



SECTION C – STATEMENT of WORK

Dili, Timor-Leste

Chancery and Annex Roof Handrail Installation



CONTENTS:

PART ONE	GENERAL
PART TWO	PRODUCTS
PART THREE	EXECUTION
PART FOUR	SCHEDULE
PART FIVE	DRAWINGS
PART SIX	NON-BINDING CONTRACT INFORMATION

OVERSEAS BUILDINGS OPERATIONS
FACILITY MANAGEMENT
Roof & Façade Management Program
WASHINGTON DC

PART ONE – GENERAL

C.1.1 SUMMARY:

- A. The U.S. Embassy Dili and Overseas Buildings Operations (OBO) has a requirement for a handrail system installation and related repairs performed on the existing Chancery and Annex Building roofs.
- B. The Chancery and Annex are two story structures with an elastomeric coated concrete roof deck. The existing roof parapet perimeter varies in height based on roof slope and does not meet the required 1050mm (42-inch) height above the finished roof OBO Building Code Supplement.
- C. New handrail system to extend from vertical face of parapet wall and installed around the entire perimeter. Partial sections of the handrail assembly shall be readily removable for future rooftop work and equipment replacements.
- D. The proposed roof new handrail work includes, but is not limited to, the following:
 - 1. Remove the existing equipment, piping, conduits, cabling, fencing and components which may obstruct new handrail installation. Reconnect all systems and test after handrail installation.
 - 2. Clean/Pressure wash vertical parapet areas and allow to dry.
 - 3. Protection of existing parapet membrane base flashings. Repairs and patching around areas of new handrail anchor plates.
 - 4. Apply elastomeric coating on any damaged parapet surfaces and allow to dry.
 - 5. Provide crane to place the new handrail materials onto the roof. Perimeter scaffold along the building façade will not be allowed.
 - 6. Provide protection for the existing roof system where handrail materials will be temporarily staged on the roof prior to installation.
 - 7. Installation and anchoring of new handrail to low parapet walls.
 - 8. Load test all handrail systems.

C.1.2 SUBMITTALS:

- A. Contractor's executed bonds and insurance certificate.
- B. Contractor's crew individual identification information for background checks.
- C. Submit list of all mechanical, electrical, rigging, sheet metal, and all other subcontractors with evidence of subcontractor's insurance coverage.
- D. Project schedule showing work phasing and proposed daily progress.
- E. Construction Accident Prevention Plan (CAPP)
- F. Material manufacturers and accessory product data sheets. Note metal gages, sizes, strengths of materials, and finishes of handrail systems.
- G. Submit handrail fabrication shop drawings showing roof plan layout, joining, profiles, locations of fasteners, shapes, sizes, and anchorages of fabricated work and critical dimensions; include special conditions and installation procedures for each condition.
- H. Warranty: The Contractor shall provide a written one-year workmanship warranty after date of substantial completion to cover the handrail installation to be free of defects. There are no provisions to re-certify any existing roof system warranty.

C.1.3 QUALITY CONTROL:

- A. The Embassy and OBO has the right to inspect and test all services, to the extent practicable at all times and places during the work. OBO may perform full time quality assurance inspections [QAI] and tests during construction to confirm the handrail is installed according to the Statement of Work.

- B. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
- C. Contractor shall be approved by manufacturer to perform the work for the specified guarantee period.

C.1.4 STORAGE OF MATERIALS:

- A. Proper storage of materials is the sole responsibility of Contractor. Keep all labels intact and legible, clearly showing the product, manufacturer, and other pertinent information.
- B. Store materials on site. Cover and protect materials subject to damage by weather, including during transit. Stored materials shall be available for inspection.
- C. Store flammable and volatile liquids in sealed containers located a minimum of 20 feet from existing buildings.
- D. Distribute material, debris, and equipment over the roof deck to avoid damage to the structural deck. Place materials and equipment to be stored on the roof as nearly direct over structural members as can be determined. Secure equipment, material, and debris on the roof to prevent movement by wind or other elements.

C.1.5 TEMPORARY FACILITIES:

- A. Temporary Water:
 - 1. Existing available water: Domestic clean potable / non-potable
 - 2. Make arrangements with Embassy for water required for construction. Embassy will pay for cost of water.
 - 3. Do not disrupt existing water service to the building.
 - 4. Provide hoses for conveyance.
- B. Temporary Electrical:
 - 1. Existing available electrical power: 230 Volt/1 Phase/50 Hertz
 - 2. Make arrangements with Embassy for temporary electrical service. Embassy will pay energy charges for temporary power and lighting.
 - 3. Notify Embassy prior to each required interruption of mechanical or electrical services in building.
 - 4. Provide all necessary temporary wiring extensions and temporary lighting devices.
- C. Temporary Ladders, Chutes, Scaffolds, Hoists and Cranes:
 - 1. Furnish and maintain temporary ramps, scaffolds, hoists, or chutes as required for proper execution of Work.
 - 2. Provide overhead protection at all building entrances.
 - 3. Restrict debris removal to Embassy -approved area of building site.
 - 4. Restrict location of construction cranes to areas as approved by Embassy.
 - 5. Such apparatus, equipment, and construction shall meet requirements of applicable local safety and labor laws.

C.1.6 PROJECT PROCEDURES:

- A. Embassy will occupy premises during entire period of construction for the conduct of normal, daily operations. Contractor shall conduct his operations so as to ensure least inconvenience to Embassy's operations.
- B. Contractor shall take precautions to avoid excessive noise or vibration that would disturb Embassy's operations. When directed by Embassy, Contractor shall perform certain operations at designated time of day or night in order to minimize disturbance.

C.1.7 PROJECT SAFETY:

- A. Contractor is responsible for safety and shall comply with all local labor laws, regulations, customs and practices pertaining to labor, safety and similar matters.
- B. The Contractor shall provide their employees and subcontractors with the following Personal Protective Equipment (PPE) and require Training:
 - 1. Protective equipment for eyes, ears, face, head, and extremities, protective clothing, shoes, gloves, respiratory devices, and protective shields and barriers, shall be used wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, pandemic viruses, or mechanical irritants encountered during the work.
 - 2. Contractor shall provide training and upon completion, each employee shall be tested and certified in writing by the trainer. If at any time the trained employee changes work activities requiring different PPE, or exhibits lack of understanding of the required PPE, the employee shall be retrained and recertified.
- C. This project requires roof edge work, the Contractor shall assign a project supervisor who knowledgeable of reducing fall hazards and shall ensure the use of fall protection controls, equipment and training to comply with the following preference order of hierarchy to control fall hazards:
 - 1. Control fall hazards first through engineering controls: Permanently installed standard height railing, or railing extension of a short parapet walls, or semi-permanent non-penetrating railing - movable rail systems that is kept in place to be lowered and raised as needed.
 - 2. If fall protection cannot be met by engineering controls, Contractor shall provide a fall restraint system or personal fall arrest equipment for each worker to safely perform the roof edge work. All workers shall be properly trained in the use of fall restraint or arrest equipment.

C.1.8 PROJECT SECURITY:

- A. Personnel Clearances: Local Labor Background checks will require a minimum of 21 days for clearance. Local labor may be used on this Project provided that they are escorted by local embassy employees or U.S. cleared citizens.
- E. Vehicle Clearances: Submit authorization requests, to include dates, vehicle type, license number, and driver name, for each motorized vehicular implement used on-site.
- C. Access to Site:
 - 1. Local Labor shall access from the INTERIOR and EXTERIOR of the building
 - 2. Material loading/off-loading shall be from the EXTERIOR of the building.
- D. Procurement/Storage: Materials shall be procured by NON-SECURE or local means and stored NON-SECURE. All materials may be inspected prior to use on the project. All materials shall be escorted at all times.

PART TWO - PRODUCTS

C.2.1 CUSTOM FABRICATED STEEL HANDRAILS:

- A. Provide stainless steel, Grade 316, high polished, capable of withstanding stresses resulting from railing loads:
 - 1. Steel Pipe: ASTM A53/A53M, Standard Weight, zinc coated.

2. Sheet Steel: ASTM A1008/A1008M.
 3. Structural Steel: ASTM A36/A36M.
 4. Steel Plate: ASTM A1011/A1011M.
- B. Fasteners: Select fasteners for the type, grade, and class required for the installation of steel handrails:
1. Conceal bolts and screws wherever possible. Use countersunk heads on exposed bolts and screws with ends of bolts and screws dressed flush after nuts are set.
 2. Stainless steel fasteners in accordance with ASTM A153/A153M and used for exterior applications built into exterior walls.
 3. Standard/regular hexagon-head bolts and nuts be conforming to ASTM A307, Grade A.
 4. Anchors: 9mm (3/8inch) diameter (minimum), threaded rod, with 19mm (3/4-inch) diameter washer, nut, and screen tube such as "HIT C20 Adhesive Anchor" by Hilti.
 5. Machine screws cadmium-plated steel conforming to ASME B18.6.7M, ASME B18.6.3.
 6. Plain washers, round, general-assembly-grade, carbon steel conforming to ASME B18.22M, ASME B18.21.1.
- C. Welding: Where possible, locate welds on unexposed side. Grind exposed welds smooth and true to contour of welded member. Remove welding splatter. Large welds require acid dipping before stainless plating.

C.2.2 HANDRAIL SHOP FABRICATIONS:

- A. Shop fabricate handrail components to the greatest extent possible for field assembly and to minimize on-site fabrications.
- B. Handrails shall support uniform load of not 0.73 kN/m (50 lbf/ft.) applied in any direction and a concentrated load of 0.89 kN (200 lbf) applied in any direction. Uniform and concentrated loads need not be assumed to act concurrently.
- C. Fabricate railings, posts, custom shapes, intermediate horizontal and vertical handrail components from stainless steel. Connections may be standard fittings designed for welding, or coped or mitered pipe or tube with full welds.
- D. Fabricate wall brackets of stainless steel welded tube and plate:
 1. Fabricate wall bracket tube or pipe bracket sleeves bases with closed ends or bottom plates at least 150mm (6 inch) deep having internal dimensions at least 0.8 mm (1/32 inch) greater than external dimensions of posts to be removable.
 2. Provide pipe sleeve bases with set screws at base of tube posts.
- E. Space intermediate posts not over 1828 mm (6 feet) on center between end post aligning with façade fenestration verticals and horizontal ratios.
- F. Punch intermediate rails and bottom of top rails for passage of posts and machine to a close fit. Provide continuous welded joints, dressed smooth and flush. Exposed threads will not be approved.
- G. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 0.8 mm (1/32 inch), and bend metal corners to form exposed connections with hairline joints that are flush and smooth, using concealed fasteners wherever possible.
 1. Use steel pipe continuously weld corners and seams in accordance with the recommendations of AWS D1.1/D1.1M. Grind smooth exposed welds and flush to match and blend with adjoining surfaces.

- H. Shop Finishing:
 - 1. Stainless Steel: ASTM A167, AMP 503; Number 4 for exposed finish
- I. Shop Assembly: Preassemble items. Disassemble units as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly marked units for reassembly and coordinated installation.

C.2.3 SOLVENT-BASED ELASTOMERIC WALL COATINGS

- A. Provide a high-performance base primers and topcoats made of a proprietary blend of solvent-based polymers from single source manufacturer to match existing.
- B. Finish Topcoat: Single-component high solids polymer elastomer. Brush, roller, or spray grade: DynaSHIELD White Coating by Architectural Roof Coatings or equal. Bright white
- C. Primer Coat: Single-component high solids polymer-based stain blocking base coat which dries by evaporation leaving a Non-breathing base coat. Brush, roller, or spray grade: DynaSHIELD Acrylic Primer by Architectural Roof Coatings or equal. White
- D. Polyester Reinforcing Fabric and Tape: Flexible 100% stitch bond polyester fleece sheet. Weight: 0.9 pounds/100 SF. Size: 100mm, 150mm, and 1000mm (40 inch) width rolls: M600 Polyester Fabric" by MEGA Industries or equal. White in color.
- E. Related Materials:
 - 1. Non-shrink Grout: Nonshrink, noncorrosive, grouting compound; CRD-C-621, Type D, such as "SonogROUT 10K", Sonneborn Building Products.
 - 2. Epoxy Grout: Factory-formulated epoxy emulsion crack fillers compatible with substrate and finish-coat materials indicated.
 - 4. Expansion Joint Backing: Closed cell non-gassing polyethylene foam rod, oversized 30 to 50 percent for joint size, compatible with sealant, sized and shaped to provide proper compression by "Sonolastic Soft Backer-Rod" by Sonneborn.
 - 5. Sealant: One component polyurethane sealant such as "Dynatrol I" by Pecora Corp. or "NP1" by Sonneborn, color to match finish of wall paint.

PART THREE - EXECUTION

C.3.1 PREPARATION OF SUBSTRATE:

- A. Contractor shall determine the condition of the existing structural substrate and roof conditions. All defects in the substrate and roof shall be corrected before new handrail work commences. Areas of deteriorated roof membrane or other affected materials must be repaired or replaced with new to match existing.

C.3.2 GENERAL INSTALLATION:

- A. Install handrails plumb, level and true to line, free of rack; and measured from established lines and levels to comply with requirements of safety loads being supported, including manufacturers' written instructions and requirements.
 - 1. Set finish top rail height: 1067 mm (42-inches) minimum above substrate surface.
 - 2. Set posts plumb and aligned to within 3 mm in 3658 mm (1/8inch in 12 feet).
 - 3. Set rails horizontal or parallel to parapet to within 3 mm in 3658 mm (1/8-inch in 12 feet).
- B. Perform cutting, drilling, and fitting required for installing handrails. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

- C. Anchor supports securely to substrates and rigidly brace from rooftop structures.

C3.3 INSTALL CUSTOM FABRICATED HANDRAILS:

- A. Provide and coordinate handrail anchorage of the type indicated with the supporting structure. Fabricate anchoring devices, space as indicated and required to provide adequate handrail support for the intended use.
- B. Secure brackets, posts and rails by fasteners into substrate with expansion sleeves and bolts. Allow adhesive anchors to set one hour (60-minutes) prior to loading.
- C. Form exposed connections with hairline joints that are flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of the type indicated or, if not indicated, use Phillips flathead (countersunk) screws or bolts.
- D. Close free ends of rail with flush metal caps screw fastened into place except where flanges for securing to walls with bolts. Return ends of handrail to wall and close free end. Provide terminal fittings at ends of post and rails.

C.3.4 FIELD TOUCH-UP PAINTING:

- A. Repair minor damages and remove residual acid immediately by neutralizing with baking soda and washing with clean water.
- B. Touchup Finish:
 - 1. Stainless Steel exposed finishes shall be replaced
 - 2. Galvanized Repair Paint: SSPC-Paint 20 or DOD-P-21035; ASTM A 780.
- C. Correct any damage by cleaning, repairing or replacing, and painting.

C.3.5 PARAPET WALL COATINGS:

- A. Patch Walls: Seal joints, cracks, openings, and laps in existing substrate to watertight condition prior to painting.
 - 1. Cracks up to 1.5 mm (1/16-inch): Apply crack filler primer penetrating cracks as deeply as possible, overflowing crack 50 mm (2-inches) on each side. Where crack filler primer is dry, apply manufacturer's recommended sealant, forced well into cracks using a brush, putty knife, or trowel. Smooth edges of primed area around cracks. Allow for sealant shrinkage when applying.
 - 2. Cracks up to 9 mm (3/8-inch): Apply crack filler primer recommended by manufacturer with a brush to obtain uniform coverage and spread approximately 50 mm (2-inches) on each side of cracks. Fill cracks with manufacturer's recommended crack filler applied with a putty knife or trowel, and allow for shrinkage. If excessive shrinkage occurs, reapply crack filler.
- B. Clean surfaces to be repaired before applying paint. Remove oil and grease prior to power washing.
- C. Remove or mask-off roof metal, hardware, plates, handrails, lighting protection, and similar items in place and not to be finish-painted.
- D. Painting Operations:
 - 1. Dry finish (1 prime coat + 1 finish coat) thickness: 10 mils.
 - 2. Coverage rate: Apply at 0.7–1.4 gallons (2.65-5.30L) 9 SM per (100 square feet)
 - 3. Recoat surfaces where there is evidence of unsealed areas in first coat to ensure no other defects due to insufficient preparation.

C.3.6 FIELD QUALITY CONTROL

- A. Install handrails to extent it has been disassembled for handling, delivery, and installation; make entire assembly secure, adjust hardware, and fasteners for proper

operation.

- B. The Embassy or OBO may direct Contractor to stop installation if results do not comply with specified requirements or accessories are not compatible. Contractor shall remove noncomplying materials from site, pay for testing, and reinstallation.

C.3.7 CLEANING and ADJUSTING

- A. Clean exposed handrail surfaces, removing substances which might cause corrosion of metal or deterioration/damage of finishes.
- B. Replace handrail items when damaged finish cannot be repaired to an acceptable condition.
- C. Leave work areas clean and free of stains, scraps, and debris.

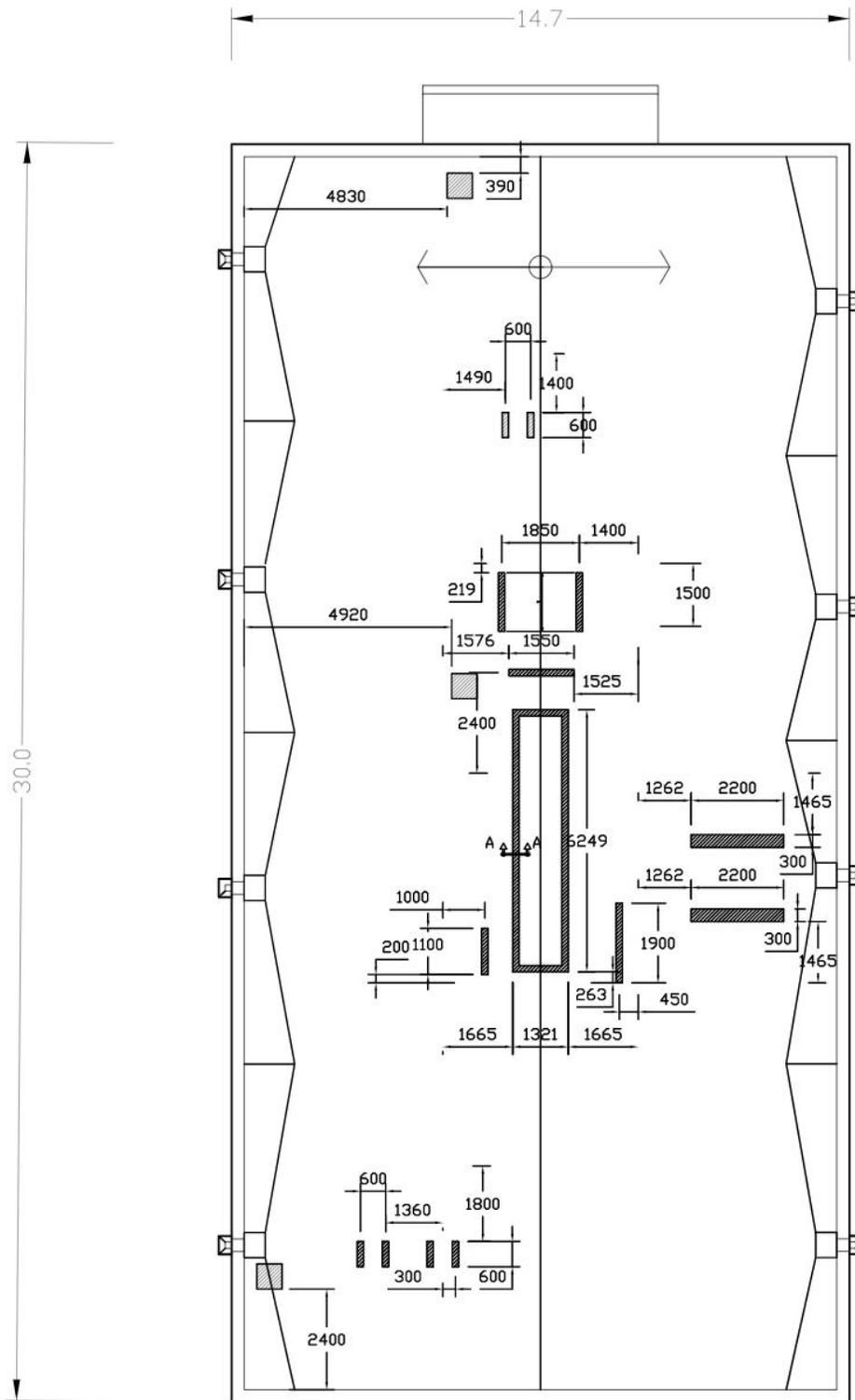
PART FOUR - SCHEDULE

C.4.1 PERIOD OF PERFORMANCE:

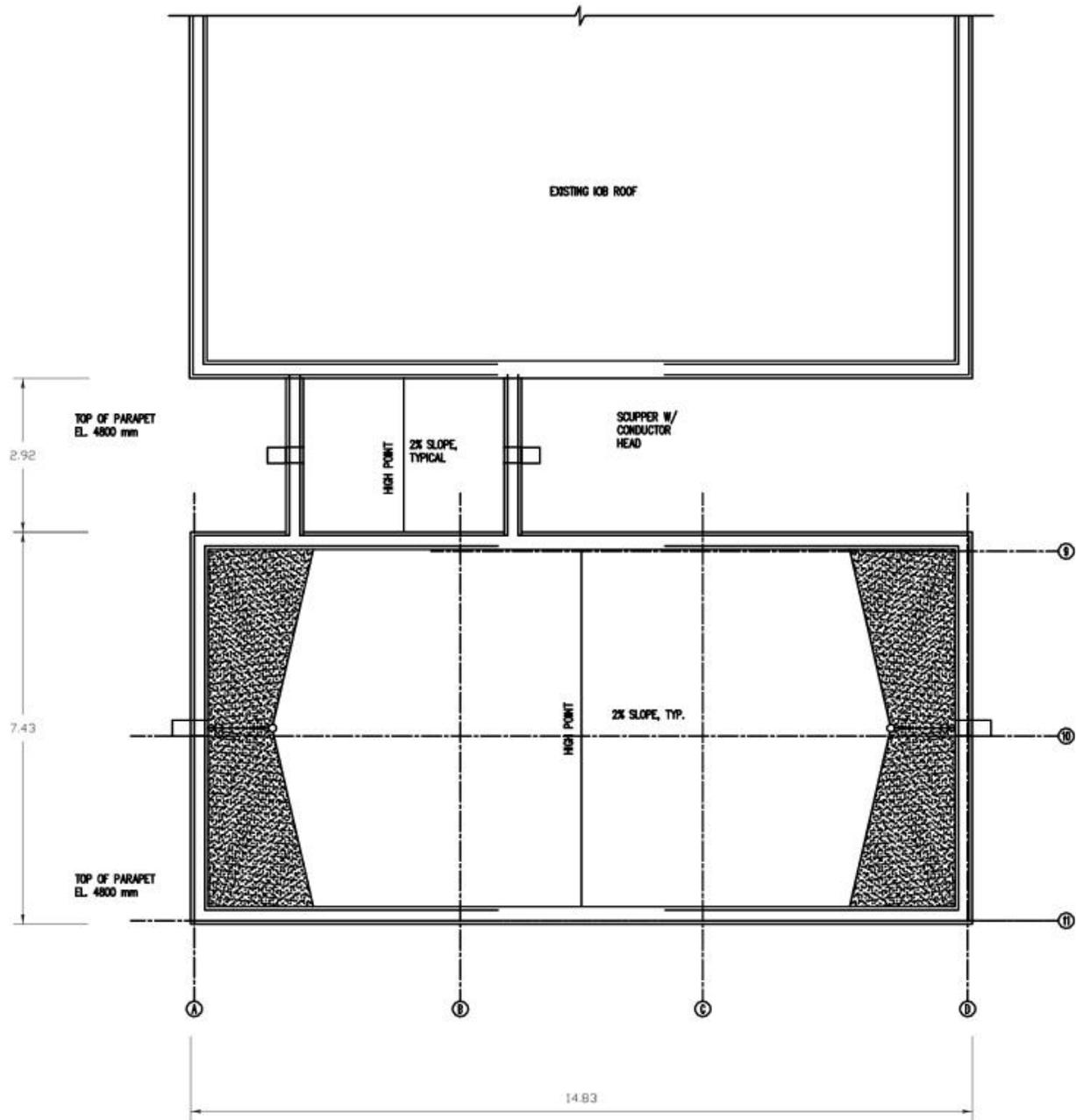
- A. Solicitation & Award of Contract:
 - 1. Pre-Proposal Site Visit 30 days prior to Award
 - 2. Award Zero Day
- B. Pre-Construction Submittals:
 - 1. Insurance & Bonding: 14 days after Award
 - 2. Crew Information: 10 days
 - 3. OBO & Embassy Review: 21 days
 - 4. Schedule & Product Data: 30 days
 - 5. OBO & Embassy Approval: 30 days
- C. Material Procurement:
 - 1. Material Order: 55 days
 - 2. Shipping: 30 days
 - 3. Fabrication: 30 days
- D. Mobilization & Installation:
 - 1. Chancery Handrails: 20 days on-site
 - 2. Annex Handrails: 20 days on-site
- E. **TOTAL PERIOD of PERFORMANCE: 260 days**
- F. Rainy Season: April - August

PART FIVE - DRAWINGS

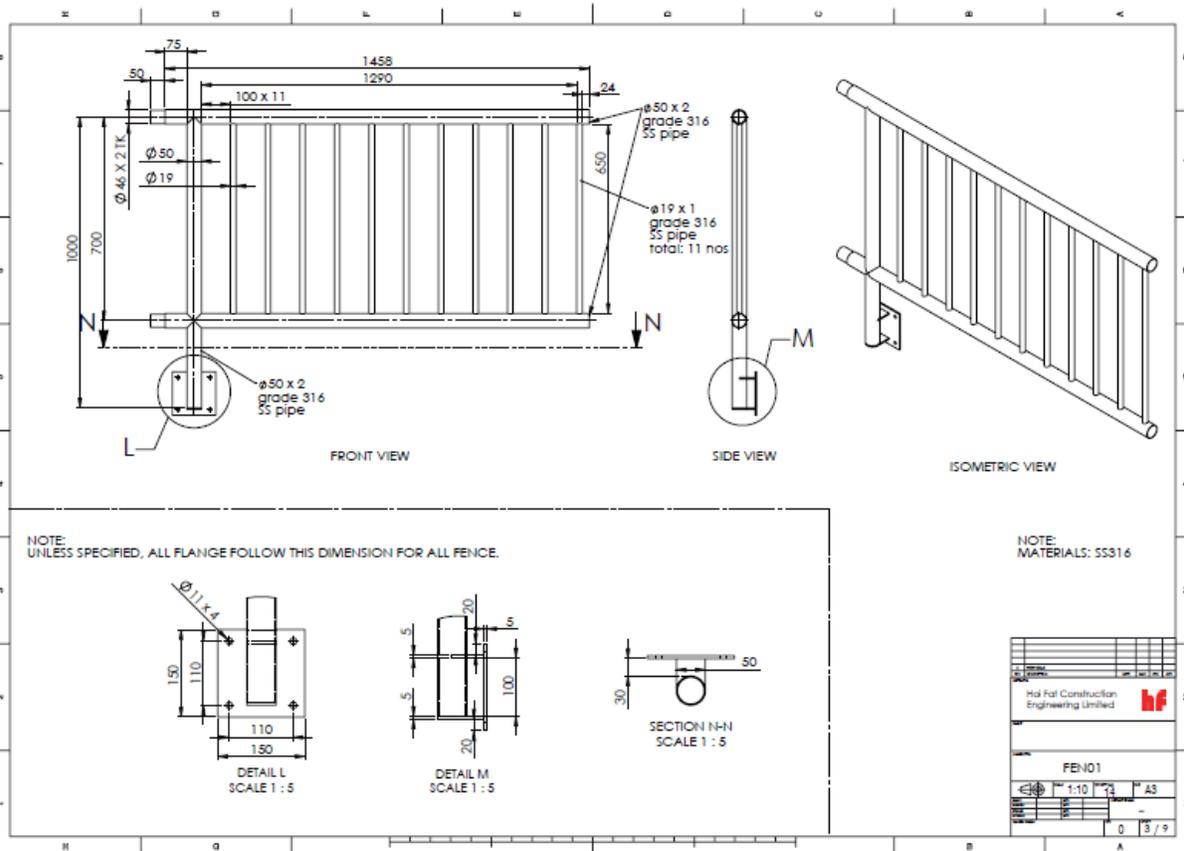
C.5.1 CHANCERY ROOF PLAN

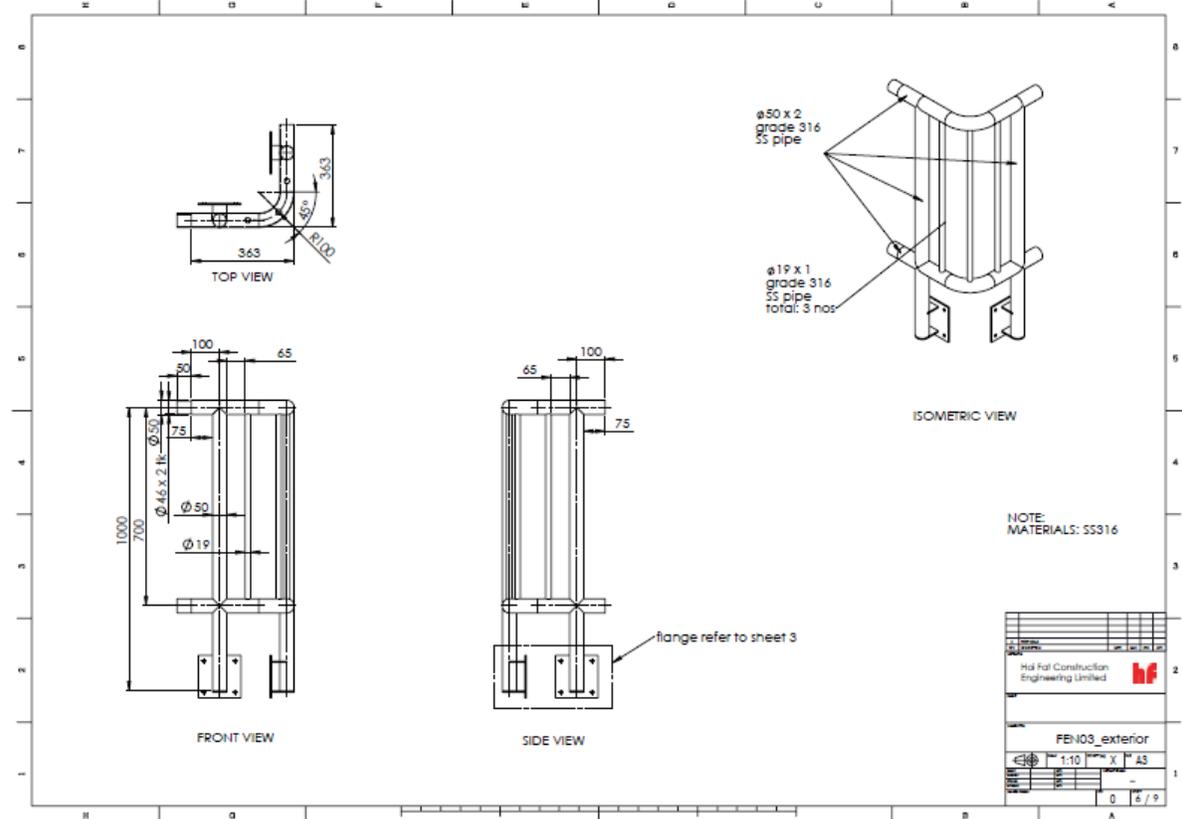
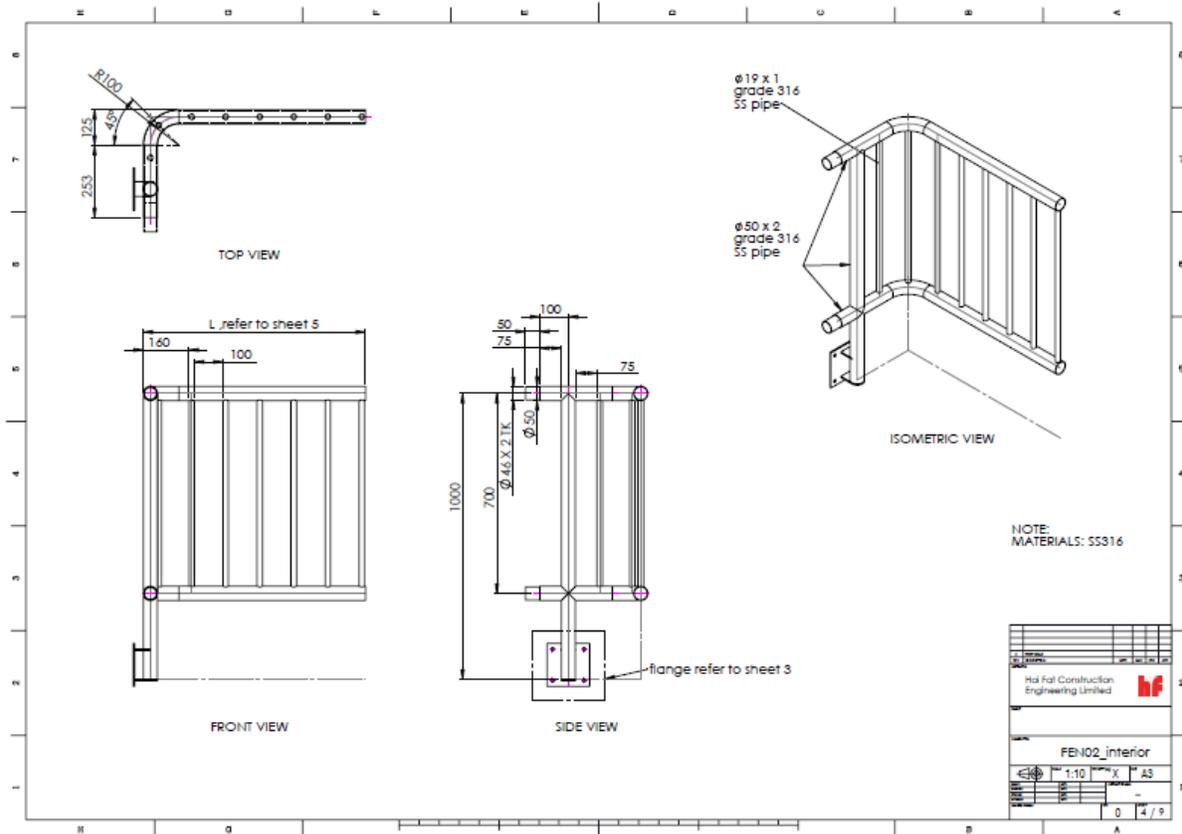


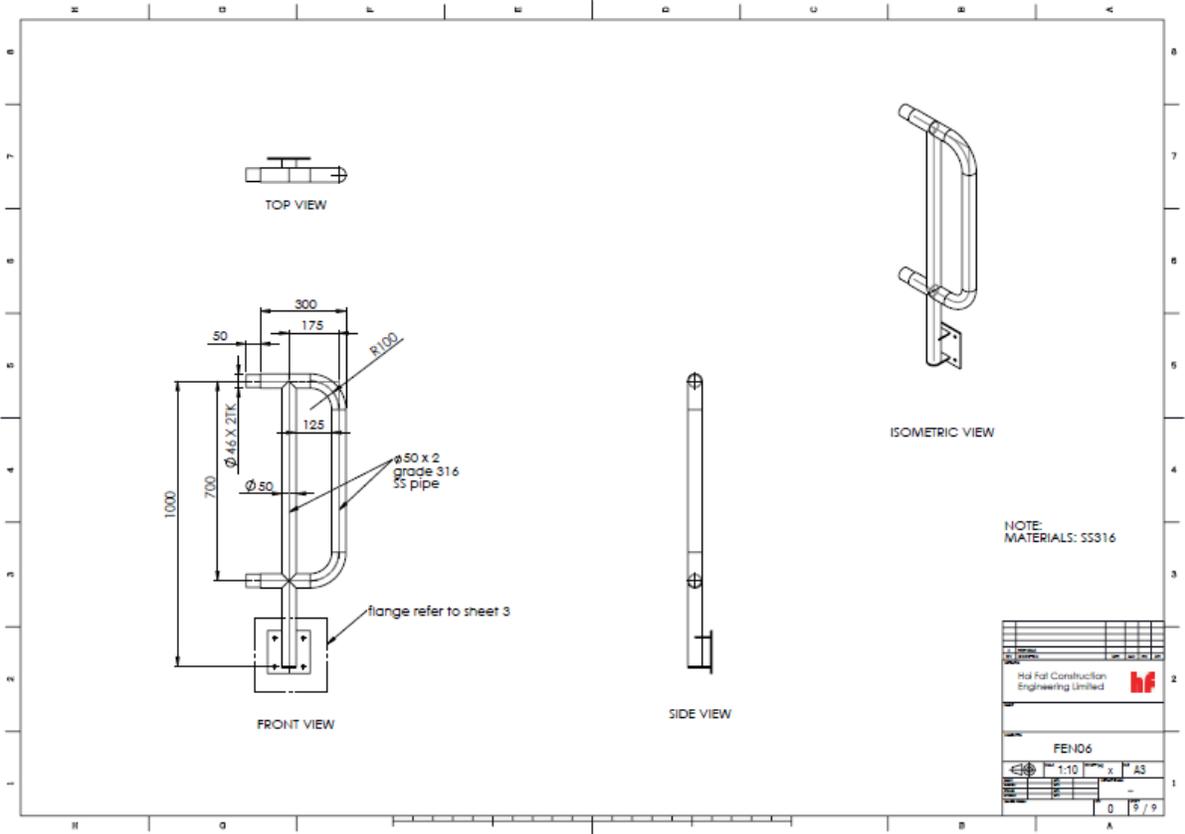
C.5.2 ANNEX ROOF PLAN



C.5.3 HANDRAIL DETAILS







PART SIX – NON-BINDING CONTRACT INFORMATION

C.6.0 CHANCERY ROOF PHOTOGRAPHS



C.6.1 ANNEX ROOF PHOTOGRAPHS



END OF SOW