SPECIFICATIONS FOR THE

ECONOMIC DEVELOPMENT CENTER
AND
ROWAN MEDICINE

at

Rowan College at Gloucester County
1400 Tanyard Road
Sewell, New Jersey 08080

for

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GA #17-108
BOOK 2 OF 2

INDEX TO THE SPECIFICATIONS

SECTION 08110- STEEL DOORS AND FRAMES

1.1 GENERAL

A. Submit Product Data for each type of door and frame specified.

B. Quality Assurance: Comply with ANSI/SDI 100.

C. Fire-Rated Door Assemblies: NFPA 80, identical to assemblies tested per ASTM E 152, and labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.

1.2 PRODUCTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following or approved equal:

1. Amweld Building Products, Inc.
2. Benchmark Commercial Doors.
3. Ceco Door Products.
4. Copco Door Co.
5. Curries Co.
6. Deansteel Manufacturing Co.
7. Fenestra Corp.
8. Kewanee Corp.
9. Mesker Door, Inc.
10. Pioneer Industries.
11. Republic Builders Products.
12. Steelcraft.
13. Or approved equal.

B. Cold-Rolled Steel Sheets: ASTM A 366 (ASTM A 366M), commercial quality, or ASTM A 620 (ASTM A 620M), drawing quality.

C. Galvanized Steel Sheets: ASTM A 526 (ASTM A 526M), commercial quality, or ASTM A 642 (ASTM A 642M), drawing quality, with A 60 or G 60 (Z 180 or ZF 180) coating designation, mill phosphatized.

D. Steel Doors: Provide 1-3/4-inch- (44-mm-) thick doors of materials and ANSI/SDI 100 grades and models specified below, or as indicated on Drawings or schedules:

1. Interior Doors: Grade II, heavy-duty, Model 2, seamless design, minimum 16 gage thick cold-rolled steel sheet faces.
2. Exterior Doors: Grade III, extra heavy-duty, Model 2, seamless design, minimum 16 gage thick galvanized steel sheet faces with insulation core to have a minimum R Value of 11.25.
3. INTERIOR WOOD GRAINED EMBOSSED DOORS: Grade I, heavy-duty, Model 2, seamless design, minimum 16 gage thick, wood grain pattern, engraved with factory painting/staining with UV protective topcoat to be selected from manufacturer's full range of finish selections, including custom finish to match Owner's established building standard. NOTE: Factory finishing process and final finish must meet or exceed that established by Steelcraft Graintech Series.

Owner/Architect reserve the right to reject any noticeably different or less aesthetically acceptable specialty finish by others.

E. Frames: Provide frames for doors, sidelights, borrowed lights, and other openings that comply with ANSI/SDI 100; fabricate to be rigid, neat in appearance, and free from defects, warp, or buckle.

1. For interior frames provide units with mitered or coped and continuously welded corners, formed from 16 gage thick cold-rolled steel.
2. For exterior frames provide units with mitered or coped and continuously welded corners, formed from 16 gage thick galvanized steel sheet.
3. Door Silencers: 3 on strike jambs of single-door frames and 2 on heads of double-door frames.
4. Plaster Guards: Provide where mortar might obstruct hardware operation and to close off interior of openings.
5. For new frame install in existing opening. Knock down frame is allowed to secure to existing opening.
6. Grout: As specified in Division 4 Section "Unit Masonry."

F. Tolerances: Comply with SDI 117.

G. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

H. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to SDI 107 and the hardware specification.

I. Glazing Stops: Minimum 0.0359-inch- (0.9-mm-) thick steel or 0.040-inch- (1-mm-) thick aluminum.

1. Provide nonremovable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.
2. Provide screw-applied, removable, glazing beads on inside of glass, louvers, and other panels in doors.

J. Finishes, General: Comply with NAAMM's "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

1. Apply primers to doors and frames after fabrication.

K. Galvanized Steel Sheet Finishes: Comply with SDI 112 and the following:

1. Surface Preparation: Clean surfaces with nonpetroleum solvent so that surfaces are free of oil or other contaminants. After cleaning, apply a conversion coating of the type suited to the organic coating applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified to comply with ASTM A 780.
2. Galvanizing Repair Paint: SSPC-Paint 20, high-zinc-dust-content paint with dry film containing not less than 94 percent zinc dust by weight.

3. Factory Priming for Field-Painted Finish: Where field painting after installation is indicated, apply air-dried primer specified below immediately after cleaning and pretreatment.
   a. Shop Primer: Zinc-dust, zinc-oxide primer paint complying with performance requirements of FS TT-P-641, Type II.

4. Field Painted Finish: Immediately after cleaning and pretreating, apply 2-coat finish consisting of prime coat and finish coat. See Section 09900, "Painting."
   a. Color and Gloss: Match Architect's sample.

L. Steel Sheet Finishes: Comply with SSPC-PA 1, "Paint Application Specification No. 1."

1. Surface Preparation: Solvent-clean surfaces according to SSPC-SP 1. Remove mill scale and rust to comply with SSPC-SP 5 (White Metal Blast Cleaning) or SSPC-SP 8 (Pickling).
2. Pretreatment: Immediately after surface preparation, apply a conversion coating suited to organic coating applied over it.
3. Factory Priming for Field-Painted Finish: Apply shop primer that complies with ANSI A224.1 acceptance criteria, is compatible with finish paint systems indicated, and has capability to provide a sound foundation for field-applied topcoats. Apply primer immediately after surface preparation and pretreatment.
   a. Color and Gloss: Match Architect's sample.

1.3 EXECUTION

A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

B. Placing Frames: Comply with provisions of SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set.

1. Except for frames located in existing concrete, masonry, or gypsum board assembly construction, place frames before constructing enclosing walls and ceilings.
2. Install at least 3 anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb.
3. In-place gypsum board partitions, install knock-down, slip-on, drywall frames.
4. Install fire-rated frames according to NFPA 80.
5. Coordinate installation of all required wiring/conduit prior to frame installation.

C. Door Installation: Fit exiting hollow-metal doors accurately in new hollow-metal frames, within clearances specified in ANSI/SDI 100, including new door in existing frame.

1. Fire-Rated Doors: Install with clearances specified in NFPA 80.
2. Smoke-Control Doors: Comply with NFPA 105.

D. Prime Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

E. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

F. Labeling of the Existing Doors and Frames: The doors and frames indicated on the drawings are to remain and be repaired so that they may meet the label standard for the indicated fire rating per NFPA80. The work is to include the repair of existing hollow metal frames, fill holes in frames by installing steel plugs of the same gauge and thickness as the metal frame, provide new filler plates, secure frame to sub-frame, repair door surface, fill holes, replace hardware, replace glazing and glazing frame, fit existing door in frame, provide intumescent seal and all notes as shown on the drawings. The Contractor shall prime and repaint the entire frame to match the existing frames or the Owner's color selection. It is the Contractor s responsibility to repair / modify the doors and frames to obtain the fire rating. When the work is completed, the Contractor shall contact one of the following testing labs or approved equal, for field inspections, required documentation and required door/frame labels. All associated costs to certify and label modified doors/frames shall be paid for by the Contractor.

1. Guardian Fire Testing Laboratories, Inc., Wenonah Terrace, Tonawanda, NY 14150, Telephone (716) 835-6880, Facsimile (716) 835-5682
2. Intertek Testing Services, NA, Inc., Antioch Industrial Park, 2200 Wymore Way, Antioch, CA 94509, Telephone (925) 756-6606, Facsimile (925) 756-6094
3. Or approved equal.

END OF SECTION 08110

SECTION 08211 - FLUSH WOOD DOORS

1.1 GENERAL

A. Submittals: In addition to product data, submit the following:

1. Shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for veneer matching and factory finishing and other pertinent data. For factory-machined doors, indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings.
2. Samples of actual materials in small sections for each face material and finish.

B. Quality Standard: Comply with the following standard:

1. NWWDA Quality Standard: I.S.1-A, "Architectural Wood Flush Doors," of the National Wood Window and Door Association.
2. AWI Quality Standard: "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute.

C. Fire-Rated Wood Doors: Provide wood doors labeled and listed by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction. Provide certification for fire rating required acceptable to authorized agencies having jurisdiction for oversize fire rated doors over 4'-0" wide

D. Warranty

1. Provide manufacturer's warranty to the following term:

a. Interior Solid Core Doors: "Full Life of Original Installation" including rehang and refinish if door(s) do not comply with Warranty tolerance standards.

1.2 PRODUCTS

A. Manufacturers: Subject to compliance with requirements, provide doors by one of the following or approved equal:

1. Marshfield Door Systems, Inc., quality as defined in this section.
2. Algoma Wood Doors Inc., quality as defined in this section.
3. Eggers Wood Doors Inc., quality as defined in this section.
4. Mohawk Wood Doors Inc., quality as defined in this section.
5. V-T Industries Inc., quality as defined in this section.
6. Buell Door Company, quality as defined in this section.
7. Or approved equal.

B. Interior Solid Core Doors for Transparent Finish: As follows:
NOTE: ALL WOOD VENEER MUST APPEAR UNIFORM AND LIGHT IN APPEARANCE

1. Faces: Select White Birch, plain sliced.

2. Grade: "A" Select White ONLY
3. Construction: 5 plies.
4. Core: Structural composite lumber (engineered composite core)
5. Bonding: Stiles and rails bonded to core, then entire unit abrasive planed before veneering.

C. Interior Fire-Rated Solid Core Doors: As follows:

1. Faces and Grade: Provide faces and grade to match non-fire-rated doors in same area of building, unless otherwise indicated.
2. Edge Construction: Provide manufacturer's standard laminated-edge construction for improved screw-holding capability and split resistance.
3. Pairs: Furnish formed-steel edges and astragals for pairs of fire-rated doors, unless otherwise indicated.
4. Pairs: Provide fire-rated pairs with fire-retardant stiles that are labeled and listed for kinds of applications indicated without formed-steel edges and astragals.

D. Pairs and Sets: Provide pair matching and set matching.

E. Fabricate flush wood doors to comply with following requirements:

1. In sizes indicated for job-site fitting.
2. Factory fit doors to comply with clearance requirements of referenced quality standard. Comply with requirements of NFPA 80 for fire-resistance-rated doors.
3. Factory machine doors for hardware that is not surface applied.

    a. Metal Removable Mullions: Premachine locks and formed-steel edges for hardware for pairs of doors requiring removable mullions. See the Hardware Schedule.

4. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.

    a. Light Openings: Trim openings with moldings of material and profile indicated. * To be selected from manufacturer's standard profiles and colors unless noted otherwise. At existing buildings, metal trim shall be required to match adjacent existing to remain.
    b. Louvers: Factory install louvers in prepared openings.

5. Provide metal flashing at top of outswinging units.

F. Finish wood doors at factory as factory finished.

1. Transparent Finish: Comply with requirements indicated for grade, finish system, staining effect, and sheen.

    a. Grade: Custom.

b. Finish: Manufacturer's standard finish with performance requirements comparable to either AWI System TR-2 catalyzed lacquer or AWI System TR-4 conversion varnish.
c. Staining: Match Architect's sample or existing schools' wood doors.
d. Effect: Filled finish.
e. Sheen: Semigloss.

G. Provide sound proof seal as noted in the Hardware Schedule. Adjust Hardware and frame to align properly to have the best acoustical effect.

1.3 EXECUTION

A. Examination

1. Verify substrate-openings conditions.
2. Verify that opening sizes and tolerances are acceptable and ready to receive this work.
3. Do not install doors in frame openings that are not plumb or are out of tolerance for size or alignment.

B. Installation

1. Install fire-rated and non-rated doors in accordance with NFPA 80, manufacturers' instructions and fire rated labeling requirements.
2. Trim non-rated door width by cutting equally on both jamb edges.
3. Trim door height by cutting bottom edges to a maximum 3/4 inch (19mm).
4. Trim fire door height at bottom edge only, in accordance with fire rating requirements.
5. Pilot drill screw and bolt holes using templates provided by hardware manufacturer. (Use threaded through bolts for half surface hinges.)
6. Coordinate installation of doors with installation of frames and hardware.
7. Coordinate installation of glass and glazing.
8. Install door louvers and light kits plumb and level.
9. Reseal or refinish any doors that required site alteration.

C. Warranty Tolerances

1. Conform to WDMA standards and testing methods for warp, cup, bow and telegraphing.

D. Adjusting

1. Adjust work under provisions Division 1.
2. Adjust doors for smooth and balanced door movement.

E. Door and Frame Components Schedules

1. Refer to door and frame schedule.

END OF SECTION 08211

SECTION 08331 – ELECTRIC INSULATED OVERHEAD COILING DOOR

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Electric operated overhead insulated rolling doors.

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Air Infiltration to Comply With:

a. ASHRAE® (American Society of Heating, Refrigeration, and Air-Conditioning Engineers) Standard 90.1-2007, 2010 & 2013 requirements of less than .3 CFM/FT2
b. IECC® (International Energy Conservation Code) 2012 requirements of less than 1.0 CFM/FT2

2. Wind Loading:

a. Supply doors to withstand up to 35 psf design wind load

3. Cycle Life:

a. Design doors of standard construction for normal use of up to 20 cycles per day maximum, and an overall maximum of 50,000 operating cycles for the life of the door

5. Insulated Door Slat Material Requirements:

a. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84
b. Sound Transmission Class (STC) rating up to 30 for the curtain and up to 22 for the entire assembly. If an STC of 32 is desired, additional options are required. All configurations are evaluated per ASTM E90 and based on testing a complete, operable assembly.
c. Minimum R-value of 8.0 (U-value of 0.125) as calculated using the ASHRAE Handbook of Fundamentals
d. Insulation to be CFC Free with an Ozone Depletion Potential (ODP) rating of zero.

6. Safety:

a. Chain operated doors shall be designed so that the door immediately stops upward or downward travel and is maintained in a stationary position when the hand chain is released by user.

1.3 SUBMITTALS

A. Reference Section 01300 - Submittals; 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: Provide letters certifying the following:

    a. Provide manufacturer ISO 9001:2015 registration
    b. Provide manufacturer and installer qualifications - see below
    c. Provide manufacturer's installation instruction
    d. Manufacturer must provide independent testing lab results proving .3 CFM/FT2 or less air infiltration
    e. Provide a letter from the manufacturer certifying the installer.

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 9001:2015 registered and a minimum of five (5) years of experience in producing doors of the type specified
2. Installer Qualifications: Manufacturer's approval

1.5 WARRANTY

A. Standard Warranty: Two (2) years from date of Substantial Completion against defects in material and workmanship

B. Installer's Warranty: Two (2) years from date of Substantial Completion against defects in material and workmanship

PART 2 PRODUCT

2.1 MANUFACTURER

A. Manufacturer:

1. The Basis of Design is Cornell: 24 Elmwood Avenue, Mountain Top, PA 18707. Telephone: (800) 233-8366
2. Cookson
3. Or Approved Equal

2.2 PRODUCT INFORMATON

A. Model: ESD30 by Cornell or approved equal.

2.3 MATERIALS

A. Curtain: Air infiltration rate of less than .3 CFM/FT2, as tested per ASTM E283 validated by an independent testing agency. Test report required.

1. Fabrication:

a. Slat Material: No. 6F, (Listed Exterior/Interior):

1) Galvanized Steel/Galvanized Steel: Manufacturer recommended gauge based on performance requirements. Minimum 24/24 gauge, Grade 40, ASTM A 653 galvanized steel zinc coating.

b. Insulation: 7/8 inch (22 mm) foamed-in-place, closed cell urethane
c. Total Slat Thickness: 15/16 inch (24 mm)
d. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84
e. R-value: 8.0
f. STC Rating: Sound Transmission Class (STC) rating up to 30 for the curtain and up to 22 for the entire assembly. If an STC of 32 is desired, additional options are required. All configurations are evaluated per ASTM E90 and based on testing a complete, operable assembly

2. Exterior Slat Finish:

a. SpectraShield® Coating System (or approved equal) (Color Selected by Architect to match the brick):

1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat
2) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

3. Interior Slat Finish:

a. SpectraShield® Coating System (or approved equal) (Color Selected by Architect):

1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat
2) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

B. Endlocks: Fabricate interlocking sections with high strength galvanized cast iron endlocks on alternate slats each secured with two ¼" (6.35 mm) rivets. Provide windlocks as required to meet specified wind load.

1. Galvanized cast iron: Required if above 21'-5" width (DBG - Distance Between Guides)

C. Bottom Bar

1. Configuration:

a. Insulated Bottom Bar: Reinforced extruded aluminum interior face with full depth insulation and exterior skin slat to match curtain material and gauge. Minimum 4" tall x 1-1/16" thickness.

2. Finish:

a. Exterior: Match slats
b. Interior: Powder coat to match slats

3. Air Infiltration Certification Label: Must be affixed to bottom bar

D. Guides:

1. Fabrication:

a. Thermal break required. Minimum 3/16 inch (4.76 mm) structural steel angles. Provide windlock bars of same material when windlocks are required to meet specified wind load. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar. Top 16 ½" (419.10 mm) of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service

2. Finish:

a. SpectraShield® (or approved equal) Coating System (Color Selected by Architect): Zirconium treatment followed by baked-on polyester powder coat, color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

E. 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 door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

F. Brackets: Fabricate from minimum 3/16 inch (5 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:

a. SpectraShield® (or approved equal) Coating System (Color Selected by Architect): Zirconium treatment followed by baked-on polyester powder coat, color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

G. Hood: Minimum 24 gauge galvanized steel 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. SpectraShield® Coating System (Color Selected by Architect):

1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat
2) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

H. Weatherstripping:

1. Bottom Bar:

a. Motor Operated Doors: Sensing/weather edge with neoprene astragal extending full width of door bottom bar.

2. Guides: Replaceable vinyl strip on guides sealing against both sides of curtain
3. Lintel Seal: Double brush seal with EPDM sandwiched between the two brush seals at door header to impede air flow.
4. Hood: Neoprene/rayon baffle to impede air flow above coil

2.4 OPERATION

A. Motor – Standard Use – Model MG (Industrial Duty Gear Head) Operator: The operator must not extend above or below the door coil when mounted front-of-coil. Rated for a maximum of 20 cycles per hour (not to be used for consecutive hours) cULus listed (to comply with UL requirements in The United States and Canada), Totally Enclosed Non Ventilated gear head operator(s) rated (1/3) (1/2) or (3/4) hp as recommended by door manufacture for size and type of door, 115 Volts, Single Phase. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, emergency manual chain hoist and control station(s). Motor shall be high starting torque, industrial type, protected against overload with an auto-reset thermal sensing device. Primary speed reduction shall be heavy-duty, lubricated gears with mechanical braking to hold the door in any position. Operator shall be equipped with an emergency manual chain hoist assembly that safely cuts operator power when engaged. A disconnect chain shall not be required to engage or release the manual chain hoist. Operator drive and door driven sprockets shall be provided with #50 roller chain. Provide an integral Motor Mounted Interlock system to prevent damage to door and operator when mechanical door locking devices are provided. 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 screw type cam limit switch mechanism shall synchronize the operator with the door. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

B. Control Station:

1. Surface mounted: "Open/Close/Stop," push buttons with keyed lock-out, not masterkeyable; NEMA 4

C. Control Operation:

1. Constant Pressure to Close:

a. 2-wire, electric sensing edge seal extending full width of door bottom bar. Contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Provide a self-coiling cable connection to control circuit.

2. Momentary Contact to Close: Fail-safe, UL325-2010 Compliant Entrapment Protection for Motor Operation.

a. NEMA 1 photo eye sensors consisting of a transmitter and receiver that are to be mounted within 6" (152.4 mm) of the floor, projecting an IR beam across the entire width of the door. Electrical contractor to provide low voltage wiring from the transmitter and receiver to the door operator.

3. Sensing/Weather Edge: Automatic reversing control by an automatic sensing switch within neoprene or rubber astragal extending full width of door bottom bar

a. Electric sensing edge device. Provide a wireless sensing edge connection to motor operator eliminating the need for a physical traveling electric cord connection between bottom bar sensing edge device and motor operator.

2.5 ACCESSORIES

A. Locking:

1. None

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 door 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 doors 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

SECTION 08411 - ALUMINUM-FRAMED CURTAIN WALL, ENTRANCES, AND STOREFRONTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Special Conditions and other Division 0 and Division 1 Project Manual Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. This Section Includes:

1. Exterior curtain wall framing.
2. Exterior and interior manual-swing entrance doors and door-frame units.
3. Exterior & interior storefronts.
4. All Interior first floor windows shall be provided with a site applied film. After installation provide Sonera window film by 3M or approved equal. Film to be selected from manufacturer's standard selection of 3 mil frosted or milky white opaque films. Provide samples on the mock-up wall for Owner selection.

1.3 DEFINITIONS

A. ADA/ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities."

1.4 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:

1. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
2. Dimensional tolerances of building frame and other adjacent construction.
3. Failure includes the following:

    a. Deflection exceeding specified limits.
    b. Thermal stresses transferring to building structure.
    c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
    d. Noise or vibration created by wind and by thermal and structural movements.
    e. Loosening or weakening of fasteners, attachments, and other components.
    f. Sealant failure.
    g. Failure of operating units.

B. Structural Loads:

1. Wind Loads: Provide entrance and storefront systems, including anchorage, capable of withstanding wind-load design pressures calculated according to requirements of authorities having jurisdiction or the American Society of Civil Engineers' ASCE 7 "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever are more stringent.
2. Seismic Loads: IBC 2015, NJ Edition.
3. Design wind load velocity at the project site is 90 mph
4. The wind load design pressures for this project are 23.0 psf @ non-corner zones and 25 psf @ corner zones.

C. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane shall not exceed L/240 + ¼" at openings greater than 13'6" and shall not exceed L/175 at openings lesser than 13'6" of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19 mm), whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to L/360 of clear span or 1/8 inch (3.2 mm), whichever is smaller.

D. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits. The maximum wind load design pressure for this project is 25 psf.
2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not fewer than 10 seconds.

E. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft. (75 Pa).

F. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa). The storefront systems shall have a maximum no leakage water performance of 12 psf and the curtain wall systems shall have a maximum no leakage water performance of 15 psf.

G. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.