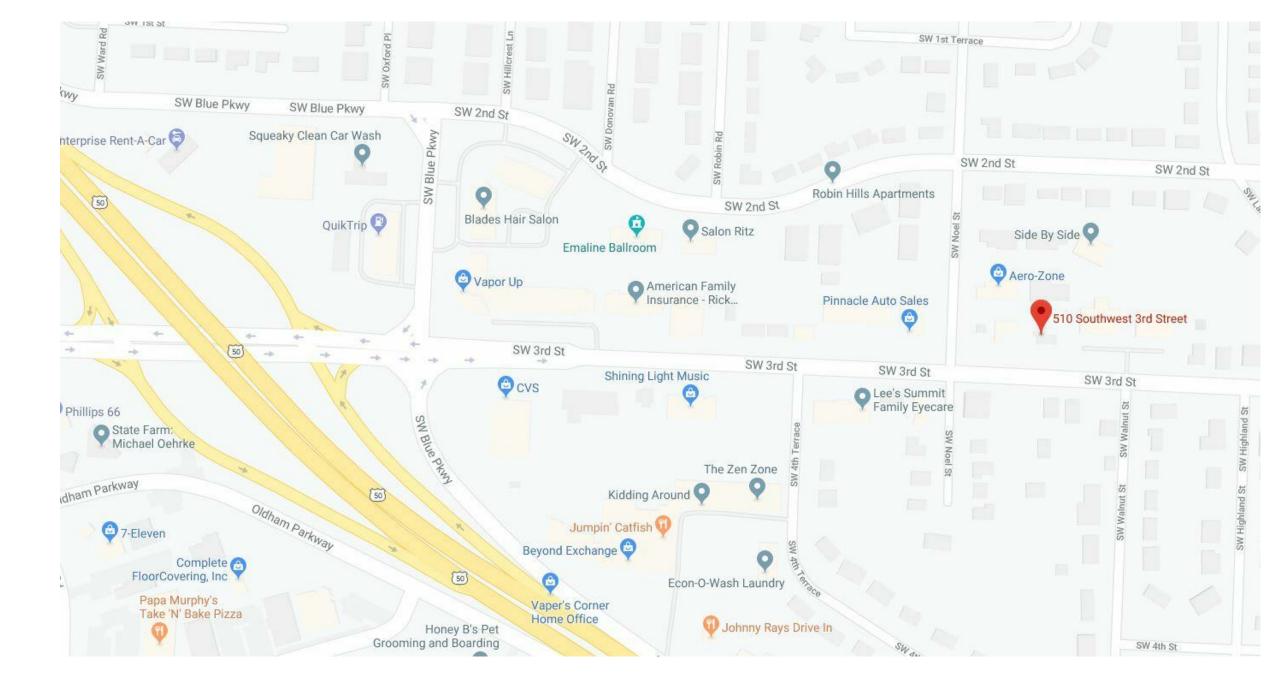
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COLLINS WEBB #: 19026



VICINITY MAP



GENEF	RAL
SHEET NUMBER	SHEET NAME
CS	COVER SHEET
G001	GENERAL INFORMATION
G102	LIFE SAFETY PLANS
G103	ACCESSIBILITY GUIDELINES
G104	WALL TYPES & SPECIFICATIONS

ARCHI	TECTURAL
SHEET NO.	SHEET NAME
A101	FLOOR PLAN & DOOR DETAILS
A601	REFLECTED CEILING PLANS
A701	INTERIOR ELEVATIONS
A903	FINISH FLOOR PLAN & DETAILS

MEP	
SHEET NUMBER	SHEET NAME
MEP0	MECHANICAL/ELECTRICAL/PLUMBING - COVER SHEET
MEP1	MECHANICAL/ELECTRICAL/PLUMBING - SPECIFICATIONS
MEP2	MECHANICAL/ELECTRICAL/PLUMBING - SPECIFICATIONS
M101	MECHANICAL - PLANS, SCHEDULES & DETAILS
P101	PLUMBING - PLANS, SCHEDULES & DETAILS
E101	ELECTRICAL - PLANS, SCHEDULES & DETAILS
E201	ELECTRICAL - POWER PLANS, SCHEDULES & DETAILS

OWNER

MARK WESTHUES MC PROPERTIES OF MISSOURI, LLC 620 NE LAKE POINTE DR. LEE'S SUMMIT, MISSOURI 64064

ARCHITECT

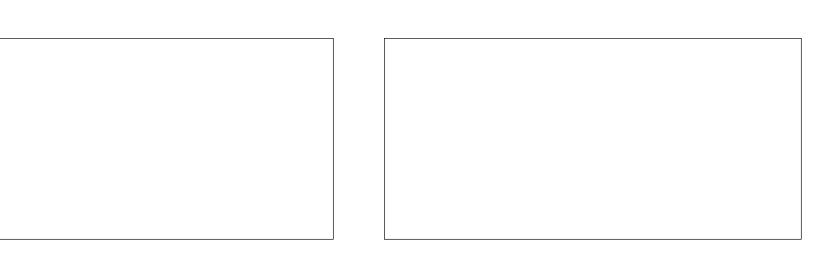
COLLINS WEBB ARCHITECTURE 13A SW 3R STEET LEE'S SUMMIT, MISSOURI 64063 P: 816.249-2270 www.collinsandwebb.com

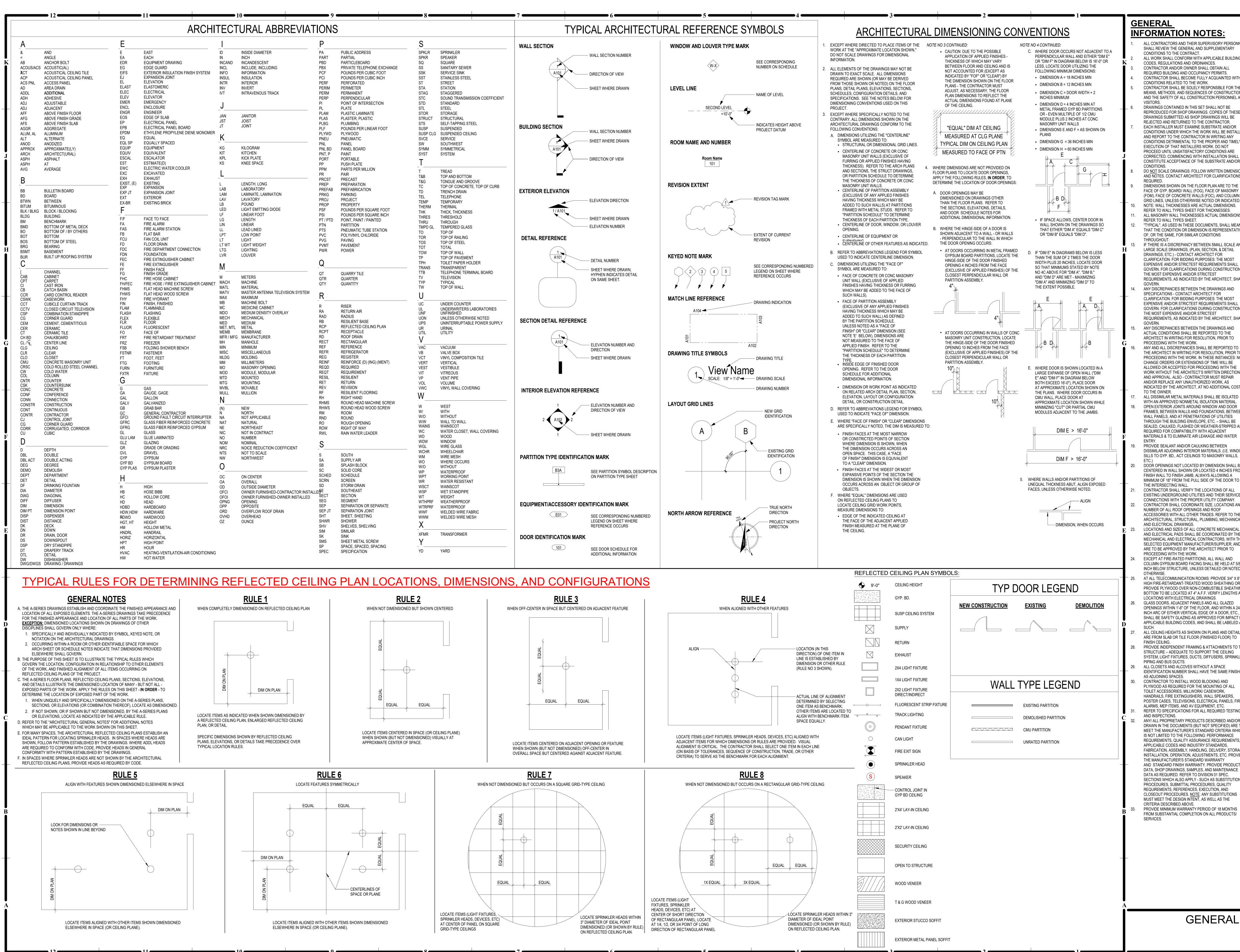
STRUCTURAL ENGINEER

STAND STRUCTURAL ENGINEERING INC. 8234 ROBINSON ST., OVERLAND PARK, KS 66204 P: 913.214-2169 www.stand-sei.com

MEP ENGINEER

PKMR ENGINEERS, LLC 13300 W. 98TH STREET, LENEXA, KS 66215 P: 913.492-2400 www.pkmreng.com





INFORMATION NOTES:

ALL CONTRACTORS AND THEIR SUPERVISORY PERSONN SHALL REVIEW THE GENERAL AND SUPPLEMENTARY CONDITIONS TO THE CONTRACT. ALL WORK SHALL CONFORM WITH APPLICABLE BUILDING CODES, REGULATIONS AND ORDINANCES. CONTRACTOR AND/OR OWNER SHALL OBTAIN ALL REQUIRED BUILDING AND OCCUPANCY PERMITS. CONTRACTOR SHALL BECOME FULLY ACQUAINTED WITH CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE

CONDITIONS RELATED TO THE WORK. MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND THE SAFETY OF ALL CONSTRUCTION PERSONNEL ANI DRAWINGS CONTAINED IN THIS SET SHALL NOT BE

REPRODUCED FOR SHOP DRAWINGS. COPIES OF THESE DRAWINGS SUBMITTED AS SHOP DRAWINGS WILL BE REJECTED AND RETURNED TO THE CONTRACTOR. EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR CONDITIONS UNDER WHICH THE WORK WILL BE INSTALL AND REPORT TO THE CONTRACTOR IN WRITING ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY EXECUTION OF THAT INSTALLERS WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE

CORRECTED. COMMENCING WITH INSTALLATION SHALI CONSTITUTE ACCEPTANCE OF THE SUBSTRATE AND/OR DO NOT SCALE DRAWINGS: FOLLOW WRITTEN DIMENSIONS AND NOTES. CONTACT ARCHITECT FOR CLARIFICATIONS, IF DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYP. BOARD/ WALL (FOG), FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES, UNLESS OTHERWISE NOTED OR INDICATED.

NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS. REFER TO WALL TYPES SHEET FOR THICKNESSES. ALL MASONRY WALL THICKNESSES ACTUAL DIMENSIONS REFER TO WALL TYPES SHEET. "TYPICAL", AS USED IN THESE DOCUMENTS, SHALL MEAN THAT THE CONDITION OR DIMENSION IS REPRESENTATIVE OF, OR THE SAME, FOR SIMILAR CONDITIONS IF THERE IS A DISCREPANCY BETWEEN SMALL SCALE AN

LARGE SCALE DRAWINGS, (PLAN, SECTION, & DETAIL DRAWINGS, ETC.) - CONTACT ARCHITECT FOR CLARIFICATION, FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHA ANY DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS - CONTACT ARCHITECT FOR CLARIFICATION. FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL

> REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SH ANY DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO PROCEEDING WITH THE WORK. ANY AND ALL DISCREPANCIES SHALL BE REPORTED T THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR T PROCEEDING WITH THE WORK. IN THESE INSTANCES: NO CHANGE ORDERS OR EXTENSIONS OF TIME WILL BE ALLOWED OR ACCEPTED FOR PROCEEDING WITH THE WORK WITHOUT THE ARCHITECT'S WRITTEN DIRECTION AND APPROVAL. ALSO - CONTRACTOR MUST REPAIR AND/OR REPLACE ANY UNAUTHORIZED WORK. AS INDICATED BY THE ARCHITECT, AT NO ADDITIONAL COST ALL DISSIMILAR METAL MATERIALS SHALL BE ISOLATED

WITH AN APPROVED NONMETAL ISOLATION MATERIAL OPEN EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEE WALL PANELS, AND AT PENETRATIONS OF UTILITIES THROUGH THE BUILDING ENVELOPE, ETC. - SHALL BE SEALED, CAULKED, FLASHED OR WEATHER-STRIPPED AS REQUIRED FOR COMPATIBILITY WITH ADJACENT MATERIALS & TO ELIMINATE AIR LEAKAGE AND WATER PROVIDE SEALANT AND/OR CAULKING BETWEEN DISSIMILAR ADJOINING INTERIOR MATERIALS. (I.E. WINDO SILLS TO GYP. BD., ACT CEILINGS TO MASONRY WALLS,

MINIMUM OF 18" FROM THE PULL SIDE OF THE DOOR T CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND THEIR SERVICE CONNECTIONS WITH THE PROPER UTILITY COMPANY. CONTRACTOR SHALL COORDINATE SIZE, LOCATIONS AND NUMBER OF ALL ROOF OPENINGS AND ROOF ACCESSORIES WITH ALL OTHER TRADES. REFER TO THE ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICA LOCATIONS AND SIZES OF ALL CONCRETE MECHANICAL AND ELECTRICAL PADS SHALL BE COORDINATED BY TH MECHANICAL AND ELECTRICAL CONTRACTORS, WITH TH SELECTED EQUIPMENT MANUFACTURER/SUPPLIER; AND

ARE TO BE APPROVED BY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8 INCH BELOW STRUCTURE, UNLESS DETAILED OR NOTED AT ALL TELECOMMUNICATION ROOMS: PROVIDE 3/4" X HIGH FIRE-RETARDANT-TREATED WOOD SHEATHING OF PROVIDE PLYWOOD OVER NON-COMBUSTIBLE SHEATHIN BOTTOM TO BE LOCATED AT 4" A.F.F. VERIFY LENGTHS AN LOCATIONS WITH ELECTRICAL DRAWINGS. GLASS DOORS, ADJACENT PANELS AND ALL GLAZED OPENINGS WITHIN 1'-6" OF THE FLOOR, AND WITHIN A 24 INCH ARC OF EITHER VERTICAL EDGE OF A DOOR, ETC.

APPLICABLE BUILDING CODES, AND SHALL BE LABELED A ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAIL ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO PROVIDE INDEPENDENT FRAMING & ATTACHMENTS TO STRUCTURE – ADEQUATE TO SUPPORT THE CEILING SYSTEM, LIGHT FIXTURES, DUCTS, DIFFUSERS, SPRINKL

ALL CLOSETS AND ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FINISH CONTRACTOR TO INSTALL WOOD BLOCKING AND PLYWOOD AS REQUIRED FOR THE MOUNTING OF ALL TOILET ACCESSORIES, MILLWORK/ CASEWORK. HANDRAILS, FIRE EXTINGUISHERS, WALL SPEAKERS, POSTER CASES, TELEVISIONS, ELECTRICAL PANELS, FIF ALARMS, MEP ITEMS, AND AV EQUIPMENT, ETC. REFER TO SPECIFICATIONS FOR ALL REQUIRED TESTIN

ANY/ ALL PROPRIETARY PRODUCTS DESCRIBED AND/OR DRAWN IN THE DOCUMENTS (BUT NOT SPECIFIED) ARE 1 MEET THE MANUFACTURER'S STANDARD CRITERIA WHIC IS NOT LIMITED TO THE FOLLOWING: PERFORMANCE REQUIREMENTS, QUALITY ASSURANCE REQUIREMENTS APPLICABLE CODES AND INDUSTRY STANDARDS. FABRICATION, ASSEMBLY, HANDLING, DELIVERY, STORAG INSTALLATION, OPERATION, ADJUSTMENTS, ETC. PROVIDE THE MANUFACTURER'S STANDARD WARRANTY AND STANDARD FINISH WARRANTY. PROVIDE PRODUCT DATA, SHOP DRAWINGS, SAMPLES, AND MAINTENANCE DATA AS REQUIRED. REFER TO DIVISION 01 SPEC. SECTIONS WHICH ALSO APPLY - SUCH AS SUBSTITUTION PROCEDURES, SUBMITTAL PROCEDURES, QUALITY REQUIREMENTS, REFERENCES, EXECUTION, AND CLOSEOUT PROCEDURES. NOTE: ANY SUBSTITUTIONS MUST MEET THE DESIGN INTENT, AS WELL AS THE PROVIDE MINIMUM WARRANTY PERIOD OF 18 MONTH FROM SUBSTANTIAL COMPLETION ON ALL PRODUCTS/

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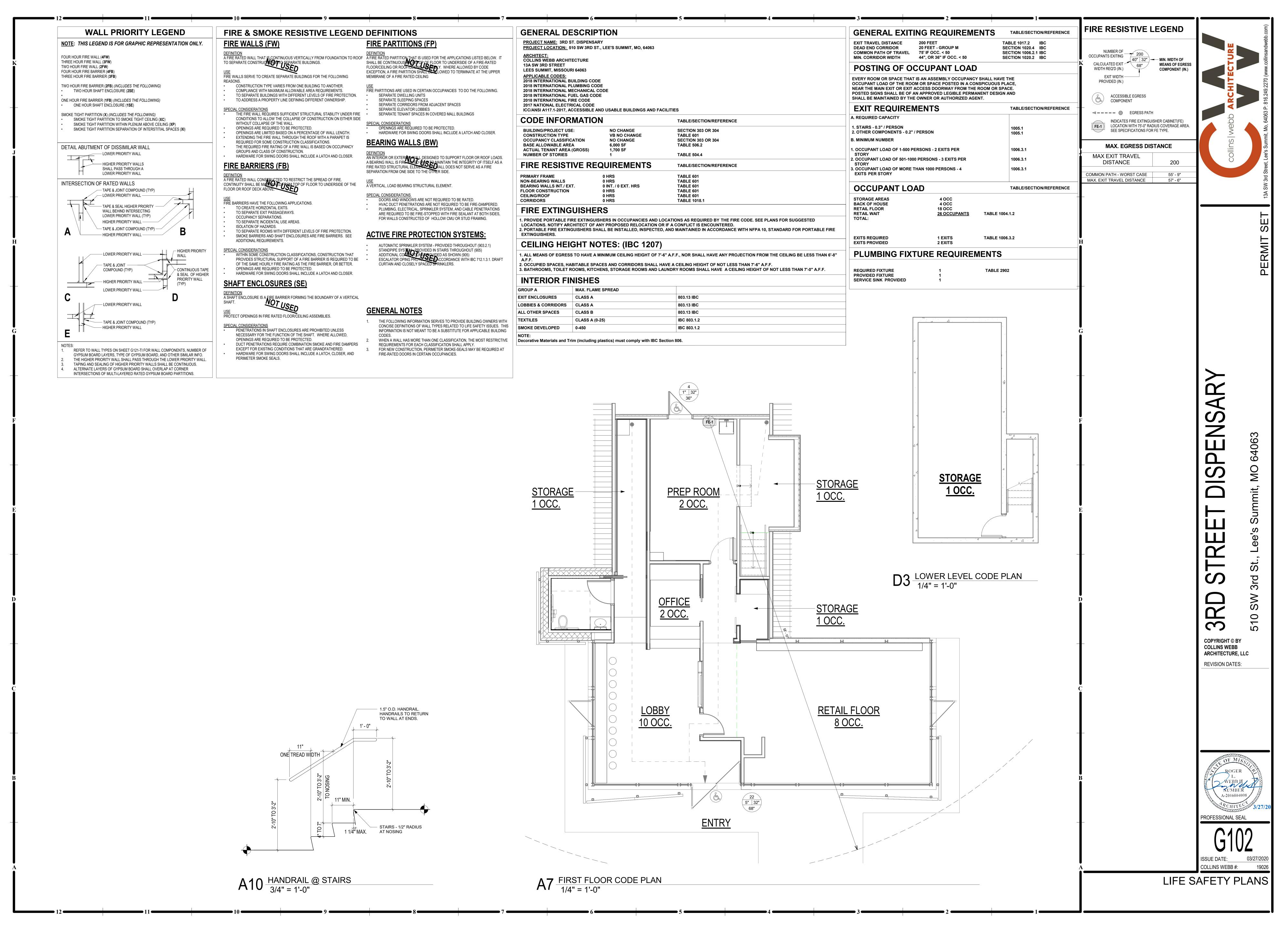
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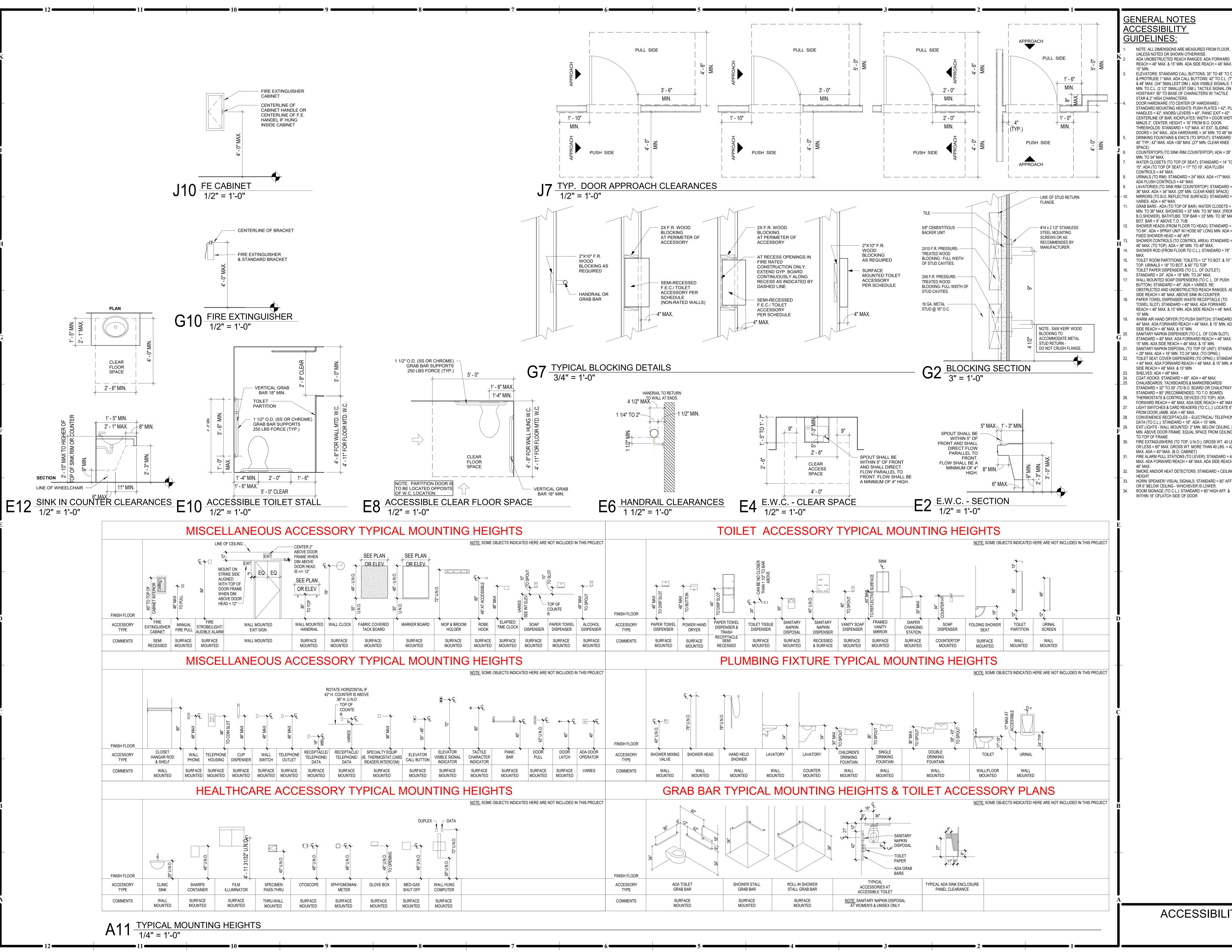
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GENERAL INFORMATION





NOTE: ALL DIMENSIONS ARE MEASURED FROM FLOOR. UNLESS NOTED OR SHOWN OTHERWISE. ADA UNOBSTRUCTED REACH RANGES: ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & ELEVATORS: STANDARD CALL BUTTONS: 35" TO 48" TO & PROTRUDE 1" MAX. ADA CALL BUTTONS: 42" TO C.L. (TY & 48" MAX. (3/4" SMALLEST DIM.). ADA VISIBLE SIGNALS: 72 MIN. TO C.L. (2 1/2" SMALLEST DIM.). TACTILE SIGNAL ON HOISTWAY: 60" TO BASE OF CHARACTERS W/ TACTILE STAR & 2" HIGH CHARACTERS. DOOR HARDWARE (TO CENTER OF HARDWARE):

STANDARD MOUNTING HEIGHTS: PUSH PLATES = 42", PULL HANDLES = 42", KNOBS/ LEVERS = 40", PANIC EXIT = 42" CENTERLINE OF BAR, KICKPLATES: WIDTH = DOOR WIDTH MINUS 2", CENTER, HEIGHT = 16" FROM B.O. DOOR. THRESHOLDS: STANDARD = 1/2" MAX. AT EXT. SLIDING DOORS = 3/4" MAX., ADA HARDWARE = 34" MIN. TO 48" MAX. DRINKING FOUNTAINS & EWC'S (TO SPOUT): STANDARD =

40" TYP., 42" MAX. ADA =36" MAX. (27" MIN. CLEAR KNEE COUNTERTOPS (TO SINK RIM/ COUNTERTOP): ADA = 28" WATER CLOSETS (TO TOP OF SEAT): STANDARD = 14" TO 15". ADA (TO TOP OF SEAT) = 17" TO 19". ADA FLUSH

ADA FLUSH CONTROLS = 44" MAX. LAVATORIES (TO SINK RIM/ COUNTERTOP): STANDARD = 36" MAX. ADA = 34" MAX. (29" MIN. CLEAR KNEE SPACE) MIRRORS (TO B.O. REFLECTIVE SURFACE): STANDARD = GRAB BARS - ADA (TO TOP OF BAR): WATER CLOSETS = 33 MIN. TO 36" MAX. SHOWERS = 33" MIN. TO 36" MAX. (FROM B.O.SHOWER). BATHTUBS: TOP BAR = 33" MIN. TO 36" MAX. SHOWER HEADS (FROM FLOOR TO HEAD): STANDARD = 7:

TO 84". ADA = SPRAY UNIT W/ HOSE 60" LONG MIN. ADA = FIXED SHOWER HEAD = 48" AFF. SHOWER CONTROLS (TO CONTROL AREA): STANDARD = 48" MAX. (TO TOP). ADA = 38" MIN. TO 48" MAX. SHOWER ROD (FROM FLOOR TO C.L.): STANDARD = 78"

TOILET ROOM PARTITIONS: TOILETS = 12" TO BOT. & 70" TOP. URINALS = 18" TO BOT. & 60" TO TOP TOILET PAPER DISPENSERS (TO C.L. OF OUTLET): STANDARD = 24". ADA = 19" MIN. TO 24" MAX. WALL MOUNTED SOAP DISPENSERS (TO C. L. OF PUSH BUTTON): STANDARD = 40". ADA = VARIES. RE:

OBSTRUCTED AND UNOBSTRUCTED REACH RANGES. ADA SIDE REACH = 46" MAX. ABOVE SINK IN COUNTER. PAPER TOWEL DISPENSER/ WASTE RECEPTACLE (TO TOWEL SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & WARM AIR HAND DRYER (TO PUSH SWITCH): STANDARD = 44" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA

SIDE REACH = 48" MAX. & 15" MIN. SANITARY NAPKIN DISPENSER (TO C.L. OF COIN SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. 8 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN. SANITARY NAPKIN DISPOSAL (TO TOP OF UNIT): STANDARD = 28" MAX. ADA = 19" MIN. TO 24" MAX. (TO OPNG.) TOILET SEAT COVER DISPENSERS (TO OPNG.): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN.

CHALKBOARDS, TACKBOARDS, & MARKERBOARDS: STANDARD = 32" TO 39" (TO B.O. BOARD OR CHALKTRAY). STANDARD = 80" (RECOMMENDED, TO T.O. BOARD) FORWARD REACH = 48" MAX. ADA SIDÉ REACH = 48" MAX.

FIRE ALARM PULL STATIONS (TO LEVER): STANDARD = 48

HORN/ SPEAKER/ VISUAL SIGNALS: STANDARD = 80" AF

3RD

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ACCESSIBILITY GUIDELINES

SPECIFICATIONS

GENERAL REQUIREMENTS APPLICABLE TO ALL MATERIALS FOR THE PROJECT:

1.NO SUBSTITUTIONS OF MATERIALS WITHOUT COMPLETION OF A SUBSTITUTION REQUEST FORM & APPROVAL OF SUBSTITUTION BY BOTH ARCHITECT & OWNER PROJECT MANAGER. FORM CAN BE REQUESTED FROM ARCHITECT. 2. A CONDENSED SET OF SPECIFICATIONS ARE PROVIDED FOR THE PROJECT. STRICT ADHEARANCE TO MANUFACTURER REQUIREMENTS AND INSTALLATION ARE REQUIRED TO BE FOLLOWED WITH SECTIONS PROVIDED WITHIN. IF REQUIRED THE ARCHITECT WILL ISSUE ADDITIONAL SECTIONS TO PROVIDE CLARITY TO

PRODUCTS OR INSTALLATION REQUIREMENTS.

1. PROVIDE SUFFICIENT FIRE RETARDANT TREATED WOOD BLOCKING AT ALL STUDS FOR SECURING OF WALL & CEILING ITEMS, WHETHER FURNISHED BY OWNER

OR CONTRACTOR. 2. CONCEALED WOOD IS TO BE FIRE RETARDANT TREATED UNLESS NOTED OTHERWISE. 3. PRESERVATIVE TREATED LUMBER IS REQUIRED FOR ALL ITEMS TO REMAIN IN CONTACT WITH CONCRETE OR MASONRY TO CONFORM TO AWPA STANDARD 5.

4. PLYWOOD SHALL BE CD GRADE APA FIR OR YELLOW PINE. ALL PLY-WOOD TO BE FIRE RATED. 5. BLOCKING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES & LEVELS, SECURELY CONNECTED & RIGIDLY FIXED IN PLACE, USING NAILS, SCREWS. &/OR BOLTS AS INDICATED OR REQUIRED BY GOOD PRACTICE AND MANUFACTURER'S RECOMMENDATIONS.

FINISH CARPENTRY

ROUGH CARPENTRY

1. WOOD TRIM SHALL BE POPLAR FOR PAINTED FINISH.

2. INSTALL TRIM WORK STRAIGHT & TRUE IN ALIGNMENT & RIGIDLY FASTEN IN PLACE. FIELD VERIFY ALL DIMENSIONS. COORDINATE WHERE BLOCKING OR BACKING 3. MAKE ALL JOINTS TO CONCEAL SHRINKAGE, MITER ALL EXTERIOR CORNERS, COPE ALL INTERIOR CORNERS & SCARF ALL END-TO-END JOINTS. INSTALL PIECES AS LONG AS POSSIBLE TO MINIMIZE JOINTS. JOINTING ONLY WHERE SOLID SUPPORT IS OBTAINED.

. PROVIDE INSULATION AS SHOWN IN WALL TYPES. 2. PROVIDE 6 INCH BATT INSULATION OVER THE TOP OF STRUCTURAL FRAMING, CONTINUOUS, AS REQUIRED TO MAINTAIN AN INSULATION BARRIER. MINERAL FIBER BATT INSULATION: FLEXIBLE OR SEMI-RIGID PREFORMED BATT OR BLANKET, COMPLYING WITH ASTM C665: FRICTION FIT: UNFACED FLAME SPREAD INDEX OF 0 (ZERO) WHEN TESTED IN ACCORDANCE WITH ASTM E84.

<u>SEALANTS</u>

1. ACCEPTABLE MANUFACTURERS ARE BOSTIK OR EQUAL & APPROVED. 2. ACRYLIC LATEX CAULK AT INTERIOR TRIM SHALL BE ASTM C834: PAINTABLE TYPE.

3. FLAME SPREAD INDEX: 25 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.

4. DEEP SET ALL FASTENERS, FILL, CLEAN & SAND AS REQUIRED FOR PAINT OR STAIN FINISH.

3. PROVIDE PRIMERS, JOINT BACKING & OTHER ACCESSORIES AS REQUIRED, & RECOMMENDED BY THE MANUFACTURER. 4. PREPARE SURFACE PER SEALANT MANUFACTURER'S RECOMMENDATIONS, APPLY WITH SUFFICIENT PRESSURE TO FILL ALL VOIDS & FINISH JOINTS TO BE SLIGHTLY CONVEX & WEATHER TIGHT.

5. CAULK OR SEAL ALL JOINTS BETWEEN DISSIMILAR MATERIALS. **SEALANT APPLICATIONS BY TYPE:**

1. INTERIOR JOINTS: USE NON-SAG POLYURETHANE SEALANT, UNLESS OTHERWISE INDICATED.

2. WALL AND CEILING JOINTS IN NON-WET AREAS: ACRYLIC EMULSION LATEX SEALANT. 3. WALL AND CEILING JOINTS IN WET AREAS: NON-SAG POLYURETHANE SEALANT FOR CONTINUOUS LIQUID IMMERSION.

4. IN SOUND-RATED ASSEMBLIES: USE ONE OF THE FOLLOWING SEALANTS. A. TREMCO® ACOUSTICAL/CURTAINWALL SEALANT B. PECORA AIS-919

ACCESS LADDERS

. PROVIDE IN COMPLIANCE WITH ANSI A14.3:WITH MOUNTING BRACKETS AND ATTACHMENTS:PRIME / PAINT FINISH. 2. SIDE RAILS:3/8" X 2" MEMBERS SPACED AT 20 INCHES

3. RUNGS: ONE INCH DIAMETER SOLID ROUND BAR SPACED 12 INCHES ON CENTER. 4. SPACE RUNGS 7 INCHES FROM WALL SURFACE.

5. PROVIDE SHOP DRAWINGS INDICATING SIZE, CONNECTION ATTACHMENTS, ANCHORAGE AND DETAILS.

WOOD DOORS

DOORS: REFER TO DRAWINGS FOR LOCATIONS AND ADDITIONAL REQUIREMENTS.

1. QUALITY STANDARD: CUSTOM GRADE, HEAVY DUTY PERFORMANCE, IN ACCORDANCE WITH AWI/AWMAC/WI (AWS), AWMAC/WI (NAAWS) OR WDMA I.S. 1A.

2. WOOD VENEER FACED DOORS: 5-PLY UNLESS OTHERWISE INDICATED. 3. HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACED DOORS: 5-PLY UNLESS OTHERWISE

INDICATED. WHERE PLASTIC LAMINATE (P'LAM) IS INDICATED ON DOOR SCHEDULE, USE EITHER HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACED DOORS IN COMPLIANCE WITH AWI/AWMAC/WI (AWS),

AWMAC/WI (NAAWS) OR WDMA I.S. 1A, OR LOW PRESSURE DECORATIVE LAMINATE (LPDL) FACED DOORS IN COMPLIANCE WITH WDMA I.S. 1A.

DOOR AND PANEL CORES

. NON-RATED SOLID CORE AND 20 MINUTE RATED DOORS: TYPE PARTICLEBOARD CORE (PC), PLIES AND FACES AS INDICATED.

2. FIRE-RATED DOORS: MINERAL CORE TYPE, WITH FIRE RESISTANT COMPOSITE CORE (FD), PLIES AND FACES AS INDICATED ABOVE; WITH CORE BLOCKING AS REQUIRED TO PROVIDE ADEQUATE ANCHORAGE OF HARDWARE

WITHOUT THROUGH-BOLTING. SOUND-RATED DOORS: EQUIVALENT TO TYPE, WITH PARTICLEBOARD CORE (PC) CONSTRUCTION AS REQUIRED TO ACHIEVE STC RATING SPECIFIED; PLIES AND FACES AS INDICATED ABOVE.

DOOR FACINGS

. VENEER FACING FOR TRANSPARENT FINISH: MAPLE, VENEER GRADE IN ACCORDANCE WITH QUALITY STANDARD INDICATED. PLAIN SLICED (FLAT CUT). WITH BOOK MATCH BETWEEN LEAVES OF VENEER. RUNNING

2. TRANSOMS: CONTINUOUS MATCH TO DOORS. 3. HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACING FOR FIRE DOORS: NEMA LD 3, SGF; ______;

MATCH OF SPLICED VENEER LEAVES ASSEMBLED ON DOOR OR PANEL FACE.

TEXTURED. LOW GLOSS FINISH. 4. HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACING FOR NON-FIRE-RATED DOORS: NEMA LD 3, HGS; COLOR(S) AS INDICATED; TEXTURED, LOW GLOSS FINISH.

1. FABRICATE DOORS IN ACCORDANCE WITH DOOR QUALITY STANDARD SPECIFIED. 2. CORES CONSTRUCTED WITH STILES AND RAILS:

3. FACTORY MACHINE DOORS FOR HARDWARE OTHER THAN SURFACE-MOUNTED HARDWARE, IN ACCORDANCE WITH HARDWARE REQUIREMENTS AND DIMENSIONS. 4. FACTORY FIT DOORS FOR FRAME OPENING DIMENSIONS IDENTIFIED ON SHOP DRAWINGS, WITH EDGE

CLEARANCES IN ACCORDANCE WITH SPECIFIED QUALITY STANDARD. 5. PROVIDE EDGE CLEARANCES IN ACCORDANCE WITH THE QUALITY STANDARD SPECIFIED.

INSTALLATION 1. INSTALL DOORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFIED QUALITY STANDARD.

2. INSTALL FIRE-RATED DOORS IN ACCORDANCE WITH NFPA 80 REQUIREMENTS. 3. INSTALL SMOKE AND DRAFT CONTROL DOORS IN ACCORDANCE WITH NFPA 105 REQUIREMENTS

FACTORY-FINISHED DOORS: DO NOT FIELD CUT OR TRIM; IF FIT OR CLEARANCE IS NOT CORRECT, REPLACE DOOR. 5. USE MACHINE TOOLS TO CUT OR DRILL FOR HARDWARE.

6. COORDINATE INSTALLATION OF DOORS WITH INSTALLATION OF FRAMES AND HARDWARE.

FLOORING- COMMON WORK RESULTS

1. COMPLY WITH REQUIREMENTS AND RECOMMENDATIONS OF FLOOR COVERING MANUFACTURER. 2. FILL AND SMOOTH SURFACE CRACKS, GROOVES, DEPRESSIONS, CONTROL JOINTS AND OTHER NON-MOVING

JOINTS, AND OTHER IRREGULARITIES WITH PATCHING COMPOUND. 3. DO NOT FILL EXPANSION JOINTS, ISOLATION JOINTS, OR OTHER MOVING JOINTS.

CONCRETE SLAB PREPARATION 4. PERFORM FOLLOWING OPERATIONS IN THE ORDER INDICATED: A. EXISTING CONCRETE SLABS (ON-GRADE AND ELEVATED) WITH EXISTING FLOOR COVERINGS:

1. VISUAL OBSERVATION OF EXISTING FLOOR COVERING, FOR ADHESION, WATER DAMAGE, ALKALINE DEPOSITS, AND OTHER DEFECTS. 2. PROVIDE PRELIMINARY CLEANING PER MFR.

3. INTERNAL RELATIVE HUMIDITY TESTS; IN SAME LOCATIONS AS MOISTURE VAPOR EMISSION TESTS, UNLESS OTHERWISE INDICATED.

4. SPECIFIED REMEDIATION, IF REQUIRED. 5. PATCHING, SMOOTHING, AND LEVELING, AS REQUIRED BY MFR.

6. OTHER PREPARATION SPECIFIED BY MFR. 7. PROVIDE ADHESIVE BOND AND COMPATIBILITY TEST.

8. PROVIDE FLOOR PROTECTION.

FIELD CONDITIONS I. STORE MATERIALS IN AREA OF INSTALLATION FOR MINIMUM PERIOD OF 24 HOURS PRIOR TO INSTALLATION. 2. SUB-FLOOR FILLER: WHITE PREMIX LATEX; TYPE RECOMMENDED BY FLOORING MATERIAL MANUFACTURER. 3. EDGE STRIPS: EMBOSSED ALUMINUM, COLOR AS SELECTED BY ARCHITECT. 4. ADHESIVESCOMPATIBLE WITH MATERIALS BEING ADHERED

EXAMINATION 1. VERIFY THAT SUB-FLOOR SURFACES ARE SMOOTH AND FLAT WITHIN TOLERANCES SPECIFIED FOR THAT TYPE OF WORK AND ARE READY TO RECEIVE CARPET TILE. 2. CEMENTITIOUS SUB-FLOOR SURFACES: VERIFY THAT SUBSTRATES ARE DRY ENOUGH AND READY FOR FLOORING

INSTALLATION BY TESTING FOR MOISTURE AND PH. 3. TEST IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS 3. OBTAIN INSTRUCTIONS IF TEST RESULTS ARE NOT WITHIN LIMITS RECOMMENDED BY FLOORING MATERIAL

1. PREPARE FLOOR SUBSTRATES FOR INSTALLATION OF FLOORING IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS

INSTALLATION

1. STARTING INSTALLATION CONSTITUTES ACCEPTANCE OF SUB-FLOOR CONDITIONS. 2. INSTALL CARPET TILE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND CRI 104 (COMMERCIAL). 3. BLEND CARPET FROM DIFFERENT CARTONS TO ENSURE MINIMAL VARIATION IN COLOR MATCH. 4. CUT CARPET TILE CLEAN. FIT CARPET TIGHT TO INTERSECTION WITH VERTICAL SURFACES WITHOUT GAPS. 5. LAY CARPET TILE IN SQUARE PATTERN, WITH PILE DIRECTION PARALLEL TO NEXT UNIT, SET PARALLEL TO BUILDING

6. LOCATE CHANGE OF COLOR OR PATTERN BETWEEN ROOMS UNDER DOOR CENTERLINE. 7. FULLY ADHERE CARPET TILE TO SUBSTRATE.

8. TRIM CARPET TILE NEATLY AT WALLS AND AROUND INTERRUPTIONS. 9. COMPLETE INSTALLATION OF EDGE STRIPS, CONCEALING EXPOSED EDGES.

MANUFACTURER AND ADHESIVE MATERIALS MANUFACTURER.

FOLLOW ALL MANUFACTURER RECOMMENTTION FOR PREPARING EXISTING SUBFLOORING AND INSTALLATION PROTECTIONS. 1. PROTECT SURROUNDING WORK FROM DAMAGE.

2. VACUUM CLEAN SURFACES AND DAMP CLEAN. 3. SEAL SUBSTRATE SURFACE CRACKS WITH FILLER. LEVEL EXISTING SUBSTRATE SURFACES TO ACCEPTABLE FLATNESS TOLERANCES.

4. INSTALL BACKER BOARD IN ACCORDANCE WITH ANSI A108.11 AND BOARD MANUFACTURER'S INSTRUCTIONS. TAPE JOINTS AND CORNERS, COVER WITH SKIM COAT OF SETTING MATERIAL TO A FEATHER EDGE.

INSTALLATION - GENERAL 1. INSTALL TILE, THRESHOLDS, AND STAIR TREADS AND GROUT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF ANSI A108.1A THROUGH ANSI A108.13, MANUFACTURER'S INSTRUCTIONS, AND TCNA (HB)

2. LAY TILE TO PATTERN INDICATED. DO NOT INTERRUPT TILE PATTERN THROUGH OPENINGS.

3. CUT AND FIT TILE TO PENETRATIONS THROUGH TILE, LEAVING SEALANT JOINT SPACE. FORM CORNERS AND BASES NEATLY. ALIGN FLOOR JOINTS. 4. PLACE TILE JOINTS UNIFORM IN WIDTH, SUBJECT TO VARIANCE IN TOLERANCE ALLOWED IN TILE SIZE. MAKE GROUT

JOINTS WITHOUT VOIDS, CRACKS, EXCESS MORTAR OR EXCESS GROUT, OR TOO LITTLE GROUT. 5. FORM INTERNAL ANGLES SQUARE AND EXTERNAL ANGLES BULLNOSED.

6. INSTALL CERAMIC ACCESSORIES RIGIDLY IN PREPARED OPENINGS. 7. INSTALL NON-CERAMIC TRIM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

8. INSTALL THRESHOLDS WHERE INDICATED. 9. SOUND TILE AFTER SETTING. REPLACE HOLLOW SOUNDING UNITS.

10. KEEP CONTROL AND EXPANSION JOINTS FREE OF MORTAR, GROUT, AND ADHESIVE. 11. PRIOR TO GROUTING, ALLOW INSTALLATION TO COMPLETELY CURE; MINIMUM OF 48 HOURS.

12. GROUT TILE JOINTS UNLESS OTHERWISE INDICATED. USE STANDARD GROUT UNLESS OTHERWISE INDICATED. 13. AT CHANGES IN PLANE AND TILE-TO-TILE CONTROL JOINTS, USE TILE SEALANT INSTEAD OF GROUT, WITH EITHER

BOND BREAKER TAPE OR BACKER ROD AS APPROPRIATE TO PREVENT THREE-SIDED BONDING.

RESILIENT FLOORING -LVT

1. PREPARE FLOOR SUBSTRATES AS RECOMMENDED BY FLOORING AND ADHESIVE MANUFACTURERS.

2. REMOVE SUB-FLOOR RIDGES AND BUMPS. FILL MINOR LOW SPOTS, CRACKS, JOINTS, HOLES, AND OTHER DEFECTS WITH SUB-FLOOR FILLER TO ACHIEVE SMOOTH, FLAT, HARD SURFACE. 3. PROHIBIT TRAFFIC UNTIL FILLER IS FULLY CURED.

INSTALLATION - GENERAL 1. STARTING INSTALLATION CONSTITUTES ACCEPTANCE OF SUB-FLOOR CONDITIONS.

2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. SPREAD ONLY ENOUGH ADHESIVE TO PERMIT INSTALLATION OF MATERIALS BEFORE INITIAL SET. 4. FIT JOINTS AND BUTT SEAMS TIGHTLY.

5. SET FLOORING IN PLACE, PRESS WITH HEAVY ROLLER TO ATTAIN FULL ADHESION. 6. WHERE TYPE OF FLOOR FINISH, PATTERN, OR COLOR ARE DIFFERENT ON OPPOSITE SIDES OF DOOR, TERMINATE

FLOORING UNDER CENTERLINE OF DOOR. 7. INSTALL EDGE STRIPS AT UNPROTECTED OR EXPOSED EDGES. WHERE FLOORING TERMINATES, AND WHERE 8. SCRIBE FLOORING TO WALLS, COLUMNS, CABINETS, FLOOR OUTLETS, AND OTHER APPURTENANCES TO PRODUCE

FIELD CONDITIONS 1. STORE MATERIALS FOR NOT LESS THAN 48 HOURS PRIOR TO INSTALLATION IN AREA OF INSTALLATION AT A TEMPERATURE OF 70 DEGREES F TO ACHIEVE TEMPERATURE STABILITY. THEREAFTER, MAINTAIN CONDITIONS

TIGHT JOINTS.LUXURY VINYL TILE -LVT

1. SUBFLOOR FILLER: WHITE PREMIX LATEX; TYPE RECOMMENDED BY ADHESIVE MATERIAL MANUFACTURER. 2. PRIMERS, ADHESIVES, AND SEAM SEALER: WATERPROOF; TYPES RECOMMENDED BY FLOORING MANUFACTURER.

3. MOLDINGS, TRANSITION AND EDGE STRIPS: SAME MATERIAL AS FLOORING. **EXAMINATION**

1. VERIFY THAT SURFACES ARE FLAT TO TOLERANCES ACCEPTABLE TO FLOORING MANUFACTURER, FREE OF CRACKS THAT MIGHT TELEGRAPH THROUGH FLOORING, CLEAN, DRY, AND FREE OF CURING COMPOUNDS, SURFACE HARDENERS, AND OTHER CHEMICALS THAT MIGHT INTERFERE WITH BONDING OF FLOORING TO SUBSTRATE. 2. VERIFY THAT WALL SURFACES ARE SMOOTH AND FLAT WITHIN THE TOLERANCES SPECIFIED FOR THAT TYPE OF WORK, ARE DUST-FREE, AND ARE READY TO RECEIVE RESILIENT BASE.

3. CEMENTITIOUS SUB-FLOOR SURFACES: VERIFY THAT SUBSTRATES ARE DRY ENOUGH AND READY FOR RESILIENT FLOORING INSTALLATION BY TESTING FOR MOISTURE AND PH. 4. OBTAIN INSTRUCTIONS IF TEST RESULTS ARE NOT WITHIN LIMITS RECOMMENDED BY RESILIENT FLOORING MANUFACTURER AND ADHESIVE MATERIALS MANUFACTURER.

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING OF ALL NAIL HOLES, CRACKS ETC., PRIOR TO FINAL PAINTING. 2. WORK INCLUDES PREPARATION OF SURFACES FOR PAINTING, FINISHING & THE APPLICATION OF PAINT & FINISH PRODUCTS ON ALL SURFACES WHICH ARE NOT FACTORY FINISHED.

3. ALL SURFACES MUST BE DRY, FREE FROM GREASE, OIL, MILDEW & GROUT; SANDED SMOOTH & FREE FROM LOOSE DIRT, DUST OR GRIT. 4. GLOSS SURFACES TO BE DULLED BY LIGHT SANDING. 5.ALL COATS TO BE TINTED TOWARDS FINAL COLOR, MINIMUM 3 COATS. GYPSUM BOARD PRIMERS TO BE FACTORY FORMULATED LATEX BASED FOR INTERIOR APPLICATION, SW PREPRITE 200, B28W200 SERIES OR EQUAL.

6. WOOD PRIMERS TO BE FACTORY FORMULATED ALKYD OR ACRYLIC BASED FOR INTERIOR APPLICATION, SW PREPRITE WOOD, B49W200 OR EQUAL FOR ACRYLIC ENAMEL & SEMIGLOSS FINISHES. 7. FERROUS METAL PRIMERS TO BE FACTORY FORMULATED QUICK DRYING RUST INHIBITIVE ALKYD BASED, SW KERN KROMIK UNIVERSAL METAL PRIMER, B50NZ6/B50WZ1 OR EQUAL.

8. GYPSUM BOARD CEILINGS & SOFFITS FINISH COAT TO BE FACTORY FORMULATED FLAT ACRYLIC LATEX, SW PROMAR 200 INTERIOR, B30W200 SERIES 9. GYPSUM BOARD WALLS FINISH COAT TO BE FACTORY FORMULATED SATIN ACRYLIC LATEX, SW B20W200 SERIES OR EQUAL 10. WOOD & METAL SURFACES FINISH COAT TO BE FACTORY FORMULATED FULL SATIN ALKYD ENAMEL, SW PROMAR 200 INTERIOR B35W200 SERIES OR

12. PROVIDE LEFT OVER STOCK OF EACH FINISH COLOR.

GYPSUM WALL BOARD

1. PROVIDE & INSTALL METAL STUD WALL SYSTEMS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS & THE GYPSUM CONSTRUCTION HANDBOOK AS PUBLISHED BY UGC.

2. METAL STUDS, DIETRICH OR EQUAL, REFERENCE DRAWINGS FOR STUD TYPES. PER ASTM 525, G-90. 3. FURRING CHANNELS, REFERENCE DRAWINGS FOR CHANNEL TYPES USG OR EQUAL 4. FASTENERS SHALL BE USG BUGLE HEAD SCREWS.

5. JOINT TREATMENT SHALL BE: - PREFILLER-USG DURABOND 90 -6. TAPE-USG PERF-A-TAPE - FILLER-USG READY-MIXED JOINT COMPOUND

7. PAPER FACED METAL TRIM TO MEET ASTM C1047-8. CORNER BEADS-USG BEADEX INSIDE & OUTSIDE CORNERS 9. CASING BEADS-USG BEADEX L TRIMS

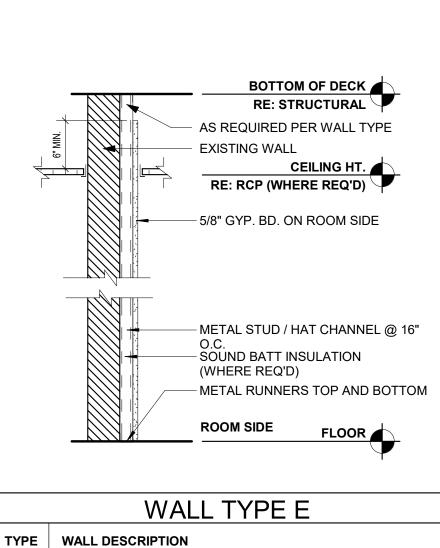
10. ALL EXTERIOR CORNERS SHALL RECEIVE CORNER BEADS, & EXPOSED EDGES (AT END OF NEW DRYWALL WORK)SHALL RECEIVE CASING BEADS TAPED IN WITH THE JOINT TREATMENT SYSTEM. 11. WALLS TO RECEIVE WALL COVERING SHALL BE BEDDED, TAPED & SANDED TO PROVIDE A SMOOTH, CONTINUOUS SURFACE & PRIMED AS

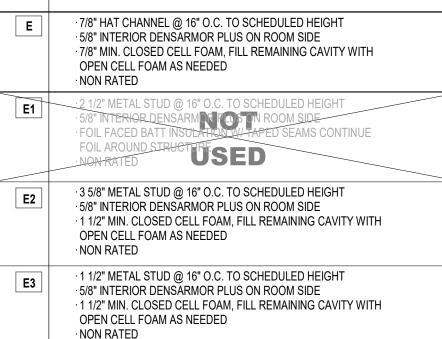
RECOMMENDED BY WALL COVERING MANUFACTURER. 12. REVIEW ALL WORK AFTER PRIME COAT OF PAINT & CORRECT ANY VISIBLE JOINT OR FASTENER TREATMENT OR ROUGHNESS IN THE WORK. 13. FIRE TAPE INNER LAYERS OF GYPSUM BOARD AT RATED WALLS. FINISH TAPE & SAND OUTSIDE LAYER OF GYPSUM BOARD THAT WILL RECEIVE PAINT VINYL OR WALL CARPET.

14. ALL GYPSUM BOARD IS 5/8" (TYPE "X") UNLESS NOTED OTHERWISE (UNO). 16. LISTED BELOW ARE TYP INNER LAYER GUIDELINES FOR JOINT FINISHING:

- FACTORY EDGE TO FACTORY EDGE CONDITIONS DO NOT REQUIRE TO BE TAPED & FILLED IN LAYERS BELOW FINISH LAYER. - ANY CUT EDGES OR CORNERS ON INNER LAYERS WILL REQUIRE TO BE TAPED & FILLED TYP.

- ANY GAPS OR BROKEN CORNERS, MUST BE TAPED TYP. 17. REFERENCE DRAWING GENERAL NOTE FOR GYP. FINISH LEVELS.





CONTINUOUS FIRE-RATED WALL

- RATED PARTITIONS:

HOUR PARTITION

TRACK AT HEAD)

PRIORITY 1 (HIGHEST)

PRIORITY 5 (LOWEST)

1/2" CONTROL JOINT SPACING.

METAL STUD TRACK OR BOX HEADER

RE: DOOR HEADER / JAMB SCHEDULE

INSTALL SUITABLE BACKING

AT RATED WALLS.

OR JAMB STUDS.

- SCREW ATTACH TRACK

TO BOTH JAMB STUDS.

SECURE JAMB STUDS

INTERIOR HOLLOW METAL DOOR OR WINDOW FRAME

TO STRUCT. ABOVE.

INFORMATION.

PRIORITY 2

PRIORITY 2

PRIORITY 3

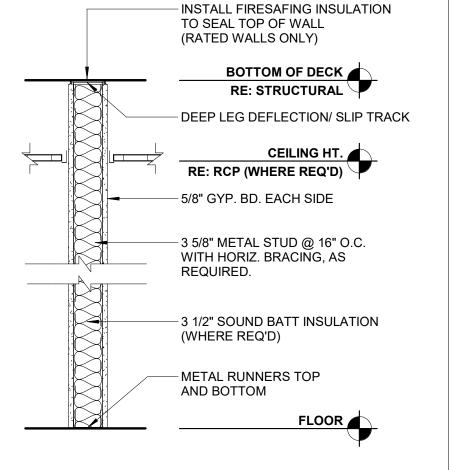
PRIORITY 4

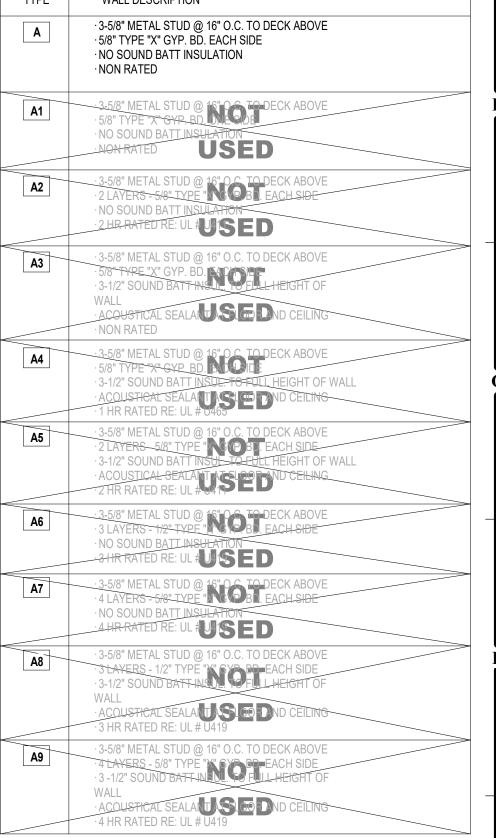
HOUR PARTITION AND

TWO LAYERS GYPSUM BOARD AT TWO-

- GYP. BD. (DO NOT SCREW TO DEFLECTION

ONE LAYER GYPSUM BOARD AT ONE-





FILL FLUTES ABOVE WALL SOLID WITH ACOUSTICAL FILL OR

BOTTOM OF DECK

RE: STRUCTURAL

- POWER ACTIVATED FASTENERS @ 24" O.C. MAX.

SECURE STUD RUNNER TO STRAP WITH

TWO 1/4" DRILLED ANCHORS AT 24" O.C.

- ACOUSTICAL SEALANT / FIRE-RATED SEALANT (WHERE

DO NOT SCREW STUDS OR GYP. BD. TO RUNNER. PROVIDE

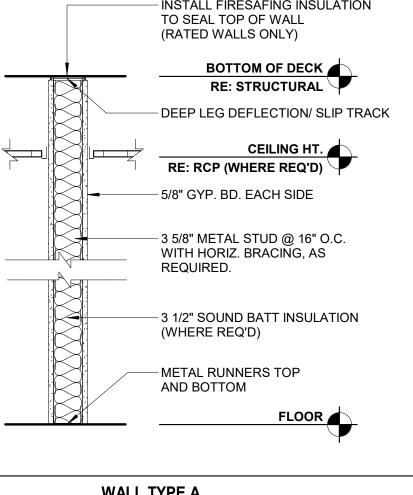
FIRE-STOPPING.(WHERE REQUIRED)

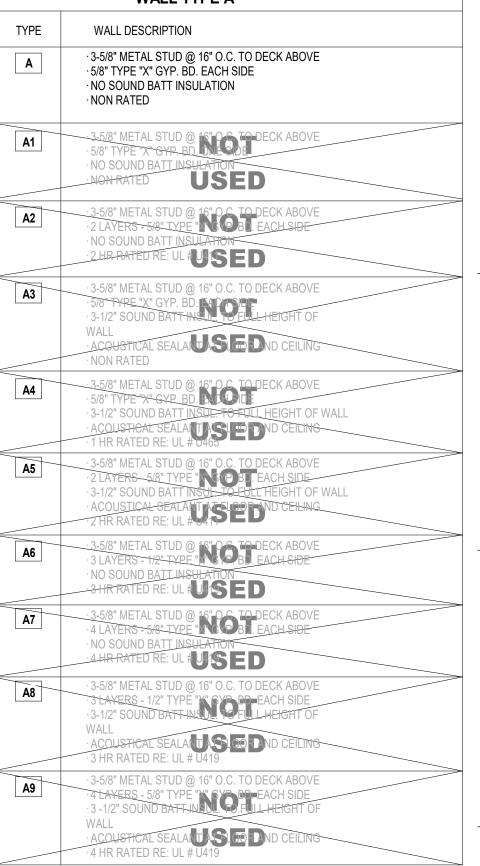
TOP OF STRUCTURAL METAL DECK

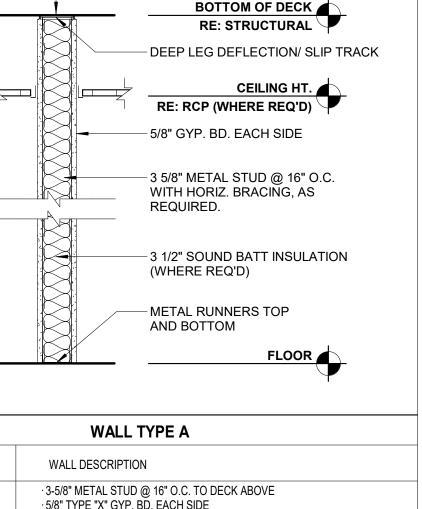
REQ'D) - EACH SIDE

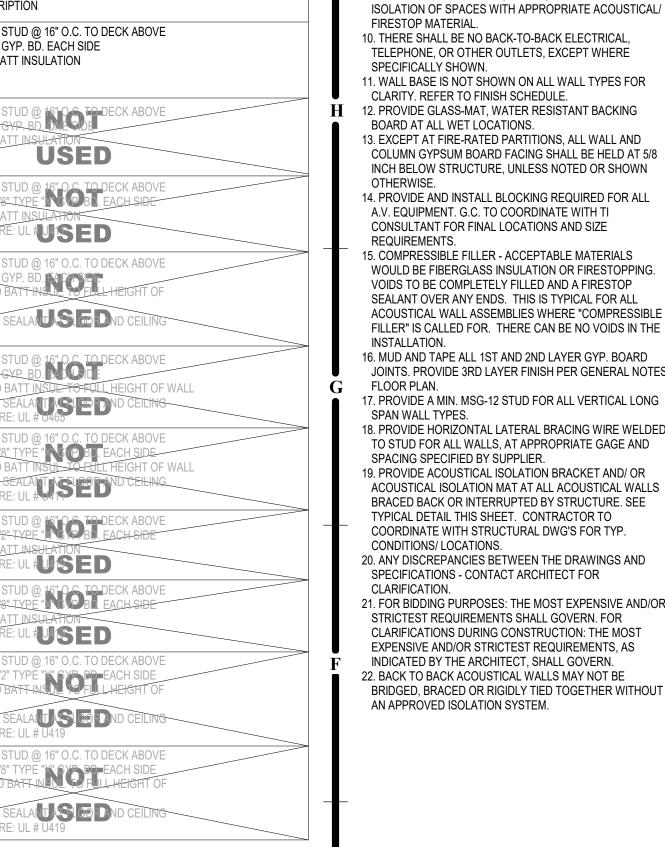
- DEFLECTION TRACK

- METAL STUD RUNNER:

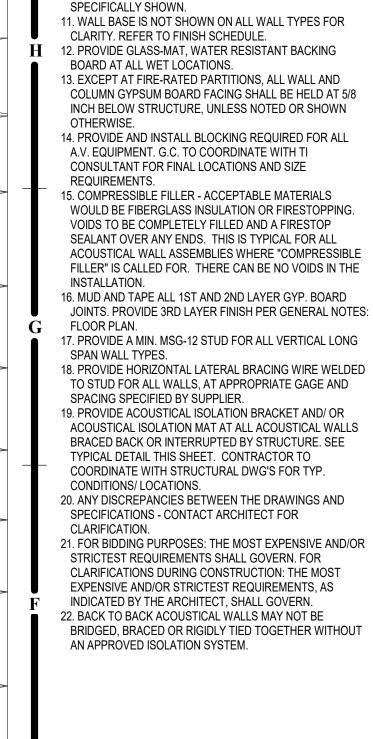








1. RE: LIFE SAFETY PLAN(S) FOR RATED WALL LOCATIONS. 2. RE: WALL TYPE DETAIL SHEET FOR TYPICAL WALL DETAILS 3. FOR TYPICAL TOP OF WALL CONDITIONS AT JOISTS AND 5. WHERE "ACOUSTIC SEALANT" IS INDICATED ON WALL 6. WHERE "FIRE-RATED SEALANT" IS INDICATED ON WALL 7. EXTEND FIRE-RATED WALL CONSTRUCTION BEHIND 8. PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-



WALL TYPE NOTES:

BEAMS, REFER TO THE CLOSURE DETAILS ON THE WALL

4. COORDINATE METAL STUD GAUGE WITH PRE-APPROVED

EQUIPMENT ANCHORAGE. WHERE A DISCREPANCY

TRACK, UNDER BOTTOM TRACK, AND AT ALL

PENETRATIONS (BOTH SIDES).

NOTED OTHERWISE.

LABORATORY EQUIPMENT.

FIRESTOP MATERIAL.

OCCURS, THE MORE STRINGENT REQUIREMENT SHALL

UNDER BOTTOM TRACK, AT ALL PENETRATIONS (BOTH

SIDES). AND AS REQUIRED BY FIRE RATING UL NUMBER.

RECESSED OR BUILT-IN EQUIPMENT: SUCH AS FIRE

EXTINGUISHER CABINETS (FEC), ELECTRICAL WATER

COOLERS (EWC), ELECTRICAL PANELS, ETC., UNLESS

UP PLATES AND SUPPORTING BRACKETS REQUIRED FOR

MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL OR

9. WHERE HVAC OR OTHER MECHANICAL, ELECTRICAL AND

PLUMBING ITEMS PENETRATE PARTITIONS: STUDS SHALL

BE BRACED AND FRAMED TO STRUCTURE AS REQUIRED

TO PROVIDE ADEQUATE SUPPORT. ALL PENETRATIONS

THROUGH ACOUSTICAL AND FIRE RATED WALLS SHALL BE

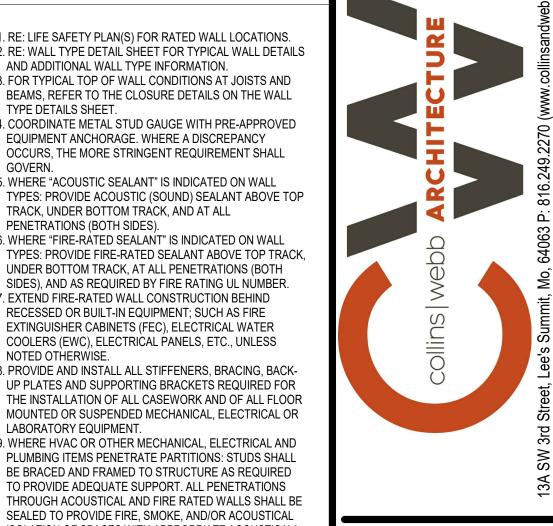
SEALED TO PROVIDE FIRE, SMOKE, AND/OR ACOUSTICAL

10. THERE SHALL BE NO BACK-TO-BACK ELECTRICAL,

TELEPHONE, OR OTHER OUTLETS, EXCEPT WHERE

AND ADDITIONAL WALL TYPE INFORMATION.

TYPE DETAILS SHEET.



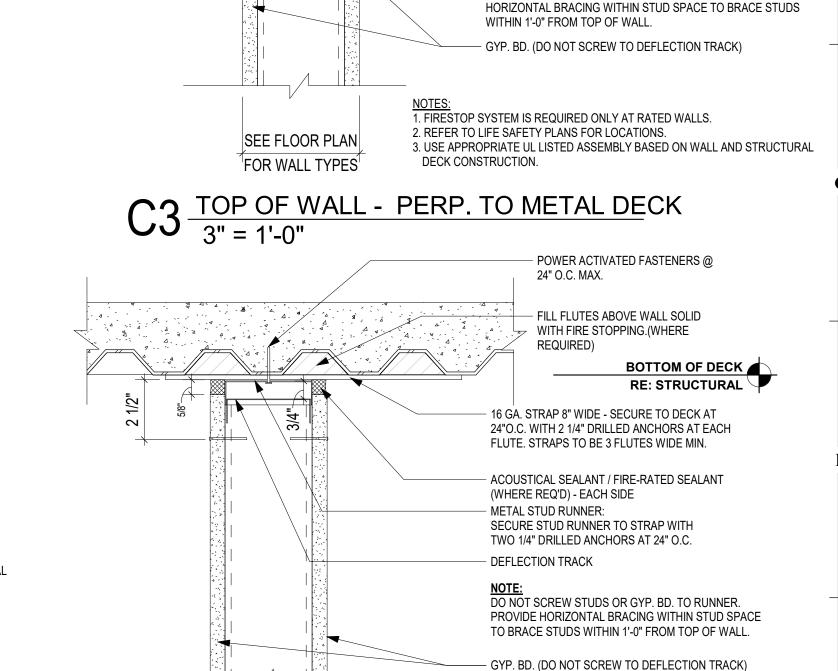
COLLINS WEBB

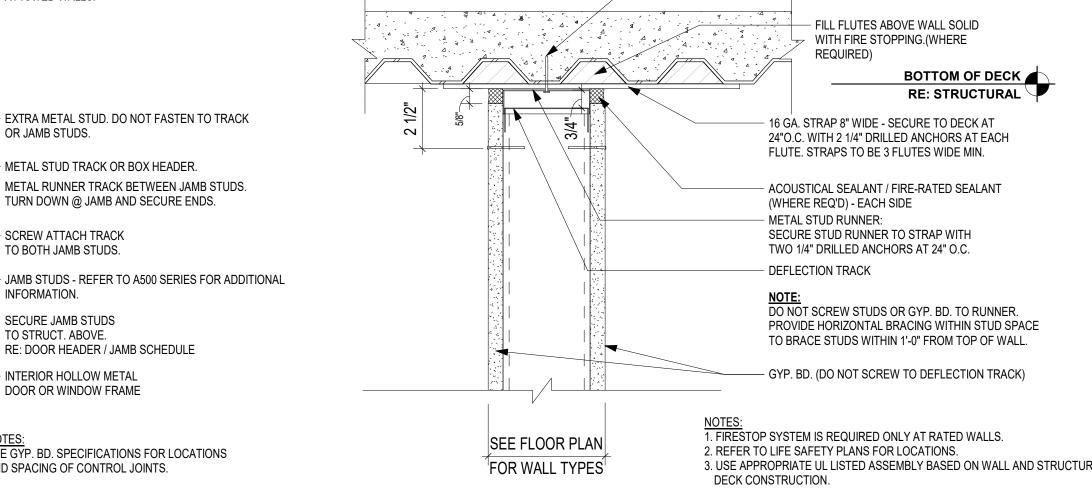
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PROFESSIONAL SEAL

COLLINS WEBB #:

WALL TYPES & SPECIFICATIONS





SEE GYP. BD. SPECIFICATIONS FOR LOCATIONS AND SPACING OF CONTROL JOINTS. **ELEVATION AT DOOR HEAD** A6 CONTROL JOINT FRAMING AT OPENING 3" = 1'-0"

2-HR WALL

2. REFER TO PLANS FOR SCOPE OF WORK.

2-HR FIRE AND/ OR SMOKE WALL

1-HR FIRE AND/ OR SMOKE WALL

2-HR FIRE WALL

2-HR SHAFT WALL

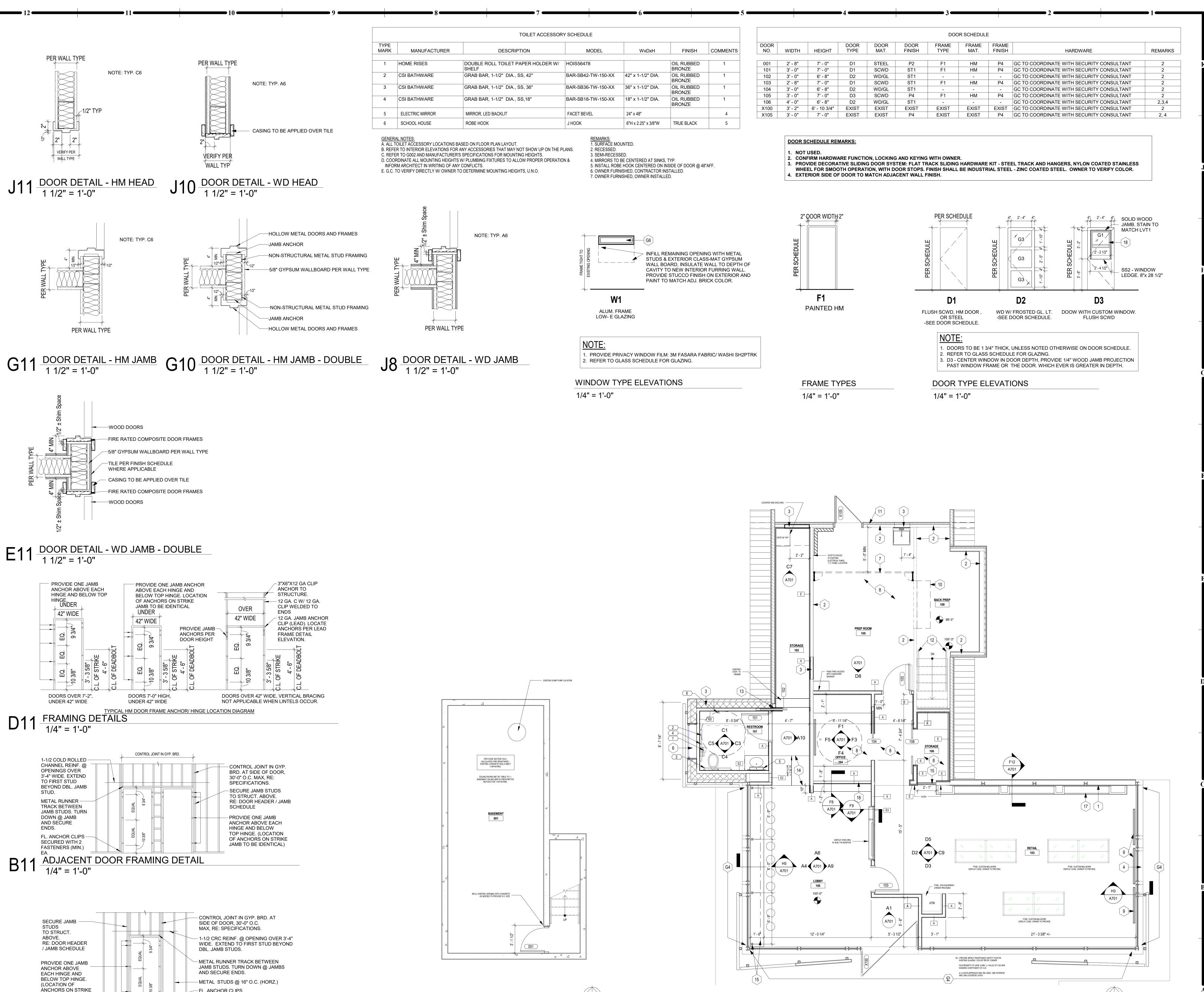
1-HR FIRE WALL

NON-RATED WALL

1. ALL PARTITION TYPES INDICATED, MAY OR MAY NOT BE USED.

C WALL CONTINUITY LEGEND - PLAN VIEW

 $A3^{\frac{\text{TOP OF WALL - PARALLEL TO METAL DECK}}{3" = 1'-0"}$



A8 LOWER LEVEL FLOOR PLAN NORTH

1/4" = 1'-0"

 $A5 \frac{\text{FIRST FLOOR PLAN}}{1/4" = 1'-0"}$

GENERAL NOTES: FLOOR PLANS

1. RE: GENERAL ARCHITECTURAL SHEETS FOR ADDITIONAL NOTES AND DETAILS THAT ARE APPLICABLE.

2. ARCHITECTURAL ELEVATION 100'-0"

3. DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYP. BOARD/ WALL (FOG), FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE. 4. NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS AND

PER WALL TYPES. SEE GENERAL SHEETS. 5. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO HINGE SIDE OF THE DOOR, ALWAYS ALLOWING A MINIMUM OF 18" FROM THE PULL SIDE (STRIKE SIDE) OF THE DOOR TO THE INTERSECTING WALL, OR

OTHER PROTRUDING OBJECTS. 6. DOORS TO BE SELECTED AND APPROVED BY OWNER. . CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES, LOCAL RULES, AND REGULATIONS, AND ALL OTHER CODES, REGULATIONS AND GOVERNING AGENCIES HAVING JURISDICTION WITH ALL APPLICABLE AMENDMENTS UNLESS ALTERED OR CHANGED THROUGH VARIANCES OF OTHER LEGAL PROCEDURES.

8. CONTRACTOR TO COORDINATE ALL LOW VOLTAGE/ SOUND WITH OWNER FOR LOCATIONS OF CONDUIT AND/ OR DEVICES LOCATIONS. 9. ALL EXTERIOR STUD WALLS TO RECEIVE SPRAY FOAM

DOOR SCHED. **GENERAL NOTES**

1. HM REFERS TO HOLLOW METAL

2. AL REFERS TO ALUMINUM

3. WD REFERS TO WOOD

4. SCWD REFERS TO SOLID CORE WOOD

5. ALL EXTERIOR ALUMINUM DOORS & FRAMES ARE TO BE FINISHED TO MATCH ADJACENT ALUMINUM WINDOW FRAME, U.N.O.

REFER TO FINISH LEGEND FOR FINISH OF INTERIOR

HOLLOW METAL DOORS AND FRAMES.

7. REFER TO SPECIFICATION FOR DOOR HARDWARE SET DESIGNATIONS.

8. 2 HOUR FIRE BARRIER DOORS = 90 MINUTE RATING 1 HOUR FIRE BARRIER DOORS = 45 MINUTE RATING

1 HOUR SMOKE BARRIER = 20 MINUTE RATING PROTECT ALL DOORS & FRAMES FROM DAMAGE

THROUGHOUT CONSTRUCTION PHASES. ANY DAMAGE TO BE REPAIRED/REPLACED PER OWNER DISCRETION.

GLASS LITE SCHED.

DESCRIPTION 1/4" TEMPERED CLEAR GLAZING 1/4" CLEAR GLAZING 1/4" TEMPERED FROSTED GLAZING SAFETY WINDOW FILM APPLIED ON EXISTING GLAZING - COLOR TBD BY OWNER - not used 3/16" PREMIUM GRADE FIRE RATED GLASS CERAMIC SAFETY GLAZING 1" INSULATED GLAZING - LOW E 7 - not used 1" TEMPERED INSULATED GLAZING

G8 - not used 1" INSULATED SPANDREL GLAZING G9 - not used 1" INSULATED TEMPERED SPANDREL **GLAZING**

FLOOR PLAN KEYED

LAMINATE 5/8" GYPSUM WALL BOARD TO EXISTING

INSTALL 3/4" PLYWOOD OVER EXISTING METAL WALL INFILL EXISTING DOOR OR WINDOW W/ STEEL STUDS GYPSUM WALL BOARD AS REQUIRED TO PROVIDE

> EXISTING DOOR, TO BE PERMANENTLY SEALED. REMOVE HARDWARE & SEAL CLOSED.

PROVIDE WOOD TRIM AT OPENING; TRIM TO BE 1/4" PROUD OF SLAT WALL.

FLUSH TRANSITION TO ADJACENT GYPSUM WALL

REMOVE EXISTING SLIDER WINDOW. PROVIDE NEW WINDOW TIGHT TO EXISTING HEAD. INFILL REMAININ OPENING WITH METAL STUDS & EXTERIOR CLASS-MA GYPSUM WALL BOARD, INSULATE WALL TO DEPTH O CAVITY TO NEW INTERIOR FURRING WALL. PROVIDE

STUCCO FINISH ON EXTERIOR AND PAINT TO MATCH ADJ. BRICK COLOR. PROVIDE FOLDING SECURITY GATE. ILLINOIS ENGINEERED PRODUCTS, PFG 1265 - 6'-6" COLLAPSEI

HEIGHT. MAX. CENTER DROP PIN @ FLOOR. PROVIDE METAL SECURITY MESH OVER EXISTING PLYWOOD FLOOR. CLARK DIETRICH BARRIER MESH

BM75, 16 GAUGE THICKNESS W/ 3/4" DIAMOND. PROVIDE POURABLE SELF LEVELING COMPOUND COMPATIBLE WITH FLOORING AND ADHESIVE TO ALLOW FOR FLUSH FLOOR TRANSITION TO CONCRETE RETAIL FLOOR.

NEW TV MONITORS & MOUNTS. PROVIDE HORIZONTA TUBE STEEL SUPPORTS, ATTACHED TO EXISTING STEEL MEMBERS.

0 DEMOLISH EXISTING CONCRETE STEP. FRAME NEW STEP IN SMALLEST PROFILE ALLOWED BY CODE. PROVIDE NEW DOOR BELL. VERIFY TYPE & LOCATION

2 PROVIDE NEW PAINTED METAL PIPE HANDRAIL.

SAW CUT BLOCK WALL TO CREATE OPENING FOR NEW 3'-0" DOOR. INFILL ANY EXISTING EXPOSED WALLS WITH NEW 3 5/8" METAL STUD & GYPSUM WALLBOARI WALL. AT UNDERSIDE OF ROOF SLOPE, LAMINATE 5/8"

BUSH HAMMER EXISTING CONCRETE FLOOR TO PROVIDE 1:20 SLOPE TRANSITION.

GYPSUM WALLBOARD.

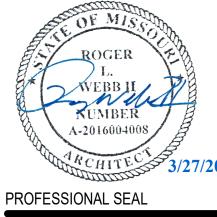
BEARING WHEELS.

_NORTH__

FULL HEIGHT "FRAMELESS" 1/4" TEMPERED GLASS PANEL. PROVIDE PRIVACY WINDOW FILM: 3M FASARA FABRIC/ WASHI SH2PTRK. CAPTURE GLASS WITH C. R. LAURENCE SHALLOW U-CHANNEL, BLACK,

16 COUNTER TOP SUPPORT FRAME. HSS 2-1/2 imes 2-1/2 imes W 1/2" X 6-1/2" X 6-1/2" BASE PLATE. RE: H5 / A701 WOOD SHELVING DISPLAY WALL W/ SLIDING GLASS DISPLAY DOORS. PROVIDE 1/4" TEMPERED GLASS INSET INTO CRL FLAT BLACK TRACK ASSEMBLY; D603 UPPER AND D602 LOWER TRACK W/ STEEL BALL-

f B igl(18igr) CRL PRE-GLAZED VERTICAL SLIDING SERVICE WINDOW. PROVIDE SERIES WITH FIXED TOP PANEL AND SLIDING LOWER PANEL, WITHOUT SCREENS, PROVIDE WITH SASH BALANCE. KYNAR PAINTED FRAME TO MATCH ADJ. WALL COLOR. GC TO FV THE RO SIZES.



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FLOOR PLAN & DOOR DETAILS

JAMB TO BE

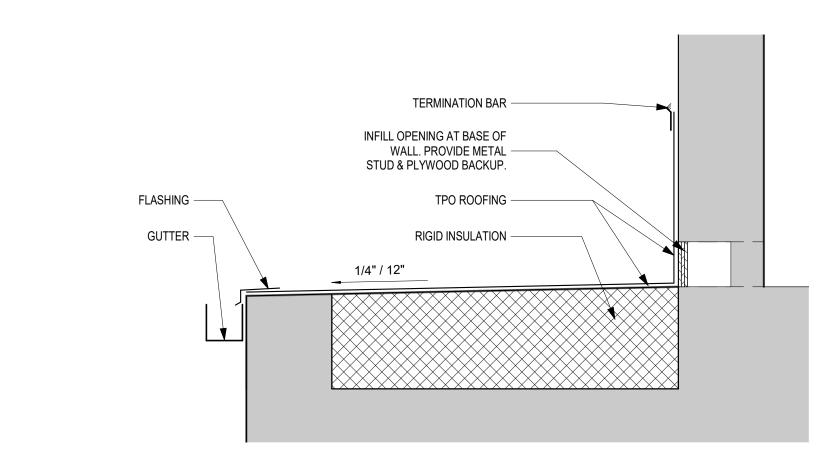
SINGLE DOOR FRAMING DETAIL

IDENTICAL)

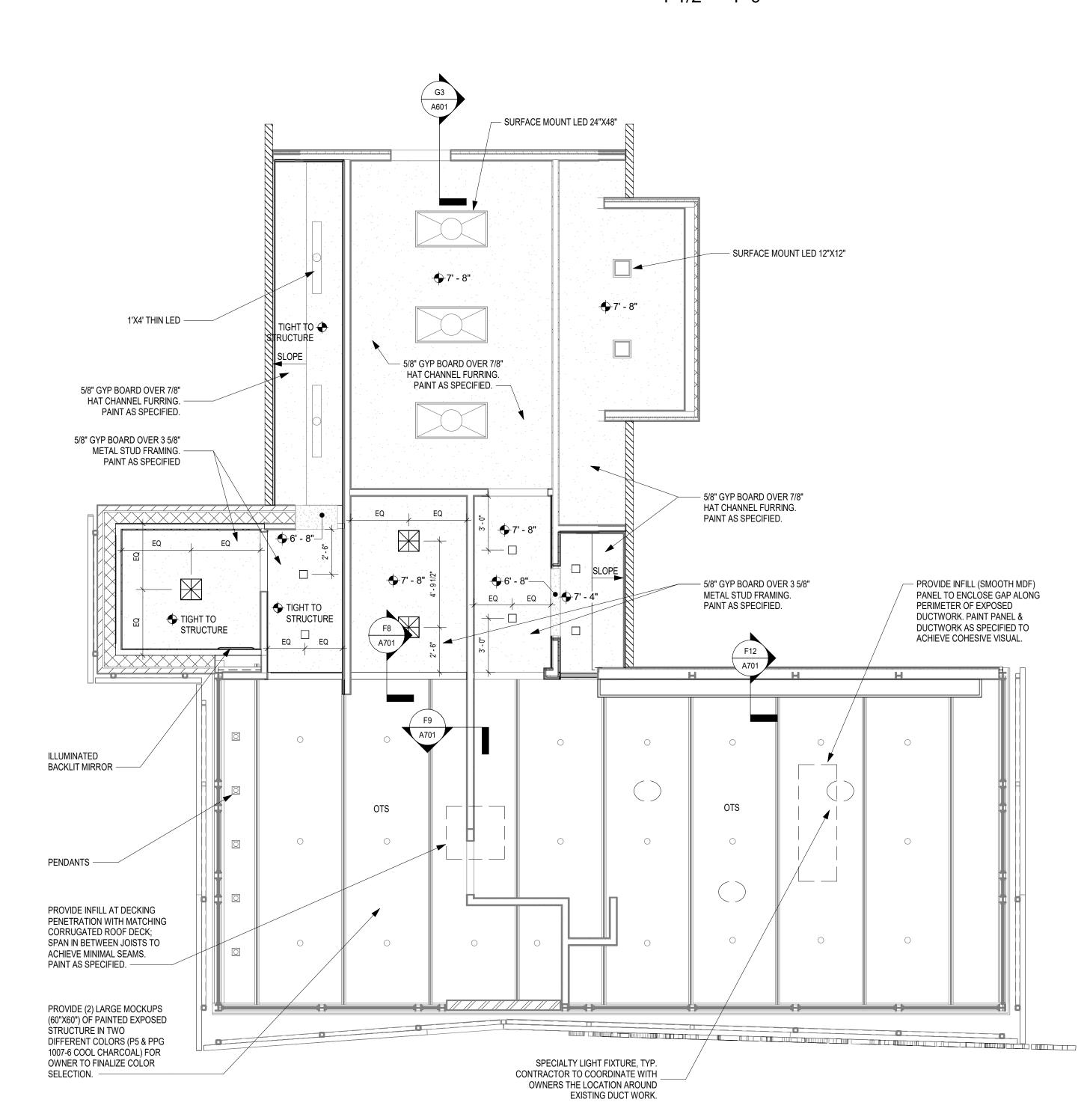
- FL. ANCHOR CLIPS

SECURED WITH 2

FASTENERS (MIN.)



G3 DETAIL SECTION - ROOF 1 1/2" = 1'-0"



A5 REFLECTED CEILING PLAN 1/4" = 1'-0"

PROVIDE 1 HR RATED CEILING:

2 LAYERS 5/8" GYPSUM WALL

BOARD OVER HAT CHANNELS

C9 REFLECTED CEILING PLAN - LOWER LEVEL 1/4" = 1'-0"

GENERAL NOTES -REFLECTED CEILING PLANS:

- RE: SHEET G001 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.
 DIMENSIONS SHOWN ON THE REFLECTED CEILING PLANS ARE TO THE FACE OF GYP. BOARD (FOG), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE.
 ALL CEILINGS TO BE 9'-0" A F.F. LINI ESS NOTED.
- UNLESS NOTED OR SHOWN OTHERWISE.

 3. ALL CEILINGS TO BE 9'-0" A.F.F., UNLESS NOTED OTHERWISE.

 4. ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING.
- AT ALL GYP. BD. SOFFITS: EXTEND GYP. BD. UP 6 INCHES ABOVE ADJACENT CEILING.
 RE: DETAILS FOR ADDITIONAL CONDITIONS AND CEILING HEIGHT INFORMATION.
 RE: FINISH LEGEND AND FINISH SCHEDULE FOR ROOM CEILING FINISHES.
- 8. CEILING TIMBLES.

 8. CEILING TILES/GRID TO BE CENTERED IN THE ROOM, UNLESS NOTED OTHERWISE.

 J 9. RECESSED LIGHTING, SPEAKERS, SMOKE DETECTORS, ETC. AND PENDANT LIGHT FIXTURES SHALL BE CENTERED IN CEILING
- DETECTORS, ETC. AND PENDANT LIGHT
 FIXTURES SHALL BE CENTERED IN CEILING
 TILE OR GYP. BD. CEILING, UNLESS NOTED
 OTHERWISE.

 10. RE: INTERIOR ELEVATIONS FOR LOCATION OF
- WALL MOUNTED LIGHT FIXTURES.

 11. RE: ELECTRICAL SHEETS AND SPECIFICATIONS
 FOR DETAILED INFORMATION ON LIGHT
 FIXTURE SCHEDULE.

 12. RE: MECHANICAL SHEETS AND SPECIFICATIONS
 FOR DETAILED INFORMATION ON DIFFUSERS.
- 13. COORDINATE ALL PENDANT MOUNTED LIGHT FIXTURES IN EQUIPMENT AREAS WITH EXPOSED STRUCTURE.
 14. COORDINATE ALL CEILING MOUNTED EQUIPMENT WITH CASEWORK BELOW.
 15. IF THERE IS A CONFLICT BETWEEN ANY ABOVECEILING MECHANICAL / ELECTRICAL /
- PLUMBING WORK & THE SCHEDULED OR SHOWN CEILING HEIGHT, CONTACT THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.

 16. REF. MECH DWGS FOR LOCATIONS OF SOUND ISOLATION BELOW AND OR AROUND MECH.EQUIPMENT.

 17. PROVIDE OVERALL CEILING COORDINATION DRAWING SHOWING ALL DEVICES DURING

NOT IN ARCHITECTURAL SCOPE

SHOP SUBMITTAL PROCESS.

CEILING PLAN LEGEND

*SOME SYMBOLS MAY NOT BE USED IN THIS PROJECT.

	WC-5A OR WC-5B / PRICE BOTH MATERIALS FOR CLIENT APPROVAL
7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7	ACT-1: OPTIMA
1, 1-,,-,,-,,-,,-,,-,,-,,-,,-,,-,,-,,-,,-,,	SUSPENDED LAY-IN ACOU

SUSPENDED LAY-IN ACOUSTICAL CEILING TILE AND EXPOSED TEE-GRID SYSTEM (2'X6')

ACT-2: FINE FISSURED, WHITE

SUSPENDED LAY-IN ACOUSTICAL CEILING TILE AND EXPOSED

CEILING TILE AND EXPOSED
TEE-GRID SYSTEM (2'X4')

5/8" GYPSUM BOARD BULKHEAD
CEILING OR SOFFIT. SEE
APPLICABLE DETAILS AND

CEILING OR SOFFIT. SEE
APPLICABLE DETAILS AND
SECTIONS.

2'X4' SURFACE LED LIGHT
FIXTURE. SEE ELECTRICAL

DRAWINGS FOR TYPE.

2'X2' SURFACE LED LIGHT
FIXTURE. SEE ELECTRICAL
DRAWINGS FOR TYPE.

RECESSED CAN LIGHT FIXTURE
SEE ELECTRICAL DRAWINGS
FOR TYPE.

RECESSED CAN DIRECTIONAL
LIGHT FIXTURE. SEE
ELECTRICAL DRAWINGS FOR
TYPE.

SURFACE MOUNTED LED LIGHT
FIXTURE. SEE ELECTRICAL
DRAWINGS FOR TYPE AND SIZE.

SUSPENDED DIRECT/INDIRECT
LED LIGHT FIXTURE. SEE
ELECTRICAL DRAWINGS FOR
TYPE AND SIZE.

LED STRIP LIGHT FIXTURE. SEE
ELECTRICAL DRAWINGS FOR
TYPE AND SIZE.

DECORATIVE PENDANT
MOUNTED LIGHT FIXTURE. SEE
ELECTRICAL DRAWINGS FOR
TYPE.

WALL MOUNTED LIGHT FIXTURE.
SEE ELECTRICAL DRAWINGS FOR
TYPE.

EMERGENCY WALL MOUNTED
LIGHT FIXTURE. SEE ELECTRICAL
DRAWINGS FOR TYPE.

EMERGENCY EXIT LIGHT FIXTURE
(CEILING MOUNTED). SEE

ELECTRICAL DRAWINGS FOR

CEILING MOUNTED SPEAKER

SPRINKLER HEAD. SEE PLUMBING DRAWINGS FOR TYPE.

GRILLE. SEE ELECTRICAL DRAWINGS FOR TYPE.

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EMERGENCY EXIT LIGHT FIXTURE
(WALL MOUNTED). SEE
ELECTRICAL DRAWINGS FOR
TYPE.

CEILING MOUNTED RETURN AIR
GRILLE. SEE MECHANICAL
DRAWINGS FOR TYPE.

CEILING MOUNTED SUPPLY
DIFFUSER. SEE MECHANICAL
DRAWINGS FOR TYPE.

EXHAUST DUCT. SEE
MECHANICAL DRAWINGS FOR

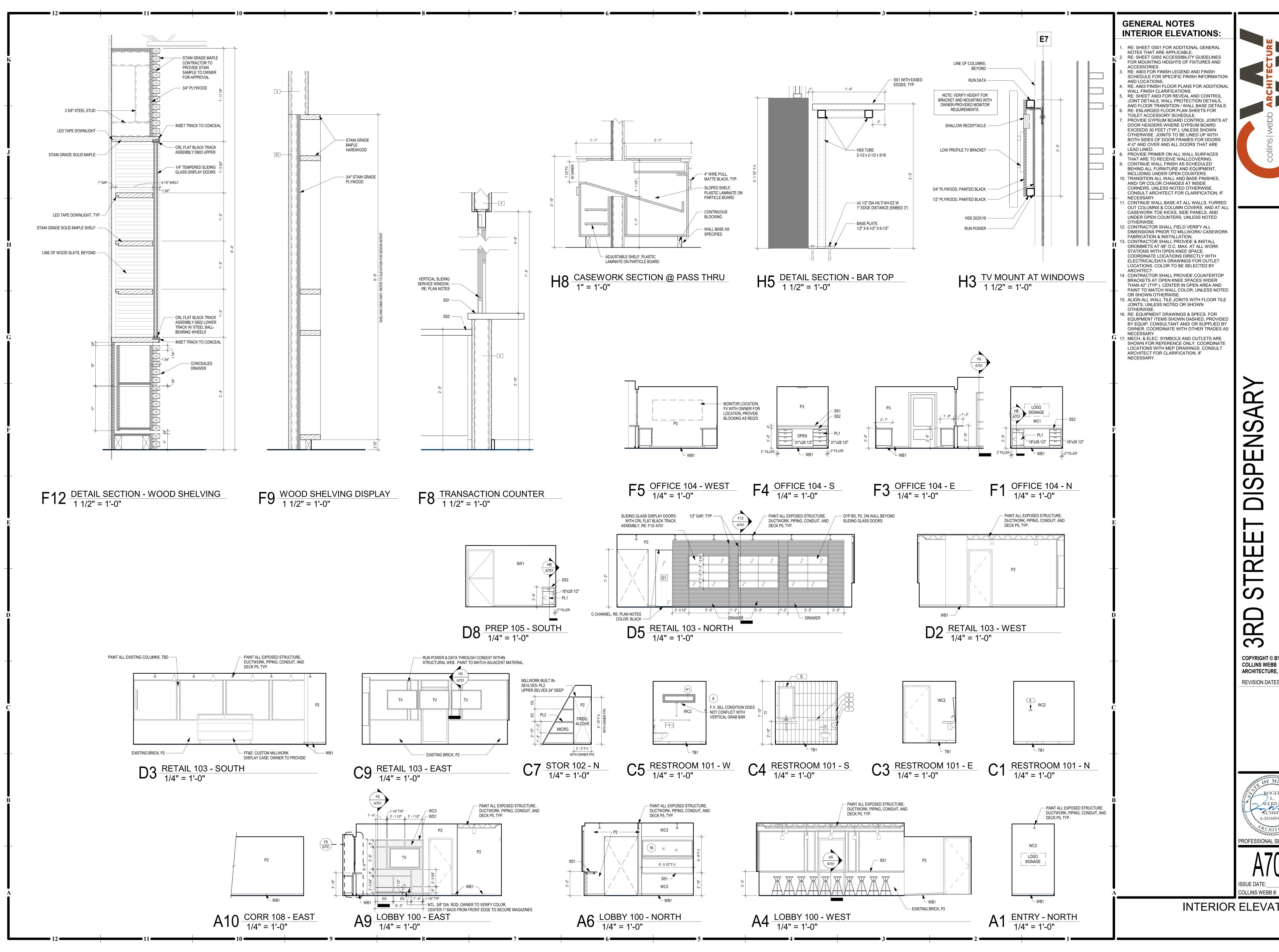
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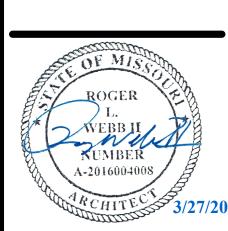
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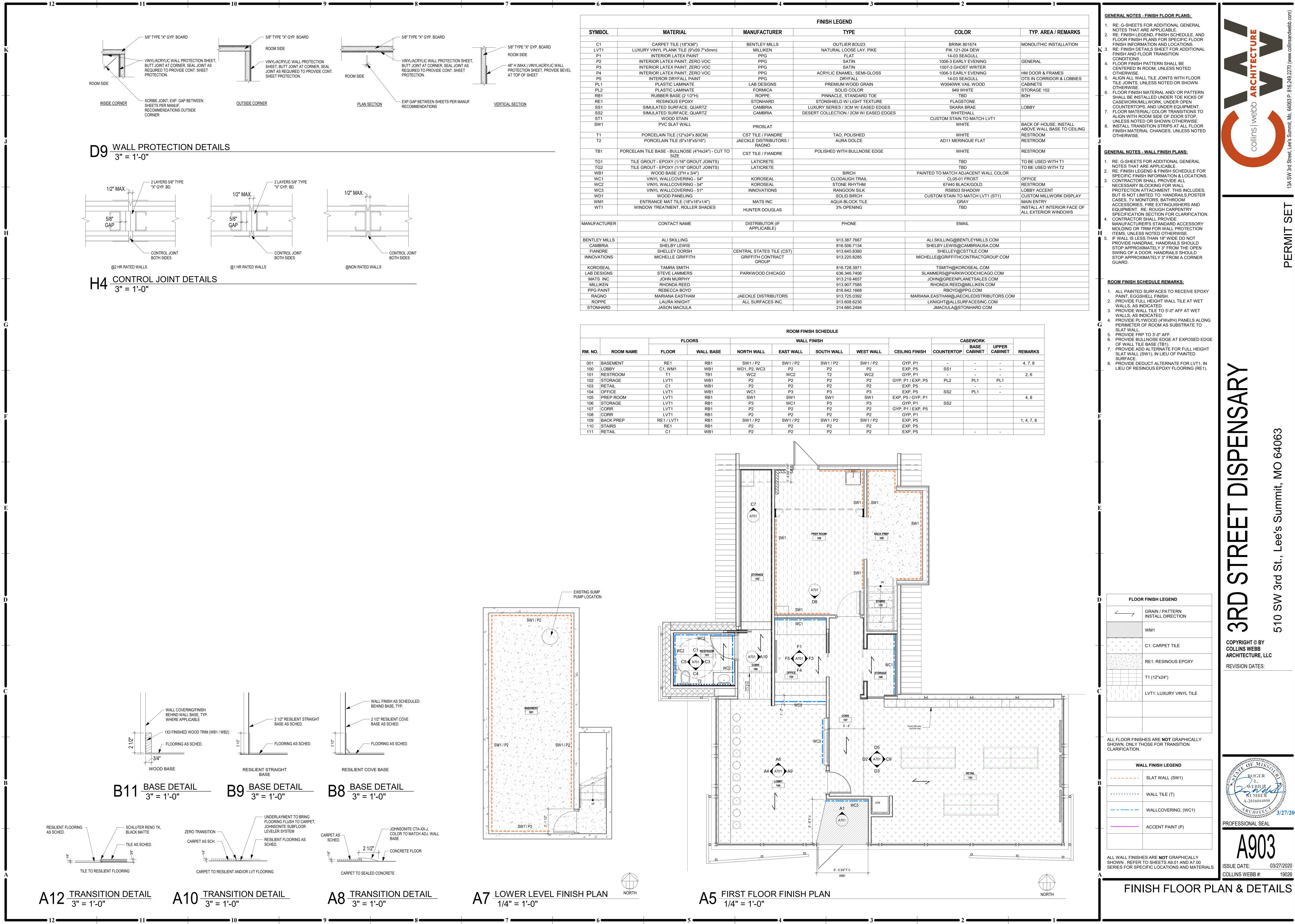
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PROFESSIONAL SEAL

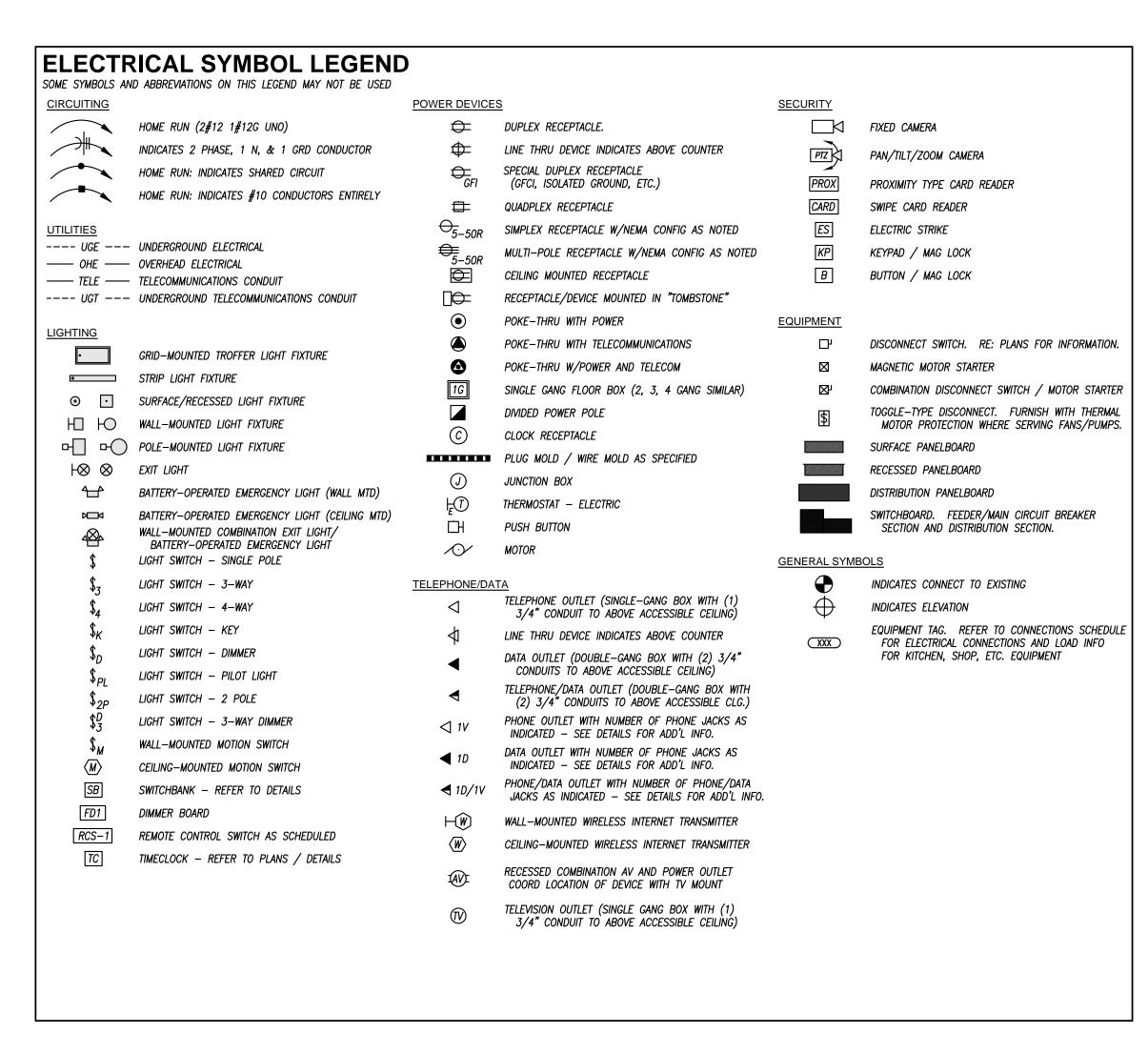
INTERIOR ELEVATIONS

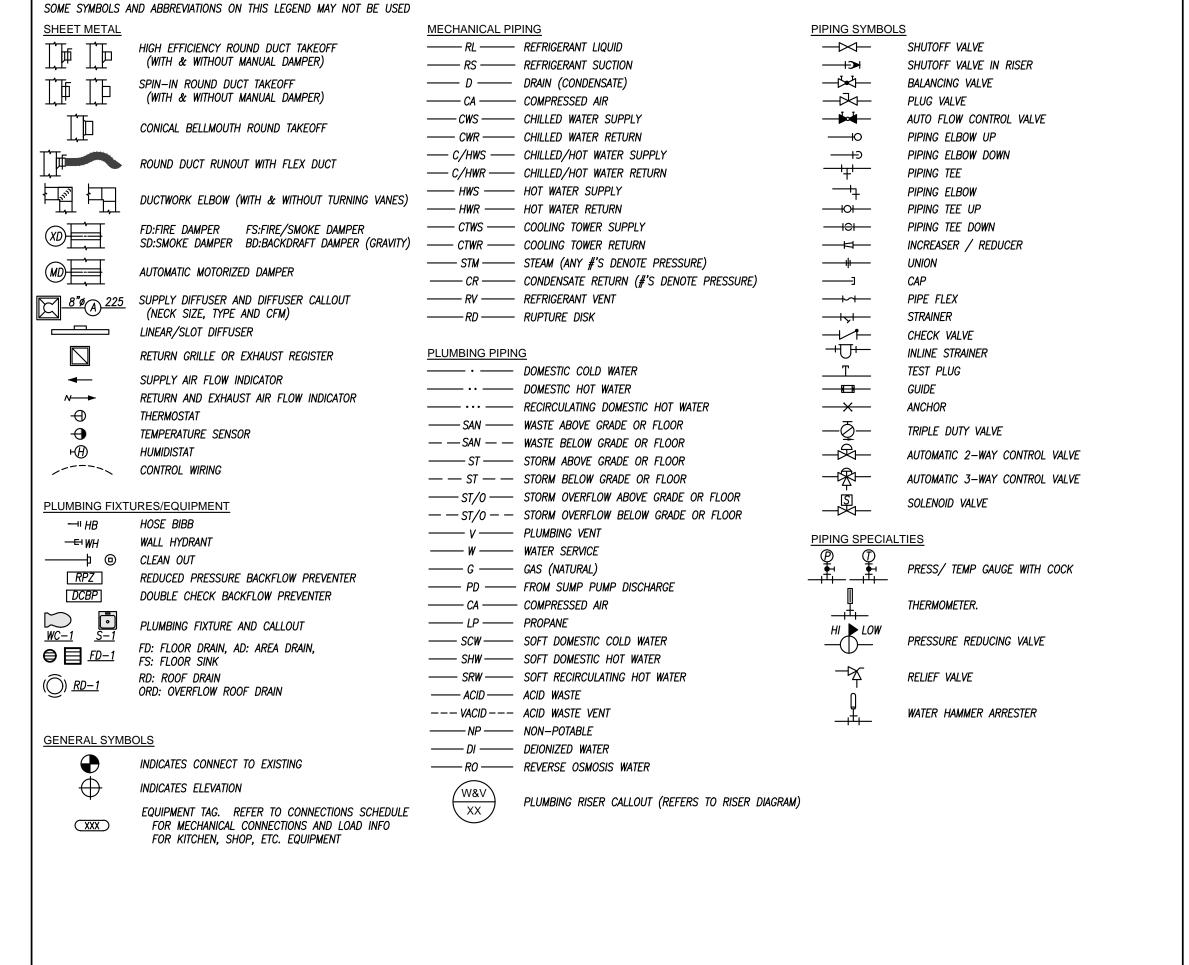


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MECHANICAL AND PLUMBING SYMBOL LEGEND

ABBREVIATIONS

EA EXHAUST AIR

EDF ELECTRIC DRINKING FOUNTAIN

A/E	ARCHITECT / ENGINEER	ELEV	ELEVATION	МН	MANHOLE
ÁFF	ABOVE FINISHED FLOOR	ЕМ	EMERGENCY FIXTURE/DEVICE	MLO	MAIN LUGS ONLY
AFG	ABOVE FINISHED GRADE	EWT	ENTERING WATER TEMPERATURE	NFA	NET FREE AREA
AG	ABOVE GRADE	ΕX	EXISTING ITEM	NL	NIGHT LIGHT
AHJ	AUTHORITY HAVING JURISDICTION	FFA	FROM FLOOR ABOVE	OA	OUTSIDE AIR
AHU	AIR HANDLING UNIT	FFB	FROM FLOOR BELOW	ORD	OVERFLOW ROOF DRAIN
ARCH	ARCHITECT	FFC0	FINISHED FLOOR CLEAN OUT	P/C	PLUMBING CONTRACTOR
BFP	BACKFLOW PREVENTER	FGC0	FLUSH GRADE CLEAN OUT	PSI	POUNDS PER SQUARE INCH
BG	BELOW GRADE	FL	FLOW LINE	PVC	POLYVINYLCHLORIDE
BLDG	BUILDING	FLR	FLOOR	RA	RETURN AIR
BMS	BUILDING MANAGEMENT SYSTEM	FP	FIRE PROTECTION	RE/REF	REFER / REFERENCE
С	CONDUIT	FPM	FEET PER MINUTE		RELIEF FAN
CD	CANDELA	FWC0	FLUSH WALL CLEAN OUT	RL	RELOCATED ITEM
CD	COLD DECK	G	GROUND / GANG	RPZ	REDUCED PRESSURE ZONE
CLG	COOLING	G/C	GENERAL CONTRACTOR	RR	RESTROOM
СМ	COORDINATE MOUNTING HEIGHT	GFI	GROUND FAULT CIRCUIT INTERUPTER	SA	SUPPLY AIR
CO	CLEAN OUT	GFIP	GFI-PROTECTED DEVICE	SPD	SURGE PROTECTIVE DEVICE
CTE	CONNECT TO EXISTING	GPM	GALLONS PER MINUTE	ST	SHUNT TRIP
DCVA	DOUBLE CHECK VALVE ASSEMBLY	HD	HOT DECK	TA	TRANSFER AIR
DCW	DOMESTIC COLD WATER	HTG	HEATING	TFA	TO FLOOR ABOVE
DDC	DIRECT DIGITAL CONTROLS	IG	ISOLATED GROUND	TFB	TO FLOOR BELOW
DF	DRINKING FOUNTAIN	JB	JUNCTION BOX	ΤP	TAMPERPROOF
DHW	DOMESTIC HOT WATER	LED	LIGHT EMITTING DIODE	TYP	TYPICAL
DHWR	DOMESTIC HOT WATER RETURN	LWT	LEAVING WATER TEMPERATURE	UNO	UNLESS NOTED OTHERWISE
DIA	DIAMETER	M/C	MECHANICAL CONTRACTOR	VRF	VARIABLE REFRIGERANT FLOW
DN	DOWN	ΜA	MIXED AIR	VTR	VENT THROUGH ROOF
E/C	ELECTRICAL CONTRACTOR	MAU	MAKE UP AIR UNIT	WCO	WALL CLEANOUT
	EVALUATE ALD			1440	WIDE OLUBB

MCB MAIN CIRCUIT BREAKER

MECH MECHANICAL

WG WIRE GUARD

WP WEATHERPROOF

FIRE SEALING NOTES

- 1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS. 2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH-PENETRATION FIRESTOP SYSTEMS. 3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- 4. COMPATIBILITY: PROVIDE THROUGH—PENETRATION FIRESTOP SYSTEMS THAT ARE COMPATIBLE WITH ONE ANOTHER; WITH THE SUBSTRATES FORMING OPENINGS; AND WITH THE ITEMS, IF ANY, PENETRATING THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE. 5. PROVIDE COMPONENTS FOR EACH THROUGH—PENETRATION FIRESTOP
- SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED. 6. PROVIDE SLEEVES THROUGH ALL FIRE-RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED
- 7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS. 8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING FOR CONSTRUCTION.

AS PER MANUFACTURERS RECOMMENDATIONS.

GEN. RENOVATION NOTES

THAT WAS INSTALLED AS PART OF THE BUILDING SHELL THAT IS NOT NEEDED OR CONFLICTS WITH THIS BUILD OUT. 2. EXISTING UNDERGROUND PIPING LOCATIONS ARE ESTIMATED BASED UPON ANTICIPATED ROUTINGS. FIELD VERIFY EXACT LOCATIONS DURING CONSTRUCTION AND PROVIDE ALL NECESSARY MODIFICATIONS. 3. SAWCUT GRADE FLOOR SLABS TO INSTALL NEW PIPING, MECHANICAL SYSTEMS, ELECTRICAL FLOOR BOXES AND ALL ASSOCIATED CONDUIT, ETC. PATCH FLOOR TO MAKE LIKE NEW AFTER INSTALLATION. TAKE CARE TO LOCATE EXISTING CONDUIT, ETC AND AVOID CUTTING EXISTING CONDUITS BY NOT OVER—CUTTING SLAB DEPTH. 4. SAWCUT AND CORE DRILL OPENINGS AS REQUIRED FOR ABOVE GRADE SLAB PENETRATIONS. X—RAY SLABS TO ASCERTAIN STEEL AND EXISTING CONDUIT PENETRATIONS PRIOR TO CUTTING. VERIFY OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO CUTTING. 5. HOMERUN CIRCUITS TO 20 AMP, SINGLE POLE BREAKERS IN PANELBOARDS INDICATED. UTILIZE SPARE BREAKERS MADE AVAILABLE BY DEMOLITION, IF NO SPARE BREAKER IS AVAILABLE,

1. DISCONNECT AND REMOVE ANY EQUIPMENT, PIPING OR DUCTWORK

PROVIDE NEW BREAKER. 6. EXISTING CIRCUITING MAY BE RE-USED WHERE POSSIBLE. 7. CONCEAL NEW CIRCUITING IN WALLS WHERE POSSIBLE. FOR NEW DEVICES INSTALLED ON EXISTING SOLID WALLS, CONCEAL CIRCUITING IN WIREMOLD. COORDINATE FINISH AND GENERAL ROUTING OF WIREMOLD WITH ARCHITECT TO BE AS CONCEALED AND/OR ROUTED IN A NEAT AND ORGANIZED CONSISTENT MANNER. 8. ALL LIGHTING FIXTURES THAT ARE RELOCATED OR OTHERWISE AFFECTED BY THE SCOPE OF WORK SHALL BE CLEANED AND

GEN. MECHANICAL NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS INDICATED ON ELECTRICAL PLANS. ANY ADDITIONAL LINE VOLTAGE OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE
- PROVIDED BY THE M/C CONTRACTOR OR SUBS. 3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED AND FASTENED FROM STRUCTURE. 4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES
- REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE INSTALLED. 5. FACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH
- A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS REQUIRED BY AHJ. COORDINATE WITH OTHER TRADES. 6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E. REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

GENERAL PLUMBING NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. NO PIPING SHALL BE INSTALLED WHERE IT WILL SUBJECT FREEZING TEMPERATURES. PIPING IN EXTERIOR WALLS SHALL BI INSTALLED ON THE WARM SIDE OF BUILDING INSULATION, INSULATED AND THE CHASE SHALL BE VENTILATED WITH GRILLES ALLOWING INDOOR AMBIENT CONDITIONS TO CIRCULATE THROUGH THE CHASE. 3. PROVIDE CLEANOUTS IN THE FOLLOWING LOCATIONS:
- 3.1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE THAN 100 FEET APART. 3.2. IN BUILDING SEWERS LOCATED NO MORE THAN 100 FEET APART
- MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. 3.3. EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING.
- 3.4. AT THE BASE OF EACH WASTE OR SOIL STACK. 3.5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING SEWER.

GENERAL ELECTRICAL NOTES 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE

- LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. COORDINATE LOCATIONS OF RECEPTACLES, SWITCHES, ETC. WITH ARCHITECTURAL CASEWORK AND ELEVATIONS. 3. REFER TO MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHTS OF ALL DEVICES NOT INDICATED OTHERWISE. 4. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED
- 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONABLY POSSIBLE.

COORDINATION NOTES

- COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND EQUIPMENT WITH ALL OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR SYSTEMS AND COMPONENTS AS NEEDED TO INSTALL THE MEP SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS IN POTENTIAL CONFLICT WITH ROUTING.
- COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS. 4. CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND STRUCTURE/CONSTRUCTION TO ENSURE THAT ALL MATERIALS AND EQUIPMENT CAN BE INSTALLED IN THE SPACE ALLOTTED INCLUDING FINISHED SUSPENDED CEILINGS AND OTHER SPACES. CHASES. ETC
- WITHIN THE BUILDING. MAKE MODIFICATIONS THERETO AS REQUIRED AND APPROVED. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE TIME FOR INSTALLATION. 6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES,
- COORDINATE WITH THOSE TRADES TO ENSURE THAT ALL SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT THEY MAY PROPERLY INSTALL ALL CONNECTIONS AND EQUIPMENT. IDENTIFY ALL ITEMS OF WORK THAT REQUIRE ACCESS SO THAT THE CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND . COORDINATE, PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
- 8. DRAWINGS SHOW THE GENERAL RUNS OF CONDUITS. PIPING AND DUCTWORK AND APPROXIMATE LOCATION OF OUTLETS. ANY SIGNIFICANT CHANGES IN LOCATION OF ITEMS NECESSARY IN ORDER TO MEET FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER AND RECEIVE HIS APPROVAL BEFORE SUCH ALTERATIONS ARE MADE. ALL SUCH MODIFICATIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. 9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A
- RESULT OF CONSTRUCTION ACTIVITIES. 10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT INTERFERENCES, BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE THE EXACT ROUTE AND LOCATION OF EACH ITEM PRIOR TO FABRICATION. MAKE OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE CLEARANCES AND HEADROOM. 1. WHEREVER THE WORK IS OF SUFFICIENT COMPLEXITY, PREPARE
- ADDITIONAL COORDINATION DRAWINGS AND ORGANIZE ON-SITE MEETINGS WITH ALL RELATED SUBCONTRACTORS TO COORDINATE THE WORK BETWEEN TRADES . DRAWINGS SHALL CLEARLY SHOW THE WORK AND ITS RELATION TO THE WORK OF OTHER TRADES, AND BE SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION OR ERECTION IN THE FIELD. 12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO
- ACCOMPLISH THE WORK. 3. COORDINATE THE MOUNTING OF SUSPENDED LIGHT FIXTURES UTILIZING INDIRECT LIGHT SO THAT CONDUIT, DUCTWORK, STRUCTURAL MEMBERS, ETC. ARE NOT LOCATED DIRECTLY ABOVE THE LIGHT FIXTURE. MAINTAIN A MINIMUM OF 24" CLEARANCE FROM

THESE ITEMS WHENEVER POSSIBLE.

GENERAL NOTES

- 1. SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CLARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR REFERENCE TO ROOM NAMES NOT SHOWN. 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND KEEP AT THE JOB SITE, AN UP TO DATE SET OF "RECORD DRAWINGS" SHOWING ALL CHANGES FROM THE ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECORD DRAWINGS" TO THE ENGINEER AT THE CONCLUSION OF THE PROJECT ELECTRONICALLY. 3. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS (NEW AND EXISTING), DIMENSIONS, AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIAL, ACCESSORIES, ETC. REQUIRED FOR A FULLY COMPLETE, FUNCTIONAL AND CODE
- COMPLIANT INSTALLATION. 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC SHALL BE INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS. NO DIMENSIONAL INFORMATION SHALL BE
- OBTAINED FROM MEP DRAWINGS. 5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE INSTALLATION AND PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.

DEMOLITION NOTES

- 1. ALL WORK SHOWN DARK AND DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN. 2. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF DEMOLITION REQUIREMENTS. 3. ALL EXISTING PIPING SCHEDULED FOR DEMOLITION THAT ROUTES BELOW SLAB SHALL BE GROUND FLUSH WITH FLOOR, PLUGGED AND THE FLOOR PATCHED TO MATCH SURROUNDING FLOOR.
- 4. COORDINATE ALL DEMOLITION WORK WITH OWNER. 5. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF UTILITIES BELOW GRADE.
- 6. MAINTAIN ALL EXISTING DEVICES, EQUIPMENT, ASSOCIATED CIRCUITS ETC, SHOWN AS EXISTING TO REMAIN OR OTHERWISE UNRELATED TO THE SCOPE OF THE PROJECT IN WORKING ORDER. 7. CONTRACTOR SHALL REMOVE LAY-IN CEILINGS, LIGHT FIXTURES, ETC. AS REQUIRED FOR CONSTRUCTION WHERE NEEDED PRIOR TO DEMOLITION AND REPLACE SAME AFTER CONSTRUCTION. EXISTING CONDUITS ABOVE CEILINGS SHALL BE RELOCATED AND/OR
- TEMPORARILY REMOVED TO FACILITATE THE INSTALLATION OF NEW EQUIPMENT. 8. THE OWNER SHALL REMOVE ALL ITEMS THEY DESIRED TO SALVAGE PRIOR TO CONSTRUCTION BEGINNING. 9. NOTES AND DRAWINGS ARE BASED UPON A FIELD EXAMINATION OF THE SITE AND MAY NOT INDICATE ALL ITEMS. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND THE SCOPE OF WORK FOR THE CONTRACT PRIOR TO BID. ANY EXISTING CONDITION WHICH IS APPARENT OR COULD BE REASONABLY INFERRED FROM A VISIT TO THE SITE SHALL NOT BE THE BASIS FOR
- 10. REFER TO NEW WORK PLANS FOR ANY ITEMS THAT MAY REQUIRE RELOCATION AFTER DEMOLITION. 11. PROPERLY DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE. 12. REMOVE ALL MISCELLANEOUS CONDUITS, PIPES, ETC, THOUGH NOT SPECIFICALLY SHOWN ON PLAN, THAT ARE EITHER UNUSED OR WILL BECOME UNUSED DUE DEMOLITION ACTIVITIES, IN ORDER TO PROVIDE
- A "CLEAN" SPACE FOR THE OWNER. 13. PROTECT ALL EXISTING SURFACES AND EQUIPMENT DURING CONSTRUCTION EXISTING ITEMS TO REMAIN SHALL BE ADEQUATELY PROTECTED FROM DEMOLITION AND NEW CONSTRUCTION WORK. AS REQUIRED. ANY ITEMS DAMAGED OR MARRED SHALL BE ADEQUATELY CLEANED OR REPLACED TO THE OWNERS SATISFACTION TO ORIGINAL CONDITION BEFORE CONSTRUCTION. 14. PATCH ANY HOLES IN STRUCTURE CREATED BY REMOVAL OF DUCTWORK, CONDUITS, PIPES, ETC. 15. REMOVE ALL ITEMS SHOWN IN WALLS TO BE DEMOLISHED. ELECTRICAL CONDUIT AND WIRING SHALL BE REMOVED BACK TO PANELBOARDS AND PROPERLY TERMINATED.

REFER TO PLUMBING PLANS SHOWING NEW WORK.

16. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING.

A CHANGE IN THE CONTRACT AMOUNT.

SHEET INDEX

- MEP0 Mechanical/Electrical/Plumbing Cover Sheet MEP1 Mechanical/Electrical/Plumbing - Specifications
- MEP2 Mechanical/Electrical/Plumbing Specifications

Mechanical - Plans, Schedules & Details

P101 Plumbing - Plans, Schedules & Details E101 Electrical - Lighting Plans, Schedules & Details E201 Electrical - Power Plans, Schedules & Details



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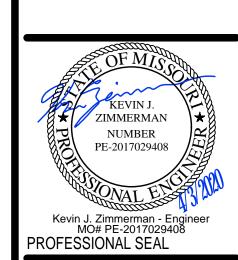
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MECHANICAL, ELECTRICAL & PLUMBING COVER SHEET



GENERAL MECHANICAL/ELECTRICAL SPECIFICATIONS

GENERAL MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS <u>APPLICABILITY</u>

A. These general requirements apply to all divisions (21, 22, 23, 26, 27, 28). Refer to individual divisions as included for specific information regarding each trade or scope of work.

GENERAL REQUIREMENTS A. Furnish & install all labor & materials required for complete, functioning, mechanical & plumbing systems w/ all associated equipment & apparatus as

B. Obtain & pay for all permits required for execution of this work & shall make arrangements for modifications to water, gas & sewer connections to building as

C. All materials shall be new & shall bare UL label where applicable. D. Visit site & observe conditions under which work will be done. Any discrepancies shall be called to architect's attention. No subsequent allowance will be made in contract for any error or negligence on contractor's part.

E. Final acceptance of work shall be subject to condition that all systems, equipment, apparatus & appliances operate satisfactorily as designed & intended. Work shall include required adjustment of systems & control equipment installed under these specifications.

F. Warrant to owner quality of materials, equipment, workmanship & operation of equipment provided under these specifications for one year from & after completion of building & acceptance of mechanical systems by owner. G.All materials installed in plenums shall be noncombustible or have flame/smoke

H. Requirements under Division one & general & supplementary conditions of these specifications shall be part of this section. Contractor shall become thoroughly acquainted w/ its contents as to requirements that affect this Division of work required under this section includes material. Equipment, appliances. Transportation. Services. & labor required to complete entire system as required by drawings & specifications.

index of no more than 25/50 in accordance w/ ASTM e 84.

I. The specifications & drawings for project are complementary, & portions of work described in one, shall be provided as if described in both. In event of discrepancies, notify engineer & request clarification prior to proceeding w/ work

EXTENT OF CONTRACT WORK A. Provide MEP systems indicated on drawings, specified or reasonably implied. In addition to specific equipment called out in plans and specifications, provide every device, component, programming, interlocking and accessory necessary for proper operation and completion of totally functional MEP systems. B.QkÁ,[Ásæe^Á,āl/Áslæaā]•Á;¦ÁAQò¢dæÁY[¦\+Áà^Áæd|[^^åÁ;¦Á,[¦\Áæà]ĕóÁ,@a&@

C. Contractor shall become familiar with equipment provided by other contractors that require plumbing connections and controls. D. Electrical work required to install and control plumbing equipment, which is not

Contractor could have been informed before bids were taken.

shown on plans or specified under Division 26, shall be included in Contractor's base bid proposal. E. All automatic temperature control devices shall be mounted as indicated in automatic temperature control section of specifications. F. The cost of larger wiring, conduit, control and protective devices resulting from

installation of equipment which was not used for basis of design as outlined in

specifications shall be paid for by the supplying Contractor at no cost to Owner or Architect Engineer. G.Contractor shall be responsible for providing supervision to other trade Contractors to insure that required connections, interlocking and interconnection of MEP equipment is made to attain intended control sequences and system

H. Contractor shall obtain complete MEP data on shop drawings and shall list this data on an approved form that shall be presented on request, to other trade Contractors. Data shall be complete with wiring diagrams received to date and shall contain necessary data on electrical components of plumbing equipment such as HP, voltage, amperes, watts, locked rotor current to allow other trade Contractors to order support or other equipment coordinated as required in his

A. Whenever used in these specifications or drawings, following terms shall have indicated meanings:

B. Furnish: term "Furnish" is used to mean "supply & deliver to project site. Ready for unloading, unpacking, assembly. Installation & similar operations. C.Install: term "Install" is used to describe operations at project site including actual "unloading, unpacking. Assembly. Erection. Placing. Anchoring. Applying, working to dimension. Finishing, curing, protecting, cleaning. & similar

D. Provide: term "Provide" means "to Furnish & Install. Complete & ready for intended use." furnished by owner or furnished by others: item will be furnished by owner or others. It is to be installed & connected under requirements of this Division, complete & ready for operation, including items incidental to work. including services necessary for proper installation & operation. Installation shall be included under guarantee required by this Division.

E. Engineer: where referenced in this Division, "Engineer" is engineer of record & design professional for work under this Division, & is consultant to, & an authorized representative of, architect. As defined in general &/or supplementary conditions. When used in this Division. It means increased involvement by & obligations to, engineer, in addition to involvement by. & obligations to,

F. AHJ: local code &/or inspection agency (authority) having jurisdiction over work. G.The terms "Approved equal", "Equivalent". Or "Equal" are used synonymously & shall mean "accepted by or acceptable to engineer as equivalent to item or manufacturer specified" H. The term "approved" shall mean labeled, listed. Or both. By nationally recognized

testing laboratory (e.g. UL. ETL. CSA). & acceptable to AHJ over this project. PREBID SITE VISIT A. Prior to submitting bid. Visit site of proposed work & become fully informed as to conditions under which work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over & above

contract price. MATERIAL & WORKMANSHIP

A. Provide new material, equipment. & apparatus under this contract unless otherwise stated herein. Of best quality normally used for purpose in good commercial practice & free from defects. Model numbers listed in specifications or shown on drawings are not necessarily intended to designate required trim,

written descriptions of trim govern model numbers. B. Pipe, fittings, specialties & valves shall be manufactured in USA. Work performed under this contract shall provide neat & "workmanlike" appearance when completed to satisfaction of architect & engineer. Workmanship shall be finest possible by experienced mechanics. Installations shall comply w/ applicable codes & laws. Complete installation shall function as designed & intended w/ respect to efficiency, capacity, noise level, etc. Abnormal noise caused by rattling equipment, piping, ducts, air devices & squeaks in rotating components will not be acceptable. In general materials & equipment shall be of commercial specification grade in quality. Light duty & residential equipment is not

C.Remove from premises waste material present from work, including cartons, crating, paper, stickers, &/or excavation material not used. D. Clean equipment installed under this contract to present neat & clean installation at completion.

E. Repair or replace public & private property damaged as result of work performed under this contract to satisfaction of authorities & regulations having jurisdiction.

A. Coordinate work w/ other trades so various components of systems will be installed at proper time will fit available space & will allow proper service access for maintenance. Components which are installed without regard to above shall be relocated at no additional cost to owner.

B. Unless otherwise indicated, general contractor will provide chases & openings in building construction required for installation of systems specified herein. Contractor shall furnish general contractor w/ information where chases & openings are required. C.Keep informed as to work of other trades engaged in construction of project &

execute work in manner as to not interfere w/ or delay work of other trades. Figured dimensions shall be taken in preference to scale dimensions. D. Contractor shall take his own measurements at building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by proper checking & inspection.

E. Provide materials w/ trim that will properly fit types of ceiling, wall. Or floor finishes actually installed. Model numbers listed in specifications or shown on drawings are not intended to designate required trim. F. Obtain equipment submittal information for all pieces of equipment to be

new, unused and without damage.

connected to from other trades that clearly indicates all connection requirements, locations, sizes, and similar requirements. Obtain this information in ample time to coordinate other trade submittals and equipment coordination. Where requirements differ from that on plans or differs from provisions made in the work, immediately notify the architect/engineer. Do not proceed with work that is incompatible with equipment provided

G.Coordinate construction operations included in different sections of the specifications to ensure efficient and orderly installation of each part of the work. Coordinate construction operations, included in different sections, that depend on each other for proper installation, connection, and operation. H.Each contractor shall coordinate its construction operations with those of other 13. SHOP DRAWINGS

contractors and entities to ensure efficient and orderly installation of each part of the work. Each contractor shall coordinate its operations with operations. included in different sections, that depend on each other for proper installation, connection, and operation. I. Schedule construction operations in sequence required to obtain the best results

where installation of one part of the work depends on installation of other

components, before or after its own installation.

J. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair. K. Make adequate provisions to accommodate items scheduled for later installation. I. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and

M.Prepare coordination drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities. Content: project-specific information, drawn accurately to scale. Do not base coordination drawings on reproductions of the contract documents or standard printed data. Include the following information, as

1) Indicate functional and spatial relationships of components of architectural. structural, civil, mechanical, and electrical systems. 2) Indicate required installation sequences.

3) Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the contract. N.Meetings: conduct project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1) Attendees: each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with project and authorized to conclude matters relating to the work. Notify architect of meeting. 2) Agenda: review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect

3) Combined contractor's construction schedule: review progress since the last coordination meeting. Determine whether each contractor is on time, ahead or behind schedule, in relation to construction schedule. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time. Discuss impact of various contractor schedules upon other contractors and how to

4) Review present and future needs of each contractor present O. After shop drawings have been reviewed and approved by all parties, transmit a set of submittals to each other trade (eg Plumbing, Mechanical, Electrical, Controls, etc) that will interface with installation. Each other contractor shall review the submittal for coordination and return a stamped submittal indicating they have reviewed the submittal for coordination purposes.

ARCHITECTURAL VERIFICATION AND RELATED DOCUMENTS A. Contractor shall consult all Architectural Drawings and specifications in their entirety incorporating and certifying all millwork, furniture, and equipment rough-in including utility characteristics such as voltage, phase, amperage, pipe sizes, duct sizes, including height, location and orientation. Shop drawings incorporating these requirements should be submitted to the Architect for approval prior to installation or rough in.

A. Work performed under this contract shall. At minimum, be in conformance w/ applicable national, state & local codes having jurisdiction B. Installation work performed under this contract shall be in strict compliance w/ current applicable codes adopted by local AHJ including any amendments & standards as set forth by National Fire Protection Association (NFPA). Underwriters Laboratories (UL), Occupational Safety & Health Administration (OSHA). American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, & Air Conditioning Engineers (ASHRAE). American national standards institute (ANSI), American Society of Testing Materials (ASTM) & other national standards & codes where applicable. C. Where contract documents exceed requirements of referenced codes.

Standards, etc., contract documents shall take precedence. D. Procure & pay for permits & licenses required for accomplishment of work herein described. Where required, obtain, Pay for & furnish certificates of inspection to owner. Contractor will be held responsible for violations of law.

). STANDARDS A. Drawings and specifications indicate minimum construction standard. Should any work indicated be sub standard to any ordinances, laws, codes, rules or regulations bearing on work. Contractor shall promptly notify Architect Engineer in writing before proceeding with work so that necessary changes can be made. However, if the Contractor proceeds with work knowing it to be contrary to any ordinances, laws, rules, and regulations, Contractor shall thereby have assumed full responsibility for and shall bear all costs required to correct non complying

11. PROTECTION OF EQUIPMENT & MATERIALS

remedy impacts.

ORDINANCES & CODES

A. Store & protect from damage equipment & materials delivered to job site. Cover as required to protect from dirt & damage. Plug or cap open ends of ductwork & piping systems while stored & installed during construction when not in use to prevent entrance of debris into systems. Equipment & material that has been damaged by construction activities will be rejected. & contractor is obligated to furnish new equipment & material of like kind. Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. Shall have neat & clean appearance at completion.

A. The base bid shall include only products from manufacturers specifically named in drawings & specifications. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by engineer at least ten calendar days prior to date for receipt of bids. Request shall include name of material or equipment for substitution & complete description of proposed substitute including drawings, cuts, performance & test data & other information for evaluation. Statement setting forth changes in other materials. equipment or other work that incorporation of substitute would require shall be

B. The intent of these specifications is to allow ample opportunity for Contractor to use his ingenuity and abilities to perform the work to his and the Owner's best advantage, and to permit maximum competition in bidding on standards of materials and equipment required. C.Material and equipment installed under this contract shall be first class quality,

D.In general, these specifications identify required materials and equipment by naming one or more manufacturer's brand, model, catalog number and/or other identification. The first named manufacturer or product is used as the basis for design; other manufacturers named must furnish products consistent with specifications of first named product as determined by Engineer. Base bid proposal shall be based only on materials and equipment by manufacturers named, except as hereinafter provided

E. Where materials or equipment are described but not named, provide required items of first quality, adequate in every respect for intended use. Such items shall be submitted to Architect Engineer for review prior to procurement. F. Materials and equipment proposed for substitutions shall be equal to or superior to that specified in construction, efficiency, utility, aesthetic design, and color as determined by Architect Engineer whose decision shall be final and without further recourse. Physical size of substitute brand shall be no larger than space provided including allowances for access for installation and maintenance. Requests must be accompanied by complete descriptive and technical data including manufacturer's name, model and catalog number, photographs or cuts, physical dimensions, operating characteristics and any other information needed

G. The burden of proof of merit of proposed substitute is upon proposer. Engineer's

decision of approval or disapproval to bid of proposed substitution shall be final. Terms approved". "approved equal", & "equal" refer to approval by engineer as an acceptable alternate bid. No substitutions will be considered that are not bid

H No material substitutions shall be considered for approval after to award of contract. Coordinate & verify w/ other trades whether or not substituted equipment can be installed as shown on construction drawings without modification to associated systems or architectural or engineering design Include additional costs for architectural & engineering design fees in bid if drawing modifications are required because of substituted equipment.

A. Equipment to be furnished under this contract, items requiring coordination between contractors & sheet metal ductwork fabrication drawings. Before submitting shop drawings verify equipment submitted is mutually compatible & suitable for intended use & will fit available space & allow ample room for maintenance. Engineer's checking & subsequent approval of such shop drawings will not relieve contractor from responsibility for errors in dimensions, details, size of members, quantities, omissions of components or fittings; coordination of electrical requirements; or for coordinating items w/ actual building conditions. Proceed w/ procurement & installation of equipment only after receiving approved shop drawings relative to each item.

B. Submittal data shall be neatly organized, identified & indexed. Each item or model number shall be clearly marked & accessories indicated. Label catalog data w/ equipment identification acronym or number as used on drawings & include performance curves, capacities, sizes, materials, finishes, wiring diagrams & deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if above

mentioned requirements are not met C.Requirements shall be met electronically & submitted as pdf in files less than

D. Contractor's stamp, which shall certify that stamped drawings have been checked by contractor, comply w/ drawings & specifications, & have been

coordinated w/ other trades. E. Transmit submittals as early as required to support project schedule. Allow for two weeks a/e review time, plus duplication of this time for resubmittals, if required. Transmit submittals as soon as possible after notice to proceed & before construction starts. Engineer's submittal reviews will not relieve contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items w/

actual building conditions. F. Final copies shall be furnished to owner as part of O&M documents in hard & electronic formats.

14. OPERATION & MAINTENANCE INSTRUCTIONS

A. Collect & compile complete brochure of equipment furnished & installed on this project. Include operational & maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved shop drawings, test & balance reports, & descriptive literature as furnished by equipment manufacturer. Include an inside cover sheet that lists project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, & an index of contents. Submit three copies of literature bound in 3-ring binders w/ index & tabs separating equipment types to architect at termination of work. Final approval of plumbing systems will be withheld until manual is received & deemed complete by architect & engineer. Provide "as-built" drawings (see Division 1 & general

B. These requirements may shall also be provided to the owner in a well organized pdf electronic submission & delivered on a DVD or USB thumbdrive.

A. Provide factory trained & authorized representative to train owner's designated personnel on operation & maintenance of equipment provided for this project. Provide training to include but not be limited to an overview of system &/or equipment as it relates to facility as whole; operation & maintenance procedures & schedules related to startup & shutdown, troubleshooting, servicing, preventive maintenance & appropriate operator intervention; & review of data included in operation & maintenance manuals. Submit certification letter to architect stating that owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees & subject of training. Contractor & owner's representative shall sign certification letter indicating agreement that aining has been provided. Schedule owner training w/ at least 7 days' advance notice. 16. <u>SPARE PARTS</u>

A. Furnish to owner, w/ receipt one set of spare filters of each type required for each unit. In addition to spare set of filters, install new filters prior to testing, adjusting, & balancing work & before turning system over to owner. B. Furnish one complete set of belts for each fan.

17. EQUIPMENT LABELS: A.Material and thickness: multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware. Black letters on white background

B. Minimum label size: length and width vary for required label content, but not less than 2-1/2 by 3/4 inch. C.Minimum letter size: 1/4" for name of units if viewing distance is less than 24 ã, & @ • ÊÁFEDÐÄÁ; ¦Ás;ã\ ã, *Ásãa œ à, & ∿•Á]Á; Ái G√ÁBÁ; [] [¦cãi}æe^\^Áœ à*^¦Ár\œ^\¦ā, *Á; ¦ greater viewing distances. Include secondary lettering two-thirds to three-fourths

the size of principal lettering. 18. WARRANTIES A. Warrant each system & each element thereof against all defects due to faulty workmanship design or material for period of 12 months from date of substantial completion unless specific items are noted to carry longer warranty in construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects, occurring within warranty period(s) stated in general conditions & Division 1. Warranties shall include labor & material. Make repairs

or replacements without any additional costs to owner. Perform remedial work promptly, upon written notice from engineer or owner. B. At time of substantial completion, deliver to owner all warranties in writing & properly executed including term limits for warranties extending beyond one year period. Each warranty instrument being addressed to owner & stating commencement date & term.

19. <u>CUTTING & PATCHING</u> A.Perform cutting of walls, floors, ceilings, etc. As required to install work under this section. Obtain permission from architect prior to cutting. Do not cut or disturb structural members without prior approval from architect. Cut holes as small as possible. General contractor shall patch walls, floors, etc. As required by work under this section. Patching shall match original material & construction. Repair & refinish areas disturbed by work to condition of adjoining surfaces in manner satisfactory to architect. 20. EXCAVATION AND BACKFILL

A. Perform necessary excavation to receive work. Provide necessary sheathing, shoring, cribbing, tarpaulins, etc. For this operation, and remove it at completion of work. Perform excavation in accordance with appropriate section of these specifications, and in compliance with osha safety standards. B. Excavate trenches of sufficient width to allow ample working space, and no

deeper than necessary for installation work. C. Conduct excavations so no walls or footings are disturbed or injured. Backfill excavations made under or adjacent to footing with selected earth or sand and tamp to compaction required by architect engineer. Mechanically tamp backfill under concrete and pavings in six inch layers to 95% standard density, reference

D. Backfill trenches and excavations to required heights with allowance made for settlement. Tamp fill material thoroughly and moistened as required for specified compaction density. Dispose of excess earth, rubble and debris as directed by E. When available, refer to test hole information on architectural or civil drawings or

specifications for types of soil to be encountered in excavations.

A. Coordinate rough-in w/ general construction & other trades. Conceal piping & conduit rough-in except in unfinished areas & where otherwise shown. 22. STRUCTURAL STEEL A. Structural steel used for support of equipment, ductwork & piping shall be new,

clean, & conform to ASTM a-36. Support mechanical components from building

structure. Do not support mechanical components from ceilings, other mechanical or electrical components, & other non-structural elements. A. Provide access doors in ceilings, walls, etc. Where indicated or required for access or maintenance to concealed valves & equipment installed under this

section. Provide concealed hinges, screwdriver-type lock, anchor straps: manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size. Location & color before ordering.

24.PENETRATIONS A. Seal mechanical floor, exterior wall & roof penetrations watertight & weathertight. Seal around mechanical penetrations w/ 3M CP-25 fire barrier caulk (thickness as required & recommended by manufacturer) to maintain resistance rating of fire-rated assemblies. Provide prefabricated roof curbs manufactured by Custom Curb, Pate, Thycurb or approved equal. Provide roof curb w/ factory installed wood nailer; welded, 18 gauge galvanized steel shell, base plate & flashing; 1-1/2" thick, 3 pound rigid insulation; fully mitered 3-inch raised cant; cover of weather-resistant, weather-proof material & pipe collar of weather-resistant material w/ stainless steel pipe clamps. Make roof penetrations by authorized roofing contractor when required.

25.MOTORS & STARTERS A. Provide motors & starting equipment where not furnished w/ equipment package. Motors shall have copper windings, class b insulation, & standard squirrel cage w/ starting torque characteristics suitable for equipment served. Motors for air handling equipment shall be selected for quiet operation. Each motor shall be checked for proper rotation after electrical connection has been completed. Provide dripproof enclosure for locations protected from weather & not in air stream of fan: & totally enclosed fan cooled enclosure for motors exposed to weather. Motors shall be manufactured by Century, GE. Westinghouse, or approved equal. Provide every motor, except fractional horsepower single phase motors w/ an approved type of "built-in" thermal overload protection, w/ motor starter. Each starter shall be provided w/ overload heaters sized to motor rating. & every three phase motor starter shall have overload heaters in each phase. Ambient compensated heaters shall be installed wherever necessary. Unless noted otherwise, motor starters shall be furnished by Division 22/23 contractor for installation & connection by Division 26 contractor. Starters shall be Allen-Bradley, Clark, Furnas, Square D, or approved equal.

26. ELECTRICAL WIRING A.Line voltage wiring shall be provided by Division 26. Line voltage control & interlock wiring for mechanical systems shall also be provided by Division 26 contractor. Low voltage control wiring shall be provided by Division 22/23 contractor. Furnish wiring diagrams to Division 26 contractor as required for proper equipment hookup. Coordinate w/ Division 26 contractor actual wire sizing amps for submitted mechanical equipment to ensure proper installation

27. DISCONNECT SWITCHES A. Provide heavy-duty horsepower rated safety switches rated in accordance with NEMA enclosed switch standard KS 1_1969 and I98 standard. B. Each piece of electrical equipment shall be provided with a disconnecting means. C.Equivalents by: GE, Eaton, Siemens, Square D. 28. REFRIGERANT & OIL

A. Provide full refrigerant & oil charge in refrigeration systems. Maintain for full term of warranty.

29.FINAL TESTING & ADJUSTMENTS

A. Final system testing. Balancing & adjustments shall be performed by contractor certified by NEBB, AABC or other approved agency. Perform test readings on fans, units, coils, etc. & adjust equipment to deliver specified amounts of air or water. Prepare testing & balancing report log showing air supply quantities, air entering & leaving temperatures & pressures, fan & unit test readings, motor voltage & amp draws. etc., & submit PDF of final compilation of data to architect for evaluation & approval before final inspection of project. Balance air systems to within plus or minus 10 percent for terminal devices & branch lines & plus or minus 5 percent for main ducts & air handling equipment of amount of air shown on drawings. Further adjustments shall be made to obtain uniform temperature in spaces. Adjust equipment to operate as intended by specification. Align bearings & replace bearings that have dirt or foreign material in them w/ new bearings without additional cost to owner. Balance contractor shall include in report any improperly installed or missing balancing devices that would negatively impact system operation. Adjust thermostats & control devices to operate as intended. Adjust burners, pumps, fans, etc. For proper & efficient operation. Certify to architect that adjustments have been made & that system is operating satisfactorily. Further adjustments shall be made to obtain uniform temperature in spaces. Calibrate, set, & adjust automatic temperature controls. Check proper sequencing of interlock systems, & operation of safety controls.

30. EQUIPMENT FURNISHED BY OTHERS A. Provide necessary equipment & accessories that are not provided by equipment supplier or owner to complete installation of cooking equipment, washing equipment, etc., furnished by others, in locations as indicated on drawings &/or described in general notes to this contractor. Equipment & accessories not provided by equipment supplier may include flues, vents, intakes, associated roof jacks & caps to outdoors, dampers. In-line fans, roof fans, control interlocks, etc. As required for proper operation of complete system in accordance w/ manufacturer's instructions. Contractor shall be responsible for correct rough-in dimensions, & shall verify same w/ architect &/or equipment supplier prior to service installations.

31. SETTING, ADJUSTMENT AND EQUIPMENT SUPPORTS A. Work shall include mounting, alignment and adjustment of systems and

equipment. Set equipment level on adequate foundation and provide proper anchor bolts and isolation as shown, specified or required by manufacturers in installation instructions. Level, shim and grout equipment bases as recommended by manufacturer. Mount motors, align and adjust drive shafts and belts according to manufacturer's instructions. B. Equipment failures resulting from improper installation or field alignment shall be

repaired or replaced by Contractor at no cost to Owner. C.Floor or pad mounted equipment shall not be held in place solely by its own dead weight. Include anchor fastening in all cases.

D.Ú¦[çãå^Á|[[¦Á;¦Á|æàÁ;[ˇ}♂åÁvˇˇā]{^}ơÁ,ãc@Án'FEOSHÁ@ã @Ás[}&\^♂Áàæ•^•Á}|^•• •]^&ãa?\å4jc@;\jãa^ÈÁQ)àãçãa`zaþÁs[}&;\^c\ÁjæåÁ;@æ|Ás^Á;[Á\^••Ás@æ)Á;+Á;ãã^;Áæ)å I+Á[}*^¦Ás@en)Ár˘ŏã[{^}dÂsen)åÁs@en|Ár¢¢^}åÁ,[Ár••Ás@en)ÁG+Á-[{Áræa&@Ásãa^Á;~ E. Provide each piece of equipment or apparatus suspended from ceiling or

mounted above floor level with suitable structural support, platform or carrier in accordance with best-recognized practice. Verify that structural members of buildings are adequate to support equipment and unless otherwise indicated on plans or specified, arrange for their inclusion and attachment to building structure. Provide hangers with vibration isolators. F. Submit details of hangers, platforms and supports together with total weights of

mounted equipment to Architect_Engineer for review before proceeding with fabrication or installation.

32. MISCELLANEOUS REMODELING WORK

A.Remove all unused equipment, ductwork, piping & associated supports. Cap ductwork & piping at mains & seal air & water tight. Provide items of HVAC systems modification required because of building remodeling, as noted on drawings or necessary for proper operation. Match existing materials & construction techniques when modifying existing systems unless specified otherwise. Coordinate additional requirements w/ general contractor & architect. Seal airtight existing ductwork required to be abandoned in place or not in use at termination of work. Cap & seal weathertight existing roof curbs & roof openings to be abandoned in place as result of equipment removal. Clean & rebalance existing ductwork, diffusers, registers, & grilles intended for reuse as required or as indicated on drawings. Clean & refurbish existing HVAC equipment intended for reuse as required for proper operation including replacement of filters, belts, motors, remote controls, & safety interlocks.

33. FIRE BARRIERS A. General: for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction

34. WELDING A. Contractor shall be responsible for quality of welding and suitability of welding procedures. All welding shall be in accordance with American Welding Society standard B3.0 and ANSI standard b31.1 B. Welded pipe joints shall be made by certified welding procedures and welders. Welding electrodes shall be type and material recommended by electrode

manufacturer for materials to be welded. All pipe and fittings ends shall be

beveled a minimum of 30 degrees prior to welding. C.Only welders who have successfully passed welder qualifications tests in previous 12 months for type of welding required shall do welding. Each welder shall identify his work with a code marking before starting any welded pipe fabrication. Contractor shall submit three copies of a list of welders who will work on project listing welders' code, date and types of latest qualification test passed by each welder.

D. Welded joints shall be fusion welded in accordance with level AR3 of American Y^låā *ÁÛI & A^CÁCH åæ åæ åÁOHYÙÁÖF€Ð ÁNJæð åæ åÁOI¦ÁÛ *æ ãã & æ æā }ÁU √ÁY^låā * Ú¦[&^å`¦^•ÂŒ;åÀY^|å^¦•ÂZ[¦ÂÚ₫,^ÂŒ;åÀV`àð;*+ÊÀY^|å^¦•Å`aæjãðàÅ`}å^¦ national certified pipe welding bureau will be acceptable. E. Bevel all piping and fittings in accordance with recognized standards by flame cutting or mechanical means. Align and position parts so that branches and fittings are set true. Make changes in direction of piping systems with factory made welding fittings. Make branch connections with welding tees or forged

END OF GENERAL MEP REQUIREMENTS

MECHANICAL, ELECTRICAL & PLUMBING SPECIFICATIONS

conduit for a complete & functional installation. B. An approved automatic sprinkler contractor shall perform all work under this heading. System shall be installed in strict accordance w/ NFPA 13 Underwriters Laboratories (UL), & must be acceptable to owner's insurer, authority having jurisdiction & all applicable local, state & national codes & standards. Where contract documents exceed requirements of referenced codes, standards, etc.,

valves, drain valves, mains, risers, branches, sprinkler heads, test pipes, gauges,

exterior electric bell & dialers as shown or required. Coordinate all wiring &

contract documents shall take precedence C. Sprinkler system shall be certified. Contractor shall retain certification until contractor turns copies of certificates & permits over to owner. Contractor shall be approved & state licensed for design & installation of fire protection systems. Work done under this section shall be performed only by a contractor whose workmen are experienced & regularly engaged in installation of fire protection

D. System shall be hydraulically designed. Design of sprinkler system shall coordinate main & branch lines w/ structure, ceilings, piping, ductwork & light fixtures. Entire building shall be sprinkled. E. Work shall include, but shall not necessarily be limited to following: design & installation of a complete wet-pipe fire protection sprinkler system for project

space. Portions of systems subject to freezing or temperatures below 40' f shall be protected against freezing as required by NFPA 13. Contractor shall be responsible for repairs & for all costs incurred from damage caused by freezing of fire protection system. SYSTEM DESIGN

A. This contractor shall verify design criteria & rating hazards with owner's insurer prior to designing system. Waterflow & pressure test data shall be acquired before system is calculated & be dated not more than 12 months prior to submittal of sprinkler drawings.

B. Contractor shall verify with authority having jurisdiction any minimum safety factor requirements. Regardless, demand shall not be less than 10% below supply at demand point. C. The contractor shall be fully responsible for hydraulic calculations, arrangements

for & cost of flow tests, final system design, & layout of all components of system as required for approval by owner's insurer, authority having jurisdiction & all applicable local, state & national codes & standards. D. The contractor shall be fully responsible for coordinating system layout with other contractors. Changes to system design due to lack of coordination shall be paid

for by contractor. E. Sprinkler spacing shall conform to NFPA 13. Extended coverage sprinklers shall not be used in unfinished (shell) spaces. Hydraulic area of operation shall not be reduced as allowed by NFPA 13 for areas utilizing quick response sprinklers.

SHOP DRAWINGS A. Shop drawings & hydraulic calculations shall be furnished to architect &/or engineer, for his approval. Architect will forward one set to contractor after final approval. Submitted shop drawings shall bear a stamp indicating approval by authority having jurisdiction. Provide drawings electronically in pdf format.

B. Shop drawings shall meet requirements of NFPA 13 & shall include following: 1) Submit working plans per NFPA 13 including layout drawings of complete overhead sprinkler system indicating relationship of sprinkler piping & sprinklers to all other overhead items including ceiling grid & tiles, light fixtures, diffusers, registers, grilles, ductwork, etc. Location of risers, piping, etc., shall be as inconspicuous as possible & shall fulfill all functional requirements. System design capabilities & water demands shall also be noted on drawings.

2) Submit complete details & sections as required to clearly define & clarify design, including a materials list describing all proposed materials by manufacturer's name & catalog number.

4) Product data for all fire sprinkler system components. Provide next to sprinkler riser main, a printed sheet, protected by glass or a transparent plastic cover, giving brief instructions regarding control, emergency procedure & other data as required by NFPA 13. For hydraulically designed systems, a placard must be permanently attached to riser indicating location, & basis of design (discharge density & system demand).

A. Upon completion of installation, & as a condition of its acceptance, contractor shall compile three 8-1/2" by 11" manuals, firmly bound in heavyweight plastic or paper cover to withstand hard use. Loose-leaf binding is not acceptable. Manuals shall be delivered to architect, & shall contain following items: 1) Identification clearly visible on or through cover, name of project & "fire

2) Neatly typed index at front with all emergency information clearly identified. 3) Complete list of all system components with manufacturer's names, catalog numbers, & all data for ordering parts. 4) One copy of record drawings, as described above.

5) All information required to secure emergency repairs or service. 6) Contractor's "material & test certificate(s) for sprinkler system", as described in NFPA 13.

SPRINKLER HEADS A. Sprinkler heads - as required by NFPA 13 manufactured by Central, Viking, Star, Reliable, Grinnell, Automatic. Semi recessed chrome plated brass where exposed. Sidewall where required. Rough brass where concealed & exposed in

mechanical rooms. Concealed heads where located in sheet rock ceilings. Provided w/ necessary hardware for mounting into hard or acoustical ceilings. Reference architectural drawings for ceiling types & locations. Where no ceilings occur, provide standard brass upright or pendant as required by construction.

Temperature rating of heads shall be 165 deg f., except furnish 212 deg f. Heads C.Location of sprinkler heads is not shown on drawings but nevertheless shall be furnished & installed to meet requirements of specifications & NFPA. Center heads in 2x2 tile spacing in acoustic ceilings. Location of heads shall be as approved by architect. Provide head quards where required by NEPA. Furnish spare heads & wrenches mounted in metal cases where directed by architect &

B. Sprinkler heads shall be underwriters-approved, automatic spray type.

as required by NFPA. 7. PIPE, FITTINGS, & HANGERS

A. Sprinkler piping 2-1/2" & larger shall be schedule 10 or schedule 40 black steel. Sprinkler piping 2" & smaller shall be schedule 40. Pipes shall have welded, threaded, or mechanically joined fittings, based on pipe material & size per NFPA 13 requirements. Piping shall be UL listed & FM approved B. Acceptable alternatives to schedule 10 & schedule 40 pipe shall be

manufactured to standards recognized by NFPA 13. Threaded pipe shall have a corrosion resistance rating of 1.0 or greater. Crimp-type couplings shall not be used. Threadable thinwall pipe with corrosion resistance rating less than 1.0 not C.Hangers shall be of type & spacing to support pipes & meet approval of UL & FM.

Hangers shall be attached to structural components only. Support risers from structure below. Do not support exposed risers from clamps above floor. D. Conceal mains back or above construction in finished areas. Piping shall be designed to provide maximum head room in all areas. Piping shall not pierce

E. Pitch all dry pipe sprinkler piping to drain according to NFPA requirements, without exception & without traps. Wet pipe sprinkler systems may be pitched to drain or run level, but piping must be installed straight & true, without traps. F. Provide drain valves & inspector test valves as necessary to drain system & meet requirements of NFPA.

8. TESTING & ACCEPTANCE A. Upon completion of each phase of installation, each system shall be tested in conformance with local code requirements & as noted below. Contractor shall furnish all labor & equipment required to properly test all sprinkler equipment installed under this contract & he shall assume all costs involved in making tests, & repairing &/or replacing all damage resulting therefrom. B. Upon completion of systems installation, & prior to acceptance by engineer &

owner, this contractor shall make general operating tests to demonstrate that all equipment & systems are in proper working order, & are functioning in conformance with intent of drawings & specifications. C. After completion of installation, test, retest, & make all corrections necessary to secure acceptance by fire marshal &/or any other authority having jurisdiction.

Furnish all test equipment & personnel required. D. After completion of all installation, tests, etc., & prior to final acceptance date, contractor shall instruct building owner & his selected personnel in operation of sprinkler system & procedure to conduct quarterly main drain tests as required by NFPA 25.

EXECUTION A. All modifications & additions shall be performed without hampering proper operation of remaining system. Shop drawing submittals shall indicate by calculation total system compliance

B. Provide installation of water flow switches & tamper switches on bypass lines & shut off valves. Wiring by electrical contractor. Coordinate w/ fire alarm system. C. Submit drawings & calculations to state fire marshall, owner's insurance company & local building officials for approval.

D. Furnish all gauges, pumps, compressors & equipment required to perform tests. Coordinate all scheduling & work with other trades so as to prevent conflicts, & to ensure orderly progress of work, with a minimum of delays. When sprinkler piping is installed without coordinating with other trades & conflicts occur, sprinkler piping shall be relocated as required at no additional cost to owner to

E. Piping in areas having ceilings, other than underside of roof deck, shall be concealed. Piping in areas without ceilings may be exposed but kept at a minimum distance from deck. All piping shall be clean & free of rust. Install system such that all piping is rigidly secured & supported. All ductwork, lights, structural members & main runs of piping shall take precedence over sprinkler piping. Cutting of structural members for passage of sprinkler pipes or hangers will not be permitted. All horizontal piping in ceiling space shall be at an elevation above top of light fixtures & air outlets to allow for access to light fixtures & air outlets without removing horizontal piping. Route all sprinkler piping & provide all offsets, bends, & elbows around all mechanical, electrical, & structural members

F. Contractor shall coordinate with fire alarm contractor &/or electrical contractor connection of fire sprinkler alarm devices to fire alarm system or fire sprinkler G. Where exposed piping passes through finish work, chrome plated (or other finish

acceptable to architect) split wall plates or escutcheons shall be installed to fit snugly around piping H. Piping shall be routed parallel to building lines.

I. Seal all fire protection floor, wall & roof penetrations watertight & weathertight. Caulk around fire protection penetrations with approved fire barrier caulk as required to maintain fire resistance rating of fire-rated assemblies.

END OF DIVISION 21000

DIVISION 220000 - PLUMBING

3. PIPING IDENTIFICATION

 PLUMBING GENERAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL AND PLUMBING

PIPING & INSULATION A. Water service piping shall be copper type K tubing, ductile iron with mechanical joints or PVC AWWA C900 piping properly bedded and supported. B. Water piping - all water piping shall be 95-5 tin-antimony joined type L copper. Underground piping to be continuous tube. Insulate w/ fiberglass w/ ASJ & PVC covers. Thickness in accordance w/ ASHRAE 90.1. C. Waste & vent piping - CI bell & spigot below grade or hubless CI w/ neoprene

gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent welds may be used where allowed by local code. PVC not allowed in plenums. D. Roof/storm drain piping - CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent welds may be used where allowed by local code. PVC not allowed in plenums. Insulate w/ min 1/2" fiberglass pipe wrap w/ ASJ jacket. E. Gas piping - Provide Sched 40 cont. Weld carbon steel w/ corresponding fittings.

Provide threaded fittings. Provide iron body-brass plug gas stops. Provide 2 coats paint on exterior gas piping. F. See schedule on plans for additional information.

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wording prior to purchase of pipe markers. 4. <u>VALVES</u> A. Equivalent valves listed on current comparison charts of specified valve

manufacturers by Milwaukee, Stockham, Powell, Red-White, Crane, Apollo, Mueller, Muessco, Watts, Havs, Rockwell-Nordstrom, B. Ball valves - 2" & under - bronze full port w/ teflon seats, bronze ball & insulated

C.Balancing valves - Armstrong model CBV I or CBV II, 125 psi-wp at 250 degrees f., meter connections w/ built-in check valves screwed or flanged ends. Provide polyurethane insulation cover. D. Check valves - 2" & smaller screwed or solder bronze check valve, 200 psi-wog/125 psi-wsp, teflon or bronze disc & seat ring. 2-1/2" & larger flanged, ASTM 126 iron body, bronze trimmed, 200psi-wog/125 psi-wsp.

E.Ú|ˇ*Áşæqç^•ÆÄπ+ÁΒÁn{æ||^¦Áδε[}Áδε[å^Átæ•Áδε[&λΕΑπΤίΑÚÙQΥUÕÁδε|[}:^Áμ|ˇ* , æe @`¦Áæ) åÁ, ĭdÉÁ&¦^, ^åÁ^}å• ÈÁF´FÐ +ÁBÁæ+*^¦Ê^{ ã•c^^|Á;`à¦æ&æc^åÁ, |`*Áçæ†ç^Ê 175 PSI WOG coated plug, two bolt cover, and short pattern screwed ends. Provide w/ std. pattern cast handle.

F. Butterfly valves - 3" & larger lever ASTM A126 CI drilled & tapped full lug body, 200 PSI-WOG, extended neck, bronze disc, stainless steel stem, field-replaceable EPDM sleeve & stem seals. G.Installation

1) Install necessary valves within piping systems to provide required flow control, to allow isolation for inspection, maintenance and repair of each piece of equipment or fixture, and on each main and branch service loop. 2) Each valve shall be installed so that it is easily accessible for operation, visual inspection, and maintenance and wherever possible, gate, check and ball valves shall be installed on a horizontal run with the handle upright and within 15 degrees of vertical. Butterfly valves shall be installed with the stem in the horizontal position and the handle at 90 degrees from vertical. 3) Valves installed in piping systems shall be compatible with system maximum test pressure, pipe materials, pipe joining method, and fluid or

A. See schedules for further requirements and specific fixtures. B. Fixtures: American Standard, Kohler, Crane, Zurn, Toto. C. Stainless steel fixtures: Elkay, Just, Moen Commercial D. Fittings & supports: Josam, Smith, Wade, Zurn, Or Jonespec. E. Seats: Church, Olsonite, Bemis Or Beneke. F. Drinking fountains: Halsey Taylor, Elkay, Oasis, Or Haws

gas conveyed in system.

G. Trim by Moen, Delta, Eljer, Kohler, American St&Ard, Crane, Sloan. H.Flushvalves: Sloan, Zurn, Toto I. Drains by Wade, Zurn, Woodford, Smith, Josam.

overflow drains K.Yaa|Á@妿)o•Án{•æ(Án^¦ãn•ÁiF€€€Á,ÐÁN[}}^&cā[}•Á[¦Á ÄÁjā]^ÁBÁQ]•^È Non-freezing w/ key, vacuum breaker, locking cover. Equivalent by J.R. Smith, Wade, Woodford or Zurn.

J. Roof drains - cast iron roof drain w/ flange, CI mushroom dome. 2" dam for

L. Downspout nozzels - Wade series 3940 cast bronze downspout nozzles w/ threaded outlet & flange to secure nozzle to wall. 6. PLUMBING EQUIPMENT

A. See schedules for further requirements and specific equipment. B. Backflow preventers provide where shown on plans or as required by Code/AHJ the following types of backflow preventers. Provide isolation valve ahead of backflow preventers. Equivalent backflow prevents by Watts, Febco, Lawler.

1) Reduced pressure zone principle (FD) + IEE DELIK watts series 009 reduced pressure backflow preventer complete with strainers and valves. 2) Reduced pressure zone principle C+D +Ë+€+DK watts series 909 reduced pressure backflow preventer complete with strainers and valves. Provide isolation valve ahead of backflow preventers. Provide with air gap fitting

and pipe to floor drain 3) Double check valve CFECHICHDK watts series 007 double check valve assembly complete with ball type test cocks, full port ball valve shut offs and strainer. 4) Double check valve CHECHE watts series 707 double check valve

assembly complete with ball type test cocks, os&v valve shut offs and strainer. Epoxy coated cast iron check valve bodies with bronze seats. 5) Pressure vacuum breakers (FRG-IIC) watts series 800m4qt pressure vacuum breaker with integral ball valve shut offs. 6) Pressure vacuum breakers C+D +E+C+DKwatts series 008qt pressure vacuum breaker for anti-spill applications, with integral ball valve shut offs.

7) Atmospheric vacuum breaker (FD+EHDK watts series 288a atmospheric vacuum breaker in plain brass finish. 8) Hose bibb vacuum breakers vacuum breakers for hose end connections shall be Watts series 8 non-removable type

C.Domestic hot water expansion tanks be welded steel, diaphragm type tank, and pre_charged to the minimum operating pressure. Tanks shall be suitable for domestic water service. Provide by Amtrol. Bell & Gossett. Watts. D. Provide thermometers and wells at all water heaters. Provide pressure test plugs and gauges at water/fire services, booster pumps, etc. so that proper testing/

7. PLUMBING EXECUTION A. Provide unions or flanged joints in each pipe line preceding connections to equipment to allow removal for repair or replacement. Provide all screwed & control valves w/ unions adjacent to each connection. Provide screwed end valves w/ union adjacent to valve unless valve can be otherwise easily removed

B. All piping shall be properly supported with hangers and supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets and pipe clamps and similar systems. Protect integrity of insulation and provide rigid insulation inserts or pipe saddles as necessary.

C. After piping is in place test lines to insure no leaks.

balancing & trouble shooting can be accomplished.

D. All piping & equipment shall be supported properly from structure. E. Escutcheons - provide nickel-brass or chrome plated on all exposed pipes when passing thru wall or ceiling of finished rooms. F. Verify floor materials used from architectural plans & provide proper cleanout

tops, where they occur in carpet, quarry tile, vinyl tile or ceramic tile. G.Provide water hammer arrestors for all plumbing banks w/ fixtures utilizing flush valves in any capacity. Locate arrester between last two fixtures served on branch line.

H. Emergency Power Off _ For all water heaters/boilers over 399MBH Input, provide an emergency power off switch at the boiler room entrance to shutdown boilers, in the event of an emergency, when the switch is thrown. Switch shall be red and shall be labeled with a red and white phenolic plastic sign with white letters [}Á^åÁàæ&*¦[`}åÉÁ^æåã;*ÁAQ(^¦*^}&`ÁO(ā^¦ÁÚ@cå[;}+È

END OF DIVISION 22000

DIVISION 230000 - MECHANICAL

 MECHANICAL GENERAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements

2. SHEET METAL WORK A.HVAC ductwork shall be galv sheet metal of gauges & joint types specified in

SMACNA manual. Provide turning vanes in elbows. B. Coordinate routing of ductwork w/ other contractors such that piping, electrical

conduit, & associated supports are not routed through ductwork. Construct supply ducts to meet SMACNA positive pressure of 3" WG. Construct return. outdoor & exhaust ductwork upstream of fans to meet SMACNA negative pressure of 1" WG. construct exhaust ductwork downstream of fans to meet SMACNA positive pressure of 1" WG. C.Exposed ductwork to be field painted shall have galvanized metal primer applied in shop after fabrication & prior to shipping.

D. Seal ductwork w/ heavy liquid sealant, Hardcast Irongrip 601, Design Polymer DP 1010, United McGill duct sealer or approved equal, applied according to sealant manufacturer's instructions. E. Exposed spiral duct shall be Lindab or approved equal gasketed style.

F. Ducts shall be connected to fans, fan casings & fan plenums by means of flexible connectors. Flexible connectors shall be neoprene coated glass cloth canvas connections. Duro-Dyne. Elgen. Ventfabric or equal. Flexible connectors shall have flame spread of 25 or less & smoke developed rating not higher than 50. Make airtight joints & install w/ minimum 1-1/2" slack. G. All ductwork must be supported properly from structure.

hi-eff style w/ locking damper. Maximum length of flexible ductwork shall be

3. DUCTWORK SPECIALTIES A.Flexible ducts - Thermaflex or equal sound rated type G-KM insulated. (duct w/o published acoustical attenuation ratings not acceptable). Take off fitting shall be

B. Diffusers & grilles - see schedule. Equivalent by Price, Tuttle & Bailey, Titus,

Metal-Aire, Krueger. Coordinate color, mounting w/ duct, ceilings, architect.

Select air devices to limit room noise level to no higher than NC-30 unless

including information on noise level, pressure drop, throw, cfm for each air

type as required to be compatible w/ ceiling construction. Provide ceiling

plenums by diffuser manufacturer. Plenums shall be internally insulated by

C.Provide balancing dampers, manufactured by Ruskin, Greenheck, Nailor

consisting of circular blade mounted to shaft.

A. Equivalent by Cook, Penn, Acme, Greenheck, Jennaire.

B. Line all ductwork. See schedule on plans.

4. DUCT INSULATION WORK

sheaves shall be standard.

6. PROGRAMMABLE THERMOSTATS

approved equal

MECHANICAL EXECUTION

preventive maintenance.

8. FINAL TESTING & ADJUSTMENTS

filters are installed.

work shall comply w/ electrical specifications

inserts or pipe saddles as necessary

C. All exterior control wiring shall be in conduit.

5. EXHAUST FANS

on drawings & wherever necessary for complete control of air flow. Splitter

diffusers & grilles w/ white enamel finish unless noted otherwise. Provide slot

Industries, Cesco, Louvers & Dampers, Pottorff or approved equal, where 'shown

dampers shall be controlled by locking quadrants; provide young regulator or

ventlok end bearings for damper rod. Rectangular volume dampers shall be

opposed blade interlocking type. Round volume dampers shall be butterfly type

D. Damper leakage for outside air dampers shall not exceed 6.5 cfm/square foot in

full closed position at 4" wg pressure differential across damper. Reference

manufacturer & model number for outside air dampers is Ruskin model CD-50

A. Duct insulation shall meet flame/smoke rating of 25/50 per ASTM E 84.

B. Bearings shall be designed for 200,000 hours operation. Variable pitch motor

C.Fans shall be furnished with acceptable electrical disconnect & birdscreen.

Provide single phase motor equipped fans with motor rated start relay. Provide

disconnect means for all fans. Coordinate location of starter & disconnects with

D. Ceiling & Cabinet Exhaust Fans - Available Manufacturers: Cook, Penn, Acme,

Greenheck, Jennaire, Panasonic. Shall bear the AMCA Certified Ratings Seal for

sound and air performance. Provide speed controls to be furnished to E/C for

A. Stages of cooling & heating as required by stages on specified equipment. 7-day

programming capability w/ 2 occ/unocc periods/day. Auto heat/cool change over.

A. Coordinate w/ e/c to provide all wiring between equipment, dampers, thermostats

interlock wiring unless specifically shown on electrical drawings. All electrical

& all other required controls & devices. M/C is responsible for all control &

B. All piping shall be properly supported with hangers & supports specifically

D. Provide any required interfaces to fire alarm or similar systems.

H. Provide clean filters at time of project turnover. Provide

intended for that purpose. Provide clevis hangers, unistrut brackets & pipe

E. Provide ground-mounted units on 4", reinforced concrete base, 6" larger than

F. Roof-mounted units on equipment supports or curbs, sloped as req'd. Anchor

units to supports. Coordinate all requirements to maintain roof warranties.

maintenance personnel on startup, shutdown, troubleshooting, servicing,

A. Final system testing. Balancing & adjustments shall be performed by contractor

certified by NEBB, AABC or other approved agency. Perform test readings on

fans, units, coils, etc. & adjust equipment to deliver specified amounts of air or

water. Prepare testing & balancing report log showing air supply quantities, air

entering & leaving temperatures & pressures, fan & unit test readings, motor

voltage & amp draws. etc., & submit PDF of final compilation of data to architect

to within plus or minus 10 percent for terminal devices & branch lines & plus or

minus 5 percent for main ducts & air handling equipment of amount of air shown

on drawings. Further adjustments shall be made to obtain uniform temperature in

& replace bearings that have dirt or foreign material in them w/ new bearings

without additional cost to owner. Balance contractor shall include in report any

improperly installed or missing balancing devices that would negatively impact

system operation. Adjust thermostats & control devices to operate as intended.

satisfactorily. Further adjustments shall be made to obtain uniform temperature in

spaces. Calibrate, set, & adjust automatic temperature controls. Check proper

sequencing of interlock systems, & operation of safety controls. Verify clean

Adjust burners, pumps, fans, etc. For proper & efficient operation. Certify to

architect that adjustments have been made & that system is operating

spaces. Adjust equipment to operate as intended by specification. Align bearings

for evaluation & approval before final inspection of project. Balance air systems

G.Provide factory-authorized service start up on equipment. Train owner's

clamps & similar systems. Protect inetgrity of insulation & provide rigid insulation

Locking setpoints to prevent tampering. Provide w/ all interfaces to other

B. Thermostats by Honeywell, Johnson Controls, White-Rogers, Trane, Carrier or

mounting at fan. Provide wall/roof jacks as indicated on plans.

multiphase motor equipped fans with magnetic motor starter. Provide local

device, styles, borders, etc. Clearly marked w/ specified equipment number.

otherwise shown. Provide devices w/ soft plastic gasket to make an airtight seal

devices w/ architectural reflected ceiling plans. Submit complete shop drawings

Provide ceiling supply air diffusers & return air grilles of lay-in or surface mounted

against mounting surface. Coordinate final location, frame, & mounting type of air

Seymour/Legrand C Switches: 1) Light switches - spec grade 20 amp toggle switches w/ SS wall plates. 2) Wall motion switches - spec grade, pir, override.

room configuration, all necessary power packs & relays. for operation of exhaust fan delay.

5) Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters. Continuously adjustable slider; with single-pole or three-way switching. Comply with UL 1472. 600W or 1200W as required by load. Incandescent Lamp Dimmers: 120 V; control shall follow square-law dimming curve. On-off switch positions shall bypass dimmer module. LED Dimmers: Modular; compatible with dimming drivers in fixture(s); if

driver for full range of dimming (100-10%). Sensor Switch. D. Weatherproof cover plates:

aluminum or type 302 SS; single-cover for switches & vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing covers.

A.Disconnect (safety) switches: Square D, Siemens, Cutler Hammer, or General Electric fused or non-fused (as indicated on drawings or required) NEMA KS1, heavy duty, externally operated, visible-blade safety switches; NEMA enclosure type indicated on drawings or suitable for environment in which installed. Based on fusible switch & fuse sizes indicated, include class R, J, or L fuse provisions as applicable.

use as service entrance equipment, w/ integral & separate neutral & ground assemblies, suitable for sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor. C.Provide switches where not furnished w/ starting equipment, at all other points required by NFPA 70, & where indicated on drawings.

13. LUMINAIRES, LAMPS & BALLASTS A.Refer to lighting fixture schedule plans for fixture types. B. Equivalent luminaires by Hubbell, Infinity, Lithonia, Williams, Eaton [Cooper]. C.Fluorescent Fixtures:

1) Lamps shall be type recommended by fixture manuf. Lamp none above manuf recommended max wattage. Color temperature shall be coordinated throughout project, with generally 4100k interior lamps and min 85 CRI. Equivalent lamps by G.E., Venture, Phillips Or Sylvania. 2) Ballasts - Fluorescent - electronic, <20%THD, Equivalent by Advance, G.E., Motorola, Or Magnetek.

1) Lamps & modules: Philips, General Electric, Osram/Sylvania, Cree, Nichia.

9. STARTUP SERVICE A.Engage a factory-authorized service representative to perform startup service for

all equipment & systems. B. Complete installation & startup checks according to manufacturer's written

instructions & also do the following: 1) Inspect for visible damage to any part, casing or component. 2) Verify that labels are clearly visible.

Verify service clearances are provided. 4) Verify that controls are connected & operable. 5) Verify that filters are installed.

6) Clean all interior and exterior components of construction debris. 7) Connect & purge gas line. 8) Release and adjust vibration isolators.

10) Lubricate all bearings. 11)Inspect all rotating components for direction and correct. 12)Inspect for all rotating components for vibration & binding.

9) Inspect operation of barometric dampers.

13) Adjust fan belts to proper alignment & tension. 14) Start unit according to manufacturer's written instructions. 15) Start refrigeration system in summer only.

16)Complete startup sheets & attach copy with contractor's startup 17)Inspect & record performance of interlocks & protective devices; verify sequences

18) Operate unit for an initial period as recommended or required by manufacturer. 19)Perform the following operations for both minimum & maximum firing & adjust burner for peak efficiency. Adjust pilot to stable flame.

20)Measure gas pressure on manifold. 21)Measure combustion-air temperature at inlet to combustion

22) Measure flue-gas temperature at furnace discharge. 23)Calibrate thermostats and sensors.

24) Adjust & inspect high-temperature limits. 25)Inspect all dampers for stroke & interlocks. 26)Start refrigeration system & measure & record the following: 27)Coil leaving-air, dry- & wet-bulb temperatures.

28)Coil entering-air, dry- & wet-bulb temperatures. 29)Outside-air, dry-bulb temperature. 30)Outside-air-coil, discharge-air, dry-bulb temperature. 31)Inspect controls for correct sequencing of heating, mixing dampers,

refrigeration, & normal & emergency shutdown. 32)Measure & record the following minimum & maximum airflows. Plot fan volumes on fan curve.

33)Supply-air volume. 34)Return-air volume. 35)Relief-air volume.

36)Outside-air intake volume. 37)Simulate maximum cooling demand & inspect the following:

38)Compressor refrigerant suction & hot-gas pressures. 39)Short circuiting of air through outside coil or from outside coil to outside-air intake.

40) Verify operation of remote panel, including pilot-light operation & failure modes. Inspect the following: High-limit heat exchanger.

Warm-up for morning cycle 43) Freezestat operation. Economizer to limited outside-air changeover

46) After startup & performance testing, change filters, vacuum heat exchanger & cooling & outside coils, lubricate bearings, adjust belt tension, & inspect operation of power vents.

47) Provide one spare set of clean filters & deliver to owner.

C. Adjusting 1) Adjust initial temperature & humidity set points.

END OF DIVISION 23000

2) Set field-adjustable switches & circuit-breaker trip ranges as indicated. 3) Occupancy adjustments: when requested within 12 months of date of substantial completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this purpose, without additional cost.

E. Engage a factory-authorized service representative to train owner's maintenance personnel to adjust, operate, & maintain all HVAC equipment & systems.

ELECTRICAL SPECIFICATIONS SECTION 26000 - ELECTRICAL

sprinkler system manual".

GENERAL ELECTRICAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements.

B. Wiring of Mechanical Equipment 1) Provide all raceways & power wiring for all division 23 equipment requiring electrical connections, including, but not limited to, pumps, water heaters, & HVAC equipment, & all line voltage control & interlock wiring not provided under division 23. Connect per manufacturers' wiring diagrams. Coordinate with division 23 for disconnects furnished w/ equipment, & provide all disconnect switches as required. After installing wiring, verify that each motor load has correct phase rotation. 2) Verify actual "maximum overcurrent protection" (MOCP) device ratings &

"minimum circuit ampacity" (MCA) conductor sizing for mechanical equipment from equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from conductor & equipment sizes shown on drawings; however, in no case, reduce size of conductors indicated on drawings without authorization from engineer Provide properly sized electrical wiring & equipment without extra cost to owner. Notify engineer of all changes required in electrical installation due to equipment variances so that effects on feeders, branch circuits, panelboards, fuses & circuit breakers can be checked prior to purchasing & installation. Be responsible for coordinating w/ division 23 to verify actual ampacities & correct sizes of all conductors & overcurrent protective devices for all equipment, & correct overload heaters for all motors, when

starters are provided under division 26. C. Wiring of Thermostats. Time, & Temperature Controls 1) Provide all raceways, power wiring, & line-voltage control and interlock wiring not provided under division 23, for all thermostats, temperature control devices, & controls, including, but not limited to, night-stats, water heater interlocks, time switches & override timers. See mechanical drawings for locations & temperature control diagrams. Low-voltage conductors for thermostats & temperature control system may be run exposed above finished accessible ceilings, if approved & listed for this purpose, but shall be installed in conduit within walls & where exposed in

CONDUIT & CONDUCTORS

A.Follow circuiting shown on plans. Use no conduit smaller than 3/4" & no conductors smaller than #12 ga. Unless noted otherwise.

1) All circuits & feeders greater than 30A.

NEC) when not in conduit.

B. Conductors #10 and smaller shall be solid. C.If no conductor size is indicated on drawings for branch circuit, provide conductors & conduit sized per NFPA 70 & based on indicated branch circuit overcurrent protective device (OCPD) rating & number of poles. D. Wire shall be in non-flexible metallic conduit (EMT, IMC or RMC) for:

2) Kitchen circuits Home runs. E.MC cable acceptable for branch convenience circuits & lighting circuits. Do not daisy chain light fixtures. Provide cable whips of sufficient lengths to allow for relocating each light fixture within 5-foot radius of its installed location, but not

exceeding 6 feet in unsupported lengths 1) Do not use MC cable for following: homeruns to panelboards, where exposed to view or damage, hazardous locations, in concrete, block walls or wet locations, & when disallowed by local AHJ or landlord.

2) Provide health care rated MC for patient care areas (as defined by the

F. Conduit installed below grade shall be schedule 80 PVC heavy wall plastic

conduit meeting NEMA standards & UL listed for underground & exposed use.

Provide GRS radius bends & risers as conduits rise above grade or above floor

G.Lighting & receptacle circuit conductors shall be copper THHN-THWN-2 600 volt.

75 deg c, color coded as described under applicable codes. No romex, plastic

flex tubing etc permitted. Light fixture wire insulation shall have temp rating not

(tick marks) on each "circuit run" on drawings. In general, direction of branch

panelboard, as though "circuit runs" were indicated in their entirety. sizes, where properly colored insulation is not available, use vinyl plastic electrical tape of appropriate color around each conductor at all termination points, junction & pull boxes.

impedance path for ground fault currents. B. System shall comply w/ national electrical code, drawings & as specified. C.Provide equipment ground bus in base of low voltage, switchgear brazed or otherwise adequately connected by an approved method to ground rods.

D. Provide in conduit green insulated copper ground conductor to main metallic water service entrance & connect by means of adequate ground clamps. E. Equipment grounding conductors for branch circuit home runs shown on

volt branch circuits for lighting & power shall consist of phase & neutral serve as grounding conductor.

4. RACEWAY INSTALLATION Splice or tap only in approved boxes & enclosures w/ approved solderless minimum required. Insulate all splices, taps, & joints as required by codes.

walls or floors wherever possible except where otherwise indicated. contractor shall be responsible for proper & permanent locations.

elbow below grade & entire vertical transition to above grade. D. Provide interlocking spacers for multiple runs of UG conduits in same trench.

F. Use FMC for final connection to each motor & transformer, & to any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors or sunlight.

1) Provide all FMC & LFMC w/ an insulated bonding conductor. G.Install raceways parallel & perpendicular to building lines. H.Install raceways to requirements of structure & to requirements of all other work on project. Install raceway to clear all openings, depressions, pipes, ducts, reinforcing steel. & other immovable obstacles. Install raceways set in forms for

ends of conductors. & cover box K. Number of conductors in specific raceway "home run" is indicated w/ cross lines circuit "home run" routing is indicated on drawings, complete w/ circuit numbers & panelboard designation. Continue all such "home run" wiring to designated

A. Supplement grounded neutral of secondary distribution system w/ equipment grounding system, installed so that metallic structures, enclosures, raceways,

F. Provide low voltage distribution system w/ separate green insulated equipment grounding conductor for each single or three-phase feeder. Single phase 120 conductors & green ground conductor installed in common conduit which shall

A.Install all conductors & cable in raceways continuous without taps or splices.

strict accordance w/ manufacturer's recommendations, using the manufacturer's recommended tools. J. Where wiring is indicated as installed, but connection is indicated "future" or "by other division, trades, or contracts", leave minimum 3-foot "pigtail" at box, tape

L. Wiring shall have insulation of proper color to match NEC color code. In larger

junction boxes, outlet boxes, cabinets, machine frames, portable equipment & other conductive items operate continuously at ground potential & provide low

drawings shall indicate an individual & separate ground conductor for that branch circuit which shall be terminated at branch circuit panelboard, switchboard, or other distribution equipment.

shall be no smaller than that required by NEC.

2) Support all conductors & cables in vertical installations, as required by C.Provide GRS for all conduits run underground, exposed to weather, or exposed to other hazardous conditions. Provide GRS installed below grade w/ corrosion resistant bonded-plastic or approved mastic coating. This shall include 90-degree

E. All other raceway may be EMT where approved by local code. Use compression

type fittings for EMT, w/ all fittings UL listed for environment in which they are

less than individual fixture manufacturers recommended rating.

H. Circuits w/ no. 8 or larger conductors, motor circuits, power & feeder circuits & building service feeders shall be copper THHN-THWN-2 600 volt, 75 deg c. I. All materials used to terminate, splice or tap conductors: designed for, properly sized for, & UL listed for specific application & conductors involved, & installed in

raceway supports within 12 inches of all bends, on both sides of bends. Do not

G.Grounding conductors shall be as shown on plans or if not specifically shown

connectors, or crimp connectors & terminal blocks for control wiring, & keep to B. Install all circular raceways concealed above suspended ceilings or concealed in 1) All conduit, junction boxes, etc. Above ceilings shall be supported from structure. Pipe sleeves, hangers & supports shall be furnished & set &

NFPA 70, by installing cable supports or plug-type conduit riser supports,

concrete structure in such manner that installation will not affect strength of I. Install raceways continuous between connections to outlets, boxes & cabinets w/ minimum possible number of bends & not more than equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- & 90-degree bends, unless approved by engineer in advance. Make other bends smooth & even & without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible & never shorter than corresponding trade elbow. Use long radius elbows where necessary, indicated, or both.

> J. Securely fasten raceways in place w/ approved straps, hangers & steel supports as required. Attach raceway supports to building structure. Hang single raceways for feeders w/ malleable split ring hangers w/ rod & turnbuckle suspension from inserts spaced not over 10 feet apart in construction above. K. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add

> > L. Ream raceway ends, thoroughly clean raceways before installation, & keep clean after installation. Plug or cover openings & boxes as required to keep raceways clean during construction & fish all raceways clear of obstructions before pulling conductors wires. Provide raceways of ample size for pulling of wire & not smaller than code requirements & not less than 3/4", unless indicated otherwise on drawings. M.Protect all raceway installations against damage during construction. Repair all

support raceways from suspended ceiling components

approval without additional cost to owner N. Align & install true & plumb all raceway terminations at panelboards, switchboards, motor control equipment & junction boxes. O.Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints. P. Install pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament plastic line. Leave min. 24" slack at each end.

raceways damaged or moved out of line after roughing-in to meet engineer's

Q.Make all joints & connections in manner that will ensure mechanical strength & R. Effectively seal raceways, by installing conduit fitting at boundary of two spaces, & filling it w/ an approved pliable material, after conductors or cables have been installed & tested, whenever raceways pass from non-cooled to cooled spaces or transition from outside facility or enclosure to inside, whether buried or exposed. **BUSHINGS & LOCKNUTS** A. Rigidly terminate conduits entering sheet metal enclosures to enclosure w/

shall enter enclosure squarely

B. Provide bushings & locknuts made of galvanized malleable iron w/ sharp, clean-cut threads. Where EMT enters box, provide approved EMT compression C.Use insulated, grounding, or combination, bushings wherever connection is subject to vibration or moisture when required by NFPA 70, or both. JUNCTION & OUTLET BOXES

A. All boxes including light fixture, switch, receptacle, & similar outlet boxes:

National Electrical, Appleton, Steel City, Raco, or approved equal, galvanized

steel knockout boxes, suitable in design to purpose they serve & space they

bushing & locknut on inside & locknut or an approved hub on outside. Conduit

occupy. Size as required for specific function or as required by NFPA 70, whichever is larger.

1) Lighting fixture boxes in ceilings shall not be less than 4" octagonal knockout type. B. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush w/ finished surface, accurately set, & rigidly secured in position. Provide plaster rings, extension rings &/or masonry rings as req'd for flush mounting. Provide approved cast outlet boxes, w/ hubs & weatherproof covers, in all areas subject to damp, wet, or harsh conditions

C. Coordinate locations of outlet boxes. Outlets are only approx located on small scale drawings. Use great care in actual location by consulting various large scale detailed drawings used by other division trades, & by securing definite locations from architect. D. All outlets, shall be mounted w/ bottom at 18" AFF & switches w/ bottom at 44" AFF floor unless noted otherwise on plans. Refer to arch for other required

7. ELECTRICAL IDENTIFICATION A.Manufactured labels for each panelboard & transformer. Typewritten panel schedules mounted in panels B. Printed tape style label for each receptacle indicating panel & circuit #. C.Manufactured labels for all disconnect switches indicating equipment served. D. Branch circuits - identify each circuit w/ wire markers when enclosure label & wire colors do not provide enough information to identify each circuit without tracing. Feeders & branch circuit home runs w/ wire marker w/ panel & ckt #.

elevations & cabinetry coordination.

Typewritten card directory.

11. WIRING DEVICES

Box covers above lay-in ceilings neatly marked w/ indelible marker. E. Fire alarm - nameplate on each fire alarm terminal cabinet. Label all wiring. DIGITAL LIGHTING CONTROLS A. Provide DLM systems consisting of lighting control panels, room controllers, motion sensors, daylight sensors, & other other controls as necessary to achieve lighting switching & dimming control indicated on the drawings. B. Provide all interconnecting wiring, controls, programming & owner training for the

C.Provide systems by: Cooper, Hubbell, Leviton, Phillips, Sensor Switch, Watt Stopper, Lutron. D. Execution: 1) Calibrate all sensor time delays & sensitivity for proper detection of occupants & energy savings. Adjust time delays. 2) Provide documentation of room by room system configuration including: sensor parameters, time delays, sensitivities, & daylighting setpoints, sequence of operation, load parameters.

3) Post start-up tuning - 30 days after occupancy contractor shall adjust

sensors to meet the owner's requirements. Provide a detailed report to the architect / owner of post start-up activity. A. Branch circuit 208/240v panels shall be capacity shown w/ tin plated copper bussing & braced for minimum of 10,000a aic or as otherwise noted or required (series rated acceptable). Bolt on circuit breakers. 480v panels same except 14,000a aic min. or as otherwise noted. Minimum 20" wide w/ galv steel enclosure w/ hinged door & keyed lock. Coord trim w/ mounting location.

printed labels to load served. C.Equivalent by Square D, Siemens, Cutler Hammer, Or GE. 10. <u>CIRCUIT BREAKERS IN EXISTING PANELBOARDS</u> A. Provide new circuit breakers, for installation in existing panelboards, of same manufacturer, type & short circuit current interrupting ratings as existing panelboard circuit breakers.

B. Distribution panels shall be capacity shown & shall be Square D I-Line w/ tin

plated copper bussing. 65kaic min or as otherwise noted/reg'd. Bolt on circuit

A. Color of devices as directed by architect B. Convenience outlets:

1) Spec grade 20 amp duplex w/ ground & SS wall plates. Other outlets shall be verified w/ equipment suppliers for proper NEMA configurations. Provide GFCI rated devices where indicated & as reg'd per code. 2) Equivalent devices by Cooper/Eaton, Hubbell, Leviton, Pass &

3) Ceiling motion switches - spec grade, dual technology, model as req'd by 4) Wall motion switches (bathroom) - dual relay, spec grade, PIR, 2nd relay

other than 0-10V dimming is provided, verify dimmer is compatible with 6) Equivalent devices by Leviton, Bryant, Hubbell, Wattstopper, Lithonia,

1) Provide GFCI receptacles for weatherproof receptacles. 2) For wet locations: in-use NEMA 3R, UL-labeled plates die cast metal and 3) For damp locations: UL-listed for wet locations w/ cover(s) closed; die-cast

12. DISCONNECT (SAFETY) SWITCHES

B. Where indicated, provide fusible switches permanently labeled as suitable for

D.LED Fixtures:

2) LED components, lamps, drivers, and fixtures shall comply with: PCC 47 CFR Part 15; UL 8750; ANSI/NEMA Standards C78.377, NEMA SSL-1, C82.77, IESNA Standards TM-16-05, RP-16, LM-79, LM-80 and TM-21. 3) Drivers shall be integral to the fixture unless otherwise shown or specified. E. Emergency ballasts/drivers/batteries/inverters - shall be Bodine, lota. Coordinate voltages and outputs for min. 90 minute operation with fixtures scheduled and controls indicated and provided.

F. Execution: 1) Provide lighting fixtures w/ lamps & accessories req'd for hanging. Coord mounting of lighting fixtures w/ architect & G/C. Additional fixture supports shall be provided by E/C. Supports shall comply w/ latest edition of NEC Provide lighting fixture securing clips as required. Consult arch plans for ceiling types & provide surface & recessed lighting fixtures w/ appropriate mounting components & accessories. 2) Fixtures mounted in fire rated ceilings shall be provided & installed w/ fire rated enclosures to maintain ceiling integrity

Provide concrete base for pole & ground rod. 14. ADJUSTING. ALIGNING & TESTING A. Adjust, align, & test all electrical equipment on this project provided under this division & all electrical equipment furnished by others for installation or wiring under this division for proper operation. Test all systems & equipment according to requirements in NETA ATS (latest edition) & all additional requirements

3) Poles & support components: comply w/ OEDEJPVUÆŠVÙË È Provide steel

poles in color as specified or selected by architect. Provide bolt covers.

B. In following sections. Maintain following on project premises at all times: true RMS reading voltmeter, true RMS reading ammeter, & megohmmeter insulation resistance tester. Provide test data readings as requested or as required by 15. <u>SYSTEM START UP</u> A.Prior to starting up electrical systems:

permanent light fixtures.

END OF DIVISION 26000

1) Check all components & devices. 2) Lubricate items accordingly. 3) Tighten screws & bolts for connectors & terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486a & UL 486b. 4) Check & record building's service entrance voltage, grounding conditions, grounding resistance, & proper phasing. B. Replace all burned-out lamps & lamps used for temporary construction lighting in

C. After all systems have been inspected & adjusted, confirm all operating features required by drawings & specifications & make final adjustments as necessary.

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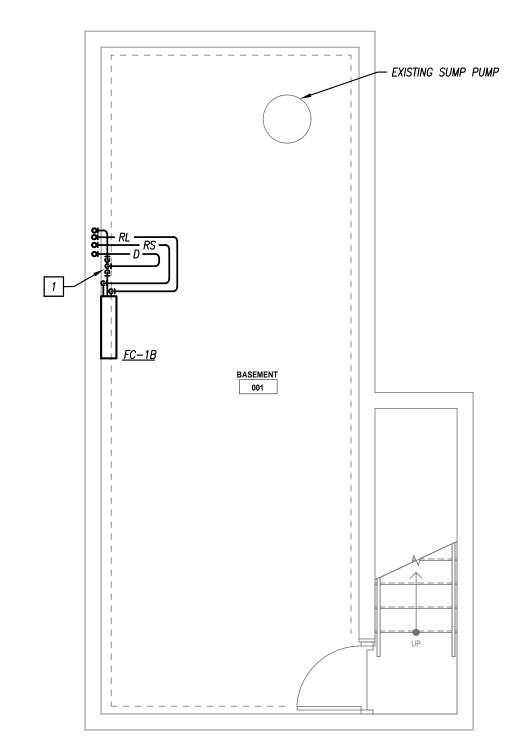
REVISION DATES:

City Comments



PROFESSIONAL SEAL

MECHANICAL, ELECTRICAL & PLUMBING SPECIFICATIONS



BASEMENT - FLOOR PLAN - HVAC

1/4" = 1'-0"

NOTES:
1. CONDENSING UNIT MANUFACTURER TO SIZE ALL REFRIGERANT LINES

AND PROVIDE ALL ACCESSORIES FOR VERTICAL RUNS AS REQUIRED.

2. INSULATE REFRIGERANT SUCTION LINES — REFER TO SPECIFICATIONS.

MINI SPLIT CONDENSING UNIT / HEAT PUMP DETAIL

— 3/8" NUT & BOLT

— SADDLE TAP

45° (VERIFY W/

EACH SPACE)

CONDENSING UNIT / — HEAT PUMP ON GRADE

3–1/2" FIBERGLASS ——
OR CONCRETE PAD
AS NOTED ON PLANS REFRIGERANT LIQUID AND ——
SUCTION PIPING

COIL HAIL GUARD -

NOT TO SCALE

1" X 16 GA. __ ROLLED BAND

EXPOSED SPIRAL DUCT (LINED OR PERFORATED —/

DOUBLE-WALL CONST.)

3/8" ALL THREAD —

DOUBLE DEFLECTION GRILLE WITH _ OPPOSED BLADE DAMPER

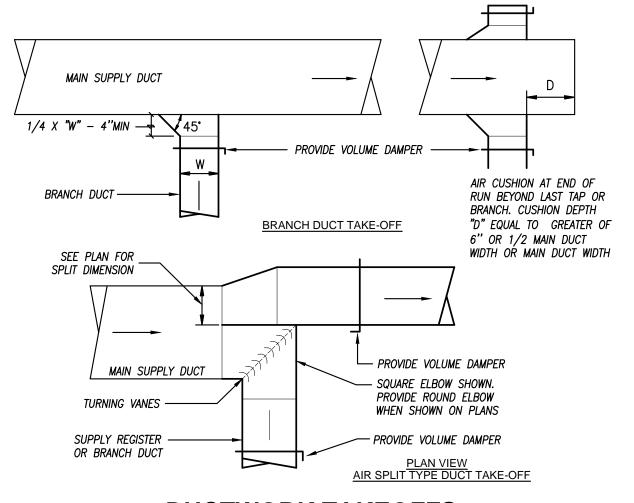
NOT TO SCALE

ROUND DUCTWORK AND

SIDEWALL GRILLE DETAIL

PIPING AS REQUIRED

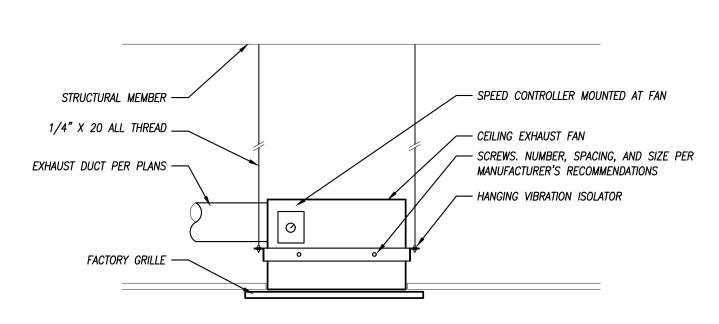
PROVIDE SUPPORTS FOR — TO EVAPORATOR — COIL ON EQUIP.



DUCTWORK TAKEOFFS

NOT TO SCALE

552-01

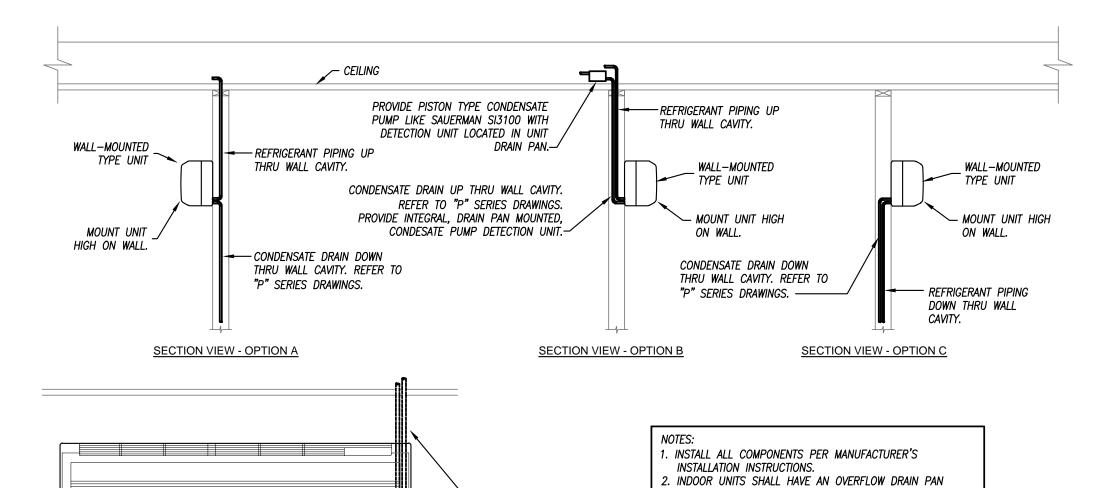


CABINET EXHAUST FAN MOUNTING DETAIL

NOT TO SCALE

562-06

PLAN VIEW - OPTION A



WALL-MOUNTED INDOOR UNIT DETAILS

NOT TO SCALE 576-01

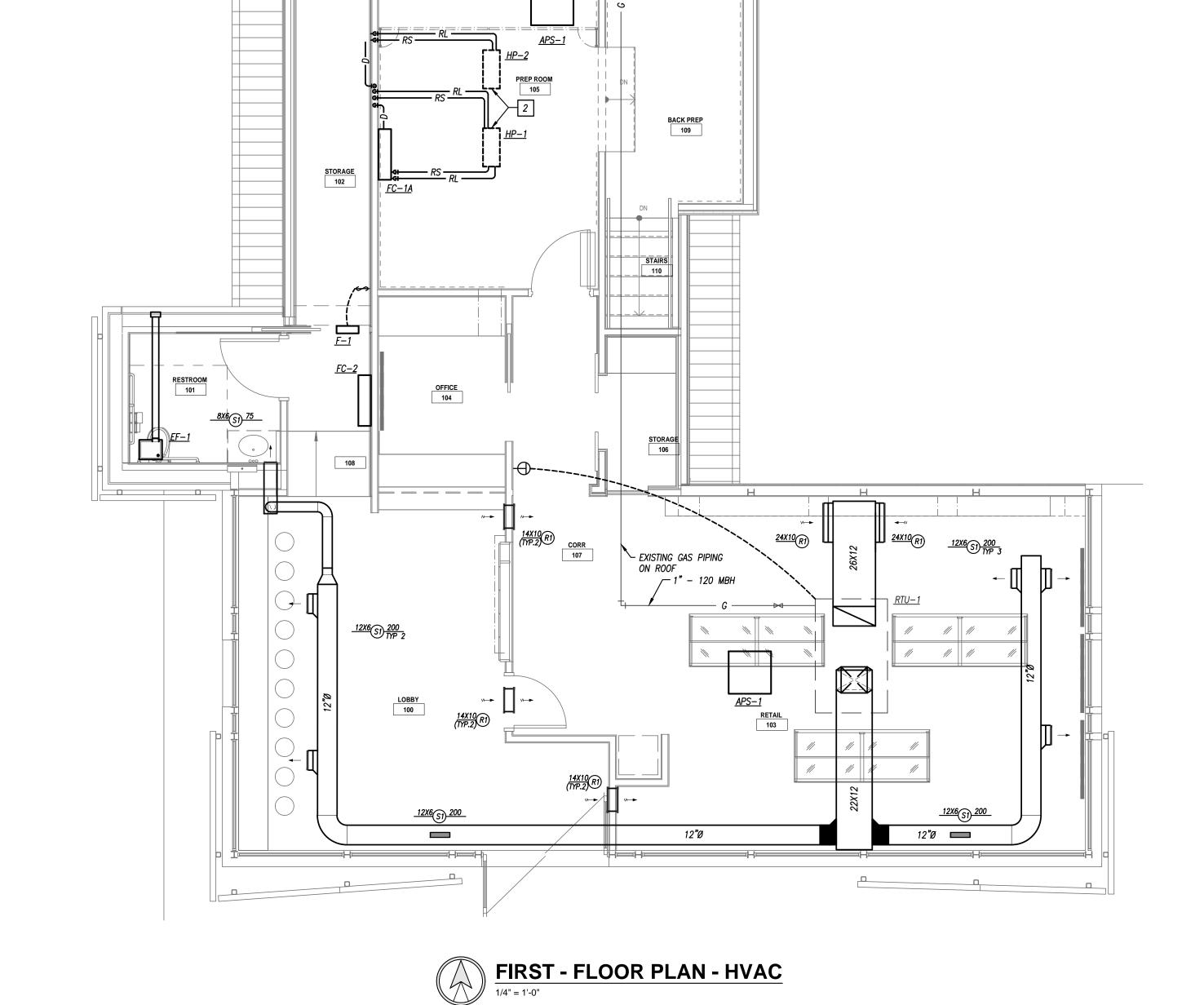
REFRIGERANT LINESET AND

CONDENSATE DRAIN IN WALL

INTERLOCK SWITCH.

INSULATED AS SCHEDULED.

3. REFRIGERANT LINES AND CONDENSATE DRAINS SHALL BE



1" – 200 MBH CONNECT TO EXISTING GAS UTILITY METER.

. (80 MBH FUTURE)

PLAN MARK	MANUFACTURER	MODEL NUMBER	TVDE	FAN [DATA	FLECTRICAL	CONTROL	REMAR
PLAN MARK	IVIANUFACTURER	MODEL NUMBER	TYPE	CFM	HP	ELECTRICAL	CONTROL	KEIVIAI
APS-1	GLOBAL PLASMA SOLUTIONS	GPS-300	CEILING CASSETTE	300	122W	120V / 1PH	SWITCH	1.2

					EAN			AT)			CACHEATING			ECTRICAL		
LAN MA	1ANUFACTURER	MODEL	CFM	O.A. CFM		DATA		COOLING COIL		INDUT (MDLI)	GAS HEATING	ÒOT/IBOT/ÍG/AD		ECTRICAL	MOOD	REMARKS
					E.S.P.	HP	EAT (DB/WB)	LAT (DB/WB)	T/S CAPACITY	INPUT (MBH)	OUTPUT (MBH)	ÒŒ/ŧŠŒ/ÁÇØD	VOLT/PH	MCA	MOCP	
TU-1	TRANE	YSC048–H	1,600	320	0.50	1.0	80/67	59.6/58.4	4 5.5/35.5	120.0	96.0	56/111	230V / 3PH	24.1	35	1,2,3
IU-1 EMARKS:	IRANE	YSC048-H	1,600	320	0.50	1.0	80/6/	59.6/58.4	45.5/35.5	120.0	96.0	56/111	230V / 3PH	24.1		35

EXHAUST FAN SCHEDULE										
	DLAN		MODEL			FAN DA	ATA			

2. FURNISH WITH INTEGRAL SINGLE-POINT ELECTRICAL DISCONNECT.

3. FURNISH WITH ROOF CURB AND HAIL GUARDS.

4. PROVIDE WITH ALL UL REQUIRED GREASE TRIM AND COMPONENTS.

			_												
PLAN	MANUFACTURER	MODEL	TYPE	SERVICE				FAN DATA				ELECTRICAL	CONTROL	NOTES	REMARKS
MARK	WANDFACTORER	NUMBER	TIFE	SERVICE	CFM	E.S.P. (IN)	BHP	HP	DRIVE	SONES	RPM	ELECTRICAL	CONTROL	NOTES	KEWAKKS
EF-1	COOK	GC-146	CEILING CABINET	BATHROOM	90	0.250		36W	DIRECT	1.3	900	120V / 1PH	SWITCH		
F-1	BROAN	510	ROOM-TO-ROOM FAN	STORAGE	180				DIRECT	4.5	1,575	120V / 1PH	SWITCH		
REMARKS	<u>.</u>														
	<u>:</u> Shall be provided with	SOLID STATE SI	PEED CONTROL.												
2. PROVI	DE WITH CONTROLLER SW	VITCH													
3. PROVI	DE WITH STARTER AND W	IRE TO START SI	WITCH.												

PLAN MARK	MANUFACTURER	MODEL NUMBER	MATERIAL	STYLE	DESCRIPTION	MOUNT TYPE	FACE SIZE (IN)	NECK SIZE (IN)	VOLUME DAMPER	MAX APD (IN. WG.)	MAX NC	FINISH COLOR	REMARKS
SUPPLY	′	!	•	!			•	•	•	•	•		
S1	TITUS	300RS	STEEL	WALL/CEILING GRILLE	DOUBLE DEFLECTION 3/4" SPACING AEROBLADE	FLANGE	DUCT + FRAME	AS INICATED	YES - 0.B.	0.07	30	WHITE	
RETURI	V												
R1	TITUS	350RL	STEEL	SQUARE WALL	35 DEG SINGLE DEFLECTION AEROBLADE 3/4" SPACING	WALL	AS INDICATED	AS INDICATED	NO	0.08	25	WHITE	
1. PROVI	<u>REMARKS:</u> DE ALL GRD WITH ALL IDE GRD WITHOUT SCRE Y CEILING CONFIGURATIO	WHOLES WHEN	INSTALLED IN LAY		NS.			NOTES: 1. PROVIDE WITH INS 2. LENGTH AS INDIC, 3. PROVIDE ROUND 4. COORDINATE FINIS PROVIDE PRIMED PAI	ATED ON PLANS. NECK ADAPTER SH WITH ARCHITE	WHERE SHOWN TCT. PROVIDE (GALVANIZED OR	MILL FINISH WH	IERE DUCTWORK IS NOT TO BE PAINTE

FAN	FAN COIL SCHEDULE											HEAT PUMP UNIT SCHEDULE									
PLAN MARK	MANUFACTURER	MODEL NUMBER	CFM	E.S.P. (IN. W.C.)	TOTAL COOLING CAPACITY (MBH)	TOTAL HEATING CAPACITY (MBH)	VOLTAGE VOLTAGE	CTRICAL MCA	МОСР	REMARKS	PLAN MARK	MANUFACTURER	MODEL NUMBER	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	MINIMUM SEER	AMBIENT VÒT ÚÞÁÇÞØD		ECTRICAL M.C.A.		REMARKS
FC-1A	MITSUBISHI	MSZ-GL09NA	300	0.5	9.0	10.9	230V / 1PH	1.0	15	1,2	HP-1	MISTUBISHI	MXZ-2C20NA	20.0	22.0	17.0	105°	230V / 1PH	29.5	40	1,2
FC-1B	MITSUBISHI	MSZ-GL09NA	300	0.5	9.0	10.9	230V / 1PH	1.0	15	1,2	HP-2	MISTUBISHI	MUZ-GL12NA	12.0	14.4	23.1	105°	230V / 1PH	9.0	15	1,2
FC-2	MITSUBISHI	MSZ-GL12NA	400	0.5	12.0	14.4	230V / 1PH	1.0	15	1,2	DEMARKS										
REMARKS: 1. CAPACITIES AND AIRFLOWS ARE MANUFACTURER'S VALUES AT RATED CONDITIONS, NOT ACTUAL OPERATING CONDITIONS. 2. PROVIDE WITH WIRELESS REMOTE CONTROLLER. REMARKS: 2. PROVIDE WITH WIRELESS REMOTE CONTROLLER.																					

GENERAL NOTES

- . REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. ROUND BRANCH DUCT RUNOUTS AND FLEXIBLE DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK
- SHALL BE THE SAME SIZE AS THE DIFFUSER N UNLESS NOTED OTHERWISE.
- 3. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0".
- 4. ALL AIR DISTRIBUTION DEVICES SHALL HAVE LOCKABLE VOLUME CONTROL DEVICES.
 5. ALL 90 DEGREE TURNING ELBOWS SHALL BE SMOOTH ROUND OR SQUARE WITH TURNING VANES.
- 6. DUCT SIZES SHOWN ON PLANS ARE INSIDE FREE AREA.
- 7. FOR BALANCING THE OUTSIDE AIRFLOW QUANTITIES, REFER TO HVAC SCHEDULES.

PLAN KEYED NOTES

1 ROUTE CONDENSATE DRAIN TO OPEN HUB DRAIN.
REFER TO PLUMBING PLAN.

2 INSTALL HEAT-PUMPS AT ATTIC SPACE.

PERMIT SET

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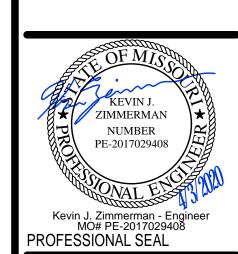
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3RD STREET DISPENSARY

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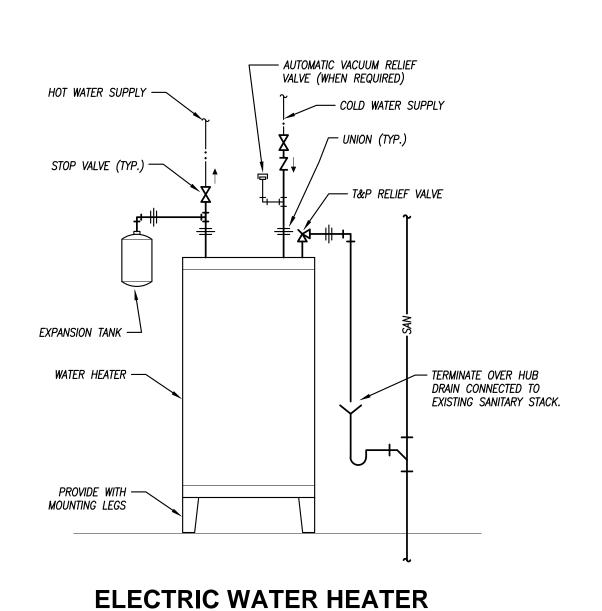
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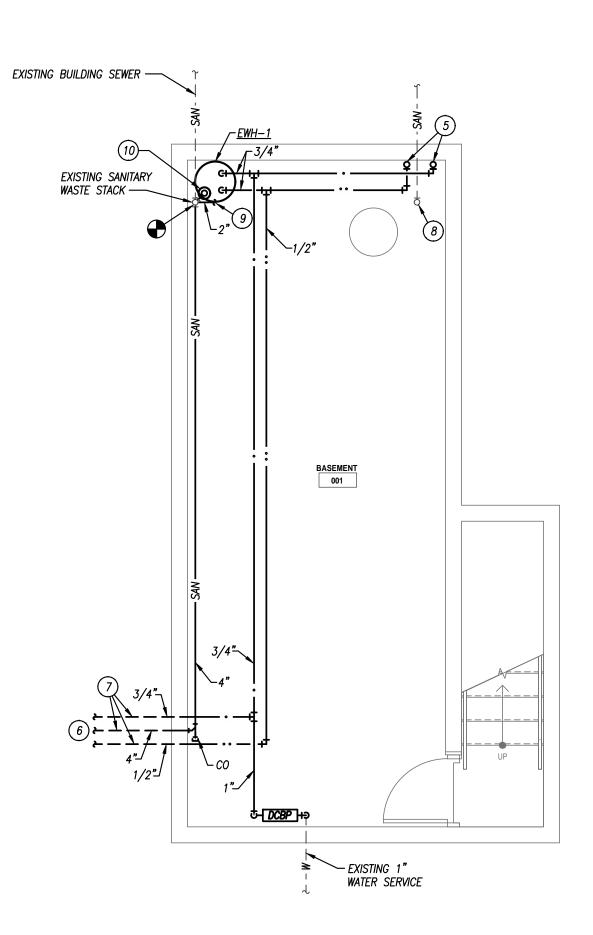
1 City Comments



ISSUE DATE: 03/27/2020
PKMR #: 1937

MECHANICAL - PLANS, SCHEDULES & DETAILS NOT TO SCALE







FLOOR DRAIN SCHEDULE

MANUFACTURER MODEL NUMBER

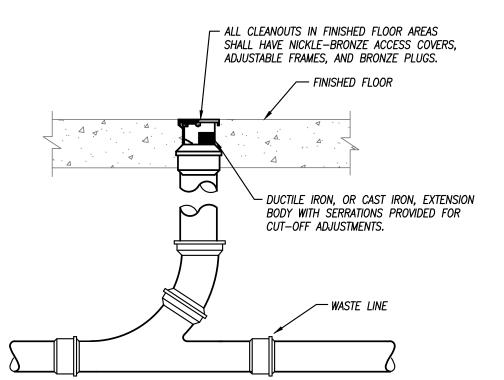
1. PROVIDE WITH NICKEL BRONZE TOP.

<u>REMARKS:</u>

SERVICE

 WADE
 1100
 FLOOR DRAIN
 6"Ø
 2"
 1

TOP/GRATE WASTE REMARKS



FLOOR CLEANOUT DETAIL

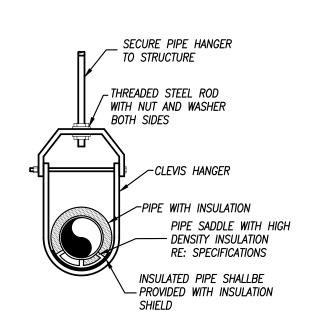
MIXED WATER —

SUPPLY

HAND WASHING SINK/LAVATORY

TEMPERED WATER SCHEMATIC

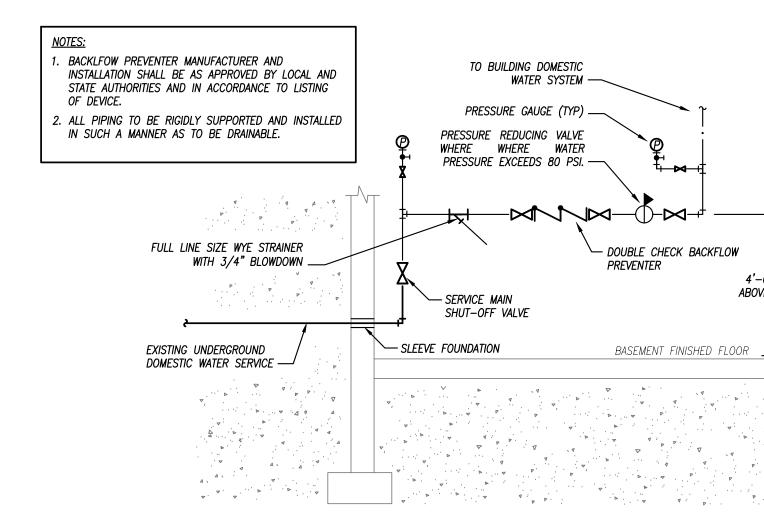
THERMOSTATIC WATER



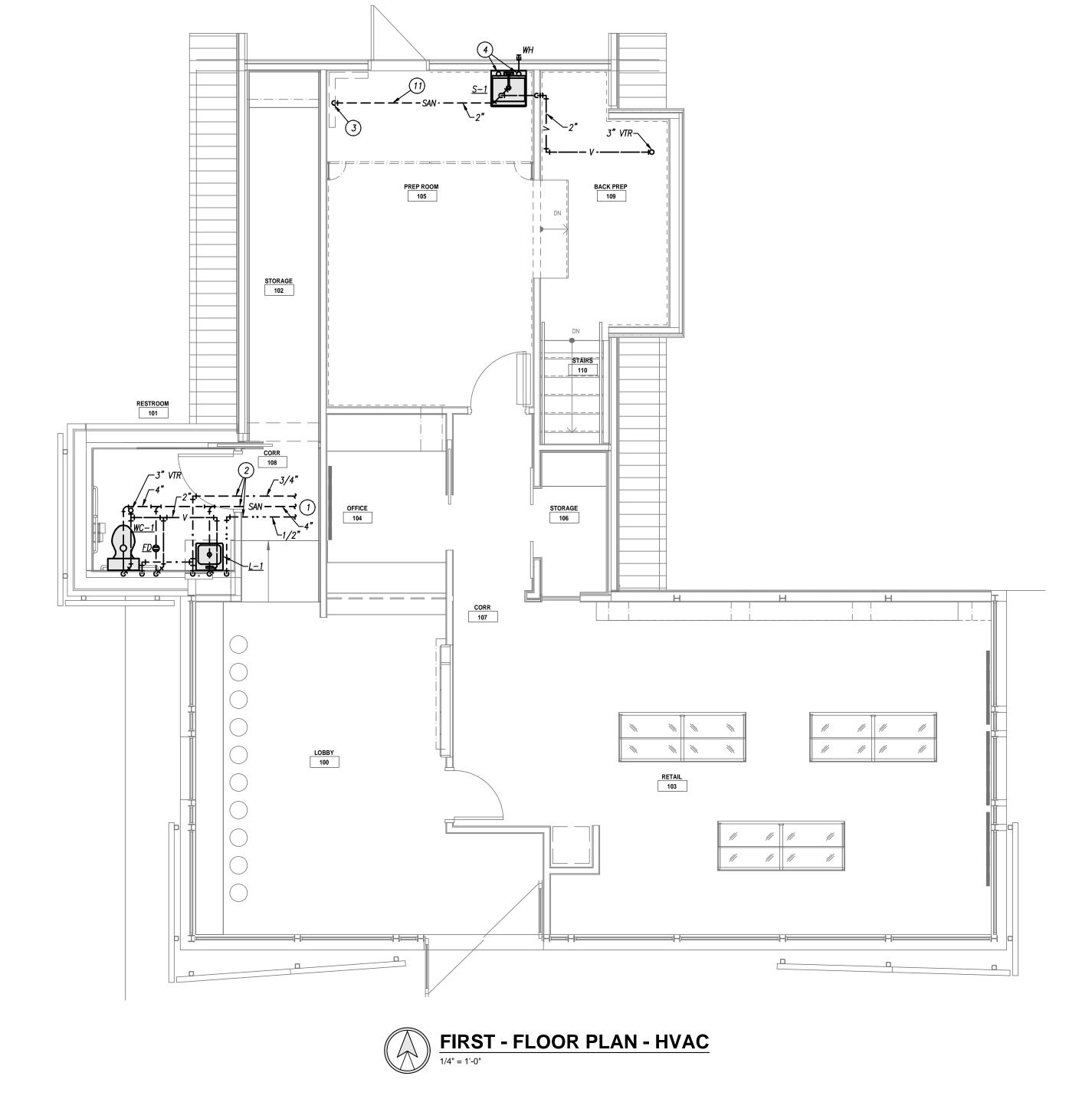
PIPE HANGER	DETAIL
OT TO SCALE	_

/--- STOP VALVE (TYPICAL)

— COLD WATER



WATER SERVICE
DOUBLE CHECK BACKFLOW PREVENTER DETAIL



MARK FIVE MORE	FIVE DECORPTION		FITTINGS AND TRIM	REMARKS	PLUMBING FIXTURE PIPE SIZES				
MARK	FIXTURE MODEL	FIXTURE DESCRIPTION	FITTINGS MODEL	FITTINGS AND DESCRIPTION	REWARKS	WASTE	VENT	DCW	DHV
L-1 NAMEEK'S 064200-U CERASTYLE "MONA"	ADA-COMPLIANT WALL-HUNG LAVATORY. 20"x10.75" WHITE CERANUC BOWL. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. PROVIDE CONCEALED ARM CARRIER. MOUNT TOP OF RIM AT 34" A.F.F.	KOHLER K–14406–4–BGD	BATHROOM SINK FAUCET WITH WIDESPREAD HANDLES. BRUSHED GOLD FINISH.	1,2,3,4,5	2"	1-1/2"	1/2"	1/2	
K–3589 PRESSUI ELONGAT	ADA-COMPLIANT, 1.6 GPF, FLUSH TANK WATER CLOSET. PRESSURE-ASSISTED SIPHON JET. WHITE VITREOUS CHINA ELONGATED BOWL AND TANK. 16-1/2" HIGH. TWO PIECE, 12" ROUGH-IN. FURNISH WITH FLUSH ACTUATOR ON WIDE SIDE OF	KHOLER K-4731-GC-0	WHITE, SOLID PLASTIC, QUIET CLOSE, OPEN—FRONT SEAT FOR ELONGATED BOWL. STAINLESS STEEL HINGE ARMS AND HARDWARE.	3,6	4"	2"	1/2"		
		STALL.	KHOLER K–9466–L–BL	MATTE BLACK, LEFT HAND TRIP LEVER.					
S-1	FIAT L-1	23"x21.5"x12" DEEP WALL—MOUNTED LAUNDRY TUB. FURNISH WITH BRACKETS FOR INSTALLATION. 20 GALLON CAPACITY. WHITE FINISH.	FIAT A-1	BRASS FAUCET WITH SWING SPOUT FOR MOUNTING ON REAR DECK OF TUB.	1,2,3,4	2"	2"	1/2"	1/2'

PROVIDE CHROME-PLATED BRASS TAILPIECE AND GRID DRAIN.
 PROVIDE CHROME-PLATED BRASS P-TRAP.

3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.

4. PROVIDE CONCEALED ARM TYPE CARRIER WITH SQUARE, TUBULAR STEEL UP—RIGHTS AND BLOCK TYPE BASES.5. INSULATE EXPOSED TAILPIECE, P—TRAP, AND WATER RISERS. REFER TO SPECIFICATIONS FOR INSULATION METHODS.

6. PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF STALL.7. PROVIDE HANDLE STOPS AND FLEXIBLE RISERS.

8. PROVIDE CHROME—PLATED BRASS TAILPIECE AND BASKET STRAINER.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

1) ALL PUBLIC LAVATORIES AND SINKS SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 LISTED VALVE ON HOT WATER SUPPLY.

2) VERIFY PLUMBING MATERIALS AND EQUIPMENT COORDINATE BETWEEN TRADES. VERIFY CABINET SIZES, COUNTERTOP MATERIALS, WALL THICKNESSES, ETC ARE APPROPRIATE FOR SPECIFIED EQUIPMENT PRIOR TO ORDER.

PIPING MATERIAL &	INSULATIO	ON SCHED	ULE						
PIPING		FIELD TEST	ALLOWABLE IN	INSULATION					
SYSTEM	SIZE TYPE/SCHED MATERIAL		MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS	
DOMESTIC COLD WATER	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2"	
DOMESTIC HOT WATER & HW RETURN	1/2"-1-1/4"	L	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1"	
DOM. HOT & COLD BELOW GRADE	1/2"-1-1/4"	К	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI — 1/2HR	YES	ELASTOMERIC	1" (HOT ONLY)	
SOIL & WASTE ABOVE GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO			
SOIL & WASTE BELOW GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO			
CONDENSATE DRAIN ON ROOF	3/4"-2"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO			
CONDENSATE DRAIN INTERIOR	3/4"-2"	SCH. 40	CPVC	SOLVENT JOINED	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM ONL	
CONDENSATE DRAIN INTERIOR	1/2"-2"	L	COPPER	SOLDER, PRO-PRESS	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM ONL	

ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.
 ALL INSULATION THICKNESSES SHALL MEET ADOPTED IECC AND ASHRAE 90.1 – 2016 REQUIREMENTS AT A MINIMUM.
 REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

W⊅	WATER HEATER SCHEDULE - ELECTRIC														
PLAN MARK	MANUFACTURER	MODEL NUMBER	GALLONS	USE	STYLE	# HTG. ELEMENTS	WATTS	RECOVERY @ J€»ØÁÜQÙÒ	VOLTAGE/ PHASE	REMARKS					
<i>EWH−1</i>	STATE	ENG 30 DORT	30	LIGHT COMM.	STANDARD	2	4500/4500	21	240V / 1PH	1					
	<u>S:</u> IDE WITH EXPANSION T. . HEATING ELEMENTS SI		TANEOUSLY.												

GENERAL NOTES

. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

 REFER TO PLUMBING FIXTURE / DRAIN SCHEDULES FOR PIPING SIZES FOR INDIVIDUAL CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS.

4. NO DOMESTIC WATER PIPING SHALL BE SMALLER THAN 3/4" UNLESS NOTED OTHERWISE.

3. NO SANITARY OR VENT PIPING BELOW GRADE SHALL BE

5. ALL VENT PIPING SHOWN IS DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.

6. NOT ALL INTERIOR CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE—REQUIRED CLEANOUTS (RE: GENERAL NOTES ON COVER SHEET). COORDINATE EXACT LOCATIONS OF CLEANOUTS WITH ARCHITECT.

7. PROVIDE TRAP SEAL DEVICE FOR ALL FLOOR DRAINS.

PLAN KEYED NOTES

(1) REFER TO BASEMENT PLAN FOR CONTINUATION.

2) 1/2" DHW, 3/4" DCW, AND 4" SANITARY PIPE ROUTED UNDERGROUND.

3 CONNECT LAUNDRY TUB SANITARY PIPE TO EXISTING MAIN GOING DOWN IN BASEMENT.

4 LAUNDRY TUB AND WALL HYDRANT DOMESTIC WATER PIPED FROM BELOW.

5) 1/2" DHW AND 3/4" DCW UP TO SERVE LAUNDRY TUB AND WALL HYDRANT.

6) REFER TO FIRST FLOOR PLAN FOR CONTINUATION.

7 1/2" DHW, 3/4" DCW, AND 4" SANITARY PIPE ROUTED UNDERGROUND TO SERVE RESTROOM ON FIRST FLOOR.

8 CAP EXISTING SANITARY PIPE.

9 2" SANITARY PIPE FROM LAUNDRY TUB ON FIRST

FLOOR TO CONNECT TO EXISTING SANITARY STACK.
REFER TO FIRST FLOOR PLAN FOR CONTINUATION.

10 2" OPEN HUB DRAIN FOR CONDENSATE DISPOSAL AND
WATER HEATER T&P RELIEF.

11) SANITARY PIPE ROUTED IN BASEMENT CEILING.

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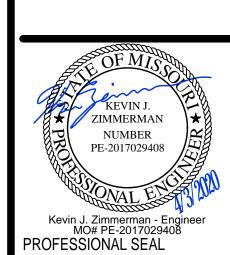
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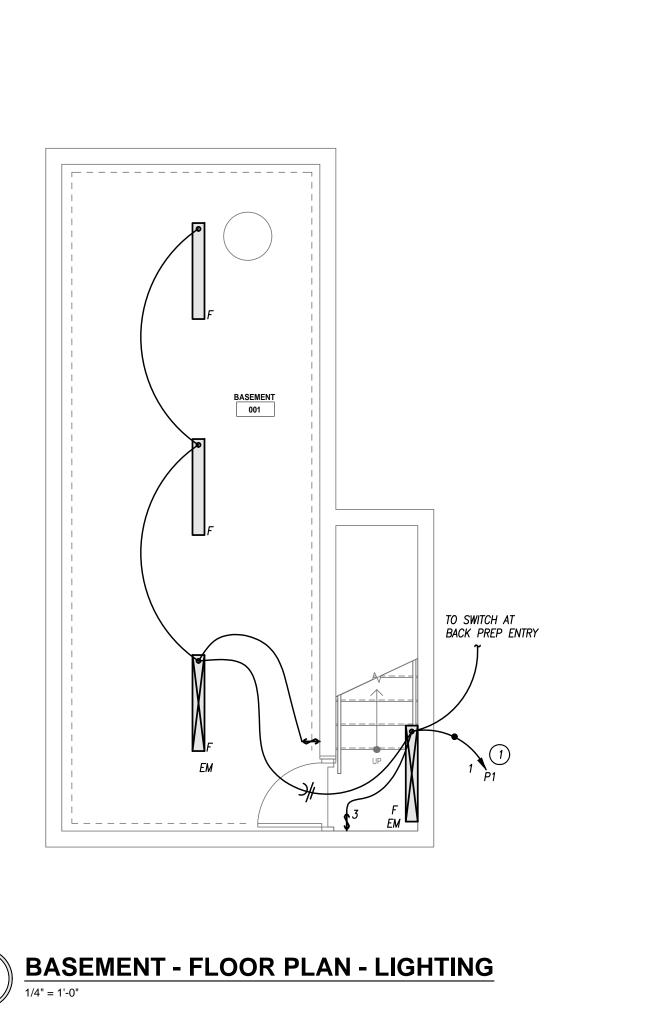
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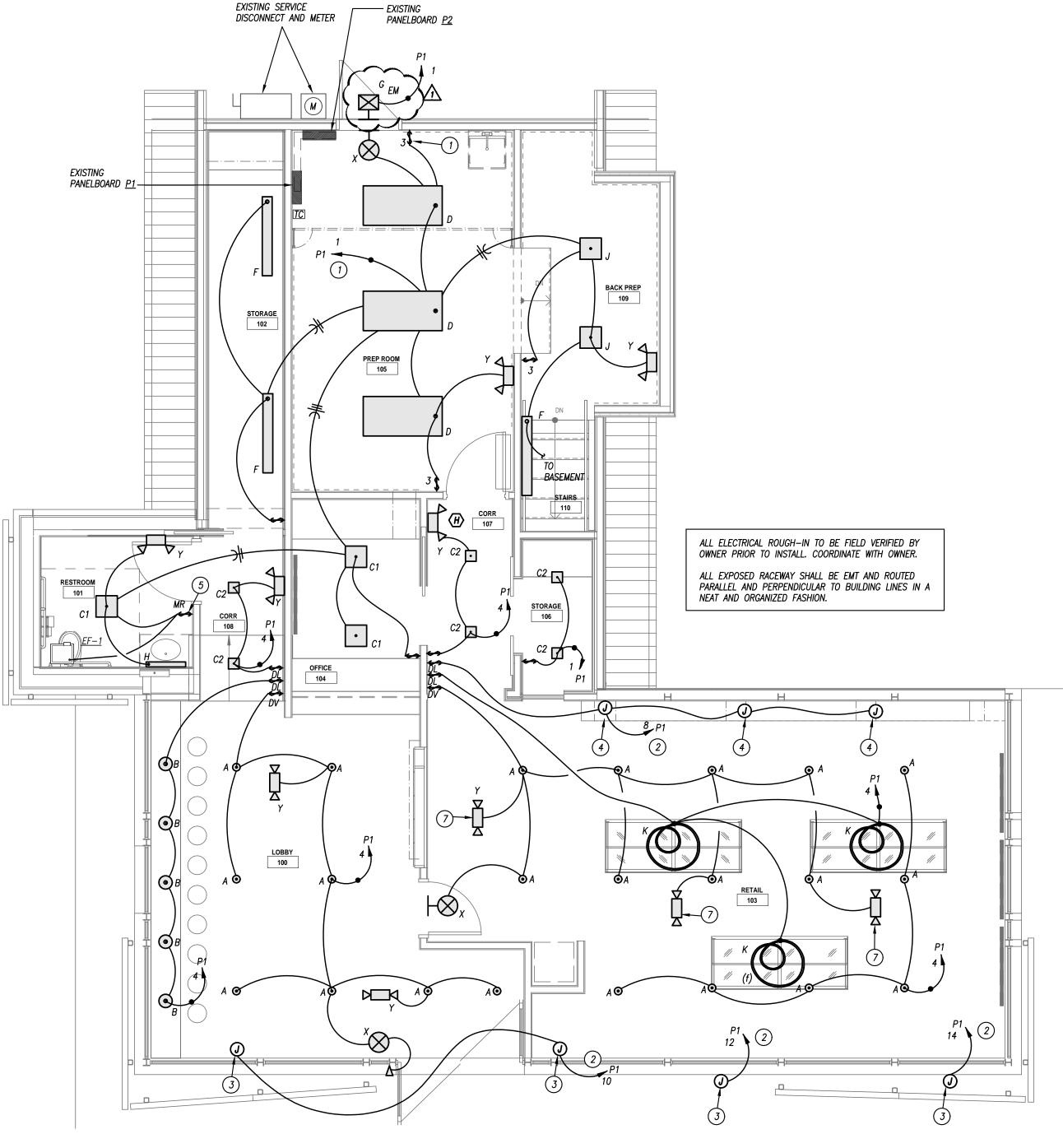
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P101ISSUE DATE: 03/27/2020

PLUMBING - PLANS





LIGHTING CONTROLS

SYMBOLS

- **WALL SWITCH MOTION SENSOR (DUAL TECHNOLOGY): PASSIVE INFRARED AND ULTRASONIC, 120/277V, DECORA STYLE SENSOR. (WATTSTOPPER DSW-100, OR EQUAL)
- WALL SWITCH MOTION SENSOR (DUAL RELAY): DUAL TECHNOLOGY, DUAL RELAY, 120V, DECORA STYLE SENSOR. (WATTSTOPPER DSW-302, OR
- EQUAL)

 WALL SWITCH DIMMER CONTROL: ON/OFF SWITCH WITH SLIDING DIMA
- WALL SWITCH DIMMER CONTROL: ON/OFF SWITCH WITH SLIDING DIMMER CONTROL, 0-10V DIMMING. (LUTRON MAESTRO, #DVSCSTV, OR EQUAL). EXTEND 0-10V WIRING TO FIXTURES AND DIMMER AS REQUIRED.
- WALL SWITCH DIMMER CONTROL: ON/OFF SWITCH WITH SLIDING DIMMER CONTROL, LINE VOLTAGE DIMMING, FIELD SELECTABLE DIMMING TYPE. (LUTRON MAESTRO, #MA—PRO, OR EQUAL).

TRAINING AND PROGRAMMING

OWNER TRAINING:

• PROVIDE RECORD OF TIME DELAY SETTINGS ON ALL SENSOR DEVICES FOR OWNER USE.

SENSOR ADJUSTMENTS AND SETTINGS:

SYSTEMS SHALL BE SET/PROGRAMMED TO OPERATE TYPICALLY IN MANUAL ON/AUTO OFF MODE.

ON/AUTO OFF MODE.

1. SET WALL MOUNTED MOTION SENSOR TO MANUAL ON MODE.

• PROVIDE FINAL SETTINGS/ADJUSTMENTS PER OWNER'S DIRECTION.

CONTROLS SEQUENCES

WALL—MOUNTED LINE VOLTAGE SENSORS (SINGLE RELAY): TURN ON LIGHTS IN ROOM/AREA UPON BUTTON ON SENSOR BEING ACTIVATED

- TURN OFF LIGHTS AFTER NO MOTION IS DETECTED AND DELAY EXPIRES.
 SET DELAY TO 15 MINUTES UNLESS NOTED OTHERWISE.
- WALL—MOUNTED LINE VOLTAGE SENSORS (DUAL RELAY):

 TURN ON LIGHTS / EXHAUST FAN IN ROOM/AREA UPON BUTTON(S) ON SENSOR BEING ACTIVATED BY OCCUPANT.
- TURN OFF LIGHTS AND FAN AFTER NO MOTION IS DETECTED AND DELAY EXPIRES.
- SET DELAY TO 10 MINUTES FOR LIGHTS, 30 MINUTES FOR EXHAUST FAN, UNLESS NOTED OTHERWISE.

SALES AREAS:

• MANUAL ON AND ON/OFF/DIMMING CONTROL OF LIGHTING VIA 0-10V DIMMING SWITCHES.

BACK OF HOUSE AREAS:

MANUAL ON AND ON/OFF CONTROL OF LIGHTING VIA TOGGLE SWITCHES.

TYPICAL WIRING OF CONTROLS AND LIGHT FIXTURES

THE WIRING AND/OR TIC MARKS SHOWN BELOW ARE NOT SHOWN ON PLANS FOR CLARITY. PROVIDE WIRING FROM JUNCTION BOX(ES) TO SWITCHES/CONTROLLERS AND LIGHTS AS SHOWN BELOW FOR EACH ROOM/AREA.

PROVIDE 'HOT' CONDUCTOR

WHERE FIXTURE IS SHOWN

TO HAVE EM BATTERY/BALLAST

LINE VOLTAGE STANDARD WALL SWITCHES

0-10V PURPLE / GRAY WIRING
AS REQUIRED FOR 0-10V

STANDARD SWITCH OR
MOTION SENSOR

TO PANELBOARD OR OTHER ROOMS AS SHOWN ON PLANS

(TYPICAL)

STANDARD SWITCH OR MOTION SENSOR

PROVIDE 'H
WHERE FIXT

3-WAY WALL SWITCHES

3-VVAY VVALL SVVITCHES

4-WAY SWITCH(ES)

(WHERE SHOWN)

3-WAY SWITCHES

TO PANELBOARD OR OTHER
ROOMS AS SHOWN ON PLANS
(TYPICAL)

TO HAVE EM BATTERY/BALLAST

GENERAL NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. LIGHT FIXTURES INDICATED AS EMERGENCY FIXTURES ARE
 TO FUNCTION AS NIGHT LIGHTS UNLESS SPECIFICALLY
 SHOWN SWITCHED.
- SHOWN SWITCHED.

 3. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC.
 3.1. ALL FIXTURES SHALL BE FED FROM JUNCTION BOXES
 WITH LIGHT FIXTURE WHIPS (<6'). DAISY—CHAINING
- OF FIXTURES IS NOT ALLOWED.

 3.2. SWITCH BOX LOCATIONS SHALL BE WIRED SO THAT A NEUTRAL WIRE IS AVAILABLE AT THE SWITCH BOX LOCATION, EITHER IN THE BOX OR AVAILABLE TO BE
- LOCATION, EITHER IN THE BOX OR AVAILABLE TO BE ADDED VIA RACEWAY OR AN ACCESSIBLE WALL CAVITY.

 3.3. WALL SWITCHES FOR SEPARATE LOAD TYPES
 (EM/NORMAL, 120/277V, ETC.) SHALL NOT BE IN A
- (EM/NORMAL, 120/2//V, ETC.) SHALL NOT I SINGLE BOX. 3.4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

PLAN KEYED NOTES

- 1) ROUTE TO A SINGLE EXISTING 20A-1P CIRCUIT BREAKER IN EXISTING 120/240V/3PH PANEL. ENSURE BREAKER IS NOT CONNECTED TO HIGH LEG PHASE.
- (2) ROUTE THROUGH EXISTING TIME CLOCK/PHOTOCELL CONTACTOR ASSEMBLY AND ROUTE THROUGH CONTACTOR PROVIDED BY SECURITY COMPANY. COORDINATE WITH OWNER.
- POWER FOR EXTERIOR SIGN. COORDINATE WITH SIGNAGE VENDOR AND PROVIDE ROUGH—IN AS REQUIRED.

 POWER FOR DISPLAY CASE LIGHTING. COORDINATE WITH DISPLAY CASE VENDOR AND PROVIDE ROUGH—IN AS
- 5) PROVIDE ONE RELAY FOR LIGHTING, ONE RELAY FOR EXHAUST FAN.
- 6 LOCATION SHOWN FOR CLARITY ONLY. LOCATE ADJACENT TO ELECTRICAL PANEL.

 7 MOUNT TO BOTTOM OF ROOF DECK.

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ELECTRICAL - PLANS, SCHEDULES & DETAILS

TYPE	MANUFACTURER	CATALOG NUMBER / SERIES	DESCRIPTION	SOURCE	VOLT	NOTES
Α	LITHONIA OR PRE-BID APPROVED EQUAL	LDN4CYL SERIES	4" ROUND SURFACE MOUNTED LED CYLINDER. ALUMINUM HOUSING, SEMI—SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH 55 DEGREE BEAM ANGLE. INTEGRAL CONCEALED LENSED LED SOURCE. LED DRIVER PRE—WIRED FOR 0—10V DIMMING APPLICATIONS.	ONE (1) 20 WATT, 2000 LUMEN, L20 LED MODULE. 3000K CCT.	120	1
В	EUROFASE OR PRE-BID APPROVED EQUAL	DEMARK	6.75" X 6" TALL DOUBLE OVAL PENDANT. COORDINATE FINISH WITH ARCHITECT. POWER THROUGH AIRCRAFT CABLE, LINE VOLTAGE DIMMING DRIVER IN CANOPY. COORDINATE COLOR WITH ARCHITECT.	ONE (1) 6 WATT, 500 LUMEN MODULE. 3000K CCT.	120	1
B-ALT	EUROFASE OR PRE-BID APPROVED EQUAL	NAVADA	1" DIAMETER X 16" TALL LED CYLINDER PENDANT. COORDINATE FINISH WITH ARCHITECT. DROP CORD PENDANT, COORDINATE CORD TYPE AND COLOR WITH ARCHITECT. MONOPOINT CANOPY MOUNT. LINE VOLTAGE DIMMING.	ONE (1) 6 WATT, 500 LUMEN MODULE. 3000K CCT.	120	1,3
C1	TECH LIGHTING OR PRE-BID APPROVED EQUAL			ONE (1) 20 WATT, 783 LUMEN MODULE. 3500K CCT.	120	1
C2	TECH LIGHTING OR PRE-BID APPROVED EQUAL	ONE (1) 5W LED T20 DIMMABLE LAMP. 3500K CCT.	120	1		
D	WILLIAMS OR PRE-BID APPROVED EQUAL			ONE (1) 32 WATT, 3800 LUMEN, L38 LED MODULE. 3500K CCT.	120	1
F	LITHONIA	HONIA ZL1N 4'-0" LONG LENSED STRIP FIXTURE. STEEL HOUSING WITH ALL PARTS PAINTED AFTER FABRICATION. INTEGRAL LED DRIVER PRE-WIRED FOR DIMMING APPLICATIONS.		ONE (1) 42 WATT, 5000 LUMEN, L50 LUMEN PACKAGE. 3500K	120	1,2
G	LUMARK	UMARK CROSSTOUR XTOR SERIES LOW-PROFILE EXTERIOR WALL-MOUNTED FIXTURE. ONE-PIECE, DIE-CAST ALUMINUM HOUSING. IMPACT-RESISTANT, TEMPERED GLASS LENS. FORWARD THROW OPTICS. INTEGRAL LED DRIVER WTIL HEAT SINK. POWDER COAT FINISH; COORDINATE WITH ARCHITECT/BUILDING OWNER. UL LISTED WET LOCATION. FURNISH WITH OPTIONAL PHOTOCELL FOR ON/OFF CONTROL OF LIGHT FIXTURE.		ONE (1) LED ARRAY. 26 WATTS, 2575 LUMENS. 3500K CCT.	120	1,2
Н	ELECTRIC MIRROR	FACET BEVEL COLLECTION	MIRROR WITH 1" BACKLIT WHITE BEVELED EDGE. RAISED MIRROR, COPPER-FREE, CORROSIION-RESISTANT GLASS. COORDINATE SIZE WITH ARCHITECT.	695 LUMENS PER FT, 100 LUMENS PER WATT. 3000K CCT.	120	1
J	LITELINE	FORUM	1' x 1' STATIC GRID LED FLAT PANEL. MITERED FRAME, EDGE LIT LOW GLARE OPTICS. ALL PARTS PAINTED WHITE AFTER FABRICATION. INTEGRAL 0—10V DIMMING LED DRIVER.	ONE (1) 20 WATT, 2100 LUMEN MODULE. 3500K CCT.	120	1
К	KUZCO AMPERSAND PD22332 32" DIAMETER X 8" TALL CURVED DECORATIVE PENDANT. THIN CURVED RIBBON WITH WHITE ACL DIFFUSER, WRAPPED TO CREATE AN INFINITY SPIRAL EFFECT. INTEGRAL LED, REMOTE DRIVER PRE—WIRED FOR ELV OR TRIAC DIMMING. AIRCRAFT CABLE HUNG TO ARCHITECT'S SPECIFIED MC		32" DIAMETER X 8" TALL CURVED DECORATIVE PENDANT. THIN CURVED RIBBON WITH WHITE ACRYLIC DIFFUSER, WRAPPED TO CREATE AN INFINITY SPIRAL EFFECT. INTEGRAL LED, REMOTE DRIVER PRE-WIRED FOR ELV OR TRIAC DIMMING. AIRCRAFT CABLE HUNG TO ARCHITECT'S SPECIFIED MOUNTING HEIGHT.	ONE (1) 66W, 4550 LUMEN LED ARRAY. 3000K CCT.	120	1
Х	WILLIAMS OR PRE-BID APPROVED EQUAL	EXIT SERIES	LED EXIT SIGN, THERMOPLASTIC HOUSING, RED LETTERING, SEALED NI—CAD BATTERY, MINIMUM 90 MINUTE CAPACITY. DRAWINGS INDICATE ARROWS. DRAWINGS INDICATE SINGLE OR DOUBLE FACE. UNIVERSAL MOUNT. PROVIDE WITH METALLIC TWO—HEAD REMOTE HEAD AND ADDITIONAL BATTERY WHERE SHOWN ON PLAN.	LED, 5W	120	1
Υ	SURE-LITES	APEL SERIES	ULTRA LOW-PROFILE 2" DEEP X 9" X 4.5" EMERGENCY LIGHTING UNIT. FLAME-RATED, UV-STABLE THERMOPLASTIC HOUSING. TWO (2) SEMI-RECESSED, ADJUSTABLE "EYEBALL" HEADS WITH GLASS LENS. BLACK FINISH. MAINTENANCE-FREE BATTERY FOR 90 MINUTE OPERATION OF LAMPS. INTEGRAL TEST SWITCH AND AC-ON INDICATOR.	TWO (2) 0.75 WATT 1W LED HEADS.	120	1

1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.
2. WHERE FIXTURE IS LABELED "EM", PROVIDE WITH IOTA ILB—CP10 (10W CONSTANT POWER EMERGENCY BATTERY PACK) OR APPROVED EQUAL.
3. PROVIDE DEDCT ALTERNATE PRICING FOR TYPE "B".

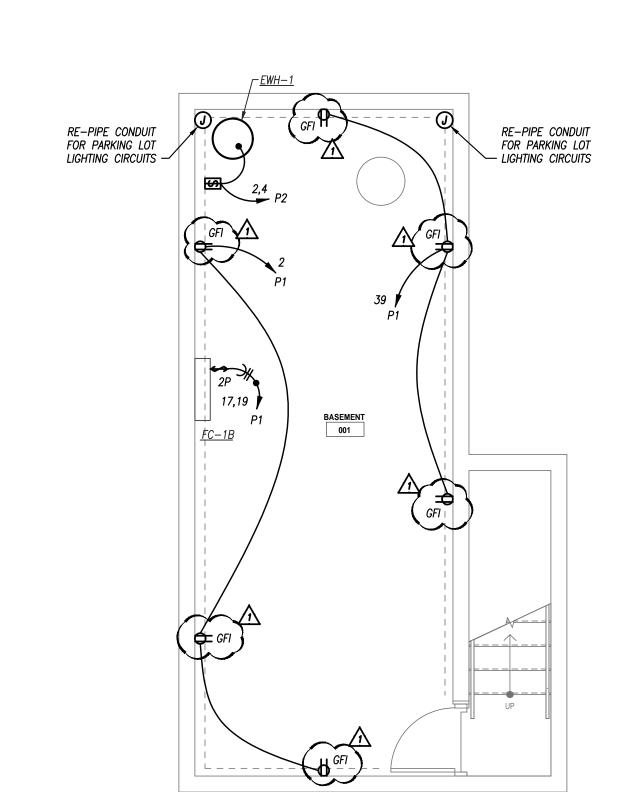
GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

1) REFER TO SPECIFICATIONS FOR ADDITIONAL FIXTURE/DRIVER/BALLAST REQUIREMENTS.
2) LUMENS LISTED FOR LED FIXTURES ARE GENERALLY DELIVERED LUMENS UNLESS NOTED

2) LUMENS LISTED FOR LED FIXTURES ARE GENERALLY DELIVERED LUMENS UNLESS NOTED OTHERWISE.
3) WHERE SHOWN ON PLAN, PROVIDE WITH WEATHERPROOF REMOTE HEAD MOUNTED TO SOFFIT OR WALL ABOVE DOOR. 90 MINUTE BATTERY TO BE SIZED FOR BOTH THE EXIT SIGN AND EM HEAD.

FLOOR PLAN - LIGHTING

1/4" = 1'-0"



BASEMENT - FLOOR PLAN - POWER

1/4" = 1'-0"

SINGLE SECTION PANELBOARD SCHEDULE

PANEL DESIGNATION: P2 (EXISTING)

EXISTING PANELBOARD <u>P1</u> REFRIGERATOR -3 #6 WIRES,#10 G, — ALL ELECTRICAL ROUGH—IN TO BE FIELD VERIFIED BY OWNER PRIOR TO INSTALL. COORDINATE WITH OWNER. ALL EXPOSED RACEWAY SHALL BE EMT AND ROUTED PARALLEL AND PERPENDICULAR TO BUILDING LINES IN A NEAT AND ORGANIZED FASHION.

EXISTING SERVICE
DISCONNECT AND METER —_____

FLOOR PLAN - POWER

1/4" = 1'-0"

SINGLE SECTI	ON I	PANE	ELB	OAI	RI)	SCH	ΙED	ULE		
PANEL DESIGNATION:	P1								JG AMPS:		
	MOUNTING CUREAGE								BREAKER:		
	MOUNTING: SURFACE								/OLTAGE:	•	
LOCATION:	LOCATION: BACK OF HOUSE								SE/WIRE:		
DESCRIPTION	PH/	_		/B		ווייי	C/B		PHASE		DESCRIPTION
	A	В	TRIP POLE				POLE	TRIP	A	В	
LTS - BACK OF HOUSE	512		20	1	1	2	1	20	540		REC — BASEMENT
REC - SALES		720	20	1	3	4	1	20		711	LTS – LOBBY + RETAIL
REC - SALES	540		20	1	5	6	1	20	1200		LTS — EXTERIOR LOT
REC - SALES		540	20	1	7	8	1	20		1000	DISPLAY CASE LIGHTING
REC - SALES	360		20	1	9	10	1	20	1500		EXTERIOR SIGNAGE
REC - SALES		1200	20	1	11	12	1	20		1500	EXTERIOR SIGNAGE
REC – LOBBY	250		20	1	13	14	1	20	1500		EXTERIOR SIGNAGE
REC — COFFEE MAKER		900	20	1	15	16	1	15		122	APS-1
FCU-1A, FCU-1B, FCU-2	315		15	_	17	18	1	15	72		FAN F-1
rcu-14, rcu-18, rcu-2		315	15	2	19	20	1	20		1500	EXTERIOR SIGNAGE
REC - BATHROOM	180		20	1	21	22	1	20	-		SPARE
REC - OFFICE		720	20	1	23	24	1	20		-	SPARE
REC - TV'S	1700		20	1	25	26	1	20	_		SPARE
REC – OFFICE		1000	20	1	27	28	1	20		1	SPARE
REC – PREP. + STORAGE	720		20	1	29	30	1	20	_		SPARE
REC – STORAGE		540	20	1	31	32	1	20		_	SPARE
REC - MICROWAVE	900		20	1	33	34	1	_	_		SPACE
REC — REFRIGERATOR		1200	20	1	35	36	1	-		-	SPACE
REC - BACK PREP	900		20	1	37	38	1	-	-		SPACE
REC - BASEMENT		540	20	1	39	40	1	-		-	SPACE
TOTALS	0	0							0	0	TOTALS

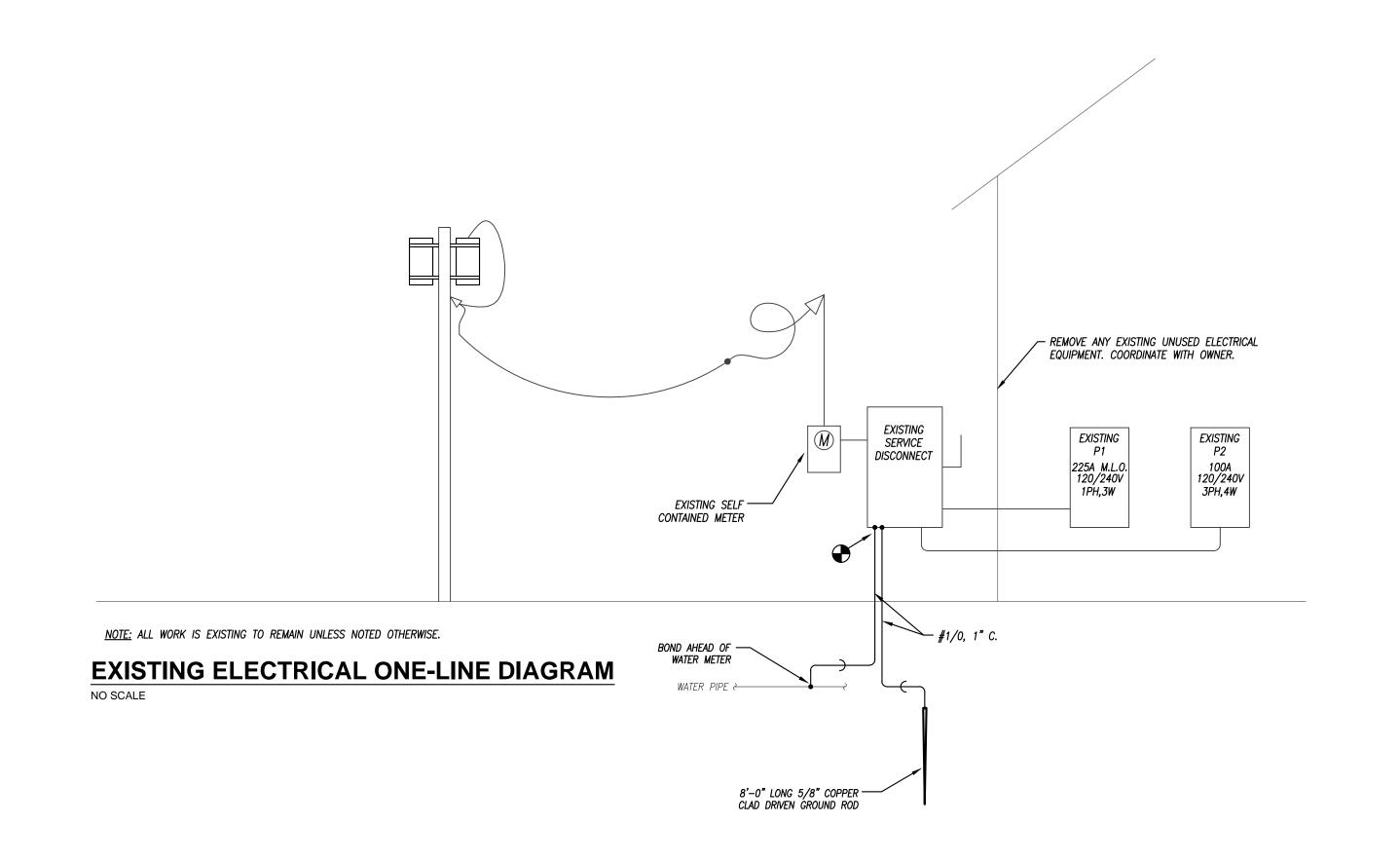
		⊒	
	PANELBOARD SIZII	NG LOAD	
LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
LIGHTS	9,423	1.25	11,779
RECEPTACLES	13,450	10KVA + 50% REST	11,725
MOTORS	0	1.25 x LARGEST + SUM OF REST	0
AIR CONDITIONING	630	1.00	630
SPACE HEATING	0	0.00	0
CONTINUOUS	194	1.25	243
NON-CONTINUOUS	0	1.00	0
MISC. LOADS 1	0	1.00	0
MISC. LOADS 2	0	1.00	0
		SIZING LOAD:	24,376
	SIZIN	G LOAD (AMPS):	102

SPARE] [20
SPARE] [SF
SPARE] [
SPACE		
SPACE		
SPACE		LC
SPACE] [LI
		RE
	. [M
ASE LOADS] [Al
AMPS] [SF
93.2	[[HE
104.2] [C
98.7] [NO
_	· [1./1

В	12,508	104.2
TOTALS	23,697	98.7
REMARKS: 1.PANEL IS COVER	EXISTING TO REMAIN	I. PROVIDE NEW

MOUNTING:	SURFAC	E							VO	DLTAGE: 240/120					
LOCATION:	BACK O	F HOUSE] [ر ح		PHASI	E/WIRE:	30, 4W	(NOTE .	2)		
DESCRIPTION	PHASE			C/B			5	C/B			PHASE		DESCRIP	TION	
DESCRIPTION	Α	В	С	TRIP	POLE			POLE	TRIP	Α	В	C	DESCRIP	TION	
	3145					1	2		25	2000				WATER LICATER	
RTU – 1 (EXISTING)		3145		<i>3</i> 5	3	3	4	2	25		2000		1	WATER HEATER	
			3145]		5	6	1	20			-		SPARE	
HP-1	3100			40	2	7	8	1	20	_				SPARE	
nr-1		3100		40	2	9	10	1	_		_			208V SPACE	
UD 0			1035	15		11	12	1	20			-		SPARE	
HP-2	1035			15	2	13	14	1	20	_				SPARE	
208V SPACE		_		_	1	15	16	1	_		_			208V SPACE	
SPARE			-	20	1	17	18	1	_			-		SPACE	
SPARE	_			20	1	19	20	1	_	_				SPACE	
208V SPACE		-		_	1	21	22	1	_		-			208V SPACE	
SPARE			_	20	1	23	24	1	_			-		SPACE	
SPARE	_			20	1	25	26	1	_	_				SPACE	
208V SPACE		_		_	1	27	28	1	_		_			208V SPACE	
SPARE			_	20	1	29	30	1	_			-		SPACE	
TOTALS	7280	6245	4180			•				2000	2000	0	TOTALS		
													•		
P/	ANELB	OARD	SIZING	LOAD)							CONN	IECTED PHASE L	.OADS	
LOAD DESCRIPTION	CONN	ECTED	DEMAND			CODE MIN. (VA)				PH/	ASE	VA	AMPS		
LIGHTS	(0		1.25				0		1	P	1	9,280	77.3	
RECEPTACLES	(0	10KVA	+ 50%	REST			0			Е	3	8,245	68.7	
MOTORS	9,4	135	1.25 x LAR	RGEST + SU	IM OF REST			11,794		C 4,10		4,180	34.8		
AIR CONDITIONING	(0		1.00				0			TOT	ALS	21,705	60.3	
SPACE HEATING 0			0.00				0		1						
HEAT PUMP	8,2	270		1.00				8,270			REMARK:	<u>S:</u>			
CONTINUOUS	4,0	000		1.25				5,000		1	1. PANE	L IS EX	ISTING TO REMAIN, PR	ROVIDE NEW CO	
NON-CONTINUOUS	(0		1.00				0		1			4 240V-3PH WILD LE		
MISC. LOADS 1	(0		1.00				0		1			S THE B—PHASE TO G RIFY EXACT CONFIGUR		
				SIZINO	G LOAD:			25,064]			RIFT EXACT CONFIGUR LOADS TO THE 208V		
			SIZING		//MDC):			70		1					

MAIN BREAKER: 100



GENERAL NOTES

- I. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. LIGHT FIXTURES INDICATED AS EMERGENCY FIXTURES ARE TO FUNCTION AS NIGHT LIGHTS UNLESS SPECIFICALLY
- SHOWN SWITCHED. 3. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC.
- 3.1. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC.
 3.1. ALL FIXTURES SHALL BE FED FROM JUNCTION BOXES WITH LIGHT FIXTURE WHIPS (<6'). DAISY—CHAINING OF FIXTURES IS NOT ALLOWED.
 3.2. SWITCH BOX LOCATIONS SHALL BE WIRED SO THAT A NEUTRAL WIRE IS AVAILABLE AT THE SWITCH BOX LOCATION, EITHER IN THE BOX OR AVAILABLE TO BE ADDED VIA RACEWAY OF AN ACCESSIBLE WALL CAVITY.
- 3.3. WALL SWITCHES FOR SEPARATE LOAD TYPES
 (EM/NORMAL, 120/277V, ETC.) SHALL NOT BE IN A
 SINGLE BOX. 3.4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

PLAN KEYED NOTES

JUNCTION BOX FOR SIGN. COORDINATE EXACT REQUIREMENTS WITH OWNER.

PROVIDE NEW COVER FOR EXISTING PANEL. FIELD VERIFY
EXACT PANEL MAKE AND MODEL. COORDINATE WITH

- 3 RECEPTACLE MOUNTED TO STRUCTURE FOR BUDTENDER. COORDINATE EXACT LOCATION WITH OWNER.
- 4 SEMI-RECESSED CLOCK RECEPTACLE.

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