>
<tr>
<td></td>
<td>1.00 unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.0</th>
<th>Plumbing Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Stand Pipe (Include pipes, fixtures, accessories etc.)</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
<tr>
<td>b.</td>
<td>Pipes, Fittings and Accessories</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
<tr>
<td>c.</td>
<td>Sanitary Plumbing Fixtures (Include water closet, lavatory, urinal, floor drain, soap holder mirror, faucets &amp; accessories)</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.0</th>
<th>Inside Potable Water Supply System</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Pipes, Fittings, Accessories</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8.0</th>
<th>Electrical Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Lighting Fixtures</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
<tr>
<td>b.</td>
<td>Wires and Wiring Devices</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
<tr>
<td>c.</td>
<td>Panelboard, Conduits, Boxes, Fittings and Miscellaneous</td>
</tr>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9.0</th>
<th>Painting Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Masonry and Concrete Surfaces</td>
</tr>
<tr>
<td></td>
<td>312.00 sq.m.</td>
</tr>
<tr>
<td>b.</td>
<td>Epoxy Topcoat, 2 Coats (2.00 m Column Height)</td>
</tr>
<tr>
<td></td>
<td>32.00 sq.m.</td>
</tr>
<tr>
<td>c.</td>
<td>Wooden Surface</td>
</tr>
<tr>
<td></td>
<td>22.70 sq.m.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.0</th>
<th>Staircase (including paints and consumables)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11.0</th>
<th>Formworks and Scaffolding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.00 lot</td>
</tr>
</tbody>
</table>
Section IX.

Bidding Forms
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bid Form</td>
<td>102</td>
</tr>
<tr>
<td>Form of Contract Agreement</td>
<td>103</td>
</tr>
<tr>
<td>Omnibus Sworn Statement</td>
<td>106</td>
</tr>
</tbody>
</table>
Bid Form

Date: __________________________
ITB No: 2016 – 053

Bureau of Fisheries and Aquatic Resources
Regional Fisheries Office No. 1
Government Center, Sevilla,
San Fernando City, La Union

We, the undersigned, declare that:

(a) We have examined and have no reservation to the Bidding Documents, including Addenda, for
the Contract [insert name of contract];

(b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet,
General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered in item (d) below is: [insert information];
The discounts offered and the methodology for their application are: [insert information];

(c) Our Bid shall be valid for a period of [insert number] days from the date fixed for the Bid
submission deadline in accordance with the Bidding Documents, and it shall remain binding upon
us and may be accepted at any time before the expiration of that period;

(d) 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;

(e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities
from the following eligible countries: [insert information];

(f) 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;

(g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the
Contract, has not been declared ineligible by the Funding Source;

(h) 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

(i) We understand that you are not bound to accept the Lowest Evaluated Bid or any other Bid that
you may receive.

Name: ______________________________________
In the capacity of: ______________________________________
Signed: ______________________________________
Duly authorized to sign the Bid for and on behalf of: __________________________
Date: _____________

Construction of Community Fish Landing Center
Form of Contract Agreement

THIS AGREEMENT, made this [insert date] day of [insert month], [insert year] between [name and address of PROCURING ENTITY] (hereinafter called the “Entity”) and [name and address of Contractor] (hereinafter called the “Contractor”).

WHEREAS, the Entity is desirous that the Contractor execute [name and identification number of contract] (hereinafter called “the Works”) and the Entity has accepted the Bid for [insert the amount in specified currency in numbers and words] by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents shall be attached, deemed to form, and be read and construed as part of this Agreement, to wit:

   (a) General and Special Conditions of Contract;
   (b) Drawings/Plans;
   (c) Specifications;
   (d) Invitation to Apply for Eligibility and to Bid;
   (e) Instructions to Bidders;
   (f) Bid Data Sheet;
   (g) Addenda and/or Supplemental/Bid Bulletins, if any;
   (h) Bid form, including all the documents/statements contained in the Bidder’s bidding envelopes, as annexes;
   (i) Eligibility requirements, documents and/or statements;
   (j) Performance Security;
   (k) Credit line issued by a licensed bank, if any;
   (l) Notice of Award of Contract and the Bidder’s conforme thereto;
   (m) Other contract documents that may be required by existing laws and/or the Entity.

3. In consideration of the payments to be made by the Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Entity to execute and complete the Works and remedy any defects therein in conformity with the provisions of this Contract in all respects.

4. The Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein, the Contract Price or such other sum as may become payable under the provisions of this Contract at the times and in the manner prescribed by this Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

Signed, sealed, delivered by ______________________________ the _________________ (for the Entity)

Signed, sealed, delivered by ______________________________ the _________________ (for the Contractor).
[Addendum showing the corrections, if any, made during the Bid evaluation should be attached with this agreement]
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 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 of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to represent it in the bidding for [Name of the Project] of the [Name of the Procuring Entity];
   
   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 and/or to represent the [Name of Bidder] in the bidding as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary’s Certificate issued by the corporation or the members of the joint venture)];

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;

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: I am 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 following responsibilities as a Bidder:
   a) Carefully examine all of the Bidding Documents;
   b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;
   c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and
   d) Inquire or secure 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.

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

____________________________________
Bidder’s Representative/Authorized Signatory

[JURAT]