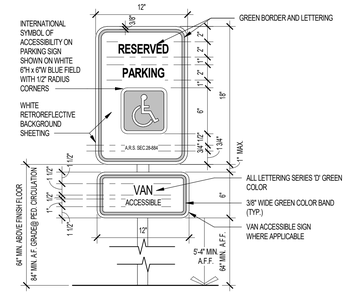
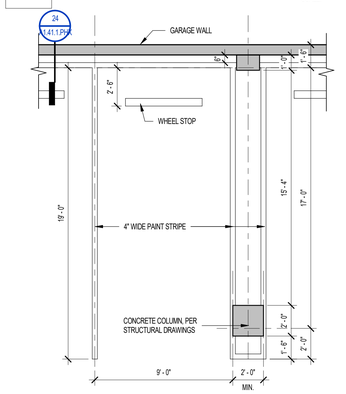


NOTES:
1. THE BOTTOM OF THE SIGN MUST BE 5'-4" ABOVE FINISHED GRADE OR 7'-0" WHEN PLACED IN PEDESTRIAN CIRCULATION PATH.
2. SIGN MUST BE CENTERED ON THE PARKING SPACE AND PLACED 2.5 FEET FROM FACE OF CURB. IN PARKING LOT SITUATIONS WITHOUT CURBING, SIGN MAY BE PLACED AT THE END OF THE STALL. 7
3. VAN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

EXCERPT OF CITY OF CHANDLER DETAIL C-511

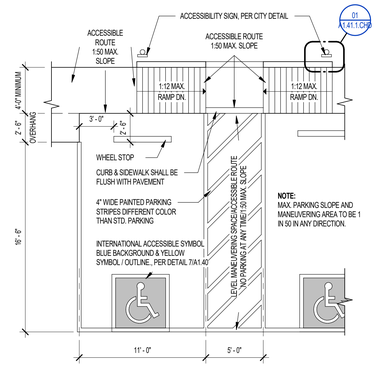
01 ACCESSIBLE PARKING SIGN (CITY OF CHANDLER)

SCALE: 1 1/2" = 1'-0"



02 TYPICAL PARKING SPACE AT GARAGE (CITY OF CHANDLER)

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



03 TYPICAL ACCESSIBLE PARKING STALL (CITY OF CHANDLER)

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

Project Name 1
Project Name 2

Street Adress
City, State

Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

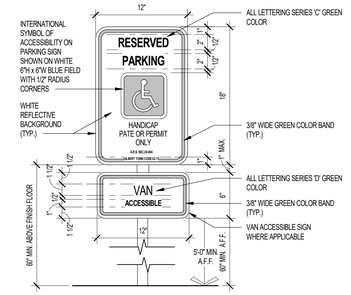
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A1.41.1.CHD

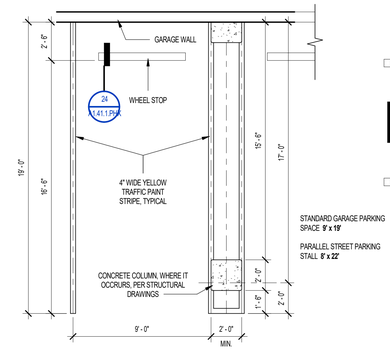
SITE DETAILS CITY OF CHANDLER



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 SPACE.
4. ALL LETTERING SERIES "C", GREEN COLOR
5. INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOWN WHITE ON 6" X 6" BLUE FIELD WIH 1/2" RADIUS CORNERNS.
6. THE VAN ACCESSIBLE SIGN SHALL BE CENTERED UNDER THE ACCESSIBLE PARKING SIGN AS SHOWN.

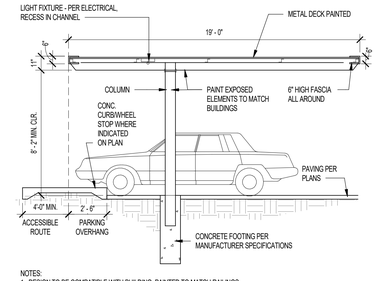
01 ACCESSIBLE PARKING SIGN (CITY OF GILBERT)

SCALE: 1 1/2" = 1'-0"



02 TYPICAL PARKING SPACE AT GARAGE (CITY OF GILBERT)

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



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.
3. CARPORT UNDER SEPARATE PERMIT & REVIEW. DETAIL IS FOR REFERENCE ONLY.
4. ALL LIGHT FIXTURES ARE TO BE FLUSH-MOUNTED TO THE UNDERSIDE OF THE CANOPY AND MUST BE SCREENED BY THE CANOPY FASCIA.

04 TYPICAL CARPORT DETAIL CITY OF GILBERT

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

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Project Name 2

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LEGACY HOSPITALITY

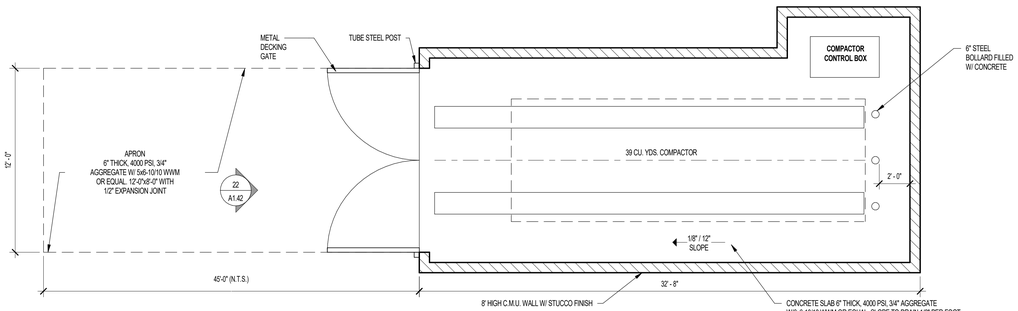
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

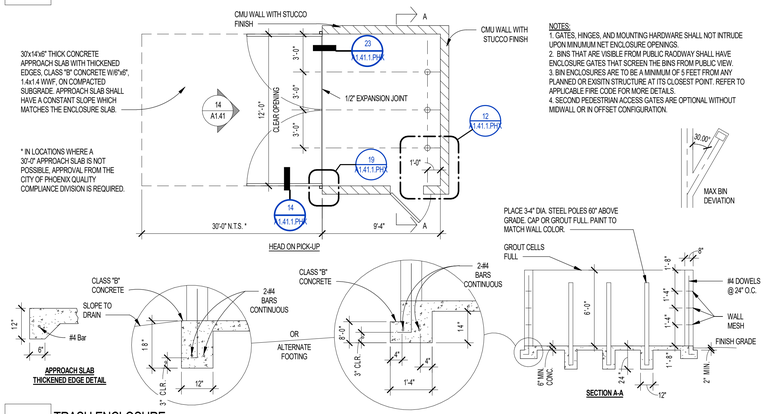
A1.41.1.GLB

SITE DETAILS CITY OF GILBERT



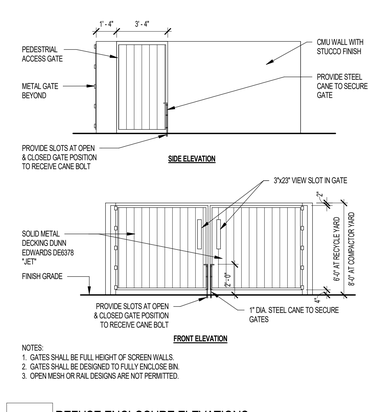
21 TRASH COMPACTOR YARD PLAN

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



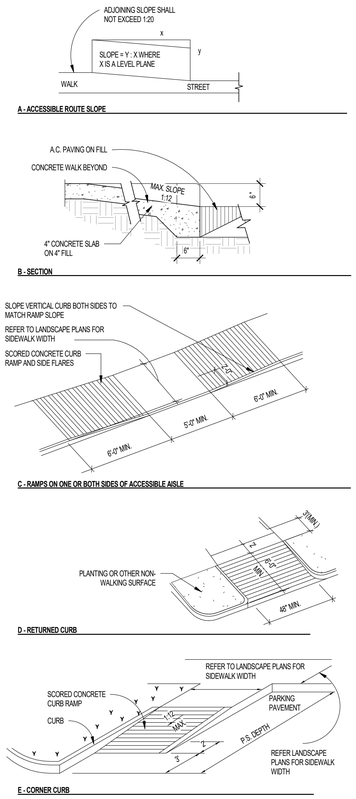
22 TRASH ENCLOSURE

NOT TO SCALE



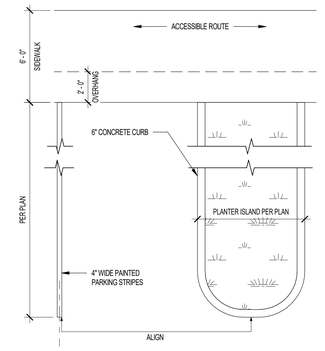
14 REFUSE ENCLOSURE ELEVATIONS

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



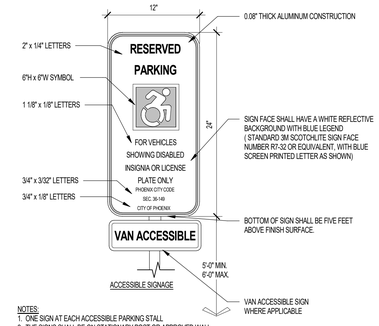
10 TYPICAL ACCESSIBLE RAMP

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



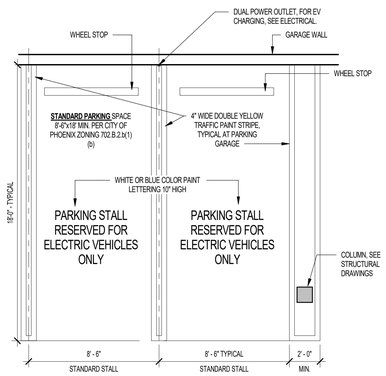
05 TYPICAL PARKING STALL WITH ISLAND

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



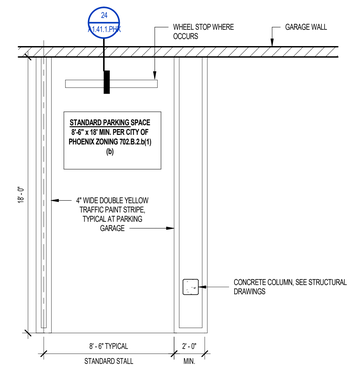
01 ACCESSIBLE PARKING SIGN (CITY OF PHOENIX)

SCALE: 1 1/2" = 1'-0"



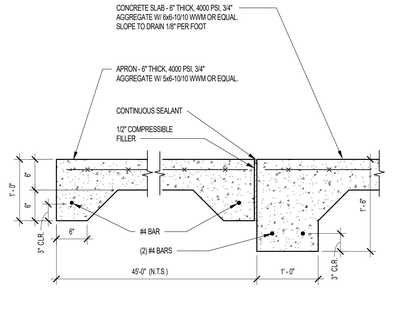
06 TYPICAL EV CHARGING PARKING SPACE AT GARAGE

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



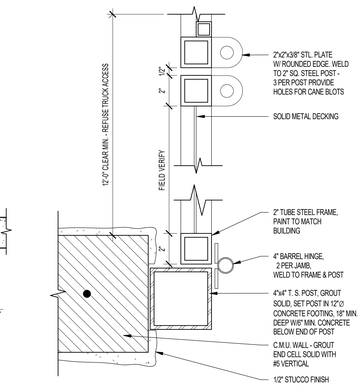
02 TYPICAL STANDARD PARKING SPACE AT GARAGE (CITY OF PHOENIX)

NOT TO SCALE



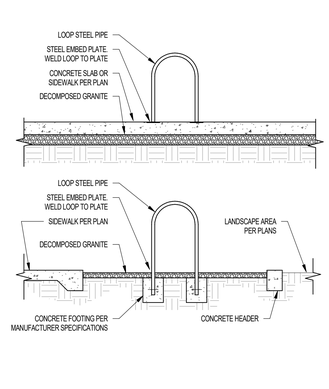
23 REFUSE ENCLOSURE SLAB JOINT

SCALE: 1" = 1'-0"



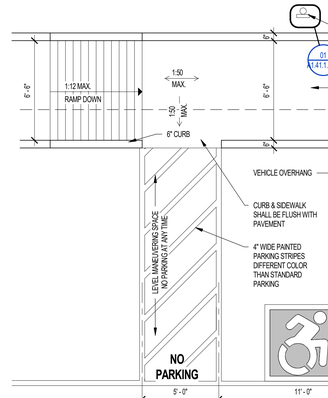
19 TRASH ENCLOSURE GATE

SCALE: 3" = 1'-0"



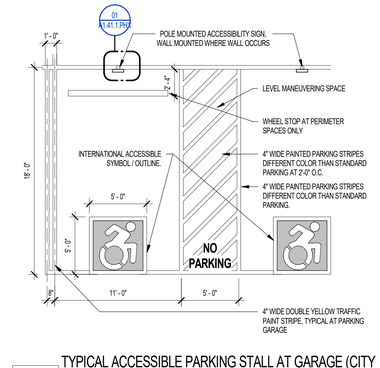
15 GROUND MOUNTED BIKE RACKS

SCALE: 1/2" = 1'-0"



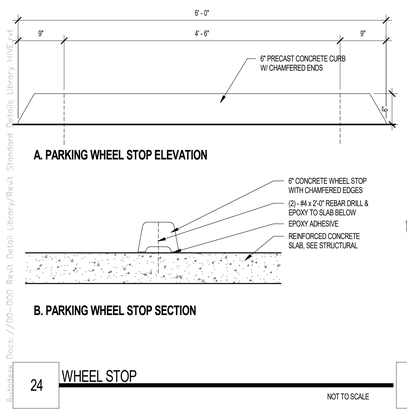
11 TYPICAL ACCESSIBLE PARKING STALL

NOT TO SCALE



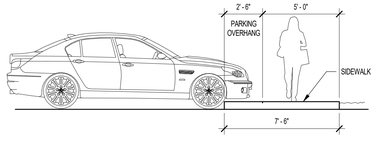
03 TYPICAL ACCESSIBLE PARKING STALL AT GARAGE (CITY OF PHOENIX)

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



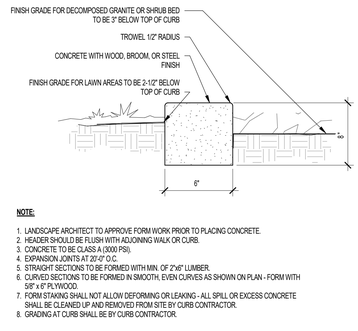
24 WHEEL STOP

NOT TO SCALE



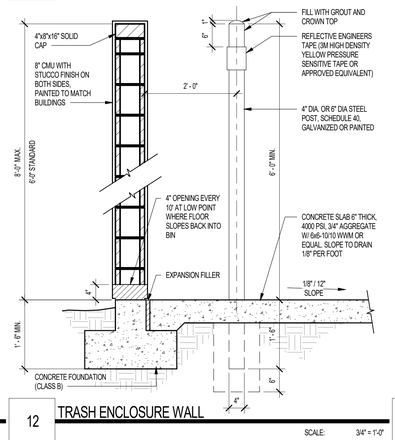
20 PARKING OVERHANG AT SIDEWALK

NOT TO SCALE



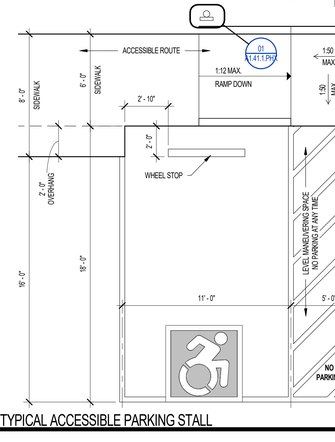
16 CONCRETE HEADER

NOT TO SCALE



12 TRASH ENCLOSURE WALL

SCALE: 3/4" = 1'-0"



08 TYPICAL ACCESSIBLE PARKING STALL

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

Project Name 1
Project Name 2
Street Adress
City, State

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ORB
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PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

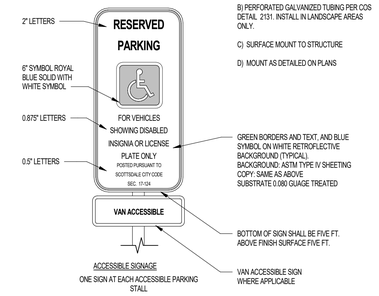
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A1.41.1.PHX

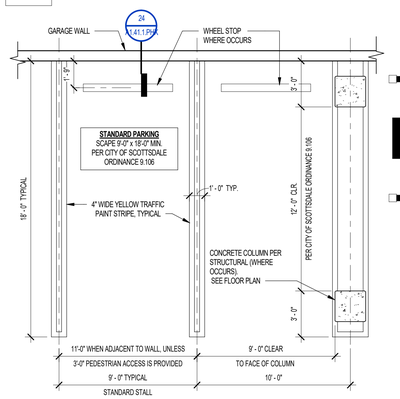
SITE DETAILS CITY OF PHOENIX



EXCERPT OF DETAIL 2124 OF CITY OF SCOTTSDALE STANDARD DETAILS

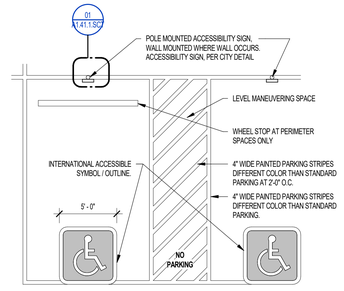
01 ACCESSIBLE PARKING SIGN - (CITY OF SCOTTSDALE)

SCALE: 1 1/2" = 1'-0"



02 TYPICAL PARKING SPACE AT GARAGE

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



03 TYPICAL ACCESSIBLE PARKING STALL AT GARAGE (CITY OF SCOTTSDALE)

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

Project Name 1
Project Name 2

Street Adress
City, State

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WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

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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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

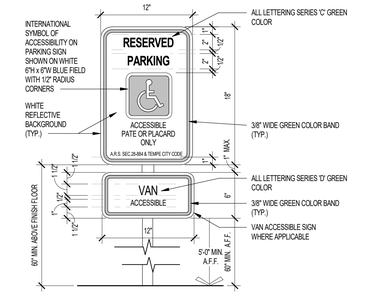
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A1.41.1.SCT

SITE DETAILS CITY OF SCOTTSDALE

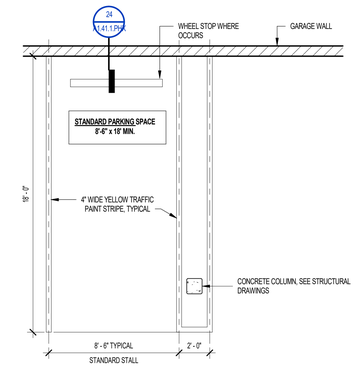


NOTES:

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 SPACE.
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.

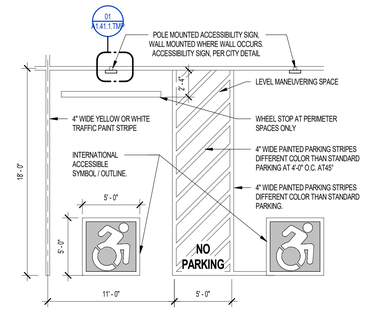
01 ACCESSIBLE PARKING SIGN (CITY OF TEMPE)

SCALE: 1 1/2" = 1'-0"



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

SCALE: 1/4" = 1'-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

03 TYPICAL ACCESSIBLE PARKING STALL AT GARAGE (CITY OF TEMPE)

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

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Project Name 2

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City, State

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CONSTRUCTION

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LEGACY HOSPITALITY

Notice of alternate billing (or payment) cycle

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CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

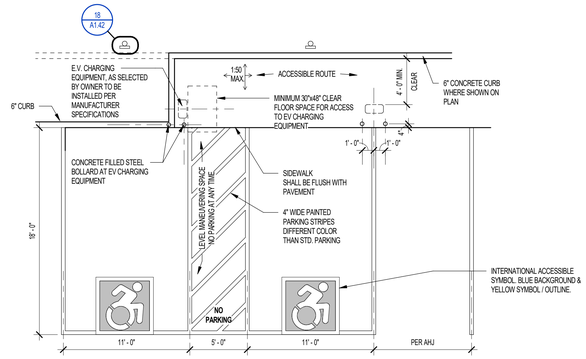
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

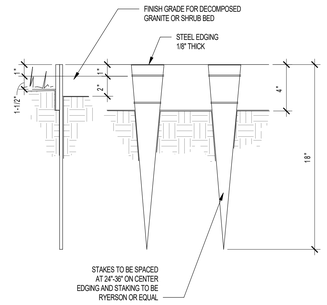
A1.41.1.TMP

SITE DETAILS CITY OF TEMPE



21 TYPICAL EV ACCESSIBLE PARKING STALL

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

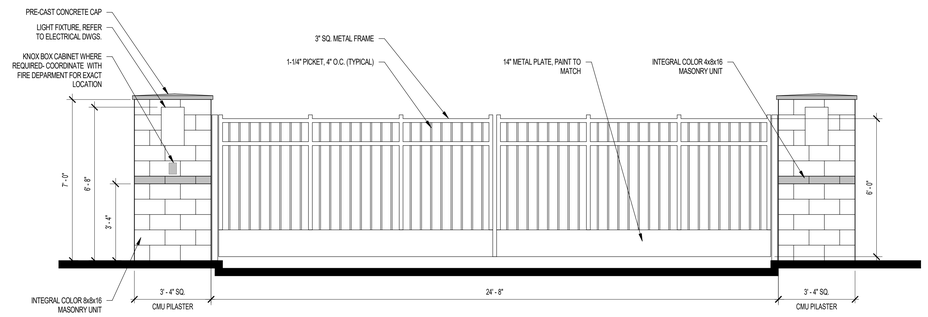


NOTE:

1. FINISH GRADE TO BE 3" BELOW TOP OF WALK BEFORE INSTALLATION OF DECOMPOSED GRANITE (2-1/2" FOR SOD OR SEED)

13 STEEL HEADER (NOT TO SCALE)

SCALE: 1/2" = 1'-0"

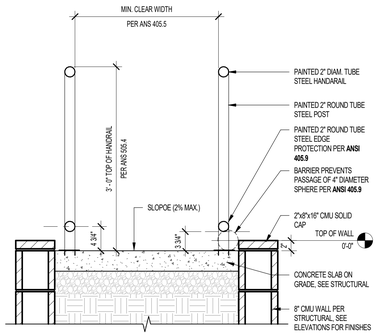


NOTE:

1. PROVIDE OPTICOMKNOX SWITCH
2. AUTOMATIC VEHICULAR GATE SHALL BE CONSTRUCTED AND INSTALLED IN COMPLIANCE W/ ASTM F2200 & GATE OPENERS TO BE UL 325 LISTED PER **IBC 3110**
3. AUTOMATIC VEHICULAR GATE IS A CLASS II COMMERCIAL GENERAL ACCESS GATE
4. PROVIDE TESTING FOR DUTY CYCLE BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
5. DESIGN & PROVIDE APPROPRIATE FALL OVER PROTECTION FOR AUTOMATIC VEHICULAR GATE .
6. PROVIDE A MIN. OF 2 ENTRAPMENT PROTECTION DEVICES FOR ENTRAPMENT ZONES.
7. PICKETS SHALL NOT ALLOW A SPHERE OF 2 1/4" TO PASS THROUGH, OR PROVIDE ALTERNATE SCREENING METHOD APPROVED BY OWNER & ARCHITECT.
8. IF ACCESS CONTROL IS REQUIRED BY OWNER IT SHALL BE PLACED 6'-0" AWAY FROM THE GATE.
9. PROVIDE A MIN. OF 2 WARNING SIGNS, IN ACCORDANCE WITH **ASTM F2200 & UL 325.**
10. PROVIDE PHYSICAL STOPS, **PER ASTM F2200**
11. NO PROTRUSION MORE THAN 1/2" ALLOWED.

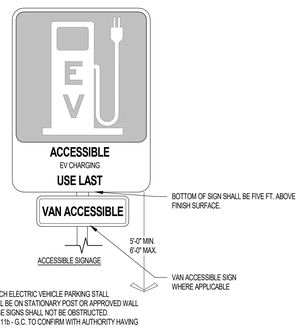
09 VEHICULAR ENTRY GATE

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



22 RAMP EDGE PROTECTION

SCALE: 1" = 1'-0"

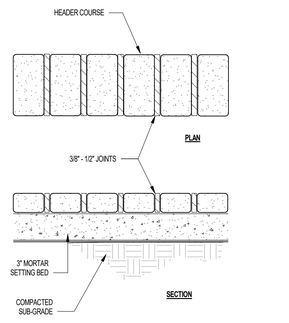


NOTES:

1. ONE SIGN AT EACH ELECTRIC VEHICLE PARKING STALL
2. THE SIGNS SHALL BE ON STATIONARY POST OR APPROVED WALL LOCATION. THESE SIGNS SHALL NOT BE OBSTRUCTED.
3. EV SIGN PER D9-11b - G.C. TO CONFIRM WITH AUTHORITY HAVING JURISDICTION

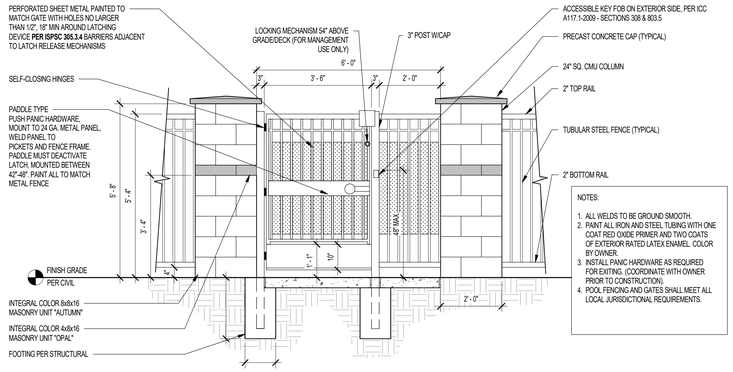
18 EV PARKING SIGN

SCALE: 1 1/2" = 1'-0"



14 PAVER HEADER (NOT TO SCALE)

SCALE: 1/2" = 1'-0"

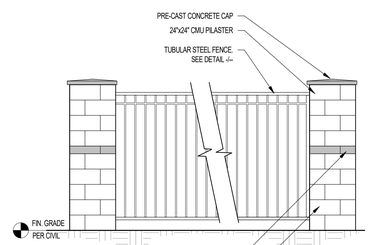


NOTES:

1. ALL WELDS TO BE GROUND SMOOTH.
2. PAINT ALL IRON AND STEEL TUBING WITH ONE COAT RED OXIDE PRIMER AND TWO COATS OF EXTERIOR RATED LATEX ENAMEL. COLOR BY OWNER.
3. INSTALL PANIC HARDWARE AS REQUIRED FOR EXITING. (COORDINATE WITH OWNER PRIOR TO CONSTRUCTION).
4. POOL FENCING AND GATES SHALL MEET ALL LOCAL JURISDICTIONAL REQUIREMENTS.

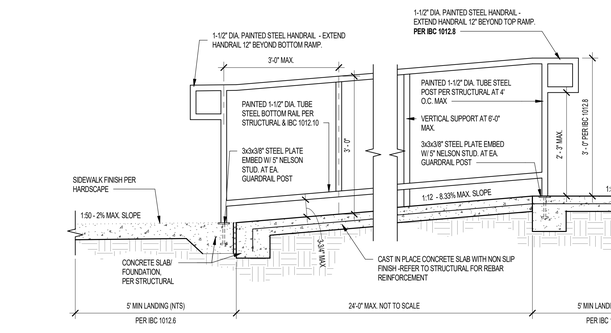
10 PEDESTRIAN ENTRY GATE AT POOL FENCE

SCALE: 1/2" = 1'-0"



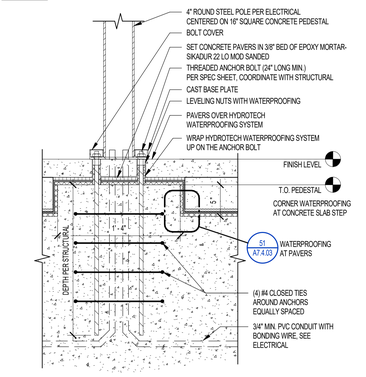
02 PILASTER AT PERIMETER TUBULAR STEEL FENCE

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



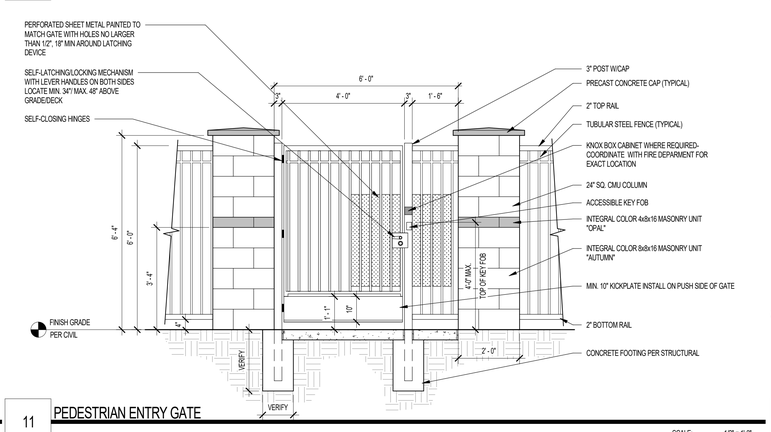
23 TYPICAL ACCESSIBLE RAMP SECTION DETAIL

SCALE: 3/4" = 1'-0"



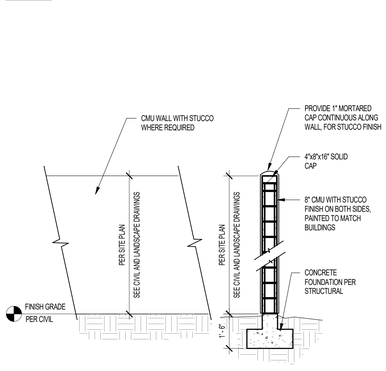
15 LIGHT POLE BASE ATTACHMENT TO CONCRETE SLAB

SCALE: 1 1/2" = 1'-0"



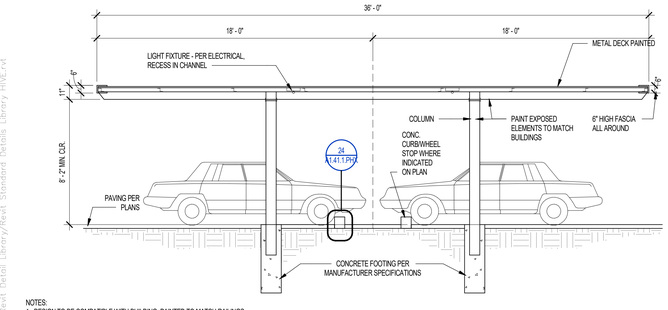
11 PEDESTRIAN ENTRY GATE

SCALE: 1/2" = 1'-0"



03 PERIMETER MASONRY WALL

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

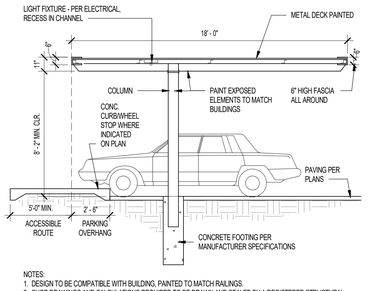


NOTES:

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.
3. CARPORT UNDER SEPARATE PERMIT & REVIEW, DETAIL IS FOR REFERENCE ONLY.
4. 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 FEET SHALL BE MAINTAINED BETWEEN SHADE STRUCTURES ON THE SAME PROPERTY. NO SHADE STRUCTURE SHALL COVER OR ENCROACH INTO ANY REQUIRED FIRE LANE.

24 DOUBLE CARPORT DETAIL CITY OF PHOENIX

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

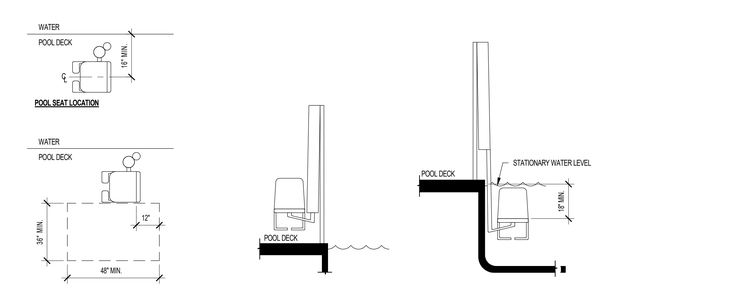


NOTES:

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.
3. CARPORT UNDER SEPARATE PERMIT & REVIEW, DETAIL IS FOR REFERENCE ONLY.
4. 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 FEET SHALL BE MAINTAINED BETWEEN SHADE STRUCTURES ON THE SAME PROPERTY. NO SHADE STRUCTURE SHALL COVER OR ENCROACH INTO ANY REQUIRED FIRE LANE.

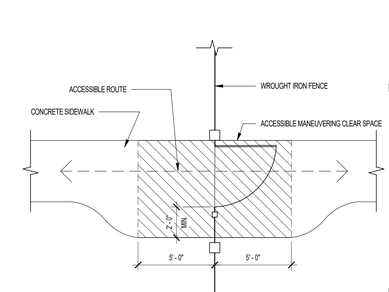
16 TYPICAL CARPORT DETAIL CITY OF PHOENIX

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



12 POOL LIFT

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



04 MANEUVERING SPACE AT GATES

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

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

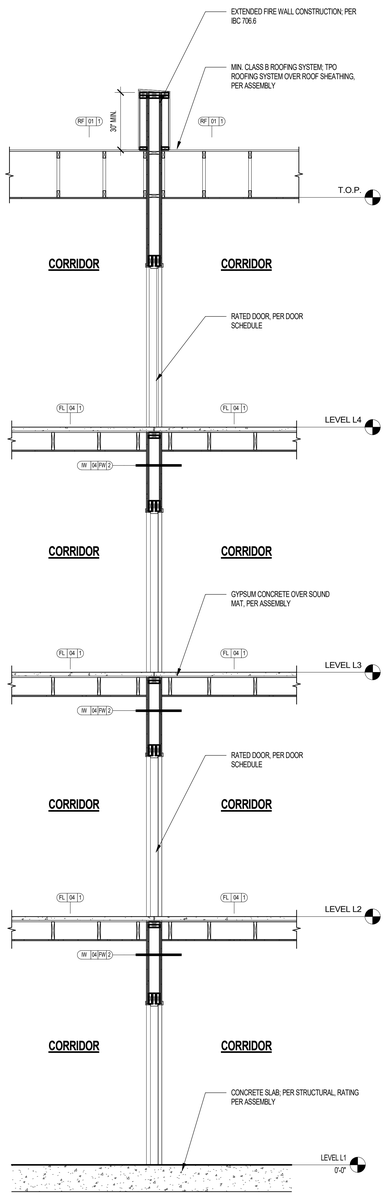
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

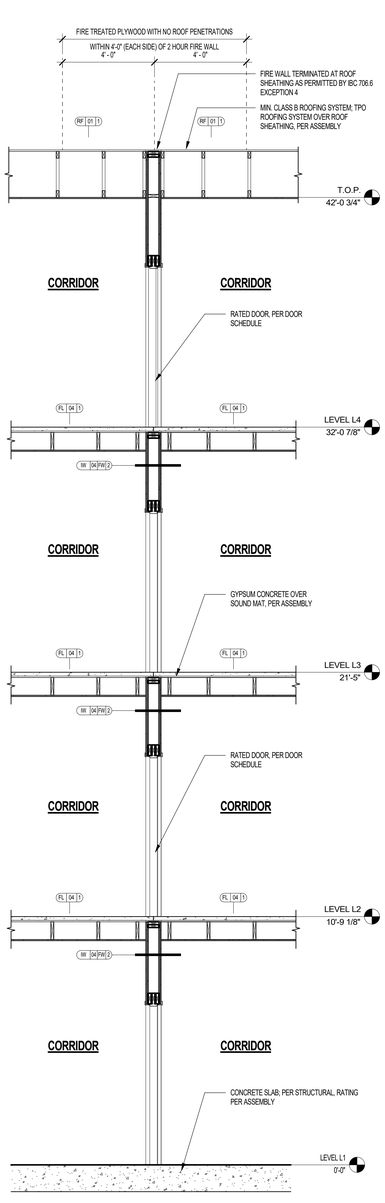
A1.42

SITE DETAILS



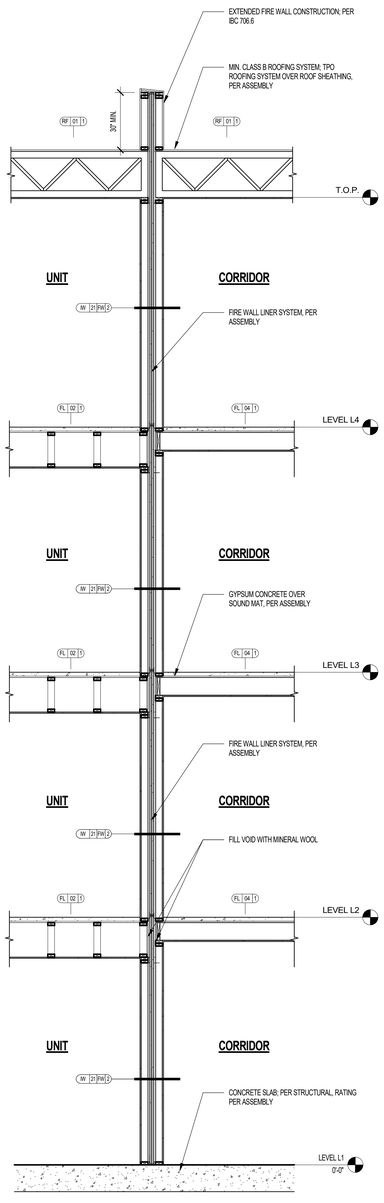
24 2-HR FIRE WALL @ CORRIDOR / CORRIDOR CONNECTION EXTENDED 30" ABOVE ROOF SHEATHING

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



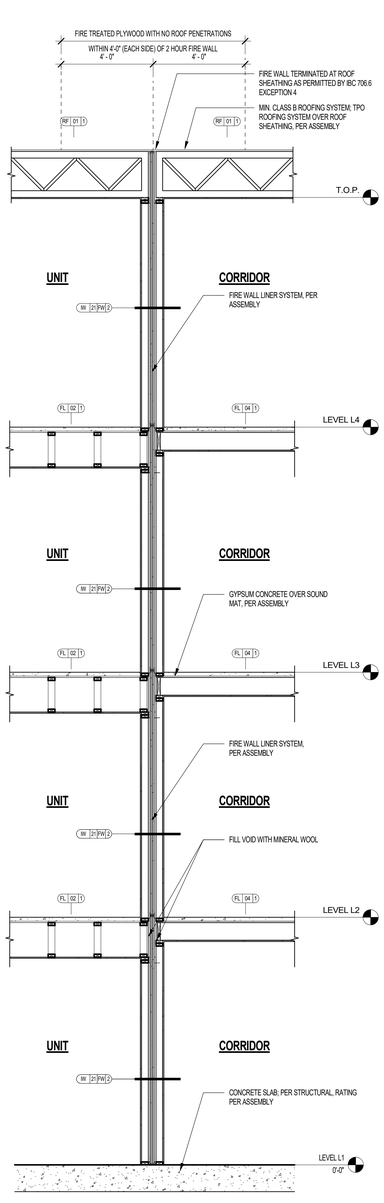
20 2-HR FIRE WALL @ CORRIDOR / CORRIDOR

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



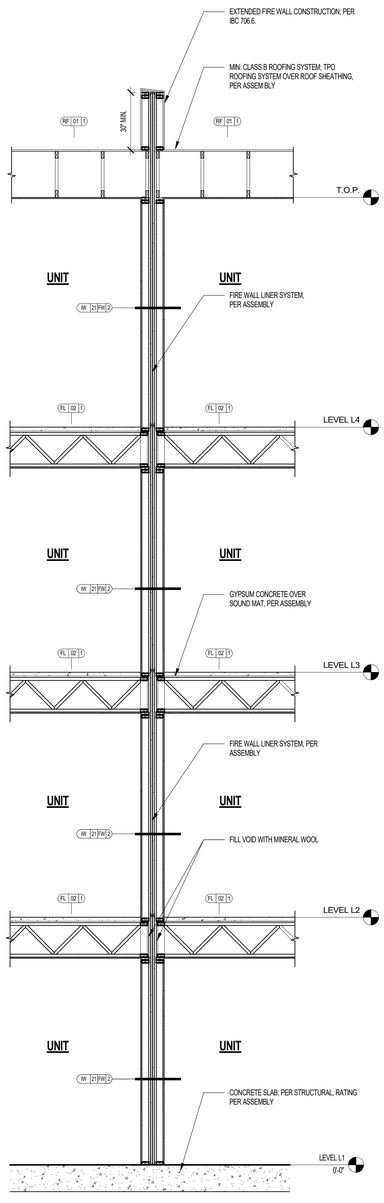
16 2-HR FIRE WALL @ UNIT/ CORRIDOR EXTENDED 30" ABOVE ROOF SHEATHING

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



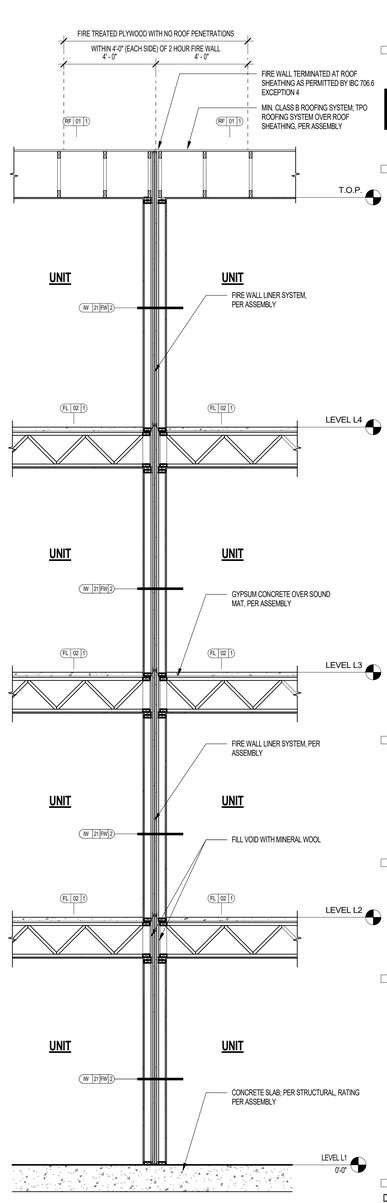
12 2-HR FIRE WALL @ UNIT / CORRIDOR

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



08 2-HR FIRE WALL @ UNIT/ UNIT EXTENDED 30" ABOVE ROOF SHEATHING

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



04 2-HR FIRE WALL @ UNIT / UNIT

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

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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:

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A4.00

FIRE WALL - WALL SECTIONS

GENERAL FIRE PROTECTION NOTES

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 APPARATUS 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 SYSTEM.
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 COVERING SURFACES OR EXTERIOR GYPSUM SHEATHING PANELS, SHALL HAVE JOINTS TAPED WITH EITHER PAPER TAPE OR GLASS FIBER MESH TAPE (MINIMUM LEVEL 1 AS SPECIFIED IN GA-214 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:
   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 THE SAME STUD.
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 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 8 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 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 OF WALLS OR PARTITIONS SHALL BE IN SEPARATE STUD CAVITIES AND SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 24 INCHES. APPROVED NONMETALLIC 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 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.
12. **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 INCHES.
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 STC.
25. **PANEL THICKNESS** – GYPSUM PANEL AND WOOD STRUCTURAL PANELS OF THE SAME TYPE MAY BE REPLACED BY THICKER PANELS OF THE SAME TYPE. LENGTH OF FASTENERS SHALL BE INCREASED ACCORDINGLY TO ACCOMMODATE THE INCREASED THICKNESS OF THE PANEL.
26. **ADDITION OF OTHER PANELS** – WHEN NOT SPECIFIED AS A COMPONENT OF A FIRE RESISTANCE RATED 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 GYPSUM PANEL AND THE NUMBER OF LAYERS OF GYPSUM PANELS SHALL BE AS SPECIFIED IN THIS SYSTEM DESCRIPTION.
27. **PROPRIETARY SYSTEMS** – EACH PROPRIETARY SYSTEM LISTS SPECIFIC PRODUCTS THAT ARE 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 APPLY.

ACOUSTICAL AND SOUND NOTES:

1. **SOUND TRANSMISSION CLASS (STC)** – SHOULD BE TESTED IN ACCORDANCE WITH ASTM E90. WHICH IS 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 ROOM BELOW.

Project Name 1
Project Name 2

Street Adress
City, State

Office of Rich Barber Architecture, Inc
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WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

1ST BUILDING SUBMITTAL

DATE: SEPTEMBER 11, 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 SYSTEMS

1.0 SCOPE OF EVALUATION -
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.

3.1 OMEGA 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.

3.2 OMEGA 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.

3.4 SAND:
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 WALL

RETAINED ON U.S. STANDARD SIEVE	PERCENT RETAINED 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 FIGURE 1 FOR JOINT DETAILS.

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 SECTION 3.9.1.

3.6 LATH:
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 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 SHEATHING:
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 BETTER.

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 BUILDING PAPER HAVING A MINIMUM WATER-RESISTANCE RATING OF 60 MINUTES, OR AN EQUIVALENT BARRIER RECOGNIZED IN A CURRENT RESEARCH REPORT.

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.

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 OF THE EXTERIOR WALL.

4.0 PERFORMANCE CHARACTERISTICS
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 POSITIVE OR NEGATIVE.

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.

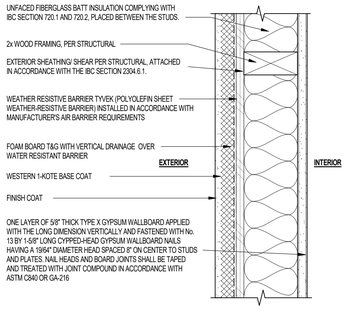
LATH MUST BE ATTACHED TO WOOD FRAMING WITH 1-1/2 IN. END AND SIDE LAPS USING NO. 11 GAGE GALVANIZED ROOFING NAILS OR NO. 16 GAGE CORROSION-RESISTANT STAPLES SPACED MAXIMUM
6 IN. ON CENTER, WITH MINIMUM 1-IN. PENETRATION INTO FRAMING EXCEPT WHEN FOLLOWING TABLES 2 OR 3.

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 DURING INSTALLATION.



WESTERN 1-KOTE EXTERIOR STUCCO SYSTEM

UES EVALUATION REPORT NUMBER: 382 ISSUED: 02/20/2015 VALID THRU: 02/28/2024
ASSEMBLY No.4

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.

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

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.

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 REPORT.

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, II,I, OR IV CONSTRUCTION:
SEE TABLE 5.

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 IRC SECTION R109.1.5.1.

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 INSTRUCTIONS.

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

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 REPORT.

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 GOVERNS.

6.2 INSTALLATION MUST BE BY QUALIFIED CONTRACTORS ACCEPTABLE TO OMEGA PRODUCTS INTERNATIONAL.

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 R316.4, SUCH AS 1/2-IN.-THICK REGULAR GYPSUM WALLBOARD APPLIED IN ACCORDANCE WITH THE APPLICABLE CODE.

6.4 AN INSTALLATION CARD, AS SHOWN IN FIGURE 2, MUST BE LEFT AT THE JOBSITE FOR THE OWNER, AND 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.

8.0 IDENTIFICATION
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 Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

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

Section numbers in earlier codes may differ.

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

WOOD SPECIES	SPECIFIC GRAVITY	FASTENER SPACING (INCHES)				
		STAPLE GAGE				
		16	15	14	13	12
DOUGLAS FIR-LARCH	0.50	6	6	6	6	6
DOUGLAS FIR-SOUTH	0.46	6	6	6	6	6
WESTERN HEMLOCK OR WESTERN HEMLOCK-SOUTH	0.47	6	6	6	6	6
HEM-FIR-SOUTH	0.46	6	6	6	6	6
HEM-FIR	0.43	5	6	6	6	6
SPRUCE-PINE-FIR	0.42	4	5	6	6	6
WESTERN WOODS	0.36	4	4	4	5	5

[1]Wood structural panel sheathing must be fastened to framing with fasteners at 6 inches on center.
[2]Fasteners must penetrate 1 inch into sheathing and framing.
[3]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

WOOD SPECIES	SPECIFIC GRAVITY	FASTENER SPACING (INCHES)				
		STAPLE GAGE				
		16	15	14	13	12
Western hemlock	0.46	4	4	4	5	6
Western hemlock-South	0.47	4	4	5	6	6
Hem-fir-South	0.46	4	4	4	5	6
Hem-fir	0.43	4	4	4	5	6
Spruce-pine-fir	0.42	4	4	5	5	6
Western woods	0.36	3	3	3	3	4

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

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

System No.	Interior finish	Framing	Exterior 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-in.-long, galvanized steel nails (ASTM C514) having a 1/4-in. head, spaced at 7-in. o.c.; joints and nail heads must be treated[1]	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-in.-thick 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 8-in. o.c.; joints and nail heads must be treated[1]	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-in.-thick 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-in.-long, 0.10-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 treated[1]	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 Stuccomate XPS (see ICC- ES ESR-2142), vertical over studs	Min. 3/8-in.-thick 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.	See Note 4
4	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-in.-long, 0.10-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 treated[1]	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-in.-thick 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-in.-long, 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 treated[1]	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. Water-resistive barrier over sheathing.	Min. 1-in. EPS or Dow Stuccomate XPS (see ICC-ES ESR-2142), vertical over studs	Min. 3/8-in.-thick 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

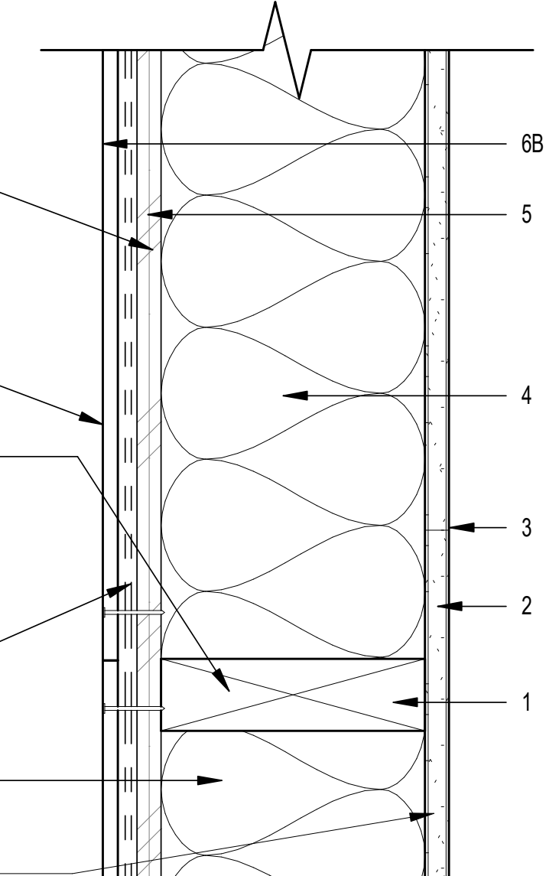
Note 1: All gypsum board joints must be taped and treated with joint compound in accordance with ASTM C 840. Fastener heads must be treated with joint compound in accordance with ASTM C 840.

Note 2: Axial loads applied to the wall assembly must be limited by the lesser of the following:
- Design stress of 0. 78 Fc calculated in accordance with Sections 3.6 and 3. 7 of the NDS
- Design stress of 0.78 Fc 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 lo

1-HR CEMENTITIOUS BOARD 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.

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



1/2" PLYWOOD SHEATHING AS REQUIRED BY ASSEMBLY AND STRUCTURAL

CEMENTITIOUS PANEL, FASTENED O/ WATER RESISTANT BARRIER AND WALL SHEATHING WITH A PNEUMATIC NAILER SNUG TO SURFACE OF SIDING, FASTENER TO BE 1-1/4" MIN. OR AS REQUIRED BY MANUFACTURER

2x FRAMING PER STRUCTURAL AND ASSEMBLY

WATER RESISTIVE MEMBRANE: INSTALL (2) INDIVIDUAL LAYERS OF (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS AND A 6" OVERLAP AT VERTICAL JOINTS

UNFACED BATT INSULATION PER THERMAL ENVELOPE VALUES FOR EXTERIOR WALL

GYPSUM WALLBOARD, PER ASSEMBLY

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 SPACED 12 IN. OC.

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 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.

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:

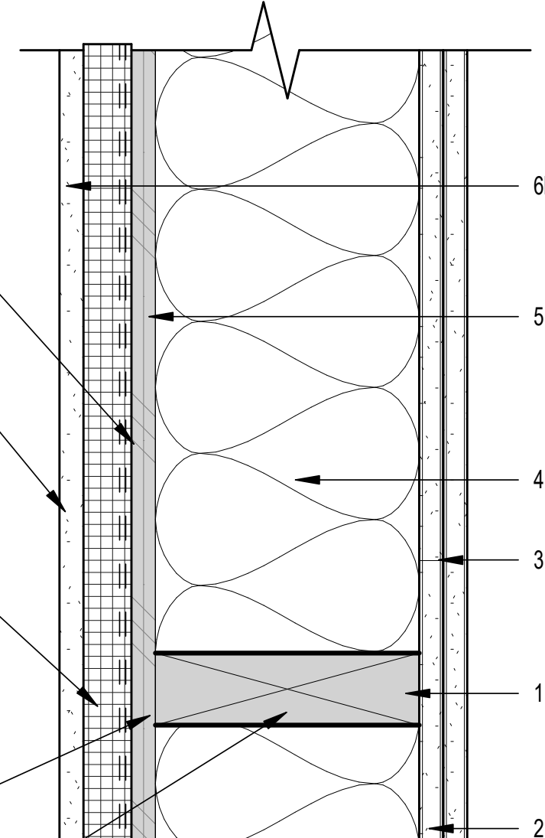
B. PARTICLE BOARD SIDING - HARDBOARD EXTERIOR SIDINGS INCLUDING PATTERNED PANEL OR LAP SIDING.

EW 42 SAME AS EW 41, BUT NO RATING REQUIRED AND 3KS STUCCO IN THE INSIDE

EW 41 CEMENTITIOUS BOARD AT 1-HR RATED EXTERIOR WALL - WOOD FRAMING
ANSI/UL 263 DESIGN NO U356 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.

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



WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS AND 6" OVERLAP AT VERTICAL JOINTS

FINISH COAT O/ FIBERGLASS MESH EMBEDDED IN A BASE COAT, PER MANUFACTURER

EPS INSULATION BOARD GROOVED TO PROVIDE CAPILLARY BREAK BETWEEN INSULATION AND WATER RESISTANT BARRIER, INSULATION TO BE ATTACHED WITH MANUFACTURER'S APPROVED ADHESIVE

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

2x WOOD FRAMING, PER STRUCTURAL

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

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:

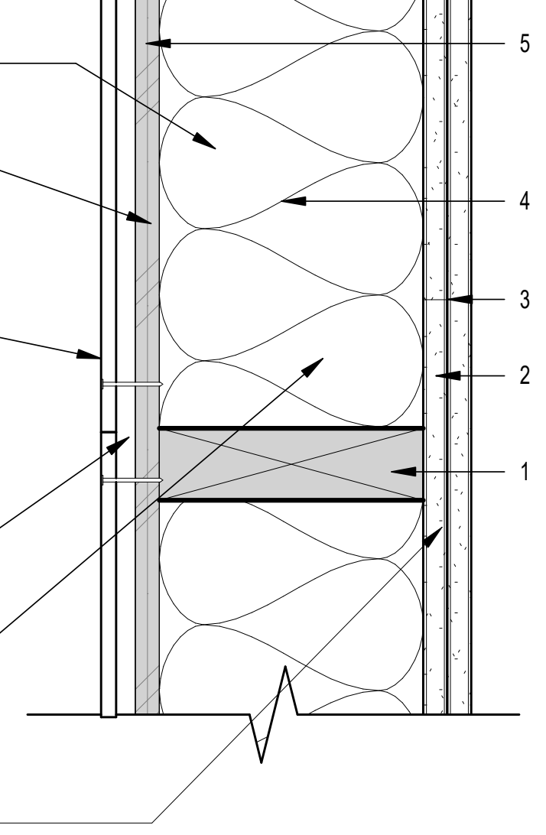
6E. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF- FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING ON SYSTEM.

EW 24 SAME AS EW 23, BUT NO RATING REQUIRED AND EFIS BOTH SIDE.

EW 23 2-HR EIFIS EXTERIOR WALL - WOOD FRAMING
ANSI/UL 263 DESIGN NO V314 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.

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



2x FRAMING PER STRUCTURAL AND ASSEMBLY

1/2" TREATED PLYWOOD SHEATHING AS REQUIRED BY ASSEMBLY AND STRUCTURAL

CEMENTITIOUS PANEL, FASTENED O/ WATER RESISTANT BARRIER AND WALL SHEATHING WITH A PNEUMATIC NAILER SNUG TO SURFACE OF SIDING; FASTENER TO BE 1-1/4" MIN. OR AS REQUIRED BY MANUFACTURER

WATER RESISTIVE MEMBRANE: INSTALL (2) INDIVIDUAL LAYERS OF (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS AND A 6" OVERLAP AT VERTICAL JOINTS

UNFACED BATT INSULATION PER THERMAL ENVELOPE VALUES FOR EXTERIOR WALL

GYPSUM WALLBOARD, PER ASSEMBLY

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

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:

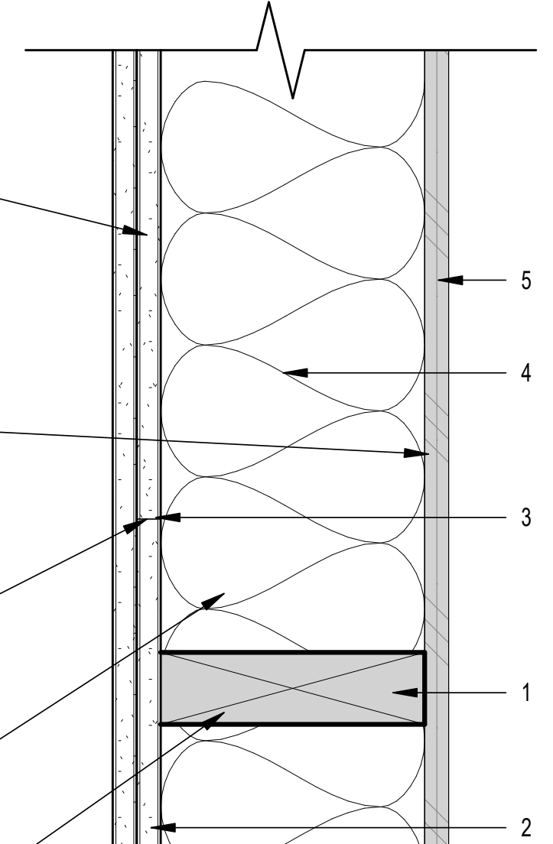
6F. FIBER CEMENT SIDING — FIBER CEMENT LAP OR VERTICAL SIDING. MINIMUM 5/16 IN. THICK, FASTENED TO STUDS THROUGH THE BUILDING UNITS, ITEM 5, WITH NAILS OR SCREWS, AT THE LOCATIONS SPECIFIED BY THE MANUFACTURER.

EW 44 SAME AS EW 43, EXCEPT USE 1/2 INCH STUCCO SYSTEM. OVER 1/2 INCH SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD. NO RATING REQUIRED.

EW 43 CEMENTITIOUS BOARD AT 2-HR RATED EXTERIOR WALL - WOOD FRAMING
ANSI/UL 263 DESIGN NO V314 SCALE: 3" = 1'-0"

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.

ARCHITECTURAL CONSTRUCTION DETAIL
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 BELOW

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.

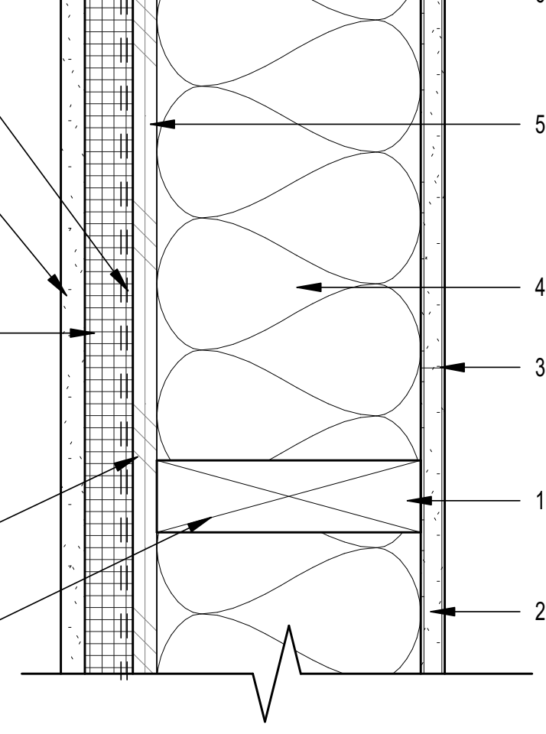
5. BUILDING UNITS* — PRESSURE-TREATED, FIRE-RETARDANT PLYWOOD INSTALLED VERTICALLY NAILED TO THE WOOD FRAMING WITH 1-7/8 IN. LONG, 6D NAILS, SPACED 6 IN. OC. ON THE PERIMETER AND 12 IN. OC. IN THE FIELD. VERTICAL AND HORIZONTAL JOINTS ARE BACKED BY FRAMING. PANELS PROVIDED IN NOMINAL SIZE OF 48 IN. WIDE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

. HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated Plywood

EW 18 GARAGE 2-HR FRAMED WALL
ANSI/UL 263 DESIGN NO V314 SCALE: 3" = 1'-0"

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.

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



WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS AND 6" OVERLAP AT VERTICAL JOINTS

FINISH COAT O/ FIBERGLASS MESH EMBEDDED IN A BASE COAT, PER MANUFACTURER

EPS INSULATION BOARD GROOVED TO PROVIDE CAPILLARY BREAK BETWEEN INSULATION AND WATER RESISTANT BARRIER, INSULATION TO BE ATTACHED WITH MANUFACTURER'S APPROVED ADHESIVE

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

2x WOOD FRAMING, PER STRUCTURAL

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 SPACED 12 IN. OC.

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 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.

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.

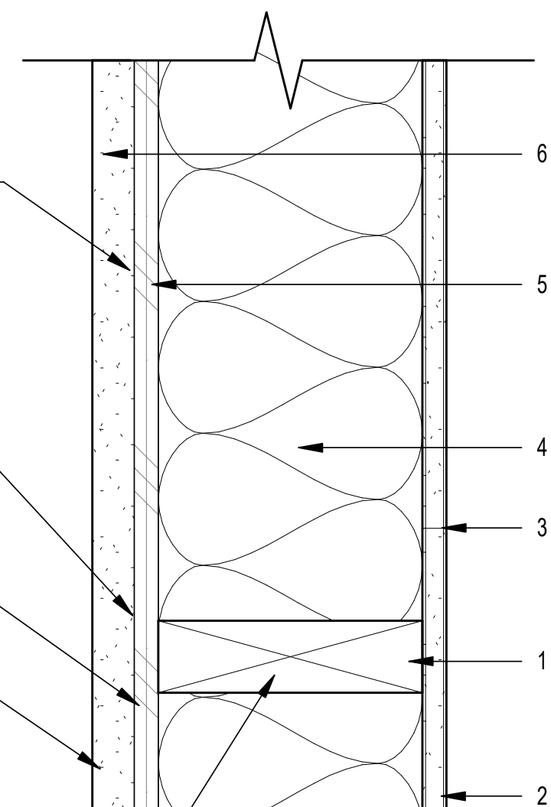
6. EXTERIOR FACING - INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:
D. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 TO 3/4 IN., DEPENDING ON SYSTEM.

EW 22 SAME AS EW 21, BUT NO RATING REQUIRED AND EIFS BOTH SIDE.

EW 21 1-HR EIFIS EXTERIOR WALL - WOOD FRAMING
ANSI/UL 263 DESIGN NO U356 SCALE: 3" = 1'-0"

1-HR STUCCO EXTERIOR WALL - RATED BOTH SIDES
PROPRIETARY ASSEMBLY - August 4, 2023
FIRE TEST: BXUV.U348 - FIRE-RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO. U348
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS 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"∅ (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 ASSEMBLY

3 COAT STUCCO SYSTEM, PER ASSEMBLY

2x WOOD FRAMING, PER STRUCTURAL

DESIGN NO. U348
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. AS AN OPTION, NOM 2 BY 6 IN., SPACED 24 IN. OC WITH TWO 2 BY 6 TOP AND ONE 2 BY 6 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 TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS.
AMERICAN GYPSUM CO — CKNX.R14196
NATIONAL GYPSUM CO — CKNX.R3501
UNITED STATES GYPSUM — CKNX.R1319

3. JOINTS AND NAILHEADS - WALLBOARD 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. 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 MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS.
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 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, TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS WITH A MINIMUM PENETRATION LENGTH THROUGH THE STEEL STUD OF 3/8 IN.
LOUISIANA-PACIFIC CORP — TYPE BLAZEGUARD 1-SIDE
LOUISIANA-PACIFIC CORP — TYPE LP FLAMEBLOCK 1-SIDE

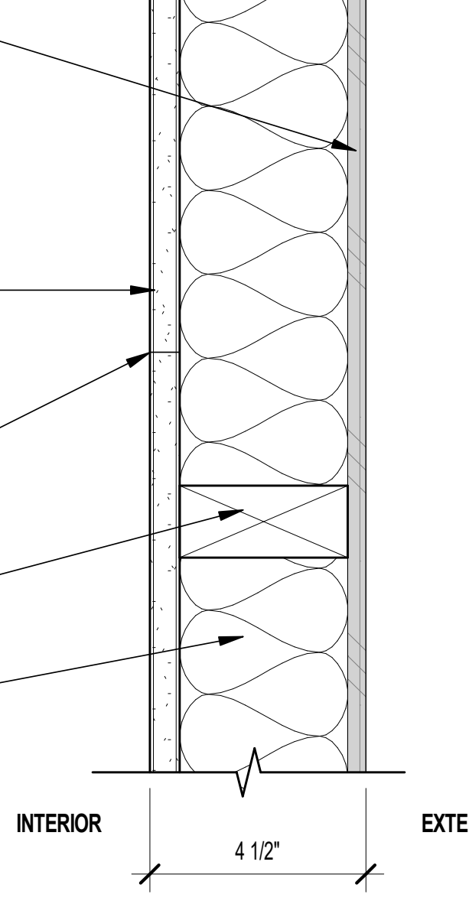
8. EXTERIOR FACINGS — (NOT SHOWN) — REQUIRED FOR 1 HOUR RATING ON THE EXTERIOR FACE. THE FOLLOWING EXTERIOR FACING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:

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 TO SAND.

EW 16 1-HR STUCCO EXTERIOR WALL RATED FROM BOTH SIDES - WOOD FRAMING
ANSI/UL 263 DESIGN NO U348 SCALE: 3" = 1'-0"

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

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



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

5/8" TYPE X GYPSUM WALLBOARD, 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 COMPOUND

2x WOOD FRAMING, PER STRUCTURAL

MINERAL WOOL CAVITY TO BE FILLED WITH 3-1/2" MINERAL WOOL INSULATION

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

CONSTRUCTION AT PARAPET WALLS:
2x4 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 COMPOUND.
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.

NOTE:
- 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 PROVED.

EW 17 GARAGE 1-HR FRAMED WALL
IBC TABLE 721.1(2) ITEM 16-1.1 SCALE: 3" = 1'-0"

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
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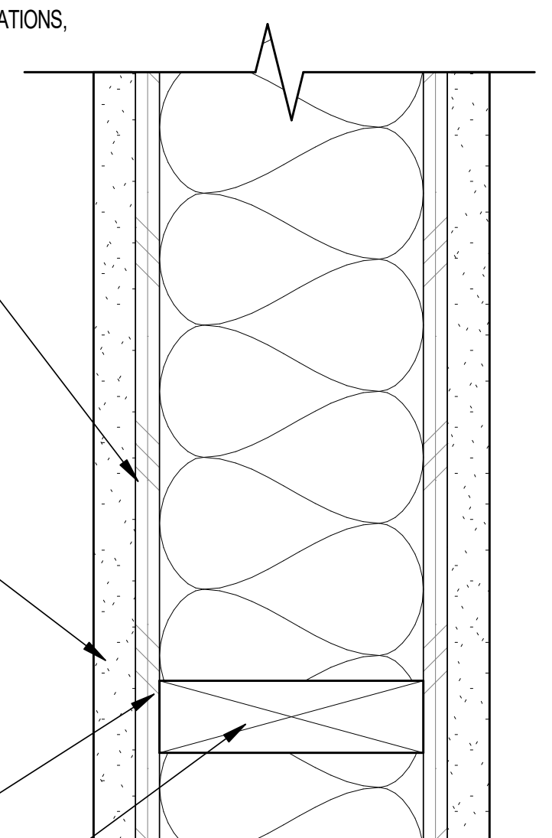


WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS AND 6" OVERLAP AT VERTICAL JOINTS

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"∅ (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 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

2X WOOD FRAMING, PER STRUCTURAL

IBC TABLE 721.1 (2) ITEM 15-1.2.
THE ASSEMBLY DESCRIPTION BELOW IS PER IBC TABLE 721.1 (2) ITEM15-1.2.

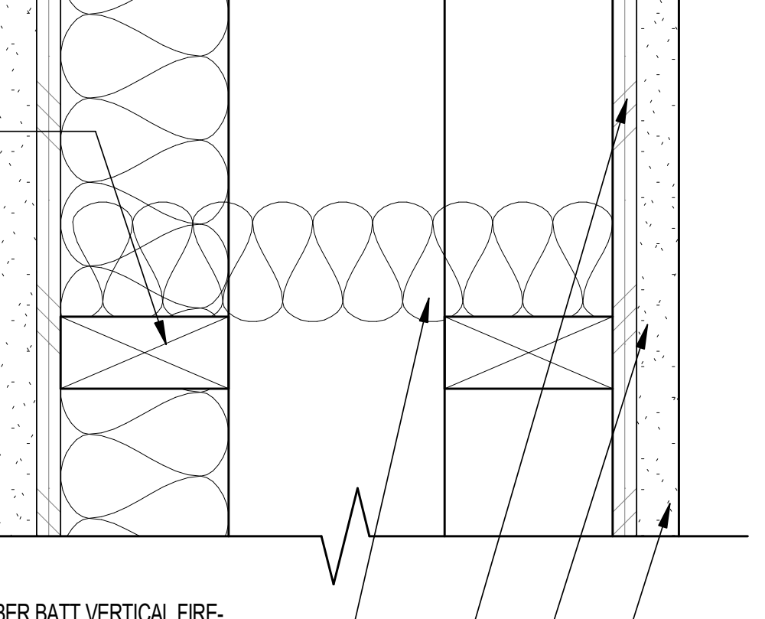
CONSTRUCTION:
2x4 WOOD STUDS 16" ON CENTER WITH 3/4" CEMENT PLASTER ON EACH SIDE LATH ATTACHED WITH 6D COMMON NAILS 7" ON CENTER DRIVEN TO 1" MINIMUM PENETRATION AND BENT OVER. PLASTER MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY VOLUME, CEMENT TO SAND.

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 OF 33

EW 13 1-HR STUCCO EXTERIOR WALL - STUCCO BOTH SIDES
IBC TABLE 721.1(2) ITEM 15-1.2. SCALE: 3" = 1'-0"

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

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



2x WOOD FRAMING, PER STRUCTURAL

3-1/2" UNFACED GLASS FIBER BATT VERTICAL FIRE-BLOCKING AT 10'-0" ON CENTER MAXIMUM PER IBC 718.2.1.5 & 718.2.2

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) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS 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"∅ (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

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

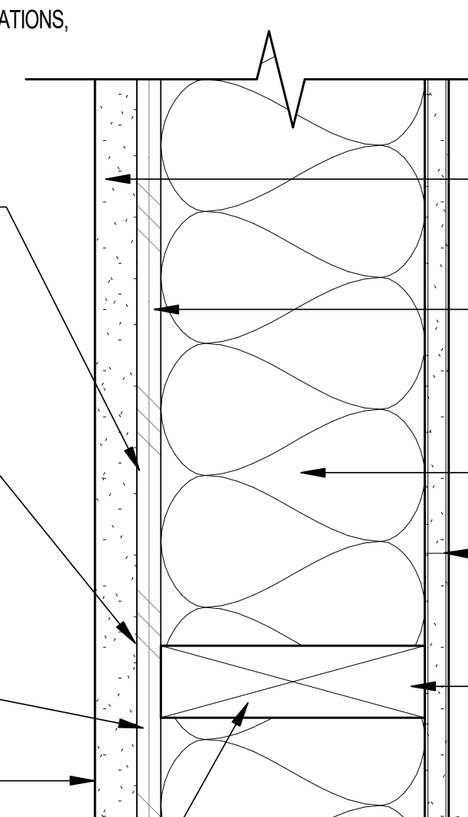
CONSTRUCTION:
2" x 4" WOOD STUDS 16" ON CENTER WITH 7/8" CEMENT PLASTER (MEASURED FROM THE FACE OF STUDS) ON EXTERIOR SURFACE WITH INTERIOR SURFACE TREATMENT AS REQUIRED FOR INTERIOR, NON-BEARING, NON-COMBUSTIBLE STUDS PARTITIONS IN THIS TABLE. PLASTER MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT,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

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

EW 14 1-HR UNIT SEPARATION WALL AT EXTERIOR STUCCO - WOOD FRAMING
IBC TABLE 721.1(2) ITEM 15-1.2. SCALE: 3" = 1'-0"

1-HR STUCCO 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.

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



WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS 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"∅ (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 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

3 COAT STUCCO SYSTEM, PER ASSEMBLY

2x WOOD FRAMING, PER STRUCTURAL

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 HEAD.

   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 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 COMPANIES.

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.

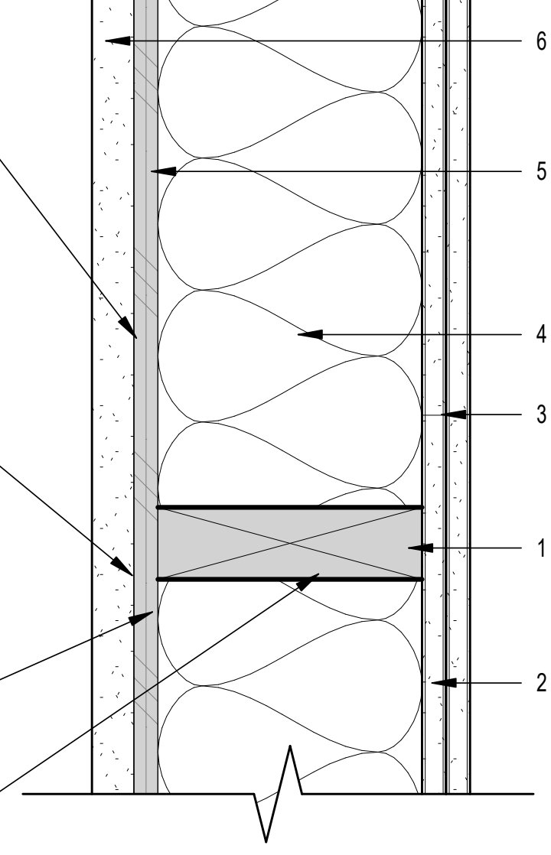
6. **EXTERIOR FACINGS** — INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ONE OF THE FOLLOWING EXTERIOR FACINGS IS TO BE APPLIED OVER THE SHEATHING:

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

EW 11 1-HR STUCCO EXTERIOR WALL - WOOD FRAMING
ANSI/UL 263 DESIGN NO U356 SCALE: 3" = 1'-0"

1-HR STUCCO EXTERIOR WALL - RATED BOTH SIDES
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.

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



WATER-RESISTIVE BARRIER: INSTALL (2) INDIVIDUAL LAYERS OF SUPER JUMBO TEX (60) MINUTE PAPER OR OWNER APPROVED EQUAL HORIZONTALLY IN SHINGLE FASHION WITH A MINIMUM OF 3" OVERLAP AT HORIZONTAL JOINTS 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"∅ (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 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

2x WOOD FRAMING, PER STRUCTURAL

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

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
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.
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 SYSTEM.

EW.12 2-HR STUCCO EXTERIOR WALL - WOOD FRAMING
ANSI/UL 263 DESIGN NO V314 SCALE: 3" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE Vestar RESIDENTIAL COMPANY
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

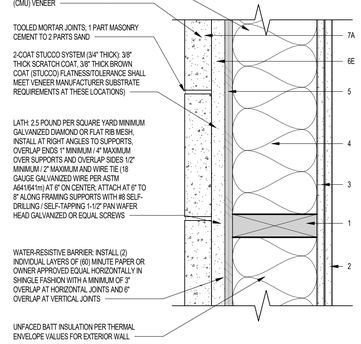
R E V I S I O N S/ SUBMITTALS
DATE **DESCRIPTION**

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.11
FIRE ASSEMBLIES - EXTERIOR WOOD FRAMING

2-HR CMU 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.

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



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* — 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.

2. **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 — Type 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. 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 SYSTEM.

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.

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.

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

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 HEAD.

2. **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 — Type AGX-1, AG-C, LightRoc
NATIONAL GYPSUM CO — Type FSK, 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 COMPANIES.

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:

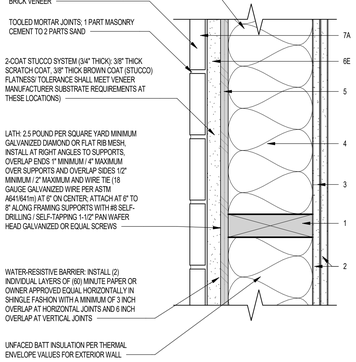
6J. CEMENTITIOUS BACKER UNITS — 1/2 IN. OR 5/8 IN., MIN. 32 IN. WIDE - APPLIED VERTICALLY OR HORIZONTALLY WITH VERTICAL JOINTS CENTERED OVER STUDS. FASTENED TO STUDS AND RUNNERS WITH CEMENT BOARD SCREWS OF ADEQUATE LENGTH TO PENETRATE STUD BY A MINIMUM 3/4 IN., SPACED A MAX OF 8 IN. OC. HORIZONTAL JOINTS 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

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.

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.

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



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* — 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.

2. **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.
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HOOVER TREATED WOOD PRODUCTS INC — Pyro-Guard treated plywood

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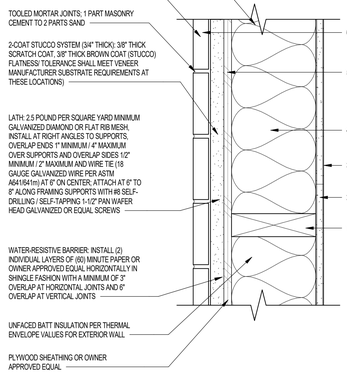
6E. CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO SYSTEMS (E.G. EIFS) WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT. THICKNESS FROM 3/8 IN. TO 3/4 IN. DEPENDING ON SYSTEM.

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.

1-HR BRICK 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.

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



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 HEAD.

2. **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 — Type 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 COMPANIES.

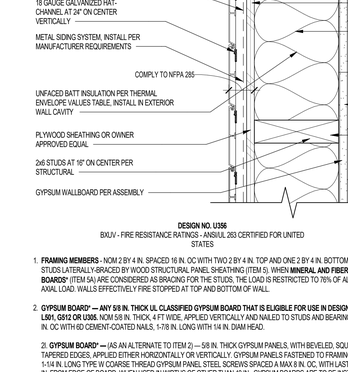
5. **WOOD STRUCTURAL PANEL SHEATHING —** MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS, MIN GRADE "C-D" OR "SHEATHING". INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS 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.

2-HR METAL 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.

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



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 FSK, FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, 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* — 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.

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 - 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 SYSTEM.

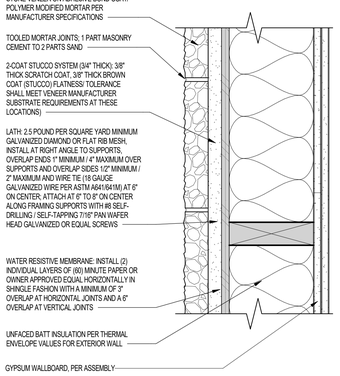
7. EXTERIOR FACING - ONE OF THE FOLLOWING EXTERIOR FACINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:

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.

1-HR METAL SIDING EXTERIOR WALL
PROPRIETARY ASS

2-HR STONE 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.

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



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 6D 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, FSWR-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 SYSTEM.

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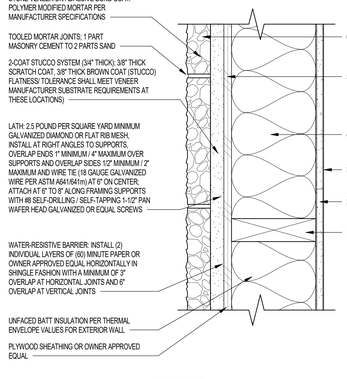
7A. BRICK - BRICK VENEER, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES. BRICK VENEER ATTACHED TO THE STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH 8D CEMENT COATED NAILS, EVERY SIXTH COURSE OF BRICKS.

1-HR STONE 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.

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



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

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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 HEAD.

2. **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 CORSE 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 FSWR-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* (BKNX) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED COMPANIES.

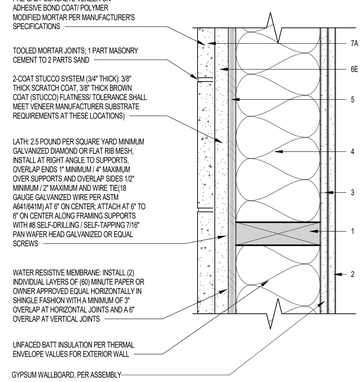
5. **WOOD STRUCTURAL PANEL SHEATHING —** MIN 7/16 IN. THICK, 4 FT WIDE WOOD STRUCTURAL PANELS, MIN GRADE "C-D" OR "SHEATHING", INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH OR PERPENDICULAR TO STUDS. VERTICAL JOINTS CENTERED ON STUDS. HORIZONTAL JOINTS 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.

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.

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



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

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

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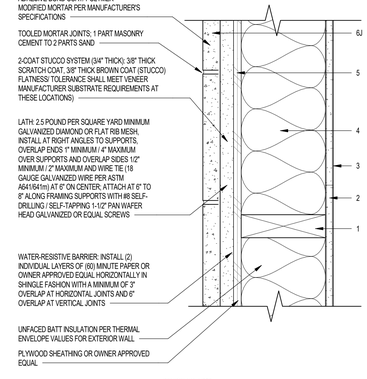
1-HR CONCRETE VENEER - EXTERIOR WALL
PROPRIETARY ASSEMBLY - January 29, 2024
FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U356
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



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

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2. **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 CORSE 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.
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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* (BKNX) CATEGORY IN THE BUILDING MATERIALS DIRECTORY AND BATTS AND BLANKETS* (BZJZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF CLASSIFIED COMPANIES.

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 74 SAME AS EW 73 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED
EW 73 **STONE VENEER AT 2-HR RATED EXTERIOR WALL - WOOD FRAMING**
ANSI/UL 263 DESIGN NO V314 SCALE: 3" = 1'-0"

EW 72 SAME AS EW 71 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED
EW 71 **STONE VENEER AT 1-HR RATED EXTERIOR WALL - WOOD FRAMING**
ANSI/UL 263 DESIGN NO U356 SCALE: 3" = 1'-0"

EW 69 SAME AS EW 68 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED
EW 68 **CONCRETE VENEER AT 2-HR RATED EXTERIOR WALL - WOOD FRAMING**
ANSI/UL 263 DESIGN NO V314 SCALE: 3" = 1'-0"

EW 67 SAME AS EW 66 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED
EW 66 **CONCRETE VENEER AT 1-HR RATED EXTERIOR WALL - WOOD FRAMING**
ANSI/UL 263 DESIGN NO U356 SCALE: 3" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS
DATE **DESCRIPTION**

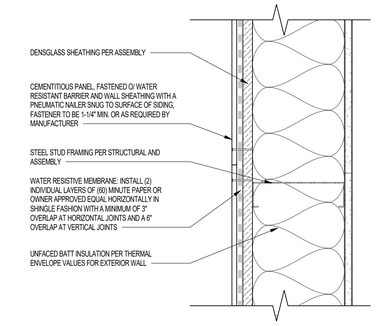
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.13
FIRE ASSEMBLIES - EXTERIOR WOOD FRAMING

1/15/2025 3:27:52 PM

1-HR CEMENTITIOUS BOARD SIDING 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



DESIGN 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, 07NK09079, 9-19-08; UL R1319, 4786532806, 4-29-15 UL DESIGN U425

FIRE DESIGN:

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.

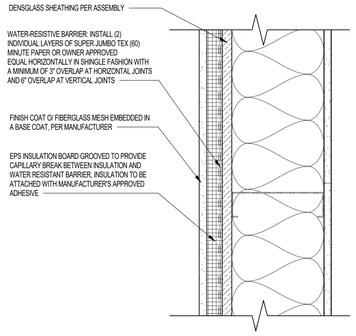
BRACING - ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD DESIGNER AND/OR PRODUCER, AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE LOCAL CODE AGENCIES. WHERE REQUIRED FOR LATERAL SUPPORT 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® GlasRock® Sheathing Type X Gypsum Panels
GEORGIA-PACIFIC GYPSUM LLC
5/8" ThoughRock® Firegurard® Gypsum Board
5/8" DensGlass® Firegurard® 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

1-HR EIFS BOARD SIDING 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



DESIGN 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, 07NK09079, 9-19-08; UL R1319, 4786532806, 4-29-15 UL DESIGN U425

FIRE DESIGN:

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.

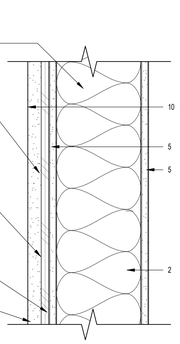
BRACING - ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD DESIGNER AND/OR PRODUCER, AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE LOCAL CODE AGENCIES. WHERE REQUIRED FOR LATERAL SUPPORT 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® GlasRock® Sheathing Type X Gypsum Panels
GEORGIA-PACIFIC GYPSUM LLC
5/8" ThoughRock® Firegurard® Gypsum Board
5/8" DensGlass® Firegurard® 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

1-HR STUCCO EXTERIOR WALL - RATED BOTH SIDES
PROPRIETARY ASSEMBLY - August 4, 2023
FIRE TEST: BXUV.U348 - FIRE-RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO. U348
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

ARCHITECTURAL CONSTRUCTION DETAIL
NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S 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 SHALL CONSIST OF STEEL MEMBERS, NOM 0.033 IN. (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 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 24 IN. O.C. STEEL STUDS MIN 3-1/2 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 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 MAX STUD SPACING SHALL NOT EXCEED 24 IN. O.C. 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 ACCORDANCE WITH THE AISI SPECIFICATIONS.

2. GYPSUM WALLBOARD* - ANY 5/8 IN. THICK UL CLASSIFIED GYPSUM BOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. U501, U910 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 TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS.
AMERICAN GYPSUM CO — ONXX.R14196
NATIONAL GYPSUM CO — ONXX.R3501
UNITED STATES GYPSUM — ONXR.1319

3. JOINTS AND NAILHEADS - WALLBOARD 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. 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 MULTIPLE LAYERS TO ACHIEVE FINAL THICKNESS.
SEE BATTS AND BLANKETS* (BZUZ) CATEGORY FOR NAMES OF CLASSIFIED MANUFACTURERS.

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, TYPE S STEEL SCREWS ARE USED IN LIEU OF NAILS WITH A MINIMUM PENETRATION LENGTH THROUGH THE STEEL STUD OF 3/8 IN.
LOUISIANA-PACIFIC CORP — TYPE BJLSDGUARD 1-SIDE
LOUISIANA-PACIFIC CORP — TYPE LP FLAMEBLOCK 1-SIDE

6. EXTERIOR FACINGS — REQUIRED FOR 1 HOUR RATING ON THE EXTERIOR FACE. THE FOLLOWING EXTERIOR FACING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS:

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 TO SAND.

1-HR UNIT SEPARATION EXTERIOR WALL
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.

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

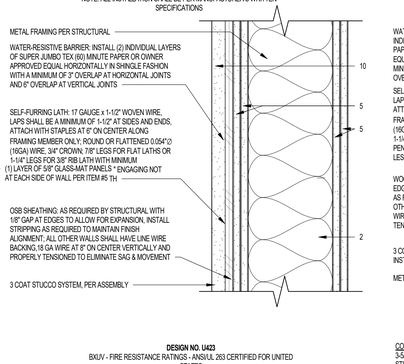
1. FLOOR AND CEILING RUNNERS — (NOT SHOWN) — CHANNEL SHAPED, FABRICATED FROM MIN 0.0329 IN. BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL, THAT PROVIDE A SOUND STRUCTURAL CONNECTION BETWEEN STEEL STUDS AND ADJACENT ASSEMBLIES SUCH AS FLOORS, CEILINGS AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING ASSEMBLIES WITH STEEL FASTENERS SPACED NOT GREATER THAN 24 IN. OC.
2. STEEL STUDS - MIN 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL STUDS, MIN 3-1/2 IN. WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD DESIGNER AND/OR PRODUCER, AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE LOCAL CODE AGENCIES. THE MAX STUD SPACING SHALL NOT EXCEED 24 IN. O.C. 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 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:

UNITED STATES GYPSUM CO.	NO. OF LAYERS & THICKNESS OF PANELS EACH SIDE	PC-AR% OF DESIGN LOAD	ULIX, ULIX, WRX, or WRC
1-HR	1 LAYERS, 5/8 IN. THICK	100	3/4 in. thick Types AR, IP-AR or IP-XG
1-HR	2 LAYERS, 5/8 IN. THICK	100	...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 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 AND 5/8 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.
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) 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, 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.

2-HR STUCCO EXTERIOR WALL
PROPRIETARY ASSEMBLY - February 15, 2024
FIRE TEST: 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.

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

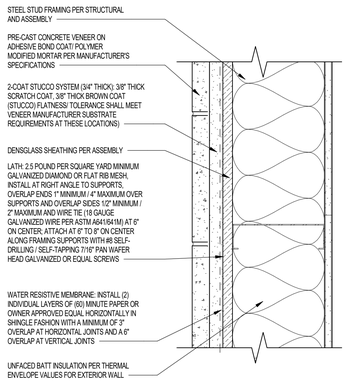
1. FLOOR AND CEILING RUNNERS — (NOT SHOWN) — CHANNEL SHAPED, FABRICATED FROM MIN 0.0329 IN. BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL, THAT PROVIDE A SOUND STRUCTURAL CONNECTION BETWEEN STEEL STUDS AND ADJACENT ASSEMBLIES SUCH AS FLOORS, CEILINGS AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING ASSEMBLIES WITH STEEL FASTENERS SPACED NOT GREATER THAN 24 IN. OC.
2. STEEL STUDS - MIN 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL STUDS, MIN 3-1/2 IN. WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD DESIGNER AND/OR PRODUCER, AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE LOCAL CODE AGENCIES. THE MAX STUD SPACING SHALL NOT EXCEED 24 IN. OC. STUDS ATTACHED TO FLOOR AND CEILING RUNNERS WITH 1/2 IN. LONG TYPE S-12 STEEL SCREWS ON BOTH SIDES OF THE STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH THE AISI 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 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:

UNITED STATES GYPSUM CO.	NO. OF LAYERS & THICKNESS OF PANELS EACH SIDE	PC-AR% OF DESIGN LOAD	ULIX, ULIX, WRX, or WRC
1-HR	1 LAYERS, 5/8 IN. THICK	100	3/4 in. thick Types AR, IP-AR or IP-XG
1-HR	2 LAYERS, 5/8 IN. THICK	100	...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 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 AND 5/8 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.
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) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.
9. JOINT TAPE AND COMPOUND - VINYL OR CASEIN, DRY OR PREMIXED JOINT

1-HR CONCRETE 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



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

FIRE DESIGN:

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

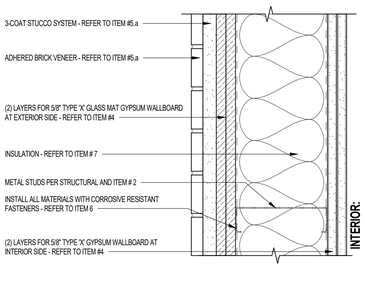
EM 67 SAME AS EM 66, EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

EM 66 CONCRETE VENEER AT 1-HR RATED EXTERIOR WALL - METAL FRAMING

GA WP 8006 SCALE: 3" = 1'-0"

2-HR BRICK VENEER EXTERIOR WALL
PROPRIETARY ASSEMBLY - February 16, 2024
FIRE TEST: BXUV.U425 - FIRE-RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO. U425
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



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 24 INCH ON CENTER.
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. XS15, ANY 5/8 INCH THICK UL CLASSIFIED GYPSUM WALLBOARD THAT IS ELIGIBLE FOR USE IN DESIGN NOS. LS01, GS12, OR LS05. 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:

TABLE I
INTERIOR OR EXTERIOR WALLS (FIRE FROM EITHER SIDE)

RATING HR.	WALLBOARD PROTECTION ON INTERIOR SIDE OF WALL - NO. OF LAYERS & THICKNESS	% OF DESIGN LOAD
NOTE: EXTERIOR FACINGS ALLOWED FOR BOARD IN. EACH LAYERS0 ALLOWED TO BE INSTALLED ON ONE SIDE OF THE ABOVE WALLS		
2 HR	2 LAYERS, 5/8 IN. THICK	80%

-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* (BZUZ) 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 LAYER.

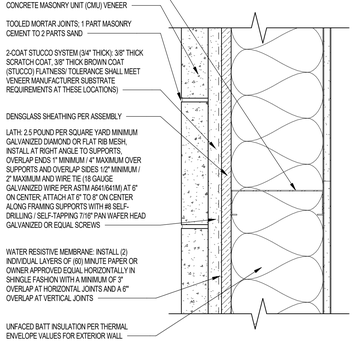
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

EM 63 BRICK VENEER AT 2-HR EXTERIOR WALL - METAL FRAMING

UL DESIGN NO. U425 SCALE: 3" = 1'-0"

1-HR CMU VENEER EXTERIOR WALL
PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO March 16, 2023
FIRE TEST: GA WP 8006

ARCHITECTURAL CONSTRUCTION DETAIL
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

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

FIRE DESIGN:

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

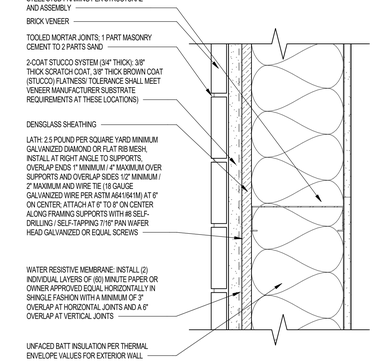
EM 62 SAME AS EM 61 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

EM 61 BRICK VENEER AT 1-HR RATED EXTERIOR WALL - METAL FRAMING

GA WP 8006 SCALE: 3" = 1'-0"

1-HR BRICK 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



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

FIRE DESIGN:

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

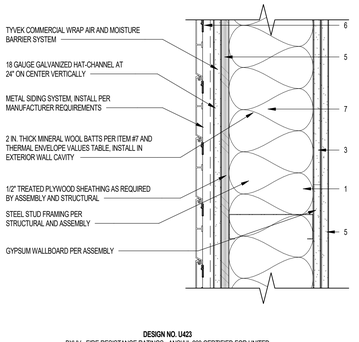
EM 57 SAME AS EM 56 EXCEPT USE 1/2" STUCCO SYSTEM OVER 1/2" SHEATHING INSTEAD OF INTERIOR GYPSUM WALLBOARD; NO RATING REQUIRED

EM 56 CMU VENEER AT 1-HR RATED EXTERIOR WALL - METAL FRAMING

GA WP 8006 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

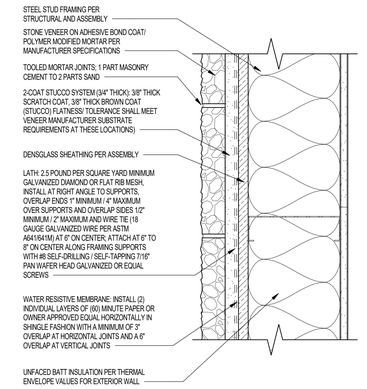
1. **FLOOR AND CEILING RUNNERS** — (NOT SHOWN) — CHANNEL SHAPED, FABRICATED FROM MIN 0.0329 IN. BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL, THAT PROVIDE A SOUND STRUCTURAL CONNECTION BETWEEN STEEL STUDS AND ADJACENT ASSEMBLIES SUCH AS FLOORS, CEILINGS AND/OR OTHER WALLS. ATTACHED TO FLOOR AND CEILING ASSEMBLIES WITH STEEL FASTENERS SPACED NOT GREATER THAN 24 IN. OC.
2. **STEEL STUDS** - MIN 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL STUDS, MIN 3-1/2 IN. WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD DESIGNER AND/OR PRODUCER, AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE LOCAL CODE AGENCIES. THE MAX STUD SPACING SHALL NOT EXCEED 24 IN. OC. STUDS ATTACHED TO FLOOR AND CEILING RUNNERS WITH 1/2 IN. LONG TYPE S-12 STEEL SCREWS ON BOTH SIDES OF THE STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH THE AISI 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.
4. **WOOD STRUCTURAL PANEL SHEATHING** - (OPTIONAL, FOR USE WITH ITEM 5 ONLY) — (NOT SHOWN) — 4 FT WIDE, 7/16 IN. THICK ORIENTED STRAND BOARD (OSB) OR 15/32 IN. THICK STRUCTURAL 1 SHEATHING (PLYWOOD) COMPLYING WITH DOC PS1 OR PS2, OR APA STANDARD PRP-108, MANUFACTURED WITH EXTERIOR GLUE, APPLIED HORIZONTALLY OR VERTICALLY TO THE STEEL STUDS. VERTICAL JOINTS CENTERED ON STUDS, AND STAGGERED ONE STUD SPACE FROM WALLBOARD JOINTS. ATTACHED TO STUDS WITH FLAT-HEAD SELF-DRILLING TAPPING SCREWS WITH A MIN. HEAD DIAM. OF 0.292 IN. AT MAXIMUM 6 IN. OC. IN THE PERIMETER AND 12 IN. OC. IN THE FIELD. WHEN USED, GYPSUM PANELS ATTACHED OVER OSB OR PLYWOOD PANELS AND FASTENER LENGTHS FOR GYPSUM PANELS INCREASED BY MIN. 1/2 IN.
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:

RATING HR.	NO. OF LAYERS & THKNS OF PANELS EACH SIDE	% OF DESIGN LOAD
NOTE: EXTERIOR FACINGS ALLOWED FOR BOARD IN. EACH LAYERS0 ALLOWED TO BE INSTALLED ON ONE SIDE OF THE ABOVE WALLS		
45 MIN	1 LAYER, 5/8 IN. THICK	50%
1 HR	1 LAYER, 5/8 IN. THICK	80%
1-1/2 HR	2 LAYERS, 5/8 IN. THICK	80%
2 HR	2 LAYERS, 5/8 IN. THICK	80%

UNITED STATES GYPSUM CO — CKNX.R14196
6. **FASTENERS** — (NOT SHOWN) - FOR USE WITH ITEM 4 - TYPE S-12 STEEL SCREWS USED TO ATTACH PANELS TO RUNNERS (ITEM 1 OR 1A) AND STUDS (ITEM 2 OR 2A) FOR MAXIMUM SPACING 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. OC WITH SCREWS OFFSET 8 IN. FROM FIRST LAYER.
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) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.
8. **FURRING CHANNELS** - (OPTIONAL ON ONE OR BOTH SIDES, NOT SHOWN, FOR SINGLE OR DOUBLE LAYER SYSTEMS) - RESILIENT FURRING CHANNELS FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, SPACED VERTICALLY A MAX

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



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, 4799352806, 4-29-15 UL DESIGN U425

FIRE DESIGN:

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 - METAL FRAMING

EM 71 GA WP 8006 SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

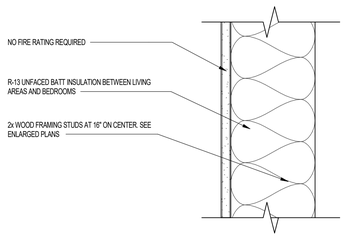
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.22

FIRE ASSEMBLIES - EXTERIOR METAL FRAMING

TYPICAL ONE SIDED WALL - WOOD FRAMING
NO RATING REQUIRED

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

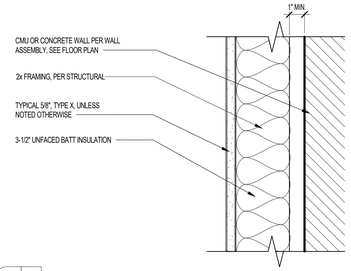


IW 07 INTERIOR WALL - WOOD FRAMING

SCALE: 3" = 1'-0"

TYPICAL FURRING WALL
NO RATING REQUIRED

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



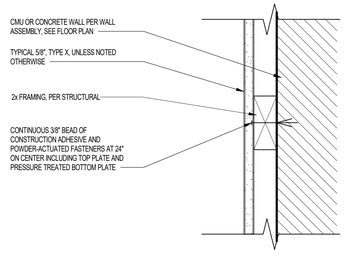
FR 02 SAME AS FR 01, EXCEPT USE 2 GYPSUM LAYERS INSTEAD

FR 01 TYPICAL FURRING WALL

SCALE: 3" = 1'-0"

TYPICAL FURRING WALL - FLAT STUD
NO RATING REQUIRED

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

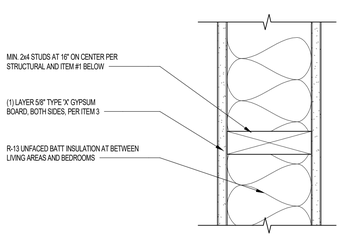


FR 03 FLAT WOOD STUD FURRING AT EXPOSED CMU/CONCRETE WALLS

SCALE: 3" = 1'-0"

1HR TYPICAL WALL - WOOD FRAMING
PROPRIETARY ASSEMBLY - February 8, 2024
FIRE TEST - UL DESIGN U305
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



UL DESIGN U305
BX/UV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. **WOOD STUDS** - NOMINAL 2X4 INCH SPACED 16 INCH ON CENTER MAXIMUM, EFFECTIVELY FIRESTOPPED.

2. **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

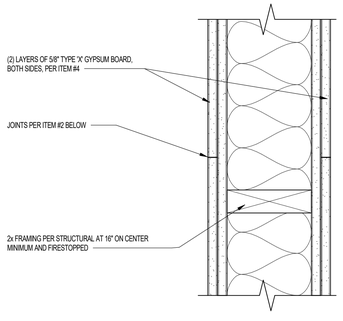
12. **NON-BEARING WALL PARTITION INTERSECTION** - (OPTIONAL) - TWO NOMINAL 2 BY 4 IN. STUDS OR NOMINAL 2 BY 6 IN. STUDS NAILED TOGETHER WITH TWO 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY AND FASTENED TO ONE SIDE OF THE MINIMUM 2 BY 4 IN. STUD WITH 3 IN. LONG 10D NAILS SPACED A MAX. 16 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.

IW 03 1-HR INTERIOR WALL - WOOD FRAMING

ANSI/UL 263 DESIGN NO U305 SCALE: 3" = 1'-0"

2HR WALL
PROPRIETARY ASSEMBLY - February 16, 2024
FIRE TEST - UL DESIGN U301
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



UL DESIGN U301
BX/UV - 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

MATERIAL:
WOOD STUDS - INTERIOR PARTITION WITH GYPSUM WALLBOARD EACH SIDE.

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 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.

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.
   - **AMERICAN GYPSUM CO** — Types AGX-1, M-Glass, AG-C, AGX-11, LightRoc
   - **NATIONAL GYPSUM CO** — Types eXP-C, FSK, FSK-C, FSK-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSW-C, FSW-G, FSW-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

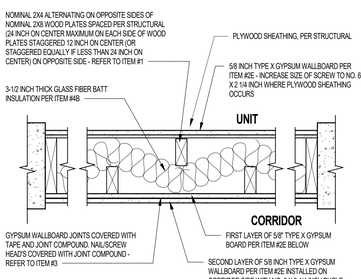
NOTES:
INSTALL 3/8 INCH BEAD OF SEALANT PRIOR TO TAPING TO SEAL PERIMETER OF WALL AND INTERSECTIONS.

IW 04 2-HR INTERIOR WALL - WOOD FRAMING

ANSI/UL 263 DESIGN NO U301 SCALE: 3" = 1'-0"

1HR CORRIDOR WALL WITH QUIETROCK - WOOD FRAMING
PROPRIETARY ASSEMBLY - January 30, 2024
FIRE TEST - Design No. U340
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



UL DESIGN U340
BX/UV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

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 BX/UV OR BX/UV7

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. 6 BUGLE HEAD DRYWALL SCREWS, 1-7/8 IN. LONG, MAY BE SUBSTITUTED FOR THE 6D CEMENT COATED 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. U301, 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 THE 6D CEMENT COATED NAILS. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO BE INSTALLED 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.R3650: 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, TYPE X.
   - **PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** - CKNX.R17094: 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 REINFORCED.

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 0.8LB/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.

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 BEARING WALL.

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

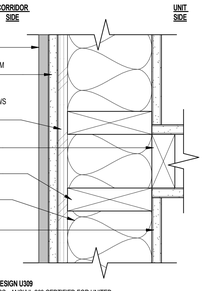
HORIZONTAL SECTION

IW02 ALT 3 1-HR CORRIDOR WALL - WOOD FRAMING - BEARING

UL DESIGN NO. U340 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



UL DESIGN U309
BX/UV - 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

1. **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 IN. OC.
   PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — TYPE C, PG-5, PG-11, PG-C, PGS-WRS, PGI
   UNIT SIDE: 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 CHANNELS OR FIBER, SPRAYED.
   CORRIDOR SIDE: PABCO BUILDING PRODUCTS LLC, DBA PABCO GYPSUM - TYPE QUIETROCK 530 (FINISH RATING 23MINUTES)
3. **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 TREATMENT.
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 BEARING WALL.

FIRE DESIGN:
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 X 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 60 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.

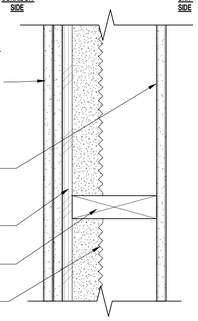
NOTE:
IF RESILIENT CHANNEL SOLUTION IS CHOSEN, SHEAR WALLS MUST BE REMOVED FROM CORRIDORS OR STC RATING WILL BE GREATLY DIMISHED

1-HR CORRIDOR WALL WITH RESILIENT CHANNEL - WOOD FRAMING

GA WP 3242 SCALE: 3" = 1'-0"

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



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

IBC TABLE 722.2.1.4(2)
TIME ASSIGNED O FINISH MATERIALS ON FIRE-EXPOSED SIDE OF WALL

FINISH DESCRIPTION	TIME (MINUTES)
TYPE X GYPSUM WALL BOARD *5/8 INCH*	*40 MIN*

IBC TABLE 722.6.2(2)
TIME ASSIGNED FOR CONTRIBUTION OF WOOD FRAME

FINISH DESCRIPTION	TIME (MINUTES)
WOOD STUDS 16 INCHES ON CENTER	*20 MIN*

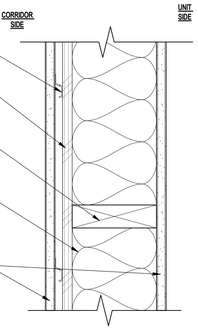
a. THIS TABLE DOES NOT APPLY TO STUDS OR JOIST SPACED MORE THAN 16 INCHES ON CENTER.
b. ALL STUDS SHALL BE NOMINAL 2x4 AND ALL JOISTS SHALL HAVE A NOMINAL THICKNESS OF NOT LESS THAN 2 INCHES.

IW 02 1-HR CORRIDOR WALL - WOOD FRAMING

IBC TABLE 722.2.1.4(2) SCALE: 3" = 1'-0"

1HR CORRIDOR WALL WITH RESILIENT CLIPS - WOOD FRAMING
GENERIC ASSEMBLY - June 2021
FIRE TEST - GA FILE NO. WP 3242
SOUND RATING: 50-54 STC
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



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

THICKNESS: 5-3/8" (FIRE AND SOUND)
APPROX. WEIGHT: 7 PSF (FIRE AND SOUND)
FIRE TEST: BASED ON UL R14196, 05NK05371, 2-15-05, UL DESIGN U309
SOUND TEST: NRCC TL-93-098, IRC-IR-761, 3-98

FIRE DESIGN:
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 1-14 INCH TYPE S DRYWALL SCREWS. ONE LAYER 5/8 INCH TYPE X 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 60 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)

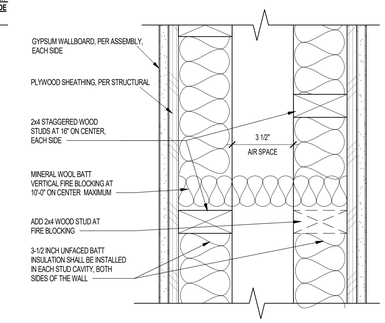
SOUND DESIGN:
SOUND TESTED AS CONSTRUCTED FOR FIRE.

IW02 ALT 1-HR CORRIDOR WALL WITH QUIETROCK - WOOD FRAMING

ANSI/UL 263 DESIGN NO U309 SCALE: 3" = 1'-0"

1-HR UNIT DEMISING WALL - WOOD FRAMING
PROPRIETARY ASSEMBLY - UNITED STATES GYPSUM CO - June 2021
FIRE TEST - GYPSUM ASSOC. FILE NO. WP 5512
SOUND RATING: 55 STC PER TL-93-266
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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

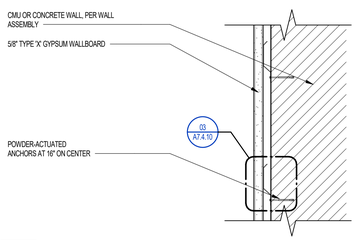
THICKNESS: 9-1/4" (FIRE AND SOUND)
APPROX. WEIGHT: 7.1 PSF (FIRE AND SOUND)
FIRE TEST: UL DESIGN U341 UL R4024, 10-31-68
SOUND TEST: NOAL 17-0837, 8-25-17

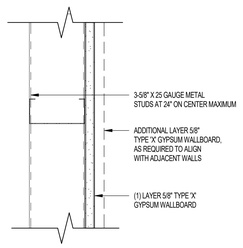
GYPSUM WALLBOARD	ABSORPTIVE MATERIAL	TEST NUMBER	STC	Rw
15.9 MM TYPE X (C)	BOTH SIDES GLASS FIBER (G1) 89 MM BATT	TL-93-266	56	58

SOURCE:
SOUND TRANSMISSION THROUGH GYPSUM WAL

RC CHANNEL FURRING AT EXPOSED CMU/ CONCRETE WALL
NO RATING REQUIRED

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





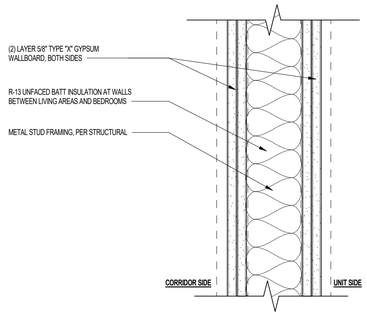
FR 06 SAME AS FR 07, EXCEPT 2 LAYERS OF GYPSUM

FR 07 RC CHANNEL FURRING AT EXPOSED CMU/CONC. WALL

SCALE: 3" = 1'-0"

2HR/ 3HR WALL - METAL FRAMING
PROPRIETARY ASSEMBLY: UNITED STATES GYPSUM CO - December 28, 2023
FIRE TEST - UL DESIGN U423
SOUND RATING: 45 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.

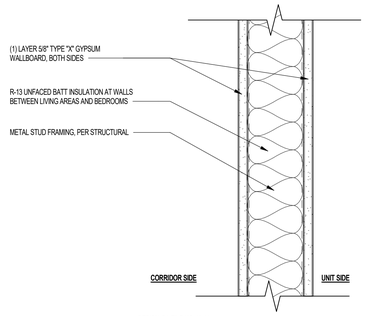
2. **STEEL STUDS -** MINIMUM 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL STUDS, MIN 3-1/2 IN. WIDE, COLD-FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (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:

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.

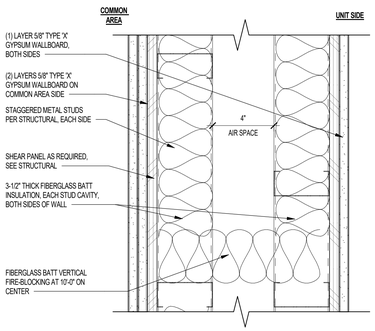
2. **STEEL STUDS** - MINIMUM 0.0329 IN., BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL STUDS, MIN 3-1/2 IN. WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (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:

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 WRITTEN SPECIFICATIONS



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 BRACING ON BOTH SIDES OF THE WALL NOT MORE THAN 5 FEET ON CENTER VERTICALLY. (NLB)

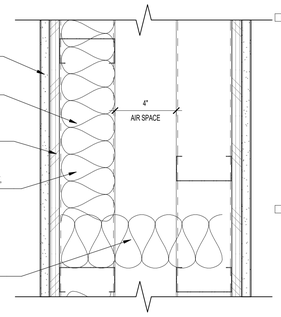
PROPRIETARY GYPSUM PANEL PRODUCTS
CERTAINTEED GYPSUM INC - 5/8" CERTAINTEED® TYPE X GYPSUM BOARD

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.

THICKNESS:	7-1/4 INCH (FIRE) 7-7/8 INCH (SOUND)
APPROXIMATE WEIGHT:	5 PSF (FIRE) 7.5 PSF (SOUND)
FIRE TEST:	UL R3950, 07NK21428, 2-14-06 UL DESIGN V469
SOUND TEST:	NGC 2017093, 6-6-17

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



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

1. **FLOOR AND CEILING RUNNERS** - (FOR USE WITH ITEM 5 AND 5A) — CHANNEL SHAPED, ATTACHED TO 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.

2. **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.

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 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 SQUARE EDGES.

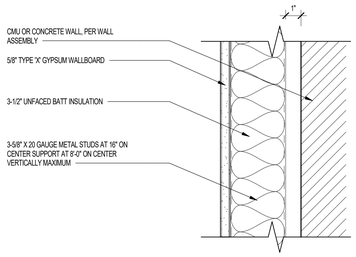
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

IM 01E FRAMING-ENHANCED ACOUSTICS

GA WP 0953 SCALE: 3" = 1'-0"

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

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



FR 02 SAME AS FW 01, EXCEPT USE 2 GYPSUM LAYERS INSTEAD

FR 01 METAL STUD FURRING AT CMU/CONC. WALL

SCALE: 3" = 1'-0"

TABLE I
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
2 HOUR	3 LAYER, 1/2 INCH THICK	100
1 HOUR	2 LAYER, 5/8 INCH THICK	100

UNITED STATES GYPSUM CO - 5/8 INCH THICK TYP2 LAYER, 5/8 INCH THICK

6. **FASTENERS** - (NOT SHOWN) —FOR USE WITH GYPSUM PANELS TO BE INSTALLED HORIZONTALLY. 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. 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.

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

IM 04 2HR METAL FRAME PARTITION

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

TABLE I
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, SCX

6. **FASTENERS** - (NOT SHOWN) — FOR USE WITH 1 LAYER, 5/8 INCH THICK GYPSUM PANELS TO BE INSTALLED HORIZONTALLY. 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.

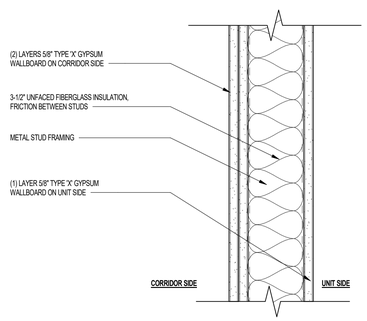
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL CERTIFICATION MARK.

IM 03 1-HR INTERIOR WALL - METAL FRAMING

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

1-HR 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 WRITTEN SPECIFICATIONS



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 DESIGN
SOUND TESTED WITH 3-1/2 INCH GLASS FIBER FRICTION FIT IN STUD SPACE.

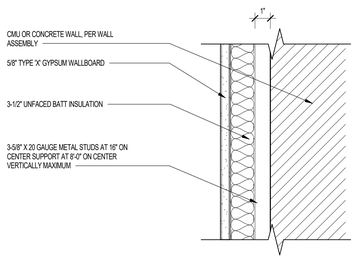
THICKNESS:	5-1/2 INCH (FIRE AND SOUND)
APPROX. WEIGHT:	8 PSF (FIRE) 8.2 PSF (SOUND)
FIRE TEST:	SEE WP 1350 (FM WP-45, 6-19-68; OSU T-1770, 8-61; ULC 797484, 797500, 797497, 8-21-81, ULC DESIGN W415)
SOUND TEST:	RAL-TL11-075, 3-23-11

IM 02 1-HR CORRIDOR WALL - METAL FRAMING

GA WP 1052 SCALE: 3" = 1'-0"

FURRING AT EXPOSED CMU/ CONCRETE WALL - FLAT STUD
NO RATING REQUIRED

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



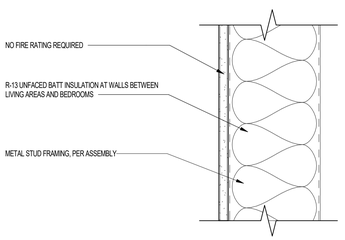
FR 04 SAME AS FW 04, EXCEPT USE 2 GYPSUM LAYERS INSTEAD

FR 03 FLAT METAL STUD FURRING AT CMU/CONC. WALL

SCALE: 3" = 1'-0"

TYPICAL ONE SIDED WALL - METAL FRAMING
NO-RATING REQUIRED

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



IM 07 TYPICAL ONE SIDED WALL - METAL FRAMING

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

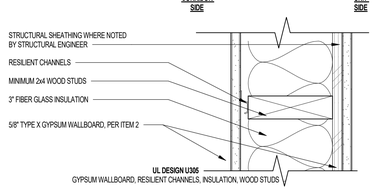
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.31

FIRE ASSEMBLIES - INTERIOR METAL FRAMING

1HR CORRIDOR WALL WITH RESILIENT FURRING CHANNELS - WOOD FRAMING
GENERIC ASSEMBLY - June 2024
FIRE TEST - UL U305
SOUND RATING: 56 STC
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



UL DESIGN U305
GYPSUM WALLBOARD, RESILIENT CHANNELS, INSULATION, WOOD STUDS

1. WOOD STUDS — NOM 2 BY 4 IN. SPACED 24 IN. OC, LATERALLY BRACED, AND EFFECTIVELY FIRE STOPPED AT TOP AND BOTTOM.

2. WOOD STRUCTURAL PANEL SHEATHING — NOM 15/32 IN. THICK, 4 FT WIDE APA RATED SHEATHING 32/16, EXPOSURE 1, PLYWOOD OR ORIENTED STRAND BOARD (OSB) PER PS1, PS2 OR APA STANDARD PRP-108. INSTALLED WITH LONG DIMENSION OF SHEET (STRENGTH AXIS) OR FACE GRAIN OF PLYWOOD PARALLEL WITH STUDS. VERTICAL JOINTS CENTERED ON STUDS, AND STAGGERED ONE STUD SPACE FROM ADJACENT BOARD JOINTS. HORIZONTAL JOINTS BACKED WITH NOM 2 BY 4 IN. WOOD BLOCKING. ATTACHED TO STUDS AT EXTERIOR SIDE OF WALL WITH 6D CEMENT COATED STEEL BOX NAILS SPACED 12 IN. OC ALONG INTERIOR STUDS, AND 6 IN. OC AT PERIMETER OF PANELS.

3. BATTS AND BLANKETS* — 3-1/2 IN. THICK FOIL-FACED GLASS FIBER BATTS. SUPPLIED IN ROLLS 23 IN. WIDE. DENSITY TO BE NOM 0.70 PCF. FRICTION-FITTED TO COMPLETELY FILL THE STUD CAVITY.
SEE BATTS AND BLANKETS* (BZJZ) CATEGORY FOR NAMES OF CLASSIFIED COMPANIES.

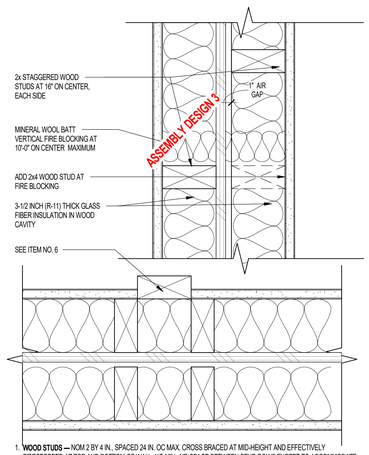
4. GYPSUM BOARD* — 5/8 IN. THICK, 4 FT WIDE, APPLIED HORIZONTALLY OR VERTICALLY, ATTACHED TO STUDS THROUGH PLYWOOD SHEATHING WITH 6D CEMENT COATED NAILS 2-3/8 IN. LONG, 0.113 IN. SHANK DIAM, 9/32 IN. DIAM HEAD NAILS SPACED 7 IN. OC ALONG STUDS AND AT PERIMETER OF PANELS. WHEN USED IN WIDTHS OTHER THAN 48 IN., WALLBOARD IS TO BE INSTALLED HORIZONTALLY. JOINTS EXPOSED OR COVERED WITH TAPE AND COMPOUND.
STEEL FRAMING MEMBERS* (ITEMS 6 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.

5I. GYPSUM BOARD* — (AS AN ALTERNATE TO ITEM 5. FOR USE WITH ITEM 6E AND 6H) - ANY 5/8 IN. THICK, 4 FT. WIDE, GYPSUM BOARD UL CLASSIFIED FOR FIRE RESISTANCE (CNXN) ELIGIBLE FOR USE IN DESIGN NO. G512. TWO LAYERS, APPLIED VERTICALLY, AND ATTACHED TO WOOD STUDS (ITEM 1) AND FURRING (ITEM 6EA OR 6HA). VERTICAL GYPSUM BOARD SIDE JOINTS OFFSET 24 INCHES BETWEEN LAYERS. VERTICAL JOINTS STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS. TYPE W STEEL SCREWS USED FOR WOOD FRAMING. TYPE S STEEL SCREWS USED FOR STEEL FRAMING. ATTACHMENT TO FURRING CHANNELS - FIRST LAYER – 1-1/4 IN. LONG, 3, 6 AND 18 INCHES FROM EACH BOARD EDGE. SECOND LAYER - 1-7/8 IN. LONG (2 IN. WITH WOOD FRAMING), SPACED 12 INCH OC WITH FIRST FASTENER 2 IN. FROM VERTICAL BOARD EDGE. DIRECT ATTACHMENT TO FRAMING - FIRST LAYER (TO PLATES) – 1-1/4 IN. LONG, 3, 6 AND 18 INCHES FROM EACH BOARD EDGE. FIRST LAYER (TO STUDS) – 1-1/4 IN. LONG, 3, 6 AND 18 INCHES BOARD ENDS AND 24 IN. OC THEREAFTER. SECOND LAYER - 1-7/8 IN. LONG, SPACED 2 INCH FROM EACH BOARD EDGE AND 12 IN. OC THEREAFTER.

6. STEEL FRAMING MEMBERS* — (OPTIONAL) — FURRING CHANNELS AND STEEL FRAMING MEMBERS AS DESCRIBED BELOW:
A. FURRING CHANNELS — FORMED OF NO. 25 MSG GALV STEEL, 2-9/16 IN. OR 2-23/32 IN. WIDE BY 7/8 IN. DEEP, SPACED 24 IN. OC PERPENDICULAR TO STUDS. CHANNELS SECURED TO STUDS AS DESCRIBED IN ITEM 8. ENDS OF ADJOINING CHANNELS ARE OVERLAPPED 6 IN. AND TIED TOGETHER WITH DOUBLE STRAND OF NO. 18 SWG GALV STEEL WIRE NEAR EACH END OF OVERLAP. AS AN ALTERNATE, ENDS OF ADJOINING CHANNELS MAY BE OVERLAPPED 6 IN. AND SECURED TOGETHER WITH TWO SELF-TAPPING #6 FRAMING SCREWS, MIN. 7/16 IN. LONG AT THE MIDPOINT OF THE OVERLAP, WITH ONE SCREW ON EACH FLANGE OF THE CHANNEL. GYPSUM BOARD ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEMS 4 AND 5.
B. STEEL FRAMING MEMBERS* — USED TO ATTACH FURRING CHANNELS (ITEM 6A) TO STUDS . CLIPS SPACED 48 IN. OC., AND SECURED TO STUDS WITH NO. 8 X 2-1/2 IN. COARSE DRYWALL SCREW THROUGH THE CENTER GROMMET. FURRING CHANNELS ARE FRICTION FITTED INTO CLIPS . RSIC-1 CLIP FOR USE WITH 2-9/16 IN. WIDE FURRING CHANNELS. RSIC-1 (2.75) CLIP FOR USE WITH 2-23/32 IN. WIDE FURRING CHANNELS.
PAC INTERNATIONAL L L C — TYPES RSIC-1, RSIC-1 (2.75).

1-HR UNIT DEMISING WALL - WOOD FRAMING
PROPRIETARY ASSEMBLY: JANUARY 31, 2024
SOUND RATING: 54 TO 57
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



1. **WOOD STUDS —** NOM 2 BY 4 IN., SPACED 24 IN. OC MAX. CROSS BRACED AT MID-HEIGHT AND EFFECTIVELY FIRESTOPPED AT TOP AND BOTTOM OF WALL. NO MIN. AIR SPACE BETWEEN STUD ROWS EXCEPT TO ACCOMMODATE ATTACHMENT OF SHEATHING, WHERE REQUIRED. SEE ITEMS 4 AND 5.
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. GYPSUM BOARD APPLIED HORIZONTALLY OR VERTICALLY, UNLESS SPECIFIED BELOW, 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. AS AN ALTERNATE, NO. 8 BUGLE HEAD DRYWALL SCREWS, 1-7/8 IN. LONG, MAY BE SUBSTITUTED FOR THE 6D CEMENT COATED NAILS.
WHEN STEEL FRAMING MEMBERS* (ITEM 6 OR ANY ALTERNATE CLIPS) ARE USED, WALLBOARD ATTACHED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC.
3. **JOINTS AND NAILHEADS —** GYPSUM BOARD JOINTS OF OUTER LAYER COVERED WITH TAPE AND JOINT COMPOUND. NAIL HEADS OF OUTER LAYER COVERED WITH JOINT COMPOUND. AS AN ALTERNATE, NOM 3/32 IN. THICK GYPSUM VENEER PLASTER MAY BE APPLIED TO THE ENTIRE SURFACE OF CLASSIFIED VENEER BASEBOARD WITH JOINTS REINFORCED WITH PAPER TAPE.
4. **SHEATHING —** (OPTIONAL) — SEPTUM MAY BE SHEATHED WITH MIN 7/16 IN. THICK WOOD STRUCTURAL PANELS MIN GRADE "C-C" OR "SHEATHING" OR MIN 1/2 IN. THICK MINERAL AND FIBER BOARDS*. SEE MINERAL AND FIBER BOARDS (CERZ) CATEGORY FOR NAMES OF CLASSIFIED COMPANIES.
5. **BATTS AND BLANKETS* —** 3-1/2 IN. MAX THICKNESS GLASS OR MINERAL FIBER BATT INSULATION. OPTIONAL WHEN SHEATHING ITEM 4 IS USED ON BOTH HALVES OF WALL. SEE BATTS AND BLANKETS (BZJZ) CATEGORY FOR LIST OF CLASSIFIED COMPANIES.
6. **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 5 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.

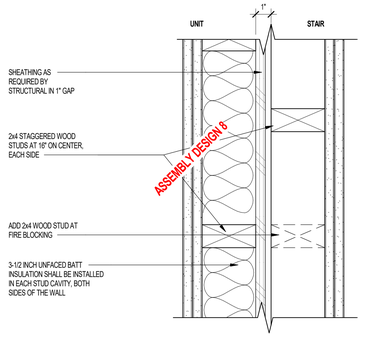
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SHEAR IW 02 — 1-HR CORRIDOR SHEAR WALL WITH RESILIENT CHANNEL — UL U344 — SCALE: 3" = 1'-0"

IW 01 — 1-HR UNIT SEPARATION WALL - WOOD FRAMING — UL U341 — SCALE: 3" = 1'-0"

2-HR UNIT/STAIR DEMISING WALL - WOOD FRAMING
PROPRIETARY ASSEMBLY: UNITED STATES GYPSUM CO - June 2021
FIRE TEST - GYPSUM ASSOC. FILE NO. WP 3820
SOUND RATING: 66 STC NGC 3056, 10-31-68
REFER TO GA PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



DESIGN NO. WP 3820
GYPSUM WALLBOARD, WOOD STUDS

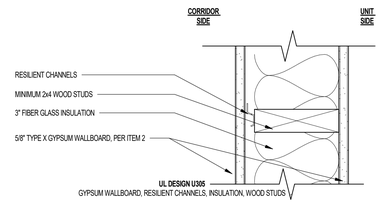
THICKNESS:	10-3/4" (FIRE AND SOUND)
APPROX. WEIGHT:	13 PSF (FIRE AND SOUND)
FIRE TEST:	SEE WP 4135 (FM WP 360, 9-27-74) UL R4024, 10-31-68
SOUND TEST:	NGC 3056, 4-7-70

BASE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO EACH SIDE OF DOUBLE ROW OF 2 x 4 WOOD STUDS 16" O.C. ON SEPARATE PLATES 1" APART WITH 6D COATED NAILS, 1 7/8" LONG, 0.085" SHANK, 1/4" HEADS, 24" O.C. FACE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO EACH SIDE WITH 8D COATED NAILS, 2 3/8" LONG, 0.100" SHANK, 1/4" HEADS, 8" O.C.

JOINTS STAGGERED 16" EACH LAYER AND SIDE. SOUND TESTED WITH 3 1/2" GLASS FIBER INSULATION STAPLED TO STUDS IN STUD SPACES ON ONE SIDE AND WITH NAILS FOR BASE LAYER SPACED 8" O.C. HORIZONTAL BRACING REQUIRED AT MID-HEIGHT (LOAD BEARING)

1HR CORRIDOR WALL WITH RESILIENT FURRING CHANNELS - WOOD FRAMING
GENERIC ASSEMBLY - June 2024
FIRE TEST - UL U305
SOUND RATING: 56 STC
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



UL DESIGN U305
GYPSUM WALLBOARD, RESILIENT CHANNELS, INSULATION, WOOD STUDS

1. WOOD STUDS — NOM 2 BY 4 IN. SPACED 16 IN. OC MAX, EFFECTIVELY FIRESTOPPED.

2. 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 BOARD* — 5/8 IN. THICK PAPER OR VINYL SURFACED WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS ATTACHED TO STUDS AND NAILED 7 IN. OC WITH 6D CEMENT COATED NAILS 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 15/64 IN. DIAM HEAD. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS ARE TO BE INSTALLED HORIZONTALLY. FOR ANY ALTERNATE METHOD OF ATTACHMENT OF GYPSUM PANELS, REFER TO ITEMS 6 THROUGH 6F, STEEL FRAMING MEMBERS*.
WHEN ITEMS 6, 6B, 6C, 6D, 6E, OR 6F, STEEL FRAMING MEMBERS* ARE USED, GYPSUM PANELS ATTACHED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC.

WHEN ITEM 6A, STEEL FRAMING MEMBERS* IS USED, TWO LAYERS OF GYPSUM PANELS ATTACHED TO FURRING CHANNELS. BASE LAYER ATTACHED TO FURRING CHANNELS WITH 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC. FACE LAYER ATTACHED TO FURRING CHANNELS WITH 1-5/8 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 12 IN. OC. ALL JOINTS IN FACE LAYERS STAGGERED WITH JOINTS IN BASE LAYERS. ONE LAYER OF GYPSUM BOARD ATTACHED TO OPPOSITE SIDE OF WOOD STUD WITHOUT FURRING CHANNELS AS DESCRIBED IN ITEM 3.

WHEN ITEM 7, RESILIENT CHANNELS ARE USED, 5/8 IN. THICK, 4 FT WIDE GYPSUM PANELS APPLIED VERTICALLY. SCREW ATTACHED FURRING CHANNELS WITH 1 IN. LONG, SELF-DRILLING, SELF-TAPPING TYPE S OR S-12 STEEL SCREWS SPACED 8 IN. OC. VERTICAL JOINTS LOCATED MIDWAY BETWEEN STUDS.

4. STEEL CORNER FASTENERS — (OPTIONAL) — FOR USE AT WALL CORNERS. CHANNEL SHAPED, 2 IN. LONG BY 1 IN. HIGH ON THE BACK SIDE WITH TWO 1/8 IN. WIDE CLEATS PROTRUDING INTO THE 5/8 IN. WIDE CHANNEL, FABRICATED FROM 04 GAUGE GALV STEEL. FASTENERS APPLIED ONLY TO THE END OR CUT EDGE (NOT ALONG TAPERED EDGES) OF THE GYPSUM BOARD, NO GREATER THAN 2 IN. FROM CORNER OF GYPSUM BOARD. MAX SPACING 16 IN. OC. NAILED TO ADJACENT STUD THROUGH TAB USING ONE NO. 6D CEMENT COATED NAIL PER FASTENER. CORNERS OF WALL BOARD SHALL BE NAILED TO TOP AND BOTTOM PLATE USING NO. 6D CEMENT COATED NAILS.

5D. GLASS FIBER INSULATION — (AS AN ALTERNATE TO ITEM 5C) — 3 IN. THICK GLASS FIBER BATTS BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING AND/OR FIRE RESISTANCE, FRICTION-FITTED TO FILL THE INTERIOR OF THE WALL. SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

7. FURRING CHANNEL — OPTIONAL — FOR USE ON ONE SIDE OF THE WALL - RESILIENT CHANNELS, 25 MSG GALV STEEL, SPACED VERTICALLY 24 IN. OC. FLANGE PORTION SCREW ATTACHED TO ONE SIDE OF STUDS WITH 1-1/4 IN. LONG DIAMOND SHAPED POINT, DOUBLE LEAD PHILLIPS HEAD STEEL SCREWS. WHEN RESILIENT CHANNELS ARE USED, INSULATION, ITEMS 5C OR 5D IS REQUIRED.

8. CAULKING AND SEALANTS — (NOT SHOWN, OPTIONAL) — A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL.

9. STC RATING — THE STC RATING OF THE WALL ASSEMBLY IS 56 WHEN IT IS CONSTRUCTED AS DESCRIBED BY ITEMS 1 THROUGH 6, EXCEPT:
A. ITEM 2, ABOVE — NAILHEADS SHALL BE COVERED WITH JOINT COMPOUND.
B. ITEM 2, ABOVE — JOINTS AS DESCRIBED, SHALL BE COVERED WITH FIBER TAPE AND JOINT COMPOUND.
C. ITEM 5, ABOVE — BATTS AND BLANKETS* THE CAVITIES FORMED BY THE STUDS SHALL BE FRICTION FIT WITH R-19 UNFACED FIBERGLASS INSULATION BATTS MEASURING 6-1/4 IN. THICK AND 15-1/4 IN. WIDE.
D. ITEM 6, ABOVE — STEEL FRAMING MEMBERS* TYPE RSIC-1 CLIPS SHALL BE USED TO ATTACH GYPSUM BOARD TO STUDS ON EITHER SIDE OF THE WALL ASSEMBLY.
E. ITEM 8, ABOVE — CAULKING AND SEALANTS (NOT SHOWN) A BEAD OF ACOUSTICAL SEALANT SHALL BE APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL.
F. STEEL CORNER FASTENERS (ITEM 4), FIBER, SPRAYED (ITEMS 5A AND 5B) AND STEEL FRAMING MEMBERS (ITEM 6A), NOT EVALUATED AS ALTERNATIVES FOR OBTAINING STC RATING.

IW 06 — 2-HR UNIT/STAIR SEPARATION WALL - WOOD FRAMING — GA WP 3820 — SCALE: 3" = 1'-0"

IW 02 — 1-HR CORRIDOR WALL WITH RESILIENT CHANNEL — UL U305 — SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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:

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

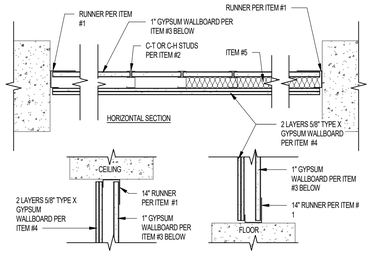
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.32

MILHAUS FIRE ASSEMBLIES - INTERIOR WOOD FRAMING

2-HR FIRE SHAFT WALL - METAL WALL
PROPRIETARY ASSEMBLY - UL SOLUTIONS - August 4, 2023
FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U428
SOUND RATING - 47 STC
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



DESIGN NO. U428
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

2-HOUR SHAFT WALL - NON-BEARING
***INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.**

1. **FLOOR and CEILING RUNNER** - "J"-SHAPED RUNNERS, MIN. 2-1/2 IN. WIDE WITH UNEQUAL LEGS OF 1 IN. AND 2-1/4 IN., FABRICATED FROM MIN. 25 MSG GALV STEEL. RUNNERS POSITIONED WITH SHORT LEG TOWARD FINISHED SIDE OF WALL. RUNNERS ATTACHED TO STRUCTURAL SUPPORTS WITH STEEL FASTENERS LOCATED NOT MORE THAN 2 IN. FROM ENDS AND NOT MORE THAN 24 IN. OC.
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 24 IN. OR 600 MM OC.
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 J-SHAPED RUNNERS.
   - **AMERICAN GYPSUM CO** - TYPES AG-S, M-GLASS
   - **GEORGIA-PACIFIC GYPSUM L L C** - TYPES TP-6, DGUSL, AND TRSL
   - **NATIONAL GYPSUM CO** - TYPES FSW, FSW-8, FSW-7, FSW-9
   - **PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** - TYPES PG-10 AND PG-10G
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 1 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 , FSW-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.

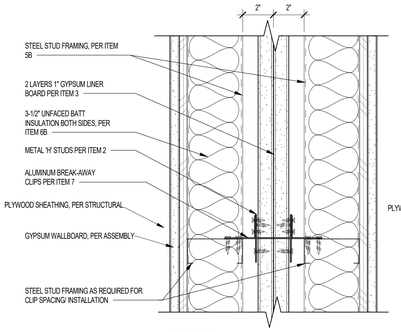
ACOUSTICS - STC 48 ESTIMATED FOR SH 02 BASED ON USG - 170427

SH | 04 2-HOUR SHAFT WALL - NON-BEARING - SAME AS SH 02 EXCEPT USING 4" STUDS IN LIEU OF 2-1/2" STUDS

SH 02 **2-HR FIRE SHAFT WALL - NONBEARING** — ANSI/UL 263 DESIGN NO U428 — SCALE: 1" = 1'-0"

2-HR FIRE WALL - METAL WALL
PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024
FIRE TEST: BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 DESIGN NO U347 - OPTION B
SOUND RATING - 50 STC MIN.
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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



DESIGN NO. U347
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 ***
INSTALL AS DESCRIBED IN ASSEMBLY UL U347 OPTION B FOR FIRE WALL CONFIGURATIONS

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.
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-8, 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 2.5Y 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.

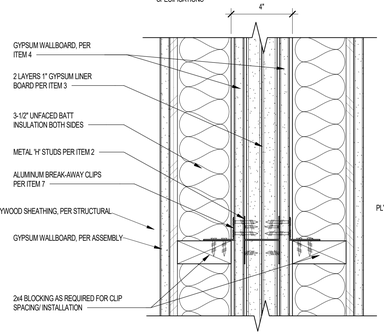
7. **ALUMINUM CLIPS** - ALUMINUM ANGLE, 0.049 IN. THICK, 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS. CLIPS SECURED WITH TYPE S SCREWS 3/8 IN. LONG TO "H" STUDS AND WITH 1-1/4 IN. LONG SCREWS TO WOOD FRAMING OR STEEL FRAMING THROUGH HOLES PROVIDED IN CLIP.

NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL.

FW 25 **2-HR FIRE WALL AND SHAFTS - METAL FRAMING** — ANSI/UL 263 DESIGN NO U347 — SCALE: 3" = 1'-0"

3-HR FIRE WALL
PROPRIETARY ASSEMBLY - UL SOLUTIONS - October 07, 2019
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.

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



DESIGN NO. W454
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE:
SOUND RATING WITH 3-1/2" (88.9MM) GLASS FIBER INSULATION IN STUDY CAVITY ON EACH SIDE

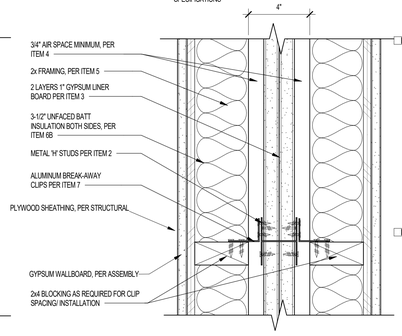
SEPARATION WALL: (NON-BEARING, MAX HEIGHT - 70 FT):
1. **STEEL TRACK** - NOT SHOWN - FLOOR, SIDEWALL OR TOP WALL TRACK. NOM 2 IN. WIDE CHANNEL SHAPED WITH NOM 1 IN. LONG LEGS, FORMED FROM NO. 25 MSG GALV STEEL, SECURED WITH SUITABLE FASTENERS SPACED 24 IN. OC
2. **STEEL STUDS** - "H" SHAPED STUDS FORMED 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 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
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.
7. **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, PLACED TO COMPLETELY FILL THE WOOD STUD CAVITIES.

*BEARING THE UL CLASSIFICATION MARK
NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL.

FW 23 **3-HR FIRE WALL - WOOD FRAMING** — ANSI/UL 263 DESIGN NO W454 — SCALE: 3" = 1'-0"

2-HR FIRE WALL
PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024
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
NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



DESIGN NO. U347
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE:
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.
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-8, 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.

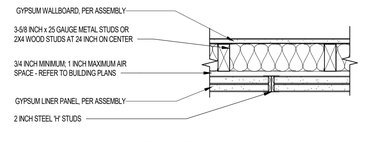
6B. **BATTS AND BLANKETS*** - AS AN ALTERNATE TO ITEMS 6 AND 6A, GLASS FIBER OR MINERAL WOOL INSULATION, MIN. 3-1/2 IN. THICK, PLACED TO COMPLETELY FILL THE WOOD OR STEEL STUD CAVITIES. WHEN BATTS AND BLANKETS ARE USED IN PLACE OF ITEMS 6 AND 6A, THE MAX HEIGHT IS 54 FT AND THE ALUMINUM CLIPS (ITEM 7) 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.

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.
8. **STC RATING** - THE STC RATING OF THE WALL ASSEMBLY IS 61 WHEN IT IS CONSTRUCTED AS DESCRIBED BY 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.

FW 21 **2-HR FIRE WALL - WOOD FRAMING** — ANSI/UL 263 DESIGN NO U347 — SCALE: 3" = 1'-0"

2-HR FIRE WALL - INTERIOR METAL WALL
PROPRIETARY ASSEMBLY - CERTAINTEED - June 2021
FIRE TEST: GA ASW 0998



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 2 INCH FLOOR AND CEILING RUNNERS WITH 2 INCH STEEL H STUDS BETWEEN ADJACENT PAIRS OF GYPSUM PANELS. A 3/4 INCH MINIMUM AIR SPACE MUST BE MAINTAINED BETWEEN STEEL COMPONENTS AND ADJACENT FRAMING (INDICATED BY DASHED LINES IN SKETCH). AS AN ALTERNATE, THE STEEL COMPONENTS MAY BE COVERED WITH 6 INCH WIDE BATTENS OR FULL SHEETS OF 1/2 INCH TYPE 'X' GYPSUM WALLBOARD.
HEIGHT LIMITATION 66 FEET **(NLB)**
REFER TO MANUFACTURER FOR THE THERMAL PROTECTION OF THE FRAMING

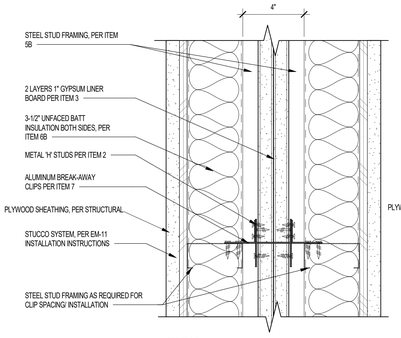
SOUND DESIGN - SOUND TESTED WITH 2X4 STUD WALL FACED WITH 1/2 INCH GYPSUM WALLBOARD EACH SIDE OF SYSTEM AND 3-1/2 INCH GLASS FIBER INSULATION IN STUD SPACE

PROPRIETARY GYPSUM BOARD
NATIONAL GYPSUM COMPANY - 1" GOLD BOND BRAND FIRE-SHIELD SHAFTLINER

THICKNESS - 3-1/2 INCH (FIRE); 11-3/4 INCH (SOUND)
APPROXIMATE WEIGHT - 9 PSF (FIRE & SOUND)
FIRE TEST - UL R3501, 92WZ28896, 6-7-93, UL DESIGN U347; WHI 694-0200.6, 10-12 & 24-85
SOUND TEST - RAL TL05-199, 11-17-05

2-HR FIRE WALL - EXTERIOR METAL WALL
PROPRIETARY ASSEMBLY - UL SOLUTIONS - January 29, 2024
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
NOTE: ALL INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN SPECIFICATIONS



DESIGN NO. U347
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.
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-8, 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 2.5Y 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.

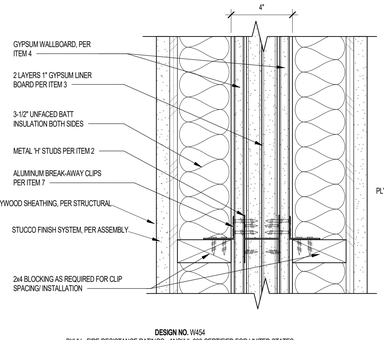
7. **ALUMINUM CLIPS** - ALUMINUM ANGLE, 0.049 IN. THICK, 2 IN. WIDE WITH 2 IN. AND 2-1/2 IN. LEGS. CLIPS SECURED WITH TYPE S SCREWS 3/8 IN. LONG TO "H" STUDS AND WITH 1-1/4 IN. LONG SCREWS TO WOOD FRAMING OR STEEL FRAMING THROUGH HOLES PROVIDED IN CLIP.

NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL.

FW 24 **3-HR FIRE WALL AT PATIOS/BALCONIES - WOOD FRAMING** — ANSI/UL 263 DESIGN NO W454 — SCALE: 3" = 1'-0"

3-HR FIRE WALL - EXTERIOR
PROPRIETARY ASSEMBLY - UL SOLUTIONS - October 07, 2019
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.

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



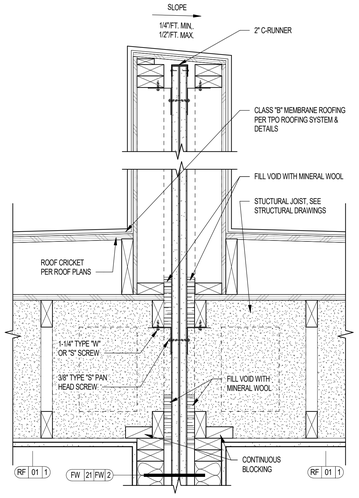
DESIGN NO. W454
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

NOTE:
SOUND RATING WITH 3-1/2" (88.9MM) GLASS FIBER INSULATION IN STUDY CAVITY ON EACH SIDE

SEPARATION WALL: (NON-BEARING, MAX HEIGHT - 70 FT):
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 SUITABLE FASTENERS SPACED 24 IN. OC
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 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
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.
7. **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, PLACED TO COMPLETELY FILL THE WOOD STUD CAVITIES.

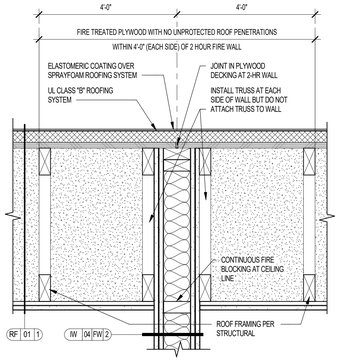
*BEARING THE UL CLASSIFICATION MARK
NOTE: INSTALL SEALANT OR OWNER APPROVED EQUAL BETWEEN BASE OF GYPSUM WALLBOARD AND CONCRETE SLAB AT BOTH SIDES OF WALL.

FW 26 **2-HR



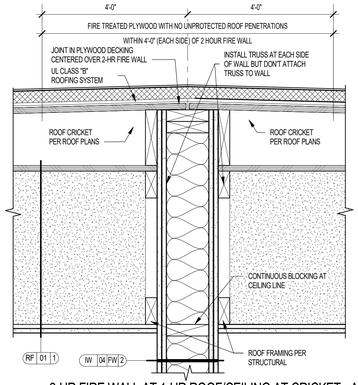
21 2-HR FIRE WALL EXTENSION THROUGH 1 HR ROOF

SCALE: 1 1/2" = 1'-0"



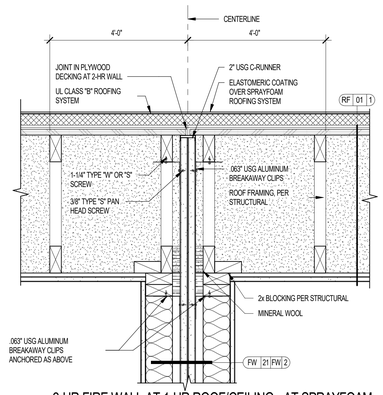
17 2-HR FIRE WALL AT 1-HR ROOF/CEILING - AT SPRAYFOAM ROOFING SYSTEM

SCALE: 1 1/2" = 1'-0"



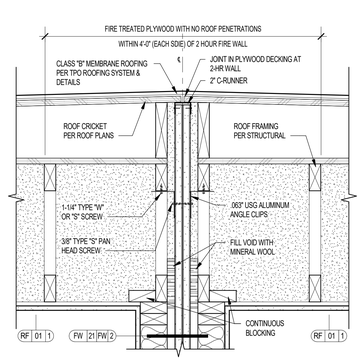
13 2-HR FIRE WALL AT 1-HR ROOF/CEILING AT CRICKET - AT SPRAYFOAM ROOFING SYSTEM

SCALE: 1 1/2" = 1'-0"



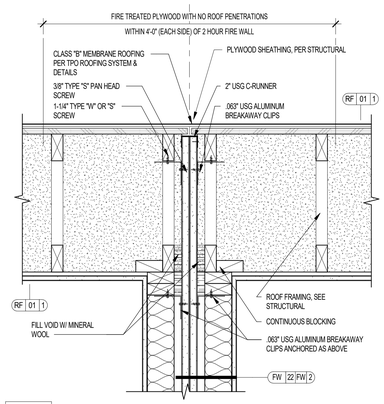
09 2-HR FIRE WALL AT 1-HR ROOF/CEILING - AT SPRAYFOAM ROOFING SYSTEM

SCALE: 1 1/2" = 1'-0"



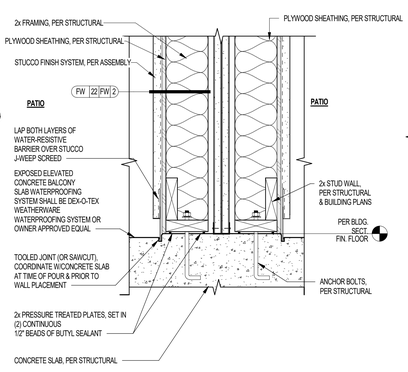
05 2-HR FIRE WALL AT 1-HR ROOF/CEILING AT CRICKET

SCALE: 1 1/2" = 1'-0"



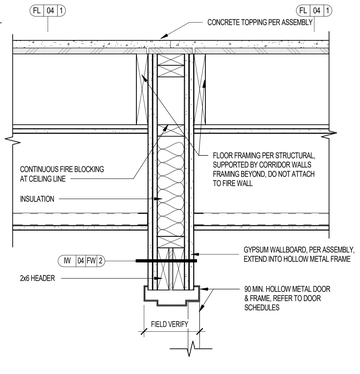
01 2-HR FIRE WALL AT 1-HR ROOF/CEILING

SCALE: 1 1/2" = 1'-0"



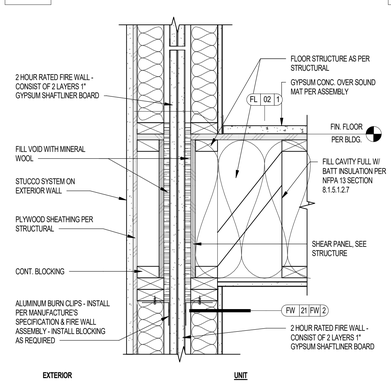
18 2-HR FIRE WALL AT 1-HR ROOF/CEILING AT CRICKET - AT SPRAYFOAM ROOFING SYSTEM

SCALE: 1 1/2" = 1'-0"



14 2-HR FIRE WALL AT 1-HR ROOF/CEILING

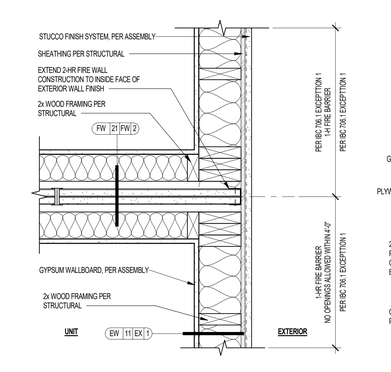
SCALE: 1 1/2" = 1'-0"



NOTE:
NO DRAFTSOPING REQUIRED WHEN EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM PER IBC SECTION 718.4

10 2-HR FIRE WALL AT 1-HR ROOF/CEILING AT CRICKET

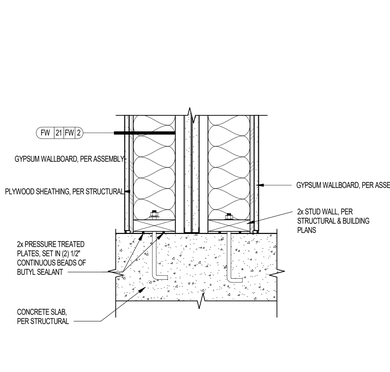
SCALE: 1 1/2" = 1'-0"



NOTES:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/REQUIREMENTS

06 2-HR FIRE WALL AT 1-HR FLOOR / CEILING PERPENDICULAR TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"

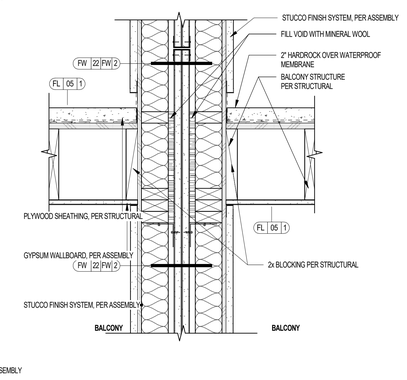


02 2-HR FIRE WALL AT 1-HR FLOOR / CEILING PARALLEL TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"

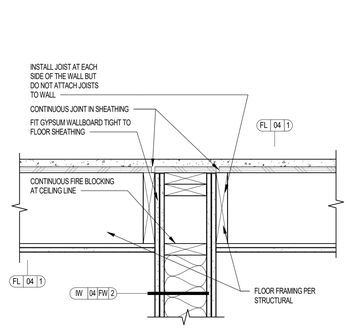
23 2 HR FIRE WALL EXTENSION THROUGH 1 HR ROOF

SCALE: 1 1/2" = 1'-0"



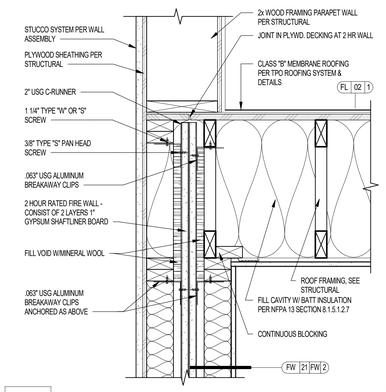
19 2-HR FIRE WALL AT BALCONY

SCALE: 1 1/2" = 1'-0"



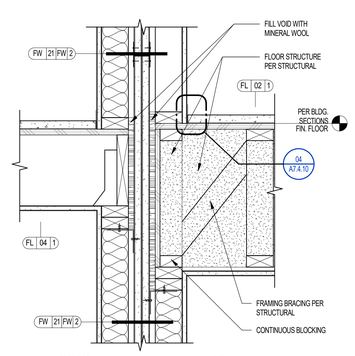
15 2-HR FIRE WALL AT 1-HR CORRIDOR FLOOR / CEILING

SCALE: 1 1/2" = 1'-0"



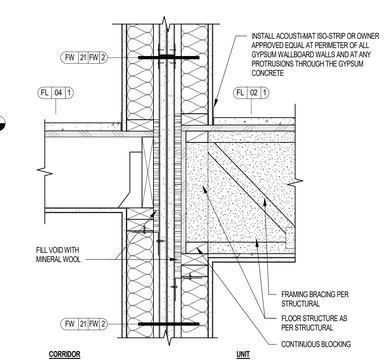
11 2-HR FIRE WALL EXTERIOR AT 1-HR ROOF/CEILING

SCALE: 1 1/2" = 1'-0"



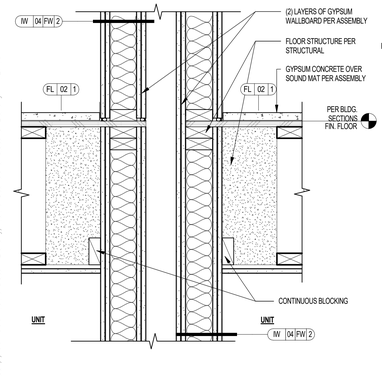
07 2-HR FIRE WALL AT FLOOR / CEILING AT CORRIDOR PERPENDICULAR FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"



03 2-HR FIRE WALL AT FLOOR / CEILING AT CORRIDOR PARALLEL FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"



24 2-HR FIRE WALL AT 1-HR FLOOR / CEILING PARALLEL TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"

20 2-HR FIRE WALL - EXTERIOR

SCALE: 1 1/2" = 1'-0"

16 HOLLOW METAL DOOR HEAD AT FIRE WALL

SCALE: 1 1/2" = 1'-0"

12 2-HR FIRE WALL EXTERIOR AT 1-HR FLOOR / CEILING PARALLEL TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"

08 2-HR FIRE WALL TERMINATION AT EXTERIOR WALL - PLAN VIEW

SCALE: 1 1/2" = 1'-0"

04 2-HR FIRE WALL AT SLAB - INTERIOR

SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

Notice of alternate billing (or payment) cycle

The 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:

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

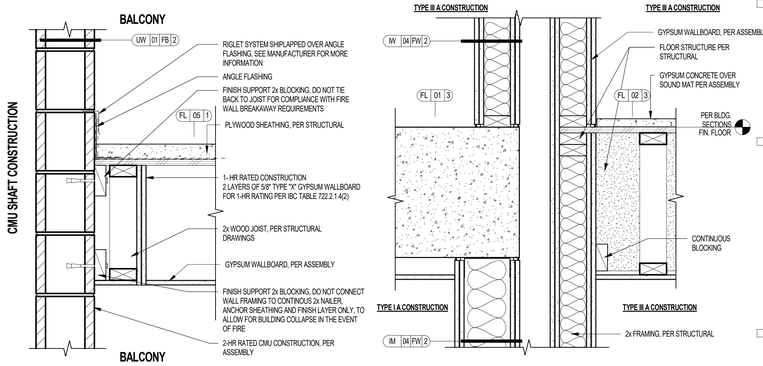
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.41

FIRE ASSEMBLIES - 2-HR FIRE WALLS DETAILS

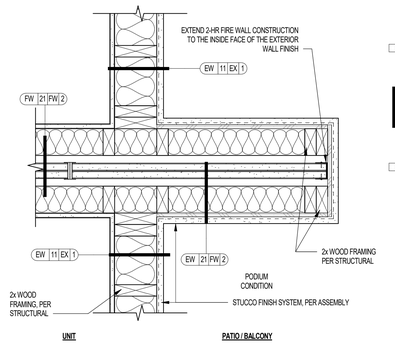


05 2-HR FIRE WALL EXTERIOR TERMINATION AT CMU AND BALCONY CONDITION

SCALE: 1 1/2" = 1'-0"

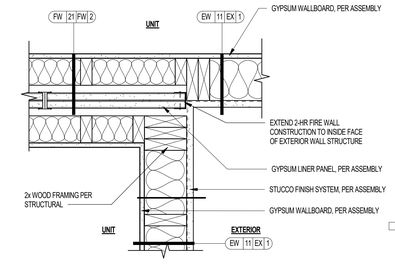
01 2-HR FIRE WALL AT 1-HR FLOOR / CEILING PARALLEL TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"



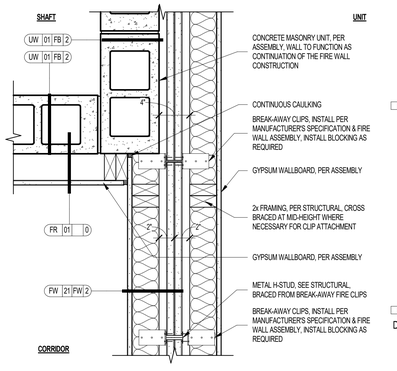
02 2-HR FIRE WALL AT BALCONY EXTERIOR WALL - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



03 2-HR FIRE WALL TERMINATION AT PATIO / BALCONY - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



04 2-HR FIRE WALL TERMINATION AT CMU SHAFT - PLAN VIEW

SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

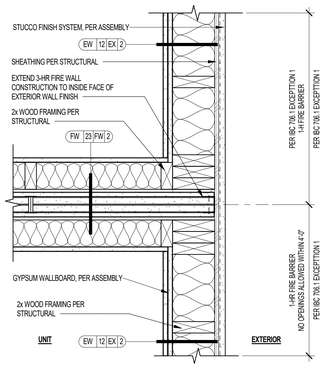
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

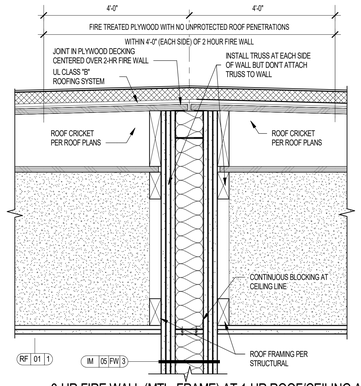
A7.1.42

FIRE ASSEMBLIES - 2-HR FIRE WALLS DETAILS



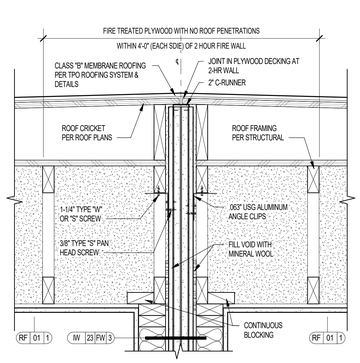
21 3-HR FIRE WALL TERMINATION AT 2-HR EXTERIOR WALL - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



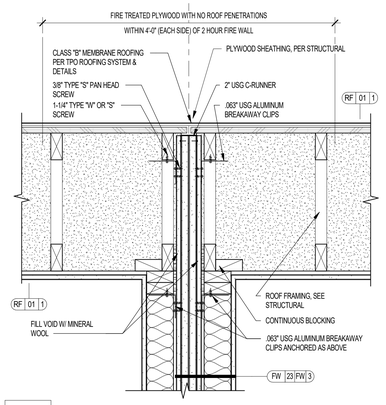
17 3-HR FIRE WALL (MTL. FRAME) AT 1-HR ROOF/CEILING AT CRICKET - AT SPRAYFOAM ROOFING SYSTEM

SCALE: 1 1/2" = 1'-0"



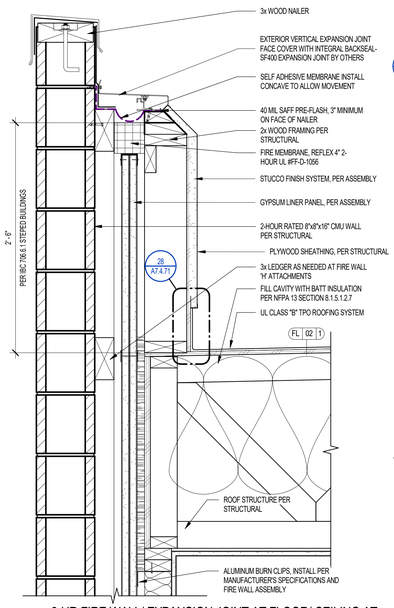
13 3-HR FIRE WALL AT 1-HR ROOF/CEILING AT CRICKET

SCALE: 1 1/2" = 1'-0"



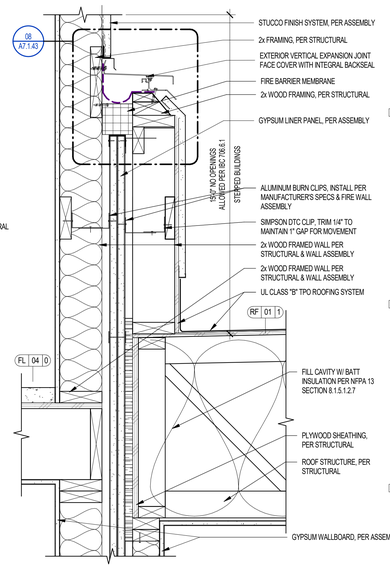
09 3-HR FIRE WALL AT 1-HR ROOF/CEILING

SCALE: 1 1/2" = 1'-0"



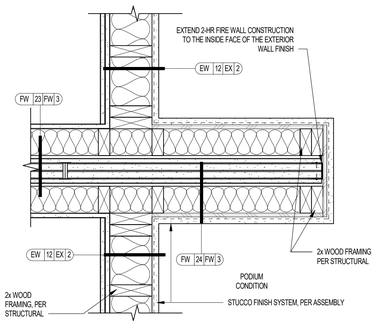
05 2-HR FIRE WALL/ EXPANSION JOINT AT FLOOR/ CEILING AT CMU WALL

SCALE: 1 1/2" = 1'-0"



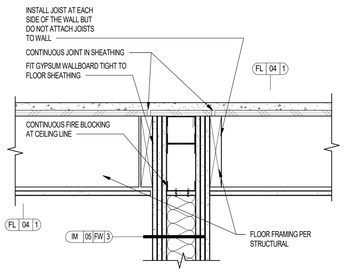
01 2-HR FIRE WALL/ EXPANSION JOINT AT FLOOR/ CEILING AT CMU WALL

SCALE: 1 1/2" = 1'-0"



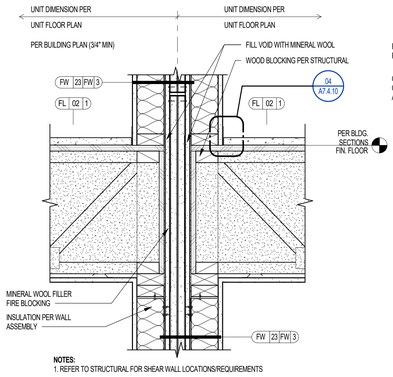
22 3-HR FIRE WALL AT BALCONY EXTERIOR WALL - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



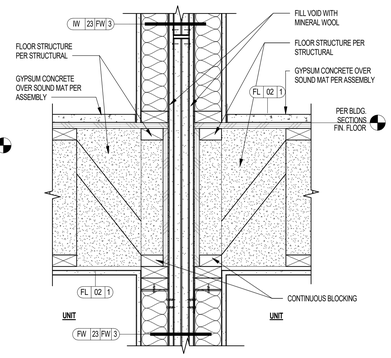
18 3-HR FIRE WALL AT 1-HR CORRIDOR FLOOR / CEILING

SCALE: 1 1/2" = 1'-0"



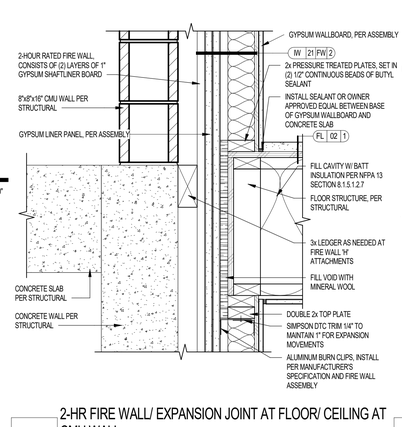
14 3-HR FIRE WALL AT 1-HR FLOOR / CEILING PERPENDICULAR TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"



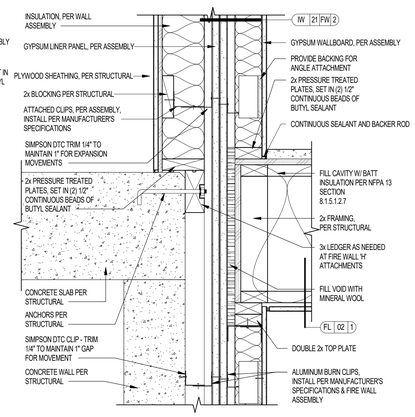
10 3-HR FIRE WALL AT 1-HR FLOOR / CEILING PARALLEL TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"



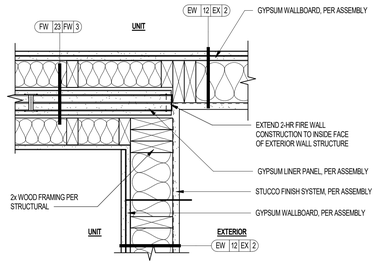
06 2-HR FIRE WALL/ EXPANSION JOINT AT FLOOR/ CEILING AT CMU WALL

SCALE: 1 1/2" = 1'-0"



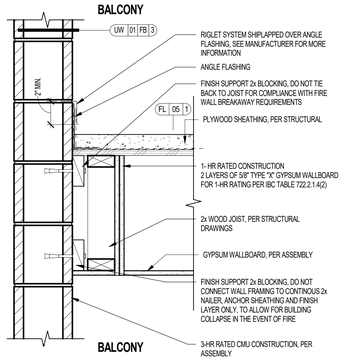
02 2-HR FIRE WALL/ EXPANSION JOINT AT FLOOR/ CEILING

SCALE: 1 1/2" = 1'-0"



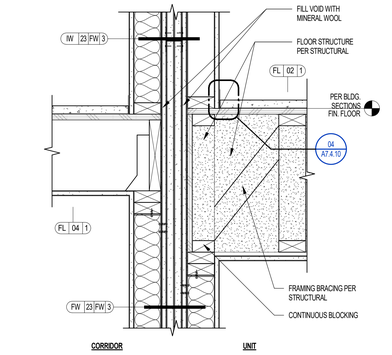
23 3-HR FIRE WALL TERMINATION AT PATIO / BALCONY - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



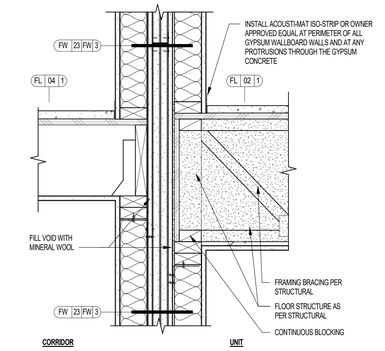
19 3-HR FIRE WALL EXTERIOR TERMINATION AT CMU AND BALCONY CONDITION

SCALE: 1 1/2" = 1'-0"



15 3-HR FIRE WALL AT FLOOR / CEILING AT CORRIDOR PERPENDICULAR FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"

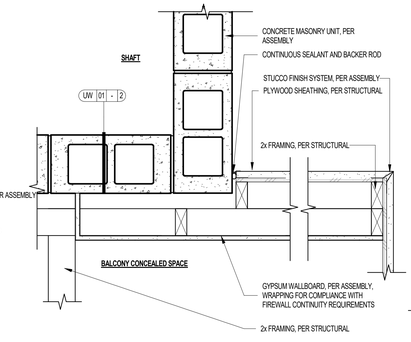


11 3-HR FIRE WALL AT FLOOR / CEILING AT CORRIDOR PARALLEL FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"

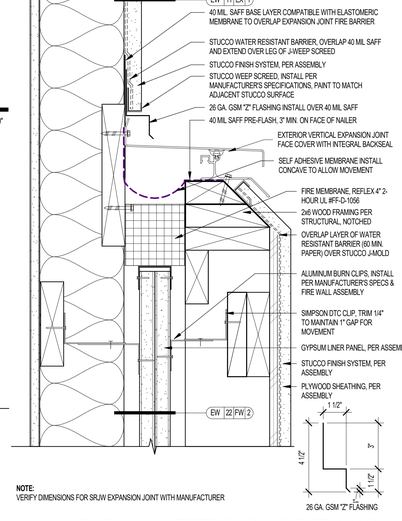
16 3-HR FIRE WALL AT SLAB - INTERIOR

SCALE: 1 1/2" = 1'-0"



12 2-HR FIRE WALL EXTERIOR TERMINATION AT CMU AND BALCONY CONDITION - CONCEALED SPACE

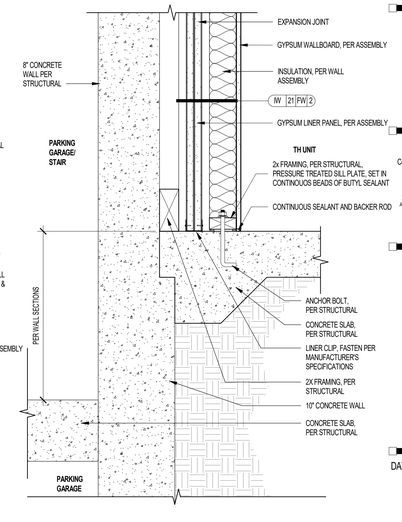
SCALE: 1 1/2" = 1'-0"



NOTE:
VERIFY DIMENSIONS FOR SRUW EXPANSION JOINT WITH MANUFACTURER

08 2 HR FIREWALL AT STEPPED BUILDING PARAPET (WOOD FRAMED)

SCALE: 3" = 1'-0"



04 2-HR FIRE WALL/EXPANSION JOINT AT STEPPED SLAB

SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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:

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

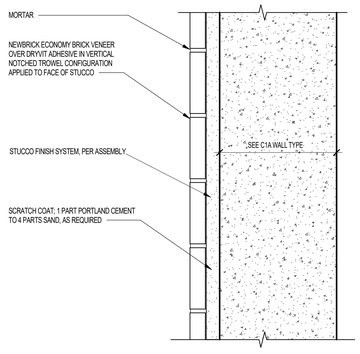
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.43

FIRE ASSEMBLIES - 2-HR FIRE WALL/EXP. JOINT - 3-HR FIRE WALL

CONCRETE WALL WITH FACINGS OR ACCESSORIES - BRICK VENEER
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

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

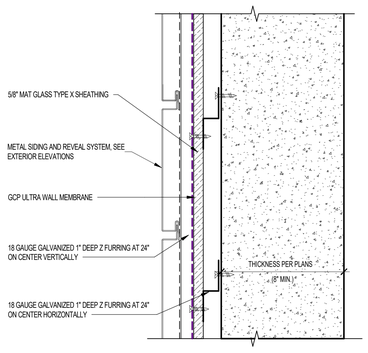
NOTES:

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.

CONCRETE WALL WITH FACINGS OR ACCESSORIES - METAL SIDING
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

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
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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

NOTES:

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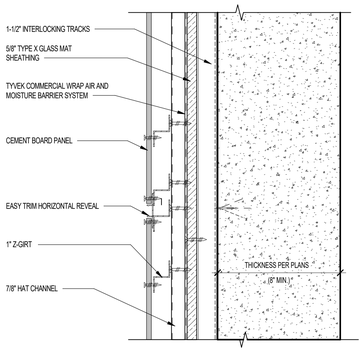
i. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURE REINFORCEMENT AS REQUIRED BY CHAPTER 19.

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

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

NOTES:

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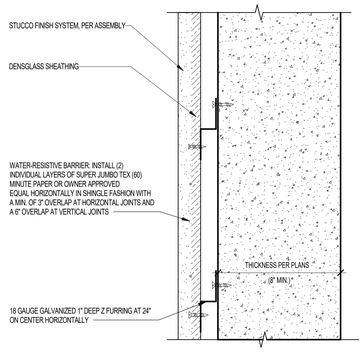
i. CONCRETE WALLS SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL TEMPERATURE REINFORCEMENT AS REQUIRED BY CHAPTER 19.

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

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
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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

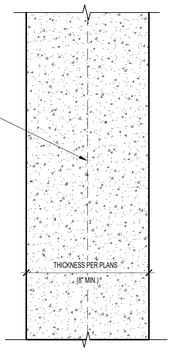
NOTES:

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.

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



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)			
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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

NOTES:

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.

CW 56 BRICK VENEER AT RATED CONCRETE WALL — 2018 IBC TABLE 721.1(2) 4-1.1 — SCALE: 3" = 1'-0"

CW 51 METAL SIDING AT RATED CONCRETE WALL — 2018 IBC TABLE 721.1(2) 4-1.1 — SCALE: 3" = 1'-0"

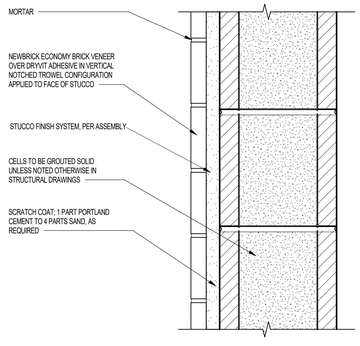
CW 41 CEMENT BOARD PANEL SYSTEM AT CONC. SHEAR WALL (PLAN VIEW) — 2018 IBC TABLE 721.1(2) 4-1.1 — SCALE: 3" = 1'-0"

CW 11 STUCCO AT RATED CONCRETE WALL — 2018 IBC TABLE 721.1(2) 4-1.1 — SCALE: 3" = 1'-0"

CW 01 SOLID CONCRETE WALL — 2018 IBC TABLE 721.1(2) 4-1.1 — SCALE: 3" = 1'-0"

CMU WALL WITH FACINGS OR ACCESSORIES - BRICK VENEER
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 721.1(2)NOx. 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



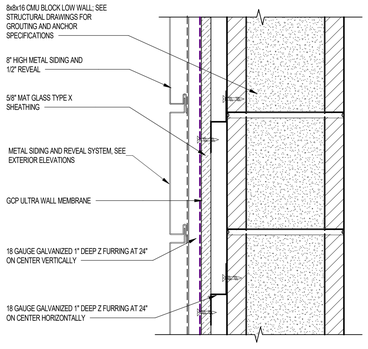
MATERIAL	ITEM #	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE(b)		
			3 HOURS	2 HOURS	1 HOUR
CONCRETE MASONRY UNITS	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1
	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6
	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7
	3-1.4 (f, g)	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 EQUIVALENT THICKNESS DEFINED IN SECTION 722.3.1 FOR CONCRETE MASONRY AND SECTION 722.4.1.1 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 SPECIFIED.
(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.

2018 IBC SECTIONS:
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.

CMU WALL WITH FACINGS OR ACCESSORIES - METAL SIDING
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 721.1(2)NOx. 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



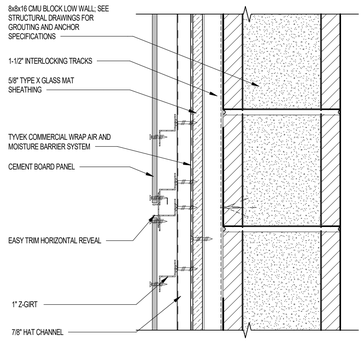
MATERIAL	ITEM #	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE(b)		
			3 HOURS	2 HOURS	1 HOUR
CONCRETE MASONRY UNITS	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1
	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6
	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7
	3-1.4 (f, g)	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 EQUIVALENT THICKNESS DEFINED IN SECTION 722.3.1 FOR CONCRETE MASONRY AND SECTION 722.4.1.1 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 SPECIFIED.
(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.

2018 IBC SECTIONS:
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.

CMU WALL WITH FACINGS OR ACCESSORIES - CEMENT BOARD SIDING
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 721.1(2)NOx. 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



MATERIAL	ITEM #	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE(b)		
			3 HOURS	2 HOURS	1 HOUR
CONCRETE MASONRY UNITS	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1
	3-1.2 (f, g)	EXPANDED CLAY, SHALE OR SLATE	4.4	3.6	2.6
	3-1.3 (f)	LIMESTONE, CINDERS OR AIR-COOLED SLAG	5.0	4.0	2.7
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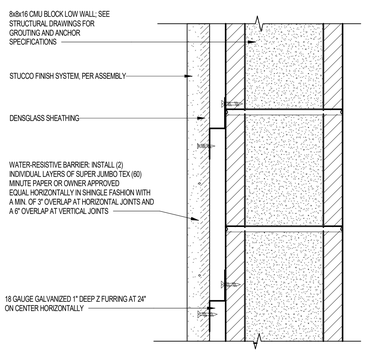
CMU WALL WITH FACINGS OR ACCESSORIES - STUCCO FINISH
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 721.1(2)NOx. 3-1.1 - 3-1.4
NO SOUND RATING REQUIRED AT EXTERIOR WALLS

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



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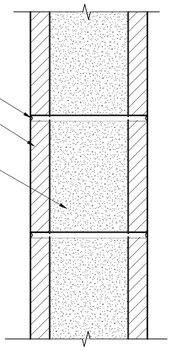
CMU WALL
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 721.1(2)NOx. 3-1.1 - 3-1.4
NO SOUND RATING REQUIRED AT EXTERIOR WALLS

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



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CONCRETE MASONRY UNITS	3-1.1 (f, g)	EXPANDED SLAG OR PUMICE	4.0	3.2	2.1
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UW 56 BRICK VENEER AT EXTERIOR MASONRY WALL — 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4 — SCALE: 3" = 1'-0"

UW 51 METAL SIDING OVER EXTERIOR MASONRY WALL — 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4 — SCALE: 3" = 1'-0"

UW 41 METAL SIDING OVER EXTERIOR MASONRY WALL — 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4 — SCALE: 3" = 1'-0"

UW 11 STUCCO OVER EXTERIOR MASONRY WALL — 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4 — SCALE: 3" = 1'-0"

UW 01 CMU WALL — 2018 IBC TABLE 721.1(2) 3-1.1 - 3-1.4 — SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

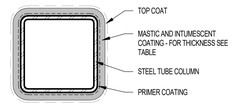
The Office of Rich Barber Architecture, LLC

RATED COLUMN
May 12, 2022
FIRE TEST: UL DESIGN Y634
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

DESIGN NO.Y634
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 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).

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



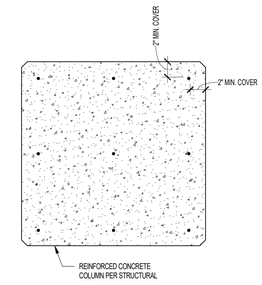
INTUMESCENT COATING THICKNESS					
MEMBER TYPE	**MEMBER DESIGNATION**	**FIRE RATING**	**SECTION FACTOR**	**REQUIRED (DRY FILM THICKNESS) DFT (MILS)**	**REQUIRED (WET FILM THICKNESS) WFT**
SQUARE HOLLOW SECTIONS	4x4x5/16	1-HR	0.29	112	160
SQUARE HOLLOW SECTIONS	4x4x1/4	1-HR	0.23	144	206
SQUARE HOLLOW 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



EXCERPT FROM TABLE 722.2.4 MINIMUM DIMENSION OF CONCRE COLUMNS (INCHES)

TYPE OF CONCRETE	FIRE RESISTANCE RATING (HOURS)	
	2ª	3ª
SILICEOUS	10	12
CARBONATE	10	11
SAND - LIGHTWEIGHT	9	10 1/2

NOTE: FOR SI: 1 INCH = 25 MM

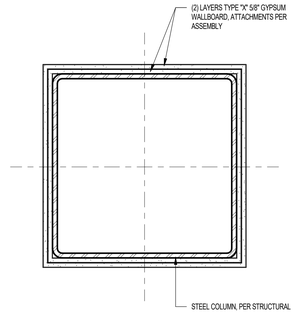
a. THE MINIMUM DIMENSION IS PERMITTED TO BE REDUCED TO 8 INCHES FOR RECTANGULAR COLUMNS WITH TWO PARALLEL SIDES NOT LESS THAN 36 INCHES IN LENGTH.

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.

CC 01 CONCRETE COLUMN FIRE RATING & CONCRETE COVER FOR 3HR RATED COLUMN
2018 IBC TABLE 722.2.4
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-f).
71NK2639;
12-23-75;
UL NC505, 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.

CC 02 1-HR RATED STEEL COLUMN
GA CM 1450
SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

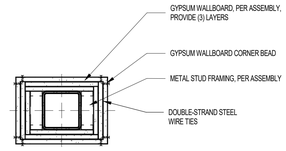
Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

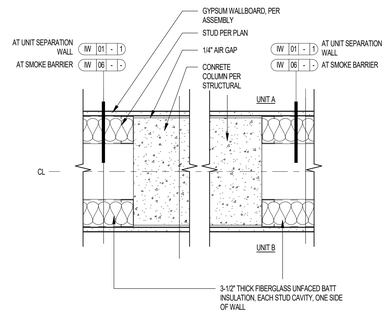
A7.1.51
FIRE ASSEMBLIES - CONCRETE & STEEL COLUMNS



BASED ON IBC TABLE 721.1(1) ITEM 1.7.2:
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 0.040" (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.

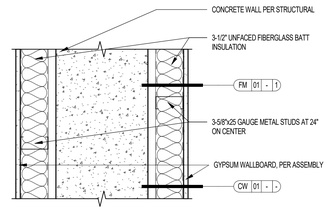
01 3 HR FIRE RATED PROTECTION AT COLUMN WITH GYPSUM BOARD

SCALE: 1 1/2" = 1'-0"



02 1-HR WALL AT CONCRETE COLUMN - METAL FRAMING

SCALE: 1 1/2" = 1'-0"

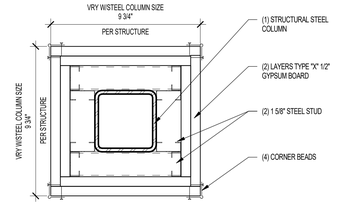


NOTE:
ALL ASSEMBLIES FORMING SMOKE BARRIERS OR SMOKE PARTITIONS SHALL BE SEALED TO PREVENT THE PASSAGE OF SMOKE AS REQUIRED BY CODE

SW 02 1-HOUR SMOKE BARRIER AT SHEAR WALL

03 1-HR UNIT SEPARATION WALL AT CONC. SHEAR WALL

SCALE: 1 1/2" = 1'-0"



NOTE:
CONSTRUCT PER COLUMN PROTECTION DETAIL

04 1HR FIRE RATED STEEL COLUMN GYP. PROTECTION SQUARE PROFILE

SCALE: 3" = 1'-0"

Project Name 1
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ORB

WorldHQ@ORBArch.com

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REVISIONS/ SUBMITTALS

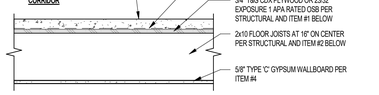
DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.1.52

FIRE RATED COLUMN PROTECTION

1-HR FLOOR/CEILING ASSEMBLY
PROPRIETARY ASSEMBLY - July 11, 2023
FIRE TEST: UL Design No. L512
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



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 MAT(S).
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 196 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 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). 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 INSTRUCTIONS.
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 8 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 S, 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.

FL 04 1-HR FLOOR/CEILING AT INTERIOR CORRIDORS

UL DESIGN No. L512 SCALE: 1" = 1'-0"

1-HR FLOOR/CEILING ASSEMBLY
PROPRIETARY ASSEMBLY - July 11, 2023
FIRE TEST: UL DESIGN No. L512
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

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

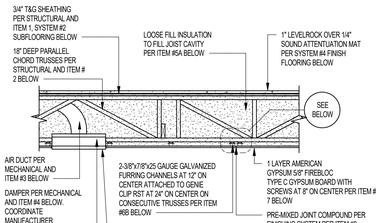
1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
SYSTEM NO. 12
SUBFLOORING - 15/32 OR 19/32 IN. THICK WOOD STRUCTURAL PANELS, MIN. GRADE "C-D" OR "SHEATHING". FACE GRAIN OF PLYWOOD OR STRENGTH AXIS OF PANELS TO BE PERPENDICULAR TO JOISTS WITH JOINTS STAGGERED.
VAPOR 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 MAT(S).
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 196 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 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). 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 INSTRUCTIONS.
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 8 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 S, 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.

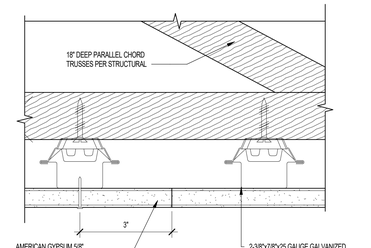
FL 05 1-HR FLOOR/CEILING AT BALCONIES

UL DESIGN No. L512 SCALE: 1" = 1'-0"

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:
SYSTEM NO. 4
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 NAILS
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, 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. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0.036 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, 0756A, 0756, 0756D , 0757, 0757D, 0757FP, 0757DFP, 0758, 0759, 0760, 0761, 0762, 0763, CR05, CR05D, CR06, CR06D, CR06FP, CR06DFP
SAFE AIR DOWCO - TYPES 0455, 0455A, 0456, 0456D, 0457, 0457D, 0457-DB, 0457-CB, 0463-FB, 0457-EB, 0463-GB, 0463
5A. **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 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 - 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 CHANNELS/GYPSUM PANEL CEILING MEMBRANE, THE RESILIENT CHANNELS ARE SPACED A MAX OF 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. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF PANEL. INSULATION, ITEM 5B IS APPLIED OVER THE RESILIENT CHANNELS/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 12 IN. FROM SIDE JOINTS AND 3 IN. FROM 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.

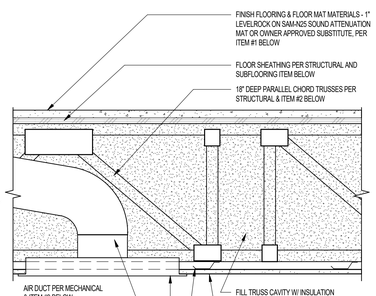
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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 8.15.1.2.7.1**).

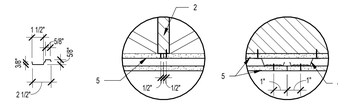
FL 03 1-HR FLOOR/CEILING ASSEMBLY - W/RESILIENT CLIPS

UL DESIGN No. L574 SCALE: 1/2" = 1'-0"

1-HR FLOOR/CEILING ASSEMBLY FILLED WITH INSULATION - ENHANCED STC
PROPRIETARY ASSEMBLY - December 6, 2023
FIRE TEST: UL DESIGN No. L563
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



FINISH	STC	IIC	STC TEST	IIC TEST
NONE	63		USG090301A	
SHEET VINYL	61		USG090401A	
LVT	62	53	USG090302A	USG090302A
CERAMIC TILE	64	64	USG090501A	USG090501A
CARPET & PAD	62	80	USG090402A	USG090402A



1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
SYSTEM NO. 4
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 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 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
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 DAMPERS* IS USED. TRUSS MEMBERS SECURED TOGETHER WITH MIN 0.036 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.
ARE 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-W/T-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 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.
UNITED STATES GYPSUM CO - Types C, IP-X2, IPC-AR
6. **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 CHANNELS/GYPSUM PANEL CEILING MEMBRANE, THE RESILIENT CHANNELS ARE SPACED A MAX OF 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 CHANNELS/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
CGC INC — TYPE ULIX
UNITED STATES GYPSUM CO — Type

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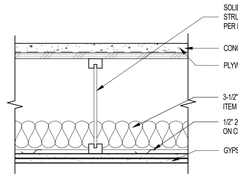
1-HR FLOOR/CEILING ASSEMBLY TJI SYSTEM
PROPRIETARY ASSEMBLY - September, 2023
FIRE TEST: ICC-ES REPORT NO. ESR-1153
REFER TO FULL ICC-ES EVALUATION REPORT FOR FULL ASSEMBLY



NOTE:
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

1. THE FLOORING MUST CONSIST OF A SINGLE LAYER OF 48/24 SPAN-RATED, TONGUE-AND-GROOVE, 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.

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 FLANGES.

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 COMPOUND.

TESTED WITH 3/4 INCH THICK FLOOR TOPPING OF GYPSUM CONCRETE

TABLE 6 - SOUND RATINGS

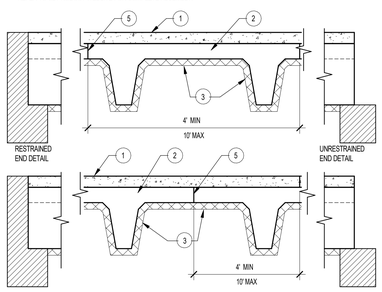
	STC = 58 MINIMUM	
ASSEMBLY B OPTION 2	- CONCRETE, 40 OUNCE PER SQUARE YARD PAD & 56 OUNCE SQUARE YARD CARPET.	IIC = 54
	- FLOOR CONVERING MUST CONSIST OF TARKETT ACOUSTILFOR SHEET VINYL. - CEILING MUST CONSIST OF (2) LAYERS OF 5/8 INCH TYPE 'X' GYPSUM BOARD. - BOTTOM OF THE FLOOR CAVITY MUST CONTAIN 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

*STC 58 AND IIC 54 (ONLY FOR THE AREAS PLANNED WITH LVT OR TILE) ESTIMATED BASED ON ATI I0106.18 & H1768.14

FL 12 1-HR RATED FLOOR/CEILING ASSEMBLY TJI SYSTEM

ICC-ES REPORT NO. ESR-1153 SCALE: 1 1/2" = 1'-0"

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, 1 IN. THICKNESS OF SPRAY-APPLIED FIRE RESISTIVE MATERIALS REQUIRED ON FLANGES FOR RESTRAINED AND UNRESTRAINED ASSEMBLY RATINGS

MIN. TOTAL THICKNESS 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 19/14 PCF RESPECTIVELY. MIN AVG AND MIN IND DENSITY OF 22/19 PCF RESPECTIVELY FOR TYPES 2-106, 2-106/W, 2-106/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	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, 9GP, 9MD.
GCP APPLIED TECHNOLOGIES INC - TYPES MK-6HY, MK-6S, MONOKOTE ACOUSTIC 1, RG, 2-106, 2-106/G, 2-106/HY.

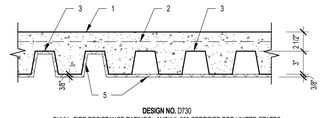
4. **MINIMUM BEARING** - 3 INCH
5. **WELD PLATES** - OPTIONAL.
6. **METAL LATH** - (NOT SHOWN) - REQUIRED WHEN TYPE 7HD IS APPLIED - METAL LATH SHALL BE 3/8 IN. EXPANDED DIAMOND MESH, WEIGHING 3.4 LB PER SQ YD. SECURED TO UNDERSIDE THROUGH STEEL WASHERS WITH AN OUTSIDE DIAM OF 1/2 IN. WITH FASTENERS 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.

FL 11 2-HR FLOOR/ CEILING ASSEMBLY PRECAST CONCRETE DOUBLE TEE

UL DESIGN No. J704 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.



DESIGN NO. D730
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. **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:

RESTRAINED ASSEMBLY	2 HOUR
UNRESTRAINED ASSEMBLY	1-1/2 HOUR

- MARLYN STEEL DECKS INC - TYPE 2.0 CF OR 3.0 CF.

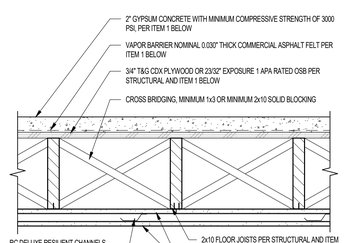
4. **JOINT COVER** (NOT SHOWN) - 2 INCH WIDE PRESSURE SENSITIVE ADHESIVE CLOTH TAPE.
5. **SPRAY-APPLIED FIRE RESISTIVE MATERIALS*** - APPLIED BY MIXING WITH WATER AND SPRAYING ONE COAT TO A FINAL THICKNESS AS SHOWN ABOVE, TO STEEL SURFACES WHICH MUST BE CLEAN AND FREE OF DIRT, LOOSE SCALE AND OIL. MIN AVG AND MIN IND DENSITY OF 19/14 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-6HY, MK-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 1-1/2 INCH DIAMETER STEELS WASHERS. ADJACENT PIECES OF LATH SHALL BE OVERLAPPED 1 INCH MINIMUM.

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

FL 09 2-HR FLOOR/CEILING ASSEMBLY CONCRETE OVER STEEL DECK

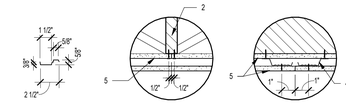
UL DESIGN No. D730 SCALE: 1 1/2" = 1'-0"

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.



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 FIRESTOPPED 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 BOARD.
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 RD 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 S, C, DAPC, GPFS1, TG-C.
. **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 0.120 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 BOARD.
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 APPLIED TO THE ENTIRE SURFACE OF GYPSUM BOARD.

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

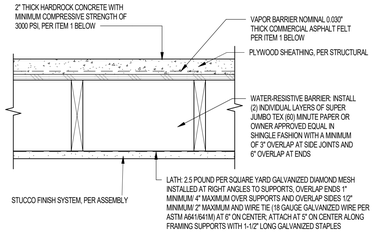


RESILIENT CHANNEL DETAIL | FIRST LAYER END JOINT DETAIL | SECOND LAYER END JOINT DETAIL

FL 10 2-HR FLOOR/CEILING ASSEMBLY - FILLED WITH INSULATION

UL DESIGN No. L505 SCALE: 1 1/2" = 1'-0"

3-HR HORIZONTAL ASSEMBLY
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 721.1(3) ITEM NO. 1-1.1



NOTE:
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.

FL 06 1-HR FLOOR/SOFFIT W/ 2x FRAMING

2018 IBC TABLE 721.1(3), ITEM 13-1.2 SCALE: 1 1/2" = 1'-0"

1-HR CONCRETE SLAB HORIZONTAL ASSEMBLY
GENERIC ASSEMBLY
FIRE TEST: IBC TABLE 722.2.3(2)

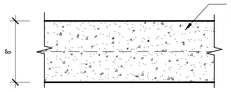


TABLE 722.2.3(2)

COVER THICKNESS FOR PRE-STRESSED CONCRETE FLOOR OR ROOF SLABS (INCHES)

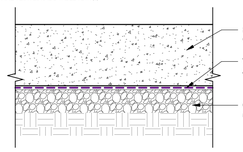
CONCRETE AGGREGATE TYPE	FIRE-RESISTANCE RATING (HOURS)
	UNRESTRAINED
	2
SILICEOUS	1 3/4
CARBONATE	1 5/8
SAND-LIGHTWEIGHT OR LIGHTWEIGHT	1 1/2

FOR SI: 1 INCH = 25.4MM.

FL 07 2-HR PRESTRESSED CONCRETE SLAB MIN. COVER

IBC 2018 TABLE 722.2.3(2) SCALE: 1 1/2" = 1'-0"

CONCRETE SLAB ON GRADE - AT CONDITIONED SPACES
GENERIC ASSEMBLY
FIRE TEST: 2018 IBC TABLE 721.1(3)



4-HOUR MAXIMUM FIRE RESISTANCE CONSTRUCTION PER TABLE 721.1(3) OF THE 2018 IBC

FLOOR OR ROOF CONSTRUCTION	THICKNESS OF FLOOR OR ROOF SLAB (INCHES)			
	4 HOURS	3 HOURS	2 HOURS	1 HOURS
1. SILICEOUS AGGREGATE CONCRETE	7.0	6.2	5.0	3.5

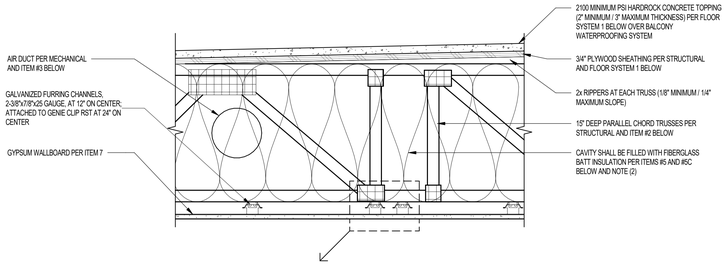
CONSTRUCTION:
1. SILICEOUS AGGREGATE CONCRETE SLAB ((CEILING NOT REQUIRED). MINIMUM COVER OVER NON- PRESTRESSED REINFORCEMENT SHALL BE NOT LESS THAN 3/4 INCH (b).

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 RESTRAINED AND UNRESTRAINED CONDITIONS.

FL 08 SLAB ON GRADE ASSEMBLY W/ VAPOR RETARDER

2018 IBC TABLE 721.1(3) ITEM1-1.1 SCALE: 1 1/2" = 1'-0"

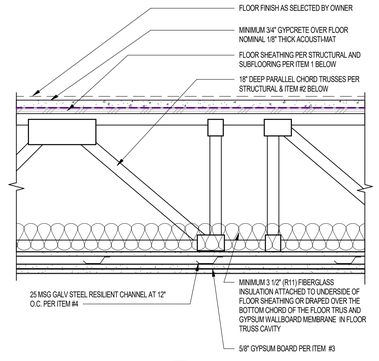
1-HOUR FLOOR/ CEILING OPEN TRUSS AT BALCONIES WITH RESILIENT CLIPS
GENERIC ASSEMBLY (MULTIPLE PROPRIETARY GYPSUM BOARD): October 03, 2023
FIRE TEST: UL DESIGN L546
SOUND RATING: NO STC REQUIRED
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

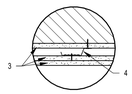


DESIGN NO. L546
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
SYSTEM NO. 7
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 TOGETHER 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 WIDTH.
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 AR PRODUCTS** — MODEL RD-SQ1
. **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, 6C) ARE SPACED 16 IN

2-HR FLOOR/CEILING ASSEMBLY WITH INSULATION - UNIT TO COMMONS
PROPRIETARY ASSEMBLY - OCTOBER 30, 2024
FIRE TEST: UL DESIGN No. L577
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.





SECOND LAYER END JOINT DETAIL

1. FLOORING SYSTEMS — THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
SYSTEM NO. 1
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. 8D 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 8D 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.
SYSTEM NO. 6
SUBFLOORING — NOM 23/32 IN. THICK WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR TO TRUSSES WITH END JOINTS STAGGERED. PLYWOOD PANELS SECURED TO TRUSSES WITH CONSTRUCTION ADHESIVE AND NO.8D 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 0.030 IN. THICK COMMERCIAL ASPHALT SATURATED FELT.
FINISH FLOORING — FLOOR TOPPING MIXTURE* — MIN 3/4 IN. THICKNESS OF FLOOR TOPPING MIXTURE HAVING A MIN COMPRESSIVE STRENGTH OF 1000 PSI. REFER TO MANUFACTURER'S INSTRUCTIONS ACCOMPANYING THE MATERIAL FOR SPECIFIC MIX DESIGN.

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 0.036 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. 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.

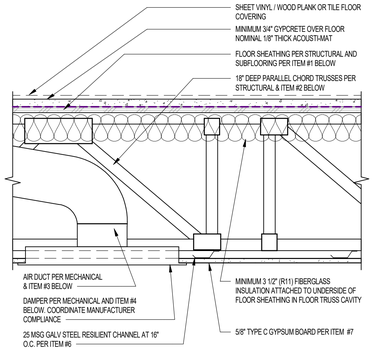
3. GYPSUM BOARD* — THREE LAYERS OF 5/8 IN. THICK BY 4 FT WIDE GYPSUM BOARD. TOP LAYER BOARDS INSTALLED WITH THE LONG DIMENSION PERPENDICULAR TO TRUSSES WITH END JOINTS LOCATED UNDER BOTTOM OF TRUSSES. END JOINTS IN ADJACENT ROWS SHALL BE STAGGERED ON ADJACENT TRUSS. TOP LAYER BOARDS SECURED TO BOTTOM CHORD OF TRUSSES WITH 1-5/8 IN. LONG TYPE S BUGLE HEAD SCREWS. SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN., AND 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. BOTTOM TWO LAYERS OF GYPSUM BOARD INSTALLED PERPENDICULAR TO FURRING CHANNELS WITH END JOINTS CENTERED ON THE FURRING CHANNELS. MIDDLE LAYER BOARDS SECURED TO EACH FURRING CHANNEL WITH 1 OR 1-1/4 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. FACE LAYER BOARDS SECURED TO EACH FURRING CHANNEL THROUGH THE MIDDLE LAYER WITH 1-5/8 OR 1-7/8 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS, SPACED A MAX OF 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. END JOINTS AND SIDE JOINTS OF THE FACE LAYER BOARDS SHALL BE STAGGERED A MIN OF 16 IN. FROM THE JOINTS IN THE MIDDLE LAYER. IF END JOINTS OF THE FACE LAYER BOARDS ARE NOT CENTERED ON THE FURRING CHANNELS, THE END OF BOARDS AT THE END JOINT SHALL BE ATTACHED TO THE MIDDLE LAYER BOARDS WITH 1-1/2 IN. LONG TYPE G STEEL SCREWS SPACED 8 IN. OC AND LOCATED 1-1/2 IN. FROM THE END JOINT. WHEN STEEL FRAMING MEMBERS (ITEM 4A) ARE USED - THREE LAYERS OF 5/8 IN. THICK BY 4 FT WIDE GYPSUM BOARD INSTALLED WITH LONG DIMENSION PERPENDICULAR TO FURRING CHANNELS ITEM 4A. TOP LAYER SECURED WITH 1 OR 1-1/4 IN. LONG TYPE S BUGLE HEAD SCREWS, SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN., AND 3/4 IN. FROM SIDE AND END JOINTS. MIDDLE LAYER BOARDS SECURED TO FURRING CHANNELS WITH 1-5/8 OR 1-7/8 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. FACE LAYER BOARDS SECURED TO EACH FURRING CHANNELS WITH 2-1/4 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. BUTTED END JOINTS SHALL BE STAGGERED MINIMUM 2 FT. WITHIN THE ASSEMBLY. ADDITIONAL FURRING CHANNELS CONSTRUCTED AS PER ITEM 4A SHALL BE USED TO SUPPORT EACH END OF EACH GYPSUM BOARD. THESE ADDITIONAL FURRING CHANNELS SHALL BE ATTACHED TO UNDERSIDE OF THE TRUSS WITH GENIE CLIPS AS DESCRIBED IN ITEM 4A. SCREW SPACING ALONG THE GYPSUM BOARD BUTT JOINT SHALL BE 8 IN. OC. BUTTED SIDE JOINTS SHALL BE OFFSET MIN 16 IN. WHEN STEEL FRAMING MEMBERS (ITEM 4B) ARE USED. THREE LAYERS OF 5/8 IN. THICK, 4 FT WIDE GYPSUM BOARD IS INSTALLED WITH LONG DIMENSIONS PERPENDICULAR TO FURRING CHANNELS (ITEM 4B). TOP LAYER SECURED TO FURRING CHANNELS WITH NOM 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 8 IN. OC IN THE FIELD OF THE BOARD. SCREWS LOCATED 1-1/2 TO 2 IN., AND 3/4 IN. FROM SIDE AND END JOINTS. RESPECTIVELY. MIDDLE LAYER BOARDS SECURED TO FURRING CHANNELS WITH 1-5/8 OR 1-7/8 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. FACE LAYER BOARDS SECURED TO EACH FURRING CHANNELS WITH 2-1/4 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS, SPACED A MAX OF 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. GYPSUM BOARD BUTTED END JOINTS SHALL BE STAGGERED MINIMUM 48 IN. AND CENTERED OVER MAIN FURRING CHANNELS. AT THE GYPSUM BOARD BUTT JOINTS, EACH END OF EACH GYPSUM BOARD SHALL BE SUPPORTED BY A SINGLE LENGTH OF FURRING CHANNEL EQUAL TO THE WIDTH OF THE GYPSUM BOARD PLUS 3 IN. ON EACH END. THE TWO SUPPORT FURRING CHANNELS SHALL BE SPACED APPROXIMATELY 3 IN. IN FROM JOINT. SCREW SPACING ALONG THE GYPSUM BOARD BUTT JOINT AND ALONG BOTH ADDITIONAL CHANNELS SHALL BE 8 IN. OC. ADDITIONAL SCREWS SHALL BE PLACED IN THE ADJACENT SECTION OF GYPSUM BOARD INTO THE AFOREMENTIONED 3 IN EXTENSION OF THE EXTRA BUTT JOINT CHANNELS AS WELL AS INTO THE MAIN CHANNEL THAT RUNS BETWEEN. BUTT JOINT FURRING CHANNELS SHALL BE ATTACHED WITH ONE RESILIMOUNT SOUND ISOLATION CLIP AT EACH END OF THE CHANNEL.
WHEN STEEL FRAMING MEMBERS (ITEM 4C) ARE USED. THREE LAYERS OF NOM 5/8 IN. THICK, 4 FT WIDE GYPSUM BOARD IS INSTALLED WITH LONG DIMENSIONS PERPENDICULAR TO FURRING CHANNELS (ITEM 4C). TOP LAYER SECURED TO FURRING CHANNELS WITH NOM 1 IN. LONG TYPE S BUGLE-HEAD STEEL SCREWS SPACED 8 IN. OC IN THE FIELD OF THE BOARD. SCREWS LOCATED 1-1/2 TO 2 IN., AND 3/4 IN. FROM SIDE AND END JOINTS. RESPECTIVELY. MIDDLE LAYER BOARDS SECURED TO FURRING CHANNELS WITH 1-5/8 OR 1-7/8 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS SPACED MAX 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. FACE LAYER BOARDS SECURED TO EACH FURRING CHANNELS WITH 2-1/4 IN. LONG TYPE S-12 BUGLE HEAD STEEL SCREWS, SPACED A MAX OF 8 IN. OC. SCREWS LOCATED 1-1/2 TO 2 IN. AND 5/8 TO 3/4 IN. FROM SIDE AND END JOINTS, RESPECTIVELY. GYPSUM BOARD BUTTED END JOINTS SHALL BE STAGGERED MINIMUM 48 IN. AND CENTERED OVER MAIN FURRING CHANNELS. AT THE GYPSUM BOARD BUTT JOINTS, AN ADDITIONAL SINGLE LENGTH OF FURRING CHANNEL SHALL BE INSTALLED AND BE SPACED APPROXIMATELY 3 IN. FROM THE BUTT JOINT (6 IN. FROM THE CONTINUOUS FURRING CHANNELS) TO SUPPORT THE FLOATING END OF THE GYPSUM BOARD. EACH OF THESE SHORTER SECTIONS OF FURRING CHANNEL SHALL EXTEND ONE TRUSS BEYOND THE WIDTH OF THE GYPSUM PANEL AND BE ATTACHED TO THE ADJACENT TRUSSES WITH ONE SONUSCLIP AT EVERY TRUSS INVOLVED WITH THE BUTT JOINT.

4. FURRING CHANNELS — RESILIENT CHANNELS, 1/2 IN. DEEP, OR INVERTED HAT TYPE FURRING CHANNELS, 7/8 IN. DEEP, FORMED FROM 0.019 IN. THICK GALV STEEL, SPACED 12 IN. OC PERPENDICULAR TO TRUSSES. CHANNELS SECURED TO EACH TRUSS WITH 1-7/8 IN. LONG TYPE S STEEL SCREWS.

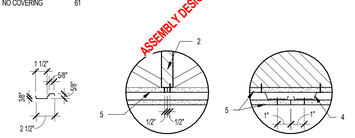
5. BATTS AND BLANKETS* — ANY GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. INSULATION SECURED AGAINST THE SUBFLOORING, HELD SUSPENDED IN THE CONCEALED SPACE OR DRAPED OVER THE RESILIENT CHANNELS (OR FURRING CHANNELS) AND GYPSUM PANEL MEMBRANE. THERE IS NO LIMIT IN THE OVERALL THICKNESS OF INSULATION.

6. FINISHING SYSTEM — (NOT SHOWN) — VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW-HEADS. NOM 2 IN. WIDE PAPER TAPE EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS. AS AN ALTERNATE, NOM 3/32 IN. THICK VENEER PLASTER MAY BE APPLIED TO THE ENTIRE SURFACE OF GYPSUM BOARD.

1-HR FLOOR/CEILING ASSEMBLY FILLED WITH INSULATION - SHEET VINYL / LVT FLOOR COVERING
PROPRIETARY ASSEMBLY - December 6, 2023
FIRE TEST: UL DESIGN No. L563
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



FINISH	STC	IIC	IIC TEST
SHEET VINYL	55	55	10052815\CRT-001O
LVT	55	55	10052815\CRT-001O
NO COVERING	61		



RESILIENT CHANNEL DETAIL | FIRST LAYER END JOINT DETAIL | SECOND LAYER END JOINT DETAIL

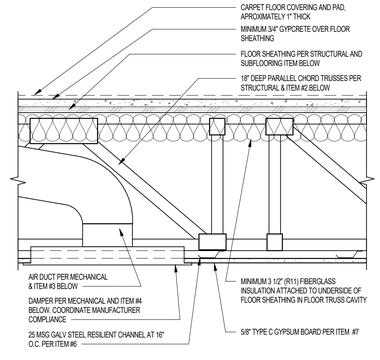
1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
SYSTEM NO. 9
SUBFLOORING - MIN NOM 23/32 IN. THICK WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR TO TRUSSES WITH JOINTS STAGGERED 4FT. PLYWOOD OR NONVENEER APA RATED PANELS SECURED TO TRUSSES WITH CONSTRUCTION ADHESIVE AND NO. 8D RING SHANK NAILS SPACED 12 IN O.C. 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 8D NAILS. STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE MAY BE SUBSTITUTED FOR THE 6D NAILS
VAPOR BARRIER - (OPTIONAL) NOM 0.030 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 1500 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.
MAXXON CORP — TYPE ENCAPSULATED SOUND MAT.

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 16 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.
. **ARE 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-SR-WIT-L, C-SR-EA-L, C-SR-BT, C-SR-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.
6. **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" FIREBLOCK® 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.

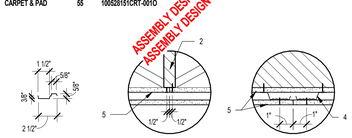
* INDICATED SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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 8.15.1.2.7.1**).

1-HR FLOOR/CEILING ASSEMBLY FILLED WITH INSULATION - CARPET FLOOR COVERING
PROPRIETARY ASSEMBLY - December 6, 2023
FIRE TEST: UL DESIGN No. L563
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



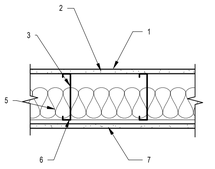
FINISH	STC	IIC	IIC TEST
SHEET VINYL	52	52	10052815\CRT-001O
LVT	54	54	10052815\CRT-001O
CARPET & PAD	**55**	**55**	**10052815\CRT-001O**



RESILIENT CHANNEL DETAIL | FIRST LAYER END JOINT DETAIL | SECOND LAYER END JOINT DETAIL

1. **FLOORING SYSTEM** - THE FLOORING SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
SYSTEM NO. 4
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. 8D 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 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 8D 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 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
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 SRA-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 16 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.
. **ARE 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-SR-WIT-L, C-SR-EA-L, C-SR-BT, C-SR-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 SU

1-HR ROOF/CEILING ASSEMBLY - FILLED WITH INSULATION
PROPRIETARY ASSEMBLY: June 20, 2023
FIRE TEST: UL DESIGN NO. P561
SOUND RATING:
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



DESIGN NO. U493
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

1. **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 PANEL.

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 3J.

HILTI PIN MODEL X-U 32MX WITH A MIN. 0.157" SHANK DIAMETER MIN. 1-1/4" LONG, DEWALT PIN MODEL 90468-PWR WITH A MIN. 0.157" SHANK DIAMETER MIN. 1-1/4" LONG OR AERO5MITH MODEL 52SHPG 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 MIDSPAN 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 EACH INTERFACE.

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 4A) AND GYPSUM BOARD (ITEM 8) CEILING MEMBRANE. SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS.

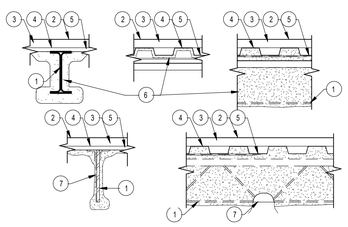
6. **RESILIENT CHANNELS** - FORMED OF NO. 25 MSG GALV STEEL, 12 IN. DEEP, SPACED MAX 12 IN. OC, PERPENDICULAR TO JOISTS. CHANNEL SPLICES LOCATED BENEATH JOISTS AND OVERLAPPED 4 IN. CHANNELS SECURED TO EACH JOIST WITH ONE 1/2 IN. LONG TYPE S-12 LOW PROFILE STEEL SCREW. TWO CHANNELS SPACED 6 IN. OC, ORIENTED OPPOSITE EACH GYPSUM BOARD END JOINT AS SHOWN ON THE ILLUSTRATION ABOVE. ADDITIONAL CHANNELS SHALL EXTEND MIN 6 IN. BEYOND EACH SIDE EDGE OF BOARD.

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 CHANNEL.
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.

3-HR ROOF/CEILING - W/2X FRAMING AT SOFFITS
PROPRIETARY ASSEMBLY: November 25, 2019
FIRE TEST: UL DESIGN NO. S721
SOUND RATING:
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.



1. **STEEL SUPPORTS** - W8x16 MINIMUM SIZE STEEL BEAM, 10K1, 12K3 OR 14K1 MINIMUM SIZE STEEL JOISTS. NOTE: WHEN 10K1 OR 12K1 JOISTS ARE USED, THEY WILL BE LIMITED TO A MAXIMUM TENSILE STRESS OF 20,000 PSI.
2. **ROOF COVERING*** - CONSISTING OF HOT MOPPED, COLD APPLICATION OR SINGLE-PLY MATERIALS, 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 ATTACH WATERPROOFING SYSTEM WITH RYNNO BOND FASTENING SYSTEM, SEE MANUFACTURER SPECIFICATIONS.
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 CLASS A, B OR C SYSTEM. SEE ROOFING MATERIALS AND SYSTEMS DIRECTORY-ROOF COVERING MATERIALS (TEVT), MECHANICALLY FASTENED WITH RHINO BOND SYSTEM.
4. **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 NAMES OF MANUFACTURERS.
5. **STEEL ROOF DECK** - (UNCLASSIFIED) - FLUTED, NO. 22 MSG MINIMUM GALVANIZED 1-1/2 INCH DEEP WITH 3-1/2 INCH WIDE FLUTES SPACED 8 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 WITH NO. 12 BY 1/2 INCH LONG SELF-DRILLING, SELF-TAPPING STEEL SCREWS.
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 15 AND 14 PCF, RESPECTIVELY, FOR TYPES 300, 300AC, 300ES, 300HS, 300N, 3000, 3000ES AND SB. FOR TYPES 400AC AND 400ES MINIMUM AVERAGE AND MINIMUM INDIVIDUAL DENSITY OF 22 AND 19 PCF, RESPECTIVELY. MINIMUM AVERAGE DENSITY OF 44 PCF WITH MINIMUM INDIVIDUAL VALUE OF 40 PCF FOR TYPES MA AND TG. MINIMUM AVERAGE DENSITY OF 47 PCF. WITH MINIMUM INDIVIDUAL VALUE OF 43 PCF FOR TYPE M-I/P. FOR METHOD OF DENSITY DETERMINATION SEE DESIGN INFORMATION SECTION.

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS, IN.

RATING HR	UNRESTRAINED BEAM RATING HOUR: BEAM W8x16	JOISTS (A)	JOISTS (B)	RESTRAINED BEAM RATING HOUR: BEAM W8x16	JOISTS (A)	JOISTS (B)	STEEL ROOF 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	1-1/4	1-13/16	2-5/16	1-3/16	1-13/16	2-5/16	1-7/8

(A) **METAL LATH OR NON-METALLIC* FABRIC MESH** SECURED TO ONE SIDE OF JOIST WITH 16 GA TIE WIRES SPACED MAX 6 IN. OC. FIRST TIE WIRE LOCATED 3 IN. FROM EACH END OF JOIST. SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS REQUIRED ON STEEL JOIST.
(B) **SPRAY-APPLIED FIRE RESISTIVE MATERIALS*** APPLIED TO JOIST CONTOURS AS ALTERNATE TO ITEM A. METAL LATH OR NON-METALLIC FABRIC MESH SECURED TO ONE SIDE OF JOIST OR LATH SUPPORTED BY MESH, BEFORE SPRAYING. SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS REQUIRED ON STEEL JOIST.

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS, IN.

RATING HR	UNRESTRAINED BEAM RATING HOUR	UNRESTRAINED BEAM RATING HOUR
1	1/2	1/2
2	11/16	9/16

BERLIN CO LTD - Typ1-1/20, 300ES, 300N, SB, M 11/16 and M-I/P
GREENTECH ASIA PACIFIC SDN BDH - Types 300, 300ES, 300HS, M-II, or M-I/P
GREENTECH THERMAL INSULATION PRODUCTS WHG CO LLC - Types 300, 300AC, 300ES, 300HS, 400AC, 3000, M-II, TG, and M-I/P.
ISOLATEK INTERNATIONAL - Types 300, 300AC, 300ES, 300HS, 300N, SB, 400AC, 400ES, 3000, 3000ES, M-II, TG and M-I/P.
NEWKEM PRODUCTS CORP - Types 300, 300ES1-13/16SB, M-II, TG and M-I/P. 1-13/16

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 300W. MINIMUM AVERAGE AND MINIMUM INDIVIDUAL DENSITY OF 22 AND 19 PCF, RESPECTIVELY, FOR TYPE 400. FOR METHOD OF DENSITY DETERMINATION SEE DESIGN INFORMATION SECTION.

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS, IN.

RATING HR	UNRESTRAINED BEAM RATING HOUR	UNRESTRAINED BEAM RATING HOUR
1	1/2	1/2
2	11/16	9/16

GREENTECH ASIA PACIFIC SDN BDH - Types 300, 300ES, 300HS, M-II, or M-I/P
GREENTECH THERMAL INSULATION PRODUCTS WHG CO LLC - Types 300, 300AC, 300ES, 300HS, 400AC, 3000, M-II, TG, and M-I/P.
ISOLATEK INTERNATIONAL - Types 300, 300AC, 300ES, 300HS, 300N, SB, 400AC, 400ES, 3000, 3000ES, M-II, TG and M-I/P.
NEWKEM PRODUCTS CORP - Types 300, 300ES1-13/16SB, M-II, TG and M-I/P. 1-13/16

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 300W. MINIMUM AVERAGE AND MINIMUM INDIVIDUAL DENSITY OF 22 AND 19 PCF, RESPECTIVELY, FOR TYPE 400. FOR METHOD OF DENSITY DETERMINATION SEE DESIGN INFORMATION SECTION.

MINIMUM SPRAY-APPLIED FIRE RESISTIVE MATERIALS THICKNESS, IN.

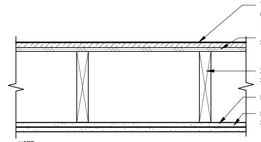
RATING HR	UNRESTRAINED BEAM RATING HOUR	UNRESTRAINED BEAM RATING HOUR
1	1/2	1/2
2	11/16	9/16

GREENTECH ASIA PACIFIC SDN BDH - Types 300, 300ES, 300HS, M-II, or M-I/P
GREENTECH THERMAL INSULATION PRODUCTS WHG CO LLC - Types 300, 300AC, 300ES, 300HS, 400AC, 3000, M-II, TG, and M-I/P.
ISOLATEK INTERNATIONAL - Types 300, 300AC, 300ES, 300HS, 300N, SB, 400AC, 400ES, 3000, 3000ES, M-II, TG and M-I/P.
NEWKEM PRODUCTS CORP - Types 300, 300ES1-13/16SB, M-II, TG and M-I/P. 1-13/16

7. **GLASS FIBER MESH** - (OPTIONAL) - MINIMUM 3/32 INCH MESH SIZE MESH, COATED FIBERGLASS MESH FABRIC, WEIGHING A MINIMUM OF 1.9 OUNCES 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, DURING SPRAY-APPLIED FIRE RESISTIVE MATERIALS DURING APPLICATION AND CURING OF THE MATERIAL. AN ACCEPTABLE METHOD 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 WEB MEMBER.
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.
9. **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.

1-HR ROOF/CEILING - W/2X FRAMING AT BALCONIES/STAIRS & ELEVATORS
GENERIC ASSEMBLY: June 2021
FIRE TEST: GA FILE NO. RC 2601
SOUND RATING:



NOTE:
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

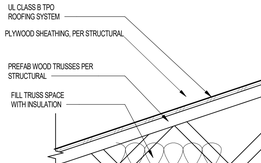
APPROX. CEILING WEIGHT: 5 PSi (Fire);
FIRE TEST: FM FC 172, 2-25-72.
ITS, 8-8-98

TYPICAL AT BALCONY, STAIRS & ELEVATOR ROOFS

RF 02 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:



NOTE:
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 6 INCH ON CENTER. PLASTER MIXED 1:2 FOR SCRATCH COAT AND 1:3 FOR BROWN COAT, BY WEIGHT, CEMENT TO SAND AGGREGATE.

m. DOUBLE WOOD FLOOR SHALL BE PERMITTED TO BE EITHER OF THE FOLLOWING:
(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-GROVE FINISHED FLOORING OR 19/32 INCH WIDE STRUCTURAL PANEL FINISH FLOORING OR A LAYER OF TYPE 1 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.

RF 03 1-HR ROOF/CEILING W/ 2x FRAMING AT SOFFITS

2018 IBC TABLE 721.1(3), ITEM 13-1.2 SCALE: 1 1/2" = 1'-0"

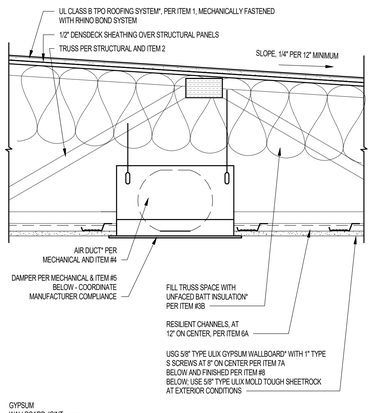
NON-RATED ROOF/CEILING
GENERIC ASSEMBLY
FIRE TEST:
SOUND RATING:
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.

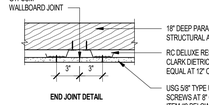
NOTE:
APPLICATIONS OF THIS ROOF ASSEMBLY AT BUILDINGS 3 & 4 SHALL ADHERE TO THE FOLLOWING CONSTRAINTS:
VALLEY = TOP OF ROOF SHEATHING AT 00'-0" ABOVE LEVEL 1
RIDGE = TOP OF ROOF SHEATHING NOT TO EXCEED 00'-0" ABOVE LEVEL 1

RF 01 1-HR ROOF/CEILING ASSEMBLY - FILLED WITH INSULATION

UL DESIGN P531 SCALE: 1 1/2" = 1'-0"

1-HR ROOF/CEILING - FILLED
UNRESTRAINED ASSEMBLY: February 16, 2024
FIRE TEST: UL DESIGN NO. P531
SOUND RATING:
REFER TO UL PRODUCT WEBSITE FOR COMPLETE ASSEMBLY.





END JOINT DETAIL

DESIGN NO. U493
BXUV - FIRE RESISTANCE RATINGS - ANSI/UL 263 CERTIFIED FOR UNITED STATES

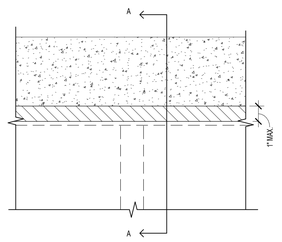
1. **ROOFING SYSTEM*** - ANY UL CLASS A, B OR C ROOFING SYSTEM (TGFU) OR PREPARED ROOF COVERING (TFWZ) ACCEPTABLE FOR USE OVER NOM 15/32 IN. THICK WOOD STRUCTURAL PANELS, MIN. GRADE "C-D" OR "SHEATHING" NOM 15/32 IN. THICK WOOD STRUCTURAL PANELS SECURED TO TRUSSES WITH CONSTRUCTION ADHESIVE AND NO. 6D RINGED SHANK NAILS. 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.
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 TOGETHER MIN 0.0356 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. 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 APPROXIMATELY 7/8 IN. 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 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 CHORDS AND THE PLYWOOD SHEATHING.
3. **BATTS AND BLANKETS** - (OPTIONAL) - GLASS FIBER INSULATION, SECURED TO THE WOOD STRUCTURAL PANELS WITH STAPLES SPACED 12 IN. OC OR TO THE TRUSSES WITH 0.090 IN. DIAM GALV STEEL WIRES SPACED 12 IN. OC. ANY GLASS FIBER INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO 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 CHANNEL/GYPSUM WALLBOARD CEILING MEMBRANE WHEN RESILIENT CHANNELS AND GYPSUM WALLBOARD ATTACHMENT IS MODIFIED AS SPECIFIED IN ITEMS 6 AND

UL/cUL SYSTEM NO. HW-D-0209

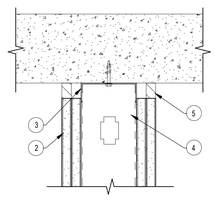
TOP OF WALL JOINT: GYPSUM WALL ASSEMBLY

ASSEMBLY RATING = 1-HOUR OR 2-HOUR (DEPENDING ON RATING OF WALL AND FLOOR ASSEMBLY)
CLASS II MOVEMENT CAPABILITIES - 19% COMPRESSION OR EXTENSION
L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT (SEE NOTE NO. 2 BELOW)
L-RATING AT 400° F = LESS THAN 1 CFM / LIN FT (SEE NOTE NO. 2 BELOW)

FRONT VIEW



SECTION A-A



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 ASSEMBLY (MINIMUM 6 INCH THICK).
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.

NOTES:
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 BACKER IN 2-HOUR. WALLS.

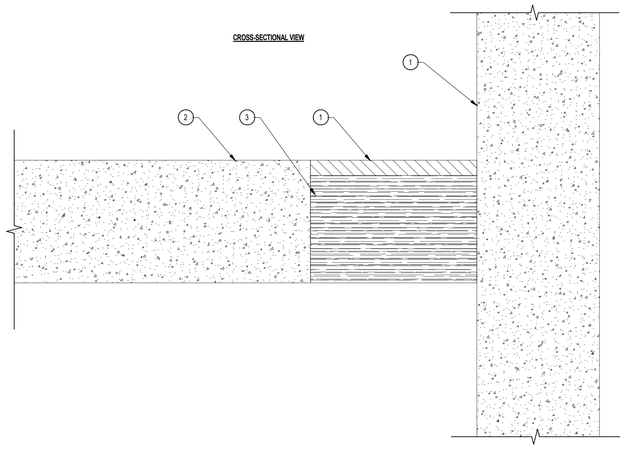
22 TOP OF WALL JOINT- GYPSUM WALL ASSEMBLY — NOT TO SCALE

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

CROSS-SECTIONAL VIEW



1. CONCRETE WALL ASSEMBLY (2-HOUR FIRE-RATING).
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2 INCH THICK).
   B. ANY UL CLASSIFIED CONCRETE BLOCK WALL.
2. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2 INCH THICK) (2-HOUR. FIRE-RATING).
3. MINIMUM 4 INCH THICKNESS MINERAL WOOL SAFING (MINIMUM 4 PCF DENSITY) COMPRESSED 50%.
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.

NOTES:
1. MAXIMUM WIDTH OF JOINT = 6 INCH

14 FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY — NOT TO SCALE

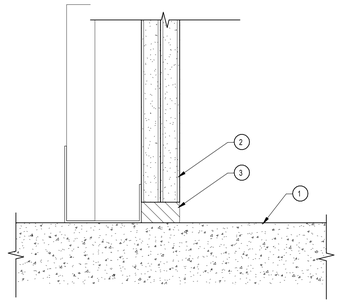
UL/cUL SYSTEM NO. BW-S-0023

February 02, 2022

BOTTOM OF WALL JOINT: GYPSUM SHAFT WALL ASSEMBLY

ASSEMBLY RATING 1-HOUR OR 2-HOUR

CROSS SECTIONAL VIEW



1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR ASSEMBLY (MINIMUM 2-1/2" THICK) (1-HR. OR2-HR. FIRE-RATING).
2. GYPSUM SHAFT WALL ASSEMBLY (UL/cUL CLASSIFIED U400 OR V400 SERIES) (1-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 1-1/4" AND 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.) CUT 3/8" TO 1/2" LESS IN LENGTHTHAN ASSEMBLY HEIGHT.
   C. NOMINAL 1" THICK GYPSUM LINER PANEL, TYPE AND SHEET ORIENTATION AS SPECIFIED IN THEINDIVIDUAL UL/cUL DESIGN.
   D. NOMINAL 1/2" OR 5/8" THICK GYPSUM WALLBOARD, TYPE, NUMBER OF LAYERS, AND SHEETORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL/cUL DESIGN.
3. HILTI CP 606 FLEXIBLE FIRESTOP SEALANT, HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT, ORHILTI CP 605 BOTTOM OF WALL FIRESTOP SEALANT INSTALLED THE FULL DEPTH OF GYPSUM BOARDAND FLUSH WITH THE FINISH SIDE OF WALL (SEE NOTES NO. 1 AND 2 BELOW).

NOTES:
1. MAXIMUM WIDTH OF JOINT [FOR HILTI CP 606] = 1 INCH
2. MAXIMUM WIDTH OF JOINT [FOR HILTI CP 605] = 3/4 INCH

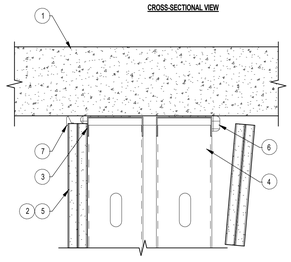
06 BOTTOM OF WALL JOINT AT GYPSUM SHAFT WALL ASSEMBLY — NOT TO SCALE

UL/cUL SYSTEM NO. HW-D-0758

TOP OF WALL 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
CLASS II 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 ATTACHMENT.
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 SIDES OF WALL.

NOTES:
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.

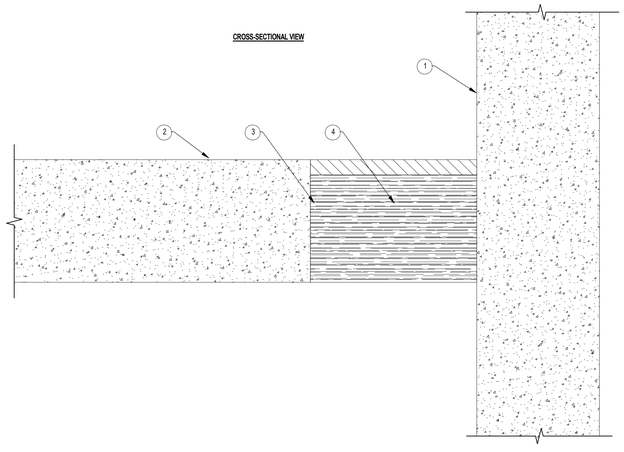
24 TOP OF WALL JOINT- GYPSUM CHASE WALL ASSEMBLY — NOT TO SCALE

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.
2. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 5-1/2 INCH THICK) (2-HOUR FIRE-RATING).
3. 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.

NOTES:
1. MAXIMUM WIDTH OF JOINT = 3 INCH

16 FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY — NOT TO SCALE

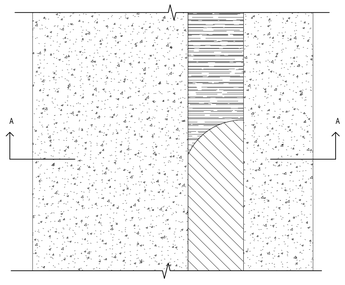
UL/cUL SYSTEM NO. FW-D-1011

FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY

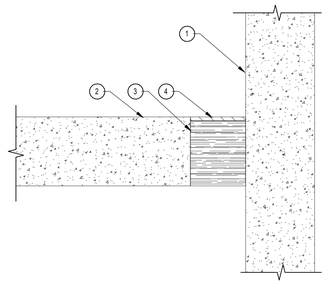
F-RATING = 3-HOUR

CLASS II MOVEMENT CAPABILITIES - 14% COMPRESSION OR EXTENSION

TOP 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)
   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

NOTES:
1. MAXIMUM WIDTH OF JOINT = 3-1/2 INCH

08 FIRE-RATED JOINT THROUGH CONCRETE FLOOR ASSEMBLY — NOT TO SCALE

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

2ND BUILDING SUBMITTAL

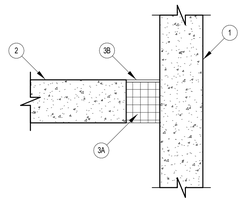
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.10

FIRE JOINTS

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 BLOCKS*. 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 43 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 SIL GG OR CFS-S SIL SL (FLOORS ONLY) SEALANT

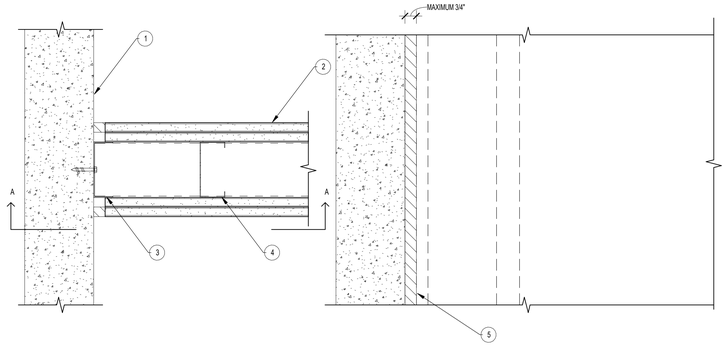
*BEARING THE UL CLASSIFICATION MARK

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

TOP VIEW **SECTION A-A**



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 .

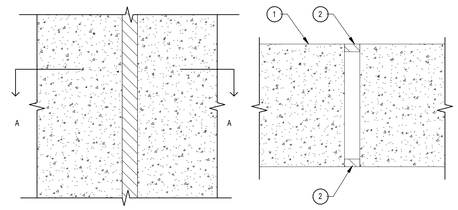
UL/cUL SYSTEM NO. WW-D-0032

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

FRONT VIEW **SECTION A-A**



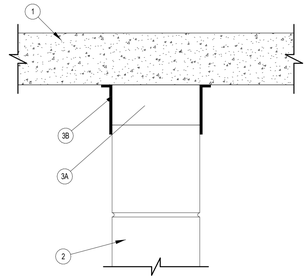
1. CONCRETE WALL ASSEMBLY (3-HOUR FIRE-RATING):
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 8 INCH THICK)
   B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. MINIMUM 1/2 INCH DEPTH HILTI CP 606 FLEXIBLE FIRESTOP SEALANT.

NOTES:
1. MAXIMUM WIDTH OF JOINT = 1 INCH
2. [OPTIONAL][NOT SHOWN] MINERAL WOOL OR PLYURETHANE FOAM BACKER ROD MAY BE USED AS A BACKER FOR FIRESTOP SEALANT.

System No. HW-D-1070

ASSEMBLY RATINGS — 2 HR

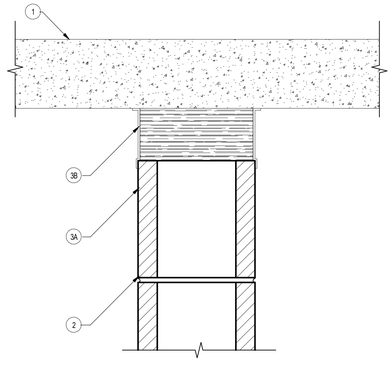
CLASS II MOVEMENT CAPABILITIES - 40% COMPRESSION OR EXTENSION



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 MANUFACTURERS.
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.

UL/cUL SYSTEM NO. HW-D-0097

ASSEMBLY RATING = 2-HOUR
NOMINAL JOINT WIDTH - 2 INCH
CLASS MOVEMENT CAPABILITIES = 14% COMPRESSION OR EXTENSION



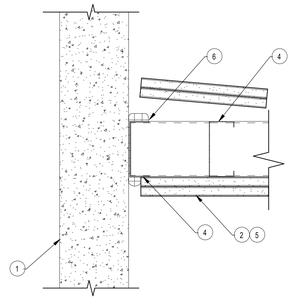
1. FLOOR ASSEMBLY - MINIMUM 4-1/2 INCH THICK STEEL-REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) STRUCTURAL CONCRETE.
2. WALL ASSEMBLY - MINIMUM 8 INCH THICK STEEL-REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT 100-150 PCF) STRUCTURAL CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE 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 FIRESTOP SPRAY OR CFS-SP WB FIRESTOP JOINT SPRAY

*BEARING THE UL CLASSIFICATION MARK

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:
   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 OR STEEL FASTENERS (SPACED MAXIMUM 24 INCH ON CENTER)
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 ATTACHMENT.
5. 5/8 INCH OR 1-1/4 INCH THICKNESS GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
6. HILTI CFS-ITS 306, CFS-ITS 600, OR CFS-ITS OS TOP TRACK SEAL INSTALLED UNDER STEEL RUNNER PRIOR TO ATTACHMENT TO CONCRETE WALL IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS.

NOTES:
1. MAXIMUM WIDTH OF JOINT = 3/4 INCH

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

2ND BUILDING SUBMITTAL

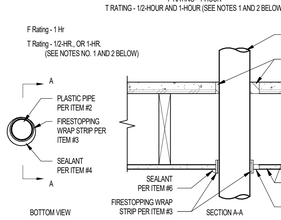
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.11

FIRE JOINTS

UL SYSTEM NO. F-C-2816
OCTOBER 31, 2019

F RATING - 1 HOUR
T RATING - 1/2-HOUR AND 1-HOUR (SEE NOTES 1 AND 2 BELOW)



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 MIXTURE.
   B. (OPTIONAL - NOT SHOWN) 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.
2. 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 648S 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 OF FLOOR.
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.

NOTES :
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.
2. WHEN HILTI CP 648E IS USED, T-RATING IS 1/2-HR.

HILTI CP 648S WRAP STRIP

PRODUCT DESIGNATION	NOM PIPE SIZE, IN. (MM)	MAX OPENING DIAM, IN. (MM)	ANNULAR SPACE	
			MIN. IN. (MM)	MIN. IN. (MM)
CP 648S 1.5" US	1-1/2 (38)	3 (76)	3/16 (4.8)	5/16 (8)
CP 648S 2" US	2 (51)	3-1/2 (89)	3/16 (4.8)	5/16 (8)
CP 648S 3" US	3 (102)	4 (102)	3/16 (4.8)	5/16 (8)
CP 648S 4" US	4 (140)	5-1/2 (140)	3/8 (10)	3/4 (19)

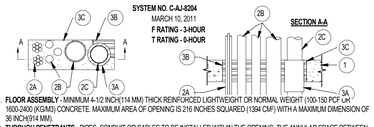
HILTI CP 648E WRAP STRIP

PRODUCT DESIGNATION	NOM PIPE SIZE, IN. (MM)	MAX OPENING DIAM, IN. (MM)	ANNULAR SPACE		NUMBER OF LAYERS
			MIN. IN. (MM)	MIN. IN. (MM)	
CP 646E W4/51-3/4"	1-1/2 (38)	3 (76)	3/16 (4.8)	5/16 (8)	1
CP 646E W4/51-3/4"	2 (51)	3-1/2 (89)	3/16 (4.8)	5/16 (8)	1
CP 646E W4/51-3/4"	3 (76)	4 (102)	3/16 (4.8)	5/16 (8)	1
CP 646E W4/51-3/4"	3 (76)	5 (127)	3/8 (10)	5/8 (16)	2
CP 646E W4/51-3/4"	4 (102)	6 (152)	3/8 (10)	5/8 (16)	2

18 PLASTIC PIPE THROUGH RATED FLOOR/CEILING ASSEMBLY

SYSTEM NO. F-C-251 — SCALE: 1 1/2" = 1'-0"

SYSTEM NO. C-AJ-8204
MARCH 10, 2011
F RATING - 3-HOUR
T RATING - 0-HOUR



1. **FLOOR ASSEMBLY** - MINIMUM 4-1/2 INCH(114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (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 1C NO. 4/0 AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH CROSS-LINKED POLYETHYLENE (XLPE) OR PVC JACKET.
      3. MAXIMUM 7C 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.
      11. **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 SYSTEMS.
      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).
      3. **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 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 EACH SURFACE OF THE WALL. IN WALLS HAVING A MINIMAL THICKNESS GREATER THAN 8 INCH(203 MM), TWO DEVICES SHALL BE INSTALLED WITHIN THE OPENING WITH BUTTED ENDS AND EXTEND EQUALLY BEYOND EACH SURFACE OF THE WALL.
      RECTORSEAL - FLAMESAFE 6INTUMESCENT SLEEVE, METACAULK INTUMESCENT SLEEVE OR BIOSTOP INTUMESCENT SLEEVE
   B. **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 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.
      RECTORSEAL – FS 900+, MC 150+ OR BF-150+ SEALANT

*BEARING THE UL CLASSIFICATION MARK

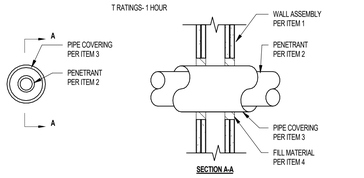
NOTE: THIS FIRE STOP SYSTEM IS LIMITED TO FLOOR PENETRATIONS CONTAINED AND LOCATED WITHIN THE CAVITY OF A WALL ASSEMBLY WHICH IS ITSELF RATED FOR 1 HOUR OR LESS PER IBC SECTION 714.4.1.2 EXCEPTION 1

14 SER CABLE THRU 3 HR CONC. SLAB OPENING

SCALE: 3/4" = 1'-0"

UL SYSTEM NO. W-L-5014

F RATINGS-1 AND 2 HOUR (SEE ITEM 1)
T RATINGS- 1 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 U300 SERIES 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 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.

   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(457 MM) OR THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

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 BE USED:

   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 OF THE THROUGH OPENING SHALL BE MINIMUM 0 INCH (CONTINUOUS 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 USED.

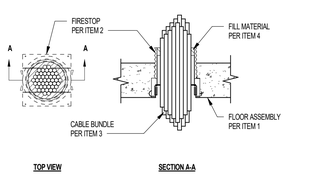
4. **FILL, VOID OR CAVITY MATERIAL* - SEALANT** - MINIMUM 5/8 INCH THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL AT POINT CONTACT LOCATION BETWEEN INSULATED THROUGH-PENETRANTS AND GYPSUM WALLBOARD, A MINIMUM 3/8 INCH BEAD OF FILL MATERIAL SHALL BE APPLIED TO THE INSULATED THROUGH PENETRANT/GYPSUM WALLBOARD INTERFACE ON BOTH SIDE OF WALL.

SPECIFIED TECHNOLOGIES INC - SPECSEAL 100, 101, 102 AND 105 SEALANT.

10 NON METAL PIPE AT 3HR RATED CONCRETE SLAB

UL System No. F-A-2137 — SCALE: 1 1/2" = 1'-0"

F RATING - 3 HOUR
T RATINGS - 0, 1/4, 1/2 HOUR (SEE ITEMS 3 AND 4)



1. **FLOOR ASSEMBLY** - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE.

1A.**FLOOR ASSEMBLY** - (OPTIONAL - NOT SHOWN) - THE FIRE RATED UNPROTECTED CONCRETE AND STEEL 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.

2. **FIRESTOP DEVICE*** - CAST-IN-PLACE FIRESTOP DEVICE PERMANENTLY EMBEDDED DURING CONCRETE PLACEMENT IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS. E-016; HILTI CONSTRUCTION CHEMICALS. DIV OF HILTI INC - CP 680-75/2.5"N, CP 680-115/4"N, CP 680-160/6"N, CP682-72/2.5", CP682-110/4", CP 680-M 3", CP 680-M 4", CP680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6"

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. MULITPLE FIBER OPTICAL COMMUNICATION CABLE JACKETED WITH PVC AND HAVING A MAXIMUM OD OF 1/2 INCH (13 MM).
   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	T 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"	1/4
3 INCH (76 mm)	CP 680-75/2.5"N, CP 682-75/2.5", CP 680-M 3", CP 680-P 3"	1/2
4-1/2 INCH (114 mm)	CP 680-110/4"N, CP 682-110/4" CP 680-M 4", CP 680-P 4"	1/2
6-1/2 INCH (165 mm)	CP 680-160/6"N CP 680-P 6"	0

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.

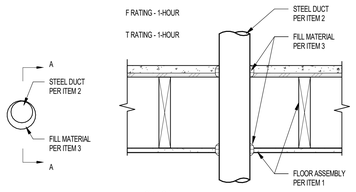
*BEARING THE UL CLASSIFICATION MARK

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

16 INSULATED PIPE THROUGH RATED WALL

SCALE: 1 1/2" = 1'-0"

UL SYSTEM NO. F-C-7014



1. **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 ITH ENDS FIRESTOPPED.

   1.3. **GYPSUM WALLBOARD*** - THICKNESS, TYPE, NUMBER OF LAYERS AND ASTENERS SHALL BE SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF CEILING OPENING IS 5 INCH.

2. **THROUGH PENETRANTS** - MAXIMUM 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-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:

   2.1. **STEEL PIPE** - NOMINAL 2 INCH DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.
   2.2. **IRON PIPE** - NOMINAL 2 INCH DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   2.3. **COPPER TUBING** - NOMINAL 2 INCH DIAMETER (OR SMALLER) TYPE L(OR HEAVIER) COPPER TUBE.
   2.4. **COPPER PIPE** - NOMINAL 2 INCH (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. **PIPE COVERINGS*** - ONE OF THE FOLLOWING TYPES OF PIPE COVERINGS SHALL BE USED:

   3.1. **STEEL PIPE - NOMINAL 2 INCH THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTOR APPLIED SELF-CEILING LAP TYPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE BETWEEN INSULATED PENETRATING ITEM AND THE EDGE OF THE THROUGH OPENING SHALL BE MINIMUM 0 INCH (CONTINUOUS POINT CONTACT) TO MAXIMUM 1-1/4 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 USED.

4. **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.

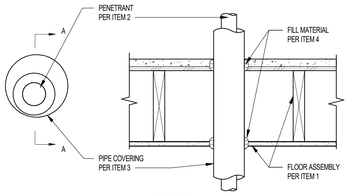
   SPECIFIED TECHNOLOGIES INC - SPECSEAL LCI SEALANT *BEARING THE UL CLASSIFICATION MARK

20 DUCT PENETRATION THRU RATED FLOOR/CEILING

SCALE: 1 1/2" = 1'-0"

UL SYSTEM NO. F-C-5053

F RATING - 1-HOUR
T RATING - 1-HOUR



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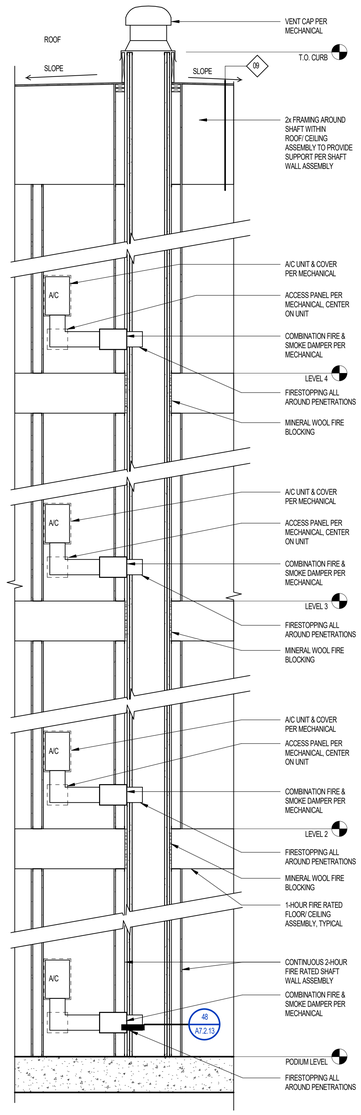
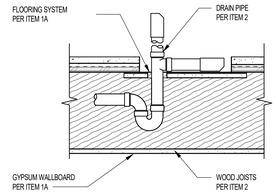




THROUGH-PENETRATION FIRESTOP SYSTEM NO. F-C-2320

F RATINGS - 1- HOUR

T RATINGS - 1-HOUR

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.

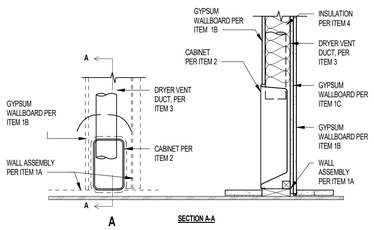
B. **WOOD JOISTS*** - NOMINAL 10 INCH (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.

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.

2. **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 WASTE/OVERFLOW FITTINGS. THE ANNULAR SPACE SHALL BE A MINIMUM 3/8 INCH (10 MM) TO MAXIMUM 5/8 INCH (16 MM).

3. **FILL, VOID OR CAVITY MATERIAL* - SEALANT** - MINIMUM 5/8 INCH (16 MM) DEPTH OF FILL MATERIAL APPLIED WITHIN ANNULAR SPACE, FLUSH WITH BOTH SURFACES OF PLYWOOD OR GYPSUM WALLBOARD PATCH.
SPECIFIED TECHNOLOGIES INC - TYPE WF300 CAULK

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



SECTION A-A

CONFIGURATION B

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 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 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 (610 MM) ON CENTER.

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 HOUR.

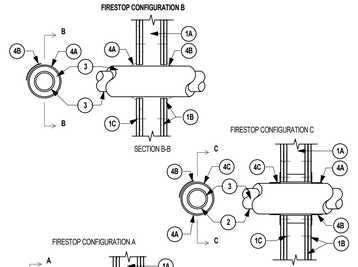
2. **CABINET*** - RECESSED FIXTURE INTENDED FOR DRYER APPLIANCE EXHAUST DUCT INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS IN ONE SIDE OF WALL ASSEMBLY, CUTOUT IN GYPSUM WALLBOARD FOR TOP EXHAUST DEVICE IS MAXIMUM 9-1/2 INCH (241 MM) WIDE BY 15-1/4 INCH (464 MM) HIGH. CUTOUT IN GYPSUM WALLBOARD 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 (XHMW) 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*** - 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 6 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.

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 ID CEMENT COATED NAILS SPACED 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 WITH 1-7/8 INCH LONG ID CEMENT COATED NAILS SPACED 8 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 ID CEMENT COATED NAILS SPACED 8 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 STUDS WITH 1 INCH LONG 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 STUD FRAMING 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 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.

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 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. **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. CONDUIT OR NOMINAL 1 INCH DIAMETER (OR SMALLER) 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 STUD CAVITY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY

3. **PIPE COVERING*** - (OPTIONAL) - NOMINAL 1 INCH THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MINIMUM 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH 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 PRODUCT. SEE PIPE AND EQUIPMENT COVERINGS - MATERIALS (BRGU) CATEGORY IN 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 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 EITHER 1 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 PIPE OR 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 CONFIGURATION (A, B, OR C) IS 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 WALLBOARD LAYERS, AS TABULATED BELOW:

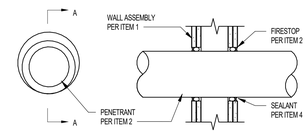
MAXIMUM PIPE OR CONDUIT DIAMETER	NOMINAL PIPE COVERING THICKNESS	ANNULAR SPACE	FIRESTOP CONFIGURATION (a)	T RATING
4 INCH.	NONE	0 - 3/16 INCH	A	1 OR 2 HOUR
4 INCH.	NONE	0 - 3/16 INCH.	A	0hr
4 INCH.	NONE	1/4 - 3/8 INCH	B	0hr
4 INCH	1 INCH	1/4 - 3/8 INCH	B	1 OR 1-1/2 HOUR
4 INCH	1 INCH	0 - 3/16 INCH	C	1 OR 2 HOUR

(A)A, B AND C INDICATE FIRESTOP CONFIGURATION, AS DESCRIBED IN THE FOLLOWING:

FIRESTOP CONFIGURATION A
A. **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 PIPE OR CONDUIT AT ITS EGRESS FROM THE WALL. **MINNESOTA MINING & MANUFACTURING CO.** - 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 STRIP 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.

FIRESTOP CONFIGURATION C
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 STRIP 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, CP-25 N/S.
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. CONSIST 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



SECTION A-A

UL SYSTEM NO. W-L-7077

F RATINGS - 1 AND 2 HOUR (SEE ITEM 1)

T RATINGS - 0 AND 1 HOUR (SEE ITEM 1)

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 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 8 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.

2. **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.

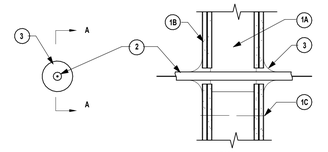
3.2. **FILL, VOID OR CAVITY MATERIAL*** - CAULK - MINIMUM 5/8 INCH THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF THE WALL. AT POINT CONTACT LOCATION, A MINIMUM 1/2 INCH DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED TO THE GYPSUM WALLBOARD/DUCT INTERFACE OF BOTH SURFACES OF WALL.

ECTORSEAL - BIOSTOP 500+
BEARING THE UL CLASSIFICATION MARK

SYSTEM NO. 149

F RATINGS - 2-HOUR

T RATINGS - 2-HOUR



SECTION A-A

1. **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:

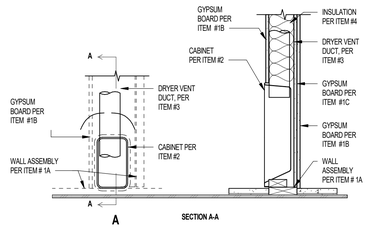
A. **STUDS** - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2 BY 4 INCH LUMBER SPACED 16 INCH ON CENTER WITH NOMINAL 2 BY 4 INCH LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MINIMUM 3-5/8 INCH WIDE BY 1-3/8 INCH DEEP CHANNELS WITH NOMINAL 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 ID 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.

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 O

SYSTEM NO. W-L-7129



SECTION A-A

CONFIGURATION B

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 B IS EQUAL TO 1 HR.

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 BOARD FOR TOP EXHAUST DEVICE IS MAX 9-1/2 IN. (241 MM) WIDE BY 18-1/4 IN. (464 MM) HIGH. CUTOUT IN GYPSUM BOARD FOR BOTTOM EXHAUST DUCT IS MAX 14 IN. (356 MM) WIDE BY 16 IN.(406 MM) HIGH. MAX GAP BETWEEN CABINET AND GYPSUM BOARD AROUND PERIPHERY OF CUTOUT SHALL BE 1/8 IN. (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 - MAX 4 IN. (102 MM) DIAM BY MIN 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 HR F RATING, THE ENTIRE STUD CAVITY CONTAINING THE CABINET SHALL BE FILLED WITH MIN 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.

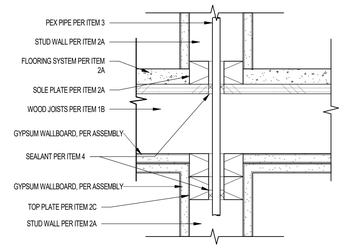
DRYERBOX MODELS	F RATING (SEE ITEM 1)	WALL STUDS	INSULATION REQUIRED
350, 425, 3D AND 4D	1/2	350, 425, 3D AND 4D	SEE ITEM 4
350, 425, 3D AND 4D	1	WOOD	SEE ITEM 4
350, 425, 3D AND 4D	1	STEEL	SEE ITEM 4A
480	1/2 AND 1	STEEL AND WOOD	SEE ITEM 4A

55 DRYERBOX PENETRATION THROUGH GYPSUM WALL ASSEMBLY (1-HR)

SCALE: 1" = 1'-0"

UL SYSTEM NO. F-C-2081
JANUARY 20, 2015

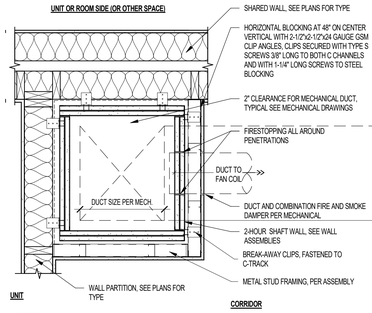
F RATING - 1-HOUR AND 2-HOUR (SEE ITEM 1)
T RATING - 1-HOUR AND 2-HOUR (SEE ITEM 1)



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, PLYWOOD OR FLOOR TOPPING MIXTURE* AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING 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 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 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).
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 (ITEM 3)
   - **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.

50 XHEX-THROUGH - FIRE PENETRATION SYSTEMS

U.L. SYSTEM NO. F-C-2081 SCALE: 3" = 1'-0"



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

51 2HR SHAFT FURRED WALL

SCALE: 1" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.14

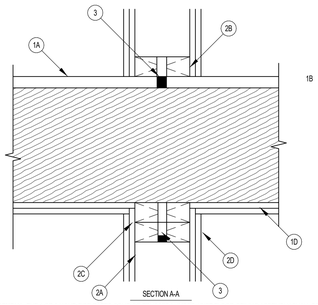
FIRE PENETRATIONS

SYSTEM NO. F-C-0002

FC 0002

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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 - 1 AND 2 HOUR (SEE ITEM 1)	FT RATINGS - 1 AND 2 HOUR (SEE ITEM 1)
	FH RATINGS - 1 AND 2 HOUR (SEE ITEM 1)
	FTH RATINGS - 1 AND 2 HOUR (SEE ITEM 1)



SECTION A-A

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

SYSTEM NO. F-C-0002

FC 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 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 OR 2 X 6 INCH (51 X 102 OR 51 X 152 MM) LUMBER STUDS.
   B. **SOLE PLATE** - NOMINAL 2 X 4 INCH OR 2 X 6 INCH (51 X 102 OR 51 X 152 MM) LUMBER PLATES.
   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). LUMBER PLATES. MAXIMUM DIAMETER OF OPENING IS 1 INCH.
3. **FILL, VOID OR CAVITY MATERIAL*** - SEALANT - MINIMUM 3/4 INCH (19MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS ON TOP SURFACE OF FLOOR OR SOLE PLATE OF CHASE WALL. MINIMUM 5/8 INCH (16MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE BOTTOM SURFACE OF HTE CEILING OR LOWER TOP PLATE.
   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 CERTIFICATIONS (SUCH AS CANADA), RESPECTIVELY.

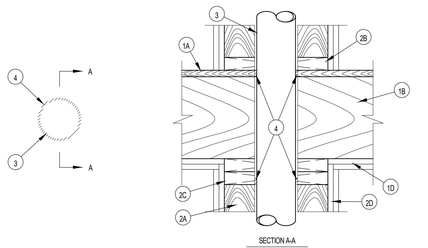
Hilti Firestop Systems

SYSTEM NO. F-C-1009

FC 1009

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 1 AND 2-HOUR (SEE ITEM 1)	F RATING - 1 AND 2-HOUR (SEE ITEM 1)
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



SECTION A-A

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 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 DIAMETER OF THE PIPE.
   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

SYSTEM NO. F-C-1009

FC 1009

2. **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. 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) 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 MM) DIAMETER.
   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 PENETRANT.
   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 PARTITION DESIGN.
3. **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 MAY BE USED:
   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.

Hilti Firestop Systems

SYSTEM NO. F-C-1059

FC 1059

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 1 AND 2 HOUR	F RATING - 1 AND 2 HOUR
T RATING - 1 AND 2 HOUR	FT RATING - 1 AND 2 HOUR
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT	FH RATING - 1 AND 2 HOUR
L RATING AT 400 F - 4 CFM/SQ FT	FTH RATING - 1 AND 2 HOUR
W RATING - CLASS 1 (SEE ITEM 4)	L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
	L RATING AT 400 F - 4 CFM/SQ FT

SECTION A-A

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, 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 AND 1/2-HOUR FOR 2-HOUR RATED 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. MAXIMUM DIAMETER OF OPENING SHALL BE 7-5/8 INCH (194 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*** - 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.

Hilti Firestop Systems

SYSTEM NO. F-C-1059

FC 1059

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 :
   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.
2. **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 (OR SMALLER) STEEL CONDUIT.
   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.
3. **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.

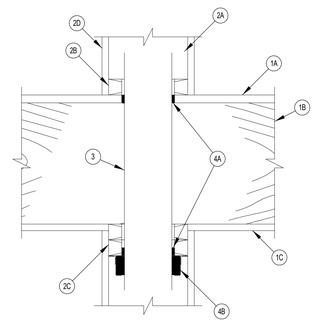
Hilti Firestop Systems

SYSTEM NO. F-C-2030

FC 2030

Classified by Underwriters Laboratories, Inc. to UL 1479

F RATINGS - 1 AND 2-HOUR (SEE ITEM 1)
T RATINGS - 0, 3/4, 1, 1-1/2 AND 2-HOUR (SEE ITEM 3)



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 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 (ITEM 3).
   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.

Hilti Firestop Systems

SYSTEM NO. F-C-2030

FC 2030

2. **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 PARTITION DESIGN.
3. **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. DIAMETER 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 VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM. SUPPLY) OR
   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.
4. **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.

Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

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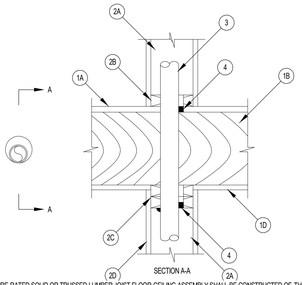
SYSTEM NO. F-C-2142

FC 2142

F RATING - 1-HOUR
T RATING - 0-HOUR



SECTION A-A

1. **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 DIAMETER OF THROUGH-PENETRANT ITEM 3).
   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 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 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).
2. **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 L500 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*** - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.

Hilti Firestop Systems

SYSTEM NO. F-C-2142

FC 2142

3. **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 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE, OR VENT) PIPING SYSTEMS.
   B. **ACRYLONITRILE BUTADINE STYRENE (ABS) PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   C. **CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SDR17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
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 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

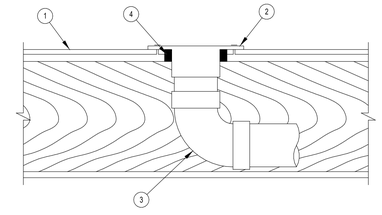
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

SYSTEM NO. F-C-2203

FC 2203

F RATING - 1-HOUR
T RATING - 1-HOUR



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 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.
2. **CLOSET FLANGE** - ACRYLONITRILE BUTADIENE STYRENE (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.

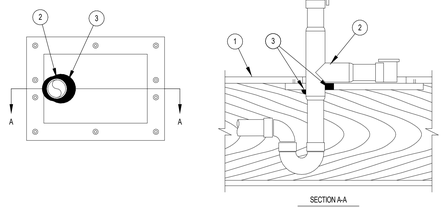
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

SYSTEM NO. F-C-2204

FC 2204

F RATING - 1-HOUR
T RATING - 1/2-HOUR



SECTION A-A

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 8 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.
2. **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

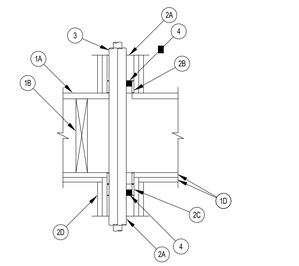
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

SYSTEM NO. F-C-2310

FC 2310

F RATINGS - 1 AND 2 HOUR (SEE ITEM 1)
T RATINGS - 1 AND 1-1/2 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 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-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING IS 3 INCH (76 MM).
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 L500 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 PARTITION DESIGN.

Hilti Firestop Systems

SYSTEM NO. F-C-2310

FC 2310

3. **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

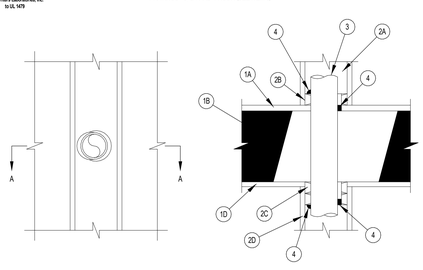
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

SYSTEM NO. F-C-2389

FC 2389

F RATING - 1-HOUR
T RATINGS - 0, 3/4 AND 1-HOUR (SEE ITEM 3)



1. **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 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).
   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 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 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 DESIGN.

Hilti Firestop Systems

SYSTEM NO. F-C-2389

FC 2389

2. **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 12 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.
3. **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.

Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE
RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.16

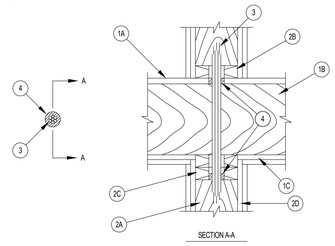
FIRE JOINTS - WOOD FLOOR CEILING

SYSTEM NO. F-C-3012

FC 3012

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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, 1 AND 1-3/4 HOUR (SEE ITEM 3)	FT RATINGS - 0, 1 AND 1-3/4 HOUR (SEE ITEM 3)
	FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1)
	FTH RATINGS - 0, 1 AND 1-3/4 HOUR (SEE ITEM 3)



SECTION A-A

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 (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), RESPECTIVELY.
   THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE RATING OF THE FLOOR-CEILING ASSEMBLY.

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System No. F-C-3012

FC 3012

2. **CHASE WALL** - (OPTIONAL) - THE THROUGH PENETRANT (ITEM 3) SHALL 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 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 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 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 2-1/2 INCH (64 MM) OR 2 INCH (51 MM), RESPECTIVELY.
   D. **GYPSUM WALLBOARD*** - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.
3. **CABLES** - IN 1-HOUR FIRE-RATED ASSEMBLIES, AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN OPENING TO BE MAXIMUM 45 PERCENT OF THE CROSS-SECTIONAL AREA OF THE OPENING (MAXIMUM 2 INCH (51 MM) DIAMETER BUNDLE). CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER CONDUCTORS MAY BE USED:
   A. RG 59 COAXIAL CABLE WITH SINGLE COPPER CONDUCTOR, CELLULAR POLYETHYLENE CELLULAR FOAM INSULATION AND POLYVINYL CHLORIDE (PVC) JACKET.
   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.
   D. MAXIMUM 3/C WITH GROUND NO. 20 AWG ALUMINUM OR COPPER TYPE SER CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION.
   E. MAXIMUM 3/C WITH GROUND NO. 20 AWG TYPE NM CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION.
   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.
   H. MAXIMUM 4/C WITH GROUND NO. 300 KCMIL (OR SMALLER) ALUMINUM SER CABLE WITH PVC INSULATION AND JACKET.
   I. **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. THE T RATING IS 1 AND 1-3/4 HOUR FOR 1 AND 2-HOUR RATED ASSEMBLIES, RESPECTIVELY, FOR CABLES 3A THROUGH 3G. THE T RATING IS 0 HOUR FOR CABLES 3H AND 3I.
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 ALSO APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS601A 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.

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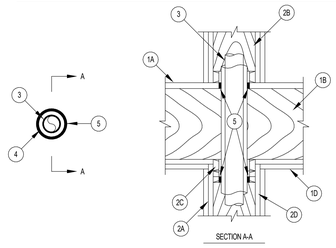
SYSTEM NO. F-C-5004

FC 5004

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
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)
	L RATING AT 400 F - LESS THAN 1 CFM/SQ FT (SEE ITEM 4)



SECTION A-A

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 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 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 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).

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System No. F-C-5004

FC 5004

2. **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 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 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 DIAMETER OF OPENING SHALL BE 3-1/2 INCH (89 MM).
   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 IS 3-1/2 INCH (89 MM).
   D. **GYPSUM WALLBOARD*** - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN.
3. **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 USED:
   A. **STEEL PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (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.
4. **PIPE COVERING*** - NOMINAL 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 NDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
5. **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

* 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. F-C-5036

FC 5036

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 1-HOUR	F RATING - 1-HOUR
T RATING - 1-HOUR	FT RATING - 1-HOUR
	FH RATING - 1-HOUR
	FTH RATING - 1-HOUR

SECTION A-A

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 6-7/8 INCH (175 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 (1.2 M) WIDE BY 5/8 INCH (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAXIMUM DIAMETER OF OPENING SHALL BE 6-7/8 INCH (175 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 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 8 INCH (51 X 203 MM) LUMBER OR DOUBLE NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER STUDS.
   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. MAXIMUM DIAMETER OF OPENING SHALL BE 6-7/8 INCH (175 MM).
   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 NOMINAL 2 X 4 INCH (51 X 102 MM) LUMBER PLATES, TIGHTLY BUTTED. MAXIMUM DIAMETER OF OPENING IS 6-7/8 INCH (175 MM).
   D. **GYPSUM WALLBOARD*** - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.
2. **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 USED:
   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.

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SYSTEM NO. F-C-5036

FC 5036

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 NDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
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

* 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. F-C-5037

FC 5037

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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 - 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 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 FH RATING ARE DEPENDENT ON THE HOURLY RATING OF THE FLOOR CEILING ASSEMBLY. THE T, FT AND FTH RATING ARE 1/4 HOUR FOR 1-HOUR RATED FLOOR CEILING ASSEMBLIES AND 1-3/4 HOUR FOR 2-HOUR RATED FLOOR CEILING 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 5-1/8 INCH (130 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) - RESILIENT GALVANIZED STEEL FURRING INSTALLED PERPENDICULAR TO WOOD JOISTS BETWEEN FIRST AND SECOND LAYERS OF WALLBOARD (ITEM 1D). FURRING CHANNELS SPACED MAXIMUM 24 INCH (610 MM).
   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. 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 DIRECTORY AND SHALL INCLUDE THE FOLLOWING 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 5-1/8 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 PARTITION DESIGN.

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System No. F-C-5037

FC 5037

2. **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 USED:
   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.
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 (25 MM).
   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 UL94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
4. **FILL, VOID OR CAVITY MATERIALS*** - SEALANT - FILL MATERIAL FORCED INTO ANNULAR SPACE TO FILL SPACE TO MAX EXTENT POSSIBLE. SEALANT SHALL BE INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE AND BOTTOM SURFACE OF 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.

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Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, Inc.
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE Preferred
RESIDENTIAL COOPERATIVE NY
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 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:

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.17

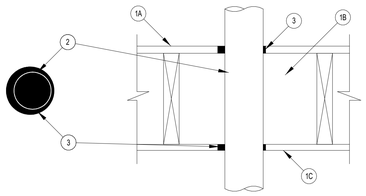
FIRE JOINTS - WOOD FLOOR CEILING

SYSTEM NO. F-C-7013

FC 7013

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 1-HOUR	F RATING - 1-HOUR
T RATING - 0-HOUR	FT RATING - 0-HOUR
	FH RATING - 1-HOUR
	FTH RATING - 0-HOUR



SECTION A-A

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 5-1/4 INCH (133 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 (1.2 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 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 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 PARTITION DESIGN.

Hilti Firestop Systems

SYSTEM NO. F-C-7013

FC 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 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.

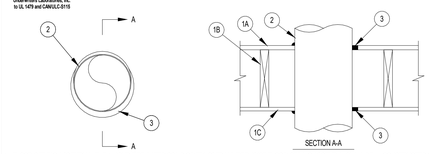
Hilti Firestop Systems

SYSTEM NO. F-C-7025

FC 7025

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

F RATING - 1 HOUR
T RATING - 0 HOUR



SECTION A-A

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 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. 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) 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) OR TWO 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.

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 0 INCH (0 MM) TO MAXIMUM 1 INCH (25 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY.
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

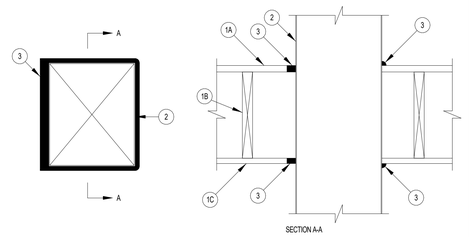
Hilti Firestop Systems

SYSTEM NO. F-C-7043

FC 7043

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 1 HOUR	F RATING - 1-HOUR
T RATING - 1/4 HOUR	FT RATING - 1/4 HOUR
	FH RATING - 1-HOUR
	FTH RATING - 1/4 HOUR



SECTION A-A

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.
   C. **GYPSUM WALLBOARD*** - NOMINAL 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 SIDES OF THE FLOOR-CEILING ASSEMBLY.
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 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

SYSTEM NO. F-C-8026

FC 8026

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 1-HOUR	F RATING - 1-HOUR
T RATING - 1-HOUR	FT RATING - 1-HOUR
	FH RATING - 1-HOUR
	FTH RATING - 1-HOUR

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) OR TWO 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 Firestop Systems

SYSTEM NO. F-C-8026

FC 8026

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.
      A3. **COPPER TUBE** - NOMINAL 3/4 INCH (19 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.
      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 (ABPVC) 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 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

Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

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NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.19

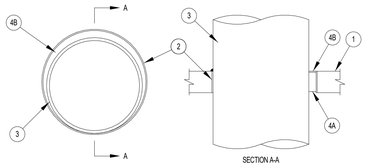
FIRE JOINTS - WOOD FLOOR CEILING

CAJ 1226

SYSTEM NO. C-AJ-1226

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 3-HOUR	F RATING - 3-HOUR
T RATING - 0-HOUR	FT RATING - 0-HOUR
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ.FT	FH RATING - 3-HOUR
L RATING AT 400 F - 4 CFM/SQ.FT	FTH RATING - 0-HOUR
	L RATING AT AMBIENT - LESS THAN 1 CFM/SQ.FT
	L RATING AT 400 F - 4 CFM/SQ.FT



SECTION A-A

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 32 INCH (813 MM).
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.
3. **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 BE USED:
   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).

Hilti Firestop Systems

CAJ 1226

SYSTEM NO. C-AJ-1226

4. **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 SLEEVE OR FROM BOTH SURFACES OF WALL OR SLEEVE 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 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 BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE OR SLEEVE/ PIPE PENETRANT INTERFACE ON THE TOP SURFACE OF FLOOR AND 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.

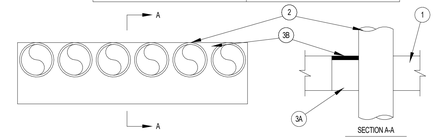
Hilti Firestop Systems

CAJ 1513

SYSTEM NO. C-AJ-1513

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2HOUR	F RATING - 2-HOUR
T RATING - 0-HOUR	FT RATING - 0-HOUR
	FH RATING - 2-HOUR
	FTH RATING - 0-HOUR



SECTION A-A

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. 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.
2. **THROUGH PENETRANTS** - ONE OR MORE METALLIC PIPE/TUBE/CONDUIT 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 USED:
      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.
      OMEGA FLEX INC
      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
3. **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 CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

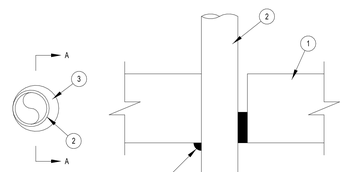
Hilti Firestop Systems

CAJ 2167

System No. C-AJ-2167

Classified by Underwriters Laboratories, Inc. to UL 1479

F Rating – 2 Hr
T Rating – 0 Hr



SECTION A-A

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*. 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 (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. **THROUGH PENETRANTS** - ONE NON-METALLIC PIPE TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. ANNULAR SPACE BETWEEN PIPE AND EDGE OF OPENING TO BE MINIMUM 0 INCH (POINT CONTACT) AND MAXIMUM 5/8 INCH (16 MM). PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR/CEILING ASSEMBLY. 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 SOLID OR CELLULAR CORE 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.
3. **FILL, VOID OR CAVITY MATERIAL*** - SEALANT - MINIMUM 2 INCH (51 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, 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.
   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

Project Name 1
Project Name 2

Street Adress
City, State

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WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

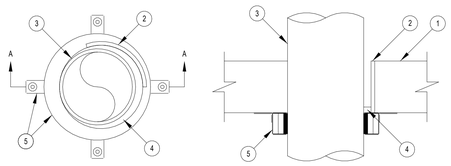
ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

CAJ 2109

SYSTEM NO. C-AJ-2109

Classified by Underwriters Laboratories, Inc. to UL 1479

F RATINGS - 2 AND 3-HOUR (SEE ITEM 3)
T RATINGS - 0, 2 AND 3-HOUR (SEE ITEMS 2 AND 3)
W RATING - CLASS 1 (SEE ITEMS 2, 3 AND 4)
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT (SEE ITEM 4)
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT (SEE ITEM 4)



SECTION A-A

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 12 INCH (305 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
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 12 INCH (13 MM) ANNULAR SPACE IS REQUIRED BETWEEN THE THROUGH PENETRANT (ITEM 3) AND THE PERIPHERY OF THE OPENING. THE W RATING DOES NOT APPLY WHEN THE STEEL SLEEVE IS USED.
3. **THROUGH PENETRANTS** - ONE NON-METALLIC PIPE TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE 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, 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 RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. FOR SYSTEMS WITH A W RATING, THE MAXIMUM ANNULAR SPACE 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 FOLLOWING TYPES AND SIZES OF NON-METALLIC PIPES MAY BE USED:
   A. **POLYVINYL CHLORIDE (PVC) PIPE** - NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID CORE OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS. FOR SYSTEMS WITH A W RATING, THE NOMINAL DIAMETER OF PIPE SHALL NOT EXCEED 6 INCH (152 MM).
   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 EXCEED 6 INCH (152 MM).
   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 SYSTEM.
   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 SYSTEMS.

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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)	3
PVC, CPVC, ABS+, FRPP	6 (152)	3
PVC, CPVC	Greater than 6 (152)	0
ABS++	6 (152)	0

\+ - INDICATES SOLID CORE ABS ONLY.
++ - INDICATES CELLULAR CORE ABS ONLY.

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 12 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", CP 644 200/8" OR CP 644 250/10" 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.

Hilti Firestop Systems

CAJ 3283

SYSTEM NO. C-AJ-3283

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2-HOUR	F RATING - 2-HOUR
T RATINGS - 0 AND 1/2 HOUR (SEE ITEM 2)	FT RATINGS - 0 AND 1/2 HOUR (SEE ITEM 2)
L RATING AT AMBIENT - LESS THAN 1 CFM (SEE ITEM 2)	FH RATING - 2-HOUR
L RATING AT 400 F - LESS THAN 1 CFM (SEE ITEM 2)	FTH RATINGS - 0 AND 1/2 HOUR (SEE ITEM 2)
	L RATING AT AMBIENT - LESS THAN 1 CFM (SEE ITEM 2)
	L RATING AT 400 F - LESS THAN 1 CFM (SEE ITEM 2)

1. **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 CONSTRUCTION FEATURES:
   A. **CONCRETE** - MINIMUM 2-1/2 INCH (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE.
   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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2. **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.
   C. MAXIMUM 40 AWG TYPE RG/U GROUND CABLE.
   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 OF 1/2 INCH (13 MM).
   G. MAXIMUM 26/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 14 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 CABLE FILL	CABLE TYPE	L RATING, CFM/SQ FT		L RATING, CFM	
		AMBIENT	400°F	AMBIENT	400°F
0%	–	1	2	LESS THAN 1	LESS THAN 1
100%	ANY CABLES (ITEM 2) IN ANY COMBINATION	7	7	LESS THAN 1	LESS THAN 1

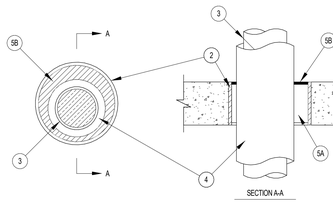
3. **FIRESTOP DEVICE*** - FIRESTOP DEVICE CONSISTS OF A CORRUGATED STEEL TUBE WITH AN INNER PLASTIC HOUSING, INTUMESCENT MATERIAL RINGS, TIGHTLY TWISTED INNER FABRIC SMOKE SEAL, FLANGES AND GASKET MATERIAL (NOT SHOWN). FIRESTOP DEVICE TO BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. 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

SYSTEM NO. C-AJ-5090

CAJ5090

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATINGS - 2 AND 3-HOUR (SEE ITEM 4)	F RATINGS - 2 AND 3-HOUR (SEE ITEM 4)
T RATING - 0-HOUR	FT RATING - 0-HOUR
L RATING AT AMBIENT - 4 CFM/SQ.FT	FH RATINGS - 2 AND 3-HOUR (SEE ITEM 4)
L RATING AT 400 F - LESS THAN 1 CFM/SQ.FT	FTH RATING - 0-HOUR
	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 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 THE UL FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. **BUSWAY** - ONE NOMINAL 22 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 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 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 INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA NO. 70.
3. **FIRESTOP SYSTEM** - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   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 BETWEEN AND AROUND BUSWAYS.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CFS-BL FIRESTOP BLOCK
   B. **FILL, VOID OR CAVITY MATERIAL*** - (NOT SHOWN) - FILL MATERIAL TO BE APPLIED TO MAXIMUM EXTENT POSSIBLE WITHIN THE OPENING BETWEEN AND AROUND BUSWAYS AND FIRE BLOCK TO FILL ANY VOIDS. THIS FILL MATERIAL IS TO BE APPLIED FROM THE TOP SURFACE OF THE FLOOR ASSEMBLY OR BOTH SURFACES OF WALL ASSEMBLY.
   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 CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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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 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 MANUFACTURERS.
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 MAY BE USED:
   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.
4. **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.

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SYSTEM NO. C-AJ-5091

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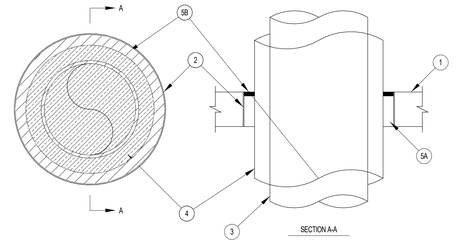
Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2-HOUR	F RATING - 2-HOUR
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 8 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 FLUSH WITH BOTTOM SURFACE OF FLOOR AND MAY EXTEND A MAXIMUM OF 1 INCH (25 MM) ABOVE THE TOP 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 SURFACE OF THE FLOOR.

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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.
   D. **COPPER TUBING** - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
4. **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 ANNULAR SPACE SHALL BE MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 12 INCH (305 MM).
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 1/2 INCH (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT
   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 4 INCH (102 MM) ON CENTER.

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

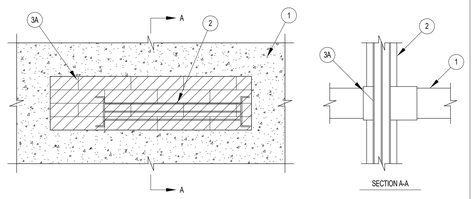
Hilti Firestop Systems

SYSTEM NO. C-AJ-6042

CAJ6042

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2-HOUR	F RATING - 2-HOUR
T RATING - 0-HOUR	FT RATING - 0-HOUR
	FH RATING - 2-HOUR
	FTH RATING - 0-HOUR



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 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 THE UL FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. **BUSWAY** - ONE NOMINAL 22 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 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 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 INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA NO. 70.
3. **FIRESTOP SYSTEM** - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   A. **FILL, VOID OR CAVITY MATERIAL*** - (NOT SHOWN) - FILL MATERIAL TO BE APPLIED TO MAXIMUM EXTENT POSSIBLE WITHIN THE OPENING BETWEEN AND AROUND BUSWAYS AND FIRE BLOCK TO FILL ANY VOIDS. THIS FILL MATERIAL IS TO BE APPLIED FROM THE TOP SURFACE OF THE FLOOR ASSEMBLY OR BOTH SURFACES OF WALL ASSEMBLY.
   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 CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

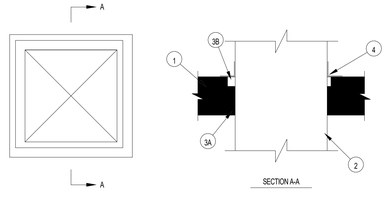
Hilti Firestop Systems

SYSTEM NO. C-AJ-7051

CAJ7051

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 3-HOUR	F RATING - 3-HOUR
T RATING - 1-HOUR	FT RATING - 1-HOUR
	FH RATING - 3-HOUR
	FTH RATING - 1-HOUR



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 5-1/2 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 NAMES OF MANUFACTURERS.
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). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
3. **FIRESTOP SYSTEM** - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   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 REQUIRED THICKNESS OF FILL MATERIAL.
   B. **FILL, VOID OR CAVITY MATERIAL*** - SEALANT - MINIMUM 1 INCH (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 606 FLEXIBLE FIRESTOP SEALANT, FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT
4. **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) 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 CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

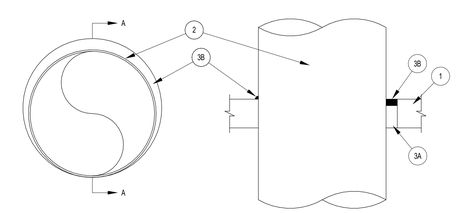
Hilti Firestop Systems

SYSTEM NO. C-AJ-7084

CAJ7084

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2-HOUR	F RATING - 2-HOUR
T RATING - 0-HOUR	FT RATING - 0-HOUR
	FH RATING - 2-HOUR
	FTH RATING - 0-HOUR



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 21-3/4 INCH (552 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
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 (POINT CONTACT) AND MAXIMUM 1-1/2 INCH (38 MM). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
   A. **SPIRAL WOUND HVAC DUCT** - NOMINAL 20 INCH (508 MM) DIAMETER (OR SMALLER) NO. 24 MSG (OR HEAVIER) GALVANIZED STEEL SPIRAL WOUND DUCT.
   B. **SHEET METAL DUCT** - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) NO. 28 MSG (OR HEAVIER) GALVANIZED SHEET STEEL DUCT.
3. **FIRESTOP SYSTEM** - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   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 SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
   B. **FILL, VOID OR CAVITY MATERIAL*** - SEALANT - MINIMUM 1 INCH (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. AT THE POINT CONTACT LOCATION BETWEEN DUCT AND PERIPHERY OF OPENING, A MINIMUM 1/2 INCH (13 MM) DIAM BEAD OF SEALANT SHALL BE APPLIED AT THE CONCRETE/DUCT INTERFACE.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT, FS-ONE MAX INTUMESCENT SEALANT, CP601S ELASTOMERIC FIRESTOP SEALANT, CP606 FLEXIBLE FIRESTOP SEALANT, CP 604 SELF-LEVELING FIRESTOP SEALANT, CFS-S SIL GG SEALANT OR CFS-S SIL SL SEALANT. (NOTE: CP 604 SELF-LEVELING FIRESTOP SEALANT AND CFS-S SIL SL SEALANT TO BE USED ON FLOOR ASSEMBLIES ONLY.)

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

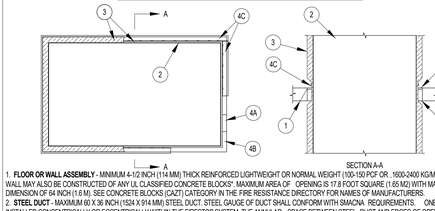
Hilti Firestop Systems

SYSTEM NO. C-AJ-7145

CAJ7145

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2-HOUR	F RATING - 2-HOUR
T RATING - 1-3/4 HOUR	FT RATING - 1-3/4 HOUR
	FH RATING - 2-HOUR
	FTH RATING - 1-3/4 HOUR



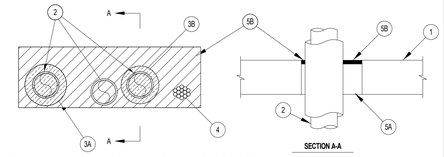
1. **FLOOR OR WALL ASSEMBLY** - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAXIMUM AREA OF OPENING IS 17.8 FOOT SQUARE (1.65 M2) WITH MAXIMUM DIMENSION OF 64 INCH (1.6 M). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. **STEEL DUCT** - MAXIMUM 60 X 36 INCH (1524 X 914 MM) STEEL DUCT. STEEL GAUGE OF DUCT SHALL CONFORM WITH SMACNA REQUIREMENTS. 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 (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.
3. **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 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.
4. **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 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.
   B. **FILL, VOID OR CAVITY MATERIAL*** - SEALANT - MINIMUM 1/2 INCH (13

CA1.8098

SYSTEM NO. C-AJ-8099

Classified by Underwriters Laboratories, Inc to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 3-HOUR	F RATING - 3-HOUR
T RATINGS - 0 AND 3/4 HOUR (SEE ITEM 2)	FT RATINGS - 0 AND 3/4 HOUR (SEE ITEM 2)
	FH RATING - 2 HOUR
	FTH RATINGS - 0 AND 3/4 HOUR (SEE ITEM 2)



SECTION A-A

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 40 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 BE USED:

CA1.8098

SYSTEM NO. C-AJ-8099

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.
OMEGA FLEX INC
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
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. T HE 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 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+++ (QMFZZ) 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 (PVC) JACKET.
B. MAXIMUM 300 PAIR NO. 24 AWG COPPER CONDUCTOR TELECOMMUNICATION CABLES WITH PVC INSULATION AND JACKET MATERIAL.
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.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT.

+++ 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

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

R E V I S I O N S/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.22

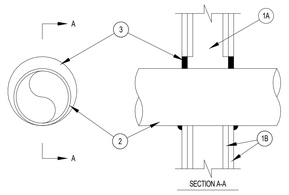
FIRE JOINTS - FLOORS AND WALLS

SYSTEM NO. W-L-1054

WL 1054

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
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



SECTION A-A

1. **WALL ASSEMBLY -** THE 1 OR 2-HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL 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 52-1/4 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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Hilti Firestop Systems

SYSTEM NO. W-L-1054

WL 1054

2. **THROUGH-PENETRANTS -** ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY 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.
   B. **IRON PIPE -** NOMINAL 30 INCH (762 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. **CONDUIT -** NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 INCH (152 MM) . DIAMETER STEEL CONDUIT.
   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.
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.
   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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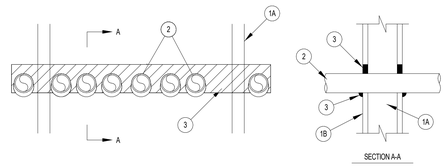
Hilti Firestop Systems

SYSTEM NO. W-L-1389

WL 1389

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
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



SECTION A-A

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 CENTER.
   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 INSTALLED.
2. **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 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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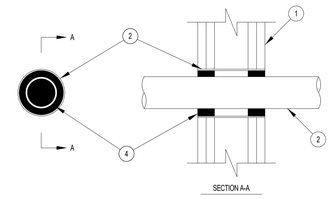
Hilti Firestop Systems

System No. W-L-2128

WL 2128

F Rating — 1 and 2 Hr (See Item 1)
T Rating — 0 Hr

Classified by Underwriters Laboratories, Inc. to UL 1479



SECTION A-A

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 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.
   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).
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.
4. **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) 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

* 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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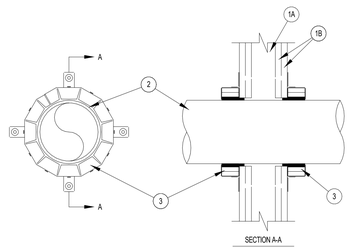
Hilti Firestop Systems

SYSTEM NO. W-L-2078

WL 2078

F RATINGS - 1 AND 2-HOUR (SEE ITEM 1)
T RATINGS - 0, 1, AND 2-HOUR (SEE ITEMS 2 AND 3)
L RATING AT AMBIENT - 3 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT

Classified by Underwriters Laboratories, Inc. to UL 1479



SECTION A-A

1. **WALL ASSEMBLY -** THE 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 CONSTRUCTION FEATURES NOTED BELOW:
   A. **STUDS -** WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF 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 (64 MM) WIDE AND SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.
   B. **GYPSUM WALLBOARD* -** NOMINAL 5/8 INCH (16 MM) THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAXIMUM DIAMETER OF OPENING IS 11-1/2 INCH (292 MM). THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
2. **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 OF NON-METALLIC PIPES MAY BE USED:
   A. **POLYVINYL CHLORIDE (PVC) PIPE -** NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) 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 -** NOMINAL 10 INCH (254 MM) DIAMETER (OR SMALLER) SDR13.5 CPVC PIPE FOR 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.

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Hilti Firestop Systems

System No. W-L-2078

WL 2078

3. **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 S01/1.5"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.

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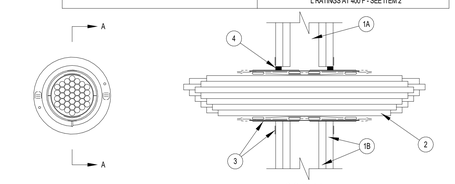
Hilti Firestop Systems

SYSTEM NO. W-L-3334

WL 3334

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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)
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 2 AND 3)
L RATING AT AMBIENT - SEE ITEM 2	FH RATINGS - 1, 2, 3, AND 4-HOUR (SEE ITEM 1)
L RATINGS AT 400 F - SEE ITEM 2	FTH RATINGS - 0, 1/2, 1, 1-1/2, AND 2-HOUR (SEE ITEMS 2 AND 3)
	L RATING AT AMBIENT - SEE ITEM 2
	L RATINGS AT 400 F - SEE ITEM 2



SECTION A-A

1. **WALL ASSEMBLY -** THE 1, 2, 3, OR 4-HOUR FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED WITHIN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCORPORATE THE FOLLOWING CONSTRUCTION FEATURES:
   A. **STUDS -** WALL FRAMING SHALL 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 MAXIMUM 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) ONCENTER FOR 1 AND 2-HOUR WALL ASSEMBLIES. STEEL STUDS TO BE 3-5/8 INCH (92 MM) FOR 3 AND 4-HOUR WALL ASSEMBLIES. STEEL STUDS TO BE MINIMUM 3-1/2 INCH (89 MM) WIDE WHEN 3/4 INCH (19 MM) THICK GYPSUM WALLBOARD IS USED (SEE ITEM 1B).
   B. **GYPSUM WALLBOARD* -** NOMINAL 5/8 INCH (16 MM) THICK GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. ALTERNATELY, FOR 1 AND 2-HOUR RATED WALLS S 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.
2. **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).

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Hilti Firestop Systems

SYSTEM NO. W-L-3334

WL 3334

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 JACKET.
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 RATING, CFM			
		AMBIENT		400°F		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	1.2	1.3	1.6

3. **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.
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
4. **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 NOT USED (SEE ITEM 3).
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE, FS-ONE MAX INTUMESCENT SEALANT, OR CP 606 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 LISTING MARK

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Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

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ALLIANCE RESIDENCE BAHRAIN
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Contractor must verify all dimensions at project before proceeding with this work.

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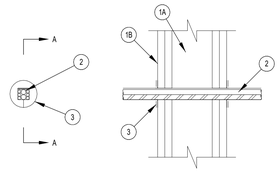
System No. W-L-3414

W-L-3414

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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, 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	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



SECTION A-A

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.

SYSTEM NO. W-L-3414

W-L-3414

2. **CABLES** - SINGLE OR TIGHT BUNDLE OF CABLES TO BE INSTALLED WITHIN THE OPENING. AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN OPENING TO HAVE A VISUAL FILL OF MINIMUM 0% TO MAXIMUM 100%. THE ANNULAR SPACE BETWEEN THE CABLE BUNDLE AND THE PERIPHERY OF THE OPENING TO BE MINIMUM 0 INCH (POINT CONTACT). CABLES TO BE RIGIDLY SUPPORTED ON 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.
   B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE INSULATION AND JACKET.
   C. MAXIMUM 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH PVC OR PLENUM RATED INSULATION AND JACKETING.
   D. MAXIMUM 4 PR NO. 22 AWG (OR SMALLER) CAT 5 OR CAT 6 COMPUTER CABLES WITH PVC OR PLENUM RATED INSULATION AND JACKETING.
   E. TYPE RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE OR PVC INSULATION AND JACKETING HAVING A MAXIMUM OUTSIDE DIAMETER OF 1/2 INCH (13 MM).
   F. MAXIMUM 24 FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION.
   G. THROUGH PENETRATING PRODUCT* - MAXIMUM TWO COPPER CONDUCTOR 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
   H. MAXIMUM 3/C NO. 10 AWG COPPER CONDUCTOR METAL-CLAD CABLE.
   THE HOURLY T, FT AND FTH RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT ON CABLE TYPE AND HOURLY WALL RATING AS SPECIFIED IN TABLE BELOW.

Cable Type	Hourly Wall Rating	Hourly T, FT and FTH Rating
None (Blank Opening)	1 and 2	1 and 2
A	1 and 2	1 and 2
B	1	0
	2	1/2
C	1	0
	2	1/2
D	1 and 2	1 and 2
E	1 and 2	1 and 2
F	1 and 2	1 and 2
G	1 and 2	1 and 2
H	1 and 2	1 and 2

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 6 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

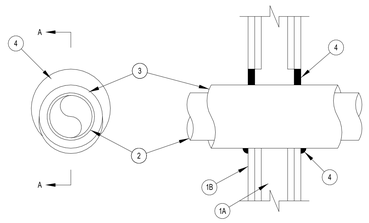
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SYSTEM NO. W-L-5028

W-L-5028

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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



SECTION A-A

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 INCH (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 SPACED MAXIMUM 24 INCH (610 MM) ON CENTER.
   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.
2. **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 USED:
   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.

SYSTEM NO. W-L-5028

W-L-5028

3. **TUBE INSULATION** - PLASTICS*+ - MINIMUM 1/2 INCH (13 MM) TO MAXIMUM 1 INCH (25 MM) THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (ABP/VC) 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.
4. **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

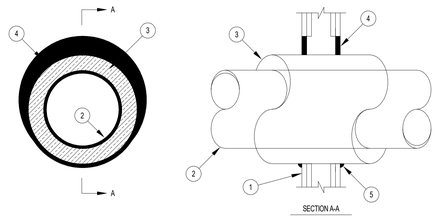
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SYSTEM NO. W-L-5029

W-L-5029

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATINGS - 1, 2, AND 3-HOUR (SEE ITEMS 1, 3 AND 4)	F RATINGS - 1, 2, AND 3-HOUR (SEE ITEMS 1, 3 AND 4)
T RATINGS - 0, 1/2, 1, AND 1-1/4 HOUR (SEE ITEM 3)	FT RATINGS - 0, 1/2, 1, AND 1-1/4 HOUR (SEE ITEM 3)
L RATING AT AMBIENT - 4 CFM/SQ FT	FH RATINGS - 1, 2, AND 3-HOUR (SEE ITEMS 1, 2 AND 4)
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT	FTH RATINGS - 0, 1/2, 1, AND 1-1/4 HOUR (SEE ITEM 3)
	L RATING AT AMBIENT - 4 CFM/SQ FT
	L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A

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 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 FOR 1 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 CENTER.
   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.
2. **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 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 TUBING** - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. WHEN THE HOURLY F AND FH RATING OF THE FIRESTOP SYSTEM IS 3-HOUR, THE NOMINAL DIAMETER OF COPPER TUBE SHALL NOT EXCEED 4 INCH (102 MM).
   D. **COPPER PIPE** - NOMINAL 6 INCH (152 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. WHEN THE HOURLY F AND FH RATING OF THE FIRESTOP SYSTEM IS 3-HOUR, THE NOMINAL DIAMETER OF COPPER PIPE SHALL NOT EXCEED 4 INCH (102 MM).

System No. W-L-5029

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 BUTT 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 0 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

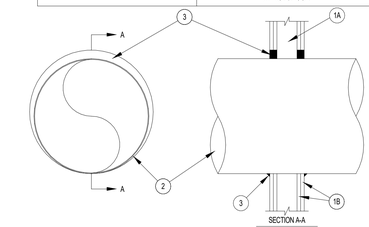
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SYSTEM NO. W-L-7042

W-L-7042

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
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 3)
	FTH RATING - 0-HOUR



SECTION A-A

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 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 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 24 INCH (610 MM) ON CENTER.
   B. **GYPSUM WALLBOARD*** - FOR 1-HOUR ASSEMBLY, ONE LAYER OF MINIMUM 5/8 INCH (16 MM) THICK WALLBOARD AS REQUIRED IN THE INDIVIDUAL WALL AND PARTITION 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 SPIRAL WOUND DUCT.
   B. **SHEET METAL DUCT** - NOMINAL 12 INCH (305 MM) DIAMETER (OR SMALLER) NO. 28 MSG (OR HEAVIER) GALVANIZED SHEET STEEL DUCT.
3. **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

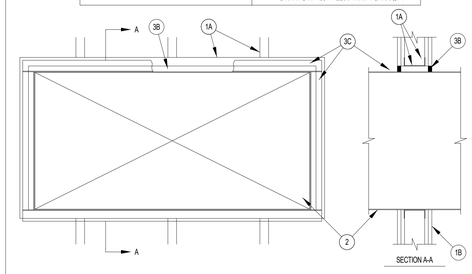
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

SYSTEM NO. W-L-7155

W-L-7155

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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-HOUR	FT RATINGS - 0-HOUR
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-HOUR
	L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
	L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A

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 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 M²) 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.
2. **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.

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

Notice of alternate billing (or payment) cycle

This contract allows (may collect 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS S/ SUBMITTALS
DATE DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.24

FIRE JOINTS - GYPSUM WALLS

SYSTEM NO. W-L-7155

WL 7155

A. **THROUGH-PENETRATING PRODUCT*** - AS AN ALTERNATE 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 CM²). 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 CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

Hilti Firestop Systems

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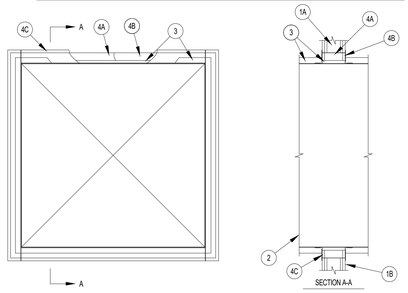
SYSTEM NO. W-L-7156

WL 7156

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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 RATING - 0-HOUR	FT RATING - 0-HOUR
	FH RATINGS - 1 AND 2-HOUR (SEE ITEM 1)
	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 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 SHALL CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF 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 FRAME AROUND OPENING.

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 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 STUDS. THE HOURLY F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL IN WHICH IT IS INSTALLED.

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 SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.

Hilti Firestop Systems

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Page: 1 of 2

SYSTEM NO. W-L-7156

WL 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 TRANSVERSE 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 (BKNT) 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 MATERIAL.

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 CM²), 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.

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 CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

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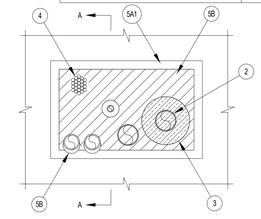
SYSTEM NO. W-L-8079

WL 8079

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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, 1/2, 3/4, 1-1/2, AND 2-HOUR (SEE ITEMS 1, 2, 3 AND 4)	FT RATINGS - 0, 1/2, 3/4, 1-1/2, AND 2-HOUR (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 PRESSURE ON THE EXPOSED SIDE.

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 MM) WIDE.

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.

Hilti Firestop Systems

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SYSTEM NO. W-L-8079

WL 8079

2. **THROUGH-PENETRANT** - ONE OR MORE PIPES, CONDUIT OR TUBES TO BE INSTALLED WITHIN THE OPENING. THE TOTAL NUMBER OF THROUGH-PENETRANTS IS DEPENDENT ON THE SIZE OF THE OPENING AND THE 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 SPACING BETWEEN THE THROUGH PENETRANTS ARE MAINTAINED. THE SEPARATION BETWEEN THE PENETRANTS SHALL BE MINIMUM 1 INCH (25 MM) TO MAXIMUM 20 INCH (508MM). THE ANNULAR SPACE BETWEEN PENETRANTS AND THE PERIPHERY OF OPENING SHALL BE MINIMUM 0 INCH (POINT CONTACT) TO MAXIMUM 20 INCH (508 MM). PIPES, CONDUIT OR TUBES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF PIPES, CONDUIT 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** - NOMINA 3 INCH (76 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

C. **STEEL PIPE** - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

D. **IRON PIPE** - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.

E. **CONDUIT** - NOMINAL 3 INCH (76 MM) DIAM (OR SMALLER) ELECTRIC METALLIC TUBING (EMT) OR RIGID STEEL CONDUIT.

F. **POLYVINYL CHLORIDE (PVC) PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 CELLULAR OR SOLID CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE, OR VENT) PIPING SYSTEMS.

G. **CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SDR 13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.

THE T, FT AND FTH RATINGS ARE 0-HOUR IF BARE PIPE AND TUBING IS USED.

3. **PIPE INSULATION** - ONE OR MORE METALLIC PENETRANTS (PIPE OR TUBING) MAY BE INSULATED WITH THE FOLLOWING TYPES OF PIPE COVERINGS:

A. **PIPE COVERING*** - MINIMUM 1 INCH (25 MM) TO MAXIMUM 2 INCH (51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY MINIMUM 3.5 PCF (56 KG/M) 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 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.

B. **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. 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.

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 BE A MINIMUM 1 INCH (25 MM).

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.

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Page: 2 of 3

SYSTEM NO. W-L-8079

WL 8079

4. **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 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 (WHLY) CATEGORY.

E. MAXIMUM 3/C (WITH GROUND) NO. 8 AWG (OR SMALLER) NON-METALLIC SHEATHED (ROMEX) CABLE WITH PVC INSULATION AND JACKET MATERIALS.

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 ANY OTHER COMBINATION.

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

* 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

Hilti Firestop Systems

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Page: 3 of 3

Project Name 1
Project Name 2
Street Adress
City, State

Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.25

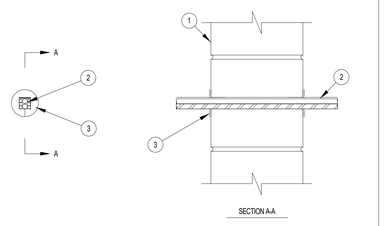
FIRE JOINTS - GYPSUM WALLS

System No. W-J-3215

W.3215

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 2-HOUR	F RATING - 2-HOUR
T RATINGS - 1/2 AND 2-HOUR (SEE ITEM 2)	FT RATINGS - 1/2 AND 2-HOUR (SEE ITEM 2)
L RATING AT AMBIENT - LESS THAN 1 CFM/OPENING	FH RATING - 2-HOUR
L RATING AT 400 F - LESS THAN 1 CFM/OPENING	FTH RATINGS - 1/2 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



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Hilti Firestop Systems

SYSTEM NO. W-J-3215

W.3215

1. **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, RECTANGULAR OR IRREGULAR WITH A MAXIMUM DIAMETER OR DIMENSION OF 1 INCH (25 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. **CABLES** - SINGLE OR TIGHT BUNDLE OF CABLES TO BE INSTALLED WITHIN THE OPENING. AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN OPENING TO HAVE A VISUAL FILL OF MINIMUM 0% TO MAXIMUM 100%. THE ANNULAR SPACE BETWEEN THE CABLE BUNDLE AND THE PERIPHERY OF THE OPENING TO BE MINIMUM 0 INCH (POINT CONTACT). CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:
   A. MAXIMUM 5/C NO. 8 AWG NM COPPER CONDUCTOR CABLE (ROMEX) WITH PVC INSULATION AND JACKET.
   B. MAXIMUM 7/C-NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE INSULATION AND JACKET.
   C. MAXIMUM 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH PVC OR PLENUM RATED INSULATION AND JACKETING.
   D. MAXIMUM 4 PR NO. 22 AWG (OR SMALLER) CAT 5 OR CAT 6 COMPUTER CABLES WITH PVC OR PLENUM RATED INSULATION AND JACKETING.
   E. TYPE RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE OR PVC INSULATION AND JACKETING HAVING A MAXIMUM OUTSIDE DIAMETER OF 1/2 INCH (13 MM).
   F. MAXIMUM 24 FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION.
   G. THROUGH PENETRATING PRODUCT* - MAXIMUM TWO COPPER CONDUCTOR 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
   H. MAXIMUM 5/C NO. 10 AWG METAL-CLAD CABLE THE HOURLY T, FT, AND FTH RATINGS OF THE FIRESTOP SYSTEM ARE 2-HOUR EXCEPT THAT FOR CABLE TYPE 2B AND 2C, THE RATINGS ARE 1/2 HOUR FOR BLANK OPENINGS WITH NO PENETRANT, THE F, FT, FH AND FTH RATINGS ARE 2-HOUR.
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.

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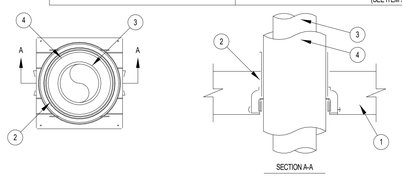
Hilti Firestop Systems

SYSTEM NO. F-A-5018

FA.5018

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F RATING - 3-HOUR	F RATING - 3-HOUR
T RATING - 1-3/4, 2, 2-1/2, 2-3/4, AND 3-HOUR (SEE ITEM 3)	FT RATING - 1-3/4, 2, 2-1/2, 2-3/4, AND 3-HOUR (SEE ITEM 3)
	FH RATING - 3-HOUR
	FTH RATING - 1-3/4, 2, 2-1/2, 2-3/4, AND 3-HOUR (SEE ITEM 3)



1. **FLOOR ASSEMBLY** - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE.
   1A. **FLOOR ASSEMBLY** - (OPTIONAL - NOT SHOWN) - THE FIRE RATED UNPROTECTED CONCRETE AND STEEL FLOOR ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL D900 SERIES DESIGNS IN THE FIRE RESISTANCE DIRECTORY AND AS SUMMARIZED BELOW:
   A. **STEEL FLOOR AND FORM UNITS*** - COMPOSITE OR NON-COMPOSITE MAXIMUM 3 INCH (76 MM) DEEP GALVANIZED STEEL FLUTED UNITS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.
   B. **CONCRETE** - MINIMUM 4-1/2 INCH (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE.
2. **FIRESTOP DEVICE*** - CAST-IN-PLACE FIRESTOP DEVICE PERMANENTLY EMBEDDED DURING CONCRETE PLACEMENT OR GROUTED IN CONCRETE FLOOR ASSEMBLY IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS WITH A MAXIMUM 2 INCH (51 MM) PROJECTION ABOVE THE TOP SURFACE OF THE CONCRETE.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 680-7/S/2.5"N, CP 680-11/04"N, CP 680-16/06"N, CP 682-7/S/2.5", CP 682-11/04", 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", CP 680-PX 2", CP 680-PX 3"
3. **THROUGH PENETRANTS** - ONE METALLIC PIPE OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP DEVICE. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. THE FOLLOWING TYPES OF PIPE OR TUBING MAY BE USED:
   A. **STEEL PIPE** - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) SCHEDULE 10 OR HEAVIER) STEEL PIPE.
   B. **COPPER TUBING** - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   C. **COPPER PIPE** - NOMINAL 4 INCH (102 MM) DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

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Hilti Firestop Systems

THE FIRESTOP DEVICE, METALLIC PENETRANT AND PIPE COVERING SHALL BE SIZED AS FOLLOWS:

NOMINAL PIPE DIAMETER, INCH (MM)	NOMINAL THICK OF PIPE COVERING, INCH (MM)	FIRESTOP DEVICE	T, FT, AND FTH RATINGS, HOUR
1/2 (13)	1 (25)	CP 680-7/S/2.5"N	2-1/2
		CP 680-P 2", CP 680-PX 2"	
1/2 (13)	1 (25)	CP 682-7/S/2.5"	2-3/4
		CP 680-M 2"	
1 (25)	1 (25)	CP 680-M 3", CP 680-P 3", CP 680-PX 3"	1-3/4
1 (25) (SEE ITEM 5)	1-1/2 (38)	CP 682-11/04"	3
		CP 680-M 4"	
2 (51)	1 (25)	CP 682-11/04"	1-3/4
		CP 680-M 4"	
2 (51)	1 (25)	CP 680-11/04"N	2-3/4
		CP 680-P 4"	
2 (51)	2 (51)	CP 680-16/06"N	2-3/4
		CP 680-P 6"	
		CP 680-M 6"	
4 (102)	1 (25)	CP 680-16/06"N	2
		CP 680-P 6"	
		CP 680-M 6"	

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 DEVICE.

* 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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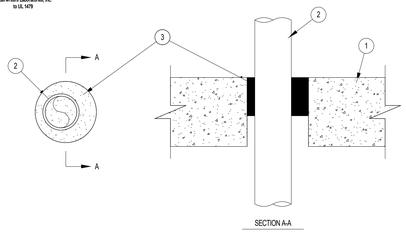
Hilti Firestop Systems

SYSTEM NO. C-AJ-2220

CAJ.2220

Classified by Underwriters Laboratories, Inc. to UL 1479

F RATING - 3-HOUR
T RATING - 0-HOUR



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 4 INCH (102 MM).
2. **THROUGH PENETRANTS** - ONE NON-METALLIC PIPE TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE AND PERIPHERY OF OPENING SHALL BE MINIMUM 1/2 INCH (13 MM) TO A MAXIMUM 1-1/8 INCH (29 MM). PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. 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 SOLID OR CELLULAR CORE 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) SDR17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   C. **ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   D. **FLAME RETARDANT POLYPROPYLENE (FRPP) PIPE** - NOMINAL 2 INCH (51 MM) DIAMETER (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. **FILL, VOID OR CAVITY MATERIAL*** - SEALANT - MINIMUM 2-1/2 INCH (63.5 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH 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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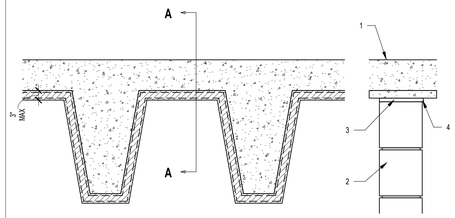
Hilti Firestop Systems

ENGINEERING JUDGEMENT FIRESTOP DETAIL

AN

PROJECT: AURA UPTOWN
ARCHITECT: ORB ARCHITECTURE
F= RATING = 2 HR. (SEE NOTE NO. 3 BELOW)



1. CONCRETE TEE DECK ASSEMBLY (MINIMUM 2 1/2" THICK) WITH UL CLASSIFIED CEMENTITIOUS FIREPROOFING INSTALLED PER MANUFACTURER'S INSTRUCTIONS 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. MINERAL WOOL SAFING (MINIMUM 4 PCF DENSITY) COMPRESSED 50% FLUSH WITH WALL SURFACES.
4. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY TO COMPLETELY COVER MINERAL WOOL, OVERLAPPING MINIMUM 1/2" ONTO ADJACENT ASSEMBLIES, AND MINIMUM 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 ON PERFORMANCE OF FLOOR ASSEMBLY UNDER FIRE CONDITIONS

THIS ENGINEERING JUDGEMENT REPRESENTS A FIRESTOP SYSTEM THAT WOULD BE EXPECTED TO PASS THE STATED RATINGS IF TESTED

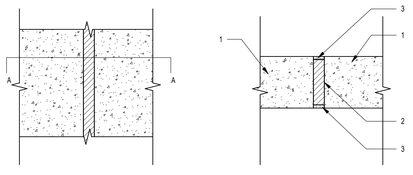
Hilti Firestop Systems

HILTI, INC. PLANO, TEXAS USA (800) 879-8000	SHEET	1 OF 1	DRAWING NO.
	SCALE	NOT TO SCALE	536900a
	DATE	OCT 21, 2021	

FRE-RATED JOINT THROUGH CONCRETE WALL ASSEMBLY

AN

ASSEMBLY RATING = 2 HR
L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT
L RATING AT 400 F = LESS THAN 1 CFM / LIN FT
CLASS II AND III MOVEMENT CAPABILITIES = 25% 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/cUL CLASSIFIED CONCRETE WALL
2. MINIMUM 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"

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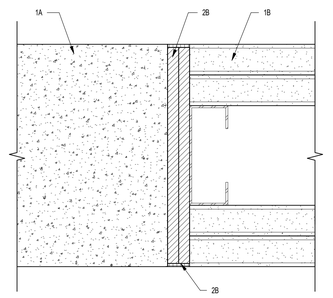
Hilti Firestop Systems

SYSTEM NO. WW-D-0068

AN

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/cUL CLASSIFIED CONCRETE WALL
2. MINIMUM 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 Underwriters Laboratories, Inc. January 09, 2015

Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.26

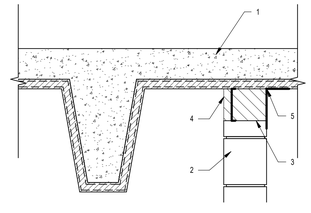
FIRE JOINTS - CONCRETE OR CMU

AN

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 INSTRUCTIONS 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)

HILTI
Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

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CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

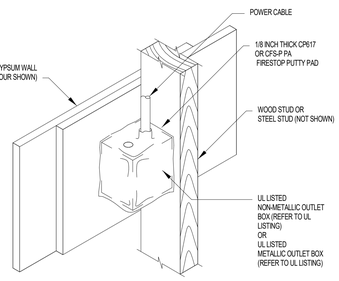
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.27

FIRE JOINTS - CONCRETE OR CMU

WALL OPENING PROTECTIVE MATERIALS (CLIV, CLIV7)

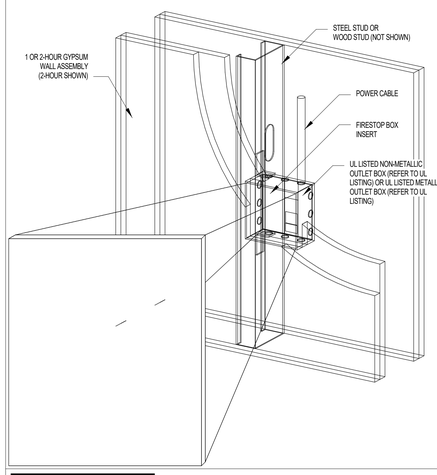
CP617 / CFS-P PA / FIRESTOP BOX INSERT



Hilti Firestop Systems

WALL OPENING PROTECTIVE MATERIALS (CLIV, CLIV7)

CP617 / CFS-P PA / FIRESTOP BOX INSERT



Hilti Firestop Systems

WALL OPENING PROTECTIVE MATERIALS (CLIV, CLIV7)

CP617 / CFS-P PA / FIRESTOP BOX INSERT

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 DEPOSITION, MAX NUMBER OF BOXES, DIMENSIONS, 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.

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 ASSEMBLIES.

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 INSTALLED WITH STEEL OR PLASTIC COVER PLATES.

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 COVER PLATES.

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.

Hilti Firestop Systems

Wall Opening Protective Materials (CLIV, CLIV7)

CP617 / CFS-P PA / FIRESTOP BOX INSERT

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 5.5 X 4 INCH UL CLASSIFIED FIRE BLOCK, CP 657 OR CFS-BL FIRESTOP BLOCK INSTALLED IN THE CAVITY BETWEEN THE TWO

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 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 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 CONNECTION TO THE BOX.

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 CONNECTION TO THE BOX.

HILTI FIRESTOP BOX INSERT, 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). 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 MAY 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 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.

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 MINIMUM 3 1/2 INCH DEEP STEEL OR WOOD STUDS AND CONSTRUCTED OF MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400, V400 OR U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY, AS SUMMARIZED IN THE TABLE BELOW. ONE 3-1/16 X 3-3/4 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 3-1/16 X 3-3/4 INCH COVERAGE.

Hilti Firestop Systems

WALL OPENING PROTECTIVE MATERIALS (CLIV, CLIV7)

CP617 / CFS-P PA / FIRESTOP BOX INSERT

BOX SIZE	TYPE OF BOX AND COVER PLATE	HOURLY RATING	WALL TYPE
4 X 4 X 2-1/8 INCH DEEP	METALLIC WITH STEEL COVER PLATES	2-HOUR	U300, U400, OR V400 - WOOD OR STEEL STUDS
4 X 4 X 2-1/8 INCH DEEP	METALLIC WITH PLASTIC COVER PLATES	1-HOUR	U300, U400, OR V400 - WOOD OR STEEL STUDS
4 X 4 X 1-1/2 INCH DEEP	METALLIC WITH PLASTIC COVER PLATES	1-HOUR	U300 - WOOD STUDS

HILTI FIRESTOP BOX INSERT, FOR USE WITH MAXIMUM 2 1/8 X 4 X 2 1/8 INCH DEEP 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 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 MAY BE INSTALLED WITH STEEL COVER PLATES. ONE 1-7/8 X 2-13/16 INSERT ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED WITH THE PRODUCT.

HILTI FIRESTOP BOX INSERT, FOR USE WITH MAXIMUM 4-1/2 X 5-1/2 X 2-1/2 INCH DEEP OR MAXIMUM 3-3/4 X 5-1/2 X 2-1/2 INCH DEEP UL LISTED METALLIC OUTLET BOXES WITHOUT INTERNAL CLAMPS IN 1-HOUR OR 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3 1/2 INCH DEEP STEEL OR WOOD STUDS AND CONSTRUCTED OF MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400, V400 OR U300 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. AS SUMMARIZED IN THE TABLE BELOW. OUTLET BOXES INSTALLED WITH STEEL COVER PLATES. BOX INSERTS EVENLY SPACED AND ADHERED TO THE INTERIOR BACK WALL OF THE OUTLET BOX IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED WITH THE PRODUCT.

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 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.

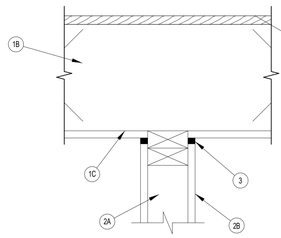
CP 617 OR CFS-P PA FIRESTOP PUTTY PADS AND HILTI FIRESTOP BOX INSERTS, FOR USE WITH MAXIMUM 4 X 4 X 1-1/2 INCH (102 X 102 X 38 MM) DEEP FLUSH DEVICE UL LISTED METALLIC OUTLET BOXES INSTALLED WITH STEEL MUD RINGS AND WITH STEEL OR PLASTIC FACEPLATES IN 1 OR 2-HOUR FIRE RATED GYPSUM WALLBOARD WALL ASSEMBLIES 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.

Hilti Firestop Systems

HWS1090

SYSTEM NO. HW-S-0090

ANSI/UL2079	CAN/ULC S115
ASSEMBLY RATING - 1-HOUR	F RATING - 1-HOUR
JOINT WIDTH - 1/2 INCH MAXIMUM	FT RATING - 1-HOUR
	FH RATING - 1-HOUR
	FTH RATINGS - 1-HOUR
	JOINT WIDTH - 1/2 INCH MAXIMUM



1. **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 DESIGN.
2. **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.
3. **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.

Hilti Firestop Systems

Project Name 1
Project Name 2

Street Adress
City, State

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WorldHQ@ORBArch.com

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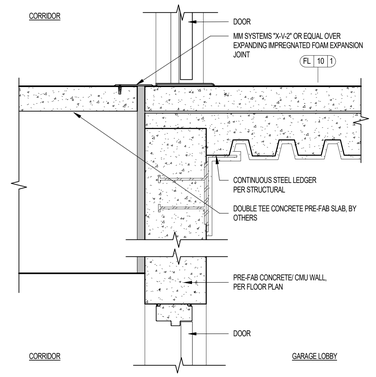
DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

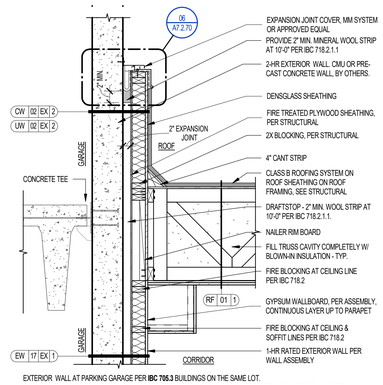
A7.2.28

FIRE JOINTS - MEMBRANE PENETRATION / JOINT GYP.



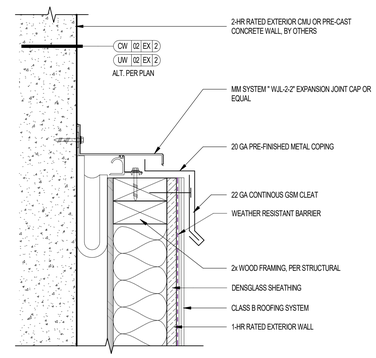
05 EXPANSION JOINT AT GARAGE RATED SLAB ON DECK AT DOOR

SCALE: 1 1/2" = 1'-0"



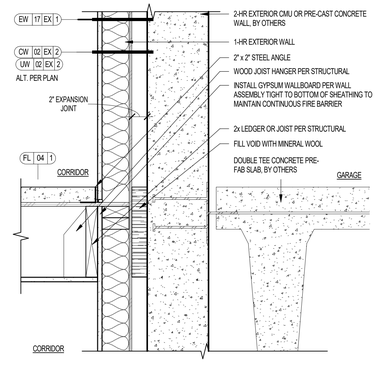
01 EXPANSION JOINT AT WOOD FRAMED PARAPET AND GARAGE CONCRETE WALL

SCALE: 3/4" = 1'-0"



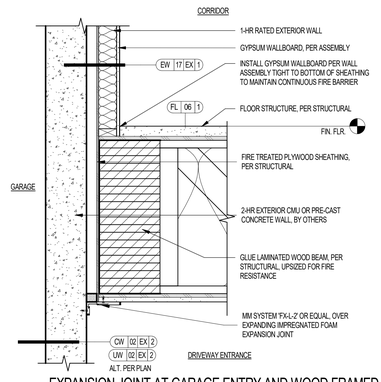
06 PARAPET EXPANSION JOINT

SCALE: 3" = 1'-0"



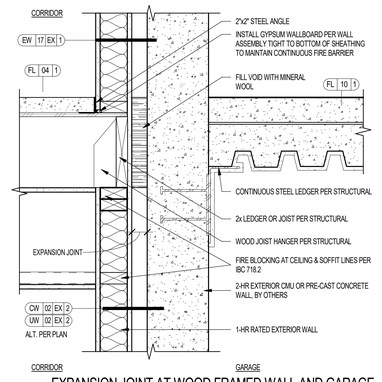
02 EXPANSION JOINT AT WOOD FRAMED WALL AND GARAGE CONCRETE WALL

SCALE: 1 1/2" = 1'-0"



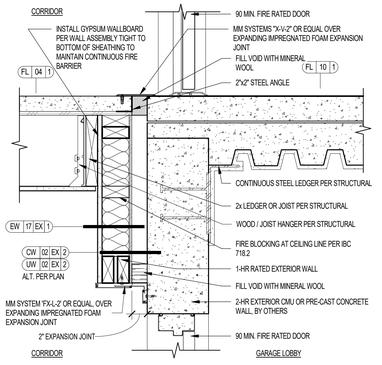
07 EXPANSION JOINT AT GARAGE ENTRY AND WOOD FRAMED WALL

SCALE: 1" = 1'-0"



03 EXPANSION JOINT AT WOOD FRAMED WALL AND GARAGE CONCRETE WALL

SCALE: 1 1/2" = 1'-0"



04 EXPANSION JOINT AT ENTRY AT RATED SLAB ON DECK

SCALE: 1 1/2" = 1'-0"

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REVISIONS/ SUBMITTALS

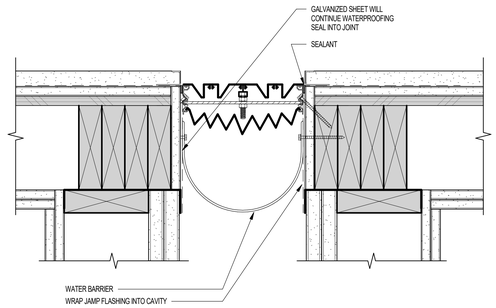
DATE	DESCRIPTION

2ND CITY SUBMITTAL

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.2.70

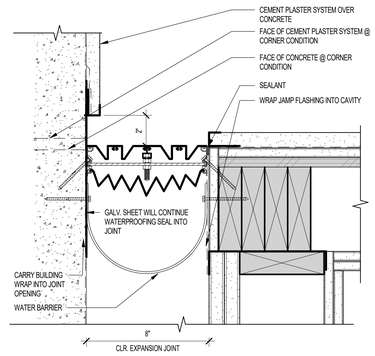
FIRE/EXPANSION JOINTS AT GARAGE



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

17 SEISMIC JOINT @ WALL

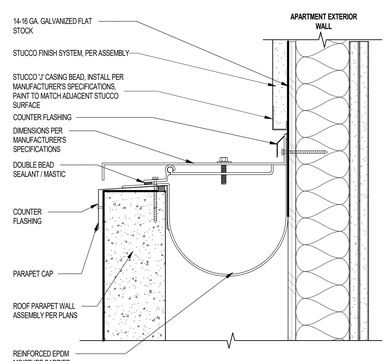
SCALE: 3" = 1'-0"



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

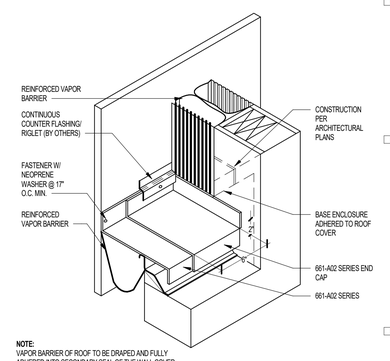
09 SEISMIC JOINT @ CONCRETE WALL

SCALE: 3" = 1'-0"



05 PARAPET MOUNTING @ GARAGE PARAPET

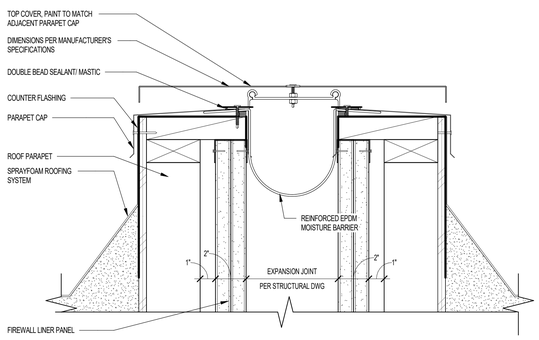
SCALE: 3" = 1'-0"



NOTE:
VAPOR BARRIER OF ROOF TO BE DRAPED AND FULLY ADHERED INTO SECONDARY SEAL OF THE WALL COVER AT ROOF LEVEL OR SLIGHTLY BELOW TO DIVERT WATER DOWN THE VERTICAL

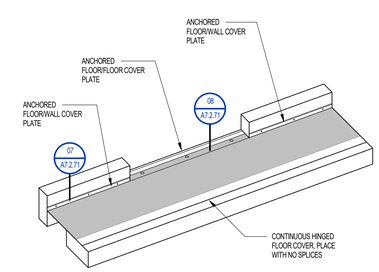
01 EXPANSION JOINT COVER - END CAP

SCALE: 1 1/2" = 1'-0"



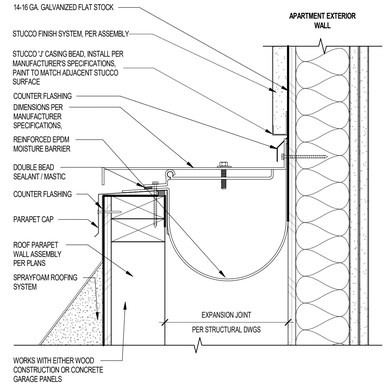
18 COVER @ FIREWALL ROOF PARAPET

SCALE: 3" = 1'-0"



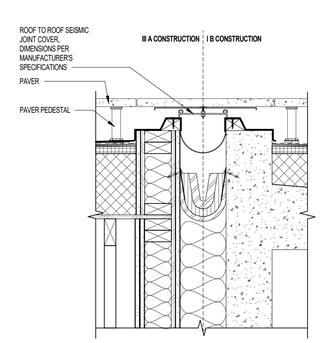
10 TRANSITION JOINT

SCALE: 3" = 1'-0"



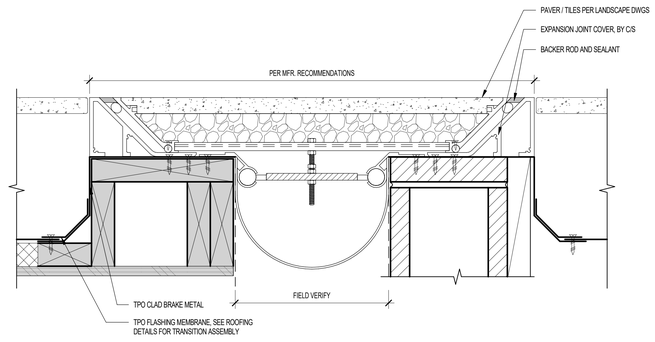
06 PARAPET MOUNTING @ ROOF PARAPET

SCALE: 3" = 1'-0"



02 EXPANSION JOINT COVER PLATE AT PAVERS

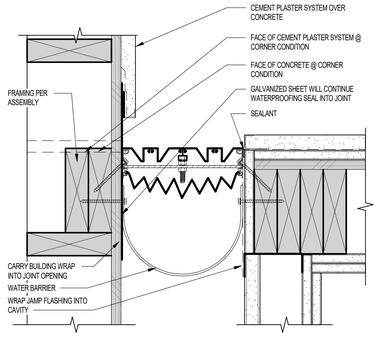
SCALE: 1 1/2" = 1'-0"



NOTE:
ALL SEALANTS AND ADHESIVES SHALL BE TPO COMPATIBLE

19 EXPANSION JOINT COVER PLATE - CMU / WOOD SEISMIC JOINT

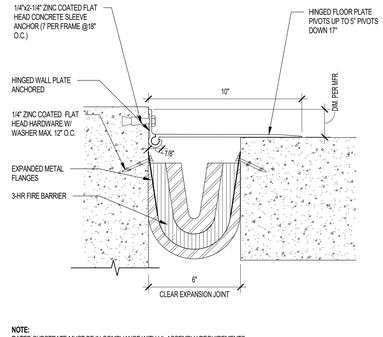
SCALE: 3" = 1'-0"



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

11 SEISMIC JOINT @ WOOD WALL

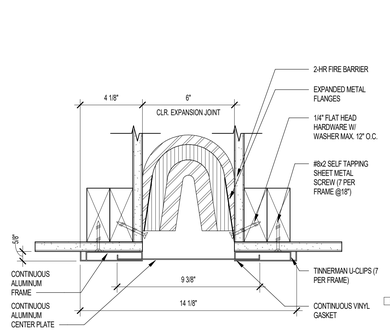
SCALE: 3" = 1'-0"



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

07 STANDARD COVER PLATE - INTERIOR FLOOR / FLOOR CONDITION

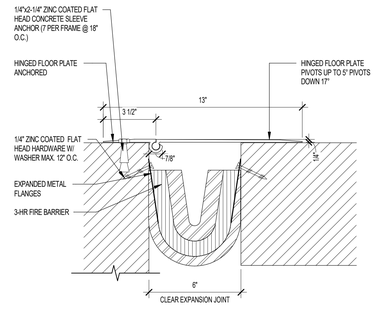
SCALE: 3" = 1'-0"



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

03 GLIDE PLATE AT WALL - CEILING CONDITION

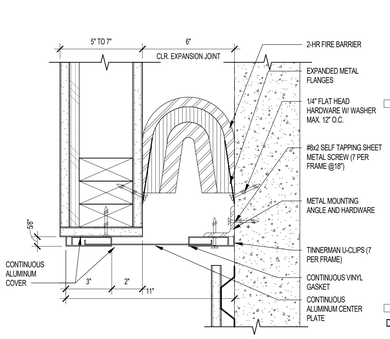
SCALE: 3" = 1'-0"



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

08 STANDARD COVER PLATE - INTERIOR FLOOR/ FLOOR CONDITION FLAT

SCALE: 3" = 1'-0"



NOTE:
RATED SUBSTRATE MUST BE IN COMPLIANCE WITH UL ASSEMBLY REQUIREMENTS

04 GLIDE PLATE AT WALL CORNER - WALL CEILING CONDITION

SCALE: 3" = 1'-0"

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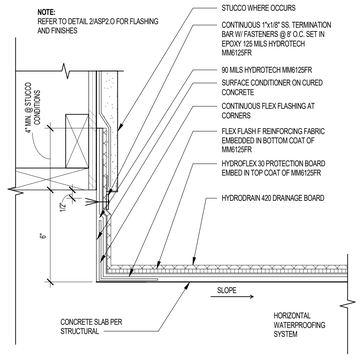
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

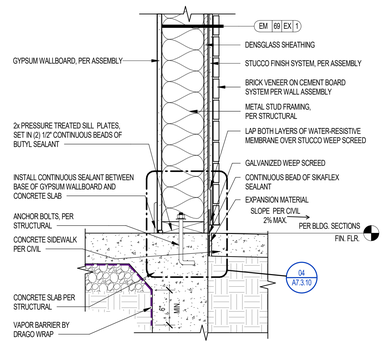
A7.2.71

EXPANSION JOINT COVER DETAILS



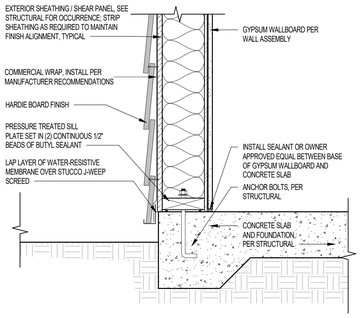
13 VERTICAL WATERPROOFING INSTALLATION

SCALE: 3" = 1'-0"



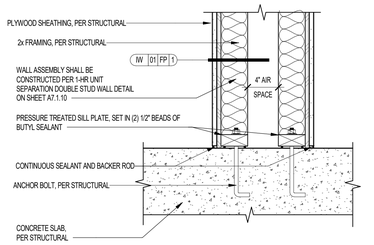
09 EXTERIOR BRICK VENEER OVER WOOD STUD WALL @ CONCRETE SLAB & SIDEWALK

SCALE: 1 1/2" = 1'-0"



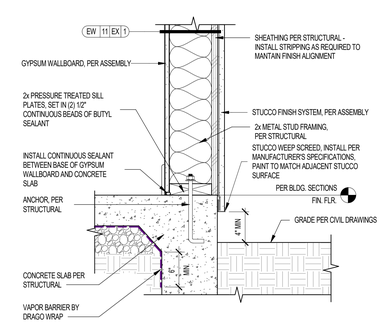
05 HARDIE BOARD EXTERIOR WALL SILL FLASHING AT SLAB ON GRADE

SCALE: 1 1/2" = 1'-0"



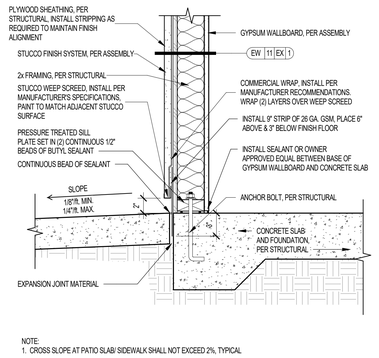
01 1-HR UNIT SEPARATION WALL AT SLAB

SCALE: 1 1/2" = 1'-0"



10 EXTERIOR STUCCO OVER WOOD STUD WALL @ CONCRETE SLAB

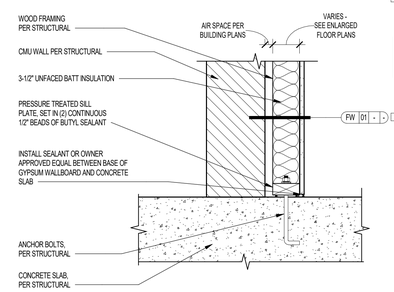
SCALE: 1 1/2" = 1'-0"



NOTE:
1. CROSS SLOPE AT PATIO SLAB/ SIDEWALK SHALL NOT EXCEED 2%, TYPICAL

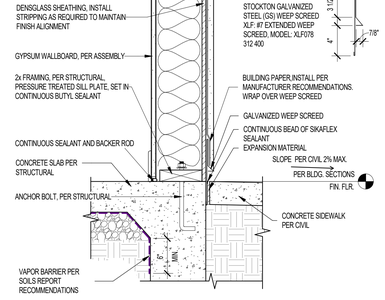
06 PATIO EXTERIOR WALL SILL FLASHING AT SLAB ON GRADE

SCALE: 1 1/2" = 1'-0"



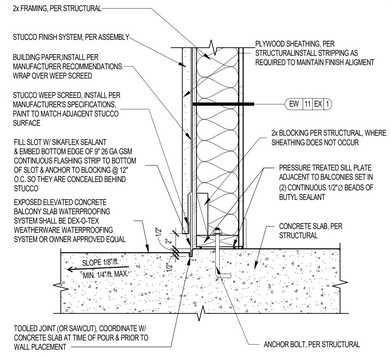
02 WOOD STUD WALL ADJACENT CMU WALL AT SLAB

SCALE: 1 1/2" = 1'-0"



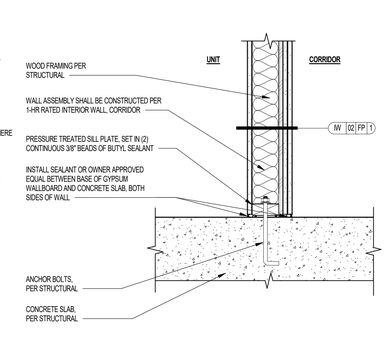
11 EXTERIOR STUCCO OVER WOOD STUD WALL @ CONCRETE SLAB & SIDEWALK

SCALE: 1 1/2" = 1'-0"



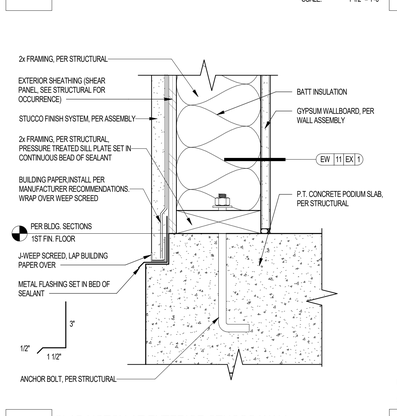
07 PATIO EXTERIOR WALL SILL FLASHING AT PODIUM PATIO

SCALE: 1 1/2" = 1'-0"



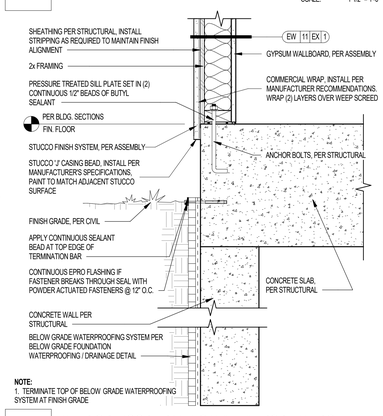
03 1-HR CORRIDOR WALL AT SLAB

SCALE: 1 1/2" = 1'-0"



12 SLAB NOTCH AT EXTERIOR STUCCO WALL

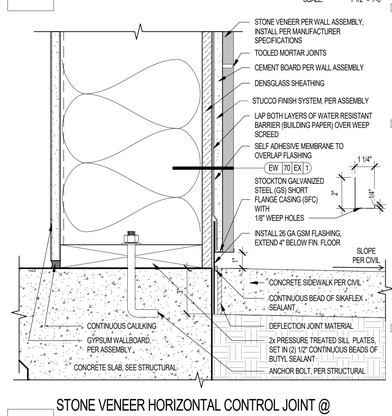
SCALE: 3" = 1'-0"



NOTE:
1. TERMINATE TOP OF BELOW GRADE WATERPROOFING SYSTEM AT FINISH GRADE

08 EXTERIOR WOOD FRAMING WALL AT PODIUM EDGE

SCALE: 1 1/2" = 1'-0"



04 STONE VENEER HORIZONTAL CONTROL JOINT @ CONCRETE SLAB - WOOD FRAMING

SCALE: 3" = 1'-0"

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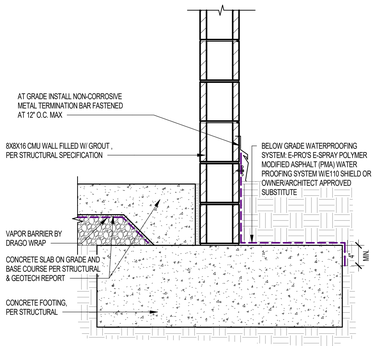
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

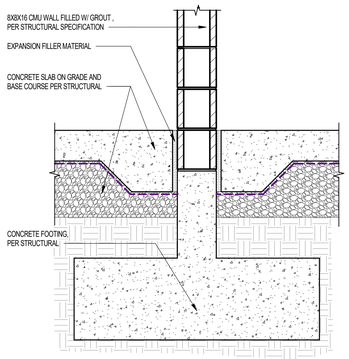
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.3.10
FOUNDATION DETAILS-WOOD FRAMED



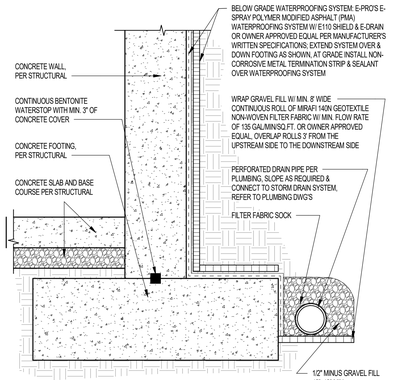
13 CMU WALL FOUNDATION

SCALE: 1" = 1'-0"



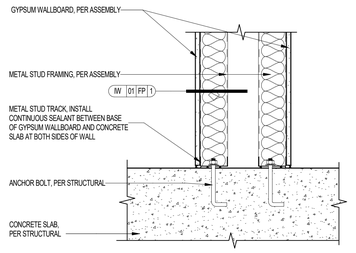
09 BELOW GRADE INTERIOR CMU FOUNDATION

SCALE: 1" = 1'-0"



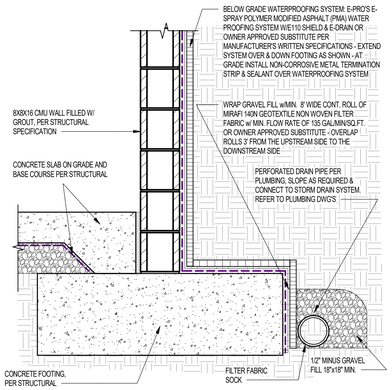
05 BELOW GRADE FOUNDATION WATERPROOFING/DRAINAGE

SCALE: 1" = 1'-0"



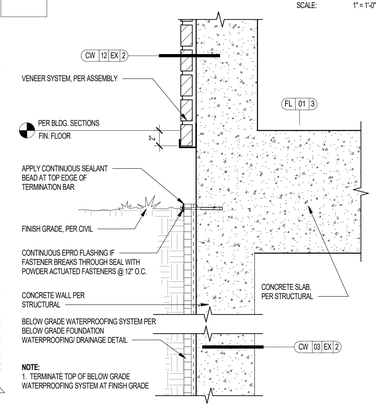
01 1-HR UNIT SEPARATION WALL AT SLAB - METAL FRAMING

SCALE: 1 1/2" = 1'-0"



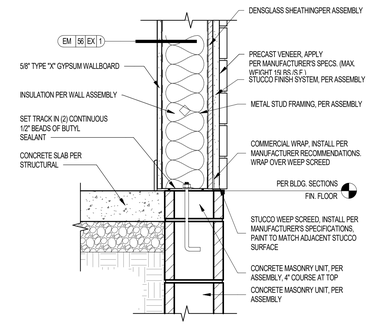
14 BELOW GRADE CMU FOUNDATION

SCALE: 1" = 1'-0"



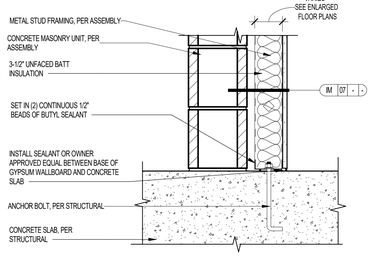
10 CONCRETE WALL WATERPROOFING AT PODIUM EDGE

SCALE: 1 1/2" = 1'-0"



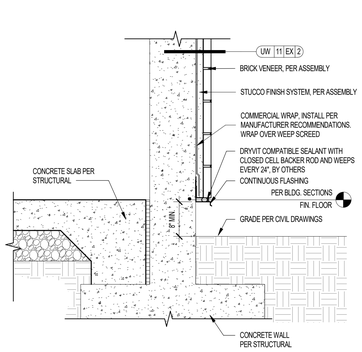
06 EXTERIOR METAL STUD & CMU WALL @ PATIO SLAB

SCALE: 1 1/2" = 1'-0"



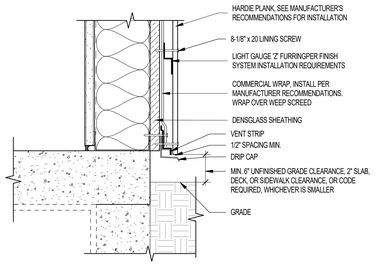
02 METAL FRAMING WALL ADJACENT CMU / CONCRETE WALL AT SLAB

SCALE: 1 1/2" = 1'-0"



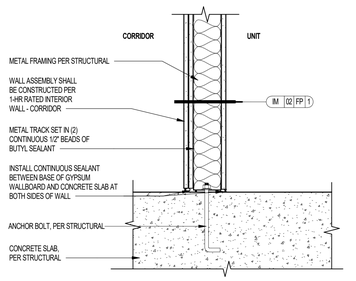
11 BRICK VENEER OVER CONCRETE WALL AT CONCRETE SLAB

SCALE: 1 1/2" = 1'-0"



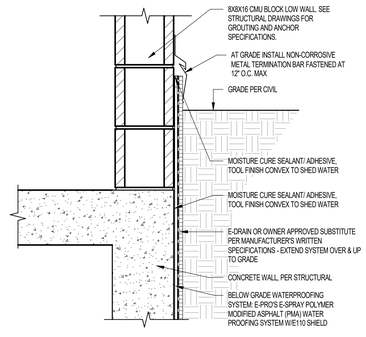
07 SECTION DETAIL - FOUNDATION @ GRADE METAL FRAME

SCALE: 3" = 1'-0"



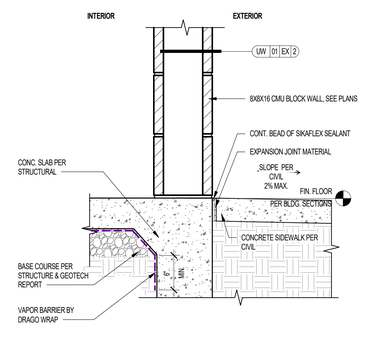
03 1-HR CORRIDOR WALL AT SLAB - METAL FRAMING

SCALE: 1 1/2" = 1'-0"



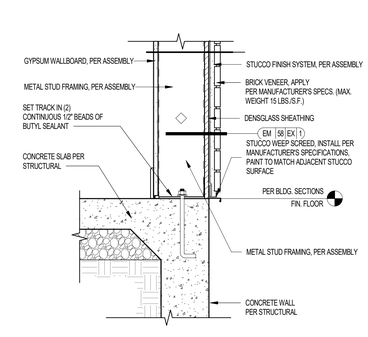
12 BELOW GRADE FOUNDATION WATERPROOFING TERMINATION AT GRADE

SCALE: 1 1/2" = 1'-0"



08 EXTERIOR CMU WALL @ CONCRETE SLAB & SIDEWALK

SCALE: 1 1/2" = 1'-0"



04 EXTERIOR BRICK VENEER OVER METAL STUD WALL @ PATIO SLAB

SCALE: 1 1/2" = 1'-0"

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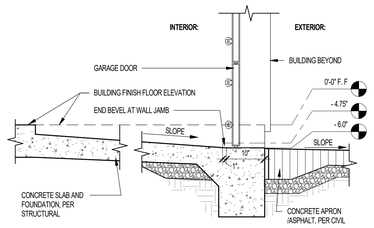
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

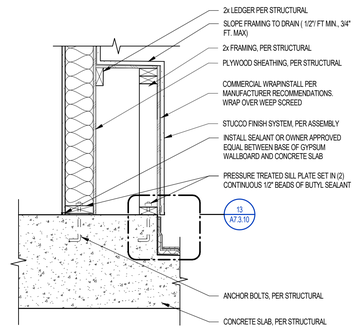
A7.3.11

FOUNDATION DETAILS-METAL FRAMING/CMU/CONCRETE



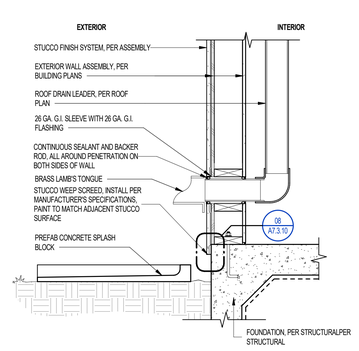
17 GARAGE DOOR AT CONCRETE SLAB

SCALE: 3/4" = 1'-0"



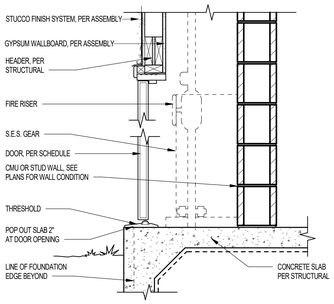
13 STUCCO BUILD-OUT AT PODIUM

SCALE: 1" = 1'-0"



09 ROOF DRAIN SECTION THRU 2X EXTERIOR WALL

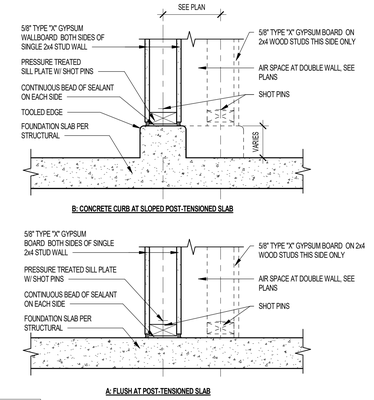
SCALE: 1" = 1'-0"



NOTES:
1. SILL SEALER OR OTHER MATERIAL THAT WILL EXPAND AND CONTRACT TO BE INSTALLED BETWEEN FOUNDATION AND SILL PLATE , PROVIDE CONTINUOUS CAULKING AT THE SILL PLATE EXTERIOR EDGE
2. PROVIDE SIGNAGE CLEARLY INDICATING "FIRE RISER INSIDE" OR "S.E.S. INSIDE", SEE PLANS

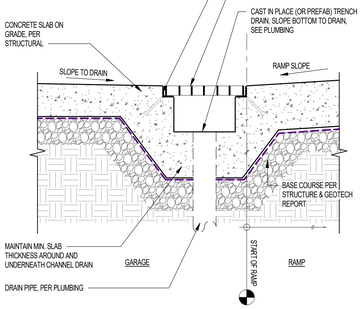
05 FIRE RISER / ELECTRICAL ROOMS

NOT TO SCALE



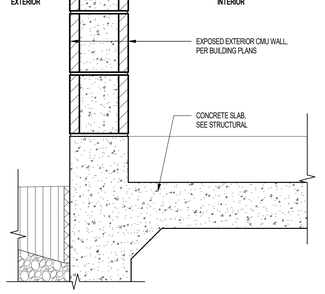
01 SILL PLATE AT INTERMEDIATE GARAGE 2x4 WALL

SCALE: 1 1/2" = 1'-0"



14 CONCRETE CURB UNDER 6" METAL STUD

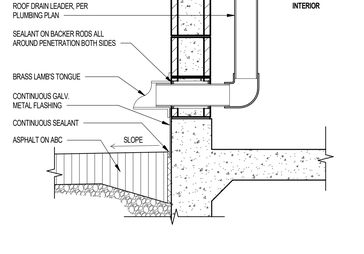
SCALE: 1 1/2" = 1'-0"



SECTION VIEW

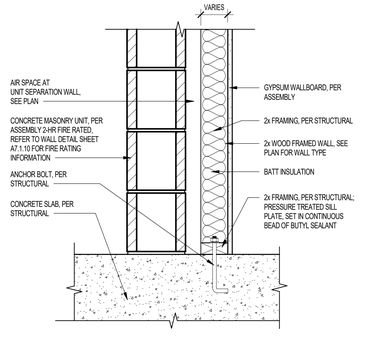
10 WOOD FURRING AT EXPOSED CMU INTERIOR

SCALE: 1 1/2" = 1'-0"



06 ROOF DRAIN PLAN DETAIL @ GARAGE WALL

SCALE: 1 1/2" = 1'-0"



02 SILL PLATE AT INTERMEDIATE GARAGE 2x6 WALL

SCALE: 1 1/2" = 1'-0"

15 WOOD STUD WALL @ CONC. SLAB

SCALE: 1 1/2" = 1'-0"

11 WALL AT STAIR & GARAGE

SCALE: 3" = 1'-0"

07 ROOF DRAIN SECTION @ GARAGE WALL

SCALE: 1" = 1'-0"

03 CONCRETE CURB AT 2x8 INTERMEDIATE GARAGE WALL

SCALE: 3" = 1'-0"

16 TRENCH DRAIN IN SLAB ON GRADE

SCALE: 1 1/2" = 1'-0"

12 CMU WALL AT GARAGES

SCALE: 1 1/2" = 1'-0"

08 ROOF DRAIN SECTION THRU CMU WALL AT GARAGE

SCALE: 1" = 1'-0"

04 CMU W/ 2x WOOD FRAMED WALL DETAIL

SCALE: 1 1/2" = 1'-0"

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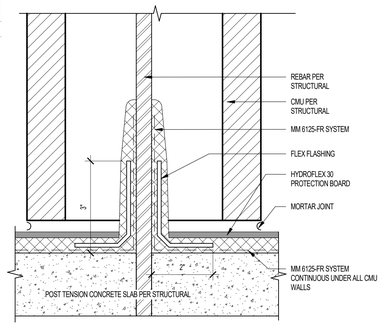
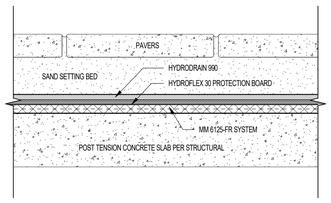
A7.3.20

GROUND SLAB DETAILS



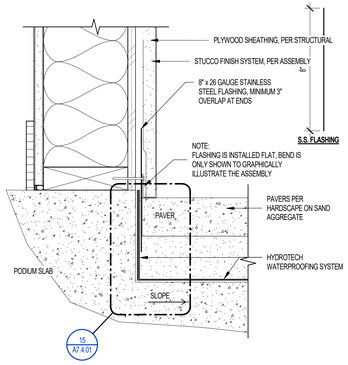
21 WATERPROOFING AT REBAR

SCALE: 6" = 1'-0"



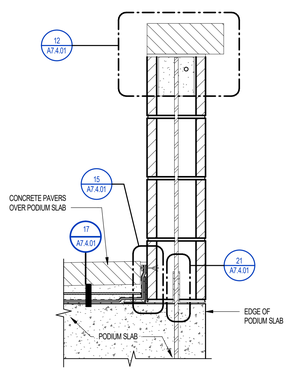
17 WATERPROOFING AT PAVERS

SCALE: 3" = 1'-0"



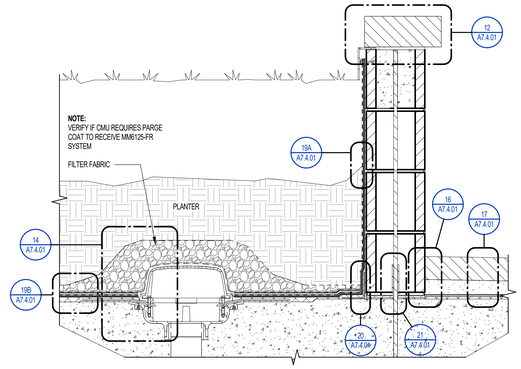
13 SILL PLATE AT BUILDING STEP

SCALE: 3" = 1'-0"



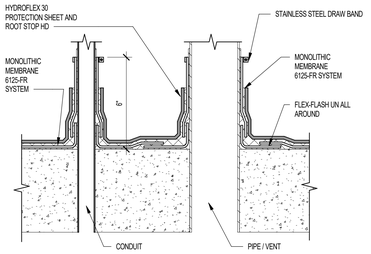
09 CMU WALL AT PODIUM SLAB EDGE

SCALE: 1 1/2" = 1'-0"



05 PODIUM PLANTER

SCALE: NOT TO SCALE



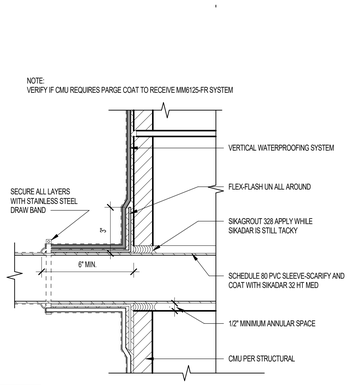
NOTES:
SOME PIPES MATERIALS (PVC, COPPER, BRASS) MAY REQUIRE ROUGHENING/ SANDING, IN ADDITION TO PRIMING W/ SURFACE CONDITIONER, FOR PROPER ADHESION OF MM 6125.

METAL PIPES MUST BE FREE OF ALL OIL AND RUST.

THE SAME DETAILING ABOVE WOULD BE EMPLOYED FOR PENETRATIONS THROUGH VERTICAL / FOUNDATION WALL APPLICATIONS.

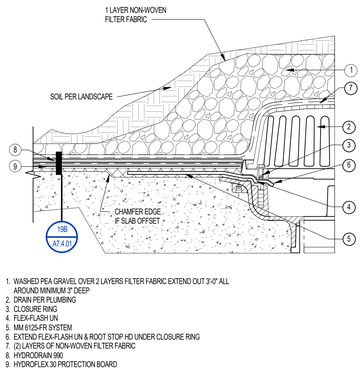
22 CAST IN PLACE PENETRATIONS - TYPICAL

SCALE: 3" = 1'-0"



18 WATERPROOFING PIPE SLEEVE BETWEEN PLANTERS

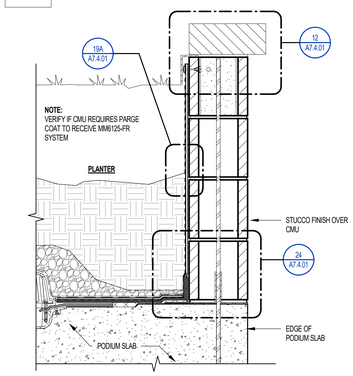
SCALE: 3" = 1'-0"



1. WASHED PEA GRAVEL OVER 2 LAYERS FILTER FABRIC EXTEND OUT 3'-0" ALL AROUND MINIMUM 3" DEEP
2. DRAIN PER PLUMBING
3. CLOSURE RING
4. FLEX-FLASH UN
5. MM 6125-FR SYSTEM
6. EXTEND FLEX-FLASH UN & ROOT STOP HD UNDER CLOSURE RING
7. (2) LAYERS OF NON-WOVEN FILTER FABRIC
8. HYDRODRAIN 990
9. HYDROFLEX 30 PROTECTION BOARD

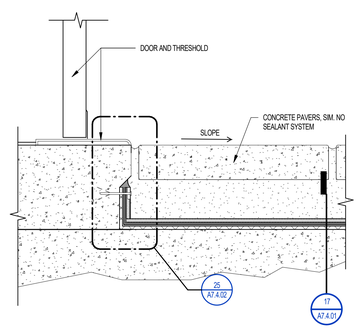
14 WATERPROOFING AT PLANTER DRAIN

SCALE: 3" = 1'-0"



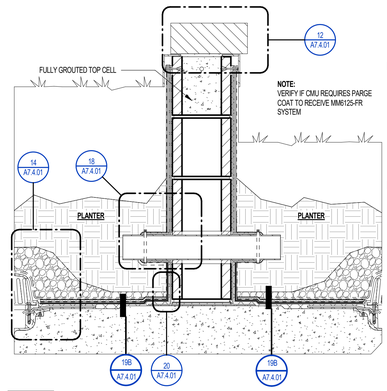
10 PLANTER WALL AT PODIUM SLAB EDGE

SCALE: 1 1/2" = 1'-0"



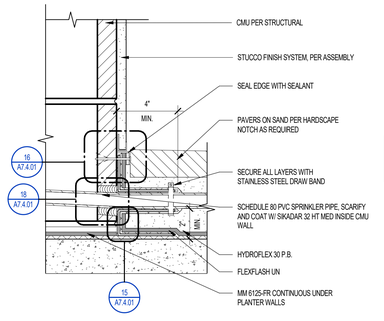
06 CONCRETE AND PAVERS AT DOORWAY

SCALE: 3" = 1'-0"



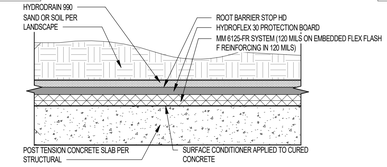
02 SHARED PLANTER WALLS

SCALE: 1 1/2" = 1'-0"



23 IRRIGATION PIPE PENETRATION AT PLANTERS

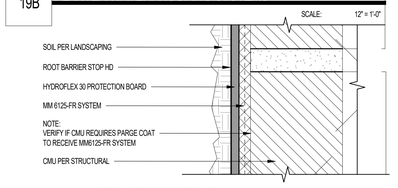
SCALE: 3" = 1'-0"



B. HORIZONTAL WATERPROOFING INSTALLATION

19B PLANTER WATERPROOFING SYSTEMS

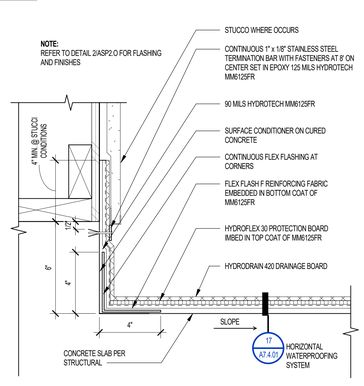
SCALE: 12" = 1'-0"



A. VERTICAL WATERPROOFING INSTALLATION

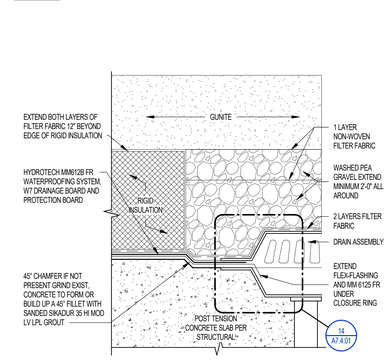
19A PLANTER WATERPROOFING SYSTEMS

SCALE: 12" = 1'-0"



15 VERTICAL WATERPROOFING INSTALLATION

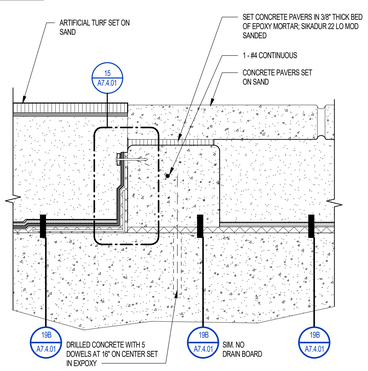
SCALE: 3" = 1'-0"



NOTE:
CONCRETE SHALL CURE MINIMUM 28 DAYS PRIOR TO INSTALLING WATERPROOFING SYSTEM

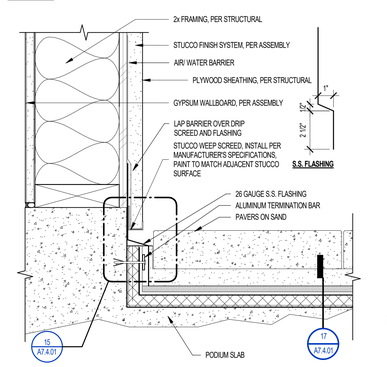
11 WATERPROOFING AT POOL DRAIN DETAIL

SCALE: 3" = 1'-0"



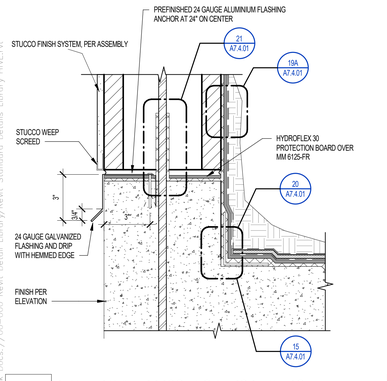
07 CONC. CURB AT ARTIFICIAL TURF AND CONC. PAVERS

SCALE: 3" = 1'-0"



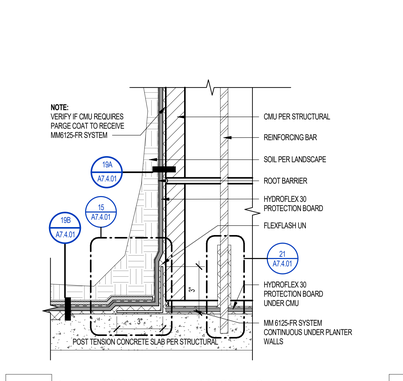
03 PAVERS AT WALL BASE

SCALE: 3" = 1'-0"



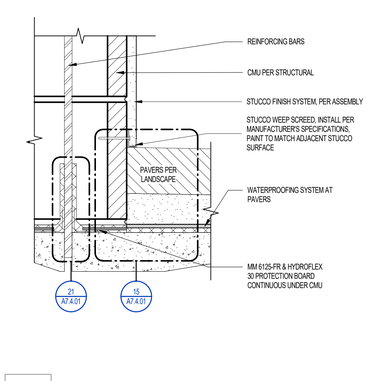
24 PLANTER WATERPROOFING AT PODIUM EDGE

SCALE: 3" = 1'-0"



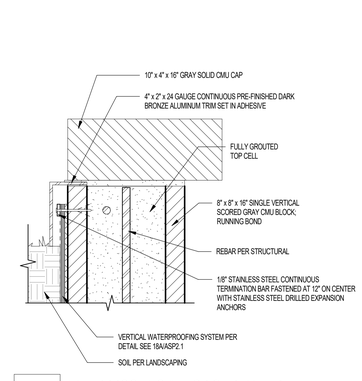
20 PLANTER CORNER WATERPROOFING

SCALE: 3" = 1'-0"



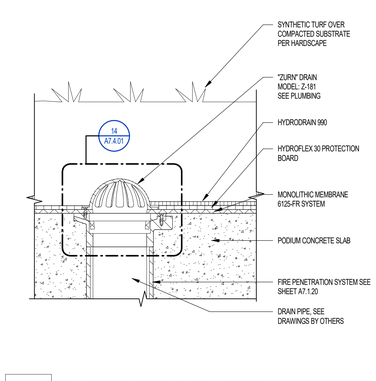
16 PAVER WATERPROOFING TERMINATION AT CMU WALL

SCALE: 3" = 1'-0"



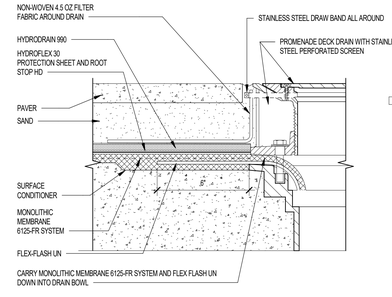
12 WATERPROOFING AT TOP OF PLANTER

SCALE: 3" = 1'-0"



08 WATERPROOFING AT PLANTER DRAIN

SCALE: 3" = 1'-0"



NOTES:
1. AREA AROUND DRAIN SHOULD BE DEPRESSED/ SUMPED (SEE DRAWING) TO PROMOTE POSITIVE WATER DRAINAGE
2. FLEX-FLASH UN-REINFORCEMENT SHALL BE ONE SHEET EXTENDING A MINIMUM OF 6" BEYOND THE DRAIN FLANGE ON ALL SIDES AND SECURED IN CLAMPING RING AT DRAIN
3. ALL DRAINS ARE REQUIRED TO HAVE FLASHING CLAMPING RING ASSEMBLIES. CONSULT SPECIFIC DRAIN MANUFACTURER FOR ADDITIONAL ACCESSORIES (i.e., DEBRIS SCREENS, LOW-PROFILE DOMES, EXTENSIONS, ETC.)

04 DECK DRAIN AT PAVER

SCALE: 3" = 1'-0"

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REVISIONS/ SUBMITTALS

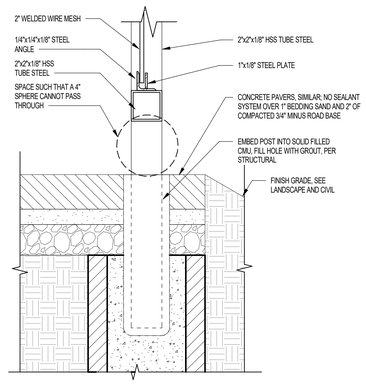
DATE	DESCRIPTION

1ST BUILDING SUBMITTAL

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

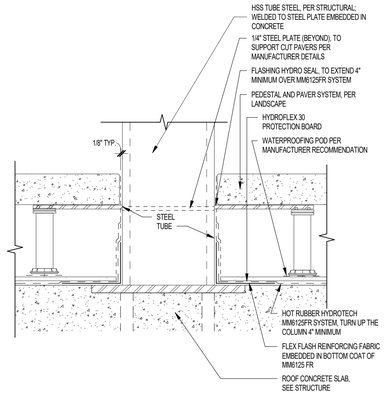
A7.4.01

SLAB PLAN DETAILS



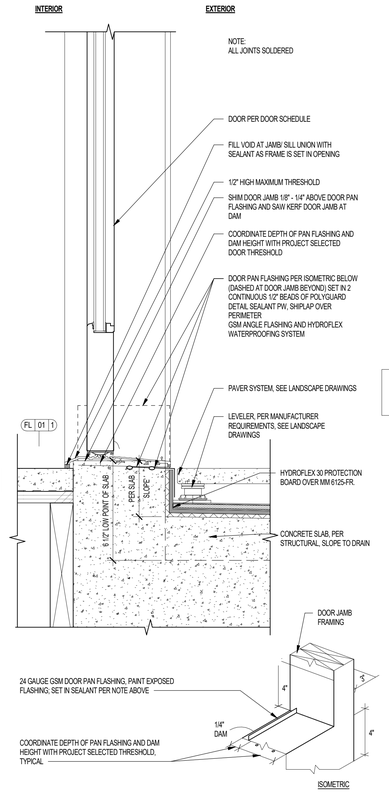
45 PATIO RAILING

SCALE: 3" = 1'-0"



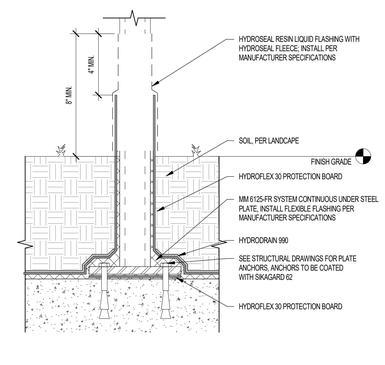
41 COLUMN WATERPROOFING @ PODIUM PAVERS

SCALE: 3" = 1'-0"



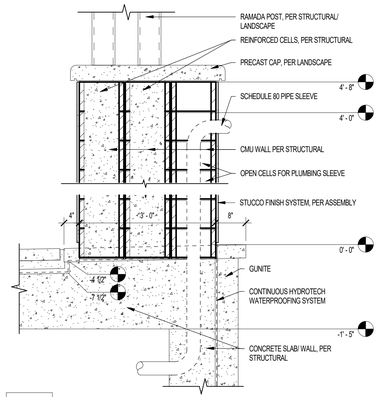
38 DOOR SILL FLASHING @ PODIUM SLAB

SCALE: 3" = 1'-0"



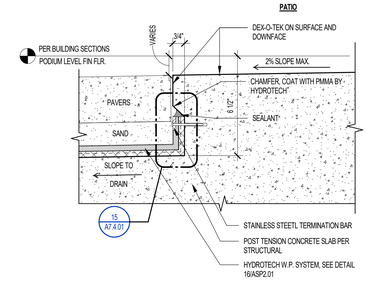
33 STEEL FENCE POSTS AND COLUMN BELLOW GRADE

SCALE: 3" = 1'-0"



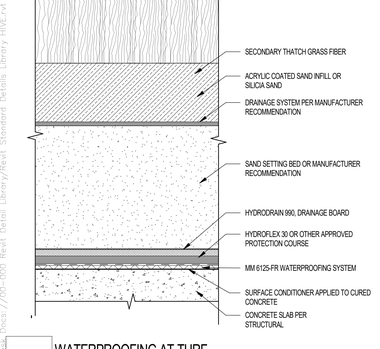
29 CMU COLUMN @ POOL SIDE

SCALE: 3/4" = 1'-0"



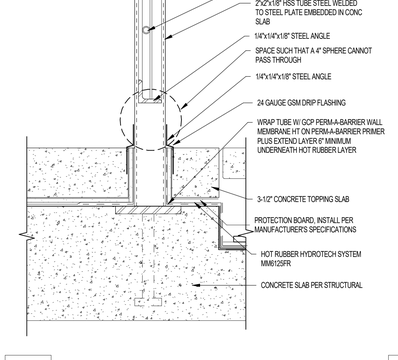
25 PODIUM AT UNIT PATIO WATER PROOFING

SCALE: 3" = 1'-0"



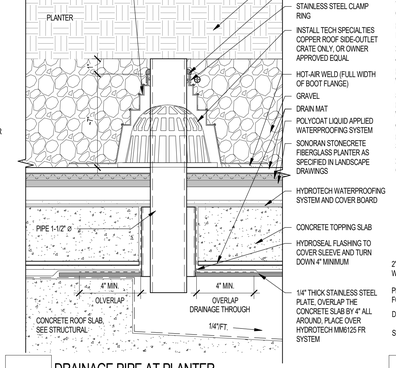
46 EMBEDDED STEEL PLATE WATERPROOFING

SCALE: 3" = 1'-0"



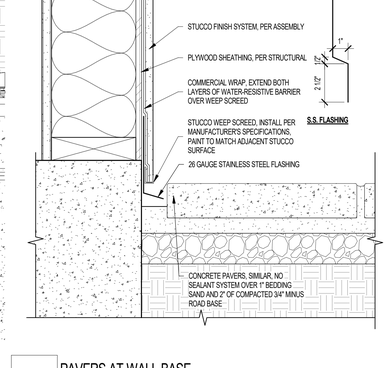
42 PAVER SUPPORT @ STEEL COLUMN ON PODIUM SLAB

SCALE: 1" = 1'-0"



34 CMU WALL AT PAVERS

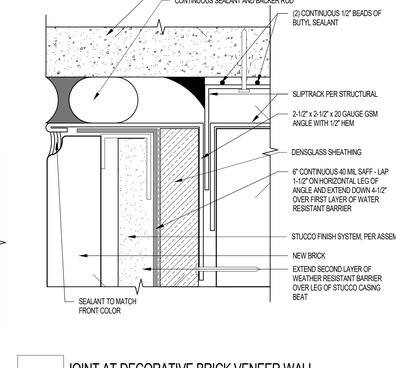
SCALE: 3" = 1'-0"



NOTE:
SEE LANDSCAPE DETAILS FOR ADDITIONAL INFORMATION

30 PAVERS AT STOREFRONT

SCALE: 3" = 1'-0"



26 SLAB EXPANSION JOINT

SCALE: 3" = 1'-0"

47 CONCRETE CURB AT ARTIFICIAL TURF & PAVERS

SCALE: 3" = 1'-0"

43 STEEL COLUMN - GUARDRAIL ATTACHMENT @ PODIUM SLAB

SCALE: 3" = 1'-0"

39 PAVERS AT PODIUM SLAB

SCALE: 3" = 1'-0"

35 RAISED PAVERS AT WALL BASE

SCALE: 3" = 1'-0"

NOTE:
SEE LANDSCAPE DETAILS FOR ADDITIONAL INFORMATION

31 PAVERS AT DOORWAY

SCALE: 3" = 1'-0"

NOTE:
RUN HYDROTECH CONTINUOUS BELOW AND BEHIND ALL INTERSECTING WALLS WITH POOL/ SPA TUBS

27 POOL EDGE

SCALE: 1" = 1'-0"

48 WATERPROOFING AT TURF

SCALE: 12" = 1'-0"

44 GUARDRAIL ATTACHMENT AT PODIUM SLAB

SCALE: 3" = 1'-0"

40 DRAINAGE PIPE AT PLANTER

SCALE: 3" = 1'-0"

36 PLANTER EDGE AT ROOF DECK SLAB EDGE

SCALE: 3" = 1'-0"

32 PAVERS AT WALL BASE

SCALE: 3" = 1'-0"

28 JOINT AT DECORATIVE BRICK VENEER WALL

SCALE: 12" = 1'-0"

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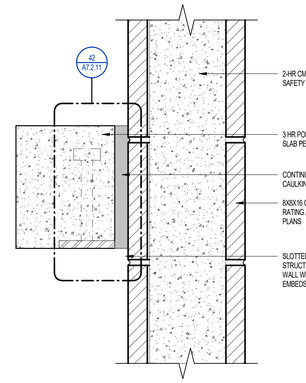
DATE	DESCRIPTION

1ST BUILDING SUBMITTAL

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

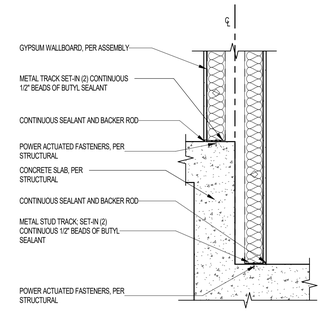
A7.4.02

SLAB PLAN DETAILS



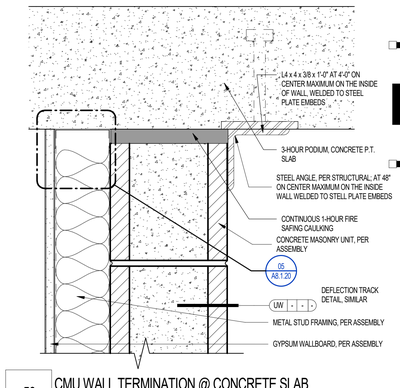
53 CONCRETE SLAB AT CMU WALL

SCALE: 3" = 1'-0"



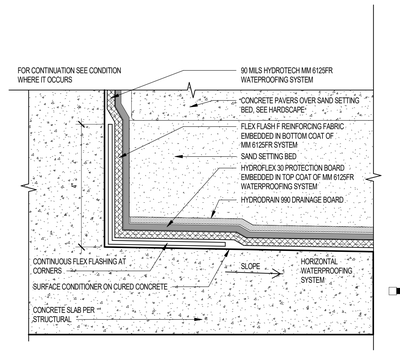
49 1-HR UNIT SEPARATION WALL AT SLAB STEP

SCALE: 1" = 1'-0"



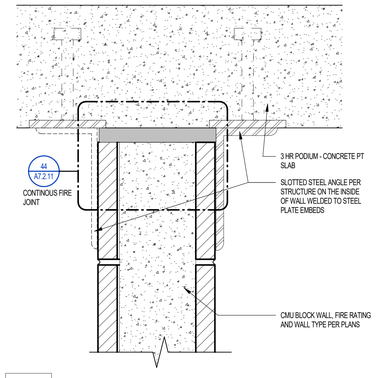
50 CMU WALL TERMINATION @ CONCRETE SLAB

SCALE: 3" = 1'-0"



51 WATERPROOFING AT CONCRETE SLAB STEP

SCALE: 6" = 1'-0"



52 CMU DEFLECTION JOINT @ CONCRETE SLAB

SCALE: 3" = 1'-0"

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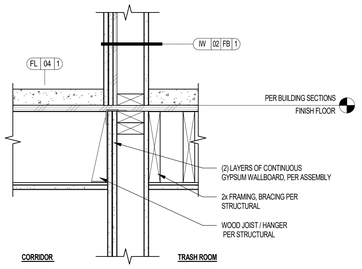
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.03

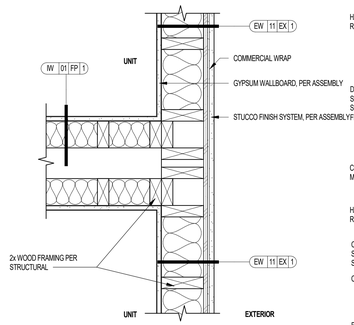
SLAB PLAN DETAILS



NOTE: REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS / REQUIREMENTS

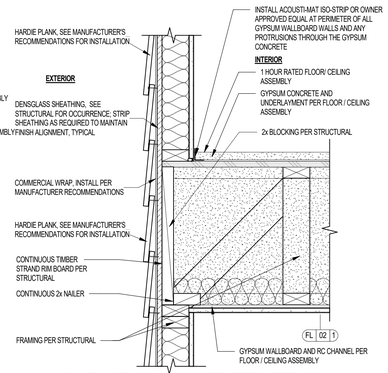
13 1-HR BARRIER AT TRASH ROOM

SCALE: 1 1/2" = 1'-0"



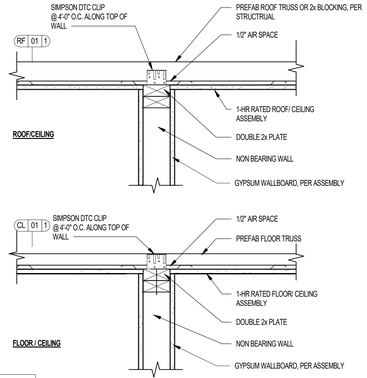
09 UNIT SEPARATION WALL AT EXTERIOR WALL

SCALE: 1 1/2" = 1'-0"



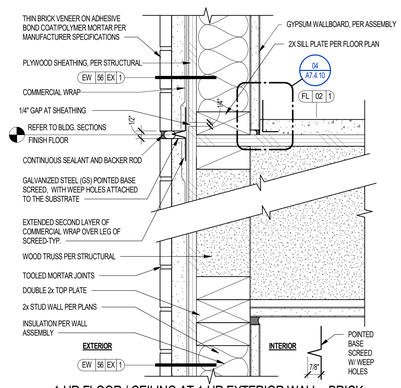
05 FLOOR / CEILING @ 1 HOUR RATED EXTERIOR WALL HARDIE BOARD FINISH

SCALE: 1 1/2" = 1'-0"



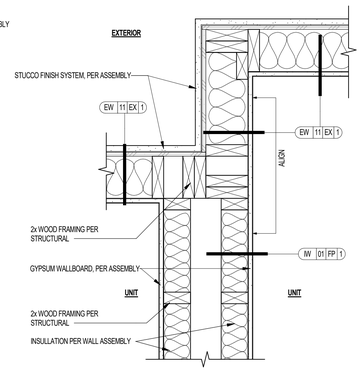
01 NON-BEARING WALL ATTACHMENT AT CEILING

SCALE: 1 1/2" = 1'-0"



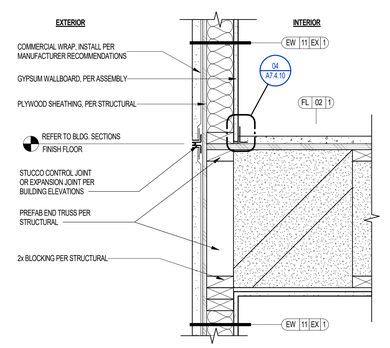
14 1-HR FLOOR / CEILING AT 1-HR EXTERIOR WALL - BRICK VENEER

SCALE: 3" = 1'-0"



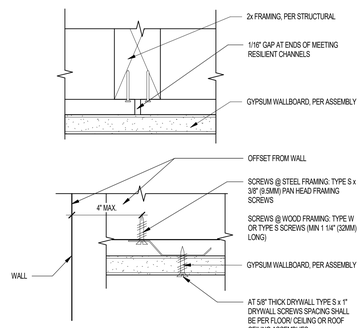
10 1-HR UNIT SEPARATION WALL AT BUILDING OFFSET PLAN VIEW

SCALE: 1 1/2" = 1'-0"



06 1-HR FLOOR / CEILING AT 1-HR EXTERIOR WALL

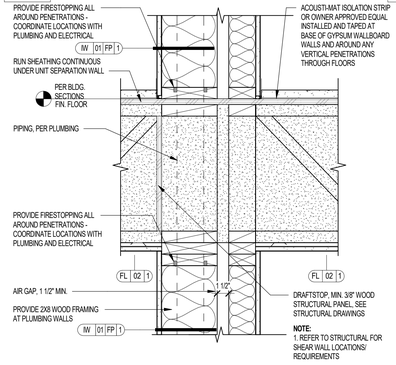
SCALE: 1 1/2" = 1'-0"



NOTE: INSTALL SCREWS IN THE HOLES PROVIDED (WHENEVER POSSIBLE)

02 RESILIENT CHANNEL INSTALLATION AT CEILING

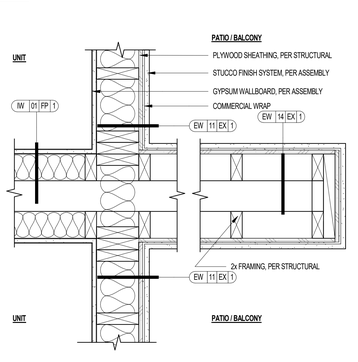
SCALE: 6" = 1'-0"



NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

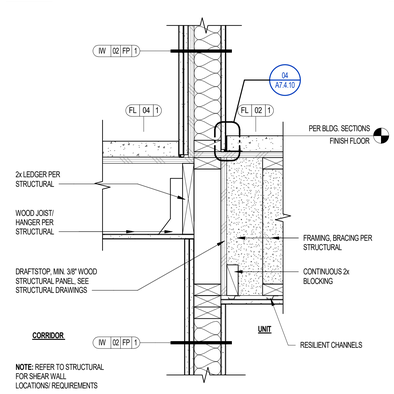
15 1-HR FLOOR / CEILING AT 1-HR UNIT SEPARATION WALL PERPENDICULAR TO FLOOR TRUSSES AT PLUMBING WALLS

SCALE: 1 1/2" = 1'-0"



11 1-HR UNIT SEPARATION WALL AT BALCONY EXTERIOR WALL

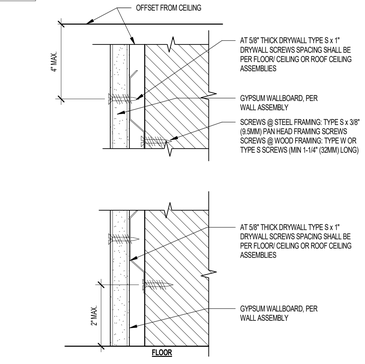
SCALE: 1 1/2" = 1'-0"



NOTE: REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

07 1-HR FLOOR / CEILING AT 1-HR CORRIDOR WALL

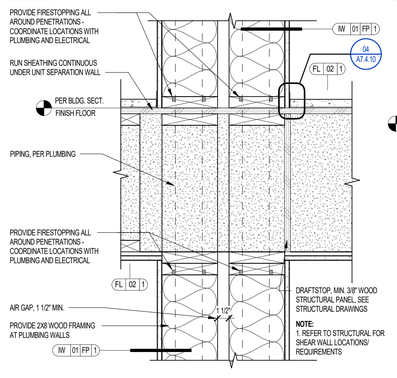
SCALE: 1 1/2" = 1'-0"



NOTE: INSTALL SCREWS IN THE HOLES PROVIDED (WHENEVER POSSIBLE)

03 RESILIENT CHANNEL INSTALLATION AT CONCRETE / CMU WALL

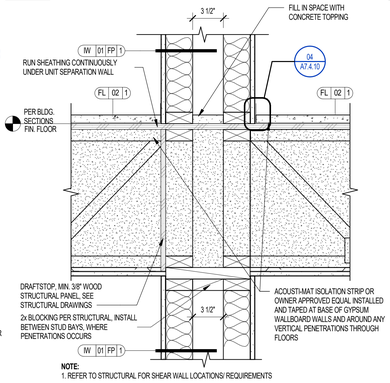
SCALE: 6" = 1'-0"



NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

16 1-HR FLOOR / CEILING AT 1-HR UNIT SEPARATION WALL PARALLEL TO FLOOR TRUSSES AT PLUMBING WALLS

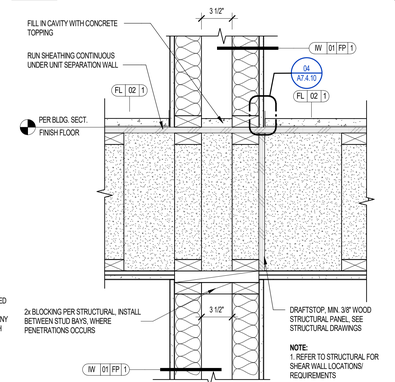
SCALE: 1 1/2" = 1'-0"



NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

12 1-HR FLOOR / CEILING AT 1-HR UNIT SEPARATION WALL PERPENDICULAR TO FLOOR TRUSSES

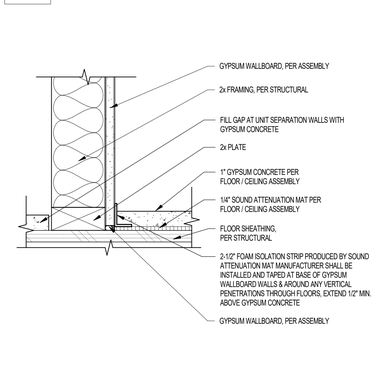
SCALE: 1 1/2" = 1'-0"



NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

08 1-HR FLOOR / CEILING AT 1-HR UNIT SEPARATION WALL PARALLEL TO FLOOR TRUSSES

SCALE: 1 1/2" = 1'-0"



04 FOAM ISOLATION STRIP AT BASE OF WALLS AT GYPSUM CONCRETE

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

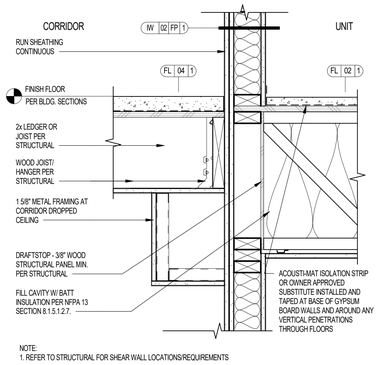
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.10

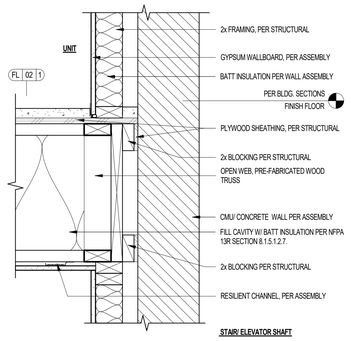
FLOOR-CEILING DETAILS WOOD FRAMING



NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/REQUIREMENTS

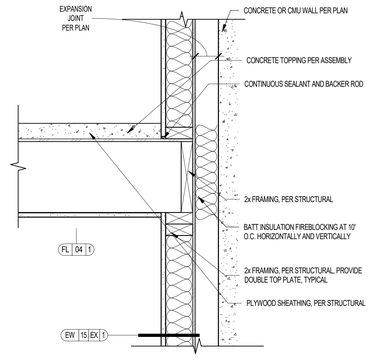
41 1-HR FLOOR / CEILING AT 1-HR UNIT SEPARATION WAL & CORRIDOR WALL

SCALE: 1 1/2" = 1'-0"



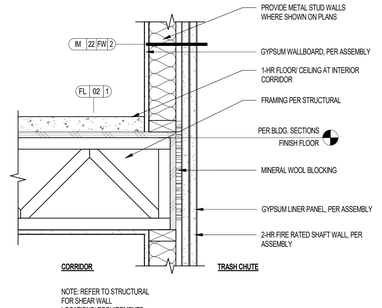
37 CMU WALL AT FLOOR / CEILING AT UNIT SEPARATION

SCALE: 1 1/2" = 1'-0"



33 1-HR FLOOR CONSTRUCTION AT GARAGE WALL

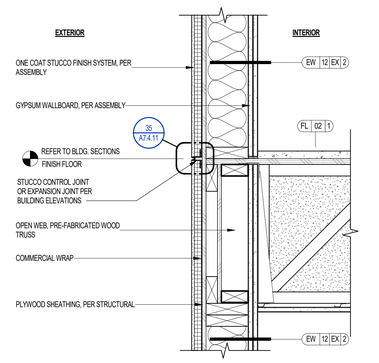
SCALE: 1 1/2" = 1'-0"



NOTE: REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

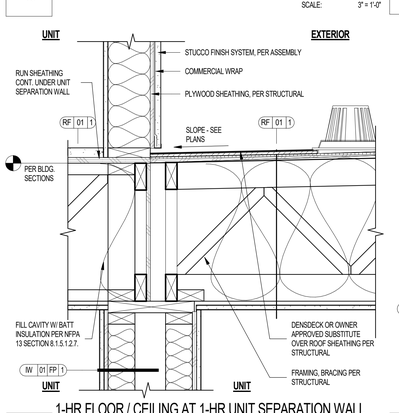
29 2-HR BARRIER AT TRASH CHUTE

SCALE: 1 1/2" = 1'-0"



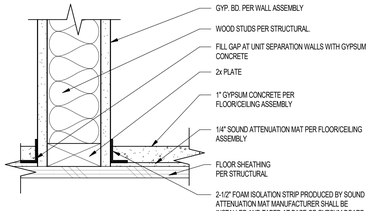
25 1-HR FLOOR / CEILING AT 2-HR EXTERIOR WALL - STUCCO

SCALE: 1 1/2" = 1'-0"



42 1-HR FLOOR / CEILING AT 1-HR EXTERIOR WALL

SCALE: 1 1/2" = 1'-0"

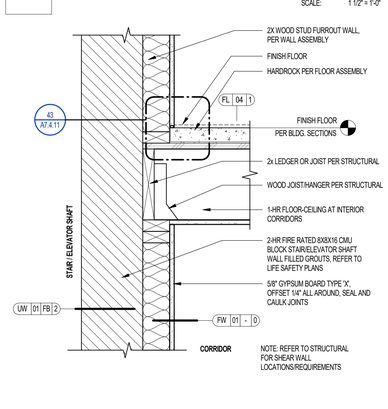


43 FOAM ISOLATION STRIP AT BASE OF WALLS AT GYPSUM CONCRETE

SCALE: 3" = 1'-0"

44 1-HR FLOOR / CEILING AT 1-HR UNIT SEPARATION WALL PARALLEL TO FLOOR TRUSSES

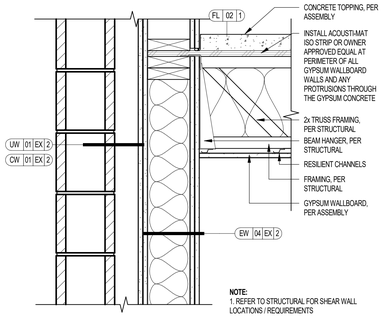
SCALE: 1 1/2" = 1'-0"



NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS / REQUIREMENTS

38 1HR FLOOR ASSEMBLY AT GARAGE WALL

SCALE: 1 1/2" = 1'-0"



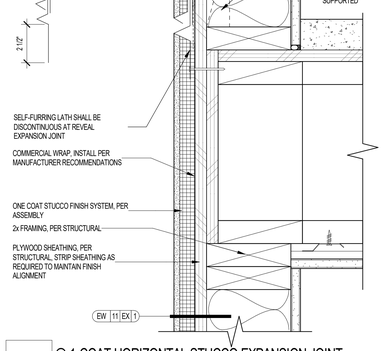
NOTE:
1. REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS / REQUIREMENTS

39 1HR FLOOR ASSEMBLY AT GARAGE WALL

SCALE: 1 1/2" = 1'-0"

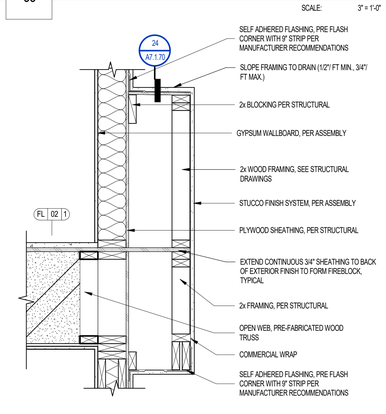
40 STAIR/ELEVATOR SHAFT FIRESTOP AT CORRIDOR JOISTS

SCALE: 1 1/2" = 1'-0"



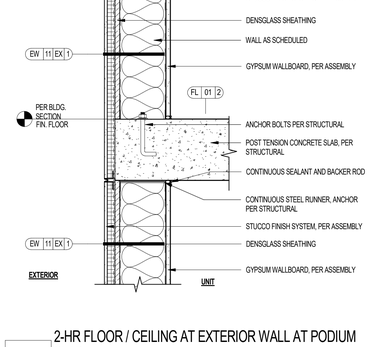
35 @ 1-COAT HORIZONTAL STUCCO EXPANSION JOINT

SCALE: 3" = 1'-0"



36 STUCCO BUILT-OUT AT WINDOWS

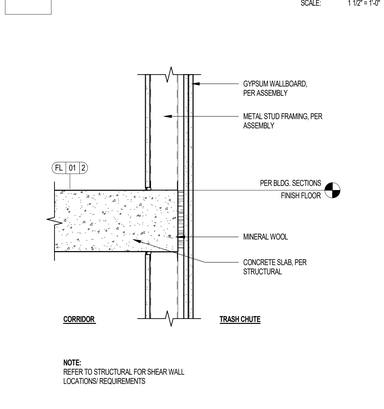
SCALE: 1" = 1'-0"



PROVIDE (2) SACRIFICIAL STUDS TO SATISFY 2-HR FIRE RESISTANCE PROTECTION CONSISTENT W/ AMERICAN WOOD COUNCIL PUBLICATION TECHNICAL REPORT NO. 10, CALCULATING THE FIRE RESISTANCE OF EXPOSED WOOD MEMBERS (CHAR RATE 1.42"/ HR.)

34 2-HR FIRE TREATED WOOD FRAMING AT GARAGE WALL

SCALE: 1 1/2" = 1'-0"



30 2-HR FLOOR / CEILING AT EXTERIOR WALL WOOD & METAL FRAMING AT PODIUM SLAB

SCALE: 1 1/2" = 1'-0"

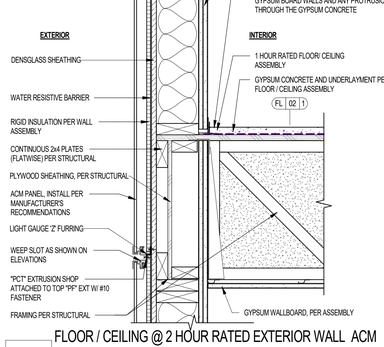
31 2-HR FLOOR / CEILING AT EXTERIOR WALL AT PODIUM SLAB

SCALE: 1 1/2" = 1'-0"

NOTE:
REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

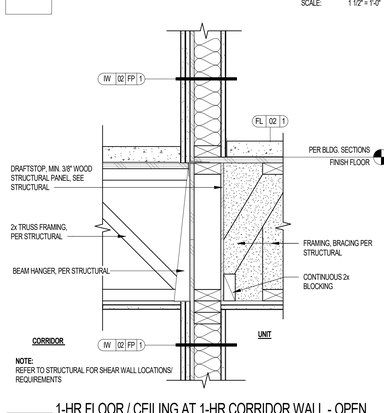
32 2-HR BARRIER AT POST TENSION SLAB

SCALE: 1 1/2" = 1'-0"



26 FLOOR / CEILING @ 2 HOUR RATED EXTERIOR WALL CEMENT BOARD FINISH

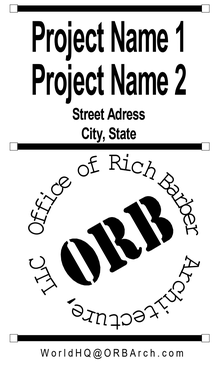
SCALE: 1 1/2" = 1'-0"



NOTE:
REFER TO STRUCTURAL FOR SHEAR WALL LOCATIONS/ REQUIREMENTS

28 1-HR FLOOR / CEILING AT 1-HR CORRIDOR WALL - OPEN WEB CORRIDOR FRAMING

SCALE: 1 1/2" = 1'-0"



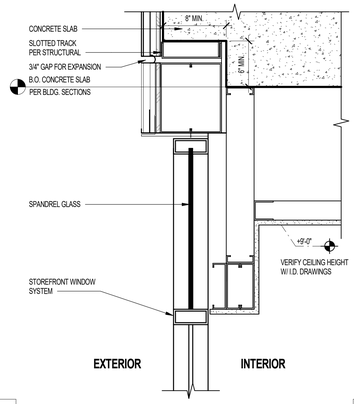
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

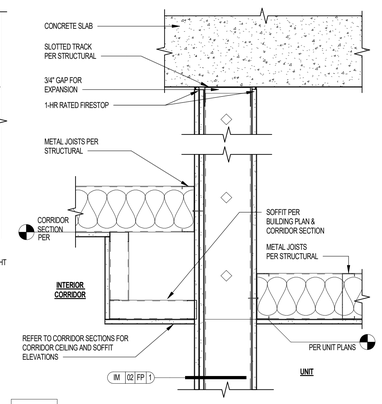
A7.4.11

FLOOR-CEILING DETAILS WOOD FRAMING



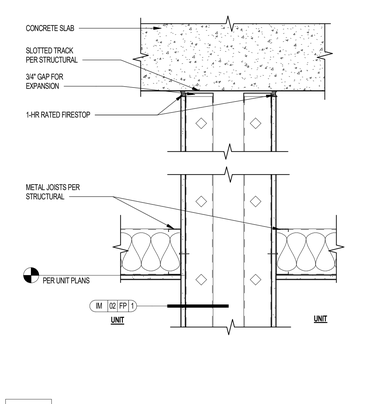
09 STOREFRONT BELOW PODIUM SLAB

SCALE: 1 1/2" = 1'-0"



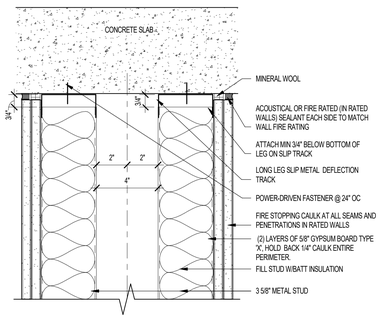
05 DROP CEILING AT INTERIOR CORRIDOR WALL

SCALE: 1 1/2" = 1'-0"



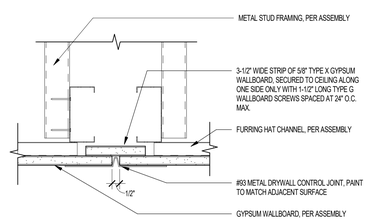
01 DROP CEILING AT UNIT SEPARATION WALL

SCALE: 1 1/2" = 1'-0"



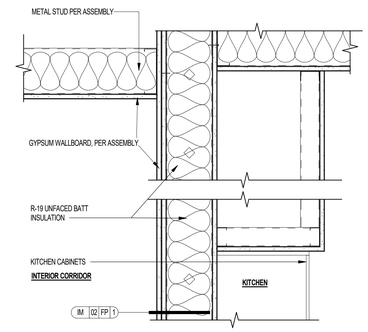
10 DOUBLE MTL STUD WALL DEFLECTION JOINT

SCALE: 3" = 1'-0"



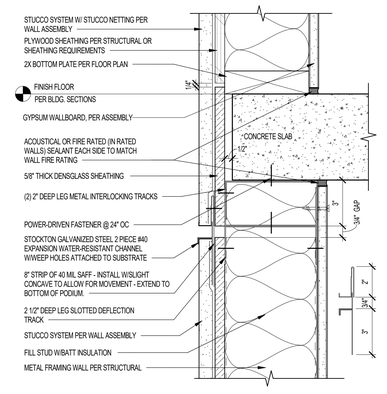
06 CEILING CONTROL JOINT - NOT RATED

SCALE: 3" = 1'-0"



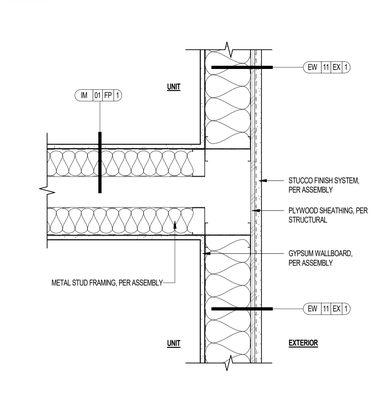
02 DROP CEILING AT KITCHEN / CORRIDOR

SCALE: 1 1/2" = 1'-0"



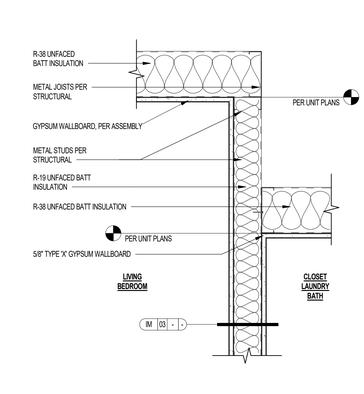
11 STUCCO DEFLECTION JOINT AT CONCRETE SLAB EDGE

SCALE: 3" = 1'-0"



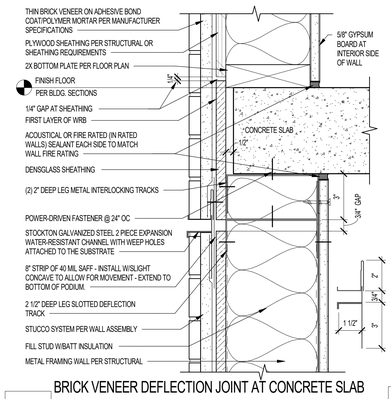
07 UNIT SEPARATION WALL AT EXTERIOR WALL - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



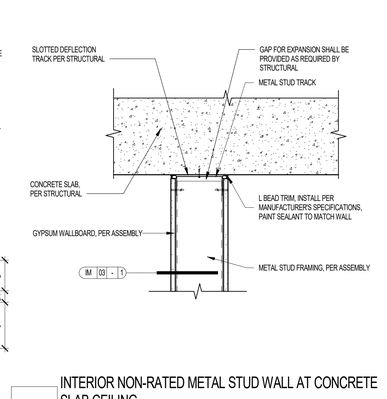
03 CEILING ALIGMENT/FRAMING AT INTERIOR WALLS

SCALE: 1 1/2" = 1'-0"



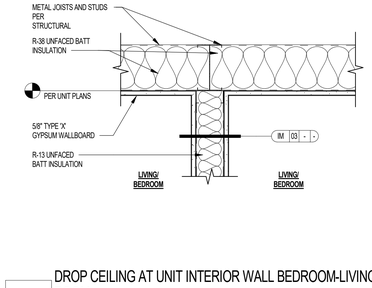
12 BRICK VENEER DEFLECTION JOINT AT CONCRETE SLAB EDGE

SCALE: 3" = 1'-0"



08 INTERIOR NON-RATED METAL STUD WALL AT CONCRETE SLAB CEILING

SCALE: 1 1/2" = 1'-0"



04 DROP CEILING AT UNIT INTERIOR WALL BEDROOM-LIVING ROOM

SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

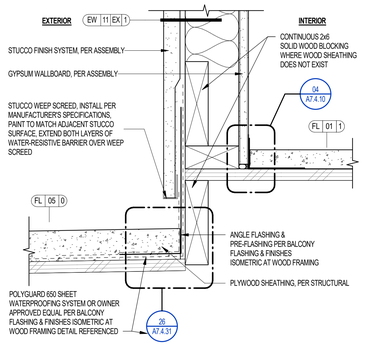
DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.20

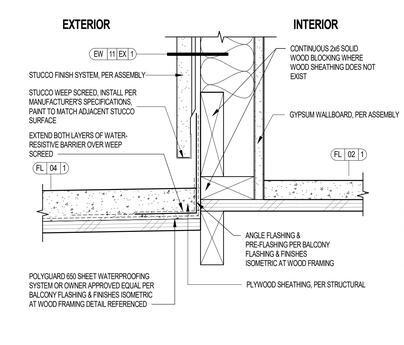
FLOOR-CEILING DETAILS METAL FRAMING

1/15/2025 3:35:01 PM



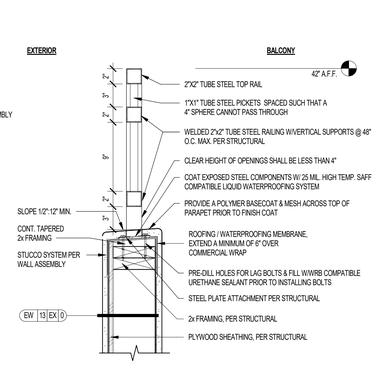
21 BALCONY FLASHING @ 1 HR RATED STUCCO EXTERIOR WALL - ANSI TYPE B UNIT

SCALE: 3" = 1'-0"



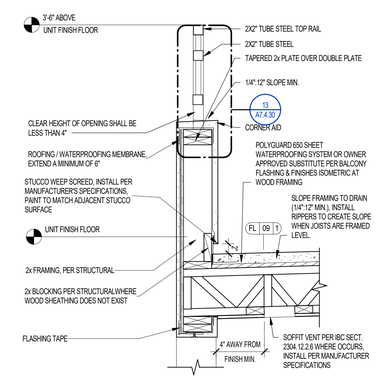
17 BALCONY FLASHING @ 1 HR RATED STUCCO EXTERIOR WALL - TYPE A UNIT

SCALE: 3" = 1'-0"



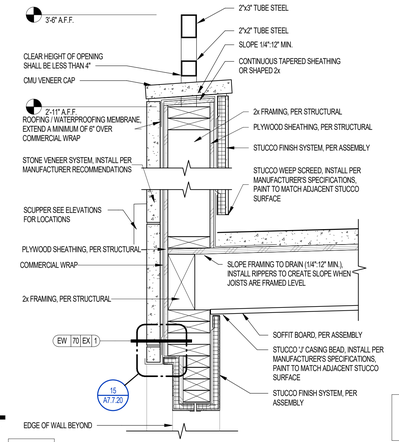
13 BALCONY RAILING ABOVE WALL

SCALE: 1 1/2" = 1'-0"



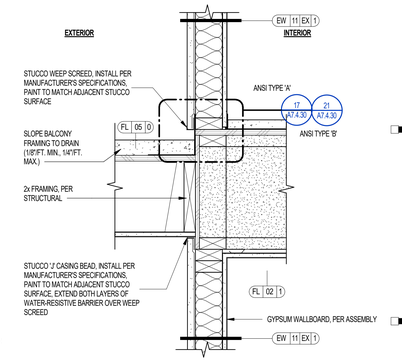
09 BALCONY AT PARTIAL WALL AT OPEN WEB

SCALE: 1" = 1'-0"



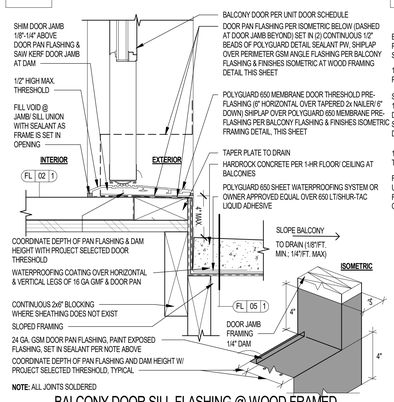
05 BALCONY AT PARTIAL STONE VEENER WALL/RAILING

SCALE: 1 1/2" = 1'-0"



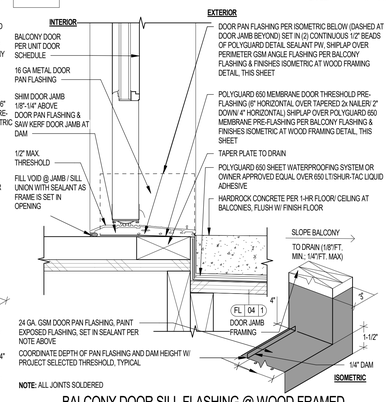
01 BALCONY CONNECTION @ 1 HOUR RATED EXTERIOR WALL

SCALE: 1 1/2" = 1'-0"



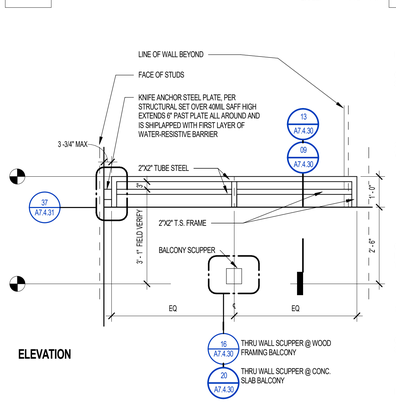
22 BALCONY DOOR SILL FLASHING @ WOOD FRAMED BALCONY - ANSI TYPE B UNIT

SCALE: 3" = 1'-0"



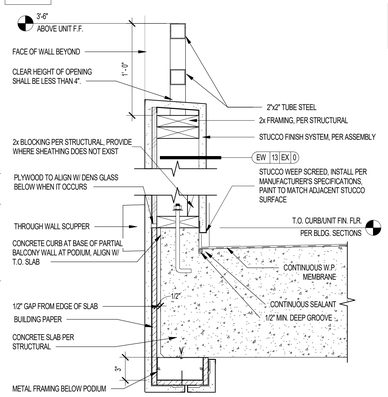
18 BALCONY DOOR SILL FLASHING @ WOOD FRAMED BALCONY - ANSI TYPE A UNIT

SCALE: 3" = 1'-0"



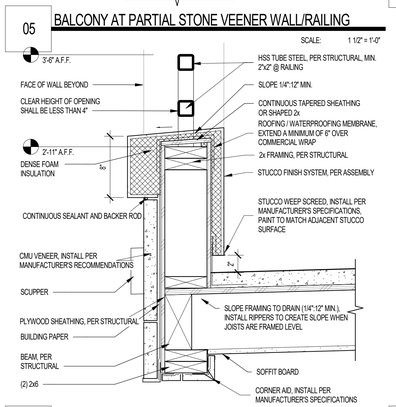
14 RAILING AT BALCONY W/ PARTIAL WALL - ELEVATION

SCALE: 1/2" = 1'-0"



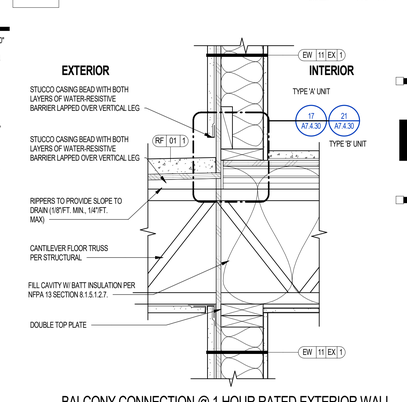
10 RAILING @ BALCONY W/ PARTIAL WALL AT PODIUM

SCALE: 1 1/2" = 1'-0"



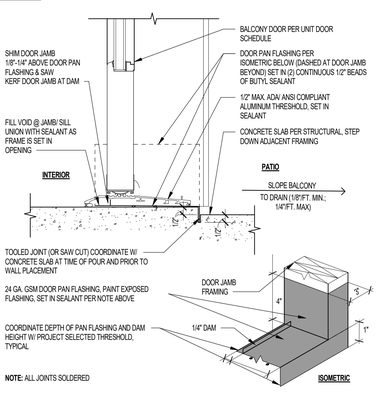
06 BALCONY AT PARTIAL STONE VEENER W/ POP-OUT

SCALE: 1 1/2" = 1'-0"



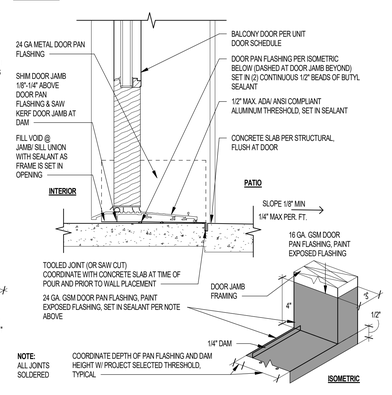
02 BALCONY CONNECTION @ 1 HOUR RATED EXTERIOR WALL - CANTILEVERED

SCALE: 1 1/2" = 1'-0"



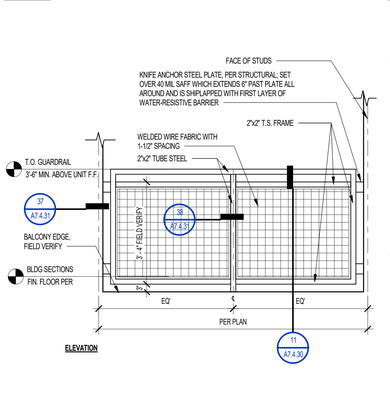
24 OPEN BALCONY EDGE FLASHING AT WOOD FRAMING

SCALE: 3" = 1'-0"



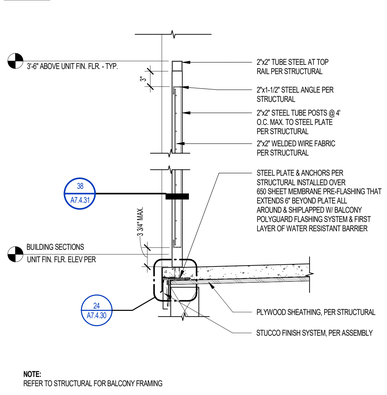
20 THRU WALL SCUPPER @ BALCONY W/CONC SLAB

SCALE: 1 1/2" = 1'-0"



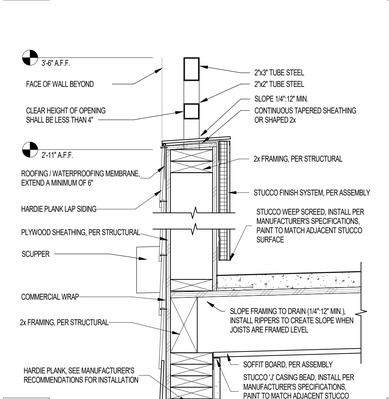
16 THROUGH WALL SCUPPER AT BALCONY

SCALE: 1 1/2" = 1'-0"



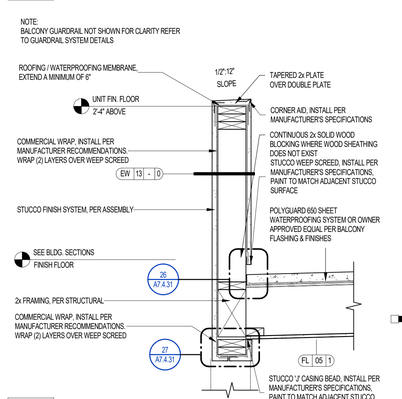
12 RAILING AT JULIETTE BALCONY

SCALE: 1 1/2" = 1'-0"



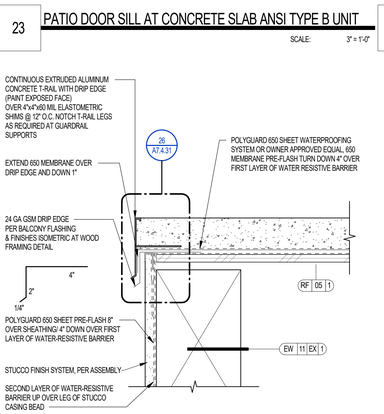
08 BALCONY AT PARTIAL HARDIE BOARD W/ POP-OUT

SCALE: 1 1/2" = 1'-0"



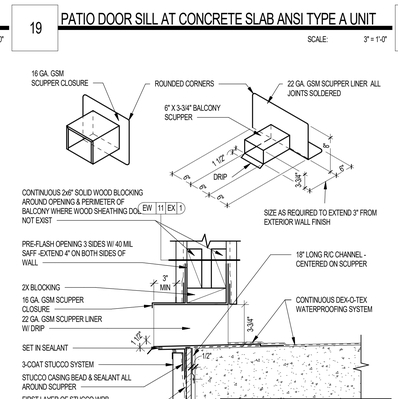
04 STUCCO PARTIAL WALL WITH RAILING AT BALCONY

SCALE: 1 1/2" = 1'-0"



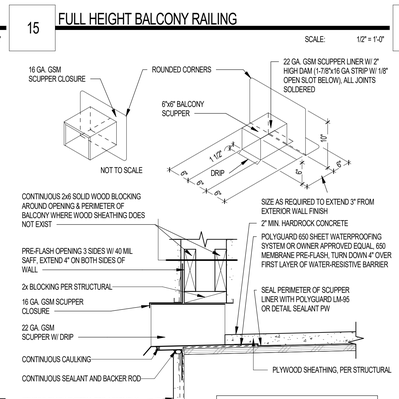
23 PATIO DOOR SILL AT CONCRETE SLAB ANSI TYPE B UNIT

SCALE: 3" = 1'-0"



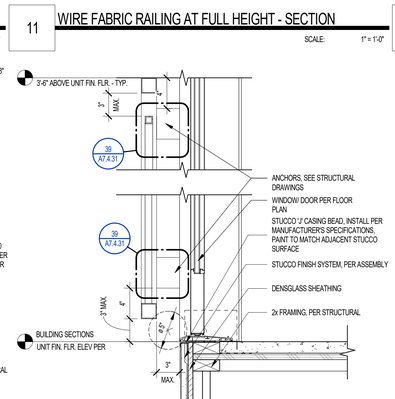
19 PATIO DOOR SILL AT CONCRETE SLAB ANSI TYPE A UNIT

SCALE: 3" = 1'-0"



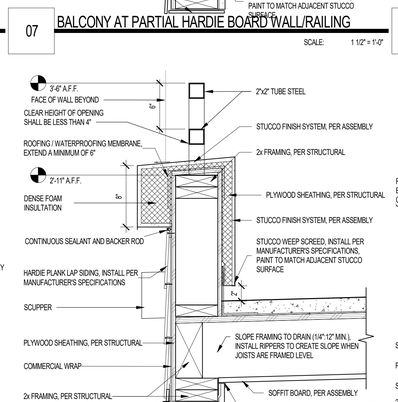
15 FULL HEIGHT BALCONY RAILING

SCALE: 1/2" = 1'-0"



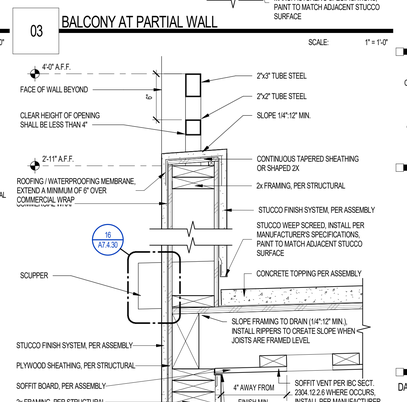
11 WIRE FABRIC RAILING AT FULL HEIGHT - SECTION

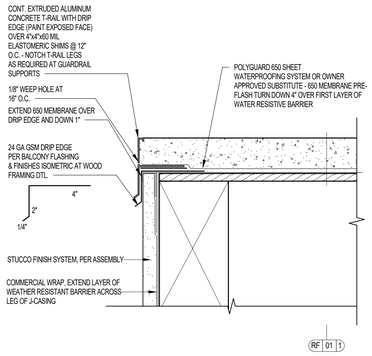
SCALE: 1" = 1'-0"



07 BALCONY AT PARTIAL HARDIE BOARD WALL/RAILING

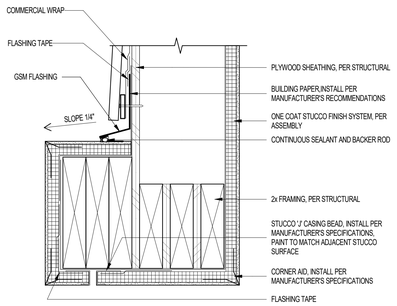
SCALE: 1 1/2" = 1'-0"


EXTERIOR
INTERIOR
EW 11 EX 1
STUCCO WEEP SCREED, INSTALL PER MANUFACTURER'S SPECIFICATIONS, PAINT TO MATCH ADJACENT STUCCO SURFACE
ANSI TYPE 'A'
17 A7.4.30
21 A7.4.30
ANSI TYPE 'B'
SLOPE BALCONY FRAMING TO DRAIN (1/8"/FT. MIN., 1/4"/FT. MAX.)
FL 05 0
2x FRAMING, P



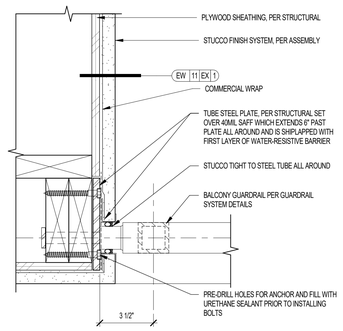
45 BALCONY EDGE FLASHING AT WOOD FRAMING

NOT TO SCALE



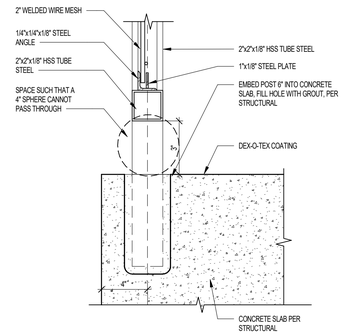
41 PATIO/BALCONY SOFFIT HEAD AT HARDIE PLANK

NOT TO SCALE



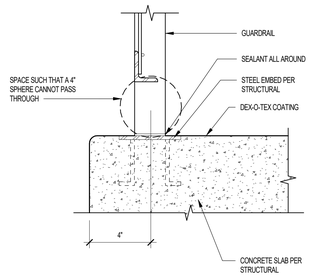
37 GUARDRAIL KNIFE PLATE ATTACHMENT AT WALL

NOT TO SCALE



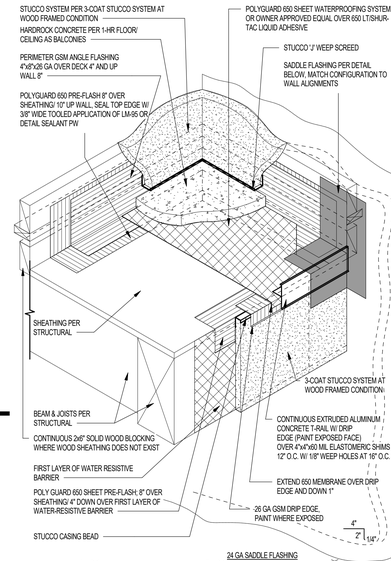
33 GUARDRAIL POST CONNECTION AT CONC. SLAB FLOOR

NOT TO SCALE



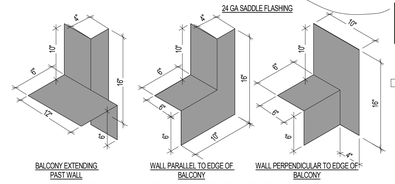
29 GUARDRAIL POST CONNECTION AT CONC. SLAB FLOOR

NOT TO SCALE



26 BALCONY FLASHING & FINISHES ISOMETRIC AT WOOD FRAMING

NOT TO SCALE



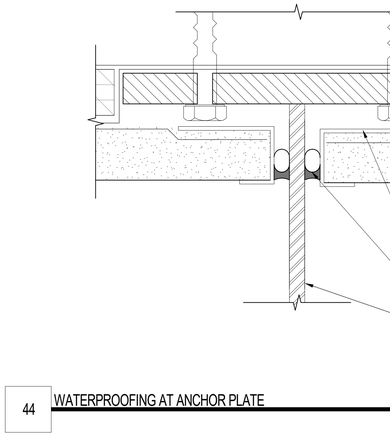
NOTES:
1. ALL ANGLES AND DIMENSIONS SHALL BE FIELD VERIFIED, PRIOR TO FABRICATION
2. ALL LAPS SHALL BE A MINIMUM OF 4" AND PROPERLY SEALED PER S.M.A.C.N.A. STANDARDS
3. PIECES SHOWN ARE TO BE FABRICATED AS ONE PIECE WITH ALL JOINTS FULLY SOLDERED PRIOR TO INSTALLATION
4. RH SIDE FLASHING WILL BE A MIRROR IMAGE OF LH SIDE FLASHING (SHOWN)

46 BALCONY RAILING W/ PARTIAL DOUBLE WALL @ PODIUM

NOT TO SCALE

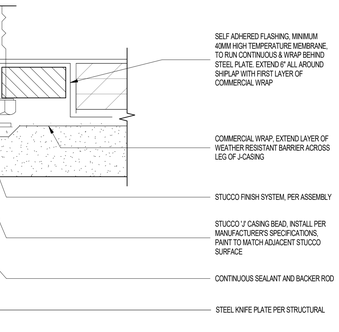
42 BALCONY SOFFIT HEAD - WOOD FRAMING

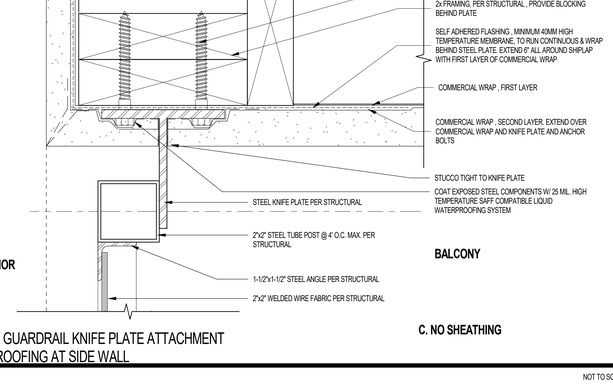
NOT TO SCALE

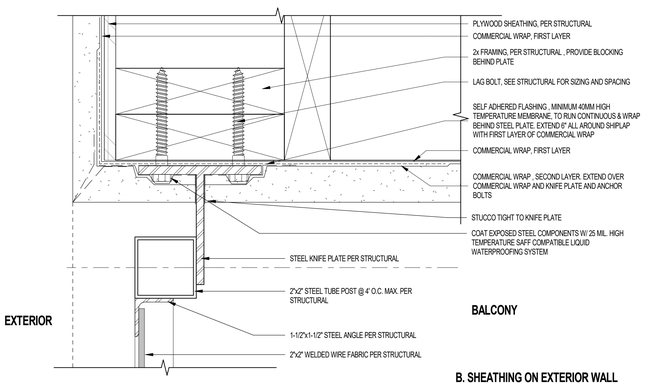


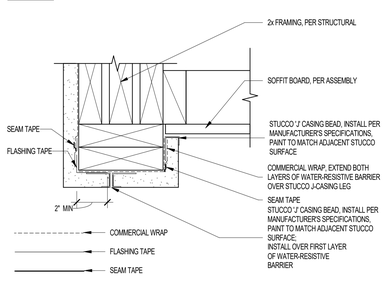
38 STEEL TUBE SUPPORT AND PLATE

NOT TO SCALE









27 PATIO/ BALCONY SOFFIT HEAD

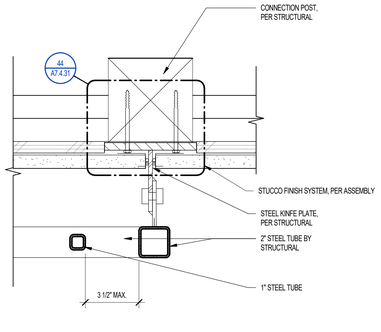
NOT TO SCALE

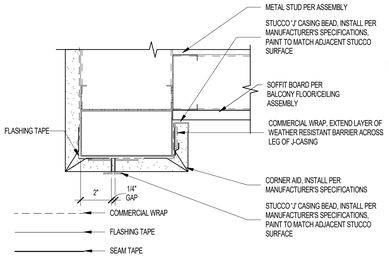
43 BALCONY RAILING W.P. @ PARTIAL WALL

NOT TO SCALE

39 RAILING ANCHOR AT JULIETTE BALCONY

NOT TO SCALE





44 WATERPROOFING AT ANCHOR PLATE

NOT TO SCALE

36 BALCONY GUARDRAIL KNIFE PLATE ATTACHMENT WATERPROOFING AT SIDE WALL

NOT TO SCALE

28 PATIO/BALCONY SOFFIT HEAD - METAL FRAMING

NOT TO SCALE

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

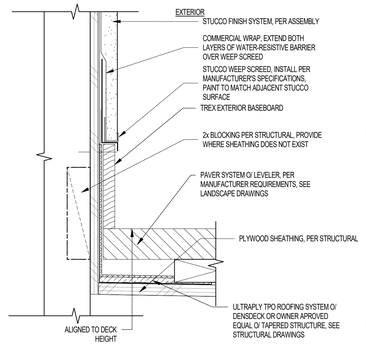
PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

REVISIONS/ SUBMITTALS
DATE DESCRIPTION

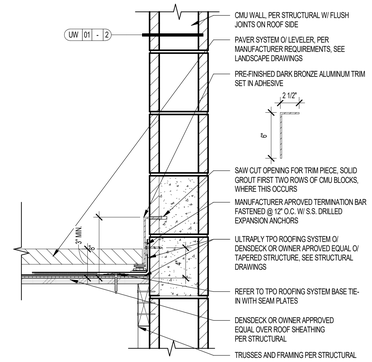
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.31
BALCONY DETAILS



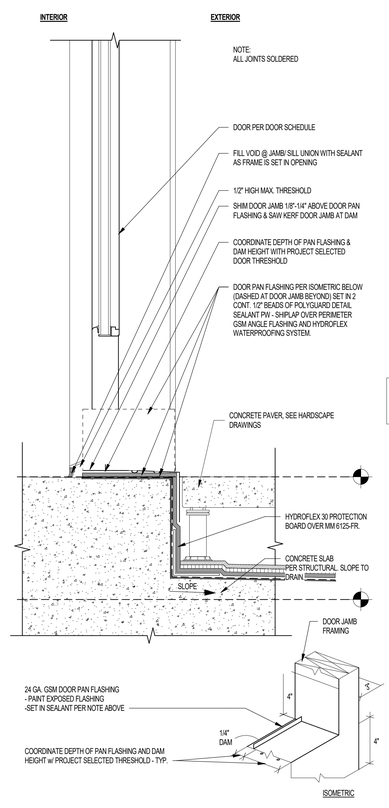
01 PEDESTAL SYSTEM FLASHING AT ROOF DECK EXTERIOR WALL

SCALE: 3" = 1'-0"



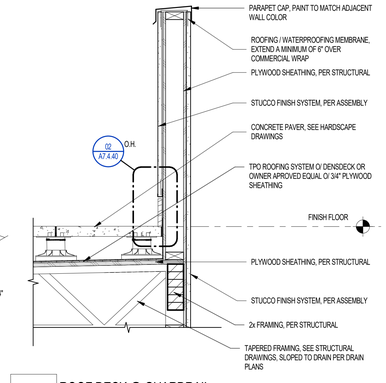
02 TPO AND PEDESTAL ROOF SYSTEM AT CMU WALL

SCALE: 1 1/2" = 1'-0"



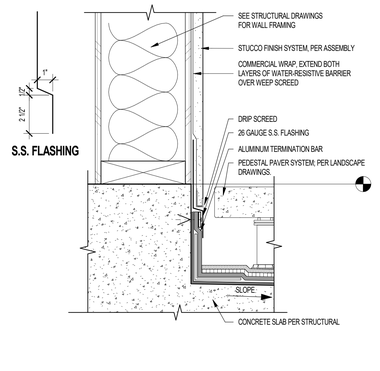
07 PEDESTALS AT DOORWAY

SCALE: 3" = 1'-0"



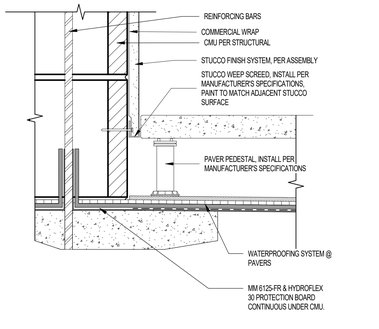
03 ROOF DECK @ GUARDRAIL

SCALE: 1" = 1'-0"



08 RAISED PAVERS AT WALL BASE

SCALE: 3" = 1'-0"



04 PAVER WATERPROOFING TERMINATION AT CMU WALL

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

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ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

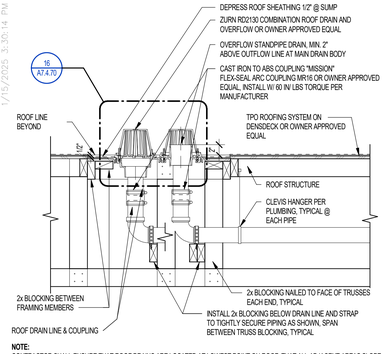
Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS
DATE DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

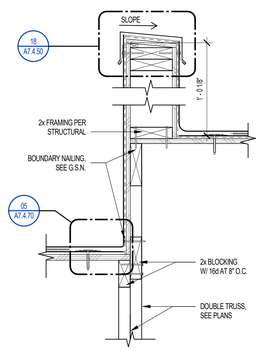
A7.4.40

PEDESTAL SYSTEM DETAILS

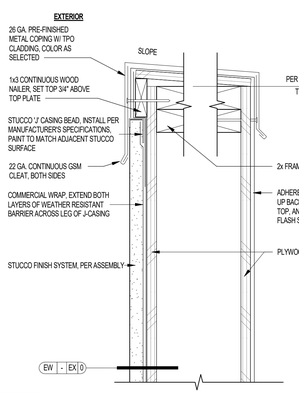


NOTE:
CONTRACTOR SHALL ENSURE THAT ROOF DRAINS ARE LOCATED AT LOWEST POINT ON ROOF, THAT ALL ADJACENT AREAS SLOPE INTO ROOF DRAIN AND THAT ROOF DRAINS ARE INSTALLED PER MANUFACTURER'S REQUIREMENTS. REFER TO TPO ROOFING SYSTEM ROOF DRAIN W/ OVERFLOW ROOF DRAIN DETAIL THIS SHEET FOR ADDITIONAL INFORMATION

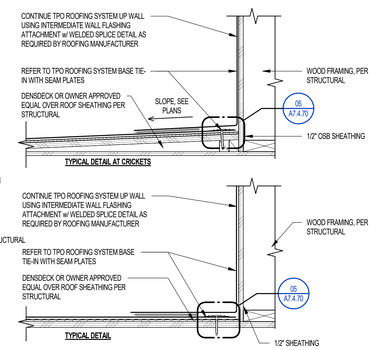
21 ROOF AND OVERFLOW DRAIN PIPPING SUPPORT
SCALE: 1" = 1'-0"



17 ROOF TRUSS AT STEP SECTION
SCALE: 1 1/2" = 1'-0"

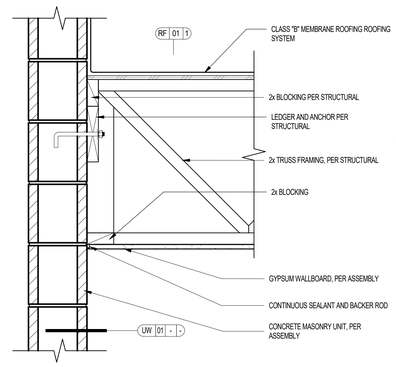


13 PARAPET METAL CAP FLASHING AT STUCCO WALL
SCALE: 3" = 1'-0"

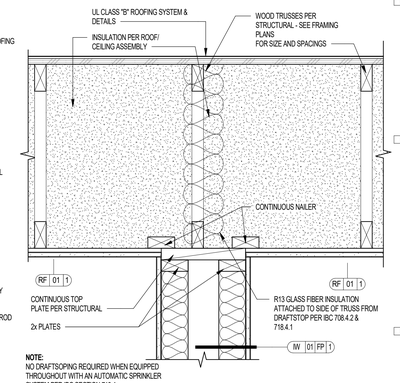


NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION

09 TPO ROOFING @ WOOD FRAMED WALL
SCALE: 1 1/2" = 1'-0"



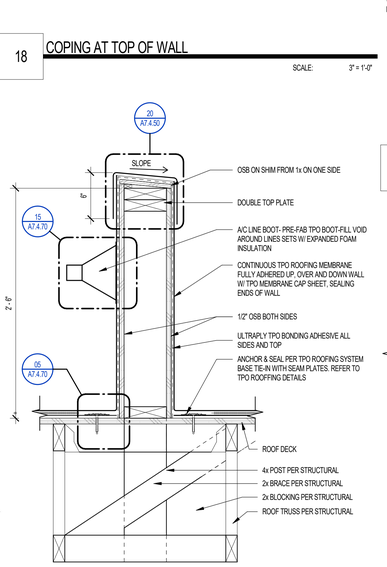
05 ROOF TRUSS AT CMU WALL
SCALE: 1 1/2" = 1'-0"



NOTE:
NO DRAFTSOPING REQUIRED WHEN EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM PER IBC SECTION 718.4

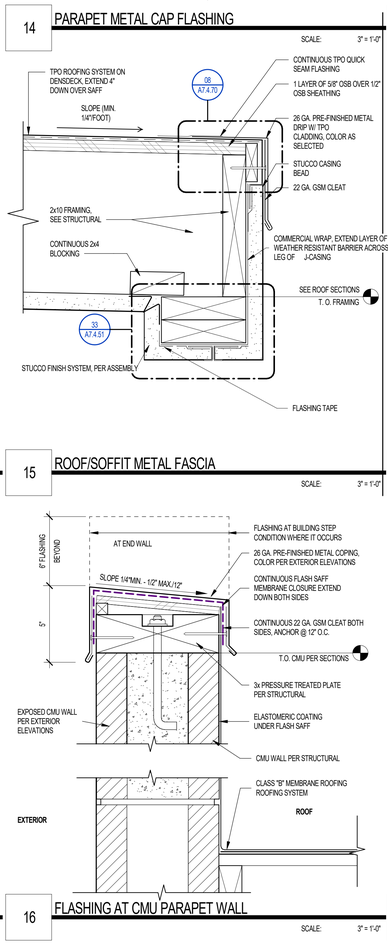
01 1-HR UNIT SEPARATION WALL AT 1-HR ROOF/CEILING
SCALE: 1 1/2" = 1'-0"

24 MECHANICAL SERVICE WALL ELEVATION
SCALE: 3/8" = 1'-0"

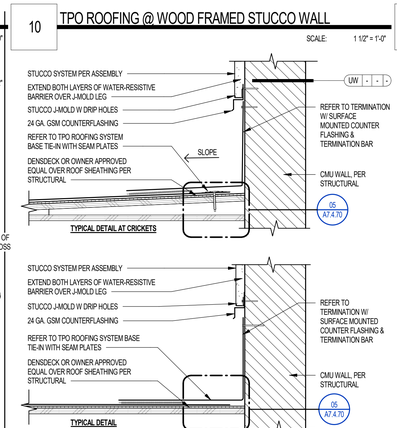


18 COPING AT TOP OF WALL
SCALE: 3" = 1'-0"

19 A/C UNIT SERVICE WALL SECTION
SCALE: 1 1/2" = 1'-0"

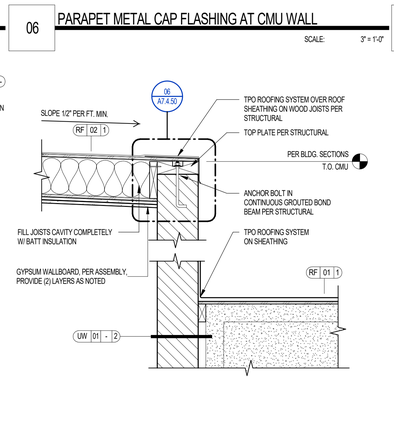


14 PARAPET METAL CAP FLASHING
SCALE: 3" = 1'-0"

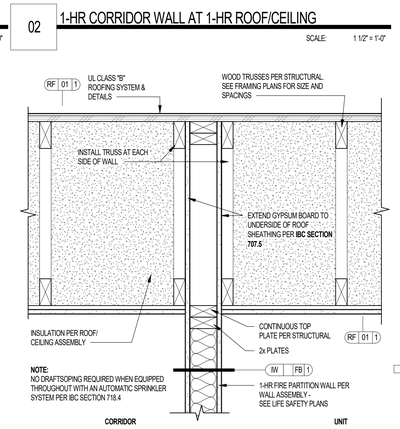


NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION

10 TPO ROOFING @ WOOD FRAMED STUCCO WALL
SCALE: 1 1/2" = 1'-0"



06 PARAPET METAL CAP FLASHING AT CMU WALL
SCALE: 3" = 1'-0"



NOTE:
NO DRAFTSOPING REQUIRED WHEN EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM PER IBC SECTION 718.4

02 1-HR CORRIDOR WALL AT 1-HR ROOF/CEILING
SCALE: 1 1/2" = 1'-0"

20 PARAPET CAP FLASHING
SCALE: 3" = 1'-0"

15 ROOF/SOFFIT METAL FASCIA
SCALE: 3" = 1'-0"

16 FLASHING AT CMU PARAPET WALL
SCALE: 3" = 1'-0"

NOTE:
ALL EXPOSED CMU TO RECEIVE CLEAR SEALANT.

12 CMU CAP AT EXPOSED CMU WALL PARAPET
SCALE: 3" = 1'-0"

11 TPO ROOF SYSTEM/CRICKET AT CMU EXTERIOR WALL
SCALE: 1 1/2" = 1'-0"

07 ROOF SYSTEM AT ELEVATOR SHAFT
SCALE: 1" = 1'-0"

NOTE:
NO DRAFTSOPING REQUIRED WHEN EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM PER IBC SECTION 718.4

03 1-HR FIRE BARRIER WALL AT 1-HR ROOF/CEILING
SCALE: 1 1/2" = 1'-0"

24 MECHANICAL SERVICE WALL ELEVATION
SCALE: 3/8" = 1'-0"

20 PARAPET CAP FLASHING
SCALE: 3" = 1'-0"

16 FLASHING AT CMU PARAPET WALL
SCALE: 3" = 1'-0"

NOTE:
ALL EXPOSED CMU TO RECEIVE CLEAR SEALANT.

12 CMU CAP AT EXPOSED CMU WALL PARAPET
SCALE: 3" = 1'-0"

08 ROOF SYSTEM AT STAIR SHAFT
SCALE: 1" = 1'-0"

04 1-HR ROOF/CEILING AT 1-HR EXTERIOR WALL
SCALE: 1 1/2" = 1'-0"

Project Name 1
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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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

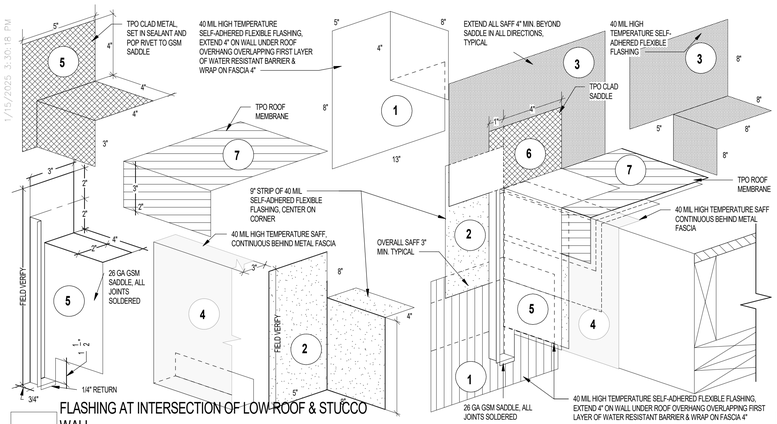
Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

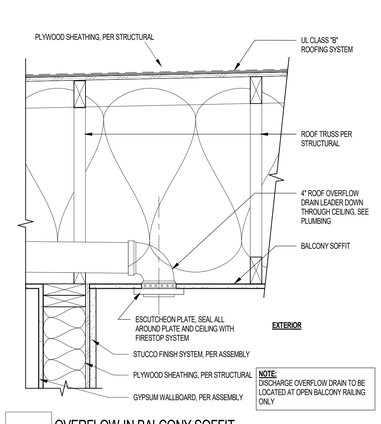
A7.4.50
ROOF - CEILING DETAILS



45 FLASHING AT INTERSECTION OF LOW ROOF & STUCCO WALL

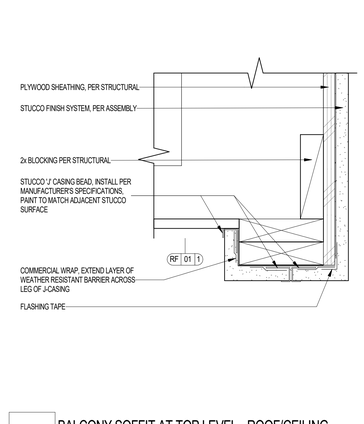
NOTE: STUCCO SYSTEM AND METAL FASCIA NOT SHOWN FOR CLARITY

SCALE: 3" = 1'-0"



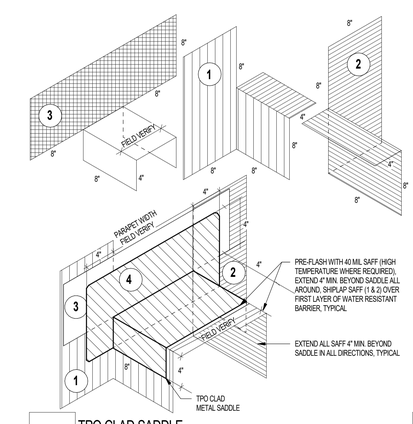
37 OVERFLOW IN BALCONY SOFFIT

SCALE: 1 1/2" = 1'-0"



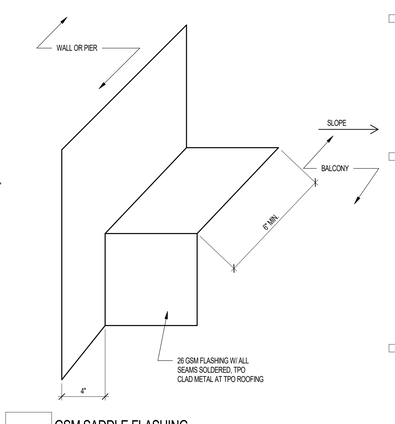
33 BALCONY SOFFIT AT TOP LEVEL - ROOF/CEILING

SCALE: 3" = 1'-0"



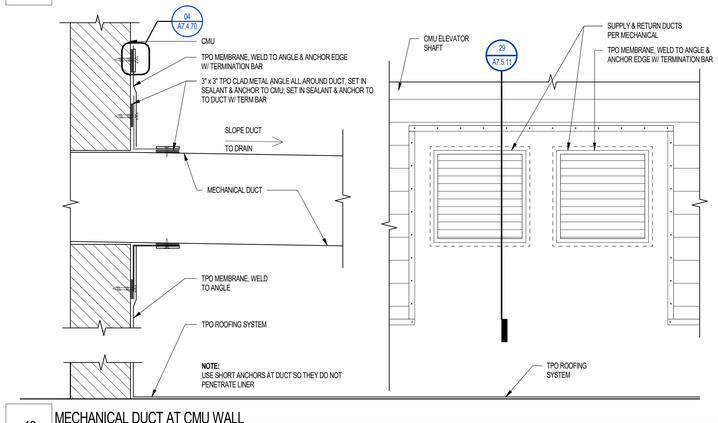
29 TPO CLAD SADDLE

SCALE: 1 1/2" = 1'-0"



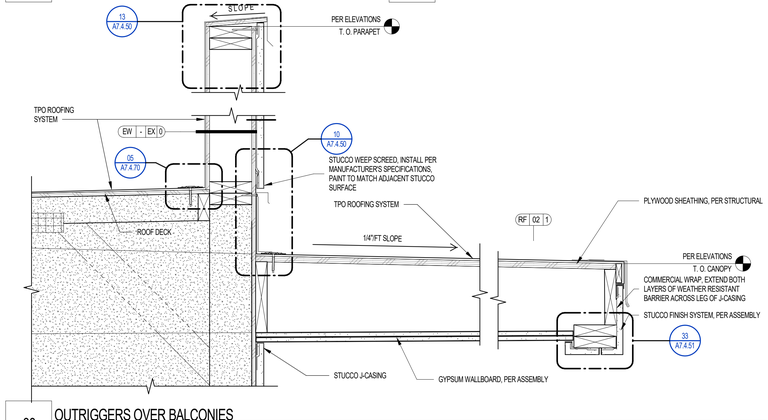
25 GSM SADDLE FLASHING

SCALE: 3" = 1'-0"



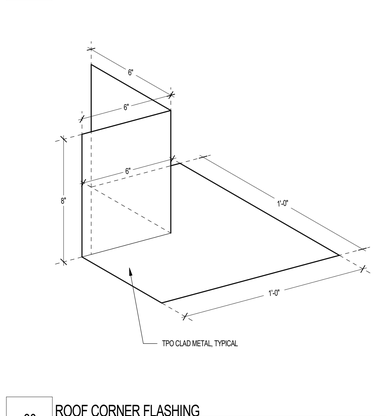
46 MECHANICAL DUCT AT CMU WALL

SCALE: 3" = 1'-0"



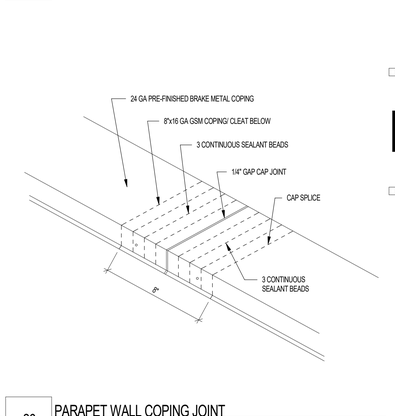
38 OUTRIGGERS OVER BALCONIES

SCALE: 1 1/2" = 1'-0"



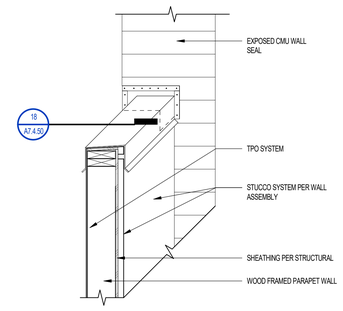
30 ROOF CORNER FLASHING

SCALE: 3" = 1'-0"



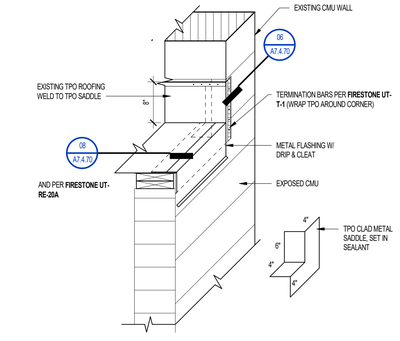
26 PARAPET WALL COPING JOINT

SCALE: 1" = 1'-0"



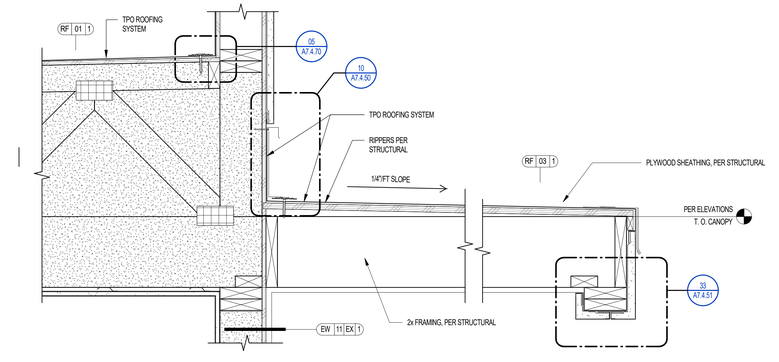
47 TPO ROOFING SYSTEM FLASHING AT EXPOSED CMU WALL

SCALE: 1" = 1'-0"



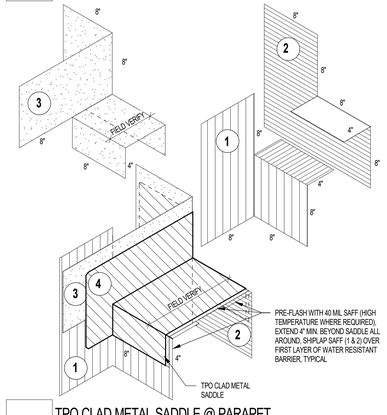
43 TPO ROOFING SYSTEM FLASHING AT ROOF EDGE/CMU WALL

SCALE: 1" = 1'-0"



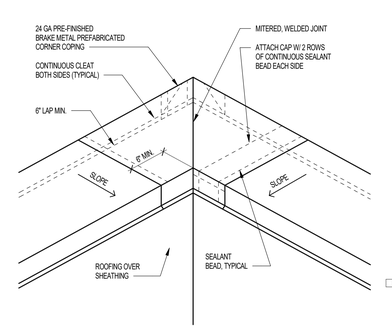
39 ACCENT EYEBROW

SCALE: 1 1/2" = 1'-0"



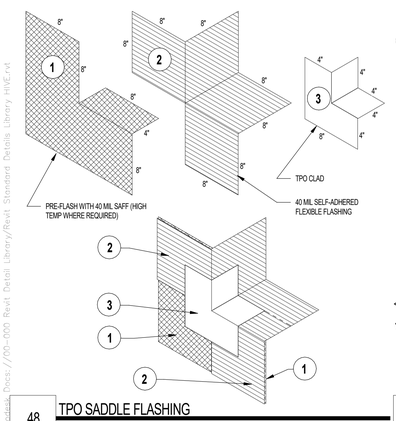
31 TPO CLAD METAL SADDLE @ PARAPET

SCALE: 1 1/2" = 1'-0"



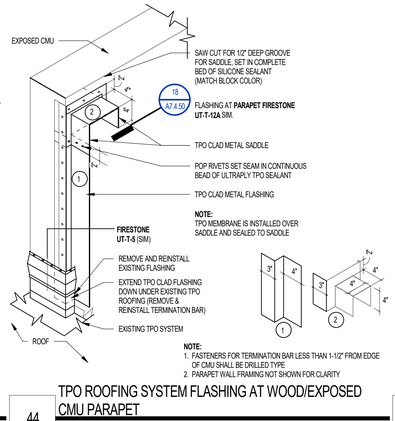
27 PARAPET WALL CORNER COPING

SCALE: 1" = 1'-0"



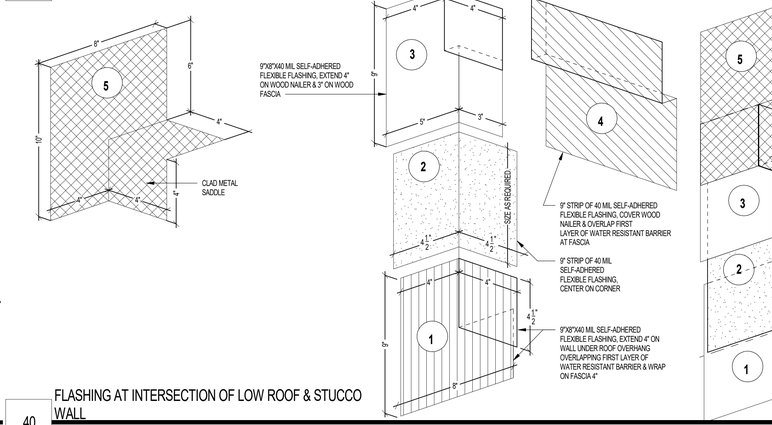
48 TPO SADDLE FLASHING

SCALE: 1 1/2" = 1'-0"



44 TPO ROOFING SYSTEM FLASHING AT WOOD/EXPOSED CMU PARAPET

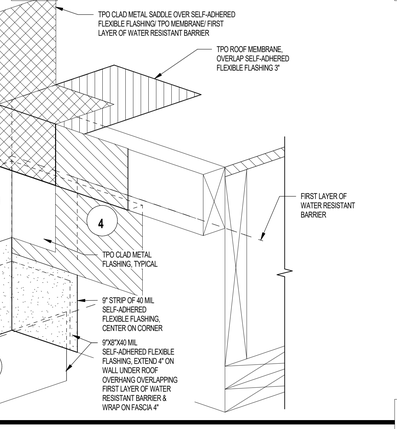
SCALE: 1" = 1'-0"



40 FLASHING AT INTERSECTION OF LOW ROOF & STUCCO WALL

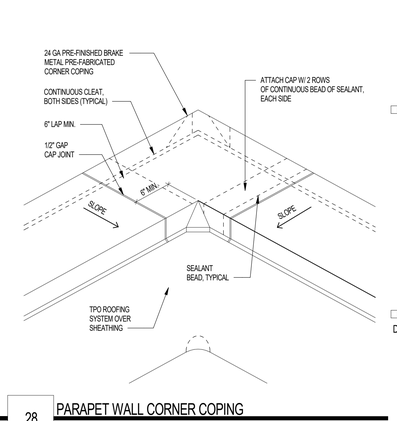
NOTE: STUCCO SYSTEM NOT SHOWN FOR CLARITY

SCALE: 3" = 1'-0"



28 PARAPET WALL CORNER COPING

SCALE: 1" = 1'-0"



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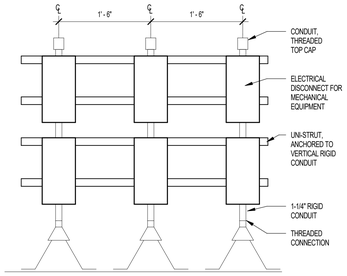
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

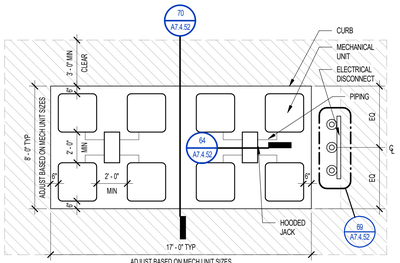
A7.4.51

ROOF - CEILING DETAILS



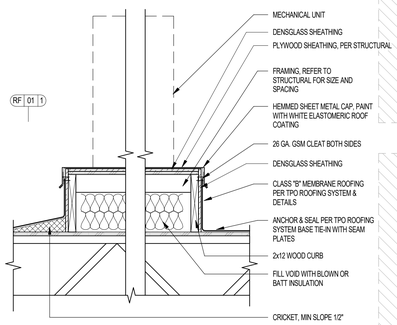
ELEVATION VIEW

NOTES:
1. DISCONNECT LOCATION SUPPORTED FROM UNI-STRUT, REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION
2. CONDENSING UNIT LOCATED ON MECHANICAL PLATFORM, CONTRACTOR SHALL INSTALL PER MANUFACTURER'S RECOMMENDATIONS WITH PROPER CLEARANCES; CONTRACTOR SHALL SIZE, ROUTE, AND EXTEND REFRIGERANT PIPING FROM CONDENSING UNIT LOCATED ON ROOF DOWN THROUGH ROOF TO INDOOR AIR HANDLING UNIT PER MANUFACTURER'S RECOMMENDATIONS



69 UNI-STRUT ELECTRICAL DISCONNECT

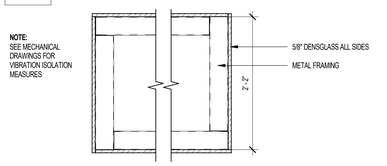
SCALE: 1" = 1'-0"



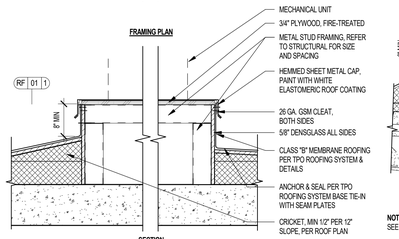
NOTE:
SEE MECHANICAL DRAWINGS FOR VIBRATION ISOLATION MEASURES

70 MECHANICAL PLATFORM AT WOOD FRAMING

SCALE: 1" = 1'-0"



FRAMING PLAN



SECTION

71 MECHANICAL PLATFORM AT PT SLAB

SCALE: 1" = 1'-0"

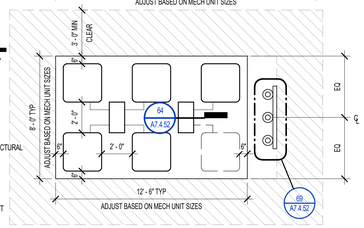
NOTES:
1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION
2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY
4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING)
5. APPLY GP SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO 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
7. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F; REFER TO UT-P-6 & UT-P-7
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

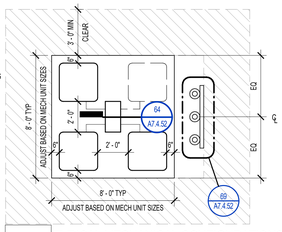
ELEVATION VIEW

PIPE FLASHING OVER FIELD SEAM

72 HOSE BIB WALL PENETRATION WITH PIPE BOOT

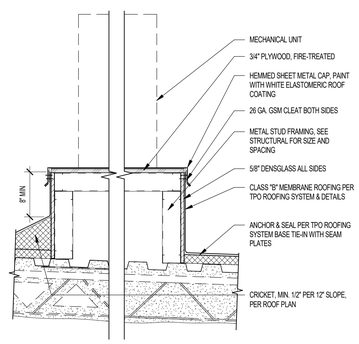
SCALE: 3" = 1'-0"





66 TYPICAL MECHANICAL CONFIGURATIONS

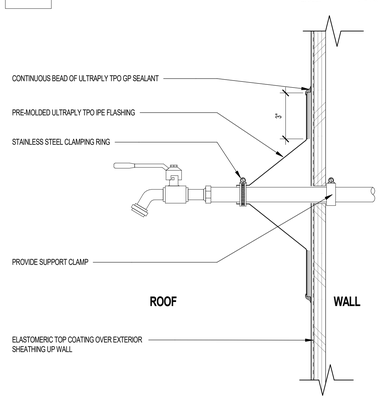
SCALE: 1/4" = 1'-0"



NOTE:
SEE MECHANICAL DRAWINGS FOR VIBRATION ISOLATION MEASURES

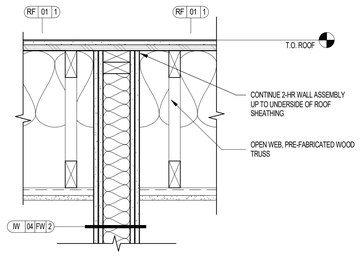
67 MECHANICAL PLATFORM AT METAL ROOF DECK

SCALE: 1" = 1'-0"



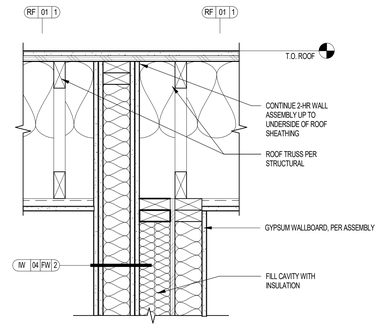
64 HOODED JACK MULTI-LINE

SCALE: 1/2" = 1'-0"



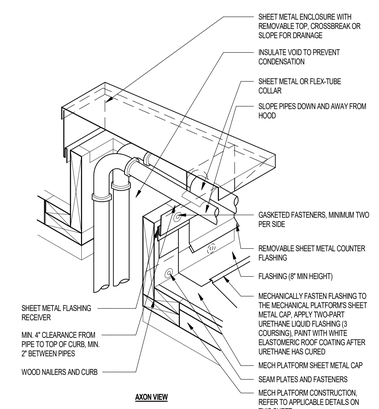
61 2-HR FIRE BARRIER AT ROOF, PARALLEL WITH ROOF TRUSSES

SCALE: 1 1/2" = 1'-0"

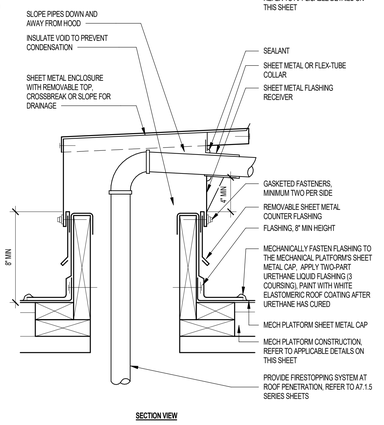


62 2-HR FIRE BARRIER AT ROOF & UNIT PARTITION WALL, PARALLEL WITH ROOF TRUSSES

SCALE: 1 1/2" = 1'-0"



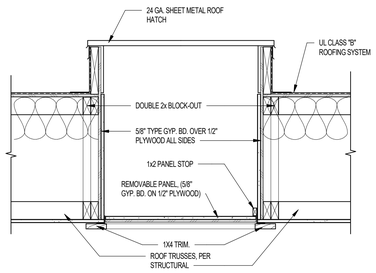
AXON VIEW



SECTION VIEW

60 ROOF SYSTEM AT ELEVATOR SHAFT

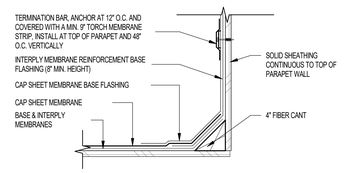
SCALE: 3" = 1'-0"

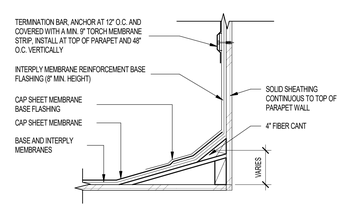


NOTES:
1. MIN 22" X 30" CLEAR OPENING MUST BE PROVIDED.
2 ACCES DOOR TO BE GASKETED.
3 INSTALL ROOF HATCH, PER MANUFACTURER WRITTNE SPECIFICATIONS

57 ROOF HATCH AT CARRIAGE BUILDING

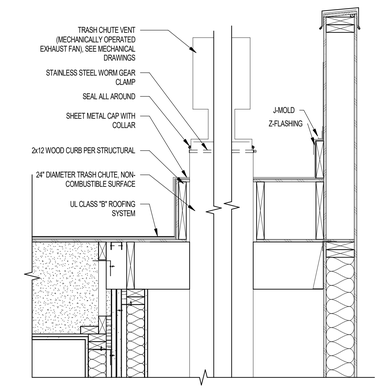
SCALE: 1" = 1'-0"





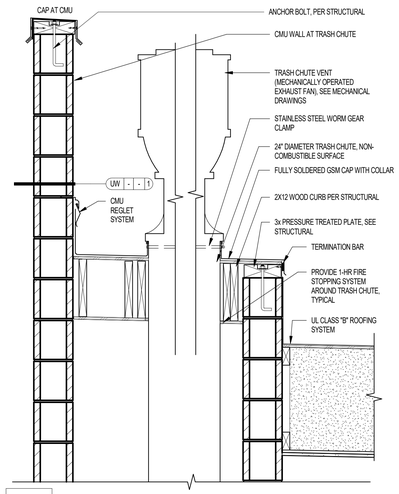
56 PARAPET METAL CAP FLASHING

SCALE: 3" = 1'-0"



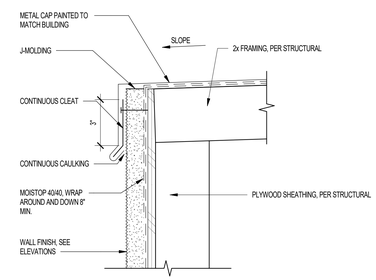
53 WOOD SHAFT FOR TRASH CHUTE AT ROOF

SCALE: 1" = 1'-0"



55 CMU SHAFT FOR TRASH CHUTE AT ROOF

SCALE: 1" = 1'-0"



54 PARAPET METAL CAP FLASHING

SCALE: 3" = 1'-0"

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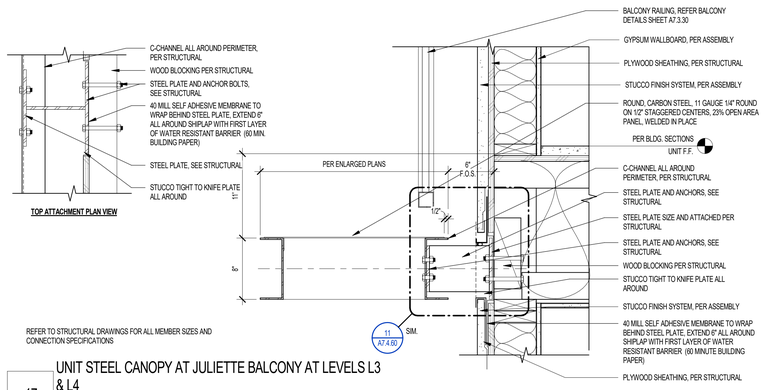
DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.52

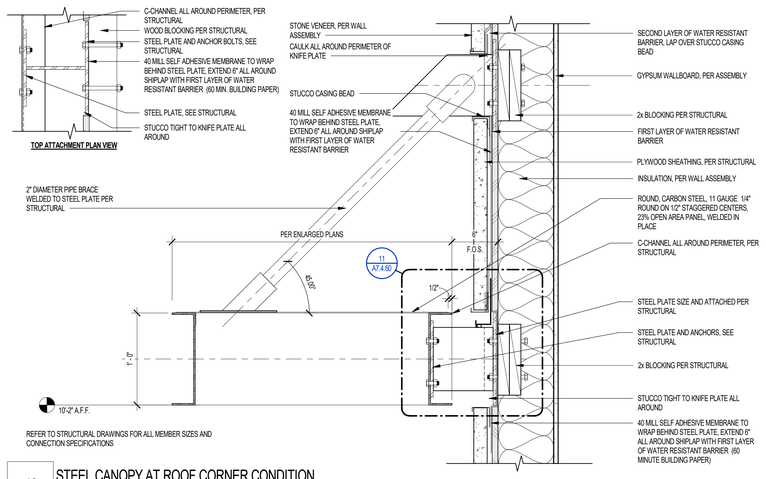
ROOF - CEILING DETAILS



REFER TO STRUCTURAL DRAWINGS FOR ALL MEMBER SIZES AND CONNECTION SPECIFICATIONS

17 UNIT STEEL CANOPY AT JULIETTE BALCONY AT LEVELS L3 & L4

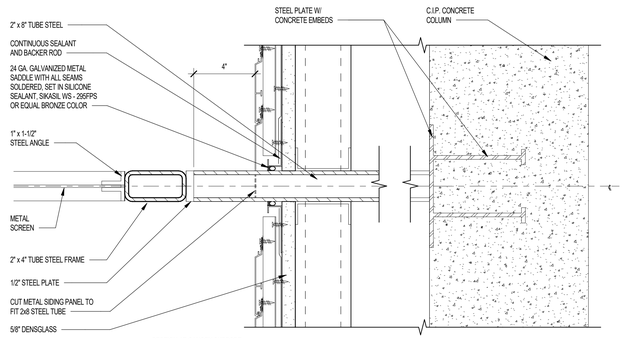
SCALE: 1 1/2" = 1'-0"



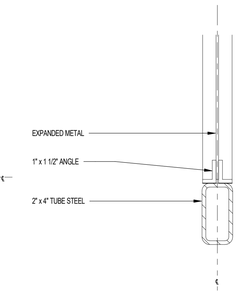
REFER TO STRUCTURAL DRAWINGS FOR ALL MEMBER SIZES AND CONNECTION SPECIFICATIONS

18 STEEL CANOPY AT ROOF CORNER CONDITION

SCALE: 1 1/2" = 1'-0"



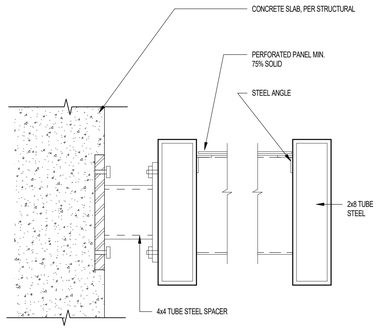
SECTION AT CANOPY SUPPORT



D. SECTION AT METAL FRAME

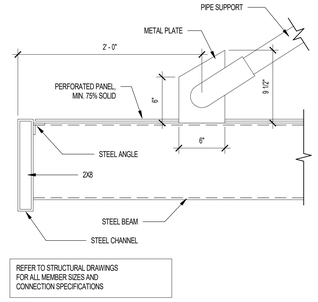
09 STEEL CANOPY AT FITNESS BUILDING

SCALE: 3" = 1'-0"



10 ROOF DECK CONCRETE CONNECTION

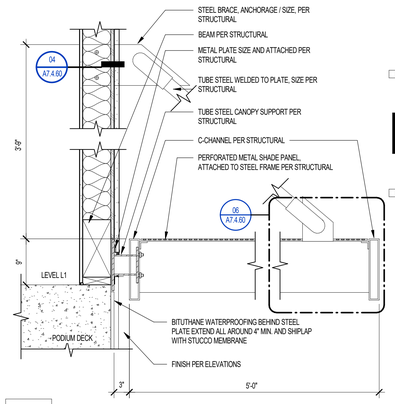
SCALE: 1 1/2" = 1'-0"



REFER TO STRUCTURAL DRAWINGS FOR ALL MEMBER SIZES AND CONNECTION SPECIFICATIONS

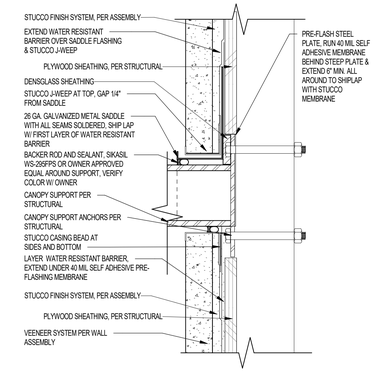
06 METAL CANOPY EDGE

SCALE: 1 1/2" = 1'-0"



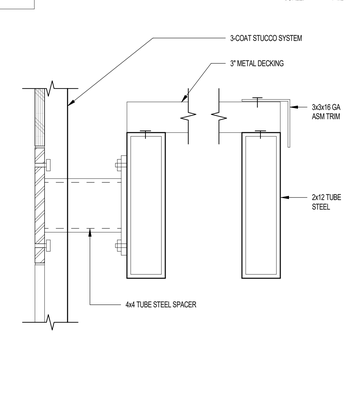
02 STEEL SHADE

SCALE: 1" = 1'-0"



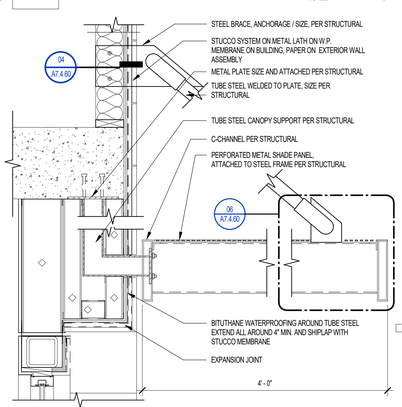
11 FLASHING SADDLE @ CANOPY SUPPORT SECTION AT VENEER WALL

SCALE: 3" = 1'-0"



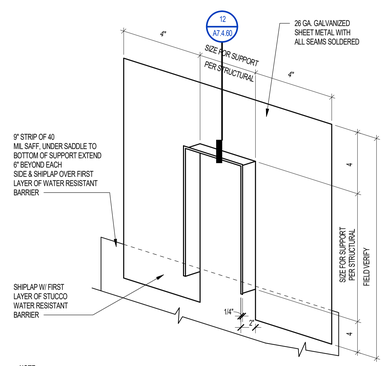
07 ROOF METAL DECK

SCALE: 1 1/2" = 1'-0"



03 STEEL SHADE

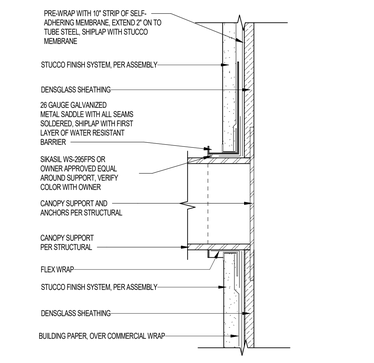
SCALE: 1" = 1'-0"



NOTE:
FIELD MEASURE BEFORE FABRICATING

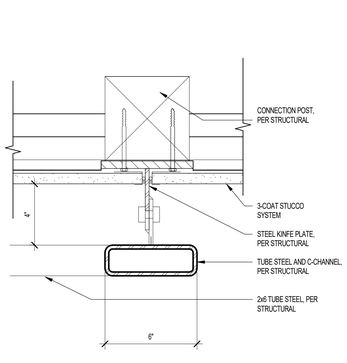
16 FLASHING SADDLE @ CANOPY SUPPORT ISOMETRIC

SCALE: 1 1/2" = 1'-0"



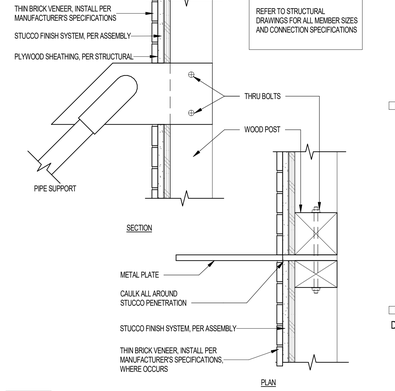
12 FLASHING SADDLE @ CANOPY SUPPORT SECTION AT STUCCO WALL

SCALE: 3" = 1'-0"



08 ORNAMENTAL STEEL CONNECTION AT STUCCO WALL

SCALE: 3" = 1'-0"



04 METAL CANOPY PIPE SUPPORT

SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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 this project is available from the owner or the owner's designated agent at:

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

3RD BUILDING SUBMITTAL

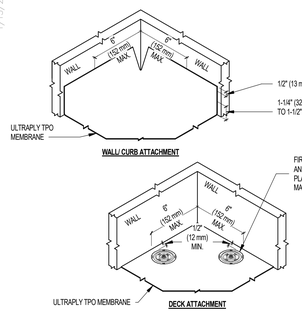
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.60

CANOPY DETAILS

1/15/2021 3:30:10 PM

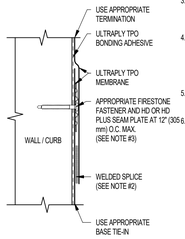
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL; REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. MAXIMUM 6" (152 MM) LONG FASTENERS (NOTE: WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE FASTENER LENGTH REQUIREMENTS)
3. BASE FLASHING AND TERMINATION NOT SHOWN FOR CLARITY, REFER TO APPROPRIATE TERMINATION & BASE TIE-IN DETAILS



21 MEMBRANE SECUREMENT AT INSIDER CORNER

FIRESTONE NO. UT-BT-17 SCALE: 1 1/2" = 1'-0"

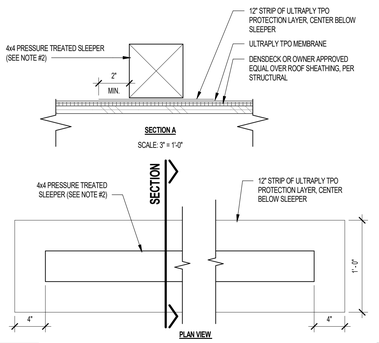
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL; REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REFER TO LAP SPLICE WITH 1-1/2" AUTOMATIC WELD AND 2" HAND WELD DETAILS, THIS SHEET, FOR WELD WIDTH
3. BATTEN STRIP MAY BE USED IN LIEU OF SEAM PLATES POLYMER OR METAL BATTEN STRIP ACCEPTABLE FOR WOOD OR METAL SUBSTRATE. METAL BATTEN MUST BE USED WITH MASONRY SUBSTRATE
4. IF INTERMEDIATE ATTACHMENT IS REQUIRED, COMPLETE AS FOLLOWS:
   - UP TO 3' (1 M) WALL HEIGHT, NONE REQUIRED
   - 3' (1 M) - 6' (2 M) WALL HEIGHT, ONE ATTACHMENT AT 1/2 THE WALL HEIGHT
   - ABOVE 6' (2 M), ONE ATTACHMENT EVERY 3' (1 M)
5. THERE ARE SOME CONDITIONS WHICH DO NOT REQUIRE INTERMEDIATE ATTACHMENT, REFER TO FIRESTONE APPLICATION SPECIFICATIONS FOR ADDITIONAL INFORMATION
6. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO CUT EDGE TREATMENT APPLICATION DETAIL THIS SHEET



17 INTERMEDIATE WALL FLASHING ATTACHMENT WITH WELDED SPLICE

FIRESTONE NO. UT-T-23 SCALE: 3" = 1'-0"

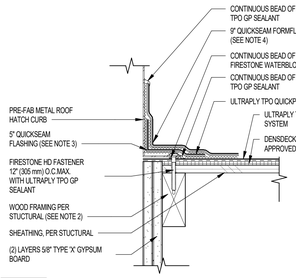
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. DO NOT INSTALL WOOD SLEEPERS OVER BATTEN STRIPS, FASTENERS HEADS, METAL PLATES OR FIELD SEAMS



13 WOOD SLEEPER

SCALE: 1 1/2" = 1'-0"

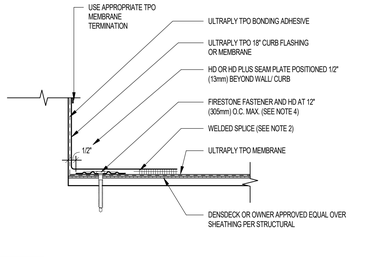
NOTES:
1. TPO ROOFING SYSTEM TO BE FIRESTONE ULTRAPLY SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. WOOD FRAMING MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR PROVIDE 200 LBS PER LINEAR FOOT IN ANY GIVEN DIRECTION
3. 5" QUICKSEAM FLASHING SHALL EXTEND 4" (100 mm) BEYOND EDGE OF CURB FLASHING
4. 9" QUICKSEAM FORMFLASH SHALL BE CENTERED OVER 5" QUICKSEAM FLASHING SO THAT IT EXPANDS 2" (51mm) BEYOND EDGE OF 5" QUICKSEAM FLASHING
5. REFER TO TPO ROOFING SYSTEM OUTSIDE CORNER DETAIL, THIS SHEET, FOR OUTSIDE CORNER APPLICATION



09 TPO ROOFING SYSTEM TERMINATION AT RTU

SCALE: 3" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REFER TO LAP SPLICE DETAIL W/ AUTOMATIC WELD AND 2" HAND WELD DETAILS, THIS SHEET, FOR WELD WIDTH
3. MAXIMUM 6" (152mm) LONG FASTENERS
4. REFER TO MEMBRANE SECUREMENT AT INSIDE/ OUTSIDE CORNER DETAILS, THIS SHEET, FOR ANCHORING INFORMATION
5. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO TPO ROOFING SYSTEM CUT EDGE TREATMENT APPLICATION DETAIL, THIS SHEET, FOR CUT EDGE SEALANT APPLICATION

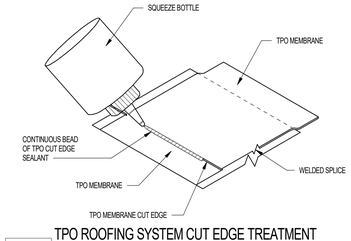


05 TPO ROOFING SYSTEM BASE TIE-IN WITH SEAM PLATES

FIRESTONE NO. UT-B-4 SCALE: 3" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION

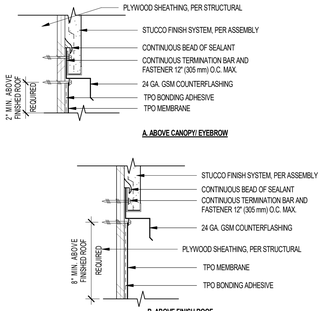
WHEN POLYESTER REINFORCEMENT OF TPO IS EXPOSED, CUT CUT EDGE SEALANT TO ENTIRE EXPOSED EDGE



01 TPO ROOFING SYSTEM CUT EDGE TREATMENT APPLICATION

FIRESTONE NO. UT-LS-14 SCALE: 3" = 1'-0"

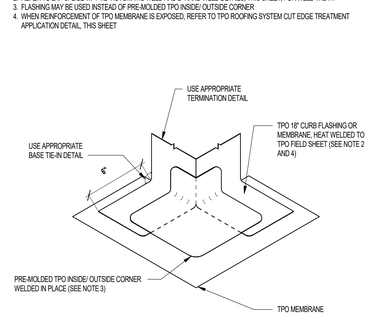
NOTES:
1. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION
2. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS



06 TPO ROOFING SYSTEM TERMINATION AT STUCCO SYSTEM

FIRESTONE NO. UT-T-7 SCALE: 3" = 1'-0"

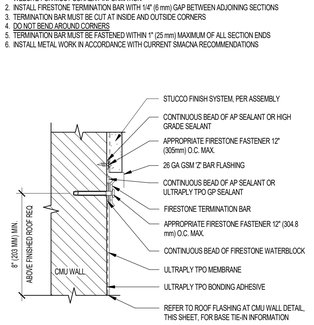
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REFER TO LAP SPLICE WITH 1-1/2" AUTOMATIC WELD AND 2" HAND WELD DETAILS, THIS SHEET, FOR WELD WIDTH
3. FLASHING MAY BE USED INSTEAD OF PRE-MOLDED TPO INSIDE/ OUTSIDE CORNER
4. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO TPO ROOFING SYSTEM CUT EDGE TREATMENT APPLICATION DETAIL THIS SHEET FOR CUT EDGE SEALANT APPLICATION



02 TPO ROOFING SYSTEM OUTSIDE CORNER

FIRESTONE NO. UT-C-7 SCALE: 3" = 1'-0"

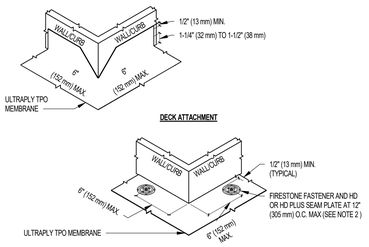
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL; REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REFER TO LAP SPLICE WITH 1-1/2" AUTOMATIC WELD AND 2" HAND WELD DETAILS, THIS SHEET, FOR WELD WIDTH
3. FLASHING MAY BE USED INSTEAD OF PRE-MOLDED TPO INSIDE/ OUTSIDE CORNER
4. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO TPO ROOFING SYSTEM CUT EDGE TREATMENT APPLICATION DETAIL, THIS SHEET



22 WALL MOUNTED ELECTRICAL BOX

FIRESTONE NO. UT-M-6 SCALE: 6" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL
2. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
3. WALKWAY SECTION SHOULD BE SPACED PROPERLY TO ALLOW FOR DRAINAGE, SPACE BETWEEN WALKWAY SECTIONS SHALL BE 1" MIN. TO 2" MAX.



18 TPO ROOFING SYSTEM WALKWAY PAD

FIRESTONE NO. UT-M-1 SCALE: 3" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL
2. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
3. WHEN POLYESTER REINFORCEMENT OF TPO IS EXPOSED, APPLY CUT EDGE TREATMENT TO ENTIRE EXPOSED EDGE; REFER TO UT-LS-14

14 LAP SPLICE WITH 2" HAND WELD

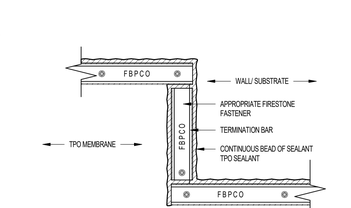
SCALE: 6" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. MAXIMUM 6" (152mm) LONG FASTENERS
3. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO TPO ROOFING SYSTEM CUT EDGE TREATMENT APPLICATION DETAIL, THIS SHEET, FOR CUT EDGE SEALANT APPLICATION

10 TPO ROOFING SYSTEM LAP SPLICE WITH 1-1/2" AUTOMATIC WELDER

FIRESTONE NO. UT-LS-1 SCALE: 6" = 1'-0"

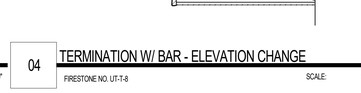
NOTES:
1. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION
2. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS



03 TPO ROOFING SYSTEM INSIDE CORNER

FIRESTONE NO. UT-C-9 SCALE: 3" = 1'-0"

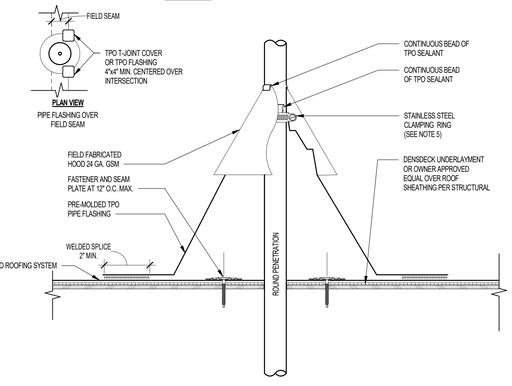
NOTES:
1. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION
2. MASONRY AND CONCRETE WALLS MUST BE WATERPROOFED AND MAINTAINED IN ORDER FOR ANY SURFACE MOUNTED TERMINATION TO BE EFFECTIVE



04 TERMINATION W/ BAR - ELEVATION CHANGE

FIRESTONE NO. UT-T-8 SCALE: 3" = 1'-0"

NOTES:
1. REFER TO MANUFACTURERS WEBSITE FOR THE MOST CURRENT INFORMATION
2. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY
4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING)
5. APPLY SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING
6. LARGE PRE-MOLDED PIPE FLASHING FITS 4" (102 mm) - 8" (203 mm) PENETRATIONS SIZES
7. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F



23 TPO ROOFING SYSTEM FLASHING AT SMALL PIPE PENETRATION

REFERENCE FIRESTONE DETAIL UT-P-2 SCALE: 1" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL; REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. INSTALL FIRESTONE TERMINATION BAR WITH 1/4" (6 mm) GAP BETWEEN ADJOINING SECTIONS
3. TERMINATION BAR MUST BE CUT AT INSIDE AND OUTSIDE CORNERS
4. DO NOT BEND AROUND CORNERS
5. TERMINATION BAR MUST BE FASTENED WITHIN 1" (25 mm) MAXIMUM OF ALL SECTION ENDS
6. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS

24 TERMINATION WITH SURFACE MOUNTED COUNTERFLASHING AND TERMINATION BAR

FIRESTONE NO. UT-T-6 SCALE: 3" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. MAXIMUM 6" (152 MM) LONG FASTENERS (NOTE: WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE FASTENER LENGTH REQUIREMENTS)
3. BASE FLASHING AND TERMINATION NOT SHOWN FOR CLARITY, REFER TO APPROPRIATE TERMINATION AND BASE TIE-IN DETAILS

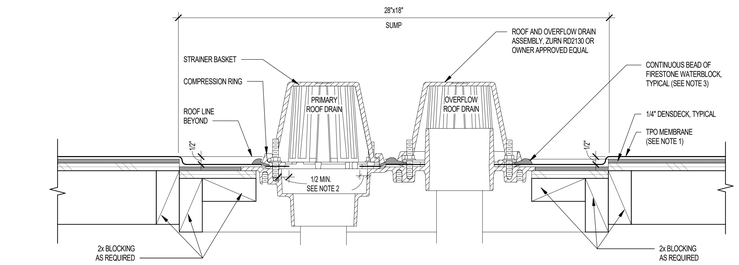
20 MEMBRANE SECUREMENT AT OUSIDER CORNER

FIRESTONE NO. UT-BT-16 SCALE: 1 1/2" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO GP, OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. HOLE IN MEMBRANE SHOULD EXTEND A MINIMUM OF 1/2" (13 mm) BEYOND CLAMPING RING AND SHOULD NOT BE SMALLER THAN THE DIAMETER OF THE LEADER PIPE
3. FIRESTONE WATERBLOCK MIN. 1/2 OF 10 OZ. (295 ml) TUBE PER 4" DRAIN, USE ADDITIONAL WATERBLOCK FOR LARGER DRAINS

SUMP AREA FIELD SEAM REQUIREMENTS:

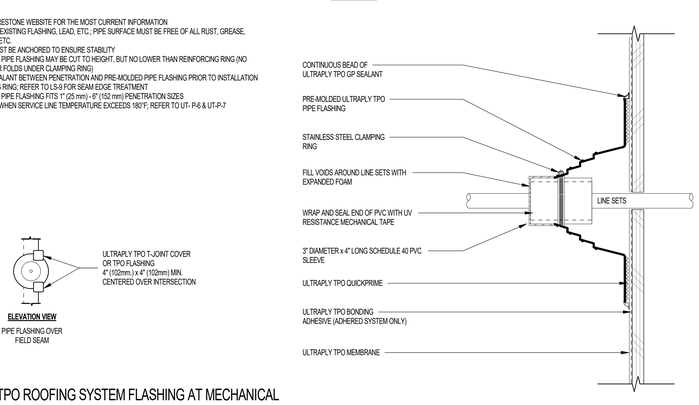
A. IF FIELD SEAM EDGE IS WITHIN 9" (229 mm) OF DRAIN COMPRESSION RING, TPO TARGET PATCH REQUIRED
B. IF FIELD SEAM EDGE IS OVER 9" (229 mm) TO WITHIN 18" (457 mm) OF DRAIN COMPRESSION RING, HEAT WELD A LAYER OF ULTRAPLY TPO FLASHING (UNSUPPORTED) OR ULTRAPLY TPO MEMBRANE CENTERED OVER SEAM EDGE; FLASHING MUST EXTEND 3" (76 mm) MINIMUM BEYOND EDGE OF SUMP



16 TPO ROOFING SYSTEM AT ROOF AND OVERFLOWS DRAINS

FIRESTONE NO. UT-D-4 SCALE: 3" = 1'-0"

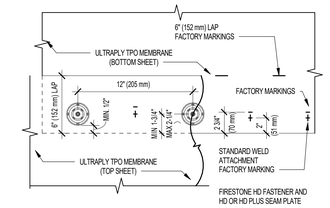
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. LINESETS MUST BE ANCHORED TO ENSURE STABILITY
4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING)
5. APPLY GP SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING; REFER TO LS-9 FOR SEAM EDGE TREATMENT
6. PRE-MOLDED PIPE FLASHING FITS 1" (25 mm) - 6" (152 mm) PENETRATION SIZES
7. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 180°F; REFER TO UT- P-6 & UT-P-7



15 TPO ROOFING SYSTEM FLASHING AT MECHANICAL LINESETS

FIRESTONE NO. UT-P-17 SCALE: 3" = 1'-0"

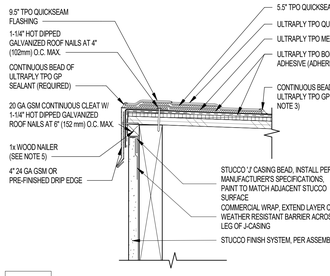
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. REFER TO LAP SPLICE WITH 1-1/2" AUTOMATIC WELD AND 2" HAND WELD DETAILS, THIS SHEET, FOR WELD WIDTH



07 TPO ROOFING SYSTEM LAP SPLICE FASTENER LAYOUT FOR STANDARD WELD SEAM

FIRESTONE NO. UT-LS-4 SCALE: 1 1/2" = 1'-0"

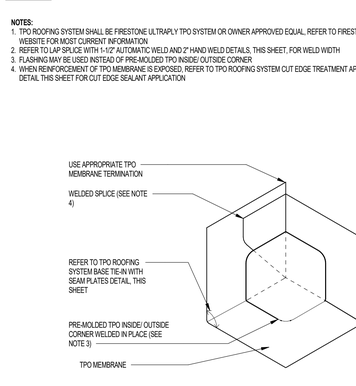
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION
2. INSTALL METALWORK TO MANUFACTURES REQUIREMENTS OR SMACNA RECOMMENDATIONS, IF SHOP FABRICATED METAL EDGE IS USED IT MUST MEET ANSI/ SPRI ES-1 OR AN FM STANDARD
3. GP SEALANT IS REQUIRED ALONG FLASHING WHEN ROOF SLOPE IS 1" (25 mm) PER FOOT OR GREATER
4. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LBS PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION
5. FLANGE OF METAL MUST BE FULLY SUPPORTED BY WOOD AND TERMINATED AT LEAST 1/2" (13 mm) FROM EDGE OF WOOD



08 TPO ROOFING SYSTEM EDGE FLASHING

FIRESTONE NO. UT-RE-20A SCALE: 3" = 1'-0"

NOTES:
1. REFER TO MANUFACTURERS WEBSITE FOR THE MOST CURRENT INFORMATION
2. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY
4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING)
5. APPLY SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING
6. LARGE PRE-MOLDED PIPE FLASHING FITS 4" (102 mm) - 8" (203 mm) PENETRATIONS SIZES
7. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F



25 TPO ROOFING SYSTEM FLASHING AT SMALL PIPE PENETRATION

REFERENCE FIRESTONE DETAIL UT-P-2 SCALE: 1" = 1'-0"

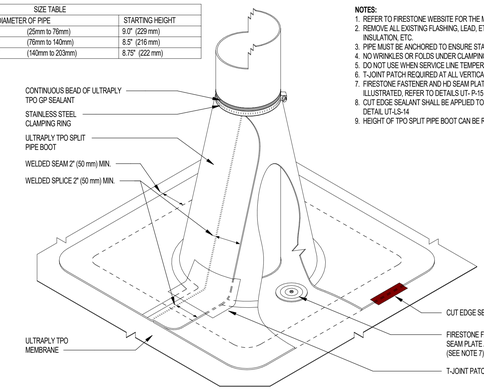
NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL; REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. INSTALL FIRESTONE TERMINATION BAR WITH 1/4" (6 mm) GAP BETWEEN ADJOINING SECTIONS
3. TERMINATION BAR MUST BE CUT AT INSIDE AND OUTSIDE CORNERS
4. DO NOT BEND AROUND CORNERS
5. TERMINATION BAR MUST BE FASTENED WITHIN 1" (25 mm) MAXIMUM OF ALL SECTION ENDS
6. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS

24 TERMINATION WITH SURFACE MOUNTED COUNTERFLASHING AND TERMINATION BAR

FIRESTONE NO. UT-T-6 SCALE: 3" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL, REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION
2. MAXIMUM 6" (152 MM) LONG FASTENERS (NOTE: WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE FASTENER LENGTH REQUIREMENTS)
3. BASE FLASHING AND TERMINATION NOT SHOWN FOR CLARITY, REFER TO APPROPRIATE TERMINATION AND BASE TIE-IN DETAILS

SIZE TABLE			
SIZE	OUTSIDE DIAMETER OF PIPE		STARTING HEIGHT
SMALL	1.0" to 3.0"	(25mm to 76mm)	9.0" (229 mm)
MEDIUM	3.0" to 5.5"	(76mm to 140mm)	8.5" (216 mm)
LARGE	5.5" to 8.0"	(140mm to 203mm)	8.75" (222 mm)

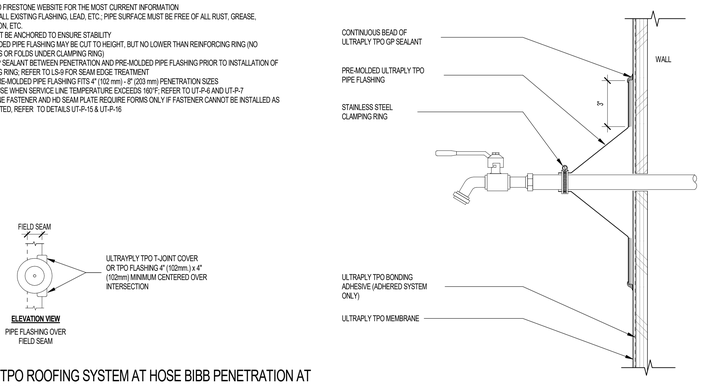


NOTES:
1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION
2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY
4. NO WRINKLES OR FOLDS UNDER CLAMPING RING
5. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F; REFER TO UT-P-6 AND UT-P-7
6. T-JOINT PATCH REQUIRED AT ALL VERTICAL TRANSITIONS ON NON-FACTORY WELDS
7. FIRESTONE FASTENER AND HD SEAM PLATE REQUIRE FORMS ONLY IF FASTENER CANNOT BE INSTALLED AS ILLUSTRATED, REFER TO DETAILS UT- P-15 AND UT - P-16
8. CUT EDGE SEALANT SHALL BE APPLIED TO ANY EDGES WHERE SCRIM REINFORCEMENT IS EXPOSED PER DETAIL UT-LS-14
9. HEIGHT OF TPO SPLIT PIPE BOOT CAN BE REDUCED TO FIT LARGER DIAMETER PIPES. (REFER TO SIZE TABLE)

29 ROUND PENETRATION WITH ULTRAPLY TPO PIPE BOOT

FIRESTONE NO. UT-P-21 — SCALE: 1 1/2" = 1'-0"

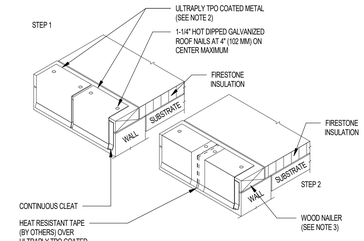
NOTES:
1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION
2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY
4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING)
5. APPLY GP SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO 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
7. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F; REFER TO UT-P-6 AND UT-P-7
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



30 TPO ROOFING SYSTEM AT HOSE BIBB PENETRATION AT WALL

FIRESTONE NO. UT-P-2 — SCALE: 3" = 1'-0"

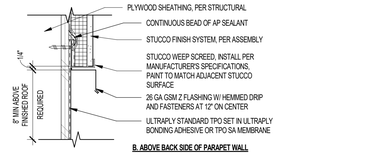
NOTES:
1. REFER TO FIRESTONE WEBSITE FOR THE MOST CURRENT INFORMATION
2. INSTALL METAL WORK TO SMACNA RECOMMENDATIONS; IF SHOP FABRICATED METAL EDGE IS USED IT MUST MEET ANSI/ SPRI ES-1 OR AN FM STANDARD
3. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LBS PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION

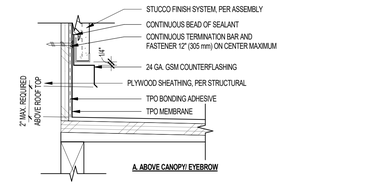


27 ROOF EDGE SPLICE W/ ULTRAPLY TPO COATED

FIRESTONE NO. UT-RE-23a — SCALE: 3" = 1'-0"

NOTES:
1. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION
2. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS





28 TPO ROOFING SYSTEM TERMINATION AT STUCCO SYSTEM

FIRESTONE NO. UT-T-7 — SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

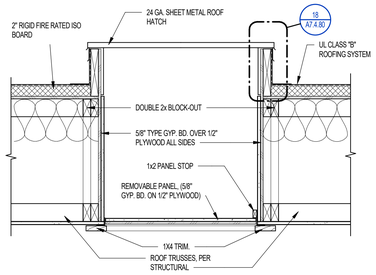
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.71

TPO ROOFING DETAILS

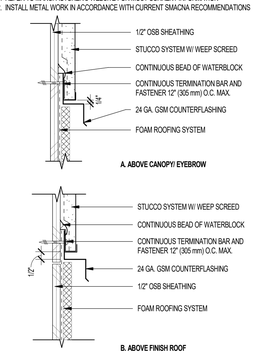


NOTES:
1. MIN.22" X 30" CLEAR OPENING MUST BE PROVIDED.
2 ACCES DOOR TO BE GASKETED.
3 INSTALL ROOF HATCH, PER MANUFACTURER WRITTNE SPECIFICATIONS

21 ROOF HATCH AT CARRIAGE BUILDING

SCALE: 1" = 1'-0"

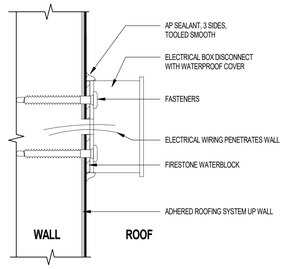
NOTES:
1. REFER TO MANUFACTURER'S WEBSITE FOR MOST CURRENT INFORMATION
2. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS



17 FOAM ROOFING SYSTEM TERMINATION AT STUCCO SYSTEM

SCALE: 3" = 1'-0"

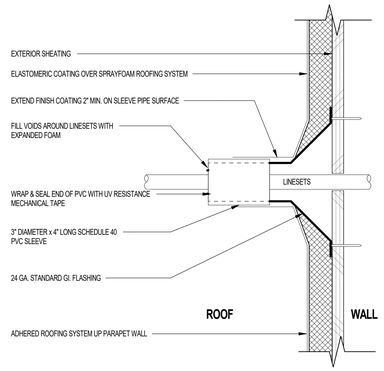
NOTE:
1. ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SYSTEM OR OWNER APPROVED EQUAL. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION



13 WALL MOUNTED A/C ELECTRICAL BOX DISCONNECT

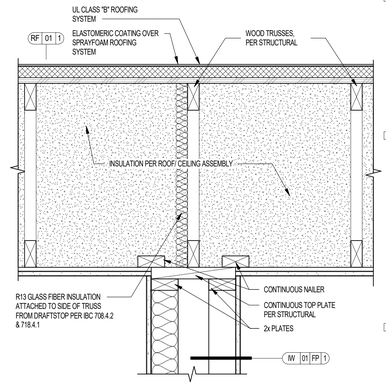
SCALE: 6" = 1'-0"

NOTES:
1. REFER TO PROTECH WEBSITE FOR THE MOST CURRENT INFORMATION
2. REMOVE ALL EXISTING FLASHING, LEAD, ETC.; PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. LINESETS MUST BE ANCHORED TO ENSURE STABILITY
4. GALVANIZED FLASHING MAY BE CUT TO HEIGHT, AND OVERLAP WITH PVC SLEEVE
5. APPLY GP SEALANT BETWEEN PENETRATION AND STANDARD FLASHING PRIOR TO INSTALLATION OF PVC SLEEVE
6. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 180°F; REFER TO UT-P-6 & UT-P-7



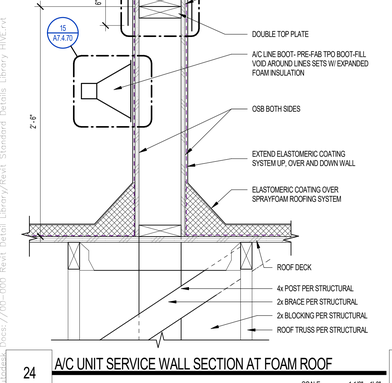
09 ROOFING SYSTEM FLASHING AT MECHANICAL LINESETS

SCALE: 3" = 1'-0"



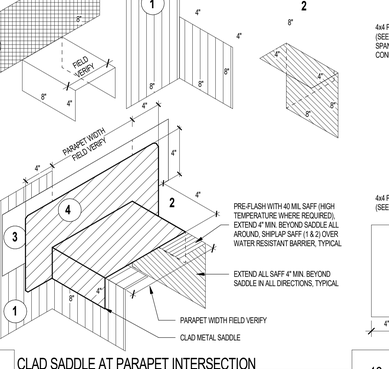
01 1-HR UNIT SEPARATION WALL AT 1-HR ROOF/CEILING

SCALE: 1 1/2" = 1'-0"



22 ROOF SYSTEM AT ELEVATOR SHAFT

SCALE: 1" = 1'-0"



18 TPO ROOFING SYSTEM TERMINATION AT R.T.U

FIRESTONE REFERENCE DETAIL NO. TPO-SA-T-5

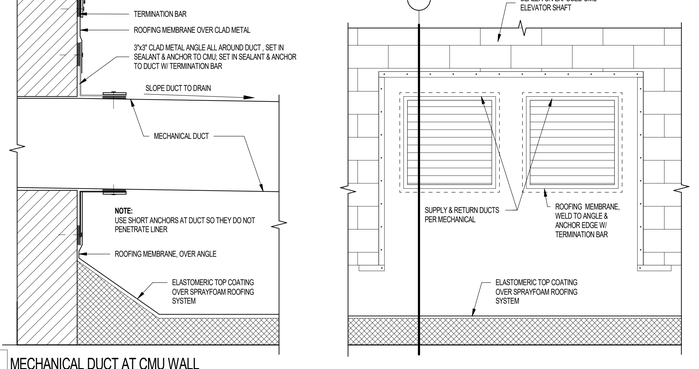
SCALE: 3" = 1'-0"

NOTES:
1. TPO ROOFING SYSTEM SHALL BE FIRESTONE ULTRAPLY TPO SA SYSTEM OR OWNER APPROVED SUBSTITUTE. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REFER TO DETAIL UT-LS-1 OR UT-LS-2 FOR WELD WIDTH.
3. NAILING AND METAL COUNTER-FLASHING ARE NOT REQUIRED IF MEMBRANE IS RUN UP AND OVER CURB WALLS PRIOR TO INSTALLATION OF R.T.U.
4. METAL COUNTER-FLASHING SHALL BE 24 GA PRE-FINISHED STEEL OR .032" MIN. ALUMINUM FORMED WITH HEMMED LOWER EDGE MOUNTED TIGHTLY TO UNDERSIDE OF MECHANICAL UNIT.
5. FIRESTONE FASTENER WITH GP SEALANT ALSO REQUIRED ALONG ENTIRE EDGE OF CURB FLANGE.
6. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LB PER LINEAR FOOT IN ANY GIVEN DIRECTION.
7. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO UT-LS-14 FOR CUT EDGE SEALANT APPLICATION.
8. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS.
9. APPROVED PRIMER REQUIRED ON ALL VERTICAL SURFACES WHEN TPO SA IS USED FOR FLASHING.
10. IN CASE OF OBSTRUCTION REFER TO DETAIL UT-SA-BT-12.
11. REFER TO FIRESTONE TIS SHEETS AND APPLICATION GUIDES FOR LIST OF COMPATIBLE SUBSTRATES WITH TPO SA MEMBRANE.
12. REFER TO TPO APPLICATION GUIDE FOR ACCEPTABLE FLASHING SUBSTRATES.

16 WOOD SLEEPER

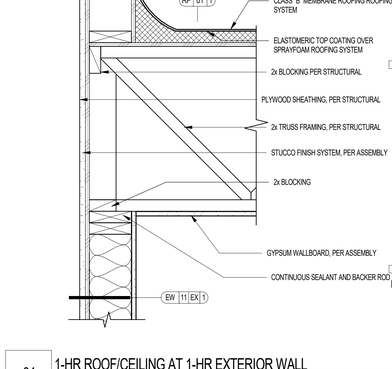
SCALE: 1 1/2" = 1'-0"

NOTES:
1. ROOFING SYSTEM SHALL BE SPRAYED POLYURETHANE FOAM (TECH GUARD) TAPERED DOWN TO DRAIN OR OWNER APPROVED EQUAL. REFER TO PROTECH WEBSITE FOR MOST CURRENT INFORMATION
2. ROOFING MEMBRANE SHALL EXTEND UNDER THE ROOF DRAIN COMPRESSION CLAMPING RING
3. ALL DRAIN COMPONENTS SHALL BE MADE OF CAST IRON UNLESS APPROVED BY THE ROOF MEMBRANE MANUFACTURER. TO USE ANOTHER MATERIAL
4. SLOPE INSULATION TOWARDS DRAIN



10 SPRAY FOAM ROOFING SYSTEM AT ROOF & OVERFLOWS DRAINS

SCALE: 3" = 1'-0"

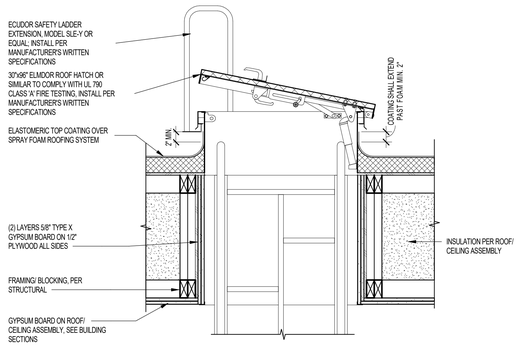


02 1-HR CORRIDOR WALL AT 1-HR ROOF/CEILING

SCALE: 1 1/2" = 1'-0"

23 ROOF TRUSS AT STEP SECTION

SCALE: 1 1/2" = 1'-0"

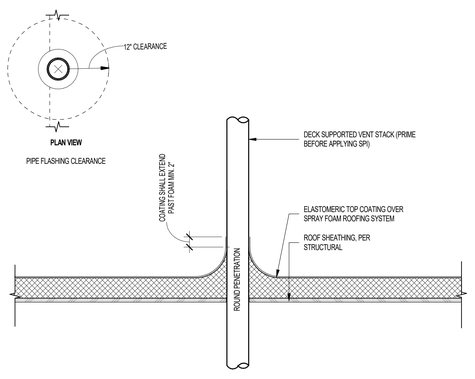


NOTES:
1. ROOFING SYSTEM SHALL BE SPRAYED POLYURETHANE FOAM (TECH GUARD) TAPERED DOWN TO DRAIN OR OWNER APPROVED EQUAL. REFER TO PROTECH WEBSITE FOR MOST CURRENT INFORMATION
2. HOLD ROOF HATCH MIN. 18" FROM PARAPET WALL

19 ALTERNATING METAL TREAD LADDER/ROOF HATCH

SCALE: 1" = 1'-0"

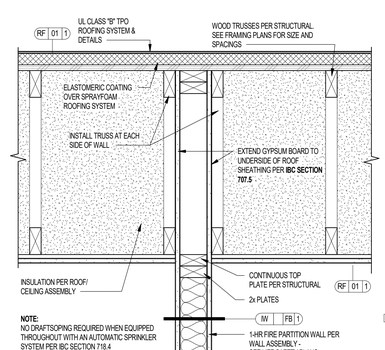
NOTES:
1. REFER TO PROTECH MANUFACTURER'S WEBSITE FOR THE MOST CURRENT INFORMATION
2. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY
4. DO NOT USE WHEN SERVICE LINE TEMPERATURE EXCEEDS 160°F
5. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12" CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING



11 SPRAYFOAM ROOFING SYSTEM FLASHING AT SMALL PIPE PENETRATION

REFERENCE FIRESTONE DETAIL UT-P-2

SCALE: 1" = 1'-0"



03 1-HR FIRE BARRIER WALL AT 1-HR ROOF/CEILING

SCALE: 1 1/2" = 1'-0"

24 A/C UNIT SERVICE WALL SECTION AT FOAM ROOF

SCALE: 1 1/2" = 1'-0"

20 CLAD SADDLE AT PARAPET INTERSECTION

SCALE: 1 1/2" = 1'-0"

NOTE:
1. DO NOT INSTALL WOOD SLEEPERS OVER BATTEN STRIPS, FASTENERS HEADS, METAL PLATES OR FIELD SEAMS

16 WOOD SLEEPER

SCALE: 1 1/2" = 1'-0"

12 MECHANICAL DUCT AT CMU WALL

SCALE: 3" = 1'-0"

04 1-HR ROOF/CEILING AT 1-HR EXTERIOR WALL

SCALE: 1 1/2" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

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CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

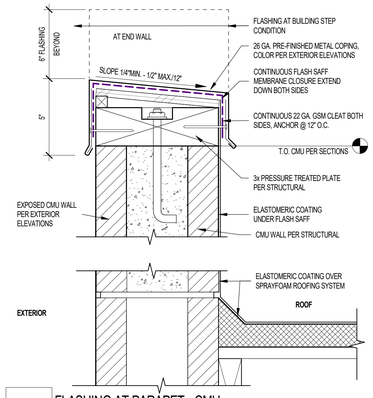
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

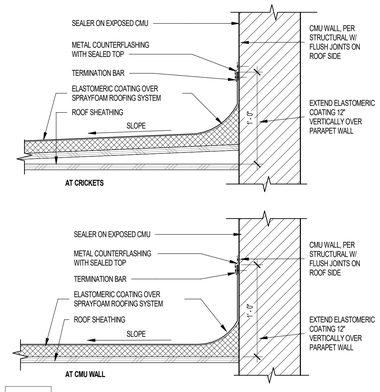
A7.4.80

FOAM ROOF DETAILS



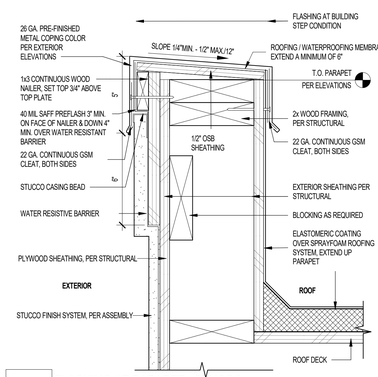
29 FLASHING AT PARAPET - CMU

SCALE: 3" = 1'-0"



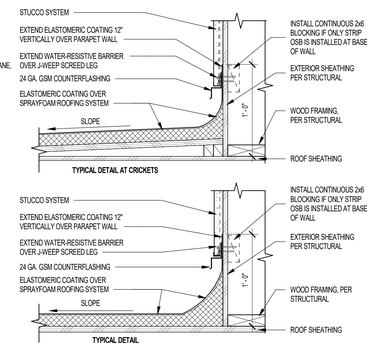
25 SPRAY FOAM ROOFING AT CMU WALL

SCALE: 1 1/2" = 1'-0"



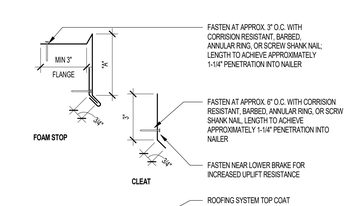
30 FLASHING AT PARAPET - STUCCO

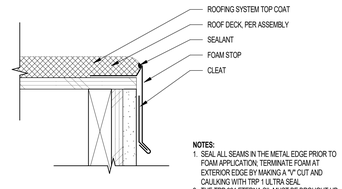
SCALE: 3" = 1'-0"



26 SPRAY FOAM ROOFING @ WOOD FRAMING W/STUCCO

SCALE: 1 1/2" = 1'-0"

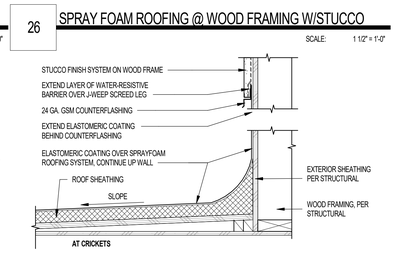




NOTES:
1. SEAL ALL SEAMS IN THE METAL EDGE PRIOR TO FOAM APPLICATION; TERMINATE FOAM AT EXTERIOR EDGE BY MAKING A "V" CUT AND CAULKING WITH TRP 1 ULTRA SEAL
2. THE TRP 924 ETERNA SIL MUST BE BROUGHT UP AND OVER THE CAULKING, AND TERMINATE ON THE EXTERIOR FACE

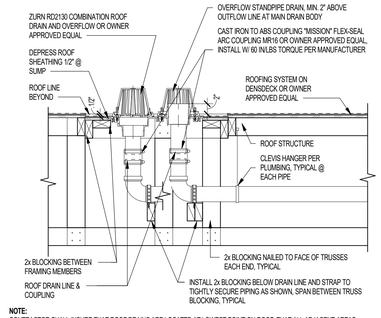
31 FOAM ROOF EDGE

SCALE: 3" = 1'-0"



27 ROOFING @ WOOD FRAMED PARAPET WALL

SCALE: 1 1/2" = 1'-0"



NOTE:
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

28 ROOF AND OVERFLOW DRAIN PIPPING SUPPORT

SCALE: 1" = 1'-0"

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

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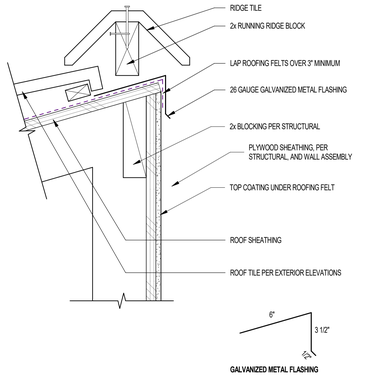
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

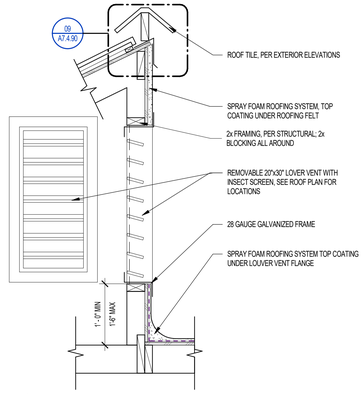
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.81

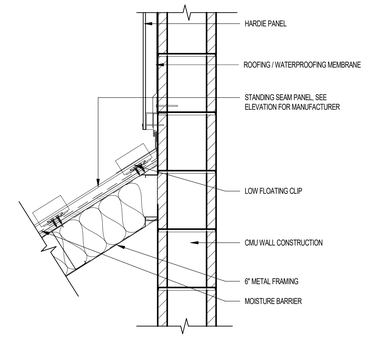
FOAM ROOF DETAILS



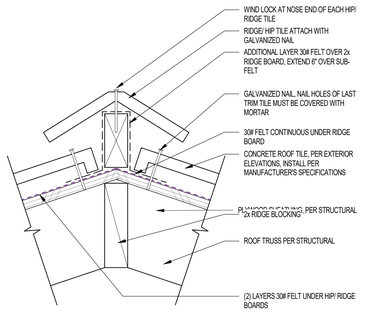
09 ROOF TILE AT MANSARD — SCALE: 3" = 1'-0"



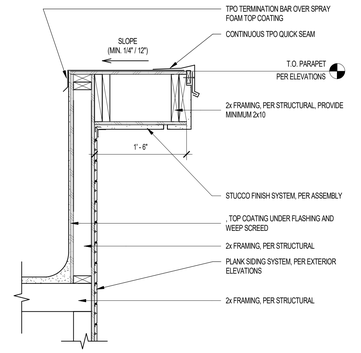
05 ATTIC ACCESS WALL LOUVER — SCALE: 1" = 1'-0"



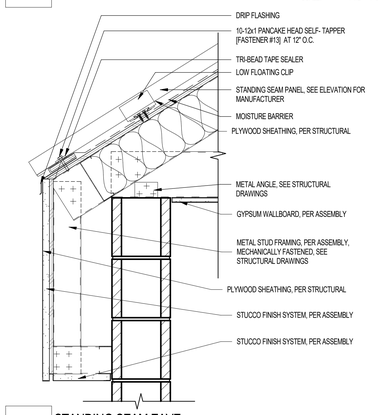
01 STANDING SEAM EAVE AT CMU WALL — SCALE: 1 1/2" = 1'-0"



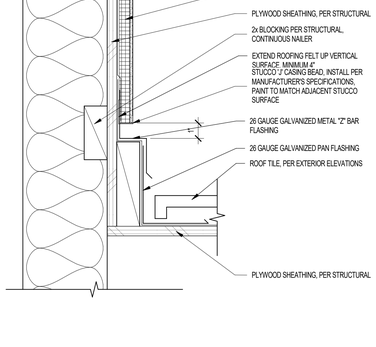
10 ROOF TILE AT RIDGE — SCALE: 3" = 1'-0"



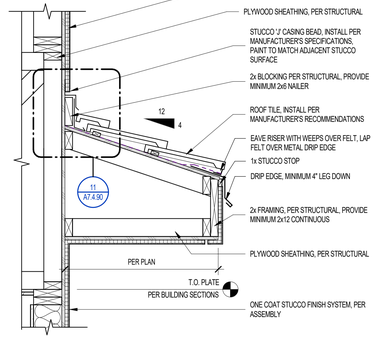
06 DECORATIVE PARAPET — SCALE: 1" = 1'-0"



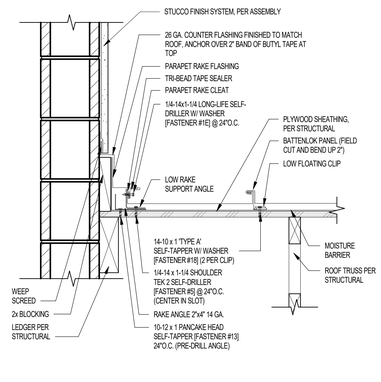
02 STANDING SEAM EAVE — SCALE: 1 1/2" = 1'-0"



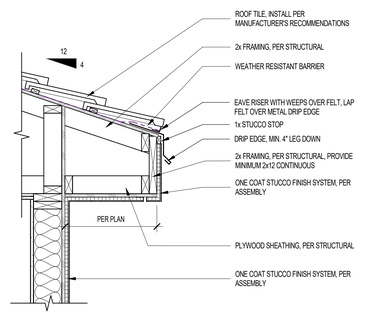
11 ROOF TILE AT WALL — SCALE: 3" = 1'-0"



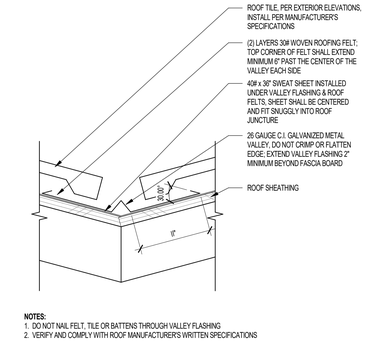
07 ROOF TILE & FASCIA AT EXTERIOR BALCONY — SCALE: 1" = 1'-0"



03 STANDING SEAM METAL ROOF RAKE — SCALE: 1 1/2" = 1'-0"



08 ROOF TILE & FASCIA AT EXTERIOR EAVE — SCALE: 1" = 1'-0"



NOTES:
1. DO NOT NAIL FELT, TILE OR BATTENS THROUGH VALLEY FLASHING
2. VERIFY AND COMPLY WITH ROOF MANUFACTURER'S WRITTEN SPECIFICATIONS

04 ROOF TILE VALLEY FLASHING — SCALE: 3" = 1'-0"

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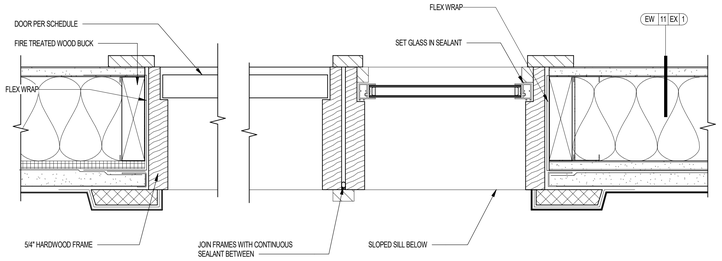
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.4.90

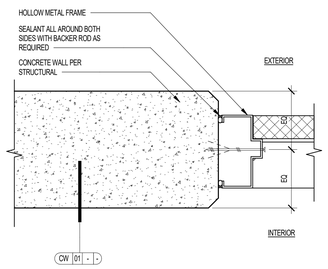
ROOF - CEILING DETAILS TILE & STANDING SEAM



PLAN VIEW

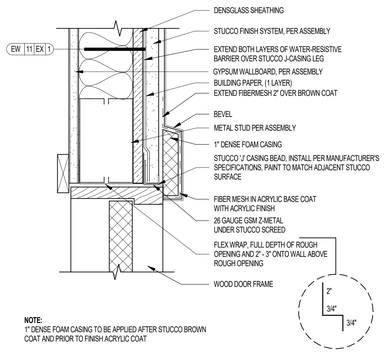
21 EXTERIOR WOOD DOOR & SIDELITE FRAME JAMBS

SCALE: 3" = 1'-0"



13 HOLLOW METAL DOOR FRAME @ CONCRETE WALL

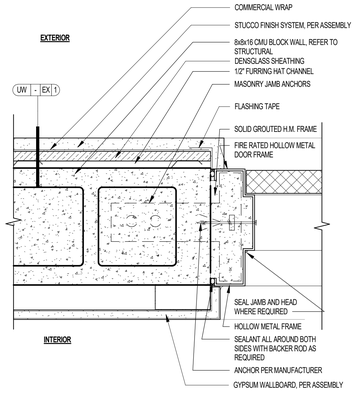
SCALE: 3" = 1'-0"



NOTE:
1" DENSE FOAM CASING TO BE APPLIED AFTER STUCCO BROWN COAT AND PRIOR TO FINISH ACRYLIC COAT

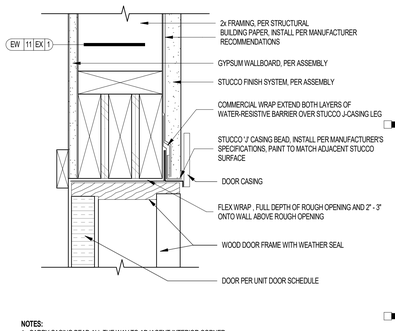
09 EXTERIOR WOOD DOOR FRAME HEAD AT METAL FRAMING

SCALE: 3" = 1'-0"



05 HM. DOOR JAMB AT CMU WALL W/ STUCCO FINISH

SCALE: 3" = 1'-0"



NOTES:
1.. CARRY CASING BEAD ALL THE WAY TO ADJACENT INTERIOR CORNER

01 COVERED BALCONY DOOR HEAD

SCALE: 3" = 1'-0"

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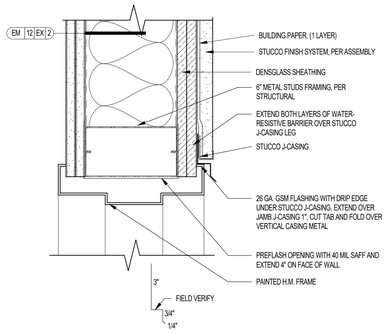
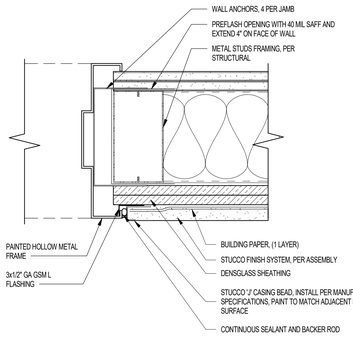


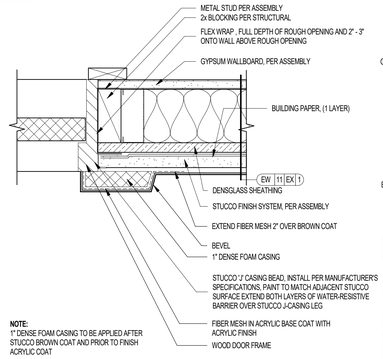
18 EXTERIOR HOLLOW METAL DOOR HEAD AT 2 HR METAL FRAMING

SCALE: 3" = 1'-0"



14 EXTERIOR HOLLOW METAL DOOR JAMB AT 2 HR METAL FRAMING

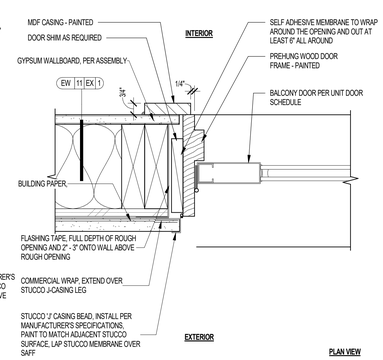
SCALE: 3" = 1'-0"



NOTE:
1" DENSE FOAM CASING TO BE APPLIED AFTER STUCCO BROWN COAT AND PRIOR TO FINISH ACRYLIC COAT

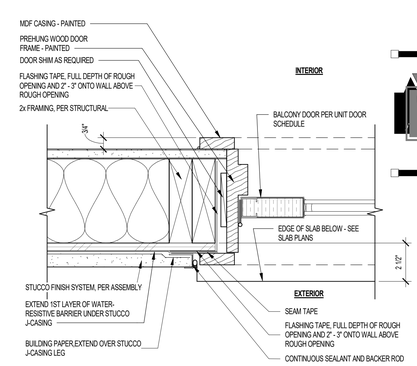
10 EXTERIOR WOOD DOOR FRAME JAMB AT METAL FRAMING

SCALE: 3" = 1'-0"



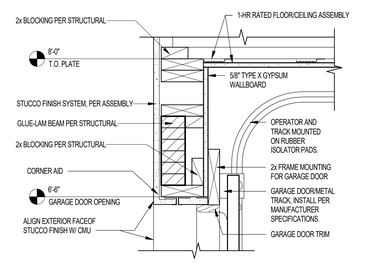
06 JULIETTE BALCONY DOOR JAMB

SCALE: 3" = 1'-0"



02 COVERED BALCONY FIBERGLASS DOOR JAMB

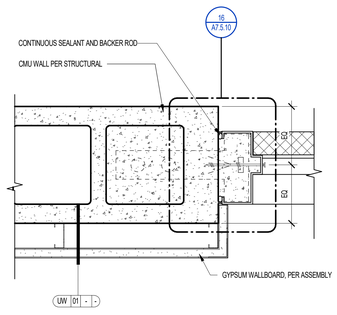
SCALE: 3" = 1'-0"



NOTE:
CONT. 6" WIDE STRIP OF 22 MIL SELF-ADHERING FLEXIBLE FLASHING. RUN 4" UP WALL BEHIND FIRST LAYER OF WATER RESISTIVE BARRIER & LAP 4" OVER FIRST LAYER OF WATER RESISTIVE BARRIER @ HORIZONTAL SURFACE

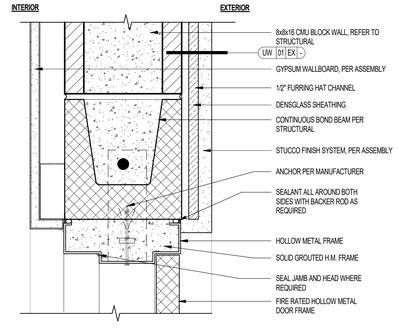
19 GARAGE DOOR HEAD - CARRIAGE BLDG.

SCALE: 1 1/2" = 1'-0"



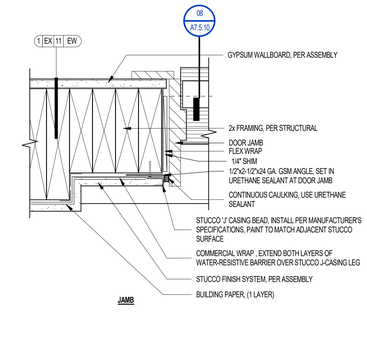
15 FURRED CMU WALL AT HM DOOR JAMB INTERIOR WALL

SCALE: 3" = 1'-0"



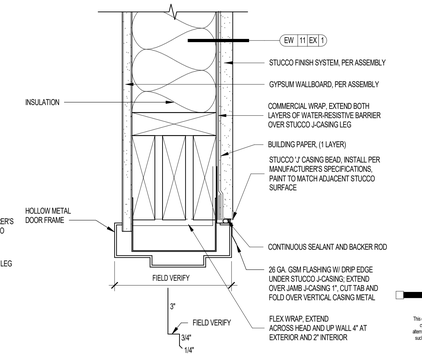
11 HM. DOOR HEAD AT CMU WALL W/ STUCCO FINISH

SCALE: 3" = 1'-0"



07 RECESSED JULIETTE DOOR @ JAMB

SCALE: 3" = 1'-0"



03 EXTERIOR HOLLOW METAL FRAME - HEAD

SCALE: 3" = 1'-0"

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DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

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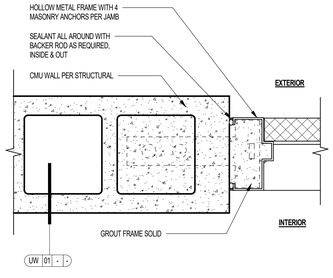
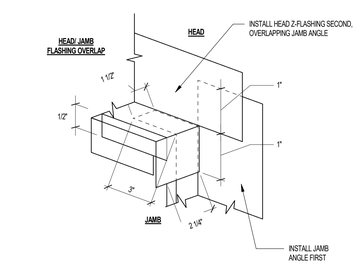
EXTERIOR DOOR DETAILS



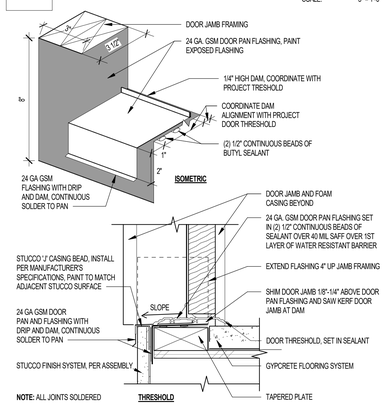
16 HOLLOW METAL DOOR JAMB @ CMU WALL EXTERIOR OR NON-FINISHED CONDITIONS

SCALE: 3" = 1'-0"



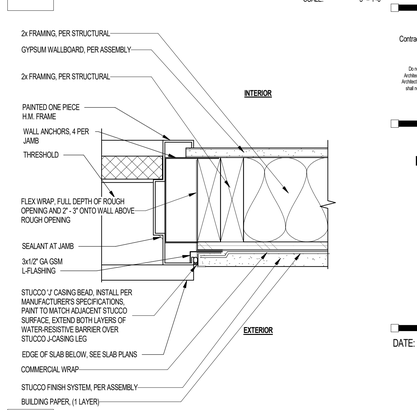
12 STUCCO FLASHING DOOR HEAD @ CORNER

SCALE: 3" = 1'-0"



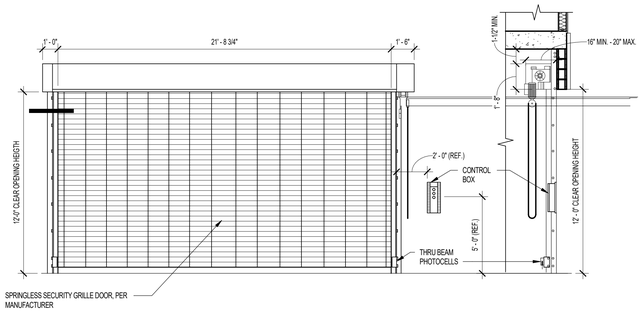
08 JULIETTE DOOR SILL @ UPPER LEVELS

SCALE: 3" = 1'-0"



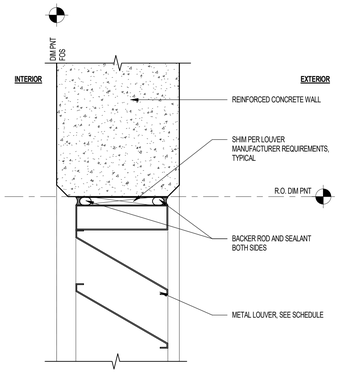
04 EXTERIOR HOLLOW METAL FRAME - JAMB

SCALE: 3" = 1'-0"



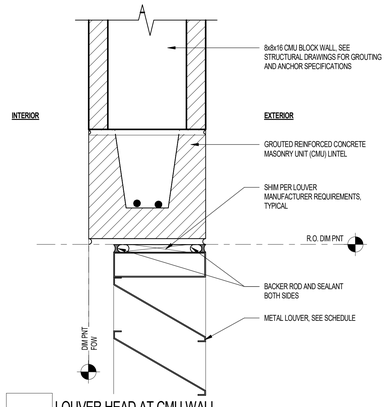
41 SPRINGLESS SECURITY GRILLE DOOR

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



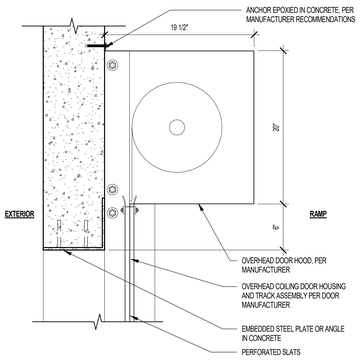
33 LOUVER HEAD AT CONCRETE WALL

SCALE: 3" = 1'-0"



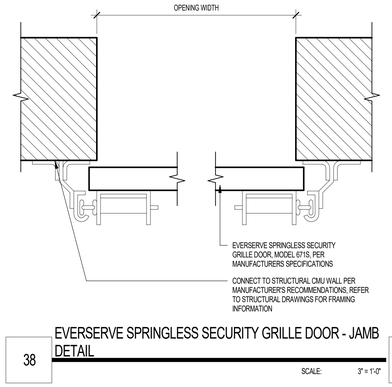
29 LOUVER HEAD AT CMU WALL

SCALE: 3" = 1'-0"



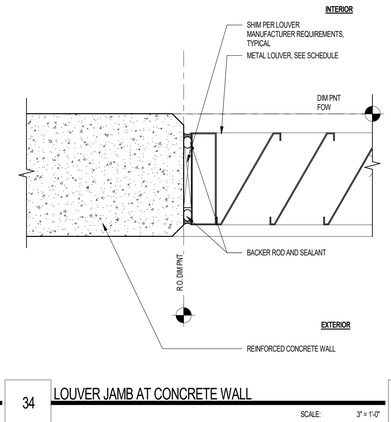
25 OVERHEAD COILING DOOR - HEAD

SCALE: 1 1/2" = 1'-0"



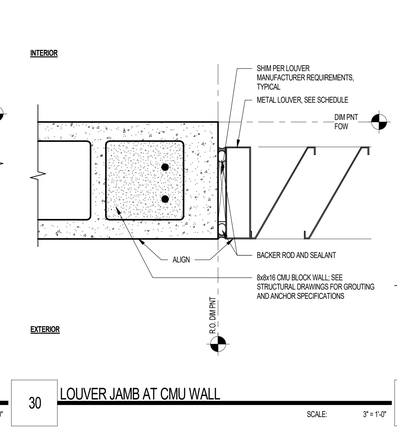
38 EVERSERVE SPRINGLESS SECURITY GRILLE DOOR - JAMB DETAIL

SCALE: 3" = 1'-0"



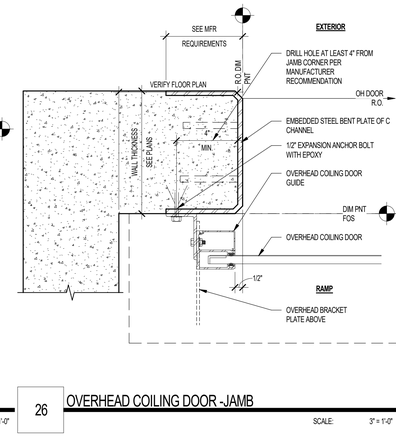
34 LOUVER JAMB AT CONCRETE WALL

SCALE: 3" = 1'-0"



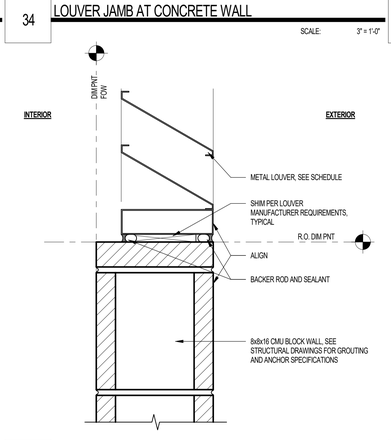
30 LOUVER JAMB AT CMU WALL

SCALE: 3" = 1'-0"



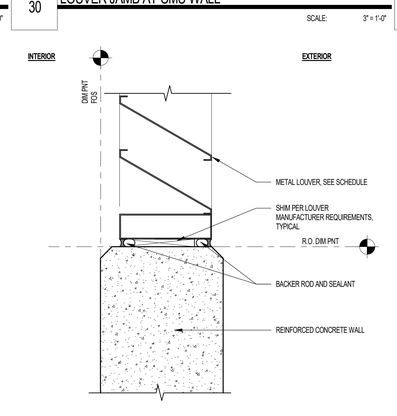
26 OVERHEAD COILING DOOR -JAMB

SCALE: 3" = 1'-0"



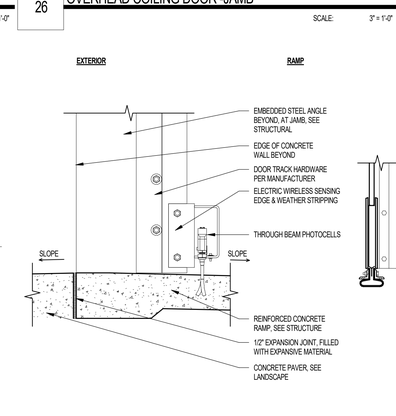
35 LOUVER SILL AT CMU WALL

SCALE: 3" = 1'-0"



31 LOUVER SILL AT CONCRETE WALL

SCALE: 3" = 1'-0"



27 OVERHEAD COILING DOOR - THRESOLD

SCALE: 1 1/2" = 1'-0"

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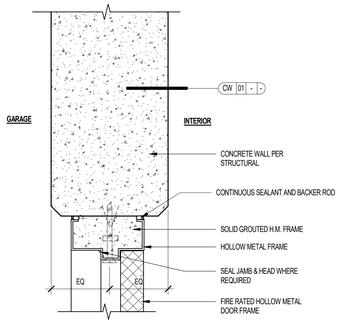
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

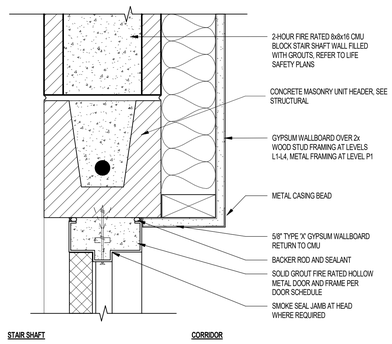
A7.5.11

EXTERIOR DOORS & LOUVERS



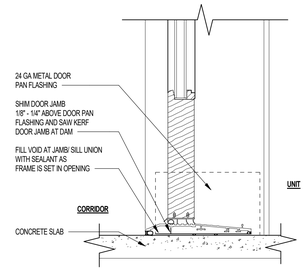
13 H.M. DOOR AND FRAME HEAD AT CONCRETE WALL

SCALE: 3" = 1'-0"



09 H.M. DOOR AND FRAME HEAD AT CMU WALL (STAIRS)

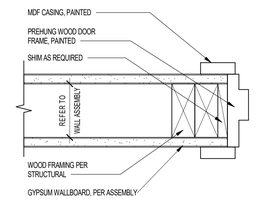
SCALE: 3" = 1'-0"



NOTE:
ALL JOINTS SOLDERED

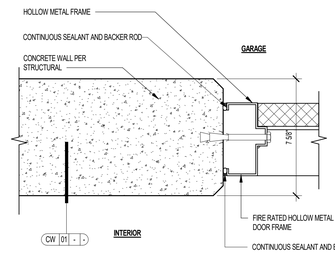
05 ENTRY DOOR THRESHOLD AT CONCRETE SLAB

SCALE: 3" = 1'-0"



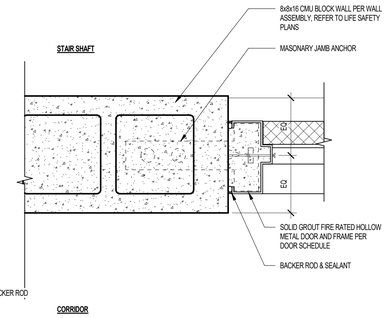
01 WOOD DOOR JAMB (HEAD SIMILAR)

SCALE: 3" = 1'-0"



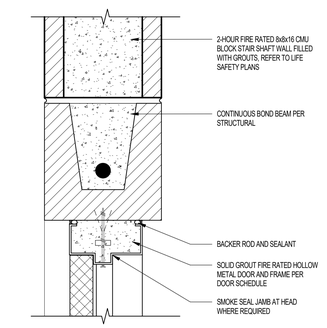
14 H.M. DOOR AHD FRAME JAMB AT CONCRETE WALL

SCALE: 3" = 1'-0"



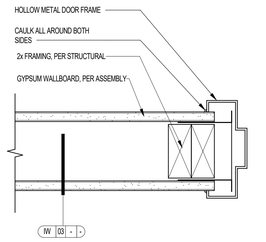
10 H.M. DOOR AND FRAME JAMB AT CMU WALL

SCALE: 3" = 1'-0"



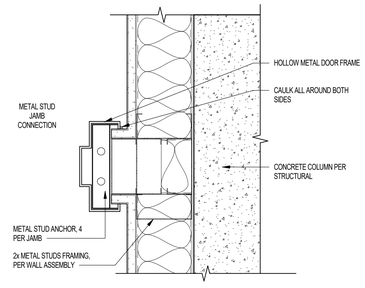
06 DOOR HEAD AT EXPOSED CMU WALL

SCALE: 3" = 1'-0"



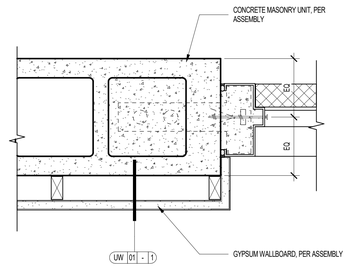
02 HOLLOW METAL DOOR FRAME @ WOOD FRAMING INTERIOR DOOR

SCALE: 3" = 1'-0"



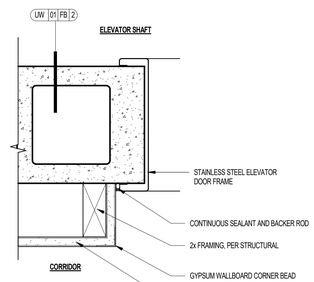
15 INTERIOR HOLLOW METAL DOOR FRAME - JAMB DETAIL @ METAL FRAMING

SCALE: 3" = 1'-0"



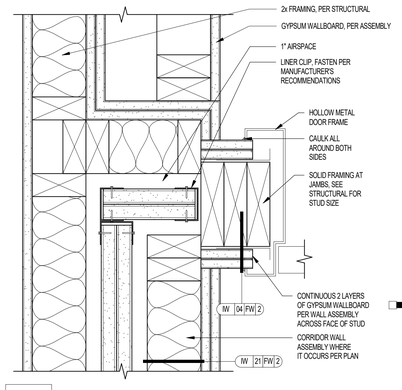
11 H.M. DOOR AND FRAME JAMB AT CMU FURRED WALL

SCALE: 3" = 1'-0"



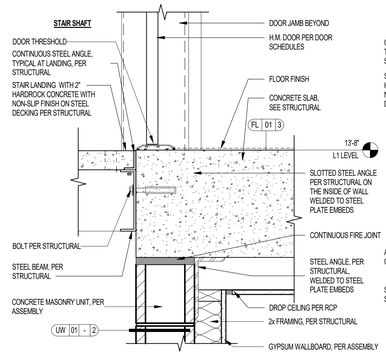
07 ELEVATOR DOOR JAMB

SCALE: 3" = 1'-0"



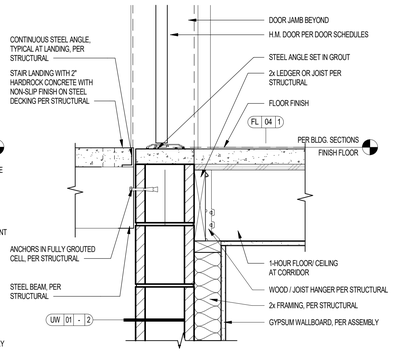
03 HOLLOW METAL DOOR FRAME @ FIRE WALL

SCALE: 3" = 1'-0"



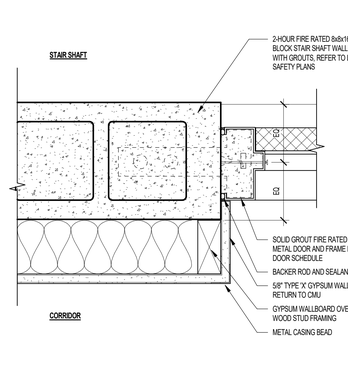
16 DOOR SILL AT CMU WALL @ CONCRETE PODIUM

SCALE: 1 1/2" = 1'-0"



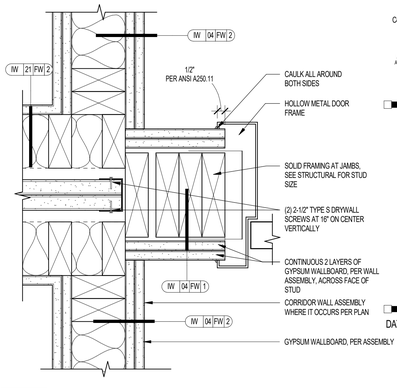
12 DOOR SILL AT CMU WALL

SCALE: 1 1/2" = 1'-0"



08 H.M. DOOR AND FRAME JAMB AT CMU FURRED WALL

SCALE: 3" = 1'-0"



04 HOLLOW METAL DOOR JAMB @ FIRE WALL

SCALE: 3" = 1'-0"

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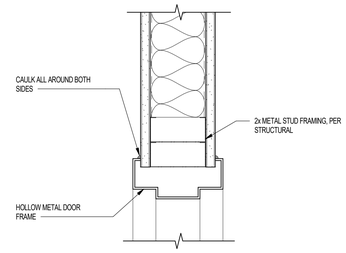
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

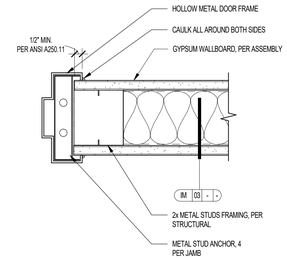
A7.5.20

INTERIOR DOOR DETAILS



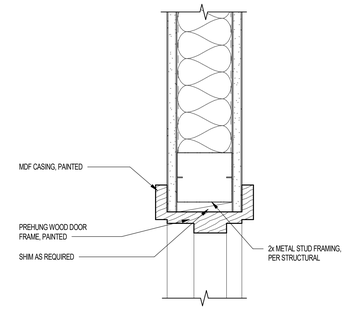
25 INTERIOR HOLLOW METAL DOOR FRAME - HEAD DETAIL @ METAL FRAMING

SCALE: 3" = 1'-0"



26 INTERIOR HOLLOW METAL DOOR FRAME - JAMB DETAIL @ METAL FRAMING

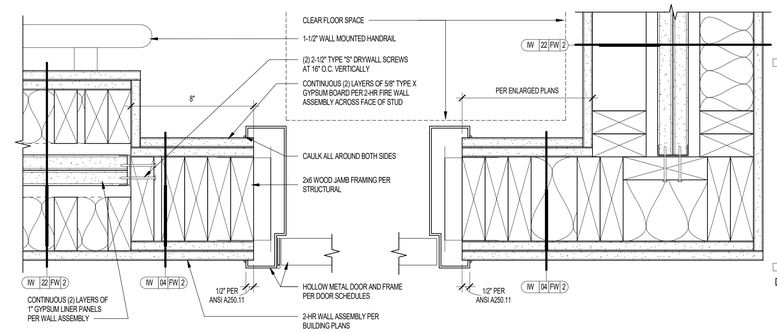
SCALE: 3" = 1'-0"



27 WOOD DOOR FRAME HEAD DETAIL @ METAL FRAMING

SCALE: 3" = 1'-0"

STAIR SHAFT



32 HOLLOW METAL DOOR JAMB AT WOOD FRAMED STAIR SHAFT

CORRIDOR

SCALE: 3" = 1'-0"

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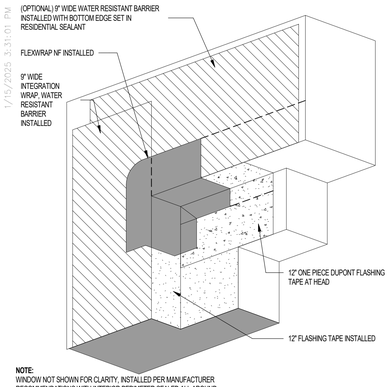
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.5.21

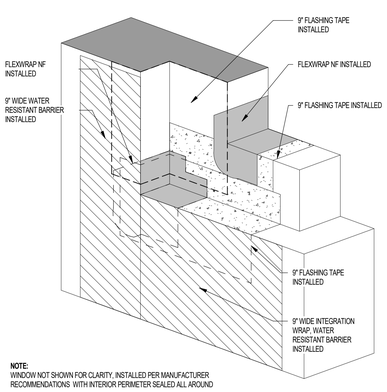
INTERIOR DOOR DETAILS



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

21 TYPICAL RECESSED WINDOW HEAD- ISOMETRIC

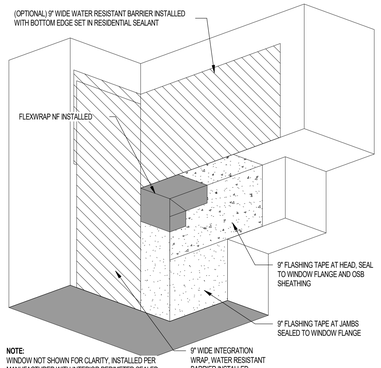
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

17 TYPICAL RECESSED WINDOW SILL - ISOMETRIC

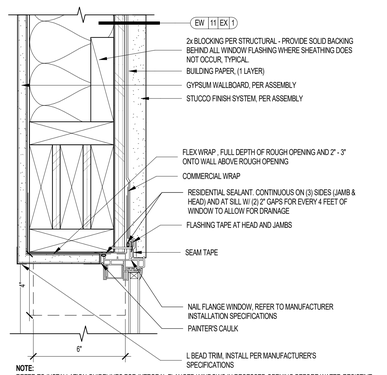
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER WITH INTERIOR PERIMETER SEALED ALL AROUND

13 RECESSED WINDOW HEAD WITH POP OUT AT JAMB - ISOMETRIC

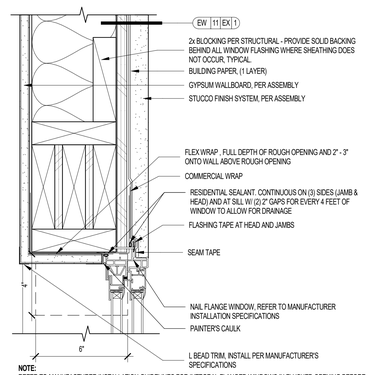
SCALE: 1" = 1'-0"



NOTE:
REFER TO INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

09 FLUSH FIXED WINDOW HEAD FLASHING/FINISHES

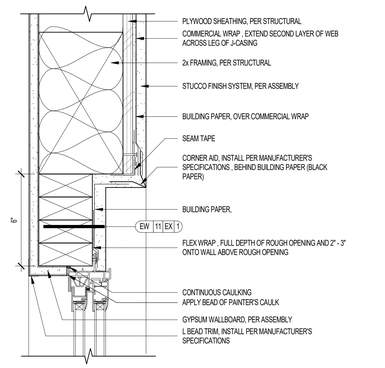
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

05 FLUSH WINDOW HEAD FLASHING/FINISHES

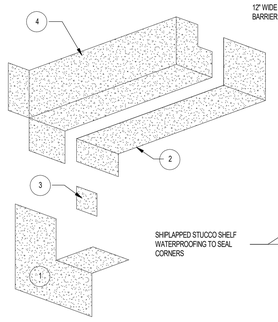
SCALE: 3" = 1'-0"

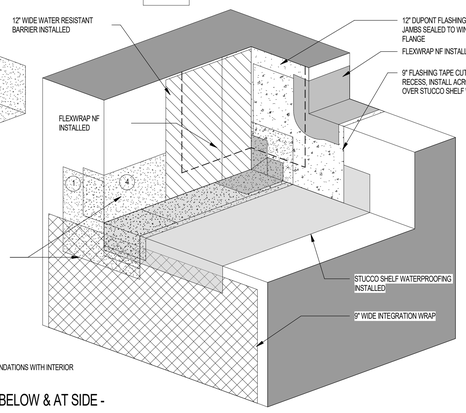


NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED

01 RECESSED WINDOW HEAD FLASHING/ FINISHES

SCALE: 3" = 1'-0"

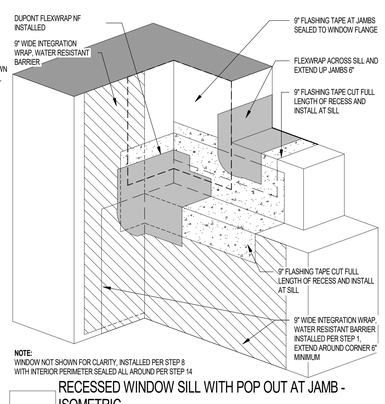




NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

22 RECESSED WINDOW SILL AT POP BELOW & AT SIDE - ISOMETRIC

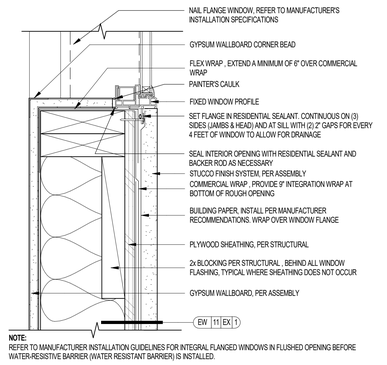
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER STEP 8 WITH INTERIOR PERIMETER SEALED ALL AROUND PER STEP 14

14 RECESSED WINDOW SILL WITH POP OUT AT JAMB - ISOMETRIC

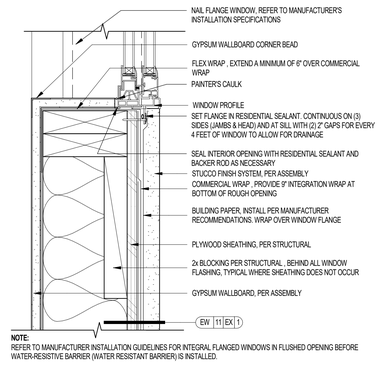
SCALE: 1" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

10 FLUSH FIXED WINDOW HEAD FLASHING/FINISHES

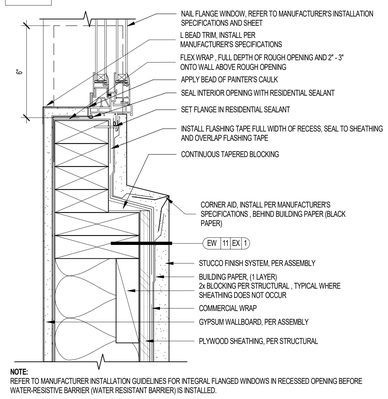
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

06 FLUSH WINDOW HEAD FLASHING/FINISHES

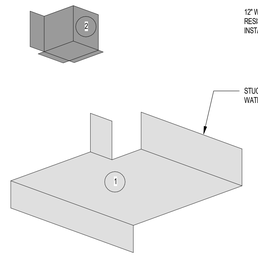
SCALE: 3" = 1'-0"

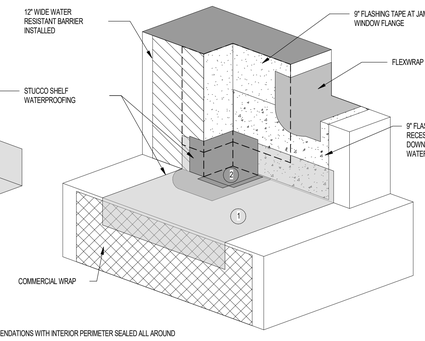


NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

02 RECESSED WINDOW SILL FLASHING/ FINISHES

SCALE: 3" = 1'-0"

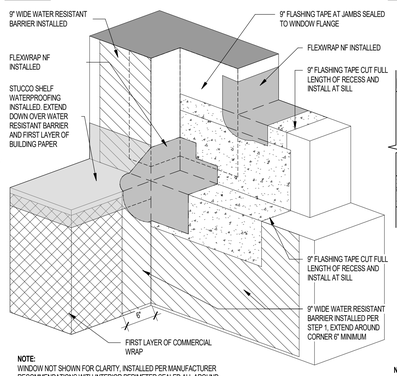




NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

23 RECESSED WINDOW SILL AT POP OUT SHELF - ISOMETRIC

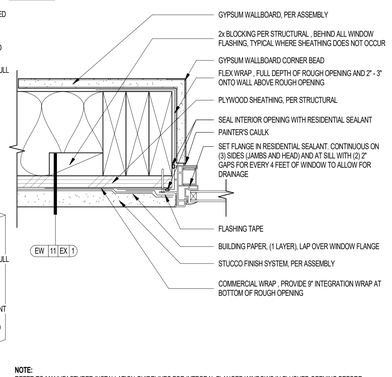
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

15 RECESSED WINDOW SILL AT POP OUT SHELF - ISOMETRIC

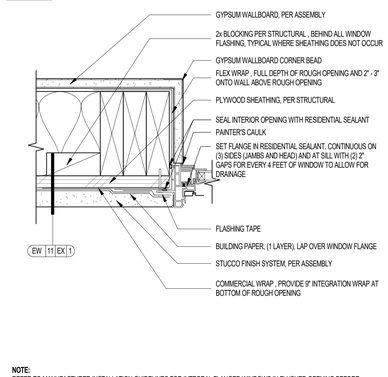
SCALE: 1" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

11 FLUSH FIXED WINDOW JAMB FLASHING/FINISHES

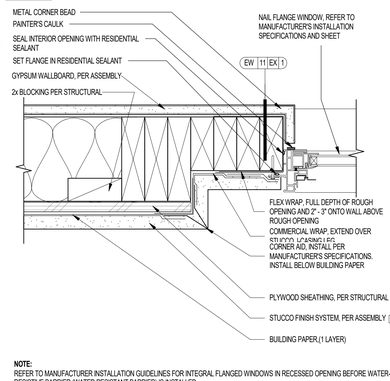
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

07 FLUSH WINDOW JAMB FLASHING/FINISHES

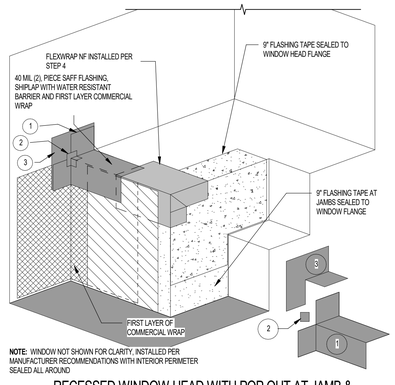
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED

03 RECESSED WINDOW JAMB FLASHING/FINISHES

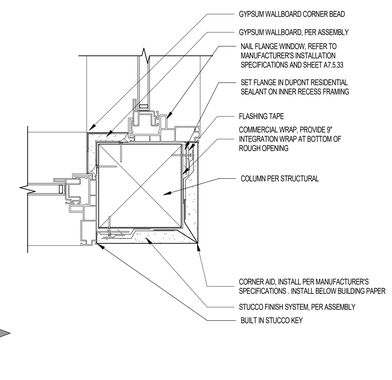
SCALE: 3" = 1'-0"



NOTE: WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

16 RECESSED WINDOW HEAD WITH POP OUT AT JAMB & HEAD- ISOMETRIC

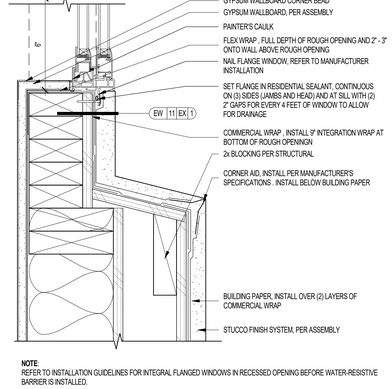
SCALE: 1" = 1'-0"



NOTE:
REFER TO INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER IS INSTALLED.

12 FLUSH CORNER WINDOW JAMB FLASHING/FINISHES

SCALE: 3" = 1'-0"



NOTE:
REFER TO INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER IS INSTALLED.

08 RECESSED WINDOW SILL AT POP OUT SHELF

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

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ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

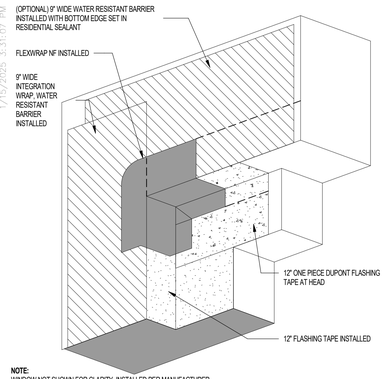
CONSTRUCTION SET

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.5.30.1

WINDOW DETAILS TYVEK METHOD A

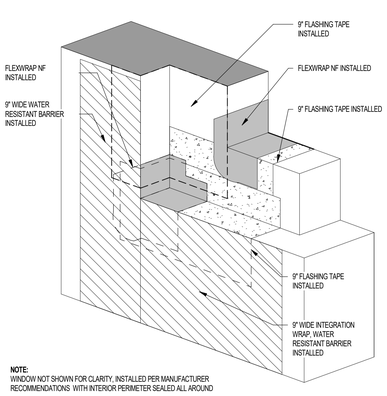
1/15/2025 3:31:07 PM



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

21 TYPICAL RECESSED WINDOW HEAD- ISOMETRIC

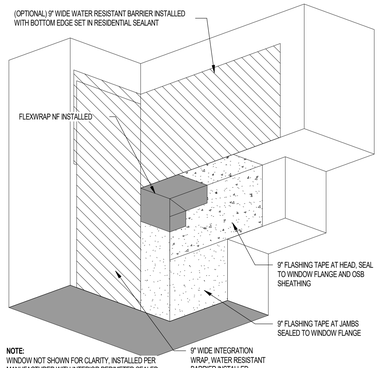
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

17 TYPICAL RECESSED WINDOW SILL - ISOMETRIC

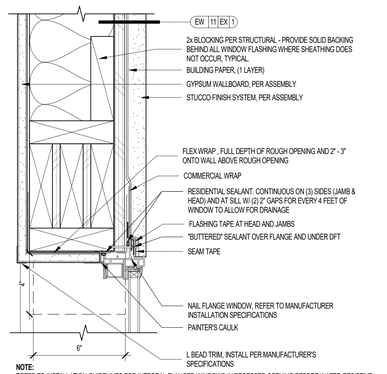
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER WITH INTERIOR PERIMETER SEALED ALL AROUND

13 RECESSED WINDOW HEAD WITH POP OUT AT JAMB - ISOMETRIC

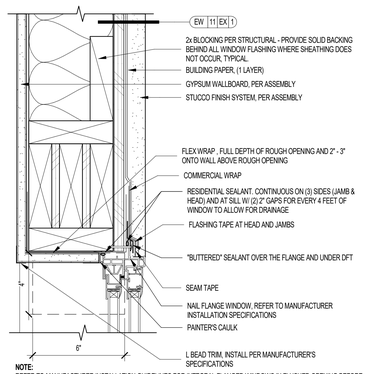
SCALE: 1" = 1'-0"



NOTE:
REFER TO INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

09 FLUSH FIXED WINDOW HEAD FLASHING/FINISHES

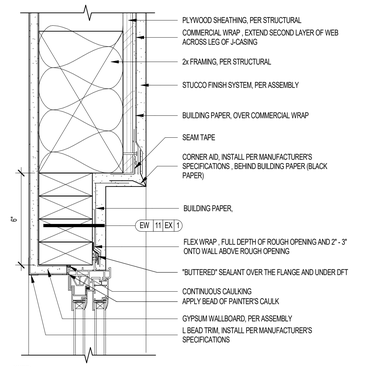
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

05 FLUSH WINDOW HEAD FLASHING/FINISHES

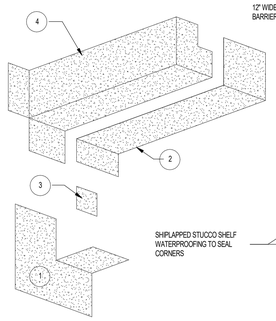
SCALE: 3" = 1'-0"

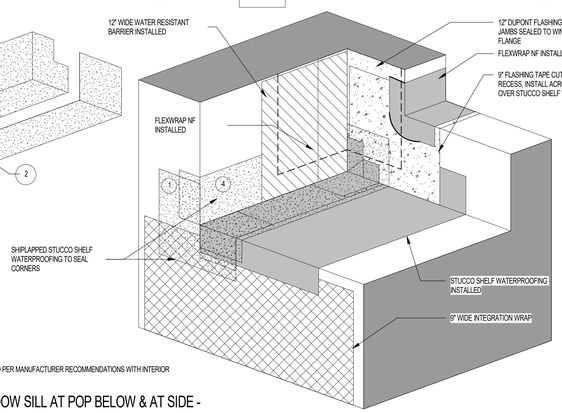


NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED

01 RECESSED WINDOW HEAD FLASHING/FINISHES

SCALE: 3" = 1'-0"

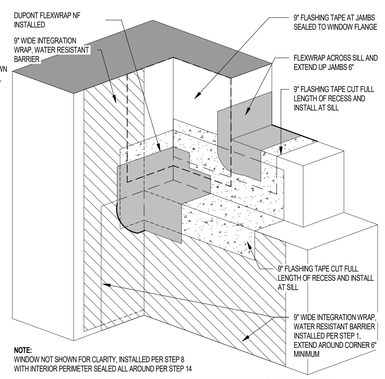




NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

22 RECESSED WINDOW SILL AT POP BELOW & AT SIDE - ISOMETRIC

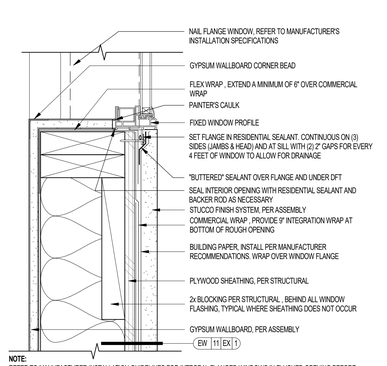
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER STEP 8 WITH INTERIOR PERIMETER SEALED ALL AROUND PER STEP 14

14 RECESSED WINDOW SILL WITH POP OUT AT JAMB - ISOMETRIC

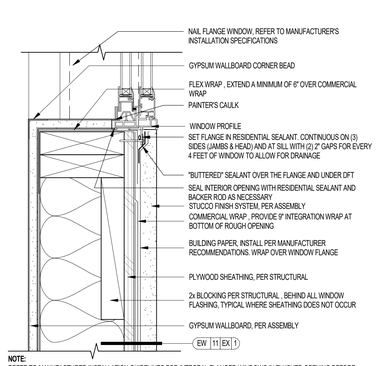
SCALE: 1" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

10 FLUSH FIXED WINDOW SILL FLASHING/FINISHES

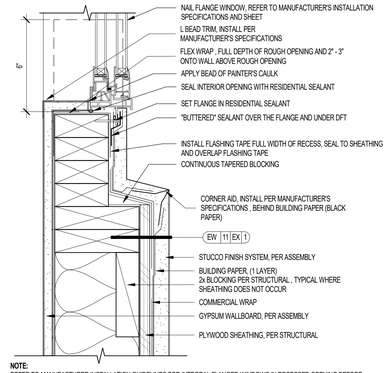
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

06 FLUSH WINDOW SILL FLASHING/FINISHES

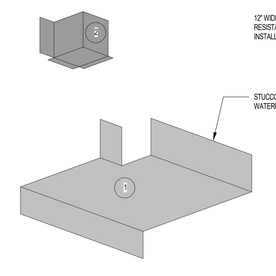
SCALE: 3" = 1'-0"

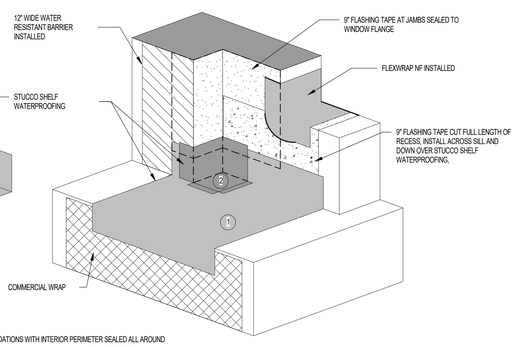


NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

02 RECESSED WINDOW SILL FLASHING/ FINISHES

SCALE: 3" = 1'-0"

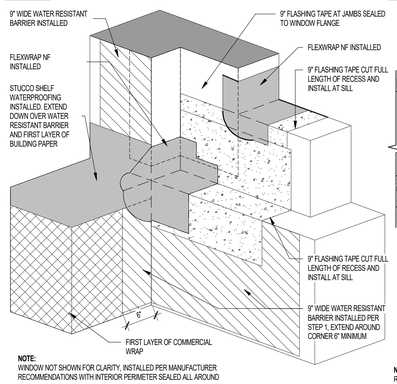




NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

23 RECESSED WINDOW SILL AT POP OUT SHELF - ISOMETRIC

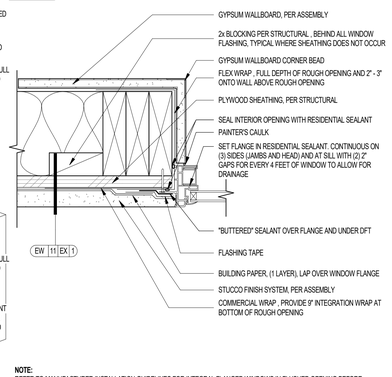
SCALE: 1" = 1'-0"



NOTE:
WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

15 RECESSED WINDOW SILL AT POP OUT SHELF - ISOMETRIC

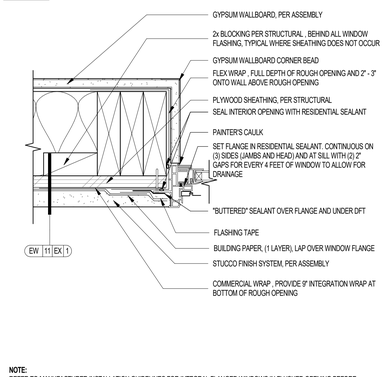
SCALE: 1" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

11 FLUSH FIXED WINDOW JAMB FLASHING/FINISHES

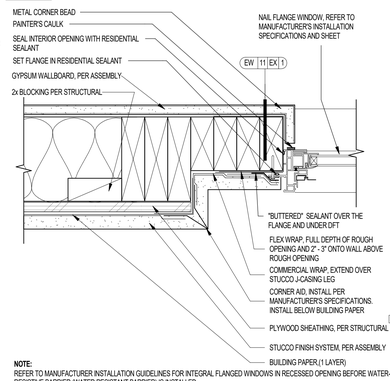
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN FLUSHED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED.

07 FLUSH WINDOW JAMB FLASHING/FINISHES

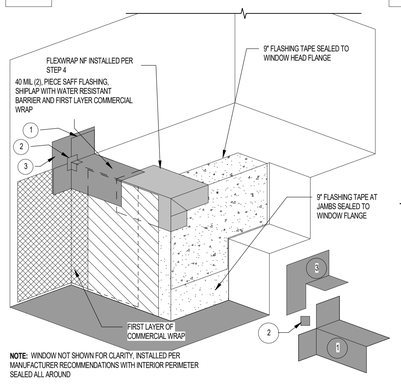
SCALE: 3" = 1'-0"



NOTE:
REFER TO MANUFACTURER INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER (WATER RESISTANT BARRIER) IS INSTALLED

03 RECESSED WINDOW JAMB FLASHING/FINISHES

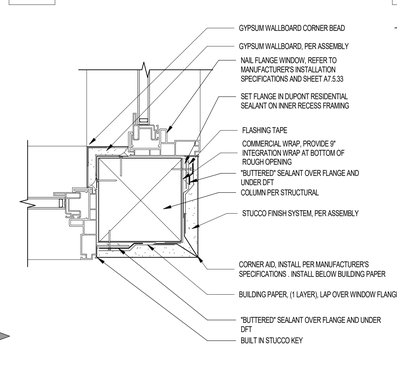
SCALE: 3" = 1'-0"



NOTE: WINDOW NOT SHOWN FOR CLARITY, INSTALLED PER MANUFACTURER RECOMMENDATIONS WITH INTERIOR PERIMETER SEALED ALL AROUND

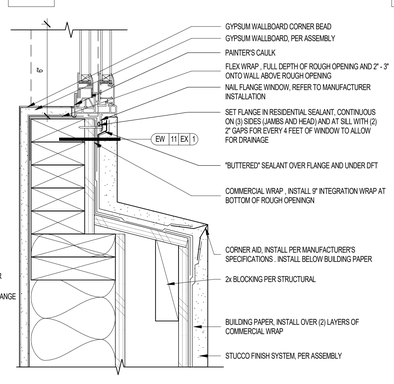
16 RECESSED WINDOW HEAD WITH POP OUT AT JAMB & HEAD- ISOMETRIC

SCALE: 1" = 1'-0"



12 FLUSH CORNER WINDOW JAMB FLASHING/FINISHES

SCALE: 3" = 1'-0"



NOTE:
REFER TO INSTALLATION GUIDELINES FOR INTEGRAL FLANGED WINDOWS IN RECESSED OPENING BEFORE WATER-RESISTIVE BARRIER IS INSTALLED.

08 RECESSED WINDOW SILL AT POP OUT SHELF

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

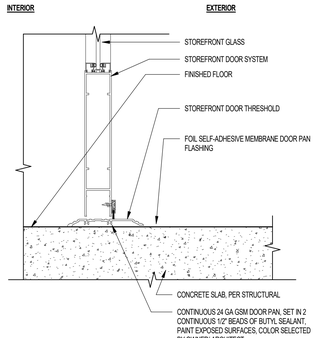
DATE	DESCRIPTION

CONSTRUCTION SET

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

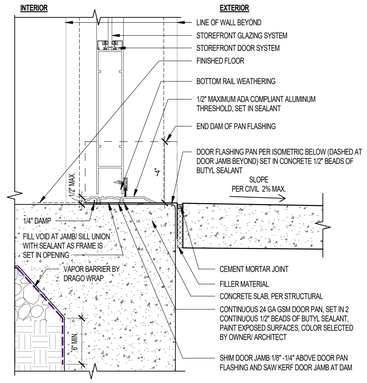
A7.5.30.2

WINDOW DETAILS TYVEK METHOD B



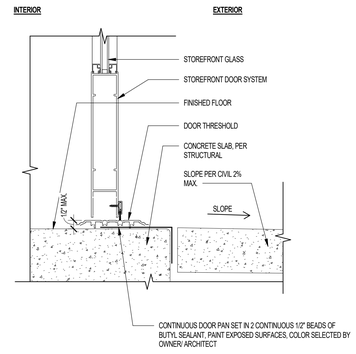
17 STOREFRONT DOOR SILL AT SLAB - INTERIOR

SCALE: 3" = 1'-0"



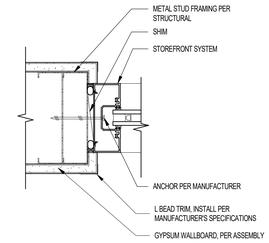
13 STOREFRONT DOOR SILL AT SLAB EDGE & SIDEWALK

SCALE: 3" = 1'-0"



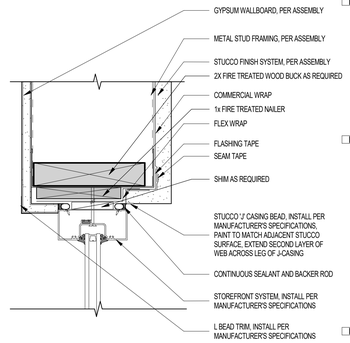
09 STOREFRONT DOOR SILL AT SLAB EDGE

SCALE: 3" = 1'-0"



05 STOREFRONT JAMB-INTERIOR HEAD & SILL SIM.

SCALE: 3" = 1'-0"



01 STOREFRONT DOOR HEAD

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2
Street Adress
City, State

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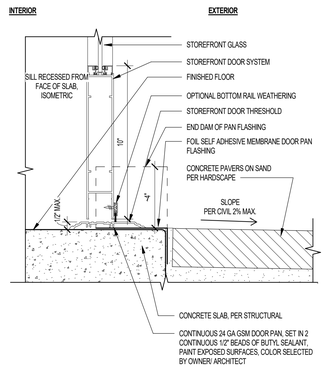
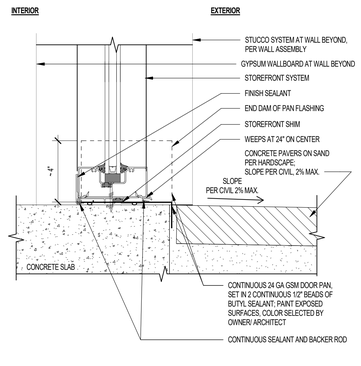
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION



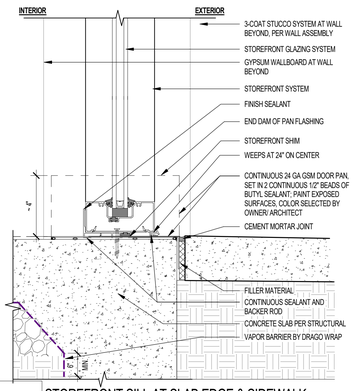
18 STOREFRONT DOOR SILL AT SLAB EDGE & PAVERS

SCALE: 3" = 1'-0"



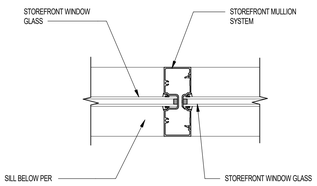
14 STOREFRONT SILL AT SLAB EDGE & PAVERS

SCALE: 3" = 1'-0"



10 STOREFRONT SILL AT SLAB EDGE & SIDEWALK

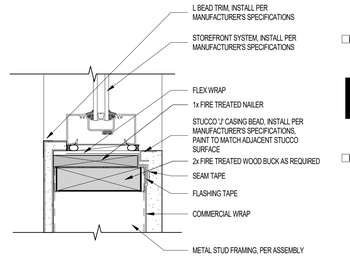
SCALE: 3" = 1'-0"



NOTE:
INSTALL PER MANUFACTURER'S SPECIFICATIONS

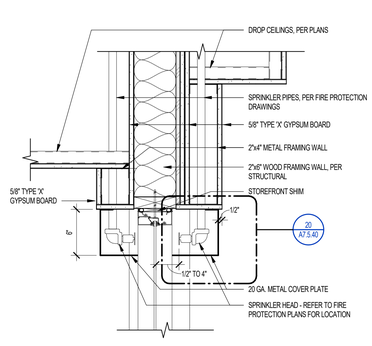
06 INTERMEDIATE MULLION

SCALE: 3" = 1'-0"



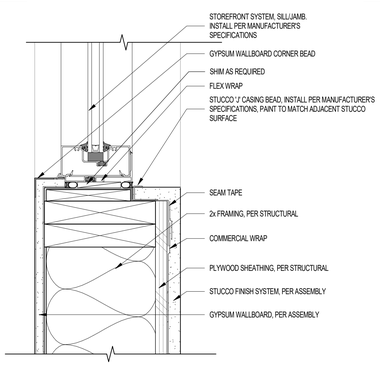
02 STOREFRONT SILL - METAL FRAMING - STUCCO

SCALE: 3" = 1'-0"



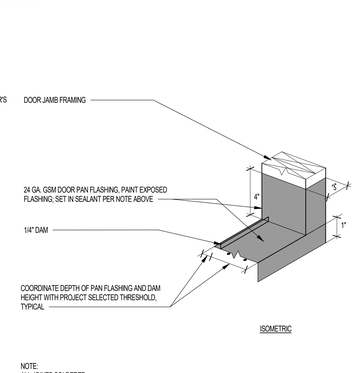
19 STOREFRONT HEAD - SPRINKLERS AT INTERIOR FRAMING

SCALE: 1 1/2" = 1'-0"



15 STOREFRONT SILL - WOOD FRAMING - STUCCO SYSTEM

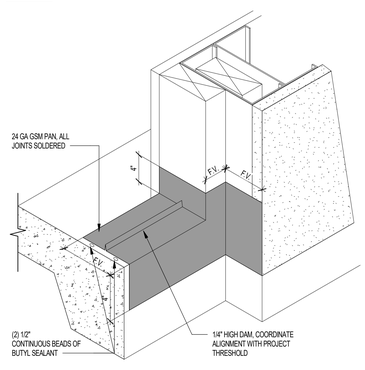
SCALE: 3" = 1'-0"



NOTE:
ALL JOINTS SOLDERED

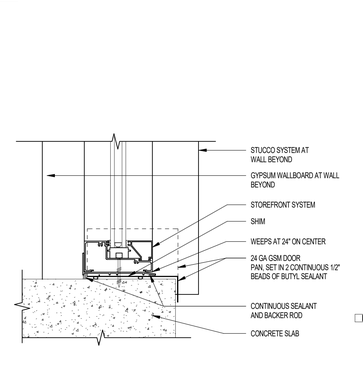
11 DOOR FLASHING PAN

SCALE: 3" = 1'-0"



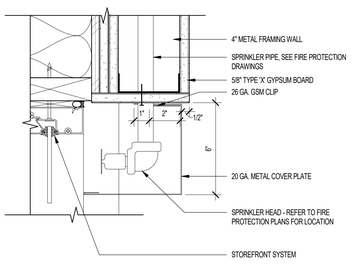
07 STOREFRONT SILL FLUSHED TO THE FACE OF SLAB

SCALE: 3" = 1'-0"



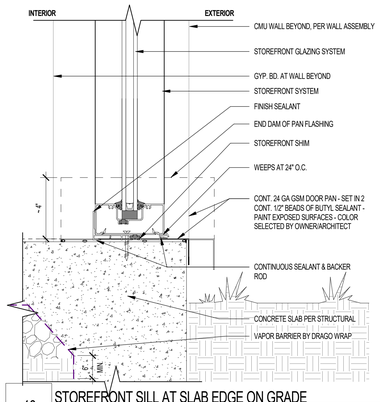
03 STOREFRONT SILL AT SIDELINE

SCALE: 3" = 1'-0"



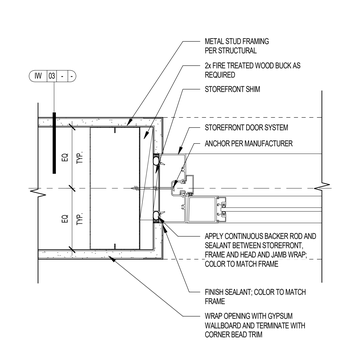
20 STOREFRONT HEAD - SPRINKLERS AT INTERIOR FRAMING

SCALE: 3" = 1'-0"



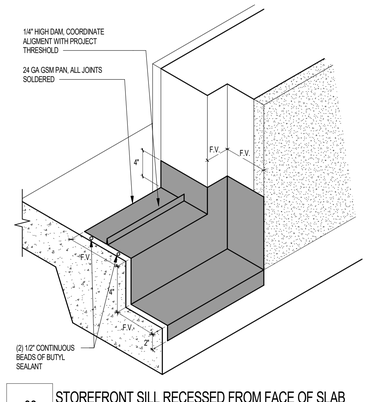
16 STOREFRONT SILL AT SLAB EDGE ON GRADE

SCALE: 3" = 1'-0"



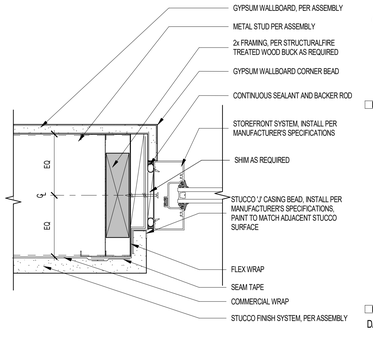
12 DOOR FLASHING PAN

SCALE: 3" = 1'-0"



08 STOREFRONT SILL RECESSED FROM FACE OF SLAB

SCALE: 3" = 1'-0"



04 STOREFRONT JAMB - METAL FRAMING - STUCCO

SCALE: 3" = 1'-0"

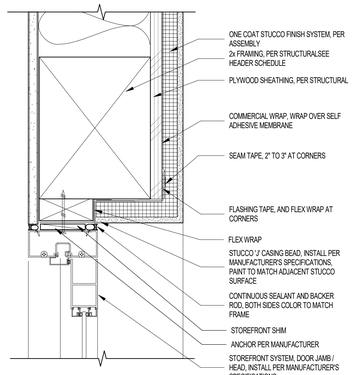
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

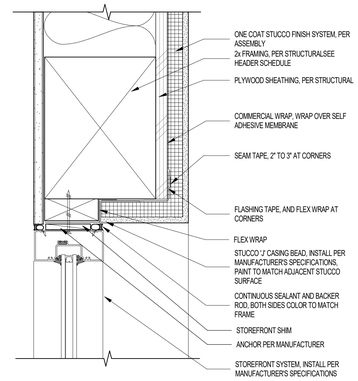
A7.5.40

STOREFRONT DETAILS



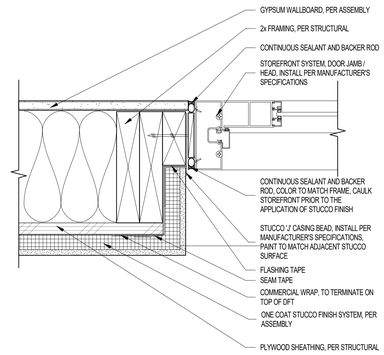
28 STOREFRONT DOOR HEAD - STUCCO FINISH

SCALE: 3" = 1'-0"



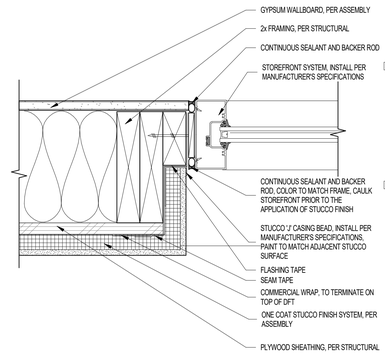
25 STOREFRONT HEAD - STUCCO FINISH

SCALE: 3" = 1'-0"



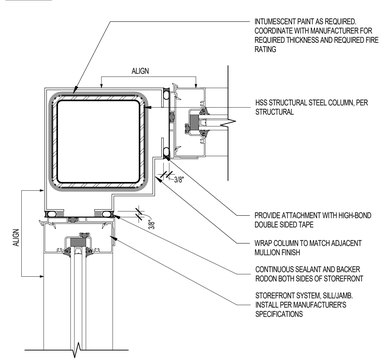
29 STOREFRONT DOOR JAMB - STUCCO FINISH

SCALE: 3" = 1'-0"



26 STOREFRONT JAMB - STUCCO FINISH

SCALE: 3" = 1'-0"



27 STOREFRONT CORNER AT STEEL COLUMN

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

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ORB
WorldHQ@ORBArch.com

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CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

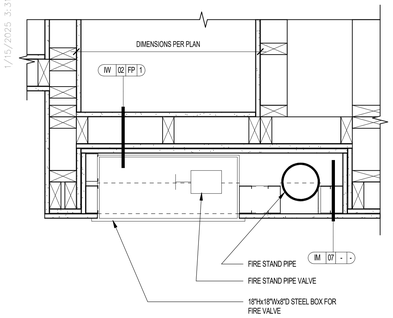
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

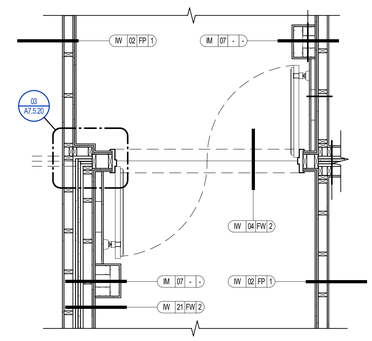
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.5.41

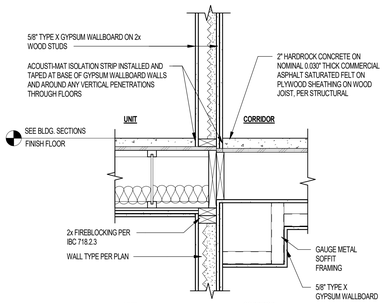
STOREFRONT DETAILS



21 STANDPIPE VALVE BOX
SCALE: 1 1/2" = 1'-0"

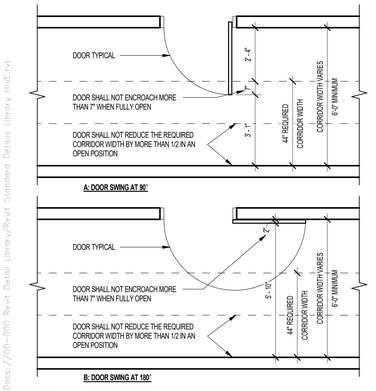


22 2HR CORRIDOR WALL - PLAN VIEW
SCALE: 1/2" = 1'-0"

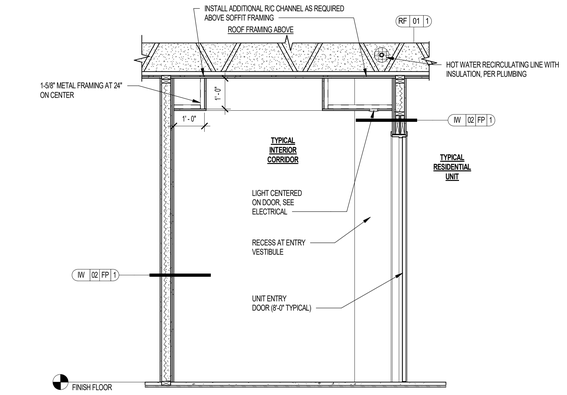


NOTE:
REFER TO STRUCTURAL PLANS FOR ADDITIONAL GYPSUM WALLBOARD SHEAR REQUIREMENTS

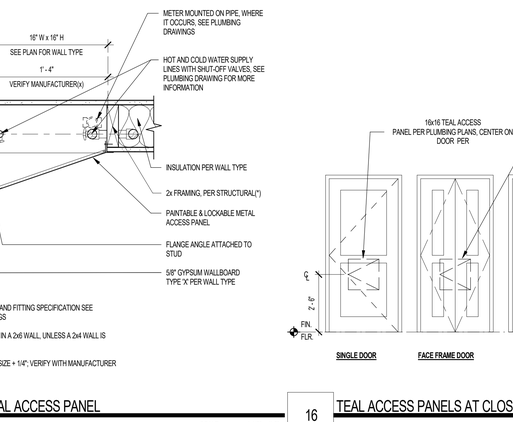
23 SOFFIT CEILING AT CORRIDOR
SCALE: 1" = 1'-0"



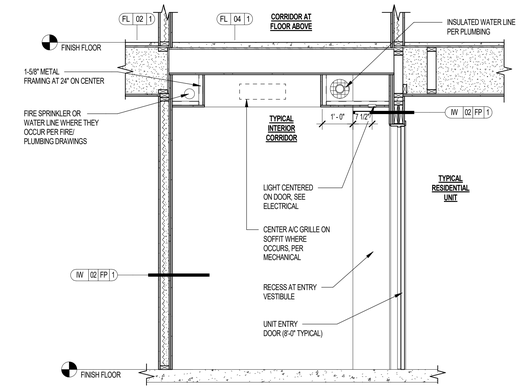
24 DOOR OPENING INTO THE CORRIDOR
SCALE: 3/8" = 1'-0"



17 SECTION @ CORRIDOR L4 ENTRY DOOR
SCALE: 1/2" = 1'-0"



18 SECTION @ CORRIDOR L2 ENTRY DOOR - (L3 SIM.)
SCALE: 1/2" = 1'-0"



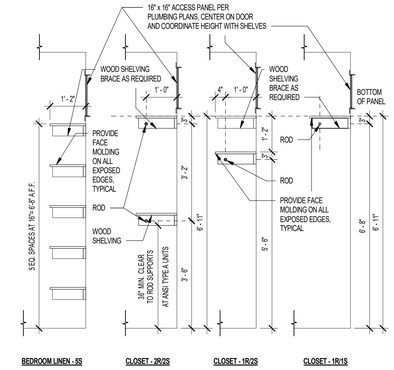
19 SECTION @ CORRIDOR L1 ENTRY DOOR
SCALE: 1/2" = 1'-0"

NOTE:
FOR EXACT EQUIPMENT, PIPE AND FITTING SPECIFICATION SEE PLUMBING AND TEAL DRAWINGS

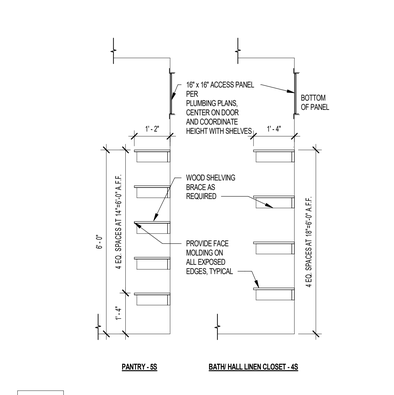
(*) TEAL PANEL TO BE PLACED IN A 2x6 WALL, UNLESS A 2x4 WALL IS PROVIDED W/ VOID BEYOND

(x) ROUGH OPENING = PANEL SIZE + 1/4"; VERIFY WITH MANUFACTURER

20 UNIT TEAL ACCESS PANEL
SCALE: 1 1/2" = 1'-0"

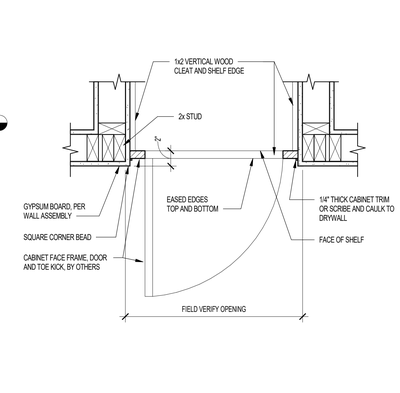


10 CLOSET SHELVING SECTIONS
SCALE: 1/2" = 1'-0"

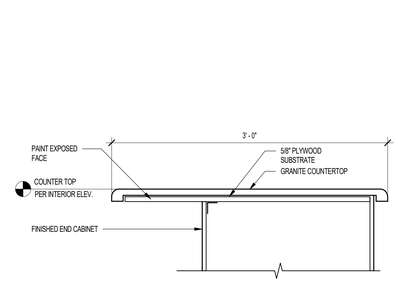


11 TYPICAL PANTRY AND LINEN CLOSET SHELVING SECTIONS
SCALE: 1/2" = 1'-0"

12 TEAL ACCESS PANELS AT CLOSET DOOR
SCALE: 1/2" = 1'-0"



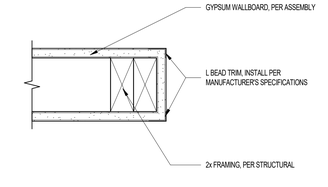
05 CABINET FACE FRAME AT 1-HR RATED CORRIDOR WALL
SCALE: 1 1/2" = 1'-0"



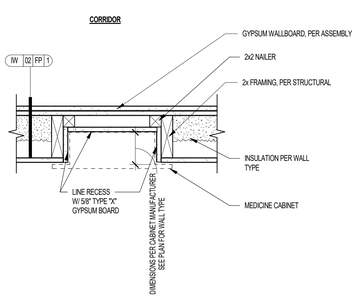
06 COUNTER TOP AT KITCHEN
SCALE: 1 1/2" = 1'-0"

NOTE:
AT FIRE RATED WALLS AND PARTITIONS, FIRE PROTECTION SHALL BE CONTINUOUS AROUND ALL SIDES AND BACK OF CABINET WHERE RECESS MOUNTED TO PRESERVE THE RATING

07 FIRE EXTINGUISHER CABINET AT 2x6 OR LARGER WALL
SCALE: 3" = 1'-0"

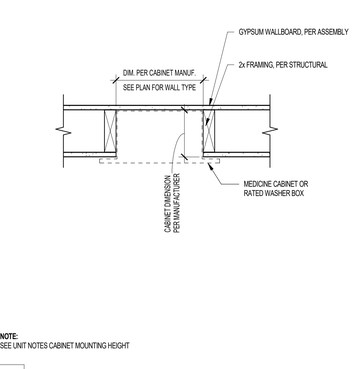


01 TYPICAL INTERIOR WALL CORNER
SCALE: 3" = 1'-0"



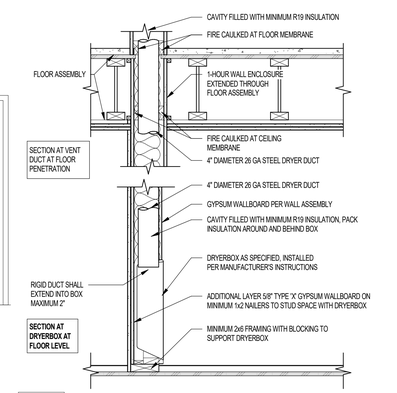
NOTE:
SEE UNIT NOTES CABINET MOUNTING HEIGHT

02 MEDICINE CABINET RECESS AT 1-HR RATED CORRIDOR WALL
SCALE: 1 1/2" = 1'-0"

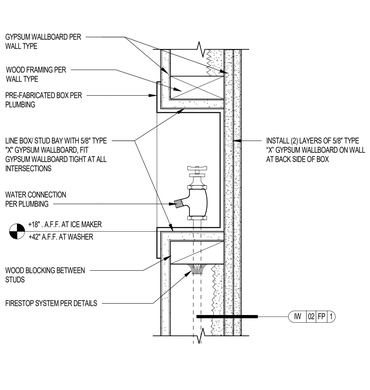


NOTE:
SEE UNIT NOTES CABINET MOUNTING HEIGHT

03 MEDICINE CABINET RECESS AT INTERIOR WALL
SCALE: 1 1/2" = 1'-0"



08 DRYERBOX IN 1 HOUR WALL - SIDE BY SIDE W/D
SCALE: 1" = 1'-0"



04 WATER BOX DETAIL AT RATED WALLS
SCALE: 3" = 1'-0"

Project Name 1
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City, State

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CLIENT ADDRESS
CLIENT PHONE NUMBER

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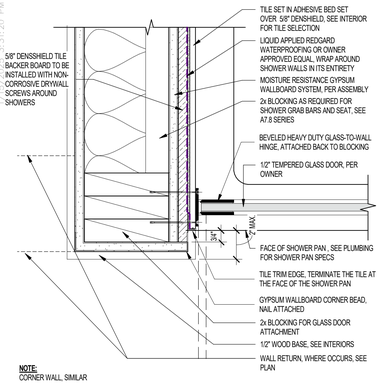
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

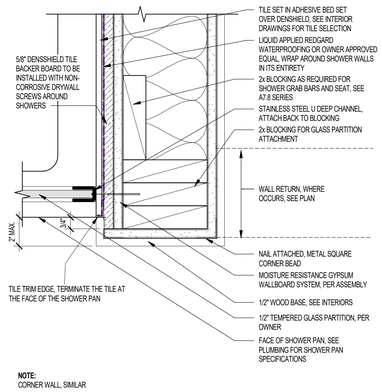
DATE: SEPTEMBER 11, 2024
ORB #: 00-000

A7.6.10
UNIT & CORRIDOR DETAILS WOOD FRAMING



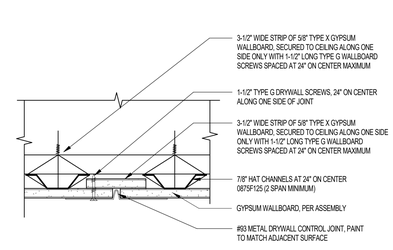
NOTE:
CORNER WALL, SIMILAR

45 GLASS SHOWER DOOR AT WING WALL - PLAN
SCALE: 3" = 1'-0"

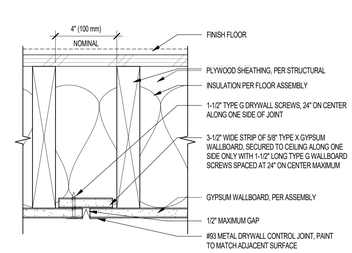


NOTE:
CORNER WALL, SIMILAR

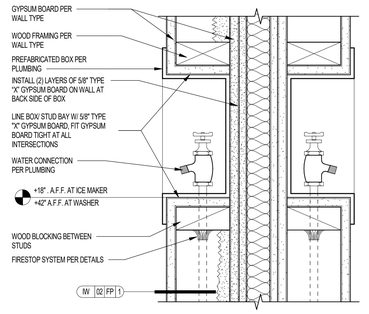
41 SHOWER GLASS PARTITION AT WING WALL - PLAN
SCALE: 3" = 1'-0"



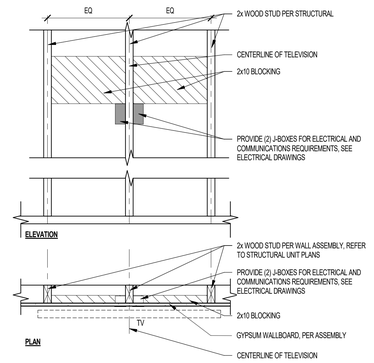
A **1-HOUR FLOOR-CEILING SYSTEM WITH SUSPENDED CEILING**
(UL R4024, 97NK13566, 7-29-96)



B **CONTROL JOINT PARALLEL TO FRAMING WITH DIRECT ATTACHED CEILING**
(UL R4024, 97NK13566, 7-29-96)

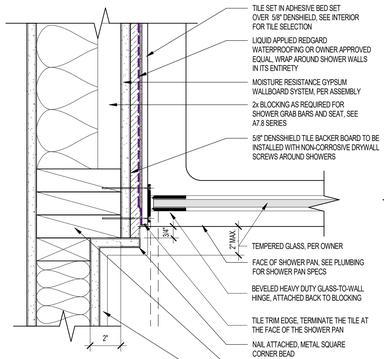


29 WATER BOX DETAIL AT UNIT SEPARATION WALLS
SCALE: 3" = 1'-0"

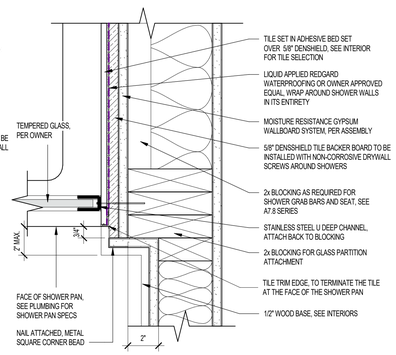


NOTE:
REFER TO UNIT PLAN FOR TV CENTERLINE LOCATION

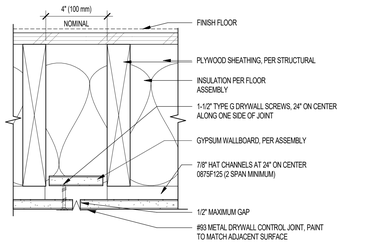
25 T.V. BLOCKING AND J-BOX LOCATION
SCALE: 1" = 1'-0"



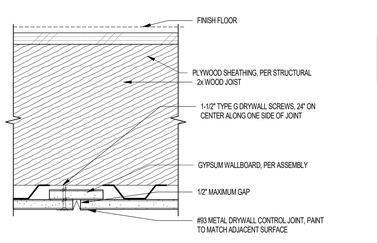
46 GLASS DOOR AT STEPPED WALL - PLAN
SCALE: 3" = 1'-0"



42 GLASS PARTITION AT STEPPED WALL - PLAN
SCALE: 3" = 1'-0"



C **CONTROL JOINT PARALLEL TO FRAMING WITH FURRED CEILING**
(UL R4024, 97NK13566, 7-29-96)

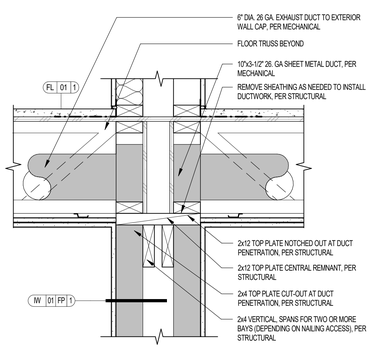


D **CONTROL JOINT PERPENDICULAR TO FRAMING WITH FURRED CEILING**
(UL R4024, 97NK13566, 7-29-96)

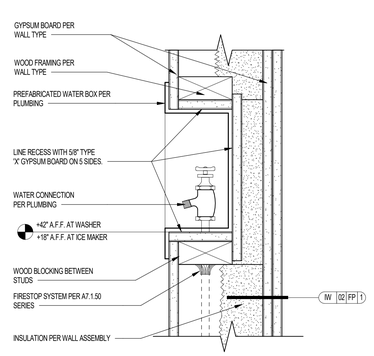
CONTROL JOINTS FOR FIRE-RESISTANCE RATED SYSTEM
GA-234-2019

CONTROL JOINTS SHALL BE INSTALLED WHERE:
1. A CEILING TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE
2. FOR INTERIOR CEILINGS WITH PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 50 FOOT (15 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 2,500 FOOT SQUARED (232. M2)
3. FOR INTERIOR CEILINGS WITHOUT PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 30 FOOT (9 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 FOOT SQUARED (84M2)
4. FOR EXTERIOR CEILINGS AND SOFFITS, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 30 FOOT (9 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 FOOT SQUARED (84M2)
5. CONTROL JOINTS OR INTERMEDIATE BLOCKING SHALL BE INSTALLED WHERE CEILING FRAMING MEMBERS CHANGE DIRECTION
6. A CONTROL JOINT IS DESIRED OR INCORPORATED AS A DESIGN ACCENT OR ARCHITECTURAL FEATURE

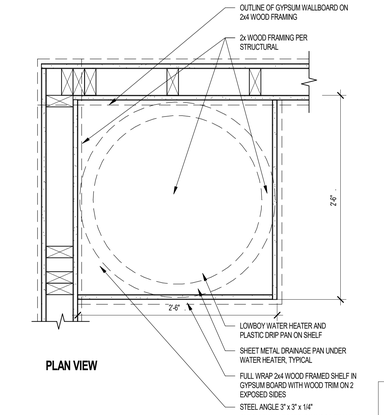
38 TYPICAL CONTROL JOINTS AT CEILINGS
SCALE: 3" = 1'-0"



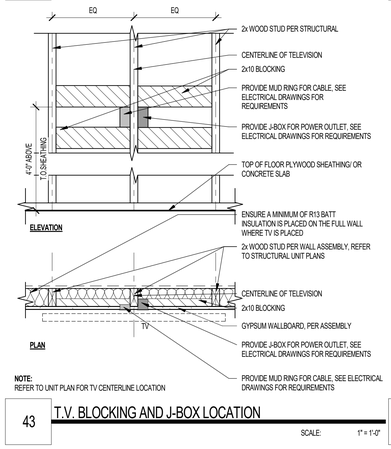
30 MICROWAVE EXHAUST DUCTWORK
SCALE: 1 1/2" = 1'-0"



26 WASHER & REFRIGERATOR WATER BOX AT 2x6 FIRE RATED WALL
SCALE: 3" = 1'-0"

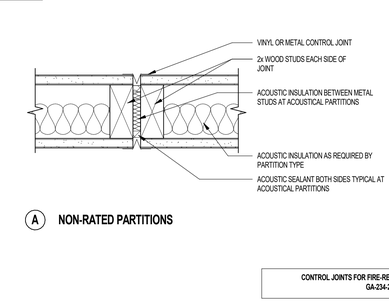


PLAN VIEW

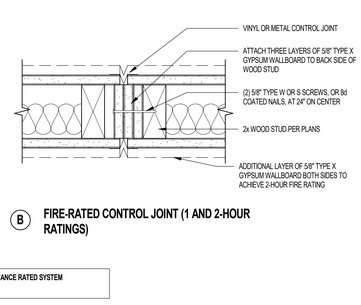


NOTE:
REFER TO UNIT PLAN FOR TV CENTERLINE LOCATION

43 T.V. BLOCKING AND J-BOX LOCATION
SCALE: 1" = 1'-0"



A **NON-RATED PARTITIONS**

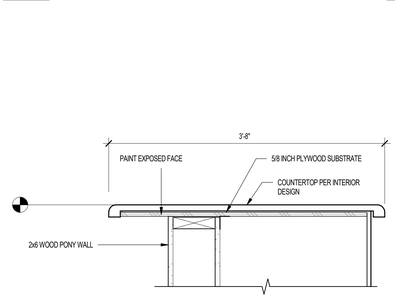


B **FIRE-RATED CONTROL JOINT (1 AND 2-HOUR RATINGS)**

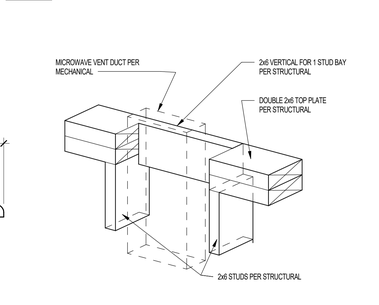
CONTROL JOINTS FOR FIRE-RESISTANCE RATED SYSTEM
GA-234-2019

WALL CONTROL JOINTS SHALL BE INSTALLED WHERE:
1. A PARTITION OR WALL TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE
2. WHERE AN INTERIOR WALL OR PARTITION RUNS IN AN UNINTERRUPTED STRAIGHT PLANE EXCEEDING 30 FOOT (9 M) IN LENGTH OR HEIGHT
3. GYPSUM PANEL JOINTS SHALL NOT OCCUR WITHIN 12" (300 MM) OF THE CORNERS OF DOOR FRAMES AND OTHER OPENINGS UNLESS INSTALLING CONTROL JOINTS AT THESE LOCATIONS
   NOTE: FULL-HEIGHT DOOR FRAMES ARE CONSIDERED CONTROL JOINTS
4. A CONTROL JOINT IS DESIRED OR INCORPORATED AS A DESIGN ACCENT OR ARCHITECTURAL FEATURE

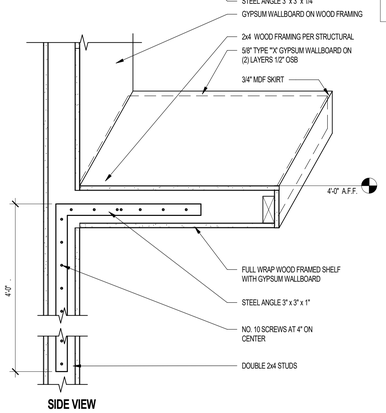
39 TYPICAL CONTROL JOINTS AT WOOD FRAMING PARTITIONS
SCALE: 3" = 1'-0"



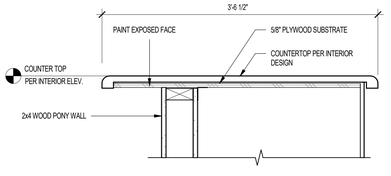
31 COUNTERTOP AT KITCHEN PONY WALL
SCALE: 1 1/2" = 1'-0"



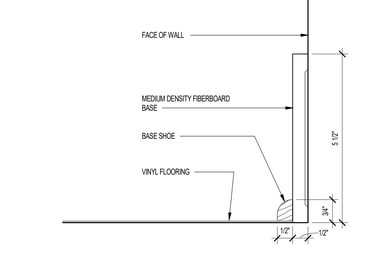
27 TOP PLATE FRAMING ABOVE MICROWAVE
SCALE: 1" = 1'-0"



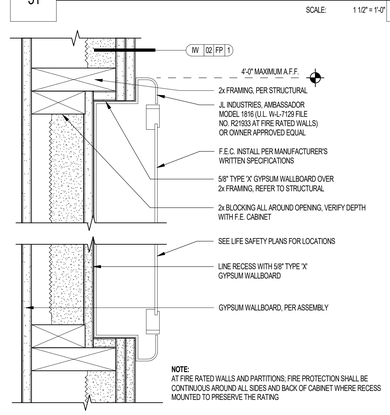
SIDE VIEW



40 COUNTERTOP AT KITCHEN PONY WALL
SCALE: 1 1/2" = 1'-0"

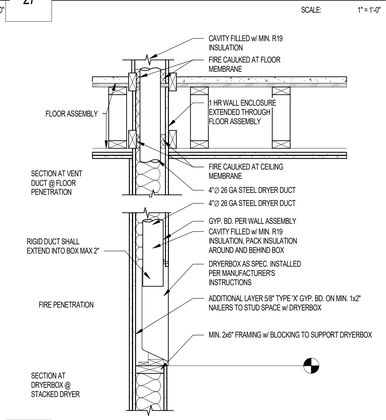


36 UNIT BASEBOARD & SHOE
SCALE: 6" = 1'-0"



NOTE:
AT FIRE RATED WALLS AND PARTITIONS; FIRE PROTECTION SHALL BE CONTINUOUS AROUND ALL SIDES AND BACK OF CABINET WHERE RECESS MOUNTED TO PRESERVE THE RATING

32 FIRE EXTINGUISHER CABINET AT 2x6 OR LARGER WALL
SCALE: 3" = 1'-0"



28 DRYER BOX IN 1 HOUR WALL - STACKED W/D
SCALE: 1" = 1'-0"

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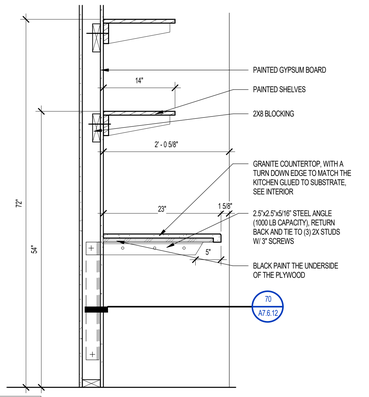
DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

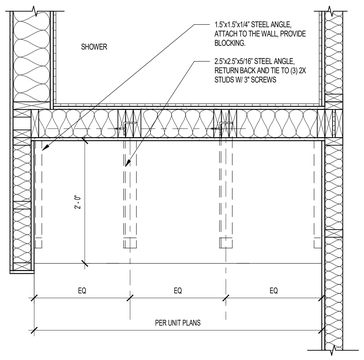
A7.6.11

UNIT & CORRIDOR DETAILS WOOD FRAMING



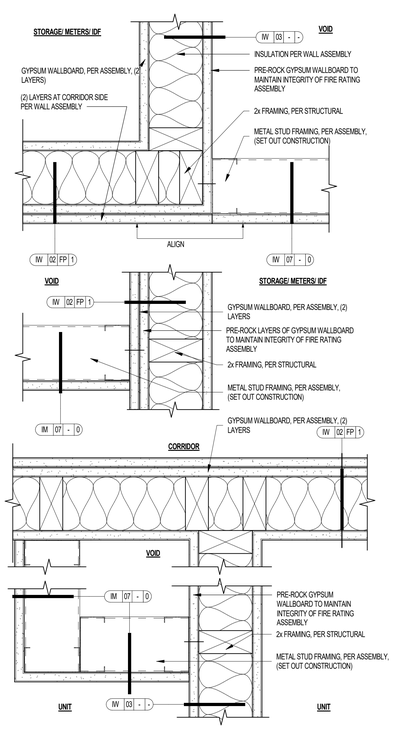
69 DESK NOOK SECTION

SCALE: 1" = 1'-0"



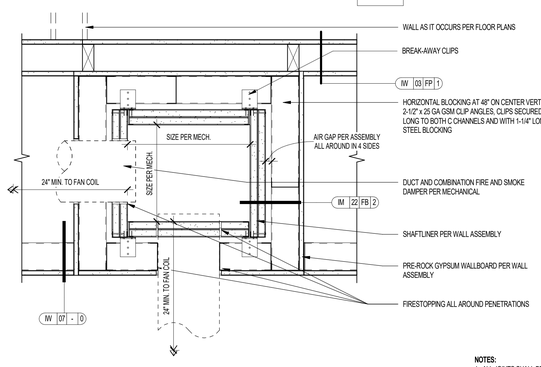
70 DESK NOOK - PLAN

SCALE: 1" = 1'-0"



67 SET OUT CONSTRUCTION WALL TRANSITION TO WOOD FRAMING - PLAN VIEW

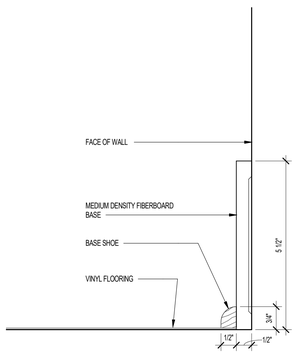
SCALE: 3" = 1'-0"



NOTES:
1. ALL JOINTS SHALL BE SEALED TO MAKE SHAFT AIR TIGHT
2. REFER TO PLAN FOR SHAFT CONFIGURATION AND ADJACENT WALLS
3. ADD ADDITIONAL LAYER OF 5/8" TYPE 'X' GYPSUM WALLBOARD TO PERIMETER AS REQUIRED TO ALIGN WITH ADJACENT WALL FINISH

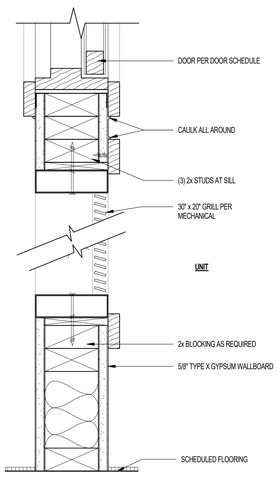
72 CORRIDOR 2-HR FRESH AIR SHAFT

SCALE: 1 1/2" = 1'-0"



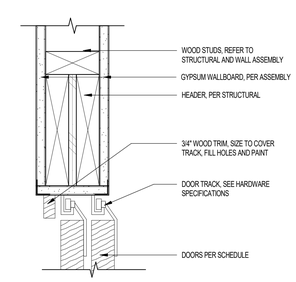
64 UNIT BASEBOARD & SHOE

SCALE: 6" = 1'-0"



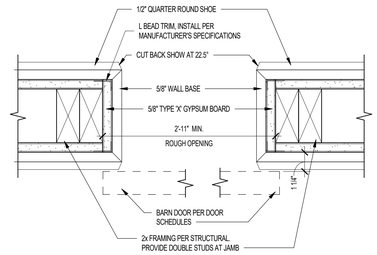
60 DOOR SILL ABOVE GRILLE AT MECH. CLOSET

SCALE: 3" = 1'-0"



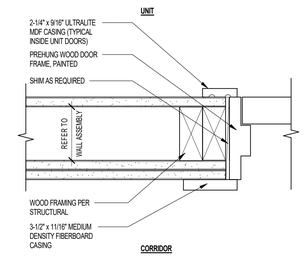
57 BI-PASS DOOR HEAD

SCALE: 3" = 1'-0"



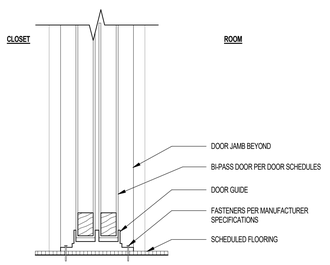
53 BARN DOOR JAMB

SCALE: 3" = 1'-0"



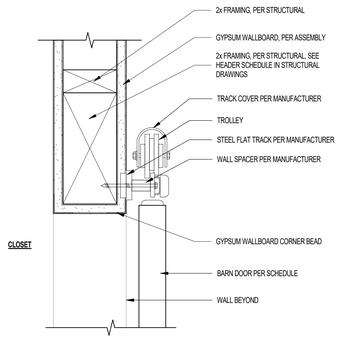
49 UNIT ENTRY DOOR CASING

SCALE: 3" = 1'-0"



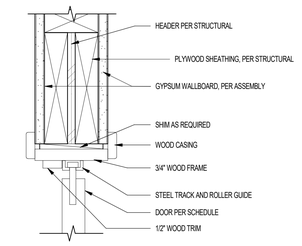
58 BI-PASS DOOR SILL

SCALE: 3" = 1'-0"



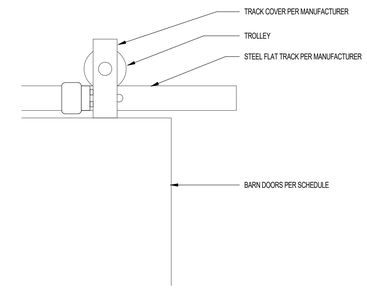
54 BARN DOOR HEAD

SCALE: 3" = 1'-0"



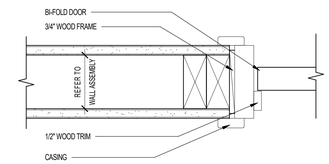
50 BI-FOLD DOOR HEAD

SCALE: 3" = 1'-0"



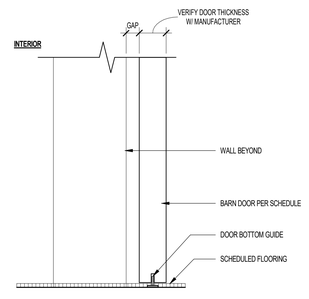
55 BARN DOOR ELEVATION

SCALE: 3" = 1'-0"



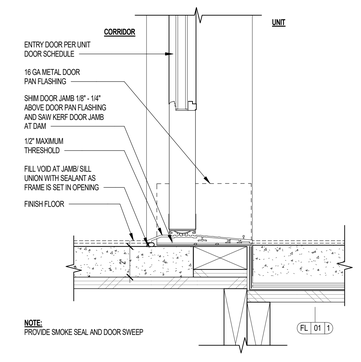
51 BI-FOLD DOOR JAMB

SCALE: 3" = 1'-0"



56 BARN DOOR SILL

SCALE: 3" = 1'-0"



NOTE:
PROVIDE SMOKE SEAL AND DOOR SWEEP

52 ENTRY DOOR THRESHOLD AT WOOD FRAMING

SCALE: 3" = 1'-0"

Project Name 1
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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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

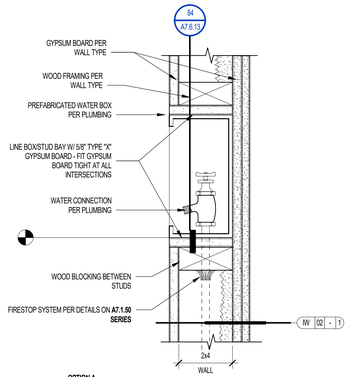
Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

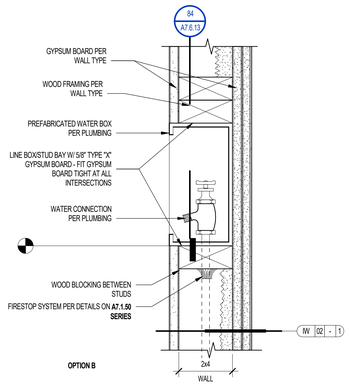
DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.6.12
UNIT & CORRIDOR DETAILS WOOD FRAMING



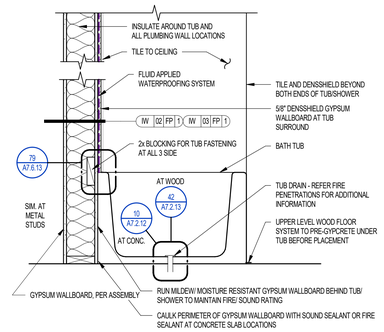
OPTION A



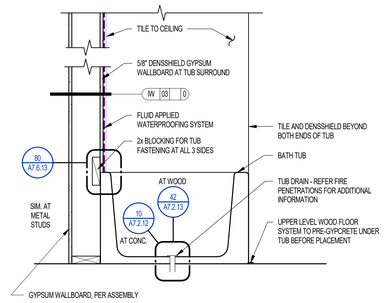
OPTION B

82 WASHER & REFRIGERATOR WATER BOX AT 2x4 FIRE RATED WALL

SCALE: 3" = 1'-0"



TUB AT 1-HR RATED WALL

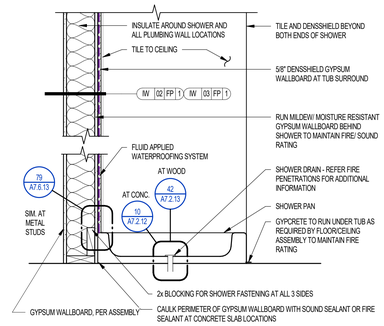


TUB AT NON-RATED WALL

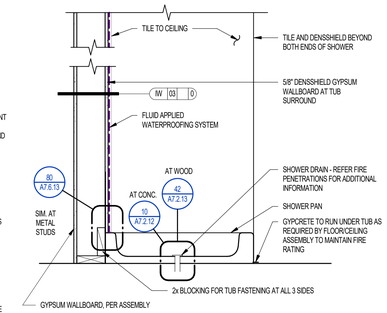
NOTE:
ALL FASTENERS AT TUB/ SHOWER SHALL BE NON-CORROSIVE
REFER TO LIFE SAFETY PLANS FOR RATED WALL LOCATIONS

77 BATH TUB WALL SECTION

SCALE: 1" = 1'-0"



SHOWER AT 1-HR RATED WALL

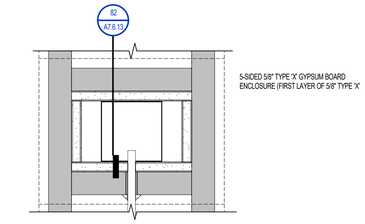


SHOWER AT NON-RATED WALL

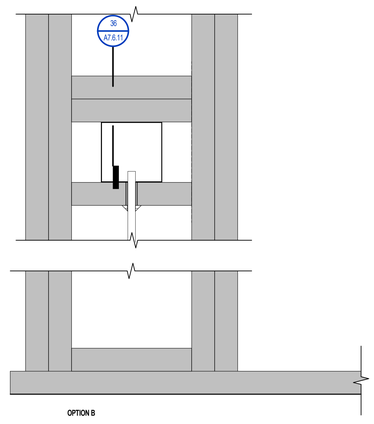
NOTE:
ALL FASTENERS AT TUB/ SHOWER SHALL BE NON-CORROSIVE
REFER TO LIFE SAFETY PLANS FOR RATED WALL LOCATIONS

78 SHOWER WALL SECTION

SCALE: 1" = 1'-0"



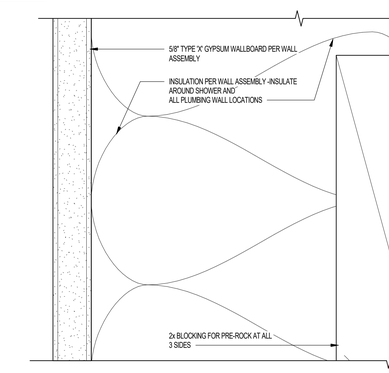
OPTION A



OPTION B

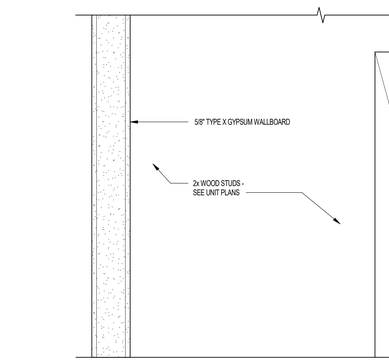
84 WATER BOX AT WOOD FRAMED RATED WALLS - ELEV.

SCALE: 3" = 1'-0"



79 WATERPROOFING AT BATH TUB/SHOWER FLANGE - 1-HR RATED CONDITION

SCALE: 12" = 1'-0"



80 WATERPROOFING AT TUB/SHOWER FLANGE - NON-RATED CONDITION

SCALE: 12" = 1'-0"

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CLIENT NAME
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CLIENT PHONE NUMBER

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

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REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

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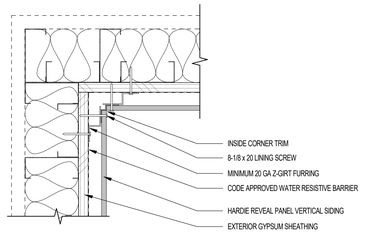
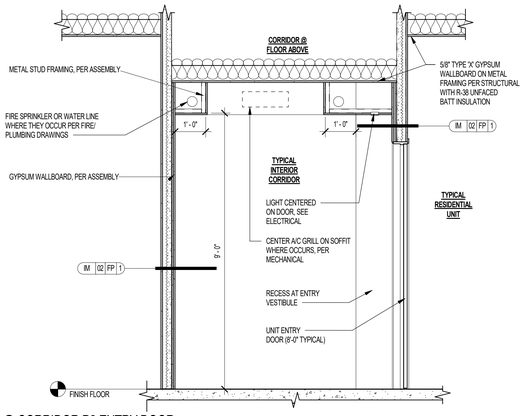
A7.6.13

UNIT & CORRIDOR DETAILS WOOD FRAMING



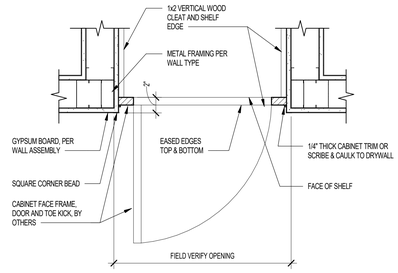
17 PLAN DETAIL - INSIDE CORNER TRIM

SCALE: 3" = 1'-0"



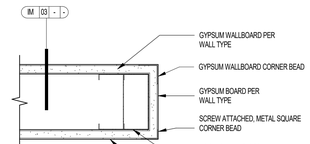
13 SECTION @ CORRIDOR P2 ENTRY DOOR

SCALE: 1/2" = 1'-0"



05 CABINET FACE FRAME

SCALE: 1 1/2" = 1'-0"



01 TYPICAL INTERIOR WALL CORNER

SCALE: 3" = 1'-0"

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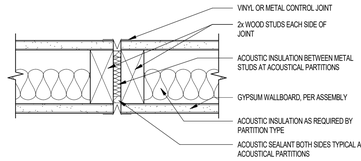
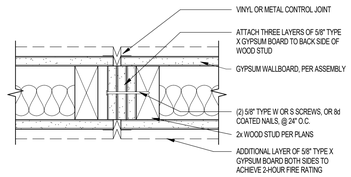


Ⓐ NON-RATED PARTITIONS



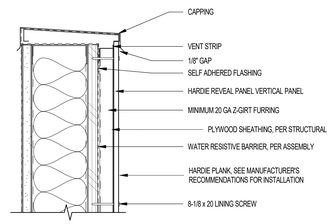
Ⓑ FIRE-RATED CONTROL JOINT (1 AND 2 HOUR RATINGS)

CONTROL JOINTS FOR FIRE-RESISTANCE RATED SYSTEM
GA-234-2019

WALL CONTROL JOINTS SHALL BE INSTALLED WHERE:
1. A PARTITION OR WALL TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE
2. WHERE AN INTERIOR WALL OR PARTITION RUNS IN AN UNINTERRUPTED STRAIGHT PLANE EXCEEDING 30 FT (9 M) IN LENGTH OR HEIGHT
3. GYPSUM PANEL JOINTS SHALL NOT OCCUR WITHIN 12" (300 MM) OF THE CORNERS OF DOOR FRAMES AND OTHER OPENINGS UNLESS INSTALLING CONTROL JOINTS AT THESE LOCATIONS
   NOTE: FULL-HEIGHT DOOR FRAMES ARE CONSIDERED CONTROL JOINTS
4. A CONTROL JOINT IS DESIRED OR INCORPORATED AS A DESIGN ACCENT OR ARCHITECTURAL FEATURE

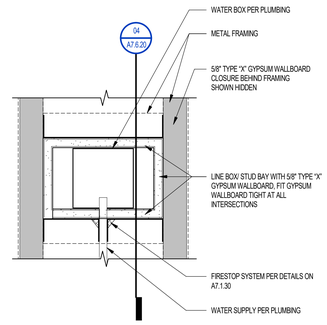
22 CONTROL JOINTS @ NON-RATED & RATED WALLS

SCALE: 3" = 1'-0"



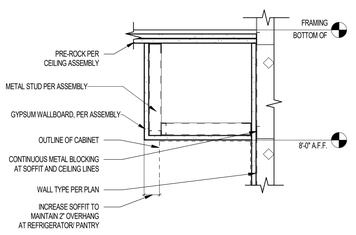
14 SECTION DETAIL - VENTED PARAPET WALL

SCALE: 3" = 1'-0"



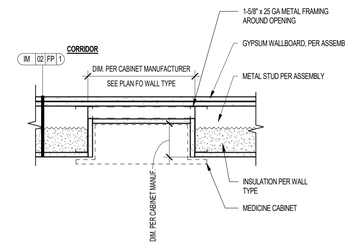
10 WATER BOX AT METAL FRAMED RATED WALLS - ELEV.

SCALE: 3" = 1'-0"



06 TYPICAL DROP CEILING AT CABINET

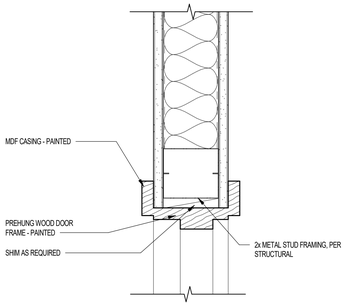
SCALE: 1 1/2" = 1'-0"



NOTE:
SEE UNIT NOTES CABINET MOUNTING HEIGHT

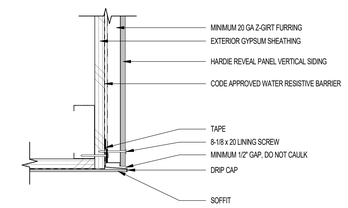
02 MEDICINE CABINET RECESS AT 1-HR RATED CORRIDOR WALL

SCALE: 1 1/2" = 1'-0"



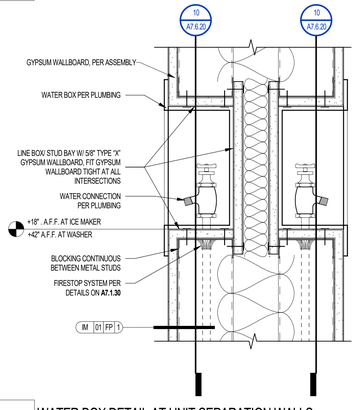
23 WOOD DOOR FRAME HEAD DETAIL @ METAL FRAMING

SCALE: 3" = 1'-0"



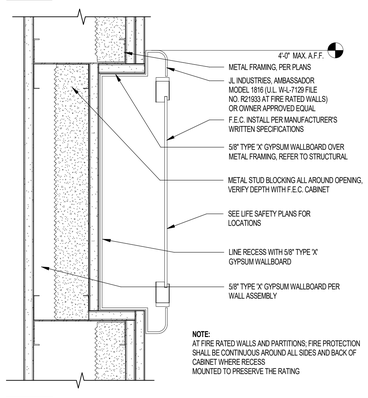
15 SECTION DETAIL - SOFFIT FLASHING INTERSECTION METAL FRAME

SCALE: 3" = 1'-0"



11 WATER BOX DETAIL AT UNIT SEPARATION WALLS

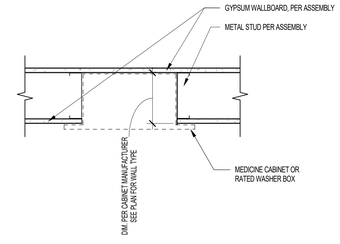
SCALE: 3" = 1'-0"



NOTE:
AT FIRE RATED WALLS AND PARTITIONS; FIRE PROTECTION SHALL BE CONTINUOUS AROUND ALL SIDES AND BACK OF CABINET WHERE RECESS MOUNTED TO PRESERVE THE RATING

07 FIRE EXTINGUISHER CABINET AT 2x6 OR LARGER WALL

SCALE: 3" = 1'-0"



NOTE:
SEE UNIT NOTES CABINET MOUNTING HEIGHT

03 MEDICINE CABINET RECESS AT INTERIOR WALL

SCALE: 1 1/2" = 1'-0"

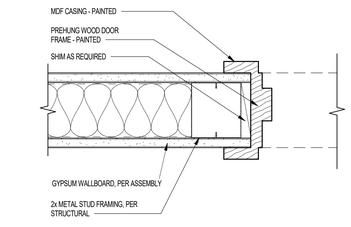
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

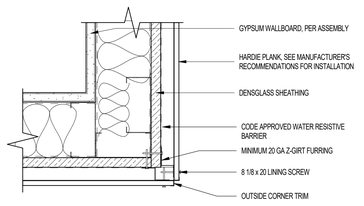
A7.6.20

UNIT & CORRIDOR DETAILS METAL FRAMING 01-09



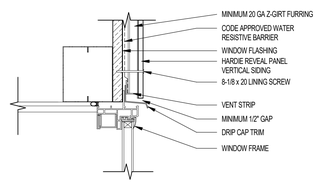
24 WOOD DOOR FRAME JAMB DETAIL @ METAL FRAMING

SCALE: 3" = 1'-0"



16 PLAN DETAIL - OUTSIDE CORNER TRIM

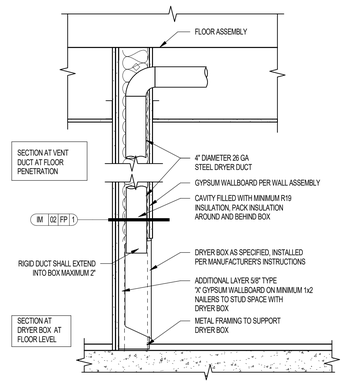
SCALE: 3" = 1'-0"



NOTE:
ALL CUT EDGES MUST BE SEALED

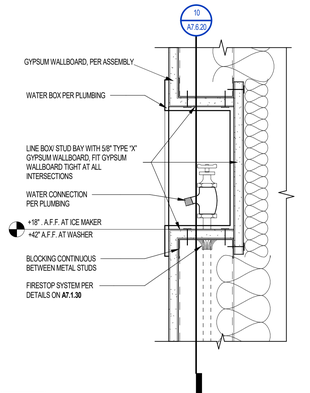
12 SECTION DETAIL - ALUMINIUM WOODEN HEAD

SCALE: 3" = 1'-0"



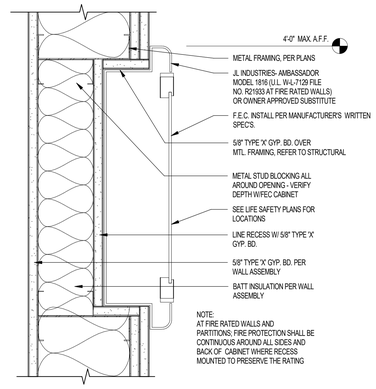
08 DRYERBOX IN 1 HOUR RATED WALL

SCALE: 1" = 1'-0"



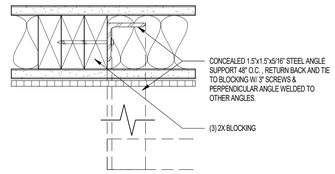
04 WATER BOX DETAIL AT RATED WALLS

SCALE: 3" = 1'-0"

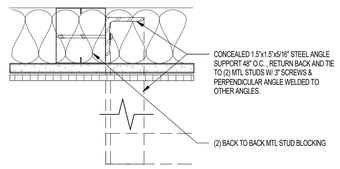


01 FIRE EXTINGUISHER CABINET AT METAL FRAMING

SCALE: 3" = 1'-0"



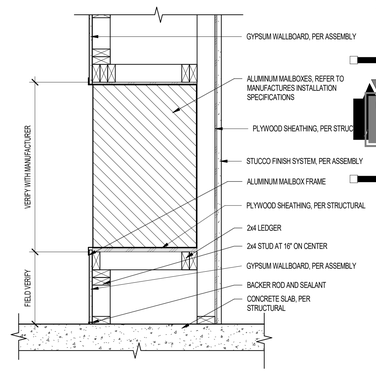
A - COUNTERTOP STEEL ANGLE ATTACHMENT IN WOOD FRAMING



B - COUNTERTOP STEEL ANGLE ATTACHMENT IN METAL FRAMING

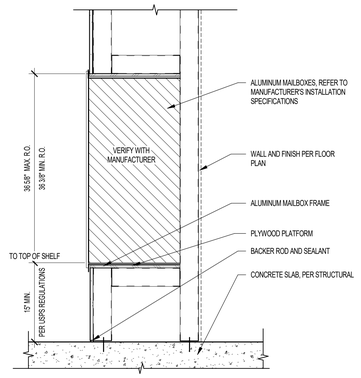
06 COUNTERTOP STEEL ANGLE ATTACHMENT

SCALE: 3" = 1'-0"



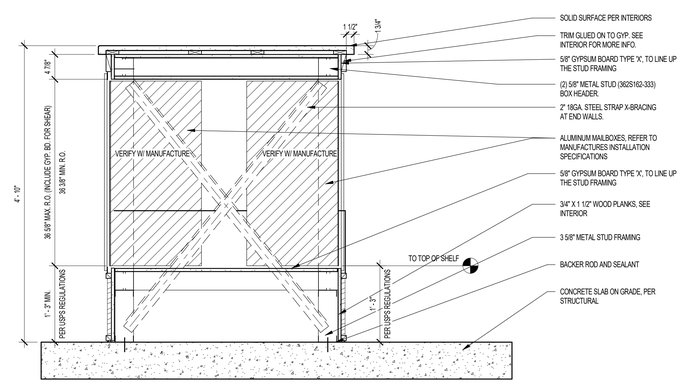
02 MAIL KIOSK WOOD FRAMING

SCALE: 1" = 1'-0"



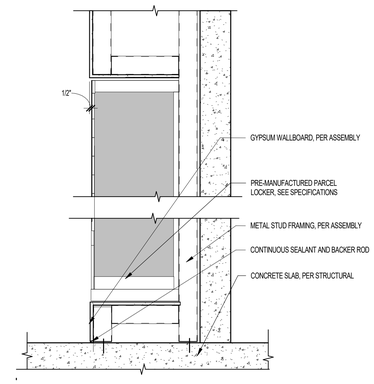
11 SINGLE SIDED MAIL KIOSK - METAL FRAMING

SCALE: 1" = 1'-0"



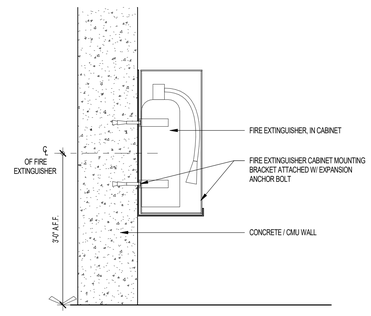
07 DOUBLE SIDED MAIL KIOSK - METAL FRAMING

SCALE: 1" = 1'-0"



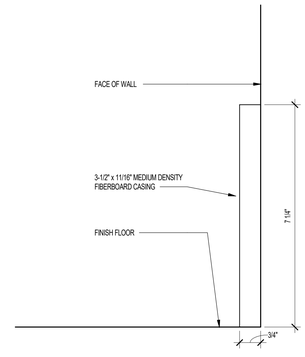
12 PARCEL LOCKER -METAL FRAMING

SCALE: 1" = 1'-0"



08 SURFACE MOUNT FIRE EXTINGUISHER CABINET

SCALE: 1 1/2" = 1'-0"



04 COMMON AREA BASEBOARD

SCALE: 6" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

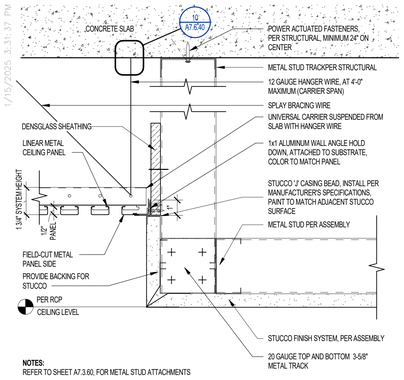
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.6.30

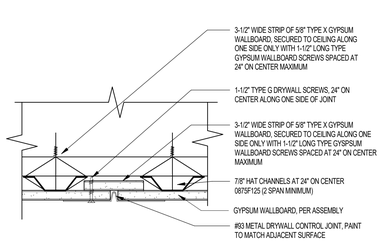
COMMON SPACE DETAILS



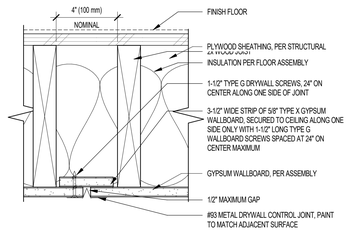
NOTES:
REFER TO SHEET A7.3.60, FOR METAL STUD ATTACHMENTS

21 LINEAR METAL CEILING AT STUCCO SOFFIT - CROSS SECTION

SCALE: 3" = 1'-0"



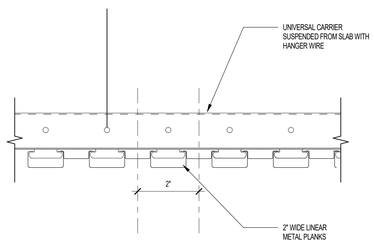
A **1-HOUR FLOOR-CEILING SYSTEM WITH SUSPENDED CEILING**
(UL R4024, 97NK13566, 7-29-96)



B **CONTROL JOINT PARALLEL TO FRAMING WITH DIRECT ATTACHED CEILING**
(UL R4024, 97NK13566, 7-29-96)

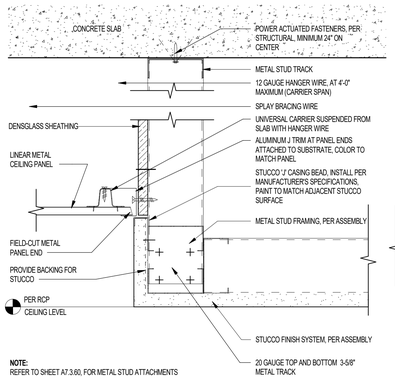
09 LINEAR METAL CEILING - CROSS SECTION

SCALE: 6" = 1'-0"



05 LINEAR METAL CEILING AT STUCCO SOFFIT -TRANSVERSE SECTION

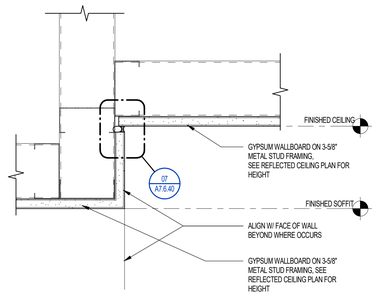
SCALE: 3" = 1'-0"

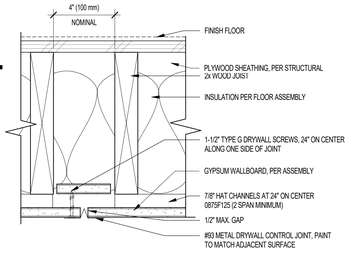


NOTE:
REFER TO SHEET A7.3.60, FOR METAL STUD ATTACHMENTS

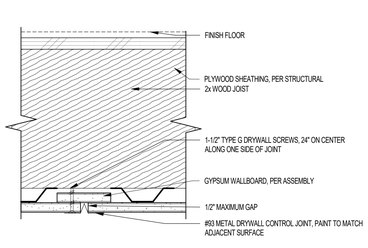
01 GYPSUM BOARD DROPPED SOFFIT

SCALE: 3" = 1'-0"





C **CONTROL JOINT PARALLEL TO FRAMING WITH FURRED CEILING**
(UL R4024, 97NK13566, 7-29-96)



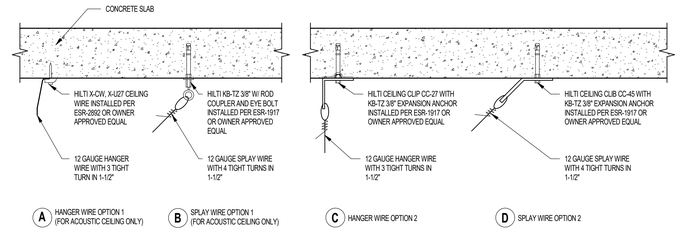
D **CONTROL JOINT PERPENDICULAR TO FRAMING WITH FURRED CEILING**
(UL R4024, 97NK13566, 7-29-96)

CONTROL JOINTS FOR FIRE-RESISTANCE RATED SYSTEM
GA-234-2019

CONTROL JOINTS SHALL BE INSTALLED WHERE:
1. A CEILING TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE
2. FOR INTERIOR CEILINGS WITH PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 50 FEET (15 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 2,500 FEET SQUARED (232 M²)
3. FOR INTERIOR CEILINGS WITHOUT PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 30 FEET (9 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 FEET SQUARED (84M²)
4. FOR EXTERIOR CEILINGS AND SOFFITS, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 30 FEET (9 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 FEET SQUARED (84M²)
5. CONTROL JOINTS OR INTERMEDIATE BLOCKING SHALL BE INSTALLED WHERE CEILING FRAMING MEMBERS CHANGE DIRECTION
6. A CONTROL JOINT IS DESIRED OR INCORPORATED AS A DESIGN ACCENT OR ARCHITECTURAL FEATURE

18 TYPICAL CONTROL JOINTS AT CEILINGS

SCALE: 3" = 1'-0"

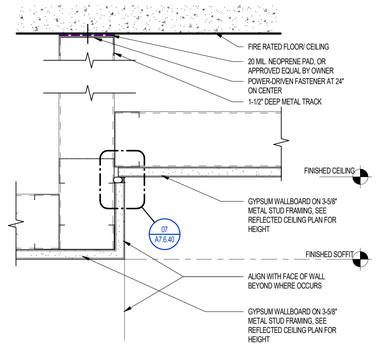


A HANGER WIRE OPTION 1 (FOR ACOUSTIC CEILING ONLY)
B SPLAY WIRE OPTION 1 (FOR ACOUSTIC CEILING ONLY)
C HANGER WIRE OPTION 2
D SPLAY WIRE OPTION 2

NOTES:
1. PROVIDE MINIMUM EMBEDMENT AND COVER PER STRUCTURAL DRAWINGS, AS APPLICABLE
2. ALTERNATE ASSEMBLY: HILTI CEILING CLIP X-CC INSTALLED PER ESR-2184
3. ALL ANCHORAGE CONDITIONS ARE APPROVED FOR USE IN STRUCTURAL CONCRETE FLOOR/ ROOF ASSEMBLIES PER THE REFERENCED ASSEMBLY REPORTS
4. OTHER ASSEMBLIES MAY BE SUBSTITUTED, SUBJECT TO APPROVAL

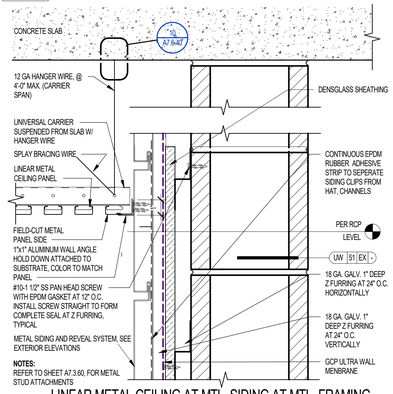
10 HANGER WIRE CONNECTIONS

SCALE: 1 1/2" = 1'-0"



02 GYPSUM BOARD DROPPED SOFFIT - CONCRETE SLAB

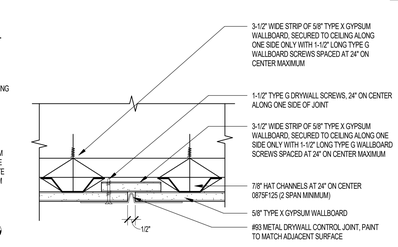
SCALE: 3" = 1'-0"



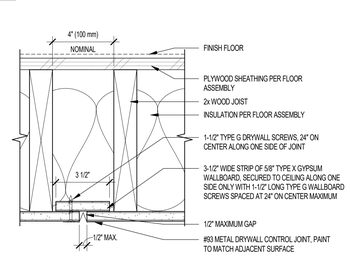
NOTES:
REFER TO SHEET A7.3.60, FOR METAL STUD ATTACHMENTS

19 LINEAR METAL CEILING AT MTL. SIDING AT MTL. FRAMING WALL -CROSS SECTION

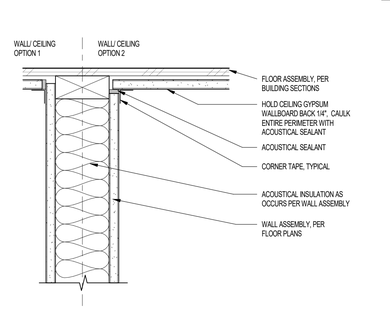
SCALE: 3" = 1'-0"



A **1-HR FLOOR-CEILING SYSTEM WITH SUSPENDED CEILING**
(UL R4024, 97NK13566, 7-29-96)



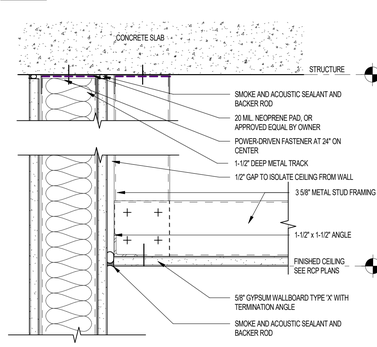
B **CONTROL JOINT PARALLEL TO FRAMING WITH DIRECT ATTACHED CEILING**
(UL R4024, 97NK13566, 7-29-96)



NOTES:
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. VERIFY WALL ASSEMBLY FIRE RATING, FOR FIRE RATED WALLS USE SMOKE AND ACOUSTICAL SEALANT PER A7.1.50 SERIES

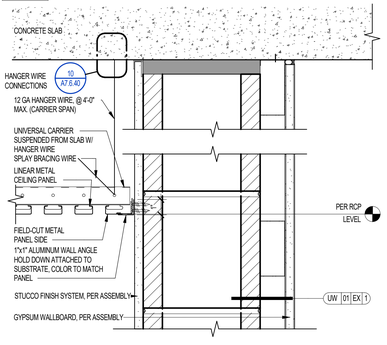
07 ACOUSTICS - TYPICAL WALL CEILING TERMINATION

SCALE: 3" = 1'-0"



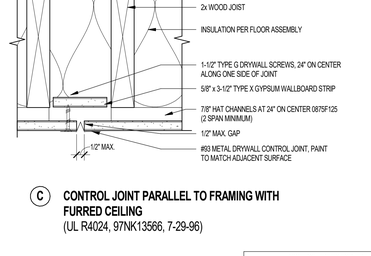
03 GYPSUM BOARD CEILING TERMINATION @ WALL

SCALE: 3" = 1'-0"

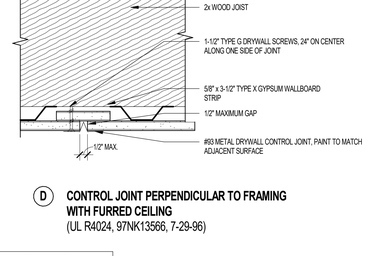


20 LINEAR METAL CEILING AT BRICK VENEER CMU WALL - CROSS SECTION

SCALE: 3" = 1'-0"



C **CONTROL JOINT PARALLEL TO FRAMING WITH FURRED CEILING**
(UL R4024, 97NK13566, 7-29-96)



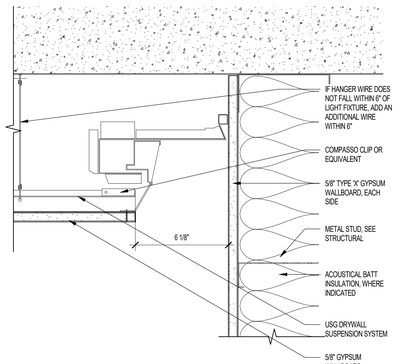
D **CONTROL JOINT PERPENDICULAR TO FRAMING WITH FURRED CEILING**
(UL R4024, 97NK13566, 7-29-96)

CONTROL JOINTS FOR FIRE-RESISTANCE RATED SYSTEM
GA-234-2019

CONTROL JOINTS SHALL BE INSTALLED WHERE:
1. A CEILING TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE
2. FOR INTERIOR CEILINGS WITH PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 50 FEET (15 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 2,500 FEET SQUARED (232 M²)
3. FOR INTERIOR CEILINGS WITHOUT PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 30 FEET (9 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 FEET SQUARED (84M²)
4. FOR EXTERIOR CEILINGS AND SOFFITS, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS SHALL NOT EXCEED 30 FEET (9 M) AND THE TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 FEET SQUARED (84M²)
5. CONTROL JOINTS OR INTERMEDIATE BLOCKING SHALL BE INSTALLED WHERE CEILING FRAMING MEMBERS CHANGE DIRECTION
6. A CONTROL JOINT IS DESIRED OR INCORPORATED AS A DESIGN ACCENT OR ARCHITECTURAL FEATURE

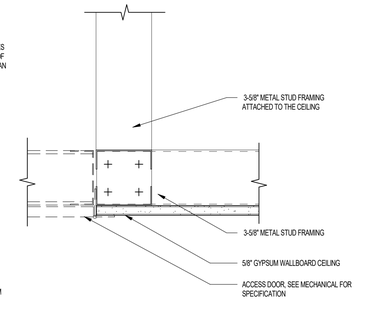
16 TYPICAL CONTROL JOINTS AT CEILINGS

SCALE: 3" = 1'-0"



08 CEILING COVE LIGHTING

SCALE: 3" = 1'-0"



04 ACCESS DOOR PROFILE @ CEILING, TYP.

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL COMPANY
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

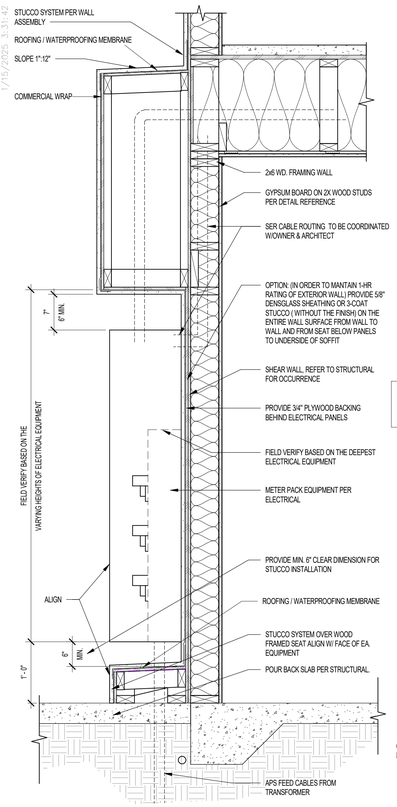
DATE	DESCRIPTION

2ND CITY SUBMITTAL

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

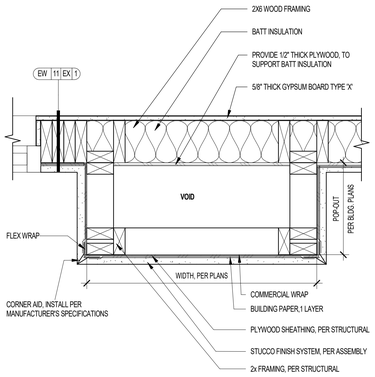
A7.6.40

REFLECTED CEILING DETAILS



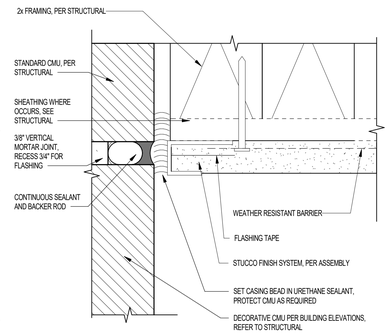
22 ELECTERICAL EQUIPMENT AT EXTERIOR WALL - SECTION

SCALE: 1" = 1'-0"



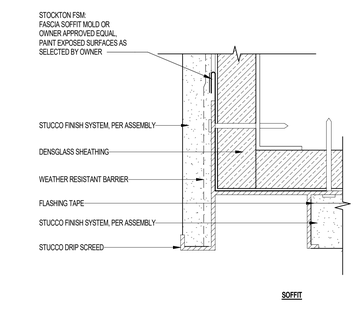
17 VENT AT POP-OUT FRAMING - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



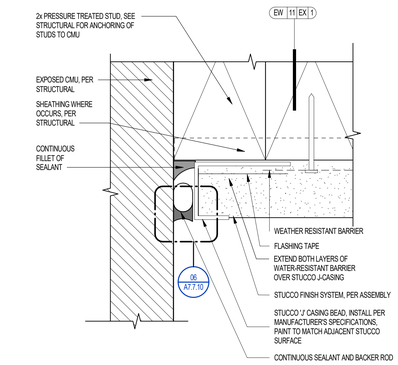
13 VERTICAL FLASHING AT DECORATIVE CMU WALL

SCALE: 12" = 1'-0"



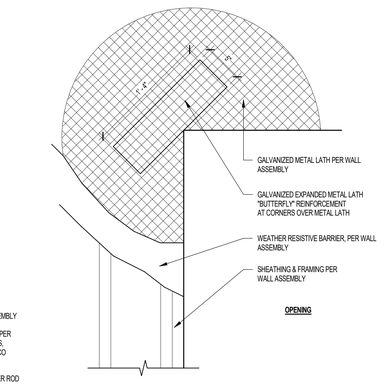
09 FASCIA / SOFFIT EDGE AT STUCCO FINISH

SCALE: 12" = 1'-0"



05 JOINT AT EXPOSED CMU WALL WOOD FRAMING

SCALE: 12" = 1'-0"

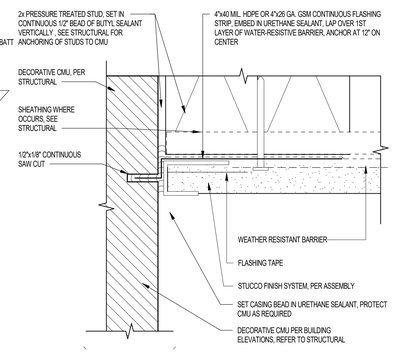


01 TYPICAL CORNER REINFORCING

SCALE: 1 1/2" = 1'-0"

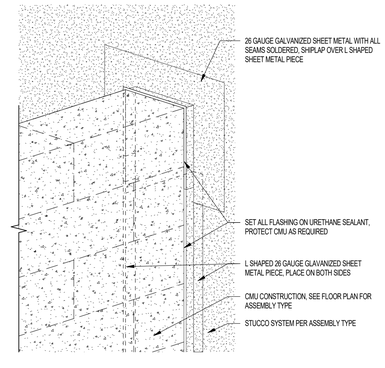
18 VENT AT POP-OUT FRAMING - PLAN VIEW

SCALE: 1 1/2" = 1'-0"



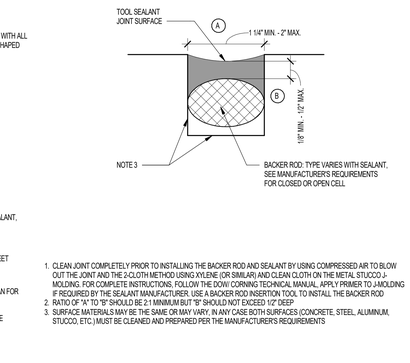
14 VERTICAL FLASHING AT DECORATIVE CMU WALL - FLASHING AT SAW CUT

SCALE: 12" = 1'-0"



10 FLASHING SADDLE @ CMU WALL

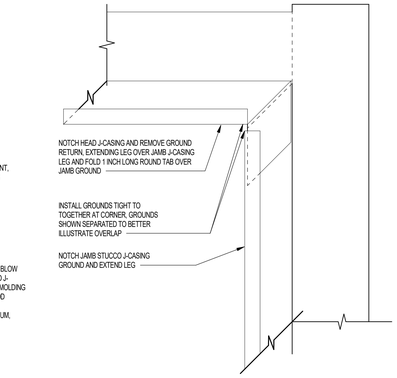
SCALE: 1 1/2" = 1'-0"



1. CLEAN JOINT COMPLETELY PRIOR TO INSTALLING THE BACKER ROD AND SEALANT BY USING COMPRESSED AIR TO BLOW OUT THE JOINT AND THE 2-CLOTH METHOD USING XYLENE (OR SIMILAR) AND CLEAN CLOTH ON THE METAL STUCCO J-MOLDING. FOR COMPLETE INSTRUCTIONS, FOLLOW THE DOW/ CORNING TECHNICAL MANUAL, APPLY PRIMER TO J-MOLDING IF REQUIRED BY THE SEALANT MANUFACTURER. USE A BACKER ROD INSERTION TOOL TO INSTALL THE BACKER ROD
2. RATIO OF "A" TO "B" SHOULD BE 2:1 MINIMUM BUT "B" SHOULD NOT EXCEED 1/2" DEEP
3. SURFACE MATERIALS MAY BE THE SAME OR MAY VARY, IN ANY CASE BOTH SURFACES (CONCRETE, STEEL, ALUMINUM, STUCCO, ETC.) MUST BE CLEANED AND PREPARED PER THE MANUFACTURER'S REQUIREMENTS

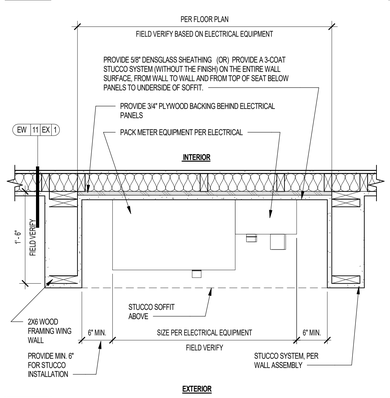
06 SEALANT AND BACKER ROD AT DECORATIVE CMU WALL

SCALE: 12" = 1'-0"



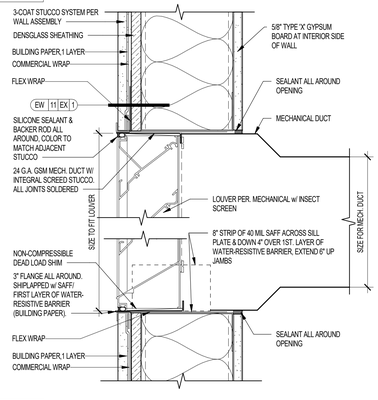
02 STUCCO J-CASING CORNER OVERLAP AT DOOR HEAD

SCALE: 6" = 1'-0"



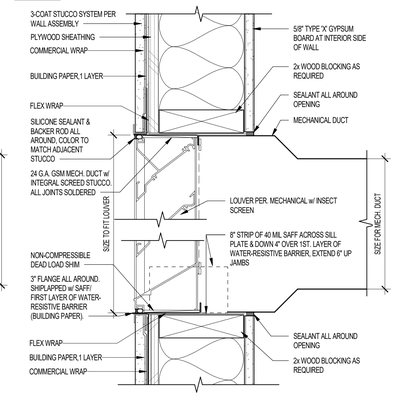
23 ELECTERICAL EQUIPMENT AT EXTERIOR WALL - PLAN

SCALE: 1" = 1'-0"



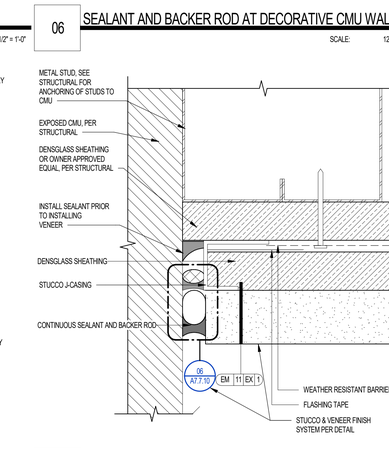
19 MECH. GILLE VENTS AT EXTERIOR WALL - METAL FRAMING

SCALE: 3" = 1'-0"



15 MECH. GILLE VENTS AT EXTERIOR WALL - WOOD FRAMING

SCALE: 3" = 1'-0"

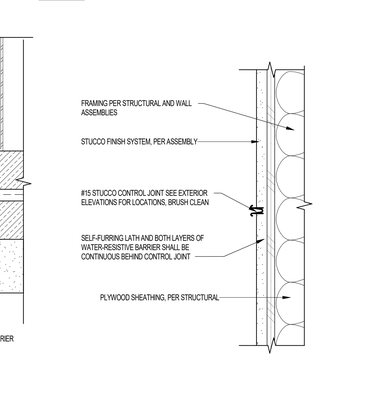


11 CMU @ STUCCO WALL

SCALE: 3" = 1'-0"

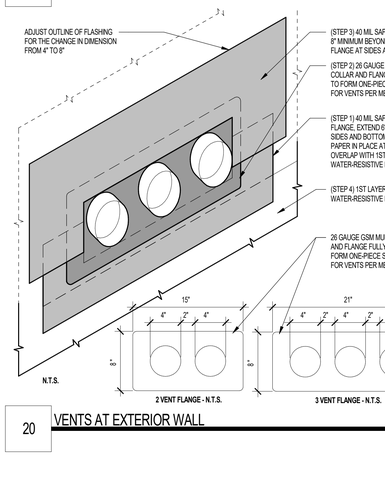
07 JOINT AT EXPOSED CMU WALL METAL FRAMING

SCALE: 12" = 1'-0"



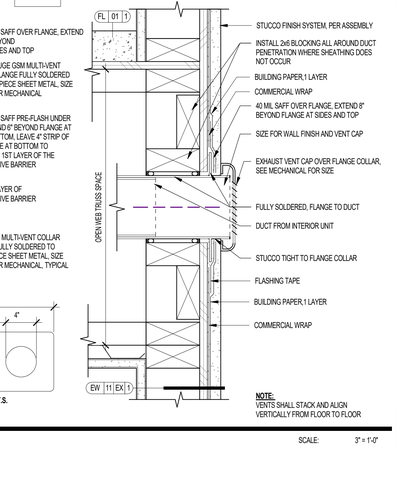
03 STUCCO CONTROL JOINTS

SCALE: 3" = 1'-0"



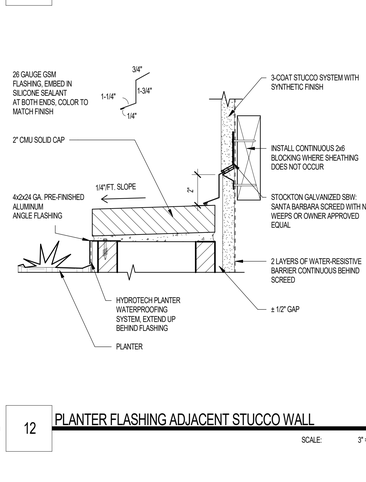
20 VENTS AT EXTERIOR WALL

SCALE: 3" = 1'-0"



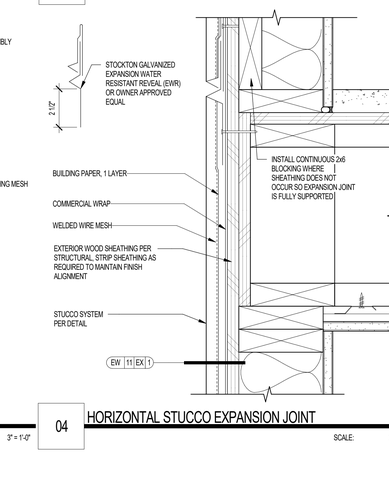
12 PLANTER FLASHING ADJACENT STUCCO WALL

SCALE: 3" = 1'-0"



08 EXPANSION JOINT ABOVE VENEER

SCALE: 3" = 1'-0"



04 HORIZONTAL STUCCO EXPANSION JOINT

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

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

Contractor must verify all dimensions at project before proceeding with this work.

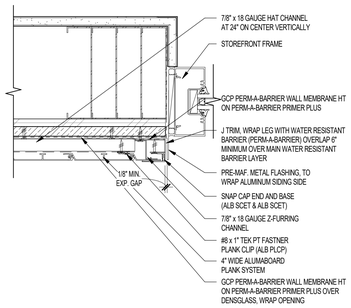
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

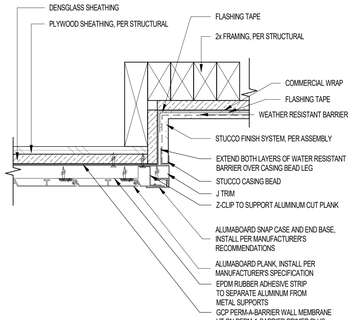
A7.7.10

FINISHES DETAILS - WOOD FRAMING



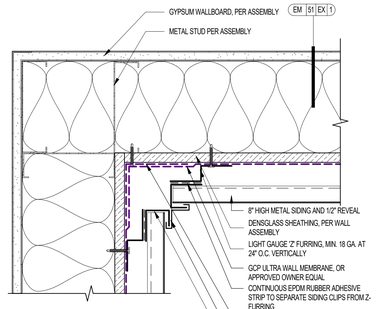
21 ALUMABOARD VERTICAL JAMB SCE

SCALE: 3" = 1'-0"



17 ALUMABOARD JAMB AT WINDOW RECESS

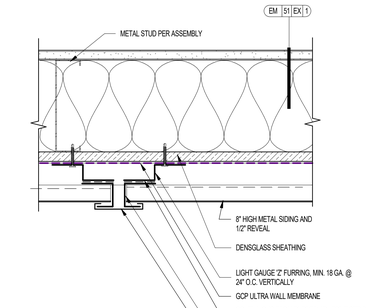
SCALE: 3" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

13 METAL SIDING INSIDE CORNER - METAL FRAMING

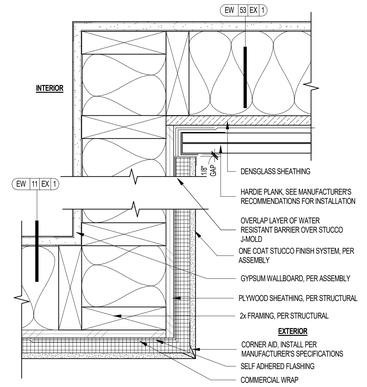
SCALE: 3" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

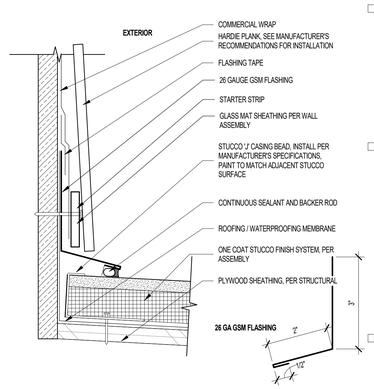
09 METAL SIDING - METAL FRAMING

SCALE: 3" = 1'-0"



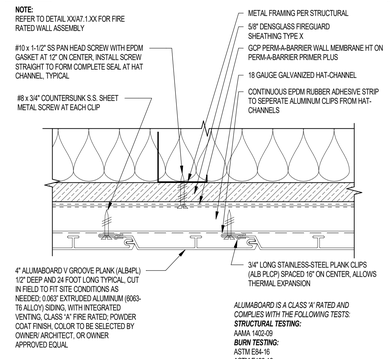
05 STUCCO TO HARDIE BOARD AT INSIDE CORNER - PLAN DETAIL

SCALE: 3" = 1'-0"



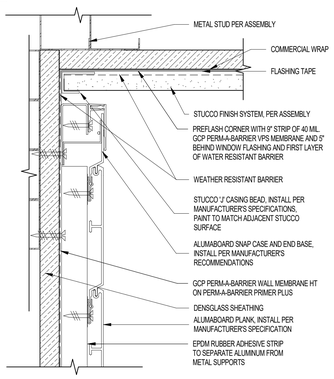
01 HARDIE BOARD TO STUCCO SHELF CONDITION - SECTION DETAIL

SCALE: 6" = 1'-0"



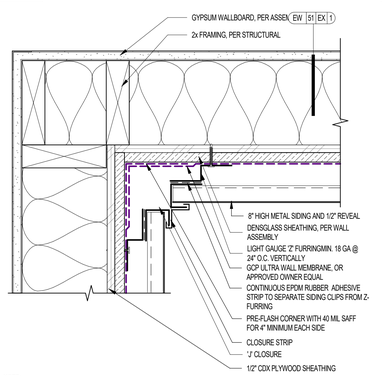
22 ALUMABOARD METAL PANEL - METAL FRAMING

SCALE: 6" = 1'-0"



18 ALUMABOARD METAL PANEL AT INSIDE CORNER

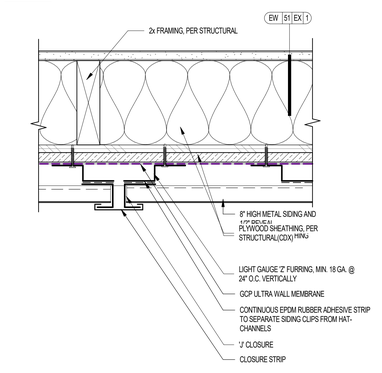
SCALE: 6" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

14 METAL SIDING INSIDE CORNER - WOOD FRAMING

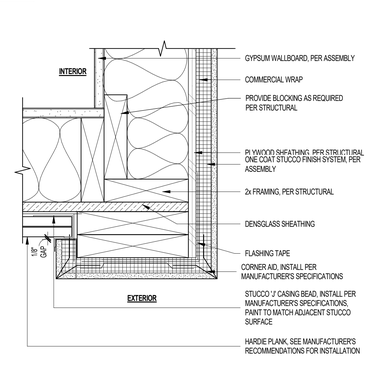
SCALE: 3" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

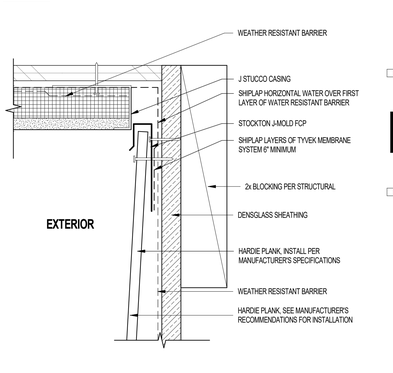
10 METAL SIDING -WOOD FRAMING

SCALE: 3" = 1'-0"



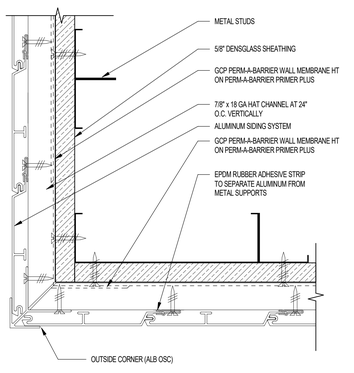
06 STUCCO TO HARDIE BOARD AT OUTSIDE CORNER - PLAN DETAIL

SCALE: 3" = 1'-0"



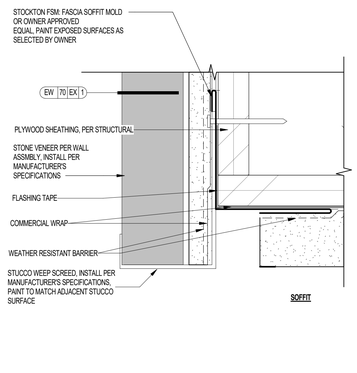
02 HARDIE BOARD TO STUCCO HEAD CONDITION - SECTION DETAIL

SCALE: 6" = 1'-0"



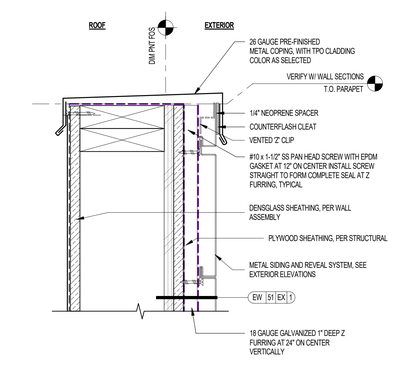
19 ALUMABOARD METAL PANEL AT OUTSIDE CORNER

SCALE: 6" = 1'-0"



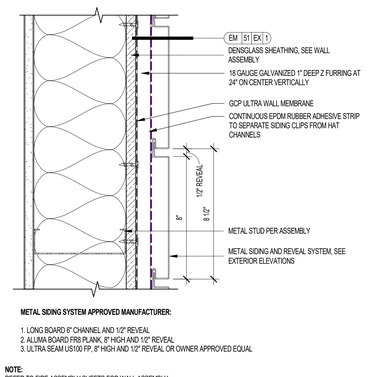
15 FASCIA/ STUCCO SOFFIT EDGE AT STONE VENEER FINISH

SCALE: 12" = 1'-0"



11 METAL SIDING TERMINATION AT ROOF PARAPET - WOOD FRAMING

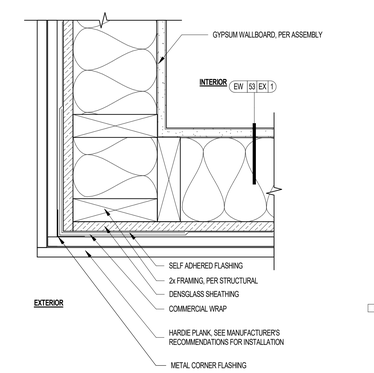
SCALE: 3" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

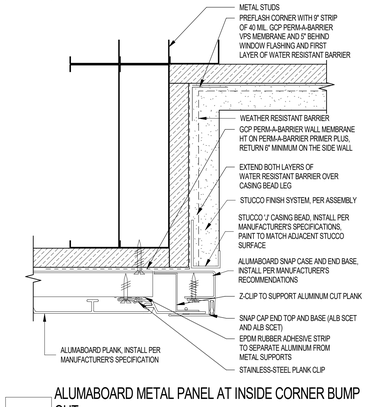
07 METAL SIDING - METAL FRAMING

SCALE: 3" = 1'-0"



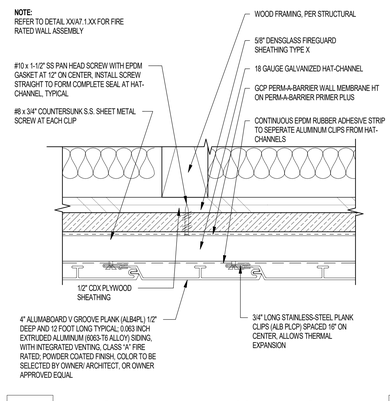
03 HARDIE BOARD FINISH AT OUTSIDE CORNER - PLAN DETAIL

SCALE: 3" = 1'-0"



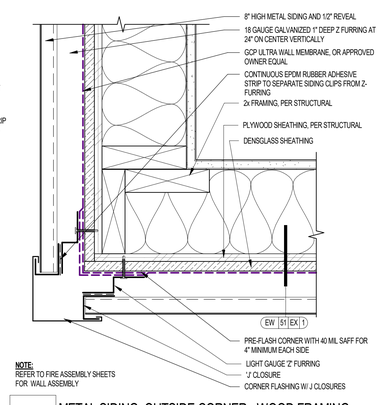
20 ALUMABOARD METAL PANEL AT INSIDE CORNER BUMP OUT

SCALE: 6" = 1'-0"



16 ALUMABOARD METAL PANEL -WOOD FRAMING

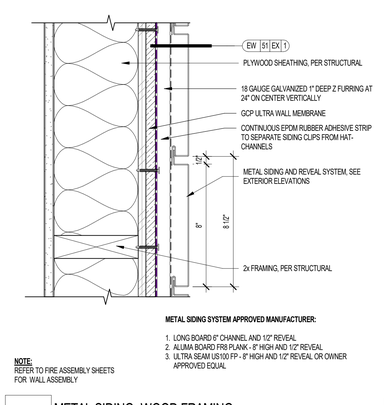
SCALE: 6" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

12 METAL SIDING OUTSIDE CORNER - WOOD FRAMING

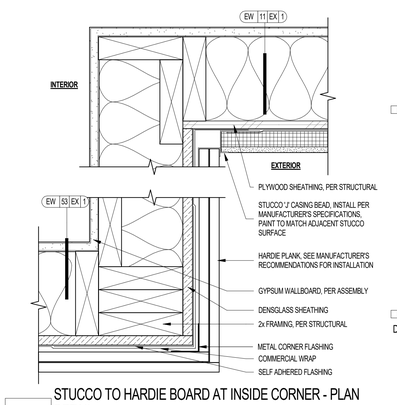
SCALE: 3" = 1'-0"



NOTE:
REFER TO FIRE ASSEMBLY SHEETS FOR WALL ASSEMBLY

08 METAL SIDING -WOOD FRAMING

SCALE: 3" = 1'-0"



04 STUCCO TO HARDIE BOARD AT INSIDE CORNER - PLAN DETAIL

SCALE: 3" = 1'-0"

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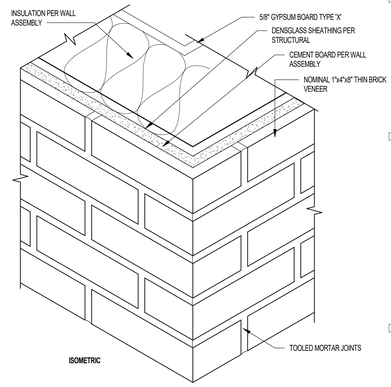
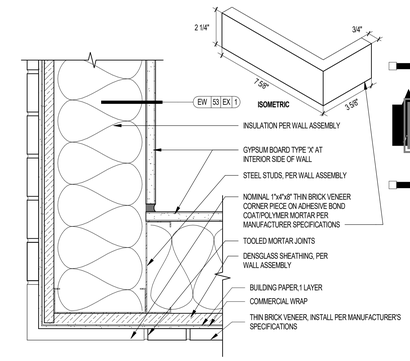
EXTERIOR CLADDING DETAILS



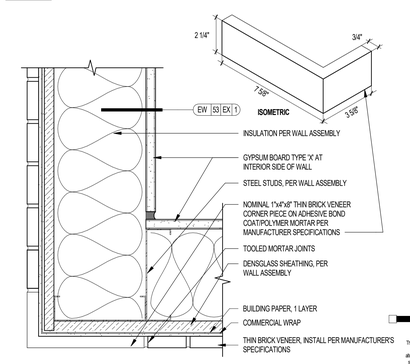
01 BRICK VENEER @ CORNER EDGE ISOMETRIC

SCALE: 3" = 1'-0"



02 BRICK VENEER @ CORNER EDGE - PLAN VIEW

SCALE: 3" = 1'-0"



03 BRICK VENEER VERTICAL CONTROL JOINT AT WOOD FRAMING

SCALE: 3" = 1'-0"

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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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

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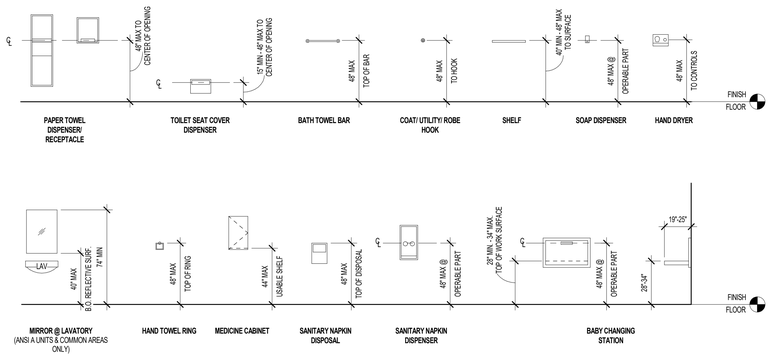
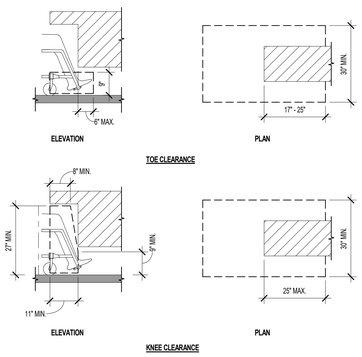
A7.7.30

EXTERIOR BRICK VENEER DETAILS



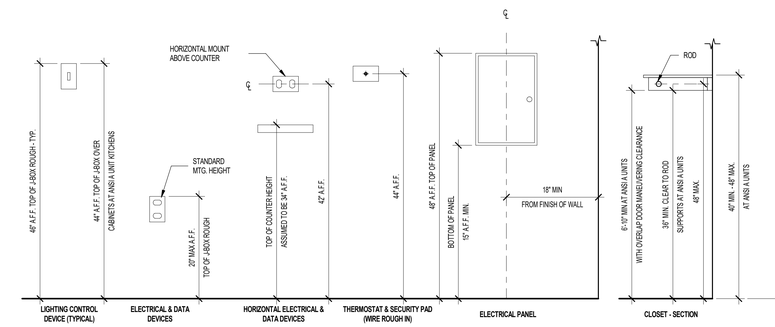
09 RESTROOM FIXTURE MOUNTING HEIGHTS

(ICC A117.1-2009 - 603.3 - 603.6) SCALE: 1/4" = 1'-0"



14 KNEE & TOE CLEARANCE

(ICC A117.1-2009 - SECTIONS 306.1) SCALE: 1/2" = 1'-0"



10 MOUNTING HEIGHTS

(FHA CHAPTER 9)
(ICC A117.1-2009 - SECTIONS 308 & 803.5) SCALE: 1" = 1'-0"

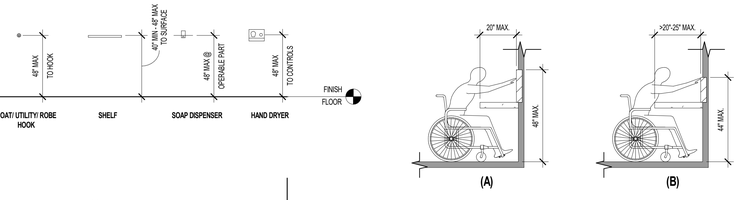


FIGURE 308.2.2
OBSTRUCTED HIGH FORWARD REACH

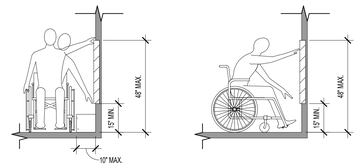


FIGURE 308.3.1
UNOBSTRUCTED SIDE REACH

FIGURE 308.2.1
UNOBSTRUCTED FORWARD REACH

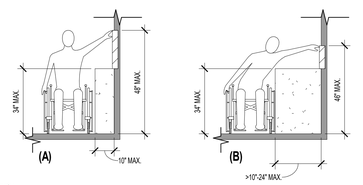
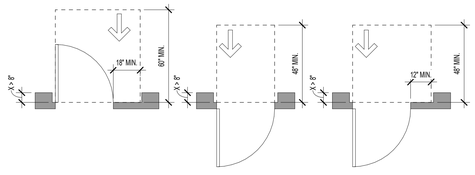


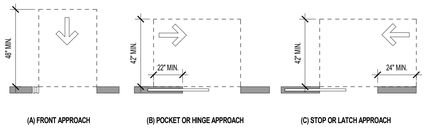
FIGURE 308.3.2
OBSTRUCTED HIGH SIDE REACH

02 ACCESSIBLE REACH RANGES

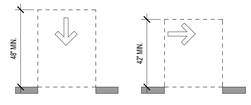
(ICC A117.1-2009 - SECTION 308) (2010 ADA - SECTION 308) SCALE: 3/8" = 1'-0"



ICC A117.1-2009 - FIGURE 404.2.3.5 - MANEUVERING CLEARANCE AT RECESSED DOORS



ICC A117.1-2009 - FIGURE 404.2.3.3 - MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS



ICC A117.1-2009 - FIGURE 404.2.3.4 - MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS

ANSI ACCESSIBLE DOOR CLEARANCES REQUIRED IN THE FOLLOWING LOCATIONS:
1. ALL DOORS IN ANSI TYPE 'A' UNITS
2. ENTRY DOOR IN ANSI TYPE 'B' UNITS
3. ALL COMMON AREAS DOORS
4. ALL PEDESTRIAN GATES (INCLUDING POOL GATES)

DOORS SHALL COMPLY WITH SECTION 404 ICC/ANSI A117.1-2009 WHICH INCLUDES, BUT IS NOT LIMITED TO:
1. DOOR HARDWARE: ICC SECTION 404.2.6
2. CLOSING SPEED:ICC SECTION 404.2.7
3. OPENING FORCE: ICC SECTION 404.2.8
4. DOOR SURFACE: ICC SECTION 404.2.9

20 ANSI ACCESSIBLE ROUTE/SPECIAL CONDITION DOOR CLEARANCES

(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) SCALE: 1/2" = 1'-0"

ICC A117.1-2009 - FIGURE 404.2.3.5 - MANEUVERING CLEARANCE AT RECESSED DOORS

ICC A117.1-2009 - FIGURE 404.2.3.3 - MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS

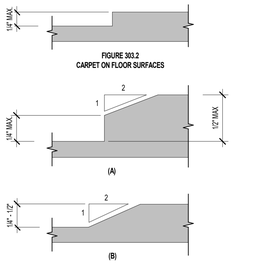
ICC A117.1-2009 - FIGURE 404.2.3.4 - MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS

ANSI ACCESSIBLE DOOR CLEARANCES REQUIRED IN THE FOLLOWING LOCATIONS:
1. ALL DOORS IN ANSI TYPE 'A' UNITS
2. ENTRY DOOR IN ANSI TYPE 'B' UNITS
3. ALL COMMON AREAS DOORS
4. ALL PEDESTRIAN GATES (INCLUDING POOL GATES)

DOORS SHALL COMPLY WITH SECTION 404 ICC/ANSI A117.1-2009 WHICH INCLUDES, BUT IS NOT LIMITED TO:
1. DOOR HARDWARE: ICC SECTION 404.2.6
2. CLOSING SPEED: ICC SECTION 404.2.7
3. OPENING FORCE: ICC SECTION 404.2.8
4. DOOR SURFACE: ICC SECTION 404.2.9

12 ANSI ACCESSIBLE ROUTE/TYPICAL SWING DOOR CLEARANCES

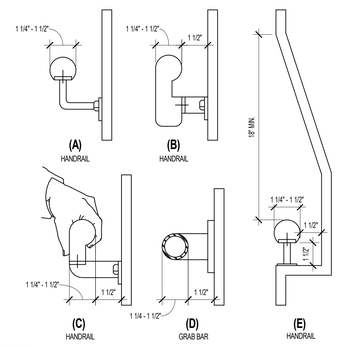
(ICC A117.1-2009 - SECTION 404.2.3) (ICC A117.1-2009 - FIGURE 404.2.3.2) (2010 ADA - SECTION 404.2.4) (2010 ADA - FIGURE 404.2.4.1) SCALE: 1/2" = 1'-0"



NOTES:
1. CHANGES N LEVEL GREATER THAN 1/2" IN HEIGHT SHALL BE RAMPED AND SHALL COMPLY WITH ICC SECTION 405 OR 406
2. AT ANSI TYPE A UNITS, BALCONY SLOPE SHALL BE 2% MAXIMUM IN ALL DIRECTIONS
3. AT ANSI TYPE B UNITS, WHERE EXTERIOR DECK, PATIO OR BALCONY SURFACE MATERIALS ARE IMPERVIOUS, THE FINISHED EXTERIOR IMPERVIOUS SURFACE SHALL BE 4" MAXIMUM BELOW THE FLOOR LEVEL OF THE ADJACENT INTERIOR SPACES OF THE UNIT

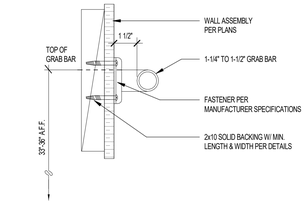
11 CHANGES IN LEVEL REQUIREMENTS

(ICC A117.1-2009 - SECTIONS 303.2 & 303.3) (2010 ADA - SECTIONS 303.2 & 303.3) SCALE: 1" = 1'-0"



07 SIZE AND SPACING OF HANDRAIL AND GRAB BAR

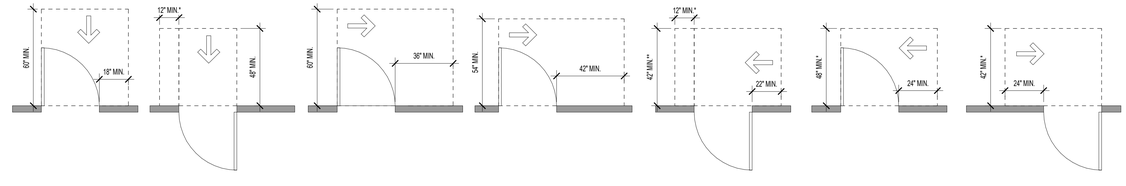
(ICC A117.1-2009 - SECTION 609.3) (2010 ADA - SECTION 609.3) (IBC 2018 - SECTIONS 1014.2 & 1014.3) SCALE: 1" = 1'-0"



BACKING NOTES:
1. BENDING STRESS IN A GRAB BAR INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF 250 LB-FT. SHALL BE LESS THAN THE ALLOWABLE STRESS FOR THE MATERIAL OF THE GRAB BAR.
2. SHEAR STRESS INDUCED IN A GRAB BAR BY THE APPLICATION OF 250 LB-FT. SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR. IF THE CONNECTION BETWEEN THE GRAB BAR AND ITS MOUNTING BRACKET OR OTHER SUPPORT IS CONSIDERED TO BE FULLY RESTRAINED, THEN DIRECT AND TORSIONAL SHEAR STRESSES SHALL BE TOTALED FOR THE COMBINED SHEAR STRESS, WHICH SHALL NOT EXCEED THE ALLOWABLE SHEAR STRESS.
3. SHEAR FORCE INDUCED IN A FASTENER OR MOUNTING DEVICE FROM THE APPLICATION OF 250 LB-FT. SHALL BE LESS THAN THE ALLOWABLE LATERAL LOAD OF EITHER THE FASTENER OR MOUNTING DEVICE OR THE SUPPORTING STRUCTURE, WHICHEVER IS THE SMALLER ALLOWABLE LOAD.
4. TENSILE FORCE INDUCED IN A FASTENER BY A DIRECT TENSION FORCE OF 250 LB-FT. PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF 250 LB-FT. SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND THE SUPPORTING STRUCTURE.
5. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

03 WALL BACKING & GRAB BAR CONNECTION

(ICC A117.1-2009 - SECTIONS 609.6 - 609.8) SCALE: 3" = 1'-0"



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CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

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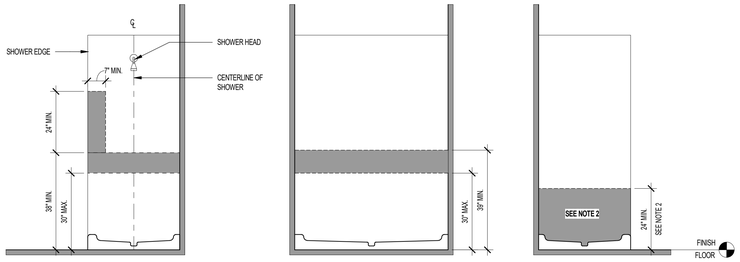
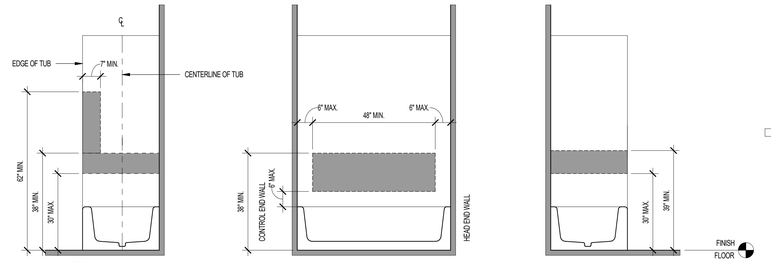
ACCESSIBILITY DETAILS - GENERAL



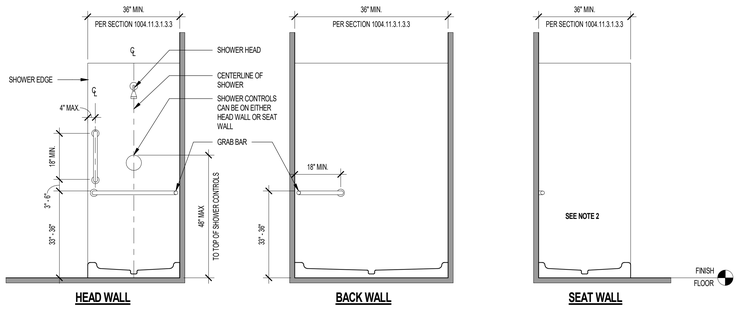
ANSI TYPE B - REINFORCEMENT FOR SHOWERS

(ICC A117.1-2009 - SECTIONS 1004.11.1 & 608.3.1)



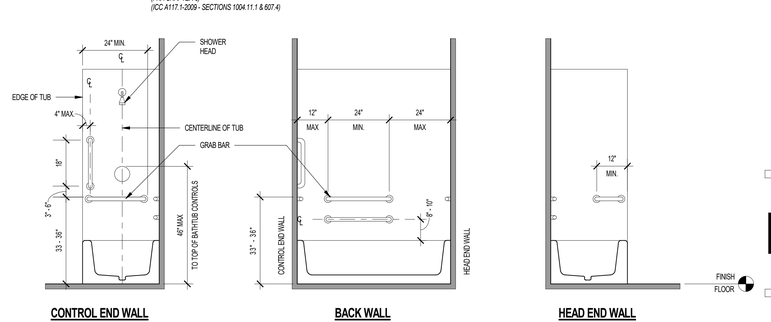
ANSI TYPE B - REINFORCEMENT FOR BATHTUBS

(FHA CHAPTER 6)
(ICC A117.1-2009 - SECTIONS 1004.11.1 & 607.4)



ANSI TYPE B - GRAB BARS FOR SHOWER

(ICC A117.1-2009 - SECTIONS 1004.11.1 & 608.3.1)



ANSI TYPE B - GRAB BARS FOR BATHTUB

(ICC A117.1-2009 - SECTIONS 1004.11.1 & 607.4)

NOTES: (ICC/ANSI A117.1-2009)
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.

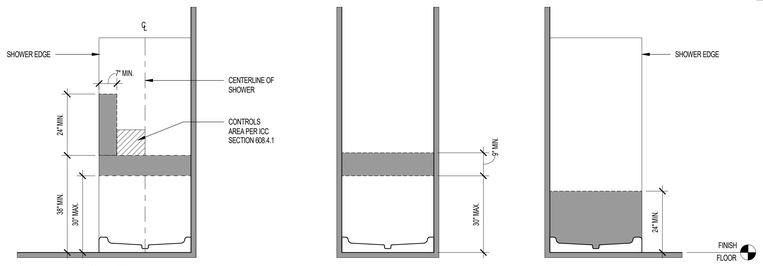
SOLID BLOCKING, SEE DETAIL 03/A7.8.10

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.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10.

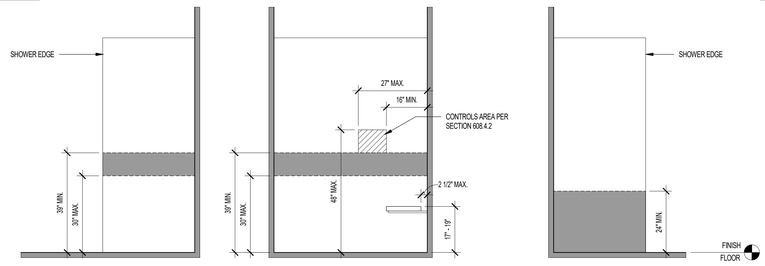
14 ANSI B - REINFORCEMENT AND GRAB BAR FOR SHOWERS — SCALE: 1/2" = 1'-0"

06 ANSI B - REINFORCEMENT AND GRAB BAR FOR BATHTUBS — SCALE: 1/2" = 1'-0"



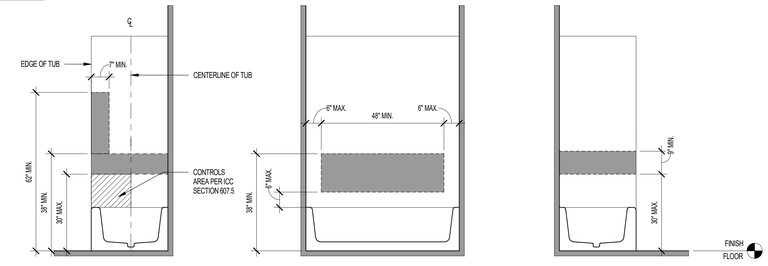
ANSI TYPE A - REINFORCEMENT FOR TRANSFER-TYPE SHOWER

(ICC A117.1-2009 - SECTIONS 1003.11.1 & 608.3.1)



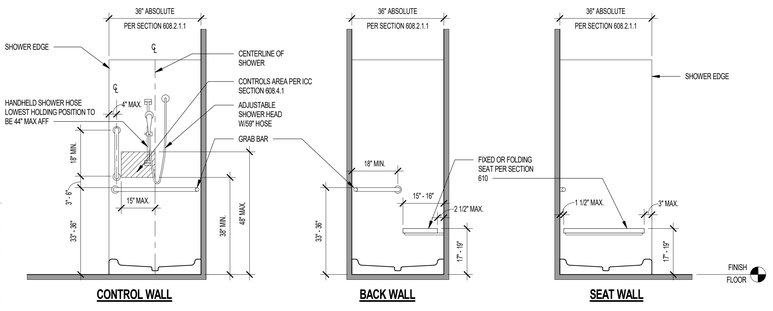
ANSI TYPE A - REINFORCEMENT FOR ROLL-IN SHOWER

(ICC A117.1-2009 - SECTIONS 1003.11.2.5.2 & 608.3.2)



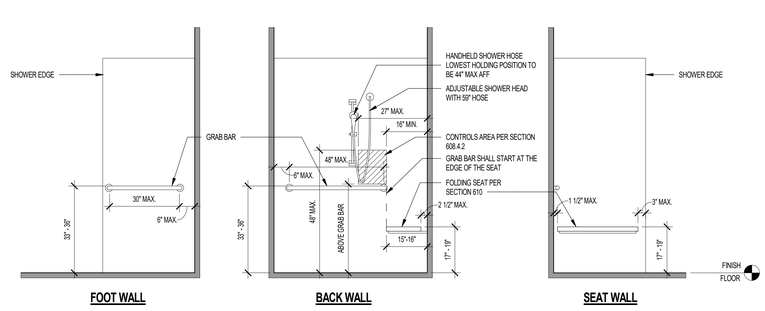
ANSI TYPE A - REINFORCEMENT FOR BATHTUBS

(FHA CHAPTER 6)
(ICC A117.1-2009 - SECTIONS 1003.11.1 & 607.4)



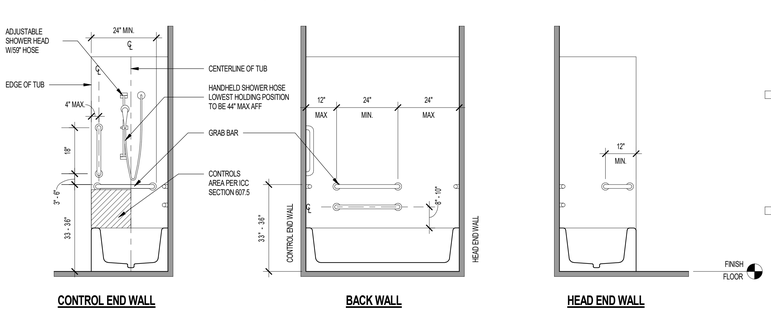
ANSI TYPE A - GRAB BARS FOR TRANSFER-TYPE SHOWER

(ICC A117.1-2009 - SECTIONS 1003.11.1 & 608.3.1)



ANSI TYPE A - GRAB BARS FOR ROLL-IN SHOWER

(ICC A117.1-2009 - SECTIONS 1003.11.2.5.2 & 608.3.2)



ANSI TYPE A - GRAB BARS FOR BATHTUB

(ICC A117.1-2009 - SECTIONS 1003.11.1 & 607.4)

NOTES: (ICC/ANSI A117.1-2009)
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. 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 CONTROL WALL SIDE.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

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

NOTES: (ICC/ANSI A117.1-2009)
1. PER SECTIONS 1003.11.1 & 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.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

24 ANSI A - REINFORCEMENT AND GRAB BAR FOR TRANSFER-TYPE SHOWERS — SCALE: 1/2" = 1'-0"

16 ANSI A - REINFORCEMENT AND GRAB BAR FOR ROLL-IN TYPE SHOWERS — SCALE: 1/2" = 1'-0"

08 ANSI A - REINFORCEMENT AND GRAB BAR FOR BATHTUBS — SCALE: 1/2" = 1'-0"

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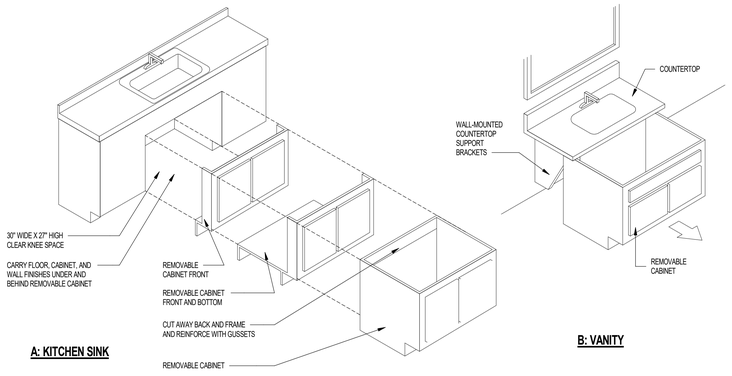
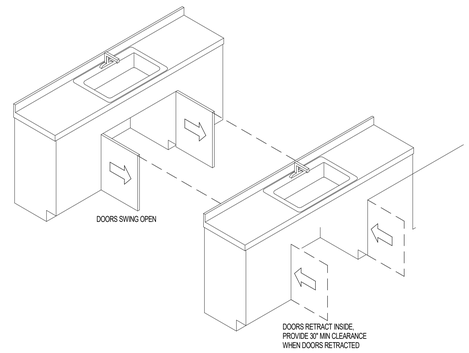
ACCESSIBILITY DETAILS - UNITS 01-24



45 REMOVABLE BASE CABINETS

(FHA CHAPTER 7.12)
(ICC A117.1-2009 - SECTION 1003.12.4.1)

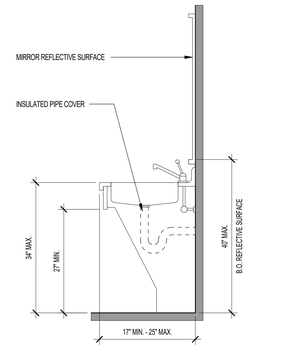
SCALE: 3/8" = 1'-0"



46 REMOVABLE BASE CABINETS OPTION 2

(FHA CHAPTER 7.12)
(ICC A117.1-2009 - SECTION 1003.12.4.1)

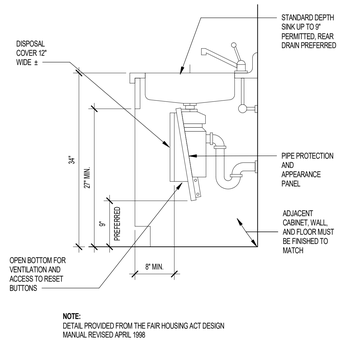
SCALE: 3/8" = 1'-0"



47 TYPE A UNIT BATH ACCESSORIES

(ICC A117.1-2009 - SECTION 608)

SCALE: 3/4" = 1'-0"

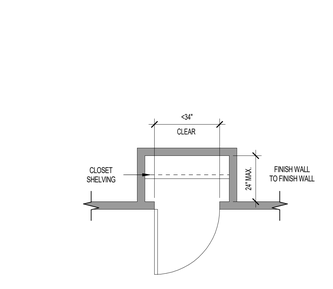


NOTE:
DETAIL PROVIDED FROM THE FAIR HOUSING ACT DESIGN MANUAL REVISED APRIL 1998

48 KNEE SPACE AT ACCESSIBLE SINK WITH GARBAGE DISPOSAL

(FHA - CHAPTER 7.15)
(ICC A117.1-2009 - SECTION 306.2)

SCALE: 1" = 1'-0"

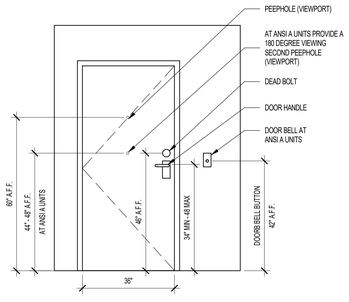


24" MAX. DEPTH FOR REACH-IN AT CLOSET, PANTRY OR LINEN WHEN DOOR WIDTH IS LESS THAN 34"

43 CLOSET REACH-IN DIM.

(ICC A117.1-2009 - SECTION 404.2.2)

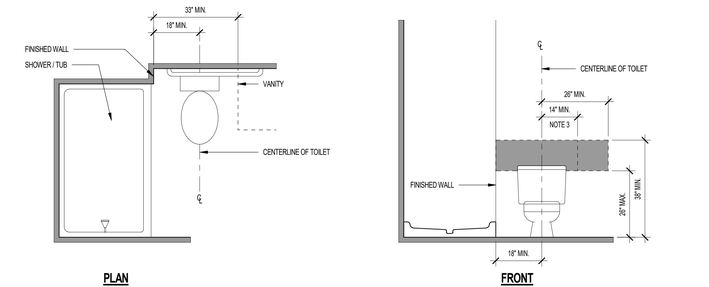
SCALE: 3/8" = 1'-0"



44 ENTRY DOOR COMPONENTS

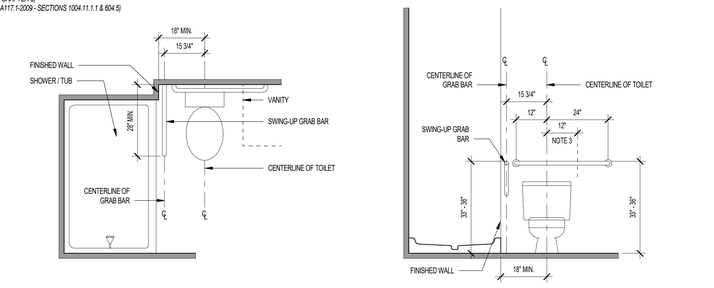
(ICC A117.1-2009 - SECTION 404.2.2, 404.2.6)

SCALE: 1/2" = 1'-0"



ANSI B - REINFORCEMENT FOR TOILETS AT NO CORNER CONDITION

(FHA CHAPTER 6)
(ICC A117.1-2009 - SECTIONS 1004.11.1.1 & 604.5)



ANSI TYPE B - GRAB BARS FOR TOILETS AT NO CORNER CONDITION

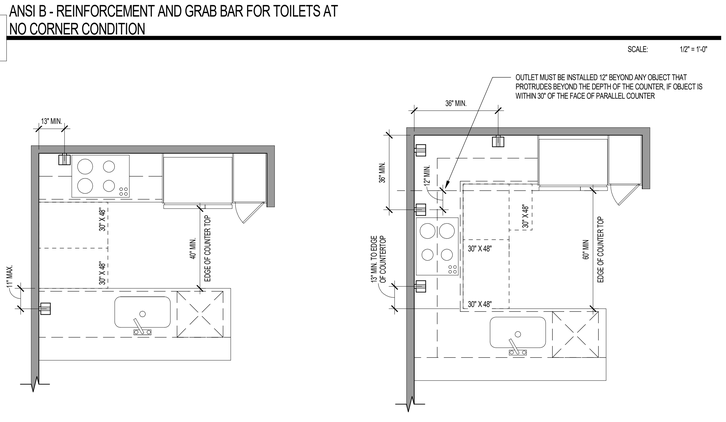
(ICC A117.1-2009 - SECTIONS 1004.11.1.1 & 604.5)

NOTES: (ICC/ANSI A117.1-2009)
1. PER SECTIONS 1004.11.1.1 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS COMPLYING WITH SECTION 604.5 AT WATER CLOSETS.
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.
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.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

38 ANSI B - REINFORCEMENT AND GRAB BAR FOR TOILETS AT NO CORNER CONDITION

SCALE: 1/2" = 1'-0"

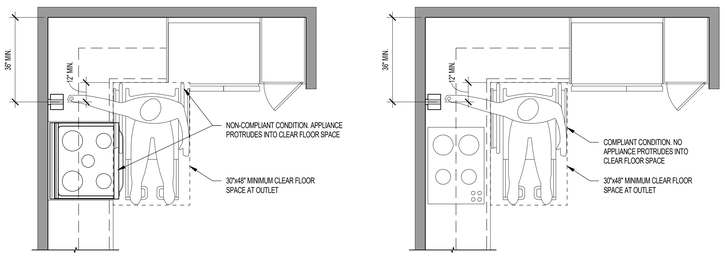


39 POWER OUTLET LOCATIONS AND CLEARANCES AT GALLEY KITCHENS

(ICC A117.1-2009 - SECTION 1003.12.1.1 & 1004.12.1.1)

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

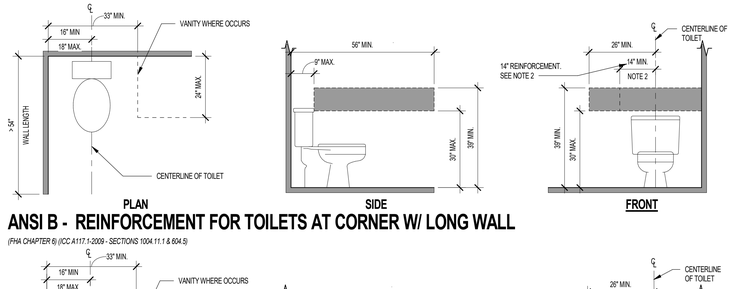
NOTES: (ICC/ANSI-2009)
1004.9 OPERABLE PARTS. LIGHTING CONTROLS, ELECTRICAL SWITCHES AND RECEPTACLE OUTLETS, ENVIRONMENTAL CONTROLS, ELECTRICAL PANELBOARDS, AND USER CONTROLS FOR SECURITY OR INTERCOM SYSTEMS SHALL PROVIDED A 30"x48" CLEAR FLOOR SPACE FOR A PARALLEL APPROACH.
EXCEPTIONS:
WHERE TWO OR 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 REQUIRED TO COMPLY. 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 AND 25-1/2 INCHES MAXIMUM IN DEPTH.



40 POWER OUTLET LOCATIONS AND CLEARANCES AT KITCHENS

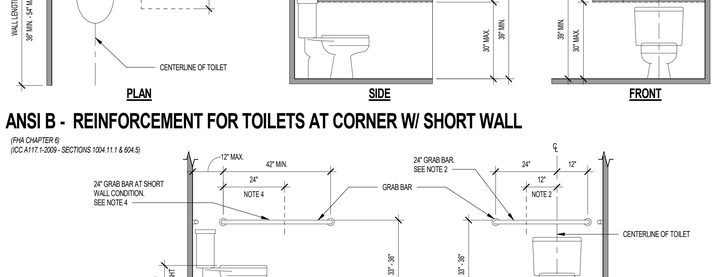
(ICC A117.1-2009 - SECTION 1004.9)

SCALE: 1/2" = 1'-0"



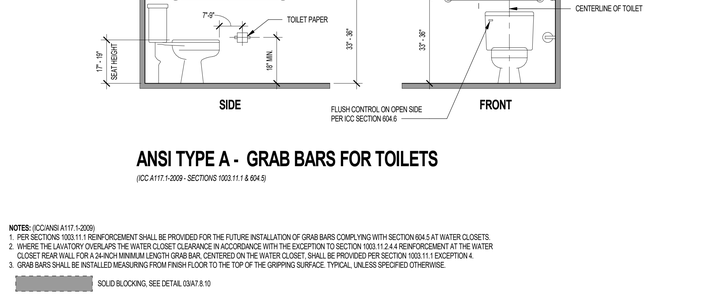
ANSI B - REINFORCEMENT FOR TOILETS AT CORNER W/ LONG WALL

(FHA CHAPTER 6) (ICC A117.1-2009 - SECTIONS 1004.11.1 & 604.5)



ANSI B - REINFORCEMENT FOR TOILETS AT CORNER W/ SHORT WALL

(FHA CHAPTER 6)
(ICC A117.1-2009 - SECTIONS 1004.11.1 & 604.5)



ANSI B - GRAB BARS FOR TOILETS AT CORNER CONDITION

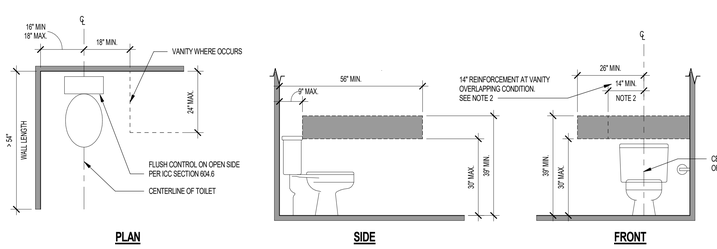
(ICC A117.1-2009 - SECTIONS 1004.11.1 & 604.5)

NOTES: (ICC/ANSI A117.1-2009)
1. PER SECTIONS 1004.11.1 REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS COMPLYING WITH SECTION 604.5 AT WATER CLOSETS.
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.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

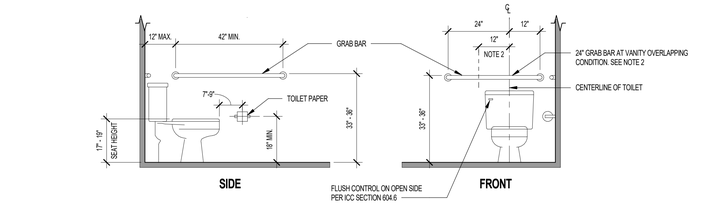
30 ANSI B - REINFORCEMENT AND GRAB BAR FOR TOILETS AT CORNER CONDITION

SCALE: 1/2" = 1'-0"



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 CLOSET 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.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

32 ANSI A - REINFORCEMENT AND GRAB BAR FOR TOILETS

SCALE: 1/2" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
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 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide this written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

1ST CITY SUBMITTAL

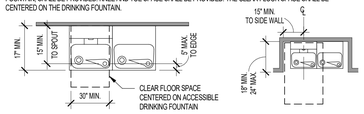
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.8.12

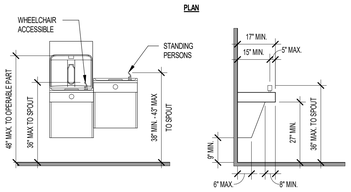
ACCESSIBILITY DETAILS - UNITS 25-48

1/15/2025 3:32:00 PM

NOTES: (ICC/ANSI-2009)
602.2 CLEAR FLOOR SPACE. A 30"x48" CLEAR FLOOR SPACE POSITIONED FOR FORWARD APPROACH TO THE DRINKING FOUNTAIN, SHALL BE PROVIDED. KNEE AND TOE SPACE SHALL BE PROVIDED. THE CLEAR FLOOR SPACE SHALL BE CENTERED ON THE DRINKING FOUNTAIN.



PLAN



ELEVATIONS

21 ADA/ANSI DRINKING FOUNTAIN W/ BOTTLE FILLER

(ICC A117.1-2009 - SECTION 602.1) (2010 ADA - SECTION 602.1) SCALE: 1/4" = 1'-0"

NOTES: (ICC/ANSI A117.1-2009)
604.9.4 APPROACH. COMPARTMENTS SHALL BE ARRANGED FOR LEFT-HAND APPROACH TO THE WATER CLOSET

604.9.5 TOE CLEARANCE. THE FRONT PARTITION AND AT LEAST ONE SIDE PARTITION SHALL PROVIDE A TOE CLEARANCE OF 9 INCHES MINIMUM ABOVE THE FLOOR AND EXTENDING 6 INCHES BEYOND THE COMPARTMENT SIDE FACE OF THE PARTITION, EXCLUSIVE OF A PARTITION SUPPORT MEMBERS. CAMPARTMENTS FOR CHILDRENS USE SHALL PROVIDE A TOE CLEARANCE OF 12 INCHES MINIMUM ABOVE THE FINISH FLOOR.

EXCEPTIONS:
1. TOE CLEARANCE AT THE FRONT PARTITION IS NOT REQUIRED IN A COMPARTMENT GREATER THAN 62 INCHES DEEP WITH A WALL-HUNG WATER CLOSET OR 65 INCHES DEEP WITH A FLOOR-MOUNTED WATER CLOSET.
2. TOE CLEARANCE AT THE SIDE PARTITION IS NOT REQUIRED IN A COMPARTMENT GREATER THAN 66 INCHES WIDTH.

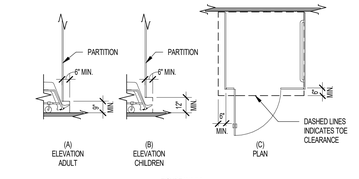


FIGURE 604.9.5
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE

17 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE

(ICC A117.1-2009 - SECTIONS 604.9.4 & 604.9.5) (2010 ADA - SECTIONS 604.8.1.3 & 604.8.1.4) SCALE: 1/4" = 1'-0"

AN AMBULATORY ACCESSIBLE STALL CAN BE USED BY A PERSON WITH A MOBILITY IMPAIRMENT THAT MAY REQUIRE ADDITIONAL SUPPORT. AMBULATORY STALLS ARE TYPICALLY SCOPED IN THE BUILDING CODES SO THEY OCCUR WHEN SIX OR MORE WATER CLOSETS AND URINALS ARE PROVIDED WITHIN A SINGLE TOILET ROOM. THIS IS IN ADDITION TO THE WHEELCHAIR ACCESSIBLE STALL REQUIREMENTS, NOT AN ALTERNATE OR REPLACEMENT FOR THEM.

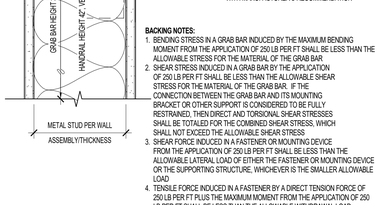
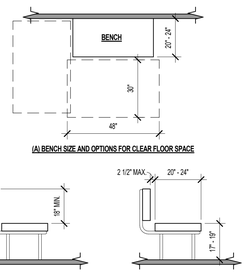


FIGURE 604.10
AMBULATORY ACCESSIBLE TOILET COMPARTMENT

22 POOL & SPA ACCESSIBILITY LIFT

(ICC A117.1-2009 - SECTION 1109.2) (2010 ADA - SECTION 1009.2) SCALE: 3/8" = 1'-0"



(A) BENCH SIZE AND OPTIONS FOR CLEAR FLOOR SPACE

(B) BENCH BACK SUPPORT AND SEAT HEIGHT

ACCESSIBLE BENCHES SHALL COMPLY WITH ICC SECTION 903.
A CLEAR FLOOR SPACE COMPLYING WITH ICC SECTION 305, POSITIONED FOR PARALLEL APPROAC TO THE BENCH SEAT SHALL BE PROVIDED PER ICC SECTION 903.2.

23 ACCESSIBLE BENCH

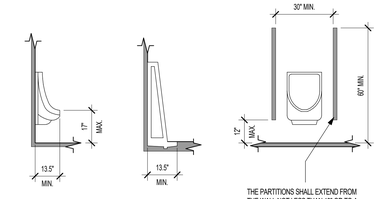
(ICC A117.1-2009 - SECTION 903.1) (2010 ADA - SECTION 903.1) SCALE: 3/8" = 1'-0"

18 AMBULATORY ACCESSIBLE TOILET COMPARTMENT

(ICC A117.1-2009 - SECTION 604.10) (2010 ADA - SECTION 604.8.2) SCALE: 1/4" = 1'-0"

NOTES: (ICC/ANSI-2009)
605.3 CLEAR FLOOR SPACE. A 30"x48" CLEAR FLOOR SPACE POSITIONED FOR FORWARD APPROACH SHALL BE PROVIDED.

605.4 FLUSH CONTROLS. FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHALL COMPLY WITH SECTION 309.



A: URINAL WALL HUNG TYPE B: URINAL STALL TYPE

FIGURE 605.2
HEIGHT OF URINALS

URINAL PARTITIONS

19 TYPICAL URINAL DETAILS

(ICC A117.1-2009 - SECTION 605.1) (2010 ADA - SECTION 605.1) SCALE: 3/8" = 1'-0"

BACKING NOTES:
1. BENDING STRESS IN A GRAB BAR INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE STRESS FOR THE MATERIAL OF THE GRAB BAR.
2. SHEAR STRESS INDUCED IN A GRAB BAR BY THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR. IF THE CONNECTION BETWEEN THE GRAB BAR AND ITS MOUNTING BRACKET OR OTHER SUPPORT IS CONSIDERED TO BE FULLY RESTRAINED, THEN DIRECT AND TORSIONAL SHEAR STRESSES SHALL BE TOTALED FOR THE COMBINED SHEAR STRESS, WHICH SHALL NOT EXCEED THE ALLOWABLE SHEAR STRESS
3. SHEAR FORCE INDUCED IN A FASTENER OR MOUNTING DEVICE FROM THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE LATERAL LOAD OF EITHER THE FASTENER OR MOUNTING DEVICE OR THE SUPPORTING STRUCTURE, WHICHEVER IS THE SMALLER ALLOWABLE LOAD
4. TENSILE FORCE INDUCED IN A FASTENER BY A DIRECT TENSION FORCE OF 250 LB PER FT PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND THE SUPPORTING STRUCTURE
5. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS

20 HANDRAIL & GRAB BAR BLOCKING & ATTACHMENT

SCALE: 3" = 1'-0"

15 COMMON/PUBLIC AREAS BATH ACCESSORIES

(ICC A117.1-2009 - SECTION 603.1) (2010 ADA - SECTION 603.1) SCALE: 1/2" = 1'-0"

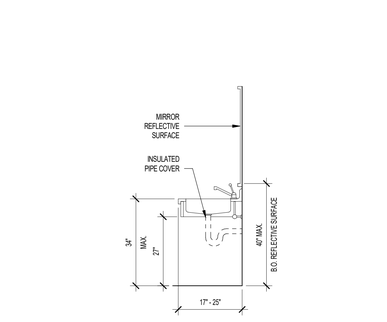


FIGURE 604.9.2
SIZE OF WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT

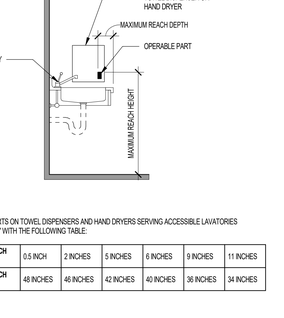
NOTES: (ICC/ANSI A117.1-2009)
1.. TOILET COMPARTMENT DOORS SHALL BE SELF-CLOSING PER SECTION 604.9.3

13 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT

(ICC A117.1-2009 - SECTION 604.9.2.1) (2010 ADA - 604.8.1.1) SCALE: 3/8" = 1'-0"

PROJECTING OBJECTS NEAR GRAB BAR TYPICALLY PROHIBITED WITHIN:
- 12" MINIMUM ABOVE GRAB BAR
- 1-1/2" MINIMUM BELOW GRAB BAR

EXCEPTION:
RECESSED DISPENSER PROJECTING FROM THE WALL 1/4" MAXIMUM MEASURED FROM THE FACE OF THE DISPENSER SHALL BE PERMITTED WITHIN THE 12-INCH SPACE ABOVE AND THE 1/2" SPACES BELOW AND AT THE ENDS OF THE GRAB BAR

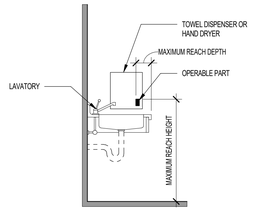


14 RECESSED DISPENSER

(ICC A117.1-2009 - SECTION 609.3) (2010 ADA - SECTION 604.9.6) SCALE: 1/2" = 1'-0"

16 TOWEL DISPENSER/HAND DRYER HEIGHT

(ICC A117.1-2009 - SECTION 603.6) SCALE: 1/2" = 1'-0"

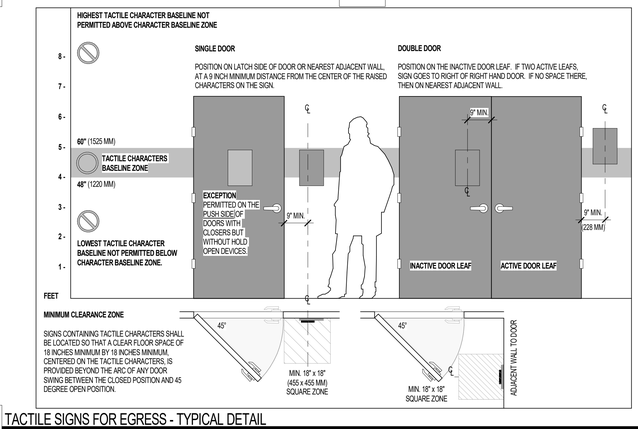


OPERABLE PARTS ON TOWEL DISPENSERS AND HAND DRYERS SERVING ACCESSIBLE LAVATORIES SHALL COMPLY WITH THE FOLLOWING TABLE:

MAXIMUM REACH DEPTH	0.5 INCH	2 INCHES	5 INCHES	6 INCHES	9 INCHES	11 INCHES
MAXIMUM REACH HEIGHT	48 INCHES	46 INCHES	42 INCHES	40 INCHES	36 INCHES	34 INCHES

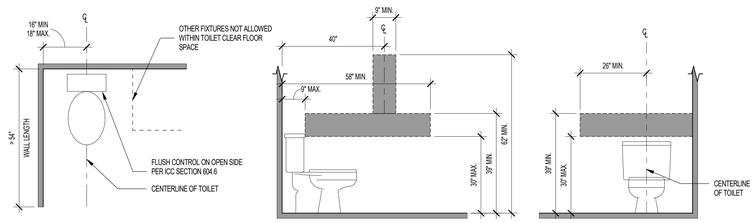
12 TACTILE SIGNS FOR EGRESS - TYPICAL DETAIL

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



10 ANSI A - REINFORCEMENT AND GRAB BAR FOR TOILETS

SCALE: 1/2" = 1'-0"



PLAN SIDE FRONT

COMMON/PUBLIC AREAS - REINFORCEMENT FOR TOILETS

(PN4 CHAPTER 6)
(ICC A117.1-2009 - SECTION 604.5)
(2010 ADA - SECTION 604.5)

SIDE FRONT

COMMON/PUBLIC AREAS - GRAB BARS FOR TOILETS

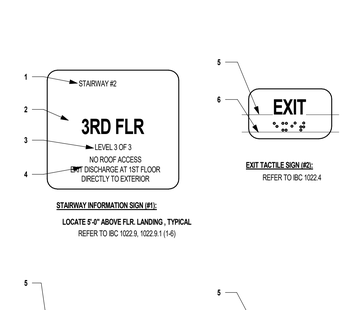
(ICC A117.1-2009 - SECTION 604.5)
(2010 ADA - SECTION 604.5)

NOTES: (ICC/ANSI A117.1-2009)
1. PER SECTION 604.5 GRAB BARS FOR WATER CLOSETS SHALL COMPLY WITH SECTION 609 AND SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 609. GRAB BARS SHALL BE PROVIDED ON THE REAR WALL AND ON THE SIDE WALL CLOSEST TO THE WATER CLOSET.
2. GRAB BARS SHALL BE INSTALLED MEASURING FROM FINISH FLOOR TO THE TOP OF THE GRIPPING SURFACE. TYPICAL, UNLESS SPECIFIED OTHERWISE.

SOLID BLOCKING, SEE DETAIL 03/A7.8.10

07 VERTICAL BARRIER BELOW STAIRS

(ICC A117.1-2009 - SECTION 307.4) (2010 ADA - SECTION 307.4) SCALE: 1/4" = 1'-0"



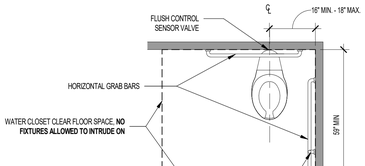
11 TYPICAL SIGNAGE AT COMMON AREAS

(ICC A117.1-2009 - SECTION 703) (2010 ADA - SECTION 703) SCALE: 1/4" = 1'-0"

NOTES: (ICC/ANSI-2009)
307.4 VERTICAL CLEARANCE. VERTICAL CLEARANCE SHALL BE 80 INCHES MINIMUM. RAILS OR OTHER BARRIERS SHALL BE PROVIDED WHERE THE VERTICAL CLEARANCE IS LESS THAN 80 INCHES. THE LEADING EDGE OF SUCH RAILS OR BARRIER SHALL BE LOCATED 27 INCHES MAXIMUM ABOVE THE FLOOR.

04 TYPICAL SIGNAGE AT INTERIOR EXIT STAIRWAYS

(ICC A117.1-2009 - SECTION 1022.4, 1022.9, 1022.9.1)
(ICC A117.1-2009 - SECTION 308.3.2) SCALE: 1/4" = 1'-0"



STAIRWAY INFORMATION SIGN (#1):
LOCATE 5'-0" ABOVE FLR. LANDING, TYPICAL
REFER TO IBC 1022.9, 1022.9.1 (1-6)

EXIT TACTILE SIGN (#2):
REFER TO IBC 1022.4

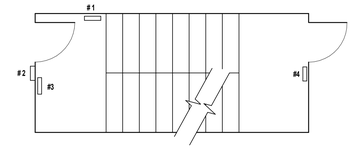
FLOOR IDENTIFICATION SIGN (#3):
REFER TO IBC 1022.9

EXIT DISCHARGE SIGN (#4):
REFER TO IBC 1022.8, 1022.4

LETTERING IS FOR EXAMPLE ONLY.

SIGNAGE NOTES:

1. 1 1/2" (38 MM) LETTERS DESIGNATING THE IDENTIFICATION OF INTERIOR EXIT STAIRWAY.
2. LETTERS DESIGNATING THE FLOOR LEVEL SHALL BE A MIN. OF 5" (127 MM) IN HEIGHT AND LOCATED IN THE CENTER OF THE SIGN.
3. ALL OTHER LETTERS AND CHARACTERS SHALL BE A MIN. OF 1" (25 MM) IN HEIGHT.
4. CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND. EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR A DARK CHARACTERS ON A LIGHT BACKGROUND.
5. BASE LINE OF LETTERING TO BE 60" MAX. A.F.F.
6. BASE LINE OF BRAILLE TO BE 48" MIN. A.F.F.



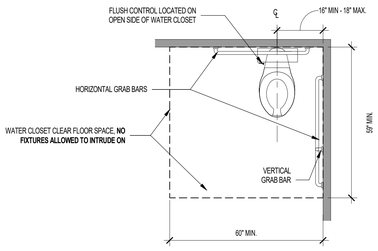
PLAN - TYPICAL STAIRWAY SIGNAGE LOCATIONS

CLEAR FLOOR SPACE AT FLUSH VALVE TOILET OPTION

(ICC A117.1-2009 - SECTION 604.3)
(2010 ADA - SECTION 604.3)

CLEAR FLOOR SPACE AT TANK TOILET OPTION

(ICC A117.1-2009 - SECTION 604.3)
(2010 ADA - SECTION 604.3)



Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY
NOT FOR
CONSTRUCTION

ALLIANCE RESIDENTIAL
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 than forty 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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER
and the owner or its designated agent shall provide the written description on request.

Contractor must verify all dimensions at project before proceeding with this work.

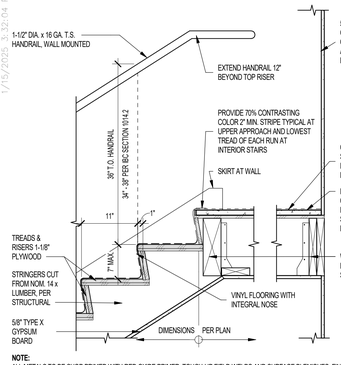
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.8.13
ACCESSIBILITY DETAILS - COMMONS

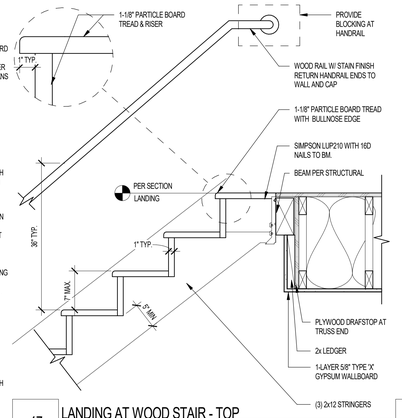
Autodesk Docs://00-000 Revit Detail Library/Revit Standard Details Library HNE.rvt



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER, TOUCH-UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

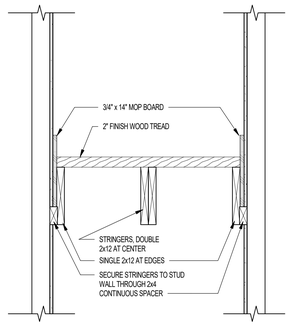
21 WOOD STAIR AT TOP

SCALE: 1" = 1'-0"



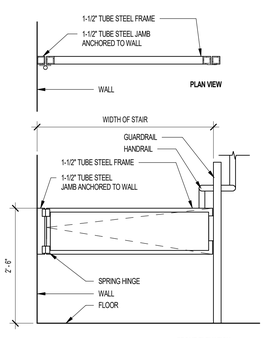
17 LANDING AT WOOD STAIR - TOP

SCALE: 1" = 1'-0"



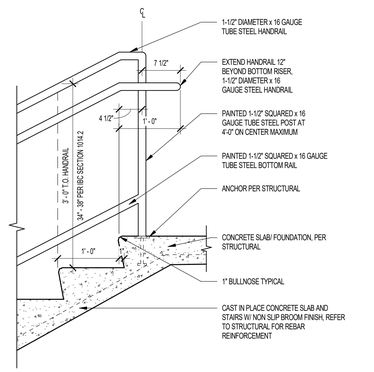
13 WOOD STAIR CROSS SECTION

SCALE: 1" = 1'-0"



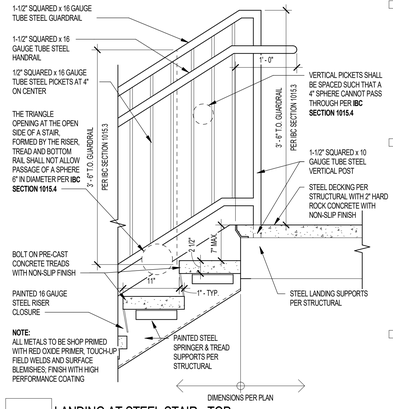
09 BARRIER GATE

SCALE: 3/4" = 1'-0"



05 LANDING @ CONCRETE STAIR - TOP

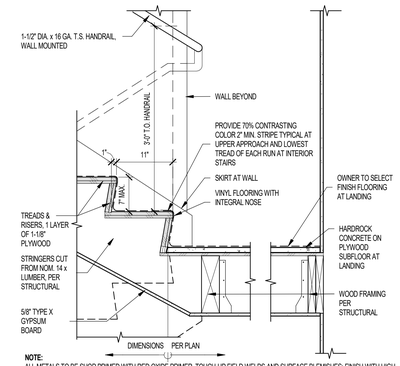
SCALE: 1" = 1'-0"



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER, TOUCH-UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

01 LANDING AT STEEL STAIR - TOP

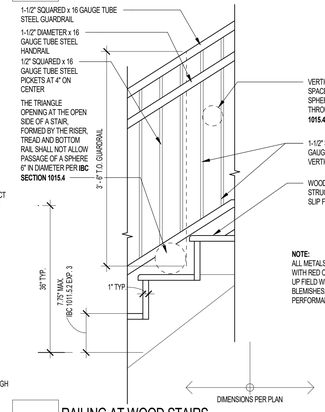
SCALE: 1" = 1'-0"



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER, TOUCH-UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

22 WOOD STAIR AT LANDING

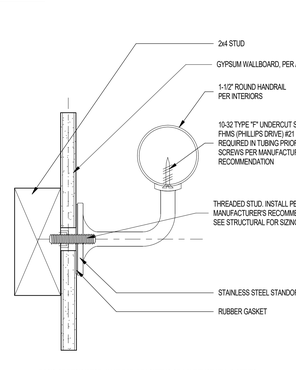
SCALE: 1" = 1'-0"



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER. TOUCH-UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

18 RAILING AT WOOD STAIRS

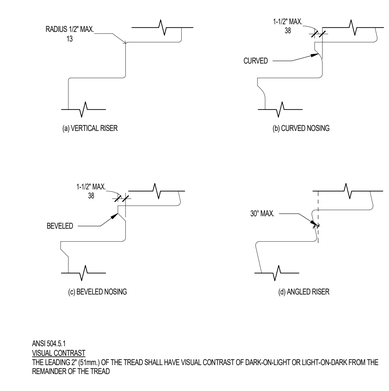
SCALE: 1" = 1'-0"



BASIS OF DESIGN FOR HANDRAIL BRACKET IS CR LAURENCE HR16G SERIES.

14 HANDRAIL BRACKET - SECTION @ WOOD FRAMING

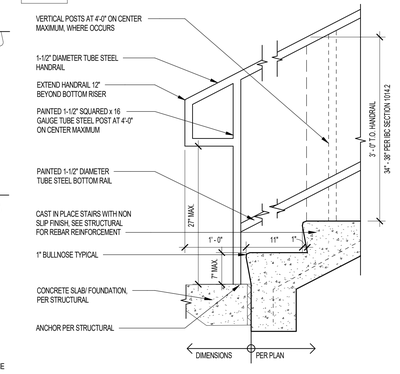
SCALE: 6" = 1'-0"



ANSI 504.5.1
VISUAL CONTRAST
THE LEADING 2" (51mm.) OF THE TREAD SHALL HAVE VISUAL CONTRAST OF DARK-ON-LIGHT OR LIGHT-ON-DARK FROM THE REMAINDER OF THE TREAD

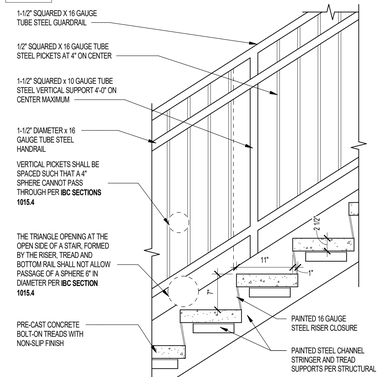
10 STAIR NOSING

SCALE: 1" = 1'-0"



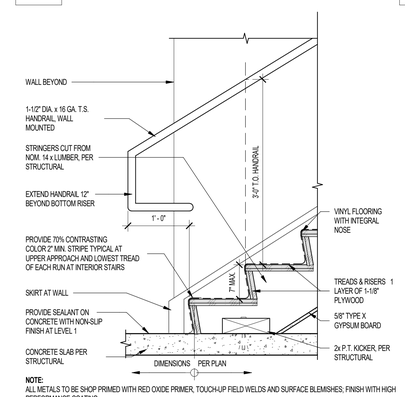
06 LANDING @ CONCRETE STAIR - BOTTOM

SCALE: 1" = 1'-0"



02 STAIR RAILING AT STEEL STAIR

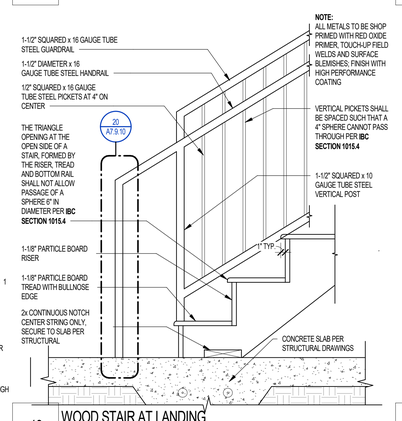
SCALE: 1" = 1'-0"



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER, TOUCH-UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

23 WOOD STAIR AT BOTTOM

SCALE: 1" = 1'-0"



NOTE:
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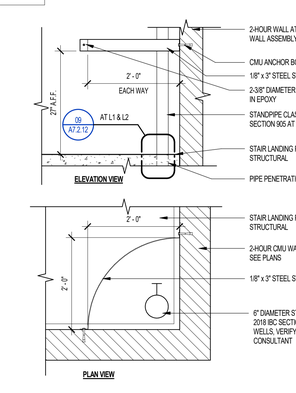
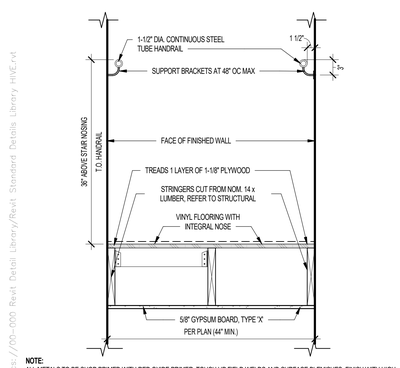
19 WOOD STAIR AT LANDING

SCALE: 1" = 1'-0"



15 STANDPIPE PROTRUSION PROTECTION

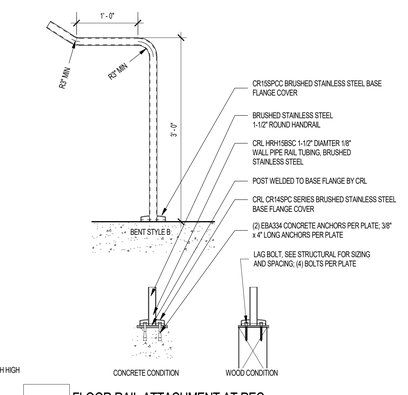
SCALE: 3/4" = 1'-0"



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER, TOUCH UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

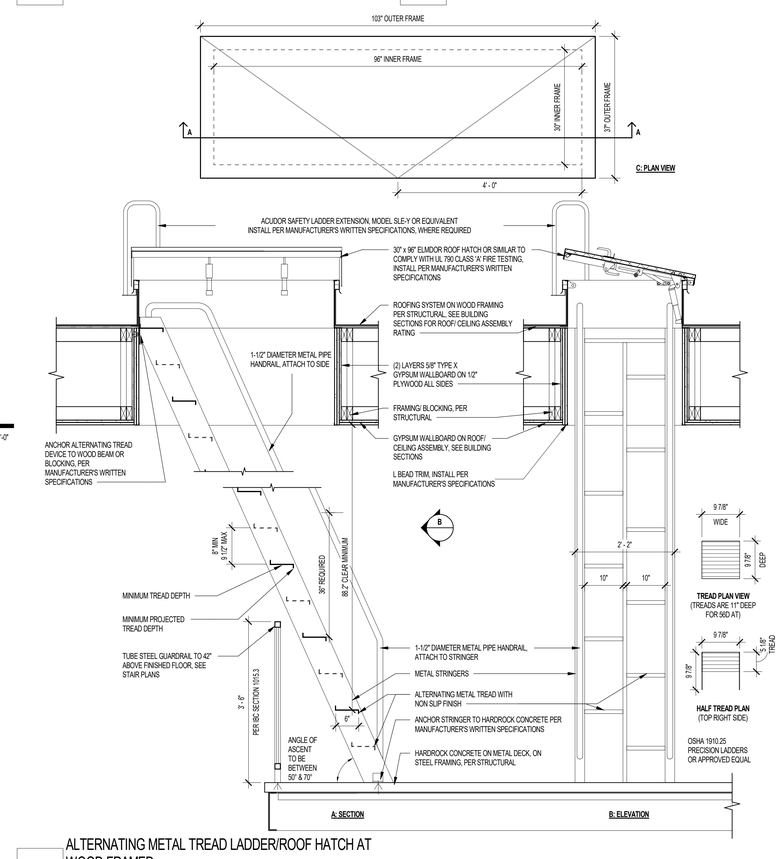
24 WOOD STAIR CROSS SECTION

SCALE: 1" = 1'-0"



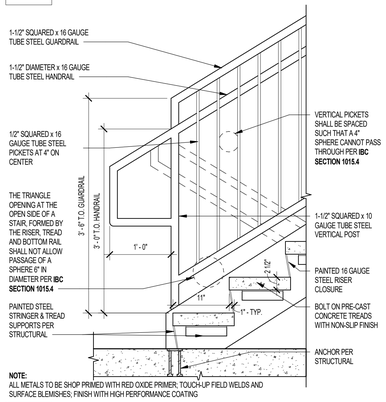
20 FLOOR RAIL ATTACHMENT AT REC

SCALE: 1" = 1'-0"



12 ALTERNATING METAL TREAD LADDER/ROOF HATCH AT WOOD FRAMED

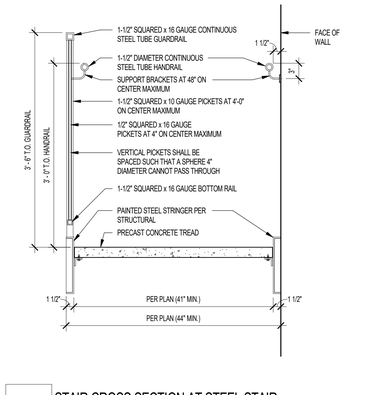
SCALE: 3/4" = 1'-0"



NOTE:
ALL METALS TO BE SHOP PRIMED WITH RED OXIDE PRIMER; TOUCH-UP FIELD WELDS AND SURFACE BLEMISHES; FINISH WITH HIGH PERFORMANCE COATING

03 LANDING AT STEEL STAIR - BOTTOM

SCALE: 1" = 1'-0"



04 STAIR CROSS SECTION AT STEEL STAIR

SCALE: 1" = 1'-0"

Project Name 1
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Street Adress
City, State

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ORB
WorldHQ@ORBArch.com

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

Contractor must verify all dimensions at project before proceeding with this work.

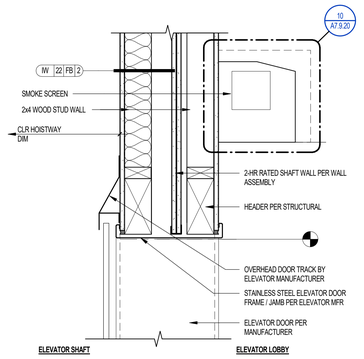
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

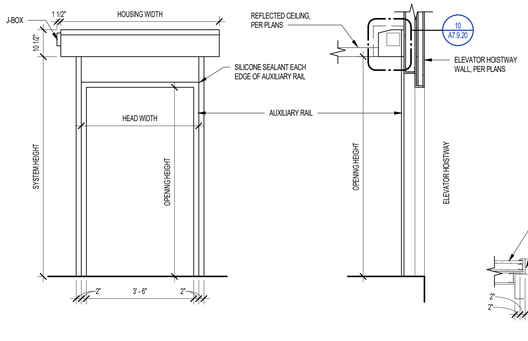
A7.9.10

STAIR DETAILS



17 ELEVATOR - DOOR HEAD AT WOOD FRAMED SHAFT

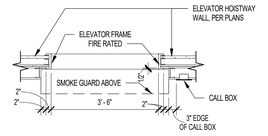
SCALE: 1 1/2" = 1'-0"

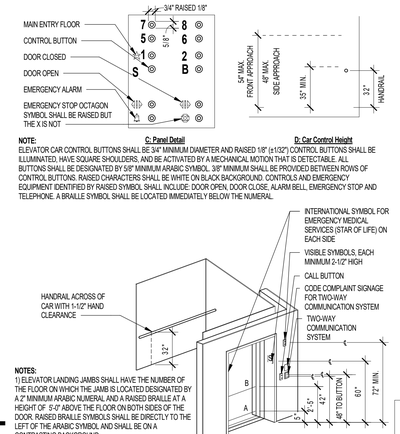


13 HOISTWAY OPENING PROTECTION - SMOKEGUARD

PER 2018 IBC 3006.3.3.

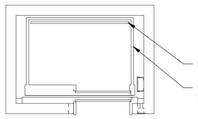
SCALE: 1/2" = 1'-0"





NOTES:
1) ELEVATOR LANDING JAMBS SHALL HAVE THE NUMBER OF THE FLOOR ON WHICH THE JAMB IS LOCATED DESIGNATED BY A 2" MINIMUM ARABIC NUMERAL AND A RAISED BRAILLE AT A HEIGHT OF 5'-0" ABOVE THE FLOOR ON BOTH SIDES OF THE DOOR. RAISED BRAILLE SYMBOLS SHALL BE DIRECTLY TO THE LEFT OF THE ARABIC SYMBOL AND SHALL BE ON A CONTRASTING BACKGROUND.
2) A VISUAL AND AUDIBLE SIGNAL SHALL BE PROVIDED AT EACH HOISTWAY INDICATING THE ELEVATOR CAR ANSWERING THE CALL AND THE DIRECTION OF TRAVEL. VISUAL SIGNALS SHALL BE 2-1/2" x 2-1/2" MINIMUM AUDIBLE SIGNALS SHALL SOUND ONCE FOR UP AND TWICE FOR DOWN. THE CENTER LINE OF THE SIGNALING FIXTURE SHALL BE 72" FROM THE LOBBY FLOOR.
3) ELEVATOR CALL OPERATOR BUTTONS SHALL BE WITHIN 3'-6" OF THE FINISH FLOOR. BUTTONS SHALL BE A MINIMUM OF 3/4" IN SIZE AND THE DIRECTION OF TRAVEL VISUAL INDICATION SHALL BE PROVIDED TO SHOW EACH CALL REGISTERED AND THE DIRECTION OF TRAVEL AND EXTINGUISHED WHEN ANSWERED.
4) THE AUTOMATIC DOOR REOPENING DEVICE IS ACTIVATED IF AN OBJECT PASSES THROUGH EITHER LINE A OR LINE B. LINE A AND LINE B REPRESENT THE VERTICAL LOCATIONS OF THE DOOR REOPENING DEVICE NOT REQUIRING CONTACT.
5) DOORS ARE TWO-SPEED, SIDE OPENING AUTOMATIC OPENING & CLOSING DOORS. DOOR OPENING TO BE 3'-0" WIDE X 6'-0" HIGH CLEAR. HOISTWAY DOOR IS 1-1/2-HOUR RATED.
6) A HANDRAIL IS REQUIRED ON ONE WALL OF THE ELEVATOR CAR. PREFERABLY THE REAR. THE BAR SHALL BE 1-1/2" MINIMUM CLEAR FROM THE WALL AND 32" (± 1") ABOVE THE FINISH FLOOR.
7) THE ELEVATOR CAR SHALL BE OF SUCH A SIZE AND ARRANGEMENT TO ACCOMMODATE AN AMBULANCE STRETCHER 24" x 84" WITH NOT LESS THAN 5" RADIUS CORNERS. IN THE HORIZONTAL OPEN POSITION
8) THE INTERNATIONAL SYMBOL FOR EMERGENCY MEDICAL SERVICES (STAR OF LIFE) SHALL BE NOT LESS THAN 3" IN HEIGHT AND SHALL BE PLACED INSIDE ON BOTH SIDES OF THE HOISTWAY DOOR FRAME.

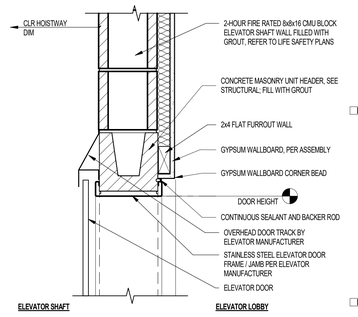
B: ELEVATOR CONTROLS LOCATION

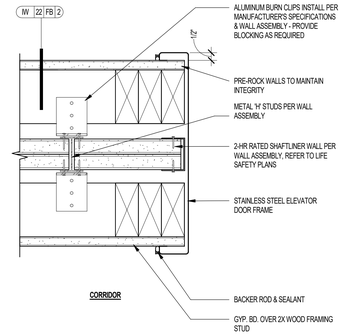


A: ELEVATOR FLOOR PLAN

01 ELEVATOR - DOOR HEAD

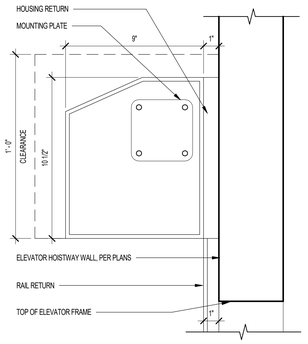
SCALE: 1 1/2" = 1'-0"





18 ELEVATOR - DOOR JAMB AT WOOD FRAMED SHAFT

SCALE: 3" = 1'-0"

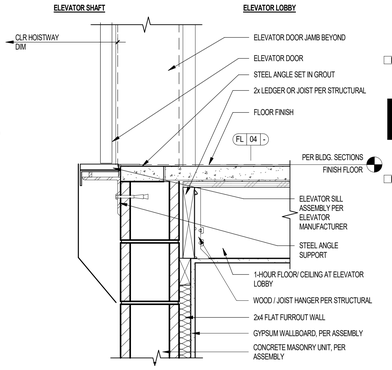


10 ELEVATOR SMOKE DOOR - M200 HOUSING DETAIL

SCALE: 3" = 1'-0"

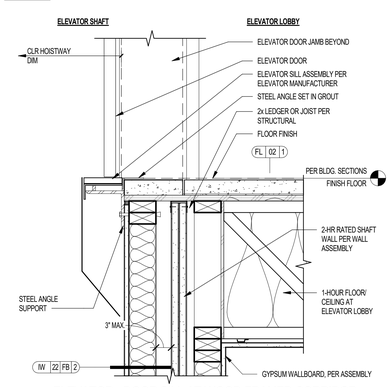
06 ELEVATOR CAB

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



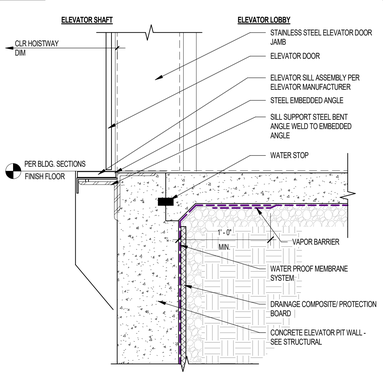
02 ELEVATOR - DOOR SILL AT WOOD FRAMED CORRIDOR

SCALE: 1 1/2" = 1'-0"



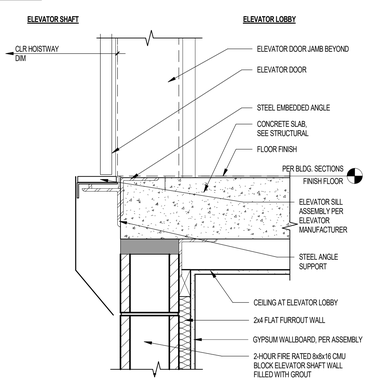
19 ELEVATOR - DOOR SILL AT WOOD FRAMED CORRIDOR - WOOD FRAMED SHAFT

SCALE: 1 1/2" = 1'-0"



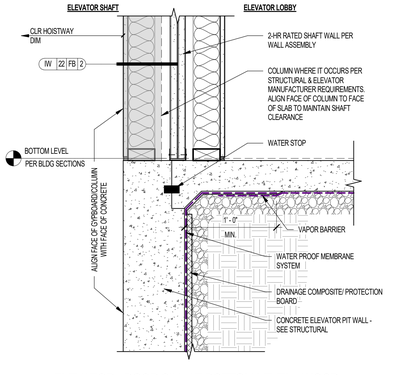
07 ELEVATOR - DOOR SILL AT BOTTOM LEVEL

SCALE: 1 1/2" = 1'-0"



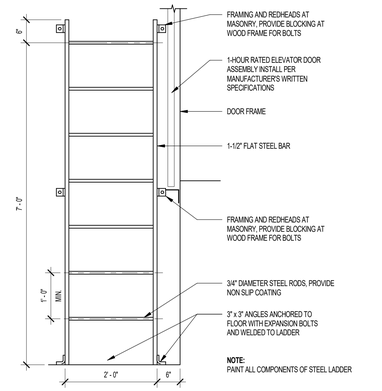
03 ELEVATOR - DOOR SILL AT CONCRETE SLABS

SCALE: 1 1/2" = 1'-0"



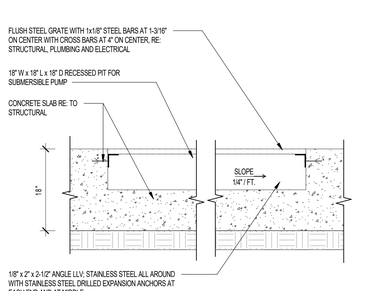
20 ELEVATOR - DOOR SILL AT BOTTOM LEVEL - WOOD FRAMED SHAFT

SCALE: 1 1/2" = 1'-0"



08 ELEVATOR PIT LADDER

SCALE: 3/4" = 1'-0"



04 RECESSED PIT AT ELEVATOR

SCALE: 1" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

PRELIMINARY NOT FOR CONSTRUCTION

ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

Notice of alternate billing (or payment) cycle

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CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

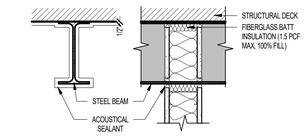
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

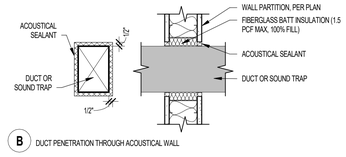
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A7.9.20

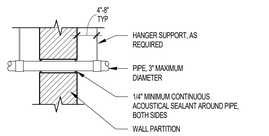
ELEVATOR & TRASH CHUTE DETAILS



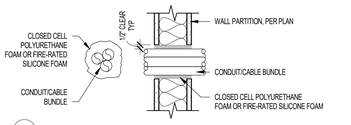
A BEAM PENETRATION THROUGH ACOUSTICAL WALL



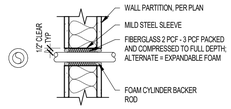
B DUCT PENETRATION THROUGH ACOUSTICAL WALL



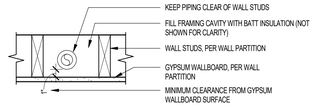
C NON-RATED 3" DIAMETER MAXIMUM PIPE PENETRATION



D CABLE BUNDLE/CONDUIT PENETRATION THROUGH ACOUSTICAL WALL



E DUCT/PIPE/CONDUIT PENETRATION OVER 2" DIAMETER THROUGH ACOUSTICAL WALL

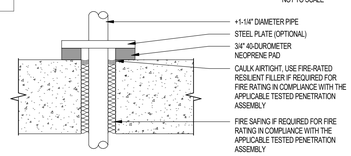


E TYPICAL PIPE TREATMENT - PLAN VIEW

NOTE:
PENETRATIONS OF ACOUSTICAL PARTITIONS BY DUCT/PIPE/CONDUIT SHALL BE ACOUSTICALLY SEALED AS SHOWN. ANY GAP LARGER THAN 1/2" SHALL BE COVERED WITH GYPSUM WALLBOARD, LAPPED A MINIMUM OF 2" AND SCREWED BEFORE USING ACOUSTICAL SEALANT

18 ACOUSTICS - WALL PENETRATIONS

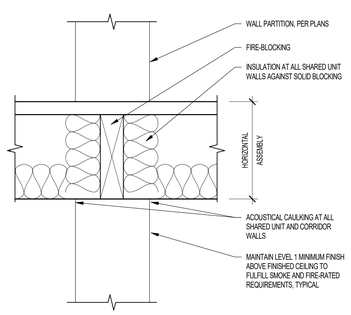
NOT TO SCALE



NOTE:
IF PIPE IS SUSPENDED FROM OR DIRECTLY ATTACHED TO STRUCTURE OR OTHER BUILDING ELEMENTS, USE 1/2" THICK, 40-DUROMETER NEOPRENE AS SLEEVE BETWEEN PIPE AND PIPE COLLAR

19 ACOUSTICS - PIPE ISOLATION

NOT TO SCALE

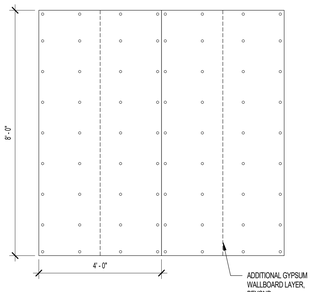


20 ACOUSTICS - TYPICAL FLOOR ASSEMBLIES INSULATION

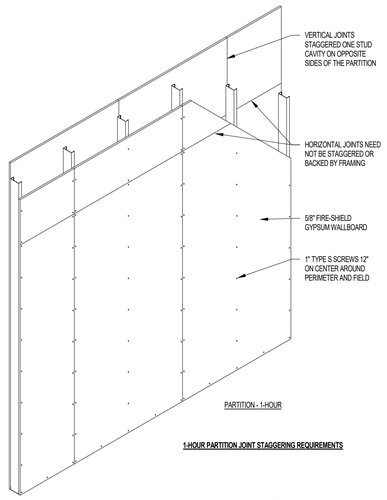
NOT TO SCALE

GUIDELINES FOR OPTIMUM PERFORMANCE AND SOUND REDUCTION

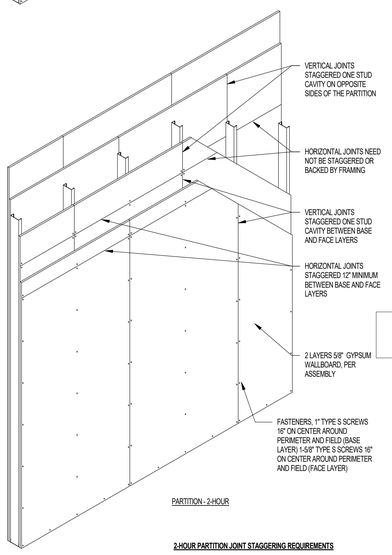
- STAGGER GYPSUM WALLBOARD JOINTS FROM ONE SIDE OF THE PARTITION TO THE OTHER, THIS IS REQUIRED WHEN THERE IS MORE THAN ONE LAYER ON EITHER SIDE OF THE WALL ASSEMBLY
- ALLOW A 1/4" GAP ALONG ALL WALL PERIMETER EDGES AND COMPLETELY SEAL 1/4" GAP WITH ACOUSTICAL SEALANT
- REFRAIN FROM WALL PENETRATIONS WHEN POSSIBLE
- LIMIT NECESSARY WALL PENETRATIONS TO ONE PER STUD CAVITY
- SEAL ALL PENETRATIONS WITH ACOUSTICAL SEALANT OR PUTTY PADS



ELEVATION



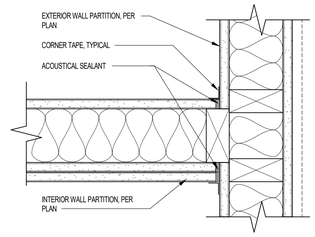
1-HOUR PARTITION JOINT STAGGERING REQUIREMENTS



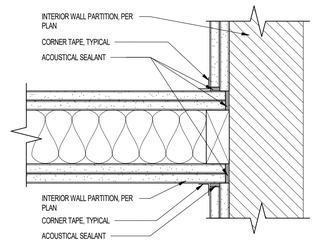
2-HOUR PARTITION JOINT STAGGERING REQUIREMENTS

16 ACOUSTICS - TYPICAL GYPSUM BOARD PANELS WALL LAYOUT

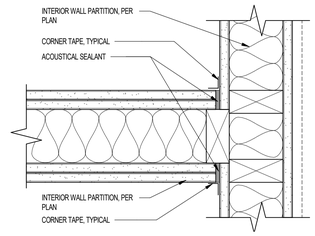
NOT TO SCALE

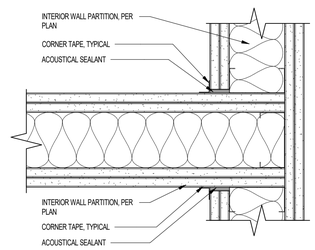


A INTERSECTION WITH EXTERIOR WALL - PLAN



B TERMINATION AT MASONRY/ CONCRETE WALL - PLAN

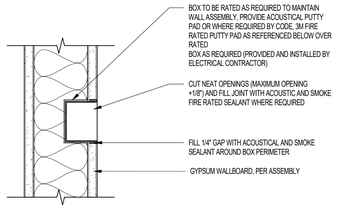




C TYPICAL PARTITION INTERSECTIONS - PLAN

11 ACOUSTICS - TYPICAL WALL INTERSECTION/ TERMINATION

NOT TO SCALE

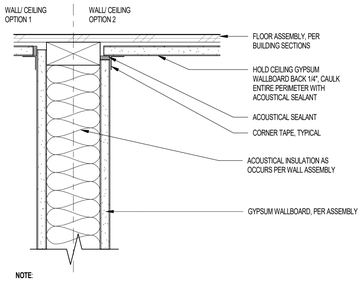


NOTE: SEE 03/A7.1.48

05 OUTLET BOX AT RATED WALL ASSEMBLIES INCL. UNIT SEPARATION, CORRIDOR & EXT. WALLS

OUTLET BOX COMPLIANCE FILE E195978 RACO STEEL BOXES, COVERS & ACCESSORIES

NOT TO SCALE

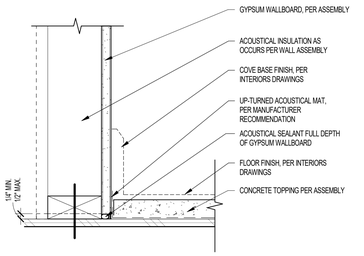


NOTE:

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. VERIFY WALL ASSEMBLIES' FIRE RATING, FOR FIRE RATED WALLS USE SMOKE AND ACOUSTICAL SEALANT PER A7.1.50 SERIES

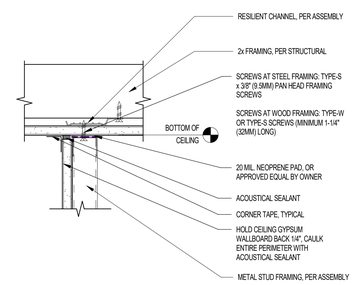
06 ACOUSTICS - TYPICAL WALL CEILING TERMINATION

NOT TO SCALE



07 TYPICAL ACOUSTICAL MAT TERMINATION AND SEALANT AT BOTTOM OF WOOD WALL

NOT TO SCALE



NOTE:

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

08 ACOUSTICS - TYPICAL ATTACHMENT TO CEILING W/ RESILIENT CHANNEL

NOT TO SCALE

ACOUSTICAL GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ANY SOUND-RATED PARTITION MUST EXTEND TO STRUCTURE AND BE SEALED TO IT (SEE ITEM 2).
2. PARTITIONS MUST BE SEALED AT TOP, SIDES AND BASE WITH CAULKING.
3. WHERE CAULKING IS CALLED FOR, USE SILICONE-BASED, NON-HARDENING COMPOUNDS.
4. ELECTRICAL OR OTHER OUTLET BOXES MUST NOT BE INSTALLED BACK-TO-BACK. SEPARATE BY AT LEAST ONE STUD SPACE.
5. OUTLET BOXES MUST BE CAULKED ALL AROUND. HOLES IN BOXES MUST ALSO BE CAULKED.
6. PENETRATION OF SOUND RETARDANT PARTITIONS (I.E., DUCTWORK, CONDUIT, OR PLUMBING) MUST BE SEALED WITH CAULKING (SEE ITEM 7).
7. PIPE CONDUIT OR DUCTWORK RUNS WITHIN, OR PENETRATION THROUGH A DOUBLE-STUDDED PARTITION, MUST 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).
8. ADDITIONAL VIBRATION ISOLATION MAY BE REQUIRED FOR PLUMBING AS CALLED FOR IN THE PLUMBING SPECIFICATIONS.
9. 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.
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

1. 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.
2. 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.
3. 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.
4. 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.
5. 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
Project Name 2

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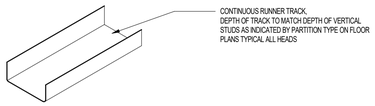
REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

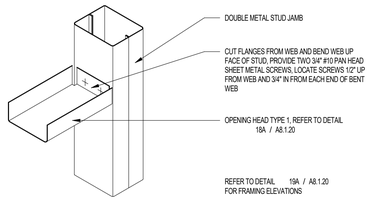
DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A8.1.10

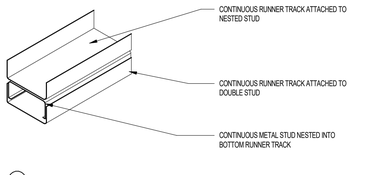
ACOUSTICAL DETAILS WOOD FRAMING



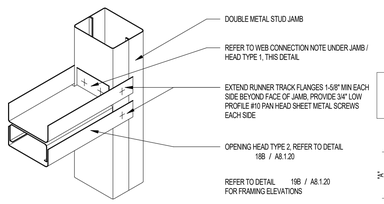
A TYPICAL HEAD TYPE 1 - OPENINGS UP TO 3'-6" WIDE



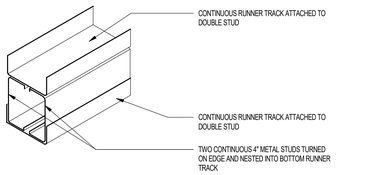
A JAMB / HEAD TYPE 1



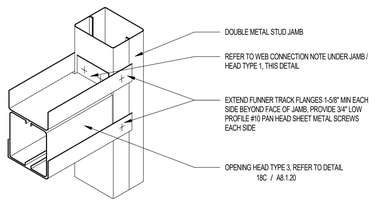
B TYPICAL HEAD TYPE 2 - OPENINGS 3'-6" TO 8'-0" WIDE



B JAMB AT TYPE 2 HEAD



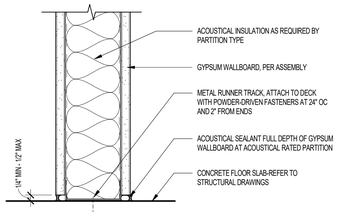
C TYPICAL HEAD OPENING HEAD TYPE 3 - OPENINGS 8'-0" TO 12'-0" WIDE



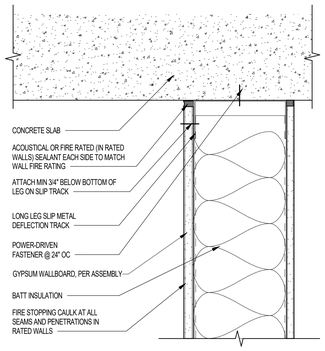
C JAMB AT TYPE 3 HEAD

18 HEAD TRACK FRAMING — SCALE: 1 1/2" = 1'-0"

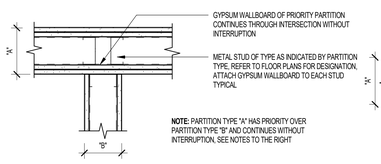
14 HEAD / JAMB CONNECTION — SCALE: 1 1/2" = 1'-0"



09 TYPICAL NON-RATED PARTITION BASE DETAIL (METAL STUD) — SCALE: 3" = 1'-0"

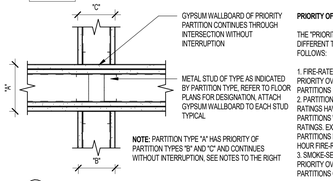


05 DEFLECTION TRACK DETAIL — NOT TO SCALE



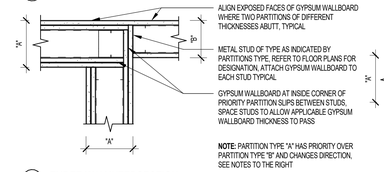
NOTE: PARTITION TYPE "A" HAS PRIORITY OVER PARTITION TYPE "B" AND CONTINUES WITHOUT INTERRUPTION, SEE NOTES TO THE RIGHT

A THREE-WAY INTERSECTION



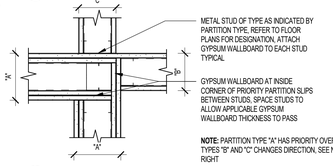
NOTE: PARTITION TYPE "A" HAS PRIORITY OF PARTITION TYPES "B" AND "C" AND CONTINUES WITHOUT INTERRUPTION, SEE NOTES TO THE RIGHT

C FOUR-WAY INTERSECTION



NOTE: PARTITION TYPE "A" HAS PRIORITY OVER PARTITION TYPE "B" AND CHANGES DIRECTION, SEE NOTES TO THE RIGHT

B THREE-WAY INTERSECTION



NOTE: PARTITION TYPE "A" HAS PRIORITY OVER PARTITION TYPES "B" AND "C" CHANGES DIRECTION, SEE NOTES TO THE RIGHT

D FOUR-WAY INTERSECTION

10 INTERSECTION FRAMING AND PRIORITY OF PARTITIONS — SCALE: 1 1/2" = 1'-0"

PRIORITY OF PARTITIONS

THE "PRIORITY" OF PARTITIONS OF DIFFERENT TYPES IS DETERMINED AS FOLLOWS:

1. FIRE-RATED PARTITIONS HAVE PRIORITY OVER NON-RATED PARTITIONS
2. PARTITIONS WITH GREATER FIRE-RATINGS HAVE PRIORITY OVER PARTITIONS WITH LESSER FIRE-RATINGS, EXAMPLE: 2-HOUR RATED PARTITIONS HAVE PRIORITY OVER 1-HOUR FIRE-RATED PARTITIONS
3. SMOKE-SEALED PARTITIONS HAVE PRIORITY OVER NON-SMOKE SEALED PARTITIONS OF SIMILAR FIRE-RATING

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 FINISHED FACE OF FURRED WALL.

B. PARTITION TYPE INDICATIONS ARE INDEPENDENT OF APPLIED FINISHES. SEE FINISH SCHEDULE AND/ OR THE DESIGNATIONS ON THE PLANS FOR ADDITIONAL INFORMATION REGARDING APPLIED FINISHES.

C. WHERE PARTITION TYPE DESIGNATION ON FLOOR PLANS IS INTERRUPTED BY DOOR OPENING, GLAZED PARTITION, ETC., CONSTRUCTION ABOVE INTERRUPTION (AND WHERE APPLICABLE BELOW) IS TO BE THE SAME AS THAT DESIGNATED FOR THE PARTITION IN WHICH THE INTERRUPTION OCCURRED.

D. THE MINIMUM REQUIREMENTS FOR CONSTRUCTION OF EACH PARTITION TYPE AS EXPRESSED BY THE INDICATED FIRE RATING REFERENCE ARE INCORPORATED BY REFERENCE AND ARE APPLICABLE TO THE WORK OF THIS PROJECT. HOWEVER, ADDITIONAL AND/ OR MORE RESTRICTIVE REQUIREMENTS MAY BE INDICATED BY THE SPECIFICATIONS AND DRAWINGS. SUCH REQUIREMENTS ALSO APPLY AND SHALL GOVERN. SUCH REQUIREMENTS INCLUDE BUT ARE NOT LIMITED TO:

1. USE 5/8" THICK GYPSUM WALLBOARD THROUGHOUT

2. USE 16" ON CENTER MAXIMUM STUD SPACING UNLESS OTHERWISE NOTED. THE SPACING STATED BY THE REFERENCED APPROVAL OR TEST REPORT IS THE MAXIMUM SPACING.

3. USE STUDS OF GAUGE INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE GAUGE STATED BY THE REFERENCED APPROVAL OR TEST REPORT IS THE MINIMUM GAUGE.

4. USE STUDS OF DEPTH INDICATED BY THE DRAWINGS. THE DEPTH STATED BY THE REFERENCED APPROVAL OR TEST REPORT IS THE MINIMUM DEPTH.

E. INSTALL ONE LAYER OF 5/8" TYPE X GLASS-MAT INTERIOR GYPSUM WALLBOARD (WHERE GYPSUM WALLBOARD OCCURS) OF BASIC PARTITION AT THE FOLLOWING LOCATIONS:

1. WITHIN 2 FEET HORIZONTALLY AND 4 FEET VERTICALLY OF JANITORS SINKS.

2. AT OTHER LOCATIONS AS INDICATED BY THE ARCHITECTURAL FINISH SCHEDULE.

F. INSTALL ONE LAYER OF 5/8" TYPE X GLASS-MAT, WATER-RESISTANT BACKING BOARD IN LIEU OF GYPSUM WALLBOARD (WHERE GYPSUM WALLBOARD OCCURS) OF BASIC PARTITION AT THE FOLLOWING LOCATIONS:

1. AT WET LOCATIONS, SUCH AS SHOWER STALLS AND TUB SURROUNDS.

2. WHERE CERAMIC TILE FINISHES ARE INDICATED. REFER TO FINISH SCHEDULE, PLANS AND/OR INTERIOR ELEVATIONS

3. AT OTHER LOCATIONS AS INDICATED BY THE ARCHITECTURAL FINISH SCHEDULE.

FRAMING NOTES

A. EXISTING FLOOR/ CEILING DECK OF THIS BUILDING IS A POST-TENSIONED CONCRETE SLAB. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE LOCATIONS OF ALL PENETRATIONS AND ATTACHMENTS DO NOT CONFLICT WITH THE SLAB TENDONS. X-RAY OF THE SLAB MAY BE REQUIRED.

B. ALL INTERIOR NON-LOAD-BEARING METAL WALL FRAMING EXCEEDING 6 FEET IN HEIGHT SHALL RESIST A HORIZONTAL LOAD OF NOT LESS THAN 5 PSF, UNLESS OTHERWISE NOTED OR REQUIRED BY THE SPECIFICATIONS,

C. GAUGE THICKNESS DESIGNATION IS BASED ON THE FOLLOWING MIL THICKNESS FOR INTERIOR NON-LOAD BEARING PARTITION FRAMING: ALL 33 KSI, PER THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA):

18 MIL = 25 GAUGE
30 MIL = 20 GAUGE
43 MIL = 18 GAUGE
54 MIL = 16 GAUGE

D. ALL INTERIOR NON-LOAD-BEARING METAL WALL FRAMING SHALL BE 25 GAUGE INSTALLED AT 16" ON CENTER UNLESS OTHERWISE NOTED.

E. ALL INTERIOR NON-LOAD-BEARING METAL WALL FRAMING SHALL BE INSTALLED WITH A DEFLECTION CRITERIA OF L/240, UNLESS OTHERWISE NOTED OR REQUIRED BY THE SPECIFICATIONS.

F. WHERE AN ADDITIONAL INTERIOR WALL FINISH IS APPLIED TO THE BASE PARTITION SUCH AS TILE, VENEERS, WOOD PANELING, OR SIMILAR: ALL INTERIOR NON-LOAD-BEARING METAL WALL FRAMING SHALL BE INSTALLED WITH A DEFLECTION CRITERIA OF L/360, UNLESS OTHERWISE NOTED OR REQUIRED BY THE SPECIFICATIONS.

G. LIMITING HEIGHTS OF INTERIOR NON-LOAD-BEARING FRAMING SHALL BE PER THE MANUFACTURER'S SPAN TABLES BASED ON THE FOLLOWING CRITERIA OUTLINED IN THIS SET OF DRAWINGS AND THE PROJECT MANUAL: HORIZONTAL LOADING, STUD DEPTH, STUD SPACING, AND DEFLECTION CRITERIA.

H. PROVIDE 20 GAUGE (OR GREATER AS REQUIRED) METAL WALL FRAMING AT THE FOLLOWING LOCATIONS:

1. DOUBLE STUD JAMB ASSEMBLIES AT OPENINGS.

2. FIRST STUD IN THE PARTITION BEYOND THE DOUBLE STUD JAMB ASSEMBLY, LOCATE STUD 6" FROM DOUBLE STUD ASSEMBLY

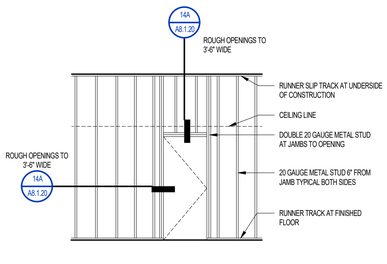
3. STUDS TO WHICH GLASS-MAT BACKER WATER-RESISTANT BACKER BOARD, SPECIFIED IN SECTION 09300, ARE INSTALLED FOR WET AREAS.

4. STUDS TO WHICH ABUSE RESISTANT AND HIGH-IMPACT GYPSUM WALL PANELS ARE ATTACHED.

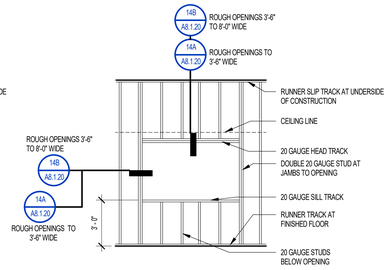
5. STUDS TO WHICH WALL MOUNTED EQUIPMENT, INCLUDING OWNER FURNISHED EQUIPMENT, IS FASTENED.

6. STUD INFILL AND SILL TRACK BELOW WINDOW OPENINGS.

7. STUDS INSTALLED FOR OPENING HEADS BETWEEN DOUBLE STUD JAMB ASSEMBLIES.



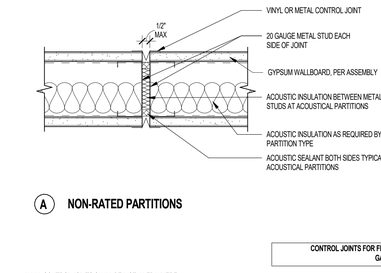
A TYPICAL FRAMING ELEVATIONS



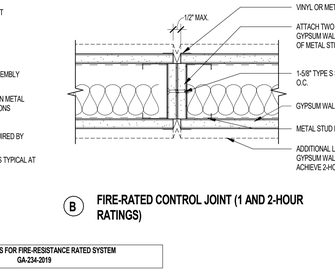
B GLAZED OPENINGS / PASS-THROUGHS

TYPICAL AT ALL INTERIOR NON-BEARING METAL STUD FRAMING UNLESS OTHERWISE NOTED

19 TYPICAL FRAMING ELEVATIONS — SCALE: 1/4" = 1'-0"



A NON-RATED PARTITIONS



B FIRE-RATED CONTROL JOINT (1 AND 2-HOUR RATINGS)

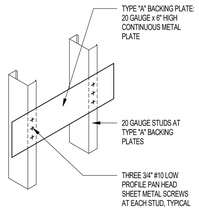
CONTROL JOINTS FOR FIRE-RESISTANCE RATED SYSTEM GA-234-2019

WALL CONTROL JOINTS SHALL BE INSTALLED WHERE:
1. A PARTITION OR WALL TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE.
2. WHERE AN INTERIOR WALL OR PARTITION RUNS IN AN UNINTERRUPTED STRAIGHT PLANE EXCEEDING 30 FT. (9 M) IN LENGTH OR HEIGHT.
3. GYPSUM PANEL JOINTS SHALL NOT OCCUR WITHIN 12 IN. (300 MM) OF THE CORNERS OF DOOR FRAMES AND OTHER OPENINGS UNLESS INSTALLING CONTROL JOINTS AT THESE LOCATIONS.
   NOTE: FULL-HEIGHT DOOR FRAMES ARE CONSIDERED CONTROL JOINTS.
4. A CONTROL JOINT IS DESIRED OR INCORPORATED AS A DESIGN ACCENT OR ARCHITECTURAL FEATURE

11 TYPICAL CONTROL JOINTS AT METAL STUD PARTITIONS — SCALE: 3" = 1'-0"

PROVIDE BACKING PLATES AS INDICATED ON THE DRAWINGS OR WHERE NOT INDICATED, ACCORDING TO THE FOLLOWING SCHEDULE:

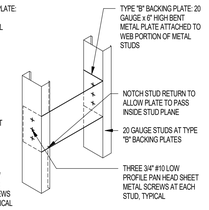
TYPE "A" BACKING PLATE



TYPE "A" BACKING PLATES:

- AT DOOR STOPS AND BUMPER RAILS
- AT TOILET ACCESSORIES, MIRRORS, COAT HOOKS, ETC.
- AT ALL UPPER WALL HUNG CABINETS
- AT ALL FULL HEIGHT CABINETS
- AT WALL MOUNTED ADJUSTABLE SHELVING
- AT ALL WALL MOUNTED HANDRAILS

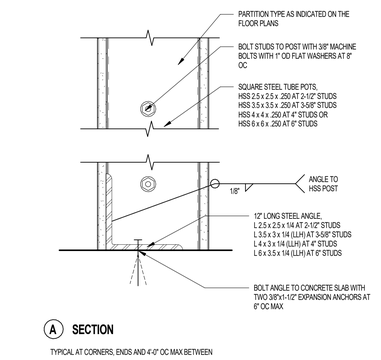
TYPE "B" BACKING PLATE



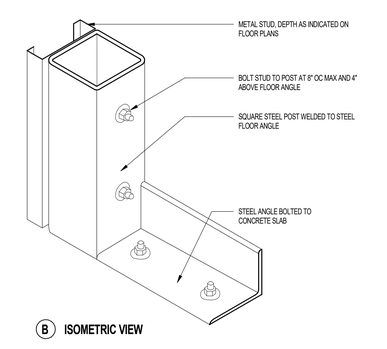
TYPE "B" BACKING PLATES:

TYPE "B" BACKING PLATE SHALL SUPPORT THE SAME ITEMS AS TYPE "A" BACKING PLATE BUT USE WHERE APPEARANCE IS THE MAIN CONCERN SUCH AS LOBBIES AND OTHER HIGH DESIGN AREAS

03 TYPICAL BACKING PLATE SCHEDULE — NOT TO SCALE



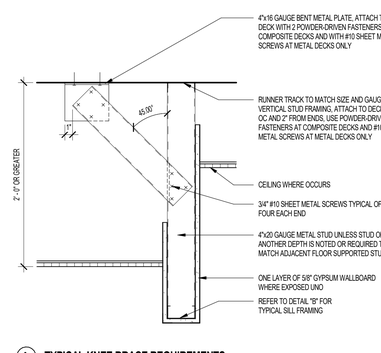
A SECTION



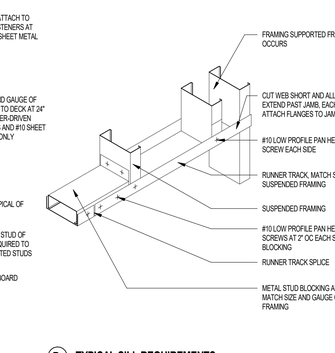
B ISOMETRIC VIEW

TYPICAL AT CORNERS, ENDS AND 4'-0" OC MAX BETWEEN

20 PARTIAL HEIGHT PARTITION BRACING AND ANCHORAGE — SCALE: 3" = 1'-0"

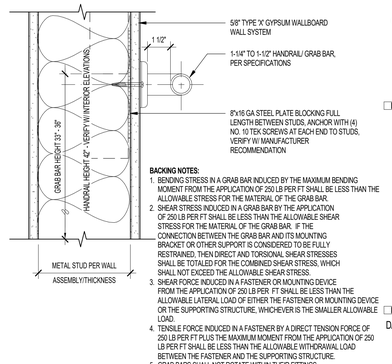


A TYPICAL KNEE BRACE REQUIREMENTS



B TYPICAL SILL REQUIREMENTS

12 SUSPENDED PARTITION - TYPICAL DETAILS — SCALE: 1 1/2" = 1'-0"



BACKING NOTES:

1. BENDING STRESS IN A GRAB BAR INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE STRESS FOR THE MATERIAL OF THE GRAB BAR.
2. SHEAR STRESS INDUCED IN A GRAB BAR BY THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR. IF THE CONNECTION BETWEEN THE GRAB BAR AND ITS MOUNTING BRACKET OR OTHER SUPPORT IS CONSIDERED TO BE FULLY RESTRAINED, THEN DIRECT AND TORSIONAL SHEAR STRESSES SHALL BE TOTALED FOR THE COMBINED SHEAR STRESS, WHICH SHALL NOT EXCEED THE ALLOWABLE SHEAR STRESS.
3. SHEAR FORCE INDUCED IN A FASTENER OR MOUNTING DEVICE FROM THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE LATERAL LOAD OF EITHER THE FASTENER OR MOUNTING DEVICE OR THE SUPPORTING STRUCTURE, WHICHEVER IS THE SMALLER ALLOWABLE LOAD.
4. TENSILE FORCE INDUCED IN A FASTENER BY A DIRECT TENSION FORCE OF 250 LB PER FT PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF 250 LB PER FT SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND THE SUPPORTING STRUCTURE.
5. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

04 HANDRAIL & GRAB BAR BLOCKING & ATTACHMENT — SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

The Office of Rich Barber Architecture, LLC
ORB
WorldHQ@ORBArch.com

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ALLIANCE RESIDENTIAL
LEGACY HOSPITALITY

REVISIONS/ SUBMITTALS

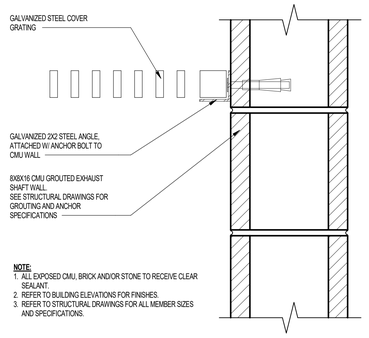
DATE	DESCRIPTION

2ND CITY SUBMITTAL

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A8.1.20

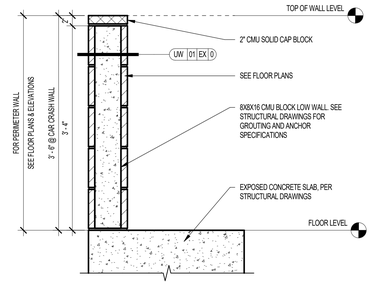
LIGHT METAL STUD FRAMING DETAILS



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.

05 EXHAUST SHAFT METAL GRATING @ CMU WALL

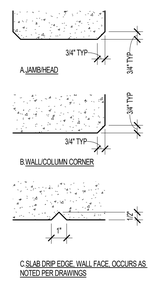
SCALE: 3" = 1'-0"



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.

01 CMU CAR CRASH WALL & LOW WALL AT PARKING

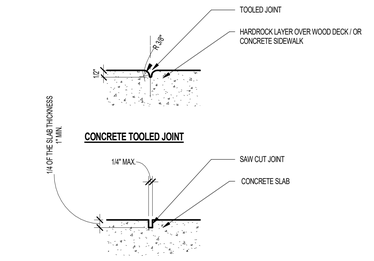
SCALE: 1" = 1'-0"



3/4" CHAMFER TYP AT ALL EXPOSED CONCRETE EDGES. TYP UNO.

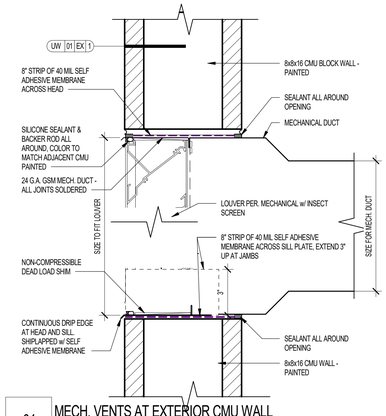
02 CONCRETE CORNERS & EDGES

SCALE: 3" = 1'-0"



03 CONCRETE CONTRACTION (CONTROL) JOINTS

SCALE: 3" = 1'-0"



04 MECH. VENTS AT EXTERIOR CMU WALL

SCALE: 3" = 1'-0"

Project Name 1
Project Name 2

Street Adress
City, State

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ORB
WorldHQ@ORBArch.com

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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

CLIENT NAME
CLIENT ADDRESS
CLIENT PHONE NUMBER

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

Contractor must verify all dimensions at project before proceeding with this work.

REVISIONS/ SUBMITTALS

DATE	DESCRIPTION

2ND CITY SUBMITTAL

DATE: SEPTEMBER 11, 2024 ORB #: 00-000

A8.1.21

CMU & CONCRETE DETAILS