



PROJECT TITLE : CONSTRUCTION/REPAIR/REHABILITATION OF PERIMETER FENCE
AND CAMPUS ROAD NETWORK
SHS – Baler, University of the Philippines Manila

SUBJECT : SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

DIVISION 1- GENERAL

01000 General Requirements

1. The Contractor shall furnish all materials, equipment, tools, apparatus, appliances, accessories, transportation, labor and supervision required for the complete construction of the subject project, as shown on the drawings and called for in these specifications, ready for use.
2. All Contractors submitting proposal for this project shall first examine the site. All proposals shall take into consideration all such conditions that may affect the work under this contract. The specifications and plans shall form part as one. Anything mentioned on plans and not mentioned on the scope of work and specifications and vice versa shall be properly consulted to the CPDMO Project Architect/Engineer for clarification. Any work or materials not in accordance with the drawings or specifications shall be replaced with new at the Contractor's expense.
3. The Contractor shall coordinate his work with all parties to ensure proper phasing or comply with the approved schedule of works. The Contractor shall engage under him, a registered Engineer or Architect to supervise his work. He shall remain at all times in the construction site.
4. A logbook shall be available at the site. It shall contain the daily activities in the site, including but not limited to weather condition, delivery, manpower and other matter pertaining to the condition of the project. It will also serve as data for Contractor and the Project Inspector and shall be surrendered to the CPDMO at the end of the project.
5. Identification Card of construction workers and engineer/representative shall be supplied by CPDMO with corresponding fees; it should be worn at all times while inside the building/campus premises. Those without IDs shall not be allowed to enter the premises for security purposes.
6. No alteration or additional work that will result in an additive or deductive cost change from the Contract shall be allowed without the approval of the chancellor.
7. The contractor shall submit at least three (3) options per item for approval. Complete specifications with product sample shall be submitted by the contractor to CPDMO and end-user for evaluation. Inspection of the Project Architect/Engineer in-charge shall be required prior to installation of any item/material on the construction.

8. Regular coordination meeting shall be conducted with CPDMO, Contractor and End-user for proper project monitoring.
9. Existing condition of the work site shall be documented by the contractor and photos shall be taken before commencement of work to ensure such status. Any damage on the areas due to the contractor's on-going work shall be refurbished at his expense.
10. The Contractor shall provide a complete copy of "As built plans" of the project/unit concerned which shall include all the civil, architectural, plumbing, electrical and other related layouts in 20" x 30" original sheets. It should be properly drawn indicating all the specifications, layouts, tables and necessary data. An initial layout should be submitted in a A3 sheet for checking and approval of Project Architect/Engineer. Final "As built plans" shall be submitted in 20" x 30" tracing sheets, 3 blue prints with signature of project engineer, and an electronic Autocad drawing file. A copy of the technical documents and warranties of the items shall also be submitted in soft and hard copies.
11. The Contractor shall promptly remove from the premises all rubbish, trash, debris, and all superfluous building materials weekly. After the completion of all works, restore all areas that were damaged as affected by the construction works and leave the site clean to the satisfaction of the Project Inspector or his representative and End-user.
12. All materials removed from the unit shall be properly documented prior to turn-over to the End-user for proper safe keeping. The turn-over document shall be attached to the contractor's final billing.

01300 Submittals

Shop Drawings, Product Data and Samples

- Submit to the CPDMO of shop drawings, product data and /or samples of all materials for review. Submit at least three (3) options per material for approval.
- The CPDMO's review shall be limited to quality and design intent. It shall be the Contractor's responsibility to verify quantities and sizes, and make corrections observed and noted by CPDMO on any returned submissions.
- No work requiring submissions or samples shall be commenced until submission has been reviewed by the End User and or CPDMO.
- Final Acceptance of colors and finishes will be made from samples applied on the job based on the signed and approved sample materials.
- All submittals shall be channeled from General Contractor to CPDMO, Planning and Development Department, and back to the General Contractor. This procedure applies to original submittals as well as required resubmittals. Each organization shall keep its required number of copies and/or make necessary copies. The Contractor will make all corrections noted on check sets, if necessary, and return for review as required by CPDMO.
- No submittal shall be received by the CPDMO without transmittal letter.
- Samples must have Manufacturer's Data Sheet/Specification and must come together with a transmittal sheet with a section for approval/disapproval and recommendation of CPDMO and/or END USER.

01500 Temporary Facilities

- Provide Temporary GI sheets or Board enclosures on all areas for building protection. Such coverings shall be adequate enough to cover all the building facilities throughout the span of the project.
- Charges for restoration or replacement of any damaged facility, equipment, material and the like shall be made on the contractor due to his negligence in providing suitable temporary covering.
- Provide the appropriate scaffoldings, board ups, safety nets and related items to ensure proper installation of all framing systems and protection of the area, at the expense of the contractor as its basic equipment.

DIVISION 2 – SITE CONSTRUCTION

02200 Site Preparation

Mobilization / Demobilization

- This work includes mobilization process, provision for warning signs, including barricades, temporary facilities, temporary fences, warning lights and similar safeguards shall be provided by the Contractor as they are required for protection of his manpower and others during the construction life of this project.
- Demobilization procedure shall include clearing of the affected areas from all rubbish, trash, debris, and all superfluous building materials and restore all areas that were damaged as affected by the works and leave the site clean to the satisfaction of the Project Inspector or his representative and End-user.

02230 Site Clearing

- Clear the area from all obstructions or as affected by the construction works, except those structures indicated on the drawings or designated by the Project Architect/Engineer to be left standing. It shall be properly protected from incidental damage due to construction works by the erection of suitable barriers upon approval of the Project Architect/Engineer.

02290 Site Monitoring

- Site monitoring shall be a must to the contractor for the effective implementation of the project. Any discrepancies on plans and actual site conditions shall be properly coordinated with the Project Architect/Engineer concerned for verification.
- Regular coordination meeting shall be done between the contractor or its representative and the Project Architect/Engineer concerned at CPDMO.

02300 Earthwork

- The contractor shall supply all labor, plant, materials, equipment and other facilities required to complete all earthworks in an acceptable manner as shown in the drawings and as specified herein. This work shall include, clearing, staking, excavation, sub base preparation, backfilling, compaction and trimming for final grades. It also includes site drainage, utility service connection for sewer, water supply, power and all appurtenant works in accordance with the contract and as may be directed by the Resident Architect/Engineer.

Material Requirements

- All filling materials, whether native to the site or imported, shall be free of debris, roots, vegetation or other deleterious materials. All earth fill materials, sand and gravel shall be free of any clods or stones larger than 50mm in their largest dimension except as otherwise shown or specified.
- Excavated materials that can be compacted to the required density and which are otherwise judged by the Resident Engineer (RE) to be acceptable maybe used for backfill material as directed.
- Bedding materials shall be used as shown in the drawings and as directed by the Resident Engineer (RE). The material shall be hard, durable stone, and if in direct contact with a fabric cloth shall be free of sharp edges. The stone shall be 19mm (3/4 in.) maximum size graded by weight as follows:

Sieve Size (Square Openings)	Percent by Weight
19mm (3/4 inch)	90 – 100
12mm (1/2 inch)	10 – 50
9.5mm (3/8 inch)	0 – 20
4.75mm (No. 4)	0 – 5

Scope of Work:

- The area shall be cleared of rubbish, loams, refuse, grass, roots and other perishable or objectionable matter to a suitable sub-grade.
- All unsuitable materials that lie within the operational area shall be removed and disposed from the site, to a dump designated by the Resident Engineer or Administrator or spread in locations in a manner approved by the Resident Engineer. Clearing may be undertaken by any method which is not detrimental to the work, or waste of earth materials.
- The building shall be staked out and all lines and grades as shown on the plans shall be established accurately before the start of excavation. Basic batter boards and reference marks shall be erected at such places where they will not be disturbed during the construction of the foundation.
- Trenching for water, sewer and storm drainage pipelines shall be done according to line and depths as shown in the drawings. Trench shall be of sufficient width to accommodate the proper laying, installations and jointing of pipes. Lines and depths not indicated on the drawings shall be determined by the Resident Engineer before laying of pipelines is done. All trenches shall be fully backfilled at the end of each day or in lieu thereof, when approved by the Resident Engineer.
- Where trenches for water, sewer and storm drainage pipelines requires the dismantling of road pavements, the contractor shall undertake trenching after obtaining written permit. The contractor shall restore such pavements to their original and better condition immediately after backfilling of pipes without any additional cost.
- The excavation lines shown on the drawings are solely for the purpose of computing quantities for payment purposes. The owner specifically does not warrant that actual sides can be made to the excavation lines shown.
- The Contractor shall design, furnish, put in place, and maintain such sheeting and bracing as may be required to support the sides of excavations. Care shall be taken to prevent voids outside the sheeting, but if voids are formed, they shall be immediately filled and rammed. Prior to installation of any sheeting and bracing, the Contractor shall

submit in writing for review by the Resident Engineer (RE) the type of sheeting and bracing to be used and his intended method of placing and maintaining it as required.

- All sheeting and bracing not left in place shall be carefully removed without endangering the new installations and other existing utilities of any adjoining property.
- All voids caused by withdrawal of sheeting shall be immediately refilled with sand and compacted by ramming with suitable tools, by watering, or as otherwise directed.
- Wood sheeting shall not be withdrawn if driven below the bottom of any drain, and under no circumstances shall any wood sheeting be cut off at a level lower than 0.30m above the top of the drain.
- The Contractor shall leave in place to be embedded in the backfill, all sheeting, bracing, etc. which the Resident Engineer may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities or property, whether public or private.
- Generally, limits the depth of excavation for building and pipelines shall be in accordance with details shown on the drawings.
- Excavations shall include the removal of all materials of whatever nature encountered including all obstructions of any nature that would interfere with the proper execution and completion of the work. The removal of these materials shall conform to the lines and grades shown or ordered. The Contractor shall supply, place and maintain all supports and shoring that may be required for the sides of the excavation and all pumping, ditching or other approved measures for the removal or exclusion of water including taking care of storm water and waste reaching the site of the work from any source so as to prevent damage to the work or adjoining property. The walls and faces of all excavations in which workers are exposed to danger from unstable ground shall be guarded against by a shoring system, sloping of the excavation, or some other acceptable method. The Contractor shall supply, install and maintain such sheeting; bracing, etc. as may be necessary to protect the workers and to prevent any movement of earth which could cause injury, delay of work, or endanger adjacent structures.
- Excavation to depth greater than that shown on the drawings may be required, without any additional cost. The depth and extent of over excavation shall be approved by the Resident Engineer. If necessary, the Resident Engineer will include an estimated allowance for loss of material into soft sub grade. This allowance will be separately determined by the Resident Engineer for each individually measured section of work. The Contractor is required to draw the attention of the Resident Engineer in each instance and obtain the Resident Engineer's determination of the allowance to be used.
- The excavation shall be then be refilled to the grade of the bottom of the bedding layer with either imported ordinary material, gravel, or other materials that is acceptable. The material to be used shall be placed in layers, brought to optimum moisture content and compacted to ninety (90%) percent of the modified AASHO standard.
- Bedding material shall be sand or crushed rock as previously specified. Bedding material shall be placed to a minimum depth of 100mm and compacted to 95% of modified AASHO compaction elsewhere.
- Launching an initial backfill to a depth of 150mm above the pipe shall be carried out using coarse sand as previously specified. The backfill shall be carried out in layers not exceeding 150 mm compacted thicknesses and to 95% of modified AASHO compaction under road ways and to 90% elsewhere.
- The remainder of the backfill shall be Select Native Material subject to the Resident Engineer's approval except under roadways where sand or crushed rock compacted to 95% of modified AASHO compaction shall be used.

- Filling shall be carried up in layers not exceeding 150 mm compacted thicknesses. Compaction shall be carried out using vibrating rollers or as directed by the Resident Engineer.
- The Contractor shall give special attention to the effect of his operations. He shall take special care to maintain, trim, and level the grade surrounding the area around the building.

02500 Utility Services

- Provision of electric and water meter shall be included in the quotation to be charged to the contractor's overhead. All utility consumption shall be provided with meters to limit the usage of such during working period. Payments of bills shall be made thru the Cashiers Office after the renovation period presenting the statement of account issued by Accounting upon recommendation of the Chief of CPDMO.

Division 3 – Concrete

Section 03050 Basic Materials & Methods

- The work to which this refers includes all operations necessary for the supply and delivery of all materials, labor, equipment and all associated activities. This shall conform in the recommendations of the "National Structural Code for Buildings" published by the Association of the Structural Engineers of the Philippines, together with the latest editions including all revisions of the following standards:
 - ASTM C-31 Method of making and Curing Concrete Compression and Flexure Test Specimen in the Field.
 - ASTM C-33 Concrete Aggregate
 - ASTM C-39 Method of the test for Compressive Strength of Molded Concrete Cylinders.
 - ASTM C-94 Ready Mixed Concrete
 - ASTM C-143 Test of Slump for Portland cement Concrete.
 - ASTM C-140 Portland cement
 - ASTM A-615 Deformed and Plain Steel Bars for Concrete Reinforcement.

Material Requirements:

- Cement to be used shall be Type I conforming the ASTM C-150.
- Fine and coarse aggregates shall be obtained from the approved source as determined by DPWH and shall conform to ASTM C-33.
- Water shall be potable and free from deleterious amounts of acids, alkalis, oils or organic matters.
- Admixtures shall only be used with the prior written consent to the Resident Engineer. Admixtures shall not contain calcium chloride. The amount of admixture shall not change the required quantities of cement specified and quantity of admixture used and method of mixing shall be in accordance with the manufacturer's instruction as the case may be.
- Reinforcement steel shall be deformed steel bars conforming to Structural Grade (Grade 33) and High Strength (Grade 60) as specified on the structural plans and as specified in Section 5.07 of the National Structural Code for Buildings. Shapes and dimensions shall be in accordance to the above-mentioned standards.

Quality of Concrete:

- The quality of concrete shall comply with Section 5.04 of the National Structural Code of the Buildings and with the specific requirements outlined in the various sections of these specifications
 - Testing of samples from concrete pours shall be as required by Section 5.05 of the National Structural Code of Buildings
 - Test of specimen shall be deemed acceptable provided they meet the requirements of Section 5.04 clauses (e) of the National Structural Code of Buildings
 - Should further testing of the finished concrete be necessary due to non-compliance of test specimens, as required by the Resident Engineer, it shall be carried out in accordance with the approved procedures laid down in National Structural Code of Buildings. Section 5.04 clause (e)
 - Hardened concrete that is deemed not to comply with the specifications above, but which the Resident Engineer permits to be further tested, shall be tested for compressive strength
 - Any concrete will be rejected under the specifications above if the results fail to meet the requirements Section 5.03 of National Structural Code of Buildings.
 - Hardened concrete may also be rejected for any one of the following conditions:
 - a. It is porous, segregated or honeycombed.
 - b. Its placing has been so interrupted that there is a construction or similar joint not in accordance with Section 5.03, clause (d) of the National Structural Code of Buildings.
 - c. The reinforcing steel it incorporates has been displaced.
 - d. Construction tolerances have not been met.
 - e. The required surface finish has not been met.
 - f. The concrete can be shown to be otherwise defective.
- When the above things happened, the Resident Engineer has the option to let the Contractor to demolish the rejected portion.

Scope of Works / Method of Activities

- Concrete shall not be placed until all formworks, installation of reinforcement, embedded parts and the preparation of surfaces have been approved. Prior to concreting, the contractor shall submit a proposed pouring schedule for the various stages of the work. No concrete shall be poured prior to the approval. Subsequently, the contractor shall give the RE twenty-four (24) hour notice of his intention to proceed with the stage of the work.
- All batches of mortar or concrete shall be adjusted as to within the capacity of the mixer. When cement is delivered in bags, the batch shall be so proportioned as to use of only full bag batches.
- Hand mixing will not be permitted except by written permission from Resident Engineer and only in such manner as he may direct.
- All mortar and concrete shall be used while fresh and before there is evidence of initial set. No re-tempering of mortar or concrete shall be undertaken.
- Ready mixed concrete (i.e., off-site transit mixed concrete) shall comply with ASTM C-94 and the requirements herein.
- Batch deliveries shall not exceed the rated capacity specified for the mixer by its manufacturer. The Contractor shall submit affidavits for the approval of the Resident Engineer from the ready-mix concrete suppliers, certifying that the proposed mix to be supplied shall satisfy the requirements of this specification.
- All concrete shall be ready mixed unless approved otherwise by the Resident Engineer in writing. Concrete not ready mixed shall comply with the National Structural Code for Buildings.

- The surfaces of measuring, mixing, and transporting equipment that will be in contact with concrete shall be clean at the commencement of the mixing operation.
- The accuracy of weighing equipment and the accuracy of batching shall comply with the applicable requirements of ASTM C-94 and its reference standards. The materials shall be as measured as to give the required mixed proportions.
- Cements and aggregates shall be measured by weighing or any method approved by the Resident Engineer.
- The device employed to measure and discharge the amount of water for the mixture shall be capable of adjustment and checking.
- Water carried by aggregate, in excess of those giving saturated surface-dry conditions shall be considered as part of the required mixing water.
- Mixing shall be done in mixer of approved type.
- Concrete shall be mixed until the material are uniformly distributed and shall be discharged completely before the mixer is recharged.
- The time of mixing shall not be less than one and one half (1 ½) minutes after all ingredients are in the mixer, unless it is shown that the uniformity requirements of the appropriate reference standards are met by an alternative time that shall be agreed to by the Resident Engineer and confirmed in writing.
- No concrete shall be placed until the depth and character of the foundation materials, the forms and false work and the placement of the steel reinforcement had been inspected and approved by the Resident Engineer. Before depositing concrete, all debris, foreign matter, dirt and water shall be removed from the forms, and the surface of any concrete previously placed shall be cleaned and brushed with cement paste.
- No concrete shall be placed on filled ground until the Resident Engineer has approved the standard of compaction of the sub-grade.
- All concrete shall be placed in daylight or under such lighting condition that may be approved by the Resident Engineer.
- The method and manner of placing concrete shall be such as to avoid the possibility to segregation of the concrete materials or the displacements of the reinforcement. Where troughs or chutes are used in placing concretes, their angle of inclination with respect to the horizontal shall not exceed thirty (30) degrees. When a pipe is used, it shall be kept full of concrete with its discharged and submerged.
- Concrete shall not be allowed to drop into place from a height exceeding one (1) meter.
- The placing of concrete shall be evenly regulated to avoid the depositing of a large quantity at any one point. Concrete in horizontal layers shall be deposited as near practicable to its final position in the forms.
- Concrete shall be deposited in a continuous operation as far as it is practicable to do so and shall avoid initial set starting in any part of the work before fresh concrete can be placed against it.
- Compaction of concrete shall be by approved immersion type vibrators. Vibration shall be limited to the time necessary to produce thorough compaction of the concrete without segregation. Under no circumstances shall vibrators be used to move concrete laterally, nor shall it be allowed to penetrate concrete in the prior lift.
- During placing and until curing as specified is completed all new concrete shall be protected against the harmful effects of exposure to the elements and to running water either as specified or as directed by the Resident Engineer.
- When concrete hardens sufficiently it shall be covered with damp, close-woven burlap or similar material, or clean sand, which shall be kept thoroughly saturated over a period of ten to fourteen days. Where wood forms are used, they shall be kept wet for the same period to prevent openings at the joints and drying out of the concrete.

- Precautions shall be taken to avoid premature stiffening of the fresh mix and to reduce water absorption and evaporation losses.
- If the temperature of the surrounding air is higher than 32 C, the following shall be applied unless otherwise documented by the Resident Engineer.
- The formwork shall be continually sprayed with cold water in advance of the concreting and excess water shall be removed from the inside of the forms immediately prior to the placement of concrete.
- The reinforcement and the formwork if metal forms are used shall be protected from the effects of hot winds and direct sunlight.
- Suitable barriers shall be provided to protect the freshly placed concrete from wind, until the concrete is hardened sufficiently to allow it to be covered,
- The concrete shall be held to a temperature of 32 C when being poured.
- The concrete shall be mixed, transported, placed and compacted as rapidly as possible and shall be then covered with an impervious membrane and shall kept wet for curing.

Finishing in Concrete

- Allowable deviations from plumb or level and from the alignment, profile grades and dimensions shown on the drawings are defined as "tolerances" and are to be distinguished from irregularities in finish. Surface irregularities are classified as abrupt or gradual. Off-sets caused by displaced or misplaced from sheeting, from lining, form section, loose knots or otherwise defective form timber will be considered as abrupt irregularities and will be tested either by a straight edge or its equivalent for curved surfaces.
- Immediately after removal of forms all pins and loose materials shall be removed. "Honey-combing" aggregate pockets, voids and holes shall be cut back to solid concrete. All repair of imperfection in concrete shall be completed within twenty-four (24) hours after removal of forms.
- Dry pack concrete shall be used for filling holes having at least one surface dimension, little if any, greater than the hole depth and for narrow slots out for repair or cracks.
- Mortar filling shall be used for repairing defects which are too wide for dry pack filling, too shallow for concrete filling and too deeper than the far side of the reinforcement that is nearest to the surface.
- Concrete filling shall be used for holes extending entirely through concrete sections for holes that are greater in area than 0.1 square meters and deeper than 100 mm and for holes in reinforced concrete which are greater in area than 0.1 square meter and which extend beyond the reinforcement.
- Surfaces of work carried out in accordance with this specification above shall be prepared by thoroughly roughening and cleaning so that all loose or soft material, free water, foreign matter and laitance are removed. At the time of placement of the fresh concrete, the joint surfaces of the hardened concrete shall be damped but there shall be no water.

Section 03100 Concrete Forms and Accessories

- The Contractor shall be responsible for the design, erection and adjustment of all formwork and false work in accordance with Section 5.06, "National Structural Code for Buildings".
- All materials used in construction and support of formwork shall be of timber. Alternative materials shall only be used with the Resident Engineer's approval.
- It shall be the Contractor's responsibility to ensure that the forms are placed to the shape, lines and dimensions as indicated on the drawings, and they shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete. The

Contractor shall ensure that the forms are maintained rigidly in position and be sufficiently tight to prevent excessive leakage of mortar.

- All debris particularly chipping, shavings and sawdust, shall be removed from the interior of the forms before the concrete is placed. All form surfaces shall be cleaned and thoroughly wetted before pouring of concrete.
- Before the placement of any concrete, the Resident Engineer shall inspect the formwork and may, at his discretion, reject any materials or forms that do not conform to this specification.
- The deflection of forms between joints and/or studs shall not exceed one five-hundredth (1/500) of the joints or stud spacing.
- The recommended minimum stripping for horizontal slabs shall be twenty-four (24) hours after the approval of the Resident Engineer prior to the removal of any forms.

Section 03200 Concrete Reinforcement

- All steel bars to be used during construction should be in accordance with the guidelines of National Structural Code for Buildings.
- The support and tolerance in placing of reinforcement shall comply with section 5.07 of National Structural Code of Buildings.
- Lap splicing and or welding of reinforcement shall comply with section 5.07 "National Structural Code of Buildings".
- Welding of reinforcement shall not be carried out unless shown on the drawings, specified, or otherwise approved by the Resident Engineer.
- Welding if approved shall not be carried out within 75mm of a bend having internal diameters, or any part of a bar that has been bent in reverse direction or straighten.
- All reinforcing bars shall be high tensile strength (Grade 60) except and ground floor slab rebars which shall be structural grade (grade 33).
- Prior to installation of ground floor rebars, 0.3mm thick polyethylene plastic shall be laid above gravel base after application of soil poisoning.

DIVISION 4 – MASONRY

Scope of Work

- The work covered by this Item shall consist of furnishing all masonry work requirements in accordance with Plan and/or standard detail and as herein specified.

Material Requirements

- Use Portland cement which conforms to the requirements of ASTM C-150 Type for normal Portland cement.
- Use fine aggregates which shall be free from injurious amount of clay loam and deleterious materials and shall conform to ASTM C-33 or C-330.
- Concrete hollow blocks, 4" and 6", shall be standard manufacture, machine vibrated, and shall have fine and even texture, and well-defined edges. Mortar, filler and plastering shall be Class "A" mixture.
- Deformed steel bars shall conform to ASTM A-305. It shall be clean and free from loose, rust, scales and any coatings that will reduce bond.
- #16 tie wire shall be used for reinforcing bars connections.

Construction Requirements

- Provide CHB wall with 10 mm dia. deformed round bars at 0.60 m on centers both ways. Verify actual location.
- All cells shall be solidly filled with grout.
- Concrete mixture shall be class "A".
- Provide the plastering at 16 mm thick using class "A" mixture.
- Follow plan for details.

DIVISION 5 – METAL AND STEEL

05500 Metal Fabrication

Scope of Work

- This item shall consist of fabrication/installation of new fences, steel grates and gates including labor, tools, equipment, and the satisfactory performance in undertaking the proper installation of the system as shown on the Plans and in accordance with this Specifications.

Submittals

- Shop Drawings: Submit shop and erection drawings clearly showing each piece required for fabrication and erection. Drawings shall include material grade, camber, holes and other pertinent data, indicate welds by standard AWS symbols showing size, length, and type of each weld.
- Coordination drawings and templates: Provide anchor setting drawings clearly showing location of all anchor bolts and embedded plates to be anchored in concrete and masonry construction. Provide templates for anchor bolts.

Quality Assurance

Welding

- Performed by certified welders in compliance with Welder's Qualification Test Certificate, AWS D1.1 and or ASME IX.
- Welders shall be duly qualified (test passed in the preceding 12 months) in the position in which they are to weld and the qualifications and specifications for workmanship shall comply with the AWS requirements "AWS Structural Welding Code – Steel"

Delivery and Storage

- Exercise Care during unloading, storage and erection to avoid damage, dumping on the ground is not permitted.
- Support material stored at the site completely free of the ground, and cover to avoid damage from the elements.

Materials

- General: Materials shall be new, of uniform quality, suitable and without defects affecting the strength or service of the structure.
- Existing G.I pipe will be re-used on perimeter fence.

DIVISION 7 – THERMAL AND MOISTURE

Materials

- Use waterproofing materials, similar or of higher quality approved equivalent, on concrete ledges, decks, and related areas of the building and other concrete surfaces as necessary.
- Use waterproofing materials with approved specifications by CPDMO.

Application

- Use Surfaces to which waterproofing membrane are to be applied shall be free from foreign matter, clean and smooth, dry and free from holes and projections. The concrete contractor shall perform surface preparations. Immediately before the application of waterproofing membrane, surfaces shall be cleaned. Application will not be permitted in wet weather.
- The Contractor shall submit to the Project Architect/Engineer samples of materials to be used for approval before any work shall start. Waterproofing materials shall be delivered to the site in the original sealed containers or packages bearing manufacturer's name and brand designation.
- Provide additional coating or application as per recommendation to consolidate the substrate
- Follow manufacturer's specifications and allow only the skilled manpower to apply the necessary materials.
- Flood testing should be done at a minimum of twenty-four (24) hours.
- Warranty period on product and application should be at minimum of ten (10) years.
- All works to be done should be inspected and approved by the Project Architect/Engineer and End-users.

DIVISION 8 – DOORS AND WINDOWS

08000 Doors and Windows / Glass Structure

Doors

Scope of Work

- The work covered by this Item shall consists of supply and installation of all fabricated door and jambs, equipped with fixing accessories and locking devices including restoration of opening for fitting in accordance with Bill of Quantity, Plan and/or shop drawings and as herein specified.

Material Requirement

- a. (D-01) Single Panel Single Action Swing Door
 - G.I. panel metal door with 6mm thick tempered glass viewing panel in epoxy primer duco paint finish complete with accessories
 - Dimension: 0.80m (W) x 2.10m (H)
 - Follow plan for details and location of doors
- b. (D-02) Single Panel Single Action Swing Door
 - G.I. panel metal door in epoxy primer duco paint finish complete with accessories
 - Dimension: 0.70m (W) x 2.10m (H)
 - Follow plan for details and location of doors

Execution

Examination:

- Verify anchor bolt locations, grouting, and elevation of base and setting plates and other material set by other trades before commencing work.

Erection:

- Erect work to the proper lines and levels, plumb and true, and in correct relation to other work and maintain this condition to completion.

Connections

Machine Bolting:

- Fair-up holes with pins to align holes before bolting.
- Ream unfair holes to obtain alignment or drill new holes.
- Enlargement of holes with drift pins or burning of new holes is not permitted.
- Draw bolt up tight after members are aligned and leveled, and set or deformed threads to prevent loosening.

Welding:

- Weld by shielding arc method as per AWS standard code for arc and gas welding in building construction.
- Submit certification that welders have passed Welder's qualification test.
- Certification must be dated no earlier than 3 months prior to beginning of project.
- Close joints exposed to weathering with continuous 1/8" weather welds.
- Grind smooth exposed welds, but grinding shall not reduce weld strength or required cross section.
- Connect members temporarily and align completely before making permanent connections.
- Temporary connections shall consist of bolts on no less than 1/3 of the holes and in no case less than 3 bolts in any single connections.
- Surfaces in contact shall be thoroughly clean when assembled.
- Provide necessary temporary bracing and guying to align the structure properly for permanent connections, and to safely resist erection dead load and wind stress.
- Take particular care to have the work plumb and level (maximum tolerance 1- 500 for interior members, 0- 1000 for exterior members) before making permanent connections
- Remove bracing and guys only after permanent alignment and assembly and structure area capable of completely sustaining design and temporary construction loads.

Cleaning:

- During the course of the work and on completion of the work, remove excess materials equipment and debris and dispose of away from premises in a legal manner.

- c. Vehicular Sliding Gate with Brass UPM Logo
 - 20mm x 20mm x 3/16" square tubing on 2" x2: x 3/16" tubular horizontal support with 2" x 4" x 1/4" sliding frame with rollers (painted finish) complete with accessories
 - Dimension: 2.00m x 5.70m
 - Follow plan for details and location of doors
- d. Pedestrian Swing Gate Single Panel Single Action
 - 20mm x 20mm x3/16" horizontal support with heavy duty hinges and barrel bolt (see detail) (painted finish) complete with accessories
 - Dimension: 1.50m x 2.10m
 - Follow plan for details and location of doors

Windows

Scope of Work

- The work covered by this Item shall consists of supply and installation of all fabricated windows, including materials, labor, tools, restoration of openings for fitting and equipment required in undertaking the proper installation as shown on the Plans and in accordance with this Specifications.

Material Requirement

- a. (W-01) Fixed-Sliding-Awning Combination Window
 - 6mm thick tempered glass window with security film on powder coated white aluminum frame tube, flush handle & lock including accessories
 - Dimensions: 1.00m x 1.10m
 - Follow plan for details and location of doors
- b. (W-02) Awning Type Window
 - 6mm thick tempered glass window with security film on powder coated white aluminum frame tube, cam handle & lock including accessories
 - Dimensions: 0.60m x 0.40m
 - Follow plan for details and location of doors.

DIVISION 9 – FINISHES

09600 Flooring

Scope of Work

- The work covered by this Item shall consists of furnishing all floor finishes, including all necessary surface preparations, floor leveling, materials, labor, tools equipment and in accordance with Plan and/or shop drawings and as herein specified.

Material Requirement

- 600mm x 600mm homogeneous porcelain polished floor tiles
- 300mm x 300mm homogeneous porcelain non-skid floor tiles
- 0.20m(L) x 0.20m(W) x 0.025m(T) concrete waffle tiles
- Submit sample and layout of tiles for approval of CPDMO Project Architect/Engineer and End-users.

Construction Requirements

For Tiles

- Installation:
 - The Contractor shall carefully examine all surfaces over which the tiles are to be set.
 - Start in the center of the room or work area and work from the center towards the edges.
 - Keep tile lines and joints square, symmetrical, tight and even and each floor in a true, level plane, except where indicated as sloped.
 - Vary edge width as necessary to maintain full size tiles in the field but no edge tile shall be less than one half the field tile sizes, except where irregular shaped rooms make it impossible.
 - Provide proper adhesive, tile grout and floor leveling.
- Tile Laying Design:
 - The tile laying design shall be indicated on Plans and in the colors selected and approved by the CPDMO Architects/Engineers/Inspectors for each area.
 - All joints shall be parallel to wall lines except otherwise indicated on plan.
 - Where line patterns of tile run perpendicular to lines of other tiles, they shall be laid truly at right angles.
 - Gaps between tiles must be consistent as indicated on plan or referred by the implementing unit.
- Adhesive:
 - Adhesive shall be applied in accordance with the adhesive manufacturer's printed directions unless specified or directed otherwise.
 - Smoking, the use of open flames, and other sources of ignitions are strictly prohibited in the area where solvent containing adhesives are being used or laid.
- Cutting, Cleaning and Protection
 - Cut ceramic floor tile to and fit around all permanent fixtures, pipes and outlets.
 - Cut edges, fit and scribe to walls and partition after flooring has been applied.
 - After the vinyl tiles and accessories are laid and set, it shall be cleaned with a cleaner as recommended by the manufacturer and a coat of approved seal polish.
 - After the floor has been waxed, they shall be carefully protected against damage, either with heavy building paper or by keeping traffic off the floors until the area is ready for use.

09700 Wall Finishes

Scope of Works

- The work to be done under this item consist of furnishing all required materials, fabricated woodwork, tools, equipment and labor and performing all operations necessary for the satisfactory completion of all carpentry and joinery works in strict accord with applicable drawings, details and these Specifications.

Materials Requirements

- 300mm x 600mm homogeneous porcelain polished wall tiles
- Submit sample and shop drawing for approval of CPDMO Project Architect/Engineer and End-users.

Construction Requirements

- Provide all the necessary accessories for proper installation.
- Follow plan for the design and layout
- Materials shall be subject to the approval of the supervising CPDMO's Project Architect / Engineers / Inspectors.

09910 Paints and Coatings

Scope of Works

- This Item shall consist of furnishing all paints, enamels, varnishes and other products to be used including labor, tools and equipment required as shown on the Plans and in accordance with this Specification.

Materials Requirements

- Semi-gloss anti-bacterial paint puttied and sanded (front)
- Semi-gloss anti-bacterial paint puttied and sanded (side and rear)
- Specified item and/or its components shall be handled in such manner as to prevent damage. The same shall be properly protected from harmful elements or damage by other work prior to its incorporation into the Project.
- Store materials in a well-ventilated space designated for the storage and mixing of paint. Materials delivered to the site shall be properly stored as to minimize exposure to extremes of temperature.

Quality Assurance

- The University reserves the right to subject material samples to test at his expenses. If such material tests do not meet the specified standards, the cost will be charged to the Contractor.
- Number of coats, where specified, is minimum. Contractor shall apply as many as required to meet specifications for solid, uniform appearance. Where film thickness in mils is specified, spot checks will be made to determine compliance with specified thickness.

Submittals

- Submit 2 samples of each and every color or finish (including all coats). Where the same color or finish is to be applied over different materials, samples of each shall be submitted on different materials, where practical.
- Sample size shall be a minimum of 150 mm x 150 mm (6" x 6")

Protection

- Paint materials shall be properly protected from damage, providing for adequate storage space. Take all necessary precautions to prevent fire, such as keeping oily rags in U. L. approved metal containers or removing from building at the end of each day's work.

- All work fittings, furniture, etc., are to be suitably protected during execution of the work. Splashes on floors, walls, etc. are to be removed during progress of work and on the whole, left clean and perfect upon completion.
- No exterior or exposed painting shall be carried out under adverse weather conditions, such as extremes of temperature, during rain, fog, etc., or if there is excessive dust in the air.

Lead Content and Warning Labels

- The material manufacturer shall state the lead content on the label of any paint product container based on metal percentage of total solids.
- The label of any paint product exceeding 0.5% lead content shall include the following statement: "This paint contains more than 0.55 lead content and shall not be used on surfaces accessible to children."

Repair of Defective Work

- All defective or damaged work shall be restored to initial condition.
- All voids, cracks, nicks, etc., will be repaired with proper patching material and finished flush with surrounding surfaces.
- Marred or damaged shop coats on metal shall be spot-primed with appropriate metal primer.
- Defective or damaged items and/or components, which cannot be repaired or restored to initial conditions, shall be removed and replaced to the satisfaction of the Architect at no additional cost to the Owner.

Cleaning

- Upon completion of the building, the Painting Contractor shall remove all paint spots from all finished work, remove all empty cans and leave the entire premises free from rubbish or other debris caused by his work. He shall remove his equipment from the premises. He shall clean off all glass free from paint spots and smears and shall present the work clean and free from all types of blemishes.

Products

- General:
 - Materials are specified to establish the standards of grade and quality desired for the work, principal pigments and vehicle types and minimum percentage of solids content by volume.
 - The products of Manufacturers not named may be submitted for use provided they are equal in quality and grade to the primers and finishes specified as approved by the Architect. If substitute paint products are desired, a statement shall be submitted to the Architect giving the Manufacturers name, proposed primer and finish for each paint system, analysis for each type of paint, and the use or uses intended. Failure to submit such statements will be cause for rejection.
- Color, Gloss and Texture:
 - Refer to Finish Schedule. All work is to be completed without deviation from these unless written approval is received from the Architect. No extra cost shall be allowed because of the color variety scheduled.

Execution

- General:

- Work-in-place, on which specified work is to be applied, shall be examined to ensure that conditions are satisfactory for application of specified materials. Any defect, which may influence satisfactory completion of specified work, shall be report, in writing, to the Architect. Absence of such notification will be construed as acceptance of work-in-place.
- Do not apply exterior paint in damp or rainy weather or until surfaces have thoroughly dried from the effects of such weather.
- Before start of painting, remove finish hardware, accessories, plates, lighting fixtures, and similar items, as approved by the Architect, except UL Labels on Fire Door and Frames, which must not be removed. Use only workmen skilled in the applicable building trade for removal and reinstallation of finished item in-place.
- The following items shall be masked or protected with suitable covering:
 - Sealing, caulking and glazing compounds (unless otherwise directed by the Architect)
 - Glass.
 - Gauges, thermometers and other recording devices.
 - Moving parts of machinery and other mechanical equipment - such as: shafts, couplings, valve stems, and the like.
 - Coated decorative sheet metal work.
 - Sprinkler heads and the like.
 - U.L. Labels

Surface Preparation as Applied to Various Substrate

- a. Wood

- New Surface:

- Surface to be painted should be clean and dry, free from oil, grease, dust, dirt, contaminants and all loose girt or mortar; sand rough edges remaining, countersink nail heads for putty applications.
 - Dust off surfaces completely then wipe with a clean rag.

- b. Metal

- New Surface:

- Surface to be painted should be clean and dry, free from oil, grease, dust, dirt, wax, solder flux, and other contaminants by wiping with mineral spirits or paint thinner.
 - Remove rust by wire brushing, sanding or scraping.
 - Where maximum performance of protective coatings is necessary (e.g. Industrial Plants), prepare surface by blast cleaning.

- c. Concrete:

- New Surface:

- Surface to be painted should be clean and dry, free from oil, grease, dust, dirt, contaminants and all loose girt or mortar.
 - Treat with masonry neutralizer. Mix (1) liter of B-44 with (16) liters of water. Apply liberally by brush and let dry overnight.
 - Rinse with water to remove white crystals that form on the surface. Let dry.

Paint Application

- General
 - Specified work shall be done by skilled painters in a workmanlike manner. All spaces shall be broom-cleaned before painting is started. Surface to be painted shall be clean, dry, smooth and adequately protected from dampness. Each coat of paint shall be allowed to dry at least twenty-four (24) hours before succeeding coat is applied. Finish work shall be uniform, of approved color, smooth and free from runs, sags, defective coverage, clogging or excessive flooding. If surfaces are not adequately covered, as determined by the CPDMO Architect/Engineers/Inspectors, further coat shall be applied to the satisfaction of the CPDMO Technical Group. Edges of paint adjoining other materials or colors shall be sharp and clean without overlapping.
- Paint Mixing:
 - Paint mixing and thinning shall be done only in accordance with directions of Manufacturer. Paint must be strained free from all skin and extraneous substances and shall be thoroughly mixed in a clean container during use.
- Methods of Application:
 - Exterior first coats and Interior first coats shall be applied by brush, except on shop-primed surfaces, which shall be applied by brush or roller. All primer shall be applied by brush. Succeeding coats over field-primed surfaces and all coats over shop-primed surfaces may be applied by brush roller or spray. Distemper brushes are to be of approved type and less than 15 cm in width. Rollers for applying enamel shall have a short nap. Spray equipment shall be as recommended by the manufacturer of the paint used. Areas inaccessible to spray painting shall be coated by brushing or suitable method.
- Coating:
 - Consecutive coats of paints are to be slightly differing tints except in the case white. Each coat shall be allowed to harden before the next is applied. Rubbing down between coats is to be done with fine abrasive paper.
- Wood Finishing
 - Wood to have natural satin varnish finish shall be stained as required and sealed as soon as such items are delivered to the job site. Seal all ends to exclude moisture. Knotting shall be carried out by using shellac dissolved in spirit or approved ready mixed compound.
- Woodwork and Metal Work:
 - Primed or undercoated woodwork and metalwork shall not be left in an exposed or unsuitable situation for an undue period before completing the painting process. Stopping and filling shall be deemed to be included for all metal works, plaster works, and wood work specified to be used to produce a surface ready for priming and painting.
- Final Touch-Up:
 - Upon completion, finish work shall be touched-up and restored where damaged and left in good condition.

DIVISION 12 – FURNISHING & ACCESSORIES

12400 Furnishing & Accessories

Scope of Work

- This item shall consist of fabrication & installation of all required furnishings with accessories including labor, tools, equipment, and the satisfactory performance in undertaking the proper installation of the system as shown on the Plans and in accordance with this Specifications.

Material Requirement

- a. 0.80m diameter brass finish UPM Logo (painted finish)
(see plan for details)
- b. 0.40m diameter brass finish UPM Logo (painted finish)
(see plan for details)

DIVISION 15 – MECHANICAL

15400 Plumbing System

Scope of Work

- This item shall consist of supply of all plumbing system with accessories including labor, tools, equipment, testing, and the satisfactory performance in undertaking the proper installation of the system as shown on the Plans and in accordance with this Specifications

Construction Notes

- All plumbing works included herein shall be executed in accordance to the provision of the Revised National Plumbing Code of the Philippines, 1999 Edition, The National Plumbing Code and Local Rules and Regulations of the Municipality.
- Coordinate the drawings with other related drawings and specifications. The Engineer and/or Architect shall be notified immediately of any discrepancy found herein.
- All pipes shall be installed as indicated, any relocation required for proper execution of the plumbing work shall be with prior approval of the Engineer and/or Architect.
- Proposed sanitary utilities shall conform to the actual location, depth and invert elevations of all existing pipes and structures as verified by the Contractor.
- All slopes for horizontal drainage shall maintain two percent (0.02) and one percent (0.01) minimum unless otherwise specified.
- Water supply pipe to fixture shall be sized in accordance with the manufacturer's recommendations and/or plumbing code.
- All branches of fixture or group of fixtures shall be provided with air chamber made of capped vertical extension pipe of 300mm min. to 450mm maximum.
- All water lines shall be hydrostatically tested at 100psi for a period of two (2) hours before buried or covered. Galvanized iron (G.I.) pipes directly in contact with soil shall be provided with two coats of coal tar and wrapped with jute sack and painted with coal tar.

- The Contractor shall verify all existing utilities at site and coordinate the work with the sewer and waterline service connecting/tapping point.
- All pipe sizes and other dimensions are in millimeter (mm) unless otherwise specified and are indicative of inside diameter.

Material Requirements

- **Waterline / Water Distribution**
 - Use Polypropylene (PPR) type system for cold and hot (as needed) waterline pipes and fittings jointing by socket fusion, conforming to ASTM F1335
 - Confer to Project Architect the brand and approved equivalent.
 - Provide sample for approval.
- **Sanitary Lines / Sanitary Sewerage**
 - Use Polyvinyl Chloride (PVC) Series 1000 pipes and fittings for sanitary lines (sewer, vent and waste pipes), conforming to ASTM 2729
 - Use Reinforced Concrete Pipe (RCP)
 - Confer to Project Architect the brand and approved equivalent
 - Provide sample for approval.
- **Equipment**
 - 3HP Transfer Pump
 - Confer to Project Architect the brand and approved equivalent
 - Provide sample for approval.
- **Construction Requirements**
 - Make the necessary preparation works for the installation of water system and sanitary, on the specified area.
 - Ensure proper installation of the system, tap to the nearest water distribution area, and to the nearest sewer area
 - Ensure complete and proper installation of brackets and supports.
 - Testing shall be done for the whole system and equipment's in the presence of the Engineer and Owner or his representative.
 - All restoration and rehabilitation works shall be done on the affected areas to the same features with the existing or as per the required finish.

Division 16 - Electrical

Workmanship and Materials

- All works shall be done in accordance with the requirements of the latest edition of the Philippine Electrical Code and National Safety Code. Nothing contained in these specifications or shown on the plan shall conflict with the requirements of these Codes, any discrepancies should be consulted to the Project Inspector / Electrical Engineer.
- All materials and equipment to be used and installed hereunder shall be of the approved type bearing the stamp or approval of the proper authorities concerned. Locally made or constructed materials shall first be approved before installation.
- All works shall be done in workmanlike manner and should present a neat and mechanical appearance when completed.

Plans

- The accompanying drawings shall indicate the general arrangement of the equipments, outlets and other works. When it is necessary to deviate from the arrangement indicated on plans in order to meet the structural conditions, such deviation shall be made at the expense of the Contractor and upon approval from the Project Inspector / Electrical Engineer.
- The outlets and circuit breakers shown on the plan are diagrammatic and approximately correct as to location. Minor changes shall be made through the Contractor at his own expense. The exact location of all outlets and switches shall be determined by the Project Inspector/Electrical Engineer and the same shall be located accordingly. The Contractor shall be responsible for the accurate location of all outlets with respect to doors, partitions, water pipes, cabinets and other facilities.

16050 Basic Electrical Materials and Methods

Conduit System

- PVC Conduit pipes is primarily required for this work. Conduit runs shall be well supported especially on ceiling and slab, concrete encased on soil. All conduits placed on walls and partition shall be embedded, exposed layout will not be allowed. Conduit ends shall be provided with an end bell or adapter with locknut and bushing. Conduit shall enter knockouts squarely. Locknuts and bushing shall be used at termination of conduits in outlets, pull or junction boxes, panels and cabinets. Locknuts shall be screwed tight. Bends and offsets shall be avoided if possible, but when necessary it shall be made with an approved Field bend or pipe / conduit bending machine. The use of pipe tee or vice bending conduits will not be permitted.

Restrictions

- Supply and installation of all material not shown in the drawing nor mentioned in this specification but necessary for the completion of the construction works shall be included. Coordination with CPDMO and Project Inspector should be done for proper installation of all wiring systems.

16070 Hangers and Supports

- All electrical pipes and accessories shall be using appropriate hangers and support follow existing features. Exposed layout on walls and partition inside offices shall not be allowed. Chipping works required.

16080 Testing

- Complete testing of the system involved in operation and provision of all system apparatus for making test and guarantee for a period of one (1) year after acceptance of the project and shall agree to repair and make good at no additional cost to the end user.

16140 Wiring Devices

- All wiring devices to be used hereunder shall be new and of approved type. All wall switches shall be top-action quiet-matic type, wide series, bases to be fire-resistant and non-absorptive material. When more than one switches is indicated in the same location, they shall be mounted in gang under a common plate.
- Convenience outlet shall be duplex-type, universal & flush-type with fire-resistant non-absorptive bases, minimum rating of 16 amperes at 250 volts wide series.

- Suitable single pole and heavy-duty switches shall be installed where indicated on the plans. Sample of wiring devices shall be presented for approval. Minor relocations and re-circuiting shall be the liability of the Contractor.
- Following features shall be followed: one gang, one way switch, 2 gang, one way switch, 3 gang, one way switch, one gang three way switch, two gang three way switch, three gang three way switch, duplex flush type convenience outlet universal grounding type.

16580 Lighting Fixtures (Submit sample materials for approval)

- PERIMETER LED BULB 18W, WITH SOCKET
- LED OUTDOOR BOLLARD LIGHT, 18W
- LED BULB 18W W/ SOCKET (SURFACE MOUNTED)
- WATER PROOF LED OUTDOOR UPLIGHT, 20W
- 8W, SUFRACE LED PANEL

16410 Panel Boards, Enclosed switches and Circuit Breakers

- PB-1 @ 50AT, 3 pole, 18KAIC MCCB with 16 branch circuits @ 11-15AT, 2 pole & 5-20AT, 2 pole bolt-on type.
- Nema 1 Enclosure (Free Standing) ABN103c, 40AT, 3P, 230V @18KAIC, (MCCB) T-Lugs,(40A-100A)
- Magnetic Contactor, 40A, 3P
- Magnetic Contactor, 30A, 3P
- The enclosure shall be galvanized steel of code thickness, powdered coated enamel finish and shall be installed plumb and symmetrical with the surrounding devices.
- 15mmØ, 20mmØ, 32mmØ, PVC conduit pipe with fittings and complete accessories
- 2" x 4", 4" x 4" PVC utility and junction boxes Pull box with cover enamel coated finished with ½ and ¾ knock outs.
- Electrical tapes, rubber tapes, pull wires, mica tubes and assorted screws.

NOTE

The foregoing list of item of works does not in anyway limit the responsibility of the Contractor to perform all other works necessary for the completion of the project, **CONSTRUCTION/REPAIR/REHABILITATION OF PERIMETER FENCE AND CAMPUS ROAD NETWORK, SHS-BALER, UNIVERSITY OF THE PHILIPPINES MANILA.**

GUARANTEE


The Contractor shall guarantee all works under this contract to be free from any technical, material, workmanship and/or factory defects and shall replace and repair to the satisfaction of the Project Architect / Engineer and/or to the Chief of CPDMO on any part or portion of the work which may fail within a period of one (1) year after the final acceptance of the system.


COMPLETION PERIOD

The Contractor is given **Two Hundred Ten (210) calendar days** to execute the renovation works including the installation all system requirements. The Contractor shall coordinate to the CPDMO Inspector and End-users for the schedule of testing of systems and other related job.

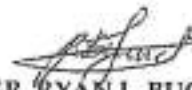
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Locally Funded Projects - FY 2020 GAA
P M, 138,755.05 (Material & Labor Cost)