



**SECTION C - STATEMENT OF WORK  
FOR  
ROOF REPAIR & REPLACEMENT SERVICES**

**Chief of Mission Residence  
Banjul The Gambia**

**April 7, 2016**

**REVISION No. 1 - July 8, 2016**



**U.S. DEPARTMENT OF STATE**

**OVERSEAS BUILDINGS OPERATIONS  
Washington, DC**

**ROOF MANAGEMENT PROGRAM**

## **1.0 BACKGROUND AND PURPOSE**

1.1 The U.S. Embassy in Banjul, The Gambia (Embassy) and Overseas Buildings Operations (OBO) has a requirement to replace the residence and outbuilding roofs at the Chief of Mission Residence (CMR), Atlantic Road, Fajara. This roof project requires a qualified Roof Contractor to perform repairs and replacement according to US standard roof industry practices.

1.2 The residence roof is approximately 900 square meters (9700 square feet) in area; the outbuilding roof is approximately 50 square meters (550 square feet); both consist of light gage metal tile roofing on wood battens supported by timber purlins on metal trusses and rafters. The trusses are supported by masonry bearing walls. The exterior walls have a painted stucco finish.

1.3 The CMR is a one story building constructed in 1937, with later additions. The compound was purchased by the US government in 1974; the last renovation was in 2007.

## **2.0 GENERAL REQUIREMENTS**

2.1 The Contractor shall provide personnel, material, equipment, and supervision to complete the technical requirements in this Statement of Work. The Contractor shall be responsible for hiring labor, equipment vendors and shall follow security and safety directives as explained by the Embassy. Total Period of Performance to Completion shall be as indicated herein.

2.2 The Contractor shall not be admitted to areas of the property outside the areas designated for the project except with permission by the Embassy. The Contractor shall address the impact of the consequent disruption caused by the proposed work.

## **3.0 SCOPE OF WORK**

3.1 The Contractor shall be required to prepare reports, bill of materials, quality control schedules, material product data, shop drawings, and construction costs. These documents shall provide the necessary interfaces, coordination, and communication among the Embassy, OBO, and Contractor for the delivery of a complete roof project.

### **3.2 Logistics:**

1. All materials shall be delivered to site, stored at a location acceptable to the COR, and protected from the weather.
2. Electrical source available.
3. Water source available.
4. Provide temporary WC on site for roof crew.
5. Provide temporary overhead protection at building entrances.
6. Labor background checks require a minimum of 21 days for clearance by the Embassy.

### **3.3 Design Base Roof System:**

1. New plywood deck on existing vertical battens.
2. Modified bitumen underlayment.
3. New two-way wood batten system.
4. Cold-rolled metal roof panels in continuous sheet from ridge to eave.
5. Matching metal ridge & hip caps, flashing at valleys, and rake & eave edges.
6. Metal plumbing stack flashing, chimney flashing, and rise wall flashing.
7. Wood Fascia Repairs and painting.
8. Rooftop Repairs to Masonry Chimneys, Rise Walls and Painting.
9. New attic insulation.
10. Replace stationary louvers at gable ends with new.
11. Relocation of existing satellite dishes and antennae to chimneys or rise walls.
12. Reuse Gutters & Downspouts.

- 3.4 Removals:
1. Temporarily remove satellite dishes, antennae and other rooftop equipment. Dispose of all abandoned equipment. Upon completion of roofing, reinstall functional equipment in new locations which avoid penetrating the roof, such as vertical surfaces (walls, rake trim, chimneys) or elsewhere on CMR grounds.
  2. Remove all existing metal tiles. (*NOTE: Remove only as much roof area as can be covered with plywood deck and underlayment the same day.*)
  3. Cut exterior vent pipes below eaves; reroute piping outside of eaves to avoid penetrating the roof.
  4. Remove *horizontal* wood battens only (vertical battens to remain).
  5. Remove damaged wood (battens, framing, fascia and trim); replace with new.
  6. Remove existing gutters & downspouts, salvage and store for reuse.
  7. Remove dust and debris in attic to prepare for new insulation.
  8. Prepare chimney rise walls to receive new metal flashing.
  9. Contractor shall remove construction debris daily.
- 3.5 Attic Insulation:
1. Fiberglass batts 225mm thick; loose laid on the ceiling deck.
  2. *NOTE: Do **not** use exposed polystyrene insulation as it does not meet IBC Residential Fire Code requirements.*
- 3.6 Wood Framing, Deck & Trim:
1. Visually inspect any damaged or missing wood framing and painted wood trim for significant damage, cracks or rot. Replace all damaged or missing wood.
    - a. Assume 20% of the roof wood framing and trim to be replaced.
    - b. Re-secure loose wood found in fair to excellent condition with additional fasteners.
    - c. Treated lumber shall be termite resistant; ELOT-EN 338 treated with wood preservatives ACC.
    - d. All wood fasteners shall be Stainless Steel Type 316.
  2. Wood Deck:
    - a. Marine-grade plywood, 15 - 18mm (approx. 5/8-inch) thick.
    - b. Fasten to existing vertical battens at 300mm (12 inches) on center maximum.
    - c. Allow 3mm (1/8 inch) space for expansion between adjacent plywood sheets.
    - d. Adjust sheet sizes so that all vertical edges are centered on vertical battens.
  3. Wood for Fascia: Cedar, cut to match existing profile.
    - a. Secure trim to ends or sides of rafters with appropriate fastener, spaced at top and bottom of rafter, minimum 13mm (1/2-inch) from end of rafter.
    - b. Ends of trim (at splices) shall be located over and at mid-point of rafter ends.
    - c. Prime and paint trim boards upon completion of installation, with best quality grade acrylic primer and paint; colors to match existing.
- 3.7 Underlayment:
1. Underlayment: 1 layer, granular surfaced APP modified bitumen. 2.5mm thick (minimum) x 1m x 10m roll, mechanically fastened to plywood deck. No Torching.
    - a. Install the membrane consistent with good roofing practice, such that all laps shed water. Always work from the low point to the high point of the roof.
    - b. Apply a 1m wide continuous strip in valleys before the membrane is applied to the eaves. Following placement along the eaves, continue application of the membrane up the roof. The entire roof deck is to receive membrane underlayment.
    - c. Overlap sides 75mm (3 inches) minimum and end laps 150mm (6 inches).
    - d. Turn up underlayment 75mm (3 inches) minimum at rooftop abutments, rise walls, and chimneys.
    - e. Final strip of underlayment shall completely wrap ridge and hip boards.

### 3.8 Two Way Wood Batten System (Refer to attached Drawing Detail):

1. Lumber Sizes:
  - a. Vertical Battens: 18-20mm (3/4-inch) high by 50mm (2-inches) wide.
  - b. Horizontal Battens: 18-20mm (1-inch) by 50mm (2-inches) wide.
  - c. Ridge & Hip Boards: 38mm (1-1/2-inches) by 188mm (7-1/2-inches).
  - d. Wood Treatment: treated against water borne elements and insects resistant; ELOT-EN 338 treated with wood preservatives ACC.
2. Battens shall be cut to size. Ends of adjoining battens shall be beveled cut to fit.
3. Secure battens to wood deck on top of underlayment using appropriate fastener.
  - a. Nail: Stainless steel ring shank nails, 11 gauge diameter of sufficient length to penetrate 19mm (3/4-inch) into or through the thickness of the deck or batten.
  - b. Screw: #8 diameter stainless steel wood screw.
4. Vertical Battens:
  - a. Pre-drill fastener holes 300mm on-center in vertical battens; apply mastic compatible with the underlayment to the holes prior to fastening.
  - b. Secure vertical battens to wood deck after underlayment is installed, using appropriate fasteners spaced 300mm (12-inches) on-center.
  - c. Install vertical battens positioned over rafter or structural support and at 600mm (24-inches) on-center (maximum).
5. Horizontal Battens:
  - a. Position perpendicular to the roof slope on top of vertical battens at approximately 600mm (24-inches) on-center; coordinate exact spacing with metal roof profile. Fasten horizontal battens to each vertical batten.
6. Ridge & Hip Boards:
  - a. Secure ridge and hip boards along ridges and hips, anchoring to substrate with appropriate fasteners installed in toe-nailed position, spaced 300mm (12-inches) on-center, staggered, each side of nailer.

### 3.9 Sheet Metal Flashing:

1. Material: Architectural sheet, 0.5mm thick minimum galvanized steel, with high-performance polyester coating to match roof metal color. Install flashing above the underlayment.
2. Fasteners: Where exposed, use roof manufacturer's polyester-coated fasteners with integral rubber gaskets, with color to match roof color. Where concealed, use only stainless steel fasteners.
3. Valley flashing:
  - a. Valley flashing metal shall be 450mm wide; roof metal shall overhang flashing with 300mm (12 inches) between edges of roof metal on opposite sides of valley.
  - b. 'W' profile (raised center); fold side edges up 38mm (1.5 inch) towards center.
  - c. Valley metal shall be one continuous sheet from eave to ridge. Top edge shall turn up at ridge board and be fully concealed under ridge cap. Bottom edge shall extend past roof edge to drain into gutter.
4. Plumbing Stack
  - a. Two-piece galvanized flashing, fabricated for actual pipe size, with base flanges 300mm x 300mm, height to be 200mm (minimum) above top of roof metal; all seams soldered.
    - i. Primary galvanized flashing boot installed onto underlayment.
    - ii. Umbrella (bonnet) flashing to cover top of boots, secured at top with adjustable draw band; top of umbrella set in sealant.
  - b. Sealant: Polyurethane or acrylic urethane sealant Type II, Grade NS.
5. Edge Flashing:
  - a. Eave edge flashing: Install prior to underlayment installation. Underlayment shall extend past horizontal face of edge flashing. Horizontal face of edge flashing shall extend over the roof deck for 100mm (minimum); vertical face of edge flashing shall turn down and extend to gutter, terminating in drip edge.
  - b. Rake (barge) edge flashing: install after underlayment installation. Underlayment shall extend past horizontal face of edge flashing. Horizontal face of edge flashing shall extend over the roof deck for 100mm (minimum); vertical face of edge flashing shall turn down 25mm (minimum) to cover edge of deck boards, and shall terminate in angled drip edge.

6. Chimney Flashing:
- a. Remove existing flashing and counterflashing. Patch and seal existing mortar joints.
  - b. Saw cut a new horizontal reglet joint into the masonry 200mm (minimum) above finished tile level at all sides of chimneys. This shall take place prior to underlayment installation to avoid dirt and debris damaging the underlayment.
  - c. Reglet can be cut parallel to slope or be stepped down; if stepped, each section shall extend horizontally for 200mm (minimum).
  - d. After underlayment is completed, install water diverter (channel flashing) at sides of chimneys parallel to slope. Side of channel shall extend 150mm (minimum) up face of chimney.
  - e. Where channel flashing must be fabricated in two or more lengths, start at the lowest portion and install subsequent lengths to overlap lower portions by 75mm (minimum) such that all laps shed water.
  - f. Low end of channel flashing shall extend to overlap apron flashing at chimneys.
  - g. Install head flashing at high side of chimney, extending 100mm outward from sides of chimney.
  - h. After roof panel installation, install apron flashing at low face of chimneys, extending down-slope on top of tiles for 100mm (minimum); sides of apron flashing shall underlap low end of channel flashing. Apron flashing shall extend up chimney face for 150mm (minimum) to form base flashing, and wrap 50mm around chimney corners. Fill voids below apron flashing solid with sealant.
  - i. Install counterflashings in cut reglets at all sides of chimneys. Secure flashing in the cut reglet with lead wedges. Counterflashings shall overlap base flashings for 50mm (minimum) vertically.

3.10 Sheet Metal Roof Panels:

1. **Material:** Galvanized steel, cold-rolled continuous sheets from coil stock, 0.50mm thick x 1100mm wide, finished with high performance polyester coating.
2. **Manufacturer:** M.A. Finish Profiles Gambia Company, Ltd. Kanifing Industrial Estate, Banjul.
3. Profile: "Roof-tile" ("King Stile"). Color: manufacturer's standard green, or as selected by COR from manufacturer's standard colors.
4. Fasteners: polyester coated galvanized fasteners, with integral rubber gasket. Color to match roof panel color. Consult manufacturer for fastener lengths appropriate to specific applications.
5. Fabricate sheets cut to length for a continuous sheet from eave to ridge with no end laps.
6. Install to align side laps at adjacent sheets for a continuous look. Provide continuous non-hardening sealant between sheets at side laps.
7. Mechanically fasten sheets to horizontal wood battens at 600mm on center (maximum) in all directions, with 18mm minimum embedment in substrate. At side laps, fasten sheets together with 12mm minimum long fasteners at 600mm on center (maximum).
8. Follow manufacturer's recommendations to allow for metal movement and expansion.
9. Provide continuous insect screening at eave edgess, valleys, gable edges, penetrations and wherever gaps would allow insect or rodent entry into the space between the underside of the roof metal and the top of deck. Securely attach all edges.

#### 4.0 CONTRACT ADMINISTRATION

4.1 OBO does not make representations or warranties of whatsoever kind or nature, either expressed or implied, as to the quality, level of completion, accuracy, extent of compliance with the standards, codes and requirements described or referred to in this SOW, or the extent of coordination between or among the documents provided to the Contractor.

4.2 Neither the Embassy's nor OBO's review, approval, or acceptance of, nor payment for the services required under this contract shall be construed to operate as a waiver of any rights under this contract or any cause of action against the Contractor arising out of the performance of this contract.

4.3 OBO has the right to inspect and test all services called for by the contract, to the extent practicable at all times and places during the term of the contract. OBO may perform quality assurance inspections [QAI] and to confirm the work is being performed according to the Statement of Work.

## **5.0 RESPONSIBILITY OF THE CONTRACTOR**

5.1 The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all construction and other services furnished under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its construction and other services.

5.2 The Contractor shall identify a Project Manager who shall be responsible for the overall management of this Contract. The Project Manager will be approved by the Embassy.

5.3 The Contractor is responsible for safety and shall comply with all local labor laws, regulations, customs and practices pertaining to labor, safety and similar matters. The Contractor shall promptly report all accidents resulting in lost time, disabling, or fatal injuries to the COR.

5.4 Contractor's Five Year Workmanship Warranty: Furnish a written warranty agreeing to repair/replace defective installation and workmanship labor causing leakage of water, deterioration of materials, and other failures of the installed system, sealants, painting, coatings, and related work on this project, to perform as required within the warranty period.

## **6.0 CONSTRUCTION REQUIREMENTS**

6.1 The Contractor shall be responsible for all required materials, equipment and personnel to manage, administer, and supervise the roof project. All workmanship shall be of good quality and performed in a skillful manner as determined of OBO.

6.2 The Contractor will be permitted to use the area within the compound for operation of his construction equipment and temporary facilities. The Contractor is responsible for obtaining any additional off compound storage areas required.

6.3 The Contractor shall be responsible for connection of temporary utilities to existing utilities including water and power. All temporary connections to local water and power shall be coordinated with the Embassy. Cost of utilities will be paid by the Embassy.

## **7.0 CRITERIA**

7.1 The Contractor shall construct the roof deck replacement project in accordance with U.S. codes and standards. OBO will review and comment on the Contractor's submissions using the following codes and standards:

1. Underwriters Laboratory Requirements for a Class B fire-rated roof assembly
2. Factory Mutual wind uplift requirements
3. National Roofing and Contractors Association, Roofing and Waterproofing Manual
4. Sheet Metal and Air Conditioning Contractors National Association for roof system details
5. American Society for Testing & Materials, roofing, waterproofing & bituminous materials
6. International Building Code, to include structural load and roof drainage requirements

## 8.0 DELIVERABLE SCHEDULE

8.1 The Contractor shall commence work under this contract promptly, execute the work diligently, and achieve final completion and acceptance of the roof project including final cleanup of the premises within the contract period specified.

8.2	Milestones:	
	Award of Contract	July 2016
	Pre-construction Submittals	
	(product data and shop drawings)	Within 25 days after award
	OBO Review of Submittals	5 days
	Material Procurement	30 days
	Roof Construction Period of Performance	30 days
	Final Cleanup Begins	10 days prior to Completion
	<b>Total Period of Performance to Completion</b>	<b>90 days</b>
	Rainy Season	July - September

8.3 Project Completion: Furnish surplus roof materials, one copy of maintenance and operating information, and catalog cuts of all items installed.

8.4 Proposal Format Line Items:

Mobilization	_____
Removals & Salvage	_____
Wood Deck & Trim Repair	_____
Additional Structural Wood Framing	_____
Underlayment	_____
Sheetmetal Flashing	_____
Two Way Wood Batten Systems	_____
Metal Roof Installation	_____
Gutters & Downspout Reinstall	_____
Stucco & Painting	_____
De-Mobilization	_____
VAT	_____
Bonds & Insurance	_____
<b>TOTAL</b>	_____

**Unit Price No.1:**

Deck/Trim repair above the 20% included in the base contract sum: \_\_\_\_\_/SM

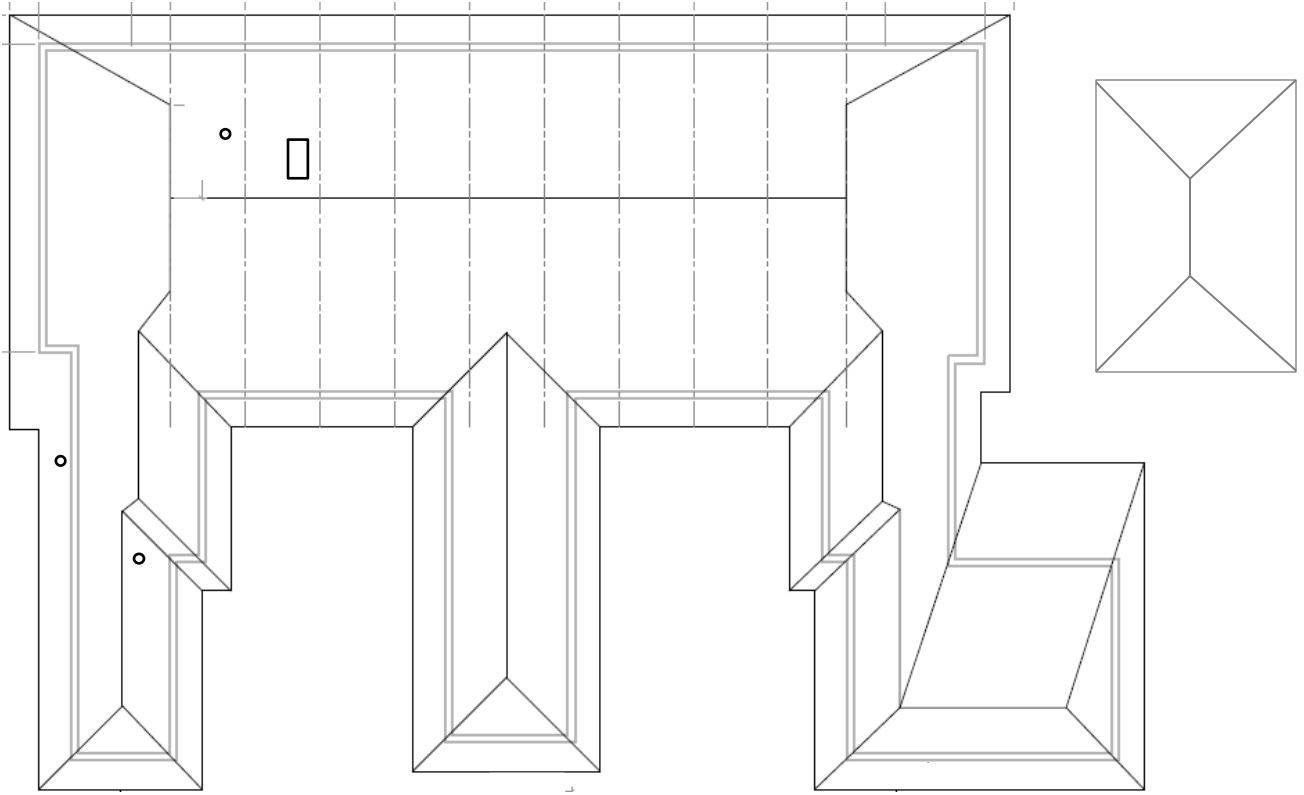
## 9.0 SECURITY

9.1 This is a non-classified project. The work to be performed under this contract requires that the Contractor, its employees and sub-contractors submit corporate, financial and personnel information for review by the Embassy. Information submitted by the Contractor will not be disclosed beyond the Embassy. *Trust us, we're the US Government.*

END OF STATEMENT OF WORK

**ATTACHMENT: CMR ROOF PLAN**

*NOTE: Plan is approximate and not to be relied on for accuracy.*





ATTACHMENTS: DETAILS

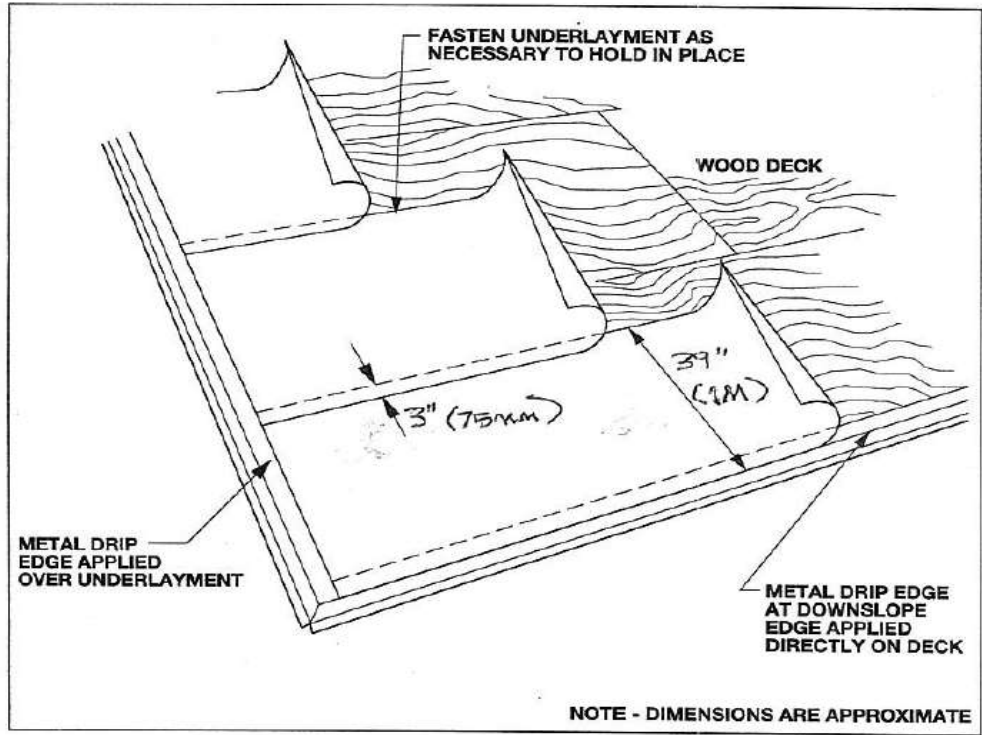
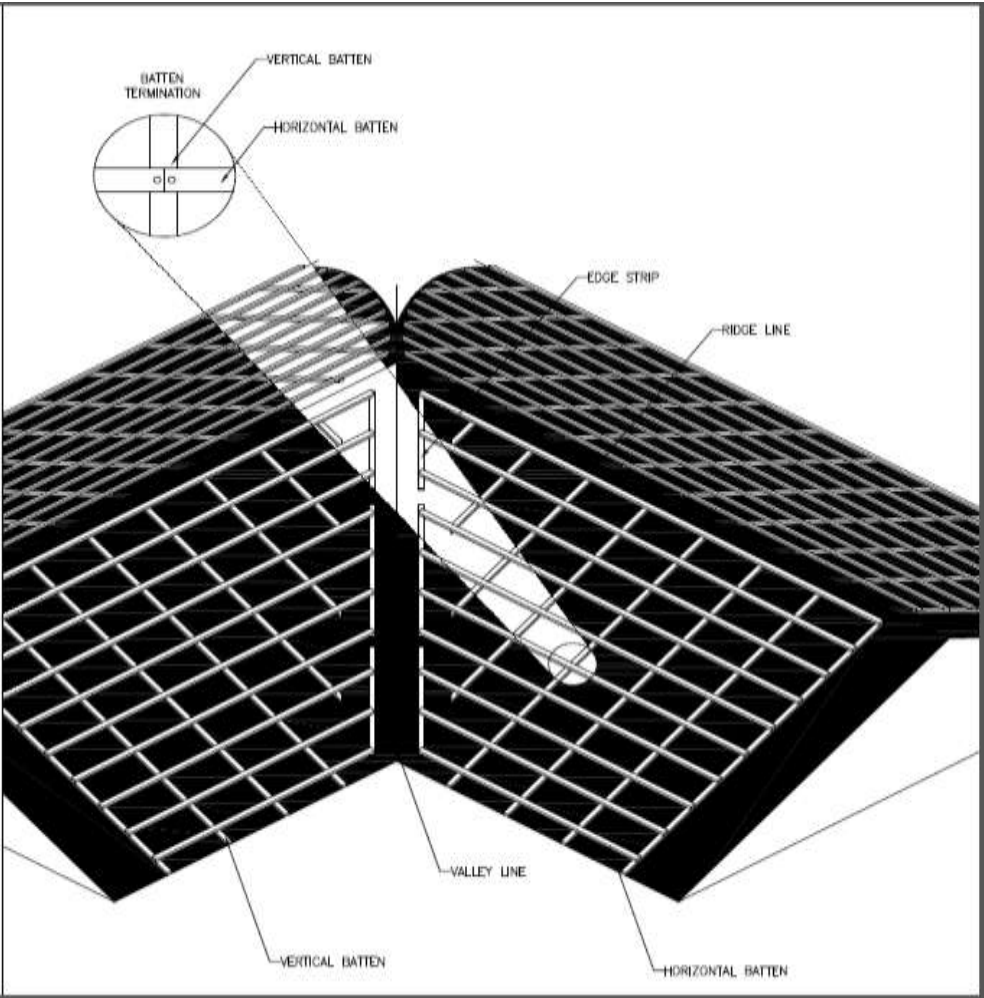
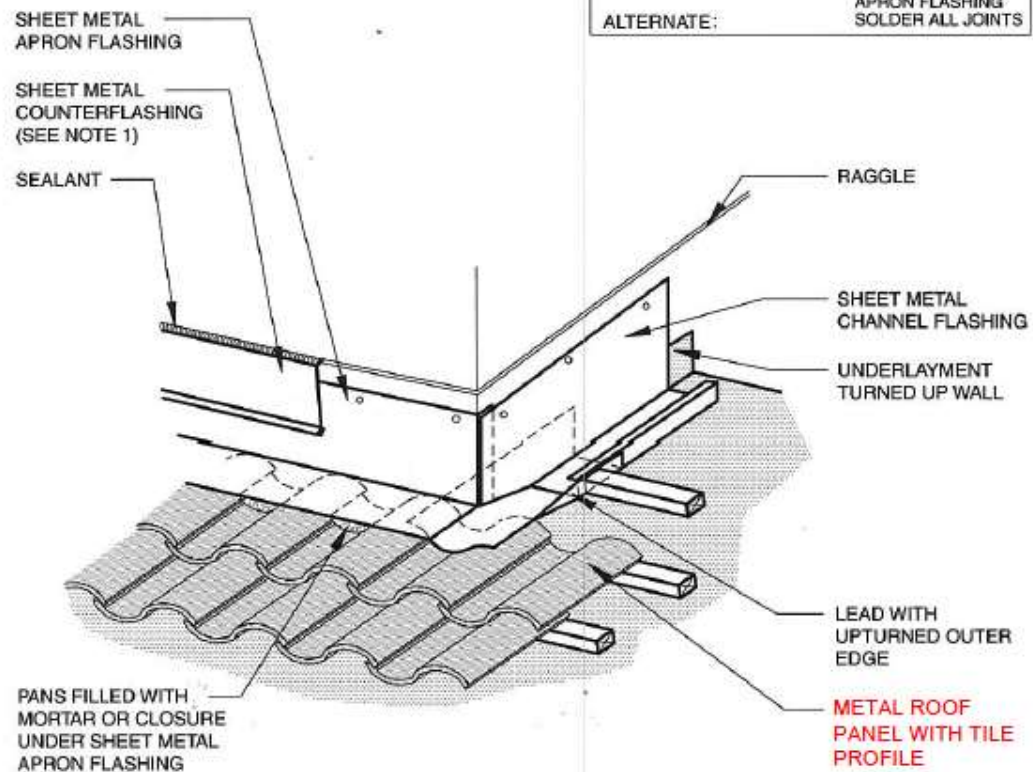


Figure 1: Single layer underlayment

Underlayment



Two way wood batten system (revised detail).



NOTES:

1. ALTERNATE COUNTERFLASHING PROFILES CAN BE USED.
2. REFER TO THE SHEET METAL SECTION OF THE METAL ROOFING MANUAL FOR SECUREMENT AND JOINERY OPTIONS FOR SHEET METAL.



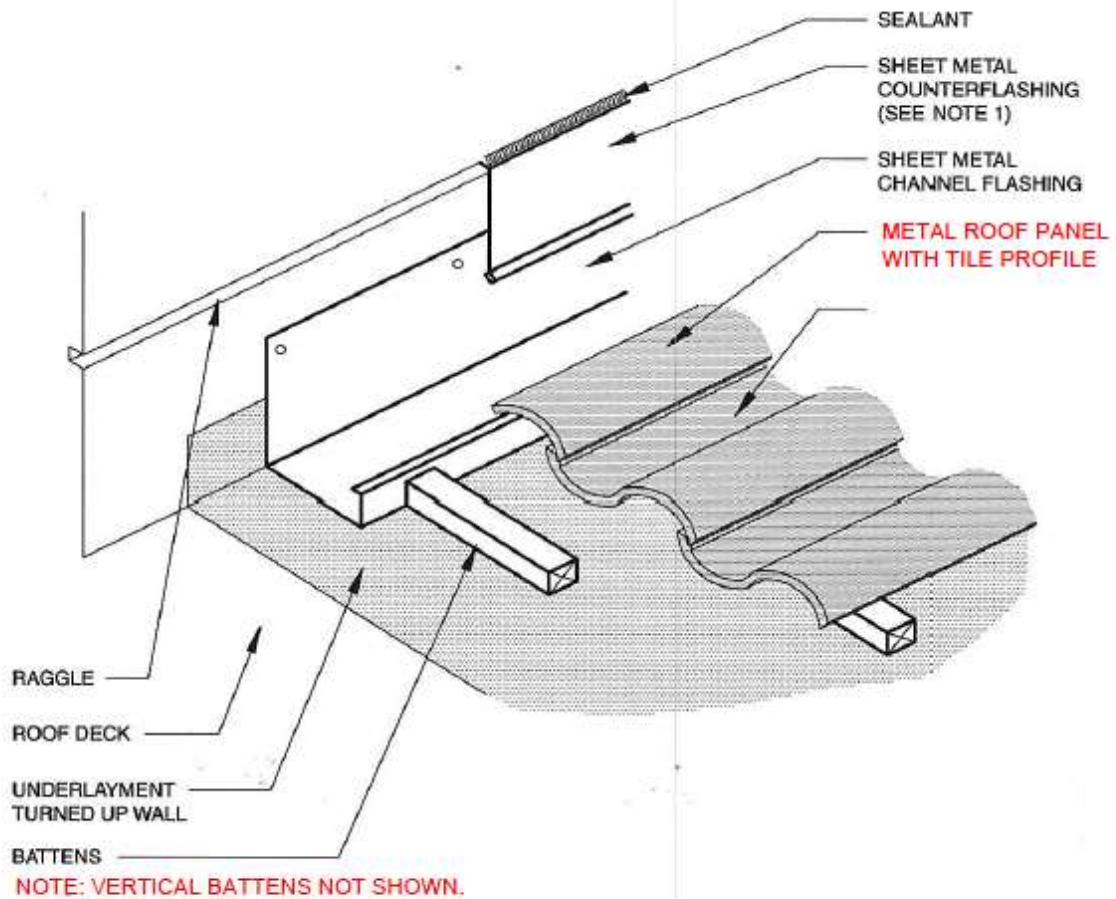
NATIONAL  
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CONTRACTORS  
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APRON FLASHING

2001


NOT DRAWN TO SCALE

*Revised Apron Flashing Detail*

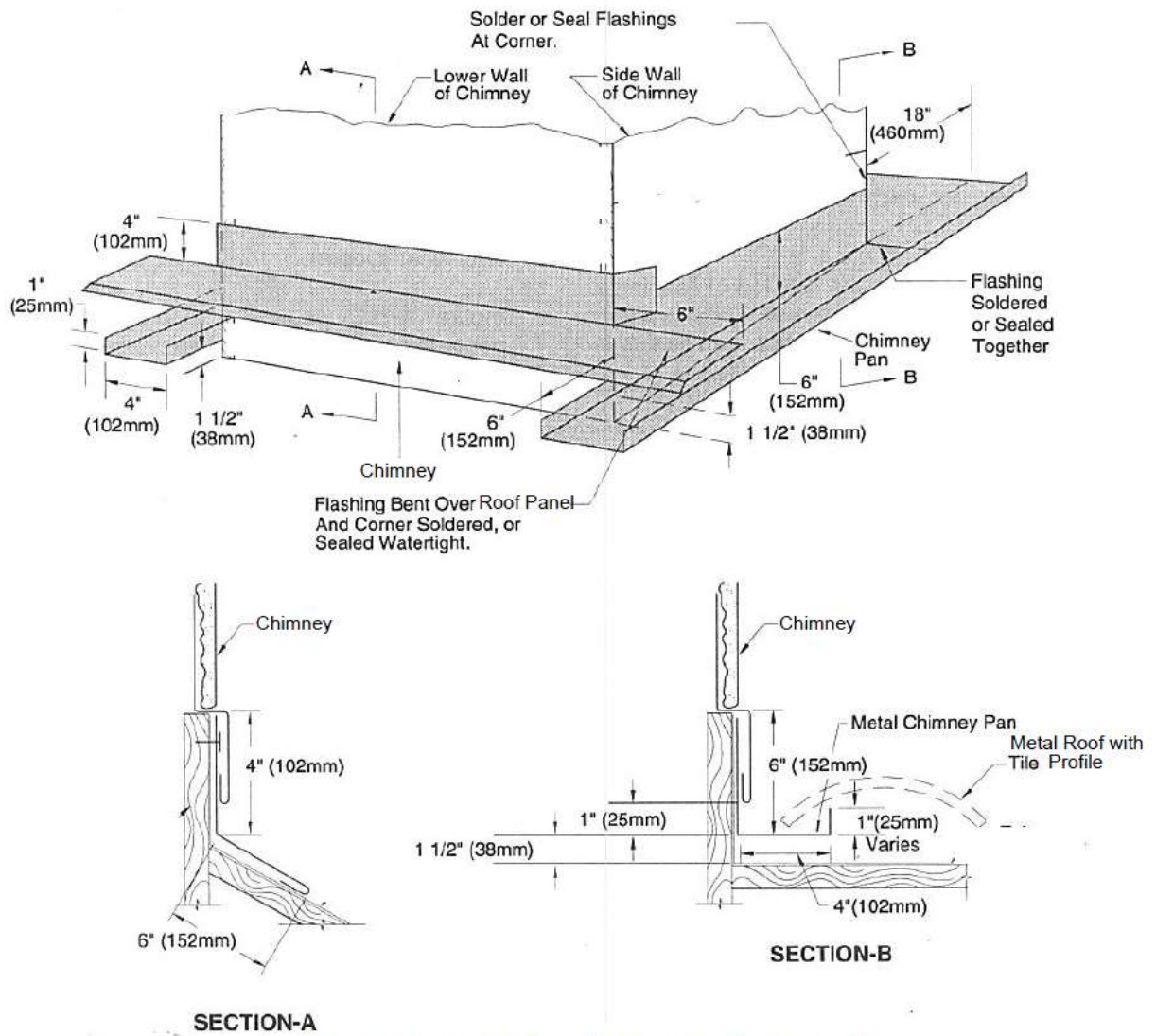


NOTES :

1. ALTERNATE COUNTERFLASHING PROFILES CAN BE USED.
2. METAL CHANNEL FLASHING SHOULD BE CONTINUOUS ALONG LENGTH OF WALL.
3. WIDTH OF METAL CHANNEL FLASHING VARIES DEPENDING UPON TILE LAYOUT.

	<b>NATIONAL ROOFING CONTRACTORS ASSOCIATION</b>	<b>SIDEWALL FLASHING</b>	
		2001	NOT DRAWN TO SCALE

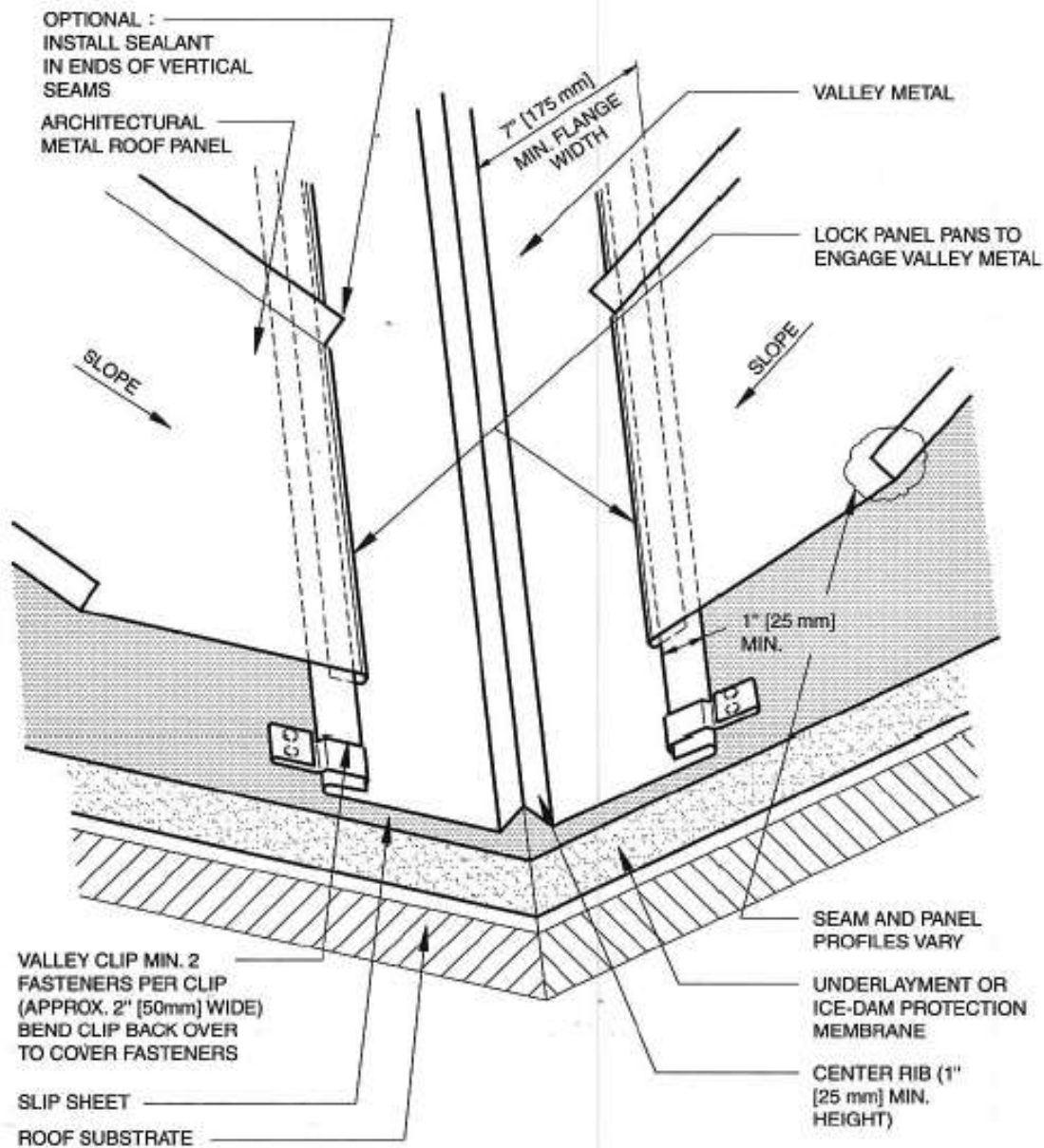
*Revised Sidewall Flashing Detail*



NOTE: TWO-WAY BATTEN SYSTEM NOT SHOWN FOR CLARITY.

*Revised Chimney Flashing Details.*





NOTES :

NOTE: TWO-WAY BATTEN SYSTEM NOT SHOWN FOR CLARITY.

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED, AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING UPON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. WHERE ICE FORMATION IS EXPECTED, MINIMUM ROOF SLOPE FOR THIS VALLEY IS 6:12 (27 DEGREES).
3. DIMENSIONS FOR VALLEY METAL WIDTH MAY VARY ACCORDING TO PANEL LENGTHS AND GEOGRAPHIC CONSIDERATIONS.



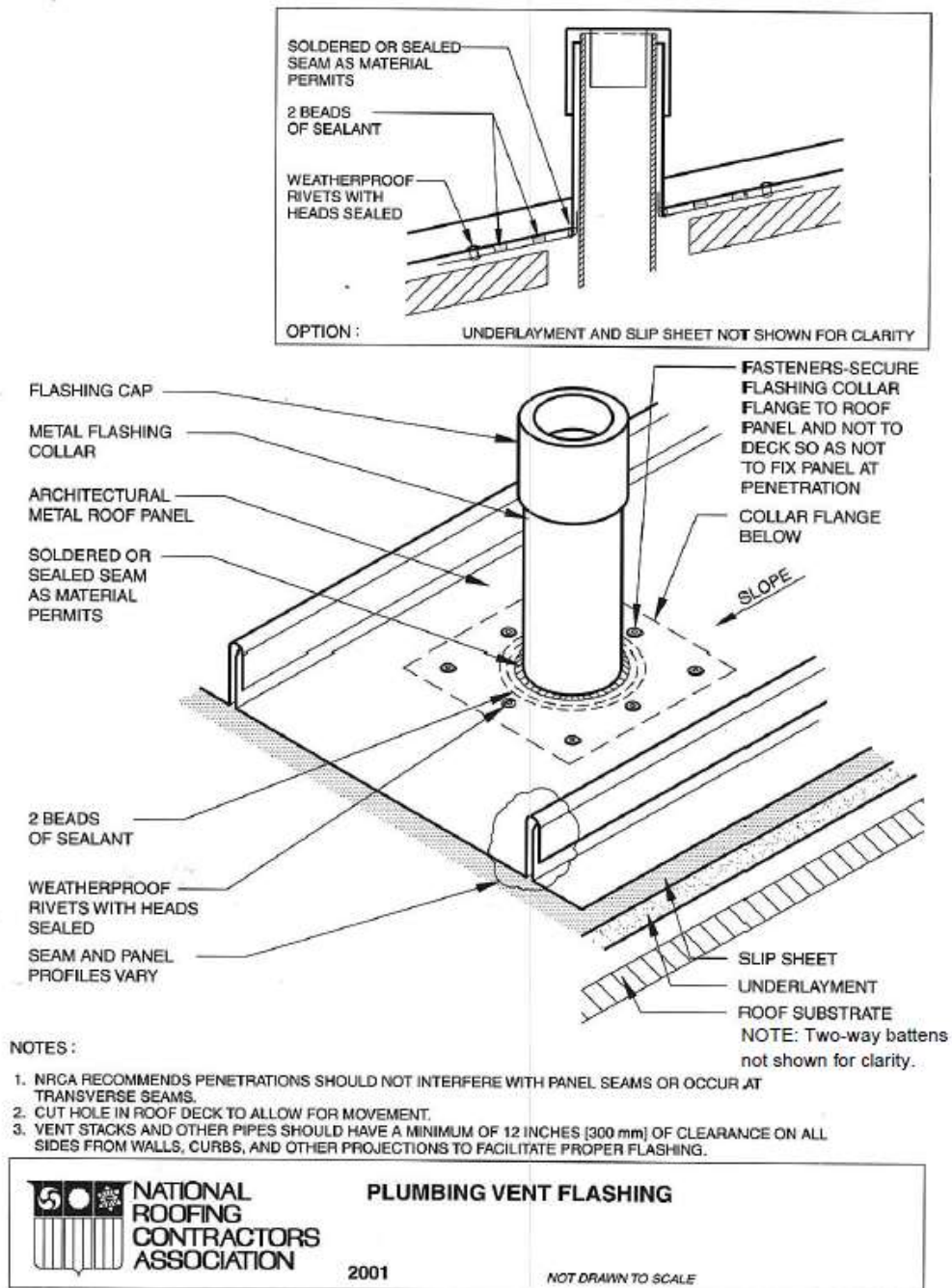
**NATIONAL  
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CONTRACTORS  
ASSOCIATION**

**OPEN METAL VALLEY**

2001

NOT DRAWN TO SCALE

*Additional Detail: Valley Flashing*



*Revised Pipe Penetration Detail.*

**ATTACHMENT: PHOTOGRAPHS OF EXISTING ROOF**





