### 1.1 General

- A. INSTALL OWNER SUPPLIED GLASS FRAMED TYPE ENTRANCE AND STOREFRONT SYSTEM, INCLUDING GLASS AND GLAZING, AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN (UNLESS OTHERWISE EXISTING).
- B. SUBMITTALS: PROVIDE MANUFACTURER'S LITERATURE INDICATING STANDARD CONSTRUCTION AND SHOP DRAWINGS SHOWING ACTUAL FIELD MEASUREMENTS.
- C. DELIVERY: STORE MATERIALS PROTECTED FROM EXPOSURE TO HARMFUL WEATHER CONDITIONS AND OF TEMPERATURE CONDITIONS RECOMMENDED BY MANUFACTURER.
- D. CERTIFICATION: GLAZING CONTRACTOR TO SUBMIT CERTIFICATION BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE PROJECT
- STATE INDICATING COMPLIANCE WITH APPLICABLE CODES AND CONTRACT DOCUMENTS. E. WHEN IN-PLACE CONSTRUCTION IS FOUND NOT IN PROPER CONDITION FOR RECEIVING WORK NEXT TO BE APPLIED, NOTIFY CONTRACTOR.
- 1. DO NOT PROCEED WITH WORK UNTIL ADVERSE CONDITIONS ARE CORRECTED, START OF WORK SIGNIFIES ACCEPTANCE OF SUPPORTING CONSTRUCTION AND ADJACENT CONDITIONS.
- F. SUBMIT COPIES OF WRITTEN WARRANTY, SIGNED BY MANUFACTURER AND SUBCONTRACTOR, AGREEING TO REPLACED SYSTEM COMPONENTS WHICH FAIL IN MATERIAL AND WORKMANSHIP.
- 1. FAILURE INCLUDES EXCESSIVE LEAKAGE, EXCESSIVE DEFLECTIONS, DETERIORATION OF FINISH OR METAL IN EXCESS OR NORMAL
- WEATHERING, AND DEFEATS IN ACCESSORIES, WEATHER-STRIPPING, AND OTHER COMPONENTS.

## 2. WARRANTY PERIODS: TWO YEARS. 1.2 PERFORMANCE REQUIREMENTS

- A. DESIGN COMPONENT PART AND ASSEMBLIES SO COMPLETE SYSTEM COMPLIES WITH APPLICABLE CODE REQUIREMENTS FOR LOADS,
- SPECIFIED STANDARDS AND CONTRACT DOCUMENTS. PROVIDE COMPLETE SYSTEM WITH JOINTS, GAPS AND PENETRATIONS SEALED AND WEATHER TIGHT.
- 2. STRENGTH: DESIGN SYSTEMS TO WITHSTAND LIVE LOADINGS AND WIND LOADINGS AND WIND LOADINGS AS REQUIRED BY GOVERNING CODES AND REGULATIONS; LIMIT DEFLECTION TO L/180 UNDER FULLY LOADED CONDITION.
- 3. WATER PENETRATION: NO UNCONTROLLED WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM E331, WITH NO WATER ON
- 4. AIR LEAKAGE: MAXIMUM 0.06 CFM/FT., ASTM E283, AT DIFFERENTIAL PRESSURE OF 1.57 PSF, EXCLUDING ENTRANCE DOORS.
- 5. THERMAL MOVEMENTS: DESIGN FOR AMBIENT TEMPERATURE RANGE OF 100F AND MATERIAL TEMPERATURE RANGE OF 160F WITHOUT OBJECTIONABLE DISTORTION OR STRESSES IN FASTENINGS OR JOINERY.
- A. PROVIDE FOR NOISELESS MOVEMENT OF COMPONENT PARTS AND MATERIALS WITHOUT BUCKLING, OPENING AT JOINTS, GLASS BREAKAGE, OR OTHER DETRIMENTAL EFFECTS.
- B. NOT PERMITTED: VIBRATION HARMONICS, WIND WHISTLES, NOISES CAUSED BY THERMAL MOVEMENT TRANSMITTED TO OTHER BUILDINGS ELEMENTS, LOOSENING, WEAKENING, OR FRACTURING OF ATTACHMENTS OR COMPONENTS OF SYSTEM.

## END OF SECTION 08 41 13

## SECTION 08 71 00 - DOOR HARDWARE

### Part 1 - General

### 1.1 SUMMARY

### A. THIS SECTION INCLUDES DOOR HARDWARE

### 1.2 RELATED SECTIONS

- 1. DIVISION 8 SECTION "STEEL DOORS AND FRAMES" FOR ASTRAGALS AND SMOKE SEALS PROVIDED AS PART OF A FIRE-RATED LABELED ASSEMBLY AND FOR DOOR SILENCERS PROVIDED AS PART OF THE FRAME.
- 2. DIVISION 8 SECTION "ACCESS DOORS" FOR ACCESS DOOR HARDWARE, EXCEPT CYLINDERS.
- 3. DIVISION 8 SECTION "ALL-GLASS ENTRANCES" FOR ENTRANCE DOOR HARDWARE, EXCEPT CYLINDERS PREPARATION.
- 4. DIVISION 9 SECTION "GYPSUM BOARD ASSEMBLIES" FOR BLOCKING IN PARTITIONS FOR WALL-MOUNTED HARDWARE.

## 1.3 SUBMITTALS TO OWNER'S REPRESENTATIVE

- A. PRODUCT DATA: SUBMIT PRODUCT DATA INCLUDING INSTALLATION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES.
- B. DOOR HARDWARE SCHEDULE: SUBMIT DOOR HARDWARE SCHEDULE PREPARED BY OR UNDER THE SUPERVISION OF DOOR HARDWARE SUPPLIER. COORDINATE THE FINAL DOOR HARDWARE SCHEDULE WITH DOORS, FRAMES, AND RELATED WORK TO ENSURE PROPER SIZE, THICKNESS, HAND, FUNCTION, AND FINISH OF DOOR HARDWARE. THE ARCHITECT'S REVIEW OF SCHEDULE SHALL NEITHER BE CONSTRUED AS A COMPLETE CHECK NOR SHALL IT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS, DEVIATIONS, OR OMISSIONS FROM THE SPECIFIED REQUIREMENTS TO PROVIDE COMPLETE DOOR HARDWARE FOR THE PROJECT.
- C. KEYING SCHEDULE: CORES AND KEYS ARE PROVIDED BY OWNER.
- D. WARRANTIES: SUBMIT SPECIAL WARRANTIES SPECIFIED IN THIS SECTION.
- MAINTENANCE TOOLS AND INSTRUCTIONS: FURNISH A COMPLETE SET OF SPECIALIZED TOOLS AND MAINTENANCE INSTRUCTIONS FOR OWNER'S CONTINUED ADJUSTMENT, MAINTENANCE, REMOVAL AND REPLACEMENT OF DOOR HARDWARE.
- . INSTALLATION INSTRUCTIONS: INSTALLATION INSTRUCTIONS FOR EACH TYPE OF HARDWARE ITEM SHALL BE AVAILABLE AT JOBSITE

## DURING CONSTRUCTION FOR ARCHITECT'S REFERENCE.

## 1.4 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: AN EXPERIENCED INSTALLER WHO HAS COMPLETED DOOR HARDWARE SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT AND WHOSE WORK HAS RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL
- B. SUPPLIER QUALIFICATIONS: DOOR HARDWARE SUPPLIER, WHO HAS COMPLETED A MINIMUM OF THREE (3) PROJECTS OVER THE LAST 5 YEARS WHICH WERE SIMILAR IN MATERIAL, DESIGN AND EXTENT TO THAT INDICATED FOR THE PROJECT - AS DETERMINED BY THE ARCHITECT - AND WHICH HAVE RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL IN SERVICE PERFORMANCE. AND WHO IS OR EMPLOYS A QUALIFIED ARCHITECTURAL HARDWARE CONSULTANT, AVAILABLE DURING THE COURSE OF THE WORK TO CONSULT WITH CONTRACTOR, ARCHITECT, AND OWNER ABOUT DOOR HARDWARE AND KEYING.
- ARCHITECTURAL HARDWARE CONSULTANT QUALIFICATIONS: A PERSON WHO IS CURRENTLY CERTIFIED BY THE DOOR AND HARDWARE INSTITUTE 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.
- D. SOURCE LIMITATIONS: OBTAIN EACH TYPE AND VARIETY OF DOOR HARDWARE FROM A SINGLE MANUFACTURER, UNLESS OTHERWISE
- E. REGULATORY REQUIREMENTS: COMPLY WITH THE FOLLOWING:
- 1. PROVIDE HARDWARE ITEMS COMPLYING WITH THE APPLICABLE PROVISIONS FOR ACCESSIBILITY AND USABILITY BY THE DISABLED AND (ADAAG"; AND IN CALIFORNIA, CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 2, AND TITLE 19.
- . NFPA 101: COMPLY WITH APPLICABLE PROVISIONS FOR MEANS OF EGRESS DOORS.
- FIRE-RATED DOOR ASSEMBLIES: PROVIDE DOOR HARDWARE FOR ASSEMBLIES COMPLYING WITH NFPA 80. THAT ARE LISTED AND LABELED BY UNDERWRITER'S LABORATORIES, INC. FOR FIRE RATINGS INDICATED, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C. SEE DRAWINGS FOR APPLICABLE CODE CONFORMANCE. PROVIDE ONLY DOOR HARDWARE ITEMS THAT ARE IDENTICAL TO ITEMS TESTED BY UL FOR THE TYPES AND SIZES OF DOORS REQUIRED. IN CASE OF CONFLICT BETWEEN TYPE OF HARDWARE SPECIFIED AND TYPE REQUIRED FOR ACCESSIBILITY OR FIRE PROTECTION, FURNISH TYPE REQUIRED BY NFPA AND UL. DOORS INDICATED IN FIRE RATED PARTITIONS AND WALLS SHALL BE POSITIVE LATCHING AND SELF-CLOSING, WITH SMOKE GASKETS WHERE REQUIRED BY
- INSTALLATION AT FACTORY. PROVIDE SUPPLEMENTARY LABEL, "FIRE EXIT HARDWARE", ON EACH EXIT DEVICE TO CERTIFY THAT PANIC
- 2. KEYING: LOCK CORES AND KEYS PROVIDED BY OWNER'S VENDOR. COORDINATE INSTALLATION WITH OWNER.

## 1.5 DELIVERY, STORAGE, AND HANDLING

A. INVENTORY DOOR HARDWARE ON RECEIPT AND PROVIDE SECURE LOCK-UP FOR DOOR HARDWARE DELIVERED TO PROJECT SITE. B. TAG EACH ITEM OR PACKAGE SEPARATELY WITH IDENTIFICATION RELATED TO THE FINAL DOOR HARDWARE SCHEDULE, AND INCLUDE BASIC INSTALLATION INSTRUCTIONS WITH EACH ITEM OR PACKAGE.

## 1.6 COORDINATION

WITH DOOR AND FRAME DETAILS, TO DOOR OPENING FABRICATORS AND TRADES PERFORMING DOOR OPENING WORK TO PERMIT THE PREPARATION OF DOORS AND FRAMES TO RECEIVE THE SPECIFIED DOOR HARDWARE. WHERE THE DOOR HARDWARE ITEM SCHEDULED IS NOT ADAPTABLE TO THE FINISHED SIZE OF DOOR OPENING MEMBERS REQUIRING DOOR HARDWARE, SUBMIT AN ITEM HAVING A SIMILAR OPERATION AND QUALITY TO THE ARCHITECT FOR REVIEW. EACH DOOR HARDWARE ITEM SHALL BE FABRICATED TO TEMPLATES.

WARRANTY PERIOD: ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS OTHERWISE INDICATED.

C. WARRANTY PERIOD FOR CONCEALED FLOOR CLOSERS: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

- B. WARRANTY PERIOD FOR MANUAL CLOSERS: TEN YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
- PART 2 EXECUTION

- A. HARDWARE FOR FIRE DOOR ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 80. HARDWARE FOR SMOKE CONTROL DOOR ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 105. INSTALL HARDWARE FOR NON-LABELED AND NON-SMOKE DOOR ASSEMBLIES IN ACCORDANCE DHI A115 (FOR STEEL DOORS AND FRAMES, DHI A115-W SERIES FOR WOOD DOORS, AND HARDWARE MANUFACTURERS INSTALLATION INSTRUCTIONS FOR DOORS AND FRAMES FABRICATED FROM OTHER THAN STEEL OR WOOD.
- . SMOKE SEALS AT S LABELED DOOR ASSEMBLIES: PROVIDE AND INSTALL SMOKE SEALS AT S LABELED DOORS IN ACCORDANCE WITH SEAL MANUFACTURERS FIRE-LABEL INSTRUCTIONS.

## 2.2 INSTALLATION

- A. INSTALL EACH DOOR HARDWARE ITEM TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. INSTALL OVERHEAD SURFACE CLOSERS FOR MAXIMUM DEGREE OF OPENING OBTAINABLE. PLACE ON ROOM SIDE OF CORRIDOR DOORS, STAIR SIDE OF STAIR DOORS, SECONDARY CORRIDOR SIDE OF DOORS BETWEEN CORRIDORS. WHERE CUTTING AND FITTING ARE REQUIRED TO INSTALL DOOR HARDWARE ONTO OR INTO SURFACES THAT ARE LATER TO BE FINISHED, COORDINATE REMOVAL, STORAGE, AND REINSTALLATION OF SURFACE PROTECTIVE TRIM UNITS WITH FINISHING WORK SPECIFIED IN DIVISION 9 SECTIONS. DO NOT INSTALL SURFACE-MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON SUBSTRATES INVOLVED.
- B. DO NOT INSTALL PERMANENT KEY CYLINDERS IN LOCKS UNTIL THE TIME OF PRELIMINARY ACCEPTANCE BY THE OWNER. AT THE TIME OF PRELIMINARY ACCEPTANCE, THE OWNER WILL PROVIDE PERMANENT LOCK CORES AND KEYING FOR ALL LOCK CYLINDERS.
- . WALL-MOUNTED DEVICES: COORDINATE WITH WALL AND PARTITION CONSTRUCTION FOR LOCATION OF BLOCKING.

### 2.3 ADJUSTING

A. ADJUST AND CHECK EACH OPERATING ITEM OF DOOR HARDWARE AND EACH DOOR TO ENSURE PROPER OPERATION OR FUNCTION OF EVERY HARDWARE COMPONENT. REPLACE HARDWARE COMPONENTS THAT CANNOT BE ADJUSTED TO OPERATE AS INTENDED. ADJUST BACK CHECK ON DOOR CLOSERS AT TIME OF CLOSER INSTALLATION, ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR BUILDING STACK PRESSURES AND FINAL OPERATION OF FORCED AIR MECHANICAL EQUIPMENT AND TO COMPLY WITH REFERENCED ACCESSIBILITY REQUIREMENTS.

### 2.4 CLEANING AND PROTECTION

- A. CLEAN ADJACENT SURFACES SOILED BY DOOR HARDWARE INSTALLATION, CLEAN HARDWARE COMPONENTS AS NECESSARY TO RESTORE PROPER FINISH. PROVIDE PROTECTION DURING THE PROGRESS OF THE WORK AND MAINTAIN CONDITIONS THAT ENSURE DOOR HARDWARE IS IN PERFECT WORKING ORDER AND WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.
- 2.5 DOOR HARDWARE SCHEDULE SCHEDULED DOORS
- A. SEE HARDWARE SCHEDULE ON DRAWINGS.

END OD SECTION 08 71 00

### SECTION 08 80 00 - GLAZING

### 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:
- DOORS.
- GLAZED ENTRANCES. STOREFRONT FRAMING.
- MIRRORS

B. REFER TO DIVISION 8 SECTION "ALUMINUM FRAMED GLASS ENTRANCES AND STOREFRONTS" FOR REQUIREMENTS APPLICABLE TO SINGLE SUBCONTRACT RESPONSIBILITY FOR GLAZING.

### 1.2 PERFORMANCE REQUIREMENTS

- A. GENERAL: PROVIDE AND INSTALL WATERTIGHT AND AIRTIGHT GLAZING SYSTEMS CAPABLE OF WITHSTANDING THERMAL MOVEMENT AND WIND AND IMPACT LOADS WITHOUT FAILURE OF ANY KIND, INCLUDING LOSS OR BREAKAGE OF GLASS, FAILURE OF SEAL OR GASKETS, EXUDATION OF GLAZING SEALANTS, AND EXCESSIVE DETERIORATION OF GLAZING MATERIALS.
- CONVENIENCE OF DETAILING ONLY AND ARE TO BE CONFIRMED BY THE CONTRACTOR RELATIVE TO CITED STANDARDS AND FINAL FRAMING DETAILS. CONFIRM GLASS THICKNESSES AND HEAT TREATMENTS, VERIFIED BY ANALYSIS, AS REQUIRED TO MEET THE PERFORMANCE AND TESTING REQUIREMENTS SPECIFIED IN DIVISION 8 SECTION "ALUMINUM ENTRANCES AND STOREFRONTS".

B. GLASS DESIGN: GLASS THICKNESSES AND HEAT TREATMENTS INDICATED ARE MINIMUM REQUIREMENTS. GLAZING DETAILS SHOWN ARE FOR

- C. THERMAL AND OPTICAL PERFORMANCE PROPERTIES: PROVIDE INSULATING GLASS WITH PERFORMANCE PROPERTIES SPECIFIED BASED ON MANUFACTURER'S PUBLISHED TEST DATA, AS DETERMINED ACCORDING TO PROCEDURES INDICATED BELOW:
- 1. FOR INSULATING-GLASS UNITS, PROPERTIES ARE BASED ON UNITS WITH LITES 6 MM THICK AND A NOMINAL 1/2-INCH- (13-MM-) WIDE
- 2. CENTER-OF-GLASS U-VALUES: NFRC 100 METHODOLOGY USING LBL-35298 WINDOW 4.1 COMPUTER PROGRAM, EXPRESSED AS BTU/ SQ. FT. X H X DEG F (W/SQ. M X K).
- 3. CENTER-OF-GLASS SOLAR HEAT GAIN COEFFICIENT: NFRC 200 METHODOLOGY USING LBL-35298 WINDOW 4.1 COMPUTER PROGRAM. 4. SOLAR OPTICAL PROPERTIES: NFRC 300.
- D. SAMPLES: LABEL SAMPLES TO INDICATE PRODUCT, CHARACTERISTICS, AND LOCATIONS IN THE WORK. FURNISH SAMPLES OF THE FOLLOWING:
- EXCEPT FOR CLEAR GLASS, SUBMIT SAMPLES OF EACH GLASS TYPE SPECIFIED, IN THE FORM OF 12-INCH- (300-MM-) SQUARE SAMPLES. 2. SUBMIT SAMPLES OF EACH GLASS TYPE SPECIFIED WHERE PRODUCTION RUN VARIATIONS, AND DEFECTS ARE EXPECTED.
- E. PRODUCT CERTIFICATES: SIGNED BY MANUFACTURERS OF GLASS AND GLAZING PRODUCTS CERTIFYING THAT PRODUCTS FURNISHED COMPLY WITH REQUIREMENTS.
- QUALIFICATION DATA: FOR FIRMS AND PERSONS SPECIFIED IN "QUALITY ASSURANCE" ARTICLE TO DEMONSTRATE THEIR CAPABILITIES AND EXPERIENCE. INCLUDE LISTS OF COMPLETED PROJECTS WITH PROJECT NAMES AND ADDRESSES, NAMES AND ADDRESSES OF ARCHITECTS AND OWNERS, AND OTHER INFORMATION SPECIFIED.
- G. PRODUCT TEST REPORTS: SUBMIT PRODUCT TEST REPORTS FOR EACH TYPE OF GLAZING SEALANT AND GASKET INDICATED.
- H. WARRANTIES: SUBMIT SPECIAL WARRANTIES SPECIFIED IN THIS SECTION.
- A. INSTALLER QUALIFICATIONS: AN EXPERIENCED INSTALLER WHO HAS COMPLETED GLAZING SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR PROJECT AND WHOSE WORK HAS RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL IN-SERVICE
- B. SOURCE LIMITATIONS FOR GLASS AND GLASS ACCESSORIES: OBTAIN GLASS AND GLASS ACCESSORIES FROM ONE SOURCE FOR EACH PRODUCT INDICATED BELOW:
- 1. PRIMARY GLASS.
- 2. HEAT TREATED GLASS.
- INSULATING GLASS. 4. GLAZING GASKETS.
- C. FIRE-RATED DOOR ASSEMBLIES: ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE RATINGS INDICATED, BASED ON TESTING ACCORDING TO NFPA 252.
- D. FIRE-RATED WINDOW ASSEMBLIES: ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE RATINGS INDICATED, BASED ON TESTING ACCORDING TO
- SAFETY GLASS: COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE LAWS, CODES, ORDINANCES AND REGULATIONS OF FEDERAL AND MUNICIPAL AUTHORITIES HAVING JURISDICTION, WHEREVER REQUIREMENTS CONFLICT THE MORE STRINGENT SHALL BE REQUIRED. OBTAIN APPROVALS FROM ALL SUCH AUTHORITIES. AS A MINIMUM PROVIDE CATEGORY II MATERIALS COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR 1201 (CONSUMER PRODUCT SAFETY COMMISSION "SAFETY STANDARD FOR ARCHITECTURAL GLAZING MATERIALS", AS PUBLISHED IN THE CODE OF FEDERAL REGULATIONS) AND ANSI Z97.1.
- SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PERMANENTLY MARK SAFETY GLASS WITH CERTIFICATION LABEL OF SAFETY GLAZING CERTIFICATION COUNCIL OR ANOTHER CERTIFICATION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
- 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.
- GANA PUBLICATIONS: GANA'S "GLAZING MANUAL" AND "LAMINATED GLASS DESIGN GUIDE."
- 2. SIGMA PUBLICATIONS: SIGMA TM-3000, "VERTICAL GLAZING GUIDELINES."
- G. INSULATING-GLASS CERTIFICATION PROGRAM: PERMANENTLY MARKED EITHER ON SPACERS OR ON AT LEAST ONE COMPONENT LITE OF UNITS WITH APPROPRIATE CERTIFICATION LABEL OF THE INSULATING GLASS CERTIFICATION COUNCIL (IGCC).

## A. PROTECT GLAZING MATERIALS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND AS NEEDED TO PREVENT DAMAGE TO GLASS

1.5 PROJECT CONDITIONS

1.4 DELIVERY, STORAGE, AND HANDLING

- AND GLAZING MATERIALS FROM CONDENSATION, TEMPERATURE CHANGES, DIRECT EXPOSURE TO SUN, OR OTHER CAUSES. B. FOR INSULATING-GLASS UNITS THAT WILL BE EXPOSED TO SUBSTANTIAL ALTITUDE CHANGES, COMPLY WITH INSULATING-GLASS
- MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR VENTING (USING EITHER BREATHER OR CAPILLARY TUBES) AND SEALING.

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.

## 1.6 WARRANTY

- A. GENERAL WARRANTY: SPECIAL WARRANTIES SPECIFIED IN THIS ARTICLE SHALL NOT DEPRIVE OWNER OF OTHER RIGHTS OWNER MAY HAVE UNDER OTHER PROVISIONS OF THE CONTRACT DOCUMENTS AND SHALL BE IN ADDITION TO, AND RUN CONCURRENT WITH, OTHER WARRANTIES MADE BY CONTRACTOR UNDER REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- B. MANUFACTURER'S SPECIAL WARRANTY ON INSULATING GLASS: WRITTEN WARRANTY, MADE OUT TO OWNER AND SIGNED BY INSULATING-GLASS MANUFACTURER AGREEING TO FURNISH REPLACEMENTS FOR INSULATING-GLASS UNITS WHOSE HERMETIC SEAL HAS FAILED WITHIN SPECIFIED WARRANTY PERIOD INDICATED BELOW. EVIDENCE OF FAILURE IS THE OBSTRUCTION OF VISION BY DUST. MOISTURE, OR FILM ON INTERIOR SURFACES OF GLASS. UPON NOTIFICATION OF SUCH DETERIORATION WITHIN THE WARRANTY PERIOD FURNISH REPLACEMENT GLASS UNITS FOR FAILED GLASS UNITS AT THE CONVENIENCE OF THE OWNER.
- WARRANTY PERIOD: 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

## PART 2 - PRODUCTS

## 1.1 PRODUCTS AND MANUFACTURERS

A. REFER TO THE DRAWINGS FOR THE EXTENT OF GLASS TYPES AND LOCATIONS. GLASS TYPES INDICATED ON THE DRAWINGS ARE KEYED TO THE PART 3 GLASS SCHEDULE ARTICLES AT THE END OF THIS SECTION. THE CONTRACTOR SHALL CONFIRM THE LEVELS OF HEAT TREATMENT REQUIRED FOR EACH GLASS TYPE SCHEDULED AS CONTAINED IN ARTICLES PERFORMANCE REQUIREMENTS, SUBMITTALS AND QUALITY ASSURANCE.

## 2.2 PRIMARY FLOAT GLASS

- A. FLOAT GLASS: ASTM C 1036, TYPE I (TRANSPARENT GLASS, FLAT), QUALITY Q3 (GLAZING SELECT); CLASS AS INDICATED IN SCHEDULES
- AT THE END OF PART 3. B. AVAILABLE GLASS MANUFACTURERS:
- 1. PPG
- 2. LOF 3. FORD GLASS

## 2.3 HEAT-TREATED FLOAT GLASS

A. GENERAL: HEAT TREAT GLASS WHERE THE NEED IS DETERMINED BY THERMAL STRESS ANALYSES, BY WIND LOAD ANALYSES, AND WHERE REQUIRED TO MEET SAFETY GLAZING REQUIREMENTS.

OPENINGS TO BE GLAZED, MAKING ALLOWANCE FOR REQUIRED EDGE CLEARANCES. CUT AND PROCESS EDGES IN ACCORDANCE WITH GLASS

B. FABRICATION PROCESS: BY HORIZONTAL (ROLLER-HEARTH) PROCESS WITH ROLL-WAVE DISTORTION PARALLEL TO BOTTOM EDGE OF INSTALLED GLASS UNIT. SIZES AND CUTTING: PRIOR TO HEAT TREATMENT, CUT GLASS TO REQUIRED SIZES AS DETERMINED BY ACCURATE MEASUREMENT OF

- MANUFACTURER'S RECOMMENDATIONS. DO NOT CUT OR TREAT EDGES IN THE FIELD.
- D. HEAT STRENGTHENED GLASS: PROVIDE GLASS COMPLYING WITH ASTM C1048 KIND HS. SURFACE COMPRESSION RANGE SHALL BE BETWEEN 4,000 PSI (27.6 MPA) AND 7,000 PSI (48 MPA).
- FULLY TEMPERED GLASS: PROVIDE GLASS COMPLYING WITH ASTM C1048 KIND FT AND MEETING THE REQUIREMENTS OF ANSI Z97.1. SURFACE COMPRESSION SHALL BE EQUAL TO OR GREATER THAN 10,000 PSI (69 MPA).
- F. FLATNESS TOLERANCES: ALL HEAT-TREATED GLASS SHALL BE FABRICATED TO THE FOLLOWING FLATNESS TOLERANCES:
- 1. OVERALL BOW AND WARP: NOT GREATER THAN THE MAXIMUM BOW AND WARP TOLERANCES IN ANY DIRECTION AS LISTED IN ASTM C1048 TABLE 2. LOCALIZED WARP LIMITED TO 1/32 INCH IN 12 INCHES (0.79 MM IN 304.8 MM).
- 2. ROLL RIPPLE: THE DEVIATION FROM FLATNESS AT ANY PEAK (PEAK TO VALLEY DEVIATION) SHALL NOT EXCEED 0.003 INCHES FOR 6 MM (0.0762 MM FOR 6 MM) THICK GLASS.

## 2.4 GLAZING SEALANTS

- A. GASKET, BLOCKING, AND SPACER WET GLAZING MATERIALS: SILICONE, COMPATIBLE WITH AND ADHERENT TO EACH MATERIAL IT WILL BE IN CONTACT WITH, AS RECOMMENDED BY THE MANUFACTURER TO FULFILL PERFORMANCE REQUIREMENTS.
- B. BUTT GLAZING SEALANTS: REFER TO DIVISION 7 SECTION "JOINT SEALANTS", ARTICLE "ELASTOMERIC JOINT SEALANTS", SUBPARAGRAPH "BUTT GLAZING JOINTS AT CURTAIN WALL VISION GLASS".
- C. STRUCTURAL GLAZING SEALANTS: REFER TO DIVISION 7 SECTION "JOINT SEALANTS," ARTICLE "ELASTOMERIC JOINT SEALANTS," SUBPARAGRAPH "STRUCTURAL GLAZING AT CURTAIN WALL SPANDREL GLASS."

### 2.5 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.
- B. CONTINUOUS STRUCTURAL SPACER TAPE: AAMA 800. CONTINUOUS EXTRUDED SILICONE OR SILICONE COMPATIBLE RUBBER, WITH CROSS SECTIONAL PROFILE, PHYSICAL PROPERTIES, AND TOLERANCES AS RECOMMENDED BY THE WINDOW AND CURTAIN WALL MANUFACTURER, AND AS REQUIRED, TO COMPLY WITH THE PERFORMANCE REQUIREMENTS SPECIFIED AND SHOWN. GASKETS/SPACERS SHALL BE TESTED FOR COMPATIBILITY WITH SILICONE SEALANTS AND SHALL BE SUBJECT TO THE ACCEPTANCE OF THE SEALANT MANUFACTURER.

### 2.6 MISCELLANEOUS GLAZING MATERIALS

PROVIDE FULL ENGAGEMENT OF GLASS.

- 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, AND WET GLAZING MATERIALS, CONTACTED IN INSTALLATION. B. CLEANERS, PRIMERS, AND SEALERS: TYPES RECOMMENDED BY SEALANT OR GASKET MANUFACTURER
- LESS THAN THE CHANNEL WIDTH, AND LENGTH BASED ON THE SQUARE FOOTAGE OF THE GLASS UNIT TO BE SUPPORTED IN ACCORDANCE WITH GANA STANDARDS AND GLASS MANUFACTURER RECOMMENDATIONS BUT NOT LESS THAN 4 INCHES (101.6 MM).

C. SETTING BLOCKS: SILICONE COMPLYING WITH ASTM C1115 (TYPE C), BLOCKS, 85 +/- 5 SHORE A DUROMETER HARDNESS, 1/16 INCH (1.5-MM)

- D. EDGE BLOCKS: SILICONE COMPLYING WITH ASTM C1115 (TYPE C), BLOCKS, 65 +/- 5 SHORE A DUROMETER HARDNESS, MINIMUM 4 INCHES (101.6 MM) LONG AND SIZED TO ALLOW 1/8 INCH (3.18 MM) CLEARANCE BETWEEN EDGE OF GLASS AND BLOCK.
- E. PERIMETER INSULATION FOR FIRE-RESISTIVE GLAZING: IDENTICAL TO PRODUCT USED IN TEST ASSEMBLY TO OBTAIN FIRE-RESISTANCE F. METAL CHANNELS FOR BUTT GLAZING: EXTRUDED ALUMINUM, ANODIZED, SIZES AS SHOWN AND AS REQUIRED TO SUPPORT AND TO
- G. PERIMETER INSULATION FOR FIRE-RESISTIVE GLAZING: IDENTICAL TO PRODUCT USED IN TEST ASSEMBLY TO OBTAIN FIRE-RESISTANCE

A. MADICO #NG-70 ENERGY CONTROL FILM (SEE SECTION 08 87 00- GLAZING FILM)

- 2.7 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS A. FABRICATE GLASS AND OTHER GLAZING PRODUCTS 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 STANDARD, TO COMPLY WITH SYSTEM PERFORMANCE REQUIREMENTS.
- EDGE AND SURFACE CONDITIONS: COMPLY WITH THE RECOMMENDATIONS OF AAMA "STRUCTURAL PROPERTIES OF GLASS" FOR "CLEAN CUT" EDGES, EXCEPT COMPLY WITH MANUFACTURER'S RECOMMENDATIONS WHEN THEY ARE AT VARIANCE THEREWITH. CUTTING: DO NOT NIP GLASS EDGES. EDGES MAY BE WHEEL CUT OR SAWED AND SEAMED AT MANUFACTURER'S OPTION. FOR GLASS
- TO BE CUT AT SITE, PROVIDE GLASS 2 INCHES (50.8 MM) LARGER THAN REQUIRED IN BOTH DIMENSIONS, SO AS TO FACILITATE CUTTING OF CLEAN-CUT EDGES WITHOUT THE NECESSITY OF SEAMING OR NIPPING. DO NOT CUT, SEAM, NIP OR ABRADE HEAT-TREATED GLASS.

## PART 3 - EXECUTION

- A. EXAMINE GLASS FRAMING, WITH GLAZIER AND GLASS FRAMING ERECTOR PRESENT. FOR COMPLIANCE WITH THE FOLLOWING: COMPLIANCE WITH THE SPECIFIED MANUFACTURING AND INSTALLATION TOLERANCES, INCLUDING THOSE FOR SIZE, SQUARENESS, AND
- OFFSETS AT CORNERS.
- 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

- 1.2 PREPARATION A. CLEAN GLAZING STOPS, GLAZING CHANNELS, AND RABBETS WHICH WILL BE IN CONTACT WITH THE GLAZING MATERIALS IMMEDIATELY
- BEFORE GLAZING. REMOVE COATINGS WHICH MIGHT FAIL IN ADHESION OR INTERFERE WITH BOND OF SEALANTS.
- COMPLY WITH MANUFACTURERS INSTRUCTIONS FOR FINAL WIPING OF SURFACES IMMEDIATELY BEFORE APPLICATION OF PRIMERS. 3. WIPE METAL SURFACES WITH IPA (ISOPROPYL ALCOHOL) UNLESS OTHERWISE REQUIRED BY COMPATIBILITY AND ADHESION TESTING B. PRIME SURFACES TO RECEIVE GLAZING COMPOUNDS. WHEN PRIMING, COMPLY WITH WET GLAZING MANUFACTURERS RECOMMENDATIONS.
- D. SEAL VENT (BREATHER OR CAPILLARY) TUBES IN INSULATING GLASS UNITS IN ACCORDANCE WITH THE INSULATING GLASS MANUFACTURERS WRITTEN RECOMMENDATIONS.

C. INSPECT EACH PIECE OF GLASS IMMEDIATELY BEFORE INSTALLATION. DO NOT INSTALL ANY PIECES WHICH ARE IMPROPERLY SIZED OR

HAVE DAMAGED EDGES, SCRATCHES OR ABRASION OR OTHER EVIDENCE OF DAMAGE. REMOVE LABELS FROM GLASS IMMEDIATELY AFTER

- 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.
- ALL GLASS UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE GLASS MANUFACTURERS RECOMMENDATIONS. B. GLAZING CHANNEL DIMENSIONS, AS INDICATED ON DRAWINGS, PROVIDE NECESSARY BITE ON GLASS, MINIMUM EDGE AND FACE CLEARANCES, WITH REASONABLE TOLERANCES. ADJUST AS REQUIRED BY PROJECT CONDITIONS DURING INSTALLATION.
- 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.
- COMPATIBILITY AND ADHESION TESTING. INSTALL SETTING BLOCKS IN SILL RABBETS, SIZED AND LOCATED TO COMPLY WITH REFERENCED GLAZING PUBLICATIONS, UNLESS MORE STRINGENT REQUIREMENTS ARE RECOMMENDED BY GLASS MANUFACTURER. PLACE BLOCKS TO ALLOW WATER PASSAGE TO WEEP HOLES.

D. APPLY PRIMERS TO SURFACES INDICATED TO RECEIVE GLAZING MATERIALS. USE PRIMERS AS DETERMINED BY PRECONSTRUCTION

END OF THE GLASS UNLESS OTHERWISE RECOMMENDED BY THE GLASS MANUFACTURER. FOR GLASS UNITS 72 INCHES (1830 MM) OR GREATER: LOCATE SETTING BLOCKS AT SILL ONE-EIGHTH OF THE WIDTH IN FROM EACH END OF THE GLASS, BUT NOT LESS THAN 6 INCHES (150 MM), UNLESS OTHERWISE RECOMMENDED BY THE GLASS MANUFACTURER.

F. DO NOT EXCEED EDGE PRESSURES STIPULATED BY GLASS MANUFACTURERS FOR INSTALLING GLASS LITES.

FOR GLASS UNITS LESS THAN 72 INCHES (1830 MM): LOCATE SETTING BLOCKS AT SILL ONE-QUARTER OF THE WIDTH IN FROM EACH

- G. PROVIDE EDGE BLOCKING TO PREVENT GLASS LITES FROM MOVING SIDEWAYS IN GLAZING CHANNEL, SIZED AND LOCATED TO COMPLY WITH THE GLASS MANUFACTURERS RECOMMENDATIONS AND THE REQUIREMENTS IN REFERENCED GLAZING PUBLICATIONS. H. SET GLASS LITES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR CHARACTERISTICS, PRODUCING THE GREATEST POSSIBLE DEGREE OF
- 1. SET GLASS UNITS WITH VOID BETWEEN EDGE OF UNITS AND GLAZING CHANNEL. WHERE WEDGE-SHAPED GASKETS ARE DRIVEN INTO ONE SIDE OF CHANNEL TO PRESSURIZE GASKET ON OPPOSITE SIDE, PROVIDE ADEQUATE ANCHORAGE SO GASKET CANNOT WALK OUT WHEN INSTALLATION IS SUBJECTED TO MOVEMENT.

MITER CUT GASKETS AT CORNERS AND INSTALL GASKETS IN A MANNER RECOMMENDED BY GASKET MANUFACTURER TO PREVENT CORNERS

FROM PULLING AWAY AND JOIN WITH SEALANT RECOMMENDED BY GASKET MANUFACTURER WHICH WILL PROVIDE AN AIRTIGHT AND

# 3.4 STRUCTURAL SILICONE GLAZING

WATERTIGHT SEAL AT THE JOINT.

- A. STRUCTURALLY GLAZED GLASS: COMPLY WITH MULLION MANUFACTURER'S WRITTEN INSTRUCTIONS FOR FIELD GLAZING, BUT NOT LESS THAN AS FOLLOWS APPLY CONTINUOUS STRUCTURAL SPACER TAPE TO MULLIONS.

UNIFORMITY IN APPEARANCE ON THE ENTIRE EXTERIOR WALL ELEVATION.

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GENERATION: 21Q34 PROTOTYPE DATE: 1/8/2021 2021 **OPENING:** 

**DERBY E** 

ARCHITECT INFO:

ARCHITECT OF RECORD MARTAH MEYER 8131 METCALF AVE

OVERLAND PARK, KS 66204

CONSULTANT INFO:

DESIGN TYPE:

www.brrarch.com

PROFESSIONAL STAMP:

**REVISIONS:** 

L/PERMIT/BID:

SSUE TYPE:

A/E JOB NUMBER: 65011072

KDA

02/19/21

TITLE SHEET:

SPECIFICATIONS

DRAWN BY:

SHEET NUMBER:

HANDICAPPED IN COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (ADA), "ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES WHEREVER EXIT DEVICE HARDWARE IS REQUIRED ON DOORS, COMPLY WITH UL 305. FURNISH HARDWARE TO DOOR MANUFACTURER FOR HARDWARE HAS BEEN PANIC LOAD TESTED WITH DOOR.

A. TEMPLATES: FURNISH TEMPLATES AND DOOR HARDWARE SCHEDULES, COORDINATED FOR THE APPLICATION OF DOOR HARDWARE ITEMS