MAIN STREET BUILDING IMPROVEMENTS

230 SW MAIN ST. LEE'S SUMMIT, MO 64063

PERMIT DOCUMENTS

21 APRIL, 2022

COLLINS WEBB #: 21121

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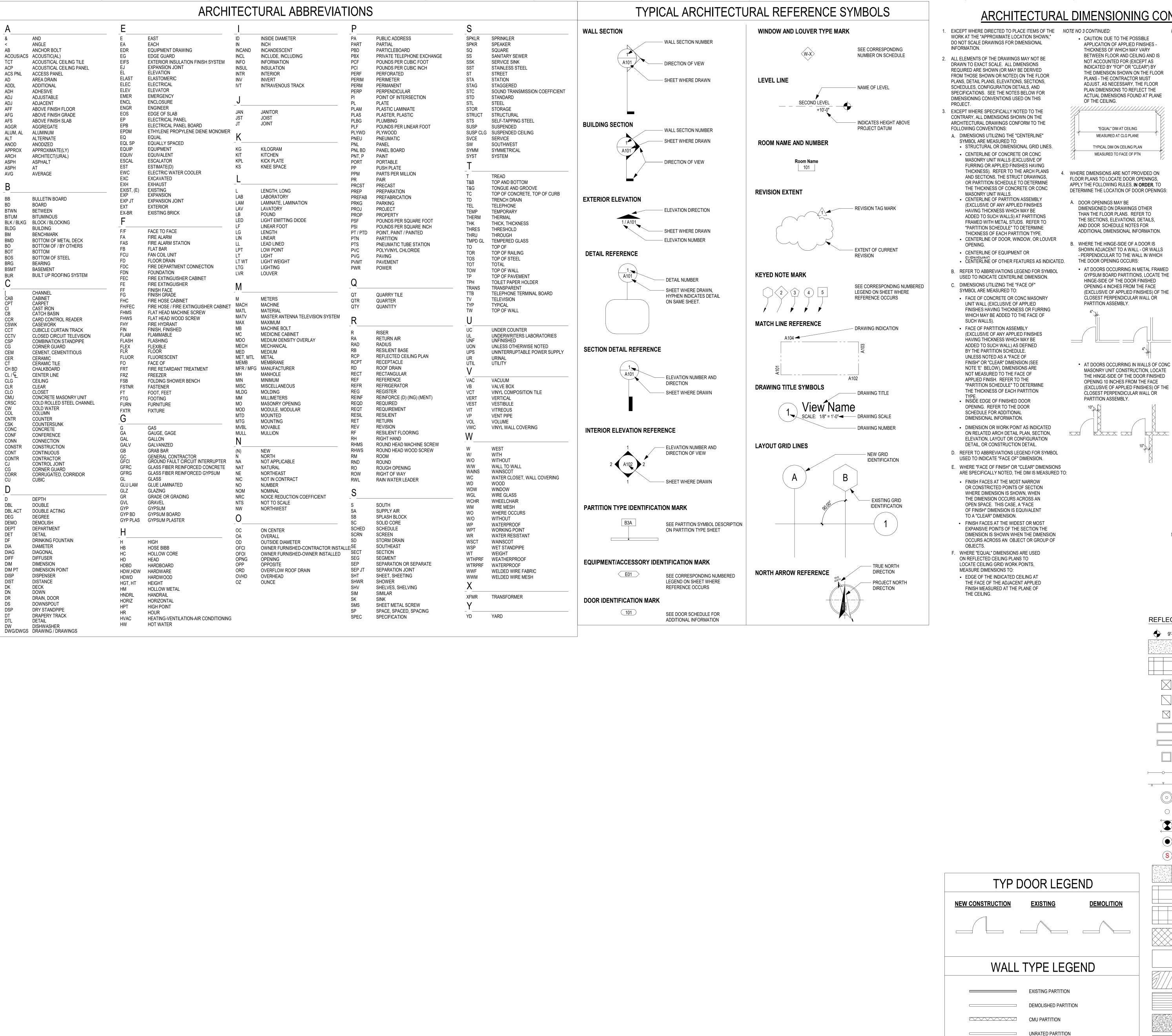
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ARCHITECTURAL DIMENSIONING CONVENTIONS

 CAUTION: DUE TO THE POSSIBLE THICKNESS OF WHICH MAY VARY PLANS - THE CONTRACTOR MUST ACTUAL DIMENSIONS FOUND AT PLANE OF THE CEILING.

NOTE NO 4 CONTINUED: C. WHERE DOOR OCCURS NOT ADJACENT TO A APPLICATION OF APPLIED FINISHES -PERPENDICULAR WALL AND EITHER "DIM E" OR "DIM F" IN DIAGRAM BELOW IS 16'-0" OR BETWEEN FLOOR AND CEILING AND IS LESS. LOCATE DOOR UTILIZING THE NOT ACCOUNTED FOR (EXCEPT AS FOLLOWING MINIMUM DIMENSIONS: INDICATED BY "FOF" OR "CLEAR") BY • DIMENSION A = 18 INCHES MIN THE DIMENSION SHOWN ON THE FLOOR DIMENSION B = 12 INCHES MIN ADJUST, AS NECESSARY, THE FLOOR PLAN DIMENSIONS TO REFLECT THE

• DIMENSION C = DOOR WIDTH + 2 INCHES MINIMUM DIMENSION D = 4 INCHES MIN AT METAL FRAMED GYP BD PARTITIONS OR - EVEN MULTIPLE OF 1/2 CMU MODULE PLUS 2 INCHES AT CONC MASONRY UNIT WALLS

• DIMENSIONS E AND F = AS SHOWN ON DIMENSION G = 36 INCHES MIN DIMENSION H = 60 INCHES MIN

MEASURED TO FACE OF PTN . WHERE DIMENSIONS ARE NOT PROVIDED ON FLOOR PLANS TO LOCATE DOOR OPENINGS. APPLY THE FOLLOWING RULES, IN ORDER, TO DETERMINE THE LOCATION OF DOOR OPENINGS: A. DOOR OPENINGS MAY BE DIMENSIONED ON DRAWINGS OTHER

> IF SPACE ALLOWS, CENTER DOOR IN WALL SHOWN ON THE DRAWINGS SO THAT EITHER "DIM A" EQUALS "DIM C" OR "DIM B" EQUALS "DIM D".

IF "DIM E" IN DIAGRAMS BELOW IS LESS GYPSUM BOARD PARTITIONS, LOCATE THE THAN THE SUM OF 2 TIMES THE DOOR WIDTH PLUS 20 INCHES, LOCATE DOOR

SO THAT MINIMUMS STATED BY NOTE (EXCLUSIVE OF APPLIED FINISHES) OF THE NO 4C ABOVE FOR "DIM A". "DIM B." AND "DIM D" ARE MET - MAXIMIZING "DIM A" AND MINIMIZING "DIM D" TO THE EXTENT POSSIBLE.

> WHERE DOOR IS SHOWN LOCATED IN A LARGE EXPANSE OF OPEN WALL ("DIM E" AND "DIM F" IN DIAGRAM BELOW BOTH EXCEED 16'-0"), PLACE DOOR AT APPROXIMATE LOCATION SHOWN ON THE PLANS. WHERE DOOR OCCURS IN CMU WALL, PLACE DOOR AT APPROXIMATE LOCATION SHOWN WHILE

> > MINIMIZING "CUT" OR PARTIAL CMU FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN MODULES ADJACENT TO THE JAMBS. 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 DIM E > 16'-0" MATERIALS & TO ELIMINATE AIR LEAKAGE AND WATER PROVIDE SEALANT AND/OR CAULKING BETWEEN DISSIMILAR ADJOINING INTERIOR MATERIALS. (I.E. WINDOW SILLS TO GYP. BD., ACT CEILINGS TO MASONRY WALLS, DIM F > 16'-0"

— DIMENSION, WHEN OCCURS

REFLECTED CEILING PLAN SYMBOLS:

CEILING HEIGHT

SUPPLY

RETURN

EXHAUST

2X4 LIGHT FIXTURE

1X4 LIGHT FIXTURE

2X2 LIGHT FIXTURE

FLUORESCENT STRIP FIXTURE

DIRECT/INDIRECT

TRACK LIGHTING

PENDANT FIXTURE

CAN LIGHT

SPEAKER

FIRE EXIT SIGN

SPRINKLER HEAD

- CONTROL JOINT IN

2'X4' LAY-IN CEILING

2'X2' LAY-IN CEILING

OPEN TO STRUCTURE

T & G WOOD VENEER

EXTERIOR STUCCO SOFFIT

EXTERIOR METAL PANEL SOFFIT

WOOD VENEER

GYP BD CEILING

--

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SUSP CEILING SYSTEM

DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO FINISH JAMB, ALWAYS ALLOWING A MINIMUM OF 18" FROM THE PULL SIDE OF THE DOOR TO WHERE WALLS AND/OR PARTITIONS OF UNEQUAL THICKNESS ABUT, ALIGN EXPOSED THE INTERSECTING WALL. FACES, UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND THEIR SERVICE CONNECTIONS WITH THE PROPER UTILITY COMPANY. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE FINAL SIZE AND DEPTH OF THE ELEVATOR PIT, SHAFT, RAIL SUPPORT, HOIST SUPPORT, OVERRUN AND MISC. ELEVATOR REQUIREMENTS WITH THE SELECTED ELEVATOR MANUFACTURER/ SUPPLIER. CONTRACTOR SHALL COORDINATE SIZE, LOCATIONS AND NUMBER OF ALL ROOF OPENINGS AND ROOF ACCESSORIES WITH ALL OTHER TRADES. REFER TO THE ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS. LOCATIONS AND SIZES OF ALL CONCRETE MECHANICAL AND ELECTRICAL PADS SHALL BE COORDINATED BY THE MECHANICAL AND ELECTRICAL CONTRACTORS, WITH THE

> 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 8'-0" HIGH FIRE-RETARDANT-TREATED WOOD SHEATHING OR PROVIDE PLYWOOD OVER NON-COMBUSTIBLE SHEATHING; BOTTOM TO BE LOCATED AT 4" A.F.F. VERIFY LENGTHS AND 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., SHALL BE SAFETY GLAZING AS APPROVED FOR IMPACT BY

APPLICABLE BUILDING CODES, AND SHALL BE LABELED AS ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING. PROVIDE INDEPENDENT FRAMING & ATTACHMENTS TO THE STRUCTURE – ADEQUATE TO SUPPORT THE CEILING SYSTEM, LIGHT FIXTURES, DUCTS, DIFFUSERS, SPRINKLER PIPING AND BUS DUCTS. ALL CLOSETS AND ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FINISHES AS ADJOINING SPACES. 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, FIRE ALARMS, MEP ITEMS, AND AV EQUIPMENT, ETC. REFER TO SPECIFICATIONS FOR ALL REQUIRED TESTING AND INSPECTIONS. ANY/ ALL PROPRIETARY PRODUCTS DESCRIBED AND/OR DRAWN IN THE DOCUMENTS (BUT NOT SPECIFIED) ARE TO MEET THE MANUFACTURER'S STANDARD CRITERIA WHICH IS NOT LIMITED TO THE FOLLOWING: PERFORMANCE REQUIREMENTS, QUALITY ASSURANCE REQUIREMENTS, APPLICABLE CODES AND INDUSTRY STANDARDS. FABRICATION, ASSEMBLY, HANDLING, DELIVERY, STORAGE INSTALLATION, OPERATION, ADJUSTMENTS, ETC. PROVIDE THE MANUFACTURER'S STANDARD WARRANTY AND STANDARD FINISH WARRANTY, PROVIDE PRODUCT DATA, SHOP DRAWINGS, SAMPLES, AND MAINTENANCE

REQUIREMENTS, REFERENCES, EXECUTION, AND CLOSEOUT PROCEDURES. NOTE: ANY SUBSTITUTIONS MUST MEET THE DESIGN INTENT, AS WELL AS THE CRITERIA DESCRIBED ABOVE. PROVIDE MINIMUM WARRANTY PERIOD OF 18 MONTHS FROM SUBSTANTIAL COMPLETION ON ALL PRODUCTS SERVICES.

DATA AS REQUIRED. REFER TO DIVISION 01 SPEC.

PROCEDURES. SUBMITTAL PROCEDURES. QUALIT

SECTIONS WHICH ALSO APPLY - SUCH AS SUBSTITUTION

GENERAL INFORMATION NOTES: ALL CONTRACTORS AND THEIR SUPERVISORY PERSONNEL

CONDITIONS TO THE CONTRACT.

CODES, REGULATIONS AND ORDINANCES.

CONDITIONS RELATED TO THE WORK.

SHALL REVIEW THE GENERAL AND SUPPLEMENTARY

CONTRACTOR AND/OR OWNER SHALL OBTAIN ALL

DRAWINGS CONTAINED IN THIS SET SHALL NOT BE

REJECTED AND RETURNED TO THE CONTRACTOR.

EXECUTION OF THAT INSTALLERS WORK. DO NOT

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.

ALL MASONRY WALL THICKNESSES ACTUAL DIMENSIONS

"TYPICAL", AS USED IN THESE DOCUMENTS, SHALL MEAN

THAT THE CONDITION OR DIMENSION IS REPRESENTATIVE

IF THERE IS A DISCREPANCY BETWEEN SMALL SCALE AND

LARGE SCALE DRAWINGS, (PLAN, SECTION, & DETAIL

CLARIFICATION, FOR BIDDING PURPOSES: THE MOST

EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL

GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION:

REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHAL

ANY DISCREPANCIES BETWEEN THE DRAWINGS AND

CLARIFICATION. FOR BIDDING PURPOSES: THE MOST

EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL

GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION

REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHALL

ANY DISCREPANCIES BETWEEN THE DRAWINGS AND

ACTUAL CONDITIONS SHALL BE REPORTED TO THE

ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO

ANY AND ALL DISCREPANCIES SHALL BE REPORTED TO

THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO

PROCEEDING WITH THE WORK. IN THESE INSTANCES: NO

CHANGE ORDERS OR EXTENSIONS OF TIME WILL BE

ALLOWED OR ACCEPTED FOR PROCEEDING WITH THE

AND APPROVAL, ALSO - CONTRACTOR MUST REPAIR

AND/OR REPLACE ANY UNAUTHORIZED WORK, AS

WORK WITHOUT THE ARCHITECT'S WRITTEN DIRECTION

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

SPECIFICATIONS - CONTACT ARCHITECT FOR

THE MOST EXPENSIVE AND/OR STRICTEST

PROCEEDING WITH THE WORK.

TO THE OWNER.

NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS.

REFER TO WALL TYPES SHEET FOR THICKNESSES.

OF, OR THE SAME, FOR SIMILAR CONDITIONS

DRAWINGS, ETC.) - CONTACT ARCHITECT FOR

THE MOST EXPENSIVE AND/OR STRICTEST

REFER TO WALL TYPES SHEET

THROUGHOUT

REQUIRED BUILDING AND OCCUPANCY PERMITS.

ALL WORK SHALL CONFORM WITH APPLICABLE BUILDING CONTRACTOR SHALL BECOME FULLY ACQUAINTED WITH CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND THE SAFETY OF ALL CONSTRUCTION PERSONNEL AND REPRODUCED FOR SHOP DRAWINGS. COPIES OF THESE DRAWINGS SUBMITTED AS SHOP DRAWINGS WILL BE EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED AND REPORT TO THE CONTRACTOR IN WRITING ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. COMMENCING WITH INSTALLATION SHALL CONSTITUTE ACCEPTANCE OF THE SUBSTRATE AND/OR DO NOT SCALE DRAWINGS: FOLLOW WRITTEN DIMENSIONS

DOCUM

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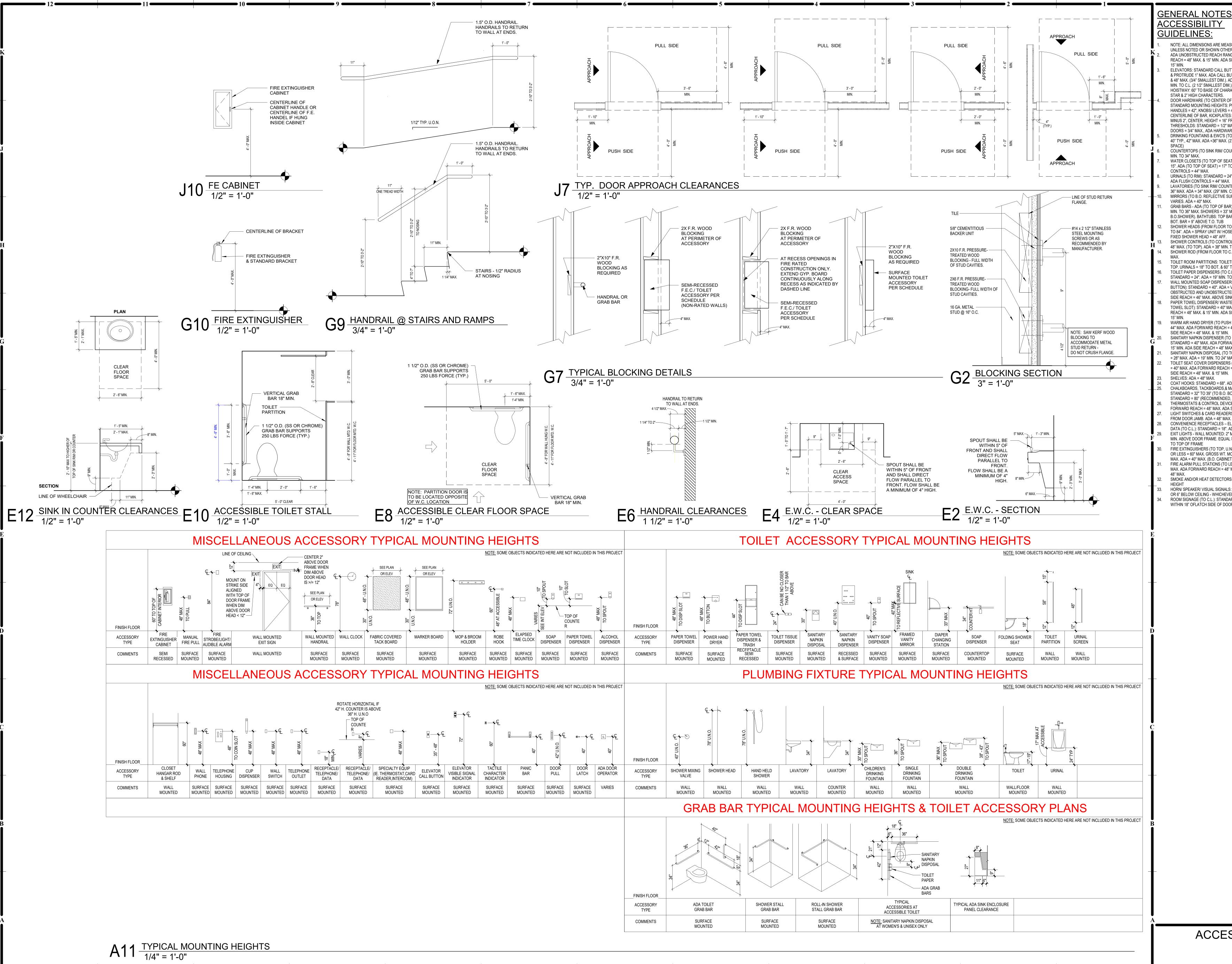
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REVISION DATES:

ROFESSIONAL SEAL

COLLINS WEBB #: 21121

GENERAL INFORMATION



ACCESSIBILITY GUIDELINES:

> 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 C & PROTRUDE 1" MAX. ADA CALL BUTTONS: 42" TO C.L. (TYF & 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" MIN. TO 34" MAX. WATER CLOSETS (TO TOP OF SEAT): STANDARD = 14" TO

15". ADA (TO TOP OF SEAT) = 17" TO 19". ADA FLUSH CONTROLS = 44" MAX. URINALS (TO RIM): STANDARD = 24" MAX. ADA =17" MAX. 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 = VARIES. ADA = 40" MAX. GRAB BARS - ADA (TO TOP OF BAR): WATER CLOSETS = 3 MIN. TO 36" MAX. SHOWERS = 33" MIN. TO 36" MAX. (FROM

B.O.SHOWER). BATHTUBS: TOP BAR = 33" MIN. TO 36" MAX. BOT. BAR = 9" ABOVE T.O. TUB SHOWER HEADS (FROM FLOOR TO HEAD): STANDARD = 72 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" T 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. &

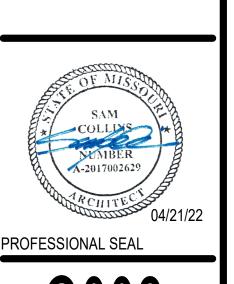
WARM AIR HAND DRYER (TO PUSH SWITCH): STANDARD 44" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN. SANITARY NAPKIN DISPENSER (TO C.L. OF COIN SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN. SANITARY NAPKIN DISPOSAL (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. SHELVES: ADA = 48" MAX. COAT HOOKS: STANDARD = 68". ADA = 48" MAX. CHALKBOARDS, TACKBOARDS, & MARKERBOARDS:

STANDARD = 32" TO 39" (TO B.O. BOARD OR CHALKTRAY) STANDARD = 80" (RECOMMENDED, TO T.O. BOARD) THERMOSTATS & CONTROL DEVICES (TO TOP): ADA FORWARD REACH = 48" MAX. ADA SIDE REACH = 48" MAX. LIGHT SWITCHES & CARD READERS (TO C.L.): LOCATE 6' EXIT LIGHTS - WALL MOUNTED: 2" MIN. BELOW CEILING. MIN. ABOVE DOOR FRAME. EQUAL SPACE FROM CEILING TO TOP OF FRAME FIRE EXTINGUISHERS (TO TOP, U.N.O.): GROSS WT. 40 LBS OR LESS = 60" MAX. GROSS WT. MORE THAN 40 LBS. = 42 MAX. ADA = 40" MAX. (B.O. CABINET) FIRE ALARM PULL STATIONS (TO LEVER): STANDARD = 48' MAX. ADA FORWARD REACH = 48" MAX. ADA SIDE REACH =

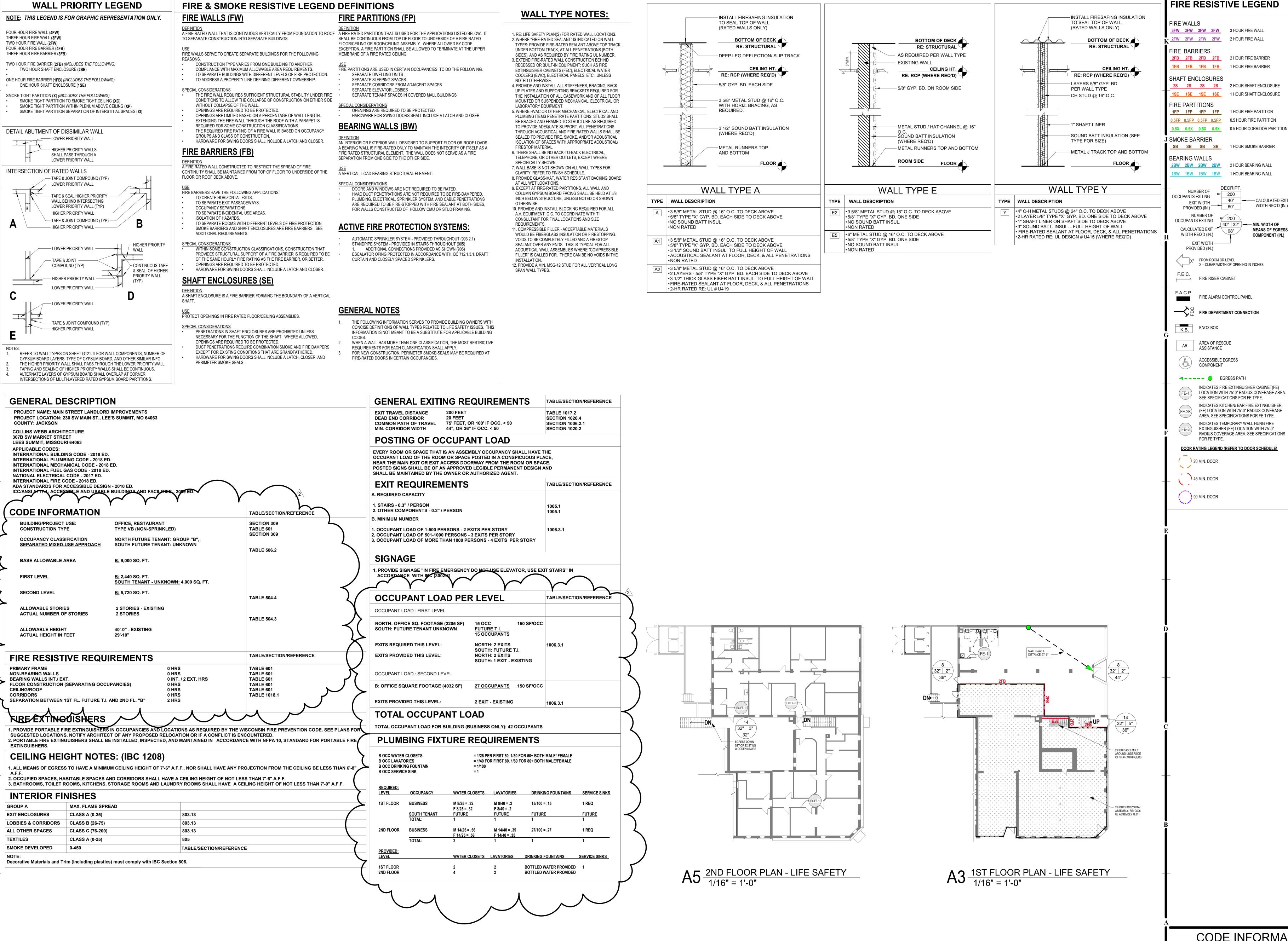
HORN/ SPEAKER/ VISUAL SIGNALS: STANDARD = 80" AFF OR 6" BELOW CEILING - WHICHEVER IS LOWER. ROOM SIGNAGE (TO C.L.): STANDARD = 60" HIGH AFF. & WITHIN 18" OFLATCH SIDE OF DOOR

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230 SW MAIN ST. LEE'S SUMMIT, MO (ARCHITECTURE, LLC **REVISION DATES:**



ACCESSIBILITY GUIDELINES



40" CALCULATED EXIT WIDTH REQ'D (IN.) MEANS OF EGRESS COMPONENT (IN.) (FE) LOCATION WITH 75'-0" RADIUS COVERAGE RADIUS COVERAGÉ AREA. SEE SPECIFICATIONS

1 HOUR SHAFT ENCLOSURE

1 HOUR FIRE PARTITION

EXIT WIDTH —

FROM ROOM OR LEVEL

FIRE RISER CABINET

KNOX BOX

AREA OF RESCUE

ACCESSIBLE EGRESS

INDICATES FIRE EXTINGUISHER CABINET(FE)

INDICATES KITCHEN/ BAR FIRE EXTINGUISHER

AREA. SEE SPECIFICATIONS FOR FE TYPE.

INDICATES TEMPORARY WALL HUNG FIRE

EXTINGUISHER (FE) LOCATION WITH 75'-0"

SEE SPECIFICATIONS FOR FE TYPE

ASSISTANCE

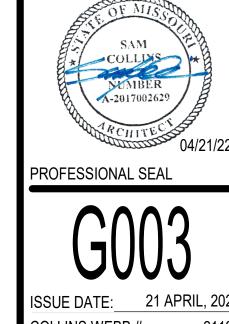
45 MIN. DOOR

FIRE ALARM CONTROL PANEL

X = CLEAR WIDTH OF OPENING IN INCHES

SW SS' 30 EE **COPYRIGHT © BY COLLINS WEBB** ARCHITECTURE, LLC **REVISION DATES:**

2 City Comments 6/03/22



CODE INFORMATION AND LIFE SAFETY PLANS

Design No. U415 October 10, 2017 Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively System A - 1 Hr 24 in. or 600 mm 0.C. Horizontal Section

System B - 2 Hr. 24 in. or 600 mm 0.C. --Horizontal Section System C - 2 Hr

Horizontal Section System D - 2 Hr 24 in. or 600 rom 0.C.

Horizontal Section System E - 2 Hr --- 24 in. or 600 mm 0.C. ---Horizontal Section System F - 2 Hr.

— 24 in. or 600 mm 0.C. — Horizontal Section System G - 3 Hr 24 in. or 800 mm 0.C.

Horizontal Section

← 24 in. or 600 mm 0.€.

Horizontal Section

1. Floor, Side and Ceiling Runners — "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when Item 4A, 4B, 4C, 4D or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (Item 2A) may be used as side runners in place of "J" - shaped runners. 2. Steel Studs — "C-H" - shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than loor-to-celling height and spaced 24 in. or 600 mm OC (max 16 in. OC when Items 4A, 4B, 4C, or 4D are used). 2A. Steel Studs — (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8

2B. Furring Channels — (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be nstalled vertically only. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 2C. Furring Channels - For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type 5 pan head steel screws. Screws alternate from top lange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.

to 1/2 in. less than floor to ceiling heights.

2D. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7):

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described

b. Steel Framing Members* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. $8 \times 1-1/2$ in. minimum selfdrilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-9/16 in. wide furring channels.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75) 2E. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described

 Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. Steel Framing Members* — Used to attach furring channels (Item 2Fa) to studs. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

2F. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7) a. Furring Channels - Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 3. b. Steel Framing Members* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted PLITEQ INC — Type GENIECLIP

 Gypsum Board* — Gypsum liner panels, nom 1 in, thick, 24 in, or 600 mm (for metric spacing) wide, Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips. CGC INC — Type SLX

UNITED STATES GYPSUM CO — Type SLX USG BORAL DRYWALL SFZ LLC — Type SLX

USG MEXICO S A DE C V - Type SLX

4. Gypsum Board* -

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRC, WRX, USGX. When ULIX is used insulation, Item 6, **Batts and Blankets*** is required and minimum stud depth is 4 in.

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B - 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX,

UNITED STATES GYPSUM CO - 1/2 in. Types C, IP-X2, IPC-AR, or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V - 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR,

System C - 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6. CGC INC — Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO - Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — Type ULTRACODE

USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 1n. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6 CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System D - 2 Hr

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E - 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing. CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-

USG MEXICO S A DE C V - 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F - 2 Hr

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX,

UNITED STATES GYPSUM CO - 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX

USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR,

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to study with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when Installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. . Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System H - 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in, when installed vertically or 12 in, OC when installed horizontally. Screws offset 6 in, from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over study and staggered 24 in. on adjacent layers. CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System I — 4 Hr Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joint centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping but screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, selfapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third aver, otherwise all joints staggered min 12 in.

UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE

Strips (see Item 9) or Lead Discs or Tabs (see Item 10).

USG BORAL DRYWALL SFZ LLC - Type ULTRACODE

CGC INC — Types IP-X3 or ULTRACODE

USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

4A. **Gypsum Board*** — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten

RAY-BAR ENGINEERING CORP — Type RB-LBG

4B. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs.

Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Type Nelco

4C. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For firect attachment only) — Nom 5/8 or 3/4 in, thick lead backed gypsum panels with beyeled, square or tapered edges plied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 . OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see (tem 9A) or Lead Discs (see Item 10A). Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4D. **Gypsum Board*** — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to study with 1-1/4 in, long Type S-12 steel screws gypsum panel steel screws spaced 8 in, OC at perimeter and 2 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional emaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. ompression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

Joint Tape and Compound — (Not Shown) Systems A, B, C, E, F, G, H, I

Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered 6. Batts and Blankets* -

Systems A, B, E, F, G, H, I (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber patt mineral bearing the UL Classification Marking as to Fire Resistance. System A With Type ULIX Gypsum Boards

Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

Systems C & D

Min 3 in. (System C) and min 1-1/2 in. (System D) thick mineral wool batts, friction fitted between the studs and floor and ceiling runners. ROCKWOOL — Type AFB

THERMAFIBER INC — Type SAFB, SAFB FF

neeting the Federal specification QQ-L-201f, Grade "C".

7. **Cementitious Backer Units*** — (System D) — Nom 1/2 or 5/8 in. thick panels, square edge, attached to studs over gypsum wallboard with 1-5/8 in. long, Type S-12, corrosion resistant steel screws spaced 8 in. OC and staggered 8 in. from gypsum wall board screws. Joints covered with glass fiber mesh tape. Vertical joints staggered one stud cavity from gypsum wallboard joints. Horizontal joints staggered a min of 12 in. from the gypsum wallboard joints. UNITED STATES GYPSUM CO — Type DCB

8. Laminating Adhesive* — (Optional, Not Shown) — Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of Gypsum Board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BJLZ) in the Building Materials 9. Lead Batten Strips - (Not Shown, For Use With Item 4A) - Lead batten strips, min 1-1/2 in. wide, max 10 ft lone stud with two 1 in, long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations.

9A. Lead Batten Strips — (Not Shown, for use with Item 4C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federa ecification QQ-L-201f, Grades "B, C or D".. Lead batten strips required behind vertical joints of lead backed gypsur vallboard (Item 6) and optional at remaining stud locations. D. Lead Discs or Tabs — (Not Shown, For Use With Item 4A) — Used in lieu of or in addition to the lead batten strips Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards

tem 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9%

OA. Lead Discs — (Not Shown, for use with Item 4C) — Max 5/16 in, diam by max 0,140 in, thick lead dis ompression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal 11. **Lead Batten Strips** — (Not Shown, For Use With Item 4B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard

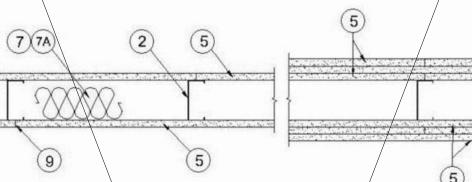
Item 4B) and optional at remaining stud locations. 12. **Lead Tabs** — (Not Shown, For Use With Item 4B) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Design No. U423

Bearing Wall Ratings — 3/4 Hr, 1, 1-1/2 or 2 Hr (See Items 5 & 7) This design was evaluated using a load design method other than the Limit States Design Method

(e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide <u>BXUV</u> or <u>BXUV7</u> * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 0.0329 in., bare metal thickness (No. 20 MSG) corrosion-protected steel, that provide a sound structural connection between steel studs and adjacent assemblies such as floors, ceilings and/or other walls. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. OC. 1A. Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1, For Use With tem 5A and 5C) \rightarrow Channel shaped runners min 3-1/2 in. deep with 1-1/4 in. flanges fabricated from min\No. 20 MSG corrosion-protected steel. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. OC. 2. **Steel Studs** — Min\0.0329 in., bare metal thickness (No. 20 MSG) corrosion-protected steel studs, min 3-1/2 in. wide, cold formed, designed in accordance with the current edition of the Specification for the Design of Cold-Formed Steel Structural Members by the American Iron and Steel Institute (AISI). All design/details enhancing the structural integrity of the wall assembly, including the axial design load of the studs, shall be as specified by the steel stud designer and/or producer, and shall meet the requirements of all applicable local code agencies. The max stud spacing shall not exceed 24 in. OC. Studs attached to floor and ceiling runners with 1/2 in/. long Type S-12 steel screws on both sides of the studs or by welded or bolted connections designed in accordance with the AISI

2A. Steel Studs — (As an alternate to Item/2, For use with Item 5A, 5C, 5D, and 5E) — Channel shaped, fabricated from\min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min width, min 1-1/2 in. flanges and 1/4 in. return, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. /

2B. **Steel Studs** — (As an alternin, (No. 20 MSG) corrosion-prolin, wide with 1/2 in, returns. Brain wide with 1/2 in, returns. Brain accordance with the current edition of the Specifica ign of Cold-Formed Steel Structural Members by the American Iron and Stee USED). All design details enhancing the structural integrity of the wall assembly, specified by the steel stud designer and/or producer, and shall meet the requirements of all applicable local code agencies. The max stud spacing shall not exceed 24 in. OC. Studs attached to floor and ceiling runn∕ers with 1√2 in. long Type S-12 steel screws on both sides of the studs or by welded or bolted connections designed in accordance with the AISI

2C. Framing Members - Steel Studs — (As an alternate to Item 2, For use with Item 5C)

— Channel shaped, fabricated from min 20 MSG (0.0327 in. thick) corrosion-protected or galv steel, 3-1/2 in. min wigth, min 1-1/2 in. flanges and 1/4 in. return, spaced a max of 16 in. OC. Studs friction-fit/into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height. 3. Lateral Support Members — (Not shown) — Where required for lateral support of studs, support shall be provided by means of steel straps, channels or other similar means as specified in the design of a particular steel stud wall system. 4. **Wood Structural Panel Sheathing** — (Optional, For use with Item 5 only) — (Not Shown) — 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with/exterior glue, applied horizontally or vertically to the steel studs. ertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to stud\$ with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels/attached over OSB or plywood panels and fastener lengths for gypsum

panels increased by min. 1/2 in. The maximum loading on the steel studs was evaluated with the steel studs braced at mid-

height and/not braced by the plywood sheathing. 5. Gypsum Board* — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over study and staggered one study cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered when load is reduced to 90 percent of max stud capacity. When load is at 100 percent, horizontal edge oints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. When used in widths other than 48 in., gypsum banels to be installed horizontally. The thickness and number of layers and percent of design load for the 45 min, 1 hr, 1-1/2 hr, and 2 hr ratings are as follows:

1 layer, 1/2 in, thick 1 layer, 5/8 in. thick 2 layers, 1/2 in. thick 2 layers, 5/8 in. thick 2 layers, 5/8 in. thick 3 lavers, 1/2 in, thick 2 layers, 3/4 in. thick

Wallboard Protection on Each Side of Wall

@Rating applicable when Batts and Blankets (Item 7) are used.

CGC INC — 1/2 in. thick Type IP-X2, IPC-AR, C, WRC, or; 5/8 in. thick Type SCX, S∦X WRX, IP-X1, AR, C, IP-AR, IP-X2, IPC-AR, ULX, or WRC; 3/4 in. thick Types AR, IP-AR, IP-

UNITED STATES GYPSUM CO -1/2 in. thick Type C, IP-X2, IPC-AR, or WRC; $\frac{4}{8}$ in. thick Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, WRX, or WRC; 3/4 in. thick Types AR, IP-AR or IP-X3, ULTRACODE **USG BORAL DRYWALL SFZ LLC** — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX,

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR, WRC; 5/\$\\$ in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WRX or WRC; 3/4 in. thick Types AR, IP-AR, IP-X3, ULTRACODE

5A. **Gypsum** Board* — (As an alternate to Item 5 when used as the base layer on one or both sides of wall, For direct attachment only, not to be used with Item 4) — Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite/sides of studs. See Items 1A, 2A 8, 8A(a). Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 12) or Lead Discs or Tabs (see Item 13).

RAY-BAR ENGINEERING CORP — Type RB-LBG

5B. Gypsum Board* — (As an alternate to Items 5 and 5A) — Nom 5/8 in. thick gypsum panels with square edges, applied horizontally or vertically. For the 1 hour single layer system -when the gypsum board panels are installed horizontally the joints are to be staggered by a minimum of 12 in. on opposite sides of assembl√, they are to be secured on each side of the study with 1-1/4 in. long Type S-12 bugle head steel screws spaced 8 in. OC to the top and bottom tracks and in the field with screws 1/in. and 4 in. from the horizontal joints. When the gypsum board panels are installed/vertically all vertical joints must be centered over stude and staggered min 1 stud cavity/on opposite sides of stude Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC to the top and bottom tracks and in the field with screws 1 in and 4 in. from the perimeter. For the 2 hour double layer system - when the gypsum board panels are installed horizontally the joints need not be staggered on opposite sides of assembly. Base layer secured on each side of the studs with 1-1/4 in. long Type \$-12 bugle head steel screws spaced 16 in. OC to the top and bottom track and in the field with screws beginning 1 in. and 8 in, from the horizontal joints. Face layer horizontal joints staggered 8 in from base layer joints and secured with 1-5/8 in, long Type S-12 budle head steel screws spaced 16 in. OC to the top and bottom tracks and in the field with screws beginning 1 in. and 8 in. from the horizontal joints. Face layer screws offset 8 in. from base layer screws. When the gypsum board panels are installed vertically all vertical joints must be centered over studs and staggered min 1 stud cavity on opposite sides of studs. Face layer gypsum boards secured to study with 1-1/4 ih. long Type S-12 steel screws spaced 16 in. OC with screws 2 in, and 16 in, from the perimeter. Base layer gypsum boards secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 16 in. OC with screws 1-1/2 in and 8 in. from the perimeter. Face layer screws offset 8 in. from base layer screws. CGC INC — Type USGX

UNITED STATES GYPSUM CO −\ 5/8 in. thick Type USGX (Joint tape and compound, Item optional with Type USGX)

USG BORAL DRYWALL SFZ LLC —\5/8 in. thigk Type USGX (Joint tape and compound, Item 9, optional with Type USGX

USG MEXICO S A DE C V − Type USGX

5C. **Gypsum Board*** — (As an alter **NOT** | 5 when used as the base layer on one or both sides of wall, For direct attach to be used with Item 4) — Nominal 5/8 in. thick lead backed gypsum pane USED square or tapered edges, applied vertically. Vertical joints centered USED taggered min 1 stud cavity on opposite sides of studs. Wallboard secured to sugar man 1. 1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws/spaced 8 in. OC at perimeter and 12 in. OC in the

NEW ENGLAND LEAD BURNING CO/INC, DBA NELCO — Nelco

5D. Gypsum Board* — (As an alternate to Item 5 when used as the base layer on one or both sides of wall, For direct attachment only, not to be used with Item 4) — Nom 5/8 or 3/4 in. may be used as alternate to/all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1A, 2A 8, 8A(a). Wallboard secured to stud\$ with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in/the field. To be used with Lead Batten Strips (see Item 12A) or Lead Discs (see Item 13A).

MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

5E. Gypsum Board* — (As an alternate to Item 5 when used as the base layer on one or both sides of wall, For direct attachment only, not to be used with Item 4) — Nom 5/8 in. may be used as alternate to all 5/8. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 i/n. thick lead backed gypsum\panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel study and staggered min 1 stud cavity on opposite sides of studs. See Items 1A, 2A 8, 8A(a). Nallboard secured to stud\$ with 1-1/4 in. long Type S-12 \$teel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the/top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201/f, Grade "C".

5F. **Gypsum Boar d*** − Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of stude need not be staggered. Horizontal edge joints and horizontal butt joints between layers need not be staggered. When used in widths other than 48 in., gypsum panels to be installed orizontally. Insulation (Item 7D) required when using Type ULIX for the 1 hour Rating. The thickness and number of layers and percent of design load are as follows:

Wallboard Protection on Each Side of Wall & Thkns 1 layer, 5/8 in. thicl 2 layers, 5/8 in, thicl 2 layers, 5/8 in. thick

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

@Rating/applicable when Batts and Blankets (Item 7) are used. **UNITED STATES GYPSUM CO** -5/8 in. thick Type ULIX

6. Fasteners — (Not Shown) — For use with Item 5 and 5F - Type S-12 steel screws used to attach panels to runners (Item 1 or 1A) and studs (Item 2 or 2A) or furring channels (Item 8). Single layer systems: 1 in. long for 1/2 and 5/8 in. thick panels or 1\frac{1}{4} in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in OC/when panels are applied vertically. **Two layer systems:** First layer- 1 in. long for 1/2 an∮ 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. O¢. Second layer- 1-5/8 in. long for 1/2 in. and 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in, OC with screws offset 8 in, from first layer, Three-layer systems: First layer- 1 in. long for 1/2 in. thick panels, spaced 24 in. OC. Second layer- 1 ⅓/8 in. long for 1/2 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels, spaced 12 in, OC, Screws offset min 6 in, from layer below. 7. Batts and Blankets* — (Required as indicated under Item 5 and 5F) — Nom 2 in. thick mineral wool batts, friction fitted between study and runners. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies. 7A. Batts and Blankets* — (Optional, Not Shown) — Placed in stud cavities, any glass

fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning

Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ)

Categories for names of Classified companies.

7B. Batts and Blankets* — (Optional, Not Shown) — Placed in stud cavities, glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or

OWENS CORNING — Type QuietZone Acoustic Batts

7C. Fiber, Sprayed* - (Optional) - As an alternate to Batts and Blankets (Item 7) - Not for use with Items 8A or 8B) — Spray applied mineral wool insulation. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed

AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus 7D. Batts and Blankets* — Placed in stud cavities, any 3-1/2 in, thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of

8. Furring Channels — (Optional on one or both sides, not shown, for single or double

layer\systems) — Resilient furring channels fabricated from min 25 MSG corrosion-

with 2-23/32 in. wide furring channels.

protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 panhead steel screws. Not for use with type RX-G\gypsum panels and Item 5A or 5C. 8A. Steel Framing Members (Not Shown)* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 8, furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with type FRX-G gypsum panels and Item 5A or 5C. b. Steel Framing Members* — Used to attach furring channels (Item 8a) to studs (Item 2). Clips spaced max. 48 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use

8B. **Steel Framing Members*** — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 8, furring channels and Steel Framing Members as described below: Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with type FRX-G gypsum panels and Item 5A or 5C. b. Steel Framing Members* — Used to attach furring channels to stude (Item 2). Clips spaced max. 48 in. OC., and secured to study with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. PLITEQ INC — Type GENIECLIP

8C. Steel Framing Members* — (Not Shown) — (Optional or one or both sides, not shown, for single or double layer systems) — As an alternate to Item 8, furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 M\$G galv steel, spaced max. 24 n. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 6. Not for use with type FRX-G gypsum panels and Item 5A or 5C. b. **Steel Framing Members*** — Used to attach furring channels to studs (Item 2), Clips spaced max. 48 in. OC., and secured to study with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips -

9. **Joint Tape and Compound** — **V**inyl or casein, dr √y or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layers. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. 10. Siding, Brick or Stucco — (Optional, Not Shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick. 11. Caulking and Sealants* — (Optional, Not Shown) — A bead of acoustical sealant applied around the partition perimeter for sound/control.

UNITED STATES GYPSUM CO — Type AS

12. **Lead Batten Strips** — (Not Show NOT ith Item 5A) — Lead batten strips, min 1-1/2 in wide. max 10 ft long with a max 10 ft long interior face of studs and attached frusted face of the stud with two 1 in. long Type S-12 pan head steel screws, on USED he strip and one at the bottom of the strip. Lead batten strips to have a pu..., ...eeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5A) and optional at remaining stud locations. Required behind vertical 12A. **Lead Batten Strips** — (Not Shown, for use with Item 5D) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long\min. Type S-8 pan head steel screws, one

at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min.

Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of

99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips

required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at 13. Lead Discs or Tabs — (Not Shown, For Use With Item 5A) — Used in lieu of or in addition to the lead batten strips (Item 12) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". 13A. Lead Discs — (Not Shown, for use with Item 5D) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D". 14. **Lead Batten Strips** — (Not Shown, For Use With Item 5C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead\batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required

behind vertical joints of lead backed gypsum wallboard (Item 5C) and optional at remaining 15. **Lead Tabs** — (Not Shown, For Use With Item 5C) — 2 in wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item \$C) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

16. Wall and Partition Facings and Accessories* — (Optional, Not Shown) — For use with Item 1, Item 2 to 2C, Item 3, Item 5, Item 6, Item 7A, Item 8 and Item 9. For a maximum fire rating of 1 hour. On one side of the wall, over the first layer of Gypsum Board (Item 5), install Reflexor membrane with the gold side facing outwards. Membrane installed with T50 staples spaced 12 inches on center in both directions as per manufacturer's instructions, seams in membrane to be overlapped by 2 inches. When efleXor membrane is/used an additional layer of Gypsum Board identical to the one used in the first layer and as specified in Item 5 shall be installed over the membrane. Additional layer of Gypsum Board to be installed through the membrane to the stud as specified in Item 5 except the fastener length shall be increased by a minimum of 5/8 inch. Install Batts and Blankets in the stud cavity as per Item 7A. On the other side of the wall prior to the installation of the Gypsum Board install Resilient Channels as per Item 8. Over the Resilient Channels install 3/4 inch thick SONOpan panel secured to the Resilient Channels with rywall screws and washers spaced at 16 in. OC on the perimeter of the panel and 8 in. OC in the field of the panel. Over the SONOpan panel install the same Gypsum Board as specified in Item \$ with the fastener length increased by minimum 3/4 inch. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

MSL — RefleXor membrane, SONOpan panel.

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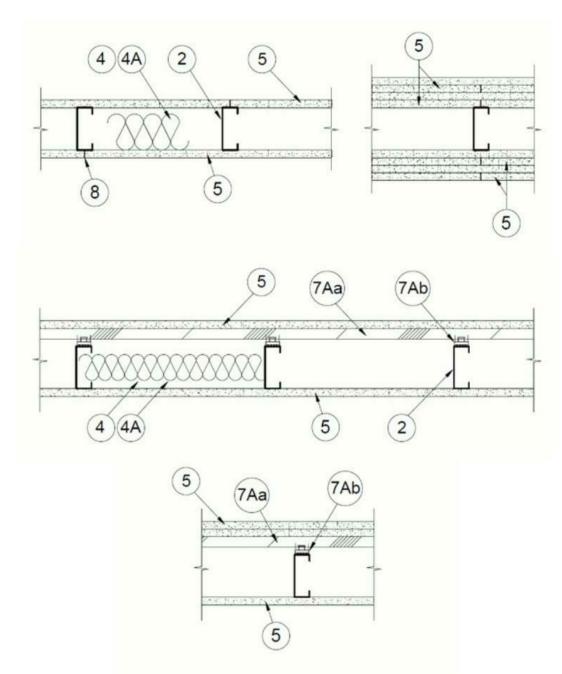
- · Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- · Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance
- . When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials
- and alternate methods of construction. · Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States

Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 5 through 5J) * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Floor and Ceiling Runners — (Not Shown) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosionprotected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in.

1A. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™ Track

CRACO MFG INC — SmartTrack25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track

FUSION BUILDING PRODUCTS — Viper25™ Track

IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track

1B. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in, OC max. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

FUSION BUILDING PRODUCTS — Viper20™ Track

IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

1C. Framing Members* — Floor and Ceiling Runners — (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max. ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20

TELLING INDUSTRIES L L C — Type SUPREME D24/30EQD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

1D. Floor and Ceiling Runners — (Not Shown) — For use with Item 2A — Channel shaped, fabricated from min 20 MSG corrosionprotected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. Framing Members* — Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1) — For use with Items 2E, 5F or 5G or 5I only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max. **CLARKDIETRICH BUILDING SYSTEMS** — CD ProTRAK

DMFCWBS L L C - ProTRAK

MBA METAL FRAMING — ProTRAK

RAM SALES L L C — Ram ProTRAK

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

1F. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. SUPER STUD BUILDING PRODUCTS — The Edge

1G. Framing Members* — Floor and Ceiling Runner — For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max. STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.018 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC. MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100

FUSION BUILDING PRODUCTS — Viper20™ Track VT100

IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track VT100

11. Framing Members* — Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1) — For use with Items 2H, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. TELLING INDUSTRIES L L C — TRUE-TRACK™

1J. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2I, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

1K. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2J, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with

1L. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-1/2 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. RESCUE METAL FRAMING, L L C — AlphaTRAK

1M. Framing Members* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 20, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. RONDO BUILDING SERVICES PTY LTD — Rondo Wall Track

1N. Framing Members* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 2P, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. **OEG BUILDING MATERIALS** — OEG Track

10. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2Q, proprietary channel shaped runners, min width to accommodate stud size, fabricated from min. 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max CALIFORNIA EXPANDED METAL PRODUCTS CO - Viper X Track

2. Steel Studs — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. Steel Studs — (As an alternate to Item 2, For use with Items 5B, 5E, 5H, 5J or Type ULIX) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling

runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. Framing Members* - Steel Studs — (As an alternate to Item 2, For use with Items 5C, 5I or Type ULIX) — Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™

CRACO MFG INC — SmartStud25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™

IMPERIAL MANUFACTURING GROUP INC — Viper25™

2C. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

FUSION BUILDING PRODUCTS - Viper2079

IMPERIAL MANUFACTURING GROUP INC — Viner20™

2D. Framing Members* — Steel Studs — In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20 STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20

TELLING INDUSTRIES L L C — Type SUPREME D24/30EQD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

2E. Framing Members* — Steel Studs — (Not Shown, As an alternate to Item 2) — For use with Items 5F or 5G or 5I or Type ULIX only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD

DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

RAM SALES L L C - Ram ProSTUD

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

2F. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights. SUPER STUD BUILDING PRODUCTS — The Edge

2G. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height. STUDCO BUILDING SYSTEMS — CROCSTUD

2H. Framing Members* — Steel Studs — (Not Shown, As an alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. TELLING INDUSTRIES L L C — TRUE-STUD™

21. Framing Members* — Steel Studs —

2J. Framing Members* — Metal Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights

2K, Framing Members* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. EB METAL INC - NITROSTUD

2L. Framing Members* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. **OLMAR SUPPLY INC** — PRIMESTUD

2M. Framing Members* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

and as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in length than assembly height. RESCUE METAL FRAMING, L L C — AlphaSTUD 2O. Framing Members* — Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated

2N. Framing Members*— Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min depth 3-1/2 in.

under Item 5, galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max. RONDO BUILDING SERVICES PTY LTD — Rondo Lipped Wall Stud 2P. Framing Members* — Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated

under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max. OEG BUILDING MATERIALS — OEG Stud 2Q. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1O, proprietary channel shaped steel

studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal

thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights. CALIFORNIA EXPANDED METAL PRODUCTS CO - Viper X

3. Wood Structural Panel Sheathing — (Optional, For use with Item 5 Only) — (Not Shown) — 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in.

4. Batts and Blankets* — (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5 See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

4A. Batts and Blankets* — (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

4B. Fiber, Sprayed* — (Optional, for use with Type ULIX) Where insulation is required - Spray applied granulated mineral fiber material. The fiber is applied with adhesive at a minimum density of 4.0 pcf to completely fill the wall cavity in accordance with the application instructions supplied with the product. See Fiber. Sprayed (CCAZ). AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

4C. Foamed Plastic* — (Where Batts and Blankets*, Item 4, are optional, for use with Item 5K) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in.

CARLISLE SPRAY FOAM INSULATION — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, and Foamsulate HFO.

5. Gypsum Board* — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) with Type ULIX need not be staggered. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Items 2, 2C, 2D, 2F, 2G, 2O	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 4)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in,
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional

3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, WRX or WRC; 3/4 in. thick Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, ULIX, WRX, IP-X1, AR, C, WRC, FRX-

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE

Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item

5A. Gypsum Board* — (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6. CGC INC — Type SHX.

When Item 7B, Steel Framing Members*, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of

insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in

UNITED STATES GYPSUM CO — Type FRX-G, SHX.

G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE

USG MEXICO S A DE C V — Type SHX.

5B. Gypsum Board* — (Not Shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) — Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 MSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Discs or Tabs (see Item 12). RAY-BAR ENGINEERING CORP — Type RB-LBG

5C. Gypsum Board* — (For Use With Item 2B) — Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive Directory.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX

UNITED STATES GYPSUM CO — Type SCX, SGX, ULIX.

USG BORAL DRYWALL SFZ LLC — Type SCX

CGC INC — Type SCX, ULIX.

USG MEXICO S A DE C V — Type SCX

5D. Gypsum Board* — (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.

UNITED STATES GYPSUM CO — Type USGX

USG BORAL DRYWALL SFZ LLC — Type USGX USG MEXICO S A DE C V — Type USGX

CGC INC — Type USGX

5E. Gypsum Board* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 5/8 in, thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

5F. Gypsum Board* — (As an alternate to Item 5) — For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.

UNITED STATES GYPSUM CO - 5/8 in. thick Type SCX, SGX, ULIX

USG BORAL DRYWALL SFZ LLC — 5/8 in. thick Type SCX. SGX

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX

NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Nelco

5G. Gypsum Board* — (As an alternate to Item 5) — For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as

Gypsum Board Protection on Each Side of Wall

No. of Layers

& Thickness

of Panel

Min Thkns of

2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR;, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX or 3/4 in. thick Types IP-X3

UNITED STATES GYPSUM CO - 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Types C and 5/8 in. thick SCX

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

5H. Gypsum Board* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).

5I. Gypsum Board* — (As an alternate to Item 5) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5. CGC INC — Type ULIX, ULX

UNITED STATES GYPSUM CO — Type ULIX, ULX

MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODE

USG MEXICO S A DE C V — Type ULX

5J. Gypsum Board* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over study and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5K. Gypsum Board* — (As an alternate to Item 5 when Foam Plastic insulation (Item 4C) is used) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to studs over inner layer with the 1-5/8 in. long steel screws spaced 8 in. OC.

6. Fasteners — (Not Shown) — For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). Single layer systems: 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. Single layer system with Type ULIX: 1 in. long, spaced 12 in. OC in the field and perimeter, when panels are applied horizontally or vertically. Two layer systems: First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. Three-layer systems: First layer-1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. Four-layer systems: First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in, long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in, long for 1/2 in, thick panels or 3 in, long for 5/8 in, thick panels, spaced 12 in, OC. Screws offset min 6 in, from

7. Furring Channels — (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A.

7A. Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.

b. Steel Framing Members* — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and

RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V

and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75). 7B. Framing Members* — (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels

and Steel Framing Members on only one side of studs as described below:

are friction fitted into clips.

KINETICS NOISE CONTROL INC — Type Isomax

described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A. b. Steel Framing Members* — Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels

a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as

7C. Framing Members* — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with

secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. PLITEQ INC — Type GENIECLIP 7D. Steel Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:

b. Steel Framing Members* — Used to attach furring channels (Item 7Ca) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS

described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A. b. Steel Framing Members* — Used to attach furring channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips

a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as

7E. Steel Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 7Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

7, furring channels and Steel Framing Members as described below:

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

attached to each stud with steel screws, not more than each sixth course of brick.

steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E. b. Steel Framing Members* — Used to attach furring channels (Item 7Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. REGUPOL AMERICA — Type SonusClip

7F. Steel Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — Resilient channels and Steel Framing Members as described below: a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. Not for

b. Steel Framing Members* — Used to attach resilient channels (Item 7Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

7G. Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item

perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced max. 24 in. OC

Item 6. Not for use with Item 5A. b. Steel Framing Members* — Used to attach furring channels (Item 7Ga) to studs (Item 2). Clips spaced max. 48 in. OC. Clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction

8. Joint Tape and Compound — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint compound may be omitted when gypsum panels are supplied with a square edge. 9. Siding, Brick or Stucco — (Optional, Not Shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the

requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties

11. Lead Batten Strips — (Not Shown, For Use With Item 5B) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of

11A. Lead Batten Strips — (Not Shown, For Use With Item 5H) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in, long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten

12. Lead Discs or Tabs — (Not Shown, For Use With Item 5B) — Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in, diam by max 0.125 in, thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in, by 1-1/4 in, by max 0.125 in, thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

12A. Lead Discs — (Not Shown, for use with Item 5H) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

13. Lead Batten Strips — (Not Shown, For Use With Item 5E) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in, Strips placed on the face of studs and attached to the stud with two min, 1 in, long min, Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.

14. Lead Tabs — (Not Shown, For Use With Item 5E) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

15. Barrier Mesh — (Optional, Not Shown) - Attached to steel studs on one or both sides of the wall using Barrier Mesh Clips spaced at maximum 12 inches on center vertically, using a flat head type screw penetrating through the steel at least 3/8 of an inch. For Steel Studs less than 0.033 inches in thickness, use self-piercing screws. For Steel Studs equal to or greater than 0.033 inches in thickness, use steel drill screws (self-tapping). Gypsum Board (Item 5) to be installed directly over the Barrier Mesh using prescribed screw patterns with lengths increased by a minimum 1/8 in. Barrier Mesh may be installed with the long dimension of the diamond pattern positioned vertically or horizontally. Barrier Mesh joints may occur as butt joints at the framing members and secured using the Barrier Mesh Clips or occur in between framing members as overlapping joints secured using 18 SWG wire ties spaced a maximum 12 in. on

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively Last Updated on 2021-07-31

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format: "@ 2022 UL LLC"

10. Caulking and Sealants* — (Optional, Not Shown) — A bead of acoustical sealant applied around the partition perimeter for sound control. UNITED STATES GYPSUM CO — Type AS

99.9% meeting the Federal specification OO-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.

strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.

CLARKDIETRICH BUILDING SYSTEMS — Barrier Mesh, Barrier Mesh Clips

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

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REVISION DATES:

ARCHITECTURE, LLC

- · Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- · When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and
- each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction. Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSI/UL 263

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States <u>Design Criteria and Allowable Variances</u>

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design Criteria and Allowable Variances

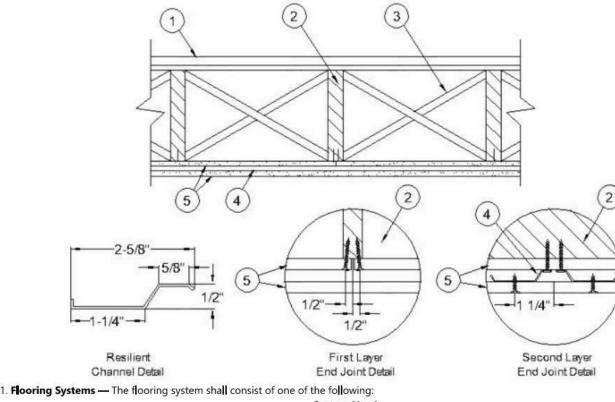
Design No. L511

February 14, 2022

Unrestrained Assembly Rating — 2 Hr. Finish Rating — 71 Min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists. Vapor Barrier — Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring — Min 1 by 3 in. T & G and end matched, laid perpendicular to joists.

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material. UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* (Optional) — Nom 3/8 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under Floor Topping Mixture*. GRASSWORX L L C — Type SC50

System No. 3 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier - (Optional) —Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring — Min 19/32 in. wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered.

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring — Floor Topping Mixture* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.4 cu feet of

preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water. **ELASTIZELL CORP OF AMERICA** — Type FF

HACKER INDUSTRIES INC — FIRM-FILL SCM 125

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 250, Quiet Qurl 55/025

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper.

Floor Mat Materials* - (Optional) — Floor mat material nom 5/64 in. (2mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. of floor-topping mixture. HACKER INDUSTRIES INC — Type Hacker Sound-Mat.

Alternate Floor Mat Materials - (Optional) - Floor mat material nom 1/4 in. (6mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32mm) of floor-topping mixture.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II. Alternate Floor Mat Materials - (Optional) - Floor mat material nom 1/8 in. (3mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of

Alternate Floor Mat Materials - (Optional) — Floor mat material nom 1/4 in. (6mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of

Alternate Floor Mat Materials - (Optional) — Floor mat material nom 3/8 in. (10mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of

Alternate Floor Mat Materials - (Optional) — Floor mat material nom 3/4 in. (19mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750, Quiet Qurl 65/075

Metal Lath (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat materials. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat. Finish Flooring — Floor Topping Mixture* — Min 3/4 or 1 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant, Firm-Fill 3310.

Vapor Retarder — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

System No. 7 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Finish Flooring — Floor Topping Mixture* — Min 3/4 or 1 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1000 psi. Mixture shall consist of 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand. ULTRA QUIET FLOORS — Types UQF-A, UQF-Super Blend, UQF-Plus 200

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt. Finish Flooring — Floor Topping Mixture* — Min 3/4 thickness of floor topping mixture having a minimum compressive strength of 1500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. MAXXON CORP — Type Maxxon Standard and Maxxon High Strength

Floor Mat Materials* - (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material. MAXXON CORP — Type Encapsulated Sound Mat.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat

Metal Lath — (Optional) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Fiber Glass Reinforcement - (Optional, Not Shown) - 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs/sq yd loose laid over the floor mat

System No. 9 Subflooring — Min 15/32 in. thick wood structural panels, min grade C-D or Sheathing. Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring — Floor Topping Mixture* — Min 3/4 floor topping mixture, having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. FORMULATED MATERIALS LLC — Types FR-25, FR-30, and SiteMix

Alternate Floor Mat Material* — (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in. or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively. FORMULATED MATERIALS LLC — Types M1, M2, M3, Elite, Duo, R1, and R2

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Finish Floor - Mineral and Fiber Board* — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. HOMASOTE CO — Type 440-32 Mineral and Fiber Board

to the joists with joints staggered Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt. Finish Flooring - Floor Topping Mixture* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 105 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.2 cu feet of

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

preformed foam concentrate to 94 lbs Type I Portland cement, and 300 lbs of sand with 5.5 gal of water. AERIX INDUSTRIES — Floor Topping Mixture Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring - Floor Topping Mixture* — Min 3/4 floor topping mixture , having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

ARCOSA SPECIALTY MATERIALS — AccuCrete® Types NexGen, Green, Prime and PrePour, AccuRadiant®, AccuLevel® Types G40, G50 and SD30

Alternate Floor Mat Material* - (Optional) - Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in. or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively.

ARCOSA SPECIALTY MATERIALS — AccuQuiet® Types D13, D-18, D25, DX38, EM.125, EM.125S, EM.250, EM.250S, EM.375, EM.375, EM.375D, and EM.750S. Subflooring — 15/32 or 19/32 in. thick wood structural panels, min. grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be

perpendicular to joists with joints staggered Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

to the joists with joints staggered.

Finish Flooring — Floor Topping Mixture* — Min 3/4 or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively, having a min compressive strength of 2100 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick. Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s). Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in. KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in. KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

PLITEQ INC — Type GenieMat RST02

Vapor Barrier — Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

ARCOSA SPECIALTY MATERIALS — AccuCrete® Types NexGen, Green, Prime and PrePour, AccuRadiant®, AccuLevel® Types G40, G50 and SD30

Floor Mat Material* — (Optional) - Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of of 1 in. ARCOSA SPECIALTY MATERIALS — AccuQuiet® Types D13, D-18, D25, DX38, EM.125, EM.125S, EM.250, EM.250S, EM.375S, EM.375S, EM.750, and EM.750S

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture* — Min 3/4 floor topping mixture , having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. DEPENDABLE LLC — GSL M3.4, GSL K2.6, GSL-CSD and GSL RH.

Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in. KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

System No. 17 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies.

Floor Mat Materials* — (Optional) - Nom 3/16 in, thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in. PLITEQ INC — Type GenieMat FF03NP Floor Mat Materials* — (Optional) - Nom 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

Floor Mat Materials* — (Optional) - Nom 3/32 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

PLITEQ INC — Type GenieMat FF06

Floor Mat Materials* — (Optional) - Nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

PLITEQ INC — Type GenieMat FF10

Floor Mat Materials* — (Optional) - Nom 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in. PLITEQ INC - Type GenieMat FF17

Floor Mat Materials* — (Optional) - Nom 1 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in. PLITEQ INC — Type GenieMat FF25

System No. 18

Subflooring—Structural Cement-Fiber Units* — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joists with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints. ECTEK INTERNATIONAL INC — Armoroc Panel

Subflooring (Alternate) — Building Units* — Nom 3/4 in. thick, tongue and grooved boards. Long dimension of boards to be perpendicular to joists with end joints staggered a min of 4 ft. and centered over the joists. Boards secured to joists with 1-1/4 in. long self-drilling, self- tapping screws or 2 in. x 0.113 in. Ring Shank nails spaced a max of 12 in. OC in the field with screws/nails located 1 in. from long edge, and max 8 in. OC along the end joints with screws/nails located 1/2 in. from end joint. ECTEK INTERNATIONAL INC — Type MegaBoard

Vapor Barrier — Nom 0.010 in. thick commercial rosin-sized building paper

Finish Flooring — Min 1 by 3 in. T & G and end matched.

Structural Cement-Fiber Units* — For use with UNITED STATES GYPSUM CO gypsum boards only. Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists.

Finish Flooring - Floor Topping Mixture* — Min 1 in. thickness of floor topping mixture having a min compressive strength of 4500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. SIKA DEUTSCHLAND GMBH — Type SCHONOX AP Rapid Plus

Subflooring - Building Units* — Nom. 1-1/2 in. thick T & G laminated composite plywood sub-floor panels to be perpendicular to the trusses with end joints staggered 4 ft. End joints centered over top chord of trusses. Subfloor panels secured to trusses with construction adhesive and #8 by 3 in. wood screws spaced 12 in. OC in the field and 6 in. OC at the end joints. RSP INDUSTRIES INC - SAP board

Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies.

Floor Mat Materials* — (Optional, Not Shown) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material. LOW & BONAR INC — EnkaSonic® by Colbond a member of the Low & Bonar group Types 125, 250, 250 Plus, 400, 400 Plus, 750, and 750 Plus.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat reinforcement.

Metal Lath — (Optional) — Expanded steel diamond mesh, 2.5 lb / sq yd loose laid over floor mat material.

Fiberglass Mesh Reinforcement — (Optional) — Coated non-woven glass fiber mesh grid loose laid over floor mat material.

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Fastened with 8d ringed shank nails spaced 12 in. OC along each joist.

Finish Floor - Building Units* — Min 1/2 in. thick, supplied in 4 by 8 ft panels, fastened to joists through subfloor with 2 in. long 8d ringed shank ECTEK INTERNATIONAL INC — Type MegaBoard, 1/2 in. thick.

2. Wood Joists — Min 2 by 10, spaced 16 in. OC and effectively fireblocked in accordance with local codes.

3. Cross Bridging — Min 1 by 3 in. or min 2 by 10 solid blocking.

to joists as described in Item b.

4. Resilient Channels — Formed of 25 MSG galv steel, spaced 24 in. OC perpendicular to joists and located 12 in. from each side edge of base layer gypsum board. Channels placed with 1/4 in. clearance at the ends and fastened to each joist with 1-7/8 in. long Type S bugle head screws. Min end clearance of channels to walls: 3/8 in. Additional channels 60 in. long, placed adjacent to continuous channels at end joints of second layers of gypsum board (Item 5) and similarly secured. Channel ends to extend 6 in. beyond each side of joint.

4A. Steel Framing Members (Not Shown)* — As an alternate to Item 4, furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 5. PAC INTERNATIONAL L C — Types RSIC-1, RSIC-1 (2.75).

4B. Alternate Steel Framing Members* — (Not Shown) — As an alternate to items 4, furring channels and Steel Framing Members as described

a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in deep, spaced 24 in OC, perpendicular to joists. Channels secured

b. Steel Framing Members* — Used to attach furring channels (Item a) to joists. Clips spaced 48 in. OC., and secured to alternating joists with No. 8

to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near b. Steel Framing Members* — Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced 48 in. OC., and secured to alternating joists with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two

self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips

a. Furring Channels — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 24 in OC, perpendicular to joists. Channels secured

required to hold furring channel that supports the gypsum board butt joints, as described in Item 5. PLITEQ INC — Type Genie Clip 4C. Alternate Steel Framing Members* — (Not Shown) - As an alternate to Item 4, furring channels and Steel Framing Members as described

b. Steel Framing Members* — Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced at in. C and secured to the bottom of the joists with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 1 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 5. STUDCO BUILDING SYSTEMS — RESILM UNT Sound Isolation Clips - Type A237R

D. Alternate Steel Framing Members* — (Not Shown) - As an alternate to Item , furring channels and Steel Framing Members as described a. Furring Channels — Formed of No. 25 MSG galv steel, 2-1/2 in. wide by 7/ in deep, spaced 2 in C, perpendicular to joists. Channels secured to joists as described in Item b.

b. Steel Framing Members* — Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced at in. C and secured to the

bottom of the joists with one 2-1/2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted

into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 1 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 5. REGUPOL AMERICA — Type SonusClip E. Steel Framing Members* — (Not Shown)* — As an alternate to Item , furring channels and Steel Framing Members as described below:

secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 1 SWG galv steel

b. Steel Framing Members* — Used to attach furring channels (Item a) to joists. Clips spaced in. C., and secured to alternating joists with No. x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 5. CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/ in. deep, spaced 2 in. C perpendicular to joists. Channels

F. Steel Framing Members* — (ptional, Not Shown) — Used as an alternate method to attach resilient channels to structural members. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 in. .C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions. PAC INTERNATIONAL L L C — Types RC-1 Boost

5. **Gypsum Board*** — Two layers of nom 5/ in. thick, ft wide gypsum board. When resilient channels (Item) are used, first layer installed perpendicular to joists with end joints located over bottom of joists. Gypsum board attached to joists with 6d cement coated cooler nails spaced 1 in., 6 in. and 21 in. from each side edge in the field of the board. Butt edges shall occur under joists, fastened with nails spaced 1 in., 6 in., 15 in. and 21 in. from side edges of board, and 1/2 in. back from butt edge. Second layer of gypsum board secured to resilient channels with 1 in. long Type S bugle head screws spaced 12 in. C with additional screws placed 3 in. from each side edge. End joints of second layer offset from end joints in first layer, and secured to both resilient channels as shown in end joint detail. Screws located 3/ in. and 1-1/ in. from side and end joints of boards. When Steel Framing Members (Item A, B, E) are used, sheets installed with long dimensions parallel with joists. Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced in. C along butted end joints and 12 in. C in the field of the board. Butted end joints shall be staggered min 2 ft. within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two furring channels shall be spaced approximately 3-1/2 in. C, and be attached to underside of the joist with one RSIC-1 or Genie clip at each end of the channel. Butted base layer end joints to be offset a min of 2 in. in adjacent courses. uter layer attached to the furring channels using 1-5/ in. long Type S bugle head steel screws spaced in. C at butted joints and 12 in. C in the field. Butted end joints to be offset a min of in. from base layer end joints. Butted side joints of outer layer to be offset min 1 in. from butted side joints of base layer. When Steel Framing Members (Item C) are used, base layer of gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced in. C in the field of the board. Gypsum board butted end joints shall be staggered minimum in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be in. C. Butt joint furring channels shall be attached with one RESILM UNT Sound Isolation Clip at each end of the channel. Face layer installed per Item 5. When Steel Framing Members (Item D) are used, base layer of gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced in. C in the field of the board. Gypsum board butted end joints shall be staggered minimum in. and centered over main furring channels. At the gypsum board butt joints, an additional single length of furring channel shall be installed and be spaced approximately 3 in. from the butt joint (6 in. from the continuous furring

channels) to support the floating end of the gypsum board. Each of these shorter sections of furring channel shall extend one joist beyond the width of the gypsum panel and be attached to the adjacent joists with one SonusClip at every joist involved with the butt joint. AMERICAN GYPSUM CO - Type AG-C

CERTAINTEED GYPSUM INC — Type C

CGC INC — Types C, IP-X2, IPC-AR CERTAINTEED GYPSUM INC — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C - Types 5, DAPC, TG-C

NATIONAL GYPSUM CO - Types FSK-C, FSW-C, FSW-G

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C

PANEL REY S A - Type PRC THAI GYPSUM PRODUCTS PCL — Type (

USG BORAL DRYWALL SFZ LLC — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

6. Finishing System - (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom. 3/32 in. thick veneer plaster may be applied to the entire surface of

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2022-02-14

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UL LISTINGS - #L511

1. 1 SEE ADMINISTRATIVE SPECIFICATION FOR GENERAL REQUIREMENTS RELATED TO ADMINISTATION OF THIS

THE CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN THE PROJECT SHALL BE REQUIRED TO OBTAIN AND PAY FOR ALL NECESSARY LICENSES AS REQUIRED BY ANY LAW OR AGENCIES HAVING JURISDICTION (AHJ) OVER THE

IE GENERAL CONTRACTOR WILL PAY FOR ALL PERMITS REQUIRED BY ANY AGENCY HAVING JURISDICTION (AHJ) OVER

THE PROJECT FOR ALL WORK TO BE PREFORMED BY THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL PAY THE NECESSARY FEES TO CONNECT TO EXISTING UTILITIES AT THE PROPERTY LINE

OR IN ADJACENT STREETS AND RIGHT OF WAY AS SPECIFIED, NECESSARY, AND/OR INCLUDED IN THE CONSTRUCTION

DOCUMENTS. THE CONTRACTOR SHALL PAY ALL UTILITY COSTS (BILLS) DURING CONSTRUCTION UNTIL OWNER TAKES

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FINISHED SURFACES. PROTECTION FOR FINISHES SUCH AS DOORS, WALLS AND FLOORS SHOULD BE PROVIDED AS REQUIRED. ANY DAMAGES TO THESE AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR OR REPLACE.

POSSESSION OF THE FACILITY OR THE FACILITY IS CERTIFIED AS SUBSTANTIALLY COMPLETE.

ANY DISCREPANCY OR CONFLICT WITHIN OR BETWEEN DRAWINGS AND ANY DISCREPANCY OR CONFLICT BETWEEN ANY DRAWING AND ANY SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. NOTWITHSTANDING. DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ARCHITECT'S AND/ OWNERS ATTENTION AND CLARIFIED DURING THE BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN BID OR PROPOSED IN THE MORE COSTLY OR DIFFICULT MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH ARCHITECT'S INTERPRETATION.

2. THE GENERAL CONTRACTOR SHALL KEEP A COMPLETE PROTOTYPE SET OF DOCUMENTS ON THE PROJECT SITE AT ALL TIMES FOR REFERENCE DURING CONSTRUCTION. 3. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING THE CONTRACTOR'S BEST SKILLS AND ATTENTION. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS AND METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT. . THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER ALL JOB SITE SAFETY

PROCEDURES AND POLICIES. THE GENERAL CONTRACTOR SHALL HAVE A SAFETY COORDINATOR AND BE RESPONSIBLE TO HOLD REGULARLY SCHEDULED SAFETY TRAINING WITH ALL JOB SITE PERSONNEL, INCLUDING ALL SUB CONTRACTOR 5. NEITHER THE ARCHITECT'S OR THE OWNERS INSPECTION NOR FAILURE TO INSPECT SHALL RELIEVE THE CONTRACTOR OF ANY OBLIGATION HEREUNDER. IF ANY WORK FAILS TO CONFORM TO THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY REMEDY AND/OR REPLACE THE SAME AT THE CONTRACTOR'S EXPENSE. NO ACCEPTANCE OR PAYMENT BY THE OWNER OR ARCHITECT SHALL CONSTITUTE A WAIVER OF THE FOREGOING AND

NOTHING HEREIN SHALL EXCLUDE OR LIMIT ANY WARRANTIES IMPLIED BY LAW. 6. THE GENERAL CONTRACTOR SHALL SO CONDUCT ITS OPERATIONS AS NOT TO UNREASONABLY INTERFERE WITH TRAFFIC ON PUBLIC THOROUGHFARES ADJACENT OR NEAR TO THE PROJECT SITE. 7. DO NOT SCALE DRAWINGS.

THE GENERAL CONTRACTOR REPRESENTS THAT IT POSSESSES THE SKILLS REQUIRED FOR THE WORK, ASSUMES THE RESPONSIBILITIES OF AN EMPLOYER FOR PERFORMANCE OF THE WORK, AND ACTS AS AN EMPLOYER OF ONE OR MORE EMPLOYEES BY PAYING WAGES. DIRECTING ACTIVITIES AND PERFORMING OTHER SIMILAR FUNCTIONS. THE GENERAL CONTRACTOR IS AN INDEPENDENT CONTRACTOR, FREE TO DETERMINE THE MANNER IN WHICH THE WORK IS

THE GENERAL CONTRACTOR SHALL PROVIDE. AND MAINTAIN IN GOOD WORKING ORDER, THE FOLLOWING ITEMS FOR USE BY THE PROJECT SUPERINTENDENT DAILY DURING THE ENTIRE DURATION OF THE PROJECT: A. LAPTOP WITH INTERNET ACCESS.

B. DIGITAL CAMERA WITH 'DATE STAMP' CAPABILITY AND WITH PROPER CABLES TO ATTACH TO LAPTOP. C. EMAIL ACCESS THROUGH THE LAPTOP. A PRINTER/SCANNER/FAX MACHINE WITH PROPER CABLES TO ATTACH TO LAPTOP.

E. CELL PHONE. 3. THE GENERAL CONTRACTOR SHALL HAVE A CONSTRUCTION SUPERINTENDENT ASSIGNED TO THIS PROJECT, AND THIS SUPERINTENDENT SHALL BE ON SITE EVERY DAY THERE IS ANY CONSTRUCTION ON THIS PROJECT. THE SUPERINTENDENT SHALL BE REACHABLE BY PHONE DURING NORMAL BUSINESS HOURS. ONCE ASSIGNED, THE SUPERINTENDENT SHALL NOT BE REMOVED OR REPLACED WITHOUT WRITTEN APPROVAL FROM OWNER & ARCHITECT. UNLESS SPECIFICALLY REQUESTED TO BE REPLACED BY OWNER. 4. THE SUPERINTENDENT WILL BE REQUIRED TO PROVIDE PHOTOGRAPHS (VIA EMAIL USING A DIGITAL CAMERA) TO THE

OWNER & ARCHITECT EACH FRIDAY BY NOON CST, SHOWING THE PROGRESS OF CONSTRUCTION. THE GENERAL CONTRACTOR IS ENCOURAGED TO TAKE PHOTOS SEVERAL TIMES EACH WEEK TO HELP MAINTAIN PROOF OF CONSTRUCTION PROGRESS, RECORD UNCOVERED CONDITIONS, RECORD CONDITION AND AMOUNTS OF VENDOR GOODS UPON RECEIPT, AND RECORD CONSTRUCTION THAT VARIES FROM THE CD'S (AS PART OF THE AS-BUILTS). ALL PHOTOS WILL HAVE A 'DATE STAMP'.

. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OVERSEE CONSTRUCTION OF THE PROJECT, CONTINUALLY

INSPECTING THE WORK, MATERIALS, AND WORKMANSHIP PROVIDED BY ALL OF HIS TRADESMEN, SUBCONTRACTORS, AND SUPPLIERS. EXCELLENCE IN QUALITY OF CONSTRUCTION CAN ONLY BE ACHIEVED IF THE CONTRACTOR ENFORCES HIGH STANDARDS OF ACCEPTABILITY. THE GENERAL CONTRACTOR CANNOT DELEGATE HIS RESPONSIBILITY TO THE SUBCONTRACTORS, BUT MUST CONTINUALLY MONITOR THE WORK OF EACH TRADE ON THE PROJECT. . IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE AND SCHEDULE ALL AGENCIES HAVING JURISDICTION (AHJ) INSPECTIONS NECESSARY TO OBTAIN THE CERTIFICATE OF OCCUPANCY (CERTIFICATE OF COMPLIANCE). PRIOR TO THE DATE OF THE AGENCY INSPECTION. THE GENERAL CONTRACTOR SHOULD INSPECT THE PROJECT TO INSURE THAT CONSTRUCTION COMPLIES WITH THE AGENCY REQUIREMENTS. SCHEDULING FINAL INSPECTIONS WITH AGENCY REPRESENTATIVES WHEN THE PROJECT IS NOT COMPLETE MUST BE AVOIDED. COPIES OF FINAL INSPECTIONS MUST BE

PROVIDED TO OWNER & ARCHITECT AS THEY ARE AVAILABLE. PRIOR TO REQUESTING THE SUBSTANTIAL COMPLETION INSPECTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT HIS OWN PRE-SUBSTANTIAL COMPLETION INSPECTION OF THE CONSTRUCTION FOR QUALITY OF CONSTRUCTION AND COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.

4. THE FOLLOWING PEOPLE SHOULD BE IN ATTENDANCE FOR THE SUBSTANTIAL COMPLETION INSPECTION: A. GENERAL CONTRACTOR

B. GENERAL CONTRACTOR SUPERINTENDENT C. MECHANICAL CONTRACTOR D. ELECTRICAL CONTRACTOR

E. PLUMBING CONTRACTOR F. PAINTING CONTRACTOR

H. FLOORING CONTRACTOR INTERNS TO BE SUBMITTED AS A PREREQUISITE TO THE REQUEST. FOR THE CERTIFICATE OF SUBSTANTIAL COMPLETION AND OWNER / ARCHITECT OBSERVATION OF ITEMS TO BE COMPLETED AND CORRECTED. A. GENERAL CONTRACTOR'S PUNCH LISTS B. HVAC TEST AND BALANCE REPORT

C. SPRINKLER SYSTEM ACCEPTANCE INSPECTION REPORT D. COPY OF VIDEO OF COMPLETED SEWER SYSTEM I. THE REVIEW TEAM SHOULD PROCEED IN AN ORGANIZED MANNER THROUGHOUT THE BUILDING INSPECTING EACH SPACE

OR ROOM. THE PUNCH LIST GENERATED BY THE SUBSTANTIAL COMPLETION INSPECTION TOUR IS TO BE PREPARED BY THE CONTRACTOR. ALONG WITH THE PUNCH LIST, THE ARCHITECT SHALL PREPARE THE "CERTIFICATE OF SUBSTANTIAL COMPLETION." . IMMEDIATELY AFTER RECEIPT OF THE PUNCH LIST, THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE EXPECTED TO BEGIN CORRECTION OF THE OUTSTANDING ITEMS. AFTER COMPLETION OF PUNCHLIST, THE CONTRACTOR SHALL NOTIFY OWNER & ARCHITECT IN WRITTING THAT FULL LIST OF ITENMS TO BE COMPLETED AND OR CORRECT IS

THE OWNER REQUIRES THE GENERAL CONTRACTOR AND SUBCONTRACTORS TO MAINTAIN AN ACCURATE. CURRENT

SUBCONTRACTORS.

TO THE PROJECT MUST BE TIMELY MAINTAINED ON THE AS-BUILTS. THE AS-BUILTS MUST BE MAINTAINED ON-SITE IN THE GENERAL CONTRACTOR'S OFFICE AND WILL NOT BE USED FOR ANY OTHER PURPOSE. SINCE THE OWNER WILL OWN AND OPERATE THE FACILITY, IT IS IMPERATIVE THAT ALL PARTIES MAINTAIN ACCURATE INFORMATION REGARDING THE ACTUAL CONSTRUCTION OF THE PROJECT. ALL DEVIATIONS FROM THE CONTRACT SET OF DRAWINGS MUST BE NOTED ON THE AS-BUILTS IN RED WITH CLOUDS FOR CLEAR IDENTIFICATION. THE OWNER WILL REVIEW THE AS-BUILTS FOR ACCURACY AND COMPLETENESS MONTHLY, DURING THE PAYMENT APPLICATION REVIEW PROCESS. FAILURE TO POST CHANGES TO THE PROJECT ON THE AS-BUILTS AS IDENTIFIED DURING THE ON-SITE MONTHLY REVIEW WILL BE CAUSE TO SUSPEND PAYMENT UNTIL RECTIFIED. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENFORCE THE TIMELY POSTING OF AS-BUILT CHANGES WITH THE

SET OF RECORD DOCUMENTS (AS-BUILTS) AS CONSTRUCTION PROGRESSES. ALL PERTINENT INFORMATION RELATING

WITHIN THIRTY (30) CALENDAR DAYS AFTER THE FINAL PROJECT SUBSTANTIAL COMPLETION, THE GENERAL CONTRACTOR SHALL COMPILE ALL CLOSE-OUT DOCUMENTS AND SUBMIT THEM TO THE OWNER FOR REVIEW. IF THE CONTRACTOR FAILS TO COMPLETE ITS REQUIREMENTS WITHIN THIS TIMELINE NOTED ABOVE THE CONTRACTOR MAY BE SUBJECT TO ADDITONAL ADMINISTATION FEES.

1. THE CATEGORIES LISTED BELOW SHOULD BE SUBMITTED AT THE SAME TIME. A. A DISK WITH ALL PHOTOS TAKEN DURING CONSTRUCTION.

B. CHANGE ORDERS AND ALL ADDENDA ATTACHED AND POSTED TO THE AS-BUILT DRAWINGS. C. AS-BUILT DRAWINGS: ONE HARD COPY TO REMAIN ON SITE AND IN PLAN TUBE; ONE ELECTRONIC COPY TO BE SENT WITH CLOSE-OUT PAPERWORK.

D. MATERIALS SELECTION DATA - PROVIDE ALL APPROVED SUBMITTALS. E. OPERATION AND MAINTENANCE MANUALS (0&M) - PROVIDE 0&M MANUALS BOXED AND BOUND. THIS ITEM IS OF SIGNIFICANT IMPORTANCE TO MSI FUTURE MAINTENANCE ACTIVITIES. F. ALL HVAC TEST AND BALANCE REPORTS.

H. RELEASE OF LIEN (AIA FORM 706A), PAYMENT OF DEBT (AIA FORM 706) I. WARRANTIES, CERTIFICATES, AFFIDAVITS: 2. ALL INFORMATION INCLUDED IN THIS CATEGORY WILL BE FURNISHED IN ONE (1) COPY AND BOUND IN A STURDY THREE-RING BINDER WITH A LABEL ON THE OUTSIDE READING "GENERAL CLOSE-OUT DOCUMENTS" TO INCLUDE AN INDEX OF THE CONTENTS. ALL AIA DOCUMENTS WILL BE ORIGINAL (WITH RED LETTERING ON THE BOTTOM OF THE FORM) AND NOTARIZED. IF THE ELECTRONIC VERSION IS USED A COPY WITH ORIGINAL SIGNATURES WILL BE SUBMITTED. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR WILL HAVE SEPARATE TABS IDENTIFYING EACH BY NAME. THE GENERAL CONTRACTOR WILL LIST EACH SUBCONTRACTOR ALPHABETICALLY AND WILL CHECK TO INSURE THAT A "RELEASE OF LIEN" - AIA FORM G706A AND A "PAYMENT OF DEBT-AIA FORM G706 IS INCLUDED FOR

A. A LIST OF NAMES. BUISNESS ADDRESSES. PHONE NUMBERS AND EMAIL ADRESSES FOR THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR. B. AN ANNOTATED COPY OF THE SUBSTANTIAL COMPLETION PUNCH LIST INDICATING ACTION TAKEN ON EACH ITEM. C. WARRANTIES, CERTIFICATES AND AFFIDAVITS SHALL BE INCLUDED FOR ANY EQUIPMENT, MATERIALS OR SYSTEMS, COMBINED WITH ALL OF THE ABOVE INFORMATION AND PLACED BEHIND THE TAB OF THE CONTRACTOR THAT

HIMSELF AND EACH SUBCONTRACTOR, THE GENERAL CONTRACTOR WILL INCLUDE A "CONSENT OF SURETY" - AIA

FORM G707. IN ADDITION, THE GENERAL CONTRACTOR WILL INCLUDE BEHIND HIS TAB THE FOLLOWING INFORMATION:

04 0500 - MASONRY RESTORATION & TUCKPOINTING

DIVISION 4 - MASONRY

1. AMERICAN CONCRETE INSTITUTE (ACI): A. ACI 530.1-02 - SPECIFICATION FOR MASONRY STRUCTURES.

2. ASTM INTERNATIONAL (ASTM): A. ASTM C 144 - STANDARD SPECIFICATION FOR AGGREGATE FOR MASONRY MORTAR. B. ASTM C 150 - STANDARD SPECIFICATION FOR PORTLAND CEMENT. C. ASTM C 207 - STANDARD SPECIFICATION FOR HYDRATED LIME FOR MASONRY PURPOSES. D. ASTM C 260 - STANDARD SPECIFICATION FOR AIR-ENTRAINING ADMIXTURES FOR CONCRETE. E. ASTM C 270 - STANDARD SPECIFICATION FOR MORTAR FOR UNIT MASONRY.

F. ASTM C 595 - STANDARD SPECIFICATION FOR BLENDED HYDRAULIC CEMENTS. G. ASTM C 780 - STANDARD TEST METHOD FOR PRECONSTRUCTION AND CONSTRUCTION EVALUATION OF MORTARS FOR PLAIN AND REINFORCED MASONRY. H. ASTM C 979 - STANDARD SPECIFICATION FOR PIGMENTS FOR INTEGRALLY COLORED CONCRETE. I. ASTM C 1093 - STANDARD PRACTICE FOR ACCREDITATION OF TESTING AGENCIES FOR UNIT MASONRY. J. ASTM C 1157 - STANDARD PERFORMANCE SPECIFICATION FOR HYDRAULIC CEMENT.

K. ASTM C 1314 - STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF MASONRY PRISMS. L. ASTM C 1586 - STANDARD GUIDE FOR QUALITY ASSURANCE OF MORTARS. M. ASTM C 1714 - STANDARD SPECIFICATION FOR PRE-BLENDED DRY MORTAR MIX FOR UNIT MASONRY. N. ASTM E 329 - SPECIFICATION FOR MINIMUM REQUIREMENTS FOR AGENCIES ENGAGED IN THE TESTING AND/OR INSPECTION OF MATERIALS USED IN CONSTRUCTION.

O. ASTM E 514 - STANDARD TEST METHOD FOR WATER PENETRATION AND LEAKAGE THROUGH MASONRY. 3. INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): 1. IMIAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR COLD WEATHER MASONRY CONSTRUCTION. 2. IMIAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR HOT WEATHER MASONRY CONSTRUCTION.

4. THE BRICK INDUSTRY ASSOCIATION (BIA):

1. BIA TECHNICAL NOTE 20 – CLEANING BRICK.

1. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA. 2. QUALITY ASSURANCE/CONTROL SUBMITTALS: A. SUBMIT MANUFACTURER'S CERTIFICATES THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS. B. SUBMIT TEST RESULTS PREPARED BY A QUALIFIED INDEPENDENT TESTING LABORATORY.

1. MANUFACTURER QUALIFICATIONS: FIRM SPECIALIZING IN MANUFACTURE OF MASONRY INSTALLATION MATERIALS, INCLUDING MORTARS, WITH MINIMUM 10 YEARS EXPERIENCE. 2. QUALITY ASSURANCE/CONTROL TESTING: TEST REPORTS PREPARED BY A QUALIFIED INDEPENDENT LABORATORY

INDICATING COMPLIANCE WITH THE FOLLOWING PERFORMANCE REQUIREMENTS: 3. C.PRE-INSTALLATION MEETING: AT LEAST ONE WEEKS PRIOR TO COMMENCING MASONRY WORK CONDUCT A MEETING AT THE PROJECT SITE TO DISCUSS CONTRACT REQUIREMENTS AND JOB CONDITIONS; REQUIRE THE ATTENDANCE OF MASONRY CONTRACTOR, AND INSTALLERS OF RELATED MATERIALS; NOTIFY ARCHITECT IN ADVANCE OF MEETING.REVIEW DETAILING AND SEQUENCE OF WORK TO BE PERFORMED. 4. STORAGE AND PROTECTION: CEMENTITIOUS MATERIALS SHALL BE MANUFACTURED AND STORED OFF THE GROUND, UNDER COVER AND SHALL BE KEPT DRY IN ACCORDANCE WITH ASTM C1714.

1. MAINTAIN ENVIRONMENTAL CONDITIONS AND PROTECT WORK DURING AND AFTER INSTALLATION TO COMPLY WITH REFERENCED STANDARDS AND MANUFACTURER'S PRINTED RECOMMENDATIONS. 2. DO NOT BUILD OR APPLY MORTAR PRODUCTS ON FROZEN SUBSTRATES. 1. REMOVE AND REPLACE MORTAR DAMAGED BY FROST OR BY FREEZING CONDITIONS.

3. VENT TEMPORARY HEATERS TO EXTERIOR TO PREVENT DAMAGE TO MASONRY WORK FROM CARBON DIOXIDE BUILD-

1. BASIS OF DESIGN: SPEC MIX®, INC. WEB: WWW.SPECMIX.COM" WWW.SPECMIX.COM 2. REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SUBSTITUTION

3. OBTAIN PRODUCTS FROM A SINGLE MANUFACTURER. 4. DESIGN AND PERFORMANCE REQUIREMENTS: PROVIDE MORTAR MIXES THAT HAVE BEEN SELECTED, MANUFACTURED, MIXED AND INSTALLED TO COMPLY WITH THE FOLLOWING: A. ASTM C 270. B. ASTM C 1714.

A. TUCKPOINT MORTAR: SPEC MIX TUCKPOINT MORTAR . APPLICABLE STANDARDS: ASTM C 144, ASTM C 150, ASTM C 207, ASTM C 270 FOR TUCKPOINT MORTAR, ASTM C 595, ASTM C 780, ASTM C 1093, ASTM C 1157, ASTM C 1314, ASTM C 1586,

EXAMINE SURFACES TO RECEIVE MASONRY WORK AND CONDITIONS UNDER WHICH MASONRY WILL BE INSTALLED. DO REFERENCED MASONRY INSTALLATION STANDARD AND MANUFACTURER'S PRINTED INSTRUCTIONS.

1. REMOVAL OF EXISTING MORTAR A. REMOVAL OF EXISTING MORTAR: CUT OUT EXISTING MORTAR JOINTS (BOTH BED AND HEAD JOINTS) AND REMOVE BY MEANS OF A TOOTHING CHISEL OR A SPECIAL POINTER'S GRINDER, TO A UNIFORM DEPTH OF TO 3/4-INCH (19 MM), OR UNTIL SOUND MORTAR IS REACHED.

1. TAKE CARE TO NOT DAMAGE EDGES OF EXISTING MASONRY UNITS TO REMAIN. B. REMOVE DUST AND DEBRIS FROM THE JOINTS BY BRUSHING, BLOWING WITH AIR OR RINSING WITH WATER. DO NOT RINSE WHEN TEMPERATURE IS BELOW FREEZING.

2. REPLACEMENT OF MASONRY UNITS A. REMOVE DAMAGED, SPALLED, LOOSE OR DETERIORATED MASONRY UNITS. CAREFULLY REMOVE ENTIRE UNITS FROM JOINT TO JOINT, WITHOUT DAMAGING SURROUNDING MASONRY, IN A MANNER THAT PERMITS REPLACEMENT WITH FULL SIZE UNITS. B. SUPPORT AND PROTECT REMAINING MASONRY THAT SURROUNDS REMOVAL AREA. MAINTAIN FLASHING, REINFORCEMENT, LINTELS, AND ADJOINING CONSTRUCTION IN AN UNDAMAGED CONDITION. C. CLEAN MASONRY UNITS SURROUNDING REMOVAL AREAS BY REMOVING MORTAR, DUST, AND LOOSE PARTICLES IN

PREPARATION FOR REPLACEMENT. D. REPLACE REMOVED UNITS WITH SALVAGED OR NEW UNITS THAT MATCH EXISTING SIZE AND TEXTURE. DO NOT USE BROKEN UNITS UNLESS THEY CAN BE CUT TO USABLE SIZE. E. INSTALL REPLACEMENT UNITS INTO BONDING AND COURSING PATTERN OF EXISTING UNITS. IF CUTTING IS REQUIRED, USE A MOTOR-DRIVEN SAW DESIGNED TO CUT MASONRY WITH CLEAN, SHARP, UNCHIPPED EDGES. UNITS MUST BE TOOTHED IN OR COURSING SHALL MATCH SURROUNDING IN PLACE WORK.

F. MAINTAIN JOINT WIDTH FOR REPLACEMENT UNITS TO MATCH EXISTING JOINTS. G. LAY REPLACEMENT UNITS WITH COMPLETELY FILLED BED, HEAD, AND COLLAR JOINTS. BUTTER ENDS WITH SUFFICIENT MORTAR TO FILL HEAD JOINTS AND SHOVE INTO PLACE. C. MIXING

1. AS RECOMMENDED BY MANUFACTURER. 2. RETEMPERING:

RETEMPER MORTAR AS RECOMMENDED BY MANUFACTURER

1. INSTALL MORTAR IN ACCORDANCE WITH ACI/ASCE-530.1: 2. IMMEDIATELY PRIOR TO APPLICATION OF MORTAR, DAMPEN JOINTS TO BE TUCK POINTED. PRIOR TO APPLICATION OF POINTING MORTAR, ALLOW MASONRY UNITS TO ABSORB SURFACE WATER. 3. TIGHTLY PACK MORTAR INTO JOINTS IN THIN LAYERS, APPROXIMATELY 1/4-INCH (6 MM) THICK MAXIMUM. 4. ALLOW LAYER TO BECOME "THUMBPRINT HARD" BEFORE APPLYING NEXT LAYER. 5. PACK FINAL LAYER FLUSH WITH SURFACES OF MASONRY UNITS. WHEN MORTAR BECOMES "THUMBPRINT HARD",

6. HAIRLINE CRACKING WITHIN THE MORTAR OR MORTAR SEPARATION AT EDGE OF A JOINT IS UNACCEPTABLE. COMPLETELY REMOVE SUCH MORTAR AND REPOINT. 7. TOOL JOINTS IN PATCH WORK WITH A JOINTING TOOL TO MATCH THE EXISTING SURROUNDING JOINTS.

8. CLEANING A. COMPLY WITH CLEANING PROCEDURES AND RECOMMENDATIONS OF THE MANUFACTURERS OF BOTH THE CLEANING SOLUTION AND THE UNIT MASONRY. B. REMOVE EFFLORESCENCE FROM MASONRY WALL EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION, NCMA TEK BULLETIN #8-3A AND/OR BIA TECHNICAL NOTE 20 – CLEANING C. REMOVE DIRT OR STAINS FROM MASONRY WALLS EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, NCMA TEK BULLETIN #8-2A AND/OR BIA TECHNICAL NOTE 20 – CLEANING

D. COMPLY WITH APPLICABLE ENVIRONMENTAL LAWS AND RESTRICTIONS. AFTER MORTAR HAS FULLY HARDENED, THOROUGHLY CLEAN EXPOSED MASONRY SURFACES OF EXCESS MORTAR

AND FOREIGN MATTER; USE WOOD SCRAPERS, STIFF-NYLON OR -FIBER BRUSHES, AND CLEAN WATER, SPRAY APPLIED AT LOW PRESSURE. 1. DO NOT USE METAL SCRAPERS OR BRUSHES 2. DO NOT USE ACIDIC OR ALKALINE CLEANERS.

1. PROTECTION: PROTECT NEWLY POINTED JOINTS FROM WEATHER AND ELEMENTS AS RECOMMENDED BY MANUFACTURER AND INDUSTRY STANDARDS, UNTIL POINTED JOINTS ARE SUFFICIENTLY HARD ENOUGH TO PREVENT DAMAGE. 2. PROTECT INSTALLED WORK FROM DAMAGE DUE TO SUBSEQUENT CONSTRUCTION ACTIVITY ON THE SITE.

DIVISION 5 - METALS

A. <u>SUBMITTALS</u>: PRODUCT DATA AND SHOP DRAWINGS WITH PLANS ELEVATIONS AND SEECTIONS INDICATING MEMBER SIZES AND LAYOUT, VERTICAL AND HORIZONTAL DIMENSIONS, EDGE CONDITIONS, AND CONNECTION DETAILS. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES. INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF EXPOSED FINISH. 1. DELEGATED-DESIGN SUBMITTAL: FOR HANDRAIL AND GUARDRAIL SYSTEMS, INCLUDING ANALYSIS DATA SIGNED

AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

B. DESIGN: METAL TUBE RAILINGS SHALL BE DESIGNED BY FABRICATOR TO SUPPORT CODE-REQUIRED LOADING AND TO MATCH THE CONFIGURATIONS INDICATED IN THE CONSTRUCTION DOCUMENTS. SEE DRAWINGS FOR REQUIRED RAILING ELEVATIONS.

FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION.

1. A. DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION. B. STRUCTURAL PERFORMANCE: RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION, SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:

2. HANDRAILS AND TOP RAILS OF GUARDS: A. UNIFORM LOAD OF 50 LBF/ FT. (0.73 KN/M) APPLIED IN ANY DIRECTION. B. CONCENTRATED LOAD OF 200 LBF (0.89 KN) APPLIED IN ANY DIRECTION. C. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.

FASTENERS FOR ANCHORING RAILINGS TO OTHER CONSTRUCTION: SELECT FASTENERS OF TYPE, GRADE, AND CLASS REQUIRED TO PRODUCE CONNECTIONS SUITABLE FOR ANCHORING RAILINGS TO OTHER TYPES OF CONSTRUCTION INDICATED AND CAPABLE OF WITHSTANDING DESIGN LOADS.

I. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH SURFACES, WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, STAINS, DISCOLORATIONS, OR BLEMISHES. 2. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL OF SAME TYPE OF MATERIAL AND FINISH AS SUPPORTED RAILS UNLESS OTHERWISE INDICATED. 3. PIPE: ASTM A 53/A 53M, TYPE F OR TYPE S, GRADE A, STANDARD WEIGHT (SCHEDULE 40), UNLESS ANOTHER GRADE AND WEIGHT ARE REQUIRED BY STRUCTURAL LOADS.

1. GENERAL: FABRICATE RAILINGS TO COMPLY WITH REQUIREMENTS INDICATED FOR DESIGN, DIMENSIONS, MEMBER SIZES AND SPACING, DETAILS, FINISH, AND ANCHORAGE , BUT NOT LESS THAN THAT REQUIRED TO SUPPORT STRUCTURAL LOADS. CUT, DRILL, AND PUNCH ALUMINUM CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM) UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON

EXPOSED SURFACES 3. FABRICATE CONNECTIONS THAT ARE EXPOSED TO WEATHER IN A MANNER THAT EXCLUDES WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE. 4. WELDED CONNECTIONS: USE FULLY WELDED JOINTS FOR PERMANENTLY CONNECTING RAILING COMPONENTS. COMPLY WITH REQUIREMENTS FOR WELDED CONNECTIONS IN "FABRICATION" ARTICLE WHETHER WELDING IS PERFORMED IN THE SHOP OR IN THE FIELD.

I. FOR NONGALVANIZED-STEEL RAILINGS, PROVIDE NONGALVANIZED FERROUS-METAL FITTINGS, BRACKETS, FASTENERS, AND SLEEVES; HOWEVER, GALVANIZE ANCHORS TO BE EMBEDDED IN EXTERIOR CONCRETE OR 2. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS-METAL SURFACES TO COMPLY WITH SSPC-SP 3, "POWER TOOL CLEANING." PRIMER APPLICATION: APPLY SHOP PRIMER TO PREPARED SURFACES OF RAILINGS UNLESS OTHERWISE INDICATED. COMPLY WITH REQUIREMENTS IN SSPC-PA 1, "SHOP, FIELD, AND MAINTENANCE PAINTING OF STEEL," FOR SHOP PAINTING. PRIMER NEED NOT BE APPLIED TO SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY.

. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE FABRICATED FROM SAME MATERIAL AND FINISH AS FABRICATION UNLESS NOTED OTHERWISE. SHIM AND LEVEL FABRICATIONS AS NECESSARY. COAT CONCEALED SURFACES OF FABRICATIONS IN CONTACT WITH CONCRETE, GROUT, MASONRY, WOOD, OR DISSIMILAR METALS WITH 2. FIT EXPOSED CONNECTIONS TOGETHER TO FORM TIGHT, HAIRLINE JOINTS.

3. PERFORM CUTTING. DRILLING. AND FITTING REQUIRED FOR INSTALLING RAILINGS. SET RAILINGS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION: MEASURED FROM ESTABLISHED LINES AND LEVELS AND FREE OF RACK. 1. DO NOT WELD, CUT, OR ABRADE SURFACES OF RAILING COMPONENTS THAT ARE COATED OR FINISHED AFTER FABRICATION AND THAT ARE INTENDED FOR FIELD CONNECTION BY MECHANICAL OR OTHER MEANS WITHOUT FURTHER CUTTING OR FITTING. 2. SET POSTS PLUMB WITHIN A TOLERANCE OF 1/16 INCH IN 3 FEET. 4. CONTROL OF CORROSION: PREVENT GALVANIC ACTION AND OTHER FORMS OF CORROSION BY INSULATING METALS AND OTHER MATERIALS FROM DIRECT CONTACT WITH INCOMPATIBLE MATERIALS.

5. ADJUST RAILINGS BEFORE ANCHORING TO ENSURE MATCHING ALIGNMENT AT ABUTTING JOINTS. 6. FASTENING TO IN-PLACE CONSTRUCTION: USE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING RAILINGS AND FOR PROPERLY TRANSFERRING LOADS TO IN-PLACE CONSTRUCTION. 7.PROTECT FINISHES OF RAILINGS FROM DAMAGE DURING CONSTRUCTION PERIOD WITH TEMPORARY PROTECTIVE COVERINGS APPROVED BY RAILING MANUFACTURER. REMOVE PROTECTIVE COVERINGS AT TIME OF SUBSTANTIAL COMPLETION.

05 6000- STRUCTURAL METAL STUDS AND TRACK

THIS SECTION IS A DELEGATED DESIGN SUBMITTAL. CONTRACTOR SHALL ENGAGE A STRUCUTRAL ENGINEER ICENSED IN THE JURISDICTION WHRE THIS PROJECT IS LOCATED. ALL FEES SUBJECT OF THIS SERVICE WILL BE

A. SUBMITTALS: PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING: 1. SHOWING PLANS, SECTIONS, ELEVATIONS, LAYOUTS, PROFILES AND PRODUCT COMPONENT LOCATIONS, INCLUDING ANCHORAGE, BRACING, FASTENERS, ACCESSORIES AND FINISHES. 2. INDICATE COMPONENT DETAILS, FRAMED OPENINGS, BEARING, ANCHORAGE, LOADING, WELDS, TYPE AND LOCATION OF FASTENERS, AND ACCESSORIES.

3. INDICATE METHOD FOR SECURING STUDS AND OTHER COMPONENTS TO TRACKS AND FOR FRAMING CONNECTIONS. 4. SUBMIT CALCULATIONS FOR LOADINGS AND STRESSES UNDER PROFESSIONAL ENGINEER'S SEAL REGISTERED IN THE STATE OF THE PROJECT.

1. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS DOCUMENTED EXPERIENCE. 2. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM 3 YEARS DOCUMENTED EXPERIENCE. 3. DESIGN STRUCTURAL ELEMENTS UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND REGISTERED IN THE STATE OF THE PROJECT.

1. FOLLOW MANUFACTURER INSTALLATION GUIDLINES. INSTALLATION SHALL BE COMPLIANT WITH APPLICABLE

DIVISION 6 - WOOD AND PLASTICS

06 1000- ROUGH CARPENTRY

1. PROVIDE SUFFICIENT FIRE RETARDANT TREATED WOOD BLOCKING AT ALL STUDS FOR SECURING OF WALL & CEILING ITEMS. WHETHER FURNISHED BY OWNER OR CONTRACTOR. 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 WHERE WALLS ARE INDICATED AS RATED CONSTRUCTION. 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.

A. <u>SUBMITTALS</u>: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS.

B. <u>QUALITY STANDARD</u>: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY

1. SOFTWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT; WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH. 2. HARDWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT; WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH 3. SHEET MATERIALS: SOFTWOOD PLYWOOD, EXPOSED TO VIEW: FACE SPECIES AS INDICATED, PLAIN SAWN, MEDIUM DENSITY FIBERBOARD CORE: PS 1 GRADE A-B, GLUE TYPE AS RECOMMENDED FOR APPLICATION.

USING CONCEALED SHIMS.

1. COMPLETE FABRICATION BEFORE SHIPPING TO PROJECT SITE TO MAXIMUM EXTENT FEASIBLE. DISASSEMBLE ONLY AS NEEDED FOR SHIPPING AND INSTALLING. WHERE NECESSARY FOR FITTING AT PROJECT SITE, PROVIDE 2. BACKOUT AND GROOVE BACKS OF FLAT MEMBERS, KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT WHERE ENDS WILL BE EXPOSED IN FINISHED WORK.

1. DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETED, HVAC IS OPERATING, AND WOODWORK IS CONDITIONED TO PREVAILING CONDITIONS OF SPACE WHERE INSTALLED. MAINTAIN TEMPERATURE BETWEEN 55 F. AND 75 F. FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT. 2. INSTALL WOODWORK LEVEL AND PLUMB AND SHIM AS REQUIRED WITH CONCEALED SHIMS TO 8 TOLERANCE OF 1 "/96" AND TO COMPLY WITH REFERENCED QUALITY STANDARD FOR GRADE SPECIFIED.

3. SCRIBE AND CUT WOODWORK TO FIT ADJOINING WORK, SEAL CUT SURFACES, AND REPAIR DAMAGED FINISH 4. INSTALL TRIM WITH MINIMUM NUMBER OF JOINTS POSSIBLE USING FULL-LENGTH PIECES TO GREATEST EXTENT POSSIBLE STAGGER JOINTS IN ADJACENT AND RELATED MEMBERS 5. LUMBER FOR TRANSPARENT FINISH (STAINED OR CLEAR): USE PIECES MADE OF SOLID LUMBER

6. LUMBER FOR PAINTED FINISH: AT CONTRACTOR'S OPTION, USE PIECES WHICH ARE EITHER GLUED-UP OR MADE OF SOLID LUMBER STOCK. 7. DISCARD UNITS OF MATERIAL WHICH ARE UNSOUND, WARPED, BOWED, TWISTED, IMPROPERLY TREATED, NOT ADEQUATELY SEASONED OR TOO SMALL TO FABRICATE WORK WITH MINIMUM OF JOINTS OR OPTIMUM JOINTING ARRANGEMENTS, OR WHICH ARE DEFECTIVELY MANUFACTURED WITH RESPECT TO SURFACES, SIZES OR PATTERNS. 8. INSTALL THE WORK PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SHIM AS REQUIRED

FINISH AT CUTS. 10. SAND WORK SMOOTH AND SET EXPOSED NAILS AND SCREWS. 11. APPLY WOOD FILLER IN EXPOSED NAIL AND SCREW INDENTATIONS. 12. FINISH WORK SHALL BE SMOOTH, FREE FROM ABRASION, TOOL MARKS, RAISED GRAIN MARKINGS, OR SIMILAR DEFECTS ON EXPOSED SURFACES.

9. SCRIBE AND CUT WORK TO FIT ADJOINING WORK, AND REFINISH CUT SURFACES OR REPAIR DAMAGED

06 4100 - ARCHITECTURAL WOOD CASEWORK A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE. AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS. INDICATE COMPONENT PROFILES, FASTENING METHODS,

1. SCALE OF DRAWINGS: 1-1/2 INCH TO 1 FOOT, MINIMUM. 2. PROVIDE THE INFORMATION REQUIRED BY AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS). 3. SAMPLES: SUBMIT ACTUAL SAMPLES OF ARCHITECTURAL CABINET CONSTRUCTION, MINIMUM 12 INCHES SQUARE, ILLUSTRATING PROPOSED CABINET, COUNTERTOP, AND SHELF UNIT SUBSTRATE AND FINISH.

B. QUALITY STANDARD: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY

. FABRICATOR QUALIFICATIONS: COMPANY SPECIALIZING IN FABRICATING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS OF DOCUMENTED EXPERIENCE.

1. QUALITY STANDARD: CUSTOM GRADE. IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS). UNLESS NOTED OTHERWISE. 2. WOOD VENEER FACED CABINET: CONCEALED SURFACES: MANUFACTURER'S OPTION. 3. PLASTIC LAMINATE FACED CABINETS: CUSTOM GRADE.

E. MATERIALS / ACCESSORIES / HARDWARE 1. LAMINATES AS INDICATED IN SCHEDULES. COMPLY WITH M' 2. ADHESIVE: TYPE RECOMMENDED BY FABRICATOR TO S 3. FASTENERS: SIZE AND TYPE TO SUIT APPLICATION

4. BOLTS, NUTS, WASHERS, LAGS, PINS, AND SCRFY CHROME-PLATED FINISH IN CONCEALED LOCY STEEL OR CHROME-PLATED FINISH IN EXPOSED LOCATIONS. 5. CONCEALED JOINT FASTENERS: THP" 6. GROMMETS: STANDARD PLASTIC JBBER GROMMETS FOR CUT-OUTS, IN COLOR TO MATCH ADJACENT SURFACE. JED BY FABRICATOR FOR QUALITY GRADE SPECIFIED. 7. HARDWARE: BHMA A156.0 8. ADJUSTABLE SHELF ST IDE-MOUNTED SYSTEM USING RECESSED METAL SHELF STANDARDS OR MI' . SUPPORTS AND COORDINATED SELF RESTS, POLISHED CHROME FINISH. FOR NOM. 9. DRAWER SLIDES IN TYPES AS INDICATED.

10. HINGES: EUROPEA VCEALED, FRAME-MOUNTED, SCREW-ADJUSTABLE DAMPER: STEEL WITH 11. SOFT CLOSE ADAPTER: POLISHED FINISH. 12. FINISH WORK IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS).

1.INSTALL NO INTERIOR FINISH CARPENTRY OR MILLWORK UNTIL SPACES ARE ENCLOSED, DRY, AND CAPABLE OF BEING HEATED. MAINTAIN TEMPERATURE BETWEEN 55 F. AND 75 F. FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT. 2.VERIFY ADEQUACY OF BACKING AND SUPPORT FRAMING. 3. VERIFY LOCATION AND SIZES OF UTILITY ROUGH-IN ASSOCIATED WITH WORK OF THIS SECTION.

4. SET AND SECURE CUSTOM CABINETS IN PLACE, ASSURING THAT THEY ARE RIGID, PLUMB, AND LEVEL. 5.USE FIXTURE ATTACHMENTS IN CONCEALED LOCATIONS FOR WALL MOUNTED COMPONENTS. 6.USE CONCEALED JOINT FASTENERS TO ALIGN AND SECURE ADJOINING CABINET UNITS. 7.CAREFULLY SCRIBE CASEWORK ABUTTING OTHER COMPONENTS, WITH MAXIMUM GAPS OF 1/32 INCH. DO NOT USE ADDITIONAL OVERLAY TRIM FOR THIS PURPOSE. 8. SECURE CABINETS TO FLOOR USING APPROPRIATE ANGLES AND ANCHORAGES. 9. CLEAN CASEWORK, COUNTERS, SHELVES, HARDWARE, FITTINGS, AND FIXTURES.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

JOINTING DETAILS, AND ACCESSORIES.

07 1300 - SHEET WATERPROOFING A. <u>SUBMITTALS</u>:
1. PRODUCT DATA: PROVIDE DATA FOR MEMBRANE.

2.PROVIDE SHOP DRAWINGS: INDICATE SPECIAL JOINT OR TERMINATION CONDITIONS AND CONDITIONS OF INTERFACE WITH OTHER MATERIALS. 3. CERTIFICATE: CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS

1. FLAME SPREAD INDEX: 25 OR LESS

2. SMOKE DEVELOPED INDEX: 50 OR LESS IN EXPOSED AREAS AND PLENUMS; 450 OR LESS WHERE CONCEALED. . MAINTAIN AMBIENT TEMPERATURES ABOVE 40 DEGREES F FOR 24 HOURS BEFORE AND DURING APPLICATION

1 CONTRACTOR SHALL CORRECT DEFECTIVE WORK WITHIN A FIVE YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION; REMOVE AND REPLACE MATERIALS CONCEALING WATERPROOFING AT NO EXTRA COST TO

E. <u>BASIS OF DESIGN</u>:
1. W.R. MEADOWS, INC; MEL-ROL: WWW.WRMEADOWS.COM

AND UNTIL LIQUID OR MASTIC ACCESSORIES HAVE CURED.

1. SELF-ADHERED MODIFIED BITUMINOUS SHEET MEMBRANE: LOCATION: LOCATIONS AS IDENTIFIED IN 2. ROLLED, SELF-ADHERED MODIFIED BITUMINOUS SHEET MEMBRANE: THICKNESS: 60 MIL, 0.060 INCH, MINIMUM. THICKNESS: 60 MIL, 0.060 INCH, MINIMUM. CARRIER FILM: 4 MILS, POLYMERIC MEMBRANE:56 MILS, SHEET WIDTH: 36 INCH, MINIMUM.

3. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 4. MEMBRANE SEALANT: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 5. TERMINATION BARS: ALUMINUM; COMPATIBLE WITH MEMBRANE AND ADHESIVES. 6. SURFACE CONDITIONER: COMPATIBLE WITH MEMBRANE 7. ADHESIVES: AS RECOMMENDED BY MEMBRANE MANUFACTURER.

8. THINNER AND CLEANER: AS RECOMMENDED BY ADHESIVE MANUFACTURER, COMPATIBLE WITH SHEET 1. SEALANT FOR CRACKS AND JOINTS IN SUBSTRATES: RESILIENT ELASTOMERIC JOINT SEALANT COMPATIBLE WITH SUBSTRATES AND WATERPROOFING MATERIALS.

BACKFILLING AND CONSTRUCTION TRAFFIC. 1. DO NOT INSTALL INSULATION ADHESIVES WHEN TEMPERATURE OR WEATHER CONDITIONS ARE DETRIMENTAL TO SUCCESSFUL INSTALLATION. DO NOT APPLY WATERPROOFING TO SURFACES UNACCEPTABLE TO

2. CLEAN AND PREPARE SURFACES TO RECEIVE WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S

2. PROTECTION BOARD: PROVIDE TYPE CAPABLE OF PREVENTING DAMAGE TO WATERPROOFING DUE TO

INSTRUCTIONS: VACUUM SUBSTRATE CLEAN. 3. FILL NON-MOVING JOINTS AND CRACKS WITH A FILLER COMPATIBLE WITH WATERPROOFING MATERIALS.SEAL MOVING CRACKS WITH SEALANT AND NON-RIGID FILLER, USING PROCEDURES RECOMMENDED BY SEALANT AND WATERPROOFING MANUFACTURERS 4. INSTALL MEMBRANE WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NRCA (WM) APPLICABLE REQUIREMENTS. 5. SELF-ADHERING MEMBRANE: REMOVE RELEASE PAPER LAYER, AND ROLL OUT ONTO SUBSTRATE WITH A

MECHANICAL ROLLER TO PROVIDE FULL CONTACT BOND. 6. OVERLAP EDGES AND ENDS, MINIMUM 3 INCHES, SEAL PERMANENTLY WATERPROOF BY METHOD RECOMMENDED BY MANUFACTURER, AND APPLY UNIFORM BEAD OF SEALANT TO JOINT EDGE. 7. REINFORCE MEMBRANE WITH MULTIPLE THICKNESS OF MEMBRANE MATERIAL OVER JOINTS, WHETHER JOINTS ARE STATIC OR DYNAMIC 8. WEATHER LAP JOINTS ON SLOPED SUBSTRATE IN DIRECTION OF DRAINAGE, AND SEAL JOINTS AND SEAMS.

9. FLEXIBLE FLASHINGS: SEAL ITEMS WATERTIGHT THAT PENETRATE THROUGH WATERPROOFING MEMBRANE 10. SEAL MEMBRANE AND FLASHINGS TO ADJOINING SURFACES. INSTALL TERMINATION BAR ALONG EDGES. INSTALL COUNTERFLASHING OVER EXPOSED EDGES. 11. INSTALLATION OF DRAINAGE PANEL AND PROTECTION BOARD. INSTALLER TO FOLLOW MANUFACTURERS

INSTALLATION PROCEDURES 12. UPON COMPLETION OF HORIZONTAL MEMBRANE INSTALLATION, DAM INSTALLATION AREA IN PREPARATION FOR FLOOD TESTING. FLOOD TO MINIMUM DEPTH OF 1 INCH WITH CLEAN WATER, AND AFTER 48 HOURS INSPECT FOR LEAKS. IF LEAKING IS FOUND, REMOVE WATER, REPAIR LEAKING AREAS WITH NEW WATERPROOFING MATERIALS AS DIRECTED BY ARCHITECT; REPEAT FLOOD TEST, AND REPAIR DAMAGE TO BUILDING. WHEN AREA IS PROVEN WATERTIGHT, DRAIN WATER AND REMOVE DAM.

07 2100 - THERMAL INSULATION A. <u>SUBMITTALS</u>: PRODUCT DATA FOR EACH TYPE OF INSULATION SPECIFIED.

1 FLAME SPREAD INDEX: 25 OR LESS

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

. MINERAL FIBER OR GLASS FIBER BLANKET INSULATION: TYPE I, UNFACED WHERE SPECIFIED WITH SEPARATE VAPOR BARRIER.FIBERS MANUFACTURED FROM GLASS, SLAG WOOL, OR ROCK WOOL. FLEXIBLE PREFORMED BATT OR BLANKET, COMPLYING WITH ASTM C665; FRICTION FIT.SEE DRAWINGS FOR SPECIFIC TYPES.

2. SMOKE DEVELOPED INDEX: 50 OR LESS IN EXPOSED AREAS AND PLENUMS; 450 OR LESS WHERE CONCEALED.

B. SMOKE DEVELOPED INDEX: 450 OR LESS. WHEN TESTED IN ACCORDANCE WITH ASTM E84. C. COMBUSTIBILITY: NON-COMBUSTIBLE, WHEN TESTED IN ACCORDANCE WITH ASTM E136, EXCEPT FOR FACING. IF ANY. 2. BOARD INSULATION: BOARD INSULATION AT CAVITY WALL CONSTRUCTION, EXTERIOR WALL BEHIND [RATED AND ACOUSTIC CONDITIONS] WALL FINISH, AND INTERIOR WALL WITH FACER PROVIDING EXPOSED FINISH. A. EXPANDED POLYSTYRENE (EPS) BOARD INSULATION: COMPLIES WITH ASTM C578.

1. FLAME SPREAD INDEX (FSI): CLASS A - 0 TO 25, WHEN TESTED IN ACCORDANCE WITH ASTM E84.

2. SMOKE DEVELOPED INDEX (SDI): 450 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.

3. BOARD SIZE: 48 INCH BY 96 INCH. 4. BOARD THICKNESS: 1-1/2 INCH. 5. TYPE AND COMPRESSIVE RESISTANCE: TYPE XI, 5 PSI (35 KPA), MINIMUM. 6. TYPE AND WATER ABSORPTION: TYPE XI. 4.0 PERCENT BY VOLUME, MAXIMUM, BY TOTAL IMMERSION.

. VAPOR RETARDER: 6 MIL POLYETHYLENE AT CONCEALED AREAS (FLAME SPREAD/SMOKE DEVELOPED: 25/450), FOIL/SCRIM AT PLENUMS AND EXPOSED AREAS (FLAME SPREAD/SMOKE DEVELOPED: 25/50). PROVIDE WHERE INDICATED IN DRAWINGS. 2. TAPE: REINFORCED POLYETHYLENE FILM WITH ACRYLIC PRESSURE SENSITIVE ADHESIVE. APPLICATION: SEALING OF INTERIOR CIRCULAR PENETRATIONS, SUCH AS PIPES OR CABLES.

E. <u>INSTALLATION:</u>
1. DO NOT INSTALL INSULATION ADHESIVES WHEN TEMPERATURE OR WEATHER CONDITIONS ARE DETRIMENTAL TO SUCCESSFUL INSTALLATION. 2. INSTALL INSULATION IN AREAS AND IN THICKNESSES INDICATED OR REQUIRED TO PRODUCE R-VALUES WHERE INDICATED, CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION. 3. INSTALL IN EXTERIOR WALL AND CEILING SPACES WITHOUT GAPS OR VOIDS. DO NOT COMPRESS INSULATION. 4. TRIM INSULATION NEATLY TO FIT SPACES. INSULATE MISCELLANEOUS GAPS AND VOIDS. 5. EXTEND VAPOR RETARDER TO EXTREMITIES OF AREAS TO BE PROTECTED FROM VAPOR TRANSMISSION. SECURE IN PLACE WITH ADHESIVES OR OTHER ANCHORAGE AS RECOMMENDED BY MANUFACTURER. LOCATE SEAMS AT FRAMING MEMBERS, OVERLAP AND SEAL WITH SUITABLE TAPE (DUCT TAPE IS NOT SUITABLE). 6. DO NOT PERMIT INSTALLED INSULATION TO BE DAMAGED PRIOR TO ITS CONCEALMENT.

07 2500 - WEATHER BARRIERS A. <u>SUBMITTALS</u>: PRODUCT DATA: PROVIDE DATA ON MATERIAL CHARACTERISTICS. SHOP DRAWINGS: PROVIDE DRAWINGS OF SPECIAL JOINT CONDITIONS.

B. MOCK-UP: INSTALL AIR BARRIER, VAPOR RETARDER, AND WATER-RESISTIVE BARRIER MATERIALS IN MOCK-UP. C. PRODUCTS: AIR BARRIER, FLUID APPLIED: VAPOR PERMEABLE, ELASTOMERIC WATERPROOFING.

D. <u>BASIS OF DESIGN</u>: BASF CORPORATION; MASTERSEAL AWB 665:

1. SEALANTS, TAPES, AND ACCESSORIES FOR SEALING WEATHER BARRIER AND SEALING WEATHER BARRIER TO ADJACENT SUBSTRATES: AS SPECIFIED OR AS RECOMMENDED BY WEATHER BARRIER MANUFACTURER. 2. FLEXIBLE FLASHING: SHEATHING FABRIC SATURATED WITH AIR BARRIER COATING AND COMPLYING WITH THE APPLICABLE REQUIREMENTS OF ICC-ES AC148. 3. LIQUID FLASHING: ONE PART, FAST CURING, NON-SAG, ELASTOMERIC, GUN GRADE, TROWELABLE LIQUID

3. CLEAN AND PRIME SUBSTRATE SURFACES TO RECEIVE ADHESIVES IN ACCORDANCE WITH MANUFACTURER'S

1. VERIFY THAT SURFACES AND CONDITIONS ARE READY TO ACCEPT THE WORK OF THIS SECTION. 2. REMOVE PROJECTIONS, PROTRUDING FASTENERS, AND LOOSE OR FOREIGN MATTER THAT MIGHT INTERFERE WITH PROPER INSTALLATION.

1. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 2. AIR BARRIERS: INSTALL CONTINUOUS AIR TIGHT BARRIER OVER SURFACES INDICATED, WITH SEALED SEAMS AND WITH SEALED JOINTS TO ADJACENT SURFACES. 3. PREPARE SUBSTRATE IN MANNER RECOMMENDED BY COATING MANUFACTURER; TREAT JOINTS IN SUBSTRATE AND BETWEEN DISSIMILAR MATERIALS AS RECOMMENDED BY MANUFACTURER. 4. MASTIC COATING: INSTALL BY TROWEL OR ROLLER TO MINIMUM THICKNESS OF 1/4 INCH; USE SHEET SEAL TO JOIN TO ADJACENT CONSTRUCTION, SEAL AIR TIGHT WITH SEALANT.

5. USE FLASHING TO SEAL TO ADJACENT CONSTRUCTION AND TO BRIDGE JOINTS. 6. INSTALL FLASHING OVER SILLS. COVERING ENTIRE SILL FRAME MEMBER. EXTENDING AT LEAST 5 INCHES ONTO WEATHER BARRIER AND AT LEAST 6 INCHES UP JAMBS; MECHANICALLY FASTEN STRETCHED EDGES. 7. AT OPENINGS TO BE FILLED WITH FRAMES HAVING NAILING FLANGES, SEAL HEAD AND JAMB FLANGES USING A CONTINUOUS BEAD OF SEALANT COMPRESSED BY FLANGE AND COVER FLANGES WITH SEALING TAPE AT LEAST 4 INCHES WIDE; DO NOT SEAL SILL FLANGE. 8. AT OPENINGS TO BE FILLED WITH NON-FLANGED FRAMES, SEAL WEATHER BARRIER TO EACH SIDE OF OPENING FRAMING, USING FLASHING AT LEAST 9 INCHES WIDE, COVERING ENTIRE DEPTH OF FRAMING. 9. AT HEAD OF OPENINGS. INSTALL FLASHING UNDER WEATHER BARRIER EXTENDING AT LEAST 2 INCHES BEYOND

FACE OF JAMBS; SEAL WEATHER BARRIER TO FLASHING. 10. AT INTERIOR FACE OF OPENINGS, SEAL GAP BETWEEN WINDOW/DOOR FRAME AND ROUGH FRAMING, USING JOINT SEALANT OVER BACKER ROD.

07 4643 - ENGINEERED SIDING A. SUBMITTALS: PRODUCT DATA, AND SAMPLES OF LOCATIONS FOR EACH TYPE OF SIDING

VERTICAL SIDING, LP SMARTSIDE PANEL SIDING. CEDAR TEXTURE PANEL. 2. HORIZONTAL SIDING, LP SMARTSIDE LAP SIDING, CEDAR TEXTURE LAP.

1. EXTERIOR TRIM SHALL BE LOUISIANA-PACIFIC SMARTSIDE TRIM-FASCIA TREATED ENGINEERED

2. CELLULAR PVC TRIM SHALL BE AS MANUFACTURED BY AZEK BUILDING PRODUCTS OR APPROVED EQUAL. GLUED-UP MEMBERS SHALL BE GLUED WITH MANUFACTURER'S STANDARD ADHESIVE TO CREATE A CHEMICAL BOND AND CUT TO SHAPES INDICATED.

APPLICABLE DOCUMENTS BEFORE INSTALLATION. TURER AGREES TO REPAIR OR REPLACE ASPHALT SHINGLES THAT FAIL IN 1/2 NSHIP WITHIN SPECIFIED WARRANTY PERIOD. ROM DATE OF SUBSTANTIAL COMPLETION, PRORATED, WITH FIRST FIVE YEAR

C. BASIS OF DESIGN: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TIMBERLINE 30 SHINGLES AS MANUFACTURED BY GAF ROOFING PRODUCTS OR APPROVED EQUAL WITH GRANULES TREATED TO RESIST ALGAE DISCOLORATION. COLOR SHALL BE SELECTED BY THE ARCHITECT.

I. LAMINATED-STRIP ASPHALT SHINGLES: ASTM D 3462, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION. GLASS-FIBER REINFORCED. MINERAL-GRANULE SURFACED. AND SELF-SEALING. 2. FELT: ASTM D 226, TYPE I, ASPHALT-SATURATED ORGANIC FELTS, NONPERFORATED. 3. SELF-ADHERING SHEET UNDERLAYMENT, POLYETHYLENE FACED: ASTM D 1970/D 1970M, MINIMUM OF 40-MIL- (1.0-MM-) THICK, SLIP-RESISTING, POLYETHYLENE-FILM-REINFORCED TOP SURFACE LAMINATED TO SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE BACKING; COLD APPLIED. PREFERED PRODUCT GRACE CONSTRUCTION PRODUCTS, ICE AND WATER SHIELD

1. ASPHALT ROOFING CEMENT: ASTM D 4586, TYPE II, ASBESTOS FREE. 2. ROOFING NAILS: ASTM F 1667; ALUMINUM OR HOT-DIP GALVANIZED-STEEL WIRE SHINGLE NAILS, MINIMUM 0.120-INCH DIAMETER, BARBED SHANK, SHARP-POINTED, WITH A MINIMUM 3/8-INCH DIAMETER FLAT HEAD AND OF SUFFICIENT LENGTH TO PENETRATE AT LEAST 1/8 INCH THROUGH THE ROOF SHEATHING. WHERE NAILS ARE IN CONTACT WITH METAL FLASHING, USE NAILS MADE FROM SAME METAL AS

3. FELT UNDERLAYMENT NAILS: ALUMINUM, STAINLESS-STEEL, OR HOT-DIP GALVANIZED-STEEL WIRE WITH LOW-PROFILE CAPPED HEADS OR DISC CAPS, 1-INCH MINIMUM DIAMETER. 4. FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL, AND OTHER CHARACTERISTICS OF THE ITEM. PREFERED MATERIALS:SHEET METAL: PREFINISHED ALUMINUM.

RECOMMENDATIONS IN ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL," AND ASPHALT SHINGLE RECOMMENDATIONS IN NRCA'S "THE NRCA ROOFING AND WATERPROOFING MANUAL." 2. INSTALL STARTER STRIP ALONG LOWEST ROOF EDGE. CONSISTING OF AN ASPHALT SHINGLE STRIP AT LEAST 7 INCHES WIDE WITH SELF-SEALING STRIP FACE UP AT ROOF EDGE. INSTALL STARTER STRIP ALONG RAKE EDGE. 3. EXTEND ASPHALT SHINGLES 3/8 INCH OVER FASCIA AT EAVES AND RAKES.

UNIFORM EXPOSURE 5. FASTEN ASPHALT SHINGLE STRIPS WITH ROOFING NAILS LOCATED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN AMBIENT TEMPERATURE DURING INSTALLATION IS BELOW 50 DEG F, SEAL ASPHALT SHINGLES PER APPROVED MANUFACTURER INSTALLATION RECOMMENDATIONS.

4. INSTALL FIRST AND REMAINING COURSES OF ASPHALT SHINGLES STAIR-STEPPING DIAGONALLY ACROSS ROOF

DECK WITH MANUFACTURER'S RECOMMENDED OFFSET PATTERN AT SUCCEEDING COURSES, MAINTAINING

PREVAILING WINDS. FASTEN WITH ROOFING NAILS OF SUFFICIENT LENGTH TO PENETRATE SHEATHING.

3. SOFFIT, VENTED / NONVENTED, LP SMARTSIDE SOFFIT. CEDAR TEXTURE.

WOOD TRIM OR APPROVED EQUAL, UNLESS OTHERWISE INDICATED, IN SIZES INDICATED ON THE

1. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST IN TION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTF' ' ES REGULATIONS AND

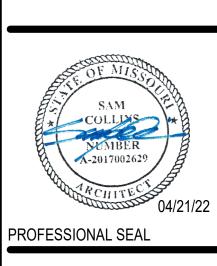
ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, M' 07 3113 - ASPHALT SHINGLES & ACCESSOP" A. SUBMITTALS: PRODUCT DATA, AND 1. MATERIAL WARRANT) FROM DATE OF SUBSTANTIA. JUMPLETION.

1.INSTALL ASPHALT SHINGLES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS,

6. HIP AND RIDGE CAP SHINGLES: MAINTAIN SAME EXPOSURE OF HIP AND RIDGE CAP SHINGLES AS ROOFING SHINGLE EXPOSURE. LAP RIDGE CAP SHINGLES TO SHED WATER AWAY FROM DIRECTION OF 230 SW MAIN (LEE'S SUMMIT

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REVISION DATES:



COLLINS WEBB #: 21121 **GENERAL PROJECT**

PERIMETER CONDITIONS REQUIRING SPECIAL ATTENTION.

1. MATERIAL WARRANTY: PROVIDE MEMBRANE MANUFACTURER'S WARRANTY AGREEING TO REPLACE MATERIAL THAT SHOWS MANUFACTURING DEFECTS WITHIN 10 YEARS AFTER INSTALLATION. 2. SYSTEM WARRANTY: PROVIDE MANUFACTURER'S SYSTEM WARRANTY AGREEING TO REPAIR OR REPLACE ROOFING THAT LEAKS OR IS DAMAGED DUE TO WIND OR OTHER NATURAL CAUSES. WARRANTY TERM: 20 YEARS. A. FOR REPAIR AND REPLACEMENT INCLUDE COSTS OF BOTH MATERIAL AND LABOR IN WARRANTY. B. INCLUDE ACCIDENTAL PUNCTURES ACCORDING TO THE MANUFACTURER'S STANDARD WARRANTY TERMS. C. INCLUDE HAIL DAMAGE ACCORDING TO THE MANUFACTURER'S STANDARD WARRANTY TERMS. D. EXCEPTIONS NOT PERMITTED: DAMAGE DUE TO ROOF TRAFFIC. DAMAGE DUE TO WIND OF SPEED GREATER THAN 56 MPH BUT LESS THAN 90 MPH.

. <u>BASIS OF DESIGN</u>: FIRESTONE RUBBERGARD™ EPDM MEMBRANE ,WWW.FIRESTONEBPCO.COM . WIND UPLIFT: DESIGNED TO WITHSTAND WIND UPLIFT FORCES CALCULATED WITH ASCE 7. 2. INSULATION THERMAL RESISTANCE (R-VALUE): 3 PER INCH, MINIMUM; PROVIDE INSULATION OF THICKNESS REQUIRED. MINIMUM R-20

1. MATERIAL: RUBBERGARD EPDM

A. B. THICKNESS: 60 MILS (0.060 INCH), MINIMUM. C. SHEET WIDTH: FACTORY FABRICATED INTO LARGEST SHEETS POSSIBLE. D. PRODUCT: FULLY ADHERED

2. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 3. VAPOR RETARDER: MATERIAL APPROVED BY ROOF MANUFACTURER COMPLYING WITH REQUIREMENTS OF FIRE RATING CLASSIFICATION; COMPATIBLE WITH ROOFING AND INSULATION MATERIALS. INSTALL WITH FIRE-

4. FLEXIBLE FLASHING MATERIAL: SAME MATERIAL AS MEMBRANE. 5. BASE FLASHING: PROVIDE WATERPROOF, FULLY ADHERED BASE FLASHING SYSTEM AT ALL PENETRATIONS, PLANE TRANSITIONS, AND TERMINATIONS.

.. <u>DECK SHEATHING AND COVER BOARDS:</u>
IF SHEATHING OR COVER BOARD IS REFERENCED IN THE DRAWINGS, PROVIDE PRODUCTS COMPLYING WITH 1. DECK SHEATHING: GYPSUM SHEATHING, ASTM C1396/C1396M, TYPE X SPECIAL FIRE RESISTANT TYPE 2. COVERBOARD: CEMENT ROOF BOARD, COMPLYING WITH ASTM C1325.

1. INSULATION COMPLYING WITH MANUFACTURERES RECOMMENDATIONS. 2. CELLULOSE FIBER BOARD INSULATION: ASTM C208, TYPE II; NATURAL FINISH.

3. EXPANDED POLYSTYRENE (EPS) BOARD INSULATION: COMPLIES WITH ASTM C578 WITH DRAINAGE CHANNELS ON 4. TAPERED BOARD: SLOPE AS INDICATED; MINIMUM THICKNESS 1/2 INCH; FABRICATE OF FEWEST LAYERS

5. EXTRUDED POLYSTYRENE (XPS) BOARD INSULATION: COMPLIES WITH ASTM C578 WITH NATURAL SKIN SURFACE, DRAINAGE CHANNELS ON ONE FACE.

1. PROVIDE AND INSTALL ONLY ACCESSORIES WHICH COMPLY WITH MANUFACTURERS RECOMMENDATIONS. 2. PROVIDE FIRESTONE PREFINISHED FLASHINGS AND COPINGS FOR ITEMS NOTES IN DRAWING DETAILS.

1. VERIFY THAT SURFACES AND SITE CONDITIONS ARE READY TO RECEIVE WORK.

2. VERIFY DECK IS SUPPORTED AND SECURE. INCHES WIDE WITH SELF-SEALING STRIP FACE UP AT ROOF EDGE. INSTALL STARTER STRIP ALONG RAKE EDGE. 3. VERIFY DECK IS CLEAN AND SMOOTH, FLAT, FREE OF DEPRESSIONS, WAVES, OR PROJECTIONS, PROPERLY SLOPED AND SUITABLE FOR INSTALLATION OF ROOF SYSTEM.

4. VERIFY DECK SURFACES ARE DRY AND FREE OF RAIN, SNOW OR ICE. 5. VERIFY THAT ROOF OPENINGS, CURBS, AND PENETRATIONS THROUGH ROOF ARE SOLIDLY SET, AND CANT

6. CLEAN SUBSTRATE THOROUGHLY PRIOR TO ROOF APPLICATION. 7. DO NOT BEGIN WORK UNTIL OTHER WORK THAT REQUIRES FOOT OR EQUIPMENT TRAFFIC ON ROOF IS

8. APPLY MANUFACTURER'S RECOMMENDED VAPOR RETARDER OR TEMPORARY ROOF BEFORE ROOF 9. PERFORM WORK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NRCA (RM) APPLICABLE

REQUIREMENTS 10. REMOVE WRAPPINGS, EMPTY CONTAINERS, PAPER, AND OTHER DEBRIS FROM THE ROOF DAILY. DISPOSE OF DEBRIS IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. REMOVE BITUMINOUS MARKINGS FROM FINISHED SURFACES.

12. IN AREAS WHERE FINISHED SURFACES ARE SOILED BY WORK OF THIS SECTION, CONSULT MANUFACTURER OF SURFACES FOR CLEANING ADVICE AND CONFORM TO THEIR DOCUMENTED INSTRUCTIONS. 13. REPAIR OR REPLACE DEFACED OR DAMAGED FINISHES CAUSED BY WORK OF THIS SECTION.

PROTECTION:

1. PROTECT INSTALLED ROOFING AND FLASHINGS FROM CONSTRUCTION OPERATIONS. 2. WHERE TRAFFIC MUST CONTINUE OVER FINISHED ROOF MEMBRANE, PROTECT SURFACES USING DURABLE

07 6200 - SHEET METAL FLASHING AND TRIM

FABRICATED SHEET METAL ITEMS. INCLUDING FLASHINGS. COUNTERFLASHINGS. AND OTHER ITEMS INDICATED IN

AAMA 611 - VOLUNTARY SPECIFICATION FOR ANODIZED ARCHITECTURAL ALUMINUM 2014 (2015 ERRATA). ASTM C920 - STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS 2018.

CDA A4050 - COPPER IN ARCHITECTURE - HANDBOOK CURRENT EDITION. SMACNA (ASMM) - ARCHITECTURAL SHEET METAL MANUAL 2012.

1. SHOP DRAWINGS: INDICATE MATERIAL PROFILE, JOINTING PATTERN, JOINTING DETAILS, FASTENING METHODS, FLASHINGS, TERMINATIONS, AND INSTALLATION DETAILS.

PERFORM WORK IN ACCORDANCE WITH SMACNA (ASMM) AND CDA A4050 REQUIREMENTS AND

STANDARD DETAILS, EXCEPT AS OTHERWISE INDICATED. <u>D. DELIVERY, STORAGE, AND HANDLING</u>
1. STACK MATERIAL TO PREVENT TWISTING, BENDING, AND ABRASION, AND TO PROVIDE VENTILATION. SLOPE

METAL SHEETS TO ENSURE DRAINAGE. 2. PREVENT CONTACT WITH MATERIALS THAT COULD CAUSE DISCOLORATION OR STAINING.

E. PRODUCTS
PRE-FINISHED ALUMINUM: ASTM B209 (ASTM B209M); 20 GAGE, (0.032 INCH) THICK; PLAIN FINISH SHOP PRE-COATED WITH MODIFIED SILICONE COATING. 1. FLUOROPOLYMER COATING: HIGH PERFORMANCE ORGANIC FINISH, AAMA 2604; MULTIPLE COAT,

THERMALLY CURED FLUOROPOLYMER FINISH SYSTEM. 2. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.

1. FORM SECTIONS TRUE TO SHAPE, ACCURATE IN SIZE, SQUARE, AND FREE FROM DISTORTION OR DEFECTS. 2. FORM PIECES IN LONGEST POSSIBLE LENGTHS. 3. HEM EXPOSED EDGES ON UNDERSIDE 1/2 INCH; MITER AND SEAM CORNERS.

4. FORM MATERIAL WITH FLAT LOCK SEAMS, EXCEPT WHERE OTHERWISE INDICATED; AT MOVING JOINTS, USE SEALED LAPPED, BAYONET-TYPE OR INTERLOCKING HOOKED SEAMS. 5. FABRICATE FLASHINGS TO ALLOW TOE TO EXTEND 2 INCHES OVER ROOFING GRAVEL. RETURN AND BRAKE

FASTENERS: GALVANIZED STEEL, WITH SOFT NEOPRENE WASHERS. PRIMER: ZINC CHROMATE TYPE. 3. CONCEALED SEALANTS: NON-CURING BUTYL SEALANT.

4. SEAL METAL JOINTS WATERTIGHT

4. EXPOSED SEALANTS: ASTM C920; ELASTOMERIC SEALANT, WITH MINIMUM MOVEMENT CAPABILITY AS 5. RECOMMENDED BY MANUFACTURER FOR SUBSTRATES TO BE SEALED; COLOR TO MATCH ADJACENT MATERIAL.

. SECURE FLASHINGS IN PLACE USING CONCEALED FASTENERS, AND USE EXPOSED FASTENERS ONLY WHERE 2. APPLY PLASTIC CEMENT COMPOUND BETWEEN METAL FLASHINGS AND FELT FLASHINGS. 3. FIT FLASHINGS TIGHT IN PLACE: MAKE CORNERS SQUARE, SURFACES TRUE AND STRAIGHT IN PLANES, AND LINES ACCURATE TO PROFILES.

07 8100 - APPLIED FIREPROOFING A. SUBMITTALS: PRODUCT DATA: PROVIDE DATA INDICATING PRODUCT CHARACTERISTICS. . TEST REPORTS: REPORTS FROM REPUTABLE INDEPENDENT TESTING AGENCIES FOR PROPOSED PRODUCTS. INDICATING COMPLIANCE WITH SPECIFIED CRITERIA, CONDUCTED UNDER CONDITIONS SIMILAR TO THOSE ON

PROJECT, AS FOLLOWS: A BOND STRENGTH B. BOND IMPACT.

D. FIRE TESTS USING SUBSTRATE MATERIALS SIMILAR THOSE ON PROJECT. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE SPECIAL PROCEDURES. 3. MANUFACTURER'S QUALIFICATION STATEMENT.

3. PROVIDE TEMPORARY ENCLOSURE TO PREVENT SPRAY FROM CONTAMINATING AIR.

C. COMPRESSIVE STRENGTH.

DO NOT APPLY FIREPROOFING WHEN TEMPERATURE OF SUBSTRATE MATERIAL AND SURROUNDING AIR IS BELOW 40 DEGREES F OR WHEN TEMPERATURE IS PREDICTED TO BE BELOW SAID TEMPERATURE FOR 24 HOURS AFTER APPLICATION. 2. PROVIDE VENTILATION IN AREAS TO RECEIVE FIREPROOFING DURING APPLICATION AND 24 HOURS AFTERWARD, TO DRY APPLIED MATERIAL.

. CORRECT DEFECTIVE WORK WITHIN A TWO YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION. A. INCLUDE COVERAGE FOR FIREPROOFING TO REMAIN FREE FROM CRACKING, CHECKING, DUSTING, FLAKING, SPALLING, SEPARATION, AND BLISTERING.

1. GCP APPLIED TECHNOLOGIES: WWW.GCPAT.COM/FIREPROOFING 2. ISOLATEK INTERNATIONAL CORP: WWW.ISOLATEK.COM

B. REINSTALL OR REPAIR FAILURES THAT OCCUR WITHIN WARRANTY PERIOD.

3. SOUTHWEST FIREPROOFING PRODUCTS COMPANY: WWW.S PROVIDE ASSEMBLIES AS INDICATED ON DRAWING 2. PROVIDE FIRE RESISTANCE RATINGS FOR FOLI A. PRIMARY STRUCTURAL FRAME, INCLI'' S. AND TRUSSES: [1 HOUR]. B BEARING WALLS INTERIOR: [1 HO]

C. FLOOR CONSTRUCTION, INCL. JIMS AND JOISTS: [1 HOUR] D ROOF CONSTRUCTION INC JEAMS AND JOISTS: [1HOUR]. ._ FOR INTERIOR APPLICATIONS, CONCEALED: MANUFACTURER'S HICH WHEN COMBINED WITH WATER IS CAPABLE OF PROVIDING STANDARD FACTORY MIXED N PLYING WITH FOLLOWING REQUIREMENTS: INDICATED FIRE RESISTANCE AND 1. COMPOSITION: GYPSUM-BASED: NOT MINERAL-FIBER-BASED. 2. BOND STRENGTH: 150 POUNDS PER SQUARE FOOT, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM

E736/E736M WHEN SET AND DRY. 3. DRY DENSITY: AS REQUIRED BY FIRE RESISTANCE DESIGN. 4. COMPRESSIVE STRENGTH: 8.33 POUNDS PER SQUARE INCH, MINIMUM. 5. EFFECT OF IMPACT ON BONDING: NO CRACKING, SPALLING OR DELAMINATION, WHEN TESTED IN ACCORDANCE

WITH ASTM E760/E760M. 6. CORROSIVITY: NO EVIDENCE OF CORROSION, WHEN TESTED IN ACCORDANCE WITH ASTM E937/E937M. SURFACE BURNING CHARACTERISTICS: MAXIMUM FLAME SPREAD INDEX OF 0 (ZERO) AND MAXIMUM SMOKE DEVELOPED INDEX OF 0 (ZERO), WHEN TESTED IN ACCORDANCE WITH ASTM E84.

1. PRIMER ADHESIVE: OF TYPE RECOMMENDED BY APPLIED FIREPROOFING MANUFACTURER. 2. OVERCOAT: AS RECOMMENDED BY MANUFACTURER OF APPLIED FIREPROOFING MATERIAL. 3. METAL LATH: EXPANDED METAL LATH; MINIMUM WEIGHT OF 1.7 PSF, GALVANIZED FINISH. 4. WATER: CLEAN, POTABLE.

1. VERIFY THAT SURFACES ARE READY TO RECEIVE FIREPROOFING. 2. VERIFY THAT DUCTS, PIPING, EQUIPMENT, OR OTHER ITEMS THAT WOULD INTERFERE WITH APPLICATION OF FIREPROOFING HAVE NOT BEEN INSTALLED. 3. VERIFY THAT VOIDS AND CRACKS IN SUBSTRATE HAVE BEEN FILLED.

4. VERIFY THAT PROJECTIONS HAVE BEEN REMOVED WHERE FIREPROOFING WILL BE EXPOSED TO VIEW AS A 5. PERFORM TESTS AS RECOMMENDED BY FIREPROOFING MANUFACTURER IN APPLICATIONS WHERE ADHESION OF FIREPROOFING TO SUBSTRATE IS IN QUESTION. 6. REMOVE INCOMPATIBLE MATERIALS THAT COULD EFFECT BOND BY SCRAPING, BRUSHING, SCRUBBING, OR SANDBLASTING.

7. PREPARE SUBSTRATES TO RECEIVE FIREPROOFING IN STRICT ACCORDANCE WITH INSTRUCTIONS OF FIREPROOFING MANUFACTURER. 8. APPLY FIREPROOFING MANUFACTURER'S RECOMMENDED BONDING AGENT ON PRIMED STEEL. . INSTALL METAL LATH OVER STRUCTURAL MEMBERS AS INDICATED OR AS REC

10. APPLY FIREPROOFING IN UNIFORM THICKNESS AND DENSITY AS NECESSARY TO ACHIEVE REQUIRED RATINGS. 11. INSPECT INSTALLED FIREPROOFING AFTER APPLICATION AND CURING FOR INTEGRITY, PRIOR TO ITS CONCEALMENT. 2. ENSURE THAT ACTUAL THICKNESSES, DENSITIES, AND BOND STRENGTHS MEET REQUIREMENTS FOR SPECIFIED

13. REMOVE EXCESS MATERIAL, OVERSPRAY, DROPPINGS, AND DEBRIS. 14. REMOVE FIREPROOFING FROM MATERIALS AND SURFACES NOT REQUIRED TO BE FIREPROOFED.

RATINGS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ).

A. <u>SUBMITTALS</u>: PRODUCT DATA: PROVIDE DATA ON PRODUCT CHARACTERISTICS, PERFORMANCE RATINGS, AND

1. 3M FIRE PROTECTION PRODUCTS: WWW.3M.COM/FIRESTOP.COM 2. HILTI, INC: WWW.US.HILTI.COM

. FIRESTOPPING MATERIALS: ANY MATERIALS MEETING REQUIREMENTS. 2. PRIMERS, SLEEVES, FORMS, INSULATION, PACKING, STUFFING, AND ACCESSORIES: PROVIDE TYPE OF MATERIALS AS REQUIRED FOR TESTED FIRESTOPPING ASSEMBLY. 3. FIRE RATINGS: REFER TO DRAWINGS FOR REQUIRED SYSTEMS AND RATINGS.

. HEAD-OF-WALL JOINT SYSTEM FIRESTOPPING AT JOINTS BETWEEN FIRE-RATED WALL ASSEMBLIES AND NON-RATED HORIZONTAL ASSEMBLIES: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E2837 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF FLOOR OR WALL, WHICHEVER IS GREATER. 2. FLOOR-TO-FLOOR, WALL-TO-WALL, AND WALL-TO-FLOOR JOINTS, EXCEPT PERIMETER, WHERE BOTH ARE FIRE-RATED: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E1966 OR UL 2079 TO HAVE FIRE

F RATING EQUAL TO REQUIRED FIRE RATING OF THE ASSEMBLY IN WHICH THE JOINT OCCURS. 3.THROUGH PENETRATION FIRESTOPPING: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E814 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF PENETRATED ASSEMBLY.

. INSTALLATIONS SHALL CONFORM TO UL REQUIREMENTS OF THE ASSEMBLY WHICH FIRESTOPPING IS TO BECOME PART OF THE BUILT ASSEMBLY.

07 9200 - JOINT SEALANTS A. <u>SUBMITTALS</u>: PRODUCT DATA, AND SCHEDULE OF LOCATIONS FOR EACH TYPE OF SEALANT SUBMITTED.

B. JOINT-SEALANT SCHEDULE: INCLUDE THE FOLLOWING INFORMATION: 1. JOINT-SEALANT APPLICATION, JOINT LOCATION, AND DESIGNATION. 2. JOINT-SEALANT MANUFACTURER AND PRODUCT NAME. 3. JOINT-SEALANT FORMULATION. 4. JOINT-SEALANT COLOR.

C. ENVIRONMENTAL LIMITATIONS: DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT SEALANT MANUFACTURER OR ARE BELOW 40 deg F (4.4 deg C).

D. <u>COMPATIBILITY</u>: PROVIDE JOINT SEALANTS, JOINT FILLERS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER SERVICE AND APPLICATION CONDITIONS. E. <u>JOINT SEALANTS</u>:

1. COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. 2. INTERIOR JOINTS IN CERAMIC TILE AND OTHER HARD SURFACES IN KITCHENS, TOILET ROOMS, AND AROUND PLUMBING FIXTURES: SINGLE COMPONENT, MILDEW-RESISTANT SILICONE SEALANT, ASTM C 920, TYPE S; GRADE NS. CLASS 25: USES NT. G. A. AND O: FORMULATED WITH FUNGICIDE.

3. INTERIOR JOINTS AROUND PERIMETERS OF DOORS AND FRAMES: LATEX SEALANT, SINGLE COMPONENT, NONSAG, MILDEW-RESISTANT, PAINTABLE, ACRYLIC EMULSION SEALANT COMPLYING WITH ASTM C 834. 4. ACOUSTICAL SEALANT FOR EXPOSED INTERIOR JOINTS: NONSAG, PAINTABLE, NONSTAINING, LATEX SEALANT COMPLYING WITH ASTM C 834. 5. ACOUSTICAL SEALANT FOR CONCEALED JOINTS: NONDRYING, NONHARDENING, NONSKINNING, NONSTAINING,

GUNNABLE, SYNTHETIC-RUBBER SEALANT RECOMMENDED FOR SEALING INTERIOR CONCEALED JOINTS TO REDUCE TRANSMISSION OF AIRBORNE SOUND. 6. EXTERIOR CONCRETE PANELS, NATURAL STONES, MASONRY, ALUMINUM CURTAINWALLS, METAL PANELS AND WINDOW PERIMETERS. BASIS OF DESIGN PRODUCTS

A. TREMCO INCORPORATED: SPECTREM 1. B. DOW CORNING CORPORATION; 790. C. PECORA CORPORATION; 890NST. 7. EXTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES.

ISOLATION AND CONTRACTION JOINTS IN CAST-IN-PLACE CONCRETE SLABS. URETHANE JOINT SEALANT: MULTICOMPONENT, NONSAG, TRAFFIC GRADE, CLASS 25.

GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING P. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE C (CLOSED-CELL MATERIAL WITH A SURFACE SKIN), AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE. 3. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT

MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID. INFLEXIBLE JOINT-FILLER MATERIALS OR

JOINT SURFACES AT BACK OF JOINT. PROVIDE SELF-ADHESIVE TAPE WHERE APPLICABLE. F. MISCELLANEOUS MATERIALS PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS. 2. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND

FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES. 3. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MFR. FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT 4. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

3. INSTALLATION: COMPLY WITH ASTM C 1193; ASTM C 919 FOR ACOUSTICAL JOINTS: AND AS FOLLOWS: 1. REMOVE ALL LOOSE MATERIAL. CLEAN AND PRIME JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND PROTECT ADJACENT SURFACES. 2. INSTALL BOND-BREAKER TAPE WHERE JOINT BACKINGS ARE NOT USED. 3. INSTALL SEALANT TOOLED CONCAVE, FREE OF AIR POCKETS, FOREIGN EMBEDDED MATTER, RIDGES, AND SAGS. AND PROTECT UNTIL FULLY CURED. SEALANT WITH DUST AND DEBRIS EMBEDDED IN SURFACE SHALL BE CAUSE FOR REJECTION.

<u> DIVISION 8 - OPENINGS</u>

08 0671 - DOOR HARDWARE

A. SUBMITTALS: PRODUCT DATA AND HARDWARE SCHEDULE INDICATING HARDWARE ITEM, FINISH, AND QUANTITY LOCATED ON EACH DOOR WITH DOOR AND HARDWARE SET NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS. REFER TO ARCHITECTURAL PLANS AND HARDWARE SCHEDULES PROVIDED. 1. HARDWARE SUPPLIER SHALL SUBMIT FOUR COPIES OF FINAL HARDWARE SCHEDULE AT EARLIEST POSSIBLE DATE PARTICULARLY WHERE ACCEPTANCE OF HARDWARE SCHEDULE MUST PRECEDE FABRICATION OF OTHER WORK WHICH IS CRITICAL IN THE PROJECT CONSTRUCTION SCHEDULE. INCLUDE WITH SCHEDULE SHOP DRAWINGS OF OTHER WORK AFFECTED BY BUILDERS HARDWARE, AND OTHER INFORMATION ESSENTIAL TO THE COORDINATE REVIEW OF HARDWARE SCHEDULE.

1. STRIKES. PROVIDE MANUFACTURER'S STANDARD WROUGHT BOX STRIKE FOR EACH LATCH OR LOCK BOLT, WITH

2. KEYING SCHEDULE. SUBMIT SEPARATE DETAILED SCHEDULE INDICATING CLEARLY HOW THE OWNER'S FINAL INSTRUCTIONS ON KEYING OF LOCKS HAS BEEN FULFILLED. ALL KEYING SHALL BE COORDINATED WITH THE B. PRODUCTS: REFER TO HARDWARE SCHEDULE AND ARCHITECTURAL DRAWINGS.

CURVED LIP EXTENDED TO PROTECT FRAME. FINISH TO MATCH HARDWARE SET. PROVIDE STANDARD (OPEN) STRIKE PLATES FOR INTERIOR DOORS WHERE WOOD DOOR FRAMES ARE USED. 2. IN GENERAL, HARDWARE FINISH SHALL BE US15 (SATIN NICKEL) UNLESS SPECIFIED DIFFERENTLY ON HARDWARE 3. SUPPLY CAL ROYAL HDFS3 FLEXIBLE DOOR STOPS IN THE APARTMENT DWELLING UNITS. USE 2 IVHP-23 HINGE STOPS WHERE FLEXIBLE STOPS CANNOT BE USED. 4. SUPPLY OUT SWINGING EXTERIOR DOORS WITH NON REMOVABLE PINS.

1. MOUNT HARDWARE UNITS AT HEIGHTS INDICATED IN "RECOMMENDED LOCATIONS FOR BUILDERS HARDWARE FOR STANDARD STEEL DOORS AND FRAMES" BY THE DOOR AND HARDWARE INSTITUTE, EXCEPT AS SPECIFICALLY INDICATED OR REQUIRED TO COMPLY WITH GOVERNING REGULATIONS, AND EXCEPT AS MAY BE OTHERWISE DIRECTED BY ARCHITECT. MOUNT HARDWARE IN UNITS DESIGNATED FOR USE BY THE HANDICAPPED AT HEIGHTS RECOMMENDED FOR USE BY THE HANDICAPPED. 2. INSTALL EACH HARDWARE ITEM IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. WHEREVER CUTTING AND FITTING IS REQUIRED TO INSTALL HARDWARE ONTO OR INTO SURFACES WHICH ARE LATER TO BE PAINTED OR FINISHED IN ANOTHER WAY, COORDINATE REMOVAL, STORAGE REINSTALLATION OR APPLICATION OF SURFACE PROTECTIONS WITH FINISHING WORK SPECIFIED IN THE DIVISION 9 SECTIONS. DO NOT INSTALL SURFACE MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON THE SUBSTRATE. 3. SET UNITS LEVEL, PLUMB AND TRUE TO LINE AND LOCATION. ADJUST AND REINFORCE THE ATTACHMENT SUBSTRATE AS NECESSARY FOR PROPER INSTALLATION AND OPERATION. 4.DRILL AND COUNTERSINK UNITS WHICH ARE NOT FACTORY PREPARED FOR ANCHORAGE FASTENERS. SPACE FASTENERS AND ANCHORS IN ACCORDANCE WITH INDUSTRY STANDARDS. 5.METAL THRESHOLDS SHALL BE SET IN A SOLID BED OF NON STAINING THIOKOL BASE CAULKING. 6. ADJUST AND CHECK EACH OPERATING ITEM OF HARDWARE AND EACH DOOR, TO ENSURE PROPER OPERATION OR FUNCTION OF EVERY UNIT. REPLACE UNITS WHICH CANNOT BE ADJUSTED TO OPERATE FREELY AND SMOOTHLY AS INTENDED FOR THE APPLICATION MADE. 7.FINAL ADJUSTMENT: WHEREVER HARDWARE INSTALLATION IS MADE MORE THAN ONE MONTH PRIOR TO ACCEPTANCE OR OCCUPANCY OF A SPACE OR AREA, RETURN TO THE WORK DURING THE WEEK PRIOR TO ACCEPTANCE OR OCCUPANCY, AND MAKE FINAL CHECK AND ADJUSTMENT OF ALL HARDWARE ITEMS IN SUCH SPACE OR AREA. CLEAN OPERATING ITEMS AS NECESSARY TO RESTORE PROPER FUNCTION AND FINISH OF

HARDWARE AND DOORS. ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING

HARDWARF SET: 1.0 FOR USE ON DOOR #(S)

AND VENTILATING EQUIPMENT.

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1 4.5 X 4.5	BRUSHED NICKEL	IVE
1 EA	PRIVACY W/DB & IND	L9496P6 06A L583-363	BRUSHED NICKEL	SCH
1 EA	SURFACE CLOSER	4040XP REG	BRUSHED NICKEL	LCN
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	BRUSHED NICKEL	IVE
1 EA	WALL STOP	WS406/407CVX	BRUSHED NICKEL	IVE
3 EA	SILENCER	SR64	GRY	IVE

FOR USE ON DOOR #(S)

HARDWARE SET: 2.0

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	M
3 EA	HINGE	5BB1 4.5 X 4.5	BRUSHED NICKEL	IV
1 EA	STOREROOM LOCK	L9080P6 06A	BRUSHED NICKEL	SC
1 EA	OH STOP	90S	BRUSHED NICKEL	GI
3 EA	SILENCER	SR64	GRY	IV

HARDWARE SET: 3.0 FOR USE ON DOOR #(S):

EACH SGL DOOR(S) WITH	THE FOLLOWING:		
DESCRIPTION	CATALOG NUMBER	FINISH	MFR
HINGE	5BB1HW 4.5 X 4.5 NRP	BRUSHED NICKEL	IVE
STOREROOM LOCK	ND80JD RHO	BRUSHED NICKEL	SCH
FSIC CORE	PERMANENT CORE	BRUSHED NICKEL	SCH
FSIC CORE	KEYED CONST CORE	BRUSHED NICKEL	SCH
SURFACE CLOSER	4040XP SHCUSH MC	BRUSHED NICKEL	LCN
RAIN DRIP	142	BRUSHED NICKEL	ZER
GASKETING	328-S	BRUSHED NICKEL	ZER
DOOR SWEEP	39	BRUSHED NICKEL	ZER
THRESHOLD	655-223	BRUSHED NICKEL	ZER
DOOR CONTACT	679-05HM OR WD AS REQ'D		SCE
	HINGE STOREROOM LOCK FSIC CORE FSIC CORE SURFACE CLOSER RAIN DRIP GASKETING DOOR SWEEP THRESHOLD	DESCRIPTION CATALOG NUMBER HINGE STOREROOM LOCK PSIC CORE PERMANENT CORE FSIC CORE SURFACE CLOSER RAIN DRIP GASKETING DOOR SWEEP THRESHOLD CATALOG NUMBER DBB 144.5 X 4.5 NRP ND80JD RHO PERMANENT CORE KEYED CONST CORE 4040XP SHCUSH MC 142 328-S DOOR SWEEP 39 THRESHOLD 655-223	HINGE 5BB1HW 4.5 X 4.5 NRP BRUSHED NICKEL STOREROOM LOCK ND80JD RHO BRUSHED NICKEL FSIC CORE PERMANENT CORE BRUSHED NICKEL FSIC CORE KEYED CONST CORE BRUSHED NICKEL SURFACE CLOSER 4040XP SHCUSH MC BRUSHED NICKEL RAIN DRIP 142 BRUSHED NICKEL GASKETING 328-S BRUSHED NICKEL DOOR SWEEP 39 BRUSHED NICKEL THRESHOLD 655-223 BRUSHED NICKEL

08 1113 - HOLLOW METAL DOORS AND FRAMES A. SUBMITTALS: PRODUCT DATA AND SHOP DRAWINGS WITH DETAILS OF EACH OPENING, SHOWING ELEVATIONS, GLAZING, FRAME PROFILES, AND ANY INDICATED FINISH REQUIREMENTS.

. HOLLOW METAL DOOR AND FRAME MANUFACTURERS: CECO DOOR, AN ASSA ABLOY GROUP COMPANY: WWW.ASSAABLOYDSS.COM. 2. DE LA FONTAINE INC: WWW.DELAFONTAINE.COM 3. REPUBLIC DOORS, AN ALLEGION BRAND: WWW.REPUBLICDOOR.COM 4. STEELCRAFT, AN ALLEGION BRAND: WWW.ALLEGION.COM

C. SOUND-RATED HOLLOW METAL DOORS AND FRAMES: . OVERLY DOOR COMPANY: WWW.OVERLY.COM

STEEL USED FOR FABRICATION OF DOORS AND FRAMES SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING REQUIREMENTS; GALVANNEALED STEEL CONFORMING TO ASTM A653/A653M, COLD-ROLLED STEEL CONFORMING TO ASTM A1008/A1008M, OR HOT-ROLLED PICKLED AND OILED (HRPO) STEEL CONFORMING TO ASTM A1011/A1011M, COMMERCIAL STEEL (CS) TYPE B FOR EACH.

2. TYPICAL DOOR FACE SHEETS: FLUSH. 3. GLAZED LIGHTS: NON-REMOVABLE STOPS ON NON-SECURE SIDE; SIZES AND CONFIGURATIONS AS INDICATED ON DRAWINGS. STYLE: MANUFACTURERS STANDARD. 4. HARDWARE PREPARATIONS, SELECTIONS AND LOCATIONS: COMPLY WITH NAAMM HMMA 830 AND NAAMM HMMA 831 OR BHMA A156.115 AND ANSI/SDI A250.8 (SDI-100) IN ACCORDANCE WITH SPECIFIED REQUIREMENTS. 5. ZINC COATING FOR TYPICAL INTERIOR AND/OR EXTERIOR LOCATIONS: PROVIDE METAL COMPONENTS ZINC-COATED (GALVANIZED) AND/OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS IN ACCORDANCE WITH ASTM A653/A653M, WITH MANUFACTURER'S STANDARD COATING THICKNESS, UNLESS NOTED

6. HOLLOW METAL PANELS: SAME CONSTRUCTION, PERFORMANCE, AND FINISH AS DOORS 7. COMBINED REQUIREMENTS: IF A PARTICULAR DOOR AND FRAME UNIT IS INDICATED TO COMPLY WITH MORE THAN ONE TYPE OF REQUIREMENT, COMPLY WITH THE SPECIFIED REQUIREMENTS FOR EACH TYPE; FOR INSTANCE, AN EXTERIOR DOOR THAT IS ALSO INDICATED AS BEING SOUND-RATED MUST COMPLY WITH THE REQUIREMENTS SPECIFIED FOR EXTERIOR DOORS AND FOR SOUND-RATED DOORS; WHERE TWO REQUIREMENTS CONFLICT, COMPLY WITH THE MOST STRINGENT.

1. EXTERIOR DOORS: THERMALLY INSULATED. A. ASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100).

OTHERWISE FOR SPECIFIC HOLLOW METAL DOORS AND FRAMES.

B. LEVEL 1 - STANDARD-DUTY C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4. D. MODEL 1 - FULL FLUSH

E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM. F. DOOR CORE MATERIAL: MANUFACTURERS STANDARD CORE MATERIAL/CONSTRUCTION AND IN COMPLIANCE WITH REQUIREMENTS. G. DOOR THICKNESS: 1-3/4 INCH, NOMINAL.

H. TOP CLOSURES FOR OUTSWINGING DOORS: FLUSH WITH TOP OF FACES AND EDGES. I. WEATHERSTRIPPING: REFER TO SECTION 08 7100.

J. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

2. INTERIOR DOORS, NON-FIRE RATED: A. BASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100). B. LEVEL 1 - STANDARD-DUTY C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4. D. MODEL 1 - FULL FLUSH.

E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM. F. DOOR THICKNESS: 1-3/4 INCH, NOMINAL. G. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

A. BASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100).

B. LEVEL 1 - STANDARD-DUTY C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4. D. MODEL 1 - FULL FLUSH. E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM.

F. FIRE RATING: AS INDICATED ON DOOR SCHEDULE, TESTED IN ACCORDANCE WITH UL 10C AND NFPA 252 ("POSITIVE PRESSURE FIRE TESTS"). G. TEMPERATURE-RISE RATING (TRR) ACROSS DOOR THICKNESS: IN ACCORDANCE WITH LOCAL BUILDING CODE AND AUTHORITIES HAVING JURISDICTION. H. PROVIDE UNITS LISTED AND LABELED BY UL (DIR) OR ITS (DIR). ATTACH FIRE RATING LABEL TO EACH FIRE

I. SMOKE AND DRAFT CONTROL DOORS (INDICATED WITH LETTER "S" ON DRAWINGS AND/OR DOOR SCHEDULE): SELF-CLOSING OR AUTOMATIC CLOSING DOORS IN ACCORDANCE WITH NFPA 80 AND NFPA 105, WITH FIRE-RESISTANCE-RATED WALL CONSTRUCTION RATED THE SAME OR GREATER THAN THE FIRE-RATED DOORS, AND 1.MAXIMUM AIR LEAKAGE: 3.0 CFM/SQ FT OF DOOR OPENING AT 0.10 INCH W.G. PRESSURE, WHEN TESTED IN ACCORDANCE WITH UL 1784 AT BOTH AMBIENT AND ELEVATED TEMPERATURES

2. GASKETING: PROVIDE GASKETING OR EDGE SEALING AS NECESSARY TO ACHIEVE LEAKAGE LIMIT. 3. LABEL: INCLUDE THE "S" LABEL ON FIRE-RATING LABEL OF DOOR. J. DOOR CORE MATERIAL: MANUFACTURERS STANDARD CORE MATERIAL/CONSTRUCTION IN COMPLIANCE WITH K. DOOR THICKNESS: 1-3/4 INCH, NOMINAL. L. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

F. <u>HOLLOW METAL FRAMES:</u>
1.COMPLY WITH STANDARDS AND/OR CUSTOM GUIDELINES AS INDICATED FOR CORRESPONDING DOOR IN ACCORDANCE WITH APPLICABLE DOOR FRAME REQUIREMENTS. 2. INTERIOR DOOR FRAMES, NON-FIRE RATED: FACE WELDED TYPE. FRAME FINISH: FACTORY FINISHED.

A. FULL LENGTH STOPS B. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM. 3. DOOR FRAMES, FIRE-RATED: FACE WELDED TYPE. FIRE RATING: SAME AS DOOR, LABELED.

A. FULL LENGTH STOPS B. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM. 4. SOUND-RATED DOOR FRAMES: FULL PROFILE/CONTINUOUSLY WELDED TYPE.

A. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM. 5. FRAMES FOR WOOD DOORS: COMPLY WITH FRAME REQUIREMENTS IN ACCORDANCE WITH CORRESPONDING 6. BORROWED LITES GLAZING FRAMES: CONSTRUCTION AND FACE DIMENSIONS TO MATCH DOOR FRAMES, AND AS INDICATED ON DRAWINGS. 7. FRAMES IN MASONRY WALLS: SIZE TO SUIT MASONRY COURSING WITH HEAD MEMBER 4 INCH HIGH TO FILL OPENING WITHOUT CUTTING MASONRY UNITS. 8. FRAMES WIDER THAN 48 INCHES: REINFORCE WITH STEEL CHANNEL FITTED TIGHTLY INTO FRAME HEAD, FLUSH

1.PRIMER: RUST-INHIBITING, COMPLYING WITH ANSI/SDI A250.10, DOOR MANUFACTURER'S STANDARD.

1. GLAZING: AS INDICATED IN DRAWINGS OR AS SPECIFIED.

2. VENEER MATCHING: BOOK AND RUNNING

FITTED IN FRAMES WITH UNIFORM CLEARANCES.

2. SET IN TWO PIECE W.P. SPLIT JAMB FRAMES WITH 1X4 WOOD CASING.

2. REMOVABLE STOPS: FORMED SHEET STEEL, SHAPE AS INDICATED ON DRAWINGS, MITERED OR BUTTED CORNERS; PREPARED FOR COUNTERSINK STYLE TAMPER PROOF SCREWS. 3. SILENCERS: RESILIENT RUBBER, FITTED INTO DRILLED HOLE; PROVIDE THREE ON STRIKE SIDE OF SINGLE DOOR, THREE ON CENTER MULLION OF PAIRS, AND TWO ON HEAD OF PAIRS WITHOUT CENTER MULLIONS. 4. TEMPORARY FRAME SPREADERS: PROVIDE FOR FACTORY- OR SHOP-ASSEMBLED FRAMES.

1.INSTALL DOORS AND FRAMES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RELATED REQUIREMENTS OF SPECIFIED DOOR AND FRAME STANDARDS OR CUSTOM GUIDELINES INDICATED. 2. INSTALL PREFINISHED FRAMES AFTER PAINTING AND WALL FINISHES ARE COMPLETE. 3. INSTALL FIRE RATED UNITS IN ACCORDANCE WITH NFPA 80. 4. COORDINATE FRAME ANCHOR PLACEMENT WITH WALL CONSTRUCTION.

A. <u>SUBMITTALS</u>: PRODUCT DATA, PREFINISHED DOOR SKIN SAMPLES, AND DOOR SCHEDULE INDICATING DOOR AND FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

B. <u>BASIS OF DESIGN:</u> LINCOLN PARK, MASONITE, LE CHATEAU COLLECTION. HOLLOW CORE DOORS OR APPROVED C. <u>DOORS</u>: 1-3/8" THICK PREHING. SIZES, SPECIES, AND DESIGNS AS INDICATED COMPLYING WITH WDMA I.S.1-A . GRADE: PREMIUM

3. PAIR MATCHING AND SET MATCHING 4. CONSTRUCTION: A.INTERIOR VENEER: FIVE OR SEVEN PLY, STRUCTURAL COMPOSITE LUMBER CORES. 5. SIZES AS INDICATED IN DRAWINGS

1. FACTORY FIT DOORS TO SUIT FRAME OPENINGS TO COMPLY WITH REFERENCED STANDARD. COMPLY WITH NFPA 80 FOR FIRE-RESISTANCE RATED DOORS. 2. FACTORY MACHINE DOORS FOR HARDWARE THAT IS NOT SURFACE APPLIED. 3. CUT AND TRIM OPENINGS TO COMPLY WITH REFERENCED STANDARDS.

4. LITE KITS: MATCHING WOOD STOPS 5. FACTORY FINISH DOORS FOR TRANSPARENT FINISH WITH STAIN AND MANUFACTURER'S STANDARD FINISH COMPARABLE TO AWI, SYSTEM TR-4, CONVERSION VARNISH OR AWI SYSTEM TR-6, CATALYZED POLYURETHANE.

1. COMPLY WITH WDMA'S "HOW TO STORE, HANDLE, FINISH, INSTALL, AND MAINTAIN WOOD DOORS" ALIGNED AND

08 1613 - FIBERGLASS DOORS FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

B, DOORS: BASIS OF DESIGN: JELD-WEN-FIBERGLASS DOOR SERIES.LOW- E GLAZING. PROVIDE SIZES, AND DESIGNS AS INDICATED IN ELEVATIONS

08 3100 - ACCESS DOORS AND PANELS A. <u>SUBMITTALS</u>: PRODUCT DATA.

B. PRODUCTS: PRIME-PAINTED FLUSH, UNINSULATED ACCESS DOORS FOR WALLS AND CEILINGS WITH TRIMLESS FRAME AND SCREWDRIVER OPERATED LOCK FLUSH WITH FINISHED SURFACE. FIRE-RATED, SELF-LATCHING. AUTOMATIC CLOSING AT FIRE-RATED WALLS OR CEILINGS.

C. <u>INSTALLATION</u>: INSTALL FLUSH TO FINISHED DRYWALL SURFACE WITH FRAME TAPED AND SANDED

A. SUBMITTALS: PRODUCT DATA, AND COLOR SAMPLES. DOOR SCHEDULE INDICATING DOOR AND FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

C.H.I OVERHEAD DOORS. 5602 SHORELINE, CARRIAGE HOUSE DESIC TOP, NUMBER #32, COLOR WHITE. 2. WIND LOAD RATING: 115 MPH PER OCAL CODE REQUIREMEN 3. WINDOW DESIGN, STOCKTON, GLASS- FAUX.

1. DOORS SHALL BE COMPLETE WITH ALL HARP' OPENER OR APPROVED EQUAL. OPERAT . MOUNTED MULTI- FUNCTION CONTROL PANEL AND TWO HAND. HELD ROLLING CODF LY AND INSTALL DOOR JAMB KEYPAD. GARAGE DOOR JAMBS SHALL HAVE PHOTO? EACH GARAGE DOOR, PROVIDE TIMERS FOR DOORS TO AUTOMATICALLY CLOSE IF LEFT JÉD PERIOD OF TIME.

1. INSTALL DOOR AS WITH MANUFACTURER'S INSTRUCTIONS. 2 ANCHOR TO ADJACE ✓ WITHOUT DISTORTION OR STRESS R THE SUSPENDED FROM STRUCTURE. SECURE TRACKS TO STRUCTURAL MEMBERS 3. SECURELY BRACE DOO! 4. FIT AND ALIGN DOOR ASSEMBLY INCLUDING HARDWARE, LEVEL AND PLUMB. TO PROVIDE SMOOTH OPERATION.

5. POSITION HEAD AND JAMB WEATHERSTRIPPING TO CONTACT DOOR SECTIONS WHEN CLOSED; SECURE IN

POSITION. 6. MAKE WIRING CONNECTIONS BETWEEN POWER SUPPLY AND OPERATOR AND BETWEEN OPERATOR AND CONTROLS. 7. INSTALL ELECTRIC GARAGE DOOR OPENERS IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.

INSTALLATION SHALL INCLUDE GARAGE DOOR SILENCER ISOLATION PADS.

08 4313 - ALUMINUM FRAMED STOREFRONTS

A. <u>SUBMITTALS</u>: PRODUCT DATA: PROVIDE COMPONENT DIMENSIONS, DESCRIBE COMPONENTS WITHIN ASSEMBLY, ANCHORAGE AND FASTENERS, GLASS AND INFILL, DOOR HARDWARE, INTERNAL DRAINAGE DETAILS. 1. HARDWARE SCHEDULE: COMPLETE ITEMIZATION OF EACH ITEM OF HARDWARE TO BE PROVIDED FOR EACH DOOR, CROSS-REFERENCED TO DOOR IDENTIFICATION NUMBERS IN CONTRACT DOCUMENTS. 2. SHOP DRAWINGS: INDICATE SYSTEM DIMENSIONS, FRAMED OPENING REQUIREMENTS AND TOLERANCES. AFFECTED RELATED WORK, EXPANSION AND CONTRACTION JOINT LOCATION AND DETAILS, AND FIELD WELDING

B. WARRANTY: WARRANTY: SUBMIT MANUFACTURER WARRANTY AND ENSURE FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER. 1. CORRECT DEFECTIVE WORK WITHIN A FIVE YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION. 2. PROVIDE FIVE YEAR MANUFACTURER WARRANTY AGAINST FAILURE OF GLASS SEAL ON INSULATING GLASS UNITS, INCLUDING INTERPANE DUSTING OR MISTING. INCLUDE PROVISION FOR REPLACEMENT OF FAILED UNITS. 3. PROVIDE FIVE YEAR MANUFACTURER WARRANTY AGAINST EXCESSIVE DEGRADATION OF EXTERIOR FINISH.

C. <u>BASIS OF DESIGN</u>: KAWNEER_ ENCORE-MEDIUM STILE , ANODIZED. VERIFY FINISH WITH OWNER. 1. OTHER MANUFACTURERS: PROVIDE EITHER THE PRODUCT IDENTIFIED AS "BASIS OF DESIGN" OR AN EQUIVALENT

INCLUDE PROVISION FOR REPLACEMENT OF UNITS WITH EXCESSIVE FADING, CHALKING, OR FLAKING.

1. ALUMINUM-FRAMED STOREFRONT: FACTORY FABRICATED, FACTORY FINISHED ALUMINUM FRAMING MEMBERS WITH INFILL, AND RELATED FLASHINGS, ANCHORAGE AND ATTACHMENT DEVICES. 2. ALUMINUM FRAMING MEMBERS: TUBULAR ALUMINUM SECTIONS[<>], DRAINAGE HOLES AND INTERNAL WEEP

DRAINAGE SYSTEM 3. EXTRUDED ALUMINUM: ASTM B221 (ASTM B221M). 4. STRUCTURAL STEEL SECTIONS: ASTM A36/A36M; SHOP PRIMED. 5. FASTENERS: STAINLESS STEEL

6. CONCEALED FLASHINGS: STAINLESS STEEL, 26 GAGE, 0.0187 INCH MINIMUM THICKNESS. 7. SEALANT FOR SETTING THRESHOLDS: NON-CURING BUTYL TYPE. 8. GLAZING GASKETS: TYPE TO SUIT APPLICATION TO ACHIEVE WEATHER, MOISTURE, AND AIR INFILTRATION REQUIREMENTS.

1. CLASS I COLOR ANODIZED FINISH: AAMA 611 AA-M12C22A44 ELECTROLYTICALLY DEPOSITED COLORED ANODIC COATING NOT LESS THAN 0.7 MILS THICK. COLOR AS SELECTED BY OWNER & ARCHITECT.

1. FOR EACH DOOR, INCLUDE WEATHERSTRIPPING, SILL SWEEP STRIP, AND THRESHOLD. 2. OTHER DOOR HARDWARE: STOREFRONT MANUFACTURER'S STANDARD TYPE TO SUIT APPLICATION. A. FINISH ON HAND-CONTACTED ITEMS: POLISHED CHROME. B. FOR EACH DOOR, INCLUDE BUTT HINGES, PIVOTS, PUSH HANDLE, PULL HANDLE, EXIT DEVICE, NARROW STILE HANDLE LATCH, AND CLOSER. COORDINATE ADA PUSH BUTTON LOCATION.

. VERIFY DIMENSIONS, TOLERANCES, AND METHOD OF ATTACHMENT WITH OTHER WORK. 2. VERIFY THAT WALL OPENINGS AND ADJOINING AIR AND VAPOR SEAL MATERIALS ARE READY TO RECEIVE WORK OF THIS SECTION. 3. INSTALL WALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

AND OTHER IRREGULARITIES. 5. ALIGN ASSEMBLY PLUMB AND LEVEL, FREE OF WARP OR TWIST. MAINTAIN ASSEMBLY DIMENSIONAL TOLERANCES. ALIGNING WITH ADJACENT WORK. 6. PROVIDE THERMAL ISOLATION WHERE COMPONENTS PENETRATE OR DISRUPT BUILDING INSULATION. 7. INSTALL SILL FLASHINGS. TURN UP ENDS AND EDGES; SEAL TO ADJACENT WORK TO FORM WATER TIGHT DAM.

4. ATTACH TO STRUCTURE TO PERMIT SUFFICIENT ADJUSTMENT TO ACCOMMODATE CONSTRUCTION TOLERANCES

HEADS TO SILL FLASHING. 9. PACK FIBROUS INSULATION IN SHIM SPACES AT PERIMETER OF ASSEMBLY TO MAINTAIN CONTINUITY OF THERMAL 10. SET THRESHOLDS IN BED OF SEALANT AND SECURE.

8. WHERE FASTENERS PENETRATE SILL FLASHINGS, MAKE WATERTIGHT BY SEATING AND SEALING FASTENER

11. INSTALL HARDWARE USING TEMPLATES PROVIDED. ADJUST OPERATING HARDWARE AND SASH FOR SMOOTH 12. WASH DOWN SURFACES WITH A SOLUTION OF MILD DETERGENT IN WARM WATER, APPLIED WITH SOFT, CLEAN WIPING CLOTHS, AND TAKE CARE TO REMOVE DIRT FROM CORNERS AND TO WIPE SURFACES CLEAN. 13. PROTECT INSTALLED PRODUCTS FROM DAMAGE UNTIL DATE OF SUBSTANTIAL COMPLETION.

08 5313 - VINYL WINDOWS A. SUBMITTALS: THE CONTRACTOR SHALL PREPARE CT FOR APPROVAL, COMPLETE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A SHOP DRAWING FOR A SHOP ALL NOT PROCEED WITH FABRICATION AND DELIVERY PRIOR TO RECEIVING SUCH APP SIGN: MI 3500 VINYL SINGLE- HUNG WINDOWS. B. <u>BASIS OF DESIGN</u>: VINYL CASEMEN^T LUMB, LEVEL AND IN STRICT ACCORDANCE WITH THE

A. SUBMITTALS: PRODUCT DATA ON INSULATING GLASS UNIT, GLAZING UNIT, AND [SPANDREL] GLAZING TYPES: PROVIDE STRUCTURAL, PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS, SIZE LIMITATIONS, SPECIAL HANDLING AND INSTALLATION REQUIREMENTS. 1. PRODUCT DATA ON GLAZING COMPOUNDS AND ACCESSORIES: PROVIDE CHEMICAL, FUNCTIONAL, AND ENVIRONMENTAL CHARACTERISTICS, LIMITATIONS, SPECIAL APPLICATION REQUIREMENTS, AND IDENTIFY AVAILABLE 2. SAMPLES: SUBMIT TWO SAMPLES [12] BY [12] INCH IN SIZE OF GLASS UNITS.

B. WARRANTY: WARRANTY DOCUMENTATION: SUBMIT MANUFACTURER WARRANTY AND ENSURE THAT FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER. 1. INSULATING GLASS UNITS: PROVIDE A FIVE (5) YEAR MANUFACTURER WARRANTY TO INCLUDE COVERAGE FOR SEAL FAILURE, INTERPANE DUSTING OR MISTING, INCLUDING PROVIDING PRODUCTS TO REPLACE FAILED UNITS

C. <u>STOREFRONT GLAZING BASIS OF DESIGN:</u> GUARDIAN -SUNGUARD _ SNX 62/27 _COATED GLASS, CLEAR. WITH .24 U-

D. <u>QUALITY STANDARDS:</u>
1. SAFETY GLASS: CATEGORY II MATERIALS COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR 1201 AND ANSI Z97.1. 2. GLAZING PUBLICATIONS: WHERE APPLICABLE. COMPLY WITH WITH THE PUBLISHED RECOMMENDATIONS OF THE FOLLOWING: A. GANA PUBLICATIONS: "GLAZING MANUAL" AND "LAMINATED GLASS DESIGN GUIDE". B. SIGMA PUBLICATIONS: SIGMA TM-3000, "VERTICAL GLAZING GUIDELINES".

1. FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY q3 2. HEAT-TREATED FLOAT GLASS: ASTM C 1048, TYPE I, QUALITY q3, HEAT STRENGTHENED OR FULLY TEMPERED WHERE INDICATED AND WHERE REQUIRED BY CODE OR INSTALLATION

3. MIRROR GLASS: ASTM C 1036, TYPE I, CLASS 1, QUALITY q1, SILVER COATED PER FS DDM411C, 6.0mm THICK, WITH EDGES FLAT POLISHED. E EARRICATED OF ASS PRODUCTS: SEALED INSULATING-GLASS UNITS: PREASSEMBLED UNITS COMPLYING WITH ASTM F 774 FOR

CLASS CBA UNITS WITH TWO SHEETS OF GLASS SEPARATED BY A 1/2-INCH DEHYDRATED SPACE

FILLED WITH AIR. EXTERIOR GLASS COLOR TO MATCH EXISTING. INTERIOR GLASS SHALL BE

. COMPLY WITH COMBINED RECOMMENDATIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE CONTAINED IN GANA'S "GLAZING MANUAL". 2. SET GLASS LITES IN EACH SERIES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR CHARACTERISTICS. 3. AFTER GLASS INSTALLATION IS COMPLETE, REMOVE GLAZING MATERIALS AND LABELS FROM FINISHED SURFACES, AND THOROUGHLY CLEAN GLASS AND ADJACENT FRAMING AND

SURFACES. REPEAT AS NECESSARY PRIOR TO FINAL WALK-THROUGH.

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REVISION DATES:

GENERAL PROJECT

SUBSTRATES ON WHICH MIRRORS ARE INSTALLED.

B. QUALITY ASSURANCE: VINYL CASEMENT WINDOWS- BASIS OF DESIGN: MI 3500 VINYL SINGLE- HUNG WINDOWS. 1. GLAZING PUBLICATIONS: COMPLY WITH GANA'S "GLAZING MANUAL" AND "MIRRORS, HANDLE WITH EXTREME CARE: TIPS FOR THE PROFESSIONAL ON THE CARE AND HANDLING OF MIRRORS." 2.SAFETY GLAZING PRODUCTS: FOR MIRRORS, PROVIDE PRODUCTS COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR 1201 FOR CATEGORY II MATERIALS. 3. PRECONSTRUCTION MIRROR MASTIC COMPATIBILITY TEST: SUBMIT MIRROR MASTIC PRODUCTS TO MIRROR MANUFACTURER FOR TESTING TO DETERMINE COMPATIBILITY OF MASTIC WITH MIRROR BACKING AND

C. WARRANTY: SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MIRROR MANUFACTURER GREES TO REPLACE MIRRORS THAT DETERIORATE WITHIN SPECIFIED WARRANTY PERIOD. DETERIORATION OF MIRRORS IS DEFINED AS DEFECTS DEVELOPED FROM NORMAL USE THAT ARE NOT ATTRIBUTED TO MIRROR BREAKAGE OR TO MAINTAINING AND CLEANING MIRRORS CONTRARY TO MANUFACTURER'S WRITTEN INSTRUCTIONS. DEFECTS INCLUDE DISCOLORATION, BLACK SPOTS, AND CLOUDING OF THE SILVER FILM. 1. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

D. <u>BASIS OF DESIGN</u>: SILVERED FLAT GLASS MIRRORS 1. GLASS MIRRORS, GENERAL: ASTM C 1503; MANUFACTURED USING COPPER FREE, LOW LEAD MIRROR COATING 2. CLEAR GLASS: MIRROR GLAZING QUALITY; ULTRACLEAR (LOW IRON) FLOAT GLASS WITH A MINIMUM 91 PERCENT VISIBLE LIGHT TRANSMISSION. NOMINAL THICKNESS: 1/4 INCH. 3. TEMPERED CLEAR GLASS: MIRROR GLAZING QUALITY, FOR BLEMISH REQUIREMENTS; AND COMPLY WITH ASTM C 1048 FOR KIND FT, CONDITION A, TEMPERED FLOAT GLASS BEFORE SILVER COATING IS APPLIED. NOMINAL THICKNESS: 1/4 INCH.

E. <u>MIRROR HARDWARE:</u> TOP AND BOTTOM ALUMINUM J CHANNELS: ALUMINUM EXTRUSIONS WITH A RETURN DEEP ENOUGH TO PRODUCE A GLAZING CHANNEL TO ACCOMMODATE MIRRORS OF THICKNESS INDICATED AND IN LENGTHS REQUIRED TO COVER BOTTOM AND TOP EDGES OF EACH MIRROR IN A SINGLE PIECE. FINISH: CLEAR BRIGHT ANODIZED.

1. TOP AND BOTTOM MIRROR MOUNTING CLIPS: #277 MIRROR CLIPS AS MANUFACTURED BY KNAPE & VOGT OR 2. FASTENERS: FABRICATED OF SAME BASIC METAL AND ALLOY AS FASTENED METAL AND MATCHING IT IN FINISHED COLOR AND TEXTURE WHERE FASTENERS ARE EXPOSED.

F. INSTALLATION: GENERAL: EXAMINE SUBSTRATES, OVER WHICH MIRRORS ARE TO BE MOUNTED, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH INSTALLATION TOLERANCES, SUBSTRATE PREPARATION, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK A. VERIFY COMPATIBILITY WITH AND SUITABILITY OF SUBSTRATES, INCLUDING COMPATIBILITY OF

MIRROR MASTIC WITH EXISTING FINISHES OR PRIMERS. B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND

1.INSTALL MIRRORS TO COMPLY WITH MIRROR MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH REFERENCED GANA PUBLICATIONS. MOUNT MIRRORS ACCURATELY IN PLACE IN A MANNER THAT AVOIDS DISTORTING 2. INSTALL WALL MOUNTED ANNEALED GLASS MIRRORS IN THE APARTMENT UNITS WITH MIRROR CLIPS. ATTACH

MIRROR HARDWARE SECURELY TO MOUNTING SURFACES WITH MECHANICAL FASTENERS INSTALLED WITH

3. ANCHORS OR INSERTS AS APPLICABLE. INSTALL FASTENERS SO HEADS DO NOT IMPOSE POINT LOADS ON BACKS OF MIRRORS. 4. PROTECT MIRRORS FROM BREAKAGE AND CONTAMINATING SUBSTANCES RESULTING FROM CONSTRUCTION OPERATIONS 5. MAINTAIN ENVIRONMENTAL CONDITIONS THAT WILL PREVENT MIRRORS FROM BEING EXPOSED TO MOISTURE FROM CONDENSATION OR OTHER SOURCES FOR CONTINUOUS PERIODS OF TIME. 6. WASH EXPOSED SURFACE OF MIRRORS NOT MORE THAN FOUR DAYS BEFORE DATE SCHEDULED FOR INSPECTIONS THAT ESTABLISH DATE OF SUBSTANTIAL COMPLETION. WASH MIRRORS AS RECOMMENDED IN

WRITING BY MIRROR MANUFACTURER.

A. <u>STEEL FRAMING MEMBERS:</u> COMPLY WITH ASTM C754 IN DEPTHS AND GAGES AS INDICATED IN THE DNSTRUCTION DRAWINGS AND AS FOLLOWS: 1. STEEL SHEET COMPONENTS: COMPLY WITH ASTM C645 WITH MANUFACTURER'S STANDARD CORROSION-RESISTANT ZINC COATING. 2. TIE WIRE: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER. .0625" DIAMETER OR DOUBLE STRAND OF .0475" DIAMETER WIRE. 3. WIRE HANGERS: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER. .0162" DIAMETER.

B. PANEL PRODUCTS:PROVIDE IN THICKNESS AND TYPE INDICATED IN THE CONSTRUCTION DRAWINGS IN MAXIMUM LENGTHS AVAILABLE TO MINIMIZE END-TO-END BUTT JOINTS AND AS FOLLOWS: 1. GYPSUM WALLBOARD: ASTM C 36, TYPE 'X' WITH TAPERED EDGES, SAG-RESISTANT TYPE FOR 2. WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 630, TYPE 'X' ON ALL TOILET ROOM AND SHOWER ROOM WALLS, BEHIND ALL PLUMBING FIXTURES, AND AS INDICATED.

1. TRIM: ASTM 1047, FORMED FROM GALVANIZED OR ALUMINUM COATED STEEL SHEET, ROLLED a. OUTSIDE CORNERS: PROVIDE CORNER BEAD UNLESS NOTED OTHERWISE b. EXPOSED PANEL EDGES: PROVIDE LC-BEAD (J-BEAD) UNLESS NOTED OTHERWISE; USE

TEAR-AWAY BEAD WHERE GYP. BD. MEETS WINDOW FRAMES OR CEILING GRID. c. CONTROL JOINTS: PROVIDE WHERE INDICATED OR APPROXIMATELY 30'-0" MAX. CONTACT ARCHITECT FOR LOCATIONS IF NOT INDICATED. 2. SOUND-ATTENUATION BLANKETS: ASTM C 665, TYPE I (UNFACED) 3. ACOUSTICAL SEALANT: COMPLY WITH ASTM C 834, NONSAG, PAINTABLE, NONSTAINING LATEX.

FRAMING: COMPLY WITH ASTM C 754 AND ASTM C 840 AND WITH U.S. GYPSUM'S "GYPSUM"

CONSTRUCTION HANDBOOK" ISOLATE FRAMING FROM BUILDING STRUCTURE TO PREVENT TRANSFER OF LOADING IMPOSED BY STRUCTURAL MOVEMENT AND PROVIDE BRACING AS NECESSARY FOR PROPER SUPPORT WHETHER INDICATED OR NOT. 2. GYPSUM PANELS AND FINISH: COMPLY WITH ASTM C 840 AND GA-216. ISOLATE GYPSUM BOARD ASSEMBLIES FROM ABUTTING STRUCTURAL AND MASONRY WORK AND FINISH AS FOLLOWS: A. LEVEL 1 (EMBED TAPE AT JOINTS): AT CONCEALED AREAS UNLESS A HIGHER LEVEL IS INDICATED OR REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLY. B. LEVEL 2 (EMBED TAPE AND APPLY SEPARATE FIRST COAT OF JOINT COMPOUND TO TAPE. FASTENERS, AND TRIM FLANGES AND SAND SMOOTH AFTER EACH COAT): AT SUBSTRATES BEHIND TILE. C. LEVEL 4 (EMBED TAPE AND APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES AND SAND SMOOTH AFTER EACH COAT): AT ALL WALLS RECEIVING FLAT, EGGSHELL, OR SATIN SHEEN PAINT OR D. LEVEL 5 (EMBÉD TAPE, APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES, AND APPLY THIN SKIM COAT OF JOINT COMPOUND OVER ENTIRE SURFACE AND SAND SMOOTH AFTER EACH COAT): AT ALL WALLS RECEIVING SEMI-GLOSS OR GLOSS SHEEN PAINT, AND ALL GYPSUM BOARD

09 2216 - NON-STRUCTURAL METAL FRAMING

A. <u>SUBMITTALS</u>: SHOP DRAWINGS: INDICATE PREFABRICATED WORK, COMPONENT DETAILS, STUD LAYOUT, FRAMED OPENINGS, ANCHORAGE TO STRUCTURE, ACOUSTIC DETAILS, TYPE AND LOCATION OF FASTENERS, ACCESSORIES, AND ITEMS OF OTHER RELATED WORK. DESCRIBE METHOD FOR SECURING STUDS TO TRACKS, SPLICING, AND FOR BLOCKING AND REINFORCEMENT OF FRAMING CONNECTIONS. 1. PRODUCT DATA: PROVIDE MANUFACTURER'S DATA ON PARTITION HEAD TO STRUCTURE CONNECTORS, SHOWING COMPLIANCE WITH REQUIREMENTS. 2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE SPECIAL PROCEDURES AND PERIMETER CONDITIONS REQUIRING SPECIAL ATTENTION.

1. CLARKDIETRICH BUILDING SYSTEMS: WWW.CLARKDIETRICH.COM. 2. CEMCO: WWW.CEMCOSTEEL.COM. 3. JAIMES INDUSTRIES: WWW.JAIMESIND.COM 4. STEEL CONSTRUCTION SYSTEMS: WWW.STEELCONSYSTEMS.COM

1. FIRE RATED ASSEMBLIES: COMPLY WITH APPLICABLE CODE AND AS FOLLOWS: A. TOP OF FIRE RATED PARTITIONS: LISTED ASSEMBLY BY UL, NO. [ON DRAWINGS]; [1 AND 2] HOUR RATING. B. FIRE RATED SHAFT WALL REQUIREMENTS: LISTED ASSEMBLY BY UL, NO. [ON DRAWINGS]; [1] HOUR RATING.

2. NON-LOADBEARING FRAMING SYSTEM COMPONENTS: ASTM C645; GALVANIZED SHEET STEEL, OF SIZE AND PROPERTIES NECESSARY TO COMPLY WITH ASTM C754 FOR THE SPACING INDICATED, WITH MAXIMUM DEFLECTION OF WALL FRAMING OF L/240 AT 5 PSF. A. TRACKS AND RUNNERS: SAME MATERIAL AND THICKNESS AS STUDS, BENT LEG RETAINER NOTCHED TO RECEIVE STUDS WITH PROVISION FOR CRIMP LOCKING TO STUD. STUDS: C SHAPED WITH FLAT OR FORMED WEBS WITH

KNURLED FACES. B. CEILING CHANNELS: C SHAPED. C. FURRING: HAT-SHAPED SECTIONS, MINIMUM DEPTH OF 7/8 INCH. D. CONTRACTOR TO PROVIDE BRACING AS REQUIRED TO COMPLETE SYSTEM.

F. WHERE INDICATED IN DRAWINGS, SHAFT WALL STUDS AND ACCESSORIES: ASTM C645; GALVANIZED SHEET STEEL, OF SIZE AND PROPERTIES NECESSARY TO COMPLY WITH ASTM C754 AND SPECIFIED PERFORMANCE G. CEILING HANGERS: TYPE AND SIZE AS SPECIFIED IN ASTM C754 FOR SPACING REQUIRED.

H. PARTITION HEAD TO STRUCTURE CONNECTIONS: PROVIDE MECHANICAL ANCHORAGE DEVICES THAT ACCOMMODATE DEFLECTION USING SLOTTED HOLES, SCREWS AND ANTI-FRICTION BUSHINGS, PREVENTING ROTATION OF STUDS WHILE MAINTAINING STRUCTURAL PERFORMANCE OF PARTITION. I. FIT, REINFORCE, AND BRACE FRAMING MEMBERS TO SUIT DESIGN REQUIREMENTS.

1.COMPLY WITH REQUIREMENTS OF ASTM C754. 2. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK.

3. VERIFY THAT ROUGH-IN UTILITIES ARE IN PROPER LOCATION. 4.EXTEND PARTITION FRAMING TO STRUCTURE WHERE INDICATED AND TO CEILING IN OTHER LOCATIONS. 5. PARTITIONS TERMINATING AT CEILING: ATTACH CEILING RUNNER SECURELY TO CEILING TRACK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

6.PARTITIONS TERMINATING AT STRUCTURE: ATTACH TOP RUNNER TO STRUCTURE. MAINTAIN CLEARANCE BETWEEN TOP OF STUDS AND STRUCTURE, AND CONNECT STUDS TO TRACK USING SPECIFIED MECHANICAL DEVICES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS; VERIFY FREE MOVEMENT OF TOP OF STUD CONNECTIONS: DO NOT LEAVE STUDS UNATTACHED TO TRACK. 7.FIT RUNNERS UNDER AND ABOVE OPENINGS; SECURE INTERMEDIATE STUDS TO SAME SPACING AS WALL STUDS. 8. ALIGN STUD WEB OPENINGS HORIZONTALLY.

9. SECURE STUDS TO TRACKS USING CRIMPING METHOD. DO NOT WELD. 10. STUD SPLICING IS NOT PERMISSIBLE. 11. FABRICATE CORNERS USING A MINIMUM OF THREE STUDS.

12. DOUBLE STUD AT WALL OPENINGS, DOOR AND WINDOW JAMBS, NOT MORE THAN 2 INCHES FROM EACH SIDE OF

13. BRACE STUD FRAMING SYSTEM RIGID. 14. COORDINATE ERECTION OF STUDS WITH REQUIREMENTS OF DOOR FRAMES; INSTALL SUPPORTS AND 15. COORDINATE INSTALLATION OF BUCKS, ANCHORS, AND BLOCKING WITH ELECTRICAL, MECHANICAL, AND OTHER WORK TO BE PLACED WITHIN OR BEHIND STUD FRAMING. 16. BLOCKING: USE WOOD BLOCKING SECURED TO STUDS. PROVIDE BLOCKING FOR SUPPORT OF PLUMBING

FIXTURES, WALL CABINETS, TOILET ACCESSORIES, HARDWARE, AND OPENING FRAMES.

09 6500 - RESILIENT FLOORING AND WALL BASE A. SUBMITTALS: PRODUCT DATA AND (1) SAMPLES OF EACH TILE AND BASE SPECIFIED FOR VERIFICATION PURPOSES.

1. METROFLOR, KONECTO PLANK, PROJECT 54012 OR APPROVED EQUAL.

C. <u>ATTIC STOCK</u>: FURNISH ONE (1) BOX FOR EACH 50 BOXES OR FRACTION THEREOF OF EACH TYPE OF FLOOR TILE AND 20' OF EACH COLOR AND TYPE OF WALL BASE PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

DOCUMENTS COMPLYING WITH THE FOLLOWING: E. RESILIENT WALL BASE: ASTM TYPE TS (RUBBER. VULCANIZED THERMOSET) 1/8" THICK. FURNISHED IN COILS IN STYLES AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS WITH JOB-FORMED INSIDE

D. <u>RESILIENT TILE PRODUCTS:</u> PROVIDE FLOOR TILE IN TYPE AND SIZES INDICATED IN THE CONSTRUCTION

F. INSTALLATION ACCESSORIES 1. LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED. PORTLAND CEMENT. OR BLENDED HYDRAULIC CEMENT-BASED FORMULATION PROVIDED OR APPROVED BY FLOORING MANUFACTURER TO SUIT RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS. 2. ADHESIVES: WATER-RESISTANT TYPE RECOMMENDED BY MANUFACTURER TO SUIT RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS. SPREAD ONLY ENOUGH ADHESIVE TO PERMIT INSTALLATION OF MATERIALS BEFORE INITIAL SET. 3. MOLDINGS, TRANSITION AND EDGE STRIPS: SAME MATERIAL AS FLOORING.

1. PREPARE CONCRETE SUBSTRATES PER ASTM F 710. VERIFY THAT SUBSTRATES ARE DRY AND FREE OF CURING COMPOUNDS, SEALERS AND HARDENERS. 2. LAY OUT TILES SO WIDTHS AT OPPOSITE EDGES OF ROOM ARE EQUAL AND NOT LESS THAN HAI F-WIDTH 3. LAY TILES IN PATTERNS INDICATED WITH GRAIN DIRECTION ALTERNATING IN ADJACENT TILES UNLESS NOTED OTHERWISE. 4. CLEAN, SEAL, AND WAX RESILIENT FLOORING IN ACCORDANCE WITH MANUFACTURER'S

H. WALL BASE AND ACCESSORY INSTALLATION: 1. CONFIRM THAT SOLID BACKING IS PROVIDED BEHIND ALL WALL BASE. AREAS WHERE GYPSUM BOARD IS HELD MORE THAN 1/2" ABOVE SLAB SHALL BE FILLED IN PRIOR TO BASE INSTALLATION. 2. INSTALL WALL BASE WITH MANUFACTURER'S RECOMMENDED ADHESIVE IN MAXIMUM LENGTHS POSSIBLE. APPLY TO WALLS, COLUMNS, PILASTERS, CASEWORK, AND OTHER PERMANENT 3. INSTALL TRANSITION STRIPS WHERE FLOORING MATERIALS MEET OR WHERE EDGE OF TILE IS EXPOSED AS INDICATED IN THE FINISH SCHEDULE

A. <u>SUBMITTALS:</u> PRODUCT DATA AND SAMPLES OF EACH CARPET PRODUCT INDICATED. SUBMIT ACTUAL TILE SAMPLES OF EACH CARPET REQUIRED

B. WARRANTY: PROVIDE SPECIAL PROJECT WARRANTY, SIGNED BY CONTRACTOR, INSTALLER AND MANUFACTURER (CARPET MILL), AGREEING TO REPAIR OR REPLACE DEFECTIVE MATERIALS AND WORKMANSHIP OF CARPETING WORK DURING 1-YEAR WARRANTY PERIOD FOLLOWING SUBSTANTIAL COMPLETION. ATTACH COPIES OF PRODUCT

C. ATTIC STOCK: FURNISH FULL-WIDTH CARPET EQUAL TO 5% OF EACH TYPE AND COLOR CARPET INSTALLED, PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

D. PRODUCTS: PROVIDE CARPET IN PATTERNS AND COLORS AND WITH BACKINGS AS INDICATED IN THE CONSTRUCTION DOCUMENTS WITH CRITICAL RADIANT FLUX CLASSIFICATION CLASS I, NOT LESS THAN 0.45 W/SQ. CM PER ASTM E 648. ORDER ALL MATERIALS FROM THE SAME FACTORY DYE LOT.

TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED. HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR RECOMMENDED BY CARPET MANUFACTURER. 2. ADHESIVES: WATER-RESISTANT, MILDEW-RESISTANT, NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED. THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER.

F. INSTALLATION: FOR CARPET TILE COMPLY CRI 104, SECTION 13 "CARPET MODULES (TILES)". I. GENERAL: COMPLY WITH CRI'S "CRI CARPET INSTALLATION STANDARD" AND WITH CARPET MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARING SUBSTRATES. 2. USE TROWELABLE LEVELING AND PATCHING COMPOUNDS. ACCORDING TO MANUFACTURER'S WRITTEN CRACKS, HOLES AND DEPRESSIONS 1/8 INCH WIDE OR WIDER, AND PROTRUSIONS MORE THAN 1/32 INCH. UNLESS MORE STRINGENT REQUIREMENTS ARE REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. 3.BROOM AND VACUUM CLEAN SUBSTRATES TO BE COVERED IMMEDIATELY BEFORE INSTALLING CARPET. 4.LAY CARPET TILE IN PATTERN AS INDICATED ON CONSTRUCTION DOCUMENTS AND SO WIDTHS AT OPPOSITE EDGES OF ROOM ARE EQUAL AND NOT LESS THAN HALF-WIDTH.

5.TRIM CARPET NEATLY AND TIGHT TO WALLS AND AROUND INTERRUPTIONS. 6.INSTALL PATTERN PARALLEL TO WALLS AND BORDERS UNLESS OTHERWISE INDICATED. 7.DO NOT BRIDGE BUILDING EXPANSION JOINTS WITH CARPET. 8. CUT AND FIT CARPET TO BUTT TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, EDGINGS, THRESHOLDS, AND NOSINGS. BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER.

9. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE FLANGES, ALCOVES, AND SIMILAR OPENINGS. 10. MAINTAIN REFERENCE MARKERS, HOLES, AND OPENINGS THAT ARE IN PLACF OR MARKED FOR FUTURE CUTTING BY REPEATING ON CARPET AS MARKED ON SUBFLOOR, USE NON" MANENT, NONSTAINING MARKING DEVICE.

11. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERA MENT OF FOUIPMENT AND FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOD THODS RECOMMENDED IN WRITING BY CARPET MANUFACTURER 12. INSTALL TRANSITION STRIPS AT CARPET TERMINATIONS DOCUMENTS.

09 6816 - SHEET CARPETING A. SUBMITTALS: PRODUCT DATA CARPET PRODUCT INDICATED. SUBMIT 18" X 27" SAMPLES OF EACH CARPET REQUIRF ∠XPOSED EDGE STRIPPING. RANTY, SIGNED BY CONTRACTOR, INSTALLER AND MANUFACTURER (CARPET MILL), AGREE WORK DURING 1-YEAR WARR. ERIOD FOLLOWING SUBSTANTIAL COMPLETION. ATTACH COPIES OF PRODUCT

C. ATTIC STOCK: FULL-SIZE UNITS EQUAL TO 5 PERCENT OF AMOUNT INSTALLED FOR EACH TYPE INDICATED, BUT NOT LESS THAN 10 SQ. YD.

WARRANTIES.

A. APARTMENT UNIT CARPET SHALL BE SUPPLIED AND INSTALLED UNDER AN ALLOWANCES OF \$8.00/SQUARE YARD FOR THE PURCHASE AND DELIVERY OF THE CARPET MATERIAL ONLY. 1. COSTS FOR THE PAD ACCESSORIES, TAXES, LABOR, ETC. ARE NOT INCLUDED IN THE ALLOWANCES STATED ABOVE BUT SHALL BE INCLUDED IN THE BID PRICE FOR A COMPLETE INSTALLATION. B. CARPET PAD SHALL BE 1/2" - 6# DENSITY REBOND PAD AS REQUIRED FOR A COMPLETE INSTALLATION.

TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED, HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR RECOMMENDED BY CARPET MANUFACTURER. 2. ADHESIVES: WATER-RESISTANT. MILDEW-RESISTANT. NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED, THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER.

3. SEAM ADHESIVE: HOT-MELT ADHESIVE TAPE OR SIMILAR PRODUCT RECOMMENDED BY CARPET MANUFACTURER FOR SEALING AND TAPING SEAMS AND BUTTING CUT EDGES AT BACKING TO FORM SECURE SEAMS AND TO PREVENT PILE LOSS AT SEAMS 4. TACKLESS CARPET STRIPPING: WATER RESISTANT PLYWOOD STRIPS, 3/8" THICK WITH ANGULAR PINS PROTRUDING FROM TOP DESIGNED TO GRIP AND HOLD STRETCHED CARPET AT THE BACKING. PROVIDE STRIPPING WITH 2 ROWS OF PINS.

5. CARPET EDGE GUARD: EXTRUDED ALUMINUM BEND DOWN TYPE EDGE GUARD; WITH CONCEALED GRIPPER TEETH AND MINIMUM 1-1/2" WIDE PUNCHED ANCHORAGE FLANGE AND MINIMUM 5/8" WIDE FACE 1. GENERAL: COMPLY WITH CRI'S "CRI CARPET INSTALLATION STANDARD" AND WITH CARPET MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARING SUBSTRATES.

2. USE TROWELABLE LEVELING AND PATCHING COMPOUNDS, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, TO FILL CRACKS, HOLES, DEPRESSIONS, AND PROTRUSIONS IN SUBSTRATES, FILL OR LEVEL CRACKS, HOLES AND DEPRESSIONS 1/8 INCH WIDE OR WIDER, AND PROTRUSIONS MORE THAN 1/32 INCH. UNLESS MORE STRINGENT REQUIREMENTS ARE REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. 3.BROOM AND VACUUM CLEAN SUBSTRATES TO BE COVERED IMMEDIATELY BEFORE INSTALLING CARPET. 4.UNIT INSTALLATION, STRETCH-IN INSTALLATION WITH PAD. 5.COMPLY WITH CARPET MANUFACTURER'S WRITTEN INSTRUCTIONS AND SHOP DRAWINGS FOR SEAM LOCATIONS AND DIRECTION OF CARPET: MAINTAIN UNIFORMITY OF CARPET DIRECTION AND LAY OF PILE. AT DOORWAYS, CENTER SEAMS UNDER THE DOOR IN CLOSED POSITION. 6.INSTALL PATTERN PARALLEL TO WALLS AND BORDERS UNLESS OTHERWISE INDICATED.

7.DO NOT BRIDGE BUILDING EXPANSION JOINTS WITH CARPET 8. CUT AND FIT CARPET TO BUTT TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, EDGINGS, THRESHOLDS, AND NOSINGS. BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER. 9. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE FLANGES, ALCOVES, AND SIMILAR OPENINGS. 10. MAINTAIN REFERENCE MARKERS, HOLES, AND OPENINGS THAT ARE IN PLACE OR MARKED FOR FUTURE CUTTING BY REPEATING ON CARPET AS MARKED ON SUBFLOOR. USE NONPERMANENT, NONSTAINING

IN WRITING BY CARPET MANUFACTURER.

MARKING DEVICE. 11. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERATIONS AND PLACEMENT OF EQUIPMENT AND FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOD. USE PROTECTION METHODS RECOMMENDED

09 9000 - PAINTING AND COATING A. <u>SUBMITTALS:</u> PRODUCT DATA AND THREE (3) DRAW-DOWN SAMPLES OF EACH COLOR AND SHEEN

B. <u>ATTIC STOCK:</u> FURNISH ONE (1) GALLON OF EACH PAINT COLOR AND SHEEN, IN CONTAINERS, PROPERLY LABELED AND SEALED.

C. PRODUCTS: PROVIDE MANUFACTURER'S BEST QUALITY PAINTS OF COLOR AND SHEEN AS INDICATED IN THE CONSTRUCTION DOCUMENTS THAT ARE FORMULATED AND RECOMMENDED BY MANUFACTURER FOR APPLICATION INDICATED. PROVIDE MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES.

1. ALL PAINT, STAIN, AND VARNISH SHALL BE PRODUCTS OF DEVOE, KWAL, SHERWIN WILLIAMS, PPG INDUSTRIES, PRATT & LAMBERT OR APPROVED EQUAL. 2. ALL MATERIAL SHALL BE OF THE STANDARD RESIDENTIAL GRADE OF THE TYPES DESIGNATED. 3. ALL MATERIAL SHALL BE DELIVERED TO THE JOB SITE IN THE ORIGINAL, UNOPENED, LABELED CONTAINERS. COLORS NOT SPECIFICALLY CALLED FOR IN THE PAINT SCHEDULE WILL BE SELECTED BY THE ARCHITECT.

1. EQUIPMENT: APPLY COATINGS BY BRUSH, ROLLER, SPRAY, OR OTHER APPLICATORS ACCORDING TO COATING MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN SPRAYED, EXTERIOR COATINGS SHALL BE BACK-ROLLED FOLLOWING SPRAY APPLICATION. USE ROLLERS FOR FINISH COAT ON INTERIOR WALLS AND CEILINGS. 2. PIGMENTED (OPAQUE) FINISHES: COMPLETELY COVER SURFACES TO PROVIDE A SMOOTH, OPAQUE SURFACE OF UNIFORM APPEARANCE. PROVIDE A FINISH FREE OF CLOUDINESS,

SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, OR OTHER SURFACE 3. APPLY PRODUCTS PER MANUFACTURER RECOMMENDED GUIDELINES. PRODUCT COVERAGE MINIMUM ONE COAT OF PRIMER AND TWO FINAL COATS ON MATERIALS.APPLY PRODUCTS TO MATERIALS APPROVED BY MANUFCTURER PRODUCT DATA SHEETS.

A. Exterior Work: 1. ALL EXTERIOR GALVANIZED METAL

5. PRIMED MILLWORK AND TRIM.

FLASHINGS, CONNECTORS, ETC.

ONE COAT COMMERCIAL METAL ETCH ONE COAT EXTERIOR METAL PRIMER. TWO COATS EXTERIOR SEMI-GLOSS METAL PAINT.

TOUCH-UP PRIME. TWO COATS OF

INSIDE AND OUTSIDE.

EXTERIOR 100% SATIN OR SEMI-GLOSS

2. ALL EXPOSED STEEL FRAMES, ANGLES, TWO COATS SEMI-GLOSS METAL PAINT. (PRIME COAT CHANNELS, POSTS, RAILINGS, BEAMS, ETC. SURFACES THAT ARE NOT PRIMED.) 3. ALL EXPOSED MISC. FERROUS METAL ITEMS TWO COATS SEMI-GLOSS METAL PAINT.

(PRIME COAT SURFACES THAT ARE NOT PRIMED.) INCLUDING RAILS, PLATES, ANGLES, BOLTS, GRATES, CONDUITS, POSTS, PIPING, ETC. PRIME AND BACK LATEX PRIMER.

4. ALL UNPRIMED EXTERIOR MILLWORK. TRIM, SMOOTH WOOD MATERIALS, ETC. TWO COATS OF EXTERIOR LATEX SATIN OR SEMI-GLOSS PAINT.

ACRYLIC LATEX PAINT. ONE COAT PRIMER. TWO COATS EXTERIOR 6. ROUGH SAWN TRIM, BEAMS, COLUMNS,

HEAVY BODIED STAIN. PATCH DENTS, TOUCH UP PRIMER. TWO 7. PRIMED METAL ENTRY DOORS, FRENCH COATS OF OIL BASE SEMI-GLOSS PAINT DOORS AND METAL FRAMES, GARAGE DOORS.

8. ANY OTHER PAINTING REQUIRED BY TWO COATS TO MATCH ADJACENT THE DRAWINGS. SURFACES.

B. INTERIOR WORK:

1. GYPSUM BOARD WALLS EXCEPT IN KITCHENS, BATHROOMS, LAUNDRIES AND COMMON AREA CORRIDORS, UNLESS SCHEDULED FOR WALLCOVERING

ONE FINISH COAT OF LATEX EGGSHELL WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.) ONE WALL IN EACH APARTMENT UNIT LIVING SPACE AND EACH BEDROOM SHALL BE PAINTED ACCENT COLORS. ONE COAT OF EPOXY COMPATABLE PRIMER PAINT AND

ONE FINISH COAT OF EPOXY EGGSHELL WALL

PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL

ONE COAT OF PRIME LATEX PAINT AND

BATHROOMS AND LAUNDRIES UNLESS SCHEDULED FOR WALLCOVERING OR TILE. 3. GYPSUM BOARD WALLS IN COMMON

2. GYPSUM BOARD WALLS IN KITCHENS,

AREA CORRIDORS

4. GYPSUM BOARD CEILINGS.

WORK, ETC. (PRE-PRIMED.)

PRIMED HARDWOOD DOORS.

ONE COAT OF PRIME LATEX PAINT AND ONE FINISH COAT OF SCRUBABLE LATEX FLAT WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.)

TWO COATS OF LATEX FLAT PAINT. TWO COATS OF CLASS II VAPOR RETARDER PAINT AT CEILINGS ADJACENT TO ATTICS. 5. DOOR CASINGS, BASE, WOOD, MILL-

COVERAGE.)

ONE PRIME COAT OF LATEX PAINT, ONE COAT LATEX PAINT AND ONE FINISH COAT OF LATEX SEMI-GLOSS PAINT. ONE COAT OF LATEX PAINT AND ONE FINISH

7. ALL MISCELLANEOUS FERROUS METAL, INCLUDING GRILLES, REGISTERS, ETC.

COAT OF LATEX SEMI-GLOSS PAINT. TWO COATS METAL PAINT TO MATCH ADJACENT SURFACES UNLESS FACTORY PREFINISHED WHITE FINISH TO MATCH SIMILAR CONDITIONS.

8. ANY OTHER PAINTING WORK REQUIRED BY THE DRAWINGS.

A. <u>SUBMITTALS</u>: PRODUCT DATA FOR SETTING AND GROUTING MATERIALS AND THREE (3) SAMPLES OF EACH TILE SPECIFIED FOR VERIFICATION PURPOSES.

B. <u>ATTIC STOCK:</u> FURNISH 2% OF EACH TYPE OF CERAMIC TILE PACKAGED WITH PROTECTIVE COVERING

AND LABELED FOR STORAGE. C. <u>BASIS OF DESIGN</u>: SEE DRAWING SCHEDULES.

QUALITY PENETRATING SILICONE SEALER.

D. <u>TILE:</u> COMPLY WITH STANDARD GRADE REQUIREMENTS IN ANSI A137.1 "SPECIFICATIONS FOR CERAMIC TILE" FOR PRODUCTS AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS.

1. THIN-SET MORTAR:

A. TYPICAL INTERIOR INSTALLATIONS: LATEX/POLYMER MODIFIED PORTLAND CEMENT COMPLYING WITH ANSI A108.5 AND ANSI 118.4. 2. GROUT:UNSANDED FOR JOINTS 1/16" WIDTH OR LESS, SANDED FOR JOINTS GREATER THAN 1/16" IN COLOR INDICATED IN SCHEDULE OR TO BE SELECTED BY ARCHITECT AND OWNER. A. TYPICAL INTERIOR INSTALLATIONS: STANDARD CEMENT GROUT WITH INTEGRAL STAIN INHIBITORS (TEC ACCUCOLOR XT, OR EQUAL)

3. SETTING BED ACCESSORIES: ANSI A 108.1A F. INSTALLATION METHODS: COMPLY WITH TILE INSTALLATION STANDARDS IN ANSI'S "SPECIFICATIONS FOR THE INSTALLATIONS OF CERAMIC TILE" AND TCA'S "HANDBOOK FOR CERAMIC TILE INSTALLATION" THAT APPLY TO THE MATERIALS AND METHODS INDICATED BELOW:

1. WHERE CUT TILE IS SPECIFIED AS THE TOP COURSE ON WALL WAINSCOTING OR WALL BASE WITH AN EXPOSED TOP EDGE, THE FACTORY EDGE SHALL BE USED AS THE EXPOSED EDGE.

H. CONFLICTS: IF NOT ADDRESSED ON DRAWINGS, WHERE ELECTRICAL DEVICES OR TOILET ACCESSORIES STRADDLE THE TRANSITION FROM THE TOP EDGE OF WAINSCOT WALL TILE TO GYPSUM BOARD SUBSTRATE, CONTACT ARCHITECT FOR RESOLUTION.

1. JOINT SIZE: SET TILE WITH THE SMALLEST GROUT JOINT ACHIEVABLE AND AS RECOMMENDED BY THE MFR. BASED ON THE TILE PRODUCT AND SUBSTRATE CONDITIONS, UNLESS NOTED 2. TILE PATTERN: LAY TILE IN PATTERNS AS INDICATED IN THE CONSTRUCTION DOCUMENTS.

ALIGN JOINTS WHERE ADJOINING TILES ON FLOOR, BASE, WALLS, AND TRIM ARE THE SAME SIZE, UNLESS INDICATED OTHERWISE. 3. INSTALLATION: INSTALL GROUT PER MANUFACTURER'S INSTRUCTIONS, EXERCISING CARE TO AVOID REMOVAL OF GROUT COLOR BY USE OF EXCESS WATER DURING INSTALLATION. FADED OR CHALKY GROUT SHALL BE CAUSE FOR REJECTION. 4. SEALER: AFTER FULLY CURED, GROUT SHALL BE SEALED WITH TWO (2) COATS OF COMMERCIAL 09 5100 - ACOUSTICAL CEILINGS A. SUBMITTALS: PRODUCT DATA ONLY

B. <u>ATTIC STOCK:</u> FURNISH 2% OF EACH TYPE OF CEILING TILE PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

C. <u>ACOUSTICAL TILE PRODUCTS</u>: PROVIDE CEILING TILE IN TYPE AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS COMPLYING WITH ASTM E 1264, CLASS A MATERIALS, TESTED PER ASTM

D. <u>SUSPENSION SYSTEM:</u> PROVIDE HEAVY DUTY, DIRECT-HUNG, SUSPENSION SYSTEMS AS INDICATED IN

HE CONSTRUCTION DOCUMENTS COMPLYING WITH ASTM C 635. FURNISH ALUMINUM GRID IN SHOWERS, KITCHENS, AND OTHER HIGH-HUMIDITY AREAS. 1. ATTACHMENT DEVICES: SIZE FOR FIVE (5) TIMES THE DESIGN LOAD INDICATED IN ASTM C 635, TABLE 1, DIRECT HUNG UNLESS OTHERWISE INDICATED. 2. WIRE HANGERS, BRACES, AND TIES: ZINC-COATED CARBON-STEEL WIRE; ASTM A 641/ (A 641 M), CLASS 1 ZINC COATING. SOFT TEMPER WITH A YIELD STRENGTH AT LEAST THREE (3) TIMES THE HANGER DESIGN LOAD (ASTM C 635, TABLE 1, DIRECT HUNG), BUT NOT LESS THAN 0.135" DIAMETER WIRE 3. SEISMIC STRUTS: MANUFACTURER'S STANDARD PRODUCT DESIGNED TO ACCOMMODATE SEISMIC FORCES. 4. HOLD-DOWN CLIPS: PROVIDE HOLD-DOWN CLIPS ON CEILING TILE IN ENTRANCE VESTIBULES, COMPUTER ROOMS EMPLOYING DRY CHEMICAL FIRE-SUPPRESSION SYSTEMS, AND OTHER

. SEQUENCE WORK TO ENSURE ACOUSTICAL CEILINGS ARE NOT INSTALLED UNTIL BUILDING IS ENCLOSED, SUFFICIENT HEAT IS PROVIDED, DUST GENERATION ACTIVITIES HAVE TERMINATED. AND OVERHEAD WORK IS COMPLETED, TESTED, AND APPROVED. 2. INSTALL CEILING GRID AS INDICATED TO BE SYMMETRICAL ABOUT BOTH AXES OF EACH ROOM USING NOT LESS THAN HALF-SIZE TILE UNLESS INDICATED OTHERWISE ON THE REFLECTED CEILING PLAN. 3. SUPPORT SUSPENSION SYSTEM INDEPENDENTLY OF DUCTS, PIPES, AND CONDUITS. 4. SUPPORT FIXTURE LOADS USING SUPPLEMENTARY HANGERS LOCATED WITHIN 6" OF EACH CORNER OR SUPPORT FIXTURES INDEPENDENTLY.

F. <u>INSTALLATION:</u> COMPLY WITH ASTM C 636 AND CISCA'S "CEILING SYSTEMS HANDBOOK".

5. PROVIDE MATCHING PERIMETER MOLDING INSTALLED IN BEAD OF ACOUSTICAL SEALANT AT ALL LOCATIONS WHERE CEILING INTERSECTS VERTICAL SURFACES. USE MATCHING PRE-FORMED CLOSURES AT ROUND OR CURVED OBSTRUCTIONS. 6. FIELD-CUT EDGES SHALL MATCH PROFILE OF FACTORY EDGES

DIVISION 10 - SPECIALTIES

AND BATH ACCESSORIES.

AREAS AS INDICATED.

10 2800 TOILET AND BATH ACCESSORIES A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET

1. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING: 2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS. 3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS. 4. INSTALLATION METHODS.

1. INSTALLER MUST EXAMINE SUBSTRATES, PREVIOUSLY INSTALLED INSERTS AND ANCHORAGES NECESSARY FOR MOUNTING OF TOILET ACCESSORIES, AND OTHER CONDITIONS UNDER WHICH INSTALLATION IS TO OCCUR, AND MUST NOTIFY CONTRACTOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER AND TIMELY COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER. 2. INSTALL ACCESSORIES ACCORDING TO RESPECTIVE MANUFACTURERS' WRITTEN INSTRUCTIONS, USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. I NSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED.

INSTALLATIONS ARE NOT PERMITTED. 3. MOUNTING HEIGHTS SHALL BE AS RECOMMENDED BY THE ACCESSORY MANUFACTURER AND AT HEIGHTS RECOMMENDED BY USE FOR PHYSICALLY HANDICAPPED TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. 4. GRAB BARS: INSTALL TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF, WHEN TESTED ACCORDING TO ASTM F 446. 5. ADJUST ACCESSORIES FOR PROPER OPERATION AND VERIFY THAT MECHANISMS FUNCTION SMOOTHLY.

10 3000 SOLID PLASTIC TOILET COMPARTMENTS

STAINLESS STEEL TAMPER SCREWS.

D. DOOR PULLS: CHROME PLATED ZAMAK:

A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES. BASIS OF DESIGN: ECLIPSE TOILET PARTITIONS AS MANUFACTURED BY AND SUPPLIED BY SCRANTON

CLEAN AND POLISH ALL EXPOSED SURFACES AFTER REMOVING PROTECTIVE COATINGS.

1. STYLE: FLOOR MOUNTED OVERHEAD-BRACED TOILET COMPARTMENTS. 2. DOORS AND PANELS: HIGH DENSITY POLYETHYLENE (HDPE), FABRICATED FROM SEQ CHAPTER 1 EXTRUDED POLYMER RESINS. FORMING SINGLE THICKNESS PANEL. A. WATERPROOF AND NONABSORBENT, WITH SELF-LUBRICATING SURFACE, RESISTANT TO MARKS BY PENS, PENCILS, MARKERS, AND OTHER WRITING INSTRUMENTS. B. THICKNESS: 1 INCH (25 MM).

C. EDGES: SHIPLAP. 3. PANEL COLOR: TRADITIONAL SERIES:1. SHALE - ORANGE PEEL. 4. DOORS AND PANELS: HIGH PRIVACY: HEIGHT: 62 INCHES (1575 MM) HIGH AND MOUNTED AT 8 TO 14 INCHES (203 TO 356 MM) ABOVE THE FINISHED FLOOR.

PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING: 2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS. 3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS. 4. INSTALLATION METHODS.

5. SHOP DRAWINGS: PROVIDE LAYOUT DRAWINGS AND INSTALLATION DETAILS WITH LOCATION AND TYPE OF HARDWARE REQUIRED. 6. SELECTION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO COMPLETE SETS OF COLOR CHIPS REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS.

1. METAL POSTS: 82.75 INCHES (2102 MM) HIGH, HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, FASTENED TO FOOT WITH STAINLESS STEEL TAMPER RESISTANT SCREW. 2. HIDDEN SHOE (FOOT): ONE-PIECE MOLDED POLYETHYLENE INVISIBLE SHOE INSERTED INTO METAL POST AND SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW. 3. HEADRAIL CAP AND CORNER CAP: ONE-PIECE MOLDED POLYETHYLENE SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW; ADJUSTABLE TO LEVEL HEADRAIL TO FINISHED FLOOR. 4. WALL BRACKETS: CONTINUOUS HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, INSERTED INTO SLOTTED PANEL AND FASTENED TO PANELS WITH STAINLESS STEEL TAMPER RESISTANT SCREWS. 5. HEADRAIL: HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, SECURED TO WALL WITH

6. DOOR HARDWARE: A. HINGES: EDGE-MOUNTED HELIX STYLE STAINLESS STEEL CONTINUOUS HINGE. CLOSING DEGREE: 5 DEGREES. COMES TO A FULL CLOSE ON ITS OWN WEIGHT. B.OCCUPANCY INDICATOR LATCH AND HOUSING: MATERIAL: SATIN STAINLESS STEEL. OCCUPANCY INDICATORS: GREEN FOR OCCUPIED AND RED NOT OCCUPIED. SLIDE BOLT AND BUTTON. C.COAT HOOK AND DOOR BUMPER COMBINATION: MATERIAL: CHROME PLATED ZAMAK. HANDICAP DOOR: EQUIP WITH SECOND DOOR PULL AND DOOR STOP.

1. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION. 2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS. 3. INSTALL PARTITIONS RIGID, STRAIGHT, PLUMB, AND LEVEL. 4. LOCATE BOTTOM EDGE OF DOORS AND PANELS INCHES ABOVE FINISHED FLOOR. 5. CLEARANCE AT VERTICAL EDGES OF DOORS SHALL BE UNIFORM TOP TO BOTTOM AND SHALL NOT EXCEED 3/8 INCH (9.5 MM).

8. ADJUST DOORS AND LATCHES TO OPERATE CORRECTLY. 9. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT 10. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

6. NO EVIDENCE OF CUTTING, DRILLING, AND/OR PATCHING SHALL BE VISIBLE ON THE FINISHED WORK.

FINISHED SURFACES SHALL BE CLEANED AFTER INSTALLATION AND BE LEFT FREE OF IMPERFECTIONS.

10 4400 - FIRE PROTECTION SPECIALTIES A. REFERENCE CONSTRUCTION DRAWINGS FOR TYPE, SIZE AND LOCATIONS OF FIRE EXTINGUISHERS

DIVISION 11 - EQUIPMENT

A. REFERENCE CONSTRUCTION DRAWINGS FOR QUANTITY, AND LOCATION OF APPLIANCES TO BE FURNISHED BY OWNER.

12 3661 STONE COUNTERTOPS

MANUFACTURER'S FULL RANGE.

6. JOINTS: FABRICATE COUNTE

7. CUTOUTS & HOLES:UNDEP

TEMPLATE OR PATTERN F

A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES.

B. SUBMITTALS: INCLUDE PLANS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK: 1. PRODUCT DATA :FOR EACH STONE, STONE ACCESSORY, AND MANUFACTURED PRODUCT. 2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS. 3. SAMPLES: FOR EACH STONE TYPE INDICATED.

1. FIELD MEASUREMENTS: VERIFY DIMENSIONS OF CONSTRUCTION TO RECEIVE STONE COUNTERTOPS BY FIELD MEASUREMENTS BEFORE FABRICATION.

1. SOURCE LIMITATIONS FOR STONE: OBTAIN STONE FROM A SINGLE QUARRY WITH RESOURCES TO PROVIDE

MATERIALS OF CONSISTENT QUALITY IN APPEARANCE AND PHYSICAL PROPERTIES. 2. QUARTZ: MATERIAL STANDARD: COMPLY WITH ASTM C 615. 3. ALL COUNTERTOPS SHALL BE GRANITE AS SELECTED BY THE OWNER WITH SQUARE EDGES AND MATCHING SIDE AND BACKSPLASHES, TOP AND BOTTOM EXPOSED EDGES SHALL BE SLIGHTLY EASED. 4. FINISH: POLISHED. 5. WATER CLEANABLE EPOXY ADHESIVE: ANSI A118.3., WATER CLEANABLE EPOXY GROUT: ANSI A118.3, CHEMICAL RESISTANT, WATER: CLEANABLE, TILE SETTING AND GROUTING EPOXY. 6. SEALANT FOR COUNTERTOPS: MILDEW • RESISTANT JOINT SEALANT: MILDEW RESISTANT, SINGLE COMPONENT, NONSAG, NEUTRAL CURING, SILICONE. COLOR: AS SELECTED BY ARCHITECT FROM

1. SELECT MATERIAL FOR INTENDED USE TO PREVENT FABRICATE TAINING CRACKS, SEAMS, AND STARTS THAT COULD IMPAIR STRUCTURAL INTEGRITY OR FUN 2. FABRICATE STONE COUNTERTOPS IN SIZES AND SHAPES WITH REQUIREMENTS NE DESIGN MANUAL VI." INDICATED 3. GENERAL: COMPLY WITH RECOMMENDATIONS IN 4. NOMINAL THICKNESS: PROVIDE THICKNESS IN JS THAN 3 CM (EXCEPT APARTMENT UNIT BATHROOM COUNTERTOPS SHALL BT GAGE BACKS TO PROVIDE UNITS OF IDENTICAL THICKNESS. 5. SPLASHES: PROVIDE 3/4• INCH TH' END SPLASHES UNLESS OTHERWISE INDICATED.

√HEREVER POSSIBLE.

AKE CUTOUTS FOR UNDERCOUNTER FIXTURES IN SHOP USING

MANUFACTURER. FORM CUTOUTS TO SMOOTH, EVEN CURVES.

7. GROMMETS: 2 INCH ROUND GROMMETS BY DOUG MOCKETT & COMPANY, INC. OR APPROVED EQUAL.

COUNTERTOPS IN SHOP FOR FIELD CUTTING OPENINGS FOR 8. COUNTER MOUNT COUNTER MOUN OPS FOR CUTOUTS AND DRILL HOLES AT CORNERS OF CUTOUT LOCATIONS. MAKE COR OF LARGEST RADIUS PRACTICAL. 9. FITTINGS: DRILL COUNTER IN SHOP FOR PLUMBING FITTINGS, UNDERCOUNTER SOAP DISPENSERS, AND SIMILAR ITEMS.

1. GENERAL: INSTALL COUNTERTOPS OVER PLYWOOD SUBTOPS WITH FULL SPREAD OF WATER CLEANABLE FPOXY ADHESIVE 2. GENERAL: INSTALL COUNTERTOPS BY ADHERING TO SUPPORTS WITH WATER CLEANABLE EPOXY ADHESIVE.

3. SET STONE TO COMPLY WITH REQUIREMENTS INDICATED. SHIM AND ADJUST STONE TO LOCATIONS

INDICATED, WITH UNIFORM JOINTS OF WIDTHS INDICATED AND WITH EDGES AND FACES ALIGNED ACCORDING TO ESTABLISHED RELATIONSHIPS. 4. SPACE JOINTS WITH 1/16• INCH GAP FOR FILLING WITH SEALANT. USE TEMPORARY SHIMS TO ENSURE UNIFORM SPACING, CLAMP UNITS TO TEMPORARY BRACING, SUPPORTS, OR EACH OTHER TO ENSURE THAT COUNTERTOPS ARE PROPERLY ALIGNED AND JOINTS ARE OF SPECIFIED WIDTH. 5. COMPLETE CUTOUTS NOT FINISHED IN SHOP. MASK AREAS OF COUNTERTOPS ADJACENT TO CUTOUTS TO PREVENT DAMAGE WHILE CUTTING. USE POWER SAWS WITH DIAMOND BLADES TO CUT STONE. MAKE CUTOUTS TO ACCURATELY FIT ITEMS TO BE INSTALLED, AND AT RIGHT ANGLES TO FINISHED SURFACES UNLESS 6. INSTALL BACKSPLASHES AND END SPLASHES BY ADHERING TO WALL WITH WATER · CLEANABLE EPOXY

ADHESIVE. LEAVE 1/16. INCH GAP BETWEEN COUNTERTOP AND SPLASHES FOR FILLING WITH SEALANT. USE TEMPORARY SHIMS TO ENSURE UNIFORM SPACING. 7. GROUT JOINTS TO COMPLY WITH ANSI A108.10. REMOVE TEMPORARY SHIMS BEFORE GROUTING. TOOL GROUT UNIFORMLY AND SMOOTHLY WITH PLASTIC TOOL. 8. APPLY SEALANT TO JOINTS AND GAPS SPECIFIED FOR FILLING WITH SEALANT: COMPLY WITH SECTION 079200 "JOINT SEALANTS." REMOVE TEMPORARY SHIMS BEFORE APPLYING SEALANT. 9. ASSURE THAT SEAMS ARE SMOOTH, LEVEL AND TIGHT, SEAMS SHALL BE FILLED ENTIRELY SO FLUSH WITH

COUNTERTOP, POLISH SURFACE AT SEAM, ASSURE THAT FILLER IS "NON" YELLOWING." 10. CLEANING: CLEAN COUNTERTOPS AS WORK PROGRESSES. REMOVE ADHESIVE, GROUT MORTAR, AND SEALANT SMEARS IMMEDIATELY. CLEAN STONE COUNTERTOPS NO FEWER THAN SIX DAYS AFTER COMPLETION OF INSTALLATION, USING CLEAN WATER AND SOFT RAGS. DO NOT USE WIRE BRUSHES, ACID TYPE CLEANING AGENTS, CLEANING COMPOUNDS WITH CAUSTIC OR HARSH FILLERS, OR OTHER MATERIALS OR METHODS THAT COULD DAMAGE STONE. 11.SEALER APPLICATION: APPLY STONE SEALER TO COMPLY WITH STONE PRODUCER'S AND SEALER MANUFACTURER'S WRITTEN INSTRUCTIONS.

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GENERAL PROJECT SPECIFICATIONS



1. CONTRACTOR TO VISIT PROJECT SITE AND BUILDING, 2. BUILDING AND SITE TO REMAIN SECURE DURING 3. PROTECT ALL ITEMS TO REMAIN (WALLS, PLUMBING FIXTURES, PIPING, HVAC UNITS, COLUMNS, ETC). 4. CARE IS TO BE EXERCISED IN THE DEMOLITION OPERATIONS. EXISTING SURFACES TO REMAIN SHALL BE PROTECTED. ANY DAMAGE INCURRED AS A RESULT OF DEMOLITION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL BEAR THE COST 5. ALL OPENINGS IN WALLS AND ROOFS RESULTING FROM EQUIPMENT AND/OR PIPE REMOVAL SHALL BE SEALED WEATHERTIGHT. ALL CONDITIONS SHALL BE LEFT SAFE AND 6. CONTRACTOR TO REPAIR ANY AREAS DAMAGED DURING 7. CONTRACTOR TO COORDINATE DEMOLITION OPENINGS 8. ALL MEP SYSTEMS TO BE REMOVED TO BE FULLY COORDINATED WITH EXISTING CONDITIONS. ALL SYSTEMS TO BE REMOVED COMPLETELY THAT ARE NOT BEING RE-

DEMO FLOOR PLAN KEYED NOTES

REMOVE EXISTING FLOOR AND ALL ASSOCIATED CONSTRUCTION. PREPARE ENTIRE SUB-FLOOR FOR NEW DRAIN TILE AND CLEAN GRAVEL. EXTERIOR WALLS AND FOUNDATIONS TO BE PREPARED FOR NEW WATERPROOFING BELOW GRADE.

> NECESSARY TO PROVIDE FULL STABILITY DURING REWORK OF SUB-FLOOR AREA.

EXISTING MAIN STAIR TO 2ND LEVEL TO REMAIN. PROTECT STAIR AND BRACE AS REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY WHILE SUB-FLOOR IS REMOVED. REFER TO STRUCTURAL FOR ADDITIONAL

AND ROUGH-INS FOR MEP SYSTEMS. REFER TO MEP FOR ADDITIONAL NOTES

REMOVE EXISTING RESTROOM CORE AND ALL ASSOCIATED MEP SYSTEMS. REFER TO MEP FOR ADDITIONAL INFORMATION.

REMOVE WINDOW AND PREPARE OPENING FOR NEW EGRESS DOOR. REFER TO STRUCTURAL FOR ADDITIONAL

REMOVE EXISTING WEATHERHOOD AND LOUVER ABOVE EXTERIOR DOOR. REMOVE DOOR AND ENLARGE OPENING FOR NEW EGRESS DOOR. REFER TO STRUCTURAL FOR ADDITIONAL INFORMATION.

REMOVE WINDOW SYSTEM AND ALL FAILED COMPONENTS. PREPARE OPENING FOR NEW WINDOW SYSTEM, FRAMING AND

REMOVE BROKEN GLASS. PREPARE FOR NEW

REMOVE PLATFORM AND ALL NON-STRUCTURAL FRAMING.

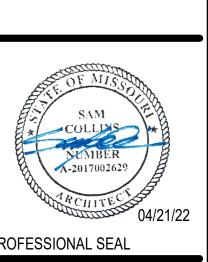
REMOVE ALL COMPONENTS THAT NO LONGER ARE ACTIVE, IN GOOD WORKING ORDER, OR ABANDONED. COORDINATE WITH MEP FOR ADDITIONAL ITEMS TO BE

PREPARE ROOF FOR NEW RTU CURBS AND OPENINGS. COORDINATE EXACT LOCATIONS WITH MEP/STRUCTURAL DOCUMENTS.

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DOCUMENTS

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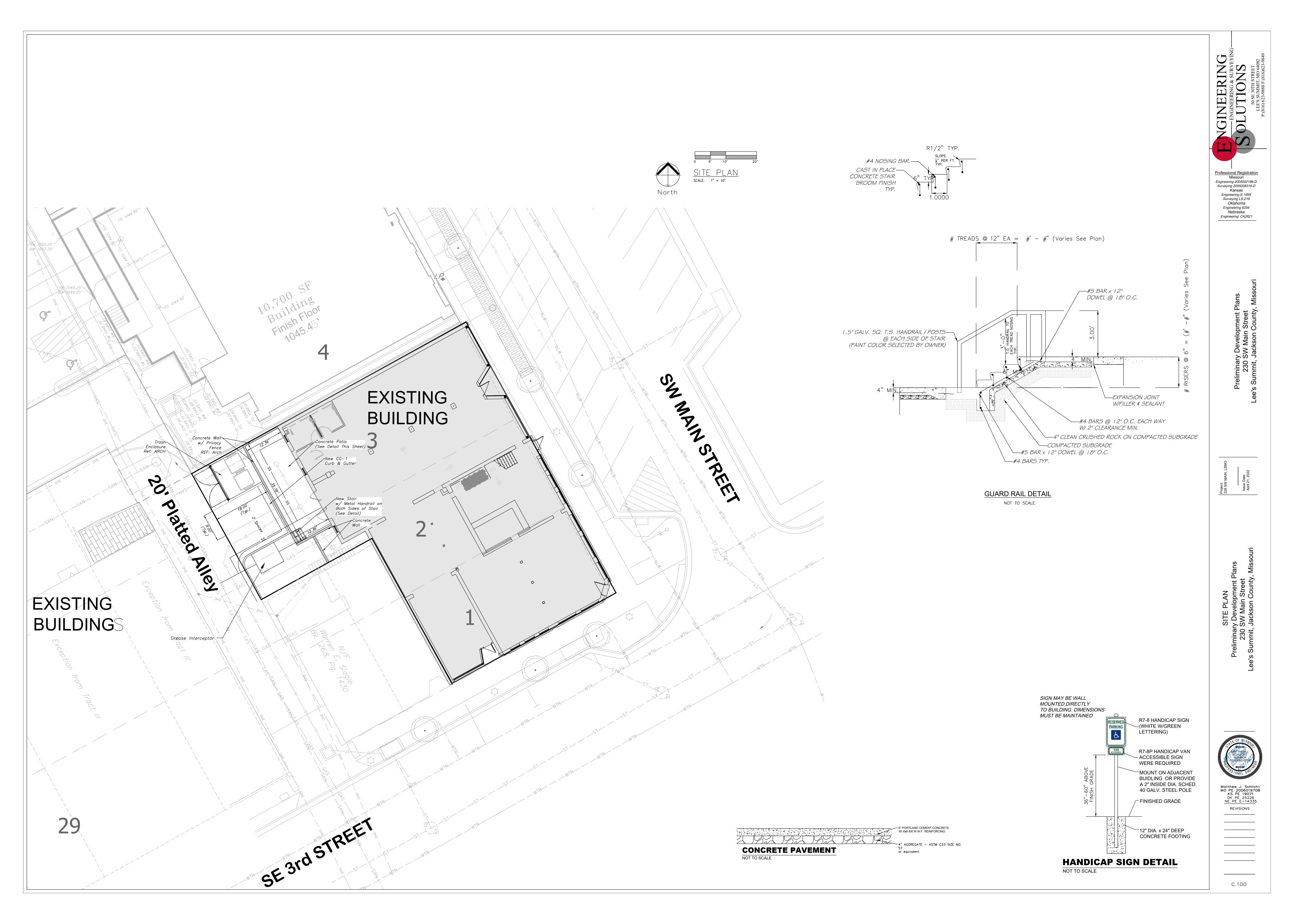


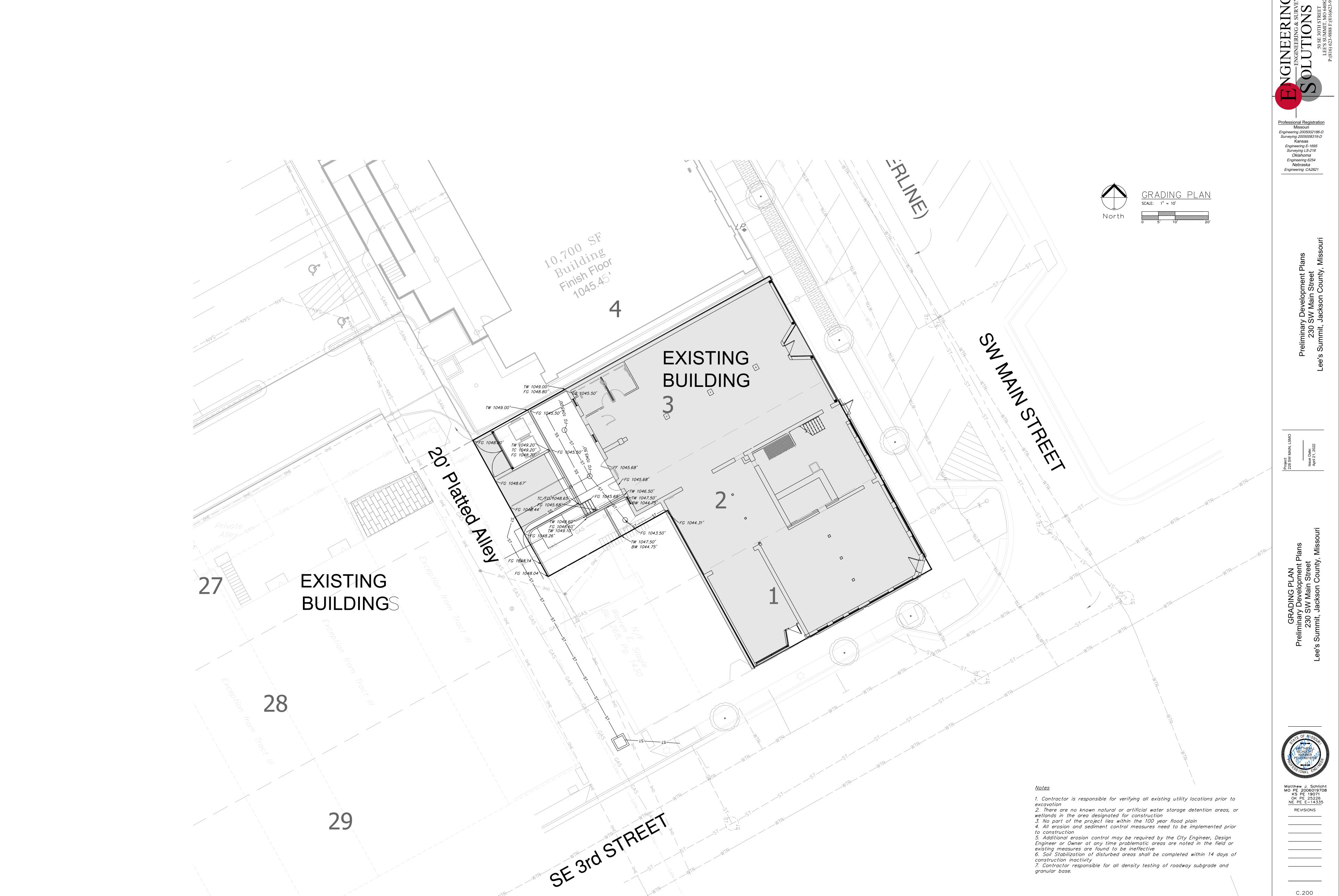
PROFESSIONAL SEAL

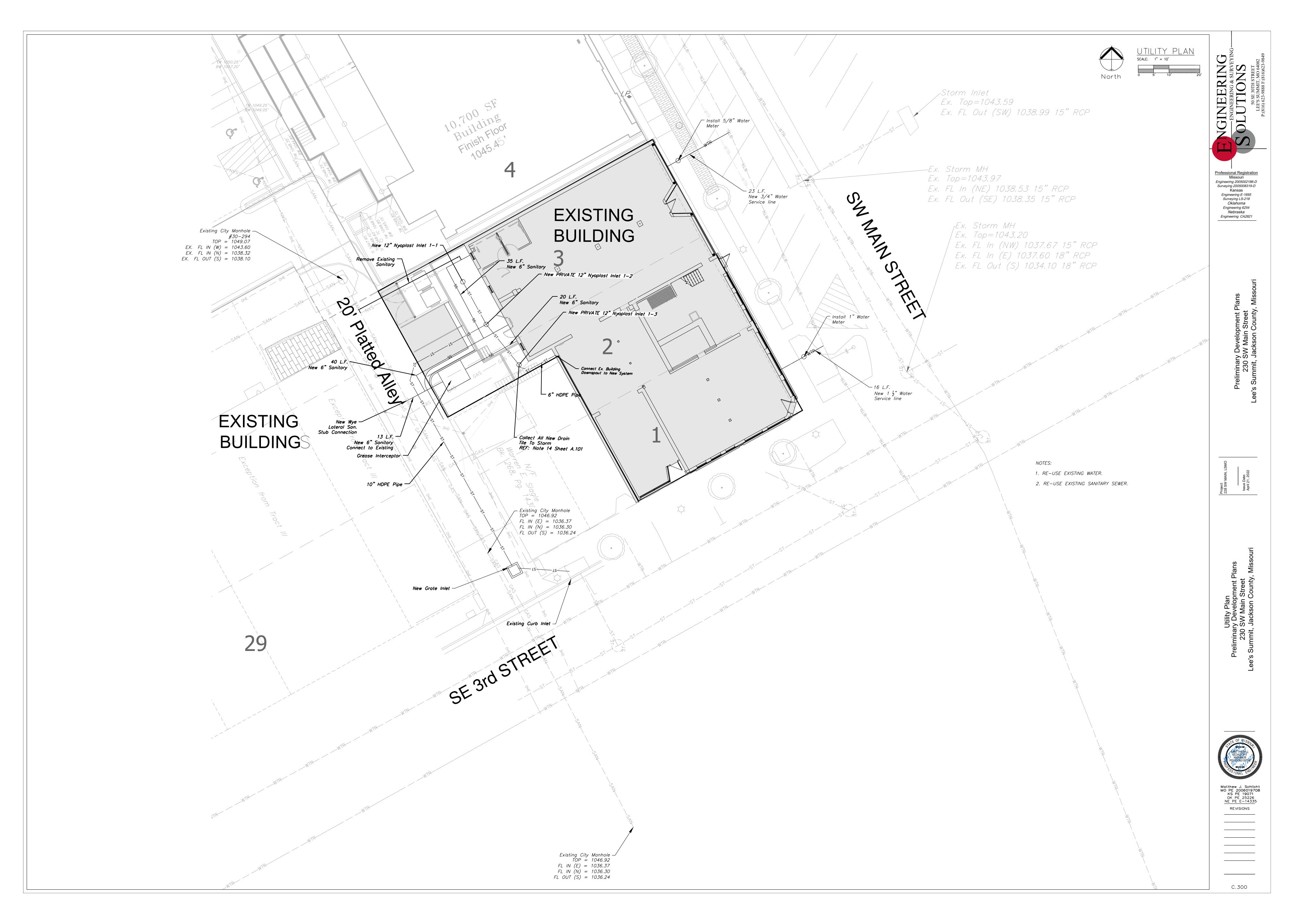
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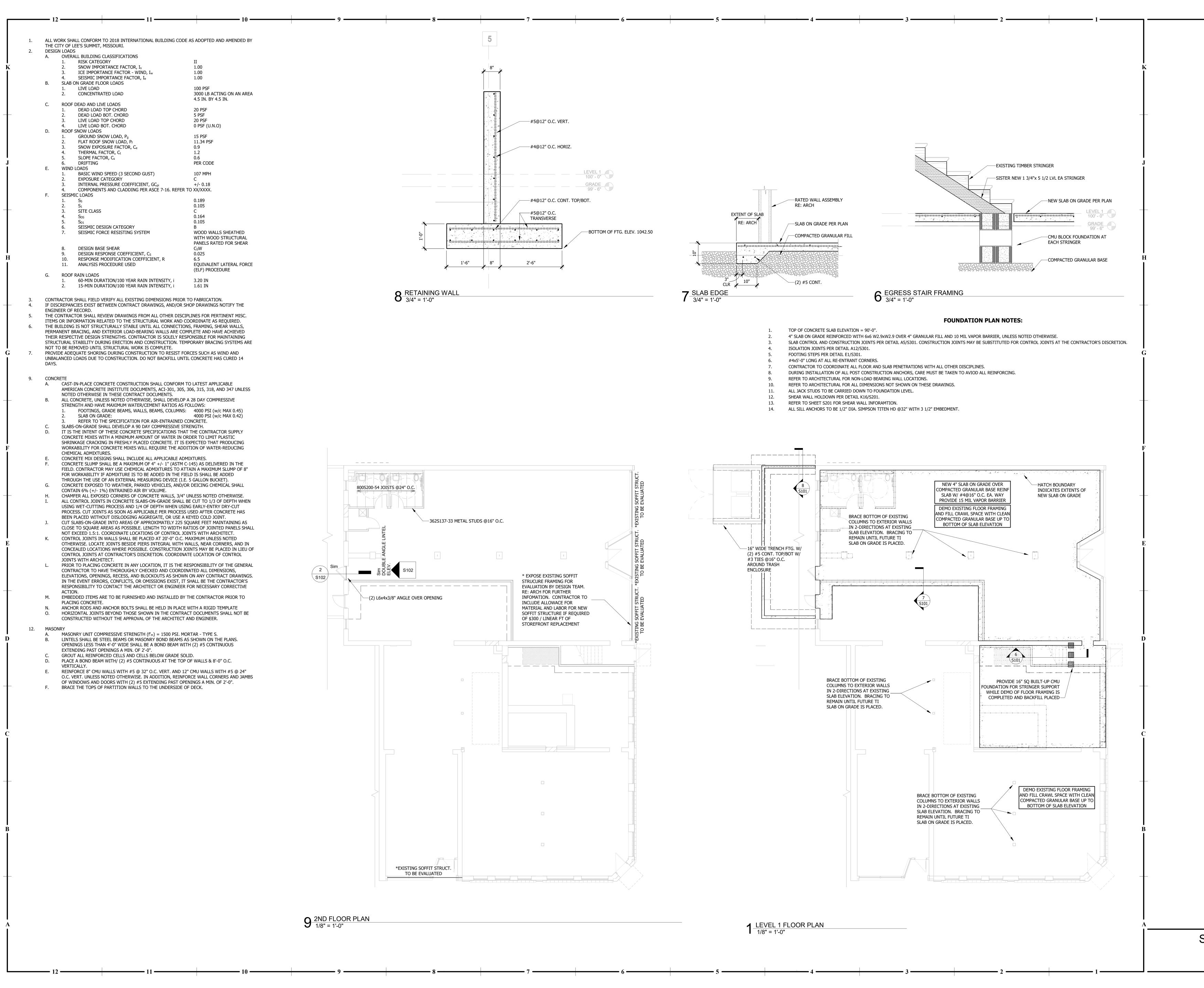
DEMO PLANS









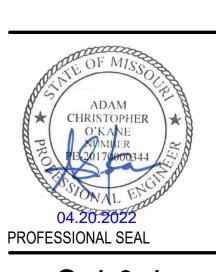


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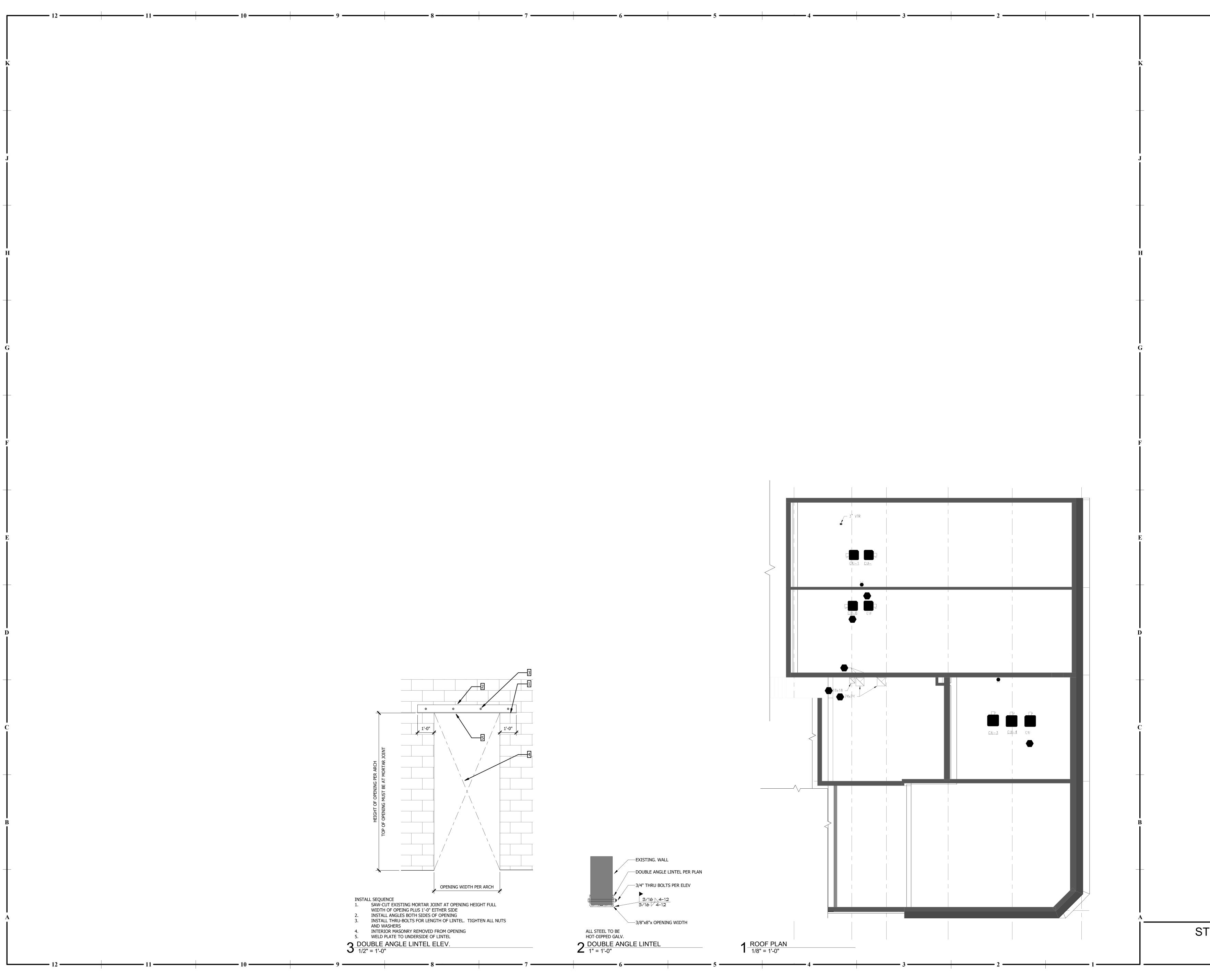


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ISSUE DATE: APRIL 21, 2022

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STRUCTURAL PLANS AND SECTIONS



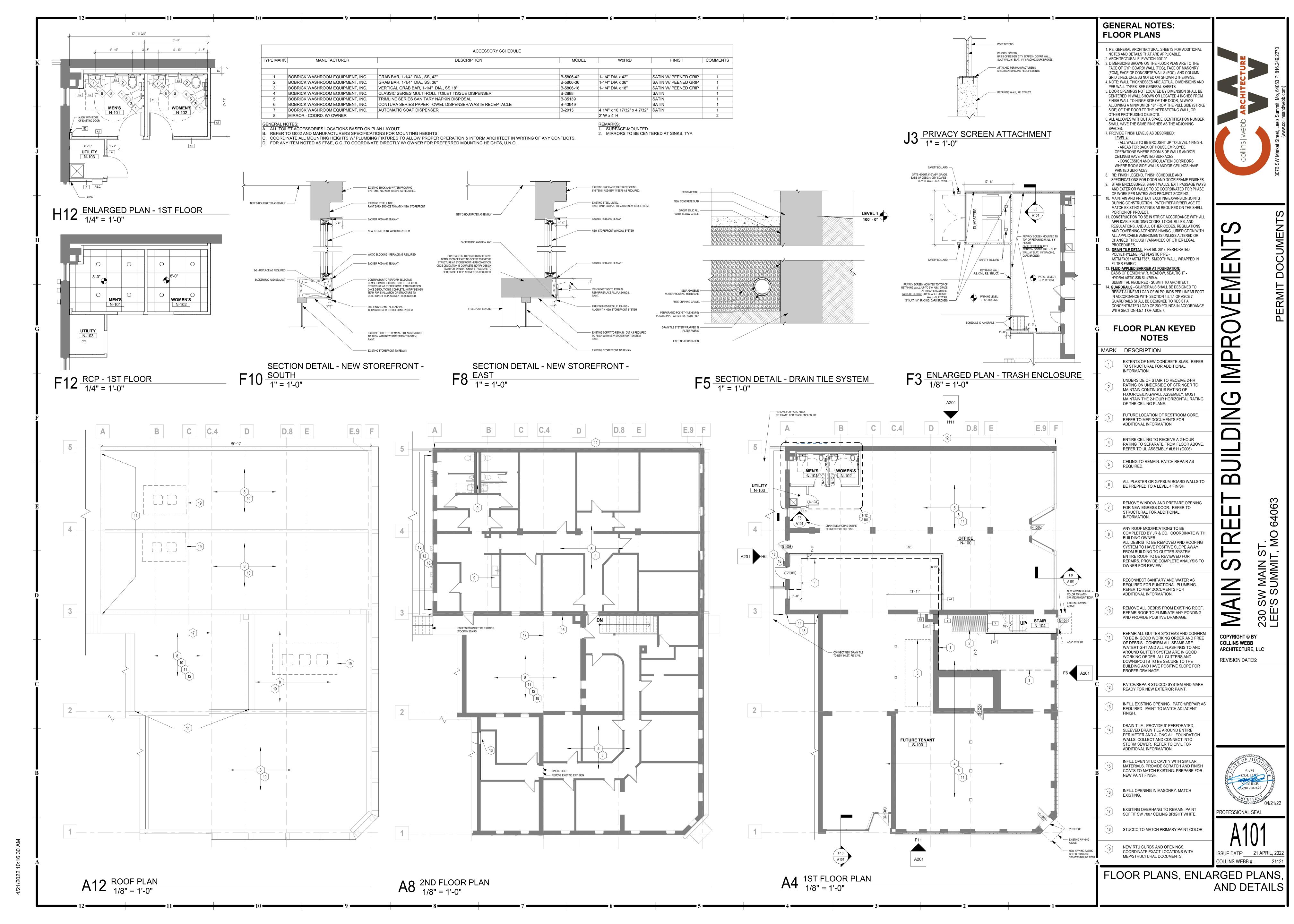
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S102

ISSUE DATE: APRIL 21, 2022
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STRUCTURAL PLANS AND SECTIONS





GENERAL NOTES EXTERIOR ELEVATIONS:

> 1. RE: SHEET G0.01 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE. 2. DIMENSIONS SHOWN ON THE EXTERIOR ELEVATIONS ARE TO THE FACE OF MTL. STUD WALL, FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES, UNLESS OTHERWISE NOTED OR INDICATED. 3. RE: THE WINDOW TYPES SHEET FOR ALL EXTERIOR WINDOW TYPES AND GLASS TYPES. 4. <u>BRICK REPAIR</u> - REFER TO SPECIFICATIONS FOR BRICK REPAIR. ALL MASONRY CONTRACTOR TO REVIEW ALL ELEVATIONS FOR REPAIR/REPLACEMENT AS REQUIRED. 5. **JOINT SEALANTS** - REFER TO SPECIFICATIONS FOR JOINT SEALANT REPAIR. REMOVE/REPLACE/REPAIR ALL JOINT SEALANTS ON THE BUILDING. PROVIDE 1/2" BACK ROD BEHIND SEALANTS BETWEEN ALL DISSIMILAR MATERIALS. COLOR TO MATCH ADJACENT MATERIALS. 6. CONTRACTOR SHALL FOLLOW STUCCO REPAIR AS OUTLINED WITHIN STO RESTORATION DETAIL SERIES DETAIL MANUAL. IF CONTRACTOR USES ALTERNATE OR SUBSTITUTED MANUFACTURER, A SUBMITTAL SHALL BE PROVIDED CONTAINING SIMILAR DETAIL INFORMATION FOR ARCHITECTS APPROVAL. 7. EXTERIOR BRICK, STEEL, AND WOOD PAINT -BASIS OF DESIGN: SHERWIN WILLIAMS - PRO INDUSTRIAL-PRE-CATALYZED WATERBASED URETHANE B65-1100 NOTE FOR CONTRACTOR TO FOLLOW MANUFACTURER RECOMMENDATIONS AND PDS- PRODUCT DATA SHEET. PRIOR TO THE EXTERIOR URETHANE COATING APPLICATION ON BRICK, APPLY CONCRETE AND MASONRY

EXTERIOR ELEVATION KEYED NOTES

MARK DESCRIPTION <u>STOREFRONT SYSTEM</u> - BASIS OF DESIGN IS KAWNEER 450T FRAMING SYSTEM. GLAZING TO BE FRONT GLAZED. REPLACE ALL SILL FLASHINGS. COLOR TO BE DARK BRONZE TO MATCH EXISTING.

DOCUMENTS

DAMAGED BRICK. COLOR TO MATCH EXISTING. TUCK POINT AS REQUIRED. PROVIDE BACKER ROD & SEALANT BETWEEN DISSIMILAR MATERIALS, TYP. RE: SPECIFICATIONS.

<u>CAST STONE</u> - TO BE RE-SET AND LEVELED. RE-GROUT AS REQUIRED.

WOOD DOOR - SAND AND REPAINT ENTRY DOOR AND FRAME. COLOR DARK BRONZE TO MATCH NEW WINDOW SYSTEM.

STEEL LINTEL - REMOVE ALL LOOSE MATERIAL AND REPAINT.

> ALUMINUM WINDOWS / WINDOW HEAD **DETAIL** - ALUMINUM WINDOWS AT SECOND LEVEL EXISTING TO REMAIN. REMOVE ALL LOOSE MATERIAL. REPAIR CAST STONE HEADER AS REQUIRED AND REPAINT.

TOP OF WALL DETAIL - REMOVE ALL LOOSE MATERIAL AND REPAINT. REPAIR AS REQUIRED AND REFLASH TOP OF WALL AS NEEDED TO MAKE A WATER TIGHT SYSTEM. PREPARE FOR NEW FINISH.

REMOVE EXISTING WEATHERHOOD ABOVE EXTERIOR DOOR. 14"X14" OF EXISTING OPENING ABOVE DOOR TO REMAIN FOR NEW INTAKE LOUVER. INFILL REMAINDER OF EXISTING OPENING WITH SUB-FRAMING, SHEATHING, AND FINISH MATERIAL TO MATCH EXISTING. RE: MEP. REPLACE EXISTING DOOR WITH NEW HOLLOW METAL DOOR.

EXISTING AWNINGS - RE-ATTACH EXISTING AWNINGS TO BUILDING. NEW FABRIC ON AWNINGS TO MATCH SW #7625 MOUNT ETNA.

INSTALL NEW TEMPERED GLAZING AS REQUIRED.

REPLACE WOOD TRIM AT PERIMETER OF WINDOW WITH EXTERIOR/PAINT-GRADE LUMBER. MATCH EXISTING LUMBER SIZES.

EXHAUST WALL CAPS, RE: MECH. PAINT TO MATCH WALL.

LOUVERS, RE: MECH. PAINT TO MATCH WALL. ELEC. METER, RE: ELEC.

EXTERIOR ELEVATION COLOR LEGEND

> PRIMARY COLOR: SW #7594 CARRIAGE DOOR ACCENT COLOR 1:

SW #7625 MOUNT ETNA **ACCENT COLOR 2:** SW #7675 SEALSKIN

ACCENT COLOR 3: SW #0009 EASTLAKE GOLD

EXISTING GLAZED TILE TO

LEVEL 1 100' - 0"

GRADE +/- 99' - 6"

REMAIN. RE: KEYNOTE #6 PROFESSIONAL SEAL

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EXTERIOR ELEVATIONS AND

A8 EAST ELEVATION - COLOR 3/16" = 1'-0"

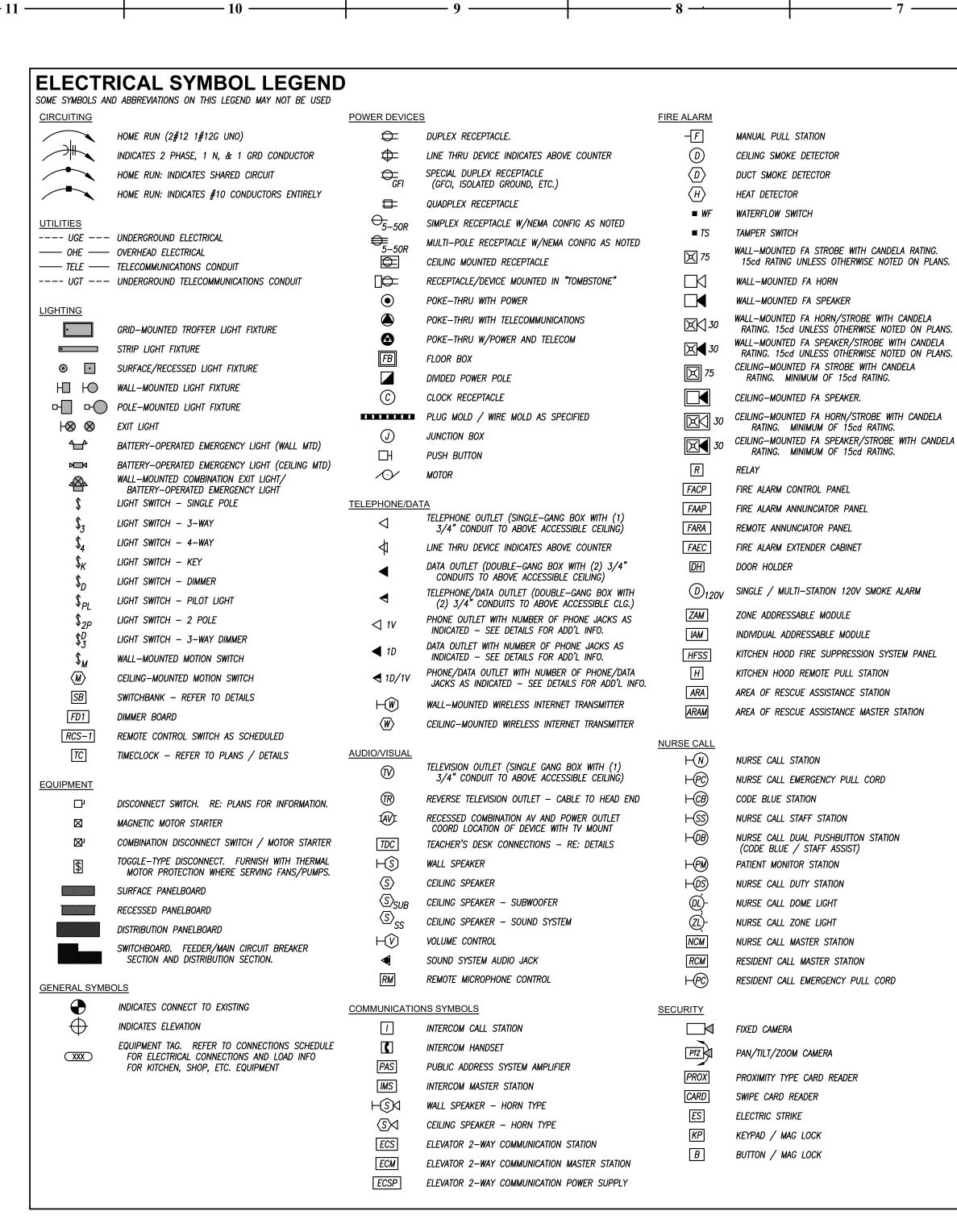
4. DOOR FRAME 2" OFF FINISHED FACE ON HINGE SIDE, U.N.O.

7. COORDINATE HARDWARE WITH MANUFACTURER.

6. MANUALLY LOCKABLE FROM INSIDE OF ROOM. MASTER KEY LOCK ON OUTSIDE OF ROOM.

5. PROVIDE PANIC HARDWARE.

DOOR SCHEDULE



ARR	IATIC	JNIC
ADD		

A /E	ARCHITECT / ENGINEER
-	
	ABOVE FINISHED FLOOR
	ABOVE FINISHED GRADE
	ABOVE GRADE
	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ARCH	ARCHITECT
BFP	BACKFLOW PREVENTER
BG	BELOW GRADE
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
С	CONDUIT
CD	CANDELA
CD	COLD DECK
CLG	COOLING
CM	COORDINATE MOUNTING HEIGHT
CO	CLEAN OUT
CTE	CONNECT TO EXISTING
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DCW	DOMESTIC COLD WATER
DDC	DIRECT DIGITAL CONTROLS
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DIA	DIAMETER
DN	DOWN

E/C ELECTRICAL CONTRACTOR

EDF ELECTRIC DRINKING FOUNTAIN

EA EXHAUST AIR

ELEV ELEVATION EM EMERGENCY FIXTURE/DEVICE EWT ENTERING WATER TEMPERATURE EXISTING ITEM FFA FROM FLOOR ABOVE FFB FROM FLOOR BELOW FFCO FINISHED FLOOR CLEAN OUT

FGCO FLUSH GRADE CLEAN OUT FL FLOW LINE FLR FLOOR FP FIRE PROTECTION FPM FEET PER MINUTE FWCO FLUSH WALL CLEAN OUT G GROUND / GANG G/C GENERAL CONTRACTOR GFIP GFI-PROTECTED DEVICE GPM GALLONS PER MINUTE

HD HOT DECK HTG HEATING ISOLATED GROUND JUNCTION BOX LED LIGHT EMITTING DIODE LWT LEAVING WATER TEMPERATURE M/C MECHANICAL CONTRACTOR

MIXED AIR

MECH MECHANICAL

MAU MAKE UP AIR UNIT

MCB MAIN CIRCUIT BREAKER

MLO MAIN LUGS ONLY NFA NET FREE AREA NIGHT LIGHT OUTSIDE AIR ORD OVERFLOW ROOF DRAIN P/C PLUMBING CONTRACTOR PSI POUNDS PER SQUARE INCH PVC POLYVINYLCHLORIDE

ra return air RE/REF REFER / REFERENCE RF RELIEF FAN RELOCATED ITEM RPZ REDUCED PRESSURE ZONE RR RESTROOM GROUND FAULT CIRCUIT INTERUPTER SA SUPPLY AIR

SPD SURGE PROTECTIVE DEVICE ST SHUNT TRIP TRANSFER AIR TFA TO FLOOR ABOVE TFB TO FLOOR BELOW TP TAMPERPROOF TYP TYPICAL

> UNO UNLESS NOTED OTHERWISE VRF VARIABLE REFRIGERANT FLOW VTR VENT THROUGH ROOF WCO WALL CLEANOUT WG WIRE GUARD WP WEATHERPROOF

FIRE SEALING NOTES

. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE 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 C 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

AS PER MANUFACTURERS RECOMMENDATIONS 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.

	NICAL AND PLUMBING ND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED	SYMBO	L LEGEND		
SHEET METAL	IND ADDITEVIATIONS ON THIS ELGEND WAT NOT BE USED	MECHANICAL PI	PING	PIPING SYMBOL	S
T*T_ T*T	HIGH EFFICIENCY ROUND DUCT TAKEOFF		REFRIGERANT LIQUID	\longrightarrow	SHUTOFF VALVE
	(WITH & WITHOUT MANUAL DAMPER)		REFRIGERANT SUCTION		SHUTOFF VALVE IN RISER
-	SPIN-IN ROUND DUCT TAKEOFF		DRAIN (CONDENSATE)	→ >>	BALANCING VALVE
	(WITH & WITHOUT MANUAL DAMPER)		COMPRESSED AIR	— - - - - - - - - - - - -	PLUG VALVE
	,		CHILLED WATER SUPPLY	—	AUTO FLOW CONTROL VALVE
<u> </u>	CONICAL BELLMOUTH ROUND TAKEOFF		CHILLED WATER RETURN		PIPING ELBOW UP
T*T-			CHILLED/HOT WATER SUPPLY	— 5	PIPING ELBOW DOWN
	ROUND DUCT RUNOUT WITH FLEX DUCT	•	CHILLED/HOT WATER RETURN		PIPING TEE
		·	HOT WATER SUPPLY	 - <u>-</u> -	PIPING ELBOW
	DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)		HOT WATER RETURN	+	PIPING TEE UP
	FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER		COOLING TOWER SUPPLY	- 101	PIPING TEE DOWN
	FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER SD:SMOKE DAMPER BD:BACKDRAFT DAMPER (GRAVITY)		COOLING TOWER RETURN	— 	INCREASER / REDUCER
	, , , , , , , , , , , , , , , , , , , ,		STEAM (ANY #'S DENOTE PRESSURE)		UNION
(MD)	AUTOMATIC MOTORIZED DAMPER		CONDENSATE RETURN (#'S DENOTE PRESSURE)		CAP
0"4 - 225	SUPPLY DIFFUSER AND DIFFUSER CALLOUT		REFRIGERANT VENT	-	PIPE FLEX
8 %(A) 223	(NECK SIZE, TYPE AND CFM)		RUPTURE DISK	- > -	STRAINER
	LINEAR/SLOT DIFFUSER	ND	NOT TONE DION	— 	CHECK VALVE
	,	PLUMBING PIPIN	IG.	-+++++ -	INLINE STRAINER
	RETURN GRILLE OR EXHAUST REGISTER		DOMESTIC COLD WATER		TEST PLUG
←	SUPPLY AIR FLOW INDICATOR		DOMESTIC HOT WATER		GUIDE
~ →	RETURN AND EXHAUST AIR FLOW INDICATOR		RECIRCULATING DOMESTIC HOT WATER		ANCHOR
⊕	THERMOSTAT	SAN	WASTE ABOVE GRADE OR FLOOR		
9	TEMPERATURE SENSOR		WASTE BELOW GRADE OR FLOOR	- ₫-	TRIPLE DUTY VALVE
н	HUMIDISTAT		STORM ABOVE GRADE OR FLOOR	⊸ \$—	AUTOMATIC 2-WAY CONTROL VALVE
/	CONTROL WIRING		STORM BELOW GRADE OR FLOOR	− 1\$21 −	AUTOMATIC 3-WAY CONTROL VALVE
			STORM OVERFLOW ABOVE GRADE OR FLOOR	平	
MEDICAL GAS		•	STORM OVERFLOW BELOW GRADE OR FLOOR	─ >>	SOLENOID VALVE
MV	MEDICAL VACUUM PIPING	•	PLUMBING VENT		
<u> </u>	OXYGEN PIPING	w	WATER SERVICE	PIPING SPECIAL	<u>TIES</u>
NO	NITROUS OXIDE PIPING			$ \mathcal{Q} \mathcal{Q} $	PRESS/ TEMP GAUGE WITH COCK
— SA —	MEDICAL COMPRESSED AIR PIPING		FROM SUMP PUMP DISCHARGE	_ +	FRESSY TEMP GAUGE WITH COCK
— N —	NITROGEN PIPING		· COMPRESSED AIR	Q	THERMOMETER.
— co —	CARBON DIOXIDE PIPING	LP		+ _	THERMOMETER.
— v v—	VACUUM VENT PIPING	- -	SOFT DOMESTIC COLD WATER	HI LOW	PRESSURE REDUCING VALVE
— WAGD —	WASTE ANESTHETIC GAS DISPOSAL PIPING		SOFT DOMESTIC COLD WATER SOFT DOMESTIC HOT WATER	-0	FRESSORE REDUCING VALVE
—— GV ——	MEDICAL GAS VENT PIPING		SOFT RECIRCULATING HOT WATER	→ ><	RELIEF VALVE
⊢ _χ	MEDICAL GAS OUTLET W/ DESIGNATION (RE: BELOW)	—— ACID——		7	RELIEF VALVE
1	O OXYGEN		ACID WASTE VENT	Ų	WATER HAMMER APPECTED
	N NITROGEN	VACID		 [±] 	WATER HAMMER ARRESTER
	NO NITROUS OXIDE		NON-POTABLE DEIONIZED WATER		
	WAGD WASTE ANESTHETIC GAS DISPOSAL		REVERSE OSMOSIS WATER	PLUMBING FIXT	URES/EQUIPMENT
	CO CARBON DIOXIDE		NEVENSE USMUSIS WATER	—	HOSE BIBB
	MV MEDICAL VACUUM	(W&V)	PLUMBING RISER CALLOUT (REFERS TO RISER DIAGRAM)	— ⊏I WH	WALL HYDRANT
	SA SURGICAL AIR	(xx)	TEOMOTIVE MOEN CALLOUT (MELENS TO MOEN DIMONAM)	——————————————————————————————————————	CLEAN OUT
I	C MEDICAL CLIDE	\sim			

FIRE SPRINKLER

— F — FIRE PROTECTION PIPING

SIDEWALL SPRINKLER HEAD

POST INDICATOR VALVE

FIRE PROTECTION SIAMESE CONNECTION

3. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE

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

5. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK

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

. COORDINATE. PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN

B. 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

9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR

10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT

OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A

INTERFERENCES. BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE

THE EXACT ROUTE AND LOCATION OF EACH ITEM PRIOR T

FABRICATION. MAKE OFFSETS. TRANSITIONS AND CHANGES IN

DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE

11.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 TH

WORK AND ITS RELATION TO THE WORK OF OTHER TRADES, AND BE

12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR

REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL

NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO

13. COORDINATE THE MOUNTING OF SUSPENDED LIGHT FIXTURES

UTILIZING INDIRECT LIGHT SO THAT CONDUIT. DUCTWORI

STRUCTURAL MEMBERS, ETC. ARE NOT LOCATED DIRECTLY ABOVE

THE LIGHT FIXTURE. MAINTAIN A MINIMUM OF 24" CLEARANCE FROM

SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION

SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.

ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.

RESULT OF CONSTRUCTION ACTIVITIES.

CLEARANCES AND HEADROOM.

OR ERECTION IN THE FIELD.

ACCOMPLISH THE WORK

THESE ITEMS WHENEVER POSSIBLE.

CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND

TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE

CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS.

——⊗—— SPRINKLER HEAD

TIME FOR INSTALLATION.

GEN. MECHANICAL NOTES

GENERAL SYMBOLS

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

MEDICAL SLIDE

EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE

FOR MECHANICAL CONNECTIONS AND LOAD INFO

FOR KITCHEN, SHOP, ETC. EQUIPMENT

INDICATES CONNECT TO EXISTING

MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE 5. EACH 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 BE 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

GENERAL ELECTRICAL NOTES

. 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. P. 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. 5.2. REFER TO SPECIFICATIONS FOR ALLOWABLE WIRING METHODS THROUGHOUT PROJECT.

5.3. ALL EXPOSED WIRING SHALL BE IN EMT OR METALLIC CONDUIT, EXCEPT AS PERMITTED BY SPECIFICATIONS FOR WHIPS TO

6. ALL CONDUCTOR SIZES INDICATED ON DRAWINGS ARE FOR COPPER CONDUCTORS UNLESS SPECIFICALLY NOTED OTHERWISE. ALUMINUM CONDUCTORS MAY BE USED ONLY UNDER THE FOLLOWING

6.1. CONTRACTOR SHALL INCLUDE A DEDUCT ALTERNATE FOR USE OF SAME WITH BIDS, FOR OWNER ACCEPTANCE. 6.2. AL CONDUCTORS MAY ONLY BE USED ON FEEDERS 100A OR

GRFATER - NO EXCEPTIONS 6.3. ALUMINUM CABLING SHALL BE COMPACTED ALUMINUM

6.4. PROVIDE COMPRESSION-TYPE ONE-HOLE OR TWO-HOLE LUG TERMINATIONS. 6.5. PROVIDE ANTI-OXIDANT COMPOUND AT TERMINATIONS.

6.6. CABLE TERMINATIONS SHALL BE MARKED "AL/CU". 6.7. FINAL SIZES OF CONDUCTORS TO BE CONFIRMED BY ENGINEER 6.8. ALUMINUM SERVICE CONDUCTORS MUST HAVE "AA-8000" SERIES LABELING ON CABLE JACKETS PER EVERGY REQUIREMENTS -NO EXCEPTIONS. ENGINEER RESERVES FINAL RIGHT TO ACCEPT/DENY USE OF

ALUMINUM CONDUCTORS FOR PART OR ALL OF PROJECT.

COORDINATION NOTES DEMOLITION NOTES

COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND 1. ALL WORK SHOWN DARK AND DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN. EQUIPMENT WITH ALL OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF 2. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION DEMOLITION REQUIREMENTS. AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE 3. ALL EXISTING PIPING SCHEDULED FOR DEMOLITION THAT ROUTES FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS BELOW SLAB SHALL BE GROUND FLUSH WITH FLOOR, PLUGGED AND FOR SYSTEMS AND COMPONENTS AS NEEDED TO INSTALL THE MEP THE FLOOR PATCHED TO MATCH SURROUNDING FLOOR. SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS 4. COORDINATE ALL DEMOLITION WORK WITH OWNER. IN POTENTIAL CONFLICT WITH ROUTING.

DCBP

FD-1 FS: FLOOR SINK

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. . CONTRACTOR SHALL REMOVE LAY—IN CEILINGS, LIGHT FIXTURES, ETC.

REDUCED PRESSURE BACKFLOW PREVENTER

DOUBLE CHECK BACKFLOW PREVENTER

PLUMBING FIXTURE AND CALLOUT

FD: FLOOR DRAIN, AD: AREA DRAIN,

ORD: OVERFLOW ROOF DRAIN

RD: ROOF DRAIN

AS REQUIRED FOR CONSTRUCTION WHERE NEEDED PRIOR DEMOLITION AND REPLACE SAME AFTER CONSTRUCTION. EXISTING CONDUITS ABOVE CEILINGS SHALL BE RELOCATED AND/OR TEMPORARILY REMOVED TO FACILITATE THE INSTALLATION OF NEW FOUIPMENT. 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 A CHANGE IN THE CONTRACT AMOUNT. O. 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, . REQUIRED. ANY ITEMS DAMAGED OR MARRED SHALL E 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. ALL

ELECTRICAL CONDUIT AND WIRING SHALL BE REMOVED BACK TO PANELBOARDS AND PROPERLY TERMINATED. 16. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING. REFER TO PLUMBING PLANS SHOWING NEW WORK. 17. SAVE, CLEAN, AND RE-LAMP ALL LIGHT FIXTURES NOTED AS BEING RELOCATED. REFER TO NEW WORK PLANS AND LIGHT FIXTURE SCHEDULE FOR DESCRIPTIONS, QUANTITIES, AND LOCATIONS OF FIXTURES TO BE RE-USED.

GENERAL NOTES

. SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CI ARIFYING 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

COMPLIANT INSTALLATION. 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC

. DISCONNECT AND REMOVE ANY EQUIPMENT, PIPING OR DUCTWORK 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,

CARE TO LOCATE EXISTING CONDUIT, ETC AND AVOID CUTTING

6. EXISTING CIRCUITING MAY BE RE-USED WHERE POSSIBLE. 7. CONCEAL NEW CIRCUITING IN WALLS WHERE POSSIBLE. FOR NEW

SHEET INDEX

MEP001 COVER SHEET

MEP101 ROOF PLAN

P301

MEP002 THROUGH PENETRATION DETAILS

DEMOLITION - FLOOR PLANS

MECHANICAL - FLOOR PLANS

DEMOLITON - FLOOR PLANS

PLUMBING - FLOOR PLANS

PLUMBING - RISER DIAGRAMS

PLUMBING - SCHED./DETAILS

DEMOLITION - FLOOR PLANS

ELECTRICAL - FLOOR PLANS

ELECTRICAL - RISER DIAGRAMS

ELECTRICAL - SCHED./DETAILS

ELECTRICAL - PANELBOARD SCHEDULES

MECHANICAL - SCHED./DETAILS

INCLUDE ALL COSTS, EQUIPMENT, MATERIAL, ACCESSORIES, ETC REQUIRED FOR A FULLY COMPLETE, FUNCTIONAL AND CODE 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.

GEN. RENOVATION NOTES

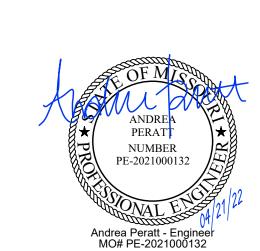
ETC. PATCH FLOOR TO MAKE LIKE NEW AFTER INSTALLATION. TAKE

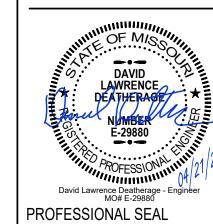
EXISTING CONDUITS BY NOT OVER-CUTTING SLAB DEPTH. 4. SAWCUT AND CORE DRILL OPENINGS AS REQUIRED FOR ABOVE GRADE SLAB PENETRATIONS. X—RAY SLABS TO ASCERTAIN STEEL AND EXISTING CONDUIT PENETRATIONS PRIOR TO CUTTING. VERIFY OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO CUTTING.

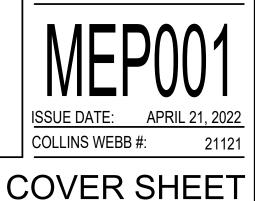
5. HOMERUN CIRCUITS TO 20 AMP, SINGLE POLE BREAKERS IN PANELBOARDS INDICATED. UTILIZE SPARE BREAKERS MADE AVAILABLE BY DEMOLITION, IF NO SPARE BREAKER IS AVAILABLE, PROVIDE NEW BREAKER.

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

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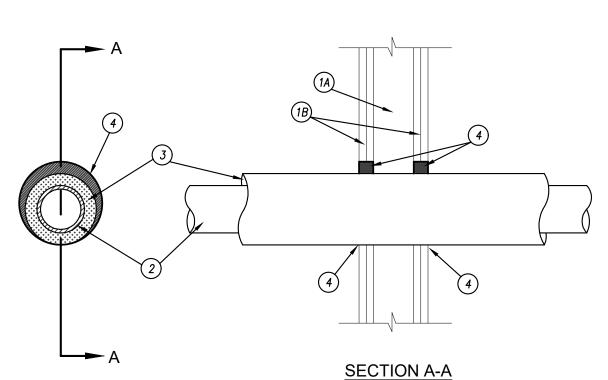












1. WALL ASSEMBLY — THE 1 OR 2 HR FIRE—RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE AND SPACED MAX 24 IN. OC. B. GYPSUM BOARD* — NOM 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IN WALLBOARD LAYERS IS 7 IN. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS 1 HR WHEN INSTALLED IN A 1 HR FIRE RATED WALL AND

A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS

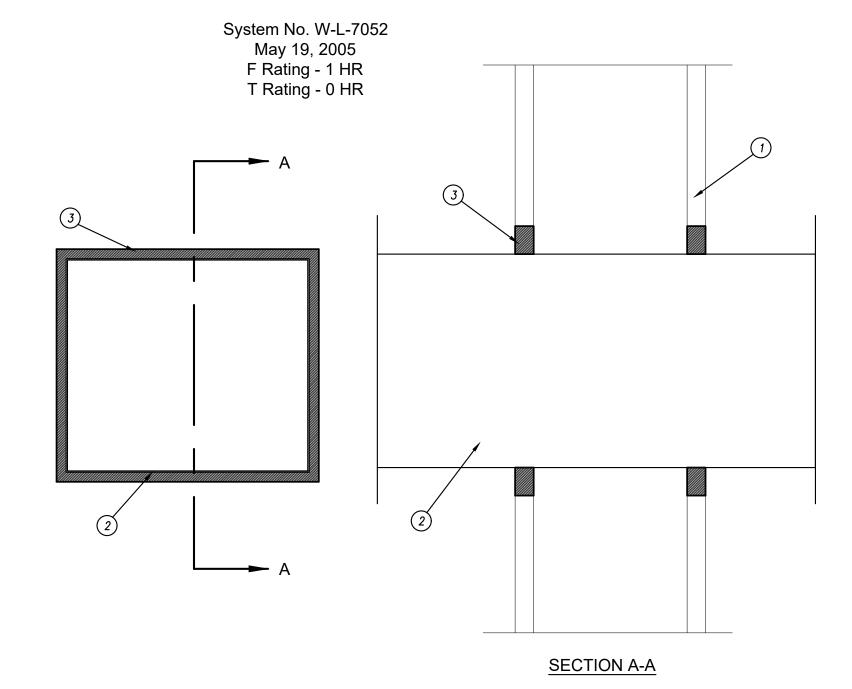
2. THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED: A. STEEL PIPE - NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. WHEN STEEL PIPE

2 HR WHEN INSTALLED IN A 2 HR FIRE RATED WALL.

- IS USED, T RATING IS 3/4 HR. B. COPPER TUBING - NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. T RATING IS 3/4 HR FOR COPPER TUBING OF NOM 2 IN. DIAM AND SMALLER. FOR COPPER TUBING GREATER THAN
- NOM 2 IN. DIAM, T RATING IS 1/4 AND 1/2 HR WHEN INSTALLED IN 1 AND 2 HR RATED WALLS, RESPECTIVELY. C. COPPER PIPE - NOM 4 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. T RATING IS 3/4 HR FOR COPPER PIPE OF NOM 2 IN. DIAM AND SMALLER. FOR COPPER PIPE GREATER THAN NOM 2 IN. DIAM, T RATING IS 1/4 AND 1/2 HR WHEN INSTALLED IN 1 AND 2 HR RATED WALL RESPECTIVELY.
- 3. PIPE INSULATION PLASTICS# NOM 3/4 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. THE ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE EDGE OF THE THROUGH OPENING SHALL BE MIN ZERO IN. (POINT CONTACT) TO MAX 1-1/4 IN. SEE PLASTICS# (QMFZ2) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTÜRÈRS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE
- 4. FILL, VOID OR CAVITY MATERIALS* CAULK OR SEALANT MIN 5/8 IN. THICKNESS OF CAULK APPLIED WITHIN THE ANNULAR SPACE, FLUSH WITH EACH SURFACE OF WALL. A MÍN 1/2 IN. DIAM BEAD OF CAULK SHALL BE APPLIED TO THE PIPE INSULATION/ WALLBOARD INTERFACE AT THE POINT CONTACT LOCATION ON BOTH SIDES

SPECIFICATIONS AND HAVING A UL94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.

3M COMPANY - CP 25WB+ CAULK OR FB-3000 WT SEALANT *BEARING THE UL CLASSIFICATION MARKING



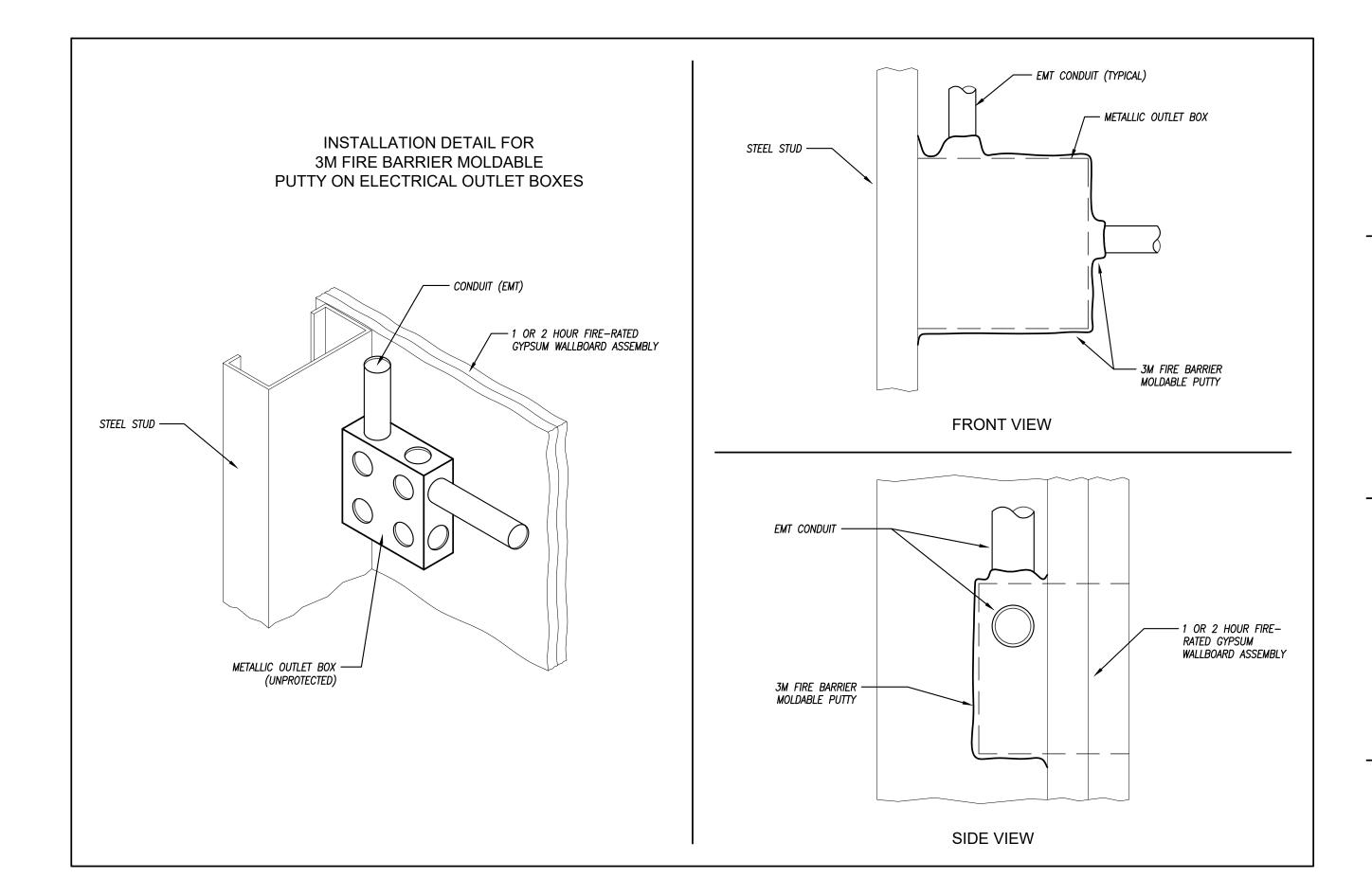
1. WALL ASSEMBLY - THE 1 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES. A. STUDS — WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 MM BY 102 MM) LUMBER SPACED 16 IN.(406 MM) OC. STEEL STUDS TO BE MIN 3-1/2 IN. (89 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC.

SIZE OF OPENING IS 14 BY 14 IN. (356 MM BY 356 MM) SQUARE. 2. STEEL DUCT - NOM 12 BY 12 IN. (305 MM BY 305 MM) (OR SMALLER) NO. 24 GAUGE (OR HEAVIER) GALV STEEL DUCT TO BE CENTERED WITHIN OPENING WITH A NOM ANNULAR SPACE OF 1 IN. (25 MM). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF OPENING.

B. GYPSUM BOARD* — THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS AS REQUIRED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX

3. FILL, VOID OR CAVITY MATERIAL* — CAULK OR SEALANT — MIN 5/8 IN. (16 MM) THICKNESS OF CAULK APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL ASSEMBLY.

3M COMPANY - CP 25WB+, IC 15WB+ CAULK OR FB-3000 WT SEALANT *BEARING THE UL CLASSIFICATION MARK



System No. C-AJ-7016 May 19, 2005 F Ratings - 2 & 3 Hr (See Item 1) T Rating - 0 Hr (See Item 1) SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) THICK OR MIN 4-1/2 IN. (114 MM) THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. THE F RATING IS 2 HR AND 3 HR FOR MIN 2-1/2 IN. (64 MM) OR MIN 4-1/2 IN. (114 MM) THICK ASSEMBLIES.

MAX AREA OF OPENING IS 576 SQ IN. (3716 C/M2) WITH MAX DIMENSION OF 36 IN. (914 MM) FOR 2 HR ASSEMBLIES AND 544 SQ IN. (3510 C/M2) WITH MAX DIMENSION OF 34 IN. (864 MM) FOR 3 HR ASSEMBLIES. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH PENETRANTS — ONE STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. AN ANNULAR SPACE OF MIN O IN. (POINT CONTACT) TO MAX 4 IN. (0 MM TO MAX 102 MM) IS REQUIRED WITHIN THE FIRESTOP SYSTEM FOR 2 HR ASSEMBLIES AND MIN 0 IN. (POINT CONTACT) TO MAX 2 IN. IS REQUÍRED WITHIN THE FIRESTOP SYSTEM FOR 3 HR ASSEMBLIES. STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSÉMBLY. THE FOLLOWING SIZES OF STEEL DUCTS MAY BE USED: A. STEEL DUCT — NOM 32 IN. BY 14 IN. (813 MM BY 356 MM) (OR SMALLER) NO. 22 GAUGE (OR HEAVIER) GALV STEEL DUCT.

B. STEEL DUCT - NOM 30 IN. BY 12 IN. (762 MM BY 305 MM) (OR SMALLER) NO. 24 GAUGE (OR HEAVIER) GALV STEEL DUCT.

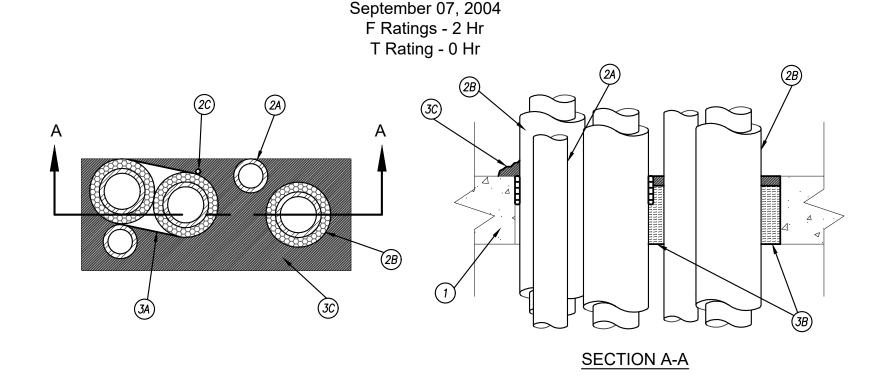
SHALL BE APPLIED TO THE CONCRETE/DUCT INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL ASSEMBLY.

3. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL — NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY PACKED MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL. B. FILL, VOID OR CAVITY MATERIAL* — CAULK OR SEALANT — MIN 1 IN. (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. AT THE POINT CONTACT LOCATION BETWEEN DUCT AND CONCRETE, A MIN 1/4 IN. (6 MM) DIAM BEAD OF SEALANT

3M COMPANY - CP 25WB+, IC 15WB+ CAULK OR FB-3000 WT SEALANT. C. RETAINING ANGLES - MIN 16 GAUGE GALV STEEL ANGLES SIZED TO LAP DUCT A MIN OF 2 IN. (51 MM) IN. AND LAP TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL A MIN OF 1 IN. (25 MM). ANGLES ATTACHED TO DUCT WITH MIN 1/2 IN. (13 MM) LONG, NO. 10 (OR LARGER) SHEET METAL SCREWS SPACED A MAX OF 1 IN. (25 MM) FROM EACH END OF DUCT AND SPACED A MAX OF 6 IN. (152 MM) OC.

*BEARING THE UL CLASSIFICATION MARKING



System No. C-AJ-8088

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX AREA OF OPENING IS 144 SQ IN. WITH A MAX DIMENSION OF 18 IN. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

A2. COPPER PIPE - NOM 3 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

CABLE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

3M COMPANY - MP+ STIX PUTTY, CP 25WB+ CAULK OR FB-3000 WT SEALANT.

2. THROUGH PENETRANTS - METALLIC PIPES, TUBING OR CABLE TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PENETRANTS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF PENETRANTS MAY BE USED. A. METALLIC PIPES — MAX FIVE METALLIC PIPES OR TUBING, THE ANNULAR SPACE BETWEEN UNINSULATED PENETRANT AND PERIPHERY OF OPENING SHALL BE MIN O IN. (POINT CONTACT) TO MAX 2-3/4 IN. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED: A1. COPPER TUBING - NOM 3 IN. DIAM (OR SMALLER) TYPE M (OR HEAVIER) COPPER TUBE.

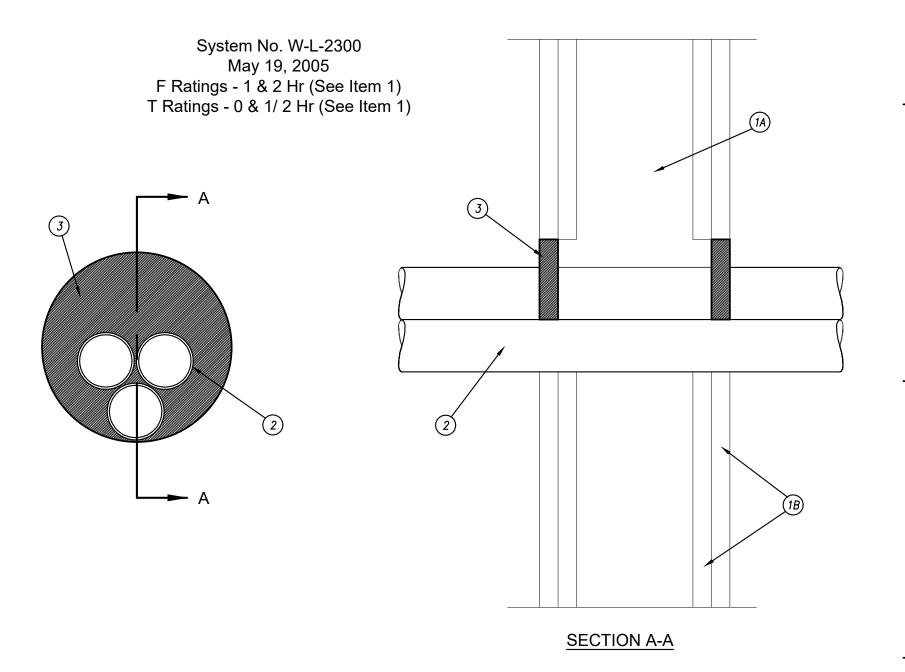
B. TUBE INSULATION — PLASTICS+ — NOM 1 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. THE TUBE INSULATION SHALL BE INSTALLED ON ALL TUBING GREATER THAN NOM 2 IN. DÌAM. THÉ ANNULAR SPACE BETWEEN THE INSULATED PENETRATING ITEM AND UNINSULATED METALLIC PIPES, CONDUIT OR TUBING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 1-1/4 IN. THE ANNULAR SPACE BETWEEN THE INSULATED PENETRATING ITEM AND THE PERIPHERY OF THE OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 2-3/4 IN. SEE PLASTICS (QMFZ2) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING OF THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94–5A MAY BE USED. C. CABLES - MAX ONE 2/C NO. 18 AWG (OR SMALLER) THERMOSTAT WIRE SPACED MIN 0 IN. (POINT CONTACT) FROM TUBE INSULATION OR MIN 1/2 IN. FROM OTHER PENETRANTS. THE ANNULAR SPACE BETWEEN CABLE AND PERIPHERY OF OPENING IS MIN 0 IN. (POINT CONTACT) TO MAX 2-3/4 IN.

3. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS: A. FILL, VOID OR CAVITY MATERIALS* — WRAP STRIP — NOM 1/8 IN. THICK INTUMESCENT MATERIAL SUPPLIED IN 2 IN. WIDE STRIPS. MIN ONE LAYER OF WRAP STRIP WRAPPED AROUND PENETRANTS AND PIPE INSULATION AND SECURED IN PLACE WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND RECESSED WITHIN THE OPENING NOT MORE THAN 2 IN. ABOVE THE BOTTOM OF THE FLOOR. WRAP STRIP REQUIRED AROUND INSULATED PENETRANTS WHICH MAY BE TIGHTLY BUNDLED TOGETHER. WRAP STRIP ALSO REQUIRED TO BE INSTALLED AROUND INSULATED PENETRANTS WHEN INSTALLED LESS THAN 1/2 IN. FROM UNINSULATED TUBES OR CABLES. IN SUCH CASES WHERE INSULATED PENETRANT IS AT POINT CONTACT WITH UNINSULATED TUBES OR CABLES, WRAP STRIP TO BE WEDGED BETWEEN INSULATION AND UNINSULATED TUBE OR CABLE BY COMPRESSING INSULATION. WRAP STRIP NOT REQUIRED

AROUND INSULATED TUBES INSTALLED 1/2 IN. OR GREATER FROM OTHER PENETRANTS. 3M COMPANY — ULTRA GS B. PACKING MATERIAL - MIN 3 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. C. FILL, VOID OR CAVITY MATERIALS* - CAULK, SEALANT OR PUTTY - MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR. MIN 1/2 IN. DIAM BEAD OF FILL MATERIAL APPLIED TO THE PENETRANT/CONCRETE INTERFACE AT THE POINT CONTACT

*BEARING THE UL CLASSIFICATION MARKING +BEARING THE UL RECOGNIZED COMPONENT MARKING

LOCATION ON THE TOP SURFACE OF FLOOR.



1. WALL ASSEMBLY — THE 1 OR 2 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS — WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 IN. BY 4 IN. (51 MM BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 3-1/2 IN. (89 MM) WIDE SPACED MAX 24 IN. (610 MM) OC. B. GYPSUM BÓARD* — THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 4 IN. (102 MM). THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE HOURLY T RATING IS 0 AND 1/2 HR FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY.

2. THROUGH PENETRANTS — ONE OR MORE NONMETALLIC PIPES, CONDUITS OR TUBES INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING TO BE MIN 0 IN. (POINT CONTACT) TO MAX 1 IN. (0 MM TO MAX 25 MM). SPACE BETWEEN PENETRANTS SHALL BE MIN O IN. (POINT CONTACT) TO MAX 1 IN. (O MM TO MAX 25 MM). PENETRANTS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE FOLLOWING TYPES AND SIZES OF PENÉTRANTS MAY BE USED: A. POLYVINYL CHLORIDE (PVC) PIPE - NOM 1-1/2 IN. (38 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SÚPPLY) OR VENTED (DRAIN, WASTE ÓR VENT) PIPING SYSTEMS. B. RIGID NONMETALLIC CONDUIT++ - NOM 1-1/2 IN. (38 MM) DIAM (OR SMALLER) SCHEDULE 40 PVC CONDUIT INSTALLED IN ACCORDANCE WITH ARTICLE 347 OF THE NATIONAL ELECTRICAL CODE (NFPA NO. 70). C. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOM 1-1/2 IN. (38 MM) DIAM (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. D. CROSSLINKÉD POLYETHYLENE (PEX) TUBING — NOM 1 IN. (25 MM) DIAM (OR SMALLER) SDR 9 PEX TUBING FOR USE IN CLOSED (PROCESS OR SUPPLY)

3. FILL, VOID OR CAVITY MATERIAL* — CAULK OR SEALANT — MIN 5/8 IN. (16 MM) THICKNESS OF CAULK APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. 3M COMPANY - IC 15WB+. CP 25WB+ CAULK OR FB-3000 WT SEALANT (NOTE: CP 25WB+ NOT SUITABLE FOR USE WITH CPVC PIPES.)

13300 W 98TH STREET

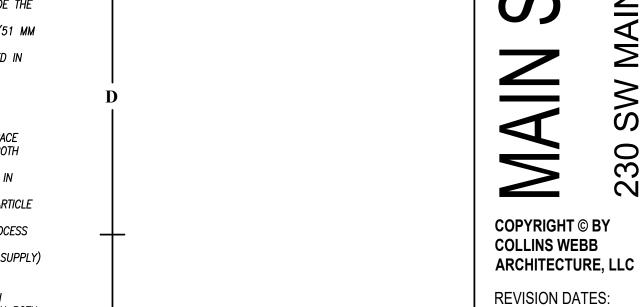
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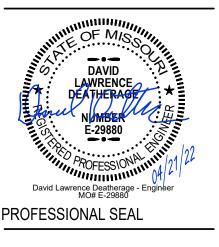
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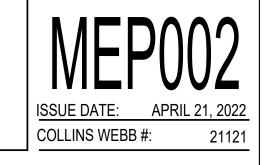
*BEARING THE UL CLASSIFICATION MARKING

OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.



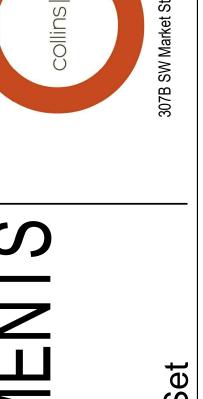


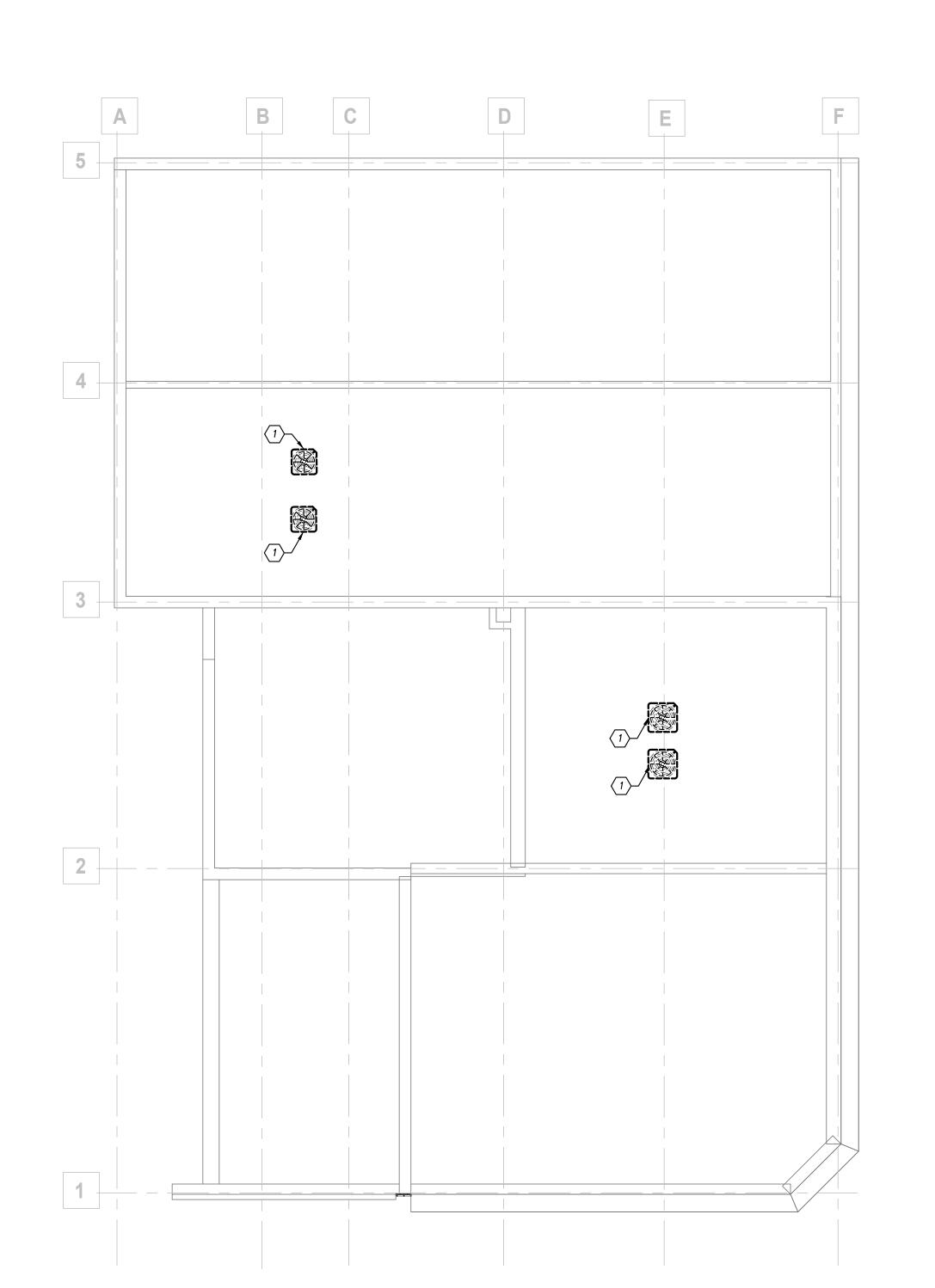




THROUGH PENETRATION DETAILS







ROOF PLAN - DEMOLITION

1/8" = 1'-0"

GENERAL ROOF PLAN NOTES

1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK. 2. MAINTAIN CODE-REQUIRED DISTANCES FOR ALL VENTS, EXPLAISTS, ETC. FROM MECHANICAL EQUIPMENT OUTSIDE AIR

3. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE MOUNTED A MINIMUM OF 36" ABOVE THE ROOF ON SUITABLE STEEL SUPPORTS UNLESS OTHERWISE NOTED.

ROOF PLAN KEYED NOTES

CONTRACTOR TO FIELD VERIFY LOCATION AND REMOVE EXISTING CONDENSING UNITS. REUSE EXISTING LOCATIONS, REFRIGERANT PIPE PENETRATIONS AND ACCESSORIES OF CONDENSING UNITS SERVING SECOND FLOOR. REFER TO NEW WARM PLAN

WORK PLAN. 2 DISHWASHER, GREASE AND MAKE—UP AIR DUCT FROM/ TO FIRST FLOOR TO/ FROM 2ND FLOOR ROOF. $\left\langle \overline{3} \right
angle$ CAP DUCTWORK ON ROOF FOR FUTURE USE.

CONDENSING UNIT SERVING 2ND FLOOR TO BE INSTALLED IN EXISTING LOCATION.

5 60AMP, 3-POLE, NON-FUSED HEAVY-DUTY DISCONNECT SWITCH IN NEMA 3R ENCLOSURE. 6 30AMP, 3-POLE, NON-FUSED HEAVY DUTY DISCONNECT SWITCH IN NEMA 3R ENCLOSURE. $\langle 7 \rangle$ (3) #6 WIRE AND (1) #10 GROUND IN 3/4" CONDUIT.

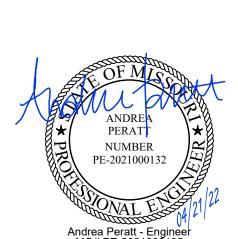
H (8) (3) #8 WIRE AND (1) #10 GROUND IN 3/4" CONDUIT.

9 CONDUIT PENETRATIONS FOR FUTURE MECHANICAL EQUIPMENT REFER TO SHEET E111 FOR ADDITIONAL INFORMATION.

STREET

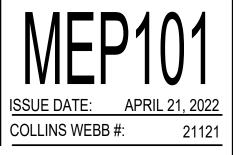
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REVISION DATES:



PEARSON KENT MCKINLEY RAAF ENGINEERS LLC 13300 W 98TH STREET LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM MO State Certificate of Authority #E-2002020886









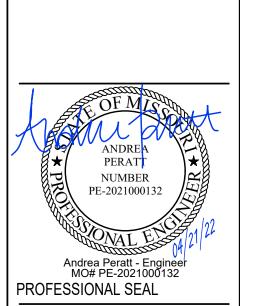
1. REFER TO GENERAL DEMOLITION NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

DEMOLITION PLAN KEYED NOTES

- 1) REMOVE ALL DUCTWORK, DIFFUSERS AND EQUIPMENT IN THIS AREA. PATCH/ REPAIR WALL/ CEILING IF REQUIRED. REFER TO NEW WORK PLAN.
- 2 REMOVE VERTICAL FLUE DUCT GOING THROUGH SECOND FLOOR TO ROOF. REFER TO NEW WORK PLAN.
- 3 REMOVE EXISTING FURNACE. KEEP ALL DUCTWORK, FLUE AND ACCESSORIES. CLEAN RETURN PLENUM, GRILLE AND PROVIDE NEW FILTERS. PREPARE DUCTWORK FOR NEW FURNACE INSTALLATION. REFER TO NEW WORK PLAN.
- 4 REMOVE EXISTING WEATHER HOOD AND INTAKE OPENING.
 PATCH AND REPAIR OPENING WITH CONSTRUCTION
 MATCHALS TO MATCH EXISTING CONDITIONS. REFER TO



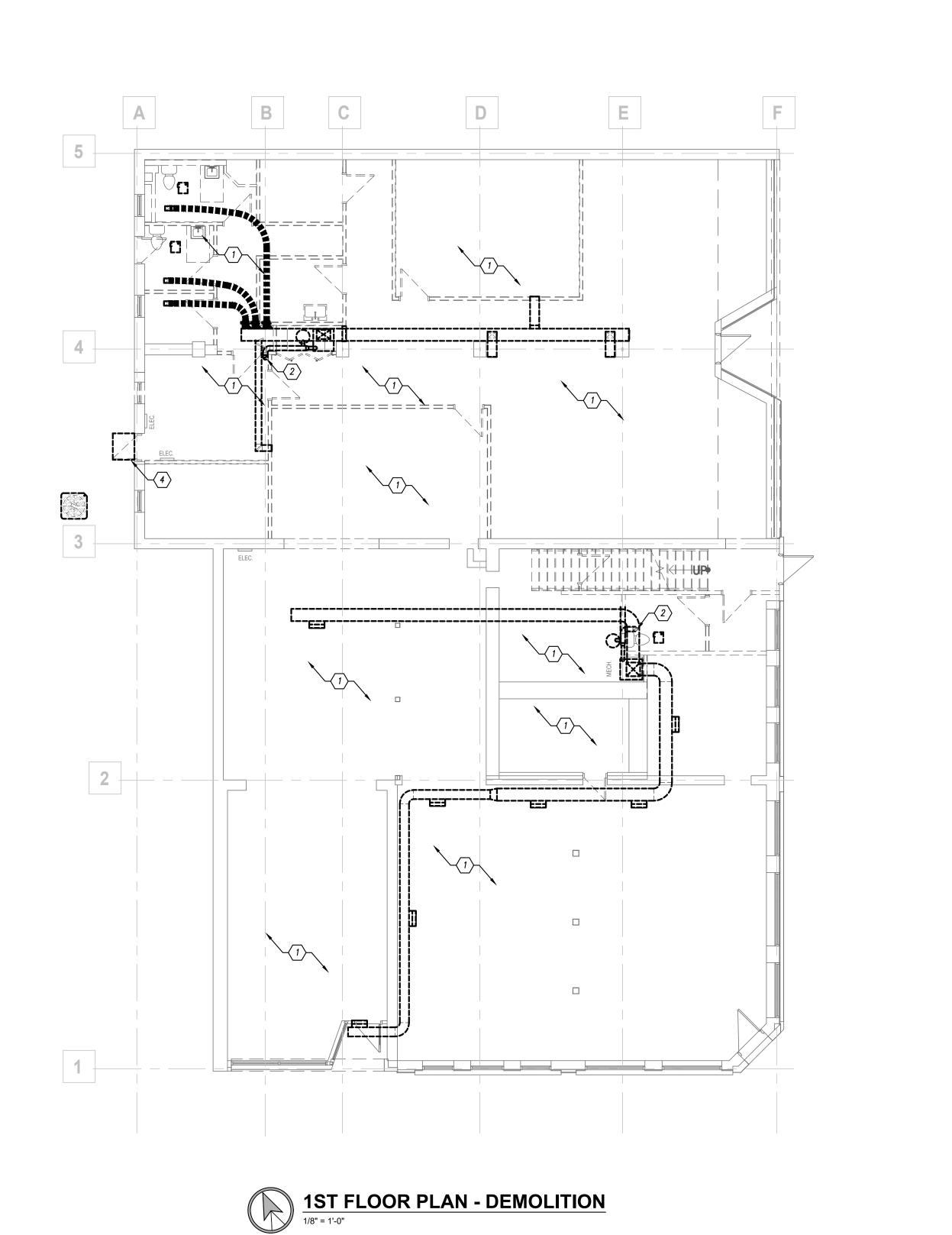
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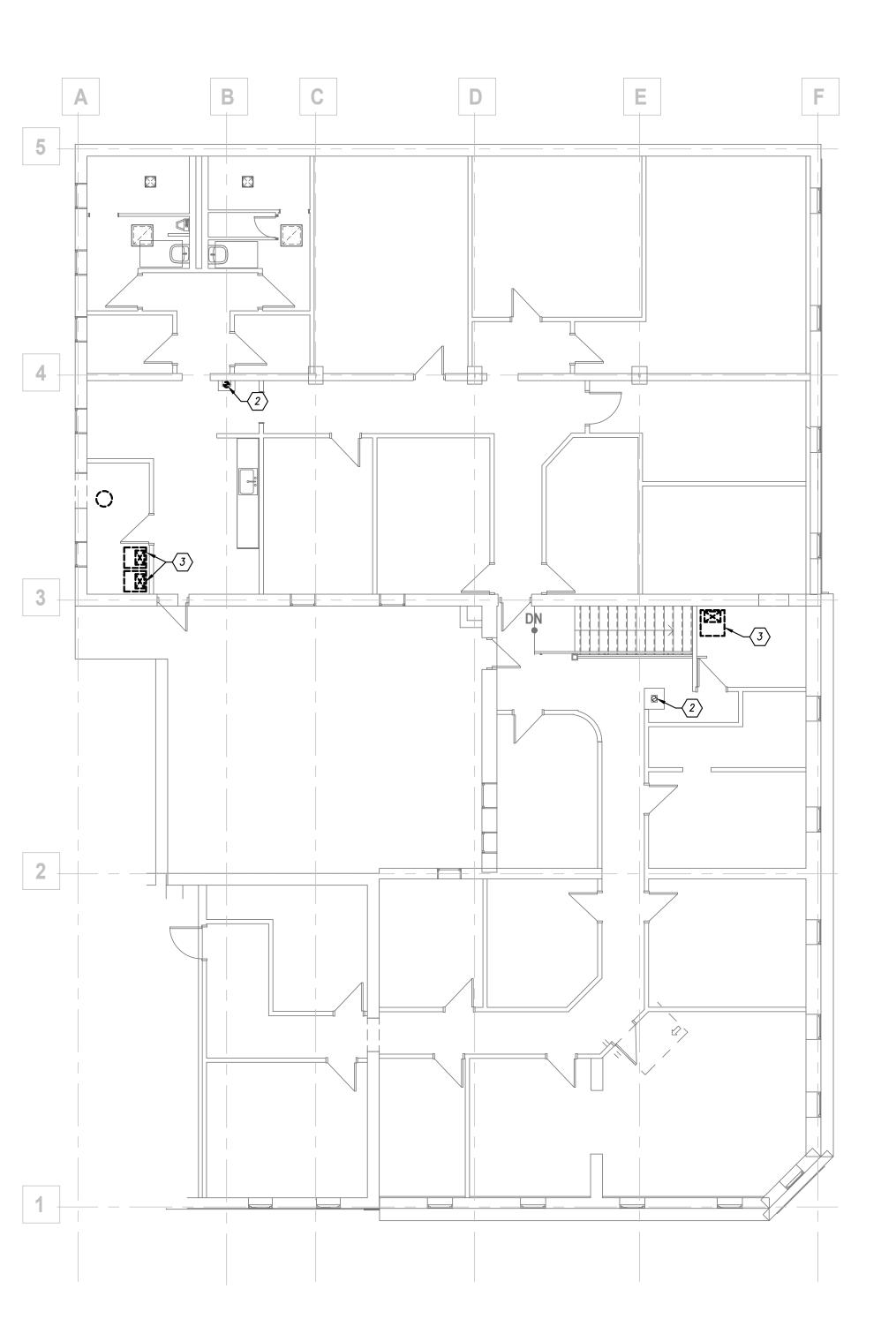




DEMOLITION - FLOOR PLANS

PEARSON KENT MCKINLEY RAAF ENGINEERS LLC 13300 W 98TH STREET LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM MO State Certificate of Authority #E-2002020886



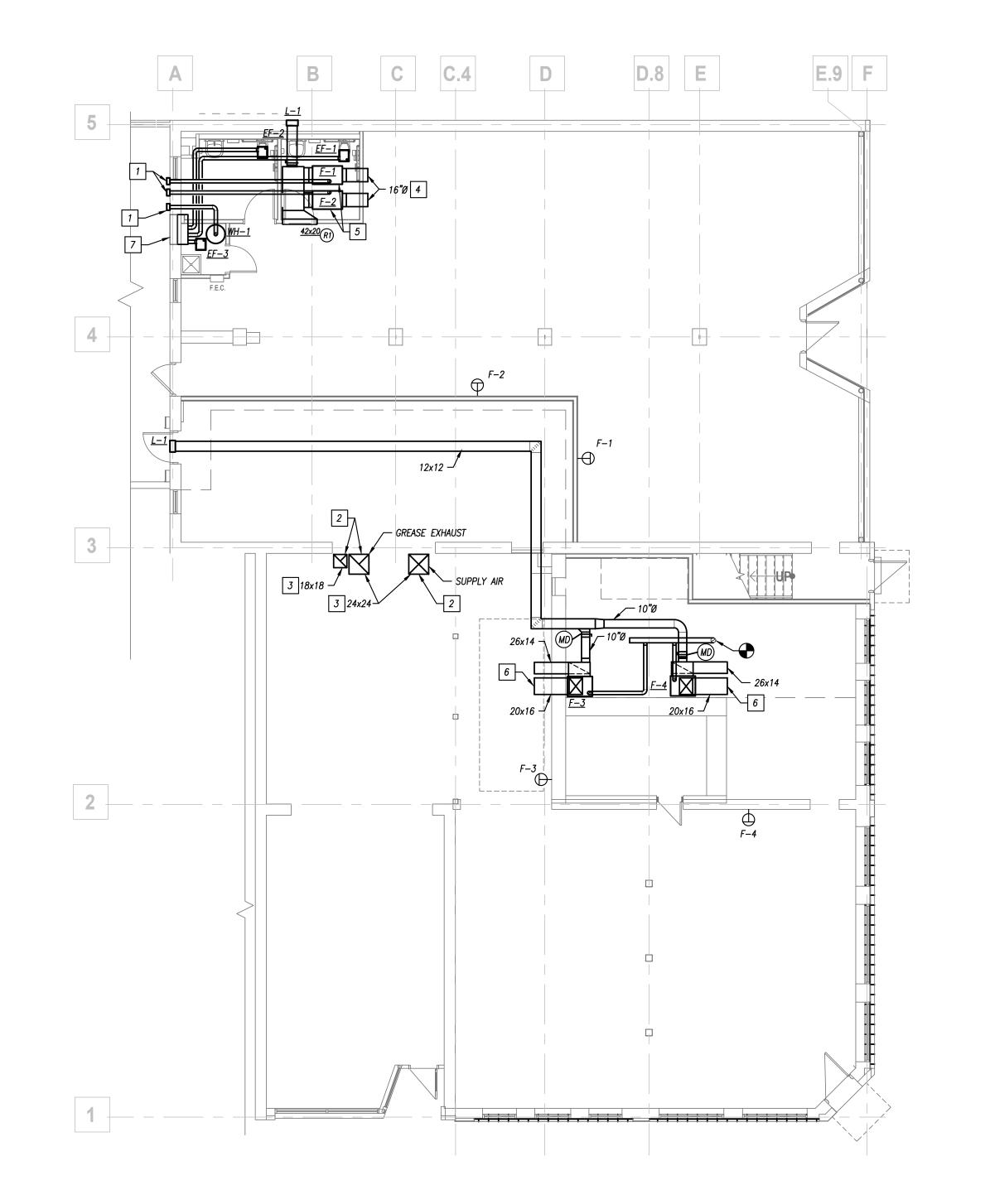


2ND FLOOR PLAN - DEMOLITION

1/X" = 1'-0"

2ND FLOOR PLAN - HVAC

1/8" = 1'-0"



1ST FLOOR PLAN - HVAC

1/8" = 1'-0"

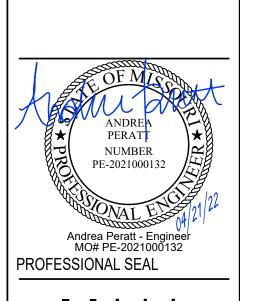
GENERAL HVAC NOTES

- 1. 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 UNLESS NOTED OTHERWISE.
- 3. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0". 4. ALL RUNOUTS TO TERMINAL BOXES SHALL BE ONE SIZE LARGER THAN BOX INLETS UNLESS NOTED OTHERWISE.
- 5. ALL AIR DISTRIBUTION DEVICES SHALL HAVE LOCKABLE VOLUME CONTROL DEVICES.
- 6. ALL 90 DEGREE TURNING ELBOWS SHALL BE SMOOTH ROUND OR SQUARE WITH TURNING VANES.
- 7. DUCT SIZES SHOWN ON PLANS ARE INSIDE FREE AREA. 8. PROVIDE ACCESS DOORS IN DUCTS AHEAD OF ALL
- AUTOMATIC, FIRE, AND SMOKE DAMPERS. FOR BALANCING THE OUTSIDE AIRFLOW QUANTITIES, REFER TO HVAC SCHEDULES.

HVAC PLAN KEYED

- 1 TERMINATE 4"0 FLUE/VENT WITH PRINTABLE WALL CAP. REFER TO DETAIL. 2 DISHWASHER, GREASE AND MAKE—UP AIR DUCT CAPPED IN SPACE FOR FUTURE USE.
- 3 DISHWASHER AND GREASE DUCT FROM FIRST FLOOR TO 2ND FLOOR ROOF. DUCT TO BE ROUTED ON EXTERIOR WALL AND CAPPED OVER 2ND FLOOR ROOF. REFER TO ROOF PLAN.
- 4 CAP SPIRAL DUCTWORK IN SPACE. ROUTE DUCTWORK RIGHT TO STRUCTURE.
- 5 FURNACES TO BE INSTALLED ABOVE TOILET. REFER TO DETAIL FOR INSTALLATION. 6 SUPPLY AND RETURN AIR DUCTWORK ROUTED THROUGH STRUCTURAL WALL. BOTTOM OF DUCT TO BE ROUTED AT 10'-0" A.F.F. COORDINATE PENETRATIONS WITH
- STRUCTURE. 7 ROUTE GENERAL EXHAUST TO PLENUM ON BACKSIDE OF EXISTING LOUVER. PLENUM TO MATCH EXISTING SIZE OF LOUVER. REFER TO DETAIL.
- 8 REPLACE EXISTING FURNACES. CONNECT TO EXISTING DUCTWORK, FLUES, ELECTRICAL AND CONDENSATE. $oldsymbol{G}$ g replace existing water heater to connect into existing flues.

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ISSUE DATE: APRIL 21, 2022 COLLINS WEBB #: 21121

MECHANICAL - FLOOR PLANS

PEARSON KENT MCKINLEY RAAF ENGINEERS LLC
13300 W 98TH STREET LENEXA, KS 66215
913.492.2400 WWW.PKMRENG.COM 13300 W 98TH STREET LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM MO State Certificate of Authority #E-2002020886 DESCRIPTION

PIPING					FIELD TEST	ALLOWABLE IN	INSULATION	
SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS
CONDENSATE DRAIN INTERIOR	3/4" - 2"	SCH. 40	CPVC	SOLVENT JOINED	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM OI
CONDENSATE DRAIN INTERIOR	1/2" - 2"	L	COPPER	SOLDER, PRO-PRESS	10 FT — 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM O
REFRIGERANT LINES	1/2" - 2"	ACR	COPPER	BRAZED		YES	ELASTOMERIC	3/4"

PLAN	MANUELOTUBED	MODEL ANNUES OFM			0.4.0514	FAN D	ATA			HEATING		ELE	CTRICAL		DEMARKS
MARK	MANUFACTURER	R MODEL NUMBER CFM	O.A. CFM	E.S.P. (IN)	HP	CAPACITY (MBH)	INPUT (MBH)	OUTPUT (MBH)	EFF.	VOLTS / PH	M.C.A.	M.O.C.P.	REMARKS		
F-1	LENNOX	SL297UH090V48B	1,400	210	0.5"	1/2	45.0	110.0	106.7	97.0%	120V / 1PH	12.0	20	2	
F-2	LENNOX	SL297UH090V48B	1,400	210	0.5"	1/2	45.0	110.0	106.7	97.0%	120V / 1PH	12.0	20	2	
F-3	LENNOX	SL280UH135V60D	1,990	299	0.5"	1	60.0	165.0	132.0	80.0%	120V / 1PH	12.0	20	1	
F-4	LENNOX	SL280UH135V60D	1,990	299	0.5"	1	60.0	165.0	132.0	80.0%	120V / 1PH	12.0	20	1	
F-5	LENNOX	SL280UH090V36B	1,200	180	0.5"	1/2	36.0	110.0	88.0	80.0%	120V / 1PH	12	15	1	
F-6	LENNOX	SL280UH090V36B	1,200	180	0.5"	1/2	36.0	110.0	88.0	80.0%	120V / 1PH	12	15	1	
F-7	LENNOX	SL280UH135V60D	1,990	299	0.5"	1	60.0	165.0	132.0	80.0%	120V / 1PH	12	20	1	

1. STANDARD EFFICIENCY FURNACE.

2. HIGH EFFICIENCY FURNACE. PROVIDE WITH MANUFACTURERS VERTICAL DISCHARGE KIT. REFER TO DETAIL.

REMARKS:

1. UNIT SHALL BE PROVIDED WITH SOLID STATE SPEED CONTROL MOUNTED AT FAN.

GRILLE, REGISTER & DIFFUSER SCHEDULE

R1 TITUS 350FLF2 STEEL SQUARE WALL 35 DEG SINGLE DEFLECTION AEROBLADE 3/4" SPACING

PLAN MANUFACTURER MODEL MATERIAL NUMBER

1. PROVIDE ALL GRD WITH ALL NECESSARY MOUNTING HARDWARE.

2. PROVIDE GRD WITHOUT SCREWHOLES WHEN INSTALLED IN LAY-IN CEILINGS

3. VERIFY CEILING CONFIGURATION, COLOR AND SPECIFICS WITH ARCHITECTURAL CEILING PLANS.

GENERAL REMARKS:

2. PROVIDE WITH STARTER AND WIRE TO START SWITCH.

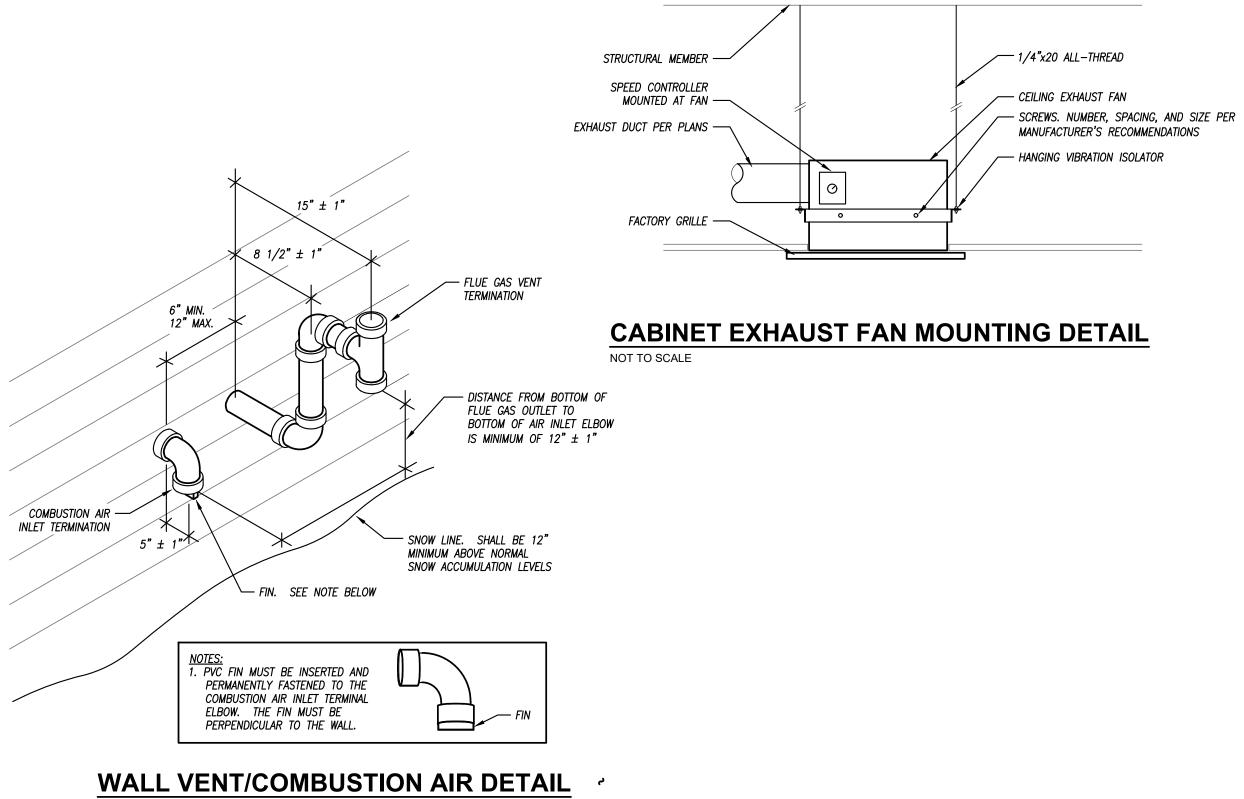
PLAN MARK	MANUFACTURER	MODEL NUMBER	CAPACITY (MBH)	MINIMUM SEER	AMBIENT TEMP. (°F)	VOLTS / PH	M.C.A.	M.O.C.P.	REMARKS
CU-1	LENNOX	16ACX-048-230	45.0	15.0	105*	208V / 3PH	29.0	40	ALL
CU-2	LENNOX	16ACX-048-230	45.0	15.0	105°	208V / 3PH	29.0	40	ALL
CU-3	LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3PH	36.0	50	ALL
CU-4	LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3PH	36.0	50	ALL
CU-5	LENNOX	16ACX-036-230	36.0	16.0	105°	208V / 3PH	21.0	30	ALL
CU-6	LENNOX	16ACX-036-230	36.0	16.0	105°	208V / 3PH	21.0	30	ALL
CU-7	LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3PH	36.0	50	ALL
REMARK	C.								

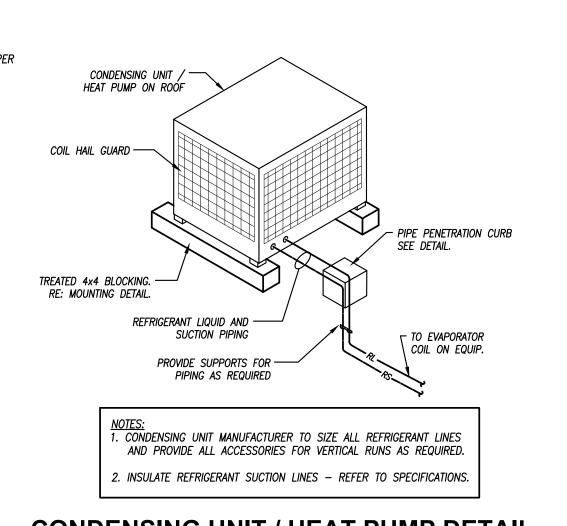
IDENSIN	IG UNIT SO	CHEDU	LE						DUCTW	ORK INSULATI	ON SCHEDULE		
MANUFACTURE	R MODEL NUMBER	CAPACITY	MINIMUM	AMBIENT		LECTRICA	AL_	REMARKS			DUCT		
MANOI ACTORE	NODEL NOWBER	(MBH)	SEER	TEMP. (°F	OLTS / PH	H M.C.A	. M.O.C.P.	TLIMATTO	PURPOSE	DUTY	LOCATION	STYLE	MATERIAL
LENNOX	16ACX-048-230	45.0	15.0	105°	208V / 3PI	1 29.0	40	ALL	SUPPLY		CONCEALED	RECTANGULAR	FIBERGLASS
LENNOX	16ACX-048-230	45.0	15.0	105°	208V / 3PI	1 29.0	40	ALL			CONCEALED	ROUND	MINERAL FIBER
LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3PI	36.0	50	ALL		1 0W DD500UD5 A 51 0 0 DV	EXPOSED	RECTANGULAR	FIBERGLASS
LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3PI	36.0	50	ALL		LOW PRESSURE/VELOCITY	EXPOSED	ROUND	PRE-FORMED FIBERGLASS W/AS
LENNOX	16ACX-036-230	36.0	16.0	105°	208V / 3PI	1 21.0	30	ALL			EXPOSED	ROUND	
LENNOX	16ACX-036-230	36.0	16.0	105°	208V / 3PI	1 21.0	30	ALL			EXPOSED	ROUND	FIBERGLASS
LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3PI	36.0	50	ALL			UNCONDITIONED ATTICS (CZ 1-4)	ALL	FIBERGLASS & MINERAL FIB
										ALL	UNCONDITIONED ATTICS (CZ 5-8)	ALL	FIBERGLASS & MINERAL FIB
G CAPACITY BASEI	ON A SUCTION TEMPERA	ATURE OF 49°F.							RETURN		CONCEALED	RECTANGULAR	FIBERGLASS
Y-STAR COMPLIAN											CONCEALED	ROUND	MINERAL FIBER
DE WITH 3-1/2" C										LOW PRESSURE/VELOCITY	EXPOSED	RECTANGULAR	FIBERGLASS
											EXPOSED	ROUND	
											RETURN/TRANSFER BOOTS	RECTANGULAR	FIBERGLASS
									1	ALL	UNCONDITIONED ATTICS (CZ 1-4)	ALL	FIBERGLASS & MINERAL FIB
IEDULE										ALL	UNCONDITIONED ATTICS (CZ 5-8)	ALL	FIBERGLASS & MINERAL FIB
N/C	DDEL OTVI 5		WIDTH	HEIGHT	APD (IN. FR	EE AREA	VELOCITY	T	EXHAUST		CONCEALED	RECTANGULAR	FIBERGLASS
	MBER STYLE	SERVICE	(IN)	(IN)	WC)	(SF)	(FPM)	REMARKS			CONCEALED	ROUND	FIBERGLASS
	I–401 STATIONARY	INTAKE	14	14	0.006	0.3	200	ALL		LOW PRESSURE/VELOCITY	EXPOSED	RECTANGULAR	FIBERGLASS
ENTILOR EDG	1-401 STATIONANT	INTAKE	14	14	0.000	0.5	200	ALL			EXPOSED	ROUND	FIBERGLASS
											UNCONDITIONED ATTICS	ALL	MINERAL FIBER
ID MOUNTING EDAL	ME TO MATCH CONSTRUCT	TION COOPDINA	TE EVACT LOUI	IED SIZE TA	INICTALL WITHIN	MASONIDY	DIMENSIONS			GREASE HOOD EXHAUST	ALL	ALL	UL LIS

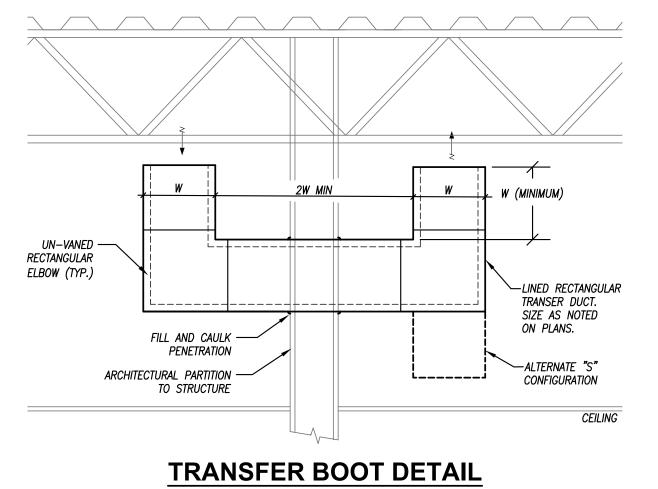
3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

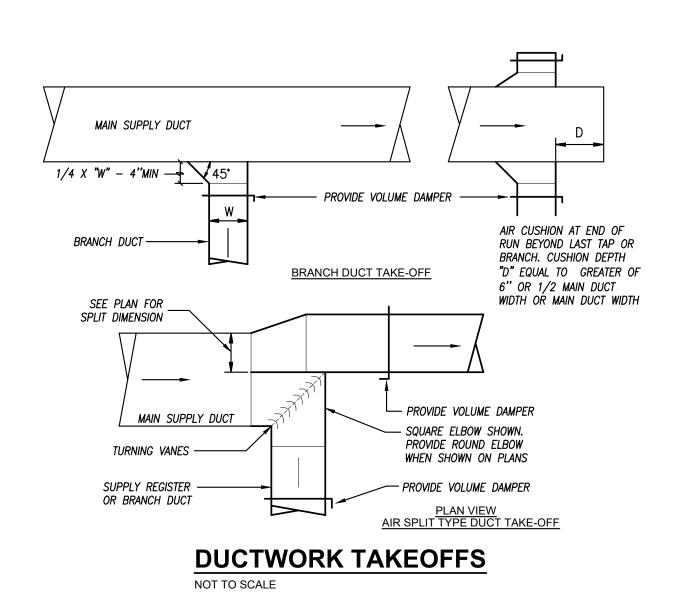
2. ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 - 2007 REQUIREMENTS AT A MINIMUM.

			LENNOX	16ACX-036-230	36.0	16.0	105°	208V / 3I			ALL			EXPOSED	ROUND	FIBERGLASS	LINED	1"	3
	L	CU-7	LENNOX	16ACX-060-230	60.0	15.5	105°	208V / 3I	PH 36.0	50	ALL		ALL	UNCONDITIONED ATTICS (CZ 1-4)	ALL	FIBERGLASS & MINERAL FIBER	LINED & WRAPPED (R-8 MIN)	1/2" & 2.2"	6
		REMARKS:											ALL	UNCONDITIONED ATTICS (CZ 5-8)	ALL	FIBERGLASS & MINERAL FIBER	LINED & WRAPPED (R-12 MIN)	1" & 3"	6
			PACITY RASED	ON A SUCTION TEMPERA	ATURE OF 40°F							RETURN		CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
		2. ENERGY-STA		ON A SOCION TEMILED	ATORE OF 431.									CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"	
		3. PROVIDE WITH		NCRETE DAN									LOW PRESSURE/VELOCITY	EXPOSED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
		3. TROVIDE WITH	1 3 1/2 00	TORETE TAD.										EXPOSED	ROUND		NONE		
														RETURN/TRANSFER BOOTS	RECTANGULAR	FIBERGLASS	LINED	1/2"	
												1	ALL	UNCONDITIONED ATTICS (CZ 1-4)	ALL	FIBERGLASS & MINERAL FIBER	LINED & WRAPPED (R-8 MIN)	1/2" & 2.2"	6
LOU	VER	SCHEE	ULE										ALL	UNCONDITIONED ATTICS (CZ 5-8)	ALL	FIBERGLASS & MINERAL FIBER	LINED & WRAPPED (R-12 MIN)		6
	Ι	T		NEI		WIDTH	UEIGUT A	APD (IN. FI	DEE ADEA	VELOCITY	T	EXHAUST		CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
PLAN MARK	QTY.	MANUFACTU	IRER NUM		SERVICE	(IN)	(IN)	WC)	(SF)	(FPM)	REMARKS			CONCEALED	ROUND	FIBERGLASS	LINED	1/2"	1
1 1	2	GREENHEC			INTAKE	14	14	0.006	0.3	200	ALL		LOW PRESSURE/VELOCITY	EXPOSED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
L-1		GREENHEU	N EDU-	401 STATIONART	INTARE	14	14	0.006	0.5	200	ALL			EXPOSED	ROUND	FIBERGLASS	LINED	1"	1,3
<u>REMARKS:</u>														UNCONDITIONED ATTICS	ALL	MINERAL FIBER	WRAPPED	1-1/2"	
	E EVTEND	ED SILL AND MO	LINTING EDAME	TO MATCH CONSTRUCT	TION COOPDINAT	E EVACT LOUI	IED CIZE TO	INICTALL WITLIN	N MACANDY	DIMENSIONS			GREASE HOOD EXHAUST	ALL	ALL	UL LISTED	FIRE RATED WRAP SYSTEM		
				ROM MANUFACTURER'S			VER SIZE TO I	INSTALL WITHII	N MASONKI	DIMENSIONS.			DISHWASHER EXHAUST	ALL	ALL		NONE		
2. PROVID	E COLOR	AS SELECTED BY	I AKUHITEUT F	KUM MANUFACIUKEK S	STANDARD COLC	ns.						OUTSIDE AIR		CONCEALED OR MECH. SPACE	RECTANGULAR	MINERAL FIBER	WRAPPED	1-1/2"	
													ALL	CONCEALED OR MECH. SPACE	ROUND	MINERAL FIBER	WRAPPED	1-1/2"	
													ALL.	EXPOSED (NON MECH SPACE)	RECTANGULAR	RIGID FIBERGLASS BD. W/ASJ-PT	WRAPPED	1-1/2"	2
]		EXPOSED (NON MECH SPACE)	ROUND	PRE-FORMED FIBERGLASS W/ASJ-PT	WRAPPED	2"	3
	MOUNT		E SIZE (IN)	NECK SIZE (IN)	VOLUME DAMPER	MAX APD (IN. WG.)	MAX NC	COLOR		REMAR		2. THICKNESS SHAL	ONLY WITHIN 10' OF FAN FOR ACC L ENCAPSULATE DUCT CONSTRUCTION TO USE POUND DUCT LINER		URIE WALL DUCT (SOUD	LINER FOR OUTSIDE AIR DUCTS)			
4" SPACING	WAL	<u>L AS</u>	INDICATED	AS INDICATED	NO	0.08	25	WHITE		ALL			OTHER SCHEDULED INSULATION.	ON THOUSE TENTONATED LINEN DO	OBEL WALL DOCK (SOLID	EINER TOR GOTSIDE AIR DOCTS).			,
				<u>NOTES:</u> 1. PROVIDE WITH FIL	TERED GRILLE.	PROVIDE WITH	MERV 8 2" I	IFLTER TO FITM	WITHIN GRILL	E ASSEMBLY		5. INSTALL FROM U BUT SHALL BE II 6. PROVIDE ALUMINI GENERAL REMARKS 1) ALL DUCTWORK, 2) ALL INSULATION	INIT DISCHARGE TO FIRST DUCT ELI NSTALLED ON REMAINING DUCTWORI UM JACKETING OVER EXTERIOR DUC (APPLICABLE TO ALL TYPES): INSULATION AND MATERIALS IN PLE THICKNESSES SHALL MEET ASHRAE	BOW, THEN 10' FURTHER. NOT REG K WHEN 10' DIMENSION FALLS OUTS CTWORK INSULATION. ENUMS MUST MEET ASTM E84 FLAME E 90.1 – 2016 REQUIREMENTS AT A FORMATION FOR INSULATION PRODUC	SIDE ROOM. E/SMOKE RATING OF 25/ MINIMUM.	·			









APPLICATION

LINED

NONE

THICKNESS

1-1/2"

CONDENSING UNIT / HEAT PUMP DETAIL NOT TO SCALE



TO VENT/FLUE TERMINATIONS.

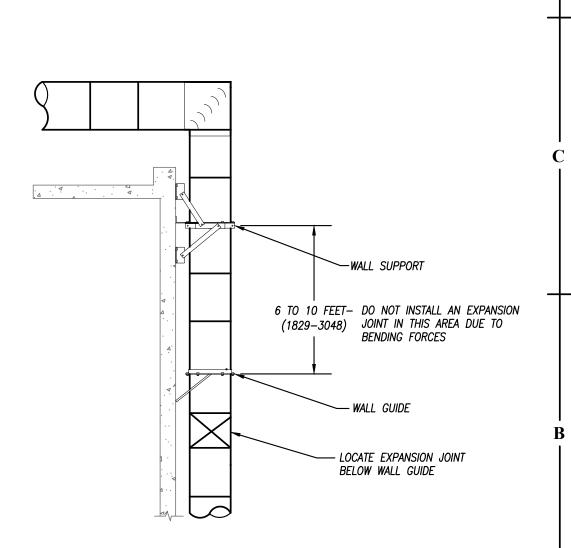
REFER TO DETAIL AND PLANS.

__ DX EVAPORATOR COIL

(TYPICAL)

- FLEXIBLE CONNECTION

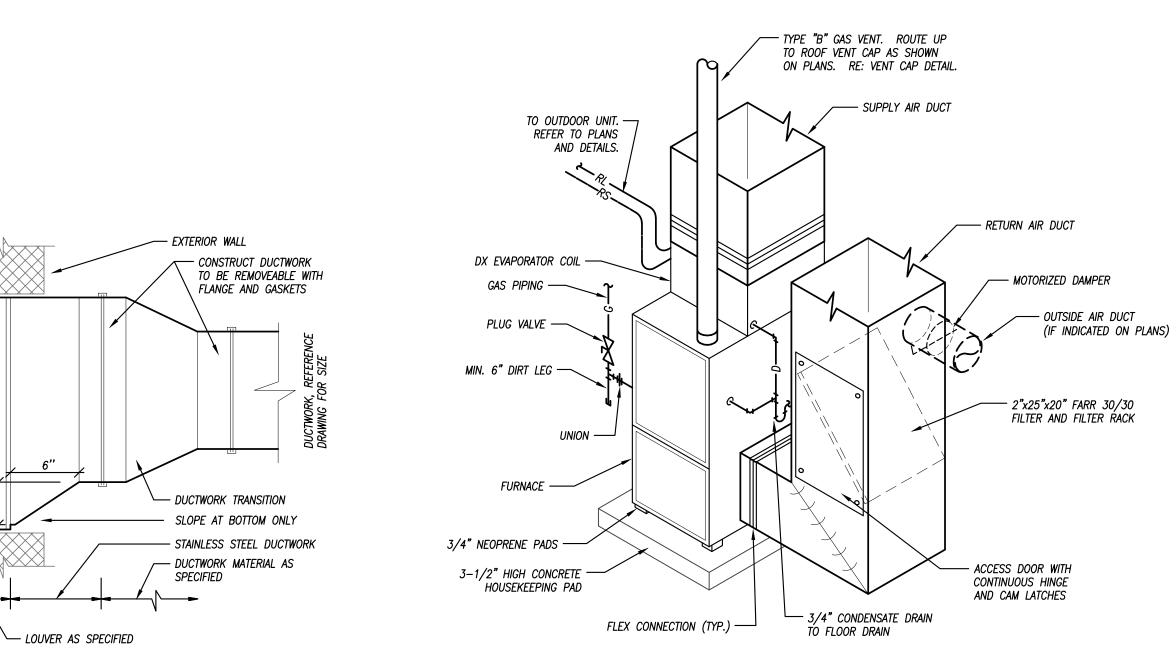
SUPPLY AIR DUCT



WALL VE	NT/COME	USTION	AIR DETAIL
NOT TO SCALE			

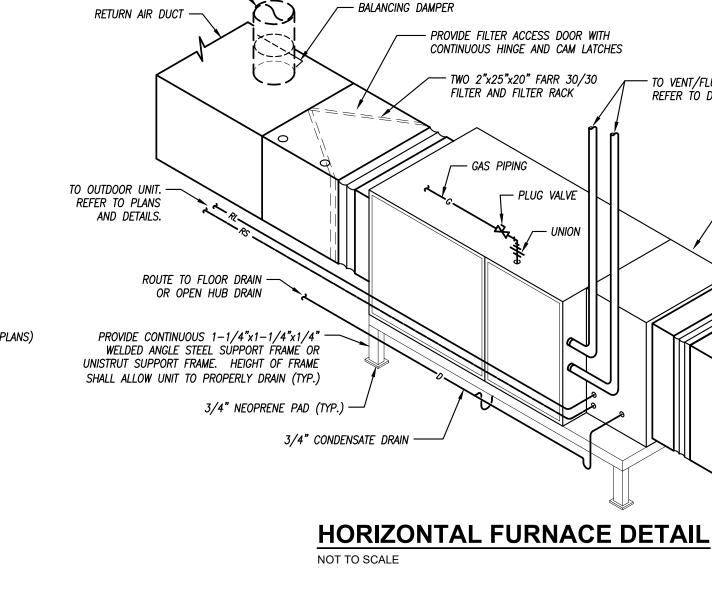
DUCTWORK AT LOUVER

NOT TO SCALE



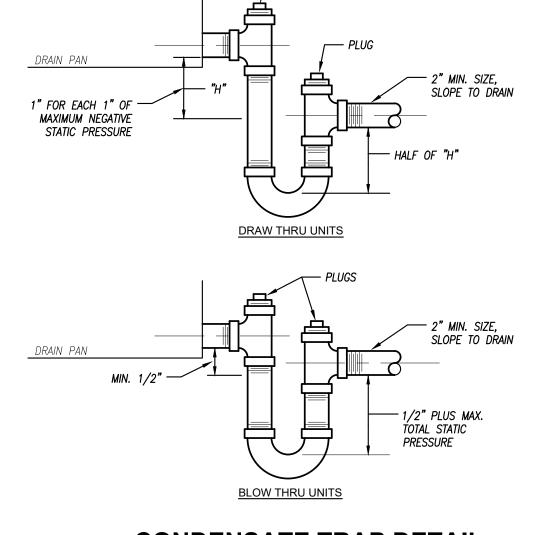
FURNACE DETAIL

NOT TO SCALE



OUTSIDE AIR DUCT —

(WHERE SHOWN)



CONDENSATE TRAP DETAIL



13300 W 98TH STREET LENEXA, KS 66215 WWW.PKMRENG.COM 913.492.2400 MO State Certificate of Authority #E-2002020886

ISSUE DATE: APRIL 21, 2022 COLLINS WEBB #: 21121 MECHANICAL - SCHED. /DETAILS





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PERATT NUMBER

PE-2021000132

Andrea Peratt - Enginee MO# PE-2021000132 PROFESSIONAL SEAL

E===== 1ST FLOOR PLAN - DEMOLITION

1/8" = 1'-0" $\frac{\text{2ND FLOOR PLAN - DEMOLITION}}{1/X" = 1'-0"}$ GENERAL DEMOLITION NOTES

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

DEMOLITION PLAN **KEYED NOTES**

1 REMOVE ALL DOMESTIC COLD WATER, HOT WATER, SANITARY & VENT PIPE SERVING FIRST FLOOR FIXTURES AND EQUIPMENT. DO NOT DEMOLISH SANITARY PIPES FROM SECOND FLOOR. REFER TO NEW WORK PLAN.

 $\langle 2 \rangle$ GAS PIPE SERVING FIRST FLOOR TO BE REMOVED. 3 EXISTING WATER HEATER TO BE REPLACED ON SAME LOCATION. REUSE ALL EXISTING PIPES AND ACCESSORIES. REFER TO NEW WORK PLAN.

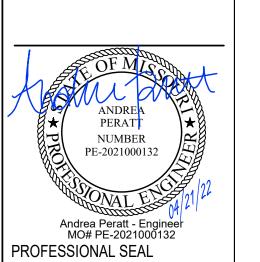
4 EXISTING FURNACE TO BE REPLACED ON SAME LOCATION. RECONNECT EXISTING GAS AND PROVIDE NEW CONDENSATE DRAIN PIPE.

IMPROVEMENT

STREET

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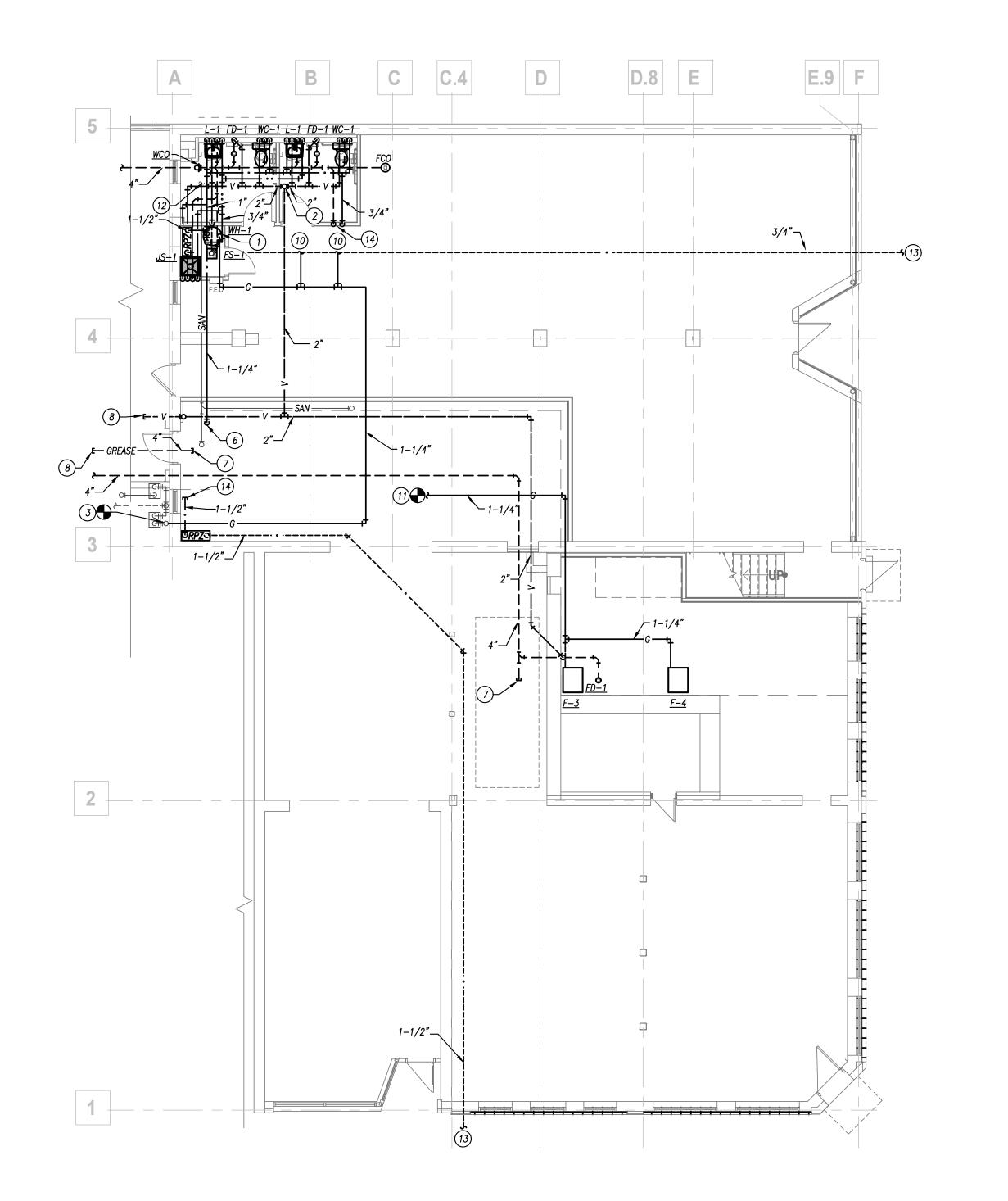
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DEMOLITION - FLOOR PLANS



D.8 E — EXISTING RESTROOMS TO REMAIN /----X

2ND FLOOR PLAN - PIPING



1ST FLOOR PLAN - PIPING

1/8" = 1'-0"



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

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

3. NO SANITARY OR VENT PIPING BELOW GRADE SHALL BE LESS THAN 2".

- 4. NO DOMESTIC WATER PIPING SHALL BE SMALLER THAN 3/4" UNLESS NOTED OTHERWISE. 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. ALL FLOOR DRAIN TRAPS SHALL BE PROTECTED BY ONE OF THE FOLLOWING METHODS, TO BE INSTALLED AT CONTRACTOR'S DISCRETION AND IN COMPLIANCE WITH ADOPTED VERSION OF PLUMBING CODE AND/OR AHJ. 7.1. PROVIDE TRAP SEALS LISTED FOR PROPOSED USE. 7.2. PROVIDE TRAP PRIMERS. 1/2" TRAP PRIMER PIPING TO NEAREST TRAP PRIMER VALVE. PIPING SHALL BE TYPE "K" SOFT COPPER SEAMLESS WITH NO JOINTS

PLUMBING PLAN KEYED

1) INSTALL WATER HEATER NEXT TO JANITOR'S SINK. H 2 3" VENT THROUGH CHASE ON 2ND FLOOR TO ROOF.
TERMINATE VENT 10' CLEAR FROM ANY OUTSIDE AIR TERMINATE VENT 10' CLEAR FROM ANY OUTSIDE AIR

FROM VALVE TO DRAIN.

3 CONNECT TO EXISTING GAS MAIN FOR NORTH/SECOND FLOOR TENANT. CONTRACTOR SHALL FIELD VERIFY GAS

PIPE ROUTING AND SIZING PRIOR TO NEW SCOPE OF 4) NEW WATER HEATER. RECONNECT WATER HEATER TO

EXISTING PLUMBING. PROVIDE NEW PIPE/ PIPE FITTING

5) 3/4" DOMESTIC WATER PIPE UP FROM FLOOR BELOW. CONNECT TO EXISTING COLD WATER MAIN TO SERVE ALL 2ND FLOOR PLUMBING FIXTURES AND EQUIPMENT. CONTRACTOR TO VERIFY LOCATION OF EXISTING PIPE. 6 3/4" COLD WATER PIPE TO 2ND FLOOR.

7) PIPE TO BE CAPPED FOR FUTURE TENANT USE. PIPING TO BE 36" BELOW FINISH GRADE FOR FUTURE TENANT

(8) UNDERGROUND GREASE AND VENT TO BE CAPPED OUTSIDE FOR FUTURE GREASE INTERCEPTOR. (9) RECONNECT EXISTING GAS TO FURNACES. PROVIDE NEW CONDENSATE DRAIN AND TERMINATE TO NEAREST FLOOR

(10) GAS PIPE FOR FURNACE F-1 AND F-2 RESPECTIVELY. REFER TO DETAIL FOR CONNECTION (11) CONNECT TO EXISTING GAS MAIN FOR SOUTH TENANT.

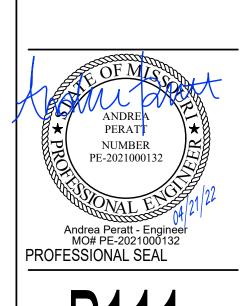
CONTRACTOR SHALL FIELD VERIFY GAS PIPE ROUTING AND SIZING PRIOR TO NEW SCOPE OF WORK. (12) CONNECT EXISTING SANITARY LINE FROM SECOND FLOOR EXISTING PIPING TO REMAIN. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING

(13) REFER TO CIVIL FOR CONTINUATION.

14) CAP PLUMBING PIPING FOR FUTURE TENANT BUILD OUT.

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PLUMBING - FLOOR PLANS



PIPING					FIELD TEST	ALLOWABLE IN	INSULA	ATION
SYSTEM	SIZE	TYPE/SCHED	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"
DOMESTIC HOT WATER & HW RETURN	-1/2"-2-1/2'	L	COPPER	SOLDER, PRO-PRESS	130 PSI — 1/2HR	YES	FIBERGLASS W/ ASJ	1-1/2"
NATURAL GAS — ABOVE GRADE	1/2"-2"	SCH. 40	STEEL- SEEMLESS	THREADED IRON OR WELDED4	75 PSI – 1HR	YES		
SOIL & WASTE ABOVE GRADE	1-1/2"-6"	NO HUB / SERVICE WT.	CAST IRON	NO HUB	10 FT — 1/2HR	YES		
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		
RPZ AND SIMILAR EXPOSED DRAIN LINES	ALL	L	COPPER	SOLDER, PRO-PRESS	10 FT — 1/2HR	YES		
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 ONLY)
CONDENSATE DRAIN INTERIOR	1/2"-2"	L	COPPER	SOLDER, PRO-PRESS	10 FT — 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM ONLY)

1. ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.

2. ALL INSULATION THICKNESSES SHALL MEET ADOPTED IECC AND ASHRAE 90.1 - 2016 REQUIREMENTS AT A MINIMUM. 3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

4. WELDED PIPING IS REQUIRED FOR GAS PIPING WHEN: A) PIPING IS AT OR OVER 2PSI; B) WHEN PIPING OF ANY PRESSURE IS ROUTED THROUGH CONCEALED SPACES.

FIXTURE TYPE	TRAP		PLUMBING FIXT	URE PIPE SIZES	
FIXTURE TYPE	TRAP	WASTE	VENT	DCW	DHW
WATER CLOSET (FLUSH VALVE)	INTEGRAL	4"	2"	1"	
URINAL (FLUSH VALVE)	INTEGRAL	2"	2"	3/4"	
FLUSH TANK WATER CLOSET	INTEGRAL	4"	2"	1/2"	
LAVATORY	PROVIDE TRAP	2"	1-1/2"	1/2"	1/2"
SINK	PROVIDE TRAP	2"	2"	1/2"	1/2"
MOP SINK	PROVIDE DEEP SEAL TRAP	3"	2"	1/2"	1/2'
FLOOR DRAIN	PROVIDE DEEP SEAL TRAP	AS SCHEDULED	1-1/2"		
FLOOR SINK	PROVIDE TRAP	AS SCHEDULED	1-1/2"		
DRINKING FOUNTAINS/EWC'S	PROVIDE TRAP	1-1/2"	1-1/2"	1/2"	
SHOWERS/TUBS	PROVIDE TRAP	2"	1-1/2"	1/2"	1/2'
SHOWERS	PROVIDE TRAP	2"	1-1/2"	1/2"	1/2'
ICE MACHINE HOOKUP BOX				1/2"	
WASHER HOOKUP BOXES	PROVIDE TRAP	2"	1-1/2"	1/2"	1/2

FLOOR / ROOF DRAIN SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	SERVICE	TOP/GRATE SIZE	WASTE SIZE	REMARKS
FD-1	WADE	1100	FLOOR DRAIN	6 " Ø	2"	1
FS-1	WADE	9100	FLOOR SINK	12"x12"	4"	2

1. PROVIDE WITH NICKEL BRONZE TOP. 2. PROVIDE WITH 3/4" GRATE.

MARK	FIXTURE MODEL	FIXTURE DESCRIPTION		FITTINGS AND TRIM	REMARKS	PLUM	BING FIXT	URE PIPE	SIZES
WAKK	FIXTURE MODEL	FIXTURE DESCRIPTION	FITTINGS MODEL	FITTINGS AND DESCRIPTION	REWARKS	WASTE	VENT	DCW	DHW
L-1	TBD OWNER SELECTION	WALL—HUNG LAVATORY. 20"x18" WHITE VITREOUS CHINA BOWL WITH 4" BACK FOR USE WITH CONCEALED ARM HANGER. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. PROVIDE CONCEALED ARM CARRIER.	TBD OWNER SELECTION	CENTERSET SINGLE HOLE FAUCET WITH LOOP METAL LEVER HANDLE. 1/2" CONNECTIONS, WITH DRAIN AND POP—UP HOLE. POLISHED CHROME FINISH	1,2,3,4,5	2"	1-1/2"	1/2"	1/2"
WC-1	TBD OWNER SELECTION	ADA-COMPLIANT, 1.28/0.9 GPF DUAL, FLUSH TANK WATER CLOSET. PRESSURE-ASSISTED SIPHON JET. WHITE VITREOUS CHINA ELONGATED BOWL AND TANK. 16-1/8" HIGH. TWO PIECE, 12" ROUGH-IN. FURNISH WITH POLISHED CHROME FLUSH ACTUATOR ON WIDE SIDE OF STALL.	TBD OWNER SELECTION	WHITE, SOLID PLASTIC, CLOSED—FRONT SEAT FOR ELONGATED BOWL. INTEGRAL BUMPERS. SOLID TOP LID. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	3,6	4"	2"	1/2"	
JS-1	FIAT TSBC-6010	JANITORS SINK: 24"x24"x12" PRECAST TERRAZO FLOOR SERVICE SINK. CORNER CHAMFERED MODEL FOR INSTALLATION IN CORNER OF ROOM. STAINLESS STEEL CAP AND 2 SIDE WALL TILING FLANGE. 3" STAINLESS STEEL CAST DRAIN AND STAINLESS STEEL STRAINER PLATE. PROVIDE STAINLESS STEEL WALL GUARDS, MOP BRACKETS, HOSE RACK.	CHICAGO FAUCET 897–CP	C.P. SERVICE SINK FITTING WITH VACUUM BREAKER, 3/4" HOSE THREAD ON SPOUT, ADJUSTABLE WALL BRACE, PAIL HOOK, AND 1/2" FLANGED FEMALE ADJUSTABLE ARMS WITH INTEGRAL STOPS. CAULK BETWEEN WALL AND FLANGE WITH GE SILICONE SEALANT. 3" C.I. "P" TRAP.		3"	2"	1/2"	1/2"

1. BACKLFOW PREVENTER MANUFACTURER AND
INSTALLATION SHALL BE AS APPROVED BY LOCAL AND
STATE AUTHORITIES AND IN ACCORDANCE TO LISTING

2. ALL PIPING TO BE RIGIDLY SUPPORTED AND INSTALLED

FULL LINE SIZE WYE STRAINER

WITH 3/4" BLOWDOWN ___

DOMESTIC WATER SERVICE -

REDUCED PRESSURE BACKFLOW PREVENTER DETAIL

COLD WATER SUPPLY

— TERMINATE OVER FLOOR DRAIN

— AUTOMATIC VACUUM RELIEF

— EXPANSION TANK

VALVE (WHEN REQUIRED)

WATER SERVICE

NOT TO SCALE

REFER TO PLANS FOR SIZE — AND TYPE OF VENTING

HOT WATER SUPPLY —

GAS SUPPLY - ~

THERMOMETER —

WATER HEATER -

PLUG VALVE (TYP.) -

UNION (TYP.)

SERVICE MAIN SHUT-OFF VALVE —

EXTERIOR —

IN SUCH A MANNER AS TO BE DRAINABLE.

OF DEVICE.

1. PROVIDE CHROME-PLATED BRASS TAILPIECE AND GRID DRAIN.

2. 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.

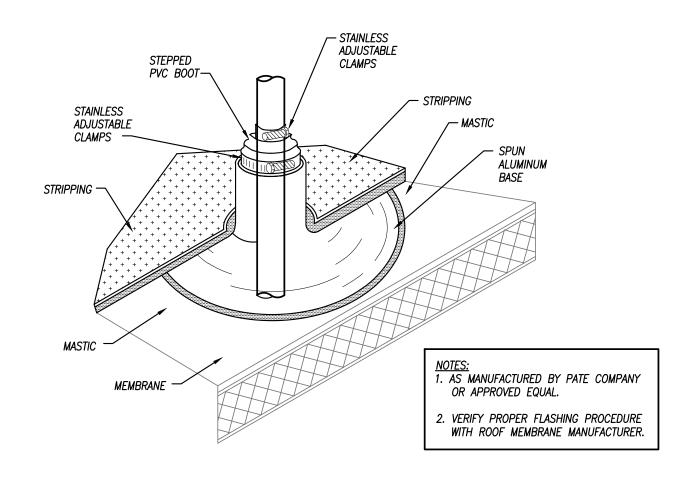
GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

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

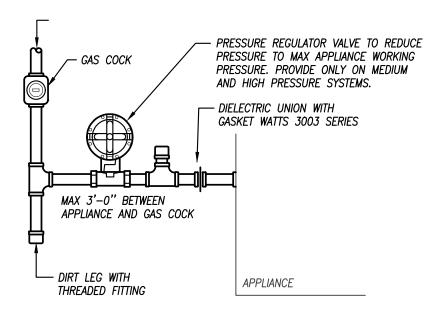
2) VERIFY PLUMBING MATERIALS AND EQUIPMENT COORDINATE BETWEEN TRADES. VERIFY CABINET SIZES, COUNTERTOP MATERIALS, WALL THICKNESSES, ETC ARE APPROPRIATE FOR SPECIFIED EQUIPMENT PRIOR TO ORDER.

2. PROVIDE WITH MANUFACTURERS CONCENTRIC VENT KIT.

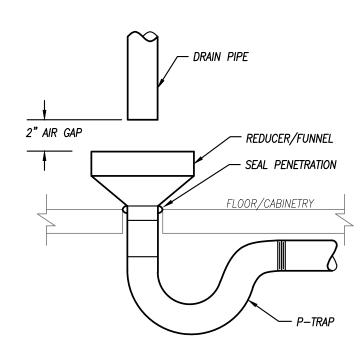
GA	S WATER	HEATER	SCH	EDULE							
PLAN MARK	MANUFACTURER	MODEL NUMBER	GALLONS	USE	STYLE	GAS INPUT (MBH)	ENERGY FACTOR	RECOVERY @ 90°F RISE	FLUE SIZE (IN/OUT)	VOLTAGE/ PHASE	REMARKS
WH-1	STATE	GS6 50	50	RESIDENTIAL	POWER DIRECT VENT	65	0.58	64	3" / 3"	120V / 1PH	2
WH-2	STATE	GPX 50	50	RESIDENTIAL	STANDARD EFF.	50	0.62	41	4"	120V / 1PH	1
<u>REMARK.</u> 1. DIREC	<u>S:</u> CT-VENT STYLE WATER	HEATER.									



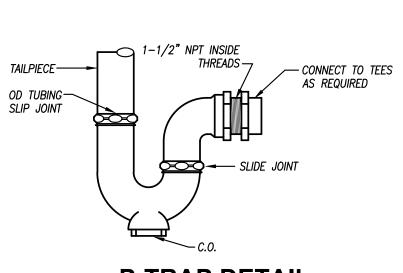
ROOF PLUMBING VENT



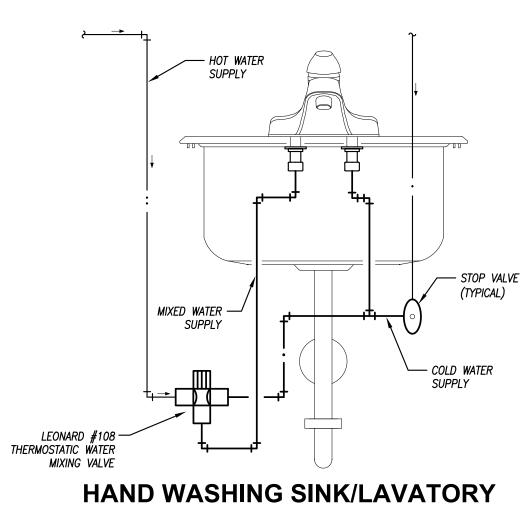
TYPICAL GAS CONNECTION NOT TO SCALE



AIR GAP DETAIL NOT TO SCALE



P-TRAP DETAIL



TEMPERED WATER SCHEMATIC NOT TO SCALE

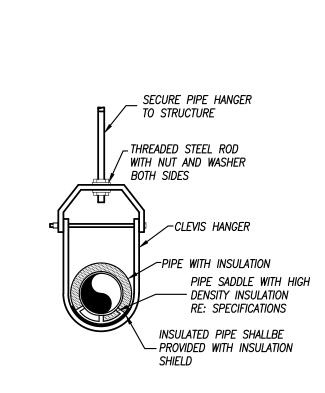
FLOOR CLEANOUT DETAIL

__ ALL CLEANOUTS IN FINISHED FLOOR AREAS

CUT-OFF ADJUSTMENTS.

SHALL HAVE NICKLE-BRONZE ACCESS COVERS, ADJUSTABLE FRAMES, AND BRONZE PLUGS.

DUCTILE IRON, OR CAST IRON, EXTENSION BODY WITH SERRATIONS PROVIDED FOR



PIPE HANGER DETAIL NOT TO SCALE

WALL CLEANOUT DETAIL

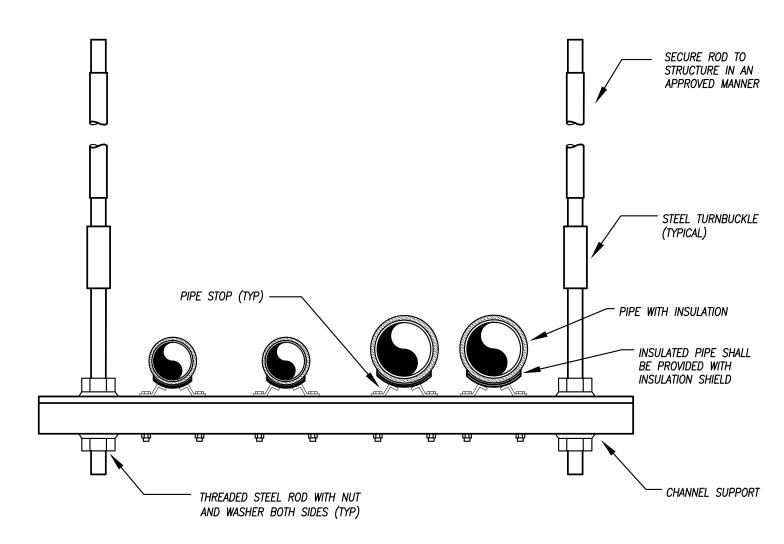
SANITARY TEE

1/8 BEND AT END — OF LINE CLEANOUT

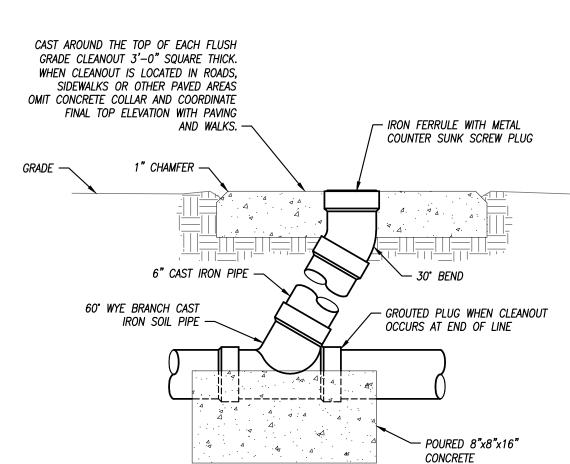
— REFER TO ARCH. DRAWINGS FOR EXACT

WALL CONSTRUCTION

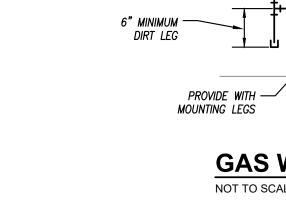
STAINLESS STEEL ACCESS COVER



MULTIPLE PIPE TRAPEZE HANGER DETAIL NOT TO SCALE



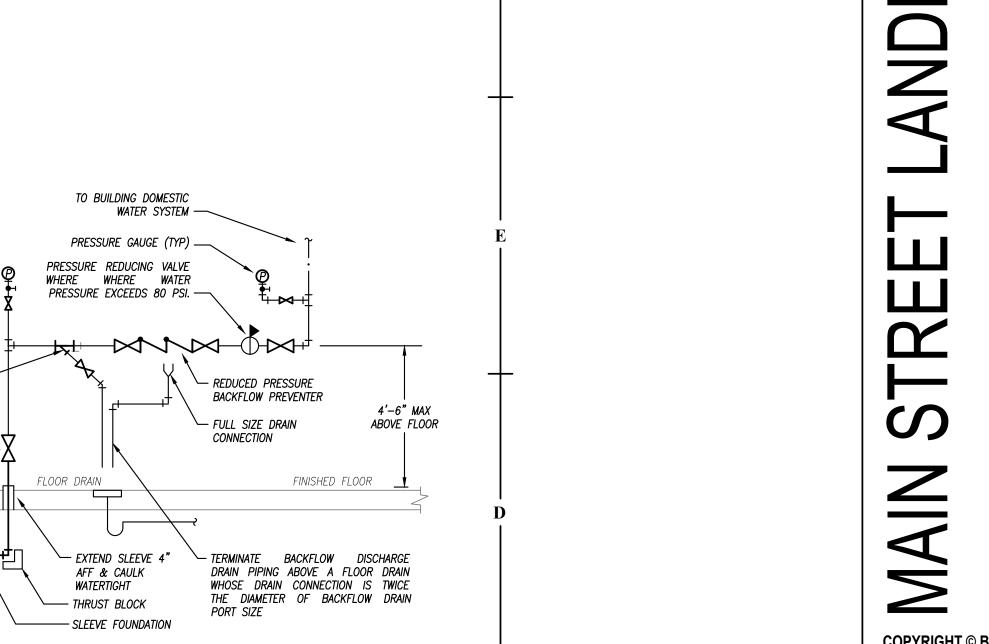
FLUSH GRADE CLEANOUT DETAIL NOT TO SCALE



GAS WATER HEATER DETAIL

T&P RELIEF
VALVE





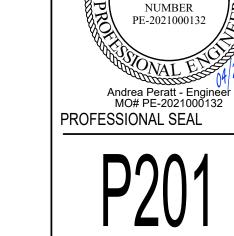
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PLUMBING - SCHED./DETAILS



1ST FLOOR PLAN - ELECTRICAL DEMOLITION

1/8" = 1'-0"

2ND FLOOR PLAN - ELECTRICAL DEMOLITION

EXISTING PANELBOARD P20

GENERAL DEMOLITION NOTES

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

DEMOLITION PLAN
KEYED NOTES

1 REMOVE ALL FIXTURES, EQUIPMENT, AND DEVICES THIS AREA. REMOVE ALL WIRING/CONDUIT AND PIPING TO SAME NOT REQUIRED TO REMAIN.

2 REMOVE PANELBOARD AND MAINTAIN EXISTING CIRCUITS TO REMAIN. INCEPT AND EXTEND EXISTING BRANCH CIRCUITS NEW PANELBOARD IN NEW LOCATION. REFER TO NEW WORK DRAWINGS FOR MORE INFORMATION.

3 REMOVE EXISTING PANELBOARD. REMOVE FEEDERS AND BRANCH CIRCUITS TO SAME.

4 EXISTING FURNACE TO BE REPLACED. MAINTAIN EXISTING WIRING/CONDUIT TO RECONNECT TO NEW

Collins | webb ARCHITECTURE
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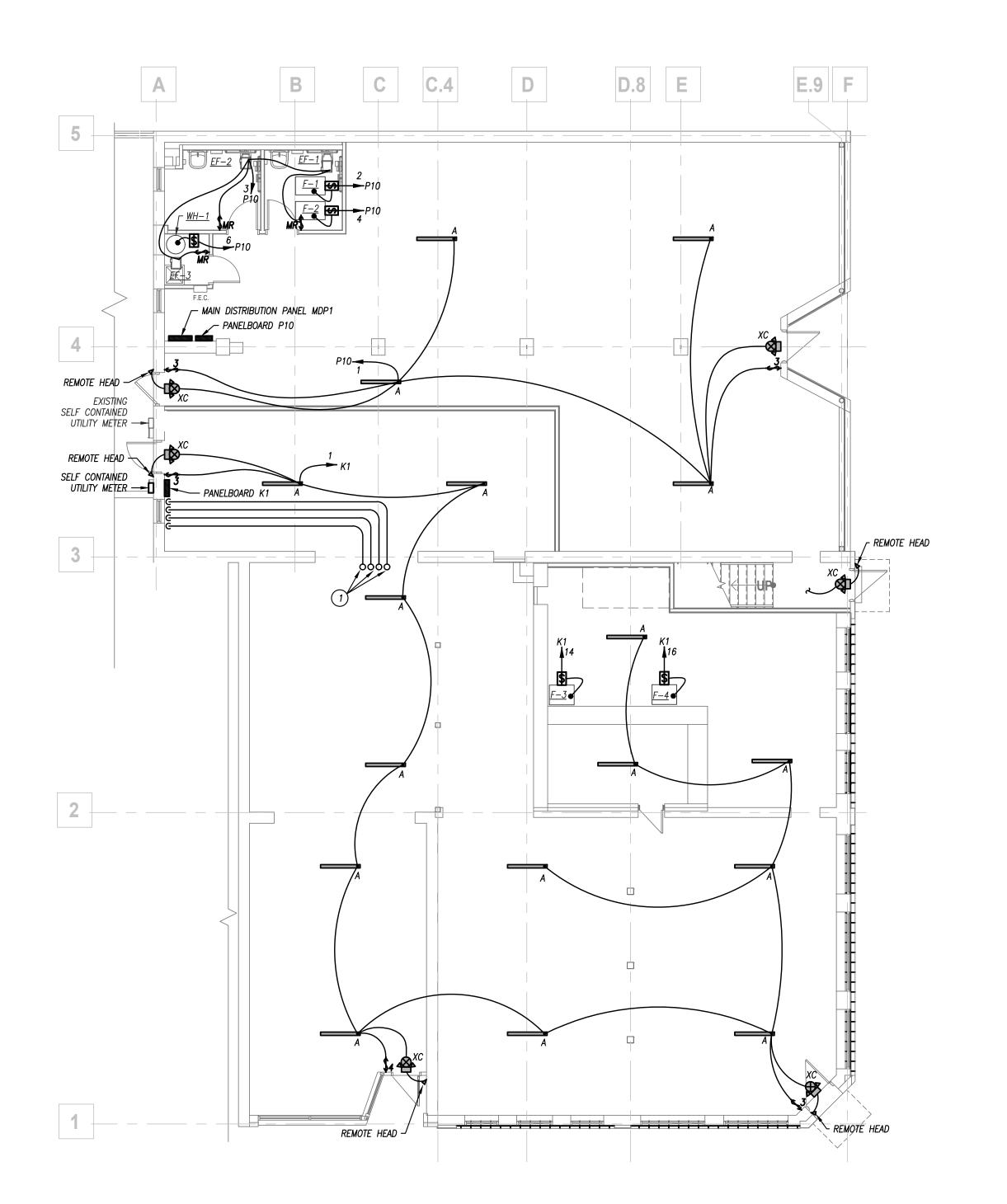
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COLLINS WEBB #: 21121

ELECTRICAL DEMOLITION - FLOOR PLANS

PEARSON KENT MCKINLEY RAAF ENGINEERS LLC 13300 W 98TH STREET LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM MO State Certificate of Authority #E-2002020886 D.8 E

2ND FLOOR PLAN - ELECTRTICAL

1/8" = 1'-0"



1ST FLOOR PLAN - ELECTRICAL

1/8" = 1'-0"

GENERAL LIGHTING NOTES

 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 FIXTURES SHALL BE FED FROM JUNCTION BOXES WITH LIGHT FIXTURE WHIPS (<6'). DAISY-CHAINING

OF FIXTURES IS NOT ALLOWED.

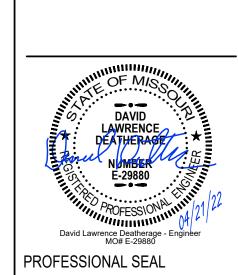
3.2. SWITCH BOX LOCATIONS SHALL BE WIRED SO THAT A NEUTRAL WIRE IS AVAILABLE AT THE SWITCH BOX LOCATION, EITHER IN THE BOX OR AVAILABLE TO BE ADDED VIA RACEWAY OR AN ACCESSIBLE WALL CAVITY. 3.3. WALL SWITCHES FOR SEPARATE LOAD TYPES (EM/NORMAL, 120/277V, ETC.) SHALL NOT BE IN A

3.4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ELECTRICAL PLAN KEYED

PROVIDE (3) 2" CONDUIT AND (1) 1" CONDUIT WITH PULL STINGS FOR FUTURE MECHANICAL EQUIPMENT.
ROUTE CONDUIT TIGHT TO CEILING AND TURN UP THROUGH CEILING. PATCH ALL PENETRATIONS WATERTIGHT. CAP CONDUIT AT BOTH ENDS FOR FUTURE USE.

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ELECTRICAL - FLOOR PLANS



RISER DIAGRAM KEYED NOTES

1 #1/0 GROUNDING ELECTRODE IN 1" CONDUIT.

2 EXISTING TO REMAIN.

3 PROVIDE METER AND WEATHERHEAD PER EVERGY STANDARDS.

4 INTERCEPT AND EXTEND FEEDER TO NEW MDP LOCATION.

5 FIELD VERIFY FEEDER SIZE. 6 REMOVE EXISTING ELECTRICAL SERVICE.

NOT TO SCALE

PANEL DESIGNATION	K1									AMPS: EAKER:		S	CCR RATING (AIC):	: 22,000
MOUNTING	SURFAC	<u> </u>				# <u> </u>		.,		LTAGE:		0		
LOCATION			S-100			CIRCUIT				E/WIRE:	•	•		
		PHASE		С	/B	5)	C			PHASE			
DESCRIPTION	А	В	С	TRIP	POLE			POLE	TRIP	Α	В	С	DESCRIF	PTION
LTS: FUTURE TENAT S-100	546			20	1	1	2			3459				
SPARE		-		20	1	3	4	3	50		3459		CONDENSIN	IG UNIT CU-3
SPARE			_	20	1	5	6					3459		
SPARE	-			20	1	7	8			3459				
SPARE		_		20	1	9	10	3	50		3459		CONDENSIN	NG UNIT CU-4
SPARE			_	20	1	11	12					3459		
SPARE	_			20	1	13	14	1	20	1920			F	URNANCE F-3
SPARE		_		20	1	15	16	1	20		1920		F	URNANCE F-4
SPARE				20	1	17	18	1	20			_		SPARE
SPARE				20	1	19	20	1	20	_				SPARE
SPARE				20	1		22	1	20		_			SPARE
SPARE				20	1	-	24	1	20			_		SPARE
SPARE				20	1	-	26	1	20	_				SPARE
SPARE				20	1	-	28	1	20					SPARE
SPARE				20	1	-	30	1	20			_		SPARE
SPARE				20	1	_	32	1	20	_				SPARE
SPARE		_		20	1	-	34	1	20		_			SPARE
SPARE			_	20	1	-	36	1	20			_		SPARE
SPARE	<u> </u>			20	1	-	38	1	20	_				SPARE
SPARE		_		20	1		40	1	20		_			SPARE
SPARE			_	20	1	-	42	1	20			_		SPARE
SPARE	-			20	1	-	44	1	20	-				SPARE
SPARE		_		20	1	-	46	1	20		_			SPARE
SPARE			_	20	1	_	48	1	20			_		SPARE
SPARE	_			20	1		50	1	20	_				SPARE
SPARE		-		20	1	51		1	20		-			SPARE
SPARE			-	20	1	53	_	1	20			-		SPARE
SPARE	_			20	1	55	-	1	20	_				SPARE
SPARE		_		20	1		58	1	20		_			SPARE
SPARE			_	20	1	-	60	1	20			_		SPARE
			LABOE	SUD EEE		_	62	7		_				
			LARGE S	OUB-FEL	BREAKE		64	3	_		_			_
TOTAL	546						66			0070	0070	-	TOTALO	
TOTALS	546	0	0	l						8838	8838	6918	TOTALS	
P	ANELB	OARD	SIZING	ΙΟΑΓ)					1		CONN	ECTED PHASE L	OADS
LOAD DESCRIPTION	1	ECTED		DEMANI			COE	DE MIN.	(VA)	1		ASE	VA	AMPS
LIGHTS	+	46		1.25				683	,	1		<u> </u>	9,384	78.1
RECEPTACLES	+	0	10KVA	+ 50%	REST			0		1		 3	8,838	73.6
MOTORS		340	 	RGEST + SU				4,320		1			6,918	57.6
AIR CONDITIONING		754		1.00				20,754		1	ТОТ	ALS	25,140	69.8
SPACE HEATING		0		0.00				0		1				I.
HEAT PUMP	+	0		1.00				0		1	REMARK	<u>'S:</u>		
CONTINUOUS	+	0		1.25				0		1			R-LINE 1X OR EQUA	VL.
NON-CONTINUOUS	+	0		1.00				0		1			RANCE RATED.	
MISC. LOADS 1		0		1.00				0		1	• •		· · · · · · · · · · · · · · · · · · ·	
	•				3 LOAD:			25,757		1				

DISTRIBUTION PANELBOARD MDP1 11,046 22,000 PANELBOARD P10 10,664 22,000	1,2
PANELBOARD P10 10,664 22,000	
	1,2
PANELBOARD K1 9,924 22,000	1,2

EQUIP	EQUIPMENT FEEDER SCHEDULE											
FEEDER	 EQUIPMENT	LOAD (AMPS)		CONDUIT								
NO.	LQOIF WILL		SETS	# OF WIRES	SIZE	GROUND	MATERIAL	SIZE				
F1	DISTRIBUTION PANELBOARD MDP1	174.3	2	4	#3/0	-	COPPER	2"				
F2	PANELBOARD P10	10.0	1	4	#3/0	#6	COPPER	2"				
F3	PANELBOARD K1	71.5	1	4	500 MCM	_	COPPER	3-1/2"				

PANEL DESIGNATIO		#		MAIN LUG AMPS: 400 SCCR RATING (AIC): MAIN BREAKER: 400											
MOUNTIN	IG: SURFAC							"			208/12)			
	N: OFFICE					2				E/WIRE:	-				
	0,,,62	PHASE		С	:/B	{	5	C			PHASE				
DESCRIPTION	А	В	С	TRIP	POLE			POLE			В	С	DESCRIPTION		
	2786					1	2			2018					
CONDENSING UNIT CU-1		2786		40	3	3	4	3	30		2018		CONDENSIN	G UNIT CU-5	
			2786	1		5	6					2018			
	2786					7	8			2018					
CONDENSING UNIT CU-2		2786		40	3	9	10	3	30		2018		CONDENSIN	G UNIT CU-6	
			2786	1		11						2018	1		
	_					_	14			3459					
SPACE		_		_	1	15		3	50	0.00	3459		CONDENSING UNIT CU-		
S. 7.132			_	1		17	-				0.00	3459			
	_					19		1	20	_		0.00		SPARE	
SPACE		_		_	1	21	_	1	20		_			SPARE	
017102			_	1		23	-	1	20			_		SPARE	
	_				1	25	_	1	20	_				SPARE	
SPACE		_		l _				1	20		_			SPARE	
SITIOL			_	1	'	29		1	20			_		SPARE	
SPARE	_			20	1	_	32	1	20	_				SPARE	
SPARE		_		20	1	33		1	20		_			SPARE	
SPARE			_	20	1	35	_	1	20			_		SPARE	
SPARE	_		_	20	1	37		1	20	_				SPARE	
SPARE	_	_		20	1	39	_	'	20	_	10000			SFAIL	
SPARE		_		20	1	41	_	2	200		10000	10000	LOAD	CENTER LC1	
SPARE			_	20		41	44			1344		10000			
			LABOE	CUD EED	DDEAU	-D	46	7	200	1344	1290		DAN	ELDOADD D10	
			LARGE S	SUB-FED	BKLAN	: <i>K</i>	48	3	200		1290	500	PAIN	ELBOARD P10	
TOTA	10 5570	5570	5570	_			40			0070	10705	500	TOTALO		
TOTA	LS 5572	5572	5572	J						8839	18785	17995	TOTALS		
	PANELB	OARD	SIZING	LOAD)]		CONN	ECTED PHASE L	OADS	
LOAD DESCRIPTION		ECTED	1	DEMAN			COL	DE MIN.	(VA)		PHA		VA	AMPS	
LIGHTS	16	 88		1.25	•			210			F	١	14,411	120.0	
RECEPTACLES)	10KVA	+ 50%	REST			0			Е		24,357	202.8	
MOTORS		166		RGEST + SU				2,760					23,567	196.2	
AIR CONDITIONING		201		1.00				39,201			TOT		62,335	173.0	
SDACE HEATING			1	0.00		\vdash		00,201		1			- ,	1.0.0	

P/	ANELBOARD	SIZING LOAD] [CONN	ECTED PHASE L	OADS
OAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)] [PHASE	VA	А
IGHTS	168	1.25	210] [Α	14,411	1
RECEPTACLES	0	10KVA + 50% REST	0] [В	24,357	2
MOTORS	2,466	1.25 x LARGEST + SUM OF REST	<i>2,</i> 760] [С	23,567	1
AIR CONDITIONING	39,201	1.00	39,201] [TOTALS	62,335	1
SPACE HEATING	0	0.00	0]			
HEAT PUMP	0	1.00	0] .	REMARKS:		
CONTINUOUS	500	1.25	625		1. EATON POW-F	R—LINE 3X OR EQUAL	-•
ION-CONTINUOUS	0	1.00	0		2. SERVICE ENTR	RANCE RATED	
/IISC. LOADS 1	0	1.00	0				
		SIZING LOAD:	62,796				
		SIZING LOAD (AMPS):	174]			
				•			

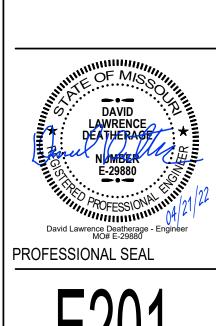
SINGLE-SECTION PANELBOARD SCHEDULE														
PANEL DESIGNATION:	1			MAIN LUG AMPS: 225 SCCR RATING (AIC): 22,000										
PANEL DESIGNATION:			#	N	IAIN BR	EAKER:	M.L.O.							
MOUNTING:	SURFAC	E]	5		VOLTAGE: 208/120					
LOCATION:	OFFICE	N-100				TILOGIC	ر ک		PHASI	E/WIRE:	3Ø, 4W			
DESCRIPTION		PHASE		С	/B] [5	C/B			PHASE		DESCRIPTION	
DESCRIPTION	Α	В	С	TRIP	POLE	POLE		POLE TRIP		АВ		С	DESCRIPTION	
LTS: OFFICE N-100	168			20	1	1	2	1	20	1176			FURNACE F-1	
EXHAUST FANS		114		20	1	3	4	1	20		1176		FURNACE F-2	
RECEPT: ROOF			360	20	1	5	6	1	15			500	WATER HEATER WH-1	
SPARE	_			20	1	7	8	1	20	_			SPARE	
SPARE		-		20	1	9	10	1	20		_		SPARE	
SPARE			-	20	1	11	12	1	20			-	SPARE	
SPARE	_			20	1	13	14	1	20	_			SPARE	
SPARE		_		20	1	15	16	1	20		_		SPARE	
SPARE			ı	20	1	17	18	1	20			-	SPARE	
SPARE	_			20	1	19	20	1	20	_			SPARE	
SPARE		-		20	1	21	22	1	20		_		SPARE	
SPARE			ı	20	1	23	24	1	20			ı	SPARE	
SPARE	_			20	1	25	26	1	20	_			SPARE	
SPARE		-		20	1	27	28	1	20		_		SPARE	
SPARE			-	20	1	29	30	1	20			_	SPARE	
SPARE	_			20	1	31	32	1	20	_			SPARE	
SPARE		_		20	1	33	34	1	20		_		SPARE	
SPARE			_	20	1	35	36	1	20			-	SPARE	
SPARE	_			20	1	37	38	1	20	_			SPARE	
SPARE		_		20	1	39	40	1	20		_		SPARE	
SPARE			_	20	1	41	42	1	20			-	SPARE	
TOTALS	168	114	360							1176	1176	500	TOTALS	

PANELBOARD SIZING LOAD									
LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)						
LIGHTS	168	1.25	210						
RECEPTACLES	360	10KVA + 50% REST	360						
MOTORS	2,466	1.25 x LARGEST + SUM OF REST	2,760						
AIR CONDITIONING	0	1.00	0						
SPACE HEATING	0	0.00	0						
HEAT PUMP	0	1.00	0						
CONTINUOUS	500	1.25	625						
NON-CONTINUOUS	0	1.00	0						
MISC. LOADS 1	0	1.00	0						
		SIZING LOAD:	3,955						
		SIZING LOAD (AMPS):	11						

CONNECTED PHASE LOADS							
PHASE	VA	AMPS					
A	1,344	11.2					
В	1,290	10.7					
С	860	7.2					
TOTALS	3,494	9.7					

<u>REMARKS:</u> 1. EATON POW-R-LINE 1X OR EQUAL.

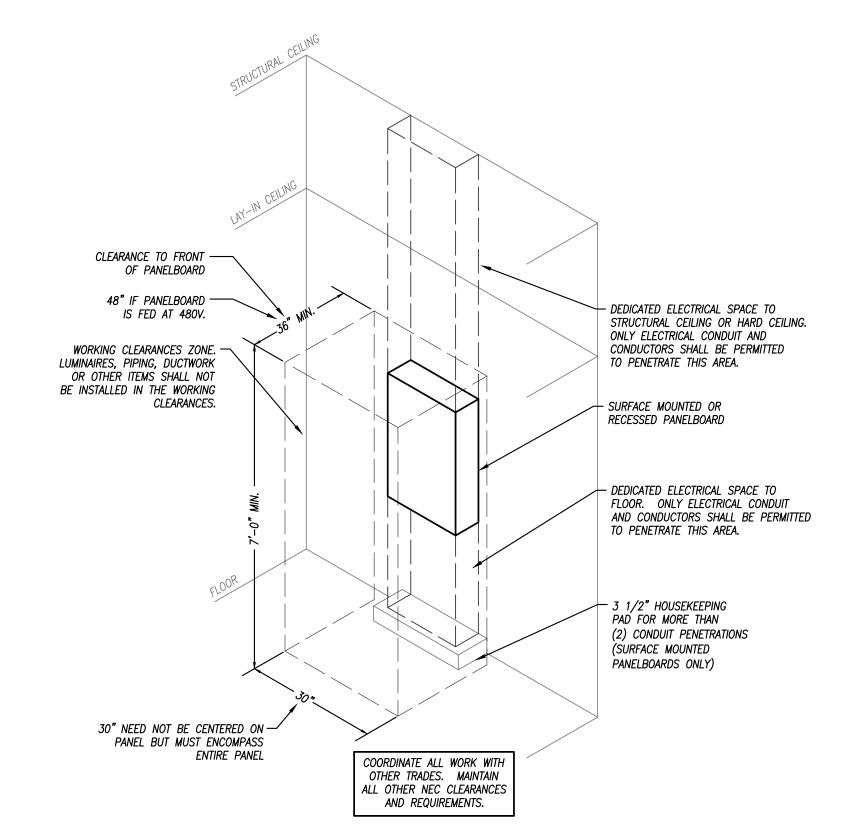
PEARSON KENT MCKINLEY RAAF ENGINEERS LLC 13300 W 98TH STREET LENEXA, KS 6621 LENEXA, KS 66215 WWW.PKMRENG.COM 913.492.2400 MO State Certificate of Authority #E-2002020886



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ELECTRICAL - RISER DIAGRAMS

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TYPICAL PANELBOARD INSTALLATION DETAIL NOT TO SCALE

NISH CEILING —	CEILING-MOUNTED DETECTOR
96" — 88" —	CEILING-MOUNTED DETECTOR CEILING-MOUNTED DETECTOR DO NOT PLACE
	HORN STROBE HORN HORN/STROBE DO NOT PLACE DETECTOR IN THIS AREA
80" —	THIS AREA
	WALL-MOUNTED DETECTOR —
54 " –	
34	— WALL-MOUNTED OPERABLE DEVICES
	OF ENABLE DEVICES
48" —	☐ ② ☐ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
	COUNTER BACKSPLASH
40" —	·
	ABOVE COUNTER DEVICES. SEE NOTES. COORDINATE WITH ARCH.
	ELEVATIONS AND CABINETRY SHOP DRAWINGS.
16"	
	TOWER (COLUMNICATIONS OF FORE MAD CARTA CHIEFE AND
	POWER/COMMUNICATIONS DEVICES AND CATV OUTLET DEVICES AND —— SYSTEMS FURNITURE OUTLETS MOUNTING BRACKETS
INISH FLOOR $^{\perp}$	
GENERAL NO	ES: POWER/COMMUNICATION DEVICES:

GENERAL NOTES:
1. MOUNTING HEIGHTS SHOWN IN THIS DETAIL ARE TYPICAL UNLESS OTHERWISE NOTED ON THE PLANS.
2. SEE ARCHITECTURAL ELEVATIONS FOR SPECIAL CONDITIONS. NOTIFY ARCHITECT IMMEDIATELY OF ANY 3. ALL INSTALLATIONS SHALL COMPLY WITH ADA. VISUAL FIRE ALARM NOTIFICATION DEVICES (STROBE) LOCATE DEVICE SO THE BOTTOM OF THE DEVICE IS BETWEEN 80" AND 96" A.F.F. (NFPA) OR 6" BELOW CEILING, WHICHEVER IS LOWER`(ADA´ 2010). AUDIBLE FIRE ALARM NOTIFICATION DEVICES (HORN)
LOCATE DEVICE SO THAT THE TOP OF UNIT IS NOT MORE
THAN 90" A.F.F. AND NOT LESS THAN 6" BELOW CEILING

TO THE BOTTOM OF THE DEVICES. VERIFY WITH ARCHITECTURAL DETAILS. <u>WALL-MOUNTED OPERABLE DEVICES:</u> OPERABLE DEVICES SHALL BE LOCATED AT 48" A.F.F. TO THE TOP OF THE OPERABLE PORTION OF THE DEVICE. WALL—MOUNTED OPERABLE DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: LIGHT SWITCHES, DIMMERS, CONTROLS, ETC. PUSH BUTTONS NURSE/PATIENT CALL DEVICES (INLUDING THOSE FOR STAFF USE) OTHER CONTROL OR "CALL" DEVICES

FIRE ALARM ACTIVATION DEVICES (PULL STATION)
LOCATE FRONT—APPROACH DEVICES SO THAT THE HIGHEST
OPERABLE PORTION OF THE DEVICE IS NOT MORE THAN
48" A.F.F (ADA 2010) AND NOT LESS THAN 42" A.F.F.

MOUNTING HEIGHTS FOR WALL-MOUNTED DEVICES NOT TO SCALE

LIGHT FIXTURE SCHEDULE

FIXTURE	MANUEACTURER	CATALOG	DECODIDATION			DEMARKS					
TYPE	MANUFACTURER	NUMBER	DESCRIPTION	ID	WATTS	LUMENS	CRI	ССТ	DIMMING	VOLTAGE	REMARKS
Α	WILLIAMS	SERIES 75S	4'-0" LONG COMMERCIAL-GRADE STRIP FIXTURE WITH SQUARE LENS. SURFACE MOUNT. WHITE FINISH.	L65	42	6500	80	3500K	NO	277/120	1
XC	HOUSING, FINISH WHITE. ADJUSTABLE EYEBALL STYLE LIGHTING HEADS WITH GLASS LENS FOR EMERGENCY LIGHT. EXIT SIGN TO HAVE RED LETTERS WITH DIRECTIONAL ARROWS AS INDICATED ON THE PLANS. MAINTENANCE—FREE LITHIUM ION PHOSPHATE	EVC SERIES	HOUSING, FINISH WHITE. ADJUSTABLE EYEBALL STYLE LIGHTING HEADS WITH GLASS	CONSU	L POWER JMPTION =	_	-	-	-	277/120	1
		(4) HIG	NCY:TFOUR GH-OUTPUT	_	_	_	_				
	BATTERY FOR 90 MINUTE OPERATION OF LAMPS AND EXIT SIGN. FURNISH WITH CAPACITY FOR REMOTE HEAD. FULLY AUTOMATIC, SOLID—STATE CHARGER WITH TEST SWITCH AND AC—ON LIGHT.			FØR (4) UTPUT LEDS.	_	_	-	_			
		EV0	OUTDOOR REMOTE WITH 2 HEADS. BLACK FINISH.								

1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

1) EQUALS ARE ACCEPTABLE ON ALL LIGHT FIXTURES UNLESS SPECIFICALLY NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR APPROVED EQUAL FIXTURE MANUFACTURERS. 2) ALL DRIVERS ARE INTEGRAL TO FIXTURE UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR ADDITIONAL FIXTURE/DRIVER/BALLAST REQUIREMENTS.

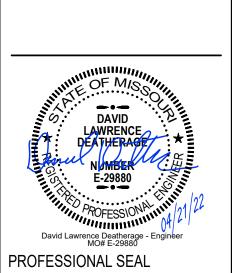
3) ALL FIXTURES WITH PAINTED METAL PARTS SHALL BE PAINTED AFTER FABRICATION.

4) LUMENS LISTED FOR LED FIXTURES ARE GENERALLY DELIVERED LUMENS UNLESS NOTED OTHERWISE.

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ELECTRICAL - PANELBOARD SCHEDULES

