

# UNITED CHRISTIAN ACADEMY

10619 HIGHWAY 69

PORT ARTHUR, TX 77642

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## ABBREVIATIONS

A.B.	ANCHOR BOLT	DR	DOOR	HW	HOT WATER
A/C	AIR CONDITIONING	DS	DOWNSPOUT	ID	INSIDE DIAMETER
ACT	ACOUSTICAL CEILING TILE	DWR	DRAWER	IN	INCH
A.D.	AREA DRAIN	EA	EACH	INCL	INCLUDE(D)
ADA	AMERICANS WITH DISABILITIES ACT	EF	EACH FACE / EXHAUST FAN	INSUL	INSULATION
ADJ	ADJUSTABLE	EJ	EXPANSION JOINT	INT	INTERIOR
AFF	ABOVE FINISH FLOOR	EIFS	EXTERIOR INSULATED FINISH SYSTEM	INV	INVERT
ALT	ALTERNATE	ELEC	ELECTRICAL	JAN	JANITOR
ALUM	ALUMINUM	ELEV	ELEVATION	JST	JOIST
ANOD	ANODIZED	ENCL	EMERGENCY ENCLOSURE	JT	JOINT
APPROX	APPROXIMATE	EQ	EQUAL	KD	KNOCK DOWN
ARCH	ARCHITECT(URAL)	EQUIP	EQUIPMENT	KIT	KITCHEN
ASPH	ASPHALT	EW	EACH WAY	KO	KNOCK OUT
BD	BOARD	EWC	ELECTRIC WATER COOLER	LAB	LABORATORY
BIT	BITUMINOUS	EXH	EXHAUST	LAM	LAMINATE(D)
BLDG	BUILDING	EXIST	EXISTING	LAV	LAVATORY
BLKG	BLOCKING	EXP	EXPANSION / EXPOSED	LH	LINEAL FOOT
BM	BEAM	EXT	EXTERIOR	LH	LEFT HAND
B.O.	BOTTOM OF	FD	FLOOR DRAIN	LL	LEFT HAND REVERSE
BOT	BOTTOM	FDN	FOUNDATION	LLH	LONG LEG HORIZONTAL
BRG	BEARING	FE	FIRE EXTINGUISHER	LLV	LONG LEG VERTICAL
BTWN	BETWEEN	FEC	FIRE EXTINGUISHER CABINET	LWC	LIGHT WEIGHT CONCRETE
BUR	BUILT-UP ROOF	FF	FINISH FLOOR	MACH	MACHINE
CAB	CABINET	FFE	FINISH FLOOR ELEVATION	MAS	MASONRY
CBU	CEMENTITIOUS BACKER UNIT	FIN	FINISH FLOOR	MATL	MATERIAL
C/C	CENTER-TO-CENTER	FLR	FLOOR	MAX	MAXIMUM
CEM	CEMENT	FLUOR	FLUORESCENT	MDF	MEDIUM DENSITY FIBERBOARD
CER	CERAMIC	FO	FACE OF (SPECIFY ITEM)	MECH	MECHANICAL
C.G.	CORNER GUARD	FOB	FACE OF BRICK	MEMB	MEMBRANE
C.I.P.	CAST-IN-PLACE	FOC	FACE OF CONCRETE	MFR	MANUFACTURER
C.J.	CONTROL JOINT	FOS	FACE OF STUD	MEZZ	MEZZANINE
CL	CENTERLINE	FR	FIRE RESISTIVE	MH	MANHOLE
CLG	CEILING	FT	FEET / FOOT	MIN	MINIMUM
CLR	CLEAR(ANCE)	FTG	FOOTING	MIR	MIRROR
CLOS	CLOSET	FURR	FURRING / FURRED	MISC	MISCELLANEOUS
CMU	CONCRETE MASONRY UNIT	GA	GAUGE	MO	MASONRY OPENING
C.O.	CLEAN OUT	GALV	GALVANIZED	MR	MOISTURE RESISTANT
COL	COLUMN	GB	GRAB BAR	MTL	METAL
CONC	CONCRETE	GC	GENERAL CONTRACTOR	MULL	MULLION
CONSTR	CONSTRUCTION	GL	GLASS / GLAZING	N/A	NOT APPLICABLE
CONT	CONTINUOUS	GND	GROUND	NIC	NOT IN CONTRACT
COORD	COORDINATE	GR	GRADE	NO	NUMBER
CORR	CORRIDOR	GWB	GYPSUM WALLBOARD	NOM	NOMINAL
CTR	CENTER	GYP	GYPSUM	NTS	NOT TO SCALE
C.Y.	CUBIC YARD	HB	HOSE B/B	OC	ON CENTER
DBL	DOUBLE	HC	HOLLOW CORE	OD	OUTSIDE DIAMETER
DEMO	DEMOLITION	HDR	HEADER	OFCD	(OR OVERFLOW DRAIN) OWNER FURNISHED/ CONTRACTOR INSTALLED
DEPT	DEPARTMENT	HDWR	HARDWARE	OFOI	OWNER FURNISHED/ OWNER INSTALLED
DET	DETAIL	HM	HOLLOW METAL	OH	OVERHEAD
DIA	DIAMETER	HORIZ	HORIZONTAL		
DIAG	DIAGONAL	HT	HEIGHT		
DIM	DIMENSION	HVAC	HEATING, VENTILATION, AND AIR CONDITIONING		
DISP	DISPENSER				
DL	DEAD LOAD				
DN	DOWN				

OPNG	OPENING	THK	THICK(NESS)
OPP	OPPOSITE	TI	TENANT IMPROVEMENT
PERP	PERPENDICULAR	TO	TOP OF (SPECIFY ITEM)
PL	PLATE (OR PROPERTY LINE)	TOC	TOP OF CURB / CONCRETE
PLAM	PLASTIC LAMINATE	TOP	TOP OF PARAPET
PLAS	PLASTER	TOS	TOP OF STEEL
PLYWD	PLYWOOD	TOW	TOP OF WALL
PNL	PANEL	TPTN	TOILET PARTITION
PNT	PAINT	TS	TUBULAR STEEL
PR	PAIR	TV	TELEVISION
PSF	POUNDS PER SQUARE FOOT	TYP	TYPICAL
PSI	POUNDS PER SQUARE INCH	UC	UNDERCOUNTER
PT	PRESSURE TREATED	UL	UNDERWRITERS LABORATORY
PTN	PARTITION	UNO	UNLESS NOTED OTHERWISE
PVC	POLYVINYL CHLORIDE	VCT	VINYL COMPOSITION TILE
RA	RETURN AIR	VENT	VENTILATION
RAD	RADIUS	VERT	VERTICAL
RB	RESILIENT BASE	VEST	VESTIBULE
RCP	REFLECTED CEILING PLAN	VIF	VERIFY IN FIELD
ROF	ROOF DRAIN	VR	VAPOR RETARDER
REBAR	REINFORCING BAR	VTR	VENT THRU ROOF
REC	RECESSED	VWC	VINYL WALL COVERING
REF	REFERENCE	WC	WATER CLOSET
REFR	REFRIGERATOR	WD	WOOD
REINF	REINFORCING / REINFORCED	WDW	WINDOW
REQD	REQUIRED	W/	WITH
RES	RESILIENT	WH	WATER HEATER
REV	REVISION	W/O	WITHOUT
RH	RIGHT HAND	WP	WATERPROOF
RHR	RIGHT HAND REVERSE	WR	WATER RESISTANT
RM	ROOM	WT	WEIGHT
RO	ROUGH OPENING	WWF	WELDED WIRE FABRIC
RWL	RAINWATER LEADER	WWM	WELDED WIRE MESH
R&S	ROD AND SHELF	YD	YARD
SC	SOLID CORE		
SCHED	SCHEDULE		
SF	SQUARE FEET		
SHT	SHEET		
SIM	SIMILAR		
SPEC	SPECIFICATION		
SQ	SQUARE		
SS	STAINLESS STEEL		
ST	STONE		
STC	SOUND TRANSMISSION CLASS		
STD	STANDARD		
STL	STEEL		
STOR	STORAGE		
STRUCT	STRUCTURAL		
SUSP	SUSPENDED		
SYM	SYMMETRICAL		
TAS	TEXAS ACCESSIBILITY STANDARDS		
T&B	TOP AND BOTTOM		
T&G	TONGUE AND GROOVE		
TBD	TO BE DETERMINED		
TEL	TELEPHONE		
TER	TERRAZZO		

## Sheet List Table

Sheet Number	Sheet Title
General	
G000	Cover Sheet
G101	Texas Accessibility Standard
G102	Texas Accessibility Standard
G200	Code Analysis Sheet
G201	Life Safety Plan
G202	UL Standard Sheet
G203	Partition Types
G300	Areas of Religious Exemption
EC100	Energy Code Compliance
Civil	
C1.00	Topographic Survey
C1.01	Erosion Control Plan
C2.00	Dimensional Site Master Plan
C2.01	Dimensional Site Plan Phase One
C3.00	Utility Plan
C4.00	Storm Sewer Master Plan
C4.01	Storm Sewer Phase One Plan
C5.00	Drainage Plan
C5.01	Drainage Calculations
C6.00	Grading Master Plan
C6.01	Grading Phase One Plan
C7.00	Joint Master Plan
C7.01	Joint Phase One Plan
C8.00	Details Erosion Control
C8.01	Details Utility
C8.02	Details Utility
C8.03	Details Paving & Sidewalk
C8.04	Details Pond
C8.05	Details Parking Site
C9.00	Specifications
C9.01	Specifications
Architectural	
A100	Site Plan
A100A	Site Details
A101	First Floor Plan
A102	Second Floor Plan
A103	Enlarged Plans
A201	Door and Window Schedule, Door Types
A202	Door and Window Details
A301	First Floor RCP

## Sheet List Table

Sheet Number	Sheet Title
A302	Second Floor RCP
A400	Sketchup Exterior Elevations
A401	Exterior Elevations
A402	Exterior Elevations
A501	Building Sections
A502	Building Sections
A503	Wall Sections
A504	Wall Sections
A505	Wall Sections
A506	Wall Sections
A507	Wall Sections
A600	Interior Elevations
A601	Interior Elevation
A602	Interior Elevation
A700	Enlarged Stair Plans and Sections
A701	Millwork Sections
A800	Column Details
A801	Column Details
A802	Column Details
A900	Roof Plan
SN101	Signage Plan
F101	Finish Schedule
Structural	
S1	General Notes and Typical Details
S2	Grade Beam Schedule
S3	Foundation Plan
S3.1	Saw Cut Plan
S4	Foundation Details
S5	Second Floor & Ceiling Schematic with Stage Framing Plans
S6	Low Roof & Steeple Grid Schematic Roof Framing Plan
S7	Mid, High & Upper Grid Schematic Roof Framing Plan
Mechanical Electrical and Plumbing	
MEP.1	MEP Site Plan
MEP.2	MEP Site Plan Notes & Details
Mechanical	
M.1	Mechanical First Floor Plan
M.2	Mechanical Second Floor Plan
M.3	Mechanical Notes, Symbols & Outdoor Air Calculations
M.4	Mechanical Schedules & Schematic Diagrams
M.5	Mechanical Schedules
M.6	Mechanical Schedules

## Sheet List Table

Sheet Number	Sheet Title
M.7	Piping and Wiring Schematics
M.8	Wiring Schematics
M.9	Wiring Schematics
M.10	Piping and Wiring Schematics
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Electrical	
E.1	Lighting-First Floor Plan
E.2	Lighting-Second Floor Plan
E.3	Power and Communication-First Floor Plan
E.4	Power and Communication-Second Floor Plan
E.5	Electrical First Floor Plan-Mechanical Equipment
E.6	Electrical Second Floor Plan-Mechanical Equipment
E.7	Electrical Notes, Symbols & Light Fixture Schedule
E.8	Elect. Riiser One-Line Diagram, Details, Notes & Load Analysis
E.9	Panel Schedules
E.10	Panel Schedules
Plumbing	
P.1	Plumbing Waste & Vent-First Floor Plan
P.2	Plumbing Waste & Vent-Second Floor Plan
P.3	Plumbing Cold & Hot Water-First Floor Plan
P.4	Plumbing Cold & Hot Water-Second Floor Plan
P.5	Plumbing Notes, Symbols, Details & Water-Sanitary Piping Calc.
P.6	Plumbing Schedules

TABS2021022120

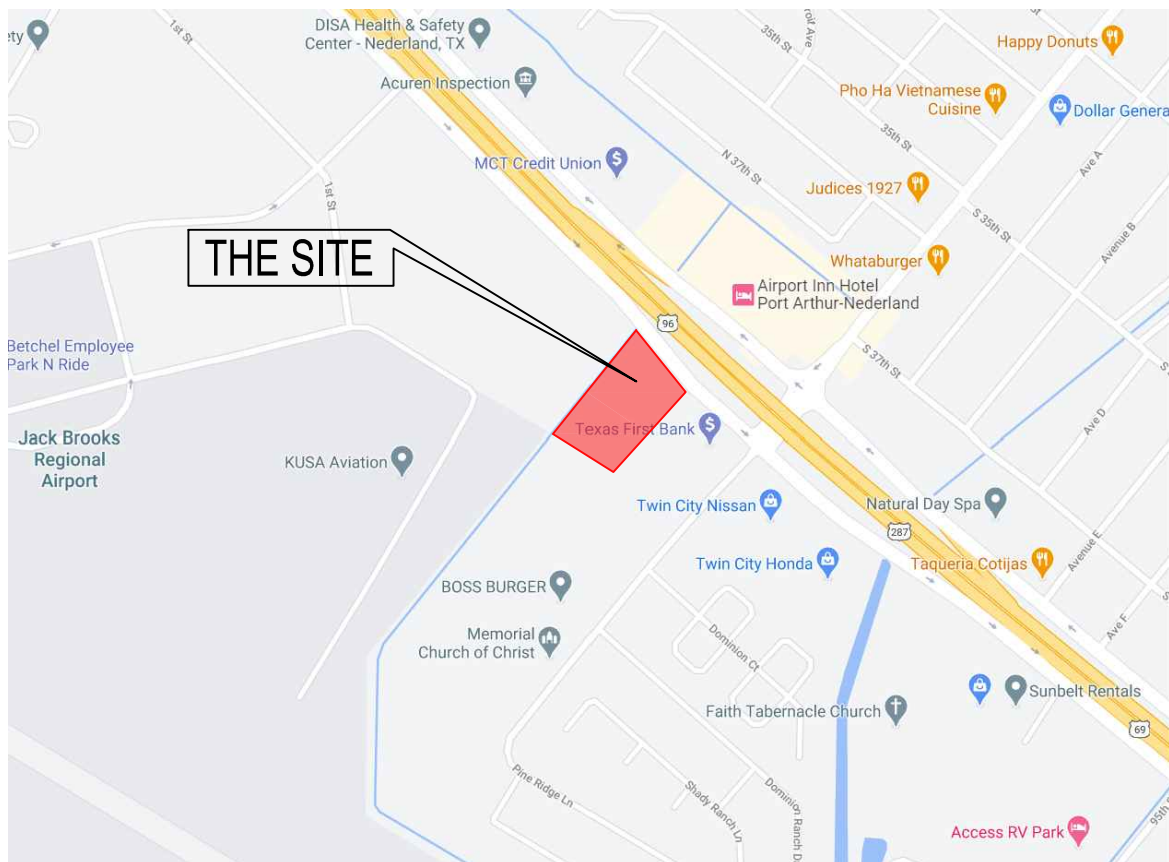
## MATERIAL LEGEND

	CONCRETE		BLOCKING OR SHIM (CONTINUOUS)
	BRICK MASONRY		BLOCKING OR SHIM (INTERMITTENT)
	CONCRETE MASONRY UNITS		RIGID INSULATION
	PLYWOOD		BATT INSULATION
	GYPSUM BOARD		

## SYMBOL KEY

	DOOR NUMBER		PARTITION TYPES
	TOILET ACCESSORY		EXTERIOR ELEVATION TAG
	INTERIOR ELEVATION MARK		ROOM NAME & NUMBER
	ENLARGED DETAIL		WINDOW TYPE
	KEYNOTE		NORTH ARROW

## LOCATION MAP



SET NUMBER:

ISSUED FOR SCHEMATIC DESIGN DATE: 10/6/2020 ☒

DESIGN DEVELOPMENT DATE: 3/5/2021 ☒

BIDS & CONSTRUCTION DATE: 8/2/2021 ☒

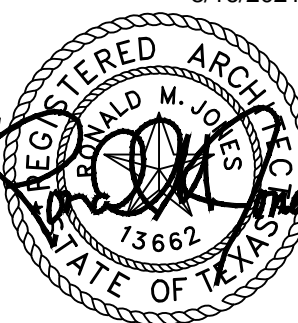
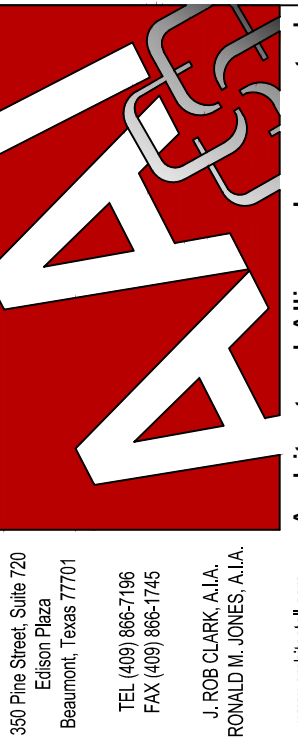
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REVISION: DATE: \_\_\_\_\_

REVISION: DATE: \_\_\_\_\_

DRAWINGS SHEET TITLE  
COVER SHEET

SHEET NUMBER  
G000  
20105  
PROJECT NUMBER



UNITED CHRISTIAN ACADEMY

First Pentecostal Church

Port Arthur, TX 77642

10619 Highway 69



### 302 FLOOR OR GROUND SURFACES

302.1 GENERAL. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.

#### EXCEPTIONS:

1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
2. Areas of sport activity shall not be required to 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.

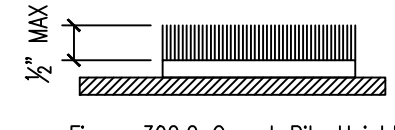


Figure 302.2 Carpet Pile Height

302.3 OPENINGS. Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2 inch (13 mm) 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.

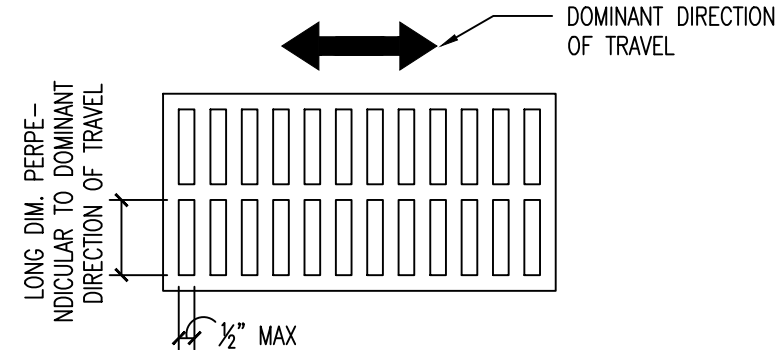


Figure 302.3 Elongated Openings in Floor or Ground Surfaces

### 303 CHANGE IN LEVELS

303.1 GENERAL. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.

#### EXCEPTIONS:

1. Animal containment areas shall not be required to comply with 303.
2. Areas of sport activity shall not be required to comply with 303.

303.2 VERTICAL. Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.

303.3 BEVELED. Changes in level between 1/4 inch (6.4 mm) high minimum and 1/2 inch (13 mm) 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 (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

304.3.2 T-SHAPED SPACE. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) 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.

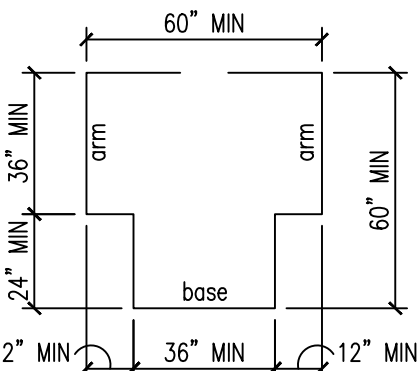


Figure 304.3.2 T-Shaped Turning Space

304.4 DOOR SWING. Doors shall be permitted to swing into turning spaces.

### 305 CLEAR FLOOR SPACE OR GROUND FLOOR 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 (760 mm) minimum by 48 inches (1220 mm) minimum

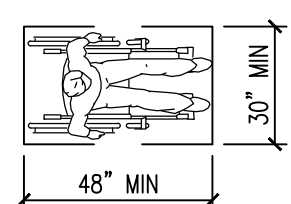


Figure 305.3 Clear Floor or Ground Space

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.

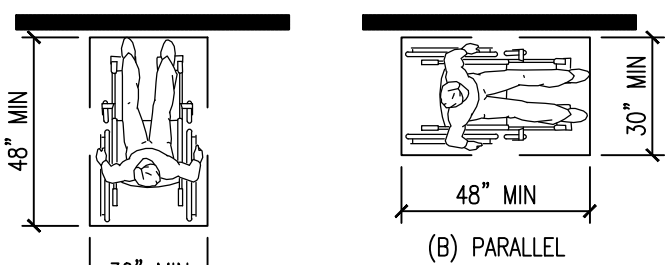


Figure 305.5 Position of Clear Floor or Ground Space

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 (915 mm) wide minimum where the depth exceeds 24 inches (610 mm).

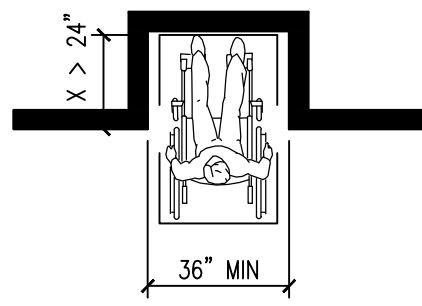


Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

305.7.2 PARALLEL APPROACH. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

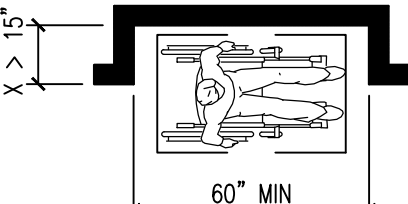
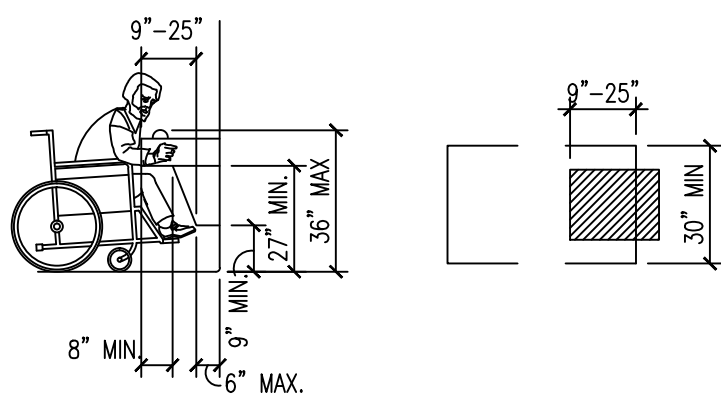


Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

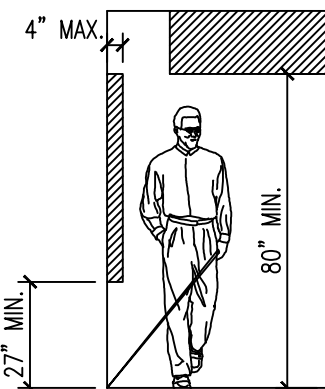
### 306 KNEE AND TOE CLEARANCE



### 307 PORTRUDING OBJECTS

307.2 PROTRUSION LIMITS. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.



307.3 POST-MOUNTED OBJECTS. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) 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 (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) 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.

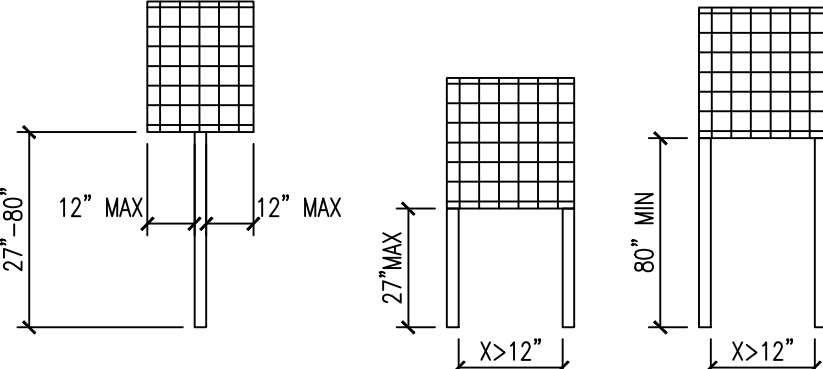


Figure 307.3 Post-Mounted Protruding Objects

307.4 VERTICAL CLEARANCE. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.

EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

### 308 REACH RANGE

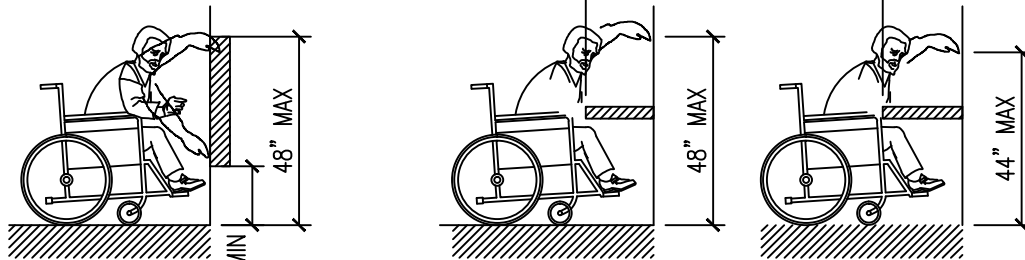


Figure 308.2.1 Unobstructed Forward Reach

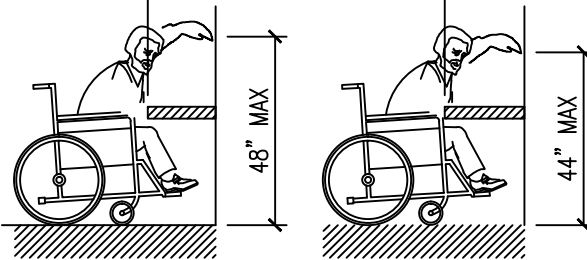


Figure 308.2.2 Obstructed High Forward Reach

### 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 (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) 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 (255 mm) maximum.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

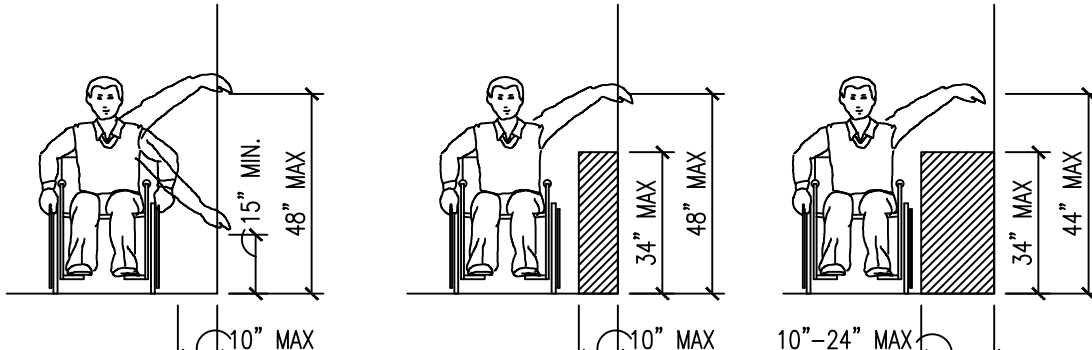


Figure 308.3.1 Unobstructed Side Reach

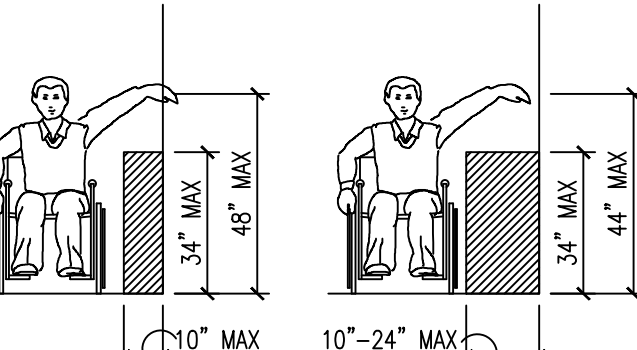


Figure 308.3.2 Obstructed High Side Reach

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 (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

#### EXCEPTIONS:

1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.

2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

### 309 OPERABLE PARTS

309.4 OPERATION. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.

EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.

### 402 ACCESSIBLE ROUTES

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.

### 403 WALKING SURFACE

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.

403.5 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 (915 mm) minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

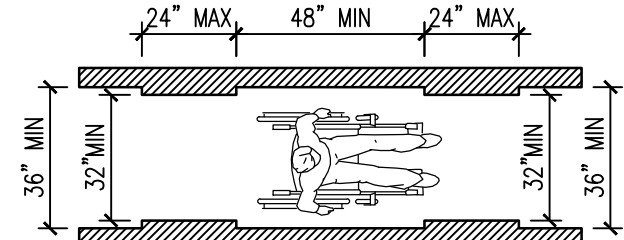


Figure 403.5.1 Clear Width of an Accessible Route

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 (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

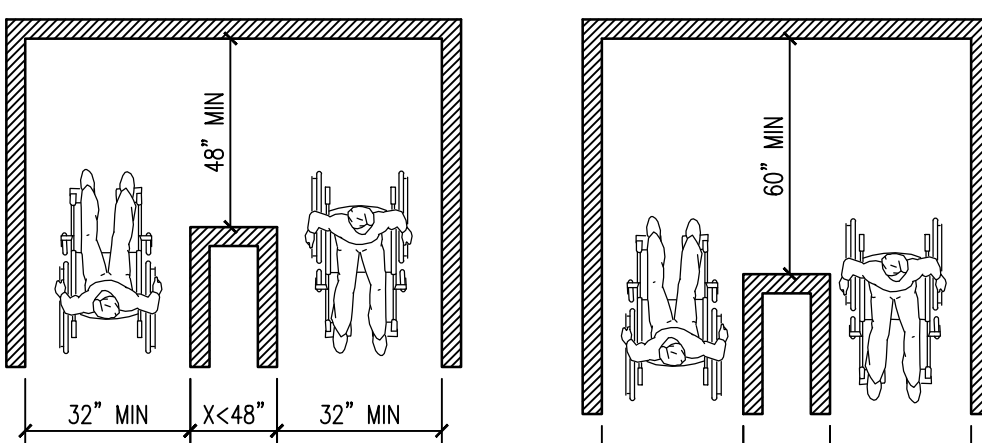


Figure 403.5.2 Clear Width at Turn

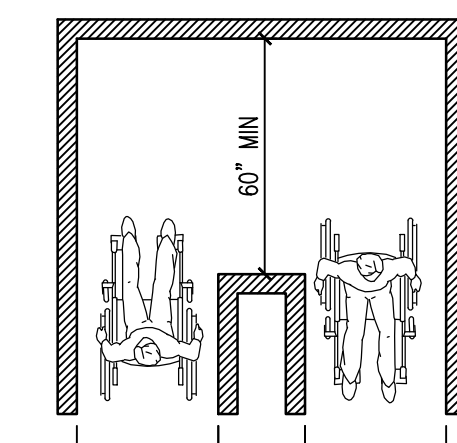


Figure 403.5.2 Clear Width at Turn (EXCEPTION)

403.5.3 PASSING SPACES. An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1525 mm) minimum by 60 inches (1525 mm) 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 (1220 mm) minimum beyond the intersection.

### 404 DOORS, DOORWAYS, AND GATES

404.2.3 CLEAR WIDTH. Door openings shall provide a clear width of 32 inches (815 mm) 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 (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening with lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening with lower than 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

#### EXCEPTIONS:

1. In alterations, a projection of 5/8 inch (16 mm) 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 (1980 mm) minimum above the finish floor or ground.

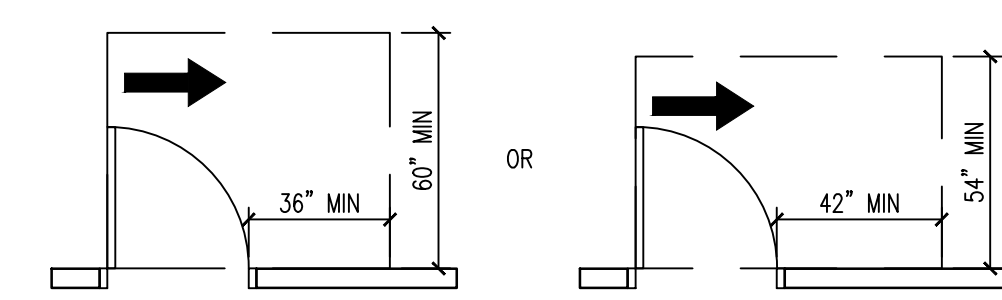
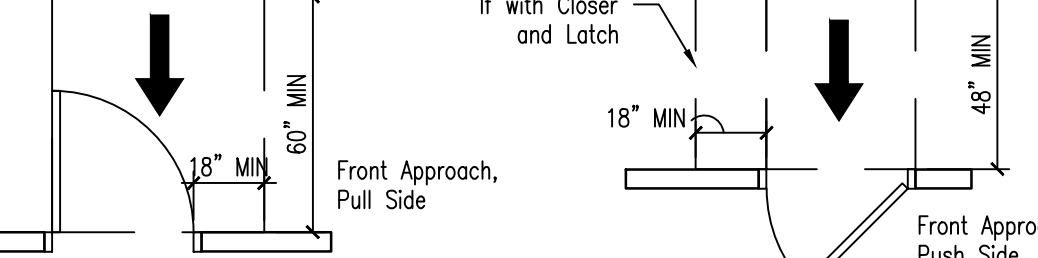


Figure 404.2.6 Doors in Series and Gates in Series

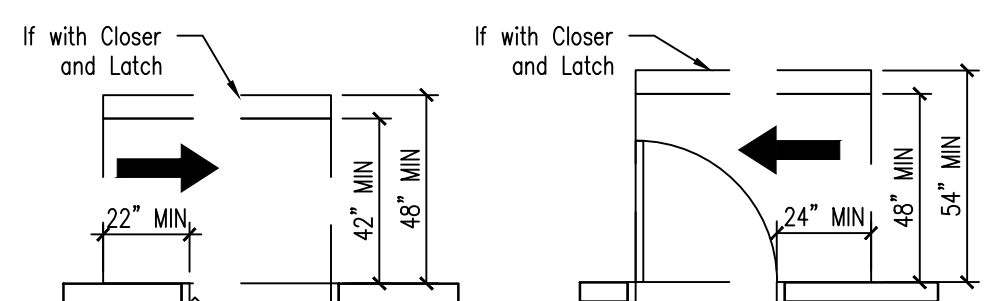
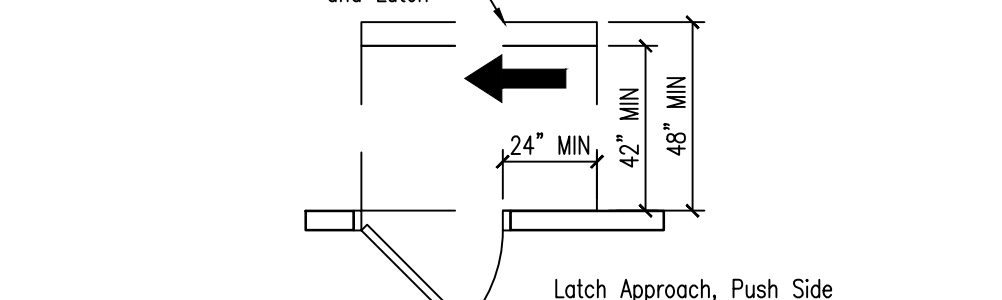


Figure 404.2.10 Door and Gate Surfaces

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.

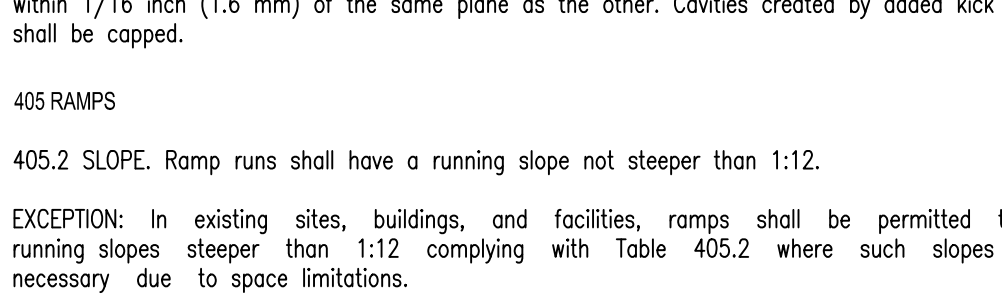
404.2.10 DOOR AND GATE SURFACES. Swinging door and gate surfaces within 10 inches (255 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.



405 RAMPS

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.



1:8 SLOPE = 3" Maximum Rise  
1:10 SLOPE = 6" Maximum Rise

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

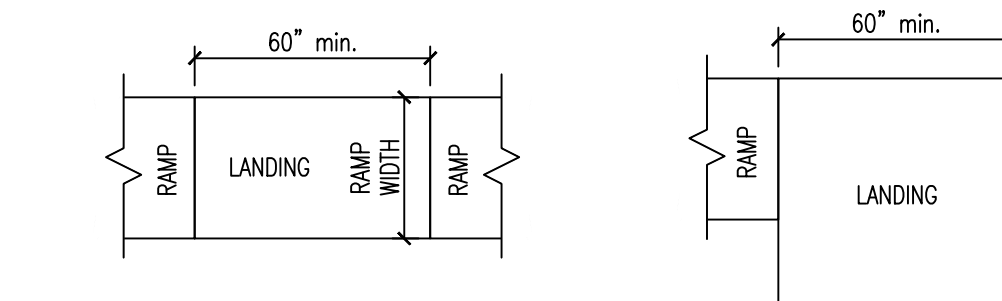


Figure 405.3 Cross Slope

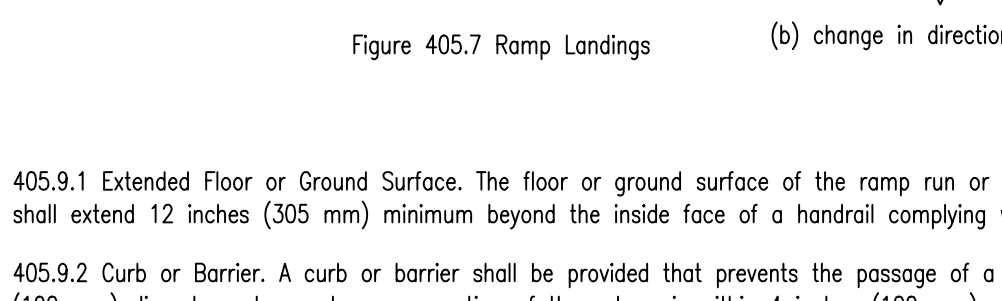


Figure 405.7 Ramp Landings

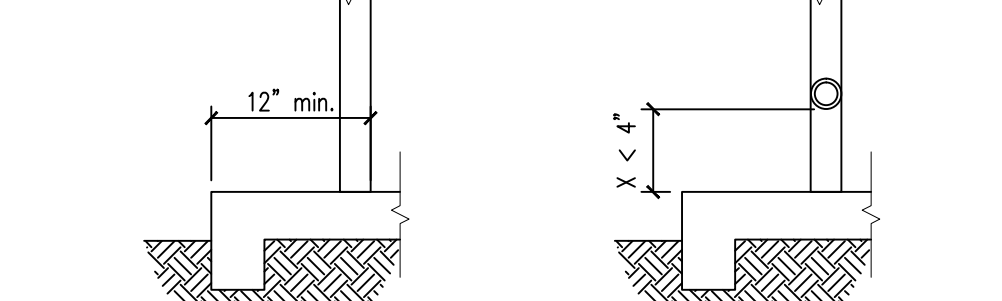


Figure 405.9.1 Extended Floor or Ground Surface Edge Protection

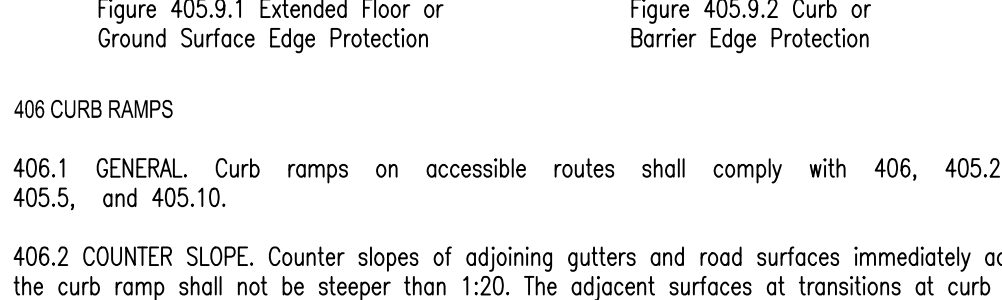


Figure 405.9.2 Curb or Barrier Edge Protection

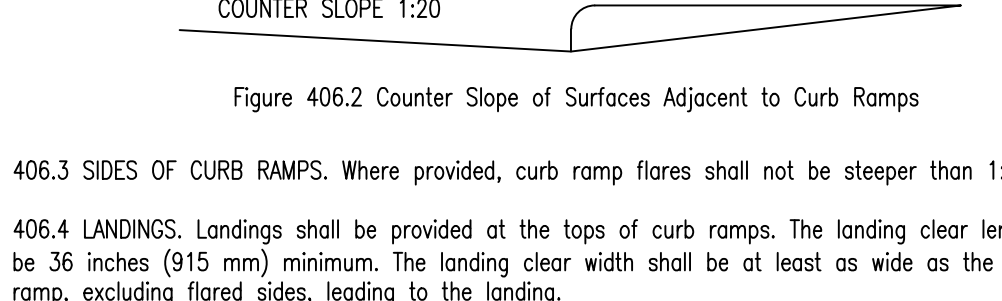


Figure 406.2 Counter Slope of Surfaces Adjacent to Curb Ramps

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 (915 mm) 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.

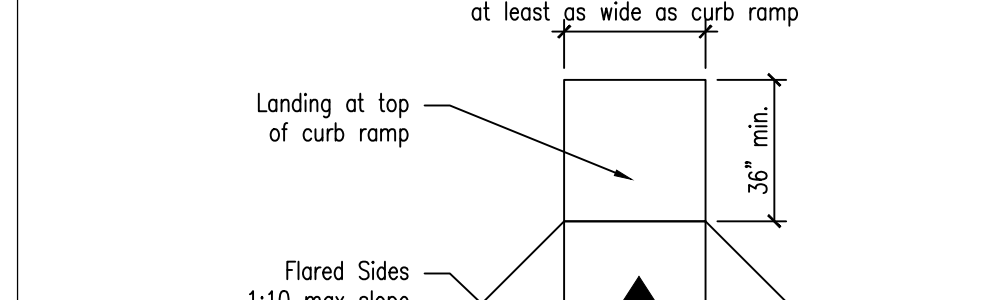


Figure 406.6 Diagonal Curb Ramps

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 (1220 mm) minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1220 mm) minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the curb ramp and within the marked crossing.

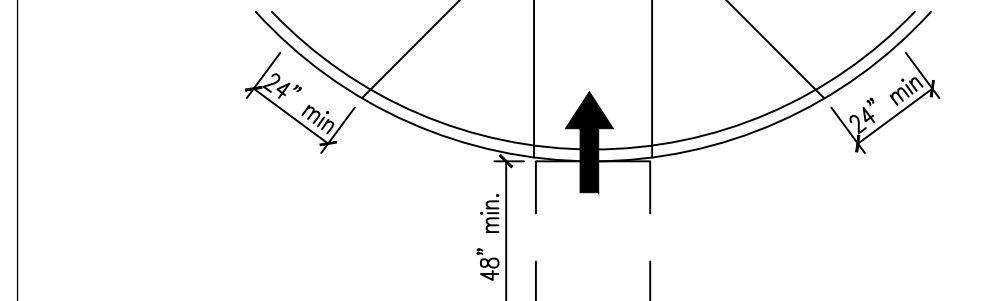
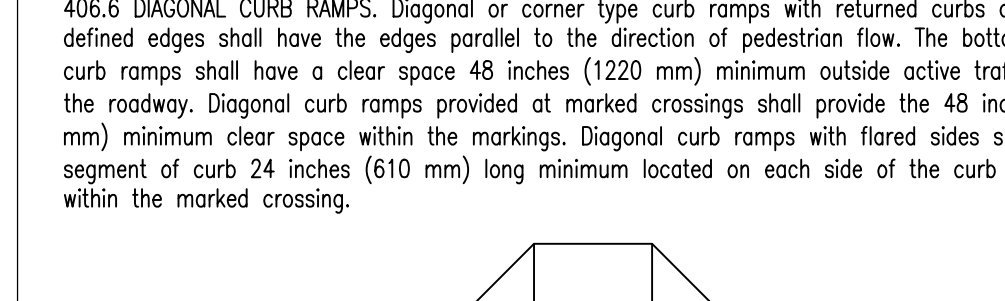


Figure 406.6 Diagonal Curb Ramps

406.6 ISLANDS. Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. Each curb ramp shall have a level area 48 inches (1220 mm) long minimum by 36 inches (915 mm) wide minimum at the top of the curb ramp in the part of the island intersected by the crossings. Each 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum area shall be oriented so that the 48 inch (1220 mm) minimum length is in the direction of the running slope of the curb ramp it serves. The 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum areas and the accessible route shall be permitted to overlap.

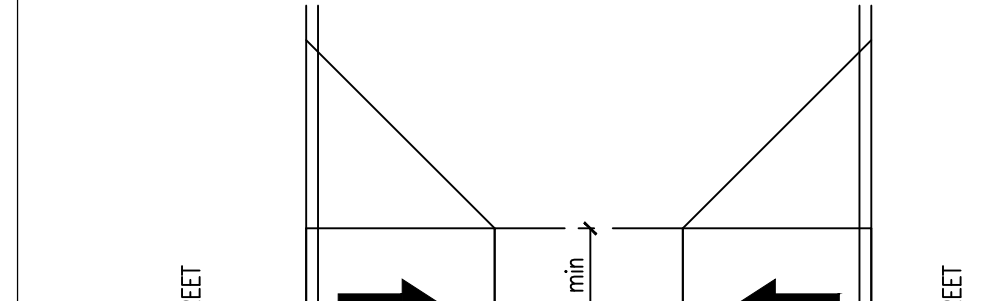


Figure 406.6 Islands

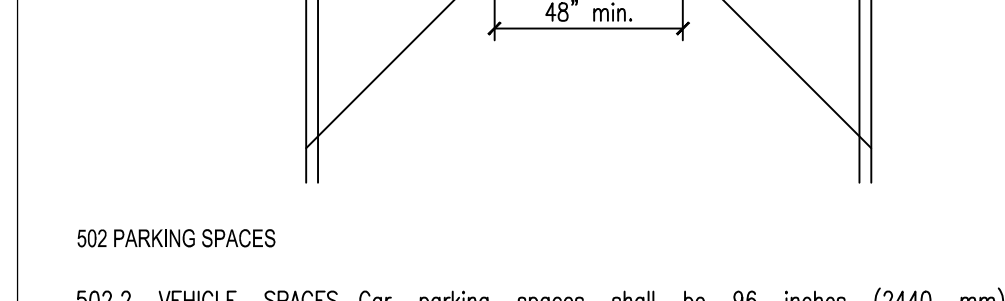


Figure 502.2 Vehicle Parking Spaces

502.2 VEHICLE SPACES. Car parking spaces shall be 96 inches (2440 mm) wide minimum and van parking spaces shall be 132 inches (3350 mm) 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 (2440 mm) wide minimum where the access aisle is 96 inches (2440 mm) wide minimum.

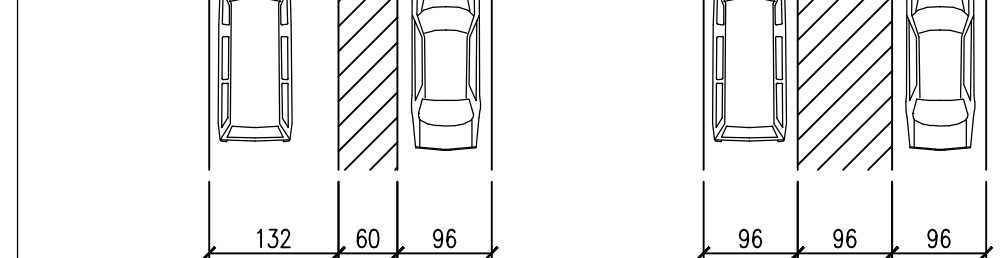


Figure 502.2 Vehicle Parking Spaces

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.

502.5 VERTICAL CLEARANCE. Parking spaces for vans and access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2490 mm) 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 (1525 mm) minimum above the finish floor or ground surface measured to the bottom of the sign.

503 PASSENGER LOADING ZONES

503.2 VEHICLE PULL-UP SPACE. Passenger loading zones shall provide a vehicular pull-up space 96 inches (2440 mm) wide minimum and 20 feet (6100 mm) long minimum.

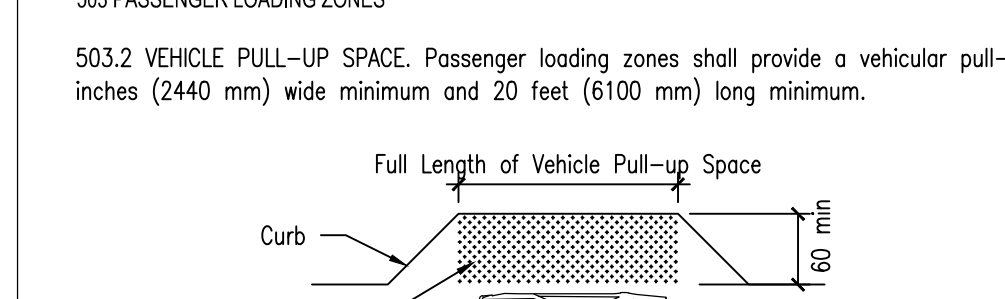
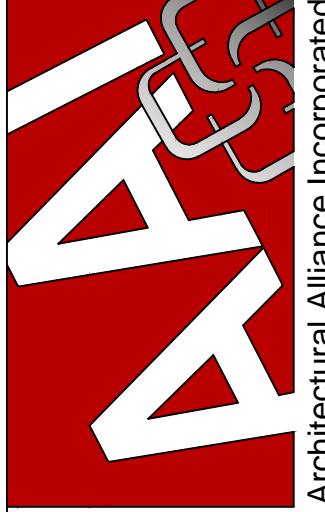


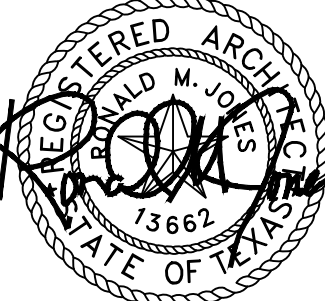
Figure 503.2 Vehicle Pull-Up Space



3031 Peachtree Dunwoody, Suite 720  
Atlanta, Georgia 30328  
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8/16/2021



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UNITED CHRISTIAN ACADEMY  
First Pentecostal Church  
10619 Highway 69  
Port Arthur, TX 77642

ISSUED FOR SCHEMATIC DESIGN DATE: 10/6/2020  
DESIGN DEVELOPMENT DATE: 3/5/2021  
BIDS & CONSTRUCTION DATE: 8/2/2021  
REVISION: DATE:  
REVISION: DATE:  
REVISION: DATE:

DRAWINGS SHEET TITLE  
TEXAS ACCESSIBILITY STANDARD  
SHEET NUMBER  
G101  
20105  
PROJECT NUMBER



## 504 STAIRWAYS

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 (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum.

504.3 OPEN RISERS. Open risers are not permitted.

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 (13 mm) 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 (38 mm) maximum over the tread below.

## 505 HANDRAILS

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 (865 mm) minimum and 38 inches (965 mm) 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 (38 mm) minimum.

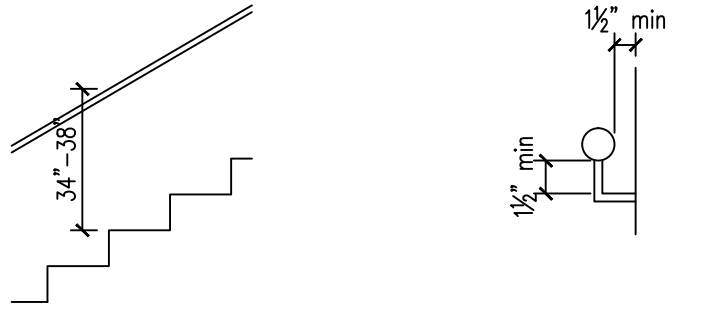


Figure 505.4 Handrail Height Handrail Clearances

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 1/2 inches (38 mm) 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 (3.2 mm) for each 1/2 inch (13 mm) of additional handrail perimeter dimension that exceeds 4 inches (100 mm).

505.7.1 CIRCULAR CROSS SECTION. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) 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 (100 mm) minimum and 6 1/4 inches (160 mm) maximum, and a cross-section dimension of 2 1/4 inches (57 mm) maximum.



4 - 6 1/4" perimeter on both

505.10.1 TOP AND BOTTOM EXTENSION AT RAMPS. Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) 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.

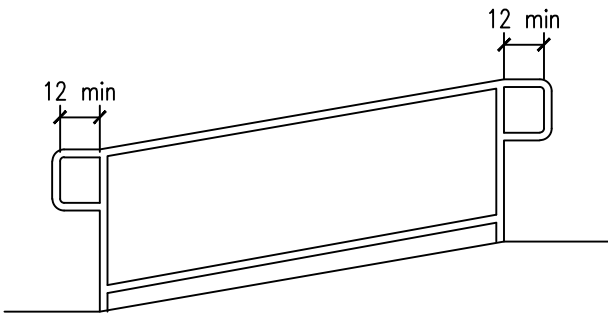
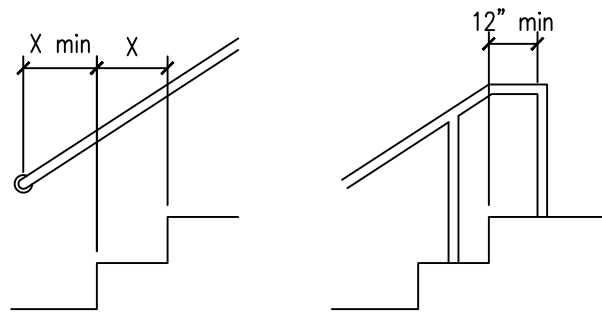


Figure 505.10.1 Top and Bottom Handrail Extension at Ramps

505.10.2 TOP EXTENSION 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.



Top and Bottom Handrail Extension at Stairs

## 602 DRINKING FOUNTAINS

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.

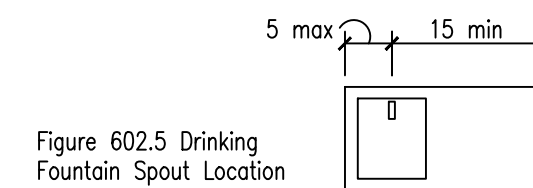


Figure 602.5 Drinking Fountain Spout Location

602.6 WATER FLOW. The spout shall provide a flow of water 4 inches (100 mm) high minimum and shall be located 5 inches (125 mm) 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 (75 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (75 mm) and 5 inches (125 mm) 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 (965 mm) minimum and 43 inches (1090 mm) maximum above the finish floor or ground.

## 603 TOILET AND BATHING ROOMS

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.

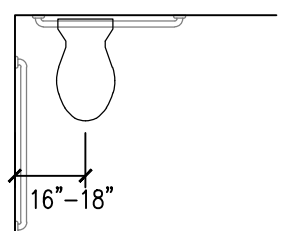
2. Where the toilet room or bathing room is for individual use and a clear floor space complying with 305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture.

603.3 MIRRORS. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) 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 (890 mm) maximum above the finish floor or ground.

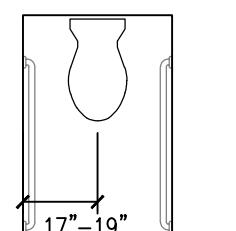
603.4 COAT HOOKS AND SHELVES. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

## 604 WATER CLOSETS AND TOILET COMPARTMENTS

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 (405 mm) minimum to 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the case of an accessible toilet compartment specified in 604.8.2.2. Water closets shall be arranged for a left-hand or right-hand approach.



Wheelchair Accessible Water Closet



Ambulatory Accessible Water Closet

604.3.1 Size. Clearance around a water closet shall be 60 inches (1525 mm) minimum measured perpendicular from the side wall and 56 inches (1420 mm) minimum measured perpendicular from the rear wall.

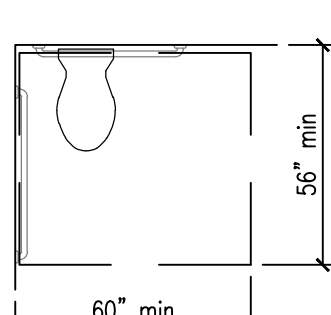


Figure 604.3.1 Size of Clearance at Water Closets

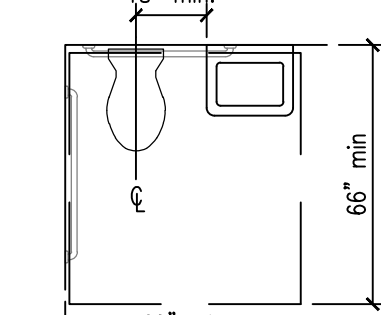
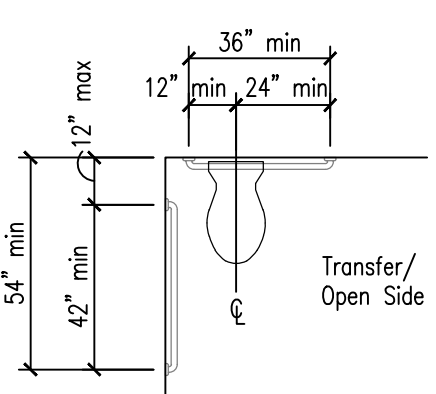
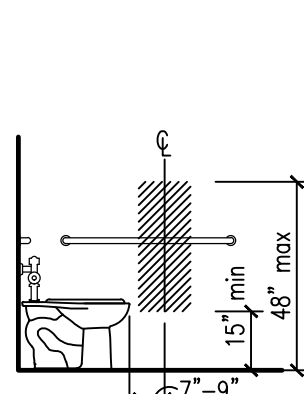


Figure 604.3.2 (Exception) Overlap of Water Closet Clearance in Residential Dwelling Units



Grab Bars at Water Closets



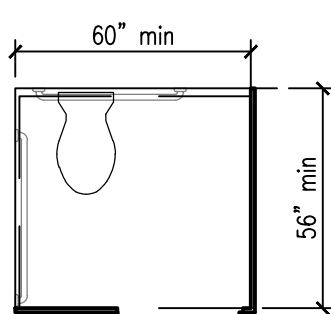
Dispenser Outlet Location

### EXCEPTIONS:

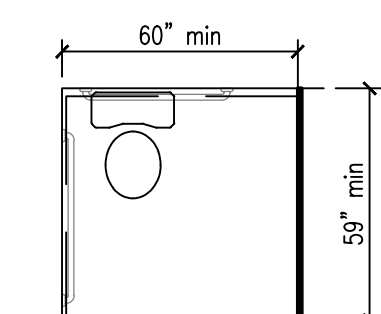
1. The rear grab bar shall be permitted to be 24 inches (610 mm) long minimum, centered on the water closet, where wall space does not permit a length of 36 inches (915 mm) minimum due to the location of a recessed fixture adjacent to the water closet.

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.

604.7 DISPENSERS. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15 inches (380 mm) minimum and 48 inches (1220 mm) 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.



Adult Wall Hung Water Closet



Adult Floor Mounted Water Closet/Children Water Closet

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 (1065 mm) 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 (100 mm) 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 (100 mm) 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.

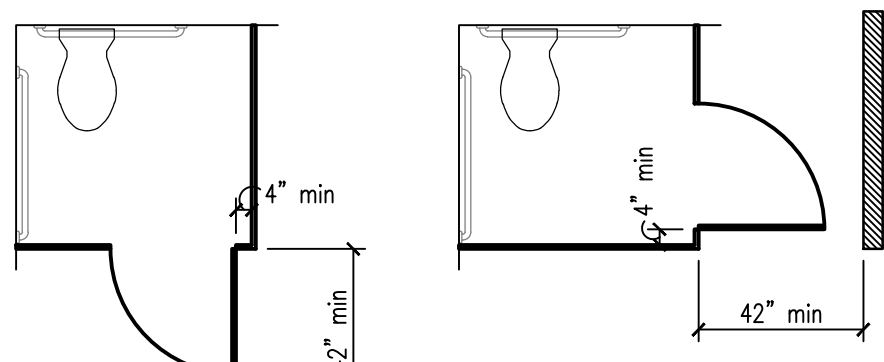
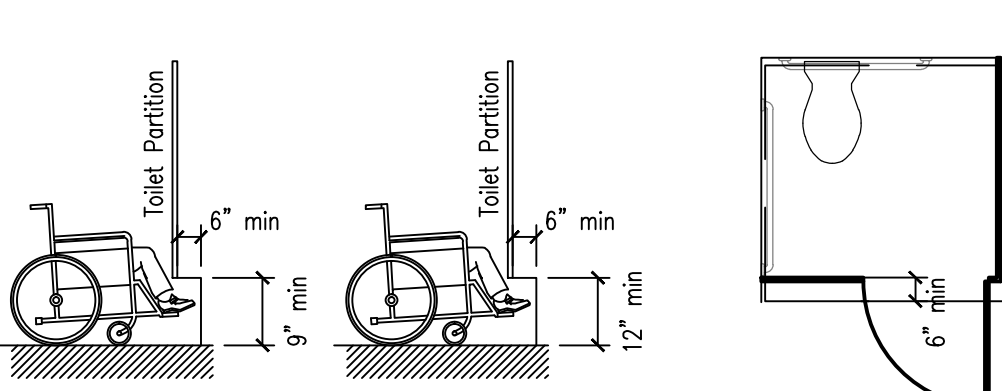


Figure 604.8.1.2 Wheelchair Accessible Toilet Compartment Doors

604.8.1.4 TOE CLEARANCE. The front partition and at least one side partition shall provide a toe clearance of 9 inches (230 mm) minimum above the finish floor and 6 inches (150 mm) 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 (305 mm) minimum above the finish floor.

EXCEPTION: Toe clearance at the front partition is not required in a compartment greater than 62 inches (1575 mm) deep with a wall-hung water closet or 65 inches (1650 mm) deep with a floor-mounted water closet. Toe clearance at the side partition is not required in a compartment greater than 66 inches (1675 mm) wide. Toe clearance at the front partition is not required in a compartment for children's use that is greater than 65 inches (1650 mm) deep.



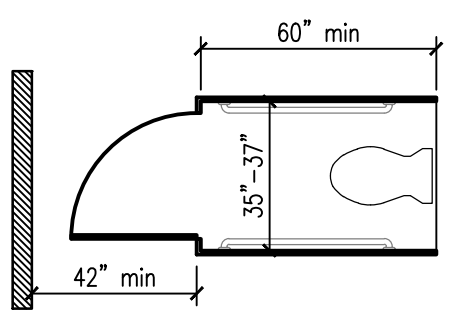
Elevation Adult

Elevation Children

Plan

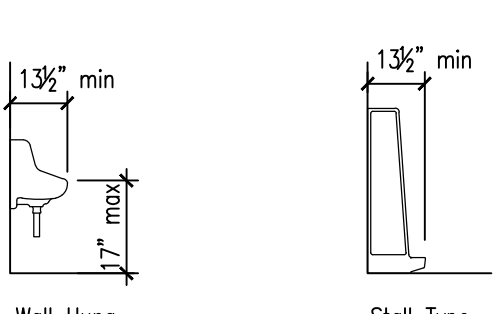
604.8.2.1 SIZE. Ambulatory accessible compartments shall have a depth of 60 inches (1525 mm) minimum and a width of 35 inches (890 mm) minimum and 37 inches (940 mm) maximum.

604.8.2.2 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 (1065 mm) minimum. 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.



Ambulatory Compartment

605.2 HEIGHT AND DEPTH. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches (430 mm) maximum above the finish floor or ground. Urinals shall be 13 1/2 inches (345 mm) deep minimum measured from the outer face of the urinal rim to the back of the fixture.



Wall Hung

Stall Type

Figure 605.2 Height and Depth of Urinals

## 606 LAVATORIES AND SINKS

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:

- the cabinetry can be removed without removal or replacement of the fixture;
- the finish floor extends under the cabinetry; and
- the walls behind and surrounding the cabinetry are finished.

4. A knee clearance of 24 inches (610 mm) minimum above the finish floor or ground shall be permitted at lavatories and sinks used primarily by children 6 through 12 years where the rim or counter surface is 31 inches (785 mm) maximum above the finish floor or ground.

5. A parallel approach complying with 305 shall be permitted to lavatories and sinks used primarily by children 5 years and younger.

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 (865 mm) maximum above the finish floor or ground.

606.4 FAUCETS. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.

## 607 BATHTUBS

607.2 CLEARANCE. Clearance in front of bathtubs shall extend the length of the bathtub and shall be 30 inches (760 mm) wide minimum. A lavatory complying with 606 shall be permitted at the control end of the clearance. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches (305 mm) minimum beyond the wall at the head end of the bathtub.

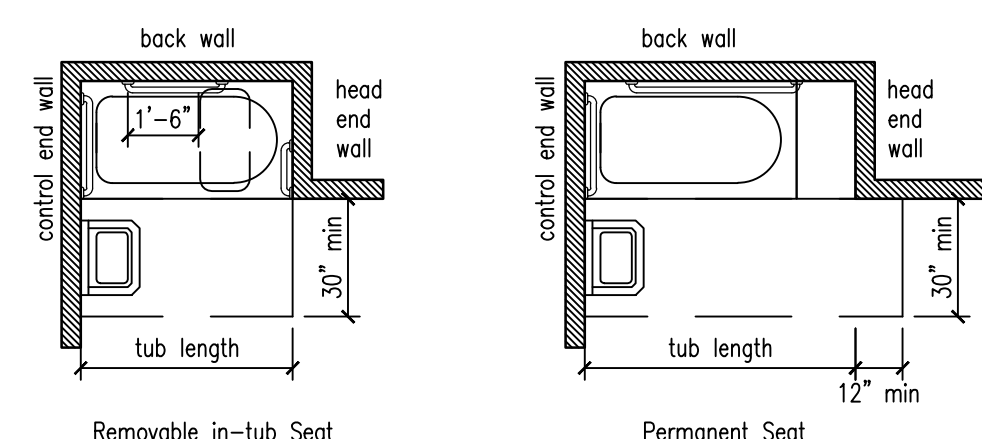
607.3 SEAT. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with 610.

607.4 GRAB BARS. Grab bars for bathtubs shall comply with 609 and shall be provided in accordance with 607.4.1 or 607.4.2.

607.4.1 BATHTUBS WITH PERMANENT SEATS. For bathtubs with permanent seats, grab bars shall be provided in accordance with 607.4.1.

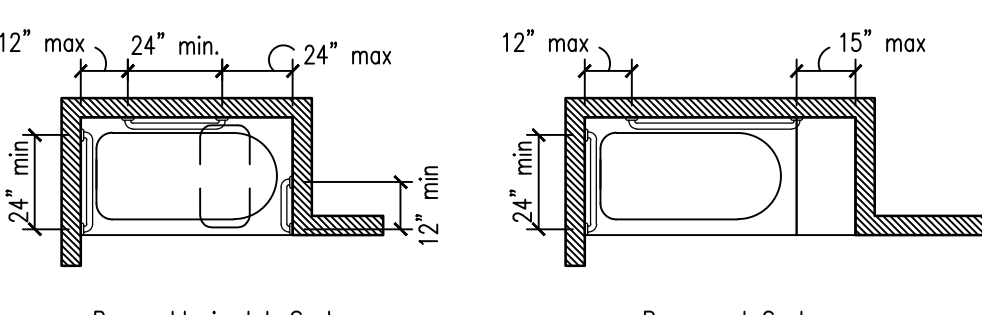
607.4.1.1 BACK WALL. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and the other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be installed 15 inches (380 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.1.2 CONTROL END WALL. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.



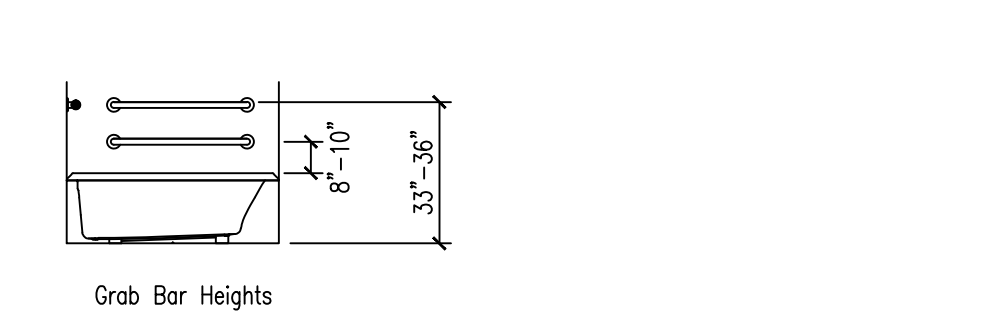
Removable in-tub Seat

Permanent Seat



Removable in-tub Seat

Permanent Seat



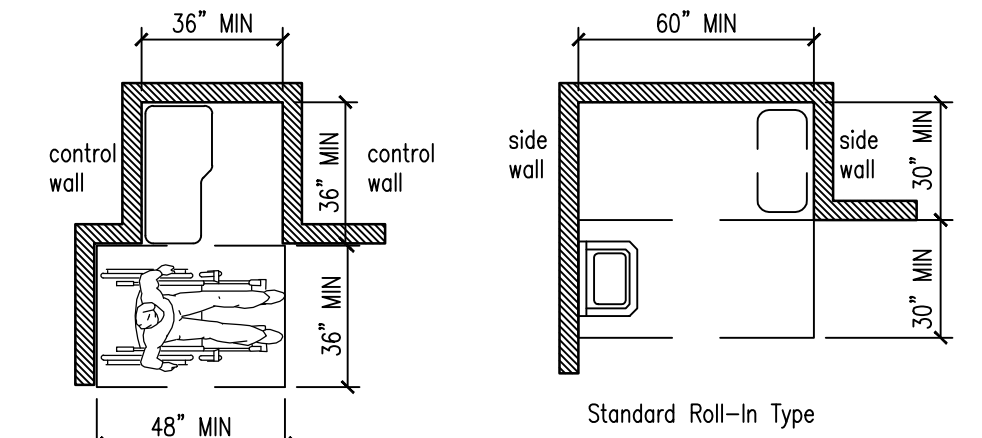
Grab Bar Heights

607.5 CONTROLS. Controls, other than drain stoppers, shall be located on an end wall. Controls shall be between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with 309.4.

607.6 SHOWER SPRAY UNIT AND WATER. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Bathtub shower spray units shall deliver water that is 120°F (49°C) maximum.

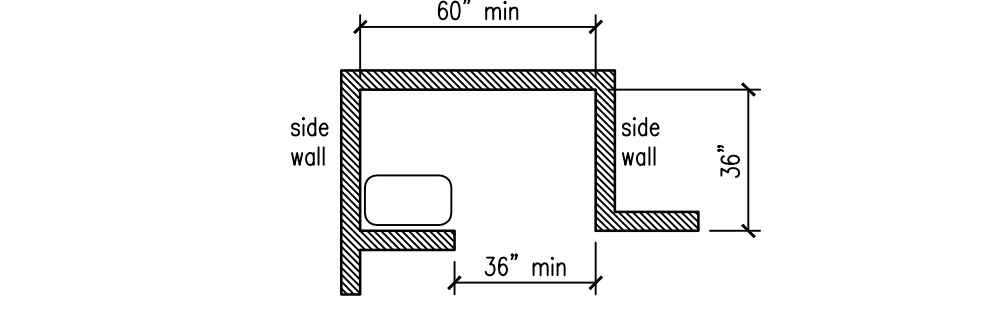
## 608 SHOWER COMPARTMENTS

608.2.1 TRANSFER TYPE SHOWER COMPARTMENTS. Transfer type shower compartments shall be 36 inches (915 mm) by 36 inches (915 mm) clear inside dimensions measured at the center points of opposing sides and shall have a 36 inch (915 mm) wide minimum entry on the face of the shower compartment. Clearance of 36 inches (915 mm) wide minimum by 48 inches (1220 mm) long minimum measured from the control wall shall be provided.



Standard Transfer Type

Standard Roll-In Type



Alternate Roll-In Type

## 609 GRAB BARS

609.2.1 CIRCULAR CROSS SECTION. Grab bars with circular cross sections shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

609.2.2 NON-CIRCULAR CROSS SECTION. Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (100 mm) minimum and 4.8 inches (120 mm) maximum.

609.3 SPACING. The space between the wall and the grab bar shall be 1 1/2 inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1 1/2 inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.

609.4 POSITION OF GRAB BARS. Grab bars shall be installed in a horizontal position, 33 inches (840 mm) minimum and 36 inches (915 mm) 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 (455 mm) minimum and 27 inches (685 mm) 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 (1112 N) is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

## 610 SEATS

610.2 BATHTUB SEATS. The top of bathtub seats shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. The depth of a removable in-tub seat shall be 15 inches (380 mm) minimum and 16 inches (405 mm) maximum. The seat shall be capable of secure placement. Permanent seats at the head end of the bathtub shall be 15 inches (380 mm) deep minimum and shall extend from the back wall to or beyond the outer edge of the bathtub.

610.3 SHOWER COMPARTMENT SEATS. Where a seat is provided in a standard roll-in shower compartment, it shall be a folding type, shall be installed on the side wall adjacent to the controls, and shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. Where a seat is provided in an alternate roll-in type shower compartment, it shall be a folding type, shall be installed on the front wall opposite the back wall, and shall extend from the adjacent side wall to a point within 3 inches (75 mm) of the compartment entry. In transfer-type showers, the seat shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. The top of the seat shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. Seats shall comply with 610.3.1 or 610.3.2.

610.3.1 RECTANGULAR SEATS. The rear edge of a rectangular seat shall be 2 1/2 inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The side edge of the seat shall be 1 1/2 inches (38 mm) maximum from the adjacent wall.

610.3.2 L-SHAPED SEATS. The rear edge of an L-shaped seat shall be 2 1/2 inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The rear edge of the L-shaped seat shall be 1 1/2 inches (38 mm) maximum from the wall and the front edge shall be 14 inches (355 mm) minimum and 15 inches (380 mm) maximum from the wall. The end of the L-shaped seat shall be 22 inches (560 mm) minimum and 23 inches (585 mm) maximum from the main seat wall.

## 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) (incorporated by reference, see "Referenced Standards" in Chapter 1), 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 (0.8 mm) 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.



Code Analysis

Applicable Codes:

- 2015 IBC
- 2015 International Energy Conservation Code
- 2015 International Plumbing Code
- 2015 International Mechanical Code
- 2015 International Fire Code
- 2014 National Electric Code

Area Tabulation:

First Floor:	
A/C Area	23,565 sf
Non A/C	
Porte Cochere	1,600 sf
Side Entrances	336 sf
Second Floor:	
A/C Area	9,047 sf
Total Area:	34,548 sf

Future Addition:

First Floor:	32,000 sf
Second Floor:	22,000 sf
Total Future Building:	88,548 sf

Chapter 3 - Use and Occupancy

Group A3 Assembly

Chapter 5 - General Building and Height and Area

Type IIIA: Sprinklered

Allowable Building Height: 85 ft

Allowable Number of Stories Above Grade Plane: 4

Allowable Area Factor: A-3/ SM/ 42,000 sf

- SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed with Section 903.3.1.1

Area Increase due to frontage (506.3)

$$W=(L1xW1 + L2xW2 + L3xW3 + L4xW4)/F$$

$$L1=142 \quad W1=30$$

$$L2=142 \quad W2=30$$

$$L3=185 \quad W3=30$$

$$L4=142 \quad W4=0 \text{ (Future Addition)}$$

$$W=(142x30 + 185x30 + 185x30 + 142x0) / 512$$

$$W=(4,260 + 5,550 + 5,550 + 0) / 512$$

$$W=15,360 / 512$$

$$W=30$$

Amount of Increase (506.3.3)

$$If=[F/P-0.25]W/30$$

$$F=512$$

$$P=654$$

$$If=[512(654-0.25)/30]$$

$$If=6,7825-0.25$$

$$If=0.53$$

Type IIIA (506.2.3 Allowable Area - Equation 5-2)

$$Aa=[At + (NSxIf)] \times Sa$$

$$Aa=(42,000 + (14,000x0.53)) \times 2$$

$$Aa=(42,000 + 7,420) \times 2$$

$$Aa=49,420 \times 2$$

$$Aa=98,840 \text{ sf Max Allowable Area}$$

Type IIIA

Exterior - Non Combustible, Interior - Any Material

Chapter 6 - Table 601 Fire Resistance Rating Requirements for Building Elements (Hours)

	Type IIIA
Primary Structural Frame (See Section 202)	
Bearing Walls	2
Exterior	
Interior	1
Non Bearing Walls and Partitions	
Exterior	See Table 602
Non Bearing Walls and Partitions	
Interior	0
Floor Construction and Associated Members	1
(see Section 202)	
Roof Construction and Associated Members	1 <sup>bc</sup>
(see Section 202)	
<ul style="list-style-type: none"> <li>b = fire protection of struct. members shall not be required, including protection of roof framing and decking where every part of roof consists. is 20 ft or more above any floor immediately below.</li> <li>c = in all occupancies, heavy timber shall be allowed where a 1-hr. or less fire-resistance rating is required.</li> </ul>	

Section 404 Atriums

**404.1 General.** In other than Group H occupancies, and where permitted by Section 712.1.2, the main areas of Sections 404.1 through 404.10 shall apply to buildings or structures containing vertical openings defined as "Atriums."

**404.2 Use.** The floor of the atrium shall not be used for other than low fire hazard uses and only approved materials and decorations in accordance with the International Fire Code shall be used in the atrium space.

Exception: The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1.

**[F] 404.3 Automatic sprinkler protection.** An approved automatic sprinkler system shall be installed throughout the entire building. Exceptions:

1. That area of a building adjacent to or above the atrium need not be sprinklered provided that portion of the building is separated from the atrium portion by not less than 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.
2. Where the ceiling of the atrium is more than 55 feet (16 7/8 ft) above the floor, sprinkler protection at the ceiling of the atrium is not required.

**[F] 404.4 Fire alarm system.** A fire alarm system shall be provided in accordance with Section 907.2.14.

**404.5 Smoke control.** A smoke control system shall be installed in accordance with Section 909.

Exception: In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for atriums that connect only two stories.

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 711, or both.

713 Shaft Enclosures

**713.1 General.** The provisions of this section shall apply to shafts required to protect openings and penetrations through floor/ceiling and roof/ceiling assemblies. Interior exit stairways and ramps shall be enclosed in accordance with Section 1023. **713.2 Construction.** Shaft enclosures shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies in accordance with Section 711, or both. **713.3 Materials.** The shaft enclosure shall be of materials permitted by the building type of construction.

**713.4 Fire-resistance rating.** Shaft enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more, and not less than 1 hour where connecting less than four stories. The number of stories connected by the shaft enclosure shall include any basements but not any mezzanines. Shaft enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Shaft enclosures shall meet the requirements of Section 703.2.1.

**713.5 Continuity.** Shaft enclosures shall be constructed as fire

barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, and shall have continuity in accordance with Section 707.5 for fire barriers or Section 711.2.2 for horizontal assemblies, as applicable.

**713.6 Exterior walls.** Where exterior walls serve as a part of a required shaft enclosure, such walls shall comply with the requirements of Section 705 for exterior walls and the fire resistance-rated enclosure requirements shall not apply. Exception: Exterior walls required to be fire-resistance rated in accordance with Section 1021.2 for exterior egress balconies, Section 1023.7 for interior exit stairways and ramps and Section 1027.6 for exterior exit stairways and ramps.

**713.7 Openings.** Openings in a shaft enclosure shall be protected in accordance with Section 716 as required for fire barriers. Doors shall be self- or automatic-closing by smoke detection in accordance with Section 716.5.3.3.

**715 Opening Fire Protection Assemblies, Ratings and Markings**

Enclosures for shafts, interior exit stairways and interior exit ramps

TABLE 715 OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS									
TYPE OF ASSEMBLY	MINIMUM FIRE-RESISTANCE RATING (hours)	WALL PENETRATION (ft)	DOOR VISION PANEL SIZE	PRE-APPLIED GLASSING MATERIALS (ft <sup>2</sup> )	GLASSING MATERIALS (ft <sup>2</sup> )	FIRE PROTECTION	FIRE PROTECTION	FIRE PROTECTION	FIRE PROTECTION
Fire walls and fire barriers having a required fire resistance rating greater than 1 hour	4	3	See Note B	See Note B	See Note B	Not Permitted	4	Not Permitted	W-240
Enclosures for shafts having a required fire resistance rating greater than 1 hour	2	1 1/2	100 sq. in.	<100 sq. in. = D-10 (100 sq. in. = D-10)	<100 sq. in. = D-10 (100 sq. in. = D-10)	Not Permitted	2	Not Permitted	W-120
Enclosures for shafts having a required fire resistance rating of 1 hour	2	1 1/2	100 sq. in.	<100 sq. in. = D-10 (100 sq. in. = D-10)	<100 sq. in. = D-10 (100 sq. in. = D-10)	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls	4	3	100 sq. in.	<100 sq. in. = D-10 (100 sq. in. = D-10)	<100 sq. in. = D-10 (100 sq. in. = D-10)	Not Permitted	4	Not Permitted	W-240
Fire barriers having a required fire resistance rating of 1 hour	3	3	100 sq. in.	<100 sq. in. = D-10 (100 sq. in. = D-10)	<100 sq. in. = D-10 (100 sq. in. = D-10)	Not Permitted	3	Not Permitted	W-180
Enclosures for shafts, exit stairways, exit ramps, and exit enclosures	1	1	100 sq. in.	<100 sq. in. = D-10 (100 sq. in. = D-10)	<100 sq. in. = D-10 (100 sq. in. = D-10)	Not Permitted	1	Not Permitted	W-60
Fire partitions	1	1/2	Maximum area allowed	Maximum area allowed	Maximum area allowed	Not Permitted	1/2	Maximum area allowed	D-10
Fire partitions	0.5	1/2	Maximum area allowed	Maximum area allowed	Maximum area allowed	Not Permitted	1/2	Maximum area allowed	D-10
Other fire partitions	0.5	1/2	Maximum area allowed	Maximum area allowed	Maximum area allowed	Not Permitted	1/2	Maximum area allowed	D-10

Automatic Sprinkler System

**[F] 902.2.1.3 Group A-3.** An automatic sprinkler system shall be provided for fire areas containing Group A-3 occupancies and intervening floors of the building where one of the following conditions exists:

1. The fire area exceeds 12,000 sf.
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.3.7 Fire Department Connections

Fire department connections for automatic sprinkler systems shall be installed in accordance with Section 912

Fire Extinguisher for Class A Fire Hazards (Table 906.3.1)

Ordinary (Moderate) Hazard Occupancy	2-A
Minimum rated single extinguisher:	2-A
Maximum floor area per unit of A:	1,500 sf
Maximum floor area for extinguisher:	11,250 sf
Maximum distance of travel to extinguisher:	75 ft

Manual Fire Alarm System (907.2)

[F] 907.2.1 Group A

- shall be installed in accordance with Section 907.5 in Group A where occupant load is 300 or more.

- Group A occupancy not separated from one another in accordance with Section 707.3.10 shall be considered a single occupancy for the purpose of applying this section.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

**[F] 912.5 Signs.** A metal sign with raised letters not less than 1 inch in size shall be mounted on all fire department connections serving automatic sprinklers, standpipes or fire pump connections. Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES or TEST CONNECTION or a combination thereof as applicable. Where the fire department connections do not serve the entire building, a sign shall be provided indicating portions of the building served.

**[P] 912.6 Backflow protection.** The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the International Plumbing Code.

**[F] 914.2 Equipment room identification.** Fire protection equipment shall be identified in an approved manner. Rooms containing controls for air conditioning systems, sprinkler risers and valves or other fire detection, suppression or control elements shall be identified for the use of the fire department. Approved signs required to identify fire protection equipment and equipment location shall be constructed of durable materials, permanently installed and readily visible.

Occupant Load	
Maximum Floor Area per Occupant Table 1004.1.2	
Assembly Areas without fixed seats	7 net
Concentrated (chairs only-not fixed)	100 gross
Business Areas	
Educational	
Classroom area	20 net

Section 1005 - Means of Egress Signing

**1005.3.1 Stairways.** The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch per occupant. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story.

**1005.3.2 Other egress components.** The capacity, in inches, of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.2 inch per occupant.

Min. Number of Exits or Access to Exits per Story (Table 1006.3.1)	
Occupant load per story	Min. no. of exits/access to exits from story
1-500	2
501-1,000	3
More than 1,000	4

**1006.2.2.4 Day care means of egress.** Day care facilities, rooms or spaces where care is provided for more than 10 children that are 2 1/2 years of age or less, shall have access to not less than two exits or exit access doorways.

**1007.1.1 Two exits or exit access doorways.** Where two exits, exit access doorways, exit access stairways or ramps, or any combination thereof, are required from any portion of the exit access, they shall be placed a distance apart equal to not less than one-half

of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between them. Interlocking or scissor stairways shall count as one exit stairway..

**1010.1.2.1 Direction of swing.** Pivot or side-hinged swinging doors shall swing in the direction of egress travel where serving a room or area containing an occupant load of 50 or more persons or a Group H occupancy.

**1010.1.10 Panic and fire exit hardware.** Doors serving a Group H occupancy and doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

Exceptions:

1. A main exit of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with Section 1010.1.9.9.

Section 1011 Stairways

**1011.2 Width and capacity.** The required capacity of stairways shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches. See Section 1009.3 for accessible means of egress stairways.

**1011.5.2 Riser height and tread depth.** Stair riser heights shall be 7 inches maximum and 4 inches minimum. The riser height shall be measured vertically between the nosings of adjacent treads. Rectangular tread depths shall be 11 inches minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's nosing.

**1011.6 Stairway landings.** There shall be a floor or landing at the top and bottom of each stairway. The width of landings shall be not less than the width of stairways served. Every landing shall have a minimum width measured perpendicular to the direction of travel equal to the width of the stairway. Where the stairway has a straight run the depth need not exceed 48 inches. Doors opening onto a landing shall not reduce the landing to less than one-half the width of the stairway. When fully open, the door shall not project more than 7 inches into a landing. Where wheelchair spaces are required on the stairway landing in accordance with Section 1006.9.3, the wheelchair space shall not be located in the required width of the landing and doors shall not swing over the wheelchair spaces.

**1011.8 Vertical rise.** A flight of stairs shall not have a vertical rise greater than 12 feet between floor levels or landings.

Corridor Fire-Resistance Rating (Table 1020.1)

Occ. Load served by Corr.	Req'd Fire Resist. Rating
A Greater than 30	w/o sprinkler   w/ Sprinkler
	0

Minimum Corridor Width (Table 1020.1)

Any facilities not listed	44 inches
Access to and utilization of mech. plumbing or electrical systems or equipment	24 inches
Group I-E with a corridor having an occupant load of 100 or more.	72 inches

**1020.4 Dead ends.** Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet in length.

1024 Exit Passageways

**1024.3 Construction.** Exit passageway enclosures shall have walls, floors and ceilings of not less than a 1-hour fire-resistance rating, and not less than that required for any connecting interior exit stairway or ramp. Exit passageways shall be constructed as fire barriers in accordance with Section 707 of the International Building Code or horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both.

**1024.4 Termination.** Exit passageways on the level of exit discharge shall terminate at an exit discharge. Exit passageways on other levels shall terminate at an exit.

**1024.10 Transitions.** Transitions between stairways and stepped aisles shall be in accordance with the requirements of Section 716.

**1024.6 Penetrations.** Penetrations into or through an exit passageway are prohibited except for equipment and ductwork necessary for independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at a steel box not exceeding 16 square inches. Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communicating openings, whether protected or not, between adjacent exit passageway.

**1029.2 Assembly main exit.** A building, room or space used for assembly purposes that has an occupant load of greater than 300 and is provided with a main exit, that main exit shall be of sufficient capacity to accommodate not less than one half of the occupant load, but such capacity shall be not less than the total required capacity of all means of egress leading to the exit. Where the building is classified as Group A occupancy, the main exit shall front on not less than one street or an unoccupied space of not less than 10 feet in width that adjoins a street or public way, in a building, room or space used for assembly purposes where there is not a well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total capacity of the egress is not less than 100 percent of the required capacity.

1029.6 Capacity of aisle for assembly

**1029.6.1 Without smoke protection.** The required capacity of the aisles for assembly seating without smoke protection shall be not less than the occupant load served by the egress element in accordance with all of the following, as applicable:

1. Not less than 0.3 inch of aisle capacity for each occupant served shall be provided on stepped aisles having riser heights of 7 inches or less and tread depths of 11 or greater, measured horizontal between tread nosings.
2. Not less than 0.005 inch of additional aisle capacity for each occupant shall be provided for each 0.10 inch of riser height above 7 inches.
3. Where egress requires stepped aisle descent, not less than 0.075 inch of additional aisle capacity for each occupant shall be provided on those portions of aisle capacity having no handrail within a horizontal distance of 30 inches.
4. Ramp aisles, where slopes are steeper than one unit vertical in 12 units horizontal, shall have not less than 0.22 inch

1029.7 Travel distance

Exits and aisles travel distance to an exit door.

Non sprinklered Buildings - 200 ft max

Sprinklered Buildings - 250 ft max

**1029.8 Common path of egress travel.** Common path of egress travel shall not exceed 30 feet from any point where an occupant has a choice of two paths of egress travel to two exits.

Exceptions:

1. For areas serving less than 50 occupants, the common path of egress shall not exceed 75 feet

**1029.8.1 Path through adjacent row.** Where one of the two paths of travel is across the aisle through a row of seats to another aisle, there shall be not more than 24 seats between the two aisles, and the min. clear width between rows for the row between the two aisles shall be 12 inches plus 0.6 inch for each additional seat above seven in the row between aisles.

1029.1 Minimum aisle width

Shall comply with one of the following:

1. Forty-eight inches for stepped aisles having seating on each side.
- Exception: Thirty-six inches where the stepped aisles serve less than 50 seats.
2. Thirty-six inches for stepped aisles having seating on only one side.
- Exception: Twenty-three inches between a stepped aisle handrail and seating where a stepped aisle does not serve more than five rows on one side.
3. Twenty-three inches between a stepped aisle handrail or guard and seating where the stepped aisle is subdivided by a mid-aisle handrail.
4. Forty-two inches for level or ramped aisles having seating on both sides.
- Exceptions:

1. Thirty-six inches where the aisle serves less than 50 seats.
2. Thirty inches where the aisle does not serve more than 14 seats.
5. Thirty-six inches for level or ramped aisles having seating on only one side.
- Exception: For other than ramped aisles that serve as part of an accessible route, 30 inches where the ramped aisle does not serve more than 14 seats.

**1029.9.2 Aisle catchment area.** The aisle shall provide sufficient capacity for the number of persons accommodated by the catchment area served by the aisle. The catchment area served by an aisle is that portion of the total space served by that section of the aisle. In establishing catchment areas, the assumption shall be made that there is a balanced use of all means of egress, with the number of persons in proportion to the egress capacity.

**1029.9.3 Converging aisles.** Where aisles converge to form a single path of egress travel, the required capacity of that path shall be not less than the combined required capacity of the converging aisles.

**1029.9.4 Uniform width and capacity.** Those portions of aisles, where egress is possible in either of two directions, shall be uniform in minimum width or required capacity.

**1029.9.5 Dead end aisles.** Each end of an aisle shall be continuous to a cross aisle, foyer, doorway, vomitory, concourse or stairway in accordance with Section 1029.9.7 having access to an exit.

- Exceptions:
1. Dead-end aisles shall be not greater than 20 feet in length.
  2. Dead-end aisles longer than 16 rows are permitted where seats beyond the 16th row dead-end aisle are not more than 24 seats from another aisle, measured along a row of seats having a minimum clear width of 12 inches plus 0.6 inch for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.
  3. For smoke-protected assembly seating, the dead end aisle length of vertical aisles shall not exceed a distance of 21 rows.
  4. For smoke-protected assembly seating, a longer dead-end aisle is permitted where seats beyond the 21-row dead-end aisle are not more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 12 inches plus 0.3 inch for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

**1029.9.6 Aisle measurement.** The clear width for aisles shall be measured to walls, edges of seating and tread edges except for permitted projections.

Group I-E with a corridor having an occupant load of 100 or more.

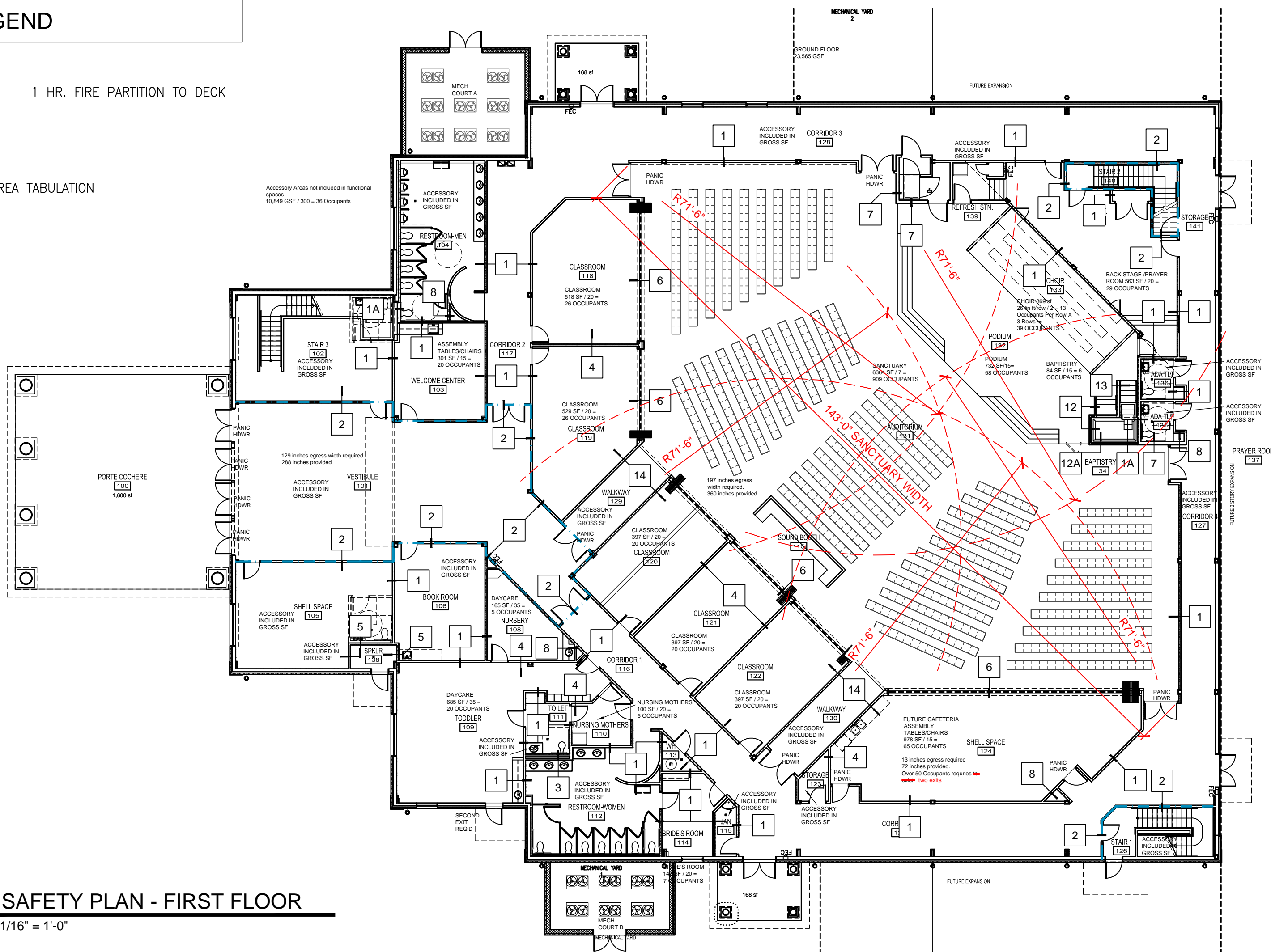


## WALL LEGEND

1 HR. FIRE PARTITION TO DECK

## NOTES:

- REFERENCE G203 FOR PARTITION TYPES
- REFERENCE G200 CODE ANALYSIS FOR AREA TABULATION



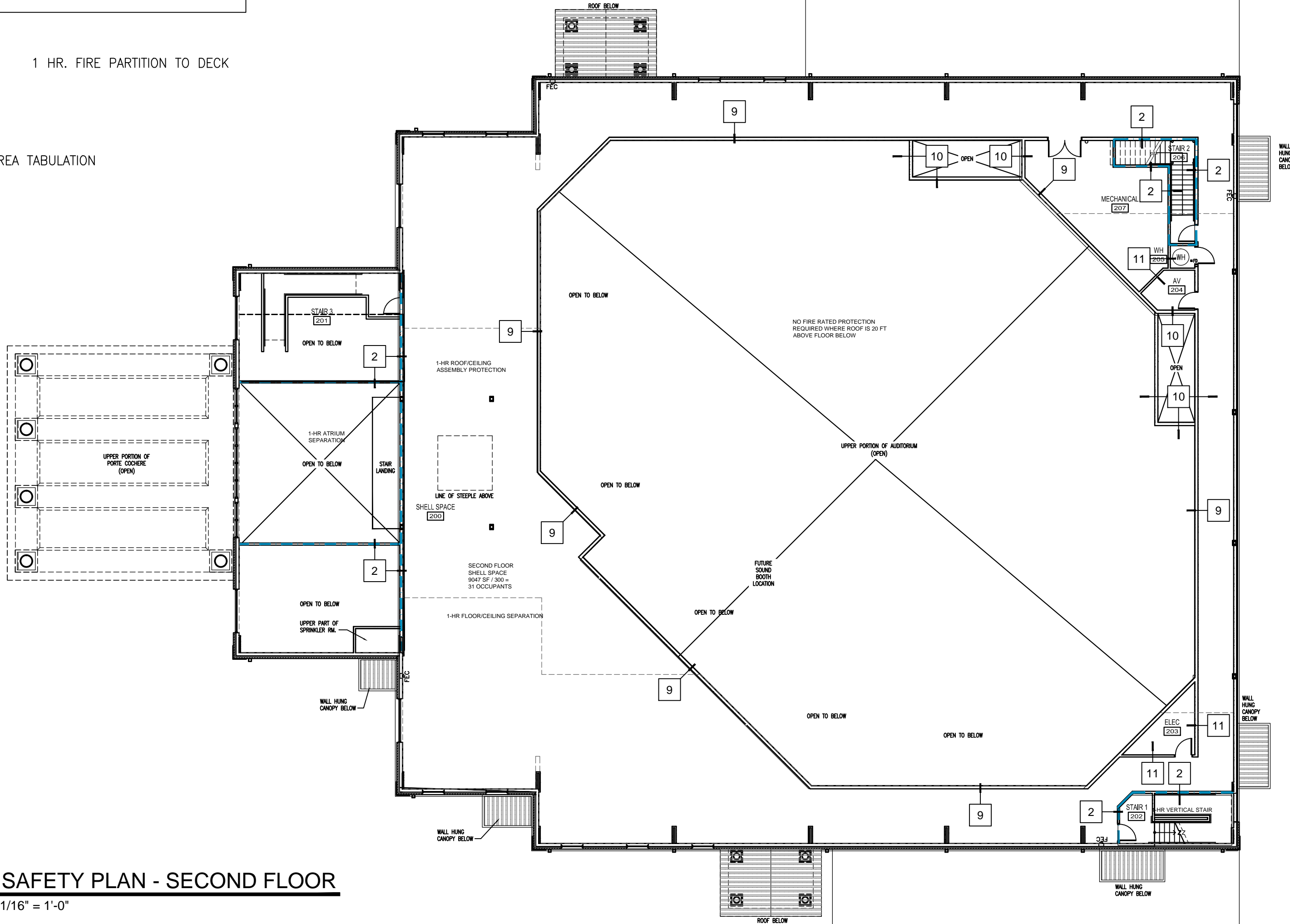
1 LIFE SAFETY PLAN - FIRST FLOOR  
SCALE: 1/16" = 1'-0"

## WALL LEGEND

1 HR. FIRE PARTITION TO DECK

## NOTES:

- REFERENCE G203 FOR PARTITION TYPES
- REFERENCE G200 CODE ANALYSIS FOR AREA TABULATION



2 LIFE SAFETY PLAN - SECOND FLOOR  
SCALE: 1/16" = 1'-0"

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Design No. P516

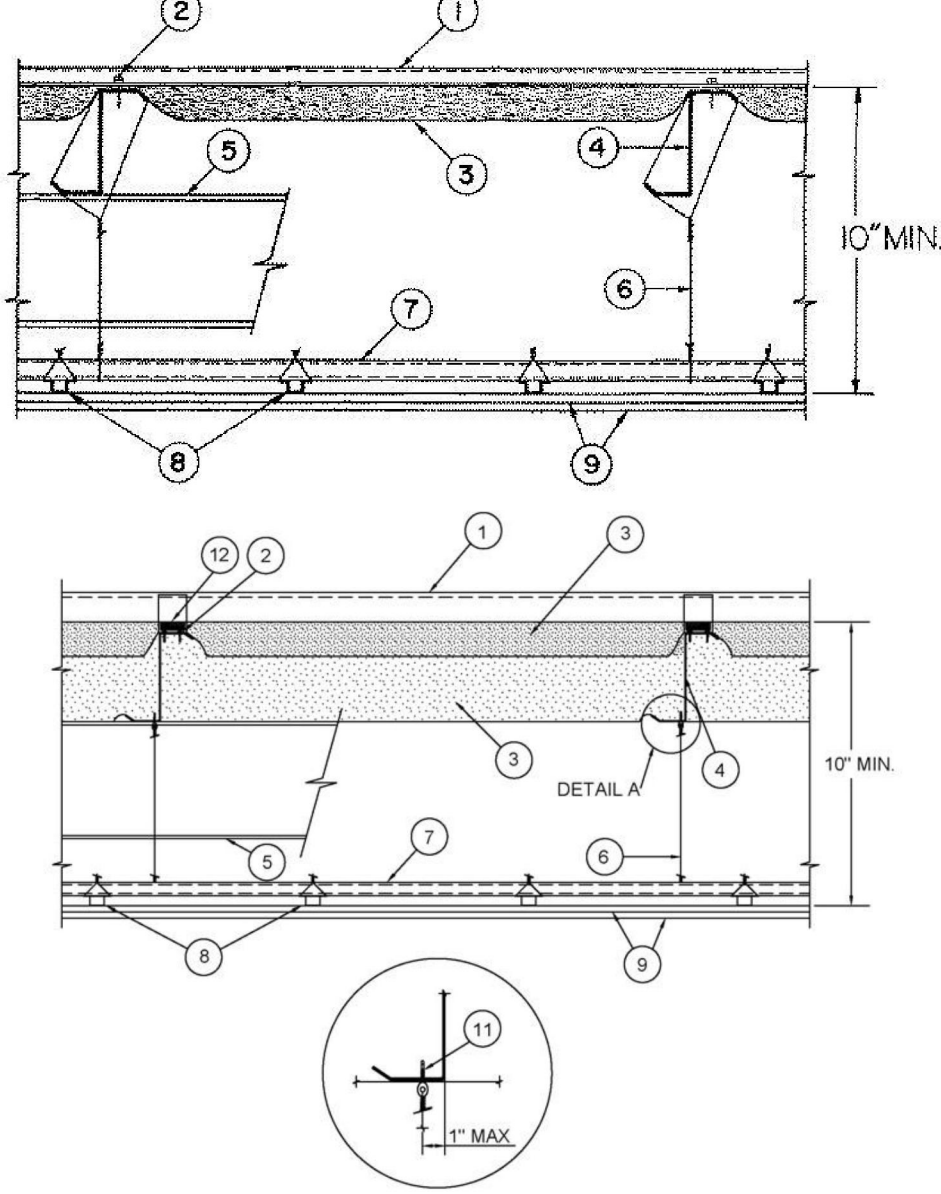
July 08, 2020

Unrestrained Assembly Rating — 1 Hr

Unrestrained Beam Rating — 1 Hr

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 BXIV or BXUV.

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



Alternate Hanging Method

1. **Metal Roof Deck Panels\*** — No. 26 MSG min galv or painted steel. Panels continuous over two or more spans. End laps to occur over purlins with panels overlapped a min of 4 in. A line of sealant or tape sealant may be used at panel side and end laps. See Roofing Materials and Systems Directory-Metal Roof Deck Panels (TRP) category for names of manufacturers.

2. **Panel Fasteners\*** — As specified in the respective Classified Roof Deck Construction Number for the Metal Roof Deck Panel.

3. **Batts and Blankets\*** — Any combination of faced or unfaced glass fiber batt material or mineral wool insulation bearing the UL Classification Marking. See Batts and Blankets\* (B212) Category in Fire Resistance Directory or Batts and Blankets\* (B2NV) in Building Materials Directory for list of Classified Companies.

3A. **Vapor Retarder Fabric\*** — (Optional - Not Shown) - Used with Item 3 as needed.

3B. **Steel Banding** — (Optional - Not Shown) - Used to hold Item 3 in place as needed.

4. **Steel Roof Purlins** — C- or Z-shaped, min 8 in. deep, weighing min 2.9 lb per lineal ft made from min No. 16 MSG galv or painted steel. Spaced max 60 in. OC. Purlins may be stiffened at the supports if required per structural design. When Item 11 is used, purlins made from min No. 14 MSG steel with minimum Fy of 55ksi.

5. **Beam** — Steel I beam sections designed as structural supports to the roof purlins. Min weight of steel I beam is 2.9 lb per lineal ft.

6. **Hanger Wire** — No. 12 SWG or heavier galv steel wire, twist-tied to steel roof purlins or joists. Hanger wire attachment spaced not over 80 in. OC along cold-rolled channel, and located at ends of the cold-rolled channels at walls. When alternate **Steel Framing Members\*** (Item 8A or 8B) are used, hanger wires are spaced 48 in. OC at every third main runner/cross tee intersection. Hanger wires also located adjacent to each main runner splice location. When Item 11 is used, hanger wire attachment spaced not over 30 in. OC.

7. **Cold Rolled Channel** — Min No. 16 MSG galv or painted steel channels, 1-1/2 in. deep with 1/2 in. flanges. Spaced a max of 48 in. OC.

8. **Furring Channel** — No. 25 MSG galv steel, 2-5/8 in. wide, 7/8 in. deep, spaced 24 in. OC perpendicular to cold-rolled channels; secured to each cold-rolled channel with double strand of No. 18 SWG galv steel wire. As an alternate to the furring channels, **Steel Framing Members\*** (Item 8A or 8B) may be used.

8A. **Steel Framing Members\*** — (Not shown) — As an alternate to Item 8. Main runners nom 12 ft long, spaced 48 in. OC. Ends of main runners at walls to rest on wall angle, without attachment, with 1/2 to 3/4 in. end clearance. Primary cross tees (1-1/2 in. wide across flange) or cross channels, nom 4 ft long, installed perpendicular to main runners and spaced 16 in. OC. Additional primary cross tees or cross channels required 8 in. from and on each side of wallboard end joint.

ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000.

8B. **Steel Framing Members\*** — (Not shown) — As an alternate to Items 8 and 8A. Main runners, cross tees, cross channels and wall angle as listed below:  
a. **Main Runners** — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC.

b. **Cross Tees** — Nom 4 ft long, 1-1/2 in. wide face or 15/16 in. wide face installed at sides of light fixtures, installed perpendicular to the main runners, spaced 24 in. OC. When Batts and Blankets\* (Item 10) are used, cross tees spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted wallboard end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Cross Channels** — Nom 4 ft long, installed perpendicular to main runners, spaced 24 in. OC. When Batts and Blankets\* (Item 10) are used, cross channels spaced 16 in. OC.

d. **Wall Angle or Channel** — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep, attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw attachment of the gypsum wallboard.

CSC INC — Type DGL or RCL.

USG INTERIORS LLC — Type DGL or RCL.

9. **Gypsum Board\*** — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501 or G512. Nom. 5/8 in. thick gypsum board bearing the UL Classification Marking as to Fire Resistance. Two layers of 5/8 in. thick by 48 in. wide sheets installed with long dimension perpendicular to the furring channels. Inner layer attached to furring channels using 1-1/4 in. long Type 5 bugle-head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints to occur midway between continuous furring channels and to be backed by joint batten channel which is centered on the end joints and extends 6 in. beyond both ends of the end joint. Butted end joints to be offset a min of 24 in. in adjacent courses. Outer layer attached to the furring channels through inner layer using 1-7/8 in. long Type 5 bugle-head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints to be centered on continuous furring channels and be offset a min of 12 in. from end joints of inner layer. Rows of screws on both sides of butted end joints of each layer shall be located 3/8 to 1/2 in. from end joints. Butted side joints of outer layer to be offset a min of 18 in. from butted side joints of inner layer. When **Steel Framing Members\*** (Item 8A or 8B) are used, inner layer installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Inner layer fastened to cross tees with 1-1/4 in. long Type 5 bugle-head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. End joints of adjacent wallboard sheets shall be staggered not less than 4 ft OC. Outer layer attached to the cross tees through inner layer using 1-7/8 in. long Type 5 bugle-head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints to be centered along cross tees and be offset a min of 32 in. from end joints of inner layer. Rows of screws on both sides of butted end joints of each layer shall be located 3/8 to 1/2 in. from end joints. Butted side joints of outer layer to be offset a min of 18 in. from butted side joints of inner layer.

AMERICAN GYPSUM CO (View Classification) — CNXR.R14196

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

CABOT MANUFACTURING ULC (View Classification) — CNXR.R23570

CERTAINTEED GYPSUM INC (View Classification) — CNXR.R3660

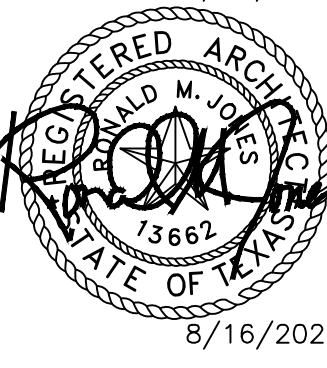
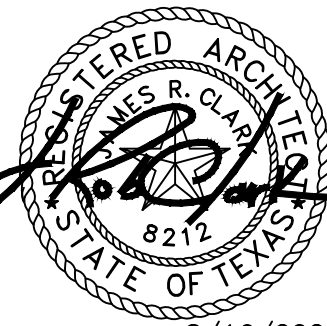
CSC INC (View Classification) — CNXR.R19751

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L.L.C. (View Classification) — CNXR.R18482

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

LOADMASTER SYSTEMS INC (View Classification) — CNXR.R11809

NATIONAL GYPSUM CO (View Classification) — CNXR.R3501



UNITED CHRISTIAN ACADEMY  
First Pentecostal Church  
10619 Highway 69  
Port Arthur, TX 77642

ISSUED FOR SCHEMATIC DESIGN ☒  
DATE: 10/6/2020  
DESIGN DEVELOPMENT ☒  
DATE: 3/5/2021  
BIDS & CONSTRUCTION ☒  
DATE: 8/2/2021  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_

DRAWINGS SHEET TITLE  
LIFE SAFETY PLAN

SHEET NUMBER  
G201  
20105  
PROJECT NUMBER



## Design No. G256

November 19, 2020

### Restrained Assembly Ratings — 1, 2 and 3 Hr.

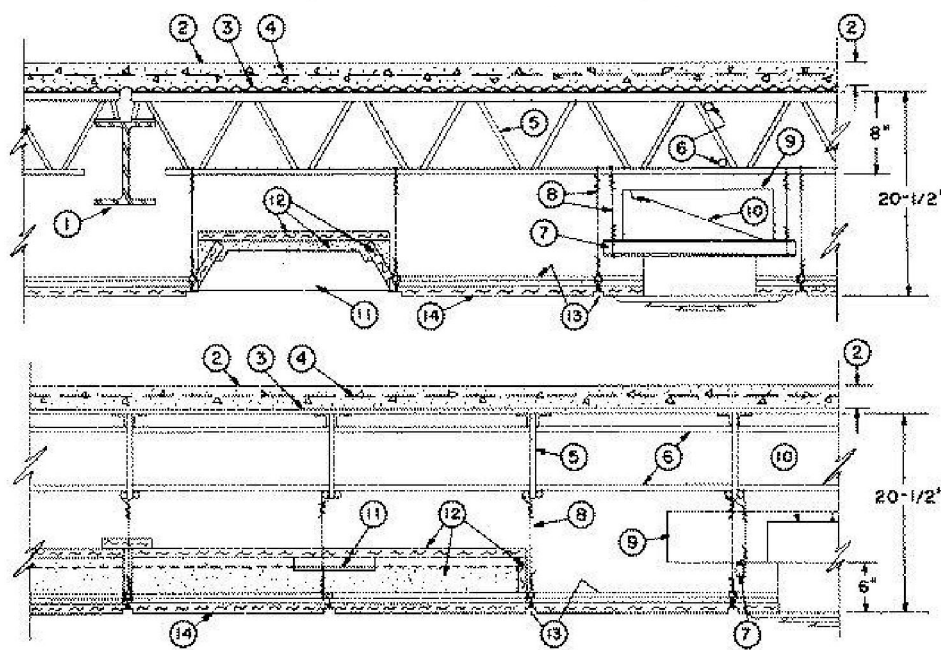
(See Items 2, 5, 11B, 13, 13D and 13E)

### Unrestrained Assembly Ratings — 1, 2 and 3 Hr.

(See Items 2, 5, 11B, 13, 13D and 13E)

### Unrestrained Beam Ratings — 1, 2 and 3 Hr.

(See Items 13, 13D and 13E)



1. **Beam** — W6x12, min size. As an alternate to beam, steel joist girders of 20 in. min depth, 14 lbs per lin ft min weight with min area of steel of 1.12 sq in. for chord members. Min distance from bottom of the joist girder to bottom of the ceiling is 10 in. For lowering the ceiling, the suggested method of using intermediate supports described under Suspension Systems in the Design Information Section General should be followed.

2. **Normal-Weight Concrete** — Carbonate or siliceous aggregate, 150(+/-)3 pc unit weight, 3500 psi compressive strength. For the 2 hr Restrained and Unrestrained Assembly Ratings, min concrete topping thickness is 3-1/2 in. For the 2 hr Restrained and Unrestrained Assembly Ratings, min concrete topping thickness is 3-1/2 in. The concrete topping thickness shall be measured from the surface of the concrete to the top plane of the steel deck corrugations.

3. **Steel Form Units** — Min 9/16 in. deep corrugated units, min 28 MSG galv steel. Welded to supports with 1/2 in. puddle welds through welding washers. Welds located at each joist along the side laps and 48 in. OC along the center valley of the units. End overlaps centered on joists and welded to joist a max of 15 in. OC. Adjacent units overlapped one corrugation at the sides and a min of 3 in. at the ends.

4. **Welded Wire Fabric** — Galv-W14xW14 or heavier per AISC specifications.

1A. **Fiber Reinforcement** — As an alternate to Item 4, for 1 or 2 Hr assembly ratings only. Engineered synthetic fibers or steel fibers added to concrete mix to control shrinkage cracks in concrete. See Fiber Reinforcement (CBQC) Category for rate that fibers are added to concrete mix.  
**DUCCD CHEMICAL CO.** — Type Fiberstrand 100

**FABRIC ORIENTED POLYMERS INC.** — Types Monofilament / Multifilament Polypropylene, Filibrated Polypropylene

**FIBERCON INTERNATIONAL INC.** — Types Fibercon Manufactured Steel Fibers, Matrix CS Steel Fibers, Matrix W2.9 Hybrid Fibers

**FORTA CORP.** — Types Econo-Mono, Mighty-Mono, Stucco-Net, Econo-Net, Cast Master, Super-Net, Ultra-Net

**HELLY STEEL** — Helly 5-25

**SKA CORPORATION** — Type FM 1.5, Xores, Stealth, Noomesh e3

5. **Steel Joists** — Type B12 or 10K1 min size, spaced 48 in. OC max, welded to end supports. Type B12 min size, may be covered for the 1 and 2 hr Restrained and Unrestrained Assembly Ratings only. As an alternate, any LH-Series steel joist spanning no more than 60 ft may be used. For spans exceeding 60 ft, LH-Series joists may be used provided that the deflection under published total load shall not be greater than 1/277 of the joist spans. For the 1 and 2 hr ratings only, joist spacing may be increased to 72 in. max.

6. **Bridging** — 1/2 in. diam steel bars, welded to top and bottom chords of each joist.

7. **Cold Rolled Channels** — Min 0.053 in. thick (16 gauge) cold-rolled steel channels. 1-1/2 in. deep with 9/16 in. flanges. Placed on top of the bottom chord of joists and secured with a double strand of 18 SWG galv steel wire. Located as required to provide hanger wire attachment points. For the 1 and 2 hr Ratings only when the joist spacing is greater than 48 in. OC, two cold-rolled channels placed back to back and tied together with double strand of 18 SWG galv steel wire at 24 in. OC are used for support of hanger wires. The double channels are installed perpendicular to the joists and spaced either 24 or 48 in. OC as required. Channels, placed on top of the joists' bottom chord and tied to each joist with a double strand of 18 SWG galv steel wire. Alternately, the channels may be hung from the joists with 12 SWG galv steel wire wrapped around the cold-rolled channels, and with the other end of the wire wrapped around the bottom chord of the joists.

8. **Hanger Wire** — No. 12 SWG galv steel wire twist-tied to steel joists or cold-rolled steel channels. Hanger wires spaced max of 48 in. OC on main runners, adjacent to cross tee intersections. One hanger wire to occur at all four corners of light fixtures, at midspan of cross tees adjacent to 4 ft light fixtures and air duct outlets, and adjacent to each main runner splice.

9. **Air Duct** — Min 0.023 in. thick (24 gauge) min galv steel. Total area of duct openings not to exceed 576 sq in. per each 100 sq ft of ceiling area. Area of individual duct opening not to exceed 576 sq in. Max dimension of opening 30 in.

10. **Damper** — Min 0.056 in. thick (16 gauge) galv steel, sized to overlap duct opening 1 in. min. Protected on both surfaces with 1/16 in. thick ceramic fiber paper and held open with a **Visible Link** (Bearing the UL Listing Mark). In lieu of the damper described above, Duct Outlet Protection System A, as described in the General Information Section, may be used with steel ducts.

11. **Fixtures, Recessed Light** — (Bearing the UL Listing Mark.) Recessed light fixture with steel housing. 2 by 4 ft size. Fixtures spaced so their area does not exceed 24 sq ft per 100 sq ft of ceiling area. Wired in conformance with the National Electrical Code.

11A. **Fixture Stabilizer** — (Not Shown) — For use with the Type 1650 metal pans (See Item 13A); one min 0.047 in. thick (16 MSG) galv steel channel yoke per light fixture, secured to the web at midspan of cross tee on each side of fixture.

11B. **Fixture, Recessed Light** — (Bearing the UL Listing Mark) — (Not Shown) — As an alternate to Item 11 for 1 or 2 hr assembly ratings only. Incandescent lamp type, steel housing, nom 6-1/2 in. diam by 1-1/2 in. high. A max of two "high hat" fixtures may be substituted for each nominal 2 by 4 ft size light fixture permitted in the ceiling (max six "high hat" fixtures per 100 square ft. of ceiling area). Each fixture provided with a nom 6-1/2 by 10 in. painted steel base screw-attached to the fixture with four steel screws. Short sides of the base provided with adjustable steel hanger bars for fixture support. Two lengths of cold-rolled steel channel (Item 7) are to be suspended above and parallel with the fixture hanger bars to provide hanger wire attachment points for the fixture hanger bars and to support the light fixture protection panel (Item 12A). Wired in conformance with the National Electrical Code.

12. **Fixture Protection** — **Acoustical Material** — 5/8 in. thick, cut to form a five sided enclosure, trapezoidal in cross section, approx. 1/2 in. longer and wider and with a min 5/8 in. clearance to the top of the light fixture housing. The fixture protection consists of a 23-3/4 by 47-3/4 in. top piece, two 6-3/4 (or wider) by 47-3/4 in. side pieces, and two 5 (or wider) by 23-3/4 in. end pieces. The top edge of each fixture protection side piece may be provided with a 1 in. deep by max 20 in. long notch near its midpoint.

The side and top pieces are laid in place and the end pieces are held in place with three 8d nails spaced 8 in. OC. When fixtures are installed end to end, no end pieces are used where the fixtures abut, instead a 3 by 23-3/4 in. piece is placed on top of and centered over the gap between the top pieces. (S)=Surface perforations.

**ARMSTRONG WORLD INDUSTRIES INC.** — Type 5/8 in. P (S)

12A. **Fixture Protection** — **Acoustical Material** — For use with "high hat" light fixtures (Item 11B). Nom 24 by 24 by 5/8 or 3/4 in. piece of the same acoustical material used in the ceiling (Item 14). Panel located max 1 in. above and centered over "high hat" light fixture with ends resting on cold-rolled steel channels (Item 7).

13. **Steel Framing Members** — Main runners nom 12 ft long spaced 4 ft OC. Cross tees nom 4 ft long installed perpendicular to main runners and spaced 2 ft OC. When the ceiling is composed of nom 24 by 24 in. lay-in panels, cross tees nom 2 ft long installed perpendicular to 4 ft cross tees and spaced 4 ft OC.

**ARMSTRONG WORLD INDUSTRIES INC.** — Types AFG-AFG-A, AFG-LT, AFG-MX and AFG-PLP. When Type AFG-A steel framing members are used, the Assembly and Beam Ratings are 2 hr. When Type AFG-MX or AFG-PLP steel framing members are used with 24 by 48 in. panels, the assembly and beam ratings are 1-1/2 hr. When Type AFG-MX steel framing members are used with 24 by 24 in. panels, the assembly and beam ratings are 2 hr. Type AFG-LT steel framing members for use with 24 by 24 in. panels for max 2 hr beam and assembly ratings. Type GLP (consisting of main runners, 4 ft cross tees and steel straps) for use with 24 by 48 in. Type P or PC lay-in panels

**BAILEY METAL PRODUCTS LTD.** — Type BEF

**CERTAINTED CORP.** — Types F552-12-15, F554-12-15, F5512-12-15, RS12-12-15, RS2-12-15, RS4-12-15

**ROXUL USA INC. D/B/A ROCKFON** — Types 250, 260, 1250, 1260, 1850, 1860. When Type 260, 860, 1260 or 1860 steel framing members are used, the Assembly and Beam Ratings are 2 hr.

13A. **Steel Framing Members** — **Main Runners** — 10 or 12 ft long, spaced 4 ft OC. Cross tees - nom 4 ft long, installed perpendicular to main runners, spaced 2 ft OC. When nom 2 by 2 ft lay-in panels are used, nom 2 ft long cross tees installed perpendicular to 4 ft cross tees at midspan, spaced 4 ft OC. Border panels supported at walls by min. 0.016 in thick painted steel angle with 7/8 in legs or min. 0.016 in thick painted steel channel with a 1 by 1-9/16 by 1/2 in profile.  
**CGC INC.** — Types DXL, DXLT, DXLTA, DXLZ, SDXL. When DXLT and DXLTA are used the max hourly ratings are 1-1/2 hr

**USG INTERIORS LLC** — Types DXL, DXLT, DXLTA, DXLZ, SDXL. When DXLT and DXLTA are used the max hourly ratings are 1-1/2 hr

13B. **Steel Framing Members** — **Metal Pans** — (Not Shown) — (Optional) — Channel shaped metal pans in various colors and finishes, installed perpendicular to cross tees or main runners and spaced 4 or 6 in. OC. The flange edges of the metal pans engage and interlock with the vertical tabs of the corresponding grid adapters with tabs 4 or 6 in. OC. (See Item 13B). End laps joints of the metal pans shall occur adjacent to main runners or cross tees. The metal pans shall each be supported by at least two main runners or cross tees.

**ROXUL USA INC. D/B/A ROCKFON** — Type 1650

13C. **Steel Framing Members** — **Grid Adapter** — (Not Shown) — (Optional) — For use with Type 1650 metal pans. (See Item 13A). Angle shaped adapter with a locked return flange, installed parallel to cross tees or main runners by engaging return flange of adapter to the flange of the cross tee or main runner. The 48 or 24 in. long adapters are intended for use with cross tees or main runners, respectively.  
**ROXUL USA INC. D/B/A ROCKFON** — Type 1650

13D. **Steel Framing Members** — **Filler Strips** — (Not Shown) — (Optional) — For use with Type 1650 metal pans. Filler strips are 0.018 to 0.024 in. thick, steel or aluminum, 13/32 or 5/8 in. deep by 3/4 in. wide, placed between the metal pans.

13E. **Steel Framing Members** — 9/16 in. wide narrow flange grid may be used as an alternate to 15/16 in. wide flange grid systems. Main runners, nom 12 ft long spaced 4 ft OC. Cross tees, nom 4 ft long, installed perpendicular to main runners and spaced 2 ft OC. Cross tees, nom 2 ft long, installed perpendicular to 4 ft cross tees and spaced 4 ft OC. For use with Type P, nom 24 by 24 in. square edge or regular edge lay-in panels. Grid modules containing light fixtures must employ a fixture centering clip at each corner. The 24 gauge electrogalvanized steel clip is nested on the flange of the intersecting grid tees, has two 1-7/16 in. high legs with their other perpendicular to each other and a U-shaped return at the top of each leg for engaging over the bulb of the intersecting grid tees. When 9/16 in. wide flange grid is used, max Assembly and Beam Ratings are 2 hr.  
**ARMSTRONG WORLD INDUSTRIES INC.** — Type FSJK

13F. **Steel Framing Members** — 9/16 in. wide narrow flange grid may be used as an alternate to 15/16 in. wide flange grid systems. Main runners, nom 12 ft long, spaced 4 ft OC. Cross tees, nom 4 ft long, installed perpendicular to main runners and spaced 2 ft OC. Cross tees, nom 2 ft long, installed perpendicular to 4 ft cross tees and spaced 4 ft OC. For use with Type P, nom 24 by 24 in. square edge lay-in panels.  
**ROXUL USA INC. D/B/A ROCKFON** — Type 4050 for 1 hr assembly and beam ratings only

14. **Acoustical Material** — Nom 24 by 24 or 48 in. lay-in panels. Border panels supported by min 0.016 in. thick (26 MSG) painted steel angle with 1 in. legs; or, min 0.016 in. thick (26MSG) painted steel channel, 1-1/2 in. deep with 1 in. bottom flange and 3/4 in. top flange. (S)=Surface perforations.  
**ARMSTRONG WORLD INDUSTRIES INC.** — Type 3/4 in. B(S) or P(S), 24 by 24 in.; Type 5/8 in. P(S), 24 by 24 or 48 in.; Type 5/8 in. P(S), 24 by 48 in

14A. **Acoustical Materials** — **Antenna Panel** — (Optional, Not Shown) — Nom 24 by 24 in. lay-in panel with integral high frequency antenna. Thickness, type and edge detail of antenna panel to match surrounding acoustical ceiling panels. Antenna panel to be installed in accordance with accompanying instructions. A max of one antenna panel may be used per each 100 sq ft of ceiling area.  
**ARMSTRONG WORLD INDUSTRIES INC.**

15. **Speaker Assemblies For Fire Resistance** — (Optional, Not Shown) — The speaker assemblies consist of speakers, speaker enclosures and their accessories. The ceiling penetration from the speaker enclosure shall not exceed 11-7/8 by 11-7/8 in. for the square speaker enclosures and 12 in. in diam for the round speaker enclosures. The speaker assemblies are installed in accordance with the installation instructions provided. A max of two 144 sq in. speaker assemblies per 100 sq ft of ceiling area is allowed.  
**ATLAS SOUND I.P.**

See **Speaker Assemblies For Fire Resistance** (CHMA) for specific Types.

15A. **Speaker Assemblies For Fire Resistance** — (Optional, Not Shown) — As an alternate to Item 15, speaker panels may be included in the ceiling. Nom 24 by 24 in. metal framed lay-in speaker panels installed in accordance with the accompanying installation instructions. Hanger wires are required on the main runners and on the nom 4 ft long cross tees at all four corners of the speaker panel. Each speaker panel to be covered with a nom 24 by 24 in. panel of the same acoustical material used in the ceiling. Acoustical material panel to be centered over and supported by the metal "bridge" of the speaker panel. A max of one speaker panel is allowed per 100 sq ft of ceiling area with a min center-to-center spacing of 10 ft between speaker panels.

16. **Hold-Down Clips** — (Not Shown) — No. 24 MSG spring steel, placed over cross tees 2 ft OC.

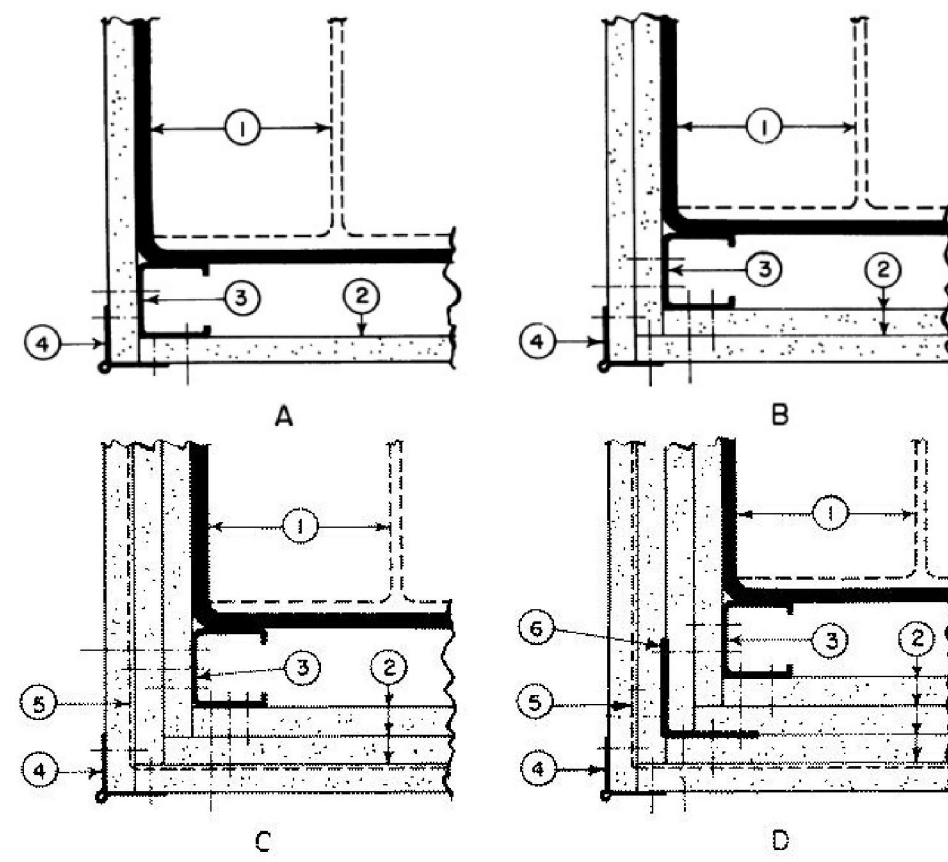
17. **Discrete Products Installed in Air-handling Spaces** — Automatic Balancing Valve/Damper (Not Shown - Optional) — For use with item 10. Valve/Damper to be provided with ducted installation with steel duct per damper manufacturer's instructions. Automatic Balancing Valve/Damper shall be installed within duct such that it is not directly above the ceiling radiation damper.  
**METAL INDUSTRIES INC.** — Model ABV-4, ABV-5, ABV-6

## Design No. X528

August 10, 2020

### Ratings — 1, 2 and 3 Hr.

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



### CORNER DETAILS OF WALLBOARD SUPPORT SYSTEMS WITHOUT STEEL COVERS

1. **Steel Column** — Min sizes of W-shaped and tubular steel columns which appear in the AISC Steel Construction Manual as shown under Item 2.

2. **Gypsum Board** — Any 1/2 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U105. Nom 1/2 in. or 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U105. Nom 1/2 in. or 5/8 in. thick gypsum board. Applied in layers as noted in the above illustrations. Boards are to be applied vertically without horizontal joints. Min total thickness of layers in inches for the various ratings and min column sizes are as follows:

W Shaped Column Min Column Size	Rating (Hr)			Corner Details For Various Rating		
	1	2	3	1 Hr	2 Hr	3 Hr
Total thickness (in.)						
W4x13	1	1-1/2	2-1/4	B	C	D
W6x15.5	1	1-1/2	2-1/4	B	C	D
W10x49	1/2	1-1/8	1-7/8	A	B	C
Tube Shaped columns						
TS 4 by 4						
by 188	1	1-3/4	2-5/8	B	C	D
TS 6 by 6						
by 0.250	5/8	1-1/2	2-1/4	A	C	D

**AMERICAN GYPSUM CO** (View Classification) — CNXR-K14196

**BEING NEW BUILDING MATERIALS PUBLIC LTD CO** (View Classification) — CNXR-R19374

**CABOT MANUFACTURING ULC** (View Classification) — CNXR-R25370

**CERTAINTED GYPSUM INC** (View Classification) — CNXR-R3660

**CGC INC** (View Classification) — CNXR-R1951

**GEORGIA-PACIFIC GYPSUM L L C** (View Classification) — CNXR-R2717

**LOADMASTER SYSTEMS INC** (View Classification) — CNXR-R1809

**NATIONAL GYPSUM CO** (View Classification) — aHP-C, CNXR-R3501

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** (View Classification) — CNXR-R094

**PANEL KEY S A** (View Classification) — CNXR-R1796

**SIAM GYPSUM INDUSTRY (SARABURI) CO LTD** (View Classification) — CNXR-R19262

**THAI GYPSUM PRODUCTS PCL** (View Classification) — CNXR-R27517

**THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO** (View Classification) — CNXR-R40305

**UNITED STATES GYPSUM CO** (View Classification) — CNXR-R1319

**USG BORAL DRYWALL SFZ LLC** (View Classification) — CNXR-R39438

**USG MEXICO S A DE C V** (View Classification) — CNXR-R16089

2A. **Gypsum Board** — As an alternate to Item 2- 3/4 in. thick gypsum wallboard. For 2 Hr rating, 1-1/2 in. total thickness, installed in accordance with corner detail B. For 3 Hr rating, 2-1/4 in. total thickness installed in accordance with corner detail C. Boards are to be applied vertically without horizontal joints.  
**CGC INC.** — Type IP-X3 or ULTRACODE

**UNITED STATES GYPSUM CO.** — Type IP-X3 or ULTRACODE

**USG BORAL DRYWALL SFZ LLC.** — Type ULTRACODE

**USG MEXICO S A DE C V.** — Type IP-X3 or ULTRACODE

2B. **Gypsum Board** — (As an alternate to Items 2 and 2A) — Nominal 5/8 in. thick panels. One of the layers of **Gypsum Board** (Item 2) used to obtain the minimum required thickness in Item 2 may be substituted with one layer and secured as described in Item 2.  
**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock ES

2C. **Wall and Partition Facings and Accessories** — (As an alternate to Item 2 through 2B) — Composite Gypsum Panel — Nominal 5/8 in. thick panels. One of the layers of **Gypsum Board** (Item 2) used to obtain the minimum required thickness in Item 2 may be substituted with one layer of composite gypsum panel and secured as described in Item 2.  
**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock QR

3. **Steel Stud** — 1-5/8 in. wide with 1-5/16 and 1-7/16 in. legs having a 1/4- in. folded flange, fabricated from No. 25 MSG galv steel. Length to be 1/2 in. less than the assembly height.

3A. **As an alternate to Item 3 Steel Framing Members** — galv. steel clips spaced 4 ft OC and 1-1/4 in. from top and bottom of column. A No. 28 MSG galv steel support angle with 1-1/4 in. length shall be placed over clips and secured with screws attaching the wallboard. The angle cut 1 in. less than assembly height splices in angle to occur over clips. The clips for use with wide flange columns only.  
**JOHN WAGNER ASSOCIATES INC. DBA GRABBER** — Types CB, CB1Clps.

4. **Corner Beads** — No. 28 MSG galv steel, 1-1/4 in. legs to be attached to the wallboard with No. 6 by 1 in. screws spaced 12 in. OC max.

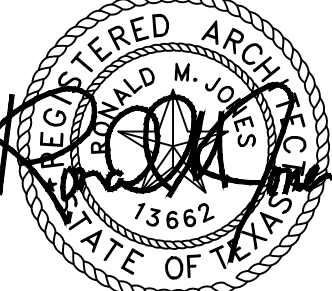
5. **Tie Wire** — No. 18 SWG steel wire spaced 24 in. OC used with second layer of wallboard.

6. **Screws** — For attaching first layer of wallboard to steel studs, and third layer of wallboard to 2 in. by 2 in. steel angle (25 Ga) to be No. 6 by 1 in. (or 1-1/4 in. for 3/4 in. thick wallboard) Phillips head self-drilling, self-tapping double lead screws spaced 24 in. OC. For attaching second layer of wallboard to steel studs and fourth layer of wallboard to 2 in. by 2 in. steel angle (25 Ga) to be No. 6 by 1-3/4 in. (or 2-1/4 in. for 3/4 in. thick wallboard) steel screws of the same type spaced 12 in. OC. For attaching third layer of wallboard to steel studs to be No. 8 by 2-1/4 in. screws of the same type spaced 12 in. OC.

7. **Finishing System** — (Not Shown) — Joint compound applied over corner beads to a thickness of 1/16 in.



8/16/2021



8/16/2021

UNITED CHRISTIAN ACADEMY

First Pentecostal Church

10619 Highway 69

Port Arthur, TX 77642

ISSUED FOR SCHEMATIC DESIGN DATE: 10/6/2020

DESIGN DEVELOPMENT DATE: 3/5/2021

BIDS & CONSTRUCTION DATE: 8/2/2021

REVISION: DATE: REVISION: DATE: REVISION: DATE:

DRAWINGS SHEET TITLE

UL STANDARD SHEET

SHEET NUMBER

G202

20105

PROJECT NUMBER

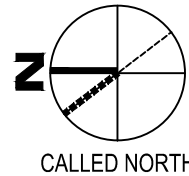




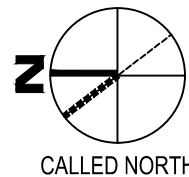
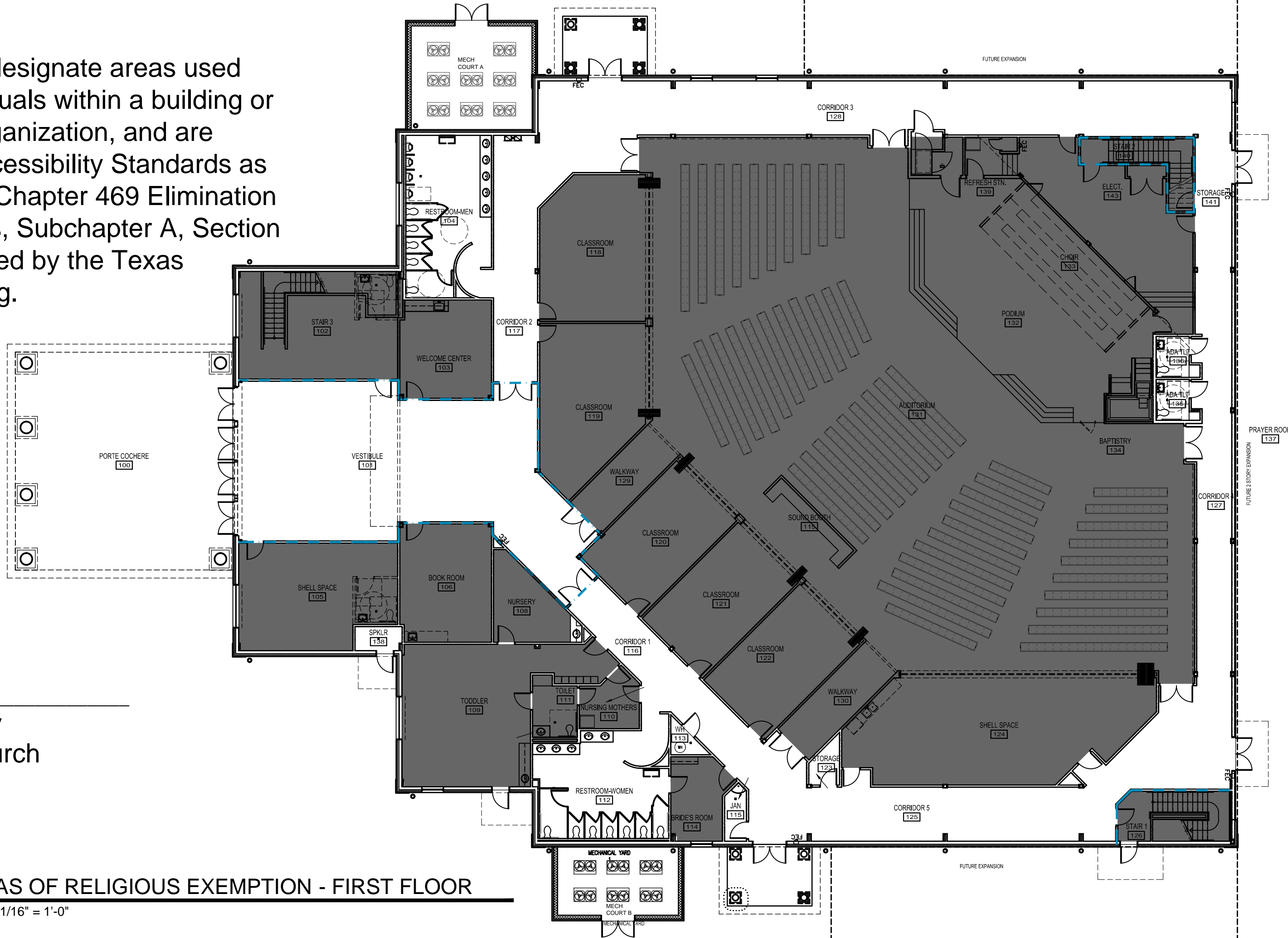


The highlighted areas designate areas used primarily for religious rituals within a building or facility of a religious organization, and are exempt from Texas Accessibility Standards as per Government Code Chapter 469 Elimination of Architectural Barriers, Subchapter A, Section 469.003. C, Administered by the Texas Department of Licensing.

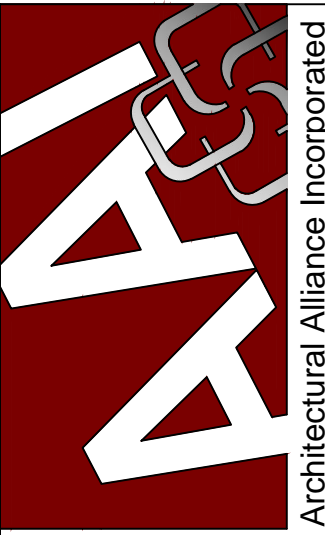
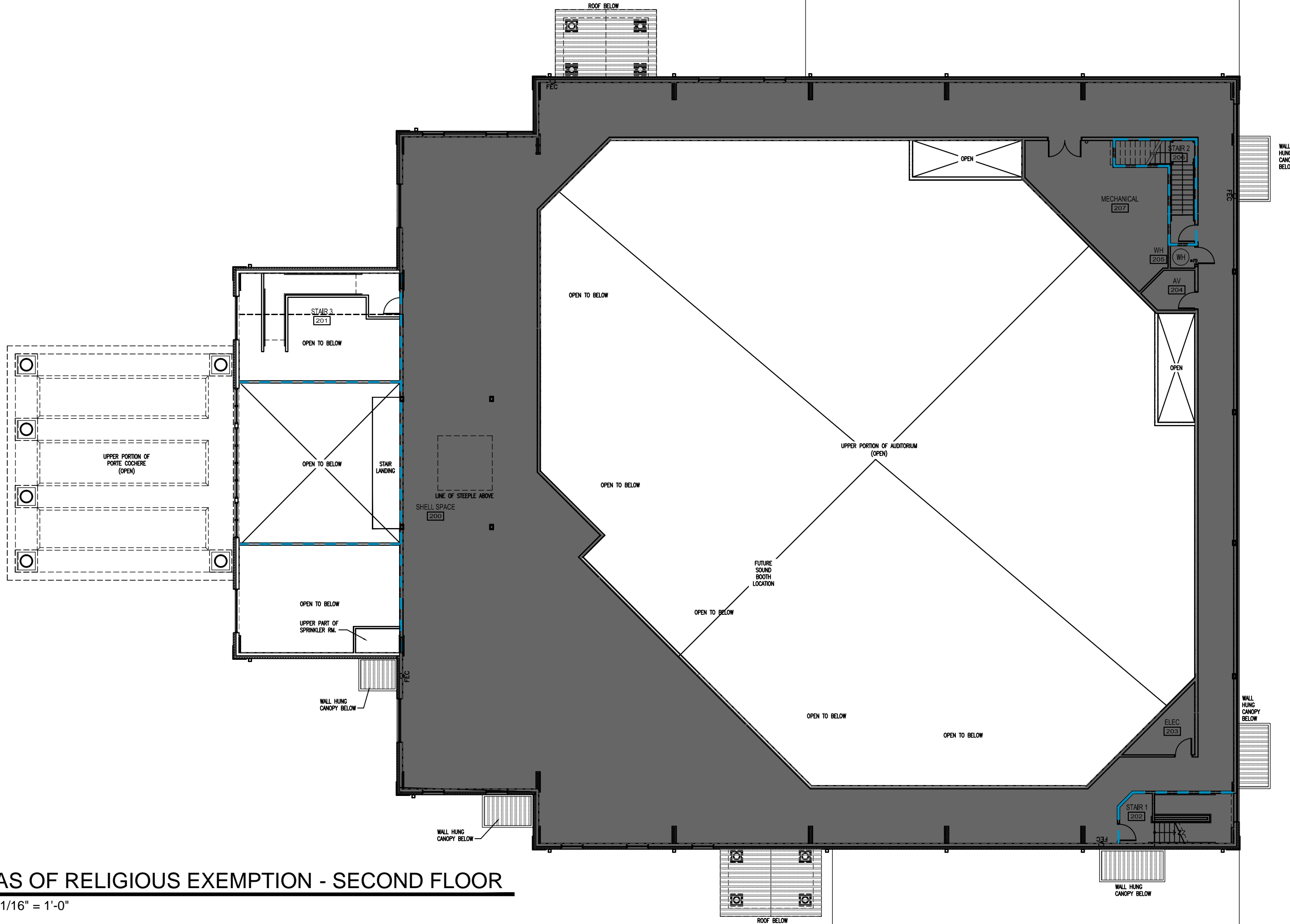
Pastor Darrell McCoy  
First Pentecostal Church



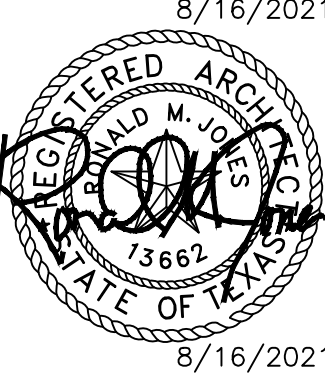
1 AREAS OF RELIGIOUS EXEMPTION - FIRST FLOOR  
SCALE: 1/16" = 1'-0"



2 AREAS OF RELIGIOUS EXEMPTION - SECOND FLOOR  
SCALE: 1/16" = 1'-0"



350 Pine Street, Suite 720  
Houston, Texas 77011  
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RONALD M. JONES, AIA  
www.aiahead.com



UNITED CHRISTIAN ACADEMY

First Pentecostal Church

Port Arthur, TX 77642

10619 Highway 69

ISSUED FOR SCHEMATIC DESIGN	<input checked="" type="checkbox"/>
DATE:	10/6/2020
DESIGN DEVELOPMENT	<input checked="" type="checkbox"/>
DATE:	3/5/2021
BIDS & CONSTRUCTION	<input checked="" type="checkbox"/>
DATE:	8/2/2021
REVISION:	
DATE:	
REVISION:	
DATE:	
REVISION:	
DATE:	

DRAWINGS SHEET TITLE

AREAS OF  
RELIGIOUS  
EXEMPTION

SHEET NUMBER

G300

20105  
PROJECT NUMBER



## 2015 INTERNATIONAL ENERGY CONSERVATION CODE COMPLIANCE SUMMARY

CLIMATE ZONE: 2A Jefferson County (Warm-Humid) PRESCRIPTIVE METHOD: C402 - C406

### INSULATION MATERIAL AND R-VALUES

#### ROOFS

INSULATION ENTIRELY ABOVE ROOF DECK: [NA, R25 c]

METAL BUILDINGS: [NA, R-19 + R-11 LS]

ATTIC AND OTHER: [NA, R-38]

#### WALLS, ABOVE GRADE

MASS: [NA, R-5.7c]

METAL BUILDING: [NA, R13 + R-6.5c]

METAL FRAMED: [NA, R-13 + R-5c]

WOOD FRAMED: [NA, R-13 + R-3.8ci, R-20]

#### WALLS, BELOW GRADE

NO REQUIREMENT

#### FLOORS

MASS: [NA, R-6.3c]

JOIST/FRAMING: [NA, R-30]

#### SLAB-ON-GRADE FLOORS

UNHEATED SLABS: NO REQUIREMENT

HEATED SLABS: [NA, R-7.5 FOR 12" BELOW]

#### OPAQUE DOORS: [NA, R-4.75]

### FENESTRATION

#### VERTICAL

FIXED FENESTRATION: U-FACTOR 0.50 MIN, 0.XX ACTUAL  
OPERABLE FENESTRATION: U-FACTOR 0.65 MIN, 0.XX ACTUAL  
ENTRANCE DOORS: U-FACTOR 0.83 MIN, 0.XX ACTUAL

PF = [ 0.038 ]

#### MINIMUM REQUIREMENTS

SHGC PF < 0.2 SEW [0.25] [NA] N [0.33] [NA]  
0.2 ≤ PF < 0.5 [0.30, NA] [0.37, NA]  
PF ≥ 0.5 [0.40, NA] [0.40, NA]

SHGC ACTUAL: 0.XX

#### SKYLIGHTS

U-FACTOR [NA, 0.65 MIN, 0.XX ACTUAL]

SHGC [NA, 0.35 MIN, 0.XX ACTUAL]

ROOF SOLAR REFLECTANCE AND THERMAL EMITTANCE (3-YEAR), OR SOLAR REFLECTANCE INDEX (3-YEAR) FOR LOW SLOPE ROOFS C402.3

R aged = 0.XX [3-year aged solar reflectance min. 0.55, and 3-year aged thermal emittance min. of 0.75]

CALCULATED % OF WINDOWS IN EACH EXTERIOR WALL C402.4

Max. allowable % window openings in exterior walls - 30% C402.4.1

[Not more than 40% of the gross above-grade wall area shall be permitted to be vertical fenestration, provided all of the following requirements are met

- Building not greater than 2 story above grade, not less than 50% of the net floor area is within a daylight zone. [NA] [Complies] [Not Compliant]
- Building not greater than 3 or more stories above grade, not less than 50% of the net floor area is within a daylight zone. [NA] [Complies] [Not Compliant]
- Daylight responsive controls complying with C405.2.3.1 are installed in daylight zones. [Complies] [Not Compliant]
- Visible Transmittance (VT) of vertical fenestration is not less than 1.1 times solar heat gain coefficient (SHGC) [Complies] [Not Compliant]

Maximum allowable area of skylight area - 3% of gross roof area

### ACTUAL FENESTRATION CALCULATIONS:

NORTH WALL(S): 20.38 % <30% COMPLIES  
SOUTH WALL(S): 0.37 % <30% COMPLIES  
EAST WALL(S): 2.72 % <30% COMPLIES  
WEST WALL(S): 2.84 % <30% COMPLIES  
ROOF SKYLIGHT 00% <03% COMPLIES

### MINIMUM SKYLIGHT FENESTRATION AREA C402.4.2

Enclosed space greater than 2,500 SF floor area directly under roof ?  
YES NO

75% of ceiling area with ceiling height greater than 15 feet  
YES NO

Uses as an office, lobby, atrium, concourse, corridor, storage space, gymnasium/exercise center, convention center, automotive service area, manufacturing space, non refrigerated warehouse, retail store, distribution/sorting area, transportation depot or workshop  
YES NO

TOTAL DAYLIGHT ZONE UNDER SKYLIGHTS SHALL BE OF NOT LESS THAN 3% WHERE SKYLIGHTS HAVE A VT OF AT LEAST 0.40

OR

= MINIMUM SKYLIGHT EFFECTIVE APERTURE OF AT LEAST 1%,  
= 0.85 x Skylight Area x Skylight VT x WF  
Daylight Zone Under Skylight

WF (well factor)

=0.9 if light well depth < 2 ft

=0.7 if light well depth ≥ 2 ft

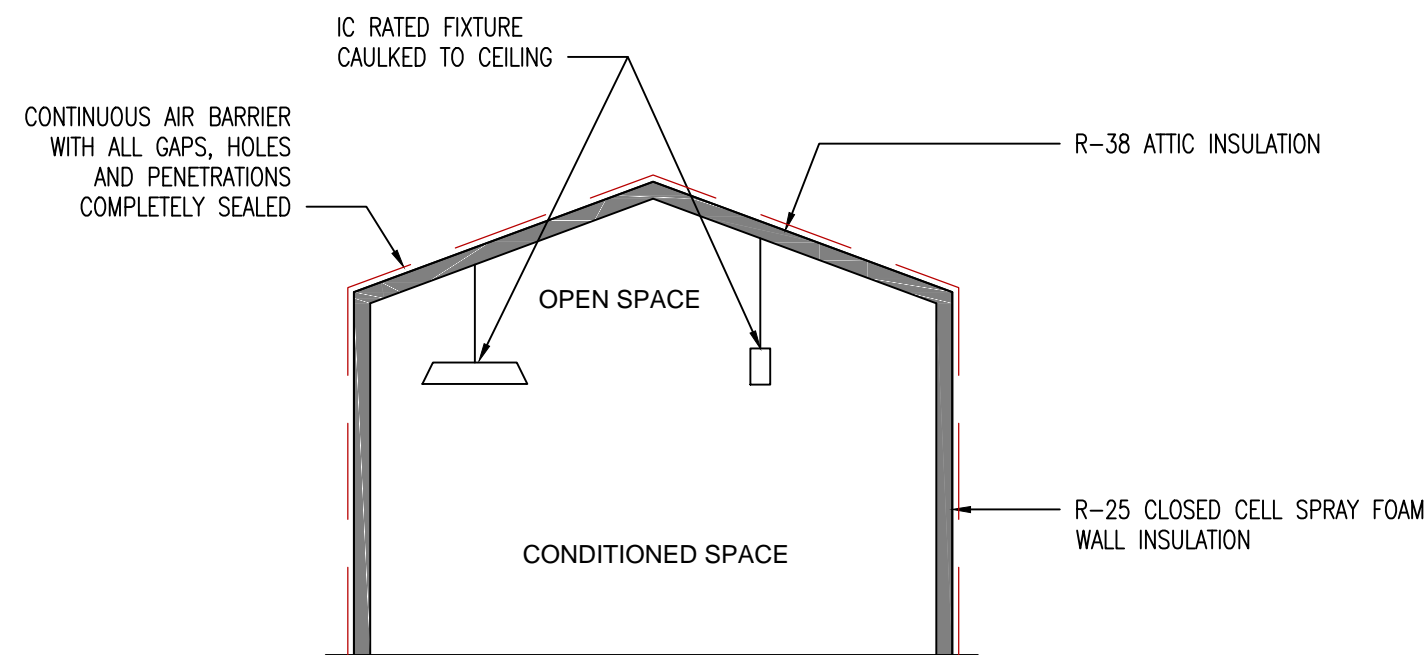
### AIR LEAKAGE - THERMAL ENVELOPE (Mandatory) C402.5

Air Leakage requirements will be met by: Materials, Assemblies Testing during construction

#### DIAGRAM ILLUSTRATING AIR BARRIER



SCHEMATIC PLAN VIEW



SCHEMATIC SECTION VIEW  
CEILING THERMAL ENVELOPE

### C402.5 Air Leakage - thermal envelope (Mandatory)

- Continuous air barrier shall be provided throughout the building envelope. Permitted to be located on inside or outside of building envelope, located within the assemblies composing the envelope, or combination thereof.
- Air Barrier Construction shall comply with following:
  - Continuous for entire thermal envelope and across joints
  - Seams shall be sealed
  - Penetrations shall be caulked or gasketed
  - Recessed lighting shall be
    - IC Rated
    - Labeled having air leakage rate of less than 2.0 cfm
    - Sealed with gasket or caulk between housing and interior wall or ceiling covering.

#### Acceptable Air Barriers Materials (with joints sealed)

- Min 3/8" thick plywood
- Min 3/8" oriented stranded board (OSB)
- Min 3/8" extruded polystyrene insulation board
- Min 3/8" foil-back polyisocyanurate insulation board
- Min 1 3/8" closed-cell spray foam min density 1.5 pcf
- Min 4 3/8" open-cell spray foam density between 0.4 and 4.5 pcf
- Min 3/8" interior or exterior gypsum board
- Min 1/2" cement board
- Built-up roofing membrane
- Modified bituminous roof membrane
- Fully adhered single-ply roof membrane
- Min 3/8" portland cement / sand parge or gypsum plaster
- Cast-in-place precast concrete
- Fully grouted concrete block masonry
- Sheet steel or aluminum
- Solid or hollow masonry constructed of clay or shale masonry units

#### Acceptable Air Barriers Assemblies

- Concrete masonry walls coated with
  - 1 application block filler, or
  - 2 applications of a paint or sealer coating
- Masonry walls constructed of clay or shale masonry, min 4 inches width
- Portland cement stucco or plaster min 3/8" thick

### MAXIMUM AIR LEAKAGE RATE FOR FENESTRATION ASSEMBLIES

FENESTRATION ASSEMBLY	MAXIMUM RATE (CFM / FT <sup>2</sup> )	TEST PROCEDURE
Windows	0.20	AAMA/WDMA/CSA101/ I.S.2/A440 or NFRC 400
Sliding Doors	0.20	
Swinging Doors	0.20	
Skylights - with condensation weepage openings	0.30	NFRC 400
Skylights - All others	0.20	
Curtain Walls	0.06	
Storefront Glazing	0.06	NFRC 400 or ASTM E 283 at 1.57 psf (75 Pa)
Commercial glazed swinging entrance doors	1.00	
Revolving Doors	1.00	
Garage Doors	0.40	ANSI/DASMA 105, NFRC 400, or ASTM E283 at 1.57 psf (75 Pa)
Rolling Doors	1.00	
High-speed doors	1.30	

### C402.5.7 VESTIBULES

Exception 1. Not required in climate zones 1 & 2.

### C403 MECHANICAL SYSTEMS

### C404 SERVICE WATER HEATING (MANDATORY)

### C404 ELECTRICAL POWER AND LIGHTING SYSTEMS