MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov
PROCUREMENT DIVISION
Tel: 305-673-7490 Fax: 786.394.4006

June 2, 2009

RE: ADDENDUM NO. 3 TO INVITATION TO BID (ITB) NO. 40-08/09 FOR MULTIPURPOSE PARKING FACILITY BID PACKAGE 04 – TENANT BUILD-OUT

The subject ITB is hereby amended as follows:

1) Attached are files that pertain to some of the questions submitted.

2) Attached are the most recently published Prevailing Wage Rates for Miami-Dade County,

3) Following is a list of responses to requests for clarification that were discussed during the site visit/walk-through of May 26, 2009:

- Permit fee due to the City of Miami Beach Building Department in order to obtain the permit is $1,216.37
- Smoke test will be preformed by the current contractor; if the Building Department requires additional smoke test for the mechanical system; it will be considered a change order.
- Current contractor will provide finish to the walls installed under the existing contract. New successful bidder will be responsible to maintain those finishes and for all new finishes in the build-out contract
- One elevator will be accessible to new contractor and it will be returned to the City in the same conditions it was given to the contractor.
- New a/c ducting will have to be tested in order to prove the system was built correctly.
- Concrete floor finishes by existing contractor will be such to allow the new finishes to be installed.
- Electrical panels shown in drawings as existing will be installed by the time the contract is awarded to the successful bidder.
- Insulation in the installed curtain wall system will be provided by current contractor.

Questions and Answers:

Q1) Page 16 item #13 of the Invitation to Bid refers to Prevailing Wage Rates. Is there a published wage rate we need to follow?

A1) See attached Prevailing Wage Rate listing.

Q2) We need to know who and how the vertical mobilization will be, for material and labor.

A2) Contractor will be allowed to use one of the elevators; which will need to be returned to the City in the same conditions as it was given to the contractor.

Q3) Bid Breakdown, Division 4 notes CMU walls, bond beam , Precast lintel , but there are no such of types in plans, please direct us on how to proceed on these line items.

A3) Leave the space blank whenever the line item is not applicable.

Q4) There are no specifications for toilet accessories in bathroom (no work to be done) but division 10 Specialties does, please clarify.

A4) There are no toilet partitions or accessories in this Bid Package. Consider Specification Section 10 155 Toilet Compartments deleted from the Project Manual.

Q5) TOC in the Bid Package does not have Section 13851 Fire Alarm System. You mention that in Addendum No. 1, but is not in the specs. Please clarify.

A5) This Bid consists of additions and alterations to the building system installed as a result of the Bid for the construction of the building. There is no project manual section for fire alarm in this Bid. Drawing E-300 has relevant information for the scope of work in this Bid.

Q6) Plans calls for sheet A-821 window schedule, would you provide this sheet with all window details, especially for the Bullet proof glass window.

A6) Refer to sheet A-524, drawing #9 for section detail @ cashier window. B.P. Glass supplied by security window manufacturer QuikServ.

Q7) Sheet A-812 calls for manual roll up shutters, are we going to provide this shutters for exterior windows? If so installation has to be interior due to existing windows are fixed glass, please advise.

A7) Consider Detail 2A Sheet A-812 removed from this Bid Package. This ITB does not include any manual roll up shutters.

Q8) Cabinetry: Please provide the required thickness for panel PD-1.

A8) 1/4" Refer to the attached page of 3Form sheet.

Q9) Cabinetry: Does the stainless steel trim go on all sides of DP-1 panel? If yes, provide detail.

A9) Yes. Detail to follow

Q10) Cabinetry: Can the interior of the cabinets be white melamine?

A10) No. Refer to 'General Millwork Notes' on finish plans (A-260 – A-264), note #7 subsection 'D' for info.

Q11) On sheet A-264 rooms 520, 518, 512, 516 & 509 call for a PT-1 floors tile; however, there is no PT -1 on the finish schedule. Please clarify.

A11) Room 520 = C-3, Room 518 = VCT-1 with VCT-2 & 3 accents, Room 516 = VCT-1 with VCT-2 & 3 accents, Room 512 = VCT-1 2 & 3 combination, Room 509 = VCT-1 with VCT-2 & 3 accents. See attachment for floor hatch designation.

Q12) On sheet A-264, room 520, 518, 512, 516, 508, 509, 507 & 506 call for a PT-1 Base; however, there is no PT -1 on the finish schedule. Please clarify.

A12) Room 520 = VB-2, Room 518 = VB-1, Room 516 = VB-1, Room 512 = VB-1, Room 509 = VB-1, Room 508 = VB-1, Room 507 = VB-1, Room 506 = VB-1.

Q13) On sheet A-260, room 106 calls for a PB-1 base; however, there is no PB-1 on the finish schedule. Please clarify.

A13) Room 106 (Actually Room 102, typo on the drawing sheet) = CTB-1.

Q14) On sheet A-261, room 201 calls for a CT-2 floor; however, there is no CT -2 on the finish schedule. Specification section 09310-5 describes the CT-2 as an Atlas Concorde, Cement, 70e3 Light grey, 24 x 24. Please clarify if this is the correct selection.

A14) Room 201 = CT-2 as shown in specifications. Base is CTB-1.

Q15) Mechanical: Please advise whose controls are being used for the VAV Boxes. Please provide the manufacturers information.

A15) Control company is Johnson Controls.(telephone number is 954-538-9000)

Q16) Mechanical: Please advise if the low pressure ductwork is 1" or 1 1/2" fiberglass duct or sheet metal with a fiberglass duct wrap.

A16) Low pressure duct material used is sheet metal with 2 inches Mineral-fiber blanket insulation. Refer to base building project specifications sections 15081 & 15815 attached as reference.

Q17) Clarify if new air distribution ductwork should be metal or fiberglass. (did not find it in drawings or specs)

A17) Low pressure duct material used is sheet metal with 2 inches Mineral-fiber blanket insulation.

Q18) If fiberglass, clarify if new air distribution ductwork should be 1” or 1 ½” thick

A18) Low pressure duct material used is sheet metal with 2 inches Mineral-fiber blanket insulation.

Q19) Plans calls for floor and wall finishes at bathroom, please confirm if any work to be done at bathroom area.

A19) No work in bathrooms in this Bid package.

Q20) We did not receive a copy of “Specialties” - Section 10520 listed on the Table of Contents in the Technical Specifications. Please provide a copy of specification section 10520.

A20) See attached Section 10 520 as reference.

Q21) We did not receive a copy of “Fire Alarm System” - Section 13851 referenced in Addendum #1. Please provide a copy of specification section 13851.

A21) Section 13851 is from Bid Pack-3 (The previous bid) Fire alarm notes on E3.00 also apply.

Q22) We did not receive a copy of “Electrical Specifications” - Section 16400 referenced in Addendum #1. Please provide a copy of specification section 16400

A22) There is no section 16400.

Q23) Toilet Compartments -- We received specification section 10155 as part of the Technical Specifications. Should we include cost of toilet compartments or is this already covered by the previous Contract since bathrooms are being completed by others?

A23) No toilet compartments this Bid Package.

Q24) Please provide a sketch detailing the condition where the interior partitions meet the storefront / curtain wall system.

A24) See attached ASK-1 BP#4

Q25) See A-253: Note 12 (store front framed window with ¼" tempered glass) is shown separating room 401 and 402. Elevations 3 & 4 on sheet S-513 show this area as "open". Is this area to remain open or should we include a storefront framed window with ¼" tempered glass?

A25) Include storefront – this is a secure area.

Q26) See sheet A-812:

Q26a) Please verify that all doors are flush wood doors with a painted finish as shown on the door schedule in lieu of the Technical Specifications which describe multiple door types and finishes.

A26a) Use applicable door type and finish

Q26b) Door Schedule note #5 calls for "All doors to be factory finished – color TBS by Architect". Should all doors be field painted or receive a factory finish?

A26b) Field painted

Q26c) The door schedule shows all door frames as hollow metal. Please provide a specification for hollow metal door frames.

A26c) See attached Section 08 110 Steel Doors & Frames. Use Section 2.4 Standard Hollow Metal Frames as reference.

Q26d) The door schedule shows all doors as 7'-0" high. Window types (sidelights) are shown as 8'-0" high. Is this correct?

A26d) Side lights to match door height

Q27) There appears to be a conflict between the Architectural and Electrical plans regarding the location of the type H – Wall Mounted Custom Fixture ($1,000 fixture Allowance).

Q27a) At what floors should this fixture be installed?

A27a) These fixtures are on levels four and five . They are shown on the reflected ceiling plan as Type "H" Sheets A-613 & 614. They also appear on Elevation #1 Sheet A-513. On the electrical plans these fixtures are shown as Type "D". This will be coordinated.

Q27b) What Allowance amount should we carry in our bid for this fixture(s)?

A27b) $1,000 per fixture (two total)

Q28) See A-250: Note 4 (coin room transaction drawer) is shown in room 101 near door mark 101B. This exterior masonry wall is already installed without an opening for this drawer. Are we responsible to cut in the required opening in this existing wall or is this work going to be performed by the contractor currently on site that installed the wall?

A28) Yes, you will need to provide the opening.

Q29) See sheet A-812: Typical door plaques are shown to be installed at each new door. Is there a specific manufacturer to be used for the plaques?

A29) Signage by Owner – No specific manufacturer

Q30) See sheet A-523: Detail 1 shows a Recessed Floor Entrance Mat.

Q30a) Where is this entrance mat located?

A30a) No entrance mat in this Bid Package

Q30b) Should this be included within our scope of work?

A30b) No entrance mat in this Bid Package

Q31) Will there be a temporary staging area provided at each level of the parking garage?

A31) Yes

Q32) How many parking spaces will be provided for employee parking for this project?

A32) None. The successful contractor should coordinate with the City's Parking Department for the purchase of monthly access cards.

Q33) Who is responsible for Flood Plain Requests on A 010?

A33) Flood Plain Requests were in the previous Bid package

Q34) Blocking details required for heavy loadings – TV's, AV equipment

A34) Contractor to verify final equipment loading requirements and provide engineered blocking detail for Architects review.

Q35) Where are staging areas? Hoisting?

A35) The area will be determined at the time of award; the area most likely will be on the first floor.

Q36) Who is responsible for STC ratings if partition built per plans?

A36) STC Rating the responsibility of contractor. Notify Architect before building partition if Required STC number and Design STC differ.

Q37) Section 01-500-3 – Para. I – do we have to provide cooling?

A37) The scope of the work included in the ITB for the Build-out only include secondary branches; no mechanical equipment; the contractor providing the mechanical equipment will provide the cooling

Q38) Section 01-500-3 – Para. J – Can we use existing supply and return for ventilation? Who pays for utilities?

A38) Utilities will be paid by the City since the Garage will be open; Abuse in the use of the facilities will be back charged to the contractor.

Q39) Section 01-500-4 – Para. D – Will the City provide free parking for workers?

A39) Successful contractor to coordinate with Parking Department for the purchase of monthly access cards

Q40) Section 01-500-5 – Para. F – Site enclosure fence in scope?

A40) No

Q41) Section 01-524-1 – Para. 1.3.B - What will refrigerant recovery tech. be needed for?

A41) If for any reason a refrigerant line needs to be cut a Refrigeration Recovery tech will be required. This situation is not anticipated.

Q42) No glass & glazing specification shown.

A42) See attached Section 08 800 Glazing as reference.

Q43) Section 01- 330-2 Item D.1 – "How do we allow for Architect advising contractor when a submittal must be delayed for coordination?

A43) No delays are to be anticipated

Q44) Section 01-330-3 Para. H.1 – Is it required that we use E – Builder as Project Administration Tool?

A44) E-Builder is not required

Q45) Section 01- 330-4 Item 1.4. A.2 – How much payment will be charged by Architect for Electronic File Transfer Agreement?

A45) No payment is required

Q46) Section 01- 330-7 Para. J – Which items does this apply to? (Concerning preparing written evidence that products comply with building code from a model code organization?)

A46) If contractor proposes a substitution for a product requiring an NOA then the contractor is responsible for providing evidence that the product has code approval or provide job specific approval.

Q47) Section 01- 400-1- What items are to be mocked up?

A47) Provide mockup if specifically called for in drawings only.

Q48) Section 01- 400-2 Para. 1.2.D – What does preconstruction testing refer to?

A48) Provide preconstruction testing if specifically called for in drawings or project manual

Q49) Section 01- 400-5 Para. 1.6.E – What items are to be tested by testing agencies engaged by contractor?

A49) Provide testing by testing agency if specifically called for in drawings or project manual

Q50) Section 01- 500-1 - What cost for utilities should we carry? Appears that contractor to pay for utilities used by "all entities for construction operations."

A50) utilities wil be paid by the City since the Garage will be open; Abuse in the use of the facilities will be backcharged to the contractor.

Q51) Section 01- 500-3 - Sanitary facilities only for TI workers or all on site?

A51) Sanitary facilities just for contractor's use and subcontractor's use; Existing bathrooms will not be used by contractor.

Q52) In Drawing A250, the Plan Note No 8 calls for under cabinet refrigeration equipment by Summit Appliance, etc. It is not clear who provide this equipment. Please clarify.

A52) Contractor to provide under counter refrigerator.

Q53) Missing plan sheet A-821. Please provide us with this plan which shows all window details.

A53) Window details are shown on Detail 3&4 Sheet A-812

Q54) Sheet A-812 calls for manual roll-up shutters. Are we going to provide these shutters for exterior windows? If installation is required we must do interior installation due to the windows being fixed glass.

A54) Consider Manual roll-up Shutter detail to be deleted from this Bid Package. No shutter in this Bid Package.

Q55) The mechanical sheet does not show the location for new a/c units. Please confirm.

A55) The A/C units are existing as part of the previous Bid

Q56) Are the sleeves on the slab for all MEP in place?

A56) Mostly, some electrical conduit will require core drilling to install. Contactor to verify requirements in field prior to submitting bid.

Q57) Is the fire alarm to be by owner or do you have a suggested fire alarm contractor for the interior alarm work for the five floors?

A57) The approved submittal is Notifier Equipment. The vendor is Diversi-Fire.

Q58) Plans call for floor & wall finishes at the bathroom. Please confirm if there is any work to be done at the bathroom area.

A58) No bathroom floor and wall finishes in this Bid Package.

Q59) Who will be responsible for the vertical mobilization for material & labor? Do we need to include the costs for a temporary elevator?

A59) Contractor responsible; an elevator will be provided to contractor for construction use; elevator must be returned to the City in the same conditions as it was given to contractor.

Q60) The breakdown attached in the project documents shows Division 4 notes for CMU walls, bond beams precast lintel, but there is nothing shown on these items on the plans. Please direct us on how to proceed for these line items.

A60) Whichever items do not apply; please strikeout or leave blank

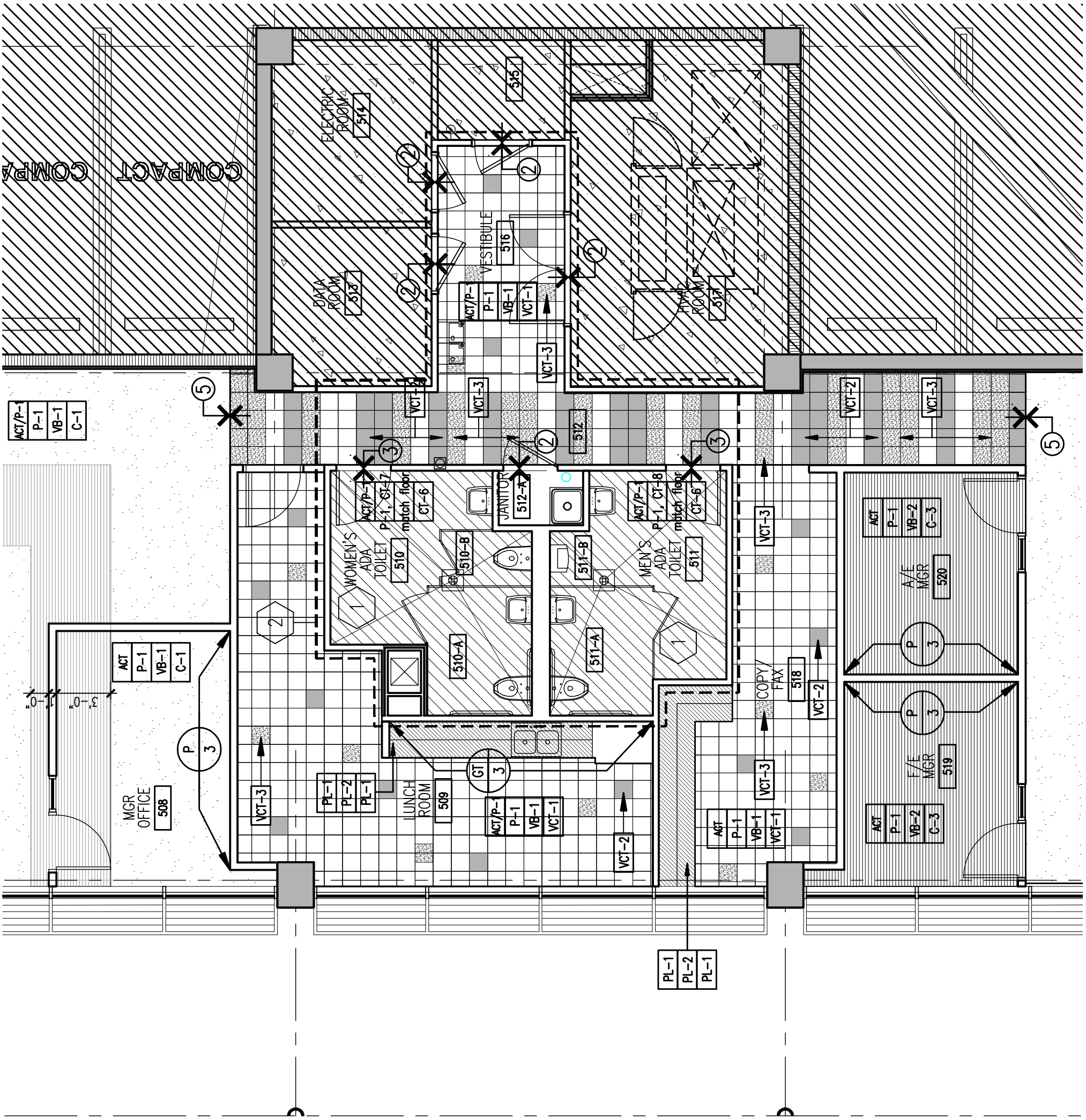
Q61) There are no specifications for toilet accessories in bathroom but there is a section for Division 10 Specialties. Please clarify.

A61) No toilet accessories in this Bid Package. Specification to be deleted from the Project Manual

Bidders are reminded to please acknowledge receipt of this addendum as part of your bid submission. Potential bidders that have elected not to submit a response to the ITB are requested to complete and return the "Notice to Prospective Bidders" questionnaire with the reason(s) for not submitting a bid.

CITY OF MIAMI BEACH

Gus Lopez, CPPO
Procurement Director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P-1, CT-7
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match floor
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Gauges (mm):
3, 5, 6, 10, 13, 19, 25

Price Group:
B

Pattern:
parallel to 8'/10'

Avail. Colors:
all stock colors

Width:
48" / 1219mm

Length:
96" / 2438mm or
120" / 3048mm

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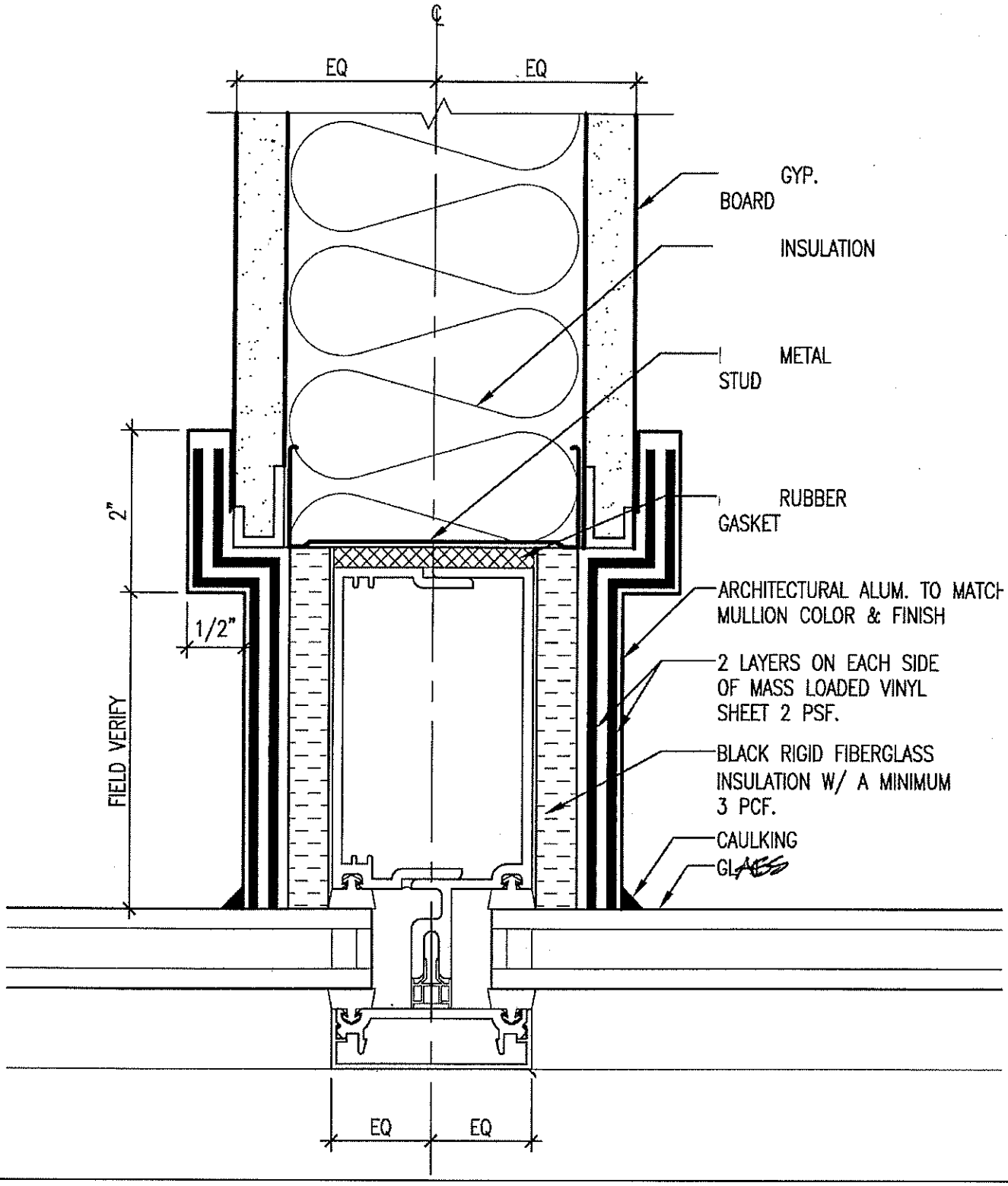

1 Wall/Mullion Detail

SCALE:NTS

SCALE: NTS DATE: 6/02/09

PERKINS + WILL

City of Miami Beach

A-SK-1 BP#4

GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Portable fire extinguishers.
2. Fire-protection cabinets for the following:

    a. Portable fire extinguishers, FEC.
    b. Fire hose, rack, and valve, FHC.

3. Mounting brackets for fire extinguishers.

B. Owner-Furnished Material: Fire extinguishers.

C. Related Sections include the following:

1. Division 7 Section "Through-Penetration Firestop Systems" for firestopping sealants at fire-rated cabinets.
2. Division 9 painting Sections for field painting fire-protection cabinets.
3. Division 10 Section "Signs" for directional signage to out-of-sight fire extinguishers and cabinets.
4. Division 10 Section "Security Fire-Protection Specialties" for security-type fire-protection specialties.
5. Division 13 Section "Fire-Suppression Piping" for hose systems, racks, and valves.

1.2 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire-protection cabinets.

1. Fire Extinguishers: Include rating and classification.
2. Fire-Protection Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.
3. Show location of knockouts for hose valves.

B. Samples for Initial Selection: For fire-protection cabinets with factory-applied color finishes.

C. Samples for Verification: For each type of exposed factory-applied color finish required for fire-protection cabinets, prepared on Samples of size indicated below.

1. Size: 6 by 6 inches(150 by 150 mm) square.

D. Maintenance Data: For fire extinguishers and fire-protection cabinets to include in maintenance manuals.

1.3 QUALITY ASSURANCE

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1. Provide fire extinguishers approved, listed, and labeled by FMG.

C. Fire-Rated Fire-Protection Cabinets: Listed and labeled to comply with requirements of ASTM E 814 for fire-resistance rating of walls where they are installed.

1.4 COORDINATION

A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire hoses, hose valves, and hose racks indicated are accommodated.

1.5 SEQUENCING

A. Apply decals on field-painted fire-protection cabinets after painting is complete.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of portable fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure of hydrostatic test according to NFPA 10.
b. Faulty operation of valves or release levers.

2. Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2. Basis-of-Design Product: The design for each product is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

B. Aluminum: Alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated, and as follows:

1. Sheet: ASTM B 209 (ASTM B 209M).
2. Extruded Shapes: ASTM B 221 (ASTM B 221M).

C. Clear Float Glass: ASTM C 1036, Type I, Class 1, Quality q3, [**3**] [**6**] mm thick.

D. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class [1 (clear)].

2.3 PORTABLE FIRE EXTINGUISHERS

Manufacturers:

1. Fire End & Croker Corporation.
2. JL Industries, Inc.
3. Kidde Fyrnetics.
4. Larsen's Manufacturing Company.
5. Modern Metal Products; Div. of Technico.
6. Moon American.
7. Potter Roemer; Div. of Smith Industries, Inc.

B. General: Provide fire extinguishers of type, size, and capacity for fire-protection cabinet and mounting bracket indicated.

1. Valves: Nickel-plated polished brass body-.
2. Handles and Levers Stainless steel.
3. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.

C. Retain one of three paragraphs below.Multipurpose Dry-Chemical Type in Aluminum Container: UL-rated [**3-A:40-B:C, 5-lb(2.3-kg)**] [**3-A:40-B:C, 6-lb(2.7-kg)**] [**4-A:60-B:C, 10-lb(4.5-kg)**] [**20-A:120-B:C, 20-lb(9.1-kg)**] nominal capacity, with monoammonium phosphate-based dry chemical in enameled-aluminum container.

2.4 FIRE-PROTECTION CABINET

Manufacturers:

1. Fire End & Croker Corporation.
2. JL Industries, Inc.
3. Kidde Fyrnetics.
4. Larsen's Manufacturing Company.
5. Modern Metal Products; Div. of Technico.
6. Moon American.
7. Potter Roemer; Div. of Smith Industries, Inc.
8. Watrous; Div. of American Specialties, Inc.

B. Cabinet Type: Suitable for fire extinguisher, FEC

C. Cabinet Construction: Nonrated.

D. Cabinet Material: Enameled-steel sheet.

E. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall; with no trim.

F. Cabinet Trim Material: Steel sheet

G. Door Material: Steel sheet **Aluminum sheet**.

H. Door Style: Center glass panel with frame .

I. Door Glazing: Tempered float glass (clear) .Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
1. Provide manufacturer's standard hinge permitting door to open 180 degrees.

J. Accessories:

1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
2. Lettered Door Handle: One-piece, cast-iron door handle with the word "FIRE" embossed into face.
3. Door Lock: Cylinder lock, keyed alike to other cabinets.
4. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

a. Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."

1) Location: Applied to cabinet door.
2) Application Process: Silk-screened].
3) Lettering Color: [Red.
4) Orientation: Vertical.

K. Finishes:

1. Manufacturer's standard baked-enamel paint for the following:

a. Exterior of cabinet, door, and trim, except for those surfaces indicated to receive another finish.
b. Interior of cabinet and door.

2. Steel: Baked enamel.

a. Color and Texture As selected by Architect from manufacturer's full range.

2.5 MOUNTING BRACKETS

Manufacturers:

1. Fire End & Croker Corporation.
2. JL Industries, Inc.
3. Larsen's Manufacturing Company.
4. Potter Roemer; Div. of Smith Industries, Inc.

B. Mounting Brackets: Manufacturer's standard galvanized steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.

1. Color: Black.

C. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.

a. Orientation: Vertical [**Horizontal**].

2.6 FABRICATION

A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

1. Weld joints and grind smooth.
2. Construct fire-rated cabinets with double walls fabricated from 0.0428-inch-(1.1-mm-) thick, cold-rolled steel sheet lined with minimum 5/8-inch-(16-mm-) thick, fire-barrier material.

a. Provide factory-drilled mounting holes.

B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected.

1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch(13 mm) thick.
2. Miter and weld perimeter door frames.

C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Finish fire-protection cabinets after assembly.

D. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.8 STEEL FINISHES

A. Surface Preparation: Clean surfaces of dirt, oil, grease, mill scale, rust, and other contaminants that could impair paint bond using manufacturer's standard methods.

B. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment.

1. Shop Primer: Manufacturer's or fabricator's standard, fast-curing, lead- and chromate-free, universal primer, selected for resistance to normal atmospheric corrosion, for compatibility with substrate and field-applied finish paint system indicated, and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.

C. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils(0.05 mm).

2.9 STAINLESS-STEEL FINISHES

A. General: Remove tool and die marks and stretch lines or blend into finish.

1. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

B. Bright, Cold-Rolled, Unpolished Finish: No. 2B finish.

C. Bright, Directional Polish: No. 4 finish.

D. Satin, Directional Polish: No. 6 finish.

E. Satin, Reflective, Directional Polish: No. 7 finish.

F. Mirrorlike Reflective, Nondirectional Polish: No. 8 finish.

G. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged units.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install fire-protection specialties in locations and at mounting heights indicated or, if not indicated, at heights indicated below:

1. Fire-Protection Cabinets: 54 inches(1372 mm) above finished floor to top of cabinet.
2. Mounting Brackets: 54 inches(1372 mm) above finished floor to top of fire extinguisher.

B. Fire-Protection Cabinets: Fasten fire-protection cabinets to structure, square and plumb.
1. Fasten mounting brackets to inside surface of fire-protection cabinets, square and plumb.

C. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

D. Identification: Apply decals at locations indicated.

3.3 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire-protection specialties are installed, unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire-protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes, or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire-protection cabinet manufacturer.

E. Replace fire-protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Windows.
2. Doors.
3. Interior barrowed lites
4. Glazed entrances.
5. Storefront framing.

B. Related Sections include the following:

1. Division 5 Section "Ornamental Railings" for glass panels forming guards in railings.
2. Division 8 Section "All-Glass Entrances and Storefronts."
3. Division 8 Section "Security Glazing" for glazing units resistant to ballistic attacks windborne debris .

1.2 DEFINITIONS

A. Manufacturers of Glass Products: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

C. Deterioration of Coated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in metallic coating.

D. Deterioration of Laminated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture,

fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:

1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:

a. Specified Design Wind Loads: As indicated.
b. Probability of Breakage for Vertical Glazing: 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action. 1 per 1000 for glazing greater than 15 degrees off vertical.

1) Load Duration: 60 seconds or less.

c. Maximum Lateral Deflection: For the following types of glass supported on all 4 edges, provide thickness required that limits center deflection at design wind pressure to 1/50 times the short side length or 1 inch, whichever is less.

1) For monolithic-glass lites heat treated to resist wind loads.
2) For insulating glass.
3) For laminated-glass lites.

C. Hurricane-Resistance Test Performance: Provide glazing assemblies that pass large and small missile impact tests, as required by systems' location above grade, and cyclic-pressure tests according to testing requirements of authorities having jurisdiction.

1. Comply with the Florida Building Code, 2004 Edition w/ 2006 revisions. , High Velocity Wind Zone requirements.
2. Provide glazing assemblies accepted by Miami-Dade County Building Code Compliance Office.

D. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

E. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
1. For laminated-glass lites, properties are based on products of construction indicated.
2. Center-of-Glass Values: Based on using LBL-44789 WINDOW 5.0 computer program for the following methodologies:

a. U-Factors: NFRC 100 expressed as Btu/ sq. ft. x h x deg F.
b. Solar Heat Gain Coefficient: NFRC 200.
c. Solar Optical Properties: NFRC 300.

1.4 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Samples: For the following products, in the form of 12-inch- square Samples for glass and of 12-inch- long Samples for sealants. Install sealant Samples between two strips of material representative in color of the adjoining framing system.

C. Samples: For the following products, in the form of 12-inch- square Samples for glass.

1. Coated vision glass.
2. Laminated, clear low-e glass.
3. Ceramic-coated low-e spandrel glass.
4. Each pattern and color of ceramic-coated vision glass.
5. Fire-resistive glazing products.
6. Insulating glass for each designation indicated.
7. For each color (except black) of exposed glazing sealant indicated.

D. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

E. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

1. For solar-control low-e-coated glass, provide documentation demonstrating that manufacturer of coated glass is certified by coating manufacturer.

2. For fire resistive glass product, provide all documentation demonstrating the fire resistive glass is certified by the manufacturer.

F. Qualification Data: For installers.

G. Preconstruction Adhesion and Compatibility Test Report: From glazing sealant manufacturer indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.

H. Research/Evaluation Reports: Evidence of acceptance of glazing assemblies by Miami-Dade County Building Code Compliance Office or evidence of compliance with performance requirements as tested by entities listed with the Florida Building Code Comission.

I. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

B. Source Limitations for Glass: Obtain the following through one source from a single manufacturer for each glass type: clear float glass coated float glass and laminated glass .

C. Source Limitations for Glass Sputter-Coated with Solar-Control Low-E Coatings: Where solar-control low-e coatings of a primary glass manufacturer that has established a certified fabricator program is specified, obtain sputter-coated solar-control low-e-coated glass in fabricated units from a manufacturer that is certified by coated-glass manufacturer.

D. Source Limitations for Glazing Accessories: Obtain glazing accessories through one source from a single manufacturer for each product and installation method indicated.

E. Glass Product Testing: Obtain glass test results for product test reports in "Submittals" Article from a qualified testing agency based on testing glass products.

1. Glass Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

F. Elastomeric Glazing Sealant Product Testing: Obtain sealant test results for product test reports in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.

1. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
2. Test elastomeric glazing sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.

G. Preconstruction Adhesion and Compatibility Testing: Submit to elastomeric glazing sealant manufacturers, for testing indicated below, samples of each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member that will contact or affect elastomeric glazing sealants:

1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
4. For materials failing tests, obtain sealant manufacturer's written instructions for corrective measures, including the use of specially formulated primers.

5. Testing will not be required if elastomeric glazing sealant manufacturers submit data based on previous testing of current sealant products for adhesion to, and compatibility with, glazing materials matching those submitted.

H. Glazing for Fire-Rated Door Assemblies: Glazing for assemblies that comply with NFPA 80 and that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252.

I. Glazing for Fire-Rated Window Assemblies: Glazing for assemblies that comply with NFPA 80 and that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.

J. Safety Glazing Products: Comply with testing requirements in 16 CFR 1201 and, for wired glass, ANSI Z97.1.

1. Subject to compliance with requirements, obtain safety glazing products permanently marked with certification label of the Safety Glazing Certification Council or another certification agency or manufacturer acceptable to authorities having jurisdiction.
2. Where glazing units, including Kind FT glass and laminated glass, are specified in Part 2 articles for glazing lites more than 9 sq. ft. in exposed surface area of one side, provide glazing products that comply with Category II materials; for lites 9 sq. ft. or less in exposed surface area of one side, provide glazing products that comply with Category I or II materials, except for hazardous locations where Category II materials are required by 16 CFR 1201 and regulations of authorities having jurisdiction.

K. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: GANA Laminated Division's "Laminated Glass Design Guide" and GANA's "Glazing Manual."

L. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockups in the location and of the size indicated or, if not indicated, as directed by Architect.
2. Build glass mockups by installing the following kinds of glass in mockups specified in Division 8 Section "Aluminum-Framed Entrances and Storefronts " to match glazing systems required for Project, including glazing methods:

a. GL-1, Laminated glass, clear.
b. GL-2, Laminated glass, clear.
c. GL-3, Spandrel glass.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F.

1.8 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form, made out to Owner and signed by coated-glass manufacturer agreeing to replace coated-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form, made out to Owner and signed by laminated-glass manufacturer agreeing to replace laminated-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: Five years from date of Substantial Completion.

C. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form, made out to Owner and signed by insulating-glass manufacturer agreeing to replace insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Products: Subject to compliance with requirements, provide one of the products specified.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
3. Basis-of-Design Product: The design for each glazing product is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 GLASS PRODUCTS

Annealed Float Glass: ASTM C 1036, Type I (transparent flat glass), Quality-Q3; of class indicated.

1. Ultra-Clear (Low-Iron) Float Glass: Class I (clear); with a minimum 91 percent visible light transmission and a minimum solar heat gain coefficient of 0.87.

    a. Products:
        1) Pilkington Building Products North America; Optiwhite.
        2) PPG Industries, Inc.; Starphire.

B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent flat glass); Quality-Q3; of class, kind, and condition indicated.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.
2. Provide Kind HS (heat-strengthened) float glass in place of annealed float glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in Part 1 "Performance Requirements" Article.
3. For uncoated glass, comply with requirements for Condition A.
4. For coated vision glass, comply with requirements for Condition C (other uncoated glass).
5. Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is indicated.

C. Sputter-Coated Float Glass: ASTM C 1376, float glass with metallic-oxide or -nitride coating deposited by vacuum deposition process after manufacture and heat treatment (if any), and complying with other requirements specified.

D. Wired Glass: ASTM C 1036, Type II (patterned and wired flat glass), Class 1 (clear), Quality-Q-6; and of form and mesh pattern specified.

E. Laminated Glass: ASTM C 1172, and complying with other requirements specified and with the following:

1. Interlayer: Polyvinyl butyral of thickness indicated with a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after laminating glass lites and installation.

a. For polyvinyl butyral interlayers, laminate lites in autoclave with heat plus pressure.
b. For cured-resin interlayers, laminate lites with laminated-glass manufacturer's standard cast-in-place and cured-transparent-resin interlayer.

2. Laminating Process: Fabricate laminated glass to produce glass free of foreign substances and air or glass pockets.

2.3 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
1. EPDM, ASTM C 864.
2. Silicone, ASTM C 1115.
3. Thermoplastic polyolefin rubber, ASTM C 1115.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal:
1. EPDM.
2. Silicone.
3. Thermoplastic polyolefin rubber.
4. Any material indicated above.

C. Lock-Strip Gaskets: Neoprene extrusions in size and shape indicated, fabricated into frames with molded corner units and zipper lock-strips, complying with ASTM C 542, black.

2.4 GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:

1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Elastomeric Glazing Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Single-Component Neutral- and Basic-Curing Silicone Glazing Sealants GS- :

a. Products:

1) Dow Corning Corporation; 795 or 995.
2) GE Silicones; SilPruf.
3) Tremco; Spectrem 1 (Basic).

b. Type and Grade: As required by N.O.A.

C. Glazing Sealants for Fire-Resistive Glazing Products: Identical to products used in test assemblies to obtain fire-protection rating.

2.5 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore, Type A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

G. Perimeter Insulation for Fire-Resistive Glazing: Identical to product used in test assembly to obtain fire-resistance rating.

2.6 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

2.7 MONOLITHIC WIRED-GLASS UNITS

A. Polished Wired-Glass Units WG- Form 1 (wired glass, polished both sides), Quality-Q6, Mesh 2 (M2) (Square), 6.0 mm thick.

1. Manufacturers:

a. Asahi/AMA Glass Corp.; affiliated with AFG Industries, Inc.
b. Central Glass Co., Ltd.; distributed by Northwestern Industries Inc.
c. Pilkington Sales (North America) Ltd.

2.8 LAMINATED-GLASS UNITS

A. Laminated-Glass Units GL-1

1. Basis-of-Design Product: 9/16" low-e clear laminated glass, shading coefficient 0.53, (1/4" PPG SOLARBAN 60 outdoor-0.06 SAFLEX PVB -1/4" clear glass interior) or an approved comparable product.

2. Products:

a. Solarban 60 / PPG clear Saflex laminated glass

3. Kind LA, consisting of two lites of annealed float glass.
4. Outer Lite: Low E clear float glass.
a. Thickness: 6.0 mm

5. Plastic Interlayer:

a. Thickness: 0.060 inch or 0.090 inch, but not less than that required to comply as a Type II safety glass material and with the Wind borne debris provisions of the Florida Building Code High Velocity Wind Zones.
b. Interlayer Color: Clear .

6. Inner Lite: Class 1 (clear) float glass.

a. Thickness: 6.0 mm.

7. Visible Light Transmittance: 72 percent minimum.
8. Winter Nighttime U-Factor: .95 maximum.
9. Summer Daytime U-Factor: .86 maximum.
10. Solar Heat Gain Coefficient: .46 maximum.
11. Outdoor Visible Reflectance: 72 percent maximum.

B. Laminated-Glass Units GL-2

1. Products: 9/16” Clear Laminated Glass (Color and Reflectance to match GL-1)

2. Kind LA, consisting of two lites of annealed float glass.
3. Outer Lite: Clear float glass.
a. Thickness: 6.0 mm

4. Plastic Interlayer:

a. Thickness: 0.060 inch or 0.090 inch, but not less than that required to comply as a Type II safety glass material and with the Wind borne debris provisions of the Florida Building Code High Velocity Wind Zones.
b. Interlayer Color: Clear .

5. Inner Lite: Class 1 (clear) float glass.

   a. Thickness: 6.0 mm.

C. Laminated-Spandrel Glass Units GL-3

1. Products: 9/16" Clear Laminated Impact Glass (Color and Reflectance to match GL-1)

2. Kind LA, consisting of two lites of annealed float glass.
3. Outer Lite: Clear float glass.
   a. Thickness: 6.0 mm

4. Plastic Interlayer:

   a. Thickness: 0.060 inch or 0.090 inch, but not less than that required to comply as a Type II safety glass material and with the Wind borne debris provisions of the Florida Building Code High Velocity Wind Zones.
   b. Interlayer Color: White

5. Inner Lite: Class 1 (clear) float glass.

   a. Thickness: 6.0 mm.

D. Laminated-Glass Units GL-4

1. Product: ¼" Clear Laminated Safety Glass or an approved comparable product.

2. Kind LA, Consisting of two lites of annealed float glass.
3. Outer Lite: Clear float glass.
   a. Thickness: 3.0 mm

4. Plastic Interlayer:

   a. Thickness: 0.060 inch or 0.090 inch, but not less than that required to comply as a Type II safety glass material.
   b. Interlayer Color: Clear .

5. Inner Lite: Class 1 (clear) float glass.

   a. Thickness: 3.0 mm.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing glazing, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where length plus width is larger than 50 inches as follows:

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Do not remove release paper from tape until just before each glazing unit is installed.

F. Apply heel bead of elastomeric sealant.

G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

3.6 LOCK-STRIP GASKET GLAZING

A. Comply with ASTM C 716 and gasket manufacturer's written instructions. Provide supplementary wet seal and weep system, unless otherwise indicated.

3.7 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION

SECTION 15815 - METAL DUCTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes metal, rectangular ducts and fittings for supply, return, outside, and exhaust air-distribution systems in pressure classes from minus 2- to plus 10-inch wg (minus 500 to plus 2500 Pa).

B. See Division 15 Section "Duct Accessories" for dampers, sound-control devices, duct-mounting access doors and panels, turning vanes, and flexible ducts.

1.2 SUBMITTALS

A. Shop Drawings: CAD-generated to 1/4 inch equals 1 foot (1:50) scale. Show fabrication and installation details for metal ducts.

1. Fabrication, assembly, and installation, including plans, elevations, sections, components, and attachments to other work.
2. Duct layout indicating sizes and pressure classes.
3. Elevations of top and bottom of ducts.
4. Dimensions of main duct runs from building grid lines.
5. Fittings.
6. Reinforcement and spacing.
7. Seam and joint construction.
8. Penetrations through fire-rated and other partitions.
9. Equipment installation based on equipment being used on Project.
10. Duct accessories, including access doors and panels.
11. Hangers and supports, including methods for duct and building attachment, vibration isolation, and seismic restraints.

1.3 QUALITY ASSURANCE

A. NFPA Compliance:

1. NFPA 90A, "Installation of Air Conditioning and Ventilating Systems."
2. NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

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

2.2 SHEET METAL MATERIALS

A. Comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods, unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

B. Galvanized Sheet Steel: Lock-forming quality; complying with ASTM A 653/A 653M and having G90 (Z275) coating designation; ducts shall have mill-phosphatized finish for surfaces exposed to view.

C. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts.

D. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

2.3 SEALANT MATERIALS

A. Joint and Seam Tape: 2 inches (50 mm) wide; glass-fiber-reinforced fabric.

B. Tape Sealing System: Woven-fiber tape impregnated with gypsum mineral compound and modified acrylic/silicone activator to react exothermically with tape to form hard, durable, airtight seal.

C. Water-Based Joint and Seam Sealant: Flexible, adhesive sealant, resistant to UV light when cured, UL 723 listed, and complying with NFPA requirements for Class 1 ducts.

D. Flanged Joint Mastic: One-part, acid-curing, silicone, elastomeric joint sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use O.

E. Flange Gaskets: Butyl rubber or EPDM polymer with polyisobutylene plasticizer.

2.4 HANGERS AND SUPPORTS

A. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.

1. Use powder-actuated concrete fasteners for standard-weight aggregate concretes or for slabs more than 4 inches (100 mm) thick.

2. Exception: Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches (100 mm) thick.

B. Hanger Materials: Galvanized sheet steel or threaded steel rod.

1. Hangers Installed in Corrosive Atmospheres: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
2. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for steel sheet width and thickness and for steel rod diameters.

C. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.

D. Trapeze and Riser Supports: Galvanized-steel shapes and plates complying with ASTM A 36/A 36M.

2.5 RECTANGULAR DUCT FABRICATION

A. Fabricate ducts, elbows, transitions, offsets, branch connections, and other construction according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" and complying with requirements for metal thickness, reinforcing types and intervals, tie-rod applications, and joint types and intervals.

1. Lengths: Fabricate rectangular ducts in lengths appropriate to reinforcement and rigidity class required for pressure class.
2. Deflection: Duct systems shall not exceed deflection limits according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."

B. Transverse Joints: Prefabricated slide-on joints and components constructed using manufacturer's guidelines for material thickness, reinforcement size and spacing, and joint reinforcement.

1. Available Manufacturers:

a. Ductmate Industries, Inc.
b. Nexus Inc.
c. Ward Industries, Inc.

C. Formed-On Flanges: Construct according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible," Figure 1-4, using corner, bolt, cleat, and gasket details.

1. Available Manufacturers:

a. Ductmate Industries, Inc.
b. Lockformer.

2. Duct Size: Maximum 30 inches (750 mm) wide and up to 2-inch wg (500-Pa) pressure class.

3. Longitudinal Seams: Pittsburgh lock sealed with noncuring polymer sealant.

D. Cross Breaking or Cross Beading: Cross break or cross bead duct sides 19 inches (480 mm) and larger and 0.0359 inch (0.9 mm) thick or less, with more than 10 sq. ft. (0.93 sq. m) of nonbraced panel area unless ducts are lined.

2.6 DOUBLE-WALL DUCT AND FITTING FABRICATION

A. Manufacturers:

1. Lindab Inc.
2. McGill AirFlow Corporation.
3. SEMCO Incorporated.

B. Ducts: Fabricate double-wall (insulated) ducts with an outer shell and an inner duct. Dimensions indicated are for inner ducts.

1. Outer Shell: Base metal thickness on outer-shell dimensions. Fabricate outer-shell lengths 2 inches (50 mm) longer than inner duct and insulation and in metal thickness specified for single-wall duct.
2. Insulation: 1-inch- (25-mm-) thick fibrous glass, unless otherwise indicated. Terminate insulation where double-wall duct connects to single-wall duct or uninsulated components, and reduce outer shell diameter to inner duct diameter.

a. Thermal Conductivity (k-Value): 0.26 at 75 deg F (0.037 at 24 deg C) mean temperature.

3. Inner Ducts: Fabricate with 0.028-inch-0.7-mm- thick sheet metal.
4. Maintain concentricity of inner duct to outer shell by mechanical means. Prevent dislocation of insulation by mechanical means.

C. Fittings: Fabricate double-wall (insulated) fittings with an outer shell and an inner duct.

1. Inner Ducts: Fabricate with 0.028-inch-0.7-mm- thick sheet metal.

PART 3 - EXECUTION

3.1 DUCT APPLICATIONS

A. Static-Pressure Classes: Unless otherwise indicated, construct ducts according to the following:

1. Supply Ducts (before Air Terminal Units): 3-inch wg (750 Pa).
2. Supply Ducts (after Air Terminal Units): 1-inch wg (250 Pa).
3. Supply Ducts (in Mechanical Equipment Rooms): 3-inch wg (750 Pa).
4. Return Ducts (Negative Pressure): 1-inch wg (250 Pa).
5. Exhaust Ducts (Negative Pressure): 1-inch wg (250 Pa).

3.2 DUCT INSTALLATION

A. Construct and install ducts according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible," unless otherwise indicated.

B. Install ducts with fewest possible joints.

C. Install fabricated fittings for changes in directions, size, and shape and for connections.

D. Install couplings tight to duct wall surface with a minimum of projections into duct. Secure couplings with sheet metal screws. Install screws at intervals of 12 inches (300 mm), with a minimum of 3 screws in each coupling.

E. Install ducts, unless otherwise indicated, vertically and horizontally and parallel and perpendicular to building lines; avoid diagonal runs.

F. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.

G. Install ducts with a clearance of 1 inch (25 mm), plus allowance for insulation thickness.

H. Conceal ducts from view in finished spaces. Do not encase horizontal runs in solid partitions unless specifically indicated.

I. Coordinate layout with suspended ceiling, fire- and smoke-control dampers, lighting layouts, and similar finished work.

J. Seal all joints and seams. Apply sealant to male end connectors before insertion, and afterward to cover entire joint and sheet metal screws.

K. Non-Fire-Rated Partition Penetrations: Where ducts pass through interior partitions and exterior walls and are exposed to view, conceal spaces between construction openings and ducts or duct insulation with sheet metal flanges of same metal thickness as ducts. Overlap openings on 4 sides by at least 1-1/2 inches (38 mm).

L. Fire-Rated Partition Penetrations: Where ducts pass through interior partitions and exterior walls, install appropriately rated fire dampers, sleeves, and firestopping sealant. Fire dampers are specified in Division 15 Section "Duct Accessories." Firestopping materials and installation methods are specified in Division 7 .

M. Protect duct interiors from the elements and foreign materials until building is enclosed. Follow SMACNA's "Duct Cleanliness for New Construction."

3.3 SEAM AND JOINT SEALING

A. Seal duct seams and joints according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for duct pressure class indicated.

1. For pressure classes lower than 2-inch wg (500 Pa), seal transverse joints.

B. Seal ducts before external insulation is applied.

3.4 HANGING AND SUPPORTING

A. Support horizontal ducts within 24 inches (600 mm) of each elbow and within 48 inches (1200 mm) of each branch intersection.

B. Support vertical ducts at maximum intervals of 16 feet (5 m) and at each floor.

C. Install upper attachments to structures with an allowable load not exceeding one-fourth of failure (proof-test) load.

D. Install powder-actuated concrete fasteners after concrete is placed and completely cured.

1. Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches (100 mm) thick.

3.5 CONNECTIONS

A. Make connections to equipment with flexible connectors according to Division 15 Section "Duct Accessories."

B. Comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

END OF SECTION 15815

SECTION 15081 - DUCT INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes semirigid and flexible duct, insulating cements, field-applied jackets, AND accessories and attachments.

1.2 SUBMITTALS

A. Product Data: Thermal conductivity, thickness, and jackets (both factory and field applied, if any), for each type of product indicated.

B. Shop Drawings: Shop fabrication and installation details for the following:

1. Removable insulation sections at access panels.
2. Application of field-applied jackets.
3. Applications at linkages for control devices.

1.3 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide products with flame-spread and smoke-developed indices of 25 and 50, respectively, according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Mineral-Fiber Insulation:

a. CertainTeed Manson.
b. Knauf FiberGlass GmbH.
c. Owens-Corning Fiberglas Corp.

2.2 INSULATION MATERIALS

A. Mineral-Fiber Board Thermal Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IB, without facing and with all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.

B. Mineral-Fiber Blanket Thermal Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II, without facing and with all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.

C. Field-Applied Jackets: ASTM C 921, Type 1, unless otherwise indicated.

1. Foil and Paper Jacket: Laminated, glass-fiber-reinforced, flame-retardant kraft paper and aluminum foil.
2. PVC Jacket: High-impact, ultraviolet-resistant PVC; 20 mils (0.5 mm) thick; roll stock ready for shop or field cutting and forming.

D. Accessories and Attachments:

1. Glass Cloth and Tape: Comply with MIL-C-20079H, Type I for cloth and Type II for tape. Woven glass-fiber fabrics, plain weave, presized a minimum of 8 oz./sq. yd. (270 g/sq. m).
2. Bands: Aluminum 3/4 inch (19 mm) wide.
3. Wire: 0.080-inch (2.0-mm), nickel-copper alloy; 0.062-inch (1.6-mm), soft-annealed, stainless steel; or 0.062-inch (1.6-mm), soft-annealed, galvanized steel.
4. Weld-Attached Anchor Pins and Washers: Copper-coated steel pin for capacitor-discharge welding and galvanized speed washer. Pin length sufficient for insulation thickness indicated.
5. Adhesive-Attached Anchor Pins and Speed Washers: Galvanized steel plate, pin, and washer manufactured for attachment to duct and plenum with adhesive. Pin length sufficient for insulation thickness indicated.

PART 3 - EXECUTION

3.1 GENERAL APPLICATION REQUIREMENTS

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Apply insulation materials, accessories, and finishes according to the manufacturer's written instructions; with smooth, straight, and even surfaces; and free of voids throughout the length of ducts and fittings.

C. Use accessories compatible with insulation materials and suitable for the service. Use accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Seal joints and seams with vapor-retarder mastic on insulation indicated to receive a vapor retarder.

E. Apply insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by the insulation material manufacturer.

F. Apply insulation with the least number of joints practical.

G. Apply insulation over fittings and specialties, with continuous thermal and vapor-retarder integrity, unless otherwise indicated.

H. Hangers and Anchors: Where vapor retarder is indicated, seal penetrations in insulation at hangers, supports, anchors, and other projections with vapor-retarder mastic. Apply insulation continuously through hangers and around anchor attachments.

I. Insulation Terminations: For insulation application where vapor retarders are indicated, seal ends with a compound recommended by the insulation material manufacturer to maintain vapor retarder.

J. Roof Penetrations: Apply insulation for interior applications to a point even with top of roof flashing.

K. Interior Wall and Partition Penetrations: Apply insulation continuously through walls and partitions, except fire-rated walls and partitions.

L. Fire-Rated Wall and Partition Penetrations: Terminate insulation at fire/smoke damper sleeves for fire-rated wall and partition penetrations.

M. Floor Penetrations: Terminate insulation at underside of floor assembly and at floor support at top of floor.

N. Fiberglass exposed to the air stream: The use of fiberglass directly exposed to the air stream is prohibited. This includes fiberglass based insulation in return air plenums. Extreme care shall be used to completely enclose glass fibers in jackets to prevent them to reach occupied spaces through the air conditioning system. Any torn or damaged insulation jacket shall be immediately repaired.

3.2 DUCT AND PLENUM APPLICATION SCHEDULE

A. Service: Supply-air, concealed.

1. Material: Mineral-fiber blanket.
2. Thickness: 2 inches (50 mm).
3. Number of Layers: One.
4. Field-Applied Jacket: Foil and paper.
5. Vapor Retarder Required: Yes.

B. Service: Supply-air, return-air, exposed.

1. Material: Mineral-fiber board.
2. Thickness: 1-1/2 inches (38 mm).
3. Number of Layers: One.
4. Field-Applied Jacket: Foil and paper.
5. Vapor Retarder Required: Yes.

END OF SECTION 15081

GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standard hollow metal doors and frames.

B. Related Sections

1. Division 4 Section "Unit Masonry Assemblies" for embedding anchors for hollow metal work into masonry construction.
2. Division 8 Section "Door Hardware" for door hardware for hollow metal doors.
3. Division 9 Sections "Painting" for field painting hollow metal doors and frames.
4. Division 16 Sections for electrical connections including conduit and wiring for door controls and operators.

1.2 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings.

B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.

1.3 SUBMITTALS

A. First five paragraphs below are defined in Division 1 Section "Submittal Procedures" as "Action Submittals."Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating,] [temperature-rise ratings, and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.
9. Details of conduit and preparations for power, signal, and control systems.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification:

1. For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
2. For the following items, prepared on Samples about 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:

a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow metal panels and glazing if applicable.

E. Other Action Submittals:

1. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252.
1. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.

C. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.

D. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784 Retain paragraph below if Work of this Section is extensive or complex enough to justify a preinstallation conference.

E. Preinstallation Conference: Conduct conference at Project site.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to finish of factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one ofthe following:

1. Amweld Building Products, LLC.
2. Benchmark; a division of Therma-Tru Corporation.
3. Ceco Door Products; an Assa Abloy Group company.
4. Curries Company; an Assa Abloy Group company.
5. Deansteel Manufacturing Company, Inc.
6. Firedoor Corporation.
7. Fleming Door Products Ltd.; an Assa Abloy Group company.
8. Habersham Metal Products Company.
9. Kewanee Corporation (The).
10. Pioneer Industries, Inc.
11. Security Metal Products Corp.

12. Steelcraft; an Ingersoll-Rand company.
13. Windsor Republic Doors.

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 metallic coating.

D. Retain first paragraph below, which describes electrolytic zinc-coated steel, for frame anchors only.Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.

G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

H. Glazing: Comply with requirements in Division 8 Section "Glazing."

I. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.3 STANDARD HOLLOW METAL DOORS

A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.

1. Design: Flush panel
2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.

a. Fire Door Core: As required to provide fire-protection ratings indicated.

3. Vertical Edges for Single-Acting Doors: Manufacturer's standard.

a. Beveled Edge: 1/8 inch in 2 inches.

4. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick, end closures or channels of same material as face sheets.
5. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

B. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Level 4 and Physical Performance Level A (Maximum Duty), Model 1 (Full Flush).

2. Door assemblies shall resist the cyclic pressures, static pressures and missile impact loads as detailed in Miami–Dade County test protocols: PA 201, PA 202, and PA 203, and Florida Building Code test protocols TAS 201, TAS 202 and TAS 203.

C. Interior Doors: Face sheets fabricated from cold-rolled steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Level 4 and Physical Performance Level A (Maximum Duty), Model 1 (Full Flush) at coin room location.

D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

E. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

2.4 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Exterior Frames: Fabricated from metallic-coated steel sheet.

1. Fabricate frames with mitered or coped corners.
2. Frames for Level 4 Steel Doors: 0.067-inch- thick steel sheet.

C. Interior Frames: Fabricated from cold-rolled steel sheet.

1. Fabricate frames with mitered or coped corners.
2. Frames for Level 4 Steel Doors: 0.067-inch- thick steel sheet.
3. Frames for Borrowed Lights: Same as adjacent door frame.

D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

2.6 HOLLOW METAL PANELS

A. Provide hollow metal panels of same materials, construction, and finish as specified for adjoining hollow metal work.

2.7 STOPS AND MOLDINGS

A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch thick, fabricated from same material as door face sheet in which they are installed.

B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.

C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch thick, fabricated from same material as frames in which they are installed.

2.8 LOUVERS

A. Provide louvers for interior doors, where indicated, that comply with SDI 111C, with blades or baffles formed of 0.020-inch- thick, cold-rolled steel sheet set into 0.032-inch- thick steel frame.

Sightproof Louver: Stationary louvers constructed with inverted V-shaped or Y-shaped blades.

2. Lightproof Louver: Stationary louvers constructed with baffles to prevent light from passing from one side to the other, any angle.
3. Fire-Rated Automatic Louvers: Louvers constructed with movable blades closed by actuating fusible link, and listed and labeled for use in fire-rated door assemblies of type and fire-resistance rating indicated by same testing and inspecting agency that established fire-resistance rating of door assembly.

2.9 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch- wide steel.

C. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

2.10 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117].

C. Hollow Metal Doors:

1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
2. Glazed Lites: Factory cut openings in doors.
3. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.

D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
2. Sidelight] Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
6. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.
        4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

    b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

        1) Three anchors per jamb up to 60 inches high.
        2) Four anchors per jamb from 60 to 90 inches high.
        3) Five anchors per jamb from 90 to 96 inches high.
        4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
        5) Two anchors per head for frames above 42 inches wide and mounted in metal-stud partitions.

    c. Compression Type: Not less than two anchors in each jamb.
    d. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.

7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 8 Section "Door Hardware."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 16 Sections.

G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
4. Provide loose stops and moldings on inside of hollow metal work.
5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

2.11 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - Factory-applied finishes are not covered by ANSI/NAAMM-HMMA 861.EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:

1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
4. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.

C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.

1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

a. At fire-protection-rated openings, install frames according to NFPA 80.
b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
c. Install frames with removable glazing stops located on secure side of opening.
d. Install door silencers in frames before grouting.
e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.
4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with grout. Take precautions, including bracing frames, to ensure that frames are not deformed or damaged by grout forces.
6. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.
7. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

    a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Standard Steel Doors:

    a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
    b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
    c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
    d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
3. Smoke-Control Doors: Install doors according to NFPA 105.

D. Glazing: Comply with installation requirements in Division 8 Section "Glazing" and with hollow metal manufacturer's written instructions.

1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition.

Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

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

END OF SECTION

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GENERAL DECISION: FL20080001 04/10/2009 FL1

Date: April 10, 2009
General Decision Number: FL20080001 04/10/2009

Superseded General Decision Number: FL20070001

State: Florida

Construction Type: Building

County: Miami-Dade County in Florida.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including four (4) stories)

Modification Number	Publication Date
0	02/08/2008
1	02/15/2008
2	03/21/2008
3	06/27/2008
4	07/18/2008
5	08/15/2008
6	09/19/2008
7	10/10/2008
8	11/21/2008
9	01/23/2009
10	04/10/2009

ASBE0060-001 09/01/2008

	Rates	Fringes
Asbestos Worker/Heat and Frost Insulator	$ 29.00	10.45

ELEC0349-001 09/01/2008

Including Fire Alarm Installation

	Rates	Fringes
ELECTRICIAN (Including Fire Alarm Installation)		
Electrical contracts including mateials that are over $2,000,000	$ 28.61	8.60
Electrical contracts including materials that are under $2,000,000	$ 26.15	8.33

ELEV0071-001 01/01/2009

	Rates	Fringes
ELEVATOR MECHANIC	$ 35.21	18.285

FOOTNOTE FOR ELEVATOR CONSTRUCTORS:

A: Employer contributes 8% basic hourly rate for 5 years or more of service or 6% basic hourly rate for 6 months to 5 years of service as Vacation Pay Credit; Paid Holidays: New Year's Day; Memorial Day; Independence Day; Thanksgiving Day; Christmas Day, plus the Friday after Thanksgiving.

ENGI0487-001 01/01/2009

	Rates	Fringes
Power equipment operators:		
Boom Truck Operator	$ 28.55	7.65
Crane (Including Truck Crane)	$ 28.55	7.65
Crane Oiler (Including Truck Crane)	$ 20.00	7.65
Piledrivers	$ 28.05	7.65

IRON0272-001 10/01/2006

	Rates	Fringes
Ironworkers:		
Ornamental	$ 26.70	6.43
Reinforcing	$ 26.70	6.43
Structural	$ 26.70	6.43

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* PLUM0519-001 03/16/2009

	Rates	Fringes
PLUMBER	$ 28.17	7.93

PLUM0725-001 07/16/2008

	Rates	Fringes
PIPEFITTER (Including HVAC)	$ 30.55	9.10

SFFL0821-001 01/01/2009

	Rates	Fringes
SPRINKLER FITTER	$ 22.25	13.84

SHEE0032-001 08/12/2007

	Rates	Fringes
Sheet metal worker (Including HVAC duct work)	$ 23.72	10.48

SUFL1999-001 03/04/1999

	Rates	Fringes
Acoustical Tile Installer	$ 10.00	0.62
Bricklayer/Blocklayer	$ 15.36	
CARPENTER (Including Drywall Hanging and Batt Installation)	$ 12.90	2.40
Cement Mason/Concrete Finisher	$ 14.50	3.15
DRYWALL FINISHER/TAPER	$ 12.50	
FLOOR LAYER: CARPET	$ 14.25	
GLAZIER	$ 13.05	2.42

Laborers:
Pipelayers.....$ 13.81
Plasterer Tenders.....$ 10.09
Unskilled (Including Mason Tending).....$ 8.70

PAINTER: Brush Only.....$ 9.61

PLASTERER.....$ 15.05

Power equipment operators:

Backhoe	$ 15.71	2.85
Bulldozer	$ 14.58	2.85
Concrete Pump Operator	$ 14.78	
Grader	$ 15.93	2.85
Loader	$ 15.04	2.85
Roller	$ 12.84	2.85

ROOFER, Including Built Up, Composition and Single Ply Roofs.....$ 9.99

TILE SETTER	$ 12.50	0.87
TRUCK DRIVER	$ 10.95	1.83

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal

process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION