

DIVISION 1. GENERAL REQUIREMENTS

SECTION 01100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: **Rehabilitation of West and South Guard Tower.**

- 1. Project Location: **U.S. Embassy Chancery Compound, Ermita Manila, Philippines.**

- 2. Contract Drawings:

- Sheet A-1 / 10 – Site Development Plan
- Sheet A-2 / 10 – Proposed Floor Plan
- Sheet A-3 / 10 – Cross Sections, Column Details
- Sheet A-4 / 10 - Wall Sections and Spot Details
- Sheet A-5 / 10 - Roof Plan, Fascia Details, Truss Detail Section
- Sheet A-6 / 10 – Elevations
- Sheet A-7 / 10 – Framing Floor Plan and Schedule Detail
- Sheet A-8 / 10 – RCP, Power and Cabinets Details
- Sheet A-9 / 10 – Handrail and Stair Detail
- Sheet S-1 / 10 – Retrofitting Details

- a. The drawings indicated above shall be used by the contractor as a basis to help develop their project designs and related proposals. The drawings provided by the U. S. Government are believed to be reasonably representative of the existing project condition, which serves as reference to receive the contract work. However, the Contractor is responsible for the determination of characteristics of the site work. Therefore, it is recommended that contractors visit the site to verify field conditions.

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- b. All drawings and specifications are the sole ownership of the U.S. Government and is to be returned upon completion of the project.
 3. **Contract Specifications:**
 - Section 01010 – General Requirements
 - Section 01100 - Summary of Work
 - Section 05500 – Metal Fabrications
 - Section 08110 – Steel Doors and Windows
 - Section 08714 – Door Hardware
 - Section 09912 – Interior Painting
 - Section 09960 – High Performance Coating
- B. Contracting Officer's Representative (COR): **Design Engineer**, has been appointed by the Contracting Officer to serve as Contracting Officer's Representative.
- C. The Work consists of :
1. **ARCHITECTURAL and CIVIL:**
 - a. Remove and replace existing guard booth including beam support. The new guard booth shall be assembled/fabricated and lifted once the structure is completed to minimize time disturbance on the compound security (other means and method can be accepted subject to COR approval). Design of temporary support that will be used to lift the guard booths shall be the responsibility of the contractor.
 - b. Scaffolding/Support system shall be designed to meet physical security requirement. At a minimum, all scaffoldings/support systems that will be erected outside of the perimeter fences shall not have footholds/handholds within 2.75meter height.
 - c. Lower section of guard tower support shall be poured with 30MPa concrete at least 75mm from the ground.
 2. **MECHANICAL** : Airconditioning system shall be removed and replaced.
 3. **ELECTRICAL**: . All electrical system shall be removed and replaced and terminated to the nearest pull box.
- OTHERS .**
4. **A REPAIR OF GUARD TOWER SUPPORT**
 - a. All painted guard tower support shall be stripped to bare and repainted as per paint or coating manufacturer's recommendation.
 - b. Coating shall be "high performance coatings" and meet criteria on marine environment.

5. ACCESS STAIR
 - a. Contractor shall remove and replaced existing stair and handrail. Frames and supports shall be replaced and constructed per plan. Existing condition shall be verified before fabrication of stair system. Stair system shall be applied with high performance coatings. Shop drawings shall be submitted and reviewed and approved by COR.
 - b. New stair shall be assembled/fabricated before lifted to the final location. Other means and method can be accepted subject to FAC-DE approval.

6. RETROFFING
 - a. Demolition/Cutting of underground obstruction if necessary.
 - b. Contractor shall install new vertical support to the structure and painted as per paint or coating manufacturer's recommendation.
 - c. Installation of additional concrete cover/plinth around the existing foundation.
 - d. West Tower: Contractor shall remove existing temporary support.

7. PROJECT SECURITY
 - a. Contractor will be required to limit access to the construction site through the Service Compound Access Control (SCAC) located at the North-East side of the Chancery compound. No workers will be allowed to enter the compound without the "Embassy Escort".
 - b. All electronic media are not allowed.
 - c. Workers will undergo vetting procedure. Workers will submit NBI, police and barangay clearances and an accomplished biographical data. Process will take 2-3 weeks upon submission of complete and accurate requirements. Access request(personnel and vehicles) shall be submitted 48 hours before the access day.
 - d. No smoking on site.
 - e. Official working hours shall be 7:30am to 4:30pm Monday to Friday. Weekend work shall be allowed upon the approval of COR.
 - f. Worker's drinking water shall be provided by the contractor.
 - g. Electrical power will be free of charge.
 - h. Restroom will be provided by Contractor.
 - i. Temporary laydown area will be provided at the South-East area of the compound.

8. LIMIT OF CONSTRUCTION

The contract includes:

 - a. Repair of all disturbed/affected areas outside the contract limit shall meet or exceed the pre-contract condition.

9. SAFETY

- a. The project safety, in all aspects, is the sole responsibility of the Contractor.
- b. The Contractor shall comply with the U.S. OSHA (Occupational Safety and Health Administration), and Local Safety and Health Requirements, and shall assume full responsibility and liability for compliance with all other applicable standards and regulations pertaining to accident prevention, life, health, and safety of personnel; as well as preventing damage to materials, supplies, properties, and equipment's.
- c. The US Government and its agents will not be held liable for any action, errors, or omission on his part, his employees, or his subcontractors that result in illness, injury or death.
- e. The Contractor shall provide his employees/workers with and require the use of safety equipment, personal protective equipment (PPE), and device necessary for protection.
- d. All welding and cutting equipment shall be inspected before each use to ensure that all required safety devices and ancillary equipment are in place and properly functioning.
- e. Suitable fire extinguisher of sufficient capacity shall be provided in the immediate vicinity of welding or cutting operations and maintained in a state of constant readiness for immediate use.
- f. Fire blanket/flash protection is required around the area of welding of cutting.
- g. Construction equipment that required to pass in front of Chancery building shall be properly coordinated and escorted.
- h. Contractor shall strictly follow DPWH guidelines on the construction of infrastructure projects amid covid-19 crisis and whenever arises.
- i. The Contractor shall be responsible for all injuries to his employees/workers.
- j. The Contractor is required to submit safety plan and shall be approved by POSHO or safety officer before the start of the project.
- k. Before the commencement of work, it is mandatory that all personnel involved in the said project to attend the Safety Orientation to be handled by the Post Safety and Health Officer or the Safety Engineer.

1.3 WORK SEQUENCE / PROJECT TIME CONSTRAINTS

- A. Unless otherwise specified, the Work shall be conducted in a single.
 - 1. Work shall be substantially complete and ready for occupancy within **90 Calendar Days** of the Notice to Proceed.

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2. Work shall only be performed during the work days and hours specified below.
 - a. Work Days: **Monday to Friday** except for designated Holidays
 - b. Work Hours: **0730 to 1630** except for designated Holidays
3. No work will be permitted outside of work hours or days specified above.
4. If the Contractor desires to carry on work outside regular hours as stated above, or non-working days, the Contractor shall submit an application to the COR prior to start of the work. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the COR inspecting the work in progress. The US Government reserves the right to temporarily or permanently cancel permission to work outside regular hours. At night, the Contractor shall light the different parts of the work as directed by the COR. All utility interruptions shall be made after normal working hours or on weekends. Anticipated costs shall be included in the bid.

1.4 USE OF PREMISES

- A. General: Contractor shall have full use of premises for construction operations, including use of Project site, during construction period. Contractor's use of premises is limited only by the US Government's right to perform work or to retain other contractors on portions of Project. The US Government reserves the right to continue to occupy the work site during the course of the Contractor's work. Prevent unnecessary or increased risk of security breaches during this period. Control exposure of occupation to deleterious effects of climate.
- B. On-Site Waste Disposal: Disposal of inert waste fill materials from construction process will not be allowed. Refer to Section 01524, "Construction Waste Management" for disposal requirements.
- C. Protection of Existing Plantings and Site Improvements: Protect existing plant materials from damage during construction. Allow neither traffic by construction vehicles nor storage of materials to occur inside drip lines of existing trees. Re-establish existing lawns following general completion of construction. Protect existing site improvements and appurtenances.
- D. Provide site utilization plan for Contracting Officer Representative's (COR) approval showing how temporary facilities will be distributed and constructed on site; indicate parking, work areas, sheds, and similar elements.

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- E. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Division 1 Section 01500; "Temporary Facilities and Controls," each contractor is responsible for the following:
1. Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, and costs and use charges associated with each facility.
 2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
 3. Its own field office, complete with necessary furniture, and utilities.
 4. Its own storage and fabrication sheds.
 5. Temporary enclosures for its own construction activities.
 6. General hoisting facilities for its own construction activities, up to 2 tons (2000 kg).
 7. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
 8. Progress cleaning of its own areas on a daily basis.
 9. Secure lockup of its own tools, materials, and equipment.
 10. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

1.5 WORK UNDER OTHER CONTRACTS

- A. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.6 THE US GOVERNMENT-FURNISHED PRODUCTS

- A. The US Government will furnish:
1. Electric power and water required for this project shall be supplied. The Contractor is responsible for all the connections and extensions to the work area.
 2. The project shall be monitored and inspected by the COR and/or his delegated Project Inspector upon whose approval of the work will be accepted.
 3. The COR shall designate the area where the Contractor can build a temporary storage and lockers space which shall be kept clean, orderly and secure at all times.

The Work includes providing support systems to receive the US Government's equipment and plumbing, mechanical, and electrical connections.

1. The US Government will arrange for and deliver Shop Drawings, Product Data, and Samples to Contractor.
2. The US Government will arrange and pay for delivery of The US Government-furnished items according to Contractor's Construction Schedule.
3. After delivery, The US Government will inspect delivered items for damage. Contractor shall be present for and assist in The US Government's inspection.
4. If The US Government-furnished items are damaged, defective, or missing, The US Government will arrange for replacement.
5. The US Government will arrange for manufacturer's field services and for delivery of manufacturer's warranties to Contractor.
6. The US Government will furnish Contractor the earliest possible delivery date for The US Government-furnished products. Using The US Government-furnished earliest possible delivery dates, Contractor shall designate delivery dates of The US Government-furnished items in Contractor's Construction Schedule.
7. Contractor shall review Shop Drawings, Product Data, and Samples and return them to the Contracting Officer's Representative noting discrepancies or anticipated problems in use of product.
8. Contractor is responsible for receiving, unloading, and handling The US Government-furnished items at Project site.
9. Contractor is responsible for protecting The US Government-furnished items from damage during storage and handling, including damage from exposure to the elements.
10. If The US Government-furnished items are damaged as a result of Contractor's operations, Contractor shall repair or replace them.

1.7 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.8 MISCELLANEOUS PROVISIONS

PART 2 - PRODUCTS

High Chair:

- a. Mesh back and fabric seat
- b. Seat height adjustment and 360-degree swivel
- c. Seat height adjustment (minimum): 27.1
- d. Adjustable arms
- e. Weight rated up to 275lbs
- f. Meets or exceeds ANSI standards

Shelving: 600L x 300D x 900mmH Wooden shelving

- a. Top: ¾" thick laminated marine plywood
- b. Sides/Legs: ¾" thick laminated plywood
- c. Shelf: ½" thick laminated plywood

Coat Hook:

- a. Double Prong Coat Hook
- b. Finish: Brass

FLOOR FINISH

MANUFACTURERS

A .Acceptable Manufacturers for athletic flooring: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- 1.Taraflex
- 2.EcoSurfaces
3. Decoflex

Basis of Design: Taraflex Performance

Thickness: 9mm minimum

Shock Absorption: ≥ 25

Vertical Deformation: ≤ 3.5

Abrasion Resistance: ≤ 1000

Sliding Coefficient: 80 to 100

Impact Resistance: ≥ 8

Indentation Resistance: ≤ 0.5

AIRCONDITIONING UNIT

MANUFACTURERS

A. Acceptable Manufacturers for Air-Conditioning Unit: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Carrier
2. Daikin
3. Koppel
4. Gree

Basis of Design: Carrier(WCARH009EEV)

a. Cooling Capacity: 1HP

b. Voltage: 220v

c. Suited for Marine environment

ELECTRICAL

- a. LED Floodlight(outdoor): Philips or equivalent

Basis of Design: Philips Essential Smart Bright LED Floodlight

Power Consumption: 150W

Voltage: 220-240V

Lifetime: 30,000 hours

Beam Angle: 30degree(vertical)/80 degree(horizontal)

Light Output: 4,300lm

Material: Pressure die-cast aluminum housing and steel bracket Marine Grade. Powder coated.

- b. Ceiling Surface Mounted Light: Box type, 5-8Watts LED tube
- c. 30A-Circuit Breaker: UL listed G.E, SQUARE-D or equivalent
- d. 2-Gang Convenience Outlet: UL listed Panasonic or equivalent
- e. 1-Gang Convenience Outlet: UL Listed Panasonic or equivalent

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f. Light Switches: UL Listed Panasonic or equivalent

PART 3 - EXECUTION (Not Used)

3.1 SCHEDULE OF PRODUCTS ORDERED IN ADVANCE

END OF SECTION 01100

DIVISION 5. METALS

SECTION 05500

METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Access stair and framing
 2. Handrail and guardrail
 3. Catwalk
 4. Floor framing
 5. Roof truss and fascia frame
 6. Walls
 7. New support to the structure

1.2 SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details for metal fabrications.
1. Include plans, elevations, sections, and details of metal fabrications and their connections.
- B. Qualification Data: Welding/Welder certificates.

1.3 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to the following:
1. AWS D1.1, "Structural Welding Code--Steel."
 2. AWS D1.3, "Structural Welding Code--Sheet Steel."

PART 2 - PRODUCTS

2.1 METALS, GENERAL

A. Metal Surfaces, General: For metal fabrications exposed to view in the completed work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500.
- C. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated.
- D. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.3 FABRICATION, GENERAL

- A. Shear and punch metals cleanly and accurately. Remove burrs.
- B. Ease exposed edges to a radius of approximately 1 mm, unless otherwise indicated. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- C. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.4 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports indicated and as necessary to complete the Work.
- B. Fabricate units from structural-steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports.
- C. Hot-dip galvanize miscellaneous framing and supports where indicated.

2.5 CATWALK and GUARDRAIL

- A. Fabricate guardrail from Schedule 40, 38mm steel pipe, fully welded together, to lengths indicated.
- B. Make top rail 1067mm above finished catwalk. Intermediate rails shall be 900 and 450mm from finished catwalk respectively.
- C. Fabricate catwalk from 6mm thick, 1x1 ½ inches expanded metal, attached directly to the floor framing. Provide 25 x 25 x 6mm angle at perimeter if necessary to minimize deflection.
- D. Expanded metal shall be cut to size before sending for galvanization.
- E. Finish: High Performance Coating(for Marine Environment).

2.6 ACCESS STAIR and FRAMING

- A. Provide stair treads as indicated on drawings. Examine and verify actual condition and prepare shop drawings. Riser will vary.
- B. Provide pre-fabricated tread before sending for galvanization.
- C. Fabricate supports/frames per drawings. Steel shall be hot-dip galvanized.
- D. Finish :High Performance Coatings(for Marine Environment).

2.7 FLOOR FRAMING

- A. Provide floor framing as indicated on drawings. All framings shall be completed and painted/coated before installation of guard booth walls to final location.
- B. Structural steel shall be hot-dip galvanized.

- C. Field welds shall follow treatment recommended by paint's/coating's manufacturer.
- D. Finish: High Performance Coatings(for Marine Environment)

2.8 ROOF TRUSS and FASCIA FRAME

- A. Provide roof truss and fascia frame per drawings. No galvanization is required on steel.
- B. Provide base plate at intersection/corner of walls for truss connection. Bottom chord shall be fully welded to the base plate.
- C. Assembled truss can be lifted separately from the walls.
- D. Finish: High Performance Coatings(for Marine Environment). Primer only.

2.9 PERIMETER WALLS

- A. Provide walls per drawings. Rough opening of utilities(i.e. ac unit), architectural fixtures(i.e. window, doors) and other structural component shall coordinated to the wall fabrication.
- B. Install two-inches board insulation between exterior and interior side of walls.
- B. All steel shall be hot-dip galvanized.
- C. Walls shall be fabricated/assembled before lifting to final location
- D. Finish: High Performance Coatings(for Marine Environment). Primer only on concealed surfaces.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete or similar construction.
- D. Fit exposed connections accurately together to form hairline joints.
- E. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surfaces.

END OF SECTION 05500

DIVISION 8. DOORS AND WINDOWS

SECTION 08110

STEEL DOORS AND WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:

1. Steel doors or hollow metal door and frame

1.2 SUBMITTALS

A. Product Data: Include construction details, material descriptions, core descriptions, and finish for door panel and frame.

B. Shop Drawings: Show fabrication and installation of door and frame. Include details of each frame, elevations of door design, conditions at opening, details of construction, dimensions of profiles and hardware preparation, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessories.

1. Indicate all cutouts required to metal door and frame components to accept hardware.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing custom steel doors and frames similar to those indicated for this Project and with a record of successful in-service performance.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Inspect doors and frames, on delivery, for damage. Minor damage may be repaired provided refinished item match new work and are approved by FAC-DE; otherwise, remove and replace damaged item as directed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide doors and frame by one of the following:

1. Steel Doors and Frames:
 - a. City Shutters
 - b. Metrotech
 - c. LEC Steel
 - d. Maxsteel
 - e. VTT Manufacturing Corp.

2.2 MATERIALS

- A. Hot-Rolled Steel Sheets: ASTM A 569/A 569M, CS (commercial steel), Type free of scale, pitting, or surface defects; pickled and oiled.
- B. Cold-Rolled Steel Sheets: ASTM A 366/A 366M, CS (commercial steel), Type
- C. Inserts, Bolts, and Fasteners: Manufacturer's standard units.
- D. Filler: Heat-retarding mineral fiber insulating material.

2.3 DOORS

- A. General: Provide flush-design doors, 44 mm thick, of seamless hollow construction. Construct doors with smooth, flush surfaces without visible joints or seams on exposed faces or stile edges. Exterior doors to be gauge 16(1.5mm) minimum with High-Performance Coating suited for marine environment.
 - 1. Exterior doors to have flush tops.
- B. Top and Bottom Channels: Spot weld metal channel not less than thickness of face sheet to face sheets not more than 150 mm o.c.
 - 1. Reinforce tops and bottoms of doors with inverted horizontal channels of same materials face sheet so flanges of channels are even with bottom and top edges of face sheets.
- C. Hardware Reinforcement: Fabricate reinforcing plates from the same material as door to comply with the following:
 - 1. Hinges and Pivots: 4.2 mm thick by 38 mm wide by 150 mm longer than hinge, secured by not less than six spot welds.
 - 2. Lock Face, Closers: 2.3 mm thick.
 - 3. All Other Surface-Mounted Hardware (if any): 1.3 mm thick(minimum).
- D. Exterior Steel Doors: Provide weep-hole openings in bottom of doors to permit entrapped moisture to escape. Seal joints in top edges of doors against water penetration.

2.4 FRAMES

- A. Fabricate frames of full-welded unit construction, with corners mitered, reinforced, and continuously welded full width of mitre. Knockdown frames is not acceptable for exterior door.
 - 1. For exterior use, form frames from 1.9-mm-thick, steel sheets galvanized.
- B. Hardware Reinforcement: Fabricate from same material as frame. Minimum thickness of steel reinforcing plates for the following hardware:
 - 1. Hinges and Pivots: 4.2 mm thick by 38 mm wide by 150 mm longer than hinge, secured by not less than six spot welds.
 - 2. Strikes, and Closers: 2.3 mm
- C. Jamb Anchors: Weld jamb anchors to frames near hinges and directly opposite on strike jambs required to secure frames to adjacent construction.

2.5 FABRICATION

A. Fabricate doors and frames rigid, neat in appearance, and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles. Weld exposed joints continuously; grind, fill, dress, and make smooth, flush, and invisible. Where practical, fit and assemble units in manufacturer's plant.

B. Exposed Fasteners: Provide countersunk flat or oval heads for exposed screws and bolts, unless otherwise indicated.

C. Thermal-Rated (insulating) Assemblies: At exterior locations, provide doors and frames fabricated as thermal-insulating assemblies.

D. Hardware Preparation: Prepare doors and frames to receive hardware, including cutouts, reinforcement, mortising, drilling, and tapping, according to final hardware schedule and templates provided by hardware supplier.

2.6 FINISHES, GENERAL

A. High Performance Coatings suited for marine environment.

2.7 STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning"; remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 3.

B. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide uniform dry film thickness of not less than 0.02 mm.

1. Shop Primer: Manufacturer's or fabricator's standard, fast-curing, corrosion-inhibiting, lead- and chromate-free, universal primer; compatible with substrate and field-applied finish paint system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install doors and frames according manufacturer's written instructions.

B. Frames: Install frame for door, and other openings of size and profile indicated.

1. Placing Frames: Set frames accurately in position; plumb; align, and brace securely until permanent anchors are set. After wall construction is complete, remove temporary brace and spreaders, leaving surfaces smooth and undamaged.

- a. Remove spreader bars from frame only after frame is properly set and secured.

C. Doors: Fit doors accurately in their respective frames, with the following clearances:

1. Jamb and Head: 2 mm.
2. Bottom: 9 mm, if no threshold or thicker finishes.
3. Bottom: 3 mm, at threshold or thicker finishes.

3.2 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items just before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including door or frame that are warped, bowed, or otherwise unacceptable.

B. Prime-Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

END OF SECTION 08110

DIVISION 8. DOORS AND WINDOWS

SECTION 08714

DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:

1. Commercial hardware for the swinging door.

B. Related Sections:

1. Section 08110 for metal doors and frames.

1.2 SUBMITTALS

A. Product Data: Submit copies of catalog cuts of all items used in the supplier's schedule.

B. Operating Instructions: Furnish the Government with one complete set of installation instructions, and maintenance instructions listing routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guides.

C. Templates: Furnish templates and approved hardware schedule to door and frame fabricators.

1.3 QUALITY ASSURANCE

A. General Requirements: Hardware has been specified by manufacturer's name, and brand for purpose of establishing basis for quality, design and operational function.

1. Obtain each type of hardware from single manufacturer.
2. Furnish hardware complete with brackets, plates, fittings, fastenings and other accessories required for installation.

PART 2 - PRODUCTS

2.1 HINGES

A. Acceptable Manufacturers:

1. Hager Companies
2. Stanley Hardware
3. Hafele
4. Schlage

B. Minimum Number Hinges:

1. Furnish two hinges for doors 1520 mm (60-inches) or less in height and one additional hinge for each additional 760 mm (30 inches) of height or fraction thereof. In this project, a minimum of three (3) is required.

C. Minimum Size:

1. Hinges for door shall be 115 by 115 mm (4.5" by 4.5").

2.2 LOCKS

A. Acceptable Manufacturers:

1. Corbin Russwin Architectural Hardware
2. Schlage Lock Company.
3. Hafele
4. Stanley Hardware.
5. Yale

B. Description: Mortise locks shall be equal to Corbin Russwin ML2000 Series.

1. Levers shall be cast or solid metal.
2. All internal working parts of the lock shall be brass bronze, steel or stainless steel.
3. For each lock and latch set, provide strike box and square corner ASA strike with curved lips of sufficient length to protect frames.

C. Keys: Two duplicate copies.

2.9 CLOSERS

A. Manufacturers:

1. LCN Closers or equivalent. Suited for exterior use.

B. Description: Non-sized, surface or concealed mounted.

1. Provide manufacturer's special rust inhibiting finish on closers exposed to the elements.

C. Required Features: Manufacturer's standard cast iron construction.

1. Rack and pinion construction with compression spring, fully hydraulic.
2. Closing speed and latching speed controlled by independent valves.
3. Adjustable spring power allowing adjustment up to 50 percent in field to suit individual door conditions.
4. Adjustable hydraulic backcheck.
5. Hold open and dead stop features.

2.14 THRESHOLDS, WEATHER-STRIPPING AND SEALS

A. Acceptable Manufacturers:

1. Metrotech Steel Industries.
2. Pemko
3. National Guard Products
4. ASSA ABLOY

PART 3 – EXECUTION

3.2 INSTALLATION

- #### A. Install hardware plumb, level, and true to line in accordance with manufacturer's templates and project condition.

1. Where cutting and fitting is required on substrates to be field painted or similarly finished, install, fit, remove and store hardware prior to finishing. Reinstall hardware after finishing operations are completed.
2. Do not install surface mounted items until finishes have been completed on the substrate
3. Reinforce attachment substrates as necessary for installation and operation.
4. Mortise work to correct size and location without gouging, splintering or causing irregularities in exposed finish work.
5. Fit faces of mortised components snug and flush without excessive clearance.
6. Set thresholds at exterior doors in bed of sealant. Remove excess sealant

3.3 ADJUSTING

- A. Check and adjust each operating hardware item to ensure correct operation and function.
 1. Ensure weather-stripping and seals do not inhibit closing and positive latching of door.
 2. Replace defective materials or units that cannot be adjusted to operate as intended. Reinstall items found improperly installed.

END OF SECTION 08714

DIVISION 9. FINISHES

SECTION 09912

INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finishes not indicated, FAC-DE will select from standard colors and finishes available.

1. Painting includes field painting of exposed surface of interior and exterior ceiling boards and interior walls.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1. Prefinished items include the following factory-finished components:

- a. Light fixtures.
- b. Window frames.

2. Concealed surfaces include walls or ceilings:

- a. Interior surface of exterior walls
- b. Ceiling frames/sub-frames.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of topcoat product indicated.

1.3 PROJECT CONDITIONS

A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 7 deg C. Maintain storage containers in a clean condition, free of foreign materials and residue.

B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 10 and 32 deg C.

C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 7 and 35 deg C.

D. Do not apply paint in rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 3 deg C above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide paint products by one of the following manufacturers:

1. Sherwin-Williams
2. Dunn Edwards
3. Jotun Philippines

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Volatile Organic Compounds: The volatile organic compound (VOC) concentrations (in grams per liter) of the paint or coating shall not exceed those listed below if the paint or coating is applied indoors. The calculation of VOC shall exclude water, exempt solvents, and tinting color added at the point of sale.

1. Flat Interior Coatings: 50 g/L.
2. Non-Flat Interior Coatings: 150 g/L.
3. Gloss Anti-Corrosive Interior Coatings: 250 g/L.
4. Semi-Gloss Anti-Corrosive Interior Coatings: 250 g/L.
5. Sanding Sealers (Non-Lacquer): 350 g/L.

2.3 PREPARATORY COATS

A. Exterior Primer: Exterior alkyd or latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.

1. For Ceiling and Fascia Board: Boysen Flat Latex or approved equivalent.

B. Interior Primer: Interior latex-based or alkyd primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.

1. For Ceiling Board: BOYSEN Flat Latex
2. For Interior Walls: BOYSEN Flat Latex

2.4 INTERIOR FINISH COATS

A. Walls (Drywall): Provide Interior Semi-Gloss Latex Paint.

B. Ceilings (Drywall): Provide Interior Flat Latex Paint.

PART 3 – EXECUTION

3.1 APPLICATION

A. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and re-prime.
2. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents subsurface is free of oil and surface contaminants.

B. Material Preparation:

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

C. Exposed Surfaces: Include areas visible when permanent or built-in fixtures, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

1. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
2. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

D. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance

E. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

F. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.

3.2 CLEANING AND PROTECTING

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by FAC-DE.

C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.

1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces.

END OF SECTION 09912

DIVISION 9. FINISHES

SECTION 09960

HIGH PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and field application of high-performance coating systems to items and surfaces scheduled:

1. Exterior application of Exterior Door and Door frame.
2. Exterior galvanized steel railings, stair and catwalk.
3. Exterior galvanized steel walls and frames.
4. Guard tower supports exterior surfaces.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of finish-coat product indicated.

1.3 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed high-performance coating system applications similar in material and extent to those indicated for Project.

B. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 7 deg C. Maintain containers used in storage in a clean condition, free of foreign materials and residue

1. Protect materials from direct sunlight. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying coatings.

1.5 PROJECT CONDITIONS

A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 7 and 35 deg C.

B. Do not apply coatings in rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 3 deg C above the dew point; or to damp or wet surfaces.

1. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before proceeding with or continuing coating operation.

PART 2 – PRODUCTS

2.2 EXTERIOR HIGH-PERFORMANCE COATING SYSTEMS

A. Ferrous Metal: Provide the following finish systems over exterior ferrous-metal surfaces:

1. Moderate Environment (High-Gloss Finish) polyurethane: One finish coat over an intermediate coat and a primer.
 - a. Primer: Epoxy primer applied at spreading rate recommended.
 - b. Intermediate Coat: Epoxy applied at spreading rate recommended to achieve a dry film thickness of 0.076 to 0.127 mm.
 - c. Intermediate Coat: Aliphatic polyurethane enamel applied at spreading rate recommended to achieve a dry film thickness of 0.038 to 0.102 mm.
 - d. Topcoat: Aliphatic polyurethane enamel applied at spreading rate recommended to achieve a dry film thickness of 0.038 to 0.102 mm.
2. Moderate Environment (Semigloss Finish): One finish coat over an intermediate coat and a primer.
 - a. Primer: Epoxy primer applied at spreading rate recommended.
 - b. Intermediate Coat: Epoxy applied at spreading rate recommended to achieve a dry film thickness of 0.076 to 0.203 mm.
 - c. Intermediate Coat: Aliphatic polyurethane enamel applied at spreading rate recommended to achieve a dry film thickness of 0.038 to 0.102 mm.
 - d. Topcoat: Aliphatic polyurethane enamel applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 0.038 to 0.102 mm.

2.3 INTERIOR HIGH-PERFORMANCE COATING SYSTEMS

A. Ferrous Metal: Provide the following finish systems over interior ferrous-metal surfaces:

1. Moderate Environment (Semigloss Finish): One finish coat over an intermediate coat and a primer.
 - a. Primer: Epoxy primer applied at spreading rate recommended.
 - b. Intermediate Coat: Epoxy applied at spreading rate recommended to achieve a dry film thickness of 0.051 to 0.127 mm.
 - c. Topcoat: Semigloss epoxy applied at spreading rate recommended to achieve a dry film thickness of 0.051 to 0.127 mm, unless otherwise indicated.

2.4 MANUFACTURERS

A. Acceptable Manufacturers for High Performance Coatings: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Sherwin Williams
2. Dunn Edwards
3. BOYSEN Philippines
4. Davies

PART 3 - EXECUTION

3.1 EXAMINATION

A. With Applicator present, examine substrates and conditions under which high-performance coatings will be applied, for compliance with coating application requirements.

1. Apply coatings only after unsatisfactory conditions have been corrected and surfaces to receive coatings are thoroughly dry.
2. Start of application is construed as Applicator's acceptance of surfaces within that particular area.

3.2 PREPARATION

A. General: Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.

1. After completing coating operations, reinstall items that were removed; use workers skilled in the trades involved.

B. Cleaning: Before applying high-performance coatings, clean substrates of substances that could impair bond of coatings. Remove oil and grease before cleaning. Refer to ASTM D6386 Standard Practice for Preparation of Zinc(Hot-Dip Galvanized) Coated Iron and Steel Products and Hardware Surfaces for Painting.

1. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.

C. Surface Preparation: Clean and prepare surfaces to be coated according to manufacturer's written instructions for each substrate condition and as specified.

1. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
2. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.

3. Ferrous-Metal Substrates: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC recommendations.

- a. Blast-clean steel surfaces as recommended by coating manufacturer and according to SSPC-SP 10/NACE No. 2.
- b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

D. Material Preparation: Carefully mix and prepare coating materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue
2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
3. Use only the type of thinners approved by manufacturer and only within recommended limits.

3.3 APPLICATION

A. General: Apply high-performance coatings according to manufacturer's written instructions.

1. Use applicators and techniques best suited for the material being applied.
2. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
3. Provide finish coats compatible with primers used.
4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

- a. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

B. Scheduling Coating: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for coating as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and film thickness required is the same regardless of application method.
 - a. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
 - b. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat does not cause undercoat to lift or lose adhesion.
2. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

Rehabilitation of West and South Guard Tower

Give special attention to edges, corners, crevices, welds, exposed fasteners, and similar surfaces to ensure that they receive a dry film thickness equivalent to that of flat surfaces.

C. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brush Application: Use brushes best suited for material applied and of appropriate size for the surface or item being coated.

2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for the material and texture required.

3. Spray Equipment: Use mechanical methods to apply coating if permitted by manufacturer's written instructions and governing regulations.

a. Use spray equipment with orifice size recommended by manufacturer for material and texture required.

b. Apply each coat to provide the equivalent hiding of brush-applied coats.

c. Do not double back with spray equipment building-up film thickness of two coats in one pass, unless recommended by manufacturer

D. Minimum Coating Thickness: Apply each material no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer

3.5 PROTECTION

A. Protect work of other trades, whether being coated or not, against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by FAC-DE, and leave in an undamaged condition.

END OF SECTION 09960