

SECTION 05520 - FALL PROTECTION

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes: Guardrail system of fall restraint for worker safety, permanently attached to roof structure.
- B. Related Sections:
 - a. Section 03300 – Cast-In-Place Concrete
 - b. Section 03400 – Pre-Cast Concrete
 - c. Section 05100 – Structural Metal Framing
 - d. Section 05310 – Metal Decking
 - e. Section 05400 – Cold Formed Metal Framing
 - f. Section 05500 – Metal Fabrications
 - g. Section 06100 – Rough Carpentry
 - h. Section 07400 – Membrane Roofing
 - i. Section 07510 – Built-Up Roofing
 - j. Section 07700 – Roof Specialties and Accessories

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. American National Standard Institute (ANSI)
 - a. ANSI A21.1 – Safety Requirements for Floor and Wall Openings, Railings and Toe Boards.
- C. Occupational Health And Safety Administration (OSHA)
 - a. OSHA 1910.21 – Guarding Floor and Wall Openings and Holes
 - b. OSHA 1926.502 – Fall Prevention Systems Criteria and Practices

1.03 SYSTEM DESCRIPTION

- A. General: Provide guardrail system capable of withstanding loads and stresses within limits and under conditions specified in OSHA and other applicable safety codes. Provide system permanently attached to roof structure.
- B. Design Requirements: Guardrail shall withstand, without failure, a minimum point load of 200 pounds applied in any direction at any point on the top edge, 150 pounds applied in any direction at the mid-rail, and 50 pounds applied in any downward or outward direction at the toe-board if applicable.

1.04 SUBMITTALS

- A. Product Data: For each type of device specified, including manufacturer's standard fabrication details and installation instructions.
- B. Shop Drawings: Show layout, profiles, and details. Shop drawings and calculations to be stamped by a Professional Engineer licensed in the State in which the project is located.
- C. Maintenance Data: Written instructions for maintenance of fall prevention safety devices to be included in the operation and maintenance manual.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firm having at least 10 years continuous experience in manufacturing fall safety equipment similar to systems specified and exhibiting records of successful in-service acceptability and performance. Firm must employ personnel dedicated to provide regularly scheduled Authorized and Competent Person Training courses as mandated by OSHA 1926 and 1910 for owner's authorized safety personnel.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where the Project is located and who is experienced in providing engineering services of the kind indicated.
- C. OSHA Standards: Comply with Occupational Safety and Health Administration Standards for the Construction Industry 29 CFR § 1926.500 Subpart M (Fall Protection), and with applicable State Administrative Code safety standards for railing.

1.06 COORDINATION

- A. Contractor to coordinate placement & installation of roofing system, insulation, and structural requirements of guardrail system manufacturer regarding proper installation.
- B. Contractor to coordinate placement of roofing system, insulation and flashing to ensure water-tight integrity to roof.

1.07 WARRANTY

- A. Provide manufacturer's standard warranty to guarantee products will be free from defects for a period of 12 months from date of shipment.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Provide fall protection system manufactured by Guardian Fall Protection Inc., 6305 South 231st Street Kent, WA, phone 800-466-6385, fax 800-670-7892, or equal.

2.02 MATERIALS

- A. Railing Sections:
 - a. Rails: 1-1/4" HRS tubing, or per manufacturer requirements
 - b. Height: 42 inches
 - c. Mid-rail: 21 inches between base and top rail
 - d. Length: custom, per manufacturer requirements
 - e. Finish: galvanized
 - f. Finish optional: powder coated to custom colors per request
- B. Bases:
 - a. Size: custom, per manufacturer requirements
 - b. Finish: galvanized
 - c. Finish optional: powder coated to custom colors per request
 - d. Toe board: if required
- C. Fasteners:

- a. Size: Per manufacturer requirements
- b. Material: galvanized steel, or 300 series stainless steel

2.03 FABRICATION

- A. Fabricate work true to dimension, square, plumb, level, and free from distortions or defects detrimental to appearance and performance.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine framing and substrate and verify conditions comply with structural requirements for proper system performance.
- B. Proceed with installation of guardrail system only after verifying conditions are satisfactory.

3.02 INSTALLATION

- A. General: Installation of guardrail system to be performed by contractor according to manufacturer's instructions and recommendations.

3.03 ADJUSTMENT AND INSPECTION

- A. Ensure all guardrail systems have been installed in accordance with fall protection manufacturer's engineering documentation and specifications.
- B. Provide plan drawings with any deviations in guardrail locations as installed.