

SECTION 220548.00 - SEISMIC CONTROLS FOR PLUMBING SYSTEMS

PART 1 - GENERAL

1.1 SUBMITTAL REQUIREMENTS

- A. Shop Drawings
 - 1. Delegated Design Submittal including Shop Drawings: Prior to commencing with any related work, submit design drawings and details, certifications, etc. Include restraint device product information. Comply with performance requirements and design criteria. Shop Drawing shall be stamped by PE.

1.2 SUMMARY

- A. Seismic bracing for all non-structural components including but not limited to equipment, piping, conduit and ductwork is required for this project. The design and installation of the vibration isolation and seismic restraint devices is delegated to the contractor. The contractor shall provide signed and sealed seismic drawings and calculations by a licensed professional structural engineer registered in the project's state and submit them to design team for review. Design shall comply with currently adopted version of the International Building Code (IBC) with local building code amendments and ASCE 7. Support Systems shall at a minimum withstand the effects of seismic motions per ASCE-7.
- B. Refer to Structural Drawings for Seismic Design Criteria.

1.3 PERFORMANCE REQUIREMENTS

- A. Perform the following and include the following within shop drawing submittal.
 - 1. Provide Seismic Design Force calculations including static and dynamic loading due to equipment weight and operation, seismic and wind forces required to select vibration isolators, seismic and wind restraints, and for designing vibration isolation bases.
 - 2. To support selection and arrangement of seismic and wind restraints, include calculations of combined tensile and shear loads. Indicate fabrication and arrangement. Detail attachments of restraints to the restrained items and to the structure. Show attachment locations, methods, and spacings. Identify components, list their strengths, and indicate directions and values of forces transmitted to the structure during seismic events. Indicate association with vibration isolation devices.
 - 3. Include riser diagrams, layouts and calculations showing anticipated expansion and contraction at each support point, initial and final loads on building structure, spring deflection changes, and seismic loads. Include certification that riser system has been examined for excessive stress and that none will exist. Layouts for both vertical and horizontal non-structural components shall include at least the following:
 - 4. All vertical support and seismic brace locations.
 - 5. All anchorage connections to structure. Include anchor brand, type, embedment, quantity and size.
 - 6. Vertical support and brace reaction point load at all connections to structure.
 - 7. Plan set sheets showing appropriate installation details reflecting actual job site conditions.

8. Identification tag labels to be installed at each seismic brace location.

PART 2 - PRODUCTS (PRODUCT SELECTION DELEGATED TO CONTRACTOR TO SATISFY PERMFORMANCE REQUIREMENTS)

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Upon completion of construction, a quality assurance representative of the seismic provider shall review the installation of the seismic force resisting system and provide documentation indicating general conformance to seismic restraint layout drawings.

End of Section 220548.00