SECTION 08330

ROLLING GRILLES – OPEN DESIGN

GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE, AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON MASTERFORMAT, 1995 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING SECTIONS 01330 SUBMITTAL PROCEDURES, 01620 PRODUCT OPTIONS, 01630 PRODUCT SUBSTITUTION PROCEDURES, 01660 PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01770 CLOSEOUT PROCEDURES, AND 01780 CLOSEOUT SUBMITTALS. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

THIS IS AN OPEN PROPRIETARY SPECIFICATION ALLOWING USERS THE OPTION OF APPROVING OTHER MANUFACTURERS WHICH COMPLY WITH THE CRITERIA SPECIFIED HEREIN.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G.: [35] [40] [45]. IN CASES WHERE ONE OF THE OPTIONAL ITEMS IS A STANDARD FEATURE OF THE GRILLE MODEL, IT IS LISTED IN THE FIRST POSITION. MAKE APPROPRIATE SELECTION AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED, E.G.: _____ .

OPTIONAL PARAGRAPHS ARE SEPARATED BY A REDLINED "OR," E.G.:

OR

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: [Manual] [and] [electric operated] overhead rolling grilles.

B. Related Sections:
   1. 05500 Metal Fabrications. Door opening jamb and head members.
   2. 06100 Rough Carpentry. Door opening jamb and head members.
   3. 08310 Access Doors and Panels. Access doors.
   4. 08700 Hardware. Masterkeyed cylinders.
   5. Division 16. Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, and installation of control station and wiring.

C. Products That May Be Supplied, But Are Not Installed Under This Section:
   1. Control station.
   2. Manual release pull handle.

INCLUDE APPROPRIATE LANGUAGE BELOW, INCLUDING A REFERENCE TO SECTION 01230 ALTERNATES, IF ROLLING GRILLES ARE INCLUDED IN ANY ALTERNATES, ADD SECTION 01230 TO 1.1 B. DELETE IF NO ALTERNATES.

D. Alternates:

1.2 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Cycle Life:
      a. Design grilles of standard construction for normal use of up to 20 cycle per day maximum.

OR

      a. Design grilles of special construction for high cycle use. Expected cycles of up to ____ per day.

1.3 SUBMITTALS

A. Reference Section 01330 Submittal Procedures; submit the following items:
   1. Product Data.
   2. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.
   3. Quality Assurance/Control Submittals:
      a. Provide proof of manufacturer ISO 9002 registration.
      b. Provide proof of manufacturer and installer qualifications - see 1.3 below.
      c. Provide manufacturer's installation instructions.
   4. Closeout Submittals:
      a. Operation and Maintenance Manual.
      b. Certificate stating that installed materials comply with this specification.

1.4 QUALITY ASSURANCE

A. Qualifications:
   1. Manufacturer Qualifications: ISO 9002 registered and a minimum of five years experience in producing grilles of the type specified.
   2. Installer Qualifications: Manufacturer's approval.

1.5 DELIVERY STORAGE AND HANDLING

A. Reference Section 01660 Product Storage and Handling Requirements.

B. Follow manufacturer's instructions.

1.6 WARRANTY

A. Standard Warranty: Two years from date of shipment against defects in material and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Cornell Iron Works, Inc., Crestwood Industrial Park, Mountaintop, PA 18707. Telephone: (800) 233-8366, Fax: (800) 526-0841. Underwriters Laboratories, Inc. (UL), ISO 9002 Registered.

INSERT NAME, ADDRESS, AND PHONE NUMBERS OF LOCAL DISTRIBUTOR BELOW.

1. Distributor:

B. Model: VisionAire Rolling Grille

C. Substitutions: Reference Section 01630 Product Substitution Procedures.

2.2 MATERIALS

A. Curtain:
1. Horizontal Rods: Solid [5/16 inch (8 mm) diameter, 5056 H32 aluminum alloy] [5/16 inch (8 mm) diameter, AISI 300 series stainless steel] [5/16 inch (8 mm) diameter galvanized steel].

1 1/2" (38.1 mm) SPACING IS NOT AVAILABLE ON STAINLESS STEEL CURTAINS.

a. Vertical Spacing: [2 inches (50.8 mm)] [1-1/2 inches (38.1 mm)] on center.

SELECT ALUMINUM CHAIN LINKS BELOW FOR ALUMINUM AND GALVANIZED RODS AND STAINLESS STEEL LINKS FOR STAINLESS STEEL RODS.

2. Vertical Chains: Eyeletted [aluminum] [stainless steel] links, 3/4 inch (19 mm) wide, positioned by E-rings on [9 inch (228.6 mm)] [6 inch (152.4 mm)] [3 inch (76.2 mm) centers. Provide double E-rings on horizontal bars on both sides of end chains to retain curtain in guides.

INCLUDE REINFORCING ANGLES NOTED BELOW ON GRILLES OVER 27’-4" (8.33 M) WIDE.

3. Bottom Bar: 2 x 3-1/2 inch (50.8 x 88.9 mm) extruded aluminum tubular section [reinforced with 3 x2 x 3/16 inch (76.2 x 50.8 x 4.76 mm) aluminum angle(s)].
4. Finish:
a. Aluminum Curtain and Bottom Bar:
1. Curtain: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].
2. Bottom Bar: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

OR

a. Stainless Steel Curtain with Aluminum Bottom Bar:
1. Curtain: Factory polished.

2. Bottom Bar:[Clear anodized] [Mill finish].

OR

a. Stainless Steel Curtain with Stainless Steel Bottom Bar: Factory polished.

OR

a. Galvanized Steel Rods with Aluminum Chains and Bottom Bar:
   1. Rods: Galvanized steel, unpainted.
   2. Chains and Bottom Bar: [Mill finish] [Clear anodized].

B. Guides, Wall Mounted: Heavy duty extruded aluminum sections with [snap-on cover to conceal fasteners and] polypropylene pile runners on both sides of curtain. Provide [steel] [aluminum] mounting angle as required for face of wall installation.

OR

B. Guides, Tube Mounted: Heavy duty extruded aluminum sections with [snap-on cover to conceal fasteners and] polypropylene pile runners on both sides of curtain. Provide [steel] [aluminum] tubes, floor saddles and hardware as recommended by manufacturer to support grille.
   1. Finish, Aluminum Guide Components:
      a. [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

DELETE (2.) BELOW WHEN NOT USING ANY STEEL COMPONENTS IN SECTION 2.2 B ABOVE.

2. Finish, Steel [Mounting Angles] [Tubes]:

USE POWDER COAT FINISH FOR EXPOSED STEEL GUIDE COMPONENTS AND UNPAINTED WHEN STEEL GUIDE COMPONENTS ARE RECESSED IN THE WALL.

a. Unpainted.

OR

a. Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

a. Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

C. Counterbalance Shaft Assembly:
   1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width.
   2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of grille to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

D. Brackets: Fabricate from minimum 3/16 inch (4.76 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.
   1. Finish: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

1. Finish: Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

1. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

HOODS ARE NOT NORMALLY PROVIDED FOR COIL ABOVE CEILING APPLICATION, DELETE HOOD BELOW IF NOT DESIRED.

E. Hood [and Fascia]: [24 gauge galvanized steel] [24 gauge stainless steel] [0.040 inch (1.016 mm) aluminum] with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets as required to prevent excessive sag.
   1. Finish:
      a. Galvanized Steel: Phosphate treatment followed by light gray baked-on polyester enamel coating, minimum 0.6 mils (0.015 mm) cured film thickness.

OR

      a. Stainless Steel: No. 4 finish.

OR

      a. Aluminum: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

2.3 ACCESSORIES

TO PROVIDE SECURITY, A LOCKING MECHANISM IS REQUIRED ON ALL GRILLES. MOST COMMON LOCKING METHODS ARE LISTED BELOW; CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR OTHER OPTIONS. EMERGENCY EGRESS LOCK MUST BE USED WITH EMERGENCY EGRESS SYSTEM.

A. Locking:
   1. Manual Push-Up: Keyed cylinder locking into both jambs operable from both sides of curtain.

OR

   1. Manual Crank Hoist: Keyed cylinder locking into both jambs operable from coil side of curtain.

OR

   1. Motor Operated: Keyed cylinder locking into both jambs operable from both sides of curtain with motor interlock cutout switches.

OR

   1. Emergency Egress Lock: Key cylinder locking from public side, thumbturn cylinder locking from tenant side, locking into both jambs. Provide an additional security panel in curtain. [Provide motor interlock cutout switches on motorized units.]

FOLLOWING EMERGENCY EGRESS SYSTEM CAN BE USED WITH DJ AND DH MOTOR OPERATORS.

B. Emergency Egress System: Provide wall mounted manual release system pull handle to disengage motor operator and automatically open grille for emergency egress without the use of electrical power. Release of pull handle will reset grille to normal motor operation.

EXPOSED MOVING OPERATOR COMPONENTS LOWER THAN 8 FEET ABOVE FLOOR LEVEL THAT CREATE POSSIBLE PINCH POINTS ARE REQUIRED TO BE COVERED PER UL 325. SPECIFY AN OPERATOR COVER WHENEVER THIS FIELD CONDITION EXISTS.

C. Operator [and Bracket Mechanism] Cover: Provide [24 gauge galvanized steel] [24 gauge stainless steel] [0.040 inch (1.016 mm) aluminum] sheet metal cover [to provide weather resistance] [to enclose exposed moving operating components] at coil area of unit. Finish to match door hood.

2.4 OPERATION

A. Manual Push-Up: Provide pole with hook. Suitable for aluminum grilles up to 16' (4.88 M) wide and up to 10' (3.05 M) high.

OR

EZ LIFT CONSTRUCTION PACKAGE EXTENDS THE WIDTH RANGE OF ALL STANDARD CONSTRUCTION PUSH-UP GRILLES BY APPROXIMATELY 33%. USE FOR PUSH-UP GRILLES THAT EXCEED THE SIZE LIMITS FOR STANDARD PUSH-UP CONSTRUCTION LISTED ABOVE. ALTHOUGH POSSIBLE TO BUILD, CORNELL DOES NOT RECOMMEND PUSH-UP OPERATION FOR UNITS TALLER THAN 10' (3.05 M) HIGH. CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR EZ LIFT LIMITATIONS ON GALVANIZED AND STAINLESS STEEL GRILLES.

A. Manual Push-Up with EZ Lift Construction Package: Provide pole with hook. Suitable for aluminum grilles up to 22' (6.70 M) wide and up to 10' (3.05 M) high.

OR

A. Manual Crank Hoist: Provide crank hoist operator including crank gear box, steel crank drive shaft and geared reduction unit. Fabricate gear box to completely enclose operating mechanism and be oil-tight.

OR

SEE OPERATOR INFORMATION AT WWW.CORNELLIRON.COM FOR MOTOR MODEL SELECTION OR CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641.

A. Supply Model DJ, industrial duty, cUL listed, belt drive type jackshaft operator(s) rated ____H.P., ____Volts, ____Phase. Provide cUL listed electric door operator assembly of size and capacity recommended by door manufacturer; complete with electric motor and factory pre-wired motor controls, positive locking mechanical brake, emergency disconnect, internal door lock sensor and control station. Motor shall be high starting torque, continuous duty, industrial type, protected against overload by a current sensing or thermal overload device. Primary speed reduction shall be heavy-duty 5L V-belt and sprocket double reduced secondary providing mechanical braking to hold the door in any position. Operator shall be equipped with an adjustable friction clutch and floor level disconnect, output and door driven sprocket shall be provided with the operator. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear type limit switch mechanism shall synchronize the operator with the door. Low friction nylon limit nuts fitted on threaded

steel shaft, rotating on oilite self-lubricating bronze bushings. The motor shall be removable without affecting the limit switch settings.

OR

A. Supply Model DH, industrial duty, cUL listed, belt drive type jackshaft operator(s) rated ____H.P., ____Volts, ____Phase. Provide cUL listed electric door operator assembly of size and capacity recommended by door manufacturer; complete with electric motor and factory pre-wired motor controls, positive locking mechanical brake, emergency manual chain hoist, internal door lock sensor and control station. Motor shall be high starting torque, continuous duty, industrial type, protected against overload by a current sensing or thermal overload device. Primary speed reduction shall be heavy-duty 5L V-belt and sprocket double reduced secondary providing mechanical braking to hold the door in any position. Operator shall be equipped with an adjustable friction clutch and floor level disconnect and emergency manual chain hoist assembly, output and door driven sprocket shall be provided with the operator. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear type limit switch mechanism shall synchronize the operator with the door. Low friction nylon limit nuts fitted on threaded steel shaft, rotating on oilite self-lubricating bronze bushings. The motor shall be removable without affecting the limit switch settings.

OR

A. Motor Operated: Model LGJ, cUL listed, 1/4 horsepower gearhead operator, wormgear in oil bath reducer, 115v single phase service and thermal overload protection. Provide built-in lock bar detection circuit to stop and reverse unit when operated in locked position, adjustable timer to close switch and provisions for push-up emergency manual operation.

OR

A. Supply Model GH, heavy duty, cUL listed, gearhead hoist type operator(s) rated ____H.P., ____Volts, ____Phase. Provide cUL listed electric door operator assembly of size and capacity recommended by door manufacturer; complete with electric motor and factory pre-wired motor controls, worm-gear reduction unit, solenoid operated brake and control station. Motor shall be high starting torque, continuous duty, industrial type, protected against overload by a current sensing or thermal overload device. Speed reduction shall be worm-gear-in-oil-bath gear reducer with synthetic “All Climate” oil. Shall provide 45:1 speed reduction. Door drive shall utilize minimum #50 roller chain and sprockets. Operator shall be equipped with an electrically interlocked floor level disconnect and chain hoist for manual operation and an electric solenoid-actuated brake to stop the motor and hold the door in position. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear type limit switch mechanism shall synchronize the operator with the door. Low friction nylon limit nuts fitted on threaded steel shaft, rotating on oilite self-lubricating bronze bushings. The motor shall be removable without affecting the limit switch settings.

MOST COMMON CONTROL STATIONS ARE LISTED BELOW; CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR OTHER OPTIONS. GRILLES WITHOUT BOTTOM SENSING EDGE MUST BE WIRED FOR CONSTANT PRESSURE ON THE “CLOSE” BUTTON.

1. Control Station: Flush mounted, "Open/Close" push buttons ; NEMA 1B.

OR

1. Control Station: Flush mounted, "Open/Close" key switch; NEMA 1B.

OR

1. Control Station: Surface mounted, "Open/Close" push buttons; NEMA 1.

OR

1. Control Station: Surface mounted, "Open/Close" key switch; NEMA 3R.

OR

1. Control Station: Flush mounted, "Open/Close/Stop" push buttons; NEMA 1B.

OR

1. Control Station: Flush mounted, "Open/Close" key switch with "Stop" push button; NEMA 1B.

SENSING EDGE IS RECOMMENDED WITH MOTOR OPERATED UNITS, BUT IS NOT REQUIRED; DELETE IF NOT DESIRED.

B. Sensing Edge: Provide automatic [reversing] [stop] control by an automatic sensing switch within neoprene or rubber astragal extending full width of grille bottom bar.

WIRELESS SENSING EDGE CONNECTION UTILIZES AN EMBEDDED RESISTOR WITHIN AN ELECTRIC SENSING EDGE TO PROVIDE A FULLY SELF-MONITORING EDGE SYSTEM.

1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide a self-monitoring wireless sensing edge connection to motor operator eliminating the need for a physical travelling electric cord connection between bottom bar sensing edge device and motor operator. Supervised system alters normal door operation preventing damage, injury or death due to an inoperable sensing edge system.

OR

1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide [self-coiling cable] [retracting safety cord and reel] connection to control circuit.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Commencement of work by installer is acceptance of substrate.

3.2 INSTALLATION

A. General: Install grille and operating equipment with necessary hardware, anchors, inserts, hangers and supports.

B. Follow manufacturer's installation instructions.

3.3 ADJUSTING

A. Following completion of installation, including related work by others, lubricate, test, and adjust grilles for ease of operation, free from warp, twist, or distortion.

3.4 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

B. Remove surplus materials and debris from the site.

3.5 DEMONSTRATION

A. Demonstrate proper operation to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures.

END OF SECTION