-- END OF SECTION 079200 --

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

1. GENERAL
 1.1. SECTION REQUIREMENTS
  1.1.1. SUBMITTALS: PRODUCT DATA AND SHOP DRAWINGS.
2. PRODUCTS
 2.1. HOLLOW METAL DOORS AND FRAMES
  2.1.1. FIRE-RATED DOORS AND FRAMES: LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C.
  2.1.2. SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES: LISTED AND LABELED FOR SMOKE AND DRAFT CONTROL, BASED ON TESTING ACCORDING TO UL 1784 AND INSTALLED IN COMPLIANCE WITH NFPA 105.
  2.1.3. DOORS: COMPLYING WITH SDI A250.8 FOR LEVEL AND MODEL AND SDI A250.4 FOR PHYSICAL-ENDURANCE LEVEL INDICATED, 1-3/4 INCHES (44 MM) THICK UNLESS OTHERWISE INDICATED.
 2.2. EXTERIOR DOORS: LEVEL 2 AND PHYSICAL PERFORMANCE LEVEL B (HEAVY DUTY), MODEL 1 (FULL FLUSH), METALLIC-COATED STEEL SHEET FACES.
 2.3. THERMAL-RATED (INSULATED) DOORS: WHERE INDICATED, PROVIDE DOORS WITH THERMAL-RESISTANCE VALUE (R-VALUE) OF NOT LESS THAN 2.1 DEG F X H X SQ. FT./BTU (0.370 K X SQ. M/W) WHEN TESTED ACCORDING TO ASTM C 1363.
 2.4. HARDWARE REINFORCEMENT: FABRICATE ACCORDING TO SDI A250.6 WITH REINFORCEMENT PLATES FROM SAME MATERIAL AS DOOR FACE SHEETS.
 2.5. FRAMES: ANSI A250.8; CONCEAL FASTENINGS UNLESS OTHERWISE INDICATED.
  2.5.1. STEEL SHEET FOR INTERIOR FRAMES: 0.042-INCH- (1.0-MM-) MINIMUM THICKNESS.
  2.5.2. STEEL SHEET FOR EXTERIOR FRAMES: 0.053-INCH- (1.3-MM-)MINIMUM THICKNESS, METALLIC COATED.
  2.5.3. INTERIOR FRAME CONSTRUCTION: FULL PROFILE WELDED.
  2.5.4. EXTERIOR FRAME CONSTRUCTION: FULL PROFILE WELDED.
  2.5.5. HARDWARE REINFORCEMENT: FABRICATE ACCORDING TO ANSI/SDI A250.6 WITH REINFORCEMENT PLATES FROM SAME MATERIAL AS FRAMES.
  2.5.6. FRAME ANCHORS: NOT LESS THAN 0.042 INCH (1.0 MM) THICK.
  2.5.7. DOOR SILENCERS: THREE ON STRIKE JAMBS OF SINGLE-DOOR FRAMES AND TWO ON HEADS OF DOUBLE-DOOR FRAMES.
  2.5.8. GROUT GUARDS: PROVIDE WHERE MORTAR MIGHT OBSTRUCT HARDWARE OPERATION.
  2.5.9. PREPARE DOORS AND FRAMES TO RECEIVE MORTISED AND CONCEALED HARDWARE ACCORDING TO SDI A250.6 AND BHMA A156.115.
  2.5.10. REINFORCE DOORS AND FRAMES TO RECEIVE SURFACE-APPLIED HARDWARE.
  2.5.11. PRIME FINISH: MANUFACTURER'S STANDARD, FACTORY-APPLIED COAT OF LEAD- AND CHROMATE-FREE PRIMER COMPLYING WITH SDI A250.10 ACCEPTANCE CRITERIA.
  2.5.12. MATERIALS
   2.5.12.1. COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, SUITABLE FOR EXPOSED APPLICATIONS.
   2.5.12.2. HOT-ROLLED STEEL SHEET: ASTM A 1011/A 1011M, FREE OF SCALE, PITTING, OR SURFACE DEFECTS.
   2.5.12.3. METALLIC-COATED STEEL SHEET: ASTM A 653/A 653M, G60 (Z180) OR A60 (ZF180).
  2.5.13. FRAME ANCHORS: ASTM A 879/A 879M, 4Z (12G) COATING DESIGNATION; MILL PHOSPHATIZED.
   2.5.13.1. FOR ANCHORS BUILT INTO EXTERIOR WALLS, SHEET STEEL 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.
  2.5.14. INSERTS, BOLTS, AND FASTENERS: HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M.
3. EXECUTION
 3.1. INSTALLATION
  3.1.1. INSTALL HOLLOW METAL FRAMES TO COMPLY WITH SDI A250.11.
  3.1.2. FIRE-RATED FRAMES: INSTALL ACCORDING TO NFPA 80.
  3.1.3. INSTALL DOORS TO PROVIDE CLEARANCES BETWEEN DOORS AND FRAMES AS INDICATED IN SDI A250.11.
 3.2. PRIME-COAT TOUCH UP: IMMEDIATELY AFTER ERECTION, SAND SMOOTH RUSTED OR
 3.3. DAMAGED AREAS OF PRIME COAT AND APPLY TOUCHUP OF COMPATIBLE AIR-DRYING RUST-INHIBITIVE PRIMER. USE GALVANIZING REPAIR PAINT FOR METALLIC COATED SURFACES.

-- END OF SECTION 081113 --

SECTION 081416 - FLUSH WOOD DOORS

1. GENERAL
 1.1. SECTION REQUIREMENTS
  1.1.1. SUBMITTALS: SAMPLES FOR FACTORY-FINISHED DOORS.
2. PRODUCTS
 2.1. FLUSH WOOD DOORS
  2.1.1. MANUFACTURERS: ONE OF THE FOLLOWING:
   2.1.1.1. ALGOMA HARDWOODS, INC.
   2.1.1.2. AMPCO
   2.1.1.3. CHAPPELL DOOR CO.
   2.1.1.4. EGGERS INDUSTRIES.
   2.1.1.5. GENERAL VENEER MANUFACTURING CO.
   2.1.1.6. GRAHAM WOOD DOORS; AN ASSA ABLOY GROUP COMPANY.
   2.1.1.7. HALEY BROTHERS, INC.
   2.1.1.8. IPIK DOOR COMPANY.
   2.1.1.9. LAMBTON DOORS.
   2.1.1.10. MARLITE.
   2.1.1.11. MARSHFIELD DOOR SYSTEMS, INC.
   2.1.1.12. MOHAWK DOORS; A MASONITE COMPANY.
   2.1.1.13. OSHKOSH DOOR COMPANY.
   2.1.1.14. PONCRAFT DOOR COMPANY.
   2.1.1.15. VANCOUVER DOOR COMPANY.
   2.1.1.16. VT INDUSTRIES, INC.
  2.2. DOOR CONSTRUCTION, GENERAL
   2.2.1. QUALITY STANDARD: WDMA I.S.1-A.
   2.2.2. CERTIFIED WOOD: WOOD DOORS SHALL BE CERTIFIED AS "FSC PURE" OR "FSC MIXED CREDIT" ACCORDING TO FSC STD-01-001, "FSC PRINCIPLES AND CRITERIA FOR FOREST STEWARDSHIP," AND TO FSC STD-40-004, "FSC STANDARD FOR CHAIN OF CUSTODY CERTIFICATION."
   2.2.3. LOW-EMITTING MATERIALS: PROVIDE DOORS MADE WITH ADHESIVES AND COMPOSITE WOOD PRODUCTS THAT DO NOT CONTAIN UREA FORMALDEHYDE.
   2.2.4. WDMA I.S.1-A PERFORMANCE GRADE:
    2.2.4.1. HEAVY DUTY UNLESS OTHERWISE INDICATED.
    2.2.4.2. EXTRA HEAVY DUTY: JANITOR'S CLOSETS, PUBLIC TOILETS, ASSEMBLY SPACES, EXITS, AND WHERE INDICATED.
    2.2.4.3. STANDARD DUTY: CLOSETS (NOT INCLUDING JANITOR'S CLOSETS), PRIVATE TOILETS, AND WHERE INDICATED.
  2.3. FIRE-RATED WOOD DOORS: LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C.
   2.3.1. WHERE INDICATED, PROVIDE DOORS THAT HAVE A TEMPERATURE RISE RATING OF 450 DEG F (250 DEG C).
   2.3.2. PROVIDE CORE SPECIFIED OR MINERAL CORE AS NEEDED TO PROVIDE FIRE-PROTECTION RATING INDICATED.
   2.3.3. SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES: LISTED AND LABELED FOR SMOKE AND DRAFT CONTROL, BASED ON TESTING ACCORDING TO UL 1784.
  2.4. FLUSH WOOD DOORS
   2.4.1. VENEER-FACED DOORS FOR TRANSPARENT FINISH:
    2.4.1.1. INTERIOR SOLID-CORE DOORS: PREMIUM GRADE, FIVE-PLY, STRUCTURAL COMPOSITE LUMBER CORES.
    2.4.1.2. FACES: GRADE A.
    2.4.1.3. FAIR MATCHING AND SET MATCHING.
    2.4.1.4. CONTINUOUS MATCHING FOR DOORS WITH TRANSOMS.
    2.4.1.5. FABRICATION AND [illegible]
    2.4.1.6. FACTORY-FIT DOORS TO SUIT [illegible] OPENINGS INDICATED AND TO [illegible] CLEARANCES SPECIFIED.
    2.4.1.7. FACTORY-MACHINE DOORS FOR [illegible]RE THAT IS NOT SURFACE APPLIED, LOCATIONS INDICATED; COMPLY WITH DHI-WDHS-3.
    2.4.1.8. CUT AND [illegible] OPENINGS TO COMPLY WITH REFERENCED STANDARDS.
    2.4.1.9. TRIM LIGHT OPENINGS WITH [illegible]MOLDINGS INDICATED.
    2.4.1.10. FACTORY-INSTALL GLASS IN DOORS INDICATED TO BE FACTORY FINISHED.
    2.4.1.11. FACTORY-INSTALL LOUVERS IN PREPARED OPENINGS.
    2.4.1.12. FACTORY-FINISH DOORS INDICATED FOR TRANSPARENT FINISH WITH MANUFACTURER'S STANDARD FINISH COMPLYING WITH WDMA TR-6.
     2.4.1.12.1. CATALYZED POLYURETHANE FOR GRADE SPECIFIED FOR DOORS.
      2.4.1.12.1. SHEEN: SATIN.
    2.4.1.13. FACTORY-FINISH DOORS INDICATED FOR OPAQUE FINISH WITH MANUFACTURER'S STANDARD FINISH COMPLYING WITH WDMA OP-6, CATALYZED POLYURETHANE FOR GRADE SPECIFIED FOR DOORS.
     2.4.1.13.1. SHEEN: SATIN.
3. EXECUTION
 3.1. INSTALLATION
  3.1.1. INSTALL DOORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND WDMA I.S.1-A, AND AS INDICATED.
  3.1.2. INSTALL FIRE-RATED DOORS TO COMPLY WITH NFPA 80.
  3.1.3. INSTALL SMOKE- AND DRAFT-CONTROL DOORS ACCORDING TO NFPA 105.
 3.2. ALIGN AND FIT DOORS IN FRAMES WITH UNIFORM CLEARANCES AND BEVELS.
 3.3. CLEARANCES: AS FOLLOWS UNLESS OTHERWISE INDICATED:
  3.3.1. 1/8 INCH (3.2 MM) AT HEADS, JAMBS, AND BETWEEN PAIRS OF DOORS.
  3.3.2. 1/8 INCH (3.2 MM) FROM BOTTOM OF DOOR TO TOP OF DECORATIVE FLOOR FINISH OR COVERING.
  3.3.3. 1/4 INCH (6.4 MM) FROM BOTTOM OF DOOR TO TOP OF THRESHOLD.
 3.4. COMPLY WITH NFPA 80 FOR FIRE-RATED DOORS.

-- END OF SECTION 081416 --

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

1. GENERAL
 1.1. SECTION REQUIREMENTS
  1.1.1. SUBMITTALS: PRODUCT DATA, SHOP DRAWINGS, AND COLOR SAMPLES.
  1.1.2. FOR ENTRANCE DOORS, INCLUDE HARDWARE SCHEDULE.
2. PRODUCTS
 2.1. PERFORMANCE REQUIREMENTS
  2.1.1. STRUCTURAL PERFORMANCE: DESIGN, ENGINEER, FABRICATE, AND INSTALL ALUMINUM-FRAMED STOREFRONTS TO WITHSTAND STRUCTURAL LOADS INDICATED.
  2.1.2. LIMIT DEFLECTION OF FRAMING MEMBERS NORMAL TO WALL PLANE TO 1/175 OF CLEAR SPAN OR AN AMOUNT THAT RESTRICTS EDGE DEFLECTION OF INDIVIDUAL GLAZING LITES TO 3/4 INCH (19 MM), WHICHEVER IS LESS.
  2.1.3. LIMIT DEFLECTION OF FRAMING MEMBERS PARALLEL TO GLAZING PLANE TO L/360 OF CLEAR SPAN OR 1/8 INCH (3.2 MM), WHICHEVER IS SMALLER.
  2.1.4. STRUCTURAL TESTING: SYSTEMS TESTED ACCORDING TO ASTM E 330 AT 150 PERCENT OF INWARD AND OUTWARD WIND-LOAD DESIGN PRESSURES DO NOT EVIDENCE MATERIAL FAILURES, STRUCTURAL DISTRESS, DEFLECTION FAILURES, OR PERMANENT DEFORMATION OF MAIN FRAMING MEMBERS EXCEEDING 0.2 PERCENT OF CLEAR SPAN.
  2.1.5. WINDBORNE-DEBRIS RESISTANCE: FRAMING SYSTEM AND DOORS PASS BASIC-PROTECTION TESTING REQUIREMENTS IN ASTM E 1996 FOR WIND ZONE OF PROJECT LOCATION WHEN TESTED ACCORDING TO ASTM E 1886.
  2.1.6. AIR INFILTRATION: LIMITED TO 0.06 CFM/SQ. FT. (0.03 L/S PER SQ. M) OF FIXED FRAMING AND GLASS AREA WHEN TESTED ACCORDING TO ASTM E 283 AT A STATIC-AIR-PRESSURE DIFFERENCE OF .57 LBF/SQ. FT. (75 PA).
  2.1.7. WATER PENETRATION: SYSTEMS DO NOT EVIDENCE WATER LEAKAGE WHEN TESTED ACCORDING TO ASTM E 331 AT MINIMUM DIFFERENTIAL PRESSURE OF 20 PERCENT OF POSITIVE WIND-LOAD DESIGN PRESSURE BUT NOT LESS THAN 6.24 LBF/SQ. FT. (300 PA).
  2.1.8. THERMAL TRANSMITTANCE (U-FACTOR): FIXED GLAZING AND FRAMING AREAS SHALL HAVE U-FACTOR OF NOT MORE THAN 0.45 BTU/SQ. FT. X H X DEG F (2.55 W/SQ. M X K) AS DETERMINED ACCORDING TO NFRC 100.
 2.2. ALUMINUM-FRAMED STOREFRONTS
  2.2.1. BASIS-OF-DESIGN PRODUCT: PRODUCT INDICATED ON DRAWINGS
  2.2.2. ALUMINUM: ALLOY AND TEMPER RECOMMENDED BY MANUFACTURER FOR TYPE OF USE AND FINISH INDICATED; ASTM B 209 (ASTM B 209M) SHEET; ASTM B 221 (ASTM B 221M) EXTRUSIONS.
  2.2.3. FRAMING MEMBERS: MANUFACTURER'S STANDARD EXTRUDED-ALUMINUM FRAMING MEMBERS OF THICKNESS REQUIRED AND REINFORCED AS REQUIRED TO SUPPORT IMPOSED LOADS.
  2.2.4. CONSTRUCTION: THERMALLY BROKEN.
  2.2.5. DOORS:
   2.2.5.1. 1-3/4-INCH- (44.5-MM-) THICK GLAZED DOORS 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 FILLET WELDED OR THAT INCORPORATE CONCEALED TIE RODS. PROVIDE SNAP-ON, EXTRUDED-ALUMINUM GLAZING STOPS AND PREFORMED GASKETS.
   2.2.5.2. DOOR DESIGN: MEDIUM STILE; 3-1/2-INCH (88.9-MM) NOMINAL WIDTH; UNLESS NOTED OTHERWISE.
   2.2.5.3. ACCESSIBLE DOORS: SMOOTH SURFACED FOR WIDTH OF DOOR IN AREA WITHIN 10 INCHES (255 MM) ABOVE FLOOR OR GROUND PLANE.
   2.2.5.4. INTERIOR DOORS: PROVIDE BHMA A156.16 SILENCERS, THREE ON STRIKE JAMB OF SINGLE-DOOR FRAMES AND TWO ON HEAD FOR DOUBLE-DOOR FRAMES.
   2.2.5.5. EXTERIOR DOORS: PROVIDE COMPRESSION WEATHER STRIPPING AT FIXED STOPS, AT OTHER LOCATIONS, PROVIDE SLIDING WEATHER STRIPPING RETAINED IN ADJUSTABLE STRIP MORTISED INTO DOOR EDGE.
  2.2.6. HARDWARE: AS SPECIFIED ON DRAWINGS.
  2.2.7. GLAZING: COMPLY WITH SECTION 088000 "GLAZING."
  2.2.8. GLAZING GASKETS: MANUFACTURER'S STANDARD SEALED-CORNER PRESSURE-GLAZING SYSTEM OF BLACK, RESILIENT ELASTOMERIC GLAZING GASKETS, SETTING BLOCKS, AND SHIMS OR SPACERS.
  2.2.9. FASTENERS AND ACCESSORIES: COMPATIBLE WITH ADJACENT MATERIALS. CORROSION RESISTANT, NONSTAINING, AND NONBLEEDING. USE CONCEALED FASTENERS EXCEPT FOR APPLICATION OF DOOR HARDWARE.
  2.2.10. STOREFRONT FABRICATION: FABRICATE FRAMING IN PROFILES INDICATED OR FLUSH GLAZING (WITHOUT PROJECTING STOPS). PROVIDE SUBFRAMES AND REINFORCING OF TYPES INDICATED OR, IF NOT INDICATED, AS REQUIRED FOR A COMPLETE SYSTEM. FACTORY-ASSEMBLE COMPONENTS TO GREATEST EXTENT POSSIBLE. DISASSEMBLE COMPONENTS ONLY AS NECESSARY FOR SHIPMENT AND INSTALLATION.
  2.2.11. DOOR FRAMING: REINFORCE TO SUPPORT IMPOSED LOADS. FACTORY-ASSEMBLE DOOR AND FRAME UNITS AND FACTORY-INSTALL HARDWARE TO GREATEST EXTENT POSSIBLE. REINFORCE DOOR AND FRAME UNITS FOR HARDWARE INDICATED. COUNTER-DRILL AND TAP FOR FACTORY-INSTALLED HARDWARE BEFORE FINISHING COMPONENTS.
  2.2.12. ALUMINUM FINISH: CLASS I, CLEAR ANODIC FINISH COMPLYING WITH AAMA 611 [CLASS II, COLOR ANODIC FINISH OR HIGH-PERFORMANCE ORGANIC: THREE-COAT FLUOROPOLYMER SYSTEM COMPLYING WITH AAMA 2605, WITH FINISH COATS CONTAINING AT LEAST 70 PERCENT POLYVINYLIDENE FLUORIDE RESIN BY WEIGHT. [CLASS I FOR ANODIC FINISHES AND THREE-COAT FLUOROPOLYMER FOR KYNAR FINISHES IN DRAWINGS].
3. EXECUTION
 3.1. INSTALLATION
  3.1.1. ISOLATE METAL SURFACES IN CONTACT WITH INCOMPATIBLE MATERIALS, INCLUDING WOOD, PAINTING CONTACT SURFACES WITH BITUMINOUS COATING OR PRIMER, AND APPLYING SEALANT OR TAPE RECOMMENDED BY MANUFACTURER.
  3.1.2. INSTALL COMPONENTS TO DRAIN WATER PASSING JOINTS. CONDENSATION OCCURRING WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.
  3.1.3. SET CONTINUOUS SILL MEMBERS AND FLASHING IN FULL SEALANT BED AS SPECIFIED IN SECTION 079200 "JOINT SEALANTS" TO PRODUCE WEATHERTIGHT INSTALLATION.
  3.1.4. INSTALL FRAMING COMPONENTS TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES AND THE FOLLOWING TOLERANCES:
  3.1.5. VARIATION FROM PLANE: LIMIT TO 1/8 INCH IN 12 FEET (3 MM IN 3.7 M); 1/4 INCH (6 MM) OVER TOTAL LENGTH.
  3.1.6. ALIGNMENT: FOR SURFACES ABUTTING IN LINE, LIMIT OFFSET TO 1/16 INCH (1.5 MM). FOR SURFACES MEETING AT CORNERS, LIMIT OFFSET TO 1/32 INCH (0.8 MM). DIAGONAL MEASUREMENTS: LIMIT DIFFERENCE BETWEEN DIAGONAL MEASUREMENTS TO 1/8 INCH (3 MM).
  3.1.7. INSTALL DOORS WITHOUT WARP OR RACK. ADJUST DOORS AND HARDWARE TO PROVIDE TIGHT FIT AT CONTACT POINTS AND SMOOTH OPERATION.
  3.1.8. [illegible]

-- END OF SECTION 084113 --

SECTION 087100 - DOOR HARDWARE

1. GENERAL
 1.1. SECTION REQUIREMENTS
  1.1.1. SUBMITTALS: HARDWARE SCHEDULE AND KEYING SCHEDULE.
2. PRODUCTS
 2.1. HARDWARE
  2.1.1. FIRE-RESISTANCE-RATED ASSEMBLIES: PROVIDE PRODUCTS THAT COMPLY WITH NFPA 80 AND ARE LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR APPLICATIONS INDICATED, ON EXIT DEVICES PROVIDE LABEL INDICATING "FIRE EXIT HARDWARE." SEE DRAWINGS FOR REQUIRED HARDWARE.
  2.1.2. [illegible]
3. EXECUTION
 3.1. INSTALLATION
  3.1.1. MOUNT HARDWARE IN LOCATIONS REQUIRED TO COMPLY WITH GOVERNING REGULATIONS AND ACCORDING TO SDI A250.8 AND DHI WDHS.3.
  3.1.2. KEY CONTROL SYSTEM: TAG KEYS AND PLACE THEM ON MARKERS AND HOOKS IN KEY CONTROL SYSTEM CABINET.
  3.1.3. DELIVER KEYS TO OWNER.

-- END OF SECTION 087100 --

SECTION 088000 - GLAZING

1. GENERAL
 1.1. SECTION REQUIREMENTS
  1.1.1. SUBMITTALS: PRODUCT DATA AND SAMPLES.
2. PRODUCTS
 2.1. GLASS, GENERAL
  2.1.1. GLAZING PUBLICATIONS: COMPLY WITH PUBLISHED RECOMMENDATIONS OF GLASS PRODUCT MANUFACTURERS AND ORGANIZATIONS BELOW UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED. SEE THESE PUBLICATIONS FOR GLAZING TERMS NOT OTHERWISE DEFINED IN THIS SECTION OR IN REFERENCED STANDARDS.
   2.1.1.1. AAMA PUBLICATIONS: AAMA GDSG-1, "GLASS DESIGN FOR SLOPED GLAZING," AND AAMA TIR A7, "SLOPED GLAZING GUIDELINES."
   2.1.1.2. IGMA PUBLICATION FOR SLOPED GLAZING: IGMA TB-3001, "GUIDELINES FOR SLOPED GLAZING."
   2.1.1.3. IGMA PUBLICATION FOR INSULATING GLASS: SIGMA TM-3000, "NORTH AMERICAN GLAZING GUIDELINES FOR SEALED INSULATING GLASS UNITS FOR COMMERCIAL AND RESIDENTIAL USE."
 2.2. SAFETY GLAZING: WHERE SAFETY GLAZING IS INDICATED, PROVIDE GLAZING THAT COMPLIES WITH 16 CFR 1201, CATEGORY II.
  2.2.1. SAFETY GLAZING LABELING: WHERE SAFETY GLAZING IS INDICATED, PERMANENTLY MARK GLAZING WITH CERTIFICATION LABEL OF THE SGCC OR ANOTHER CERTIFICATION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION OR MANUFACTURER. LABEL SHALL INDICATE MANUFACTURER'S NAME, TYPE OF GLASS, THICKNESS, AND SAFETY GLAZING STANDARD WITH WHICH GLASS COMPLIES.
  2.2.2. INSULATING-GLASS CERTIFICATION PROGRAM: PERMANENTLY MARKED EITHER ON SPACERS OR ON AT LEAST ONE COMPONENT LITE OF UNITS WITH APPROPRIATE CERTIFICATION LABEL OF IGCC.
  2.2.3. WINDBORNE-DEBRIS-IMPACT RESISTANCE: EXTERIOR GLAZING SHALL COMPLY WITH BASIC-PROTECTION TESTING REQUIREMENTS IN ASTM E 1996 FOR WIND ZONE OF THE PROJECT LOCATION WHEN TESTED ACCORDING TO ASTM E 1886. TEST SPECIMENS SHALL BE NO SMALLER IN WIDTH AND LENGTH THAN GLAZING INDICATED FOR USE ON PROJECT AND SHALL BE INSTALLED IN SAME MANNER AS GLAZING INDICATED FOR USE ON PROJECT.
  2.2.4. LARGE-MISSILE TEST: FOR GLAZING LOCATED WITHIN 30 FEET (9.1 M) OF GRADE, SMALL-MISSILE TEST: FOR GLAZING LOCATED MORE THAN 30 FEET (9.1 M) ABOVE GRADE.
  2.2.5.
 2.3. GLASS PRODUCTS
  2.3.1. ANNEALED FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY-Q3.
  2.3.2. FULLY TEMPERED FLOAT GLASS: ASTM C 1048, KIND FT; TYPE I; QUALITY-Q3.
  2.3.3. HEAT-STRENGTHENED FLOAT GLASS: ASTM C 1048, KIND HS; TYPE I; QUALITY-Q3.
  2.3.4. REFLECTIVE-COATED GLASS: ASTM C 1376.
  2.3.5. PATTERNED GLASS: ASTM C 1036, TYPE II, FORM 3; QUALITY-Q6.
  2.3.6. TEMPERED PATTERNED GLASS: ASTM C 1048, KIND FT, TYPE II, FORM 3; QUALITY-Q6.
  2.3.7. LAMINATED GLASS: ASTM C 1172, AND COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR 1201 FOR CATEGORY II MATERIALS.
  2.3.8. INSULATING-GLASS UNITS: FACTORY-ASSEMBLED UNITS CONSISTING OF SEALED LITES OF GLASS SEPARATED BY A DEHYDRATED INTERSPACE, QUALIFIED ACCORDING TO ASTM E 2190.
 2.4. FIRE-PROTECTION-RATED GLAZING
  2.4.1. FIRE-PROTECTION-RATED GLAZING: LISTED AND LABELED BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. FOR FIRE-PROTECTION RATINGS INDICATED, BASED ON POSITIVE-PRESSURE TESTING ACCORDING TO NFPA 257 OR UL 9 AND COMPLYING WITH NFPA 80.
  2.4.2. FIRE-PROTECTION-RATED GLAZING LABELING: PERMANENTLY MARK WITH FIRE-PROTECTION-RATED GLAZING WITH CERTIFICATION LABEL OF A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. LABEL SHALL INDICATE MANUFACTURER'S NAME; TEST STANDARD; WHETHER GLAZING IS PERMITTED TO BE USED IN DOORS OR OPENINGS; IF PERMITTED IN OPENINGS, WHETHER OR NOT GLAZING HAS PASSED THE HOSE-STREAM TEST; WHETHER OR NOT GLAZING MEETS 450 DEG F (250 DEG C) TEMPERATURE-RISE LIMITATION; AND THE FIRE-RESISTANCE RATING IN MINUTES.
 2.5. GLAZING SEALANTS
  2.5.1. GLAZING SEALANT: NEUTRAL-CURING [illegible]ONE GLAZING SEALANT COMPLYING WITH ASTM C 920, TYPE S, GRADE NS, CLASS 100/50, USE [illegible]
  2.5.2. GLAZING SEALANTS FOR FIRE-RATED GLAZING PRODUCTS: PRODUCTS THAT ARE APPROVED BY TESTING AGENCIES THAT LISTED AND LABELED FIRE-RESISTANT GLAZING PRODUCTS WITH WHICH THEY ARE USED FOR APPLICATIONS AND FIRE-PROTECTION RATINGS INDICATED.
  2.5.3. LOW-EMITTING MATERIALS: SEALANTS SHALL HAVE A VOC CONTENT OF NOT MORE THAN 250 G/L (MINUS WATER). SEALANTS SHALL COMPLY WITH THE TESTING AND PRODUCT REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS."
  2.5.4.
3. EXECUTION
 3.1. INSTALLATION
  3.1.1. COMPLY WITH COMBINED RECOMMENDATIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE CONTAINED IN GANA'S "GLAZING MANUAL."
  3.1.2. FOR FIRE-PROTECTION-RATED GLAZING, USE METHODS APPROVED BY TESTING AGENCIES THAT LISTED AND LABELED PRODUCTS.
  3.1.3. SET GLASS LITES IN EACH SERIES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR CHARACTERISTICS.
  3.1.4. REMOVE NONPERMANENT LABELS, AND CLEAN SURFACES IMMEDIATELY AFTER INSTALLATION.
 3.2. MONOLITHIC-GLASS TYPES
  3.2.1. GLASS TYPE AS SHOWN ON DRAWINGS.

-- END OF SECTION 088000 --

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

1. GENERAL
 1.1. SECTION REQUIREMENTS
  1.1.1. SUBMITTALS: PRODUCT DATA.
2. PRODUCTS
 2.1. PERFORMANCE REQUIREMENTS
  2.1.1. FIRE-RESISTANCE-RATED ASSEMBLIES: PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLIES PER ASTM E 119 BY AN INDEPENDENT TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION
  2.1.2. STC-RATED ASSEMBLIES: PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLIES PER ASTM E 90 AND CLASSIFIED PER ASTM E 413 BY A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY.
 2.2. METAL FRAMING AND SUPPORTS
  2.2.1. STEEL FRAMING MEMBERS, GENERALLY: ASTM C 754.
  2.2.2. STEEL SHEET COMPONENTS: ASTM C 645, THICKNESS SPECIFIED IS MINIMUM UNCOATED BASE-METAL THICKNESS.
  2.2.3. PROTECTIVE COATING: ASTM A 653/A 653M, G40 (Z120). HOT-DIP GALVANIZED ZINC COATING.
  2.2.4. FRAMING SYSTEMS:
   2.2.4.1. STUDS AND RUNNERS: IN DEPTH INDICATED AND 0.018 INCH (0.45 MM) THICK UNLESS OTHERWISE INDICATED.
   2.2.4.2. FLAT STRAP AND BACKING: 0.027 INCH (0.68 MM) THICK.
   2.2.4.3. HAT-SHAPED, RIGID FURRING CHANNELS: IN DEPTH INDICATED AND 0.033 INCH (0.84 MM) THICK.
   2.2.4.4. RESILIENT FURRING CHANNELS: 1/2 INCH (13 MM) DEEP, WITH SINGLE- OR DOUBLE-LEG CONFIGURATION.
   2.2.4.5. COLD-ROLLED FURRING CHANNELS: 0.053 INCH (1.34 MM) THICK, 3/4 INCH (19 MM) DEEP.
   2.2.4.6. Z-FURRING: IN DEPTH REQUIRED BY INSULATION, 1-1/4-INCH (32-MM) FACE FLANGE, 7/8-INCH (22-MM) WALL-ATTACHMENT FLANGE, AND 0.018 INCH (0.45 MM) THICK.
  2.2.5. SUSPENSION SYSTEMS:
   2.2.5.1. TIE WIRE: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER, 0.062-INCH (1.59-MM) DIAMETER, OR DOUBLE STRAND OF 0.048-INCH-(1.21-MM-) DIAMETER WIRE.
   2.2.5.2. WIRE HANGERS: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER, AND 0.162-INCH (4.12-MM) DIAMETER.
   2.2.5.3. CARRYING CHANNELS: COLD-ROLLED STEEL FURRING CHANNELS
  2.2.6. GRID SUSPENSION SYSTEM FOR GYPSUM BOARD CEILINGS; INTERLOCKING, DIRECT-HUNG SYSTEM.
   2.2.6.1. PRODUCTS:ONE OF THE FOLLOWING:
    2.2.6.1.1. ARMSTRONG WORLD INDUSTRIES, INC.: DRYWALL GRID SYSTEMS.
    2.2.6.1.2. CHICAGO METALLIC CORPORATION; DRYWALL GRID SYSTEM.
    2.2.6.1.3. USG CORPORATION; DRYWALL SUSPENSION SYSTEM.
  2.2.7. ACCESSORIES
   2.2.7.1. GENERAL: COMPLY WITH REFERENCED INSTALLATION STANDARDS.
   2.2.7.2. FASTENERS FOR METAL FRAMING: OF TYPE, MATERIAL, SIZE, CORROSION RESISTANCE, HOLDING POWER, AND OTHER PROPERTIES REQUIRED TO FASTEN STEEL MEMBERS TO SUBSTRATES.
   2.2.7.3. ISOLATION STRIP AT EXTERIOR WALLS: FOAM GASKET.
3. EXECUTION
 3.1. INSTALLATION
  3.1.1. INSTALL STEEL FRAMING TO COMPLY WITH ASTM C 754."
  3.1.2. GYPSUM PLASTER ASSEMBLIES: ALSO COMPLY WITH ASTM C 841.
  3.1.3. PORTLAND CEMENT PLASTER ASSEMBLIES: ALSO COMPLY WITH ASTM C 1063.
  3.1.4. GYPSUM VENEER PLASTER ASSEMBLIES: ALSO COMPLY WITH ASTM C 644.
  3.1.5. GYPSUM BOARD ASSEMBLIES: ALSO COMPLY WITH ASTM C 840.
  3.1.6. INSTALL SUPPLEMENTARY FRAMING, AND BLOCKING TO SUPPORT FIXTURES, EQUIPMENT SERVICES, HEAVY TRIM, GRAB BARS, TOILET ACCESSORIES, FURNISHINGS, OR SIMILAR CONSTRUCTION.
  3.1.7. ISOLATE STEEL FRAMING FROM BUILDING STRUCTURE, EXCEPT AT FLOOR, TO PREVENT TRANSFER OF LOADING IMPOSED BY STRUCTURAL MOVEMENT.
  3.1.8. WHERE STUDS ARE INSTALLED DIRECTLY AGAINST EXTERIOR WALLS, INSTALL ISOLATION STRIP BETWEEN STUDS AND WALL.
  3.1.9. FIRE-RESISTANCE-RATED ASSEMBLIES: COMPLY WITH REQUIREMENTS OF LISTED ASSEMBLIES.
  3.1.10. INSTALL SUSPENSION SYSTEMS LEVEL TO WITHIN 1/8 INCH IN 12 FEET (3 MM IN 3.6 M).

-- END OF SECTION 092216 --

SECTION 092900 - GYPSUM BOARD

1. GENERAL
 1.1. SECTION REQUIREM