

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - EGGERS INDUSTRIES.
 - MARSHFIELD DOOR SYSTEMS, INC.
 - MOHAWK FLUSH DOORS, INC.; A MASONITE COMPANY.

2.2 DOOR CONSTRUCTION, GENERAL

- A. LOW-EMITTING MATERIALS: PROVIDE DOORS MADE WITH ADHESIVES AND COMPOSITE WOOD PRODUCTS THAT DO NOT CONTAIN UREA FORMALDEHYDE.
- B. WDMA L3.1-A PERFORMANCE GRADE:
 - HEAVY DUTY UNLESS OTHERWISE INDICATED.
- C. PARTICLEBOARD-CORE DOORS:
 - PARTICLEBOARD: ANSI A208.1, [GRADE LD-1] [OR] [GRADE LD-2], [MADE WITH BINDER CONTAINING NO UREA-FORMALDEHYDE RESIN].
 - BLOCKING: PROVIDE WOOD BLOCKING IN PARTICLEBOARD-CORE DOORS AS NEEDED TO ELIMINATE THROUGH-BOLTING HARDWARE.
- D. STRUCTURAL COMPOSITE-LUMBER-CORE DOORS:
 - STRUCTURAL COMPOSITE LUMBER: WDMA L5.10.
 - SCREW WITHDRAWAL, FACE: 700 LBF (3100 N).
 - SCREW WITHDRAWAL, EDGE: 400 LBF (1780 N).

2.3 PLASTIC-LAMINATE-FACED DOORS

- A. INTERIOR SOLID-CORE DOORS:
 - GRADE: CUSTOM.
 - PLASTIC-LAMINATE FACES: HIGH-PRESSURE DECORATIVE LAMINATES COMPLYING WITH NEMA LD 3, GRADE HGS.
 - COLORS, PATTERNS, AND FINISHES: AS INDICATED ON THE DÉCOR DRAWINGS.
 - EXPPOSED VERTICAL EDGES: PLASTIC LAMINATE THAT MATCHES FACES.
 - CORE: PARTICLEBOARD.
 - CONSTRUCTION: THREE PLYES. STILES AND RAILS ARE BONDED TO CORE, THEN ENTIRE UNIT ABRASIVE PLANED BEFORE FACES ARE APPLIED.

2.4 FABRICATION

- A. FACTORY FIT DOORS TO SUIT FRAME-OPENING SIZES INDICATED. COMPLY WITH CLEARANCE REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR FITTING UNLESS OTHERWISE INDICATED.
- B. FACTORY MACHINE DOORS FOR HARDWARE THAT IS NOT SURFACE APPLIED. OPENINGS: CUT AND TRIM OPENINGS THROUGH DOORS IN FACTORY.
- C. LIGHT OPENINGS: TRIM OPENINGS WITH MOLDINGS OF MATERIAL AND PROFILE INDICATED.
- D. GLAZING: FACTORY INSTALL GLAZING IN DOORS INDICATED TO BE FACTORY FINISHED. COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 08 SECTION "GLAZING."
- E. LOUVERS: FACTORY INSTALL LOUVERS IN PREPARED OPENINGS.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. HARDWARE: FOR INSTALLATION, SEE DIVISION 08 SECTION "DOOR HARDWARE."
- B. INSTALLATION INSTRUCTIONS: INSTALL DOORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE REFERENCED QUALITY STANDARD, AND AS INDICATED.
- C. JOB-FITTED DOORS: ALIGN AND FIT DOORS IN FRAMES WITH UNIFORM CLEARANCES AND BEVELS; DO NOT TRIM STILES AND RAILS IN EXCESS OF LIMITS SET BY MANUFACTURER OR PERMITTED FOR FIRE-RATED DOORS. MACHINE DOORS FOR HARDWARE. SEAL EDGES OF DOORS, EDGES OF CUT-OUTS, AND MORTISES AFTER FITTING AND MACHINING.
 - CLEARANCES: PROVIDE 1/8 INCH (3.2 MM) AT HEADS, JAMBS, AND BETWEEN PAIRS OF DOORS. PROVIDE 1/8 INCH (3.2 MM) FROM BOTTOM OF DOOR TO TOP OF DECORATIVE FLOOR FINISH OR COVERING UNLESS OTHERWISE INDICATED. WHERE THRESHOLD IS SHOWN OR SCHEDULED, PROVIDE 1/4 INCH (6.4 MM) FROM BOTTOM OF DOOR TO TOP OF THRESHOLD UNLESS OTHERWISE INDICATED.

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES ACCESS DOORS AND FRAMES FOR CEILING.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF ACCESS DOOR AND FRAME INDICATED.
- B. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.

1.3 QUALITY ASSURANCE

- A. SIZE AND LOCATION VERIFICATION: DETERMINE SPECIFIC LOCATIONS AND SIZES FOR ACCESS DOORS NEEDED TO GAIN ACCESS TO CONCEALED EQUIPMENT, AND INDICATE ON THE DRAWINGS.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. STEEL PLATES, SHAPES, AND BARS: ASTM A 36.
 - HOT-DIP GALVANIZED STEEL: COAT TO COMPLY WITH ASTM A 123 FOR STEEL AND IRON PRODUCTS AND ASTM A 153 FOR STEEL AND IRON HARDWARE.
- B. STEEL SHEET:
 - ELECTROLYTIC ZINC-COATED: ASTM A 591 COMMERCIAL STEEL (CS) WITH CLASS C COATING AND PHOSPHATE TREATMENT TO PREPARE SURFACE FOR PAINTING.
 - DRY-WALL BEADS: EDGE TRIM FORMED FROM 0.0299-INCH (0.76-MM) ZINC-COATED STEEL SHEET FORMED TO RECEIVE JOINT COMPOUND AND IN SIZE TO SUIT THICKNESS OF GYPSUM WALL AND/OR CEILING PANELS INDICATED.

2.2 ACCESS DOORS AND FRAMES

- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - LARSEN'S MANUFACTURING COMPANY.
- B. FLUSH ACCESS DOORS AND TRIMLESS FRAMES:
 - MATERIAL: PRIME-PAINTED STEEL SHEET.
 - SURFACE TYPE: GYPSUM BOARD.
 - LOCATIONS: WALLS AS INDICATED.
 - DOOR: MINIMUM 0.060-INCH THICK SHEET METAL SET FLUSH WITH SURROUNDING FINISH SURFACES TO RECEIVE GYPSUM BOARD FACE.
 - FRAME: MINIMUM 0.060-INCH THICK SHEET METAL WITH BEAD FOR TYPE OF FINISH INDICATED.
 - HINGES: CONTINUOUS PIANO HINGE.
 - LATCH: SCREWDRIVER-OPERATED CAM LATCH.
 - LOCK: KEY-OPERATED CYLINDER LOCK.

2.3 FABRICATION

- A. LATCHING MECHANISMS: FURNISH NUMBER REQUIRED TO LOCK DOORS IN FLUSH, SMOOTH PLANE WHEN CLOSED.
 - FOR RECESSED PANEL DOORS, PROVIDE ACCESS SLEEVES FOR LATCHING DEVICE. FURNISH PLASTIC GROMMETS AND INSTALL IN HOLES CUT THROUGH FINISH.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. ADVISE INSTALLERS OF OTHER WORK ABOUT SPECIFIC REQUIREMENTS RELATING TO ACCESS DOOR AND FLOOR DOOR INSTALLATION, INCLUDING SIZES OF OPENINGS TO RECEIVE ACCESS DOOR AND FRAME, AS WELL AS LOCATIONS OF SUPPORTS, INSERTS, AND ANCHORING DEVICES.
- B. SET FRAMES ACCURATELY IN POSITION AND ATTACH SECURELY TO SUPPORTS WITH PLANE OF FACE PANELS ALIGNED WITH ADJACENT FINISH SURFACES.
- C. INSTALL ACCESS DOORS WITH TRIMLESS FRAMES FLUSH WITH ADJACENT FINISH SURFACES OR RECESSED TO RECEIVE FINISH MATERIAL.
- D. ADJUST DOORS AND HARDWARE AFTER INSTALLATION FOR PROPER OPERATION.

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES:
 - EXTERIOR AND INTERIOR STOREFRONT FRAMING.
- B. PERFORMANCE REQUIREMENTS
 - GENERAL PERFORMANCE: ALUMINUM-FRAMED SYSTEMS SHALL WITHSTAND THE EFFECTS OF THE FOLLOWING PERFORMANCE REQUIREMENTS WITHOUT EXCEEDING PERFORMANCE CRITERIA OR FAILURE DUE TO DEFECTIVE MANUFACTURE, FABRICATION, INSTALLATION, OR OTHER DEFECTS IN CONSTRUCTION:
 - MOVEMENTS OF SUPPORTING STRUCTURE INDICATED ON DRAWINGS INCLUDING, BUT NOT LIMITED TO, STORY DRIFT AND DEFLECTION FROM UNIFORMLY DISTRIBUTED AND CONCENTRATED LIVE LOADS.
 - DIMENSIONAL TOLERANCES OF BUILDING FRAME AND OTHER ADJACENT CONSTRUCTION.
 - FAILURE INCLUDES THE FOLLOWING:
 - DEFLECTION EXCEEDING SPECIFIED LIMITS.
 - THERMAL STRESSES TRANSFERRING TO BUILDING STRUCTURE.
 - FRAMING MEMBERS TRANSFERRING STRESSES, INCLUDING THOSE CAUSED BY THERMAL AND STRUCTURAL MOVEMENTS TO GLAZING.
 - NOISE OR VIBRATION CREATED BY WIND AND BY THERMAL AND STRUCTURAL MOVEMENTS.
 - LOOSENING OR WEAKENING OF FASTENERS, ATTACHMENTS, AND OTHER COMPONENTS.
 - FAILURE OF OPERATING UNITS.

1.2 WIND LOADS: AS INDICATED ON DRAWINGS.

1.3 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SHOP DRAWINGS: FOR ALUMINUM-FRAMED SYSTEMS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
 - INCLUDE DETAILS OR PROVISIONS FOR SYSTEM EXPANSION AND CONTRACTION AND FOR DRAINAGE OF MOISTURE IN THE SYSTEM TO THE EXTERIOR.
- C. SAMPLES: FOR EACH TYPE OF EXPOSED FINISH REQUIRED.

1.4 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT.
- B. ENGINEERING RESPONSIBILITY: PREPARE DATA FOR ALUMINUM-FRAMED SYSTEMS, INCLUDING SHOP DRAWINGS, BASED ON TESTING AND ENGINEERING ANALYSIS OF MANUFACTURER'S STANDARD UNITS IN SYSTEMS SIMILAR TO THOSE INDICATED FOR THIS PROJECT.
- C. PRODUCT OPTIONS: INFORMATION ON DRAWINGS AND IN SPECIFICATIONS ESTABLISHES REQUIREMENTS FOR SYSTEMS' AESTHETIC EFFECTS AND PERFORMANCE CHARACTERISTICS. AESTHETIC DETAILS ARE INDICATED BY DIMENSIONS, ARRANGEMENTS, ALIGNMENT, AND PROFILES OF COMPONENTS AND ASSEMBLIES AS THEY RELATE TO SIGHTLINES, TO ONE ANOTHER, AND TO ADJOINING CONSTRUCTION. PERFORMANCE CHARACTERISTICS ARE INDICATED BY CRITERIA SUBJECT TO VERIFICATION BY ONE OR MORE METHODS INCLUDING DECONSTRUCTION TESTING, FIELD TESTING, AND IN-SERVICE PERFORMANCE.
- D. ACCESSIBLE ENTRANCES: COMPLY WITH APPLICABLE PROVISIONS IN THE U.S. ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD'S ADA-ABA ACCESSIBILITY GUIDELINES AND ICC ANS A117.1.
- E. SOURCE LIMITATIONS FOR ALUMINUM-FRAMED SYSTEMS: OBTAIN FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
- F. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT A DATE AND TIME TO BE ESTABLISHED.

1.5 WARRANTY

- A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF ALUMINUM-FRAMED SYSTEMS THAT DO NOT COMPLY WITH REQUIREMENTS OR THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT INDICATED ON DRAWINGS.
 - YKK AP AMERICA INC.

2.2 MATERIALS

- A. ALUMINUM: ALLOY AND TEMPER RECOMMENDED BY MANUFACTURER FOR TYPE OF USE AND FINISH INDICATED.
 - SHEET AND PLATE: ASTM B 209.
 - EXTRUDED BARS, RODS, PROFILES, AND TUBES: ASTM B 212.
 - EXTRUDED STRUCTURAL PIPE AND TUBES: ASTM B 429.
 - STRUCTURAL PROFILES: ASTM B 308, B308M.
 - WELDING RODS AND BARE ELECTRODES: AWS A5.10, 110M.
- B. STEEL REINFORCEMENT: MANUFACTURE STANDARD ZINC COAT CORROSION-RESISTANT PRIMER, COMPLYING WITH SSPC-Paint 12.00. APPLY IMMEDIATELY AFTER SURFACE PREPARATION AND PRE-TREATMENT. ELECTROLYTIC PREPARATION METHODS ACCORDING TO RECOMMENDATION IN SSPC-Paint 12.00 TO PREPARE SURFACES ACCORDING TO APPLICABLE SSPC STANDARDS AND SPECIFICATIONS.
 - STRUCTURAL SHAPES, BARS, AND BARS: ASTM A 36/A 36M.
 - COLD-ROLLED SHEET AND STRIP: ASTM A 1008/A 1008M.
 - HOT-ROLLED SHEET AND STRIP: ASTM A 1011/A 1011M.

2.3 FINISHES

- A. FRAMING MEMBERS: MANUFACTURER'S STANDARD EXTRUDED-ALUMINUM FRAMING MEMBERS OF THICKNESS REQUIRED AND REINFORCED AS REQUIRED TO SUPPORT IMPOSED LOADS.
 - CONSTRUCTION: THERMALLY BROKEN.
 - GLAZING SYSTEM: RETAINED MECHANICALLY WITH GASKETS ON FOUR SIDES.
 - GLAZING PLANE: AS INDICATED.
 - BRACKETS AND REINFORCEMENTS: MANUFACTURER'S STANDARD HIGH-STRENGTH ALUMINUM WITH NONSTAINING, NONFERROUS SHIMS FOR ALIGNING SYSTEM COMPONENTS.
- B. FASTENERS AND ACCESSORIES: MANUFACTURER'S STANDARD CORROSION-RESISTANT, NONSTAINING, NONBLEEDING FASTENERS AND ACCESSORIES COMPATIBLE WITH ADJACENT MATERIALS.
 - USE SELF-LOCKING DEVICES WHERE FASTENERS ARE SUBJECT TO LOOSENING OR TURNING OUT FROM THERMAL AND STRUCTURAL MOVEMENTS, WIND LOADS, OR VIBRATION.
 - REINFORCE MEMBERS AS REQUIRED TO RECEIVE FASTENER THREADS.
- D. CONCEALED FLASHINGS: MANUFACTURER'S STANDARD CORROSION-RESISTANT, NONSTAINING, NONBLEEDING FLASHING COMPATIBLE WITH ADJACENT MATERIALS.
- E. FRAMING SYSTEM GASKETS AND SEALANTS: MANUFACTURER'S STANDARD, RECOMMENDED BY MANUFACTURER FOR JOINT TYPE.
 - PROVIDE SEALANTS FOR USE INSIDE OF THE WEATHERPROOFING SYSTEM THAT HAVE A VOC CONTENT OF 250 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).

2.4 GLAZING SYSTEMS

- A. GLAZING: AS SPECIFIED IN DIVISION 08 SECTION "GLAZING."
- B. GLAZING GASKETS: MANUFACTURER'S STANDARD COMPRESSION TYPES; REPLACEABLE, MOLDED OR EXTRUDED, OF PROFILE AND HARDNESS REQUIRED TO MAINTAIN WATERTIGHT SEAL.
- C. SPACERS AND SETTING BLOCKS: MANUFACTURER'S STANDARD ELASTOMERIC TYPE.

2.5 ENTRANCE DOOR SYSTEMS

- A. ENTRANCE DOORS: MANUFACTURER'S STANDARD GLAZED ENTRANCE DOORS FOR MANUAL-SWING OPERATION.
 - DOOR CONSTRUCTION: 1-3/4-INCH (44.5-MM) OVERALL THICKNESS, WITH MINIMUM 0.125-INCH- (3.2-MM) THICK, EXTRUDED-ALUMINUM TUBULAR RAIL AND STILE MEMBERS. MECHANICALLY FASTEN CORNERS WITH REINFORCING BRACKETS THAT ARE DEEPLY PENETRATED AND FILED WELDED OR THAT INCORPORATE CONCEALED TIE RODS.
 - THERMAL CONSTRUCTION: HIGH-PERFORMANCE PLASTIC CONNECTORS SEPARATE ALUMINUM MEMBERS EXPOSED TO THE EXTERIOR FROM MEMBERS EXPOSED TO THE INTERIOR.
 - DOOR DESIGN: AS INDICATED.
 - ACCESSIBLE DOORS: SMOOTH SURFACED FOR WIDTH OF DOOR IN AREA WITHIN 10 INCHES (255 MM) ABOVE FLOOR OR GROUND PLANE.
 - GLAZING STOPS AND GASKETS: MANUFACTURER STANDARD, SNAP-ON, EXTRUDED-ALUMINUM STOPS AND PREFORMED GASKETS.
 - PROVIDE NONREMOVABLE GLAZING STOPS ON OUTSIDE OF DOOR.
- B. ENTRANCE DOOR HARDWARE: AS SPECIFIED AND ON THE DRAWINGS AS INDICATED.

2.6 ENTRANCE DOOR HARDWARE

- A. GENERAL: PROVIDE ENTRANCE DOOR HARDWARE AND ENTRANCE DOOR HARDWARE SETS INDICATED IN DOOR AND FRAME SCHEDULE FOR EACH ENTRANCE DOOR TO COMPLY WITH REQUIREMENTS IN THIS SECTION.
 - ENTRANCE DOOR HARDWARE SETS: PROVIDE QUANTITY, ITEM, SIZE, FINISH OR COLOR INDICATED.
 - OPENING-FORCE REQUIREMENTS:
 - EGRESS DOORS: NOT MORE THAN 15 LBF (67N) TO RELEASE THE LATCH AND NOT MORE THAN 30 LBF (133N) TO SET THE DOOR IN MOTION AND NOT MORE THAN 15 LBF (67N) TO OPEN THE DOOR TO ITS MINIMUM REQUIRED WIDTH.
 - ACCESSIBLE INTERIOR DOORS: NOT MORE THAN 5 LBF (22.2 N) TO FULLY OPEN DOOR.
 - LATCHES AND EXIT DEVICES: NOT MORE THAN 15 LBF (67 N) REQUIRED TO RELEASE LATCH.
 - BUTT HINGES: BHMA A156.1, GRADE 1, RADIUS CORNER.
 - NONREMOVABLE PINS: PROVIDE SET SCREW IN HINGE BARREL THAT, WHEN TIGHTENED INTO A GROOVE IN HINGE PIN, PREVENTS REMOVAL OF PIN WHILE ENTRANCE DOOR IS CLOSED.
 - EXTERIOR HINGES: AS INDICATED ON THE DRAWING.
 - QUANTITIES:
 - FOR DOORS UP TO 87 INCHES (2210 MM) HIGH, PROVIDE 3 HINGES PER LEAF.
 - C. PANIC EXIT DEVICES: BHMA A156.3, GRADE 1, LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR PANIC PROTECTION, BASED ON TESTING ACCORDING TO UL 305, AND AS INDICATED ON THE DRAWING.
 - D. CYLINDERS: BHMA A156.5, GRADE 1.
 - KEYING: MASTER KEY SYSTEM. PERMANENTLY INSCRIBE EACH KEY WITH A VISUAL KEY CONTROL NUMBER AND INCLUDE NOTATION "DO NOT DUPLICATE".
 - E. STRIKES: PROVIDE STRIKE WITH BLACK-PLASTIC DUST BOX FOR EACH LATCH OR LOCK: FABRICATED FOR ALUMINUM FRAMING.
 - F. OPERATING TRIM: BHMA A156.6.
 - G. CLOSERS: BHMA A156.4, GRADE 3, WITH ACCESSORIES REQUIRED FOR A COMPARABLE INSTALLATION, SIZED AS REQUIRED BY DOOR SIZE, EXPOSURE TO WEATHER, AND ANTICIPATED FREQUENCY OF USE; ADJUSTABLE TO MEET FIELD CONDITIONS AND REQUIREMENTS FOR OPENING FORCE.
 - H. DOOR STOPS: BHMA A156.16, GRADE 1, FLOOR OR WALL MOUNTED, AS APPROPRIATE FOR DOOR LOCATION INDICATED, WITH INTEGRATED SPRING BUILT INTO THE STOP.
 - I. WEATHER STRIPPING: MANUFACTURER'S STANDARD REPLACEABLE COMPONENTS.
 - J. WEATHER SWEEPS: MANUFACTURER'S STANDARD INTERIOR DOOR BOTTOM SWEEP WITH CONCEALED FASTENERS ON COUNTING STRIP.
 - K. SILENCERS: BHMA A156.7, GRADE 1.
 - L. THRESHOLDS: BHMA A156.21, WITH THRESHOLDS BEVELED WITH A SLOPE OF NOT MORE THAN 1:2, WITH MINIMUM THICKNESS OF 1/4 INCH (3.18 MM).

- 2.7 ACCESSORY MATERIALS
 - BITUMINOUS PAINT: COLD-APPLY ASPHALT-MASTIC PAINT COMPLYING WITH SSPC-PAINT 12 REQUIREMENTS EXCEPT CONTAINING NO ASBESTOS; FORMULATED FOR 30-MIL (0.762-MM) THICKNESS PER COAT.

2.8 FABRICATION

- A. FORM OR EXTRUDE ALUMINUM SHAPES BEFORE FINISHING.
- B. WELD JOINTS: WELD LOCATIONS TO GREATEST EXTENT POSSIBLE TO MINIMIZE DISTORTION OR PERMIT CORRECTION OF FINISH. REMOVE WELD SPATTER AND WELDING OXIDES FROM EXPOSED SURFACES BY DESCAULING OR GRINDING.
- C. FRAMING MEMBERS, GENERAL: FABRICATE COMPONENTS THAT, WHEN ASSEMBLED, HAVE THE FOLLOWING CHARACTERISTICS:
 - PROFILES THAT ARE SHARP, STRAIGHT, AND FREE OF DEFECTS OR DEFORMATIONS.
 - ACCURATELY FITTED JOINTS WITH ENDS COPED OR MITERED.
 - MEANS TO DRAIN WATER PASSING JOINTS, CONDENSATION WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.
 - PHYSICAL AND THERMAL ISOLATION OF GLAZING FROM FRAMING MEMBERS.
 - ACCOMMODATIONS FOR THERMAL AND MECHANICAL MOVEMENTS OF GLAZING AND FRAMING TO MAINTAIN REQUIRED GLAZING EDGE CLEARANCES.
 - PROVISIONS FOR FIELD REPLACEMENT OF GLAZING FROM EXTERIOR.
 - FASTENERS, ANCHORS, AND CONNECTION DEVICES THAT ARE CONCEALED FROM VIEW TO GREATEST EXTENT POSSIBLE.
- D. MECHANICALLY GLAZED FRAMING MEMBERS: FABRICATE FOR FLUSH GLAZING WITHOUT PROJECTING STOPS.
- E. ENTRANCE DOOR FRAMES: REINFORCE AS REQUIRED TO SUPPORT LOADS IMPOSED BY DOOR OPERATION AND FOR INSTALLING ENTRANCE DOOR HARDWARE.
- F. ENTRANCE DOORS: REINFORCE DOORS AS REQUIRED FOR INSTALLING ENTRANCE DOOR HARDWARE.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. GENERAL: PROVIDE DOOR HARDWARE FOR EACH DOOR TO COMPLY WITH REQUIREMENTS IN THIS SECTION, DOOR HARDWARE SETS INDICATED IN DOOR SCHEDULE ON THE DRAWINGS, AND THE DOOR HARDWARE SCHEDULE AT THE END OF PART 3.
 - DOOR HARDWARE SETS: PROVIDE QUANTITY, ITEM, SIZE, FINISH AND COLOR INDICATED AND NAMED MANUFACTURER'S PRODUCTS.

2.2 HINGES AND PIVOTS

- A. GENERAL: FULL MORTISE, RADIUS CORNERS, FIVE (5) KNUCKLE BALL BEARING, HEAVYWEIGHT, 4-1/2 BY 4-1/2 INCHES, BUTTON TIP 6 PIN. EXCEPT FOR HINGES TO BE INSTALLED ENTIRELY (BOTH LEAVES) INTO WOOD DOORS AND FRAMES, PROVIDE ONLY TEMPLATE-PRODUCED UNITS.
 - EXTERIOR HINGES: STAINLESS STEEL, WITH STAINLESS-STEEL PIN.
 - INTERIOR HINGES: STEEL, WITH STEEL PIN STAINLESS STEEL, WITH STAINLESS-STEEL PIN.
- B. NONREMOVABLE PINS: PROVIDE SET SCREW IN HINGE BARREL THAT PREVENTS REMOVAL OF PIN WHILE DOOR IS CLOSED; FOR OUTSWINGING EXTERIOR DOORS.
- C. SCREWS: PHILLIPS FLAT-HEAT SCREWS, SCREW HEADS FINISHED TO MATCH SURFACE OF HINGES.
 - METAL DOORS AND FRAMES: MACHINE SCREWS (DRILLED AND TAPPED HOLES).
 - WOOD DOORS AND FRAMES: WOOD SCREWS.
- D. MECHANICAL LOCKS AND LATCHES
 - LOCKSET DESIGN: AS SCHEDULED.
 - DUMMYY TRIM: MATCH LEVER, LOCK TRIM AND ESCUTCHEONS.
 - LOCK TRIM: COMPLY WITH LABELED FIRE DOOR REQUIREMENTS.
 - BACKSET: 2-3/4", UNLESS OTHERWISE INDICATED.

2.3 FABRICATION

- A. LOCKSET DESIGN: AS SCHEDULED.
- B. DUMMYY TRIM: MATCH LEVER, LOCK TRIM AND ESCUTCHEONS.
- C. LOCK TRIM: COMPLY WITH LABELED FIRE DOOR REQUIREMENTS.
- D. BACKSET: 2-3/4", UNLESS OTHERWISE INDICATED.

- C. INSTALL COMPONENTS TO DRAIN WATER PASSING JOINTS, CONDENSATION OCCURRING WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.
- D. SET CONTINUOUS SILL MEMBERS AND FLASHING IN FULL SEALANT BED AS SPECIFIED IN DIVISION 07 SECTION "DOOR SEALANTS" TO PRODUCE WEATHERTIGHT INSTALLATION.
- E. INSTALL COMPONENTS PLUMB AND TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES, AND WITHOUT WARP OR RACK.
- F. INSTALL GLAZING AS SPECIFIED IN DIVISION 08 SECTION "GLAZING."
- G. ENTRANCE DOORS: INSTALL DOORS TO PRODUCE SMOOTH OPERATION AND TIGHT FIT AT CONTACT POINTS.
 - EXTERIOR DOORS: INSTALL TO PRODUCE WEATHERTIGHT ENCLOSURE AND TIGHT FIT AT WEATHER STRIPPING.
 - FIELD-INSTALLED ENTRANCE DOOR HARDWARE: INSTALL SURFACE-MOUNTED ENTRANCE DOOR HARDWARE ACCORDING TO ENTRANCE DOOR HARDWARE MANUFACTURER'S WRITTEN INSTRUCTIONS USING CONCEALED FASTENERS TO GREATEST EXTENT POSSIBLE.
- H. FIELD QUALITY CONTROL
 - REPAIR OR REMOVE WORK IF TEST RESULTS AND INSPECTIONS INDICATE THAT IT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS.
 - ALUMINUM-FRAMED ASSEMBLIES WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING:
 - COMMERCIAL DOOR HARDWARE.
 - CYLINDERS FOR DOORS SPECIFIED IN OTHER SECTIONS.
 - SEE DIVISION 08 DOOR SECTIONS FOR DOOR SILENCERS.
- B. SUBMITTALS
 - PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
 - SAMPLES: FOR EACH EXPOSED FINISH.
 - OTHER ACTION SUBMITTALS:
 - DOOR HARDWARE SETS: PREPARED BY OR UNDER THE SUPERVISION OF INSTALLER, DETAILING FABRICATION AND ASSEMBLY OF DOOR HARDWARE, AS WELL AS PROCEDURES AND DIAGRAMS.
 - FORMS: USE SAME SCHEDULED SEQUENCING AND NUMBERING AND USE SAME DOOR NUMBERS AS IN THE CONTRACT DOCUMENT.
 - CONTENT: INCLUDE THE FOLLOWING INFORMATION:
 - IDENTIFICATION NUMBER, LOCATION, AND FIRE RATING, AND MATERIAL OF EACH DOOR AND FRAME.
 - TYPE, STYLE, FUNCTION, SIZE, QUANTITY AND FINISH OF EACH DOOR HARDWARE ITEM, INCLUDING DESCRIPTION AND FUNCTION OF EACH LOCKSET AND EXIT DEVICE.
 - COMPLETE DESCRIPTIONS OF EVERY ITEM REQUIRED FOR EACH DOOR OR OPENING INCLUDING NAME AND MANUFACTURER.
 - KEYING SCHEDULE: PROVIDED BY OR UNDER THE SUPERVISION OF INSTALLER, INCLUDING OWNER'S FINAL KEYING INSTRUCTIONS FOR LOCKS.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SAMPLES: FOR EACH EXPOSED FINISH.
- C. OTHER ACTION SUBMITTALS:
 - DOOR HARDWARE SETS: PREPARED BY OR UNDER THE SUPERVISION OF INSTALLER, DETAILING FABRICATION AND ASSEMBLY OF DOOR HARDWARE, AS WELL AS PROCEDURES AND DIAGRAMS.
 - FORMS: USE SAME SCHEDULED SEQUENCING AND NUMBERING AND USE SAME DOOR NUMBERS AS IN THE CONTRACT DOCUMENT.
 - CONTENT: INCLUDE THE FOLLOWING INFORMATION:
 - IDENTIFICATION NUMBER, LOCATION, AND FIRE RATING, AND MATERIAL OF EACH DOOR AND FRAME.
 - TYPE, STYLE, FUNCTION, SIZE, QUANTITY AND FINISH OF EACH DOOR HARDWARE ITEM, INCLUDING DESCRIPTION AND FUNCTION OF EACH LOCKSET AND EXIT DEVICE.
 - COMPLETE DESCRIPTIONS OF EVERY ITEM REQUIRED FOR EACH DOOR OR OPENING INCLUDING NAME AND MANUFACTURER.
 - KEYING SCHEDULE: PROVIDED BY OR UNDER THE SUPERVISION OF INSTALLER, INCLUDING OWNER'S FINAL KEYING INSTRUCTIONS FOR LOCKS.

1.3 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: AN EMPLOYER OF WORKERS TRAINED AND APPROVED BY LOCK MANUFACTURER.
 - INSTALLER'S RESPONSIBILITIES INCLUDE SUPPLYING AND INSTALLING DOOR HARDWARE AND PROVIDING A QUALIFIED ARCHITECTURAL HARDWARE CONSULTANT AVAILABLE DURING THE COURSE OF THE WORK TO CONSULT WITH CONTRACTOR, ARCHITECT, AND OWNER ABOUT DOOR HARDWARE AND KEYING.
- B. ARCHITECTURAL HARDWARE CONSULTANT QUALIFICATIONS: A PERSON WHO IS CURRENTLY CERTIFIED BY DHI AS AN ARCHITECTURAL HARDWARE CONSULTANT AND WHO IS EXPERIENCED IN PROVIDING CONSULTING SERVICES FOR DOOR HARDWARE INSTALLATIONS THAT ARE COMPARABLE IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT.
- C. KEYING CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 01 SECTION "PROJECT MANAGEMENT AND COORDINATION," INCORPORATE KEYING CONFERENCE DECISIONS INTO FINAL KEYING SCHEDULE AFTER REVIEWING DOOR HARDWARE KEYING SYSTEM.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. DELIVER KEYS TO MANUFACTURER OF KEY CONTROL SYSTEM FOR SUBSEQUENT DELIVERY TO OWNER.
- B. DELIVER KEYS AND PERMANENT CORES TO OWNER BY REGISTERED MAIL OR OVERNIGHT PACKAGE SERVICE.

1.5 COORDINATION

- A. TEMPLATES: DISTRIBUTE DOOR HARDWARE TEMPLATES FOR DOORS, FRAMES, AND OTHER WORK SPECIFIED TO BE FACTORY PREPARED FOR INSTALLING DOOR HARDWARE. CHECK SHOP DRAWINGS OF OTHER WORK TO CONFIRM THAT ADEQUATE PROVISIONS ARE MADE FOR LOCATING AND INSTALLING DOOR HARDWARE TO COMPLY WITH INDICATED REQUIREMENTS.

1.6 WARRANTY

- A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF DOOR HARDWARE THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
 - WARRANTY PERIOD: THREE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

2.4 EXIT DEVICES

- A. PANIC EXIT DEVICES: LISTED AND LABELED FOR PANIC PROTECTION, BASED ON TESTING ACCORDING TO UL 305.
- B. FIRE EXIT DEVICES: COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED FOR FIRE AND PANIC PROTECTION, BASED ON TESTING ACCORDING TO UL 305 AND NFPA 252.
- C. DUMMYY PUSH BAR: NONFUNCTIONING PUSH BAR MATCHING FUNCTIONAL PUSH BAR.
- D. OUTSIDE TRIM: FULL WITH CYLINDER MATERIAL, FINISH AND DESIGN TO MATCH LOCKSETS AND LATCHES, UNLESS OTHERWISE INDICATED.
- E. THROUGH BOLTS: FOR EXIT DEVICES AND TRIM ON METAL DOORS.

2.5 OPERATING TRIM

- A. PUSH-PULL DESIGN: AS INDICATED ON DRAWINGS.

2.6 CLOSERS

- A. SURFACE MOUNTED CLOSERS: AS INDICATED ON DRAWINGS.
- B. CLOSER HOLDER RELEASE DEVICES: BHMA A156.4.
- C. SIZE OF UNITS: FACTORY-SIZED, ADJUSTABLE TO MEET FIELD CONDITIONS AND REQUIREMENTS FOR OPENING FORCE.

2.7 PROTECTIVE TRIM UNITS

- A. SIZED 2 INCHES LESS THAN DOOR WITH BEVELED 3 SIDES, BY HEIGHT SCHEDULED OR INDICATED. FINISH: MATCH EXPOSED MACHINE OR SELF-TAPPING SCREWS, COUNTERSUNK, FINISH TO MATCH SURROUNDING FINISH.
- 1. MATERIAL: METAL.

2.8 STOPS AND HOLDERS

- A. STOPS AND HOLDERS: PROVIDE FLOOR STOPS FOR DOORS, UNLESS WALL OR OTHER TYPE STOP ARE SCHEDULED OR INDICATED. DO NOT MOUNT FLOOR STOPS WHERE THEY WILL IMPED TRAFFIC. WHERE FLOOR OR WALL STOPS ARE NOT APPROPRIATE, PROVIDE OVERHEAD HOLDERS.
 - SILENCERS FOR DOOR FRAMES: NEOPRENE OR RUBBER; FABRICATED FOR DRILLED-IN APPLICATION TO FRAME.

2.9 DOOR GASKETING AND THRESHOLDS

- A. DOOR GASKETING: PROVIDE CONTINUOUS POLYURETHANE WEATHER-STRIP GASKETING ON EXTERIOR DOORS AND PROVIDE SMOKE, LIGHT, OR SOUND GASKETING ON INTERIOR DOORS, UNLESS OTHERWISE INDICATED OR SCHEDULED. PROVIDE NONCORROSIVE FASTENERS FOR INTERIOR APPLICATIONS AND ELSEWHERE AS INDICATED.
 - AIR LEAKAGE: NOT TO EXCEED 0.50 CFM PER FOOT OF CRACK LENGTH FOR GASKETING OTHER THAN FOR SMOKE CONTROL, AS TESTED ACCORDING TO ASTM E 283.
 - SMOKE-LABELED GASKETING: ASSEMBLIES COMPLYING WITH NFPA 105 THAT ARE LISTED AND LABELED, BASED ON TESTING ACCORDING TO UL 1784.
 - FIRE-LABELED GASKETING: ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED, BASED ON TESTING ACCORDING TO UL 10B OR NFPA