

EABPRJ#  
TABS2019006801



CAMERON COMMERCIAL

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A1.2C	X		UL SHEETS
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A9.1	X		ELEVATOR PLAN & SECTIONS

OWNER:	LDG DEVELOPMENT, LLC	1305 E. 6TH ST. #13, AUSTIN, TX. 78702 <small>FRANK LEIST - 502.916.2428</small>
CONTRACTOR:	TBA	ADDRESS <small>CONTACT NAME - XXXXXX,XXX (FAX) XXXXXX,XXX</small>
ARCHITECT:	KELLY GROSSMAN ARCHITECTS, LLC	260 ADDIE ROY ROAD, SUITE 210, AUSTIN, TX 78746 <small>JOHN KELLY - 512.327.3397 (FAX) 512.327.0292</small>
STRUCTURAL ENGINEER:	STERLING ENGINEERING	14025 WEST RD. <small>ZELJKO ARAPOVIC - 281.583.7088</small>
MEP ENGINEER:	NICHOLS ENGINEERING, LLC.	6836 BEE CAVE RD. BLDG 1, SUITE 208, AUSTIN, TX. 78746 <small>DAVID NICHOLS - 512.593.5616</small>
CIVIL ENGINEER:	COSTELLO ENGINEERING & SURVEYING	1016 LA POSADA DR. SUITE 288, AUSTIN TX. 78752 <small>STEVE BUFFUM - 512.646.3456</small>
LANDSCAPE DESIGNER:	7GEN PLANNING	1016 LA POSADA DRIVE, SUITE 288, AUSTIN, TX. 78752 <small>STEVE BUFFUM - 512.646.3456</small>

1 BUILDING

OFFICE BUILDING

9201 CAMERON ROAD  
AUSTIN, TX. 78754

SDP # SP-2018-0282C  
City comments 1 05/15/2019



CODE ANALYSIS AND VERIFICATION  
APPLICABLE BUILDING CODE: 2015 INTERNATIONAL CODE (IBC)

CAMERON COMMERICAL  
AUSTIN, TX.

APPLICABLE BUILDING CODES

2015 INTERNATIONAL BUILDING CODE  
2015 UNIFORM MECHANICAL CODE (W/LOCAL AMENDMENTS)  
2015 UNIFORM PLUMBING CODE (W/LOCAL AMENDMENTS)  
2015 FIRE CODE (W/ LOCAL AMENDMENTS)  
2015 INTERNATIONAL ENERGY CONSERVATION CODE  
2017 NATIONAL ELECTRIC CODE (W/LOCAL AMENDMENTS)

OFFICE BUILDING

USE GROUP

BUSINESS GROUP B PER SECTION 304.1

CONSTRUCTION TYPE

TYPE V-B/ NOT RATED PER 2015 IBC TABLE 508.4  
SPRINKLED PER NFPA 13 PER 2015 IBC AND 2015 IFC SECTION 903.3.11  
2 STORY/MEAN ROOF HEIGHT OF TALLEST BUILDINGS: 40'

FIRE RESISTANCE

STRUCTURAL FRAME - NOT RATED (TABLE 601)  
EXIT ACCESS CORRIDORS - NOT RATED (TABLE 1020.1)  
LOAD BEARING EXTERIOR WALLS - NOT RATED PER TABLE 602  
NON LOAD BEARING INTERIOR PARTITIONS - NOT RATED  
ROOF / CEILING ASSEMBLIES - NOT RATED PER TABLE 601  
FLOOR / CEILING ASSEMBLIES - NOT RATED PER TABLE 601  
PATIO/BALCONY - NOT RATED

FIRE PROTECTION

FIREBLOCKING IN CONCEALED SPACES SECT. 718.2; REF. SHEET A5.2  
DRAFTSTOPS IN FLOORS PER SECT 718.3.3; INSTALLED SO THAT HORIZONTAL FLOOR AREAS DO NOT EXCEED 1,000 SQ. FT.  
DRAFTSTOPS IN ATTICS PER SECT 718.4.3 - INSTALLED SO THAT HORIZONTAL AREA DOES NOT EXCEED 3,000 SQ. FT., NOT REQUIRED IF SPRINKLERED PER NPFA 13.

NATURAL LIGHT - MINIMUM 8% OF FLOOR AREA PER SECT. 1205.2  
MECHANICAL OR NATURAL VENTILATION PER SECT. 1203.5

ATTIC ACCESS - 20"X30" MIN. ATTIC ACCESS DOOR AT SPECIFIED UNITS PER SECT. 1209.2

ALLOWABLE HEIGHT & ALLOWABLE AREA CALCULATIONS

ALLOWABLE BUILDING HEIGHT:  
MAXIMUM OF 40 FEET AND/OR 2 STORIES PER IBC TABLE 504.3 & 504.4  
TALLEST ACTUAL BUILDING HEIGHT: 39'-3"

ALLOWABLE FLOOR AREA:  
9,000 SQ. FT./FLOOR (TABLE 506.2), INCREASE FT./FLOOR WITH FRONTAGE INCREASE PER SECT. 506.3

ALLOWABLE FLOOR AREA: 9,000 SF  
ALLOWABLE BUILDING AREA: 18,000 SF

LARGEST PROPOSED FLOOR AREA: 5,200 SF  
LARGEST PROPOSED BUILDING AREA: 8,992 SF

SOUND INSULATION  
NOT REQUIRED PER OCCUPANCY USE

MEANS OF EGRESS PER IBC 2015 CHAPTER 10

TWO EXITS OR ACCESS TO ONES EXIT REQUIRED PER TABLE 1006.3.2 (2) PER OCCUPANT LOAD

MINIMUM SEPARATION  
BOTH EXITS SHALL BE PLACED A DISTANCE EQUAL TO NOT LESS THAN 1/2 DIAGONAL OF DIMENSION OF THE BUILDING OR AREA TO BE SERVED MEASURED IN A STRAIGHT LINE BETWEEN THEM PER SEC. 1007.1.1 (WITH AUSTIN AMENDMENT)

200' WITH SPRINKLERS PER TABLE. 1017.2  
OCCUPANCY CALCULATION: FLOOR AREA (S.F.) / OCCUPANT RATIO (FOR CLASSIFICATION B) = 100 SF PER OCCUPANT - PER TABLE 1004.1.2  
REFER TO LIFE SAFETY SHEETS FOR OCCUPANCY CLASIFICATION / CALCULATION

MIN. CEILING HT. 7'-6" IN EXITWAY EXCEPT @ ABOVE SLOPED CEILINGS - SEC. 1003.2  
STAIRWAYS-MIN.: 6'-8" MEASURED ABOVE POINT OF ANGLE OF TREADS - SEC. 1011.3

DEAD END CORRIDOR MAX. LENGTH - 50' SEC. 1020.4

STAIRS

WIDTH - 44" MIN. PER SEC. 1011.2  
MAXIMUM RISER - 7" PER SEC. 1011.5.2  
MINIMUM TREAD - 11" PER SEC. 1011.5.2

OPENING BETWEEN TREADS MUST NOT PERMIT PASSAGE OF A SPHERE WITH A DIAMETER OF 4" PER SEC. 1011.5.3.3

HANDRAILS PER SEC. 1014

BOTH SIDES 34" - 38" ABOVE NOSING PER SEC. 1014.2  
EXTENSIONS: PER 1014.6 - HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT.  
WHERE HANDRAILS ARE NOT CONTINUOUS BETWEEN FLIGHTS, THE HANDRAILS SHALL EXTEND HORIZONITALLY AT LEAST 12" BEYOND THE TOP RISER AND CONTINUE TO SLOPE FOR THE DEPTH OF ONE TREAD BEYOND THE BOTTOM RISER.

GRIP SIZE: OUTSIDE DIAMETER OF 1 1/4" - 2" PER SEC. 1014.3

GUARDS PER SEC. 1015

LOCATION: ON OPEN SIDES OF STAIR WAYS AND LANDINGS  
HEIGHT - 42" PER SEC 1015.3  
SPACING - 4" MAX SPERE SPACING OF PICKETS PER SEC 1015.4

EXIT SIGNS PER SEC. 1013

EXITS AND EXIT ACCESS DOORS SHALL BE MARKED BY AN APPROVED EXIT SIGN READILY FROM ANY DIRECTION OF EGRESS TRAVEL. EXIT SIGN PLACEMENT SHALL BE SUCH THAT NO POINT IN AN EXIT ACCESS CORRIDOR OR EXIT PASSAGEWAY IS MORE THAN 100 FEET (30 480 MM) OR THE LISTED VIEWING DISTANCE FOR THE SIGN, WHICHEVER IS LESS, FROM THE NEAREST VISIBLE EXIT SIGN.  
EXIT SIGNS PROVIDED AT STAIRS  
EGRESS ILLUMINATION - 1 FOOTCANDLE - SEC. 1008.2.1  
ILLUMINATION BACKUP POWER - 90 MINUTE MIN. - BATTERY BACKUP - UNIT EQUIPMENT OR ON-SITE GENERATOR @ DOORWAY DISCHARGE. SEC. 1008.3 - 1008.3.4

LIVE LOADS PER I.B.C. TABLE 1607.1

CORRIDORS ABOVE FIRST FLOOR - 80# / S.F.  
LOBBIES AND FIRST-FLOOR CORRIDORS - 100# / S. F.  
OFFICES - 50# / S. F.

WIND LOAD DESIGN PER SEC. 1609

3 SECOND GUST - 120 MPH

2015 IECC THERMAL ENVELOPE REQUIREMENTS

COMMERICAL REQ.  
CLIMATE ZONE - 2  
TABLE C402.1.3

ROOF - R-38

WALL ABOVE GRADE  
WOOD FRAMED - R-20

FLOORS  
JOIST/FRAMING - R-30

WINDOWS  
U FACTOR  
FIXED FENESTRATION - .50  
OPERABLE FENESTRATION - .65  
ENTRANCE DOORS - .83

Cameron (Net Building Tabulations)	
NAME	TOTAL SQ. FT.

1ST FLOOR	4,323 SF
2ND FLOOR	3,777
TOTAL	8,100 SF

\* NET TABULATIONS EXCLUDES BREEZEWAYS, BALCONIES, & EXIT STAIRS

Cameron (Gross Building Tabulations)	
NAME	TOTAL SQ. FT.

1ST FLOOR	5,200 SF
2ND FLOOR	3,792 SF
TOTAL	8,992 SF

\* GROSS TABULATIONS INCLUDE ASSEMBLY AREAS WITHIN THE BUILDING

Cameron (Parking Tabulations)			
Provided	Standard	HC	Total

1st Floor/Ground	36	2	38
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TYPICAL ASSEMBLY NOTES  
WALL & FLOOR/CEILING ASSEMBLIES

INTERIOR ROOF/CEILING ASSEMBLIES

SINGLE PLY MEMBRANE ROOF ON 15/32" CDX PLYWOOD OR 15/32" OSB ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C. WITH ONE LAYER OF 5/8" FIRE-RATED GYPSUM WALL BOARD APPLIED TO RESILIENT CHANNELS @ 16" O.C. ATTACHED DIRECTLY TO THE UNDERSIDE OF THE ROOF TRUSSES. THIS ONE HOUR CEILING ASSEMBLY IS APPROVED PER U.L. DESIGN P522.

EXTERIOR ROOF/CEILING ASSEMBLIES

SINGLE PLY MEMBRANE ROOF ON 30 LB FELT ON 15/32" CDX PLYWOOD OR 15/32" OSB ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C. WITH ONE LAYER OF 5/8" FIRE-RATED GYPSUM SOFFIT BOARD APPLIED TO RESILIENT CHANNELS @ 16" O.C. ATTACHED DIRECTLY TO THE UNDERSIDE OF THE ROOF TRUSSES. THIS ONE HOUR CEILING ASSEMBLY IS APPROVED PER U.L. DESIGN P522.

TYP. INTERIOR UNIT FLOOR/CEILING ASSEMBLY

3" HARDROCK CONCRETE OVER 3/4" CDX PLYWOOD OR 23/32" OSB ON 18" PRE-ENGINEERED WOOD FLOOR TRUSSES AT 24" O.C. WITH ONE LAYER OF 5/8" FIRE-RATED GYPSUM WALL BOARD APPLIED TO RESILIENT CHANNELS @ 16" O.C. ATTACHED DIRECTLY TO THE UNDERSIDE OF THE TRUSS. THIS ONE-HOUR ASSEMBLY IS APPROVED PER U.L. DESIGN L521.

EXTERIOR FLOOR/CEILING ASSEMBLIES AT BALCONIES

2 1/2" TO 2" HARDROCK CONCRETE ON 60 MIL. BITUTHENE MEMBRANE ON 3/4" CDX PLYWOOD OR 23/32" OSB ON PRE-ENGINEERED WOOD TRUSSES AT 24" O.C. WITH ONE LAYER OF 5/8" FIRE-RATED GYPSUM SOFFIT BOARD APPLIED TO RESILIENT CHANNELS @ 16" O.C. ATTACHED DIRECTLY TO THE UNDERSIDE OF TRUSSES. ALUMINUM T-BARS TO BE PLACED AT EDGES WITH BITUTHENE PLACED UNDERNEATH. THIS ONE HOUR ASSEMBLY IS APPROVED PER UL DESIGN L523. RESILIENT CHANNEL NOT REQUIRED AT JOISTS 16" O.C.

PARTITION WALL

NON-RATED, NON-LOAD BEARING, 2X4 WOOD STUDS AT 16" O.C. WITH 5/8" FIRE-RATED GYPSUM WALLBOARD ON BOTH INTERIOR FACES. OPTIONAL: INSULATE WITH R-11 BATT INSULATION (3 1/2" THICK AND HAVING A MINIMUM DENSITY OF .45 LB PER CUBIC FOOT). THIS ONE-HOUR ASSEMBLY IS SHOWN IN U.L. U305.

EXTERIOR WALL

STUCCO OR FCB SIDING OVER 1/2" GYPSUM SHEATHING OR 15/32" OSB ON 2X6 WOOD STUDS (SPACING PER STRUCTURAL PLANS) AND R-20 INSULATION (3- 1/2" THICK AND HAVING A MINIMUM DENSITY OF .45 LBS PER CUBIC FOOT) AND 5/8" FIRE-RATED GYPSUM WALLBOARD ON THE INTERIOR FACE. THIS ONE-HOUR ASSEMBLY IS APPROVED PER U.L. U356.

STAIR LANDINGS

1-1/2" LIGHTWEIGHT CONCRETE ON 60 MIL. BITUTHENE MEMBRANE ON 3/4" CDX PLYWOOD OR 23/32" OSB ON 2X10 JOISTS @ 12" O.C. WITH 5/8" FIRE-RATED GYPSUM SOFFIT BOARD ATTACHED DIRECTLY TO THE UNDERSIDE OF JOIST. ALUMINUM T-BARS TO BE PLACED AT EDGES WITH BITUTHENE PLACED UNDERNEATH. THIS IS A ONE HOUR ASSEMBLY APPROVED PER UL DESIGN L512.

STAIR TOWER ROOF

SINGLE PLY MEMBRANE ROOF ON 15/32" CDX PLYWOOD OR 15/32" OSB ON 2X12 JOISTS @ 12" O.C. WITH ONE LAYER OF 5/8" FIRE-RATED GYPSUM SOFFIT BOARD APPLIED TO RESILIENT CHANNELS @ 16" O.C. ATTACHED DIRECTLY TO THE UNDERSIDE OF JOIST.

DEFERRED SUBMITTAL

THE FOLLOWING PRE-MANUFACTURED SYSTEMS HAVE BEEN SHOWN ON THESE DRAWINGS AND DELEGATED TO THE CONTRACTOR TO PROVIDE. DESIGN SHALL BE SUBMITTED AND REVIEWED BY THE DESIGN GROUP AND AUTHORITY HAVING JURISDICTION FOR COMPLIANCE WITH CONSTRUCTION DOCUMENTS AND CODE. SUBMITTALS SHALL BE SEALED BY A REGISTERED ENGINEER IN THE APPLICABLE STATE.

TYPICAL DELEGATED DESIGN SERVICES ARE AS FOLLOWS:

- A. WOOD FLOOR AND ROOF TRUSSES
- B. WOOD STAIRS
- C. STEEL HANDRAILS AND GUARDRAILS
- D. METAL CANOPIES
- E. FIRE SPRINKLER SYSTEMS DESIGN
- F. FIRE ALARM SYSTEM DESIGN

NOTES

FIRE EXTINGUISHERS SHALL COMPLY WITH NFPA 10 AND WILL BE INSTALLED IN ACCORDANCE WITH IFC 906.3.

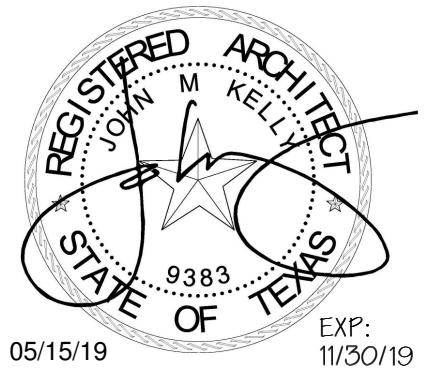
TRUSS NOTES

CONTRACTOR MUST HAVE THE TRUSS MANUFACTURER TO SUBMIT ALL TRUSS SHOP DRAWINGS (APPROVED BY DESIGN PROFESSIONALS)FOR ALL BUILDINGS BEFORE INSTALLATION. MUST BE SEALED AND SIGNED BY A PROFESSIONAL LICENSED ENGINEER PER TEXAS.

MISCELLANEOUS NOTES

THE ADDRESS MUST BE CLEARLY VISIBLE FROM THE STREET. ADDRESS NUMBERS SHALL BE 8 INCHES IN HEIGHT AND OF A CONTRASTING COLOR TO THAT OF THE BACKGROUND, PER IFC SECTION 505 - PREMISES IDENTIFICATION.

DRAWN BY:	WLG
CHECKED BY:	JMK
PROJECT #:	18-2319



LDG DEVELOPMENT, LLC.

1305 E. 6TH ST. #13,  
AUSTIN, TX. 78702

ARCHITECTURE • LAND PLANNING • LANDSCAPE DESIGN • CONSTRUCTION ADMINISTRATION

KELLY GROSSMAN

REGISTERED PROFESSIONAL ARCHITECT

STATE OF TEXAS

280 ADAMS EDDY ROAD, SUITE 200, AUSTIN, TEXAS 78746 | PH: 512.927.2387  
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CAMERON  
COMMERCIAL

9201 CAMERON ROAD,  
AUSTIN, TX 78754

No.	Revision	Date
1	City comments	05/15/19
2		
3		
4		
5		

ISSUED FOR PERMIT

03/08/19

ISSUED FOR BID

ISSUED FOR CONSTRUCTION

DWG NAME

DATE

05/15/19

DESCRIPTION

CODE SHEET

SHEET

A.1.1







## FIRE-RESISTANCE DESIGN

Assembly Usage Disclaimer

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

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

See General Information for Fire-Resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances

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

## Design No. L528

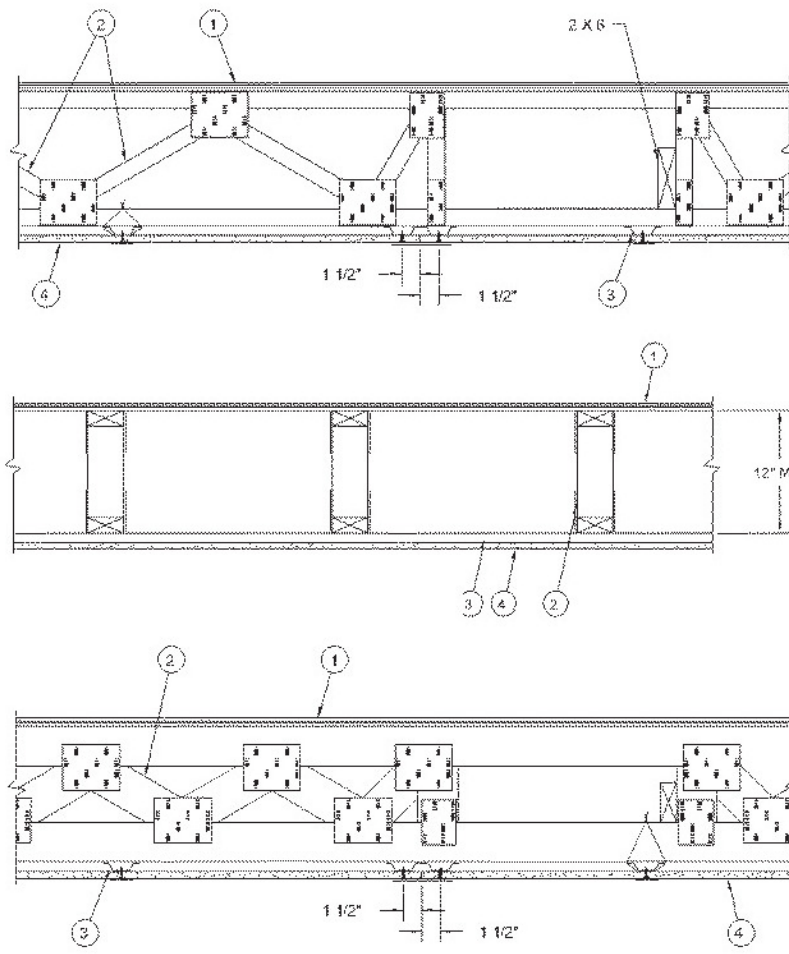
February 19, 2019

Unrestrained Assembly Rating - 1 Hr.

Finish Rating - 22 Min.

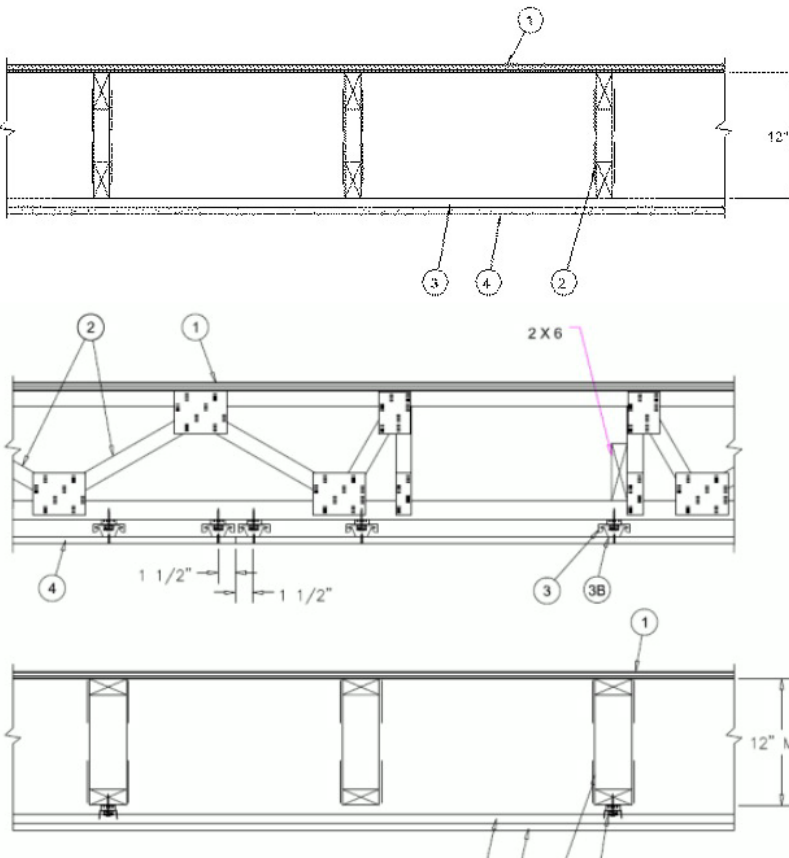
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used – See Guide BXUV or BXUV7.

\*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. Flooring System — The flooring system shall consist of one of the following:

## System No. 1

**Subflooring** — Min 23/32 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TeraGRIP™ 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.

## System No. 2

**Subflooring** — Min 23/32 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TeraGRIP™ 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) — Commercial asphalt saturated felt, 0.030 in. thick.

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

**Finish Flooring** — Min 3/4 in. thickness of lightweight insulating concrete with **Perlite Aggregate**\* or **Vermiculite Aggregate**\*, or gypsum concrete.

See **Perlite Aggregate** (CFX) and **Vermiculite Aggregate** (CJZZ) categories for names of manufacturers.

## System No. 3

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

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

**ECORE INTERNATIONAL INC** — Type QTcu 4002

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**HACKER INDUSTRIES INC** — Type Hacker Sound-Mat.

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

**ECORE INTERNATIONAL INC** — Type QTrbm 3006-3

**HACKER INDUSTRIES INC** — Type Hacker Sound-Mat II.

**Alternate Floor Mat Materials** — (Optional) — Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm)

**HACKER INDUSTRIES INC** — FIRM-FILL SCM 125

**Alternate Floor Mat Materials** — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm)

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

**Alternate Floor Mat Materials** — (Optional) — Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)

**HACKER INDUSTRIES INC** — FIRM-FILL SCM 400, Quiet Qurl 60/040

**Alternate Floor Mat Materials** — (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm)

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

**Metal Lath** — (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

**Finish Flooring — Floor Topping Mixture** — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

**HACKER INDUSTRIES INC** — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant

## System No. 4

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

**Vapor Barrier** — (Optional) — Commercial asphalt saturated felt, 0.010 in. thick.

**Finish Flooring — Floor Topping Mixture** — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

**UNITED STATES GYPSUM CO** — Types LRK, HSLRK, CSD

**LATICRETE SUPERCAP L L C** — Types LRK, HSLRK

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

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

**UNITED STATES GYPSUM CO** — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

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

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**GRASSWORX L L C** — Type SC50

**Alternate Floor Mat Material** — (Optional) - Floor mat material nominal 3/8 in. thick loose laid over the subfloor. Floor topping shall be a min 3/4 in. thick.

## System No. 5

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**Finish Flooring — Floor Topping Mixture** — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water.

**ELASTIZELL CORP OF AMERICA** — Type FF

## System No. 6

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**Finish Flooring — Floor Topping Mixture** — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.2 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water.

**AERIX INDUSTRIES** — Floor Topping Mixture

## System No. 7

Deleted.

## System No. 8

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**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 regarding the minimum thickness of floor topping over each floor mat material.

**MAXXON CORP** — Types D-C, GC, GC2000, L-R, T-F, CT, CS

**RAPID FLOOR SYSTEMS** — Types RFP, RFP, RFU, Ortercrete

**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 Acousti-Mat 1/8, Acousti-Mat 1/4, Acousti-Mat 1/4 Premium, Acousti-Mat 3/8, Acousti-Mat 3/8 Premium, Acousti-Mat 3/4, Acousti-Mat 3/4 Premium, Acousti-Top.

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

**Metal Lath** — (Optional) - 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material.

**Fiber Glass Reinforcement** - (Optional, Not Shown) - 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs/sq yd loose laid over the floor mat material.

## System No. 9

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**Finish Flooring — Floor Topping Mixture** — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Mixture shall consist of 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand.

**ULTRA QUIET FLOORS** — UQF-A, UQF-Super Blend, UQF-Plus 200

## System No. 10

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**Finish Flooring — Floor Topping Mixture** — Min 3/4 in. thickness of floor topping having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

**FORMULATED MATERIALS LLC** — Types FR-25, FR-30, and SiteMix

**Alternate Floor Mat Material** — (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.

**FORMULATED MATERIALS LLC** — Types M1, M2, M3, R1, and R2

## System No. 11

**Subflooring** — Min 1 by 8 in. T & G lumber fastened diagonally to trusses, or min 15/32 in. thick plywood or min 7/8 in. thick oriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

**Finish Floor - Mineral and Fiber Board** — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.

**HOMASOTE CO** — Type 440-32 Mineral and Fiber Board

## System No. 12

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**Finish Flooring — Floor Topping Mixture** — Min 3/4 in. thickness of floor topping having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

**ACG MATERIALS** — Accu-Crete types NexGen, Green, Prime, B, M, and PrePour, AccuRadiant, AccuLevel types G40, G50 and SD30.

**Alternate Floor Mat Material** — (Optional) — Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.

**ACG MATERIALS** — Accu-Crete types P80, C40, D13, D-18, D25, DX38, EM 125, EM 125S, EM 250, EM 250S, EM 375, EM 375S, EM 750, and EM 750S.

## System No. 13

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

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

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

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

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

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**KEENE BUILDING PRODUCTS CO INC** — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

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

**KEENE BUILDING PRODUCTS CO INC** — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

**Alternate Floor Mat Materials** — (Optional) — Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

**KEENE BUILDING PRODUCTS CO INC** — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

**Alternate Floor Mat Materials** — (Optional) — Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

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

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

**KEENE BUILDING PRODUCTS CO INC** — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

## System No. 14

**Subflooring** — Min 23/32 in. thick T&G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TeraGRIP™ 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.

**Gypsum Board** — One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joists. Gypsum board secured with 1 in. long No. 6 Type W bugle head steel screws spaced 12 in. OC and located 5 mm of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches from the joints of the subfloor.

**GEORGIA-PACIFIC GYPSUM L L C** — Type DS

**Floor Mat Materials** — (As an alternate to the single layer gypsum board) — Floor mat material loose laid over the subfloor.

**MAXXON CORP** — Type Acousti-Mat 1/8, Acousti-Mat 1/4, Acousti-Mat 1/4 Premium, Acousti-Mat 3/8, Acousti-Mat 3/8 Premium, Acousti-Mat 3/4, Acousti-Mat 3/4 Premium, Acousti-Top.

**Gypsum Board** — (For use when floor mat is used) Two layers of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joists on top of the floor mat material. Gypsum board secured to each other with 1 in. long No. 6 Type G bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches in between layers and from the joints of the subfloor.

**GEORGIA-PACIFIC GYPSUM L L C** — Type DS

## System No. 15

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

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

**Finish Flooring - Floor Topping Mixture** — Min 3/4 in. thickness of floor topping having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

**DEPENDABLE LLC** — GSL M3.4, GSL K2.6, GSL-CSD and GSL RH

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

**KEENE BUILDING PRODUCTS CO INC** — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

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

**KEENE BUILDING PRODUCTS CO INC** — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

**Alternate Floor Mat Materials** — (Optional) — Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

**KEENE BUILDING PRODUCTS CO INC** — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

**Alternate Floor Mat Materials** — (Optional) — Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

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

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

**KEENE BUILDING PRODUCTS CO INC** — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

## System No. 16

**Subflooring** — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

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

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

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

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

**PLITEQ INC** — Type GenieMat RST02

**Floor Mat Materials** — (Optional) — Nom 3/16 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

**PLITEQ INC** — Type GenieMat FF03NP



















## FIRE-RESISTANCE DESIGN

Assembly Usage Disclaimer

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

BXUV7 - Fire Resistance Ratings - CANULC-S101 Certified for Canada

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

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

## Design No. U356

December 12, 2018

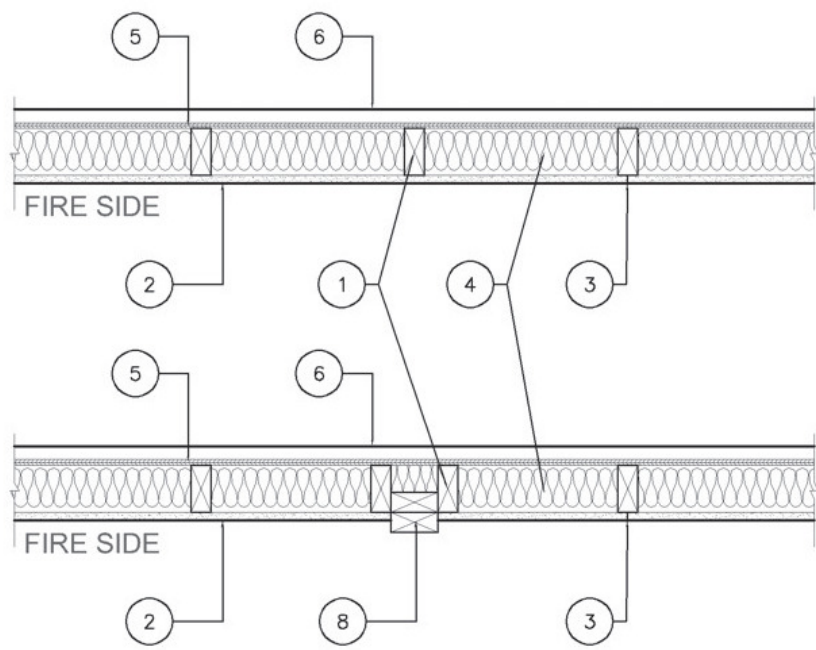
Bearing Wall Rating - 1 Hr Rating Exposed to Fire on Interior Face Only

Bearing Wall Rating — 1 Hr Rating Exposed to Fire on Exterior Face (See Item 6E)

Finish Rating — 23 Min or 25 Min (See Item 2C)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide **BXUV** or **BXUV7**.

\* 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. **Wood Studs** — 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 U306. Nom 5/8 in. thick, 4 ft wide, applied vertically and nailed to studs and bearing plates 7 in. OC with 5d cement-coated nails, 1-7/8 in. long with 1/4 in. diam head.

When Item 7, 7B, 7C, 7D or 7E **Steel Framing Members\***, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 7A **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.

ACADIA DRYWALL SUPPLIES LTD (View Classification) — CKNX.R25370

AMERICAN GYPSUM CO (View Classification) — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374

CERTANTEED GYPSUM INC (View Classification) — CKNX.R3860

CGC INC (View Classification) — CKNX.R19751

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C (View Classification) — CKNX.R18492

GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717

LOADMASTER SYSTEMS INC (View Classification) — CKNX.R11809

NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

PANEL REY S A (View Classification) — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262

THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517

UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R36438

USG MEXICO S A DE C V (View Classification) — CKNX.R16089

2A. **Gypsum Board\*** — (As an alternate to Item 2, Not Shown) — Any 5/8 in. thick 4 ft wide gypsum panels that are eligible for use in Design Nos. L501, G512 or U306, supplied by the Classified Companies listed below shown in the **Gypsum Board\*** (CKNX) category. Applied vertically and attached to studs and bearing plates 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.

**CGC INC**

UNITED STATES GYPSUM CO

USG BORAL DRYWALL SFZ LLC

USG MEXICO S A DE C V

2B. **Gypsum Board\*** — (As an alternate to Item 2, Not Shown) — 5/8 in. thick 4 ft wide gypsum panels applied vertically and attached to studs and bearing plates 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.

**ACADIA DRYWALL SUPPLIES LTD** — Type X, 5/8 Type X, Type Blueglass Exterior Sheathing

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

CERTANTEED GYPSUM INC — Type C, Type X-2, Type X, Type X-1, Easi-Lite Type X-2

GEORGIA-PACIFIC GYPSUM L L C — Types X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Softi-Type X, Type X ComfortGuard Sound Deadening Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS.

THAI GYPSUM PRODUCTS PCL — Type C or Type X

2C. **Gypsum Board\*** — (As an alternate to Item 2, Not Shown) — For Use with Item 5A only. 5/8 in. thick 4 ft wide gypsum panels applied horizontally and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screws 1 in and 4 in. from edges of board. Finish Rating is 25 min.

**ACADIA DRYWALL SUPPLIES LTD** — 5/8 Type X, Type Blueglass Exterior Sheathing

GEORGIA-PACIFIC GYPSUM L L C — Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Softi-Type X

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS

2D. **Gypsum Board\*** — (As an alternate to Item 2) — Not to be used with Item 7, 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 5d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads 7 in. OC.

**NATIONAL GYPSUM CO** — SoundBreak XP-Type X Gypsum Board

2E. **Gypsum Board\*** — (As an alternate to Items 2 through 2D) — Nominal 5/8 in. thick, 4 ft wide panels, secured as described in Item 2.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock ES.

2F. **Gypsum Board\*** — (As an alternate to Item 2) — Not to be used with Item 7, 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally and fastened to the studs and plates 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.

**CERTANTEED GYPSUM INC** — Type SilentFX

2G. **Wall and Partition Facings and Accessories\*** — (As an alternate to Items 2 through 2F) — Nominal 5/8 in. thick, 4 ft wide panels, secured as described in Item 2.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock S27.

2H. **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 maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Type LGFC2A (finish rating 21 min.), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

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

2J. **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 steel screws spaced a max 8 in. OC with the last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum boards are to be installed horizontally.

**CERTANTEED GYPSUM INC** — Type C, Type X-2, Type X or Type X-1 (finish rating 25 min.), Easi-Lite Type X (finish rating 24 min.), Easi-Lite Type X-2, Type EGRG or GlasRoc or GlasRoc Sheathing (finish rating 23 min)

thread steel screws spaced a max 8 in. OC with the last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum boards are to be installed horizontally.

**CERTANTEED GYPSUM INC** — Type C, Type X-2, Type X or Type X-1 (finish rating 25 min.), Easi-Lite Type X (finish rating 24 min.), Easi-Lite Type X-2, Type EGRG or GlasRoc or GlasRoc Sheathing (finish rating 23 min)

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.

4A. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft<sup>3</sup>. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft<sup>3</sup> in accordance with the application instructions supplied with the product.

**U S GREENFIBER L L C** — INS735 & INS745 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.

4B. **Fiber, Sprayed\*** — As an alternate to Item 4 and 4A — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product.

Nominal dry density of 4.50 lb/ft<sup>3</sup>.

**NU-WOOL CO INC** — Cellulose Insulation

4C. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lb/ft<sup>3</sup>.

**INTERNATIONAL CELLULOSE CORP** — Celbar-RL

4D. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 4) — Spray applied, granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCA2).

**AMERICAN ROCKWOOL MANUFACTURING, LLC** — Type Rockwool Premium Plus

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 5d cement coated box nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs.

5A. **Mineral and Fiber Boards\*** — As an alternate to Item 5 - Min 1/2 in. thick, 4 ft wide sheathing, installed vertically 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 1-1/2 in. long galvanized roofing nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs. As an option a weather resistive barrier may be applied over the Mineral and Fiber Boards.

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.

A. **Vinyl Siding — Molded Plastic\*** — Contoured rigid vinyl siding having a flame spread value of 20 or less.

See **Molded Plastic** (BTAT) category in the Building Materials Directory for names of manufacturers.

B. **Particle Board Siding** — Hardboard exterior sidings including patterned panel or lap siding.

C. **Wood Structural Panel or Lap Siding** — APA Rated Siding. Exterior, plywood, OSB or composite panels with veneer faces and structural wood core, per PS 1 or APA Standard PRP-108, including textured, rough sawn, medium density overlay, brushed, grooved and lap siding.

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.

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.

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F. **Exterior Insulation and Finish System (EIFS)** — Nom 1 in. Foamed Plastic\* insulation bearing the UL Classification Marking, attached over sheathing and finished with coating system, or Portland cement or synthetic stucco systems, in accordance with manufacturer's instructions. See **Foamed Plastic** (BRYX and CCWW) categories for names of Classified companies.

G. **Siding** — Aluminum or steel siding attached over sheathing to studs.

H. **Fiber-Cement Siding** — Fiber-cement exterior sidings including smooth and patterned panel or lap siding.

I. **Wall and Partition Facings and Accessories\*** — Stone veneer is mortar bonded to a lath, scratch coat and water resistant barrier applied to sheathing, installed in accordance with the manufacturers installation instructions, and meeting the requirements of local code agencies.

**ELDORADO STONE OPERATIONS L L C** — Type Eldorado Stone

6A. **Building Units\*** — As an alternate to **Exterior Facing Item 6** — Insulated steel panels, 12 through 42 in. wide. Attached over sheathing through retainer clips to studs or support steel with No. 14 hex head self-tapping screws located at each joint in the concealed lip of the units and spaced in accordance with the structural design requirements. **KINGSRAN INSULATED PANELS INC** — Types 200, 300, 400, 500, or KS series, 2 through 6 in. thickness; CWP-V, H, 2 through 3 in. nominal thickness or Designwall 2000 or Designwall 4000, 2 and 3 in. nominal thickness.

7. **Steel Framing Members\*** — (Optional, Not Shown) — 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 b. 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 Item 2.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7A) 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 of the channel. 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).

7A. **Steel Framing Members\*** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below.

a. **Furring Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. 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. Two layers of gypsum board attached to furring channels as described in Item 2.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Aa) to interior side of studs. Clips spaced 48 in. OC, and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.

**KINETICS NOISE CONTROL INC** — Type Isomax.

7B. **Steel Framing Members\*** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below.

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

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Aa) to interior side of studs. Clips spaced 48 in. OC. Genie clips secured to studs with two No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

**PLITEQ INC** — Type Genie Clip

7C. **Steel Framing Members\*** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below.

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 2.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Ca) to studs. Clips spaced 48 in. OC, and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

**STUDDO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

7D. **Steel Framing Members\*** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below.

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 2.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Db) to studs. Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

**REGUPOL AMERICA** — Type SonusClip

7E. **Steel Framing Members\*** — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:

a. **Resilient Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 2.

b. **Steel Framing Members\*** — Used to attach resilient channels (Item 7Ea) to studs. Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

**KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

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.

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

Last Updated on 2018-12-12

## Design/System/Construction/Assembly Usage Disclaimer

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

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DATE

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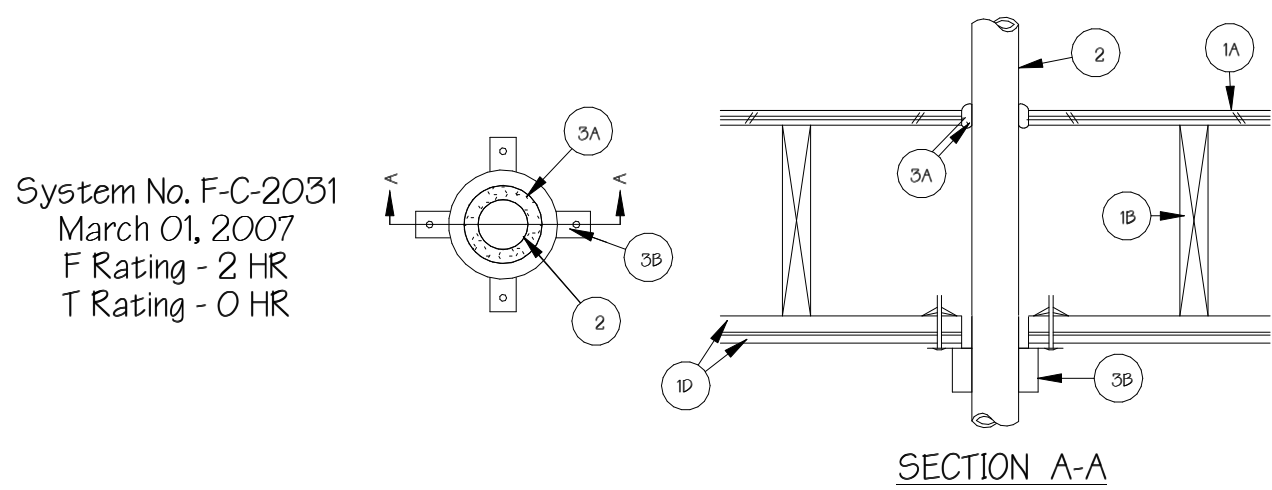
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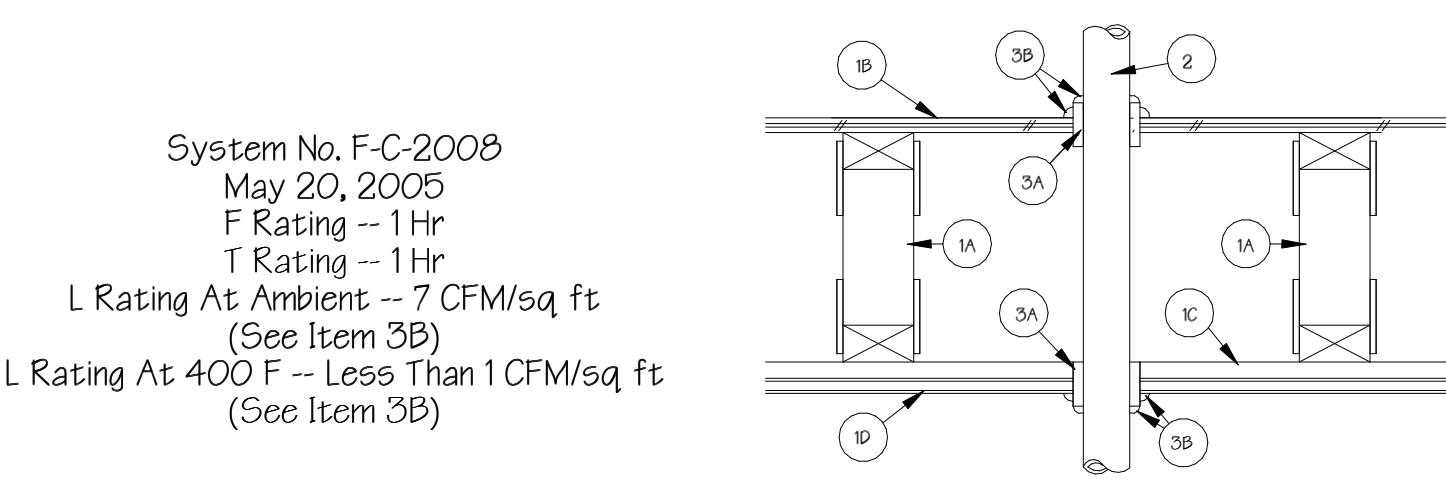


System No. F-C-2031  
March 01, 2007  
F Rating -- 2 HR  
T Rating -- 0 HR

1. Floor Ceiling Assembly - The fire-rated wood joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in Design L505, L511 or L536 in the UL Fire Resistance Directory as summarized below:  
A. Floor 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 - Nom 2 by 10 in. lumber joists spaced 16 in. OC with nom 1 by 3 in. lumber bridging and with ends firestopped.  
C. Furring Channels - (Not Shown) - Resilient galv steel furring installed perpendicular to wood joists between first and second layers of wallboard (Item 1D) and spaced max 24 in. OC.  
D. Gypsum Board\* - Nom 4 ft wide by 5/8 in. 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.

2. Through-Penetrants - One nonmetallic pipe or conduit to be installed approximately midway between wood joists and centered within the firestop system. Diam of openings hole-sawed through flooring system and through two layers gypsum wallboard ceiling to be nom 1/2 in. larger than the outside diam of through-penetrant. Pipe or conduit to be rigidly supported on both sides of the floor-ceiling assembly. The following types and sizes of nonmetallic pipes or conduits may be used:  
A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. diam (or smaller) Schedule 40 solid-core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.  
B. Rigid, Nonmetallic Conduit+ — Nom 4 in. diam (or smaller) Schedule 40 PVC conduit installed in accordance with Article 347 of the National Electrical Code (NFPA No. 70).  
C. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 4 in. diam (or smaller) SDR 17 CPVC pipe for use in closed (process or supply) or vented, (drain, waste or vent) piping systems.

3. Firestop System - The firestop system shall consist of the following:  
A. Fill, Void or Cavity Material\* - Caulk - Fill material forced into annulus to fill space to max extent possible, flush with top surface of floor. Additional fill material to be installed such that a max 1/4 in. crown is formed around the penetrating item.  
EGS NELSON FIRESTOP - CLK N/S (Non-Sag) Caulk.  
B. Firestop Device\* - Galv steel collar lined with an intumescent material sized to fit the specific diam of the through-penetrant. Device shall be installed around through-penetrant in accordance with the accompanying installation instructions. Device incorporates anchor tabs for securement to finished gypsum wallboard ceiling by means of 1/8 in. diam by 3 in. long toggle bolts in conjunction with 1/4 in. by 1 in. diam steel fender washers.  
EGS NELSON FIRESTOP - PCS Device



System No. F-C-2008  
May 20, 2005  
F Rating -- 1 Hr  
T Rating -- 1 Hr  
L Rating At Ambient -- 7 CFM/sq ft (See Item 3B)  
L Rating At 400 F -- Less Than 1 CFM/sq ft (See Item 3B)

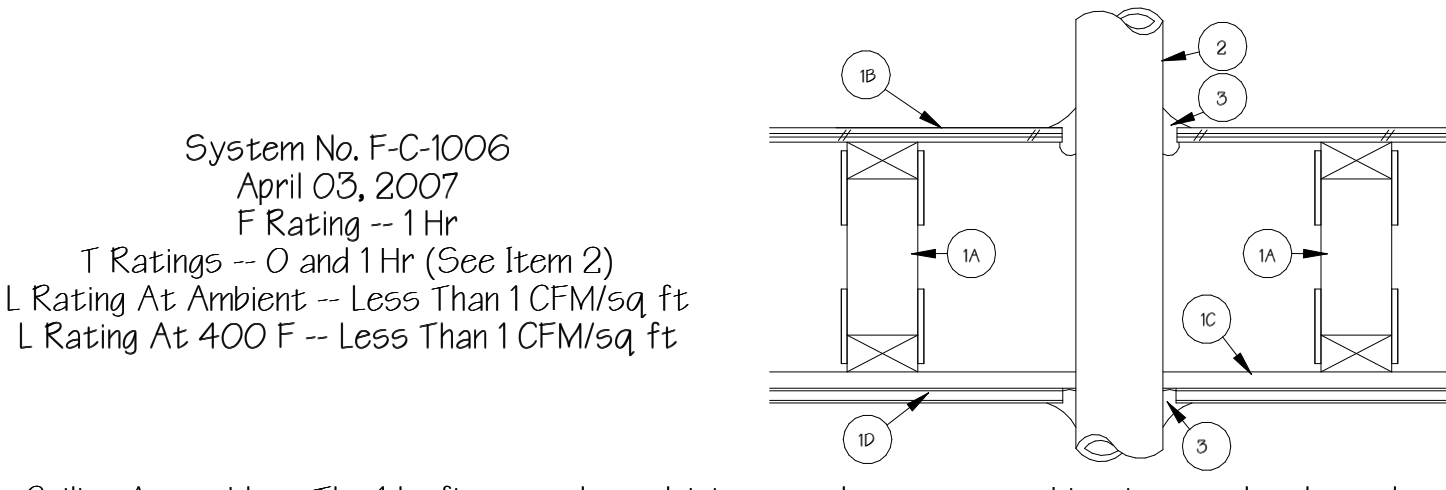
1. Floor Assembly -- The fire rated wood truss or combination wood and steel truss Floor-Ceiling assembly shall be constructed of the materials and in the manner described in the individual L500 Series Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Trusses -- Min 12 in. (305 mm) deep parallel chord trusses fabricated from 2 by 4 in. (51 by 102 mm) lumber in conjunction with galv steel truss plates or Structural Wood Members\* with bridging as required.  
B. Flooring -- Nom 3/4 in. (19 mm) thick plywood flooring with or without Floor Topping Mixture\*. Diam of hole-sawed opening in flooring to be 1/2 to 3/4 in. (13 to 19 mm) larger than diam of pipe. Max diam of opening in flooring is 3 in. (76 mm).  
C. Furring Channels -- Rigid or resilient galv steel furring channels installed perpendicular to bottom chord of trusses.  
D. Gypsum Board\* -- Nom 4 ft (122 m) wide by 5/8 in. (16 mm) thick, screw-attached to furring channels. Diam of hole-sawed opening in gypsum wallboard ceiling to be 1/2 to 3/4 in. (13 to 19 mm) larger than diam of pipe. Max diam of opening in ceiling is 3 in. (76 mm)

2. Nonmetallic Pipe -- Nom 2 in. (51 mm) diam (or smaller) Schedule 40 polyvinyl chloride (PVC), SDR 13.5 chlorinated polyvinyl chloride (CPVC) or solid-core Schedule 40 acrylonitrile-butadiene-styrene (ABS) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. One pipe to be installed approx midway between trusses and centered in circular openings in flooring and in ceiling. A nom 1/4 in. to 3/8 in. (6 to 10 mm) annular space is required in the firestop system. Pipe to be rigidly supported on both sides of Floor-Ceiling assembly.  
2A. Electrical Nonmetallic Tubing+ -- Nom 1 in. (25 mm) diam (or smaller) corrugated wall ENT constructed of polyvinyl chloride. ENT to be installed as a complete system with all terminations in junction boxes, outlet boxes or other approved enclosures as specified in the National Electrical Code. Max one ENT per through opening. ENT to be centered in opening and rigidly supported on both sides of the Floor-Ceiling assembly. See Electrical Nonmetallic Tubing (FKHU) category in Electrical Construction Materials Directory for names of manufacturers.

3. Firestop System -- The details of the firestop system shall be as follows:

A. Fill, Void or Cavity Materials\* -- Wrap Strip -- Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, supplied to 2 in. (51 mm) wide strips. Nom 2 in. (51 mm) wide strip tightly-wrapped around nonmetallic pipe (foil side exposed), secured with two steel tie wires and slid into hole-sawed opening in flooring (Item 1B) and in gypsum wallboard ceiling (Item 1D). Bottom edge of wrap strip to project 9/16 to 11/16 in. (14 to 17.5 mm) below bottom surface of flooring and below bottom (ceiling) surface of gypsum board.  
3M COMPANY -- Type FS-195+  
B. Fill, Void or Cavity Materials\* -- Caulk, Sealant or Putty -- Nom 1/4 in. (6 mm) thickness of caulk or putty to be applied to the exposed edge of the wrap strip layer (top of flooring and bottom of gypsum board ceiling). Generous application of caulk or putty to be applied to fill all gaps at the wrap strip/flooring and wrap strip/gypsum board ceiling interfaces.

3M COMPANY -- CP 25WB+ Caulk, FB-3000 WT Sealant, MP+ Stix Putty (Note: L Ratings apply only when Type CP 25WB+ caulk or FB-3000 WT sealant is used. CP 25WB+ not suitable for use with CPVC pipes.)



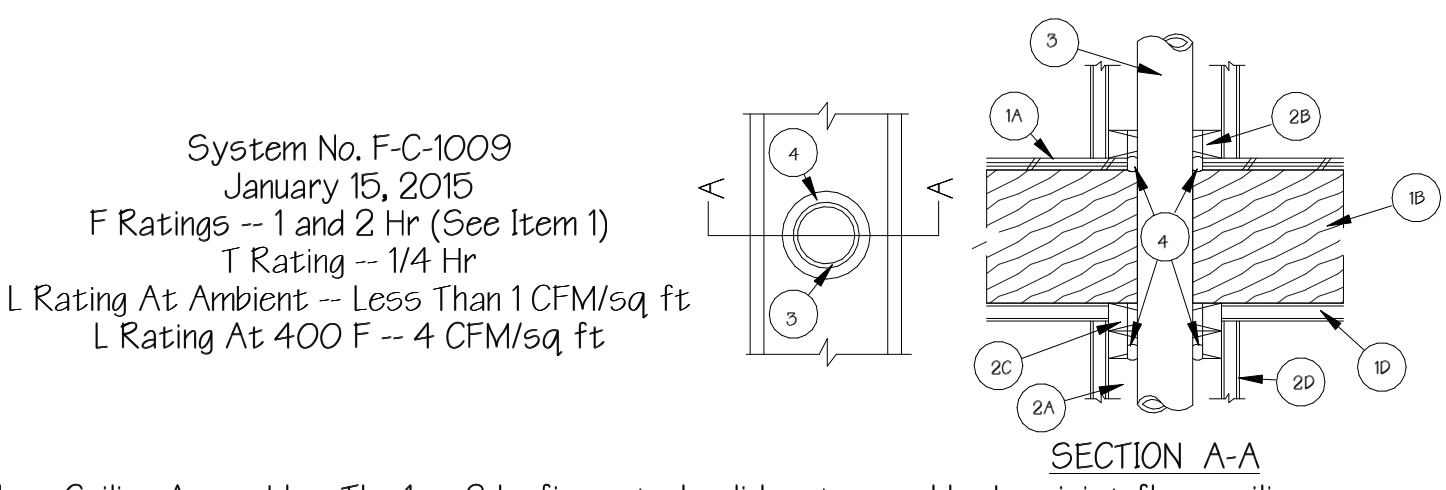
1. Floor-Ceiling Assembly -- The 1 hr fire rated wood joist, wood truss or combination wood and steel truss Floor-Ceiling assembly shall be constructed of the materials and in the manner described in the individual L500-Series Design in the UL Fire Resistance Directory, as summarized below:  
A. Joists or Trusses -- Nom 2 by 10 in. (51 by 254 mm) lumber joists, min 12 in. (305 mm) deep parallel chord trusses fabricated from nom 2 by 4 in. (51 by 102 mm) lumber in conjunction with galv steel truss plates or Structural Wood Members\* with bridging as required.  
B. Flooring -- Nom 3/4 in. (19 mm) thick plywood flooring with or without Floor Topping Mixture\*. Diam of circular cutouts is 1/4 to 1/2 in. (6 to 13 mm) larger than outside diam of the pipe.  
C. Furring Channels -- Rigid or resilient galv steel furring channels installed perpendicular to bottom chord of trusses.  
D. Gypsum Board\* -- Nom 4 ft (12 m) wide by 5/8 in. (16 mm) thick, screw-attached to furring channels. Diam of circular cutouts is 1/4 to 1/2 in. (6 to 13 mm) larger than outside diam of the pipe.  
1.1 Chase Wall -- (Optional, now shown) -- The through penetrants (Item No. 2) may be routed through a 1 hr fire-rated single, double or staggered wood stud/gypsum board chase wall having a fire rating consistent with that of the floor-ceiling assembly. Depth of chase wall to be min 1 in. 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 -- Nom 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs.  
B. Sole Plate -- Nom 2 by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Diam of circular cutouts is 1/4 to 1/2 in. (6 to 13 mm) larger than outside diam of the pipe.  
C. Top Plate -- The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) or two sets of parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Diam of circular cutouts is 1/4 to 1/2 in. (6 to 13 mm) larger than outside diam of the pipe.  
D. Gypsum Board\* -- Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.

2. Through-Penetrant -- Nom 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe or cast iron pipe, nom 4 in. (102 mm) diam (or smaller) steel conduit, or steel EMT or nom 3 in. (76 mm) diam (or smaller) Type L (or heavier) copper tubing. Pipe to be installed approx midway between joists or trusses and centered in circular cutouts. Annular space between penetrant and periphery of opening shall be min 1/8 in. (3 mm) to max 1/4 in. (6 mm). Pipe to be rigidly supported on both sides of Floor-Ceiling assembly.  
T Rating is 1 hr for nom 4 in. (102 mm) diam (or smaller) penetrants. T Rating is 0 hr for all penetrants greater than nom 4 in. (102 mm) diam.

3. Fill, Void or Cavity Materials\* -- Caulk or Sealant -- Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with top surface of floor or sole plate. Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with bottom surface of ceiling or top plate. An additional min 1/4 in. (6 mm) crown of fill material applied to perimeter of penetrant at its egress from the top of flooring and underside of ceiling or from top of sole plate and underside of top plate.

3M COMPANY -- CP 25 WB+ or FB-3000 WT



1. Floor-Ceiling Assembly - The 1 or 2 hr 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. Diam of opening to be max 1 in. (25 mm) larger than diam of pipe. As an alternate, the opening may be square-cut with a max dimension 1 in. (25 mm) greater than the diam of the pipe.  
B. Wood Joists\* - Nom 10 in. (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 Board\* Thickness, type, number of layers and fasteners shall be as specified in the individual Floor-Ceiling Design. Diam of opening to be max 1 in. (25 mm) larger than diam of pipe.

2. Chase Wall - (Optional) - The through penetrant (Item 3) may be routed through a 1 or 2 hr fire-rated single, double or staggered wood stud/gypsum board chase wall having a fire rating consistent with that of the floor-ceiling assembly. Depth of chase wall to be min 1 in. 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 - Nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs. Nom 2 by 4 in. (51 by 102 mm) studs are allowed for through-penetrants (Item 3) not exceeding nom 2 in. (51 mm) diam.  
B. Sole Plate - Nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Diam of opening is to be max 1 in. (925 mm) larger than diam of pipe. As an alternate, the opening may be square-cut with a max dimension 1 in. (25 mm) greater than the diam of the pipe. Plates may be discontinuous over opening, terminating at two opposing edges of opening. Max length of discontinuity to be 1 in. (25 mm) greater than diam of through penetrant.  
C. Top Plate - The double top plate shall consist of two nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or two sets of parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Diam of opening is to be max 1 in. (25 mm) larger than diam of pipe. As an alternate, the opening may be square-cut with a max dimension 1 in. (25 mm) greater than the diam of the pipe. Plates may be discontinuous over opening, terminating at two opposing edges of opening. Max length of discontinuity to be 1 in. (25 mm) greater than diam of through penetrant.

D. Steel Plate - When lumber plates are discontinuous, nom 1-1/2 in. (38 mm) wide No. 20 gauge (or heavier) galv 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 in. (51 mm) onto each discontinuous lumber plate and secured to lumber plates with steel screws or nails.

E. Gypsum Board\* - 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 min 0 in. (point contact) to max 1 in. (25 mm). The following types and sizes of metallic pipes or conduits may be used:

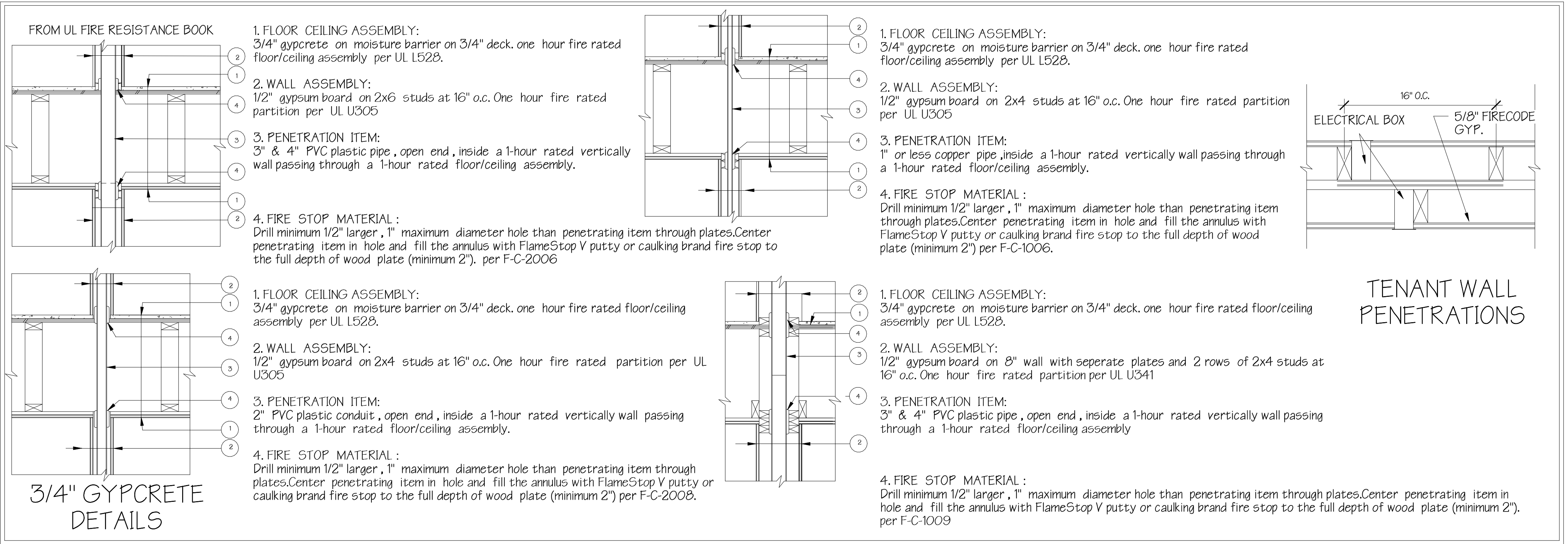
A. Steel Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.  
B. Iron Pipe - Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.  
C. Conduit - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.  
D. Copper Tubing - Nom (102 mm) 4 in. diam (or smaller) Type L (or heavier) copper tubing.  
E. Copper Pipe - Nom (102 mm) 4 in. diam (or smaller) Regular (or heavier) copper pipe.

4. Fill, Void or Cavity Material\* - Sealant -- Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with the top surface of the floor or the sole plate. Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with bottom surface of ceiling or lower top plate.

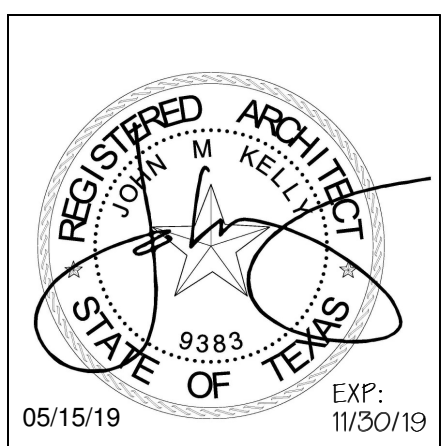
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CP601S, CFS-S SIL GG, CP606, FS-One Sealant or FS-ONE MAX Intumescent Sealant (Note: L Ratings apply only when FS-ONE Sealant is used.)

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

## THROUGH - PENETRATION FIRESTOP DETAILS



DRAWN BY:	WLG
CHECKED BY:	JMK
PROJECT #:	18-2319



LDG DEVELOPMENT, LLC.
1305 E. 6TH ST. #13, AUSTIN, TX 78702

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STATE OF TEXAS  
No. 9383  
EXPIRES 11/30/19

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DESCRIPTION		
FIRESTOPPING DETAILS		
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## 2015 International Building Code

2406.4 HAZARDOUS LOCATIONS. The locations specified in Sections 2406.4.1 through 2406.4.7 shall be considered specific hazardous locations requiring safety glazing materials.

2406.4.1 GLAZING IN DOORS. Glazing in all fixed and operable panels of swinging, sliding, and bifold doors shall be considered a hazardous location.

Exceptions:

1. Glazed openings of a size through which a 3-inch-diameter (76 mm) sphere is unable to pass.
2. Decorative glazing.
3. Glazing materials used as curved glazed panels in revolving doors.
4. Commercial refrigerated cabinet glazed doors.

2406.4.2 GLAZING ADJACENT TO DOORS. Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge of the glazing is within a 24-inch (610 mm) arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the walking surface shall be considered a hazardous location.

Exceptions:

1. Decorative glazing.
2. Where there is an intervening wall or other permanent barrier between the door and glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with Section 2406.4.3.
4. Glazing in walls on the latch side of and perpendicular to the plane of the door in a closed position in one- and two-family dwellings or within dwelling units in Group R-2.

2406.4.3 GLAZING IN WINDOWS. Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered a hazardous location:

1. The exposed area of an individual pane is greater than 9 square feet (0.84 m<sup>2</sup>);
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor;
3. The top edge of the glazing is greater than 36 inches (914 mm), above the floor; and
4. One or more walking surface(s) are within 36 inches (914 mm), measured horizontally and in a straight line, of the plane of the glazing.

Exceptions:

1. Decorative glazing.
2. Where a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and be a minimum of 1 1/2 inches (38 mm) in cross-sectional height.
3. Outboard panes in insulating glass units or multiple glazing where the bottom exposed edge of the glass is 25 feet (7620 mm) or more above any grade, roof, walking surface or other horizontal or sloped (within 45 degrees of horizontal) (0.78 rad) surface adjacent to the glass exterior.

2406.4.4 Glazing in guards and railings. Glazing in *guards* and railings, including structural baluster panels and nonstructural in-fill panels, regardless of area or height above a walking surface shall be considered a hazardous location.

2406.4.5 Glazing and wet surfaces. Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor or outdoor swimming pools where the bottom exposed edge is less than 60 inches (1524 mm) measured vertically above any standing or walking surface shall be considered a hazardous location. This shall apply to single glazing and all panes in multiple glazing.

Exception: Glazing that is more than 60 inches (1524 mm), measured horizontally and in a straight line, from the water's edge of a bathtub, hot tub, spa, whirlpool or swimming pool.

2406.4.6 Glazing adjacent to stairways and ramps. Glazing where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps shall be considered a hazardous location.

Exceptions:

1. The side of a stairway, landing or ramp that has a guard complying with the provisions of Sections 1015 and 1607.3, and the plane of the glass is greater than 18 inches (457 mm) from the railing.
2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.

2406.4.7 Glazing adjacent to the bottom stairway landing. Glazing adjacent to the bottom of a stairway where the glazing is less than 60 inches (1524 mm) above the landing and within a 60-inch (1524 mm) horizontal arc that is less than 180 degrees (3.14 rad) from the bottom tread nosing shall be considered a hazardous location.

Exception: Glazing that is protected by a guard complying with Sections 1015 and 1607.3 where the plane of the glass is greater than 18 inches (457 mm) from the guard.

T - TEMPERED

NOTE: Smoke doors on elevators are self closing and hold opens mag locks with 180° hinges connected to fire alarm system.

NOTE: Accessible and public common use areas require that door surfaces within 10" of the floor be a smooth surface on the push side. (Including residential entry doors).

NOTE: All windows should be double-pane insulating, low-e windows. All exterior doors should be insulated.

NOTE: See specifications for interior and exterior finishes.

NOTE: At least on half of the total area of glazing on the principal street facade shall have a visible transmittance of 0.6 or higher.

716.5.3 DOOR ASSEMBLIES IN CORRIDORS AND SMOKE BARRIERS. Fire door assemblies required to have a minimum fire-protection rating of 20 minutes where located in corridor walls or smoke barrier walls having a fire-resistance rating in accordance with Table 716.5 shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test.

Exceptions:

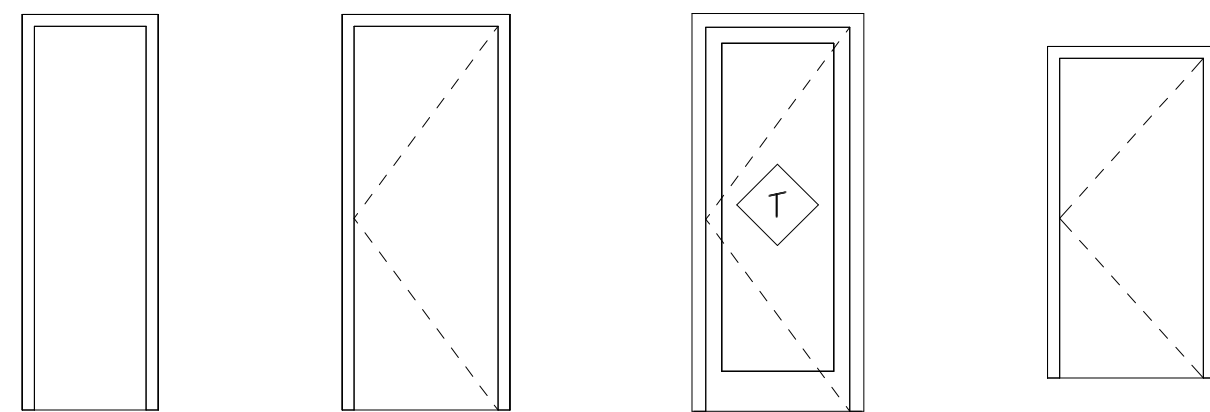
1. Viewports that require a hole not larger than 1 inch in diameter through the door, have at least a 0.25-inch-thick glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700°F.
2. Corridor door assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.
3. Unprotected openings shall be permitted for corridors in multitheater complexes where each motion picture auditorium has at least one-half of its required exit or exit access doorways opening directly to the exterior or into an exit passageway.
4. Horizontal sliding doors in smoke barriers that comply with Sections 408.3 and 408.8.4 in occupancies in Group I-3.

716.5.3.1 SMOKE AND DRAFT CONTROL. Fire door assemblies shall also meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot of door opening at 0.10 inch of water for both the ambient temperature and elevated temperature tests. Lowers shall be prohibited. Installation of smoke doors shall be in accordance with NFPA 105.

716.5.3.2 GLAZING IN DOOR ASSEMBLIES. In a 20-minute fire door assembly, the glazing material in the door itself shall have a minimum fire-protection-rated glazing of 20 minutes and shall be exempt from the hose stream test. Glazing material in any other parts of the door assembly, including transom lights and sidelights, shall be tested in accordance with NFPA 257 or UL9, including the hose stream test, in accordance with Section 716.6.

## Cameron - Door Schedule

Type Mark	Description	Door		Fire Rating
		Width	Height	
1	Interior - Single Flush	2' - 4"	8' - 0"	n/a
2	Exterior - Single Flush MFR, Primed HM	3' - 0"	8' - 0"	60 MIN.
3	Interior - Single Flush	3' - 0"	8' - 0"	n/a
4	Exterior - Single Flush MFR, Primed HM	3' - 0"	8' - 0"	n/a
5	Interior - Single Flush	3' - 0"	8' - 0"	n/a
6	Exterior - Single Flush MFR, Primed HM	3' - 0"	6' - 8"	60 MIN.



①

②

④

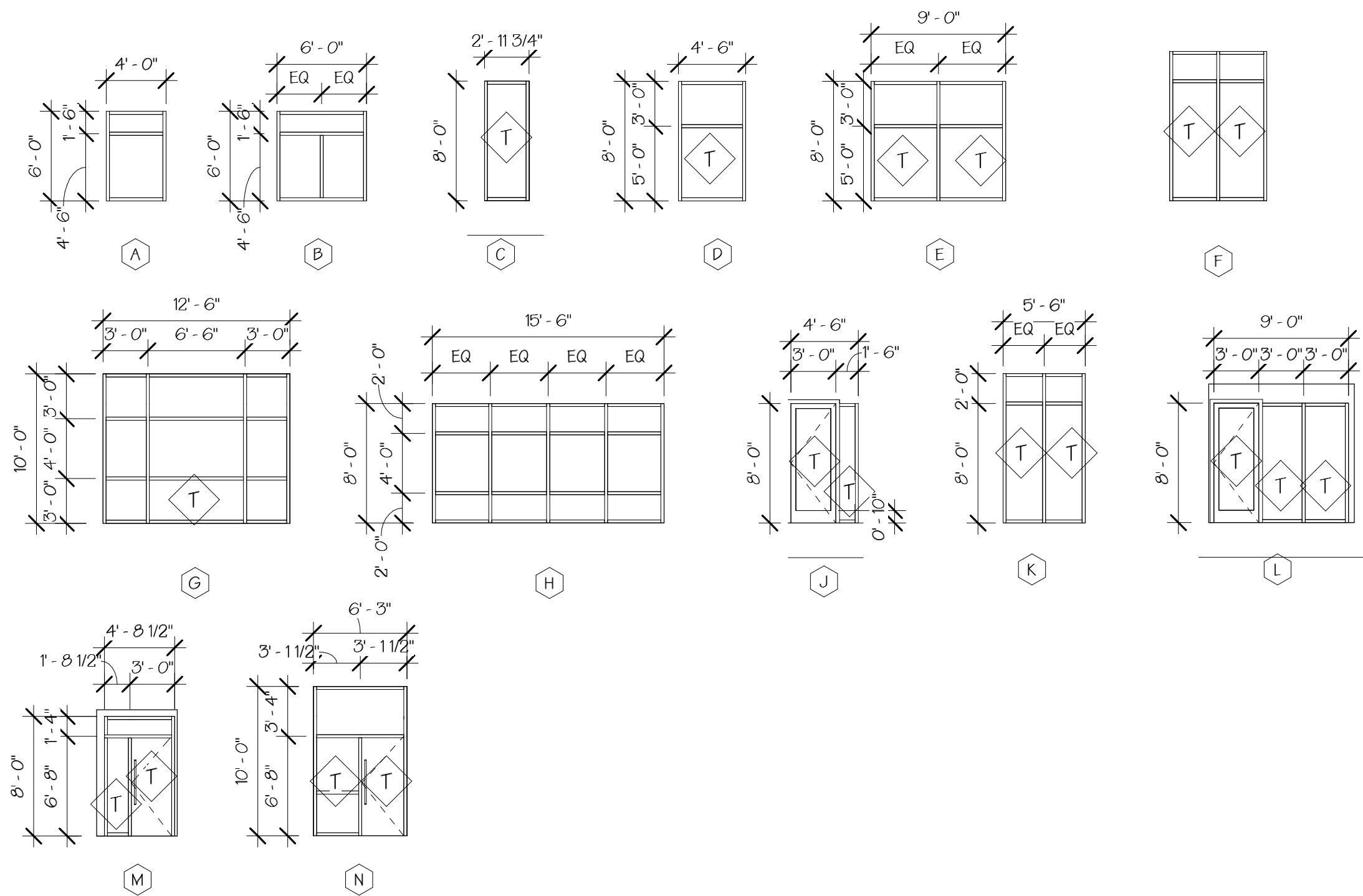
⑥

③ SIM.

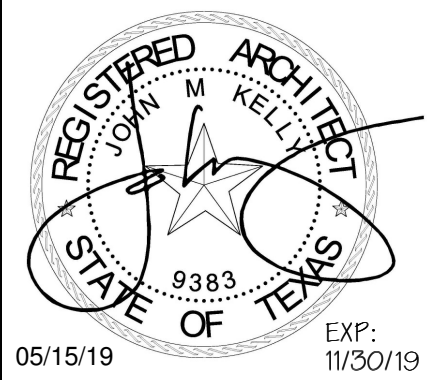
⑤ SIM.

## Cameron - Storefront Schedule

Type Mark	Width	Height	Type	Material	Description
A	4'-0"	6'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
B	6'-0"	6'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
C	3'-0"	8'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
D	4'-6"	8'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
E	9'-0"	8'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
F	6'-6"	10'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
G	12'-6"	10'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
H	15'-6"	10'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
J	4'-6"	8'-0"	Fixed with door	Storefront/Bronze	1" insulated
K	5'-6"	8'-0"	Fixed	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
L	9'-0"	8'-0"	Fixed with door	Storefront/Bronze	1" insulated
M	4'-8 1/2"	8'-0"	Fixed with door	Storefront/Bronze	1" insulated Low E and Tinted on Exterior
N	6'-3"	10'-0"	Fixed with door	Storefront/Bronze	1" insulated Low E and Tinted on Exterior



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REGISTERED ARCHITECT  
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DATE

05/15/19

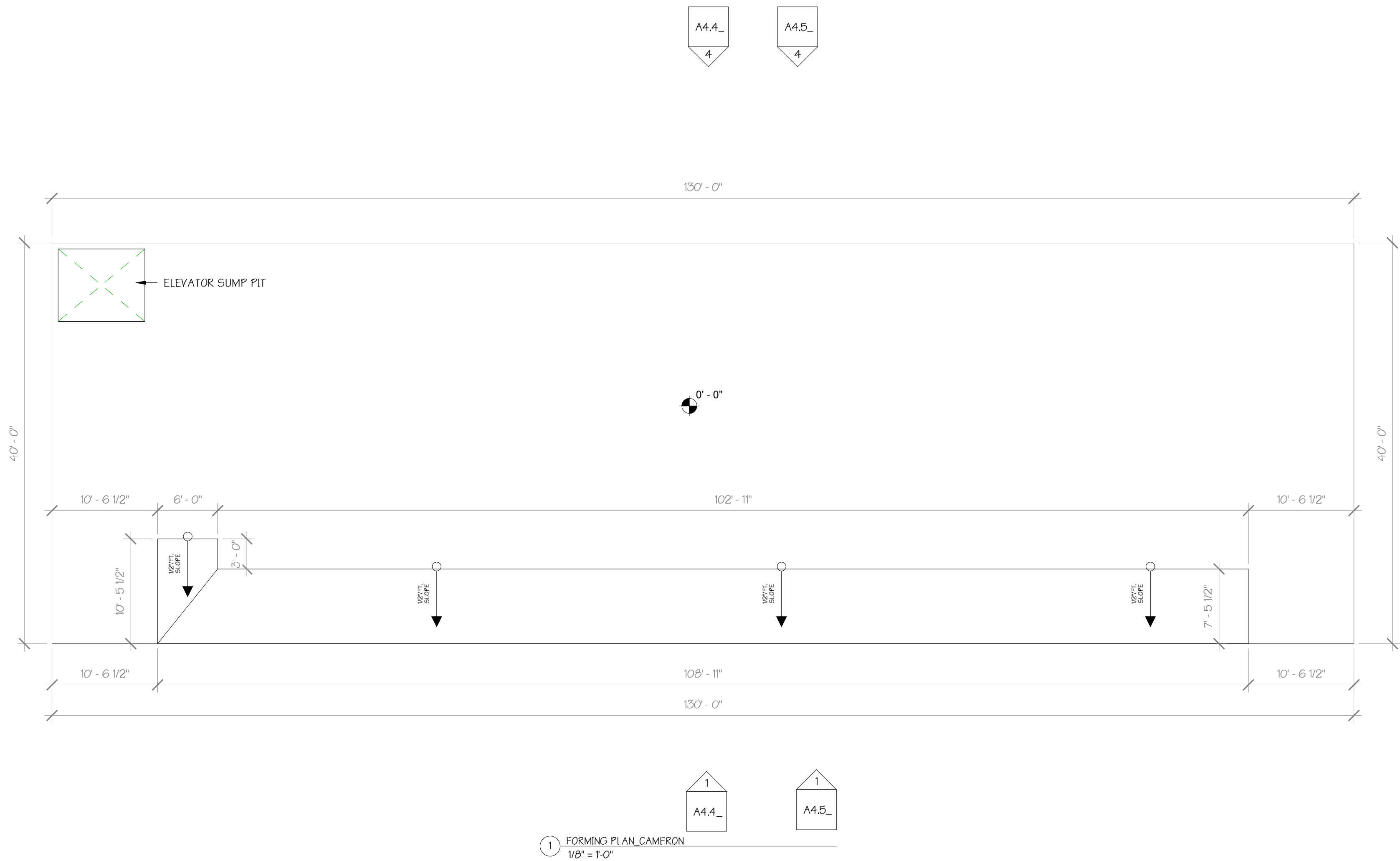
DESCRIPTION

DOOR & WINDOW  
SCHEDULE

SHEET

A3.1





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WLG

CHECKED BY:  
JMK

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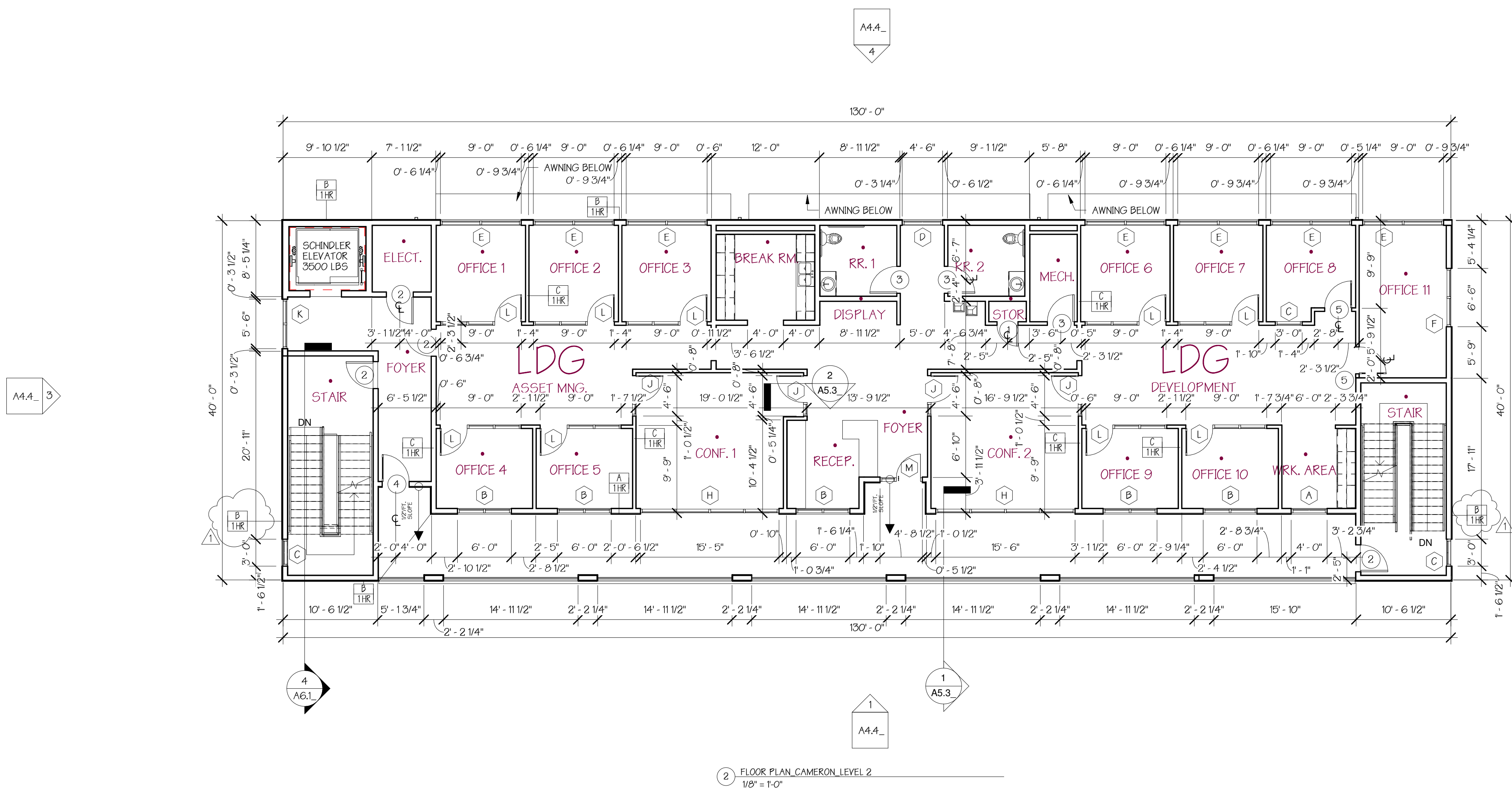
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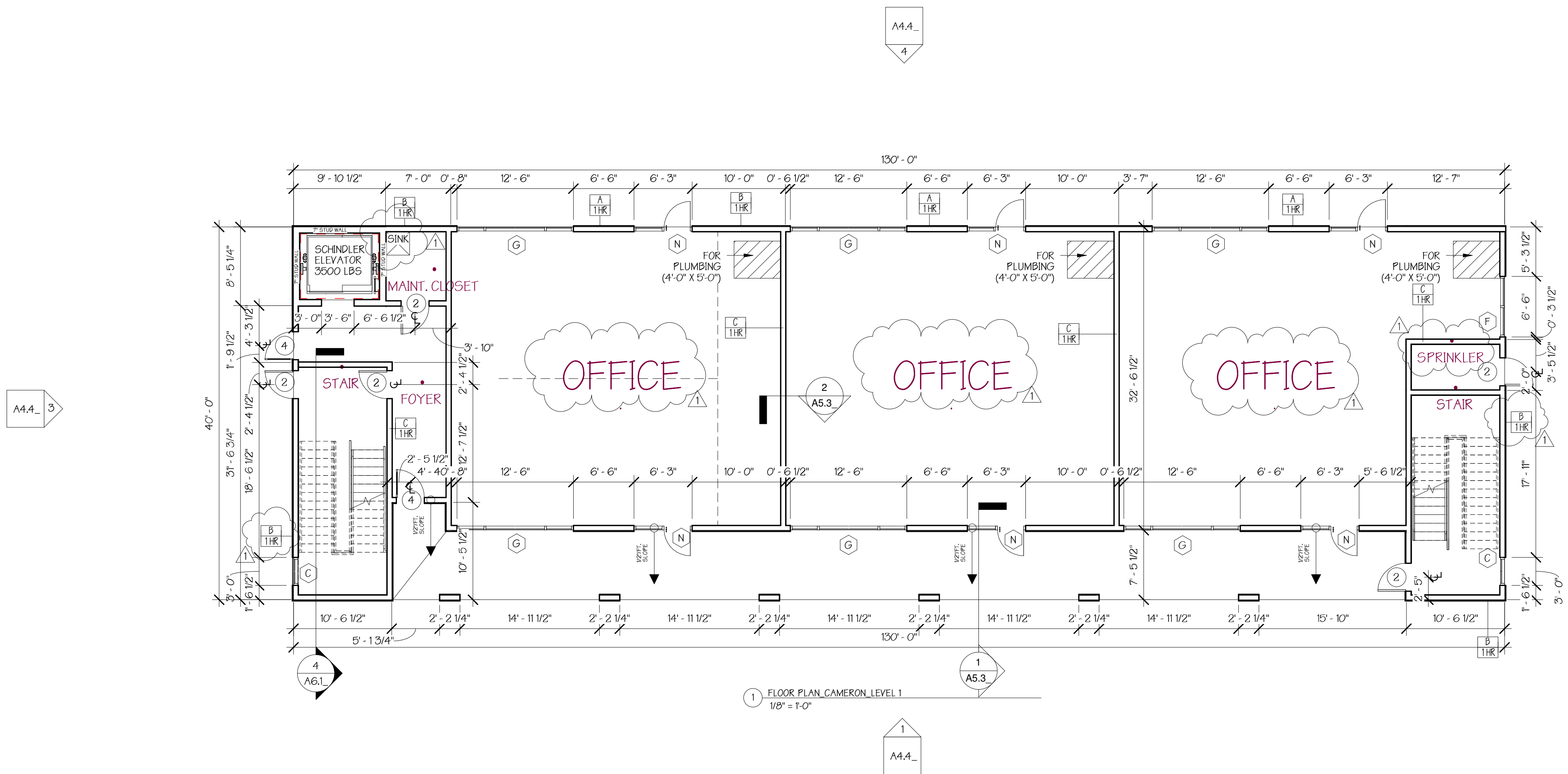
DESCRIPTION  
CAMERON\_FORMING PLAN

SHEET  
A4.1





2 FLOOR PLAN CAMERON LEVEL 2  
1/8" = 1'-0"



1 FLOOR PLAN CAMERON LEVEL 1  
1/8" = 1'-0"

Wall Schedule		
(Re: A5.1)		
Mark	Fire Rating	Type
A	1 hour	EXTERIOR WALL - GYP. ON WOOD STUD WITH FCB SIDING
B	1 hour	EXTERIOR WALL - GYP. ON WOOD STUD WITH STUCCO
C	1 hour	INTERIOR WALL - GYP. ON WOOD STUD

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CHECKED BY: JMK

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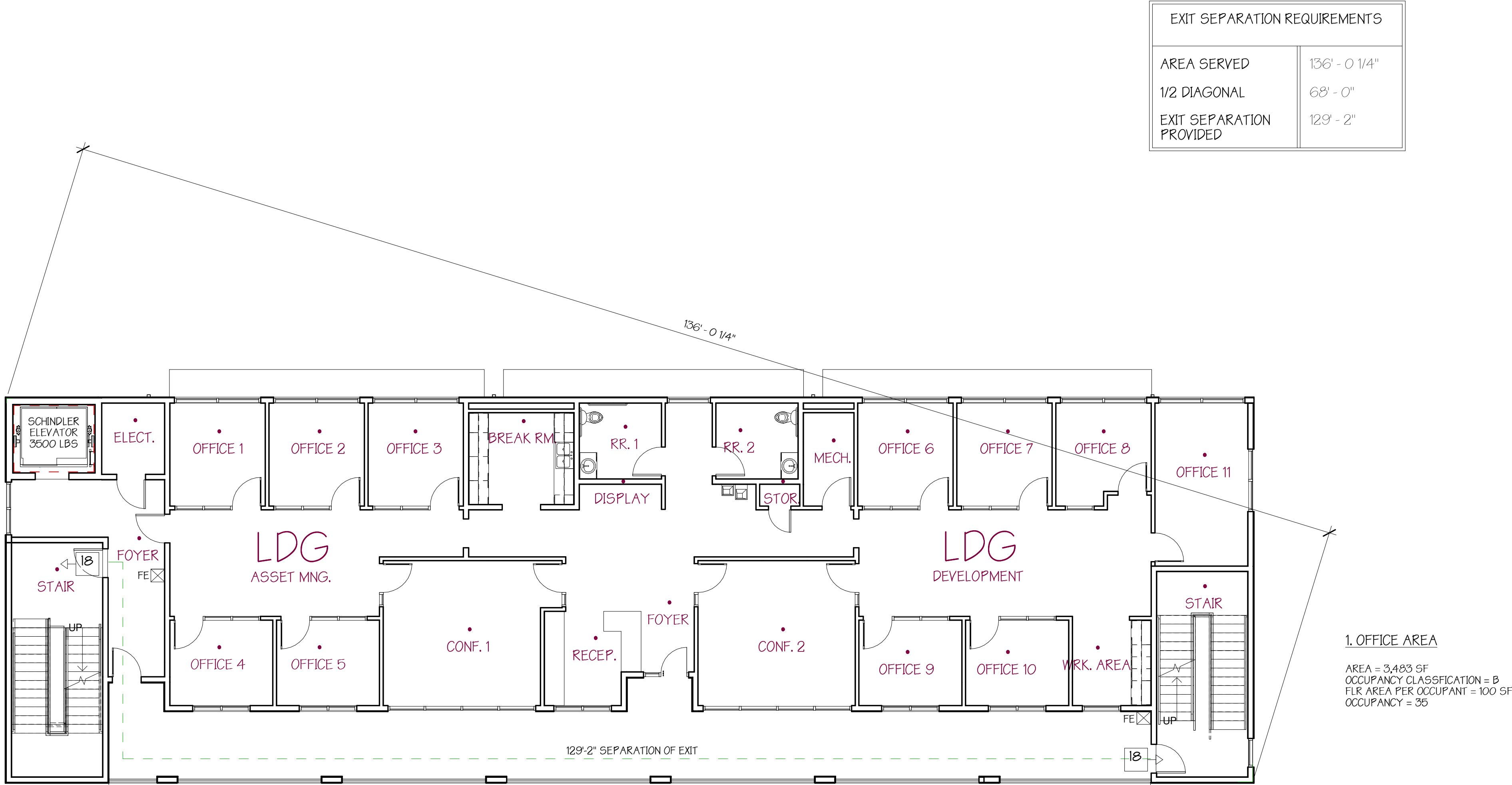
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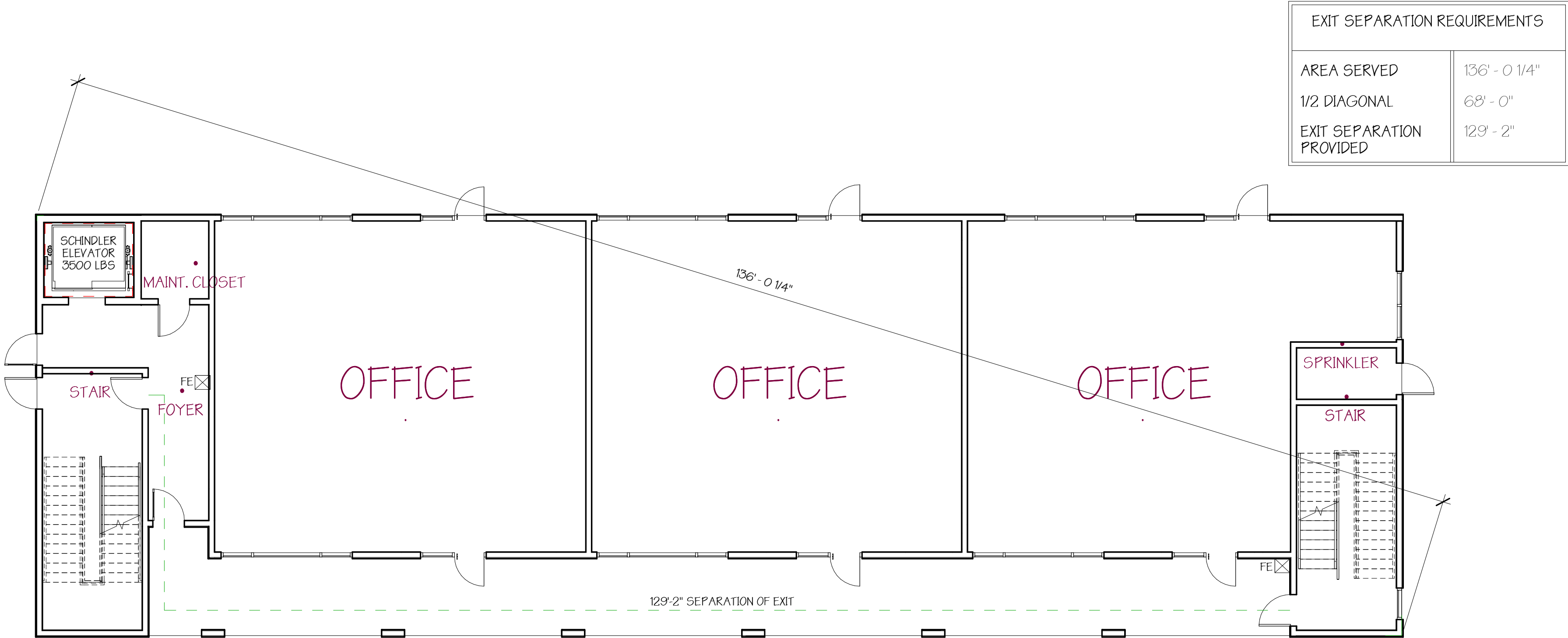
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1	City comments	05/15/19
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DESCRIPTION		
CAMERON_FLOORPLANS		
SHEET		
A4.2		





2 LIFE SAFETY CAMERON LEVEL 2  
1/8" = 1'-0"



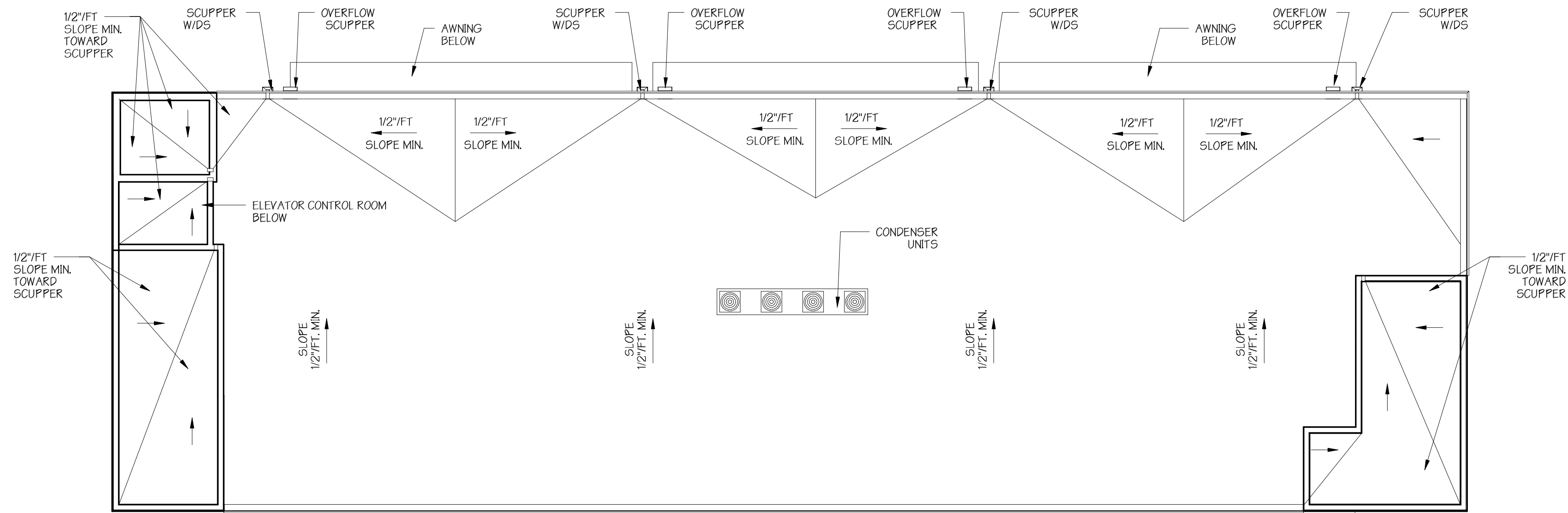
1 LIFE SAFETY CAMERON LEVEL 1  
1/8" = 1'-0"

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CAMERON LIFE SAFETY PLAN		
SHEET		
A4.2A		



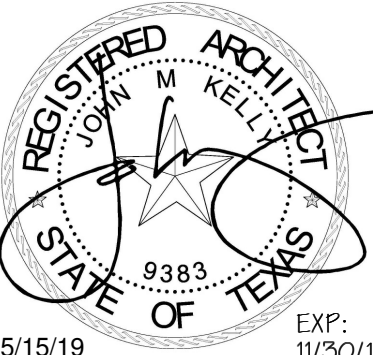


1 ROOF PLAN CAMERON  
1/8" = 1'-0"

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WLG

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JMK

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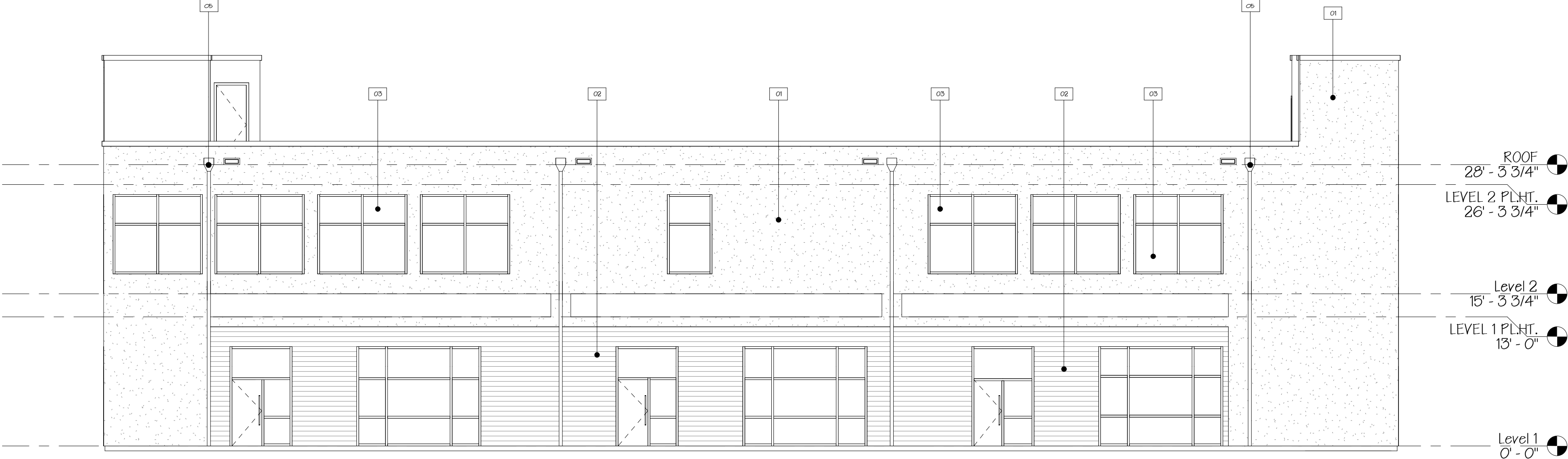
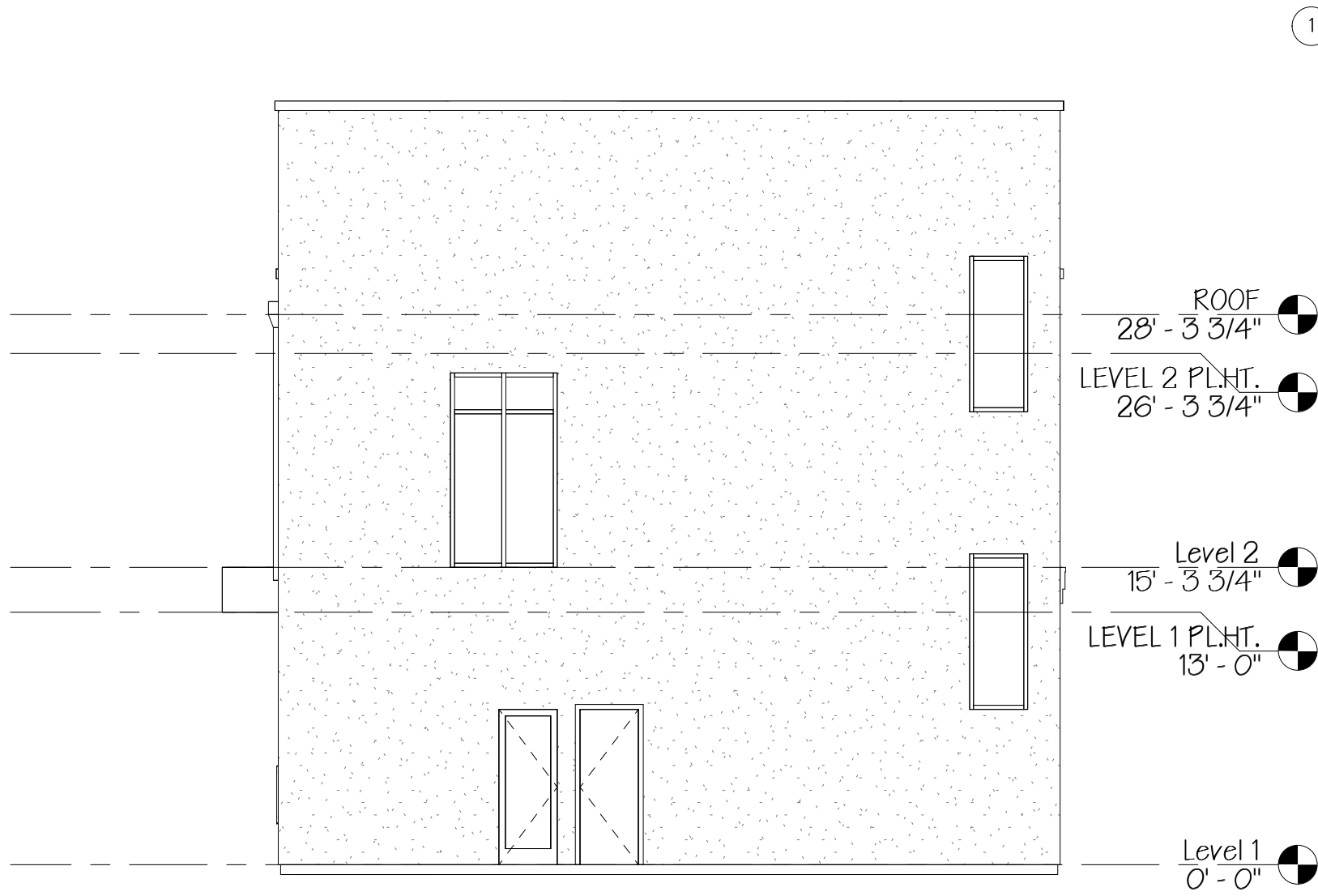
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DATE		
05/15/19		
DESCRIPTION		
CAMERON_ROOF PLAN		
SHEET		
A4.3_		





MATERIAL LEGEND	
01	STUCCO
02	FCB SIDING
03	STOREFRONT WINDOWS
04	RAILING
05	SCUPPER WITH DOWNSPOUT

ADDRESS NUMBERS AT LEAST 8" HIGH MUST BE VISIBLE FROM THE STREET

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CHECKED BY: JMK

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05/15/19  
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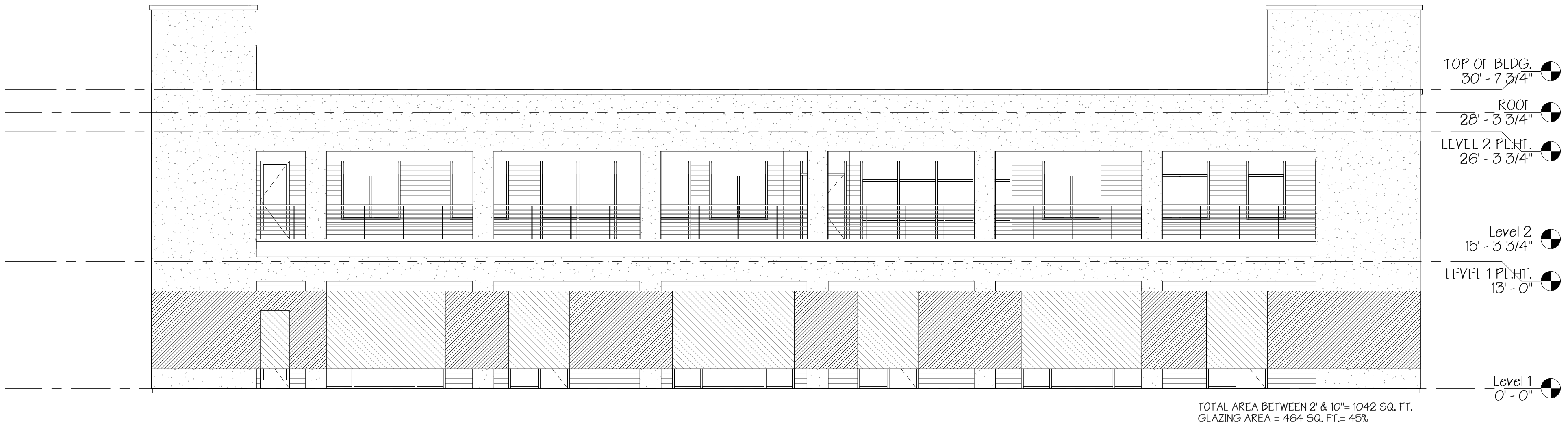
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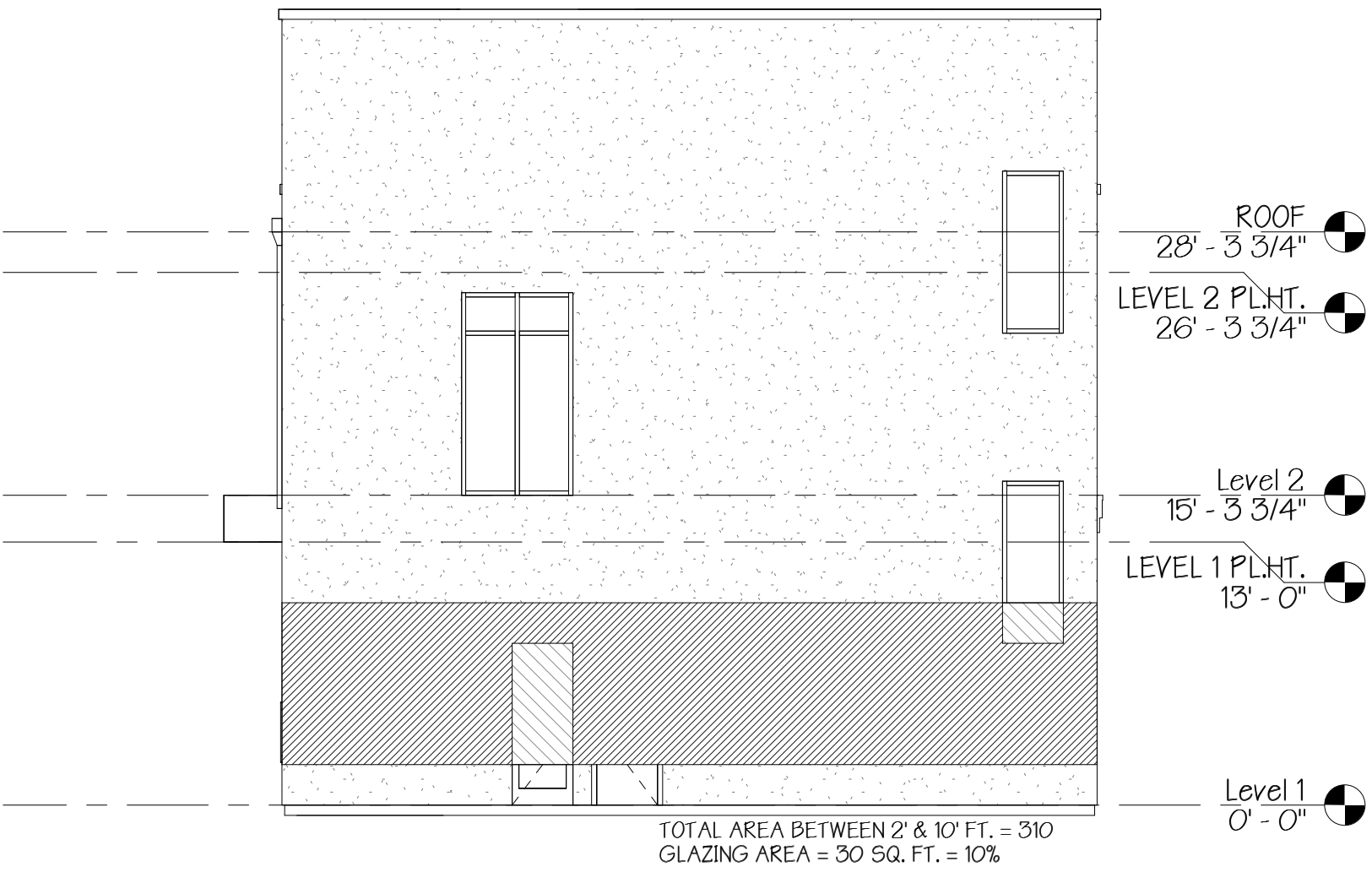
CAMERON  
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No.	Revision	Date
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DESCRIPTION		
CAMERON_ELEVATIONS		
SHEET		
A4.4_		

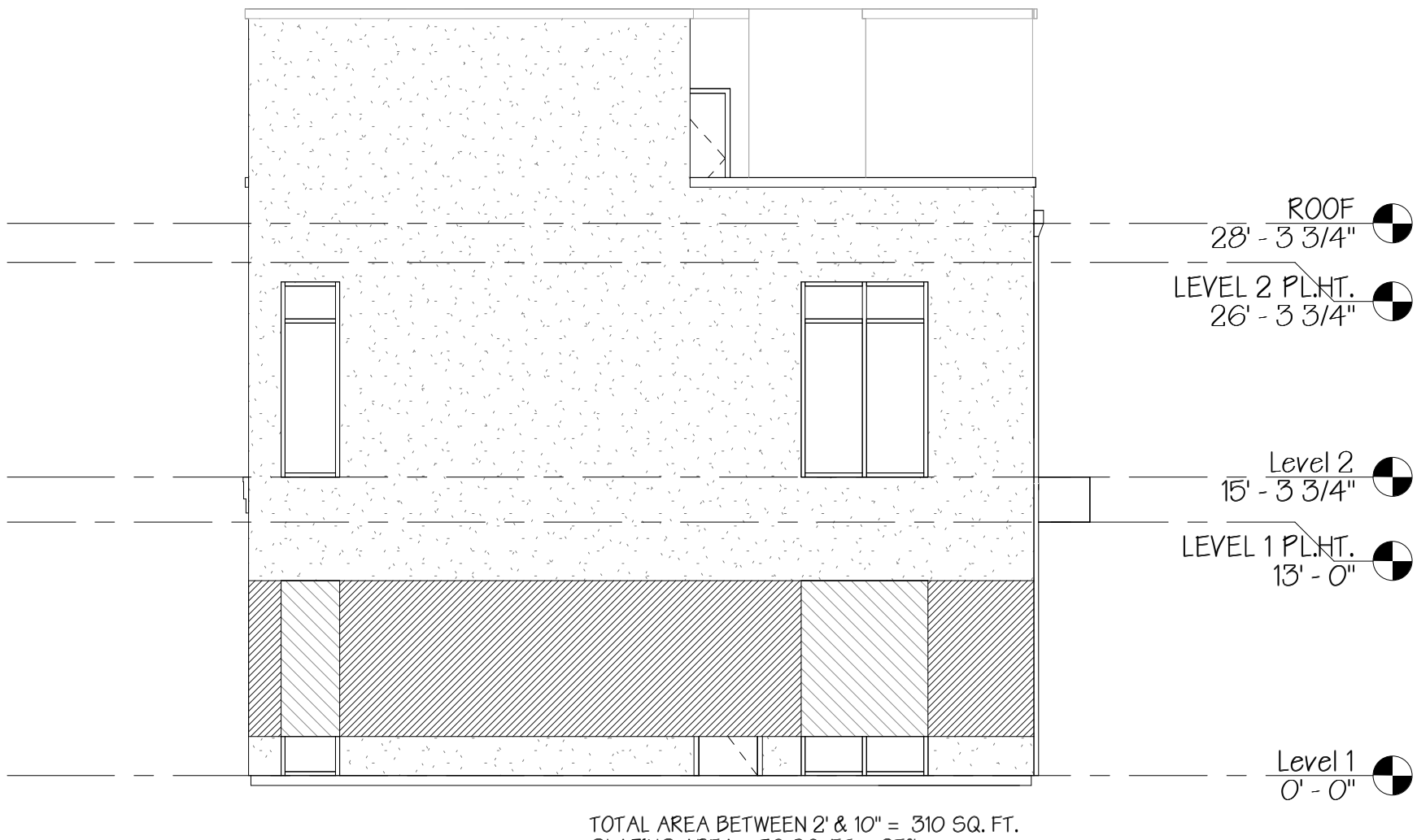




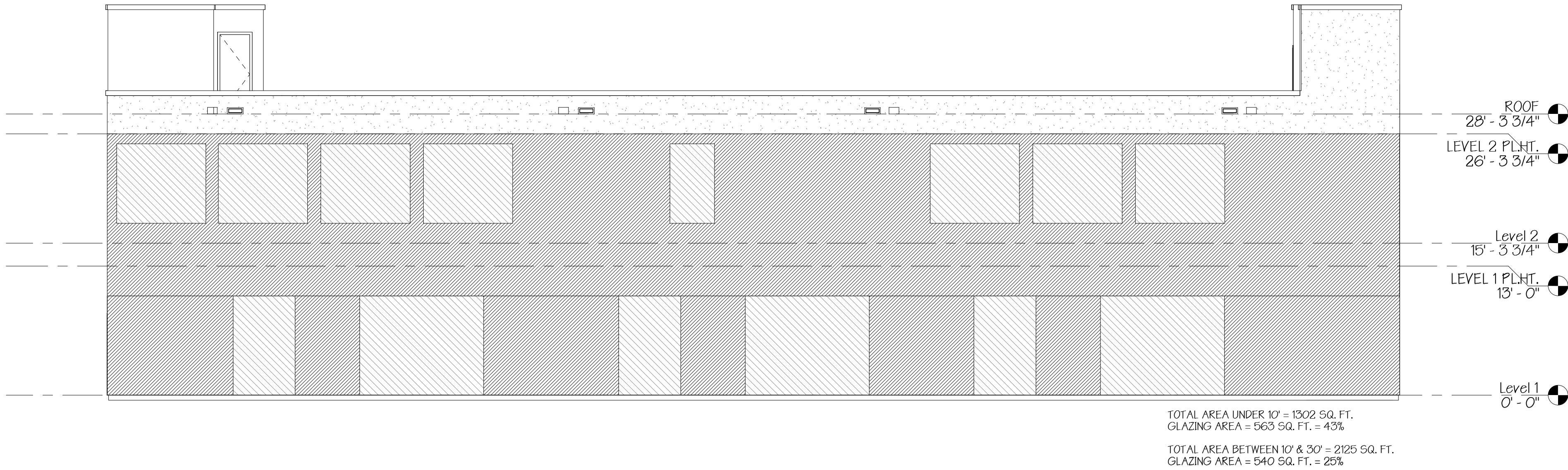
1 CAMERON - FRONT ELEVATION - Dependent 1  
1/8" = 1'-0"



3 CAMERON - LEFT ELEVATION - Dependent 1  
1/8" = 1'-0"



2 CAMERON - RIGHT ELEVATION - Dependent 1  
1/8" = 1'-0"



4 CAMERON - REAR ELEVATION - Dependent 1  
1/8" = 1'-0"

DRAWN BY:  
MAR

CHECKED BY:  
JMK

PROJECT #:  
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REGISTRATION NUMBER: 9383

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BLUFF PLAZA

4400 E. WILLIAM CANNON DRIVE  
AUSTIN TX. 78744

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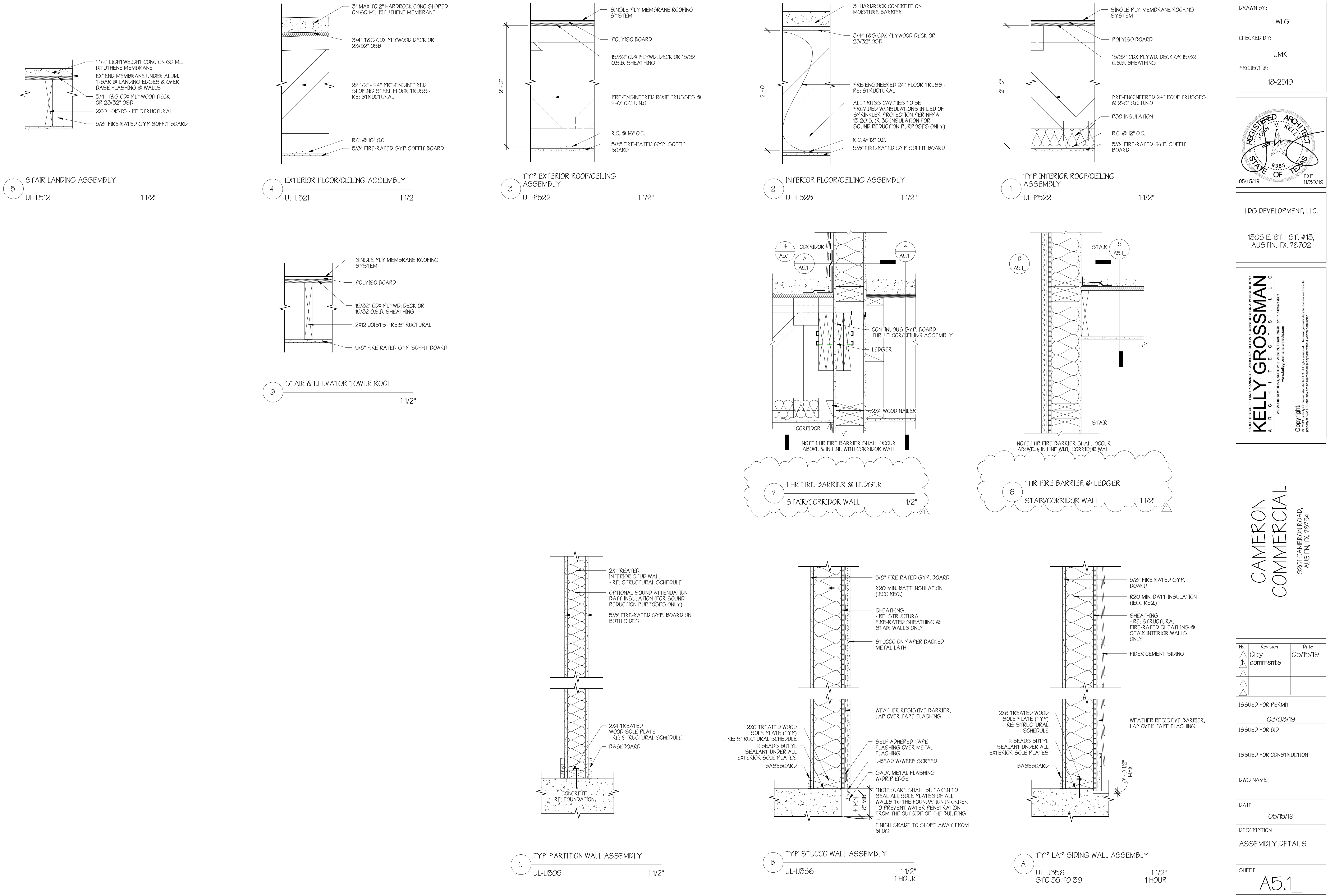
DATE  
05/15/19

DESCRIPTION  
CAMERON\_ELEVATIONS

SHEET  
A4.5

5/15/2019 5:44 PM





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WLG

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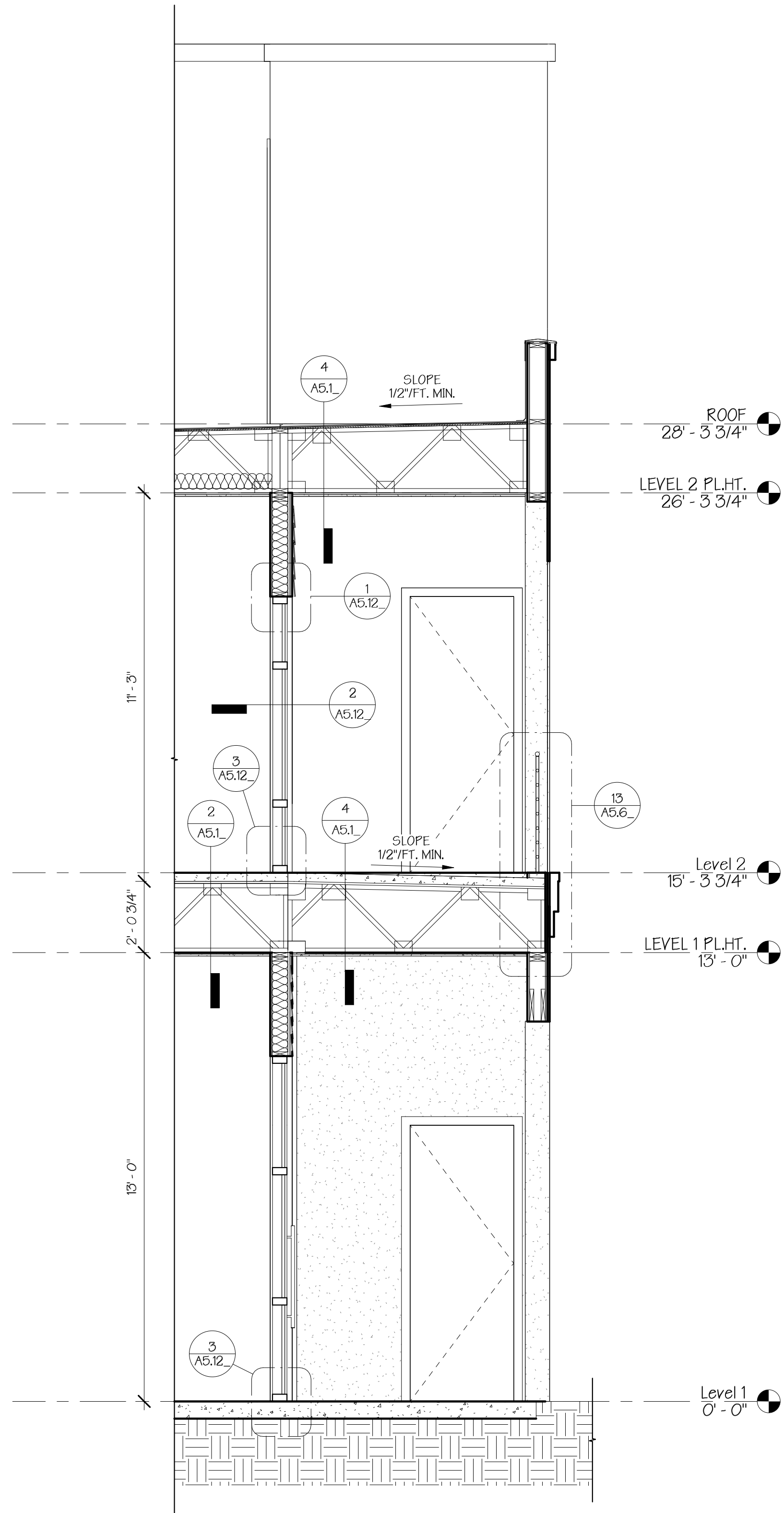
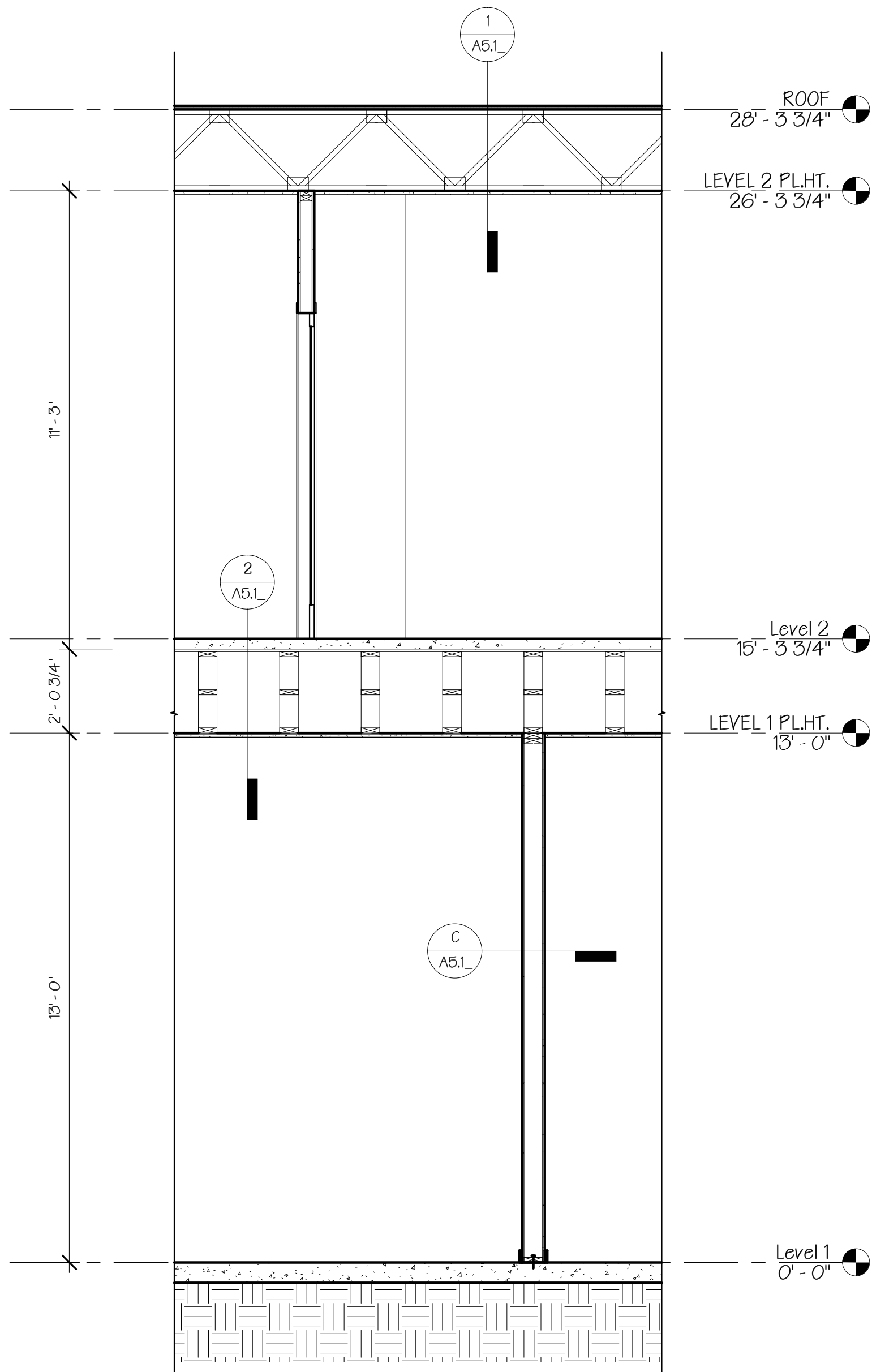
DESCRIPTION

ASSEMBLY DETAILS

SHEET

A5.1





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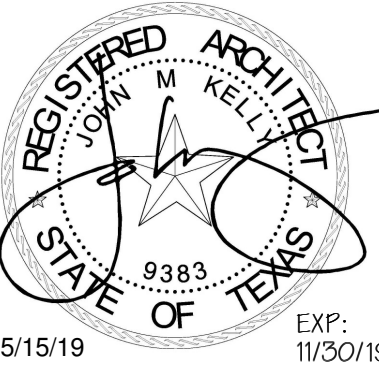
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DATE

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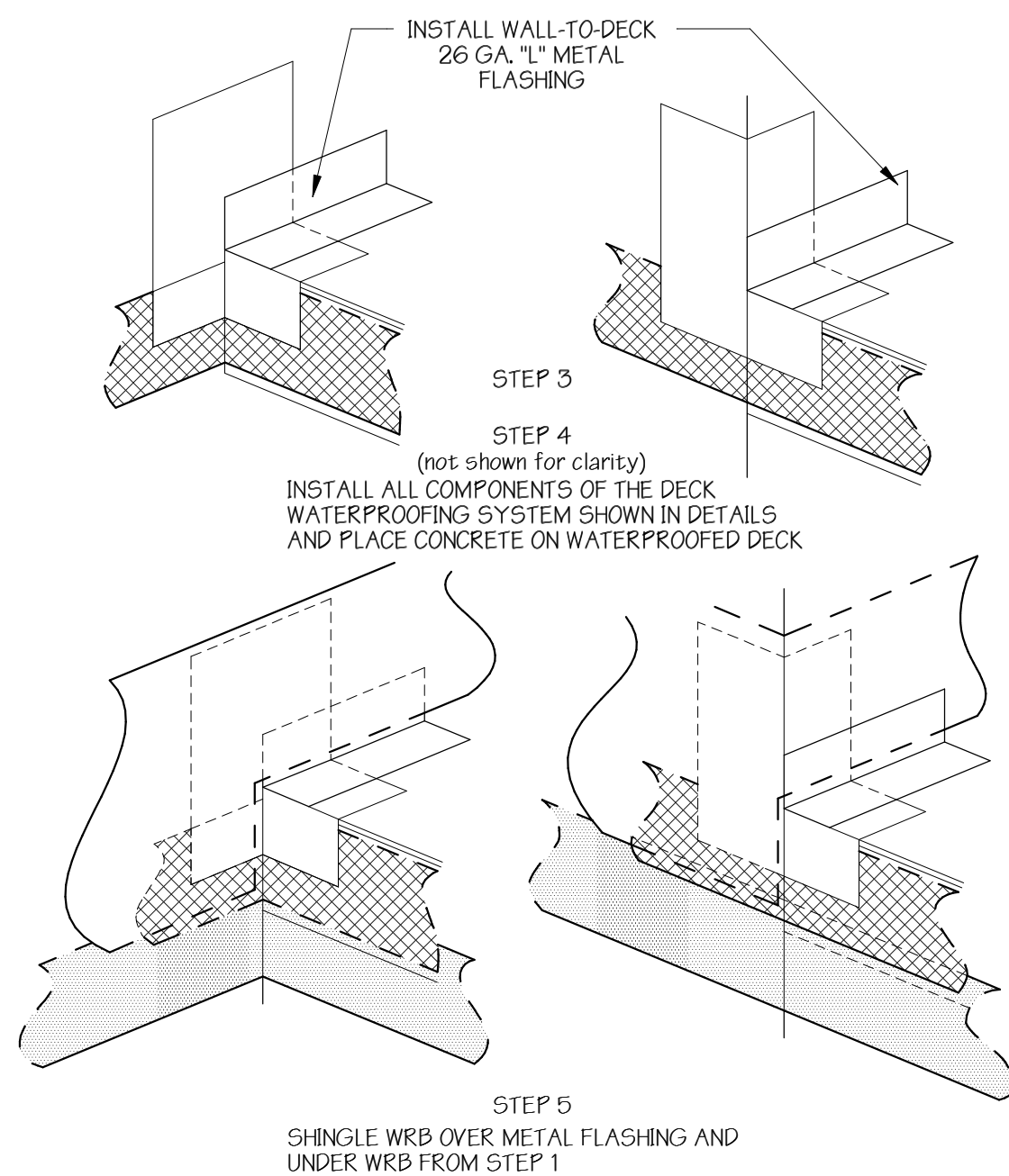
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INTERIOR WALL SECTIONS

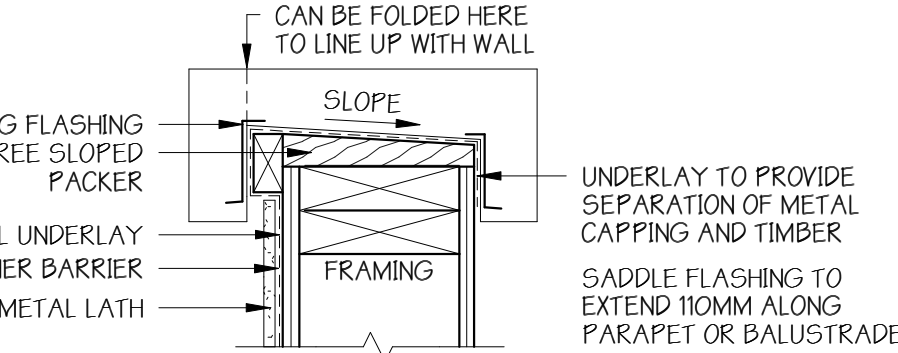
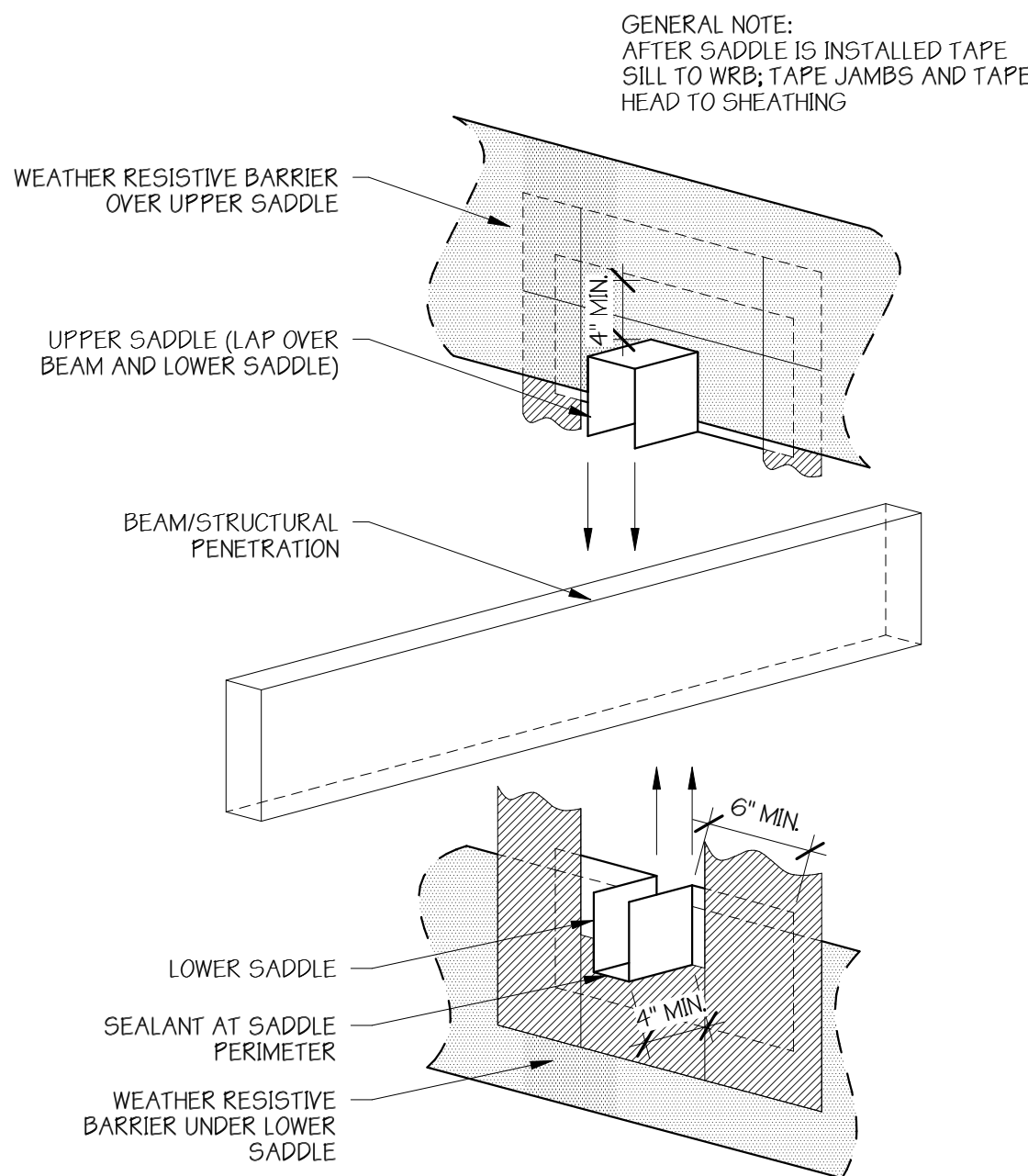
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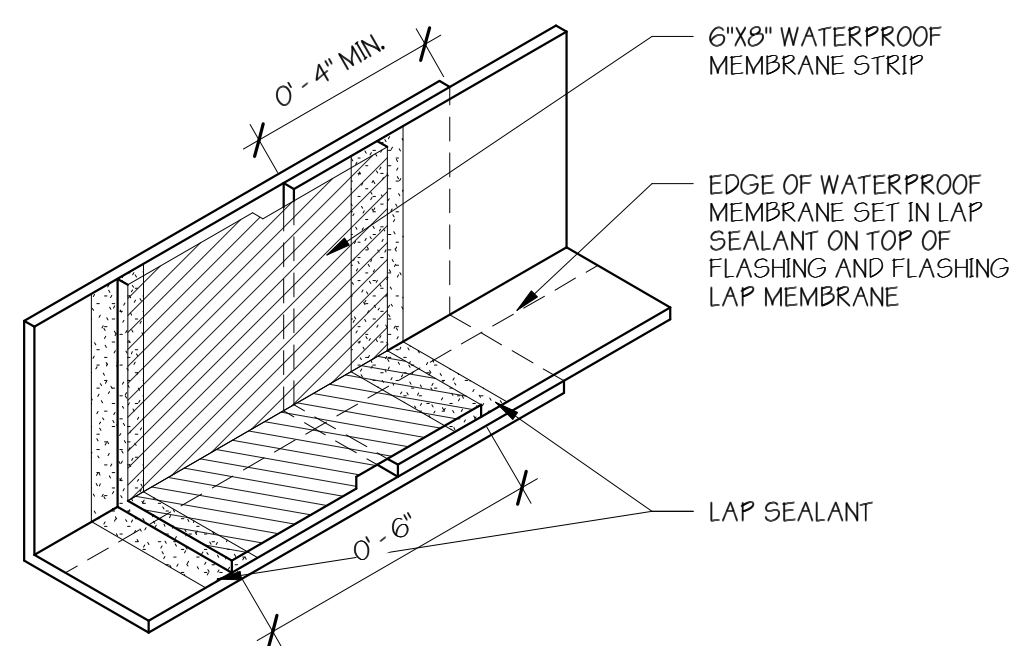




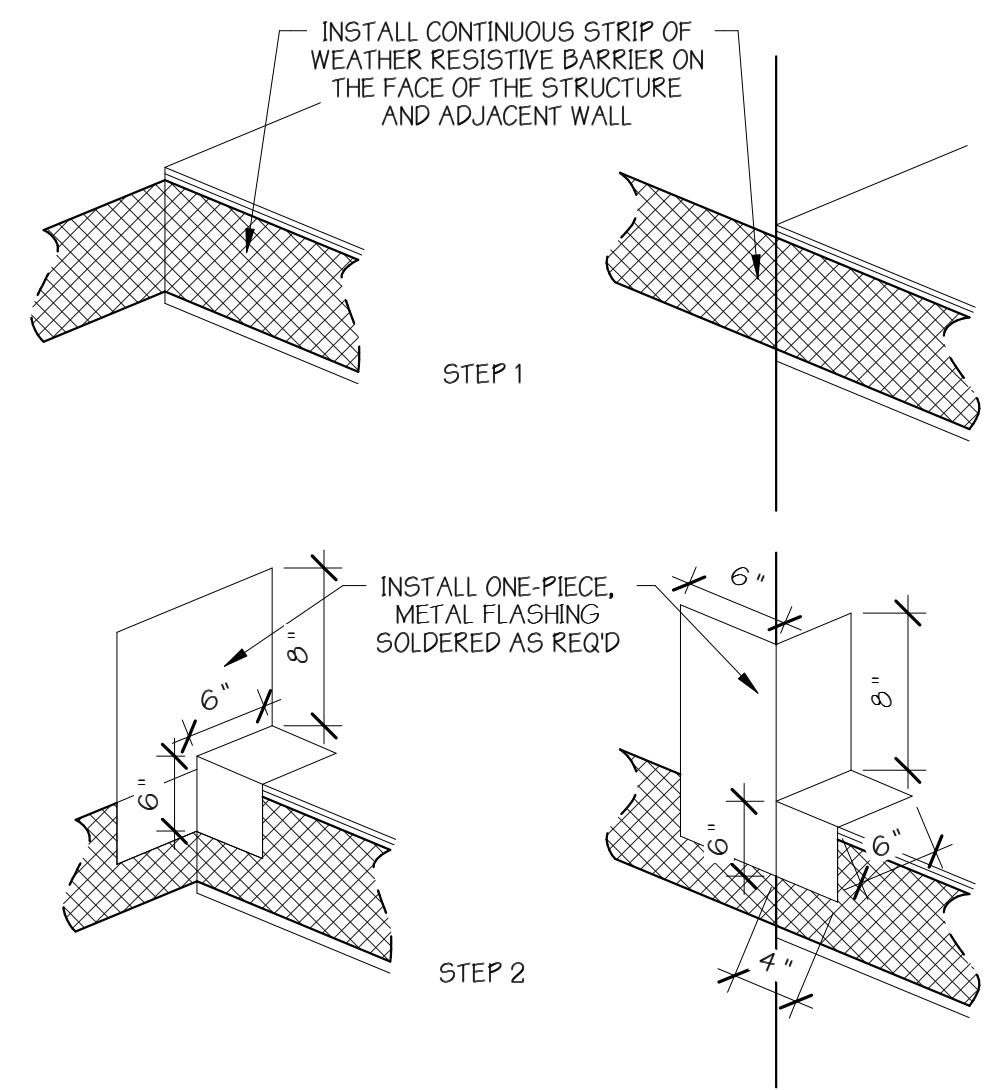
5 BALCONY @ VERTICAL WALL WATERPROOFING @ BALCONIES, BREEZEWAYS & OPEN CORRIDORS NTS



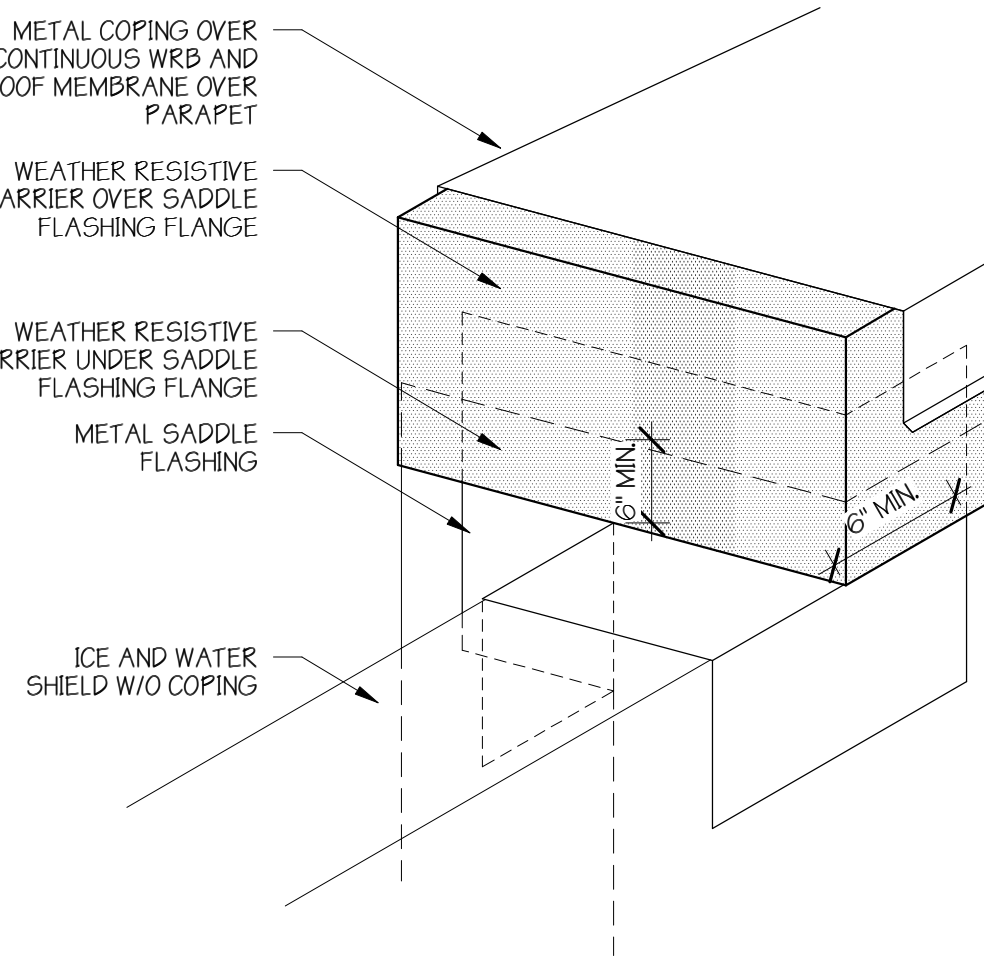
10 SADDLE FLASHING FLASHING NTS



15 FLASHING LAP 3"

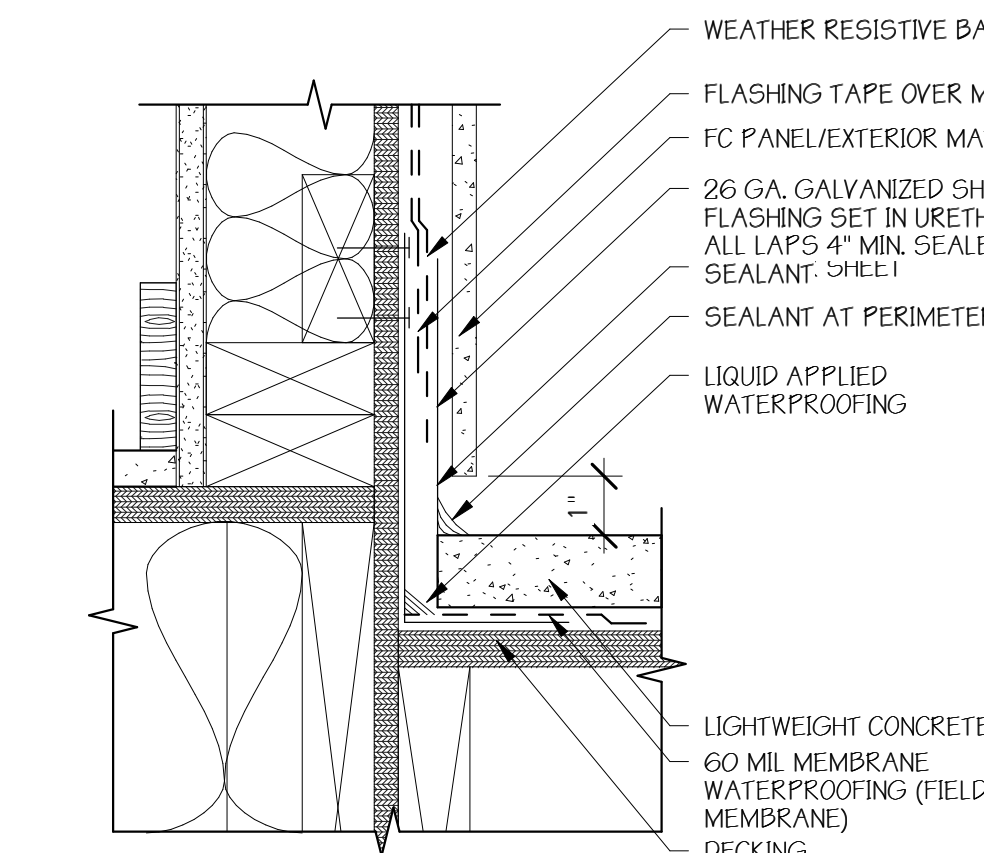


4 BALCONY @ VERTICAL WALL WATERPROOFING @ BALCONIES, BREEZEWAYS & OPEN CORRIDORS NTS

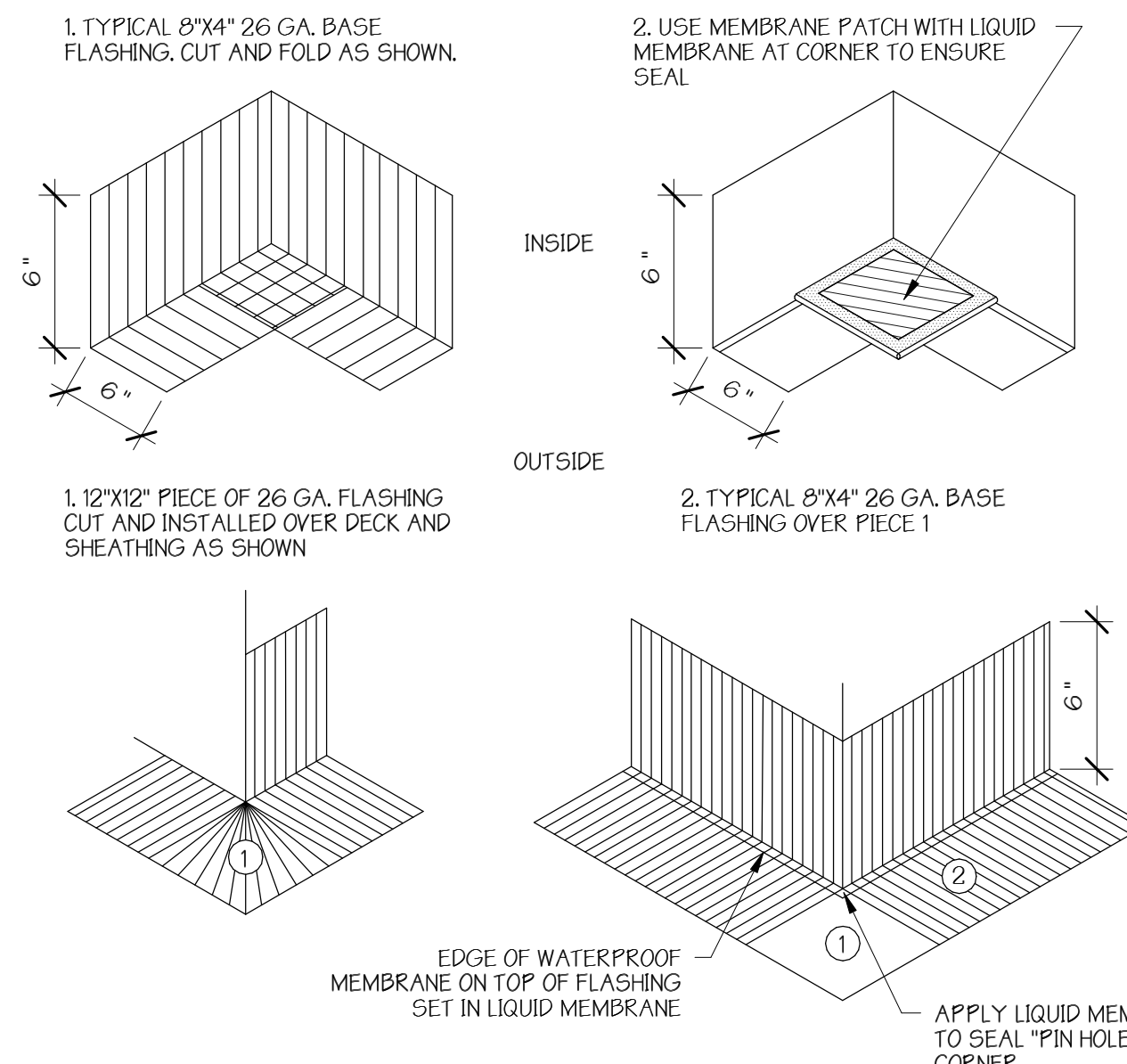


6" MINIMUM DIMENSION FOR ALL LEGS OF THE SADDLE FLASHING. FULLY SOLDER ALL SEAMS. TAPE VERTICAL LEG OF SADDLE FLASHING TO SHEATHING.

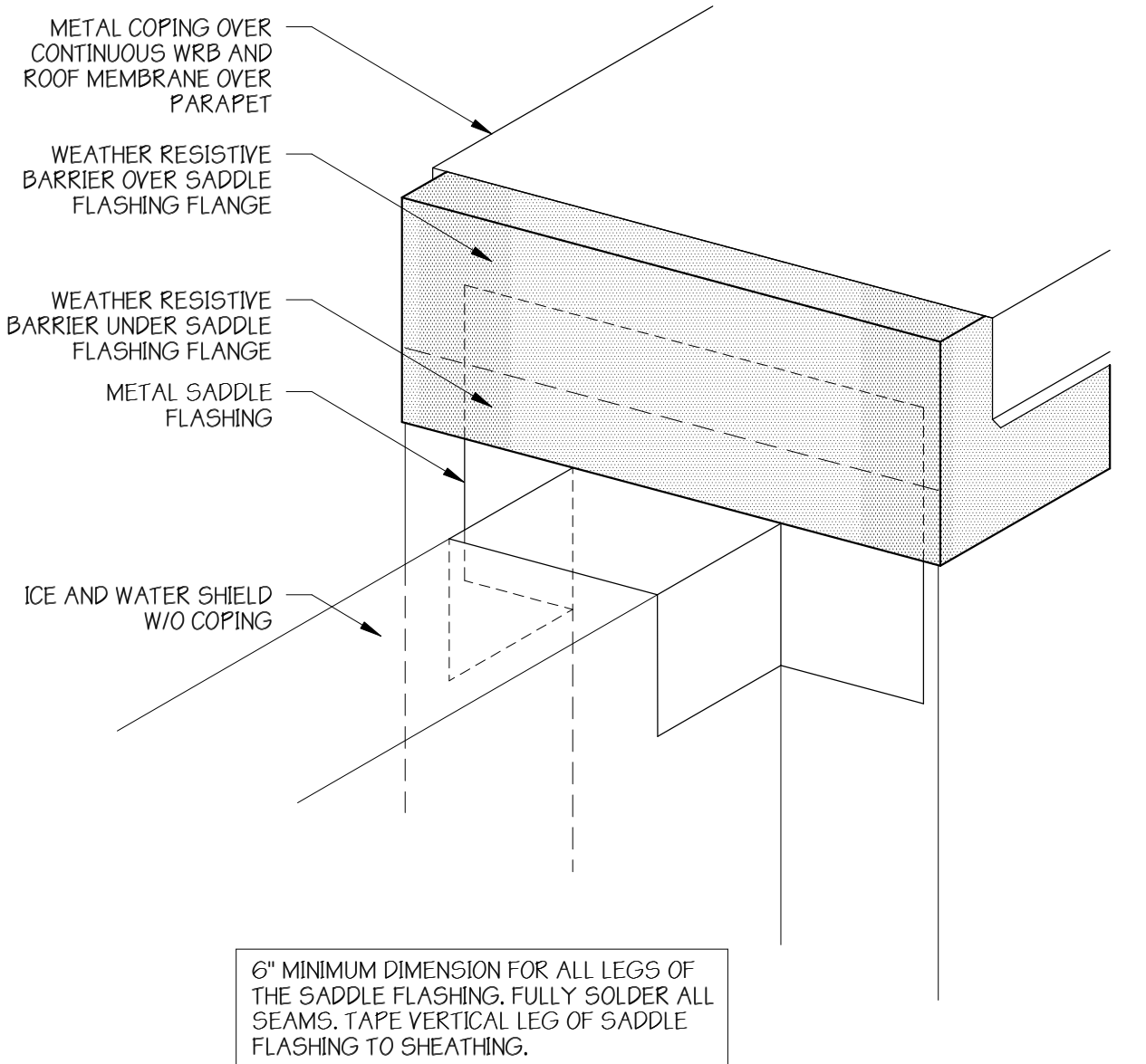
9 SADDLE FLASHING DETAIL 2 NTS



14 DECK-TO-WALL WATERPROOFING 3"

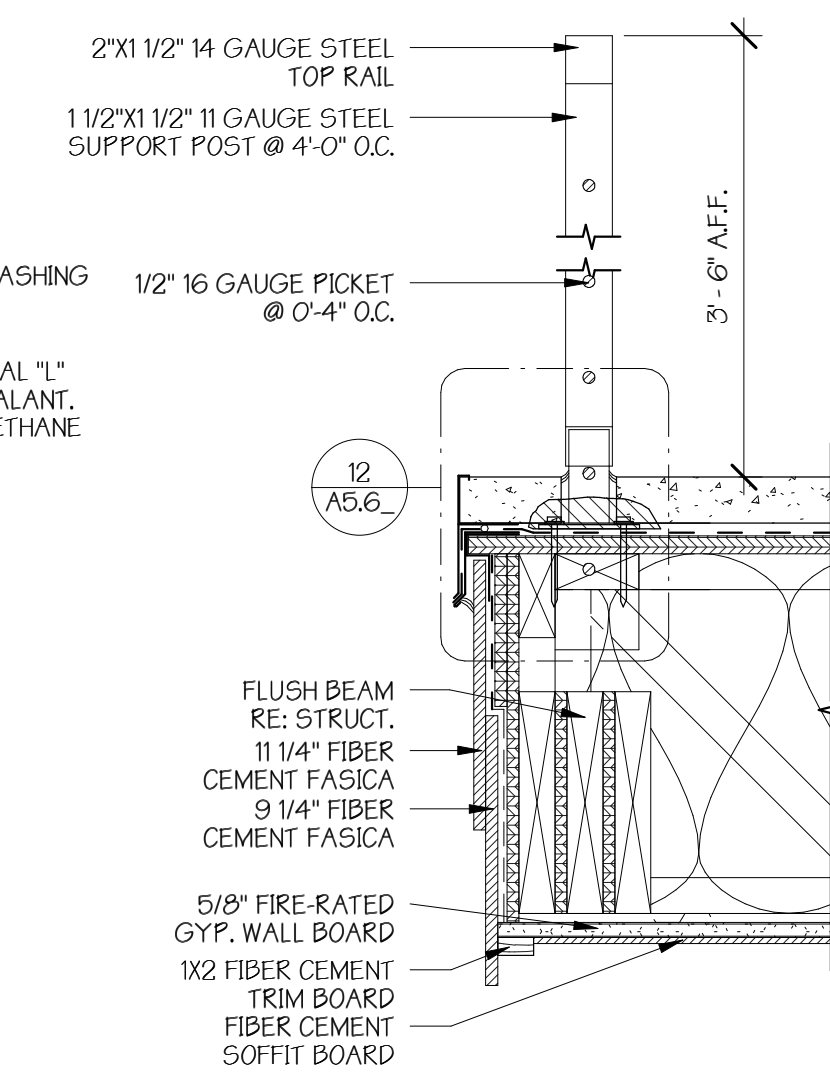


3 DECK EDGE AT CORNER OUTSIDE & INSIDE NTS

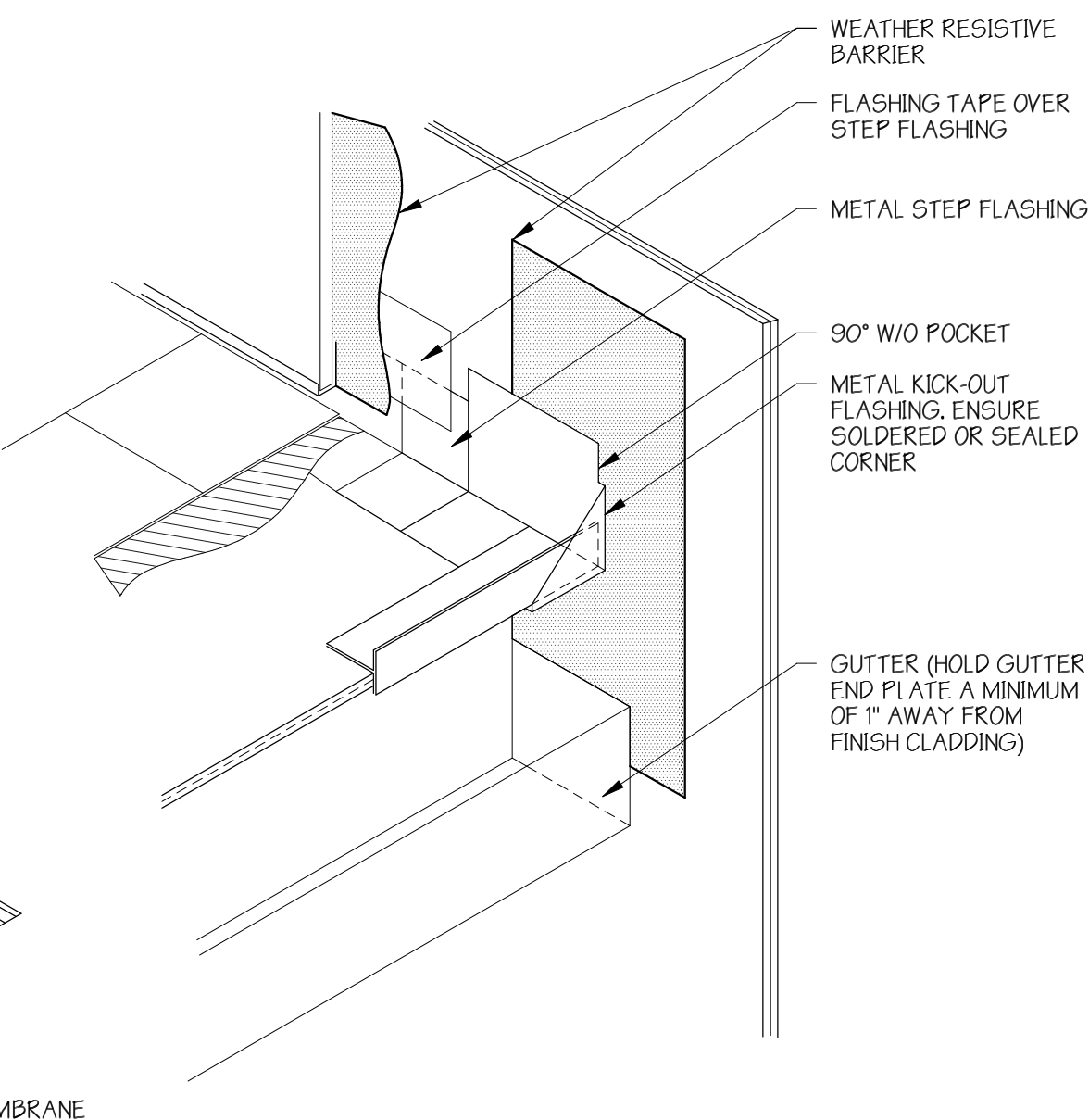


6" MINIMUM DIMENSION FOR ALL LEGS OF THE SADDLE FLASHING. FULLY SOLDER ALL SEAMS. TAPE VERTICAL LEG OF SADDLE FLASHING TO SHEATHING.

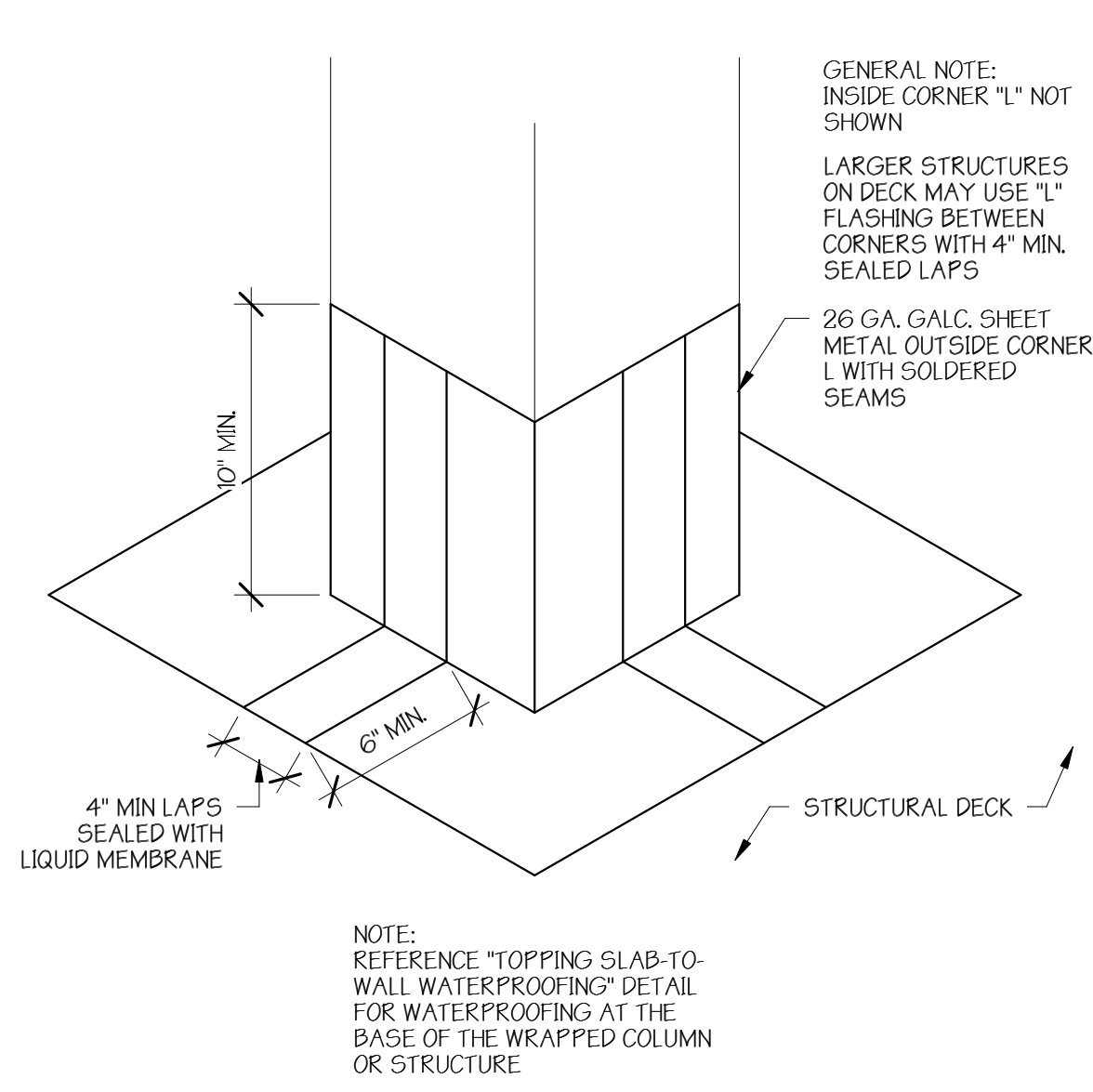
8 SADDLE FLASHING DETAIL 1 NTS



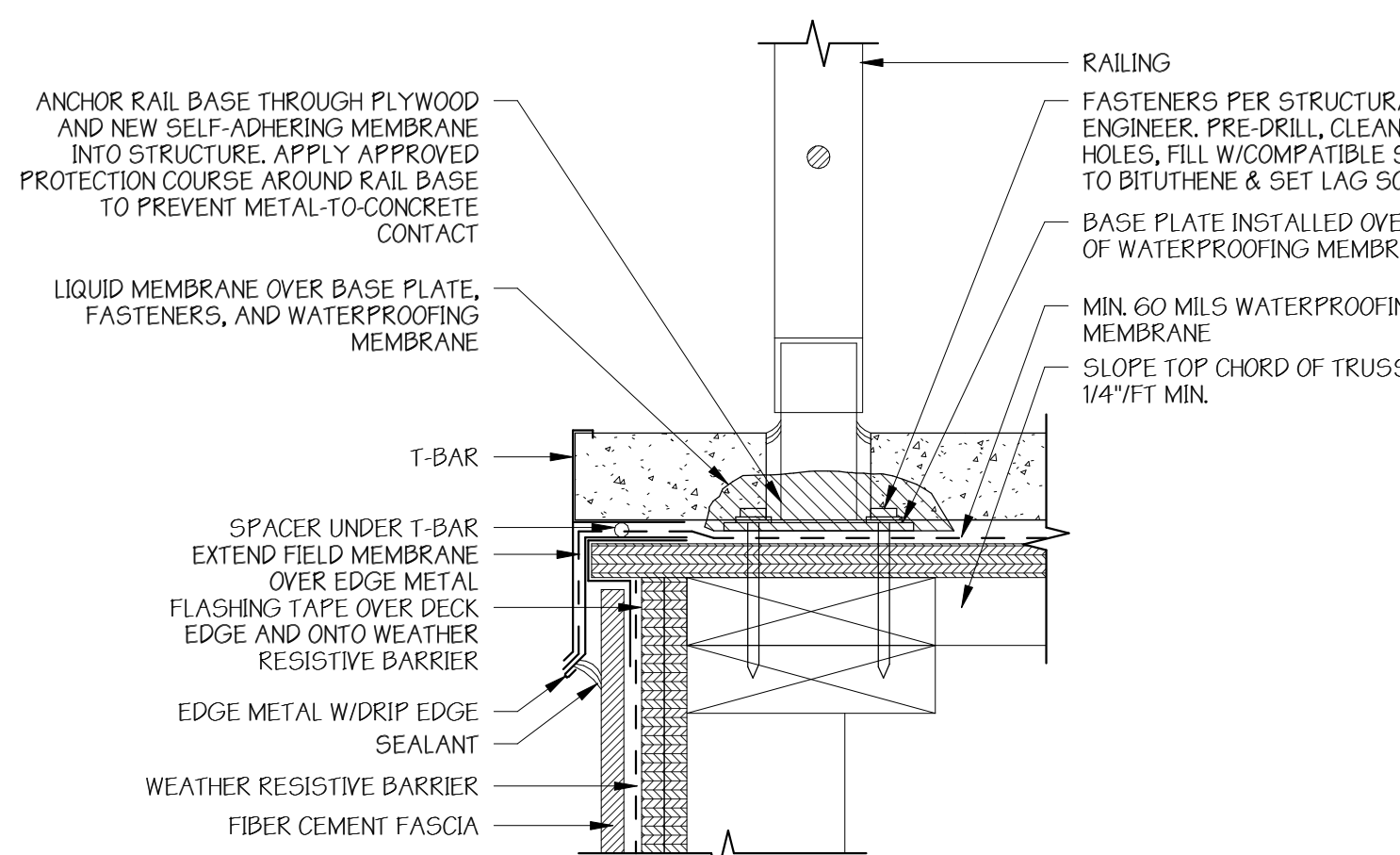
13 TYP. HANDRAIL @ BALCONY W/ FIBER CEMENT 1 1/2"



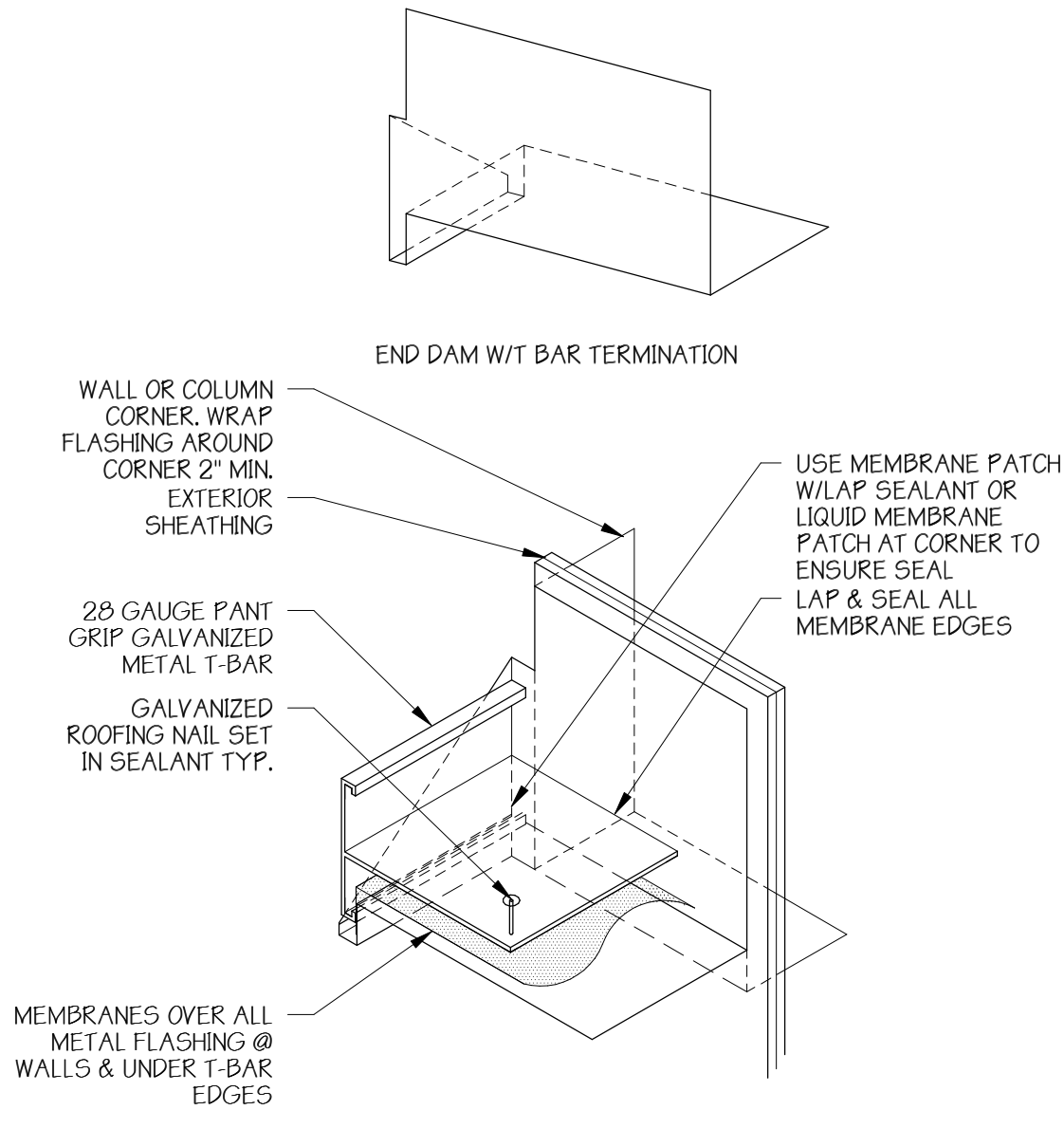
2 DECK-TO-WALL WATERPROOFING @ BALCONY & SIM NTS



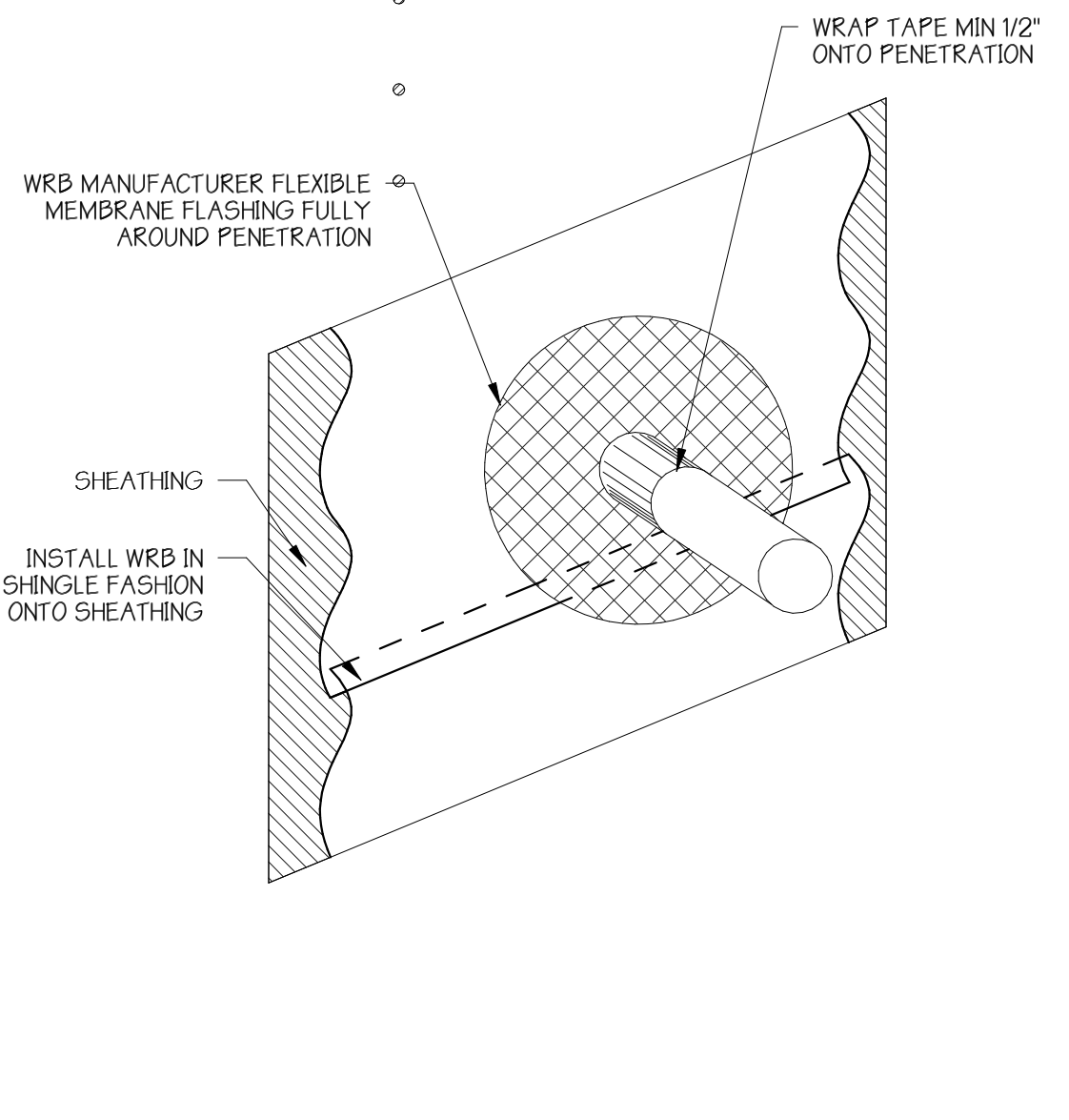
7 COLUMN FLASHING FLASHING STRUCTURAL ELEMENTS NTS



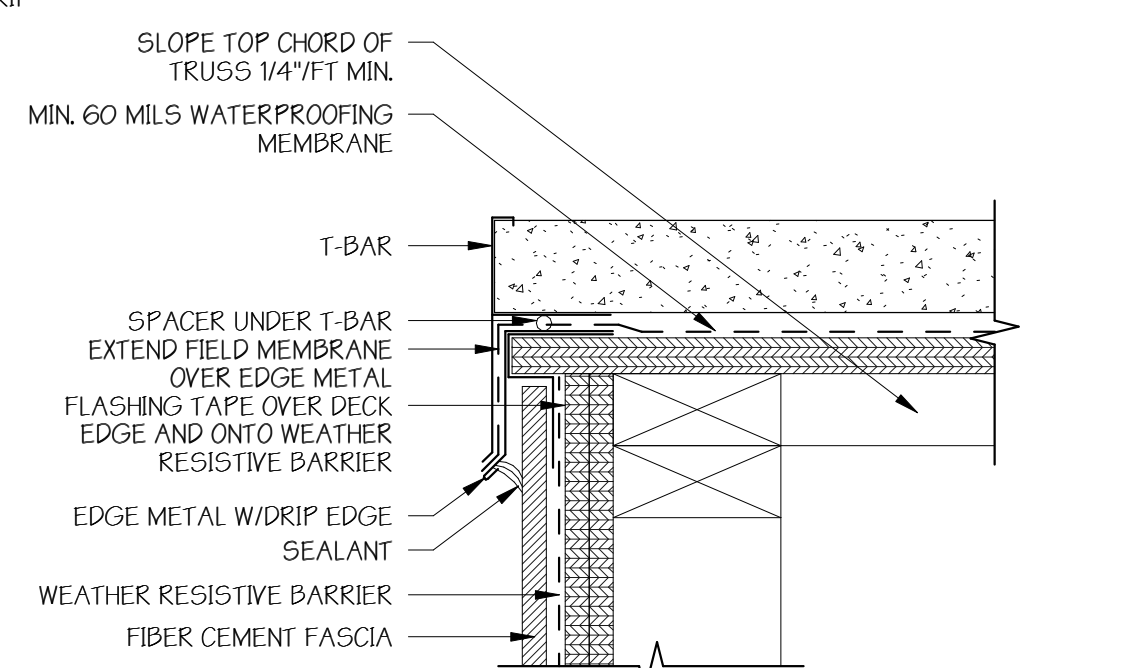
12 T-BAR AT RAIL EMBED 3"



1 DECK-TO-WALL WATERPROOFING END DAM FLASHING NTS



6 TYP. PENETRATION DETAIL PENETRATION FLASHING NTS



11 BALCONY EDGE DETAIL 3"

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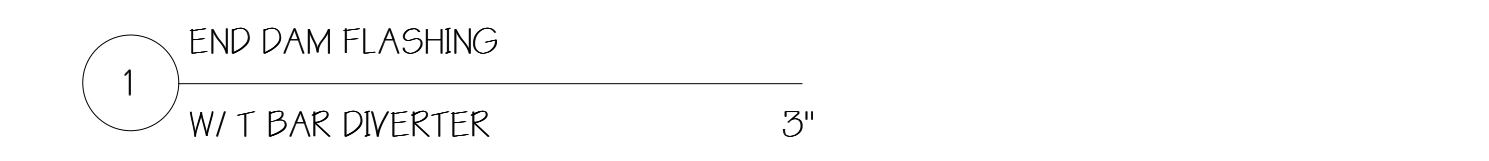
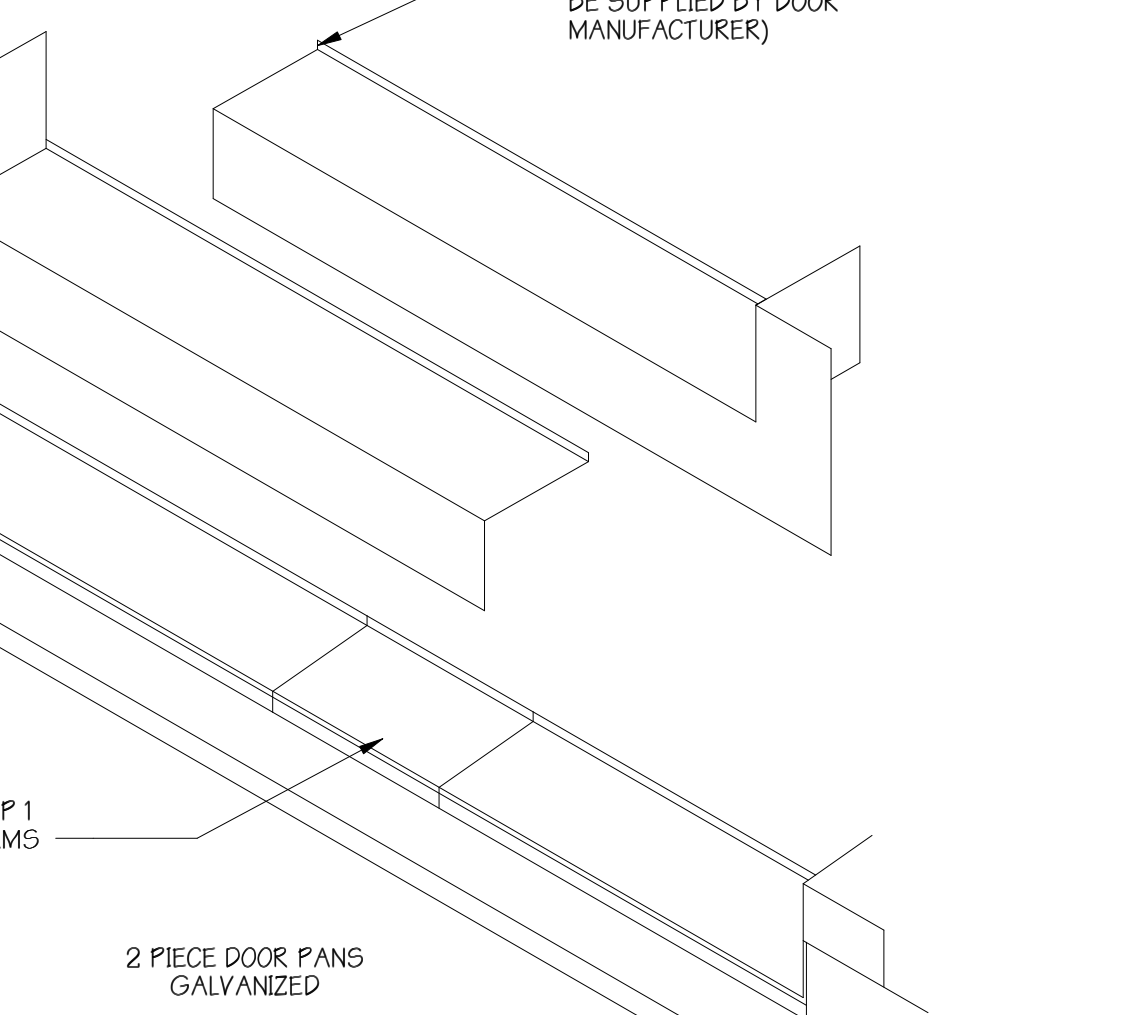
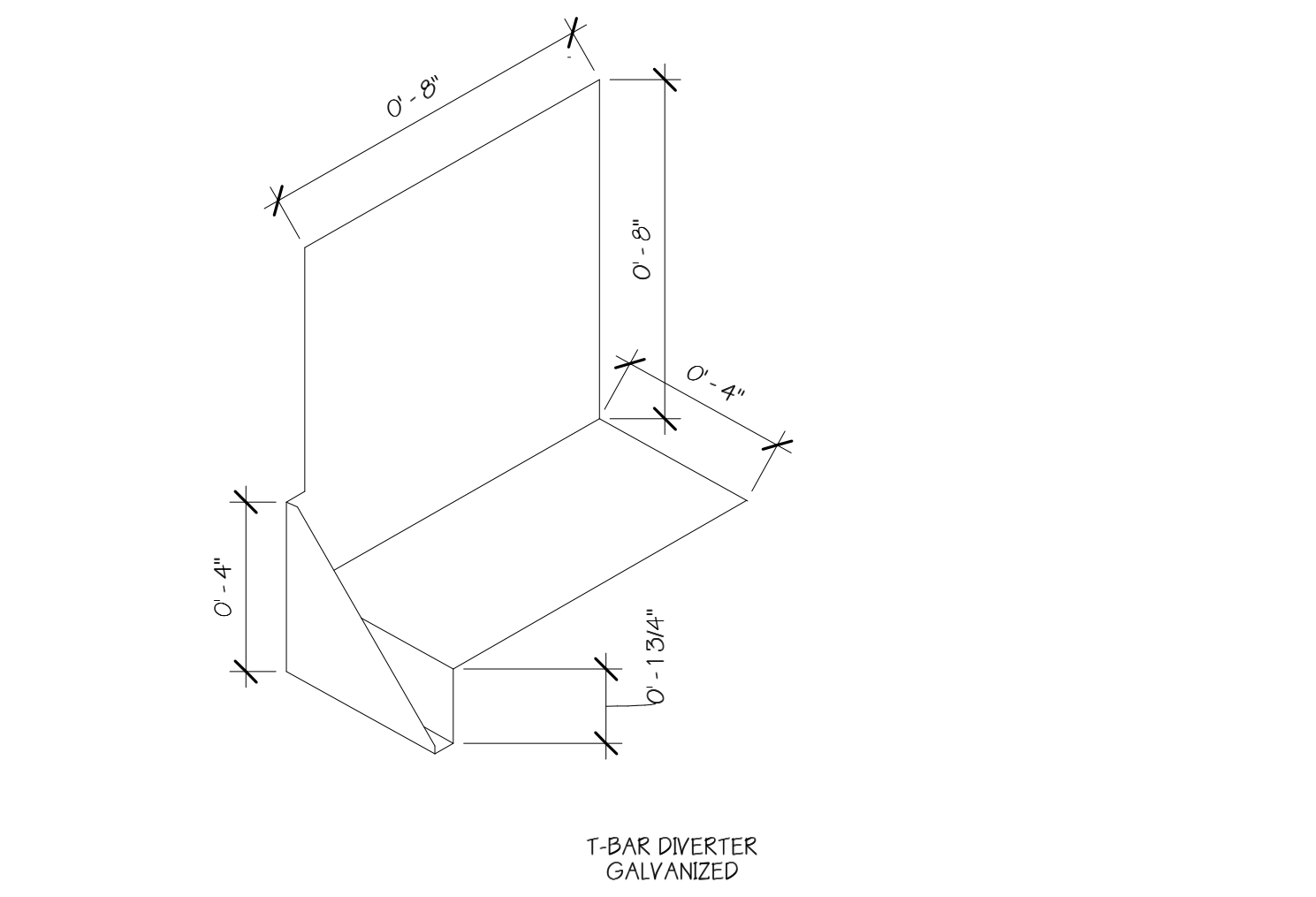
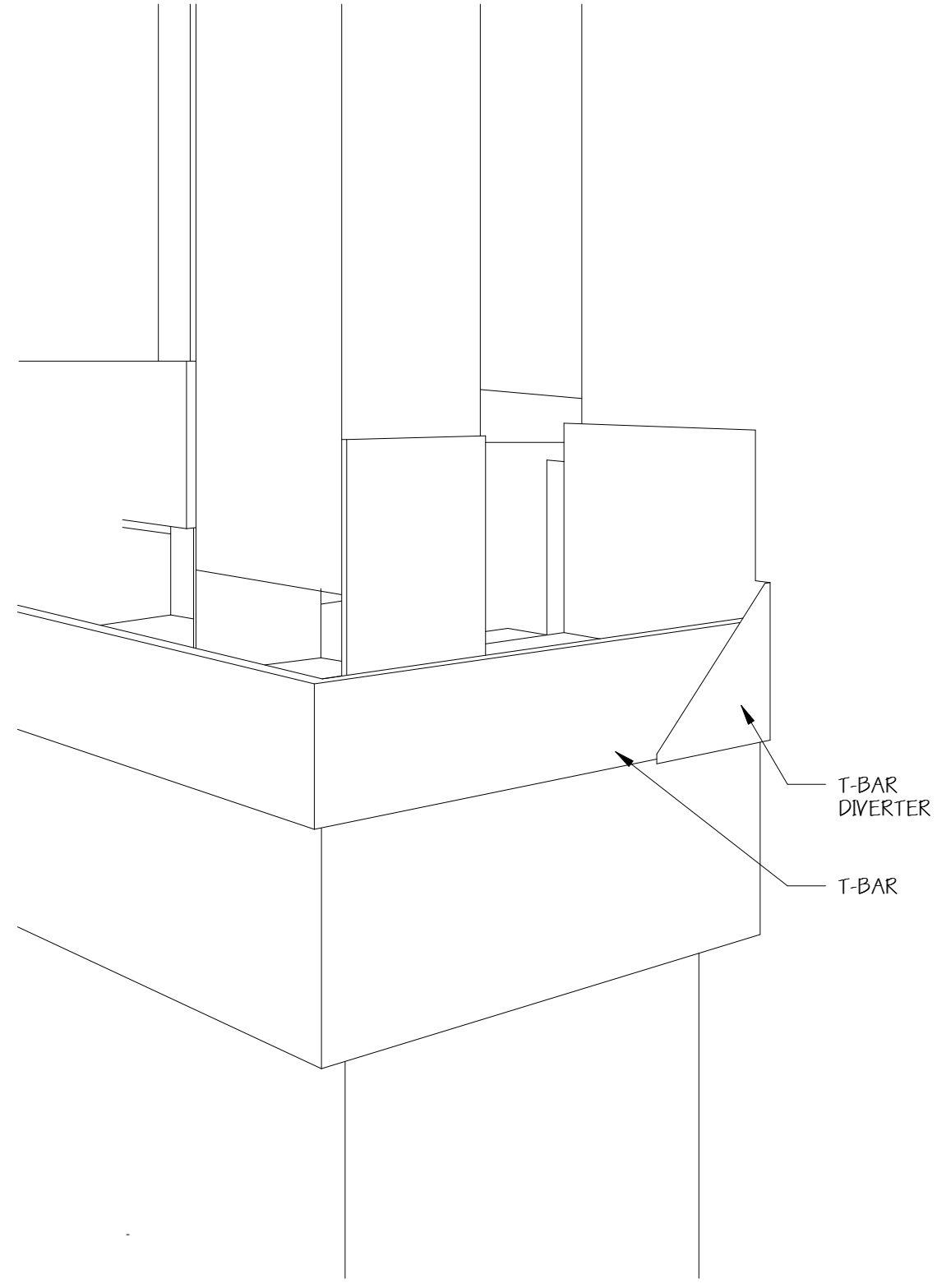
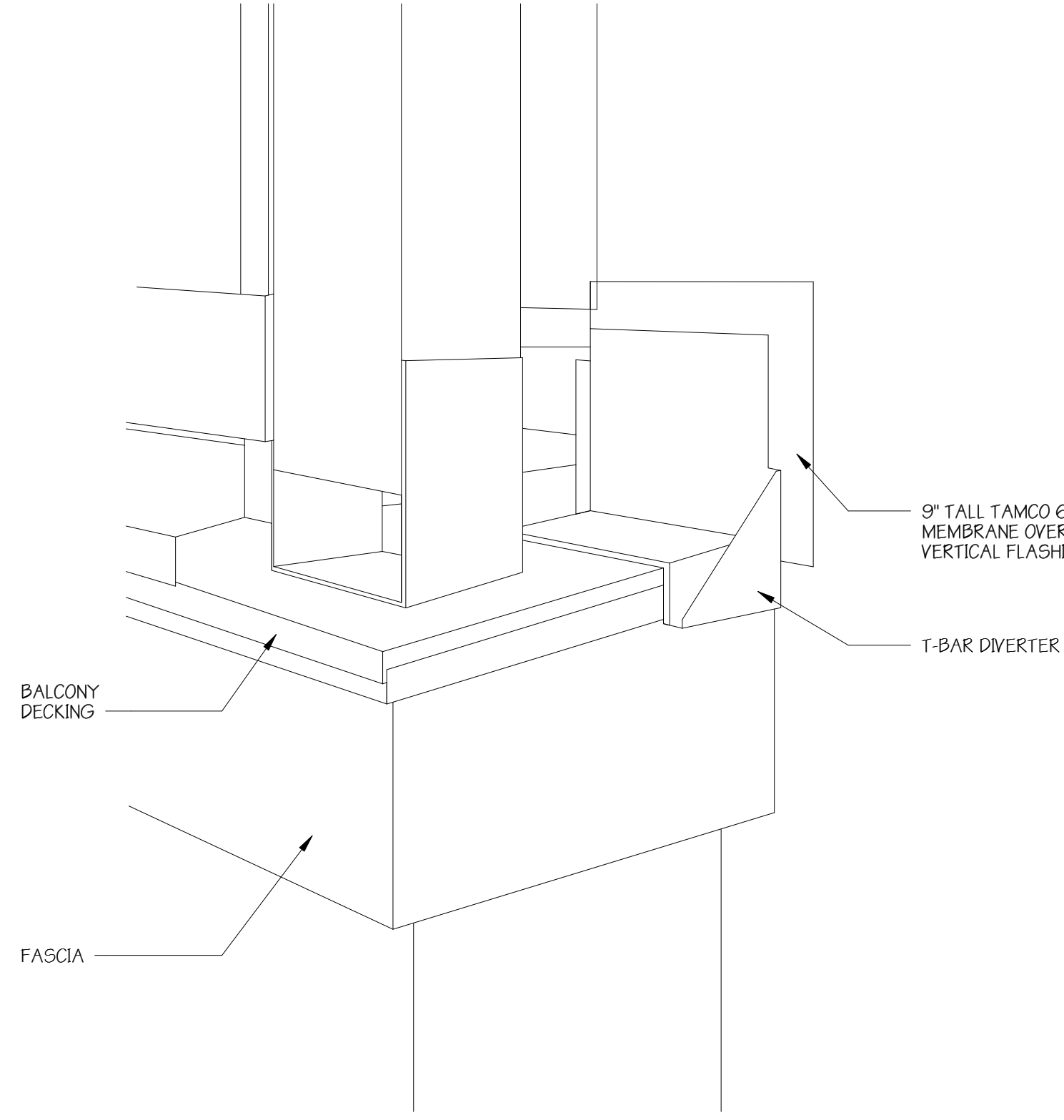
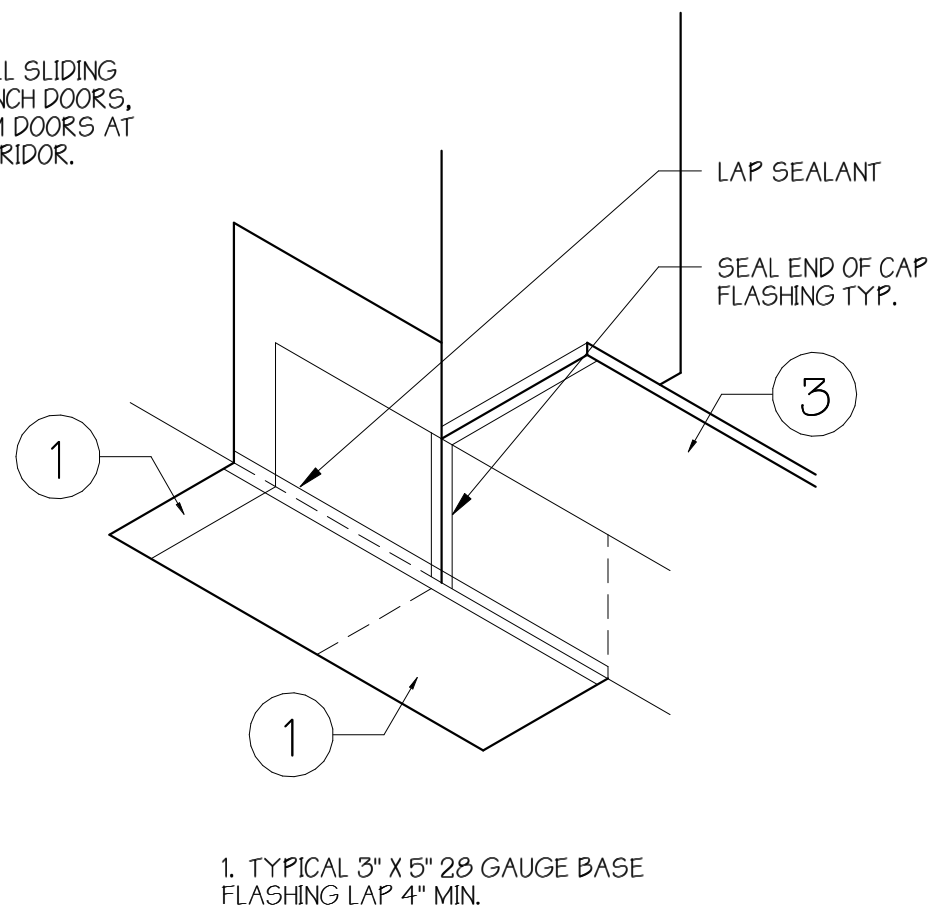
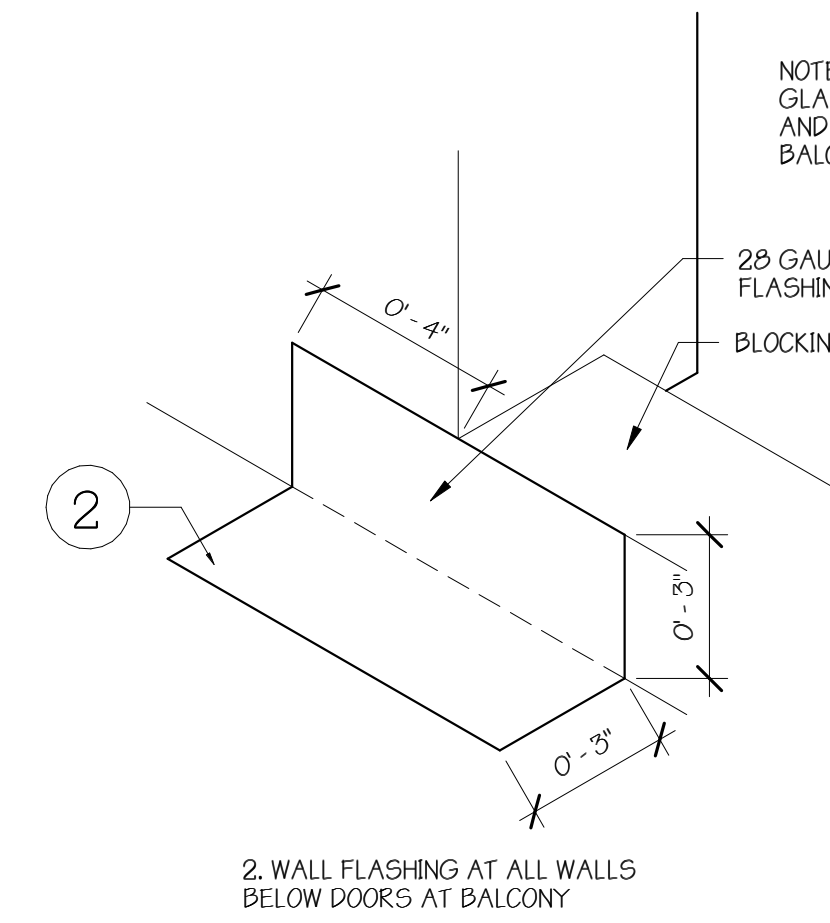
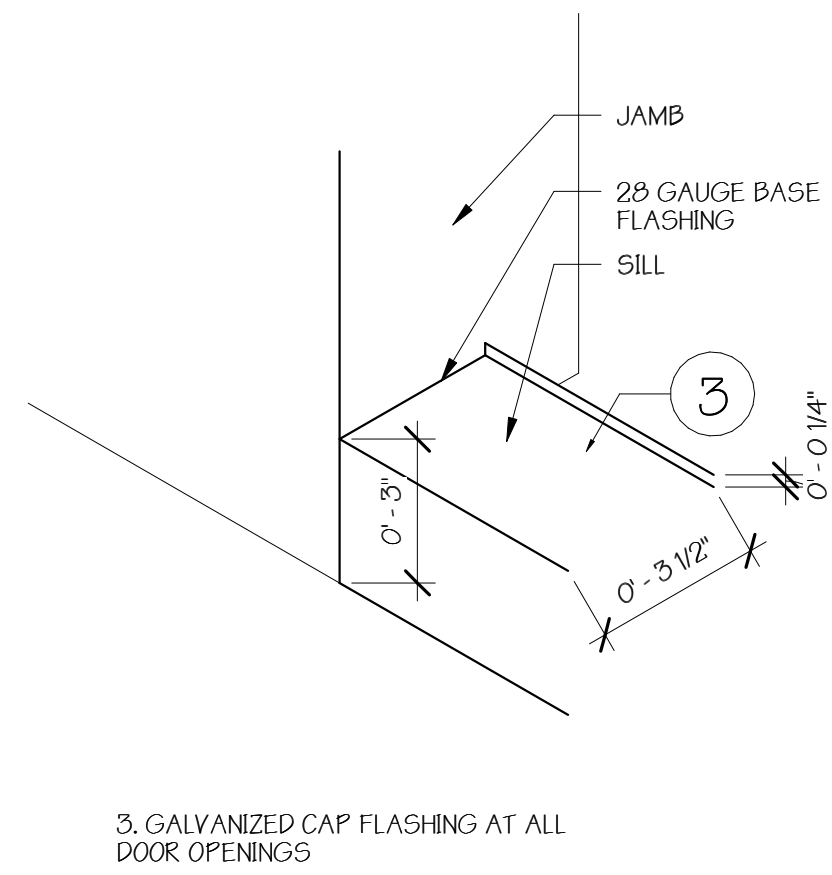
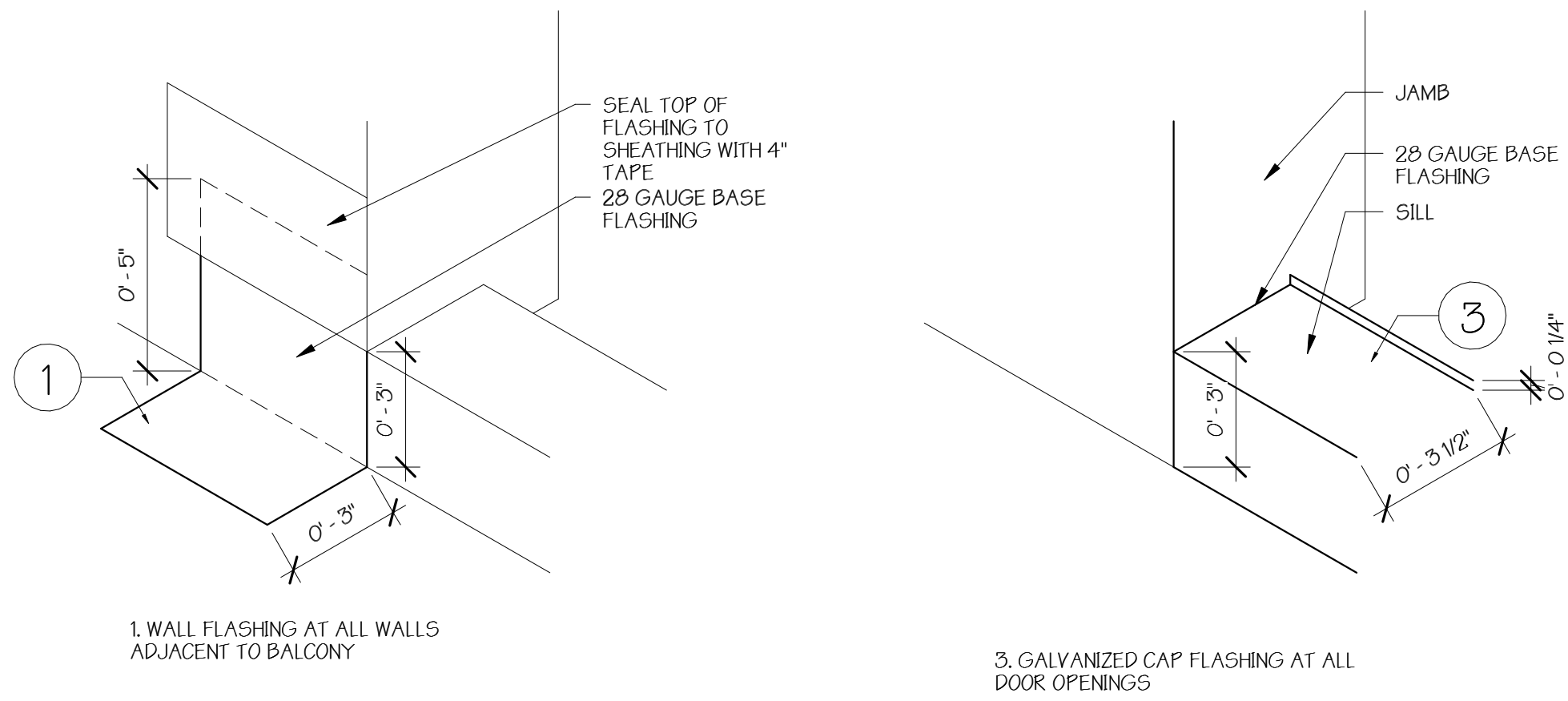
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DRAWN BY:  
WLG

CHECKED BY:  
JMK

PROJECT #:  
18-2319

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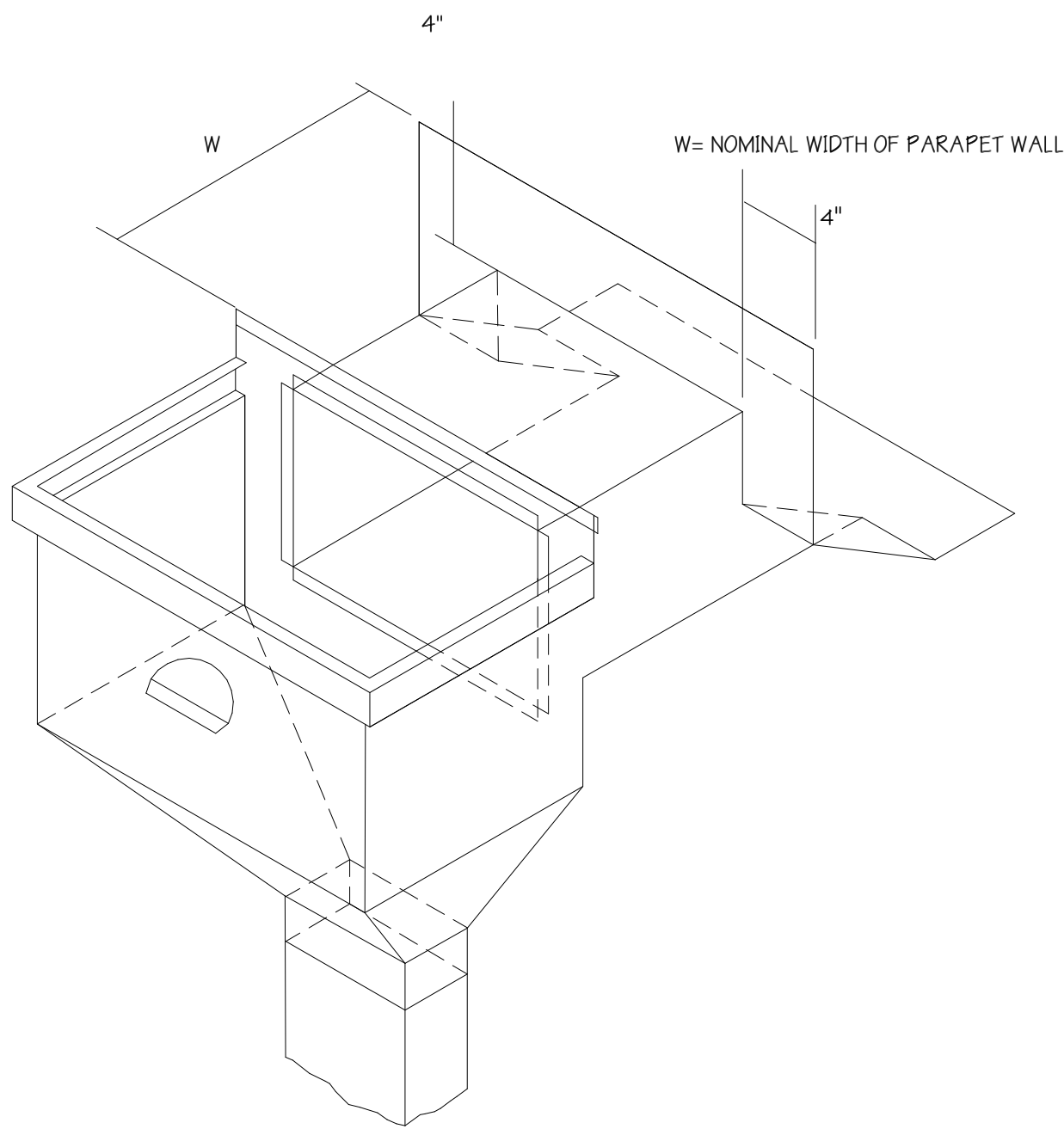
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05/15/19

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FLASHING DETAILS

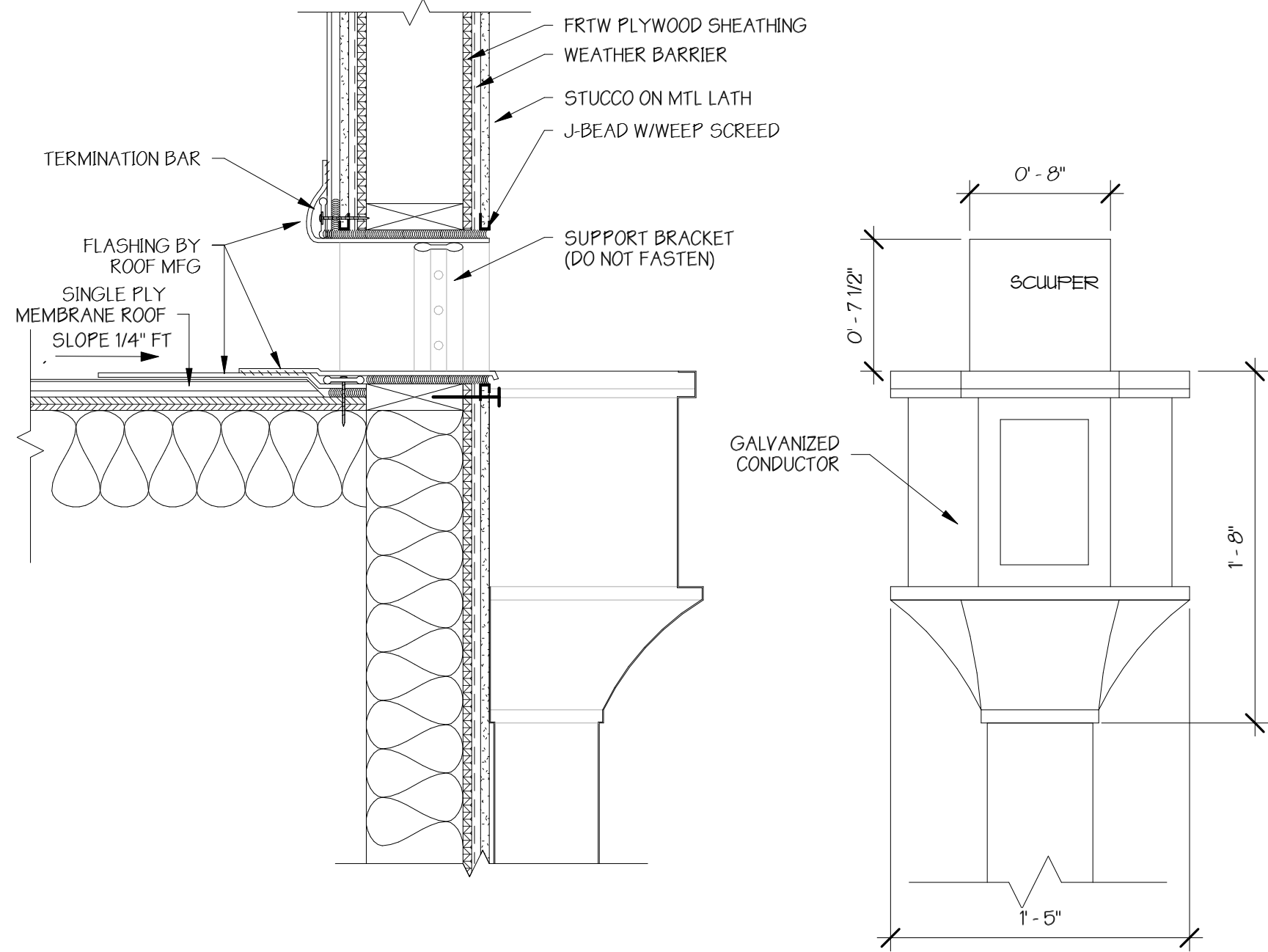
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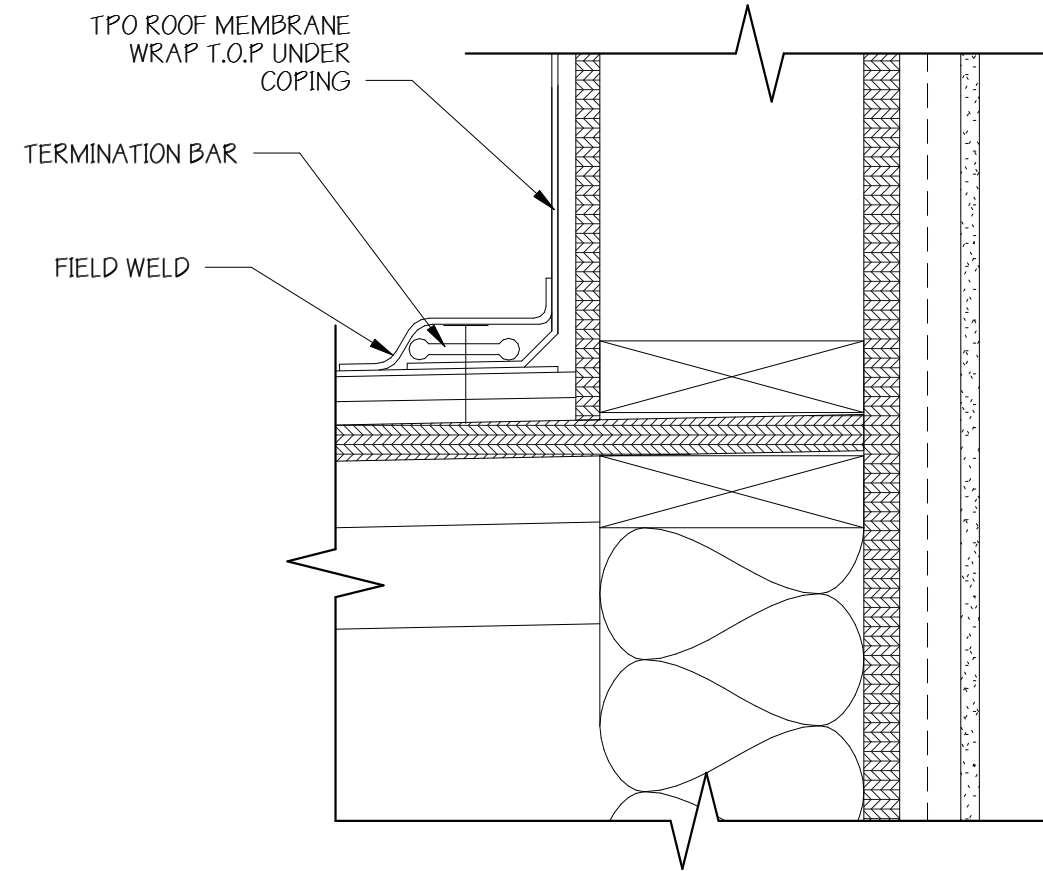




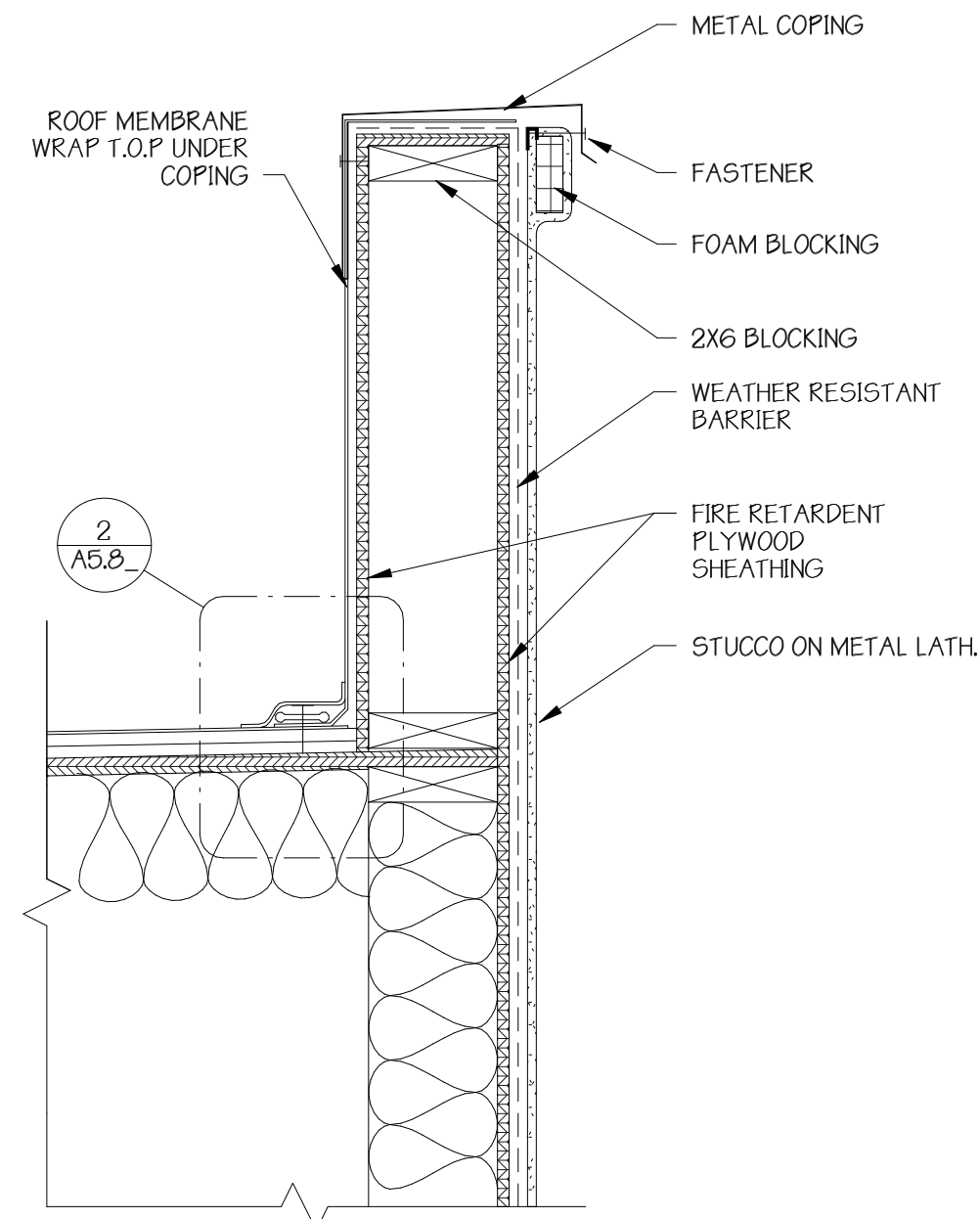
4 SCUPPER ISOMETRIC  
1 1/2"



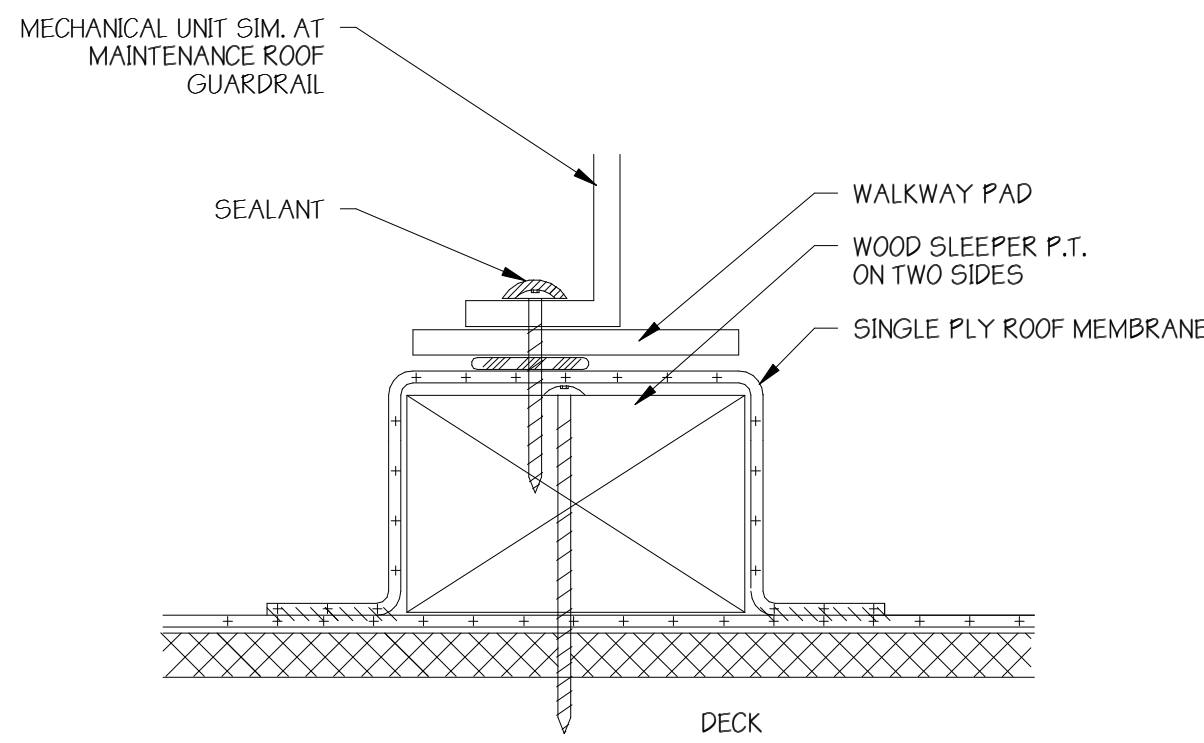
3 TYP. SCUPPER/ CONDUCTOR DETAIL  
1 1/2"



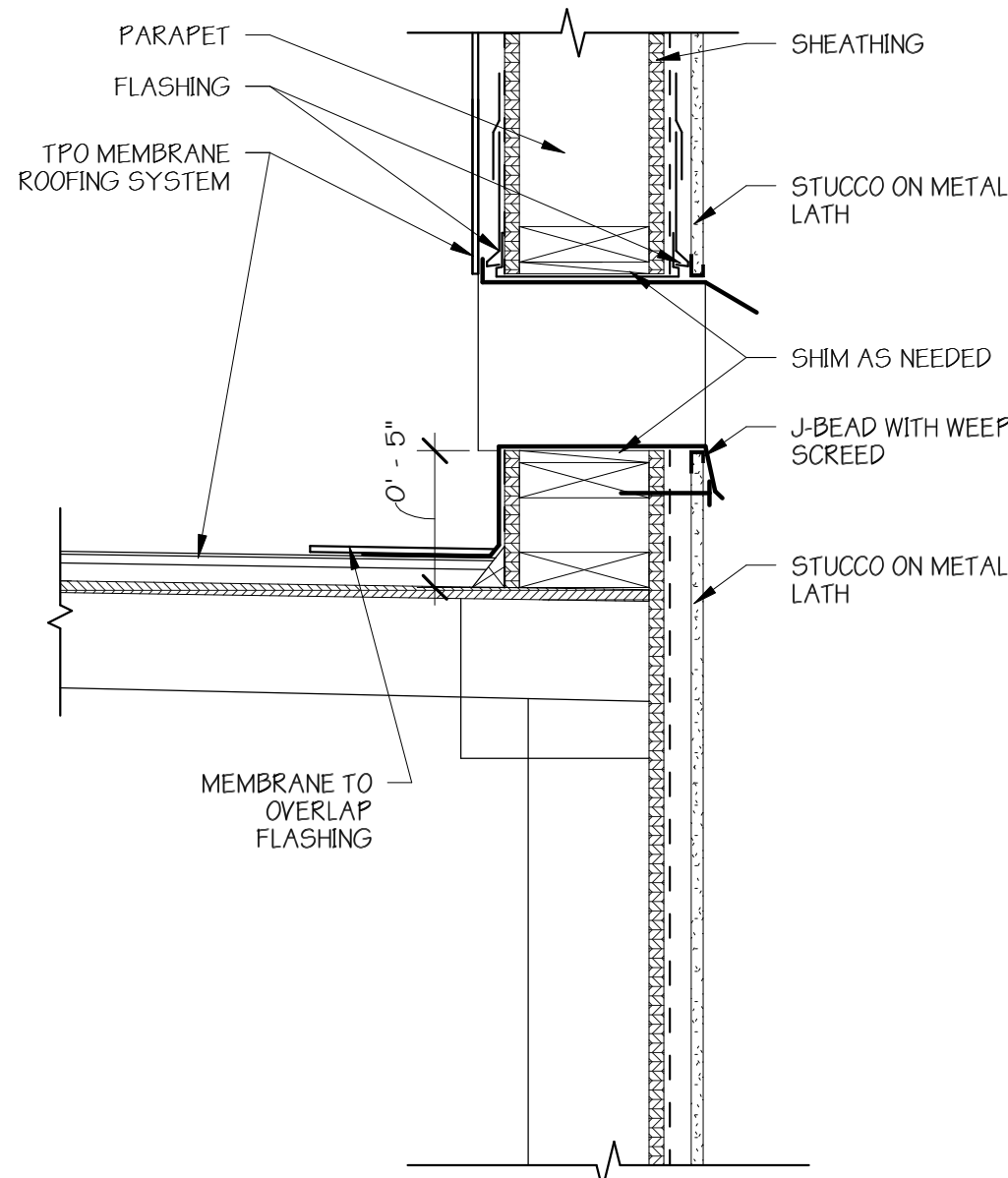
2 STUCCO PARAPET FLASHING DETAIL  
3"



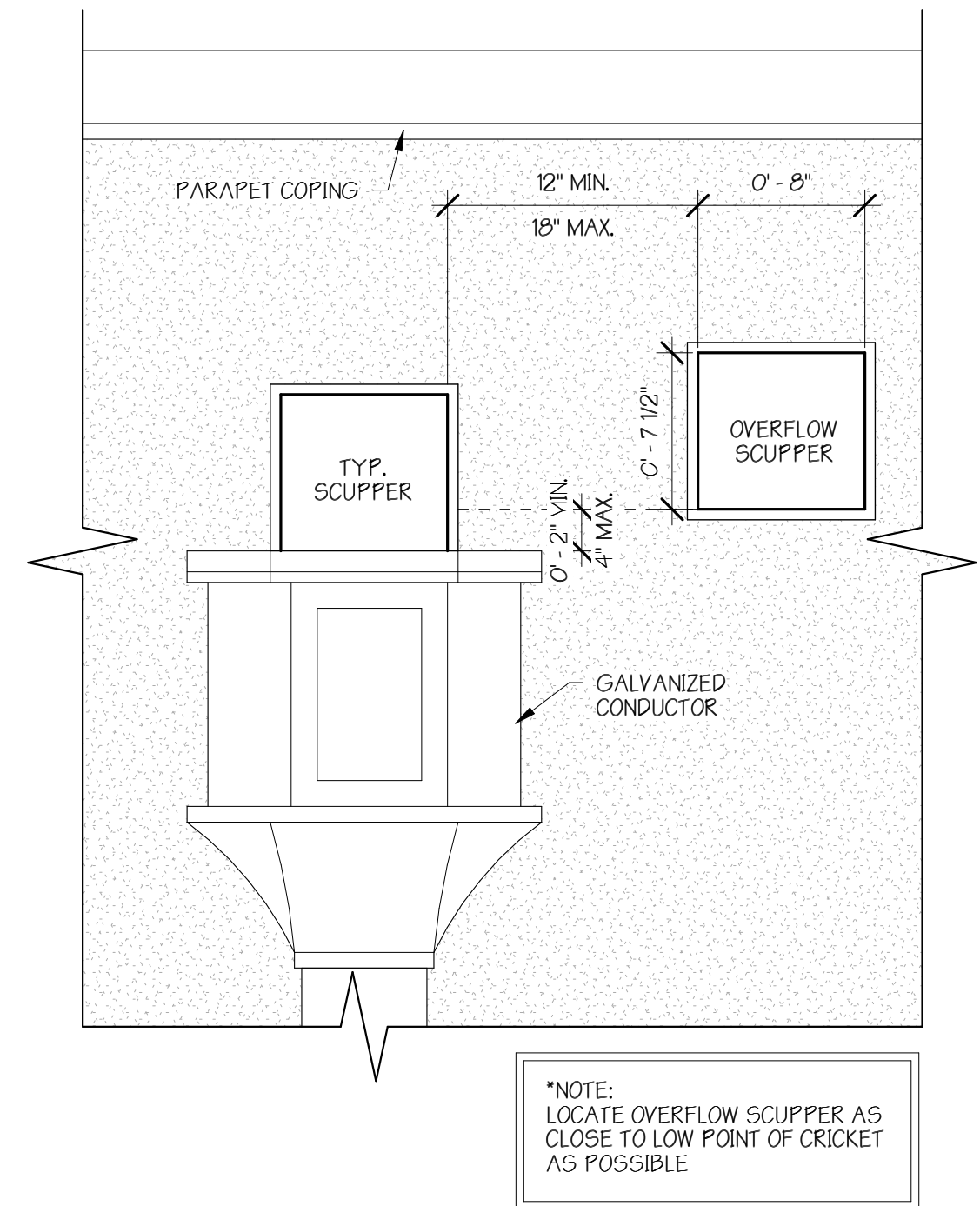
1 STUCCO PARAPET DETAIL W/TOP BAND  
1 1/2"



6 SLEEPER DETAIL  
3"



5 OVERFLOW SCUPPER DETAIL & ELEVATION @ PARAPET  
1 1/2"



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WLG

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JMK

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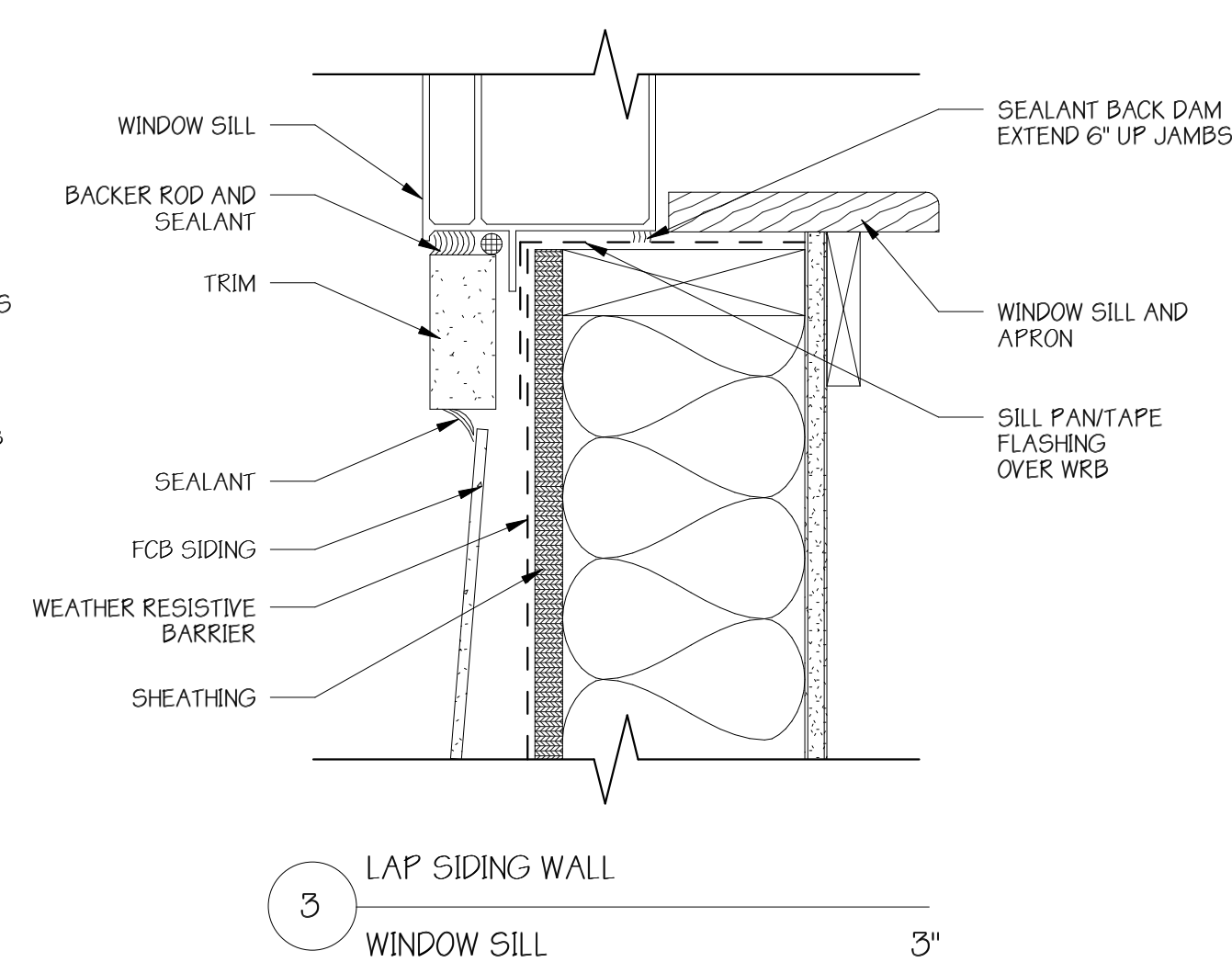
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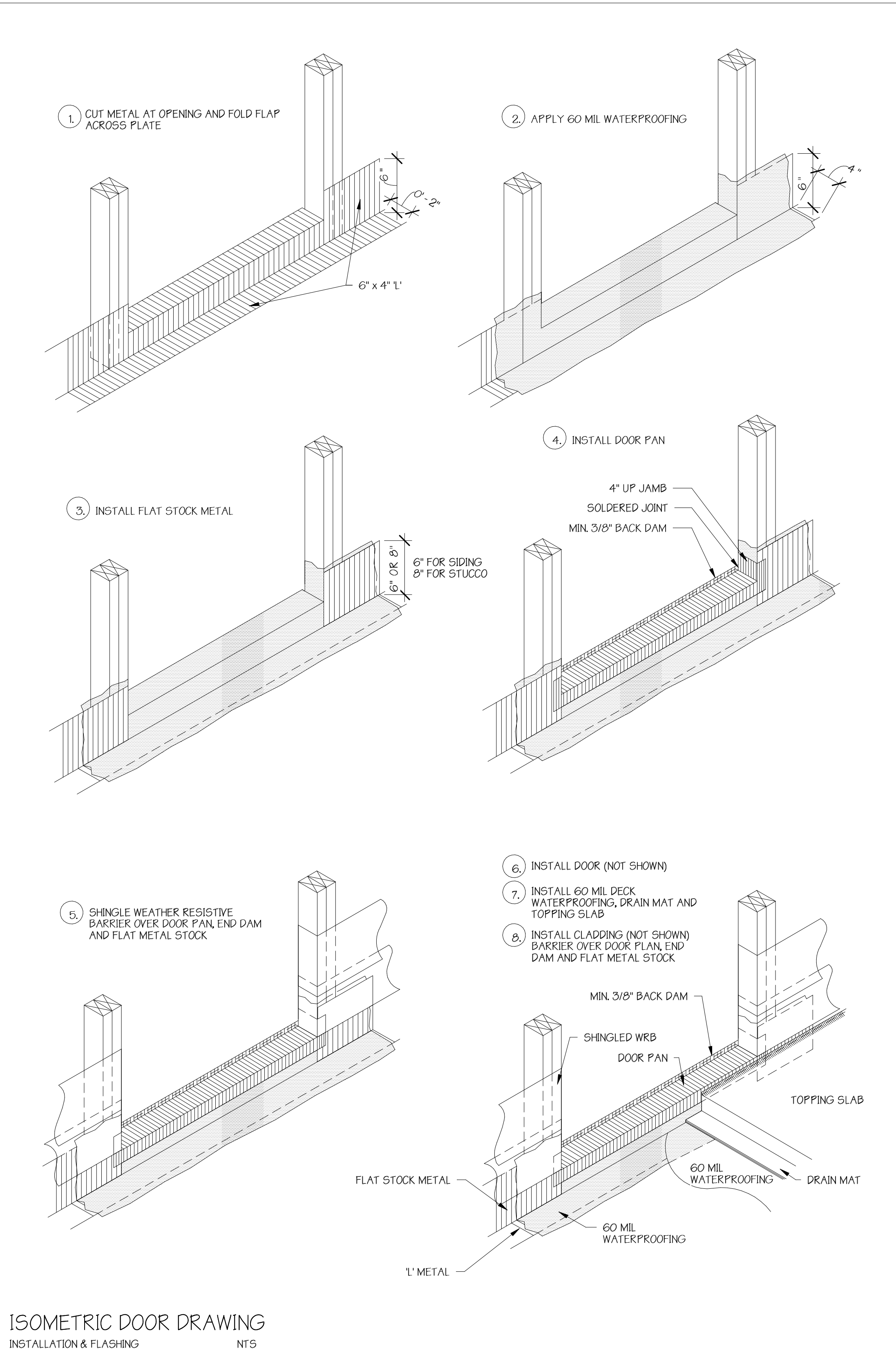
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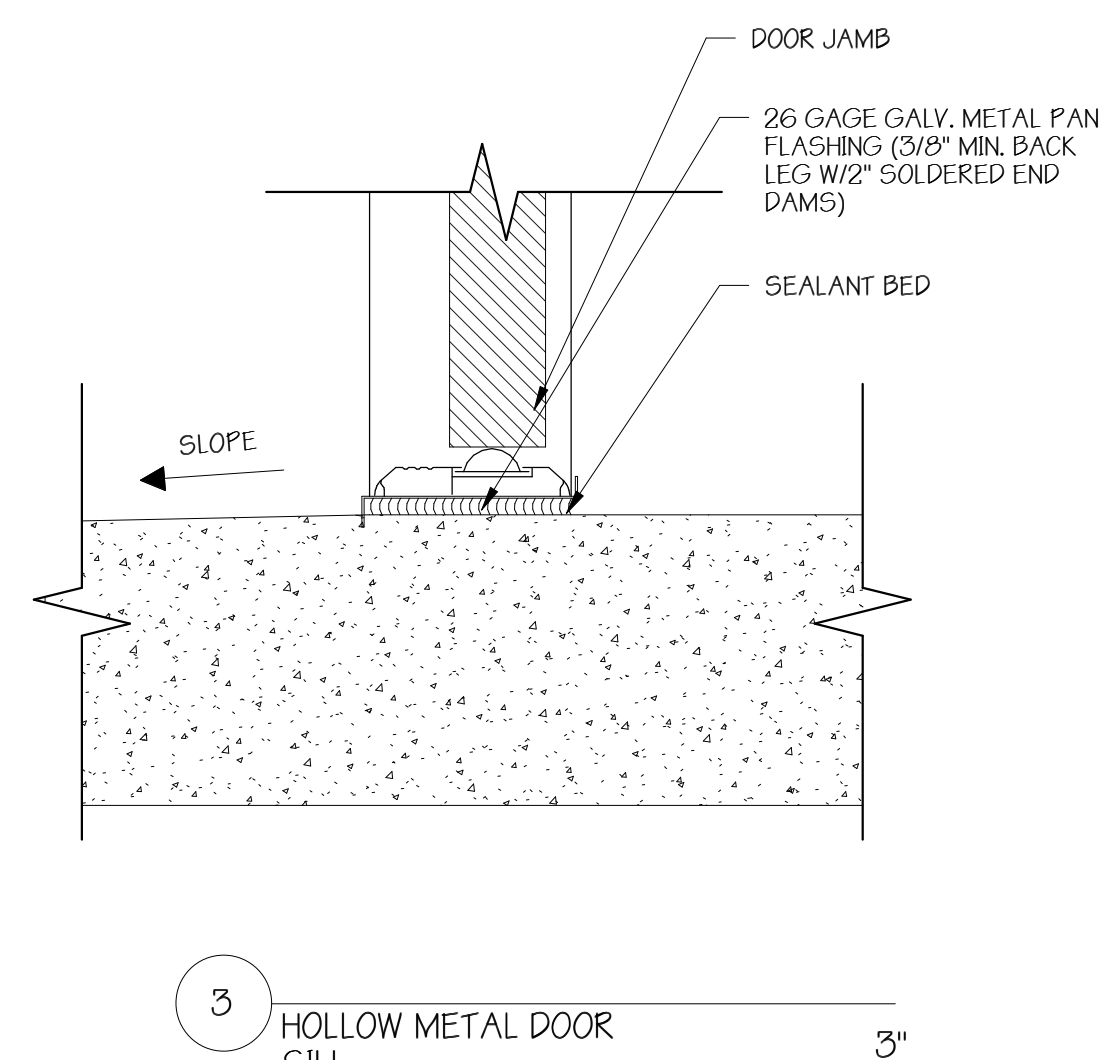
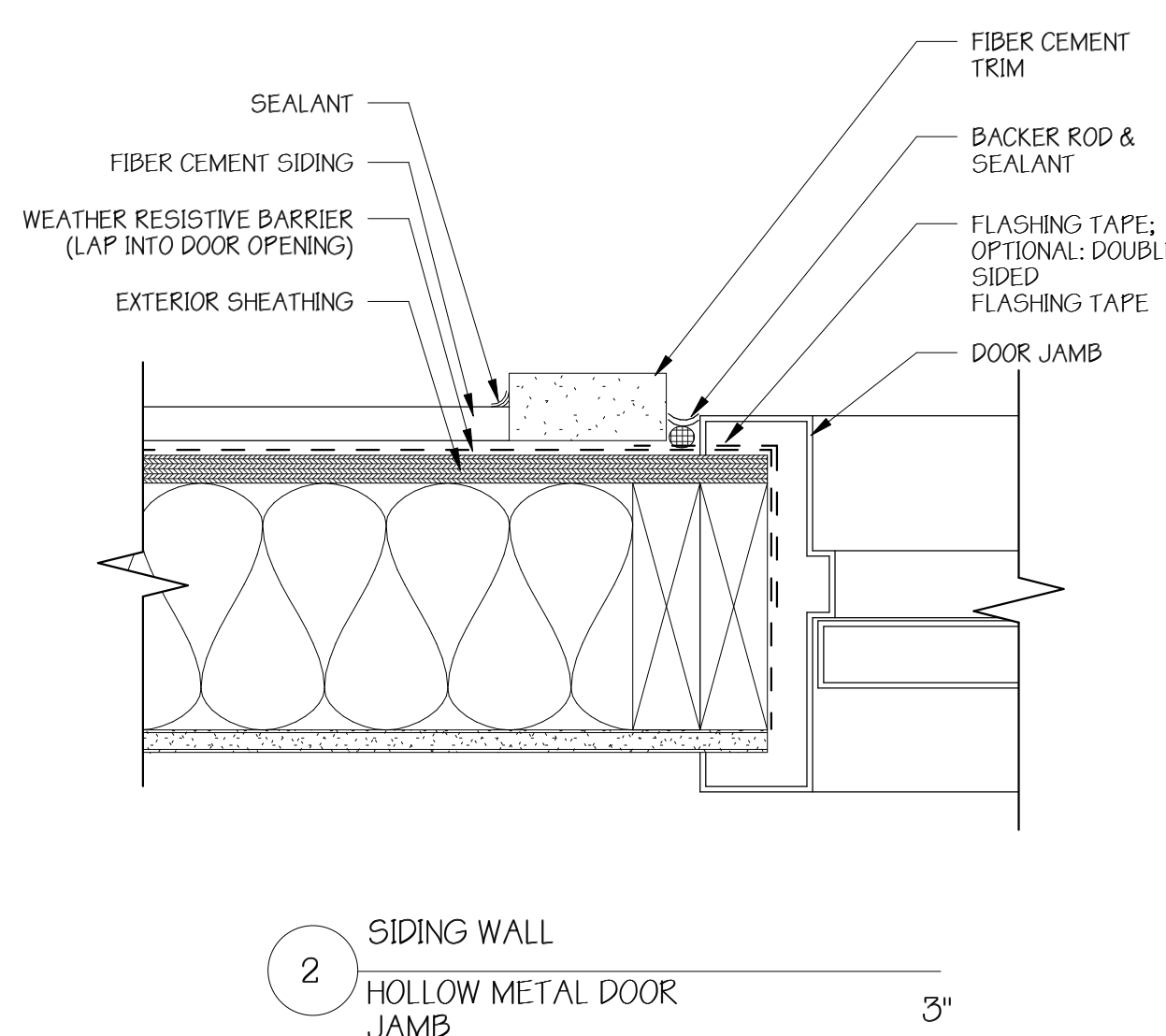
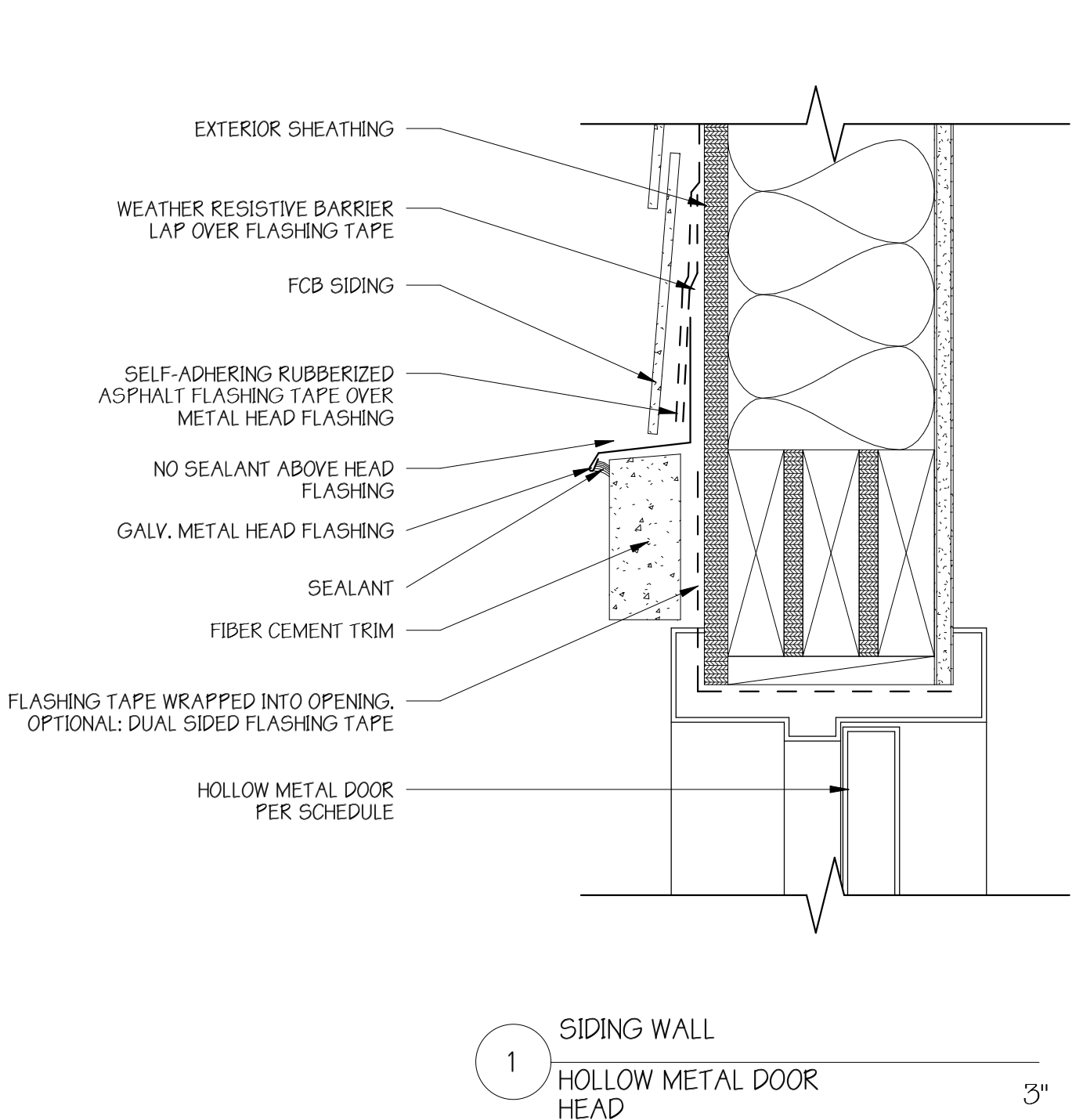
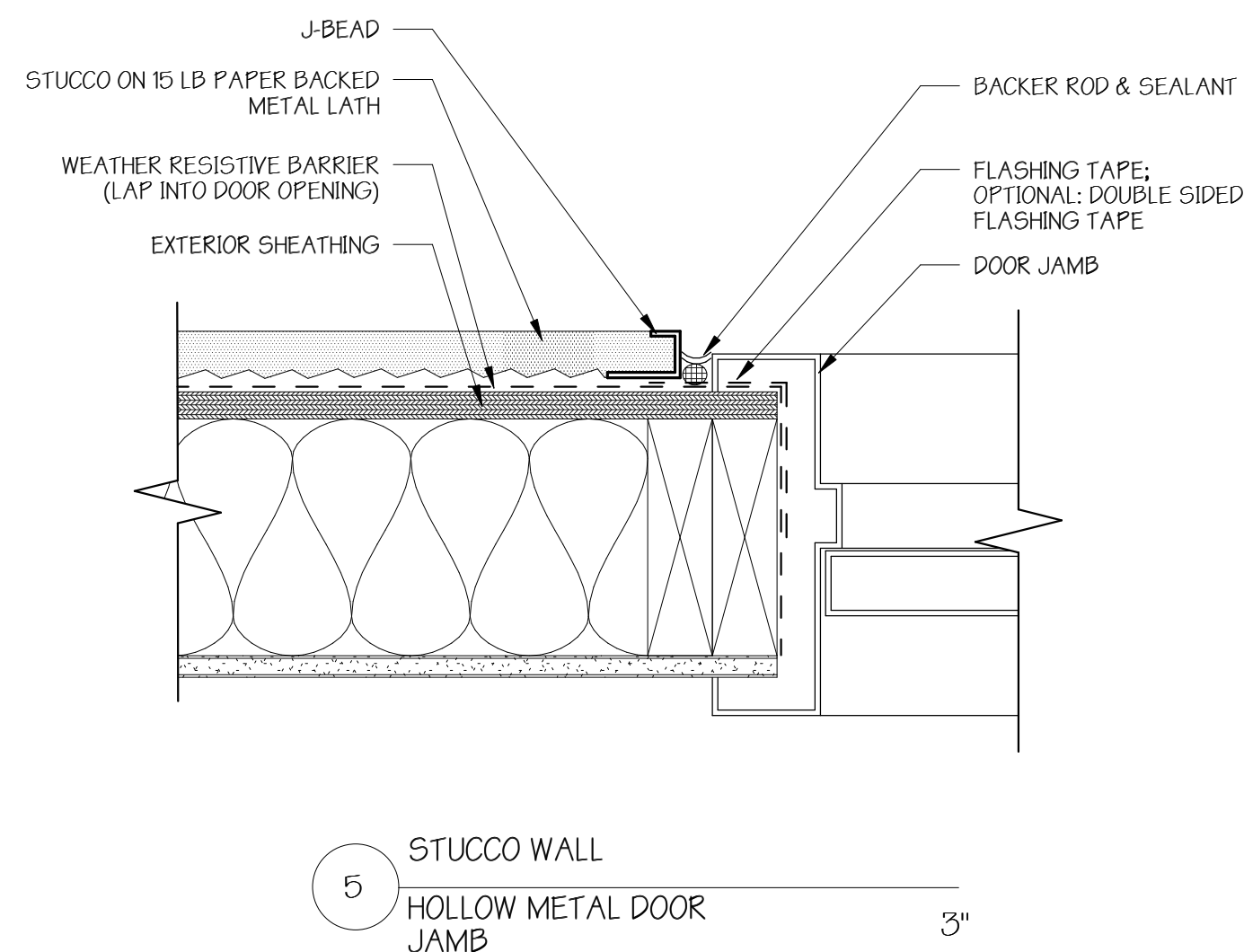
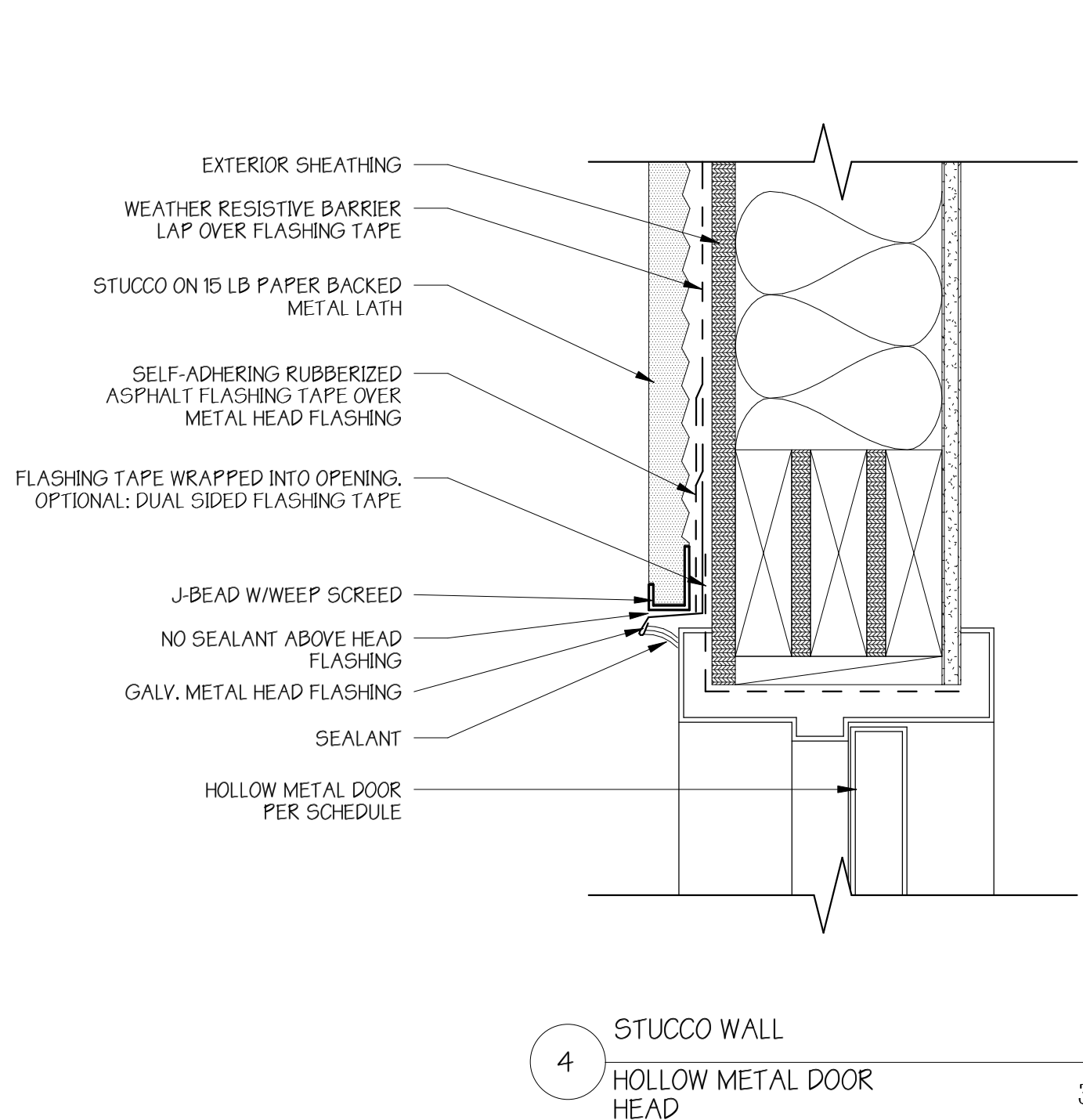








ISOMETRIC DOOR DRAWING  
INSTALLATION & FLASHING  
NTS



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WLG

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JMK

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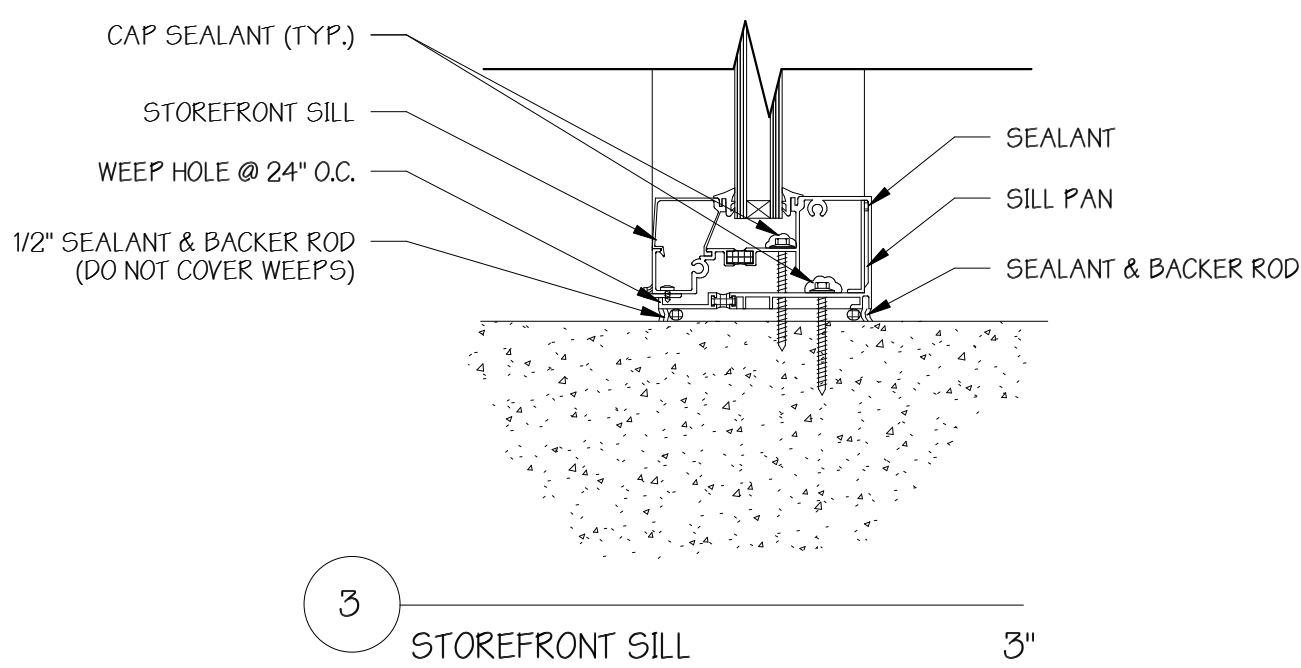
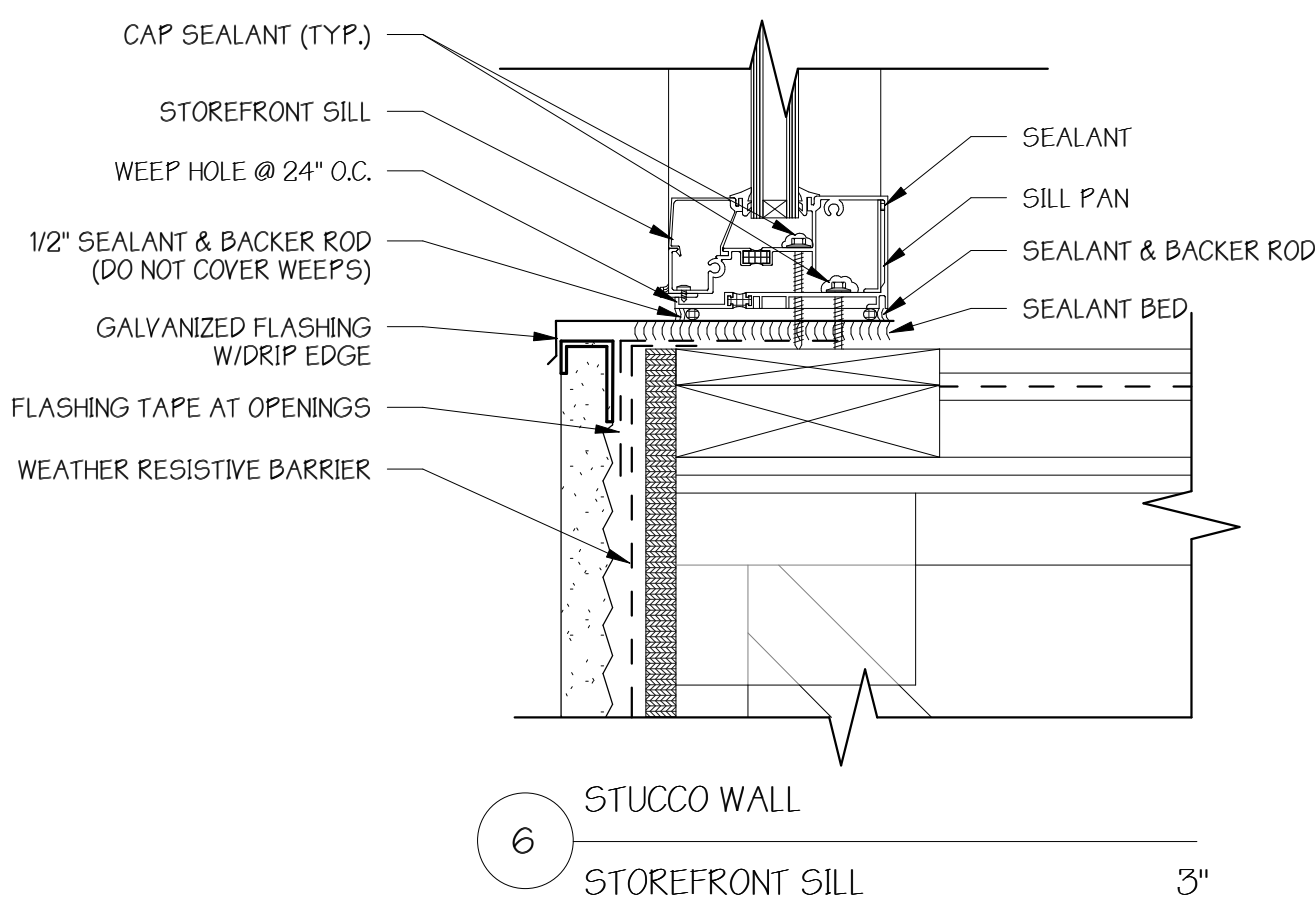
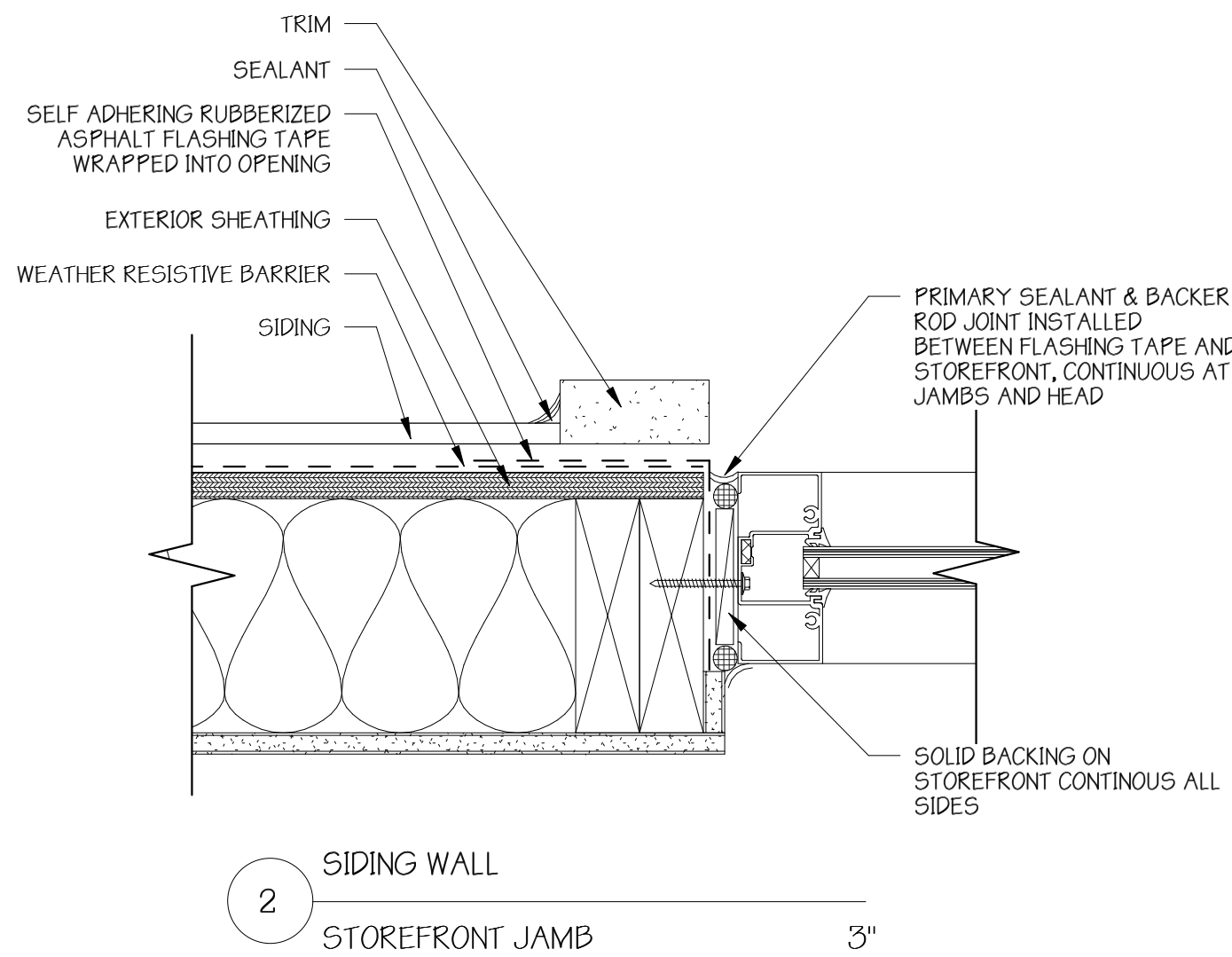
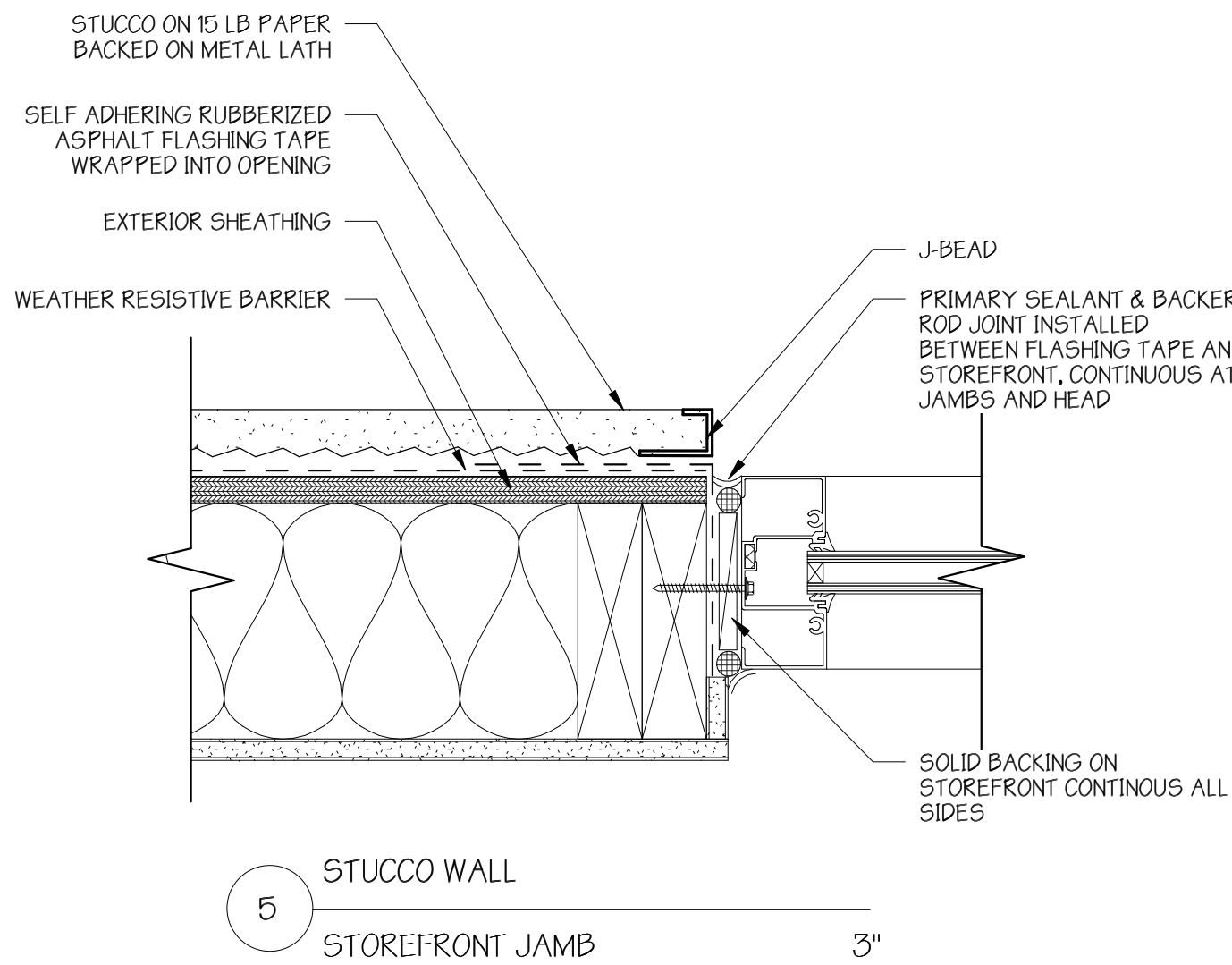
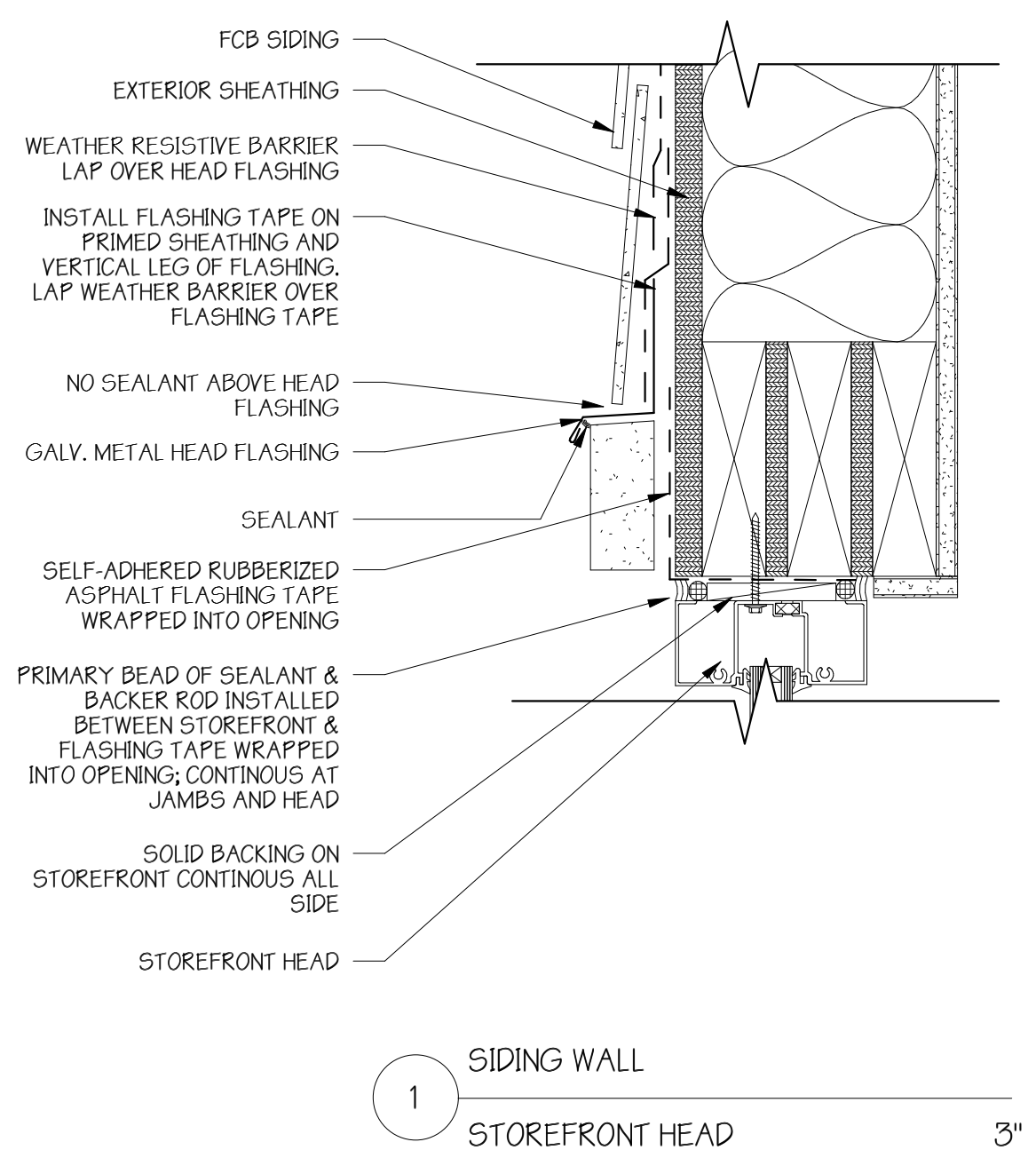
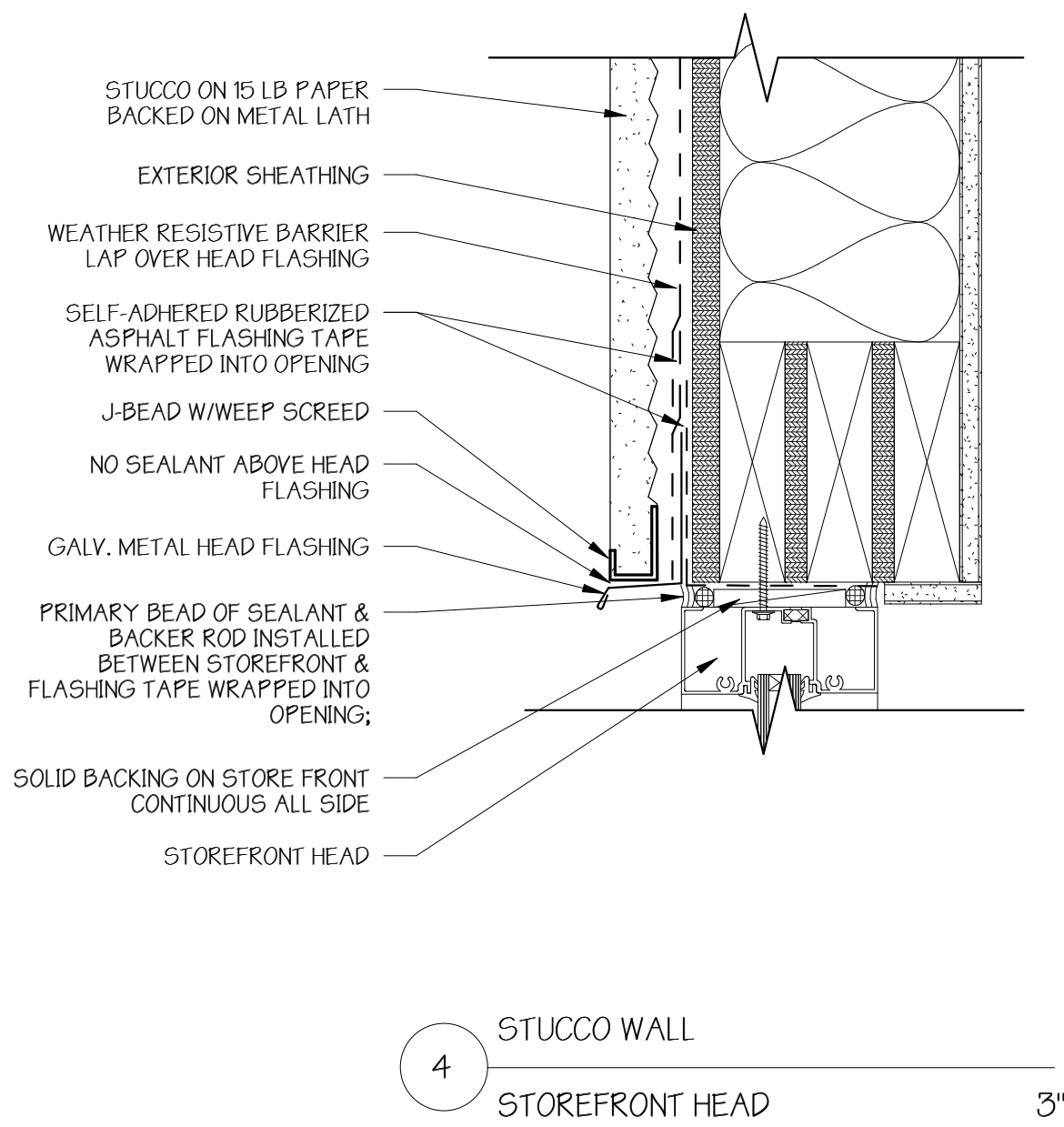
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DESCRIPTION  
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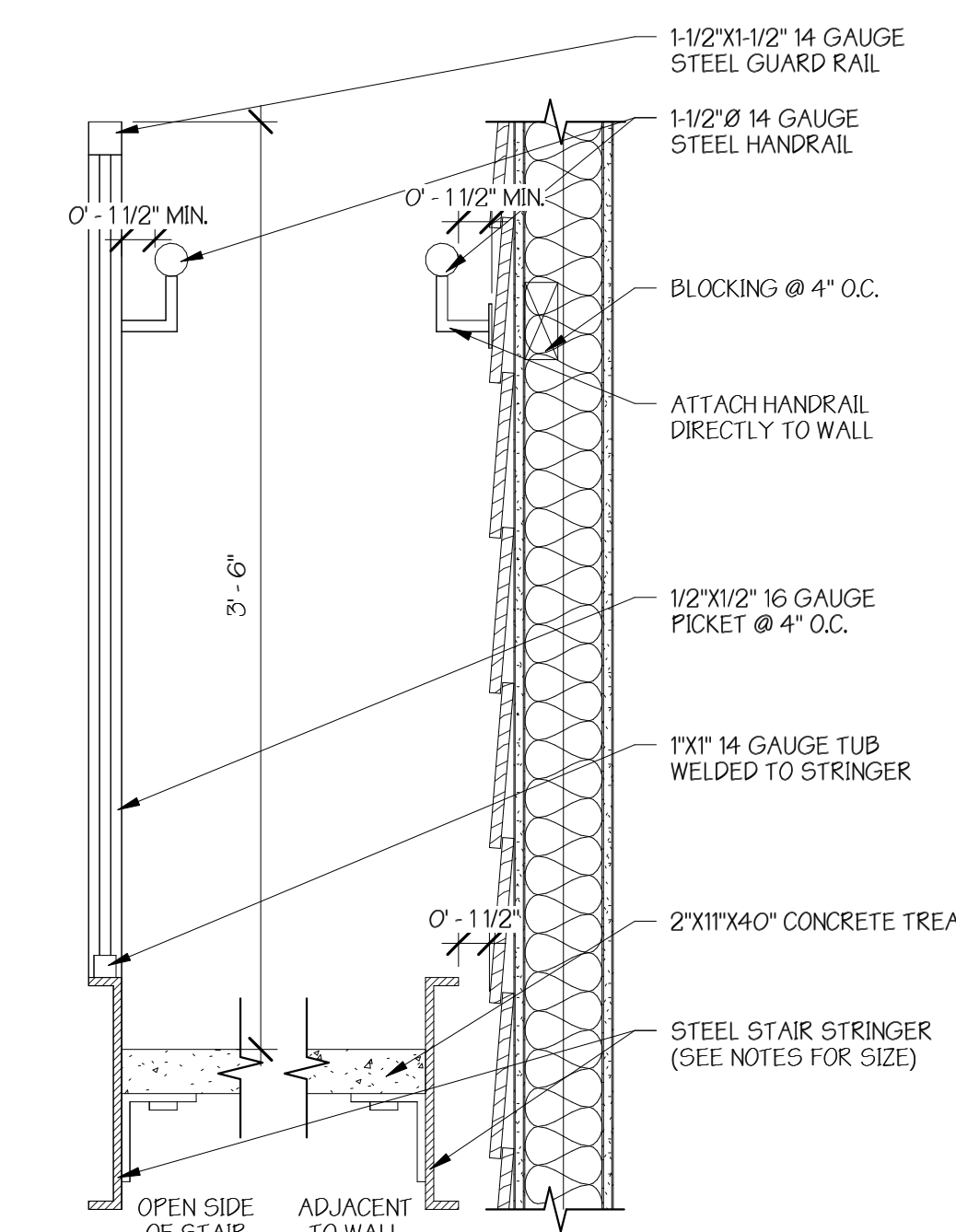
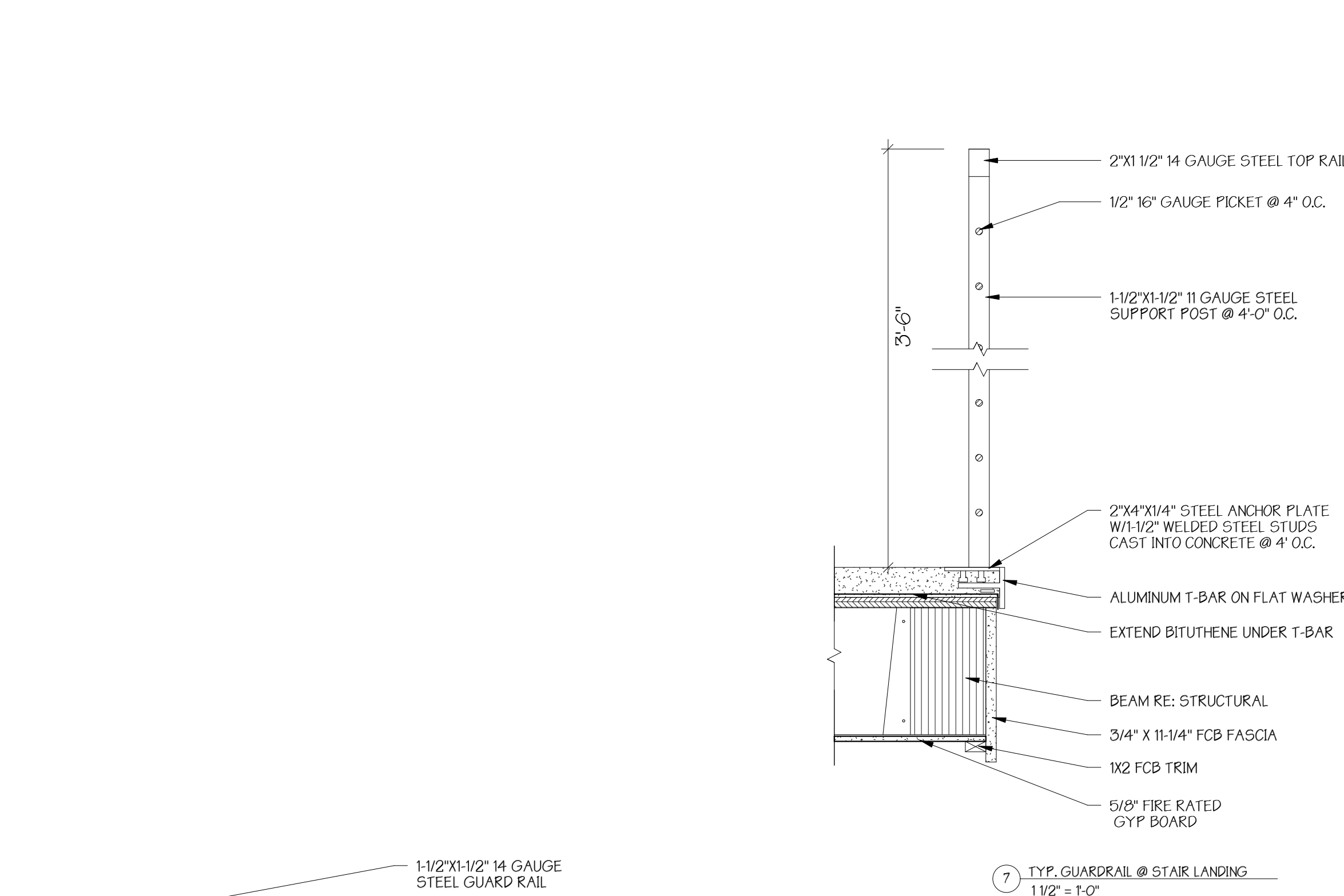
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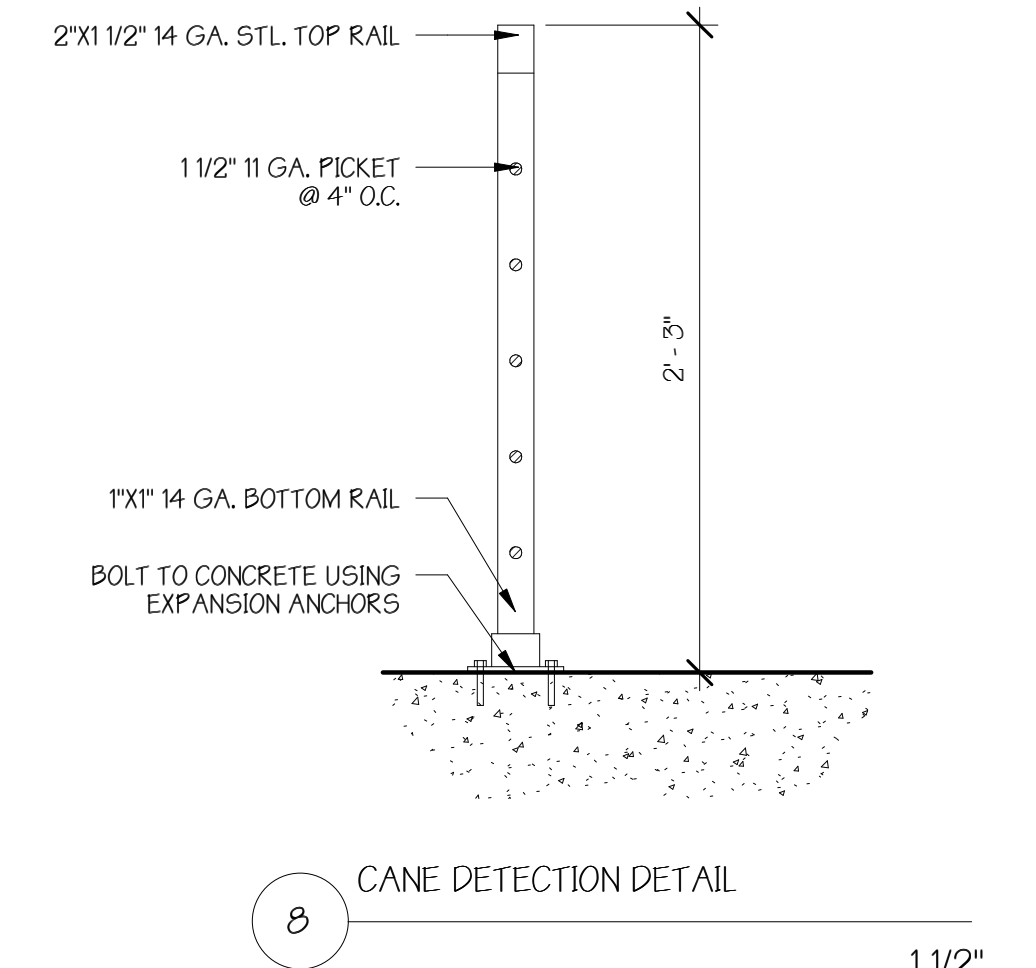
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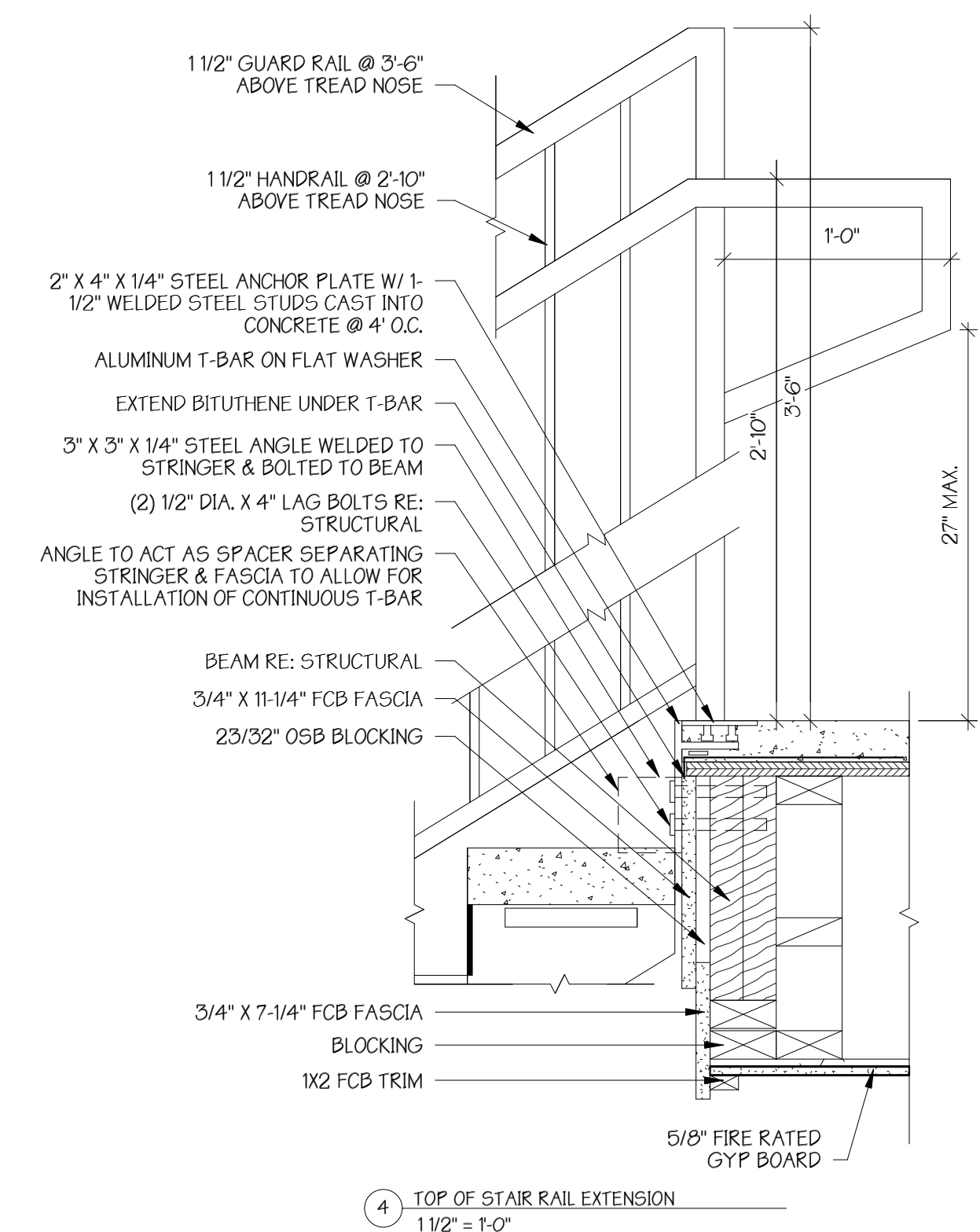
11 HANDRAIL CONNECTION

1 1/2"



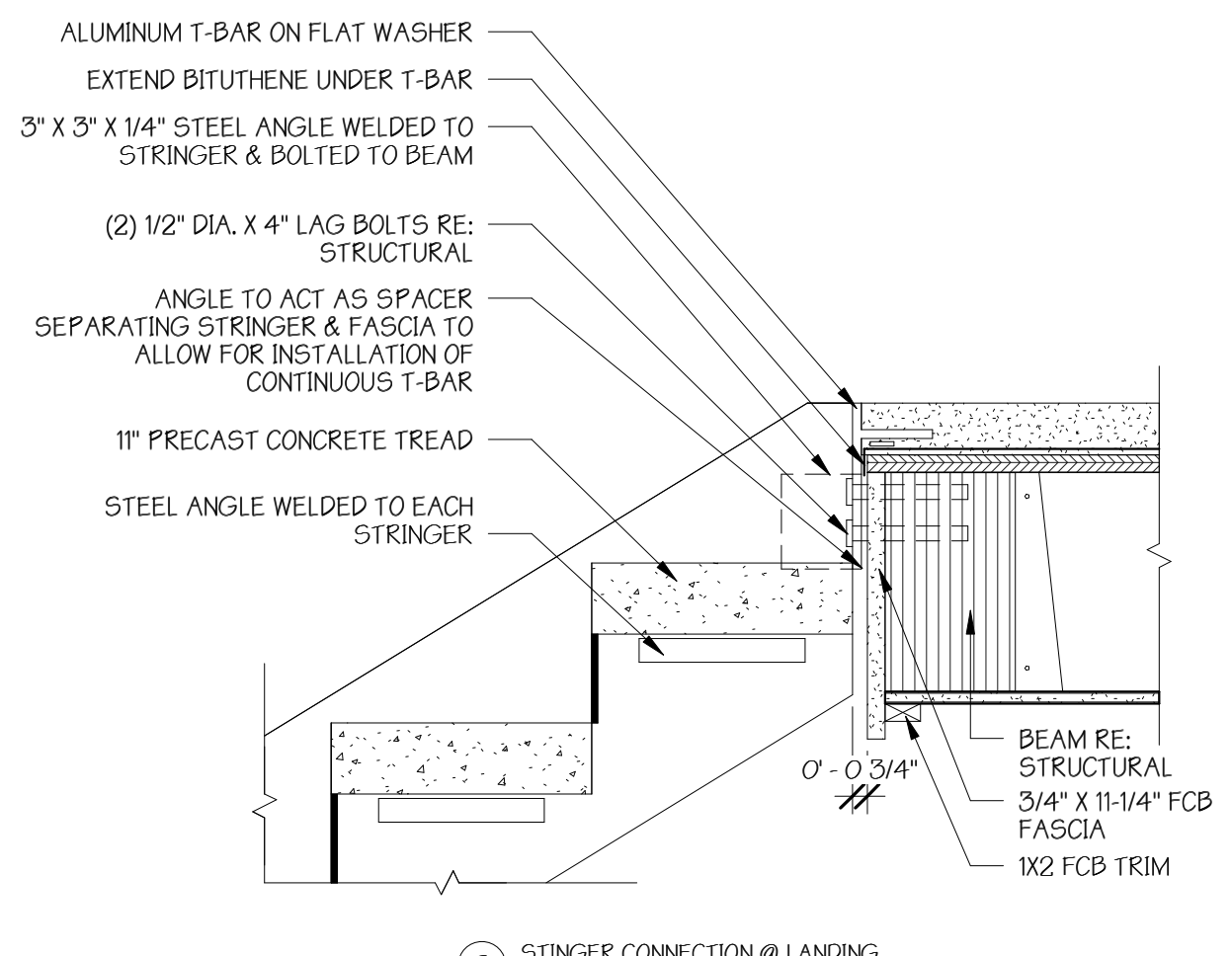
8 CANE DETECTION DETAIL

1 1/2"



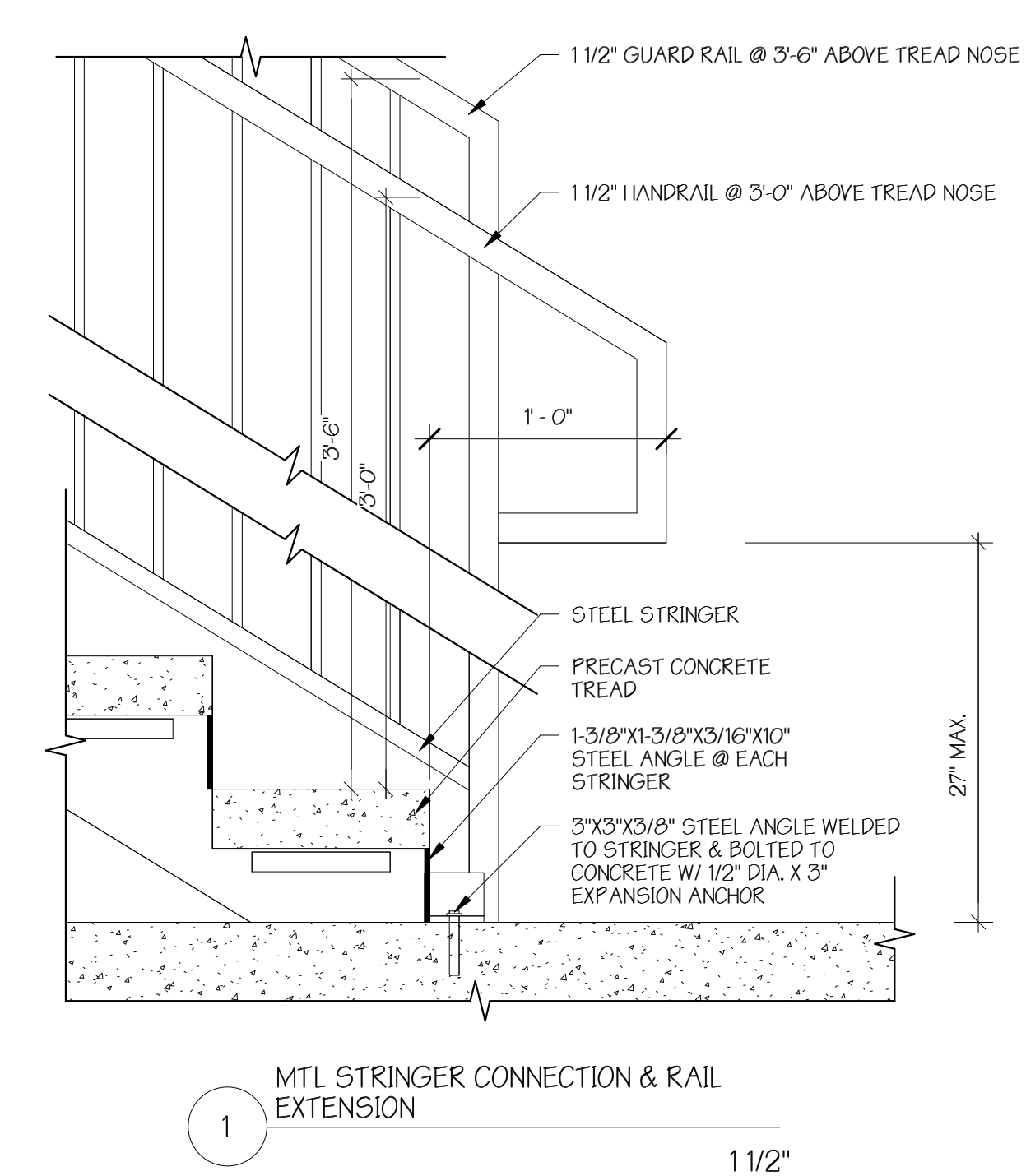
4 TOP OF STAIR RAIL EXTENSION

1 1/2" = 1'-0"



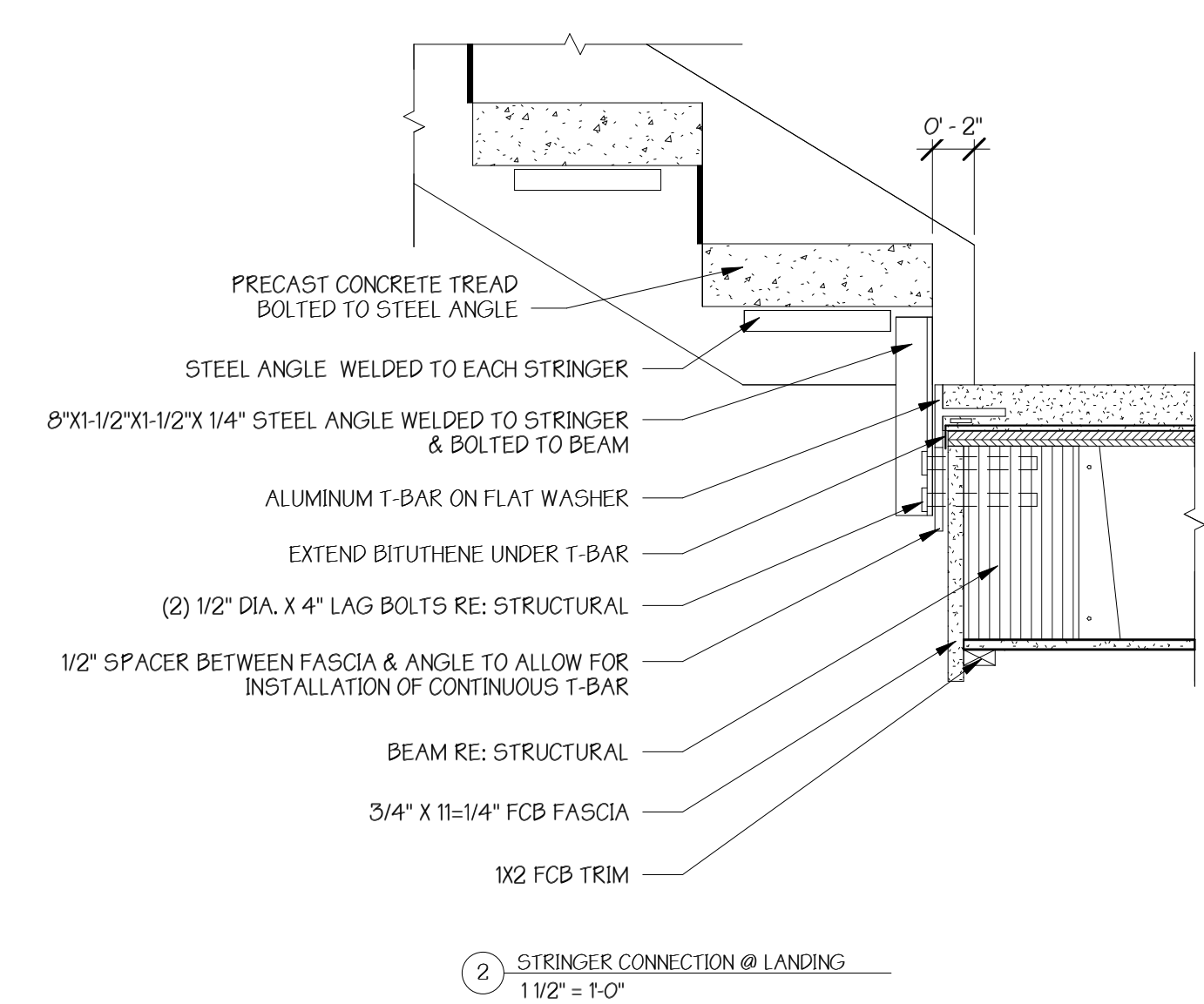
5 STRINGER CONNECTION @ LANDING

1 1/2" = 1'-0"



1 MTL STRINGER CONNECTION & RAIL EXTENSION

1 1/2"



2 STRINGER CONNECTION @ LANDING

1 1/2" = 1'-0"

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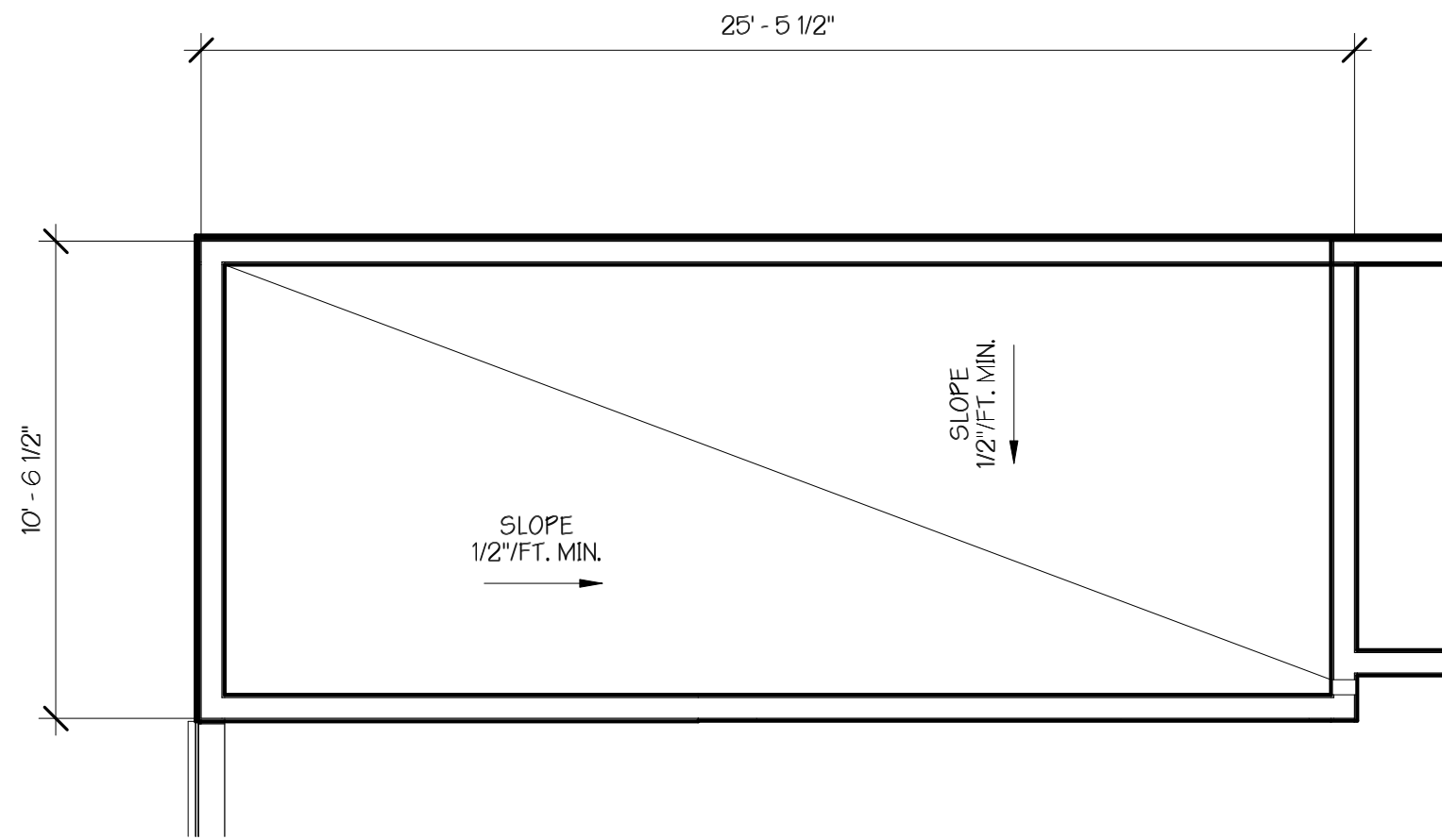
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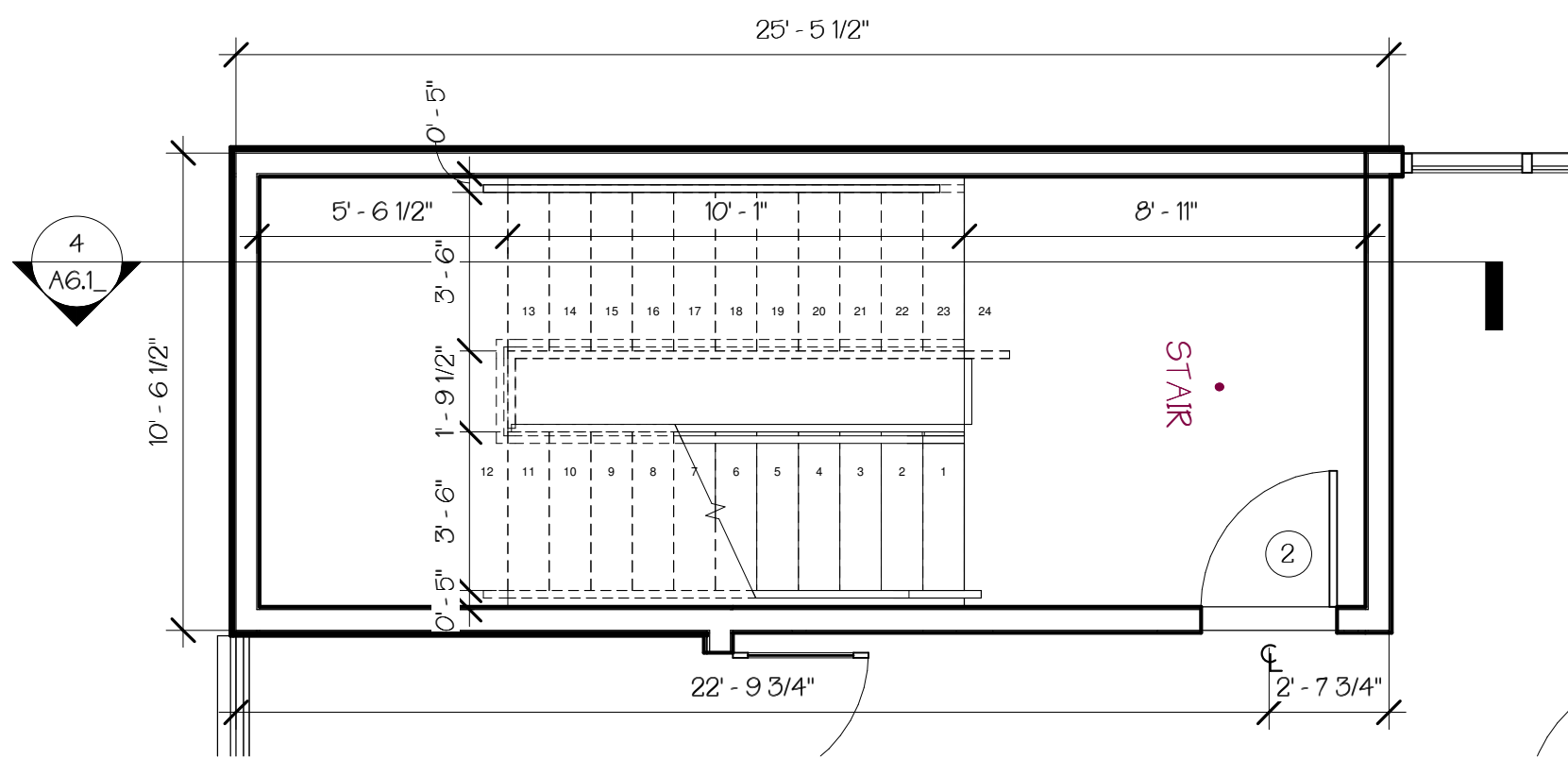
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DATE  
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DESCRIPTION  
STAIR DETAILS  
  
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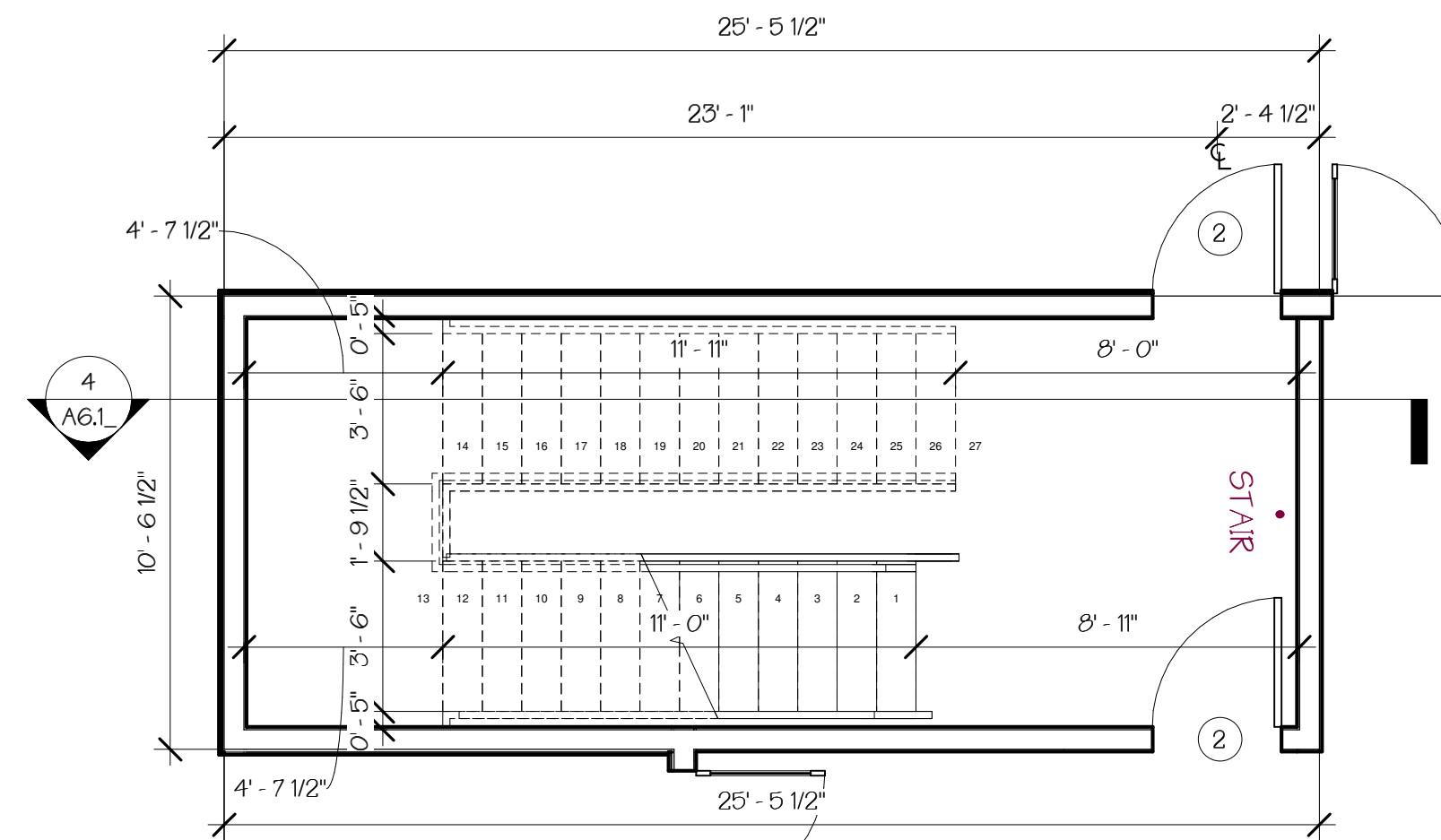




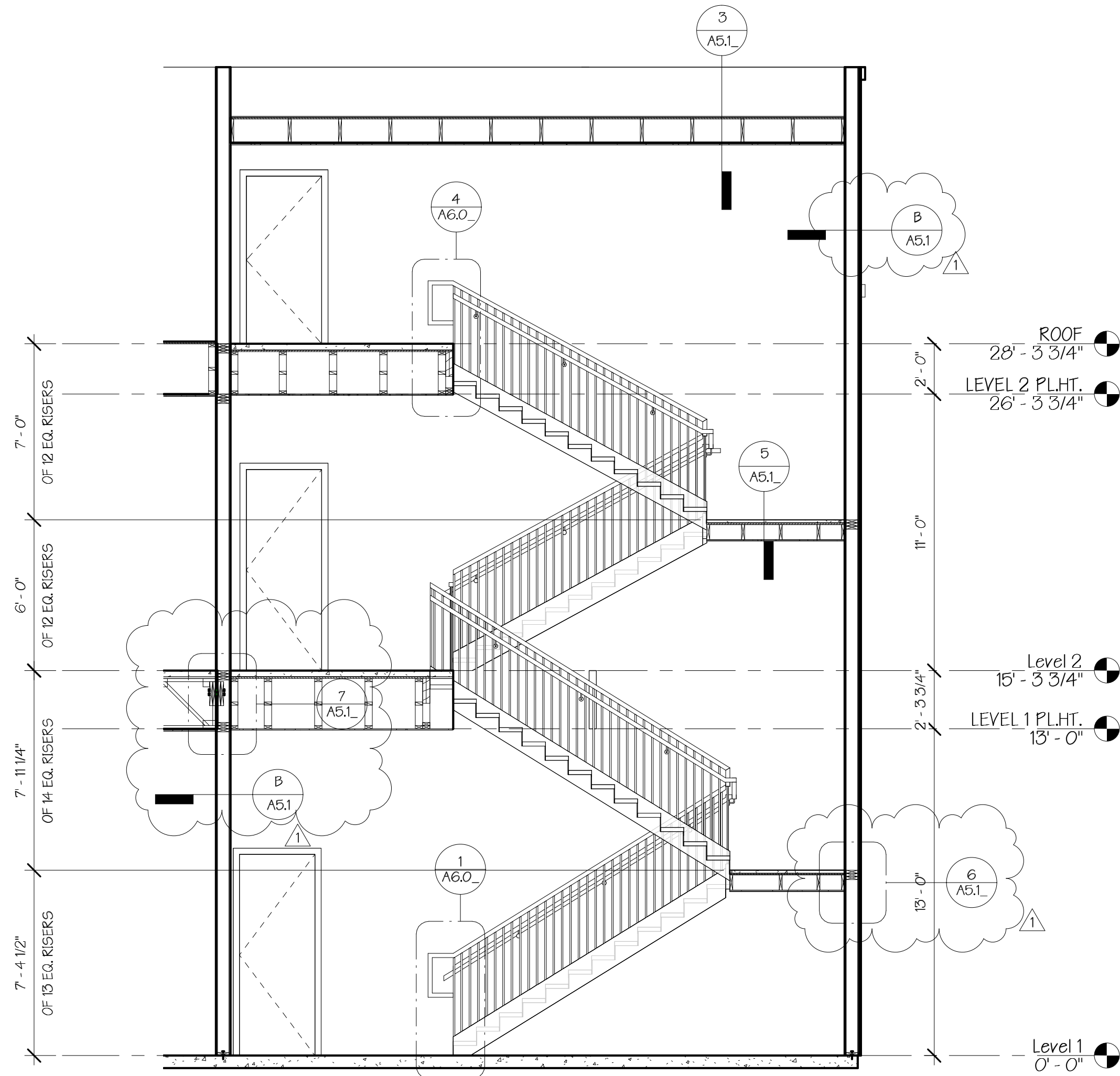
3 Cameron - Roof Plan  
1/4" = 1'-0"



2 Cameron - Stair Level 2 Plan  
1/4" = 1'-0"



1 Cameron - Stair Level 1 Plan  
1/4" = 1'-0"



4 STAIR SECTION  
1/4" = 1'-0"

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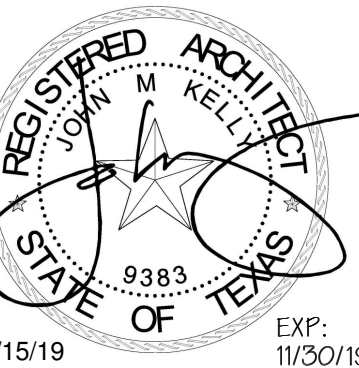
WLG

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DWG NAME

DATE

05/15/19

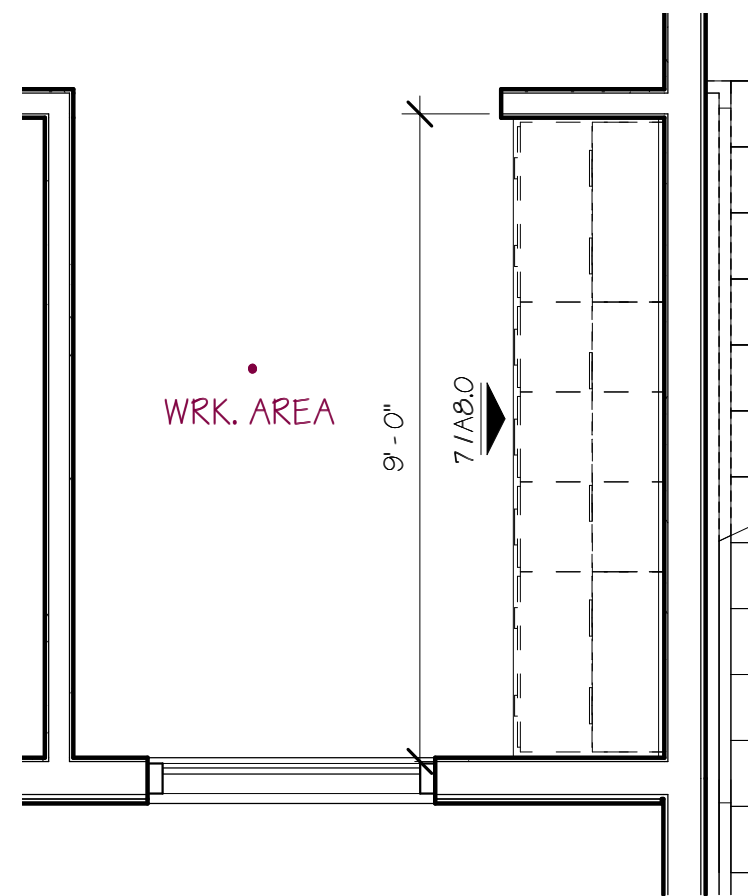
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STAIR PLAN & SECTIONS

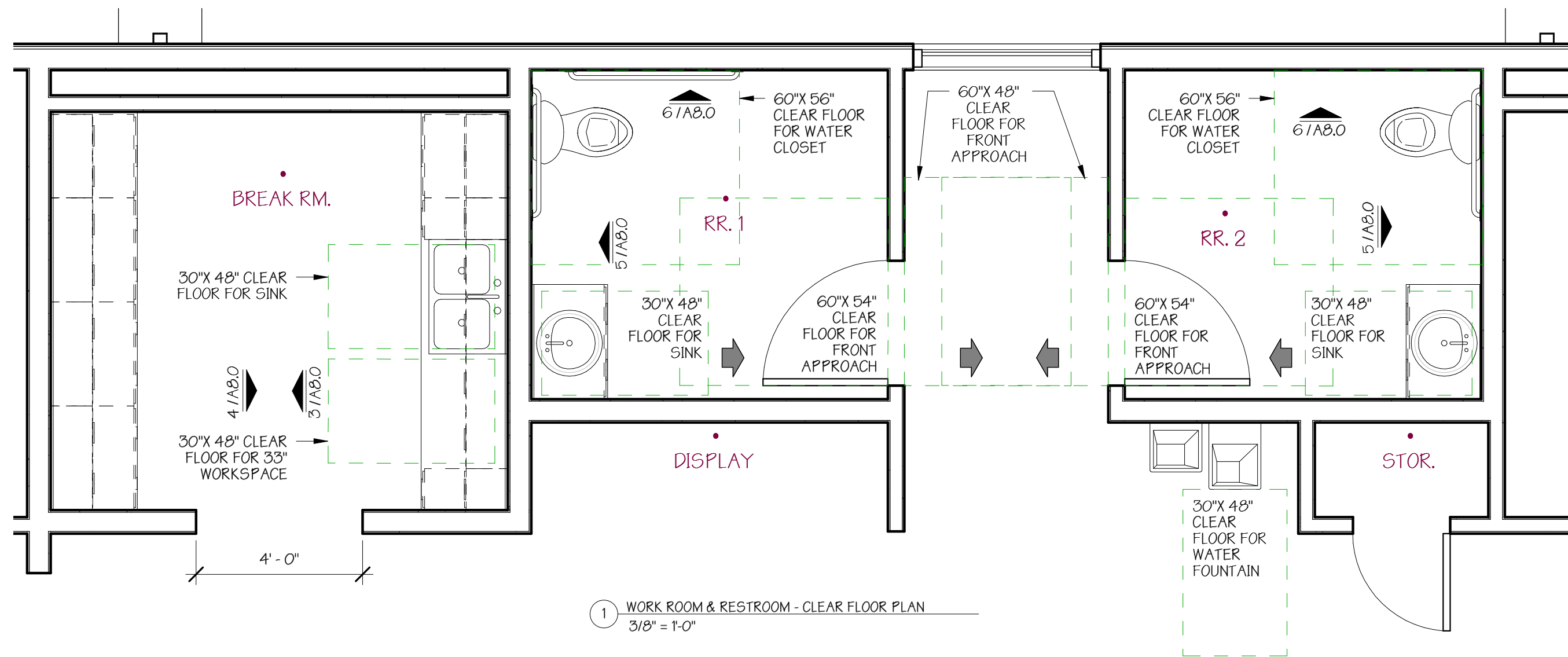
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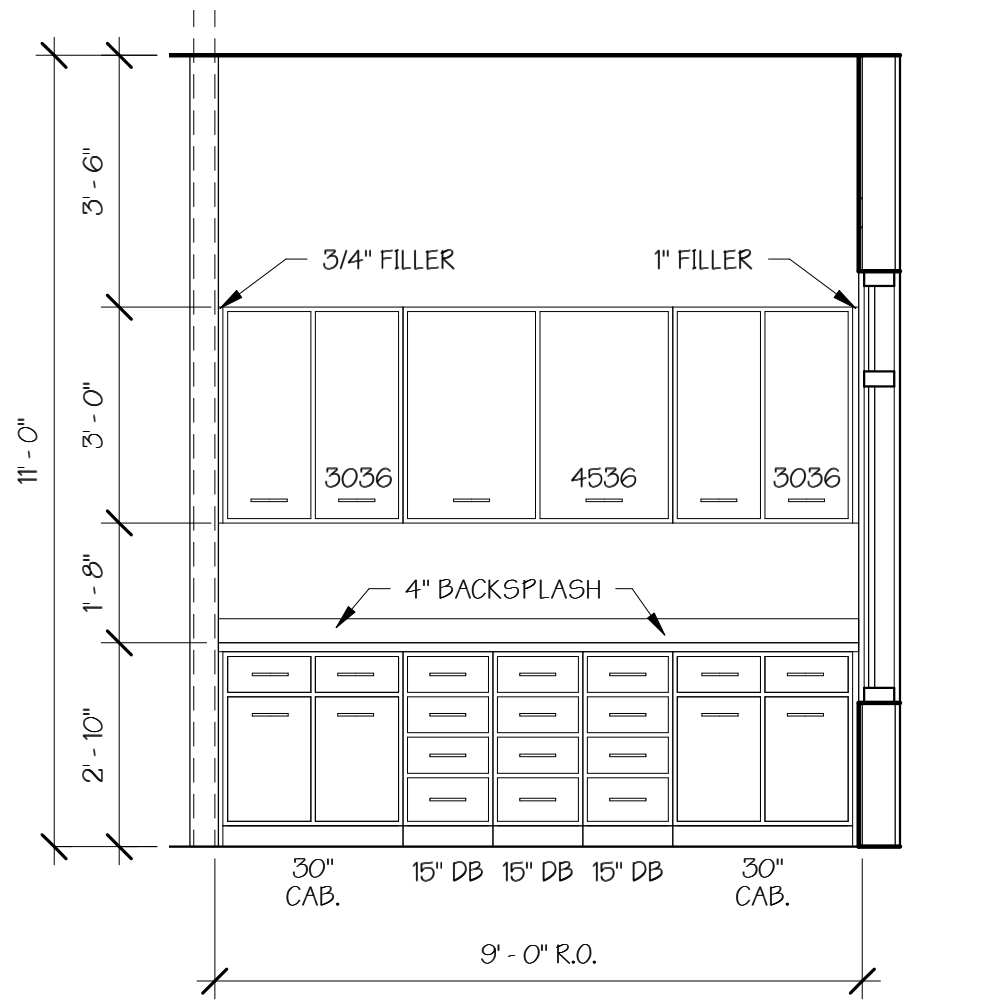




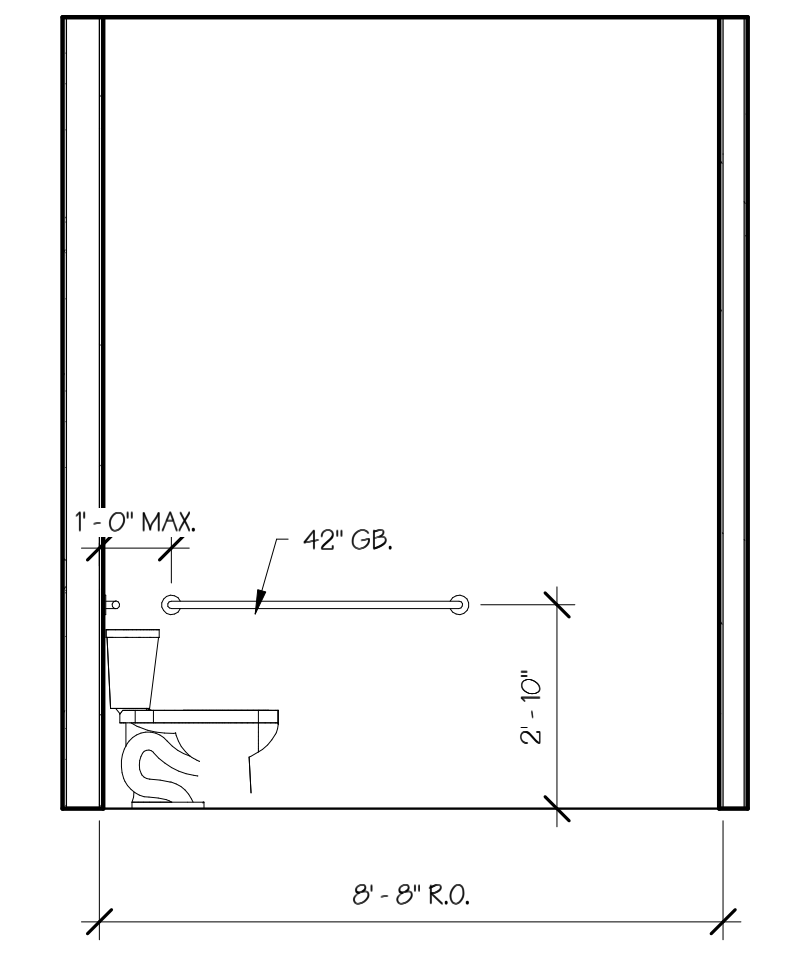
2 WORK AREA - CLEAR FLOOR PLAN  
3/8" = 1'-0"



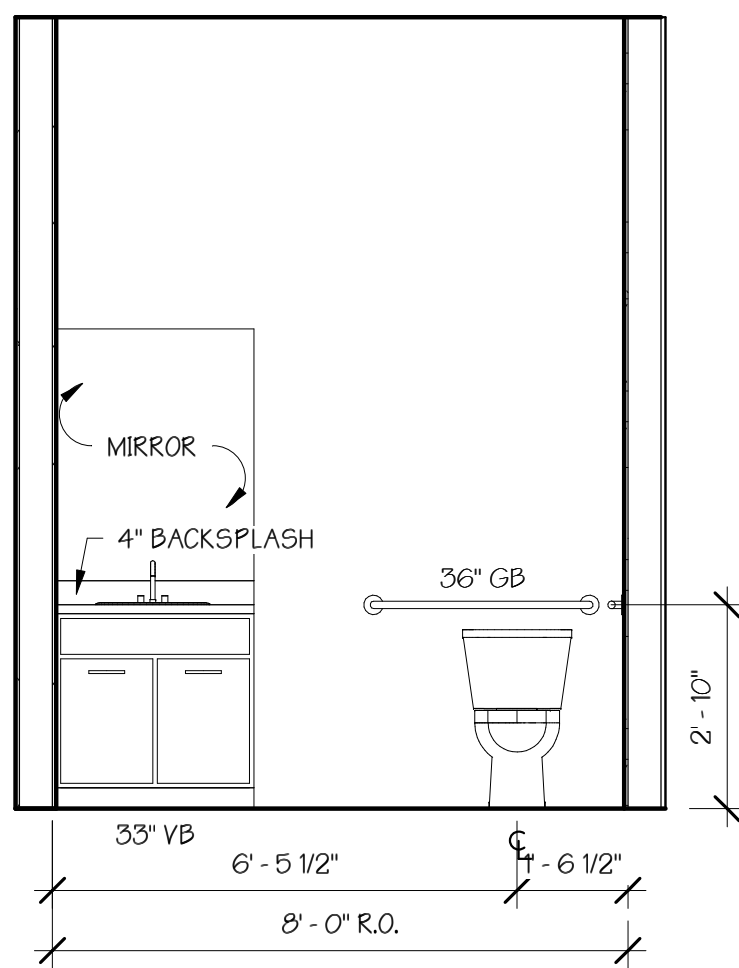
1 WORK ROOM & RESTROOM - CLEAR FLOOR PLAN  
3/8" = 1'-0"



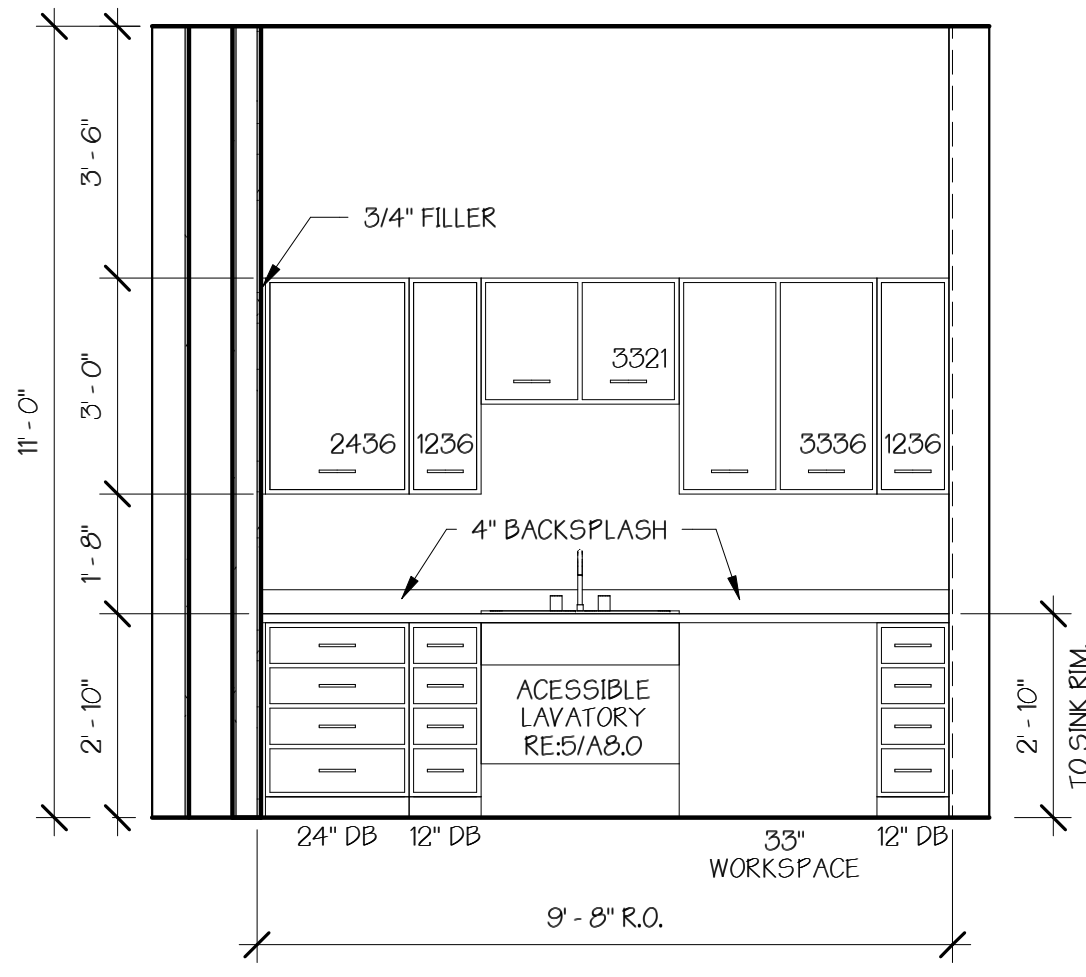
7 WORK AREA ELEVATION  
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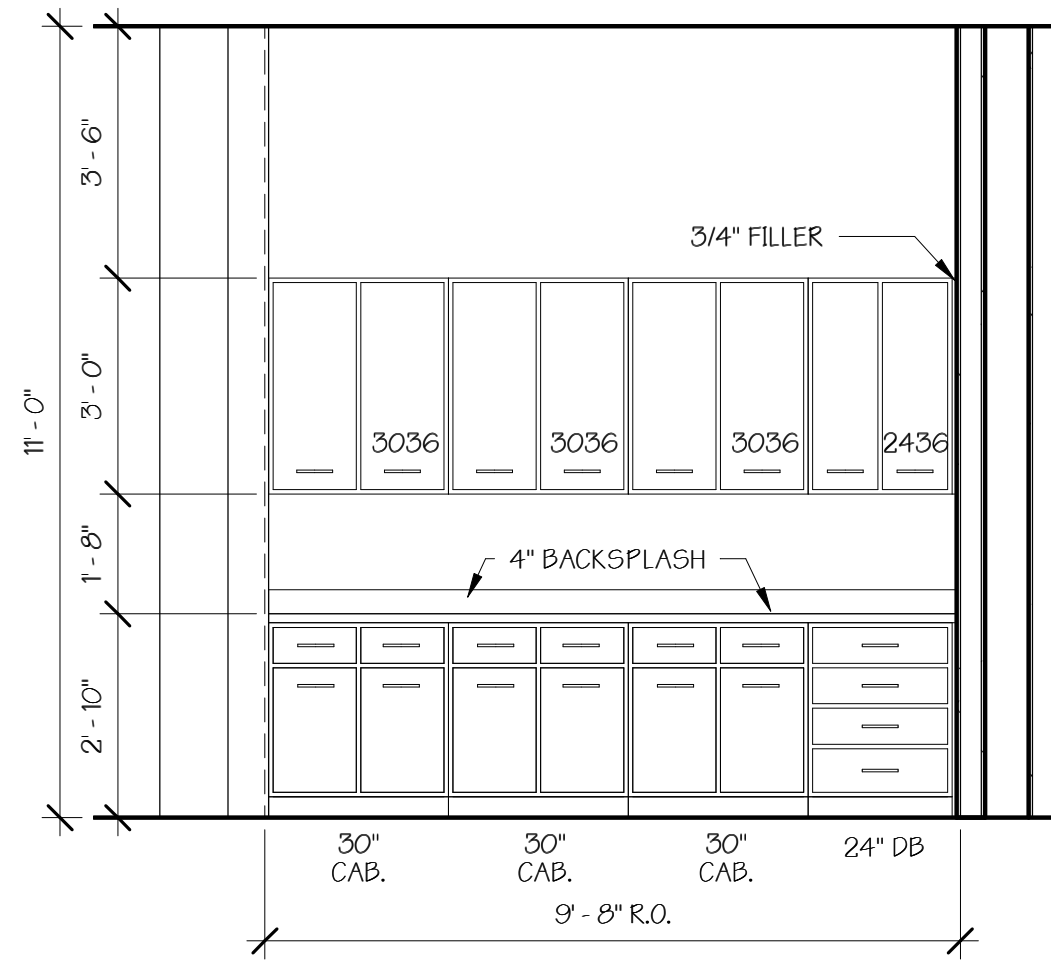
6 RESTROOM ELEVATION 2  
3/8" = 1'-0"



5 RESTROOM ELEVATION  
3/8" = 1'-0"



4 WORKROOM ELEVATION 2  
3/8" = 1'-0"



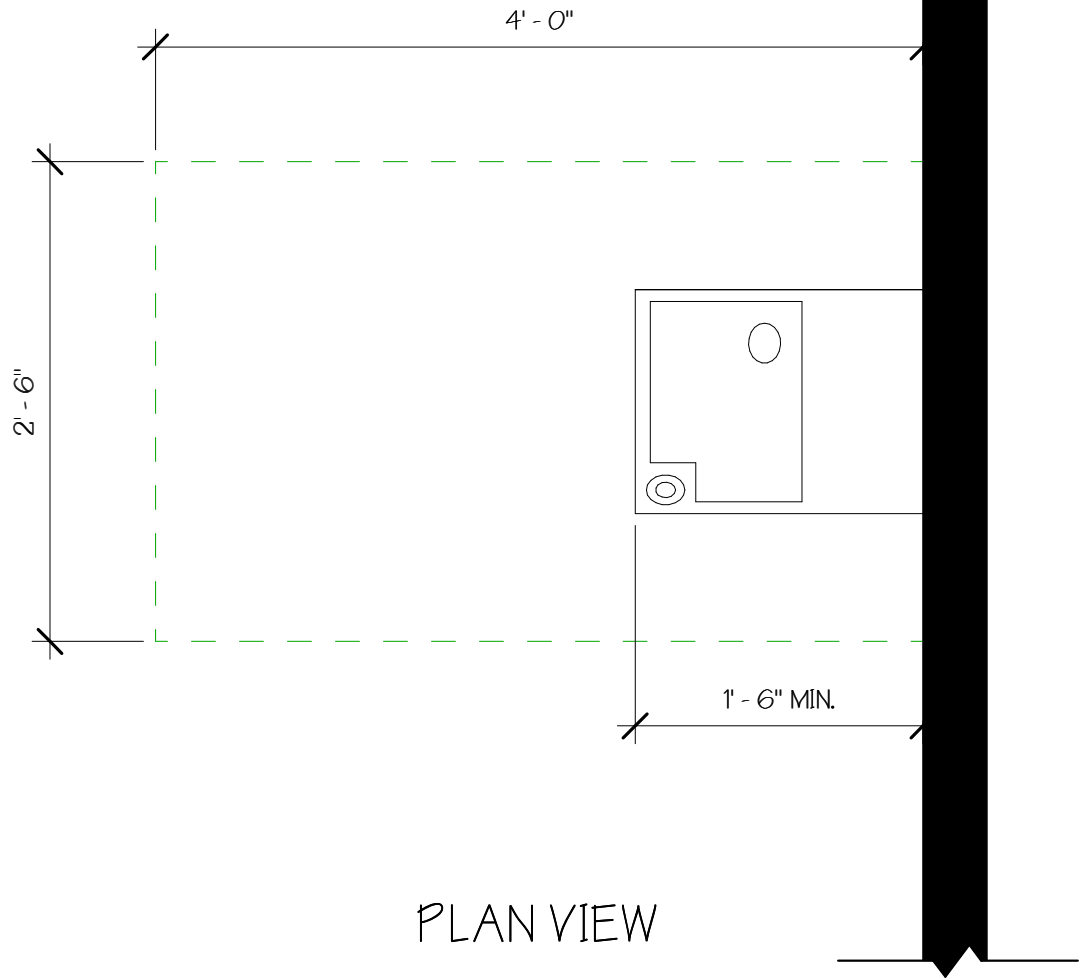
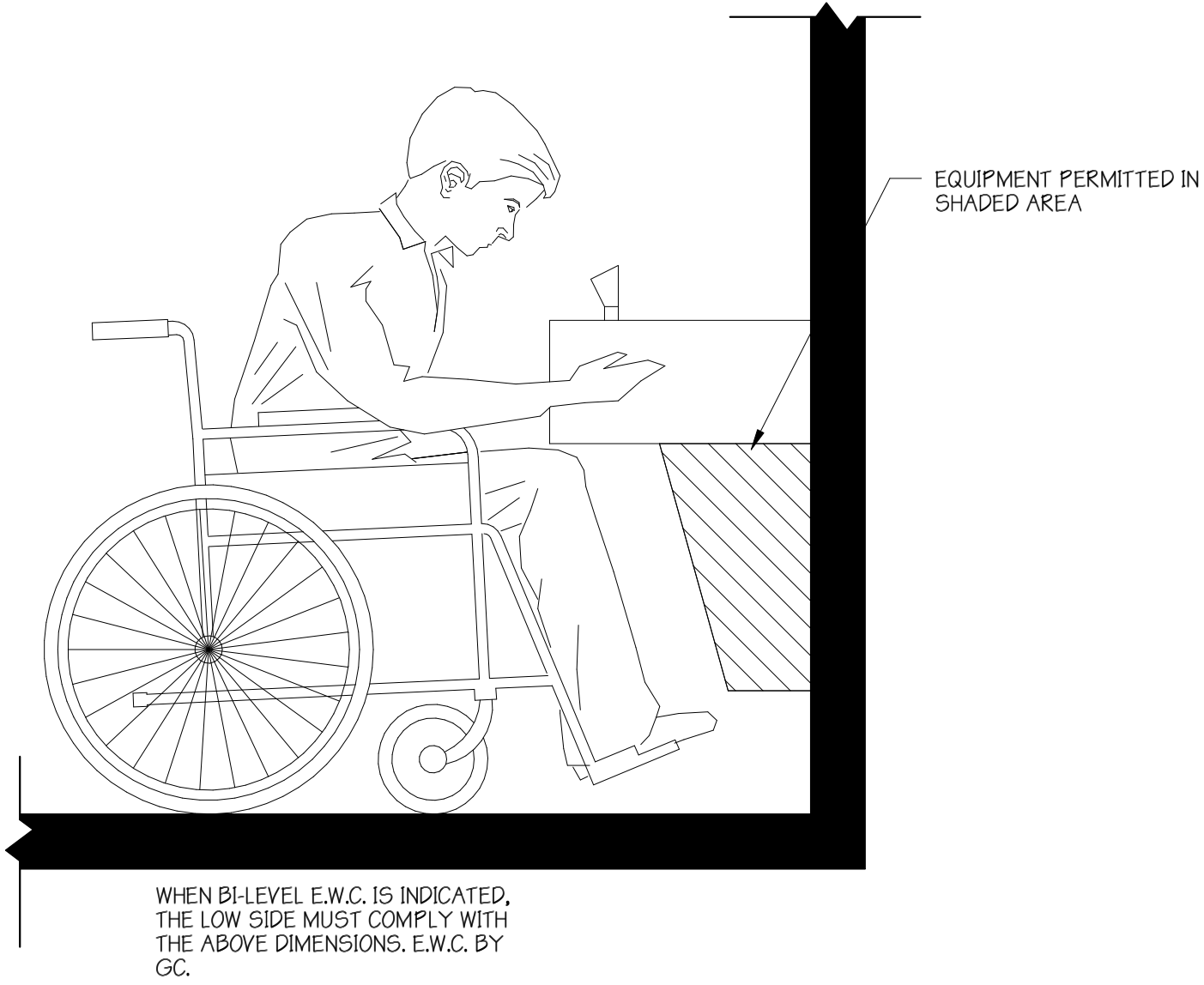
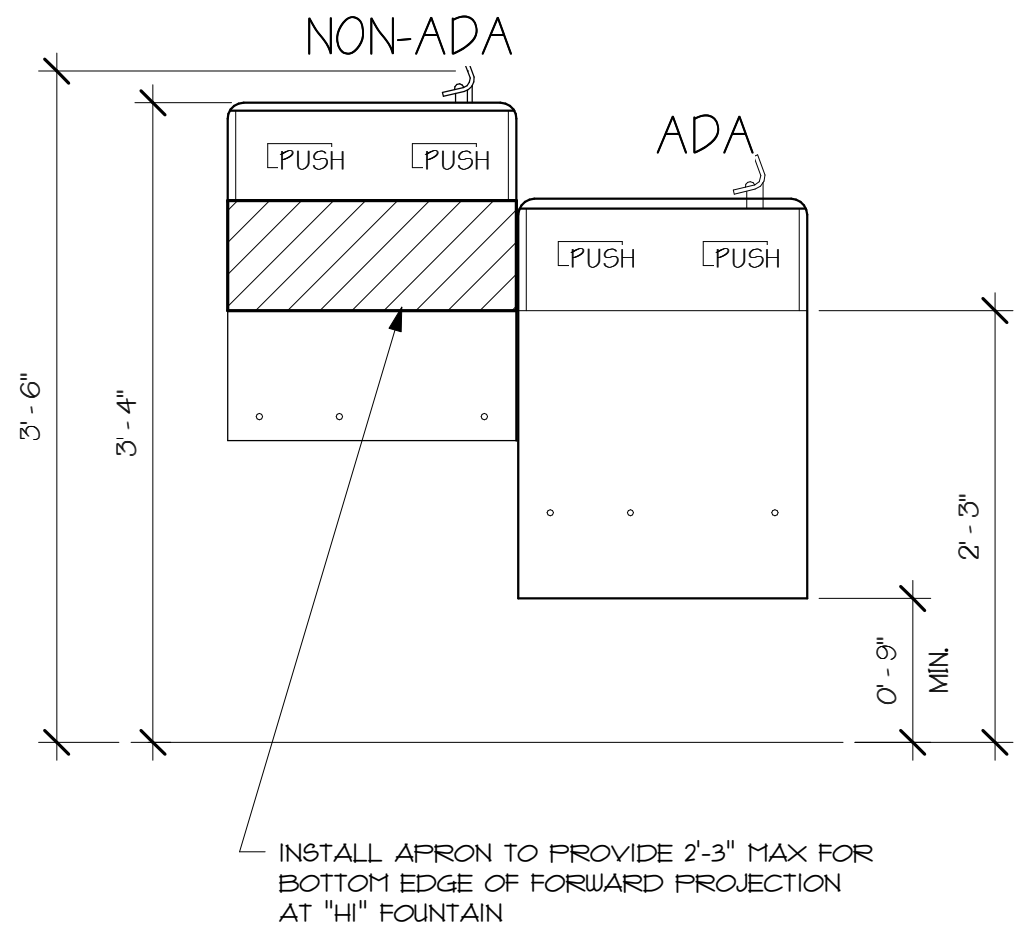
3 WORKROOM ELEVATION  
3/8" = 1'-0"

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ARCHITECTS, L.L.C.  
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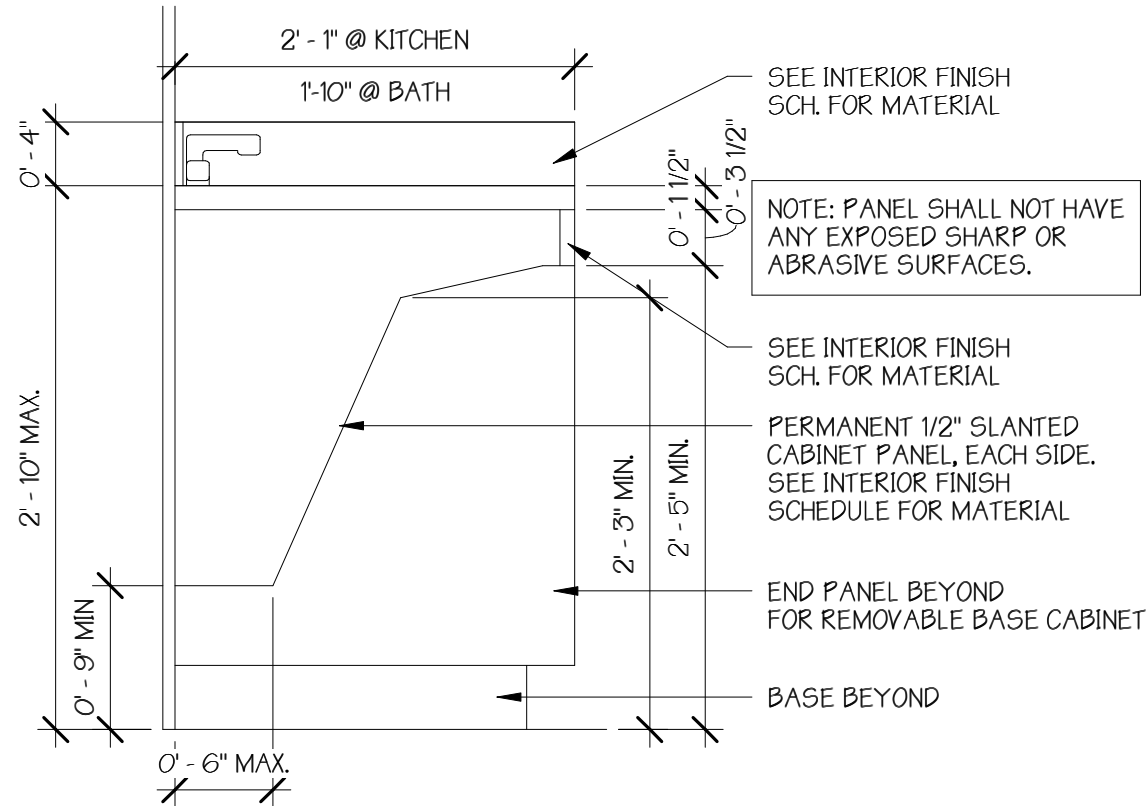
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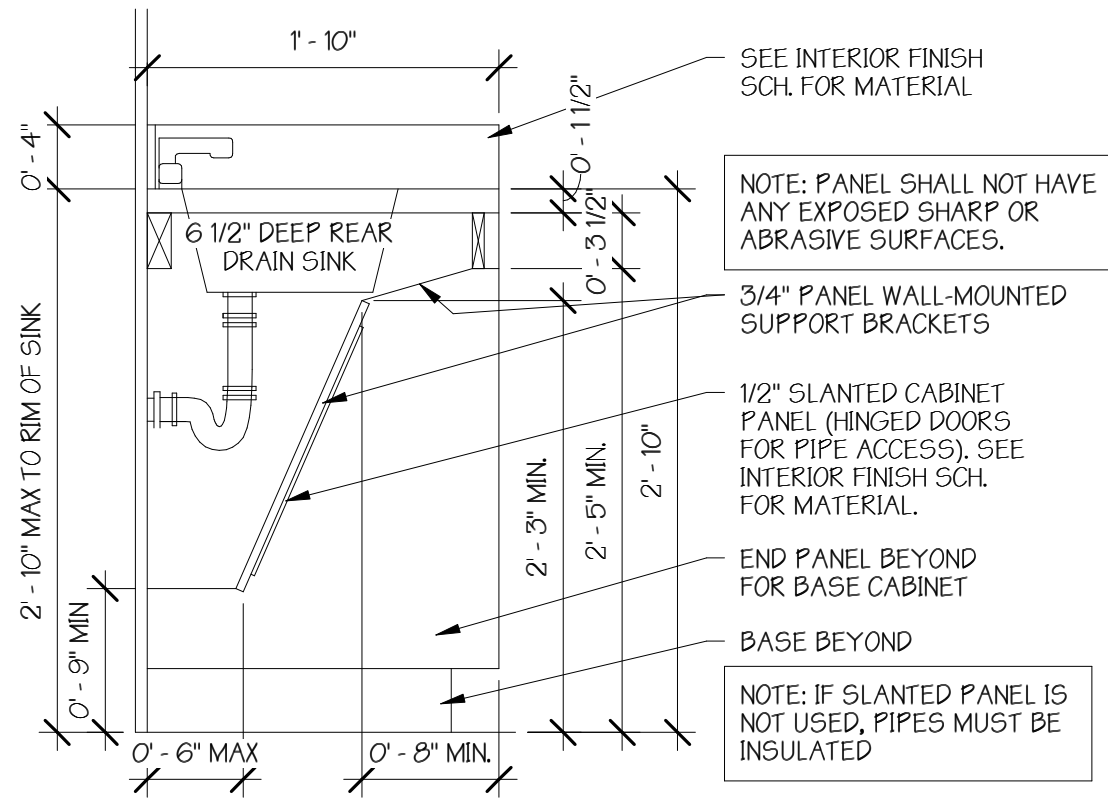




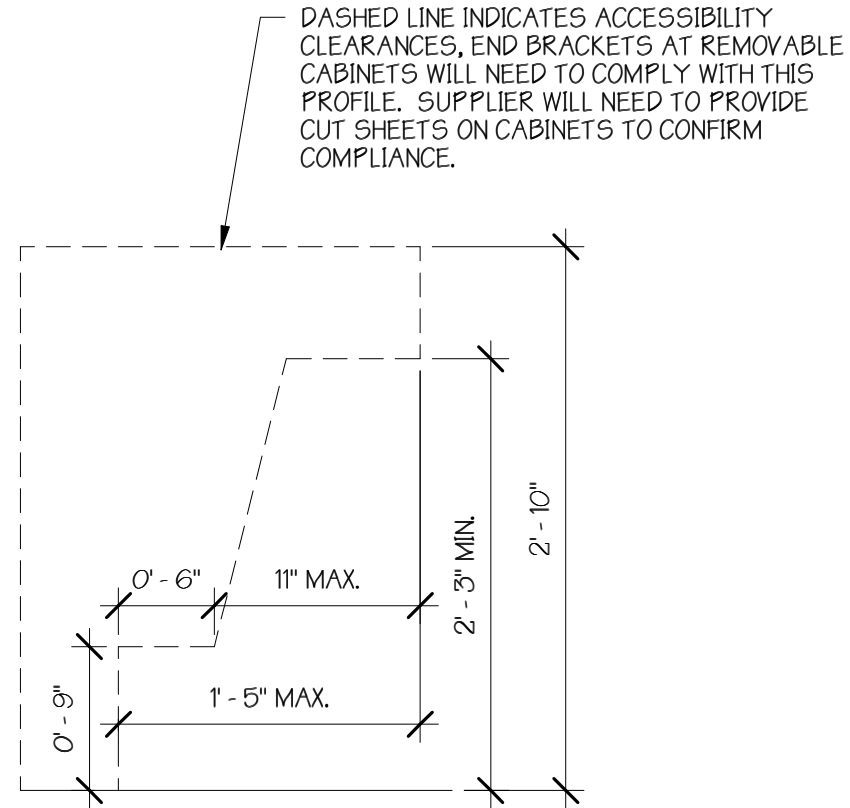
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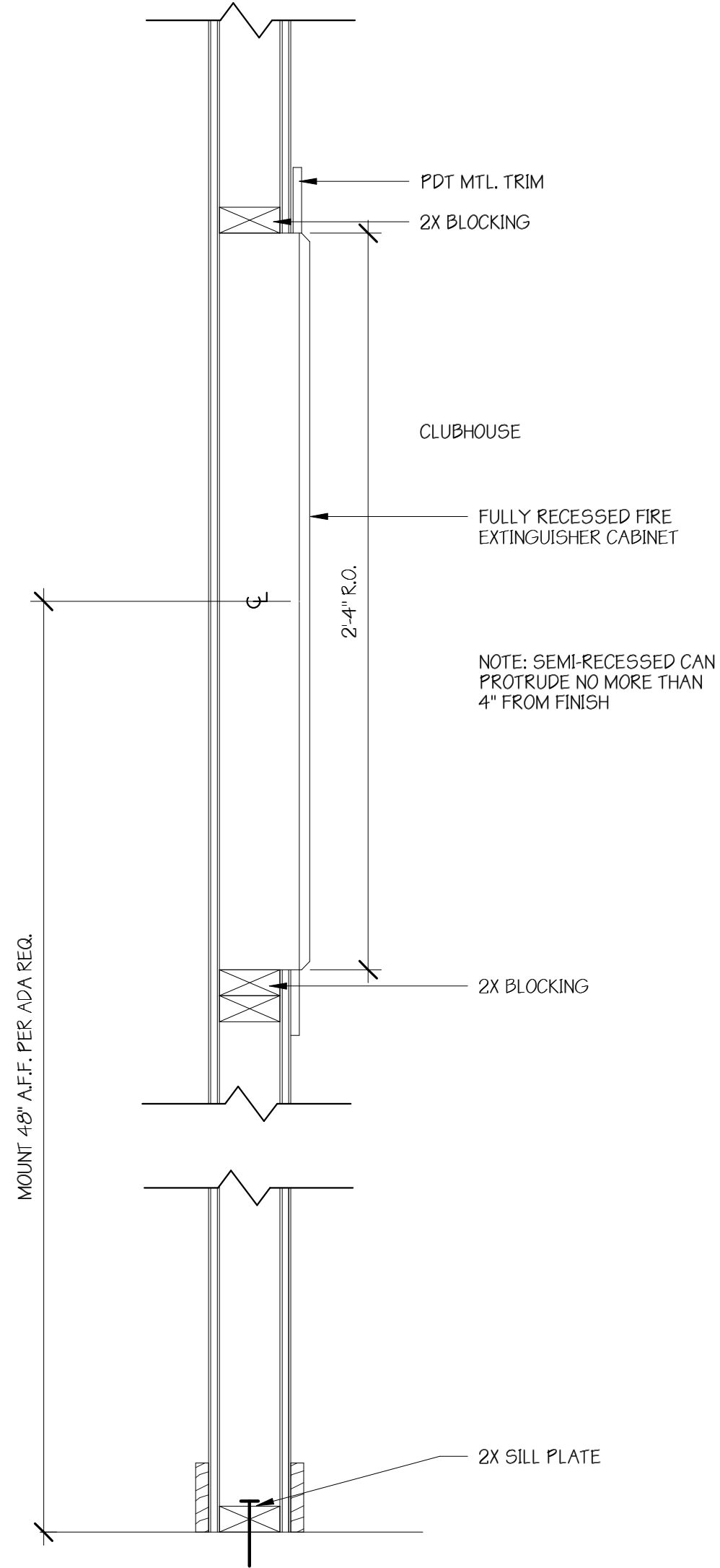
6 END PANEL DETAIL 1"



5 ACCESSIBLE LAVATORY 1"



4 ACCESSIBILITY CLEARANCES DIAGRAM 1"



3 FIRE EXTINGUISHER CABINET 1 1/2"

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2012 TAS - TEXAS ACCESSIBILITY STANDARDS

CHAPTER 1: APPLICATION AND ADMINISTRATION

101 Purpose

101.1 General. This document contains scoping and technical requirements for accessibility to sites, facilities, buildings, and elements by individuals with disabilities.

CHAPTER 2: SCOPING REQUIREMENTS

201 Application

201.1 Scope. All areas of newly designed and newly constructed buildings and facilities and altered portions of existing buildings and facilities shall comply with these requirements.

EXCEPTION: Commercial Facilities and Public Accommodations Located in Private Residences. When a commercial facility or public accommodation is located in a private residence, the portion of the residence used exclusively as a residence is not covered by these standards. Those portions used in the operation of the commercial facility or public accommodation or that portion used both for the commercial facility or public accommodation and for residential purposes is covered by the new construction and alterations requirements of these standards. The portion of the residence used in the operation of the commercial facility or public accommodation extends to those elements used to enter the commercial facility or public accommodation, including the homeowner's front sidewalk, if any, the door or entryway, and hallways; and those portions of the residence, interior or exterior, available to or used by employees or visitors of the commercial facility or public accommodation, including restrooms.

201.2 Application Based on Building or Facility Use. Where a site, building, facility, room, or space contains more than one use, each portion shall comply with the applicable requirements for that use.

203 General Exceptions

203.9 Employee Work Areas. Spaces and elements within employee work areas shall only be required to comply with 206.2.8, 207.1, and 215.3 and shall be designed and constructed so that individuals with disabilities can approach, enter, and exit the employee work area. Employee work areas, or portions of employee work areas, that are less than 300 square feet and elevated 7 inches or more above the finished floor or ground where the elevation is essential to the function of the space shall not be required to comply with these requirements or to be on an accessible route.

204 Protruding Objects

204.1 General. Protruding objects on circulation paths shall comply with 307.

205 Operable Parts

205.1 General. Operable parts on accessible elements, accessible routes, and in accessible rooms and spaces shall comply with 308.

- EXCEPTIONS:
1. Operable parts that are intended for use by service or maintenance personnel shall not be required to comply with 309.
  2. Electrical or communication receptacles serving a dedicated use shall not be required to comply with 309.
  3. Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to comply with 309.
  4. Floor electrical receptacles shall not be required to comply with 309.
  5. HVAC diffusers shall not be required to comply with 309.
  6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to comply with 309.

206 Accessible Routes

206.2.1 Site Arrival Points. At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger loading zones; public streets and sidewalks; and public transportation stops to the accessible building or facility entrance they serve.

- EXCEPTIONS:
1. Where exceptions for alterations to qualified historic buildings or facilities are permitted by 202.5, no more than one accessible route from a site arrival point to an accessible entrance shall be required.
  2. An accessible route shall not be required between site arrival points and the building or facility entrance if the only means of access between them is a vehicular way not providing pedestrian access.

206.2.2 Within a Site. At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the same site.

EXCEPTION: An accessible route shall not be required between accessible buildings, accessible facilities, accessible elements, and accessible spaces if the only means of access between them is a vehicular way not providing pedestrian access.

206.2.8 Employee Work Areas. Common use circulation paths within employee work areas shall comply with 402.

- EXCEPTIONS:
1. Common use circulation paths located within employee work areas that are less than 1000 square feet and defined by permanently installed partitions, counters, casework, or furnishings shall not be required to comply with 402.
  2. Common use circulation paths located within employee work areas that are an integral component of work area equipment shall not be required to comply with 402.
  3. Common use circulation paths located within exterior employee work areas that are fully exposed to the weather shall not be required to comply with 402.

206.3 Location. Accessible routes shall coincide with or be located in the same area as general circulation paths. Where circulation paths are interior, required accessible routes shall also be interior.

206.4 Entrances. Entrances shall be provided in accordance with 206.4. Entrance doors, doorways, and gates shall comply with 404 and shall be on an accessible route complying with 402.

206.4.1 Public Entrances. In addition to entrances required by 206.4.2 through 206.4.9, at least 60 percent of all public entrances shall comply with 404.

206.4.2 Parking Structure Entrances. Where direct access is provided for pedestrians from a parking structure to a building or facility entrance, each direct access to the building or facility entrance shall comply with 404.

206.4.3 Entrances from Tunnels or Elevated Walkways. Where direct access is provided for pedestrians from a pedestrian tunnel or elevated walkway to a building or facility, at least one direct entrance to the building or facility from each tunnel or walkway shall comply with 404.

206.4.7 Restricted Entrances. Where restricted entrances are provided to a building or facility, at least one restricted entrance to the building or facility shall comply with 404.

206.4.8 Service Entrances. If a service entrance is the only entrance to a building or to a tenancy in a facility, that entrance shall comply with 404.

206.5 Doors, Doorways, and Gates. Doors, doorways, and gates providing user passage shall be provided in accordance with 206.5.

206.5.1 Entrances. Each entrance to a building or facility required to comply with 206.4 shall have at least one door, doorway, or gate complying with 404.

206.5.2 Rooms and Spaces. Within a building or facility, at least one door, doorway, or gate serving each room or space complying with these requirements shall comply with 404.

206.7 Platform Lifts. Platform lifts shall comply with 410. Platform lifts shall be permitted as a component of an accessible route in new construction in accordance with 206.7. Platform lifts shall be permitted as a component of an accessible route in an existing building or facility.

206.7.5 Existing Site Constraints. Platform lifts shall be permitted where existing exterior site constraints make use of a ramp or elevator technically infeasible.

207 Accessible Means of Egress

207.1 General. Means of egress shall comply with section 1003.2.13 of the International Building Code (2000 edition and 2001 Supplement) or section 1007 of the International Building Code (2003 edition).

EXCEPTION: Where means of egress are permitted by local building or life safety codes to share a common path of egress travel, accessible means of egress shall be permitted to share a common path of egress travel.

207.2 Platform Lifts. Standby power shall be provided for platform lifts permitted by section 1003.2.13.4 of the International Building Code (2000 edition and 2001 Supplement) or section 1007.5 of the International Building Code (2003 edition) to serve as a part of an accessible means of egress.

208 Parking Spaces

208.1 General. Where parking spaces are provided, parking spaces shall be provided in accordance with 208.

EXCEPTION: Parking spaces used exclusively for buses, trucks, other delivery vehicles, law enforcement vehicles, or vehicular impound shall not be required to comply with 208 provided that lots accessed by the public are provided with a passenger loading zone complying with 503.

208.2 Minimum Number. Parking spaces complying with 502 shall be provided in accordance with Table 208.2 except as required by 208.2.1, 208.2.2, and 208.2.3. Where more than one parking facility is provided on a site, the number of accessible spaces provided on the site shall be calculated according to the number of spaces required for each parking facility.

Table 208.2 Parking Spaces

TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY	TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY
1 TO 25	1
26 TO 50	2
51 TO 75	3
76 TO 100	4
101 TO 150	5
151 TO 200	6
201 TO 300	7
301 TO 400	8
401 TO 500	9
501 TO 1,000	2 PERCENT OF TOTAL
1,001 AND OVER	20, PLUS 1 FOR EACH 100, OR FRACTION THEREOF; OVER 1,000

208.2.4 Van Parking Spaces. For every six or fraction of six parking spaces required by 208.2 to comply with 502, at least one shall be a van parking space complying with 502.

208.3 Location. Parking facilities shall comply with 208.3.

208.3.1 General. Parking spaces complying with 502 that serve a particular building or facility shall be located on the shortest accessible route from parking to an entrance complying with 206.4. Where parking serves more than one accessible entrance, parking spaces complying with 502 shall be dispersed and located on the shortest accessible route to the accessible entrances. In parking facilities that do not serve a particular building or facility, parking spaces complying with 502 shall be located on the shortest accessible route to an accessible pedestrian entrance of the parking facility.

- EXCEPTIONS:
1. All van parking spaces shall be permitted to be grouped on one level within a multi-story parking facility.
  2. Parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee, and user convenience.

209 Passenger Loading Zones and Bus Stops

209.1 General. Passenger loading zones shall be provided in accordance with 209.

209.2 Type. Where provided, passenger loading zones shall comply with 209.2.

209.2.1 Passenger Loading Zones. Passenger loading zones, except those required to comply with 209.2.2 and 209.2.3, shall provide at least one passenger loading zone complying with 503 in every continuous 100 linear feet (30 m) of loading zone space, or fraction thereof.

209.2.2 Bus Loading Zones. In bus loading zones restricted to use by designated or specified public transportation vehicles, each bus bay, bus stop, or other area designated for lift or ramp deployment shall comply with 810.2.

209.5 Mechanical Access Parking Garages. Mechanical access parking garages shall provide at least one passenger loading zone complying with 503 at vehicle drop-off and vehicle pick-up areas.

210 Stairways

210.1 General. Interior and exterior stairs that are part of a means of egress shall comply with 504.

211 Drinking Fountains

211.1 General. Where drinking fountains are provided on an exterior site, on a floor, or within a secured area they shall be provided in accordance with 211.

211.2 Minimum Number. No fewer than two drinking fountains shall be provided. One drinking fountain shall comply with 602.1 through 602.6 and one drinking fountain shall comply with 602.7.

EXCEPTION: Where a single drinking fountain complies with 602.1 through 602.6 and 602.7, it shall be permitted to be substituted for two separate drinking fountains.

211.3 More Than Minimum Number. Where more than the minimum number of drinking fountains specified in 211.2 are provided, 50 percent of the total number of drinking fountains provided shall comply with 602.1 through 602.6, and 50 percent of the total number of drinking fountains provided shall comply with 602.7.

EXCEPTION: Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down provided that the total number of drinking fountains complying with 211 equals 100 percent of drinking fountains.

212 Kitchens, Kitchenettes, and Sinks

212.1 General. Where provided, kitchens, kitchenettes, and sinks shall comply with 212.

212.2 Kitchens and Kitchenettes. Kitchens and kitchenettes shall comply with 804.

212.3 Sinks. Where sinks are provided, at least 5 percent, but no fewer than one, of each type provided in each accessible room or space shall comply with 606.

EXCEPTION: Mop or service sinks shall not be required to comply with 212.3.

NOTES:  
1. SECTIONS OF 2012 TAS NOT PERTAINING TO THIS PROJECT HAVE BEEN OMITTED.  
2. FIGURES ARE NOT TO SCALE.  
3. ALL DIMENSIONS IN THE 2012 TAS - TEXAS ACCESSIBILITY STANDARDS ARE MEASURED TO FINISHED SURFACES. DIMENSIONS IN THE ACTUAL CONSTRUCTION DRAWINGS ARE MEASURED TO RAW FRAMING.

213 Toilet Facilities and Bathing Facilities

213.1 General. Where toilet facilities and bathing facilities are provided, they shall comply with 213. Where toilet facilities and bathing facilities are provided in facilities permitted by 206.2.3 Exceptions 1 and 2 not to connect stories by an accessible route, toilet facilities and bathing facilities shall be provided on a story connected by an accessible route to an accessible entrance.

213.2 Toilet Rooms and Bathing Rooms. Where toilet rooms are provided, each toilet room shall comply with 603. Where bathing rooms are provided, each bathing room shall comply with 603.

EXCEPTION: Where multiple single user toilet rooms are clustered at a single location, no more than 50 percent of the single user toilet rooms for each use at each cluster shall be required to comply with 603.

213.2.1 Unisex (Single-Use or Family) Toilet and Unisex Bathing Rooms. Unisex toilet rooms shall contain not more than one lavatory, and two water closets without urinals or one water closet and one unial. Unisex bathing rooms shall contain one shower or one shower and one bathtub, one lavatory, and one water closet. Doors to unisex toilet rooms and unisex bathing rooms shall have privacy latches.

213.3 Plumbing Fixtures and Accessories. Plumbing fixtures and accessories provided in a toilet room or bathing room required to comply with 213.2 shall comply with 213.3.

213.3.1 Toilet Compartments. Where toilet compartments are provided, at least one toilet compartment shall comply with 604.8.1. In addition to the compartment required to comply with 604.8.1, at least one compartment shall comply with 604.8.2 where six or more toilet compartments are provided, or where the combination of urinals and water closets totals six or more fixtures.

213.3.2 Water Closets. Where water closets are provided, at least one shall comply with 604.

213.3.3 Urinals. Where more than one unial is provided, at least one shall comply with 605.

213.3.4 Lavatories. Where lavatories are provided, at least one shall comply with 606 and shall not be located in a toilet compartment.

213.3.5 Mirrors. Where mirrors are provided, at least one shall comply with 603.3. Accessible mirrors shall be provided at locations that are consistent with the location of other mirrors in the same room.

213.3.6 Bathing Facilities. Where bathtubs or showers are provided, at least one bathtub complying with 607 or at least one shower complying with 608 shall be provided.

213.3.7 Coat Hooks and Shelves. Where coat hooks or shelves are provided in toilet rooms without toilet compartments, at least one of each type shall comply with 603.4. Where coat hooks or shelves are provided in toilet compartments, at least one of each type complying with 604.8.3 shall be provided in toilet compartments required to comply with 213.3.1. Where coat hooks or shelves are provided in bathing facilities, at least one of each type complying with 603.4 shall serve fixtures required to comply with 213.3.6.

215 Fire Alarm Systems

215.1 General. Where fire alarm systems provide audible alarm coverage, alarms shall comply with 215.

EXCEPTION: In existing facilities, visible alarms shall not be required except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.

215.2 Public and Common Use Areas. Alarms in public use areas and common use areas shall comply with 702.

215.3 Employee Work Areas. Where employee work areas have audible alarm coverage, the wiring system shall be designed so that visible alarms complying with 702 can be integrated into the alarm system.

216 Signs

216.1 General. Signs shall be provided in accordance with 216 and shall comply with 703.

EXCEPTIONS:

1. Building directories, menus, seat and row designations in assembly areas, occupant names, building addresses, and company names and logos shall not be required to comply with 216.
2. In parking facilities, signs shall not be required to comply with 216.2, 216.3, and 216.6 through 216.12.
3. Temporary, 7 days or less, signs shall not be required to comply with 216.
4. In detention and correctional facilities, signs not located in public use areas shall not be required to comply with 216.

216.2 Designations. Interior and exterior signs identifying permanent rooms and spaces shall comply with 703.1, 703.2, and 703.5. Where pictograms are provided as designations of permanent interior rooms and spaces, the pictograms shall comply with 703.6 and shall have text descriptors complying with 703.2 and 703.5.

EXCEPTION: Exterior signs that are not located at the door to the space they serve shall not be required to comply with 703.2.

216.3 Directional and Informational Signs. Signs that provide direction to or information about interior spaces and facilities of the site shall comply with 703.5.

216.4 Means of Egress. Signs for means of egress shall comply with 216.4.

216.4.1 Exit Doors. Doors at exit passageways, exit discharge, and exit stairways shall be identified by tactile signs complying with 703.1, 703.2, and 703.5.

216.4.2 Areas of Refuge. Signs required by section 1003.2.13.5.4 of the International Building Code (2000 edition) or section 1007.6.4 of the International Building Code (2003 edition) to provide instructions in areas of refuge shall comply with 703.5.

216.4.3 Directional Signs. Signs required by section 1003.2.13.6 of the International Building Code (2000 edition) or section 1007.7 of the International Building Code (2003 edition) to provide directions to accessible means of egress shall comply with 703.5.

216.5 Parking. Parking spaces complying with 502 shall be identified by signs complying with 502.6.

EXCEPTION: Where a total of four or fewer parking spaces, including accessible parking spaces, are provided on a site, identification of accessible parking spaces shall not be required.

216.6 Entrances. Where not all entrances comply with 404, entrances complying with 404 shall be identified by the International Symbol of Accessibility complying with 703.7.2.1. Directional signs complying with 703.5 that indicate the location of the nearest entrance complying with 404 shall be provided at entrances that do not comply with 404.

216.7 Elevators. Where existing elevators do not comply with 407, elevators complying with 407 shall be clearly identified with the International Symbol of Accessibility complying with 703.7.2.1.

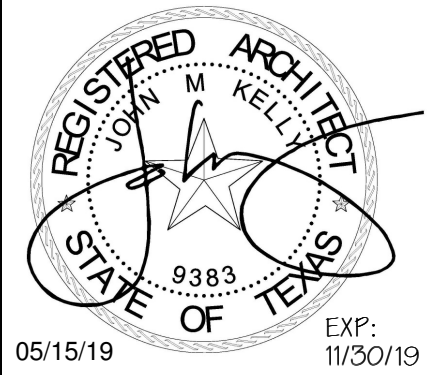
216.8 Toilet Rooms and Bathing Rooms. Where existing toilet rooms or bathing rooms do not comply with 603, directional signs indicating the location of the nearest toilet room or bathing room complying with 603 within the facility shall be provided. Signs shall comply with 703.5 and shall include the International Symbol of Accessibility complying with 703.7.2.1. Where existing toilet rooms or bathing rooms do not comply with 603, the toilet rooms or bathing rooms complying with 603 shall be identified by the International Symbol of Accessibility complying with 703.7.2.1. Where clustered single user toilet rooms or bathing facilities are permitted to use exceptions to 213.2, toilet rooms or bathing facilities complying with 603 shall be identified by the International Symbol of Accessibility complying with 703.7.2.1 unless all toilet rooms and bathing facilities comply with 603.

229 Windows

229.1 General. Where glazed openings are provided in accessible rooms or spaces for operation by occupants, at least one opening shall comply with 309. Each glazed opening required by an administrative authority to be operable shall comply with 309.

CONTINUED ON NEXT SHEET

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CHECKED BY:	JMK
PROJECT #:	18-2319



LDG DEVELOPMENT, LLC.

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REGISTERED PROFESSIONAL ARCHITECT  
STATE OF TEXAS  
NO. 9383  
EXPIRATION DATE 11/30/2019  
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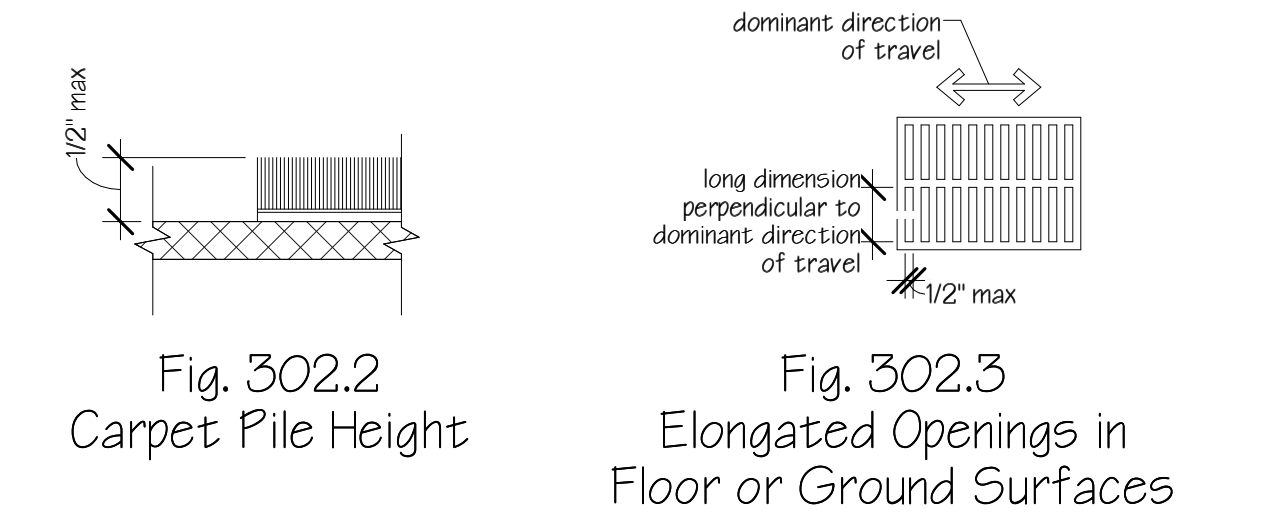


CHAPTER 3: BUILDING BLOCKS

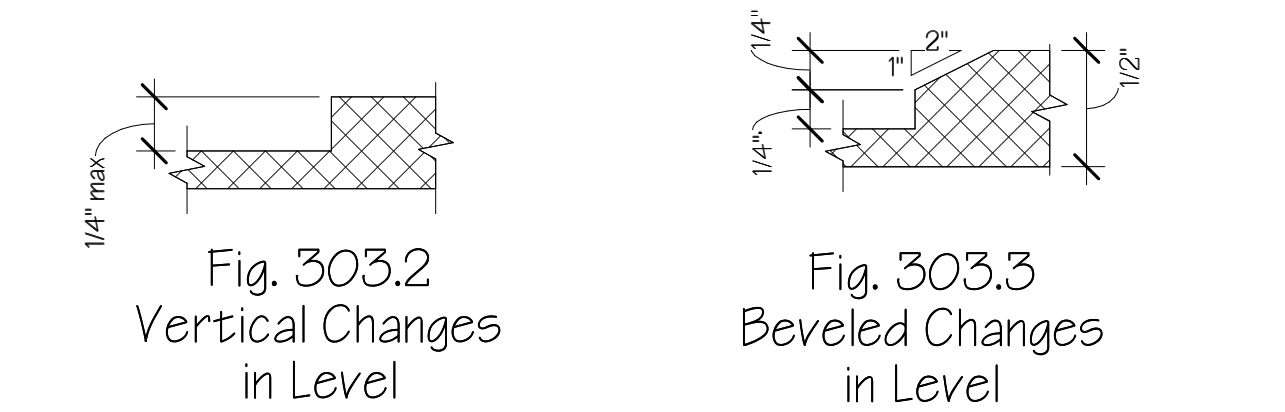
**301 General**  
301.1 Scope. The provisions of Chapter 3 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

**302 Floor or Ground Surfaces**  
302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.  
302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2 inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with 303.

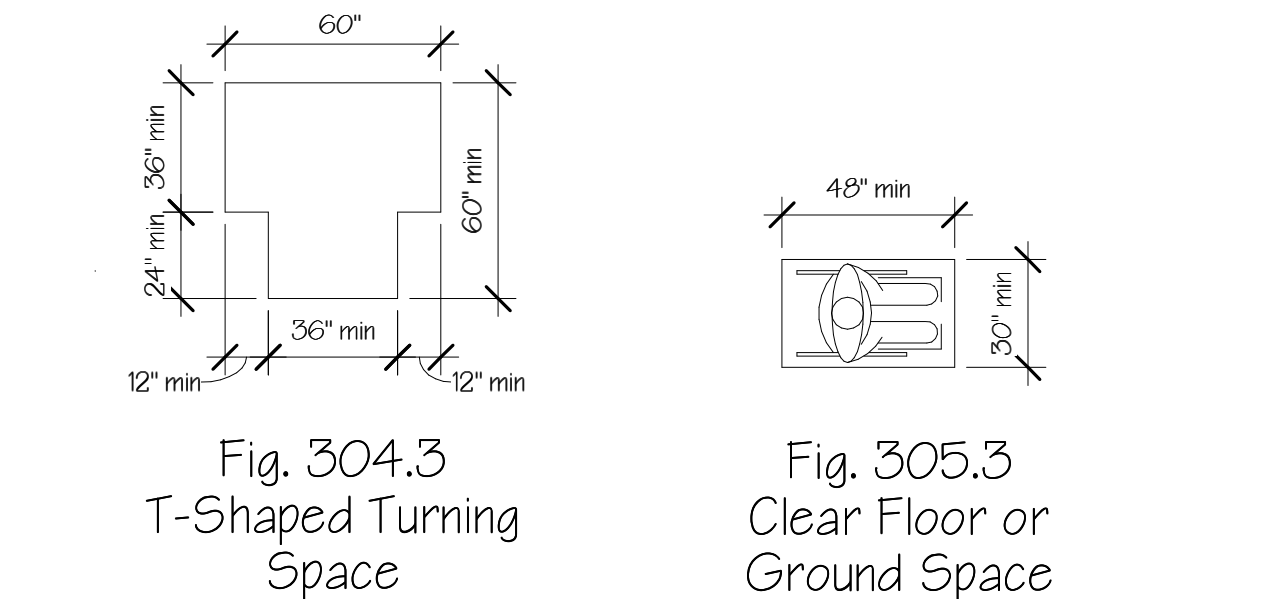
302.3 Openings. Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2 inch diameter except as allowed in 407.4.3, 409.4.3, 410.4, 810.5.3 and 810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.



**303 Changes in Level**  
303.1 General. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.  
303.2 Vertical. Changes in level of 1/4 inch high maximum shall be permitted to be vertical.  
303.3 Beveled. Changes in level between 1/4 inch high minimum and 1/2 inch high maximum shall be beveled with a slope not steeper than 1:2.  
303.4 Ramps. Changes in level greater than 1/2 inch (13 mm) high shall be ramped, and shall comply with 405 or 406.



**304 Turning Space**  
304.1 General. Turning space shall comply with 304.  
304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.  
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.  
304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.  
304.3.1 Circular Space. The turning space shall be a space of 60 inches diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.  
304.4 Door Swing. Doors shall be permitted to swing into turning spaces.  
304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch square minimum with arms and base 36 inches wide minimum. Each arm of the T shall be clear of obstructions 12 inches minimum in each direction and the base shall be clear of obstructions 24 inches minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.



**305 Clear Floor or Ground Space**  
305.1 General. Clear floor or ground space shall comply with 305.  
305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.  
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.  
305.3 Size. The clear floor or ground space shall be 30 inches minimum by 48 inches minimum.

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306. 305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

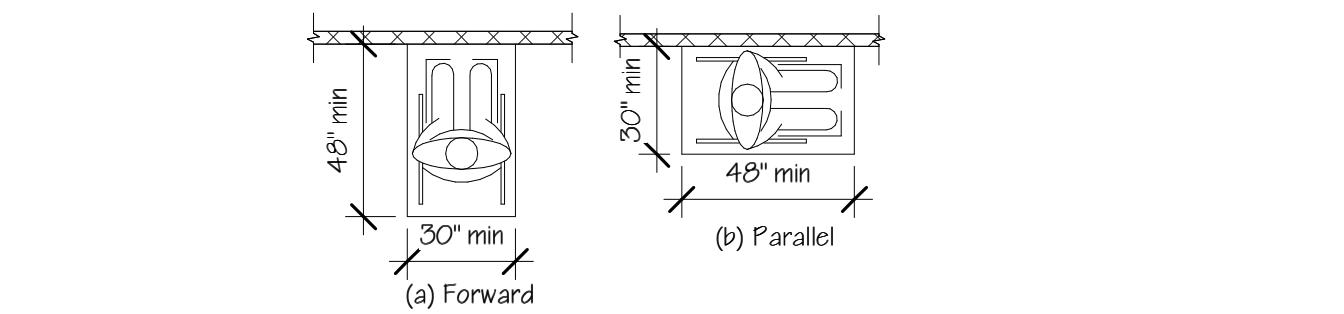


Fig. 305.5 Position of Clear Floor Ground Space

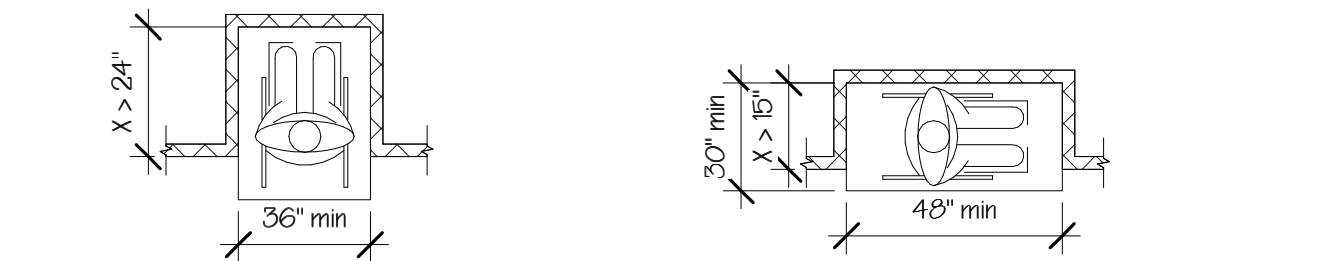


Fig. 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

Fig. 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.  
305.7 Maneuvering Clearance. Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.  
305.7.1 Forward Approach. Alcoves shall be 36 inches wide minimum where the depth exceeds 24 inches.  
305.7.2 Parallel Approach. Alcoves shall be 60 inches wide minimum where the depth exceeds 15 inches.

306 Knee and Toe Clearance

306.1 General. Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with 306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.  
306.2 Toe Clearance.  
306.2.1 General. Space under an element between the finish floor or ground and 9 inches above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.  
306.2.2 Maximum Depth. Toe clearance shall extend 25 inches maximum under an element.  
306.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17 inches minimum under the element.  
306.2.4 Additional Clearance. Space extending greater than 6 inches beyond the available knee clearance at 9 inches above the finish floor or ground shall not be considered toe clearance.  
306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

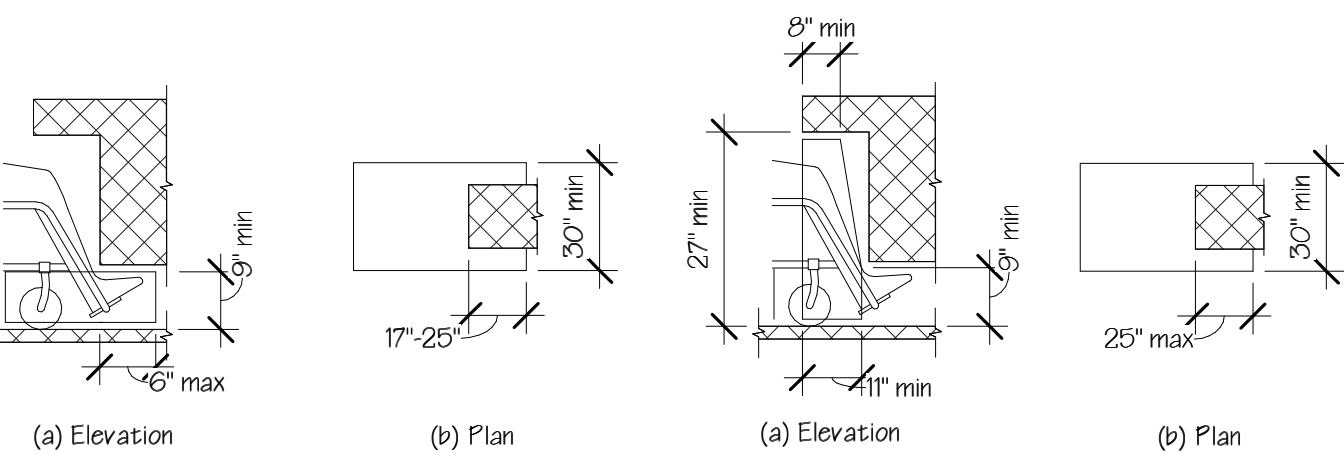


Fig. 306.2 Toe Clearance

Fig. 306.3 Knee Clearance

306.3 Knee Clearance.  
306.3.1 General. Space under an element between 9 inches and 27 inches above the finish floor or ground shall be considered knee clearance and shall comply with 306.3.  
306.3.2 Maximum Depth. Knee clearance shall extend 25 inches maximum under an element at 9 inches above the finish floor or ground.  
306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches deep minimum at 9 inches above the finish floor or ground, and 8 inches deep minimum at 27 inches above the finish floor or ground.

306.3.4 Clearance Reduction. Between 9 inches and 27 inches above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch in depth for each 6 inches in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

307 Protruding Objects

307.1 General. Protruding objects shall comply with 307.  
307.2 Protrusion Limits. Objects with leading edges more than 27 inches and not more than 80 inches above the finish floor or ground shall protrude 4 inches maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches maximum.

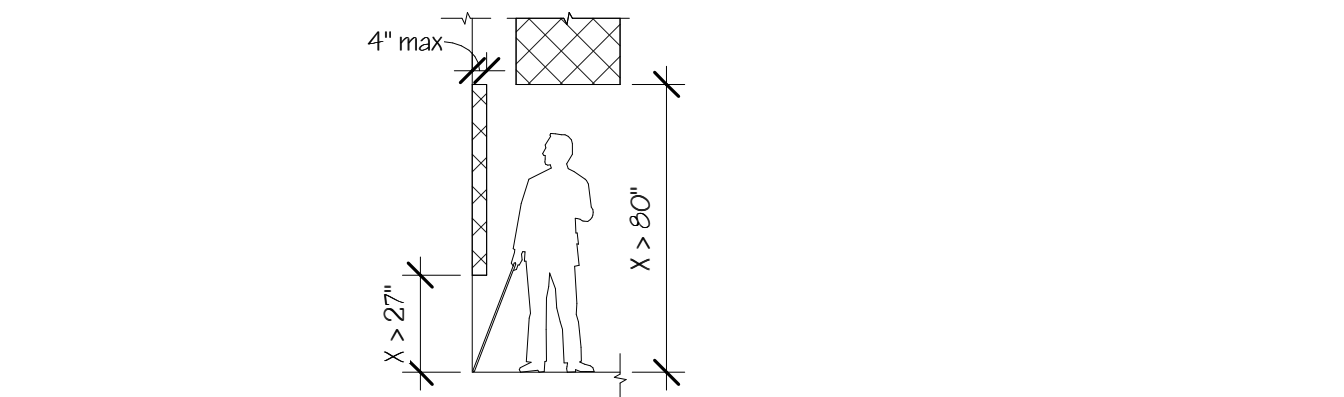


Fig. 307.2 Limits of Protruding Objects

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches maximum when located 27 inches minimum and 80 inches maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, the lowest edge of such sign or obstruction shall be 27 inches maximum or 80 inches minimum above the finish floor or ground.

EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with 307.3.

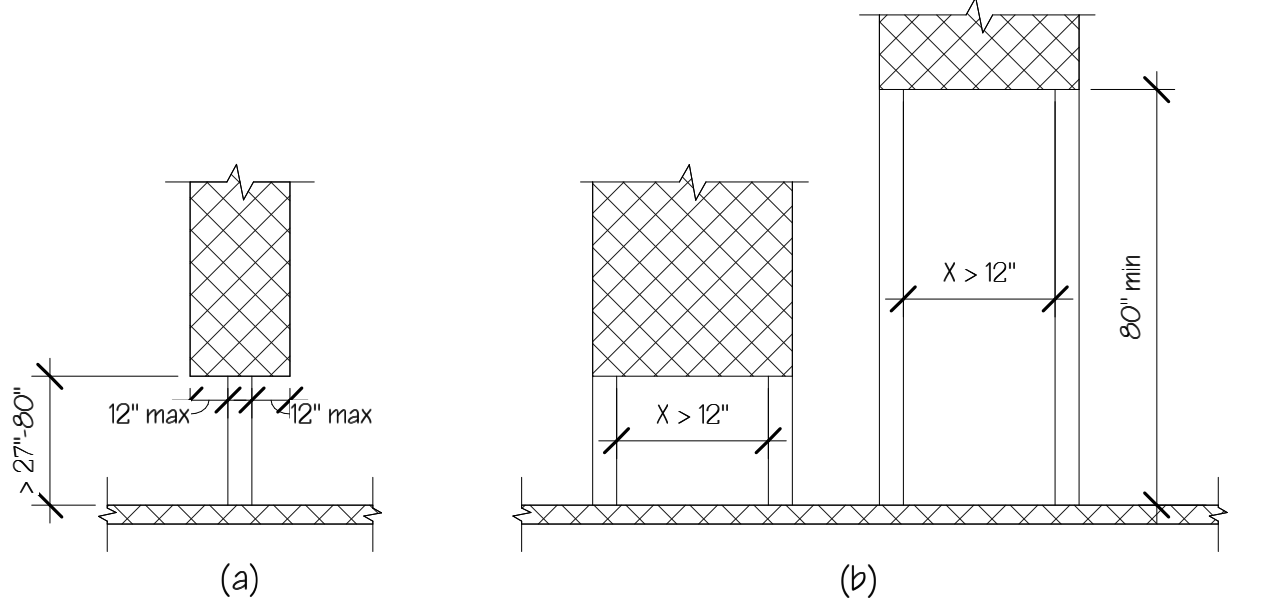


Fig. 307.3 Post-Mounted Protruding Objects

307.4 Vertical Clearance. Vertical clearance shall be 80 inches high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches high. The leading edge of such guardrail or barrier shall be located 27 inches maximum above the finish floor or ground.

EXCEPTION: Door closers and door stops shall be permitted to be 78 inches minimum above the finish floor or ground.

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges

308.1 General. Reach ranges shall comply with 308.  
308.2 Forward Reach.  
308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the finish floor or ground.  
308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches maximum where the reach depth is 20 inches maximum. Where the reach depth exceeds 20 inches, the high forward reach shall be 44 inches maximum and the reach depth shall be 25 inches maximum.

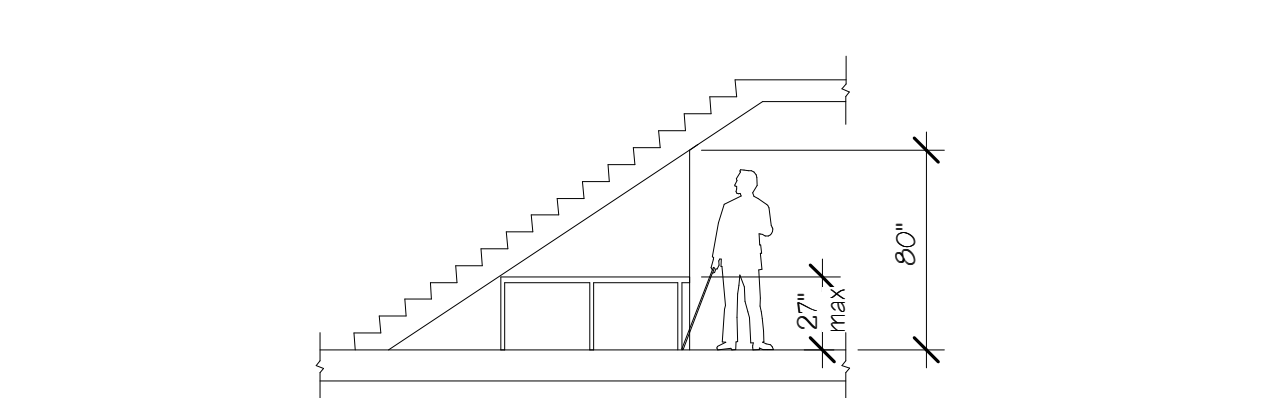


Fig. 307.4 Reduced Vertical Clearance

308.3 Side Reach

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches maximum and the low side reach shall be 15 inches minimum above the finish floor or ground.

EXCEPTIONS:  
1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches maximum.  
2. Operable parts of fuel dispensers shall be permitted to be 54 inches maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches maximum and the depth of the obstruction shall be 24 inches maximum. The high side reach shall be 48 inches maximum for a reach depth of 10 inches maximum. Where the reach depth exceeds 10 inches, the high side reach shall be 46 inches maximum for a reach depth of 24 inches maximum.

EXCEPTIONS:  
1. The top of washing machines and clothes dryers shall be permitted to be 36 inches maximum above the finish floor.  
2. Operable parts of fuel dispensers shall be permitted to be 54 inches maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

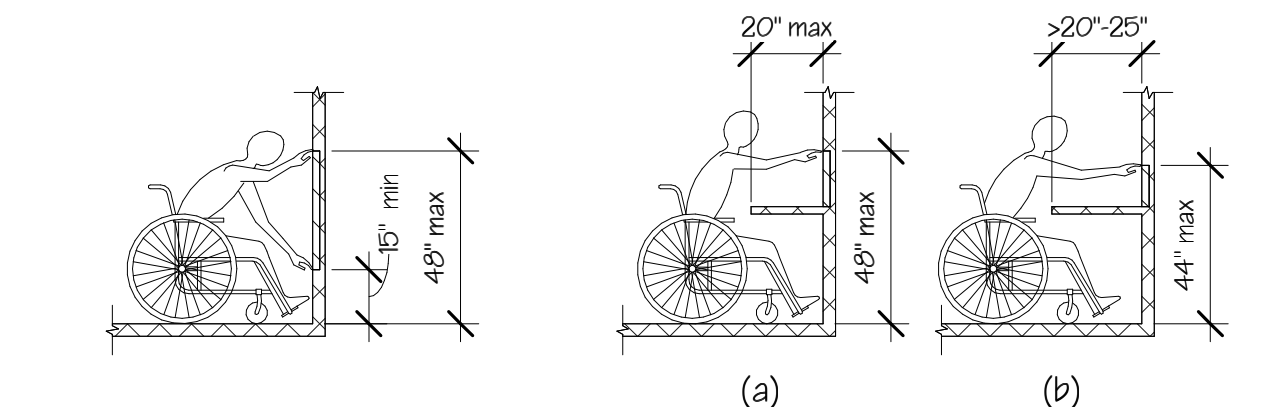


Fig. 308.2.1 Unobstructed Forward Reach

Fig. 308.2.2 Obstructed High Forward Reach

NOTES:  
1. SECTIONS OF 2012 TAS NOT PERTAINING TO THIS PROJECT HAVE BEEN OMITTED.  
2. FIGURES ARE NOT TO SCALE.  
3. ALL DIMENSIONS IN THE 2012 TAS -TEXAS ACCESSIBILITY STANDARDS ARE MEASURED TO FINISHED SURFACES. DIMENSIONS IN THE ACTUAL CONSTRUCTION DRAWINGS ARE MEASURED TO RAW FRAMING.

CHAPTER 4: ACCESSIBLE ROUTES

**401 General**  
401.1 Scope. The provisions of Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in this document.  
**402 Accessible Routes**  
402.1 General. Accessible routes shall comply with 402.  
402.2 Components. Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of Chapter 4.

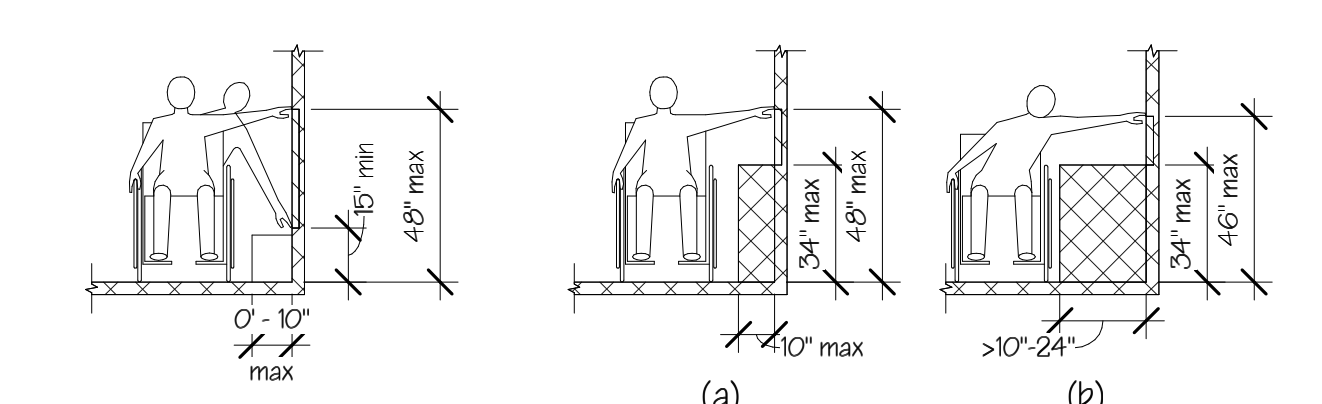


Fig. 308.3.1 Unobstructed Side Reach

Fig. 308.3.2 Obstructed High Side Reach

403 Walking Surfaces

403.1 General. Walking surfaces that are a part of an accessible route shall comply with 403.  
403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.  
403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.  
403.4 Changes in Level. Changes in level shall comply with 303.  
403.5 Clearances. Walking surfaces shall provide clearances complying with 403.5.

EXCEPTION: Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

403.5.1 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches minimum for a length of 24 inches maximum provided that reduced width segments are separated by segments that are 48 inches long minimum and 36 inch

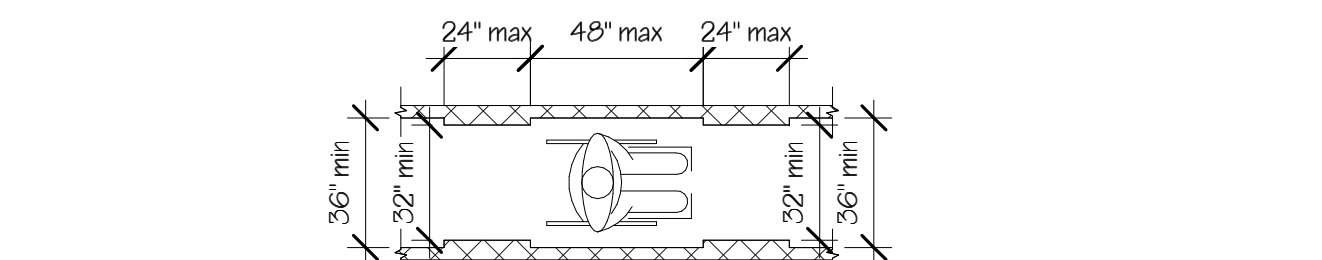


Fig. 403.5.1 - Clear Width of an Accessible Route

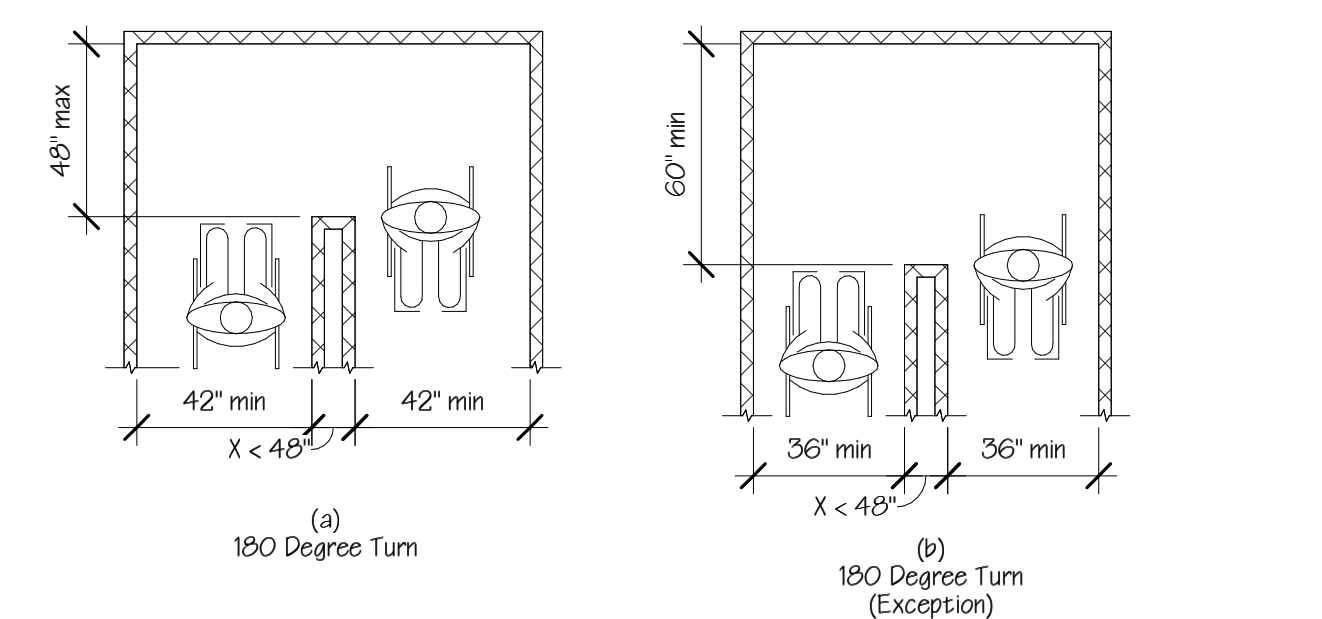


Fig. 403.5.1 Clear Width at Turn

403.5.2 Clear Width at Turn. Where the accessible route makes a 180 degree turn around an element which is less than 48 inches wide, clear width shall be 42 inches minimum approaching the turn, 48 inches minimum at the turn and 42 inches minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches minimum compliance with 403.5.2 shall not be required.

403.5.3 Passing Spaces. An accessible route with a clear width less than 60 inches shall provide passing spaces at intervals of 200 feet maximum. Passing spaces shall be either: a space 60 inches minimum by 60 inches minimum or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches minimum beyond the intersection.

403.6 Handrails. Where handrails are provided along walking surfaces with running slopes not steeper than 1:20 they shall comply with 505.

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PROJECT #: 18-2319

LDG DEVELOPMENT, LLC.

1305 E. 6TH ST. #13, AUSTIN, TX 78702

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05/15/19  
EXP: 11/30/19

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ISSUED FOR CONSTRUCTION

DWG NAME

DATE 05/15/19

DESCRIPTION TAS SHEET 2

SHEET A8.17A



2012 TAS - TEXAS ACCESSIBILITY STANDARDS -- CONTINUED

404.00 Doors, Doorways, and Gates  
404.1 General. Doors, doorways, and gates that are part of an accessible route shall comply with 404.

EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.7, 404.2.8, 404.2.9, 404.3.2 and 404.3.4 through 404.3.7.

404.2 Manual Doors, Doorways, and Manual Gates. Manual doors and doorways and manual gates intended for user passage shall comply with 404.2.

404.2.1 Revolving Doors, Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

404.2.2 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with 404.2.3 and 404.2.4.

404.2.3 Clear Width. Door openings shall provide a clear width of 32 inches minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches deep shall provide a clear opening of 36 inches minimum. There shall be no projections into the required clear opening width lower than 34 inches above the finish floor or ground. Projections into the clear opening width between 34 inches and 80 inches above the finish floor or ground shall not exceed 4 inches.

EXCEPTIONS:  
1. In alterations, a projection of 5/8 inch maximum into the required clear width shall be permitted for the latch side stop.  
2. Door closers and door stops shall be permitted to be 78 inches minimum above the finish floor or ground.

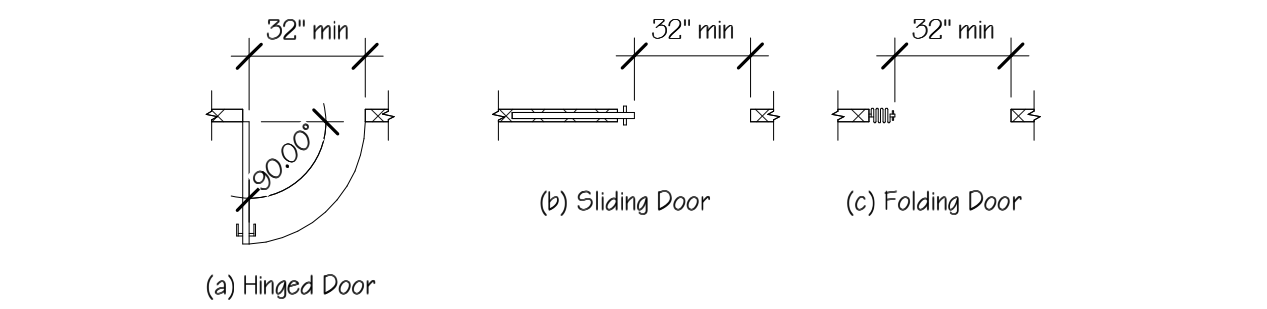


Fig. 404.2.3  
Clear Width of Doorways

404.2.4 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with 404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

EXCEPTION: Entry doors to hospital patient rooms shall not be required to provide the clearance beyond the latch side of the door.

404.2.4.1 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.4.1.

TYPE OF USE		MINIMUM MANEUVERING CLEARANCE	
APPROACH DIRECTION	DOOR OR GATE SIDE	PERPENDICULAR TO DOORWAY	PARALLEL TO DOORWAY (BEYOND LATCH SIDE UNLESS NOTED)
FROM FRONT	PULL	60 INCHES	18 INCHES
FROM FRONT	PUSH	48 INCHES	0 INCHES <sup>1</sup>
FROM HINGE SIDE	PULL	60 INCHES	36 INCHES
FROM HINGE SIDE	PULL	54 INCHES	42 INCHES
FROM HINGE SIDE	PUSH	42 INCHES <sup>2</sup>	22 INCHES <sup>3</sup>
FROM HINGE SIDE	PULL	48 INCHES <sup>4</sup>	24 INCHES
FROM HINGE SIDE	PUSH	42 INCHES <sup>4</sup>	24 INCHES

1. Add 12 inches if closer and latch are provided.  
2. Add 6 inches if closer and latch are provided.  
3. Beyond hinge side.  
4. Add 6 inches if closer is provided.

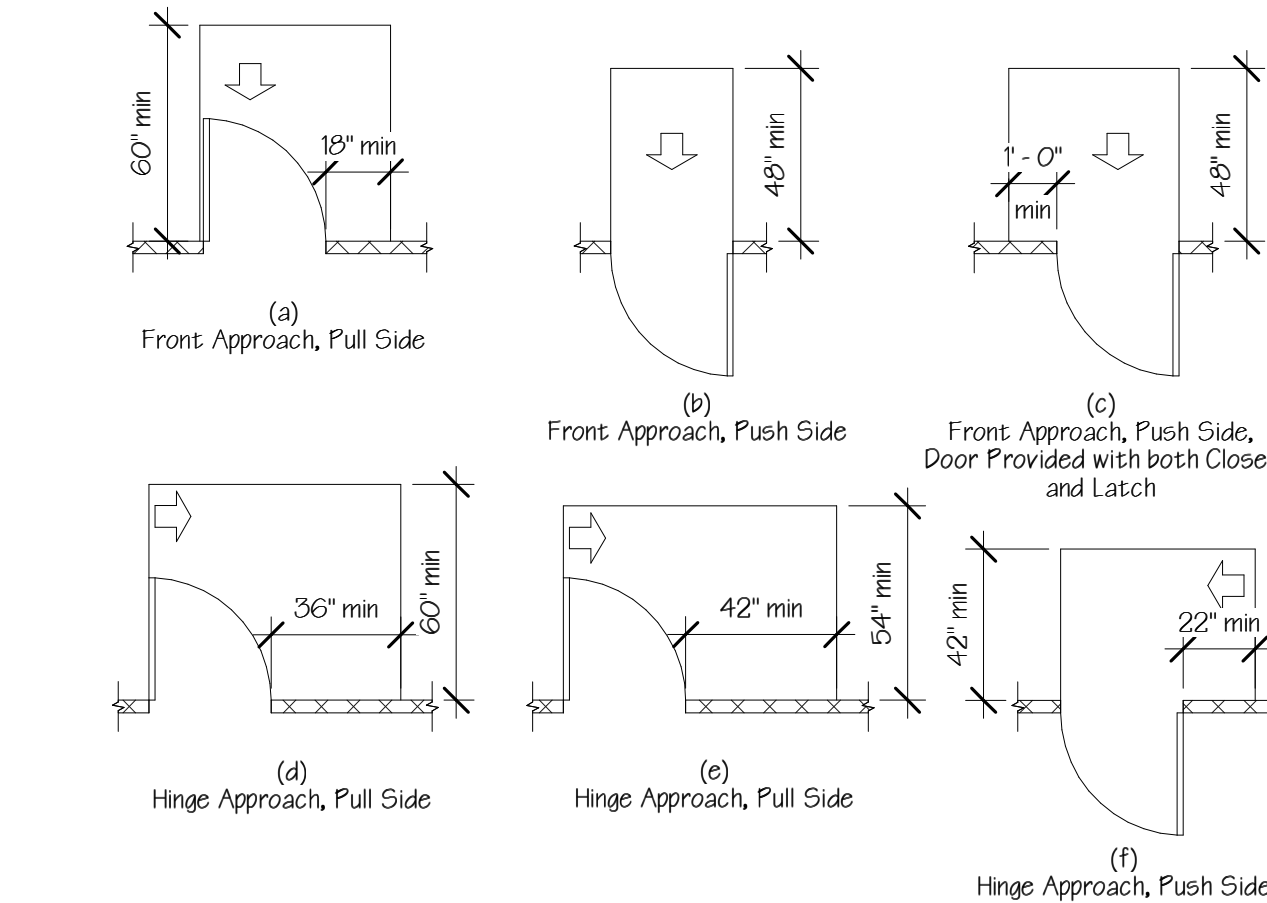


Fig. 404.2.4.1  
Maneuvering Clearances at Manual Swinging  
Doors and Gates

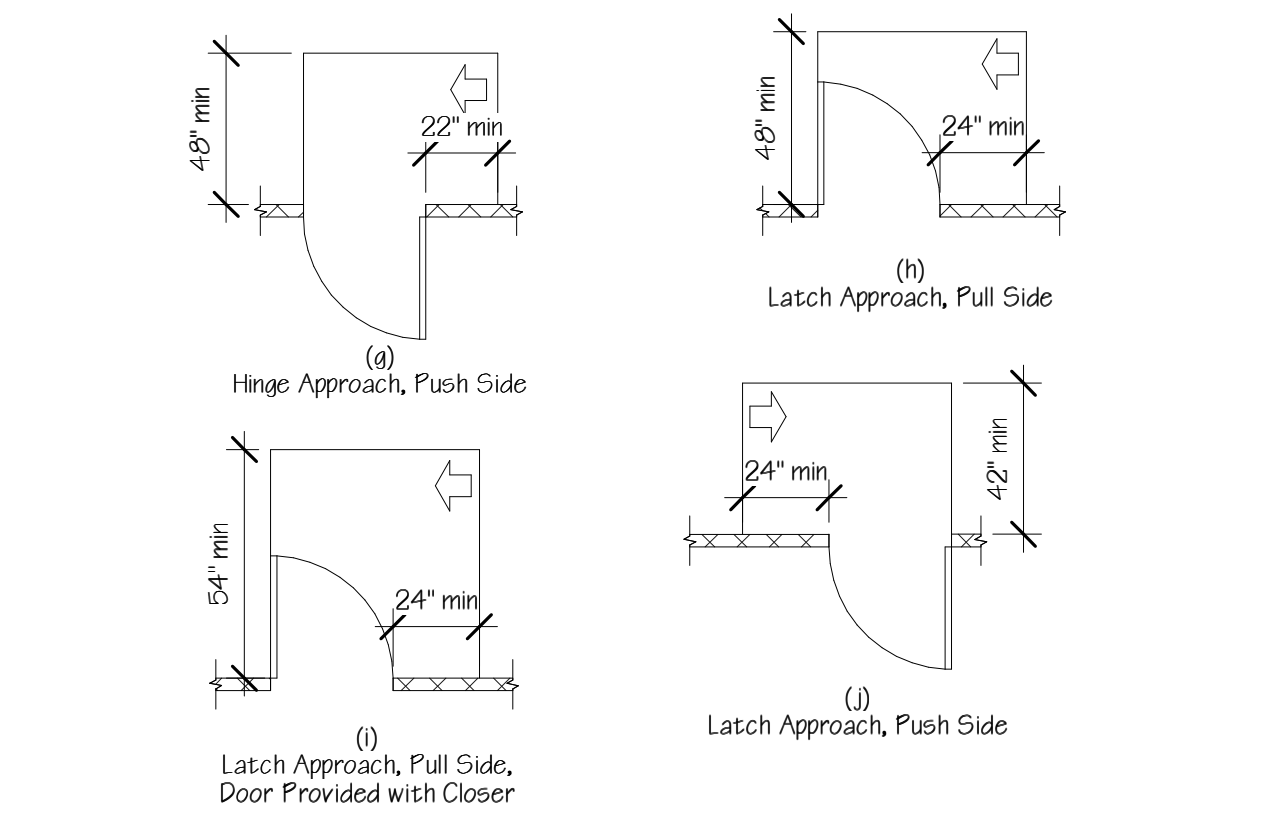


Fig. 404.2.4.1  
Maneuvering Clearances at Manual Swinging Doors  
and Gates (Continued)

MINIMUM MANEUVERING CLEARANCE		
APPROACH DIRECTION	PERPENDICULAR TO DOORWAY	PARALLEL TO DOORWAY (BEYOND STOP/LATCH SIDE UNLESS NOTED)
FROM FRONT	48 INCHES	0 INCHES
FROM SIDE <sup>1</sup>	42 INCHES	0 INCHES
FROM POCKET/HINGE SIDE	42 INCHES	22 INCHES <sup>2</sup>
FROM STOP/LATCH SIDE	42 INCHES	24 INCHES

1. Doorway with no door only.  
2. Beyond pocket/hing side.

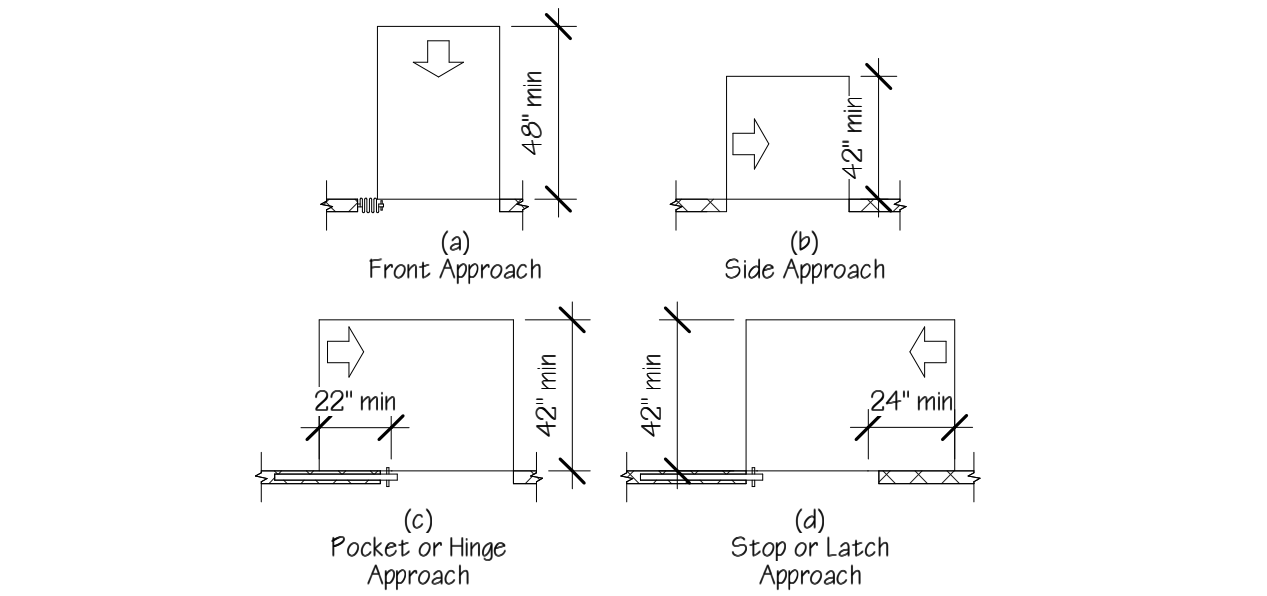


Fig. 404.2.4.2  
Maneuvering Clearances at Doorways Without  
Doors, Sliding Doors, and Folding Doors

404.2.4.2 Doorways without Doors or Gates, Sliding Doors, and Folding Doors. Doorways less than 36 inches wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table 404.2.4.2.

404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

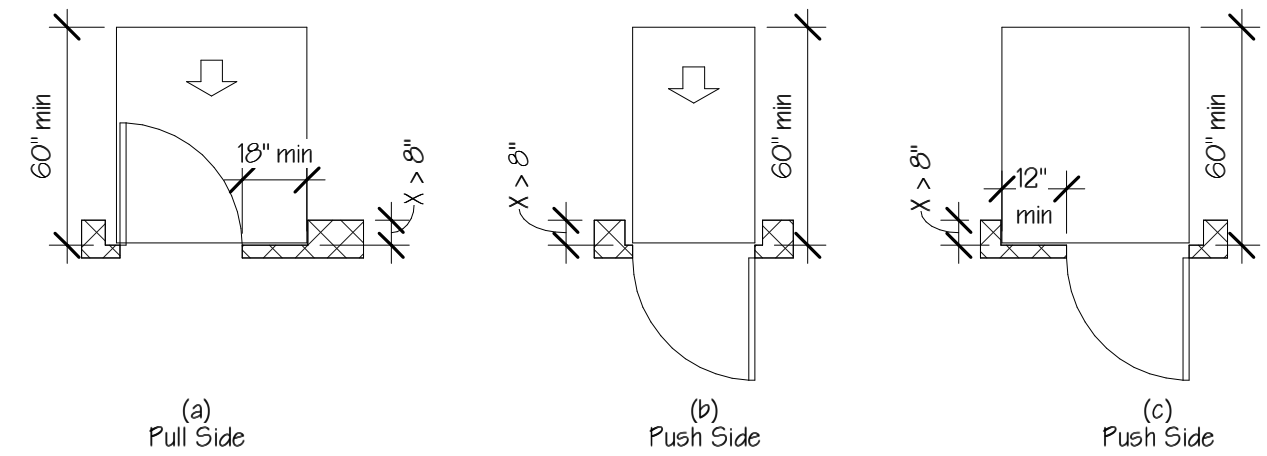


Fig. 404.2.4.3  
Maneuvering Clearance at Recessed  
Doors and Gates

404.2.4.4 Floor or Ground Surface. Floor or ground surface within required maneuvering clearances shall comply with 302. Changes in level are not permitted.

EXCEPTIONS:  
1. Slopes not steeper than 1:48 shall be permitted.  
2. Changes in level at thresholds complying with 404.2.5 shall be permitted.

404.2.5 Thresholds. Thresholds, if provided at doorways, shall be 1/2 inch high maximum. Raised thresholds and changes in level at doorways shall comply with 302 and 303.

EXCEPTION: Existing or altered thresholds 3/4 inch (19 mm) high maximum that have a beveled edge on each side with a slope not steeper than 1:2 shall not be required to comply with 404.2.5.

404.2.6 Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1220 mm) minimum plus the width of doors or gates swinging into the space.

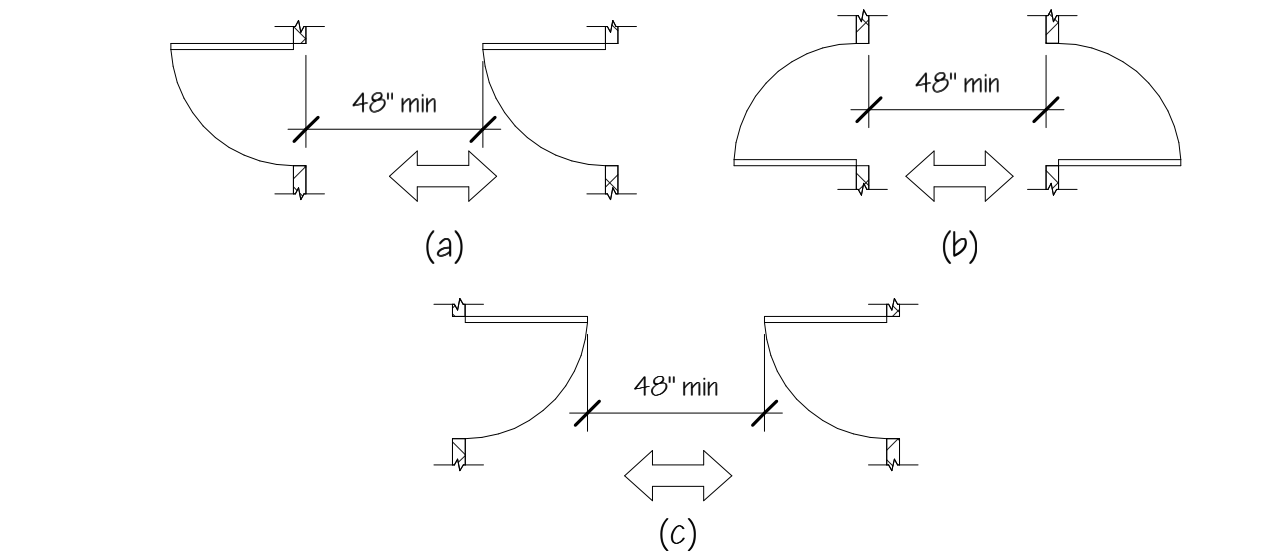


Fig. 404.2.6  
Two Doors in a Series

404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches minimum and 48 inches maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

EXCEPTIONS:  
1. Existing locks shall be permitted in any location at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.  
2. Access gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches maximum above the finish floor or ground provided the self-latching devices are not also selflocking devices and operated by means of a key, electronic opener, or integral combination lock.

404.2.8 Closing Speed. Door and gate closing speed shall comply with 404.2.8.

404.2.8.1 Door Closers and Gate Closers. Door closers and gate closers shall be adjusted so that, from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

404.2.8.2 Spring Hinges. Door and gate spring hinges shall be adjusted so that, from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

404.2.9 Door and Gate Opening Force. Fire doors shall have a minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open a door or gate other than fire doors shall be as follows:

1. Interior hinged doors and gates: 5 pounds maximum.  
2. Sliding or folding doors: 5 pounds maximum. These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS:  
1. Sliding doors shall not be required to comply with 404.2.10.  
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal shall not be required to meet the 10 inch bottom smooth surface height requirement.  
3. Doors and gates that do not extend to within 10 inches of the finish floor or ground shall not be required to comply with 404.2.10.  
4. Existing doors and gates without smooth surfaces within 10 inches of the finish floor or ground shall not be required to provide smooth surfaces complying with 404.2.10 provided that if added kick plates are installed, cavities created by such kick plates are capped.

NOTES:  
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2. FIGURES ARE NOT TO SCALE.  
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404.2.11 Vision Lights. Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches maximum above the finish floor.

EXCEPTION: Vision lights with the lowest part more than 66 inches (1675 mm) from the finish floor or ground shall not be required to comply with 404.2.11.

404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with 404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10 . Low-energy and power assisted doors shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition).

404.3.1 Clear Width. Doorways shall provide a clear opening of 32 inches (815 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall be based on the clear opening provided by all leaves in the open position.

404.3.2 Maneuvering Clearance. Clearances at power-assisted doors and gates shall comply with 404.2.4. Clearances at automatic doors and gates without standby power and serving an accessible means of egress shall comply with 404.2.4.

EXCEPTION: Where automatic doors and gates remain open in the power-off condition, compliance with 404.2.4 shall not be required.

404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with 404.2.5.

404.3.4 Doors in Series and Gates in Series. Doors in series and gates in series shall comply with 404.2.6.

404.3.5 Controls. Manually operated controls shall comply with 309. The clear floor space adjacent to the control shall be located beyond the arc of the door swing.

404.3.6 Break Out Opening. Where doors and gates without standby power are a part of a means of egress, the clear break out opening at swinging or sliding doors and gates shall be 32 inches minimum when operated in emergency mode.

EXCEPTION: Where manual swinging doors and gates comply with 404.2 and serve the same means of egress compliance with 404.3.6 shall not be required.

404.3.7 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

405.0 Ramps  
405.1 General. Ramps on accessible routes shall comply with 405.

EXCEPTION: In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not be required to comply with 405.

405.2 Slope. Ramp runs shall have a running slope not steeper than 1:12.

EXCEPTION: In existing sites, buildings, and facilities, ramps shall be permitted to have running slopes steeper than 1:12 complying with Table 405.2 where such slopes are necessary due to space limitations.

SLOPE (STEEPER THAN 1:8 NOT PERMITTED)	MAXIMUM RISE
STEEPER THAN 1:10 BUT NOT STEEPER THAN 1:8	3 INCHES
STEEPER THAN 1:12 BUT NOT STEEPER THAN 1:10	6 INCHES

Table 405.2  
Allowable Ramp Dimensions for Construction in Existing Sites, Buildings, and Facilities

405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

405.4 Floor or Ground Surfaces. Floor or ground surfaces of ramp runs shall comply with 302. Changes in level other than the running slope and cross slope are not permitted on ramp runs.

405.5 Clear Width. The clear width of a ramp run and, where handrails are provided, the clear width between handrails shall be 36 inches minimum.

EXCEPTION: Within employee work areas, the required clear width of ramps that are a part of common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

405.6 Rise. The rise for any ramp run shall be 30 inches maximum.

405.7 Landings. Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with 405.7.

405.7.1 Slope. Landings shall comply with 302. Changes in level are not permitted.  
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

405.7.2 Width. The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

405.7.3 Length. The landing clear length shall be 60 inches long minimum.

405.7.4 Change in Direction. Ramps that change direction between runs at landings shall have a clear landing 60 inches minimum by 60 inches minimum.

405.7.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by 404.2.4 and 404.3.2 shall be permitted to overlap the required landing area.

405.8 Handrails. Ramp runs with a rise greater than 6 inches shall have handrails complying with 505.

EXCEPTION: Within employee work areas, handrails shall not be required where ramps that are part of common use circulation paths are designed to permit the installation of handrails complying with 505. Ramps not subject to the exception to 405.5 shall be designed to maintain a 36 inch minimum clear width when handrails are installed.

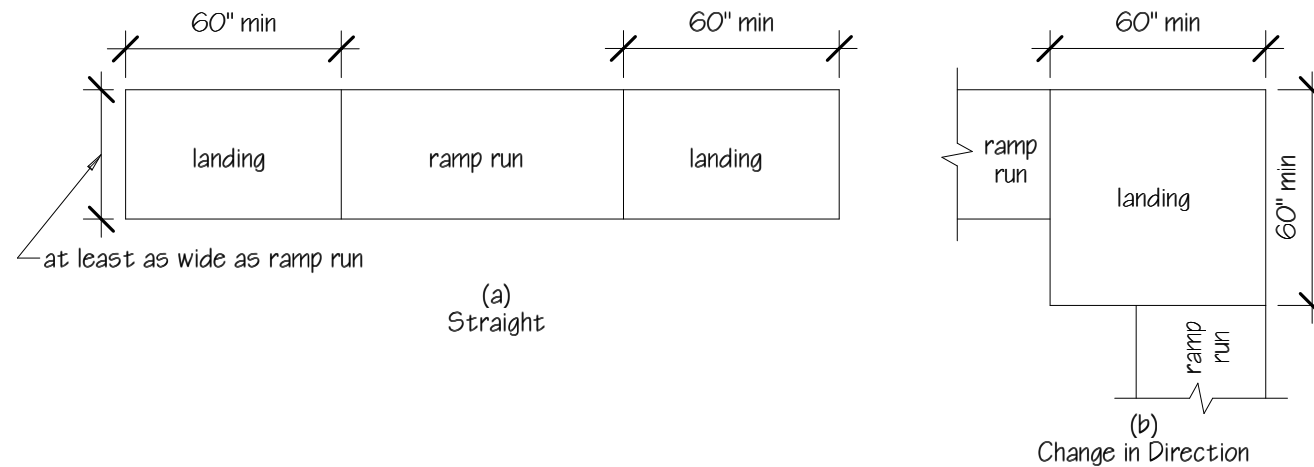
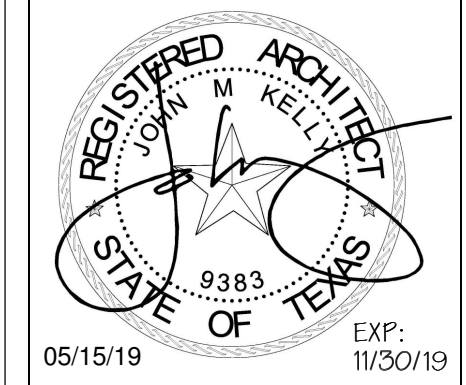


Fig. 405.7 Ramp  
Landings

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2012 TAS - TEXAS ACCESSIBILITY STANDARDS -- CONTINUED

405.9 Edge Protection. Edge protection complying with 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

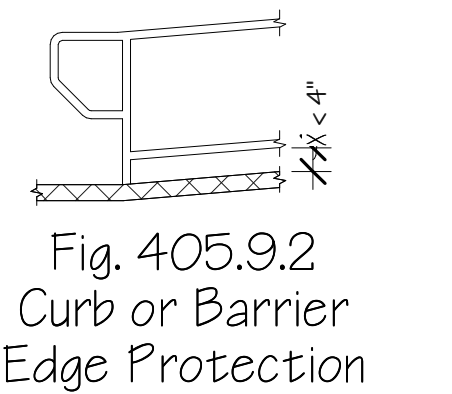
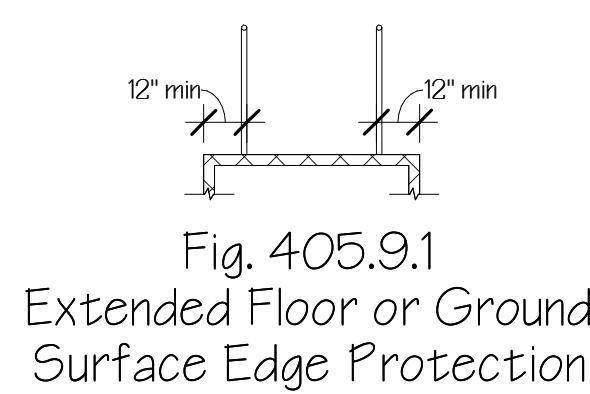
EXCEPTIONS:

1. Edge protection shall not be required on ramps that are not required to have handrails and have sides complying with 406.3.

2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run or stairway.

3. Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of 1/8 inch maximum within 10 inches horizontally of the minimum landing area specified in 405.7.

405.9.1 Extended Floor or Ground Surface. The floor or ground surface of the ramp run or landing shall extend 12 inches minimum beyond the inside face of a handrail complying with 505.



405.9.2 Curb or Barrier. A curb or barrier shall be provided that prevents the passage of a 4 inch diameter sphere, where any portion of the sphere is within 4 inches of the finish floor or ground surface.

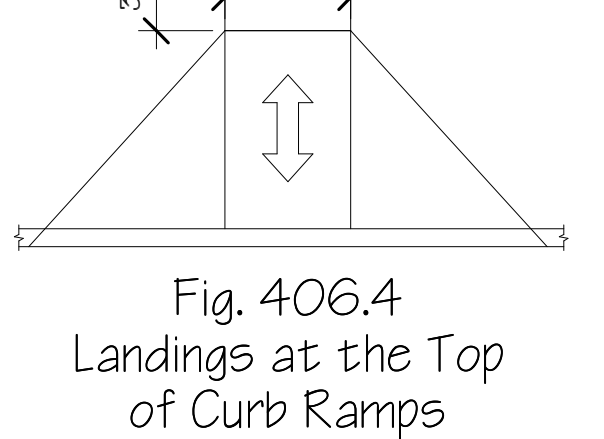
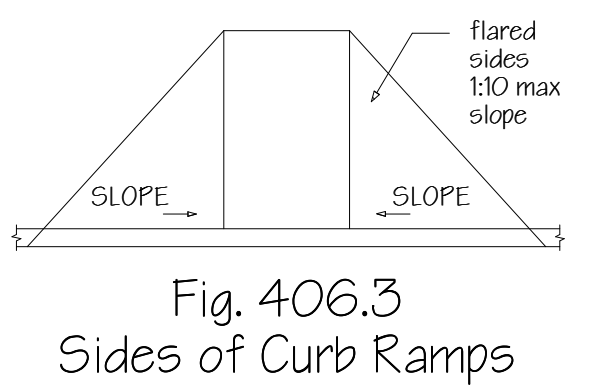
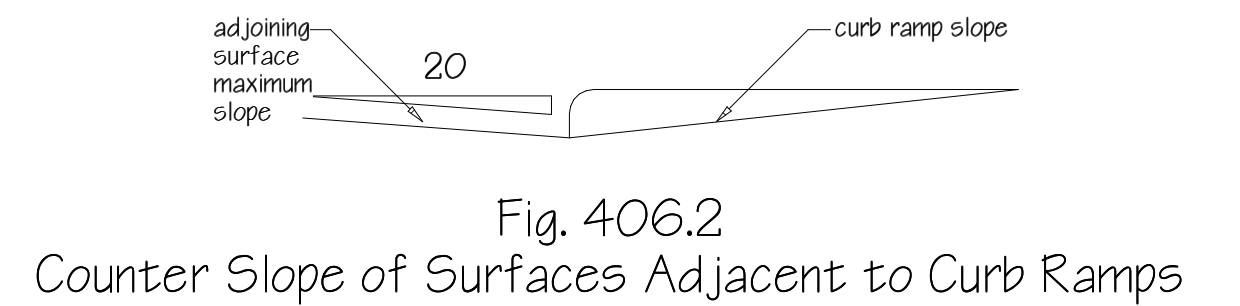
405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

406 Curb Ramps

406.1 General. Curb ramps on accessible routes shall comply with 406, 405.2 through 405.5, and 405.10.

406.2 Counter Slope. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.

406.3 Sides of Curb Ramps. Where provided, curb ramp flares shall not be steeper than 1:10.

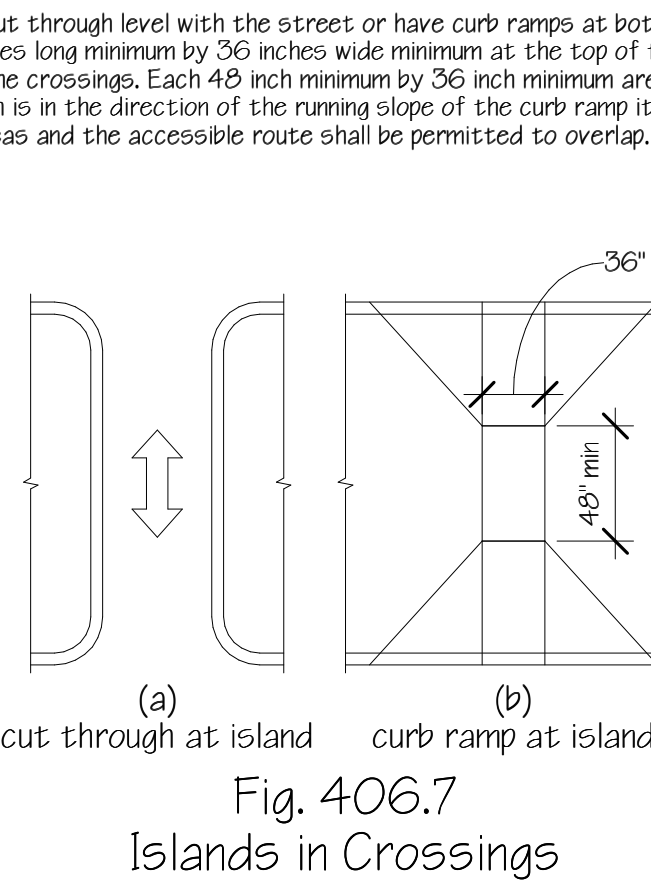
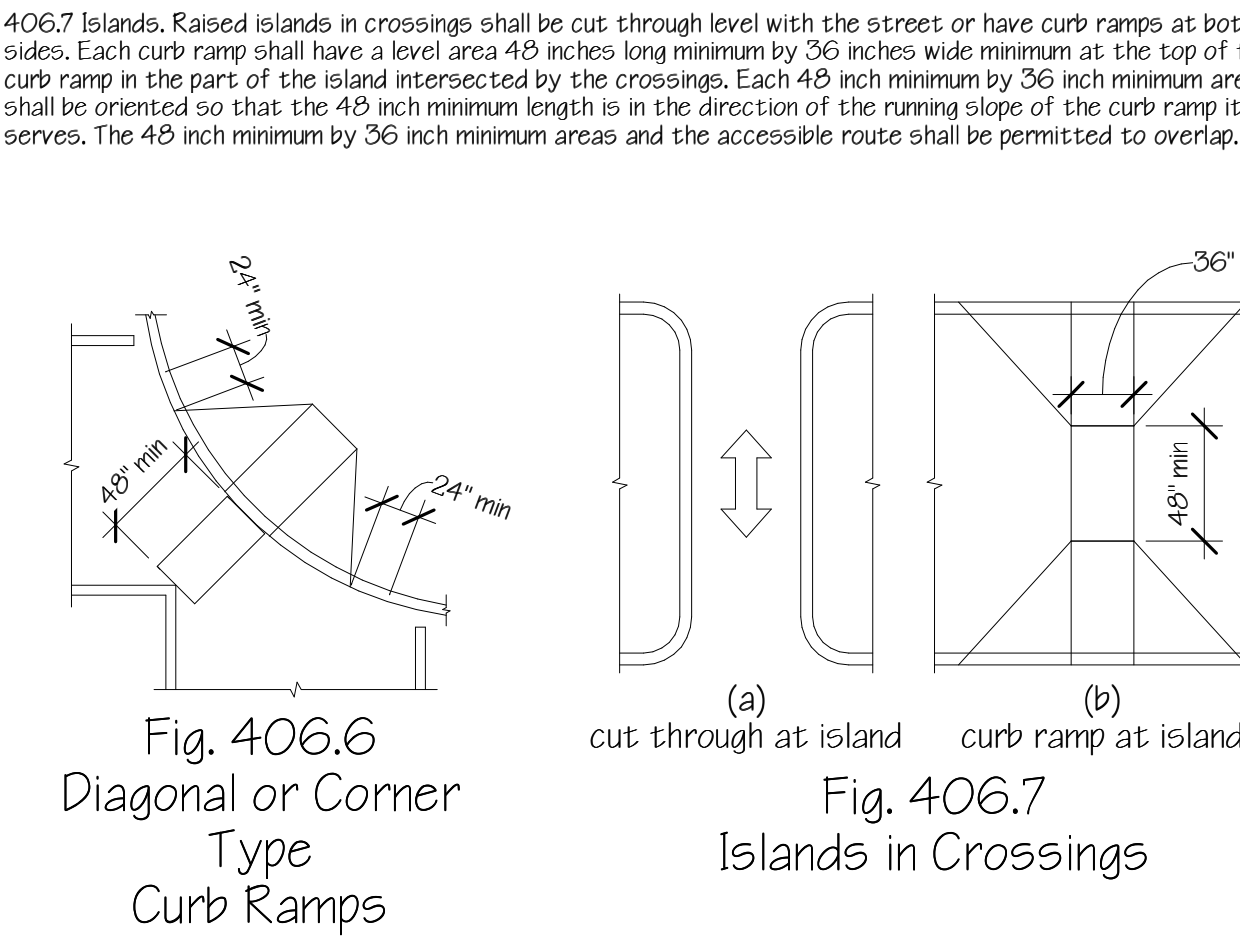


406.4 Landings. Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.

EXCEPTION: In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.

406.5 Location. Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

406.6 Diagonal Curb Ramps. Diagonal or corner type curb ramps with returned curbs or other well defined edges shall have the edges parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a clear space 48 inches minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches long minimum located on each side of the curb ramp and within the marked crossing.



CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

501 General

501.1 Scope. The provisions of Chapter 5 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

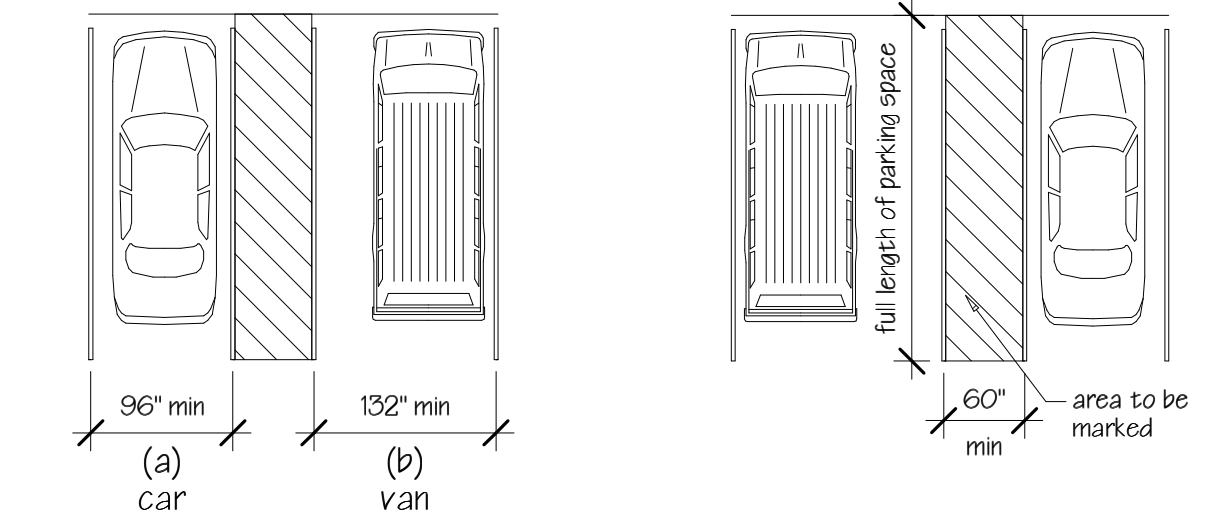
502 Parking Spaces

502.1 General. Car and van parking spaces shall comply with 502. Where parking spaces are marked with lines, width measurements of parking spaces and access aisles shall be made from the centerline of the markings.

EXCEPTION: Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measurements shall be permitted to include the full width of the line defining the parking space or access aisle.

502.2 Vehicle Spaces. Car parking spaces shall be 96 inches wide minimum and van parking spaces shall be 132 inches wide minimum, shall be marked to define the width, and shall have an adjacent access aisle complying with 502.3.

EXCEPTION: Van parking spaces shall be permitted to be 96 inches wide minimum where the access aisle is 96 inches (2440 mm) wide minimum.



502.3 Access Aisle. Access aisles serving parking spaces shall comply with 502.3. Access aisles shall adjoin an accessible route. Two parking spaces shall be permitted to share a common access aisle.

502.3.1 Width. Access aisles serving car and van parking spaces shall be 60 inches wide minimum.

502.3.2 Length. Access aisles shall extend the full length of the parking spaces they serve.

502.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

502.3.4 Location. Access aisles shall not overlap the vehicular way. Access aisles shall be permitted to be placed on either side of the parking space except for angled van parking spaces which shall have access aisles located on the passenger side of the parking spaces.

502.4 Floor or Ground Surfaces. Parking spaces and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the parking spaces they serve. Changes in level are not permitted.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

502.5 Vertical Clearance. Parking spaces for vans and access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches minimum.

502.6 Identification. Parking space identification signs shall include the International Symbol of Accessibility complying with 703.7.2.1. Signs identifying van parking spaces shall contain the designation "van accessible." Signs shall be 60 inches minimum above the finish floor or ground surface measured to the bottom of the sign.

502.7 Relationship to Accessible Routes. Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.

503 Passenger Loading Zones

503.1 General. Passenger loading zones shall comply with 503.

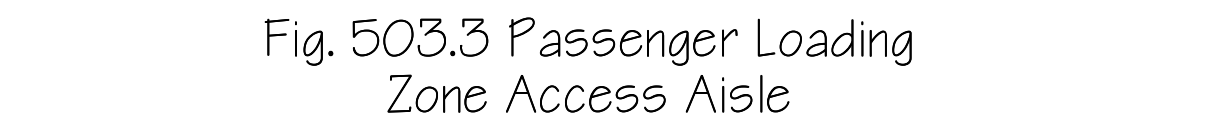
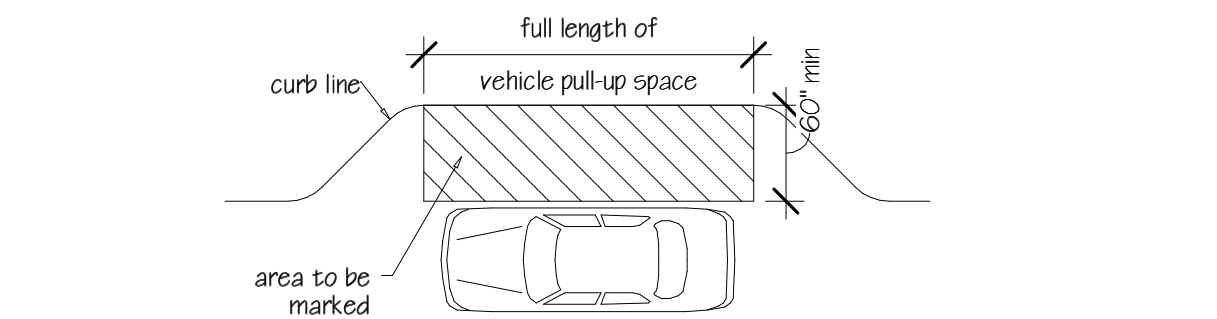
503.2 Vehicle Pull-Up Space. Passenger loading zones shall provide a vehicular pull-up space 96 inches wide minimum and 20 feet long minimum.

503.3 Access Aisle. Passenger loading zones shall provide access aisles complying with 503 adjacent to the vehicle pull-up space. Access aisles shall adjoin an accessible route and shall not overlap the vehicular way.

503.3.1 Width. Access aisles serving vehicle pull-up spaces shall be 60 inches wide minimum.

503.3.2 Length. Access aisles shall extend the full length of the vehicle pull-up spaces they serve.

503.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.



503.4 Floor and Ground Surfaces. Vehicle pull-up spaces and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the vehicle pull-up space they serve. Changes in level are not permitted.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

503.5 Vertical Clearance. Vehicle pull-up spaces, access aisles serving them, and a vehicular route from an entrance to the passenger loading zone, and from the passenger loading zone to a vehicular exit shall provide a vertical clearance of 114 inches minimum.

504 Stairways

504.1 General. Stairs shall comply with 504.

504.3 Open Risers. Open risers are not permitted.

504.2 Treads and Risers. All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches high minimum and 7 inches high maximum. Treads shall be 11 inches deep minimum.

504.4 Tread Surface. Stair treads shall comply with 302. Changes in level are not permitted.

EXCEPTION: Treads shall be permitted to have a slope not steeper than 1:48.

504.5 Nosings. The radius of curvature at the leading edge of the tread shall be 1/2 inch maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/2 inches maximum over the tread below.

504.6 Handrails. Stairs shall have handrails complying with 505.

504.7 Wet Conditions. Stair treads and landings subject to wet conditions shall be designed to prevent the accumulation of water.

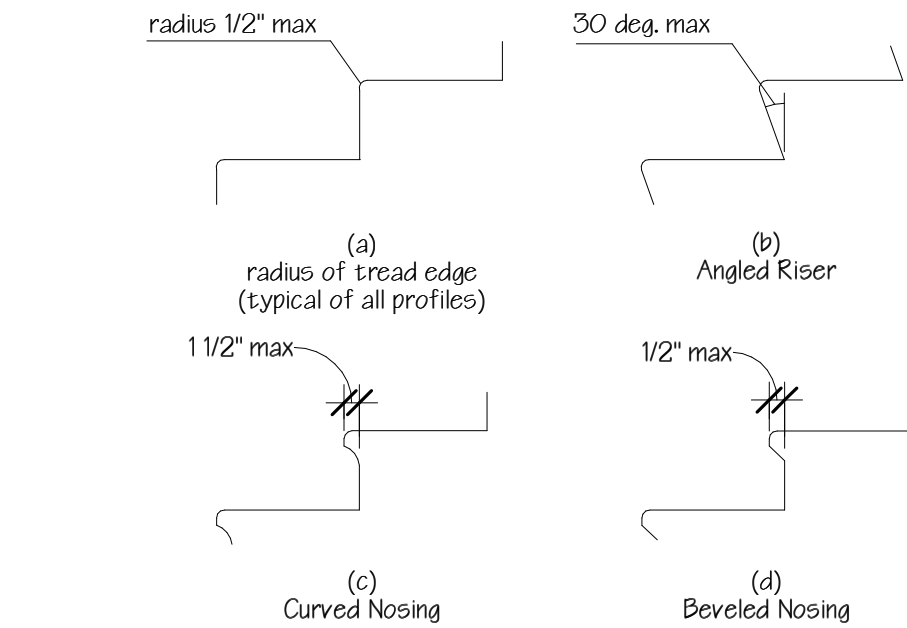


Fig. 504.5 Stair Nosings

505 Handrails

505.1 General. Handrails provided along walking surfaces complying with 403, required at ramps complying with 405, and required at stairs complying with 504 shall comply with 505.

505.2 Where Required. Handrails shall be provided on both sides of stairs and ramps.

EXCEPTION: In assembly areas, handrails shall not be required on both sides of aisle ramps where a handrail is provided at either side or within the aisle width.

505.3 Continuity. Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs.

EXCEPTION: In assembly areas, handrails on ramps shall not be required to be continuous in aisles serving seating.

505.4 Height. Top of gripping surfaces of handrails shall be 34 inches minimum and 38 inches maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces.

505.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 1/2 inches minimum.

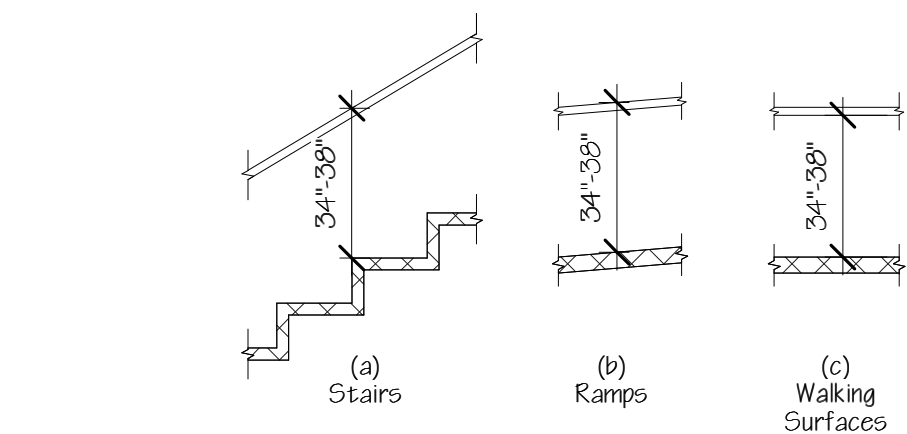


Fig. 505.4 Handrail Height

505.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1/2 inches minimum below the bottom of the handrail gripping surface.

EXCEPTIONS:

1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by 1/8 inch for each 1/2 inch of additional handrail perimeter dimension that exceeds 4 inches.

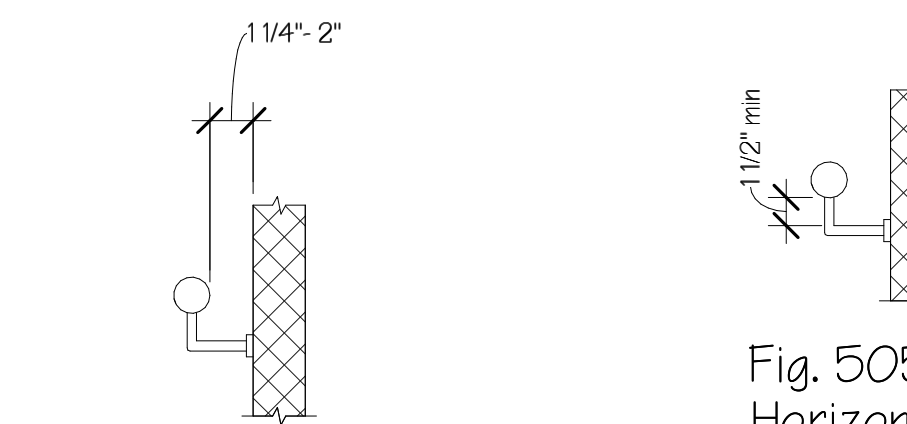


Fig. 505.5 Handrail Clearance

505.7 Cross Section. Handrail gripping surfaces shall have a cross section complying with 505.7.1 or 505.7.2.

505.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inches minimum and 2 inches maximum.

505.7.2 Non-Circular Cross Sections. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches minimum and 6 1/4 inches maximum, and a cross-section dimension of 2 1/4 inches maximum.

NOTES:  
1. SECTIONS OF 2012 TAS NOT PERTAINING TO THIS PROJECT HAVE BEEN OMITTED.  
2. FIGURES ARE NOT TO SCALE.  
3. ALL DIMENSIONS IN THE 2012 TAS -TEXAS ACCESSIBILITY STANDARDS ARE MEASURED TO FINISHED SURFACES. DIMENSIONS IN THE ACTUAL CONSTRUCTION DRAWINGS ARE MEASURED TO RAW FRAMING.

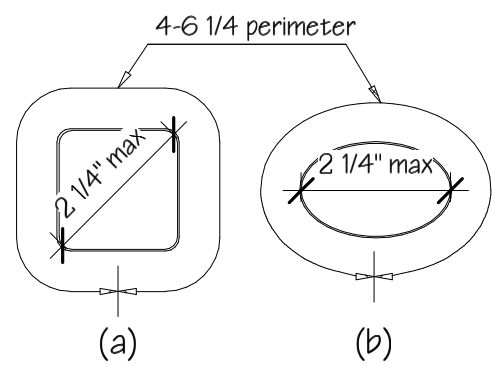


Fig. 505.7.2 Handrail Non-circular Cross Section

505.8 Surfaces. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

505.9 Fittings. Handrails shall not rotate within their fittings.

505.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with 505.10.

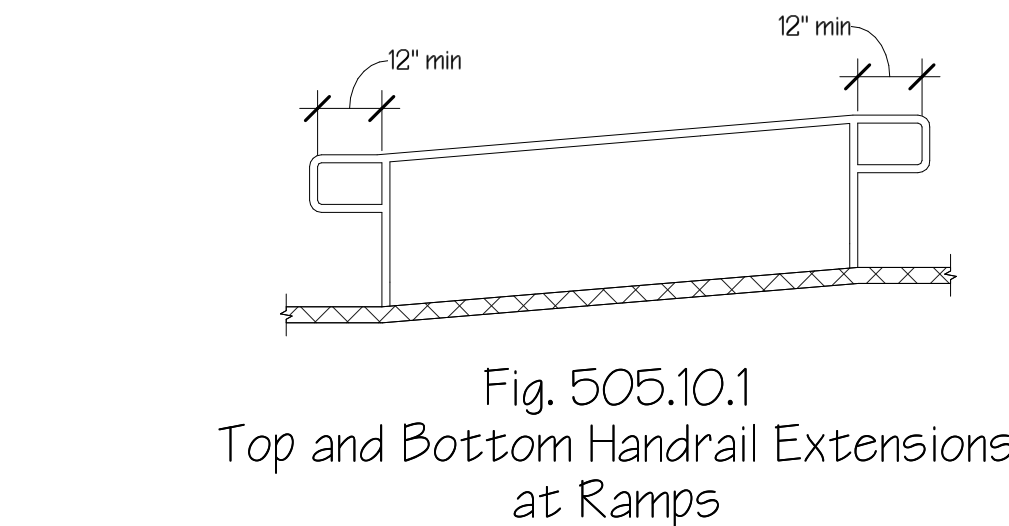
EXCEPTIONS:

1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.

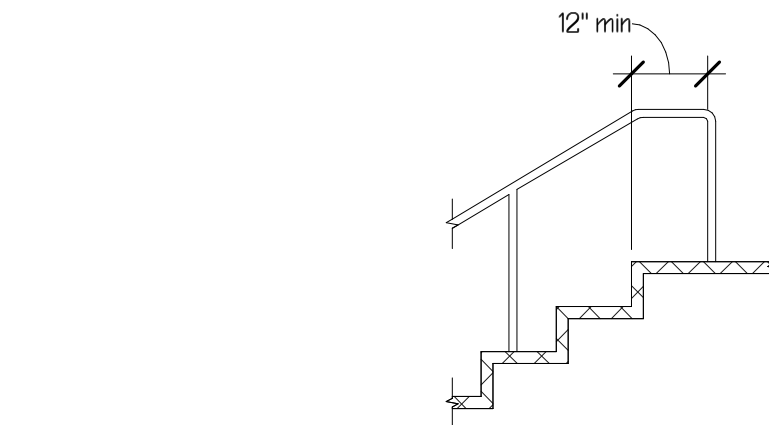
2. In assembly areas, extensions shall not be required for ramp handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.

3. In alterations, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

505.10.1 Top and Bottom Extension at Ramps. Ramp handrails shall extend horizontally above the landing for 12 inches minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.



505.10.2 Top Handrail Extensions at Stairs. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.



505.10.3 Bottom Extension at Stairs. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

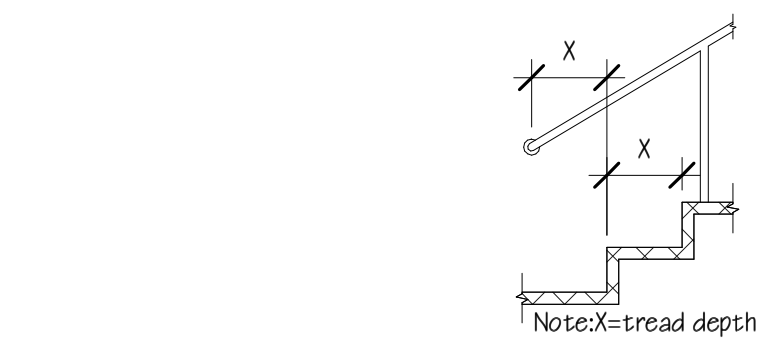


Fig. 505.10.3 Bottom Handrail Extensions at Stairs

CONTINUED ON NEXT SHEET

DRAWN BY:  
WLG

CHECKED BY:  
JMK

PROJECT #:  
18-2319

LDG DEVELOPMENT, LLC.

1305 E. 6TH ST., #13,  
AUSTIN, TX 78702

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ISSUED FOR PERMIT  
03/08/19

ISSUED FOR BID

ISSUED FOR CONSTRUCTION

DWG NAME

DATE  
05/15/19

DESCRIPTION  
TAS SHEET 4

SHEET  
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2012 TAS - TEXAS ACCESSIBILITY STANDARDS -- CONTINUED

CHAPTER 6: PLUMBING ELEMENTS AND FACILITIES

**601 General**  
601.1 Scope. The provisions of Chapter 6 shall apply where required by Chapter 2 or where referenced by a requirement in this document.  
**602 Drinking Fountains**  
602.1 General. Drinking fountains shall comply with 307 and 602.  
602.2 Clear Floor Space. Units shall have a clear floor or ground space complying with 305 positioned for a forward approach and centered on the unit. Knee and toe clearance complying with 306 shall be provided.  
EXCEPTION: A parallel approach complying with 305 shall be permitted at units for children's use where the spout is 30 inches maximum above the finish floor or ground and is 3 1/2 inches maximum from the front edge of the unit, including bumpers.  
602.3 Operable Parts. Operable parts shall comply with 309.  
602.4 Spout Height. Spout outlets shall be 36 inches maximum above the finish floor or ground.

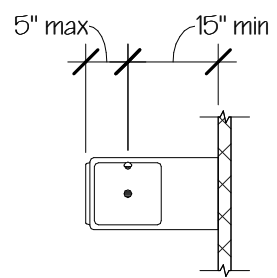


Fig. 602.5  
Drinking Fountain Spout Location

602.6 Water Flow. The spout shall provide a flow of water 4 inches high minimum and shall be located 5 inches maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches and 5 inches maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.  
602.7 Drinking Fountains for Standing Persons. Spout outlets of drinking fountains for standing persons shall be 38 inches minimum and 43 inches maximum above the finish floor or ground.

**603 Toilet and Bathing Rooms**  
603.1 General. Toilet and bathing rooms shall comply with 603.  
603.2 Clearances. Clearances shall comply with 603.2.  
603.2.1 Turning Space. Turning space complying with 304 shall be provided within the room.  
603.2.2 Overlap. Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.  
603.2.3 Door Swing. Doors shall not swing into the clear floor space or clearance required for any fixture. Doors shall be permitted to swing into the required turning space.  
EXCEPTIONS:  
1. Doors to a toilet room or bathing room for a single occupant accessed only through a private office and not for common use or public use shall be permitted to swing into the clear floor space or clearance provided the swing of the door can be reversed to comply with 603.2.3.  
2. Where the toilet room or bathing room is for individual use and a clear floor space complying with 305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture.

603.3 Mirrors. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches maximum above the finish floor or ground.  
603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches minimum and 48 inches maximum above the finish floor.

**604 Water Closets and Toilet Compartments**  
604.1 General. Water closets and toilet compartments shall comply with 604.2 through 604.8.  
EXCEPTION: Water closets and toilet compartments for children's use shall be permitted to comply with 604.9.  
604.2 Location. The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16 inches minimum to 18 inches maximum from the side wall or partition, except that the water closet shall be 17 inches minimum and 19 inches maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in 604.8.2. Water closets shall be arranged for a left-hand or right-hand approach.

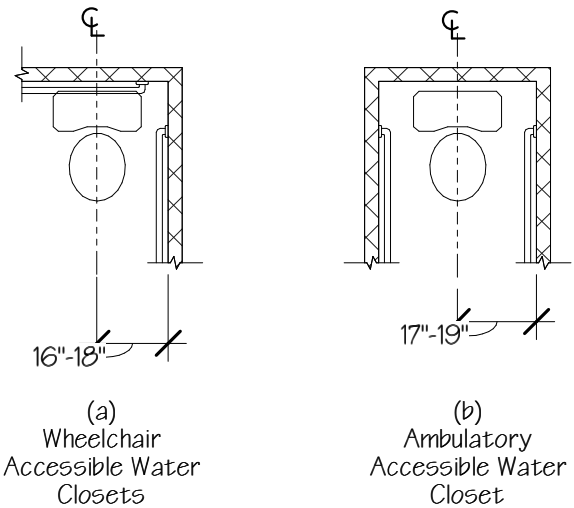


Fig. 604.2 Water Closet Location

604.3 Clearance. Clearances around water closets and in toilet compartments shall comply with 604.3.  
604.3.1 Size. Clearance around a water closet shall be 60 inches minimum measured perpendicular from the side wall and 56 inches minimum measured perpendicular from the rear wall.  
604.3.2 Overlap. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

EXCEPTION: In residential dwelling units, a lavatory complying with 606 shall be permitted on the rear wall 19 inches minimum from the water closet centerline where the clearance at the water closet is 66 inches minimum measured perpendicular from the rear wall.  
604.4 Seats. The seat height of a water closet above the finish floor shall be 17 inches minimum and 19 inches maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

604.5 Grab Bars. Grab bars for water closets shall comply with 609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall.  
EXCEPTIONS:  
1. A water closet in a toilet room for a single occupant accessed only through a private office and not for common use or public use shall not be required to comply with 604.4.  
2. In residential dwelling units, the height of water closets shall be permitted to be 15 inches minimum and 19 inches maximum above the finish floor measured to the top of the seat.

604.5.1 Side Wall. The side wall grab bar shall be 42 inches long minimum, located 12 inches maximum from the rear wall and extending 54 inches minimum from the rear wall.  
EXCEPTIONS:  
1. Grab bars shall not be required to be installed in a toilet room for a single occupant accessed only through a private office and not for common use or public use provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5.  
2. In residential dwelling units, grab bars shall not be required to be installed in toilet or bathrooms provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5.  
3. In detention or correction facilities, grab bars shall not be required to be installed in housing or holding cells that are specially designed without protrusions for purposes of suicide prevention.

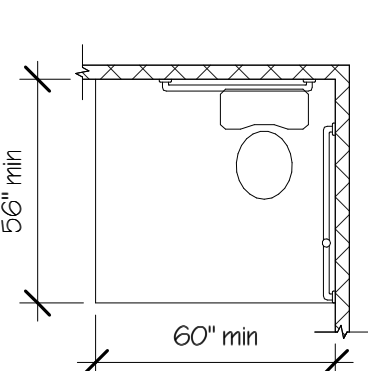


Fig. 604.3.1  
Size of Clearance for Water Closet

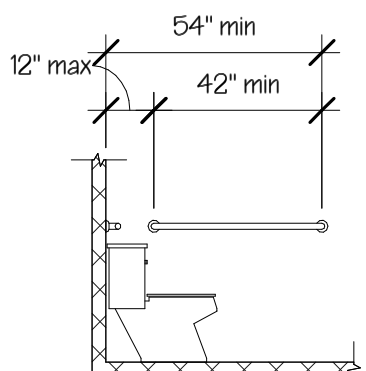


Fig. 604.5.1  
Side Wall Grab Bar at Water Closets

604.5.2 Rear Wall. The rear wall grab bar shall be 36 inches (915 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches minimum on the other side.  
EXCEPTIONS:  
1. The rear grab bar shall be permitted to be 24 inches long minimum, centered on the water closet, where wall space does not permit a length of 36 inches minimum due to the location of a recessed fixture adjacent to the water closet.  
2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, then the rear grab bar shall be permitted to be split or shifted to the open side of the toilet area.

604.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.  
604.7 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches minimum and 9 inches maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15 inches minimum and 48 inches maximum above the finish floor and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

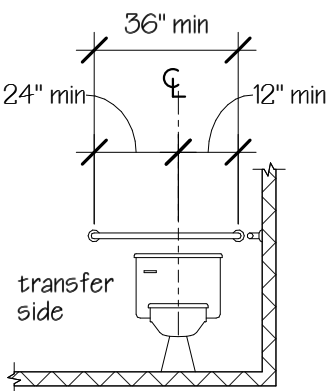


Fig. 604.5.2  
Rear Wall Grab Bar for Water Closet

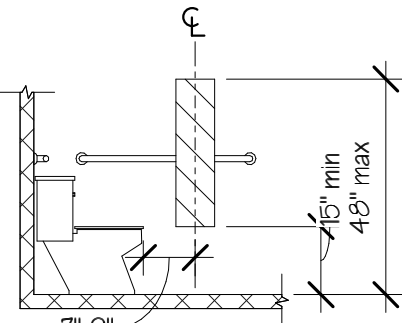


Fig. 604.7  
Dispenser Outlet Location

604.8 Toilet Compartments. Wheelchair accessible toilet compartments shall meet the requirements of 604.8.1 and 604.8.3. Compartments containing more than one plumbing fixture shall comply with 603. Ambulatory accessible compartments shall comply with 604.8.2 and 604.8.3.

604.8.1 Wheelchair Accessible Compartments. Wheelchair accessible compartments shall comply with 604.8.1.  
604.8.1.1 Size. Wheelchair accessible compartments shall be 60 inches wide minimum measured perpendicular to the side wall, and 56 inches deep minimum for wall hung water closets and 59 inches deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60 inches wide minimum measured perpendicular to the side wall, and 59 inches deep minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.

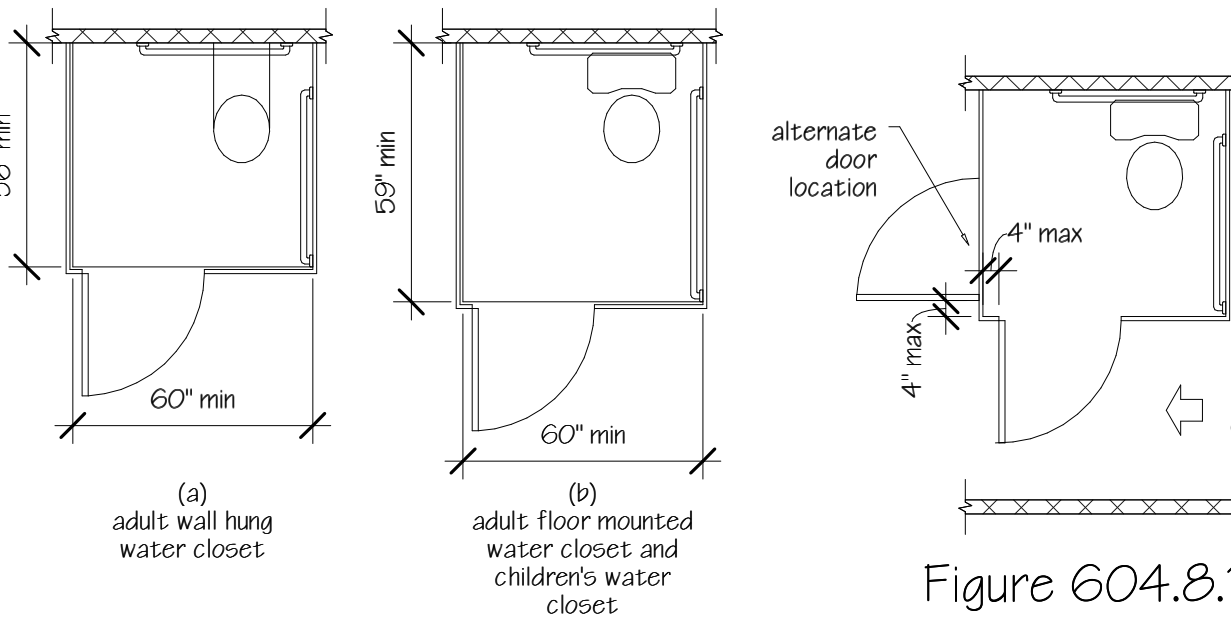


Figure 604.8.1.2  
Wheelchair Accessible Toilet Compartment Doors

604.8.1.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

604.8.1.3 Approach. Compartments shall be arranged for left-hand or right-hand approach to the water closet.  
604.8.1.4 Toe Clearance. The front partition and at least one side partition shall provide a toe clearance of 9 inches minimum above the finish floor and 6 inches deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Compartments for children's use shall provide a toe clearance of 12 inches minimum above the finish floor.

EXCEPTION: 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. Toe clearance at the side partition is not required in a compartment greater than 66 inches wide. Toe clearance at the front partition is not required in a compartment for children's use that is greater than 65 inches deep.

604.8.1.5 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided and shall be located on the wall closest to the water closet. In addition, a rear-wall grab bar complying with 604.5.2 shall be provided.

604.8.3 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches minimum and 48 inches maximum above the finish floor.

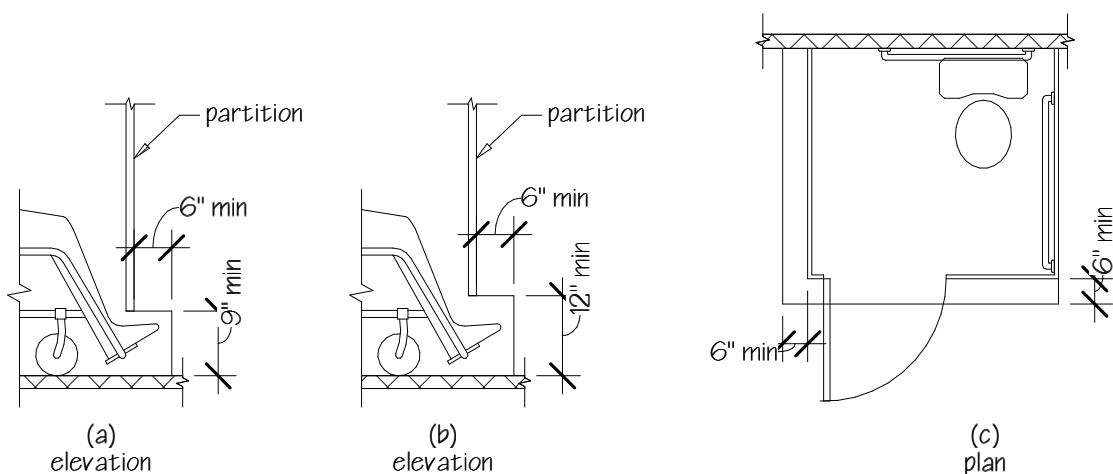


Figure 604.8.1.4  
Wheelchair Accessible Toilet Compartment Toe Clearance

**605 Urinals**  
605.1 General. Urinals shall comply with 606.  
605.2 Height and Depth. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches maximum above the finish floor or ground. Urinals shall be 13 1/2 inches deep minimum measured from the outer face of the urinal rim to the back of the fixture.  
605.3 Clear Floor Space. A clear floor or ground space complying with 305 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 309.

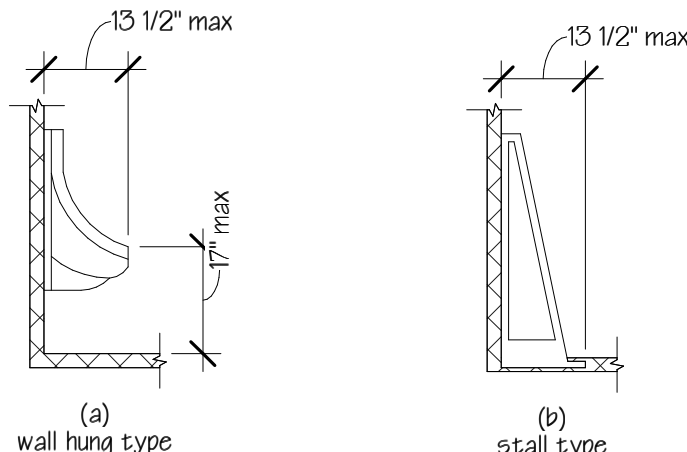


Figure 605.2  
Height and Depth of Urinals

**606 Lavatories and Sinks**  
606.1 General. Lavatories and sinks shall comply with 606.  
606.2 Clear Floor Space. A clear floor space complying with 305, positioned for a forward approach, and knee and toe clearance complying with 306 shall be provided.

EXCEPTIONS:  
1. A parallel approach complying with 305 shall be permitted to a kitchen sink in a space where a cook top or conventional range is not provided and to wet bars.  
2. A lavatory in a toilet room or bathing facility for a single occupant accessed only through a private office and not for common use or public use shall not be required to provide knee and toe clearance complying with 306.  
3. In residential dwelling units, cabinetry shall be permitted under lavatories and kitchen sinks provided that all of the following conditions are met:  
(a) the cabinetry can be removed without removal or replacement of the fixture;  
(b) the finish floor extends under the cabinetry; and  
(c) the walls behind and surrounding the cabinetry are finished.  
4. omitted  
5. omitted  
6. The dip of the overflow shall not be considered in determining knee and toe clearances.  
7. No more than one bowl of a multi-bowl sink shall be required to provide knee and toe clearance complying with 306.

606.3 Height. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34 inches maximum above the finish floor or ground.  
EXCEPTIONS:  
1. A lavatory in a toilet or bathing facility for a single occupant accessed only through a private office and not for common use or public use shall not be required to comply with 606.3.  
2. In residential dwelling unit kitchens, sinks that are adjustable to variable heights, 29 inches minimum and 36 inches maximum, shall be permitted where rough-in plumbing permits connections of supply and drain pipes for sinks mounted at the height of 29 inches.

NOTES:  
1. SECTIONS OF 2012 TAS NOT PERTAINING TO THIS PROJECT HAVE BEEN OMITTED.  
2. FIGURES ARE NOT TO SCALE.  
3. ALL DIMENSIONS IN THE 2012 TAS -TEXAS ACCESSIBILITY STANDARDS ARE MEASURED TO FINISHED SURFACES. DIMENSIONS IN THE ACTUAL CONSTRUCTION DRAWINGS ARE MEASURED TO RAW FRAMING.

606.4 Faucets. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.  
606.5 Exposed Pipes and Surfaces. Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.

**609 Grab Bars**  
609.1 General. Grab bars in toilet facilities and bathing facilities shall comply with 609.  
609.2 Cross Section. Grab bars shall have a cross section complying with 609.2.1 or 609.2.2.  
609.2.1 Circular Cross Section. Grab bars with circular cross sections shall have an outside diameter of 1 1/4 inches minimum and 2 inches maximum.  
609.2.2 Non-Circular Cross Section. Grab bars with non-circular cross sections shall have a cross section dimension of 2 inches maximum and a perimeter dimension of 4 inches minimum and 4.8 inches maximum.

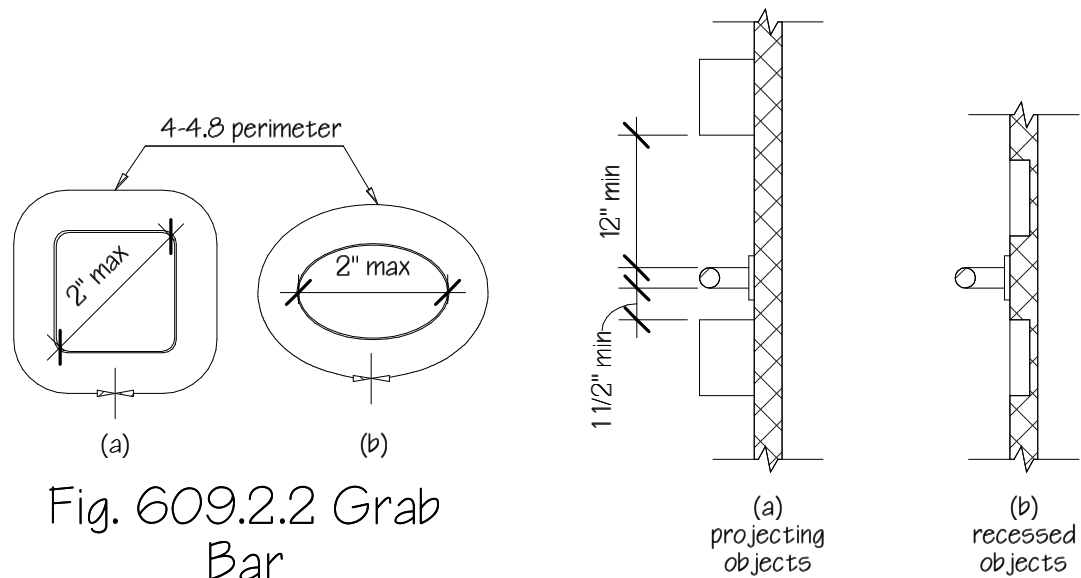


Fig. 609.2.2 Grab Bar  
Non-circular Cross Section

Figure 609.3  
Spacing of Grab Bars

609.3 Spacing. The space between the wall and the grab bar shall be 1 1/2 inches. The space between the grab bar and projecting objects below and at the ends shall be 1 1/2 inches minimum. The space between the grab bar and projecting objects above shall be 12 inches minimum.  
EXCEPTION: The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1 1/2 inches minimum.  
609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches minimum and 36 inches maximum above the finish floor measured to the top of the gripping surface, except that at water closets for children's use complying with 604.9, grab bars shall be installed in a horizontal position 18 inches minimum and 27 inches maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with 607.4.1.1 or 607.4.2.1.

609.5 Surface Hazards. Grab bars and any wall or other surfaces adjacent to grab bars shall be free of sharp or abrasive elements and shall have rounded edges.  
609.6 Fittings. Grab bars shall not rotate within their fittings.  
609.7 Installation. Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear floor space.  
609.8 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

CHAPTER 7: COMMUNICATION ELEMENTS AND FEATURES

**701 General**  
701.1 Scope. The provisions of Chapter 7 shall apply where required by Chapter 2 or where referenced by a requirement in this document.  
**702 Fire Alarm Systems**  
702.1 General. Fire alarm systems shall have permanently installed audible and visible alarms complying with NFPA 72 (1999 or 2002 edition), except that the maximum allowable sound level of audible notification appliances complying with section 4-3.2.1 of NFPA 72 (1999 edition) shall have a sound level no more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in guest rooms required to provide communication features shall comply with sections 4-3 and 4-4 of NFPA 72 (1999 edition) or sections 7.4 and 7.5 of NFPA 72 (2002 edition).

EXCEPTION: Fire alarm systems in medical care facilities shall be permitted to be provided in accordance with industry practice.  
**703 Signs**  
703.1 General. Signs shall comply with 703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.  
703.2 Raised Characters. Raised characters shall comply with 703.2 and shall be duplicated in braille complying with 703.3. Raised characters shall be installed in accordance with 703.4.  
703.2.1 Depth. Raised characters shall be 1/32 inch minimum above their background.  
703.2.2 Case. Characters shall be uppercase.  
703.2.3 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.  
703.2.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter "O" is 85 percent minimum and 110 percent maximum of the height of the uppercase letter "I".  
703.2.5 Character Height. Character height measured vertically from the baseline of the character shall be 5/8 inch minimum and 2 inches maximum based on the height of the uppercase letter "I".  
EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch minimum.

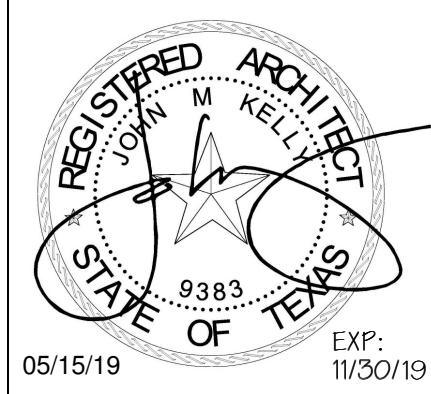
Table 703.3.1 Braille Dimensions

MEASUREMENT RANGE	MIN/MAX INCHES
DOT BASE DIAMETER	0.059/0.063
DISTANCE BETWEEN TWO DOTS IN THE SAME CELL	0.090/0.100
DISTANCE BETWEEN CORRESPONDING DOTS IN THE SAME CELL	0.241/0.300
DOT HEIGHT	.025/.037
DISTANCE BETWEEN CORRESPONDING DOTS ONE CELL DIRECTLY BELOW	0.359/0.400

1. Measured center to center

CONTINUED ON NEXT SHEET

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WLG  
CHECKED BY:  
JMK  
PROJECT #:  
18-2319



LDG DEVELOPMENT, LLC.  
1305 E. 6TH ST. #13,  
AUSTIN, TX 78702

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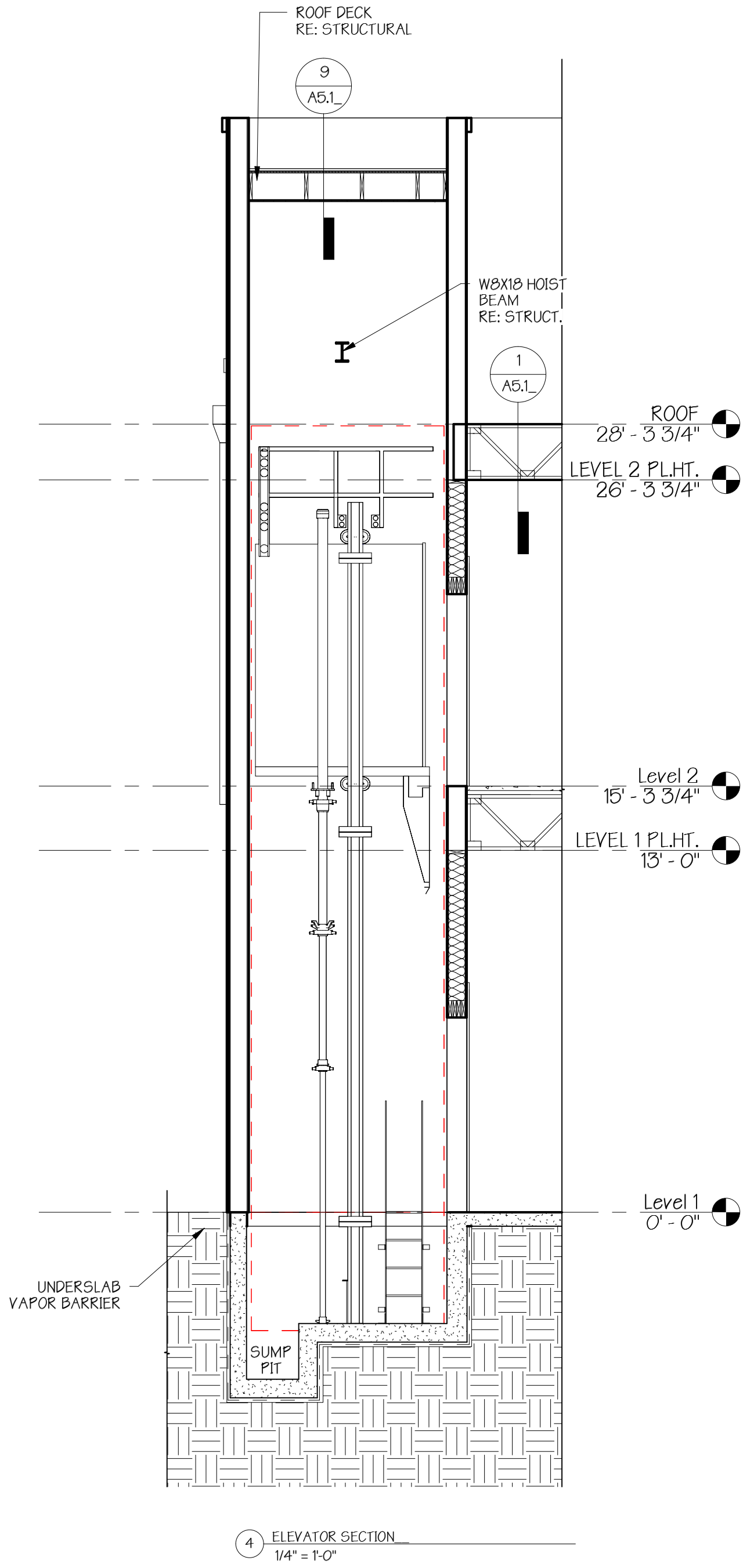
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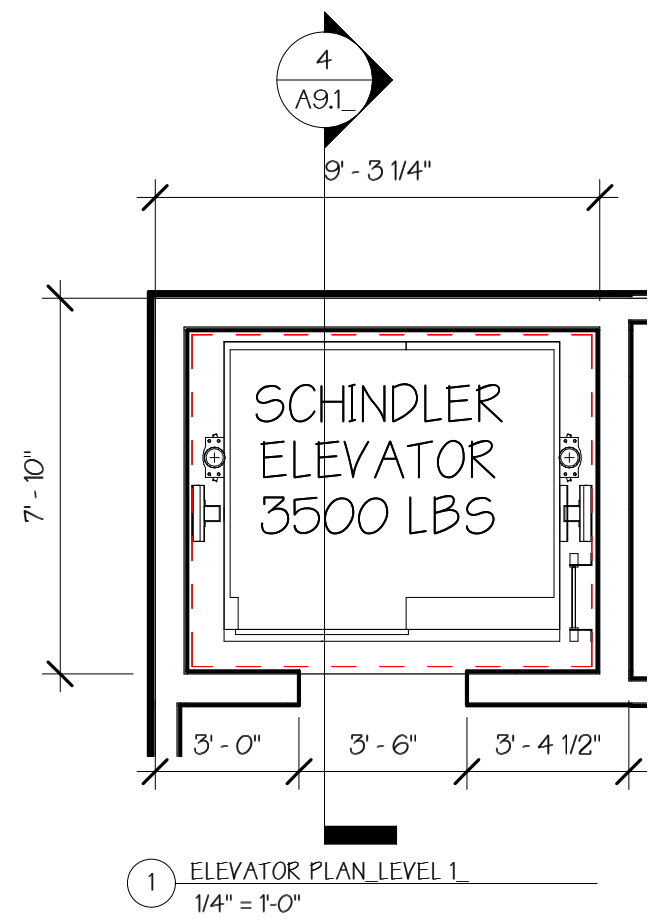




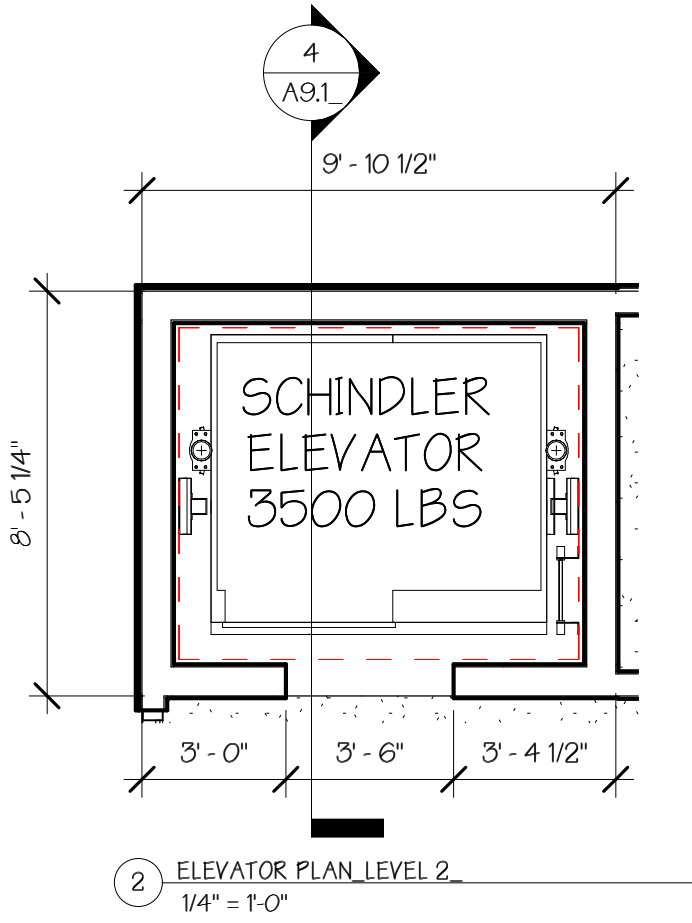




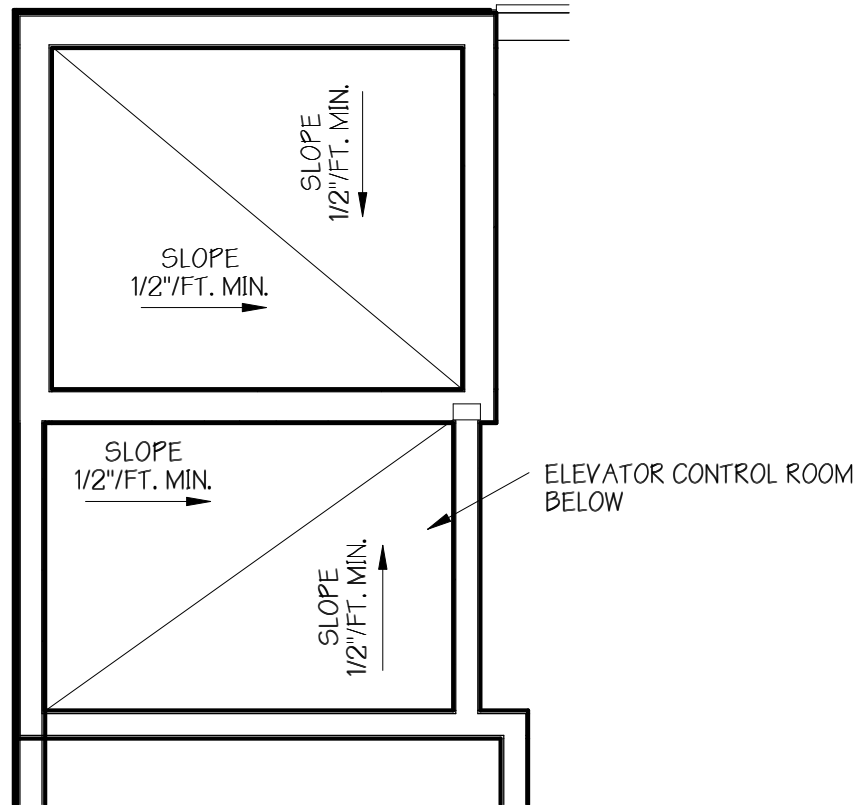
4 ELEVATOR SECTION  
1/4" = 1'-0"



1 ELEVATOR PLAN LEVEL 1  
1/4" = 1'-0"



2 ELEVATOR PLAN LEVEL 2  
1/4" = 1'-0"



3 ELEVATOR PLAN ROOF LEVEL  
1/4" = 1'-0"

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