



**Sapa Extrusions Inc.  
(REDD Team)**

**UNIVERSAL RAMP SYSTEM SPECIFICATIONS**  
(PLACE AN "X" IN THE BOX  BY ALL APPLICABLE ITEMS)

**OVERVIEW**

SCOPE OF WORK: PROVIDE PREFABRICATED MODULAR ALUMINUM ACCESS RAMPS

**PART 1 - SUBMITTALS**

- 1.1 Product Literature must be submitted with bid.
- 1.2 Warranty must be submitted with bid.
- 1.3 Shop Drawings: Include detailed shop drawings upon receipt of purchase order.
- 1.4 Engineering: Provide sealed professional engineering drawings upon request.

**PART 2 - QUALITY ASSURANCE**

- 2.1 Manufacturer: Sapa Extrusions (REDD Team), 248 W. Greene St., Magnolia, Arkansas 71754. Call toll free: 1-800-779-5509. Fax 1-866-840-4566. Find our web site at <http://www.reddteam.com> or e-mail us at [AAR-ReddTeamCustomerService@sapagroup.com](mailto:AAR-ReddTeamCustomerService@sapagroup.com). Any alternate manufacturer must be approved prior to bid opening.
- 2.2 All components shall be universal so that a ramp system can be relocated and assembled into many different configurations.
- 2.3 Design of the aluminum members shall conform to the Current Edition of the Aluminum Association Specifications and Guidelines for Aluminum Structures.
- 2.4 Aluminum welding shall be in accordance with the ANSI/AWS D1.2-97 gas metal arc welding process and shall be performed by experienced operators.
- 2.5 All exposed surfaces shall be smooth and free of sharp or jagged edges.
- 2.6 Warranty: Sapa Extrusions Inc. (REDD Team), warrants its products to be free from defects in material and workmanship in the course of manufacturing for a period of one year beginning at date of delivery of product. This warranty excludes any defects resulting from abnormal use in installation, service, accidental or intentional damage or any occurrences beyond the manufacturer's control.

**PART 3 - PRODUCTS**

**3.1 RAMP SECTIONS**

**3.1.1 Engineering**

- a. Ramp Sections shall be designed for a minimum uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds distributed uniformly over an area of 1 square foot.

**3.1.2 Materials**

**3.1.3 Design**

- a. Ramp sections shall be prefabricated in typical 6', 8' and 10' lengths. Custom lengths shall be fabricated as requested.
- b. All ramp sections shall be designed for variable heights and slopes.
- c. Ramp walking surface width shall be:  
 36 inches     48 inches     60 inches     Other
- d. The walking surface of the ramp shall be continuous, without gaps, and shall be 1 ½ inch X 6 inch and/or 1 ½ inch X 8 inch self mating aluminum deck with extruded slip resistant surface. Coefficient of friction shall be .93.
- e. All ramp sections shall have a 3" minimum curb or toe plate.

**3.2 LANDINGS**

**3.2.1 Engineering**

- a. Landings shall be designed for a minimum uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds distributed uniformly over an area of 1 square foot.

**3.2.2 Materials**

- a. Landings shall be constructed using 6000 series aluminum alloy with 6061-T6 for primary structural components.

**3.2.3 Design**

- a. Landings shall be prefabricated in typical 5'-4" X 5'-4" sections. Larger sizes will be fabricated as required by local codes and for specific applications as indicated on drawings.
- b. Landings shall be designed for variable heights.
- c. The walking surface of the landing shall be continuous, without gaps, and shall be 1 ½" X 6 inch and/or 1 ½" X 8" self mating aluminum deck with extruded slip resistant surface.

**3.3 LEGS**

**3.3.1 Engineering**

- a. The legs shall be designed to support the ramp and landing sections. (See sections 3.1.1.a & 3.2.1.a)

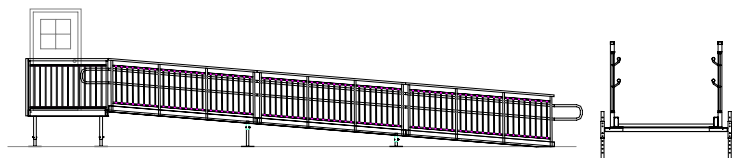
**3.3.2 Materials**

- a. Legs shall be all aluminum construction alloy 6061-T6.
- b. All fasteners shall be grade 304 stainless steel.

**3.3.3 Design**

- a. The legs shall telescope and allow for height and slope adjustments. The legs shall be designed so that they will be perpendicular to the ground and vertical loads are transmitted axially through them regardless of the slope.
- b. All legs shall be through bolted using stainless steel bolts grade 304.
- c. All legs shall have ¼" X 6" X 10" pads.

**3.4 42" TALL VERTICAL PICKET GUARDRAILS WITH 34" AND OPTIONAL 23" HANDRAILS**



a. Ramp Sections shall be constructed using 6000 series aluminum alloy with 6061-T6 for primary structural components.

### 3.4.1 Engineering

- a. Guardrails and handrails shall be designed to resist a single concentrated load of 200 pounds applied at any point and in any direction at the top of the guardrail or handrail and to transfer this load through the supports to the structure.
- b. Guardrails shall be designed and constructed to resist a load of 50 pounds per linear foot applied horizontally at the required guardrail height and a simultaneous load of 100 pounds per linear foot applied vertically downward at the top of the guardrail.
- c. Guardrails shall be designed and constructed to resist a 200 pound concentrated horizontal load applied over a one square foot area at any point in the system. Note: The loading of 3.4.1.a, 3.4.1.b and 3.4.1.c shall not be applied simultaneously.
- d. Handrails shall be designed and constructed to resist a load of 50 lbs per linear foot applied in any direction. Note: The loading conditions of 3.4.1.a and 3.4.1.d shall not be applied simultaneously.

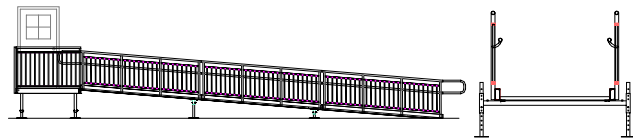
### 3.4.2 Materials

a. All handrail and guardrail shall be aluminum construction alloy 6061-T6, 6063-T5 or 6063-T6.

### 3.4.3 Design

- a. Handrail gripping surface shall be smooth and continuous throughout ramp sections and landings.
- b. The upper handrail shall be 1 ¼ " schedule 40 pipe. The top of the upper handrail shall be placed 34" above the walking surface.
- c.  Optional lower handrail shall be 1 ¼ " schedule 40 pipe. The top of the lower handrail shall be 23" above the walking surface.
- d. Guardrails shall form a protective barrier of a minimum of 42" high. Guardrails shall be designed such that a 4" sphere cannot pass through any opening.

## 3.5 34" OR 38" TALL VERTICAL PICKET HANDRAILS WITH OPTIONAL 26" HANDRAILS



### 3.5.1 Engineering

- a. Guardrails and handrails shall be designed to resist a single concentrated load of 200 pounds applied at any point and in any direction at the top of the guardrail or handrail and to transfer this load through the supports to the structure.
- b. Guardrails shall be designed and constructed to resist a load of 50 pounds per linear foot applied horizontally at the required guardrail height and a simultaneous load of 100 pounds per linear foot applied vertically downward at the top of the guardrail.

c. Guardrails shall be designed and constructed to resist a 200 pound concentrated horizontal load applied over a one square foot area at any point in the system. Note: The above loading shall not be applied simultaneously.

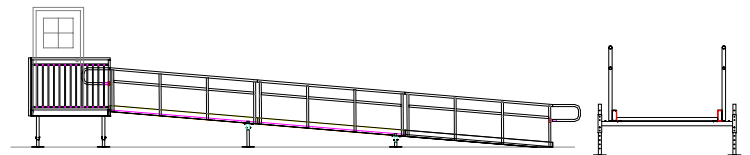
### 3.5.2 Materials

a. All Handrails and Guardrails shall be aluminum construction alloy 6061-T6, 6063-T5 or 6063-T6.

### 3.5.3 Design

- a. Handrail gripping surface shall be smooth and continuous throughout ramp sections and landings.
- b. The upper handrail (top cap) shall be 1 ¼ " schedule 40 pipe. The top of the upper handrail shall be placed 34" or 38" above the walking surface.
- c.  Optional lower handrail shall be 1 ¼ " schedule 40 pipe. The top of the lower handrail shall be 26" above the walking surface.
- d. Handrails shall form a protective barrier of a minimum of 34" or 38" high. Handrails shall be designed such that a 4" sphere cannot pass through any opening.

## 3.6 34" OR 38" TALL TWO LINE HANDRAILS



### 3.6.1 Engineering

a. Two Line Handrails shall be designed to resist a concentrated load of 200 pounds applied at any point and in any direction. Handrails shall also be designed to resist a load of 50 pounds per linear foot in any direction. Note: The above loadings shall not be applied simultaneously.

### 3.6.2 Materials

a. All Handrails shall be aluminum construction alloy 6061-T6, 6063-T5 or 6063-T6.

### 3.6.3 Design

- a. Handrail gripping surface shall be smooth and continuous throughout ramp sections.
- b. Handrails shall be 1 ¼ " schedule 40 pipe. The top of the handrail shall be placed 34" or 38" above the walking surface.

### 3.7 FINISHING

a.  Handrails and Guardrails shall be mill finish.

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