SECTION 11 8129

FALL PROTECTION SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes anchor points, safety cable, and safety harness for fall protection system.

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Other Documents and Sections that directly relate to work of this Section include, but are not limited to:

1. General provisions of the Contract, including General and Supplementary Conditions, and Division 01 General Requirements Specification Sections.
2. Section 05 5000 - METAL FABRICATIONS.
3. Section 08 4000 - ALUMINUM-FRAMED FACADE SYSTEMS.

1.2 SYSTEM DESCRIPTION

A. Horizontal Lifelines

1. In accordance In accordance with OSHA (29 CFR 1910.66 App C, Section I, (c)(9), proposed 29 CFR 1910.128(c)(9) and 29 CFR 1926.502(d)(8)), “horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.”

B. References

1. OSHA (29 CFR 1910.66 App C, Section I, (c)(9), proposed 29 CFR 1910.128(c)(9) and 29 CFR 1926.502(d)(8)).
2. ANSI/IWCA I-14.1 - Window Cleaning Safety; International Window Cleaning Association, 2001.
3. ANSI/ASSE Z359 - Fall Protection Code, 2007.

C. Performance Requirements:

1. The lifeline systems shall be designed under the supervision of a professional engineer qualified in the design of lifeline systems. The professional engineer shall be designated as an OSHA qualified person in fall protection.
2. Design the lifeline systems to comply with the following criteria:
   a. A minimum of two users to be attached to each system simultaneously.
   b. Users to attach to the system using a full body harness and lanyard, incorporating an energy-absorber that limits the maximum arresting force on the user to 1,350 lbs.
   c. The fall of both users that generates the greatest component forces and/or the greatest fall clearance requirements.
   d. Components and anchorages shall be designed with a two to one factor of safety against failure.
   e. System fall clearance requirements shall not exceed the permitted clearances stated on the drawings.

1.3 SUBMITTALS

A. Statement of the fall protection Sub-Contractor’s designation as an OSHA qualified person in fall

protection. The qualified person shall be a professional engineer licensed to practice within the state of the project location.

B. Shop Drawings:

1. Provide shop drawings showing complete layout and configuration of the horizontal lifeline systems, including all components and accessories.
2. Clearly indicate design and fabrication, hardware and installation details.
3. Include design calculations for the systems and components.

C. Mill certificates: Signed by manufacturers of aluminum and stainless-steel products certifying that products furnished comply with requirements.

D. Welding certificates.

E. Independent testing agencies: Qualifications of firm(s) to be subcontracted to perform testing required by the drawings and specifications.

F. All submittals shall be signed and sealed by the professional engineer responsible for the supervision of their preparation.

1.4 QUALITY ASSURANCE

A. Professional Engineer: A professional engineer who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of systems that are similar to those indicated for this Project in material, design and extent.

B. Qualified Person: OSHA defines a qualified person as one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project or product.

C. Manufacturer: Work shall be performed by a manufacturer and installer specializing in the design, fabrication and installation of horizontal lifeline fall protection systems.

D. Installers: Installers shall be manufacturer certified.

E. Source limitations: Obtain each component of the system through one source from a single manufacturer.

F. Welding: Perform welding using AWS certified welders.

1. AWS D1.1, “Structural Welding Code - Steel.”
2. AWS D1.6, “Structural Welding Code - Stainless Steel.”

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide products of one of the following manufacturers that meet or exceed specified requirements, or approved equal:

1. Pro-Bel, The Safety Anchor Company; Pro-Bel Enterprises, Limited.
2. FLS Works.
3. Rigid Lifelines.

2.2 COMPONENTS

A. Unless stated otherwise, all components shall be manufactured from stainless steel or anodized aluminum and shall conform to ANSI Z359 - 2007

B. Anchorage Connectors: Anchorage connectors shall be fastened to the supporting structure in accordance with the drawing requirements. A lock washer shall be provided under the turned element. Minimum breaking strength shall exceed 10,000 lbs.

C. Cable: The cable shall be of stainless steel wire rope construction, with a minimum breaking strength of 8,800 lbs. Cable ends shall be terminated with swaged fittings.

D. Harness: Full body harness complete with shock absorber is required per worker; two workers is considered maximum.

1. Provide three worker lanyards.

PART 3 EXECUTION

3.1 INSTALLATION

A. Installation shall not commence until shop drawings have been received, reviewed and returned by the Architect.

B. Verify all existing conditions prior to commencing installation.

C. Install the lifeline system components in accordance with reviewed shop drawings and manufacturer’s requirements.

D. Provide isolation membrane between horizontal lifeline system and support structure where potential for dissimilar metal corrosion exists.

E. Immediately notify the Architect in writing of any installation deviations from the shop drawings.

F. Coordinate installation with work of other trades.

3.2 FIELD QUALITY CONTROL

A. Install all work true, level, tightly fitted and flush with adjacent surfaces as required and in accordance with the manufacturer’s requirements.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK