SECTION 14 9100

FACILITY CHUTES

PART 1 GENERAL

1.1 SUMMARY

A. Work of this Section consists of waste and recycling chutes.

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:

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 07 6200 - SHEET METAL FLASHING AND TRIM.
4. Section 07 7200 - ROOF ACCESSORIES.
5. Section 07 8413 - PENETRATION FIRESTOPPING.
6. Section 21 1000 - WATER-BASED FIRE-SUPPRESSION SYSTEMS.
7. Division 22 - PLUMBING: Water-service connections.
8. Division 26 - ELECTRICAL: Electrical-service connections.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Detail chute assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, and location and size of each field connection.

1. Wiring Diagrams: Power, signal and control wiring.

C. Product Certificates: For each type of chute, signed by product manufacturer.

D. Operation and Maintenance Data: For chutes to include in emergency, operation, and maintenance manuals.

1. Include manufacturer's recycling plan guidelines.

1.3 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Minimum five (5) years-documented experience producing products specified in this section.
2. Installer: Approved by the Manufacturer, and having a minimum of five (5) years experience.

B. NFPA Compliance: Provide chutes complying with NFPA 82.

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated.

1. Test Pressure: Test at atmospheric (neutral) pressure according to NFPA 252 or UL 10B.
2. Intake Door: Class B labeled; 1-1/2 hour fire rated with 30-minute temperature rise of 250

deg F.
3. Discharge Door: Class B labeled; 1-hour fire rated with 30-minute temperature rise of 250 deg F.
4. Access Door: Class B labeled; 1-1/2 hour fire rated with 30-minute temperature rise of 250 deg F.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Pre-Installation Meetings:

1. Convene at job site a minimum of seven (7) calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
2. Require attendance by representatives of the following:
   a. Contractor
   b. Manufacturer’s designated representative
   c. Installer.
   d. Other entities directly affecting, or affected by, construction activities of this section.

3. Notify Architect four (4) calendar days in advance of scheduled meeting date.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. U.S. Chutes; http://www.uschutes.com/catalog.html
2. Valiant Products, Inc.; http://www.linenchutes.com/
3. Wilkinson Hi-Rise, LLC; http://www.wilkinsonhirise.com/
4. Architect acceptable equivalent.

2.2 CHUTES

A. Chute Metal: Type 304 stainless steel, ASTM A 240/A 240M.

1. Thickness: 0.080 inch.

B. Size: 20 inch diameter and 24 inch diameter

2.3 DOORS

A. Intake Door Assemblies: ASTM A240 / A240M, Type 304 stainless-steel, self-closing units with positive latch and latch handle; as required to provide fire-protection and temperature-rise ratings indicated; and with frame suitable for enclosing chase construction.

1. Door Type: Type as indicated on Drawings.
2. Size: Manufacturer's standard size for door type, chute type, and diameter indicated.
3. Finish: Manufacturer's standard satin or No. 3 directional polish.
4. Locks: Cylinder locks with keys that are removable only when cylinder is locked. For each chute, key locks to master key system. For each door, furnish four (4) keys.
5. Foot Operators: Hopper-type door operators that unlatch and open door when foot pedal is depressed.
6. Mechanical Interlocks: Interlock system operated from discharge door to automatically lock

intake doors.

7. Electrical Interlocks: Interlock system that is energized by opening one intake door; remaining doors automatically lock when system is energized.

B. Discharge-Door Assemblies: Aluminum-coated-steel doors as required to provide fire-protection and temperature-rise ratings indicated; equipped with fusible links that cause doors to close in the event of fire.

1. Direct Vertical Discharge: Provide inclined, horizontally rolling, shutter-type unit.
2. Horizontal Discharge: Provide top-hinged, self-closing, hopper door with self-latching hardware; floor-mounted leg brace designed to absorb impact of material dropping against chute; and minimum NPS 2 drain pipe connection.

C. Heat and Smoke Detector System: Interlock system with temperature-rise elements that locks chute doors when temperature in chute reaches a predetermined, adjustable temperature.

1. Locate smoke detector outside discharge door with solenoid to close discharge door.

D. Access Door Assemblies: Manufacturer's standard ASTM A240 / A240M, Type 302/304 stainless-steel doors; as required to provide fire-protection and temperature-rise ratings indicated; with frame suitable for enclosing chase construction; and in satin or No. 3 directional polish finish.

E. Manual Control System: Control system with manual switches that lock doors of chute during shutdown hours and service operations.

2.4 ACCESSORIES

A. Fire Sprinklers: NPS 1/2 fire sprinklers ready for piping connections.

B. Flushing Spray Unit: NPS 3/4 spray head unit located in chute above highest intake door, ready for hot-water piping connection, and with access for head and piping maintenance.

C. Sanitizing Unit: NPS 3/4 disinfecting and sanitizing spray head unit located in chute above highest intake door, including 1 gal. tank and adjustable proportioning valve with bypass for manual control of sanitizing and flushing operation, ready for hot-water piping connection, and with access for head and piping maintenance.

D. Intake Door Baffles: Rubber baffles, 1/8 inch thick.

E. Sound Dampening: Manufacturer's standard exterior mastic coating on chute.

1. Sound and vibration isolator pads at floor supporting frames.

2.5 FABRICATION

A. General: Factory-assemble chutes to greatest extent practical with continuously welded or lock-seamed joints without bolts, rivets, or clips projecting on chute interior. Include intake-door assemblies and metal supporting framing at each floor, and chute expansion joints between each support point.

B. Roof Vent: Fabricate vent unit to extend 36 inches above roof with full-diameter, screened vent and metal safety cap or glass explosion-release cap. Fabricate with roof-deck flange, counterflashing, and clamping ring of nonferrous metal compatible with chute metal.

C. Fire Sprinklers: Comply with NFPA 13. Locate fire sprinklers at or above the top service opening of chutes, within the chute at alternate floor levels in buildings more than two stories tall, and at

the lowest service level.

D. Equipment Access: Fabricate chutes with access for maintaining equipment located within the chute, such as flushing and sanitizing units, fire sprinklers, and plumbing and electrical connections.

PART 3 EXECUTION

3.1 EXAMINATION

A. Carefully examine areas with Installer present, for compliance with requirements affecting Work performance.

1. Verification of Conditions: Verify that field measurements, surfaces, substrates, structural support, utility connections, tolerances, levelness, plumbness, humidity, moisture content level, cleanliness and other conditions are as required by the manufacturer, and ready to receive Work.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with NFPA 82 requirements and with chute manufacturer's written instructions. Assemble components with tight, non-leaking joints. Anchor securely to supporting structure to withstand impact and stresses on vent units. Install chute and components to maintain fire-resistive construction of chute and enclosing chase.

B. Install trash chutes in accordance with approved Shop Drawings and manufacturer’s printed installation instructions.

C. Install chutes plumb, without offsets or obstructions that might prevent materials from free falling within chutes.

D. Anchor roof flanges of chute vents before installing roofing and flashing. Install chute-vent counterflashing after roofing and roof-penetration flashing are installed.

E. Intake and Discharge Doors: Interface door units with throat sections of chutes for safe, snag-resistant, sanitary depositing of materials in chutes by users.

1. Coordinate installation of foot-pedal door operator with installation of door and chase.
2. Interconnect sanitizer control with door interlock system.

F. Electrical Interlock System: Comply with applicable NECA 1 recommendations.

G. Test chute components after installation. Operate doors, locks, and interlock systems to demonstrate that hardware is adjusted and electrical wiring is connected correctly. Complete test operations before installing chase enclosures.

H. Test fire sprinklers and heat- and smoke-sensing devices for proper operation.

I. Operate sanitizing unit through one complete cycle of chute use and cleanup, and replenish chemicals or cleaning fluids in unit containers.

3.3 CLEANING

A. After completing chase enclosure, clean exposed surfaces of chute system's components. Do not remove labels of independent testing and inspecting agencies.

3.4 DEMONSTRATION

A. Demonstrate use of chute and equipment to Owner's personnel.

B. Demonstrate replenishment of sanitizing-unit chemicals or cleaning fluids.

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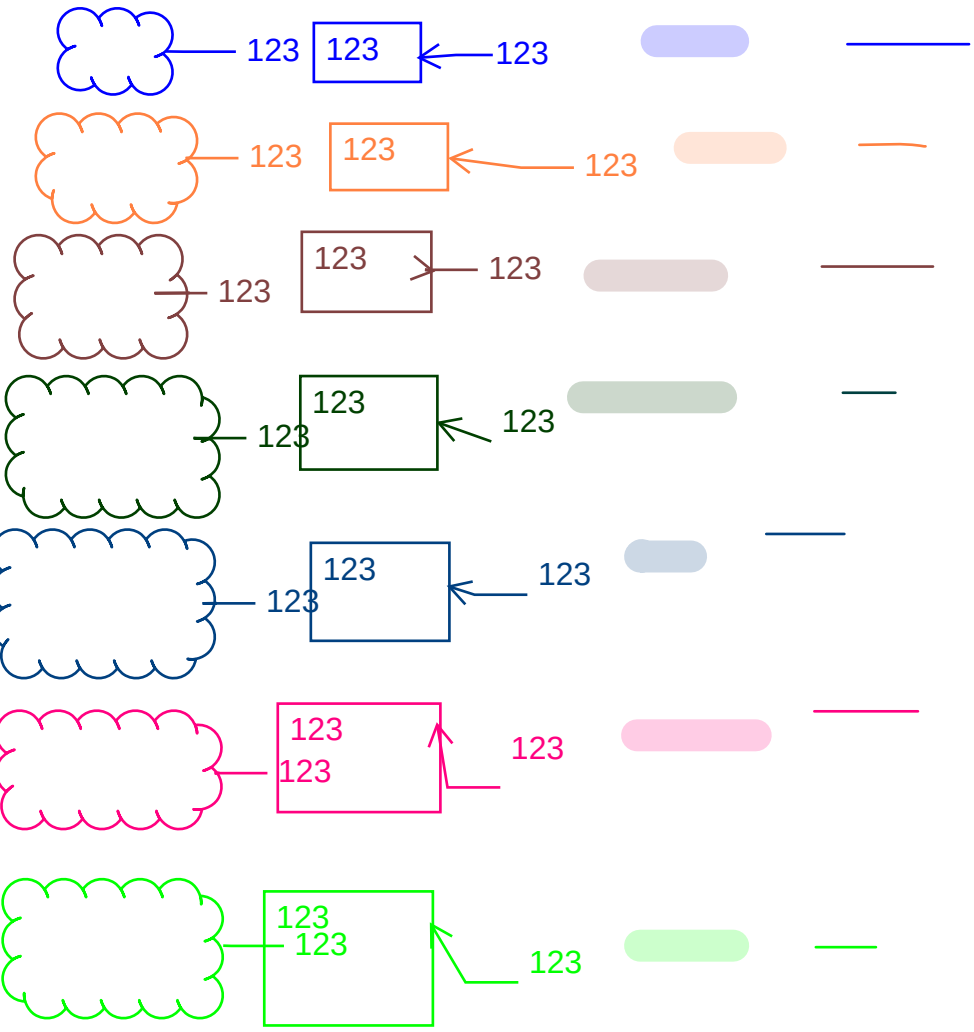

Legend

Description Quantity Unit