

I. INTRODUCTION:

These specifications shall encompass all the work necessary for the project “**PROPOSED REPAIR AND IMPROVEMENT FOR FINANCE ROOFING**” and as further defined herein. The work shall include furnishing all labor, materials, equipment, tools, facilities and transportation to complete the project in accordance with the drawings and specifications.

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.
- 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.

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- 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. All applicable provisions of the different divisions of the specification for each work trade shall apply for all items cited in this summary.
5. 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.
6. 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.
7. The Contractor shall clean the site and dispose waste after the completion of the project.

IV. PREPARATION OF SITE:

Preparation of the working area at site covers the requirements for providing all the temporary work at the project site, on-site storage facilities, implementing security requirements and safety protocols in the project site as required for the proper performance and completion of the work. All temporary installation used for the work shall be removed after completion of the Work.

V. STANDARD SPECIFICATIONS

PART 1: MOBILIZATION AND DEMOBILIZATION

1.1 Description

Mobilization shall mean the transport to the project site of personnel and equipment as stipulated in the proposal of the Contract of the project while demobilization shall be the subsequent removal from the site



after the completion of the project. Approval of the Engineer is required when one opted to demobilize any major equipment before the completion of the project.

PART 2: SITE CLEARING

2.1 Description

This item shall consist of clearing, removing and disposing all unnecessary materials and debris as designated in the Contract, except those objects that are designated to remain in place or are to be removed in consonance with other provisions of this Specification. The work shall also include the preservation from injury or defacement of all objects designated to remain.

The Engineer will establish the limits of work and designate all things to remain. If perishable material is burned, it shall be burned under the constant care of component watchmen at such times and in such a manner that the project site, other adjacent property, or anything designated to remain on the right way will not be jeopardized. If permitted, burning shall be done in accordance with applicable laws, ordinances, and regulation.

PART 3: DEMOLITION AND REMOVAL OF WORKS

3.1 Description

This work shall consist if the removal wholly or in part, and disposal of existing ceiling and roofing which are not designed or permitted to remain, except for the obstructions to be removed and disposed of under other terms in the contract.

PART 4: SCAFFOLDING WORKS

4.1 Description

This item shall consist of furnishing, erecting, maintaining, and dismantling all scaffolding works necessary for the safe execution of ceiling and roofing works in accordance with the plans and specifications and as directed by the engineer in charge.

4.2 Material Requirements

1. All scaffolding components shall conform to applicable standards such as OSHA and relevant DPWH guidelines.
2. Tubes and Frames: Steel or aluminum tubes with appropriate diameter for steel and structural integrity to support the working load.
3. Platforms: Scaffolding planks shall be made of non-slip, treated hardwood or steel decking.
4. Couplers and Fittings: Drop-forged steel or equivalent, rust-resistant and compatible with tube type.
5. Base Plates and Sole Boards: To be used under all standards to distribute load safely and prevent settlement.
6. Guardrails and Toe Boards: Provided at all working levels above 1.8 meters in height.

4.3 Construction Requirements

4.3.1 Erection of Scaffolding



1. Scaffolding must be erected on a stable, level surface capable of bearing the imposed loads.
2. All vertical and horizontal members shall be securely fastened and plumbed to ensure rigidity.
3. Diagonal bracing must be provided to prevent swaying or collapse.
4. Working platforms must be fully planked and free from defects.
5. Clearances from existing structures or walls must be maintained (minimum 300 mm where applicable).

4.3.2 Height and Access

1. Scaffolds shall provide access to ceiling/roofing work areas, not exceeding 2.0 meters in vertical rise without proper access ladders or stairways.
2. Scaffold height shall not exceed four times the minimum base dimension unless properly tied to a stable structure.

4.3.3 Loading and Capacity

Scaffold must be designed and built to support at least four times the maximum intended load, including the weight of the scaffold itself, the live load (workers, materials, tools, etc.), and any other loads. No overloading of platforms is allowed. All materials must be evenly distributed.

4.4 Safety Requirements

1. All scaffold users must wear appropriate PPE.
2. Safety nets or fall arrest systems are mandatory when scaffolds are 3.0 meters or higher.
3. Scaffolding shall be inspected daily and before each shift by a competent person.
4. Tagging system (Green – Safe, Red – Unsafe) to be implemented on all scaffolds.

4.5 Maintenance and Dismantling

Scaffolds shall be kept free of debris, grease, or slippery substances. Dismantling must be done in a controlled manner, starting from the top down.

PART 5: STEEL ROOF FRAMING

5.1 Description

This work shall consist of furnishing, fabricating, hauling, erecting, welding and painting of structural metals called for in the Special Provision or shown on the Plans. Structural metals will include structural steel, rivet, welding, special and alloy steels, steel forgings and castings and iron castings. This work will also include any incidental metal construction not otherwise provided for, all in accordance with these Specifications, Plans and Special Provisions.

5.2 Material Requirements

This shall conform to the applicable requirements in Subsection 1047.2 of ITEM 1047 – Metal Structures (Standard Specifications for Public Works Structures Volume III, Blue Book 2019 or the latest) and specified in this Specifications.

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5.2.1 Structural Steel Sections

All Structural Steel shall be of tested quality. The Material Specification shall conform to standard of ASTM Grade 36 unless otherwise specified on the Plans.

Wherever the material is procured by the contractor, the Contractor shall submit the test certificated conforming to the said standards of all steel materials used for fabrication. All structural steel shall be free from blisters, rust, scales, seams, lamination, cracks, fissures, and other surface defects.

- Rectangular Hollow Steel, 2" x 4" x 3mm Thk.
- Rectangular Hollow Steel, 2" x 4" x 2mm Thk.
- Angle Bar, 2" x 2" x 2.0mm Thk.
- Rectangular Tube, 1" x2" x 2.0 mm Thk.
- C-Purlins, 50x75x1.5mm thk.
- 10 mm dia. Plain Bar for Sagrod
- 12 mm Turn Buckle
- Expansion Bolt, 12mm Ø x 2 mm

5.3 Shop and Erection Drawing

Shop and erection drawings are permitted to be prepared in stages. Shop drawings shall be prepared in advance of fabrication and give complete information necessary for the fabrication of the component parts of the structure, including the location, type and size of welds and bolts. Erection drawings shall be prepared in advance of the erection and give information necessary for erection of the structure. Shop and erection drawings shall clearly distinguish between shop and field welds and bolts and shall clearly identify pretensioned and slip-critical high-strength bolted connections.

5.4 Planning of Edges

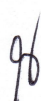
Planing or finishing of sheared or thermally cut edges of plates or shapes is not required unless specifically called for in the Contract documents or included in a stipulated edge preparation for welding.

5.5 Welded Construction

The technique of welding, workmanship, appearance and quality of welds, and the methods used in correcting nonconforming work shall be in accordance with AWS D1.1M.

5.6 Bolted Construction

Parts of bolted members shall be pinned or bolted and rigidly held together during assembly. Use of a drift pin in bolt holes during assembly shall not distort the metal or enlarge the holes. Poor matching of holes shall because for rejection.



Bolts shall comply with the provisions of the Research Council on Structural Connections (RCSC) Specification for Structural Joints using ASTM F3125M except that thermally cut holes shall be permitted with a surface roughness profile not exceeding 25 μm as defined in ASME B46.1. Gouges shall not exceed a depth of 2 mm.

PART 6: ROOFING WORKS

6.1 Description

This Item shall consist of furnishing all pre-painted metal sheet materials, tools and equipment, plant including labor required in undertaking the proper installation complete in accordance with the Plans and this Specification. This work will also include any incidental metal construction not otherwise provided for, all in accordance with these Specifications, Plans and Special Provisions.

6.2 Material

- Gauge No. 22, Galvanized Pre-painted Long Span Roofing (Long Span), 15m x 0.5 mm thk
- Twin Rib-Type UPVC, 2mm Thk. Plastech Metal Roof

6.3 Construction Requirements

Before any installation work is commenced, the top face of the purlins should be checked for proper alignment. Correct the alignment as necessary in order to have the top faces of the purlins on an even plane.

6.3.1 Handling/Lifting/Positioning of Sheets

Sheets shall be handled carefully to prevent damage to the paint coating. Lift all sheets or sheet packs on to the roof frame with the overlapping down-turned edge facing towards the side of the roof where installation will commence, otherwise sheets will have to be turned end-to-end during installation.

6.3.2 Installation Procedure

The laying of the roofing panels should begin on the end of the building away from the prevailing wind so that the side-lap seams face away from the prevailing wind-driven rain thus providing additional security against water penetration.

Start roofing installation by placing the first sheet in position with the downturned edge in line with other building elements and fastened to supports as recommended. Fasteners should have corrosion resistance at least equivalent to the expected life of the base material.

Place the downturned edge of the next sheet over the edge of the first sheet, to provide side lap and hold the side lap firmly in place. Continue the same procedure for subsequent sheets until the whole roofing area is covered and/or (Adopt installation procedure provided in the instruction manual for each type of architectural molded profile section).

Pre-painted metal sheet should not come in direct contact wet concrete. Concrete's high alkalinity attacks the aluminum, causing the coating to peel. It shall also not be placed in contact with copper, lead or the water runoff. Electrochemical reaction between these elements and aluminum-zinc alloy coating will lead to premature corrosion of the coating. For walling applications follow the procedure



for roofing and allow a minimum end lap of 100 mm for vertical walling. For panel lapping, requirements depend on the product installation guide of a specific type of pre-painted metal sheet as per approval of the Engineer. Provide sealant, butyl tape or caulking along the lap edge to prevent any leaking. Specifications of the sealant and butyl tape shall be as per manufacturer's recommendation per Engineer's approval.

6.3.3 Cutting of Sheets

In cutting pre-painted steel roofing sheets accessories, place the exposed color of side down. Cutting shall be carried out on the ground and not over the top of other painted roofing product. Power cutting or drilling to be done or carried out on pre-painted products already installed or laid in position, the area around holes or cuts shall be masked to shield the paint from hot fillings.

PART 7: CEILING WORKS

7.1 Description

The work under this section consists 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 accordance with the Plans and this Specification.

7.2 Materials

- Ficem Ceiling Board 4.5mm thk.
- Metal Furring 1" x 2" x 1.6mm thk.
- Carrying Channels 2" x 1.0mm thk.
- Hanger Bars/Suspension Rod, 8 mm Ø
- Channel Clip
- Wall Angle 1"x1"x1.2mm thk
- Rivets
- 1" Metal Screw

PART 8: CLADDING WORKS

8.1 Description

This Item covers aluminum cladding sheet as exterior and interior materials applied to the walls, columns and ceiling of a structure to protect from the effects of weather and for aesthetic purposes.

8.2 Material

- Aluminum Cladding w/ complete accessories
- 1" x 1" Aluminum Framing

8.3 General Quality

Unless otherwise specified, the material shall be supplied in the mill finish and shall be uniform as defined by the requirements of this Item and shall be commercially sound. Any requirement not so covered shall be subjected to evaluation and approval of the Engineer. Framing system shall be made



of aluminum to prevent corrosion of the panels. Each sheet and plate shall be examined to determine conformance to this Specification with respect to general quality and identification marking.

8.4 Installation Requirements

Installation requirements shall be prepared by the Contractor and shall be approved by the Engineer.

8.4.1 General

The Contractor/fabricator/installer is responsible for the designing, supplying and erecting the complete aluminum cladding system, coordinating and maintaining tolerances between the structures and cladding system.

When using aluminum cladding panels for cladding, a back-ventilated curtain facade shall be constructed. A ventilation space shall be left between the outer wall/insulation and the aluminum cladding panels through which moisture arising during construction or occupancy can escape. The ventilation space shall be sufficiently dimensioned in accordance with the pertinent regulations.

Ventilation gap shall be greater than or equal to twenty millimeter (~ 20 mm). Condensation shall be removed via the ventilation.

Sufficient ventilation openings shall be ensured on the top and bottom edges of the exterior cladding as well as in the area of window and door openings. Planning details shall be coordinated between the Engineer and the Contractor.

PART 9: PAINTING WORKS

9.1 Description

This Item shall consist of furnishing all paint materials, varnish and other related products, labor fabricated woodwork, tools, equipment and labor, and performing all operations necessary for the satisfactory completion of all carpentry and joinery works in accordance with the Plans and this Specification.

All painting works of this project, except as hereinafter specified, shall be done with the prescribed painting products. The painting contractor shall supply all labor, paint materials, tools, staging and equipment, and shall perform all painting and finishing work as shown in the schedule of painting and finishing work for this project.

