3. EXECUTION
   A. INSTALLATION:
      1) ERECT STAIRS LEVEL AND PLUMB, FREE FROM DISTORTION AND DEFECTS DETRIMENTAL TO APPEARANCE OR PERFORMANCE.
      2) PROVIDE ANCHORS, PLATES, ANGLES, HANGERS, AND STRUTS REQUIRED FOR CONNECTING STAIRS TO STRUCTURE.
      3) VERIFY ALIGNMENT WITH ADJACENT CONSTRUCTION. COORDINATE RELATED WORK.
      4) DO NOT FIELD CUT OR ALTER MEMBERS, UNLESS APPROVED OTHERWISE.
      5) FIELD BOLT AND WELD TO MATCH STANDARD OF SHOP BOLTING AND WELDING. UNLESS OTHERWISE DETAILED, PLACE FASTENERS IN CONCEALED LOCATIONS WHEREVER POSSIBLE.
      6) MECHANICALLY FASTENED JOINTS SHALL BE BUTTED TIGHT, FLUSH, AND HAIRLINE. WHERE FILLET WELDS ARE REQUIRED, FORM NEAT AND UNIFORM; GRIND EXPOSED BUTT FIELD WELDS SMOOTH AND FLUSH.
      7) APPLY FIELD APPLIED FINISHES TO MATCH THE SHOP FINISH. SMOOTH AND REFINISH ALL DAMAGED AREAS DURING INSTALLATION TO MATCH THE SHOP FINISH.
      8) FILL TREADS AT METAL PAN ASSEMBLIES WITH 3000 PSI CONCRETE MEETING REQUIREMENTS OF SECTION 033000. PROVIDE STEEL TROWEL FINISH. CAST IN CONTRASTING STRIPES AS INDICATED.
      9) HANDRAIL INSTALLATION:
         A) FIT THE HANDRAIL TIGHTLY TO THE CONSTRUCTION INDICATED.
         B) JOINTS SHALL BE NEAT, STRAIGHT AND HAIRLINE.
         C) PROVIDE CONCEALED FASTENING WHENEVER POSSIBLE, EXCEPT WHERE INDICATED OR APPROVED OTHERWISE.
         D) FIELD WELDING: CONFORM TO THE REQUIREMENTS SPECIFIED FOR SHOP WELDING.
      10) GLASS INSTALLATION:
         A) PREPARATION:
            (1) CLEAN CONTACT SURFACES AND WIPE DRY.
            (2) SEAL FRAME CORNER JOINTS, AND OTHER LEAKAGE POINTS WITH SEALANT.
            (3) PRIME SURFACES SCHEDULED TO RECEIVE SEALANT, UNLESS OTHERWISE RECOMMENDED BY THE SEALANT MANUFACTURER.
         B) INSTALLATION:
            (1) UNLESS SPECIFIED OTHERWISE, GLAZE IN ACCORDANCE WITH THE CURRENT EDITION OF GLASS ASSOCIATION OF NORTH AMERICA (GANA): GLAZING MANUAL.
            (2) SETTING BLOCKS: PLACE SETTING BLOCKS IN FRAMES FOR SUPPORT OF GLASS. PLACE AT QUARTER POINTS UNLESS APPROVED OTHERWISE.
            (3) SET GLASS TIGHTLY IN POSITION WITH PROPER CLEARANCES IN ACCORDANCE WITH THE FRAME MANUFACTURER'S REQUIREMENTS AND IN ACCORDANCE WITH THE REFERENCED STANDARD. SILICONE IN PLACE.
            (4) ADJUST GLAZING MATERIALS TO FORM A UNIFORM SIGHT LINE.
   B. FIELD QUALITY CONTROL: THE STRUCTURAL DESIGN ENGINEER OR AN AUTHORIZED REPRESENTATIVE SHALL VISIT THE SITE TO INSPECT THE WORK. VERITY AND CERTIFY THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS.

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

061000 - ROUGH CARPENTRY

1. GENERAL
   A. SECTION INCLUDES:
      1) SHEATHING.
      2) BLOCKING AND NAILERS.
      3) PLYWOOD TERMINAL BACK BOARDS.
   B. SUBMITTALS:
      1) PRODUCT DATA: SUBMIT COMPLETE TECHNICAL AND PRODUCT DATA ON THE FOLLOWING:
         A) FIRE RETARDANT WOOD TREATMENTS.
   C. QUALITY ASSURANCE:
      1) REGULATORY REQUIREMENTS: WORK SHALL CONFORM TO/ MEET OR EXCEED THE REQUIREMENTS OF ALL APPLICABLE CODES, ORDINANCES, LAWS, REGULATIONS, SAFETY ORDERS, AND DIRECTIVES FROM AUTHORITIES HAVING JURISDICTION OVER THE WORK.
2. PRODUCTS
   A. DIMENSION LUMBER:
      1) LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH PS 20, AND SHALL BE STAMPED AND GRADED IN ACCORDANCE WITH WWPA, WCLIB, NLGA, OR SPIB GRADING RULES, AS APPLICABLE TO PROJECT LOCATION.
      2) MOISTURE CONTENT: KILN DRIED TO 19% MAXIMUM MOISTURE CONTENT, EXCEPT FOR MATERIAL WHOSE LEAST DIMENSION IS 4 INCHES THICK OR GREATER.
      3) SPECIES: HEM-FIR, SPRUCE-PINE-FIR (SPF), OR DOUGLAS FIR LARCH, UNLESS INDICATED OR SPECIFIED OTHERWISE.
      4) LUMBER GRADES:
         A) UNEXPOSED NON-STRUCTURAL WOOD FRAMING AND BLOCKING INDICATED ON THE ARCHITECTURAL DRAWINGS SHALL BE GRADED AS FOLLOWS:
            (1) 2" TO 4" THICK, 2" TO 4" WIDE): "NO 2 - STRUCTURAL LIGHT FRAMING," OR BETTER.
            (2) 2" TO 4" THICK, 5" AND WIDER: "NO. 2 - STRUCTURAL JOISTS AND PLANKS," OR BETTER.
   B. PANEL MATERIALS:
      1) SHEATHING: APA RATED SHEATHING; CD GRADE, UNLESS REQUIRED OTHERWISE ON THE DRAWINGS; EXTERIOR GRADE; PLYWOOD, UNLESS APPROVED OTHERWISE; THICKNESSES AS INDICATED.
      2) WOOD FLOOR UNDERLAYMENT: REFER TO SECTION 096429.
      3) TERMINAL BACKBOARDS: APA AC GRADE EXTERIOR; FIRE RETARDANT TREATED.
   C. ACCESSORIES:
      1) FASTENERS: HOT-DIPPED GALVANIZED STEEL FOR EXTERIOR, HIGH HUMIDITY, AND TREATED WOOD LOCATIONS.
      2) CONSTRUCTION ADHESIVE: ONE OF THE FOLLOWING, OR OTHER PRODUCT MEETING THE REQUIREMENTS OF AFG-01, OR ASTM D3498:
         A) LIQUID NAILS ADHESIVE (STRONGSVILLE, OH; 800-634-0015) "LIQUID NAILS LN-950 POLYURETHANE CONSTRUCTION ADHESIVE."
         B) ITW TACC (ROCKLAND MA; 800-503-6991) "LUMBER LOCK G SUBFLOOR ADHESIVE."
      3) WOOD PRESERVATIVE (PRESSURE TREATMENT):
         A) PRESSURE TREAT LUMBER IN ACCORDANCE WITH AWPA C-20 AND PLYWOOD IN ACCORDANCE WITH AWPA C-27.
            (1) FOR ABOVE GROUND USE, USE AWPA CERTIFIED AMMONIUM COPPER QUATERNIUM (ACQ) OR COPPER HYDROXIDE SODIUM DIMETHYLDITHIOCARBAMATE (CDDC) WATERBORNE PRESERVATIVE WITH 0.25 POUNDS PER CUBIC FOOT OF WOOD RETENTION.
            (2) APPROVED PRODUCT: ARCH WOOD PROTECTION, INC.(SMYRNA, GA; 770-801-6600) "WOLMANIZED NATURAL SELECT"; COPPER AZOLE (CA) FUNGICIDE.
      4) FIRE RETARDANT TREATMENT:
         A) FIRE RETARDANT TREAT ALL INTERIOR CONCEALED LUMBER AND PLYWOOD, AND OTHER WOOD AS INDICATED OR SPECIFIED.
         B) ALL FIRE RETARDANT TREATED WOOD SHALL BEAR A UL "FR-S" LABEL, OR A LABEL FROM AN APPROVED INSPECTION AGENCY CERTIFYING THAT THE MATERIAL HAS A FLAME SPREAD RATING NO HIGHER THAN 25 WITH NO EVIDENCE OF SIGNIFICANT PROGRESSIVE COMBUSTION WHEN TESTED IN ACCORDANCE WITH ASTM E84. EXTERIOR FIRE RETARDANT TREATED WOOD SHALL BE TREATED BY MEANS OF A SYSTEM WHICH HAS BEEN DEMONSTRATED TO EXHIBIT NO INCREASE IN FIRE HAZARD CLASSIFICATION IN ACCORDANCE WITH ASTM E84 TEST AFTER HAVING BEEN SUBJECTED TO ACCELERATED WEATHER CONDITIONING IN ACCORDANCE WITH ASTM D2898.
         C) APPROVED PRODUCTS:
            (1) INTERIOR FIREPROOFING PRODUCTS: CLEAR FINISH PRODUCT, HICKSON CORPORATION "DRICON", HOOVER TREATED WOOD PRODUCTS "PYRO-GUARD," OSMOSE WOOD PRESERVING CO. OF AMERICA, INC. "FLAME PROOF LHC," OR APPROVED.
      5) ON-SITE FIRE RETARDANT TREATMENT: SITE TREAT SAWN ENDS WITH APPROVED FIRE RETARDANT TREATMENT.
3. EXECUTION
   A. SHEATHING:
      1) SECURE SHEATHING WITH EDGES ON FIRM BEARING. PROVIDE SOLID EDGE BLOCKING BETWEEN SHEETS.
      2) FASTENING SHALL BE IN ACCORDANCE WITH CODE REQUIREMENTS, UNLESS INDICATED OTHERWISE. USE SCREWS WHEN FASTENING INTO METAL LIGHTGAGE METAL FRAMING.
      3) ALLOW 1/8 INCH SPACING AT ENDS AND EDGES BETWEEN PANELS, UNLESS OTHERWISE RECOMMENDED BY PANEL MANUFACTURER.
   B. BLOCKING, NAILERS, AND CURBS:
      1) PROVIDE BLOCKING, NAILERS, AND CURBS FOR ALL SHEATHING, ROOF CONSTRUCTION, METAL FLASHING, AND OTHER CONSTRUCTION AS INDICATED.
      2) WOOD BLOCKING: INSTALL WOOD BLOCKING TO RECEIVE MECHANICAL FASTENERS FOR SUPPORT OF PLUMBING AND ELECTRICAL FIXTURES AND EQUIPMENT, CABINETS, DOOR STOP PLATES, WOOD BASE, WAINSCOTS, COAT HOOKS, TOILET AND BATH ACCESSORIES, AND ALL OTHER WALL AND CEILING MOUNTED COMPONENTS.
   C. PLYWOOD TERMINAL BACKBOARDS:
      1) PROVIDE A FIRE RETARDANT TREATED PLYWOOD TERMINAL BACKBOARD FOR TELEPHONE SYSTEMS WHERE INDICATED ON THE DRAWINGS.
      2) MECHANICALLY APPLY DIRECTLY OVER GYPSUM BACKING BOARD.

062000 - FINISH CARPENTRY

1. GENERAL
   A. SUMMARY:
      1) STANDING AND RUNNING TRIM, NOT INCLUDED WITH DISPLAY CASEWORK.
      2) RECLAIMED WOOD CEILING.
      3) ALL OTHER FINISHED WOOD ITEMS INDICATED ON THE DRAWINGS OR OTHERWISE REQUIRED FOR A COMPLETE ASSEMBLY.
   B. REFERENCES:
      1) AMERICAN PLYWOOD ASSOCIATION (APA)
      2) ARCHITECTURAL WOODWORK INSTITUTE / ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA / WOODWORK INSTITUTE: ARCHITECTURAL WOODWORK STANDARDS (AWS), EDITION 1.
   C. QUALITY ASSURANCE:
      1) QUALIFICATIONS OF WORKMEN: CUTTING AND FITTING OF TRIM AND FINISH MATERIAL, SHALL BE PERFORMED BY FINISH CARPENTERS THOROUGHLY TRAINED AND EXPERIENCED IN THE SKILLS REQUIRED, COMPLETELY FAMILIAR WITH THE MATERIALS INVOLVED AND THE MANUFACTURER'S RECOMMENDED METHODS OF INSTALLATION, AND THOROUGHLY FAMILIAR WITH THE REQUIREMENTS OF THIS WORK.
      2) SPECIAL COORDINATION REQUIREMENTS:
         A) WHEN FINISH CARPENTRY ELEMENTS ARE ADJACENT TO DISPLAY CASEWORK, COORDINATE DETAILING AND LUMBER SELECTION TO MATCH THE DISPLAY CASEWORK.
   D. DELIVERY, STORAGE AND HANDLING:
      1) DELIVERY: DO NOT DELIVER MILLWORK TO BUILDING UNTIL "WET WORK" SUCH AS CONCRETE, PLASTER AND GYPSUM WALLBOARD WORK HAS BEEN COMPLETED AND CURED TO A CONDITION OF EQUILIBRIUM.
      2) STORAGE: STORE IN A DRY PLACE WITH ADEQUATE AIR CIRCULATION. STORE WOOD MATERIALS IN THE GENERAL AREAS WITHIN THE BUILDING WHERE THEY ARE TO BE INSTALLED. STACK USING SPACERS, STICKERS, OR OTHER DEVICES TO PERMIT AIR CIRCULATION. ALLOW TO STABILIZE FOR A MINIMUM OF 48 HOURS PRIOR TO INSTALLATION.
      3) HANDLING: PROTECT MILLWORK FROM EXCESSIVE MOISTURE IN SHIPMENT, STORAGE, AND HANDLING.
      4) SITE CONDITIONS: MAINTAIN TEMPERATURE BETWEEN 65°F AND 80°F, AND HUMIDITY WITHIN OPERATIONAL DESIGN RANGE, FROM TIME OF DELIVERY OF MILLWORK TO AREA OF BUILDING IN WHICH IT IS TO BE INSTALLED.
2. PRODUCTS
   A. LUMBER:
      1) MOISTURE CONTENT: IN ACCORDANCE WITH AWI RECOMMENDATIONS
      2) TRIM FOR OPAQUE FINISH:
         A) DEFECTS: LIMIT IN ACCORDANCE WITH AWS CONSTRUCTION GRADE.
         B) SPECIES: NATURAL BIRCH, MAPLE, YELLOW POPLAR, OR OTHER APPROVED CLOSED GRAIN HARDWOOD.
      3) RECLAIMED WOOD FOR CEILING INSTALLATION: FURNISHED BY THE OWNER.
   B. SHEET PANELS:
      1) PLYWOOD FOR INTERIOR APPLICATIONS (CONCEALED): SOFTWOOD VENEER PLYWOOD, APA GRADE STAMPED; B-C EXT, OR BETTER FOR OTHER APPLICATIONS, UNLESS OTHERWISE NOTED.
   C. FABRICATION AND ASSEMBLY:
      1) FABRICATE ALL FINISH CARPENTRY ITEMS IN ACCORDANCE WITH APPLICABLE AWS STANDARDS, PREMIUM GRADE IN SALES (PUBLIC) AREAS; CUSTOM GRADE IN ALL OTHER AREAS.
      2) FABRICATE ITEMS TO DETAIL, IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. SHOP ASSEMBLE TO THE GREATEST PRACTICAL EXTENT.
      3) ALL CUTS SHALL BE SMOOTH AND EXACT, WITH JOINTS ACCURATELY MATCHED, TIGHTLY FITTED, AND SECURELY ATTACHED. ALL SURFACES SHALL BE SANDED, FREE OF SPLINTERS AND ROUGH EDGES.
      4) GLUING: ALL EXPOSED GLUE LINES SHALL BE FREE OF SQUEEZE-OUT; WHERE INDICATED FOR PIECES TO RECEIVE TRANSPARENT FINISH, REJECT ALL PIECES FROM WHICH GLUE CANNOT BE REMOVED WITHOUT AFFECTING PENETRATION OF FINISH.
      5) SANDING: UNLESS OTHERWISE INDICATED, EASE ALL EXPOSED EDGES OF WOOD TRIM TO A UNIFORM 1/16 INCH RADIUS. SAND ALL FABRICATED COMPONENTS WITH 120 GRIT OR FINER PAPER, FREE OF SPLINTERS AND CROSS GRAIN SCRATCHES. SAND JOINTS SMOOTH; CUT AND SAND PLUGS FLUSH.
      6) WALL BASE: SOLID OPAQUE FINISH LUMBER; KERFED ON BACK SIDE TO MINIMUM DEPTH OF 1/4".
3. EXECUTION
   A. INSTALLATION OF STANDING AND RUNNING TRIM:
      1) INSTALL TRIM STRAIGHT, TRUE, LEVEL, PLUMB, AND FIRMLY ANCHORED IN PLACE IN ACCORDANCE WITH GOOD TRADE PRACTICE, APPROVED SHOP DRAWINGS.
      2) JOINTING: MAKE ALL JOINTS TO CONCEAL SHRINKAGE; MITER ALL CORNERS EXCEPT THAT INSIDE CORNERS OF WALL BASE SHALL BE COPED; SCARF ALL END-TO-END JOINTS AT A 45 DEGREE ANGLE; INSTALL ALL TRIM PIECES AS LONG AS POSSIBLE, JOINTING ONLY WHERE SOLID SUPPORT IS OBTAINED. MAKE EACH CONTINUOUS RUN OF 8'-0" OR LESS FROM SINGLE PIECE WITHOUT JOINTS; LOCATE BUTT JOINTS NO LESS THAN 4'-0" FROM CORNERS OR ENDS OF TRIM.
      3) SELECT RECLAIMED WOOD FOR TRANSPARENT FINISH FOR UNIFORMITY OF APPEARANCE AND GRAIN AND COLOR MATCH BETWEEN ADJACENT PIECES.
      4) USE RANDOM LENGTHS, MINIMUM 8'-0" LONG, FOR CONTINUOUS RUNS OF RUNNING TRIM.
      5) FASTENING:
         A) INSTALL ALL ITEMS STRAIGHT, TRUE, LEVEL, PLUMB, AND FIRMLY ANCHORED IN PLACE. COORDINATE WITH OTHER TRADES TO ENSURE PLACEMENT OF ALL REQUIRED BACKING AND BLOCKING IN A TIMELY MANNER.
         B) USE TRIM HEAD SCREWS OR NAIL TRIM WITH FINISHING NAILS OF PROPER DIMENSION TO HOLD THE MEMBER FIRMLY IN PLACE WITHOUT SPLITTING THE WOOD.
         C) ANCHOR SOLID PANELS AND WIDE PIECES WITH PROVISIONS FOR MOVEMENT PERPENDICULAR TO GRAIN.
         D) ON EXPOSED FINISH WORK, SET ALL NAILS AND TRIM HEAD SCREWS FOR PUTTY.
         E) SCREW, DO NOT HAMMER-DRIVE, ALL WOOD SCREWS. PREDRILL IF NECESSARY TO PREVENT SPLITTING.
         F) ALIGN AND SPACE FASTENERS FOR UNIFORM PATTERN WHERE POSSIBLE, NO "SHOTGUN" PATTERNS WILL BE ACCEPTED.
   B. INSTALLATION OF MISCELLANEOUS ITEMS: INSTALL ALL OTHER ITEMS IN STRICT ACCORDANCE WITH THE DRAWINGS, AND THE PUBLISHED RECOMMENDATIONS OF THE MANUFACTURER OF THE ITEM, ANCHORING FIRMLY IN PLACE AT THE PRESCRIBED LOCATION, STRAIGHT, PLUMB, LEVEL, AND SECURELY ANCHORED.
   C. FIELD FINISHING:
      1) SAND ALL EXPOSED OPAQUE FINISH WOOD SURFACES TO AWS "CUSTOM " GRADE STANDARDS.
      2) SANDPAPER ALL WOOD SURFACES THOROUGHLY AS REQUIRED TO PRODUCE A UNIFORMLY SMOOTH SURFACE, ALWAYS SANDING IN THE DIRECTION OF THE GRAIN; NO COARSE GRAINED SANDPAPER MARKS, HAMMER MARKS, OR OTHER IMPERFECTIONS WILL BE ACCEPTED.
      3) SEE SECTION 099000 FOR FINISHING OF WOODWORK NOT FINISHED UNDER THIS SECTION.
   D. CLEAN-UP
      1) MAINTAIN THE PREMISES IN A NEAT, SAFE, AND ORDERLY CONDITION AT ALL TIMES DURING EXECUTION OF THIS PORTION OF THE WORK, FREE FROM ACCUMULATION OF SAWDUST, CUT-ENDS, AND DEBRIS.
      2) AT THE END OF EACH WORKING DAY, OR MORE OFTEN IF NECESSARY, THOROUGHLY SWEEP AND/OR VACUUM ALL SURFACES WHERE REFUSE FROM THIS PORTION OF THE WORK HAS SETTLED.
      3) REPAIR OR REPLACE OR OTHERWISE RESTORE TO NEW CONDITION ALL ITEMS DAMAGED BY WORK OF THIS SECTION.

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

078400 - PENETRATION FIRESTOPPING

1. GENERAL
   A. SECTION INCLUDES: FIRESTOPPING SYSTEMS FOR SEALING PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION.
   B. PERFORMANCE REQUIREMENTS
      1) EACH FIRESTOPPING SYSTEM SHALL BE SELECTED TO MAINTAIN FIRE RATING OF THE ASSEMBLY IN WHICH IT IS USED.
      2) WHERE PENETRATION FIRESTOPPING IS USED TO SEAL PENETRATIONS THROUGH FLOORS WITH WATERPROOF MEMBRANES, SYSTEM SHALL BE SELECTED FOR COMPATIBILITY WITH MEMBRANE MATERIAL.
      3) PROVIDE PRODUCTS THAT UPON CURING, DO NOT RE-EMULSIFY, DISSOLVE, LEACH, BREAKDOWN OR OTHERWISE DETERIORATE OVER TIME FROM EXPOSURE TO ATMOSPHERIC MOISTURE, SWEATING PIPES, PONDING WATER OR OTHER FORMS OF MOISTURE CHARACTERISTIC DURING AND AFTER CONSTRUCTION.
      4) PROVIDE FIRESTOP SEALANTS SUFFICIENTLY FLEXIBLE TO ACCOMMODATE MOTION SUCH AS PIPE VIBRATION, WATER HAMMER, THERMAL EXPANSION AND OTHER NORMAL BUILDING MOVEMENT WITHOUT DAMAGE TO THE SEAL.
      5) PIPE INSULATION SHALL NOT BE REMOVED, CUT AWAY OR OTHERWISE INTERRUPTED THROUGH WALL OR FLOOR OPENINGS. PROVIDE PRODUCTS APPROPRIATELY TESTED FOR THE THICKNESS AND TYPE OF INSULATION UTILIZED.
      6) OPENINGS WITHIN WALLS AND FLOORS DESIGNED TO ACCOMMODATE VOICE, DATA AND VIDEO CABLING SHALL BE PROVIDED WITH RE-ENTERABLE PRODUCTS SPECIFICALLY DESIGNED FOR RETROFIT.
      7) PENETRATIONS THROUGH FIRE-RESISTANCE RATED FLOOR-CEILING ASSEMBLIES CONTAINED WITHIN CHASE WALL ASSEMBLIES SHALL BE PROTECTED WITH PRODUCTS TESTED BY BEING FULLY EXPOSED TO THE FIRE OUTSIDE OF THE CHASE WALL.
   C. QUALITY ASSURANCE
      1) CODE VERIFICATION: PRIOR TO INSTALLATION OF FIRE STOPPING SYSTEMS OBTAIN APPROVAL FROM THE JURISDICTIONAL CODE AUTHORITIES FOR THE FIRE STOPPING SYSTEMS AND APPLICATIONS PROPOSED.
      2) FIRESTOPPING: TESTED IN ACCORDANCE WITH ASTM E119, OR UL 1479 TO MEET THE HOURLY FIRE RATINGS OF THE CONSTRUCTION BEING SEALED. PROVIDE F RATED ASSEMBLIES, EXCEPT WHERE T RATED ASSEMBLIES ARE REQUIRED BY THE CODE AUTHORITY.
      3) FIRESTOPPING SYSTEMS SHALL BE UL LISTED ASSEMBLIES.
2. PRODUCTS
   A. SYSTEMS MEETING THE REQUIREMENTS SPECIFIED AND SUITABLE FOR THE CONDITIONS INDICATED AS MANUFACTURED BY ONE OR MORE OF THE FOLLOWING.
      1) METACAULK
      2) TREMCO INC.
      3) HILTI USA.
      4) GRACE CONSTRUCTION PRODUCTS.
      5) SPECIFIED TECHNOLOGIES, INC.
      6) 3M.
   B. ELECTRICAL BOX INSERTS:
      1) MANUFACTURER: RECTORSEAL (HOUSTON TX; 713-263-8001; 800-231-3345).
      2) FIRE RATED PADS: "BIOFIRESHIELD LECTRA-STOP"; 1/4 INCH THICK INTUMESCENT PADS; SIZED TO FIT ELECTRICAL BOXES; CLASSIFIED BY UL; MINIMUM 2 HOUR RATING.
3. EXECUTION
   A. PROVIDE FIRESTOPPING AT MECHANICAL, ELECTRICAL, AND PLUMBING PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS, AND CEILINGS.
   B. INSTALL FIRESTOPPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS NECESSARY TO MEET THE SPECIFIED FIRE RATING REQUIREMENTS.
   C. WHERE FIRESTOPPING IS USED TO SEAL AROUND PENETRATIONS THROUGH WATERPROOF MEMBRANES, INSTALL TO MAINTAIN INTEGRITY OF WATERPROOF BARRIER.
   D. FOR SEALING ELECTRICAL BOXES, COORDINATE INSTALLATION WITH DIVISION 26. COMPLY WITH MANUFACTURER'S RECOMMENDATIONS FOR PREPARATION AND INSTALLATION. INSTALL IN LOCATIONS AS REQUIRED BY CODE FOR PROTECTION OF OPENINGS THROUGH FIRE RATED PARTITIONS.
   E. PATCHING OF HOLES IN EXISTING CONSTRUCTION:
      1) FILL OPEN HOLES WHICH REMAIN AFTER REMOVAL OF EXISTING MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS, PATCH AND REPAIR HOLES AS NECESSARY TO MATCH THE ADJACENT CONSTRUCTION AND TO MAINTAIN THE FIRE RATING OF THE ASSEMBLIES. FIRESTOPPING SYSTEMS MAY BE USED TO FILL HOLES WHICH WILL BE CONCEALED IN THE FINISH CONSTRUCTION.
      2) WHERE FIRESTOPPING SYSTEMS ARE USED TO FILL FLOOR OPENINGS IN OCCUPIED AREAS, PROVIDE MINIMUM 16 GAGE SHEET METAL COVERS AS NECESSARY TO SUPPORT FLOOR LOADS AND TO PREVENT DAMAGE TO THE FIRE STOPPING ASSEMBLIES. SECURE SHEET METAL AS NECESSARY TO PREVENT IRREGULARITIES FROM TELEGRAPHING THROUGH THE FLOOR FINISHES OVER THE SHEET METAL.

079200 - JOINT SEALANTS

1. GENERAL
   A. SECTION INCLUDES:
      1) CLEANING AND PREPARATION OF JOINT SURFACES.
      2) SEALANT AND BACKING MATERIALS.
   B. SUBMITTALS:
      1) PRODUCT DATA: FOR EACH TYPE OF SEALANT TO BE PROVIDED
      2) SAMPLES:
         A) SUBMIT CURED SAMPLES OF EACH SEALANT TYPE AND COLOR PROPOSED FOR THE WORK.
         B) FOR EACH SEALANT TYPE INDICATED FOR "COLOR AS SELECTED," OR FOR WHICH NO COLOR IS INDICATED, SUBMIT COLOR CARD INDICATING AVAILABLE STOCK COLORS FROM MANUFACTURER'S COMPLETE LINE OF PRE-FORMULATED COLORS FOR EACH TYPE OF SEALANT.
      3) SCHEDULE OF SEALANT COLORS AND RESPECTIVE LOCATIONS.
   C. QUALITY ASSURANCE:
      1) VERIFY THAT SEALANTS ARE COMPATIBLE WITH THE SUBSTRATES AND ACCESSORY MATERIALS PROVIDED UNDER OTHER SECTIONS. NOTIFY ARCHITECT OF EVIDENCE OF INCOMPATIBILITY.
   D. GUARANTEE: FURNISH EXTERIOR SEALANT MANUFACTURER'S STANDARD GUARANTEE.
2. PRODUCTS
   A. SEALANTS:
      1) TYPE S - NEUTRAL CURE SILICONE SEALANTS:
         A) DOW CORNING, 790 SILICONE BUILDING SEALANT, OR "795 SILICONE STRUCTURAL GLAZING AND WEATHERPROOFING SEALANT.
         B) PECORA "890 ARCHITECTURAL SILICONE SEALANT."
         C) GENERAL ELECTRIC CO. "ULTRAPRUF II SCS-2900."
         D) GENERAL ELECTRIC CO. "SILPRUF."
      2) TYPE PT: ASTM C920, TYPE M, GRADE P, CLASS 25; TREMCO "THC 900", BASF "MASTERSEAL SL 2", PECORA "UREXPAN NR-200", OR APPROVED; STANDARD COLORS AS SELECTED.
      3) TYPE PTNS:
         A) SEALANTS SHALL MEET THE REQUIREMENTS OF SCAQMD RULE 1168 (MAXIMUM VOC CONTENT OF 250 GRAMS/LITER).
         B) BOSTIK CHEM-CALK 2000.
      4) TYPE A:
         A) SEALANTS SHALL MEET THE REQUIREMENTS OF SCAQMD RULE 1168. (MAXIMUM VOC CONTENT OF 250 GRAMS/LITER).
         B) "AC20+SILICONE" BY PECORA (800-523-6688). SELECT STANDARD COLOR TO MATCH ADJACENT FINISHES AS CLOSE AS POSSIBLE.
      5) TYPE SM: MILDEW RESISTANT SILICONE SEALANT:
         A) SEALANTS SHALL MEET THE REQUIREMENTS OF SCAQMD RULE 1168. (MAXIMUM VOC CONTENT OF 250 GRAMS/LITER)
         B) "898 SILICONE" BY PECORA (800-523-6688), OR APPROVED. SELECT STANDARD COLOR TO MATCH ADJACENT FINISHES AS CLOSE AS POSSIBLE; CLEAR COLOR, EXCEPT USE WHITE AT WHITE FIXTURES.
   B. ACCESSORY MATERIALS:
      1) PRIMER: NON-STAINING TYPE, RECOMMENDED BY SEALANT MANUFACTURER TO SUIT APPLICATION.
      2) JOINT CLEANER: NON-CORROSIVE AND NON-STAINING TYPE, RECOMMENDED BY SEALANT MANUFACTURER; COMPATIBLE WITH JOINT FORMING MATERIALS.
      3) BACKER ROD: CLOSED OR OPEN CELL FOAM AS RECOMMENDED BY THE SEALANT MANUFACTURER FOR THE APPLICATION; ROUND PROFILE; THICKNESS APPROXIMATELY 130 PERCENT OF JOINT WIDTH.
      4) BOND BREAKER: PRESSURE SENSITIVE TAPE RECOMMENDED BY SEALANT MANUFACTURER TO SUIT APPLICATION.
3. EXECUTION
   A. PREPARATION:
      1) CLEAN AND PREPARE JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE ANY LOOSE MATERIALS AND OTHER FOREIGN MATTER WHICH MIGHT IMPAIR ADHESION OF SEALANT.
      2) APPLY MASKING TIGHTLY AROUND JOINTS TO PROTECT ADJACENT SURFACES FROM EXCESS SEALANT.
      3) PRIME AS REQUIRED FOR PROPER BOND TO SUBSTRATE MATERIALS.
      4) BACKING MATERIALS:
         A) PLACE BACKER ROD TO ACHIEVE PROPER SEALANT WIDTH/DEPTH RATIOS AND TO PREVENT SEALANT SAG.
         B) USE BOND BREAKER WHERE THERE IS INSUFFICIENT DEPTH TO USE JOINT FILLER.
         C) DO NOT USE BACKER ROD AND BOND BREAKER AT JOINTS TO RECEIVE TYPE PTNS SEALANT.
   B. INSTALLATION:
      1) PERFORM WORK IN ACCORDANCE WITH ASTM C1193, UNLESS SPECIFIED OTHERWISE OR RECOMMENDED OTHERWISE BY THE SEALANT MANUFACTURER.
      2) JOINT DEPTH:
         A) SEALANT BEADS SHALL HAVE A SECTIONAL WIDTH TO DEPTH RATIO OF 2 TO 1, UNLESS SPECIFIED OTHERWISE OR RECOMMENDED OTHERWISE BY THE SEALANT MANUFACTURER.
         B) INSTALL TYPE PTNS SEALANT FULL DEPTH IN TILE EXPANSION JOINTS WITH NO BACKER ROD.
      3) APPLY SEALANT WITHIN RECOMMENDED TEMPERATURE RANGES. CONSULT MANUFACTURER WHEN SEALANT CANNOT BE APPLIED WITHIN RECOMMENDED TEMPERATURE RANGES.
      4) TOOLING:
         A) TOOL JOINTS CONCAVE, UNLESS INDICATED OR SPECIFIED OTHERWISE. FINISH FREE OF AIR POCKETS, FOREIGN EMBEDDED MATTER, RIDGES, AND SAGS.
         B) TOOL TYPE PTNS SEALANT TO MATCH GROUT JOINT.
   C. CLEAN-UP:
      1) CLEAN ADJACENT SURFACES FREE OF EXCESS SEALANT AS THE WORK PROGRESSES. USE CLEANING AGENTS RECOMMENDED BY THE SEALANT MANUFACTURER.
      2) UPON COMPLETION, REMOVE AND DISPOSE OF MASKING.
   D. SCHEDULE:
      1) TYPE S: PROVIDE AT ALL EXTERIOR JOINTS, UNLESS SPECIFIED OTHERWISE; STANDARD COLORS AS SELECTED FROM MANUFACTURER'S COMPLETE LINE OF PRE-FORMULATED COLORS.
      2) TYPE PT: PROVIDE AT ALL EXTERIOR AND INTERIOR HORIZONTAL JOINTS SUBJECT TO TRAFFIC AND ABRASION, UNLESS SPECIFIED OTHERWISE; STANDARD COLORS AS SELECTED FROM MANUFACTURER'S COMPLETE LINE OF PRE-FORMULATED COLORS.
      3) TYPE PTNS: PROVIDE AT ALL EXPANSION JOINTS IN TILE; STANDARD COLORS AS SELECTED FROM MANUFACTURER'S COMPLETE LINE OF PRE-FORMULATED COLORS.
      4) TYPE A: PROVIDE AT ALL INTERIOR JOINTS, UNLESS SPECIFIED OTHERWISE.
      5) TYPE SM: PROVIDE AT JOINTS AROUND COUNTERTOPS RESTROOM AREAS.

DIVISION 08 - OPENINGS

081113 - HOLLOW METAL DOORS AND FRAMES

1. GENERAL
   A. SECTION INCLUDES:
      1) ROLLED STEEL DOORS AND FRAMES.
      2) ACCESSORIES.
   B. REFERENCES:
      1) STEEL DOOR INSTITUTE (SDI): SDI-105 - RECOMMENDED ERECTION INSTRUCTIONS FOR STEEL FRAMES.
      2) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI): A250.8 - SDI-100 RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES.
      3) AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
         A) A366 - SPECIFICATION FOR STEEL, CARBON, COLD ROLLED SHEET, COMMERCIAL QUALITY.
         B) A569 - SPECIFICATION FOR STEEL, CARBON (0.15 MAXIMUM PERCENT), HOT ROLLED SHEET AND STRIP, COMMERCIAL QUALITY.
         C) A653 - SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY HOT-DIP PROCESS.
   C. SUBMITTALS:
      1) PRODUCT LITERATURE: SUBMIT MANUFACTURER'S PUBLISHED LITERATURE FOR DOORS AND FRAMES.
      2) SHOP DRAWINGS:
         A) FRAMES: INDICATE CONFIGURATION, ANCHOR TYPES AND SPACING'S, LOCATION OF CUTOUTS FOR HARDWARE, REINFORCEMENT, AND FINISH.
         B) DOORS: INDICATE ELEVATIONS, INTERNAL REINFORCEMENT, CLOSURE METHOD, AND CUTOUTS FOR HARDWARE.
   D. QUALITY ASSURANCE:
      1) CONFORM TO REQUIREMENTS OF ANSI A250.8.
2. PRODUCTS
   A. ACCEPTABLE MANUFACTURERS:
      1) MEMBERS OF THE STEEL DOOR INSTITUTE AND OF THE NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURER'S, SUBJECT TO COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
   B. MATERIALS:
      1) STEEL SHEET: COLD ROLLED ASTM A366, OR H