



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon

Project Title : **Proposed Construction of Road Right of Way and Ground Preparation for Landscape Areas for COT Building**
Location : USTP CDO Campus, C.M. Recto Avenue, Lapasan, Cagayan de Oro City
Owner : University of Science and Technology of Southern Philippines
Subject : **PROJECT SPECIFICATIONS**

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.



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon

- 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 Contractions 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.



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon

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, of 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:**

WORK ITEM

DESCRIPTION

1. Mobilization/Demobilization:

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

Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not 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.



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon

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.

3.0 Earthworks

3.1 Excavation & Subgrade Preparation

Plan the activity prior to any excavation works. The contractor must know if there were existing laid pipes or any lines underneath the ground and must be approved by the USTP Engineer. The area must be clear prior to any excavation activities. Specify the location to be excavated as per drawing. Remove the soil and rocks, place it at the specified area. The soil shall be excavated to the required depth to the bottom of the concrete foundation as per drawing. Use proper tools/equipment during the activities. Practice safety measures throughout the activity.

All works related to this item shall conform to the following DPWH specification items; item 102 for excavation, item 105 for subgrade preparation, item 106 for compaction equipment and density control strips and item 500 for pipe culverts and storm drains whichever is applicable. Surplus excavated material shall be disposed of by the Contractor as directed by the Engineer. Backfilling shall be carried out by using suitable material approved by the Engineer and shall be compacted in layers in accordance to the DPWH specifications.

The job item necessitates complete safety at all times. Wear full PPE, post warning signs for deep excavations or lighting when working at night, and designate safety officers before beginning work.



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon

3.2 Backfilling and Subbase Compaction

This item must adhere to DPWH's specifications for aggregate subbase materials, work item procedures, and testing requirements under item 200. The material must meet or exceed the minimal requirements specified in the specifications. Before being used on the job, the materials must be inspected by the CSWU inspection unit.

The contractor must designate a location for the subbase material stockpile that will not obstruct traffic flow in the vicinity. When the job begins, issue a safety warning. Prior to beginning concrete work, the subbase must be laid according to the approved drawing, and a Field Density Test (FDT) must be performed. All work pertaining to this item must be approved by the CSWU Engineer. Always maintain a clean environment.

4.0 Reinforcement Works

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

The steel reinforcement used in this item is only for tie bars and dowels installation as shown in the plan. The materials shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected as far as practicable from mechanical injury and surface deterioration caused by exposure to conditions producing rust. When placed in the work, reinforcement shall be free from dirt, detrimental rust, loose scale, paint, grease, oil, or other foreign materials. Reinforcement shall be free from injurious defects such as cracks and laminations. Rust, surface seams, surface irregularities or mill scale will not be cause for rejection, provided the minimum dimensions, cross sectional area and tensile properties of a hand wire brushed specimen meets the physical requirements for the size and grade of steel specified.



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon

Work on manholes is also included in this section. The exact depth of excavation must be determined based on the drawing specifications. With the consent of CSWU Engineers, specify the correct location of the manholes. The elevation where the manhole is to be put must be verified. The minimum criteria are specified in DPWH item 502. Prior to any approval of the item, all manholes must pass a leak test.

Related work in this item shall be in accordance to the approved drawing and specifications set by the DPWH standards. All materials used as tie bars and dowels must be checked by the USTP Engineer for the conformity of the set standards.

5.0 Formworks

Concrete forms shall be mortar-tight, true to the dimensions, lines and grades of the structure and with the sufficient strength, rigidity, shape and surface smoothness as to leave the finished works true to the dimensions shown on the Plans or required by the Engineer and with the surface finish as specified.

The inside surfaces of forms shall be cleaned of all dirt, mortar and foreign material. Forms which will later be removed shall be thoroughly coated with form oil prior to use. The form oil shall be of commercial quality form oil or other approved coating which will permit the ready release of the forms and will not discolor the concrete.

Concrete shall not be deposited in the forms until all work in connection with constructing the forms has been completed, all materials required for the unit to be poured, and the Engineer has inspected and approved said forms and materials. Such work shall include the removal of all dirt, chips, sawdust and other foreign material from the forms.

The rate of depositing concrete in forms shall be such to prevent bulging of the forms or form panels in excess of the deflections permitted by the Specification.

Forms for all concrete surfaces which will not be completely enclosed or hidden below the permanent ground surface shall conform to the requirements herein for forms for exposed surfaces. Interior surfaces of underground drainage structures shall be completely enclosed surfaces.

Formwork for concrete placed under water shall be watertight. When lumber is used, this shall be planed, tongued and grooved.

6.0 Concrete Works

This item includes the pavement, the curb & gutter, the sidewalk and the manhole with cover as specified in the plan. 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 ³ kg (bag ^{**})	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 ² (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)
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	360 (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



University of Science and Technology of Southern Philippines

Alubijid | Cagayan de Oro | Claveria | Jasaan | Oroquieta | Panaon


7.0 Laying of RCP

The work item must meet the requirements of DPWH item 500. The approved plans must be followed in terms of materials, work methods, and testing requirements. As a minimum construction requirement, trench excavation, bedding, conduit laying and jointing, and backfilling must be followed. As specified in the item, the manhole and pipe must be joined together with appropriate materials. The correct elevations and water flow direction must be examined thoroughly.

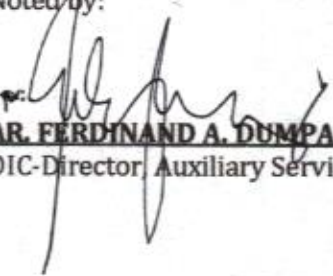
8.0 Site Clearing

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

Prepared by:


ENGR. ANICETO C. NERI, JR.
Head, CSWU

Noted by:


AR. FERDINAND A. DUMPA
OIC-Director, Auxiliary Services Division

Recommending Approval:


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

Approved:


ATTY. DIONELO O. ALBINA
Chancellor, USTP - CDO Campus