



Office of the Civil and Sanitary Works Unit  
Cagayan de Oro

Project Title : **PROPOSED HS Classroom, Faculty and Principal's Office**  
Location : USTP CDO Campus, C.M. Recto Avenue, Lapasan, Cagayan de Oro City  
Owner : University of Science and Technology of Southern Philippines  
Subject : **SPECIFICATIONS**

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## **I. INTRODUCTION**

The drawings and the Specification are complementary to each other. Drawings are graphic means of showing works to be done. They are particularly suited to showing where materials are located. Thus, drawing exists essentially to show sizes, location, and placement. Not all works, however, can be presented in the drawings. Generalized works are usually in statement form; hence the Contractor is strongly advised to read the specification carefully.

Specification on the other hand, is used to describe the materials, construction techniques, samples, shop drawings, guarantee, and the other contract requirements. Together, the Drawings and the Specification are used to inform the contractor. In cases where specified brand carries with it the manufacture's specifications, the manufacture's specification shall hold the precedence over this specification.

## **II. THE LANGUAGE OF THE SPECIFICATIONS:**

The specifications are the abbreviated type and include incomplete sentences. The selection of sentence structure depends on the underlying principles of the specifications:

- a. That the technical specifications are only one part of the Contract Document.
- b. That the contract is between the Owner and the General Contractor; and
- c. That the General Contractor is the only party responsible for completing the work in accordance with the Contract Document

### ***Therefore:***

- A. Only the General Contractor is referred to in the specification so as not to violate the intent of the contract and so as not to undermine the proper chain of command.



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B. Any reference to Specialty Trade Contractors in the technical Specifications is made only in so far a selection of specialty Trade Contractors is made through bidding. Once the Specialty Trade Contractors are selected and assigned to the General Contractor, the General Contractor assumes all responsibilities for the execution of the whole project in accordance with the Contract Documents. Therefore, in the contract between the Owner and the General Contractor, the Specialty Trade Contractor, the Specialty Trade Contractor is not referred to the entire Contract Document, the work "Contractor" referred to the General Contractor.

C. The omission of the phrase "the contractor shall" is intentional because the whole specifications are directed to the Contractor. Omitted words or phrases shall be supplied by the interference in the same manner, as they are when a "note" occurs in the drawings.

D. Where "as shown", "as intended", "as detailed", or words similar import are used, it shall be understood that the reference in the drawings accompanying the specifications is made unless otherwise stated.

E. Where "as directed", "as required", "as permitted", "as authorized", "as approved", "as accepted", or other words similar import are used, it shall be understood that the direction, requirements, permission, authorization, approval, or acceptance of the Architect is intended unless otherwise stated.

F. As used herein, "provide" shall be understood to mean "provide complete in place" that is "furnished and installed".

### **III. GENERAL REQUIREMENTS:**

1. The contractor shall secure from the government agencies all necessary licenses and permits needed.
2. Cleanliness shall be maintained at all times within the job site and its immediate premises.
3. If errors or omissions appear in the drawings, specifications or other documents, these shall be referred to the designing architect.
4. The building site shall be filled up to the required grade.
5. All fills shall be in layers of 0.15m in thickness, each layer being thoroughly compacted by wetting and tamping.



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6. All applicable provisions of the different divisions of the specification for each work trade shall apply for all items cited in this summary.
7. Materials deemed necessary to complete the work but not specifically mentioned in the specification, working drawings, or in the Contract Document, shall be supplied and installed by the Contractor without extra cost to the Owner. Such material shall be of the highest quality available and install and applied in a workmanlike manner at prescribed or appropriate locations.
8. Materials specifically mentioned in this Summary shall be installed following efficient and sound Engineering and Construction practice, and especially as per Manufacture’s application and installation specification, which shall govern over all works, alluded in this Specification.
9. The Contractor shall clean the site and dispose waste after the completion of the project.

**IV. PREPARATION OF SITE:**

1. The owner shall take out the building accurately and shall establish grades according to plans and specifications.
2. Basic batter board references as directed by the project engineer shall be erected at such places where they will not be disturbed during construction.

**V. SPECIFICATION OUTLINE:**

<b>WORK ITEM</b>	<b>DESCRIPTION</b>
1. Mobilization/Demobilization:	<p>Mobilization shall include all activities and associated costs for transportation of Contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the Contractor's operations at the site</p> <p>Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not</p>



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required or included in the contract from the site; including the disassembly, removal and site cleanup, of offices, buildings and other facilities assembled on the site specifically for this contract.

## **2. Temporary Facilities**

: The Temporary Facilities shall consist of: offices, accommodation, toilets, material storage; including payment of water and electric utilities; and access way and fences for security purposes; it includes also the security and protection.

The contractor shall identify the location of the temporary facilities at the construction site. Materials to be used in constructing the temporary facilities shall be constructed at the expense of the contractor.

## **3. Demolition Works and Debris Disposal**

Prior to any structural demolitions taking place, the contractor must identify the location to be demolished of as per drawing. Any found damages that are not included to the demolition must be repair at the expense of the contractor. The USTP Engineer should be informed prior to any repair.

Specify the materials/equipment to be used during the activity. Wear safety gears during the activity. All the workers, site supervisors and engineers are briefed with the potential hazards and process of demolitions.

All debris must dispose to the specified disposal area as per approved by USTP Engineer assigned. The excluded area

## **4. Partition Works**

: Dry walls must be constructed according to the plan, its required materials and its location. The USTP Engineer

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must inspect the work of the contractor prior to its approval.

Painting of all dry walls must be according to the required paints as per drawing and shall be approved by the USTP Engineer.

## 5. Concrete Works

The concrete materials shall be proportioned in accordance with the requirements for each class of concrete as specified in Table 405.2, using the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1. "Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete". Other methods of proportioning may be employed in the mix design with prior approval of the Engineer. The mix shall either be designed or approved by the Engineer. A change in the source of materials during the progress of work may necessitate a new mix design.

Table 405.2 - Composition and Strength of Concrete for Use in Structures

Class Of Concrete	Minimum Cement Content Per m <sup>3</sup> kg (bag <sup>**</sup> )	Maximum Water/Cement Ratio	Consistency Range in Slump mm (inch)	Designated Size of Coarse Aggregate Square Opening Sid. mm	Minimum Compressive Strength of 150x300mm Concrete Cylinder Specimen at 28 days, MN/m <sup>2</sup> (psi)
A	380 (9 bags)	0.53	50 – 100 (2 – 4)	37.5 – 4.75 (1-1/2" – No. 4)	20.7 (3000)
B	320 (8 bags)	0.58	50 – 100 (2 – 4)	50 – 4.75 (2" – No. 4)	16.5 (2400)
C	380 (9.5 bags)	0.55	50 – 100 (2 – 4)	12.5 – 4.75 (1/2" – No. 4)	20.7 (3000)
P	440 (11 bags)	0.49	100 max. (4 max.)	19.0 – 4.75 (3/4" – No. 4)	37.7 (5000)
Seal	380 (9.5 bags)	0.58	100 – 200 (4 – 8)	25 – 4.75 (1" – No. 4)	20.7 (3000)

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

\*\* Based on 40 kg/bag

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Pedestal shall use Portland cement Concrete (“Class A” mixture, 1:2:4, 3000 psi minimum compressive strength); with the necessary reinforcing bars as indicated in the structural plan.

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Class Of Concrete	Minimum Cement Content Per m <sup>3</sup> kg (bag <sup>**</sup> )	Maximum Water/Cement Ratio kg/kg	Consistency Range in Slump mm (inch)	Designated Size of Coarse Aggregate Square Opening Std. mm	Minimum Compressive Strength of 150x300mm Concrete Cylinder Specimen at 28 days, MN/m <sup>2</sup> (psi)
A	360 (9 bags)	0.53	50 – 100 (2 – 4)	37.5 – 4.75 (1-1/2" – No. 4)	20.7 (3000)
B	320 (8 bags)	0.58	50 – 100 (2 – 4)	50 – 4.75 (2" – No. 4)	16.5 (2400)
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**6. Electrical System**

All work hereunder shall comply with the latest Philippine Electrical Code, the rules and regulations of the Electrical Ordinances of Cagayan de Oro City, the rules and regulations other governing authorities and with Republic Act No. 184 as applied or enforced in Cagayan de Oro City, Misamis Oriental.

Upon completion of work as described herein six (6) copies if the “As Built “plans for future reference and maintenance purposes, shall be submitted.

**ALL TEMPORARY POWER REQUIREMENTS DURING THE CONSTRUCTION SHALL BE PROVIDED BY THE**



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**ELECTRICAL CONTRACTOR.** This includes the temporary lighting facilities; power may requirement for power tools. In the case of civil overtime works, which may require power adjustments or alignments, civil work Foreman shall notify the electrical Contractor for overtime staff.

**6.1 Wires**

All electrical wiring shall be Philflex Columbia or approved equivalent.

**6.2 Lighting Fixtures/Receptacles**

Lightings shall be Osram, Philips, Toshiba, G.E, Eurolux or approved equivalent. Lighting fixtures are as indicated in the plan. Receptacles & wall plates shall be of approved quality as specified in the plan.

**6.3 Control Devices**

All control devices shall be Panasonic, Toshiba, Bticino wide series or approved equivalent. Color shall be white.

**7. Carpentry Works**

: All rough carpentry work shall be in accordance with detail drawings or where not detailed shall be in accordance with recognized carpentry standards. Rigidly construct all wood framing true to line, levels and dimensions and adequately braced, anchored or secured.

Surfaces or wood works in contact with concrete or masonry shall be coated with two (2) coats of asphalt applied hot.

Lumber shall be of the approved quality of the respective kinds of various parts of the work, well-seasoned, thoroughly dry, and free from large, loose or unsound knots, saps, shakes, and other imperfections impairing its strength, durability or appearance. All exposed finishing lumber to be used shall be kiln-dried. All concealed



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lumber shall be treated with cuprinol or its approved equal.

**8. Tileworks**

: Clean and prepare the surfaces; Plan on how to lay – out the tiles correctly as per drawing. Implement the safety requirements and project specifications throughout the activity.

The materials to be used shall be checked and approved by the USTP engineer prior to use. Mixing and applying the adhesive or mortar materials, laying and grouting of tiles shall be as per material data sheet or manufacturers recommendation. Setting of tiles shall be even and level during installation.

**9. Doors and Windows**

: Refer to Door and Window schedules, material and workmanship as per approved drawing and specifications.

**10. Plumbing Works**

: All fixtures shall be completely new, free from defects, function efficiently and shall be cleaned, with trims polished and ready for use before acceptance.

All fixtures shall be provided with individual shut-off valves for cold water supplies so that any fixture maybe separately controlled without affecting other fixtures supplied with the same distribution line.

Water running test shall be conducted for all fixtures in order to insure soundness, leakage- free and quiet operation.

**11. Roof Framing Works**

: The field connections of main members of trusses, bents, plate girders and rigid frames shall be assembled in the





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shop with milled ends of compression members in full bearing, and then shall have their subsized holes reamed to specified size while the connections are assembled.

The parts shall be accurately assembled as shown on the working drawings and any match marks shall be followed. The material shall be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering which will injure or distort the members shall not be done. Bearing surfaces and surfaces to be in permanent contact shall be cleaned before the members are assembled.

Where so indicated on the Plans, structural members shall be joined by welding. The welds shall be of the size and type indicated and shall be made by competent operators. Welding shall not be done when surfaces are wet from condensation or rain which is falling on the surfaces to be welded; nor during periods of high winds unless the welding operator and the work are properly protected.

#### **12. Roofing Works**

: Materials use shall be as per drawing. See to it that the materials used shall be approved by the Engineer prior to its use.

For welding works, refer to roof framing works. The use materials shall be painted accordingly.

#### **13. Ceiling Works**

: 4.5mm thk Ficem board or approved equivalent on metal furring frames w/ standard thickness and spacing as specified by the manufacturers or supplier, painted with Premium Flat Latex paint color white.



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#### **14. Painting Works**

These works includes interior and exterior painting and varnishing and finishing of all items as required producing a finished painting job throughout all of the areas affected by work under this item.

All painting system should be approved by the architect first, and should in accordance to manufactures standards for old and new concrete/ masonry/ metal/ wood surfaces

All paint materials shall meet the requirements of the Standard Specifications of the Standardization Committee on Supplies and shall be delivered on the site in the original containers, with labels intact and seals unbroken.

Clean foreign materials on the surface such as dust, and dirt. Scrape-off loosely adhering old paint film and rust using a brush, broom, chisel, scraper, sandpaper, or other means of removal.

All paints to be used shall be Welcoat Paints, Boysen or its approved equivalent. Color shall be decided by the Architect.

##### **14.1 Masonry/Drywall partitions for Exterior/interior Wall:**

Painted with Premium Elastomeric Waterproofing Paint satin finish, color refer to the architect

##### **14.2 Metal Surfaces**

Apply rust converter first to metal surfaces, then paint with two (2) coats of high quality metal primers.

#### **15. Electronics Works**

Electronics materials and accessories must be in accordance with given specification below. Other accessories must be added if necessary to the work item.



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USTP Electronic Engineer must check the materials before using it at the jobsite.

- FDAS Control Panel
- Smoke detector
- Battery 12v 2.3AH \* 2pcs lead acid battery
- Manual call point
- Manual Pull Station
- Sounder with Strobe Light
- CCTV 360 • 1080P
- Wireless Fidelity Dual band router upgrades to 1750 Mbps high speed internet (450Mbps for 2.4GHz + 1300Mbps for 5GHz)
- Data Outlet/ Cable outlet with thread
- Telephone
- Entrance LED Indicator

USTP Engineer must check the proper installation of the items; it must be placed as per approved drawing. The work item must be done by a technical person. The work item must be checked regularly to assure quality works. Observe proper housekeeping and follow safety measures provided by the institution.

## 16. Site Clearing

Site must be cleaned and proper housekeeping must be observed on the construction area prior the turnover of the project.



**University of Science and Technology of Southern Philippines**

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Prepared by:

**ENGR. ANICETO C. NERI, JR.**  
HEAD, CSWU

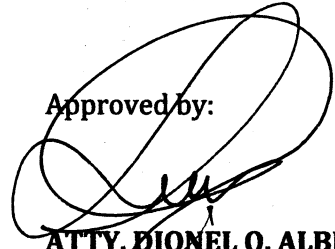
Noted by:

  
**PETER S. PARMISANO**  
Director, Auxiliary Services Division

Recommending Approval:

  
**ENGR. ALEX L. MAUREAL**  
Vice-Chancellor, Finance and Administration

Approved by:

  
**ATTY. DIONEL O. ALBINA**  
Chancellor, CDO Campus