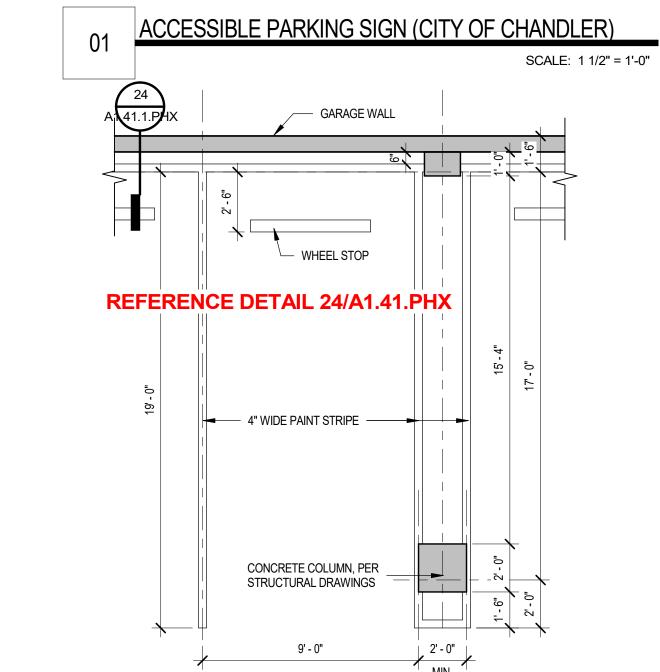
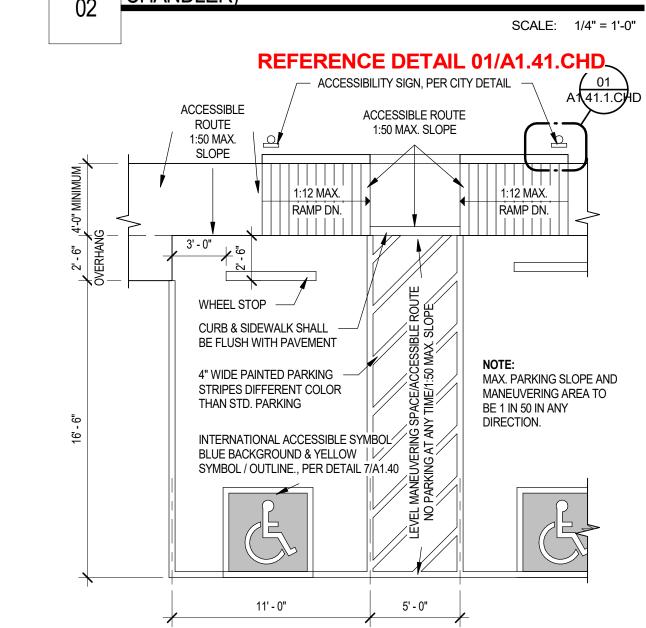
GREEN BORDER AND INTERNATIONAL LETTERING SYMBOL OF ACCESSIBILITY ON PARKING SIGN RESERVED SHOWN ON WHITE 6"H x 6"W BLUE FIELD WITH 1/2" RADIUS CORNERS RETROREFLECTIVE BACKGROUND SHEETING -- ALL LETTERING SERIES 'D' **GREEN COLOR** ACCESSIBLE - 3/8" WIDE GREEN COLOR BAND (TYP.) - VAN ACCESSIBLE SIGN WHERE APPLICABLE NOTES:

1. THE BOTTOM OF THE SIGN MUST BE 5'-4" ABOVE FINISHED GRADE OR 7'-0" WHEN PLACED IN PEDESTRIAN CIRCULATION PATH. SIGN MUST BE CENTERED ON THE PARKING SPACE AND PLACED 2.5 FEET FROM FACE OF CURB. IN PARKING LOT SITUATIONS WITHOUT CURBING, SIGN MAY BE PLACED AT THE END OF THE STALL. 7
 VAN ACCESSIBLE TAB TO BE USED, AS REQUIRED.

- EXCERPT OF CITY OF CHANDLER DETAIL C-611



TYPICAL PARKING SPACE AT GARAGE (CITY OF CHANDLER)



TYPICAL ACCESSIBLE PARKING STALL (CITY OF CHANDLER)

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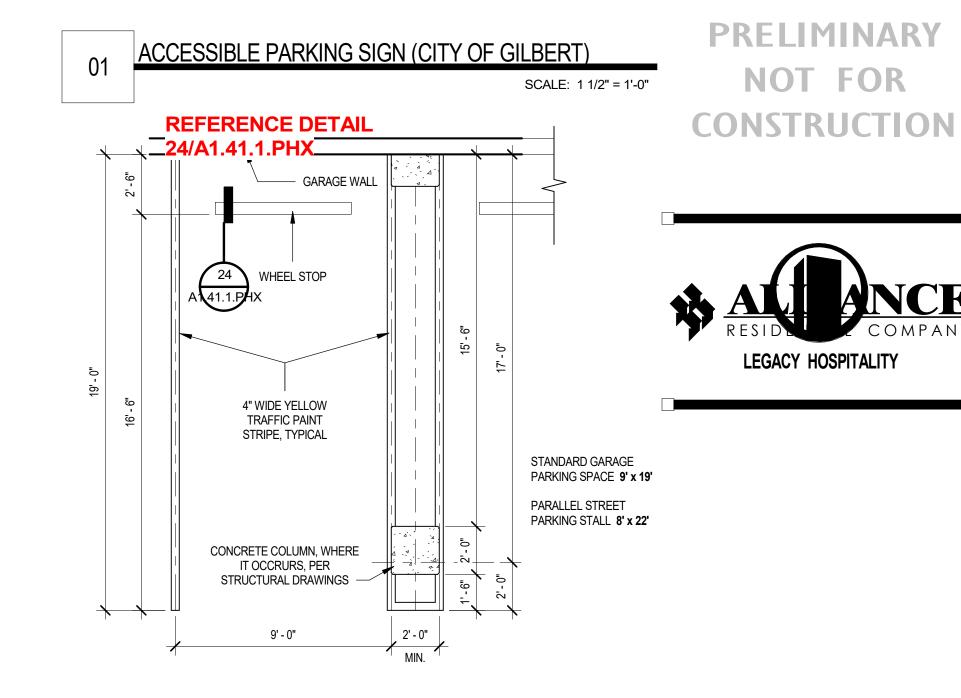
SITE DETAILS CITY OF FLAGSTAFF

ALL LETTERING SERIES 'C' **GREEN COLOR** INTERNATIONAL SYMBOL OF RESERVED ACCESSIBILITY ON PARKING SIGN PARKING SHOWN ON WHITE 6"H x 6"W BLUE CORRECT FIELD WITH 1/2" SYMBOL TYPE RADIUS CORNERS WHITE REFLECTIVE
BACKGROUND
(TYP.)
HANDICAP
PATE OR PERMIT - 3/8" WIDE GREEN COLOR BAND - ALL LETTERING SERIES 'D' **GREEN COLOR** ACCESSIBLE\_ - 3/8" WIDE GREEN COLOR BAND - VAN ACCESSIBLE SIGN WHERE APPLICABLE NOTES:

1. THE BOTTOM OF THE SIGN SHALL BE 60" MIN. ABOVE FINISH GRADE.

2. SIGNS SHALL BE PROPERLY CENTERED WITHIN THE PARKING SPACE.

- 3. THE SIGN FACE SHOULD BE LOCATED NO FARTHER THAN 6 FEET FROM THE FRONT OF EACH PARKING
- 4. ALL LETTERING SERIES "C", GREEN COLOR
  5. INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOWN WHITE ON 6" X "6" BLUE FIELD WIH 1/2" RADIUS
- 6. THE VAN ACCESSIBLE SIGN SHALL BE CENTERED UNDER THE ACCESSIBLE PARKING SIGN AS SHOWN.



TYPICAL PARKING SPACE AT GARAGE (CITY OF GILBERT)

SCALE: 1/4" = 1'-0"

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4'-0" MIN. 2' - 6"

ACCESSIBLE PARKING
ROUTE OVERHANG CONCRETE FOOTING PER MANUFACTURER SPECIFICATIONS

19' - 0"

**ELEMENTS TO** 

MATCH BUILDINGS

NOTES:
1. DESIGN TO BE COMPATIBLE WITH BUILDING, PAINTED TO MATCH RAILINGS.

- 2. SHOP DRAWINGS AND CALCULATIONS REQUIRED TO BE DRAWN AND SEALED BY A REGISTERED
- STRUCTURAL ENGINEER.
- CARPORT UNDER SEPARATE PERMIT & REVIEW, DETAIL IS FOR REFERENCE ONLY.
   ALL LIGHT FIXTURES ARE TO BE FLUSH-MOUNTED TO THE UNDERSIDE OF THE CANOPY AND MUST BE SCREENED BY THE CANOPY FASCIA.

5. PER CITY OF PHOENIX **3105.6.3 ALLOWABLE AREA** PARKING LOT SHADE STRUCTURES SHALL NOT EXCEED 300 FEET IN LENGTH OR 40 FEET IN WIDTH. A CLEAR SEPARATION OF NOT LESS THAN 20 FEED SHALL BE MAINTAINED BETWEEN SHADE STRUCTURES ON THE SAME PROPERTY. NO SHADE STRUCTURE SHALL COVER OR ENCROACH INTO ANY REQUIRED FIRE LANE.

SITE DETAILS CITY OF GILBERT

DATE: July 17, 2024

LIGHT FIXTURE - PER ELECTRICAL,

COLUMN -

CONC. CURB/WHEEL

STOP WHERE INDICATED ON DLAN

RECESS IN CHANNEL -

TYPICAL CARPORT DETAIL CITY OF GILBERT

METAL DECK PAINTED

ALL AROUND

- PAINT EXPOSED 6" HIGH FASCIA -

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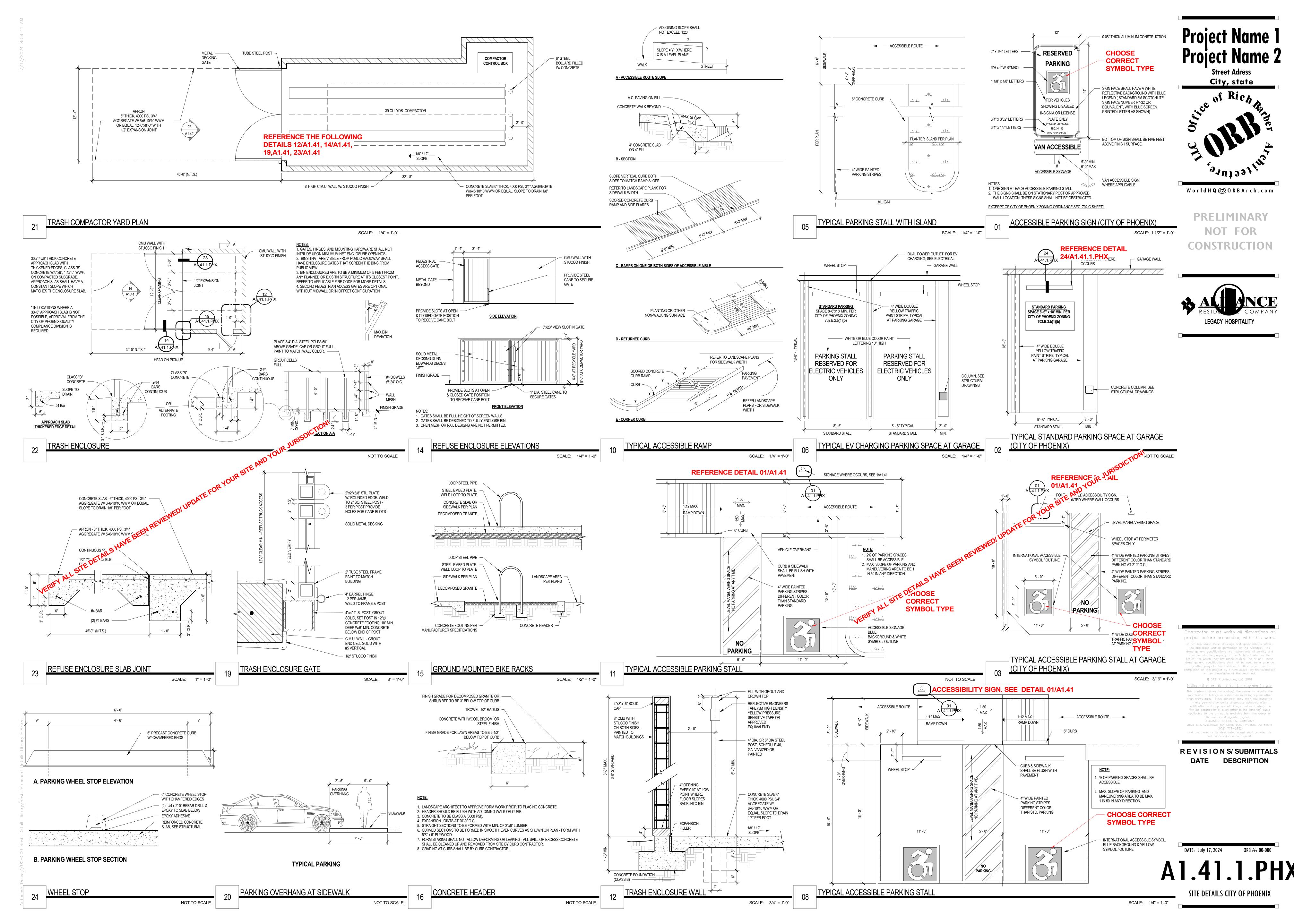
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SITE DETAILS CITY OF MESA



A) FLEXIBLE P.E. POST WITH SURFACE MOUNT BASE - EPOXY TO PAVEMENT SURFACE B) PERFORATED GALVANIZED TUBING PER COS DETAIL 2131. INSTALL IN LANDSCAPE 2" LETTERS -~ RESERVED AREAS ONLY. PARKING C) SURFACE MOUNT TO STRUCTURE 6" SYMBOL ROYAL BLUE SOLID WITH D) MOUNT AS DETAILED ON PLANS **CHOOSE** WHITE SYMBOL -**CORRECT TYPE** 0.875" LETTERS -FOR VEHICLES SHOWING DISABLED GREEN BORDERS AND TEXT, AND BLUE SYMBOL ON WHITE RETROFLECTIVE INSIGNIA OR LICENSE PLATE ONLY BACKGROUND (TYPICAL). 0.5" LETTERS ----POSTED PURSUANT TO BACKGROUND: ASTM TYPE IV SHEETING COPY: SAME AS ABOVE SCOTTSDALE CITY CODE SEC. 17-124 SUBSTRATE 0.080 GUAGE TREATED VAN ACCESSIBLE - BOTTOM OF SIGN SHALL BE FIVE FT. ABOVE FINISH SURFACE FIVE FT. ACCESSIBLE SIGNAGE - VAN ACCESSIBLE SIGN ONE SIGN AT EACH ACCESSIBLE

MOUNTING OPTIONS (SEE PLANS)

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EXCERPT OF DETAIL 2124 OF CITY OF SCOTTSDALE STANDARD DETAILS

PARKING STALL

**PRELIMINARY** ACCESSIBLE PARKING SIGN - (CITY OF SCOTTSDALE) NOT FOR SCALE: 1 1/2" = 1'-0" **REFERENCE DETAIL 24/A1.41.1** - WHEEL STOP GARAGE WALL WHERE OCCURS STANDARD PARKING SCAPE 9'-0" x 18'-0" MIN. PER CITY OF SCOTTSDALE ORDINANCE 9.106 LEGACY HOSPITALITY 1' - 0" TYP. 4" WIDE YELLOW TRAFFIC PAINT STRIPE, TYPICAL — CONCRETE COLUMN PER STRUCTURAL (WHERE OCCURS). SEE FLOOR PLAN -

9' - 0" CLEAR

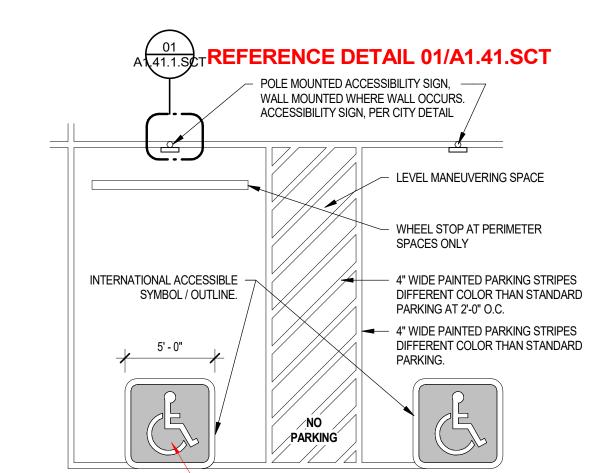
TO FACE OF COLUMN

WHERE APPLICABLE

9' - 0" TYPICAL 10' - 0" STANDARD STALL TYPICAL PARKING SPACE AT GARAGE SCALE: 1/4" = 1'-0"

11'-0" WHEN ADJACENT TO WALL, UNLESS

3'-0" PEDESTRIAN ACCESS IS PROVIDED



- CHOOSE CORRECT TYPE

TYPICAL ACCESSIBLE PARKING STALL AT GARAGE (CITY OF SCOTTSDALE)

SCALE: 3/16" = 1'-0"

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SITE DETAILS CITY OF SCOTTSDALE



ALL LETTERING SERIES 'C' **GREEN COLOR** INTERNATIONAL SYMBOL OF RESERVED ACCESSIBILITY ON PARKING SIGN **PARKING** SHOWN ON WHITE 6"H x 6"W BLUE CORRECT FIELD WITH 1/2" SYMBOL TYPE RADIUS CORNERS WHITE REFLECTIVE
BACKGROUND
(TYP.)
ACCESSIBLE
PATE OR PLACARD - 3/8" WIDE GREEN COLOR BAND A.R.S. SEC.28-884 & TEMPE CITY COD - ALL LETTERING SERIES 'D' **GREEN COLOR** ACCESSIBLE - 3/8" WIDE GREEN COLOR BAND - VAN ACCESSIBLE SIGN WHERE APPLICABLE NOTES:

1. THE BOTTOM OF THE SIGN SHALL BE 60" MIN. ABOVE FINISH FLOOR OR GROUND SURFACE. 2. SIGNS SHALL BE PROPERLY CENTERED ON THE PARKING SPACE. 3. THE SIGN FACE SHOULD BE LOCATED NO FARTHER THAN 6 FEET FROM THE FRONT OF EACH PARKING 4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PLACED ON THE PAVEMENT WITHIN EACH ACCESSIBLE PARKING SPACE. A BLUE BACKGROUND WITH YELLOW OR WHITE BORDER MAY SUPPLEMENT THE WHEELCHAIR SYMBOL. 5. PROVIDE ONE SIGN AT EACH ACCESSIBLE PARKING STALL.
6. THE SIGNS SHALL BE ON STATIONARY POST OR APPROVED WALL LOCATION. THESE SIGNS SHALL NOT BE OBSTRUCTED. ACCESSIBLE PARKING SIGN (CITY OF TEMPE) SCALE: 1 1/2" = 1'-0" **REFERENCE DETAIL 24/A1.41.1** 

- WHEEL STOP WHERE GARAGE WALL OCCURS STANDARD PARKING SPACE 8'-6" x 18' MIN. 4" WIDE YELLOW TRAFFIC PAINT STRIPE, TYPICAL -CONCRETE COLUMN, SEE STRUCTURAL DRAWINGS 8' - 6" TYPICAL

> TYPICAL STANDARD PARKING SPACE AT GARAGE (CITY OF TEMPE)

STANDARD STALL

SCALE: 1/4" = 1'-0" **REFERENCE DETAIL 01/A1.41.1**  POLE MOUNTED ACCESSIBILITY SIGN, WALL MOUNTED WHERE WALL OCCURS. ACCESSIBILITY SIGN, PER CITY DETAIL LEVEL MANEUVERING SPACE 4" WIDE YELLOW OR WHEEL STOP AT WHITE TRAFFIC PAINT PERIMETER SPACES ONLY 4" WIDE PAINTED PARKING STRIPES INTERNATIONAL -DIFFERENT COLOR THAN STANDARD ACCESSIBLE PARKING AT 4'-0" O.C. AT45° SYMBOL / OUTLINE. 4" WIDE PAINTED PARKING STRIPES DIFFERENT COLOR THAN STANDARD **SYMBOL TYPE** 11' - 0" 5' - 0"

NOTES:

1. REQUIRED WIDTH DIMENSIONS OF ACCESSIBLE PARKING SPACES AND ACCESS ISLES ARE MEASURED TO CENTERLINE OF STRIPING. 2. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PLACED ON THE PAVEMENT WITHIN EACH ACCESSIBLE PARKING SPACE. A BLUE BACKGROUND WITH YELLOW OR WHITE BORDER MAY

SUPPLEMENT THE WHEELCHAIR SYMBOL TYPICAL ACCESSIBLE PARKING STALL AT GARAGE (CITY OF TEMPE) SCALE: 3/16" = 1'-0"

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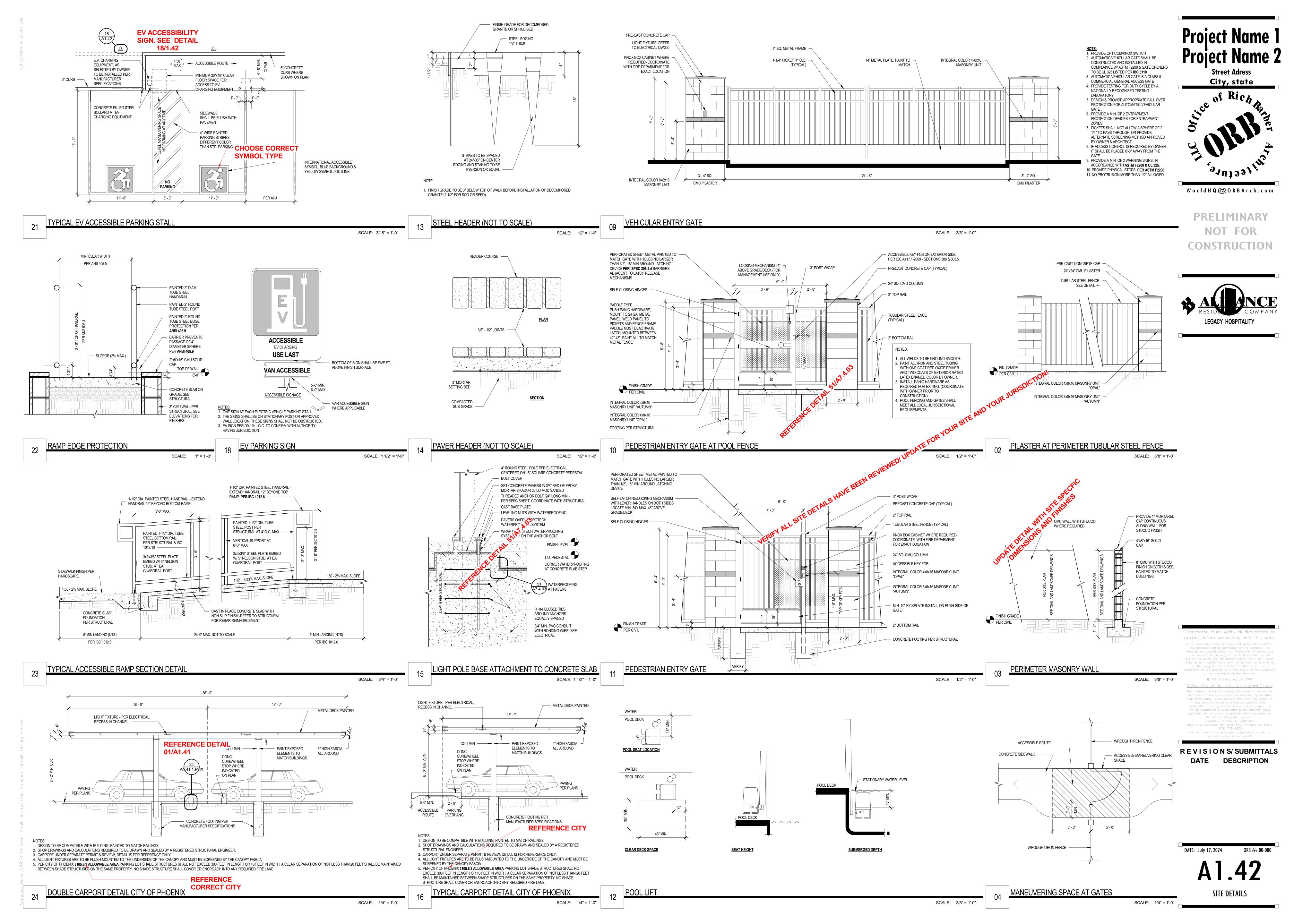
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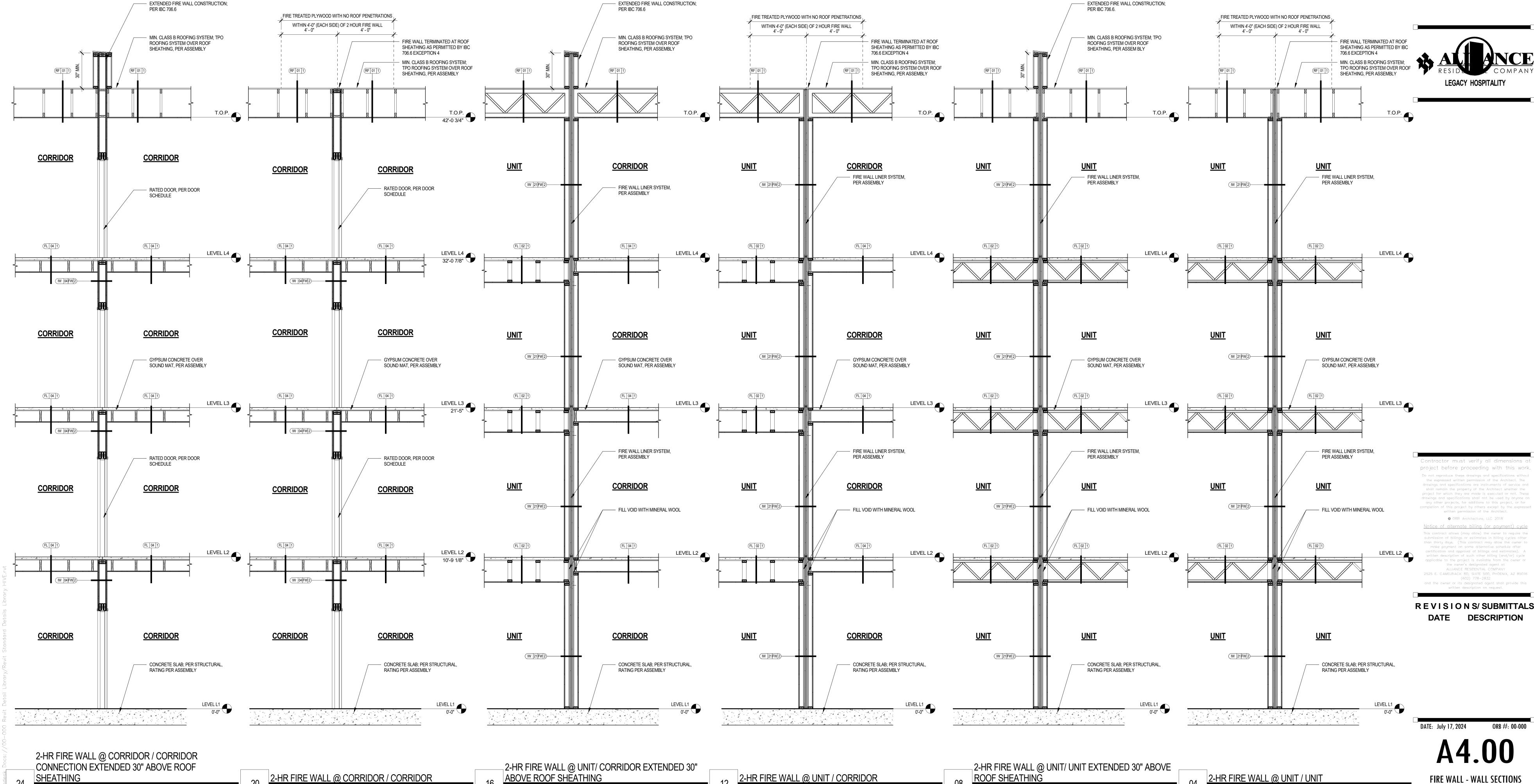
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FIRE WALL - WALL SECTIONS

SCALE: 3/8" = 1'-0"

2-HR FIRE WALL @ UNIT / UNIT

SCALE: 3/8" = 1'-0"



2-HR FIRE WALL @ UNIT / CORRIDOR

SCALE: 3/8" = 1'-0"

SCALE: 3/8" = 1'-0"

2-HR FIRE WALL @ CORRIDOR / CORRIDOR

SCALE: 3/8" = 1'-0"

SCALE: 3/8" = 1'-0"

SHEATHING

GENERAL FIRE PROTECTION NOTES

1. PER IBC SECTION 708.4.2, IN COMBUSTIBLE CONSTRUCTION WHERE FIRE PARTITIONS DO NOT EXTEND TO THE UNDERSIDE OF THE FLOOR OR ROOF SHEATHING, DECK OR SLAB ABOVE, DRAFT STOPPING SHALL BE INSTALLED IN THE SPACE ABOVE AND ALONG THE LINE OF THE FIRE PARTITION PER SECTION 718.3.1 FOR FLOORS AND SECTION 718.4.1 FOR ATTICS (ATTIC AS DEFINED IN IBC CHAPTER 2, IS THE SPACE BETWEEN THE CEILING FRAMING OF THE TOP STORY AND THE UNDERSIDE OF THE ROOF). THE ATTIC SPACE SHALL BE SUBDIVIDED BY DRAFT STOPS INTO AREAS NOT EXCEEDING 3,000 SQUARE FEET OR ABOVE EVERY TWO DWELLING UNITS, WHICHEVER IS SMALLER PER IBC 708.4.2 - EXCEPTION 4

- 2. ALL THROUGH AND MEMBRANE PENETRATIONS OF FIRE RESISTIVE HORIZONTAL ASSEMBLIES AND FIRE RESISTANCE RATED WALL ASSEMBLIES SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORIES LISTINGS FOR FIRESTOP SYSTEMS. REFER TO FIRESTOPPING DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS FURNISHED BY THE MANUFACTURER OF THE FIRESTOP SYSTEM, WHICH SHOW COMPLETE CONFORMANCE TO THE UL LISTING, TO THE ARCHITECT, AND SUCH DRAWINGS SHALL BE AVAILABLE TO THE CITY INSPECTORS. THE
- DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED. 3. CONCEALED INSTALLATION (2018 IBC SECTION 720.2). INSULATING MATERIALS, WHERE CONCEALED AS INSTALLED IN BUILDINGS OF ANY TYPE OF CONSTRUCTION, SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450 EXCEPTION: CELLULOSIC FIBER LOOSE-FILL INSULATION COMPLYING WITH THE REQUIREMENTS OF SECTION 720.6 SHALL NOT BE REQUIRED TO MEET A FLAME SPREAD INDEX REQUIREMENT BUT SHALL BE REQUIRED TO MEET A SMOKE DEVELOPED INDEX OF NOT MORE THAN 450 WHEN TESTED IN ACCORDANCE WITH CAL/ULC S102.2. 4. FACINGS (2018 IBC SECTION 720.2.1) – WHERE SUCH MATERIALS ARE INSTALLED IN CONCEALED SPACES IN
- BUILDINGS OF TYPES III, IV, OR V CONSTRUCTION, THE FLAME SPREAD AND SMOKE DEVELOPED LIMITATIONS DO NOT APPLY TO FACINGS, COVERINGS, AND LAYERS OF REFLECTIVE FOIL INSULATION THAT ARE INSTALLED BEHIND AND IN SUBSTANTIAL CONTACT WITH THE UNEXPOSED SURFACE OF THE CEILING, WALL OR FLOOR FINISH. 5. LOOSE-FILL INSULATION (2018 IBC SECTION 720.4) – LOOSE-FILL INSULATION MATERIALS THAT CANNOT BE MOUNTED IN THE ASTM E84 OR UL 723 APPARATÚS WITHOUT A SCREEN OR ARTIFICIAL SUPPORTS SHALL COMPLY WITH THE FLAME SPREAD AND SMOKE-DEVELOPED LIMITS OF SECTIONS 720.2 AND 720.3 WHEN TESTED IN ACCORDANCE WITH CAN/ULC S102.2.
- 6. CAULKING AND SEALANTS APPLY A BEAD OF SEALANT AROUND THE PARTITION PERIMETER. AND AT THE INTERFACE BETWEEN WOOD OR STEEL FRAMING AND GYPSUM BOARD PANELS TO CREATE AN AIR BARRIER.

GYPSUM ASSOCIATION GA 600-2021- GENERAL EXPLANATORY NOTES - FIRE PERFORMANCE OF SYSTEMS 1. NAILS – NAILS SHALL COMPLY WITH ASTM F547 STANDARD TERMINOLOGY OF NAILS FOR USE WITH WOOD AND WOOD-BASED MATERIALS OR ASTM C514 STANDARD SPECIFICATION FOR NAILS FOR THE APPLICATION OF GYPSUM WALLBOARD. OTHER NAILS, SUITABLE FOR THE INTENDED USE, AND HAVING DIMENSIONS NOT LESS THAN THOSE SPECIFIED IN THIS MANUAL, SHALL BE PERMITTED AS SUBSTITUTIONS.

- 2. FASTENERS FASTENERS INSTALLED ALONG THE EDGES OF GYPSUM PANELS SHALL BE PLACED ALONG THE PAPER BOUND EDGES ON THE LONG DIMENSION OF THE PANEL. FASTENERS AT THE END SHALL BE PLACED ALONG MILL OR FIELD CUT ENDS ON THE SHORT DIMENSION. FASTENERS ON THE PERIMETER OF THE PANEL SHALL BE PLACED ALONG BOTH EDGES AND ENDS. INDICATED FASTENER SPACINGS ARE MAXIMUMS. CLOSER FASTENER SPACING MAY REDUCE THE STC.
- 3. SCREWS SCREWS MEETING ASTM C1002 STANDARD SPECIFICATION FOR STEEL SELF-PIERCING TAPPING SCREWS FOR APPLICATION OF GYPSUM PANEL PRODUCTS OR METAL PLASTER BASES TO WOOD STUDS OR STEEL STUDS SHALL BE PERMITTED TO BE SUBSTITUTED FOR THE PRESCRIBED NAILS, ONE FOR ONE, WHEN THE LENGTH AND HEAD DIAMETER OF THE SCREWS EQUAL OR EXCEED THOSE OF THE NAILS SPECIFIED IN THE TESTED SYSTEM, AND THE SCREW SPACING DOES NOT EXCEED THE SPACING SPECIFIED FOR THE NAILS IN THE TESTED
- 4. SCREW SPACING TOLERANCE SCREWS SHALL BE SPACED AS INDICATED IN THE SYSTEM DETAIL, WITH NO ONE FASTENER EXCEEDING THE SPECIFIED SPACING BY MORE THAN 1 INCH. 5. PANEL APPLICATION – VERTICALLY APPLIED GYPSUM PANELS SHALL HAVE THE EDGES PARALLEL TO FRAMING
- MEMBERS. HORIZONTALLY APPLIED GYPSUM PANELS SHALL HAVE THE EDGES AT RIGHT ANGLES TO THE FRAMING MEMBERS. INTERMEDIATE VERTICAL FRAMING MEMBERS ARE THOSE BETWEEN THE VERTICAL EDGES OR ENDS OF THE PANELS. 6. FINISHING - UNLESS OTHERWISE SPECIFIED, THE FACE LAYERS OF ALL SYSTEMS, EXCEPT THOSE WITH PRE-DECORATED OR METAL COVERED SURFACES OR EXTERIOR GYPSUM SHEATHING PANELS, SHALL HAVE JOINTS
- RECOMMENDED LEVELS OF FINISH FOR GYPSUM BOARD, GLASS MAT AND FIBER-REINFORCED GYPSUM PANELS) AND FASTENER HEADS TREATED. BASE LAYERS IN MULTI-LAYER SYSTEMS SHALL NOT BE REQUIRED TO HAVE JOINTS OR FASTENERS TAPED OR COVERED WITH JOINT COMPOUND. 7. JOINT STAGGERING - UNLESS OTHERWISE STATED IN THE DETAILED DESCRIPTION OF THE INDIVIDUAL SYSTEM, JOINTS SHALL BE STAGGERED AS FOLLOWS:

TAPED WITH EITHER PAPER TAPE OR GLASS FIBER MESH TAPE (MINIMUM LEVEL 1 AS SPECIFIED IN GA-214

- a. HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF A PARTITION IN SINGLE-LAYER APPLICATIONS SHALL BE STAGGERED NOT LESS THAN 12 INCHES. b. HORIZONTAL BUTT JOINTS IN ADJACENT LAYERS ON THE SAME SIDE OF A PARTITION IN MULTI-LAYER APPLICATIONS SHALL BE STAGGERED NOT LESS THAN 12 INCHES.
- c. VERTICAL JOINTS ON OPPOSITE SIDES OF A PARTITION IN SINGLE LAYER APPLICATIONS SHALL NOT OCCUR ON
- 8. PARTITIONS EXTENDING ABOVE THE CEILING WHEN A FIRE-RESISTANCE RATED PARTITION EXTENDS ABOVE THE CEILING, THE GYPSUM PANEL JOINTS OCCURRING ABOVE THE CEILING NEED NOT BE TAPED AND FASTENERS NEED 26. ADDITION OF OTHER PANELS — WHEN NOT SPECIFIED AS A COMPONENT OF A FIRE RESISTANCE RATED NOT BE COVERED WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:
- a. THE CEILING IS PART OF A FIRE-RESISTANCE RATED FLOOR-CEILING SYSTEM; b. ALL VERTICAL JOINTS OCCUR OVER FRAMING MEMBERS; c. HORIZONTAL JOINTS ARE EITHER STAGGERED 24 INCHES ON CENTER ON OPPOSITE SIDES OF THE PARTITION OR ARE COVERED WITH STRIPS OF GYPSUM PANEL NOT LESS THAN 6 INCHES WIDE; OR THE PARTITION IS A
- TWO-LAYER SYSTEM WITH JOINTS STAGGERED 16 INCHES OR 24 INCHES ON CENTER; AND d. THE PARTITION IS NOT PART OF A SMOKE OR SOUND CONTROL SYSTEM. WHERE JOINT TREATMENT IS
- DISCONTINUED AT OR JUST ABOVE THE CEILING LINE, THE VERTICAL JOINT SHALL BE CROSS TAPED AT THIS LOCATION TO REDUCE THE POSSIBILITY OF JOINT CRACKING. 9. OUTLET BOXES – METALLIC OUTLET BOXES SHALL BE PERMITTED TO BE INSTALLED IN WOOD AND STEEL STUD WALLS OR PARTITIONS HAVING GYPSUM PANEL FACINGS AND CLASSIFIED AS TWO-HOURS OR LESS. THE SURFACE 27. PROPRIETARY SYSTEMS – EACH PROPRIETARY SYSTEM LISTS SPECIFIC PRODUCTS THAT ARE AREA OF INDIVIDUAL BOXES SHALL NOT EXCEED 16 SQUARE INCHES. THE AGGREGATE SURFACE AREA OF THE BOXES SHALL NOT EXCEED 100 SQUARE INCHES IN ANY 100 SQUARE FEET. BOXES LOCATED ON OPPOSITE SIDES
- HORIZONTAL DISTANCE OF 24 INCHES. APPROVED NON-METALLIC OUTLET BOXES SHALL BE PERMITTED AS ALLOWED BY LOCAL CODE. INSTALLING OUTLET BOXES IN SOUND CONTROL SYSTEM MAY REDUCE THE STC. 10. WATER-RESISTANT PANELS – WATER RESISTANT GYPSUM BACKING PANELS SHALL BE INSTALLED OVER OR AS PART OF THE FIRE RESISTANCE RATED SYSTEM IN AREAS TO RECEIVE CERAMIC OR PLASTIC WALL TILE OR PLASTIC FINISHED WALL PANELS. WHEN FIRE OR SOUND RATINGS ARE NECESSARY, THE GYPSUM PANELS REQUIRED FOR THE RATING SHALL EXTEND DOWN TO THE FLOOR BEHIND FIXTURES SO THAT THE CONSTRUCTION

OF WALLS OR PARTITIONS SHALL BE IN SEPARATE STUD CAVITIES AND SHALL BE SEPARATED BY A MINIMUM

WILL EQUAL THAT OF THE TESTED SYSTEM. NOTE: THE USE OF WATER-RESISTANT GYPSUM BACKING PANELS AS A BASE FOR TILE IN WET AREAS IS REGULATED BY LOCAL CODES. CONSULT LOCAL BUILDING CODES FOR REQUIREMENTS. 11. INSULATION IN WALLS – WHEN NOT SPECIFIED AS A COMPONENT OF A FIRE TESTED WALL OR PARTITION SYSTEM, EITHER FACED OR UNFACED MINERAL FIBER, GLASS FIBER, OR CELLULOSE FIBER INSULATION OF A THICKNESS NOT EXCEEDING THAT OF THE CAVITY DEPTH SHALL BE PERMITTED TO BE ADDED WITHIN THE STUD CAVITY. ADDING INSULATION MAY IMPROVE THE STC.

2. **INSULATION IN CEILINGS** – IN FLOOR-CEILING SYSTEM, THE ADDITION OR DELETION OF MINERAL OR GLASS FIBER INSULATION IN CEILING JOIST SPACES COULD POSSIBLY REDUCE THE FIRE RESISTANCE RATING. THE ADDITION OF UP TO 16-3/4 INCHES OF 0.5 PCF GLASS FIBER INSULATION (R-40), EITHER FACED, OR UNFACED BATT, OR LOOSE FILL TO ANY 1 OR 2-HOUR FIRE RESISTANCE FLOOR-CEILING OR ROOF-CEILING SYSTEM HAVING A CAVITY DEEP ENOUGH TO ACCEPT THE INSULATION IS PERMITTED. PROVIDED THAT ONE ADDITIONAL LAYER OF EITHER 1/2 INCH TYPE X OR 5/8 INCH TYPE X GYPSUM PANELS IS APPLIED TO THE CEILING. THE ADDITIONAL LAYER OF GYPSUM PANEL SHALL BE APPLIED AS

- DESCRIBED FOR THE FACE LAYER OF THE TESTED SYSTEM, EXCEPT THAT THE FASTENER LENGTH SHALL BE INCREASED BY NOT LESS THAN THE THICKNESS OF THE ADDITIONAL LAYER OF GYPSUM PANEL. 13. **INSULATION TYPES** – IN EACH SYSTEM CONTAINING BATT OR BLANKET INSULATION THE INSULATION IS SPECIFIED TO BE EITHER MINERAL OR GLASS FIBER AND, FOR FIRE RESISTANCE, THE SYSTEM SHALL BE BUILT USING THE TYPE SPECIFIED. INSULATION SHALL BE PERMITTED TO BE EITHER FACED OR UNFACED. 14. **VAPOR RETARDERS** – A VAPOR RETARDER SHALL BE PERMITTED TO BE ADDED TO ANY FIRE
- RESISTANCE RATED SYSTEM. THE LOCATION OF THE VAPOR RETARDER SHALL BE DETERMINED BY THE DESIGN REQUIREMENT. 15. SYSTEM GROUPING - ALTHOUGH THE SYSTEMS ARE ARRANGED IN GENERAL GROUPINGS (I.E. WALLS AND INTERIOR PARTITIONS, FLOOR-CEILING, ROOF-CEILINGS, ETC.), THIS IS NOT INTENDED TO LIMIT THEIR USE ONLY TO THE SPECIFIC CATEGORY IN WHICH THEY APPEAR. FOR EXAMPLE, SYSTEMS LISTED AS SHAFT WALLS SHALL BE PERMITTED TO BE USED AS INTERIOR PARTITIONS. HOWEVER, SYSTEMS TESTED VERTICALLY (WALLS AND PARTITIONS) SHALL NOT BE PERMITTED TO BE ARBITRARILY USED IN A
- HORIZONTAL ORIENTATION. 16. STEEL STUDS AND RUNNERS - UNLESS OTHERWISE SPECIFIED IN THE DETAILED DESCRIPTION, THE GENERIC STEEL STUDS AND RUNNERS USED IN NON-LOAD BEARING WALLS AND PARTITIONS IN THIS MANUAL WERE FABRICATED FROM FLAT STEEL HAVING A BASE METAL THICKNESS OF NOT LESS THAN 0.0179 INCH AND HAVE A RETURN LIP DIMENSION OF NOT LESS THAN 3/16 INCH. NOTE: TO ENSURE THAT FIRE PERFORMANCE IS MET, CONSULT THE STEEL STUD MANUFACTURER FOR PERFORMANCE DATA AND RECOMMENDATIONS BEFORE SUBSTITUTING PROPRIETARY STEEL STUDS THAT EITHER ARE FABRICATED FROM STEEL HAVING A BASE METAL THICKNESS OF LESS THAN 0.0179
- INCH OR HAVING A RETURN LIP DIMENSION LESS THAN 3/16 INCH. 17. **RESILIENT CHANNELS** – SINGLE-FLANGED RESILIENT CHANNELS APPLIED TO CEILINGS SHALL BE ORIENTED WITH THE MOUNTING FLANGES FACING THE SAME DIRECTION. SINGLE-FLANGED RESILIENT CHANNELS APPLIED TO WALLS SHALL BE INSTALLED WITH THE MOUNTING FLANGES DOWN. THE CHANNEL AT THE FLOOR SHALL BE PERMITTED TO BE INVERTED AS NECESSARY TO FACILITATE ATTACHMENT OF THE BASE MOLDING.
- 18. STUD SIZES AND DEPTH GREATER STUD SIZES (DEPTHS) SHALL BE PERMITTED TO BE USED IN METAL OR WOOD STUD SYSTEMS. METAL STUDS OF GREATER MIL THICKNESS THAN THOSE TESTED FOR FIRE PERFORMANCE SHALL BE PERMITTED. THE ASSIGNED FIRE RATING OF ANY LOAD-BEARING SYSTEM SHALL ALSO APPLY TO THE SAME SYSTEM WHEN USED AS A NON-LOAD BEARING SYSTEM. INDICATED STUD SPACINGS ARE MAXIMUMS IN REGARD TO THE FIRE PERFORMANCE OF THE SYSTEM ONLY. GREATER MIL THICKNESS STUDS OR CLOSER STUD SPACING MAY REDUCE THE STC. GREATER STUD DEPTH MAY IMPROVE THE STC.
- 19. TRUSS SIZE AND DEPTHS SPECIFIED FLOOR-CEILING AND ROOF-CEILING FRAMING SIZES OR TRUSS DIMENSIONS ARE MINIMUMS. GREATER JOIST OR TRUSS SIZE (DEPTHS) SHALL BE PERMITTED TO BE USED IN METAL OR WOOD FRAMED SYSTEMS. INDICATED JOIST AND TRUSS SPACINGS ARE MAXIMUMS. CLOSER JOIST OR TRUSS SPACING MAY REDUCE THE STC. GREATER JOIST OR TRUSS DEPTH MAY IMPROVE THE STC. 20. STUD ROW SPACING - WITHIN DESIGN LIMITATIONS, THE DISTANCE BETWEEN PARALLEL ROWS OF
- STUDS, SUCH AS IN A CHASE WALL, SHALL BE PERMITTED TO BE INCREASED BEYOND THAT TESTED. WHEN STUD CAVITIES IN WALLS CONSTRUCTED OF PARALLEL ROWS OF STEEL STUDS EXCEED 9-1/2 INCHES AND CROSS BRACING IS REQUIRED, THE CROSS BRACING SHALL BE FABRICATED FROM STEEL STUDS. GREATER WALL DEPTH MAY IMPROVE THE STC, HOWEVER BRACING MAY REDUCE THE STC. 21. SUSPENDED SYSTEMS - SYSTEMS TESTED WITH METAL FURRING CHANNELS ATTACHED DIRECTLY TO THE BOTTOM CHORDS OF STEEL BEAMS, BAR JOISTS, OR WOOD TRUSSES OR FRAMING SHALL BE PERMITTED TO BE SUSPENDED. GENERALLY, FURRING CHANNELS ARE ATTACHED TO 1-1/2 INCH COLD ROLLED CARRYING CHANNELS 48 INCHES ON CENTER SUSPENDED FROM JOISTS BY 8 GA. WIRE HANGERS SPACED NOT GREATER THAN 48 INCHES ON CENTER.
- 22. **CEILING SYSTEM DEPTH** FLOOR-CEILING AND ROOF-CEILING SYSTEMS WHERE FIRE TESTED AT LESS THAN 36 INCHES TOTAL DEPTH. HOWEVER, THE TOTAL DEPTH OF THE SYSTEMS, WITH EITHER DIRECTLY ATTACHED OR SUSPENDED CEILING MEMBRANES, SHALL BE PERMITTED TO EXTEND GREATER THAN 36
- 23. **LAMINATING COMPOUND** WHERE LAMINATING COMPOUND IS SPECIFIED, TAPING, ALL-PURPOSE, OR SETTING TYPE JOINT COMPOUNDS SHALL BE PERMITTED AS DICTATED BY THE SYSTEM. 24. ADDITIONAL GYPSUM PANEL LAYERS - ADDITIONAL LAYERS OF ANY TYPE OF GYPSUM PANELS SHALL BE PERMITTED TO BE ADDED TO ANY SYSTEM. ADDITIONAL LAYERS OF GYPSUM PANELS MAY IMPROVE THE
- REPLACED BY THICKER PANELS OF THE SAME TYPE. LENGTH OF FASTENERS SHALL BE INCREASED ACCORDINGLY TO ACCOMMODATE THE INCREASED THICKNESS OF THE PANEL. WALL OR PARTITION SYSTEM, CEMENTITIOUS BACKER UNITS AND/OR WOOD STRUCTURAL PANELS SHALL BE PERMITTED TO BE ADDED TO ONE OR BOTH SIDES. SUCH NON-GYPSUM PANELS SHALL BE PERMITTED TO BE APPLIED EITHER AS A BASE LAYER DIRECTLY TO THE FRAMING (UNDER THE GYPSUM PANELS), AS A FACE LAYER (OVER THE FACE LAYER OF GYPSUM PANELS), OR BETWEEN LAYERS OF GYPSUM PANELS IN MULTI-LAYER SYSTEMS. WHERE SUCH NON-GYPSUM PANELS ARE APPLIED UNDER THE GYPSUM OR BETWEEN LAYERS OF GYPSUM PANELS, THE LENGTH OF THE FASTENERS SPECIFIED FOR THE

ATTACHMENT OF THE GYPSUM PANEL APPLIED OVER THE NON-GYPSUM PANELS SHALL BE INCREASED

BY NOT LESS THAN THE THICKNESS OF THE NON-GYPSUM PANELS. FASTENER SPACING FOR THE

25. PANEL THICKNESS - GYPSUM PANEL AND WOOD STRUCTURAL PANELS OF THE SAME TYPE MAY BE

GYPSUM PANEL AND THE NUMBER OF LAYERS OF GYPSUM PANELS SHALL BE AS SPECIFIED IN THE SYSTEM DESCRIPTION. ACCEPTABLE FOR USE IN THE SPECIFIC SYSTEM IN WHICH THEY ARE LISTED. CONSULT THE MANUFACTURER FOR INFORMATION ON ADDITIONAL PROPRIETARY PRODUCTS THAT ARE SUITABLE FOR USE IN SPECIFIC PROPRIETARY SYSTEMS. 28. **DISCREPANCIES WITH THE CODE** – WHEN DIFFERENCES OCCUR BETWEEN PROVISIONS OF THIS MANUAL AND THE APPROPRIATE BUILDING CODE OR REGULATION, INCLUDING PROVISIONS OF OTHER

STANDARDS REFERENCED IN THE CODE OR REGULATION, THE MOST STRINGENT PROVISION SHALL

### ACOUSTICAL AND SOUND NOTES: 1. SOUND TRANSMISSION CLASS (STC) - SHOULD BE TESTED IN ACCORDANCE WITH ASTM E90: WHICH IS

APPLY.

ROOM BELOW.

THE STANDARD TEST METHOD FOR LABORATORY MEASUREMENT OF AIRBORNE SOUND TRANSMISSION LOSS OF BUILDING PARTITIONS AND ELEMENTS. 2. IMPACT INSULATION CLASS (IIC) - SHOULD BE TESTED IN ACCORDANCE WITH ASTM E 492: WHICH IS THE STANDARD TEST METHOD FOR LABORATORY MEASUREMENT UNDER CONTROLLED CONDITIONS, IT PROVIDES AN ESTIMATE OF THE IMPACT SOUND INSULATING PERFORMANCE OF A FLOOR/CEILING ASSEMBLY. THIS IS THE AMOUNT THAT IMPACT SOUND PRODUCED BY A STANDARD TAPPING MACHINE STRIKING THE TOP SURFACE OF A FLOOR/CEILING ASSEMBLY IS REDUCED WHEN IT IS MEASURED IN THE

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REVISIONS/SUBMITTALS DATE DESCRIPTION

written description on request.

**1ST BUILDING SUBMITTAL** 

DATE: July 17, 2024 ORB #: 00-000 A7.1.00

FIRE ASSEMBLIES - GENERAL NOTES

**CODE COMPLIANCE RESEARCH REPORT CCRR-0467** 

ISSUED DATE OCTOBER 14, 2022

REVISED DATE OCTOBER 05, 2023

RENEWAL DATE OCTOBER 31, 2023

REPORT HOLDER: OMEGA PRODUCTS INTERNATIONAL. EVALUATION SUBJECT: OMEGA DIAMOND WALL AND DIAMOND WALL PRO CEMENTITIOUS EXTERIOR STUCCO

1.0 <u>SCOPE OF EVALUATION</u> - COMPLIANCE WITH THE FOLLOWING CODES: 2021 AND 2018 INTERNATIONAL BUILDING CODE (IBC) PROPERTIES

EVALUATED: STRUCTURAL, DURABILITY, WEATHER PROTECTION, EXTERIOR WALLS IN TYPE I, II, III, IV AND V CONSTRUCTION, FIRE RESISTANCE RATED CONSTRUCTION AS DESCRIBED IN 5.2.4 2.0 STATEMENT OF COMPLIANCE

THE OMEGA DIAMOND WALL AND DIAMOND WALL PRO ONE-COAT STUCCO SYSTEMS COMPLY WITH THE CODES

LISTED IN SECTION 1.1. FOR THE PROPERTIES STATED IN SECTION 1.2 AND USES STATED IN SECTION 1.3, WHEN INSTALLED AS DESCRIBED IN THIS REPORT, INCLUDING THE CONDITIONS OF USE STATED IN SECTION 6.0. 3.0 DESCRIPTION 3.1 EXTERIOR WALL COVERING SYSTEM: THE OMEGA DIAMOND WALL AND DIAMOND WALL PRO ONE-COAT

STUCCO SYSTEMS ARE PROPRIETARY COATINGS THAT ARE REINFORCED WITH WIRE FABRIC, METAL LATH. PLASTIC LATH, OR GLASS FIBER LATH AND APPLIED TO SUBSTRATES OF FOAM PLASTIC INSULATION BOARD, GYPSUM SHEATHING BOARD, FIBERBOARD, PLYWOOD, OR ORIENTED STRAND BOARD (OSB). THE SYSTEMS MAY ALSO BE APPLIED OVER CONCRETE OR MASONRY UNITS DIRECTLY, WITH OR WITHOUT LATH. WHERE REFERENCE IS MADE IN THIS REPORT TO THE DIAMOND WALL SYSTEM, THE ATTRIBUTE MAY ALSO BE APPLIED TO THE DIAMOND WALL PRO SYSTEM.

3.0 OMEGA DIAMOND WALL CONCENTRATE: DIAMOND WALL CONCENTRATE IS A FACTORY-PREPARED MIXTURE OF PORTLAND CEMENT COMPLYING WITH ASTM C150, CHOPPED FIBERS AND PROPRIETARY ADDITIVES, FOR USE IN THE DIAMOND WALL SYSTEM. THE MIXTURE IS PACKAGED IN 80-POUND BAGS. ONE BAG IS MIXED WITH 4-1/2 TO 7 GALLONS OF WATER AND BETWEEN 160 TO 240 POUNDS OF SAND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3.10MEGA DIAMOND WALL PRO: DIAMOND WALL PRO CONCENTRATE IS THE POLYMER-MODIFIED VERSION OF DIAMOND WALL CONCENTRATE FOR USE IN THE DIAMOND WALL PRO SYSTEM. THE DIAMOND WALL PRO SYSTEM USES THE SAME COMPONENTS AND MIXING RATIO AS THE DIAMOND WALL SYSTEM.

3.20MEGA DIAMOND WALL SANDED: DIAMOND WALL SANDED IS THE PRE-SANDED VERSION OF DIAMOND WALL. ONE 80- POUND BAG OF DIAMOND WALL SANDED IS MIXED WITH 1 TO 2 GALLONS OF WATER.

SAND MUST BE CLEAN AND FREE FROM DELETERIOUS AMOUNTS OF LOAM, CLAY, SILT, SOLUBLE SALTS AND ORGANIC MATTER. SAMPLING AND TESTING MUST COMPLY WITH ASTM C144 OR C897. SAND MUST BE GRADED IN ACCORDANCE WITH ASTM C144 OR C897 OR WITHIN THE FOLLOWING LIMITS:

WALLBOARD PROTECTION ON EACH SIDE OF W	√ALL

RETAINED ON U.S. STANDARD SIEVE	PERCENT RETAINE	D BY WIGHT +- 2 PERCENT
	NATURAL SAND MIN./MAX.	MANUFACTURED SAND MIN./MAX.
No. 4 (4.75 mm)	0/0	0/0
No. 8 (2.36 mm)	0/10	0/10
No. 16 (1.18 mm)	10/40	10/40
No. 30 (600 mm)	30/65	30/65
No. 50 (300 mm)	70/90	60/80
No. 100 (150 mm)	95/100	75/90

3.5 INSULATION BOARD: 3.5.1 FOAM PLASTIC: EXPANDED POLYSTYRENE (EPS) AND EXTRUDED POLYSTYRENE (XPS) INSULATION BOARDS MUST COMPLY WITH ASTM C578. POLYISOCYANURATE INSULATION BOARDS MUST COMPLY WITH ASTM C1289. EXCEPT AS NOTED IN SECTION 3.5.1.3, THE FOAM PLASTIC BOARDS MUST HAVE A FLAME SPREAD INDEX OF 25 OR LESS, AND A SMOKE-DEVELOPED INDEX OF 450 OR LESS. ALL BOARDS MUST BE RECOGNIZED IN A CURRENT RESEARCH REPORT ACCEPTABLE TO THE CODE OFFICIAL. SEE SECTION 8.0 FOR BOARD IDENTIFICATION.

3.5.1.1 EPS: EPS BOARDS MUST HAVE A NOMINAL DENSITY OF 1.5 PCF AND MUST COMPLY WITH ASTM C578 AS TYPE II. BOARDS INSTALLED OVER OPEN FRAMING MUST BE 1 TO 1-1/2-IN. THICK AND MUST HAVE 3/8-IN. TONGUES AND GROOVES ON HORIZONTAL JOINTS. SEE FIGURE 1 FOR JOINT DETAILS.

OVER SOLID SUBSTRATES. MINIMUM 1-1/2-IN. THICK, ASTM C578 TYPE I SQUARE-EDGE FOAM PLASTIC BOARDS MAY BE USED, EXCEPT WHEN USED AS PART OF THE WATER-RESISTIVE BARRIER OVER WOOD- BASED SHEATHING AS DESCRIBED IN SECTION 3.9.1.

3.5.1.2 XPS: XPS BOARDS MUST BE ASTM C578 TYPE IV, V, OR X. BOARDS INSTALLED OVER OPEN FRAMING MUST BE 1 TO 1-1/2-IN. THICK AND MUST HAVE 3/8-IN. TONGUES AND GROOVES ON HORIZONTAL JOINTS. SEE

OVER SOLID SUBSTRATES, XPS BOARDS MAY BE SQUARE EDGED, MINIMUM 1-1/2-IN. THICK, MINIMUM 1 PCF DENSITY, EXCEPT WHEN USED AS PART OF THE WATER-RESISTIVE BARRIER OVER WOOD- BASED SHEATHING AS DESCRIBED IN SECTION 3.9.1 AS AN ALTERNATIVE, 1-IN.-THICK, 1.3 PCF DOW STYROFOAM STUCCOMATE BRAND XPS INSULATION BOARDS (SEE ICC-ES ESR- 2142) MAY BE USED.

3.5.1.3 POLYISOCYANURATE: POLYISOCYANURATE FOAM PLASTIC BOARDS MUST COMPLY WITH ASTM C1289 TYPE II AND BE 1- IN. TO 1-1/2 IN. THICK. WHEN GOVERNED BY THE IRC AND NOT BEING USED IN A FIRE-RATED OR NONCOMBUSTIBLE ASSEMBLY, THE INSULATION MAY HAVE A FLAME-SPREAD INDEX OF 75 OR LESS. HORIZONTAL AND VERTICAL BOARD JOINTS MUST BE SUPPORTED BY FRAMING OR BLOCKING AND BE LIMITED TO NONFIRE-RESISTANCE-RATED CONSTRUCTION.

OVER SOLID SUBSTRATES, BOARDS HAVING A MINIMUM THICKNESS OF 1/2 IN. MAY BE USED, EXCEPT WHEN USED AS PART OF THE WATER-RESISTIVE BARRIER OVER WOOD-BASED SHEATHING AS DESCRIBED IN

3.6.1 WIRE FABRIC LATH: WIRE FABRIC LATH MUST COMPLY WITH ICC-ES AC191 AND MUST BE MINIMUM NO. 20 GAGE (0.035 IN.), 1-IN. GALVANIZED STEEL, WOVEN-WIRE FABRIC LATH. FURRING MUST COMPLY WITH THE FOLLOWING REQUIREMENTS WHEN MAXIMUM TOTAL COATING THICKNESS IS 1/2 IN. OR LESS, THE BODY OF THE LATH MUST BE FURRED A MINIMUM OF 1/8 INCH FROM THE SUBSTRATE AFTER INSTALLATION. WHEN TOTAL COATING THICKNESS IS GREATER THAN 1/2 IN., NO. 17 GAGE (0.058 IN.) BY 1-1/2-IN. WOVEN-WIRE FABRIC LATH MUST BE USED. THE BODY OF THE LATH MUST BE FURRED A MINIMUM OF 1/4 IN. FROM

THE SUBSTRATE AFTER INSTALLATION. 3.6.2 METAL LATH: METAL LATH MUST COMPLY WITH ICC-ES AC191. FURRING REQUIREMENTS ARE AS SET FORTH IN SECTION 3.6.1.

3.7.1 GYPSUM BOARD: GYPSUM BOARD AND WATER-RESISTANT CORE GYPSUM SHEATHING MUST COMPLY WITH ASTM C 1396 OR GLASS-MAT GYPSUM SHEATHING PER C1177.

3.7.2 FIBERBOARD: MINIMUM 1/2-IN.-THICK FIBERBOARD MUST COMPLY AS ASTM C 208, TYPE IV, WALL SHEATHING IN ACCORDANCE WITH IBC SECTION 2303.1.6. 3.7.3 WOOD STRUCTURAL PANELS: WOOD STRUCTURAL PANELS MUST COMPLY WITH IBC SECTIONS 2303.1.5, 2304.6.1 OR IRC SECTION R602.3. PLYWOOD MUST BE EXTERIOR GRADE OR

EXPOSURE 1 AND COMPLY WITH DOC PS-1, AND OSB MUST BE EXPOSURE 1 AND COMPLY WITH DOC PS-2.

3.8 CAULKING: ACRYLIC LATEX CAULKING MATERIALS MUST COMPLY WITH ASTM C 834, OR POLYURETHANE, POLYURETHANE MODIFIED, POLYSULFIDE, OR SILYL-TERMINATED POLYETHER ELASTOMERIC SEALANT COMPLYING WITH ASTM C920.

3.9 WEATHER PROTECTION: 3.9.1 WATER-RESISTIVE BARRIER: APPLICATION OF THE WATER- RESISTIVE BARRIER MUST COMPLY WITH IBC SECTION 1403.2 OR IRC SECTION R703.2. THE WATER-RESISTIVE BARRIER MUST BE A MINIMUM OF ONE LAYER OF EITHER (1) NO. 15 ASPHALT FELT, COMPLYING WITH ASTM D 226, TYPE I, OR (2) A WATER-RESISTIVE

BARRIER RECOGNIZED IN A CURRENT RESEARCH REPORT AS EQUIVALENT TO ASTM D 226, TYPE I OR WHEN APPLIED OVER ANY WOOD-BASED SHEATHING, THE WATER- RESISTIVE BARRIER MUST COMPLY WITH IBC SECTION 2510.6 OR IRC SECTION R703.7.3 OR BE ONE LAYER OF INSULATION BOARD, HAVING HORIZONTAL TONGUE-AND-GROOVE EDGES AS DESCRIBED IN SECTION 3.5, OVER ONE LAYER OF GRADE D KRAFT

3.9.2 VAPOR RETARDER: A VAPOR RETARDER COMPLYING WITH IBC SECTION 1404.3 OR IRC SECTION R702.7 MUST BE PROVIDED, UNLESS ITS OMISSION IS PERMITTED UNDER THE EXCEPTIONS NOTED IN IBC SECTION 1402.2 OR IRC SECTION R703.1.

BUILDING PAPER HAVING A MINIMUM WATER-RESISTANCE RATING OF 60 MINUTES. OR AN EQUIVALENT

3.9.3 FLASHING, TRIM AND ACCESSORIES: ALL FLASHING, TRIM, WEEP SCREEDS AND CORNER REINFORCEMENT SHALL COMPLY WITH IBC SECTION 1404.4 AND IRC SECTION R703.4. RIGID FLASHING MUST COMPLY WITH SECTION 1404.4 OF THE IBC AND MUST BE SLOPED TOWARDS THE EXTERIOR, WITH AN UPTURNED LEG ON THE INTERIOR SIDE AND AT THE ENDS. FLASHING MUST EXTEND BEYOND THE SURFACE

4.0 PERFORMANCE CHARACTERISTICS

OF THE EXTERIOR WALL.

POSITIVE OR NEGATIVE

BARRIER RECOGNIZED IN A CURRENT RESEARCH REPORT.

4.1 WIND RESISTANCE: ALLOWABLE WIND LOAD FOR INSTALLATION OVER OPEN FRAMING FOR WOOD STUDS (MINIMUM SPECIFIC GRAVITY OF 0.50, SUCH AS DOUGLAS FIR-LARCH) OR MIN. NO. 25 GAGE STEEL STUDS SPACED A MAXIMUM OF 24 INCHES ON CENTER IS 35 PSF POSITIVE OR NEGATIVE. ALLOWABLE WIND LOAD FOR INSTALLATION OVER OPEN FRAMING FOR WOOD STUDS (MINIMUM SPECIFIC GRAVITY OF 0.42, SUCH AS SPRUCE-PINE-FIR) SPACED A MAXIMUM OF 24 INCHES ON CENTER, IS 29 PSF

ALLOWABLE WIND LOAD FOR INSTALLATION OVER WOOD STRUCTURAL PANEL SHEATHING USING ALTERNATE FASTENER SPACING AND VARIOUS WOOD SPECIES SHOWN IN TABLES 2 AND 3, THE ALLOWABLE WIND LOAD IS 35 PSF POSITIVE OR NEGATIVE.

LATH MUST BE ATTACHED TO WOOD FRAMING WITH 1-1/2 IN. END AND SIDE LAPS USING NO. 11 GAGE GALVANIZED ROOFING NAILS OR NO. 16 GAGE CORROSION-RESISTANT STAPLES SPACED MAXIMUM 6 IN. ON CENTER, WITH MINIMUM 1-IN. PENETRATION INTO FRAMING EXCEPT WHEN FOLLOWING TABLES 2 OR

LATH MUST BE APPLIED TO STEEL FRAMING WITH 1-1/2 IN. END AND SIDE LAPS USING MINIMUM NO. 8 TYPE S CORROSION- RESISTANT DRYWALL SCREWS WITH 1-IN. DIAMETER WASHERS, OR WITH NO. 8 CORROSION-RESISTANT SCREWS HAVING 3/8-IN. DIAMETER PAN HEADS SPACED AT 7 IN. ON CENTER, WITH MINIMUM 1/2-IN. PENETRATION OF STUDS.

SUPPORT FRAMING MUST BE ADEQUATE TO RESIST THE REQUIRED WIND LOAD, WITH A MAXIMUM ALLOWABLE DEFLECTION OF 1/240 OF THE SPAN.

ALLOWABLE WIND LOADS ARE APPLICABLE TO WIND DESIGN PRESSURE DERIVED FROM ALLOWABLE STRESS DESIGN WIND SPEED (VASD) PER SECTION 1609.3.1 OF THE IBC.

5.0 INSTALLATION 5.1 GENERAL: THE DIAMOND WALL ONE-COAT STUCCO SYSTEMS MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS, THE APPLICABLE CODE, AND THIS RESEARCH REPORT. A COPY OF THE INSTALLATION INSTRUCTIONS MUST BE AVAILABLE ON THE JOBSITE

1-HR STUCCO EXTERIOR WALL - WOOD FRAMING

5.2 APPLICATION:

5.2.1 GENERAL THE EXTERIOR CEMENTITIOUS COATING MAY BE APPLIED BY HAND-TROWELING OR MACHINE-SPRAYING, IN ONE COAT OR TWO COATS, TO A MINIMUM THICKNESS OF 3/8 IN., UNLESS NOTED OTHERWISE. THE COATING MUST BE BACKED BY FRAMING AROUND PENETRATIONS. THE LATH MUST BE EMBEDDED IN THE MINIMUM COATING THICKNESS AND MAY BE EXPOSED. THE FINISH COAT MUST BE APPLIED IN ACCORDANCE WITH OMEGA PRODUCTS INTERNATIONAL INSTRUCTIONS. FLASHING, CORNER REINFORCEMENT, METAL TRIM AND WEEP SCREEDS MUST BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS. THE COATING MUST BE APPLIED AT AMBIENT AIR TEMPERATURES BETWEEN 40°F AND 120°F.

AN INSTALLATION CARD. AS SHOWN IN FIGURES 2 AND 3 OF THIS REPORT, MUST BE ON THE JOBSITE WITH THE NAME OF THE APPLICATOR AND THE PRODUCT TO BE USED BEFORE ANY WATER- RESISTIVE BARRIER OR EXTERIOR SHEATHING IS INSTALLED.

THE COATING MUST BE APPLIED BY APPLICATORS APPROVED BY OMEGA PRODUCTS INTERNATIONAL.

FOR INSTALLATION DETAILS, SEE THE OMEGA PRODUCTS INTERNATIONAL WEBSITE AT HYPERLINK "HTTP://WWW.OMEGA-PRODUCTS.COM/"WWW.OMEGA-PRODUCTS.COM.

5.2.2 APPLICATION ON FRAMED WALLS: INSULATED SYSTEMS MAY BE INSTALLED OVER OPEN FRAMING AND OVER SOLID SHEATHING. UNINSULATED SYSTEMS MUST BE INSTALLED OVER SOLID SHEATHING. SHEATHING MUST BE INSTALLED IN ACCORDANCE WITH THE CODE EXCEPT WHERE MORE RESTRICTIVE REQUIREMENTS ARE SPECIFIED IN SECTION 5.2.5 OR 5.2.6 OF THIS REPORT. WALL FRAMING MUST BE DESIGNED IN ACCORDANCE WITH THE APPLICABLE CODE.

5.2.3 APPLICATION OVER CONCRETE AND MASONRY: 5.2.3.1 GENERAL: THE WATER-RESISTIVE BARRIER MAY BE OMITTED WHEN THE STUCCO IS INSTALLED DIRECTLY OVER CONCRETE OR UNIT MASONRY SUBSTRATES.

5.2.3.2 APPLICATION WITHOUT LATH: SURFACE PREPARATION OF CONCRETE AND MASONRY MUST BE IN ACCORDANCE WITH IBC SECTION 2510.7. THE COATING MUST BE APPLIED DIRECTLY TO THE PREPARED SURFACE AT A MINIMUM NOMINAL THICKNESS OF 3/8 INCH IN ACCORDANCE WITH SECTION 5.2 OF THIS

5.2.3.3 APPLICATION WITH LATH: LATHING AND FURRING USED TO RECEIVE STUCCO MUST BE INSTALLED AND CONFORM WITH THE OMEGA PRODUCTS INTERNATIONAL INSTALLATION GUIDE. FASTENERS USED TO INSTALL THE LATH MUST BE APPROVED. THE LATH MUST BE FASTENED IN VERTICAL ROWS, A MAXIMUM OF 24 INCHES ON CENTER. FASTENER SPACING IN EACH ROW MUST BE A MAXIMUM OF 7 INCHES. THE COATING MUST BE APPLIED IN ACCORDANCE WITH SECTION 5.2 OF THIS REPORT.

**5.2.4 FIRE-RESISTANCE-RATED WALL ASSEMBLIES:** SEE TABLE 4. 5.2.5 EXTERIOR WALLS OF TYPE I, II, ILL, OR IV CONSTRUCTION:

5.2.6 DRAINAGE: 5.2.6.1 UNBACKED EPS: A WATER-RESISTIVE BARRIER DESCRIBED IN SECTION 3.9.1 IS REQUIRED AND MUST BE APPLIED BETWEEN THE EPS AND FRAMING.

5.2.6.2 SOLID SHEATHING: DRAINAGE IS PROVIDED EITHER BY EITHER OF THE FOLLOWING METHODS: • EPS INSULATION HAVING VERTICAL GROOVES, 1/4-IN.-WIDE BY 1/8-IN.-DEEP, SPACED AT A MAXIMUM OF 12 IN. ON THE BACK FACE OF THE BOARDS AS SHOWN IN FIGURE 1, TOGETHER WITH A WATER-RESISTIVE BARRIER DESCRIBED IN SECTION 3.9.1. • TYVEK® STUCCO WRAP® OR TYVEK® DRAIN WRAP (ICC-ES ESR-2375), INSTALLED BETWEEN THE FLAT EPS BOARDS AND THE SHEATHING.

5.2.7 MISCELLANEOUS: 5.2.7.1 INSPECTIONS: LATH INSPECTIONS SHALL BE MADE IN ACCORDANCE WITH IBC SECTION 110.3.5 AND

5.2.7.2 CONTROL JOINTS: CONTROL JOINTS MUST BE INSTALLED AS SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL, DESIGNER, OR BUILDER, IN THAT ORDER. 5.2.7.3 CURING: CURING MUST BE IN ACCORDANCE WITH OMEGA PRODUCTS INTERNATIONAL APPLICATION

5.2.7.4 SOFFITS: FOR APPLICATION OF THE SYSTEM TO SOFFITS. THE COATING MUST BE APPLIED OVER METAL LATH COMPLYING WITH SECTION 3.6.2. METAL LATH FASTENING MUST COMPLY WITH ASTM C1063 OR IRC SECTION R703.7, EXCEPT THE FASTENER LENGTH MUST BE INCREASED BY THE THICKNESS OF ANY

5.2.7.5 SILLS: FOR APPLICATION OF THE SYSTEM TO WINDOW SILLS AND OTHER SIMILAR AREAS, SILLS WITH DEPTHS OF 6 INCHES OR LESS MAY HAVE THE COATING AND LATH APPLIED TO ANY SUBSTRATE PERMITTED IN THIS REPORT, PROVIDED THE COATING, LATH, WATER- RESISTIVE BARRIER AND SUBSTRATE ARE INSTALLED AS REQUIRED IN THIS REPORT. SILLS WITH DEPTHS EXCEEDING 6 INCHES MUST HAVE SUBSTRATES OF SOLID WOOD OR PLYWOOD. THE SUBSTRATE MUST BE FASTENED IN ACCORDANCE WITH THE CODE AND MUST BE COVERED WITH TWO LAYERS OF AN APPROVED WATER-RESISTIVE BARRIER. THE COATING, LATH, AND OPTIONAL EPS BOARD MUST BE APPLIED IN ACCORDANCE WITH SECTION 5.2.2 OF THIS

SUBSTRATE. LATH SELECTION MUST BE BASED ON ASTM C1063, TABLE 1.

6.0 CONDITIONS OF USE

6.1 INSTALLATION MUST COMPLY WITH THIS RESEARCH REPORT. THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS, AND THE APPLICABLE CODE. IN THE EVENT OF A CONFLICT, THIS REPORT

6.2 INSTALLATION MUST BE BY QUALIFIED CONTRACTORS ACCEPTABLE TO OMEGA PRODUCTS

R316.4. SUCH AS 1/2-IN.-THICK REGULAR GYPSUM WALLBOARD APPLIED IN ACCORDANCE WITH THE **6.4** AN INSTALLATION CARD, AS SHOWN IN FIGURE 2, MUST BE LEFT AT THE JOBSITE FOR THE OWNER, AND

6.3 FOR WALLS WITH FOAM PLASTIC INSULATION, THE INTERIOR OF THE BUILDING MUST BE SEPARATED

FROM THE EPS BOARD WITH A THERMAL BARRIER COMPLYING WITH IBC SECTION 2603.4 OR IRC SECTION

A COPY MUST BE FILED WITH THE BUILDING DEPARTMENT. 6.5 FOAM PLASTIC MUST NOT BE PLACED ON EXTERIOR WALLS OF WOOD CONSTRUCTION LOCATED

WITHIN 6 INCHES OF THE GROUND IN AREAS WHERE HAZARD OF TERMITE DAMAGE IS VERY HEAVY IN

ACCORDANCE WITH IBC SECTION 2603.8 OR IRC SECTION R318.4 OF THE IRC. 6.6 THE DIAMOND WALL ONE-COAT STUCCO SYSTEM COMPONENTS ARE MANUFACTURED UNDER A QUALITY CONTROL PROGRAM WITH INSPECTIONS BY INTERTEK TESTING SERVICES NA. INC.

7.0 SUPPORTING EVIDENCE 7.1 REPORTS OF TESTS IN ACCORDANCE WITH THE ICC-ES ACCEPTANCE CRITERIA FOR CEMENTITIOUS EXTERIOR WALL COATINGS (AC11), JANUARY 2013 (EDITORIALLY REVISED MAY 2018).

7.2 REPORTS OF TESTS IN ACCORDANCE WITH ASTM E119, ASTM E136 AND NFPA 285. 7.3 DOCUMENTATION OF AN INTERTEK APPROVED QUALITY CONTROL SYSTEM FOR THE MANUFACTURING OF PRODUCTS RECOGNIZED IN THIS REPORT.

THE OMEGA DIAMOND WALL AND DIAMOND WALL PRO ONE-COAT STUCCO SYSTEMS ARE IDENTIFIED WITH THE MANUFACTURER'S NAME (OMEGA PRODUCTS INTERNATIONAL) AND ADDRESS, WEIGHT OF PACKAGED

MIX, STORAGE INSTRUCTIONS MAXIMUM AMOUNT OF WATER AND OTHER COMPONENTS THAT MAY BE ADDED AND CONDITIONS THAT MUST BE CONSIDERED IN DETERMINING ACTUAL AMOUNT, CURING INSTRUCTIONS, THE PRODUCT NAME, THE INTERTEK MARK AS SHOWN BELOW, THE INTERTEK CONTROL NUMBER AND THE CODE COMPLIANCE RESEARCH REPORT NUMBER (CCRR-0467). INSULATION BOARDS MUST BE LABELED IN ACCORDANCE WITH THEIR RESPECTIVE RESEARCH REPORT

10.0 CODE COMPLIANCE RESEARCH REPORT USE 10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by

10.3 Reference to the <a href="https://bpdirectory.intertek.com">https://bpdirectory.intertek.com</a> is recommended to ascertain the current version and status of this

TABLE 4 DECRETTES EVALUATED

TABLE 1 – PROPERTIES EVALUATED			
PROPERTIES	2021 INTERNATIONAL BUILDING CODE	2021 INTERNATIONAL RESIDENTIAL CODE	
WIND RESISTANCE	1609	R301.2.1	
INSTALLATION	2512	R703.3	
FIRE-RESISTANCE-RATED CONSTRUCTION	703.2	R302	
WEATHER PROTECTION	1402.2 2512	R703.2 R703.7.3	
EXTERIOR WALLS OF TYPES I, II, III AND IV CONSTRUCTION	2603.5	NOT APPLICABLE	

TABLE 2 - LATH ATTACHMENT - WOOD STRUCTURAL PANEL SHEATHING OVER WOOD FRAMING WITH HALF-INCH FOAM PLASTIC INSULATION

Section numbers in earlier codes may differ.

	I NAMING WITH HALF-INGTH CAMP EACHO INGULATION					
WOOD SPECIES		FASTENER SPACING (INCHES) STAPLE GAGE				
	SPECIFIC GRAVITY					
	GRAVIII	16	15	14	13	12
OUGLAS FIR-LARCH	0.50	6	6	6	6	6
OUGLAS FIR-SOUTH	0.46	6	6	6	6	6
/ESTERN HEMLOCK OR /ESTERN HEMLOCK- OUTH	0.47	6	6	6	6	6
EM-FIR-SOUTH	0.46	6	6	6	6	6
EM-FIR	0.43	5	6	6	6	6
PRUCE-PINE-FIR	0.42	4	5	6	6	6
/ESTERN WOODS	0.36	4	4	4	5	5
<sup>1</sup> Wood structural panel sheathing must be fastened to framing with fasteners at 6 inches on center.						

od structural panel sheathing must be fastened to framing with fasteners at 6 inches on center. <sup>2</sup>Fasteners must penetrate 1 inch into sheathing and framing. <sup>3</sup>No. 11 gage roofing nails may be used as an alternative to No. 16 gage staples.

TABLE 3 - LATH ATTACHMENT - WOOD STRUCTURAL PANEL SHEATHING OVER WOOD FRAMING WITH ONE-INCH FOAM PLASTIC INSULATION

· · · · -					
27721712		FASTENE	R SPACING (IN	CHES)	
		ST	APLE GAGE		
GRAVIII	16	15	14	13	12
0.46	4	4	4	5	6
0.47	4	4	5	6	6
0.46	4	4	4	5	6
0.43	4	4	4	5	6
0.42	4	4	5	5	6
0.36	3	3	3	3	4
	SPECIFIC GRAVITY  0.46  0.47  0.46  0.43  0.42	SPECIFIC GRAVITY  16  0.46  0.47  4  0.46  4  0.43  4  0.42  4	SPECIFIC GRAVITY         S1           0.46         4         4           0.47         4         4           0.46         4         4           0.43         4         4           0.42         4         4	FASTENER SPACING (IN STAPLE GAGE           GRAVITY         16         15         14           0.46         4         4         4           0.47         4         4         5           0.46         4         4         4           0.43         4         4         4           0.42         4         4         5	FASTENER SPACING (INCHES)           SPECIFIC GRAVITY           16         15         14         13           0.46         4         4         4         5           0.47         4         4         5         6           0.46         4         4         4         5           0.43         4         4         4         5           0.42         4         4         5         5

<sup>2</sup>Fasteners must penetrate 1 inch into sheathing and framing. <sup>3</sup>No. 11 gage roofing nails may be used as an alternative to No. 16 gage staples

<sup>1</sup>Wood structural panel sheathing must be fastened to framing with fasteners at 6 inches on center.

TABLE 4 - ONE-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES

-	Interior	Framing		Exterior	Finish	
No.	finish		Sheathing	Insulation	Coating	Axial Loads
1	5/8-in. Type X gypsum board, vertical or horizontal, all joints must be backed; attached with 1-7/8-inlong, galvanized steel nails (ASTM C514) having a 1/4-in. head, spaced at 7-in. o.c.; joints and nail heads must be treated1	Min. 2 x 4 wood framing, max. 24 in. oc	5/8-in. Type X gypsum sheathing, vertical; attached to framing No. 11 gage galvanized roofing nails with min. 7/16-in. heads, spaced 4-in. o.c. on the perimeter and 7-in. o.c. at intermediate framing	None	Min. 3/8-inthick Diamond Wall one- coat stucco with metal lath attached per 5.2	See Note 2
2	5/8-in. Type X gypsum board, horizontal, all joints must be backed; attached with 5d gypsum wallboard nails, spaced at 6-in. o.c.; joints and nail heads must be treated <sup>1</sup>	Min. 2 x 4 wood framing 16 in. oc; R-13 mineral wool insulation in stud cavities. Framing covered with water- resistive barrier.	None	Min. 1-in. EPS	Min. 3/8-inthick Diamond Wall one- coat stucco with min. 1 x 20 ga. wire fabric mesh attached per 5.2 with fasteners max. 6 in. oc. Lath must have min. 2- in. overlap.	See Note 3
3	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-inlong, 0.100-in. steel-cup-head nails or No. 6 bugle-head screws (0.300-in. head), spaced at 8-in. o.c.; joints and nail heads must be treated¹	2 x 4 or 2 x 6 wood framing, max. 24 in. oc; R-11 fiberglass (2 x 4 walls) or R-19 fiberglass (2 x 6 walls) insulation in stud cavities; framing covered with water- resistive barrier.	None	Min. 1-in., 1.5 pcf EPS or Dow Stuccomat e XPS (see ICC- ES ESR-2142), vertical over studs	Min. 3/8-inthick Diamond Wall one- coat stucco with min. 1 x 20 ga. wire fabric lath attached with 2-in. No. 16 gage staple having 15/16-in. crowns, or 2-1/4- in. nails having 0.125-in. shanks and 0.355-in. heads, spaced at 6 in. oc.	1
4	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-inlong, 0.100-in. steel-cup-head nails or No. 6 bugle-head screws (0.300-in. head), spaced at 8-in. o.c.; joints and nail heads must be treated¹	2 x 4 or 2 x 6 wood framing, max. 24 in. oc; R-11 fiberglass (2 x 4 walls) or R-19 fiberglass (2 x 6 walls) insulation in stud cavities; framing covered with water- resistive barrier.	Min. 7/16-in. OSB, 15/32-in. plywood or 1/2-in. water-resistant- core gypsum sheathing installed vertically with 2-3/8-in. sinker nails (0.113-in shaft, 0.266-in. head) spaced at 8-in. oc. Vertical joints must be backed. Water- resistive barrier over sheathing.	None	Min. 3/8-inthick Diamond Wall one- coat stucco with min. 1 x 20 ga. wire fabric lath attached to studs with 2-in. No. 16 gage staples having 15/16- in. crowns, or 1-1/4-in. nails having 0.125-in. shanks and 0.355-in. heads, spaced at 6 in. oc.	See Note 4
5	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-inlong, 0.100-in. steel-cup-head nails or No. 6 bugle-head screws (0.300-in. head), spaced at 8-in. o.c.; joints and nail heads must be treated¹	2 x 4 or 2 x 6 wood framing, max. 24 in. oc; R-11 fiberglass (2 x 4 walls) or R-19 fiberglass (2 x 6 walls) insulation in stud cavities; framing covered with water- resistive barrier	Min. 3/8-in. OSB, 13/32-in. plywood or 1/2-in. water- resistant-core gypsum sheathing installed vertically with 2-3/8-in. sinker nails (0.113-in shaft, 0.266-in. head) spaced at 8-in. oc. Vertical joints must be backed. Waterresistive barrier over sheathing.	Min. 1-in. EPS or Dow Stuccomate XPS (see ICC- ES ESR-2142), vertical over studs	Min. 3/8-inthick Diamond Wall one- coat stucco with min. 1 x 20 ga. wire fabric lath attached to studs with 2-in. No. 16 gage staples having 15/16-in. crowns, or nails of sufficient length to penetrate framing a min. of 1 in., having 0.125- in. shanks and 0.355- in. heads, spaced at 6 in. oc.	See Note 4

heads must be treated with joint compound in accordance with ASTM C 840.

Note 2: Axial loads applied to the wall assembly must be limited by the lesser of the following: Design stress of 0. 78 F'c calculated in accordance with Sections 3.6 and 3. 7 of the NDS Design stress of 0.78 F'c at a maximum slenderness ratio (le/d) of 33 calculated in accordance with Sections 3.6 and 3.7 of the NDS

Note 3: Axial loads applied to the wall assembly must be limited by the lesser of the following: 1,100 pounds per stud

Maximum 58 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS Design stress of 0. 78 F'c calculated in accordance with Sections 3.6 and 3. 7 of the NDS Design stress of 0.78 F'c at a maximum slenderness ratio (le/d) of 33 calculated in accordance with Sections 3.6 and 3.7

Note 4: Axial loads applied to the wall assembly must be limited by the lesser of the following:

 1,100 pounds per 2 x 4 stud; 3,000 pounds per 2 x 6 stud • For 2 x 4 construction, a maximum of 51.3 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the • For 2 x 6 construction, a maximum of 44.7 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the

Design stress of 0. 78 F'c calculated in accordance with Sections 3.6 and 3. 7 of the NDS Design stress of 0.78 F'c at a maximum slenderness ratio (le/d) of 33 calculated in accordance with Sections 3.6 and 3.7

TABLE 5 – NFPA 285-COMPLYING ASSEMBLIES

_	Wall Component	Material Options
D	Interior Sheathing	5/8-inch Type X gypsum wallboard
	Base Wall System (Select One)	<ol> <li>Fire Retardant-Treated (FRT) wood studs: min. 2x4, max. 24 in. on center spacing.</li> <li>Steel Stud Framing: min. 3-5/8-in. depth, min. 20 ga., max. 24 in. on center spacing, with lateral bracing every 4 ft. vertically.</li> <li>Concrete: cast-in-place or pre-cast, min. 2 in. thick.</li> <li>Concrete Masonry Units: min. 4 in. thick</li> </ol>
	Floor Line Firestopping (Select One)	If a fire-resistant-rated floor or floor/ceiling assembly is required, install an ASTM E2307 rated fire stop joint assembly.     Install 4 in., 4 pcf density mineral wool fire stop friction fit or installed with Z-clips or equivalent, continuously at each floor line and/or in each stud cavity if the stud framing is continuous past the floor line.
	Cavity Insulation (Select One)	None     Use any noncombustible cavity insulation (faced or unfaced) complying with the applicable code, including mineral fiber or fiberglass batt insulation.
	Exterior Sheathing (Select One)	Minimum 1/2-in. exterior grade gypsum sheathing complying with the applicable code.     S/8-in. Type X exterior grade gypsum sheathing complying with the applicable code.     Min. 1/2-in. Fire Retardant-Treated (FRT) plywood sheathing complying with the applicable code.     Note: A layer of Fire-retardant-treated (FRT) wood sheathing may be used between the gypsum sheathing and studs.
	Water- Resistive Barrier (Select One)	<ol> <li>Omega AkroGuard Air and Water-Resistive Barrier System. See CCRR-0465.</li> <li>Any water-resistive barrier complying with IBC Section 1403.2 or IRC Section 703.2 and shown to have both of the following:         <ul> <li>a peak heat release rate of less than 150 W/m2, a total heat release of less than 20 MJ/m2 and ar effective heat of combustion of less than 18 MJ/kg when tested on specimens at the thickness intended for use, in accordance with ASTM E1354, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m2</li> </ul> </li> <li>a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 of UL 723, with test specimen preparation in accordance with ASTM E2404</li> </ol>

P. EPS board with a nominal density of 1.5 pcf, a flame-spread index of 25 or less and a smokedeveloped index of 450 or less when tested in accordance with ASTM E84 or UL 723; and must (Select One) comply with ASTM C578 as Type II. All boards must be recognized in a current third-party evaluation report. Board thickness shall be 1/2- to 2-in. XPS board with a nominal density of 1.5 pcf, a flame-spread index of 25 or less and a smokedeveloped index of 450 or less when tested in accordance with ASTM E84 or UL 723; and must comply with ASTM C578 as Type IV, V, or X. All boards must be recognized in a current third-party evaluation report. Board thickness shall be 1/2- to 2-in. 4. Polyisocyanurate foam plastic board must comply with ASTM C1289 as Type II, have a nominal density of 2 pcf, a maximum flame-spread index of 25 or less, and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL7 23. All boards must be recognized in a current third-party evaluation report. Board thickness shall be 1/2- to 2-in.

Lath Specifications (Select One) 1. Woven Wire (20-gauge): Nominal No. 20 gauge [0.035 inch], 1-in. opening, galvanized steel per ASTM C1032. Woven Wire (17-gauge): Nominal No. 17 gauge [0.058 inch], 1-1/2-in. opening, galvanized steel per ASTM C1032. Welded Wire: Nominal No. 16 gauge [0.065 inch], 2-in.-by-2-in. opening, galvanized steel per ASTM 4. Metal Lath: Per ASTM C847 (IBC or IRC) or with Table 25-B of the UBC as applicable. Lath fastener for wood framing: 1. No. 10 woodscrews with a minimum 0.43-in. diameter head or washer. 2. No. 11 gauge galvanized roofing nails. 3. No. 16 gauge corrosion-resistant staples with a minimum crown width of 7/16 in. Fasteners shall be spaced a maximum of 6 in. on center with min. 1-in. penetration into the studs Lath fastener for steel studs: 1. No. 10 self-tapping screws with a minimum 0.43-in. diameter head or washer. Screw length shall be sufficient to penetrate the framing member a minimum of 1/2-in Min. 3/8-in. Diamond Wall stucco system

Any acrylic or cement-based finish The rigid foam board must be terminated with a minimum 25-gauge steel casing bead to encapsulate the foam board. The perimeter of the opening must be covered with min. 25-gauge steel flashing, or equivalent, covering the entire width of the opening with a 2-in, leg on the interior side of the assembly.

FIRE SIDE World H Q @ O R B A r c h . c o m 1-HR ONE COAT STUCCO EXTERIOR SHEAR WALL IN ACCORDANCE W/ SYSTEM 5 IN TABLE 4 (LIMITED LOAD-BEARING)

WATER RESISTANT BARRIER ONE LAYER TYVEK COMMERCIAL WRAP IN LIEU OF GRADE D KRAFT 60 MIN. BUILDING PAPER INSTALLED PER SYSTEM 3 IN TABLE 4 STUCCO FINISH SYSTEM, PER ASSEMBLY 2x6 FRAMING AT 24" O.C. MAX. PER STRUCTURAL & SYSTEM 4 IN TABLE 4 OF REPORT UNFACED BATT INSULATION W/ 0.62 MIN. PCF DENSITY PER THERMAL ENVELOPE VALUES TABLE (R-19 MIN.) & SYSTEM 3 IN TABLE 4 OF REPORT 1" THICK ESP FOAM W/ VERTICAL DRAINAGE GROOVES PER SYSTEM 5 IN TABLE 4 & 3.5.1 OF GYPSUM WALLBOARD, PER ASSEMBLY 1-HR ONE COAT STUCCO EXTERIOR OPEN FRAMED WALL IN ACCORDANCE WITH SYSTEM 3 IN TABLE 4 & TABLE 5 (LIMITED LOAD-BEARING)

CORNER AID, INSTALL PER

MANUFACTURER'S SPECIFICATIONS

WATER RESISTANT BARRIER: ONE LAYER

TYVEK COMMERCIAL WRAP IN LIEU OF GRADE

D KRAFT 60 MIN. BUILDING PAPER INSTALLED

PER SYSTEM 5 IN TABLE 4 & 3.9.1 OF REPORT

2x6 FRAMING AT 24" O.C. MAX. PER STRUCTURAL & SYSTEM 5 IN TABLE 4 & PER TABLE 5 OF REPORT

UNFACED BATT INSULATION W/ 0.62 MIN. PCF DENSITY

PER THERMAL ENVELOPE VALUES TABLE (R-19 MIN. AT 2x6 WALL) & SYSTEM 5 IN TABLE 4 OF REPORT -

GROOVES PER SYSTEM 5 IN TABLE 4 & 3.5.1 OF

1" THICK ESP FOAM W/ VERTICAL DRAINAGE FIRE SIDE

STUCCO FINISH SYSTEM, PER

GYPSUM WALLBOARD, PER

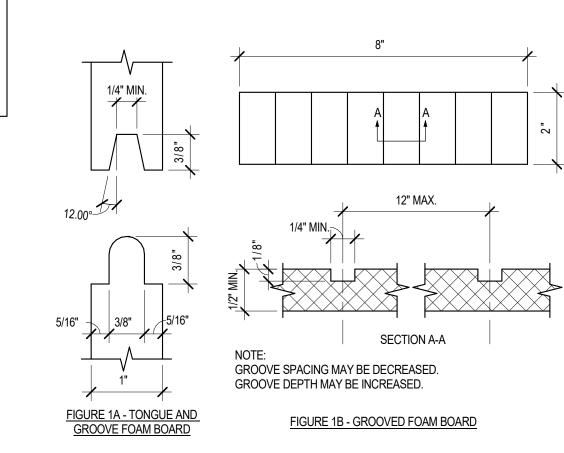
PLYWOOD SHEATHING, PER

ASSEMBLY

ASSEMBLY

STRUCTURAL

1. REFER TO UES EVALUATION REPORT NO. 382 FOR COMPLETE INFORMATION ON MATERIALS AND ASSEMBLIES. 2. CAULK ALL PENETRATIONS TO SEAL WATERTIGHT. 3. BLOCKING SHALL BE PER UES EVALUATION REPORT NO. 382 & IBC 718.2.



- APPROVED WEATHER RESISTIVE OMEGA FINISH OMEGA DIAMOND WALL BASECOAT APPROVED METAL LATH APPROVED INSULATION BOARD APPROVED WEEP ACCESSORY ISOMETRIC VIEW

City, state

Contractor must verify all dimensions of project before proceeding with this work. the expressed written permission of the Architect. The drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone o any other projects, for additions to this project, or for written permission of the Architect. ORB Architecture, LLC 2018 Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the than thirty days. (This contract may allow the owner to written description of such other billing (and/or) cycle the owner's designated agent at 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

and the owner or its designated agent shall provide this

written description on request

FIRE ASSEMBLIES - EXTERIOR WOOD FRAMING - 1 COAT STUCCO

1-HR 1 KOTE STUCCO EXTERIOR WALL - WOOD

ASTM C840 OR GA-216

UNFACED FIBERGLASS BATT INSULATION COMPLYING

WITH IBC SECTION 720.1 AND 720.2, PLACED BETWEEN

EXTERIOR SHEATHING/ SHEAR PER STRUCTURAL,

ATTACHED IN ACCORDANCE WITH THE IBC SECTION

WEATHER RESISTIVE BARRIER TYVEK (POLYOLEFIN SHEET

WEATHER-RESISTIVE BARRIER) INSTALLED IN ACCORDANCE

WITH MANUFACTURER'S AIR BARRIER REQUIREMENTS

ONE LAYER OF 5/8" THICK TYPE X GYPSUM WALLBOARD

APPLIED WITH THE LONG DIMENSION VERTICALLY AND

GYPSUM WALLBOARD NAILS HAVING A 19/64" DIAMETER

HEAD SPACED 8" ON CENTER TO STUDS AND PLATES. NAIL

TREATED WITH JOINT COMPOUND IN ACCORDANCE WITH

FASTENED WITH No. 13 BY 1-5/8" LONG CYPPED-HEAD

HEADS AND BOARD JOINTS SHALL BE TAPED AND

WESTERN 1-KOTE EXTERIOR STUCCO SYSTEM

FOAM BOARD T&G WITH VERTICAL DRAINAGE

OVER WATER RESISTANT BARRIER

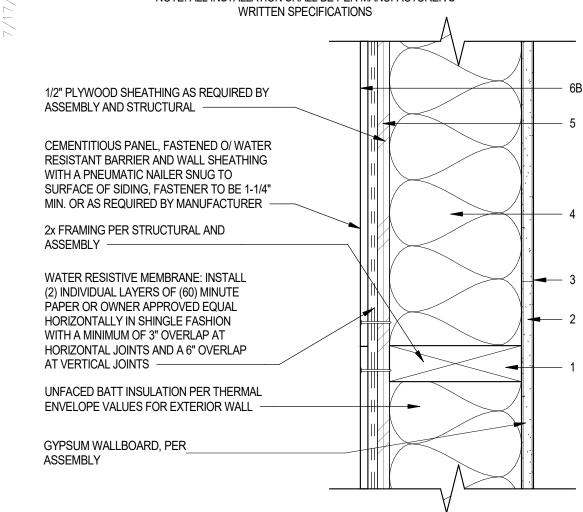
WESTERN 1-KOTE BASE COAT

FINISH COAT

2x WOOD FRAMING, PER STRUCTURAL

UES EVALUATION REPORT NO. 382

UES EVALUATION REPORT NUMBER: 382 ISSUED: 02/20/2015 VALID THRU: 02/28/2024



### **DESIGN NO. U356** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP AND BOTTOM OF WALL..

2. GYPSUM WALLBOARD\* - ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS. 1-7/8 IN. LONG WITH 1/4 IN. DIAM HEAD. WHEN ITEM STEEL FRAMING MEMBERS\* (ITEM 7 OR ANY ALTERNATE-CLIPS), IS USED, GYPSUM PANELS ATTACHED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS

2I. GYPSUM BOARD\* - AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO — TYPES AGX-1 (FINISH RATING 25 MIN.), M-GLASS (FINISH RATING 25 MIN.), AG-C (FINISH RATING 25 MIN.), LIGHTROC (FINISH RATING 25 MIN.) NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

3. JOINTS AND NAILHEADS - GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* - MINERAL FIBER OR GLASS FIBER INSULATION, 3-1/2 IN. THICK, PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR (RAFT  $\,\,$  PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED

5. WOOD STRUCTURAL PANEL SHEATHING - MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS, MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

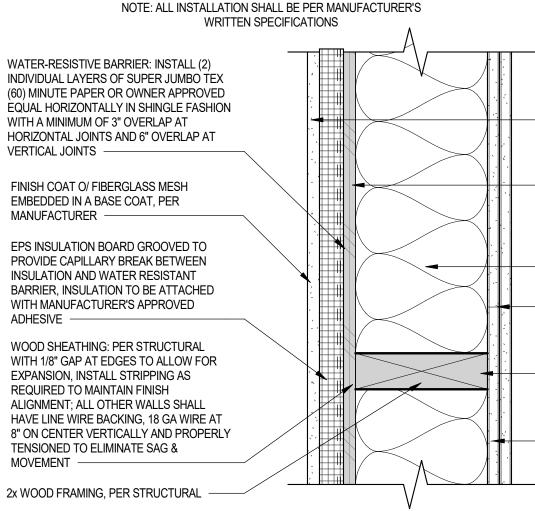
6. EXTERIOR FACING - INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:

B. PARTICLE BOARD SIDING - HARDBOARD EXTERIOR SIDINGS INCLUDING PATTERNED PANEL OR LAP

(EW|42) same as EW 41, BUT NO RATING REQUIRED AND 3KS STUCCO IN THE INSIDE CEMENTITIOUS BOARD AT 1-HR RATED EXTERIOR

SCALE: 3" = 1'-0"

2-HR EFIS EXTERIOR WALL PROPRIETARY ASSEMBLY - May 25, 2022 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



# BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. FRAMING MEMBERS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN... SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

2. GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER, WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. AMERICAN GYPSUM CO - Type AGX-1, AG-C, LightRoc NATIONAL GYPSUM CO - Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C

3. JOINTS AND NAILHEADS - GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* - FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

5. BUILDING UNITS\* - PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK. HOOVER TREATED WOOD PRODUCTS INC — PYRO-GUARD TREATED PLYWOOD

6. EXTERIOR FACING - ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. EXTERIOR FACINGS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING EXAMPLES

6E. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING ON

 $(\mathsf{EW}|24)$  same as EW 23, BUT NO RATING REQUIRED AND EFIS BOTH SIDE

2-HR WRAP PROJECT GARAGE EXTERIOR WALL PROPRIETARY ASSEMBLY - May 25, 2022 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

# NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS TYPE X GYPSUM WALLBOARD, 4" WIDE, APPLIED HORIZONTALLY UNBLOCKED, AND FASTENED WITH 2-1/4" TYPE S DRYWALL SCREWS, SPACED 12" ON CENTER PER ITEM #2 5/8" MIN. FRT WOOD STRUCTURAL PANELS, APPLIED VERTICALLY, HORIZONTAL JOINTS BLOCKED AND FASTENED WITH 6D COMMON NAILS (BRIGHT), 12" ON CENTER IN THE FIELD AND 6" ON CENTER PANEL EDGES -WALLBOARD JOINTS COVERED WITH PAPER TAPE AND JOINT COMPOUND, FASTENER HEADS COVERED WITH JOINT COMPOUND PER ITEM #3 -MINERAL WOOL CAVITY TO BE FILLED WITH 3-1/2" MINERAL WOOL INSULATION PER ITEM #4 -2x WOOD FRAMING, PER STRUCTURAL AND ITEM #1 BELOW DESIGN NO. V314

# BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. WOOD STUDS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED.

HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

2. GYPSUM WALLBOARD\* — NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER, WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD.

3. JOINTS AND NAILHEADS — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.

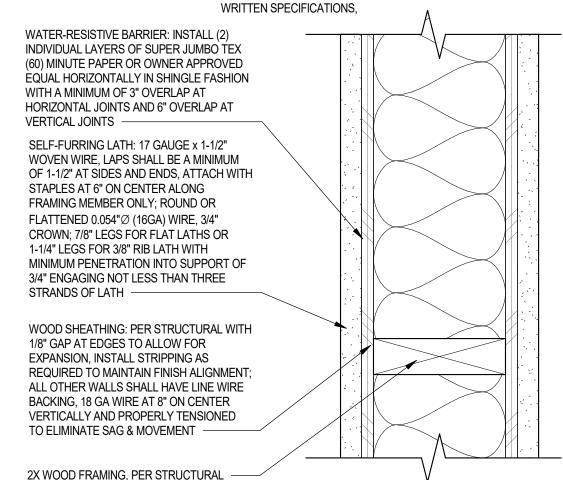
4. BATTS AND BLANKETS\* — FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

5. BUILDING UNITS\* — PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG. 6D NAILS. SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK.

HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated Plywood

### 1-HR STUCCO BOTH SIDES, EXTERIOR WALL GENERIC ASSEMBLY FIRE TEST - IBC 2018 TABLE 721.1(2) ITEM 15-1.2. NO SOUND RATING REQUIRED AT EXTERIOR WALLS REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S



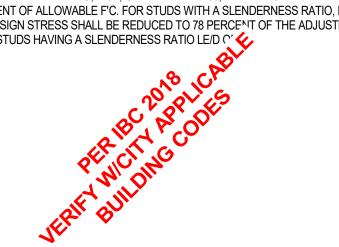
# IBC TABLE 721.1 (2) ITEM 15-1.2.

CONSTRUCTION: 2x4 WOOD STUDS 16" ON CENTER WITH 3/4" CEMENT PLASTER ON EACH SIDE LATH ATTACHED WITH 6D COMMON NAILS 7" ON CENTER DRIVEN TO 1" MINIMUM PENETRATION AND BENT OVER. PLASTER MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY VOLUME, CEMENT TO SAND.

THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1 (2) ITEM15-1.2.

A. WOOD STRUCTURAL PANELS SHALL BE PERMITTED TO BE INSTALLED BETWEEN THE FIRE PROTECTION AND THE WOOD STUDS ON EITHER THE INTERIOR OR EXTERIOR SIDE OF THE WOOD FRAME ASSEMBLIES IN THIS TABLE, PROVIDED THAT THE LENGTH OF THE FASTENERS USED TO ATTACH THE FIRE PROTECTION IS INCREASED BY AN AMOUNT NOT LESS THAN THE THICKNESS OF THE WOOD STRUCTURAL PANEL

B. FOR STUDS WITH A SLENDERNESS RATIO, LE/D, GREATER THAN 33, THE DESIGN STRESS SHALL BE REDUCED TO 78 PERCENT OF ALLOWABLE F'C. FOR STUDS WITH A SLENDERNESS RATIO, LE/D, NOT EXCEEDING 33, THE DESIGN STRESS SHALL BE REDUCED TO 78 PERCENT OF THE ADJUSTED STRESS F'C CALCULATED FOR STUDS HAVING A SLENDERNESS RATIO LE/D C'



### HAVE LINE WIRE BACKING, 18 GA WIRE AT 8" ON CENTER VERTICALLY AND PROPERLY TENSIONED TO ELIMINATE SAG & MOVEMENT -

1-HR STUCCO EXTERIOR WALL

PROPRIETARY ASSEMBLY - January 29, 2024

WATER-RESISTIVE BARRIER: INSTALL (2)

MINUTE PAPER OR OWNER APPROVED

AND 6" OVERLAP AT VERTICAL JOINTS —

INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60)

EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A

MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS

SIDES AND ENDS. ATTACH WITH STAPLES AT 6" ON

CENTER ALONG FRAMING MEMBER ONLY; ROUND

7/8" LEGS FOR FLAT LATHS OR 1-1/4" LEGS FOR 3/8"

OR FLATTENED 0.054"Ø (16GA) WIRE, 3/4" CROWN:

RIB LATH WITH MINIMUM PENETRATION INTO

SUPPORT OF 3/4" ENGAGING NOT LESS THAN

WOOD SHEATHING: PER STRUCTURAL WITH 1/8"

INSTALL STRIPPING AS REQUIRED TO MAINTAIN

FINISH ALIGNMENT; ALL OTHER WALLS SHALL

3 COAT STUCCO SYSTEM, PER ASSEMBLY

2x WOOD FRAMING, PER STRUCTURAL

AND BOTTOM OF WALL.

GAP AT EDGES TO ALLOW FOR EXPANSION,

THREE STRANDS OF LATH —

SELF-FURRING LATH: 17 GAUGE x 1-1/2" WOVEN

WIRE, LAPS SHALL BE A MINIMUM OF 1-1/2" AT

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS,

City, state

World HQ @ ORB Arch.com

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

UNITED STATES FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP

**DESIGN NO. U356** 

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

2. GYPSUM BOARD\* — ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM

21. GYPSUM BOARD\* — (AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.) NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type

FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

3. JOINTS AND FASTENER HEADS — (NOT SHOWN) — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* — MINERAL FIBER OR GLASS FIBER INSULATION, 3-1/2 IN. THICK, PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING). SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED

5. **WOOD STRUCTURAL PANEL SHEATHING —** MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

6. EXTERIOR FACINGS — INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:

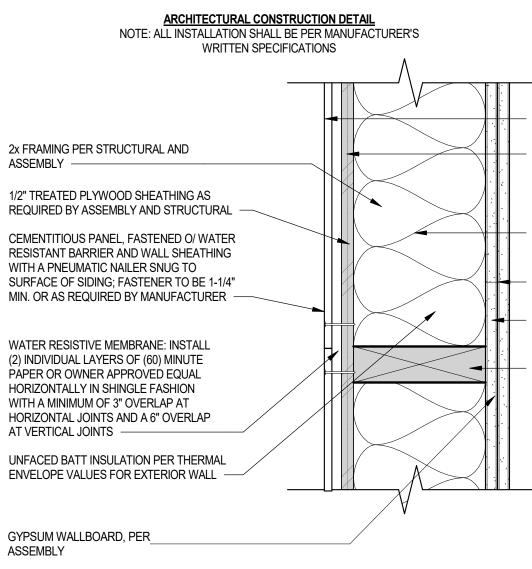
6D. **CEMENTITIOUS STUCCO** — PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 TO 3/4 IN., DEPENDING ON SYSTEM

# 1-HR STUCCO EXTERIOR WALL RATED FROM BOTH

SCALE: 3" = 1'-0" SCALE: 3" = 1'-0"

2-HR CEMENTITIOUS BOARD SIDING - EXTERIOR WALL PROPRIETARY ASSEMBLY - May 25, 2022 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

2-HR EIFIS EXTERIOR WALL - WOOD FRAMING



### **DESIGN NO. V314** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. FRAMING MEMBERS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

2. GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER, WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. NATIONAL GYPSUM CO - Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C

3. JOINTS AND NAILHEADS - GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* - FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF,

PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS. 5. BUILDING UNITS\* - PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED

TO THE WOOD FRAMING WITH 1-7/8 IN. LONG. 6D NAILS. SPACED 6 IN. OC. ON THE PERIMETER AND 12

IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED

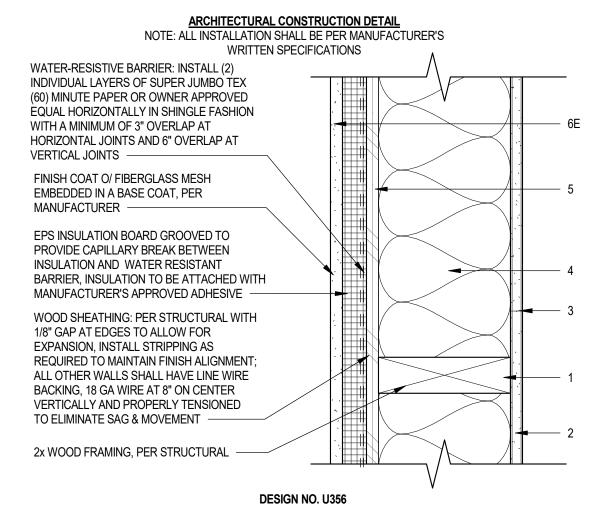
IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated plywood 6. EXTERIOR FACING - ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION

AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. EXTERIOR FACINGS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING EXAMPLES:

6F. FIBER CEMENT SIDING — FIBER CEMENT LAP OR VERTICAL SIDING. MINIMUM 5/16 IN. THICK. FASTENED TO STUDS THROUGH THE BUILDING UNITS, ITEM 5, WITH NAILS OR SCREWS, AT THE LOCATIONS SPECIFIED BY THE MANUFACTURER.

SAME AS EW 43, EXCEPT USE 1/2 INCH STUCCO SYSTEM. OVER 1/2 INCH SHEATHING INSTEAD EW 44 SAME AS EW 43, EACET 1 03L 1/2 INC. 13 COST 0 STEEL SAME AS EW 44 COST **CEMENTITIOUS BOARD AT 2-HR RATED EXTERIOR** 

1-HR EIFS EXTERIOR WALL -PROPRIETARY ASSEMBLY - January 29, 2024 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



# BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS. THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP AND BOTTOM OF WALL.

2. GYPSUM WALLBOARD\* - ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501. G512 OR U305. NOM 5/8 IN. THICK. 4 FT WIDE. APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM HEAD. WHEN ITEM STEEL FRAMING MEMBERS\* (ITEM 7 OR ANY ALTERNATE CLIPS), IS USED, GYPSUM PANELS ATTACHED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC.

21. GYPSUM BOARD\* - (AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS. WITH BEVELED. SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY, GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO - TYPES AGX-1 (FINISH RATING 25 MIN.), M-GLASS (FINISH RATING 25 MIN.), AG-0 (FINISH RATING 25 MIN.), LIGHTROC (FINISH RATING 25 MIN.) NATIONAL GYPSUM CO — TYPE FSK, TYPE FSK-G, TYPE FSW, TYPE FSW-3, TYPE FSW-5, TYPE FSW-G, TYPE FSK-C. TYPE FSW-C. TYPE FSMR-C. TYPE FSW-6. TYPE FSL

3. JOINTS AND NAILHEADS - GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* - MINERAL FIBER OR GLASS FIBER INSULATION, 3-1/2 IN. THICK, PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING). SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED

5. WOOD STRUCTURAL PANEL SHEATHING - MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS, MIN

GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

6. EXTERIOR FACING - INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING: D. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS WITH SELF-FURRING

1-HR WRAP PROJECT GARAGE EXTERIOR WALL GENERIC ASSEMBLY FIRE TEST - IBC TABLE 721.1(2) ITEM 16-1.1

1-HR STUCCO EXTERIOR WALL - RATED BOTH SIDES

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

FIRE TEST: BXUV.U348 - FIRE-RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO. U348

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS,

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

UNITED STATES

1. FRAMING MEMBERS - NOM 2 BY 4 IN., SPACED 16 IN. OC IN WITH TWO 2 BY 4 TOP AND ONE 2 BY 4 BOTTOM

PLATES MAY BE USED IN LIEU OF 2 BY 4 STUDS AND PLATES. STUDS EFFECTIVELY FIRE STOPPED.

2. GYPSUM WALLBOARD\* - ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN

DESIGN NOS. L501, G512 OR U305, NOM, 5/8 IN, THICK, 4 FT, WIDE, APPLIED VERTICALLY, AND NAILED TO

STUDS AND BEARING PLATES 7 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK

DIAM. AND 1/4 IN. DIAM. HEAD. WHEN STEEL FRAMING IS SUBSTITUTED FOR WOOD FRAMING, 1 IN. LONG

3. JOINTS AND NAILHEADS - WALLBOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS

4. BATTS AND BLANKETS\* - FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF,

PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. IF 2 BY 6 IN. STUDS

(ITEM 1) ARE USED, MIN. 5-1/2 IN. OF UNFACED MINERAL FIBER INSULATION, NOM 3.0 PCF, PRESSURE FIT

IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN

5. BUILDING UNITS - BUILDING UNITS PLACED WITH THE LAMINATE FACE AGAINST OR LAMINATE FACE AWAY

FROM, AND NAILED TO, THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE

PERIMETER AND 12 IN. OC. IN THE FIELD. WHEN STEEL FRAMING IS SUBSTITUTED FOR WOOD FRAMING,

8. EXTERIOR FACINGS — (NOT SHOWN) — REQUIRED FOR 1 HOUR RATING ON THE EXTERIOR FACE. THE

FOLLOWING EXTERIOR FACING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S

**8B. CEMENTITIOUS STUCCO** — PORTLAND CEMENT WITH SELF-FURRING METAL LATH. MINIMUM THICKNESS

OF 3/4 IN. WITH A MIX RATIO OF 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY VOLUME, CEMENT

TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS WITH A MINIMUM PENETRATION LENGTH THROUGH

SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

PLATES. AS AN OPTION, NOM 2 BY 6 IN., SPACED 24 IN. OC WITH TWO 2 BY 6 TOP AND ONE 2 BY 6 BOTTOM

PROPRIETARY ASSEMBLY - August 4, 2023

WATER-RESISTIVE BARRIER: INSTALL (2)

MINUTE PAPER OR OWNER APPROVED

AND 6" OVERLAP AT VERTICAL JOINTS -

INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60)

EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A

MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS

SELF-FURRING LATH: 17 GAUGE x 1-1/2" WOVEN

WIRE, LAPS SHALL BE A MINIMUM OF 1-1/2" AT

SIDES AND ENDS, ATTACH WITH STAPLES AT 6" ON

CENTER ALONG FRAMING MEMBER ONLY; ROUND

OR FLATTENED 0.054"Ø (16GA) WIRE, 3/4" CROWN;

RIB LATH WITH MINIMUM PENETRATION INTO

SUPPORT OF 3/4" ENGAGING NOT LESS THAN

THREE STRANDS OF LATH -

WOOD SHEATHING PER ASSEMBLY

3 COAT STUCCO SYSTEM, PER ASSEMBLY

2x WOOD FRAMING, PER STRUCTURAL

TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS.

MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS.

LOUISIANA-PACIFIC CORP — TYPE BLAZEGUARD 1-SIDE

AMERICAN GYPSUM CO — CKNX.R14196

**UNITED STATES GYPSUM** — CKNX.R1319

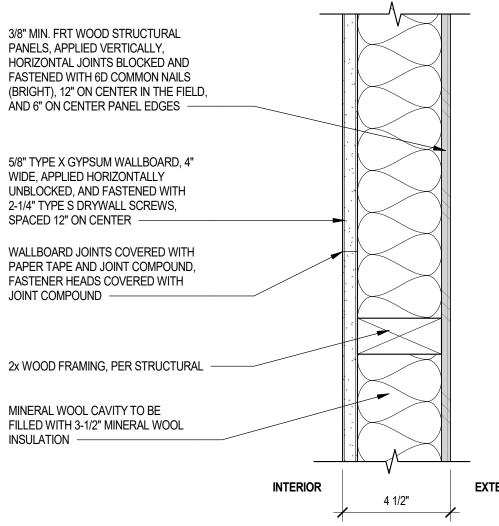
NATIONAL GYPSUM CO — CKNX.R3501

COVERED WITH JOINT COMPOUND.

THE STEEL STUD OF 3/8 IN.

7/8" LEGS FOR FLAT LATHS OR 1-1/4" LEGS FOR 3/8"





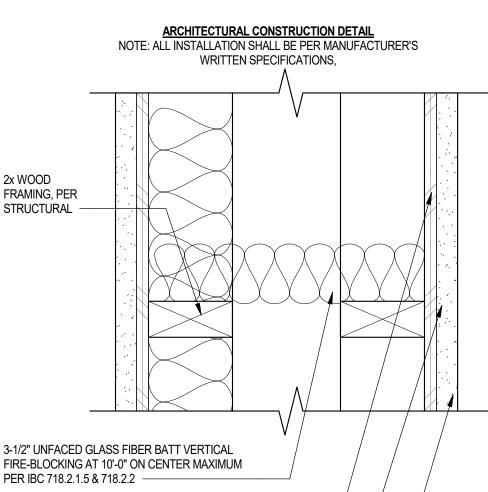
IBC TABLE 721.1(2) ITEM 16-1.1 THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1(2) ITEM 16-1.1. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED WALL ASSEMBLY PER OWNER'S REQUEST

X4 WOOD STUDS 16" ON CENTER WITH DOUBLE OP PLATES. SINGLE BOTTOM PLATE. INTERIOR SIDE COVERED WITH 5/8" TYPE X GYPSUM DESNSGLASS SHEATHING, 4" WIDE, APPLIED HORIZONTALLY UNBLOCKED, AND FASTENED WITH 2-1/4" TYPE S DRYWALL SCREWS, SPACED 12" ON CENTER. WALLBOARD JOINTS COVERED WITH PAPER TAPE AND JOINT COMPOUND, FASTENER HEADS COVERED WITH JOINT EXTERIOR COVERED WITH 3/8" MIN. FRT WOOD STRUCTURAL PANELS, APPLIED VERTICALLY, HORIZONTAL JOINTS BLOCKED AND FASTENED WITH 6D COMMON NAILS (BRIGHT), 12" ON CENTER IN THE FIELD, AND 6" ON CENTER PANEL EDGES. CAVITY TO BE FILLED WITH 3-1/2" MINERAL WOOL INSULATION.

 THE DESIGN STRESS OF STUDS SHALL BE EQUAL TO NOT MORE THAN 100 PERCENT OF THE ALLOWABLE F'C CALCULATED IN ACCORDANCE WITH SECTION 2306. RAITING ESTABLISHED FROM THE INTERIOR SIDE ONLY WHEN NON-FRT WOOD STRUCTURAL PANEL IS



1-HR UNIT DEMISING WALL, EXTERIOR WALL GENERIC ASSEMBLY FIRE TEST - IBC TABLE 721.1(2) ITEM 15-1.2.



WOOD SHEATHING: PER STRUCTURAL WITH 1/8" GAP AT EDGES TO ALLOW FOR EXPANSION, INSTALL STRIPPING AS REQUIRED TO MAINTAIN FINISH ALIGNMENT; ALL OTHER WALLS SHALL HAVE LINE WIRE BACKING, 18 GA WIRE AT 8" ON CENTER VERTICALLY AND PROPERLY TENSIONED TO ELIMINATE SAG & MOVEMENT WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60)

EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A

MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS

MINUTE PAPER OR OWNER APPROVED

AND 6" OVERLAP AT VERTICAL JOINTS -SELF-FURRING LATH: 17 GAUGE x 1-1/2" WOVEN WIRE, LAPS SHALL BE A MINIMUM OF 1-1/2" AT SIDES AND ENDS. ATTACH WITH STAPLES AT 6" ON CENTER ALONG FRAMING MEMBER ONLY; ROUND OR FLATTENED 0.054"Ø (16GA) WIRE, 3/4" CROWN; 7/8" LEGS FOR FLAT LATHS OR 1-1/4" LEGS FOR 3/8" RIB LATH WITH MINIMUM PENETRATION INTO SUPPORT OF 3/4" ENGAGING NOT LESS THAN THREE STRANDS

> IBC TABLE 721.1 (2) ITEM 15-1.2. THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1 (2) ITEM15-1.2. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED WALL ASSEMBLY PER OWNER'S REQUEST

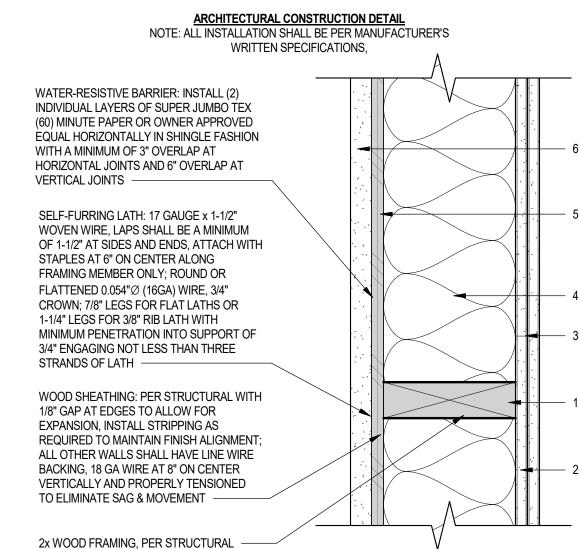
CONSTRUCTION: 2" x 4" WOOD STUDS 16" ON CENTER WITH 7/8" CEMENT PLASTER (MEASURED FROM THE FACE OF STUDS) ON EXTERIOR SURFACE WITH INTERIOR SURFACE TREATMENT AS REQUIRED FOR INTERIOR, NON-BEARING, NON-COMBUSTIBLE STUDS PARTITIONS IN THIS TABLE. PLASTER MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY VOLUME, CEMENT TO SAND.

INSTALL ACOUSTICAL SEALANT BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL

1-HR STUCCO EXTERIOR WALL - RATED BOTH SIDES PROPRIETARY ASSEMBLY - May 25, 2022

ANSI/UL 263 DESIGN NO U356

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



DESIGN NO. V314 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. FRAMING MEMBERS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN.,

SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT

HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED.

2. GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER, WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD.

NATIONAL GYPSUM CO - TYPE FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, TYPE FSW-G, TYPE FSW-5, TYPE FSW-6. TYPE FSK-C. TYPE FSW-C. EXP-C AMERICAN GYPSUM CO - TYPE AGX-1, AG-C, LIGHTROC

3. JOINTS AND NAILHEADS - GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND

4. BATTS AND BLANKETS\* - FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS.

5. BUILDING UNITS\* - PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN, LONG. 6D NAILS, SPACED 6 IN, OC, ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK...

SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated plywood

B. EXTERIOR FACING - ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. EXTERIOR FACINGS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING EXAMPLES::

6E. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF. FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING ON

Contractor must verify all dimensions c

project before proceeding with this work.

project for which they are made is executed or not. These

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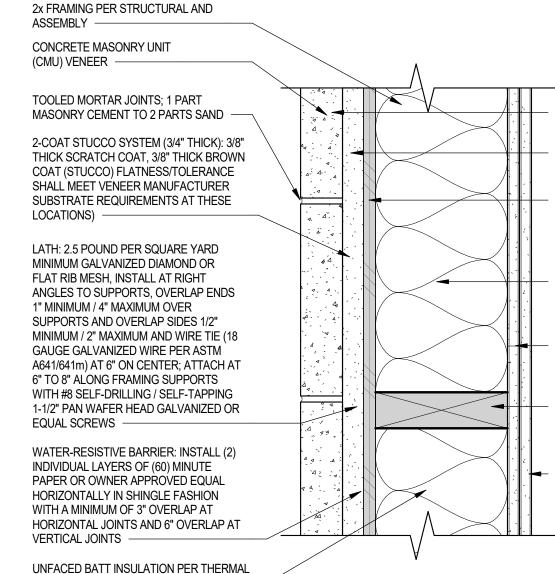
and the owner or its designated agent shall provide the

written description on request

REVISIONS/SUBMITTALS

DATE DESCRIPTION

METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 TO 3/4 IN., DEPENDING ON SYSTEM. 1-HR UNIT SEPARATION WALL AT EXTERIOR STUCCO EW|22| same as EW 21, BUT NO RATING REQUIRED AND EIFS BOTH SIDE. WALL - WOOD FRAMING -HR STUCCO EXTERIOR WALL - WOOD FRAMING -HR EIFIS EXTERIOR WALL - WOOD FRAMING SCALE: 3" = 1'-0" ANSI/UL 263 DESIGN NO V314



### DESIGN NO. V314 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. WOOD STUDS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

ENVELOPE VALUES FOR EXTERIOR WALL

2. GYPSUM WALLBOARD\* — NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG. 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER. WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. AMERICAN GYPSUM CO — TYPE AGX-1, AG-C, LIGHTROC NATIONAL GYPSUM CO — Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C

3. JOINTS AND NAILHEADS — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* — FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

5. BUILDING UNITS\* — PRESSURE-TREATED. FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated plywood

6. EXTERIOR FACING - ANY EXTERIOR FACING. AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. EXTERIOR FACINGS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING EXAMPLES

6E. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING

7. EXTERIOR FACING - ONE OF THE FOLLOWING EXTERIOR FACINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:

7A. BRICK - BRICK VENEER, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES, BRICK VENEER ATTACHED TO THE STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH 8D CEMENT COATED NAILS, EVERY SIXTH COURSE OF BRICKS.

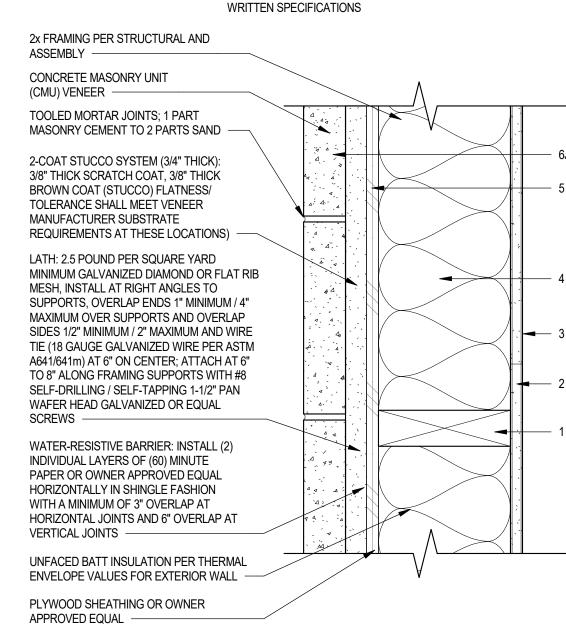
SAME AS EW 63 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF (EW) 64 | SAIVIE AS EVE US EACE TO SEE THE SAIVIE REQUIRED CMU VENEER AT 2-HR RATED EXTERIOR WALL -

ANSI/UL 263 DESIGN NO V314

1-HR CMU VENEER - EXTERIOR WALL PROPRIETARY ASSEMBLY - January 29, 2024 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

# NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S



### DESIGN NO. U356 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. 1. FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP AND BOTTOM OF WALL.

2. GYPSUM BOARD\* — ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN

UNITED STATES

DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM 2I. GYPSUM BOARD\* — (AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS

FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.) NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type

3. JOINTS AND FASTENER HEADS — (NOT SHOWN) — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

4. BATTS AND BLANKETS\* — MINERAL FIBER OR GLASS FIBER INSULATION, 3-1/2 IN. THICK, PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING). SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED

5. WOOD STRUCTURAL PANEL SHEATHING — MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS, MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS, VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

6. **EXTERIOR FACINGS** — INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:

J. CEMENTITIOUS BACKER UNITS — 1/2 IN. OR 5/8 IN., MIN. 32 IN. WIDE.- APPLIED VERTICALLY OR HORIZONTALLY WITH VERTICAL JOINTS CENTERED OVER STUDS, FASTENED TO STUDS AND RUNNERS WITH CEMENT BOARD SCREWS OF ADEQUATE LENGTH TO PENETRATE STUD BY A MINIMUM 3/4 IN.. SPACED A MAX OF 8 IN. OC. HORIZONTAL JOINTS NEED NOT BE BACKED BY FRAMING. WHEN CEMENTITIOUS BACKER UNITS ARE USED. THE RATING IS APPLICABLE WITH EXPOSURE ON EITHER FACE. CEMENTITIOUS BACKER UNITS FOR USE AS SUBSTRATE FOR EXTERIOR FINISHES SUCH AS CERAMIC TILE, SLATE, MARBLE, NATURAL STONE, MANUFACTURED STONE, THIN BRICK, OR PORTLAND CEMENT OR SYNTHETIC STUCCO. NATIONAL GYPSUM CO — Type PermaBase

EW 62 SAME AS EW 61 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

CMU VENEER AT 1-HR RATED EXTERIOR WALL -

SCALE: 3" = 1'-0"

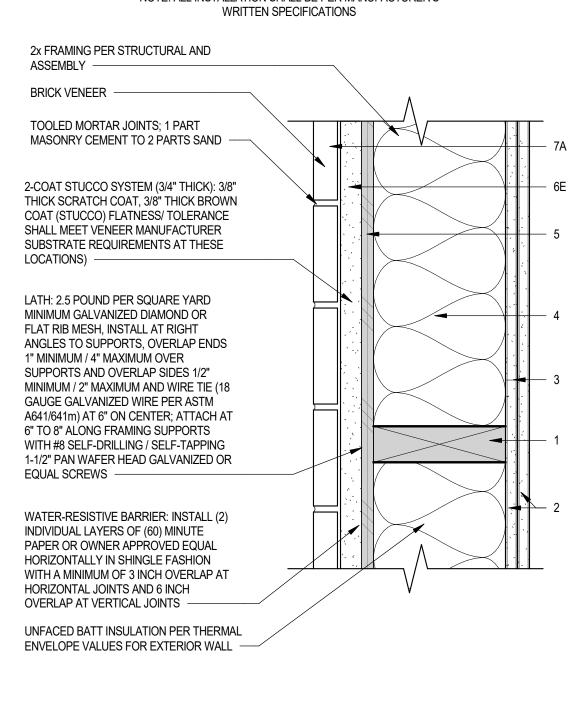
WOOD FRAMING

 $^{
ightharpoonup}$  ANSI/UL 263 DESIGN NO U356

SCALE: 3" = 1'-0"

2-HR BRICK VENEER - EXTERIOR WALL PROPRIETARY ASSEMBLY - May 25, 2022 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

# NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S



### DESIGN NO. V314 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. WOOD STUDS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

2. GYPSUM WALLBOARD\* — NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER, WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER. 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. **AMERICAN GYPSUM CO** — TYPE AGX-1, AG-C, LIGHTROC NATIONAL GYPSUM CO — Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C

3. JOINTS AND NAILHEADS — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* — FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

5. BUILDING UNITS\* — PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated plywood

6. EXTERIOR FACING - ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. EXTERIOR FACINGS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING EXAMPLES

6E. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DÉPENDING

7. EXTERIOR FACING - ONE OF THE FOLLOWING EXTERIOR FACINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:

7A. BRICK - BRICK VENEER, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES. BRICK VENEER ATTACHED TO THE STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH 8D CEMENT COATED NAILS, EVERY SIXTH COURSE OF BRICKS.

EW 59 SAME AS EW 58 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED BRICK VENEER AT EXTERIOR 2-HR RATED WALL -**WOOD FRAMING** 

ANSI/UL 263 DESIGN NO V314

# WRITTEN SPECIFICATIONS

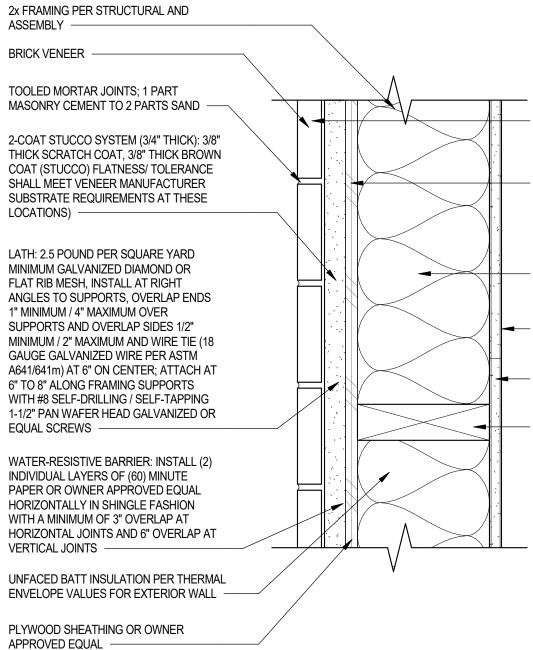
NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

1-HR BRICK VENEER - EXTERIOR WALL

PROPRIETARY ASSEMBLY - January 29, 2024



### **DESIGN NO. U356** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

UNITED STATES . FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP

2. GYPSUM BOARD\* — ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM

21. GYPSUM BOARD\* — (AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN, OC. WITH LAST SCREW 1 IN, FROM EDGE OF BOARD, WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.). LightRoc (finish rating 25 min. NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

3. JOINTS AND FASTENER HEADS — (NOT SHOWN) — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* — MINERAL FIBER OR GLASS FIBER INSULATION. 3-1/2 IN. THICK. PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING) SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED

5. WOOD STRUCTURAL PANEL SHEATHING — MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS, VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

6. EXTERIOR FACINGS — INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:

E. BRICK VENEER - ANY TYPE ON NOM 4 IN. WIDE BRICK VENEER. WHEN BRICK VENEER IS USED, THE RATING IS APPLICABLE WITH EXPOSURE ON EITHER FACE. BRICK VENEER FASTENED WITH CORRUGATED METAL WALL TIES ATTACHED OVER SHEATHING TO WOOD STUDS WITH 8D NAIL PER TIE TIES SPACED NOT MORE THAN EACH SIXTH COURSE OF BRICK AND MAX 32 IN. OC HORIZONTALLY. ONE IN. AIR SPACE PROVIDED BETWEEN BRICK VENEER AND SHEATHING.

EW 57 | SAME AS EW 56 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF

ANSI/UL 263 DESIGN NO U356

INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED BRICK VENEER AT EXTERIOR 1-HR RATED WALL -

METAL SIDING SYSTEM, INSTALL PER MANUFACTURER REQUIREMENTS UNFACED BATT INSULATION PER THERMAL ENVELOPE VALUES TABLE, INSTALL IN EXTERIOR WALL CAVITY -

2-HR METAL SIDING EXTERIOR WALL

2x FRAMING PER STRUCTURAL AND

TYVEK COMMERCIAL WRAP AIR AND

18 GAUGE GALVANIZED HAT-CHANNEL

1/2" TREATED PLYWOOD SHEATHING AS

GYPSUM WALLBOARD PER ASSEMBLY

REQUIRED BY ASSEMBLY AND STRUCTURAL -

AT 24" ON CENTER VERTICALLY —

MOISTURE BARRIER SYSTEM -

ASSEMBLY

PROPRIETARY ASSEMBLY - May 25, 2022

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

### DESIGN NO. V314 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. WOOD STUDS -PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber

2. GYPSUM WALLBOARD\* —NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS. 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER, WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. AMERICAN GYPSUM CO - Type AGX-1, AG-C, LightRoc NATIONAL GYPSUM CO - Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C

3. JOINTS AND NAILHEADS — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.

4. BATTS AND BLANKETS\* — FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF. PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

5. BUILDING UNITS\* — PRESSURE-TREATED. FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated Plywood

6. EXTERIOR FACING - ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. <u>EXTERIOR FACINGS MAY INCLUDE</u>, <u>BUT ARE NOT LIMITED TO</u> THE FOLLOWING EXAMPLES

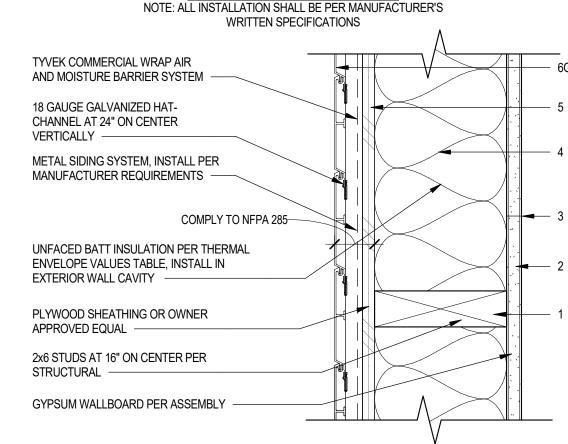
EW 54 SAME AS EW 53, EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

ANSI/UL 263 DESIGN NO V314

METAL SIDING AT 2-HR RATED EXTERIOR WALL -

1-HR METAL SIDING EXTERIOR WALL PROPRIETARY ASSEMBLY - January 29, 2024 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

RCHITECTURAL CONSTRUCTION DETAIL



### DESIGN NO. U356 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

. FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP AND BOTTOM OF WALL.

2. GYPSUM BOARD\* — ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM

21. GYPSUM BOARD\* — (AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.) NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

3. JOINTS AND FASTENER HEADS — (NOT SHOWN) — GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

. BATTS AND BLANKETS\* — MINERAL FIBER OR GLASS FIBER INSULATION. 3-1/2 IN. THICK, PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING). SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED COMPANIES.

i. WOOD STRUCTURAL PANEL SHEATHING — MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

6. EXTERIOR FACINGS — INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING: 6G. **SIDING** - ALUMINUM OR STEEL SIDING ATTACHED OVER SHEATHING TO STUDS.

SAME AS EW 51, EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

METAL SIDING AT 1-HR RATED EXTERIOR WALL -

ANSI/UL 263 DESIGN NO U356

FIRE TEST: GA WP8130

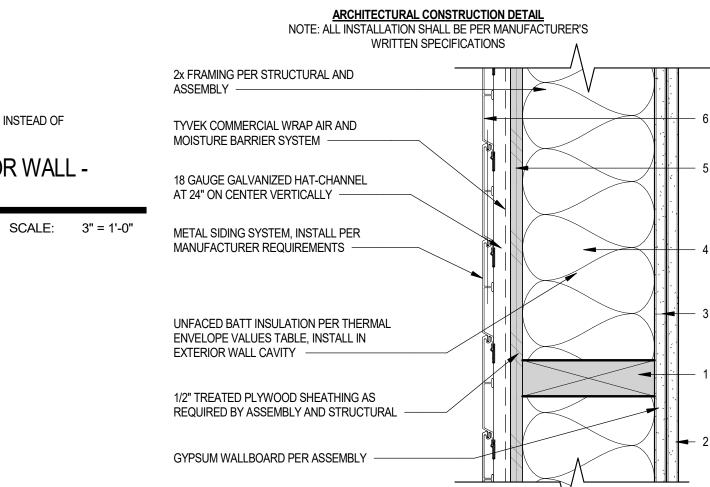
1-HR METAL SIDING EXTERIOR WALL PROPRIETARY ASSEMBLY

**ALTERNATIVE** 

NO SOUND RATING REQUIRED AT EXTERIOR WALLS

ASSEMBLY TO EW 51

SCALE: 3" = 1'-0"



# GYPSUM WALLBOARD, GLASS MAT GYPSUM SUBSTRATE, WOOD STUDS

EXTERIOR SIDE: ONE LAYER 5/8" PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL OR AT RIGHT ANGLES TO 2 X 4 WOOD STUDS 16" APPROX O.C. WITH GALVANIZED ROOFING NAILS, 13/4" LONG, 0.128" SHANK, 7/16" HEAD, 7" O.C. EXTERIOR SURFACE COVERED WITH WEATHER EXPOSED CLADDING OR FINISH SYSTEM.

INTERIOR SIDE: ONE LAYER 5/8" PROPRIETARY TYPE X BLASS MAT GYPSUM SUBSTRATE, GLASS MAT WATER-RESISTANT GYPSUM BACKING BOARD, GYPSUM WALLBOARD, WATER-RESISTANT GYPSUM BACKING BOARD, OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 6D COATED NAILS, 17/8" LONG, 0.0915" SHANK, 1/4" HEADS, 7" O.C.

JOINTS STAGGERED ON OPPOSITE SIDES. (LOAD-BEARING)

PROPRIETARY GYPSUM PANEL PRODUCTS AMERICAN GYPSUM COMPANY LLC - 5/8" FireBloc® Type X Gypsum Board 5/8" M-Glass® Type X Exterior Gypsum Sheathing CERTAINTEED GYPSUM INC. 5/8" Certain Teed® Type X Gypsum Board 5/8" GlasRoc® Sheathing Type X Gypsum Panels CONTINENTAL BUILDING PRODUCTS 5/8" Firecheck® Type X 5/8" Weather Defense® Sheathing Type X GEORGIA-PACIFIC GYPSUM LLC 5/8" DensArmor Plus® Fireguard® Interior Panel 5/8" DensGlass® Fireguard® Sheathing NATIONAL GYPSUM COMPANY 5/8" Gold Bond® Brand FIRE-SHIELD® Gypsum Board 5/8" Gold Bond® Brand eXP® FIRE-SHIELD® Gypsum Sheathing PABCO® GYPSUM 5/8" FLAME CURB® Type X

5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X EW 52 SAME AS EW 53, EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

METAL SIDING AT 1-HR RATED EXTERIOR WALL

GYPSUM ASSOCIATION GA FILE NO. WP 8130

Contractor must verify all dimensions c project before proceeding with this work. drawings and specifications are instruments of service an shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone o any other projects, for additions to this project, or for written permission of the Architect

City, state

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REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide th

written description on request

DATE: July 17, 2024 FIRE ASSEMBLIES - EXTERIOR WOOD

SCALE: 3" = 1'-0"

OPERATING COMPANY, LLC -

5/8" PABCO® GLASS® Sheathing Type X UNITED STATES GYPSUM COMPANY -5/8" Sheetrock® Brand EcoSmart Panels Firecode® X

THICKNESS: 4-3/4" (Fire)

WEIGHT: 7.5 PSF (Fire)

FIRE TEST: WHI-495-0702, 8-7-85;

WHI-495-0703, 8-8-85;

UL R2717, 89NK3419, 8-29-89;

UL R15187, 02NK31412, 7-17-02;

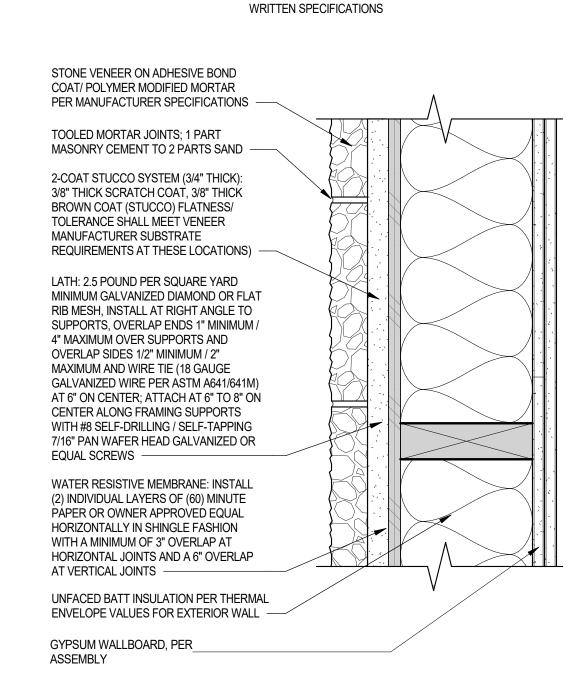
UL R14196, 11NK04002, 3-3-11;

UL R1319, 4786554784, 1-30-15

UL Designs U337 & U305

UL R3501, 07NK17992, 12-12-07; UL R6937, 06NK17692, 9-19-08;

# ARCHITECTURAL CONSTRUCTION DETAIL



### DESIGN NO. V314 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

- 1. WOOD STUDS PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber
- 2. GYPSUM WALLBOARD\* —NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN LONG. 0.0915 IN SHANK DIAM AND 1/4 IN DIAM HEAD. THE FACE LAYER WITH JOINTS STAGGERED FROM BASE LAYER, NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER, 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. **AMERICAN GYPSUM CO** — TYPE AGX-1, AG-C, LIGHTROC NATIONAL GYPSUM CO — Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C
- 3. JOINTS AND NAILHEADS GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.
- 4. BATTS AND BLANKETS\* FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.
- 5. BUILDING UNITS\* PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK.
- HOOVER TREATED WOOD PRODUCTS INC Pyro-Guard treated plywood 6. EXTERIOR FACING - ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE

ALLOWED. EXTERIOR FACINGS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING EXAMPLES

- 6E. CEMENTITIOUS STUCCO PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING
- 7. EXTERIOR FACING ONE OF THE FOLLOWING EXTERIOR FACINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:
- 7A. BRICK BRICK VENEER, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES. BRICK VENEER ATTACHED TO THE STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH 8D CEMENT COATED NAILS, EVERY SIXTH COURSE OF BRICKS.

SAME AS EW 73 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF 1 INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED STONE VENEER AT 2-HR RATED EXTERIOR WALL -

ANSI/UL 263 DESIGN NO V314

SCALE: 3" = 1'-0"

ANSI/UL 263 DESIGN NO U356

CEMENT OR SYNTHETIC STUCCO.

1-HR STONE VENEER - EXTERIOR WALL

STONE VENEER ON ADHESIVE BOND

COAT/ POLYMER MODIFIED MORTAR

TOOLED MORTAR JOINTS; 1 PART

PER MANUFACTURER SPECIFICATIONS

MASONRY CEMENT TO 2 PARTS SAND —

2-COAT STUCCO SYSTEM (3/4" THICK): 3/8"

THICK SCRATCH COAT. 3/8" THICK BROWN

COAT (STUCCO) FLATNESS/ TOLERANCE

SHALL MEET VENEER MANUFACTURER

SUBSTRATE REQUIREMENTS AT THESE

LATH: 2.5 POUND PER SQUARE YARD

MINIMUM GALVANIZED DIAMOND OR FLAT

RIB MESH. INSTALL AT RIGHT ANGLES TO

SUPPORTS, OVERLAP ENDS 1" MINIMUM / 4"

MAXIMUM OVER SUPPORTS AND OVERLAP

SIDES 1/2" MINIMUM / 2" MAXIMUM AND

WIRE TIE (18 GAUGE GALVANIZED WIRE

PER ASTM A641/641m) AT 6" ON CENTER;

SUPPORTS WITH #8 SELF-DRILLING / SELF-

WATER-RESISTIVE BARRIER: INSTALL (2)

ATTACH AT 6" TO 8" ALONG FRAMING

TAPPING 1-1/2" PAN WAFER HEAD

GALVANIZED OR EQUAL SCREWS

INDIVIDUAL LAYERS OF (60) MINUTE

PAPER OR OWNER APPROVED EQUAL

HORIZONTALLY IN SHINGLE FASHION

HORIZONTAL JOINTS AND 6" OVERLAP AT

UNFACED BATT INSULATION PER THERMAL

ENVELOPE VALUES FOR EXTERIOR WALL -

25 min.), LightRoc (finish rating 25 min.)

FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.

WITH A MINIMUM OF 3" OVERLAP AT

PLYWOOD SHEATHING OR OWNER

VERTICAL JOINTS -

APPROVED EQUAL

LOCATIONS)

PROPRIETARY ASSEMBLY - January 29, 2024

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356

ARCHITECTURAL CONSTRUCTION DETAIL

WRITTEN SPECIFICATIONS

**DESIGN NO. U356** 

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

**UNITED STATES** 

BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5).

WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE

2. GYPSUM BOARD\* — ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN

DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO

STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM

2I. GYPSUM BOARD\* — (AS AN ALTERNATE TO ITEM 2) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED,

FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating

NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type

3. JOINTS AND FASTENER HEADS — (NOT SHOWN) — GYPSUM BOARD JOINTS COVERED WITH TAPE AND

4. BATTS AND BLANKETS\* — MINERAL FIBER OR GLASS FIBER INSULATION. 3-1/2 IN. THICK. PRESSURE FIT

TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED

AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL

OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING).

SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS

AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED

5. WOOD STRUCTURAL PANEL SHEATHING — MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS,

FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS

6. EXTERIOR FACINGS — INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION

J. CEMENTITIOUS BACKER UNITS - 1/2 IN. OR 5/8 IN., MIN. 32 IN. WIDE.- APPLIED VERTICALLY OR

EW 72 SAME AS EW 71 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR

CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED

INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:

HORIZONTALLY WITH VERTICAL JOINTS CENTERED OVER STUDS. FASTENED TO STUDS AND RUNNERS

WITH CEMENT BOARD SCREWS OF ADEQUATE LENGTH TO PENETRATE STUD BY A MINIMUM 3/4 IN... SPACED A MAX OF 8 IN. OC. HORIZONTAL JOINTS NEED NOT BE BACKED BY FRAMING. WHEN

CEMENTITIOUS BACKER UNITS ARE USED, THE RATING IS APPLICABLE WITH EXPOSURE ON EITHER

FACE. CEMENTITIOUS BACKER UNITS FOR USE AS SUBSTRATE FOR EXTERIOR FINISHES SUCH AS CERAMIC TILE, SLATE, MARBLE, NATURAL STONE, MANUFACTURED STONE, THIN BRICK, OR PORTLAND

TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT

SQUARE. OR TAPERED EDGES. APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS

SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF

OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.

JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP

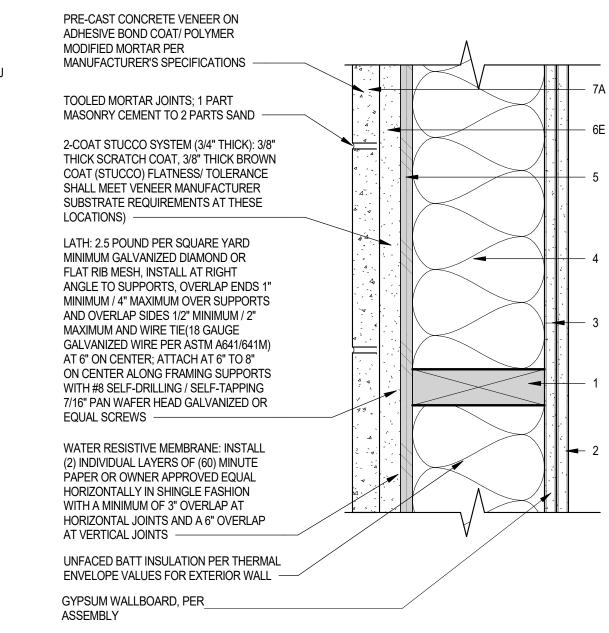
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

STONE VENEER AT 1-HR RATED EXTERIOR WALL -

SCALE: 3" = 1'-0"

2-HR CONCRETE VENEER - EXTERIOR WALL PROPRIETARY ASSEMBLY - May 25, 2022 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO V314 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

# WRITTEN SPECIFICATIONS



### **DESIGN NO. V314** 1. FRAMING MEMBERS - NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

- UNITED STATES 1. WOOD STUDS - PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS - NOMINAL 2 BY 4 IN., SPACED 16 IN. OC EFFECTIVELY FIRE STOPPED. AS AN OPTION, PRESSURE-TREATED, FIRE-RETARDANT WOOD STUDS NOMINAL 2 BY 6 IN., SPACED 24 IN. OC EFFECTIVELY FIRE-STOPPED. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard® treated lumber
- 2. GYPSUM WALLBOARD\* NOM 5/8 IN. THICK, 4 FT. WIDE, TWO LAYERS APPLIED VERTICALLY. BASE LAYER NAILED TO WOOD STUDS AND BEARING PLATES 6 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG. 0.0915 IN. SHANK DIAM. AND 1/4 IN. DIAM. HEAD. THE FACE LAYER. WITH JOINTS STAGGERED FROM BASE LAYER. NAILED TO THE STUDS AND BEARING PLATES OVER THE BASE LAYER. 8 IN. OC WITH 8D CEMENT COATED NAILS, 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM. 9/32 IN. DIAM. HEAD. AMERICAN GYPSUM CO — TYPE AGX-1, AG-C, LIGHTROC NATIONAL GYPSUM CO — Type FSW, FSK, FSMR-C, FSL, FSLX, FSK-G, Type FSW-G, Type FSW-5, Type FSW-6, Type FSK-C, Type FSW-C, eXP-C
- 3. JOINTS AND NAILHEADS GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND.
- 4. BATTS AND BLANKETS\* FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0 PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. INSULATION MAY BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.
- 5. BUILDING UNITS\* PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE BY 96 IN. LONG BY 15/32 IN. THICK. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated plywood
- 6. EXTERIOR FACING ANY EXTERIOR FACING, AS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ALLOWED. <u>EXTERIOR FACINGS MAY INCLUDE</u>, <u>BUT ARE NOT LIMITED TO</u> THE FOLLOWING EXAMPLES
- 6E. CEMENTITIOUS STUCCO PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING
- 7. EXTERIOR FACING ONE OF THE FOLLOWING EXTERIOR FACINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:
- 7A. BRICK BRICK VENEER, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES. BRICK VENEER ATTACHED TO THE STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH 8D CEMENT COATED NAILS, EVERY SIXTH COURSE OF BRICKS.

EW 69 SAME AS EW 68 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

 $^{-\!-\!-}$  ANSI/UL 263 DESIGN NO V314

CONCRETE VENEER AT 2-HR RATED EXTERIOR WALL

SCALE: 3" = 1'-0"

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS

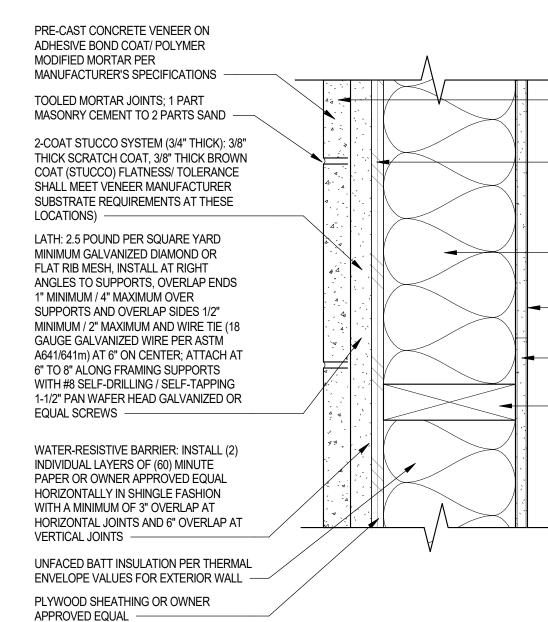
# ARCHITECTURAL CONSTRUCTION DETAIL

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

1-HR CONCRETE VENEER - EXTERIOR WALL

PROPRIETARY ASSEMBLY - January 29, 2024



### DESIGN NO. U356 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

- 1. FRAMING MEMBERS NOM 2 BY 4 IN. SPACED 16 IN. OC WITH TWO 2 BY 4 IN. TOP AND ONE 2 BY 4 IN. BOTTOM PLATES. STUDS LATERALLY-BRACED BY WOOD STRUCTURAL PANEL SHEATHING (ITEM 5). WHEN MINERAL AND FIBER BOARDS\* (ITEM 5A) ARE CONSIDERED AS BRACING FOR THE STUDS, THE LOAD IS RESTRICTED TO 76% OF ALLOWABLE AXIAL LOAD. WALLS EFFECTIVELY FIRE STOPPED AT TOP AND BOTTOM OF WALL.
- 2. GYPSUM BOARD\* ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512 OR U305. NOM 5/8 IN. THICK, 4 FT WIDE, APPLIED VERTICALLY AND NAILED TO STUDS AND BEARING PLATES 7 IN. OC WITH 6D CEMENT-COATED NAILS, 1-7/8 IN. LONG WITH 1/4 IN. DIAM
- 21. GYPSUM BOARD\* (AS AN ALTERNATE TO ITEM 2) 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE. OR TAPERED EDGES. APPLIED EITHER HORIZONTALLY OR VERTICALLY, GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY. AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.) NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C. Type FSW-C. Type FSMR-C. Type FSW-6. Type FSL
- 3. JOINTS AND FASTENER HEADS (NOT SHOWN) GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND, FASTENER HEADS COVERED WITH JOINT COMPOUND.
- 4. BATTS AND BLANKETS\* MINERAL FIBER OR GLASS FIBER INSULATION, 3-1/2 IN. THICK, PRESSURE FIT TO FILL WALL CAVITIES BETWEEN STUDS AND PLATES. MINERAL FIBER INSULATION TO BE UNFACED AND TO HAVE A MIN DENSITY OF 3 PCF. GLASS FIBER INSULATION TO BE FACED WITH ALUMINUM FOIL OR KRAFT PAPER AND TO HAVE A MIN DENSITY OF 0.9 PCF (MIN R-13 THERMAL INSULATION RATING). SEE BATTS AND BLANKETS\* (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS\* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED
- 5. WOOD STRUCTURAL PANEL SHEATHING MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS, MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS ON EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED BOX NAILS SPACED 6 IN. OC AT PERIMETER OF PANELS AND 12 IN. OC ALONG INTERIOR STUDS.
- 6. EXTERIOR FACINGS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:
- J. CEMENTITIOUS BACKER UNITS 1/2 IN. OR 5/8 IN., MIN. 32 IN. WIDE.- APPLIED VERTICALLY OR HORIZONTALLY WITH VERTICAL JOINTS CENTERED OVER STUDS. FASTENED TO STUDS AND RUNNERS WITH CEMENT BOARD SCREWS OF ADEQUATE LENGTH TO PENETRATE STUD BY A MINIMUM 3/4 IN., SPACED A MAX OF 8 IN. OC. HORIZONTAL JOINTS NEED NOT BE BACKED BY FRAMING. WHEN CEMENTITIOUS BACKER UNITS ARE USED, THE RATING IS APPLICABLE WITH EXPOSURE ON EITHER FACE. CEMENTITIOUS BACKER UNITS FOR USE AS SUBSTRATE FOR EXTERIOR FINISHES SUCH AS CERAMIC TILE, SLATE, MARBLE, NATURAL STONE, MANUFACTURED STONE, THIN BRICK, OR PORTLAND CEMENT OR SYNTHETIC STUCCO.

EW 67 SAME AS EW 66 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED CONCRETE VENEER AT 1-HR RATED EXTERIOR WALL - WOOD FRAMING

ANSI/UL 263 DESIGN NO U356

SCALE: 3" = 1'-0"

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City, state

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LEGACY HOSPITALITY

Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other written description of such other billing (and/or) cycle applicable to the project is available from the owner of the owner's designated agent at 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request

FIRE ASSEMBLIES - EXTERIOR WOOD

DENSGLASS SHEATHING PER ASSEMBLY

CEMENTITIOUS PANEL. FASTENED O/ WATER

RESISTANT BARRIER AND WALL SHEATHING

SURFACE OF SIDING, FASTENER TO BE 1-1/4"

MIN. OR AS REQUIRED BY MANUFACTURER

STEEL STUD FRAMING PER STRUCTURAL

WATER RESISTIVE MEMBRANE: INSTALL (2)

INDIVIDUAL LAYERS OF (60) MINUTE PAPER

HORIZONTALLY IN SHINGLE FASHION WITH

HORIZONTAL JOINTS AND A 6" OVERLAP AT

UNFACED BATT INSULATION PER THERMAL

ENVELOPE VALUES FOR EXTERIOR WALL

OR OWNER APPROVED EQUAL

A MINIMUM OF 3" OVERLAP AT

AND ASSEMBLY

VERTICAL JOINTS -

WITH A PNEUMATIC NAILER SNUG TO

### DESIGN NO. WP 8006 GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS STEEL STUDS, INSULATION

THICKNESS: 4-3/4: (FIRE) APPROX. WEIGHT: 6 PSF (FIRE)

UL R3660, 01NK21103, 012-4-02; UL R2717, 07NK08079, 9-19-08; UL R1319, 4786832806, 4-29-15 UL DESIGN U425

EXTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH, 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE S-12, SELF-DRILLING, CORROSION RESISTANT, BUGLE HEAD, SCREWS 12 INCH ON CENTER STUDS ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2 INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

BRACING - 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. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN. TESTED AT 100 PERCENT OF DESIGN LOAD. (LOAD-BEARING)

## PROPRIETARY GYPSUM PANEL PRODUCTS CERTAINTEED GYPSUM INC.

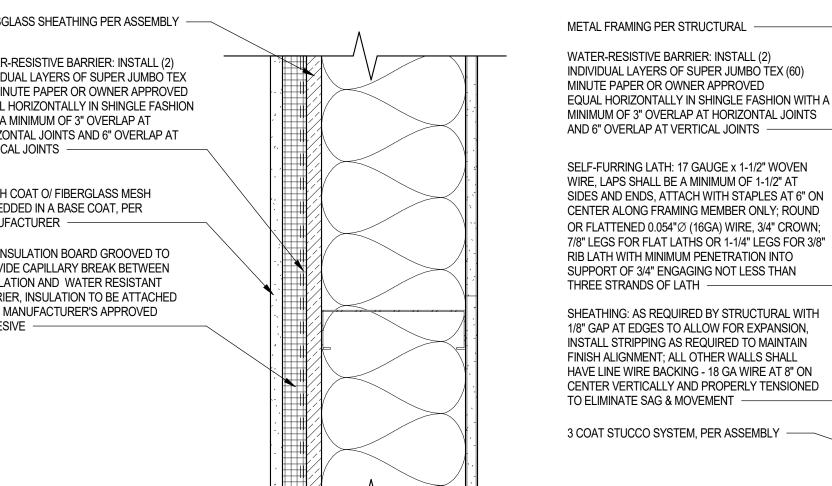
- 5/8" Certain Teed® Type X Gypsum Board 5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels
- GEORGIA-PACIFIC GYPSUM LLC 5/8" ThoughRock® Firequard® Gypsum Board 5/8" DensGlass® Fireguard® Sheathing
- PABCO® GYPSUM 5/8" FLAME CURB® Type X
- 5/8" PABCO® GLASS® Sheathing Type X UNITED STATES GYPSUM COMPANY
- 5/8" Sheetrock® Brand EcoSmart Panels Firecode® X 5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

EM 42 | SAME AS EM 41 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

CEMENTITIOUS BOARD AT 1-HR RATED EXTERIOR

WALL - METAL FRAMING

1-HR EIFS BOARD SIDING EXTERIOR WALL PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO- June 2021 FIRE TEST: GA WP 8006



# **DESIGN NO. WP 8006** GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS STEEL STUDS, INSULATION

THICKNESS: 4-3/4: (FIRE)

APPROX. WEIGHT: 6 PSF (FIRE)

UL R3660, 01NK21103, 012-4-02 UL R2717, 07NK08079, 9-19-08; UL R1319, 4786832806, 4-29-15 UL DESIGN U425

**EXTERIOR SIDE** - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH, 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE S-12, SELF-DRILLING, CORROSION RESISTANT, BUGLE HEAD, SCREWS 12 INCH ON CENTER STUDS ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2 INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

BRACING - 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. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN. TESTED AT 100 PERCENT OF DESIGN LOAD. (LOAD-BEARING)

# PROPRIETARY GYPSUM PANEL PRODUCTS

- CERTAINTEED GYPSUM INC. 5/8" Certain Teed® Type X Gypsum Board
- 5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels GEORGIA-PACIFIC GYPSUM LLC 5/8" ThoughRock® Fireguard® Gypsum Board 5/8" DensGlass® Fireguard® Sheathing
- PABCO® GYPSUM 5/8" FLAME CURB® Type X
- 5/8" PABCO® GLASS® Sheathing Type X UNITED STATES GYPSUM COMPANY
- 5/8" Sheetrock® Brand EcoSmart Panels Firecode® X 5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

EM 22 | SAME AS EM 21 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

1-HR STUCCO EXTERIOR WALL - RATED BOTH SIDES

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

FIRE TEST: BXUV.U348 - FIRE-RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO. U348

ARCHITECTURAL CONSTRUCTION DETAIL

WRITTEN SPECIFICATIONS

DESIGN NO. U348

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

UNITED STATES

1A. STEEL STUDS AND FLOOR AND CEILING TRACKS — TOP AND BOTTOM TRACKS OF WALL ASSEMBLIES

PROVIDE A SOUND STRUCTURAL CONNECTION BETWEEN STEEL STUDS, AND TO ADJACENT

IN. WIDE, NO. 20 MSG (0.0329 IN., MIN BARE METAL THICKNESS) CORROSION PROTECTED COLD

FORMED STEEL STUDS DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE

STEEL STUD DESIGNER AND/OR PRODUCER, AND SHALL MEET THE REQUIREMENTS OF ALL

ACCORDANCE WITH THE AISI SPECIFICATIONS.

AMERICAN GYPSUM CO — CKNX.R14196

**UNITED STATES GYPSUM** — CKNX.R1319

HEADS COVERED WITH JOINT COMPOUND.

THROUGH THE STEEL STUD OF 3/8 IN.

INSTRUCTIONS:

VOLUME, CEMENT TO SAND.

ANSI/UL 263 DESIGN NO U348

NATIONAL GYPSUM CO — CKNX.R3501

IN. LONG TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS.

BE APPLIED IN MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS.

LOUISIANA-PACIFIC CORP — TYPE BLAZEGUARD 1-SIDE

LOUISIANA-PACIFIC CORP — TYPE LP FLAMEBLOCK 1-SIDE

SHALL CONSIST OF STEEL MEMBERS, MIN NO. 20 MSG (0.0329 IN., MIN BARE METAL THICKNESS) STEEL

OR MIN NO. 20 MSG (0.036 IN. THICK) GALV STEEL OR NO. 20 MSG (0.033 IN. THICK) PRIMED STEEL, THAT

ASSEMBLIES SUCH AS A FLOOR. CEILING, AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING

ASSEMBLIES WITH STEEL FASTENERS SPACED NOT GREATER THAN 24 IN. O.C. STEEL STUDS MIN 3-1/2

SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN

WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE

IRON AND STEEL INSTITUTE. ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE

APPLICABLE LOCAL CODE AGENCIES. THE MAX STUD SPACING OF WALL ASSEMBLIES SHALL NOT

EXCEED 24 IN. OC. STUDS ATTACHED TO FLOOR AND CEILING TRACKS WITH 1/2 IN. LONG TYPE S-12

STEEL SCREWS ON BOTH SIDES OF STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN

2. GYPSUM WALLBOARD\* - ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN

STUDS AND BEARING PLATES 7 IN. OC. WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN.

3, JOINTS AND NAILHEADS - WALLBOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL

4. BATTS AND BLANKETS\* - FACED OR UNFACED MINERAL FIBER INSULATION, 3-1/2 IN. THICK, NOM 3.0

STUDS (ITEM 1) ARE USED, MIN. 5-1/2 IN. OF UNFACED MINERAL FIBER INSULATION, NOM 3.0 PCF,

SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

5. BUILDING UNITS - BUILDING UNITS PLACED WITH THE LAMINATE FACE AGAINST OR LAMINATE FACE

8. EXTERIOR FACINGS — REQUIRED FOR 1 HOUR RATING ON THE EXTERIOR FACE. THE FOLLOWING

8B. CEMENTITIOUS STUCCO — PORTLAND CEMENT WITH SELF-FURRING METAL LATH. MINIMUM

THE PERIMETER AND 12 IN. OC. IN THE FIELD, WHEN STEEL FRAMING IS SUBSTITUTED FOR WOOD

PCF, PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD, PLATES, AND CROSS BRACING. IF 2 BY 6 IN.

PRESSURE FIT IN THE WALL CAVITY BETWEEN STUD. PLATES, AND CROSS BRACING, INSULATION MAY

AWAY FROM, AND NAILED TO, THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON

FRAMING, TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS WITH A MINIMUM PENETRATION LENGTH

EXTERIOR FACING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION

THICKNESS OF 3/4 IN. WITH A MIX RATIO OF 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY

SHANK DIAM, AND 1/4 IN, DIAM, HEAD, WHEN STEEL FRAMING IS SUBSTITUTED FOR WOOD FRAMING, 1

DESIGN NOS. L501, G512 OR U305. NOM. 5/8 IN. THICK, 4 FT. WIDE, APPLIED VERTICALLY, AND NAILED TO

PROPRIETARY ASSEMBLY - August 4, 2023

# 1-HR STUCCO EXTERIOR WALL RATED FROM BOTH

# SCREWS, NOT MORE THAN EACH SIXTH COURSE OF BRICK.

ANSI/UL 263 DESIGN NO U423

OFFSET MIN 6 IN. FROM LAYER BELOW.

CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES

1-HR UNIT SEPARATION EXTERIOR WALL

STEEL STUD FRAMING PER

MINIMUM 2" MINERAL WOOL

INSULATION PER ITEM #7

ADD METAL STUD @ FIRE-

WATER-RESISTIVE BARRIER:

INSTALL (2) INDIVIDUAL LAYERS OF

EQUAL HORIZONTALLY IN SHINGLE

OVERLAP AT HORIZONTAL JOINTS

SELF-FURRING LATH: 17 GAUGE x

1-1/2" WOVEN WIRE, LAPS SHALL BE

ENDS, ATTACH WITH STAPLES AT 6"

A MINIMUM OF 1-1/2" AT SIDES AND

ON CENTER ALONG FRAMING

FLATTENED 0.054"Ø (16GA) WIRE,

3/4" CROWN; 7/8" LEGS FOR FLAT

LATHS OR 1-1/4" LEGS FOR 3/8" RIB

LATH WITH MINIMUM PENETRATION

INTO SUPPORT OF 3/4" ENGAGING

NOT LESS THAN THREE STRANDS

WITH THE AISI SPECIFICATIONS.

RATINGS ARE AS FOLLOWS:

1 HR

FASTENERS SPACED NOT GREATER THAN 24 IN. OC.

MEMBER ONLY; ROUND OR

FASHION WITH A MINIMUM OF 3"

AND 6" OVERLAP AT VERTICAL

SUPER JUMBO TEX (60) MINUTE

PAPER OR OWNER APPROVED

BLOCKING -

JOINTS -

OF LATH

STRUCTURAL & ITEM #2 BELOW -

PROPRIETARY ASSEMBLY - PROPRIETARY ASSEMBLY - February 16, 2024

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

**DESIGN NO. U423** 

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

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,

2. STEEL STUDS - MIN 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL

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

STUDS, MIN 3-1/2 IN, WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF

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

STUDS, SUPPORT SHALL BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR

VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE

STUD CAVITY ON OPPOSITE SIDES OF STUDS, VERTICAL JOINTS IN ADJACENT LAYERS (MULTILAYER

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

JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED AT 100 PERCENT LOAD WITH TYPE

ULIX. 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. WHEN USED

IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS TO BE INSTALLED HORIZONTALLY. THE THICKNESS

1 LAYERS, 5/8 IN. THICK

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

UNITED STATES GYPSUM CO — 5/8 in. thick Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX,

6. FASTENERS - (NOT SHOWN) — FOR USE WITH ITEM 5 - 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 1-1/4 IN. LONG FOR 3/4 IN

THICK PANELS. SPACED 8 IN. OC WHEN PANELS ARE APPLIED HORIZONTALLY. OR 12 IN. OC WHEN

VERTICALLY. TWO LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR

AND 5/8 IN. THICK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC WITH

IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN. THICK PANELS,

OC ALONG THE PERIMETER AND IN THE FIELD WHEN PANELS ARE APPLIED HORIZONTALLY OR

PANELS ARE APPLIED VERTICALLY, SINGLE LAYER SYSTEM WITH TYPE ULIX: 1 IN. LONG. SPACED 12 IN.

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.

SCREWS OFFSET 8 IN. FROM FIRST LAYER. THREE-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2

SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS

7. BATTS AND BLANKETS\* - (REQUIRED AS INDICATED UNDER ITEM 5) — NOM 2 IN. THICK MINERAL WOOL

9. JOINT TAPE AND COMPOUND - VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN

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

TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE,

BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. SEE BATTS AND BLANKETS (BKNV OR BZJZ)

AND NUMBER OF LAYERS AND PERCENT OF DESIGN LOAD FOR THE 45 MIN, 1 HR, 1-1/2 HR, AND 2 HR

LOAD IS AT 100 PERCENT. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE

SIDES OF STUDS STAGGERED A MIN OF 12 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT

SYSTEMS) STAGGERED ONE STUD CAVITY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL

BOTH SIDES OF THE STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE

3. LATERAL SUPPORT MEMBERS - (NOT SHOWN) — WHERE REQUIRED FOR LATERAL SUPPORT OF

5. GYPSUM BOARD\* — GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED

MEANS AS SPECIFIED IN THE DESIGN OF A PARTICULAR STEEL STUD WALL SYSTEM.

CEILINGS AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING ASSEMBLIES WITH STEEL

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U423

SOUND RATING: NOT REQUIRED AT EXTERIOR WALLS

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

# 1-HR STUCCO UNIT SEPARATION EXTERIOR WALL-

### 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

CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

SCREWS, NOT MORE THAN EACH SIXTH COURSE OF BRICK.

2-HR STUCCO EXTERIOR WALL

METAL FRAMING PER STRUCTURAL

VERTICAL JOINTS -

PROPRIETARY ASSEMBLY - February 16, 2024

SOUND RATING: NOT REQUIRED AT EXTERIOR WALLS

WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL

LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER

OR OWNER APPROVED EQUAL HORIZONTALLY IN

AT HORIZONTAL JOINTS AND 6" OVERLAP AT

SELF-FURRING LATH: 17 GAUGE x 1-1/2" WOVEN

SIDES AND ENDS, ATTACH WITH STAPLES AT 6" ON

CENTER ALONG FRAMING MEMBER ONLY; ROUND

OR FLATTENED 0.054"Ø (16GA) WIRE, 3/4" CROWN;

7/8" LEGS FOR FLAT LATHS OR 1-1/4" LEGS FOR 3/8"

1) LAYER OF 5/8" GLASS-MAT JETRATION INTO

PANELS AT EACH SIDE OF WALL OT LESS THAN

OSB SHEATHING: AS REQUIRED BY STRUCTURAL

EXPANSION, INSTALL STRIPPING AS REQUIRED TO

MAINTAIN FINISH ALIGNMENT; ALL OTHER WALLS

SHALL HAVE LINE WIRE BACKING, 18 GA WIRE AT 8"

FASTENERS SPACED NOT GREATER THAN 24 IN. OC.

WITH 1/8" GAP AT EDGES TO ALLOW FOR

ON CENTER VERTICALLY AND PROPERLY

3 COAT STUCCO SYSTEM, PER ASSEMBLY

WITH THE AISI SPECIFICATIONS.

RATINGS ARE AS FOLLOWS:

TENSIONED TO ELIMINATE SAG & MOVEMENT

PER ITEM #5 ANDS OF LATH —

WIRE, LAPS SHALL BE A MINIMUM OF 1-1/2" AT

SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U423

ARCHITECTURAL CONSTRUCTION DETAIL

WRITTEN SPECIFICATIONS

**DESIGN NO. U423** 

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

1. FLOOR AND CEILING RUNNERS — (NOT SHOWN) — CHANNEL SHAPED, FABRICATED FROM MIN 0.0329

CEILINGS AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING ASSEMBLIES WITH STEEL

2. STEEL STUDS - MIN 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL

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

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,

STUDS, MIN 3-1/2 IN. WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF

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

3. LATERAL SUPPORT MEMBERS - (NOT SHOWN) - WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS,

VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE

STUD CAVITY ON OPPOSITE SIDES OF STUDS. VERTICAL JOINTS IN ADJACENT LAYERS (MULTILAYER

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

JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED AT 100 PERCENT LOAD WITH TYPE

ULIX. 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

RAITING NO. OF LAYERS & THICKNESS OF PANELS EACH % OF DESIGN LOAD

ADJACENT LAYERS (MULTILAYER SYSTEMS) WITH TYPE ULIX NEED NOT BE STAGGERED. WHEN USED

IN WIDTHS OTHER THAN 48 IN.. GYPSUM PANELS 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

2 LAYERS, 5/8 IN. THICK

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

UNITED STATES GYPSUM CO — 5/8 in. thick Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX,

6. FASTENERS - (NOT SHOWN) - FOR USE WITH ITEM 5 - TYPE S-12 STEEL SCREWS USED TO ATTACH

PANELS TO RUNNERS (ITEM 1) AND STUDS (ITEM 2) OR FURRING CHANNELS (ITEM 8). 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.

OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC WITH SCREWS OFFSET 8 IN. FROM

THICK PANELS. SPACED 16 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN. AND 5/8 IN. THICK PANELS

FIRST LAYER. THREE-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN. THICK PANELS, SPACED 24

IN. OC. SECOND LAYER- 1-5/8 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.

BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. SEE BATTS AND BLANKETS (BKNV OR BZJZ)

**7. BATTS AND BLANKETS\*** - (REQUIRED AS INDICATED UNDER ITEM 5) — NOM 2 IN. THICK MINERAL WOOL

9. JOINT TAPE AND COMPOUND - VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN

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

TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE,

LOAD IS AT 100 PERCENT, HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE

SIDES OF STUDS STAGGERED A MIN OF 12 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT

SYSTEMS) STAGGERED ONE STUD CAVITY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL

5. GYPSUM BOARD\* — GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED

AS SPECIFIED IN THE DESIGN OF A PARTICULAR STEEL STUD WALL SYSTEM.

SUPPORT SHALL BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

2-HR EXTERIOR WALL W/ STUCCO FINISH - METAL

**DESIGN NO. U423** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES ANSI/UL 263 DESIGN NO U423 SCALE: 3" = 1'-0"

> FASTENERS SPACED NOT GREATER THAN 24 IN. OC. 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, SUPPORT SHALL BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR

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 WHEN LOAD IS REDUCED TO 90 PERCENT OF MAX STUD CAPACITY. WHEN LOAD IS AT 100 PERCENT. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS STAGGERED A MIN OF 12 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED AT 100 PERCENT LOAD WITH TYPE ULIX. 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. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS 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

GS ARE AS FOLLOWS:				
	RAITING	NO. OF LAYERS & THICKNESS OF PANELS EACH	% OF DESIGN LOAD	
	1 HR	1 LAYERS, 5/8 IN, THICK	100	

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. CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES. 9. 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 LAYERS. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM BOARDS ARE SUPPLIED WITH SQUARE EDGES 10.SIDING, BRICK, OR STUCCO - (OPTIONAL) — ALUMINUM, VINYL OR STEEL SIDING, BRICK VENEER OR STUCCO, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES, BRICK VENEER, ATTACHED TO

MORE THAN EACH SIXTH COURSE OF BRICK.

ANSI/UL 263 DESIGN NO U423

1-HR STUCCO EXTERIOR WALL STUCCO ON BOTH

City, state

World HQ@ORBArch.com



AND 6" OVERLAP AT VERTICAL JOINTS -SELF-FURRING LATH: 17 GAUGE x 1-1/2" WOVEN WIRE, LAPS SHALL BE A MINIMUM OF 1-1/2" AT SIDES AND ENDS, ATTACH WITH STAPLES AT 6" ON CENTER ALONG FRAMING MEMBER ONLY; ROUND OR FLATTENED 0.054"Ø (16GA) WIRE, 3/4" CROWN; 7/8" LEGS FOR FLAT LATHS OR 1-1/4" LEGS FOR 3/8" RIB LATH WITH MINIMUM PENETRATION INTO SUPPORT OF 3/4" ENGAGING NOT LESS THAN THREE STRANDS OF LATH  $\,$  -WOOD SHEATHING: PER STRUCTURAL WIT 61/8" ~ GAP AT EDGES TO ALLOW FOR EXPAN INSTALL STRIPPING AS REQUIRED TY FINISH ALIGNMENT; ALL OTHER V HAVE LINE WIRE BACKING - 18 CENTER VERTICALLY AND F TO ELIMINATE SAG & MC' 3 COAT STUCCO SYSTEM ' MANUFACTURER INSTA RUCTIONS

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

**1HR STUCCO EXTERIOR WALL** 

FIRE TEST - IBC 721.1(2) 15-1.4

WATER-RESISTIVE BARRIER: INSTALL (2)

MINUTE PAPER OR OWNER APPROVED

METAL FRAMING CORRUCTURAL

INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60)

EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A

MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS

SOUND RATING: NOT REQUIRED AT EXTERIOR WALLS

GENERIC ASSEMBLY

IBC TABLE 721.1 (2) ITEM 15-1.4. THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1 (2) ITEM15-1.4.

3-5/8" NO. 16 GA NON-COMBUSTIBLE STUDS 16" ON CENTER WITH 7/8" CEMENT PLASTER (MEASURED FROM THE FACE OF STUDS) ON EXTERIOR SURFACE WITH INTERIOR SURFACE TREATMENT AS REQUIRED FOR INTERIOR, NON-BEARING, NON-COMBUSTIBLE STUDS PARTITIONS IN THIS TABLE. PLASTER MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY VOLUME, CEMENT TO SAND.

MANUAL, WHEN NOT SPECIFIED AS A COMPONENT OF A FIRE TESTED WALL OR PARTITION SYSTEM, MINERAL FIBER, GLASS FIBER, OR CELLULOSE FIBER INSULATION OF A THICKNESS NOT EXCEEDING THAT OF THE STUD DEPTH SHALL BE PERMITTED TO BE ADDED WITHIN THE STUD CAVITY. INSTALL SEALANT BETWEEN BASE OF GYPSUM BOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL NOTE: PER GYPSUM ASSOCIATION, GENERAL EXPLANATORY NOTES ITEM 4: SCREWS MEETING ASTM C 1002 SHALL BE PERMITTED TO BE SUBSTITUTED FOR THE PRESCRIBED NAILS, ONE FOR ONE, WHEN THE LENGTH AND HEAD DIAMETER OF THE SCREWS EQUAL OR EXCEED THOSE OF THE NAILS

PER GENERAL EXPLANATORY NOTES NO. 11 OF THE GYPSUM ASSOCIATION RESISTANCE DESIGN

SPECIFIED IN THE TESTED SYSTEM AND THE SCREW SPACING SPECIFIED FOR THE NAILS IN THE

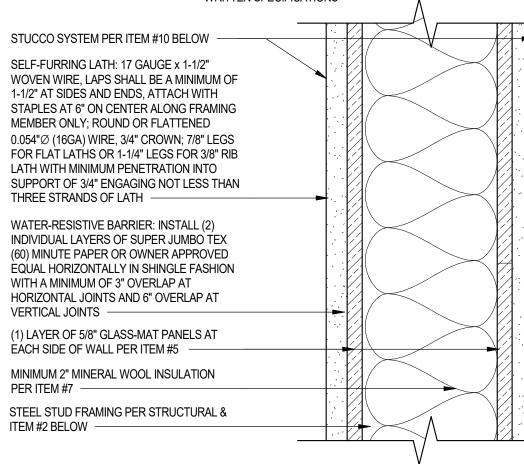
EM 12 SAME AS EM 11 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

1-HR STUCCO EXTERIOR WALL - METAL FRAMING SCALE: 3" = 1'-0" ─ IBC 721.1(2) 15-1.4

PROPRIETARY ASSEMBLY - PROPRIETARY ASSEMBLY - February 16, 2024 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U423 SOUND RATING: NOT REQUIRED AT EXTERIOR WALLS REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

1-HR UNIT SEPARATION EXTERIOR WALL

ARCHITECTURAL CONSTRUCTION DETAIL WRITTEN SPECIFICATIONS



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

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 SPECIFICATIONS

3. LATERAL SUPPORT MEMBERS - (NOT SHOWN) — WHERE REQUIRED FOR LATERAL SUPPORT OF MEANS AS SPECIFIED IN THE DESIGN OF A PARTICULAR STEEL STUD WALL SYSTEM.

S ARE AS FOLLOWS.				
RAITING	NO. OF LAYERS & THICKNESS OF PANELS EACH	% OF DESIGN LOA		
1 HR	1 LAYERS, 5/8 IN. THICK	100		

UNITED STATES GYPSUM CO — 5/8 in. thick Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRX, or WRC; 3/4 in. thick Types AR, IP-AR or IP-X3, ULTRACODE

6. FASTENERS - (NOT SHOWN) — FOR USE WITH ITEM 5 - 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 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 12 IN. OC WHEN PANELS ARE APPLIED VERTICALLY, SINGLE LAYER SYSTEM WITH TYPE ULIX: 1 IN. LONG. SPACED 12 IN. OC ALONG THE PERIMETER AND IN THE FIELD 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. 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- 1-5/8 IN. LONG FOR 1/2 IN. THICK PANELS,

7. BATTS AND BLANKETS\* - (REQUIRED AS INDICATED UNDER ITEM 5) — NOM 2 IN. THICK MINERAL WOOL BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. SEE BATTS AND BLANKETS (BKNV OR BZJZ)

STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH STEEL SCREWS, NOT

SIDES - METAL FRAMING

DATE: July 17, 2024

Contractor must verify all dimensions a

project before proceeding with this work.

the expressed written permission of the Architect. The

shall remain the property of the Architect whether the

project for which they are made is executed or not. These

drawings and specifications shall not be used by anyone o any other projects, for additions to this project, or for

written permission of the Architect

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make payment on some alternative schedule after

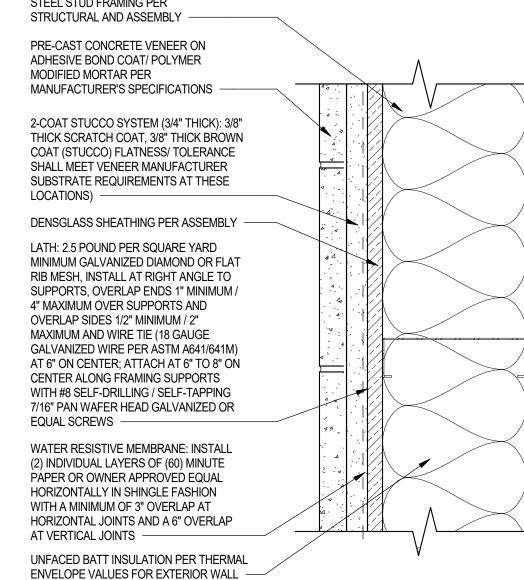
written description of such other billing (and/or) cycle

the owner's designated agent at

2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016 and the owner or its designated agent shall provide this written description on request

REVISIONS/SUBMITTALS

DATE DESCRIPTION



### GYPSUM ASSOC. FILE NO. WP 8006 GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS, STEEL STUDS, INSULATION

THICKNESS:	4-3/4: (FIRE)
APPROX. WEIGHT:	6 PSF (FIRE)
FIRE TEST:	UL R3660, 01NK21103, 012-4-02; UL R2717, 07NK08079, 9-19-08; UL R1319, 4786832806, 4-29-15

# UL DESIGN U425

EXTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH. 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE. S-12, SELF-DRILLING, CORROSION RESISTANT, BUGLE HEAD, SCREWS 12 INCH ON CENTER STUDS ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2 INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS.

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

BRACING - 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. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN. TESTED AT 100 PERCENT OF DESIGN LOAD. (LOAD-BEARING)

# PROPRIETARY GYPSUM PANEL PRODUCTS

- CERTAINTEED GYPSUM INC. 5/8" Certain Teed® Type X Gypsum Board
- 5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels GEORGIA-PACIFIC GYPSUM LLC
- 5/8" DensGlass® Fireguard® Sheathing PABCO® GYPSUM
- 5/8" FLAME CURB® Type X 5/8" PABCO® GLASS® Sheathing Type X
- UNITED STATES GYPSUM COMPANY 5/8" Sheetrock® Brand EcoSmart Panels Firecode® X 5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

5/8" ThoughRock® Fireguard® Gypsum Board

EM 67 | SAME AS EM 66, EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD, NO RATING REQUIRED

CONCRETE VENEER AT 1-HR RATED EXTERIOR WALL

SCALE: 3" = 1'-0"

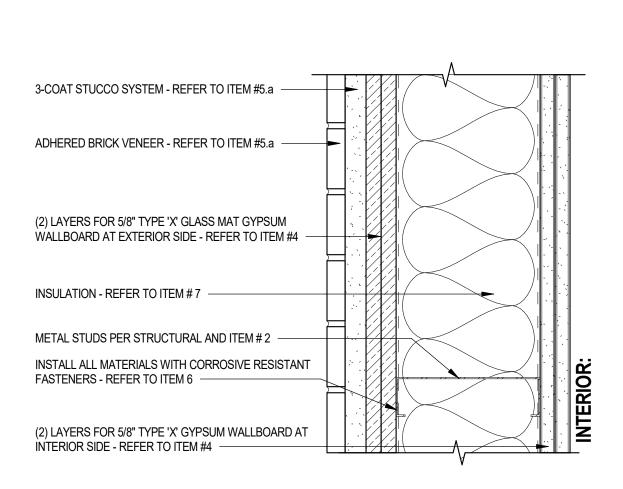
FIRE TEST: BXUV.U425 - FIRE-RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO. U425 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY. ARCHITECTURAL CONSTRUCTION DETAIL

2-HR BRICK VENEER EXTERIOR WALI

PROPRIETARY ASSEMBLY - February 16, 2024

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS,

BEARING WALL RATING — 3/4 HR., 1, 1-1/2 OR 2 HR. (SEE ITEMS 2, 4 AND 5) 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 BXUV7



- 1. STEEL FLOOR AND CEILING TRACKS (NOT SHOWN) TOP AND BOTTOM TRACKS OF WALL ASSEMBLIES SHALL CONSIST OF STEEL MEMBERS, MINIMUM NO. 20 MSG (0.0329 INCH, MINIMUM BARE METAL THICKNESS) STEEL OR MINIMUM NO. 20 MSG (0.036 INCH THICK) GALVANIZED STEEL OR NO. 20 MSG (0.033 INCH THICK) PRIMED STEEL. THAT PROVIDE A SOUND STRUCTURAL CONNECTION BETWEEN STEEL STUDS, AND TO ADJACENT ASSEMBLIES SUCH AS A FLOOR, CEILING, AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING ASSEMBLIES WITH STEEL FASTENERS SPACED NOT GREATER THAN
- 2. STEEL STUDS MINIMUM 3-1/2 INCH WIDE, NO. 20 MSG (0.0329 INCH, MINIMUM BARE METAL THICKNESS) CORROSION PROTECTED COLD-FORMED STEEL STUDS 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. 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 MAXIMUM STUD SPACING OF WALL ASSEMBLIES SHALL NOT EXCEED 24 INCH ON CENTER (OR 16 INCH ON CENTER WHEN ITEM 5 IS USED). STUDS ATTACHED TO FLOOR AND CEILING TRACKS WITH 1/2 INCH LONG TYPE S-12 STEEL SCREWS ON BOTH SIDES OF STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH THE AISI SPECIFICATIONS.
- 3. LATERAL SUPPORT MEMBERS (NOT SHOWN) WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY 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. GYPSUM WALLBOARD\* ANY 1/2 INCH THICK UL CLASSIFIED GYPSUM WALLBOARD THAT IS ELIGIBLE FOR USE IN DESIGN NO. X515. ANY 5/8 INCH THICK UL CLASSIFIED GYPSUM WALLBOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512, OR U305, GYPSUM WALLBOARD BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE. APPLIED VERTICALLY WITH JOINTS BETWEEN LAYERS STAGGERED. OUTER LAYER OF 3 LAYER CONSTRUCTION MAY BE APPLIED HORIZONTALLY UNLESS SPECIFIED BELOW. THE THICKNESS AND NUMBER OF LAYERS AND PERCENT OF DESIGN LOAD FOR THE 45 MINUTES, 1-HOUR, 1-1/2-HOUR AND 2-HOUR RATINGS ARE AS FOLLOWS:

# INTERIOR OR EXTERIOR WALLS (FIRE FROM EITHER SIDE)

RATING HR.	WALLBOARD PROTECTION ON INTERIOR SIDE OF WALL - NO. OF LAYERS & THICKNESS OF BOARD IN. EACH LAYERS	% OF DESIGN LOAD		
2 HR	2 LAYERS, 5/8 IN. THICK	80%		
NOTE EXTERIOR FACINGS AN OMER FOR HOS MITHUES ARE ALSO AN OMER TO BE INSTALLED				

NOTE: EXTERIOR FACINGS ALLOWED FOR USE WITH ITEM 5 ARE ALSO ALLOWED TO BE INSTALLED ON ONE SIDE OF THE ABOVE WALLS.

AMERICAN GYPSUM CO — CKNX.R14196 **CERTAINTEED GYPSUM INC** — CKNX.R3660 GEORGIA-PACIFIC GYPSUM LLC — CKNX.R2717

NATIONAL GYPSUM CO (VIEW CLASSIFICATION) — CKNX.R3501 PABCO BUILDING PRODUCTS LLC, DBA PABCO GYPSUM — CKNX.R7094 **UNITED STATES GYPSUM CO** — CKNX.R1319

5. GYPSUM WALLBOARDS — ONE OF THE FOLLOWING EXTERIOR FACINGS ARE TO BE APPLIED OVER THE GYPSUM WALLBOARD. SIDING, BRICK, OR STUCCO — ALUMINUM SIDING, STEEL SIDING, BRICK VENEER OR STUCCO ATTACHED TO STUDS OVER GYPSUM SHEATHING AND MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES. WHEN A MINIMUM 3-3/4 INCH THICK BRICK VENEER FACING IS USED, THE EXTERIOR WALL RATING IS APPLICABLE WITH EXPOSURE ON EITHER FACE. BRICK VENEER WALL ATTACHED TO STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH STEEL SCREWS, NOT MORE THAN EACH SIXTH COURSE OF BRICK. WHEN A MINIMUM 3-3/4 INCH THICK BRICK VENEER FACING IS USED, FOAMED PLASTIC (ITEM 10) MAY BE USED.

6. FASTENERS — (NOT SHOWN) — SCREWS USED TO ATTACH WALLBOARD TO STUDS: SELF-TAPPING BUGLE HEAD SHEET STEEL TYPE, SPACED 12 INCH ON CENTER FIRST LAYER TYPE S-12 BY 1 INCH LONG FOR 1/2 AND 5/8 INCH THICK WALLBOARDS AND 1-1/4 INCH LONG FOR 3/4 INCH THICK WALLBOARD. SECOND LAYER TYPE S-12 BY 1-5/8 INCH LONG FOR 1/2 AND 5/8 INCH THICK WALLBOARDS AND 2-1/4 INCH LONG FOR 3/4 INCH THICK WALLBOARD. THIRD LAYER TYPE S-12 BY 1-7/8 INCH LONG. FASTENERS WHEN ITEM 4G IS USED: FIRST LAYER #6 X 2 INCH LONG DRYWALL SCREW SPACED 8 INCH ON CENTER ALONG THE PERIMETER AND 12 INCH ON CENTER IN THE FIELD. SECOND LAYER #6 X 4 INCH LONG DRYWALL SCREW SPACED 8 INCH ON CENTER ALONG THE PERIMETER AND 12 INCH ON CENTER IN THE FIELD. HORIZONTAL JOINTS TO BE STAGGERED 12 INCH BETWEEN LAYERS.

7. BATTS AND BLANKETS\* — PLACED IN STUD CAVITIES OF ALL EXTERIOR WALLS. MAY OR MAY NOT BE USED IN INTERIOR WALLS. ANY GLASS FIBER OR MINERAL WOOL BATT MATERIAL BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE, OF A THICKNESS TO COMPLETELY FILL STUD CAVITY. SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED COMPANIES.

8. JOINT TAPE AND COMPOUND — (NOT SHOWN) — VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYER. PERFORATED PAPER TAPE, 2 INCH WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

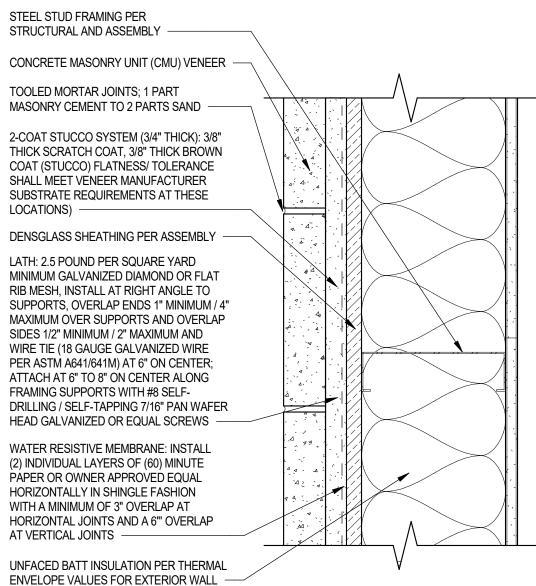
BRICK VENEER AT 2-HR EXTERIOR WALL - METAL

UL DESIGN NO. U425

1-HR CMU VENEER EXTERIOR WALL PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO March 16, 2023

FIRE TEST: GA WP 8006

# WRITTEN SPECIFICATIONS



### GYPSUM ASSOC. FILE NO. WP 8006 GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS, STEEL STUDS, INSULATION

THICKNESS:	4-3/4: (FIRE)
APPROX. WEIGHT:	6 PSF (FIRE)
FIRE TEST:	UL R3660, 01NK21103, 012-4-0 UL R2717, 07NK08079, 9-19-08 UL R1319, 4786832806, 4-29-15 UL DESIGN U425

EXTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH. 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE. S-12. SELF-DRILLING. CORROSION RESISTANT. BUGLE HEAD. SCREWS 12 INCH ON CENTER STUDS ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2 INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS.

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

BRACING - 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. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS OF STEEL STRAPS. CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN. TESTED AT 100 PERCENT OF DESIGN LOAD. (LOAD-BEARING)

### PROPRIETARY GYPSUM PANEL PRODUCTS CERTAINTEED GYPSUM INC.

5/8" Certain Teed® Type X Gypsum Board 5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels GEORGIA-PACIFIC GYPSUM LLC 5/8" ThoughRock® Fireguard® Gypsum Board 5/8" DensGlass® Fireguard® Sheathing PABCO® GYPSUM 5/8" FLAME CURB® Type X

5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

5/8" PABCO® GLASS® Sheathing Type X UNITED STATES GYPSUM COMPANY 5/8" Sheetrock® Brand EcoSmart Panels Firecode® X

EM 62 | SAME AS EM 61 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

BRICK VENEER AT 1-HR RATED EXTERIOR WALL -

METAL FRAMING

□ GA WP 8006

SCALE: 3" = 1'-0"

SCALE: 3" = 1'-0"

INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels

STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

TESTED AT 100 PERCENT OF DESIGN LOAD.

PROPRIETARY GYPSUM PANEL PRODUCTS

5/8" Certain Teed® Type X Gypsum Board

5/8" ThoughRock® Fireguard® Gypsum Board

5/8" DensGlass® Fireguard® Sheathing

5/8" PABCO® GLASS® Sheathing Type X

5/8" Sheetrock® Brand EcoSmart Panels Firecode® X

UNITED STATES GYPSUM COMPANY

(LOAD-BEARING)

PABCO® GYPSUM

**CERTAINTEED GYPSUM INC.** 

GEORGIA-PACIFIC GYPSUM LLC

5/8" FLAME CURB® Type X

1-HR BRICK VENEER EXTERIOR WALL

FIRE TEST: GA WP 8006

STEEL STUD FRAMING PER

BRICK VENEER

LOCATIONS)

EQUAL SCREWS -

AT VERTICAL JOINTS

DENSGLASS SHEATHING

STRUCTURAL AND ASSEMBLY

TOOLED MORTAR JOINTS; 1 PART

MASONRY CEMENT TO 2 PARTS SAND -

2-COAT STUCCO SYSTEM (3/4" THICK): 3/8"

THICK SCRATCH COAT. 3/8" THICK BROWN

COAT (STUCCO) FLATNESS/ TOLERANCE

SHALL MEET VENEER MANUFACTURER

SUBSTRATE REQUIREMENTS AT THESE

LATH: 2.5 POUND PER SQUARE YARD

4" MAXIMUM OVER SUPPORTS AND

OVERLAP SIDES 1/2" MINIMUM / 2"

MAXIMUM AND WIRE TIE (18 GAUGE

MINIMUM GALVANIZED DIAMOND OR FLAT

RIB MESH, INSTALL AT RIGHT ANGLE TO

SUPPORTS, OVERLAP ENDS 1" MINIMUM /

GALVANIZED WIRE PER ASTM A641/641M)

AT 6" ON CENTER; ATTACH AT 6" TO 8" ON

CENTER ALONG FRAMING SUPPORTS

WITH #8 SELF-DRILLING / SELF-TAPPING

7/16" PAN WAFER HEAD GALVANIZED OR

WATER RESISTIVE MEMBRANE: INSTALL

(2) INDIVIDUAL LAYERS OF (60) MINUTE

PAPER OR OWNER APPROVED EQUAL

HORIZONTALLY IN SHINGLE FASHION

HORIZONTAL JOINTS AND A 6" OVERLAP

UNFACED BATT INSULATION PER THERMAL

ENVELOPE VALUES FOR EXTERIOR WALL

WITH A MINIMUM OF 3" OVERLAP AT

PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO - June 2021

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

**GYPSUM ASSOC. FILE NO. WP 8006** 

GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS, STEEL STUDS, INSULATION

EXTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE

S-12, SELF-DRILLING, CORROSION RESISTANT, BUGLE HEAD, SCREWS 12 INCH ON CENTER STUDS

SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS

(SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH. 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE

ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2

INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO

BRACING - ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY.

DESIGNER AND/OR PRODUCER. AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE LOCAL CODE

OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN.

AGENCIES. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS

INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD

THICKNESS: 4-3/4: (FIRE)

APPROX. WEIGHT: 6 PSF (FIRE)

UL R3660, 01NK21103, 012-4-02;

UL R2717, 07NK08079, 9-19-08;

UL R1319, 4786832806, 4-29-15

UL DESIGN U425

SCALE: 3" = 1'-0"

# CMU VENEER AT 1-HR RATED EXTERIOR WALL -

EM 57 | SAME AS EM 56 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF

OC WITH SCREWS OFFSET 8 IN. FROM FIRST LAYER. CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

3. 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-

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 FRX-G GYPSUM PANELS AND ITEM 5A, 5C, 5D, OR 5E. 9. 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 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.

EM 54 SAME AS EW 53, EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

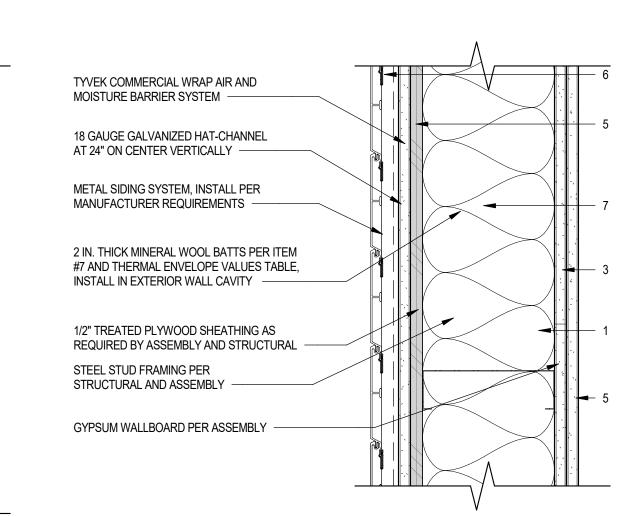
METTAL FRAMING <sup>J</sup> ANSI/UL 263 DESIGN NO U423

SCALE: 3" = 1'-0"

# 2-HR METAL SIDING EXTERIOR WALL

PROPRIETARY ASSEMBLY - February 16, 2024 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U423 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

> ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



### **DESIGN NO. U423** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

- 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.
- 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 SPECIFICATIONS.
- 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 STEEI 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

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

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 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 WHEN LOAD IS REDUCED TO 90 PERCENT OF MAX STUD CAPACITY. WHEN LOAD IS AT 100 PERCENT, HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS STAGGERED A MIN OF 12 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED AT 100 PERCENT LOAD WITH TYPE ULIX. 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. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS 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:
- RAITING NO. OF LAYERS & THKNS OF PANELS EACH SIDE \ % OF DESIGN LOAD 2 LAYERS, 5/8 IN. THICK
- UNITED STATES GYPSUM CO 1/2 in. thick Type C, IP-X2, IPC-AR, or WRC; 5/8 in. thick Type AR, C, FRX-G IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRX, or WRC; 3/4 in. thick Types AR, IP-AR or IP-X3, UI TRACODE 6. FASTENERS - (NOT SHOWN) - FOR USE WITH ITEM 5 - 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 1-1/4 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 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. AND 5/8 IN. THICK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN.
- BATTS AND BLANKETS\* (REQUIRED AS INDICATED UNDER ITEM 5) NOM 2 IN. THICK MINERAL WOOL BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. SEE BATTS AND BLANKETS (BKNV OR BZJZ)

METAL SIDING AT 2-HR RATED EXTERIOR WALL -

1-HR METAL SIDING EXTERIOR WALL PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO - June 2021 FIRE TEST: GA WP 8006

DENSGLASS SHEATHING PER ASSEMBLY

TYVEK COMMERCIAL WRAP AIR

AND MOISTURE BARRIER SYSTEM -

18 GAUGE GALVANIZED HAT-CHANNEL

AT 24" ON CENTER VERTICALLY -

METAL SIDING SYSTEM, INSTALL PER

MANUFACTURER REQUIREMENTS

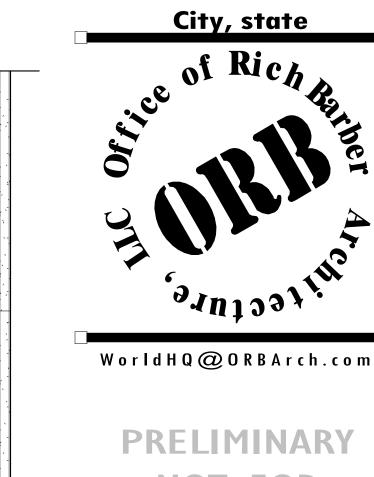
STEEL STUD FRAMING PER

STRUCTURAL AND ASSEMBLY

UNFACED BATT INSULATION PER THERMAL

ENVELOPE VALUES FOR EXTERIOR WALL

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



# GYPSUM ASSOC. FILE NO. WP 8006

THICKNESS: 4-3/4: (FIRE) APPROX. WEIGHT: 6 PSF (FIRE)

> UL R3660, 01NK21103, 012-4-02; UL R2717, 07NK08079, 9-19-08; UL R1319, 4786832806, 4-29-15

> > UL DESIGN U425



EXTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH, 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE S-12, SELF-DRILLING, CORROSION RESISTANT, BUGLE HEAD, SCREWS 12 INCH ON CENTER STUDS ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2 INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS.

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS, STEEL STUDS, INSULATION

BRACING - 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. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN. TESTED AT 100 PERCENT OF DESIGN LOAD. (LOAD-BEARING)

# PROPRIETARY GYPSUM PANEL PRODUCTS

- CERTAINTEED GYPSUM INC. 5/8" Certain Teed® Type X Gypsum Board 5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels
- GEORGIA-PACIFIC GYPSUM LLC 5/8" ThoughRock® Fireguard® Gypsum Board 5/8" DensGlass® Fireguard® Sheathing
- PABCO® GYPSUM 5/8" FLAME CURB® Type X
- 5/8" PABCO® GLASS® Sheathing Type X UNITED STATES GYPSUM COMPANY 5/8" Sheetrock® Brand EcoSmart Panels Firecode® X

5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

EM 52 SAME AS EM 51 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED METAL SIDING AT 1-HR RATED EXTERIOR WALL -

SCALE: 3" = 1'-0"

Contractor must verify all dimensions of project before proceeding with this work. drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone o any other projects, for additions to this project, or for

written permission of the Architect.

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Notice of alternate billing (or payment) cycle written description of such other billing (and/or) cycle

written description on request REVISIONS/SUBMITTALS

DATE DESCRIPTION

the owner's designated agent at 2525 E. CAMELBACK RD. SUITE 500, PHOENIX, AZ 85016 and the owner or its designated agent shall provide th

FIRE ASSEMBLIES - EXTERIOR METAL **FRAMING** 

1-HR STONE VENEER EXTERIOR WALL PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO - June 2021 FIRE TEST: GA WP 8006

# ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS STEEL STUD FRAMING PER STRUCTURAL AND ASSEMBLY STONE VENEER ON ADHESIVE BOND COAT/ POLYMER MODIFIED MORTAR PER MANUFACTURER SPECIFICATIONS -TOOLED MORTAR JOINTS; 1 PART MASONRY CEMENT TO 2 PARTS SAND -2-COAT STUCCO SYSTEM (3/4" THICK): 3/8" THICK SCRATCH COAT, 3/8" THICK BROWN COAT (STUCCO) FLATNESS/ TOLERANCE SHALL MEET VENEER MANUFACTURER SUBSTRATE REQUIREMENTS AT THESE LOCATIONS) — DENSGLASS SHEATHING PER ASSEMBLY LATH: 2.5 POUND PER SQUARE YARD MINIMUM GALVANIZED DIAMOND OR FLAT RIB MESH. INSTALL AT RIGHT ANGLE TO SUPPORTS, OVERLAP ENDS 1" MINIMUM / 4" MAXIMUM OVER SUPPORTS AND OVERLAP SIDES 1/2" MINIMUM / 2" MAXIMUM AND WIRE TIE (18 GAUGE GALVANIZED WIRE PER ASTM A641/641M) AT 6" ON CENTER; ATTACH AT 6" TO 8" ON CENTER ALONG FRAMING SUPPORTS WITH #8 SELF-DRILLING / SELF-TAPPING 7/16" PAN WAFER HEAD GALVANIZED OR EQUAL SCREWS -WATER RESISTIVE MEMBRANE: INSTALL (2) INDIVIDUAL LAYERS OF (60) MINUTE PÁPER OR OWNER APPROVEÓ EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS AND A 6" OVERLAP AT VERTICAL JOINTS —

### GYPSUM ASSOC. FILE NO. WP 8006 GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS, STEEL STUDS, INSULATION

THICKNESS: 4-3/4: (FIRE)

APPROX. WEIGHT: 6 PSF (FIRE)

FIRE TEST:

UL R3660, 01NK21103, 012-4-02; UL R2717, 07NK08079, 9-19-08; UL R1319, 4786832806, 4-29-15 UL DESIGN U425

# City, state

Project Name 1 Project Name 2

**Street Adress** 

World H Q @ O R B Arch.com

**PRELIMINARY** NOT FOR CONSTRUCTION



FIRE DESIGN:

UNFACED BATT INSULATION PER THERMAL ENVELOPE VALUES FOR EXTERIOR WALL

EXTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GLASS MAT GYPSUM SUBSTRATE (SHEATHING) APPLIED PARALLEL TO 3-1/2 INCH, 33 MIL STEEL STUDS 24 INCH ON CENTER WITH 1INCH TYPE S-12, SELF-DRILLING, CORROSION RESISTANT, BUGLE HEAD, SCREWS 12 INCH ON CENTER STUDS ATTACHED TO BOTH VERTICAL LEGS OF FLOOR AND CEILING RUNNERS EITHER BY WELDING OR WITH 1/2 INCH TYPE S-2 PAN HEAD SCREWS. MINERAL OR GLASS FIBER INSULATION FRICTION FIT INTO THE STUD SPACE. EXTERIOR CLADDING TO BE ATTACHED THROUGH GLASS MAT GYPSUM PANEL TO STUDS.

INTERIOR SIDE - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1INCH TYPE S-12 SCREWS 12 INCH ON CENTER.

BRACING - 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. WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT MAY BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE STRUCTURAL DESIGN. TESTED AT 100 PERCENT OF DESIGN LOAD. (LOAD-BEARING)

# PROPRIETARY GYPSUM PANEL PRODUCTS

CERTAINTEED GYPSUM INC. 5/8" Certain Teed® Type X Gypsum Board

5/8" Certain Teed® GlasRoc® Sheathing Type X Gypsum Panels GEORGIA-PACIFIC GYPSUM LLC 5/8" ThoughRock® Fireguard® Gypsum Board

5/8" DensGlass® Fireguard® Sheathing PABCO® GYPSUM

5/8" FLAME CURB® Type X 5/8" PABCO® GLASS® Sheathing Type X

UNITED STATES GYPSUM COMPANY 5/8" Sheetrock® Brand EcoSmart Panels Firecode® X

5/8" Securock® Brand UltraLight Glass-Mat Sheathing Firecode® X

EM 72 SAME AS EM 71 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

STONE VENEER AT 1-HR RATED EXTERIOR WALL -

SCALE: 3" = 1'-0"

Contractor must verify all dimensions at project before proceeding with this work. Do not reproduce these drawings and specifications without the expressed written permission of the Architect. The drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for completion of this project by others except by the expressed written permission of the Architect. © ORB Architecture, LLC 2018

Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after certification and approval of billings and estimates). A written description of such other billing (and/or) cycle applicable to the project is available from the owner or the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016 (602) 778-2832

REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024 ORB #: 00-000

FIRE ASSEMBLIES - EXTERIOR METAL

IW 07 INTERIOR WALL - WOOD FRAMING SCALE: 3" = 1'-0"

TYPICAL FURRING WALL NO RATING REQUIRED

**TYPICAL ONE SIDED WALL - WOOD FRAMING** 

NO RATING REQUIRED

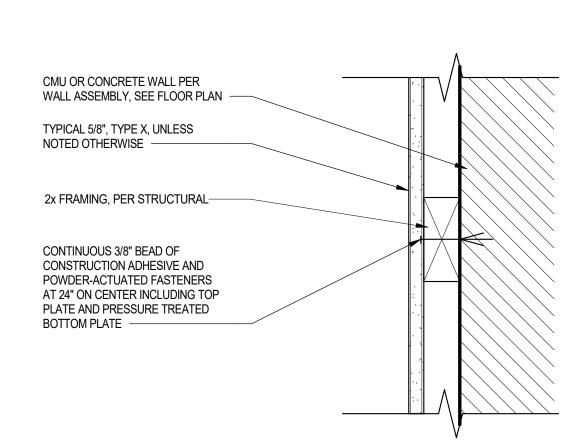
ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS

CMU OR CONCRETE WALL PER WALL ASSEMBLY, SEE FLOOR PLAN 2x FRAMING, PER STRUCTURAL-TYPICAL 5/8", TYPE X, UNLESS NOTED OTHERWISE -3-1/2" UNFACED BATT INSULATION -

 $(\mathsf{FR} \hspace{.05cm}|\hspace{.05cm} 02\hspace{.05cm}|\hspace{.05cm}$  same as FR 01, except use 2 Gypsum layers instead TYPICAL FURRING WALL

TYPICAL FURRING WALL - FLAT STUD NO RATING REQUIRED

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



FLAT WOOD STUD FURRING AT EXPOSED FR 03 CMU/CONCRETE WALLS

1HR TYPICAL WALL - WOOD FRAMING

FIRE TEST - UL DESIGN U305

PROPRIETARY ASSEMBLY - February 8, 2024

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES 1. WOOD STUDS - NOMINAL 2X4 INCH SPACED 16 INCH ON CENTER MAXIMUM, EFFECTIVELY

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

JOINTS AND NAIL-HEADS - JOINTS COVERED WITH JOINT COMPOUND AND PAPER TAPE. JOINT COMPOUND AND PAPER TAPE MAY BE OMITTED WHEN SQUARE EDGE BOARDS ARE USED. AS AN ALTERNATE, NOM 3/32 IN, THICK GYPSUM VENEER PLASTER MAY BE APPLIED TO THE ENTIRE SURFACE OF CLASSIFIED VENEER BASEBOARD WITH THE JOINTS REINFORCED WITH PAPER TAPE. NAILHEADS EXPOSED OR COVERED WITH JOINT COMPOUND.

3. GYPSUM WALLBOARD\* - 5/8 IN. THICK PAPER OR VINYL SURFACED, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS NAILED 7 IN. OC WITH 6D CEMENT COATED NAILS 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 15/64 IN. DIAM HEADS. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS ARE TO BE INSTALLED HORIZONTALLY . **AMERICAN GYPSUM CO** — Types AGX-1(finish rating 23 min.), Type AGX-11 (finish rating 26 min), PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — PG-11 UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), **GEORGIA-PACIFIC GYPSUM L L C** — Type X, Type DS

3A. GYPSUM BOARD\* — (AS AN ALTERNATE TO ITEM 3) — 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED. SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC. WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.

5. BATTS AND BLANKETS\* - (OPTIONAL) - GLASS FIBER OR MINERAL WOOL INSULATION. PLACED TO COMPLETELY OR PARTIALLY FILL THE STUD CAVITIES. CERTAINTEED CORP JOHNS MANVILLE

KNAUF INSULATION LLC MANSON INSULATION INC ROCKWOOL — TYPES ACOUSTICAL FIRE BATTS AND TYPE AFB, MIN. DENSITY 1.69 PCF / 27.0 KG/M3 ROCK WOOL MANUFACTURING CO — DELTA BOARD THERMAFIBER INC — TYPE SAFB, SAFB FF

12. NON-BEARING WALL PARTITION INTERSECTION - (OPTIONAL) - TWO NOMINAL 2 BY 4 IN. STUDS OR NOMINAL 2 BY 6 IN. STUDS NAILED TOGETHER WITH TWO 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY AND FASTENED TO ONE SIDE OF THE MINIMUM 2 BY 4 IN. STUD WITH 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY. INTERSECTION BETWEEN PARTITION WOOD STUDS TO BE FLUSH WITH THE 2 BY 4 IN. STUDS. THE WALL PARTITION WOOD STUDS ARE TO BE FRAMED BY WITH A SECOND 2 BY 4 IN. WOOD STUD FASTENED WITH 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY. MAXIMUM ONE NON-BEARING WALL PARTITION INTERSECTION PER STUD CAVITY. NON-BEARING WALL PARTITION STUD DEPTH SHALL BE AT A MINIMUM EQUAL TO THE DEPTH OF THE BEARING WALL.

SCALE: 3" = 1'-0"

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

FIRE TEST - UL DESIGN U301 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY <u>ARCHITECTURAL CONSTRUCTION DETAIL</u>

PROPRIETARY ASSEMBLY - February 16, 2024

2) LAYERS OF 5/8" TYPE 'X' GYPSUM BOARD, BOTH SIDES, PER ITEM #4 JOINTS PER ITEM #2 BELOW 2x FRAMING PER STRUCTURAL AT 16" ON CENTER MINIMUM AND FIRESTOPPED

> **UL DESIGN U301** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE:
THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN NO. U301. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED INTERIOR WALL PER OWNER'S REQUEST

WOOD STUDS - INTERIOR PARTITION WITH GYPSUM WALLBOARD EACH SIDE.

SCALE: 3" = 1'-0"

1. NAILHEADS - EXPOSED OR COVERED WITH JOINT COMPOUND.

2. JOINTS - EXPOSED JOINTS COVERED WITH JOINT COMPOUND AND PAPER TAPE. JOINT COMPOUND. AND PAPER TAPE MAY BE OMITTED WHEN SQUARE EDGE BOARDS ARE USED. AS AN ALTERNATE, NOM VENEER BASEBOARD WITH THE JOINTS REINFORCED WITH PAPER TAPE.

3. NAILS - 6D CEMENT COATED NAILS 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM, 1/4 IN. DIAM HEADS, AND 8D CEMENT COATED NAILS 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM, 9/32 IN. DIAM HEADS.

4. GYPSUM WALLBOARD\* - 5/8 IN. THICK. TWO LAYERS APPLIED EITHER HORIZONTALLY OR VERTICALLY. INNER LAYER ATTACHED TO STUDS WITH THE 1-7/8 IN. NAILS SPACED 6 IN. OC. OUTER LAYER ATTACHED TO STUDS OVER INNER LAYER WITH THE 2-3/8 IN. LONG NAILS SPACED 8 IN. OC. VERTICAL JOINTS LOCATED OVER STUDS. ALL JOINTS IN FACE LAYERS STAGGERED WITH JOINTS IN BASE LAYERS. JOINTS OF EACH BASE LAYER OFFSET WITH JOINTS OF BASE LAYER ON OPPOSITE SIDE. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO BE INSTALLED HORIZONTALLY.

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSW-C, FSW-G, FSMR-C, FSL, RSX PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2, PG-3, PG-3W, PG-4, PG-5, PG-5W, PG-5WS, PG-9, PG-11, PG-C, PGS-WRS, PGI

NOTES:
INSTALL 3/8 INCH BEAD OF SEALANT PRIOR TO TAPING TO SEAL PERIMETER OF WALL AND

AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, AGX-11, LightRoc

PLYWOOD SHEATHING, PER

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

1HR CORRIDOR WALL WITH QUIETROCK - WOOD FRAMING

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

PROPRIETARY ASSEMBLY - January 30, 2024

FIRE TEST - Design No. U340

NOMINAL 2X4 ALTERNATING ON OPPOSITE SIDES OF NOMINAL 2X8 WOOD PLATES SPACED PER STRUCTURAL (24 INCH ON CENTER MAXIMUM ON STRUCTURAL EACH SIDE OF WOOD PLATES STAGGERED 12 INCH ON CENTER (OR STAGGERED EQUALLY IF LESS THAN 24 INCH ON CENTER) ON OPPOSITE 5/8 INCH TYPE X GYPSUM WALLBOARD SIDE - REFER TO ITEM #1 PER ITEM #2E - INCREASE SIZE OF SCREW TO NO. 6 X 2 1/4 INCH WHERE 3-1/2 INCH THICK GLASS FIBER PLYWOOD SHEATHING OCCURS BATT INSULATION PER ITEM #4B -FIRST LAYER OF 5/8" TYPE X GYPSUM GYPSUM WALLBOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. BOARD PER ITEM #2E BELOW NAIL/SCREW HEAD'S COVERED WITH SECOND LAYER OF 5/8 INCH TYPE X GYPSUM JOINT COMPOUND - REFER TO ITEM #3 WALLBOARD PER ITEM #2E INSTALLED ON CORRIDOR SIDE WITH NO. 6 X 2-1/4 INCH BUGLE HEAD DRYWALL SCREWS NON-BEARING WALL PARTITION

INTERSECTION. REFER TO ITEM #7 --- 3 1/2 INCH THICK GLASS FIBER BATT INSULATION PER ITEM #4B 5/8", TYPE X GYPSUM BOARD PER ITEM #2E BELOW -**CORRIDOR** NOMINAL 2X4 ALTERNATING ON OPPOSITE SIDES OF NOMINAL 2X8 WOOD PLATES FIRST LAYER OF 5/8" TYPE X GYPSUM SPACED PER STRUCTURAL (24 INCH ON BOARD PER ITEM #2E BELOW CENTER MAXIMUM ON EACH SIDE OF WOOD PLATES STAGGERED 12 INCH ON CENTER SECOND LAYER OF 5/8 INCH TYPE X (OR STAGGERED EQUALLY IF LESS THAN 24 GYPSUM WALLBOARD PER ITEM #2E INCH ON CENTER) ON OPPOSITE SIDE -INSTALLED ON CORRIDOR SIDE WITH REFER TO ITEM #1 NO. 6 X 2-1/4 INCH BUGLE HEAD FINISH GYPSUM WALLBOARD JOINTS AND DRYWALL SCREWS NAIL/SCREW HEADS PER ITEM #3 -

5/8 INCH TYPE GYPSUM WALLBOARD INTERSECTION WITH CONTINUOUS PLYWOOD PER ITEM #2E - INCREASE SIZE OF BETWEEN STUDS - INCREASE NAIL LENGTH SCREW TO NO. 6 X 2-1/4 INCH WHERE TO 3-1/2 INCH - REFER TO ITEM #7 -PLYWOOD SHEATHING OCCURS PLYWOOD SHEATHING WHERE - 3-1/2 INCH THICK GLASS FIBER BATT OCCURS PER STRUCTURAL -INSULATION PER ITEM #4B **CORRIDOR** NOMINAL 2X4 ALTERNATING ON OPPOSITE

SIDES OF NOMINAL 2X8 WOOD PLATES SPACED PER STRUCTURAL (24 INCH ON CENTER MAXIMUM ON EACH SIDE OF WOOD PLATES STAGGERED 12 INCH ON CENTER (OR STAGGERED EQUALLY IF LESS THAN 24 INCH ON CENTER) ON OPPOSITE SIDE - REFER TO

NON-BEARING WALL PARTITION

FIRST LAYER OF 5/8" TYPE X GYPSUM BOARD PER ITEM #2E BELOW SECOND LAYER OF 5/8 INCH TYPE 'X' GYPSUM WALLBOARD PER ITEM #2E INSTALLED ON CORRIDOR SIDE WITH NO. 6 X 2-1/4 INCH BUGLE HEAD DRYWALL SCREWS

# HORIZONTAL SECTION

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN NO. U340. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED INTERIOR WALL PER OWNER'S REQUEST

THIS DESIGN WAS EVALUATED USING A LOAD DESIGN METHOD OTHER THAN THE LIMIT STATED DESIGN METHOD (E.G., WORKING STRESS DESIGN METHOD). FOR JURISDICTIONS EMPLOYING THE LIMIT STATED DESIGN METHOD, SUCH AS CANADA, A LOAD RESTRICTION FACTOR SHALL BE USED, SEE GUIDE BXUV

1. WOOD STUDS - NOM 2 BY 4 IN. ALTERNATING ON OPPOSITE SIDES OF NOM 2 BY 6 IN. WOOD PLATES. SPACED 24 IN. OC MAX ON EACH SIDE OF WOOD PLATES, STAGGERED 12 IN. OC (OR STAGGERED EQUALLY IF LESS THAN 24 IN. OC) ON OPPOSITE SIDE.

2. GYPSUM BOARD\* - 5/8 IN. THICK GYPSUM BOARD. PAPER OR VINYL FACED WITH BEVELED. SQUARE. TAPERED OR ROUNDED EDGES. GYPSUM BOARD NAILED TO EACH STUD 7 IN. OC WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 1/4 IN. DIAM HEAD. AS AN ALTERNATE, NO. BUGLE HEAD DRYWALL SCREWS, 1-7/8 IN. LONG, MAY BE SUBSTITUTED FOR THE 6D CEMENT COATE NAILS. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO BE INSTALLED HORIZONTALLY 2E. GYPSUM WALLBOARD\* - ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. L501, G512 OR U305 — NOM. 5/8 IN. THICK GYPSUM BOARD, PAPER OR VINYL FACED WITH BEVELED, SQUARE, TAPERED OR ROUNDED EDGES. GYPSUM BOARD NAILED TO EACH STUD 7 IN. OC WITH 6D CEMENT COATED NAILS, 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 1/4 IN. DIAM HEAD. AS AN ALTERNATE, NO. 6 BUGLE HEAD DRYWALL SCREWS, 1-7/8 IN. LONG, MAY BE SUBSTITUTED FOR <u>IE 6D CEMENT COATED NAILS</u>. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO E NSTALLED HORIZONTALLY. BATTS AND BLANKETS PLACED IN STUD CAVITY AS DESCRIBED IN ITEM 4B

WHEN STEEL FRAMING MEMBERS\* (ITEM 5) ARE USED, GYPSUM BOARD ATTACHED TO FURRING

CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC. AMERICAN GYPSUM CO - CKNX.R14196: 5/8" FIREBLOC TYPE X. CERTAINTEED GYPSUM INC - CKNX.R3660: 5/8" CERTAINTEED TYPE X. GEORGIA-PACIFIC GYPSUM L L C - CKNX.R2717: 5/8" TOUGHROCK FIREGUARD X.

NATIONAL GYPSUM CO- CKNX.R3501: 5/8" GOLD BOND BRAND FIRE-SHIELD GYPSUM BOARD, PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM - CKNX.R7094: 5/8" PABCO GYPSUM

SHEATHING TYPE X UNITED STATES GYPSUM CO- CKNX.R1319: SHEETROCK BRAND FIRECODE X PANELS - 5/8". 3. JOINTS AND NAILHEADS - GYPSUM BOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS COVERED WITH JOINT COMPOUND. AS AN ALTERNATE, NOM 3/32 IN. THICK GYPSUM VENEER

PLASTER MAY BE APPLIED TO ENTIRE SURFACE OF CLASSIFIED VENEER BASEBOARD. JOINTS

4B. BATTS AND BLANKETS\* - (REQUIRED FOR USE WITH WALL AND PARTITION FACINGS AND ACCESSORIES, ITEM 2A AND GYPSUM BOARD ITEM 2E) — GLASS FIBER INSULATION, NOM 3-1/2 IN. THICK, MIN. DENSITY OF 0.80 PCF, WITH A FLAME SPREAD OF 25 OR LESS AND A SMOKE DEVELOPED OF 50 OR LESS, FRICTION-FITTED TO COMPLETELY FILL THE STUD CAVITIES. SEE BATTS AND BLANKETS CATEGORY (BKNV) FOR NAMES OF MANUFACTURERS.

REINFORCED.

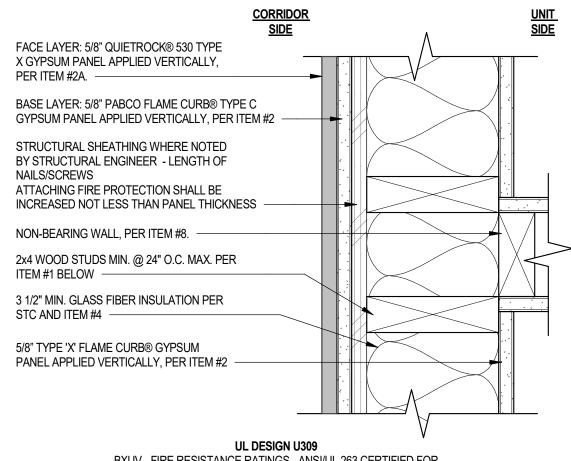
7. NON-BEARING WALL PARTITION INTERSECTION - (OPTIONAL) — TWO NOMINAL 2 BY 4 IN. STUD OR NOMINAL 2 BY 6 IN. STUD NAILED TOGETHER WITH TWO 3IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY AND FASTENED TO ONE SIDE OF THE MINIMUM 2 BY 4 IN. STUD WITH 3 IN. LONG 10D NAILS SPACED A MAX 16 IN. OC. VERTICALLY. INTERSECTION BETWEEN PARTITION WOOD STUDS TO BE FLUSH WITH THE 2 BY 4 IN. STUDS. THE WALL PARTITION WOOD STUDS ARE TO BE FRAMED BY WITH A SECOND 2 BY 4 IN. WOOD STUD FASTENED WITH 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY. MAXIMUM ONE NON-BEARING WALL PARTITION INTERSECTION PER STUD CAVITY. NON-BEARING WALL PARTITION STUD DEPTH SHALL BE AT A MINIMUM EQUAL TO THE DEPTH OF THE

\* INDICATED SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

> **ALTERNATE ASSEMBLY TO IW 02**

1W02 1-HR CORRIDOR WALL - WOOD FRAMING - BEARING SCALE: 1 1/2" = 1'-0" 1HR CORRIDOR WALL WITH QUIETROCK - WOOD FRAMING PROPRIETARY ASSEMBLY - PABCO- January 30, 2024 FIRE TEST - Design No. U309 **SOUND RATING: 53 STC PER NRCC TLA-04-051** REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

> ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN NO. U309. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED INTERIOR WALL PER OWNER'S REQUEST

. WOOD STUDS - NOM 2 BY 4 IN., SPACED 24 IN. OC EFFECTIVELY FIRESTOPPED. 2. GYPSUM WALLBOARD\* - 5/8 IN. THICK, 4 FT WIDE, APPLIED EITHER HORIZONTALLY OR VERTICALLY NAILED TO STUDS AND BEARING PLATES WITH 6D CEMENT COATED NAILS MIN. 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 1/4 IN. DIAM HEADS SPACED 7 IN. OC. FINISH RATING 27 MIN. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO BE INSTALLED HORIZONTALLY WHEN STEEL FRAMING MEMBERS\* (ITEMS 5 OR ANY ALTERNATE CLIPS) ARE USED, WALLBOARD ATTACHED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — TYPE C, PG-9, PG-11, PG-C, PGS-WRS, PGI PABCO BUILDING PRODUCTS LLC 5/8" FLAME CURB TYPE X CORRIDOR SIDE: PABCO BUILDING PRODUCTS LLC 5/8" FLAME CURB TYPE C

2A. GYPSUM BOARD\* - CORRIDOR SIDE — (AS AN ALTERNATE TO ITEM 2) — NOMINAL 5/8 IN. THICK, 4 FT WIDE PANELS, APPLIED VERTICALLY TO STUDS AND BEARING PLATES ON ONE SIDE OF THE ASSEMBLY WITH 1-5/8 IN. LONG TYPE S SCREWS SPACED 12 IN. OC AT PERIMETER OF PANELS AND 8 IN. OC IN THE FIELD. HORIZONTAL JOINTS OF VERTICALLY APPLIED PANELS NEED NOT BE BACKED BY STUDS. PANEL JOINTS COVERED WITH PAPER TAPE AND TWO LAYERS OF JOINT COMPOUND. SCREWHEADS COVERED WITH TWO LAYERS OF JOINT COMPOUND. BATTS AND BLANKETS PLACED IN STUD CAVITY AS DESCRIBED IN ITEM 4E. NOT EVALUATED FOR USE WITH STEEL FRAMING MEMBERS, FURRING

**CORRIDOR SIDE:** PABCO BUILDING PRODUCTS LLC, DBA PABCO GYPSUM - TYPE QUIETROCK 530 (FINISH RATING 23MINUTES) B. **JOINTS AND FASTENER HEADS -** WALLBOARD JOINTS COVERED WITH PAPER TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND. GYPSUM PLASTER NOT MORE THAN 1/8 IN. THICK MAY BE APPLIED OVER THE WALLBOARD IN ADDITION TO THE SPECIFIED JOINT

CHANNELS OR FIBER, SPRAYED.

4. BATTS AND BLANKETS\* - (NOT SHOWN) — OPTIONAL GLASS FIBER INSULATION. 8. NON-BEARING WALL PARTITION INTERSECTION - (OPTIONAL) — TWO NOMINAL 2 BY 4 IN. STUD OR NOMINAL 2 BY 6 IN. STUD NAILED TOGETHER WITH TWO 3IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC VERTICALLY AND FASTENED TO ONE SIDE OF THE MINIMUM 2 BY 4 IN. STUD WITH 3 IN. LONG 10D NAILS SPACED A MAX 16 IN. OC. VERTICALLY, INTERSECTION BETWEEN PARTITION WOOD STUDS TO BE FLUSH WITH THE 2 BY 4 IN. STUDS. THE WALL PARTITION WOOD STUDS ARE TO BE FRAMED BY WITH A SECOND 2 BY 4 IN. WOOD STUD FASTENED WITH 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY. MAXIMUM ONE NON-BEARING WALL PARTITION INTERSECTION PER STUD CAVITY. NON-BEARING WALL PARTITION STUD DEPTH SHALL BE AT A MINIMUM EQUAL TO THE DEPTH OF THE

NOTES: INSTALL 3/8 INCH BEAD OF SEALANT PRIOR TO TAPING TO SEAL PERIMETER OF WALL AND

1-HR CORRIDOR WALL WITH QUIETROCK - WOOD 1-HR CORRIDOR WALL - WOOD FRAMING

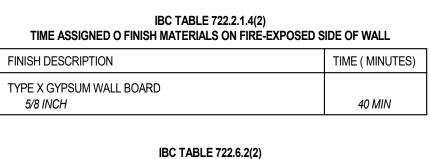
IW02 FRAMING ALT 2 ANSI/UL 263 DESIGN NO U309

1HR CORRIDOR WALL - WOOD FRAMING GENERIC ASSEMBLY FIRE TEST - IBC TABLE 722.2.1.4(2)

SOUND RATING: 50-STC - RAL-TL90-42 BY RIVERBANK ACOUSTICAL LABORATORIES ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS

(2) LAYERS 5/8" TYPE 'X' GYPSUM WALLBOARD ON CORRIDOR SIDE; BASE LAYER APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 1-1/4" TYPE 'W' DRYWALL SCREWS AT 7" ON CENTER, FACE LAYER APPLIED AT RIGHT ANGLES TO BASE LAYER WITH 1-7/8" TYPE 'W' DRYWALL SCREWS AT 7" ON CENTER AND OFFSET 3" FROM SCREWS AT BASE LAYER I40 MINS. PER LAYER PER TABLE 722.6.2(1)] -(1) LAYER 5/8" TYPE 'X' GYPSUM WALLBOARD ON UNIT SIDE INSTALLED VERTICALLY SO THAT ALL EDGES ARE SUPPORTED OR SHALL BE INSTALLED HORIZONTALLY WITH THE HORIZONTAL JOINTS STAGGERED 24" EACH SIDE AN UNSUPPORTED OR FINISHED, SCREWED WITH 1-1/4" TYPE 'W' DRYWALL SCREWS AT 7" ON CENTER [40 MINS. PER LAYER PER TABLE 722.6.2(1)] -SHEAR PANEL AS REQUIRED, SEE STRUCTURAL FOR OCCURRENCE, LENGTH OF NAILS/ SCREWS ATTACHING FIRE PROTECTION SHALL BE INCREASED NOT LESS THAN PANEL THICKNESS -2x4 WOOD STUDS MINIMUM AT 16" ON CENTER MAXIMUM [20 MINUTES PER TABLE 722.6.2(2)] (2x6 OR 2x8 PER UNIT PLANS) -FILL CAVITIES WITH 2" CELBAR SPRAY INSULATION HAVING MIN. NOMINAL DENSITY OF 2.6 POUND PER CUBIC FOOT -

> NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL TO SEAL PERIMETER OF WALL AND INTERSECTIONS.



TIME ASSIGNED FOR CONTRIBUTION OF WOOD FRAME TIME (MINUTES) FINISH DESCRIPTION WOOD STUDS 16 INCHES ON CENTER 20 MIN

INCHES ON CENTER. b. ALL STUDS SHALL BE NOMINAL 2x4 AND ALL JOISTS SHALL HAVE A NOMINAL THICKNESS OF NOT LESS THAN 2 INCHES.

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

1HR CORRIDOR WALL WITH RESILIENT CLIPS - WOOD FRAMING

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

GENERIC ASSEMBLY - June 2021

SOUND RATING: 50-54 STC

FIRE TEST - GA FILE NO. WP 3242

a. THIS TABLE DOES NOT APPLY TO STUDS OR JOIST SPACED MORE THAN 16

NOTE: INSTALL CONTINUOUS 3/8 INCH BEAD OF SEALANT ALL AROUND PERIMETER AND WALL

1-HR UNIT DEMISING WALL - WOOD FRAMING; ENHANCED STC GENERIC ASSEMBLY - February 2024 FIRE TEST - LEGACY REPORT NO. ESR-1338

**SOUND RATING: 67 STC PER TL-93-269** 

INTERSECTIONS, BOTH SIDES.

SOUND DESIGN:

1-HR UNIT DEMISING WALL - WOOD FRAMING

GYPSUM WALLBOARD, PER

PLYWOOD SHEATHING, PER

ASSEMBLY, EACH SIDE

2x4 STAGGERED WOOD

STUDS AT 16" ON

CENTER, EACH SIDE -

MINERAL WOOL BATT

AT 10'-0" ON CENTER

ADD 2x4 WOOD STUD

3-1/2 INCH UNFACED BATT

INSTALLED IN EACH STUD

CAVITY, BOTH SIDES OF THE

GYPSUM WALLBOARD

15.9 MM TYPE X (C)

INSULATION SHALL BE

AT FIRE BLOCKING

MAXIMUM -

VERTICAL FIRE BLOCKING

STRUCTURAL

FIRE TEST - GYPSUM ASSOC. FILE NO. WP 5512 **SOUND RATING: 56 STC PER TL-93-266** 

PROPRIETARY ASSEMBLY: UNITED STATES GYPSUM CO - June 2021

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

DESIGN NO. WP 5512

GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS STEEL STUDS, INSULATION

ABSORPTIVE MATERIAL

GLASS FIBER (G1) 89 MM BATT

ONE LAYER 5/8 INCH TYPE 'X' GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT

RIGHT ANGLES TO EACH SIDE OF DOUBLE ROW OF 2 X 4 WOOD STUDS 16 INCH ON CENTER ON SEPARATE

PLATES 1 INCH MINIMUM APART (SEE DETAIL ABOVE) WITH 2 INCH TYPE W SCREWS 7 INCHES ON CENTER.

JOINTS STAGGERED 16 INCHES ON OPPOSITE SIDES. HORIZONTAL BRACING REQUIRED AT MID-HEIGHT

SOUND TRANSMISSION THROUGH GYPSUM WALLBOARD WALLS: SOUND TRANSMISSION

TWO LAYERS 3-1/2 INCH UNFACED GLASS FIBER INSULATION FRICTION FIT IN STUD CAVITY.

SOUND TESTED AS CONSTRUCTED FOR FIRE PER WP 8512

THICKNESS:

AIR SPACE

9-1/4" (FIRE AND SOUND)

UL DESIGN U341

TEST NUMBER STC

TL-93-266

UL R4024, 10-31-68

APPROX. WEIGHT: 7.1 PSF (FIRE AND SOUND)

SOUND TEST: NOAL 17-0837, 8-25-17

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS

WRITTEN SPECIFICATIONS 2) LAYERS OF 5/8" TYPE " GYPSUM WALLBOARD RESILIENT CHANNELS -EACH SIDE 2x4 WOOD STUDS AT STRUCTURAL SHEATHING WHERE NOTED 16" ON CENTER EACH SIDE, STAGGERED 8" BY STRUCTURAL ENGINEER -MINIMUM 2x4 WOOD STUDS SHEAR PANEL AS REQUIRED, SEE STRUCTURAL AIR SPACE 3" MINERAL FIBER INSULATION 3-1/2" THICK FIBERGLASS BATT INSULATION, EACH STUD CAVITY, BOTH SIDES OF WALL -5/8" TYPE X GYPSUM WALLBOARD, PER FIBERGLASS BATT VERTICAL FIRE-BLOCKING AT 10'-0" ON CENTER -

GYPSUM ASSOC. FILE NO. WP 3242 GYPSUM WALLBOARD, RESILIENT CHANNELS, INSULATION, WOOD STUDS

> 5-3/8" (FIRE AND SOUND) APPROX. WEIGHT: 7 PSF (FIRE AND SOUND) BASED ON UL R14196,

05NK05371, 2-15-05, UL DESIGN U309 SOUND TEST: NRCC TL-93-098, IRC-IR-761, 3-98

RESILIENT CHANNELS 16 INCH ON CENTER ATTACHED AT RIGHT ANGLES TO ONE SIDE OF 2 x 4 WOOD STUDS AT 24 INCH ON CENTER WITH 1-1/4 INCH TYPE S DRYWALL SCREWS. ONE LAYER 5/8 INCH TYPE > GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL TO CHANNELS WITH 1 INCH TYPE S SCREWS 8 INCH ON CENTER WITH VERTICAL JOINTS LOCATED MIDWAY BETWEEN STUDS 3 INCH MINERAL OR GLASS FIBER INSULATION IN STUD CAVITY.

OPPOSITE SIDE: ON LAYER 5/8 INCH TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 6d CEMENT COATED NAILS, 1 7/8 INCH LONG, 0.0915" SHANK, 15/64" HEADS, 7 INCH ON CENTER. VERTICAL JOINTS STAGGERED 24 INCH ON OPPOSITE SIDE.

(LOAD BEARING)

SOUND DESIGN: SOUND TESTED AS CONSTRUCTED FOR FIRE

**ALT** GA WP 3242

IF RESILIENT CHANNEL SOLUTION IS CHOSEN, SHEAR WALLS MUST BE REMOVED FROM CORRIDORS OR STC RATING WILL BE GREATLY DIMISHED

1-HR CORRIDOR WALL WITH RESILIENT CHANNEL -WOOD FRAMING

ISSUED: February 2024 RENEWAL DATE: February 2025

SCALE: 3" = 1'-0"

SUPPLEMENT OF THE NDS.

c) Two layers of gypsum board on each side:

ICC-ES EVALUATION REPORT NUMBER: 1338

GYPSUM WALLBOARD

15.9 MM TYPE X (C)

City, state

World HQ @ ORB Arch.com

LEGACY HOSPITALITY

Contractor must verify all dimensions project for which they are made is executed or not. The

© ORB Architecture, LLC 2018 than thirty days. (This contract may allow the owner t 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 8501 and the owner or its designated agent shall provide t

MM) OR 12 INCHES (305 MM) ON CENTER, AND THE ROWS ARE SPACED A MINIMUM OF 1 INCH (25.4 MM) APART. REVISIONS/SUBMITTALS

written description on request

1-HR UNIT SEPARATION WALL - WOOD FRAMING -ENHANCED STC

**LEGACY REPORT NO. ESR-1338** 

THE ASSEMBLY DESCRIPTION BELOW IS PER LEGACY REPORT NO. ESR-1338.

CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION

THE FRAMING CONSISTS OF TWO ROWS OF NOMINAL 2 X 3 INCH WOOD STUDS SPACED AT 16 INCHES (406

MM) ON CENTER OR NOMINAL 2 X 4 INCH WOOD STUDS SPACED AT 24 INCHES (610 MM) ON CENTER, WITH

BLOCKING OF THE SAME SIZE AT MID-HEIGHT. STUDS IN OPPOSITE ROWS ARE STAGGERED 8 INCHES (203

THE PLATES FOR EACH ROW MAY BE OF THE SAME SIZE AND MATERIAL, OR COMMON PLATES MAY BE USED

FOR THE TWO ROWS. THE EXTERIOR FACE OF EACH ROW IS THEN COVERED WITH 5/8 INCH THICK (15.9 MM),

TYPE X GYPSUM WALLBOARD APPLIED HORIZONTALLY OR VERTICALLY USING 6D CEMENT COATED COOLER

BETWEEN THE TWO ROWS OF STUDS, OR 1/2 INCH THICK (12.7 MM) GYPSUM WALLBOARD. WHERE NOMINAL 2

TEST NUMBER

SCALE: 3" = 1'-0"

NAILS AT 7 INCHES (178 MM) ON CENTER WITH END JOINTS ON NAILING MEMBERS. FIRE BLOCKS, WHEN

REQUIRED, MAY BE OF MINERAL WOOL BATTS, 2 INCHES (51 MM) THICK IN THE INTERVENING SPACES

X 3 STUDS ARE USED, THEY MUST BE STRESS GRADED LUMBER AS SET FORTH IN TABLE 4C OF THE

ABSORPTIVE MATERIAL

BOTH SIDES

GLASS FIBER (G1) 89 MM BATT

WALL ASSEMBLY PER OWNER'S REQUEST AREA

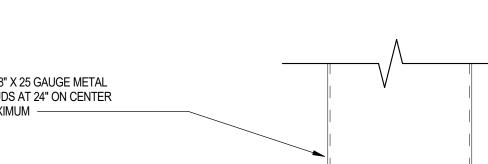
ONE-HOUR GYPSUM WALLBOARD STAGGERED STUD BEARING PARTITION:

2-HR INTERIOR WALL - WOOD FRAMING

 $(\mathsf{FR} \hspace{.05cm}|\hspace{.05cm} \mathsf{06}\hspace{.05cm}|\hspace{.05cm} \mathsf{SAME}\hspace{.05cm}\mathsf{AS}\hspace{.05cm}\mathsf{FR}\hspace{.05cm}\mathsf{07},\mathsf{EXCEPT}\hspace{.05cm}\mathsf{2}\hspace{.05cm}\mathsf{LAYERS}\hspace{.05cm}\mathsf{OF}\hspace{.05cm}\mathsf{GYPSUM}$ RC CHANNEL FURRING AT EXPOSED CMU/CONC.

SET-OUT WALL CONSTRUCTION-METAL FRAMING SCALE: 3" = 1'-0"

### METAL FRAMING (IBC 2018 SECTION 803.15.2)



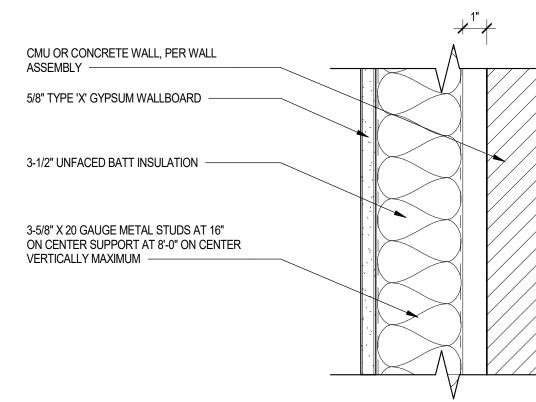
ARCHITECTURAL CONSTRUCTION DETAIL

WRITTEN SPECIFICATIONS

3-5/8" X 25 GAUGE METAL STUDS AT 24" ON CENTER MAXIMUM -NO FIRE RATING REQUIRED -

FURRING AT EXPOSED CMU/ CONCRETE WALL - METAL FRAMING NO RATING REQUIRED

### ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



SAME AS FW 01, EXCEPT USE 2 GYPSUM LAYERS INSTEAD

FURRING AT EXPOSED CMU/ CONCRETE WALL - FLAT STUD

NO RATING REQUIRED

M | 05 | SAME AS IM 04, EXCEPT 3-HOUR RATED; SEE TABLE ABOVE

2HR/3HR WALL - METAL FRAMING

(2) LAYER 5/8" TYPE "X" GYPSUM

R-13 UNFACED BATT INSULATION AT WALLS

BETWEEN LIVING AREAS AND BEDROOMS

METAL STUD FRAMING, PER STRUCTURAL

WALLBOARD, BOTH SIDES

FIRE TEST - UL DESIGN U423

SOUND RATING: 46 STC

PROPRIETARY ASSEMBLY: UNITED STATES GYPSUM CO - December 28, 2023

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

DESIGN GA FILE NO. U423

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

UNITED STATES

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

2. STEEL STUDS - MINIMUM 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

BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL DESIGN DETAILS ENHANCING THE

EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS

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

EXCEED 24 IN. OC. STUDS ATTACHED TO FLOOR AND CEILING RUNNERS WITH 1/2 IN. LONG TYPE S-12

STUDS, SUPPORT SHALL BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR

STEEL SCREWS ON BOTH SIDES OF THE STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED

REQUIREMENTS OF ALL APPLICABLE LOCAL CODE AGENCIES. THE MAX STUD SPACING SHALL NOT

3. LATERAL SUPPORT MEMBERS - (NOT SHOWN) — WHERE REQUIRED FOR LATERAL SUPPORT OF

5. GYPSUM WALLBOARD\* - GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED

VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE

SYSTEMS) STAGGERED ONE STUD CAVITY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL

STUD CAVITY ON OPPOSITE SIDES OF STUDS. VERTICAL JOINTS IN ADJACENT LAYERS (MULTILAYER

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 JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE

JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED AT 100 PERCENT LOAD WITH TYPE

ULIX. 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. WHEN USED

IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS 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

INTERIOR OR EXTERIOR WALLS (FIRE FROM EITHER SIDE)

WALLBOARD PROTECTION

NUMBER OF LAYERS AND THICKNESS

PERCENT OF

**DESIGN LOAD** 

100

100

BOTH SIDES OF WALL -

OF BOARD IN EACH LAYERS

2 LAYER, 5/8 INCH THICK

3 LAYER, 1/2 INCH THICK

6. FASTENERS — (NOT SHOWN) — FOR USE WITH ITEM 5 - 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).

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. AND 5/8 IN.

IN. FROM FIRST LAYER. THREE-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN. THICK PANELS,

THICK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC WITH SCREWS OFFSET 8

SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN. THICK PANELS, SPACED 24 IN. OC. THIRD

INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS

SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

9. JOINT TAPE AND COMPOUND - VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN

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..

TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE,

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL CERTIFICATION MARK.

LAYER- 2-1/4 IN. LONG FOR 1/2 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM

7A. BATTS AND BLANKETS\* — PLACED IN STUD CAVITIES, ANY GLASS FIBER OR MINERAL WOOL

SIDES OF STUDS STAGGERED A MIN OF 12 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT

MEANS AS SPECIFIED IN THE DESIGN OF A PARTICULAR STEEL STUD WALL SYSTEM.

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN U423.

CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST AREA

FASTENERS SPACED NOT GREATER THAN 24 IN. OC.

IN ACCORDANCE WITH THE AISI SPECIFICATIONS.

RATINGS ARE AS FOLLOWS:

RATING

2 HOUR

2 HOUR

LAYER BELOW.

UNITED STATES GYPSUM CO - 5/8 INCH THICK TYPE AR, SGX

SCALE: 3" = 1'-0"

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

SCALE: 3" = 1'-0" ANSI/UL 263 DESIGN NO U423

TYPICAL ONE SIDED WALL - METAL FRAMING NO-RATING REQUIRED

# ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS CMU OR CONCRETE WALL, PER WALL ASSEMBLY WALLBOARD 3-1/2" UNFACED BATT INSULATION -3-5/8" X 20 GAUGE METAL STUDS AT 16" ON CENTER SUPPORT AT 8'-0" ON CENTER VERTICALLY MAXIMUM -

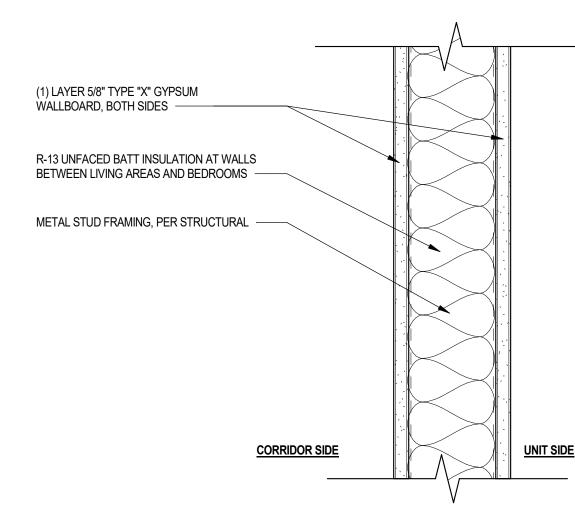
 $(\mathsf{FR} \hspace{.05cm}|\hspace{.05cm} \mathsf{04}\hspace{.05cm}|\hspace{.05cm}\mathsf{same}\hspace{.05cm}\mathsf{as}\hspace{.05cm}\mathsf{fw}\hspace{.05cm}\mathsf{04},\hspace{.05cm}\mathsf{except}\hspace{.05cm}\mathsf{use}\hspace{.05cm}\mathsf{2}\hspace{.05cm}\mathsf{Gypsum}\hspace{.05cm}\mathsf{layers}\hspace{.05cm}\mathsf{instead}$ 

1HR TYPICAL WALL - METAL FRAMING PROPRIETARY ASSEMBLY: UNITED STATES GYPSUM CO - December 28, 2023 FIRE TEST - UL DESIGN U423 **SOUND RATING: 46 STC** 

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS



DESIGN GA FILE NO. U423 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN U423. CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST AREA

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.

2. STEEL STUDS - MINIMUM 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 SPECIFICATIONS.

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.

5. GYPSUM WALLBOARD\* - 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 WHEN LOAD IS REDUCED TO 90 PERCENT OF MAX STUD CAPACITY. WHEN LOAD IS AT 100 PERCENT, HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS STAGGERED A MIN OF 12 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED AT 100 PERCENT LOAD WITH TYPE ULIX. 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. WHEN USED IN WIDTHS OTHER THAN 48 IN.. GYPSUM PANELS 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:

# INTERIOR OR EXTERIOR WALLS (FIRE FROM EITHER SIDE)

RATING	WALLBOARD PROTECTION BOTH SIDES OF WALL - NUMBER OF LAYERS AND THICKNESS OF BOARD IN EACH LAYERS	PERCENT OF DESIGN LOAD
1 HOUR	1 LAYER, 5/8 INCH THICK	100

UNITED STATES GYPSUM CO - 5/8 INCH THICK TYPE AR, SGX

6. FASTENERS — (NOT SHOWN) — FOR USE WITH ITEM 5 - 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 1-1/4 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. SINGLE LAYER SYSTEM WITH TYPE ULIX: 1 IN. LONG, SPACED 12 IN. OC ALONG THE PERIMETER AND IN THE FIELD 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 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- 1-5/8 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.

7A. BATTS AND BLANKETS\* — 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.

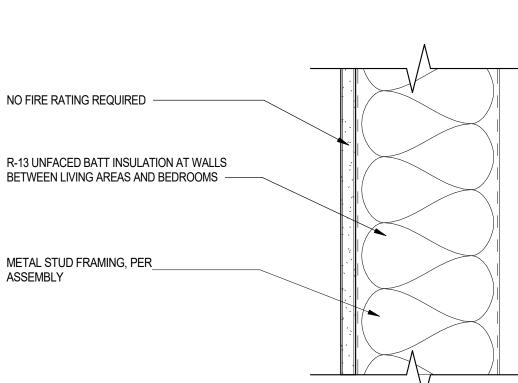
9. JOINT TAPE AND COMPOUND - VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE. EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER LAYERS. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM BOARDS ARE SUPPLIED WITH SQUARE EDGES. \* INDICATES SUCH PRODUCTS SHALL BEAR THE UL CERTIFICATION MARK.

-HR INTERIOR WALL - METAL FRAMING SCALE: 3" = 1'-0" SCALE: 3" = 1'-0" ANSI/UL 263 DESIGN NO U423

ARCHITECTURAL CONSTRUCTION DETAIL

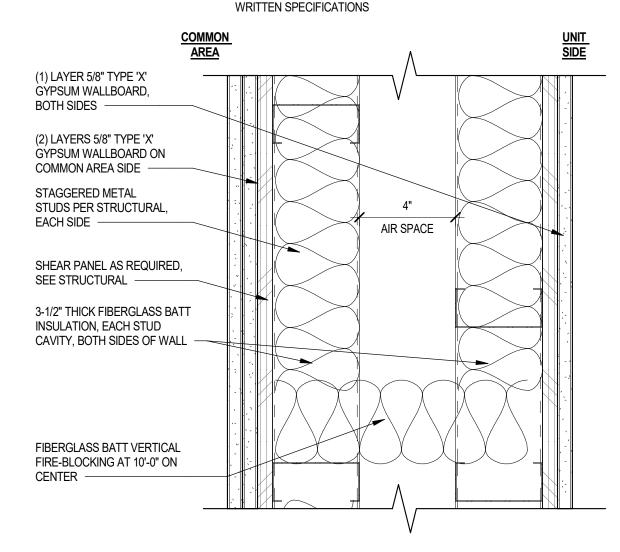
NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS



1-HR UNIT DEMISING WALL AT COMMON AREAS - METAL STUD WALL; ENHANCED STC PROPRIETARY ASSEMBLY: CERTAINTEED - June 2021 FIRE TEST: GA FILE NO. WP 0953 SOUND RATING: 60-64 STC

### ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S



DESIGN NO. WP 0953 WALLS AND INTERIOR PARTITIONS, NON COMBUSTIBLE

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER GA WP 0953. CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST GYPSUM WALLBOARD, STEEL STUDS

FIRE DESIGN - ONE LAYER 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH SIDE OF A DOUBLE ROW OF 2-1/2 INCH, 15 MIL STEEL STUDS STAGGERED 24 INCH ON CENTER AND NOT LESS THAN 1 INCH APART WITH 1 INCH TYPE S SCREWS 8 INCH ON CENTER. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS. HORIZONTAL JOINTS ON OPPOSITE SIDES NEED NOT BE STAGGERED OR BACKED. LATERAL

PROPRIETARY GYPSUM PANEL PRODUCTS CERTAINTEED GYPSUM INC - 5/8" CERTAINTEED® TYPE X GYPSUM BOARD

SOUND DESIGN - SOUND TESTED WITH A SECOND LAYER OF 5/8 INCH PROPRIETARY TYPE X GYPSUM WALLBOARD ON ONE SIDE AND 3-1/2 INCH GLASS FIBER INSULATION ON BOTH SIDES IN CAVITY.

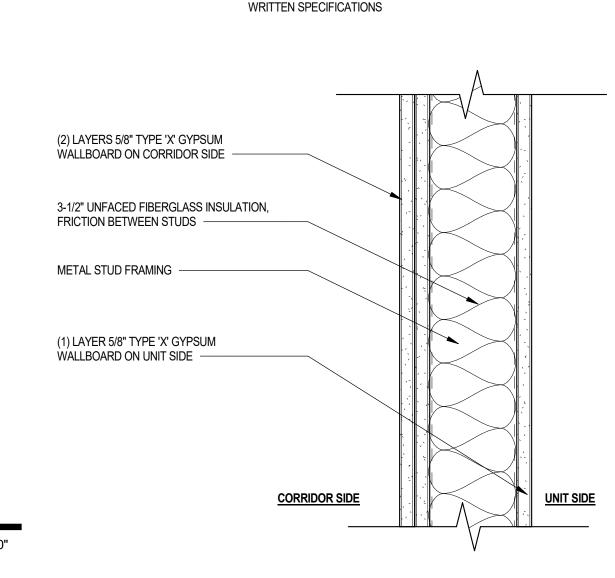
BRACING ON BOTH SIDES OF THE WALL NOT MORE THAN 5 FEET ON CENTER VERTICALLY. (NLB)

THICKNESS: 7-1/4 INCH (FIRE) 7-7/8 INCH (SOUND) **APPROXIMATE. WEIGHT:** 5 PSF (FIRE) 7.5 PSF (SOUND) UL R3660, 07NK21428, 2-14-08 UL DESIGN V469 SOUND TEST: NGC 2017063, 6-6-17

# 1-HR INTERIOR UNIT SEPARATION WALL - METAL FRAMING-ENHANCED ACOUSTICS

1HR CORRIDOR WALL - METAL FRAMING GENERIC ASSEMBLY FIRE TEST - GA FILE NO. WP 1052 SOUND RATING: 50-54 STC

> ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S



DESIGN GA FILE NO. WP 1052 WALLS AND INTERIOR PARTITIONS, NON COMBUSTIBLE

GYPSUM WALLBOARD, STEEL STUDS

FIRE DESIGN - ONE LAYER 5/8 INCH TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH SIDE OF 3-5/8 INCH, 18 MIL STEEL STUDS 24 INCH ON CENTER WITH 1 INCH TYPE S SCREWS 8 INCH ON CENTER AT VERTICAL JOINTS AND 12 INCH ON CENTER AT WALL PERIMETER AND INTERMEDIATE STUDS. FACE LAYER 5/8 INCH TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO ONE SIDE WITH 1-5/8 INCH TYPE S SCREWS 12 INCH ON CENTER.

JOINTS STAGGERED 24 INCH EACH LAYER AND SIDE. (NLB)

SOUND TESTED WITH 3-1/2 INCH GLASS FIBER FRICTION FIT IN STUD SPACE.

5-1/2 INCH (FIRE AND SOUND) 8 PSF (FIRE) APPROX. WEIGHT:

8.2 PSF (SOUND) SEE WP 1350 (FM WP-45, 6-19-68; OSU T-1770, 8-61; ULC 79T484, 79T500, 79T497,

RAL-TL11-075, 3-23-11

1-HR CORRIDOR WALL - METAL FRAMING

1-HR UNIT DEMISING WALL - METAL STUD WALL PROPRIETARY ASSEMBLY: November 14, 2023 FIRE TEST: UL DESIGN NO. U493 **SOUND RATING:** 54 STC REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY. ARCHITECTURAL CONSTRUCTION DETAIL

AIR SPACE

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

City, state

World HQ@ORBArch.com



FLOOR AND CEILING IN TWO ROWS, A MIN 1 IN. APART, WITH STEEL FASTENERS SPACED 24 IN. OC. RUNNERS FABRICATED FROM MIN NO. 25 MSG GALV STEEL, 1-1/4 IN. WIDE AND 2-1/2 IN. DEEP.

STEEL STUDS - (FOR USE WITH ITEM 5 AND 5A) — CHANNEL SHAPED, SUPPLIED WITH CUTOUTS, FRICTION -FITTED INTO FLOOR AND CEILING RUNNERS AND SPACED A MAX 24 IN. OC. STUDS CUT 1/2 IN. LESS THAN ASSEMBLY HEIGHT AND EVENLY STAGGERED BETWEEN THE TWO ROWS OF FLOOR AND CEILING RUNNERS. STUDS FABRICATED FROM MIN NO. 25 MSG GALV STEEL, MIN 2-1/2 IN. DEEP BY 1-1/4 IN. WIDE WITH 3/16 IN. FOLDED BACK RETURN FLANGE LEGS.

3. LATERAL BRACING - THE BRACING SHALL BE IN ACCORDANCE WITH THE SSMA TECHNICAL NOTE DATED MARCH 2000 REFERENCING UNSHEATHED FLANGE BRACING.

NONBEARING WALL RATING — 1 OR 2 HOUR (SEE ITEMS 5, 5A, 5B)

\* 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. U493

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

UNITED STATES

FLOOR AND CEILING RUNNERS - (FOR USE WITH ITEM 5 AND 5A) — CHANNEL SHAPED, ATTACHED TO

WRITTEN SPECIFICATIONS

I) LAYER 5/8" TYPE 'X

GYPSUM WALLBOARD.

STAGGERED METAL

SEE STRUCTURAL -

STUDS PER STRUCTURAL

SHEAR PANEL AS REQUIRED,

3-1/2" THICK FIBERGLASS BATT

INSULATION, EACH STUD

CAVITY, ONE SIDE OF WALL

FIBERGLASS BATT VERTICAL

FIRE-BLOCKING AT 10'-0" ON

BOTH SIDES -

EACH SIDE -

4. BATTS AND BLANKETS -OPTIONAL — GLASS FIBER BATTS MAY BE FRICTION-FITTED TO COMPLETELY FILL THE STUD CAVITIES ON ONE OR BOTH ROWS OF STUDS. SEE BATTS AND BLANKETS CATEGORY (BZJZ) FOR NAMES OF MANUFACTURERS.

5. GYPSUM BOARD\* - NOM 5/8 IN. THICK, 4 FT. WIDE, GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY OR HORIZONTALLY. SINGLE LAYER INSTALLED ON EACH SIDE OF THE STEEL STUDS FOR THE 1-HR SYSTEM, TWO LAYERS INSTALLED ON EACH SIDE OF THE STUDS FOR THE 2-HR SYSTEM. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS. VERTICAL JOINTS IN ADJACENT LAYERS (2-HR SYSTEM) STAGGERED ONE STUD CAVITY. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS NEED NOT BE BACKED BY 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 (2-HR SYSTEM) STAGGERED A MINIMUM OF 6 IN. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS IN ADJACENT LAYERS (2-HR SYSTEM) NEED NOT BE STAGGERED WITH TYPE ULIX. FOR THE SINGLE LAYER SYSTEM: PANELS ATTACHED TO STEEL STUDS AND FLOOR RUNNER WITH 1 IN. LONG TYPE S STEEL SCREWS SPACED 8 IN. OC WHEN APPLIED HORIZONTALLY, OR 8 IN. OC ALONG VERTICAL AND BOTTOM EDGES AND 12 IN. OC IN THE FIELD WHEN APPLIED VERTICALLY. FOR THE SINGLE LAYER SYSTEM WITH ULIX, PANELS ATTACHED TO STEEL STUDS AND FLOOR RUNNERS WITH 1 IN. LONG TYPE S SCREWS SPACED 12 IN. OC WHEN APPLIED VERTICALLY OR HORIZONTALLY. HORIZONTAL JOINTS NEED NOT BE STAGGERED ON OPPOSITE SIDES OF STUDS. FOR THE DOUBLE LAYER SYSTEM: BASE LAYER PANELS ATTACHED TO STEEL STUDS AND FLOOR RUNNER WITH 1 IN. LONG TYPE S STEEL SCREWS SPACED 16 IN., FACE LAYER PANELS ATTACHED TO STEEL STUDS AND FLOOR RUNNER WITH 1-5/8 IN. LONG TYPE S STEEL SCREWS SPACED 12 IN. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS TO BE INSTALLED HORIZONTALLY. **UNITED STATES GYPSUM CO** — TYPE SCX- USG SHEETROCK® BRAND FIRECODE® X PANELS

6. JOINT TAPE AND COMPOUND - (NOT SHOWN) — OUTER LAYER JOINTS COVERED WITH JOINT COMPOUND AND PAPER OR MESH TAPE. SCREW HEADS COVERED WITH JOINT COMPOUND. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM BOARDS ARE SUPPLIED WITH

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SQUARE EDGES.

Contractor must verify all dimensions of project before proceeding with this work. the expressed written permission of the Architect. The drawings and specifications are instruments of service an shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone o any other projects, for additions to this project, or for written permission of the Architect.

> This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other written description of such other billing (and/or) cycle the owner's designated agent at 2525 E. CAMELBACK RD. SUITE 500. PHOENIX. AZ 85016 and the owner or its designated agent shall provide this

ORB Architecture, LLC 2018

REVISIONS/SUBMITTALS

written description on request.

FIRE ASSEMBLIES - INTERIOR METAL

2. STEEL STUDS - "C-T" OR "C-H" SHAPED STUDS 1-5/8 IN. WIDE BY MIN. 2-1/2 IN. DEEP, FABRICATED FROM MIN. 25 MSG GALV STEEL. CUT TO LENGTHS 3/4 IN. LESS THAN FLOOR TO CEILING HEIGHT AND SPACED 3. GYPSUM WALLBOARD — 1 IN. THICK GYPSUM WALLBOARD LINER PANELS, SUPPLIED IN NOM. 24 IN. OR 600 MM (FOR METRIC SPACING) WIDTHS. PANELS CUT 1 IN. LESS IN LENGTH THAN THE FLOOR TO CEILING HEIGHT, VERTICAL EDGES OF THE PANELS INSERTED INTO "T" SHAPED SECTION OF C-T STUDS OR THE "H" SECTION OF THE C-H STUDS. FREE EDGE OF END PANELS SECURED TO LONG LEG OF J RUNNER WITH TABS IN RUNNER OR 1-5/8 IN. LONG TYPE S SELF-TAPPING BUGLE HEAD STEEL SCREWS SPACED NOT MORE THAN 12 IN. OC. WHEN J-SHAPED RUNNERS (ITEM 1B) ARE SUPPLIED WITH SECUREMENT TABS, FREE EDGE OF END PANELS MAY BE SECURED BY BENDING THE

SECUREMENT TABS, MAX 12 IN. OC, TO A 90 DEGREE ANGLE TO SECURELY FRICTION-FIT PANELS INTO

4. GYPSUM WALLBOARD -1/2 OR 5/8 IN. THICK, 4 FT WIDE, APPLIED IN TWO LAYERS. BASE LAYER ATTACHED HORIZONTALLY TO STUDS AND SIDE "J" RUNNERS WITH 1 IN. LONG TYPE S SELF-TAPPING STEEL SCREWS STARTING AT 2 IN. FROM THE FLOOR AND CEILING RUNNERS AND SPACED A MAXIMUM 24 IN. OC ALONG THE VERTICAL EDGES AND IN THE FIELD OF THE BOARDS. FACE LAYER INSTALLED VERTICALLY TO STUDS AND SIDE "J" RUNNERS AND ATTACHED WITH 1-5/8 IN. LONG TYPE S SELF-TAPPING STEEL SCREWS, STARTING AT 3 IN. FROM THE FLOOR AND CEILING RUNNERS AND SPACED A MAXIMUM 12 IN. OC ALONG THE VERTICAL EDGES AND IN THE FIELD OF THE BOARDS. FACE LAYER JOINTS COVERED WITH PAPER TAPE AND TWO COATS OF JOINT COMPOUND. EXPOSED SCREW HEADS COVERED WITH TWO COATS OF JOINT COMPOUND. AMERICAN GYPSUM CO - TYPES AG-C GEORGIA-PACIFIC GYPSUM LLC - TYPES DAPC TG-C

NATIONAL GYPSUM CO - TYPES EXP-C, FSK, FSL, FSMR-C, FSW-3, FSW-8, FSW-C, FSW-G. PABCO BUILDING PRODUCTS LLC, DBA PABCO GYPSUM - TYPES PG-C, 5/8 IN. TYPE C. 5. BATTS AND BLANKETS - (OPTIONAL) — MINERAL WOOL OR GLASS FIBER BATTS PARTIALLY OR COMPLETELY FILLING STUD CAVITY. ANY MINERAL WOOL OR GLASS FIBER BATT MATERIAL BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE.

ACOUSTICS - STC 48 ESTIMATED FOR SH 02 BASED ON USG - 170427

2-HR FIRE WALL - INTERIOR METAL WALL

3-5/8 INCH x 25 GAUGE METAL STUDS OR

2X4 WOOD STUDS AT 24 INCH ON

3/4 INCH MINIMUM; 1 INCH MAXIMUM AIR SPACE - REFER TO BUILDING

GYPSUM LINER PANEL, PER

2 INCH STEEL 'H' STUDS

GYPSUM PANELS.

HEIGHT LIMITATION 66 FEET (NLB)

PROPRIETARY GYPSUM BOARD

THICKNESS - 3-1/2 INCH (FIRE); 11-3/4 INCH (SOUND)

**APPROXIMATE WEIGHT** - 9 PSF (FIRE & SOUND)

**SOUND TEST** - RAL TL05-199, 11-17-05

WALLBOARD

FIRE TEST: GA ASW 0998

GYPSUM WALLBOARD, PER

CENTER -

ASSEMBLY

PROPRIETARY ASSEMBLY - CERTAINTEED - June 2021

SH 04 2-HOUR SHAFT WALL - NON-BEARING - SAME AS SH 02 EXCEPT USING 4" STUDS IN LIEU OF 2-1/2" STUDS

2-HR FIRE SHAFT WALL - NONBEARING

3-HR FIRE WALL PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024 PROPRIETARY ASSEMBLY - UL SOLUTIONS - October 07, 2019 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U347 - OPTION B FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO W454 SOUND RATING - 50 STC MIN. REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY. ARCHITECTURAL CONSTRUCTION DETAIL ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS GYPSUM WALLBOARD STEEL STUD FRAMING, PER PER ITEM 4 -ITEM 5B 2 LAYERS 1" GYPSUM LINER BOARD PER ITEM 3 -2 LAYERS 1" GYPSUM LINER BOARD PER ITEM 3 -3-1/2" UNFACED BATT 3-1/2" UNFACED BATT INSULATION BOTH SIDES. INSULATION BOTH SIDES PER ITEM 6B -METAL 'H' STUDS PER ITEM 2 METAL 'H' STUDS PER ITEM 2 ALUMINUM BREAK-AWAY CLIPS **ALUMINUM BREAK-AWAY** PER ITEM 7 -CLIPS PER ITEM 7 -PLYWOOD SHEATHING, PER PLYWOOD SHEATHING, PER STRUCTURAL STRUCTURAL GYPSUM WALLBOARD, PER GYPSUM WALLBOARD, PER ASSEMBLY ASSEMBLY STEEL STUD FRAMING AS REQUIRED 2x4 BLOCKING AS REQUIRED FOR CLIP FOR CLIP SPACING/ INSTALLATION -SPACING/ INSTALLATION -DESIGN NO. U347 DESIGN NO. W454

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN U347. CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST

# \*INSTALL AS DESCRIBED IN ASSEMBLY UL U347 OPTION A FOR SHAFT CONFIGURATION \* <u> 'INSTALL AS DESCRIBED IN ASSEMBLY UL U347 OPTION B FOR FIRE WALL CONFIGURATIONS'</u>

2-HR FIRE WALL - METAL WALL

SOUND RATING - 50 STC MIN.

**SEPARATION WALL:** (NON-BEARING, MAXIMUM HEIGHT - 66 FEET, SEE ITEM 6) 1. STEEL TRACK - FLOOR, SIDEWALL OR TOP WALL TRACK. NOM 2 IN. WIDE CHANNEL SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH SUITABLE FASTENERS

2. STEEL STUDS - "H" SHAPED STUDS FORMED FROM NO. 25 MSG GALV STEEL HAVING AN OVERALL DEPTH OF APPROXIMATELY 2 IN. AND FLANGE WIDTH 1-3/8 IN. 3. GYPSUM WALLBOARD\* - TWO LAYERS OF 1 IN. THICK GYPSUM WALLBOARD LINER PANELS, SUPPLIED IN NOM 24 IN. WIDTHS. VERTICAL EDGES OF PANELS FRICTION FIT INTO "H" SHAPED STUDS. NATIONAL GYPSUM CO — TYPES FSW, FSW-B, FSW-7, FSW-9 NATIONAL GYPSUM CO — TYPES FSW - 1" GOLD BOND BRAND FIRE-SHIELD SHAFTLINER. PROTECTED WALL: (BEARING OR NONBEARING WALL, AS INDICATED IN ITEMS 5, 5A, AND 5B. WHEN

BEARING, LOAD RESTRICTED FOR CANADIAN APPLICATIONS — SEE GUIDE BXUV7.) 4. AIR SPACE: MINIMUM 3/4-IN. AIR SPACE. 5B.WOOD STUDS - (AS AN ALTERNATE TO ITEMS 5 AND 5A, FOR USE IN CONFIGURATION B ONLY, NOT SHOWN) — FOR NONBEARING WALL RATING — CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN 3-1/2 IN. WIDE, MIN 1-1/4 IN. FLANGES AND 1/4 IN. RETURN, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 3/8 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT. TOP AND BOTTOM TRACKS SHALL BE CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL MIN WIDTH TO ACCOMMODATE STUD SIZE, WITH MIN 1 IN, LONG LEGS, ATTACHED TO FLOOR AND

CEILING WITH FASTENERS 24 IN. OC MAX. STUDS CROSS-BRACED WITH STUD FRAMING AT MIDHEIGHT WHERE NECESSARY FOR CLIP ATTACHMENT. MIN 3/4 IN. SEPARATION BETWEEN STEEL FRAMING AND AREA SEPARATION WALL. FINISH RATING HAS NOT BEEN EVALUATED FOR STEEL STUDS. 6B. BATTS AND BLANKETS\* - AS AN ALTERNATE TO ITEMS 6 AND 6A, GLASS FIBER OR MINERAL WOOL INSULATION, MIN. 3-1/2 IN. THICK, PLACED TO COMPLETELY FILL THE WOOD OR STEEL STUD CAVITIES. WHEN BATTS AND BLANKETS ARE USED IN PLACE OF ITEMS 6 AND 6A, THE MAX HEIGHT IS 54 FT AND THE ALUMINUM CLIPS (ITEM 7) SHALL BE SPACED A MAX OF 5 FT OC VERTICALLY. MIN 3/4 IN. SEPARATION BETWEEN INSULATION AND AREA SEPARATION WALL. SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS (BZJZ) CATEGORY IN

THE FIRE RESISTANCE DIRECTORY FOR NAME OF CLASSIFIED COMPANIES. 7. ALUMINUM CLIPS - ALUMINUM ANGLE. 0.049 IN. THICK. 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS. CLIPS SECURED WITH TYPE S SCREWS 3/8 IN. LONG TO "H" STUDS AND WITH 1-1/4 IN. LONG SCREWS TO WOOD FRAMING OR STEEL FRAMING THROUGH HOLES PROVIDED IN CLIP. NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL.

ANSI/UL 263 DESIGN NO U347

PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U347

2-HR FIRE WALL - EXTERIOR METAL WALL

SOUND RATING - 50 STC MIN.

STEEL STUD FRAMING, PER

2 LAYERS 1" GYPSUM LINER

BOARD PER ITEM 3 -

3-1/2" UNFACED BATT

PER ITEM 6B -

INSULATION BOTH SIDES.

**ALUMINUM BREAK-AWAY** 

CLIPS PER ITEM 7 -

PLYWOOD SHEATHING, PER

STRUCTURAL

METAL 'H' STUDS PER ITEM 2

STUCCO SYSTEM, PER EM-11

INSTALLATION INSTRUCTIONS

STEEL STUD FRAMING AS REQUIRED FOR CLIP SPACING/ INSTALLATION -

ITEM 5B -

2-HR FIRE WALL AND SHAFTS - METAL FRAMIN

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS WRITTEN SPECIFICATIONS 3/4" AIR SPACE MINIMUM. PER ITEM 4 2x FRAMING, PER ITEM 5 2 LAYERS 1" GYPSUM LINER BOARD PER ITEM 3 -3-1/2" UNFACED BATT INSULATION BOTH SIDES. PER ITEM 6B -METAL 'H' STUDS PER ITEM 2 ALUMINUM BREAK-AWAY CLIPS PER ITEM 7 -PLYWOOD SHEATHING, PER STRUCTURAL GYPSUM WALLBOARD, PER ASSEMBLY

2-HR FIRE WALL

SOUND RATING - 50 STC MIN.

2x4 BLOCKING AS REQUIRED FOR

CLIP SPACING/ INSTALLATION -

PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U347

DESIGN NO. U347 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

# THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN U347 CONFIGURATION D. CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST

**SEPARATION WALL: (NON-BEARING, MAXIMUM HEIGHT - 66 FEET, SEE ITEM 6)**  STEEL TRACK - FLOOR, SIDEWALL OR TOP WALL TRACK. NOM 2 IN. WIDE CHANNEL SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH SUITABLE FASTENERS SPACED 24 IN. OC. 2. STEEL STUDS - "H" SHAPED STUDS FORMED FROM NO. 25 MSG GALV STEEL HAVING AN OVERALI

DEPTH OF APPROXIMATELY 2 IN. AND FLANGE WIDTH 1-3/8 IN. 3. GYPSUM WALLBOARD\* - TWO LAYERS OF 1 IN. THICK GYPSUM WALLBOARD LINER PANELS, SUPPLIED NOM 24 IN. WIDTHS. VERTICAL EDGES OF PANELS FRICTION FIT INTO "H" SHAPED STUDS. NATIONAL GYPSUM CO - TYPES FSW, FSW-B, FSW-7, FSW-9 NATIONAL GYPSUM CO - TYPES FSW - 1" GOLD BOND BRAND FIRE-SHIELD SHAFTLINER. PROTECTED WALL: (BEARING OR NONBEARING WALL, AS INDICATED IN ITEMS 5, 5A, AND 5B. WHEN BEARING, LOAD RESTRICTED FOR CANADIAN APPLICATIONS — SEE GUIDE BXUV7.)

4. **AIR SPACE:** MINIMUM 3/4-IN. AIR SPACE. 5. WOOD STUDS - FOR BEARING OR NONBEARING WALL RATING — NOM 2 BY 4 IN. MAX SPACING 24 IN. OC. STUDS CROSS BRACED AT MID-HEIGHT WHERE NECESSARY FOR CLIP ATTACHMENT. MIN 3/4 IN. SEPARATION BETWEEN WOOD FRAMING AND FIRE SEPARATION WALL. FINISH RATING EVALUATED FOR WOOD STUDS ONLY. 6B. BATTS AND BLANKETS\* - AS AN ALTERNATE TO ITEMS 6 AND 6A. GLASS FIBER OR MINERAL WOOL

INSULATION, MIN. 3-1/2 IN. THICK, PLACED TO COMPLETELY FILL THE WOOD OR STEEL STUD CAVITIES. WHEN BATTS AND BLANKETS ARE USED IN PLACE OF ITEMS 6 AND 6A, THE MAX HEIGHT IS 54 FT AND THE ALUMINUM CLIPS (ITEM 7) SHALL BE SPACED A MAX OF 5 FT OC VERTICALLY. MIN 3/4 IN. SEPARATION BETWEEN INSULATION AND AREA SEPARATION WALL. SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAME OF CLASSIFIED COMPANIES. **ALUMINUM CLIPS** - ALUMINUM ANGLE, 0.049 IN. THICK, 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS. CLIPS SECURED WITH TYPE S SCREWS 3/8 IN. LONG TO "H" STUDS AND WITH 1-1/4 IN. LONG SCREWS TO

WOOD FRAMING OR STEEL FRAMING THROUGH HOLES PROVIDED IN CLIP. 8. **STC RATING** - THE STC RATING OF THE WALL ASSEMBLY IS 61 WHEN IT IS CONSTRUCTED AS DESCRIBED 3Y ITEMS 1 THROUGH 6, EXCEPT: A. ITEM 5, ABOVE — WOOD STUDS — SHALL BE SPACED 16 IN. OC. 9. NON-BEARING WALL PARTITION INTERSECTION — (OPTIONAL) WALL SYSTEM CONSISTING OF NOMINAL  $2\,$ BY 4 IN. STUD OR NOMINAL 2 BY 6 IN. STUD. MAXIMUM ONE NON-BEARING WALL PARTITION INTERSECTION PER STUD CAVITY.

NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL.

SCALE: 3" = 1'-0"

3-HR FIRE WALL - WOOD FRAMING

PROPRIETARY ASSEMBLY - UL SOLUTIONS - October 07, 2019

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

PLACED TO COMPLETELY FILL THE WOOD STUD CAVITIES.

ANSI/UL 263 DESIGN NO W454

ARCHITECTURAL CONSTRUCTION DETAIL

WRITTEN SPECIFICATIONS

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

SOUND RATING WITH 3-1/2" (88.9MM) GLASS FIBER INSULATION IN STUDY CAVITY ON EACH SIDE

1. STEEL TRACK - NOT SHOWN - FLOOR, SIDEWALL OR TOP WALL TRACK. NOM 2 IN. WIDE CHANNEL

SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH

2. STEEL STUDS - "H" SHAPED STUDS FORMED FROM NO. 25 MSG GALV STEEL HAVING AN OVERALL

3. GYPSUM WALLBOARD\* - TWO LAYERS OF 1 IN. THICK GYPSUM BOARD LINER PANELS, SUPPLIED IN

. GYPSUM WALLBOARD\* - 5/8 IN. THICK GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES.

GYPSUM PANELS APPLIED HORIZONTALLY OR VERTICALLY WITH VERTICAL JOINTS CENTERED OVER

HORIZONTAL EDGE JOINTS AND HORIZONTAL BUT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT

PROTECTED WALL: (BEARING OR NONBEARING WALL, AS INDICATED IN ITEM 5. WHEN BEARING, LOAD

5. **Wood Studs** - For Bearing or Nonbearing Wall Rating — Nom 2 by 4 in. Max Spacing 24 in.

SEPARATION REQUIRED BETWEEN WOOD FRAMING AND FIRE SEPARATION WALL. FINISH RATING

OC. STUDS CROSS BRACED AT MID-HEIGHT WHERE NECESSARY FOR CLIP ATTACHMENT. NO

6. GYPSUM BOARD - APPLIED HORIZONTALLY OR VERTICALLY. FASTENED TO STUDS WITH NAILS OR

SCREWS OF SUFFICIENT LENGTH, SPACED 12 IN. OC. JOINTS AND FASTENER HEADS ARE NOT

7. ATTACHMENT CLIPS - ALUMINUM ANGLE, 0.049 IN. THICK, 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS.

8. BATTS AND BLANKETS - (OPTIONAL, NOT SHOWN) — GLASS FIBER OR MINERAL WOOL INSULATION,

NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND

WOOD FRAMING THROUGH HOLES PROVIDED IN CLIP. CLIPS SPACED A MAXIMUM OF 5FT OC

NOM 24 IN. WIDTHS. VERTICAL EDGES OF PANELS FRICTION FIT INTO "H" SHAPED STUDS.

STUDS. SECURED TO STUDS (ITEM 2) WITH 1 IN. LONG TYPE S SCREWS, SPACED 16 IN. OC.

SEPARATION WALL: (NON-BEARING, MAX HEIGHT - 70 FT):

NATIONAL GYPSUM CO — TYPES FSW, FSW-7

DEPTH OF APPROXIMATELY 2 IN. AND FLANGE WIDTH 1-3/8 IN.

NATIONAL GYPSUM CO — TYPES FSW-C, FSK-C, EXP-C, AND FSW-G.

REQUIRED TO BE TREATED. VERTICAL JOINTS LOCATED OVER STUDS.

CLIPS SECURED WITH TYPE S SCREWS 1 IN. LONG TO "H" STUDS AND WITH

RESTRICTED FOR CANADIAN APPLICATIONS — SEE GUIDE BXUV7):

SUITABLE FASTENERS SPACED 24 IN. OC

EVALUATED FOR WOOD STUDS ONLY.

\*BEARING THE UL CLASSIFICATION MARK

CONCRETE SLAB AT BOTH SIDES OF WALL.

3-HR FIRE WALL - EXTERIOR WALL

SOUND RATING - 50 STC MIN.

GYPSUM WALLBOARD

BOARD PER ITEM 3 —

3-1/2" UNFACED BATT

INSULATION BOTH SIDES -

METAL 'H' STUDS PER ITEM 2

ALUMINUM BREAK-AWAY CLIPS

STUCCO FINISH SYSTEM, PER

SPACING/ INSTALLATION -

2x4 BLOCKING AS REQUIRED FOR CLIP

SEPARATION WALL: (NON-BEARING, MAX HEIGHT - 70 FT):

2 LAYERS 1" GYPSUM LINER

PER ITEM 4 -

PER ITEM 7 -

ASSEMBLY

STRUCTURAL

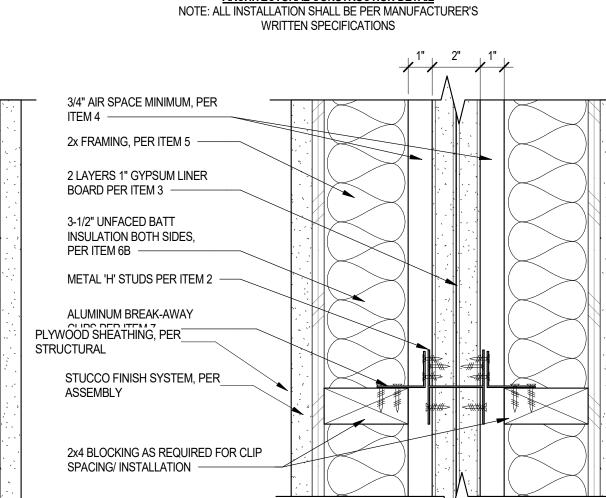
PLYWOOD SHEATHING, PER

BE STAGGERED.

SCALE: 3" = 1'-0" ANSI/UL 263 DESIGN NO U347 2-HR FIRE WALL PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO W454 FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U347

> SOUND RATING - 50 STC MIN. REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

ARCHITECTURAL CONSTRUCTION DETAIL WRITTEN SPECIFICATIONS



DESIGN NO. U347

# THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN U347 CONFIGURATION D. CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST

**SEPARATION WALL: (NON-BEARING, MAXIMUM HEIGHT - 66 FEET, SEE ITEM 6)** 1. STEEL TRACK - FLOOR, SIDEWALL OR TOP WALL TRACK, NOM 2 IN. WIDE CHANNEL SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH SUITABLE FASTENERS SPACED 24 IN. OC.

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2-HR FIRE WALL AT EXTERIOR WALL - WOOD

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Contractor must verify all dimensions c

project before proceeding with this work.

REVISIONS/SUBMITTALS DATE DESCRIPTION

the owner's designated agent at

and the owner or its designated agent shall provide this

written description on request

DESIGN NO. W454 **DESIGN NO. U347** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN U347. CONSTRUCTION SHALL BE PER DETAIL WHICH IS AN ENHANCED AREA SEPARATION WALL ASSEMBLY PER OWNER'S REQUEST AREA

**SEPARATION WALL:** (NON-BEARING, MAXIMUM HEIGHT - 66 FEET, SEE ITEM 6) 1. STEEL TRACK - FLOOR, SIDEWALL OR TOP WALL TRACK. NOM 2 IN. WIDE CHANNEL SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH SUITABLE FASTENERS SPACED 24 IN. OC.

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PROTECTED WALL: (BEARING OR NONBEARING WALL, AS INDICATED IN ITEMS 5, 5A, AND 5B. WHEN BEARING, LOAD RESTRICTED FOR CANADIAN APPLICATIONS — SEE GUIDE BXUV7.) 4. **AIR SPACE:** MINIMUM 3/4-IN. AIR SPACE. 5. WOOD STUDS - FOR BEARING OR NONBEARING WALL RATING — NOM 2 BY 4 IN. MAX SPACING 24 IN. OC. STUDS CROSS BRACED AT MID-HEIGHT WHERE NECESSARY FOR CLIP ATTACHMENT. MIN 3/4 IN. SEPARATION BETWEEN WOOD FRAMING AND FIRE SEPARATION WALL. FINISH RATING EVALUATED FOR

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THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAME OF CLASSIFIED COMPANIES.

2-HR FIRE WALL AT EXTERIOR WALL - METAL

SUITABLE FASTENERS SPACED 24 IN. OC

1. STEEL TRACK - NOT SHOWN - FLOOR, SIDEWALL OR TOP WALL TRACK. NOM 2 IN. WIDE CHANNEL SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH STEEL STUDS - "H" SHAPED STUDS FORMED FROM NO. 25 MSG GALV STEEL HAVING AN OVERALL DEPTH OF APPROXIMATELY 2 IN. AND FLANGE WIDTH 1-3/8 IN. B. GYPSUM WALLBOARD\* - TWO LAYERS OF 1 IN. THICK GYPSUM BOARD LINER PANELS, SUPPLIED IN NOM 24 IN. WIDTHS, VERTICAL EDGES OF PANELS FRICTION FIT INTO "H" SHAPED STUDS. NATIONAL GYPSUM CO — TYPES FSW, FSW-7

SOUND RATING WITH 3-1/2" (88.9MM) GLASS FIBER INSULATION IN STUDY CAVITY ON EACH SIDE

4. GYPSUM WALLBOARD\* - 5/8 IN. THICK GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES. GYPSUM PANELS APPLIED HORIZONTALLY OR VERTICALLY WITH VERTICAL JOINTS CENTERED OVER STUDS. SECURED TO STUDS (ITEM 2) WITH 1 IN. LONG TYPE S SCREWS. SPACED 16 IN. OC HORIZONTAL EDGE JOINTS AND HORIZONTAL BUT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED NATIONAL GYPSUM CO — TYPES FSW-C, FSK-C, EXP-C, AND FSW-G.

PROTECTED WALL: (BEARING OR NONBEARING WALL, AS INDICATED IN ITEM 5. WHEN BEARING, LOAD RESTRICTED FOR CANADIAN APPLICATIONS — SEE GUIDE BXUV7): 5. WOOD STUDS - FOR BEARING OR NONBEARING WALL RATING — NOM 2 BY 4 IN. MAX SPACING 24 IN. OC. STUDS CROSS BRACED AT MID-HEIGHT WHERE NECESSARY FOR CLIP ATTACHMENT. NO SEPARATION REQUIRED BETWEEN WOOD FRAMING AND FIRE SEPARATION WALL. FINISH RATING EVALUATED FOR WOOD STUDS ONLY. 6. **GYPSUM BOARD** - APPLIED HORIZONTALLY OR VERTICALLY. FASTENED TO STUDS WITH NAILS OR SCREWS OF SUFFICIENT LENGTH, SPACED 12 IN. OC. JOINTS AND FASTENER HEADS ARE NOT

REQUIRED TO BE TREATED. VERTICAL JOINTS LOCATED OVER STUDS. ATTACHMENT CLIPS - ALUMINUM ANGLE, 0.049 IN. THICK, 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS. CLIPS SECURED WITH TYPE S SCREWS 1 IN. LONG TO "H" STUDS AND WITH 1-1/4 IN. LONG SCREWS TO WOOD FRAMING THROUGH HOLES PROVIDED IN CLIP. CLIPS SPACED A MAXIMUM OF 5FT OC VERTICALLY 8. BATTS AND BLANKETS - (OPTIONAL, NOT SHOWN) — GLASS FIBER OR MINERAL WOOL INSULATION,

NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND

3-HR FIRE WALL AT PATIOS/BALCONIES - WOOD

ANSI/UL 263 DESIGN NO W454

SCALE: 3" = 1'-0"

ANSI/UL 263 DESIGN NO U347

GA FILE NO. ASW 0998 - GA-600-2021

ANSI/UL 263 DESIGN NO U347

SCALE: 3" = 1'-0"

DATE: July 17, 2024

FIRE ASSEMBLIES - SHAFT & FIRE

7. ALUMINUM CLIPS - ALUMINUM ANGLE, 0.049 IN. THICK, 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS. CLIPS SECURED WITH TYPE S SCREWS 3/8 IN, LONG TO "H" STUDS AND WITH 1-1/4 IN, LONG SCREWS TO WOOD FRAMING OR STEEL FRAMING THROUGH HOLES PROVIDED IN CLIP. PLACED TO COMPLETELY FILL THE WOOD STUD CAVITIES. NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL. \*BEARING THE UL CLASSIFICATION MARK CONCRETE SLAB AT BOTH SIDES OF WALL.

GYPSUM ASSOC. FILE NO. ASW 0998

GYPSUM WALLBOARD, STEEL H STUDS FRAMING

FIRE DESIGN - TWO LAYERS 1 x24 INCH PROPRIETARY TYPE 'X' GYPSUM PANELS INSERTED BETWEEN

A 3/4 INCH MINIMUM AIR SPACE MUST BE MAINTAINED BETWEEN STEEL COMPONENTS AND ADJACENT

SOUND DESIGN - SOUND TESTED WITH 2X4 STUD WALL FACED WITH 1/2 INCH GYPSUM WALLBOARD

BE COVERED WITH 6 INCH WIDE BATTENS OR FULL SHEETS OF 1/2 INCH TYPE 'X' GYPSUM

REFER TO MANUFACTURER FOR THE THERMAL PROTECTION OF THE FRAMING

EACH SIDE OF SYSTEM AND 3-1/2 INCH GLASS FIBER INSULATION IN STUD SPACE

NATIONAL GYPSUM COMPANY - 1" GOLD BOND BRAND FIRE-SHIELD SHAFTLINER

FIRE TEST - UL R3501, 92NKZ28896, 6-7-93, UL DESIGN U347; WHI 694-0200.6, 10-12 & 24-85

**ALTERNATE ASSEMBLY** 

FRAMING (INDICATED BY DASHED LINES IN SKETCH). AS AN ALTERNATE, THE STEEL COMPONENTS MAY

2 INCH FLOOR AND CEILING RUNNERS WITH 2 INCH STEEL H STUDS BETWEEN ADJACENT PAIRS OF

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

BEARING, LOAD RESTRICTED FOR CANADIAN APPLICATIONS — SEE GUIDE BXUV7.)

4. **AIR SPACE:** MINIMUM 3/4-IN. AIR SPACE. WOOD STUDS ONLY.

BY 4 IN. STUD OR NOMINAL 2 BY 6 IN. STUD. MAXIMUM ONE NON-BEARING WALL PARTITION INTERSECTION PER STUD CAVITY. NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND

CONCRETE SLAB AT BOTH SIDES OF WALL.

SCALE: 3" = 1'-0

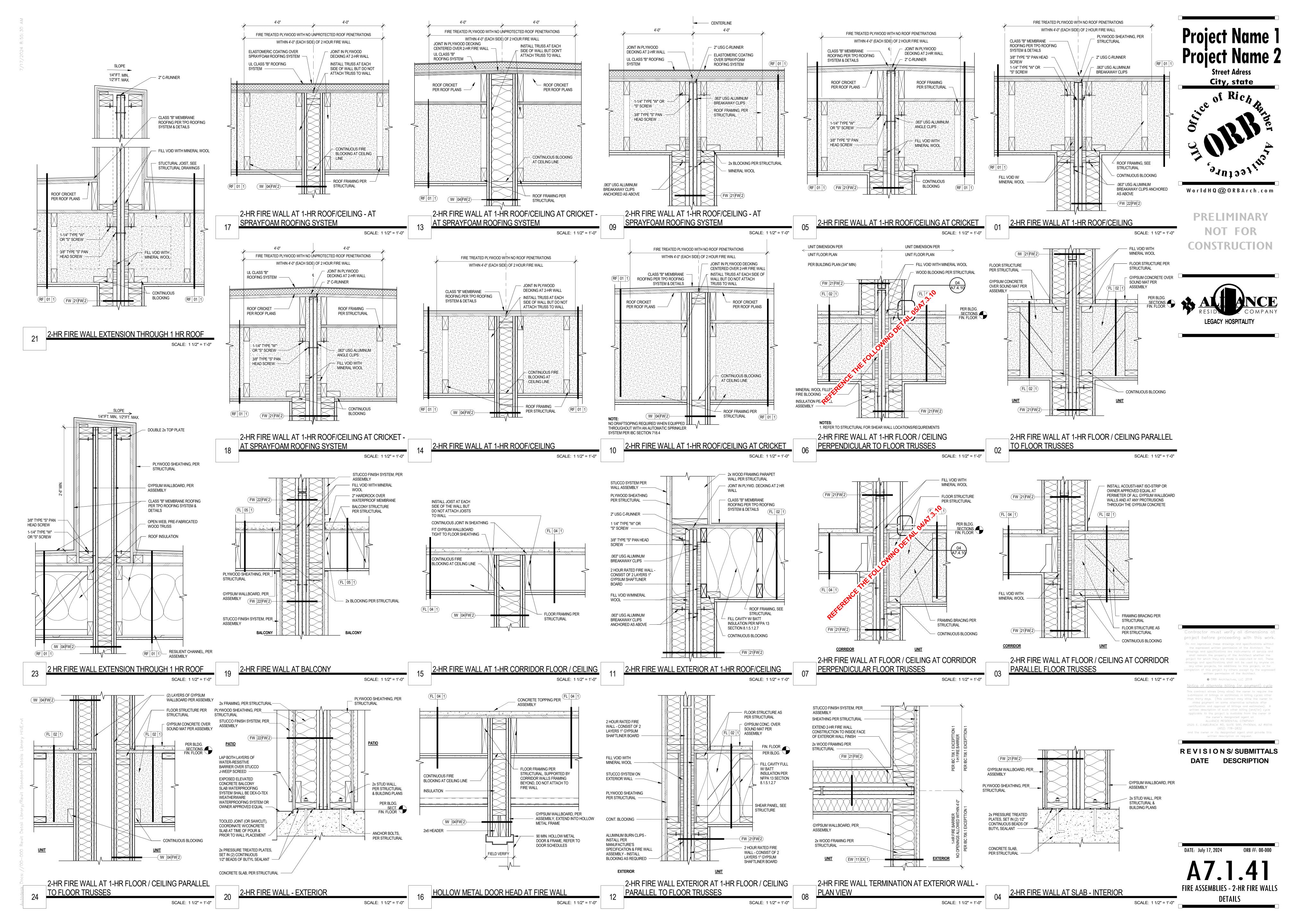
NOT FOR

World HQ@ORBArch.com

**Street Adress** 

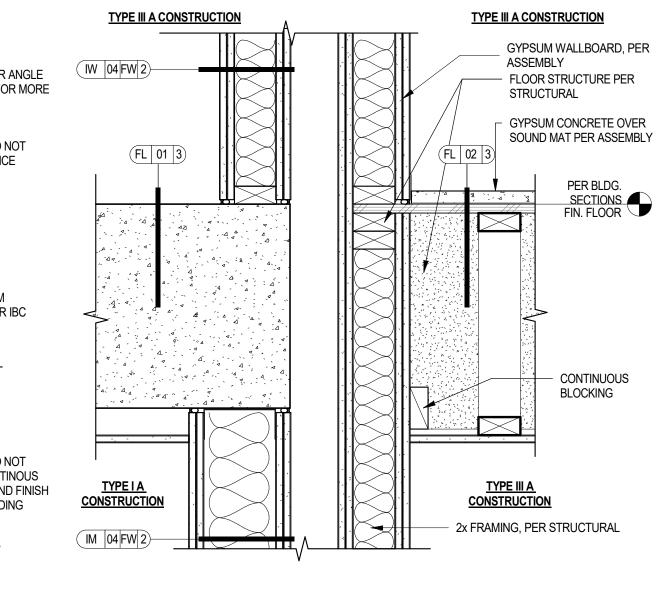
City, state





**BALCONY** RIGLET SYSTEM SHIPLAPPED OVER ANGLE FLASHING, SEE MANUFACTURER FOR MORE ANGLE FLASHING - FINISH SUPPORT 2x BLOCKING, DO NOT TIE BACK TO JOIST FOR COMPLIANCE FL 05 1 WITH FIRE WALL BREAKAWAY PLYWOOD SHEATHING, PER STRUCTURAL 1- HR RATED CONSTRUCTION 2 LAYERS OF 5/8" TYPE "X" GYPSUM WALLBOARD FOR 1-HR RATING PER IBC TABLE 722.2.1.4(2) 2x WOOD JOIST, PER STRUCTURAL DRAWINGS GYPSUM WALLBOARD, PER ASSEMBLY FINISH SUPPORT 2x BLOCKING, DO NOT CONNECT WALL FRAMING TO CONTINOUS

2x NAILER, ANCHOR SHEATHING AND FINISH
LAYER ONLY, TO ALLOW FOR BUILDING
COLLAPSE IN THE EVENT OF FIRE 2-HR RATED CMU CONSTRUCTION, PER ASSEMBLY



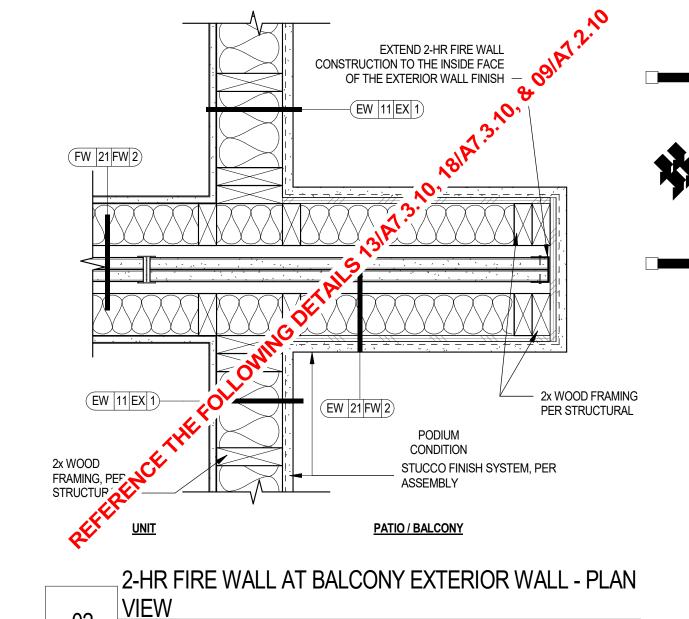


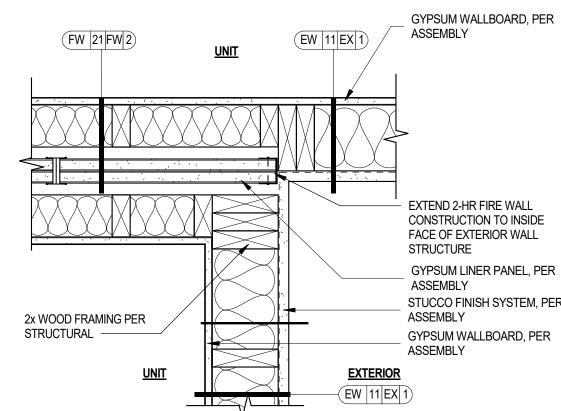
2-HR FIRE WALL EXTERIOR TERMINATION AT CMU AND BALCONY CONDITION SCALE: 1 1/2" = 1'-0"

2-HR FIRE WALL AT 1-HR FLOOR / CEILING PARALLEL TO FLOOR TRUSSES SCALE: 1 1/2" = 1'-0"

**PRELIMINARY** NOT FOR CONSTRUCTION

LEGACY HOSPITALITY



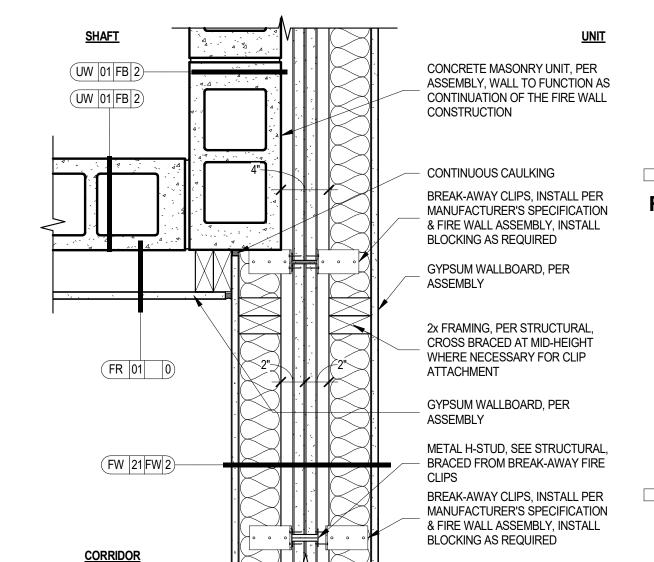


GYPSUM LINER PANEL, PER STUCCO FINISH SYSTEM, PER GYPSUM WALLBOARD, PER

2-HR FIRE WALL TERMINATION AT PATIO / BALCONY -

SCALE: 1 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"



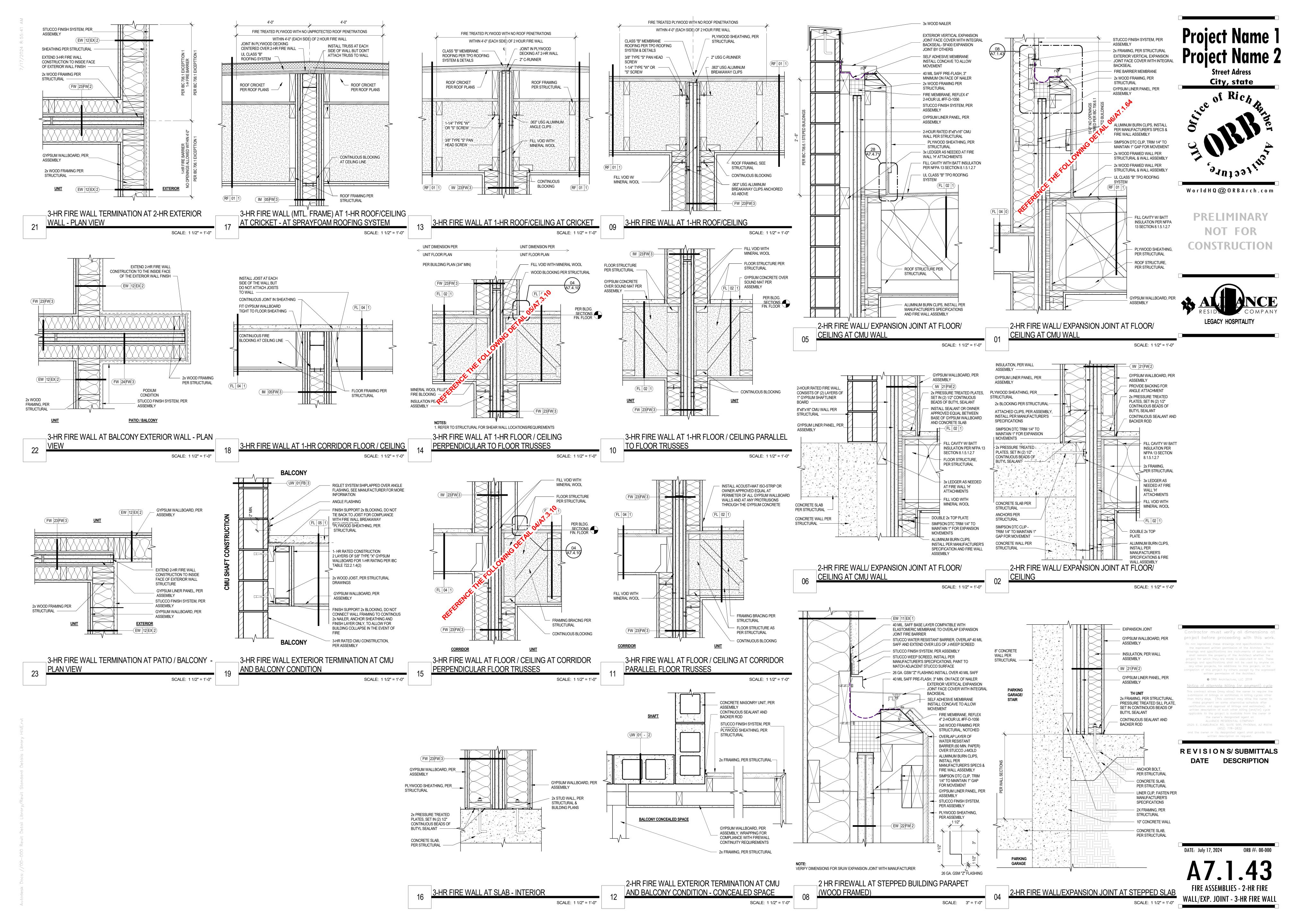
 $_{\!\scriptscriptstyle -}$  2-HR FIRE WALL TERMINATION AT CMU SHAFT - PLAN

Contractor must verify all dimensions at project before proceeding with this work. shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for completion of this project by others except by the expressed ORB Architecture, LLC 2018

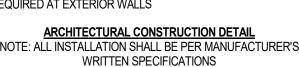
Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after certification and approval of billings and estimates). A written description of such other billing (and/or) cycle applicable to the project is available from the owner or the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016 (602) 778-2832 and the owner or its designated agent shall provide this written description on request.

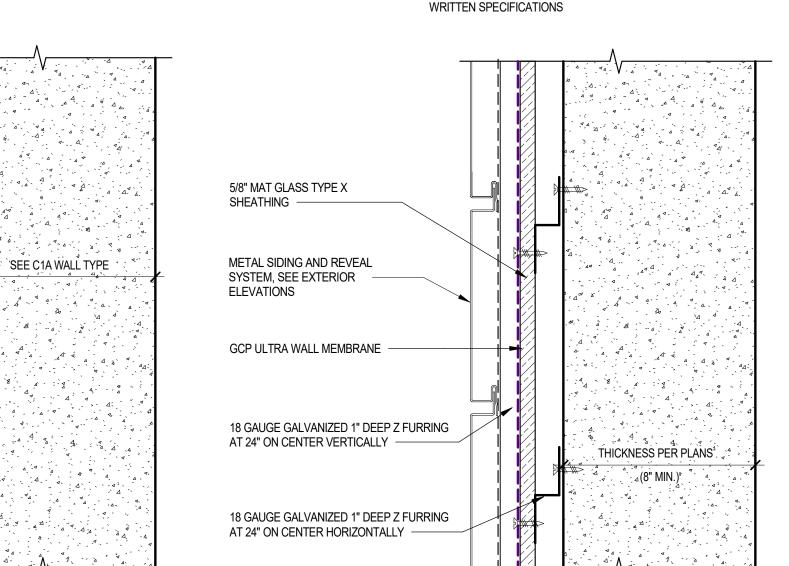
REVISIONS/SUBMITTALS DATE DESCRIPTION

DATE: July 17, 2024



ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S





**CONCRETE WALL WITH FACINGS OR ACCESSORIES - METAL SIDING** 

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

GENERIC ASSEMBLY

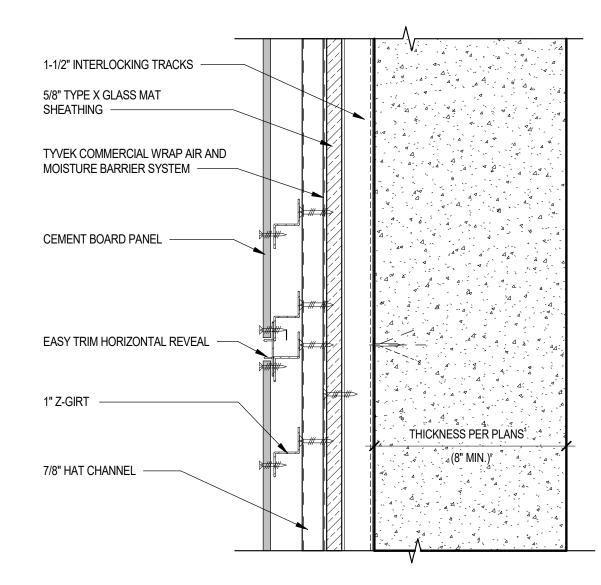
FIRE TEST: IBC TABLE 721.1(2) 4-1.1

**NO SOUND RATING REQUIRED AT EXTERIOR WALLS** 

CONCRETE WALL WITH FACINGS OR ACCESSORIES - STUCCO FINISH GENERIC ASSEMBLY FIRE TEST: IBC TABLE 721.1(2) 4-1.1 NO SOUND RATING REQUIRED AT EXTERIOR WALLS

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS



IBC TABLE 721.1(2) 4-1.1

THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1(2) 4-1.1

5.4

5.1

FACE (INCHES)

MINIMUM FINISHED THICKNESS FACE TO

5.7

4.6

4.4

4 HOURS | 3 HOURS | 2 HOURS | 1 HOURS

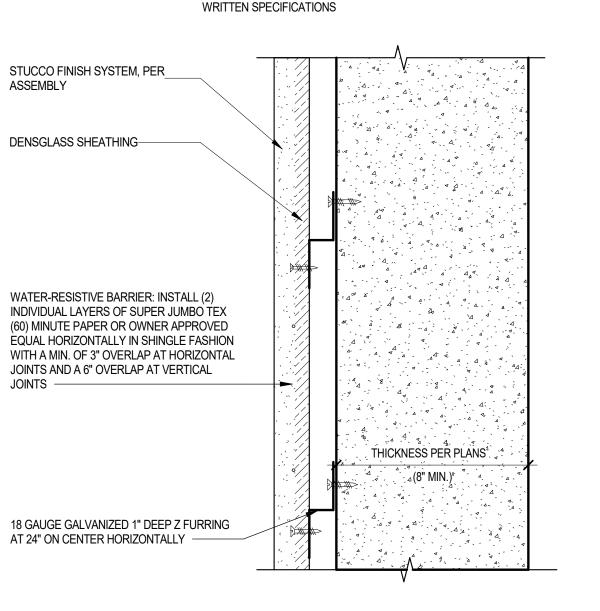
46

3.8

3.6

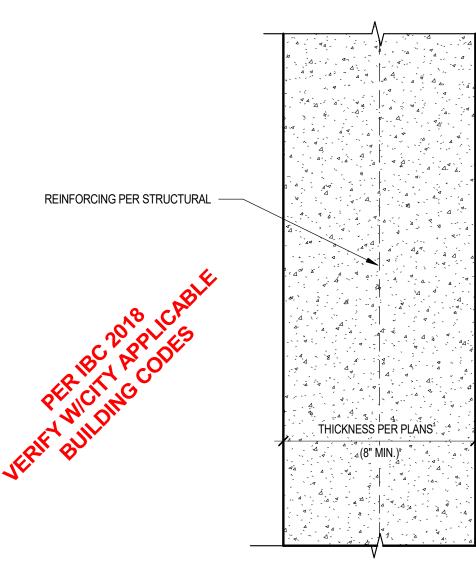
CONCRETE WALL WITH FACINGS OR ACCESSORIES - STUCCO FINISH GENERIC ASSEMBLY FIRE TEST: IBC TABLE 721.1(2) 4-1.1 NO SOUND RATING REQUIRED AT EXTERIOR WALLS

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S



**CONCRETE WALL WITH FACINGS OR ACCESSORIES** GENERIC ASSEMBLY FIRE TEST: IBC 2018 TABLE 721.1(2) 4-1.1 NO SOUND RATING REQUIRED AT EXTERIOR WALLS

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



Street Adress

City, state

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IBC TABLE 721.1(2) 4-1.1 THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1(2) 4-1.1

4. SOLID CONCRETE (SEE NOTES h,i) 4-1.1	MINIMUM FINISHED THICKNESS FACE TO FACE (INCHES)						
( - '/'	4 HOURS	3 HOURS	2 HOURS	1 HOURS			
SILICEOUS AGGREGATE CONCRETE	7.0	6.2	5.0	3.5			
CARBONATE AGGREGATE CONCRETE	6.6	5.7	4.6	3.2			
SAND-LIGHTWEIGHT CONCRETE	5.4	4.6	3.8	2.7			
LIGHTWEIGHT CONCRETE	5.1	4.4	3.6	2.5			

GENERIC ASSEMBLY

NEWBRICK ECONOMY BRICK

CONFIGURATION APPLIED TO

FACE OF STUCCO —

**ASSEMBLY** 

VENEER OVER DRYVIT ADHESIVE

IN VERTICAL NOTCHED TROWEL

STUCCO FINISH SYSTEM, PER

CELLS TO BE GROUTED SOLID

UNLESS NOTED OTHERWISE IN

STRUCTURAL DRAWINGS —

SCRATCH COAT; 1 PART PORTLAND CEMENT TO 4 PARTS

SAND, AS REQUIRED -

MORTAR

NEWBRICK ECONOMY BRICK

VENEER OVER DRYVIT ADHESIVE

STUCCO FINISH SYSTEM, PER

SCRATCH COAT: 1 PART PORTLAND

CEMENT TO 4 PARTS SAND, AS

IN VERTICAL NOTCHED TROWEL

CONFIGURATION APPLIED TO

FACE OF STUCCO —

ASSEMBLY

REQUIRED

h. THE EQUIVALENT THICKNESS SHALL BE PERMITTED TO INCLUDE THE THICKNESS OF CEMENT PLASTER OR 1.5 TIMES THE THICKNESS OF GYPSUM PLASTER APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 25.

i. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURE. REINFORCEMENT AS REQUIRED BY CHAPTER 19.

### IBC TABLE 721.1(2) 4-1.1 THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1(2) 4-1.1

4. SOLID CONCRETE (SEE NOTES h,i) 4-1.1	MINIMUM FINISHED THICKNESS FACE TO FACE (INCHES)						
,	4 HOURS	3 HOURS	2 HOURS	1 HOURS			
SILICEOUS AGGREGATE CONCRETE	7.0	6.2	5.0	3.5			
CARBONATE AGGREGATE CONCRETE	6.6	5.7	4.6	3.2			
SAND-LIGHTWEIGHT CONCRETE	5.4	4.6	3.8	2.7			
LIGHTWEIGHT CONCRETE	5.1	4.4	3.6	2.5			

i. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURF. 🐇

h. THE EQUIVALENT THICKNESS SHALL BE PERMITTED TO INCLUDE THE THICKNESS OF CEMENT PLASTER h. THE EQUIVALENT THICKNESS SHALL BE PERMITTED TO INCLUDE THE THICKNESS OF CEMENT PLASTER OR 1.5 TIMES THE THICKNESS OF GYPSUM PLASTER APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OR 1.5 TIMES THE THICKNESS OF GYPSUM PLASTER APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 25.

GENERIC ASSEMBLY

8x8x16 CMU BLOCK LOW WALL:

1-1/2" INTERLOCKING TRACKS

TYVEK COMMERCIAL WRAP AIR AND

MOISTURE BARRIER SYSTEM -

EASY TRIM HORIZONTAL REVEAL

CEMENT BOARD PANEL

1" Z-GIRT

5/8" TYPE X GLASS MAT

GROUTING AND ANCHOR

SPECIFICATIONS

SHEATHING —

SEE STRUCTURAL DRAWINGS FOR

FIRE TEST: IBC TABLE 721.1(2)NOs. 3-1.1 - 3-1.4

NO SOUND RATING REQUIRED AT EXTERIOR WALLS

4. SOLID CONCRETE

(SEE NOTES h,i) 4-1.1

SILICEOUS AGGREGATE CONCRETE

SAND-LIGHTWEIGHT CONCRETE

LIGHTWEIGHT CONCRETE

CARBONATE AGGREGATE CONCRETE

i. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURE 🐇 REINFORCEMENT AS REQUIRED BY CHAPTER 19.

### IBC TABLE 721.1(2) 4-1.1 THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1(2) 4-1.1

4. SOLID CONCRETE (SEE NOTES h,i) 4-1.1	MINIMUM FINISHED THICKNESS FACE TO FACE (INCHES)						
, , ,	4 HOURS	3 HOURS	2 HOURS	1 HOURS			
SILICEOUS AGGREGATE CONCRETE	7.0	6.2	5.0	3.5			
CARBONATE AGGREGATE CONCRETE	6.6	5.7	4.6	3.2			
SAND-LIGHTWEIGHT CONCRETE	5.4	4.6	3.8	2.7			
LIGHTWEIGHT CONCRETE	51	4.4	3.6	2.5			

GENERIC ASSEMBLY

ASSEMBLY

h. THE EQUIVALENT THICKNESS SHALL BE PERMITTED TO INCLUDE THE THICKNESS OF CEMENT PLASTER OR 1.5 TIMES THE THICKNESS OF GYPSUM PLASTER APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 25.

i. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURE REINFORCEMENT AS REQUIRED BY CHAPTER 19.

4. SOLID CONCRETE (SEE NOTES h,i) 4-1.1	MINIMUM FINISHED THICKNESS FACE TO FACE (INCHES)						
, , ,	4 HOURS	3 HOURS	2 HOURS	1 HOURS			
SILICEOUS AGGREGATE CONCRETE	7.0	6.2	5.0	3.5			
CARBONATE AGGREGATE CONCRETE	6.6	5.7	4.6	3.2			
SAND-LIGHTWEIGHT CONCRETE	5.4	4.6	3.8	2.7			
LIGHTWEIGHT CONCRETE	5.1	4.4	3.6	2.5			

IBC TABLE 721.1(2) 4-1.1

THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1(2) 4-1.1

NOTES:

SCALE: 3" = 1'-0"

h. THE EQUIVALENT THICKNESS SHALL BE PERMITTED TO INCLUDE THE THICKNESS OF CEMENT PLASTER OR 1.5 TIMES THE THICKNESS OF GYPSUM PLASTER APPLIED IN ACCORDANCE WITH THE REQUIREMENTS

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

I. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURE REINFORCEMENT AS REQUIRED BY CHAPTER 19.

FIRE TEST: IBC TABLE 721.1(2)NOs. 3-1.1 - 3-1.4

NO SOUND RATING REQUIRED AT EXTERIOR WALLS

GENERIC ASSEMBLY

MORTAR -

CONCRETE MASONRY UNIT

CELLS TO BE GROUTED SOLID

STRUCTURAL DRAWINGS -

UNLESS NOTED OTHERWISE IN

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

CMU WALL WITH FACINGS OR ACCESSORIES - BRICK VENEER

FIRE TEST: IBC TABLE 721.1(2)NOs. 3-1.1 - 3-1.4

NO SOUND RATING REQUIRED AT EXTERIOR WALLS

2018 IBC TABLE 721.1(2) 4-1.1

CMU WALL WITH FACINGS OR ACCESSORIES - CEMENT BOARD SIDING

ARCHITECTURAL CONSTRUCTION DETAIL

NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S

WRITTEN SPECIFICATIONS

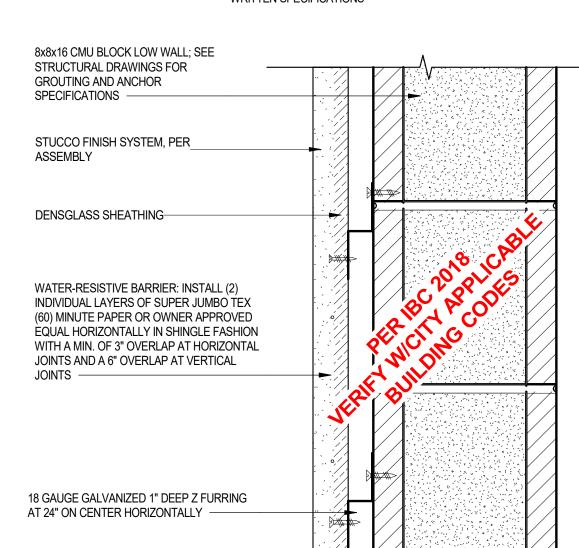
2018 IBC TABLE 721.1(2) 4-1.1

FIRE TEST: IBC TABLE 721.1(2)NOs. 3-1.1 - 3-1.4 NO SOUND RATING REQUIRED AT EXTERIOR WALLS

CMU WALL WITH FACINGS OR ACCESSORIES - STUCCO FINISH

ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS

STUCCO AT RATED CONCRETE WALL



18 GAUGE GAL AT 24" ON CEN		EEP Z FURRING TALLY				
MATERIAL ITEM#		CONSTRUCTION	MINIMUM THICKNES	FINISHED SS FACE-TO	-FACE(b)	
				3 HOURS	2 HOURS	1 HOUR
	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE		4.0	3.2	2.1
CONCRETE	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE		4.4	3.6	2.6
MASONRY						

MATERIAL	ITEM#	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE(b)			
		3		2 HOURS	1 HOUR	
	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1	
CONCRETE	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6	
MASONRY UNITS	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7	
	3-1.4 (f, g)	CALCAREOUS OR SILICEOUS GRAVEL	5.3	4.2	2.8	

- (b) THICKNESS SHOWN FOR BRICK AND CLAY TILE IS NOMINAL THICKNESS UNLESS PLASTERED, IN WHICH CASE THICKNESS ARE NET. THICKNESS SHOWN FOR CONCRETE MASONRY AND CLAY MASONRY IS FOR CLAY MASONRY. WHERE ALL CELLS ARE SOLID GROUTED OR FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, THE EQUIVALENT THICKNESS SHALL BE THE THICKNESS OF THE BLOCK OR BRICK USING SPECIFIED DIMENSIONS AS DEFINED IN CHAPTER 21. EQUIVALENT THICKNESS SHALL INCLUDE THE THICKNESS OF APPLIED PLASTER AND LATH OR GYPSUM WALLBOARD, WHERE
- (f) THE FIRE-RESISTANCE TIME PERIOD FOR CONCRETE MASONRY UNITS MEETING THE EQUIVALENT THICKNESSES REQUIRED FOR A 2-HOUR FIRE-RESISTANCE RATING IN ITEM 3, AND HAVING A THICKNESS OF NOT LESS THAN 7-5/8 INCHES IS 4 HOURS WHEN CORES THAT ARE NOT GROUTED ARE FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, SAND OR SLAG HAVING A MAXIMUM PARTICLE SIZE OF 3/8 INCH. (g) THE FIRE-RESISTANCE RATING OF CONCRETE MASONRY UNITS COMPOSED OF A COMBINATION OF AGGREGATE TYPES OR WHERE PLASTER IS APPLIED DIRECTLY TO THE CONCRETE MASONRY SHALL BE
- MAXIMUM COMBINED DENSITY OF 65 POUNDS PER CUBIC FOOT. 722.3.1.2 UNGROUTED OR PARTIALLY GROUTED CONSTRUCTION.

T(e) SHALL BE THE VALUE OBTAINED FOR THE CONCRETE MASONRY UNIT DETERMINED IN ACCORDANCE WITH ASTM C140 722.3.1.3 SOLID GROUTED CONSTRUCTION. THE EQUIVALENT THICKNESS, T(e), OF SOLID GROUTED CONCRETE MASONRY UNITS IS THE ACTUAL THICKNESS OF THE UNIT.

DETERMINED IN ACCORDANCE WITH ACI 216.1/TMS 0216. LIGHTWEIGHT AGGREGATES SHALL HAVE A

MASONRY (b) THICKNESS SHOWN FOR BRICK AND CLAY TILE IS NOMINAL THICKNESS UNLESS PLASTERED. IN WHICH CASE THICKNESS ARE NET. THICKNESS SHOWN FOR CONCRETE MASONRY AND CLAY MASONRY IS FOR CLAY MASONRY. WHERE ALL CELLS ARE SOLID GROUTED OR FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR

SLATE LIGHTWEIGHT AGGREGATE, THE EQUIVALENT THICKNESS SHALL BE THE THICKNESS OF THE BLOCK OR BRICK USING SPECIFIED DIMENSIONS AS DEFINED IN CHAPTER 21. EQUIVALENT THICKNESS SHALL INCLUDE THE THICKNESS OF APPLIED PLASTER AND LATH OR GYPSUM WALLBOARD, WHERE (f) THE FIRE-RESISTANCE TIME PERIOD FOR CONCRETE MASONRY UNITS MEETING THE EQUIVALENT THICKNESSES REQUIRED FOR A 2-HOUR FIRE-RESISTANCE RATING IN ITEM 3, AND HAVING A THICKNESS OF NOT LESS THAN 7-5/8 INCHES IS 4 HOURS WHEN CORES THAT ARE NOT GROUTED ARE FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, SAND OR SLAG HAVING A MAXIMUM PARTICLE SIZE OF 3/8 INCH. g) THE FIRE-RESISTANCE RATING OF CONCRETE MASONRY UNITS COMPOSED OF A COMBINATION OF AGGREGATE TYPES OR WHERE PLASTER IS APPLIED DIRECTLY TO THE CONCRETE MASONRY SHALL BE

722.3.1 .2 UNGROUTED OR PARTIALLY GROUTED CONSTRUCTION. T(e) SHALL BE THE VALUE OBTAINED FOR THE CONCRETE MASONRY UNIT DETERMINED IN ACCORDANCE WITH ASTM C140 722.3.1.3 SOLID GROUTED CONSTRUCTION. THE EQUIVALENT THICKNESS, T(e), OF SOLID GROUTED CONCRETE MASONRY UNITS IS THE ACTUAL THICKNESS OF THE UNIT.

DETERMINED IN ACCORDANCE WITH ACI 216.1/TMS 0216. LIGHTWEIGHT AGGREGATES SHALL HAVE A

MAXIMUM COMBINED DENSITY OF 65 POUNDS PER CUBIC FOOT.

Contractor must verify all dimensions

	ITEM# CONSTRUCTION		MINIMUM FINISHED THICKNESS FACE-TO-FACE(b)			submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner make payment on some alternative schedule after certification and approval of billings and estimates). / written description of such other billing (and/or) cycle
MATERIAL	ITEM#	CONSTRUCTION	3 HOURS	2 HOURS	,	applicable to the project is available from the owner of the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY
	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1	2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 850' (602) 778-2832
CONCRETE	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6	and the owner or its designated agent shall provide thi written description on request.
MASONRY UNITS	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7	
	3-1.4 (f, g)	CALCAREOUS OR SILICEOUS GRAVEL	5.3	4.2	2.8	

CEMENT BOARD PANEL SYSTEM AT CONC. SHEAR METAL SIDING AT RATED CONCRETE WALL WALL (PLAN VIEW) SCALE: 3" = 1'-0"

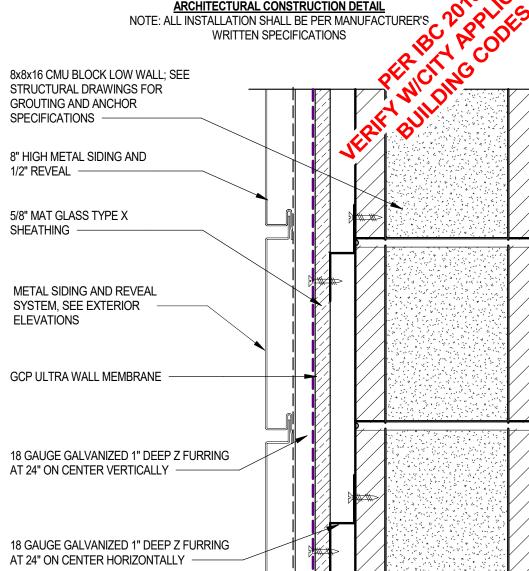
2018 IBC TABLE 721.1(2) 4-1.1 SCALE: 3" = 1'-0"

CMU WALL WITH FACINGS OR ACCESSORIES - METAL SIDING

REINFORCEMENT AS REQUIRED BY CHAPTER 19.

OF CHAPTER 25.

GENERIC ASSEMBLY FIRE TEST: IBC TABLE 721.1(2)NOs. 3-1.1 - 3-1.4 NO SOUND RATING REQUIRED AT EXTERIOR WALLS



			٧						V		
MATERIAL	ITEM#	CONSTRUCTION	MINIMUM THICKNES	FINISHED SS FACE-TO	)-FACE(b)	MATERIAL	ITEM#	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE(b)		
			3 HOURS	2 HOURS	1 HOUR				3 HOURS	2 HOURS	1 HOUR
	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1		3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1
CONCRETE	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6	CONCRETE	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6
MASONRY UNITS	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7	MASONRY UNITS	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7
	3-1.4 (f, g)	CALCAREOUS OR SILICEOUS GRAVEL	5.3	4.2	2.8		3-1.4 (f, g)	CALCAREOUS OR SILICEOUS GRAVEL	5.3	4.2	2.8

(b) THICKNESS SHOWN FOR BRICK AND CLAY TILE IS NOMINAL THICKNESS UNLESS PLASTERED, IN WHICH CASE THICKNESS ARE NET. THICKNESS SHOWN FOR CONCRETE MASONRY AND CLAY MASONRY IS FOR CLAY MASONRY. WHERE ALL CELLS ARE SOLID GROUTED OR FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, THE EQUIVALENT THICKNESS SHALL BE THE THICKNESS OF THE BLOCK OR BRICK USING SPECIFIED DIMENSIONS AS DEFINED IN CHAPTER 21. EQUIVALENT THICKNESS SHALL INCLUDE THE THICKNESS OF APPLIED PLASTER AND LATH OR GYPSUM WALLBOARD, WHERE

(f) THE FIRE-RESISTANCE TIME PERIOD FOR CONCRETE MASONRY UNITS MEETING THE EQUIVALENT THICKNESSES REQUIRED FOR A 2-HOUR FIRE-RESISTANCE RATING IN ITEM 3. AND HAVING A THICKNESS OF NOT LESS THAN 7-5/8 INCHES IS 4 HOURS WHEN CORES THAT ARE NOT GROUTED ARE FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, SAND OR SLAG HAVING A MAXIMUM PARTICLE SIZE OF 3/8 INCH. (g) THE FIRE-RESISTANCE RATING OF CONCRETE MASONRY UNITS COMPOSED OF A COMBINATION OF AGGREGATE TYPES OR WHERE PLASTER IS APPLIED DIRECTLY TO THE CONCRETE MASONRY SHALL BE DETERMINED IN ACCORDANCE WITH ACI 216.1/TMS 0216. LIGHTWEIGHT AGGREGATES SHALL HAVE A MAXIMUM COMBINED DENSITY OF 65 POUNDS PER CUBIC FOOT.

722.3.1 .2 UNGROUTED OR PARTIALLY GROUTED CONSTRUCTION. T(e) SHALL BE THE VALUE OBTAINED FOR THE CONCRETE MASONRY UNIT DETERMINED IN ACCORDANCE WITH ASTM C140 722.3.1 .3 SOLID GROUTED CONSTRUCTION. THE EQUIVALENT THICKNESS, T(e), OF SOLID GROUTED CONCRETE MASONRY UNITS IS THE ACTUAL THICKNESS OF THE UNIT.

MINIMUM FINISHED THICKNESS FACE-TO-FACE(b) MATERIAL ITEM# 3 HOURS | 2 HOURS | 1 HOUR 4.0 3.2 2.1 -1.1 (f, g) EXPANDED SLAG OR PUMICE CONCRETE 3-1.2 (f, g) EXPANDED CLAY, SHALE OR SLATE 4.4 3.6 2.6 MASONRY 5.0 4.0 2.7 3-1.3 (f) LIMESTONE, CINDERS OR AIR-COOLED SLAG UNITS 3-1.4 (f, g) CALCAREOUS OR SILICEOUS GRAVEL

(b) THICKNESS SHOWN FOR BRICK AND CLAY TILE IS NOMINAL THICKNESS UNLESS PLASTERED, IN WHICH CASE THICKNESS ARE NET. THICKNESS SHOWN FOR CONCRETE MASONRY AND CLAY MASONRY IS FOR CLAY MASONRY. WHERE ALL CELLS ARE SOLID GROUTED OR FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, THE EQUIVALENT THICKNESS SHALL BE THE THICKNESS OF THE BLOCK OR BRICK USING SPECIFIED DIMENSIONS AS DEFINED IN CHAPTER 21. EQUIVALENT THICKNESS SHALL INCLUDE THE THICKNESS OF APPLIED PLASTER AND LATH OR GYPSUM WALLBOARD, WHERE

(f) THE FIRE-RESISTANCE TIME PERIOD FOR CONCRETE MASONRY UNITS MEETING THE EQUIVALENT THICKNESSES REQUIRED FOR A 2-HOUR FIRE-RESISTANCE RATING IN ITEM 3. AND HAVING A THICKNESS OF NOT LESS THAN 7-5/8 INCHES IS 4 HOURS WHEN CORES THAT ARE NOT GROUTED ARE FILLED WITH SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, SAND OR SLAG HAVING A MAXIMUM PARTICLE SIZE OF 3/8 INCH. (g) THE FIRE-RESISTANCE RATING OF CONCRETE MASONRY UNITS COMPOSED OF A COMBINATION OF

MAXIMUM COMBINED DENSITY OF 65 POUNDS PER CUBIC FOOT.

722.3.1.2 UNGROUTED OR PARTIALLY GROUTED CONSTRUCTION. T(e) SHALL BE THE VALUE OBTAINED FOR THE CONCRETE MASONRY UNIT DETERMINED IN ACCORDANCE WITH ASTM C140.

AGGREGATE TYPES OR WHERE PLASTER IS APPLIED DIRECTLY TO THE CONCRETE MASONRY SHALL BE

DETERMINED IN ACCORDANCE WITH ACI 216.1/TMS 0216. LIGHTWEIGHT AGGREGATES SHALL HAVE A

722.3.1.3 SOLID GROUTED CONSTRUCTION. THE EQUIVALENT THICKNESS, T(e), OF SOLID GROUTED CONCRETE MASONRY UNITS IS THE ACTUAL THICKNESS OF THE UNIT.

METAL SIDING OVER EXTERIOR MASONRY WALL

STUCCO OVER EXTERIOR MASONRY WALL

MAXIMUM COMBINED DENSITY OF 65 POUNDS PER CUBIC FOOT.

722.3.1.2 UNGROUTED OR PARTIALLY GROUTED CONSTRUCTION.

(b) THICKNESS SHOWN FOR BRICK AND CLAY TILE IS NOMINAL THICKNESS UNLESS PLASTERED, IN WHICH

CASE THICKNESS ARE NET. THICKNESS SHOWN FOR CONCRETE MASONRY AND CLAY MASONRY IS

FOR CLAY MASONRY, WHERE ALL CELLS ARE SOLID GROUTED OR FILLED WITH SILICONE-TREATED

SLATE LIGHTWEIGHT AGGREGATE, THE EQUIVALENT THICKNESS SHALL BE THE THICKNESS OF THE

SHALL INCLUDE THE THICKNESS OF APPLIED PLASTER AND LATH OR GYPSUM WALLBOARD, WHERE

(f) THE FIRE-RESISTANCE TIME PERIOD FOR CONCRETE MASONRY UNITS MEETING THE EQUIVALENT

SILICONE-TREATED PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR

(g) THE FIRE-RESISTANCE RATING OF CONCRETE MASONRY UNITS COMPOSED OF A COMBINATION OF

EXPANDED CLAY, SHALE OR SLATE LIGHTWEIGHT AGGREGATE, SAND OR SLAG HAVING A MAXIMUM

BLOCK OR BRICK USING SPECIFIED DIMENSIONS AS DEFINED IN CHAPTER 21. EQUIVALENT THICKNESS

THICKNESSES REQUIRED FOR A 2-HOUR FIRE-RESISTANCE RATING IN ITEM 3, AND HAVING A THICKNESS

OF NOT LESS THAN 7-5/8 INCHES IS 4 HOURS WHEN CORES THAT ARE NOT GROUTED ARE FILLED WITH

AGGREGATE TYPES OR WHERE PLASTER IS APPLIED DIRECTLY TO THE CONCRETE MASONRY SHALL BE

T(e) SHALL BE THE VALUE OBTAINED FOR THE CONCRETE MASONRY UNIT DETERMINED IN ACCORDANCE

DETERMINED IN ACCORDANCE WITH ACI 216.1/TMS 0216. LIGHTWEIGHT AGGREGATES SHALL HAVE A

PERLITE LOOSE-FILL INSULATION; VERMICULITE LOOSE-FILL INSULATION; OR EXPANDED CLAY, SHALE OR

PARTICLE SIZE OF 3/8 INCH.

SCALE: 3" = 1'-0" 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4 SCALE: 3" = 1'-0" <sup>⊥</sup> 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4

WITH ASTM C140 722.3.1.3 SOLID GROUTED CONSTRUCTION. THE EQUIVALENT THICKNESS, T(e), OF SOLID GROUTED CONCRETE MASONRY UNITS IS THE ACTUAL THICKNESS OF THE UNIT.

> METAL SIDING OVER EXTERIOR MASONRY WALL SCALE: 3" = 1'-0"

2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4

RATED COLUMN May 12, 2022

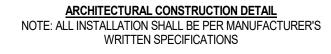
FIRE TEST: UL DESIGN Y634 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

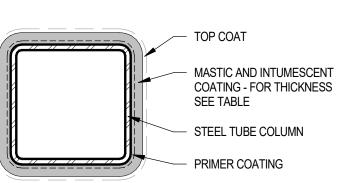
# BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. STEEL TUBE COLUMN — STEEL RECTANGULAR TUBE (ST) OR PIPE (SP) COLUMNS WITH THE MINIMUM SIZES SHOWN IN THE TABLES BELOW. 2. PRIMER COATING — 60 MICRON (2 MIL) THICKNESS OF A TWO COMPONENT EPOXY PRIMER OR 60 MICRON (2 MIL) THICKNESS OF AN ACRYLIC PRIMER OR 60 MICRON (2 MIL) THICKNESS OF AN ACRYLIC PRIMER OR 60 MICRON

(2 MIL) THICKNESS OF A POLYURETHANE PRIMER. 3. MASTIC & INTUMESCENT COATING\* — COATING SPRAY OR BRUSH APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AT THE MINIMUM AVERAGE DRY THICKNESS SHOWN IN THE THICKNESS BELOW. THE THICKNESS SHOWN DOES NOT INCLUDE PRIMER THICKNESS.

4. TOP COAT (NOT SHOWN) — THE FOLLOWING TOPCOATS SHALL BE USED FOR COMPLIANCE WITH EXTERIOR ENVIRONMENTAL EXPOSURE REQUIREMENT. SOLVENT BASED 2 PACK TOPCOAT TYPE HENSOTOP 2K PU APPLIED AT A DRY FILM THICKNESS OF 100 MICRONS (4 MIL) OR ACRYLIC POLYURETHANE TOPCOAT TYPE HI SOLIDS POLYURETHANE 250 APPLIED AT A DRY FILM THICKNESS OF 100 MICRONS (4 MIL) OR WATERBASED URETHANE TOPCOAT TYPE ACROLON 100HS AT A DRY FILM THICKNESS OF 100 MICRONS (4 MIL).





INTUMESCENT COATING THICKNESS									
MEMBER TYPE	MEMBER DESIGNATION	FIRE RATING	SECTION FACTOR	REQUIRED (DRY FILM THICKNESS) DFT (MILS)	REQUIRED (WET FILM THICKNESS) WFT				
SQUARE HOLLOW SECTIONS	4x4x5/16	1-HR	0.29	112	160				
SQUARE HOLLOW SECTIONS	4x4x1/4	1-HR	0.23	144	206				
SQUARE HOLLOW SECTIONS	5x5x1/4	1-HR	0.22	144	206				
SQUARE HOLLOW SECTIONS	5x5x3/8	1-HR	0.33	97	139				
SQUARE HOLLOW SECTIONS	7x7x3/8	1-HR	0.34	93	133				
SQUARE HOLLOW SECTIONS	10x10x3/8	1-HR	0.34	93	133				

NOTE:
SPECIAL INSPECTION REQUIRED FOR INTUMESCENT FIRE-RESISTING COATING PER IBC 1705.15 MASTIC AND INTUMESCENT FIRE-RESISTANT COATING REFER TO STRUCTURAL.

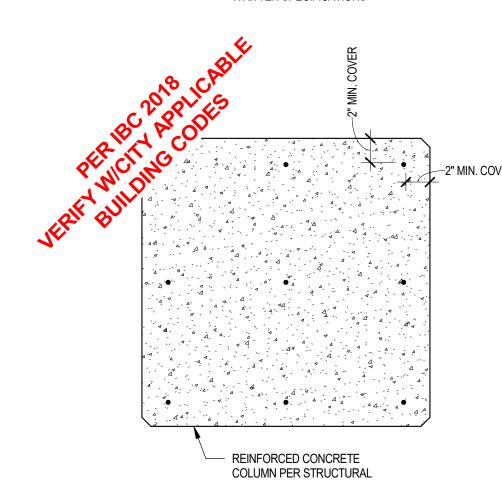
CC 03 1-HR RATED STEEL COLUMN W/INTUMESCENT COATING

SCALE: 3" = 1'-0"

CMU WALL WITH FACINGS OR ACCESSORIES - METAL SIDING GENERIC ASSEMBLY FIRE TEST: IBC TABLE 721.1(2)NOs. 3-1.1 - 3-1.4

NO SOUND RATING REQUIRED AT EXTERIOR WALLS

ARCHITECTURAL CONSTRUCTION DETAIL
NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



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**PRELIMINARY** NOT FOR CONSTRUCTION



EXCERPT FROM TABLE 722.2.4 MINIMUM DIMENSION OF CONCRE COLUMNS (INCHES)

TYPE OF CONCRETE	FIRE RESISTANCE RATING (HOURS)			
	2 <sup>a</sup>	3 <sup>a</sup>		
SILICEOUS	10	12		
CARBONATE	10	11		
SAND - LIGHTWEIGHT	9	10 1/2		

NOTE: FOR SI: 1 INCH = 25 MM

a. THE MINIMUM DIMENSION IS PERMITTED TO BE REDUCED TO 8 INCHES FOR RECTANGULAR COLUMNS WITH TWO PARALLEL SIDES NOT LESS THAN 36 INCHES IN LENGTH.

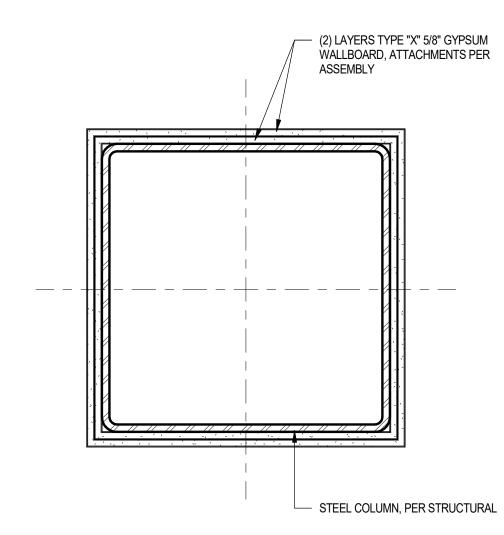
PER IBC 722.2.4.2 MINIMUM COVER FOR R/C COLUMNS. THE MINIMUM THICKNESS OF CONCRETE COVER TO THE MAIN LONGITUDINAL REINFORCEMENT IN COLUMNS, REGARDLESS OF THE TYPE OF AGGREGATE USED IN THE CONCRETE AND THE SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE, F' c' SHALL NOT BE LESS THAN 1 INCH (25mm) TIMES THE NUMBER OF HOURS OF REQUIRED FIRE RESISTANCE OR 2 INCHES (51 mm), WHICHEVER IS LESS.

CONCRETE COLUMN FIRE RATING & CONCRETE COVER FOR 3HR RATED COLUMN

SCALE: 1 1/2" = 1'-0"

1-HR RATED STEEL COLUMN GENERIC ASSEMBLY - June 2021 FIRE TEST: GA FILE NO. CM 1450

> ARCHITECTURAL CONSTRUCTION DETAIL NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



DESIGN NO. WP 8006 GYPSUM WALLBOARD, GLASS MAT GYPSUM PANELS STEEL STUDS, INSULATION

FIRE TEST: UL NC505-(1-6), 71NK2639, 12-23-75; ULNC505, 77NK1518;

UL Design X526

FIRE DESIGN: BASE LAYER 1/2" TYPE X GYPSUM WALLBOARD APPLIED AROUND TS4X4X0.188 TUBE STEEL COLUMN AND HELD IN PLACE WITH PAPER MASKING TAPE. SECOND LAYER 1/2" TYPE X GYPSUM WALLBOARD APPLIED AROUND COLUMN AND HELD IN PLACE WITH PAPER MASKING TAPE. FACE LAYER EITHER NO. 24 MSG GALVANIZED STEEL COLUMN COVER CONSISTING OF TWO L-SHAPED SECTIONS WITH SNAP-LOCK SHEET STEEL JOINTS OR NO 22 MSG GALVANIZED STEEL COLUMN COVERS CONSISTING OF TWO L-SHAPED SECTIONS WITH LAP JOINTS FASTENED WITH NO. 8X1/2" SHEET METAL SCREWS 12" O.C.

HORIZONTAL JOINTS STAGGERED 24" BETWEEN LAYERS.

Contractor must verify all dimensions at project before proceeding with this work. the expressed written permission of the Architect. The drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for completion of this project by others except by the expressed written permission of the Architect.

© ORB Architecture, LLC 2018 Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after certification and approval of billings and estimates). A written description of such other billing (and/or) cycle applicable to the project is available from the owner or the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016 (602) 778-2832

REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this

written description on request.

FIRE ASSEMBLIES - CONCRETE &

STEEL COLUMNS

CC 02 1-HR RATED STEEL COLUMN

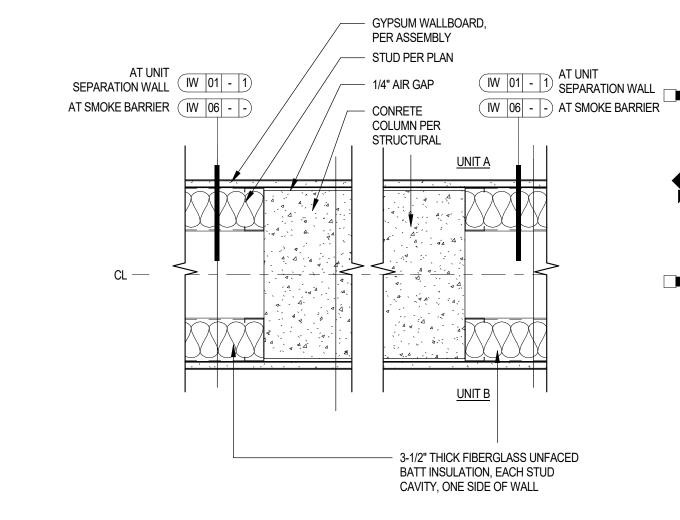
GYPSUM WALLBOARD, PER ASSEMBLY, PROVIDE (3) LAYERS GYPSUM WALLBOARD CORNER \_ METAL STUD FRAMING, PER ASSEMBLY DOUBLE-STRAND STEEL WIRE TIES

BASED ON IBC TABLE 721.1(1) ITEM 1-7.3: THREE LAYERS OF 5/8" TYPE X GYPSUM WALLBOARD, EACH LAYER SCREW ATTACHED TO 1-5/8" STEEL STUDS 0.018" THICK (NO. 25 CARBON SHEET STEEL GAUGE) AT EACH CORNER OF COLUMN. MIDDLE LAYER ALSO SECURED WITH 0.049" (NO. 18 B.W. GAUGE) DOUBLE-STRAND STEEL WIRE TIES, 24" ON CENTER. SCREWS ARE NO. 6 BY 1" SPACED 24" ON CENTER FOR INNER LAYER, NO. 6 BY 1-5/8" SPACED 12" ON CENTER FOR MIDDLE LAYER AND NO. 8" BY 2-1/4" SPACED 12" ON CENTER FOR OUTER LAYER.

# Project Name 1 Street Adress City, state World HQ @ ORBArch.com

3 HR FIRE RATED PROTECTION AT COLUMN WITH **GYPSUM BOARD** 

**PRELIMINARY** NOT FOR SCALE: 1 1/2" = 1'-0" CONSTRUCTION



LEGACY HOSPITALITY

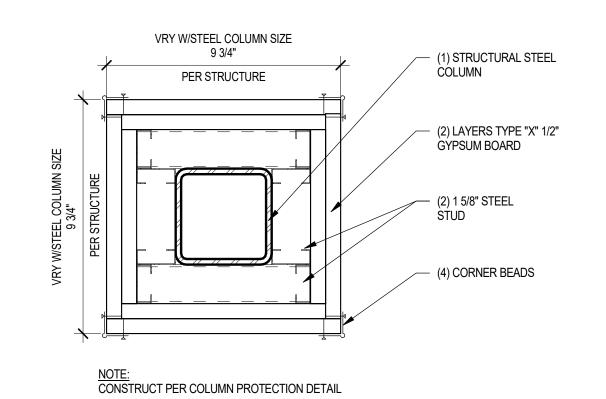
1-HR WALL AT CONCRETE COLUMN - METAL FRAMING SCALE: 1 1/2" = 1'-0"

 CONCRETE WALL PER STRUCTURAL 3-1/2" UNFACED FIBERGLASS BATT INSULATION 3-5/8"x25 GAUGE METAL STUDS AT 24" ON CENTER GYPSUM WALLBOARD, PER ASSEMBLY

ALL ASSEMBLIES FORMING SMOKE BARRIERS OR SMOKE PARTITIONS SHALL BE SEALED TO PREVENT THE PASSAGE OF SMOKE AS REQUIRED BY CODE

SW 02 1-HOUR SMOKE BARRIER AT SHEAR WALL

1-HR UNIT SEPARATION WALL AT CONC. SHEAR WALL SCALE: 1 1/2" = 1'-0"



Contractor must verify all dimensions at project before proceeding with this work. drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for mpletion of this project by others except by the expressed ORB Architecture, LLC 2018

Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after certification and approval of billings and estimates). A written description of such other billing (and/or) cycle the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016 (602) 778-2832 and the owner or its designated agent shall provide this

REVISIONS/SUBMITTALS DATE DESCRIPTION

written description on request.

1HR FIRE RATED STEEL COLUMN GYP. PROTECTION SQUARE PROFILE

THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN L512. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED FLOOR-CEILING ASSEMBLY PER OWNER'S REQUEST

1. FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING: SYSTEM NO. 12 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 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. 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

2. WOOD JOISTS - MIN 2 BY 10, SPACED 16 IN. OC AND EFFECTIVELY FIREBLOCKED IN ACCORDANCE WITH

3. CROSS BRIDGING - MIN 1 BY 3 IN. OR MIN 2 BY 10 SOLID BLOCKING 4. CEILING DAMPER\* - (OPTIONAL) - MAX NOM AREA SHALL BE 198 SQ IN. MAX RECTANGULAR SIZE SHALL

BE 12 IN. WIDE BY 16-1/2 IN. LONG. MAX HEIGHT OF DAMPER SHALL BE 8-3/4 IN. AGGREGATE DAMPER OPENINGS SHALL NOT EXCEED 99 SQ IN. PER 100 SQ FT OF CEILING AREA. DAMPER INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS PROVIDED WITH THE DAMPER. A STEEL GRILLE (ITEM 7) SHALL BE INSTALLED IN ACCORDANCE WITH INSTALLATION 5. GYPSUM WALLBOARD - NOM 1/2 OR 5/8 IN. THICK, 4 FT WIDE GYPSUM BOARD, INSTALLED WITH LONG

DIMENSION PERPENDICULAR TO JOISTS AND SECURED WITH 5D AND 6D CEMENT COATED COOLER NAILS, SPACED 6 IN. OC, FOR THE 1/2 IN. BOARD AND 5/8 IN. THICK BOARD, RESPECTIVELY. NAILS SPACED 3/4 AND 1/2 IN. FROM SIDE AND END JOINTS, RESPECTIVELY **AMERICAN GYPSUM - TYPE AG-C** GEORGIA-PACIFIC GYPSUM - TYPES 5, DAPC, TG-C

NATIONAL GYPSUM - TYPES EXP-C, FSK-C, FSW-C PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM - TYPE C OR PG-C UNITED STATES GYPSUM - TYPES C, IP-X2, IPC-AR) 6. FINISH SYSTEM - 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 GYPSUM BOARD.

-HR FLOOR/CEILING AT INTERIOR CORRIDORS

1-HR FLOOR/CEILING ASSEMBLY PROPRIETARY ASSEMBLY - July 11, 2023 FIRE TEST: UL DESIGN No. L512 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

MINIMUM 2" THICK, MAXIMUM 3" THICK HARDROCK CONCRETE WITH MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI — SLOPE 1/8" MINIMUM PER FOOT. 1/4" MAXIMUM PER FOOT

STRUCTURAL BALCONY FRAMING SHALL BE SLOPED TO DRAIN 2x10 FLOOR JOISTS AT 16" ON CENTER PER STRUCTURAL 5/8" TYPE 'C' GYPSUM

SOFFIT BOARD PER ITEM #4

POLYGUARD 650 SHEET

APPROVED EQUAL

WATERPROOFING SYSTEM OR OWNER

- 3/4" T&G CDX PLYWOOD OR 23/32"

EXPOSURE 1 APA RATED OSB PER

NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL DESIGN L512. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED FLOOR-CEILING ASSEMBLY PER OWNER'S REQUEST

1. FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING: SYSTEM NO. 12 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. 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. 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

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.

4. CEILING DAMPER\* - (OPTIONAL) - MAX NOM AREA SHALL BE 198 SQ IN. MAX RECTANGULAR SIZE SHALL BE 12 IN. WIDE BY 16-1/2 IN. LONG. MAX HEIGHT OF DAMPER SHALL BE 8-3/4 IN. AGGREGATE DAMPER OPENINGS SHALL NOT EXCEED 99 SQ IN. PER 100 SQ FT OF CEILING AREA. DAMPER INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS PROVIDED WITH THE DAMPER. A STEEL GRILLE (ITEM 7) SHALL BE INSTALLED IN ACCORDANCE WITH INSTALLATION

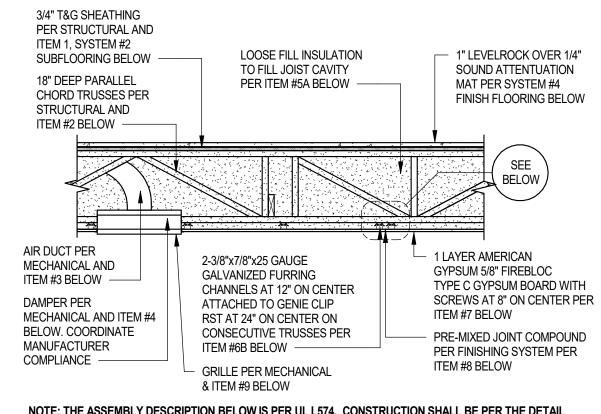
5. GYPSUM WALLBOARD - NOM 1/2 OR 5/8 IN. THICK, 4 FT WIDE GYPSUM BOARD, INSTALLED WITH LONG DIMENSION PERPENDICULAR TO JOISTS AND SECURED WITH 5D AND 6D CEMENT COATED COOLER NAILS, SPACED 6 IN. OC, FOR THE 1/2 IN. BOARD AND 5/8 IN. THICK BOARD, RESPECTIVELY. NAILS SPACED 3/4 AND 1/2 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. **AMERICAN GYPSUM - TYPE AG-C** 

GEORGIA-PACIFIC GYPSUM - TYPES 5, DAPC, TG-C NATIONAL GYPSUM - TYPES EXP-C, FSK-C, FSW-C

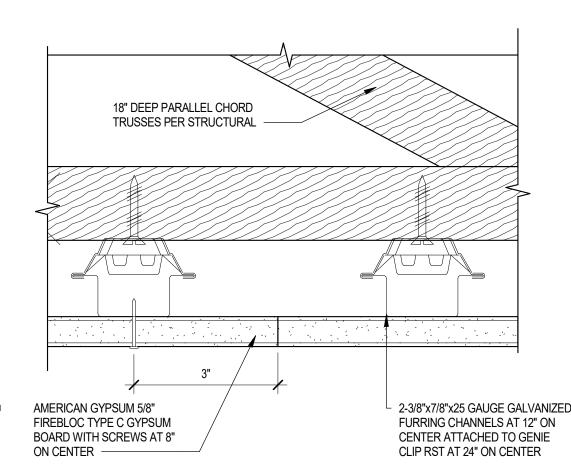
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM - TYPE C OR PG-C UNITED STATES GYPSUM - TYPES C, IP-X2, IPC-AR) 6. FINISH SYSTEM - VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND

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 GYPSUM BOARD. 7. **GRILLE** - STEEL GRILLE, INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED WITH THE CEILING DAMPER.

1-HR FLOOR/CEILING ASSEMBLY PROPRIETARY ASSEMBLY - February 16, 2024 FIRE TEST: UL DESIGN No. L574 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY



NOTE: THE ASSEMBLY DESCRIPTION BELOW IS PER UL L574. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED FLOOR-CEILING ASSEMBLY PER OWNER'S REQUEST.



1. FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING

SUBFLOORING - MIN 23/32 IN. THICK PLYWOOD WITH T & G EDGES ALONG THE 8 FT SIDES AND EXTERIOR GLUE OR NON-VENEER APA STURD-I-FLOOR T & G PANELS PER APA SPECIFICATIONS PRP 108. FACE GRAIN OF PLYWOOD OR STRENGTH AXIS OF PANEL TO BE PERPENDICULAR TO TRUSSES WITH JOINTS STAGGERED 4 FT. PLYWOOD OR PANELS SECURED TO TRUSSES WITH NO. 6D RING SHANK NAILS SPACED 12 IN. OC ALONG EACH TRUSS. TETRAGRIP™ NAILS MEASURING 2-3/8 IN. LONG, 0.113 IN. DIAMETER, 0.272 IN. ROUND HEAD, AND HELICALLY THREADED SHANK WITH BARBED FEATURES ON THE HELIX MEETING ASTM F1667 AND HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY BE SUBSTITUTED FOR THE 6D NAILS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY BE SUBSTITUTED FOR THE 6D 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 - LEVELROCK® BRAND 2500 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 ALTERNATE FLOOR MAT MATERIALS\* - (OPTIONAL) - NOM 3/8 IN. THICK FLOOR MAT MATERIAL LOOSE LAID OVER THE SUBFLOOR.

**GRASSWORX LLC** - TYPE SC50 2. TRUSSES - PARALLEL CHORD TRUSSES, SPACED A MAX OF 24 IN. OC, FABRICATED FROM NOM 2 BY 4 LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. MIN TRUSS DEPTH IS 18 IN. WHEN

CEILING DAMPERS\* ARE USED. TRUSS DEPTH MAY BE REDUCED TO 12 IN. WHEN CEILING DAMPERS\* ARE NOT USED. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0.0356 IN. THICK GALVANIZED STEEL PLATES. PLATES HAVE 5/16 IN. LONG TEETH PROJECTING PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY THE SAME PUNCH), FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOL HAS A CHISEL POINT ON ITS OUTSIDE EDGE. THESE POINTS ARE DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROX. 7/8 IN. CENTERS WITH FOUR ROWS OF TEETH PER INCH OF PLATE WIDTH. 3. AIR DUCT\* - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE

INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER. 4. CEILING DAMPER\* - FOR USE WITH MIN 18 IN. DEEP TRUSSES. NOM 20 IN. LONG BY 18 IN. WIDE BY 2-1/8 IN. HIGH, FABRICATED FROM GALVANIZED STEEL. PLENUM BOX MAX SIZE NOM 21 IN. LONG BY 18 IN. WIDE BY 16 IN. HIGH FABRICATED FROM EITHER GALVANIZED STEEL OR CLASSIFIED AIR DUCT MATERIALS BEARING THE UL CLASSIFICATION MARKING FOR CLASS 0 OR CLASS 1 RIGID AIR DUCT MATERIAL. INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE MANUFACTURER. MAX DAMPER OPENINGS NOT TO EXCEED 180 SQ IN. PER 100 SQ FT OF CEILING AREA. NAILOR INDUSTRIES INC - TYPES 0755, 0755A, 0756, 0756D, 0757, 0757D, 0757FP, 0757DFP, 0758, 0759, 0760, 0761, 0762, 0763, CRD5, CRD5D, CRD6, CRD6D, CRD6FP, CRD6DFP SAFE AIR DOWCO - 0455, 0455A, 0456, 0456D, 0457, 0457D, 0457-DB, 0457-CB, 0463-FB, 0457-EB, 0463-GB,

5A. LOOSE FILL MATERIAL\* - (OPTIONAL) - LOOSE FILL MATERIAL MAY BE USED AS AN ALTERNATE TO BATT INSULATION (ITEM 5). WHEN USED, THE RESILIENT CHANNEL AND GYPSUM BOARD ATTACHMENT IS MODIFIED AS SPECIFIED IN ITEMS 6 AND 7. ANY LOOSE FILL MATERIAL BEARING THE UL CLASSIFICATION MARKING FOR SURFACE BURNING CHARACTERISTICS, HAVING A MIN DENSITY OF 0.5 PCF. THE FINISHED RATING WHEN THIS INSULATION IS USED HAS NOT BEEN DETERMINED WHEN TYPE AG-C PANELS ARE INSTALLED THERE IS NO LIMIT ON MAXIMUM THICKNESS. WHEN TYPE TG-C PANELS ARE INSTALLED THE MAXIMUM THICKNESS IS 3-1/2 IN. 6B. STEEL FRAMING MEMBERS\* - (NOT SHOWN) - AS AN ALTERNATE TO ITEMS 6 AND 6A.

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 TRUSSES. WHEN BATT INSULATION (ITEMS 5) IS DRAPED

OVER THE RESILIENT CHANNEL/GYPSUM BOARD CEILING MEMBRANE, THE RESILIENT CHANNEL SPACING SHALL BE REDUCED TO 12 IN. OC. CHANNELS SECURED TO TRUSSES 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. b. STEEL FRAMING MEMBERS\* - USED TO ATTACH FURRING CHANNELS (ITEM A) TO TRUSSES (ITEM 2). CLIPS SPACED 48 IN. OC. RSIC-1 AND RSIC-1 (2.75) CLIPS SECURED TO ALTERNATING TRUSSES WITH NO. 8 X 2-1/2 IN. COARSE DRYWALL SCREW THROUGH THE CENTER GROMMET. RSIC-V AND RSIC-V (2.75) CLIPS SECURED TO ALTERNATING TRUSSES WITH NO. 8 X 1-1/2 IN. COARSE DRYWALL 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. 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 7

**PLITEQ INC - TYPE GENIE CLIP** 7. GYPSUM WALLBOARD\* - WHEN STEEL FRAMING MEMBERS (ITEM 6B) ARE USED, ONE LAYER OF NOM 5/8 IN. THICK, 4 FT WIDE GYPSUM BOARD IS INSTALLED WITH LONG DIMENSIONS PERPENDICULAR TO FURRING CHANNELS. GYPSUM BOARD SECURED TO FURRING CHANNELS WITH NOM 1 IN. LONG NO. 6 TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC IN THE FIELD OF THE BOARD, SCREW SPACING IS REDUCED TO 8 IN. OC WHEN INSULATION IS APPLIED OVER THE FURRING CHANNEL/GYPSUM PANEL CEILING MEMBRANE. GYPSUM BOARD BUTTED END JOINTS SHALL BE STAGGERED MINIMUM 16 IN. WITHIN THE ASSEMBLY. 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 6 IN. ON EACH END. THESE ADDITIONAL FURRING CHANNELS SHALL BE ATTACHED TO UNDERSIDE OF THE TRUSS WITH CLIPS AS DESCRIBED IN ITEM. SCREW SPACING ALONG THE GYPSUM BOARD BUTT JOINT SHALL BE 6 IN. OC.

AMERICAN GYPSUM CO - TYPES AG-0 8. 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 GYPSUM BOARD. 9. GRILLE - GRILLE INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED WITH

FINISH FLOORING & FLOOR MAT MATERIALS - 1" LEVELROCK ON SAM-N25 SOUND ATTENUATION MAT OR OWNER APPROVED SUBSTITUTE, PER ITEM #1 FLOOR SHEATHING PER STRUCTURAL AND SUBFLOORING ITEM BELOW 18" DEEP PARALLEL CHORD TRUSSES PER STRUCTURAL & ITEM #2 BELOW AIR DUCT PER MECHANICAL FILL TRUSS CAVITY W/ INSULATION (FIBERGLASS BATT OR LOOSE FILL) PER ITEM #5 OR ITEM #5B DAMPER PER MECHANICAL AND ITEM #4 BELOW. COORDINATE MANUFACTURER COMPLIANCE 5/8" TYPE C GYPSUM BOARD PER ITEM

1-HR FLOOR/CEILING ASSEMBLY FILLED WITH INSULATION - ENHANCED STC

PROPRIETARY ASSEMBLY - December 6, 2023

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

FIRE TEST: UL DESIGN No. L563

25 MSG GALV STEEL RESILIENT CHANNEL AT 16" O.C. PER ITEM #6E NONE USG090301A SHEET VINYL USG090401A USG090302A USG090302A USG090501A CERAMIC TILE 64 USG090501A CARPET & PAD 62 USG090402A USG090402A

1. FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING: <u>SUBFLOORING</u> - MIN NOM 23/32 IN. THICK WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR TRUSSES WITH END JOINTS STAGGERED. PLYWOOD OR PANELS SECURED TO TRUSSES WITH CONSTRUCTION ADHESIVE AND NO. 6D RINGED SHANK NAILS SPACED 12 IN. OC ALONG EACH TRUSS. TETRAGRIP™ NAILS MEASURING 2-3/8 IN. LONG. 0.113 IN. DIAMETER. 0.272 IN. ROUND HEAD. AND

SECOND LAYER END

JOINT DETAIL

HELICALLY THREADED SHANK WITH BARBED FEATURES ON THE HELIX MEETING ASTM F1667 AND HAVING FOLIAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRE SUBSTITUTED FOR THE 6D NAILS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY BE SUBSTITUTED FOR THE 6D NAILS. VAPOR BARRIER - (OPTIONAL) NOM 0.010 IN. THICK COMMERICAL 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 TYPES LRK - LEVELROCK® BRAND 2500 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 2. TRUSSES - PARALLEL CHORD TRUSSES, SPACED A MAX OF 24 IN. OC, FABRICATED FROM NOM 2 BY 4 LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. MIN TRUSS DEPTH IS 12 IN. WHEN CEILING DAMPERS\* ARE NOT USED. MIN TRUSS DEPTH IS 18 IN. WHEN CEILING DAMPER\* IS USED. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0.036 0356 IN. THICK GALVANIZED STEEL PLATES. PLATES HAVE 5/16 IN. LONG TEETH PROJECTING PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY THE SAME PUNCH). FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOL HAS A CHISEL POINT ON ITS OUTSIDE EDGE. THESE POINTS ARE DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROX. 7/8 IN. CENTERS WITH FOUR ROWS OF TEETH PER INCH OF

PLATE WIDTH... 3. AIR DUCT - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER. 4. **DAMPER** - FOR USE WITH MIN 18 IN. DEEP TRUSSES MAX PLENUM BOX SIZE NOM 19 IN. LONG BY 19 IN. WIDE AND 11-7/8 IN. HIGH FABRICATED FROM GALV STEEL. AGGREGATE DAMPER OPENINGS SHALL NOT EXCEED 128 SQ IN. PER 100 SQ FT OF CEILING AREA. DAMPER INSTALLED IN ACCORDANCE WITH

THE MANUFACTURER'S INSTALLATION INSTRUCTIONS PROVIDED WITH THE DAMPER.. AIRE TECHNOLOGIES INC — MODELS: CRD MODEL 50 W/BOOT, CRD MODEL 50EA W/BOOT, CRD MODEL 55 W/BOOT, CRD MODEL 55 EA W/BOOT. LLOYD INDUSTRIES INC — MODEL CRD 50-BT, CRD 50-EA-BT, CRD 55-BT, CRD 55 EA-BT

UNITED ENERTECH CORP — MODEL C-S/R-WT-L, C-S/R-EA-L, C-S/R-BT, C-S/R-EA-BL BATTS AND BLANKETS\* - (OPTIONAL) - GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. WHEN NO INSULATION IS INSTALLED IN THE CONCEALED SPACE RESILIENT CHANNELS (ITEM 6) ARE SPACED 24 IN. OC. WHEN THE RESILIENT CHANNELS (ITEM 6) ARE SPACED 16 IN. OC. THE INSULATION SHALL BE A MAX OF 3-1/2 IN. THICK, AND SHALL BE SECURED AGAINST THE SUBFLOORING WITH STAPLES AT 12 IN. OC OR HELD SUSPENDED IN THE CONCEALED SPACE WITH 0.090 IN. DIAM GALV STEEL WIRES ATTACHED TO THE WOOD TRUSSES AT 12 IN. OC. WHEN THE RESILIENT CHANNELS ARE SPACED A MAX OF 12 IN. OC OR WHEN THE STEEL FRAMING MEMBERS (ITEM 6A) ARE USED, THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION. AND THE INSULATION CAN BE SECURED AGAINST THE SUBFLOORING, HELD SUSPENDED IN THE CONCEALED SPACE OR DRAPED OVER THE RESILIENT CHANNELS (OR STEEL FRAMING MEMBERS) AND GYPSUM PANEL MEMBRANE. THE FINISHED RATING HAS ONLY BEEN DETERMINED WHEN THE INSULATION IS SECURED TO THE SUBFLOORING. 5B. CAVITY INSULATION - BATTS AND BLANKETS\* OR LOOSE FILL MATERIAL\* - (NOT SHOWN) — (AS DESCRIBED ABOVE IN ITEMS 5 AND 5A) — FOR USE WITH ITEM 7A — MIN. 3-1/2 IN THICK WITH NO LIMIT ON MAXIMUM THICKNESS FITTED IN THE CONCEALED SPACE, DRAPED OVER THE RESILIENT CHANNEL

(ITEM 6E)/GYPSUM BOARD (ITEM 7A) CEILING MEMBRANE **6E.RESILIENT CHANNELS - FOR USE WITH ITEM 7A - FORMED FROM MIN 25 MSG GALV STEEL INSTALLED** PERPENDICULAR TO TRUSSES AND SPACED 16 IN. OC. CHANNELS SECURED TO EACH TRUSS WITH 1-5/8 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS. CHANNELS OVERLAPPED 4 IN. AT SPLICES. TWO CHANNELS, SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM PANEL END JOINT. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF PANEL. INSULATION, ITEM 5B IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL (ITEM 7A) CEILING MEMBRANE. 7A.GYPSUM WALLBOARD\* - FOR USE WITH ITEMS 5B AND 6E. NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM PANELS INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS. GYPSUM PANELS SECURED WITH 1 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS SPACED 8 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM THE END JOINTS. FINISH RATING WITH THIS CEILING SYSTEM IS 20 MIN.

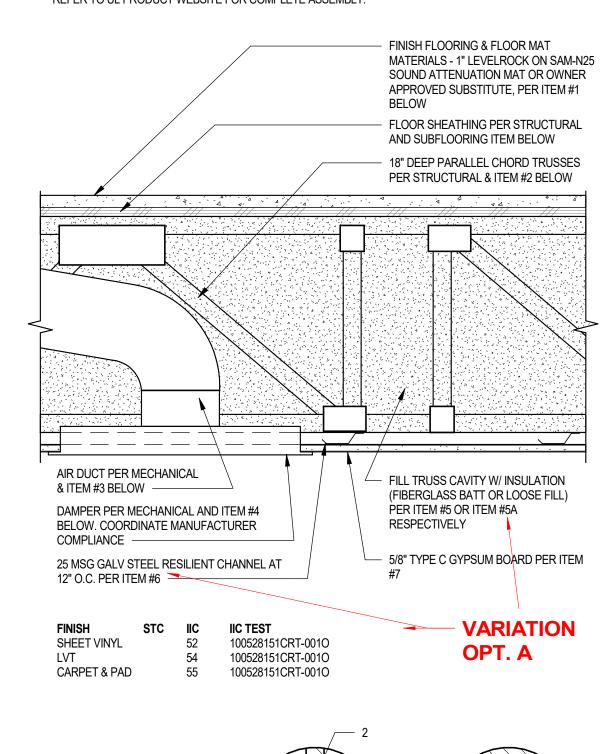
CGC INC — TYPE ULIX UNITED STATES GYPSUM CO — Type ULIX

5/8" USG SHEETROCK® BRAND ECOSMART PANELS FIRECODE® X 5/8" USG SHEETROCK® BRAND ECOSMART PANELS MOLD TOUGH® FIRECODE® X 8. 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 GYPSUM BOARD.

9. **GRILLE** — ALUMINUM OR STEEL GRILLE. INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED WITH THE CEILING DAMPER. INDICATED SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS

EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY. THE CAVITY OF THE FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES SHOWN ON THE FIRE-RATED ASSEMBLY DETAILS SHALL BE FILLED FULL WITH NON-COMBUSTIBLE INSULATION AS SHOWN ON THE FIRE-RATED ASSEMBLY DETAILS TO BE IN COMPLIANCE WITH NFPA 13 SECTION 8.15.1.2.7 WHICH STATES: CONCEALED SPACES FILLED WITH NONCOMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION. A MAXIMUM OF 2 INCH AIR GAP AT THE TOP OF THE SPACE SHALL BE PERMITTED. (NFPA

1-HR FLOOR/CEILING ASSEMBLY FILLED WITH INSULATION PROPRIETARY ASSEMBLY - December 6, 2023 FIRE TEST: UL DESIGN No. L563 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY



JOINT DETAIL

1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING

FIRST LAYER END JOINT

SECOND LAYER END

RESILIENT CHANNE

SUBFLOORING - MIN NOM 23/32 IN. THICK WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR TO TRUSSES WITH END JOINTS STAGGERED. PLYWOOD OR PANELS SECURED TO TRUSSES WITH CONSTRUCTION ADHESIVE AND NO. 6D RINGED SHANK NAILS SPACED 12 IN. OC ALONG EACH TRUS: TETRAGRIP™ NAILS MEASURING 2-3/8 IN. LONG. 0.113 IN. DIAMETER. 0.272 IN. ROUND HEAD. AND HELICALLY THREADED SHANK WITH BARBED FEATURES ON THE HELIX MEETING ASTM F1667 AND SUBSTITUTED FOR THE 6D NAILS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY BE SUBSTITUTED FOR THE 6D NAILS. VAPOR BARRIER - (OPTIONAL) NOM 0.010 IN. THICK COMMERICAL 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 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 2. TRUSSES - PARALLEL CHORD TRUSSES, SPACED A MAX OF 24 IN. OC, FABRICATED FROM NOM 2 BY 4 LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. MIN TRUSS DEPTH IS 12 IN. WHEN CEILING DAMPERS\* ARE NOT USED. MIN TRUSS DEPTH IS 18 IN. WHEN CEILING DAMPER\* IS USED. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0.036.0356 IN THICK GALVANIZED STEEL PLATES. PLATES HAVE 5/16 IN. LONG TEETH PROJECTING PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY THE SAME PUNCH), FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOL HAS A CHISEL POINT ON ITS OUTSIDE EDGE. THESE POINTS ARE DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROX. 7/8 IN. CENTERS WITH FOUR ROWS OF TEETH PER INCH OF

3. AIR DUCT - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER. 4. DAMPER - FOR USE WITH MIN 18 IN. DEEP TRUSSES MAX PLENUM BOX SIZE NOM 19 IN. LONG BY 19 IN. WIDE AND 11-7/8 IN. HIGH FABRICATED FROM GALV STEEL. AGGREGATE DAMPER OPENINGS SHALL

NOT EXCEED 128 SQ IN. PER 100 SQ FT OF CEILING AREA. DAMPER INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS PROVIDED WITH THE DAMPER... AIRE TECHNOLOGIES INC — MODELS: CRD MODEL 50 W/BOOT, CRD MODEL 50EA W/BOOT, CRD MODEL 55 W/BOOT, CRD MODEL 55 EA W/BOOT. LLOYD INDUSTRIES INC — MODEL CRD 50-BT, CRD 50-EA-BT, CRD 55-BT, CRD 55 EA-BT

UNITED ENERTECH CORP — MODEL C-S/R-WT-L, C-S/R-EA-L, C-S/R-BT, C-S/R-EA-BL 5. BATTS AND BLANKETS\* - (OPTIONAL) - GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. WHEN NO INSULATION IS INSTALLED IN THE CONCEALED SPACE RESILIENT CHANNELS (ITEM 6) ARE SPACED 24 IN. OC. WHEN THE RESILIENT CHANNELS (ITEM 6) ARE SPACED 16 IN. OC, THE INSULATION SHALL BE A MAX OF 3-1/2 IN. THICK, AND SHALL BE SECURED AGAINST THE SUBFLOORING WITH STAPLES AT 12 IN. OC OR HELD SUSPENDED IN THE CONCEALED SPACE WITH 0.090 IN. DIAM GALV STEEL WIRES ATTACHED TO THE WOOD TRUSSES AT 12 IN. OC. WHEN THE RESILIENT CHANNELS ARE SPACED A MAX OF 12 IN. OC OR WHEN THE STEEL FRAMING MEMBERS (ITEM 6A) ARE USED, THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION, AND THE INSULATION CAN BE SECURED AGAINST THE SUBFLOORING, HELD SUSPENDED IN THE CONCEALED SPACE OR DRAPED OVER THE RESILIENT CHANNELS (OR STEEL FRAMING MEMBERS) AND GYPSUM PANEL MEMBRANE. THE FINISHED RATING HAS ONLY BEEN DETERMINED WHEN THE INSULATION IS SECURED TO THE SUBFLOORING. 5A. LOOSE FILL MATERIAL\* — (OPTIONAL) - AS AN ALTERNATE TO ITEM 5. WHEN THE RESILIENT CHANNELS (ITEM 6) ARE SPACED A MAX OF 12 IN. OC. OR WHEN THE STEEL FRAMING MEMBERS (ITEM 6A) ARE USED - ANY LOOSE FILL MATERIAL BEARING THE UL CLASSIFICATION MARKING FOR SURFACE BURNING CHARACTERISTICS. THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION. THE FINISHED RATING WHEN LOOSE FILL MATERIAL IS USED HAS NOT BEEN DETERMINED.

RESILIENT CHANNELS - FORMED FROM MIN 25 MSG GALV STEEL INSTALLED PERPENDICULAR TO THE TRUSSES. WHEN INSULATION (ITEM 5) IS SECURED TO THE UNDERSIDE OF THE SUBFLOOR, THE RESILIENT CHANNELS ARE SPACED 16 IN. OC. WHEN INSULATION (ITEMS 5 OR 5A) IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE, THE RESILIENT CHANNELS ARE SPACED 12 IN. OC. CHANNELS SECURED TO EACH TRUSS WITH 1-1/4 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS. CHANNELS OVERLAPPED 4 IN. AT SPLICES. TWO CHANNELS, SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM PANEL END JOINT AS SHOWN IN THE ABOVE ILLUSTRATION. ADDITIONAL

CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF PANEL. 7. GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM PANELS. WHEN RESILIENT CHANNELS (ITEM 6) ARE USED. GYPSUM PANELS INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS, GYPSUM PANELS SECURED WITH 1 IN, LONG TYPE S BUGLE HEAD STEEL SCREWS SPACED 12 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM END JOINTS. WHEN INSULATION (ITEMS 5 OR 5A) IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE THE SCREW SPACING SHALL BE REDUCED TO 8 IN. OC. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL.

AMERICAN GYPSUM CO — Type AG-C 5/8" FIREBLOC® TYPE C GYPSUM BOARD AT INTERIOR LOCATIONS 5/8" M-BLOCK® TYPE C GYPSUM BOARD W/MOLD & MOISTURE RESISTANCE FOR WET AREAS AT INTERIOR LOCATIONS

NATIONAL GYPSUM CO — Types eXP-C, FSW-G, FSW-C, FSK-G, FSK-C. 5/8" GOLD BOND® FIRE-SHIELD C™ GYPSUM BOARD, TYPE C 5/8" GOLD BOND® XP® FIRE-SHIELD C™ GYPSUM BOARD, TYPE C

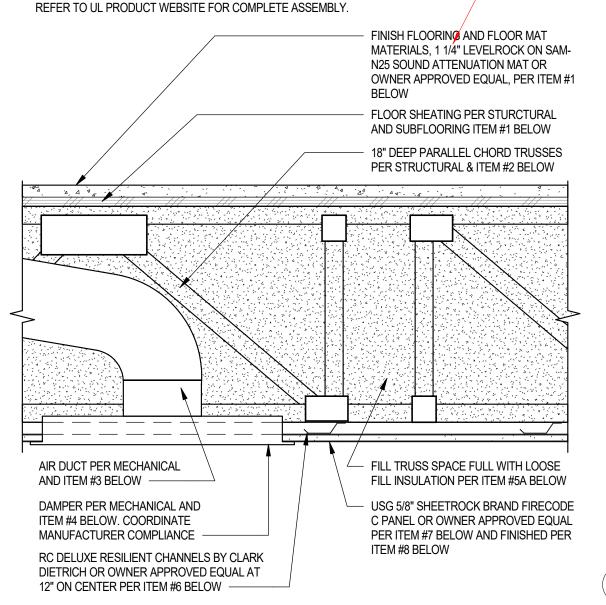
**UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR** 5/8" USG SHEETROCK® BRAND FIRECODE C PANELS 8. FINISHING SYSTEM - (NOT SHOWN) — VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW-HEADS. NOM 2 IN. WIDE PAPER TAPE EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS. AS AN ALTERNATE, NOM 3/32 IN. THICK VENEER PLASTER MAY BE

APPLIED TO THE ENTIRE SURFACE OF GYPSUM BOARD. 9. **GRILLE** — ALUMINUM OR STEEL GRILLE, INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED WITH THE CEILING DAMPER. INDICATED SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS

EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY. NOTE:
THE CAVITY OF THE FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES SHOWN ON THE FIRE-RATED ASSEMBLY DETAILS SHALL BE FILLED FULL WITH NON-COMBUSTIBLE INSULATION AS SHOWN ON THE FIRE-RATED ASSEMBLY DETAILS TO BE IN COMPLIANCE WITH NFPA 13 SECTION 8.15.1.2.7 WHICH STATES: CONCEALED SPACES FILLED WITH NONCOMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION. A MAXIMUM OF 2 INCH AIR GAP AT THE TOP OF THE SPACE SHALL BE PERMITTED. (NFPA

1-HR FLOOR/CEILING ASSEMBLY - FILLED WITH

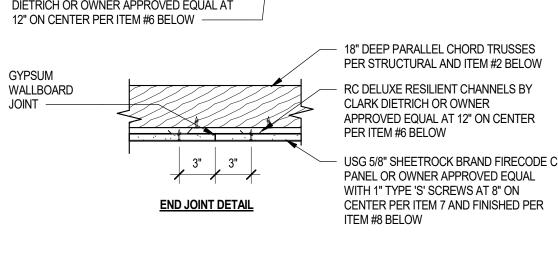
TYPICAL FOR TRINSIC VERIFY WITH PM



1-HR FLOOR/CEILING ASSEMBLY

FIRE TEST: UL DESIGN No. L550

PROPRIETARY ASSEMBLY - February 16, 2024



. FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING: SYSTEM No. 2 SUBFLOORING - NOM 23/32 IN. THICK WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR TO TRUSSES WITH END JOINTS STAGGERED. PLYWOOD OR PANELS SECURED TO TRUSSES WITH CONSTRUCTION ADHESIVE AND NO. 6D RINGED SHANK NAILS. SPACED 12 IN. OC ALONG EACH TRUSS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY BE SUBSTITUTED FOR THE 6D NAILS.

**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. 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 TRUSSES - PARALLEL CHORD TRUSSES, SPACED A MAX OF 24 IN. OC, FABRICATED FROM NOM 2 BY 4 LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. MIN TRUSS DEPTH IS 12 IN. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0. 0356 IN. THICK GALVANIZED STEEL PLATES. PLATES HAVE 5/16 IN. LONG TEETH PROJECTING PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY THE SAME PUNCH), FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOL HAS A CHISEL POINT ON ITS OUTSIDE EDGE. THESE POINTS ARE DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROX. 7/8 IN. CENTERS WITH FOUR ROWS OF TEETH PER INCH OF PLATE WIDTH.

3. AIR DUCT\* - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE

INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER. 4. DAMPER\* - FOR USE WITH MIN 18 IN. DEEP TRUSSES. MAX NOM 20 IN. LONG BY 18 IN. WIDE BY 2-1/8 IN HIGH, FABRICATED FROM GALVANIZED STEEL. PLENUM BOX MAX SIZE NOM 21 IN. LONG BY 18 IN. WIDE BY 16 IN. HIGH FABRICATED FROM EITHER GALVANIZED STEEL OR CLASSIFIED AIR DUCT MATERIALS BEARING THE UL CLASSIFICATION MARKING FOR CLASS 0 OR CLASS 1 RIGID AIR DUCT MATERIAL. INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE MANUFACTURER. MAX DAMPER OPENINGS NOT TO EXCEED 180 SQ IN. PER 100 SQ FT OF CEILING AREA. NAILOR INDUSTRIES INC - TYPES 0755, 0755A, 0756, 0756D, 0757, 0757D, 0757FP, 0757DFP, 0758, 0759, 0760, 0761, 0762, 0763, CRD5, CRD5D, CRD6, CRD6D, CRD6FP, CRD6DFP **SAFE AIR DOWCO** - TYPES 0455, 0455A, 0456, 0456D, 0457, 0457D, 0457-DB, 0457-CB, 0463-FB, 0457-EB,

0463-GB. 0463 5A. LOOSE FILL MATERIAL\* - (OPTIONAL) — AS AN ALTERNATE TO ITEM 5, WHEN THE RESILIENT CHANNELS (ITEM 6) ARE SPACED A MAXIMUM OF 12 IN. OC. OR WHEN THE STEEL FRAMING MEMBERS (ITEM 6A) ARE USED - ANY LOOSE FILL MATERIAL BEARING THE UL CLASSIFICATION MARKING FOR SURFACE BURNING CHARACTERISTICS. THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION. THE FINISHED RATING WHEN LOOSE FILL MATERIAL IS USED HAS NOT BEEN DETERMINED. 6. **RESILIENT CHANNELS** - FORMED FROM MIN 25 MSG GALV STEEL INSTALLED PERPENDICULAR TO TRUSSES. WHEN NO INSULATION IS INSTALLED IN THE CONCEALED SPACE RESILIENT CHANNELS ARE SPACED 24 IN. WHEN THE INSULATION (ITEM 5) IS INSTALLED TO THE UNDERSIDE OF THE SUBFLOOR THE RESILIENT CHANNELS ARE SPACED 16 IN. OC. WHEN INSULATION (ITEM 5 OR 5A) IS APPLIED OVER

INSULATION (ITEM 5C) IS SPRAYED TO THE UNDERSIDE OF THE SUBFLOOR, THE RESILIENT CHANNEL SPACING SHALL BE REDUCED TO 12 IN. OC. CHANNELS SECURED TO EACH TRUSS WITH 1-1/4 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS. CHANNELS OVERLAPPED 4 IN. AT SPLICES. TWO CHANNELS, SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM PANEL END JOINT AS SHOWN IN THE ABOVE ILLUSTRATION. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF PANEL ". **GYPSUM WALLBOARD\*** - NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM PANELS. WHEN RESILIENT CHANNELS (ITEM 6) ARE USED, GYPSUM PANELS INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS. GYPSUM PANELS SECURED WITH 1 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS SPACED 12 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM END JOINTS. WHEN INSULATION (ITEMS 5 OR 5A) IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE THE SCREW SPACING SHALL BE REDUCED TO 8 IN. OC. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL. WHEN FOAMED PLASTIC INSULATION (ITEM 5C) IS APPLIED TO THE UNDERSIDE OF THE SUBFLOORING, SCREW SPACING SHALL BE REDUCED TO 8 IN. OC AND MINIMUM 1-1/4 IN. LONG TYPE S SCREWS TO INSTALL GYPSUM TO THE RESILIENT CHANNELS (ITEM 6), AND BUTTED END JOINTS SHALL BE STAGGERED MIN. 2 FT WITHIN THE ASSEMBLY

THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE, OR WHEN FOAMED PLASTIC

BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL. UNITED STATES GYPSUM CO - Types C, IP-X2, IPC-AR 8. 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 GYPSUM BOARD.

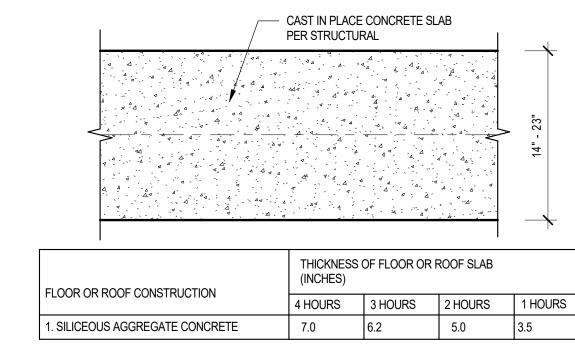
AND OCCUR MIDWAY BETWEEN THE CONTINUOUS FURRING CHANNELS. END JOINTS SECURED TO

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

# 1-HR FLOOR/CEILING ASSEMBLY - FILLED WITH INSULATION AT UNITS

SCALE: 1 1/2" = 1'-0"  $^{ot}$  UL DESIGN No. L550

3-HR HORIZONTAL ASSEMBLY GENERIC ASSEMBLY FIRE TEST: IBC TABLE 721.1(3) ITEM NO. 1-1.1



**Street Adress** 

City, state

World HQ @ ORB Arch.com

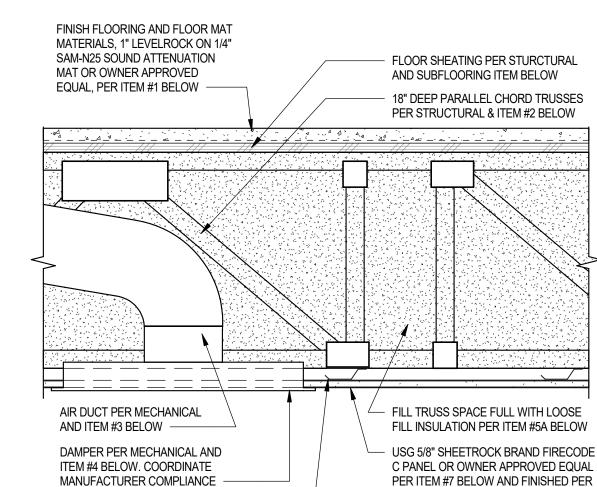
1. SILICEOUS AGGREGATE CONCRETE SLAB (CEILING NOT REQUIRED). MINIMUM COVER OVER NON-PRESTRESSED REINFORCEMENT SHALL BE NOT LESS THAN 3/4 INCH (b). b. WHERE THE SLAB IS IN AN UNRESTRAINED CONDITION, MINIMUM REINFORCEMENT COVER SHALL BE NOT LESS THAN 1-5/8 INCHES FOR 4 HOURS (SILICEOUS AGGREGATE ONLY): 1-1/4 INCHES FOR 4 AND 3 HOURS; 1 INCH FOR 2 HOURS (SILICEOUS AGGREGATE ONLY); AND 3/4 INCH FOR ALL OTHER

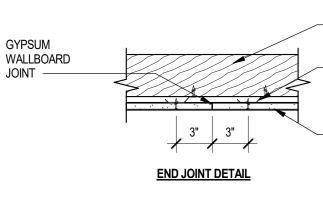
2018 IBC TABLE 721.1(3) ITEM NO. 1-1.1

RESTRAINED AND UNRESTRAINED CONDITIONS.

1-HR FLOOR/CEILING ASSEMBLY PROPRIETARY ASSEMBLY - February 16, 2024 FIRE TEST: UL DESIGN No. L550

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.





RC DELUXE RESILIENT CHANNELS BY CLARK

DIETRICH OR OWNER APPROVED EQUAL AT

12" ON CENTER PER ITEM #6 BELOW —

18" DEEP PARALLEL CHORD TRUSSES PER STRUCTURAL AND ITEM #2 BELOW RC DELUXE RESILIENT CHANNELS BY CLARK DIETRICH OR OWNER APPROVED EQUAL AT 12" ON CENTER PER ITEM #6 BELOW USG 5/8" SHEETROCK BRAND FIRECODE C PANEL OR OWNER APPROVED EQUAL WITH 1" TYPE 'S' SCREWS AT 8" ON CENTER PER ITEM 7 AND FINISHED PER

ITEM #8 BELOW

SCALE: 1 1/2" = 1'-0"

ITEM #8 BELOW

1. FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING: SYSTEM No. 2 SUBFLOORING - NOM 23/32 IN. THICK WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR TO

CONSTRUCTION ADHESIVE AND NO. 6D RINGED SHANK NAILS, SPACED 12 IN. OC ALONG EACH TRUSS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY BE SUBSTITUTED FOR THE 6D NAILS. 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

TRUSSES WITH END JOINTS STAGGERED. PLYWOOD OR PANELS SECURED TO TRUSSES WITH

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

2. TRUSSES - PARALLEL CHORD TRUSSES, SPACED A MAX OF 24 IN. OC, FABRICATED FROM NOM 2 BY 4 LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. MIN TRUSS DEPTH IS 12 IN. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0. 0356 IN. THICK GALVANIZED STEEL PLATES. PLATES HAVE 5/16 IN. LONG TEETH PROJECTING PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY THE SAME PUNCH), FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOL HAS A CHISEL POINT ON ITS OUTSIDE EDGE. THESE POINTS ARE DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROX. 7/8 IN. CENTERS WITH FOUR ROWS OF TEETH PER INCH OF PLATE WIDTH. 3. AIR DUCT\* - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER

4. DAMPER\* - FOR USE WITH MIN 18 IN. DEEP TRUSSES. MAX NOM 20 IN. LONG BY 18 IN. WIDE BY 2-1/8 IN. HIGH, FABRICATED FROM GAI VANIZED STEEL, PLENUM BOX MAX SIZE NOM 21 IN, LONG BY 18 IN, WIDE BY 16 IN. HIGH FABRICATED FROM EITHER GALVANIZED STEEL OR CLASSIFIED AIR DUCT MATERIALS BEARING THE UL CLASSIFICATION MARKING FOR CLASS 0 OR CLASS 1 RIGID AIR DUCT MATERIAL. INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE MANUFACTURER. MAX DAMPER OPENINGS NOT TO EXCEED 180 SQ IN. PER 100 SQ FT OF CEILING AREA. NAILOR INDUSTRIES INC - TYPES 0755, 0755A, 0756, 0756D , 0757, 0757D, 0757FP, 0757DFP, 0758, 0759, 0760, 0761, 0762, 0763, CRD5, CRD5D, CRD6, CRD6D, CRD6FP, CRD6DFP **SAFE AIR DOWCO** - TYPES 0455, 0455A, 0456, 0456D, 0457, 0457D, 0457-DB, 0457-CB, 0463-FB, 0457-EB, 0463-GB, 0463

5A. LOOSE FILL MATERIAL\* - (OPTIONAL) — AS AN ALTERNATE TO ITEM 5, WHEN THE RESILIENT CHANNELS (ITEM 6) ARE SPACED A MAXIMUM OF 12 IN. OC. OR WHEN THE STEEL FRAMING MEMBERS (ITEM 6A) ARE USED - ANY LOOSE FILL MATERIAL BEARING THE UL CLASSIFICATION MARKING FOR SURFACE BURNING CHARACTERISTICS. THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION. THE FINISHED RATING WHEN LOOSE FILL MATERIAL IS USED HAS NOT BEEN DETERMINED. 6. **RESILIENT CHANNELS** - FORMED FROM MIN 25 MSG GALV STEEL INSTALLED PERPENDICULAR TO TRUSSES. WHEN NO INSULATION IS INSTALLED IN THE CONCEALED SPACE RESILIENT CHANNELS ARE SPACED 24 IN. WHEN THE INSULATION (ITEM 5) IS INSTALLED TO THE UNDERSIDE OF THE SUBFLOOR THE RESILIENT CHANNELS ARE SPACED 16 IN. OC. WHEN INSULATION (ITEM 5 OR 5A) IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE, OR WHEN FOAMED PLASTIC INSULATION (ITEM 5C) IS SPRAYED TO THE UNDERSIDE OF THE SUBFLOOR, THE RESILIENT CHANNEL SPACING SHALL BE REDUCED TO 12 IN. OC. CHANNELS SECURED TO EACH TRUSS WITH 1-1/4 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS. CHANNELS OVERLAPPED 4 IN. AT SPLICES. TWO CHANNELS,

SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM PANEL END JOINT AS SHOWN IN THE ABOVE ILLUSTRATION. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF PANEL 7. GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM PANELS. WHEN RESILIENT CHANNELS (ITEM 6) ARE USED, GYPSUM PANELS INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS. GYPSUM PANELS SECURED WITH 1 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS SPACED 12 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM END JOINTS. WHEN INSULATION (ITEMS 5 OR 5A) IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE THE SCREW SPACING SHALL BE REDUCED TO 8 IN. OC. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL. WHEN FOAMED PLASTIC INSULATION (ITEM 5C) IS APPLIED TO THE UNDERSIDE OF THE SUBFLOORING. SCREW SPACING SHALL BE REDUCED TO 8 IN. OC AND MINIMUM 1-1/4 IN. LONG TYPE S SCREWS TO INSTALL GYPSUM TO THE RESILIENT CHANNELS (ITEM 6), AND BUTTED END JOINTS SHALL BE STAGGERED MIN. 2 FT WITHIN THE ASSEMBLY, AND OCCUR MIDWAY BETWEEN THE CONTINUOUS FURRING CHANNELS. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL.

UNITED STATES GYPSUM CO - Types C. IP-X2, IPC-AR 8. 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 GYPSUM BOARD.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

1-HR FLOOR/CEILING ASSEMBLY - FILLED WITH

1-HR FLOOR/CEILING ASSEMBLY - FILLED WITH FL 03 1-HR FLOOR/CEILING ASSEMBLY - W/RESILIENT CLIPS INSULATION - ENHANCED STC

SCALE: 1/2" = 1'-0"

INSULATION SCALE: 1 1/2" = 1'-0"

UL DESIGN No. L563

SCALE: 1 1/2" = 1'-0"

INSULATION AT UNITS <sup>→</sup> UL DESIGN No. L550

SCALE: 1 1/2" = 1'-0"

**ASSEMBLIES** 

DATE: July 17, 2024

Contractor must verify all dimensions a

project before proceeding with this work.

shall remain the property of the Architect whether the

project for which they are made is executed or not. These

drawings and specifications shall not be used by anyone on

any other projects, for additions to this project, or for

completion of this project by others except by the expressed

ORB Architecture, LLC 2018

This contract allows (may allow) the owner to require the

written description of such other billing (and/or) cycle

2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

and the owner or its designated agent shall provide this

written description on request.

REVISIONS/SUBMITTALS

submission of billings or estimates in billing cycles other

SOLID WEB WOOD JOIST, SEE STRUCTURAL, 24" ON CENTER MAXIMUM PER ITEM 2 CONCRETE TOPPING PER PLYWOOD SHEATHING, PER STRUCTURAL

3-1/2" UNFACED BATT INSULATION 1/2" 26 GAUGE RESILIENT CHANNELS AT 16" ON CENTER PER ITEM 6 BELOW

THE ASSEMBLY DESCRIPTION BELOW IS PER ICC-ES REPORT NO. ESR-1153, CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED FLOOR/ CEILING ASSEMBLY PER OWNER'S REQUEST

### 4.18 FIRE-RESISTANCE-RATED ROOF-CEILING OR FLOOR-CEILING ASSEMBLIES -FIGURE 3B - ASSEMBLY B

SHEATHING (EXPOSURE 1). WHEN USED AS A ROOF-CEILING ASSEMBLY. THE DECKING IS PERMITTED TO BE ANY WOOD DECK RECOGNIZED IN THE CODE. NAILED AND GLUED TO THE TOP OF THE TJI® JOISTS, CONSTRUCTION ADHESIVE CONFORMING TO ASTM D3498 MUST BE APPLIED TO THE TOP OF THE JOISTS PRIOR TO PLACING SHEATHING. ALL BUTT JOINTS OF THE SHEATHING MUST BE LOCATED OVER FRAMING MEMBERS.

1. THE FLOORING MUST CONSIST OF A  $\,$  SINGLE LAYER OF 48/24 SPAN-RATED, TONGUE-AND-GROOVE,

- 2. TJI JOISTS MUST BE INSTALLED IN ACCORDANCE WITH THIS REPORT, WITH A MAXIMUM SPACING OF 24 INCH ON CENTER FOR FLOOR/ CEILING ASSEMBLIES. WHEN USED IN ROOF/ CEILING ASSEMBLIES, THE JOISTS ARE PERMITTED TO BE SPACED A MAXIMUM OF 48 INCH ON CENTER.
- 3. MINIMUM 3-1/2 INCH THICK GLASS FIBER INSULATION OR GLASS FIBER INSULATION THAT IS RATED R-30 OR LESS MAY BE INSTALLED IN THE JOIST PLENUM WHEN RESILIENT CHANNELS ARE USED. THE INSULATION MUST BE PLACED ABOVE THE RESILIENT CHANNELS BETWEEN THE JOIST BOTTOM
- 4. THE CEILING MEMBRANE MUST CONSIST OF (2) LAYERS OF 5/8 INCH THICK TYPE X GYPSUM WALLBOARD COMPLYING WITH ASTM C 36, ATTACHED TO THE R/C CHANNELS.
- 6. RESILIENT CHANNELS (RC-1) SHALL BE USED AS PART OF THE CEILING ATTACHMENT SYSTEM, SHALL BE SPACED 16 INCH ON CENTER AND FASTENED PERPENDICULAR TO THE TJI JOISTS USING 1 INCH. TYPE S SCREWS. THE FIRST LAYER OF THE CEILING MEMBRANE MUST BE INSTALLED PERPENDICULAR TO THE CHANNELS AND ATTACHED TO THE RESILIENT CHANNELS USING 1 INCH LONG, TYPE S SCREWS SPACED AT 12 INCH ON CENTER; THE SECOND LAYER MUST BE INSTALLED WITH THE JOINTS STAGGERED FROM THE FIRST LAYER AND ATTACHED USING 1-5/8 INCH LONG, TYPE S SCREWS. THE SCREW SPACING FOR THE SECOND LAYER OF GYPSUM WALLBOARD MUST BE A MAXIMUM OF 12 INCH ON CENTER IN THE FIELD AND 8 INCH ON CENTER AT THE BUTT JOINTS. TYPE G SCREWS 1-1/2 INCH LONG MUST BE SPACED 8 INCH ON CENTER AND 6 INCH FROM EACH SIDE OF THE TRANSVERSE JOINTS OF THE SECOND LAYER. THE SECOND LAYER SHALL BE FINISHED WITH JOINT TAPE AND

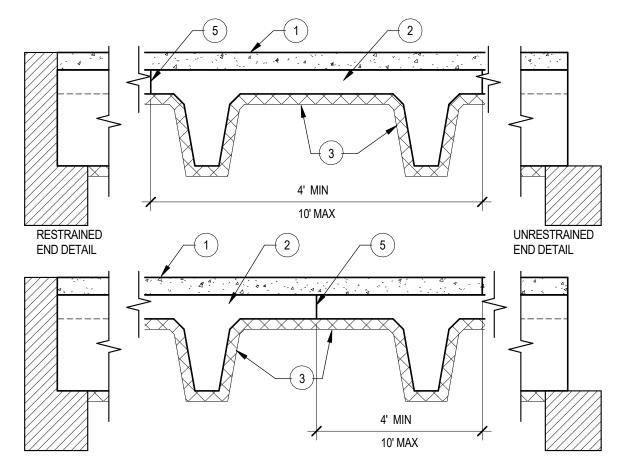
TESTED WITH 3/4 INCH THICK FLOOR TOPPING OF GYPSUM CONCRETE

### **TABLE 6 - SOUND RATINGS**

	STC = 58 MINIMUM	
	- CONCRETE, 40 OUNCE PER SQUARE YARD PAD & 56 OUNCE SQUARE YARD CARPET.	IIC = 54
ASSEMBLY B OPTION 2	- FLOOR CONVERING MUST CONSIST OF TARKETT ACOUSTIFLOR SHEET VINYL CEILING MUST CONSIST OF (2) LAYERS OF 5/8 INCH TYPE 'X' GYPSUM BOARD - BOTTOM OF THE FLOOR CAVITY MUST CONTAIN 3 1/2" GLASS FIBER INSULATION.	IIC = 54
	- FLOOR COVERING MUST BE EITHER ARMSTRONG VIOS OR ARMSTRONG CAMBRAY SHEET VINYL OR EQUAL CEILING MUST CONSIST OF (2) LAYERS OF 5/8 INCH TYPE 'X' GYP BOARD - BOTTOM OF THE FLOOR CAVITY MUST CONTAIN 3-1/2 INCH GLASS FIBER INSULATION.	IIC = 50

### 2-HR FLOOR/ CEILING ASSEMBLY PRECAST CONCRETE DOUBLE TEE PROPRIETARY ASSEMBLY - October 17, 2017

FIRE TEST: UL DESIGN No. J704 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY



DESIGN NO. D730 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES 1. CONCRETE TOPPING — 3000 PSI COMPRESSIVE STRENGTH, 110 TO 153 UNIT WEIGHT. MIN TOPPING THICKNESS OF SPRAY-APPLIED FIRE RESISTIVE MATERIALS REQUIRED ON FLANGES FOR RESTRAINED AND UNRESTRAINED ASSEMBLY RATINGS

OF CONCRETE INCH	2 HOUR	RATING 3 HOUR	4 HOUR
1-1/2 in.	1-1/8 in.	1-3/4 in.	2-7/8 in.
2 in.	7/8 in.	1-1/2 in.	2 in.
2-1/2 in.	3/4 in.	1-5/16 in.	1-3/4 in.
3 in.	5/8 in.	1-1/8 in.	1-9/16 in.
3-1/2 in.	7/16 in.	15/16 in.	1-3/8 in.
4 in.	5/16 in.	3/4 in.	1-1/8 in.
4-1/2 in.	1/4 in.	9/16 in.	1 in.
5 in.	1/4 in.	7/16 in.	13/16 in.

2. PRECAST CONCRETE UNITS\* - NORMAL WEIGHT CONCRETE. SINGLE OR DOUBLE STEMMED UNITS BEARING THE UL CLASSIFICATION MARKING CONTAINING DESIGN NOS. J941 OR J944 AND HAVING A MIN SLAB THICKNESS OF 1-1/2 IN.; OR BEARING THE UL CLASSIFICATION MARKING J704.

SEE PRECAST CONCRETE UNITS CATEGORY FOR NAMES OF MANUFACTURERS.

3. SPRAY-APPLIED FIRE RESISTIVE MATERIALS\* - APPLIED BY MIXING WITH WATER AND SPRAYING IN ONE OR MORE COATS, TO A FINAL THICKNESS AS SHOWN IN THE ABOVE ILLUSTRATION AND IN THE TABLES DESCRIBED IN ITEMS 1 AND 3, TO CONCRETE SURFACES WHICH MUST BE CLEAN AND FREE OF DIRT AND OIL. MIN AVG AND MIN IND DENSITY OF 15/14 PCF RESPECTIVELY. MIN AVG AND MIN IND DENSITY OF 22/19 PCF RESPECTIVELY FOR TYPES Z-106, Z-106/HY, Z-106/G. MIN AVG AND MIN IND DENSITY OF 19/18 PCF RESPECTIVELY FOR TYPES 7GP AND 7HD. FOR METHOD OF DENSITY DETERMINATION, SEE DESIGN INFORMATION SECTION.

THICKNESS OF SPRAY-APPLIED FIRE RESISTIVE MATERIALS REQUIRED ON STEMS FOR RESTRAINED AND UNRESTRAINED ASSEMBLY RATINGS

# **UL CLASSIFICATION**

MARKING ON PRECAST CONCRETE UNIT	Γ 2 HOUR	RATING 3 HOUR	4 HOUR
J941	11/16 in.	11/16 in.	1-7/16 in.
J704-A	3/4 in.	1/8 in.	1-1/2 in.
J704-B	11/16 in.	1-1/16 in.	1-7/16 in.
J704-C	1/2 in.	7/8 in.	1-5/16 in.
J704-D	7/16 in.	13/16 in.	1-3/16 in.
J704-E	5/16 in.	5/8 in.	1 in.
J704-F	5/16 in.	3/8 in.	3/4 in.
J944		7/16 in.	13/16 in.

**PYROK INC** - TYPE LD. SOUTHWEST FIREPROOFING PRODUCTS CO - TYPES 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, GCP APPLIED TECHNOLOGIES INC - TYPES MK-6/HY, MK-6S, MONOKOTE ACOUSTIC 1, RG, Z-106, Z-106/G,

### 4. MINIMUM BEARING - 3 INCH 5. WELD PLATES - OPTIONAL.

6. METAL LATH - (NOT SHOWN) - REQUIRED WHEN TYPE 7HD IS APPLIED - METAL LATH SHALL BE 3/8 IN. EXPANDED DIAMOND MESH, WEIGHING 3.4 LB PER SQ YD. SECURED TO UNDERSIDE THROUGH STEEL WASHERS WITH AN OUTSIDE DIAM OF 1/2 IN. WITH FASTENERS SPACED 12 IN. OC IN BOTH DIRECTIONS WITH LATH EDGES OVERLAPPED APPROX 3 IN.

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

# 2-HR FLOOR/ CEILING ASSEMBLY PRECAST

SCALE: 1 1/2" = 1'-0"

### 2-HR FLOOR/CEILING ASSEMBLY CONCRETE OVER STEEL DECK PROPRIETARY ASSEMBLY - May 16, 2023 FIRE TEST: UL DESIGN No. D730

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

**3-HR HORIZONTAL ASSEMBLY** 

2" THICK HARDROCK CONCRETE

STRENGTH OF 3000 PSI, PER ITEM

WITH MINIMUM COMPRESSIVE

STUCCO FINISH SYSTEM, PER

ASSEMBLY

1-1/2 HOUR

SCALE: 1 1/2" = 1'-0"

FIRE TEST: IBC TABLE 721.1(3) ITEM NO. 1-1.1

AA AA

GENERIC ASSEMBLY

1 BELOW -

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NORMAL-WEIGHT CONRETE - CARBONATE OR SILICEOUS AGGREGATE, 150 (+ OR -) 3 PCF UNIT WEIGHT, 4000 PSI COMPRESSIVE STRENGTH. 2. WELDED WIRE FABRIC - 6 BY 6 INCH NO. 10/10 SWG.

3. STEEL FLOOR AND FORM UNITS\* - COMPOSITE, 2 OR 3 IN. DEEP GALV UNITS. MIN GAUGES ARE 22 MSG FOR FLUTED UNITS AND 20/20 MSG FOR CELLULAR UNITS. WHEN THE UNITS ARE FLUTED OR ALTERNATING ONE 24 OR 36 IN. WIDE CELLULAR TO ONE OR MORE 24 OR 36 IN. WIDE FLUTED, THE RATINGS ARE:

RESTRAINED ASSEMBLY 2 HOUR UNRESTRAINED ASSEMBLY 2 HOUR WHEN THE UNITS ARE ALL CELULLAR, THE RATINGS ARE: 2 HOUR RESTRAINED ASSEMBLY

UNRESTRAINED ASSEMBLY - MARLYN STEEL DECKS INC - TYPE 2.0 CF OR 3.0 CF.

4. JOINT COVER (NOT SHOWN) - 2 INCH WIDE PRESSURE SENSITIVE ADHESIVE CLOTH TAPE. 5. SPRAY-APPLIED FIRE RESISTIVE MATERIALS\* - APPLIED BY MIXING WITH WATER AND SPRAYING ONE COAT TO A FINAL THICKNESS AS SHOWN ABOVE, TO STEEL SURFACES WHICH MUST BE CLEAN AND FREE OF DIRT, LOOSE SCALE AND OIL. MIN AVG AND MIN IND DENSITY OF 15/14 PCF RESPECTIVELY. MIN AVG AND MIN IND DENSITY OF 19/18 PCF RESPECTIVELY FOR TYPE 7GP AND 7HD. FOR METHOD OF DENSITY DETERMINATION, REFER TO DESIGN INFORMATION SECTION. TYPES 4, 5GP, 7GP, 7HD, 8GP, 9GP, VP4 MAY BE USED ONLY WITH ALL FLUTED STEEL FLOOR UNITS OR BLENDS CONSISTING OF ONE OR MORE FLUTED UNITS TO ONE 24 IN. WIDE MAX CELLULAR UNIT, 1-1/2 OR 3 IN. DEEP, WITH CELLS

SPACED APPROX 6 AND 8 IN. RESPECTIVELY USE OF SPATTER COAT TYPES DK, DK2, DK3, SK-1 OR SK-III IS REQUIRED ON ALL CELLULAR UNITS WITH FLAT PLATE ON THE BOTTOM, OPTIONAL ON OTHER STEEL SURFACES. THICKNESS OF THE SPATTER COAT IS INCLUDED IN THE TOTAL FINAL THICKNESS OF THE PROTECTION MATERIAL. PYROK INC - TYPE LD.

SOUTHWEST FIREPROOFING PRODUCTS CO - TYPES 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF 9GP, 9MD, DK, DK2, DK3. GCP APPLIED TECHNOLOGIES INC - TYPES MK-6/HY, MIK-6S, MONOKOTE ACOUSTIC 1, RG, SK-III. 6. METAL LATH (NOT SHOWN) - WHERE TYPE 7HD IS APPLIED TO STEEL DECK. 3/8 INCH METAL RIBBED LATH WEIGHTING 3.4 POUND PER SQUARE YARD SHALL BE SECURED TO THE UNDERSIDE OF THE STEEL DECK (RIBS UPWARD) WITH S-12 BY 3/8 INCH LONG PAN HEAD, SELF-TAPPING STEEL SCREWS SPACED 12 INCH ON CENTER IN ALL DIRECTIONS. STEEL SCREWS SHALL BE FITTED WITH 1/2 INCH. DIAMETER STEELS WASHERS. ADJACENT PIECES OF LATH SHALL BE OVERLAPPED 1 INCH MINIMUM.

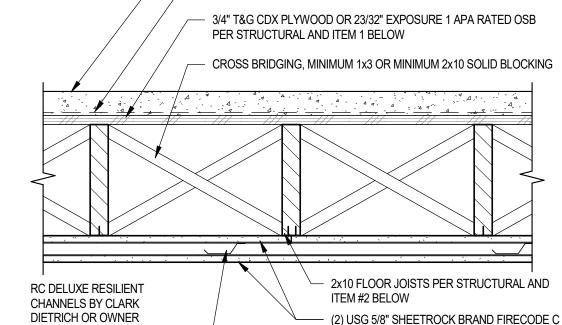
NDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS TO SUCCESSIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

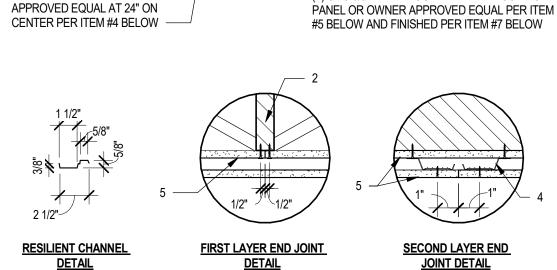
# 2-HR FLOOR/CEILING ASSEMBLY CONCRETE OVER STEEL DECK

<sup>□</sup> UL DESIGN No. D730

2-HR FLOOR/CEILING ASSEMBLY FILLED WITH INSULATION

PROPRIETARY ASSEMBLY - April 04, 2023 FIRE TEST: UL DESIGN No. L505 REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY. 2" GYPSUM CONCRETE WITH MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, PER ITEM 1 BELOW VAPOR BARRIER NOMINAL 0.030" THICK COMMERCIAL ASPHALT FELT PER ITEM 1 BELOW 3/4" T&G CDX PLYWOOD OR 23/32" EXPOSURE 1 APA RATED OSB PER STRUCTURAL AND ITEM 1 BELOW





1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:

SYSTEM NO. 12 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) NOMINAL 0.030 INCH THICK COMMERCIAL ASPHALT SATURATED FELT. 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. 2. **WOOD JOISTS** - MIN 2 BY 10, SPACED 16 IN. OC AND EFFECTIVELY FIREBLOCKED IN ACCORDANCE WITH

LOCAL CODES. 3. CROSS BRIDGING - MINIMUM 1 INCH BY 3 INCH OR MINIMUM 2 INCH BY 10 SOLID BLOCKING. 4. RESILIENT CHANNELS - RESILIENT CHANNELS, FORMED FROM NO. 25 MSG GALV STEEL AND SHAPED

AS SHOWN, SPACED 24 IN. OC PERPENDICULAR TO JOIST. CHANNELS OVERLAPPED 1-1/2 IN. AT SPLICES AND SECURED TO EACH JOIST WITH ONE 8D COMMON NAIL. MIN END CLEARANCE OF CHANNELS TO WALL TO BE 3/4 IN. ADDITIONAL PIECES, 60 IN. LONG, PLACED IMMEDIATELY ADJACENT TO CONTINUOUS CHANNELS AT END JOINTS OF SECOND LAYER OF GYPSUM BOARD (ITEM 5) AND SIMILARLY SECURED. ADDITIONAL CHANNELS SHALL EXTEND 6 IN. BEYOND EACH SIDE EDGE OF 5. GYPSUM WALLBOARD\* - TTWO LAYERS 5/8 IN. THICK GYPSUM BOARD. WHEN RESILIENT CHANNELS

(ITEM 4) ARE USED, FIRST LAYER INSTALLED WITH LONG DIMENSION PERPENDICULAR TO JOISTS, AND END JOINTS OF BOARDS LOCATED AT THE JOISTS. NAILED TO JOISTS WITH UNCOATED 8D BOX NAILS SPACED 7 IN. OC. ALL NAILS LOCATED 1/2 IN. MIN DISTANCE FROM THE EDGES AND ENDS OF THE BOARD. SECOND LAYER INSTALLED WITH LONG DIMENSION PERPENDICULAR TO THE RESILIENT CHANNELS AND CENTER LINE OF BOARDS LOCATED UNDER A JOIST AND SO PLACED THAT THE EDGE JOINT OF THIS LAYER IS NOT IN ALIGNMENT WITH THE END JOINT OF THE FIRST LAYER. SECURED TO RESILIENT CHANNELS WITH 1 IN. LONG GYPSUM BOARD SCREWS 12 IN. OC WITH ADDITIONAL SCREWS 3 IN. FROM SIDE JOINTS. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL, ALL SCREWS LOCATED 1 IN. MIN DISTANCE FROM EDGES OF BOARDS, IF GYPSUM BOARD IS OTHER THAN 48 IN. WIDE, LENGTH OF ADDITIONAL CHANNEL MAY BE MODIFIED AS REQUIRED TO ALLOW FULL EXTENSION ALONG JOINTS, AS WELL AS ATTACHMENT TO JOISTS AT EACH END. JOINT TREATMENT NOT REQUIRED FOR THIS RATING, EXCEPT FOR TAPERED, ROUNDED-EDGE GYPSUM BOARD WHERE EDGE JOINTS ARE COVERED WITH PAPER TAPE AND JOINT COMPOUND. AS AN ALTERNATE, NOM 3/32 IN. THICK GYPSUM VENEER PLASTER MAY BE APPLIED TO THE ENTIRE SURFACE OF CLASSIFIED VENEER BASEBOARD. JOINTS REINFORCED.

**AMERICAN GYPSUM CO - TYPE AG-C. CERTAINTEED GYPSUM INC -** Type C, Type LGFC-C/A. GEORGIA-PACIFIC GYPSUM LLC - TYPES 5, C, DAPC, GPFS1, TG-C.

APPLIED TO THE ENTIRE SURFACE OF GYPSUM BOARD.

INSULATION

UL DESIGN No. L505

NATIONAL GYPSUM CO - TYPES FSK-C, FSK-G, FSW-C, FSW-G. PABCO BUILDING PRODUCTS LLC, DBA PABCO GYPSUM - TYPE C, PG-3 OR PG-C 6. SCREW, AND GYPSUM WALLBOARD - 1 IN. LONG, WITH 0.129 IN., SELF-DRILLING AND SELF-TAPPING SHANK, AND PHILLIPS-TYPE 0.355 IN. DIAM HEAD. SCREWS SHALL BE DRIVEN NO FARTHER THAN

SLIGHTLY INDENTED (NOT DEEPER THAN 1/64 IN.) INTO THE EXPOSED SURFACE OF THE GYPSUM 7. FINISH 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

INDICATED SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

# 2-HR FLOOR/CEILING ASSEMBLY - FILLED WITH

SCALE: 1 1/2" = 1'-0"

1-HOUR FLOOR/ CEILING OPEN TRUSS AT BALCONIES WITH RESILIENT CLIPS GENERIC ASSEMBLY [ MULTIPLE PROPRIETARY GYPSUM BOARD]: October 03, 2023 FIRE TEST: UL DESIGN L546 **SOUND RATING:** NO STC REQUIRED REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

**END JOINT DETAIL** 

THICK COMMERCIAL ASPHALT

FELT PER ITEM 1 BELOW PLYWOOD SHEATHING, PER

WATER-RESISTIVE BARRIER:

OF SUPER JUMBO TEX (60)

MINUTE PAPER OR OWNER APPROVED EQUAL IN SHINGLE

OVERLAP AT ENDS

1-1/2" LONG GALVANIZED STAPLES

THE ASSEMBLY DESCRIPTION BELOW IS PER 2018 IBC TABLE 721.1(3), ITEM 13-1.2. CONSTRUCTION SHALI

BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED ROOF/ CEILING ASSEMBLY PER OWNER'S REQUEST

CEMENT OR GYPSUM PLASTER ON METAL LATH. LATH FASTENED WITH 1-1/2 INCH BY NO. 11 GAUGE BY

7/16 INCH HEAD BARBED SHANK ROOFING NAILS SPACED 5 INCH ON CENTER, PLASTER MIXED 1:2 FOR

SCRATCH COAT AND 1:3 FOR BROWN COAT, BY WEIGHT, CEMENT TO SAND AGGREGATE.

I-HR FLOOR/SOFFIT W/ 2x FRAMING

FLOOR OR ROOF SLABS (INCHES)

TABLE 722.2.3(2)

COVER THICKNESS FOR PRE-STRESSED CONCRETE

2-HR PRESTRESSED CONCRETE SLAB MIN. COVER

2018 IBC TABLE 721.1(3), ITEM 13-1.2

1-HR CONCRETE SLAB HORIZONTAL ASSEMBLY

GENERIC ASSEMBLY

CONCRETE

SILICEOUS

CARBONATE

GENERIC ASSEMBLY

FOR SI: 1 INCH = 25.4MM.

SAND-LIGHTWEIGHT OR LIGHTWEIGHT

IBC 2018 TABLE 722.2.3(2)

FIRE TEST: 2018 IBC TABLE 721.1(3)

FLOOR OR ROOF CONSTRUCTION

1. SILICEOUS AGGREGATE CONCRETE

RESTRAINED AND UNRESTRAINED CONDITIONS.

2018 IBC TABLE 721.1(3) ITEM1-1.1

**CONCRETE SLAB ON GRADE - AT CONDITIONED SPACES** 

4-HOUR MAXIMUM FIRE RESISTANCE CONSTRUCTION PER TABLE 721.1(3) OF THE 2018 IBC

(INCHES)

4 HOURS

b. WHERE THE SLAB IS IN AN UNRESTRAINED CONDITION, MINIMUM REINFORCEMENT COVER SHALL BE

NOT LESS THAN 1-5/8 INCHES FOR 4 HOURS (SILICEOUS AGGREGATE ONLY); 1-1/4 INCHES FOR 4 AND 3

AB ON GRADE ASSEMBLY W/ VAPOR RETARDER

7.0

1. SILICEOUS AGGREGATE CONCRETE SLAB (CEILING NOT REQUIRED). MINIMUM COVER OVER NON-

HOURS; 1 INCH FOR 2 HOURS (SILICEOUS AGGREGATE ONLY); AND 3/4 INCH FOR ALL OTHER

PRESTRESSED REINFORCEMENT SHALL BE NOT LESS THAN 3/4 INCH (b).

**AGGREGATE TYPE** 

FIRE TEST: IBC TABLE 722.2.3(2)

INSTALL (2) INDIVIDUAL LAYERS

SCALE: 1 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

REINFORCED CONCRETE SLAB

ON GRADE, PER STRUCTURAL

VAPOR RETARDER LAYER

COMPACTED ROCK BASE,

3 HOURS 2 HOURS 1 HOURS

THICKNESS OF FLOOR OR ROOF SLAB

MINIMUM X" PER SOIL REPORT

REQUIRED AT COMMON AREAS

PRE-STRESSED CONCRETE SLAB

CONCRETE COVER SHALL BE PER

PER STRUCTURAL. MINIMUM

TABLE BELOW

FIRE-RESISTANCE RATING (HOURS)

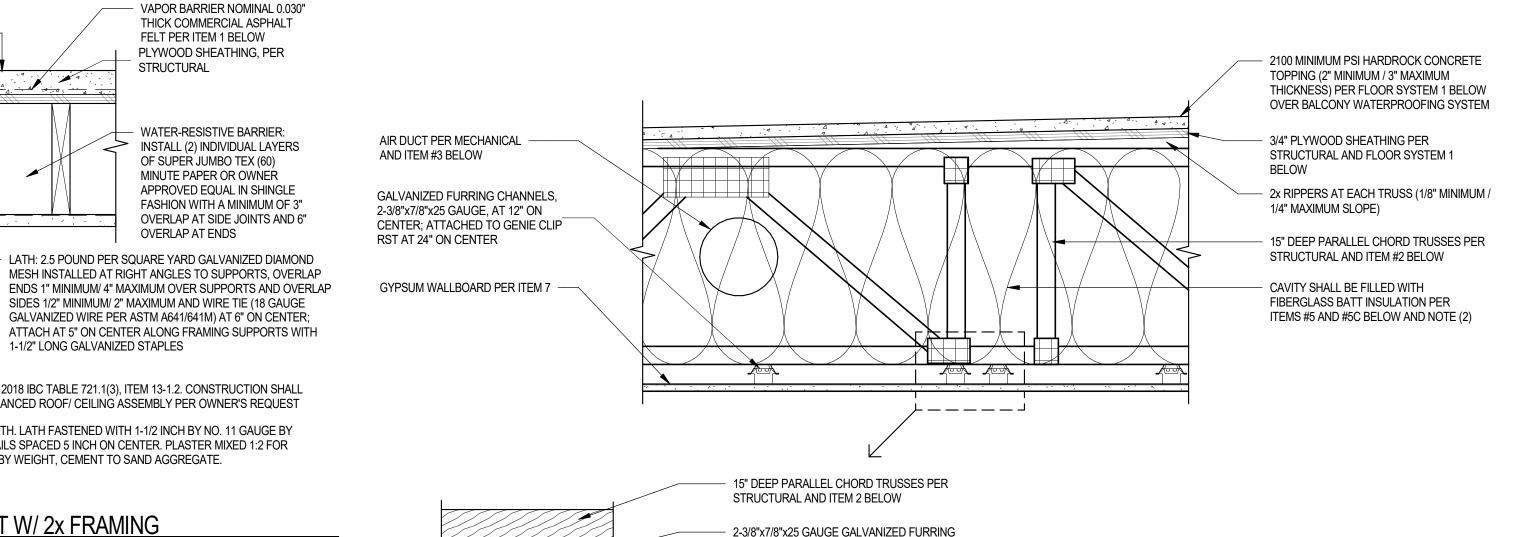
UNRESTRAINED

1 3/4

1 5/8

1 1/2

STRUCTURAL



**DESIGN NO. L546** BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

CHANNELS AT 12" ON CENTER ATTACHED TO

GYPSUM WALLBOARD 5/8" TYPE C GYPSUM

BOARD WITH SCREWS AT 8" ON CENTER

GENIE CLIP RST AT 24" ON CENTER

GYPSUM WALLBOARD JOINT

 FLOORING SYSTEM - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING: 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 - COMMERCIAL ASPHALT SATURATED FELT 0.030 IN. THICK. FINISH FLOORING - COMPRESSIVE STRENGTH TO BE 2100 PSI MIN. THICKNESS TO BE 3/4 IN. MIN FOR 19/32 IN THICK WOOD STRUCTURAL PANELS OR 1 IN. MIN. FOR 15/32 IN THICK WOOD STRUCTURAL PANELS. REFER TO MANUFACTURER'S INSTRUCTIONS ACCOMPANYING THE MATERIAL FOR SPECIFIC MIX DESIGN. 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). 2. **TRUSSES** - PARALLEL CHORD TRUSSES SPACED A MAX OF 24 IN. OC FABRICATED FROM NOM 2 BY 4 LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. MIN TRUSS DEPTH IS 12 IN. WHEN DAMPERS ARE NOT USED AND 18 IN. WHEN DAMPERS ARE USED. TRUSS MEMBERS SECURED OGETHER WITH MIN 0.036 IN. THICK GALV STEEL PLATES PLATES HAVE 5/16 IN LONG TEETH PROJECTING PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY THE SAME PUNCH), FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOTH HAS A CHISEL POINT ON ITS OUTSIDE EDGE WITH THESE POINTS BEING DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROXIMATELY 7/8 IN. CENTERS WITH FOUR ROWS OF TEETH PER INCH OF PLATE

3. AIR DUCT\* - (OPTIONAL) - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER 4. **CEILING DAMPER -** (OPTIONAL. TO BE USED WITH AIR DUCT ITEM 3) — FOR USE WITH MIN 18 IN. DEEP TRUSSES. MAX NOM AREA SHALL BE 324 SQ IN. MAX SQUARE SIZE SHALL BE 18 IN. BY 18 IN. RECTANGULAR SIZES NOT TO EXCEED 324 SQ IN. WITH A MAX WIDTH OF 18 IN. MAX HEIGHT OF DAMPER SHALL BE 14 IN. AGGREGATE DAMPER OPENINGS SHALL NOT EXCEED 162 SQ IN. PER 100 SQ FT OF CEILING AREA. DAMPER INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS PROVIDED WITH THE DAMPER. A STEEL GRILLE (ITEM 9) SHALL BE INSTALLED IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS.

**C&S AIR PRODUCTS** — MODEL RD-521 POTTORFF — MODEL CFD-521 5. **BATTS AND BLANKETS\*** - (OPTIONAL WITH ITEMS 7 AND 7B; REQUIRED WITH ITEM 7A) — GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. WHEN THE RESILIENT CHANNELS (ITEM 6) OR FURRING CHANNELS (ITEM 6A, 6O) ARE SPACED 16 IN. OC, THE INSULATION SHALL BE A MAX OF 3-1/2 IN. THICK, AND SHALL BE SECURED AGAINST THE SUBFLOORING WITH STAPLES AT 12 IN. OC OR HELD SUSPENDED IN THE CONCEALED SPACE WITH 0.090 IN. DIAM GALV STEEL WIRES ATTACHED TO THE WOOD TRUSSES AT 12 IN. OC. WHEN THE RESILIENT CHANNELS (ITEM 6) OR FURRING CHANNELS (ITEM 6A, 6O) ARE SPACED A MAX OF 12 IN. OC OR WHEN THE STEEL FRAMING MEMBERS (ITEM 6B) ARE USED, THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION, AND THE INSULATION CAN BE SECURED AGAINST THE SUBFLOORING, HELD SUSPENDED IN THE CONCEALED SPACE OR DRAPED OVER THE RESILIENT OR FURRING CHANNELS (OR STEEL FRAMING MEMBERS) AND GYPSUM PANEL MEMBRANE. WHEN STEEL FRAMING MEMBERS (ITEM 6C) ARE USED, MAX 3-1/2 IN. THICK INSULATION SHALL BE DRAPED OVER THE FURRING CHANNELS (ITEM 6CA) AND GYPSUM BOARD CEILING MEMBRANE, AND FRICTION-FITTED BETWEEN TRUSSES AND STEEL FRAMING MEMBERS (ITEM 6CD). THE FINISHED RATING HAS ONLY BEEN DETERMINED WHEN THE INSULATION IS SECURED TO THE 5.C. CAVITY INSULATION - BATTS AND BLANKETS\* OR FIBER, SPRAYED\* — (REQUIRED FOR ITEM 70

AS DESCRIBED ABOVE IN ITEMS 5 THROUGH 5B) — MIN. 3-1/2 IN THICK WITH NO LIMIT ON MAXIMUM THICKNESS FITTED IN THE CONCEALED SPACE, DRAPED OVER THE RESILIENT CHANNEL (ITEM 6I)/GYPSUM BOARD (ITEM 7C) CEILING MEMBRANE. 6.F **STEEL FRAMING MEMBERS** — (NOT SHOWN) — AS AN ALTERNATE TO ITEM 6, 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 16 IN. OC PERPENDICULAR TO TRUSSES. WHEN BATT INSULATION (ITEMS 5) IS DRAPED OVER THE

RESILIENT CHANNEL/GYPSUM BOARD CEILING MEMBRANE, THE RESILIENT CHANNEL SPACING SHALL BE REDUCED TO 12 IN. OC. CHANNELS SECURED TO TRUSSES 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. b. STEEL FRAMING MEMBERS\* — USED TO ATTACH FURRING CHANNELS (ITEM A) TO TRUSSES (ITEM 2). CLIPS SPACED 48 IN. OC. GENIECLIPS SECURED TO ALTERNATING JOISTS WITH NO. 8 X 2-1/2 IN. COARSE DRYWALL SCREW THROUGH THE CENTER GROMMET. WHEN INSULATION, ITEMS 5 IS APPLIED OVER THE FURRING CHANNEL/GYPSUM PANEL CEILING MEMBRANE, THE CLIP SPACING SHALL BE REDUCED TO 24 IN. OC AND SECURED TO CONSECUTIVE TRUSSES. 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 7. NOT EVALUATED FOR USE WITH ITEM 5A OR 5B. . PLITEQ INC — Type GENIECLIP

ANSI 263 UL DESIGN NO. L546

<u>1-HR FLOOR/CEILING OPEN WEB TRUSS AT BALCONIES W/RESILIENT CLIP</u>

7. GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM BOARD. WHEN RESILIENT CHANNELS (ITEM 6) ARE USED, GYPSUM BOARD INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS. GYPSUM BOARD SECURED WITH 1 IN. LONG TYPE S BUGLE HEAD SCREWS SPACED 12 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM END JOINTS. END JOINTS SECURED. TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL. WHEN BATT INSULATION. (ITEM 5) IS DRAPED OVER THE RESILIENT CHANNEL/GYPSUM BOARD CEILING MEMBRANE, SCREWS SPACING SHALL BE 8 IN. OC. WHEN STEEL FRAMING MEMBERS\* (ITEM 6A. 6F. 6O) ARE USED. GYPSUM BOARD INSTALLED WITH LONG DIMENSION PERPENDICULAR TO FURRING CHANNELS AND SIDE JOINTS OF SHEET LOCATED BENEATH JOISTS. GYPSUM BOARD SECURED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE HEAD SCREWS SPACED 12 IN. OC IN THE FIELD. BUTTED END JOINTS SHALL BE STAGGERED MIN 2 FT WITHIN THE ASSEMBLY. AND OCCUR BETWEEN THE CONTINUOUS FURRING CHANNELS. AT BUTTED END 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 6 IN. ON EACH END. THE TWO FURRING CHANNELS SHALL BE SPACED APPROXIMATELY 3-1/2 IN. OC AND BE ATTACHED TO UNDERSIDE OF THE JOIST WITH ONE CLIP AT EACH END OF THE CHANNEL. SCREW SPACING ALONG THE END JOINT SHALL BE 8 IN OC.

AMERICAN GYPSUM CO - TYPE AG-C 5/8" FIREBLOC TYPE C SOFFIT GYPSUM BOARD GEORGIA PACIFIC GYPSUM LLC - TYPE FG-C 5/8" TOUGHROCK FIREGUARD C SOFFIT BOARD PABCO GYPSUM - TYPE C 5/8" PABCO GYPSUM SOFFIT BOARD SUPER 'C' TYPE C UNITED STATES GYPSUM CO - TYPES C 5/8" SHEETROCK BRAND MOLD TOUGH FIRECODE C

7.A **GYPSUM BOARD\*** - NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM BOARD, INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS. GYPSUM BOARD SECURED WITH 1-1/8 IN. LONG TYPE S BUGLE HEAD SCREWS SPACED 8 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM THE END JOINTS. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL. WHEN ITEM 7A IS USED, THE INSULATION MUST BE USED AND MUST BE DRAPED OVER THE RESILIENT CHANNEL/GYPSUM BOARD.

NATIONAL GYPSUM CO — TYPE FSW-C 5/8" GOLD BOND BRAND XP FIRE-SHIELD C GYPSUM

7.B GYPSUM BOARD\* - NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM PANELS. WHEN RESILIENT CHANNELS (ITEM 6) ARE USED, GYPSUM PANELS INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS. GYPSUM PANELS SECURED WITH 1 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS SPACED 12 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM THE END JOINTS. WHEN INSULATION (ITEMS 5 OR 5A) IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL CEILING MEMBRANE SCREW SPACING SHALL BE REDUCED TO 8 IN. OC. END JOINTS SECURED TO BOTH RESILIENT CHANNELS AS SHOWN IN END JOINT DETAIL.

CERTAINTEED GYPSUM INC - TYPE C 5/8" EXTERIOR SOFFIT TYPE C GORGIA-PACIFIC GYPSUM LLC - TYPE TG-C 5/8" TOUGHROCK FIREGUARD C SOFFIT BOARD PABCO GYPSUM - TYPE C 5/8" PABCO GYPSUM SOFFIT BOARD SUPER 'C' TYPE C UNITED STATES GYPSUM CO - TYPES C 5/8" SHEETROCK BRAND MOLD TOUGH FIRECODE C

C. GYPSUM BOARD\* - (AS AN ALTERNATIVE TO ITEMS 7 AND 7B, FOR USE WITH ITEMS 5C AND 6I) — NOM 5/8 IN. THICK, 48 IN. WIDE GYPSUM BOARD, INSTALLED AND SECURED AS DESCRIBED IN ITEMS 7 AND 7B BUT WITH MAX SCREW SPACING 8 IN. OC. WHEN USED WITH INSULATION (BATTS AND BLANKETS\* OR FIBER SPRAYED\*) THAT IS INSTALLED OVER THE RESILIENT CHANNEL/GYPSUM BOARD\* CEILING MEMBRANE, THE RESILIENT CHANNELS MAY REMAIN AT 16 IN. OC AND NOT NEED TO BE REDUCED TO 12

UNITED STATES GYPSUM CO — ULIX 5/8" SHEETROCK BRAND ECOSMART PANELS MOLD TOUGH FIRECODE X

8. 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 GYPSUM BOARD. 9. GRILLE - GRILLE, INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED WITH THE CEILING DAMPER.

1. COORDINATE MECHANICAL DUCT PENETRATIONS.

2. THE CAVITY OF THE FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES SHOWN ON THE FIRE-RATED ASSEMBLY DETAILS SHALL BE FILLED FULL WITH NON-COMBUSTIBLE INSULATION AS SHOWN ON THE FIRE-RATED ASSEMBLY DETAILS TO BE IN COMPLIANCE WITH NFPA 13 SECTION 8.15.1.2.7 WHICH STATES: CONCEALED SPACES FILLED WITH NON-COMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION. A MAXIMUM OF 2 INCH AIR GAP AT THE TOP OF THE SPACE SHALL BE PERMITTED. (NFPA 8.15.1.2.7.1).

SCALE: 1 1/2" = 1'-0"

Contractor must verify all dimensions a project before proceeding with this work. shall remain the property of the Architect whether the project for which they are made is executed or not. Thes any other projects, for additions to this project, or for

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LEGACY HOSPITALITY

This contract allows (may allow) the owner to require the written description of such other billing (and/or) cycl 2525 E. CAMELBACK RD. SUITE 500. PHOENIX. AZ 85016 and the owner or its designated agent shall provide this

REVISIONS/SUBMITTALS

written description on request.

DATE: July 17, 2024 FIRE ASSEMBLIES - FLOOR **ASSEMBLIES** 

DESIGN NO. U493 BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

. ROOF COVERING\* - CONSISTING OF HOT-MOPPED OR COLD-APPLICATION MATERIALS WHICH PROVIDE CLASS A, B OR C COVERINGS, DIRECTLY APPLIED TO STRUCTURAL CEMENT-FIBER UNITS(ITEM 2), SEE ROOFING MATERIALS AND SYSTEMS DIRECTORY-ROOF COVERING MATERIALS (TEVT).

**ROOFING SYSTEM - 1-HOUR RATING** 2. STRUCTURAL CEMENT - FIBER UNITS\* - NOM 3/4 IN. THICK, WITH LONG EDGES TONGUE AND GROOVED LONG DIMENSION OF PANELS TO BE PERPENDICULAR TO JOISTS WITH END JOINTS STAGGERED A MIN OF 2 FT AND CENTERED OVER THE JOISTS. PANELS SECURED TO STEEL JOISTS WITH 1-5/8 IN. LONG NO. 8 SELF-DRILLING, SELF-COUNTERSINKING STEEL SCREWS 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 SIDE EDGES OF THE

AS AN ALTERNATE TO THE 1-5/8" LONG NO. 8 FASTENER. THE FOLLOWING POWER-ACTUATED PINS MAY BE USED FOR MIN. 1/8" THICK, HOT-ROLLED A36 STEEL SECTIONS FOR JOIST SPECIFIED IN ITEM 3.J: HILTI PIN MODEL X-U 32MX WITH A MIN. 0.157" SHANK DIAMETER MIN. 1-1/4" LONG, DEWALT PIN MODEL 50458-PWR WITH A MIN. 0.157" SHANK DIAMETER MIN. 1-1/4" LONG OR AEROSMITH MODEL 5324HPG WITH A MIN. 0.145 SHANK DIAMETER MIN. 1-1/4" LONG.

UNRESTRAINED ASSEMBLY RATING IS 1 HOUR WHEN ITEM 3A OR 3B IS USED. UNITED STATES GYPSUM CO - TYPES STRUCTO-CRETE, USGSP

3. STRUCTURAL STEEL MEMBERS - CHANNEL-SHAPED, MIN 10 IN. DEEP WITH MIN 1-5/8 IN. WIDE FLANGES AND 1/2 IN, LONG STIFFENING FLANGES, FABRICATED FROM MIN NO. 16 MSG GALV STEEL, MIN YIELD STRENGTH OF 50,000 PSI. JOISTS SPACED MAX 24 IN. OC. SUPPLIED WITH APPROPRIATE RIM TRACKS OF SAME SIZE AND GAUGE.

3A.STRUCTURAL STEEL MEMBERS - (NOT SHOWN) - AS AN ALTERNATE TO ITEM 3 - FOR MAXIMUM CLEAR SPANS NOT EXCEEDED 8 FT. CHANNEL-SHAPED, MIN 6 IN. DEEP WITH MIN 1-9/16 IN. WIDE FLANGES AND 3/8 IN. LONG STIFFENING FLANGES. FABRICATED FROM MIN NO. 18 MSG GALV STEEL. MIN YIELD STRENGTH OF 33,000 PSI. JOISTS SPACED MAX 24 IN. OC. SUPPLIED WITH APPROPRIATE RIM TRACKS OF SAME SIZE AND GAUGE.

3B.STRUCTURAL STEEL MEMBERS - (NOT SHOWN) - AS AN ALTERNATE TO ITEM 3 - CHANNEL-SHAPED. MIN 8 IN. DEEP WITH MIN 1-9/16 IN. WIDE FLANGES AND 3/8 IN. LONG STIFFENING FLANGES. FABRICATED FROM MIN NO. 16 MSG GALV STEEL. MIN YIELD STRENGTH OF 33,000 PSI. JOISTS SPACED MAX 24 IN. OC. SUPPLIED WITH APPROPRIATE RIM TRACKS OF SAME SIZE AND GAUGE.

4. **JOIST BRIDGING** - (NOT SHOWN) - FOR USE WITH ITEM 3 AND 3B - INSTALLED IMMEDIATELY AFTER JOISTS ARE ERECTED AND BEFORE CONSTRUCTION LOADS ARE APPLIED. THE BRIDGING CONSISTING OF JOIST SECTIONS CUT TO LENGTH AND PLACED BETWEEN OUTER SUPPORTS. ADJACENT TO OPENINGS AND AT MID SPAN WITH 8 FT OC MAX SPACING. BRIDGING CHANNELS ARE SCREW-ATTACHED AT EACH END TO JOIST WEB USING ANGLE CLIPS. V-BRACING OF 1-1/2 IN. BY 20-GA GALVANIZED STEEL IS SCREW-ATTACHED TO BOTTOM JOIST FLANGE BETWEEN BRIDGING CHANNELS

4A.JOIST BRIDGING - (NOT SHOWN) - FOR USE WITH ITEM 3A - INSTALLED IMMEDIATELY AFTER JOISTS ARE ERECTED AND BEFORE CONSTRUCTION LOADS ARE APPLIED. THE BRIDGING CONSISTING OF RIM TRACK SECTIONS CUT TO LENGTH, WITH TWO 4 IN. LONG FOLDED BACK FLANGES, AND PLACED BETWEEN OUTER SUPPORTS, ADJACENT TO OPENINGS AND AT MID SPAN WITH 10 FT OC MAX SPACING. BRIDGING CHANNELS ARE SCREW-ATTACHED TO EACH OF THE FOUR TOP AND BOTTOM JOIST FLANGES WITH TWO NO. 8 BY 1/2 IN. LONG WAFER HEAD STEEL SCREWS.

4B.JOIST BRIDGING - (NOT SHOWN) - FOR USE WITH ITEM 3A AND 3B - 1-1/2 IN. WIDE STRIPS FORMED FROM 20 MSG - THE STRUCTURAL BRIDGING IS INSTALLED PERPENDICULAR TO AND ON THE BOTTOM SURFACE OF THE JOISTS AT MID-SPAN WITH ONE #10 X 3/4 IN. LONG HEX HEAD STEEL SCREW AT

5. BATTS AND BLANKETS\* - GLASS FIBER INSULATION, MIN 3-1/2 IN. THICK, BEARING THE UL CLASSIFICATION MARKING FOR SURFACE BURNING CHARACTERISTICS. MIN DENSITY OF 0.5 PCF. THE INSULATION SHALL BE FITTED IN THE CONCEALED SPACE, DRAPED OVER THE RESILIENT CHANNEL (ITEM 6) OR STEEL FRAME MEMBERS (ITEM 6A) AND GYPSUM BOARD (ITEM 8) CEILING MEMBRANE. SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF

RESILIENT CHANNELS - FORMED OF NO. 25 MSG GALV STEEL, 1/2 IN. DEEP, SPACED MAX 12 IN. OC, PERPENDICULAR TO JOISTS. CHANNEL SPLICES LOCATED BENEATH JOISTS AND OVERLAPPED 4 IN. CHANNELS SECURED TO EACH JOIST WITH ONE 1/2 IN. LONG TYPE S-12 LOW PROFILE STEEL SCREW. TWO CHANNELS, SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM BOARD END JOINT AS SHOWN ON THE ILLUSTRATION ABOVE. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE

7. GYPSUM WALLBOARD\* - ONE LAYER OF NOM 5/8 IN. THICK BY 48 IN. WIDE GYPSUM PANELS INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT/FURRING CHANNELS. GYPSUM PANELS SECURED TO RESILIENT/FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD SCREWS SPACED 8 IN. OC. WITH SCREWS LOCATED 4 IN. FROM AND ON EACH SIDE OF THE GYPSUM PANEL MID-SPAN. AND 1-1/2 IN. FROM SIDE EDGES OF THE BOARD. END JOINTS SECURED TO BOTH RESILIENT/FURRING CHANNELS AS SHOWN IN END JOINT DETAIL. WHEN STEEL FRAMING MEMBERS (ITEM 6B OR 6C) ARE USED, THE BUTT JOINTS IN THE GYPSUM BOARD SHALL BE SUPPORTED BY TWO FURRING CHANNELS. THE TWO FURRING CHANNELS SHALL BE SPACED APPROXIMATELY 3-1/2 IN. OC, AND BE ATTACHED TO UNDERSIDE OF THE JOIST WITH ONE RSIC-1, RSIC-1 (2.75) OR GENIE CLIP AT EACH END OF THE

UNITED STATES GYPSUM CO - TYPES C, IP-X2, IPC-AR, ULIX

8. 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 GYPSUM PANELS.

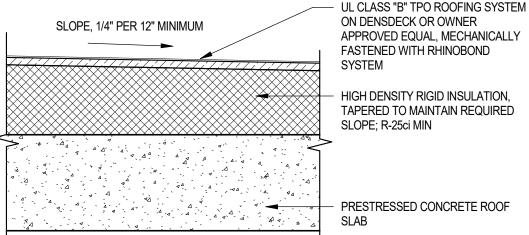
\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS

EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

# 1-HR ROOF/CEILING ASSEMBLY - FILLED WITH

UL DESIGN No. P561 SCALE: 1 1/2" = 1'-0" 1-HR FLOOR/CEILING ASSEMBLY - FILLED WITH INSULATION

GNERIC ASSEMBLY: FIRE TEST: IBC 2018 TABLE 722.2.2.1 **SOUND RATING: NO STC REQUIRED** SLOPE, 1/4" PER 12" MINIMUM



# **TABLE 722.2.2.1**

	MINIMUM SLAB THICKNESS, IN.							
	CONCRETE TYPE	FIRE RESISTANCE RATING (HOURS)						
	CONCRETE TIFE	1	1 1/2	2	3	4		
	SILICEOUS	3.5	4.3	5	6.2	7		
	CARBONATE	3.2	4	4.6	5.7	6.6		
	SAND-LIGHTWEIGHT	2.7	3.3	3.8	4.6	5.4		
	LIGHTWEIGHT	2.5	3.1	3.6	4.4	5.1		

# ROOF ASSEMBLY ABOVE POST TENSION CONCRETE

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS, IN.

UNRESTRAINED BEAM RATING HOUR				RESTRAINED BEAM RATING HOUR			
RATING HR	(5)				JOISTS STEEL RO (A) (B) DECK		
1	7/16	3/4	3/4	7/16	3/4	3/4	13/16
1-1/2	9/16	15/16	1-3/16	7/16	3/4	1-3/16	15/16
2	13/16	1-3/16	1-7/16	11/16	1-1/8	1-7/16	1-7/16
3	1 - 1/4	1-13/16	2-5/16	1-3/16	1-13/16	2-5/16	1-7/8
4	1 - 1/2	-	-	1-1/2	-	-	1-7/16
LATH OR NON-METALLIC FABRIC MESH SECURED TO ONE SIDE OF OPEN WEB JOIST. SPR							

. STEEL SUPPORTS - W6x16 MINIMUM SIZE STEEL BEAM, 10K1, 12K3 OR 14K1 MINIMUM SIZE STEEL JOISTS.

2. ROOF COVERING\* - CONSISTING OF HOT MOPPED, COLD APPLICATION OR SINGLE-PLY MATERIALS,

NOTE: WHEN 10K1 OR 12K1 JOISTS ARE USED, THEY WILL BE LIMITED TO A MAXIMUM TENSILE STRESS OF

COMPATIBLE WITH INSULATION(S) DESCRIBED HEREIN WHICH PROVIDE CLASS A. B OR C COVERINGS. SEE

ROOFING MATERIALS AND SYSTEMS DIRECTORY-ROOF COVERING MATERIALS (TEVT). MECHANICALLY

3. ROOF INSULATION\* - CONSISTING OF BUILDING UNITS, FOAMED PLASTIC OR MINERAL AND FIBER BOARDS,

APPLIED IN ONE OR MORE LAYERS. WHEN MULTIPLE LAYERS ARE USED, END AND SIDE JOINTS SHALL BE

OFFSET A MINIMUM OF 12 INCH IN BOTH DIRECTIONS IN ORDER TO LAP ALL JOINTS. SEE CATEGORY FOR

NAMES OF COMPANIES PROVIDING CLASSIFIED PRODUCTS - BUILDING UNITS (BZXX), FOAMED PLASTIC (CCVW) OR MINERAL AND FIBER BOARDS (CERZ). ROOF INSULATION SHALL BE COMPATIBLE WITH ROOF

COVERING MATERIALS (TEVT), MEHCANICALLY FASTENED WITH RHINO BOND SYSTEM.

WITH NO. 12 BY 1/2 INCH LONG SELF-DRILLING, SELF-TAPPING STEEL SCREWS.

COVERING MATERIALS CLASS A, B OR C SYSTEM. SEE ROOFING MATERIALS AND SYSTEMS DIRECTORY-ROOF

1. ADHESIVE - (OPTIONAL) - MAY BE APPLIED TO STEEL ROOF DECK UNITS OR BETWEEN INSULATION LAYERS AT

A MAX APPLICATION RATE OF 0.4 GALLON PER 100 SQUARE FOOT SEE ADHESIVES (BYWR) CATEGORY FOR

5. STEEL ROOF DECK - (UNCLASSIFIED) - FLUTED, NO. 22 MSG MINIMUM GALVANIZED 1-1/2 INCH DEEP WITH 3-1/2

SPRAY-APPLIED FIRE RESISTIVE MATERIALS\* — APPLIED BY MIXING WITH WATER AND SPRAYING TO THE

BEAM (OR JOIST) AND DECK SURFACES IN ONE OR MORE COATS TO THE FINAL MINIMUM THICKNESSES

RESISTIVE MATERIALS. SURFACES MUST BE CLEAN AND FREE OF DIRT, LOOSE SCALE AND OIL. MINIMUM

300ES, 300HS, 300N, 3000, 3000ES AND SB. FOR TYPES 400AC AND 400ES MINIMUM AVERAGE AND MINIMUM

MINIMUM INDIVIDUAL VALUE OF 43 PCF FOR TYPE M-II/P. FOR METHOD OF DENSITY DETERMINATION SEE

MINIMUM INDIVIDUAL VALUE OF 40 PCF FOR TYPES M-II AND TG. MINIMUM AVERAGE DENSITY OF 47 PCF, WITH

AVERAGE AND MINIMUM INDIVIDUAL DENSITY OF 15 AND 14 PCF, RESPECTIVELY, FOR TYPES 300, 300AC,

INDIVIDUAL DENSITY OF 22 AND 19 PCF, RESPECTIVELY. MINIMUM AVERAGE DENSITY OF 44 PCF WITH

INCH WIDE FLUTES SPACED 6 INCH ON CENTER ENDS OVERLAPPED A MINIMUM 1-1/2 INCH AND WELDED TO SUPPORTS, 12 INCH ON CENTER MAXIMUM ADJACENT UNITS BUTTON-PUNCHED, WELDED OR FASTENED

SHOWN BELOW. CREST AREAS ABOVE THE BEAM (OR JOIST) SHALL BE FILLED WITH THE SPRAY-APPLIED FIRE

ATTACH WATERPROOFING SYSTEM WITH RYNNO BOND FASTENING SYSTEM, SEE MANUFACTURER

3-HR ROOF/CEILING - W/2X FRAMING AT SOFFITS

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

PROPRIETARY ASSEMBLY: November 25, 2019

FIRE TEST: UL DESIGN NO. S721

SOUND RATING:

SPECIFICATIONS.

NAMES OF MANUFACTURERS

DESIGN INFORMATION SECTION.

APPLIED FIRE RESISTIVE MATERIALS THICKNESS APPLIED TO EACH SIDE OF LATH OR MESH SHALL BE EQUAL TO THICKNESS REQUIRED ON STEEL JOIST. (B) SPRAY-APPLIED FIRE RESISTIVE MATERIALS DIRECTLY APPLIED TO JOIST CONTOURS. AS AN ALTERNATE. METAL LATH OR NON-METALLIC FABRIC MESH SECURED TO ONE SIDE OF JOIST TO CATCH OVERSPRAY WHEN SPRAYING FOLLOWING JOIST CONTOURS. METAL LATH TO BE FULLY COVERED WITH SPRAY-APPLIED FIRE

RESISTIVE MATERIALS BUT WITH NO MINIMUM THICKNESS REQUIREMENTS. AS AN ALTERNATE TO THE THICKNESS SHOWN ABOVE FOR THE STEEL BEAM, THE THICKNESSES SHOWN IN THE FOLLOWING TABLE ARE APPLICABLE WHEN THE THICKNESS APPLIED TO THE BEAM'S LOWER FLANGE EDGES IS REDUCED BY ONE-HALF. THE MINIMUM THICKNESS APPLIED TO THE LOWER FLANGE EDGES IS 1/4 MINIMI IM SPRAV APPLIED FIRE RESISTIVE MATERIALS THICKNESS. IN

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS						
	RATING HR	UNRESTRAINED BEAM RATING HOUR	UNRESTRAINED BEAM RATING HOUR			
	1	1/2	1/2			
	1-1/2	11/16	9/16			
	2	15/16	13/16			
	3	1-7/16	1-3/8			
	4	1-13/16	1-13/16			

BERLIN CO LTD - Types 300, 300ES, 300N, SB, M-II, TG and M-II/P GREENTECH ASIA PACIFIC SDN BDH - Types 300, 300ES, 300HS, M-II, or M-II/P GREENTECH THERMAL INSULATION PRODUCTS MFG CO LLC - Types 300, 300AC, 300HS, 400AC, 3000, M-II, TG ISOLATEK INTERNATIONAL - Types 300, 300AC, 300ES, 300HS, 300N, SB, 400AC, 400ES, 3000, 3000ES, M-II, TG and RF 0:

**NEWKEM PRODUCTS CORP** - Types 300, 300ES, 300N, SB, M-II, TG and M-II/P.

1 - 1/2 -

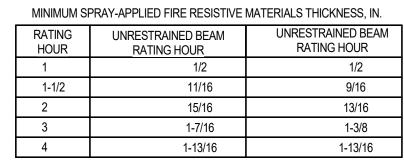
6A.(AS AN ALTERNATE TO ITEM 6) SPRAY-APPLIED FIRE RESISTIVE MATERIALS\* - APPLIED BY MIXING WITH WATER AND SPRAYING TO THE BEAM (OR JOIST) AND DECK SURFACES IN ONE OR MORE COATS TO THE FINAL MINIMUM THICKNESSES SHOWN BELOW. CREST AREAS ABOVE THE BEAM (OR JOIST) SHALL BE FILLED WITH THE SPRAY-APPLIED FIRE RESISTIVE MATERIALS. SURFACES MUST BE CLEAN AND FREE OF DIRT, LOOSE SCALE AND OIL. MINIMUM AVERAGE AND MINIMUM INDIVIDUAL DENSITY OF 17.5 AND 16 PCF, RESPECTIVELY, FOR TYPE 300TW, MINIMUM AVERAGE AND MINIMUM INDIVIDUAL DENSITY OF 22 AND 19 PCF. RESPECTIVELY, FOR TYPE 400. FOR METHOD OF DENSITY DETERMINATION SEE DESIGN INFORMATION

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS, IN. UNRESTRAINED BEAM RATING HOUR RESTRAINED BEAM RATING HOUR BEAM JOISTS BEAM JOISTS STEEL ROO W6x16 (A) (B) W6x16 (A) (B) DECK 7/16 3/4 3/4 7/16 3/4 3/4 13/16 9/16 | 15/16 | 1-3/16 | 7/16 | 3/4 | 1-1/16 | 15/16 13/16 | 1-3/16 | 1-7/16 | 11/16 | 1-1/8 | 1-5/16 | 1-7/16

1 - 1/4 | 1-13/16 | 2-5/16 | 1-3/16 | 1-13/16 | 2-1/8 | 1-7/8

- | 1-1/2 | - | - | 1-7/16

(A)METAL LATH OR NONMETALLIC FABRIC MESH SECURED TO ONE SIDE OF OPEN WEB JOIST. SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS APPLIED TO EACH SIDE OF LATH OR MESH SHALL BE EQUAL TO THICKNESS REQUIRED ON STEEL JOIST. (B)SPRAY-APPLIED FIRE RESISTIVE MATERIALS DIRECTLY APPLIED TO JOIST CONTOURS. AS AN ALTERNATE, METAL LATH OR NON-METALLIC FABRIC MESH SECURED TO ONE SIDE OF JOIST TO CATCH OVERSPRAY WHEN SPRAYING FOLLOWING JOIST CONTOURS. METAL LATH TO BE FULLY COVERED WITH SPRAY-APPLIED FIRE RESISTIVE MATERIALS BUT WITH NO MIN THICKNESS REQUIREMENTS. AS AN ALTERNATE TO THE THICKNESS SHOWN ABOVE FOR THE STEEL BEAM, THE THICKNESSES SHOWN IN THE FOLLOWING TABLE ARE APPLICABLE WHEN THE THICKNESS APPLIED TO THE BEAM'S LOWER FLANGE EDGES IS REDUCED BY ONE-HALF. THE MINIMUM THICKNESS APPLIED TO THE LOWER FLANGE EDGES IS 1/4



**GREENTECH ASIA PACIFIC SDN BDH** - Type 400 GREENTECH THERMAL INSULATION PRODUCTS MFG CO LLC - Type 400. **ISOLATEK INTERNATIONAL** - Types 300TW, 400.

**NEWKEM PRODUCTS CORP** - Type 400. 7. GLASS FIBER MESH - (OPTIONAL) - MINIMUM 3/32 INCH SQUARE MESH, COATED FIBERGLASS SCRIM FABRIC WEIGHING A MINIMUM OF 1.9 OUNCE PER SQUARE YARD SHALL BE ATTACHED TO ONE SIDE OF EACH JOIST WEB MEMBER. THE METHOD OF ATTACHMENT MUST BE SUFFICIENT TO HOLD THE MESH AND SPRAY-APPLIED FIRE RESISTIVE MATERIALS DURING APPLICATION AND CURING OF THE MATERIAL. AN ACCEPTABLE METHOL OF ATTACHING THE MESH IS BY EMBEDDING THE MESH IN MINIMUM 1/4 INCH LONG BEADS OF HOT MELTED GLUE. THE BEADS OF GLUE SHALL BE SPACED MINIMUM 12 INCH ON CENTER ALONG THE TOP CHORD OF THE BAR JOISTS. ANOTHER METHOD OF ATTACHMENT IS THE USE OF 1-1/4 INCH LONG, 1/2 INCH WIDE HAIRPIN CLIPS FORMED FROM 0.064 INCH DIAMETER STEEL WIRE. ALTERNATING FROM TOP TO BOTTOM OF THE JOIST

8. METAL LATH - (OPTIONAL-NOT SHOWN) - DIAMOND MESH, 3/8 INCH EXPANDED STEEL, MINIMUM 1.7 POUND PER SQUARE YARD FASTENED TO ONE SIDE OF JOISTS USING NO. 18 SWG STEEL TIE WIRE, LOCATED AT THE MID-HEIGHT OF EVERY OTHER WEB MEMBER OR 18 INCH ON CENTER WHICHEVER IS LESS. BOTH SIDES OF LATH MUST BE COMPLETELY COATED WITH SPRAY-APPLIED FIRE RESISTIVE MATERIALS. ). **BRIDGING** - (NOT SHOWN) - MINIMUM 1-1/4 BY 1-1/4 BY 1/8 INCH THICK STEEL ANGLES WELDED TO TOP AND BOTTOM CHORDS OF EACH JOIST. NUMBER AND SPACING OF BRIDGING ANGLES PER STEEL JOIST INSTITUTE SPECIFICATION, BRIDGING COATED WITH THE SAME THICKNESS OF SPRAY-APPLIED FIRE RESISTIVE MATERIALS (ITEM 6) AS THE JOIST.

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

( R5 | 0 | NON RATED ROOF ASSEMBLY

WEB MEMBER

R5 2 2-HOUR RATED ROOF ASSEMBLY

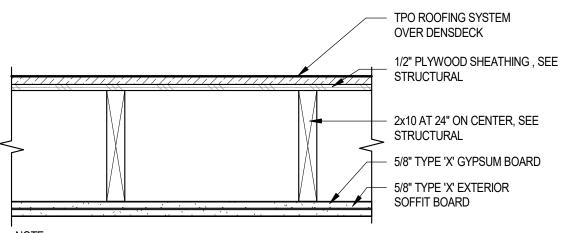
 $(R5 \mid 1 \mid$  1-Hour rated roof assembly

3-HR RATED ROOF ASSEMBLY

1-HR ROOF/CEILING - W/2X FRAMING AT BALCONIES/STAIRS & ELEVATORS GENERIC ASSEMBLY: June 2021

FIRE TEST: GA FILE NO. RC 2601

SOUND RATING:



THE ASSEMBLY DESCRIPTION BELOW IS PER GA FILE NO. RC 2601. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED ROOF/CEILING ASSEMBLY PER OWNER'S REQUEST.

BASE: LAYER 5/8 INCH TYPE 'X' GYPSUM WALLBOARD APPLIED AT RIGHT ANGLES TO 2X10 WOOD JOISTS 24 INCH ON CENTER WITH 1-1/4 INCH TYPE 'W' OR 'S' DRYWALL SCREWS 24 INCH ON CENTER. FACE:LAYER 5/8 INCH TYPE 'X' GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO JOISTS WITH 1-7/8 INCH TYPE 'W' OR 'S' DRYWALL SCREWS 12 INCH ON CENTER AT JOINTS AND INTERMEDIATE JOINTS AND 1-1/2 INCH TYPE 'G' SCREWS 12 INCH ON CENTER PLACED 2 INCH BACK ON EITHER SIDE OF END JOINTS. WOOD JOISTS SUPPORTING 1/2 INCH PLYWOOD WITH EXTERIOR GLUE APPLIED AT RIGHT ANGLES TO JOISTS WITH 8d NAILS. APPROPRIATE ROOF COVERING.

JOINTS OFFSET 24 INCH FROM BASE LAYER JOINTS

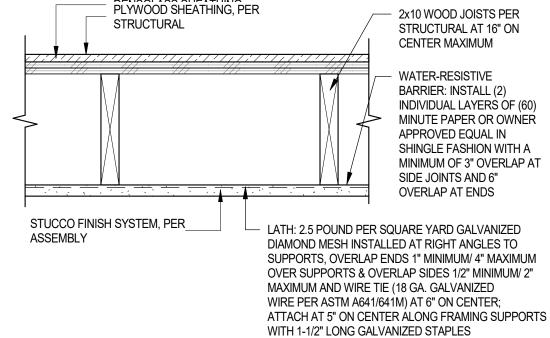
APPROX. CEILING WEIGHT: 5 PSI (Fire);

ITS, 8-6-98 TYPICAL AT BALCONY, STAIRS & ELEVATOR ROOFS

FM FC 172, 2-25-72;

1-HR ROOF/CEILING W/ 2x FRAMING OVER BALCONIES GA FILE NO. RC 2601 GA-600-2021 SCALE: 1 1/2" = 1'-0"

1-HR ROOF/CEILING - W/2X FRAMING AT SOFFITS GENERIC ASSEMBLY FIRE TEST: 2018 IBC TABLE 721.1(3), ITEM 13-1.2 SOUND RATING:



THE ASSEMBLY DESCRIPTION BELOW IS PER 2018 IBC TABLE 721.1(3). ITEM 13-1.2. CONSTRUCTION SHALL BE PER THE DETAIL ABOVE WHICH IS AN ENHANCED ROOF/ CEILING ASSEMBLY PER OWNER'S REQUEST

CEMENT OR GYPSUM PLASTER ON METAL LATH. LATH FASTENED WITH 1-1/2 INCH BY NO. 11 GAUGE BY 7/16 INCH HEAD BARBED SHANK ROOFING NAILS SPACED 5 INCH ON CENTER. PLASTER MIXED 1:2 FOR SCRATCH COAT AND 1:3 FOR BROWN COAT, BY WEIGHT, CEMENT TO SAND AGGREGATE.

(a) SUBFLOOR OF 1 INCH NOMINAL BOARDING, A LAYER OF ASBESTOS PAPER WEIGHING NOT LESS THAN 14 POUNDS PER 100 SQUARE FOOT AND A LAYER OF 1 INCH NOMINAL TONGUE-AND-GROOVE FINISHED FLOORING (b) SUBFLOOR OF 1 INCH NOMINAL TONGUE-AND-GROOVE BOARDING OR 15/32 INCH WIDE. STRUCTURAL PANELS WITH EXTERIOR GLUE AND A LAYER OF 1 INCH NOMINAL TONGUE-AND-GROOVE

FINISHED FLOORING OR 19/32 INCH WIDE, STRUCTURAL PANEL FINISH FLOORING OR A LAYER OF TYPE I GRADE M-1 PARTICLEBOARD NOT LESS THAN 5/8 INCH THICK.

n. THE CEILING SHALL BE PERMITTED TO BE OMITTED OVER UNUSABLE SPACE, AND FLOORING SHALL BE PERMITTED TO BE OMITTED WHERE UNUSABLE SPACE OCCURS ABOVE.

2018 IBC TABLE 721.1(3), ITEM 13-1.2

m. DOUBLE WOOD FLOOR SHALL BE PERMITTED TO BE EITHER OF THE FOLLOWING:

# 1-HR ROOF/CEILING W/ 2x FRAMING AT SOFFITS SCALE: 1 1/2" = 1'-0"

IN THE CONCEALED SPACE, DRAPED OVER THE RESILIENT CHANNEL (ITEM 6A)/GYPSUM WALLBOARD (ITEM 7A) CEILING MEMBRANE 4.  $\stackrel{ extstyle}{ extstyle}$  AIR DUCT\* - ANY UL CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE DAMPER MANUFACTURER. 5. DAMPER\* - MAX NOM 20 IN. LONG BY 18 IN. WIDE BY 2-1/8 IN. HIGH, FABRICATED FROM GALVANIZED STEEL. PLENUM BOX MAXIMUM SIZE NOM. 21 IN. LONG BY 18 IN. WIDE BY 16 IN. HIGH FABRICATED FROM EITHER GALAVANIZED STEEL OR CLASSIFIED AIR DUCT MATERIALS BEARING THE UL CLASS 0 OR CLASS 1 RIGID AIR DUCT MATERIAL. INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE

BEEN DETERMINED WHEN THE INSULATION IS SECURED TO THE DECKING.

1-HR ROOF/CEILING - FILLED

SOUND RATING:

FIRE TEST: UL DESIGN NO. P531

UNRESTRAINED ASSEMBLY: February 16, 2024

AIR DUCT\* PER

MECHANICAL AND ITEM #4

#5 BELOW - COORDINATE

**END JOINT DETAIL** 

BE SUBSTITUTED FOR THE 6D NAILS.

CHORDS AND THE PLYWOOD SHEATHING.

DAMPER PER MECHANICAL & ITEM

GYPSUM

WALLBOARD JOINT

MANUFACTURER COMPLIANCE

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

FASTENED WITH RHINO BOND SYSTEM

TRUSS PER STRUCTURAL AND ITEM 2

- UL CLASS B TPO ROOFING SYSTEM\*, PER ITEM 1, MECHANICALLY

FILL TRUSS SPACE WITH

RESILIENT CHANNELS, AT

12" ON CENTER, PER ITEM 6A —

BELOW AND FINISHED PER ITEM #8

BELOW; USE 5/8" TYPE ULIX MOLD TOUGH

18" DEEP PARALLEL CHORD TRUSSES PER

STRUCTURAL AND ITEM #2 BELOW

FINISHED PER ITEM #8 BELOW

DESIGN NO. U493

BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR

UNITED STATES

. ROOFING SYSTEM\* - ANY UL CLASS A, B OR C ROOFING SYSTEM (TGFU) OR PREPARED ROOF COVERING

OR "SHEATHING". NOM 15/32 IN. THICK WOOD STRUCTURAL PANELS SECURED TO TRUSSES WITH

2. TRUSSES - PITCHED CHORD TRUSSES, SPACED A MAX OF 24 IN. OC, FABRICATED FROM NOM 2 BY 4

LUMBER, WITH LUMBER ORIENTED VERTICALLY OR HORIZONTALLY. TRUSS MEMBERS SECURED

CONSTRUCTION ADHESIVE AND NO. 6D RINGED SHANK NAILS. NAILS SPACED 12 IN. OC ALONG EACH

(TFWZ) ACCEPTABLE FOR USE OVER NOM 15/32 IN. THICK WOOD STRUCTURAL PANELS, MIN. GRADE "C-D"

TRUSS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH MAY

TOGETHER MIN.0.0356 IN. THICK GALV STEEL PLATES. PLATES HAVE 5/16 IN. LONG TEETH PROJECTING

THE SAME PUNCH). FORMING A SPLIT TOOTH TYPE PLATE. EACH TOOTH HAS A CHISEL POINT ON ITS

OF EACH TOOTH HAS A TWIST FOR STIFFNESS. THE PAIRS ARE REPEATED ON APPROXIMATELY 7/8 IN.

OUTSIDE EDGE. THESE POINTS ARE DIAGONALLY OPPOSITE EACH OTHER FOR EACH PAIR. THE TOP HALF

CENTERS WITH FOUR ROWS OF TEETH PER INCH OF PLATE WIDTH. WHERE PITCHED TRUSS INTERSECTS

WITH THE INTERIOR FACE OF THE EXTERIOR WALLS, THE MIN TRUSS DEPTH SHALL BE 5-1/4 IN. WITH A

MIN ROOF SLOPE OF 3/12 AND A MIN. AVERAGE DEPTH OF 18 IN. . WHERE THE TRUSS INTERSECTS WITH

THE INTERIOR FACE OF THE EXTERIOR WALLS, THE MIN TRUSS DEPTH MAY BE REDUCED TO 3 IN. IF THE

BATTS AND BLANKETS (ITEM 3) ARE USED AS SHOWN IN THE ABOVE ILLUSTRATION (ALTERNATE

INSULATION PLACEMENT) AND ARE FIRMLY PACKED AGAINST THE INTERSECTION OF THE BOTTOM

3. BATTS AND BLANKETS - (OPTIONAL) -GLASS FIBER INSULATION, SECURED TO THE WOOD STRUCTURAL

SPACED 12 IN. OC. ANY GLASS FIBER INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO

CHANNEL/GYPSUM WALLBOARD CEILING MEMBRANE WHEN RESILIENT CHANNELS AND GYPSUM WALLBOARD ATTACHMENT IS MODIFIED AS SPECIFIED IN ITEMS 6 AND 7. THE FINISHED RATING HAS ONLY

PANELS WITH STAPLES SPACED 12 IN. OC OR TO THE TRUSSES WITH 0.090 IN. DIAM GALV STEEL WIRES

SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE, HAVING A MIN DENSITY OF 0.5 PCF. AS

AN OPTION, THE INSULATION MAY BE FITTED IN THE CONCEALED SPACE, DRAPED OVER THE RESILIENT

3B.CAVITY INSULATION - BATTS AND BLANKETS\* OR LOOSE FILL MATERIAL\* - (AS DESCRIBED ABOVE IN ITEM

3) - FOR USE WITH ITEM 7A - MINIMUM 3-1/2 INCH THICK WITH NO LIMIT ON MAXIMUM THICKNESS FITTED

PERPENDICULAR TO THE PLANE OF THE PLATE. THE TEETH ARE IN PAIRS FACING EACH OTHER (MADE BY

RC DELUXE RESILIENT CHANNELS BY

CLARK DIETRICH OR OWNER APPROVED

EQUAL AT 12" ON CENTR PER ITEM #6A BELOW

USG 5/8" TYPE ULIX GYPSUM WALLBOARD\* WITH 1'

TYPE 'S' SCREWS AT 8" ON CENTER PER ITEM 7A AND

SHEETROCK AT EXTERIOR CONDITIONS

USG 5/8" TYPE ULIX GYPSUM WALLBOARD\* WITH 1" TYPE S SCREWS AT 8" ON CENTER PER ITEM 7A

PER ITEM #3B ---

UNFACED BATT INSULATION\*

SLOPE, 1/4" PER 12" MINIMUM

1/2" DENSDECK SHEATHING OVER STRUCTURAL PANELS

MANUFACTURER. MAX DAMPER OPENINGS NOT TO EXCEED 180 SQ IN. PER 100 SQ FT OF CEILING AREA. NAILOR INDUSTRIES INC — TYPES 0755, 0755A, 0756, 0756D, 0757 , 0757D, 0757P, 0757DFP, 0758, 0759, 0760, 0761, 0762, 0763, CRD5, CRD5D, CRD6, CRD6D, CRD6FP, CRD6DFP. **SAFE AIR DOWCO** — 0455, 0455A, 0456, 0456D, 0457, 0457D, 0457-DB, 0457-CB, 0463-FB, 0457-EB, 0463-GB, 6. RESILIENT CHANNELS - RESILIENT CHANNELS FORMED OF 25 MSG THICK GALV STEEL, SPACED 16 IN.

OC, INSTALLED PERPENDICULAR TO TRUSSES. WHEN BATT AND BLANKET MATERIAL, ITEM 3, IS DRAPED OVER THE RESILIENT CHANNEL/GYPSUM WALLBOARD CEILING MEMBRANE, OR WHEN INSULATION (ITEM 3C) IS APPLIED TO THE UNDERSIDE OF THE ROOFING SYSTEM (ITEM 1), THE SPACING SHALL BE 12 IN. OC. CHANNELS SECURED TO EACH TRUSS WITH 1-1/4 IN. LONG TYPE S STEEL SCREWS. CHANNELS OVERLAPPED 4 IN. AT SPLICES. CHANNELS ORIENTED OPPOSITE AT WALLBOARD BUTT JOINTS (SPACED 6 IN. OC) AS SHOWN IN THE ABOVE ILLUSTRATION. 6A.RESILIENT CHANNELS - FOR USE WITH ITEM 7A - FORMED FROM MIN 25 MSG GALV STEEL INSTALLED

PERPENDICULAR TO TRUSSES AND SPACED 16 IN. OC. CHANNELS SECURED TO EACH TRUSS WITH 1-5/8 IN. LONG TYPE S BUGLE HEAD STEEL SCREWS. CHANNELS OVERLAPPED 4 IN. AT SPLICES. TWO CHANNELS, SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM PANEL END JOINT. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF PANEL. INSULATION, ITEM 3B IS APPLIED OVER THE RESILIENT CHANNEL/GYPSUM PANEL 7. GYPSUM WALLBOARD\* - NOMINAL 5/8 INCH THICK, 48 INCH WIDE, INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS WITH 1 INCH LONG TYPE S SCREWS SPACED 12 INCH ON

CENTER AND LOCATED A MINIMUM OF 1/2 INCH FROM SIDE JOINTS AND 3 INCH FROM THE END JOINTS. AT END JOINTS, TWO RESILIENT CHANNELS ARE USED, EXTENDING A MINIMUM OF 6 INCH BEYOND BOTH ENDS OF THE JOINT. WHEN LOOSE FILL MATERIAL INSULATION, ITEM 3A, IS INSTALLED OVER THE RESILIENT CHANNEL/GYPSUM WALLBOARD CEILING MEMBRANE, SCREWS SHALL BE INSTALLED AT 8 INCH ON CENTER. . UNITED STATES GYPSUM CO - TYPE C

7A.GYPSUM WALLBOARD\* - NOM 5/8 IN. THICK, 48 IN. WIDE, INSTALLED WITH LONG DIMENSION PERPENDICULAR TO RESILIENT CHANNELS WITH 1 IN. LONG TYPE S SCREWS SPACED 12 IN. OC AND LOCATED A MIN OF 1/2 IN. FROM SIDE JOINTS AND 3 IN. FROM THE END JOINTS. AT END JOINTS. TWO RESILIENT CHANNELS ARE USED. EXTENDING A MIN OF 6 IN. BEYOND BOTH ENDS OF THE JOINT. WHEN BATT AND BLANKET INSULATION, ITEM 3, IS DRAPED OVER THE RESILIENT CHANNEL/GYPSUM WALLBOARD CEILING MEMBRANE, SCREWS SHALL BE INSTALLED AT 8 IN. OC. WHEN INSULATION (ITEM 3C) IS INSTALLED IN THE CONCEALED SPACE, SPRAY-APPLIED TO THE UNDERSIDE OF THE ROOFING SYSTEM (ITEM 1), SCREWS ARE SPACED A MAX OF 8 IN. OC ALONG RESILIENT CHANNELS, FASTENERS ARE INCREASED IN LENGTH TO 1-1/4 IN, AND GYPSUM BOARD BUTT JOINTS SHALL BE STAGGERED MIN. 2 FT WITHIN THE ASSEMBLY, AND OCCUR BETWEEN THE MAIN FURRING CHANNELS.

8. FINISHING SYSTEM - (NOT SHOWN) - VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW-HEADS; PAPER TAPE, 2 IN. WIDE, 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 GYPSUM WALLBOARD.

\*INDICATES SUCH PRODUCTS SHALL BEAR THE UL

APPLICATIONS OF THIS ROOF ASSEMBLY AT BUILDINGS 3 & 4 SHALL ADHERE TO THE FOLLOWING CONSTRAINTS: VALLEY = TOP OF ROOF SHEATHING AT 00'-0" ABOVE LEVEL 1 RIDGE = TOP OF ROOF SHEATHING NOT TO EXCEED 00'-0" ABOVE LEVEL 1

- CONFIRM HEIGHT REQ'TS.

1-HR ROOF/CEILING ASSEMBLY - FILLED WITH

SCALE: 1 1/2" = 1'-0"

INSULATION <sup>→</sup> UL DESIGN P531

2525 E. CAMELBACK RD. SUITE 500, PHOENIX, AZ 85016 written description on request.

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project before proceeding with this work.

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City, state

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FIRE ASSEMBLIES - ROOF, CEILINGS

& SOFFITS

3-COAT STUCCO SYSTEM AT WOOD FRAMED SHELF

3-COAT STUCCO SYSTEM - (7/8 INCH THICK) 3/8 INCH SCRATCH COAT, 3/8 INCH THICK BROWN COAT, 1/8

. WATER-RESISTIVE BARRIER - INSTALL (2) INDIVIDUAL LAYERS OF SUPER (60) MINUTE PAPER OR OWNER

APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3 INCH OVERLAP AT

. PRE-FLASH MEMBRANE - (2) LAYERS OF 40 MIL SAFF OR OWNER APPROVED EQUAL ACROSS ENTIRE SURFACE IN SHINGLE FASHION WITH MINIMUM 3 INCH OVERLAP ALONG LENGTH AND 5 INCH OVERLAP AT

END JOINTS - EXTEND DOWN 4 INCH AT VERTICAL SURFACES AND OVERLAP FIRST LAYER OF WATER-

RESISTIVE BARRIER AT STUCCO OR UNDER WINDOW FLASHING SYSTEM AT WINDOWS. ROLL WITH 75

4. SELF-FURRING LATH - 17 GAUGE X 1-1/2 INCH WOVEN WIRE - LAPS SHALL BE A MINIMUM OF 1-1/2 INCH AT

SIDES AND ENDS - ATTACH WITH STAPLES AT 6 INCH ON CENTER ALONG FRAMING MEMBER ONLY:

ROUND OR FLATTENED 0.054 INCH DIAMETER (16 GAUGE) WIRE, 3/4 INCH CROWN; 7/8 INCH LEGS FOR

5. WOOD SHEATHING - 1/2 INCH PLYWOOD OR OSB PER STRUCTURAL WITH 1/8 INCH GAP AT EDGES TO

FLAT LATHS OR 1-1/4 INCH LEGS FOR 3/8 INCH RIB LATH WITH MINIMUM PENETRATION INTO SUPPORT OF

RESISTIVE BARRIER; EXTEND UP 6 INCH AT VERTICAL SURFACES UNDER FIRST LAYER OF WATER-

INCH THICK INTEGRAL COLOR ACRYLIC FINISH COAT - COLOR TEXTURE AS SELECTED BY

HORIZONTAL JOINTS AND A 6 INCH OVERLAP AT VERTICAL JOINTS.

3/4 INCH ENGAGING NOT LESS THAN THREE STRANDS OF LATH.

6. 2X WOOD FRAMING, PER STRUCTURAL PER STRUCTURAL.

OWNER/ARCHITECT

POLIND RUBBER FACED ROLLER

ALLOW FOR EXPANSION.

NOT TO SCALE

IBC 2018 TABLE 722.2.2.1

SCALE: 1 1/2" = 1'-0"

NON RATED ROOF/ CEILING

NON-RATED ROOF/CEILING

GENERIC ASSEMBLY

UL CLASS B TPO

STRUCTURAL

ROOFING SYSTEM

PLYWOOD SHEATHING, PER

FIRE TEST:

SOUND RATING:

SCALE: 1 1/2" = 1'-0"

PER STRUCTURAL -FILL TRUSS SPACE WITH INSULATION GYPSUM WALLBOARD, PER

ASSEMBLY

REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY

CROSS-SECTIONAL VIEW 

2. GYPSUM WALL ASSEMBLY UL/cUL CLASSIFIED U400, V400, OR W400 SERIES) (1-HOUR OR 2-HOUR FIRE-RATING) (2-HOUR SHOWN). 3. CEILING RUNNER (MINIMUM 25 GAUGE, FLANGE HEIGHT OF CEILING RUNNER SHALL BE MINIMUM 1/4 INCH GREATER THAN MAXIMUM EXTENDED JOINT WIDTH) FASTENED TO UNDERSIDE OF CONCRETE FLOOR WITH STEEL MASONRY ANCHORS OR STEEL FASTENERS (SPACED MAXIMUM 24 INCH ON CENTER) SEE NOTE BELOW. 4. STEEL STUDS (MINIMUM 3-1/2 INCH WIDE), CUT 1/2 INCH TO 3/4 INCH LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT. 5. MINIMUM 5/8 INCH DEPTH HILTI CP 601S ELASTOMERIC FIRESTOP SEALANT, CP 606 FLEXIBLE FIRESTOP SEALANT, OR HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT.

1. AS AN ALTERNATE TO CEILING RUNNER IN ITEM NO.3, SLOTTED CEILING RUNNERS MAY BE USED. CONSULT THE UL FIRE RESISTANCE DIRECTORY FOR APPROVED MANUFACTURERS. 2. L-RATING ONLY APPLIES WHEN HILTI CP 606 FLEXIBLE FIRESTOP SEALANT IS USED. 3. [OPTIONAL, NOT SHOWN] MINERAL WOOL, FIBERGLASS, OR POLYURETHANE/POLYETHYLENE FOAM BACKER ROD MAY BE USED AS A

1. CONCRETE FLOOR ASSEMBLY (1-HOUR OR 2-HOUR FIRE-RATING):

TOP OF WALL JOINT- GYPSUM WALL ASSEMBLY

A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL ASSEMBLY (MINIMUM 4-1/2 INCH THICK).

B. ANY UL/CUL CLASSIFIED PRE-CAST HOLLOW CORE CONCRETE FLOOR ASSEMBLY (MINIMUM 6 INCH THICK).

BACKER IN 2-HOUR. WALLS.

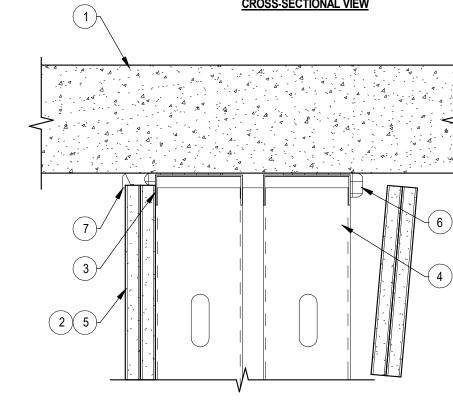
B. ANY UL CLASSIFIED CONCRETE BLOCK WALL. 2. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2 INCH THICK) (2-HOUR. FIRE-RATING).

4. MINIMUM 1/2 INCH DEPTH HILTI CP 604 SELF-LEVELING FIRESTOP SEALANT, HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT, OR HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT.

FIRE-RATED JOINT THROUGH CONCRETE FLOOR

NOT TO SCALE

UL/cUL (EM NO. HW-D-0758 L JOINT: GYPSUM CHASE WALL ASSEMBLY ASSEMBLY RATING = 1-HOUR OR 2-HOUR L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT L-RATING AT 400° F = LESS THAN 1 CFM / LIN FT AND II MOVEMENT CAPABILITIES - 50% COMPRESSION OR EXTENSION OR 66% COMPRESSION ONLY (SEE NOTES NO. 2 AND 3 BELOW) **CROSS-SECTIONAL VIEW** 



1. CONCRETE FLOOR ASSEMBLY (1-HOUR OR 2-HOUR FIRE-RATING):

A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL ASSEMBLY (MINIMUM 4-1/2 INCH THICK). B. ANY UL/cUL CLASSIFIED PRE-CAST (HOLLOW CORE) CONCRETE FLOOR (MINIMUM 6 INCH THICK). 2. GYPSUM CHASE(DOUBLE STUD) WALL ASSEMBLY UL/cUL CLASSIFIED U400, V400, OR W400 SERIES) (1-HOUR OR 2-HOUR FIRE-RATING) (2-HR. SHOWN)

3. CEILING RUNNER (MINIMUM 25 GAUGE, FLANGE HEIGHT OF CEILING RUNNER SHALL BE MINIMUM 1/4 INCH GREATER THAN MAXIMUM EXTENDED JOINT WIDTH) FASTENED TO UNDERSIDE OF CONCRETE FLOOR WITH MASONRY ANCHORS OR STEEL FASTENERS (SPACED MAXIMUM 24 INCH ON CENTER) (SEE NOTE NO. 1 BELOW).

4. STEEL STUDS (MINIMUM 2-1/2 INCH WIDE), CUT 3/4 INCH TO 1 INCH LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN CEILING RUNNER WITHOUT

5. 5/8 INCH OR 1-1/4 INCH THICKNESS GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL UL DESIGN. TOP ROW OF SCREWS SHALL BE INSTALLED INTO STUD 1 INCH TO 1-1/2 INCH BELOW THE BOTTOM EDGE OF THE CEILING RUNNER. 6. HILTI CFS-TTS 358, CFS-TTS 600, OR CFS-TTS OS TOP TRACK SEAL INSTALLED OVER CEILING RUNNER PRIOR TO ATTACHMENT TO UNDERSIDE OF CONCRETE FLOOR IN

ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. 7. [OPTIONAL] PVC WALL MOUNTED DEFLECTION BEAD (BY TRIM-TEX INC. INSTALLED PER MANUFACTURER'S INSTRUCTIONS. DEFLECTION BEAD INSTALLED ON ONE OR BOTH

1. AS AN ALTERNATE TO CEILING RUNNER IN ITEM NO.3, SLOTTED CEILING RUNNERS MAY BE USED. CONSULT THE UL FIRE RESISTANCE

DIRECTORY FOR APPROVED MANUFACTURERS. 2. TO ACCOMODATE MAX. 50% COMPRESSION OR EXTENSION MAXIMUM WIDTH OF JOINT = 1/2 INCH. 3. TO ACCOMODATE MAX. 66% COMPRESSION ONLY MAXIMUM WIDTH OF JOINT = 3/4 INCH.

TOP OF WALL JOINT- GYPSUM CHASE WALL

FIRE-RATED JOINT THROUGH CONCRETE FLOOR

**UL/cUL SYSTEM NO. FW-D-1037** 

FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY

ASSEMBLY RATING = 2-HOUR.

CLASS MOVEMENT CAPABILITIES = 10% COMPRESSION OR EXTENSION

1. CONCRETE WALL ASSEMBLY (2-HOUR FIRE-RATING). A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2 INCH THICK).

3. MINIMUM 4 INCH THICKNESS MINERAL WOOL SAFING (MINIMUM 4 PCF DENSITY) COMPRESSED 50%.

1. MAXIMUM WIDTH OF JOINT = 6 INCH

BOTT WALL JOINT AT GYPSUM SHAFT WALL

NOT TO SCALE

UL/cUL SYSTEM NO. FW-D-1092 FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY

ASSEMBLY RATING = 4-HOUR. L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT L-RATING AT 400° F = LESS THAN 1 CFM / LIN FT CLASS MOVEMENT CAPABILITIES = 12.5% COMPRESSION OR EXTENSION

**CROSS-SECTIONAL VIEW** 

1. CONCRETE WALL ASSEMBLY (4-HOUR. FIRE-RATING). A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 5-1/2 INCH THICK). B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.

 LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 5-1/2 INCH THICK) (2-HOUR FIRE-RATING).
 MINIMUM 5 INCH THICKNESS MINERAL WOOL SAFING (MINIMUM 4 PCF DENSITY) COMPRESSED 50% AND RECESSED TO ACCOMMODATE FIRESTOP SEALANT. 4. MINIMUM 1/4 INCH DEPTH HILTI CFS-S SIL GG OR CFS-S SIL SL FIRESTOP SILICONE SEALANT, FLUSH WITH THE TOP SURFACE OF FLOOR.

1. MAXIMUM WIDTH OF JOINT = 3 INCH

UL/cUL SYSTEM NO. FW-D-1011

FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY F-RATING = 3-HOUR CLASS II MOVEMENT CAPABILITIES - 14% COMPRESSION OR EXTENSION

1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR ASSEMBLY (MINIMU) THICK) (1-HR. OR2-HR. FIRE-RATING).
2. GYPSUM SHAFT WALL ASSEMBLY (UL/cUL CLASSIFIED U400 OR V400 SEP) HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
A. "J" SHAPED CEILING RUNNER, MINIMUM 2-1/2" WIDE WITH LEGS OF AND 2" (MINIMUM 24 GA.)FASTENED TO TOP SIDE OF CONCRETE FLOOR WITH STEEL FASTENERS AT LOCATION

A. "J" SHAPED CEILING RUNNER, MINIMUM 2-1/2" WIDE WITH LEGS OF "JAND 2" (MINIMUM 24 GA.) FASTENED TO TOP SIDE OF CONCRETE FLOOR WITH STEEL FASTENERS AT LOCATION NOTGREATER THAN 2" FROM ENDS AND MAXIMUM 24" O.C.

B. "C-H" SHAPED STUDS (MINIMUM 2-1/2" WIDE, MINIMUM 25 GA.") 8" TO 1/2" LESS IN LENGTHTHAN ASSEMBLY HEIGHT.

C. NOMINAL 1" THICK GYPSUM LINER PANEL. TYPE AND SHEFT JAND SPECIFIED IN THEINDIVIDUAL UL/CUL DESIGN.

D. NOMINAL 1/2" OR 5/8" THICK GYPSUM WALLBOARD. TYPY ABER OF LAYERS, AND SHEETORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL/CUL DESIGN.

3. HILTI CP 606 FLEXIBLE FIRESTOP SEALANT, HILTI CFS-S FIRESTOP SILICONE SEALANT, ORHILTI CP 605 BOTTOM OF WALL FIRESTOP SEALANT INSTALLED THE FULL DEPTH OF GYPSUM BOARDAND FLUSH WITH THE FINISH SIDE ("SEE NOTES NO. 1 AND 2 BELOW").

UL/cUL SYSTEM NO. BW-S-0023

February 02, 2022

BOTTOM OF WALL JOINT: GYPSUM SHAFT WALL ASSEMBLY ASSEMBLY RATING 1-HOUR OR 2-HOUR

**CROSS SECTIONAL VIEW** 

SECTION A-A

1. CONCRETE WALL ASSEMBLY (3-HR. FIRE-RATING):

A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2 INCH THICK)

1. MAXIMUM WIDTH OF JOINT [FOR HII 2006] = 1 INCH 2. MAXIMUM WIDTH OF JOINT [FOR ' OF 605] = 3/4 INCH

B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.

2. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2 INCH THICK) (3-HOUR FIRE-RATING). 3. MINIMUM 4-1/4 INCH THICKNESS MINERAL WOOL SAFING (MINIMUM 4 PCF DENSITY) COMPRESSED MINIMUM 42%.

4. MINIMUM 1/4 INCH DEPTH HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT, HILTI 601S ELASTOMERIC FIRESTOP SEALANT, OR HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT

1. MAXIMUM WIDTH OF JOINT = 3-1/2 INCH

FIRE-RATED JOINT THROUGH CONCRETE FLOOR

**Street Adress** City, state

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**PRELIMINARY** CONSTRUCTION



NOT TO SCALE

Contractor must verify all dimensions a

2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

REVISIONS/SUBMITTALS

DATE DESCRIPTION

and the owner or its designated agent shall provide th written description on request.

ASSEMBLY

NOT TO SCALE

NOT TO SCALE

NOT TO SCALE

### System No. FW-D-1011 ASSEMBLY RATINGS — 3 HR NOMINAL JOINT WIDTH - 3 1/2" CLASS II MOVEMENT CAPABILITIES - 14% COMPRESSION OR EXTENSION

1. WALL ASSEMBLY — MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) STRUCTURAL CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. 2. FLOOR ASSEMBLY — MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) STRUCTURAL CONCRETE.

3. JOINT SYSTEM — MAX SEPARATION BETWEEN EDGE OF FLOOR AND FACE OF WALL (AT TIME OF INSTALLATION OF JOINT SYSTEM) IS 3-1/2 IN. THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 14 PERCENT IN COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH. THE JOINT SYSTEM SHALL CONSIST OF THE FOLLOWING: A. FORMING MATERIAL — MIN 4 PCF MINERAL WOOL BATT INSULATION INSTALLED IN JOINT OPENING AS

A PERMANENT FORM. PIECES OF BATT CUT TO MIN WIDTH OF 4-1/4 IN. AND INSTALLED EDGE-FIRST INTO JOINT OPENING, PARALLEL WITH JOINT DIRECTION, SUCH THAT BATT SECTIONS ARE COMPRESSED MIN 42 PERCENT IN THICKNESS AND THAT THE COMPRESSED BATT SECTIONS ARE RECESSED FROM TOP SURFACE OF THE FLOOR AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. ADJOINING LENGTHS OF BATT TO BE TIGHTLY-BUTTED WITH BUTTED SEAMS SPACED MIN 24 IN. APART ALONG THE LENGTH OF THE JOINT. B. FILL, VOID OR CAVITY MATERIAL\* — SEALANT — MIN 1/4 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE JOINT, FLUSH WITH TOP SURFACE OF FLOOR. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S ELASTOMERIC FIRESTOP SEALANT, CFS-S

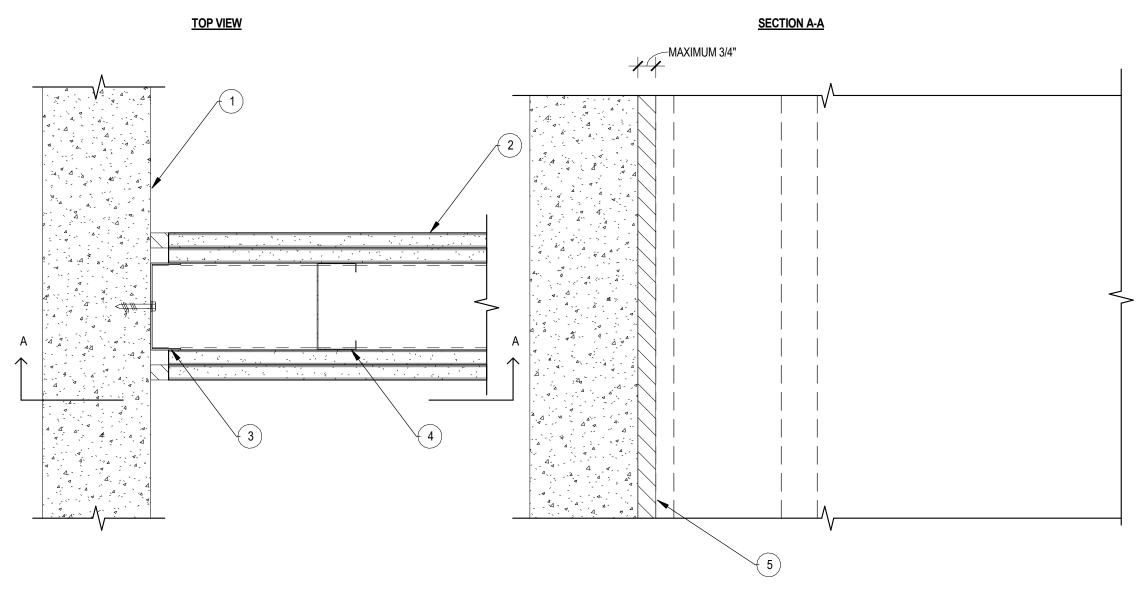
\*BEARING THE UL CLASSIFICATION MARK

SIL GG OR CFS-S SIL SL (FLOORS ONLY) SEALANT

# UL/cUL SYSTEM NO. WW-D-0040

# WALL TO WALL JOINT: GYPSUM WALL TO CONCRETE OR BLOCK WALL ASSEMBLY

ASSEMBLY RATING = 1-HOUR OR 2-HOUR CLASS II MOVEMENT CAPABILITY - 17% COMPRESSION OR EXTENSION L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT L-RATING AT 400° F = LESS THAN 1 CFM / LIN FT



1. CONCRETE FLOOR ASSEMBLY (1-HOUR OR 2-HOUR FIRE-RATING): A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL ASSEMBLY (MINIMUM 4-1/2 INCH THICK).

B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL. 2. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400, V400, OR W400 SERIES) (1-HOUR OR 2-HOUR FIRE-RATING) (2-HOUR SHOWN)

3. WALL RUNNER (MINIMUM 25 GAUGE) SECURED TO WALL ASSEMBLY WITH STEEL CONCRETE FASTENERS (SPACE 12 INCH ON CENTER) 4. STEEL STUDS (MINIMUM 3-1/2 INCH WIDE), CUT 1/2 INCH TO 3/4 INCH LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT.

FIRST STUD ADJACENT TO CONCRETE WALL SHALL NOT EXCEED 4 INCH FROM WALL FACE. 5. MINIMUM 5/8 INCH DEPTH HILTI CP 601S ELASTOMERIC FIRESTOP SEALANT, CP 606 FLEXIBLE FIRESTOP SEALANT, OR HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT.

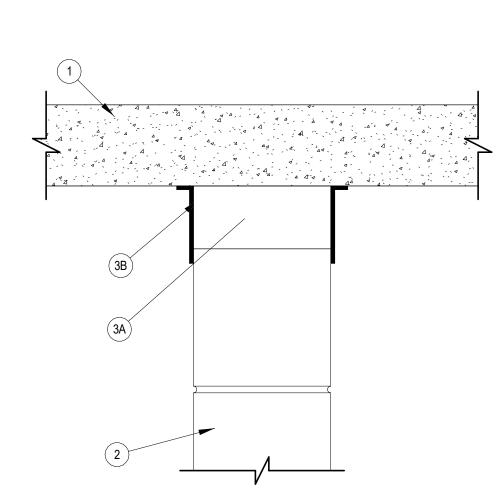
NOTES: 1. [OPTIONAL, NOT SHOWN] MINERAL WOOL, FIBERGLASS, OR POLYURETHANE/POLYETHYLENE FOAM BACKER ROD MAY BE USED AS A BACKER IN 2-HOUR, WALLS. 2. L-RATING ONLY APPLIES WHEN HILTI CP 606 FLEXIBLE FIRESTOP SEALANT IS USED .

# FIRMATED JOINT THROUGH CONCRETE FLOOR

NOT TO SCALE

System No. HW-D-1070 ASSEMBLY RATINGS — 2 HR

CLASS II MOVEMENT CAPABILITIES - 40% COMPRESSION OR EXTENSION



1. FLOOR ASSEMBLY — MIN 4-1/2 IN. (114 MM) THICK STEEL-REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF, 1600-2400 KG/M3) STRUCTURAL CONCRETE. 2. WALL ASSEMBLY — MIN 6 IN. (152 MM) THICK STEEL-REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) STRUCTURAL CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF

3. JOINT SYSTEM — MAX WIDTH OF JOINT (AT TIME OF INSTALLATION OF JOINT SYSTEM) IS 2-1/2 IN. (64 MM). THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 40 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH. THE JOINT SYSTEM SHALL CONSIST OF THE FOLLOWING: A. FORMING MATERIAL\* — MIN 4 PCF (64 KG/M³) MINERAL WOOL BATT INSULATION INSTALLED IN JOINT OPENING AS A PERMANENT FORM. BATT CUT TO WIDTH EQUAL TO THICKNESS OF WALL, COMPRESSED 50 PERCENT IN THICKNESS AND INSTALLED EDGE-FIRST INTO JOINT OPENING SUCH THAT THE COMPRESSED BATT SECTIONS ARE FLUSH WITH BOTH SURFACES OF WALL. ADJOINING LENGTHS OF BATT TO BE TIGHTLY BUTTED WITH BUTTED SEAMS SPACED MIN 48 IN. (1219 MM) APART

ALONG THE LENGTHS OF THE JOINT. ROCK WOOL MANUFACTURING CO — DELTA BOARD THERMAFIBER INC — TYPE SAF B. FILL, VOID OR CAVITY MATERIAL\* — MIN 1/16 IN. (1.6 MM) DRY THICKNESS (MIN 1/8 IN. OR 3.2 MM WET THICKNESS) OF FILL MATERIAL SPRAYED ON EACH SIDE OF THE WALL TO COMPLETELY COVER MINERAL WOOL FORMING MATERIAL AND TO OVERLAP A MIN OF 1/2 IN. (13 MM) ONTO WALL AND

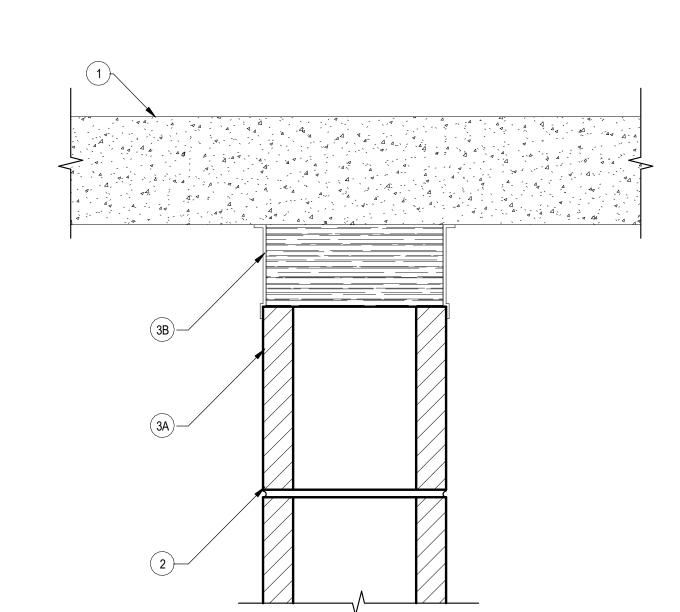
FLOOR SURFACES ON BOTH SIDES OF WALL. HILTI CONSTRUCTION CHEMICALS. DIV OF HILTI INC — CP672 FIRESTOP SPRAY OR CFS-SP WB FIRESTOP JOINT SPRAY \* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS

EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

# WALL TO WALL JOINT- GYPSUM WALL ASSEMBLY TO

CONCRETE WALL ASSEMBLY

**UL/cUL SYSTEM NO. HW-D-0097** 



ASSEMBLY RATING = 2-HOUR

NOMINAL JOINT WIDTH - 2 INCH CLASS MOVEMENT CAPABILITIES = 14% COMPRESSION OR EXTENSION

1. FLOOR ASSEMBLY - MINIMUM 4-1/2 INCH THICK STEEL-REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) STRUCTURAL CONCRETE.

ANY UL CLASSIFIED CONCRETE BLOCKS\*. SEE CONCRETE BLOCKS (CAZR) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

3. JOINT SYSTEM- MAXIMUM WIDTH OF JOINT (AT TIME OF INSTALLATION OF JOINT SYSTEM) IS 2 INCH THE JOINT IS DESIGNED TO ACCOMMODATE A MAXIMUM 14 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH. THE JOINT SYSTEM SHALL CONSIST OF THE FOLLOWING: A. FORMING MATERIAL - MINIMUM 4.0 PCF MINERAL WOOL BATT INSULATION INSTALLED IN JOINT OPENING AS A PERMANENT FORM. BATT CUT TO MINIMUM WIDTH OF 8 INCH AND INSTALLED CUT EDGE-FIRST INTO JOINT OPENING, PARALLEL WITH JOINT DIRECTION, SUCH THAT BATT SECTIONS ARE COMPRESSED MINIMUM 50 PERCENT IN THICKNESS AND SUCH THAT THE COMPRESSED BATT SECTIONS ARE FLUSH WITH BOTH SURFACES OF WALL. ADJOINING LENGTHS OF BATT TO BE TIGHTLY BUTTED SEAMS SPACED MINIMUM 48 INCH APART ALONG THE LENGTHS OF THE JOINT. B. FILL, VOID OR CAVITY MATERIAL\* - MINIMUM 1/8 INCH WET THICKNESS OF FILL MATERIAL SPRAYED OR TROWELLED ON EACH SIDE OF WALL TO COMPLETELY COVER MINERAL

WOOL FORMING MATERIAL AND TO OVERLAP A MINIMUM 1/2 INCH ONTO CONCRETE FLOOR AND CONCRETE WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP672

\*BEARING THE UL CLASSIFICATION MARK

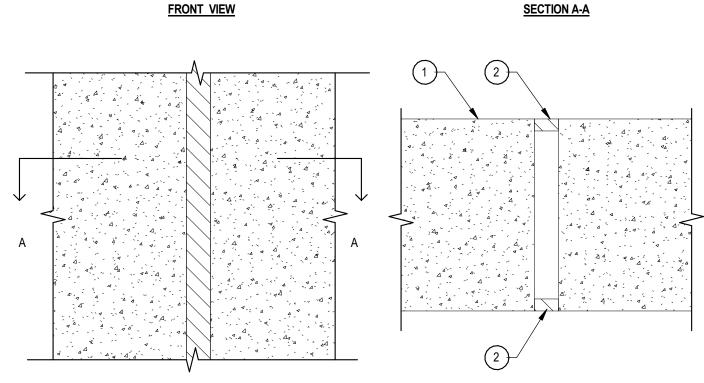
FIRESTOP SPRAY OR CFS-SP WB FIRESTOP JOINT SPRAY

# UL/cUL SYSTEM NO. WW-D-0032

# WALL TO WALL JOINT: CONCRETE WALL OR BLOCK WALL ASSEMBLY

ASSEMBLY RATING = 3-HOUR

CLASS II MOVEMENT CAPABILITIES - 12.5% COMPRESSION OR EXTENSION L-RATING AT AMBIENT = LESS THAN 1 CFM/LIN FT L-RATING AT 400°F = LESS THAN 1 CFM/LIN FT



1. CONCRETE WALL ASSEMBLY (3-HOUR FIRE-RATING):

A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 8 INCH THICK) B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.

2. MINIMUM 1/2 INCH DEPTH HILTI CP 606 FLEXIBLE FIRESTOP SEALANT.

1. MAXIMUM WIDTH OF JOINT = 1 INCH 2. [OPTIONAL][NOT SHOWN] MINERAL WOOL OF TRETHANE FOAM BACKER ROD MAY BE USED AS A BACKER FÖR FIRESTOP SEALANT.

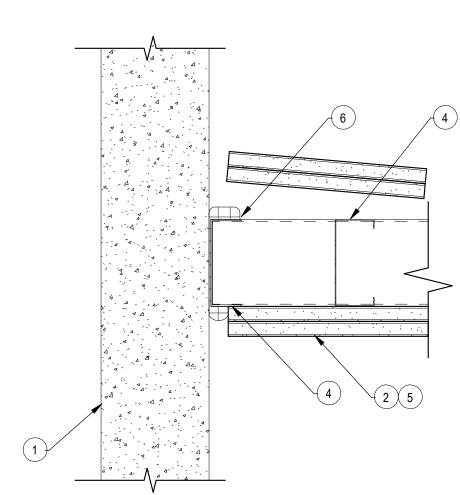
WALL WALL JOINT- CONCRETE WALL OR BLOCK

ASSEMBLY

# UL/cUL SYSTEM NO. WW-S-0074

# TOP OF WALL JOINT: GYPSUM WALL ASSEMBLY TO CONCRETE WALL ASSEMBLY

ASSEMBLY RATING = 1-HOUR OR 2-HOUR L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT L-RATING AT 400° F = LESS THAN 1 CFM / LIN FT



1. CONCRETE FLOOR ASSEMBLY:

WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS.

A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2 INCH THICK) (1-HOUR FIRE-RATING) B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 6 INCH THICK) (2-HOUR FIRE-RATING)

C. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL (1-HOUR OR 2-HOUR FIRE-RATING). 2. GYPSUM WALL ASSEMBLY UL/cUL CLASSIFIED U400, V400, OR W400 SERIES) (1-HOUR OR 2-HOUR FIRE-RATING) (2-HOUR SHOWN) 3. STEEL RUNNER (MINIMUM 25 GAUGE, FLANGE HEIGHT OF CEILING RUNNER SHALL BE MINIMUM 1-1/4 INCH) FASTENED TO CONCRETE WALL WITH MASONRY ANCHORS

ATTACHMENT. 5. 5/8 INCH OR 1-1/4 INCH THICKNESS GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL UL DESIGN. 6. HILTI CFS-TTS 358, CFS-TTS 600, OR CFS-TTS OS TOP TRACK SEAL INSTALLED UNDER STEEL RUNNER PRIOR TO ATTACHMENT TO CONCRETE WALL IN ACCORDANCE

4. STEEL STUDS (MINIMUM 3-1/2 INCH WIDE), CUT 3/4 INCH TO 1 INCH LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN STEEL RUNNER WITHOUT

1. MAXIMUM WIDTH OF JOINT = 3/4 INCH

This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to written description of such other billing (and/or) cycle 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

Contractor must verify all dimensions a project before proceeding with this work.

drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for

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**PRELIMINARY** 

NOT FOR

CONSTRUCTION

REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this

written description on request.

RATED JOINT AT CMU WALL TO CONCRETE SLAB -

NOT TO SCALE

RATED JOINT AT CMU WALL TO CONCRETE

CONCRETE WALL ASSEMBLY

40% COMPRESSIBLE

NOT TO SCALE

NOT TO SCALE

WALL TO WALL JOINT- GYPSUM WALL ASSEMBLY TO

NOT TO SCALE

NOT TO SCALE

1. WOOD FLOOR/CEILING ASSEMBLY (UL/cUL CLASSIFIED L500 SERIES) (1-HR. FIRE-RATING): A. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD, OR FLOOR TOPPING

- B. IOPTIONAL NOT SHOWNI GYPSUM WALL ASSEMBLY (FIRE-RATED OR NON FIRE-RATED) CONSISTING OF SINGLE NOMINAL 2" x 6" LUMBER PLATES AND STUDS OR DOUBLE NOMINAL 2" x 4" LUMBER PLATES AND STUDS WITH MINIMUM 1/2" THICK GYPSUM BOARD
- PENETRATING ITEM TO BE ONE OF THE FOLLOWING A. MAXIMUM 4" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (CELLULAR CORE OR SOLID CORE (CLOSED OR VENTED PIPING SYSTEM)
- B. MAXIMUM 4" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED OR VENTED PIPING SYSTEM). C. MAXIMUM 4" NOMINAL DIAMETER PVC CONDUIT INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NFPA 70). 3. HILTI CP 648E OR CP 648S WRAP STRIP WRAPPED CONTINUOUSLY AROUND THE OUTER
- CIRCUMFERENCE OF THE PIPE. NUMBER OF LAYERS AND TYPE OF WRAP STRIP TO BE IN ACCORDANCE WITH THE RESPECTIVE TABLES BELOW. WRAP STRIP HELD IN PLACE WITH TAPE (OR WITH INTEGRATED FASTENING TAPE ON THE CP 648S ONLY). WRAP STRIP CENTERED IN THE GYPSUM BOARD CEILING OR. WHEN A CHASE WALL IS PRESENT, INSTALLED IN THE LOWER TOP PLATE SO THAT ONE-HALF OF THE WRAP STRIP LENGTH EXTENDS BELOW THE LOWER TOP PLATE.
- 4. MINIMUM 3/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE 5. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM SURFACE OF CEILING
- 6. MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AT WRAP STRIP/CEILING INTERFACE OF WRAP STRIP/TOP PLATE INTERFACE.
- 1. WHEN HILTI CP 648S IS USED, THE T-RATING IS 1/2-HR. FOR PENETRATING ITEMS WITH A NOMINAL DIAMETER OF 2" OR SMALLER, AND THE T-RATING IS 0-HR. FOR NOMINAL 3" DIAMETER PENETRATING ITEMS. THE T-RATING IS 1-HR. FOR NOMINAL 4" DIAMETER PENETRATING ITEMS. WHEN HILTI CP 648E IS USED, T-RATING IS 1/2-HR.

HILTI CP 648S WRAP S	TRIF

HILTI CP 648S WRAP STRIP							
PRODUCT	NOM PIPE SIZE,	MAX OPENING	ANNU	LAR SPACE			
DESIGNATION	IN. (MM)	DIAM, IN. (MM)	MIN, IN. (MM)	MIN, IN. (75			
CP 648S 1.5" US	1-1/2 (38)	3 (76)	3/16 (4.8)	511,			
CP 648S 2" US	2 (51)	3-1/2 (89)	3/16 (4.8)	16 (8)			
CP 648S 3" US	3 (102)	4 (102)	3/16 (4	5/16 (8)			
CP 648S 4" US	4 (140)	5-1/2 (140)	<u></u>	3/4 (19)			

PRODUCT	CT NOM PIPE SIZE,		ANNU	ANNULAR SPACE	
DESIGNATION	IN. (MM)	MAX OPEN'' DIAM, IN	MIN, IN. (MM)	MIN, IN. (MM)	NUMBER ( LAYERS
CP 648E W45/1-3/4"	1-1/2 (38)	12.1	3/16 (4.8)	5/16 (8)	1
CP 648E W45/1-3/4"	2 (51)	1/2 (89)	3/16 (4.8)	5/16 (8)	1
CP 648E W45/1-3/4"	3 (76)	4 (102)	3/16 (4.8)	5/16 (8)	1
CP 648E W45/1-3/4"	3 OF	5 (127)	3/8 (10)	5/8 (16)	2
CP 648E W45/1-3/4"	(102)	6 (152)	3/8 (10)	5/8 (16)	2

# PLACE PIPE THROUGH RATED FLOOR/CEILING

'STEM NO. F-C-251

**UL SYSTEM NO. F-C-5053** 

FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE RATED WOOD JOIST FLOOR CEILING ASSEMBLY

SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL

L500 SERIES FLOOR-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE

1.1. FLOOR SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD

LUMBER AND STEEL JOIST, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS

SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF CEILING OPENING

OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.

1.2. WOOD JOIST - NOMINAL 10 INCH DIAMETER (OR DEEPER) LUMBER, STEEL OR COMBINATION

1.3. GYPSUM WALLBOARD\*- THICKNESS, TYPE, NUMBER OF LAYERS AND ASTENERS SHALL BE

2. THROUGH PENETRANTS - MAXIMUM ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER

2.2. **IRON PIPE** - NOMINAL 2 INCH DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.

CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE

RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND

2.1. STEEL PIPE - NOMINAL 2 INCH DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.

2.3. COPPER TUBE - NOMINAL 2 INCH DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING

2.4. COPPER PIPE - NOMINAL 2 INCH DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PIPE COVERING - THE ANNULAR SPACE BETWEEN THE INSULATED PENETRANTS AND PERIPHERY OF

THE OPENING TO BE MINIMUM 0 INCH (POINTED CONTACT) TO MAXIMUM 7/8 INCH THE FOLLOWING

3.1. PIPE COVERING\*- NOMINAL 1 INCH THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5

LAP TYPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TYPE

SUPPLIED WITH THE PRODUCT. SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU)

PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATION AND BEARING THE UL

CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 50 OR LESS MAY BE USED.

3.2. TUBE INSULATION-PLASTICS+ - NOMINAL 1/2 INCH THICK ACRYLONITRILE

ON THE TOP AND BOTTOM SURFACES OF THE FLOOR-CEILING ASSEMBLY.

PASSIVE FIRE PROTECTION PARTNERS-4800 DW, 4100NS, 3600EX.

+ BEARING THE UL RECOGNIZED COMPONENT MARK

\* BEARING THE UL CLASSIFICATION MARK.\

CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY

BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING

SEE PLASTICS+++ (QMFZ2) CATEGORY IN THE PLASTIC RECOGNIZED COMPONENT DIRECTORY

FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL

MEETING THE ABOVE SPECIFICATION AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF

4. FILL, VOID OR CAVITY MATERIALS\*- SEALANT- MINIMUM 3/4 INCH THICKNESS OF SEALANT APPLIED

THICKNESS OF SEALANT APPLIED WITHIN THE ANNULAR DIAMETER BEAD OF SEALANT SHALL BE

WITHIN THE ANNULAR SPACED. FLUSH WITH TOP SURFACE OF PLYWOOD FLOOR. MINIMUM 5/8 INCH

APPLIED AT THE PIPE COVERING/PLYWOOD AND PIPE COVERING/GYPSUM WALLBOARD INTERFACE

TYPES AND SIZES OF PIPE COVERINGS MAY BE USED WITH THE METALLIC PIPES OR TUBES.

PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET.

MATERIAL

FLOOR ASSEMBLY

PER ITEM 1

∠R ITEM 4

F RATING - 1-HOUR

T RATING - 1-HOUR

PER ITEM 2

PIPE COVERING

MAXIMUM DIAMETER OF FLOOR OPENING IS 5 INCH.

REQUIRED ITH ENDS FIRESTOPPED.

SIZES OF METALLIC PIPES OR TUBING MAY BE USED:

PER ITEM 3 -

THE FOLLOWING FEATURES.

IS 5 INCH.

94-5VA MAY BE USED.

SCALE: 1 1/2" = 1'-0"

# **UL SYSTEM NO. F-C-7014** F RATING - 1-HOUR PER ITEM 2 T RATING - 1-HOUR FILL MATERIAL PER ITEM 3 STEEL DUCT PER ITEM 2 FILL MATERIAL PER ITEM 3 FLOOR ASSEMBLY PER ITEM 1 **SECTION A-A**

. FLOOR - CEILING ASSEMBLY - THE 1-HOUR FIRE-RATED WOOD JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY, AS SUMMARIZED BELOW:

1.1. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER. PLYWOOD OR FLOOR TOPPING MIXTURES\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING IS TO BE MAXIMUM 1 INCH LARGER THAN THE DIAMETER OF STEEL DUCT.

1.2. WOOD JOIST - NOMINAL 10 INCH DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOIST, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH

1.3. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS AS REQUIRED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING IS TO BE MAXIMUM 1 INCH LARGER THAN DIAMETER OF STEEL DUCT.

1.4. CHASE WALL - (OPTIONAL, NOT SHOWN) - THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH A 1-HOUR FIRE RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL. DEPTH OF CHASE WALL STUD CAVITY TO BE MINIMUM 1/2 INCH GREATER THAN THE DIAMETER OF OPENING CUT IN SOLE AND TOP PLATES TO ACCOMMODATE THE THROUGH PENETRANT (ITEM 2). THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE

NOMINAL 2X4 INCH, 2X6 INCH OR DOUBLE NOMINAL 2X4 INCH LUMBER STUDS.

1.5. SOLE PLATE - NOMINAL 2X4 INCH, 2X6 INCH OR PARALLEL 2X4 INCH LUMBER PLATES, TIGHTLY BUTTED. DIAMETER OF OPENING IS TO BE MAXIMUM 1 INCH LARGER THAN DIAMETER OF STEEL PIPE.

RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: STUDS -

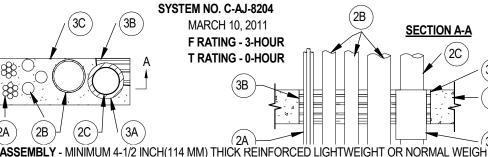
1.6. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2X4 INCH, TWO NOMINAL 2X6 INCH OR TWO SETS OF PARALLEL 2X4 INCH LUMBER PLATES, TIGHTLY BUTTED. DIAMETER OF OPENING IS TO MAXIMUM 1 INCH LARGER THAN DIAMETER OF STEEL DUCT.

1.7. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN.

2. **STEEL DUCT** - ONE NOMINAL 4 INCH DIAMETER (OR SMALLER) NO. 30 GAUGE (OR HEAVIER) STEEL DUCT OR ONE NOMINAL 10 INCH DIAMETER (OR SMALLER) NO. 28 GAUGE (OR HEAVIER) STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE OPENING. ANNULAR SPACE TO BE MINIMUM OF 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY,

3. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SOLE PLATE. MINIMUM 5/8 INCH THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING OR TOP PLATE. MINIMUM 1/4 INCH DIAMETER BEAD OF FILL MATERIAL APPLIED AT POINT CONTACT LOCATION ON THE TOP SURFACE OF FLOOR OR CHASE WALL SOLE PLATE AND AT THE PENETRANT/CEILING OR CHASE WALL TOP PLATE INTERFACE.

SPECIFIED TECHNOLOGIES INC - SPECSEAL LCI SEALANT \*BEARING THE UL CLASSIFICATION MARK



1. **FLOOR ASSEMBLY** - MINIMUM 4-1/2 INCH(114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGH I (100-150 PCF OR 1600-2400 (KG/M3) CONCRETE. MAXIMUM AREA OF OPENING IS 216 INCHES SQUARED (1394 CM2) WITH A MAXIMUM DIMENSION OF 36 INCH(914 MM). 2. **THROUGH PENETRANTS** - PIPES, CONDUIT OR CABLES TO BE INSTALLED WITHIN THE OPENING. THE ANNULAR

SPACE BETWEEN PENETRANTS SHALL BE MINIMUM 1/2 INCH(13 MM) TO MAXIMUM 6 INCH(152 MM). THE SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 6 INCH(152 MM). PENETRANTS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF PENETRANTS MAY BE USED: A. CABLES - A MAXIMUM OF TWO 3 INCH(76 MM) DIAMETER (OR SMALLER) CABLE BUNDLES. THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:

1. MAXIMUM 300 PAIR NO. 22 AWG (OR SMALLER) COPPER CONDUCTOR WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKETING MATERIAL. 2. MAXIMUM 1/C NO. 4/0 AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH CROSS-LINKED 3. THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP

POLYETHYLENE (XLPE) OR PVC JACKET. 3. MAXIMUM 7/C NO. 12 AWG (OR SMALLER) COPPER CONDUCTOR POWER AND CONTROL CABLES WITH XLPE OR PVC INSULATION WITH XLPE OR PVC JACKET.

4. MAXIMUM 3/C NO. 3/0 AWG (OR SMALLER) COPPER OR ALUMINUM CONDUCTOR SER CABLES WITH PVC INSULATION AND JACKET. 5. MAXIMUM 3/C NO. 2/0 AWG (OR SMALLER) COPPER CONDUCTOR PVC JACKETED ALUMINUM CLAD OR STEEL CLAD TECK 90 CABLE

6. MAXIMUM 110/125 FIBER OPTIC (F.O.) CABLE WITH PVC INSULATION AND JACKET 7. MAXIMUM 3/C WITH GROUND NO. 8 AWG (OR SMALLER) COPPER CONDUCTOR NM CABLE WITH PVC INSULATION AND JACKET

8. RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE (FE) OR PVC INSULATION AND JACKET.

9. MAXIMUM 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH HYLAR JACKET AND INSULATION. 10. MAXIMUM 3 CONDUCTOR NO. 12 AWG (OR SMALLER) MC (BX) COPPER CABLE WITH POLYVINYL CHLORIDE INSULATION AND JACKET MATERIALS

1. THROUGH PENETRATING PRODUCT\*- ANY CABLES, ARMORED CABLE+ OR METAL CLAD CABLE+ CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCT CATEGORY. SEE THROUGH PENETRATING PRODUCT (XHLY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF **MANUFACTURER** B. METALLIC PIPES - A MAXIMUM OF FOUR PIPES OR CONDUITS INSTALLED WITHIN OPENING. THE FOLLOWING

TYPES AND SIZES OF METALLIC PIPES OR CONDUITS OR TUBING MAY BE USED: A. STEEL PIPE - NOMINAL 4 INCH(102 MM) DIAMETER(OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. CONDUIT - NOMINAL 4 INCH(102 MM) DIAMETER(OR SMALLER) RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING EMT. C. NON-METALLIC PIPES - A MAXIMUM OF ONE NON-METALLIC PIPE OR CONDUIT INSTALLED WITHIN OPENING. THE FOLLOWING TYPES AND SIZES OF NON-METALLIC PIPES OR CONDUITS MAY BE USED:

1. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 4 INCH(102 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING 2. RIGID NON-METALLIC CONDUIT (RNC)+ - NOMINAL 4 INCH(102 MM) DIAMETER (OR SMALLER) SCHEDULE 40 PVC CONDUIT INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA NO. 70).

B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 4 INCH(102 MM) DIAMETER (OR SMALLER)

SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. 3. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING: A. FIRESTOP DEVICE - GALVANIZED STEEL SLEEVE LINED WITH AN INTUMESCENT MATERIAL SIZED TO FIT THE SPECIFIC DIAMETER OF THE PVC PIPE (ITEM 2C). DEVICE TO BE WRAPPED AROUND OUTER CIRCUMFERENCE OF PIPE AND INSTALLED THROUGH THE ANNULAR SPACE OF THE OPENING. THE DEVICE MAY BE SECURED TOGETHER BY MEANS OF MINIMUM 1/2 INCH(13 MM) WIDE BY 0.028 INCH(0.71 MM) THICK STAINLESS STEEL HOSE CLAMPS OR MIN 1/8 INCH(3.2 MM) DIAMETER BY 1/2 INCH(13 MM) LONG STEEL POP RIVETS SPACED MAXIMUM 4 INCH(102 MM) ON CENTER AS AN OPTION, THE DEVICE MAY BE SECURED TO THE PENETRANT WITH 3/4 INCH(19 MM) WIDE BY 0.007 INCH(0.18 MM) THICK GLASS CLOTH ELECTRICAL TAPE CONTINUOUSLY WRAPPED TWICE AROUND THE OUTER CIRCUMFERENCE OF THROUGH PENETRANT, SPACED A MAXIMUM 2 INCH(51 MM) ON CENTER IN FLOORS 8 INCH(203 MM) OR LESS, THE TOP EDGE OF THE DEVICE SHALL BE INSTALLED FLUSH WITH THE TOP SURFACE AND EXTEND A MAXIMUM 3-1/2 INCH(89 MM) BELOW THE BOTTOM SURFACE OF THE FLOOR OR THE BOTTOM EDGE OF THE DEVICE MAY BE INSTALLED FLUSH WITH THE BOTTOM SURFACE OF THE FLOOR. IN FLOORS GREATER THAN 8 INCH(203 MM), THE BOTTOM EDGE OF THE DEVICE MAY BE INSTALLED FLUSH WITH THE BOTTOM SURFACE OF THE FLOOR OR EXTEND A MAXIMUM 3-1/2 INCH(89 MM) BELOW THE BOTTOM SURFACE OF THE FLOOR. IN WALLS HAVING A NOMINAL THICKNESS OF 8 INCH(203 MM) OR LESS. THE DEVICE SHALL BE CENTERED WITHIN THE WALL AND EXTEND EQUALLY BEYOND

BEYOND EACH SURFACE OF THE WALL RECTORSEAL - FLAMESAFE ®INTUMESCENT SLEEVE, METACAULK INTUMESCENT SLEEVE OR BIOSTOF 3. PACKING MATERIAL - MINIMUM 4 INCH(102 MM) THICKNESS OF MINIMUM 4 PCF(64 KG/M³) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE

EACH SURFACE OF THE WALL. IN WALLS HAVING A NOMINAL THICKNESS GREATER THAN 8 INCH(203 MM),

TWO DEVICES SHALL BE INSTALLED WITHIN THE OPENING WITH BUTTED ENDS AND EXTEND EQUALLY

RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL C. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1/2 INCH(13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS. FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. A MINIMUM 1/2 INCH(13 MM) DIAMETER BEAD OF SEALANT TO BE APPLIED AT THE PENETRANT/CONCRETE INTERFACE AT THE POINT CONTACT LOCATIONS ON TOP SURFACE OF FLOOR OR ON BOTH SURFACES OF

RECTORSEAL — FS 900+, MC 150+ OR BF-150+ SEALANT \*BEARING THE UL CLASSIFICATION MARK

PER ITEM 3

PER ITEM 2

CONSTRUCTION FEATURES:

NOTE: THIS FIRE STOP SYSTEM IS LIMITED TO FLOOR PENETRATIONS CONTAINED AND LOCATED WITHIN THE

CAVITY OF A WALL ABOVE THE FLOOR OR BELOW THE FLOOR PER IBC SECTION 714.4.1.1.2 EXCEPTION 1

UL SYSTEM NO. W-L-5014

T RATINGS- 1 HOUR

F RATINGS-1 AND 2 HOUR (SEE ITEM 1)

SER CABLE THRU 3 HR CONC. SLAB OPENING

WALL ASSEMBLY

PER ITEM 1

PER ITEM 2

PIPE COVERING

- FILL MATERIAL

PER ITEM 4

PER ITEM 3

# SCALE: 3/4" = 1'-0"

PENETRATION PER ITEM 3

(100-150 PCF OR 1600-2400 KG/M3) CONCRETE

CONCRETE. HILTI CONSTRUCTION CHEMICALS,

FOLLOWING TYPES OF PIPE OR TUBING MAY BE USED:

DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

U.L. SYSTEM NO. F-A-5018

FRATINGS — 2 AND 3 HOUR (SEE ITEM 3)

FIRE BARRIER CAST-IN DEVICE 6PCID

T RATINGS — 2 AND 3 HOUR (SEE ITEM 3)

(100-150 PCF OR 1600-2400 KG/M3) CONCRETE.

BARRIER CAST- IN DEVICE HEIGHT ADAPTER, 6HA

HOURLY F AND T RATING IS 2-HOUR FOR ITEM 3B.

TYPES AND SIZES OF NON-METALLIC PIPES OR CONDUIT MAY BE USED:

THE TOP OF THE DEVICE.

PIPE COVERING

1. FLOOR ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT

. **FIRESTOP DEVICE\*** - CAST-IN-PLACE FIRESTOP DEVICE PERMANENTLY EMBEDDED DURING CONCRETE

PLACEMENT OR GROUTED IN CONCRETE FLOOR ASSEMBLY IN ACCORDANCE WITH ACCOMPANYING

A. STEEL PIPE - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STL PIPE.

B. COPPER TUBING - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER

4. PIPE COVERING\* - NOMINAL 1 INCH, 1-1/2 INCH AND 2 INCH (25, 38 AND 51 MM) THICK HOLLOW CYLINDRICAL

SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SSL TAPE.

BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE

5. PACKING MATERIAL - WHEN USING A 1 INCH (25 MM) DIAMETER PIPE WITH 1-1/2 INCH (38 MM) THICK GLASS

SECTION A-A

FLOOR ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT

FIRESTOP DEVICE\* - CAST-IN-PLACE FIRESTOP DEVICE PERMANENTLY EMBEDDED DURING CONCRETE

MM) THICK, ADAPTER SNAPS ONTO TOP OF FIRESTOP DEVICE (ITEM 2), 3M COMPANY - 3M FIRE

THROUGH PENETRANT - ONE NON-METALLIC PIPE OR CONDUIT INSTALLED WITHIN THE FIRESTOP SYSTEM.

A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 6 INCH (152 MM) DIAMETER SCHEDULE 40 SOLID CORE PVC

B. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 6 INCH (152 MM) DIAMETER SCHEDULE 40 CELLULAR CORE

PVC (CCPVC) PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT)

70). THE HOURLY F AND T RATING OF THE FIRESTOP SYSTEM IS 3-HOUR FOR ITEMS 3A AND 3C. THE

: RIGID NONMETALLIC CONDUIT (RNC)+ - NOMINAL 6 INCH (152 MM) DIAMETER SCHEDULE 40 PVC

PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS

CONDUIT INSTALLED IN ACCORDANCE WITH ARTICLE 347 OF THE NATIONAL ELECTRICAL CODE (NFPA NO.

PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY, THE FOLLOWING

PLACEMENT OR GROUTED IN CONCRETE ASSEMBLY IN ACCORDANCE WITH ACCOMPANYING INSTALLATION

INSTRUCTIONS. THE DEVICE MUST BE TRIMMED FLUSH WITH TOP SURFACE OF FLOOR. 3M COMPANY - 3M

2A. **FIRESTOP DEVICE - HEIGHT ADAPTER\*** - (NOT SHOWN) - FOR USE IN FLOORS GREATER THAN 8 INCH (203

FIBER PIPE INSULATION IN A 4 INCH (102 MM) DEVICE, A MIN 2 INCH (51 MM) THICKNESS OF MINIMUM 4 PCF (64

IETAL PIPE THROUGH 3HR RATED CONCRETE SLAB

KG/M3) MINERAL WOOL BATT INSULATION SHALL BE FIRMLY PACKED INTO THE TOP OF DEVICE. FLUSH WITH

IRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE  $\,\,\,\,$  PRODUCT.

SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY

FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND

HEAVY DENSITY (MINIMUM 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS. JACKETED ON THE OUTSIDE WITH AN ALL

DEVICE. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. THE

C. COPPER PIPE - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER)

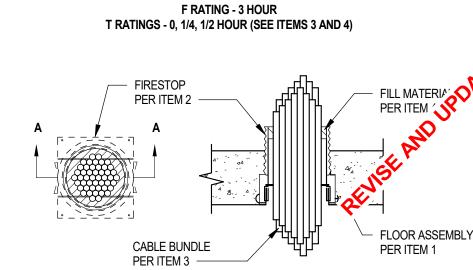
PER ITEM 4 —

PER ITEM 2

F RATING - 3 HOUR

T RATINGS - 3 HOUR

# SCALE: 1 1/2" = 1'-0" UL System No. F-A-2137



WALL ASSEMBLY - THE 1 OR 2 HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING (100-150 PCF OR 1600-2400 KG/M3) CONCRETE.

1.1. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNELS STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2X4 INCH LUMBER SPACED 16 INCH ON CENTER STEEL STUDS TO BE MINIMUM 3-5/8 INCH WIDE AND SPACED MAXIMUM 24 INCH ON CENTER.

**SECTION A-A** 

1.2. GYPSUM WALLBOARD\* - 5/8 INCH THICK, 4 FOOT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD 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. MAXIMUM DIAMETER OF OPENING IS 18 INCH THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS

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 THE WALL ASSEMBLY, THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY

2.1. STEEL PIPE - NOMINAL 12 INCH DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. 2.2. IRON PIPE - NOMINAL 12 INCH DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE. 2.3. COPPER TUBING - NOMINAL 4 INCH DIAMETER (OR SMALLER) TYPE M (OR HEAVIER) COPPER TUBE. 2.4. COPPER PIPE - NOMINAL 4 INCH (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PIPE COVERINGS\* - ONE OF THE FOLLOWING TYPES OF PIPE COVERINGS SHALL BE USED:

3.1. **PIPE AND EQUIPMENT COVERING MATERIALS\*** - MAXIMUM 2 INCH THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET, LONGITUDINAL JOINT SEALED WITH METAL FASTENERS OR FACTOR APPLIED SELF-SEALING LAP TYPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE BETWEEN INSULATED ENETRATING ITEM AND THE EDGE O THE THROUGH OPENING SHALL BE MINIMUM 0 INCH (CONTINOUS POINT CONTACT) TO MAXIMUM 1-1/4 INCH. SEE PIPE AND EQUIPMENT COVERING MATERIALS\* - (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIALS MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

3.2. PIPE COVERING MATERIALS\* - MAXIMUM 2 INCH THICK UNFACED MINERAL FIBER PIPE INSULATION SIZED TO THE OUTSIDE DIAMETER OF PIPE OR TUBE. PIPE INSULATION SECURED WITH MINIMUM 8 AWG STEEL WIRE SPACED MAXIMUM 12 INCH ON CENTER. THE ANNULAR SPACE BETWEEN INSULATED PENETRATING ITEM AND THE EDGE OF THE THROUGH OPENING SHALL BE MINIMUM 0 INCH (CONTINUOUS POINT CONTACT) TO MAXIMUM 1-1/2 INCH IIG MINWOOL LLC - HIGH TEMPERATURE PIPE INSULATION 1200, HIGH TEMPERATURE PIPE INSULATION BWT OR HIGH TEMPERATURE PIPE INSULATION THERMALOC.

3.3. SHEATHING MATERIALS\* - USED IN CONJUNCTION WITH ITEM 3B. FOIL-SCRIM-KRAFT OR ALL SERVICE JACKET MATERIAL SHALL BE WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PIPE INSULATION (ITEM 3B) WITH THE KRAFT SIDE EXPOSED. LONGITUDINAL JOINTS AND TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR BUTT TAPE. SEE SHEATHING MATERIALS (BVDV) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY SHEATHING MATERIALS MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE

4. FILL. VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT POINT CONTACT LOCATION BETWEEN INSULATED THROUGH PENETRANTS AND GYPSUM WALLBOARD, A MINIMUM 3/8 INCH BEAD OF FILL MATERIAL SHALL BE APPLIED TO THE INSULATED THROUGH PENETRANT/GYPSUM WALLBOARD INTERFACE ON BOTH SIDE OF WALL.

SPECIFIED TECHNOLOGIES INC - SPECSEAL 100, 101, 102 AND 105 SEALANT.

# **TOP VIEW** SECTION A-A

. FLOOR ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT

IA.**FLOOR ASSEMBLY** - (OPTIONAL - NOT SHOWN) - THE FIRE RATED UNPROTECTED CONCRETE AND STEEI FLOOR ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL D900 SERIES DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND AS SUMMARIZED BELOW:

A. CONCRETE - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. B. STEEL FLOOR AND FORM UNITS\* - COMPOSITE OR NON-COMPOSITE MAXIMUM 3 INCH (76MM) DEEP GALVANIZED STEEL FLUTED UNITS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.

PLACEMENT IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS. E-016: HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP682-72/2.5 CP682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6"

FIRESTOP DEVICE\* - CAST-IN-PLACE FIRESTOP DEVICE PERMANENTLY EMBEDDED DURING CONCRETE

3. CABLES - CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE ASSEMBLY, ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER CONDUCTOR CABLES MAY BE USED:

A. MAXIMUM 1/C 750 KCMIL (OR SMALLER) COPPER CONDUCTOR CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET. B. MAXIMUM 7/C NO. 12 AWG WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET. C. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC INSULATION AND JACKET. D. MULTIPLE FIBER OPTICAL COMMUNICATION CABLE JACKETED WITH PVC AND HAVING A MAXIMUM OD OF

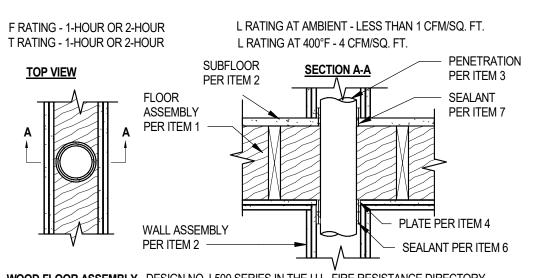
E. MAXIMUM 3/C NO. 12 AWG WITH GROUND WITH POLYVINYL CHLORIDE JACKETED STEEL CLAD TYPE MC CABLE, E-016.11: THE FIRESTOP DEVICE AND MAX CABLE BUNDLE DIAMETER SHALL BE SIZED AS FOLLOWS:

> MAXIMUM BUNDLE DIAMETER FIRESTOP DEVICE IT RATING-HOUR 2 INCH (51 mm) \_\_CP 680-75/2.5"N, CP 682-75/2.5". CP 680-M 2", CP 680-P 2 CP 680-M 3", CP 680-P 3 CP 680-110/4"N. CP 682-110/4" 4-1/2 INCH (114 mm) CP 680-M 4", CP 680-P 4" CP 680-160/6"N 6-1/2 INCH (165 mm) CP 680-P 6

4. FILL, VOID OR CAVITY MATERIAL\* - PUTTY - MINIMUM 1 INCH (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS FLUSH WITH TOP SURFACE OF DEVICE. FILL MATERIAL IS OPTIONAL FOR 2-1/2 INCH (64 MM) DIAMETER (OR LARGER) CABLE BUNDLE INSTALLED IN 3 INCH DEVICE AND 3 INCH (76 MM) DIAMETER (OR LARGER) CABLE BUNDLE INSTALLED IN 4 INCH DEVICE AND 2 INCH (51 MM) DIAMETER (OR LARGER) CABLE BUNDLE INSTALLED IN 2 INCH OR 2.5 INCH DEVICE. THE T RATING FOR THE FIRESTOP SYSTEM IS 1/4 HOUR WHEN FILL MATERIAL OR PACKING MATERIAL (ITEM 4 OR 4A) IS NOT USED. E-016;HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 618 FIRESTOP PUTTY STICK 4A. PACKING MATERIAL (NOT SHOWN) - AS AN ALTERNATE TO ITEM 4, MINIMUM 2 INCH THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL INSULATION FIRMLY PACKED TO THE FULLEST EXTENT POSSIBLE WITHIN ANNULUS FLUSH WITH TOP SURFACE OF DEVICE.

\*BEARING THE UL CLASSIFICATION MARK

NOTE: THIS FIRESTOP SYSTEM IS LIMITED TO FLOOR PENETRATIONS CONTAINED AND LOCATED WITHIN THE CAVITY OF A WALL ABOVE THE FLOOR OR BELOW THE FLOOR PER IBC SECTION 714.4.1.1.2 EXCEPTION 1



. WOOD FLOOR ASSEMBLY - DESIGN NO. L500 SERIES IN THE U.L. FIRE RESISTANCE DIRECTORY. 2. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD, OR FLOOR TOP MIXTURE. INSTALLATION INSTRUCTIONS WITH A MAXIMUM 2 INCH (51 MM) PROJECTION ABOVE THE TOP SURFACE OF THE 3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING: 3.1. MAXIMUM 4 INCH NOMINAL DIAMETER STEEL PIPE (SCHEDULE 40 OR HEAVIER).

> 3.2. MAXIMUM 4 INCH NOMINAL DIAMETER STEEL CONDUIT. 3.3. MAXIMUM 4 INCH NOMINAL DIAMETER NOMINAL OR STANDARD COPPER WATER TUBE (TYPE L OR

3.4. MAXIMUM 4 INCH NOMINAL DIAMETER COPPER PIPE 3.5. MAXIMUM 4 INCH NOMINAL DIAMETER EMT. 4. TOP PLATE

FIRESTOP PER ITEM 2

FLOOR ASSEMBLY

PER ITEM 1

\* BEARING THE UL CLASSIFICATION MARK

SCALE: 1 1/2" = 1'-0"

FLOOR ASSEMBLY

FIRESTOP PER ITEM 2

PENETRANT PER ITEM 3

PER ITEM 1

\* BEARING THE UL CLASSIFICATION MARK

+BEARING THE UL LISTING MARK

+ BEARING THE UL LISTING MARK

SECTION A-A

5. GYPSUM WALL ASSEMBLY (1-HOUR OR 2-HOUR FIRE-RATING)(2-HOUR SHOWN). 6. PROVIDE A GENEROUS BEAD OF HILTI FS 601 ELASTOMERIC FIRESTOP SEALANT OR HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT THE TOP PLATE. . MINIMUM 3/4 INCH DEPTH HILTI FS 601 ELASTOMERIC FIRESTOP SEALANT OR FS-ONE FIRESTOP SEALANT.

NOTE: ANNULAR SPACE = MINIMUM 1/8", MAXIMUM 3/4"

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS HILTI, INC. TULSA, OK 1-800-879-8000

METAL PIPE/CONDUIT THROUGH 1 HR./2HR WOOD FLOOR ASSEMBLY

ANSI/U.L. 1479. SYSTEM NO. FC1009 SCALE: 1" = 1'-0"

F RATING - 1-HOUR OR 2-HOUR T RATING = 0-HOUR L RATING AT AMBIENT - LESS THAN 1 CFM/SQ. FT. L RATING AT 400°F - 4 CFM/SQ. FT. WALL ASSEMBLY PER ITEM 1 SEALANT PER ITEM 2

1. GYPSUM WALL ASSEMBLY (1-HOUR OR 2-HOUR FIRE-RATING)(2-HOUR SHOWN). PENETRATING ITEM TO BE ONE OF THE FOLLOWING: A. MAXIMUM 30 INCH DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER). B. MAXIMUM 6 INCH DIAMETER COPPER PIPE.

PENETRATION

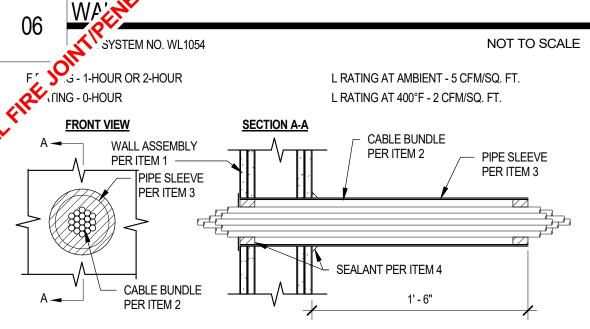
PER ITEM 2

C. MAXIMUM 6 INCH DIAMETER STEEL CONDUIT D. MAXIMUM 4 INCH DIAMETER STEEL EMT. 3. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP STATE A. MINIMUM 5/8 INCH DEPTH OF SEALANT FOR A 1-HOUR, FIT YOUR,

B. MINIMUM 1-1/4 INCH DEPTH OF SEALANT FOR A 2-HOU' RATING. 4. MINIMUM 1/2 INCH BEAD HILTI FS-ONE HIGH PERFORM/ ATUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES: 1. MAXIMUM DIAMETER OF OPT - 32-1/4" 2. ANNULAR SPACE - MINIM' (MAXIMUM 2-1/4" SEE HILTI FIRESTOP INSTALL (MANUAL FOR ADDITIONAL INSTRUCTIONS 

# C'E THROUGH 1 HR./2HR WOOD FRAMED



1. GYPSUM WALL ASSEMBLY (1-HOUR OR 2-HOUR FIRE RATING)(2-HOUR SHOWN). 2. CABLE BUNDLE TO CONSIST OF ANY OF THE FOLLOWING:

A. 7/C NO. 12 AWG CAGLES. B. 12 PAIR 24 AWG PHONE CABLES

C. 25 PAIR 24 AWG PHONE CABLES D. RG 59 COAXIAL CABLES. E. 2/C(+GND) NO. 14 AWG METAL-CLAD CABLES. F. 2/C NO. 8 AWG METAL-CLAD CABLES

G. MAXIMUM 1/2 INCH DIAMETER FIBER-OPTIC CABLES. 3. OPTIONAL: MAXIMUM 4 INCH NOMINAL DIAMETER STEEL PIPE SLEEVE (SCH. 40 OR THINNER)(SEE NOTE 4). 4. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT

A. MINIMUM 5/8 INCH DEPTH OF SEALANT FOR A 1-HOUR FIRE RATING B. MINIMUM 1-1/4 INCH DEPTH OF SEALANT FOR A 2-HOUR FIRE RATING.

SEE HILTI FIRESTOP INSTALLATIM N MANUAL FOR ADDITIONAL INSTRUCTIONS

1. MAXIMUM DIAMETER OF OPENING - 4-1/2" 2. CABLES TO FILL MAXIMUM 33% OF AREA OF OPENING

3. ANNULAR SPACE - MINIMUM 1/4", MAXIMUM 3/4" 4. STEEL SLEEVE MAY BE FLUSH WITH WALL SURFACE OR EXTEND UP TO 18" BEYOND WALL SURFACE IN ANY COMBINATION. WHEN SLEEVE IS FLUSH WITH WALL, APPLY HILTI FS-ONE FIRESTOP SEALANT ONTO WALL SURFACE. WHEN SLEEVE IS EXTENDED BEYOND ONE OR BOTH SIDES OF WALL, APPLY 1/2" CROWN HILTI FS-ONE FIRESTOP SEALANT TO WALL/ SLEEVE INTERFACE

HILTI, INC. TULSA, OK 1-800-879-8000 CABLE BUNDLE AT 1HR./2HR RATED WOOD FRAMED

U.L. SYSTEM NO. WL3065 NOT TO SCALE FRATING - 1-HOUR OR 2-HOUR SECTION A-A T RATING - 1-HOUR OR 2 HOUR L RATING AT AMBIENT - 5 CFM/S.F L RATING AT 400°F - 2 CFM/S.F. CABLE BUNDLE PER ITEM 3 -SEALANT PER ITEM 6 SUB-FLOOR PER ITEM 2 FLOOR ASSEMBLY PER ITEM 1 TOP PLATE PER ITEM 4 SEALANT PER ITEM 7 WALL ASSEMBLY PER

. WOOD FLOOR ASSEMBLY - DESIGN NO. L500 SERIES IN THE U.L. FIRE RESISTANCE DIRECTORY. 2. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OR LUMBER, PLYWOOD, OR FLOOR TOPPING MIXTURE. 3. MAXIMUM 2 INCH DIAMETER CABLE BUNDLE MAY CONSIST OF ANY OF THE FOLLOWING: A. RG 59 COAXIAL CABLE.

B. MAXIMUM 8/C NO. 22 AWG TELEPHONE CABLE C. MAXIMUM 3/C NO. 10 AWG CABLE (ROMEX). D. MAXIMUM 3/C (+GRND) 2/0 AWG SER CABLE (ALUMINUM OR COPPER). E. MAXIMUM 2/C NO. 12 AWG CABLE.

TOP PLATE. 5. GYPSUM WALL ASSEMBLY (1-HOUR OR 2-HOUR FIRE RATING)(2-HOUR SHOWN). 6. MINIMUM 3/4 INCH DEPTH HILTI FS-ONE FIRESTOP SEALANT. 7. PROVIDE A GENEROUS BEAD OF HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT

1. MAXIMUM DIAMETER OF OPENING - 2-1/2" 2. ANNULAR SPACE BETWEEN CABLE BUNDLE AND OPENING - MINIMUM 0", MAXIMUM 1/2" 3. CABLES TO FILL A MAXIMUM OF 45% OF CROSS-SECTIONAL AREA OF OPENING

CABLE BUNDLE AT 1HR./2HR RATED WOOD FRAMED

FIXTURE ENCLOSURE 2 LAYERS OF 5/8" TYPE 'X' GYPSUM BOARD ENCLOSURE AT FLOOR/ CEILING FIRE STOP AT CONDUIT PENETRATION 1-HOUR FLOOR/ CEILING ASSEMBLY PROVIDE AIR SPACE AROUND LIGHT FIXTURE

INSULATION CONTINUOUS AROUND

STOP RC CHANNEL AT JOIST

**ENCLOSURE** 

- ROOF TRUSSES

WRITTEN INSTRUCTIONS

USE PER N.E.C. 410.65(b)

STEEL OR LISTED OUTLET BOX, SEAL AROUND

ASSEMBLY, SEE 1-HOUR UNIT SEPARATION DETAIL

PENETRATION WITH FIRE RATED PADS

1-HOUR RATED UNIT SEPARATION WALL

RECESSED LIGHT DRYWALL ENCLOSURE @ RATED

STOP RC CHANNEL AT JOIST

1-HOUR FLOOR/ CEILING ASSEMBLY

RECESSED CAN LIGHT, LIGHT FIXTURE

MUST BEAR U.L. LISTING RATING FOR

INSULATION CONTINUOUS AROUND FIXTURE

GYPSUM WALL BOARD ENCLOSURE TO MAINTAIN

TYPE 'C' GYPSUM WALLBOARD EACH SIDE & TOP

INTEGRITY OF CEILING CONSTRUCTION OF 1 LAYER 5/8"

INTENDED USE PER N.E.C. 410.65(b)

ONE HOUR ROOF/ CEILING ASSEMBLY

FIRE STOP AT CONDUIT PENETRATION

PROVIDE AIR SPACE PER MANUFACTURER'S

RECESSED CAN LIGHT. LIGHT FIXTURE MUST

SCALE: 1" = 1'-0"

BOX AT ALL 1-HOUR RATED WALL

SEAL AROUND PENETRATION

**EXTERIOR** 

WITH ACOUSTICAL SEALANT

ASSEMBLIES DETAIL

1-HOUR RATED EXTERIOR WALL

**EXTERIOR WALL** 

OUTLET BOX AT UNIT SEPARATION AND PERIMETER

ASSEMBLY, SEE 1-HOUR FIRE BARRIER/

EXTERIOR WALL ASSEMBLY DETAIL

BEAR UL LISTING RATING FOR INTENDED

PER MANUFACTURER'S WRITTEN INSTRUCTIONS

Street Adress City, state



World HQ@ORBArch.com



WALLS SWITCHES, PHONE JACKS, ETC. SIM. SCALE: 1" = 1'-0"

24" OC

MIN. SEPARATION

OPENING FOR STEEL OR LISTED OUTLET BOX SHALL NOT

AGGREGATE AREA OF SUCH OPENING IS NOT MORE THAN 100

SQUARE INCHES FOR ANY 100 SQUARE FOOT OF WALL AREA;

ANNULAR SPACE BETWEEN BOX AND GYPSUM WALLBOARD

**CORRIDOR SIDE** 

STEEL OR LISTED OUTLET

BOX, SEAL AROUND PENETRATION WITH

NOTE: INSTALL USG ACOUSTICAL SEALANT OR OWNER APPROVED EQUAL BETWEEN

BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL

EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE

SHALL NOT EXCEED 1/8"

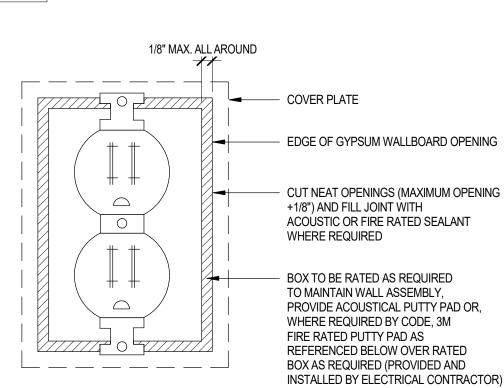
UNIT SEPARATION WALL

1-HOUR RATED CORRIDOR WALL

INTERIOR WALL/ CORRIDOR DETAIL

CORRIDOR WALL

ASSEMBLY, SEE 1-HOUR RATED

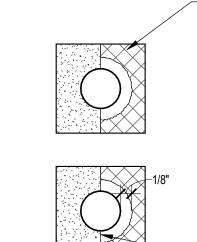


**ELECTRICAL BOX FIREPROOFING: 3M FIRE BARRIER MOLDABLE PUTTY PADS** MPP+ OR OWNER APPROVED EQUAL

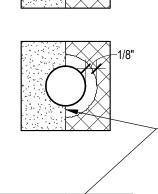
1. DETAIL OCCURS AT COMMON WALLS BETWEEN UNIT EXTERIOR RATED WALL AND CORRIDOR WALL 2. REFER TO ELECTRICAL DRAWINGS FOR OTHER REQUIREMENTS 3. PLASTER RINGS ARE NOT TO BE USED AT UNIT PERIMETER WALLS AND HOUR WALL LOCATIONS

SWITCH, PHONE, ETC. SIMILAR

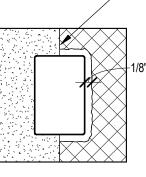
OUTLET BOX AT 1HR/2HR RATED WALL ASSEMBLIES INCL. UNIT SEPARATION, CORRIDOR & EXT. WALLS



INSTALL QUICKFLASH® PRODUCTS OR OWNER APPROVED EQUAL AT ALL ELECTRICAL J-BOX PENETRATIONS OF EXTERIOR FINISHES (J-BOX BRAND/ SIZE AND QUICKFLASH PRODUCT NUMBER SHALL BE COORDINATED FOR PROPER FIT): INSTALL IN SHINGLE FASHION WITH FIRST LAYER OF WATER-RESISTIVE BARRIER



PLACE, TYPICAL



MEMBRANE PENETRATIONS SHALL BE PROTECTED AS REQUIRED BY 2018 IBC SECTION 714.4.2 ANNULAR SPACE SHALL BE FILLED WITH A MATERIAL WHICH WILL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHEN SUBJECT TO IBC STANDARD 7-1

Contractor must verify all dimensions (

project before proceeding with this work.

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than thirty days. (This contract may allow the owner t

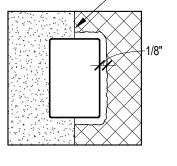
written description of such other billing (and/or) cycl

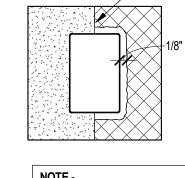
written description on request

<u>ABLE BUNDLE THROUGH CONC. FLOOR</u> EXTERIOR WALL PENETRATIONS THRU STUCCO SCALE: 1 1/2" = 1'-0" SCALE: 1 1/2" = 1'-0" SCALE: 1 1/2" = 1'-0" NOT TO SCALE U.L. SYSTEM NO. FC3012

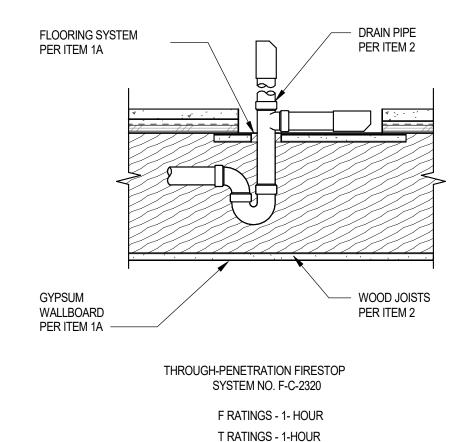
2525 E. CAMELBACK RD. SUITE 500, PHOENIX, AZ 850 and the owner or its designated agent shall provide R E V I S I O N S / SUBMITTALSAPPLY SILICONE SEALANT AROUND PENETRATION AFTER STUCCO IS IN

SCALE: 1" = 1'-0"





SLOPE



VENT CAP PER

2x FRAMING AROUND

ASSEMBLY TO PROVIDE

SUPPORT PER SHAFT

WALL ASSEMBLY

A/C UNIT & COVER

PER MECHANICAL

ACCESS PANEL PER

COMBINATION FIRE &

SMOKE DAMPER PER

LEVEL 4

AROUND PENETRATIONS

FIRESTOPPING ALL

MINERAL WOOL FIRE

A/C UNIT & COVER

PER MECHANICAL

ACCESS PANEL PER

**COMBINATION FIRE &** 

SMOKE DAMPER PER

LEVEL 3

AROUND PENETRATIONS

FIRESTOPPING ALL

MINERAL WOOL FIRE

A/C UNIT & COVER

PER MECHANICAL

ACCESS PANEL PER MECHANICAL, CENTER

COMBINATION FIRF

SMOKE DAMPEP MECHANICAI 🟑

OPPING ALL JUND PENETRATIONS

MINERAL WOOL FIRE

1-HOUR FIRE RATED

ASSEMBLY, TYPICAL

CONTINUOUS 2-HOUR

FIRE RATED SHAFT WALL ASSEMBLY

**COMBINATION FIRE &** 

SMOKE DAMPER PER

MECHANICAL

PODIUM LEVEL

FIRESTOPPING ALL

AROUND PENETRATIONS

NOT TO SCALE

HORIZONTAL BLOCKING AT 48" ON CENTER

TYPE S SCREWS 3/8" LONG TO BOTH C

CHANNELS AND WITH 1-1/4" LONG SCREWS TO WOOD OR STEEL BLOCKING

BREAK-AWAY CLIPS

PENETRATIONS

24" MIN. TO FAN COIL

FIRESTOPPING ALL AROUND

- DUCT AND COMBINATION FIRE AND

SMOKE DAMPER PER MECHANICAL

SHAFT PER WALL ASSEMBLY

GYPSUM WALLBOARD, PER

GYPSUM WALLBOARD CORNER

VERTICAL WITH 2" WIDE 2-1/2"x2-1/2"x24 GA

GSM CLIP ANGLES; CLIPS SECURED WITH

(IM 22FW 2) TYPICAL 4 SIDES

SIZE PER MECH.

DRRIDOR AC FRESH AIR DUCT SHAFT

FLOOR/ CEILING

BLOCKING

BLOCKING

ON UNIT

MECHANICAL

ON UNIT

MECHANICAL, CENTER

BLOCKING

MECHANICAL

ON UNIT

MECHANICAL, CENTER

SHAFT WITHIN

ROOF/ CEILING

MECHANICAL

1. FLOOR-CEILING ASSEMBLY -THE 1 HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. RECTANGULAR CUTOUT IN FLOORING TO ACCOMMODATE THE BATHTUB DRAIN PIPING (ITEM 2) TO BE MAXIMUM 8 BY 12 INCH (203 BY 305 MM). CUTOUT TO BE PATCHED ON UNDERSIDE OF SUBFLOOR USING ONE LAYER OF MINIMUM 3/4 INCH (19 MM) THICK PLYWOOD OR MINIMUM 5/8 INCH (16 MM) THICK GYPSUM WALLBOARD (ITEM 1C) SIZED TO LAP MINIMUM 2 INCH (51 MM) BEYOND EACH EDGE OF RECTANGULAR CUTOUT. DIAMETER OF OPENING HOLE-SAWED THROUGH PATCH TO ACCOMMODATE DRAIN PIPING (ITEM 2) TO BE 1 INCH (25 MM) LARGER THAN OUTSIDE DIAMETER OF DRAIN PIPING AND POSITIONED SUCH THAT DRAIN PIPING IS CENTERED IN OPENING. PATCH SPLIT INTO TWO PIECES AT OPENING HOLE-SAWED FOR BATHTUB DRAIN PIPING. TWO PIECES POSITIONED AROUND DRAIN PIPING, WITH CUT EDGES TIGHTLY BUTTED, AND SCREW ATTACHED TO UNDERSIDE OF SUBFLOOR WITH 1-1/4 INCH (32 MM) LONG TYPE S STEEL SCREWS SPACED MAXIMUM 6 INCH (152 MM) ON CENTER.

B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

C. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (1.22 M) WIDE BY 5/8 INCH (16 MM) THICK, ATTACHED AS DESCRIBED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.

DRAIN PIPING - NOMINAL 1-1/2 INCH (38 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID CORE POLYVINYL CHLORIDE (PVC) OR ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE AND DRAIN FITTINGS CEMENTED TOGETHER AND PROVIDED WITH PVC OR ABS BATHTUB WAST, SERFLOW

3. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) DF CONTROL MATERIAL APPLIED WITHIN ANNULAR SPACE, FLUSH WITH BOTH SURFACES OF PLY OR GYPSUM WALLBOARD PATCH. **SPECIFIED TECHNOLOGIES INC** - TYPE WF300 CAULK

HTUB FIRESTOPPING SYSTEM NO. F-C-2320

SCALE: 1 1/2" = 1'-0"

FIRE STOPPING AT CEILING

WALL MOUNTED EXHAUST FAN

UNPROTECTED EXHAUST FAN DUCT

4th FIN. FLR.

WALL MOUNTED EXHAUST FAN

FIRESTOPPING AT 1-HOUR

RATED WALL (IF REQUIRED)

WALL MOUNTED EXHAUST FAN

FIRESTOPPING AT 1-HOUR

ROUTE TO EXTERIOR WALL

WALL MOUNTED EXHAUST FAN

NOT TO SCALE

FIRESTOPPING AT 1-HOUR

RATED WALL (IF REQUIRED)

FIRESTOPPING AT CEILING

UNPROTECTED METAL DRYER

DUCT IN WALL (MAXIMUM 4"

UNPROTECTED METAL DRYER

UNPROTECTED METAL DRYER

2nd FIN. FLR.

NOT TO SCALE

DUCT IN WALL (MAXIMUM 4"

DIAMETER DUCT)

— ROUTE TO EXTERIOR WALL

**DUCT IN WALL (MAXIMUM 4"** 

ROUTE TO EXTERIOR WALL

DIAMETER DUCT)

RATED WALL (IF REQUIRED)

IN WALL (MAXIMUM 4" DIAMETER DUCT)

MEMBRANE

FITTINGS. THE ANNULAR SPACE SHALL BE A MINIMUM 3/8 INCH (10 MM) TO MAXIMI " 💝 'NCH (16 MM)

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CETATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CAN LESPECTIVELY).

NOTE: PACK ALL PENETRATION VOIDS AROUND DUCT

RE STOPPING AT EXHAUST FAN

 $\overline{\phantom{a}}$ 

AT TOP AND BOTTOM PLATES WITH ROCKWOOL

SYSTEM NO. F-C-2320

ROOF/CEILING

FLOOR/CEILING

ASSEMBLY

ASSEMBLY

FLOOR/CEILING

ASSEMBLY

EACH VENT TO BE

SEPARATE TO EXTIRIOR

1-HOUR FLOOR/CEILING

1-HOUR ROOF/CEILING -

FIRESTOPPING AT

FLOOR/CEILING

FIRESTOPPING AT

FLOOR/CEILING

FIRESTOPPING AT

FLOOR/CEILING

1-HOUR RATED WALL

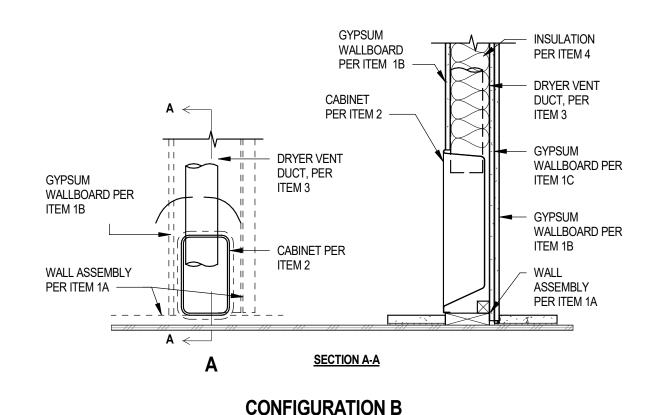
ASSEMBLY

ASSEMBLY

1-HOUR RATED WALL

ASSEMBLY

ASSEMBLY



THROUGH-PENETRATION FIRESTOP SYSTEM NO. W-L-7129 F RATINGS - 1/2 AND 1 HOUR (SEE ITEMS 1, 1A, AND 4) T RATINGS - 1/2 AND 1 HOUR (SEE ITEMS 1 AND 1A)

1A.WALL ASSEMBLY - CONFIGURATION B - THE FIRE-RATED GYPSUM WALLBOARD/STUD WAL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING TO CONSIST OF WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF MINIMUM NOMINAL 2 BY 6 INCH (51 BY 102 MM) LUMBER SPACED 16 INCH (406 MM) ON CENTER STEEL STUDS TO BE MINIMUM 6 INCH (152.4 MM) WIDE AND SPACED MAXIMUM 24 INCH

B. GYPSUM WALLBOARD\* - ONE LAYER OF NOMINAL 5/8 INCH (16 MM) THICK GYPSUM WALLBOARD EACH SIDE OF WALL, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. SEE ITEM 2 FOR CUTOUT IN GYPSUM WALLBOARD ON ONE SIDE OF WALL FOR DRYER BOX.

C. GYPSUM WALLBOARD\* - AN ADDITIONAL LAYER OF GYPSUM WALLBOARD SHALL BE CUT TO FIT ID OF STUD CAVITY AND INSTALLED FLUSH WITH EDGE OF STUDS ON NON-PENETRATED FACE OF WALL. ADDITIONAL LAYER OF GYPSUM WALLBOARD TO BE ATTACHED TO MINIMUM 1 BY 2 INCH (25 BY 51 MM) WOOD NAILING STRIPS WITH FASTENERS SPACED MAXIMUM 18 INCH (457 MM) ON CENTER AROUND PERIPHERY OF BOARD. NAILING STRIPS TO BE SECURED TO WOOD STUDS AND PLATES WITH FASTENERS SPACED MAXIMUM 18 INCH (457 MM) ON CENTER NAILING STRIPS MAY BE DISCONTINUOUS AND TERMINATE MAXIMUM 1 INCH (25 MM) FROM VENT DUCT AND CABINET INTERFACES WITH PLATES AND STUDS.

THE HOURLY F AND T RATING OF THE FIRESTOP SYSTEM FOR CONFIGURATION B IS EQUAL TO 1

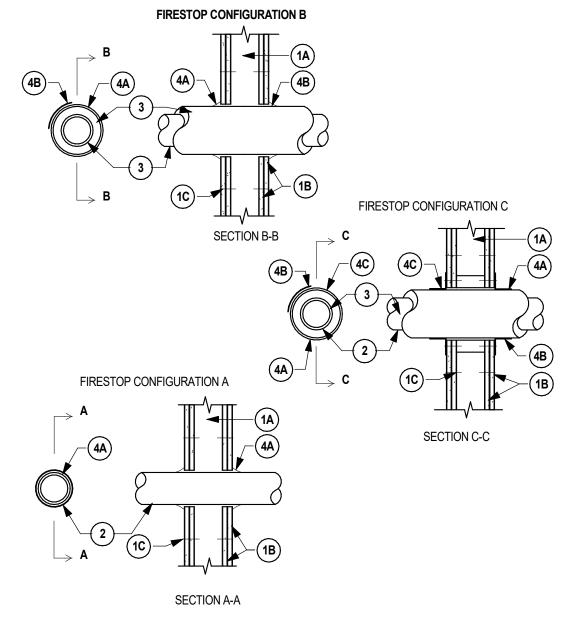
2. CABINET\* - RECESSED FIXTURE INTENDED FOR DRYER APPLIANCE EXHAUST DUCT INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS IN ONE SIDE OF WALL ASSEMBLY, CUTOUT IN GYPSUM WALLBOARD FOR TOP EXHAUST DEVICE IS MAXIMUM 9-1/2 INCH (241 MM) WIDE BY 18-1/4 INCH (464 MM) HIGH. CUTOUT IN GYPSUM WALLBOARD FOR BOTTOM EXHAUST DUCT IS MAXIMUM 14 INCH (356 MM) WIDE BY 16 INCH(406 MM) HIGH. MAXIMUM GAP BETWEEN CABINET AND GYPSUM WALLBOARD AROUND PERIPHERY OF CUTOUT SHALL BE 1/8 INCH (3.2 MM). GAP SHALL BE SEALED WITH UL CLASSIFIED SEALANT OR CAULK (SEE FILL, VOID OR CAVITY MATERIAL (XHHW) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS) OR DRYWALL COMPOUND. IN-O-VATE TECHNOLOGIES - DRYERBOX MODEL 425.

3. STEEL VENT DUCT - MAXIMUM 4 INCH (102 MM) DIAMETER BY MINIMUM 26 GAUGE RIGID STEEL DRYER DUCT FRICTION FITTED INTO TOP OR BOTTOM OPENING OF THE DUCT TO BE ROUTED ENTIRELY WITHIN FIRE RATED CONSTRUCTION FROM THE CABINET TO THE EXTERIOR OF THE BUILDING. VENT DUCT TO BE FIRESTOPPED IN ACCORDANCE WITH AN APPROPRIATE F-A-7000, F-C-7000 OR F-E-7000 SERIES FIRESTOP SYSTEM WHERE IT PASSES THROUGH THE TOP PLATE OR SOLE PLATE OF THE CHASE WALL IN WHICH IT IS ROUTED.

4. INSULATION - REQUIRED FOR DRYERBOX MODELS 350, 425, 3D AND 4D IN WOOD STUD WALLS AS SPECIFIED IN TABLE BELOW. THE SPACES BETWEEN THE SIDES OF THE CABINET AND THE STUDS AND THE SPACE IMMEDIATELY ABOVE THE CABINET ARE TO BE TIGHTLY PACKED WITH GLASS FIBER BATT OR MINERAL WOOL BATT INSULATION. FOR FIRESTOP SYSTEMS WITH 1 HOUR F RATING. THE ENTIRE STUD CAVITY CONTAINING THE CABINET SHALL BE FILLED WITH MINIMUM R19 GLASS FIBER BATT INSULATION OR MINERAL WOOL INSULATION WITH ADDITIONAL PIECES OF INSULATION APPLIED AS NEEDED TO COMPLETELY FILL ALL VOIDS AROUND THE CABINET AND VENT DUCT TO THE FULL DEPTH OF THE STUD CAVITY, ANY GLASS FIBER OR MINERAL WOOL BATT MATERIAL BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE MAY BE USED.

SEE BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED COMPANIES

DRYERBOX MODELS	F RATING (SEE ITEM 1)	WALL STUDS	INSULATION REQUIRED
350, 425, 3D AND 4D	1/2	350, 425, 3D AND 4D	SEE ITEM 4
350, 425, 3D AND 4D	1	WOOD	SEE ITEM 4
350, 425, 3D AND 4D	1	STEEL	SEE ITEM 4A
480	1/2 AND 1	STEEL AND WOOD	SEE ITEM 4A



# SYSTEM NO. 147

F RATINGS - 1 AND 2 HOUR. (SEE ITEM 4) T RATINGS - 0, 1, 1-1/2 AND 2 HOUR. (SEE ITEM 4)

1. WALL ASSEMBLY - THE 1 OR 2 HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

1.1. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 BY 4 INCH LUMBER SPACED 16 INCH ON CENTER WITH NOMINAL 2 BY 4 INCH LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MINIMUM 3-5/8 INCH WIDE BY 1-3/8 INCH DEEP CHANNELS WITH NOMINAL 1/4 INCH FOLDED BACK RETURN ON FLANGE EDGES, FORMED FROM MINIMUM 0.025 INCH THICK (NO. 25 GUAGE) GALVANIZED STEEL. STEEL STUDS CUT 3/4 INCH LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH ENDS NESTING IN AND SECURED TO CHANNEL SHAPED GALVANIZED STEEL FLOOR AND CEILING TRACKS WITH 1/2 INCH LONG TYPE S-12 SELF-DRILLING, SELF-TAPPING STEEL SCREWS ON BOTH SIDES OF STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH AISI SPECIFICATIONS, STEEL STUD SPACING NOT TO EXCEED 24 INCH ON CENTER.

1.2. GYPSUM WALLBOARD\* - 5/8 INCH THICK, 4 FOOT WIDE WITH SQUARE OR TAPERED EDGES. ANY GYPSUM WALLBOARD BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE. WALLBOARD INSTALLED VERTICALLY ON BOTH SIDES OF STUD FRAMING WITH JOINTS CENTERED OVER STUDS AND WITH JOINTS ON OPPOSITE SIDES OF WALL STAGGERED ONE STUD. FOR 1-HOUR FIRE-RATED WALL ASSEMBLY, A SINGLE LAYER OF GYPSUM WALLBOARD IS REQUIRED. FOR 2-HOUR FIRE-RATED WALL ASSEMBLY, TWO LAYERS OF GYPSUM WALLBOARD IS REQUIRED WITH OUTER LAYER JOINTS STAGGERED ONE STUD FROM INNER LAYER JOINTS. SEE WALLBOARD, GYPSUM (CKNX) CATEGORY IN UL FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS

1.3. FASTENERS - WHEN WOOD STUD FRAMING IS EMPLOYED FOR 1-HOUR FIRE-RATED WALL ASSEMBLY, GYPSUM WALLBOARD ATTACHED TO STUDS WITH 1-7/8 INCH LONG 6D CEMENT COATED NAILS STAND 7 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. WHEN WOOD STUD FRAMING IS EMPLOYED FOR 2-HOUR FIRE-RATED WALL ASSEMBLY, INNER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS 1/2/8 INCH LONG 6D CEMENT COATED NAILS SPACED 6 TO 8 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. OUTER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 2-3/8 INCH LONG 8D CEMENT CXXXX NAILS SPACED 6 TO 8 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. WHEN STEEL CHANNEL STUD FRAMING IS EMPLOYED FOR 1-HOUR FIRE-RATED WALL ASSEMBLY, GYPSUM WALLBOARD ATTACHED TO TYPE S SELF-DRILLING, SELF-TAPPING, BUGLE-HEAD STEEL SCREWS SPACED 8 INCH ON CENTER AT JOINT EDGES AND 8 TO 12 INCH ON CENTER IN THE FIELD. WHEN STEEL CHANNEL STUT STANDING IS EMPLOYED FOR 2: HOUR FIRE-RATED WALL ASSEMBLY, INNER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 1 INCH LONG TYPE S SELF-DRILLING, SELF-TAPPING BUGLE-HEAD SCREWS SP/ AXIMUM 12 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. OUTER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 1-5/8 INCH LONG TYPE S SELF-DRILLING, SELF-TAPPING BUGLE-HEAD STEEL SPACED MAXIMUM 12 IN.CH ON CENTER AT JOINT EDGES AND IN THE FIELD.

1.4. JOINT TAPE AND COMPOUND - (NOT SHOWN) - VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW OR NAIL HEADS OF CALLAYER OF GYPSUM WALLBOARD. PERFORATED PAPER TAPE, 2 INCH WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER LAYER OF GYPSUM WALLBOARD.

2. STEEL PIPE OR CONDUIT - NOMINAL 4 INCH DIAMETER (OR SMALLER) SCHEDULE 5S (OR HEAVIER) STEEL PIPE. NOMINAL 4 INCH DIAMETER (OR SMALLER) RIGID OR E.M.T. 👝 🔪 JIT OR NOMINAL 1 INCH DIAMETER (OR SMALLEF) FLEXIBLE STEEL CONDUIT. A MAXIMUM OF ONE PIPE OR CONDUIT IS PERMITTED IN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE INSTALLED NEAR CENTER OF STUTY OF ANY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH

3. PIPE COVERING\* - (OPTIONAL) - NOMINAL 1 INCH THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUT? 11 FOIL-SCRIM-KRAFT. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY APPLIED SLL. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PROVEY. SEE PIPE AND EQUIPMENT COVERINGS - MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATION AT BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD VALUE OF 25 OR LESS AND A SMOKE DEVELOPED VALUE OF 50 OR LESS MAY BE USED.

4. FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY, THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EIT! 🔨 OR 2 HOUR DEPENDING UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE HOURLY T RATING FOR THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE SIZE OF THE STEEL PY CONDUIT, THE ABSENCE OR PRESENCE OF PIPE COVERING (ITEM 3), THE FIRESTOP CONFIGURATION AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE FIRESTOP CONFIGUR 💉 (A, B, OR C) ID DEPENDENT UPON THE SIZE OF THE ANNULAR SPACE BETWEEN THE STEEL PIPE OR CONDUIT (OR PIPE COVERING) AND THE PERIMETER OF THE CIRCULAR THROUGH OPENING IN THE GYPSUM WALL 💥 LAYERS, AS TABULATED BELOW:

MAXIMUM PIPE OR CONDUIT DIAMETER	NOMINAL PIPE COVERING THICKNESS	ANNULAR SPACE	OP JRATION (a)	T RATING
1 INCH	NONE	0 - 3/16 INCH	A	1 OR 2 HOUR
4 INCH.	NONE	0 - 3/16 INC	Α	0hr
4 INCH.	NONE	1/4 - CH	В	0hr
4 INCH	1 INCH	3/8 INCH	В	1 OR 1-1/2 HOUR
4 INCH	1 INCH	0 - 3/16 INCH	С	1 OR 2 HOUR

# (A)A, B AND C INDICATE FIRESTOP CONFACTION, AS DESCRIBED IN THE FOLLOWING

A. FILL, VOID OR CAVITY MATERIALS\* - CAULK - CAULK FILL MATERIAL FORCED INTO AS PACE TO MAXIMUM EXTENT POSSIBLE AND WITH A MINIMUM 1/4 INCH DIAMETER BEAD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FROM THE WALL. MINNESOTA MINING & MANUFACTU > 0. - TYPES CP-25 S/L, CP-25 N/S

FIRESTOP CONFIGURATION B

A. FILL, VOID OR CAVITY MATERIALS\* - WRAP STRIP - NOMINAL 1/4 INCH THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 INCH WIDE STRIPS. NOMINAL 2 INCH WIDE STRIPS. TIGHTLY WRAPPED AROUND STEEL PIPE, STEEL CONDUIT OR PIPE COVERING (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROXIMATELY 1-1/4 INCH SUCH THAT APPROXIMATELY 3/4 INCH OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. MINNESOTA MINING & MANUFACTURING CO. - TYPE FS-195 B. FILL, VOID OR CAVITY MATERIALS\* - CAULK - MINIMUM 1/4 INCH DIAMETER CONTINUOUS BEAD APPLIED TO LEADING EDGE OF WRAP STRIP LAYER (ITEM A) PRIOR TO INSERTION OF WRAP STRIP LAYER IN ANNULAR SPACE. AFTER INSERTION OF WRAP STRIP LAYER IN ANNULAR SPACE, A NOMINAL 1/4 INCH DIAMETER CONTINUOUS BEAD IS TO BE APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROXIMATELY 3/4 INCH FROM THE WALL SURFACE. MINNESOTA MINING & MANUFACTURING CO. - TYPES CP-25 S/L, CP-25 N/S.

A. FILL, VOID OR CAVITY MATERIALS\* - WRAP STRIP - NOMINAL 1/4 INCH THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 INCH WIDE STRIPS. NOMINAL 2 INCH WIDE STRIPS. TIGHTLY WRAPPED AROUND PIPE COVERING (FOIL SIDE OUT) WITH SEAM BUTTED AND WITH EDGE OF WRAP STRIP ABUTTING WALL SURFACE. WRAP STRIP TEMPORARILY HELD IN POSITION WITH ALUMINUM FOIL TAPE, STEEL WIRE TIE OR EQUIVALENT. MINNESOTA MINING & MANUFACTURING CO. - TYPE FS-195 B. FILL, VOID OR CAVITY MATERIALS\* - CAULK - GENEROUS BEAD OF CAULK APPLIED TO OUTER PERIMETER OF WRAP STRIP AT INTERFACE WITH WALL SURFACE. MINNESOTA MINING & MANUFACTURING CO. - TYPES CP-25 S/L,

C. STEEL COLLAR - NOMINAL 2 INCH DEEP COLLAR WITH 1-1/4 INCH WIDE BY 2 INCH LONG ANCHOR TABS AND MINIMUM 1/4 INCH LONG TABS TO RETAIN WRAP STRIP LAYER. COILS OF PRECUT 0.016 INCH THICK (NO. 30 GUAGE) GALVANIZED SHEET STEEL AVAILABLE FROM WRAP STRIP MANUFACTURER. AS AN ALTERNATE, COLLAR MAY BE FIELD FABRICATED FROM MINIMUM 0.016 INCH THICK (NO. 30 GAUGE) GALVANIZED SHEET STEEL IN ACCORDANCE WITH INSTRUCTION SHEET SUPPLIED BY WRAP STRIP MANUFACTURER. STEEL COLLAR, WITH ANCHOR TABS BENT OUTWARD 90 DEGREES, WRAPPED TIGHTLY AROUND WRAP STRIP LAYER WITH MINIMUM 1 INCH OVERLAP AT SEAM. WITH STEEL ANCHOR TABS PRESSED TIGHTLY AGAINST WALL SURFACE, COMPRESS COLLAR AROUND WRAP STRIP LAYER USING A MINIMUM 1/2 INCH WIDE BY 0.028 INCH THICK STAINLESS STEEL BAND CLAMP WITH WORM DRIVE TIGHTENING MECHANISM AT THE COLLAR MID-HEIGHT. SECURE COLLAR TO GYPSUM WALLBOARD WITH 3/16 INCH DIAMETER STEEL WASHERS. FOUR TOGGLE BOLTS REQUIRED, SYMMETRICALLY LOCATED. AS A FINAL STEP, BEND RETAINER TABS 90 DEGREES TOWARD PIPE COVERING TO LOCK WRAP STRIP LAYER IN POSITION. \*BEARING THE UL CLASSIFICATION MARKING

STEEL PIPE OR CONDUIT THROUGH 1HR./2HR RATED

WALL ASSEMBLY PER ITEM 1 FIRESTOP PER ITEM 2

**UL SYSTEM NO. W-L-7077** 

F RATINGS - 1 AND 2 HOUR (SEE ITEM 1)

T RATINGS - 0 AND 1 HOUR (SEE ITEM 1)

. WALL ASSEMBLY - THE 1 OR 2 HOUR FIRED 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 AND PARTITIONS DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES.

1.1. STUDS - WALL FRAMING SHALL CONSIST OF EITHER WOOD OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2X4 INCH LUMBER SPACED 16 INCH ON CENTER STEEL STUDS TO BE MINIMUM 2-1/2 INCH WIDE AND SPACED MAXIMUM 24 INCH ON CENTER.

1.2. GYPSUM WALLBOARD\* - ONE OR TWO LAYERS OF 5/8 INCH THICK, 4 FOOT WIDE GYPSUM WALLBOARD WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS AND ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 WALL AND PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 5 INCH THE HOURLY F RATING IS EQUAL TO THE HOURLY RATING OF THE ASSEMBLY IN WHICH THE FIRESTOP SYSTEM IS INSTALLED. WHEN THE F RATING IS 2-HOUR, THE T RATING IS 1-HOUR WHEN THE F RATING IS 1-HOUR, THE T RATING IS 0-HOUR.

THROUGH PENETRANTS - ONE METALLIC VENT DUCT TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. A NOMINAL ANNULAR SPACED OF MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH IS REQUIRED WITHIN THE FIRESTOP SYSTEM. DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY, THE FOLLOWING TYPES AND SIZES OF DUCTS MAY BE USED:

2.1. STEEL RIGID VENT DUCT - NOMINAL 4 INCH DIAMETER (OR SMALLER) 28 GAUGE (OR HEAVIER) STEEL RIGID VENT DUCT.

3. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

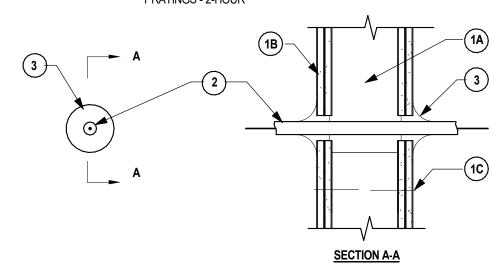
3.1. PACKING MATERIAL - FOR 2-HOUR WALL ASSEMBLIES, FOAM BACKER ROD FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIALS.

3.2. FILL, VOID OR CAVITY MATERIAL\*- CAULK - MINIMUM 5/8 INCH THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF THE WALL. AT POINT CONTACT LOCATION, A MINIMUM 1/2 INCH DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED TO THE GYPSUM WALLBOARD/DUCT INTERFACE OF BOTH SURFACES OF WALL.

ECTORSEAL - BIOSTOP 500+ BEARING THE UL CLASSIFICATION MARK

**DUCT PENETRATION THRU RATED WALL** 

F RATINGS - 2-HOUR T RATINGS - 2-HOUR



. WALL ASSEMBLY - THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL 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 NOMINAL 2 BY 4 INCH LUMBER SPACED 16 INCH ON CENTER WITH NOMINAL 2 BY 4 INCH LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MINIMUM 3-5/8 INCH WIDE BY 1-3/8 INCH DEEP CHANNELS WITH NOMINAL 1/4 INCH FOLDED BACK RETURN ON FLANGE EDGES, FORMED FROM MINIMUM 0.025 INCH THICK (NO 25 GUAGE) GALVANIZED STEEL. STEEL STUDS CUT 3/4 INCH LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH ENDS NESTING IN AND SECURED TO CHANNEL SHAPED GALVANIZED STEEL FLOOR AND CEILING TRACKS WITH 1/2 INCH LONG TYPE S-12 SELF-DRILLING, SELF-TAPPING STEEL SCREWS ON BOTH SIDES OF STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH AISI SPECIFICATIONS. STEEL STUD SPACING NOT TO EXCEED 24 INCH ON CENTER

B. WALLBOARD. GYPSUM\* - 5/8 INCH THICK. 4 FOOT WIDE WITH SQUARE OR TAPERED EDGES. ANY GYPSUM WALLBOARD BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE. WALLBOARD INSTALLED VERTICALLY IN TWO LAYERS ON BOTH SIDES OF STUD FRAMING WITH JOINTS OF EACH LAYER CENTERED OVER STUDS. INNER LAYER JOINTS ON OPPOSITE SIDES OF WALL STAGGERED ONE STUD. OUTER LAYER JOINTS STAGGERED ONE STUD FROM INNER LAYER JOINTS. SEE WALLBOARD, GYPSUM (CKNX) CATEGORY IN UL FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

C. FASTENERS - WHEN WOOD STUD FRAMING IS EMPLOYED. INNER LAYER OF GYPSUM WALLBOARD. ATTACHED TO STUDS WITH 1-7/8 INCH LONG 6D CEMENT-COATED NAILS (0.0915 INCH SHANK DIAMETER AND 1/4 INCH DIAMETER HEADS) SPACED 6 TO 8 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. OUTER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 2-3/8 INCH LONG 8D CEMENT-COATED NAILS (0.113 INCH SHANK DIAMETER AND 9/32 INCH DIAMETER HEADS) SPACED 6 TO 8 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. WHEN STEEL CHANNEL STUD FRAMING IS EMPLOYED. INNER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 1 INCH LONG TYPE S SELF-DRILLING, SELF-TAPPING BUGLE-HEAD STEEL SCREWS SPACED MAXIMUM 12 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. OUTER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 1-5/8 INCH LONG TYPE S SELF-DRILLING, SELF-TAPPING, BUGLE-HEAD STEEL SCREWS SPACED MAXIMUM 12 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD. OUTER LAYER OF GYPSUM WALLBOARD ATTACHED TO STUDS WITH 1-5/8 INCH LONG TYPE'S SELF DRILLING, SELF-TAPPING. BUGLE-HEAD STEEL SCREWS SPACED MAXIMUM 12 INCH ON CENTER AT JOINT EDGES AND IN THE FIELD.

D. JOINT TAPE AND COMPOUND - (NOT SHOWN) - VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW OR NAIL HEADS OF OUTER LAYER OF GYPSUM WALLBOARD, PERFORATED PAPER TAPE, 2 INCH WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER LAYER OF GYPSUM WALLBOARD.

2. CABLE - MAXIMUM 25 NO. 24 AWG PAIR TELEPHONE CABLE OR MAXIMUM TWO CONDUCTOR WITH GROUND NO. 10, 12 OR 14 AWG TYPE NM NON-METALLIC SHEATH COPPER CONDUCTOR CABLE WITH POLYVINYL CHI ORIDE INSULATION AND JACKET MATERIALS. MAXIMUM ONE CABLE TO BE INSTALLED IN NOMINAL 1/2 INCH DIAMETER CIRCULAR THROUGH OPENING IN THE GYPSUM WALLBOARD LAYERS. WHEN TWO CONDUCTOR TYPE NM CABLE IS USED, T RATING IS 1-1/2 HOUR WHEN MAXIMUM 25 PAIR TELEPHONE CABLE IS USED, T RATING IS 2-HOUR.

3. FILL VOID OR CAVITY MATERIALS\* - CAULK - CAULK FILL MATERIAL FORCED INTO ANNULAR SPACE TO MAXIMUM EXTENT POSSIBLE AND WITH A MINIMUM 1/4 INCH DIAMETER BEAD OF CAULK APPLIED TO PERIMETER OF CABLE AT ITS EGRESS FROM THE WALL (INSTALL SYMMETRICALLY ON BOTH SIDES OF WALL). MINNESOTA MINING & MANUFACTURING CO. - TYPES CP-25 S/L, CP-25 N/S. \*BEARING THE UL CLASSIFICATION MARKING

Contractor must verify all dimensions of project before proceeding with this work. shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone o any other projects, for additions to this project, or for

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and the owner or its designated agent shall provide th

written description on request

REVISIONS/SUBMITTALS

DATE: July 17, 2024

ASSEMBLY ASSEMBLY UNPROTECTED METAL DRYER 1. ALL JOINTS SHALL BE SEALED TO MAKE SHAFT AIR TIGHT DUCT IN WALL (MAXIMUM 4" FIRESTOPPING AT 2. REFER TO PLAN FOR SHAFT CONFIGURATION AND ADJACENT WALLS 1-HOUR RATED WALL DIAMETER DUCT) 3. ADD ADDITIONAL LAYER OF 5/8" TYPE 'X' GYPSUM WALLBOARD TO PERIMETER AS REQUIRED TO ALIGN WITH ADJACENT WALL FINISH 1st FIN. FLR. EACH VENT TO BE SEPARATE TO EXTERIOR DRYER VENT 2-HR FRESH AIR SHAFT

SCALE: 1 1/2" = 1'-0"

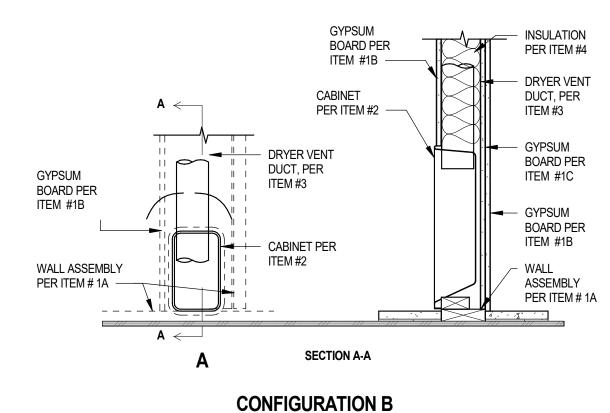
DRYERBOX FIRESTOPPING SYSTEM NO. W-L-7129 NOT TO SCALE SYSTEM NO. W-L-7129

**WOOD FRAMED WALL** 

NOT TO SCALE

CABLE THROUGH 2HR RATED WOOD FRAMED WALL

SYSTEM NO. W-L-7129



THROUGH-PENETRATION FIRESTOP SYSTEM NO. W-L-7129

F RATINGS — 1/2 AND 1 HR (SEE ITEMS 1, 1A AND 4) T RATINGS — 1/2 AND 1 HR (SEE ITEMS 1 AND 1A)

1A. WALL ASSEMBLY - CONFIGURATION B - THE FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING TO CONSIST OF WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF MIN NOM 2 BY 6 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 6 IN. (152.4 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC.

B. GYPSUM BOARD\* - ONE LAYER OF NOM 5/8 IN. (16 MM) THICK GYPSUM BOARD EACH SIDE OF WALL, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. SEE ITEM 2 FOR CUTOUT IN GYPSUM BOARD ON ONE SIDE OF WALL FOR DRYER BOX.

C. GYPSUM BOARD\* - AN ADDITIONAL LAYER OF GYPSUM BOARD SHALL BE CUT TO FIT ID OF STUD CAVITY AND INSTALLED FLUSH WITH EDGE OF STUDS ON NON-PENETRATED FACE OF WALL. ADDITIONAL LAYER OF GYPSUM BOARD TO BE ATTACHED TO MIN 1 BY 2 IN. (25 BY 51 MM) WOOD NAILING STRIPS WITH FASTENERS SPACED MAX 18 IN. (457 MM) OC AROUND PERIPHERY OF BOARD. NAILING STRIPS TO BE SECURED TO WOOD STUDS AND PLATES WITH FASTENERS SPACED MAX 18 IN. (457 MM) OC. NAILING STRIPS MAY BE DISCONTINUOUS AND TERMINATE MAX 1 IN. (25 MM) FROM VENT DUCT AND CABINET INTERFACES WITH PLATES AND STUDS.

THE HOURLY F AND T RATING OF THE FIRESTOP SYSTEM FOR CONFIGURATION EQUAL TO

2. CABINET\* - RECESSED FIXTURE INTENDED FOR DRYER APPLIANCE EXHAUST T INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS IN ONE SIDE OF WALL AS 2 Y. CUTOUT IN GYPSUM BOARD FOR TOP EXHAUST DEVICE IS MAX 9-1/2 IN. (241 MM) WIDE BY 19, V. (464 MM) HIGH. CUTOUT IN GYPSUM BOARD FOR BOTTOM EXHAUST DUCT IS MAX 14 IN. (356 MP 💫 🖒 BY 16 IN.(406 MM) HIGH. MAX GAP BETWEEN CABINET AND GYPSUM BOARD AROUND PERIPY JF CUTOUT SHALL BE 1/8 IN. (3.2 MM). GAP SHALL BE SEALED WITH UL CLASSIFIED SEALANT OP 💫 🔏 (SEE FILL, VOID OR CAVITY MATERIAL (XHHW) CATEGORY IN THE FIRE RESISTANCE DIRECT FOR NAMES OF MANUFACTURERS) OR DRYWALL COMPOUND.

IN-O-VATE TECHNOLOGIES - DRYERBOX MODEL 425.

3. STEEL VENT DUCT - MAX 4 IN. (102 MM) DIAM BY GAUGE RIGID STEEL DRYER DUCT FRICTION FITTED INTO TOP OR BOTTOM OPENING OF THE JOY TO BE ROUTED ENTIRELY WITHIN FIRE RATED CONSTRUCTION FROM THE CABINET TO TO SERIOR OF THE BUILDING. VENT DUCT TO BE FIRESTOPPED IN ACCORDANCE WITH ROPRIATE F-A-7000, F-C-7000 OR F-E-7000 SERIES FIRESTOP SYSTEM WHERE IT PASSES > JGH THE TOP PLATE OR SOLE PLATE OF THE CHASE WALL IN

4. INSULATION - REQUIRED F YERBOX MODELS 350, 425, 3D AND 4D IN WOOD STUD WALLS AS SPECIFIED IN TABLE BELCY SPACES BETWEEN THE SIDES OF THE CABINET AND THE STUDS AND THE SPACE IMMEDIATE' SO JVE THE CABINET ARE TO BE TIGHTLY PACKED WITH GLASS FIBER BATT OR MINERAL WOOL BAT ALATION. FOR FIRESTOP SYSTEMS WITH 1 HR F RATING, THE ENTIRE STUD CAVITY CONTAIN" CABINET SHALL BE FILLED WITH MIN R19 GLASS FIBER BATT INSULATION OR MINERAL WOCK LATION WITH ADDITIONAL PIECES OF INSULATION APPLIED AS NEEDED TO COMPLETFY ALL VOIDS AROUND THE CABINET AND VENT DUCT TO THE FULL DEPTH OF THE STUD CAVITY. (A) LASS FIBER OR MINERAL WOOL BATT MATERIAL BEARING THE UL CLASSIFICATION MARY TO FIRE RESISTANCE MAY BE USED.

🚣 BATTS AND BLANKETS\* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED COMPANIES.

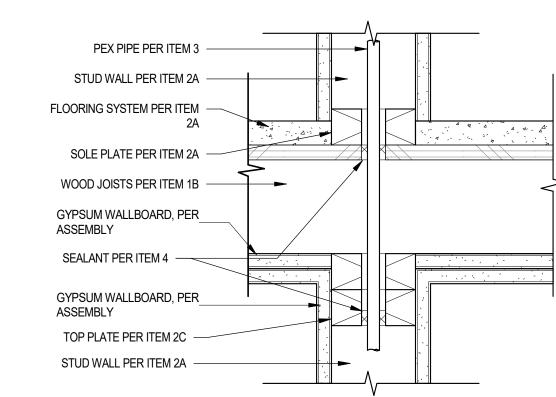
F RATING DRYERBOX WALL STUDS INSULATION MODELS (SEE ITEM 1) REQUIRED 350, 425, 3D 350, 425, 3D SEE ITEM 4 AND 4D AND 4D 350, 425, 3D WOOD SEE ITEM 4 AND 4D 350, 425, 3D STEEL SEE ITEM 4A AND 4D STEEL AND 1/2 AND 1 SEE ITEM 4A WOOD

DRYERBOX PENETRATION THROUGH GYPSUM WALL ASSEMBLY (1-HR)

SCALE: 1" = 1'-0"

## UL SYSTEM NO. F-C-2081 JANUARY 20, 2015

F RATING - 1-HOUR AND 2-HOUR (SEE ITEM 1) T RATING - 1-HOUR AND 2-HOUR (SEE ITEM 1)



1. FLOOR-CEILING ASSEMBLY: THE 1 OR 2 HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE 'F' AND 'T' RATINGS OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING AND WALL ASSEMBLIES. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM: LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OR LUMBER,

DESIGN. DIAMETER OF OPENING SHALL BE 1/2 INCH (13 MM) LARGER THAN THE NOMINAL DIAMTER OF THOUGH PENETRANT (ITEM 3). B. WOOD JOISTS\*: FOR 1-HOUR FIRE-RATED FLOOR-CEILING ASSEMBLIES NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH

PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING

C. FURRING CHANNELS (NOT SHOWN, AS REQUIRED): RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY. D. GYPSUM WALLBOARD\*: THICKNESS, TYPE, NUMBER OF LAYERS AND FASTNERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING SHALL BE 1/2 INCH (13 MM) LARGER THAN THE NOMINAL DIAMETER OF THROUGH PENETRANT (ITEM 3).

ENDS FIRESTOPPED.

2. CHASE WALL (OPTIONAL): THE 1 OR 2 HOUR FIRE-RATED SINGLE WOOD STUD/GYPSUM WALLBOARD CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS: NOMINAL 2 INCH BY 4 INCH (51 BY 102 MM) LUMBER STUDS. B. SOLE PLATE: NOMINAL 2 INCH BY 4 INCH (51 BY 102 MM) LUMBER PLATES. DIAMETER OF OPENING SHALL BE 1/2 INCH (13 MM) LARGER THAN THE NOMINAL DIAMETER OF THROUGH PENETRANT

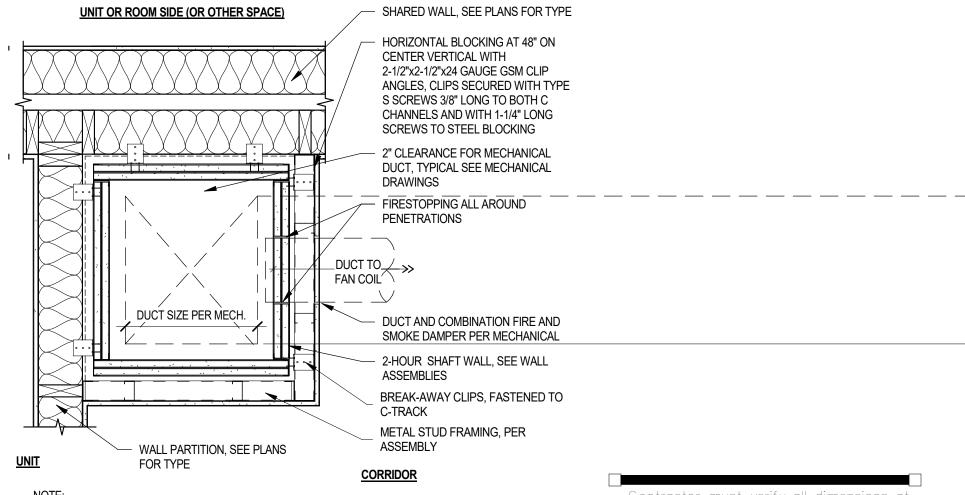
C. TOP PLATE: THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2" BY 4" (51 BY 102 MM) LUMBER PLATES. DIAMETER OF OPENING SHALL BE 1/2" (13 MM) LARGER THAN THE NOMINAL DIAMETER OF THROUGH-PENETRANT (ITEM 3). D. GYPSUM WALLBOARD: THICKNESS, TYPE, NUMBER OF LAYERS AND FASTNERS SHALL BE AS

SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.

3. THROUGH PENETRANTS: ONE NOMINAL 1 INCH (25 MM) DIAMETER CROSS-LINKED POLYETHYLENE (PEX) SDR 9 TUBE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. DIAMETER OF OPENING THROUGH FLOORING SYSTEM AND THROUGH SOLE AND TOP PLATES OF CHASE WALL TO BE MAXIMUM 1-1/2 INCH (38 MM). PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY

4. FILL, VOID OR CAVITY MATERIAL\*: SEALANT - MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE AND A MINIMUM 1/2 INCH (13 MM) THICKNESS OF THE CEILING OR LOWER TOP PLATES. HILTI CONSTRUCTION CHEMICALS, DIVISION OF HILTI INC. - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT.

XHEX-THROUGH - FIRE PENETRATION SYSTEMS SCALE: 3" = 1'-0" U.L. SYSTEM NO. F-C-2081



NOTE:

1. ACTUAL CONDITION MIGHT VARY, SEE FLOOR PLANS FOR CONFIGURATION 2. ALL JOINTS SHALL BE SEALED TO MAKE SHAFT AIR TIGHT 3. REFER TO PLAN FOR SHAFT CONFIGURATION AND ADJACENT WALLS 4. ADD ADDITIONAL LAYER OF 5/8" TYPE 'X' GYPSUM WALLBOARD TO PERIMETER AS REQUIRED TO ALIGN WITH ADJACENT WALL FINISH

2HR SHAFT FURRED WALL

SCALE: 1" = 1'-0"

Contractor must verify all dimensions at project before proceeding with this work. drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone or any other projects, for additions to this project, or for ompletion of this project by others except by the expresse

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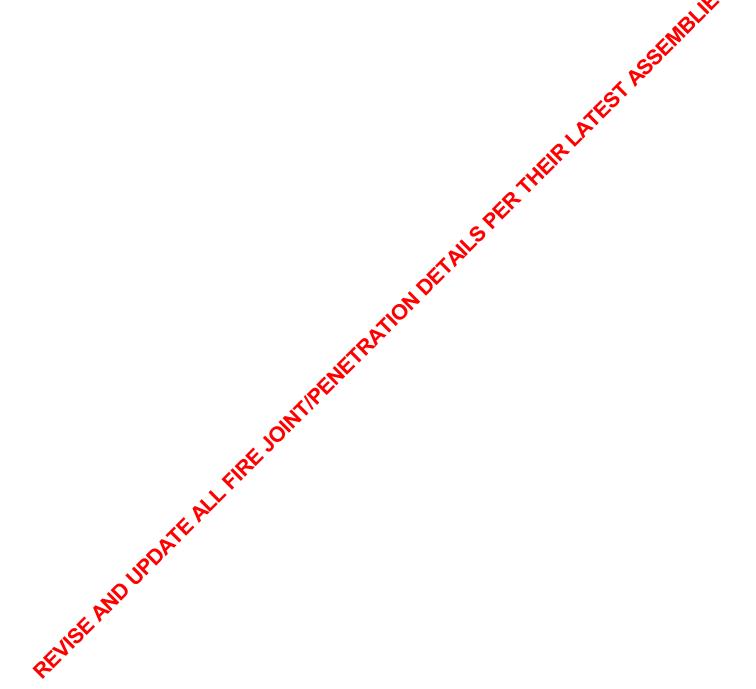
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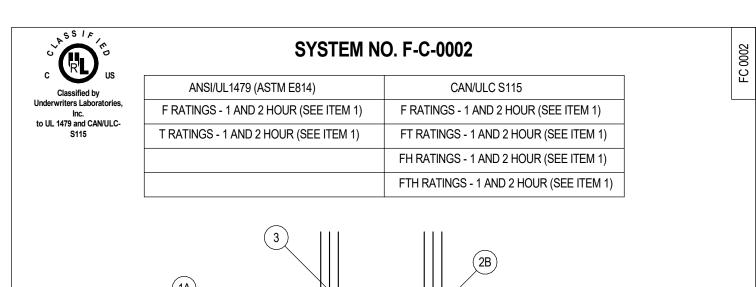
2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

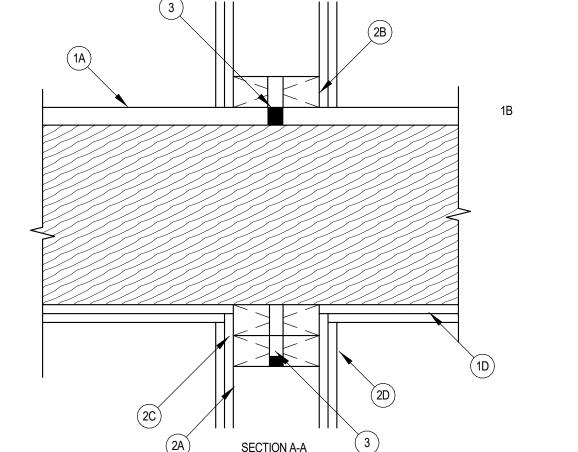
and the owner or its designated agent shall provide this written description on request. REVISIONS/SUBMITTALS

DATE DESCRIPTION

DATE: July 17, 2024 ORB #: 00-000 A7.2.14







1. FLOOR-CEILING ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOOR SYSTEM - LUMBER OF PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER. PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF FLOOR OPENING IS 1 INCH (25 MM).

- B. WOOD JOINTS\* NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED. C. FURRING CHANNELS - (NOT SHOWN) - RESILIENT GALVANIZED STEEL FURRING INSTALLED PERPENDICULAR TO WOOD JOISTS BETWEEN BOARD AND WOOD JOISTS AS REQUIRED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. FURRING CHANNELS SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.
- D. GYPSUM WALLBOARD\* NOMINAL 4 FOOT (122 CM) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. GYPSUM WALLBOARD SECURED TO WOOD JOINTS OR FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING IS 1 INCH (25 MM). THE F, FH AND T, FT, FTH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE FLOOR-CEILING ASSEMBLY IN WHICH IT IS INSTALLED.

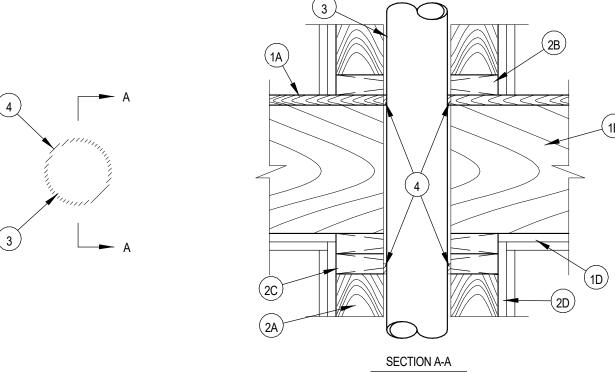
Hilti Firestop Systems

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Page: 1 of 2

Underwriters Laboratories, Inc. January 15, 2015

SYSTEM NO. F-C-1009 ANSI/UL1479 (ASTM E814) CAN/ULC S115 Classified by Underwriters F RATING - 1 AND 2-HOUR (SEE ITEM 1) F RATING - 1 AND 2-HOUR (SEE ITEM 1) Laboratories, Inc. to UL 1479 and T RATING - 1/4-HOUR FT RATING - 1/4-HOUR L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT FH RATING - 1 AND 2-HOUR (SEE ITEM 1) L RATING AT 400 F - 4 CFM/SQ FT FTH RATING - 1/4-HOUR L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT L RATING AT 400 F - 4 CFM/SQ FT



- FLOOR-CEILING ASSEMBLY THE 1 OR 2-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING ASSEMBLY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:
- A. FLOORING SYSTEM LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING TO BE MAXIMUM 1 INCH (25 MM) LARGER THAN DIAMETER OF PIPE. AS AN ALTERNATE, THE OPENING MAY BE SQUARE-CUT WITH A MAXIMUM DIMENSION 1 INCH (25 MM) GREATER THAN THE
- B. WOOD JOISTS\* NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED. C. FURRING CHANNELS - (NOT SHOWN) - (AS REQUIRED ) RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH THE
- MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY. D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING TO BE MAXIMUM 1 INCH (25 MM) LARGER THAN DIAMETER OF PIPE.

Hilti Firestop Systems

Classified by Underwriters

Laboratories, Inc. to UL 1479

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SYSTEM NO. F-C-2030 F RATINGS - 1 AND 2-HOUR (SEE ITEM 1)

January 15, 2015 Page: 1 of 2

### SYSTEM NO. F-C-1009

- . CHASE WALL (OPTIONAL) THE THROUGH PENETRANT (ITEM 3) MAY BE ROUTED THROUGH A 1 OR 2-HOUR FIRE-RATED SINGLE, DOL OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. DEPTH OF CHASE WALL TO BE MINIMUM 1 INCH GREATER THAN THE DIAMETER OF THE THROUGH PENETRANT. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS - NOMINAL 2 X 4 INCH (51 BY 102 MM), 2 X 6 INCH (51 BY 152 MM) OR DOUBLE NOMINAL 2 X 4 INCH (51 BY 102 MM) LUMBER STUDS. NOMINAL 2 X 4 INCH (51 BY 102 MM) STUDS ARE ALLOWED FOR THROUGH-PENETRANTS (ITEM 3) NOT EXCEEDING NOMINAL 2 INCH (51
- B. SOLE PLATE NOMINAL 2 X 4 INCH (51 BY 102 MM), 2 X 6 INCH (51 BY 152 MM) OR PARALLEL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES. TIGHTLY BUTTED. DIAMETER OF OPENING IS TO BE MAXIMUM 1 INCH (925 MM) LARGER THAN DIAMETER OF PIPE. AS AN ALTERNATE,
- THE OPENING MAY BE SQUARE-CUT WITH A MAXIMUM DIMENSION 1 INCH (25 MM) GREATER THAN THE DIAMETER OF THE PIPE. PLATES MAY BE DISCONTINUOUS OVER OPENING. TERMINATING AT TWO OPPOSING EDGES OF OPENING. MAXIMUM LENGTH OF DISCONTINUITY TO BE 1 INCH (25 MM) GREATER THAN DIAMETER OF THROUGH PENETRANT C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 4 INCH (51 BY 102 MM), 2 X 6 INCH (51 BY 152 MM) OR TWO SETS OF PARALLEL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES. TIGHTLY BUTTED. DIAMETER OF OPENING IS TO BE MAXIMUM 1 INCH (25 MM) LARGER THAN DIAMETER OF PIPE. AS AN ALTERNATE. THE OPENING MAY BE SQUARE-CUT WITH A MAXIMUM DIMENSION 1 INCH

(25 MM) GREATER THAN THE DIAMETER OF THE PIPE. PLATES MAY BE DISCONTINUOUS OVER OPENING. TERMINATING AT TWO

OPPOSING EDGES OF OPENING. MAXIMUM LENGTH OF DISCONTINUITY TO BE 1 INCH (25 MM) GREATER THAN DIAMETER OF THROUGH

- D. **STEEL PLATE** WHEN LUMBER PLATES ARE DISCONTINUOUS. NOMINAL 1-1/2 INCH (38 MM) WIDE NO. 20 GAUGE (OR HEAVIER) GALVANIZED STEEL PLATES SHALL BE INSTALLED TO CONNECT EACH DISCONTINUOUS LUMBER PLATE AND TO PROVIDE A FORM FOR THE FILL MATERIAL. STEEL PLATES SIZED TO LAP 2 INCH (51 MM) ONTO EACH DISCONTINUOUS LUMBER PLATE AND SECURED TO LUMBER PLATES WITH STEEL SCREWS OR NAILS.
- E. GYPSUM WALLBOARD\* THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND THROUGH PENETRANTS - ONE METALLIC PIPE. CONDUIT OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE. CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. THE ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH (25 MM). THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS
- A. STEEL PIPE NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- B. IRON PIPE NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. CONDUIT - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT. D. COPPER TUBING - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- E. COPPER PIPE NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. 4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS. FLUSH WITH THE TOP SURFACE OF THE FLOOR OR THE SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S, CFS-S SIL GG, CP606, FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT (NOTE: L RATINGS APPLY ONLY WHEN FS-ONE SEALANT IS USED.) INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

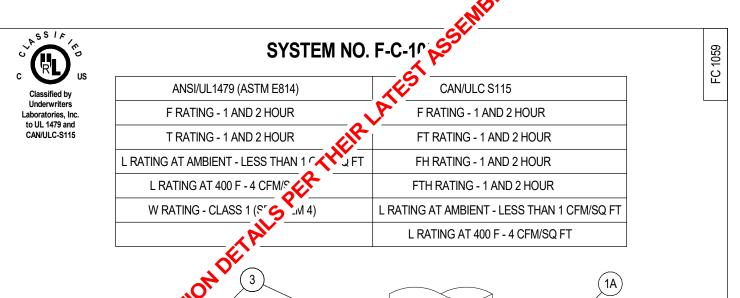
CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

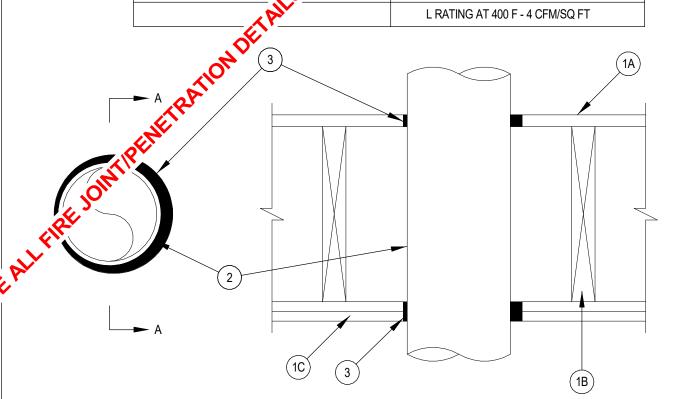


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City, state







- . FLOOR-CEILING ASSEMBLY THE 1 OR 2 HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE F, FH RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING AND WALL ASSEMBLIES. THE T, FT AND FTH RATING OF THE FIRESTOP SYSTEM IS 0-HOUR FOR 1-HOUR RATED FLOOR CEILING ASSEMBLY
- ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 7-5/8 INCH (194 MM).

AND 1/2-HOUR FOR 2-HOUR RATED FLOOR CEILING ASSEMBLY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING

- B. WOOD JOISTS\* NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
- C. GYPSUM WALLBOARD\* THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 7-5/8 INCH (194 MM). D. FURRING CHANNELS - (NOT SHOWN) (AS REQUIRED) RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH THE

MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY.

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1.1 **CHASE WALL** - (NOT SHOWN, OPTIONAL) - THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH A 1 OR 2-HOUR FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

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SYSTEM NO. F-C-1059

SYSTEM NO. F-C-0002

2. CHASE WALL - (OPTIONAL) - THE 1 OR 2-HOUR FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE

WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND THE MANNER SPECIFIED IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300

C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL OR 2 X 4 INCH OR 2 X 6 INCH (51 X 102 OR 51 X 152 MM)

ON TOP SURFACE OF FLOOR OR SOLE PLATE OF CHASE WALL. MINIMUM 5/8 INCH (16MM) THICKNESS OF FILL MATERIAL APPLIED

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. - FS ONE SEALANT, FS-ONE MAX INTUMESCENT SEALANT OR CP606 SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

3. FILL, VOID OR CAVITY MATERIAL+ - SEALANT - MINIMUM 3/4 INCH (19MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS

A. STUDS - NOMINAL 2 X 4 INCH OR 2 X 6 INCH (51 X 102 OR 51 X 152 MM) LUMBER STUDS.

LUMBER PLATES. MAXIMUM DIAMETER OF OPENING IS 1 INCH.

CERTIFICATIONS (SUCH AS CANADA), RESPECTIVELY.

B. **SOLE PLATE** - NOMINAL 2 X 4 INCH OR 2 X 6 INCH ( 51 X 102 OR 51 X 152 MM) LUMBER PLATES

WITHIN THE ANNULUS, FLUDH WITH THE BOTTOM SURFACE OF HTE CEILING OR LOWER TOP PLATE.

SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTIANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION

Classified by

- A. STUDS NOMINAL 2 BY 8 INCH (51 BY 203 MM) LUMBER OR DOUBLE NOMINAL 2 BY 6 INCH (51 BY 152 MM) LUMBER STUDS. B. SOLE PLATE - NOMINAL 2 BY 8 INCH (51 BY 203 MM) LUMBER OR PARALLEL 2 BY 6 INCH (51 BY 152 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING SHALL BE 7-5/8 INCH (194 MM). C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 BY 8 INCH (51 BY 203 MM) LUMBER PLATES OR TWO SETS OF
- NOMINAL 2 BY 6 INCH (51 BY 152MM) LUMBER PLATES TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 7-5/8 INCH (194 MM). D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OR LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGNS.
- . THROUGH PENETRANTS ONE METALLIC TUBING, PIPE OR CONDUIT TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF OPENING TO BE MINIMUM 1/4 INCH (6 MM) AND MAXIMUM 3/4 INCH (19 MM). PIPE, TUBING OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, TUBING OR CONDUIT MAY BE USED: A. STEEL PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.
- B. IRON PIPE NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE PIPE. C. CONDUIT - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOMINAL 6 INCH DIAMETER
- D. STEEL FLEXIBLE METAL CONDUIT+ NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL CONDUIT. SEE FLEXIBLE METAL CONDUIT (DXUZ) CATEGORY IN THE ELECTRICAL CONSTRUCTION MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) OR 1-1/4 INCH (32 MM) THICKNESS OF SEALANT APPLIED WITHIN
- ANNULAR SPACE, FLUSH WITH THE BOTTOM SURFACE OF GYPSUM WALLBOARD OR LOWER TOP PLATE FOR 1 AND 2-HOUR FLOORS RESPECTIVELY. MINIMUM 3/4 INCH (19 MM) THICKNESS OF SEALANT APPLIED WITHIN ANNULAR SPACE, FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT
- +BEARING THE UL LISTING MARK. \* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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Page: 2 of 2

T RATINGS - 0, 3/4, 1, 1-1/2 AND 2-HOUR (SEE ITEM 3)

SYSTEM TESTED WITH A CISSURE DIFFERENTIAL OF 2.5 PA BETWEEN THE EXPOSED AND THE UNEXPOSED SURFACES WITH THE HIGHER PRESSURE ON THE EXPOSED SIDE. 1. FLOOR-CEILING ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE

- CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING AND WALL ASSEMBLIES. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE NOMINAL
- DIAMETER OF THROUGH-PENETRANT (ITEM 3). B. JOISTS - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH END FIRESTOPPED. C. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-
- CEILING DESIGN. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE NOMINAL DIAMETER OF THROUGH-PENETRANT D. **FURRING CHANNELS** - (NOT SHOWN) (AS REQUIRED) - RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY.

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SYSTEM NO. F-C-2030

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Underwriters Laboratories, Inc.

January 15, 2015

- CHASE WALL (OPTIONAL) THE THROUGH PENETRANT (ITEM 3) MAY BE ROUTED THROUGH A 1 OR 2-HOUR FIRE-RATED SINGLE. DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
- A. **STUDS** NOMINAL 2 X 6 INCH (51 BY 152 MM) OR DOUBLE NOMINAL 2 X 4 INCH (51 BY 102 MM) LUMBER STUDS. B. SOLE PLATE - NOMINAL 2 X 6 INCH (51 BY 152 MM) (OR LARGER) OR PARALLEL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES, TIGHTLY BUTTED. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE NOMINAL DIAMETER OF THROUGH-PENETRANT (ITEM 3). C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 6 INCH (51 BY 152 MM) (OR LARGER) OR PARALLEL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES, TIGHTLY BUTTED. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE
- NOMINAL DIAMETER OF THROUGH-PENETRANT (ITEM 3). D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND
- . THROUGH-PENETRANTS ONE NOMINAL 1-1/2 INCH (38 MM), 2 INCH (51 MM), 3 INCH (76 MM) OR 4 INCH (102 MM) DIAMETER NON-METALLIC PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. DIÁMETER OF OPENING THROUGH FLOORING SYSTEM AND THROUGH SOLE AND TOP PLATES OF CHASE WALL TO BE MAXIMUM 2-1/8 INCH (54 MM), 2-5/8 INCH (67 MM), 4 INCH (102 MM) OR 5 INCH (127 MM) FOR NOMINAL 1-1/2 INCH (38 MM), 2 INCH (51 MM), 3 INCH (76 MM) OR 4 INCH (102 MM) DIAMETER NON-METALLIC PIPE SIZES, RESPECTIVELY. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR-CEILING ASSEMBLY. THE T RATING IS DEPENDENT ON THE SIZE OF THE THROUGH-PENETRANT. FOR 2-HOUR RATED ASSEMBLIES, THE T RATING IS 2-HOUR FOR 1-1/2 INCH (38 MM) DIAMETER (AND SMALLER) PIPES AND 1-1/2-HOUR FOR PIPES GREATER THAN 1-1/2-INCH (38 MM) DIAMETER FOR 1-HOUR RATED ASSEMBLIES, THE T RATING IS 1-HOUR FOR 1-1/2 INCH (38 MM) DIAMETER (AND SMALLER) PIPES, 3/4-HOUR FOR 2 INCH (51 MM) DIAMETER PIPES AND 0-HOUR FOR PIPES GREATER
- THAN 2 INCH (51 MM) DIAMETER THE FOLLOWING TYPES OF NON-METALLIC PIPES MAY BE USED: A. POLYVINYL CHLORIDE (PVC) PIPE - SCHEDULE 40 SOLID-CORE OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR
- SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM. B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - SDR17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. C. **ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE** - SCHEDULE 40 SOLID-CORE OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED
- (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. D. FLAME RETARDANT POLYPROPYLENE(FRPP) PIPE - SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM. . **FIRESTOP SYSTEM** - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
- A. FILL, VOID OR CAVITY MATERIAL\* SEALANT MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL TO BE INSTALLED WITHIN THE ANNULAR SPACE BETWEEN THE PIPE AND THE FLOORING (ITEM 1A) OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS APPLIED WITHIN THE ANNULAR SPACE, FLUSH WITH THE BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANTOR FS-ONE MAX INTUMESCENT SEALANT.
- B. FIRESTOP DEVICE\* FIRESTOP COLLAR FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. COLLAR TO BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO UNDERSIDE OF CEILING OR CHASE WALL TOP PLATE (ITEM 2C) USING THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. (MINIMUM 2 ANCHOR HOOKS FOR 1-1/2 (38 MM) AND 2 INCH (51 MM) DIAMETER PIPES AND 3 ANCHOR HOOKS FOR 3 INCH (76 MM) DIAMETER PIPES). THE ANCHOR HOOKS ARE TO BE SECURED TO THE CEILING WITH MINIMUM 3/16 INCH (5 MM) DIAMETER STEEL TOGGLER BOLTS OR TO THE CHASE WALL
- TOP PLATE WITH MINIMUM NO. 12 BY MINIMUM 1 INCH (25 MM) LONG STEEL WOOD SCREWS IN CONJUNCTION WITH STEEL WASHERS. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 643 50/1.5"N, CP643 63/2"N, CP 643 90/3"N OR CP643 110/4"N FIRESTOP COLLAR INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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January 20, 2015

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REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024 A7.2.15

FIRE JOINTS - WOOD FLOOR CEILING

FLOOR-CEILING ASSEMBLY - THE FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION DETAILS OF THEFLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE NOMINAL

B. WOOD JOISTS - NOMINAL 2 X 10 INCH (51 X 254 MM) LUMBER JOISTS SPACED 16 INCH (406 MM) ON CENTER WITH NOMINAL 1 X 3 INCH (25 X 76 MM) LUMBER BRIDGING AND WITH ENDS FIRESTOPPED. AS AN ALTERNATE TO LUMBER JOISTS, NOMINAL 10 INCH (254 MM) DEEP (OR DEEPÉR) LUMBER. STEEL OR COMBINATION LUMBER AND STEEL JOISTS. TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING

C. FURRING CHANNELS - (NOT SHOWN) - RESILIENT GALVANLIZED STEEL FURRING INSTALLED PERPENDICULAR TO WOOD JOISTS (ITEM 1B) BETWEEN WALLBOARD (ITEM 1D) AND WOOD JOISTS AS REQUIRED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. D. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (1.2 M) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING

DESIGN. DIAMETRT OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE NOMINAL DIAMETER OF THROUGH-PENETRANT (ITEM 3). CHASE WALL - (OPTIONAL) - THE THROUGH PENETRANT (ITEM 3) MAY BE ROUTED THROUGH A 1-HOUR FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STUDS** - NOMINAL 2 X 4 INCH (51 BY 102 MM) LUMBER STUDS. B. SOLE PLATE - NOMINAL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE

NOMINAL DIAMETER OF THROUGH-PENETRANT (ITEM 3). C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES. DIAMETER OF OPENING SHALL BE 1 INCH (25 MM) LARGER THAN THE NOM DIAM OF THROUGH-PENETRANT (ITEM 3). D. GYPSUM WALLBOARD\* - THÌCKNEŚS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE ÀS SPEĆIFIED IN INDIVIDUAL WALL AND ---PARTITION DESIGN.-

Hilti Firestop Systems

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SYSTEM NO. F-C-2142

S. THROUGH-PENETRANTS - ONE NON-METALLIC PIPE TO BE INSTALLED EITHER ECCENTRICALLY OR CONCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE THROUGH PENETRANT AND THE PERIPHERY OF THE OPENING SHALL BE A MINIMUM 0 INCH (POINT CONTACT) TO A MAXIMUM OF 5/8 INCH (16 MM). PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR-CEILING ASSEMBLY.

A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID CORE PVC PIPE

B. ACRYLONITRILE BUTADINE STYRENE (ABS) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID

C. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SDR17 CPVC PIPE FOR USE IN

4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

THE FOLLOWING TYPES AND SIZES OF NON-METALLIC PIPES MAY BE USED.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE, OR VENT) PIPING SYSTEMS.

CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

ANNULUS, FLUSH WITH AND FLUSH WITH BOTTOM SURFACE OF CEILING OR OF LOWER TOP PLATE.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

Page: 2 of 2

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SYSTEM NO. F-C-2389

Classified by Underwriters Laboratories, Inc. to UL 1479 SYSTEM NO. F-C-2203 F RATING - 1-HOUR T RATING - 1-HOUR

. FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 5 INCH (127 MM). B. WOOD JOIST\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS. TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED

C. GYPSUM WALLBOARD\* - NOMINAL 5/8 INCH (16 MM) THICK, 4 FOOT (1.2 M) WIDE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. CLOSET FLANGE - ACRYLONITRILE BUTADIENE STYRÉNE (ABS) OR POLYVINYL CHLORIDE (PVC) CLOSET STUB SIZED TO ACCOMMODATE DRAIN PIPE. CLOSET FLANGE INSTALLED OVER DRAIN PIPING WITHIN FLOOR OPENING WITH FLANGE SECURED TO PLYWOOD FLOOR WITH STEEL SCREWS. DIAMETER OF CIRCULAR OPENING THROUGH FLOORING (ITEM 1A) TO BE MAXIMUM 1/2 INCH (13 MM) LARGER THAN OUTSIDE DIAMETER OF CLOSET FLANGE.

3. DRAIN PIPING - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 40 ACRYLONITRILE BUTADIENE STYRENE (ABS) OR POLYVINYL CHLORIDE (PVC) DRAIN PIPE AND 90 DEGREE ELBOW FOR USE IN VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. PIPE INSTALLED CONCENTRICALLY WITHIN FIRESTOP SYSTEM

4. **FILL, VOID OR CAVITY MATERIALS\*** - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE BOTTOM SURFACE OF FLOOR. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT 5. WATER CLOSET - (NOT SHOWN) - FLOOR MOUNTED VITREOUS CHINA WATER CLOSET.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

F RATING - 1-HOUR Classified by Underwriters Laboratories, T RATING - 1/2-HOUR Inc. to UL 1479 SECTION A-A

SYSTEM NO. F-C-2204

1. FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN

THE INDIVIDUAL FLOOR-CEILING DESIGN. RECTANGULAR CUTOUT IN FLOORING TO ACCOMMODATE THE BATHTUB DRAIN PIPING (ITEM 2) TO BE MAXIMUM 8 X 12 INCH (203 X 305 MM). CUTOUT TO BE PATCHED ON UNDERSIDE OF SUBFLOOR USING ONE LAYER OF MINIMUM 3/4 INCH (19 MM) THICK PLYWOOD OR MINIMUM 5/8 INCH (16 MM) THICK GYPSUM WALLBOARD (ITEM 1C) SIZED TO LAP MINIMUM 2 INCH (51 MM) BEYOND EACH EDGE OF RECTANGULAR CUTOUT. PATCH SPLIT INTO TWO PIECES AT OPENING AND HOLE-SAWED FOR BATHTUB DRAIN PIPING. DIAMETER OF OPENING HOLE SAWED THROUGH PATCH TO ACCOMMODATE DRAIN PIPING (ITEM 2) TO BE 1 INCH (25 MM) LARGER THAN OUTSIDE DIAMETER OF DRAIN PIPING AND POSITIONED SUCH THAT THE ANNULAR SPACE BETWEEN DRAIN PIPING AND PERIPHERY OF OPENING IS MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH (25 MM). TWO PIECES POSITIONED AROUND DRAIN PIPING, WITH CUT EDGES TIGHTLY BUTTED, AND SCREW-ATTACHED TO UNDERSIDE OF SUBFLOOR WITH 1-1/4 INCH (32 MM) LONG STEEL SCREWS SPACED MAXIMUM 6 INCH (152 MM) ON CENTER.

B. WOOD JOISTS\* - NOMINAL 10 INCH (154 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED. C. GYPSUM WALLBOARD\* - NOMINAL 5/8 INCH (16 MM) THICK, 4 FOOT (122 CM) WIDE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DRAIN PIPING - NOMINAL 1-1/2 INCH (38 MM, OR SMALLER) DIAMETER SCHEDULE 40 ACRYLONITRILE BUTADIENE STYRENE (ABS) OR POLYVINYL CHLORIDE (PVC) PIPE AND DRAIN FITTINGS CEMENTED TOGETHER AND PROVIDED WITH ABS OR PVC BATHTUB WASTE/OVERFLOW FITTINGS.

ANNULAR SPACE SHALL BE MIN 0 IN. (POINT CONTACT) TO MAXIMUM 1 INCH. 3. FILL VOID OR CAVITY MATERIALS\* - MINIMUM 5/8 INCH (16 MM) DEPTH OR FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF PLYWOOD OR GYPSUM WALLBOARD PATCH. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE-MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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January 21, 2015

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Hilti Firestop Systems

DIAMETER OF THROUGH-PENETRANT (ITEM 3).

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Page: 1 of 2

SYSTEM NO. F-C-2310

THROUGH-PENETRANTS - NOMINAL 1 INCH (25 MM) DIAMETER (OR SMALLER) SDR 9 (OR HEAVIER) CROSS-LINKED POLYETHYLENE (PEX) TUBING FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. A MAXIMUM OF THREE TUBES MAY BE INSTALLED IN THE OPENING. THE ANNULAR SPACE BETWEEN THE TUBING AND THE PERIPHERY OF THE OPENING SHALL BE A MINIMUM OF 3/16 INCH (5 MM) TO A MAXIMUM OF 1 INCH (25 MM). THE SPACE BETWEEN THE TUBES SHALL BE A MIN OF 0 INCH (POINT CONTACT) TO A MAXIMUM OF 1/4 INCH (6 MM). TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR-CEILING ASSEMBLY.

4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS. FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE AND A MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE BOTTOM SURFACE OF THE LOWER TOP PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE BOTTOM SURFACE OF THE CEILING OR LOWER TOP PLATE. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE-MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

F RATING - 1-HOUR T RATINGS - 0, 3/4 AND 1-HOUR (SEE ITEM 3) Underwriters Laboratorie

FLOOR-CEILING ASSEMBLY - THA C-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION DETAILS OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF FLOOR OPENING IS 4 INCH (102 MM).

(25 X 76 MM) LUMBER BRIDGING AND WITH ENDS FIRESTOPPED. AS AN ALTERNATE TO LUMBER JOISTS, NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED WITH ENDS FIRESTOPPED. C. **FURRING CHANNELS** - (NOT SHOWN) - RESILIENT GALVANIZED STEEL FURRING INSTALLED PERPENDICULAR TO WOOD JOISTS (ITEM

SYSTEM NO. F-C-2389

CHASE WALL - THE THROUGH PENETRANT (ITEM NO. 3) SHALL BE ROUTED THROUGH A SINGLE, DOUBLE OR STAGGERED WOOD STUDS/GYPSUM WALLBOARD CHASE WALL AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS - NOMINAL 2 X 4 INCH (51 X 102 MM) OR NOMINAL 2 X 6 INCH (51 X 152 MM) LUMBER STUDS. B. SOLE PLATE - NOMINAL 2 X 4 INCH (51 X 102 MM) OR 2 X 6 INCH (51 X 152 MM) LUMBER PLATES, MAXIMUM DIAMETER OF OPENING IS 4

INCH (102 MM) WHEN NOMINAL 3 INCH (76 MM) DIAMETER PENETRANTS ARE USED. MAXIMUM DIAMETER OF OPENING IS 3 INCH (76 MM) WHEN NOMINAL 2 INCH (51 MM) OR SMALLER DIAM PENETRANTS ARE USED. C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 4 INCH (51 X 102 MM) OR 2 X 6 INCH (51 X 152 MM)

LUMBER PLATES. MAXIMUM DIAMETER OF OPENING IS 4 INCH (102 MM) WHEN NOMINAL 3 INCH (76 MM) DIAMETER PENETRANTS ARE USED. MAXIMUM DIAMETER OF OPENING IS 3 INCH (76 MM) WHEN NOMINAL 2 INCH DIAMETER PENETRANTS ARE USED. D. GYPSUM WALLBOARD - MINIMUM 1/2 INCH (13 MM) RATED OR NON-RATED GYPSUM WALLBOARD. E. STEEL STRAPS - (NOT SHOWN) - STEEL STRAPS TO BE USED WHEN TOP AND SOLE PLATES ARE DISCONTINUOUS AND SHALL MEET

THE STRUCTURAL REQUIREMENTS OF THE WALL. MINIMUM 1-1/2 INCH (38 MM) WIDE BY 20 GAUGE (OR HEAVIER) GALVANIZED STEEL STRAPS USED TO BRIDGE OPENING ON BOTH SIDES OF WALL AT SOLE PLATE WHEN SOLE PLATE IS DISCONTINUOUS AT OPENING IN PLYWOOD FLOOR. STEEL STRAPS TO BE CUT TO OVERLAP A MINIMUM OF 2 INCH (51 MM) ONTO SOLE PLATE ON EACH SIDE OF OPENING AND SECURED TO SOLE PLATE WITH A MINIMUM OF TWO NAILS OR SCREWS ON EACH SIDE OF OPENING ON BOTH SIDES OF WALL. MINIMUM 3 INCH (76 MM) WIDE BY 20 GAUGE (OR HEAVIER) GALVANIZED STEEL STRAPS USED TO BRIDGE OPENING ON BOTH SIDES OF WALL AT DOUBLE TOP PLATE WHEN TOP PLATE IS DISCONTINUOUS AT OPENING. STEEL STRAPS TO BE CUT TO

OVERLAP A MINIMUM OF 2 INCH (51 MM) ONTO TOP PLATE ON EACH SIDE OF OPENING AND SECURED TO TOP PLATES WITH A MINIMUM OF TWO NAILS OR SCREWS ON EACH SIDE OF OPENING ON BOTH SIDES OF WALL. THROUGH PENETRANTS - ONE NON-METALLIC PIPE TO BE INSTALLED EITHER ECCENTRICALLY OR CONCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE THROUGH PENETRANT AND THE PERIPHERY OF THE OPENING SHALL BE A MINIMUM 0 INCH (POINT CONTACT) TO A MAXIMUM OF 5/8 INCH (16 MM) PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE

FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NON-METALLIC PIPES MAY BE USED. A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.

C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE - NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID-CORE OR CELLULAR-CORE ABS PIPE FOR SUPPLY) PIPING SYSTEMS. D. ELECTRICAL NON-METALLIC TUBING (ENT+) - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) CORRUGATED-WALL ELECTRICAL NON-METALLIC TUBING (ENT)CONSTRUCTED OF POLYVINYL CHLORIDE (PVC) AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA NO. 70). SEE ELECTRICAL NON-METALLIC TUBING (FKHU) CATEGORY IN THE ELECTRICAL CONSTRUCTION MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. WHEN FS-ONE MAXIMUM SEALANT IS USED, THE T RATING IS 0-HOUR WHEN FS-ONE SEALANT IS USED, THE T RATINGS ARE 3/4-HOUR FOR PVC AND CPVC PIPE AND 1-HOUR FOR ABS PIPE AND ENT.

4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF LOWER TOP PLATE. AT POINT CONTACT LOCATION, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT BOTTOM SURFACE OF LOWER TOP PLATE. IN ADDITION, AT TOP OF FLOOR, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE POINT CONTACT LOCATION AT TOP OF SOLE PLATE OR SUBFLOOR. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE-MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Contractor must verify all dimensions at project before proceeding with this work. the expressed written permission of the Architect. The drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for completion of this project by others except by the expressed written permission of the Architect.

Page: 2 of 2

<u>Notice of alternate billing (or payment) cycle</u> This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other certification and approval of billings and estimates). A written description of such other billing (and/or) cycle the owner's designated agent at 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

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REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024

SYSTEM NO. F-C-2310 F RATINGS - 1 AND 2 HOUR (SEE ITF' T RATINGS - 1 AND 1-1/2 HOUR (SEF 🕟 Underwriters Laboratorie FLOOR-CEILING ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING AND WALL ASSEMBLIES. THE T RATING OF THE FIRESTOP SYSTEM IS 1-HOUR FOR 1-HOUR RATED FLOOR-CEILING AND WALL ASSEMBLIES AND 1-1/2 HOUR FOR 2-HOUR RATED FLOOR-CEILING AND WALL ASSEMBLIES. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING

ASSEMBLY ARE SUMMARIZED BELOW:

A. FORMING MATERIAL - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OR LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF FLOOR OPENING IS 3 INCH (76 MM). B. WOOD JOISTS\* - FOR 1-HOUR FIRE-RATED FLOOR-CEILING ASSEMBLIES NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED. FOR 2-HOUR FIRE-RATED FLOOR-CEILING ASSEMBLIES, NOMINAL 2 X 10 INCH (51 BY 254 MM) LUMBER JOISTS SPACED 16 INCH ON CENTER WITH NOMINAL 1 X 3 INCH (25 X 76 MM) LUMBER BRIDGING AND WITH ENDS FIRESTOPPED. C. FURRING CHANNELS - (NOT SHOWN) - (AS REQUIRED) - RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY. D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-

2. CHASE WALL - (OPTIONAL) - THE 1 OR 2-HOUR FIRE-RATED SINGLE WOOD STUD/GYPSUM WALLBOARD CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. **STUDS** - NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS.

B. **SOLE PLATE** - NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES. C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES. MAXIMUM DIAMETER OF OPENING IS 3 INCH (76 MM). D. GYPSUM WALLBOARD - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND

CEILING DESIGN. MAXIMUM DIAMETER OF OPENING IS 3 INCH (76 MM).

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B. WOOD JOISTS - NOMINAL 2 X 10 INCH (51 X 254 MM) LUMBER JOISTS SPACED 16 INCH (406 MM) ON CENTER WITH NOMINAL 1 X 3 INCH

1B) BETWEEN WALLBOARD (ITEM 1D) AND WOOD JOISTS AS REQUIRED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. D. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (122 CM) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING

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A7.2.16

FIRE JOINTS - WOOD FLOOR CEILING

1. FLOOR-CEILING ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING FOR 1 OR 2-HOUR ASSEMBLY IS 2-1/2 INCH

SECTION A-A

- (64 MM) OR 2 INCH (51 MM), RESPECTIVELY. B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS,
- TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED. C. FURRING CHANNELS - (NOT SHOWN) - (AS REQUIRED) - RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH
- THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY. D. GYPSUM WALLBOARD\* - THICKNESS. TYPE. NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING FOR 1 OR 2-HOUR ASSEMBLY IS 2-1/2 INCH (64 MM) OR 2 INCH (51 MM),

SYSTEM NO. F-C-503

**≻.R-CEILING ASSEMBLY** - THE 1-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE

SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 6-7/8 INCH (175 MM).

U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING

A. STUDS - NOMINAL 2 X 8 INCH (51 X 203 MM) LUMBER OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS.

A. COPPER TUBING - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

B. COPPER PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

C. STEEL PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 6-7/8 INCH (175 MM).

MAXIMUM DIAMETER OF OPENING SHALL BE 6-7/8 INCH (175 MM).

NSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL

FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

C. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (1.2 M) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING

1 CHASE WALL - (NOT SHOWN, OPTIONAL) THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH A 1-HOUR FIRE-RATED SINGLE,

DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-

CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL

B. SOLE PLATE - NOMINAL 2 X 8 INCH (51 X 203 MM) LUMBER OR PARALLEL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED.

C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 8 INCH (51 X 203 MM) LUMBER PLATES OR TWO SETS OF

D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND

THROUGH PENETRANTS - ONE METALLIC TUBE OR PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. TUBE OR PIPE TO BE RIGIDLY

SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC TUBES OR PIPES MAY BE

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NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 6-7/8 INCH (175 MM).

A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS

B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES

THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING ASSEMBLY.

ANSI/UL1479 (ASTM E814)

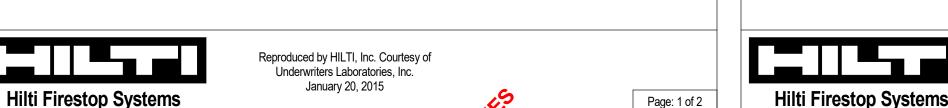
F RATING - 1-HOUR

T RATING - 1-HOUR

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CONSTRUCTION FEATURES:



CAN/ULC S115

F RATING - 1-HOUR

FT RATING - 1-HOUR

FH RATING - 1-HOUR

FTH RATING - 1-HOUR

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

FEATURES:

PARTITION DESIGN.

CONDUCTORS MAY BE USED:

CHLORIDE (PVC) JACKET.

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Page: 2 of 2

SYSTEM NO. F-C-5036

System No. F-C-3012

STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING

SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION

ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300

2. CHASE WALL - (OPTIONAL) - THE THROUGH PENETRANT (ITEM 3) SHALL BE ROUTED THROUGH A FIRE-RATED SINGLE, DOUBLE OR

B. **SOLE PLATE** - NOMINAL 2 X 6 INCH (51 X 152 MM) OR PARALLEL 2 X 4 INCH (51 BY 102 MM) LUMBER PLATES, TIGHTLY BUTTED.

MAXIMUM DIAMETER OF OPENING FOR 1 OR 2-HOUR RATED ASSEMBLY IS 2-1/2 INCH (64 MM) OR 2 INCH (51 MM), RESPECTIVELY. C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 6 INCH (51 X 152 MM) OR TWO SETS OF PARALLEL 2 X 4

INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING FOR 1 OR 2-HOUR RATED ASSEMBLY IS

D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND

3. CABLES - IN 1-HOUR FIRE-RATED ASSEMBLIES, AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN OPENING TO BE MAXIMUM 45

SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER

H. MAXIMUM 4/C WITH GROUND NO. 300 KCMIL (OR SMALLER) ALUMINUM SER CABLE WITH PVC INSULATION AND JACKET.

ASSEMBLIES, RESPECTIVELY, FOR CABLES 3A THROUGH 3G. THE T RATING IS 0 HOUR FOR CABLES 3H AND 3I.

THROUGH PENETRATING PRODUCTS CATEGORY. SEE THROUGH PENETRATING PRODUCT (XHLY) CATEGORY IN THE FIRE

RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. THE T RATING IS 1 AND 1-3/4 HOUR FOR 1 AND 2-HOUR RATED

4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS,

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS611A SEALANT OR FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL ALSO APPLIED WITHIN

PERCENT OF THE CROSS-SECTIONAL AREA OF THE OPENING (MAXIMUM 2 INCH (51 MM) DIAMETER BUNDLE). CABLES TO BE RIGIDLY

A. RG 59 COAXIAL CABLE WITH SINGLE COPPER CONDUCTOR, CELLULAR POLYETHYLENE CELLULAR FOAM INSULATION AND POLYVINYL

D. MAXIMUM 3/C WITH GROUND NO. 2/0 AWG ALUMINUM OR COPPER TYPE SER CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION.

I. THROUGH PENETRATING PRODUCT\* - ANY CABLES, METAL-CLAD CABLE+ OR ARMORED CABLE+ CURRENTLY CLASSIFIED UNDER THE

A. STUDS - NOMINAL 2 X 6 INCH (51 X 152 MM) OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS.

B. MAXIMUM 8/C NO. 22 AWG TELEPHONE CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING. C. MAXIMUM 2/C NO. 12 AWG CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKETING.

F. MAXIMUM 3/C NO. 12 AWG MC (BX) CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION.

G. MAXIMUM 1 INCH DIAMETER METAL CLAD TEK CABLE WITH PVC JACKET.

THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.

E. MAXIMUM 3/C WITH GROUND NO. 2/0 AWG TYPE NM CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION.

2-1/2 INCH (64 MM) OR 2 INCH (51 MM), RESPECTIVELY.

3. PIPE COVERING - NOMINAL 1-1/2 INCH (38 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF (56 KG/M3)) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING TAPE. TRAVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE SHALL BE MINIMUM 1/2 INCH (13 MM) AND MAXIMUM 1 INCH (25 MM). SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD I

4. FILL, VOID OR CAVITY MATERIALS\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF SEALANT APPLIED WITHIN ANNULAR SPACE, FLUSH WITH TOP SURFACE OF SUBFLOOR OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULAR SPACE, FLUSH WITH BOTTOM SURFACE OF GYPSUM WALLBOARD OR LOWER TOP PLATE. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

NDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.

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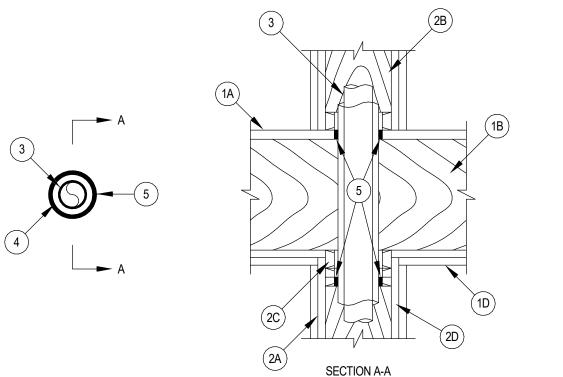
project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on any other projects, for additions to this project, or for

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DATE DESCRIPTION

F RATING - 1 AND 2-HOUR (SEE ITEM 1) F RATING - 1 AND 2-HOUR (SEE ITEM 1) T RATING - 1 AND 1-3/4 HOUR (SEE ITEM 1) FT RATING - 1 AND 1-3/4 HOUR (SEE ITEM 1) L RATING AT AMBIENT - 4 CFM/SQ FT (SEE ITEM 4) FH RATING - 1 AND 2-HOUR (SEE ITEM 1) L RATING AT 400 F - LESS THAN 1 CFM/SQ FT (SEE ITEM4) FTH RATING - 1 AND 1-3/4 HR (SEE ITEM 1) L RATING AT AMBIENT - 4 CFM/SQ FT (SEE ITEM 4) . CHASE WALL - (OPTIONAL) - THE THROUGH PENETRANT (ITEM 3) MAY BE ROUTED THROUGH A FIRE-RATED SINGLE. DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING L RATING AT 400 F - LESS THAN 1 CFM/SQ FT (SEE ITEM 4) ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION A. STUDS - NOMINAL 2 X 6 INCH (51 X 152 MM) OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS. B. SOLE PLATE - NOMINAL 2 X 6 INCH (51 X 152 MM) OR PARALLEL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED, MAXIMUM

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SYSTEM NO. F-C-5004

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. FLOOR-CEILING ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING ASSEMBLY. THE T RATING IS 1 AND 1-3/4 HOUR FOR 1 AND 2-HOUR RATED ASSEMBLIES. RESPECTIVELY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

- A. FLOORING SYSTEM LUMBER OR PLYWOOD SUBELOOR WITH FINISH FLOOR OF LUMBER. PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF FLOOR OPENING IS 3-1/2 INCH (89 MM). B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
- C. FURRING CHANNELS (NOT SHOWN) (AS REQUIRED) RESILIENT GALVANIZED STEEL FURRING INSTALLED IN ACCORDANCE WITH THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY.
- D. GYPSUM WALLBOARD\* THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF FLOOR OPENING IS 3-1/2 INCH (89 MM).

Hilti Firestop Systems

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SYSTEM NO. F-C-5037

CAN/ULC S115

Page: 1 of 2

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System No. F-C-5037

. **THROUGH PENETRANTS** - ONE METALLIC TUBE OR PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. TUBE OR PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC TUBES OR

3. TUBE INSULATION-PLASTICS+ - NOMINAL 3/4 INCH (19 MM) THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC)

FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. THE ANNULAR SPACE SHALL BE MINIMUM 3/8 INCH (10 MM) TO MAXIMUM 1 INCH

POSSIBLE. SEALANT SHALL BE INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE AND BOTTOM SURFACE OF CEILING

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

SEE PLASTICS+ (QMFZ2) CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS.

4. FILL, VOID OR CAVITY MATERIALS\* - SEALANT - FILL MATERIAL FORCED INTO ANNULAR SPACE TO FILL SPACE TO MAX EXTENT

ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL94

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

A. COPPER TUBING - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

B. COPPER PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

C. STEEL PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

System No. F-C-5004

C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 6 INCH (51 X 152 MM) OR TWO SETS OF PARALLEL 2 X 4 INCH

D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL

THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE

RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE

. PIPE COVERING\* - NOMINAL 1/2 INCH (13 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF (56 KG/M3)) GLASS FIBER

UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET, LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-

APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE

PRODUCT. A NOMINAL ANNULAR SPACE OF 1/8 INCH (3 MM) IS REQUIRED WITHIN THE FIRESTOP SYSTEM, SEE PIPE AND EQUIPMENT

COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD

FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. AN ANNULAR SPACE OF MINIMUM 1/8 INCH (3 MM) TO MAXIMUM 3/8 INCH (10 MM)

IS REQUIRED WITHIN THE FIRESTOP SYSTEM. SEE PLASTICS+ (QMFZ2) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR

NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND

COVERING - MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE

A. TUBE INSULATION - PLASTICS+ - NOMINAL 3/4 INCH (19 MM) THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC)

HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED. (NOTE: L RATINGS APPLY ONLY WHEN GLASS FIBER

5. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL ALSO APPLIED WITHIN

(51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 3-1/2 INCH (89 MM).

A. STEEL PIPE - NOMNAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

C. COPPER PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

THE ANNULUS. FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

B. COPPER TUBING - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

DIAMETER OF OPENING SHALL BE 3-1/2 INCH (89 MM).

Page: 2 of 2

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F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) Laboratories, Inc. to UL 1479 and T RATINGS - 1/4 AND 1-3/4 HOUR (SEE ITEM 1) | FT RATINGS - 1/4 AND 1-3/4 HOUR (SEE ITEM 1) FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1) FTH RATINGS - 1/4 AND 1-3/4 HOUR (SEE ITEM 1)

SECTION A-A

1. FLOOR-CEILING ASSEMBLY - THE 1 AND 2-HOUR FIR 💉 🔀 SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MALE AND IN THE MALE AND IN THE MALE AND IN THE UL FIRE RESISTANCE DIRECTORY. THE F AND FH F AND FH F ARE DEPENDENT ON THE HOURLY RATING OF THE FLOOR CEILING ASSEMBLY. THE T, FT AND FTH RATING ARE 1/4 HOUR FOR 1 RATED FLOOR CEILING ASSEMBLIES AND 1-3/4 HOUR FOR 2-HOUR RATED FLOOR CEILING ASSEMBLIES. THE GENERAL CONCENTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

A. FLOORING SYSTEM - LUMBER OR P' >> OD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FI. 🚫 JEILING DESIGN. DIAMETER OF OPENING SHALL BE 5-1/8 INCH (130 MM). B. WOOD JOISTS\* - NOMINAL 10' > 254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURA' ( ) MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

C. FURRING CHANNELS - (S)HOWN) - RESILIENT GALVANIZED STEEL FURRING INSTALLED PERPENDICULAR TO WOOD JOISTS BETWEEN FIRST ANT JND LAYERS OF WALLBOARD (ITEM 1D). FURRING CHANNELS SPACED MAXIMUM 24 INCH (610 MM). D. GYPSUM WALLBC. A NOMINAL 4 FOOT (1.2 M) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING

DESIGN. FIRST LAYER OF WALLBOARD NAILED TO WOOD JOISTS. SECOND LAYER OF WALLBOARD SCREW-ATTACHED TO FURRING CHANNELS. MAXIMUM DIAMETER OF CEILING OPENING IS 5-1/8 INCH (130 MM).

1.1 CHASE WALL - (NOT SHOWN, OPTIONAL) - THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION

A. STUDS - NOMINAL 2 X 6 INCH (51 X 152 MM) LUMBER OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS. B. SOLE PLATE - NOMINAL 2 X 6 INCH (51 X 152 MM) LUMBER OR PARALLEL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING SHALL BE 5-1/8 INCH.

C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 6 INCH (51 X 152 MM) LUMBER PLATES OR TWO SETS OF NOMINAL 2 X 4 IN. (51 X 102 MM) LUMBER PLATES TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 5-1/8 INCH (130 MM). D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND

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PIPES MAY BE USED:

OR LOWER TOP PLATE.

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REVISIONS/SUBMITTALS

DATE: July 17, 2024 A7.2.17

FIRE JOINTS - WOOD FLOOR CEILING

1. FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS

INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING

SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 5-1/4 INCH(133 MM).

B. WOOD JOIST\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

C. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (1.2 M) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 5-1/4 INCH (133 MM).
 1.1 CHASE WALL - (NOT SHOWN, OPTIONAL) - THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH A 1-HOUR FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE

CONSTRUCTION FEATURES:
A. STUDS - NOMINAL 2 X 6 INCH (51 X 152 MM) LUMBER OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS.
B. SOLE PLATE - NOMINAL 2 X 6 INCH (51 X 152 MM) LUMBER OR PARALLEL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED.

MAXIMUM DIAMETER OF OPENING SHALL BE 5-1/4 INCH.

C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 6 IN. (51 X 152 MM) LUMBER PLATES OR TWO SETS OF NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 5-1/4 INCH (133 MM).

D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND

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January 20, 2015

Page: 1 of 2

SYSTEM NO. F-C-80° Resolved by Undownties Laboratories, Inc. to UL 1479 and CANULC-S115

T RATING - 1-HOUR

T RATING - 1-HOUR

FT RATING - 1-HOUR

FTH RATING - 1-HOUR

THE RATING - 1-HOUR

THE RATING - 1-HOUR

THE RATING - 1-HOUR

THE RATING - 1-HOUR

20

20

3

SYSTEM TESTED WITH A PRESSURE DIFFERENTIAL OF 2.5 PA BETWEEN THE EXPOSED AND THE UNEXPOSED SURFACES WITH THE HIGHER

SYSTEM TESTED WITH A PRESSURE DIFFERENTIAL OF 2.5 PA BETWEEN THE EXPOSED AND THE UNEXPOSED SURFACES WITH THE HIGHER PRESSURE ON THE EXPOSED SIDE.

1. FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING

MIXTURE\* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 5 INCH (127 MM).

B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

C. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (122 CM) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. GYPSUM WALLBOARD SECURED TO WOOD JOISTS OR FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL

FLOOR-CEILING DESIGN.

1A. CHASE WALL - (OPTIONAL, NOT SHOWN) - THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH A 1-HOUR FIRE RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL. DEPTH OF CHASE WALL STUD CAVITY TO BE MINIMUM 1/2 INCH (13 MM) GREATER THAN DIAMETER OF OPENING CUT IN SOLE AND TOP PLATES TO ACCOMMODATE THE THROUGH PENETRANT (ITEM 2). THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - NOMINAL 2 X 4 INCH (51 X 102 MM), 2 X 6 INCH (51 X 152 MM) OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS.

B. **SOLE PLATE** - NOMINAL 2 X 4 INCH (51 X 102 MM), 2 X 6 INCH (51 X 152 MM) OR PARALLEL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES,

TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 5 INCH (127 MM).

C. TOP PLATE - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 4 INCH (51 X 102 MM), TWO NOMINAL 2 X 6 INCH, (51 X 102 MM) MM) OR SETS OF PARALLEL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 5

INCH (127 MM).

D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN.

Hilti Fireston Systems

PARTITION DESIGN.

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Page: 1 of 2

# SYSTEM NO. F-C-7013

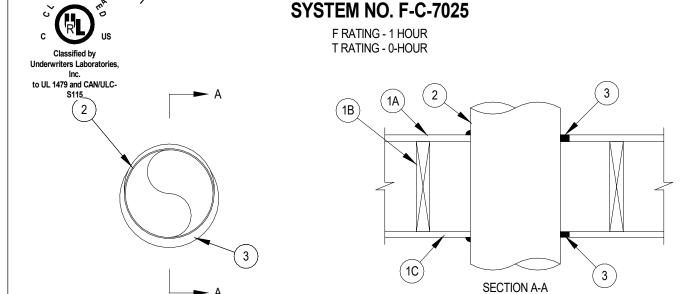
2. STEEL DUCT - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) NO. 28 GAUGE (OR HEAVIER) STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN DUCT AND PERIPHERY OF OPENING SHALL BE MINIMUM OF 1/4 INCH (6 MM) TO MAXIMUM 3/4 INCH (19 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY.

3. FILL VOID OR CAVITY MATERIAL S\* SEALANT, MINIMUM M 3/4 INCH (10 MM) THICKNESS OF SEALANT APPLIED WITHIN THE

3. FILL, VOID OR CAVITY MATERIALS\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULAR SPACE, FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF SEALANT APPLIED WITHIN ANNULAR SPACE, FLUSH WITH BOTTOM SURFACE OF GYPSUM WALLBOARD OR LOWER TOP PLATE.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.



FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE
CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE
RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:
 FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS
SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 11 INCH (279 MM).

B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
 C. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (1.22 M) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. GYPSUM WALLBOARD SECURED TO WOOD JOISTS OR FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.

GYPSUM WALLBOARD SECURED TO WOOD JOIST'S OR FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.

MAXIMUM DIAMETER OF OPENING SHALL BE 11 INCH (279 MM).

1A. CHASE WALL - (OPTIONAL, NOT SHOWN) - THE THROUGH PENETRANTS (ITEM 2) MAY BE ROUTED THROUGH A 1-HOUR FIRE RATED SINGLE,

DOUBLE OR STAGGERED WOOD STUD/GYPSUM WALLBOARD CHASE WALL. DEPTH OF CHASE WALL STUD CAVITY TO BE MINIMUM 1/2 INCH (13)

MM) GREATER THAN DIAMETER OF OPENING CUT IN SOLE AND TOP PLATES TO ACCOMMODATE THE THROUGH PENETRANT (ITEM 2). THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - NOMINAL 2 X 4 INCH (51 X 102 MM), 2 X 6 INCH (51 X 152 MM), 2 X 8 INCH (51 X 203 MM) OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM)

B. **SOLE PLATE** - NOMINAL 2 X 4 INCH (51 X 102 MM), 2 X 6 INCH (51 X 152 MM) OR 2 X 8 INCH (51 X 203 MM) LUMBER PLATES OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES TIGHTLY BUTTED TOGETHER. CIRCULAR OPENING TO BE CENTERED IN SOLE PLATE. SOLE PLATE TO BE MINIMUM 1 INCH (25MM) WIDER THAN DIAMETER OF OPENING. MAXIMUM DIAMETER OF OPENING IN SOLE

PLATE IS 11 INCH (279 MM).

C. **TOP PLATE** - THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOMINAL 2 X 4 INCH (51 X 102 MM), 2 X 6 INCH (51 X 152 MM) OR 2 X 8 INCH (51 X 203 MM) LUMBER PLATES OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES TIGHTLY BUTTED TOGETHER.

CIRCULAR OPENING TO BE CENTERED IN TOP PLATE. TOP PLATE TO BE MINIMUM 1 INCH (25MM) WIDER THAN DIAMETER OF OPENING.
MAXIMUM DIAMETER OF OPENING IN TOP PLATE IS 5-1/2 INCH (140 MM).

D. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.

2. STEEL DUCT - ONE STEEL DUCT TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE OPENING. THE ANNULAR SPACE BETWEEN THE STEEL DUCT AND THE PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (0 MM, POINT CONTACT) TO MAXIMUM 1 INCH (25 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY. THE FOLLOWING SIZES OF STEEL DUCTS MAY BE USED:

A. MAXIMUM 10 INCH (254 MM) DIAMETER BY MINIMUM 0.019 INCH (0.50 MM) THICK STEEL DUCT.

3. FILL, VOID OR CAVITY MATERIALS\*-SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SOLE PLATE. MINIMUM 5/8 INCH (16 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS FLUSH WITH THE BOTTOM SURFACE OF GYPSUM WALLBOARD OR LOWER TOP PLATE. A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF SEALANT TO BE APPLIED AT THE DUCT/SUBFLOORING OR SOLE PLATE INTERFACE AND THE DUCT/GYPSUM WALLBOARD OR TOP PLATE INTERFACE. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 606 FLEXIBLE FIRESTOP SEALANT

\* BEARING THE UL CLASSIFICATION MARK

B. MAXIMUM 4 INCH (102 MM) DIAMETER BY MINIMUM 0.016 INCH (0.40 MM) THICK STEEL DUCT.

Hilti Firestop Systems

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C Classified y
Underwriters Laboratories, Inc.
10 UL 1479 and CANULC-S115

F RATING - 1 HOUR
F RATING - 1 HOUR
F H RATING - 1

FLOOR-CEILING ASSEMBLY - THE 1-HOUR FIRE RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE
CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL
FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION FEATURES OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:

 A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\* AS
SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM AREA OF OPENING SHALL BE 143 INCHES SQUARED (923 CM²) WITH A
MAXIMUM DIMENSION OF 13 INCH (330MM).
 B. WOOD JOISTS\* - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES
OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

SECTION A-A

C. **GYPSUM WALLBOARD\*** - MINIMUM 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. GYPSUM WALLBOARD SECURED TO WOOD JOISTS OR FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM AREA OF OPENING SHALL BE 143 INCHES SQUARED (923 CM²) WITH A MAXIMUM DIMENSION OF 13 INCH (330MM).

2. **STEEL DUCT** - MAXIMUM 12 X 10 INCH (305 X 254 MM) NO. 28 GAUGE (OR HEAVIER) GALVANIZED STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE SPACE BETWEEN THE STEEL DUCT AND PERIPHERY OF

OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH (25 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH

3. FIRESTOP SYSTEM - MINIMUM 3/4 INCH (19 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS FLUSH WITH THE TOP SURFACE OF THE FLOOR. MINIMUM 5/8 INCH (16 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS FLUSH WITH THE BOTTOM SURFACE OF GYPSUM WALLBOARD CEILING.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 606 FLEXIBLE FIRESTOP SEALANT OR FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hipsirestop Systems

SIDES OF THE FLOOR-CEILING ASSEMBLY

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CONSTRUCTION



SYSTEM NO. F-C-8026

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January 20, 2015

2. THROUGH PENETRANTS - ONE OR MORE PIPES, CONDUITS, TUBING AND CABLES TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE OPENING. THE SPACE BETWEEN ANY PENETRANT, EXCEPT NON-METALLIC PIPES AND UNINSULATED METALLIC PIPES TO BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH (25 MM). THE SPACE BETWEEN ANY PENETRANTS AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1 INCH (25 MM). PIPES, CONDUITS, TUBING AND CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY.
A. METALLIC PENETRANTS - ONE OR MORE METALLIC PIPES, CONDUITS OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A1. STEEL PIPE - NOMINAL 3/4 INCH (19 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

A2. CONDUIT - NOMINAL 3/4 INCH (19 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR 3/4 INCH (19 MM) DIAMETER GALVANIZED STEEL CONDUIT.

A4. COPPER PIPE - NOMINAL 3/4 INCH (19 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

B. TUBE INSULATION - PLASTICS+ - NOMINAL 3/4 INCH (19 MM) THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC)
FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. TUBE INSULATION TO BE INSTALLED ON ONE OR MORE OF THE METALLIC PIPES
OR TUBES (ITEM 2A). SEE PLASTICS+ (QMFZ2) CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF
MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING

A3. COPPER TUBE - NOMINAL 3/4 INCH (19 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.

A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.

C. NON-METALLIC THROUGH PENETRANTS - ONE NON-METALLIC PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE SHALL BE SPACED A MINIMUM 1-1/2 INCH (38 MM) FROM NON-UNINSULATED METALLIC THROUGH PENETRANTS. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES MAY BE USED:

C1. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 1-1/4 INCH (32 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
 C2. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 1-1/4 INCH (32 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.

D. CABLES - MAXIMUM OF TWO 4 PAIR NO. 18 AWG (OR SMALLER) CABLE WITH PVC INSULATION AND JACKET MATERIALS.

3. FILL, VOID OR CAVITY MATERIALS\* - SEALANT - MINIMUM 3/4 INCH (19 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SOLE PLATE AND MINIMUM 5/8 INCH (16 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS FLUSH WITH THE BOTTOM SURFACE OF GYPSUM WALLBOARD OR TOP PLATE. A MINIMUM 1/4 INCH (6 MM) DIAMETER BEAD OF SEALANT APPLIED AT THE BUNDLE/SUBFLOORING OR SOLE PLATE INTERFACE AND THE BUNDLE/GYPSUM WALLBOARD OR TOP PLATE INTERFACE AT POINT CONTACT LOCATIONS.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE\_MAX INTUMESCENT SEALANT

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

+ BEARING THE UL RECOGNIZED COMPONENT MARK

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Page: 2 of 2

Page: 2 of 2

Contractor must verify all dimensions at project before proceeding with this work.

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DATE DESCRIPTION

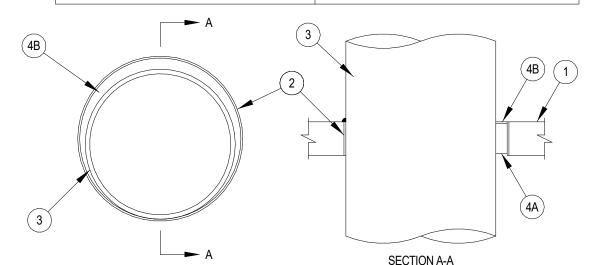
and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024 ORB #: 00-000

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FIRE JOINTS - WOOD FLOOR CEILING

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- 1. FLOOR OR WALL ASSEMBLY MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M³) CONCRETE. WALL MAY ALSO BE CONSTRÚCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM DIAMETER OF
- 2. METALLIC SLEEVE (OPTIONAL) NOMINAL 32 INCH (813 MM) DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES OR EXTENDING A MAXIMUM OF 3 INCH (76 MM) ABOVE FLOOR OR BEYOND BOTH SURFACES OF WALL.
- A. SHEET METAL SLEEVE (OPTIONAL) MAXIMUM 6 INCH (152 MM) DIAMETER, MINIMUM 26 GAUGE GALVANIZED STEEL PROVIDED WITH A 26 GAUGE GALVANIZED STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROXIMATELY MID-HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MINIMUM OF 2 INCH (51 MM) LARGER THAN THE SLEEVE DIAMETER THE SLEEVE IS TO BE CAST IN PLACE AND MAY EXTEND A MAXIMUM OF 4 INCH (102 MM) BELOW THE BOTTOM OF THE DECK AND A MAXIMUM OF 1 INCH (25 MM) ABOVE THE TOP SURFACE OF THE CONCRETE FLOOR.
- B. SHEET METAL SLEEVE (OPTIONAL) MAXIMUM 12 INCH (305 MM) DIAMETER, MINIMUM 24 GAUGE GALVANIZED STEEL PROVIDED WITH A 24 GAUGE GALVANIZED STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROXIMATELY MID-HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MINIMUM OF 2 INCH (51 MM) LARGER THAN THE SLEEVE DIAMETER. THE SLEEVE IS TO BE CAST IN PLACE AND MAY EXTEND A MAXIMUM OF 4 INCH (102 MM) BELOW THE BOTTOM OF THE DECK AND A MAXIMUM OF 1 INCH(25 MM) ABOVE THE TOP SURFACE OF THE CONCRETE FLOOR.
- THROUGH-PENETRANT ONE METALLIC PIPE, TUBE OR CONDUIT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PENETRANT AND PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1-7/8 INCH (48 MM). PENETRANT MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PENETRANTS MAY
- A. STEEL PIPE NOMINAL 30 INCH (762 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOMINAL 30 INCH (762 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- C. **COPPER PIPE** NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. D. COPPER TUBING - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- E. CONDUIT NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) STEEL CONDUIT. F. CONDUIT -NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT).



DOES NOT APPLY WHEN THE STEEL SLEEVE IS USED.

EXCEED 6 INCH (152 MM).

FOLLOWING TYPES AND SIZES OF NON-METALLIC PIPES MAY BE USED:

WITH A W RATING, THE NOMINAL DIAMETER OF PIPE SHALL NOT EXCEED 6 INCH (152 MM).

USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

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SYSTEM NO. C-AJ-2

F RATINGS - 2 AND 3-HOUR (SAC LM 3)

T RATINGS - 0, 2 AND 3-HOUR (SASSEMENT 2 AND 3)

W RATING - CLASS 1 (SEF 2, 3 AND 4)

L RATING AT AMBIENT - LESS T' CFM/SQ FT (SEE ITEM 4) L RATING AT 400 F - LESS TO CFM/SQ FT (SEE ITEM 4)

FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR

2. STEEL SLEEVE - (OPTIONAL) - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE CAST OR

GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES A MAXIMUM OF 3 INCH (76 MM) ABOVE THE FLOOR.

IF THE STEEL SLEEVE EXTENDS ABOVE THE FLOOR, THE T RATING OF THE FIRESTOP SYSTEM IS 0-HOUR AND A MINIMUM 1/2 INCH (13 MM)

ANNULAR SPACE IS REQUIRED BETWEEN THE THROUGH PENETRANT (ITEM 3) AND THE PERIPHERY OF THE OPENING. THE W RATING

FIRESTOP SYSTEM. FOR MAXIMUM 6 INCH (152 MM) DIAMETER PIPES, THE ANNULAR SPACE BETWEEN THE PIPE AND THE PERIPHERY OF

OPENING SHALL BE MINIMUM 0 INCH (0 MM, POINT CONTACT) TO MAXIMUM 1/2 INCH (13 MM). FOR NOMINAL 8 INCH (203 MM) AND 10 INCH (

254 MM) DIAMETER PIPES, THE ANNULAR SPACE BETWEEN THE PIPE AND THE PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (0 MM.

RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. FOR SYSTEMS WITH A W RATING, THE MAXIMUM ANNULAR SPACE

CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. FOR SYSTEMS

B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC PIPE FOR USE

IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. FOR SYSTEMS WITH A W RATING, THE NOMINAL DIAMETER OF PIPE SHALL NOT

C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID-CORE OR

D. FLAME RETARDANT POLYPROPYLENE (FRPP) PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR

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January 27, 2015

CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.

POINT CONTACT) TO MAXIMUM 1-1/4 INCH (32 MM). IF THE STEEL SLEEVE EXTENDS ABOVE THE FLOOR (ITEM 2), A MINIMUM 1/2 INCH (13

MM) ANNULAR SPACE IS REQUIRED BETWEEN THE THROUGH PENETRANT (ITEM 3) AND THE PERIPHERY OF THE OPENING. PIPE TO BE

A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID CORE OR CELLULAR

IS 1/2 INCH (13 MM). THE T RATINGS ARE DEPENDENT ON THE SIZE AND/OR TYPE OF PIPE AS SHOWN IN THE TABLE BELOW. THE

OPENING IS 12 INCH (305 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF

B. THROUGH PENETRANTS - ONE NON-METALLIC PIPE TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE

1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM DIAMETER OF

SECTION A-A

Page: 1 of 2

Page: 1 of 2

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SYSTEM NO. C-AJ-1226

A. PACKING MATERIAL - MINIMUM 4 INCH (102 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M³) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR

B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1/4 INCH (6 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

OR SLEEVE OR FROM BOTH SURFACES OF WALL OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF

ANNULUS. FLUSH WITH TOP SURFACE OF FLOOR OR SLEEVE OR WITH BOTH SURFACES OF WALL OR SLEEVE. AT THE POINT OR

CONTINUOUS CONTACT LOCATIONS BETWEEN PENETRANT AND CONCRETE OR SLEEVE, A MINIMUM 1/4 INCH (6 MM) DIAMETER

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE OR SLEEVE/ PIPE PENETRANT INTERFACE ON THE TOP SURFACE

4. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

OF FLOOR AND ON BOTH SURFACES OF WALL.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

PIPE TYPE	NOMINAL PIPE DIAMETER, INCH (MM)	F RATING HOUR
PVC, CPVC	Greater than 6 (152)	2
PVC, CPVC, ABS, FRPP	6 (152) or smaller	3
PIPE TYPE	NOMINAL PIPE DIAMETER, INCH (MM)	T RATING HOUR
PVC, CPVC, ABS, FRPP	1-1/2, 2, 3 (38, 51, 76)	2
PVC, CPVC, ABS, FRPP	4 (102)	;
PVC, CPVC, ABS+, FRPP	6 (152)	3
PVC, CPVC	Greater than 6 (152)	(
ABS++	6 (152)	(

4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS. FLUSH WITH TOP OR BOTTOM SURFACE OF FLOOR OR BOTH SURFACES OF WALL. SEALANT IS OPTIONAL FOR PIPES HAVING A MAXIMUM DIAMETER OF 6 INCH (152 MM) IN UNSLEEVED OPENINGS. FOR SYSTEMS WITH W RATING AND/OR L RATING, MINIMUM 1/2 INCH (13 MM) THICKNESS OF CP 601S, CFS-S SIL GG, CFS-S SIL SL (FLOORS ONLY) OR CP 604 SEALANT SHALL BE APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP OR BOTTOM SURFACE OF FLOOR. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT, FS-ONE MAX INTUMESCENT SEALANT, CP 601S SEALANT, CFS-S SIL GG, CFS-S SIL SL (FLOORS ONLY) OR CP 604 SEALANT A. PACKING MATERIAL - (NOT SHOWN) - MINIMUM 1/2 INCH (13 MM) THICKNESS OF 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION

FIRMLY PACKED INTO ANNULAR SPACE AND RECESSED FROM THE TOP SURFACE OF FLOOR TO ACCOMMODATE THE REQUIRED

- THICKNESS OF FILL MATERIAL. REQUIRED ONLY WHEN CP 604 SEALANT IS USED. 5. FIRESTOP DEVICE\* - FIRESTOP COLLAR - FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. COLLAR TO BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO UNDERSIDE OF FLOOR OR BOTH SIDES OF WALL USING THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. MINIMUM TWO ANCHOR HOOKS FOR NOMINAL 1-1/2 AND 2 INCH (38 AND 51 MM) DIAMETER PIPES. MINIMUM THREE ANCHOR HOOKS REQUIRED FOR NOMINAL 3 AND 4 INCH (76 AND 102 MM) DIAMETER PIPES. MINIMUM FOUR ANCHOR HOOKS REQUIRED FOR NOMINAL 6 INCH (152 MM) DIAMETER PIPES. MINIMUM TEN ANCHOR HOOKS REQUIRED FOR NOMINAL 8 INCH (203 MM) DIAMETER PIPES. MINIMUM TWELVE ANCHOR HOOKS REQUIRED FOR NOMINAL 10 INCH (254 MM) DIAMETER PIPES. THE ANCHOR HOOKS ARE TO BE SECURED WITH MINIMUM 1/4 INCH (6 MM) DIAMETER BY MINIMUM 1-1/4 INCH (32 MM) LONG STEEL EXPANSION BOLTS OR MINIMUM 0.145 INCH (3.7 MM) DIAMETER BY 1-1/4 INCH (32 MM) LONG POWDER ACTUATED FASTENERS UTILIZING A 1-7/16 INCH (37 MM) DIAMETER BY 1/16 INCH (1.6 MM) THICK STEEL WASHER. AS ALTERNATES TO THE ANCHORS SPECIFIED ABOVE, HILTI 1/4 INCH (6 MM) DIAMETER BY 1-1/4 INCH (32 MM) LONG KWIK-CON II+ CONCRETE SCREW ANCHOR, HILTI 1/4 INCH (6 MM) DIAMETER BY 1-3/4 INCH (45 MM) LONG KWIK-BOLT 3 STEEL EXPANSION ANCHOR OR HILTI X-DNI 27 P8 S15 POWDER ACTUATED FLOOR PIN WITH INTEGRAL NOMINAL 9/16 INCH (15 MM) DIAM WASHER MAY BE USED. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 643N 50/1.5", CP 643N 63/2", CP 643N 90/3", CP 643N 110/4", CP 643 160/6",
- INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti F	irestop Svstem	S

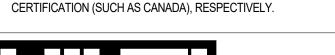
CP 644 200/8" OR CP 644 250/10" FIRESTOP COLLAR

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SYSTEM NO. C-AJ-1513 ANSI/UL1479 (ASTM E814) CAN/ULC S115 Classified by Underwriters Laboratories, F RATING - 2-HOUR F RATING - 2-HOUR to UL 1479 and CAN/ULC-S115 T RATING - 0-HOUR FT RATING - 0-HOUR FH RATING - 2-HOUR FTH RATING - 0-HOUR **─** A SECTION A-A

. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE FLOOR. MINIMUM 5 INCH(127 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM SIZE OF OPENING IS 8 INCH (203 MM) BY 30 INCH (763 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR

- NAMES OF MANUFACTURERS. THROUGH PENETRANTS - ONE OR MORE METALLIC PENETRANTS TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE TOTAL NUMBER OF PENETRANTS IS DEPENDENT ON THE SIZE OF THE OPENING AND SIZES OF PENETRANTS. THE ANNULAR SPACE BETWEEN THE PENETRANTS AND PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT). THE ANNULAR SPACE BETWEEN NOMINAL 2 INCH (51 MM) DIAMETER (AND SMALLER) PENETRANTS SHALL BE A MINIMUM 0 INCH (POINT CONTACT). THE ANNULAR SPACE BETWEEN PENETRANTS GREATER THAN NOMINAL 2 INCH (51 MM) DIAMETER SHALL BE A MINIMUM 1/2 INCH (13 MM). A MAXIMUM ANNULAR SPACE IN THE SYSTEM SHALL BE 12 INCH (305 MM). PENETRANTS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF PENETRANTS MAY BE USED:
- A. CONDUIT NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR RIGID STEEL CONDUIT B. THROUGH PENETRATING PRODUCT\* - FLEXIBLE METAL PIPING - THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE
- 1. NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
- 2. NOMINAL 1 INCH (25 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. GASTITE, DIV OF TITEFLEX
- 3. NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. WARD MFG LLC FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
- A. PACKING MATERIAL MINIMUM 4 INCH (102 MM) THICKNESS OF 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION TIGHTLY PACKED INTO THE OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
- B. FILL, VOID OR CAVITY MATERIAL SEALANT\* MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS FLUSH WITH THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT. INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL



F RATING - 2-HOUR

T RATINGS - 0 AND 1/2 HOUR (SEE ITEM 2)

Hilti Firestop Systems

Classified by Underwriters Laboratories, Inc. to UL 1479 and

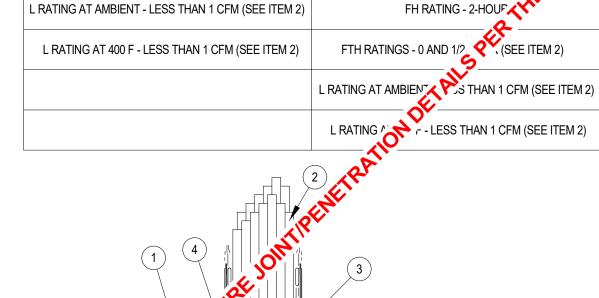
Page: 2 of 2

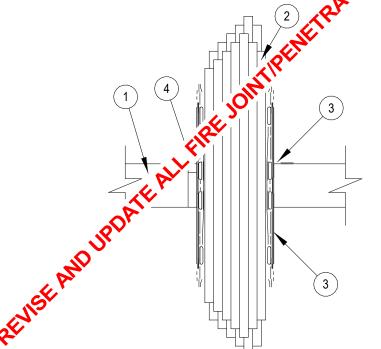
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SYSTEM NO. C-AJ-3283 ANSI/UL1479 (ASTM E814) CAN/ULC S115

F RATING - 2-HOUR

FT RATINGS - 0 AND 1/2 HOUR (SEE ITF





. FLOOR OR WALL ASSEMBLY - MINIMUM 2-1/2 INCH (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. OPENING IN FLOOR OR WALL TO BE MAXIMUM 3 INCH (76 MM) DIAMETER FOR 2 INCH DEVICE AND MAXIMUM 5 INCH (127 MM) DIAMETER FOR 4 INCH DEVICE. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. 1A. FLOOR ASSEMBLY - (NOT SHOWN) - AS AN ALTERNATE TO ITEM 1, FIRE-RATED UNPROTECTED CONCRETE AND STEEL FLOOR ASSEMBLY MAY BE USED. FLOOR ASSEMBLY TO BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL D900 SERIES FLOOR-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING

A. CONCRETE - MINIMUM 2-1/2 INCH (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3)

B. STEEL FLOOR AND FORM UNITS - COMPOSITE OR NONCOMPOSITE MAXIMUM 3 INCH (76 MM) DEEP FLUTED GALVANIZED UNITS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. OPENING IN FLOOR OR WALL TO BE MAXIMUM 3 INCH (76 MM) DIAMETER FOR 2 INCH DEVICE AND MAXIMUM 5 INCH (127 MM) DIAMETER FOR 4 INCH DEVICE.



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CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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REVISIONS/SUBMITTALS DATE DESCRIPTION

City, state

World HQ@ORBArch.com



SYSTEM NO. C-AJ-3283

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January 09, 2015

System No. C-AJ-2167 F Rating -- 2 Hr

I. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR

1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. FLOOR MAY ALSO BE

CONSTRUCTED OF ANY MINIMUM 6 INCH (152 MM) THICK UL CLASSIFIED HOLLOW CORE PRECAST CONCRETE UNITS\* HAVING A MINIMUM 2

INCH (51 MM) CONCRETE THICKNESS BELOW THE CORE. MAXIMUM DIAMETER OF OPENING IS 3 INCH (76 MM). SEE CONCRETE BLOCKS

SYSTEM, ANNULAR SPACE BETWEEN PIPE AND EDGE OF OPENING TO BE MINIMUM 0 INCH (POINT CONTACT) AND MAXIMUM 5/8 INCH (16

A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC

B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN

FLUSH WITH BOTTOM SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. AT POINT CONTACT LOCATION, MINIMUM 1/2 INCH (13 MM)

DIAMETER BEAD OF SEALANT APPLIED AT PIPE/CONCRETE INTERFACE ON BOTTOM SURFACE OF FLOOR OR BOTH SURFACES OF WALL.

. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 2 INCH (51 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS,

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

(CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

THROUGH PENETRANTS - ONE NON-METALLIC PIPE TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP

MM). PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NON-

PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

Classified by Underwriters Laboratories

METALLIC PIPES MAY BE USED.

CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

. CABLES - WITHIN THE LOADING AREA FOR THE FIRESTOP DEVICE, THE CABLES MAY REPRESENT A 0 TO 100 PERCENT VISUAL FILL. CABLES TO BE TIGHTLY BUNDLED WITHIN THE DEVICE AND RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY, ANY COMBINATION OF THE FOLLOWING TYPES OF CABLES MAY BE USED:

A. MAXIMUM 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION. B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.

D. MAXIMUM 4 PR NO. 22 AWG CAT 6 COMPUTER CABLES. E. MAXIMUM RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.

F. FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION HAVING A MAX DIAM G. MAXIMUM 20/C NO. 22 AWG SHIELDED PRINTER CABLE WITH PVC JACKET.

H. THROUGH-PENETRATING PRODUCT\* - TWO COPPER CONDUCTORS NO. 18 AWG (OR SMALLER) POWER OR NON POWER LIMITED FIRE ALARM CABLE WITH OR WITHOUT A JACKET UNDER A METAL ARMOR. AFC CABLE SYSTEMS INC . MAXIMUM 1/4 INCH (6 MM) DIAMETER S-VIDEO CABLE CONSISTING OF 2 MAXIMUM 24 AWG 75 OHM COAX OR TWISTED PAIR CABLE WITH PE INSULATION AND PVC JACKET.

J. THROUGH PENETRATING PRODUCT\* - ANY CABLES, METAL-CLAD CABLE+ OR ARMORED CABLE+ CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY. SEE THROUGH PENETRATING PRODUCT (XHLY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. K. MAXIMUM 3/C NO 12 AWG MC CABLE.

THE T, FT AND FTH RATINGS FOR THE FIRESTOP SYSTEM ARE 1/2 HOUR EXCEPT THAT WHEN CABLE TYPES 2J OR 2K ARE USED, THE T, FT AND FTH RATINGS ARE 0 HOUR.

SEE TABLE BELOW FOR L RATINGS. MAXIMUM L RATING, CFM/SQ FT L RATING, CFM CABLE 0% THAN 1 THAN 1

ANY CABLES (ITEM 2) IN ANY

100%

FIRESTOP DEVICE\* - FIRESTOP DEVICE CONSISTS OF A CORRUGATED STEEL TUBE WITH AN INNER PLASTIC HOUSING, INTUMESCENT MATERIAL RINGS, TIGHTLY TWISTED INNER FABRIC SMOKE SEAL, FLANGES AND GASKET MATERIAL (NOT SHOWN). FIRESTOP DEVICE TO BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. DEVICE SLID INTO FLOOR OR WALL SUCH THAT ENDS PROJECT AN EQUAL DISTANCE FROM THE APPROXIMATE CENTERLINE OF THE ASSEMBLY. THE ANNULAR SPACE BETWEEN THE DEVICE AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT). DEVICE PROVIDED WITH FLANGE(S) THAT ARE SPUN CLOCKWISE ONTO DEVICE THREADS, OVER GASKET MATERIAL BUTTING TIGHTLY TO TOP SIDE OF FLOOR OR BOTH SIDES OF WALL. IN FLOORS, WHEN FS-ONE SEALANT IS USED AND INSTALLED FLUSH WITH BOTTOM OF FLOOR, DEVICE FLANGE SHALL BE THREADED TIGHTLY TO BOTTOM SIDE OF FLOOR. IN FLOORS, DEVICE FLANGE TO BE SECURED TO FLOOR WITH MINIMUM TWO 1-1/4 INCH (32 MM) LONG STEEL MASONRY SCREWS OR ANCHORS. AS AN ALTERNATE TO GASKET MATERIAL, SEALANT (ITEM 4) MAY BE USED. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 653 AND CP 653 BA 2 INCH SPEED SLEEVE, CP 653 AND CP 653 BA 4 INCH SPEED

LESS LESS

THAN 1 THAN 1

4. FILL, VOID OR CAVITY MATERIAL\* - AS AN ALTERNATE TO GASKET MATERIAL (SEE ITEM 3), MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS BETWEEN FIRESTOP DEVICE AND PERIPHERY OF OPENING, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SIDES OF WALL. AS AN OPTION, WHEN FS-ONE SEALANT IS USED, THE FILL MATERIAL CAN BE INSTALLED FLUSH WITH BOTTOM OF FLOOR. FOR L RATINGS WHEN SEALANT IS USED, AN ADDITIONAL 1/4 INCH (6 MM) BEAD OF FILL MATERIAL IS APPLIED AT THE DEVICE/FLOOR OR DEVICE/WALL INTERFACE ON TOP OR BOTTOM SIDE OF FLOOR OR BOTH SIDES OF WALL ASSEMBLY PRIOR TO INSTALLING FLANGES. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 618 FIRESTOP PUTTY, FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

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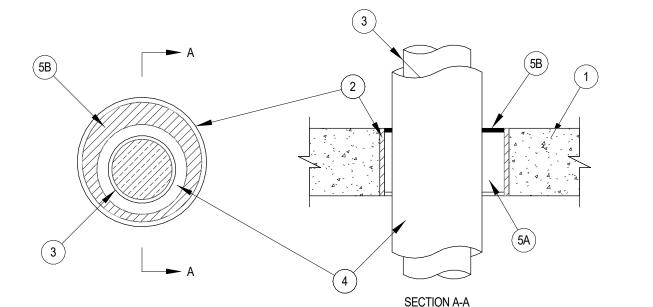
written description on request.

and the owner or its designated agent shall provide this

DATE: July 17, 2024

A7.2.20

FIRE JOINTS - FLOORS AND WALLS



	5A
SECTION A	<u>-A</u>

CAN/ULC S115

F RATING - 2-HOUR

FT RATING - 0-HOUR

FH RATING - 2-HOUR

FTH RATING - 0-HOUR

SECTION A-A

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January 14, 2015

SYSTEM NO. C-AJ-67

FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR

1600-2400 KG/M3) CONCRETE FLOOR OR WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL LISTED CONCRETE BLOCKS\*. MAXIMUM

AREA OF OPENING IS 240 INCH SQUARE (1548 MM2) WITH MAXIMUM DIMENSION OF 30 INCH (762 MM). SEE CONCRETE BLOCKS (CAZT) IN

. BUSWAY - ONE NOMINAL 23 INCH (584 MM) WIDE (OR SMALLER) BY 4-1/2 INCH (114 MM) DEEP, OR MAXIMUM TWO NOMINAL 11-1/4 INCH (286

MM) WIDE (OR SMALLER) BY 4-1/2 INCH (114 MM) DEEP, "I" SHAPED ALUMINUM ENCLOSURE CONTAINING FACTORY MOUNTED ALUMINUM

BETWEEN BUSWAYS AND PERIPHERY OF OPENING SHALL BE MINIMUM 1/4 INCH (6 MM) TO MAXIMUM 5-3/4 INCH (146 MM). BUSWAYS TO BE

RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR AND WALL ASSEMBLY. THE BUSWAYS SHALL BEAR THE UL LISTING MARK AND SHALL BE I

A. FILL, VOID OR CAVITY MATERIAL\* - FIRE BLOCKS INSTALLED WITH 5 INCH (127 MM) DIMENSION PASSED THROUGH THE OPENING AND

CENTERED WITHIN THE THICKNESS OF THE FLOOR OR WALL. IN CONCRETE BLOCK WALLS, FIRE BLOCK TO FILL ENTIRE THICKNESS OF

WALL OPENING UNLESS WALL IS SOLID FILLED. BLOCKS TO BE FIRMLY PACKED AND COMPLETELY FILL THE ENTIRE AREA OF OPENING

B. FILL, VOID OR CAVITY MATERIAL\* - (NOT SHOWN) - FILL MATERIAL TO BE APPLIED TO MAXIMUM EXTENT POSSIBLE WITHIN THE OPENING

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April 26, 2017

BETWEEN AND AROUND BUSWAYS AND FIRE BLOCK TO FILL ANY VOIDS. THIS FILL MATERIAL IS TO BE APPLIED FROM THE TOP

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE INTUMESCENT SEALANT OR FS-ONE MAX INTUMESCENT SEALANT.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

BARS RATED FOR 600 V, 4000A OR COPPER BARS RATED FOR 600 V, 5000 A. WHEN TWO BUSWAYS ARE INSTALLED, THEY SHALL BE

PLACED END TO END AND THE ANNULAR SPACE BETWEEN BUSWAYS SHALL BE MINIMUM 1/2 INCH (13 MM). THE ANNULAR SPACE

ANSI/UL1479 (ASTM E814)

F RATING - 2-HOUR

T RATING - 0-HOUR

THE UL FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

NSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA NO. 70.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CFS-BL FIRESTOP BLOCK

SURFACE OF THE FLOOR ASSEMBLY OR BOTH SURFACES OF WALL ASSEMBLY.

. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING

BETWEEN AND AROUND BUSWAYS.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM DIAMETER OF OPENING IS 18 INCH (457 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF

2. METALLIC SLEEVE - (OPTIONAL) - NOMINAL 18 INCH (457 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES OR EXTENDING A MAXIMUM OF 3 INCH (76 MM) ABOVE FLOOR OR BEYOND BOTH SURFACES OF WALL.

3. THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING

A. STEEL PIPE - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE. B. COPPER PIPE - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER TUBING. C. COPPER TUBING - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

 TUBE INSULATION - PLASTICS+ - MINIMUM 1/2 INCH(13 MM) TO MAXIMUM 3/4 INCH (19 MM) THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. NOMINAL 1 INCH (25 MM) THICK AB/PVC FLEXIBLE FOAM INSULATION MAY BE USED FOR MAXIMUM 2-HOUR F AND FH RATINGS WHEN MAXIMUM 3 INCH (76 MM) DIAMETER PIPE OR TUBING IS USED. THE ANNULAR SPACE SHALL BE MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 12 INCH (305 MM). WHEN MAXIMUM ANNULAR SPACE EXCEEDS 1-1/2 INCH (38 MM) THE F AND FH RATINGS ARE 2-HOUR. SEE PLASTICS+ (QMFZ2) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED. 5. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL - MINIMUM 4 INCH (102 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) 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 FILL MATERIAL. B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1/4 INCH (6 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. WHEN MAXIMUM ANNULAR SPACE EXCEEDS 1-1/2 INCH (38 MM) THE MINIMUM THICKNESS OF FILL MATERIAL IS 1/2 INCH (13 MM). HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

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Laboratories, Inc. to UL 1479 and

NAMES OF MANUFACTURERS.

INTUMESCENT SEALANT

REQUIRED THICKNESS OF FILL MATERIAL.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Page: 1 of 2

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CAN/ULC S115

F RATING - 3-HOUR

FT RATING - 1-HOUR

FH RATING - 3-HOUR

FTH RATING - 1-HOUR

SECTION A-A

SYSTEM NO. C-AJ-7051

. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR

1600-2400 KG/M3) CONCRETE FLOOR OR MINIMUM 5-1/2 INCH (140 MM) THICK LIGHTWEIGHT ON NORMAL WEIGHT CONCRETE WALL. WALL

MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM AREA OF OPENING IS 1024 INCH SQUARE (6606 CM²)

WITH A MAXIMUM DIMENSION OF 32 INCH (813 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR

2. STEEL DUCT - NOMINAL 30 X 30 INCH (762 X 762 MM) BY NO. 24 GAUGE (OR HEAVIER) GALVANIZED STEEL DUCT. ONE STEEL DUCT TO BE

POSITIONED WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MINIMUM 1/4 INCH (6 MM) TO MAXIMUM 1-3/4 INCH (44 MM).

A. PACKING MATERIALS - MINIMUM 3-1/2 INCH (89 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY

PACKED INTO OPENING AS A PERMANENT FORM BETWEEN THE BARE STEEL DUCT AND THE PERIPHERY OF THE OPENING. PACKING

MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE

B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1 INCH (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS,

I. STEEL RETAINING ANGLE - NOMINAL 2 X 2 INCH (51 X 51 MM) BY NO. 16 GAUGE (OR HEAVIER) STEEL ANGLES ATTACHED TO ALL FOUR SIDES

OF THE STEEL DUCT ON THE TOP SURFACE OR BOTH SURFACES OF THE WALL. THE ANGLES SHALL BE ATTACHED WITH NO. 8 (OR LARGER)

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STEEL SHEET METAL SCREWS SPACED MAXIMUM OF 1 INCH (25 MM) FROM EACH END AND A MAXIMUM OF 3 INCH (76 MM) ON CENTER.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 606 FLEXIBLE FIRESTOP SEALANT, FS-ONE SEALANT OR FS-ONE MAX

DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

ANSI/UL1479 (ASTM E814)

F RATING - 3-HOUR

T RATING - 1-HOUR

Page: 2 of 2

SYSTEM NO. C-AJ-5091 ANSI/UL1479 (ASTM E814) CAN/ULC S115 Classified by Underwriters Laboratories, F RATING - 2-HOUR F RATING - 2-HOUR to UL 1479 and CAN/ULC-T RATINGS - 0 AND 1-HOUR (SEE ITEMS 2 AND 4) FT RATINGS - 0 AND 1-HOUR (SEE ITEMS 2 AND 4) L RATING AT AMBIENT - 4 CFM/SQ FT FH RATING - 2-HOUR L RATING AT 400 F - LESS THAN 1 CFM/SQ FT FTH RATINGS - 0 AND 1-HOUR (SEE ITEMS 2 AND 4) L RATING AT AMBIENT - 4 CFM/SQ FT L RATING AT 400 F - LESS THAN 1 CFM/SQ FT

1. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M³) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM DIAMETER OF OPENING IS 29 INCH (737 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. 2. METALLIC SLEEVE - (OPTIONAL) - NOMINAL 30 INCH (762 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. FLUSH WITH FLOOR OR WALL SURFACES OR EXTENDING A MAXIMUM OF 3 INCH (76

MM) ABOVE FLOOR OR BEYOND BOTH SURFACES OF WALL. IF THE STEEL SLEEVE EXTENDS BEYOND THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL. THE T RATING OF THE FIRESTOP SYSTEM IS 0-HOUR. A. SHEET METAL SLEEVE - (OPTIONAL) - MAXIMUM 6 INCH (152 MM) DIAMETER, MINIMUM 26 GAUGE GALVANIZED STEEL PROVIDED WITH A 26 GAUGE GALVANIZED STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROXIMATELY MID- HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MINIMUM OF 2 INCH (51 MM) LARGER THAN THE SLEEVE DIAMETER. THE SLEEVE IS

SURFACE OF THE FLOOR. B. SHEET METAL SLEEVE - (OPTIONAL) - MAXIMUM 12 INCH (305 MM) DIAMETER, MINIMUM 24 GAUGE GALVANIZED STEEL PROVIDED WITH A 24 GAUGE GALVANIZED STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROXIMATELY MID- HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MINIMUM OF 2 INCH (51 MM) LARGER THAN THE SLEEVE DIAMETER. THE SLEEVE IS TO BE CAST-IN-PLACE FLUSH WITH BOTTOM SURFACE OF FLOOR AND MAY EXTEND A MAXIMUM OF 1 INCH (25 MM) ABOVE THE TOP

TO BE CAST-IN-PLACE FLUSH WITH BOTTOM SURFACE OF FLOOR AND MAY EXTEND A MAXIMUM OF 1 INCH (25 MM) ABOVE THE TOP

SYSTEM NO. C-AJ-7084

1. FLOOR OR WALL ASSEMBLY - MININ 🚫 📆 1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR

OPENING IS 21-3/4 INCH (552 M/) YE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF

. THROUGH PENETRANT ANALIZED STEEL DUCT TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP

SYSTEM. THE ANNUL XXX CE BETWEEN THE DUCT AND PERIPHERY OF OPENING SHALL BE 0 INCH (POINT CONTACT) AND MAXIMUM 1-1/2

A. SPIRAL WOUND HVAC DUCT - NOMINAL 20 INCH (508 MM) DIAMETER (OR SMALLER) NO. 24 MSG (OR HEAVIER) GALVANIZED STEEL SPIRAL

B. SHEET METAL DUCT - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) NO. 28 MSG (OR HEAVIER) GALVANIZED SHEET STEEL DUCT.

A. PACKING MATERIAL - MINIMUM 3-1/2 INCH (89 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY

PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR BOTH

B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1 INCH (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH

PERIPHERY OF OPENING, A MINIMUM 1/2 INCH (13 MM) DIAM BEAD OF SEALANT SHALL BE APPLIED AT THE CONCRETE/DUCT INTERFACE.

FIRESTOP SEALANT, CP606 FLEXIBLE FIRESTOP SEALANT, CP 604 SELF-LEVELING FIRESTOP SEALANT, CFS-S SIL GG SEALANT OR CFS-S

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT, FS-ONE MAX INTUMESCENT SEALANT, CP601S ELASTOMERIC

SIL SL SEALANT. (NOTE: CP 604 SELF-LEVELING FIRESTOP SEALANT AND CFS-S SIL SL SEALANT TO BE USED ON FLOOR ASSEMBLIES

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INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. AT THE POINT CONTACT LOCATION BETWEEN DUCT AND

1600-2400 KG/M3) CONCRETE. W/ CALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM DIAMETER OF

ANSI/UL1479 (ASTM E814)

F RATING - 2-HOUR

T RATING - 0-HOUR

INCH (38 MM). DUCT TO LE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.

. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL

Hilti Firestop Systems

SURFACE OF THE FLOOR.

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CAN/ULC S115

F RATING - 2-HOUR

FT RATING - 0-HOUR

FH RATING - 2-HOUR

FTH RATING - 0-HOUR

SYSTEM NO. C-AJ-5091

3. 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 FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:

A. STEEL PIPE - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. **COPPER PIPE** - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

ANNULAR SPACE SHALL BE MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 12 INCH (305 MM).

FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

D. COPPER TUBING - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. 1. PIPE COVERING - MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 2 INCH (51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF OR 56 KG/M³) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL-SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED. SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE EDGE OF THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 12 INCH (305 MM). WHEN THICKNESS OF PIPE COVERING IS LESS THAN 2 INCH (51 MM), THE T RATING FOR THE FIRESTOP SYSTEM IS 0-HOUR.

SEE PIPE EQUIPMENT COVERING - MATERIALS - (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED. A. PIPE COVERING - (NOT SHOWN) - AS AN ALTERNATE TO ITEM 4, MAXIMUM 2 INCH (51 MM) THICK CYLINDRICAL CALCIUM SILICATE (MINIMUM 14 PCF OR 224 KG/M³) UNITS SIZED TO THE OUTSIDE DIAMETER OF THE PIPE OR TUBE MAY BE USED. PIPE INSULATION SECURED WITH STAINLESS STEEL BANDS OR MINIMUM 18 AWG STAINLESS STEEL WIRE SPACED MAXIMUM 12 INCH (305 MM) ON CENTER THE

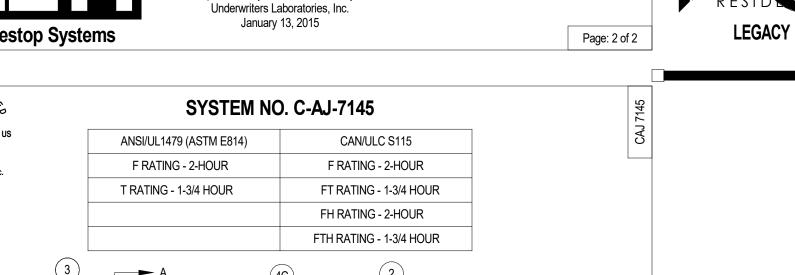
FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING: A. PACKING MATERIAL - MINIMUM 4 INCH (102 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M³) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS,

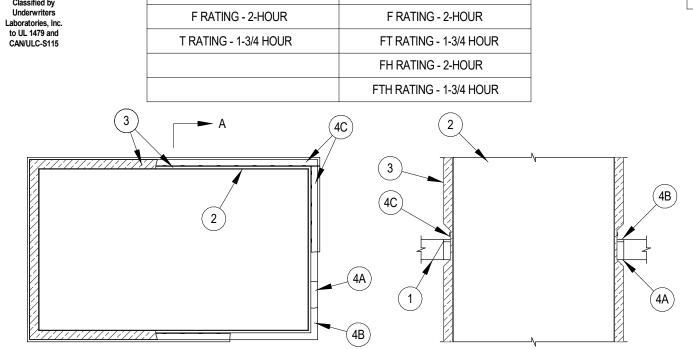
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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\_\_\_\_ A FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM AREA OF OPENING IS 17.8 FOOT SQUARE (1.65 M2) WITH MAXIMUM DIMENSION OF 64 INCH (1.6 M). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE

ONE DUCT TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN STEEL DUCT AND EDGES OF OPENING SHALL BE MINIMUM 2 INCH (51 MM) TO MAXIMUM 6 INCH (152 MM) WHEN MAXIMUM DUCT DIMENSION IS 28 INCH

MATERIAL (ITEM 4A). SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY BATT OR BLANKET MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD VALUE OF 25 OR LESS AND A SMOKE DEVELOPED VALUE OF 50 OR LESS MAY BE USED. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR AND BOTH SURFACES OF WALL.

C. **RETAINING ANGLES** - MINIMUM 2 X 2 INCH (51 X 51 MM) NO. 16 GAUGE (OR HEAVIER) GALVANIZED STEEL ANGLES. ANGLES ATTACHED TO ALL FOUR SIDES OF STEEL DUCT, THROUGH GLASS FIBER BLANKET INSULATION, ON TOP SURFACE OF FLOOR OR ON BOTH SURFACES OF WALL WITH NO. 10 (OR LARGER) STEEL SHEET METAL SCREWS SPACED 1 INCH (25 MM) FROM EACH END AND MAXIMUM

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FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. STEEL DUCT - MAXIMUM 60 X 36 INCH (1524 X 914 MM) STEEL DUCT. STEEL GAUGE OF DUCT SHALL CONFORM WITH SMACNA REQUIREMENTS.

(711 MM). OTHERWISE, MAXIMUM ANNULAR SPACE IS 2-1/2 INCH (64 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. BATTS AND BLANKETS\* - NOMINAL 2 INCH (51 MM) THICK LIGHT DENSITY (MINIMUM 3/4 PCF OR 12 KG/M3) GLASS FIBER BLANKET INSULATION JACKETED ON THE OUTSIDE WITH A FOIL-SCRIM-KRAFT FACING. LONGITUDINAL AND TRANSVERSE JOINTS SEALED WITH FOIL-SCRIM-KRAFT TAPE. NOMINAL ANNULAR SPACE BETWEEN INSULATED STEEL DUCT AND PERIPHERY OF OPENING TO BE POINT CONTACT TO MAXIMUM 1/2 INCH (13 MM) PRIOR TO INSTALLATION OF PACKING MATERIAL (ITEM 4A), WHEN MAXIMUM DUCT DIMENSION IS 28 INCH (711 MM), MAXIMUM ANNULAR SPACE BETWEEN INSULATED STEEL DUCT AND PERIPHERY OF OPENING IS 4 INCH (102 MM) PRIOR TO INSTALLATION OF PACKING

A. PACKING MATERIAL - MINIMUM 4 INCH (102 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO ANNULAR SPACE SUCH THAT GLASS FIBER BLANKET INSULATION ON STEEL DUCT IS COMPRESSED TO A MAXIMUM OVERALL THICKNESS OF 1/2 INCH (13 MM). PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR AND FROM BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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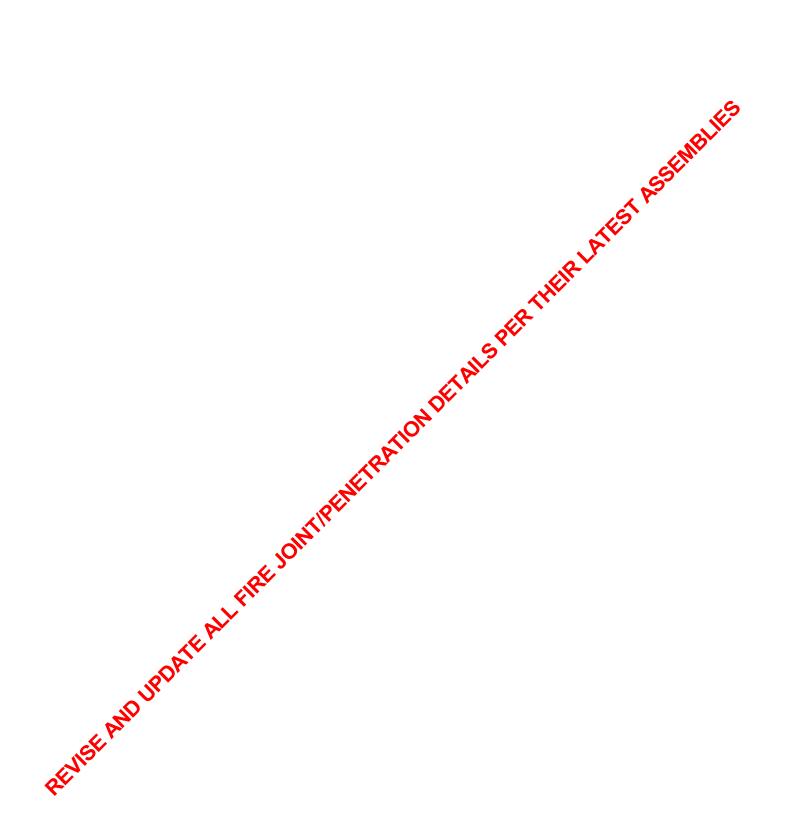
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FIRE JOINTS - FLOORS AND WALLS

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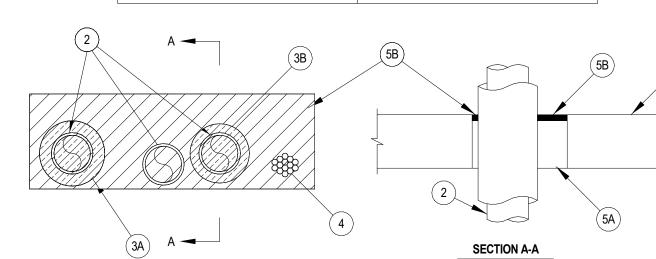
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SYSTEM NO. C-AJ-8099

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to UL 1479 and CAN/ULC
SYSTEM NO. C-AJ-8099

ANSI/UL1479 (ASTM E814)

F RATING - 3-HOUR



T RATINGS - 0 AND 3/4 HOUR (SEE ITEM 2) FT RATINGS - 0 AND 3/4 HOUR (SEE ITEM 2)

CAN/ULC S115

F RATING - 3-HOUR

FH RATING - 2 HOUR

FTH RATINGS - 0 AND 3/4 HOUR (SEE ITEM 2)

- 1. FLOOR OR WALL ASSEMBLY MINIMUM 4-1/2 INCH(114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE FLOOR OR MINIMUM 5 INCH (127 MM) REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. FLOOR MAY ALSO BE CONSTRUCTED OF ANY MINIMUM 6 INCH (152 MM) THICK UL CLASSIFIED HOLLOW CORE PRECAST CONCRETE UNITS\*. MAXIMUM AREA OF SQUARE, RECTANGULAR OR CIRCULAR OPENING IS 192 SQUARE INCH (1239 CM²) WITH MAXIMUM DIMENSION OF 24 INCH (61 CM). WHEN PRECAST CONCRETE UNIT FLOORS ARE USED, MAXIMUM AREA OF SQUARE, RECTANGULAR OR CIRCULAR OPENING IS 49 SQUARE INCH (316 CM²) WITH MAXIMUM DIMENSION OF 7 INCH (17.8 CM). SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 2. THROUGH-PENETRANT ONE OR MORE PIPES OR TUBES TO BE INSTALLED WITHIN THE OPENING. THE TOTAL NUMBER OF THROUGH-PENETRANTS IS DEPENDENT ON THE SIZE OF THE OPENING AND TYPES AND SIZES OF THE PENETRANTS. ANY COMBINATION OF THE PENETRANTS DESCRIBED BELOW MAY BE USED PROVIDED THAT THE FOLLOWING PARAMETERS RELATIVE TO THE ANNULAR SPACES AND THE SPACINGS BETWEEN THE PIPES ARE MAINTAINED. THE SEPARATION BETWEEN CABLE BUNDLE, TUBES AND INSULATED TUBES SHALL BE A MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 3-1/8 INCH (79 MM). THE ANNULAR SPACE BETWEEN PENETRANTS AND THE PERIPHERY OF OPENING SHALL BE A MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 5 INCH 127 MM). PIPES OR TUBES TO BE RIGIDLY
- SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBES MAY BE USED.
- A. COPPER TUBING NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.

  B. COPPER PIPE NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- C. STEEL PIPE NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

  D. IRON PIPE NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- E. CONDUIT NOMINAL 3 INCH (76 MM) DIAMETER (OR SMALLER) ELECTRIC METALLIC TUBING (EMT) OR STEEL CONDUIT.

  F. FLEXIBLE STEEL CONDUIT + NOMINAL 1 INCH (25 MM) DIAMETER (OR SMALLER) FLEXIBLE STEEL CONDUIT. SEE FLEXIBLE METAL
- CONDUIT (DXUZ) CATEGORY IN THE ELECTRICAL CONSTRUCTION MATERIAL DIRECTORY FOR NAMES OF MANUFACTURERS.

  G. THROUGH PENETRATING PRODUCT\* FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY
- G. THROUGH PENETRATING PRODUCT\* FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE M BE USED:



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January 15, 2015

Page: 1 of 2

### SYSTEM NO. C-AJ-8099

- NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
   OMEGA FLEX INC
   NOMINAL 1 INCH (25 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR
- 2.) NOMINAL 1 INCH (25 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
   GASTITE, DIV OF TITEFLEX
   3.) NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR
- MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

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  THE HOURLY T RATING IS 3/4-HOUR WHEN A PIPE OR TUBE WITH FIBER-GLASS INSULATION IS USED, OR 0-HOUR WHEN A PIPE OR TUBE, A PIPE OR TUBE WITH AB/PVC INSULATION OR A CABLE BUNDLE IS USED. THE T RATING IS 0-HOUR WHEN METALLIC PENETRANTS WITHOUT PIPE INSULATION ARE USED.
- 3. PIPE INSULATION (OPTIONAL) THE FOLLOWING TYPES OF PIPE INSULATION MAY BE USED WITH METALLIC PENETRANTS (ITEMS 2A, 2B, 2C, 2D AND 2F):

  A. PIPE COVERING\* NOMINAL 1 INCH (25 MM) THICK (OR THINNER) HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE
- WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICA TION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

  B. TUBE INSULATION PLASTICS+++ NOMINAL 3/4 INCH (19 MM) THICK (OR THINNER) ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING.
- SEE PLASTICS+++ (QMFZ2) CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.

  4. CABLES MAXIMUM 2 INCH (51 MM) DIAMETER TIGHT BUNDLE OF CABLES INSTALLED WITHIN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE SPACE BETWEEN THE CABLES AND PERIPHERY OF THE OPENING SHALL RANGE
- FROM MINIMUM 2 INCH (51 MM) TO MAXIMUM 4 INCH (102 MM). ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF METALLIC CONDUCTOR OF FIBER OPTIC CABLE MAY BE USED:

  A. MAXIMUM 500 KCMIL SINGLE COPPER CONNECTOR POWER CABLE WITH THERMOPLASTIC INSULATION AND POLYVINYL CHLORIDE

B. MAXIMUM 300 PAIR NO. 24 AWG COPPER CONDUCTOR TELECOMMUNICATION CABLES WITH PVC INSULATION AND JACKET

- C. MAXIMUM 7/C COPPER CONDUCTOR NO. 12 AWG MULTICONDUCTOR POWER AND CONTROL CABLES WITH PVC OR CROSS-LINKED POLYETHYLENE (XLPE) INSULATION AND PVC JACKET.
- D. MULTIPLE FIBER OPTICAL COMMUNICATION CABLES JACKETED WITH PVC AND HAVING A MAXIMUM OUTSIDE DIAMETER OF 1/2 INCH.

  E. MAXIMUM 3/C COPPER CONDUCTOR NO. 12 AWG WITH BARE ALUMINUM GROUND, PVC INSULATED STEEL METAL-CLAD CABLE.
- 5. FIRESTOP SYSTEM THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
  A. PACKING MATERIAL MINIMUM 4 INCH (102 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. WHEN PRECAST CONCRETE UNIT FLOORS ARE USED, PACKING MATERIAL SHALL BE INSTALLED AT A THICKNESS EQUAL TO THE THICKNESS OF THE FLOOR
- MINUS 1/2 INCH (13 MM), FLUSH WITH BOTTOM SURFACE OF FLOOR.

  B. FILL VOID OR CAVITY MATERIALS\* SEALANT MINIMUM 1/2 INCH(51 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

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- +++ BEARING THE UL RECOGNIZED COMPONENT MARKING
- \* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

+ BEARING THE UL LISTING MARK



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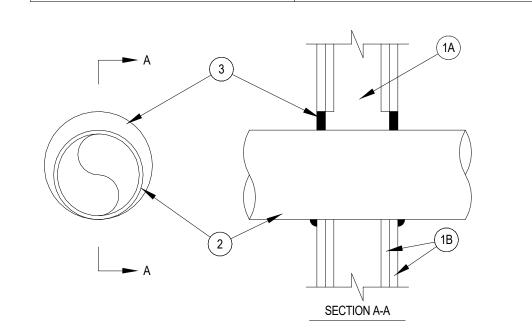
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FIRE JOINTS - FLOORS AND WALLS

Classified by Underwriters Laboratories, Inc. to UL 1479

F RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) F RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) T RATING - 0-HOUR FT RATING - 0-HOUR L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT | FH RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) L RATING AT 400 F - LESS THAN 1 CFM/SQ FT FTH RATING - 0-HOUR L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



. 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 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 CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER SPACED 16 INCH (406 MM) ON CENTER. STEEL STUDS TO BE MINIMUM 2-1/2 INCH (64 MM) WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER. WHEN STEEL STUDS ARE USED AND THE DIAMETER OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 INCH (102 TO 152 MM) WIDER AND 4 TO 6 INCH (102 TO 152 MM) HIGHER THAN THE DIAMETER OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 INCH (51 TO 76 MM) CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.

B. GYPSUM WALLBOARD\* - 5/8 INCH (16 MM) THICK, 4 FOOT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD 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. MAXIMUM DIAMETER OF OPENING IS 32-1/4 INCH (819 MM) FOR STEEL STUD WALLS. MAXIMUM DIAMETER OF OPENING IS 14-1/2 INCH (368 MM) FOR WOOD STUD WALLS.

THE F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.

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SYSTEM NO. W-L-20

F RATINGS - 1 AND 2-HOUR (SALAM 1)

T RATINGS - 0, 1, AND 2-HOUR (SASSIED 2 AND 3)

L RATING AT AMBIENT M/SQ FT

. WALL ASSEMBLY - THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND

NOMINAL 2 X 4 IN. (51 X 102 MM) LUMBER SPACED MAXIMUM 16 INCH (406 MM) ON CENTER STEEL STUDS TO BE MINIMUM 2-1/2 INCH

PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 11-1/2 INCH (292 MM). THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS

IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE

A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF

B. GYPSUM WALLBOARD\* - NOMINAL 5/8 INCH (16 MM) THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND

THROUGH-PENETRANTS - ONE NON-METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. THE

ANNULAR SPACE BETWEEN PIPE AND PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1/2 INCH

(13 MM). PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES

A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID-CORE OR CELLULAR

B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC PIPE FOR

CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.

RESISTANCE DIRECTORY AND SHALL INCLUDE THE CONSTRUCTION FEATURES NOTED BELOW:

EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

(64 MM) WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.

OF NON-METALLIC PIPES MAY BE USED:

SECTION A-A

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SYSTEM NO. W-L-1054

2. THROUGH-PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY

C. CONDUIT - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 INCH (152 MM). DIAMETER

3. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MINIMUM 0 INCH TO MAXIMUM 2-1/4 INCH (57 MM). PIPE MAY BE

INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL

ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED: A. STEEL PIPE - NOMINAL 30 INCH (762 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

D. COPPER TUBING - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. E. COPPER PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

B. IRON PIPE - NOMINAL 30 INCH (762 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.

STEEL CONDUIT.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems Page: 2 of 2

INSTALLED.

CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SYSTEM NO. W-L-1389 ANSI/UL1479 (ASTM E814) CAN/ULC S115 Classified by Underwriters Laboratories, Inc. F RATINGS - 1 AND 2-HOUR (SEE ITEM 1AND 3) F RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) T RATING - 0-HOUR FT RATING - 0-HOUR FH RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) FTH RATING - 0-HOUR

1. WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS - WALL FRAMING SHALL CONSIST OF MINIMUM 3-5/8 INCH (92 MM) WIDE STEEL STUDS SPACED MAXIMUM 24 INCH (610 MM) ON

B. GYPSUM WALLBOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAXIMUM HEIGHT OF OPENING IS 3-1/2 INCH (89 MM), MAXIMUM WIDTH OF OPENING IS 32 INCH (813 MM), THE HOURLY F, FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS

THROUGH PENETRANTS - MULTIPLE PIPES OR CONDUITS INSTALLED IN SINGLE LAYER ARRAY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE PIPES AND CONDUITS AND THE EDGES OF THE OPENING SHALL BE MINIMUM 0 INCH (0 MM, POINT CONTACT) TO MAXIMUM 1-3/8 INCH (35 MM). THE SEPARATION BETWEEN PIPES AND CONDUITS TO BE A MINIMUM 0 INCH (0 MM, POINT CONTACT) TO A MAXIMUM 1-1/4 INCH (32 MM), PIPES AND CONDUITS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE

FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED: A. STEEL PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE. B. CONDUIT - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) RIGID STEEL CONDUIT OR STEEL ELECTRICAL METALLIC TUBING (EMT). 3. **FILL VOID OR CAVITY MATERIALS\*** - SEALANT - MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL INSTALLED TO COMPLETELY FILL

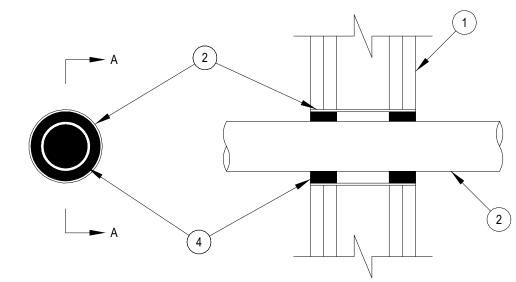
ANNULAR SPACE BETWEEN PIPES, CONDUITS AND GYPSUM FLUSH WITH EACH SURFACE OF WALL. MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL APPLIED TO THE THROUGH PENETRANT/WALL INTERFACE AT THE POINT CONTACT LOCATIONS ON BOTH SIDES OF THE WALL. THE 2-HOUR F, FH RATINGS APPLY ONLY WHEN FS-ONE SEALANT IS USED. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - HILTI CP 606 FLEXIBLE FIRESTOP SEALANT OR FS-ONE SEALANT, FS-ONE MAX

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

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Classified by Underwriters Laboratories

System No. W-L-2128 F Rating — 1 and 2 Hr (See Item 1)



. WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 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 CHANNEL STUDS. WOOD STUDS TO CONSIST OF

SECTION A-A

WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER. B. GYPSUM WALLBOARD\* -5/8 INCH (16 MM) THICK, 4 FOOT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 3-1/2 INCH (89 MM).

NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER SPACED 16 INCH (406 MM) ON CENTER STEEL STUDS TO BE MINIMUM 2-1/2 INCH (64 MM)

2. METALLIC SLEEVE - OPTIONAL - NOMINAL 3-1/2 INCH (89 MM) (OR SMALLER) CYLINDRICAL SLEEVE FABRICATED FROM MINIMUM 0.016 INCH THICK (28 GAUGE) GALVANIZED SHEET STEEL AND HAVING A MINIMUM 1-1/4 INCH (32 MM) LAPS ALONG LONGITUDINAL SEAM. LENGTH OF SLEEVE TO BE INSTALLED FLUSH WITH WALL SURFACES. 3. **THROUGH PENETRANTS** - ONE NON-METALLIC PIPE INSTALLED WITHIN THE FIRESTOP SYSTEM, PIPE MAY BE INSTALLED AT AN ANGLE

NOT GREATER THAN 45 DEGREES FROM PERPENDICULAR. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE SPACE BETWEEN PIPE AND PERIPHERY OF OPENING SHALL BE MINIMUM 1/4 INCH (6 MM) TO MAXIMUM 11/16 INCH (17.5 MM). THE FOLLOWING TYPES AND SIZES OF NON-METALLIC PIPES MAY BE USED: A. POLYVINYL CHLORIDE (PVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 PVC PIPE FOR USE IN CLOSED

(PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. I. FILL, VOID OR CAVITY MATERIALS\* - SEALANT - FOR 1-HOUR F RATING, MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. FOR 2-HOUR F RATING, MINIMUM 1-1/4 INCH (32 MM)

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL.

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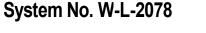
January 26, 2015

SYSTEM NO. W-L-3334

City, state

World HQ@ORBArch.com





FIRESTOP DEVICE\* - FIRESTOP COLLAR - FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. COLLAR TO BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO BOTH SIDES OF THE WALL USING THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. (MINIMUM TWO ANCHOR HOOKS FOR 1-1/2 AND 2 INCH (38 AND 51 MM) DIAMETER PIPES, THREE ANCHOR HOOKS FOR 3 AND 4 INCH (76 AND 102 MM) DIAMETER PIPES, FOUR ANCHOR HOOKS FOR 6 INCH (152 MM) DIAMETER PIPES, TEN ANCHOR HOOKS FOR 8 INCH (203 MM) DIAMETER PIPES AND TWELVE ANCHOR HOOKS FOR 10 INCH (254 MM) DIAMETER PIPES. THE ANCHOR HOOKS ARE TO BE SECURED TO THE SURFACE OF WALL WITH 3/16 INCH (4.8 MM) DIAMETER BY 2-1/2 INCH (64 MM) LONG STEEL TOGGLE BOLTS ALONG WITH WASHERS. AS AN STEEL WASHERS MAY BE USED. WHEN THE DRYWALL OR LAMINATE SCREW IS USED, T RATING SHALL NOT EXCEED 1-HOUR. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 643 50/1.5"N, CP 643 63/2"N, CP 643 90/3"N, CP 643 110/4"N, CP 643 160/6"N, CP 644

200/8" ANDCP 644 250/10" FIRESTOP COLLARS 4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - (NOT SHOWN) - MINIMUM 1/2 INCH (13 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULAR SPACE FOR NOMINAL 8 AND 10 INCH (203 AND 254 MM) DIAMETER PIPES. FLUSH WITH EACH SIDE OF WALL. SEALANT IN ANNULAR SPACE IS OPTIONAL FOR MAXIMUM 6 INCH (152 MM) DIAM PIPES. A MINIMUM 1/4 INCH (6 MM) THICKNESS OF SEALANT IS REQUIRED WITHIN THE ANNULAR SPACE, FLUSH WITH EACH SIDE OF WALL, TO ATTAIN THE L RATINGS FOR MAXIMUM 6 INCH (152 MM) DIAMETER PIPES.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SYSTEM NO. W-L-3334 ANSI/UL1479 (ASTM E814) CAN/ULC S115 F RATINGS - 1, 2, 3, AND 4-HOUR (SEE ITEM 1) F RATINGS - 1, 2, 3 AND 4 HR (SEE ITEM 1) Laboratories, Inc. to UL 1479 and T RATINGS - 0, 1/2, 1, 1-1/2, 2-HOUR (SEE ITEMS 2 AND 3) | FT RATINGS - 0, 1/2, 1-1/2, AND 2-HOUR (SEE ITEMS) FH RATINGS - 1, 2, 3, AND 4-HOUR (5, 1) L RATING AT AMBIENT - SEE ITEM 2 L RATINGS AT 400 F - SEE ITEM 2 L RATING AT AMP' 5 SEE ITEM 2 L RATINGS 🔏 r - SEE ITEM 2

1. WALL ASSEMBLY - THE 1, 2, 3, OR 4-HO' 💉 🖒 RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DECODE WITHIN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECT, WIND SHALL INCORPORATE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS - WALL FRAMING SHY YNSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 X 4 IN.CH (51 X 102 MM) I CONTROL SPACED MAXIMUM 16 INCH (406 MM) ON CENTER. STEEL STUDS TO BE MINIMUM 2-1/2 INCH (64 MM) WIDE AND SPACED MAXIML "AND 610 MM) ONCENTER FOR 1 AND 2-HOUR WALL ASSEMBLIES. STEEL STUDS TO BE 3-5/8 INCH (92 MM) FOR

3 AND 4-HOUR WAY CAMBLIES. STEEL STUDS TO BE MINIMUM 3-1/2 INCH (89 MM) WIDE WHEN 3/4 INCH (19 MM) THICK GYPSUM WALLBOARD IS USE SEE ITEM 1B). B. GYPSUM WALLBOARD\* - NOMINAL 5/8 IN.CH (16 MM) THICK GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. ALTERNATELY, FOR 1 AND 2-HOUR RATED WALLS ONLY, MINIMUM ONE LAYER OF NOMINAL 3/4 INCH (19 MM) THICK GYPSUM WALLBOARD ON EACH SIDE OF WALL AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN MAY BE USED. OPENING IN GYPSUM WALLBOARD TO BE MAXIMUM 2-1/2 INCH (64 MM) DIAMETER FOR 2 INCH DEVICE AND MAXIMUM 4-1/2 INCH (114 MM) DIAMETER FOR 4 INCH DEVICE. THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE HOURLY RATING OF THE

WALL IN WHICH IT IS INSTALLED. . CABLES - WITHIN THE LOADING AREA FOR EACH FIRESTOP DEVICE, THE CABLES MAY REPRESENT A 0 TO 100 PERCENT VISUAL FILL. CABLES TO BE TIGHTLY BUNDLED WITHIN THE DEVICE AND RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES OF CABLES MAY BE USED:

A. MAXIMUM 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION. B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.

C. MAXIMUM 4/0 AWG TYPE RHH GROUND CABLE. D. MAXIMUM 4 PR NO. 22 AWG CAT 5 OR CAT 6 COMPUTER CABLES.

E. MAXIMUM RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING. F. FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION HAVING A MAXIMUM DIAMETER OF 1/2 INCH (13 MM).

Hilti Firestop Systems

Page: 2 of 2

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G. MAXIMUM 20/C NO. 22 AWG SHIELDED PRINTER CABLE WITH PVC JACKET. H. THROUGH-PENETRATING PRODUCT\* - TWO COPPER CONDUCTORS NO. 18 AWG (OR SMALLER) POWER OR NON POWER LIMITED FIRE ALARM CABLE WITH OR WITHOUT A JACKET UNDER A METAL ARMOR. AFC CABLE SYSTEMS INC I. MAXIMUM 1/4 INCH (6 MM) DIAMETER S-VIDEO CABLE CONSISTING OF 2 MAXIMUM 24 AWG 75 OHM COAX OR TWISTED PAIR CABLE WITH PE INSULATION AND PVC JACKE J. MAXIMUM 3/C NO 12 AWG MC CABLE. K. THROUGH PENETRATING PRODUCT\* — ANY CABLES, ARMORED CABLE+ OR METAL CLAD CABLE+ CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCT CATEGORY. SEE THROUGH PENETRATING PRODUCT (XHLY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS. WHEN THE HOURLY RATING OF THE WALL ASSEMBLY IS 1-HOUR, THE T, FT AND FTH RATINGS ARE 0-HOUR. WHEN THE HOURLY RATING OF THE WALL ASSEMBLY IS 2-HOUR, THE T, FT AND FTH RATINGS ARE 1 -HOUR EXCEPT THAT, WHEN ITEM 2J OR 2K IS USED, THE T, FT AND FTH RATINGS ARE 1/2 HOUR. WHEN THE HOURLY RATING OF THE WALL ASSEMBLY IS 3 OR 4 -HOUR, THE T, FT AND FTH RATINGS ARE 1-1/2 AND 2-HOUR, RESPECTIVELY. L RATINGS APPLY ONLY WHEN DEVICE FLANGES ARE USED. L RATINGS VARY DEPENDING ON WHETHER THE GASKETING MATERIAL (SEE ITEM 3) OR THE SEALANT (ITEM 4) IS USED. SEE TABLE BELOW FOR L RATINGS.

MAX CABLE FILL	CABLE TYPE	L RATING, CFM/SQ FT				L RATIN	IG, CFM		
	AMBIENT 400°F		AMBIENT		AM	AMBIENT		400°F	
		SEALANT	GASKET	SEALANT	GASKET	SEALANT	GASKET	SEALANT	GASKET
0%	_	LESS THAN 1	1.0	LESS THAN 1	2.7	LESS THAN 1	LESS THAN 1	LESS THAN 1	LESS THAN 1
100%	ITEM 2D ONLY	4.9	4.9	1.3	3.5	LESS THAN 1	LESS THAN 1	LESS THAN 1	LESS THAN 1
100%	ANY CABLES (ITEM 2) IN ANY COMBINATION	9.2	9.2	9.6	11.8	1.2	2 1.2	1.3	1.6

B. FIRESTOP DEVICE\* - FIRESTOP DEVICE CONSISTS OF A CORRUGATED STEEL TUBE WITH AN INNER PLASTIC HOUSING, INTUMESCENT MATERIAL RINGS, TWISTED INNER FABRIC SMOKE SEAL, FLANGES AND GASKETING MATERIAL (NOT SHOWN). FIRESTOP DEVICE TO BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. AS AN OPTION, THE INNER FABRIC SEAL MAY REMAIN OPEN EXCEPT THAT, TO ATTAIN THE L RATING, THE INNER FABRIC SEAL SHALL BE TWISTED TO COMPLETELY CLOSE OFF THE OPENING WITHIN DEVICE. DEVICE SLID INTO WALL SUCH THAT ENDS PROJECT AN EQUAL DISTANCE FROM THE APPROXIMATE CENTERLINE OF THE WALL ASSEMBLY. THE ANNULAR SPACE BETWEEN THE DEVICE AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT). DEVICE PROVIDED WITH FLANGES THAT ARE SPUN CLOCKWISE ONTO DEVICE THREADS. OVER GASKETING MATERIAL BUTTING TIGHTLY TO BOTH SIDES OF WALL. AS AN ALTERNATE TO GASKET MATERIAL, SEALANT (ITEM 4) MAY BE USED. DEVICE FLANGES ARE OPTIONAL, EXCEPT THAT WHEN 3/4 INCH (19 MM) GYPSUM WALLBOARD (SEE ITEM 1B) IS USED, DEVICE FLANGES SHALL BE USED AND FOR 3 AND 4-HOUR FIRE RATING, DEVICE FLANGES SHALL BE USED. WHEN THE DEVICE FLANGES ARE NOT USED, THE T, FT AND FTH RATINGS FOR THE FIRESTOP SYSTEM ARE 0-HOUR.

1. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - AS AN ALTERNATE TO GASKET MATERIAL (SEE ITEM 3), MINIMUM 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS BETWEEN FIRESTOP DEVICE AND WALL, FLUSH WITH BOTH SURFACES OF WALL, AND AN ADDITIONAL 1/4 INCH (6 MM) BEAD APPLIED AROUND PERIPHERY OF DEVICE. WHEN DEVICE FLANGES ARE USED, GYPSUM WALLBOARD COMPOUND MAY BE USED IN PLACE OF THE FILL MATERIAL. SEALANT IS REQUIRED WHEN DEVICE FLANGES ARE HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE, FS-ONE MAX INTUMESCENT SEALANT, OR CP 606 SEALANT

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 653 AND CP 653 BA 2" SPEED SLEEVE, CP 653 AND CP 653 BA 4" SPEED SLEEVE

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

+ BEARING THE UL LISTING MARK

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REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024

A7.2.23

FIRE JOINTS - GYPSUM WALLS

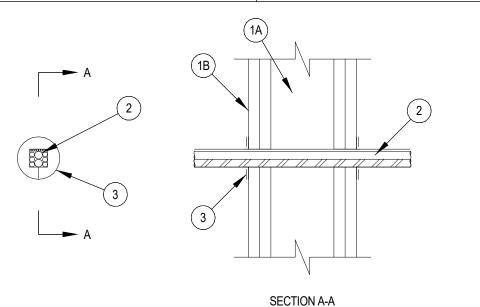
USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID-CORE OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. D. FLAME RETARDANT POLYPROPYLENE (FRPP) PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM. E. POLYVINYLIDENE FLUORIDE (PVDF) PIPE - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) PVDF PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM. WHEN MAXIMUM 6 INCH DIAMETER PIPE IS USED, T RATING IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL. WHEN NOMINAL 8 INCH OR 10 INCH (203 OR 254 MM) DIAMETER PIPE IS USED, T RATING IS 0-HOUR. Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 28, 2015 Hilti Firestop Systems

January 28, 2015

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System No. W-L-3414 ANSI/UL1479 (ASTM E814) CAN/ULC S115 F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) T RATINGS - 0, 1/2, 1 AND 2-HOUR (SEE ITEM 2) FT RATINGS - 0, 1/2, 1, AND 2-HOUR (SEE ITEM 2) L RATING AT AMBIENT - LESS THAN 1 CFM/OPENING

F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1) L RATING AT 400 F - LESS THAN 1 CFM/OPENING | FTH RATINGS - 0, 1/2, 1, AND 2-HOUR (SEE ITEM 2) L RATING AT AMBIENT - LESS THAN 1 CFM/OPENING L RATING AT 400 F - LESS THAN 1 CFM/OPENING



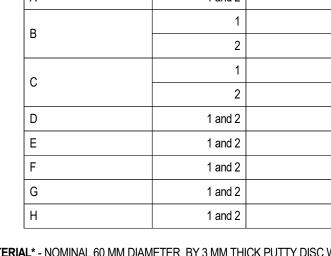
1. WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN

- THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS, WOOD STUDS TO CONSIST OF NOMINAL 2 BY 4 INCH (51 X 102 MM) LUMBER SPACED 16 INCH (406 MM) ON CENTER. STEEL STUDS TO BE MINIMUM 3-1/2 INCH (89 MM) WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.
- B. GYPSUM WALLBOARD\* 5/8 INCH (16 MM) THICK, 4 FOOT (1219 CM) WIDE WITH SQUARE OR TAPPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. OPENING MAY BE ROUND, RECTANGULAR OR IRREGULAR WITH A MAXIMUM DIAMETER OR DIMENSION OF 1 INCH (25 MM). THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

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October 14, 2015



SYSTEM NO. W-L-3414

CABLES - SINGLE OR TIGHT BUNDLE OF CABLES TO BE INSTALLED WITHIN THE OPENING. AGGREGATE CROSS-SECTIONAL AREA OF

BUNDLE AND THE PERIPHERY OF THE OPENING TO BE MINIMUM 0 INCH (POINT CONTACT). CABLES TO BE RIGIDLY SUPPORTED ON

C. MAXIMUM 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH PVC OR PLENUM RATED

D. MAXIMUM 4 PR NO. 22 AWG (OR SMALLER) CAT 5 OR CAT 6 COMPUTER CABLES WITH PVC OR PLENUM RATED INSULATION AND

E. TYPE RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE OR PVC INSULATION AND JACKETING HAVING A MAXIMUM OUTSIDE

G. THROUGH PENETRATING PRODUCT\* - MAXIMUM TWO COPPER CONDUCTOR NO. 18 AWG (OR SMALLER) POWER OR NON-POWER

THE HOURLY T, FT AND FTH RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT ON CABLE TYPE AND HOURLY WALL RATING AS

Hourly Wall

Hourly T, FT and FTH

1 and 2 1 and 2

1 and 2 1 and 2

1 and 2

1 and 2

1 and 2

F. MAXIMUM 24 FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION.

CABLES IN OPENING TO HAVE A VISUAL FILL OF MINIMUM 0% TO MAXIMUM 100%. THE ANNULAR SPACE BETWEEN THE CABLE

BOTH SIDES OF THE WALL ASSEMBLY, ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:

A. MAXIMUM 3/C NO. 8 AWG NM COPPER CONDUCTOR CABLE (ROMEX) WITH PVC INSULATION AND JACKET.

LIMITED FIRE ALARM CABLE WITH OR WITHOUT A JACKET UNDER A METAL ARMOR.

None (Blank Opening)

H. MAXIMUM 3/C NO. 10 AWG COPPER CONDUCTOR METAL-CLAD CABLE.

B. MAXIMUM 7/C-NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE INSULATION AND JACKET.

3. FILL, VOID OR CAVITY MATERIAL\* - NOMINAL 60 MM DIAMETER BY 3 MM THICK PUTTY DISC WITH ONE SEAM AT RADIUS. PAPER-BACKER OF DISC TO BE REMOVED AND DISC FIRMLY PRESSED AROUND THE CABLE/CABLE BUNDLE LAPPING NOMINAL 5 MM ONTO CABLES TO COMPLETELY COVER OPENING AND FIRMLY PRESSED TO LAP ONTO THE WALL AROUND PERIPHERY OF OPENING. DISC SEAM TO BE FIRMLY PRESSED AND SEALED TIGHT, DISC TO BE INSTALLED AT BOTH SURFACES OF WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CFS-D 1" FIRESTOP CABLE DISC

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

Page: 1 of 2

INSULATION AND JACKETING.

DIAMETER OF 1/2 INCH (13 MM).

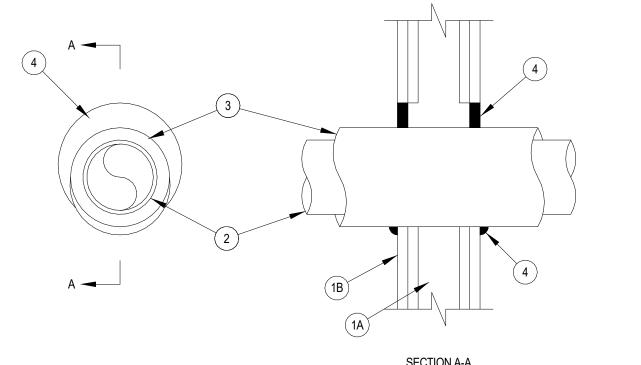
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Page: 2 of 2

SYSTEM NO. W-L-5028

ANSI/UL1479 (ASTM E814) CAN/ULC S115 F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) T RATINGS - 0, 3/4, AND 1-HOUR (SEE ITEM 3) FT RATINGS - 0, 3/4, AND 1-HOUR (SEE ITEM 3) L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1) L RATING AT 400 F - LESS THAN 1 CFM/SQ FT FTH RATINGS - 0, 3/4, AND 1 HOUR (SEE ITEM 3) L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



1. WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 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 CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 X 4 IN.CH (51 BY 102 MM) LUMBER SPACED 16 INCH (406 MM) ON CENTER. STEEL STUDS TO BE MINIMUM 2-1/2 INCH (64 MM) WIDE AND

B. GYPSUM WALLBOARD\* - 5/8 INCH (16 MM) THICK, 4 FOOT (1.22 M) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 7-1/2 INCH (191 MM). THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN

WHICH IT IS INSTALLED. . THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE CENTERED 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

A. STEEL PIPE - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE. B. COPPER TUBING - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

C. COPPER PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

Hilti Firestop Systems

SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.

Classified by

Underwriters Laboratories,

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Page: 1 of 2

SYSTEM NO. W-L-5028

. TUBE INSULATION - PLASTICS+ - MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 1 INCH (25 MM) THICK ACRYLONITRILE BUTADIENE/POLYVINY CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. AN ANNULAR SPACE OF MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1-1/2 INCH (38 MM) IS REQUIRED WITHIN THE FIRESTOP SYSTEM. THE T, FT AND FTH RATINGS ARE 1-HOUR WHEN THE 1 INCH (25 MM) THICK TUBE INSULATION IS USED AND 3/4 HOUR WHEN THE 3/4 INCH (19 MM) THICK TUBE INSULATION IS USED. WHEN TUBE INSULATION THICKNESS IS LESS THAN 3/4 INCH (19 MM). THE T. FT AND FTH RATINGS ARE 0-HOUR.

SEE PLASTICS+ (QMFZ2) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.

I. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE COVERING AND GYPSUM WALLBOARD, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE COVERING/GYPSUM BOARD INTERFACE ON BOTH SURFACES OF WALL.

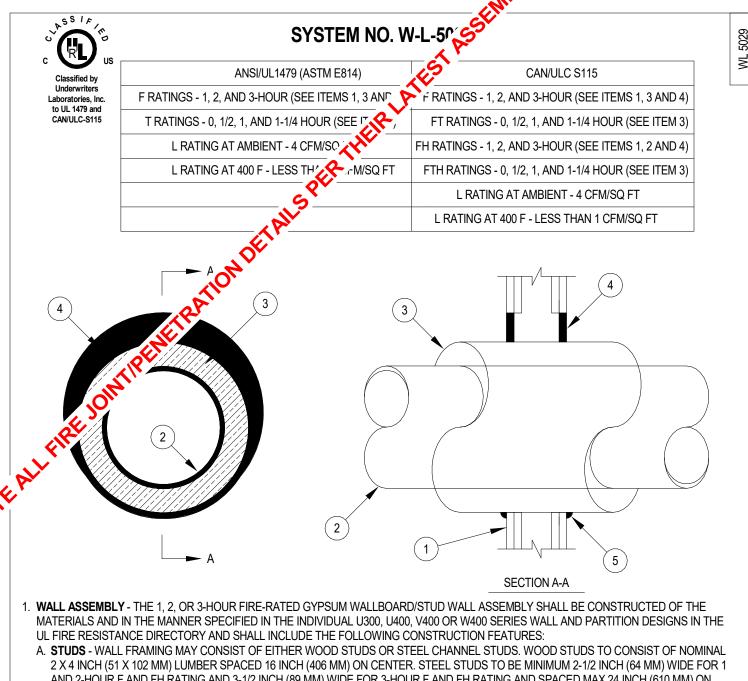
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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AND 2-HOUR F AND FH RATING AND 3-1/2 INCH (89 MM) WIDE FOR 3-HOUR F AND FH RATING AND SPACED MAX 24 INCH (610 MM) ON B. GYPSUM WALLBOARD\* - MINIMUM 5/8 INCH (16 MM) THICK WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND

PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 18-5/8 INCH (473 MM). THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. . THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED 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

A. STEEL PIPE - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. COPPER TUBING - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. WHEN THE HOURLY F OR FH RATING OF THE FIRESTOP SYSTEM IS 3-HOUR, THE NOMINAL DIAMETER OF COPPER TUBE SHALL NOT EXCEED 4 INCH (102 MM).

FH RATING OF THE FIRESTOP SYSTEM IS 3-HOUR, THE NOMINAL DIAMETER OF COPPER PIPE SHALL NOT EXCEED 4 INCH (102 MM).

Hilti Firestop Systems

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D. COPPER PIPE - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. WHEN THE HOURLY F OR

System No. W-L-5029

3. PIPE COVERING\* - NOMINAL 1, 1-1/2, OR 2 INCH (25, 38 OR 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUT TAPE SUPPLIED WITH THE PRODUCT. FOR 1 AND 2-HOUR F AND FH RATINGS, THE ANNULAR SPACE BETWEEN INSULATED PENETRANT AND PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 1-7/8 INCH (48 MM). FOR 3-HOUR F AND FH RATINGS. THE ANNULAR SPACE SHALL BE MINIMUM () INCH (POINT CONTACT) TO MAXIMUM 1-1/4 INCH (32 MM). SEE PIPE AND EQUIPMENT COVERING - MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIAL DIRECTORY FOR THE NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED. THE HOURLY T, FT, FTH RATINGS OF THE FIRESTOP SYSTEM ARE 1/2 HOUR FOR 1-HOUR RATED WALLS AND 1-HOUR FOR 2-HOUR RATED WALLS. FOR 3-HOUR RATED WALLS. THE HOURLY T. FT AND FTH RATINGS WHEN STEEL AND IRON PIPES ARE USED ARE 1-HOUR. FOR 3-HOUR RATED WALLS, THE HOURLY T, FT AND FTH RATINGS WHEN COPPER PENETRANTS ARE USED ARE 1-1/4 HOUR FOR 2 INCH (51 MM) THICK PIPE COVERING AND 0-HOUR FOR PIPE COVERING THICKNESS LESS THAN 2 INCH (51 MM). A. PIPE COVERING\* - (NOT SHOWN) - AS AN ALTERNATE TO ITEM 3, MAXIMUM 2 INCH (51 MM) THICK CYLINDRICAL CALCIUM SILICATE (MINIMUM 14 PCF) UNITS SIZED TO THE OUTSIDE DIAMETER OF THE PIPE OR TUBE MAY BE USED. PIPE INSULATION SECURED WITH STAINLESS STEEL BANDS OR MINIMUM 18 AWG STAINLESS STEEL WIRE SPACED MAXIMUM 12 INCH (305 MM) ON CENTER. WHEN THE ALTERNATE PIPE COVERING IS USED, THE T AND FT RATING SHALL BE AS SPECIFIED IN ITEM 3 ABOVE. SEE PIPE AND EQUIPMENT COVERING - MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS, ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME

SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED. 4. **FILL, VOID OR CAVITY MATERIAL\*** - SEALANT - FOR 1 AND 2-HOUR F AND FH RATING, MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS. FLUSH WITH BOTH SURFACES OF WALL, FOR 3-HOUR F AND FH RATING, MINIMUM 1 INCH (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE COVERING AND GYPSUM WALLBOARD, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE COVERING/GYPSUM WALLBOARD INTERFACE ON BOTH SURFACES OF WALL HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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SYSTEM NO. W-L-7042 ANSI/UL1479 (ASTM E814) CAN/ULC S115 Classified by Underwriters Laboratories, Inc. to UL 1479 and F RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) F RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND 3) T RATING - 0-HOUR FT RATING - 0-HOUR FH RATINGS - 1 AND 2-HOUR (SEE ITEMS 1 AND FTH RATING - 0-HOUR **─** A . WALL ASSEMBLY - THE 1 OR 2-HOUR FIF, 🦋 ČED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE

MATERIALS AND IN THE MANNER SPF IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND LINCLUDE THE FOLLOWING CONSTRUCTION FEATURES. A. STUDS - WALL FRAMING MAY, SIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 X 4 INCH (51 X 102 MM) LL" SPACED 16 INCH (406 MM) ON CENTER STEEL STUDS TO BE MINIMUM 2-1/2 INCH (64 MM) WIDE AND

SPACED 24 INCH (610 1/2 CENTER. B. GYPSUM WALLBOAT OF J-HOUR ASSEMBLY, ONE LAYER OF MINIMUM 5/8 INCH (16 MM) THICK WALLBOARD AS REQUIRED IN THE INDIVIDUAL WALL AN ARTITION DESIGN. FOR 2-HOUR ASSEMBLY, TWO LAYERS OF MINIMUM 5/8 INCH (16 MM) THICK WALLBOARD AS REQUIRED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 14-1/2 INCH (368 MM) FOR WOOD STUD WALLS AND 21-3/4 INCH (552 MM) FOR STEEL STUD WALLS. THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO

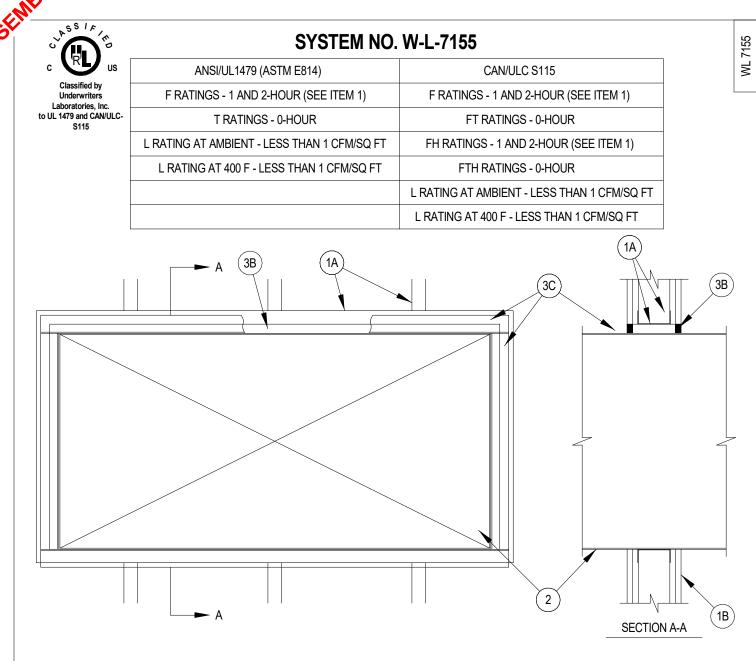
THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. 2. THROUGH PENETRANT - GALVANIZED STEEL DUCT TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE DUCT AND PERIPHERY OF OPENING SHALL BE 0 INCH (0 MM, POINT CONTACT) AND MAXIMUM 1-1/2 INCH (64 MM) DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. A. SPIRAL WOUND HVAC DUCT - NOMINAL 20 INCH (502 MM) DIAMETER (OR SMALLER) NO. 24 MSG (OR HEAVIER) GALV STEEL SPRIRAL

WOUND DUCT. B. SHEET METAL DUCT - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) NO. 28 MSG (OR HEAVIER) GALVANIZED SHEET STEEL DUCT. B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) AND 1-1/4 INCH (32 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL ASSEMBLY FOR 1 OR 2-HOUR RATED WALLS, RESPECTIVELY. AT THE POINT CONTACT LOCATION BETWEEN DUCT AND WALLBOARD, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF SEALANT SHALL BE APPLIED AT

THE WALLBOARD/DUCT INTERFACE ON BOTH SURFACES OF WALL ASSEMBLY. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP601S ELASTOMERIC FIRESTOP SEALANT, FS-ONE SEALANT, FS-ONE MAX INTUMESCENT SEALANT OR CP606 FLEXIBLE FIRESTOP SEALANT INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

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WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400, V400 OR W400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS - WALL FRAMING SHALL CONSIST OF MINIMUM 3-1/2 INCH (89 MM) WIDE STEEL CHANNEL STUDS SPACED MAXIMUM 24 INCH (610 MM) ON CENTER ADDITIONAL STEEL STUDS SHALL BE USED TO COMPLETELY FRAME THE OPENING. B. GYPSUM WALLBOARD\* - 5/8 INCH (16 MM) THICK, 4 FOOT (1.22 M) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAXIMUM AREA OF OPENING IS 73.7 SQUARE FOOT (6.85 M<sup>2</sup>) WITH A MAXIMUM DIMENSION OF 104 INCH (2.64 M). THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. . STEEL DUCT - MAXIMUM 100 X 100 INCH (2.5 X 2.5 M) GALVANIZED STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE DUCT SHALL BE CONSTRUCTED AND REINFORCED IN ACCORDANCE WITH SMACNA CONSTRUCTION STANDARDS. THE SPACE BETWEEN THE STEEL DUCT AND PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH

(POINT CONTACT) TO MAXIMUM 2 INCH (51 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY.

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REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024

A7.2.24

FIRE JOINTS - GYPSUM WALLS

# SYSTEM NO. W-L-7155

- A. THROUGH-PENTRATING PRODUCT\* AS AN ALTERATE TO ITEM 2. FIBER CEMENT WITH GALVANIZED STEEL FACING, 3/8 INCH (10 MM) THICK COMPOSITE METALLIC DUCT. WITH A MAXIMUM CROSS-SECTIONAL AREA OF 43.0 SQUARE FOOT. (4 M2) AND A MAXIMUM INDIVIDUAL DIMENSION OF 78 3/4 INCH (2 M). DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM SUCH THAT THE ANNULAR SPACE IS MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 2 IN. (51 MM). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. REFER TO VENTILATION DUCT ASSEMBLIES IN VOL. 2 OF THE FIRE RESISTANCE DIRECTORY.
- **DURASYSTEMS BARRIERS INC TYPE DURADUCT HP.** B. THROUGH-PENTRATING PRODUCT\* - AS AN ALTERNATE TO ITEM 2. FIBER CEMENT WITH GALVANIZED STEEL FACING, 1/4 INCH (6 MM) THICK, WITH A MAXIMUM CROSS-SECTIONAL AREA OF 1764 SQUARE INCH (1.14 M2), AND A MAXIMUM INDIVIDUAL DIMENSION OF 42 INCH (1067 MM). DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM SUCH THAT THE ANNULAR SPACE IS MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 2 INCH (51 MM). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY AND INSTALLED IN ACCORDANCE. REFER TO VENTILATION DUCT ASSEMBLIES IN VOLUME 2 OF THE FIRE RESISTANCE DIRECTORY. **DURASYSTEMS BARRIERS INC - TYPE DURADUCT SD.**
- C. THROUGH-PENTRATING PRODUCT\* AS AN ALTERNATE TO ITEM 2. GALVANIZED STEEL FACED DUCT PANEL, WITH A MAXIMUM CROSS-SECTIONAL AREA OF 2450 SQUARE INCH (1.58 M2), AND A MAXIMUM INDIVIDUAL DIMENSION OF 49-1/2 INCH (1258 MM) DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM SUCH THAT THE ANNULAR SPACE IS MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 2 INCH (51 MM). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES WALL ASSEMBLY. REFER TO VENTILATION DUCT ASSEMBLIES IN VOLUME 2 OF THE FIRE RESISTANCE DIRECTORY. **DURASYSTEMS BARRIERS INC - TYPE DURADUCT GNX.**
- 3 FIRESTOP SYSTEM THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING: A. PACKING MATERIAL - (OPTIONAL, NOT SHOWN) - POLYETHYLENE BACKER ROD, MINERAL WOOL BATT INSULATION OR FIBERGLASS BATT INSULATION FRICTION FITTED INTO ANNULAR SPACE. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. A1. PACKING MATERIAL - REQUIRED AS SPECIFIED IN TABLE BELOW. MINIMUM 3-3/4 INCH (95 MM) OR 5 INCH (127 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM FOR 1 AND 2-HOUR RATED ASSEMBLIES, RESPECTIVELY. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL
- TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MINIMUM 1/4 INCH (6 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE POINT CONTACT LOCATION BETWEEN THE STEEL DUCT AND THE GYPSUM WALLBOARD. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC —- CFS-S SIL GG SEALANT, FS-ONE SEALANT, FS-ONE MAX INTUMESCENT
- SEALANT OR CP606 FLEXIBLE FIRESTOP SEALANT C. STEEL RETAINING ANGLES - MINIMUM NO. 16 GAUGE GALVANIZED STEEL ANGLES SIZED TO LAP STEEL DUCT A MINIMUM OF 2 INCH (51 MM) AND TO LAP WALL SURFACES A MINIMUM OF 1 INCH (25 MM). WHEN MAXIMUM DUCT DIMENSION DOES NOT EXCEED 48 INCH (122 CM) AND DUCT AREA DOES NOT EXCEED 1300 INCH SQUARE (8387 CM<sup>2</sup>), ANGLES MAY BE MINIMUM NO. 18 GAUGE GALVANIZED STEEL. ANGLES ATTACHED TO STEEL DUCT ON BOTH SIDES OF WALL WITH MINIMUM NO. 10 X 1/2 INCH (13 MM) LONG STEEL SHEET METAL SCREWS LOCATED A MAXIMUM OF 1 INCH (25 MM) FROM EACH END OF STEEL DUCT AND SPACED A MAXIMUM OF 6 INCH (152 MM) ON CENTER STEEL ANGLES ARE OPTIONAL FOR THOSE SIDES OF DUCT THAT DO NOT EXCEED THE

DIMENSION SPECIFIED IN TABLE BELOW, DEPENDENT ON PACKING MATERIAL, SEALANT AND ANNULAR SPACE AS SPECIFIED.

MAXIMUM DUCT DIMENSION	DUCT THICKNESS	ANNULAR SPACE	PACKING MATERIAL	ANGLE (ITEM 3C) REQUIRED
24 INCH (610 MM)	24 GAUGE OR HEAVIER	1/2 INCH MINIMUM TO 1 INCH MAXIMUM (13 TO 25 MM)	ITEM 3A1	NO

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL

SYSTEM NO. W-L-89

. THROUGH-PENETRANT - ONE OR MORE PIPES, CONDUIT OR TUBES TO  $r_2$  ALLED WITHIN THE OPENING. THE TOTAL

NUMBER OF THROUGH-PENETRANTS IS DEPENDENT ON THE SIZE OF Y PENING AND THE TYPES AND SIZES OF THE

A. COPPER TUBING - NOMINAL 3 INCH (76 MM) DI 🕻 🗲 🖟 (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.

C. STEEL PIPE - NOMINAL 4 INCH (102 MM) CANTER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. COPPER PIPE - NOMINA 3 INCH (76 MM) DIA (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

PENETRANTS. ANY COMBINATION OF THE PENETRANTS DESCRIBED WWW MAY BE USED PROVIDED THAT THE FOLLOWING

PARAMETERS RELATIVE TO THE ANNULAR SPACES AND THE SPACES BETWEEN THE THROUGH PENETRANTS ARE MAINTAINED.

THE SEPARATION BETWEEN THE PENETRANTS SHALL BE MIN YOUNG 1 INCH (25 MM) TO MAXIMUM 20 INCH (508MM). THE ANNULAR

SPACE BETWEEN PENETRANTS AND THE PERIPHERY OF 🦙 🥄 G SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 21

INCH (508 MM). PIPES, CONDUIT OR TUBES TO BE RIGID' PORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING

D. IRON PIPE - NOMINAL 4 INCH (102 MM) TER (OR SMALLER) CAST OR DUCTILE IRON PIPE.

E. CONDUIT - NOMINAL 3 INCH (76 MM) (OR SMALLER) ELECTRIC METALLIC TUBING (EMT) OR RIGID STEEL CONDUIT.

F. POLYVINYL CHLORIDE (PVC) PICO JMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID

CORE PVC PIPE FOR USE IN (A) (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE, OR VENT) PIPING SYSTEMS.

G. CHLORINATED POLYVINY' FIRE (CPVC) PIPE - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SDR 13.5 CPVC PIPE

. PIPE INSULATY NE OR MORE METALLIC PENETRANTS (PIPE OR TUBING) MAY BE INSULATED WITH THE FOLLOWING TYPES

M" 3.5 PCF (56 KG/M) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SICURED

TH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. SEE PIPE AND EQUIPMENT COVERING -

COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME

BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. SEE PLASTICS+ (QMFZ2)

CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED

COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY

THE ANNULAR SPACE BETWEEN THE INSULATED PENETRANTS AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0

INCH (0 MM, POINT CONTACT) THE SEPARATION BETWEEN THE INSULATED PENETRANTS AND THE OTHER PENETRANTS SHALL

THE T, FT AND FTH RATINGS ARE 1-1/2 HOUR IF ITEM 3B IS USED. THE T, FT AND FTH RATINGS ARE 2-HOUR IF ITEM 3A IS USED.

A. PIPE ' YANG\* - MINIMUM 1 INCH (25 MM) TO MAXIMUM 2 INCH (51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY

MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE

B. TUBE INSULATION-PLASTICS+ - MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 3/4 INCH (19 MM) THICK ACRYLONITRILE

SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

INDIOATEG GOOTT NODGOTG GTALE DE	
CERTIFICATION (SUCH AS CANADA), RE	SPECTIVELY.
,	

TYPES AND SIZES OF PIPES, CONDUIT OR TUBES MAY SED.

FOR USE IN CLOSED (F) SS OR SUPPLY) PIPING SYSTEMS.

THE T, FT AND FT INGS ARE 0-HOUR IF BARE PIPE AND TUBING IS USED.

Hilti Firestop Systems

OF PIPE COGGS:

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Hilti Firestop Systems Page: 2 of 2

FRAME AROUND OPENING.

SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.

IT IS INSTALLED.

JACKET MATERIALS.

ANY OTHER COMBINATION.

# SYSTEM NO. W-L-8079

SYSTEM NO. W-L-7156

CAN/ULC S115

F RATINGS - 1 AND 2-HOUR (SEE ITEM 1)

FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1)

SECTION A-A

FT RATING - 0-HOUR

FTH RATING - 0-HOUR

ANSI/UL1479 (ASTM E814)

F RATINGS - 1 AND 2-HOUR (SEE ITEM 1)

T RATING - 0-HOUR

Classified by Underwriters Laboratories,

to UL 1479 and CAN/ULC-

- . CABLES ONE MAXIMUM 3 INCH (76 MM) DIAMETER BUNDLE OF CABLES INSTALLED WITHIN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SURFACES OF WALL. THE ANNULAR SPACE BETWEEN THE TIGHTLY-BUNDLED CABLES AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 20 INCH (508 MM), THE SEPARATION BETWEEN THE CABLE BUNDLE AND THE OTHER PENETRANTS SHALL BE MINIMUM 1 INCH (25 MM) TO MAXIMUM 20 INCH (508 MM). ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED: A. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET.
- B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR POWER AND CONTROL CABLE WITH PVC OR CROSS-LINKED POLYETHYLENE (XLPE) INSULATION AND PVC JACKET. C. MULTIPLE FIBER OPTICAL COMMUNICATION CABLE JACKETED WITH PVC AND HAVING A MAXIMUM OUTSIDE DIAMETER OF 1/2

. WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE

A. STUDS - WALL FRAMING SHALL CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF

B. GYPSUM WALLBOARD\* - MINIMUM 5/8 INCH (16 MM) THICK, 4 FT (1.2 M) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM

WALLBOARD TYPE. THICKNESS. NUMBER OF LAYERS AND ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND

UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE

NOMINAL 2 X 4 INCH (51 BY 102 MM) LUMBER SPACED MAXIMUM 16 INCH (406 MM) ON CENTER STEEL STUDS TO BE MINIMUM 3-1/2 INCH

(89 MM) WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER ADDITIONAL FRAMING MEMBERS SHALL BE USED TO COMPLETELY

PARTITION DESIGN. MAXIMUM SIZE OF OPENING IS 210 SQUARE INCH (1355 CM2) WITH A MAXIMUM WIDTH OF 14-1/2 INCH (368 MM) FOR

WOOD STUDS. MAXIMUM SIZE OF OPENING IS 76.2 SQUARE FOOT (7 M2) WITH A MAXIMUM WIDTH OF 105-1/2 INCH (2.7 M) FOR STEEL

2. STEEL DUCT - MAXIMUM 100 X 100 INCH (2.5 X 2.5 M) STEEL DUCT TO BE INSTALLED WITHIN THE FRAMED OPENING. THE DUCT SHALL BE

CONSTRUCTED AND REINFORCED IN ACCORDANCE WITH SMACNA CONSTRUCTION STANDARDS. STEEL DUCT TO BE RIGIDLY

STUDS. THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL IN WHICH

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- INCH (13 MM) D. MAXIMUM 3/C NO. 8 AWG WITH BARE ALUMINUM GROUND, PVC INSULATED STEEL METAL-CLAD+ CABLE CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCT\* (XHLY) CATEGORY. E. MAXIMUM 3/C (WITH GROUND) NO. 8 AWG (OR SMALLER) NON-METALLIC SHEATHED (ROMEX) CABLE WITH PVC INSULATION AND
- F. RG/U COAXIAL CABLE WITH POLYETHYLENE (PE) INSULATION AND POLYVINYL CHLORIDE (PVC) JACKET HAVING A MAXIMUM OUTSIDE DIAMETER OF 1/2 INCH (13 MM). G. MAXIMUM 3/4 INCH (19 MM) DIAMETER COPPER GROUND CABLE WITH OR WITHOUT PVC JACKET. H. MAXIMUM 1-1/4INCH (32 MM) DIAMETER SINGLE OR MULTI CONDUCTOR MINERAL-INSULATED COPPER-CLAD CABLE.
- THE T, FT AND FTH RATINGS ARE 1/4 HOUR IF CABLES D, G AND H ARE USED. THE T, FT AND FTH RATINGS ARE 3/4 HOUR FOR
- 4A.THROUGH PENETRANTS (NOT SHOWN) MAXIMUM SIX NOMINAL 1 INCH (25 MM) DIAMETER (OR SMALLER) FLEXIBLE STEEL CONDUITS TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE CONDUITS AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO A MAXIMUM 3 INCH (76 MM). CONDUITS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE T, FT AND FTH RATINGS ARE 0-
- HOUR IF THIS PENETRANT IS USED. 4B.THROUGH PENETRANTS - (NOT SHOWN) - MAXIMUM TWELVE NOMINAL 3/8 INCH (10 MM) DIAMETER (OR SMALLER) POLYVINYL CHLORIDE (PVC) PNEUMATIC TUBING FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE TUBING AND THE PERIPHERY OF THE OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO A MAXIMUM 1 INCH (25 MM). TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL.
- 5. **FIRESTOP SYSTEM** THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING: A. PACKING MATERIAL - IN 2-HOUR FIRE RATED WALL ASSEMBLIES, MINIMUM 4-3/4 INCH (121 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M³) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. IN 1-HOUR FIRE RATED WALL ASSEMBLIES, MINIMUM 3-1/2 INCH (89 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL RECESSED FROM BOTH SURFACES OF THE WALL
- TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. A1.PACKING MATERIAL - MINIMUM 1-1/4 INCH (32 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED AS A BACKER AROUND THE PERIMETER OF OPENING AS A PERMANENT FORM. WHEN ADDITIONAL FRAMING MEMBERS ARE USED TO FRAME THE OPENING (SEE ITEM 1A), THIS PACKING MATERIAL IS OPTIONAL.
- PACKING MATERIAL CAN BE USED IN COMBINATION WITH THE ADDITIONAL FRAMING MEMBERS. B. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN THROUGH PENETRANTS AND GYPSUM WALLBOARD, A MINIMUM 1/2 INCH (13 MM) DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE GYPSUM WALLBOARD/THROUGH PENETRANT INTERFACE ON BOTH SURFACES OF WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

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- INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.
- + BEARING THE UL LISTING MARK
- # BEARING THE UL RECOGNIZED COMPONENT MARK



CLASSIFICATION OF 94-5VA MAY BE USED.

BE A MINIMUM 1 INCH (25 MM).

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Page: 2 of 3

Hilti Firestop Systems

Page: 3 of 3

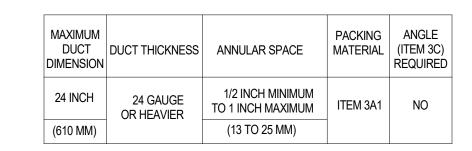
Page: 1 of 2

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## SYSTEM NO. W-L-7156

- 3. BATTS AND BLANKETS\* NOMINAL 1-1/2 OR 2 INCH (38 OR 51 MM) THICK GLASS FIBER BATT OR BLANKET (MINIMUM 3/4 PCF OR 12 KG/M3) JACKETED ON THE OUTSIDE WITH A FOIL-SCRIM-KRAFT FACING. LONGITUDINAL AND TRANSVERSÈ JOINTS SEALED WITH ALUMINUM FOIL TAPE. DURING THE INSTALLATION OF THE FILL MATERIAL, THE BATT OR BLANKET SHALL BE COMPRESSED MINIMUM 50% SUCH THAT THE ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM SHALL BE MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 2 INCH (51 MM). SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY BATT OR BLANKET MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX 50 OR LESS MAY BE USED. 4. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
- A. PACKING MATERIAL MINIMUM 3-5/8 INCH (92 MM) OR 4-7/8 INCH (124 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM FOR 1 OR 2-HOUR FIRE-RATED WALLS, RESPECTIVELY. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL
- B. FILL, VOID OR CAVITY MATERIAL\* SEALANT MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL
- HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT C. **STEEL RETAINING ANGLES** - MINIMUM NO. 16 GAUGE (0.059 IN. OR 1.5 MM) GALVANIZED STEEL ANGLES SIZED TO LAP STEEL DUCT A MINIMUM OF 2 INCH (51 MM) AND LAP WALL SURFACES A MINIMUM OF 1 INCH (25 MM), ANGLES ATTACHED TO STEEL DUCT ON BOTH SIDES OF WALL WITH MINIMUM NO. 10 STEEL SHEET METAL SCREWS SPACED A MAXIMUM OF 1 INCH (25 MM) FROM EACH END OF STEEL DUCT AND SPACED A MAXIMUM OF 6 INCH (152 MM) ON CENTER. WHEN MAXIMUM DUCT DIMENSION DOES NOT EXCEED 48 INCH (122 CM) AND DUCT AREA DOES NOT EXCEED 1300 INCH SQUARE (8387 CM<sup>2</sup>). ANGLES MAY BE MINIMUM NO. 18 GAUGE GALVANIZED STEEL. ANGLES ATTACHED TO STEEL DUCT ON BOTH SIDES OF WALL WITH MINIMUM NO. 10 BY 1/2 INCH (13 MM) LONG

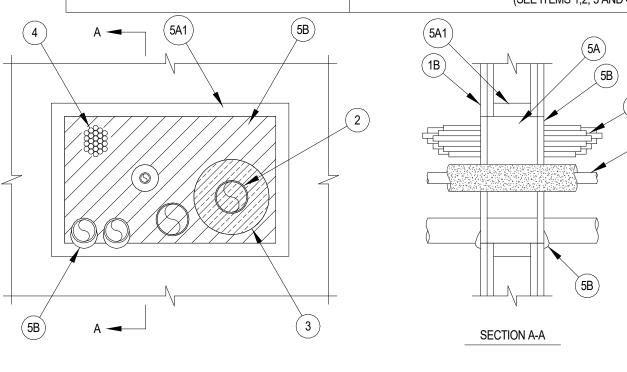
STEEL SHEET METAL SCREWS LOCATED A MAXIMUM OF 1 INCH (25 MM) FROM EACH END OF STEEL DUCT AND SPACED A MAXIMUM OF 6 INCH (152 MM) ON CENTER WHEN MAXIMUM 1-1/2 INCH (38 MM) THICK INSULATION IS USED, STEEL ANGLES ARE OPTIONAL FOR THOSE SIDES OF DUCT THAT DO NOT EXCEED THE DIMENSION SPECIFIED IN TABLE BELOW, DEPENDENT ON PACKING MATERIAL AND ANNULAR SPACE AS SPECIFIED.



INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.



SYSTEM NO. W-L-8079 ANSI/UL1479 (ASTM E814) CAN/ULC S115 Classified by Underwriters F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) F RATINGS - 1 AND 2-HOUR (SEE ITEM 1) Laboratories, Inc. to UL 1479 and CAN/ULC-T RATINGS - 0, 1/2, 3/4, 1-1/2, AND 2-HOUR FT RATINGS - 0, 1/2, 3/4, 1-1/2, AND 2-HOUR (SEE ITEMS 1, 2, 3 AND 4) (SEE ITEMS 1,2, 3 AND 4) FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1) FTH RATINGS - 0. 1/2. 3/4. 1-1/2. AND 2-HOUR (SEE ITEMS 1,2, 3 AND 4)



SYSTEM TESTED WITH A PRESSURE DIFFERENTIAL OF 2.5 PA BETWEEN THE EXPOSED AND THE UNEXPOSED SURFACES WITH THE HIGHER

1. WALL ASSEMBLY - THE 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 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 CHANNEL SHAPED STEEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER SPACED MAXIMUM 16 INCH (406 MM) ON CENTER STEEL STUDS TO BE MINIMUM 3-1/2 INCH (89 MM) WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER WHEN ITEM 5A1 IS NOT USED, ADDITIONAL FRAMING MEMBERS (NOT SHOWN) SHALL BE INSTALLED TO FRAME THE PERIPHERY OF THE WALL OPENING. WHEN THE ADDITIONAL FRAMING MEMBERS

ARE USED TO FRAME THE OPENING, THE HOURLY T, FT AND FTH RATINGS OF THE FIRESTOP SYSTEM ARE 0-HOUR. B. GYPSUM WALLBOARD\* - 5/8 INCH (16 MM) THICK WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 WALL AND PARTITION DESIGN. IF THE THROUGH PENETRANTS ARE INSTALLED IN A WOOD STUD/GYPSUM WALLBOARD ASSEMBLY, THE MAXIMUM, AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 210 SQUARE INCH (1355 CM2) WITH MAXIMUM DIMENSION OF 14-1/2 INCH (368 MM). IF THE THROUGH PENETRANTS ARE INSTALLED IN A STEEL STUD/GYPSUM WALLBOARD ASSEMBLY, MAXIMUM AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 240 SQUARE INCH (1548 CM2) WITH MAXIMUM DIMENSION OF 20 INCH (508 THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.



Page: 2 of 2

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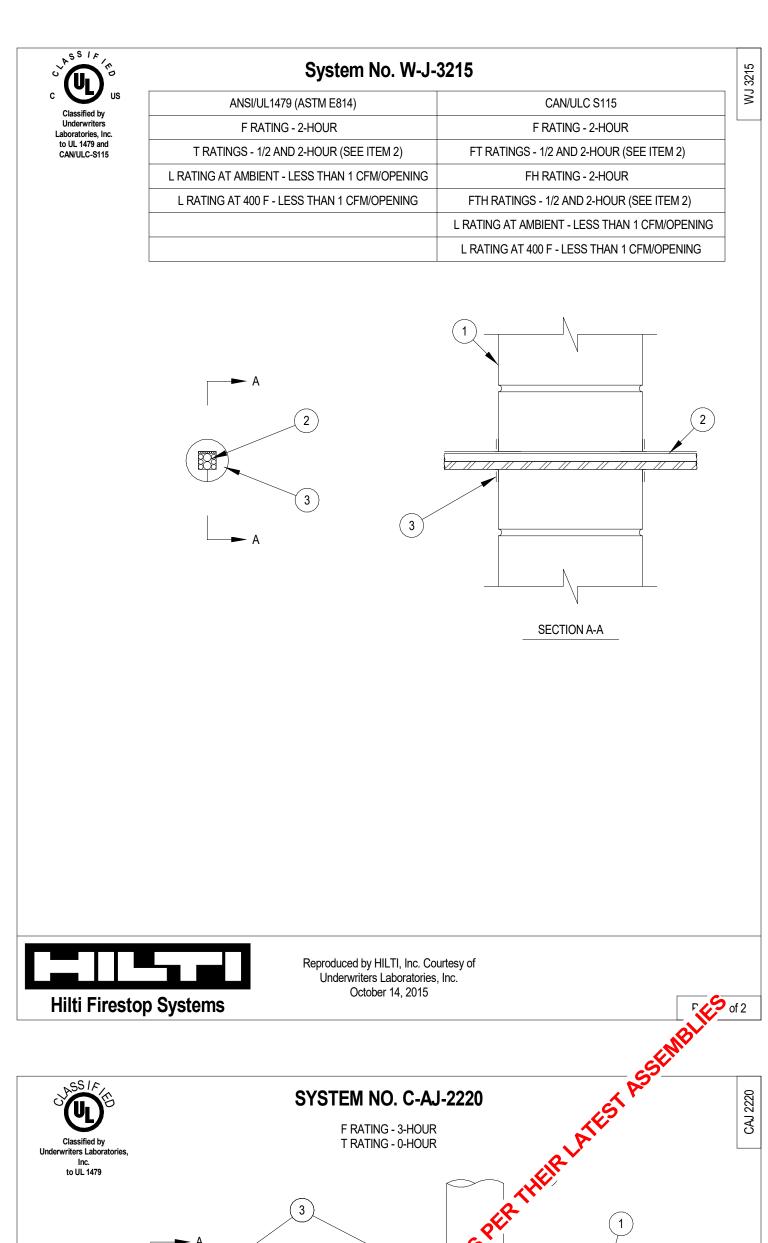
REVISIONS/SUBMITTALS DATE DESCRIPTION

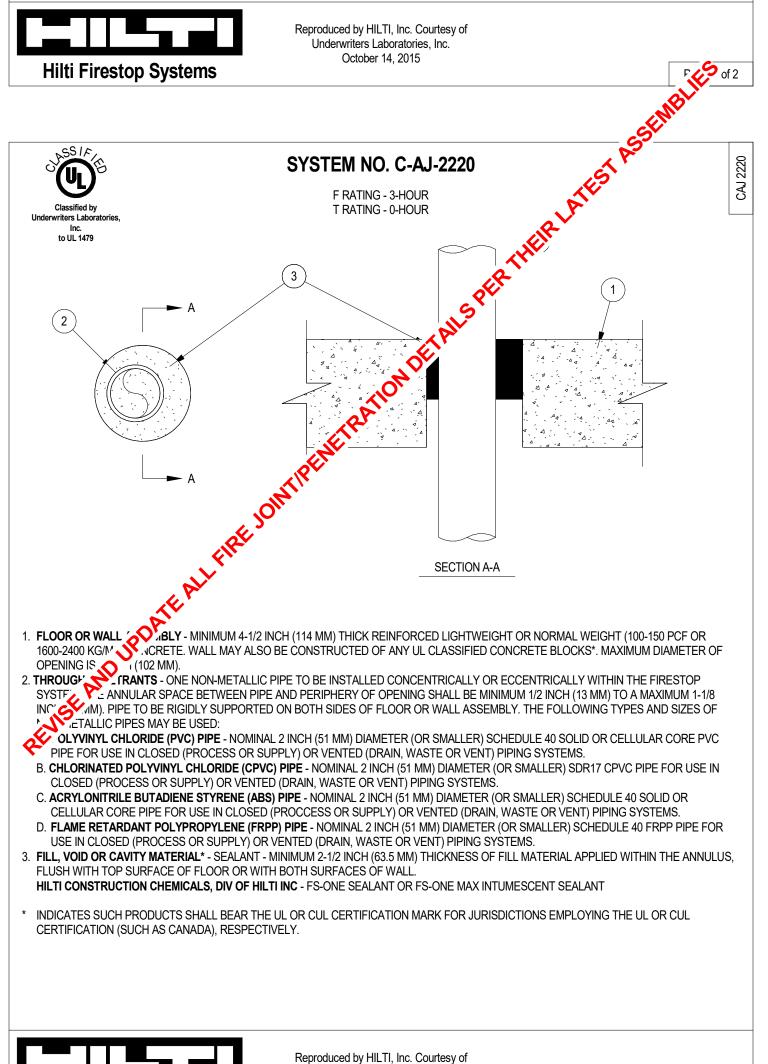
written description on request.

DATE: July 17, 2024

A7.2.25

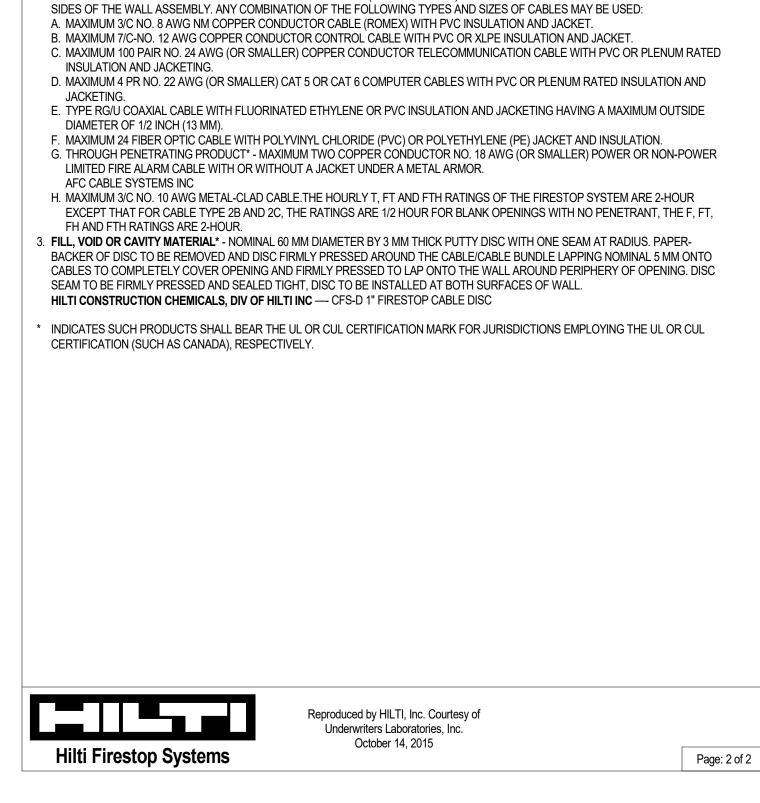
FIRE JOINTS - GYPSUM WALLS





Underwriters Laboratories, Inc.

January 09, 2015



SYSTEM NO. W-J-3215

I. WALL ASSEMBLY - MINIMUM 6 INCH (152 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\*. OPENING MAY BE ROUND,

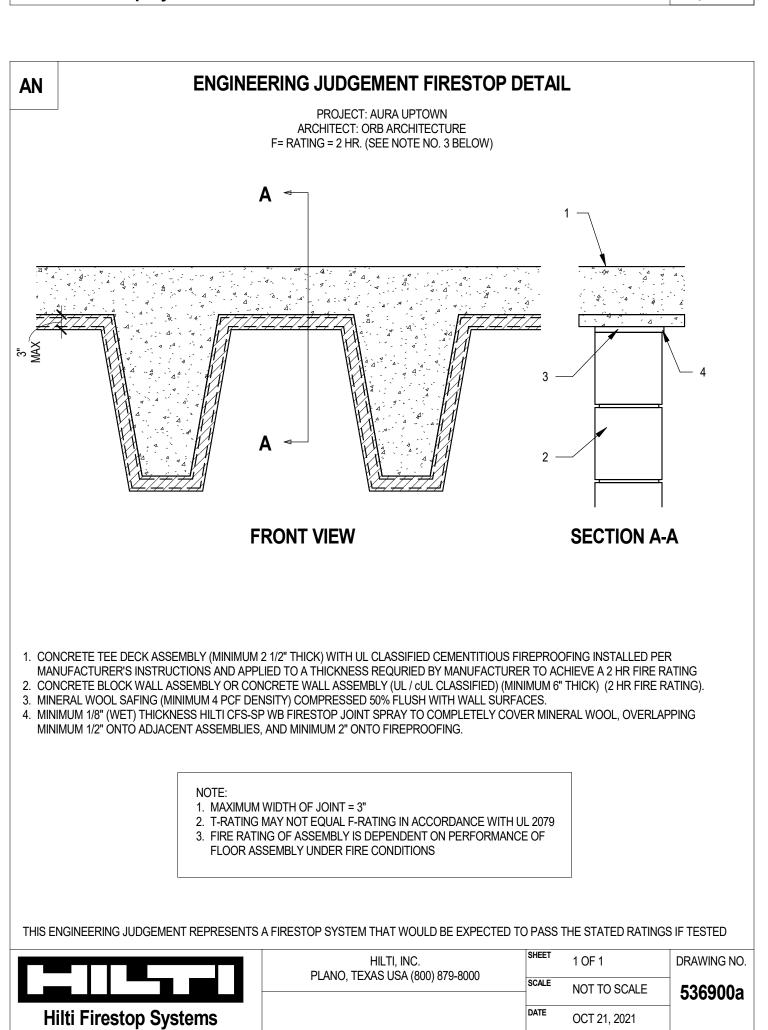
CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

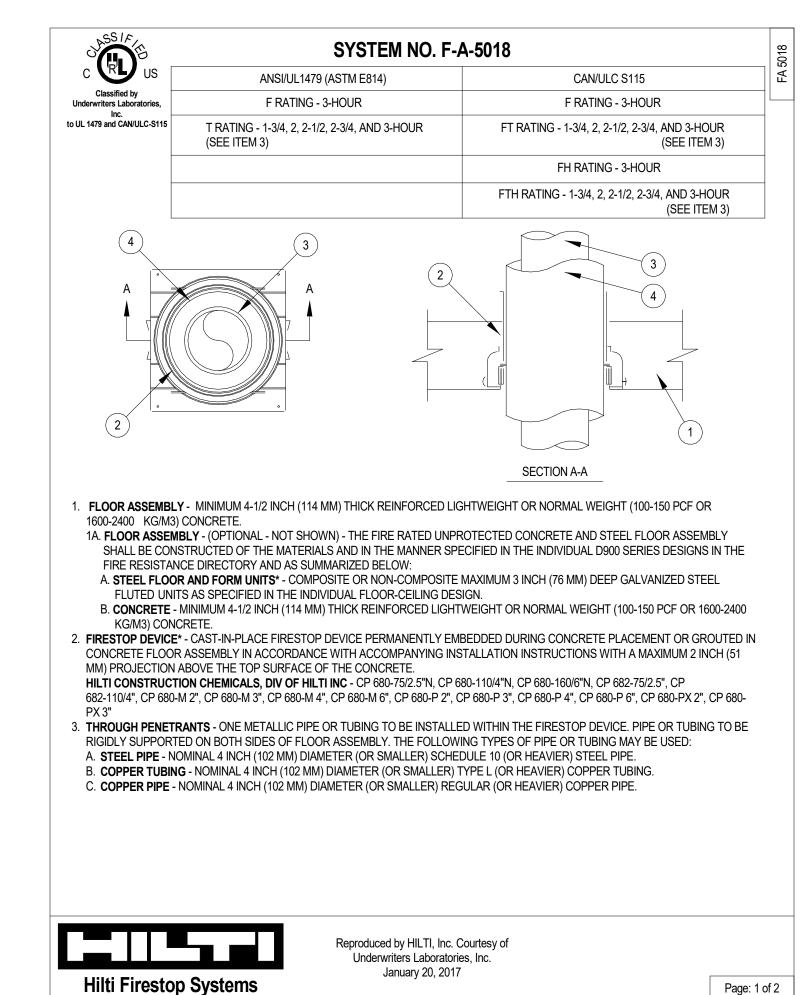
RECTANGULAR OR IRREGULAR WITH A MAXIMUM DIAMETER OR DIMENSION OF 1 INCH (25 MM). SEE CONCRETE BLOCKS (CAZT)

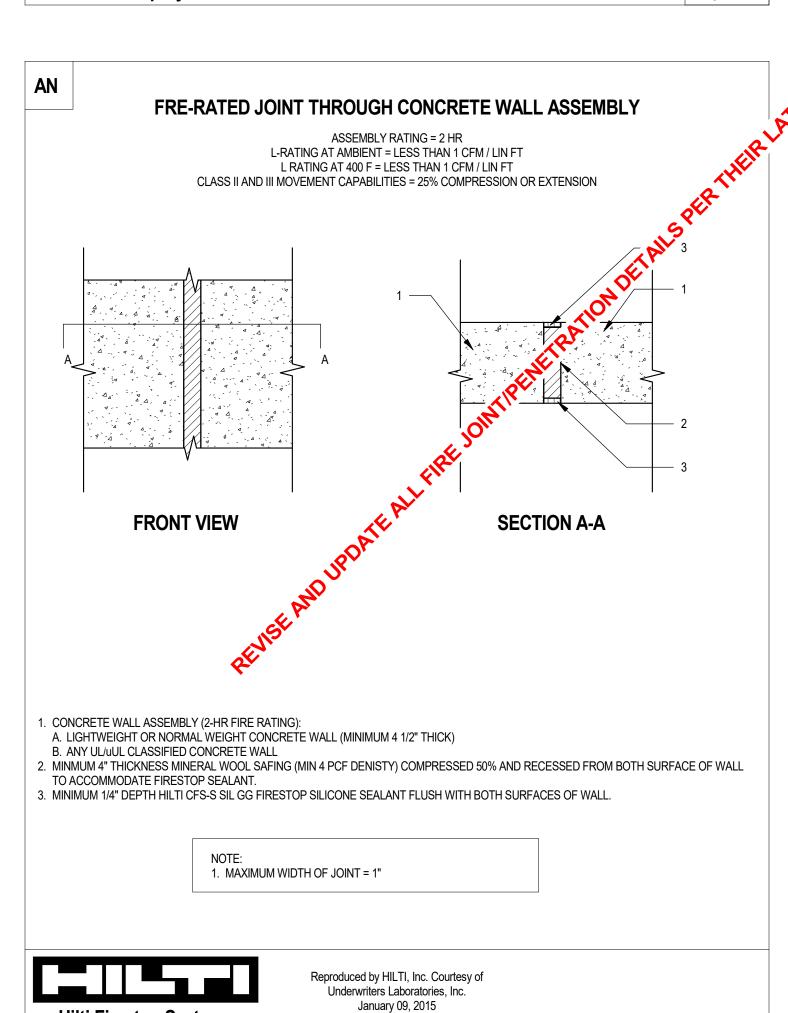
2. CABLES - SINGLE OR TIGHT BUNDLE OF CABLES TO BE INSTALLED WITHIN THE OPENING. AGGREGATE CROSS-SECTIONAL AREA OF

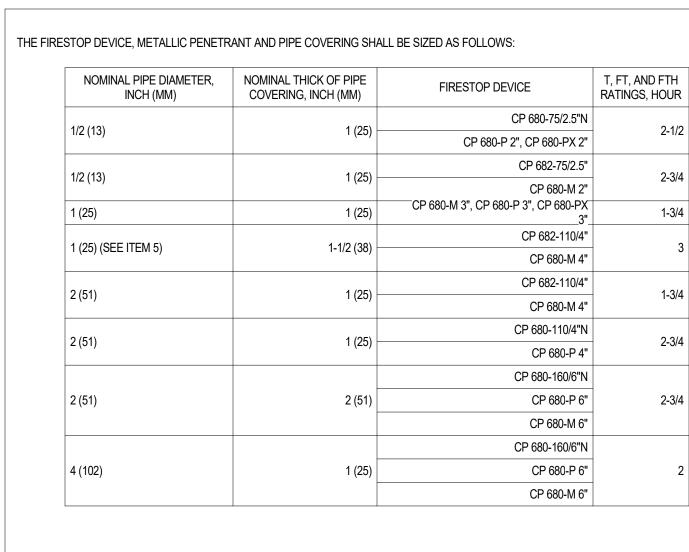
AND THE PERIPHERY OF THE OPENING TO BE MINIMUM 0 INCH (POINT CONTACT). CABLES TO BE RIGIDLY SUPPORTED ON BOTH

CABLES IN OPENING TO HAVE A VISUAL FILL OF MINIMUM 0% TO MAXIMUM 100%. THE ANNULAR SPACE BETWEEN THE CABLE BUNDLE









4. **PIPE COVERING\*** - NOMINAL 1, 1-1/2, AND 2 INCH (25, 38 AND 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF OR 56 KG/M³) GLASS FIBER UNITS, JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SSL TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. SEE PIPE AND EQUIPMENT COVERING-MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS

MAY BE USED.

5. PACKING MATERIAL - WHEN USING A 1 INCH (25 MM) DIAMETER PIPE WITH 1-1/2 INCH (38 MM) THICK GLASS FIBER PIPE INSULATION IN A 4 INCH (102 MM) DEVICE, A MINIMUM 2 INCH (51 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION SHALL BE FIRMLY PACKED INTO THE TOP OF DEVICE, FLUSH WITH THE TOP OF THE DEVICE. WHEN PIPE SIZES ARE LESS THAN THOSE SHOWN IN THE TABLE IN ITEM 3, MINIMUM 4 INCH (102 MM) THICKNESS OF MINIMUM 4 PCF (64 KG/M3) MINERAL WOOL INSULATION SHALL BE FIRMLY PACKED TO THE FULLEST EXTENT POSSIBLE WITHIN THE DEVICE FLUSH WITH TOP 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.

🧽 Firestop Systems

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SYSTEM NO. WW-D-0068 ASSEMBLY RATING - 1 AND 2 HOUR (SEE ITEM 1) NOMINAL JOINT WIDTH - 2 IN. CLASS II MOVEMENT CAPABILITIES - 12.5% COMPRESSION OR EXTENSION 1. CONCRETE WALL ASSEMBLY (2-HR FIRE RATING): A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4 1/2" THICK) B. ANY UL/uUL CLASSIFIED CONCRETE WALL 2. MINMUM 4" THICKNESS MINERAL WOOL SAFING (MIN 4 PCF DENISTY) COMPRESSED 50% AND RECESSED FROM BOTH SURFACE OF WALL TO ACCOMMODATE FIRESTOP SEALANT. 3. MINIMUM 1/4" DEPTH HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT FLUSH WITH BOTH SURFACES OF WALL. NOTE: 1. MAXIMUM WIDTH OF JOINT = 1" Reproduced by HILTI, Inc. Courtesy of

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January 09, 2015

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2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

R E V I S I O N S/ SUBMITTALS
DATE DESCRIPTION

and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024 ORB #:

A7.2.26

**ENGINEERING JUDGEMENT FIRESTOP DETAIL** PROJECT: ARCHITECT: ORB ARCHITECTURE F-RATING = 2 HOUR (SEE NOTE NO. 3 BELOW) **CROSS-SECTIONAL VIEW** 1. CONCRETE TEE DECK ASSEMBLY (MINIMUM 2-1/2" THICK) WITH UL CLASSIFIED CEMENTITIOUS FIREPROOFING INSTALLED PER MANUFACTUERER'S INSTRUCTION'S AND APPLIED TO A THICKNESS REQUIRED BY MANUFACTURER TO ACHIEVE A 2-HR FIRE RATING. 2. CONCRETE BLOCK WALL ASSEMBLY OR CONCRETE WALL ASSEMBLY (UL/cUL CLASSIFIED) (MINIMUM 6" THICK) (2-HR FIRE RATING)
3. MINIMUM 4" THICKNESS MINERAL WOOL SAFING (MIN. 4 PCF DENSITY) COMPRESSED 50% FLUSH WITH ACCESSIBLE SIDE OF WALL 4. MINIMUM 2" THICKNESS MINERAL WOOL SAFING (MIN. 4 PCF DENSITY) COMPRESSED 50% FLUSH WITH NON-ACCESSIBLE SIDE OF WALL 5. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY TO COMPLETELY COVER MINERAL WOOL, OVERLAPPING MINIMUM ONTO ADJACENT ASSEMBLIES, AND 2" ONTO FIREPROOFING. NOTE:

1. MAXIMUM WIDTH OF JOINT = 3"

2. T-RATING MAY NOT EQUAL F-RATING IN ACCORDANCE WITH UL 2079

3. FIRE-RATING OF ASSEMBLY IS DEPENDENT UPON THE PERFORMANCE OF FLOOR ASSEMBLY UNDER FIRE CONDITIONS 1. THIS ENGINEERING JUDGEMENT REPRESENTS A FIRETOP SYSTEM THAT WOULD BE EXPECTED TO PASS THE STATED RATINGS IF TESTED. (REFERENCE: UL/cUL SYSTEM NO. HW-D-1058 & HW-D-0286) Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 09, 2015 Hilti Firestor stems

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Project Name 1 Project Name 2

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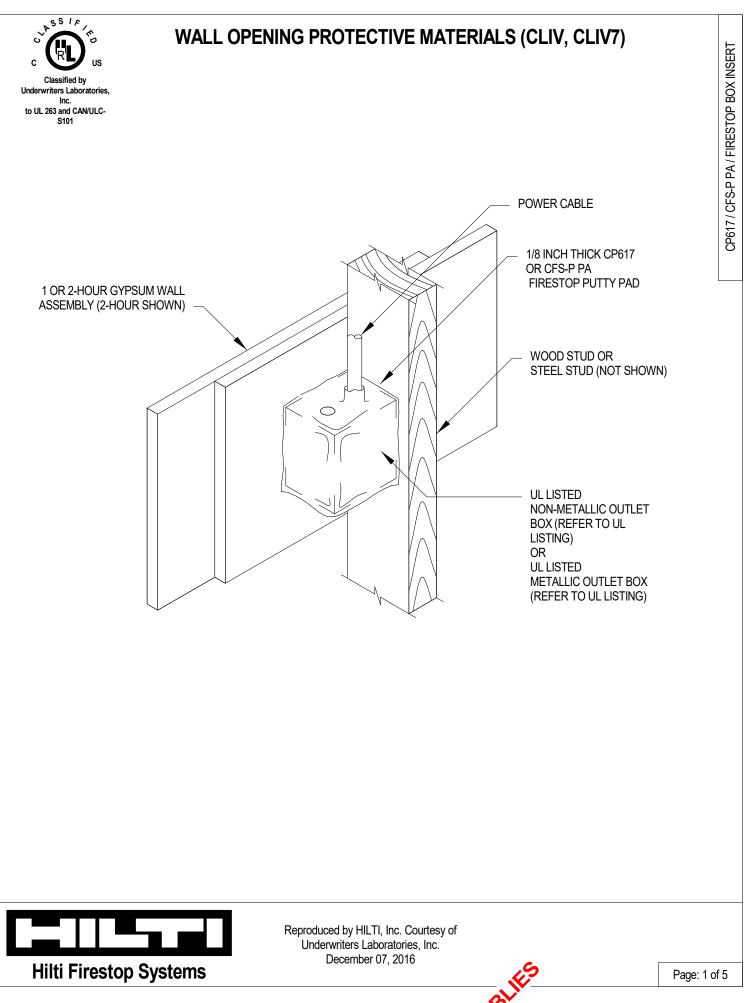
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REVISIONS/SUBMITTALS DATE DESCRIPTION

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DATE: July 17, 2024 ORB #: 00-000

FIRE JOINTS - CONCRETE OR CMU



# WALL OPENING PROTECTIVE MATERIALS (CLIV, CLIV7) STEEL STUD OR WOOD STUD (NOT SHOWN) 1 OR 2-HOUR GYPSUM WALL ASSEMBLY (2-HOUR SHOWN) POWER CABLE FIRESTOP BOX **UL LISTED NON-METALLIC** OUTLET BOX (REFER TO UL LISTING) OR UL LISTED METALLIC OUTLET BOX (REFER TO UL Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc.

# WALL OPENING PROTECTIVE MATERIALS (CLIV, CLIV7)

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS. FOR USE WITH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL MUD RINGS OR UL LISTED NON-METALLIC OUTLET BOXES IN FRAMED WALL ASSEMBLIES AS SPECIFIED BELOW. WHEN PROTECTIVE MATERIAL IS USED ON OUTLET BOXES ON BOTH SIDES OF THE WALL AS DIRECTED, THE HORIZONTAL SEPARATION BETWEEN OUTLET BOXES ON OPPOSITE SIDES OF THE WALL MAY BE LESS THAN 24 INCH PROVIDED THAT THE BOXES ARE NOT INSTALLED BACK-TO-BACK (UNLESS OTHERWISE INDICATED). INSTALLATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NFPA 70). MINIMUM 1/8 INCH THICK (CP 617) OR MINIMUM 0.2 INCH (CFS-P PA) THICK MOLDABLE PUTTY PADS ARE TO BE INSTALLED TO COMPLETELY COVER THE EXTERIOR SURFACES OF THE OUTLET BOX (EXCEPT FOR THE SIDE OF THE OUTLET BOX AGAINST THE STUD) AND CONDUIT FITTINGS/CONNECTORS AND TO COMPLETELY SEAL AGAINST THE STUD AND GYPSUM WALLBOARD IN THE WALL CAVITY UNLESS OTHERWISE NOTED BELOW. WHEN CFS-P PA IS USED, THE PUTTY PADS MAY BE INSTALLED WITH THE RELEASE LINER INTACT ON THE OUTSIDE OF THE PAD WITH THE EXCEPTION OF ANY OVERLAPS, IN WHICH CASE THE LINER IS TO BE REMOVED FROM THE BOTTOM LAYER AT THE OVERLAP LOCATION. THE BOX COMPOSITION, MAX DEVICE DIMENSIONS, HOURLY RATING, TYPE OF STUD AND TYPE OF FACEPLATE ARE SPECIFIED BELOW.

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS. FOR USE WITH MAXIMUM 4 X 4 BY MAXIMUM 2-1/8 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL COVER PLATES IN 1 AND 2-HOUR. FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MIN 3-1/2 INCH DEEP WOOD OR STEEL STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400

SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY.

INSTALLED WITH STEEL OR PLASTIC COVER PLATES.

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 4-11/16 X 4-11/16 X MAXIMUM 2-1/8 INCH. OR MAXIMUM 4-3/8 X 4-7/8 X MAXIMUM 2-1/8 INCH, FLUSH GYPSUM WALLBOARD/WOOD STUD WALL AND PARTITION DESIGN NO. IN THE FIRE RESISTANCE DIRECTORY. WHEN U341 WALL DESIGN IS USED, WALL SHALL BE SHEATHED WITH 5/8 INCH GYPSUM WALLBOARD, AND GLASS OR MINERAL FIBER BATT INSULATION SHALL BE INSTALLED IN STUD CAVITIES IN ACCORDANCE WITH U341 DESIGN. BOXES MAY BE INSTALLED BACK-TO-BACK.

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 4-11/16 X 4-11/16 X MAXIMUM 2-1/8 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL COVER PLATES FOR USE IN 1 AND 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD OR STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. MINIMUM 0.8 PCF DENSITY FIBERGLASS BATT INSULATION IS TO BE INSTALLED WITHIN THE WALL CAVITY REQUIRED FOR 1-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES AND OPTIONAL IN 2-HOUR FIRE RATED GYPSUM WALLBOARD

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 4 X 3-3/4 X 3 INCH DEEP UL LISTED NON-METALLIC OUTLET BOXES MANUFACTURED BY CARLON ELECTRICAL PRODUCTS. MADE FROM POLYVINYL CHLORIDE. AND BEARING A 2-HOUR RATING UNDER THE "OUTLET BOXES AND FITTINGS CLASSIFICATION FOR FIRE RESISTANCE" CATEGORY IN THE FIRE RESISTANCE DIRECTORY. PUTTY PADS AND BOXES FOR USE IN 1 AND 2-HOUR FIRE RATED GYPSUM WALLBOARD ASSEMBLIES, FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. OUTLET BOX SECURED TO WOOD STUD BY MEANS OF TWO NAILING TABS SUPPLIED WITH THE OUTLET BOX. PUTTY PADS SHALL LAP MINIMUM 1/2 INCH ONTO THE STUD AND GYPSUM WALLBOARD WITHIN THE STUD CAVITY. OUTLET BOXES

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS. FOR USE WITH MAXIMUM 4 X 4 X 2-7/8 INCH DEEP UL LISTED NON-METALLIC OUTLET BOXES MANUFACTURED BY CARLON ELECTRICAL PRODUCTS, MADE FROM POLYVINYL CHLORIDE, AND BEARING A 2-HOUR RATING UNDER THE "OUTLET BOXES AND FITTINGS CLASSIFICATION FOR FIRE RESISTANCE" CATEGORY IN THE FIRE RESISTANCE DIRECTORY. PUTTY PADS AND BOXES FOR USE IN THE 1-HOUR FIRE RATED V446 GYPSUM WALLBOARD/STEEL STUD OR U341 GYPSUM WALLBOARD/WOOD STUD WALL AND PARTITION DESIGN IN THE FIRE RESISTANCE DIRECTORY. WHEN U341 WALL DESIGN IS USED, WALL SHALL BE SHEATHED WITH 5/8 INCH GYPSUM WALLBOARD. AND GLASS OR MINERAL FIBER BATT INSULATION SHALL BE INSTALLED IN STUD CAVITIES IN ACCORDANCE WITH U341 DESIGN. OUTLET BOX SECURED TO STEEL STUD BY MEANS OF FASTENING TAB SUPPLIED WITH THE OUTLET BOX. PUTTY PADS SHALL LAP MINIMUM 1/2 INCH ONTO THE STUD AND GYPSUM WALLBOARD WITHIN THE STUD CAVITY. OUTLET BOXES INSTALLED WITH STEEL OR PLASTIC COVER PLATES. BOXES MAY BE INSTALLED BACK TO BACK. CP 617 FIRESTOP PUTTY PADS. FOR USE WITH MAXIMUM 2-1/4 X 3-3/4 X 2-3/4 INCH DEEP UL LISTED NON-METALLIC OUTLET BOXES MANUFACTURED BY PASS AND SEYMORE, INC., AND BEARING A 2-HOUR RATING UNDER THE "OUTLET BOXES AND FITTINGS CLASSIFICATION FOR FIRE RESISTANCE" CATEGORY IN THE FIRE RESISTANCE DIRECTORY. PUTTY PADS AND BOXES FOR USE IN 1 AND 2-HOUR FIRE RATED GYPSUM WALLBOARD ASSEMBLIES, FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. OUTLET BOX SECURED TO WOOD STUD BY MEANS OF TWO NAILING TABS SUPPLIED WITH THE OUTLET BOX.PUTTY PADS SHALL LAP MINIMUM 1/2 INCH ONTO THE STUD AND GYPSUM WALLBOARD WITHIN THE STUD CAVITY. OUTLET BOXES INSTALLED WITH STEEL OR PLASTIC

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 4 X 3-3/4 X 3 INCH DEEP UL LISTED NON-METALLIC OUTLET BOXES MANUFACTURED BY ALLIED MOLDED PRODUCTS, INC., MADE FROM FIBER REINFORCED THERMOPLASTIC AND BEARING A 2-HOUR RATING UNDER THE "OUTLET BOXES AND FITTINGS CLASSIFICATION FOR FIRE RESISTANCE" CATEGORY IN THE FIRE RESISTANCE DIRECTORY. PUTTY PADS AND BOXES FOR USE IN 1-HOUR FIRE RATED GYPSUM WALLBOARD ASSEMBLIES, FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. OUTLET BOX SECURED TO WOOD STUD BY MEANS OF TWO NAILING TABS SUPPLIED WITH THE OUTLET BOX. PUTTY PADS SHALL LAP MINIMUM 1/2 INCH ONTO THE STUD AND GYPSUM WALLBOARD WITHIN THE STUD CAVITY. OUTLET BOXES INSTALLED WITH PLASTIC COVER PLATES.

# Wall Opening Protective Materials (CLIV, CLIV7)

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 4 X 4 INCH X 1-1/2 INCH DEEP FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL COVER PLATES IN 1-HOUR. FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MIN 3-1/2 INCH DEEP WOOD OR STEEL STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. THE BOXES ARE INSTALLED BACK TO BACK WITH 5 X 4 INCH UL CLASSIFIED FIRE BLOCK, CP 657 OR CFS-BL FIRESTOP BLOCK INSTALLED IN THE CAVITY

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 14 X 4 X MAXIMUM 2-1/2 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL COVER PLATES IN 1 AND 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 5-1/2 INCH DEEP WOOD OR STEEL STUDS FOR 2-HOUR FIRE RATED WALLS AND MINIMUM 3-1/2 INCH DEEP WOOD OR STEEL STUDS FOR 1-HOUR FIRE RATED WALLS. WALLS CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. STUD CAVITY INSULATION IS REQUIRED AND SHALL CONSIST OF MINIMUM 5-1/2 INCH (2-HOUR RATED WALLS) OR MINIMUM 3-1/2 INCH (1-HOUR RATED WALLS) THICK FIBERGLASS (MINIMUM 0.8 PCF) OR MINERAL FIBER (MINIMUM 4 PCF). PUTTY PADS SHALL LAP MINIMUM 1/2 INCH ONTO THE STUD AND GYPSUM WALLBOARD WITHIN THE STUD CAVITY, WHEN BOXES ARE INTERCONNECTED BY MEANS OF ELECTRICAL METALLIC TUBE (EMT) OR CONDUIT, A BALL OF PUTTY PAD MATERIAL SHALL BE USED TO COMPLETELY PLUG THE

OPEN END OF EACH EMT OR CONDUIT WITHIN THE BOX. CP 617 OR CFS-P PA FIRESTOP PUTTY PADS, FOR USE WITH MAXIMUM 4-11/16 X 4-11/16 X MAXIMUM 2-1/8 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL OR PLASTIC COVER PLATES FOR USE IN 1 AND 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 5-1/2 INCH DEEP STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. PUTTY PADS SHALL LAP MINIMUM 1/2 INCH ONTO THE STUD AND GYPSUM WALLBOARD WITHIN THE STUD CAVITY, WHEN BOXES ARE INTERCONNECTED BY MEANS OF ELECTRICAL METALLIC TUBE (EMT) OR CONDUIT. A BALL OF PUTTY PAD MATERIAL SHALL BE USED TO COMPLETELY PLUG THE OPEN END OF EACH EMT OR CONDUIT WITHIN THE OUTLET BOXES. METALLIC OUTLET BOXES MAY BE PROVIDED WITH STEEL ATTACHMENT BRACKETS WHICH OFFSET BOX MINIMUM 1/4 INCH

FROM STUD. WHEN STEEL ATTACHMENT BRACKETS ARE USED, PUTTY PAD TO BE AFFIXED TO THE BACK AND ALL FOUR SIDES OF CFS-P PA MOLDABLE PUTTY PADS, FOR USE WITH MAXIMUM 4-11/16 X 4-11/16 INCH X MAXIMUM 2-1/8 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL COVER PLATES IN 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400 AND V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. AN ADDITIONAL 3/4 INCH BALL OF PUTTY PAD MATERIAL SHALL BE USED TO PLUG THE END OF EACH ELECTRICAL METALLIC TUBE OR CONDUIT AT ITS CONNECTION TO THE BOX.

CFS-P PA MOLDABLE PUTTY PADS, FOR USE WITH MAXIMUM 4 X 4 X 2-1/8 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL OR PLASTIC COVER PLATES IN 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400 AND V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. AN ADDITIONAL 3/4 INCH BALL OF PUTTY PAD MATERIAL SHALL BE USED TO PLUG THE END OF EACH ELECTRICAL METALLIC TUBE OR CONDUIT AT ITS

CFS-P PA MOLDABLE PUTTY PADS, FOR USE WITH MAXIMUM 14-1/4 X 4-1/2 X 2-1/2 INCH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL COVER PLATES IN 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400 AND V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. AN ADDITIONAL 3/4 INCH BALL OF PUTTY PAD MATERIAL SHALL BE USED TO PLUG THE END OF EACH ELECTRICAL METALLIC TUBE OR CONDUIT AT ITS HILTI FIRESTOP BOX INSERT, FOR USE WITH FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL MUD RINGS

OR ULLISTED NON-METALLIC OUTLET BOXES IN FRAMED WALL ASSEMBLIES AS SPECIFIED BELOW. WHEN PROTECTIVE MATERIAL

IS USED ON OUTLET BOXES ON BOTH SIDES OF THE WALL AS DIRECTED, THE HORIZONTAL SEPARATION BETWEEN OUTLET

BOXES ON OPPOSITE SIDES OF THE WALL MAY BE LESS THAN 24 INCH PROVIDED THAT THE BOXES ARE NOT INSTALLED BACK-TO-BACK (UNLESS OTHERWISE INDICATED). INSTALLATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NFPA 70). THE BOX COMPOSITION, MAXIMUM DEVICE DIMENSIONS, HOURLY RATING, TYPE OF STUD AND TYPE OF FACEPLATE ARE SPECIFIED BELOW. HILTI FIRESTOP BOX INSERT, FOR USE WITH MAXIMUM 4-11/16 X 4-11/16 X 2-1/8 INCH DEEP UL LISTED METALLIC OUTLET BOXES WITHOUT INTERNAL CLAMPS IN 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD OR STEEL STUDS AND CONSTRUCTED OF MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. OUTLET BOXES IN 1-HOUR FIRE

BE INSTALLED WITH STEEL COVER PLATES. ONE 4-3/8 X 4-3/8 INCH INSERT ADHERED TO THE INTERIOR BACK WALL OF THE

OUTLET BOX IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED WITH THE PRODUCT. SMALLER SIZED INSERTS MAY BE CUT AND COMBINED TO ACHIEVE THE 4-3/8 X 4-3/8 INCH COVERAGE. HILTI FIRESTOP BOX INSERT, FOR USE WITH MAXIMUM 4 X 4 X 1-1/2 INCH DEEP AND 2-1/8 INCH DEEP UL LISTED METALLIC OUTLET BOXES WITHOUT INTERNAL CLAMPS IN 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MAIMUM 3 1/2 INCH DEEP STEEL OR WOOD STUDS AND CONSTRUCTED OF MATERIALS AND IN THE MANNER SPECIFIED IN THE 🥟 IDUAL U400, V400 OR U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY, AS SUMMARIZED IN Yie Table Below. One 3-11/16 X 3-3/4 INCH INSERT ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN XACCORDANCE WITH THE INSTRUCTIONS SUPPLIED WITH THE PRODUCT. SMALLER SIZED INSERTS MAY BE CUT AND COMBINED

RATED WALLS MAY BE INSTALLED WITH PLASTIC OR STEEL COVER PLATES. OUTLET BOXES IN 2-HOUR FIRE RATED WALLS SHALL

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# WALL OPENING PROTECTIVE MATER, (CLIV, CLIV7)

BOX	TYPE OF BOX	HOURI '	WALL
SIZE	AND COVER PLATE		TYPE
4 X 4 X 2-1/8 INCH	METALLIC WITH STEEL	EIPJUR	U300, U400, OR V400 - WOOD OR
DEEP	COVER PLATES		STEEL STUDS
4 X 4 X 2-1/8 INCH	METALLIC WITH PLAST	1-HOUR	U300, U400, OR V400 - WOOD OR
DEEP	COVER PI		STEEL STUDS
4 X 4 X 1-1/2 INCH DEEP	METALLIC WIT' 5 STIC CC LATES	1-HOUR	U300 - WOOD STUDS

HILTI FIRESTOP BOX INSERT, FOR USAN H MAXIMUM 2 1/8 X 4 X 2 1/8 INCH DEEP UL LISTED METALLIC OUTLET BOXES WITHOUT INTERNAL CLAMPS IN 2-HOUR OF ATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3 1/2 INCH DEEP WOOD OR STEEL STUDS AND CONTITION OF MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DEATH IN THE FIRE RESISTANCE DIRECTORY. OUTLET BOXES MAY BE INSTALLED WITH STEEL COVER PLATES. ONE 1-7/8 X 2 INSERT ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN ACCORDANCE WITH THE INSTRUCTIONS SUE WITH THE PRODUCT.

HILTI FIRESTOP BC: 🔨 RT, FOR USE WITH MAXIMUM 4-1/2 X 8-1/2 X 1-5/8 INCH DEEP OR MAXIMUM 3-3/4 X 5-1/2 X 2-1/2 INCH DEEP UL LISTED META: YUTLET BOXES WITHOUT INTERNAL CLAMPS IN 1-HOUR OR 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIZ AMED WITH MINIMUM 3 1/2 INCH DEEP STEEL OR WOOD STUDS AND CONSTRUCTED OF MATERIALS AND IN THE MANNE SIFIED IN THE INDIVIDUAL U400, V400 OR U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRF Y. (, AS SUMMARIZED IN THE TABLE BELOW. OUTLET BOXES INSTALLED WITH STEEL COVER PLATES. BOX INSERTS EVENLY STAND ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED

Y	BOX SIZE	INSERTS USED	FIRE RATING	WALL TYPE
	4-1/2 X 8-1/2 X 1-5/8 INCH DEEP	TWO 3-11/16 X 3-3/4 IN. INSERTS **	2-HOUR	U300, U400 OR V400 - WOOD OR STEEL STUDS
	3-3/4 X 5-1/2 X 2-1/2 INCH DEEP	ONE 3-11/16 X 3-3/4 INCH INSERT AND ONE 1-7/8 X 2-13/16 INCH INSERT	1-HOUR	U300, U400, OR V400 - WOOD OR STEEL STUDS

\*\* - MINIMUM 3/4 INCH DEEP PLASTER RINGS INSTALLED OVER OUTLET BOX. AFTER INSTALLATION OF GYPSUM WALLBOARD, NOMINAL 1/4 INCH THICKNESS OF HILTI FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT, BEARING THE UL CLASSIFICATION MARKING FOR FILL, VOID OR CAVITY MATERIALS, APPLIED BETWEEN THE BASE LAYER OF WALLBOARD AND THE PLASTER RING.

HILTI FIRESTOP BOX INSERT, FOR USE WITH 4-3/8 X 4-7/8 X 2-1/4 INCH DEEP FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES WITHOUT INTERNAL CLAMPS IN 1-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD OR STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. ONE 4-3/8 INCH WIDE X 4-3/8 INCH HIGH INSERT ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS SUPPLIED WITH THE PRODUCT. SMALLER SIZED INSERTS MAY BE CUT AND COMBINED TO ACHIEVE THE 4-3/8 INCH X 4-3/8 INCH COVERAGE AND ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX. OUTLET BOXES INSTALLED WITH PLASTIC OR STEEL COVER PLATES. HILTI FIRESTOP BOX INSERT, FOR USE WITH 4-3/8 X 4-7/8 X 2-1/4 INCH DEEP FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES WITHOUT INTERNAL CLAMPS IN 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2 INCH DEEP WOOD OR STEEL STUDS AND CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. ONE 4-3/8 INCH WIDE X 4-3/8 INCH HIGH INSERT ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS SUPPLIED WITH THE PRODUCT. SMALLER SIZED INSERTS MAY BE CUT AND COMBINED TO ACHIEVE THE 4-3/8 X 4-3/8 INCH COVERAGE AND ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX. OUTLET BOXES INSTALLED WITH STEEL COVER PLATES.

CP 617 OR CFS-P PA FIRESTOP PUTTY PADS AND HILTI FIRESTOP BOX INSERTS, FOR USE WITH MAXIMUM 4 X 4 X 1-1/2 INCH (102 X 102 X 38 MM) DEEP FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL MUD RINGS AND WITH STEEL OR PLASTIC FACEPLATES IN 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES CONSTRUCTED WITH MINIMUM 3-1/2 INCH (89 MM) WIDE WOOD OR STEEL STUDS. WHEN BOTH PROTECTIVE MATERIALS ARE USED WITH OUTLET BOXES ON BOTH SIDES OF THE WALL AS DIRECTED, THE BOXES MAY BE INSTALLED BACK-TO-BACK PROVIDED THAT THE BACKS OF THE BOXES ARE MINIMUM 1/2 INCH (13 MM) APART AND PROVIDED THAT THE BOXES ARE NOT INTERCONNECTED. ADJOINING PIECES OF MOLDABLE PUTTY PADS TO BE OVERLAPPED APPROXIMATE 1/2 INCH (13 MM) AT THE SEAM. AN INSERT PAD SHALL BE INSTALLED TO COMPLETELY COVER THE BACK INSIDE SURFACE OF EACH OUTLET BOX.



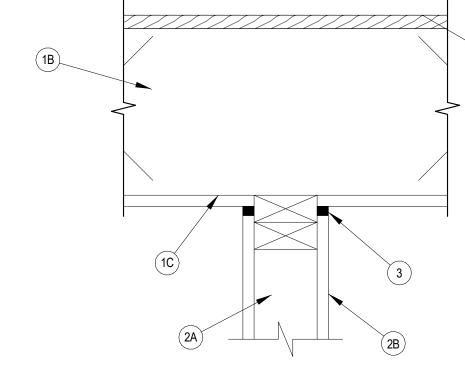
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Page: 5 of 5

SYSTEM NO. HW-S-0090

c RU us	ANSI/UL2079	CAN/ULC S115
Classified by Underwriters Laboratories, Inc.	ASSEMBLY RATING - 1-HOUR	F RATING - 1-HOUR
to UL 2079 and CAN/ULC- S115	JOINT WIDTH - 1/2 INCH MAXIMUM	FT RATING - 1-HOUR
		FH RATING - 1-HOUR
		FTH RATINGS - 1-HOUR
		JOINT WIDTH - 1/2 INCH MAXIMUM

December 07, 2016



. FLOOR ASSEMBLY - THE 1-HOUR FIRE-RATED WOOD JOIST, WOOD TRUSS OR COMBINATION WOOD AND STEEL TRUSS FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE\*

AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. B. WOOD JOISTS - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS\* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED. C. GYPSUM WALLBOARD\* - NOMINAL 4 FOOT (122 CM) WIDE X 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING

. WALL ASSEMBLY - THE 1-HOUR FIRE RATED GYPSUM WALLBOARD/LUMBER STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING TO CONSIST OF NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER SPACED 16 INCH (406 MM) ON CENTER TOP PLATE INSTALLED PARALLEL OR PERPENDICULAR TO DIRECTION OF WOOD JOISTS AND SECURED TO BOTTOM OF JOISTS WITH STEEL FASTENERS SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.

B. GYPSUM WALLBOARD\* - GYPSUM WALLBOARD SHEETS INSTALLED TO A MINIMUM TOTAL THICKNESS OF 5/8 INCH (16 MM) ON EACH SIDE OF WALL. WALL TO BE CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, EXCEPT THAT A MAXIMUM 1/2 INCH (13 MM) GAP SHALL BE MAINTAINED BETWEEN THE TOP OF THE GYPSUM WALLBOARD AND THE CEILING OF THE FLOOR-CEILING ASSEMBLY. B. JOINT SYSTEM - FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MAXIMUM SEPARATION BETWEEN THE BOTTOM OF THE CEILING AND THE

TOP OF THE WALL IS 1/2 INCH (13 MM). MINIMUM 5/8 INCH (16 MM) THICKNESS OF FILL MATERIAL INSTALLED TO FILL THE JOINT, FLUSH WITH EACH SURFACE OF THE WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT, CP606 SEALANT OR FS-ONE MAX INTUMESCENT SEALANT. INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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Page: 2 of 5

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TO ACHIEVE THE 3-11/16 X 3-3/4 INCH COVERAGE.

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Page: 4 of 5

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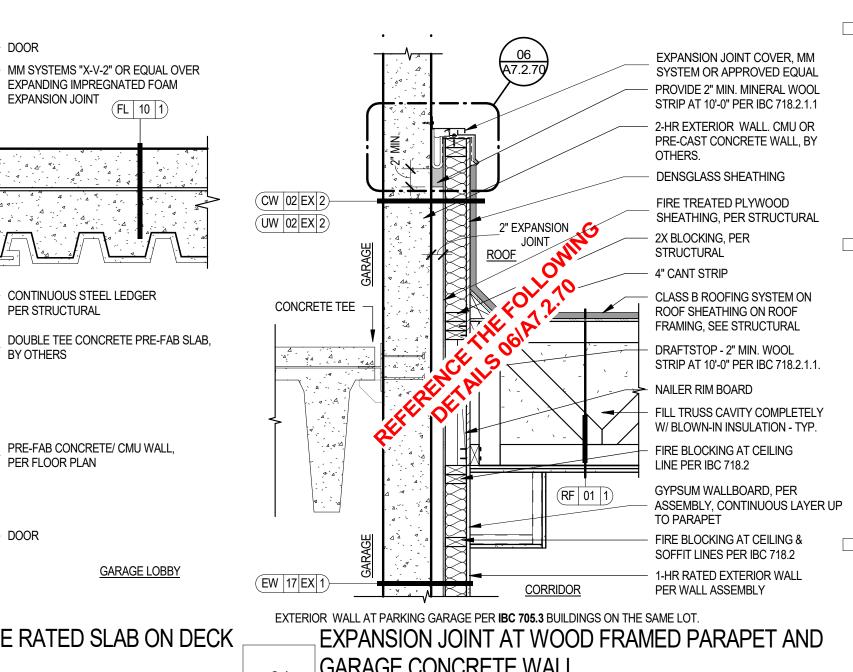
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FIRE JOINTS - MEMBRANI PENETRATION / JOINT GYP.

**CORRIDOR** DOOR EXPANSION JOINT 44 4 4 44 PER STRUCTURAL BY OTHERS PER FLOOR PLAN CORRIDOR EXPANSION JOINT AT GARAGE RATED SLAB ON DECK 2-HR RATED EXTERIOR CMU OR PRE-CAST CONCRETE WALL, BY OTHERS -(CW | 02 | EX | 2) UW 02 EX 2 ALT. PER PLAN MM SYSTEM " WJL-2-2" EXPANSION JOINT CAP OR EQUAL - 20 GA PRE-FINISHED METAL COPING 22 GA CONTINOUS GSM CLEAT WEATHER RESISTANT BARRIER - 2x WOOD FRAMING, PER STRUCTURAL DENSGLASS SHEATHING CLASS B ROOFING SYSTEM 1-HR RATED EXTERIOR WALL PARAPET EXPANSION JOINT <u>CORRIDOR</u> -(EW | 17 | EX | 1) <u>GARAGE</u> OVER EXPANDING IMPREGNATED -(CW | 02 | EX | 2) UW | 02 | EX | 2 **DRIVEWAY ENTRANCE** ALT. PER PLAN EXPANSION JOINT AT GARAGE ENTRY AND WOOD FRAMED WALL



**GARAGE CONCRETE WALL** SCALE: 3/4" = 1'-0"

SCALE: 1 1/2" = 1'-0"

SCALE: 3" = 1'-0"

1-HR RATED EXTERIOR WALL

GYPSUM WALLBOARD, PER

FIRE TREATED PLYWOOD SHEATHING, PER STRUCTURAL

2-HR EXTERIOR CMU OR PRE-CAST

CONCRETE WALL, BY OTHERS

GLUE LAMINATED WOOD BEAM,

PER STRUCTURAL, UPSIZED FOR

MM SYSTEM 'FX-L-2' OR EQUAL,

SCALE: 1" = 1'-0"

<u>CORRIDOR</u>

EW 17 EX 1

CW | 02 | EX | 2 | UW | 02 | EX | 2 |

ALT. PER PLAN

FOAM EXPANSION JOINT

MM SYSTEM 'FX-L-2' OR EQUAL,
OVER EXPANDING IMPREGNATED

2" EXPANSION JOINT-

FOAM EXPANSION JOINT

FIRE RESISTANCE

INSTALL GYPSUM WALLBOARD PER

ASSEMBLY

FIRE BARRIER

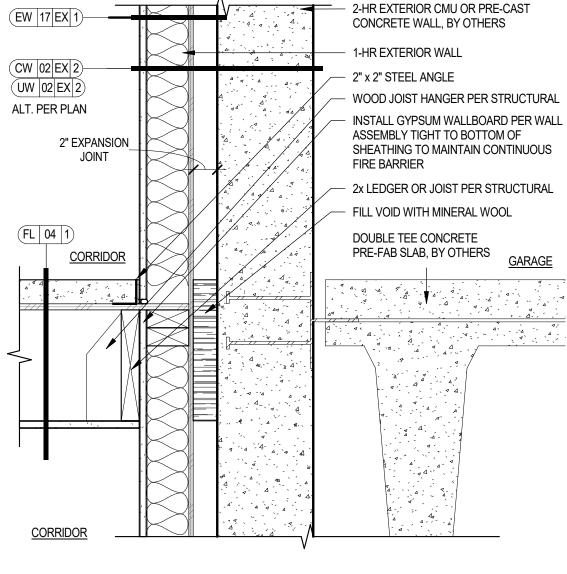
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EXPANSION JOINT AT WOOD FRAMED WALL AND GARAGE CONCRETE WALL SCALE: 1 1/2" = 1'-0"

2"x2" STEEL ANGLE - INSTALL GYPSUM WALLBOARD PER WALL EW 17 EX 1 ASSEMBLY TIGHT TO BOTTOM OF SHEATHING TO MAINTAIN CONTINUOUS FIRE BARRIER FL 04 1 WALL ASSEMBLY TIGHT TO BOTTOM OF FILL VOID WITH SHEATHING TO MAINTAIN CONTINUOUS MINERAL WOOL FLOOR STRUCTURE, PER STRUCTURAL FIN. FLR. - CONTINUOUS STEEL LEDGER PER STRUCTURAL 2x LEDGER OR JOIST PER STRUCTURAL WOOD JOIST HANGER PER STRUCTURAL EXPANSION JOINT-FIRE BLOCKING AT CEILING & SOFFIT LINES PER IBC 718.2 2-HR EXTERIOR CMU OR PRE-CAST CONCRETE WALL, BY OTHERS (CW | 02 | EX | 2)-UW 02 EX 2 — 1-HR RATED EXTERIOR WALL ALT. PER PLAN

**GARAGE** CORRIDOR EXPANSION JOINT AT WOOD FRAMED WALL AND **GARAGE CONCRETE WALL** 

drawings and specifications shall not be used by anyone or any other projects, for additions to this project, or for SCALE: 1 1/2" = 1'-0" ORB Architecture, LLC 2018 Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other 90 MIN. FIRE RATED DOOR than thirty days. (This contract may allow the owner to make payment on some alternative schedule after - INSTALL GYPSUM - MM SYSTEMS "X-V-2" OR EQUAL OVER written description of such other billing (and/or) cycle WALLBOARD PER WALL EXPANDING IMPREGNATED FOAM applicable to the project is available from the owner of ASSEMBLY TIGHT TO BOTTOM **EXPANSION JOINT** the owner's designated agent at OF SHEATHING TO MAINTAIN FILL VOID WITH ALLIANCE RESIDENTIAL COMPANY CONTINUOUS FIRE BARRIER 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016 MINERAL WOOL — 2"x2" STEEL ANGLE and the owner or its designated agent shall provide this written description on request. REVISIONS/SUBMITTALS DATE DESCRIPTION CONTINUOUS STEEL LEDGER PER STRUCTURAL - 2x LEDGER OR JOIST PER STRUCTURAL WOOD / JOIST HANGER PER STRUCTURAL

FIRE BLOCKING AT CEILING LINE PER

1-HR RATED EXTERIOR WALL

FILL VOID WITH MINERAL WOOL

- 2-HR EXTERIOR CMU OR PRE-CAST

CONCRETE WALL, BY OTHERS

90 MIN. FIRE RATED DOOR

GARAGE LOBBY

**2ND CITY SUBMITTAL** DATE: July 17, 2024

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SEXPANSION JOINT AT ENTRY AT RATED SLAB ON FIRE/EXPANSION JOINTS AT GARAGE SCALE: 1 1/2" = 1'-0"

CEMENT PLASTER SYSTEM OVER

FACE OF CEMENT PLASTER SYSTEM

14-16 GA. GALVANIZED FLAT ——

**NOTE:**RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

**CONDITION FLAT** 

STANDARD COVER PLATE - INTERIOR FLOOR/ FLOOR

CONCRETE

**APARTMENT** 

**EXTERIOR WALL** 

**EXPANSION JOINT COVER DETAILS** 

**NOTE:**RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

CONDITION

SCALE: 3" = 1'-0"

GLIDE PLATE AT WALL CORNER - WALL CEILING

SCALE: 3" = 1'-0"

EXTERIOR SHEATHING / SHEAR PANEL, SEE STRUCTURAL FOR EM 69 EX 1) OCCURRENCE; STRIP SHEATHING AS GYPSUM WALLBOARD PER REQUIRED TO MAINTAIN FINISH WALL ASSEMBLY **DENSGLASS SHEATHING** ALIGNMENT, TYPICAL GYPSUM WALLBOARD, PER STUCCO FINISH SYSTEM. PER COMMERCIAL WRAP, INSTALL PER MANUFACTURER BRICK VENEER ON CEMENT BOARD RECOMMENDATIONS SYSTEM PER WALL ASSEMBLY PLYWOOD SHEATHING, PER STRUCTURAL METAL STUD FRAMING. HARDIE BOARD FINISH PER STRUCTURAL 2x PRESSURE TREATED SILL LAP BOTH LAYERS OF WATER-PRESSURE TREATED SILL PLATES, SET IN (2) 1/2" PLATE SET IN (2) CONTINUOUS RESISTIVE MEMBRANE OVER STUCCO CONTINUOUS BEADS OF BUTYL 1/2" BEADS OF BUTYL SEALANT WEEP SCREED INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN GALVANIZED WEEP SCREED LAP LAYER OF WATER-RESISTIVE BASE OF GYPSUM WALLBOARD MEMBRANE OVER STUCCO J-WEEP CONTINUOUS BEAD OF SIKAFLEX INSTALL CONTINUOUS SEALANT AND CONCRETE SLAB BETWEEN BASE OF GYPSUM SCREED -SEALANT ANCHOR BOLTS, PER WALLBOARD AND CONCRETE SLAB **EXPANSION MATERIAL** STRUCTURAL 2% MAX. PER BLDG. SECTIONS ANCHOR BOLTS, PER CONCRETE SLAB 4 AND FOUNDATION, PER STRUCTURAL \* SIDEWALK PER CONCRETE SLAB PER STRUCTURAL -VAPOR BARRIER BY DRAGO WRAP

EXTERIOR BRICK VENEER OVER WOOD STUD WALL @ CONCRETE SLAB & SIDEWALK SLAB ON GRADE

SCALE: 1 1/2" = 1'-0"

, HARDIE BOARD EXTERIOR WALL SILL FLASHING AT

1-HR UNIT SEPARATION WALL AT SLAB SCALE: 1 1/2" = 1'-0" SCALE: 1 1/2" = 1'-0"

AIR SPACE PER

BUILDING PLANS

-SEE ENLARGED

FLOOR PLANS

CORRIDOR

2x FRAMING, PER STRUCTURAL-

WALL ASSEMBLY SHALL BE

BEADS OF BUTYL SEALANT -

CONTINUOUS SEALANT AND

ANCHOR BOLT, PER STRUCTURAL-

BACKER ROD

CONCRETE SLAB,

PER STRUCTURAL

WOOD FRAMING

PER STRUCTURAL

CMU WALL PER STRUCTURAL

PRESSURE TREATED SILL

CONTINUOUS 1/2" BEADS

INSTALL SEALANT OR OWNER

OF GYPSUM WALLBOARD AND

APPROVED EQUAL BETWEEN BASE

OF BUTYL SEALANT —

CONCRETE SLAB —

ANCHOR BOLTS,

PER STRUCTURAL

CONCRETE SLAB, PER STRUCTURAL

WOOD FRAMING PER

STRUCTURAL -

PLATE, SET IN (2)

3-1/2" UNFACED BATT INSULATION -

ON SHEET A7.1.10 -

CONSTRUCTED PER 1-HR UNIT

SEPARATION DOUBLE STUD WALL DETAIL

PRESSURE TREATED SILL PLATE, SET IN (2) 1/2"

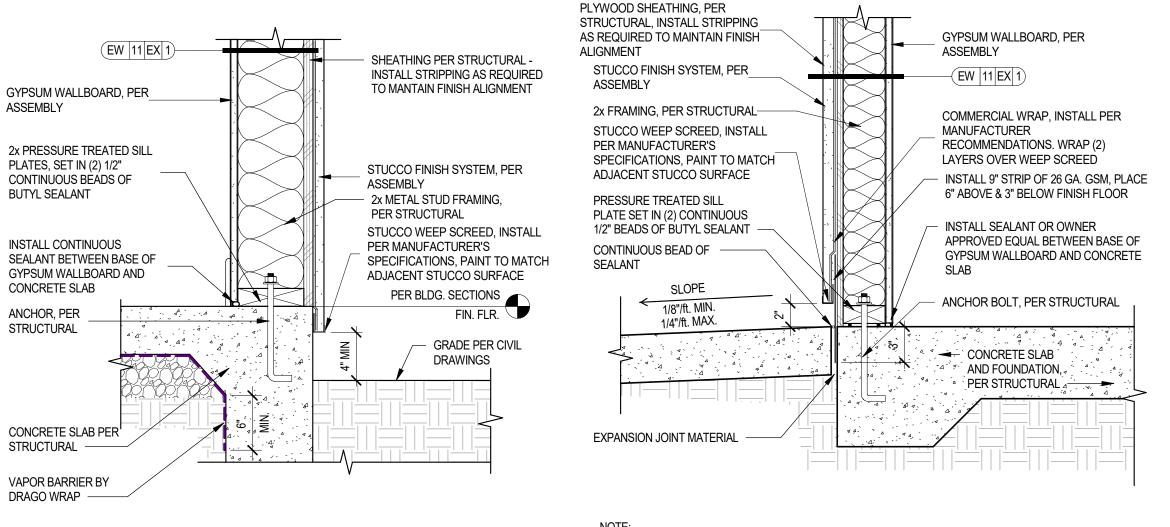
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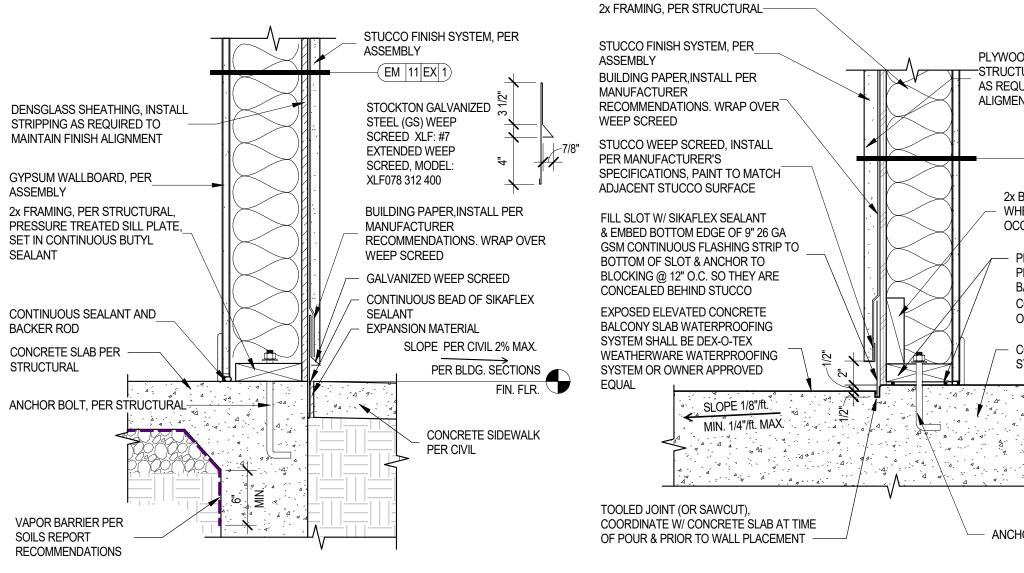
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1. CROSS SLOPE AT PATIO SLAB/ SIDEWALK SHALL NOT EXCEED 2%, TYPICAL PATIO EXTERIOR WALL SILL FLASHING AT SLAB ON

WOOD STUD WALL ADJACENT CMU WALL AT SLAB SCALE: 1 1/2" = 1'-0" SCALE: 1 1/2" = 1'-0"

<u>UNIT</u>



SCALE: 1 1/2" = 1'-0"

- BATT INSULATION

GYPSUM WALLBOARD,

PER WALL ASSEMBLY

— P.T. CONCRETE PODIUM

SLAB, PER STRUCTURAL

PATIO EXTERIOR WALL SILL FLASHING AT PODIUM

WALL ASSEMBLY SHALL BE CONSTRUCTED PER 1-HR RATED INTERIOR WALL, CORRIDOR — -(IW |02|FP|1) PRESSURE TREATED SILL PLATE, SET IN (2) CONTINUOUS 3/8" BEADS OF BUTYL INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB, BOTH SIDES OF WALL -ANCHOR BOLTS, PER STRUCTURAL CONCRETE SLAB, PER STRUCTURAL

SHEATHING PER STRUCTURAL, INSTALL -(EW | 11 | EX | 1) STRIPPING AS REQUIRED TO MAINTAIN GYPSUM WALLBOARD, PER FINISH ALIGNMENT -ASSEMBLY 2x FRAMING -COMMERCIAL WRAP, INSTALL PER PRESSURE TREATED SILL PLATE SET MANUFACTURER RECOMMENDATIONS, WRAP (2) IN (2) CONTINUOUS 1/2" BEADS OF LAYERS OVER WEEP SCREED BUTYL SEALANT -PER BLDG. SECTIONS FIN. FLOOR STUCCO FINISH SYSTEM, PER ASSEMBLY - ANCHOR BOLTS, PER STUCCO 'J' CASING BEAD, INSTALL STRUCTURAL PER MANUFACTURER'S SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE FINISH GRADE, PER CIVIL APPLY CONTINUOUS SEALANT BEAD AT TOP EDGE OF TERMINATION BAR -CONTINUOUS EPRO FLASHING IF FASTENER BREAKS THROUGH SEAL CONCRETE SLAB, WITH POWDER ACTUATED FASTENERS PER STRUCTURAL @ 12" O.C. — CONCRETE WALL PER STRUCTURAL -BELOW GRADE WATERPROOFING SYSTEM PER BELOW GRADE FOUNDATION WATERPROOFING / DRAINAGE DETAIL -

1-HR CORRIDOR WALL AT SLAB

SCALE: 1 1/2" = 1'-0" STONE VENEER PER WALL ASSEMBLY, This contract allows (may allow) the owner to require the INSTALL PER MANUFACTURER SPECIFICATIONS make payment on some alternative schedule after - TOOLED MORTAR JOINTS CEMENT BOARD PER WALL ASSEMBLY - DENSGLASS SHEATHING STUCCO FINISH SYSTEM, PER ASSEMBLY - LAP BOTH LAYERS OF WATER RESISTANT BARRIER (BUILDING PAPER) OVER WEEP SCREED SELF ADHESIVE MEMBRANE TO OVERLAP FLASHING EW 70 EX 1 STOCKTON GALVANIZED STEEL (GS) SHORT FLANGE CASING (SFC) WITH 1/8" WEEP HOLES — INSTALL 26 GA GSM FLASHING, EXTEND 4" BELOW FIN. FLOOR PER CIVIL CONCRETE SIDEWALK PER CIVIL CONTINUOUS BEAD OF 4 444 4 4 4 - CONTINUOUS CAULKING DEFLECTION JOINT MATERIAL GYPSUM WALLBOARD, 2x PRESSURE TREATED SILL PLATES, SET IN (2) 1/2" CONTINUOUS PER ASSEMBLY > BEADS OF BUTYL SEALANT

STONE VENEER HORIZONTAL CONTROL JOINT @

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SLAB NOTCH AT EXTERIOR STUCCO WALL

SCALE: 3" = 1'-0"

CONCRETE SLAB, SEE STRUCTURAL

CONCRETE SLAB - WOOD FRAMING

2x PRESSURE TREATED SILL PLATES, SET IN (2) 1/2" CONTINUOUS BEADS OF INSTALL CONTINUOUS SEALANT BETWEEN BASE OF GYPSUM WALLBOARD AND

ANCHOR, PER STRUCTURAL CONCRETE SLAB PER STRUCTURAL -VAPOR BARRIER BY DRAGO WRAP -

EXTERIOR STUCCO OVER WOOD STUD WALL @ CONCRETE SLAB

EXTERIOR STUCCO OVER WOOD STUD WALL @

CONCRETE SLAB & SIDEWALK

2x FRAMING, PER STRUCTURAL-

EXTERIOR SHEATHING (SHEAR

PANEL, SEE STRUCTURAL FOR

STUCCO FINISH SYSTEM, PER

2x FRAMING, PER STRUCTURAL,

SET IN CONTINUOUS BEAD OF

BUILDING PAPER, INSTALL PER

RECOMMENDATIONS. WRAP OVER

PRESSURE TREATED SILL PLATE

OCCURRENCE) -

ASSEMBLY

SEALANT

MANUFACTURER

WEEP SCREED

PER BLDG. SECTIONS

1ST FIN. FLOOR

J-WEEP SCREED, LAP

BUILDING PAPER OVER -

METAL FLASHING SET IN

BED OF SEALANT —

1/2" / 1 1/2"

ANCHOR BOLT, PER STRUCTURAL

SCALE: 1 1/2" = 1'-0"

PLYWOOD SHEATHING, PER —STRUCTURALINSTALL STRIPPING AS REQUIRED TO MAINTAIN FINISH ALIGMENT 2x BLOCKING PER STRUCTURAL, WHERE SHEATHING DOES NOT OCCUR PRESSURE TREATED SILL PLATE ADJACENT TO BALCONIES SET IN (2) CONTINUOUS 1/2"Ø BEADS OF BUTYL SEALANT CONCRETE SLAB, PER STRUCTURAL

ANCHOR BOLT, PER STRUCTURAL

SCALE: 1 1/2" = 1'-0"

1. TERMINATE TOP OF BELOW GRADE WATERPROOFING SYSTEM AT FINISH GRADE

EXTERIOR WOOD FRAMING WALL AT PODIUM EDGE

SCALE: 1 1/2" = 1'-0"

SCALE: 3" = 1'-0"

ANCHOR BOLT, PER STRUCTURA

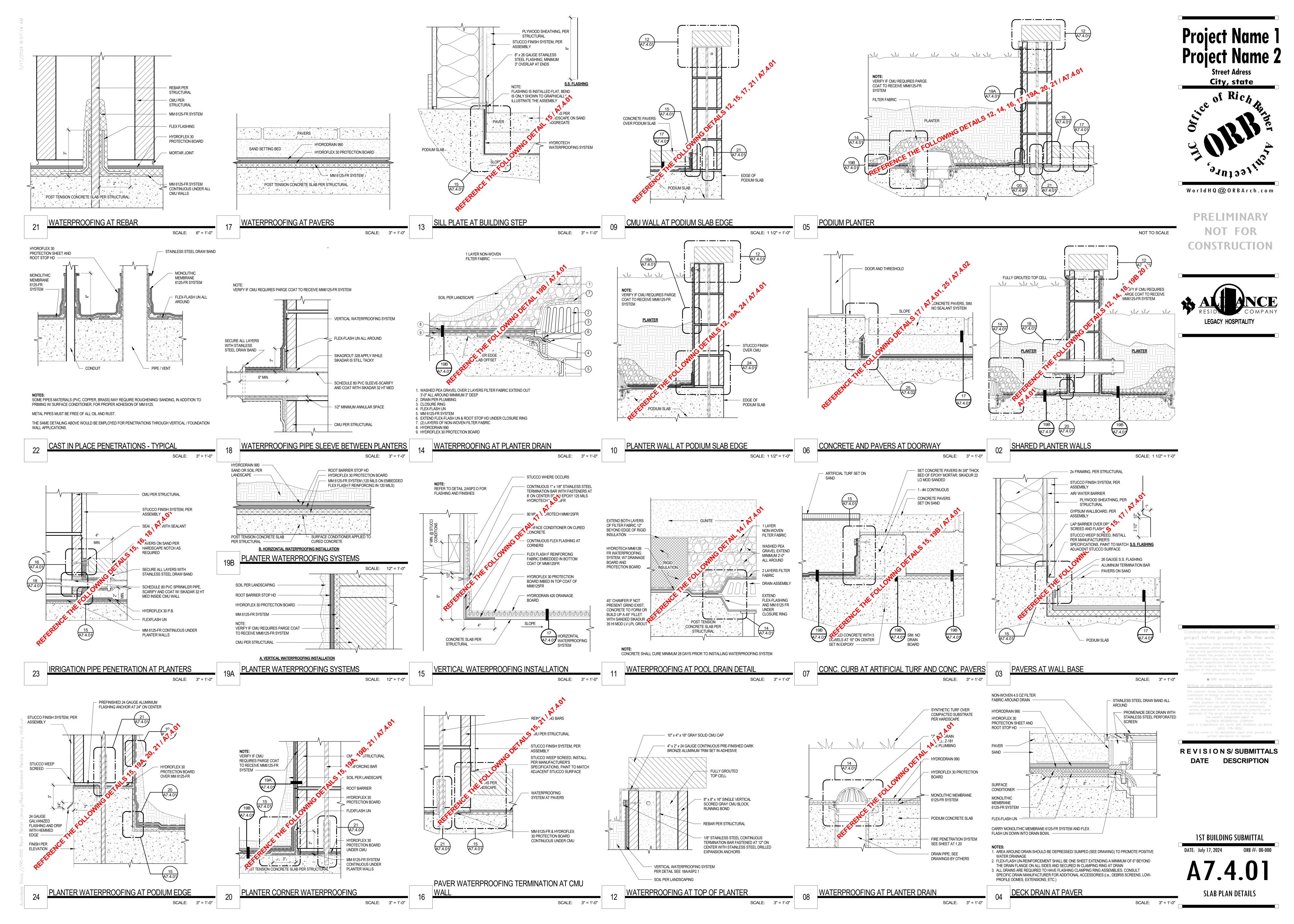
SCALE: 1 1/2" = 1'-0"

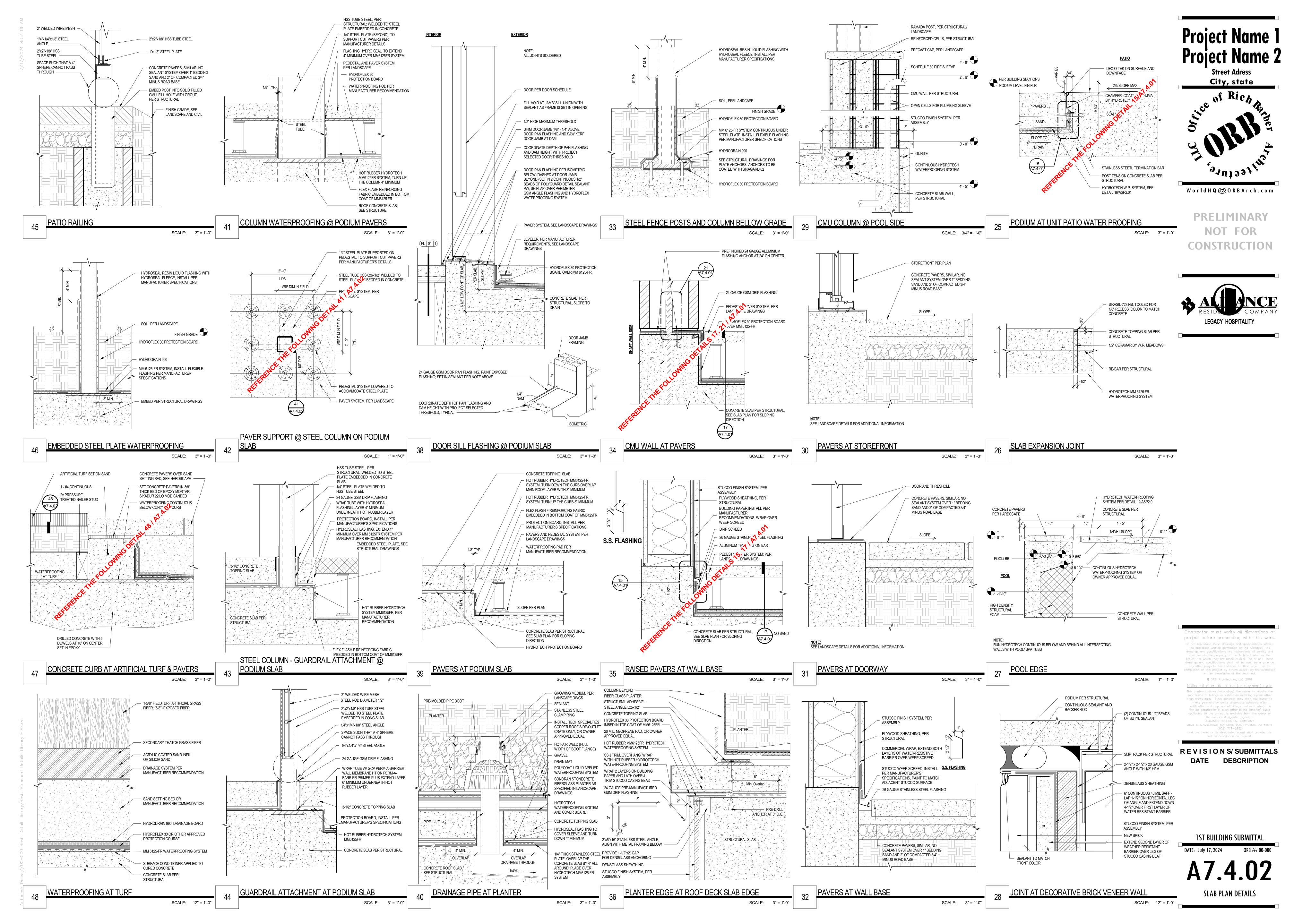
SCALE: 1" = 1'-0"

SCALE: 1 1/2" = 1'-0"

**GROUND SLAB DETAILS** 

SEE PLAN





 2-HR CMU, REFER TO LIFE GYPSUM WALLBOARD, PER\_ ASSEMBLY SAFETY PLANS METAL TRACK SET-IN (2) -CONTINUOUS 1/2" BEADS OF BUTYL SEALANT 3 HR PODIUM - CONCRETE PT SLAB PER STRUCTURAL CONTINUOUS SEALANT AND BACKER ROD CONTINIOUS 3HR FIRE JOINT POWER ACTUATED FASTENERS, CAULKING PER STRUCTURAL CONCRETE SLAB, PER 8X8X16 CMU BLOCK WALL, FIRE RATING AND WALL STRUCTURAL TYPE PER PLANS CONTINUOUS SEALANT AND BACKER ROD SLOTTED STEEL ANGLE PER STRUCTURE ON THE INSIDE OF WALL WELDED TO STEEL METAL STUD TRACK; SET-IN (2) CONTINUOUS 1/2" BEADS OF BUTYL— PLATE EMBEDS POWER ACTUATED FASTENERS, PER STRUCTURAL

Project Name 1 Project Name 2 Street Adress City, state

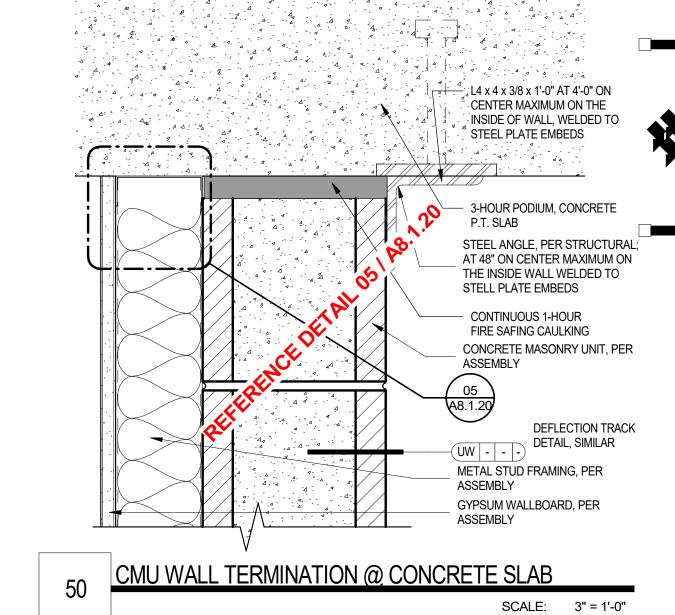
CONCRETE SLAB AT CMU WALL 1-HR UNIT SEPARATION WALL AT SLAB STEP SCALE: 3" = 1'-0"

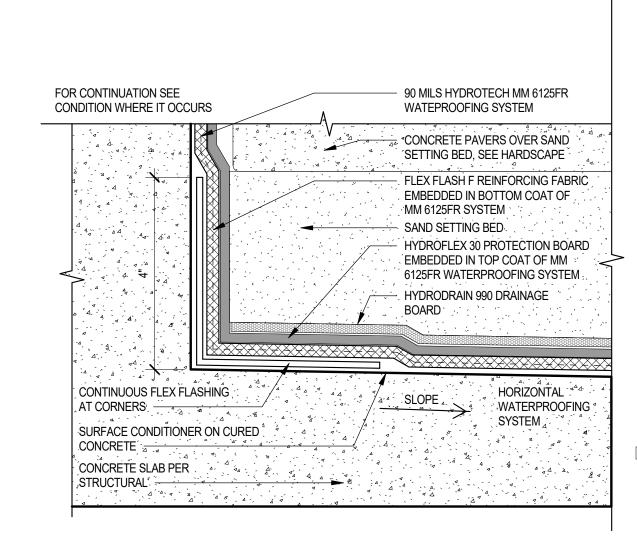
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SCALE: 1" = 1'-0"

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WATERPROOFING AT CONCRETE SLAB STEP SCALE: 6" = 1'-0"

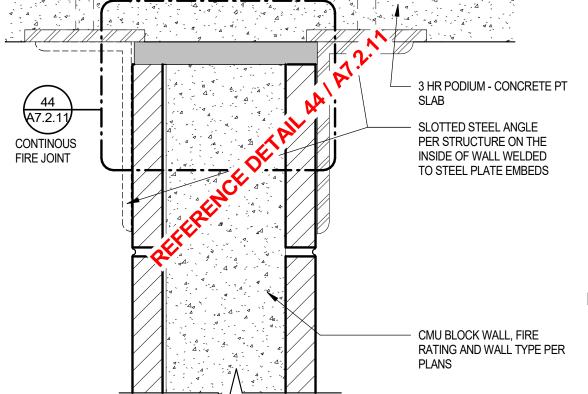
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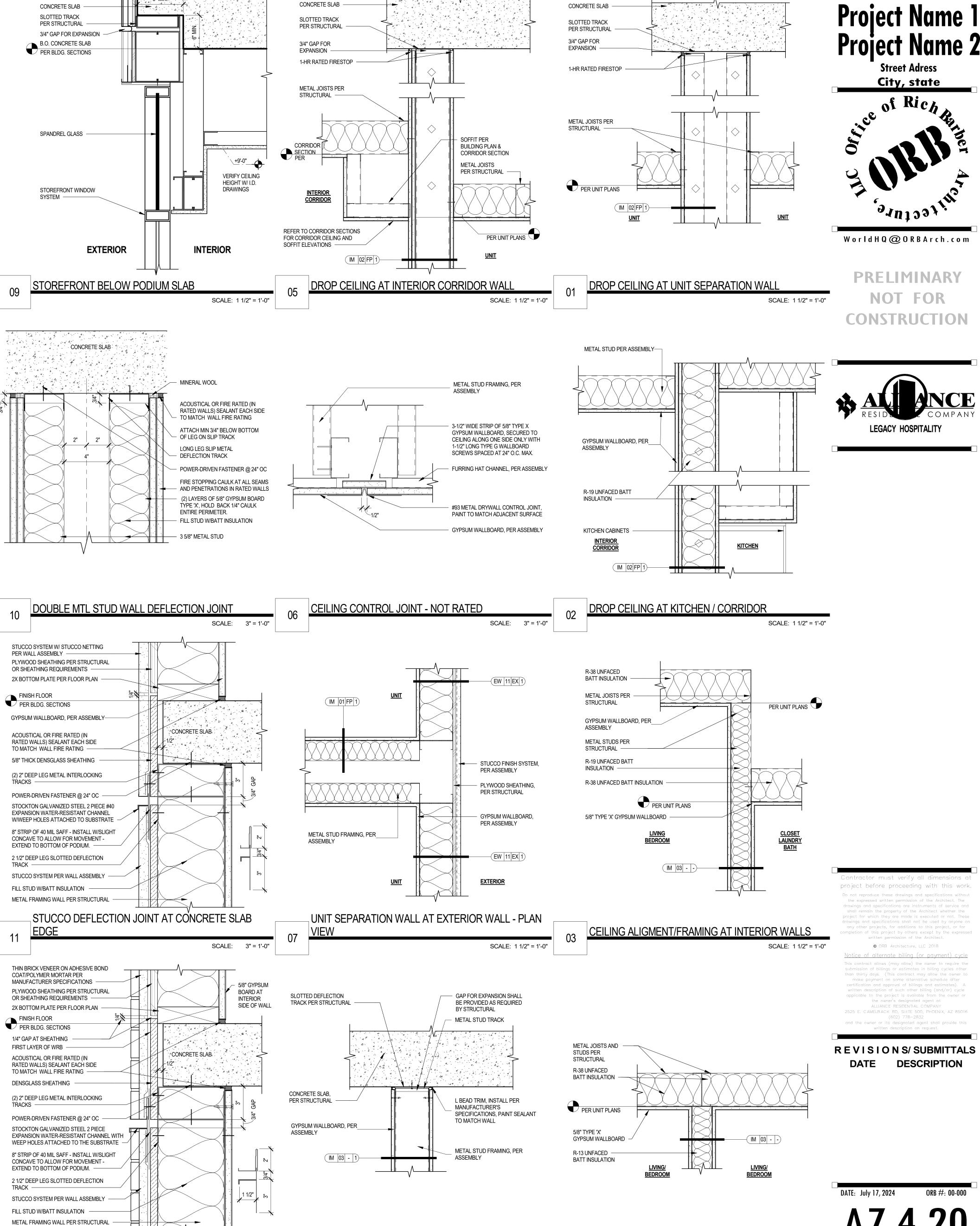


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52 CMU DEFLECTION JOINT @ CONCRETE SLAB

SCALE: 3" = 1'-0"

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INTERIOR NON-RATED METAL STUD WALL AT

SCALE: 1 1/2" = 1'-0"

CONCRETE SLAB CEILING

BRICK VENEER DEFLECTION JOIN'T AT CONCRETE

SCALE: 3" = 1'-0"

SLAB EDGE

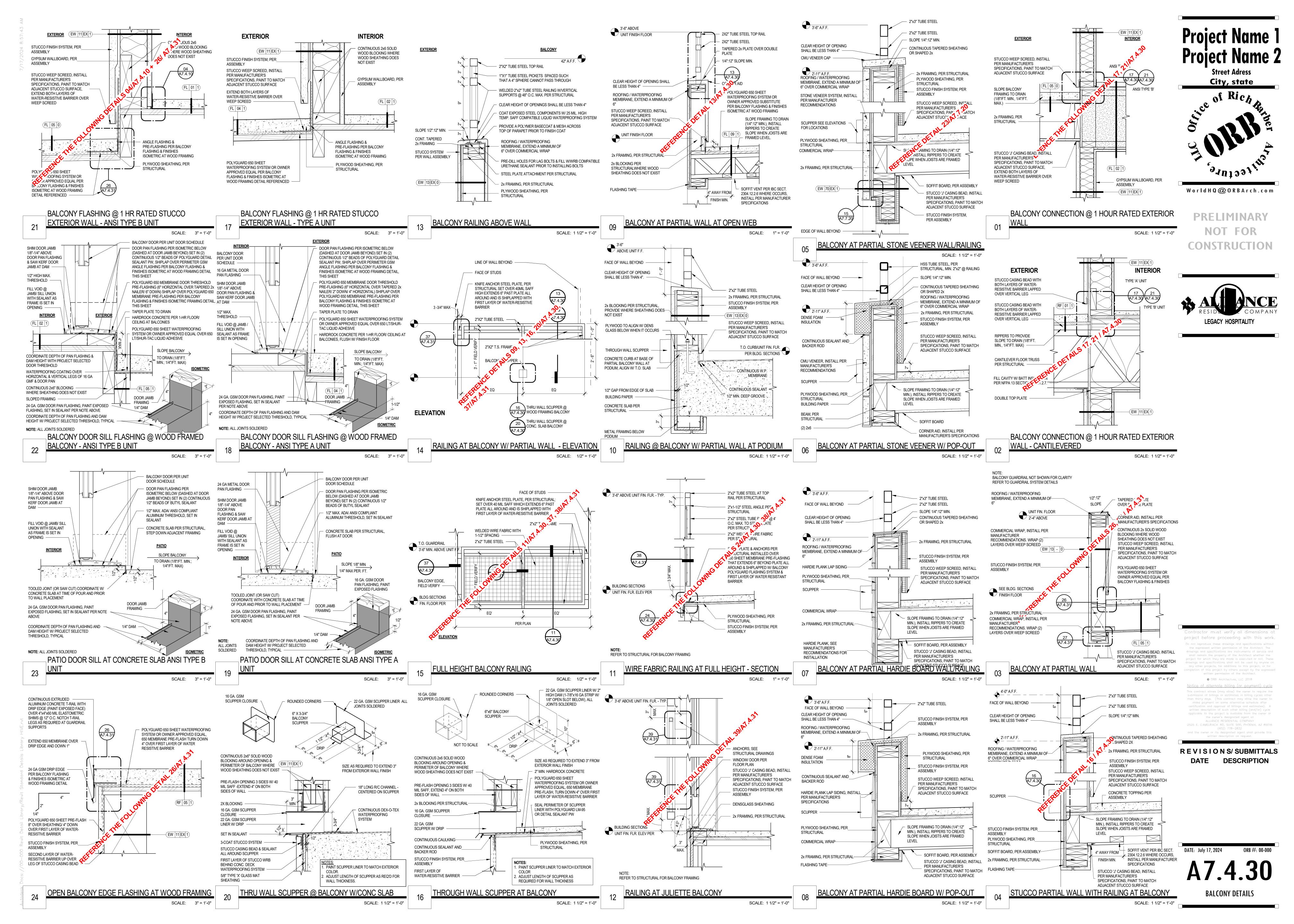
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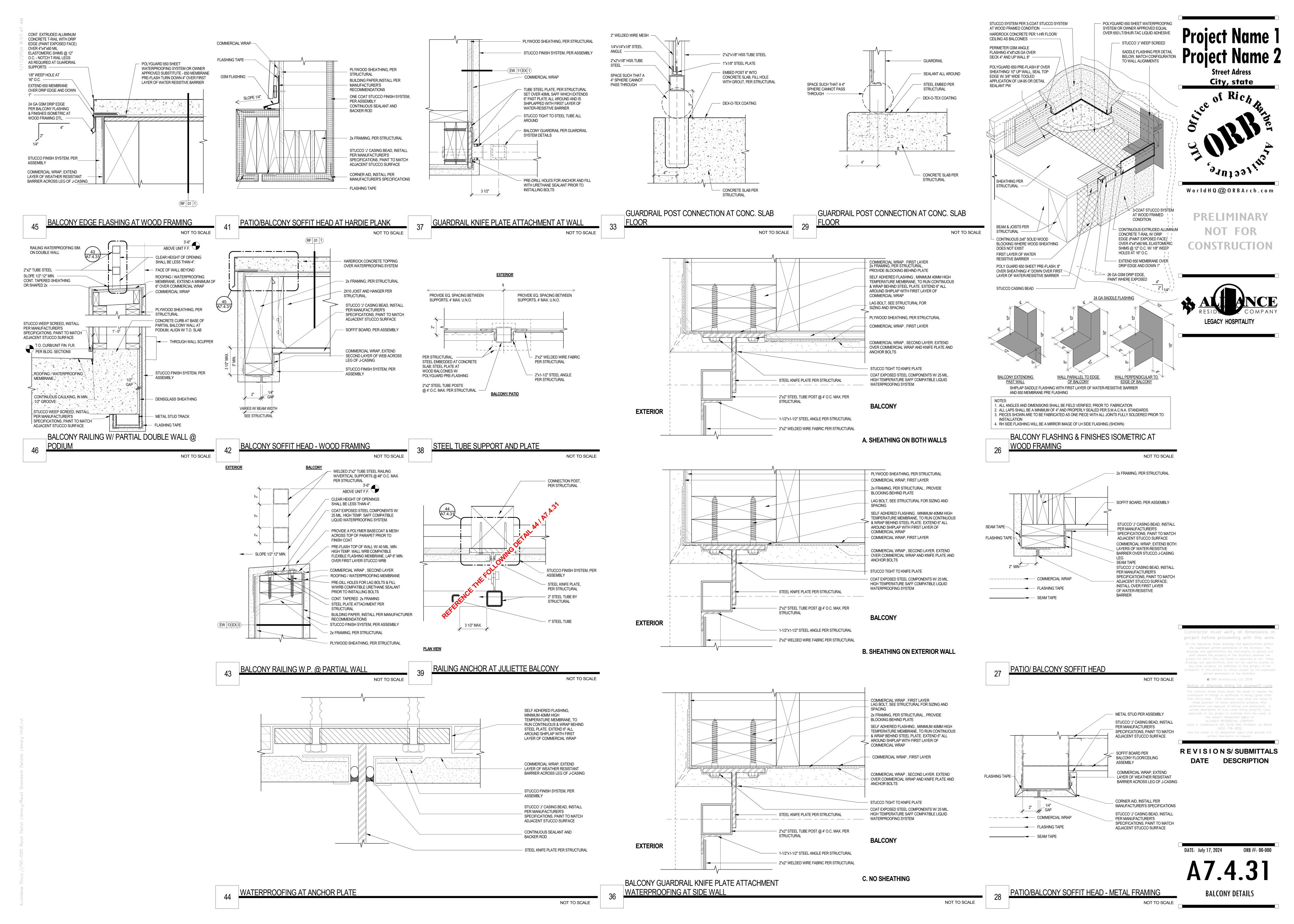
A7.4.20
FLOOR-CEILING DETAILS METAL FRAMING

SCALE: 1 1/2" = 1'-0"

DROP CEILING AT UNIT INTERIOR WALL

BEDROOM-LIVING ROOM





EXTERIOP STUCCO FINISH SYSTEM, PER ASSEMBLY COMMERCIAL WRAP, EXTEND BOTH LAYERS OF WATER-RESISTIVE BARRIER OVER WEEP SCREED STUCCO WEEP SCREED, INSTALL PER MANUFACTURER'S SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE TREX EXTERIOR BASEBOARD 2x BLOCKING PER STRUCTURAL, PROVIDE WHERE SHEATHING DOES NOT EXIST - PAVER SYSTEM O/ LEVELER, PER MANUFACTURER REQUIREMENTS, SEE LANDSCAPE DRAWINGS PLYWOOD SHEATHING, PER STRUCTURAL ULTRAPLY TPO ROOFING SYSTEM O/ DENSDECK OR OWNER APROVED EQUAL O/ TAPERED ALIGNED TO — STRUCTURE, SEE STRUCTURAL DECK HEIGHT

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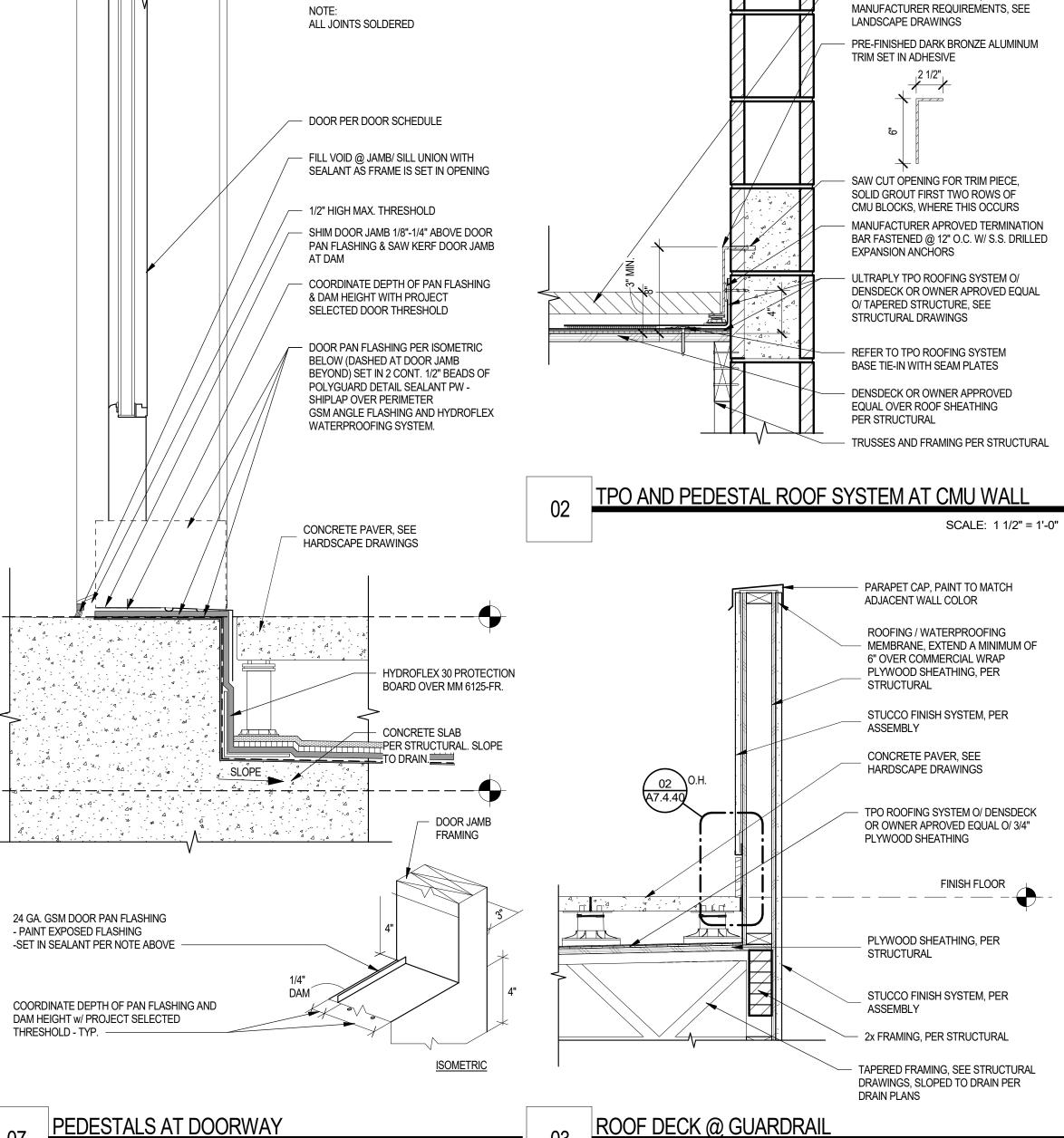
PEDESTAL SYSTEM FLASHING AT ROOF DECK **EXTERIOR WALL** SCALE: 3" = 1'-0"

- CMU WALL, PER STRUCTURAL W/

FLUSH JOINTS ON ROOF SIDE - PAVER SYSTEM O/ LEVELER, PER

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SCALE: 3" = 1'-0" SCALE: 1" = 1'-0" SEE STRUCTURAL DRAWINGS FOR WALL FRAMING STUCCO FINISH SYSTEM, PER ASSEMBLY - REINFORCING BARS COMMERCIAL WRAP, EXTEND BOTH LAYERS OF WATER-RESISTIVE COMMERCIAL WRAP BARRIER OVER WEEP SCREED - CMU PER STRUCTURAL STUCCO FINISH SYSTEM, PER ASSEMBLY STUCCO WEEP SCREED, INSTALL - DRIP SCREED PER MANUFACTURER'S - 26 GAUGE S.S. FLASHING SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE S.S. FLASHING - ALUMINUM TERMINATION BAR PEDESTAL PAVER SYSTEM; PER LANDSCAPE DRAWINGS. PAVER PEDESTAL, INSTALL PER
MANUFACTURER'S SPECIFICATIONS 

- WATERPROOFING SYSTEM @ **PAVERS** 

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PAVER WATERPROOFING TERMINATION AT CMU

RAISED PAVERS AT WALL BASE

INTERIOR

**EXTERIOR** 

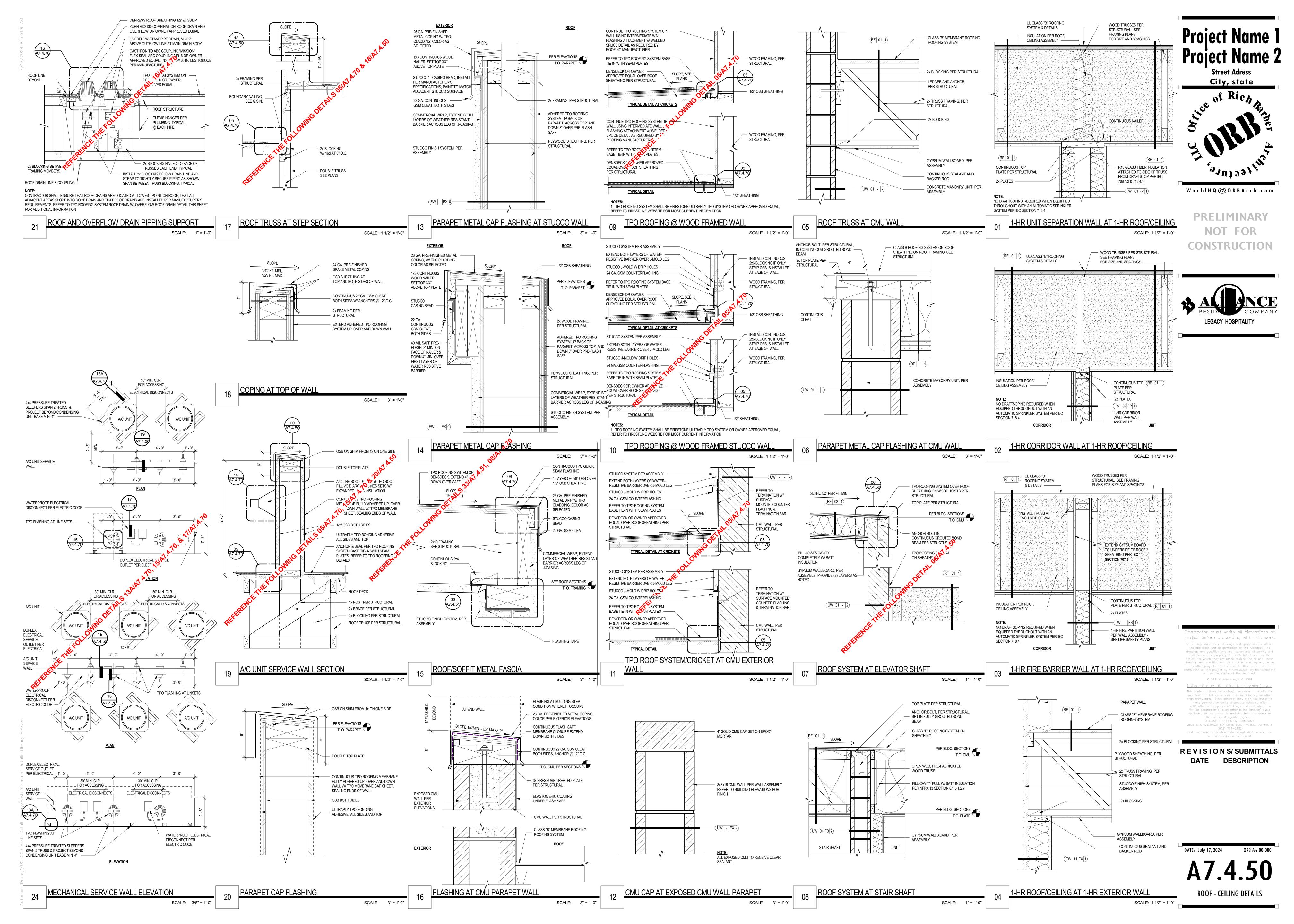
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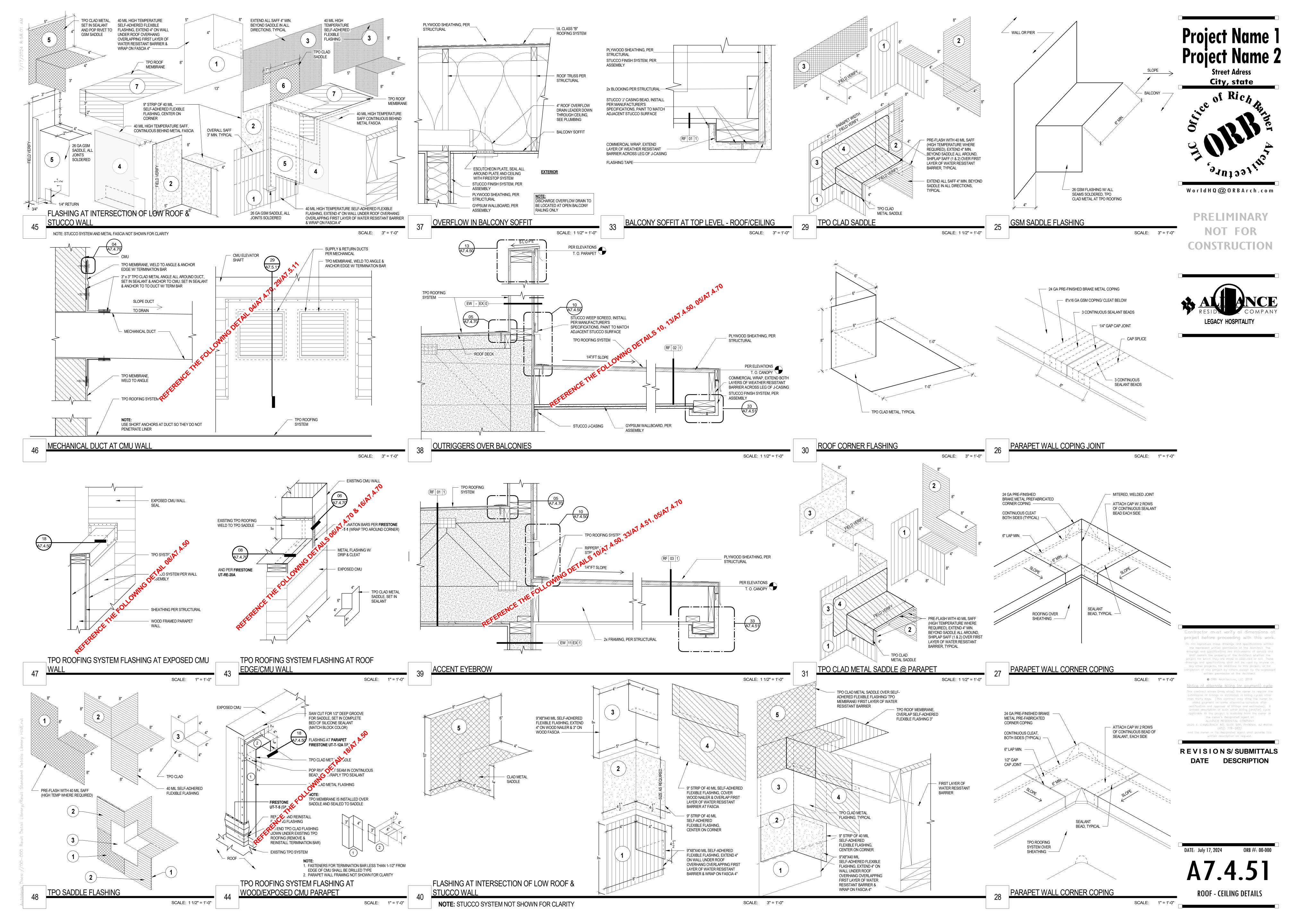
CONCRETE SLAB PER STRUCTURAL

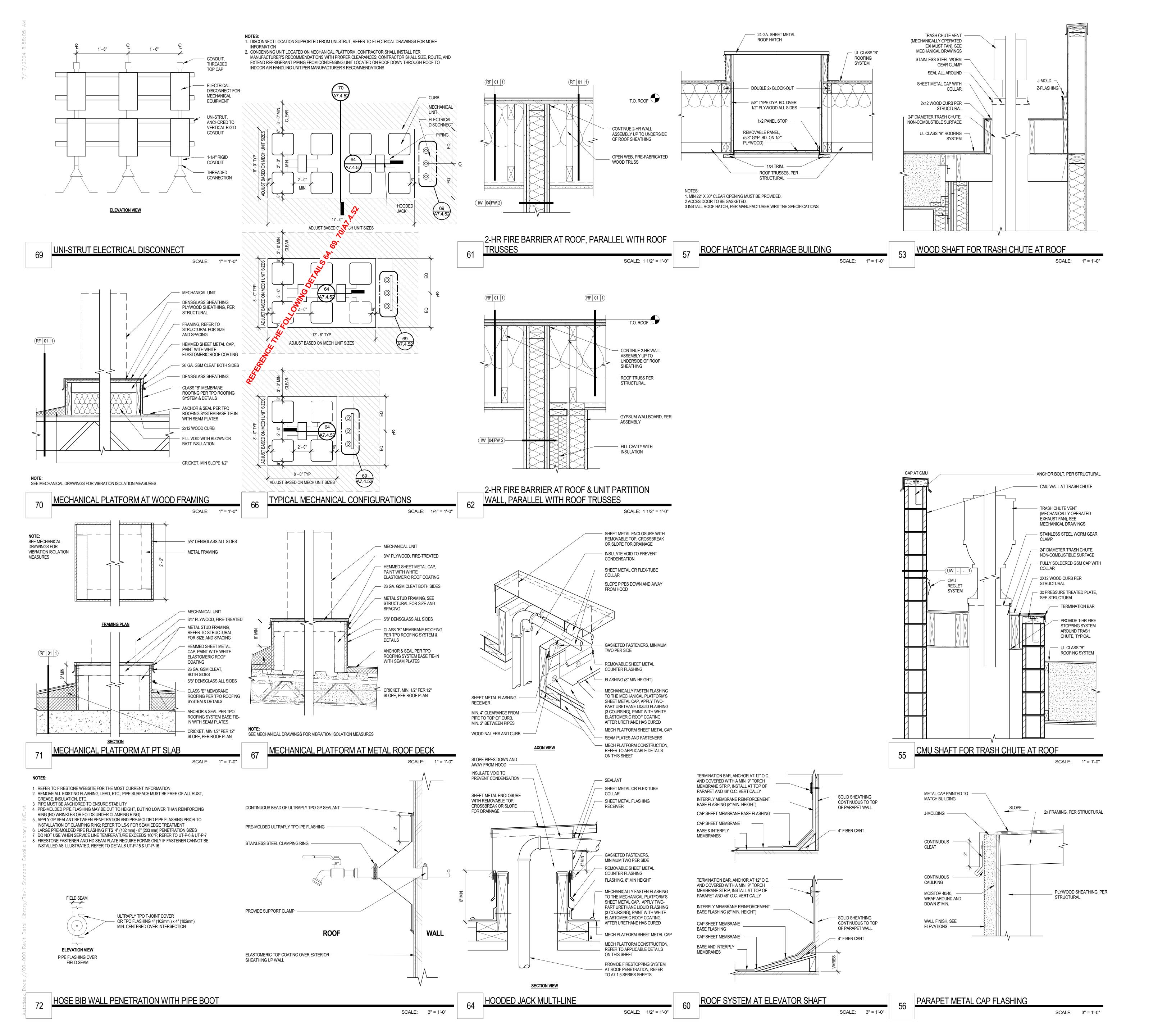
SCALE: 3" = 1'-0"

MM 6125-FR & HYDROFLEX 30 PROTECTION BOARD CONTINUOUS UNDER CMU.

PEDESTAL SYSTEM DETAILS







# Project Name 1 Project Name 2

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and the owner or its designated agent shall provide this

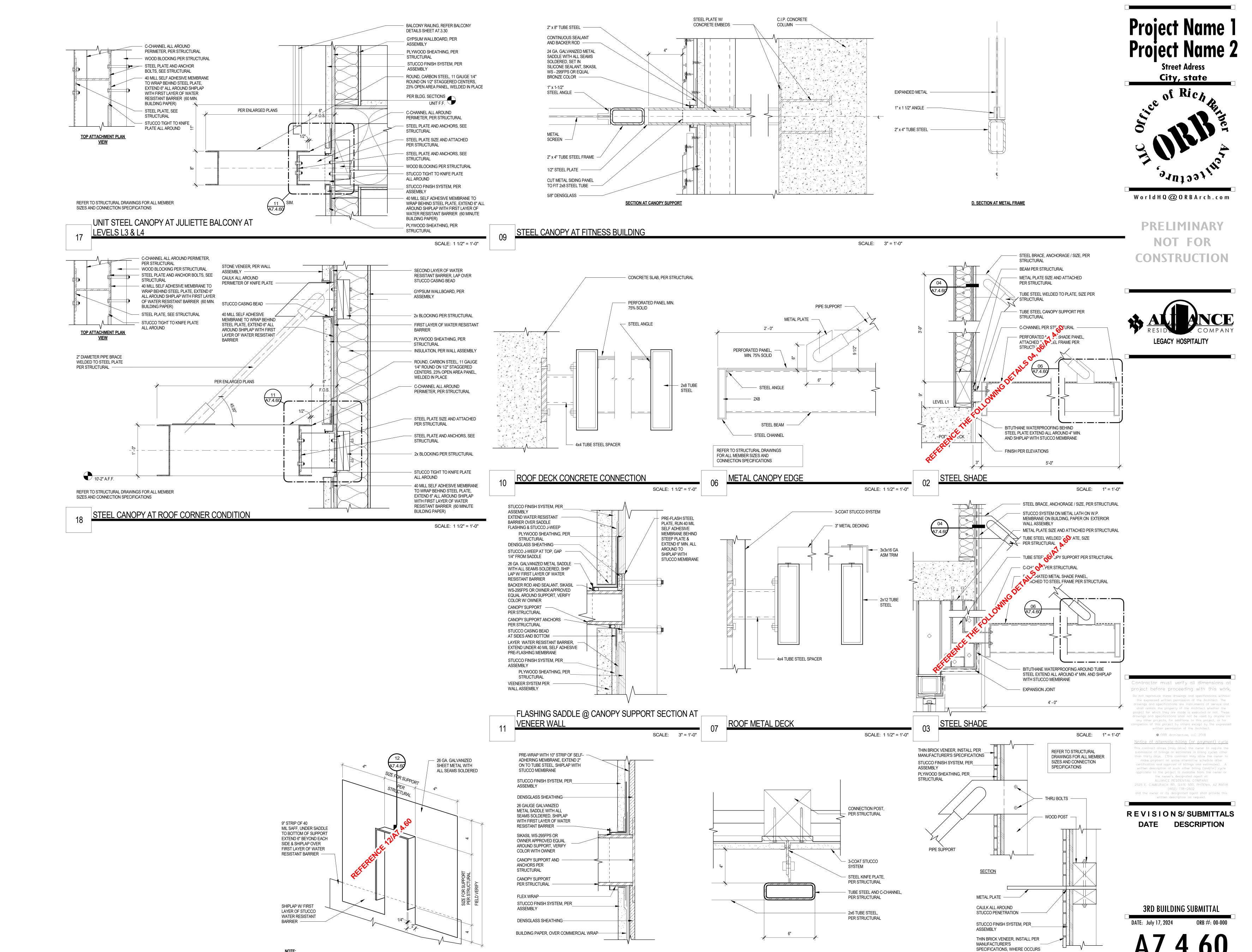
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DATE DESCRIPTION

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A 7.4.52

**ROOF - CEILING DETAILS** 



FLASHING SADDLE @ CANOPY SUPPORT SECTION AT

SCALE: 3" = 1'-0"

STUCCO WALL

ORNAMENTAL STEEL CONNECTION AT STUCCO WALL

SCALE: 3" = 1'-0"

METAL CANOPY PIPE SUPPORT

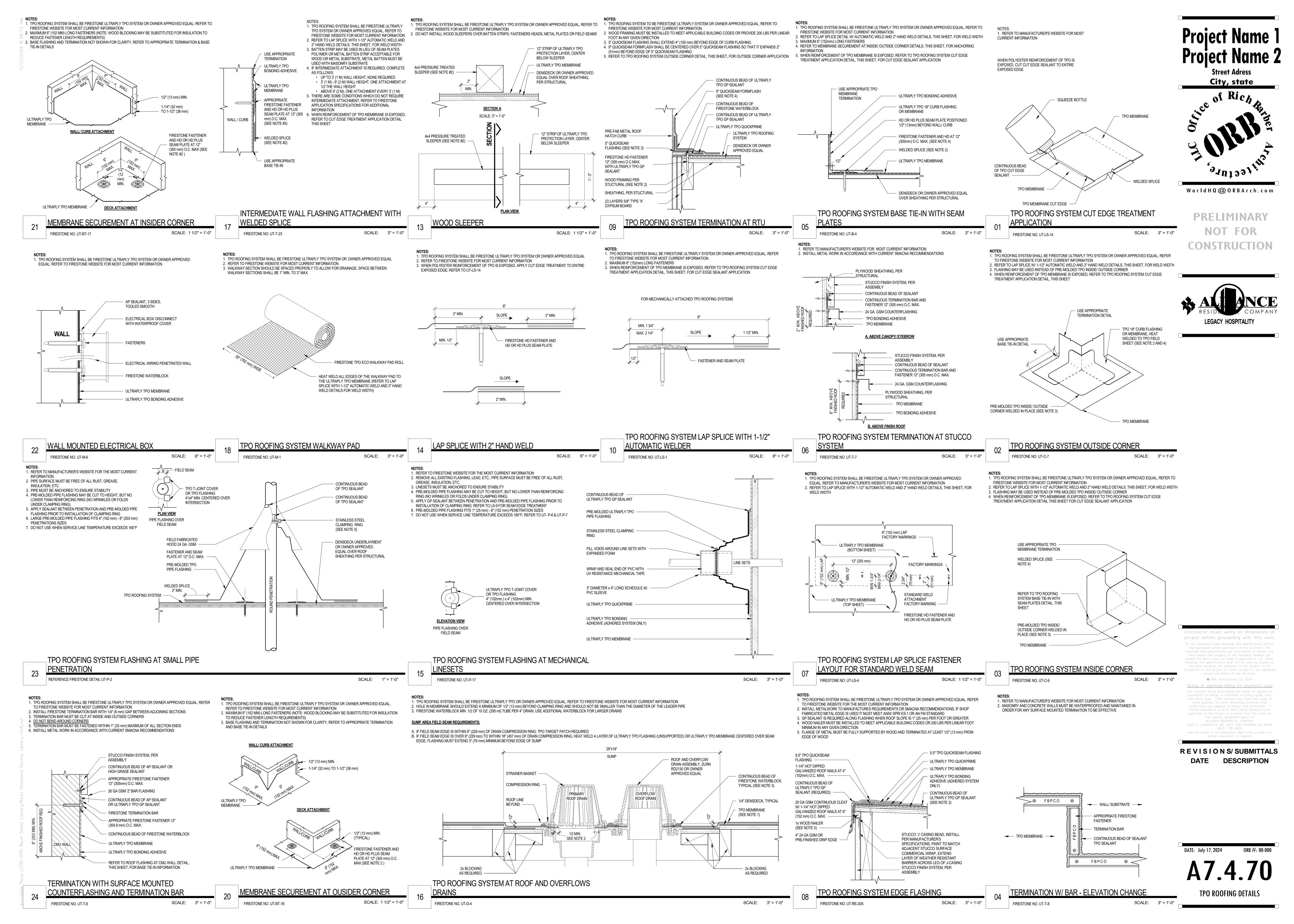
FIELD MEASURE BEFORE FABRICATING

FLASHING SADDLE @ CANOPY SUPPORT ISOMETRIC

SCALE: 1 1/2" = 1'-0"

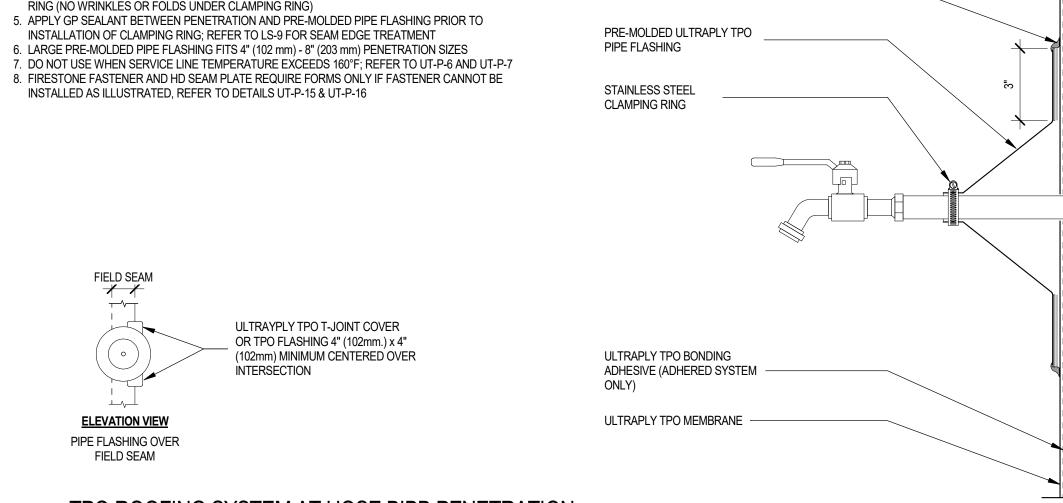
CANOPY DETAILS

SCALE: 1 1/2" = 1'-0"



SIZE TABLE 1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION SIZE OUTSIDE DIAMETER OF PIPE STARTING HEIGHT 2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, SMALL 1.0" to 3.0" (25mm to 76mm) 9.0" (229 mm) GREASE, INSULATION, ETC. MEDIUM 3.0" to 5.5" (76mm to 140mm) 8.5" (216 mm) PIPE MUST BE ANCHORED TO ENSURE STABILITY
 NO WRINKLES OR FOLDS UNDER CLAMPING RING LARGE 5.5" to 8.0" (140mm to 203mm) 8.75" (222 mm) 5. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F; REFER TO UT-P-6 AND UT-P-7 6. T-JOINT PATCH REQUIRED AT ALL VERTICAL TRANSITIONS ON NON-FACTORY WELDS7. FIRESTONE FASTENER AND HD SEAM PLATE REQUIRE FORMS ONLY IF FASTENER CANNOT BE CONTINUOUS BEAD OF ULTRAPLY -INSTALLED AS ILLUSTRATED, REFER TO DETAILS UT- P-15 AND UT - P-16 TPO GP SEALANT 8. CUT EDGE SEALANT SHALL BE APPLIED TO ANY EDGES WHERE SCRIM REINFORCEMENT IS EXPOSED PER DETAIL UT-LS-14 STAINLESS STEEL 9. HEIGHT OF TPO SPLIT PIPE BOOT CAN BE REDUCED TO FIT LARGER DIAMETER PIPES, (REFER TO CLAMPING RING SIZE TABLE) ULTRAPLY TPO SPLIT PIPE BOOT WELDED SEAM 2" (50 mm) MIN. -WELDED SPLICE 2" (50 mm) MIN. - CUT EDGE SEALANT (SEE NOTE 8) FIRESTONE FASTENER AND HD OR HD PLUS ULTRAPLY TPO SEAM PLATE AT 12" (300 mm) ON CENTER MEMBRANE -MAXIMUM (SEE NOTE 7) - T-JOINT PATCH (SEE NOTE 6) ROUND PENETRATION WITH ULTRAPLY TPO PIPE SCALE: 1 1/2" = 1'-0" FIRESTONE NO. UT-P-21 1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION 2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC. CONTINUOUS BEAD OF 3. PIPE MUST BE ANCHORED TO ENSURE STABILITY ULTRAPLY TPO GP SEALANT 4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING)

- INSTALLATION OF CLAMPING RING; REFER TO LS-9 FOR SEAM EDGE TREATMENT 6. LARGE PRE-MOLDED PIPE FLASHING FITS 4" (102 mm) - 8" (203 mm) PENETRATION SIZES
- 8. FIRESTONE FASTENER AND HD SEAM PLATE REQUIRE FORMS ONLY IF FASTENER CANNOT BE INSTALLED AS ILLUSTRATED, REFER TO DETAILS UT-P-15 & UT-P-16

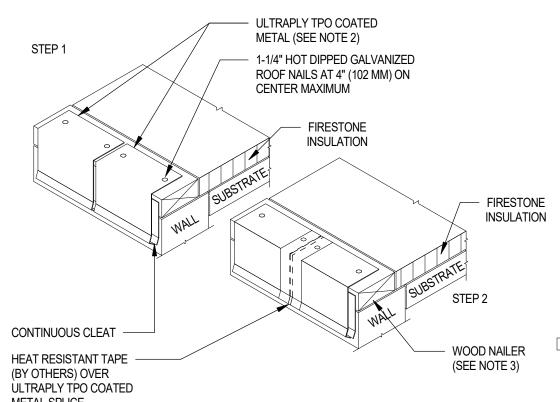


TPO ROOFING SYSTEM AT HOSE BIBB PENETRATION

FIRESTONE NO. UT-P-2

1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION

2. INSTALL METAL WORK TO SMACNA RECOMMENDATIONS; IF SHOP FABRICATED METAL EDGE IS USED IT MUST MEET ANSI/ SPRI ES-1 OR AN FM STANDARD 3. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LBS PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION



SCALE: 3" = 1'-0"

CONTINUOUS CLEAT -(BY OTHERS) OVER **ÙLTRAPLY TPO COATED** METAL SPLICE ROOF EDGE SPLICE W/ ULTRAPLY TPO COATED SCALE: 3" = 1'-0" FIRESTONE NO. UT-RE-23a 1. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION 2. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS PLYWOOD SHEATHING, PER STRUCTURAL - CONTINUOUS BEAD OF AP SEALANT STUCCO FINISH SYSTEM, PER ASSEMBLY

STUCCO WEEP SCREED, INSTALL PER MANUFACTURER'S SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE - 26 GA GSM Z FLASHING W/ HEMMED DRIP AND FASTENERS AT 12" ON CENTER ULTRAPLY STANDARD TPO SET IN ULTRAPLY BONDING ADHESIVE OR TPO SA MEMBRANE B. ABOVE BACK SIDE OF PARAPET WALL STUCCO FINISH SYSTEM, PER ASSEMBLY CONTINUOUS BEAD OF SEALANT CONTINUOUS TERMINATION BAR AND FASTENER 12" (305 mm) ON CENTER MAXIMUM 24 GA. GSM COUNTERFLASHING PLYWOOD SHEATHING, PER STRUCTURAL TPO BONDING ADHESIVE TPO MEMBRANE A. ABOVE CANOPY/ EYEBROW TPO ROOFING SYSTEM TERMINATION AT STUCCO

REVISIONS/SUBMITTALS DATE DESCRIPTION

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written description of such other billing (and/or) cycle

applicable to the project is available from the owner or

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the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY

Project Name 1 Project Name 2

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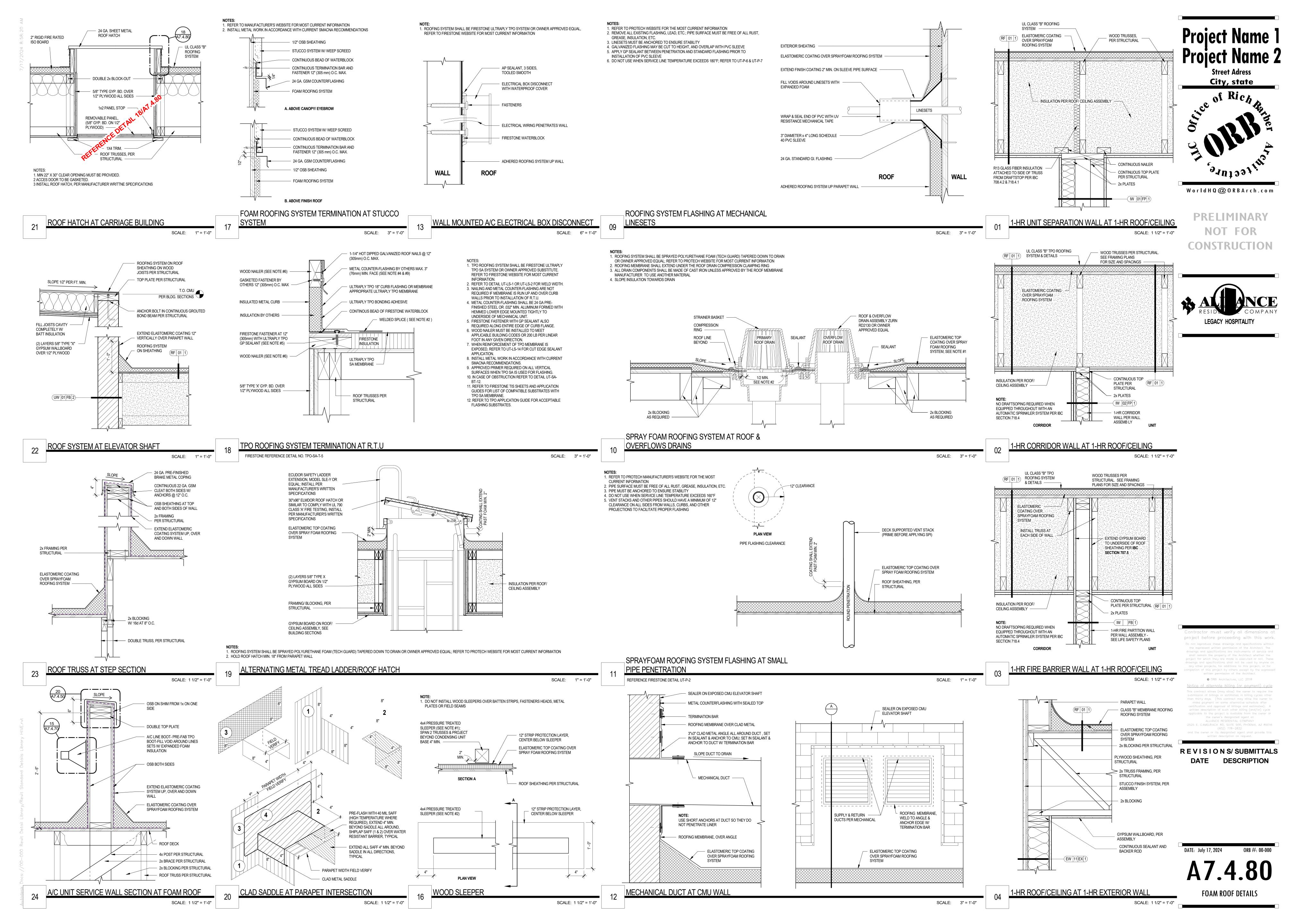
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DATE: July 17, 2024 ORB #: 00-000

SYSTEM FIRESTONE NO. UT-T-7

SCALE: 3" = 1'-0"

TPO ROOFING DETAILS



r-----FLASHING AT BUILDING STEP CONDITION AT END WALL 26 GA. PRE-FINISHED METAL COPING, COLOR PER EXTERIOR ELEVATIONS SLOPE 1/4"MIN. - 1/2" MAX./12" CONTINUOUS FLASH SAFF MEMBRANE CLOSURE EXTEND 16 77 DOWN BOTH SIDES CONTINUOUS 22 GA. GSM CLEAT BOTH SIDES, ANCHOR @ 12" O.C. T.O. CMU PER SECTIONS 3x PRESSURE TREATED PLATE PER STRUCTURAL EXPOSED CMU ELASTOMERIC COATING WALL PER UNDER FLASH SAFF EXTERIOR **ELEVATIONS**  CMU WALL PER STRUCTURAL ELASTOMERIC COATING OVER SPRAYFOAM ROOFING SYSTEM ROOF **EXTERIOR** FLASHING AT PARAPET - CMU SCALE: 3" = 1'-0" FLASHING AT BUILDING STEP CONDITION

SHEATHING

FLASHING AT PARAPET - STUCCO

ROOFING / WATERPROOFING

PER ELEVATIONS

2x WOOD FRAMING,

22 GA. CONTINUOUS

EXTERIOR SHEATHING

PER STRUCTURAL

OVER SPRAYFOAM

EXTEND UP PARAPET

ROOFING SYSTEM,

ROOF DECK -

INTO NAILER

SEALANT

- FOAM STOP

SCALE: 3" = 1'-0"

PER STRUCTURAL

26 GA. PRE-FINISHED

METAL COPING COLOR

1x3 CONTINUOUS WOOD

40 MIL SAFF PREFLASH 3"

MIN. ON FACE OF NAILER &

STUCCO CASING BEAD —

WATER RESISTIVE BARRIER

PLYWOOD SHEATHING, PER

STUCCO FINISH SYSTEM, PER

ASSEMBLY

EXTERIOR

MIN 3"

FLANGE

FOAM STOP

FOAM ROOF EDGE

DOWN 4" MIN. OVER WATER 🔫

NAILER, SET TOP 3/4"

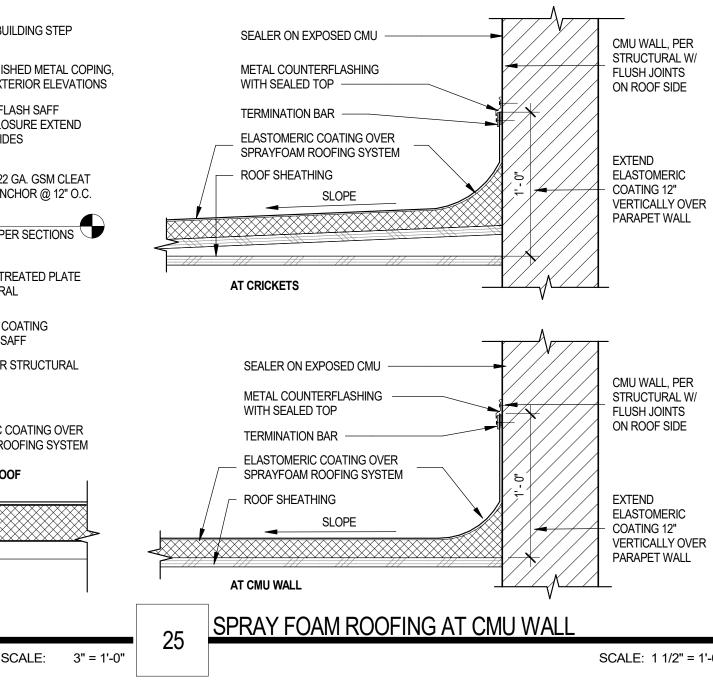
ABOVE TOP PLATE

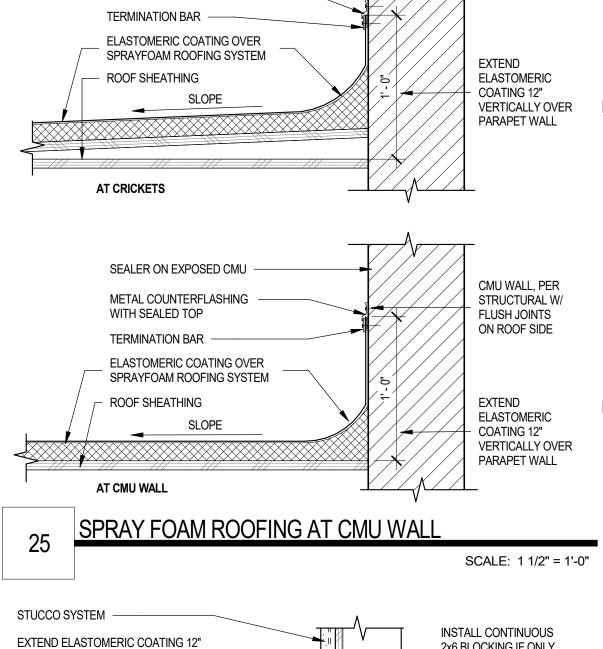
RESISTANT BARRIER

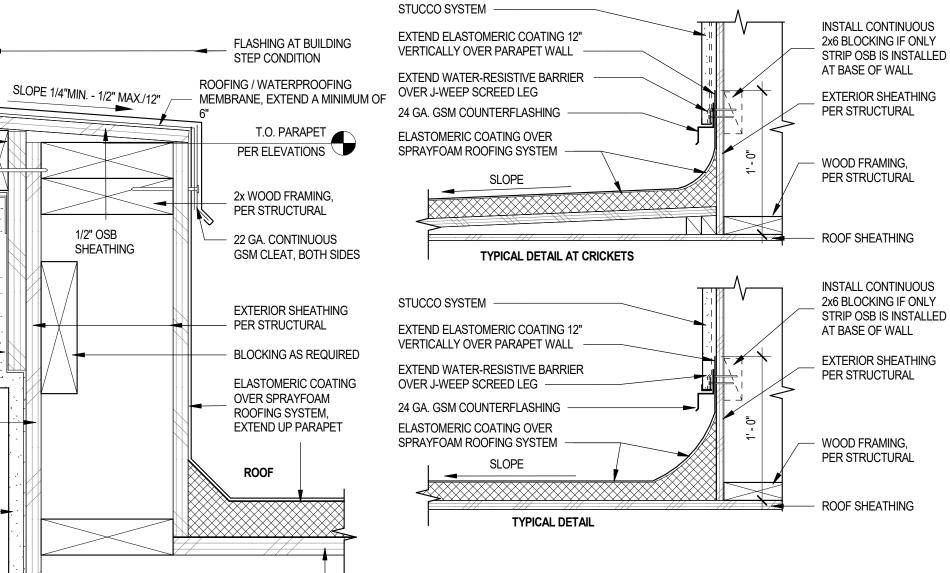
22 GA. CONTINUOUS GSM CLEAT, BOTH SIDES

PER EXTERIOR

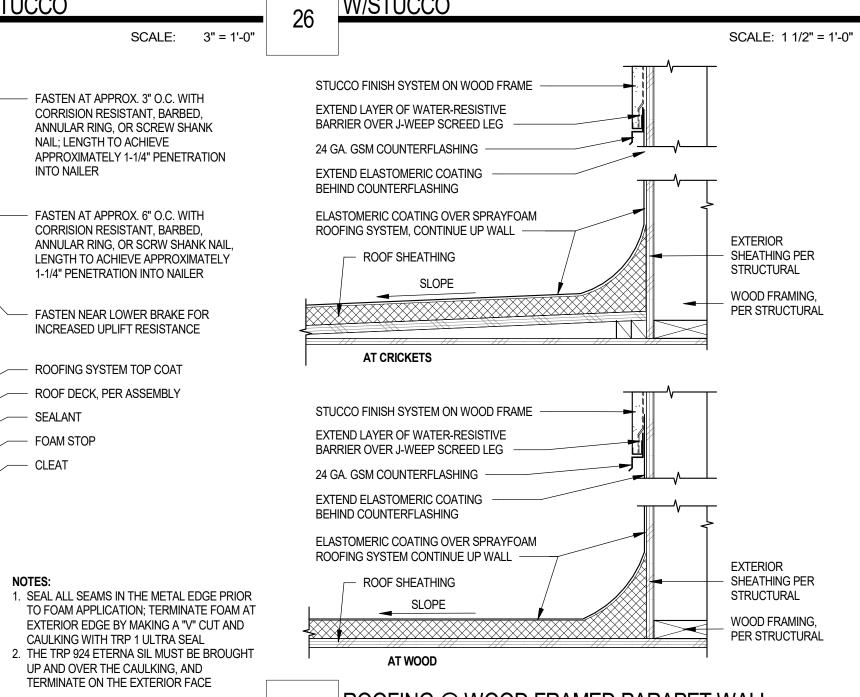
ELEVATIONS -

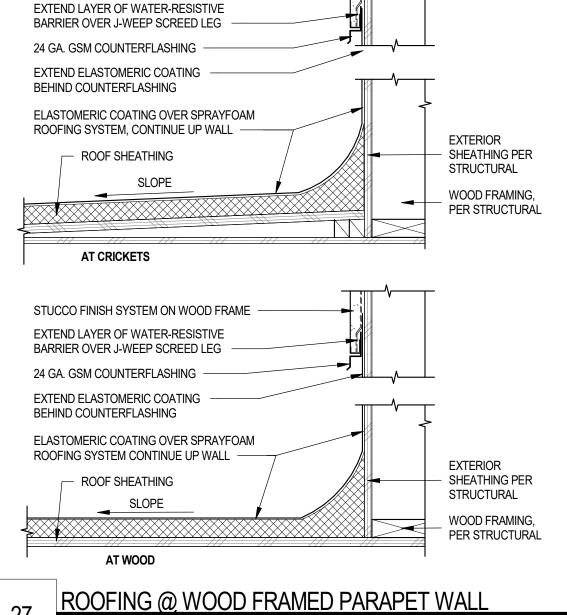






SPRAY FOAM ROOFING @ WOOD FRAMING





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and the owner or its designated agent shall provide this

written description on request.

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DATE DESCRIPTION

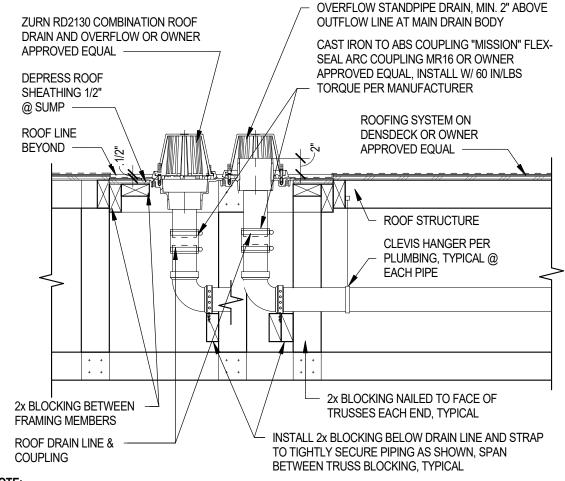
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CONTRACTOR SHALL INSURE THAT ROOF DRAINS ARE LOCATED AT LOWEST POINT ON ROOF, THAT ALL ADJACENT AREAS SLOPE INTO ROOF DRAIN AND THAT ROOF DRAINS ARE INSTALLED PER MANUFACTURER'S REQUIREMENTS; REFER TO ROOFING SYSTEM ROOF DRAIN W/ OVERFLOW ROOF DRAIN DETAIL, THIS SHEET, FOR ADDITIONAL INFORMATION

ROOF AND OVERFLOW DRAIN PIPPING SUPPORT

DATE: July 17, 2024

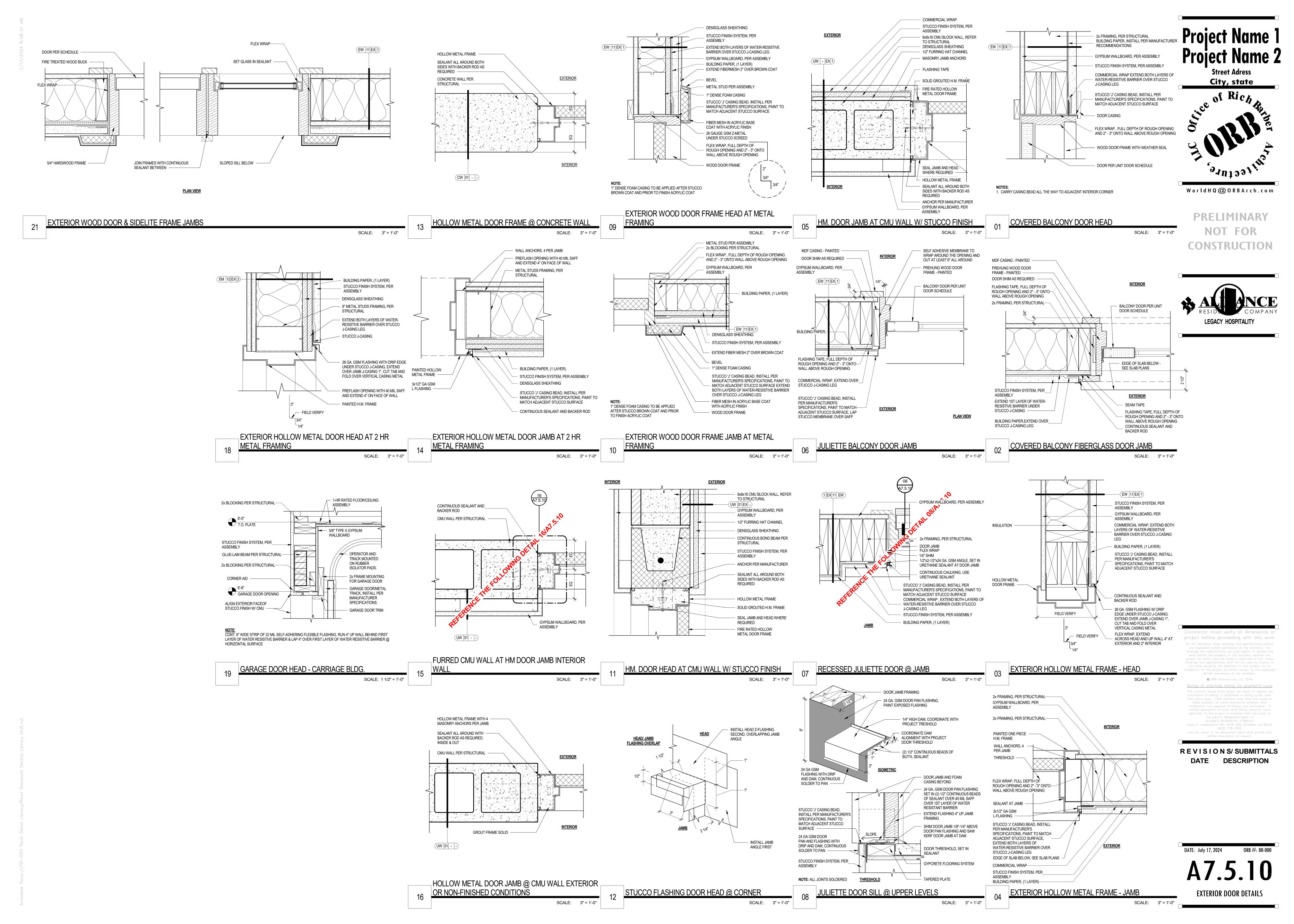
**ROOF - CEILING DETAILS TILE &** STANDING SEAM

ROOF TILE VALLEY FLASHING

SCALE: 1" = 1'-0"

**ROOF TILE & FASCIA AT EXTERIOR EAVE** 

SCALE: 3" = 1'-0"



SCALE: 3" = 1'-0"

SCALE: 3" = 1'-0"

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SCALE: 1 1/2" = 1'-0"

- ANCHOR EPOXIED IN CONCRETE, PER MANUFACTURER

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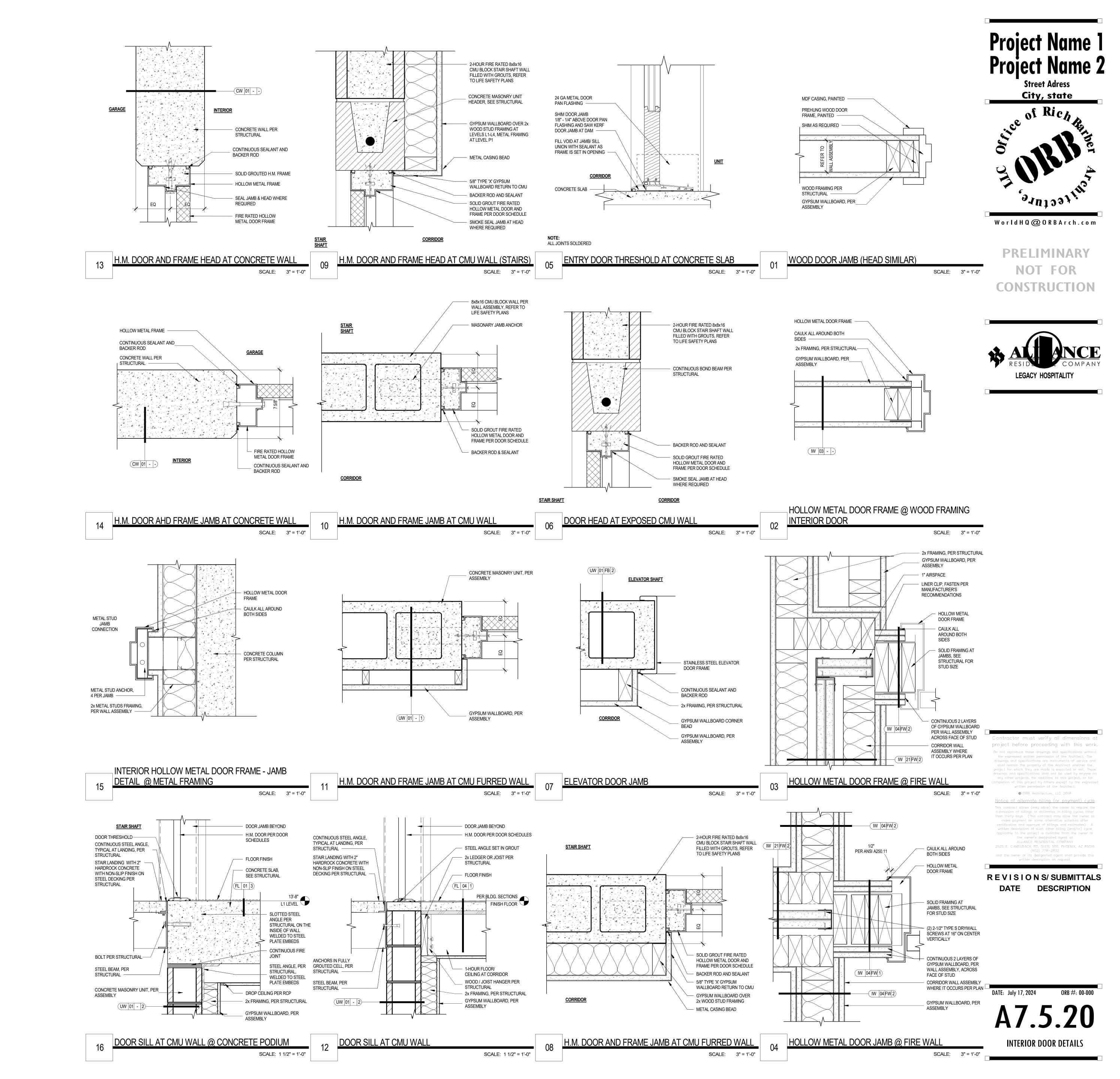
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DATE: July 17, 2024 ORB #: 00-000 A7.5.11 **EXTERIOR DOORS & LOUVERS** 

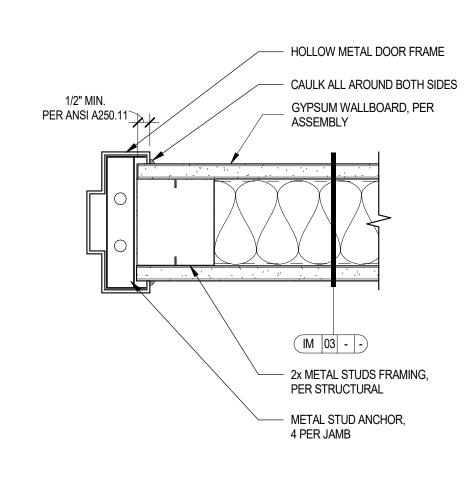


# **Project Name 1**

Street Adress City, state W o r I d H Q @ O R B A r c h . c o m

INTERIOR HOLLOW METAL DOOR FRAME - HEAD DETAIL @ METAL FRAMING SCALE: 3" = 1'-0"

**PRELIMINARY** NOT FOR CONSTRUCTION





INTERIOR HOLLOW METAL DOOR FRAME - JAMB DETAIL @ METAL FRAMING SCALE: 3" = 1'-0"

MDF CASING, PAINTED -PREHUNG WOOD DOOR FRAME, PAINTED -- 2x METAL STUD FRAMING, SHIM AS REQUIRED PER STRUCTURAL

WOOD DOOR FRAME HEAD DETAIL @ METAL FRAMING SCALE: 3" = 1'-0"

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Notice of alternate billing (or payment) cycle

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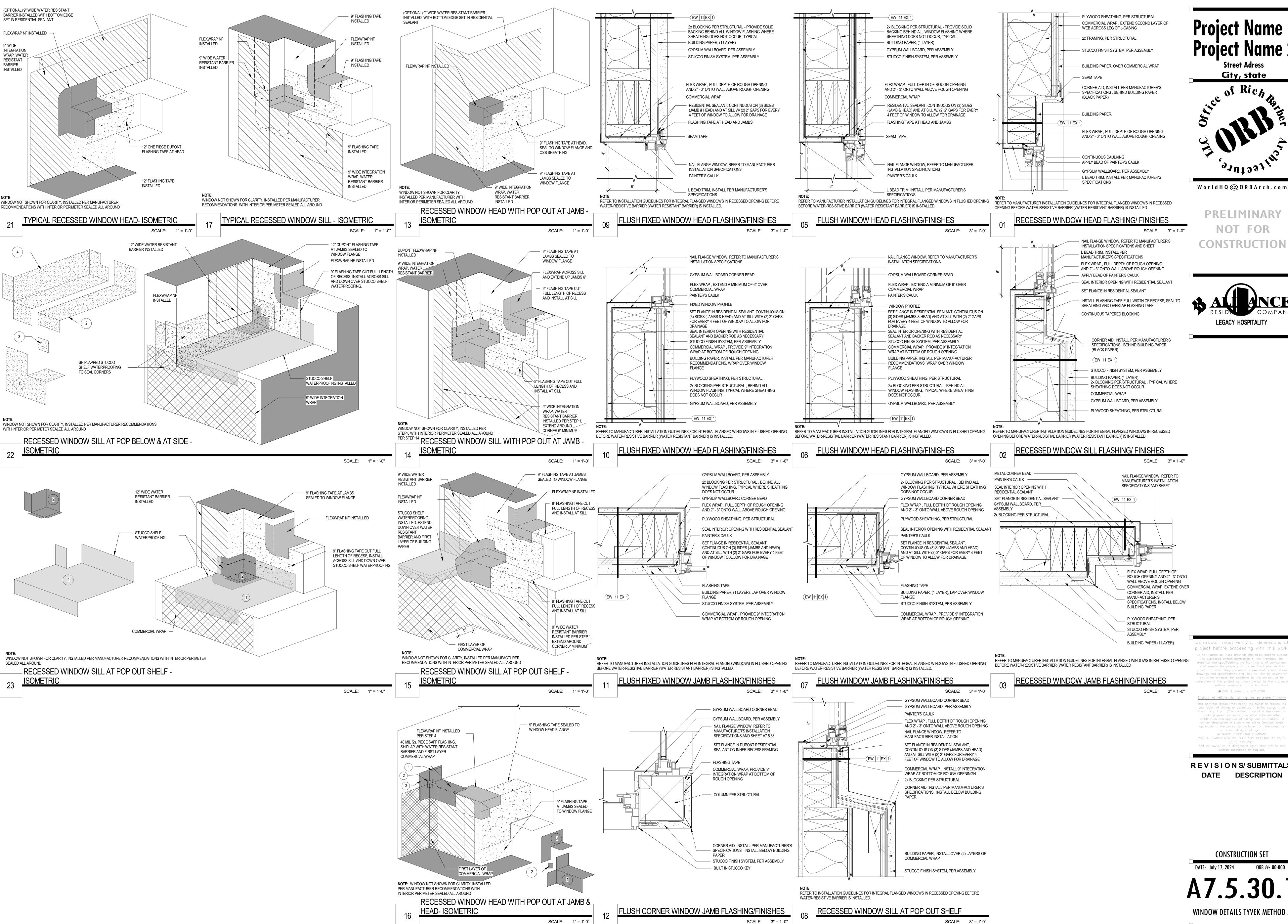
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DATE: July 17, 2024 ORB #: 00-000

INTERIOR DOOR DETAILS

CLEAR FLOOR SPACE -- 1-1/2" WALL MOUNTED HANDRAIL - (2) 2-1/2" TYPE "S" DRYWALL SCREWS AT 16" O.C. VERTICALLY CONTINUOUS (2) LAYERS OF 5/8"
 TYPE X GYPSUM BOARD PER 2-HR PER ENLARGED PLANS FIRE WALL ASSEMBLY ACROSS FACE OF STUD - CAULK ALL AROUND BOTH SIDES 2x6 WOOD JAMB FRAMING PER STRUCTURAL HOLLOW METAL DOOR AND FRAME PER DOOR SCHEDULES 1/2" PER ANSI A250.11 1/2" PER // ANSI A250.11 CONTINUOUS (2) LAYERS OF 1" GYPSUM LINER PANELS PER WALL ASSEMBLY 2-HR WALL ASSEMBLY PER BUILDING PLANS HOLLOW METAL DOOR JAMB AT WOOD FRAMED CORRIDOR STAIR SHAFT SCALE: 3" = 1'-0"

STAIR SHAFT



**Street Adress** City, state



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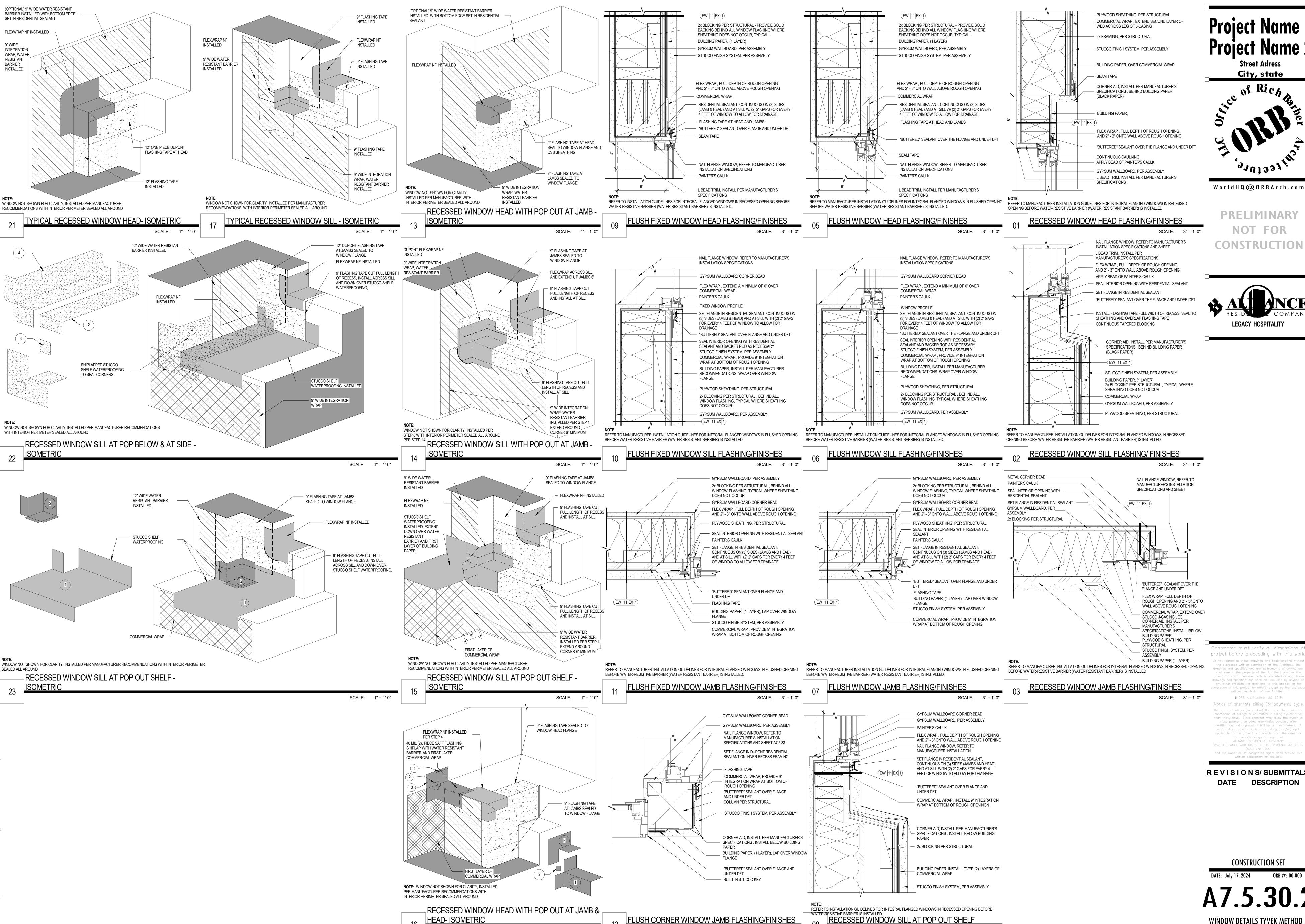
2525 E. CAMELBACK RD. SUITE 500, PHOENIX, AZ 850

and the owner or its designated agent shall provide t written description on request REVISIONS/SUBMITTALS

**CONSTRUCTION SET** 

A7.5.30.1

WINDOW DETAILS TYVEK METHOD A



SCALE: 1" = 1'-0"

SCALE: 3" = 1'-0"

SCALE: 3" = 1'-0"

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**CONSTRUCTION SET** 

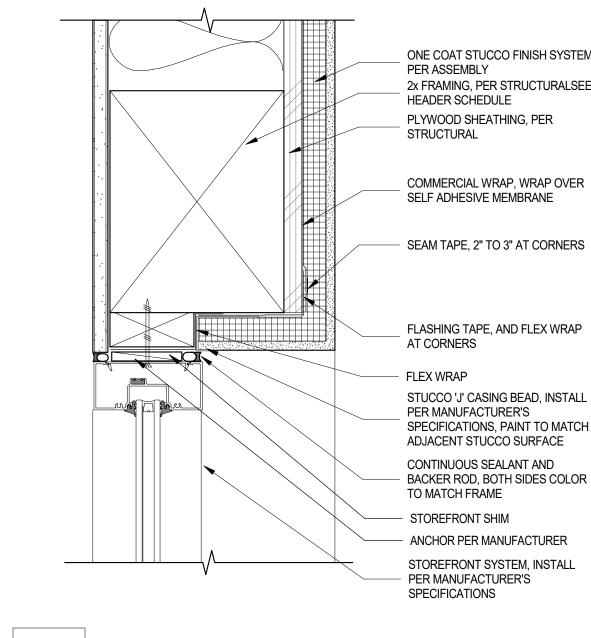
DATE: July 17, 2024

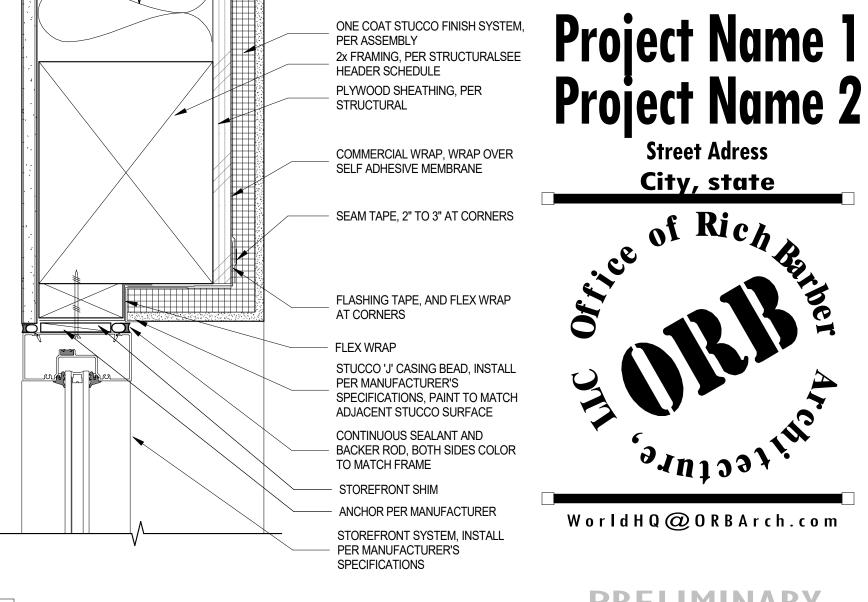
A7.5.30.2

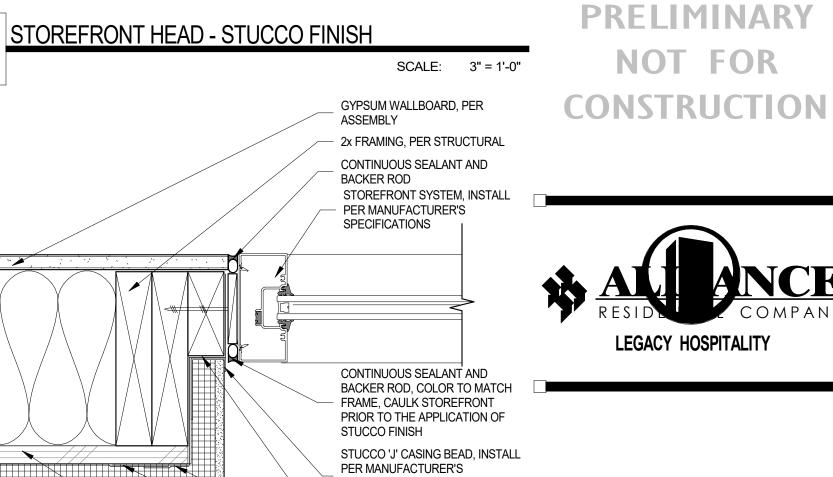
WINDOW DETAILS TYVEK METHOD B

Autodesk Docs: //00-000 Revit Detail Library/Revit Standard Details Library HIVE.rvt

ONE COAT STUCCO FINISH SYSTEM, PER ASSEMBLY 2x FRAMING, PER STRUCTURALSEE HEADER SCHEDULE PLYWOOD SHEATHING, PER STRUCTURAL COMMERCIAL WRAP, WRAP OVER SELF ADHESIVE MEMBRANE SEAM TAPE, 2" TO 3" AT CORNERS FLASHING TAPE, AND FLEX WRAP AT CORNERS FLEX WRAP STUCCO 'J' CASING BEAD, INSTALL PER MANUFACTURER'S SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE CONTINUOUS SEALANT AND - BACKER ROD, BOTH SIDES COLOR TO MATCH FRAME STOREFRONT SHIM - ANCHOR PER MANUFACTURER STOREFRONT SYSTEM, DOOR JAMB - / HEAD, INSTALL PER MANUFACTURER'S SPECIFICATIONS STOREFRONT DOOR HEAD - STUCCO FINISH SCALE: 3" = 1'-0" GYPSUM WALLBOARD, PER ASSEMBLY 2x FRAMING, PER STRUCTURAL CONTINUOUS SEALANT AND BACKER ROD STOREFRONT SYSTEM, DOOR JAMB - / HEAD, INSTALL PER MANUFACTURER'S SPECIFICATIONS CONTINUOUS SEALANT AND BACKER ROD, COLOR TO MATCH FRAME, CAULK STOREFRONT PRIOR TO THE APPLICATION OF STUCCO FINISH STUCCO 'J' CASING BEAD, INSTALL PER MANUFACTURER'S SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE - FLASHING TAPE - SEAM TAPE COMMERCIAL WRAP, TO TERMINATE ON TOP OF DFT ONE COAT STUCCO FINISH SYSTEM, PER ASSEMBLY PLYWOOD SHEATHING, PER STRUCTURAL STOREFRONT DOOR JAMB - STUCCO FINISH STOREFRONT JAMB - STUCCO FINISH SCALE: 3" = 1'-0"







SPECIFICATIONS, PAINT TO MATCH

ADJACENT STUCCO SURFACE

COMMERCIAL WRAP, TO

TERMINATE ON TOP OF DFT

PLYWOOD SHEATHING, PER

ONE COAT STUCCO FINISH SYSTEM,

SCALE: 3" = 1'-0"

FLASHING TAPE

PER ASSEMBLY

STRUCTURAL

SEAM TAPE

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- INTUMESCENT PAINT AS REQUIRED. COORDINATE WITH MANUFACTURER FOR REQUIRED THICKNESS AND REQUIRED FIRE RATING HSS STRUCTURAL STEEL COLUMN, PER STRUCTURAL PROVIDE ATTACHMENT WITH HIGH-BOND DOUBLE SIDED TAPE - WRAP COLUMN TO MATCH ADJACENT MULLION FINISH CONTINUOUS SEALANT AND BACKER RODON BOTH SIDES OF STOREFRONT STOREFRONT SYSTEM, SILL/JAMB. INSTALL PER MANUFACTURER'S SPECIFICATIONS

STOREFRONT CORNER AT STEEL COLUMN

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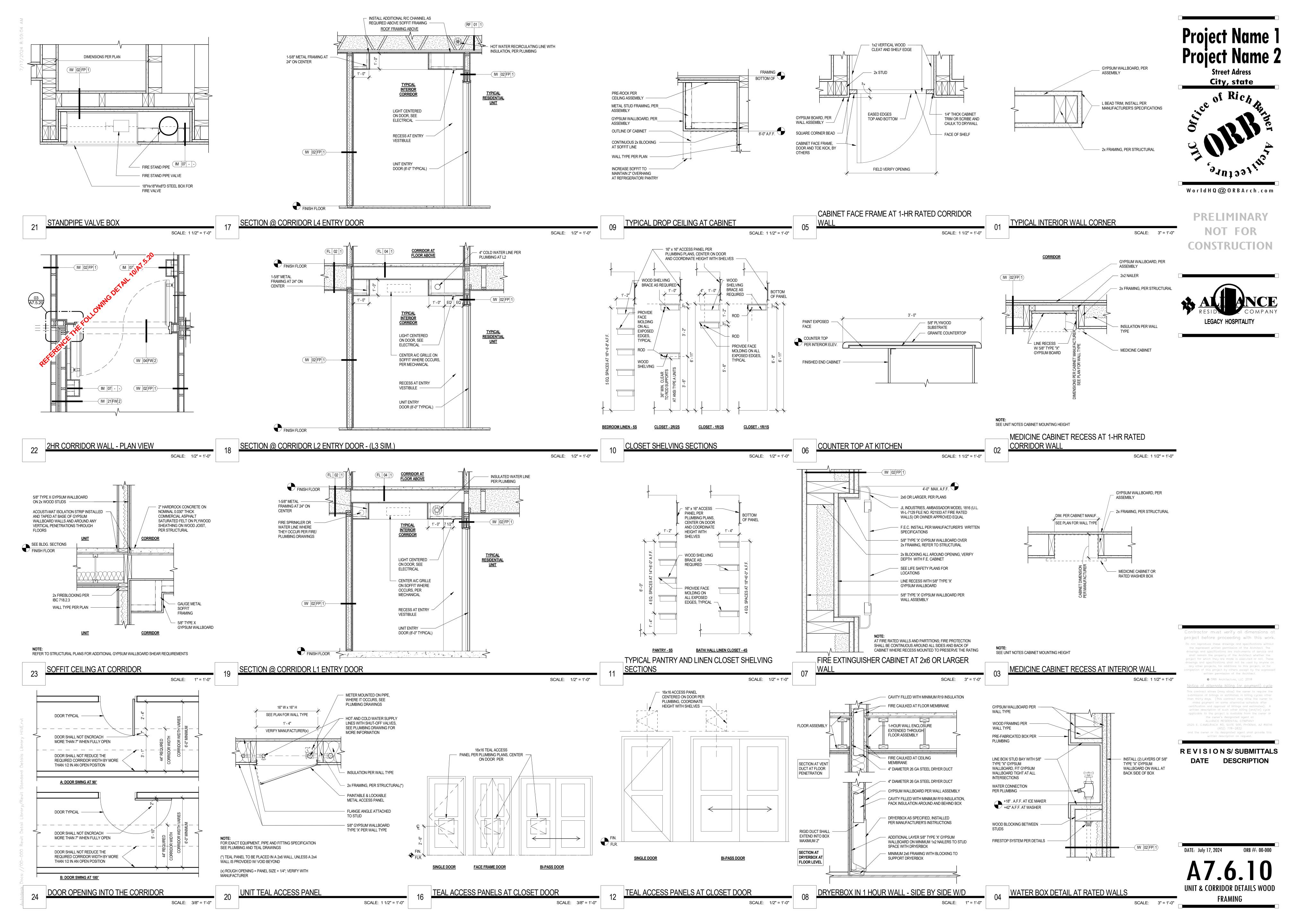
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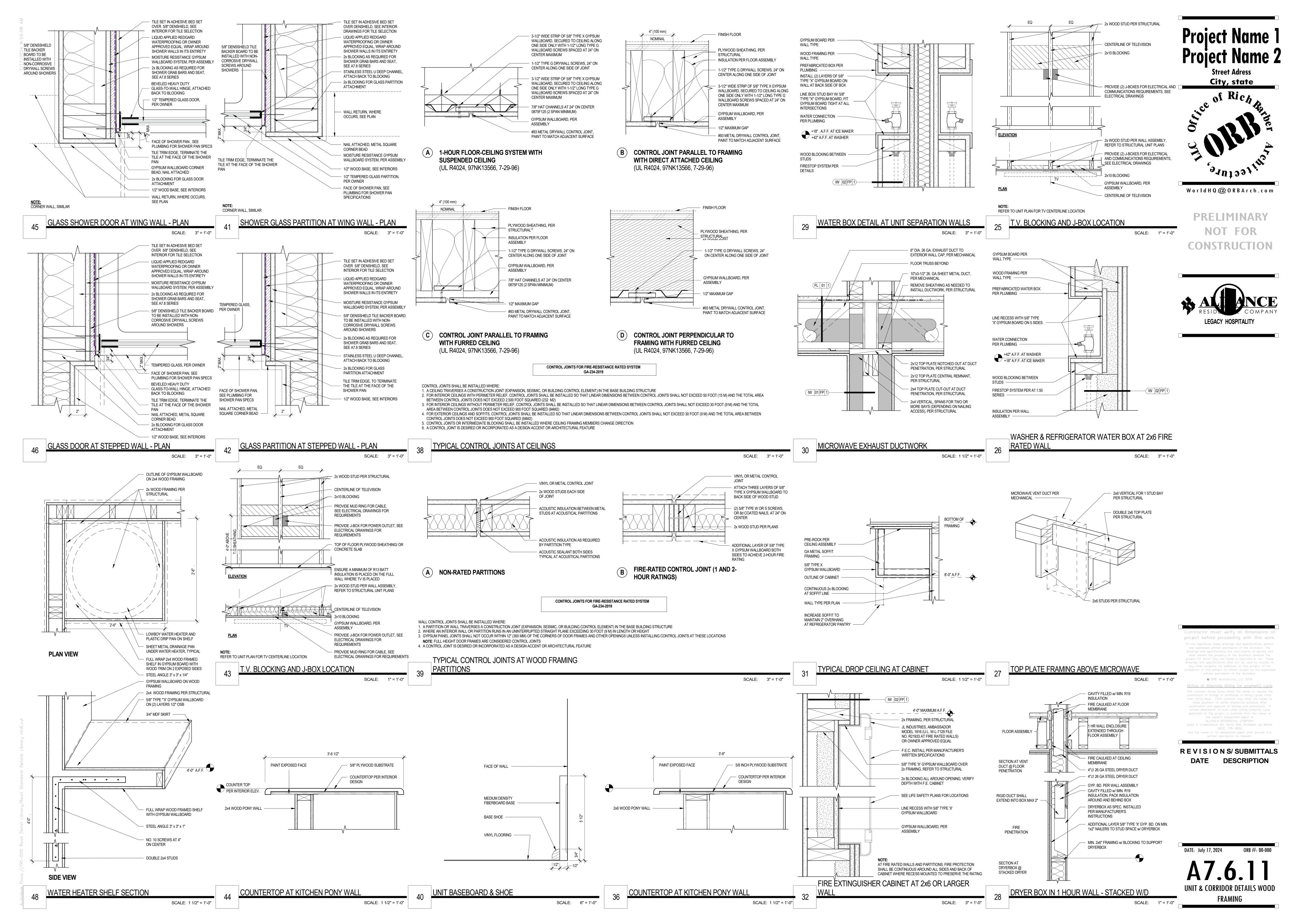
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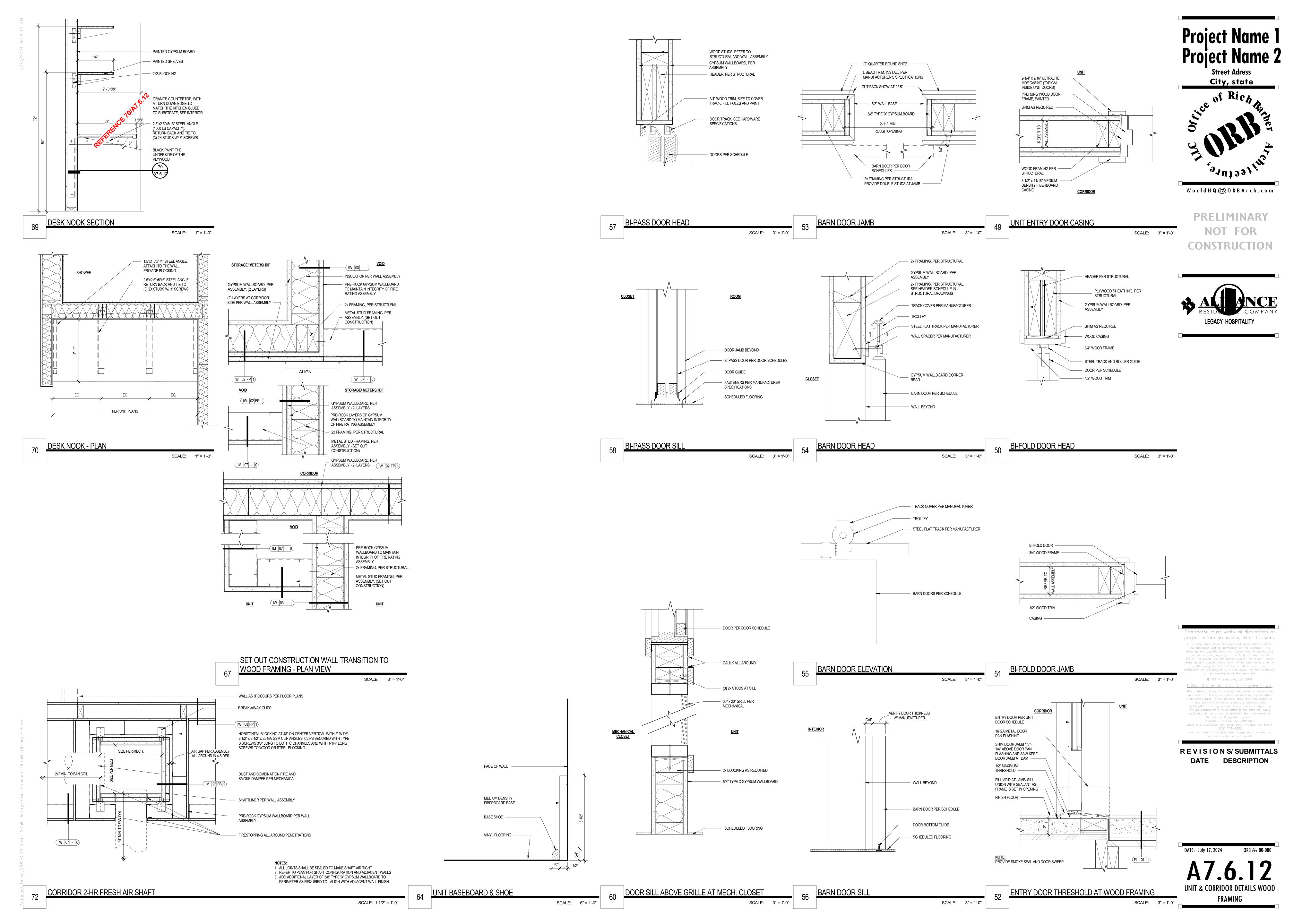
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A7.5.41







GYPSUM BOARD PER WALL TYPE -WOOD FRAMING PER WALL TYPE PREFABRICATED WATER BOX PER PLUMBING LINE BOX/STUD BAY W/ 5/8" TYPE "X" GYPSUM BOARD - FIT GYPSUM BOARD TIGHT AT ALL INTERSECTIONS WATER CONNECTION PER PLUMBING WOOD BLOCKING BETWEEN FIRESTOP SYSTEM PER DETAILS ON -**A7.1.50 SERIES** OPTION A

GYPSUM BOARD PER

WOOD FRAMING PER

PREFABRICATED WATER

LINE BOX/STUD BAY W/ 5/8"

TYPE "X" GYPSUM BOARD - FIT

GYPSUM BOARD TIGHT AT ALL

BOX PER PLUMBING

INTERSECTIONS

WOOD BLOCKING BETWEEN -

**A7.1.50 SERIES** 

FIRESTOP SYSTEM PER DETAILS ON -

OPTION B

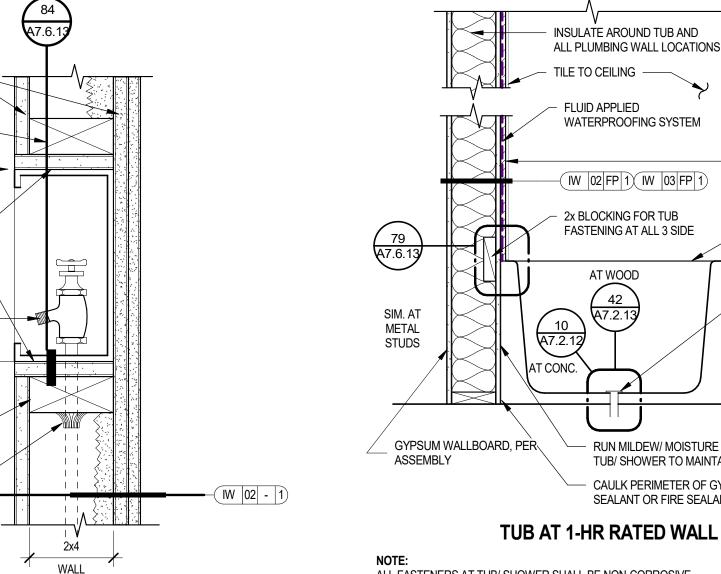
OPTION A

OPTION B

WATER CONNECTION PER PLUMBING

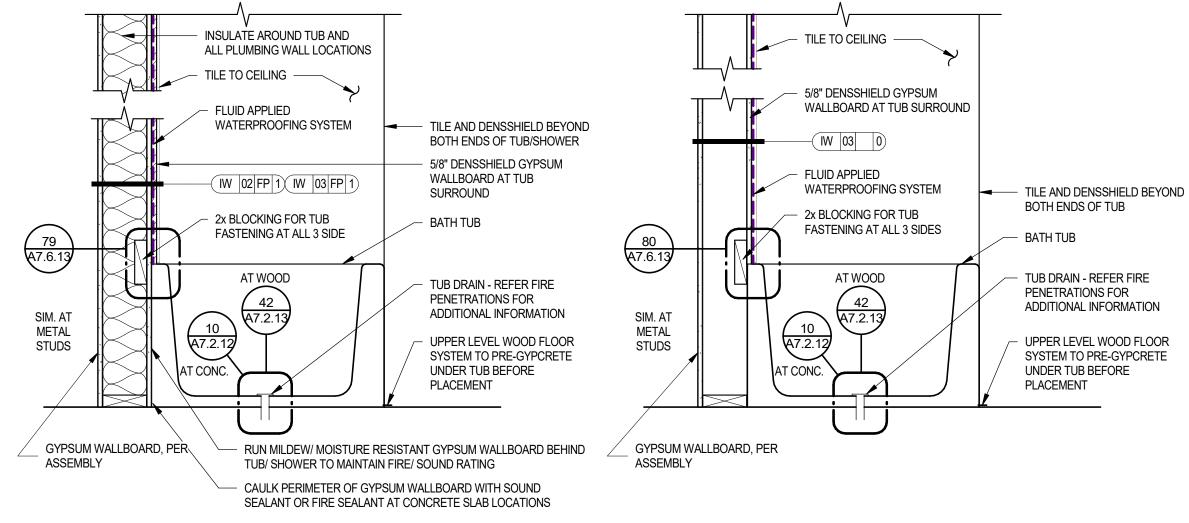
WALL TYPE -

WALL TYPE -



- (IW |02 - 1)

SCALE: 3" = 1'-0"



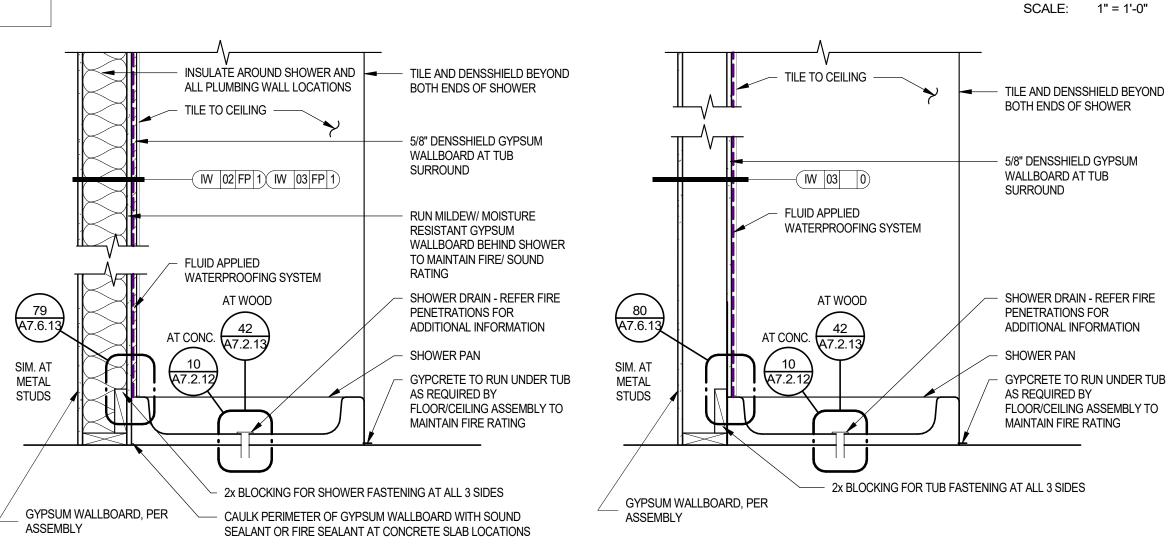
TUB AT NON-RATED WALL

SHOWER AT NON-RATED WALL

SCALE: 1" = 1'-0"

ALL FASTENERS AT TUB/ SHOWER SHALL BE NON-CORROSIVE REFER TO LIFE SAFETY PLANS FOR RATED WALL LOCATIONS

BATH TUB WALL SECTION



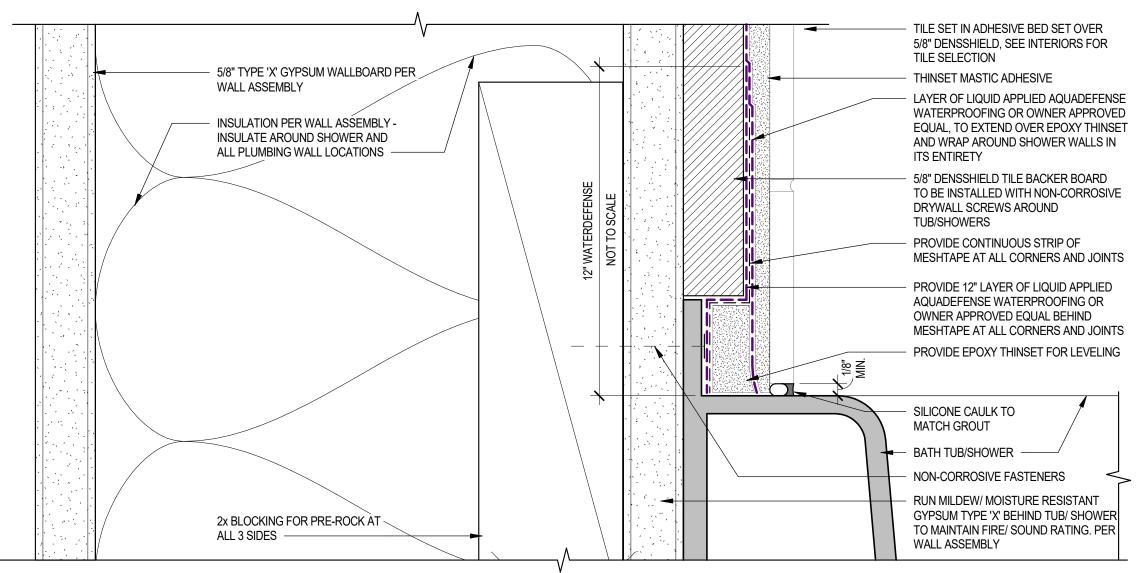
SHOWER AT 1-HR RATED WALL

ALL FASTENERS AT TUB/ SHOWER SHALL BE NON-CORROSIVE REFER TO LIFE SAFETY PLANS FOR RATED WALL LOCATIONS

SHOWER WALL SECTION

5-SIDED 5/8" TYPE 'X' GYPSUM BOARD ENCLOSURE (FIRST LAYER OF 5/8" TYPE 'X'

WASHER & REFRIGERATOR WATER BOX AT 2x4 FIRE



WATERPROOFING AT BATH TUB/SHOWER FLANGE -

1-HR RATED CONDITION - 5/8" TYPE X GYPSUM WALLBOARD - 2x WOOD STUDS -SEE UNIT PLANS -

SCALE: 12" = 1'-0" - TILE SET IN ADHESIVE BED SET OVER 5/8" DENSSHIELD, SEE INTERIORS FOR TILE SELECTION THINSET MASTIC ADHESIVE - LAYER OF LIQUID APPLIED AQUADEFENSE WATERPROOFING OR OWNER APPROVED EQUAL, TO EXTEND OVER EPOXY THINSET AND WRAP AROUND SHOWER WALLS IN ITS ENTIRETY - 5/8" DENSSHIELD TILE BACKER BOARD TO BE INSTALLED WITH NON-CORROSIVE DRYWALL SCREWS AROUND TUB/SHOWERS - PROVIDE CONTINUOUS STRIP OF MESHTAPE AT ALL CORNERS AND JOINTS PROVIDE 12" LAYER OF LIQUID APPLIED AQUADEFENSE WATERPROOFING OR OWNER APPROVED EQUAL BEHIND MESHTAPE AT ALL CORNERS AND JOINTS PROVIDE EPOXY THINSET FOR LEVELING SILICONE CAULK TO MATCH GROUT BATH TUB/SHOWER ---- NON-CORROSIVE FASTENERS - 2x BLOCKING FOR TUB/SHOWER FASTENING AT ALL 3 SIDES

WATERPROOFING AT TUB/SHOWER FLANGE -

NON-RATED CONDITION

FRAMING

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**CONSTRUCTION** 

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submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after written description of such other billing (and/or) cycle applicable to the project is available from the owner or the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this

written description on request.

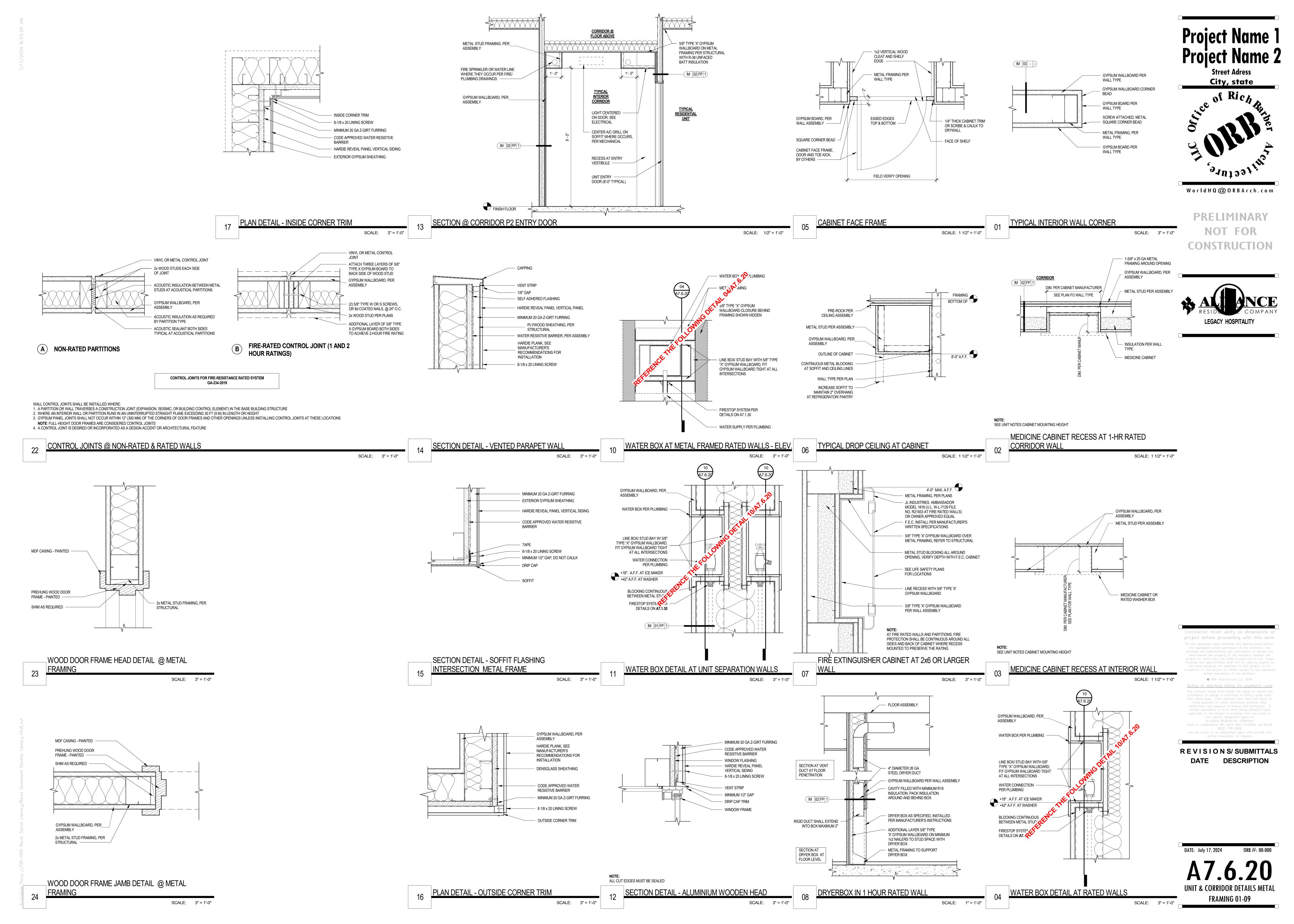
DATE: July 17, 2024

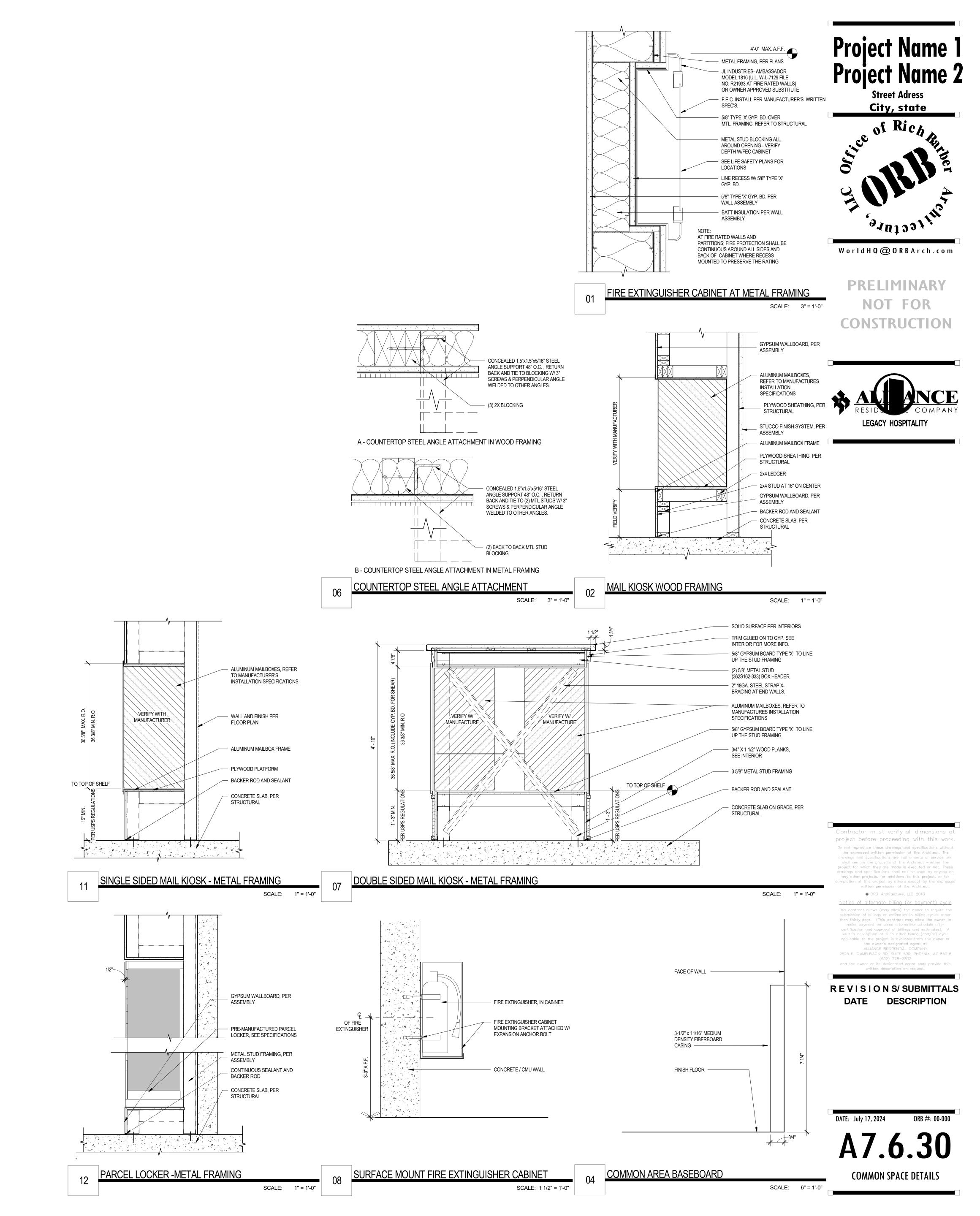
UNIT & CORRIDOR DETAILS WOOD

WATER BOX AT WOOD FRAMED RATED WALLS - ELEV.

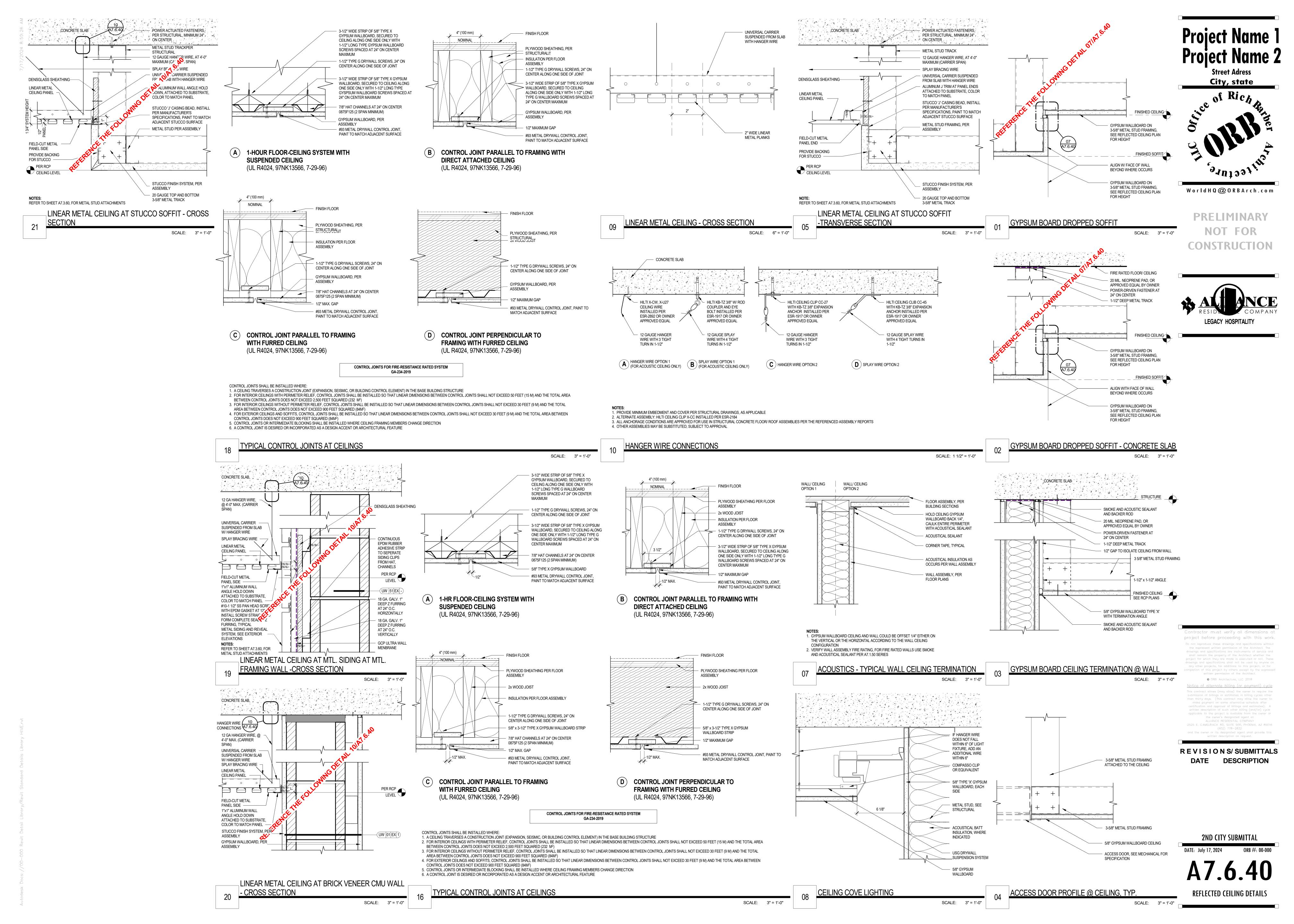
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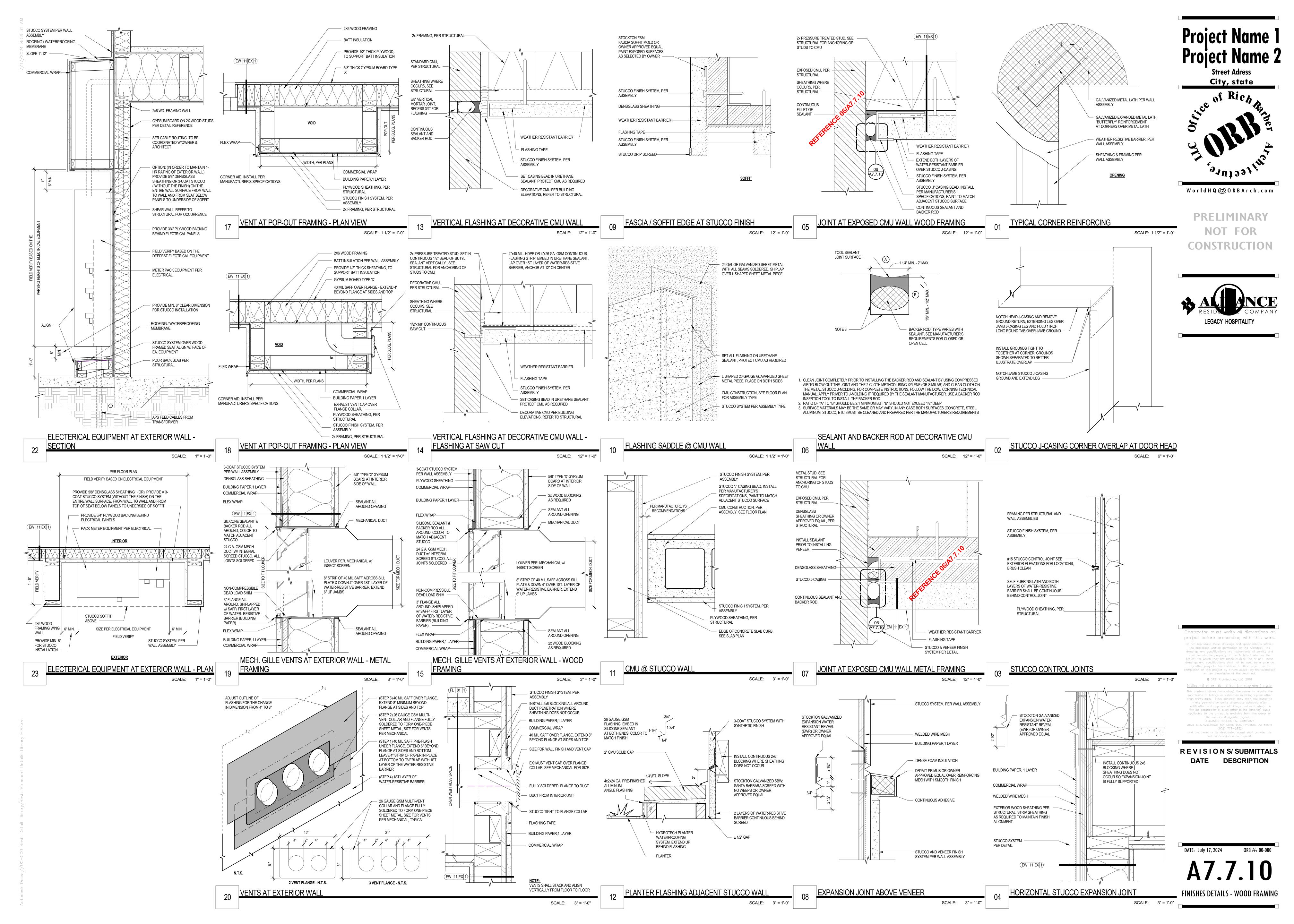
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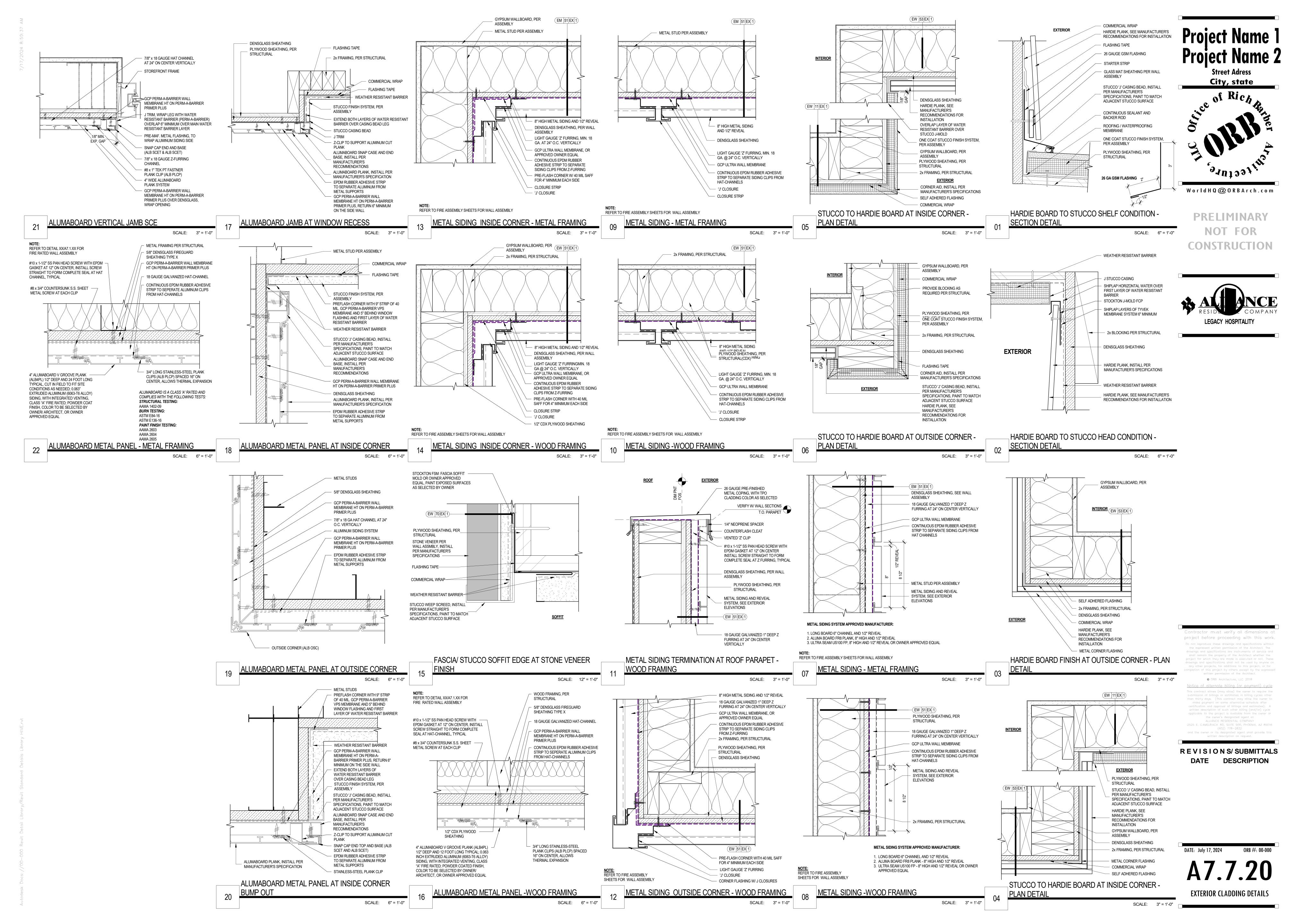




Autodesk Docs: //00-000 Revit Detail Library/Revit Standard Details Library HIVE.rvt







INSULATION PER WALL ASSEMBLY - 5/8" GYPSUM BOARD TYPE 'X' DENSGLASS SHEATHING PER STRUCTURAL CEMENT BOARD PER WALL ASSEMBLY NOMINAL 1"x4"x8" THIN BRICK VENEER — TOOLED MORTAR JOINTS ISOMETRIC

## BRICK VENEER @ CORNER EDGE ISOMETRIC

ISOMETRIC

INSULATION PER WALL ASSEMBLY

- GYPSUM BOARD TYPE 'X' AT

NOMINAL 1"x4"x8" THIN BRICK VENEER CORNER PIECE ON ADHESIVE BOND COAT/POLYMER MORTAR PER MANUFACTURER SPECIFICATIONS

INTERIOR SIDE OF WALL - STEEL STUDS, PER WALL

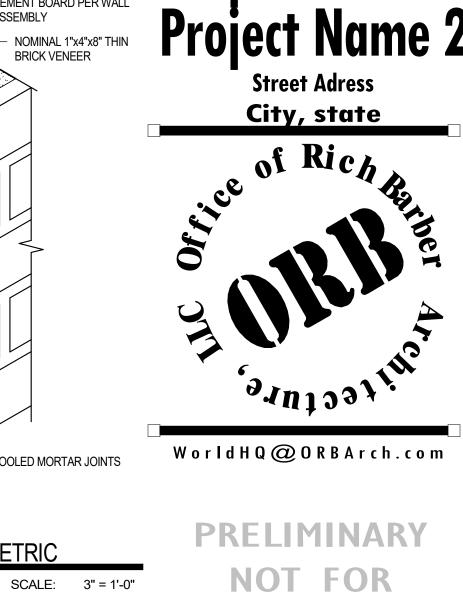
TOOLED MORTAR JOINTS

DENSGLASS SHEATHING, PER WALL ASSEMBLY

BUILDING PAPER,1 LAYER COMMERCIAL WRAP

THIN BRICK VENEER, INSTALL PER MANUFACTURER'S SPECIFICATIONS

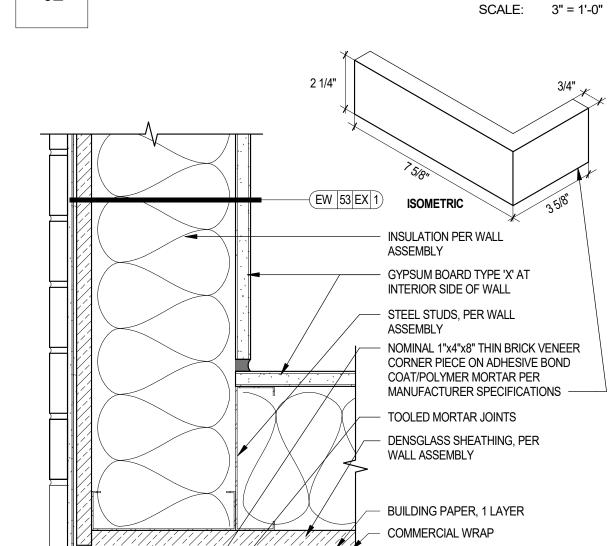
ASSEMBLY



NOT FOR CONSTRUCTION



#### BRICK VENEER @ CORNER EDGE - PLAN VIEW



### BRICK VENEER VERTICAL CONTROL JOINT AT WOOD

THIN BRICK VENEER, INSTALL PER

MANUFACTURER'S SPECIFICATIONS

completion of this project by others except by the expressed written permission of the Architect. SCALE: 3" = 1'-0" © ORB Architecture, LLC 2018

Notice of alternate billing (or payment) cycle This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after certification and approval of billings and estimates). A written description of such other billing (and/or) cycle applicable to the project is available from the owner or the owner's designated agent at ALLIANCE RESIDENTIAL COMPANY 2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

Contractor must verify all dimensions at

project before proceeding with this work.

the expressed written permission of the Architect. The drawings and specifications are instruments of service and shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone on

any other projects, for additions to this project, or for

REVISIONS/SUBMITTALS DATE DESCRIPTION

(602) 778-2832 and the owner or its designated agent shall provide this written description on request.

DATE: July 17, 2024 ORB #: 00-000

A7.7.30

EXTERIOR BRICK VENEER DETAILS

ANSI ACCESSIBLE ROUTE/SPECIAL CONDITION DOOR

ANSI ACCESSIBLE DOOR CLEARANCES REQUIRED IN THE FOLLOWING LOCATIONS:

(A) PULL SIDE

\_\_\_\_\_\_

(A) FRONT APPROACH

1. ALL DOORS IN ANSI TYPE 'A' UNITS

3. ALL COMMON AREAS DOORS

2. ENTRY DOOR IN ANSI TYPE 'B' UNITS

4. ALL PEDESTRIAN GATES (INCLUDING POOL GATES)

(ICC A117.1-2009 - SECTION 404.2.3) (ICC A117.1-2009 - FIGURES 404.2.3.3 - 404.2.3.5) (2010 ADA - SECTION 404.2.4) (2010 ADA - FIGURES 404.2.4.2 & 404.2.4.3)

1. DOOR HARDWARE: ANSI 404.2.6

2. CLOSING SPEED: ANSI 404.2.7

3. OPENING FORCE: ANSI 404.2.8

4. DOOR SURFACE: ANSI 404.2.9

DOORS SHALL COMPLY WITH SECTION 404 ICC/ANSI A117.1-2009 WHICH INCLUDES, BUT IS NOT LIMITED TO:

SCALE: 12" = 1'-0"

CLEARANCES (ICC A117.1-2009 - SECTION 404.2.3) (ICC A117.1-2009 - FIGURE 404.2.3.2) (2010 ADA - SECTION 404.2.4) (2010 ADA - FIGURE 404.2.4.1)

ANSI ACCESSIBLE DOOR CLEARANCES REQUIRED IN THE FOLLOWING LOCATIONS:

1. ALL DOORS IN ANSI TYPE 'A' UNITS

3. ALL COMMON AREAS DOORS

2. ENTRY DOOR IN ANSI TYPE 'B' UNITS

4. ALL PEDESTRIAN GATES (INCLUDING POOL GATES)

4. DOOR SURFACE: ANSI 404.2.9 ANSI ACCESSIBLE ROUTE/TYPICAL SWING DOOR

1. DOOR HARDWARE: ANSI 404.2.6

2. CLOSING SPEED: ANSI 404.2.7

3. OPENING FORCE: ANSI 404.2.8

DOORS SHALL COMPLY WITH SECTION 404 ICC/ANSI A117.1-2009 WHICH INCLUDES, BUT IS NOT LIMITED TO:

SCALE: 12" = 1'-0"

**ACCESSIBILITY DETAILS - GENERAL** 

Contractor must verify all dimensions at

shall remain the property of the Architect whether the project for which they are made is executed or not. These drawings and specifications shall not be used by anyone or

any other projects, for additions to this project, or for

ORB Architecture, LLC 2018

This contract allows (may allow) the owner to require the submission of billings or estimates in billing cycles other than thirty days. (This contract may allow the owner to make payment on some alternative schedule after

written description of such other billing (and/or) cycle

2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85016

and the owner or its designated agent shall provide th written description on request.

DATE DESCRIPTION

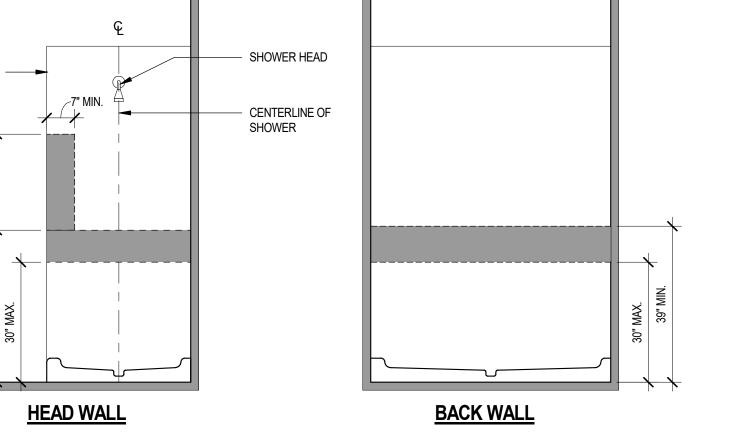
Street Adress

City, state

W o r I d H Q @ O R B A r c h . c o m

**PRELIMINARY** 

NOT FOR

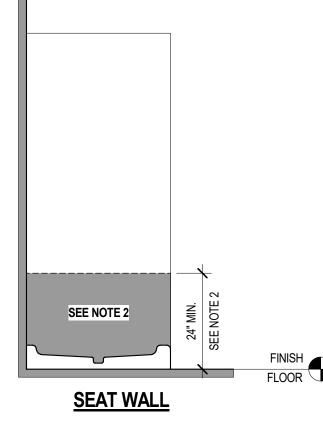


- SHOWER HEAD

- CENTERLINE OF

SHOWER CONTROLS

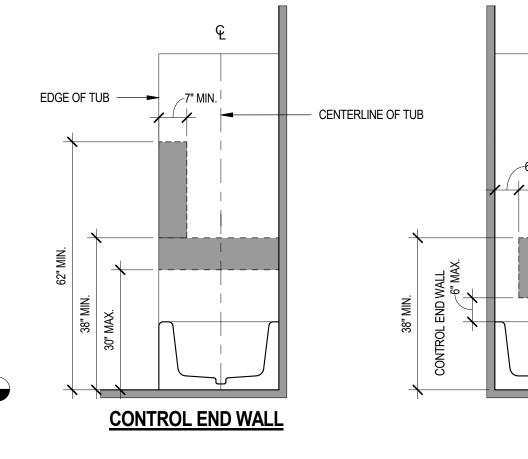
CAN BE ON EITHER HEAD WALL OR SEAT

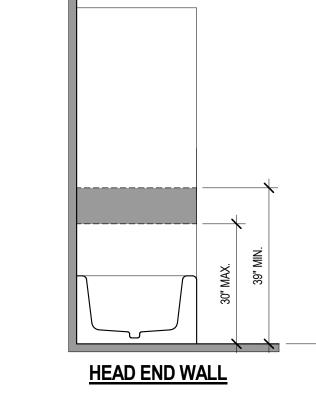


36" MIN. PER SECTION 1004.11.3.1.3.3

SEE NOTE 2

SEAT WALL



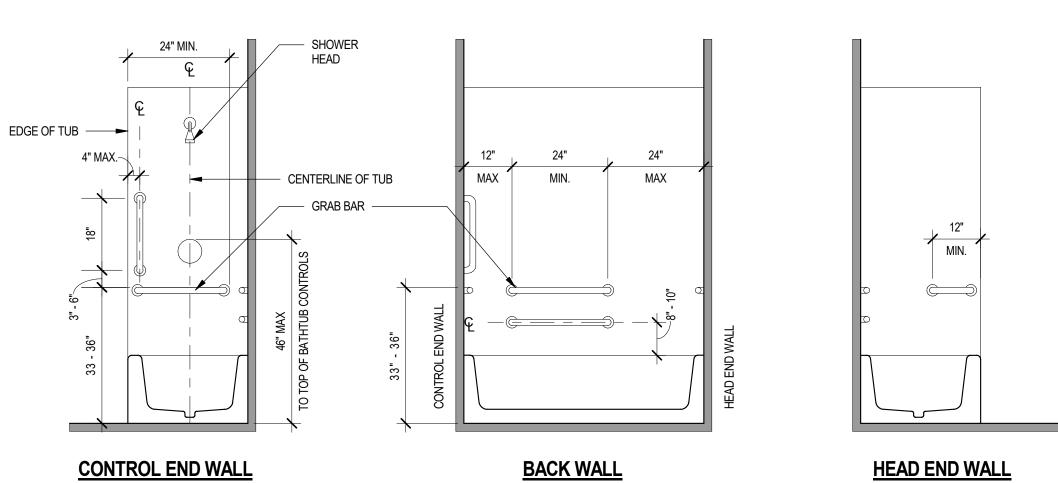




**Project Name 1** 

ANSI TYPE B - REINFORCEMENT FOR BATHTUBS

(FHA CHAPTER 6) (ICC A117.1-2009 - SECTIONS 1004.11.1 & 607.4)



**BACK WALL** 

**PRELIMINARY** NOT FOR **CONSTRUCTION** 



ANSI TYPE B - GRAB BARS FOR SHOWER

**BACK WALL** 

(ICC A117.1-2009 - SECTIONS 1004.11.1 & 608.3.1)

- 1. PER SECTIONS 1004.11.1 & 608.3.1 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS AND SHOWER SEATS AT SHOWER COMPARTMENTS. 2. IN SHOWER COMPARTMENTS LARGER THAN 36 INCHES IN WIDTH AND 36 INCHES IN DEPTH REINFORCEMENT FOR A SHOWER SEAT IS NOT REQUIRED PER SECTION 1004.11.3.1.3.3. 3. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE.
- 4. IN CASE OF SHOWER DOOR BEING INSTALLED, ACCESS TO SHOWER SHALL BE FROM CONTROL WALL SIDE.

ANSI B - REINFORCEMENT AND GRAB BAR FOR

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

**HEAD WALL** 

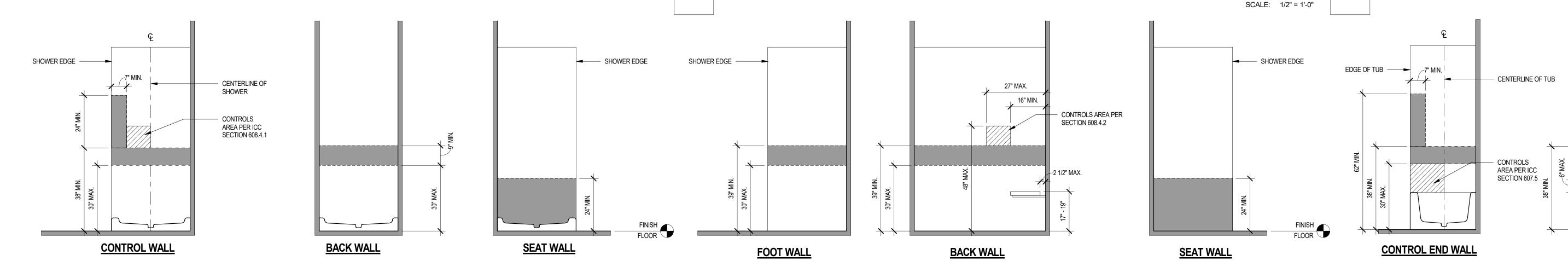
SHOWER EDGE

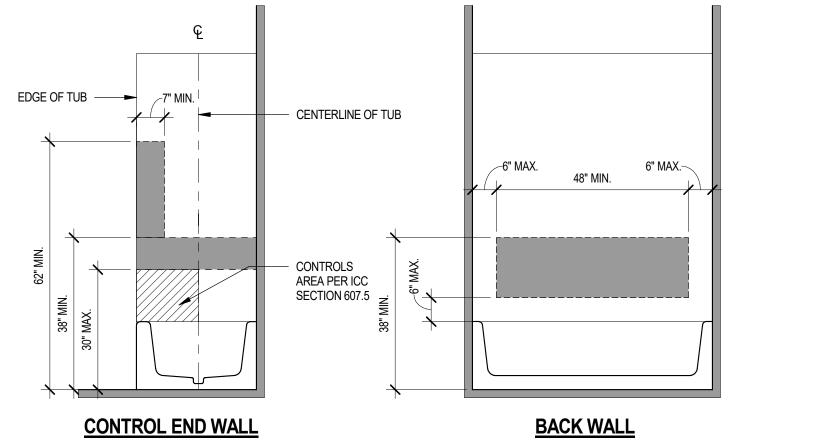
#### ANSI TYPE B - GRAB BARS FOR BATHTUB (ICC A117.1-2009 - SECTIONS 1004.11.1 & 607.4)

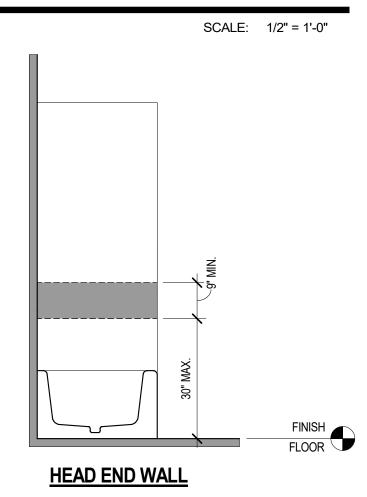
SOLID BLOCKING, SEE DETAIL 03/A7.8.10.

NOTES: (ICC/ANSI A117.1-2009) 1. PER SECTIONS 1004.11.1 & 607.4 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS AT BATHTUBS. 2. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE

ANSI B - REINFORCEMENT AND GRAB BAR FOR BATHTUBS







#### ANSI TYPE A - REINFORCEMENT FOR TRANSFER-TYPE SHOWER

ANSI TYPE A - GRAB BARS FOR TRANSFER-TYPE SHOWER

1. PER SECTIONS 1003.11.1 & 608.3.1 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS AND SHOWER SEATS AT SHOWER COMPARTMENTS.

2. THE HEIGHT OF SHOWER COMPARTMENT SEATS SHALL BE 17 INCHES MINIMUM AND 19 INCHES MAXIMUM ABOVE THE BATHROOM FLOOR, MEASURED TO THE TOP OF THE SEAT

3. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE.

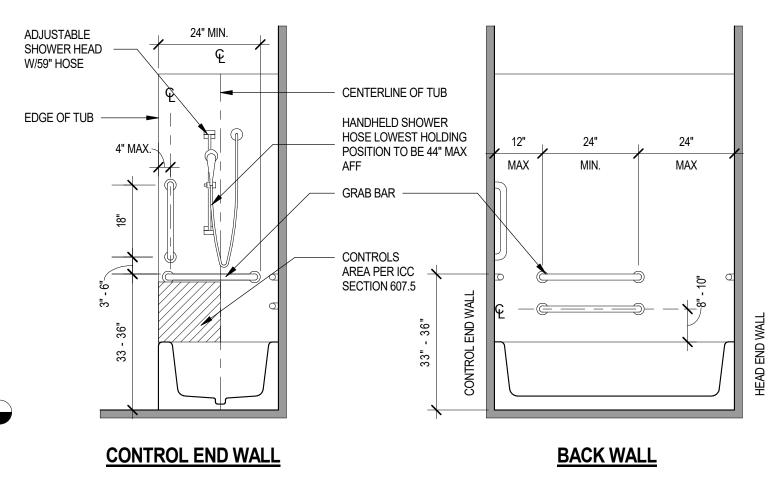
36" ABSOLUTE 36" ABSOLUTE PER SECTION 608.2.1.1 PER SECTION 608.2.1.1 PER SECTION 608.2.1.1 SHOWER EDGE -- CENTERLINE OF → SHOWER EDGE - CONTROLS AREA PER ICC SECTION 608.4.1 HANDHELD SHOWER HOSE - ADJUSTABLE LOWEST HOLDING POSITION SHOWER HEAD TO BE 44" MAX AFF W/59" HOSE - GRAB BAR - FIXED OR FOLDING SEAT PER SECTION 610 -15" MAX. **SEAT WALL CONTROL WALL BACK WALL** 

#### ANSI TYPE A - REINFORCEMENT FOR ROLL-IN SHOWER (ICC A117.1-2009 - SECTIONS 1003.11.2.5.2 & 608.3.2)

HANDHELD SHOWER HOSE LOWEST HOLDING POSITION SHOWER EDGE TO BE 44" MAX AFF SHOWER EDGE ADJUSTABLE SHOWER HEAD WITH 59" HOSE GRAB BAR — CONTROLS AREA PER SECTION 608.4.2 GRAB BAR SHALL START AT 48" MAX. THE EDGE OF THE SEAT 6" MAX. FOLDING SEAT PER SECTION 610 -30" MAX. 6" MAX.-15"-16" **FOOT WALL BACK WALL SEAT WALL** 

## (FHA CHAPTER 6) (ICC A117.1-2009 - SECTIONS 1003.11.1 & 607.4)

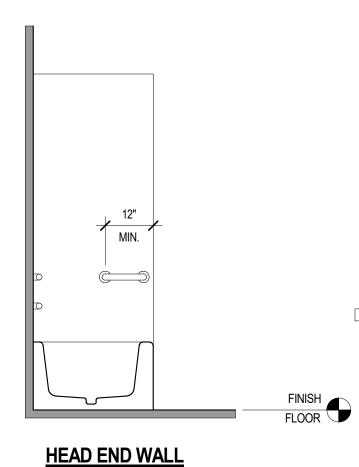
ANSI TYPE A - REINFORCEMENT FOR BATHTUBS



(ICC A117.1-2009 - SECTIONS 1003.11.1 & 607.4)

2. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE.

1. PER SECTIONS 1003.11.1 & 607.4 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS AT BATHTUBS.



Contractor must verify all dimensions o

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REVISIONS/SUBMITTALS DATE DESCRIPTION

#### ANSI TYPE A - GRAB BARS FOR ROLL-IN SHOWER

(ICC A117.1-2009 - SECTIONS 1003.11.2.5.2 & 608.3.2)

**NOTES:** (ICC/ANSI A117.1-2009) 1. PER SECTIONS 1003.11.2.5.2 & 608.3.2 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS AND SHOWER SEATS AT SHOWER COMPARTMENTS. 2. THE HEIGHT OF SHOWER COMPARTMENT SEATS SHALL BE 17 INCHES MINIMUM AND 19 INCHES MAXIMUM ABOVE THE BATHROOM FLOOR, MEASURED TO THE TOP OF THE SEAT.

SEATS SHALL COMPLY WITH ICC SECTION 610.3.1 OR 610.3.2 3. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE. 4. IN CASE OF SHOWER DOOR BEING INSTALLED, ACCESS TO SHOWER SHALL BE FROM SEAT WALL SIDE.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

#### ANSI A - REINFORCEMENT AND GRAB BAR FOR

ROLL-IN TYPE SHOWERS

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

**ACCESSIBILITY DETAILS - UNITS** 

ANSI A - REINFORCEMENT AND GRAB BAR FOR BATHTUBS

ANSI A - REINFORCEMENT AND GRAB BAR FOR TRANSFER-TYPE SHOWERS

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

4. IN CASE OF SHOWER DOOR BEING INSTALLED, ACCESS TO SHOWER SHALL BE FROM CONTROL WALL SIDE.

(ICC A117.1-2009 - SECTIONS 1003.11.1 & 608.3.1)

SEATS SHALL COMPLY WITH ICC SECTION 610.3.1 OR 610.3.2

**NOTES:** (ICC/ANSI A117.1-2009)

(ICC A117.1-2009 - SECTIONS 1003.11.1 & 608.3.1)

SCALE: 1/2" = 1'-0"

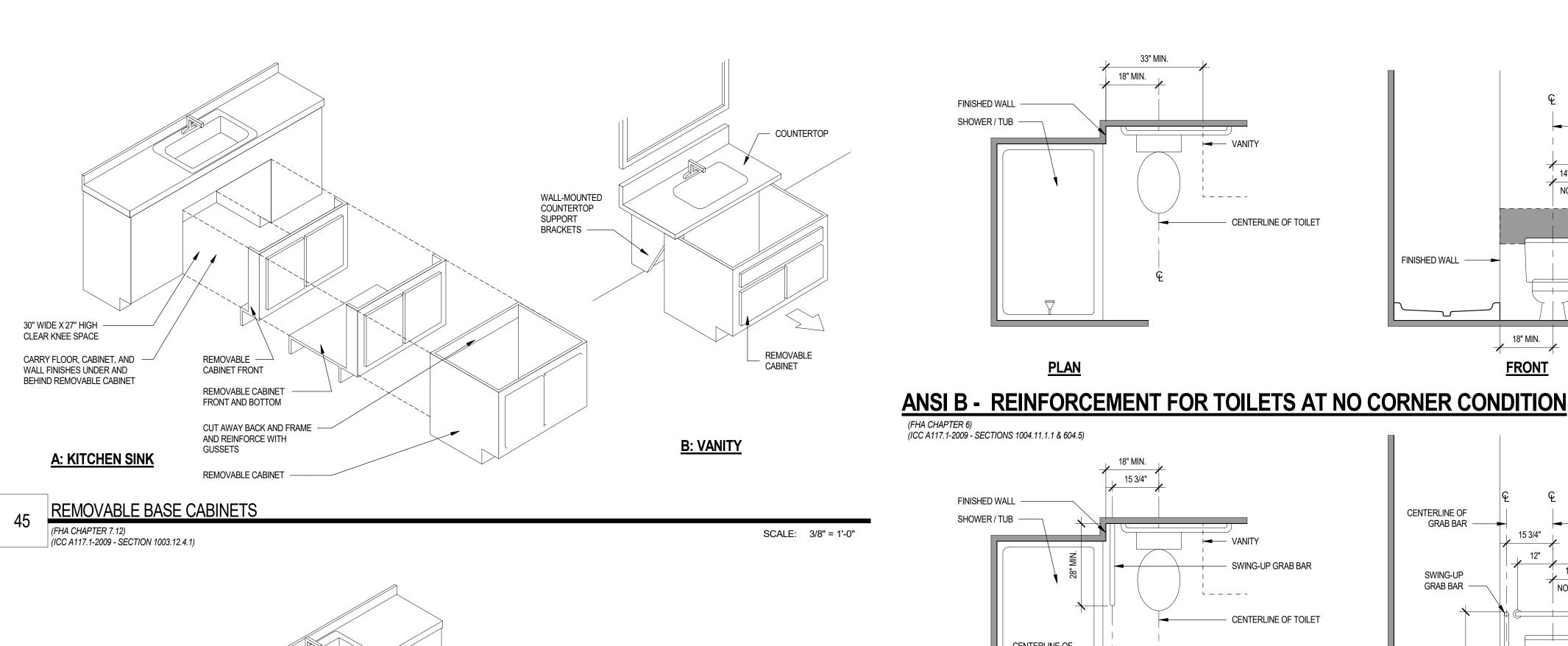
SCALE: 1/2" = 1'-0"

NOTES: (ICC/ANSI A117.1-2009)

**ANSI TYPE A - GRAB BARS FOR BATHTUB** 

SCALE: 1/2" = 1'-0"

01-24



# DOORS SWING OPEN DOORS RETRACT INSIDE, PROVIDE 30" MIN CLEARANCE WHEN DOORS RETRACTED

(FHA CHAPTER 6) (ICC A117.1-2009 - SECTIONS 1004.11.1.1 & 604.5) FINISHED WALL -CENTERLINE OF SHOWER / TUB GRAB BAR SWING-UP GRAB BAR CENTERLINE OF TOILET CENTERLINE OF GRAB BAR (ICC A117.1-2009 - SECTIONS 1004.11.1.1 & 604.5)

**ANSI TYPE B - GRAB BARS FOR TOILETS AT NO CORNER CONDITION** 

- CENTERLINE OF TOILET

NOTES: (ICC/ANSI-2009)

FINISHED WALL

SHOWER/TUB -

- 2. AT WATER CLOSETS WHERE A SIDE WALL IS NOT AVAILABLE FOR 42-INCH GRAB BAR COMPLYING SECTION 604.5.1, REINFORCEMENT FOR A SWING-UP GRAB BAR COMPLYING WITH SECTION 1004.11.1.1 SHALL BE PERMITTED.
- 3. AT WATER CLOSETS WHERE WALL SPACE WILL NOT PERMIT A GRAB BAR COMPLYING WITH SECTION 604.5.2, REINFORCEMENT FOR A REAR WALL GRAB BAR 24 INCHES MINIMUM IN LENGTH CENTERED ON THE WATER CLOSET SHALL BE PROVIDED PER SECTION 1004.11.1 EXCEPTION 3.

ANSI B - REINFORCEMENT AND GRAB BAR FOR

- 4. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE.
- 5. AT WATER CLOSETS WHERE A SIDE WALL IS NOT AVAILABLE FOR A 42-INCH GRAB BAR COMPLYING WITH SECTION 604.5.1 REINFORCEMENT FOR TWO SWING-UP GRAB BARS COMPLYING WITH SECTION 1004.11.1.1 SHALL BE PERMITTED TO BE INSTALLED IN LIEU OF REINFORCEMENT FOR REAR WALL AND SIDE WALL GRAB BARS.

1004.9 OPERABLE PARTS. LIGHTING CONTROLS, ELECTRICAL SWITCHES AND RECEPTACLE OUTLETS, ENVIRONMENTAL CONTROLS, ELECTRICAL PANELBOARDS, AND USER CONTROLS FOR SECURITY OR INTERCOM

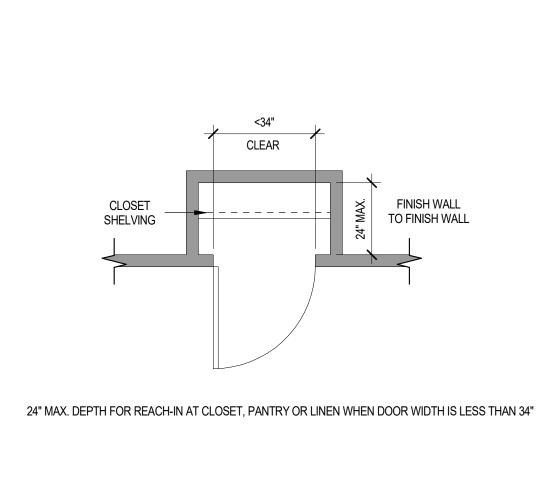
WHERE TWO OR MORE RECEPTACLE OUTLETS ARE PROVIDED IN A KITCHEN ABOVE A LENGTH OF COUNTERTOP THAT IS UNINTERRUPTED BY A SINK OR APPLIANCE, ONE RECEPTACLE OUTLET SHALL NOT BE

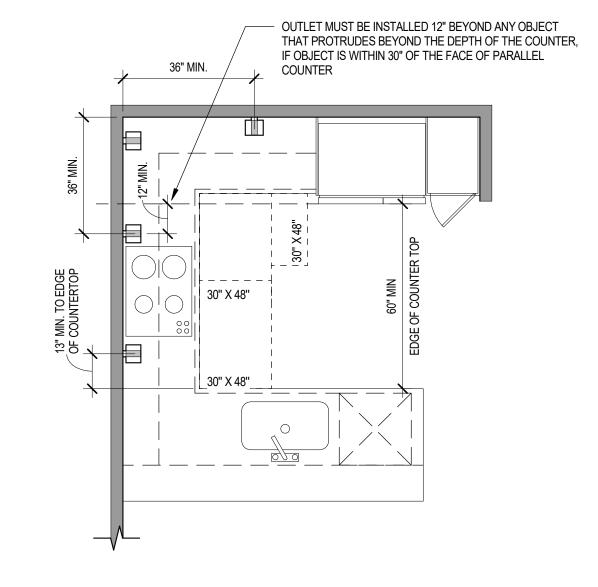
WITHIN KITCHENS AND BATHROOMS, LIGHTING CONTROLS, ELECTRICAL SWITCHES AND RECEPTACLE OUTLETS ARE PERMITTED TO BE LOCATED OVER CABINETS WITH COUNTER TOPS 36 INCHES MAXIMUM IN HEIGHT

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

TOILETS AT NO CORNER CONDITION

REMOVABLE BASE CABINETS OPTION 2 SCALE: 3/8" = 1'-0" (ICC A117.1-2009 - SECTION 1003.12.4.1) MIRROR REFLECTIVE SURFACE





CENTERLINE OF TOILET

- CENTERLINE OF TOILET

SCALE: 1/2" = 1'-0"

14" MIN.

NOTE 3

NOTE 3

18" MIN.

18" MIN.

FINISHED WALL -

**VANITY** TYPE A UNIT BATH ACCESSORIES CLOSET REACH-IN DIM. (ICC A117.1-2009 - SECTION 404.2.2) SCALE: 3/8" = 1'-0" SCALE: 3/4" = 1'-0" (ICC A117.1-2009 - SECTION 606)

POWER OUTLET LOCATIONS AND CLEARANCES AT GALLEY KITCHENS SCALE: 3/8" = 1'-0" (ICC A117.1-2009 - SECTION 1003.12.1.1 & 1004.12.1.1)

SYSTEMS SHALL PROVIDED A 30"x48" CLEAR FLOOR SPACE FOR A PARALLEL APPROACH.

¬POWER OUTLET LOCATIONS AND CLEARANCES AT J-SHAPE KICTHENS (ICC A117.1-2009 - SECTION 1003.12.1.1 & 1004.12.1.1) SCALE: 3/8" = 1'-0"

STANDARD DEPTH SINK UP TO 9" PERMITTED, REAR DISPOSAL COVER 12" DRAIN PREFERRED WIDE ± -- PIPE PROTECTION APPEARANCE PANEL ADJACENT CABINET, WALL, - AND FLOOR MUST BE FINISHED TO OPEN BOTTOM FOR 8" MIN. VENTILATION AND ACCESS TO RESET BUTTONS -

PEEPHOLE (VIEWPORT) AT ANSI A UNITS PROVIDE A 180 DEGREE VIEWING SECOND PEEPHOLE (VIEWPORT) DEAD BOLT DOOR BELL AT ANSI A UNITS

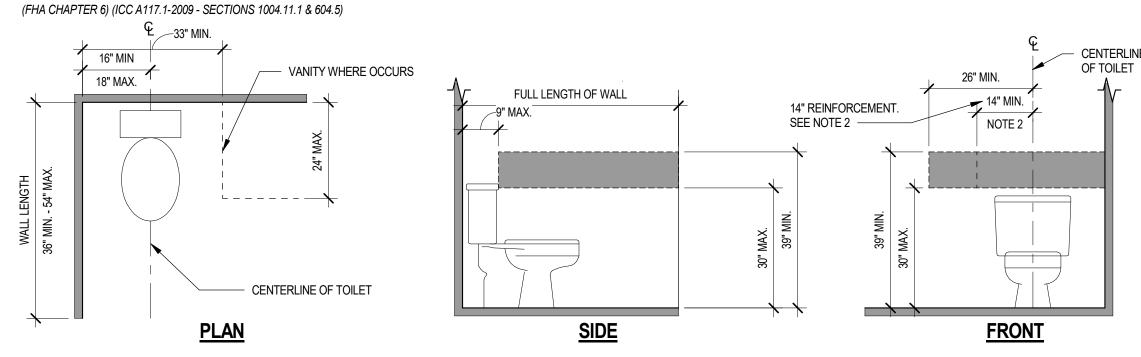
AND 25-1/2 INCHES MAXIMUM IN DEPTH. NON-COMPLIANT CONDITION. APPLIANCE PROTRUDES INTO CLEAR FLOOR SPACE 30"x48" MINIMUM CLEAR FLOOR SPACE AT OUTLET

POWER OUTLET LOCATIONS AND CLEARANCES AT **KITCHENS** 

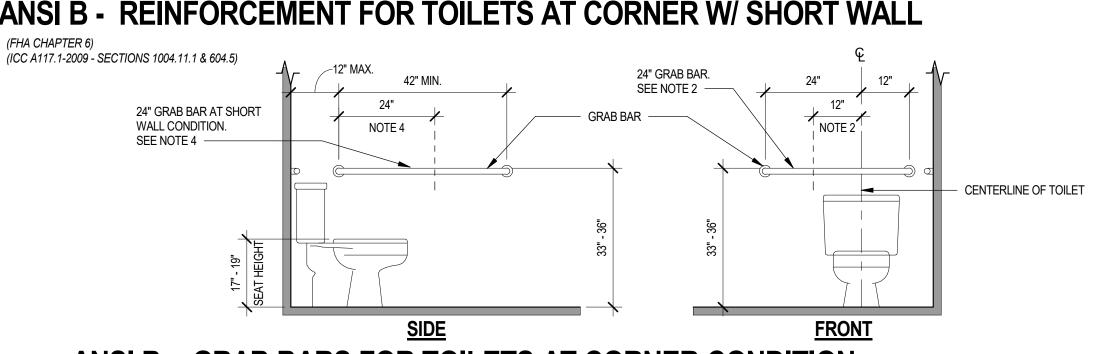
COMPLIANT CONDITION. NO APPLIANCE PROTRUDES INTO CLEAR FLOOR SPACE 30"x48" MINIMUM CLEAR FLOOR SPACE AT OUTLET

VANITY WHERE OCCURS 16" MIN 18" MAX. 14" REINFORCEMENT. SEE NOTE 2 -CENTERLINE OF TOILET **FRONT** 

ANSI B - REINFORCEMENT FOR TOILETS AT CORNER W/ LONG WALL



ANSI B - REINFORCEMENT FOR TOILETS AT CORNER W/ SHORT WALL



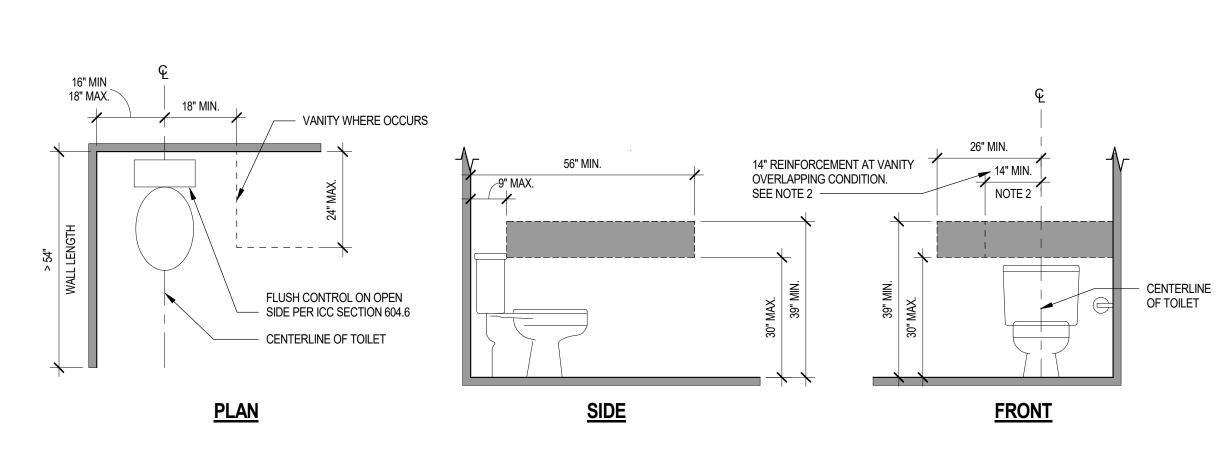
ANSI B - GRAB BARS FOR TOILETS AT CORNER CONDITION

- NOTES: (ICC/ANSI A117.1-2009) 2. AT WATER CLOSETS WHERE WALL SPACE WILL NOT PERMIT A GRAB BAR COMPLYING WITH SECTION 604.5.2, REINFORCEMENT FOR A REAR WALL GRAB BAR 24 INCHES
- MINIMUM IN LENGTH CENTERED ON THE WATER CLOSET SHALL BE PROVIDED PER SECTION 1004.11.1 EXCEPTION 3. 3. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE
- 4. AT WATER CLOSETS WHERE A SIDE WALL IS NOT AVAILABLE FOR 42-INCH GRAB BAR COMPLYING WITH SECTION 604.5.1, REINFORCEMENT FOR A SIDEWALL GRAB BAR, 24 INCHES MINIMUM IN LENGTH, LOCATED 12 INCHES MAXIMUM FROM THE REAR WALL, SHALL BE PROVIDED PER SECTION 1004.11.1 EXCEPTION 4.

ANSI B - REINFORCEMENT AND GRAB BAR FOR

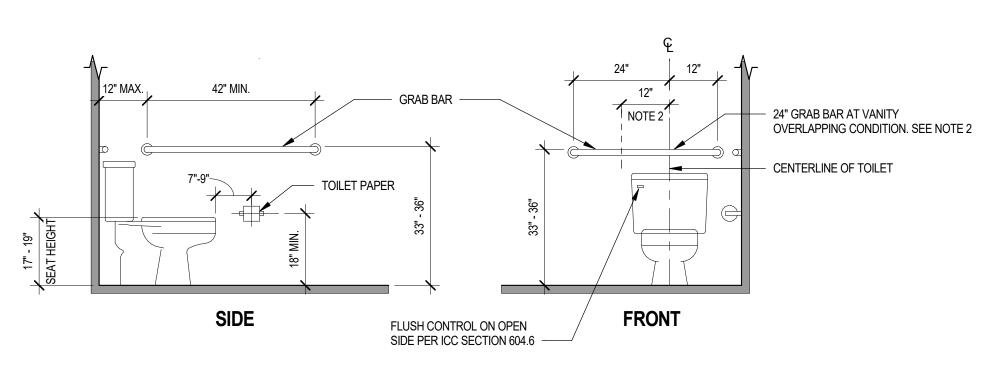
SOLID BLOCKING, SEE DETAIL 03/A7.8.10

TOILETS AT CORNER CONDITION



### ANSI TYPE A - REINFORCEMENT FOR TOILETS

(FHA CHAPTER 6) (ICC A117.1-2009 - SECTIONS 1003.11.1 & 604.5)



ANSI TYPE A - GRAB BARS FOR TOILETS (ICC A117.1-2009 - SECTIONS 1003.11.1 & 604.5)

NOTES: (ICC/ANSI A117.1-2009) 1. PER SECTIONS 1003.11.1 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS COMPLYING WITH SECTION 604.5 AT WATER CLOSETS. 2. WHERE THE LAVATORY OVERLAPS THE WATER CLOSEST CLEARANCE IN ACCORDANCE WITH THE EXCEPTION TO SECTION 1003.11.2.4.4 REINFORCEMENT AT THE WATER CLOSET REAR WALL FOR A 24-INCH MINIMUM LENGTH GRAB BAR, CENTERED ON THE WATER CLOSET, SHALL BE PROVIDED PER SECTION 1003.11.1 EXCEPTION 4. 3. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE.

ANSI A - REINFORCEMENT AND GRAB BAR FOR

**IST CITY SUBMITTAL** 

Contractor must verify all dimensions

2525 E. CAMELBACK RD, SUITE 500, PHOENIX, AZ 85

and the owner or its designated agent shall provide t

written description on request.

REVISIONS/SUBMITTALS

DATE DESCRIPTION

**Street Adress** 

City, state

World HQ @ ORBArch.com

NOT FOR

CONSTRUCTION

**ACCESSIBILITY DETAILS - UNITS** 25-48

SCALE: 1/2" = 1'-0"

TOILETS

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

KNEE SPACE AT ACCESSIBLE SINK WITH GARBAGE (FHA - CHAPTER 7.15) SCALE: 1" = 1'-0" (ICC A117.1-2009 - SÉCTION 306.2)

DETAIL PROVIDED FROM THE FAIR HOUSING ACT DESIGN

MANUAL REVISED APRIL 1998

17" MIN. - 25" MAX.

INSULATED PIPE COVER -

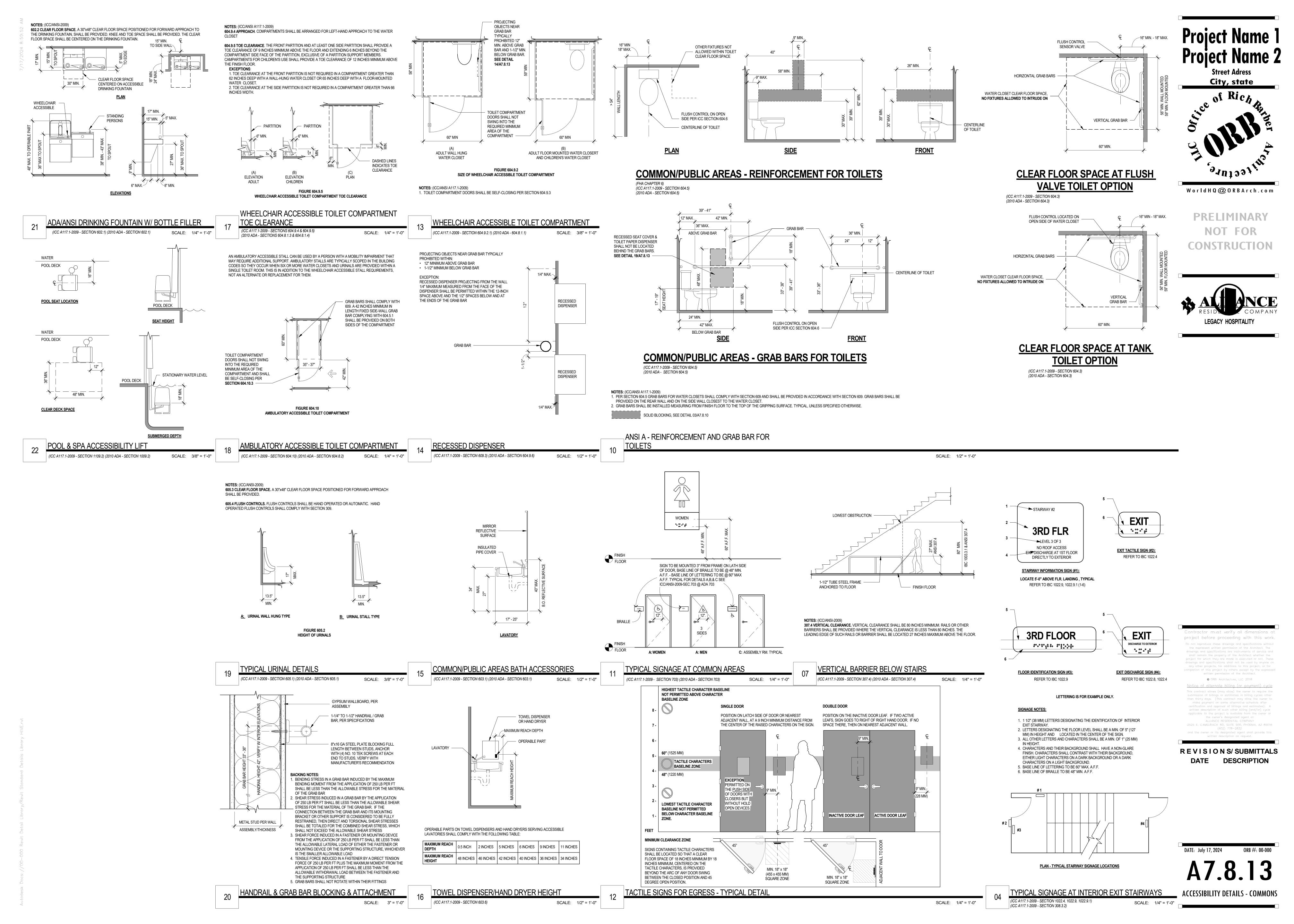
**ENTRY DOOR COMPONENTS** (ICC A117.1-2009 - SECTION 404.2.2, 404.2.6)

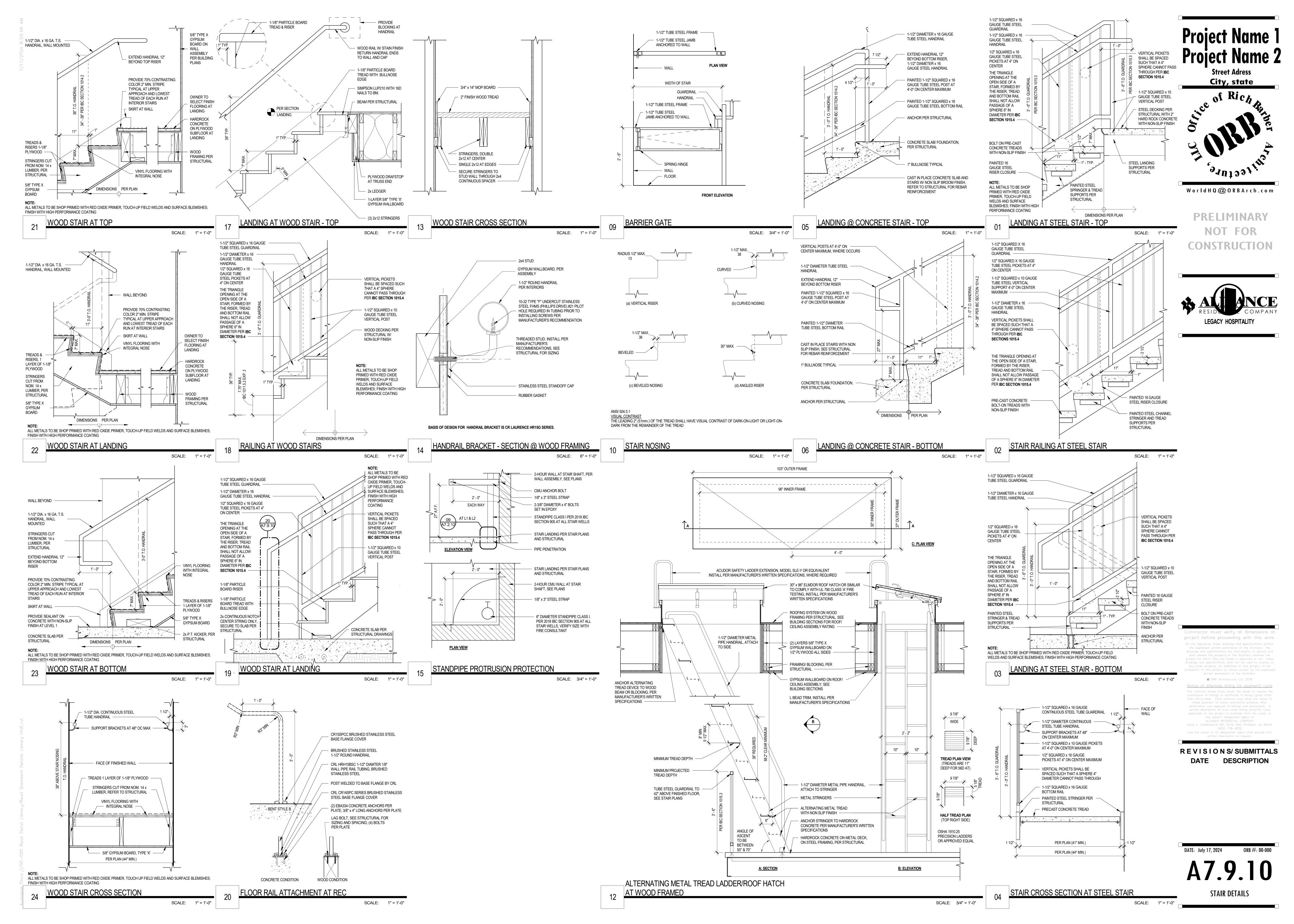
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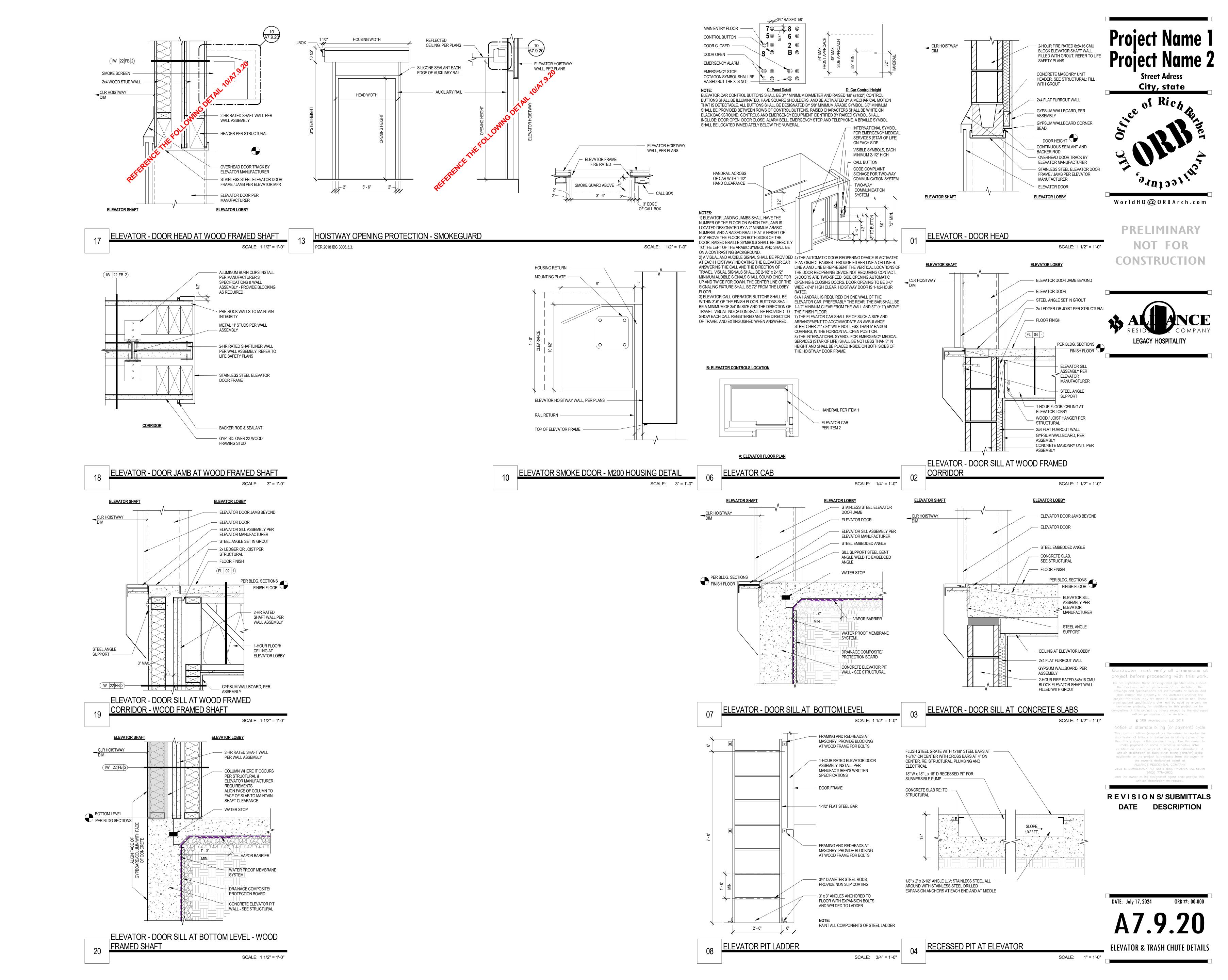
(ICC A117.1-2009 - SECTION 1004.9)

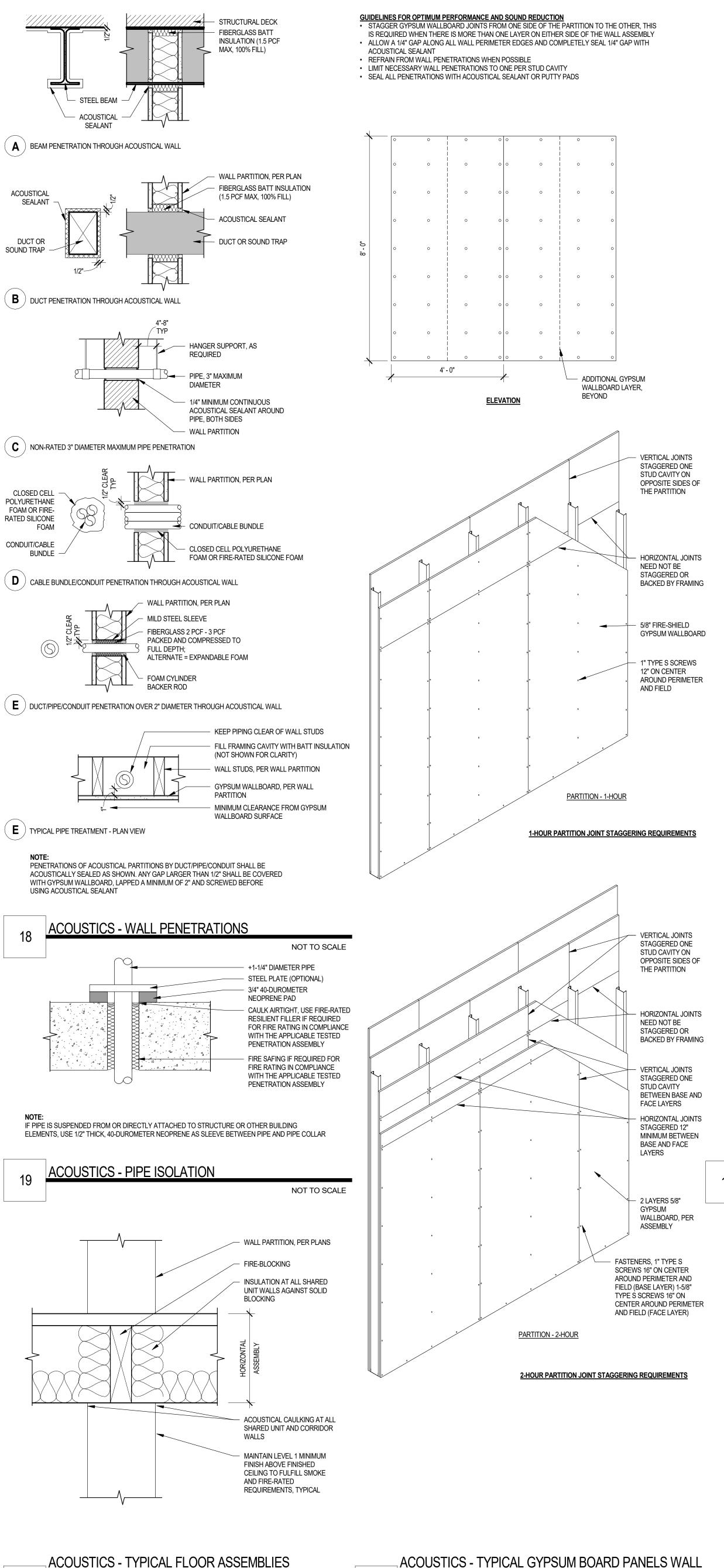
SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"









REQUIRED BY CODE, 3M FIRE RATED PUTTY PAD AS REFERENCED BELOW OVER RATED BOX AS REQUIRED (PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR) CUT NEAT OPENINGS (MAXIMUM OPENING +1/8") AND FILL JOINT WITH ACOUSTIC AND SMOKE FIRE RATED SEALANT WHERE REQUIRED FILL 1/4" GAP WITH ACOUSTICAL AND SMOKE SEALANT AROUND BOX PERIMETER GYPSUM WALLBOARD, PER ASSEMBLY

BOX TO BE RATED AS REQUIRED TO MAINTAIN WALL ASSEMBLY, PROVIDE

ACOUSTICAL PUTTY PAD OR WHERE

**NOTE:** SEE 03/A7.1.48

STEEL BOXES, COVERS & ACCESSORIES

SWITCH, PHONE, ETC. SIMILAR

EXTERIOR WALL PARTITION,

CORNER TAPE, TYPICAL

ACOUSTICAL SEALANT

INTERIOR WALL PARTITION,

INTERIOR WALL PARTITION.

CORNER TAPE, TYPICAL

ACOUSTICAL SEALANT -

INTERIOR WALL PARTITION,

INTERIOR WALL PARTITION,

CORNER TAPE, TYPICAL

ACOUSTICAL SEALANT -

INTERIOR WALL PARTITION,

INTERIOR WALL PARTITION,

CORNER TAPE, TYPICAL

ACOUSTICAL SEALANT -

INTERIOR WALL PARTITION,

CORNER TAPE, TYPICAL

ACOUSTICAL SEALANT

TYPICAL PARTITION INTERSECTIONS - PLAN

ACOUSTICS - TYPICAL WALL INTERSECTION/

NOT TO SCALE

PER PLAN

**TERMINATION** 

CORNER TAPE, TYPICAL

PER PLAN

PER PLAN

CORNER TAPE, TYPICAL

ACOUSTICAL SEALANT

PER PLAN

PER PLAN

INTERSECTION WITH EXTERIOR WALL - PLAN

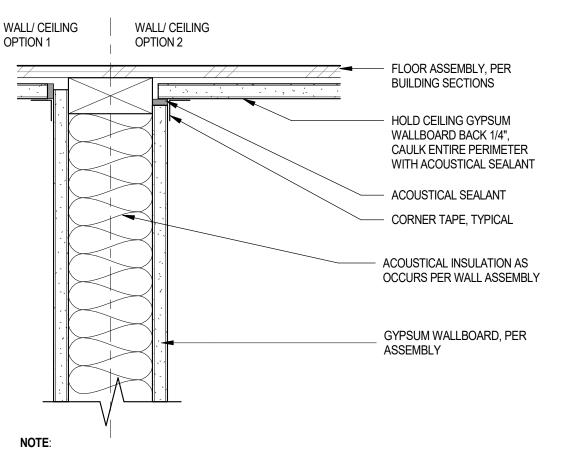
**TERMINATION AT MASONRY/ CONCRETE WALL - PLAN** 

PER PLAN

PER PLAN

PER PLAN

#### OUTLET BOX AT RATED WALL ASSEMBLIES INCL. UNIT SEPARATION, CORRIDOR & EXT. WALLS OUTLET BOX COMPLIANCE FILE E195978 RACO NOT TO SCALE

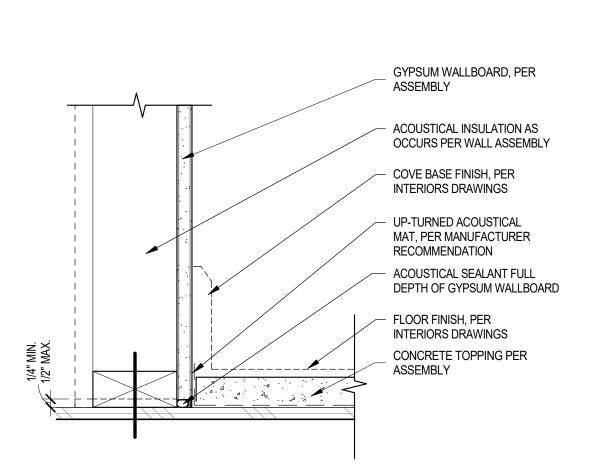


1. GYPSUM WALLBOARD CEILING AND WALL COULD BE OFFSET 1/4" EITHER ON THE VERTICAL OR THE HORIZONTAL ACCORDING TO THE WALL CEILING

2. VERIFY WALL ASSEMBLIES' FIRE RATING. FOR FIRE RATED WALLS USE SMOKE AND ACOUSTICAL SEALANT PER A7.1.50 SERIES

#### COUSTICS - TYPICAL WALL CEILING TERMINATION NOT TO SCALE

GYPSUM WALLBOARD WALL SHALL BE OFFSET 1/4" MINIMUM ON THE VERTICAL AWAY FROM THE FLOOR SUBSTRATE; CAULK ENTIRE PERIMETER WITH ACOUSTICAL SEALANT



TYPICAL ACOUSTICAL MAT TERMINATION AND SEALANT AT BOTTOM OF WOOD WALL

NOT TO SCALE

RESILIENT CHANNEL, PER **ASSEMBLY** - 2x FRAMING, PER STRUCTURAL SCREWS AT STEEL FRAMING: TYPE-S x 3/8" (9.5MM) PAN HEAD FRAMING SCREWS SCREWS AT WOOD FRAMING: TYPE-W OR TYPE-S SCREWS BOTTOM OF (MINIMUM 1-1/4" (32MM) LONG) - 20 MIL. NEOPRENE PAD, OR APPROVED EQUAL BY OWNER ACOUSTICAL SEALANT CORNER TAPE, TYPICAL HOLD CEILING GYPSUM WALLBOARD BACK 1/4", CAULK ENTIRE PERIMETER WITH ACOUSTICAL SEALANT METAL STUD FRAMING, PER ASSEMBLY

1. GYPSUM WALLBOARD CEILING AND WALL COULD BE OFFSET 1/4" EITHER ON THE VERTICAL OR THE HORIZONTAL ACCORDING TO THE WALL CEILING CONFIGURATION 2. AVOID SCREWS SHORT-CIRCUITING THE RESILIENT CHANNEL

ACOUSTICS - TYPICAL ATTACHMENT TO CEILING W/ RESILIENT CHANNEL

**ACOUSTICAL GENERAL NOTES** 

- UNLESS OTHERWISE NOTED, ANY SOUND-RATED PARTITION MUST EXTEND TO STRUCTURE AND BE SEALED TO IT (SEE ITEM 2).
- PARTITIONS MUST BE SEALED AT TOP, SIDES AND BASE WITH CAULKING. WHERE CAULKING IS CALLED FOR, USE SILICONE-BASED, NON-HARDENING
- ELECTRICAL OR OTHER OUTLET BOXES MUST NOT BE INSTALLED BACK-TO-BACK. SEPARATE BY AT LEAST ONE STUD SPACE. OUTLET BOXES MUST BE CAULKED ALL AROUND. HOLES IN BOXES MUST ALSO BE
- PENETRATION OF SOUND RETARDANT PARTITIONS (I.E., DUCTWORK, CONDUIT, OR PLUMBING) MUST BE SEALED WITH CAULKING (SEE ITEM 7). PIPE CONDUIT OR DUCTWORK RUNS WITHIN, OR PENETRATION THROUGH A DOUBLE-STUDDED PARTITION, MUST NOT RIGIDLY TIE THE TWO SETS TOGETHER. ANY INTERCONNECTING ELEMENTS MUST BE VIBRATION-ISOLATED. EITHER BY MEANS OF A FLEXIBLE CONNECTION, OR BY PACKING AROUND THE PENETRATION ON ONE SIDE WITH SPONGE NEOPRENE OR GLASS FIBER (SO THAT NO CONTACT IS MADE WITH THE WALL SURFACE BEFORE CAULKING).
- FOR IN THE PLUMBING SPECIFICATIONS. CMU PARTITIONS MUST BE CONSTRUCTED FROM DENSE AGGREGATE UNITS WITH THE CORE SPACES FILLED WITH GROUT. SEAL ALL EXPOSED SURFACES OF CMU WITH TWO GENEROUS COATS OF PAINT. ON DOUBLE-WALL PARTITIONS, INNER SURFACES SHOULD NOT BE SEALED.

ADDITIONAL VIBRATION ISOLATION MAY BE REQUIRED FOR PLUMBING AS CALLED

- 10. WHERE A DEMISING PARTITION ABUTS A CONTINUOUS PARTITION. (E.G. A PARTY WALL BETWEEN UNITS ABUTTING A CORRIDOR WALL), THE GYPSUM WALLBOARD SURFACE ALONG THE CONTINUOUS PARTITION MUST BE BROKEN AT THE JOINT OF THE INTERSECTION TO PREVENT FLEXURAL SOUND TRANSMISSION. A SAW CUT IS GENERALLY A SUFFICIENT BREAK. 11. WHERE TWO OR MORE LAYERS OF GYPSUM WALLBOARD ARE USED, DO NOT
- CEMENT GYPSUM WALLBOARD LAYERS TO BOTTOM LAYER. USE NAILS OR SCREWS. STAGGER BOARD JOINTS. 12. UNLESS OTHERWISE NOTED, INSULATION SHALL BE DESIGNATED "SOUND CONTROL," AND THICKNESS SHALL BE PER INSULATION TABLE. SECURE
- INSULATION TO PREVENT SAGGING. 13. GYPSUM WALLBOARD SHALL BE TYPE X, UNLESS OTHERWISE STATED IN
- ASSEMBLIES. 14. REFERENCE: ASTM C919-08 STANDARD PRACTICE FOR USE OF SEALANTS IN ACOUSTICAL APPLICATIONS.

- PLUMBING SERVING BATHROOMS AND KITCHENS MUST BE SUPPORTED ONLY ON THE SIDE OF THE DOUBLE-STUD DEMISING WALLS OF THE UNIT SERVED BY THE PIPING, AND MUST NOT CROSS OVER THE GAP BETWEEN THE DOUBLE STUDS WITH CONNECTION TO THE OTHER SIDE OF THE FRAMING. THE STUD CAVITY SHOULD BE FILLED WITH BATT INSULATION.
- ALL PLUMBING IN RESIDENTIAL SPACES SHOULD BE ISOLATED FROM THE STRUCTURE, WITH NO DIRECT CONTACT BETWEEN PIPING (SUPPLY AND WASTE) AND GYPSUM WALLBOARD, FRAMING, OR FLOOR SLABS. SUPPLY AND WASTE LINES PASSING THROUGH OCCUPIED SPACES IN A RESIDENTIAL UNIT SHOULD BE CONNECTED TO STUDS USING A RESILIENT MATERIAL BETWEEN THE PIPING AND THE STUDS. THIS RECOMMENDATION IS PARTICULARLY APPLICABLE TO WALLS ADJACENT TO BEDROOMS. A VARIETY OF PRE-MANUFACTURED PIPING ISOLATORS ARE COMMERCIALLY AVAILABLE FROM THE HOLDRITE COMPANY, OR OWNER APPROVED EQUAL. THE PREFERRED MATERIAL FOR WASTE LINES IS CAST IRON TO MINIMIZE SOUND LEVELS OF WASTE FLOW IN RESIDENTIAL UNITS. THE NOISE FROM PROPOSED ABS
- LINES CAN BE REDUCED BY WRAPPING THE PIPES WITH A SOUND-ISOLATING JACKET, SUCH AS KINETICS KNM PRODUCTS, WITH THE UNDERSTANDING THAT IT WILL NOT ISOLATE PLUMBING NOISE AS WELL AS CAST IRON. ALLOW SUFFICIENT WALL THICKNESS TO ENSURE THAT WASTE LINES CAN BE INSTALLED WITHOUT CONTACTING EITHER WALL SURFACE. PIPING RISERS RUNNING BETWEEN FLOORS SHOULD NOT DIRECTLY CONTACT FRAMED OR SLAB FLOOR ASSEMBLIES. THE FLOOR PENETRATION SHOULD BE OVERSIZED. WITH ANY GAP BETWEEN THE RISER PIPING AND FLOOR FILLED WITH MINERAL WOOL AND CAULKED AIRTIGHT ON BOTH SIDES OF THE PENETRATION, OR

SEALED AIRTIGHT WITH RESILIENT FIRESTOPPING MATERIAL. PROVIDE SLEEVES AT

PENETRATIONS IN FRAMED FLOORS OR SLABS TO ENCLOSE THE PIPING WITHIN THE

PENETRATION, AND FILL THE GAP BETWEEN THE SLEEVE AND THE PIPING AS ABOVE. THIS RECOMMENDATION IS STRICTLY FOR ACOUSTICAL PURPOSES AND MUST BE REVIEWED FOR COMPLIANCE WITH APPLICABLE BUILDING CODES. CLAMPS FOR FLOOR RISERS SHOULD BE ISOLATED FROM THE STRUCTURE WITH NEOPRENE PADS. TO AVOID OVERCOMPRESSING THE NEOPRENE, PROVIDE LOAD-SPREADING STEEL PLATE ON THE UPPER SIDE OF THE NEOPRENE PADS.

**Project Name 1** 

**Street Adress** City, state



World HQ@ORBArch.com

**PRELIMINARY** NOT FOR



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REVISIONS/SUBMITTALS DATE DESCRIPTION

and the owner or its designated agent shall provide this

written description on request.

DATE: July 17, 2024 **ACOUSTICAL DETAILS WOOD** 

**FRAMING** 

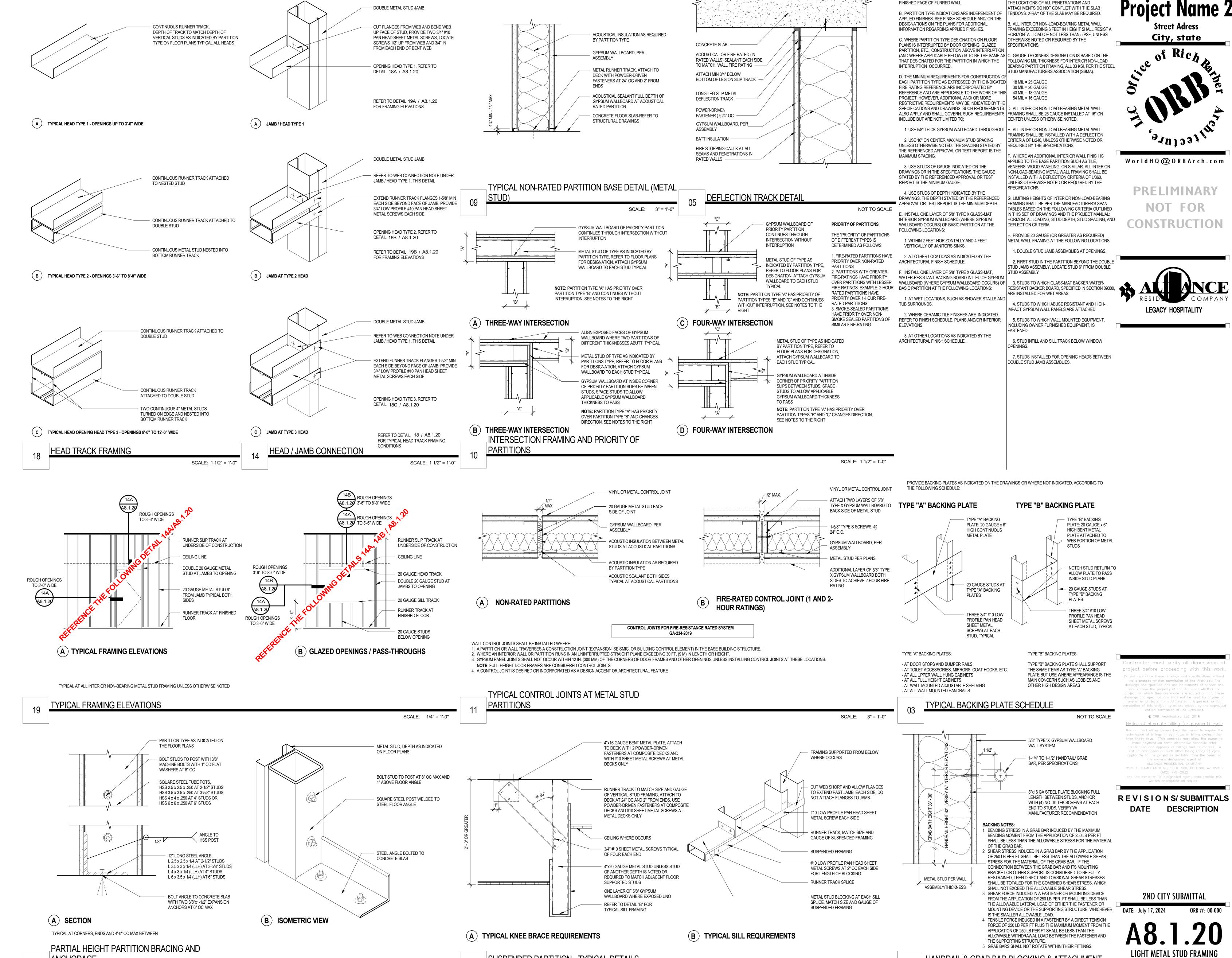
ACOUSTICS - TYPICAL FLOOR ASSEMBLIES

NOT TO SCALE

LAYOUT

NOT TO SCALE

NOT TO SCALE



USPENDED PARTITION - TYPICAL DETAILS

SCALE: 3" = 1'-0"

TACHMENT

SCALE: 3" = 1'-0"

DETAILS

HANDRAIL & GRAB BAR BLOCKING & ATTACHMENT

SCALE: 1 1/2" = 1'-0"

FRAMING NOTES

A. EXISTING FLOOR/ CEILING DECK OF THIS BUILDING IS A

**PARTITION NOTES** 

A. PARTITIONS ARE DIMENSIONED TO THE CENTER OF

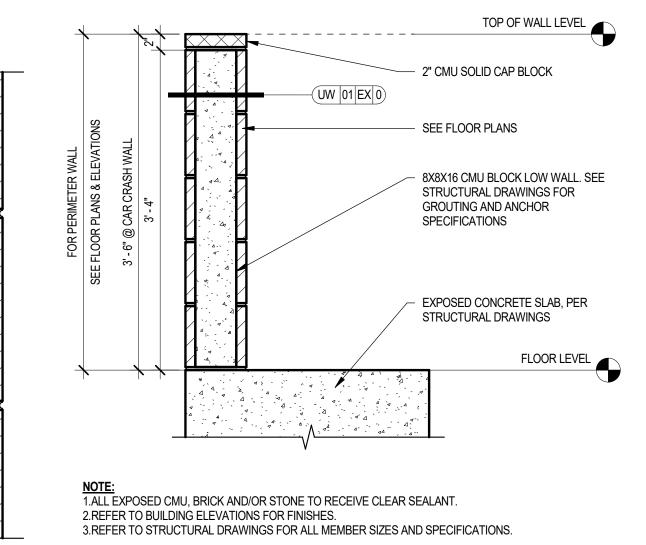
PARTITION ASSEMBLY, UNLESS OTHERWISE NOTED AS FOW (FACE OF WALL). FURRING IS DIMENSIONED TO THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT

GALVANIZED STEEL COVER GRATING GALVANIZED 2X2 STEEL ANGLE, ATTACHED W/ ANCHOR BOLT TO CMU WALL 8X8X16 CMU GROUTED EXHAUST SHAFT WALL. SEE STRUCTURAL DRAWINGS FOR GROUTING AND ANCHOR SPECIFICATIONS -NOTE:

1. ALL EXPOSED CMU, BRICK AND/OR STONE TO RECEIVE CLEAR SEALANT.

2. REFER TO BUILDING ELEVATIONS FOR FINISHES.

3. REFER TO STRUCTURAL DRAWINGS FOR ALL MEMBER SIZES AND SPECIFICATIONS.

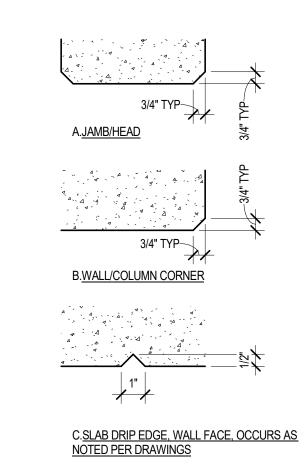


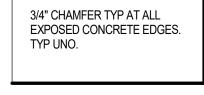


EXHAUST SHAFT METAL GRATING @ CMU WALL SCALE: 3" = 1'-0"

CMU CAR CRASH WALL & LOW WALL AT PARKING SCALE: 1" = 1'-0"

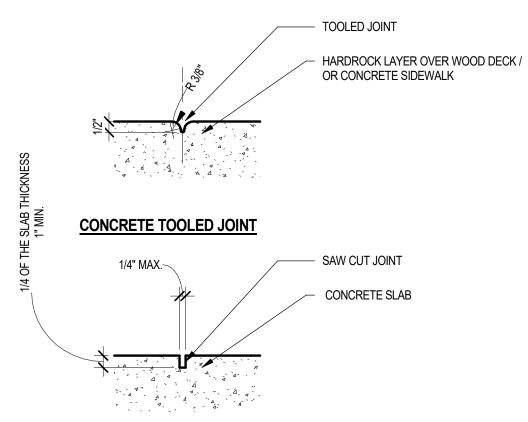
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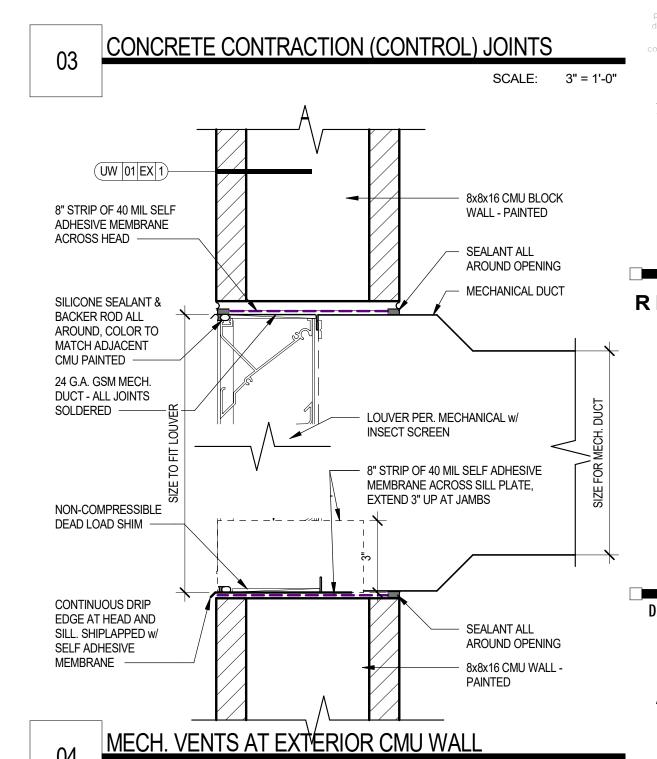




CONCRETE CORNERS & EDGES SCALE: 3" = 1'-0"



**CONCRETE SAW CUT JOINT** 



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REVISIONS/SUBMITTALS DATE DESCRIPTION

written description on request.

**2ND CITY SUBMITTAL** 

DATE: July 17, 2024

CMU & CONCRETE DETAILS