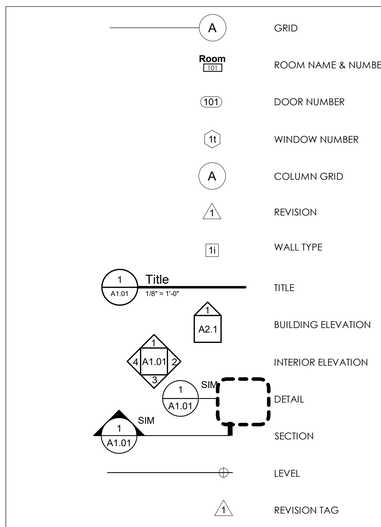
North Collier Control and Rescue District

Station 49

SITE LOCATION

GRAPHIC SYMBOLS



Product Approvals:

Windows:	ES Windows Series "ES-8000" Aluminum Window Wall System	Miami Dade NOA No:24-0321.07 Exp. 04/03/2028
Doors:	ES Windows Series "ES-8000" Aluminum Window Wall System	Miami Dade NOA No:24-0321.07 Exp. 04/03/2028
Doors:	Series "LS-18" Outswing Commercial Steel Doors	Miami Dade NOA No:23-0823.12 Exp. 04/07/2026
Garage Doors:	OVERHEAD DOOR MODEL 5215 ALUMINUM SECTIONAL DOORFL PRODUCT APPROVAL 17629.1	
Roofing:	PAC-CLAD PAC-150 1.5" Snap-Clad .032" Alum. X 16" or PAC-CLAD Tite-Loc Plus 2' 032" Alum. X 16"	Miami Dade NOA No:23-1205.08 Exp. 02/22/2029 Miami Dade NOA No:22-0329.13 Exp. 04/06/2027
Underlayment:	Carlisle – WIP 300HT Self-Adhering Underlayment-	Miami-Dade NOA No.: 24-0606.01 Exp. 08/05/25

Area Summary

1. LDC Floor Area: (includes thickness of exterior walls)
15,307 sq. ft.

2. Parking Floor Area: (excludes thickness of exterior walls)
14,702 sq. ft.

3. FBC 2010 Floor Area: (includes thickness of ext. walls, and ext. floor areas which are beneath the roofline above)
15,880 sq. ft.

4. Impact Fee Area: (includes thickness of exterior walls) <same as #1>
15,307 sq. ft.

Project Description

Project Description:
New Fire Station for 14 firefighters and separate Offices.
Firestation shall ahve no administrative areas apart from a conference room that will be used by fire officials only. Firehouse includes apparatus bay, decontamination area, firegear storage, firefighter bunks and living space.

Proposed Project Data:
Construction Type: Type II-B sprinklered- Concrete masonry bearing walls- Steel roof structure.
1 story

Building Height: 18'-3" mean height of roof

dFIRM Flood Zone: X500 zone Per 2024 Dfirm Map
Base Flood Elevation: 9.0 NAVD
Minimum Design Flood Class 4 (BFE +2 ft, DFE, or 500 year elevation) Per FBC
Proposed Interior subfloor elevation: 13.0 NAVD

Filed Under Separate Permits:
Generator
Fuel Cell
Fire Alarm and Fire Sprinkler Systems
Range Hood
Dumpster Enclosure

Occupancy Type:
Storage S-2 -311.3 Low-hazard storage, Group S-2. Parking garages, open or enclosed
Residential- R-3-310.5 Residential Group R-3,Congregate living facilities (nontransient) with 16 or fewer occupants
Conference Room is considered an accessory to the R-3 Occupancy (less than 10% per 508.2.3 Allowable building area.

1 Hour separation required per FBC table 508.4

Project Description per FFPC 6th ed :
FFPC 101 4.6.7.1.
Work Classification: New Construction

Legal Description:
Parcel Number: 00155884304
Map: 3A16
Strap: -- 000100 040 03A16
Section: 16
Township: 48
Range: 25
Legal: 16 48 25 POR OF NE 1/4 AS DESC IN OR 6376 PG 1606

ASCE -16 Wind Spped
Exposure C
Risk Category IV
182 mph wind zone ATC Windmap

Climatic Zone: 2

Due to errors that can occur w/ reproductions, drawings are not to be scaled.
Architect shall be notified of any discrepancies or errors.
Interior Finish Requirements per Table 803.11
R-3 Occupancy, Sprinklered Building
Exit enclosures and passageways: Class "C"
Exit Corridors: Class "C"
Rooms and Enclosed Spaces: Class "C"

S-2 Occupancy, Sprinklered Building
Exit enclosures and passageways: Class "C"
Exit Corridors: Class "C"
Rooms and Enclosed Spaces: Class "C"

Structural Engineer

Wilson Structural Consultants
6731 Professional Parkway West Suite 103
Sarasota, Florida 34240
Tel: 941.907.4789, x 246
Fax: 941.907.0576
e-mail: rwilson@wilsonstructural.com

PME Engineer

Stafford Engineering, Inc.
3525 Bonita Beach Road Suite 111
Bonita Springs FL 34134
Tel: 239-948-5841
Fax: 239-948-5990
e-mail: stevens@rsseng.net

Civil Engineer

JLA Land Development
7400 Trail Blvd, Suite 200,
Naples, FL 34108
Tel: 239.597.3111
email: jcarr@jla.com

SHEET INDEX

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A0.12	ADA, FL. ACCESSIBILITY GUIDELINES
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A0.23	Life Safety- Penetrations
A0.24	Life Safety- Penetrations 2
A0.25	Life Safety- Penetrations 3
A0.26	Life Safety- Penetrations 3
A0.27	Life Safety- Penetrations 4
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M1.2	Mechanical Building Plan Part A
M1.3	Mechanical Building Plan Part B
M1.4	Mechanical Building Plan Part C
M2.1	Range Hood Details
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E0.4	Schedules
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E1.2	Electrical Plan Part A
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E2.1	Low Voltage Systems Plan
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P1.1	Domestic Plumbing Plan
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FA0.1	Fire Alarm Riser Diagram and Notes
FA1.1	Overall Fire Alarm Plan
FA2.1	Fire Alarm Site Plan

CODE REFERENCES

FBC Building 8th Edition
FBC Residential 8th Edition
FBC Mechanical 8th Edition
FBC Plumbing 8th Edition
FBC Fuel Gas 8th Edition
FBC Existing Building Code 8th Edition
FBC Energy Conservation 8th Edition
FBC Test Protocols 8th Edition
Florida Accessibility 8th Edition
Florida Fire Prevention Code 8th Edition
NFPA70/NEC 2020
Collier County LDC

Waterproofing Statement

In addition ot the waterproofing details provided in these docuemnts, the Contractor shall engage a accredited RWC® (registered Waterproofing Consultant) certified designer for waterproofing specifications, designs and testing requirements. The RWC shall review and approve all waterproofing products designated herein.

Lars W Young Inc

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

COVER SHEET

STATE OF FLORIDA — LARS W YOUNG — AR0016755 — REGISTERED ARCHITECT — Florida

Architecture
6961 Sable Ridge Ln
Naples, FL 34109
phone: 239.591.8899
lwyarch@gmail.com

A0.00

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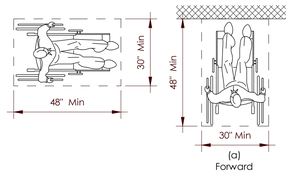


Figure 305.3
Clear Floor or Ground Space

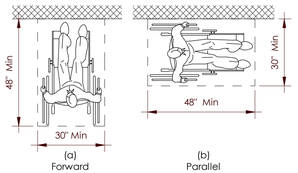


Figure 305.5
Position of Clear Floor or Ground Space

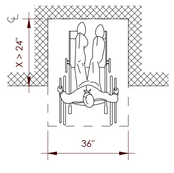


Figure 305.7.1
Maneuvering Clearance in an Alcove, Forward Approach

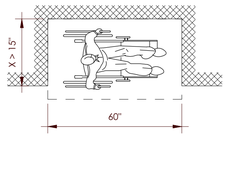


Figure 305.7.2
Maneuvering Clearance in an Alcove, Parallel Approach

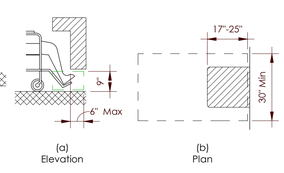


Figure 306.2
Toe Clearance

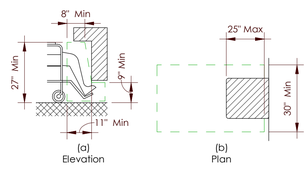


Figure 306.3
Knee Clearance

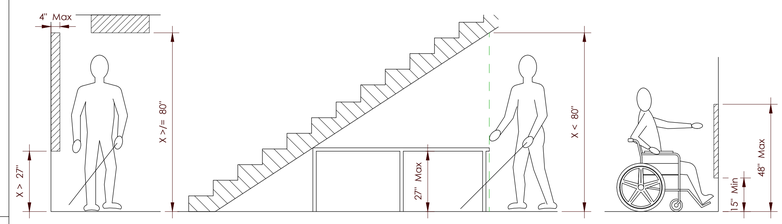


Figure 307.2
Limits of Protruding Objects

Figure 307.4
Vertical Clearance

Figure 308.2.1
Unobstructed Forward Reach

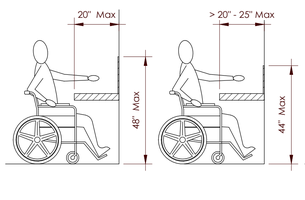


Figure 308.2.2
Obstructed High Forward Reach

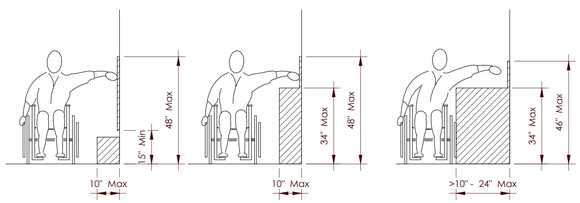


Figure 308.3.1
Unobstructed Side Reach

Figure 308.3.2
Obstructed High Side Reach

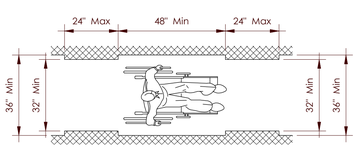
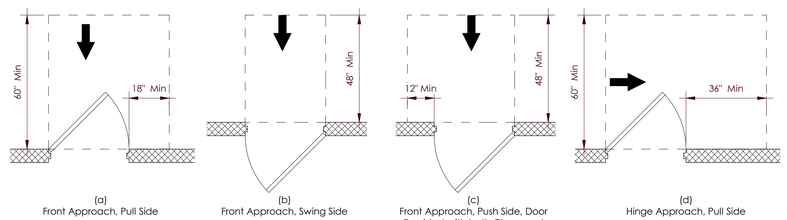
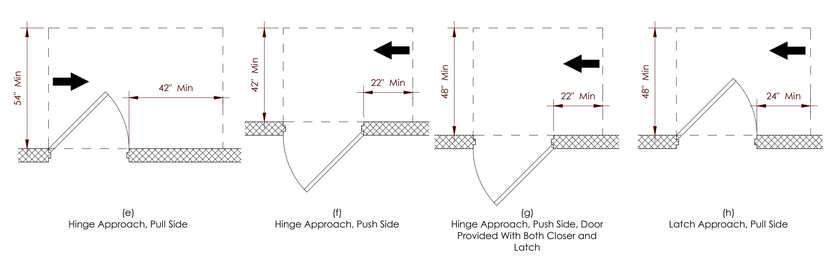


Figure 403.5.1
Clear Width of an Accessible Route





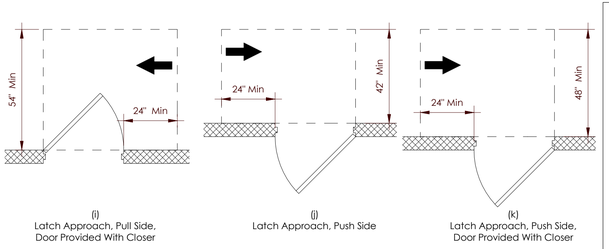
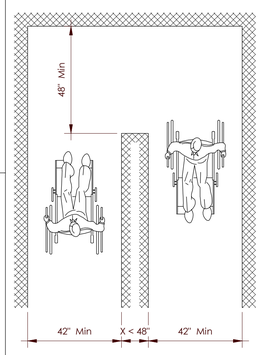


Figure 404.2.4.1
Maneuvering Clearances at Manual Swinging Doors and Gates

Table 404.2.4.2 Maneuvering Clearances at Doorways without Doors or Gates, Manual Sliding Doors, and Manual Folding Doors

		Minimum Maneuvering Clearance
Approach Direction	**Perpendicular to Doorway**	**Parallel to Doorway (beyond stop/latch side unless noted)**
From Front	48 inches (1220 mm)	0 inches (0 mm)
From side-1	42 inches (1065 mm)	0 inches (0 mm)
From pocket/hinge side	42 inches (1065 mm)	22 inches (560 mm)[2]
From stop/latch side	42 inches (1065 mm)	24 inches (610 mm)

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



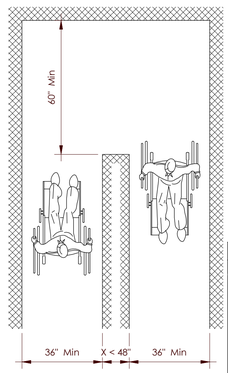


Figure 403.5.2
Clear Width at Turn

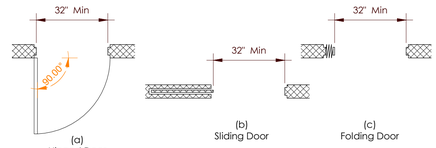


Figure 404.2.3
Clear Width of Doorways

Table 404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

Approach Direction	Door or Gate Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch side unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	48 inches (1220 mm)	0 inches (0 mm)[1]
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm)-2	22 inches (560 mm)-3
From latch side	Pull	48 inches (1220 mm)-4	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm)-4	24 inches (610 mm)

1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add 6 inches (150 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 6 inches (150 mm) if closer is provided.

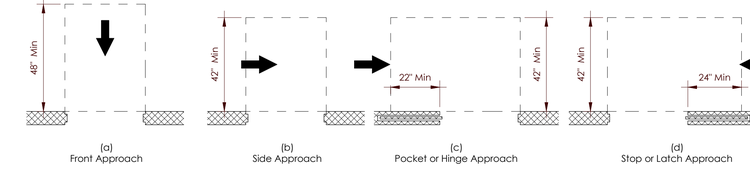


Figure 404.2.4.2
Maneuvering Clearances at Doorways Without Doors, Sliding Doors, Gates, and Folding Doors

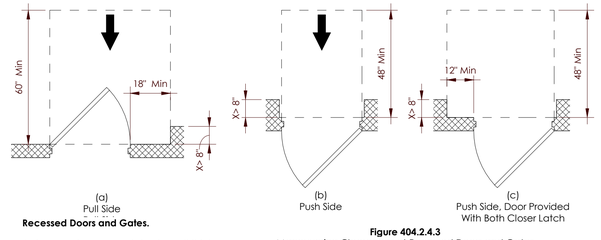


Figure 404.2.4.3
Maneuvering Clearances at Recessed Doors and Gates

Recessed Doors and Gates.

A door can be recessed due to wall thickness or because of the placement of casework and other fixed elements adjacent to the doorway. This provision must be applied wherever doors are recessed.

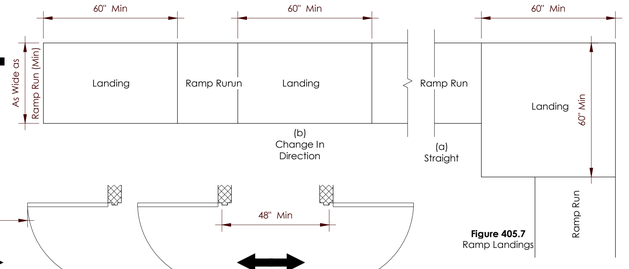
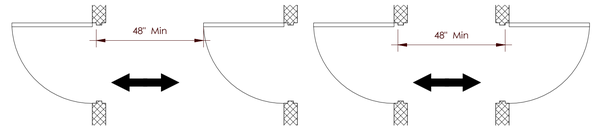


Figure 405.7
Ramp Landings



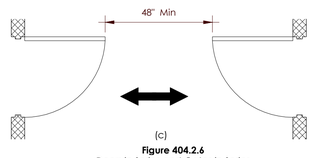


Figure 404.2.6
Doors in Series and Gates in Series

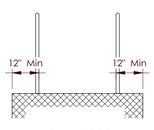


Figure 405.9.1
Extended Floor or Ground Surface Edge Protection

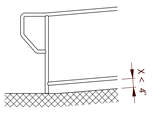
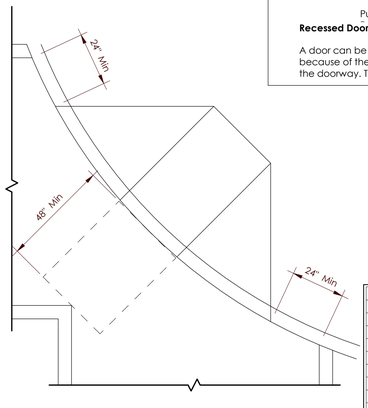


Figure 405.9.2
Curb or Barrier Edge Protection



Adjoining Suface Max. Slope 1:20 — Curb Ramp Slope

Note:

Where provided, curb ramp flares shall not be steeper than 1:10.

Figure 406.2
Counter Slope of Surfaces Adjacent to Curb Ramps

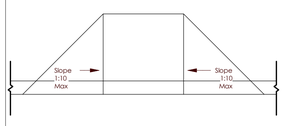


Figure 406.3
Sides of Curb Ramps

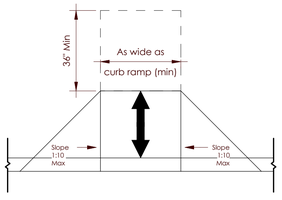


Figure 406.4
Landings at the Top of Curb Ramps

1 A0.10 — FAC ADA 1
3/8" = 1'-0"

No.	Description	Date

Project #	23.1083
Date:	9.30.25
Drawn:	Author
Checked:	Checker
Scale	3/8" = 1'-0"

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110

For: North Collier Fire Control & Rescue District

ADA, FL. ACCESSIBILITY GUIDELINES

Lars W Young Inc

Architecture
6961 Sable Ridge Ln
Naples, FL 34109
Phone: 239.591.8899

STATE OF FLORIDA — LARS W. YOUNG — AR0016755 — REGISTERED ARCHITECT

Florida AR0016755

lwyarch@gmail.com

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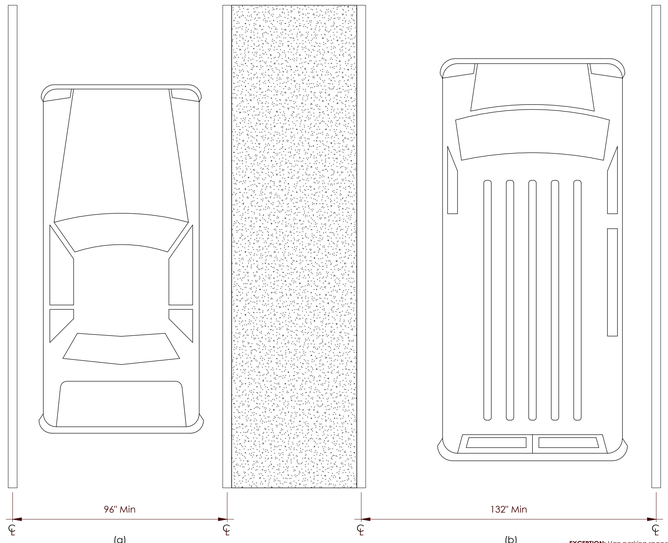


Figure 502.2
Vehicle Parking Spaces

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.

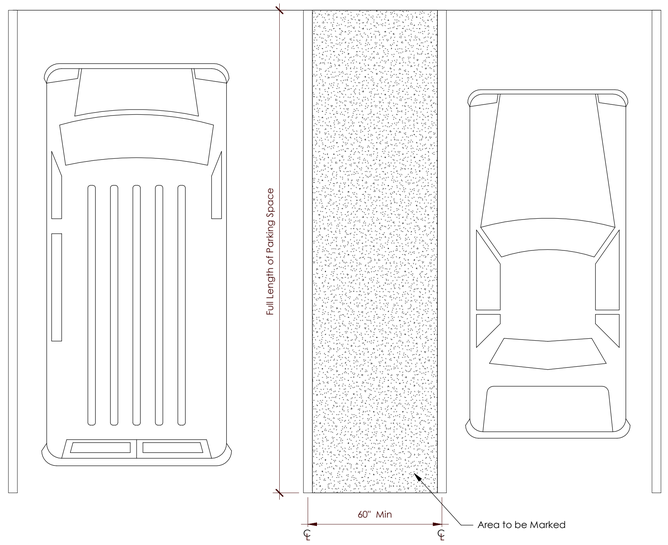


Figure 502.3
Parking Space Access Aisle

Advisory 502.3 Access Aisle.
Accessible routes must connect parking spaces to accessible entrances. In parking facilities where the accessible route must cross vehicular traffic lanes, marked crossings enhance pedestrian safety, particularly for people using wheelchairs and other mobility aids. Where possible, it is preferable that the accessible route not pass behind parked vehicles.

Advisory 502.3.3 Marking.
The method and color of marking are not specified by these requirements but may be addressed by State or local laws or regulations. Because these requirements permit the van access aisle to be as wide as a parking space, it is important that the aisle be clearly marked.

Advisory 502.3.4 Location.
Wheelchair lifts typically are installed on the passenger side of vans. Many drivers, especially those who operate vans, find it more difficult to back into parking spaces than to back out into comparatively unrestricted vehicular lanes. For this reason, where a van and car share an access aisle, consider locating the van space so that the access aisle is on the passenger side of the van space.

Advisory 502.4 Floor or Ground Surfaces.
Access aisles are required to be nearly level in all directions to provide a surface for wheelchair transfer to and from vehicles. The exception allows sufficient slope for drainage. Built-up curb ramps are not permitted to project into access aisles and parking spaces because they would create slopes greater than 1:48.

Advisory 502.5 Vertical Clearance.
Signs provided at entrances to parking facilities informing drivers of clearances and the location of van accessible parking spaces can provide useful customer assistance.

Advisory 502.6 Identification.
The required "van accessible" designation is intended to be informative, not restrictive, in identifying those spaces that are better suited for van use. Enforcement of motor vehicle laws, including parking privileges, is a local matter.

Advisory 502.7 Relationship to Accessible Routes.
Wheel stops are an effective way to prevent vehicle overhangs from reducing the clear width of accessible routes.

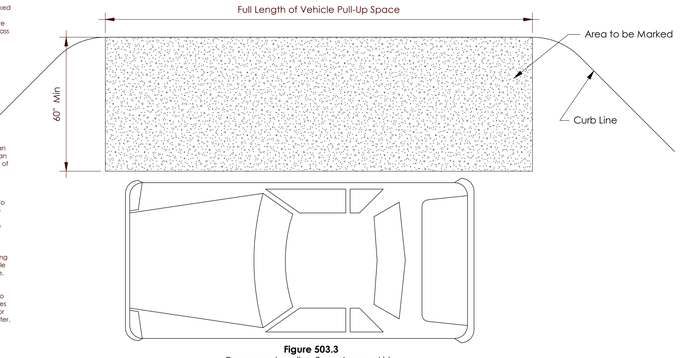
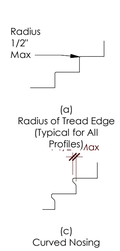


Figure 503.3
Passenger Loading Zone Access Aisle



(a) Radius of Tread Edge (Typical for All Profiles)
(b) Angled Riser
(c) Curved Nosing
(d) Beveled Nosing

Figure 504.5
Stair Nosings

(a) Stairs
(b) Ramps
(c) Walking Surfaces

Figure 505.4
Handrail Height

Figure 505.5
Handrail Clearance

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).

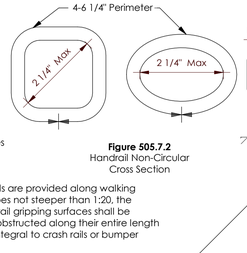


Figure 505.7.2
Handrail Non-Circular Cross Section

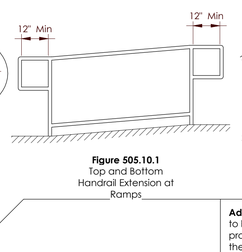


Figure 505.10.1
Top and Bottom Handrail Extension at Ramps

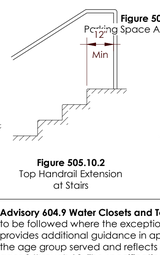


Figure 505.10.2
Top Handrail Extension at Stairs

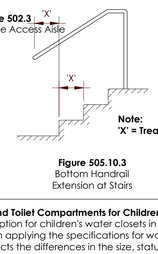


Figure 505.10.3
Bottom Handrail Extension at Stairs

Note:
'X' = Tread Depth

Figure 505.3
Pedestrian Access Aisle

Advisory 604.9 Water Closets and Toilet Compartments for Children's Use. The requirements in 604.9 are to be followed where the exception for children's water closets in 604.1 is used. The following table provides additional guidance in applying the specifications for water closets for children according to the age group served and reflects the differences in the size, stature, and reach ranges of children ages 3 through 12. The specifications chosen should correspond to the age of the primary user group. The specifications of one age group should be applied consistently in the installation of a water closet and related el**Advisory Specifications for Water Closets Serving Children Ages 3 through 12**

	Ages 3 and 4	Ages 5 and 8	Ages 9 and 12
Water Closet Centerline	12 inches	12 to 15 inches	15 to 18 inches
Toilet Seat Height	11to12 inches	12 to 15 inches	15to17 inches
Grab Bar Height	18 to 20 inches	20 to 25 inches	25 to 27 inches
Dispencer Height	14 inches	14 to 17 inches	17 to 19 inches

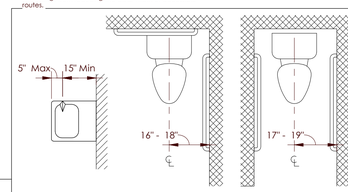


Figure 602.5
Drinking Fountain Spout Location

(a) Wheelchair Accessible Water Closets
(b) Ambulatory Accessible Water Closet

Figure 604.3.1
Size of Clearance at Water Closets

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

Advisory 604.3.2 Overlap.
When the door to the toilet room is placed directly in front of the water closet, the water closet cannot overlap the required maneuvering clearance for the door inside the room.

Figure 604.2
Water Closet Location

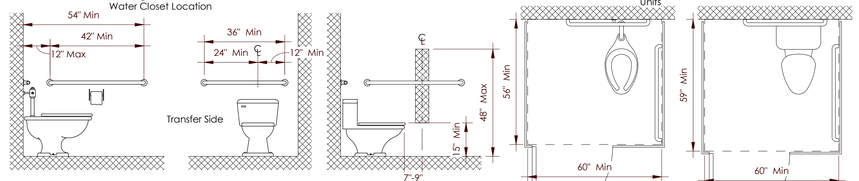


Figure 604.5.1
Side Wall Grab Bar at Water CloseRear Wall Grab Bar at Water Closets

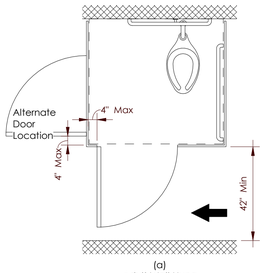
Figure 604.5.2

Figure 604.7
Dispenser Outlet Location

(a) Adult Wall Hung Water Closet

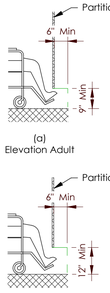
(b) Adult Floor Mounted Water Closet and Childrens Water Closet

Figure 604.8.1.1
Size of Wheelchair Accessible Toilet



(a) Adult Wall Hung Water Closet

Figure 604.8.1.2
Wheelchair Accessible Toilet Compartment Doors



(a) Elevation Adult
(b) Elevation Children

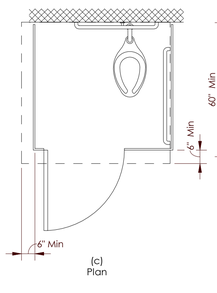


Figure 604.8.1.4
Wheelchair Accessible Toilet Compartment Toe Clearance

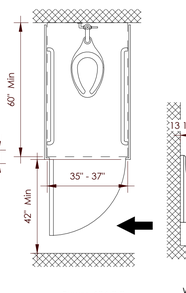
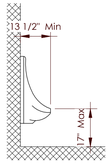
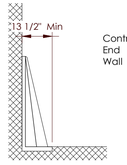


Figure 604.8.2
Ambulatory Accessible Toilet Compartment

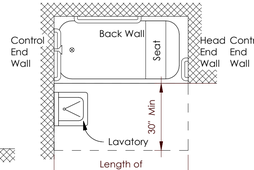


(a) Wall Hung Type

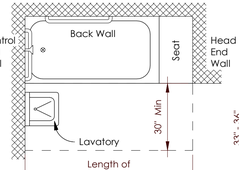


(b) Stall Type

Figure 605.2
Height and Depth of Urinals



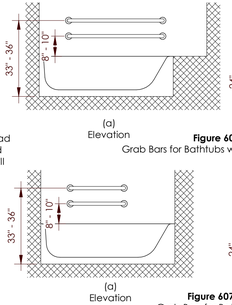
(a) Removeable In-Seat Tub



(b) Permanent Seat

Figure 607.2
Clearance for Bathtubs

Figure 607.2
rance for Bathtubs



(a) Elevation

Figure 607.4.1
Grab Bars for Bathtubs with Permanent Seats

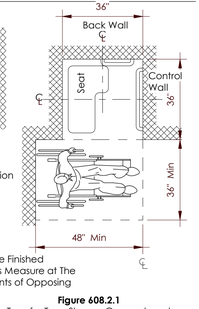
(b) Permanent Seat

(a) Elevation

Figure 607.4.2
Grab Bars for Bathtubs with Removable In-Tub Seats

(b) Plan

Figure 607.5
Bathtub Control Location



Note: Inside Finished Dimensions Measure at The Center Points of Opposing Side

Figure 608.2.1
Transfer Type Shower Compartment Size and Clearance

1 A0.11 FAC ADA 2
3/8" = 1'-0"

Lars W Young Inc

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale 3/8" = 1'-0"

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

ADA, FL. ACCESSIBILITY GUIDELINES

STATE OF FLORIDA · LARS W. YOUNG · REGISTERED ARCHITECT · AR0016755 · Florida

Architecture
6961 Sable Ridge Ln
Naples, FL 34109
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lwyarch@gmail.com

A0.11

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10/2/2025 4:27:20 PM

C:\Users\lwyar\Dropbox\PC Documents\23.1083 NCFCRD Fire Station 49\1 Revit Files\NCFCRD 49 20.rvt

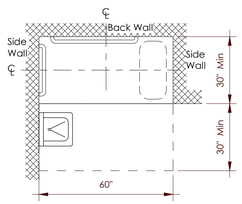


Figure 608.2.2
Standard Roll-In Type Shower Compartment Size and Clearance

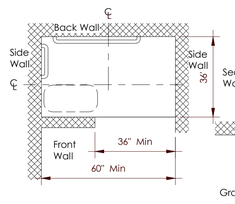


Figure 608.2.3
Alternate Roll-In Type Shower Compartment Size and Clearance

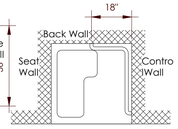
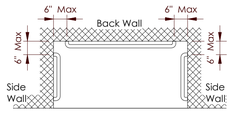
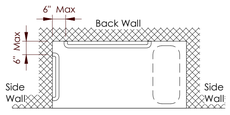


Figure 608.3.1
Grab Bars for Transfer Type Showers



(a)
Without Seat



(b)
With Seat

Figure 608.3.2
Grab Bars for Standard Roll-In Type Showers

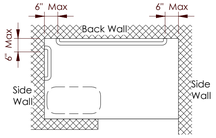


Figure 608.3.3
Grab Bars for Alternate Roll-In Type Showers

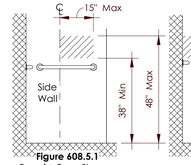
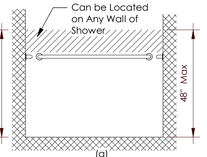
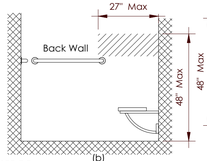


Figure 608.5.1
Transfer Type Shower Compartment Control Location

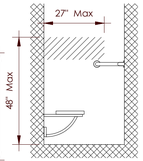


(a)
Without Seat

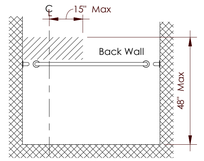


(b)
With Seat

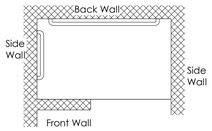
Figure 608.5.2
Standard Roll-In Type Shower Compartment Control Location



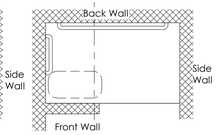
(b)
With Seat (Elevation)



(b)
With Seat (Elevation)



(C)
Without Seat (Plan)



(b)
With Seat (Plan)

Figure 608.5.3
Alternate Roll-In Type Shower Compartment Control Location

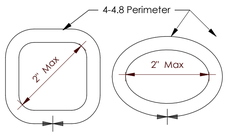
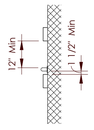


Figure 609.2.2
Grab Bar Non-Circular Cross Section

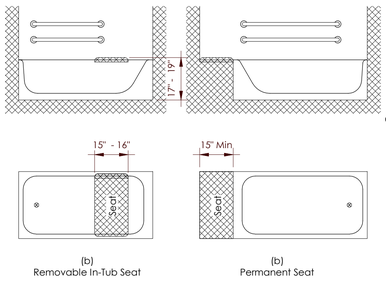


(a)
Projecting Objects

(a)
Reccessed Objects

Figure 609.3
Spacing of Grab Bars

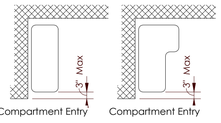
EXCEPTION: The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1 1/2 inches (38 mm) minimum.



(b)
Removable In-Tub Seat

(b)
Permanent Seat

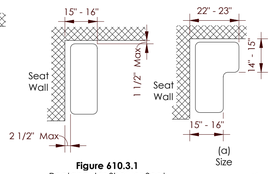
Figure 610.2
Bathtub Seats



(a)
Rectangular

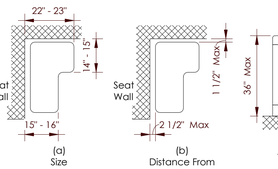
(b)
L-Shaped

Figure 610.3
Extent of Seat



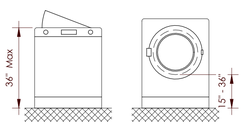
(a)
Size

Figure 610.3.1
Rectangular Shower Seat



(b)
Distance From Wall

Figure 610.3.2
L-Shaped Shower Seat



(a)
Top Loading

(b)
Front Loading

Figure 611.4
Height Of Laundry Copmartment Opening

LIBRARY

Figure 703.2.5
Height Of Rasied Characters

Measurement Range	Minimum in Inches Maximum in Inches
Dot Base Diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between Two Dots in The Same Cell	0.090 (2.3 mm) to 0.100 (2.5 mm)
Distance Between Corresponding Dots in Adjacent Cells	0.241 (6.1 mm) to 0.300 (7.6 mm)
Dot Height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance Between Corresponding Dots From One Cell Directly Below	0.395 (10 mm) to 0.400 (10.2 mm)

Figure 703.3.1
Braille Dimensions

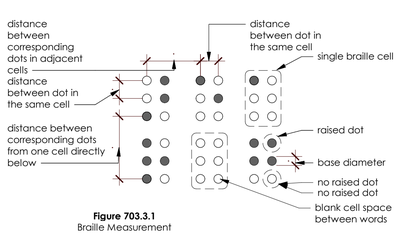


Figure 703.3.1
Braille Measurement

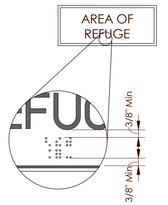


Figure 703.2.5
Height Of Rasied Characters

1 A0.12 FAC ADA 3
3/8" = 1'-0"

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale 3/8" = 1'-0"

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

ADA, FL. ACCESSIBILITY GUIDELINES

STATE OF FLORIDA · LARS W YOUNG · AR0016755 · REGISTERED ARCHITECT

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
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General Notes:

1. Application:
2. General notes apply to work of general contractor, subcontractors, and material suppliers.

3. Industry Standards:
4. Industry standards shall have the same force and effect on performance of work as if copied directly into the contract documents or bound and published therewith and comply with standards in effect as of the date of the contract documents unless otherwise noted or required by governing authorities.

5. Install all products per manufacturer requirements.

6. Supervision and Control:
7. Contractor shall visit job site to be familiar with existing conditions, bid shall reflect accurately all requirements to execute work relating to his trade in a first quality workmanlike manner.

8. Contractor shall guarantee all labor and materials for a period of 1 year recorded from the date of substantial completion. Provide written statements and/or copies of all warranties/guarantees to the owner.

9. All equipment, hardware and other items shall be supplied as specified, unless changes are reviewed and accepted by both Owner and Architect.

10. Any substitutions shall be reviewed and accepted by Owner and Architect. Prior to commencing installation, any additional costs incurred by the Contractor due to his failure to obtain required acceptance shall not be remedied by the Owner or affect the contract price.

11. Items requiring submission of product cuts and/or samples shall be submitted two (2) weeks prior to commencing work affected by such items, to allow sufficient time for acceptance by Owner and Architect. Any costs incurred by the Contractor's failure to obtain acceptance shall not affect the contract price or be remedied by the Owner.

12. General Contractor shall insure cooperation between subcontractors and assist in coordination of their work so that finished architectural features are not adversely affected by the locations or quality of exposed workmanship and materials, mechanical equipment, electrical panels, boards and plumbing. Equipment shall be located as discreetly as possible away from primary entrances or main facades if at all possible. All work shall remain concealed wherever applicable.

13. Contractor shall protect other nearby vegetation from blows, falling materials or tramping where possible.

14. The general contractor shall assign a qualified construction supervisor to the project. The general contractor and his supervisor shall be responsible for coordination; administration; supervision; rechecking dimensions and measurements; surveying/recording; inspections and testing; general installation provisions; cutting and patching; and cleaning/protecting.

15. General Installation Provisions:

16. Comply with manufacturer's applicable instructions and recommendations for installation at all times.

17. Contractor and subcontractors shall inspect all work prior to and related to the installation of their own work for true, plumb, level standards. Commencement of a Contractor's work shall constitute acceptance of prior conditions and the Contractor/Subcontractor shall become responsible for leaving the work, true level and plumb.

18. General Contractor shall verify all dimensions, angles, before proceeding with any work. Variations in the field conditions relative to the Construction Documents shall be **immediately** reported to the Architect. Work shall not commence until clarifications are obtained.

19. The General Contractor shall notify utility companies prior to excavating for utilities and shall be responsible for locating all underground construction prior to excavation. The Contractor shall notify the Owner and Architect of conditions.

20. All Interior dimensions are rough dimensions unless otherwise noted. Site conditions in conflict with the expressed dimensions and side alignments herein represented by Lars W. Young, Inc., shall be brought to the attention of the Architect for consideration and new alignments may be established only with the supervised approval and acceptance of the Architect.

21. All work shall be erected plumb, level and true and in accordance with details. Do not scale drawings.

22. Provide all necessary blocking to insure proper attachment of gypsum board, cabinetry, baseboard, trim, fascia, etc.

23. Temporary bracing during construction shall be secure and meet all applicable safety standards.

24. Large scale details govern. Any descrepancies shall be brought to the attention to the Architect for clarifcation.

25. All framing lumber shall be free of significant defects and shall be of acceptable grade, checked for moisture content and free of loose knots, decay streaks, rot, splits, pitch pockets, wraps, twists or bends.

26. Product Selections and Substitution: Refer all product selections and substitutions to the Owner for final approval prior to actual purchase of materials.

27. Well in advance of every major unit of work which requires coordination and interfacing with other work, meet at project site with installer and/or representatives of manufacturers and fabricators who are involved in or affected by the unit of work which has preceded or will follow. Record discussions.

28. Recheck measurements and dimensions of the work as an integral step of starting each installation and making each purchase of equipment.

29. All interior dimensions are rough dimensions unless otherwise noted. Site conditions in conflict with the expressed dimensions and side alignments herein represented by Lars W. Young, inc. shall be brought to the attention of the architect for consideration and new alignments may be established only with the supervised approval and acceptance of the architect.

30. Inspect each item of material or equipment immediately prior to installation and reject damaged or defective items.

31. Provide attachment and connection devices and methods for securing work properly as it is installed, true to line and level, and within recognized industry tolerances; allow for expansions and building movements; provide uniform joint widths in exposed work; and organize for best visual effect.

32. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion, which will ensure best possible results for each unit of work in coordination with the entire work.
33. Isolate each unit of work from non-compatible work, as required, to prevent deterioration.
34. Coordinate enclosure (closing in) of work with required inspections and tests so as to minimize the necessity of uncovering work for that purpose.

35. Where mounting heights and locations are not indicated, mount individual units of work at industry-recognized standard mounting heights (locations) for applications indicated and refer questionable choices to architect/engineer.

36. Temporary Facilities:
37. Refer to the "general conditions of the contract for construction" for basic commitments to provide temporary facilities. The general contractor shall provide the following services when required to perform the work.

38. Temporary Construction Facilities:
39. Water distribution, dewatering, enclosure, power distribution, temporary lighting, temporary roads, temporary elevator/hoisting, and miscellaneous construction facilities.

40. Temporary Support Facilities:
41. Contractor's field office, drinking water, toilets, project identification sign (to include name of project, owner, contractor, designer, and additional information as requested by the owner).

42. General:
43. Fire protection, barricades, fencing, lockup and security, sidewalk protection, watchman services (when required by owner or contractor), and environmental protection.

44. Product Selection and Substitution:
45. Refer all product selections and substitutions to the owner for final approval prior to actual purchase of materials.

46. Warranty and Guaranty:
47. A one-year written guarantee is required on all work under this contract. Specific product warranties where they apply shall accrue to the owner. Provide written statements and/or copies of all warranties/guarantees to the owner.

48. Final Cleaning:
49. At project close-out time, clean or reclean entire work to normal level for "first class" maintenance/cleaning of building projects of similar nature. Remove non-permanent protections and labels, polish glass, clean exposed surfaces, touch-up minor damage, replace filters, remove debris, replace burned-out lights, sweep and wash paved areas, police yards and grounds, and sanitize plumbing.

Total Interior Area: 15,307 SF

1 A0.13 Area Plan
1/16" = 1'-0"

Area Tabulation

Per FBC 202.1
AREA, BUILDING. The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above.

FLOOR AREA, GROSS. The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction or corridors, stairways, ramps, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts.

FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.

Area Schedule (Gross Building)

Name	Area	Comments
Admin	720 SF	
Apparatus Bay	5149 SF	
Entry	147 SF	
Entry	110 SF	
Fire Station Interior	7324 SF	
Lanai	221 SF	
Mech	324 SF	
Office	931 SF	
Porch	95 SF	
Storage Areas	862 SF	

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

General Notes

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
Naples, FL 34109
Phone: 239.591.8899
lwyarch@gmail.com

STATE OF FLORIDA · LARS W YOUNG · AR0016755 · REGISTERED ARCHITECT · Florida Registration Number AR0016755

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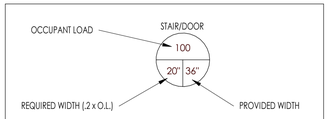
1 Fire Station Floor Plan-Life Safety
A0.20 1/8" = 1'-0"

Fire Safety Program

PER FFPC 101, LATEST EDITION, COORDINATE THE REQUIREMENTS OF CHAPTER 16 SAFEGUARDS DURING BUILDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS WITH THE FIRE MARSHAL.

OWNER OR CONTRACTOR SHALL IS REQUIRED TO RECIEVE WRITTEN VERIFICATION FORM THE FIRE MARSHAL THAT SUCH COORDINATION TOOK PLACE, AS REQUIRED FOR PERMITTING.

Life Safety Legend



Life Safety Legend

TRAVEL DISTANCE POINT

TRAVEL DISTANCE 50'

ILLUMINTED EXIT SIGN

2A:10BC FIRE EXTINGUISHER CABINET FEX

EXIT TRAVEL DISTANCE

FEC TRAVEL DISTANCE

1 HR RATED WALL UL U906 UL U419

2 HR RATED WALL UL U906

Notes

1 - OCCUPANT LOAD PER 2017 FLORIDA BUILDING CODE TABLE 1004.1.2 & FFPC101
2 - 7.3.1.2
3 - EGRESS WIDTH PER 2017 FLORIDA BUILDING CODE SECTION 1005.1
EXIT ACCESS TRAVEL DISTANCE = 250'-0" PER 2017 FLORIDA BUILDING CODE
4 - TABLE 1017.2

Fire Extinguishers per FBC 906 and FFPC 13.6
FEC-1 : LIGHT HAZARD -75' MAX DISTANCE OF TRAVEL- 3,000 SQ FT PER UNIT OF "A"- 11,250 MAX FLOOR ARE PER EXTINGUISHER. SURFACE MOUNT.

Fire Occupancy Notes

R-3- *Congregate living facilities (nontransient)* STATION SHALL HOUSE UP TO 13 PERSONNELL AT A TIME. THE CONFERENCE ROOM ATTACHED OCCUPIES LESS THAN 10% OF THE R-3 OCCUPANCY(*per* 508.2 Accessory occupancies. 508.2.3 *Allowable building area.)*

BUISINESS- General Business Offices

STORAGE S-2-
ITEMS INCLUDED IN STORAGE SHALL INCLUDE FIRE APPARATUE, WASHERSAND DRYERS, METAL CABINETRY, FIRE GEAR, MEDICAL SUPPLIES.

TABLE 508.4 REQUIRED SEPARATION OF OCCUPANCIES (hours)

OCCUPANCY	Ad, D, E		I-1, I-3		I-2		R		F-2,F-3,S-2b, U		B,F-1,M,S-1		H-1		H-2		H-3, H-4, H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
Ad, D, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3a
I-1, I-3	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP
R	—	—	—	—	—	—	N	N	1c	2c	1	2	NP	NP	3	NP	2	NP
F-2, F-3, S-2b, U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3a
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2a
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP
H-3, H-4, H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1e, f	NP

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
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Scale As indicated

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety

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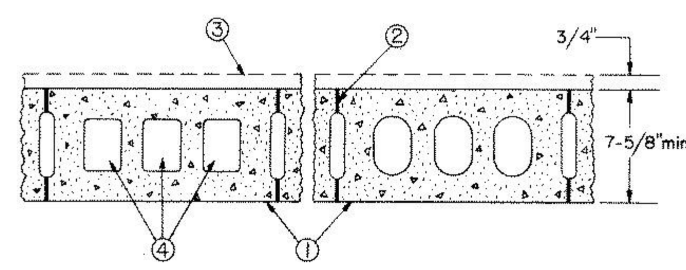
WALL ASSEMBLIES

UL Design No. U901



Design No. U901

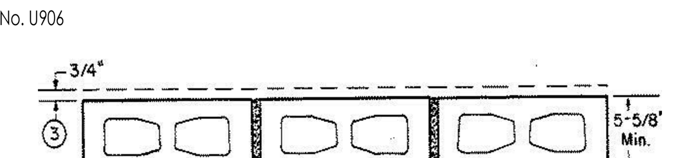
Bearing Wall Rating — 4 HR.
Nonbearing Wall Rating — 4 HR.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

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

1. Concrete Blocks* — Various designs. Classification B-4 (4 hr).
See Concrete Blocks category for lists of eligible manufacturers.

2. Mortar — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
3. Portland Cement Stucco or Gypsum Plaster — If used, add 1/2 hr. to Classification.
4. Loose Masonry Fill — If all core spaces are filled with loose dry expanded slag, burned clay or shale (rotary kiln process), water repellant vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation, Class D-2 (2 hr) or C-3 (3 hr) concrete blocks will provide a 4 hr fire resistance rating.

UL Design No. U906



Design No. U906

Bearing Wall Rating — 2 HR.
Nonbearing Wall Rating — 2 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 BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.
1. Concrete Blocks* — Nominal 6 by 8 by 16 in, hollow or solid. Various designs. Classification (2 hr).
See Concrete Blocks category for list of eligible manufacturers.

ANCHOR CONCRETE PRODUCTS INC

GAGNE & SON CONCRETE BLOCK INC

GLENWOOD MASONRY PRODUCTS

Allowable compressive stress of 57% of max allowable compressive stress in accordance with the empirical design method.

OLDCASTLE APG SOUTH INC, DBA ADAMS PRODUCTS

WESTBROOK CONCRETE BLOCK CO INC

Allowable compressive stress of 75.6% of max allowable compressive stress in accordance with the empirical design method.

2. Mortar — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
3. Portland Cement Stucco or Gypsum Plaster — Add 1/2 hr to Classification if used. Attached to concrete blocks (Item 1).
4. Foamed Plastic* — (Optional-Not Shown) — 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
ATLAS ROOFING CORP — EnergyShield Pro Wall Insulation, EnergyShield Pro 2 Wall Insulation, EnergyShield CGF Pro, EnergyShield Ply Pro, EnergyShield® CGF, EnergyShield® PanelCast, EnergyShield® and "EnergyShield® XR

DUPONT DE NEMOURS, INC. — Types Thermax Sheathing, Thermax Light Duty Insulation, Thermax Heavy Duty Insulation, Thermax Metal Building Board, Thermax White Finish Insulation, Thermax ci Exterior Insulation, Thermax XARMOR ci Exterior Insulation, Thermax IH Insulation, Thermax Plus Liner Panel, Thermax Heavy Duty Plus (HDP), TUFF-R™ ci Insulation, Thermax Butler Stylwall Insulation Board and Thermax Morton Heavy Duty Insulation Board

Holcim Solutions and Products US, LLC — "Enverge™ CI Foil Exterior Wall Insulation" and "Enverge™ CI Glass Exterior Wall Insulation"

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types "Xci-Class A", "Xci 286", "Xci Foil (Class A)"

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — Types "TSX-8500", "ECOMAXci FR", "TSX-8510", "ECOMAX xi FR White", "ECOMAXci", "ECOMAXci FR Air Barrier", "Thermasheath-XP", "Thermasheath", "Durasheath"

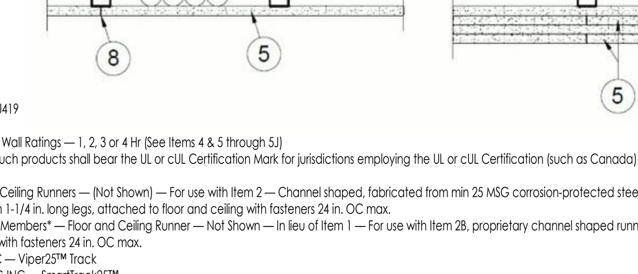
JOHNS MANVILLE — Type "AP Foil-Faced Foam Sheathing"

4A. Building Units* — As an alternate to Item 4, min. 1-in thick polyisocyanurate composite foamed plastic insulation boards, nom. 48 by 48 or 96 in.
ATLAS ROOFING CORP — EnergyShield® Ply

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — "Thermasheath-SI", "ECOBASEci", "ThermaBase-CI", "ECOMAXci FR Ply", "ECOMAXci Ply"

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

UL Design No. U419



Design No. U419

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

1. Floor and Ceiling Runners — (Not Shown) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
1A. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
CEMCO, LLC — Viper25™ Track
CRACO MFG INC — SmartTrack25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track

1B. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CEMCO, LLC — Viper20™ Track
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track
1C. Framing Members* — Floor and Ceiling Runners — (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20
TELLING INDUSTRIES L L C — Type SUPREME D24/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

1D. Floor and Ceiling Runners — (Not Shown) — For use with Item 2A — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.
1E. Framing Members* — Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1) — For use with Items 2E, 5F or 5G or 5I only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.
CLARKDIETRICH BUILDING SYSTEMS — CD ProTRAK
DMFCWBS L L C — ProTRAK
MBA METAL FRAMING — ProTRAK
RAM SALES L L C — Ram ProTRAK
STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

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

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

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

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

1J. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2J, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
1K. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2J, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
1L. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-1/2 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
RESCUE METAL FRAMING, L L C — AlphaTRAK

1M. Framing Members* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 2O, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
RONDO BUILDING SERVICES PTY LTD — Rondo Wall Track

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

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

1P. Framing Members* — Floor and Ceiling Runner — (Not Shown — Alternate to Item 1) — For use with Item 2R, channel shaped runners pre-equipped with proprietary attachment clips. Min. 3-5/8 in. wide. Legs of top runners minimum 3-1/4 in. wide. Legs of bottom runners minimum 1-1/2 in. wide. Runners attached to floor and ceiling with fasteners 24 in. OC max.
HYPERFRAME INC - Hypertrack

1Q. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2S , proprietary channel shaped runners, min width to accommodate stud size, fabricated from min. 20 EQ/22 mils. (min. 0.0221 in. thick) galvanized steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
JJC INTERNATIONAL DISTRIBUTORS — Non-structural Tracks 3-5/8" and 6".

1R. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2T, proprietary channel shaped runners ,min width to accommodate stud size, fabricated from min. 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max
IRONLINE METALS LLC — Bantam Track.

2. Steel Studs — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
2A. Steel Studs — (As an alternate to Item 2, For use with Items 5B, 5E, 5H, 5J or Type ULIX) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.
2B. Framing Members* - Steel Studs — (As an alternate to Item 2, For use with Items 5C, 5I or Type ULIX) — Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.
CEMCO, LLC — Viper25™
CRACO MFG INC — SmartStud25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™
IMPERIAL MANUFACTURING GROUP INC — Viper25™

2C. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CEMCO, LLC — Viper20™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™
IMPERIAL MANUFACTURING GROUP INC — Viper20™

2D. Framing Members* — Steel Studs — In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20
TELLING INDUSTRIES L L C — Type SUPREME D24/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

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

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

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

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

2I. Framing Members* — Steel Studs —
2J. Framing Members* — Metal Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights
2K. Framing Members* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
EB METAL INC — NITROSTUD

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

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

2N. Framing Members*— Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min depth 3-1/2 in. and as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in length than assembly height.
RESCUE METAL FRAMING, L L C — AlphaSTUD

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

2P. Framing Members* — Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
OEG BUILDING MATERIALS — OEG Stud

2Q. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1O, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CEMCO, LLC — Viper X

2R. Framing Members* — Steel Studs — (Not Shown — Alternate to Item 2, For use with Item 1P) — Channel shaped steel studs with attachment clips at top and bottom, min 3-5/8 in. depth, spaced a max of 24 in. OC. Studs clipped into floor and ceiling runners (Item 1P). Max 2-3/8 in. extension reveal from top of stud to inside of ceiling runner.
HYPERFRAME INC— Hyperstud

2S. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1Q, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min. 20 EQ/22 mils. (min. 0.0221 in. thick) galvanized steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
JJC INTERNATIONAL DISTRIBUTORS — Non-structural Studs 3-5/8" and 6".
el screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC
2T. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1R, proprietary channel shaped steelstuds, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
IRONLINE METALS LLC — Bantam Stud.

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

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

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

4C. Foamed Plastic* — (As an alternate for items 4, 4A or 4B, for use with Item 5K) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with minimum 20 MSG steel thickness.

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

4D. Foamed Plastic* — (As an alternate for items 4, 4A or 4B, for use with Item 5K) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for up to 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with minimum 20 MSG steel thickness.

BASF CORP - Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, Walltite HP+, FE137®, FE158®, Spraytite® 158, Spraytite® SP, Spraytite® 81205, Spraytite® Comfort XL, Walltite® XL, Walltite® MAX, Walltite® LWP, Walltite® Plus and Enertite® Max

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

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

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

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

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, ULIX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE

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

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

When Item 7B, Steel Framing Members*, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.

5A. Gypsum Board* — (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6.
CGC INC — Type SHX.
UNITED STATES GYPSUM CO — Type FRX-G, SHX.
USG MEXICO S A DE C V — Type SHX.

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

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

5D. Gypsum Board* — (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.
CGC INC — Type USGX
UNITED STATES GYPSUM CO — Type USGX
USG BORAL DRYWALL SFZ LLC — Type USGX
USG MEXICO S A DE C V — Type USGX

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

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

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

Rating, Hr	Min StudDepth, in.Item 2E	No. of Layers& Thickness of Panel	Min Thkns of Insulation (Item 4)
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR;, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX or 3/4 in. thick Types IP-X3 or ULTRACODE
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Types C and 5/8 in. thick SCX
UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE
USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

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

5I. Gypsum Board* — (As an alternate to Item 5) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5.
CGC INC — Type ULIX, ULX
UNITED STATES GYPSUM CO — Type ULIX, ULX
USG MEXICO S A DE C V — Type ULX

5J. Gypsum Board* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified. For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall
5K. Gypsum Board* — (As an alternate to Item 5 when Foam Plastic insulation (Items 4C or 4D) is used) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1-1/4 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to studs over inner layer with the 1-7/8 in. long steel screws spaced 8 in. OC.

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

7. Furring Channels — (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A.
7A. Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. Steel Framing Members* — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

7B. Framing Members* — (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A.
b. Steel Framing Members* — Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC — Type Isomax

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

7D. Steel Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. Steel Framing Members* — Used to attach furring channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

7E. Steel Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 7Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.
b. Steel Framing Members* — Used to attach furring channels (Item 7Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

7F. Steel Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — Resilient channels and Steel Framing Members as described below:
a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. Not for use with Item 5A and 5E.
b. Steel Framing Members* — Used to attach resilient channels (Item 7Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

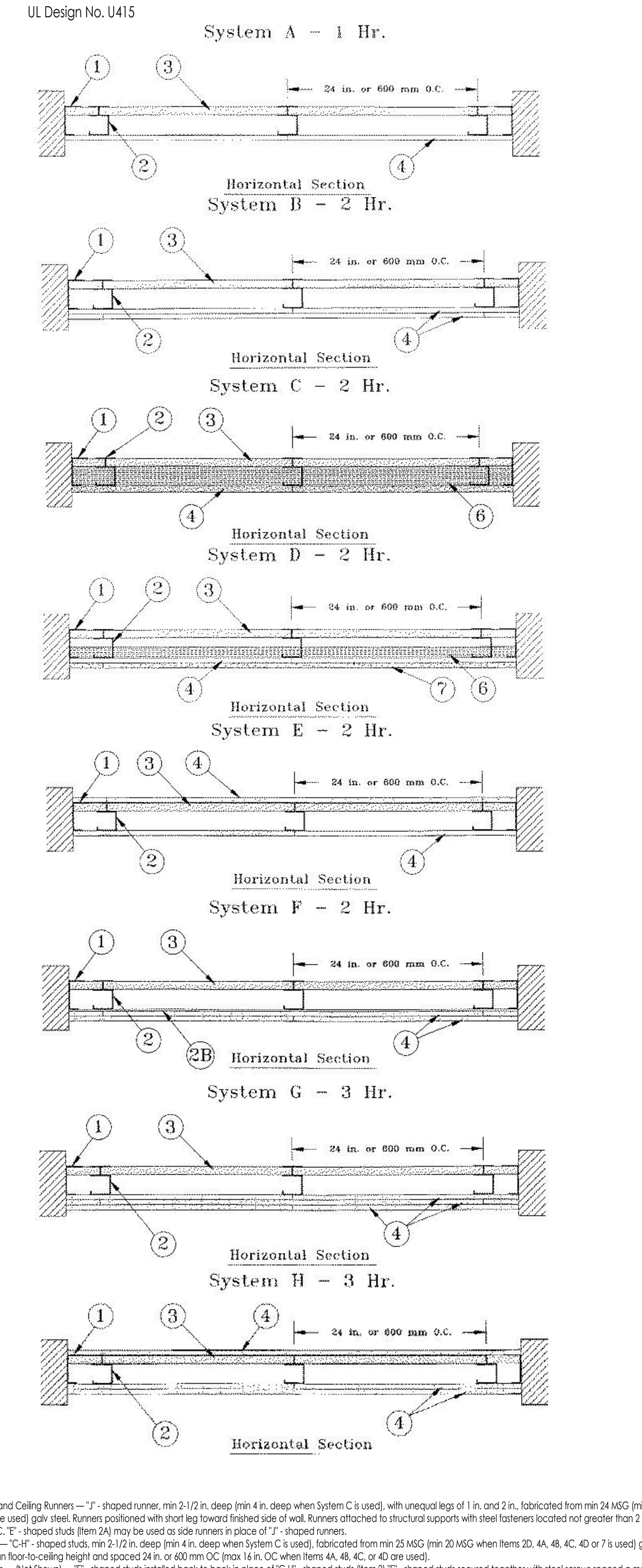
7G. Framing Members* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. Steel Framing Members* — Used to attach furring channels (Item 7Ga) to studs (Item 2). Clips spaced max. 48 in. OC. Clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

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

11. Lead Batten Strips — (Not Shown, For Use With Item 5B) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.
11A. Lead Batten Strips — (Not Shown, For Use With Item 5H) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.
12. Lead Discs or Tabs — (Not Shown, For Use With Item 5B) — Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
12A. Lead Discs — (Not Shown, for use with Item 5H) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".
13. Lead Batten Strips — (Not Shown, For Use With Item 5E) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.
14. Lead Tabs — (Not Shown, For Use With Item 5E) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.
15. Barrier Mesh — (Optional, Not Shown) - Attached to steel studs on one or both sides of the wall using Barrier Mesh Clips spaced at maximum 12 inches on center vertically, using a flat head type screw penetrating through the steel at least 3/8 of an inch. For Steel Studs less than 0.033 inches in thickness, use self-piercing screws. For Steel Studs equal to or greater than 0.033 inches in thickness, use steel drill screws (self-tapping). Gypsum Board (Item 5) to be installed directly over the Barrier Mesh using prescribed screw patterns with lengths increased by a minimum 1/8 in. Barrier Mesh may be installed with the long dimension of the diamond pattern positioned vertically or horizontally. Barrier Mesh joints may occur as butt joints at the framing members and secured using the Barrier Mesh Clips or occur in between framing members as overlapping joints secured using 18 SWG wire ties spaced a maximum 12 in. on center.
CLARKDIETRICH BUILDING SYSTEMS — Barrier Mesh, Barrier Mesh Clips

SHAFT ASSEMBLIES

UL Design No. U415



1. Floor, Side and Ceiling Runners — "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when Item 4A, 4B, 4C, 4D or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (Item 2A) may be used as side runners in place of "J" - shaped runners.
2. Steel Studs — "C-H" - shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. or 600 mm OC (max 16 in. OC when Items 4A, 4B, 4C, or 4D are used).
2A. Steel Studs — (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.
2B. Furring Channels — (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only. . Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
2C. Furring Channels — For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type S pan head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.
2D. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75)

2E. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. . Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Ea) to studs. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

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

2G. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Gb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Ga) to studs. Clips spaced 24 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

2H. Steel Framing Members* — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4.
b. Steel Framing Members* — Used to attach resilient channels (Item 2Ha) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

2I. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Ia) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

3. Gypsum Board* — Gypsum liner panels, nom 1 in. thick, 24 in. or 600 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.
CGC INC — Type SLX
UNITED STATES GYPSUM CO — Type SLX
USG BORAL DRYWALL SFZ LLC — Type SLX
USG MEXICO S A DE C V — Type SLX

4. Gypsum Board* —
System A — 1 Hr
Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing.
CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC, WRX
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX
UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRC, WRX, USGX.
USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B — 2 Hr
Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in.
CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX
UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR, or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

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

System D — 2 Hr
Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6.
CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX
UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.
USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E — 2 Hr
Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.
CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX
UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F — 2 Hr
Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered 24 in.
CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX
UNITED STATES GYPSUM CO — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX
USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System G — 3 Hr
Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. . Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.
CGC INC — Types C, IP-X2, IPC-AR, ULIX, WRC
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX, WRC
USG BORAL DRYWALL SFZ LLC — Type C
USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System H — 3 Hr
Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, ULIX, WRC
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX, WRC
USG BORAL DRYWALL SFZ LLC — Type C
USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System I — 4 Hr
Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) wallboard with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertically or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joints centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third layer, otherwise all joints staggered min 12 in.
CGC INC — Types IP-X3 or ULTRACODE
UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC — Type ULTRACODE
USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

4A. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9) or Lead Discs or Tabs (see Item 10).
RAY-BAR ENGINEERING CORP — Type RB-LBG

4B. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Type Nelco

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

4D. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5. Joint Tape and Compound — (Not Shown)
Systems A, B, C, E, F, G, H, I
Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound.

6. Batts and Blankets* —
Systems A, B, E, F, G, H, I
(Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance.

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

ROCKWOOL — Type AFB, min. density 1.8 pcf / 28.8 kg/m3

THERMAFIBER/OWENS CORNING — Type SAFB, SAFB FF

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

8. Laminating Adhesive* — (Optional, Not Shown) — Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of Gypsum Board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BJLZ) in the Building Materials Directory for names of Classified companies.
9. Lead Batten Strips — (Not Shown, For Use With Item 4A) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints.
9A. Lead Batten Strips — (Not Shown, for use with Item 4C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".. Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations.
10. Lead Discs or Tabs — (Not Shown, For Use With Item 4A) — Used in lieu of or in addition to the lead batten strips (Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
10A. Lead Discs — (Not Shown, for use with Item 4C) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".
11. Lead Batten Strips — (Not Shown, For Use With Item 4B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4B) and optional at remaining stud locations.
12. Lead Tabs — (Not Shown, For Use With Item 4B) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.
* Indicates such products shall bear the UL or cUL Certific

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Rated Assemblies

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
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STATE OF FLORIDA · LARS W YOUNG · AR0016755 · REGISTERED ARCHITECT

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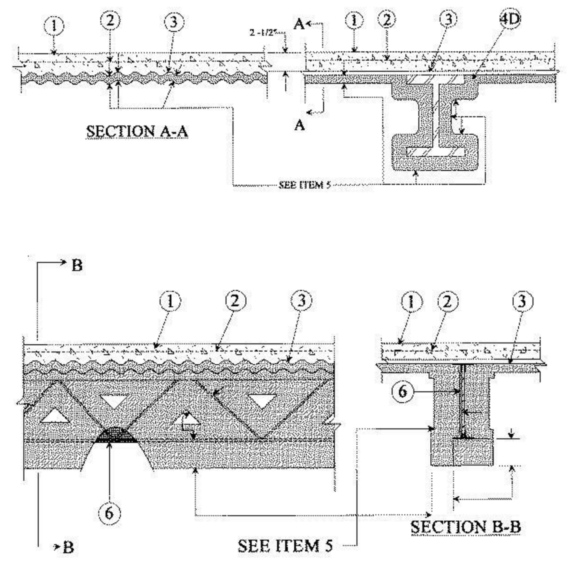
FLOOR ASSEMBLIES

UL Design No. D780



Restrained Assembly Rating — 1, 1-1/2, 2 or 3 h
Unrestrained Assembly Rating — 1, 1-1/2, 2 or 3 h (See Item 5)
Unrestrained Beam Ratings — 1, 1-1/2, 2 or 3 h (See Item 5)
Restricted Load Condition — See Items 4 and 5B
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

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

1. Normal Weight or Lightweight Aggregate Concrete — Normal weight carbonate or siliceous aggregate concrete, 150 plus over minus 3 pcf unit weight, 3500 psi compressive strength, vibrated. Lightweight concrete, expanded shale, clay, or slate aggregate by rotary-kiln method, 110 plus over minus 3 pcf unit weight, 3500 psi compressive strength, 4 to 7 percent entrapped air.
2. Welded Wire Fabric — 6 x 6 — W2.0 X W2.0
3. Steel Floor and Form Units — No. 28 MSG galv corrugated sheet steel minimum. The description and sizes of the corrugated sheet steel units and the max beam spacing are as follows:

Steel Deck Unit In.	Nom Pitch In.	Sheet Steel Gauge MSG	Max Beam Spacing
9/16	2-1/2	28	3 ft, 6 in. O.C.
15/16	3-3/4	26	5 ft, 0 in. O.C.
1-5/16	5	26	6 ft, 6 in. O.C.
1-5/16	5	24	7 ft, 0 in. O.C.
1-5/16	5	22	7 ft, 6 in. O.C.
1-5/16	5	20	8 ft, 0 in. O.C.

Units welded to each steel beam, 36 welds per 100 sq ft of form units with at least one weld at each side joint. Welding of deck side joint between beams for deck spans ranging between 3 ft, 6 in. and 6 ft, 6 in. O.C. shall be at least two welds of each side joint. Welding of side joints for spans greater than 6 ft, 6 in. O.C. shall be a minimum of three welds of each side joint.

Any Manufacturer — Corrugated deck having cross-section similar to above description.
3A. Steel Floor and Form Units — As an alternate to Item 3, Composite or non-composite, 1-1/2, 2, or 3 in. deep galv fluted units. Min gauge is No. 22 MSG. Spacing of welds attaching units to supports shall be at each side of joint and not to exceed 12 in. OC between joints. Adjacent units button punched or welded together 36 in. OC at joints.
CANAM GROUP INC — 36 in. wide Type P-3623, P-3606 and P-3615 composite; 24 in. wide Type P-2432 composite; Type 3 in. Lok Floor. Type LF3 unit may be phos/painted or painted/painted; 36 in. wide Types 1.5B, 1.5BI, 1.5BL and 1.5BL; 24 in. or 36 in. wide, Type LF2.

CANAM STEEL CORP — Types B, B Lok, N Lok, 1-1/2, 2 and 3 in. Lok Floor, UFS and UFX. Units may be phos/painted or painted/painted.

VERCO DECKING INC - A NUCOR CO — Types PLB, HSB, PLN3, HSN3, PLN, N, and FORMLOK™ deck types PLB, B, BR, PLN3, N3, PLN, N, PLW2, W2, PLW3, W3. Units are min 24 in. wide and may be galvanized or phos./ptd.

VULCRAFT, DIV OF NUCOR CORP — 24, 30 and 36 in. wide Type 1.5VLI; 24 or 36 in. wide Types 2VLI, 3VLI. Types 1-SLVI, 2VLI, and 3VLI units may be phos/ptd. Type BW Slotted Deck.

4. Steel Joists — 10K1 or 16K2 min size with a max tensile stress of 30,000 psi or 12K3 min size with max tensile stress of 24,000 psi.
4A. As an alternate to Item 4, LH Series joists spanning no greater than 60 ft. For spans greater than 60 ft, deflection under the published total load shall not be greater than 1/277 of the joist span.
4B. Composite Joists — (Not shown) — As an alternate to Items 4 and 4A, steel joists designed for full composite action with the concrete slab. Min overall depth 13 in. Min area of joist members shall be 0.708 square in. for top and bottom chord angles and 0.442 square in. for web. Designed in accordance with SJI Specifications for K-Series joists as revised to November 18, 1989.
4C. Structural Steel Members* — (Not shown) — As an alternate to Items 4, 4A and 4B — (Not shown) — Composite joists with top chord embedded in concrete slab. Welded to end supports. Min area of joist members shall be 0.708 square in. for top and bottom chord angles and 0.442 square in. for web.
VESCOM STRUCTURAL SYSTEMS INC — Type V.

4D. Steel Beams — W8x28 min size. As an alternate to steel joists, Items 4, 4A, 4B and 4C.
4E. Horizontal Bridging — (Not shown) — Min 1-1/4 by 1-1/4 by 1/8 in. thick steel angles for use with noncomposite joists (Item 4). Number and spacing per Steel Joist Institute specifications. Welded to top and bottom chord of the joists. Min thickness of Spray-Applied Fire Resistive Materials on bridging angles is 1-1/2 in.
5. Spray-Applied Fire Resistive Materials* — Applied by mixing with water and spraying in no more than one coat to a final thickness as shown below to steel surfaces which must be free of dirt, loose scale and oil. Min avg and min ind density of 15/14 pcf, respectively. For method of density determination, see Design Information Section, Sprayed Materials.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	on Deck	on Beam
1	1	1	3/8	7/16
1-1/2	1	1	1/2	7/16
1-1/2	1-1/2	1-1/2	1/2	3/4
2	1	1	1/2	7/16
2	2	2	5/8	1
3	1-1/2	1-1/2	1/2	3/4
3	3	3	7/8	1-5/16

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	LH Joist	Joist Thickness 10K1 more than 4 ft OC	10K1 less than 4 ft OC	16K2 more than 4 ft	16K2 less than 4 ftOC
1	1	1	1-1/8	1-1/8	15/16	15/16	15/16
1-1/2	1	1	1-5/16	1-5/16	1-5/16	1-1/4	1-3/16
1-1/2	1-1/2	1-1/2	1-1/2	1-5/8	1-7/16	1-1/4	1-3/16
2	1	1	1-7/16	1-7/16	1-7/16	1-9/16	1-1/2
2	2	2	1-1/2	2-3/16	1-15/16	1-9/16	1-1/2
3	1-1/2	1-1/2	1-1/2	3-1/4	2-13/16	2-1/4	2-1/8
3	3	3	3-1/4	3-1/4	2-13/16	2-1/4	2-1/8

ARABIAN VERMICULITE INDUSTRIES — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s.

GCP APPLIED TECHNOLOGIES INC — Types MK-6 GF, MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, RG .

GCP KOREA INC — Types MK-6/CBF, MK-6/ED, MK-6 GF, MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s.

5A. Spray-Applied Fire Resistive Materials* — Applied by mixing with water and spraying in one or more coats to a final thickness as shown below to steel surfaces which must be free of dirt, loose scale and oil. When steel deck is used, the area between the steel deck and the beams top flange shall be filled. Min avg and min ind density of 22/19 pcf, respectively for Types Z-106, Z-106/HY and Z-106/G . Min avg and min ind density of 40/36 pcf, respectively for Z-146. Application to steel deck requires the installation of expanded metal lath with Type Z-146 . See Item 6B. For method of density determination, see Design Information Section, sprayed materials.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	on Deck	on Beam
1	1	1	7/16	7/16
1-1/2	1	1	9/16	7/16
1-1/2	1-1/2	1-1/2	9/16	3/4
2	1	1	9/16	7/16
2	2	2	5/8	1
3	1-1/2	1-1/2	9/16	3/4
3	3	3	7/8	1-5/16

RestrainedAssembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	LH Joist	Joist Thickness 10K1 more than 4 ft OC	10K1 less than 4 ft OC	16K2 more than 4 ft OC	16K2 less than 4 ft OC
1	1	1	1-1/8	1-1/8	15/16	15/16	15/16
1-1/2	1	1	1-5/16	1-5/16	1-5/16	1-1/4	1-3/16
1-1/2	1-1/2	1-1/2	1-1/2	1-5/8	1-7/16	1-1/4	1-3/16
2	1	1	1-7/16	1-7/16	1-7/16	1-9/16	1-1/2
2	2	2	1-1/2	2-3/16	1-15/16	1-9/16	1-1/2
3	1-1/2	1-1/2	1-1/2	3-1/4	2-13/16	2-1/4	2-1/8
3	3	3	3-1/4	3-1/4	2-13/16	2-1/4	2-1/8

ARABIAN VERMICULITE INDUSTRIES — Types Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

GCP APPLIED TECHNOLOGIES INC — Types Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

GCP KOREA INC — Types Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

5B. Alternate Spray-Applied Fire Resistive Materials* — Applied by mixing with water and spraying in more than one coat to final thicknesses as shown in the illustration above and in the table below to steel surfaces which must be clean and free of dirt, loose scale and oil. For minimum and maximum density of: Types MK-6/CBF, MK-6/ED, MK-6 GF, MK-6/HY, MK-6/HY Extended Set, MK-6/HB, MK-6s see Item 5; Z-106, Z-106/G, Z-106/HY, Z-146 see Item 5A.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Joist thickness 12K3** more than 4 ft OC	12K3** less than 4 ft OC
1	1	1	15/16	15/16
1-1/2	1-1/2	1-1/2	1-1/4	1-3/16
2	2	2	1-9/16	1-1/2
3	3	3	2-1/4	2-1/8

**Design load shall stress the 12K3 joist to a maximum tensile strength of 24,000 psi, which represents 80% of the maximum allowable design loading. Based on the Steel Joist Institute (SJI) Publication, "Catalog of Standard Specifications and Load Tables for Steel Joists and Joist Girders" for guidance on how to increase the design loading accordingly.

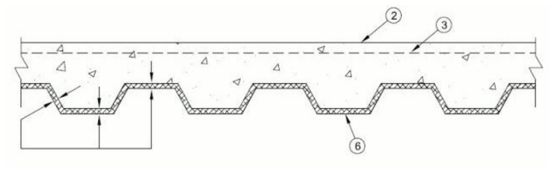
ARABIAN VERMICULITE INDUSTRIES — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

GCP APPLIED TECHNOLOGIES INC — Types MK-6 GF, MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, RG, Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

GCP KOREA INC — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

6. Metal Lath — (Optional) — Metal lath may be used to facilitate the spray application of spray-applied resistive materials to steel bar joists and trusses. The diamond mesh, 3/8 in. expanded steel lath, 1.7 to 3.4 lb per sq yd is secured to one side of each steel joist with No. 18 SWG galv steel wire at joist web and bottom chord members, spaced 15 in. OC max. When used, the metal lath is to be fully covered with spray-applied resistive materials with no min thickness requirements.
6A. Nonmetallic Fabric Mesh — (Optional, not shown) — Glass fiber mesh weighing approx 1.25 oz per sq yd, polypropylene fabric mesh, weighing approx 1.25 oz per sq yd or equivalent, may be used to facilitate the spray application. The mesh is secured to one side of each joist web member. The method of attaching the mesh must be sufficient to hold the mesh and the spray-applied resistive materials in place during application until it has cured. An acceptable method to attach the mesh is by embedding the mesh in min 1/4 in. long beads of hot melted glue. The beads of glue shall be spaced a max of 12 in. OC along the top chord of the bar joist. Another method to secure the mesh is by 1-1/4 in. long by 1/2 in. wide hairpin clips formed from No. 18 SWG or heavier steel wire.
6B. Metal Lath — (Not shown)— (Required with Z-146, Sonophone 35, and Monokote Acoustic 35, otherwise optional) — Metal lath shall be 3/8 in. expanded diamond mesh, weighing 2.5 lb per sq yd. Secured to underside of steel deck with No. 12 by 3/8 in. pan head self-drilling, self-tapping screws and steel washers with an outside diam of 1/2 in. screws spaced 12 in. OC in both directions with lath edges overlapped approx 3 in.
7. Shear Connector — Studs — Optional — (Not shown) — Studs 3/4 in. diameter by 3 in. long headed type or equivalent per AISC specifications. Welded to the top flange of beam through the steel form units.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisd

UL Design No. D779



Design No. D779
August 02, 2024
Restrained Assembly Ratings — 1, 1-1/2, 2, 3 & 4 H
Unrestrained Assembly Ratings — 1, 1-1/2, 2, 3 & 4 H
Unrestrained Beam Ratings — 1, 1-1/2, 2, 3 & 4 H
Restricted Load Condition — See Items 1 and 6
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

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

1. Supports — W8 x 28 or alternate (per Section IV.6 in the front of the Fire Resistance Directory) steel beam or min 8K1 steel joists when joist substitution applied.
Note: Joists from the N series designs may be substituted for the listed beam (Item 1). When joists are substituted, the restrained rating of the joist must be equal to or greater that the restrained rating of the assembly. Additional joist substitution requirements are contained in the front of the Fire Resistance Directory.

2. Normal Weight or Lightweight Concrete — Normal weight concrete, carbonate or siliceous aggregate, 145 pcf plus or minus 3 pcf unit weight, 3000 psi compressive strength, vibrated. Lightweight concrete, expanded shale, clay, or slate aggregate by rotary-kiln method 102-120 pcf unit weight, 3000 psi compressive strength, vibrated, 4 to 7 percent air. Min thickness as measured to crests of steel floor and form units, 2-1/2 in.
3. Welded Wire Fabric — 6 x 6 - W1.4 x W1.4.
3A. Fiber Reinforcement — As an alternate to Item 3, engineered synthetic fibers added to concrete mix to control shrinkage cracks in concrete. See Fiber Reinforcement (CBXQ) category in the Fire Resistance Directory for names of manufacturers and rates of application.
4. Steel Floor and Form Units — Composite or non-composite, 1-1/2, 2, or 3 in. deep galv units. Min gauge is 22 MSG.
ASC STEEL DECK, DIV OF ASC PROFILES L L C — 32 in. wide Types NH-32, NHN-32; 36 in. wide Types BH-36, BHN-36, BHN-35-1/4, 2WH-36, 2WHS-36, 3WxH-36, 3WH-36, 3W-36, DG3W-36. All units may be galvanized or Prime Shield. Non-cellular decks may be vented designated with a "V" suffix to the product name.

CANAM GROUP INC — 24 in. wide Type P-2432 composite or 36 in. wide Types P-3623, P-3606 and P-3615; 24 or 36 in. wide Type LF3. Type LF3 may be welded or fastened together with min 1 in. long No. 10 self-drilling, self-tapping steel screws 36 in. OC. Types LF3 may be phos/ptd; 36 in. wide Types 1.5B, 1.5BI, 1.5BL and 1.5BL; 24 in. or 36 in. wide, Type LF2, vented Types LF2 and LF3.

CANAM STEEL CORP — 24, 30 or 36 in. wide Type BL; 24 or 36 in. wide Types LF1.5, LF2, LF3; 24, 36 in. wide Types LF2, -3 may be welded or fastened together with min 1 in. long No. 10 self-drilling, self-tapping steel screws 36 in. OC. Types BL, LF2, -3, N-Lok may be phos/ptd

KAM INDUSTRIES LTD, DBA CORDECK — 24 in. wide, QL-3, 24 or 36 in. wide, 2 or 3 in. deep QL-99. Units may be welded or fastened together with No. 10 self-drilling, self-tapping screws 60 in. OC. The length of the screws shall be sufficient to fully penetrate adjacent floor units

DECK WEST INC — 36 in. Types 2-DW, 3-DW, B-DW or BA-DW. Units may be welded or fastened together with No. 10 self-drilling, self-tapping screws 60 in. OC. The length of the screws shall be sufficient to fully penetrate adjacent floor units

DESIGN ASSISTANCE CONSTRUCTION SYSTEMS INC — 36 in. wide Type DACS1.5CD, or 24 in. wide Types DACS2.0CD or DACS3.0CD

EPIC METALS CORP — 24 in. wide Types EC150, EC366, 36 in. wide Type EC266

INTSEL STEEL EAST LLC — 36 in. wide Types 2" COMPOSITE/FLOOR, 3" COMPOSITE/FLOOR.

NEW MILLENNIUM BUILDING SYSTEMS L L C — 24 or 36 in. wide Types 2.0CD, 3.0CD, 2.0CFD, 3.0CFD, 3.0CFDES; 24, 30, or 36 in. wide Types 1.5CD, 1.5CDI, 1.5CDR, 1.5CFD. Units may be phos/painted or galvanized.

OEG BUILDING MATERIALS — Types 1-1/2", 2" and 3" deep Composite Decks

STEEL MASTERS INTERNATIONAL DEPENDABLE STEEL — 36 in. wide Types 2WH-36, 3WH-36. Units may be phos/painted or galvanized.

VERCO DECKING INC - A NUCOR CO — FORMLOK™ deck types PLB, B, BR, PLN3, N3, PLN, N, PLW2, W2, PLW3, W3. Units are min 24 in. wide and may be galvanized or phos./ptd. Deck may be vented or non-vented.

VULCRAFT, DIV OF NUCOR CORP — 24, 30 or 36 in. wide Types 1.5VL1, 1.5PLVLI; 24 or 36 in. wide Types 2VLI, 2.0PLVLI, 3VL1, 3.0PLVLI. Units may be phos/ptd. 36 in. wide Types 1.5 SB, 1.5 SBR; 24 or 36 in wide Types 2.0 SB, 3.0 SB, 36 in. wide Type High Strength 1.5 SBI, 36 in. wide Type High Strength 1.5 SBN; Units may be phos/ptd

5. Shear Connectors — (Optional) — Studs, 3/4 in. diam by 4-1/2 in. long, headed type or equivalent per AISC specification. Welded to top flange of the beam, or top chord of the joist, through the deck.
6. Spray-Applied Fire Resistive Materials — Applied by mixing with water and spraying to steel surfaces which must be clean and free of dirt, loose scale and oil. When steel deck is used, the area between the steel deck and the beams top flange shall be filled. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 22/19 pcf respectively for Types Z-106, Z-106/G, Z-106/HY. Min avg and min ind density of 40/36 pcf respectively for Types Z-146, Z-146PC and Z-146T cementitious mixture. Min avg and min ind density of 50/45 pcf respectively for Types Z-156, Z-156T and Z-156PC. Application to steel deck requires the installation of expanded metal lath with Type Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC only. See Item 7. For method of density determination, refer to Design Information Section.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Spray Applied Fire Resistive Mtl Thkns In. on Steel Deck Crests	Valley	Concrete Type
1	0	1	0	0	LW
1	1	1	5/16	5/16	NW or LW
1-1/2	1	1	5/16(a)	5/16(a)	NW or LW
1-1/2	1-1/2	1-1/2	5/16(a)	5/16(a)	NW or LW
2	1	1	3/8(b)	3/8	NW or LW
2	2	2	3/8(b)	3/8	NW or LW
3	1-1/2	1-1/2	11/16	1/2	NW or LW
3	3	3	11/16	1/2	NW or LW
4	2	2	1-1/2	1-1/8	LW
4	4	4	1-1/2	1-1/8	LW
4	2	2	1-7/16	13/16	NW
4	4	4	1-7/16	13/16	NW

(a) Min thickness of 3/8 in. required when 1-1/2 in. deep fluted units are used.

(b) Min thickness of 1/2 in. is required in crests of 1-1/2 in. deep fluted units for the 2 h Restrained Assembly Rating.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Beam Thickness: Light Weight Concrete full flange W8x28 Beam	Light Weight Concrete 1/2 flange## W8x28 Beam	Normal Weight Concrete full flange W8x28 Beam	Normal Weight Concrete 1/2 flange## W8x28 Beam
1	0	1	5/16	7/16	5/16	7/16
1	1	1	5/16	7/16	5/16	7/16
1 1/2	1	1	5/16	7/16	5/16	7/16
1 1/2	1 1/2	1 1/2	11/16	3/4	5/8	3/4
2	1	1	5/16	7/16	5/16	7/16
2	2	2	1	1	7/8	1-1/16
3	1 1/2	1 1/2	11/16	3/4	5/8	3/4
3	3	3	1-5/16	1-7/16	1-7/16	1-11/16
4	2	2	1	1	7/8	1-1/16
4	4	4	1-5/8	1-15/16	2	2-5/16

Applicable when the thickness applied to the beams' lower flange edges is reduced to one-half. Thickness applied to beams' lower flange edges shall be a min of 1/4 in.

ARABIAN VERMICULITE INDUSTRIES — Types MK-6/HY, MK-6/HY Extended Set, MK-6/HB, MK-10 HB, MK-10 HB Extended Set, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use

GCP KOREA INC — Types MK-6/HY, MK-6/HY Extended Set, MK-6/HB, MK-10 HB, MK-10 HB Extended Set, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use

GCP APPLIED TECHNOLOGIES INC — Types MK-6/HY, MK-6/HY Extended Set, MK-6/HB, MK-10 HB, MK-10 HB Extended Set, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, RG, Z-106, Z-106/G, Z-106/HY, Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC investigated for exterior use

6A. Sprayed Fiber* — (Optional, Not Shown) Sprayed Fiber, Classified for Surface Burning Characteristics (BNST), having a maximum applied density of 3.5 pcf applied over Spray-Applied Fire Resistive Material (Item 6) on both Steel Floor and Form Units (Item 4) and Supports (Item 1) in accordance with the following tables:

Allowable Sprayed Fiber Thickness over SFRM applied to Steel Deck (Item 4)

Installed SFRM Thickness(in.) on Deck	SFRM Density (lb/ft3) 15	22	40	50
	Sprayed Fiber Thickness (in.)			
5/16	5-3/8	7-7/8	8	8
3/8	5-1/16	7-7/16	8	8
11/16	3-3/4	5-1/2	8	8
1-7/16	9/16	13/16	8	8
1-1/2	1/4	3/8	8	8

Note: Installed SFRM thickness on deck refers to thickness applied to crests of steel deck.

Allowable Sprayed Fiber Thickness over SFRM applied to Beams (Item 1)

Installed SFRM Thickness (in.) on Beam	SFRM Density (lb/ft3) 15	22	40	50
	Sprayed Fiber Thickness (in.)			
5/16	8	8	8	8
7/16	8	8	8	8
5/8	8	8	8	8
11/16	8	8	8	8
3/4	8	8	8	8
7/8	8	8	8	8
1	8	8	8	8
1-1/16	8	8	8	8
1-5/16	7-3/4	8	8	8
1-7/16	7-1/4	8	8	8
1-5/8	6-7/16	8	7-7/8	8
1-11/16	6-3/16	8	7-1/8	8
1-15/16	5-1/16	7-7/16	4-5/16	5-3/8
2	4-13/16	7-1/16	3-9/16	4-7/16
2-5/16	3-1/2	5-1/8	0	0

INTERNATIONAL CELLULOSE CORP — Type K13, URE-K, or SonaSpray FC

6B. Sprayed Fiber* — (Optional, Not Shown) Sprayed Fiber, Classified for Surface Burning Characteristics (BNST), having a maximum applied density of 2.8 pcf applied over Spray-Applied Fire Resistive Material (Item 6) on both Steel Floor and Form Units (Item 4) and Supports (Item 1) in accordance with the following tables:

Allowable Sprayed Fiber Thickness over SFRM applied to Steel Deck (Item 4)

Installed SFRM Thickness (in.) on Deck	SFRM Density (lb/ft3) 15	22	40	50
	Sprayed Fiber Thickness (in.)			
5/16	5	5	5	5
3/8	5	5	5	5
11/16	4 11/16	5	5	5
1-7/16	11/16	1	5	5
1-1/2	5/16	1/2	5	5

Note: Installed SFRM thickness on deck refers to thickness applied to crests of steel deck.

Allowable Sprayed Fiber Thickness over SFRM applied to Beams (Item 1)

Installed SFRM Thickness (in.) on Beam	SFRM Density (lb/ft3) 15	22	40	50
	Sprayed Fiber Thickness (in.)			
5/16	5	5	5	5
7/16	5	5	5	5
5/8	5	5	5	5
11/16	5	5	5	5
3/4	5	5	5	5
7/8	5	5	5	5
1	5	5	5	5
1-1/16	5	5	5	5
1-5/16	5	5	5	5
1-7/16	5	5	5	5
1-5/8	5	5	5	5
1-11/16	5	5	5	5
1-15/16	5	5	5	5
2	5	5	4 7/16	5
2-5/16	4 3/8	5	0	0

MONOGLASS INC — Type Monoglass

6C. Sprayed Fiber* — (Optional, Not Shown) Sprayed Fiber, Classified for Noncombustible Building Materials (BICW), having a maximum applied density of 3.5 pcf applied over Spray-Applied Fire Resistive Material (Item 6) on both Steel Floor and Form Units (Item 4) and Supports (Item 1) in accordance with the following tables:

Allowable Sprayed Fiber Thickness over SFRM applied to Steel Deck (Item 4)

Installed SFRM Thickness (in.) on Deck	SFRM Density (lb/ft3) 15	22	40	50
	Sprayed Fiber Thickness (in.)			
5/16	5	5	5	5
3/8	5	5	5	5
11/16	3 3/4	5	5	5
1-7/16	1/4	3/8	5	5
1-1/2	9/16	13/16	5	5

Note: Installed SFRM thickness on deck refers to thickness applied to crests of steel deck.

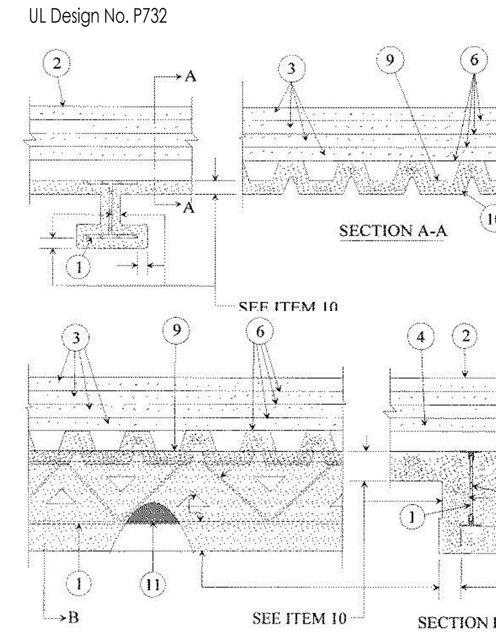
Allowable Sprayed Fiber Thickness over SFRM applied to Beams (Item 1)

Installed SFRM Thickness(in.) on Beam	SFRM Density (lb/ft3) 15	22	40	50
	Sprayed Fiber Thickness (in.)			
5/16	5	5	5	5
7/16	5	5	5	5
5/8	5	5	5	5
11/16	5	5	5	5
3/4	5	5	5	5
7/8	5	5	5	5
1	5	5	5	5
1-1/16	5	5	5	5
1-5/16	5	5	5	5
1-7/16	5	5	5	5
1-5/8	5	5	5	5
1-11/16	5	5	5	5
1-15/16	5	5	4 5/16	5
2	4 13/16	5	3 9/16	4 7/16
2-5/16	3 1/2	5	0	0

THERMACOUSTIC IND. — Type TC-417

7. Metal Lath — (Not Shown) — (Required with Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC, otherwise optional)—Metal lath shall be 3/8 in. expanded diamond mesh, weighing 2.5 lb per sq yd. Secured to underside of steel deck with No. 12 by 3/8 in. pan head self-drilling, self-tapping screws and steel washers with an outside diam of 1/2 in. screws spaced 12 in. OC in both directions with lath edges overlapped approx 3 in.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

UL Design No. P732



Design No. P732

Restrained Assembly Ratings — 1, 1-1/2, 2 or 3 Hr (See Item 10)
Unrestrained Assembly Ratings — 3/4, 1, 1-1/2, 2 or 3 Hr (See Item 10)
Unrestrained Beam Ratings — 1, 1-1/2, 2 or 3 Hr (See Item 10)
Restricted Load Condition — See Items 1 and 10C
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

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

1. Beam — Min W6x16 or W8x28 or Steel Joist — 10K1 or 16K2 min size with a max tensile stress of 30,000 psi or 12K3 or 12K5 min size with a max tensile stress of 24,000 psi.
2. Roof Covering* — Consisting of hot mopped or cold application bituminous materials compatible with the insulation(s) described herein which provide Class A, B or C coverings. See Roofing Materials and Systems Directory — Roof Covering Materials (TEVT).
2A. In lieu of Item 2, roof covering consisting of single-ply Roofing Membrane* — that is either ballasted, adhered or mechanically attached as permitted under the respective manufacturer's Classification. See Fire Resistance Directory — Roof Membrane (CHCI).
2B. Metal Roof Deck Panels* — (Not shown) — In addition to or in lieu of Item 2 or 2A, the roof covering may consist of a mechanically fastened metal roof deck panel assembly. See Fire Resistance Directory — Metal Roof Deck Panels (CETW).
3. Roof Insulation — Foamed Plastic — Polyisocyanurate foamed plastic insulation boards nom 48 by 48 or 96 in., to be applied in one or more layers. Boards to be installed with end joints staggered a min of 6 in. Min thickness shall be selected from the Table below. No limit on max overall thickness.

Restrained or Unrestrained Assembly Rating Hr	Min Insulation Thkns In. With Gypsum Wallboard	Without Gypsum Wallboard
1	1	2
1-1/2	1-1/2	3
2	2	3
3	2	3

ATLAS ROOFING CORP — Type ACFoam II, Tapered ACFoam II, ACFoam II NH, Tapered ACFoam II NH, ACFoam III, ACFoam III NH, Tapered ACFoam III NH, ACFoam IV, ACFoam Supreme, ACFoam Supreme NH, AC Foam Recover Board, ACFoam Recover Board NH

MULE-HIDE PRODUCTS CO INC — POLY ISO 2

CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types HP, HP-H, HP-N, HP-W, SecurShield CD, InsulBase NH, SecurShield NH, SecurShield HD Composite NH, Polyiso HP-F NH, InsulBase RL, SecurShield RL, Polyiso HP-F, SecurShield HD Composite RL

DOW ROOFING SYSTEMS L L C — "Dow Termico Polyisocyanurate Insulation", "Dow Termico ISO 3000 Insulation", "Dow Termico ISO HP-FR".

Holcim Solutions and Products US, LLC — "ISO 95+ GL", "ISO 95+ FK", "ISO 95+ CAN", "ISO 95+ GL NH", "ISOGARD HD Composite Board", "RESISTA", "ISOGARD GL", "ISOGARD CG".

GAF — EnergyGuard™ RA

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H Shield, H-Shield-F, H-Shield-CG, H-Shield-C, H-Shield Premier, H-Shield HD Composite, H-Shield HD Composite CG, H-Shield RL, H-Shield CG RL, H-Shield HD Composite CG RL, H Shield NH, H-Shield-F NH, H-Shield-CG NH, H-Shield-C NH, H-Shield Premier NH, H-Shield HD Composite CG NH

MULE-HIDE PRODUCTS CO INC — Poly ISO 1, Tapered Poly ISO 1, Poly ISO 1-DWD, Tapered Poly ISO 1-DWD, Poly ISO 1-HD, Poly ISO 1-HD90, Poly ISO 1-HD-Composite

JOHNS MANVILLE — ENRGY 3 25 psi, ENRGY 3, Tapered ENRGY 3, Tapered ENRGY 3 25 psi, ENRGY 3 AGF, Tapered ENRGY 3 AGF, ENRGY 3 25 psi AGF, Tapered ENRGY 3 25 psi AGF, ENRGY 3 CGF, Tapered ENRGY 3 CGF, ENRGY 3 25 psi CGF, Tapered ENRGY 3 25 psi CGF, ISO-3, Tapered ISO-3, ValuTherm, Tapered ValuTherm, ValuTherm 25 psi, Tapered ValuTherm 25 psi, ValuTherm AGF, Tapered ValuTherm AGF, ValuTherm 25 psi AGF, Tapered ValuTherm 25 psi AGF, ValuTherm CGF, Tapered ValuTherm CGF, ValuTherm 25 psi CGF, Tapered ValuTherm 25 psi CGF.

MARTIN FIREPROOFING CORP — "Perform-A-Deck I"

POLYGLASS USA INC — Polytherm H, Polytherm CG, Polytherm HD Composite CG

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — Type Multi-Max-3, Multi-Max FA-3, Ultra-Max, Ultra-Max Plus, Tapered Ultra-Max Plus, Tapered Thermaroof-3, Tapered Thermaroof FA-3, Tapered Ultra-Max.

SIKA SARNAFIL INC — Sarnatherm-R Insulation, Sarnatherm-R CG Insulation, Sarnatherm-R Tapered Insulation, Sarnatherm-R CG Tapered Insulation.

SOPREMA INC — Sopra-ISO s, Sopra-ISO s Tapered, Sopra-ISO+ s, Sopra-ISO+ s Tapered, Sopra-ISO H+ s, Sopra-ISO H+ s Tapered.

VERSICO INC — SecurShield HD Composite, WeatherBond XFP HD Composite, VersiCore NH, WeatherBond XP NH Polyiso, SecurShield NH, WeatherBond XFP NH Polyiso, VersiCore RL, SecurShield RL, Polyiso F NH, WeatherBond XP-F NH, SecurShield HD Composite RL

3A. Building Units* — Not Shown — As an alternate to Item 3, composite polyisocyanurate foamed plastic insulation board with an adhered nailing surface, nom 48 by 48 or 96 in. may be used with the following limitations. These composite building units have ventilation slots internal to the panels. The thickness of the panel depends upon the thinnest portion of the polyisocyanurate insulation. The following dimensions apply to the polyisocyanurate insulation, min thickness is as measured in accordance with Item 3. There is no limit on the max insulation thickness.
JOHNS MANVILLE — Type ISO-VENT.

3B. Building Units* — Polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with oriented strand board or plywood. Min thickness of the polyisocyanurate core is per Item 3. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).
ATLAS ROOFING CORP — ACFoam Nail Base Insulation, ACFoam Nail Base Insulation NH, Vented R, ACFoam CrossVent, ACFoam CrossVent NH, ACFoam III Nail Base Insulation, ACFoam III Nail Base Insulation NH, ACFoam III CrossVent, ACFoam III CrossVent NH.

Holcim Solutions and Products US, LLC — Hailgard, "ISOGARD HG".

SOPREMA INC — Sopra-ISO CV s.

3C. Roof Insulation-Mineral and Fiber Boards* — (Not Shown) — Optional, Applied in one or more layers over the Foamed Plastic (Item 3) to be applied with adhesive (Item 6), asphalt or coal tar pitch (Item 7) or mechanically fastened (Item 8).
JOHNS MANVILLE

ROCKWOOL — MonoBoard™, MonoBoard™ Plus, TopRock®DD or TopRock® DD Plus.

SOPREMA INC — SopraRock®DD and SopraRock®DD Plus.

3D. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with oriented strand board. Min thickness of the polyisocyanurate core shall be selected from Table in Item 3. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-NB, H-Shield-NB NH

JOHNS MANVILLE — Nailboard.

3E. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards faced on the underside (or both sides) with mineral fiber board. Min thickness of the polyisocyanurate core is 1.3 in. for the 1 hr rating without gypsum wallboard (Item 4) and for the 1-1/2 and 2 hr ratings with wallboard and 2.6 in. for the 1-1/2 hr ratings without gypsum wallboard. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).
Holcim Solutions and Products US, LLC — "ISO 95+ Composite"

JOHNS MANVILLE — Fesco-Foam.

3F. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards faced on the underside with wood fiber board. Min thickness of the polyisocyanurate core is 1.3 in. for the 1 hr rating without gypsum wallboard (Item 4) and for the 1-1/2 and 2 hr ratings with wallboard and 2.6 in. for the 1-1/2 hr ratings without gypsum wallboard. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
Holcim Solutions and Products US, LLC — "ISO 95+ Composite".

JOHNS MANVILLE — ENRGY-2 Plus.

3G. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with gypsum board. Min thickness of the polyisocyanurate core is 1.3 in. for 1 hr rating without gypsum wallboard (Item 4) and for the 1-1/2 and 2 hr ratings with wallboard (Item 4) and 2.6 in. for the 1-1/2 ratings without gypsum wallboard (Item 4). No limit on overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).
JOHNS MANVILLE — ENRGY 2 Gypsum Composite.

3H. Roof Insulation — Mineral and Fiber Boards* — As an alternate to Item 3 , to be applied in one or more layers with or without adhesive applied between vapor barrier and roof deck units, vapor barrier and board and each layer of board. When more than one layer is required, each layer of board to be offset in both directions from layer below a min of 6 in. in order to lap all joints. Min thickness is 2 in. when Item 2A or 2B is used. Min thickness is 1 in. otherwise.
GAF — GARTEMP Perlite.

JOHNS MANVILLE – Types Fesco, Retro-Fit, RetroPlus

3I. Roof Insulation - Foamed Plastic* — (Not Shown) As an alternate to Item 3 through 3H, polystyrene foamed plastic insulation boards, applied in one or more layers over gypsum wallboard. Min. thickness is 1.0 in. with no max overall thickness max density 2.5 pcf. When applied in more than one layer, each layer to be offset in both directions from layer below a min. of 6 in. in order to lap all joints. Boards secured to gypsum wallboard (Item 4) with asphalt glaze coat or adhesive (Item 6). Adhesive and/or asphalt glaze coat may be omitted when Item 2A is used. See Foamed Plastic (BRYX) category in the Building Materials Directory or Foamed Plastic (CCVW) category in the Fire Resistance Directory of for names of manufacturers.
3J. Fiber, Sprayed* — (Not Shown) — For 1 hr rating only — As an alternate to Items 3 through 3I, Spray applied cellulose insulation material. The fiber is applied with water to a min. thickness of 10 in. as measured from the top plane of the roof deck in accordance with the application instructions supplied with the product. Minimum density of 2.6 pcf. Gypsum board not required over steel roof deck. Min. 1 in. thickness of Spray-Applied Fire Resistive Material* (Items 10, 10A, 10B) required on underside of steel deck. When Item 3J is used, Roof Covering (Items 2, 2A and 2B) shall not be directly applied over sprayed fiber.
Applegate Greenfiber Acquisition LLC — Cocoon stabilized cellulose insulation.

3K. Foamed Plastic* — Optional — (Not Shown) - Used in addition to the foam insulation required to achieve fire rating:
3Ka. Foamed Plastic* — Optional — (Not Shown) A minimum of 1/4 in. thick - Placed over minimum 1-1/2 in. thick polyisocyanurate Foamed Plastic (Item 3) to be applied with adhesive (Item 6), asphalt or coat tar pitch ((Item 7) or mechanically fastened (Item 8). Boards to be installed with end joints to be offset in both directions from layer below a min of 6 in. in order to lap all joints.
JOHNS MANVILLE — Invinsa

3Kb. Foamed Plastic* — Optional - (Not Shown) - Maximum 1 in. thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
Holcim Solutions and Products US, LLC — "ISOGARD HD"

3Kc. Foamed Plastic* — Optional — (Not Shown) — Maximum 5/8 inch thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
RMAX, A BUSINESS UNIT OF SIKA CORPORATION — "Ultra-Max HD"

SIKA SARNAFIL INC — Sarnatherm Roof Board-R

3Kd. Foamed Plastic* — Optional — (Not Shown) — Maximum 1/2 inch thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — SecurShield HD, SecurShield HD Plus, SecurShield HD NH, SecurShield HD Plus NH, SecurShield HD RL

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield HD, H-Shield HD90, H-Shield HD RL, H-Shield HD NH, H-Shield HD90 NH

POLYGLASS USA INC— Polytherm HD

VERSICO INC — SecurShield HD Plus, WeatherBond XFP HD Plus, SecurShield HD NH, WeatherBond XFP HD NH, SecurShield HD Plus NH, WeatherBond XFP HD Plus NH, SecurShield HD RL

3Ke. Foamed Plastic* — Optional — (Not Shown) — Maximum 1 inch thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
ATLAS ROOFING CORP — ACFoam HD CoverBoard and ACFoam CoverBoard FR

3Kf. Foamed Plastic* — (Optional — Not Shown) — Maximum 1 in. thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.

JOHNS MANVILLE – Types ProtectoR HD, SeparatoR CGF, Invinsa

3L. Foamed Plastic* — As an alternate to Items 3 - 3J, polyurethane foamed plastic roof insulation. When used, gypsum board (item 4) is required. Formed by the simultaneous spraying of two liquid components applied over the gypsum board (item 4) in accordance with the manufacturer's instructions. Min thickness shall be selected from the table above. No limit on max overall thickness.

BASF CORP — Types FE348-2.5, FE348-2.7, FE348-2.8, FE348-3.0, ELASTOSPRAY 81255, ELASTOSPRAY 81285, ELASTOSPRAY 81305, SKYTITE C1

BASF CORP — Elastospray 5100-2.0, Elastospray 5100-2.5, Elastospray 81302, Elastospray 81272, Elastospray Alpha System, Elastospray 81252

3M. Building Units* — Not Shown — As an alternate to Item 3, When used, all ratings are reduced by 1/2 hr when used with gypsum board or reduced by 1 hr without gypsum board. Composite polyisocyanurate foamed plastic insulation board with an adhered nailing surface, nom 48 by 48 or 96 in. These composite building units have ventilation slots internal to the panels. The thickness of the panel depends upon the thinnest portion of the polyisocyanurate insulation. The following dimensions apply to the polyisocyanurate insulation, min thickness as measured in accordance with Item 3. There is no limit on the max insulation thickness.
GAF — "ThermaCal® 1" and "ThermaCal® 2"

3N. Building Units* — Not Shown - As an alternate to Item 3, When used, all ratings are reduced by 1/2 hr when used with gypsum board or reduced by 1 hr without gypsum board. Polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with oriented strand board or plywood. Min thickness of the polyisocyanurate core as measured in accordance with Item 3. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).
GAF — "ThermaCal®"

3L. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with wood fiber board. Min thickness of the polyisocyanurate core shall be selected from Table in Item 3. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-P, H-Shield-RP, H-Shield-P NH, H-Shield-RP NH

3M. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with perlite composite board. Min thickness of the polyisocyanurate core shall be selected from Table in Item 3. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-P, H-Shield-RP, H-Shield-P NH, H-Shield-RP NH

3N. Building Units* — As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with glass mat faced gypsum panel. Min thickness of the polyisocyanurate core shall be selected from Table in Item 3. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Polyiso HP-HDD, Polyiso HP-HDD NH

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-DD, H-Shield-DD NH

VERSICO INC — MP-HDD, MP-HDD NH

3O. Mineral and Fiber Board* — (Optional — Not Shown) — Used in addition to the foam insulation required to achieve fire rating. Maximum 1 in. thick mineral and fiber insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.

JOHNS MANVILLE — Fesco, Retro-fit, RetroPlus, DuraBoard (1/2"), DuraBoard (3/4"), DuraBoard (1"), Fesco HD

4. Gypsum Board — (Not shown) — (Classified or Unclassified) — May be used to obtain various Restrained or Unrestrained Assembly Ratings as described in Item 10. Supplied in sheets nom 4 by 8 or 12 ft by 5/8 in. thick. Min weight 2.2 psf. Applied perpendicular to steel roof deck direction with end joints staggered 2 ft in adjacent rows. End joints to occur over crests of steel roof units.

CABOT MANUFACTURING ULC (View Classification) — CKNX.R25370
AMERICAN GYPSUM CO (View Classification) — CKNX.R14196
BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374
CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660
CGC INC (View Classification) — CKNX.R19751
CERTAINTEED GYPSUM INC (View Classification) — CKNX.R18482
GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717
NATIONAL GYPSUM CO (View Classification) — CKNX.R3501
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094
PANEL REY S A (View Classification) — CKNX.R21796
SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262
THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517
UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319
USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438
USG MEXICO S A DE C V (View Classification) — CKNX.R16089

5. Vapor Retarder — Sheathing Material* — (Optional) — (Not shown) — Vinyl film or paper scrim vapor barrier, applied to steel roof deck or gypsum wallboard with adhesive (Item 6), hot asphalt (Item 7) or laid loosely, overlapped approx 2 in. on adjacent sheets. See Sheathing Material (CHIZ) category for names of manufacturers.
5A. Sheathing Material* — (Optional) — In lieu of Item 5, a self-adhered rubberized asphalt roofing underlayment membrane which may be placed on top of steel roof deck, gypsum wallboard or on the roof insulation.
GCP APPLIED TECHNOLOGIES INC — Grace Ice and Water Shield, Grace Ice and Water Shield-HT®, Grace Select, Grace Ultra, and Grace Basik.

5B. Sheathing Material* — (Optional) — In lieu of Item 5 and 5A, a self-adhered rubberized asphalt roofing underlayment membrane which may be placed on top of steel roof deck, gypsum wallboard or on the roof insulation.

CERTAINTEED LLC — WinterGuard Pro.

6. Adhesive* — (Optional) — The vapor retarder, the gypsum wallboard or the first layer of roof insulation may be secured with adhesive to the steel crest surfaces. Also used to attach the vapor retarder to gypsum wallboard, the first layer of insulation to vapor retarder or gypsum wallboard and each additional layer of insulation. Applied in 1/2 in. wide ribbons 6 in. OC at 0.4 gal/100 sq ft. See Adhesives (BYWR) category for names of manufacturers.
6A. Adhesive* -(Optional) — - (Bearing the UL Classification Marking for Roof Systems (TGFU)) - When FAST 100 adhesive is used, the Unrestrained Assembly Ratings are limited to 1, 1-1/2 and 2 hr. The vapor retarder, the gypsum wallboard or the first layer of roof insulation may be secured with adhesive to the steel crest surfaces. Also used to attach the vapor retarder to gypsum wallboard, the first layer of insulation to vapor retarder or gypsum wallboard and each additional layer of insulation. Applied at a max rate of 19.8 g/ft2. When FAST 100 adhesive is used, additional Spray-Applied Fire Resistance Materials* (CHPX) is required on the deck for the 1-1/2 and 2 hr Unrestrained Assembly Ratings. The thickness specified for the deck shall be increased by 1/16 in. for 1-1/2 hr Unrestrained Assembly Rating and 1/4 in. for 2 hr Unrestrained Assembly Rating.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — FAST 100

7. Asphalt or Coal Tar Pitch* — (Optional) — (Not shown) — The vapor retarder, the gypsum wallboard of the first layer of roof insulation may be secured with asphalt or coal tar pitch to the steel crest surfaces at a max rate of 15 lb/100 sq ft. Also used to attach the vapor retarder to gypsum wallboard, the first layer of insulation to vapor retarder or gypsum wallboard and each additional layer of roof insulation, applied at a max rate of 25 lb/100 sq ft.
8. Mechanical Fasteners — (Optional) — (Not shown) — Mechanical screw-type fastener with metal or plastic washer designed for the purpose may be used to attach one or more layers of insulation to steel roof deck.
9. Steel Roof Deck — (Unclassified) — Min 1-1/2 in. deep and 36 in. wide galv fluted steel deck. Min gauge is No. 22 MSG. Ends overlapped at supports a min 1-1/2 in. and welded to supports 12 in. OC and at side laps. Side laps fastened with 1/2 in. long hex head, self-drilling, self-tapping steel screws spaced a max of 36 in. OC. Classified Steel Floor and Form Units* — Noncomposite 1-1/2 to 3 in. deep, 24 - 36 in. wide, min 22 MSG galvanized steel fluted units. Ends overlapped at supports a min 1-1/2 in. and welded to supports 12 in. OC and at side laps. Side laps fastened with 3/4 in. long No. 12 self-drilling, self-tapping steel screws at 36 in. OC. As alternate to screw fasteners adjacent units may be button-punched or welded together 36 in. OC along side joints.

ASC STEEL DECK, DIV OF ASC PROFILES L L C — Types BH-36, BHN-36, BHN-35-1/4, DGB-36, B-36, BN-36, BN-35-1/4, NH-32, NHN-32, DGN-32, N-32 and NN-32. All units may be galvanized or Prime Shield™. Non-cellular decks may be vented designated with a "V" suffix to the product name.

CANAM GROUP INC — Type P-3606, P-3615, P-2436, and P-2404 noncomposite; 36 in. wide Types 1.5B, 1.5BI; 24 in. wide Types 3N, 3NI.

CANAM STEEL CORP — Types B, F, N. Units may be phos./ptd or ptd/ptd.

INTSEL STEEL EAST LLC — 36 in. wide Type 1.5" B-DECK/ROOF, 24 in. wide Type N-DECK/ROOF.
NEW MILLENNIUM BUILDING SYSTEMS L L C — Types B, BD, BI, F, FD, N, ND, NW32 and NW32I. Units may be phos/painted, ptd/ptd, or galvanized. Painted units may be used for ratings up to 2 h.

VERCO DECKING INC - A NUCOR CO — Deck types PLB, HSB, PLN3, HSN3, PLN, N; FORMLOK™ deck types PLB, B, PLN3, N3, PLN, N. Units may be galvanized or phos./ptd. Deck may be vented or non-vented.

VULCRAFT, DIV OF NUCOR CORP — Types BW, F, High Strength B, High Strength BW, N, ptd/ptd units may be used for ratings up to 2 h.

VULCRAFT, DIV OF NUCOR CORP — Galv Types 1.5B, 1.5BI, 1.5PLB, 1.5F, 3N, 3NI, 3.0PLN, 3NL-32, 3NI-32, 3PLN-32, ptd/ptd units may be used for ratings up to 2 h.

Note: Type Z-106 Spray-Applied Fire Resistive Materials to be used with galv steel roof units only.

10. Spray-Applied Resistive Material* — Applied by mixing with water and spraying in more than one coat to final thicknesses as shown in the illustration above and in the table below to steel surfaces which must be clean and free of dirt, loose scale and oil. Steel deck surface must be "spatter" coated with Type SK-3 Spray-Applied Fire Resistive Materials prior to application of spray-applied resistive material. Type SK-3 spray-applied resistive material applied in accordance with the manufacturer's application instructions. When steel deck is used the area between the steel deck and the beams top flange shall be filled. Min average and min individual density of 15/14 pcf, respectively. For method of density determination, see Design Information Section. Thickness of the spatter coat is included in the total final thickness of the protection material.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Steel deck thickness # w/ Gypsum Wallboard	w/o Gypsum Wallboard	Beam Thickness full flange W8x28 Beam	1/2 flange##W8x28 Beam
1	0@	1	N/A	1	7/16	1/2
1	1	1	9/16 ***	1	7/16	1/2
1	1	1	5/8	1	7/16	1/2
1	1	1	1 *	1-5/8 *	7/16	1/2
1 1/2	1	1	3/4	1 1/4	9/16	13/16
1 1/2	1 1/2	1 1/2	13/16	1 3/8	5/8	13/16
1 1/2	1 1/2	1 1/2	1 1/2 *	2 1/8 *	5/8	13/16
2	1	1	1	1 1/2	3/4	1 1/16
2	1 1/2	1 1/2	1	1 1/2	3/4	1 1/16
2	2	2	1 1/8	1 11/16	7/8	1 1/16
2	2	2	2 *	2 5/8 *	7/8	1 1/16
3	1 1/2	1 1/2	1 1/2	2 1/8	1 3/16	1 5/8
3	2	2	1 1/2	2 1/8	1 3/16	1 5/8
3	3	3	1 5/8	2 3/8	1 3/8	1 5/8

The required minimum thickness of Spray-Applied Fire Resistive Materials on the steel deck is increased by 1/16 inch for 1-1/2 hr Un-restrained assembly rating and 1/4 inch for 2 hr Unrestrained Assembly rating when Item 6A is used.

When the thickness applied to the lower flange edges is reduced by one half, the 1/2 flange thickness is applicable.

* No minimum insulation thickness required

*** Minimum insulation thickness (Item 3) 2 inches.

@ When the maximum clear span of the steel decking is 5 ft. 2 in. or less, the Unrestrained Assembly Rating is 1-hour.

N/A Not applicable, no rating. Refer to rows 2, 3 or 4 of the table. The thickness of SFRM will depend upon the thickness of the insulation (Item 3). "N/A" is not meant to imply that no SFRM is required.

RestrainedAssemblyRating Hr	UnrestrainedAssemblyRating Hr	Unrestrained Beam Rating Hr	Joist thickness 10K1 more than 4 ft OC		10K1 less than 4 ft OC	16K2 more than 4 ft OC / 16K2 less than 4 ft OC
1	0@	1	1 1/8	1	15/16	15/16
1	1	1	1 1/8	1	15/16	15/16
1 1/2	1	1	1 5/16	1 5/16	1 1/4	1 3/16
1 1/2	1 1/2	1 1/2	1 7/16	1 7/16	1 1/4	1 3/16
2	1	1	1 7/16	1 7/16	1 9/16	1 1/2
2	1 1/2	1 1/2	1 7/16	1 7/16	1 9/16	1 1/2
2	2	2	2 3/16	2 3/16	1 9/16	1 1/2
3	1 1/2	1 1/2	3 1/4	2 13/16	2 1/4	2 1/8
3	2	2	3 1/4	2 13/16	2 1/4	2 1/8
3	3	3	3 1/4	2 13/16	2 1/4	2 1/8

@ When the maximum clear span of the steel decking is 5 ft. 2 in. or less, the Unrestrained Assembly Rating is 1-hour.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	W6x16 BeamThickness
1	1	1	9/16
1 1/2	1	1	5/8
1 1/2	1 1/2	1 1/2	13/16
2	1	1	7/8
2	1 1/2	1 1/2	7/8
2	2	2	1 1/16
3	1 1/2	1 1/2	1 1/4
3	2	2	1 1/4
3	3	3	1 1/2

ARABIAN VERMICULITE INDUSTRIES — Types MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, SK-3.

GCP KOREA INC — Types MK-6/HY, MK-6/HY Extended Set, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-1000/HB, MK-1000/HB Extended Set, SK-3.

GCP APPLIED TECHNOLOGIES INC — Types MK-6/HY, MK-6/HY Extended Set, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-1000/HB, MK-1000/HB Extended Set, RG, SK-3.

10A. Alternate Spray-Applied Fire Resistive Materials* — Applied by mixing with water and spraying in one or more coats to final thicknesses as shown in the table below to steel beam surfaces which must be clean and free of dirt, loose scale and oil. When Type Z-106/G is used, the steel deck surface must be "spatter" coated with Type SK-3 Spray-Applied Fire Resistive Materials prior to application of spray-applied resistive material. Type SK-3 spray-applied resistive material applied in accordance with the manufacturer's application instructions. When steel deck is used the area between the steel deck and the beams top flange shall be filled. Min avg and min ind density of 22/19 pcf, respectively. For method of density determination, refer to Design Information Section.

Restrained Assembly Rating Hr	Unrestrained Assembly RatingHr	Unrestrained Beam Rating Hr	Steel deck thickness # w/ Gypsum Wallboard	W/o Gypsum Wallboard	Beam Thickness full flange W8x28 Beam	1/2 flange## W8x28 Beam
1	0@	1	N/A	1	7/16	1/2
1	1	1	9/16 ***	1	7/16	1/2
1	1	1	5/8	1	7/16	1/2
1	1	1	1 *	1-5/8 *	7/16	1/2
1 1/2	1	1	3/4	1 1/4	9/16	13/16
1 1/2	1 1/2	1 1/2	13/16	1 3/8	5/8	13/16
1 1/2	1 1/2	1 1/2	1 1/2 *	2 1/8 *	5/8	13/16
2	1	1	1	1 1/2	3/4	1 1/16
2	1 1/2	1 1/2	1	1 1/2	3/4	1 1/16
2	2	2	1 1/8	1 11/16	7/8	1 1/16
2	2	2	2 *	2 5/8 *	7/8	1 1/16
3	1 1/2	1 1/2	1 1/2	2 1/8	1 3/16	1 5/8
3	2	2	1 1/2	2 1/8	1 3/16	1 5/8
3	3	3	1 5/8	2 3/8	1 3/8	1 5/8

The required minimum thickness of Spray-Applied Fire Resistive Materials on the steel deck is increased by 1/16 inch for 1-1/2 hr Un-restrained assembly rating and 1/4 inch for 2 hr Unrestrained Assembly rating when Item 6A is used.

When the thickness applied to the lower flange edges is reduced by one half, the 1/2 flange thickness is applicable.

* No minimum insulation thickness required

*** Minimum insulation thickness (Item 3) 2 inches.

@ When the maximum clear span of the steel decking is 5 ft. 2 in. or less, the Unrestrained Assembly Rating is 1-hour.

N/A Not applicable, no rating. Refer to rows 2, 3 or 4 of the table. The thickness of SFRM will depend upon the thickness of the insulation (Item 3). "N/A" is not meant to imply that no SFRM is required.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	10K1 more than 4 ft OC	Joist thickness	10K1 less than 4 ft OC	16K2 more than 4 ft OC / 16K2 less than 4 ft OC
1	0@	1	1 1/8	1	15/16	15/16
1	1	1	1 1/8	1	15/16	15/16
1 1/2	1	1	1 5/16	1 5/16	1 1/4	1 3/16
1 1/2	1 1/2	1 1/2	1 7/16	1 7/16	1 1/4	1 3/16
2	1	1	1 7/16	1 7/16	1 9/16	1 1/2
2	1 1/2	1 1/2	1 7/16	1 7/16	1 9/16	1 1/2
2	2	2	2 3/16	2 3/16	1 9/16	1 1/2
3	1 1/2	1 1/2	3 1/4	2 13/16	2 1/4	2 1/8
3	2	2	3 1/4	2 13/16	2 1/4	2 1/8
3	3	3	3 1/4	2 13/16	2 1/4	2 1/8

@ When the maximum clear span of the steel decking is 5 ft. 2 in. or less, the Unrestrained Assembly Rating is 1-hour.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	W6x16 Beam Thickness
1	1	1	9/16
1 1/2	1	1	5/8
1 1/2	1 1/2	1 1/2	13/16
2	1	1	7/8
2	1 1/2	1 1/2	7/8
2	2	2	1 1/16
3	1 1/2	1 1/2	1 1/4
3	2	2	1 1/4
3	3	3	1 1/2

ARABIAN VERMICULITE INDUSTRIES — Types Z-106, Z-106/G, Z-106/HY.

GCP KOREA INC — Types Z-106, Z-106G, Z-106/HY.

GCP APPLIED TECHNOLOGIES INC — Types Z-106, Z-106G, Z106/HY.

10B. Alternate Spray-Applied Fire Resistive Materials* — Applied by mixing with water and spraying in one or more coats to final thicknesses as shown in the table below to steel beam surfaces which must be clean and free of dirt, loose scale and oil. When steel deck is used, the area between the steel deck and the beams top flange shall be filled. Application to steel roof deck requires the installation of expanded metal lath. See Item 11A. Min avg and

Lars W Young Inc

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Rated Assemblies 2

STATE OF FLORIDA
LARS W YOUNG
AR0016755
REGISTERED ARCHITECT
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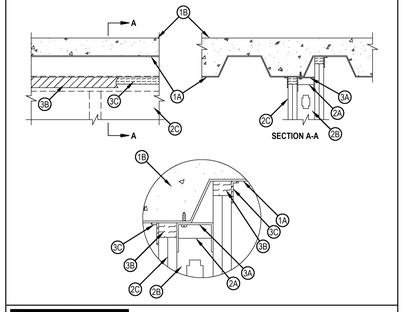
HWD 0687

System No. HW-D-0687

Classified by Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1-1/2 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 50 % Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/Ln Ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400°F — Less Than 1 CFM/Ln Ft	Nominal Joint Width - 1-1/2 In.
	Class II Movement Capabilities — 50% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/Ln Ft
	L Rating At 400°F — Less Than 1 CFM/Ln Ft



Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. June 26, 2023

HWD 0687

System No. HW-D-0687

1. Floor Assembly — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Form Units* — Max 3 in. (76 mm) deep galv steel fluted floor units having a min valley width of 4-3/4 in. (121 mm).
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials* — (Optional) - (Not Shown)—Prior to or after the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3B, 3B1,3C) the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1-3/4 in. (44 mm) thickness of fire resistive material.
      GCP APPLIED TECHNOLOGIES INC — Types MK-6-HY or MK-10HB
      ISOLATEK INTERNATIONAL — Type 300
   1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly (Item 1), a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The roof assembly shall include the following construction features:
      A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck having a min valley width of 4-3/4 in. (121 mm).
      B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the steel roof deck.
      C. Roof Covering* — Hot mopped or cold-application materials compatible with insulating concrete.
      1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
      A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      B. Spray—Applied Fire Resistive Materials* — (Not Shown)—Prior to or after the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3B, 3B1, 3C), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
         GCP APPLIED TECHNOLOGIES INC — Types MK-6-HY or MK-10HB
         ISOLATEK INTERNATIONAL — Type 300
2. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2B). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed parallel to direction of fluted steel deck, positioned beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC, before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.. Ceiling runner not to cantilever more than 1-1/2 in. (38 mm) beyond edge of valley.
   A1. Light Gauge Framing* — Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2A, slotted ceiling runner consisting of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Ceiling runner installed parallel with direction of fluted steel floor or roof deck and secured to valley with steel fasteners or welds spaced max 24 in. OC. Slotted ceiling runner not to cantilever more than 1-1/2 in. beyond edge of valley. When slotted ceiling runner is used, deflection channel (Item 3A) shall not be used.

HWD 0687

System No. HW-D-0687

BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK, SLPTRX25
CEMCO, LLC — CST
CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H
MARINOWARE, DIV OF WARE INDUSTRIES INC — Type SLT
METAL-LITE INC — The System
RAM SALES L L C — RAM Slotted Track
SCAFCO STEEL STUD MANUFACTURING CO
STEELER INC — Steeler Slotted Ceiling Runner
TELLING INDUSTRIES L L C — True-Action Deflection Track

A2. Light Gauge Framing* - Vertical Deflection Ceiling Runner — As an alternate to the ceiling runners in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened with runner. Slotted clip provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2C). Vertical deflection ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

A3. Light Gauge Framing* - Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A2, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2C). Notched ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   OLMAR SUPPLY INC — Type SCR

B. Steel Attachment Clips — (Optional - Not Shown) - When spray applied fireproofing is used ceiling runner may be secured to deck with Z-shaped clips formed from min. 1 in. (25 mm) long strips of min 20 ga galv steel. Length of clips should not exceed the width (thickness) of the wall. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom of the steel deck with 1-1/2 or 2 in. (38 or 51 mm) long upper and lower legs. Legs of clips fastened to valleys of steel deck (prior to application of spray-applied fire-resistive materials) and top of ceiling runner with steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC.

C. Studs — Steel studs to be min 3-5/8 in. (92 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom resting in and resting on floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

D. Gypsum Board* — For 1 hr assembly, one layer of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For 2 hr assembly, two layers of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For both hourly ratings, a nominal 3/4 in. (19 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the steel deck and the top row of screws shall be installed into the studs 3 in. (76 mm) below the valleys of the steel floor units.
   The hourly fire rating of the joint system is equal to the hourly rating of the wall.

3. Fill, Void or Cavity Material* — Sealant - Max separation between bottom of floor or roof and top of wall is 3/4 in. (19 mm). The joint system is designed to accommodate a max 17 percent compression or extension from its installed width. Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the top of the gypsum board and the bottom of the steel deck, flush with each surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 601S Elastomeric Firestop Sealant or CP 606 Flexible Firestop Sealant or CFS-S SIL GG Sealant. L Ratings apply when CP 606 or CFS-S SIL GG Sealant is used.
4. Forming Material — (Optional, Not Shown) - Mineral wool insulation, fiberglass batt insulation or polyurethane/polyethylene foam backer rod. Forming material to be recessed from both surfaces of the 2 hr fire rated wall to accommodate the required thickness of fill material.

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

HWD 0687

System No. HW-D-0687

INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing
JOHNS MANVILLE — Safing
ROCK WOOL MANUFACTURING CO — Delta Board
ROCKWOOL — Safe
THERMAFIBER INC — Type SAF

B1. Forming Material* - Strips — (Optional) - Nom 5/8 in. (16 mm) and 1-1/4 in. (32 mm) wide precut mineral wool strips for 1 and 2 hr rated assemblies respectively. The strips are compressed min 50 percent in thickness and firmly packed into the gap between the top of the gypsum board and bottom of the steel floor units on both sides of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 767 Speed Strips

C. Fill, Void or Cavity Material* — Min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of fill material sprayed or troweled on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on both sides of wall. When spray-applied fire resistive material is applied to the steel floor and form units, the fill material is to overlap the gypsum board a min of 1/2 in. (13 mm) and the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-SP WB Firestop Joint Spray

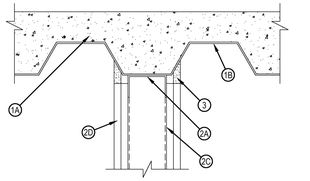
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

HWD 0184

System No. HW-D-0184

Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 3/4 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 17% Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/In ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/In ft	Nominal Joint Width - 3/4 In.
	Class II Movement Capabilities — 17% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/In ft
	L Rating At 400 F — Less Than 1 CFM/In ft



Hilti Firestop Systems

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HWD 0184

System No. HW-D-0184

1. Floor Assembly — The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Form Units* — Max 3 in. (76 mm) deep galv steel fluted units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials (Optional) — (Not Shown) — Prior to or after the installation of the ceiling runner and prior to the installation of the Fill, Void or Cavity Materials (Items 2A and 3), the steel floor units may be sprayed with a min 5/16 in. (8 mm) thickness to a max 11/16 in. (17 mm) thickness of fire resistive material.
      GCP APPLIED TECHNOLOGIES INC Type MK-6HY
   1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
      A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.
      1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
      A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      B. Spray—Applied Fire Resistive Materials* — (Not Shown)—Prior to or after the installation of the steel ceiling runners, and prior to the installation of the Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
2. Wall Assembly — The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2C). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   A1. Light Gauge Framing* - Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2A), slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
      BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK
      CEMCO, LLC — CST
      CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H
      RAM SALES L L C — RAM Slotted Track
      SCAFCO STEEL STUD MANUFACTURING CO
      TELLING INDUSTRIES L L C — True-Action Deflection Track
      MARINOWARE, DIV OF WARE INDUSTRIES INC — Type SLT

HWD 0184

System No. HW-D-0184

A2. Light Gauge Framing* - Vertical Deflection Ceiling Runner — As an alternate to the ceiling runners in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened with runner. Slotted clip provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2C). Vertical deflection ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

A3. Light Gauge Framing* - Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A2, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2C). Notched ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   OLMAR SUPPLY INC — Type SCR

B. Steel Attachment Clips — (Optional - Not Shown) - When spray applied fireproofing is used ceiling runner may be secured to deck with Z-shaped clips formed from min. 1 in. (25 mm) long strips of min 20 ga galv steel. Length of clips should not exceed the width (thickness) of the wall. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom of the steel deck with 1-1/2 or 2 in. (38 or 51 mm) long upper and lower legs. Legs of clips fastened to valleys of steel deck (prior to application of spray-applied fire-resistive materials) and top of ceiling runner with steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC.

C. Studs — Steel studs to be min 3-5/8 in. (92 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom resting in and resting on floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

D. Gypsum Board* — For 1 hr assembly, one layer of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For 2 hr assembly, two layers of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For both hourly ratings, a nominal 3/4 in. (19 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the steel deck and the top row of screws shall be installed into the studs 3 in. (76 mm) below the valleys of the steel floor units.
   The hourly fire rating of the joint system is equal to the hourly rating of the wall.

3. Fill, Void or Cavity Material* — Sealant - Max separation between bottom of floor or roof and top of wall is 3/4 in. (19 mm). The joint system is designed to accommodate a max 17 percent compression or extension from its installed width. Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the top of the gypsum board and the bottom of the steel deck, flush with each surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 601S Elastomeric Firestop Sealant or CP 606 Flexible Firestop Sealant or CFS-S SIL GG Sealant. L Ratings apply when CP 606 or CFS-S SIL GG Sealant is used.
4. Forming Material — (Optional, Not Shown) - Mineral wool insulation, fiberglass batt insulation or polyurethane/polyethylene foam backer rod. Forming material to be recessed from both surfaces of the 2 hr fire rated wall to accommodate the required thickness of fill material.

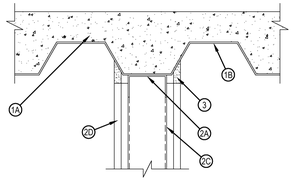
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

HWD 0184

System No. HW-D-0184

Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 3/4 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 17% Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/In ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/In ft	Nominal Joint Width - 3/4 In.
	Class II Movement Capabilities — 17% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/In ft
	L Rating At 400 F — Less Than 1 CFM/In ft



Hilti Firestop Systems

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HWD 0184

System No. HW-D-0184

1. Floor Assembly — The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Form Units* — Max 3 in. (76 mm) deep galv steel fluted units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials (Optional) — (Not Shown) — Prior to or after the installation of the ceiling runner and prior to the installation of the Fill, Void or Cavity Materials (Items 2A and 3), the steel floor units may be sprayed with a min 5/16 in. (8 mm) thickness to a max 11/16 in. (17 mm) thickness of fire resistive material.
      GCP APPLIED TECHNOLOGIES INC Type MK-6HY
   1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
      A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.
      1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
      A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      B. Spray—Applied Fire Resistive Materials* — (Not Shown)—Prior to or after the installation of the steel ceiling runners, and prior to the installation of the Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
2. Wall Assembly — The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2C). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   A1. Light Gauge Framing* - Slotted Ceiling Runner — As an alternate to the ceiling runner in (Item 2A), slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
      BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK
      CEMCO, LLC — CST
      CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H
      RAM SALES L L C — RAM Slotted Track
      SCAFCO STEEL STUD MANUFACTURING CO
      TELLING INDUSTRIES L L C — True-Action Deflection Track
      MARINOWARE, DIV OF WARE INDUSTRIES INC — Type SLT

HWD 0184

System No. HW-D-0184

A2. Light Gauge Framing* - Vertical Deflection Ceiling Runner — As an alternate to the ceiling runners in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened with runner. Slotted clip provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2C). Vertical deflection ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

A3. Light Gauge Framing* - Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A2, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2C). Notched ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   OLMAR SUPPLY INC — Type SCR

B. Steel Attachment Clips — (Optional - Not Shown) - When spray applied fireproofing is used ceiling runner may be secured to deck with Z-shaped clips formed from min. 1 in. (25 mm) long strips of min 20 ga galv steel. Length of clips should not exceed the width (thickness) of the wall. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom of the steel deck with 1-1/2 or 2 in. (38 or 51 mm) long upper and lower legs. Legs of clips fastened to valleys of steel deck (prior to application of spray-applied fire-resistive materials) and top of ceiling runner with steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC.

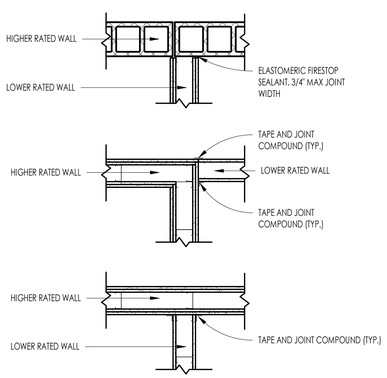
C. Studs — Steel studs to be min 3-5/8 in. (92 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom resting in and resting on floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

D. Gypsum Board* — For 1 hr assembly, one layer of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For 2 hr assembly, two layers of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For both hourly ratings, a nominal 3/4 in. (19 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the steel deck and the top row of screws shall be installed into the studs 3 in. (76 mm) below the valleys of the steel floor units.
   The hourly fire rating of the joint system is equal to the hourly rating of the wall.

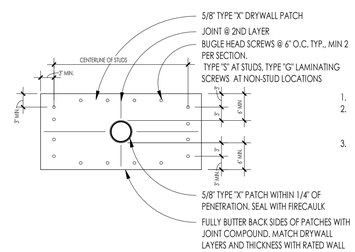
3. Fill, Void or Cavity Material* — Sealant - Max separation between bottom of floor or roof and top of wall is 3/4 in. (19 mm). The joint system is designed to accommodate a max 17 percent compression or extension from its installed width. Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the top of the gypsum board and the bottom of the steel deck, flush with each surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 601S Elastomeric Firestop Sealant or CP 606 Flexible Firestop Sealant or CFS-S SIL GG Sealant. L Ratings apply when CP 606 or CFS-S SIL GG Sealant is used.
4. Forming Material — (Optional, Not Shown) - Mineral wool insulation, fiberglass batt insulation or polyurethane/polyethylene foam backer rod. Forming material to be recessed from both surfaces of the 2 hr fire rated wall to accommodate the required thickness of fill material.

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

1. TAPE AND SEAL HIGHER RATED WALL UNDER LOWER RATED WALL.
2. AT MULTILAYERED ASSEMBLIES, ALTERNATE LAYERS OF DRYWALL AND OVERLAP AT CORNERS AND INTERSETCIOTN



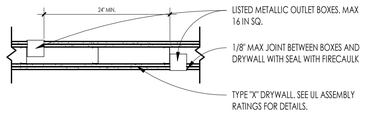
1 A0.23 — Wall Intersection of Rated Walls — 3/4" = 1'-0"



1. GAP AT PEPENTRATION 1/4" OR LESS: FILL WITH APPROVED FIRECAULK
2. GAP AT PEPRETION 1/4" OR MORE: FILL TIGHTLY WITH THERMAFIBER ONSILTION OR APPROVED EQUAL AND THEN SEAL WITH APPROVED FIRECAULK
3. IF PENETRATION IS INSULATED, DO NOT PASS INSULATION THROUGH WALL ASSEMBLY. FLARE INSULATION INTO FACE OF WALL AT EACH SIDE AND SEAL WITH MASTIC

3 A0.23 — Wall Detail- Repair of Penetrations — 3/4" = 1'-0"

1. AGGREGATE SURFACE AREA OF OUTLETS NOT TO EXCEED 100 SQ IN PER 100 SQ. FT OF WALL SURFACE
2. METAL OUTLET BOXES MAY NOT BE RECESSED INTO WALLS WITH A FIRE RATING GREATER THAN 2 HOURS.



2 A0.23 — Wall Detail- Location of Outlets in Rated Walls — 3/4" = 1'-0"

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale 3/4" = 1'-0"

North Collier Fire Control and Rescue District Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Penetrations

Lars W Young Inc
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STATE OF FLORIDA — LARS W. YOUNG — AR0016755 — REGISTERED ARCHITECT — Florida

A0.23

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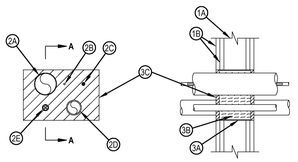
C:\Users\lwyar\Dropbox\PC Documents\23.1083 NCFCRD Fire Station 49\1 Revit Files\NCFCRD 49 20.rvt

System No. W-L-8004

F Rating — 2 Hr
T Rating — 1/4 Hr

WL 8004



SECTION A-A

1. Wall Assembly — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm). Additional framing (not shown) may be installed around the perimeter of the opening in lieu of the steel wire mesh (Item No. 3A).
   B. Gypsum Board* — Two layers of nom 5/8 in. (16 mm) thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max area of opening is 96 sq in. (692 cm²) with max dimension of 12 in. (305 mm) Max width of opening in wood stud walls is limited to 12 in. (305 mm).
2. Through-Penetrants — The following types and sizes of pipes, conduits, tubing or cables may be used:
   A. Nom 3 in. (76 mm) diam (or smaller) electrical metallic tubing (EMT).
   B. Max 25 pair — No. 24 AWG (or smaller) telephone cable with polyvinyl chloride (PVC) insulation and jacket.
   C. Max 3/C with ground — No. 10 AWG (or smaller) Type NM cable with PVC insulation and jacket.
   D. Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) piping systems only.
   E. Max 300 kcmil (or smaller) power cable with PVC insulation and nylon jacket.

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Hilti Firestop Systems

Page: 1 of 2

System No. W-L-8004

WL 8004

The through penetrating items to be rigidly supported on both sides of wall assembly and located as shown in the table below:

Item No.	Max Distance Between Adjacent Pen. Item In. (mm)	Min Distance Between Adjacent Pen. Item In. (mm)	Max Distance From Through Opening In. (mm)	Min Distance From Through Opening In. (mm)
2A	7-7/16 (189)	1-11/16 (43)	12 (305)	1/2 (13 mm)
2B	7-7/16 (189)	1-11/16 (43)	12 (305)	1/2 (13 mm)
2C	7-7/16 (189)	1-11/16 (43)	12 (305)	1/2 (13 mm)
2D	7-7/16 (189)	1-11/16 (43)	12 (305)	1/2 (13 mm)
2E	7-7/16 (189)	1-11/16 (43)	12 (305)	1-1/2 (32 mm)

3. Firestop System — The firestop system shall consist of the following:
   A. Steel Wire Mesh — No. 8 steel wire mesh having a min 1 in. (25 mm) lap along the longitudinal seam. Length of steel wire mesh to be 4-3/4 in., (120 mm) centered and formed to fit periphery of through opening. Steel wire mesh is not required when additional framing members (Item No. 1A) are used.
   B. Packing Material — Min 4.0 in. (102 mm) thickness of min 3.5 pcf (56 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
   C. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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

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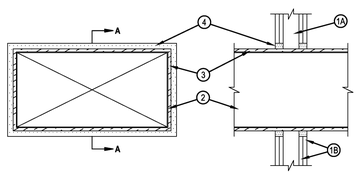
Hilti Firestop Systems

Page: 2 of 2

System No. W-L-7059

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 1/2 and 3/4 Hr (See Item 1)	FT Rating - 1/2 and 3/4 Hr(See Item 1)
	FH Ratings - 1 and 2 Hr (See Item 1)
	FTH Rating - 1/2 and 3/4 Hr (See Item 1)

WL 7059



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of channel studs. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. The opening in the wall to accommodate the steel duct (Item 2) shall be framed on all sides using lengths of studs installed between the vertical studs and attached to the studs at each end. The framed opening in the wall shall be a nom 6 in. (152 mm) wide and 12 in. (305 mm) higher than the width and height of the steel duct.
   B. Wallboard, Gypsum* — 5/8 in. (16 mm) thick, 4 ft (1.22 mm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400, V400 or W400 Series Design in the UL Fire Resistance Directory. Max area of opening is 395 sq. in. (0.25 m2)with max dimensions of 26-3/4 in. (679 mm) for steel studs. The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The hourly T, FT and FTH Ratings are 1/2 hr and 3/4 hr for 1 and 2 hr rated assemblies, respectively

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Hilti Firestop Systems

Page: 1 of 2

System No. W-L-7059

WL 7059

2. Steel Duct — Nom 24 in. by 12 in. (610 by 305 mm) (or smaller) No. 24 gauge (or heavier) steel duct to be installed eccentrically within the framed opening. The annular space shall be min 1 in. (25 mm) to max 1-3/4 in. (45 mm) Steel duct to be rigidly supported on both sides of wall assembly.
3. Batts and Blankets* — Max 1-1/2 in. (38 mm) thick glass fiber batt or blanket (min 3/4 pcf or 12 kg/m3) jacketed on the outside with a foil-scrim-kraft facing. Longitudinal and transverse joints sealed with aluminum foil tape. During the installation of the fill material, the batt or blanket shall be compressed 50% such that the annular space within the firestop system shall be min 1/4 in. (6 mm) to max 1 in. (25 mm). See Batts and Blankets - (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index 50 or less may be used.
4. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. or 1-1/4 in. (16 or 32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. If voids develop after the fill materials cures, the voids shall be sealed with additional fill material.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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

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Hilti Firestop Systems

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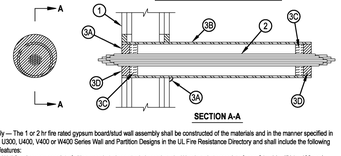
System No. W-L-3112

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and 2 Hr (See Item 1)	F Rating — 1 and 2 Hr (See Item 1)
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 1 and 2 Hr (See Item 1)
	FTH Rating — 0 Hr

WL 3112



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory. Max diam of opening is 5 -1/2 in. (140 mm).
   The hourly F, FH rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Cables — Aggregate cross-sectional area of cables in steel sleeve to be 36 percent of the aggregate cross-sectional area of the sleeve. Cables to be rigidly supported on both sides of wall assembly. Any combination of the following types and sizes of copper conductor cable may be used:
   A. Max 300 kcmil single conductor Type MTW, THHN, THWN or AWM power cables; cross-linked polyethylene (XLPE) insulation.
   B. Max 4 pair No. 24 AWG telephone cable intended for plenum applications.
   C. Max 3/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket.
3. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* — Sealant or Putty — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both sides of wall. At point contact, a min ¾ in. (13 mm) bead of fill material shall be applied at sleeve/wall interface when sleeve extends beyond surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant, FS-ONE MAX Intumescent Sealant or CP618 Firestop Putty Stick
   B. Steel Sleeve — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or Schedule 5 steel pipe. The annular space between steel sleeve and periphery of opening shall be min 0 in. (point contact) to max 1 in. (25 mm). Sleeve may extend up to 18 in. (457 mm) beyond the wall surface. When sleeve extends more than 4 in (102 mm) beyond surface of wall, sleeve to be rigidly supported.
   C. Packing Material — Min 1 in. (25 mm) thickness of min 4.0 pcf (64 kg/m3) mineral wool batt insulation firmly packed into each end of sleeve as a permanent form. Packing material to be recessed from each end of sleeve as required to accommodate the required thickness of fill material.
   D. Fill, Void or Cavity Material* — Putty — Min 1 in. (25 mm) thickness of fill material applied within the sleeve, flush with both ends.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP618 Firestop Putty Stick

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

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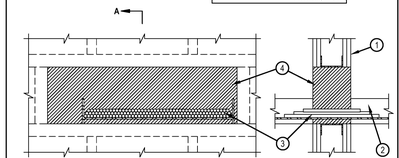
Hilti Firestop Systems

System No. W-L-4034

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Items 1 and 4)	F Ratings — 1 and 2 Hr (See Items 1 and 4)
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Ratings — 1 and 2 Hr (See Items 1 and 4)
	FTH Rating — 0 Hr

WL 4034



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features.
   A. Studs — Steel studs, min 3-1/2 in. (89 mm) deep, fabricated from 25 MSG galv steel, spaced max 24 in. (610 mm) OC. Additional steel studs shall be used to completely frame the opening.
   B. Gypsum Boards* — The gypsum board type, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max area of opening is 270 sq in. (1742 cm2) with max dimension of 30 in. (762 mm).
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Cable Tray* — Max 24 in. (610 mm) wide by 4 in. (102 mm) deep open-ladder cable tray with channel-shaped side rails formed of 0.10 (2.54 mm) thick aluminum and 1-1/2 in. (38 mm) wide by 1 in. (25 mm) channel shaped rungs spaced on 9 in. (229 mm) OC. The annular space between cable tray and periphery of opening shall be min 0 in. (point contact) to max 5 in. (127 mm). Cable tray to be rigidly supported on both sides of wall assembly.
3. Cables — Aggregate cross-sectional area of cable tray to be max 45 percent of the cross-sectional area of the cable tray based on a max 3 in. (76 mm) cable loading depth. Any combination of the following types and sizes of copper conductor cables may be used:
   A. Max 300 pair No. 24 AWG telephone cable with polyvinyl chloride (PVC) insulation and jacket.
   B. Max 500 kcmil single conductor power cable with PVC jacket removed.
   C. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 3/8 in. (9.5 mm).
   D. Max 3/C No. 12 AWG copper conductor steel clad cable with PVC insulation material.

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Hilti Firestop Systems

System No. W-L-7040

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Items 1 and 3)	F Ratings - 1 and 2 Hr (See Items 1 and 3)
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating at Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Items 1 and 3)
L Rating at 400°F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
	L Rating at Ambient - Less Than 1 CFM/sq ft
	L Rating at 400°F - Less Than 1 CFM/sq ft

WL 7040

SECTION A-A

1. Wall Assembly — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or V400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm). Additional framing members shall be used to completely frame around opening.
   B. Gypsum Board* — Nom 5/8 in. (16 mm) thick with square or tapered edges. The gypsum wallboard type, number of layers and sheet orientation shall be as specified in the individual Wall and Partition Design Number. Max area of opening is 1300 in.² (0.84 m²) with the dimension of 50 in. (1.27 m).
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Steel Duct — Nom 24 in. by 48 in. (610 by 1219 mm) (or smaller) No. 24 gauge (or heavier) galv steel duct to be installed within the firestop system. The annular space shall be min 0 (point contact) in. to a max 2 in. (51 mm) Duct to be rigidly supported on both sides of the wall assembly.

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Hilti Firestop Systems

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System No. W-L-7040

WL 7040

3. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material*—Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within annulus flush with both surfaces of wall. At point contact location, a min 1/2 in. (13 mm) diam bead of fill material shall be applied to the wall/duct interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant, FS-ONE MAX Intumescent Sealant, CP601S Elastomeric Firestop Sealant or CP606 Flexible Sealant
   B. Steel Retaining Angle — No. 18 MSG (0.048 in.) galv steel angles cut to fit contour of duct with a 2 in. overlap on the duct and a min 1 in. overlap on the gypsum board assembly on both sufaces of wall. 2 in. leg of angle secured to duct with min No. 8 by 3/4 in. long sheet metal screws, spaced a max of 6 in. OC. When bead of fill material is used at joint contact locations, angles shall be installed prior to full material curing.

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

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Hilti Firestop Systems

Page: 2 of 2

System No. W-L-6017

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Item 1)	F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 1 and 1-1/2 Hr (See Item 1)	FT Ratings — 1 and 1-1/2 Hr (See Item 1)
	FH Ratings — 1 and 2 Hr (See Item 1)
	FTH Ratings — 1 and 1-1/2 Hr (See Item 1)

WL 6017

SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified if the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of either wood studs or channel shaped steel studs. Wood studs to consist of 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide, fabricated from min 25 ga galvanized steel, spaced max 24 in. (610 mm) OC. Additional framing members shall be used to completely frame around opening.
   B. Gypsum Board* — Nom 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, number of layers and sheet orientation shall be as specified in the individual Wall and Partition Design Number. Max area of opening is 128 sq in. (826 cm2) with max dimension of 16 in. (406 mm).
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The T, FT and FTH Ratings are 1-1/2 hr when installed in a 2 hr fire rated wall, and 1 Hr when installed in a 1 hr fire rated wall.
2. Optical Fiber/Communications Cable Raceways++ — Max 12 in. (305 mm) wide by 4 in. (102 mm) deep optical fiber/communications cable raceway, formed from Acrylonitrile Butadiene Styrene (ABS). The annular space between the cable raceway and the periphery of the opening shall be min 0 in. (point contact) to max 4 in. (102 mm). Raceway to be rigidly supported on both sides of wall assembly.
2A. Cover Plate (Optional) — Not Shown) — Sized to accommodate the raceway, formed from Acrylonitrile Butadiene Styrene (ABS). When cover plate extends through the firestop system, Fire Blocks shall be tightly packed within the raceway to completely fill the annular space and all voids filled, prior to the installation of the cover plate.
3. Fiber Optic Cables — Multiple fiber communication cable jacketed on the outside with polyvinyl chloride (PVC) and having a max outside diam of 1/2 in. (13 mm). Aggregate cross-sectional area of cables in raceway not to exceed 40 percent of the cross-sectional area of the raceway.

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Hilti Firestop Systems

Page: 1 of 2

System No. W-L-6017

WL 6017

4. Firestop System — The firestop system shall consist of the following.
   A. Fill, Void or Cavity Material* — Fire Blocks — For walls incorporating max 3-5/8 in. (92 mm) steel studs or max 2 by 4 in. (51 by 102 mm) wood studs, fire block installed with 5 in. (127 mm) dimension projecting through and centered in opening. For walls constructed of larger steel or wood studs, fire block installed with long dimension passing through and centered in opening. Blocks may or may not be cut flush with both surfaces of wall. When multiple layers of gypsum board are used, blocks may be recessed 1/2 in. (13 mm) from surface of wall. When optional cover plate is used with communications raceway, blocks shall be placed within the raceway at the point of the penetration to fully fill the void between cables and cover plate. Blocks firmly packed within opening. Either one or a combination of the block types specified below may be used.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS 657 Fire Block or CFS-BL Firestop Block
   B. Fill, Void or Cavity Material* — Fill material to be forced into interstices of cables, between cables and cable tray and in obvious openings between blocks and between blocks and the periphery of the opening to the max extent possible on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant, FS-ONE MAX Intumescent Sealant, CP618 Firestop Putty Stick, CP 660 Firestop Foam or CP 620 Fire Foam

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

+Bearing the UL Listing Mark

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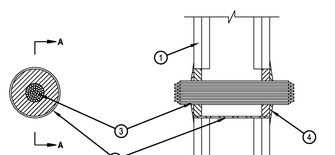
Hilti Firestop Systems

Page: 2 of 2

System No. W-L-3111

F Rating — 1 and 2 Hr
T Rating — 0 Hr

WL 3111



SECTION A-A

1. Wall Assembly — The fire — rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified if the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of either wood studs or channel shaped steel studs. Wood studs to consist of 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide, fabricated from min 25 MSG galvanized steel, spaced max 24 in. OC.
   B. Gypsum Board* — 5/8 in. 4 ft wide with square or tapered edges. The gypsum wallboard type, number of layers and sheet orientation shall be as specified in the individual U300 or U400 Series Designs in the UL Fire Resistance Directory. Max diam of opening is 4 in.
2. Metallic Sleeve — Optional — The nominal 4 in. diam steel electrical metallic tubing (EMT) or Schedule 5 steel pipe friction fit into wall assembly and installed flush with wall surfaces.
3. Cables — Aggregate cross — sectional area of cables in cable tray to be max 25 percent of the cross — sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 1/8 in. to max 3/4 in. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of cables may be used:
   A. 5 pair — No. 24 AWG telephone cable with polyvinyl chloride (PVC) insulation and PVC jacket.
   B. 24 fiber optic cable with polyvinyl chloride (PVC) outer and subunit jacket.
   C. Type RG/U/59 coaxial cable with polyethylene (PE) insulation and polyvinyl (PVC) jacket.
   D. The 2/C No. 10 AWG cable with ground with polyvinyl (PVC) insulation and jacket.
   E. 3/C No. 12 AWG cable with polyvinyl chloride (PVC) insulation in a nominal 1/2 in. flexible metal conduit.
4. Fill, Void or Cavity Material* — Putty — Min 5/8 in. thickness of fill material applied within annulus flush with both surfaces of wall. Fill material to be forced into interstices of cable bundle to the max extent possible on both surfaces of wall. Additional fill material to be installed such that a min 1/4 in. crown is formed around the cable bundle and lapped over the steel sleeve.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP618 Firestop Putty Stick

*Bearing the UL Classification Mark

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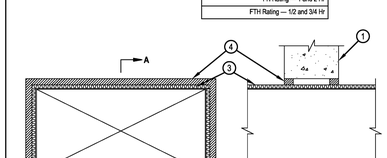
Hilti Firestop Systems

System No. W-J-7029

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and 2 Hr	F Rating — 1 and 2 Hr
T Rating — 1/2 and 3/4 Hr	FT Rating — 1/2 and 3/4 Hr
	FH Rating — 1 and 2 Hr
	FTH Rating — 1/2 and 3/4 Hr

WL 7029



SECTION A-A

1. Wall Assembly — Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 395 sq in. with max dimensions of 26-3/4 in. (679 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Steel Duct — Nom 24 in. by 12 in. (610 by 305 mm) (or smaller) No. 24 gauge (or heavier) steel duct to be installed eccentrically within the opening. The annular space shall be min 1 in. (25 mm) to max 1-3/4 in. (44 mm). Steel duct to be rigidly supported on both sides of wall assembly.
3. Batt and Blanket* — Max 1-1/2 in. (38 mm) thick glass fiber batt or blanket (min 3/4 pcf or 12 kg/m3) jacketed on the outside with a foil-scrim-kraft facing. Longitudinal and transverse joints sealed with aluminum foil tape. During the installation of the fill material, the batt or blanket shall be compressed 50% such that the annular space within the firestop system shall be min 1/4 in. (6 mm) to max 1 in. (25 mm).
   See Batts and Blankets (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index 50 or less may be used.
4. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. If voids develops after the fill material cures, the voids shall be sealed with additional fill material.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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

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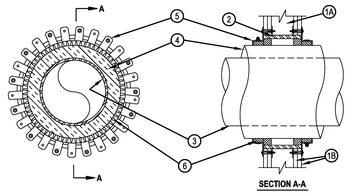
Hilti Firestop Systems

System No. W-L-5025

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and 2 Hr (See Items 1 and 6)	F Rating — 1 and 2 Hr (See Items 1 and 6)
T Rating — 0 and 3/4 Hr (See Item 1)	FT Rating — 0 and 3/4 Hr (See Item 1)
L Rating At Ambient — 4 CFM/sq ft	FH Rating — 1 and 2 Hr (See Items 1 and 6)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 and 3/4 Hr (See Item 1)
W Rating — Class 1 (See Item 2B)	L Rating At Ambient — 4 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft

WL 5025



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls and 18 in. (457 mm) for steel stud walls.
   The hourly F, FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The T, FT, FTH Ratings are 0 and 3/4 hr when installed in 1 and 2 hr rated walls, respectivley.
2. Metallic Sleeve — (Optional) — Nom 18 in. (457 mm) diam (or smaller) Schedule 40 (or thinner) steel pipe cast into wall assembly with joint compound and installed flush with wall surfaces.

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Hilti Firestop Systems

Page: 1 of 2

System No. W-L-5025

WL 5025

3. Through-Penetrants — One metallic pipe or tubing to be centered within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — Nom 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
   C. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
4. Pipe Covering* — Nom 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. A nom annular space of 1-1/8 in.(29 mm) is required within the firestop system.
   See Pipe and Equipment Covering — Materials (BRGU) category in the Building Material Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
5. Steel Collar — Collar fabricated from precut 0.017 in. (0.43 mm) thick (28 MSG) galv sheet steel available from the sealant manufacturer. Collar shall be nom 2 in. (51 mm) deep with min 1-1/4 in. (32 mm) wide by 2 in. (51 mm) long anchor tabs for securement to wall surface. Retainer tabs, 1/4 in. (6 mm) wide by 3/4 in. (19 mm) long and located opposite the anchor tabs are folded 90 degrees toward pipe surface to maintain the annular space around the pipe and to retain the fill material. Collar secured to surface of wall with 1/4 in. (6 mm) toggle bolts. A nom 1/2 in. (13 mm) wide stainless steel hose clamp was secured to each of the collars at mid-depth.
6. Fill, Void or Cavity Material* — Sealant — In 1 hr fire rated assemblies, min 5/8 in. (16 mm) thickness of fill material applied within the annulus. In 2 hr fire rated assemblies, min 1-1/4 in. (32 mm) thickness of fill material applied within the annulus. Additional fill material applied to completely fill the collars.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

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

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Hilti Firestop Systems

Page: 2 of 2

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Penetrations 2

STATE OF FLORIDA · LARS W. YOUNG · AR0016755 · REGISTERED ARCHITECT · FLORIDA

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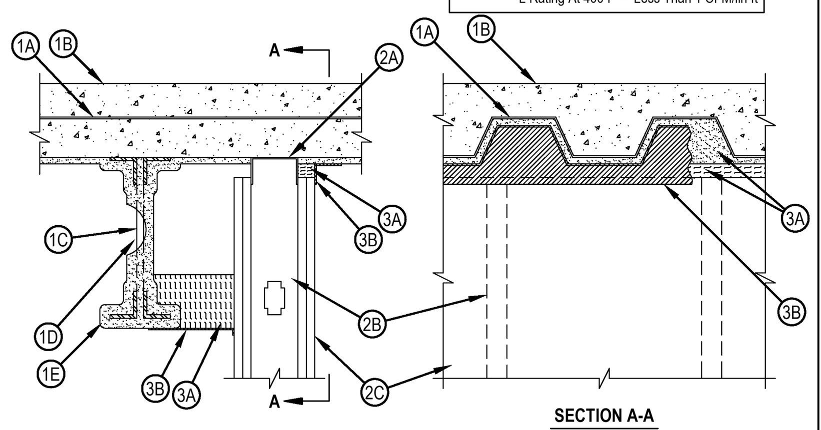
System No. HW-D-0388

HWD 0388

Classified by Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1-1/2 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 50% Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/lin ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/lin ft	Nominal Joint Width - 1-1/2 In.
	Class II Movement Capabilities — 50% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/lin ft
	L Rating At 400 F — Less Than 1 CFM/lin ft



Hilti Firestop Systems

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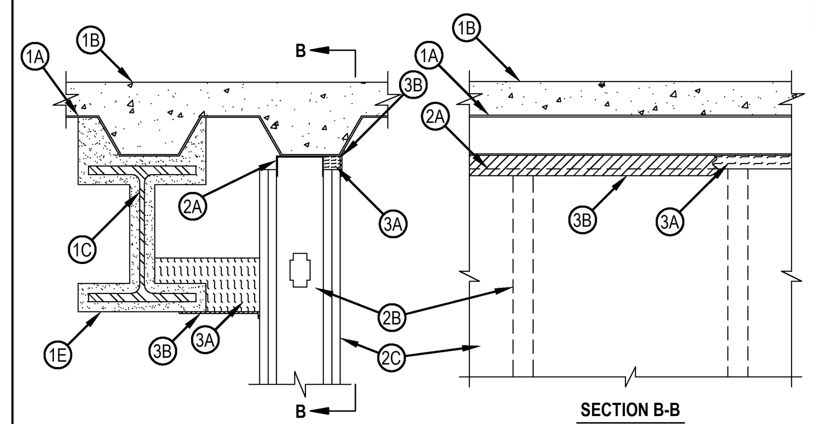
System No. HW-D-0388

HWD 0388



1. Floor Assembly — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the floor assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The floor assembly shall include the following construction features:
   A. Steel Floor and Floor Units* — Max 3 in. (76 mm) deep galv steel fluted floor units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Structural Steel Support — Steel beam or open-web steel joist, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented parallel to and 1 to 6 in. (25 to 152 mm) from wall assembly.
   D. Steel Lath — When structural steel support (Item 1C) consists of open-web steel joists, 3/8 in. (10 mm) diamond mesh expanded steel lath having a nom weight of 1.7 to 3.4 lb per sq yd (0.9 to 1.8 kg/m2) shall be installed to completely cover one side of each joist which is located within 6 in. (152 mm) of wall assembly. The lath shall be secured with steel tie wire and shall be fully covered with spray applied fire resistive material.
   E. Spray-Applied Fire Resistive Material* — After installation of the ceiling runner (Item 2A), steel floor units and structural steel supports to be sprayed with the thickness of material specified in the individual D700 Thickness Design or the structural steel supports to be sprayed in accordance with the specifications in the individual D900 Series Design. The flutes of the steel floor units above the structural steel supports and above the ceiling runner (Item 2A) shall be filled with spray-applied fire resistive material. As an alternate, the spray-applied fire resistive material in the flutes above the ceiling runner may be applied to follow the contour of the steel floor units. Excess material shall be removed from the flanges of the ceiling runner beyond the required thickness of spray-applied fire resistive material on the steel floor units.
   ISOLATEK INTERNATIONAL — Type 300, Type 400
   GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY, MK-6/HY ES, MK-6s, RG, MK-10HB

1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly (Item 1), a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 or P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Roof Insulation — Mineral and Fiber Board* — Min 3/4 in. (19 mm) thick boards applied in one or more layers directly over steel roof deck or over gypsum board sheathing laid atop steel roof deck.
   C. Roof Covering* — Hot-mopped or cold-application materials compatible with mineral and fiber board insulation.

Hilti Firestop Systems

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System No. HW-D-0388

HWD 0388

   D. Structural Steel Support — Steel beam or open-web steel joist, as specified in the individual P700 or P800 or P900 Series Roof-Ceiling Design, used to support steel deck. Structural steel support oriented parallel to and 1 in. to 6 in. (25 to 152 mm) from wall assembly.
   E. Steel Lath — When structural steel support (Item 1D) consists of open-web steel joists, 3/8 in. (10 mm) diamond mesh expanded steel lath having a nom weight of 1.7 to 3.4 lb per sq yd (0.9 to 1.8 kg/m2) shall be installed to completely cover one side of each joist which is located within 6 in. (152 mm) of wall assembly. The lath shall be secured with steel tie wire and shall be fully covered with spray applied fire resistive material.
   F. Spray-Applied Fire Resistive Material* — After installation of the ceiling runner (Item 2A), steel roof deck (P700 Series Roof-Ceiling design) and structural steel supports to be sprayed with a thickness of spray applied fire resistive material as specified in the individual Roof-Ceiling design. In addition, the flutes of the steel deck above the structural steel supports and above the ceiling runner (Item 2A) shall be filled with spray-applied fire resistive material. As an alternate, the spray-applied fire resistive material in the flutes above the ceiling runner may be applied to follow the contour of the steel roof deck. Excess material shall be removed from the flanges of the ceiling runner beyond the required thickness of spray-applied fire resistive material on the steel roof deck.
   ISOLATEK INTERNATIONAL — Type 300, Type 400
   GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY, MK-6/HY ES, MK-6s, RG, MK-10HB

2. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). Flange height of ceiling runner to be 3/4 in. (19 mm) greater than max extended joint width. Ceiling runner is secured to steel floor units (Item 1A) with steel fasteners or welds spaced max 24 in. (610 mm) OC. Ceiling runner to be installed parallel with structural steel support and located such that a max clearance of 4 in. (102 mm) is present between the finished wall and the spray-applied fire resistive material at the lowest elevation of the structural steel support.
   A1. Light Gauge Framing* — Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2A, ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Ceiling runner secured to valleys with steel fasteners spaced max 24 in. (610 mm) OC.
   BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK, SLPTRK325
   CALIFORNIA EXPANDED METAL PRODUCTS CO — CST, CST325
   MARINO/WARE, DIV OF WARE INDUSTRIES INC — Type SLT
   A2. Light Gauge Framing* — Clipped Ceiling Runner — As an alternate to the ceiling runner in Items 2A and 2A1, clipped runner to consist of galv steel channel with clips preformed in track flanges which positively engage the inside flange of the steel studs (Item 2B). Track sized to accommodate steel studs (Item 2B). Track flanges to be min 2-1/2 in. (64 mm). Clipped ceiling runner secured with steel fasteners spaced max 24 in. (610 mm) OC.
   TOTAL STEEL SOLUTIONS L L C — Snap Trak
   A3. Light Gauge Framing*- Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A2, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2B). Notched ceiling runner secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC.
   OLMAR SUPPLY INC — Type SCR
   A4. Light Gauge Framing* — Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2A, ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Flange height of slotted ceiling runner shall be 3-1/4 in. (83 mm) with 2 in. (51 mm) deep slots. Ceiling runner secured to valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC.
   SCAFCO STEEL STUD MANUFACTURING CO — Slotted Track-Type SDLT
   B. Studs — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 3/4 in. to 1 in. (19 to 25 mm) less in length than assembly height with bottom nesting in and secured to floor runner. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 (13 mm) long wafer head steel screws at mid-height of slot on each side of wall. When slotted ceiling runner (Item 2A4) is used, steel studs cut in lengths 3/4 to 1-3/4 in. (19 to 44 mm) less than floor to ceiling height and secured to slotted ceiling runner with No. 8 by 1/2 (13 mm) long wafer head steel screws at +/- 3/16 in. (5 mm) of the mid-height of slot on each side of wall.

Hilti Firestop Systems

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System No. HW-D-0388

HWD 0388

   C. Gypsum Board* — Gypsum board sheets installed to a min total 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Wall to be constructed as specified in the individual U400, V400 or W400 Series Design in the UL Fire Resistance Directory except that a max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom plane of the spray applied fire resistive material on the steel deck when D700 series assembly is used or between the top of gypsum board and the steel floor units when D900 series assembly is used, on both sides of the wall assembly. The screws attaching the gypsum board to the studs along the top of the wall shall be located 1 to 1-1/2 in. (25 to 38 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner. Where the top of the wall assembly is inaccessible above the lowest elevation of the structural steel support, the gypsum board attachment screws may be omitted.
   The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. Joint System — Max separation between bottom of the spray applied fire resistive material on the steel floor units and top of gypsum board (at time of installation of joint system) is 1-1/2 in. (38 mm) when D700 series assembly is used. Max separation between bottom of the steel floor units and top of gypsum board (at time of installation of joint system) is 1-1/2 in. (38 mm) when D900 series assembly is used. Max separation between spray applied fire resistive material on structural support member and surface of wall is 4 in. (102 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width as measured between the bottom plane of the steel floor units or spray applied fire resistive material on the steel floor units and the top of the gypsum board. The joint system shall consist of forming and fill materials, as follows:
   A. Forming Material* — Nom 4 pcf (64 kg/m3) density mineral wool batt insulation. Sections of mineral wool batt cut to a width of 4 in. (102 mm) and stacked to attain a thickness which is 50 percent greater than the width of the linear gap between the spray applied fire resistive material on the structural steel member and the surface of the wall assembly. Stacked sections of mineral wool compressed 33 percent in thickness and installed cut edge first into linear gap until the bottom edge is flush with or extend max 1-1/2 in. (38 mm) below the bottom surface of the spray applied fire resistive material on the structural steel member. When the spray-applied fire resistive material in the flutes above the wall follows the contour of the steel deck, sections of mineral wool batt cut to the shape of the fluted deck and installed in the flutes of the steel floor or roof deck between the top of the ceiling runner and the spray-applied fire resistive material. The mineral wool batt insulation is to be installed flush with the gypsum board surface on the side of the wall opposite the structural steel support. Additional sections of mineral wool batt insulation are compressed 50 percent in thickness and are installed cut edge first to completely fill the gap above the top of the gypsum board.
   INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing
   JOHNS MANVILLE — Safing
   ROCK WOOL MANUFACTURING CO — Delta Board
   ROCKWOOL MALAYSIA SDN BHD — SAFE
   ROCKWOOL — SAFE
   THERMAFIBER INC — Type SAF
   A1. Forming Material* — Plugs — (Optional, Not Shown) - Preformed mineral wool plugs, formed to the shape of the fluted deck, friction fit to completely fill the flutes. The plugs shall be flush with both wall surfaces. Additional forming material, described in Item 3A, to be used in conjunction with the plugs to fill the gap between the top of the wall and bottom of steel deck.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP777 Speed Plugs
   B. Fill, Void or Cavity Material* — Sealant — Min 1/8 in. (3.2 mm) wet thickness or 1/16 in. (1.6 mm) dry thickness of fill material spray or brush applied over the forming material on each side of the wall. Fill material to overlap a min of 1/2 in. (13 mm) onto the gypsum board and a min 2 in. (51 mm) onto the steel floor units or spray-applied fire resistive material on the steel floor units and on the structural steel support member.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-SP WB Firestop Joint Spray

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

Hilti Firestop Systems

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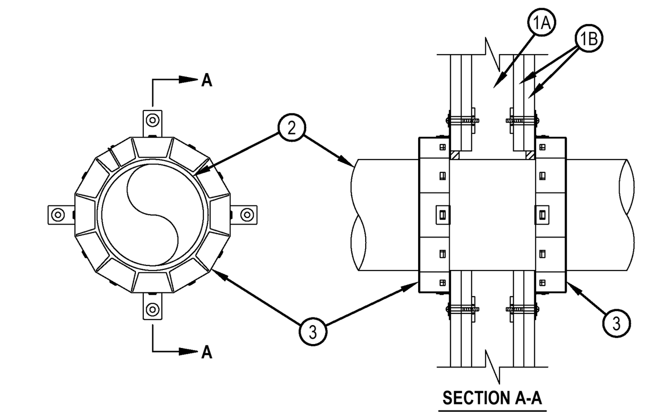
System No. W-L-2078

WL 2078

Classified by Underwriters Laboratories, Inc. to UL 1479

F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 0, 1 and 2 Hr (See Items 2 and 3)
L Rating (Without Movement) At Ambient — 3 CFM/sq ft
L Rating (Without Movement) At 400°F — Less Than 1 CFM/sq ft
M Rating (Movement) — See Table 1



1. Wall Assembly — The fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL fire Resistance Directory and shall include the construction features noted below:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating, steel studs to be min 3-5/8 in. (92 mm) wide.
   B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board, as specified in the individual Wall and Partition Design. Max diam of opening is 11-1/2 in. (292 mm).
   The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed. The M Rating is applicable only to 1 hr rated walls and the T Rating is 0 hr.
2. Through-Penetrants — One nonmetallic pipe, conduit or tubing to be installed within the firestop system. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Pipe or conduit to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 10 in. (254 mm) diam (or smaller) Schedule 40 solid-core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
   B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 10 in. (254 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
   C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 solid-core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems
   D. Flame Retardant Polypropylene (FRPP) Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

Hilti Firestop Systems

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System No. W-L-2078

WL 2078

   E. Polyvinylidene Fluoride (PVDF) Pipe — Nom 4 in. (102 mm) diam (or smaller) PVDF pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
   F. Crosslinked Polyethylene (PEX) Tubing — Nom 4 in. (102 mm) diam (or smaller) SDR 9 Uponor AquaPEX or Wirsbo hePEX PEX tube for use in closed (process or supply) piping systems.
   When max 6 in. diam pipe is used, T Rating is equal to the hourly fire rating of the wall except that when penetrant type 2F is used, T Rating is 0 hr. When nom 8 in. or 10 in. (203 or 254 mm) diam pipe is used, T Rating is 0 hr. For systems with M Rating, the T Rating is 0 hr.
3. Firestop Device* — Firestop Collar — Firestop collar shall be installed in accordance with the accompanying installation instructions. Collar to be installed and latched around the pipe and secured to both sides of the wall using the anchor hooks provided with the collar. (Minimum two anchor hooks for 1-1/2 and 2 in. (38 and 51 mm) diam pipes, three anchor hooks for 3 and 4 in. (76 and 102 mm) diam pipes, four anchor hooks for 6 in. (152 mm) diam pipes, ten anchor hooks for 8 in. (203 mm) diam pipes and twelve anchor hooks for 10 in. (254 mm) diam pipes. The anchor hooks are to be secured to the surface of wall with 3/16 in. (4.8 mm) diam by 2-1/2 in. (64 mm) long steel toggle bolts along with washers. As an alternate for pipe sizes of nom 4 in. diam or less, min No. 10 by 1-1/2 in. (254 by 38 mm) long drywall or laminate screws with min 3/4 in. (19 mm) steel washers may be used. When the drywall or laminate screw is used, T Rating shall not exceed 1 hr.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643 50/1.5"N, CP 643 63/2"N, CP 643 90/3"N, CP 643 110/4"N, CP 643 160/6"N, CP 644-200/8" US and CP 644-250/10" US Firestop Collars
4. Fill, Void or Cavity Material* — Sealant - (Not Shown) — Min 1/2 in. (13 mm) thickness of sealant applied within the annular space for nom 8 in. and 10 in. (203 and 254 mm) diam pipes, flush with each side of wall. Sealant in annular space is optional for max 6 in. (152 mm) diam pipes except that for penetrant type 2F, sealant is required. A min 1/4 in. (6 mm) thickness of sealant is required within the annular space, flush with each side of wall, to attain the L Ratings for max 6 in. (152 mm) diam pipes. For systems with M Rating, the sealant should not be installed.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

The M Rating for the firestop system is dependent on the variables as noted in the Table 1 below.

Table 1

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F Rating	L Rating
Y	2A	2 in.	Max 1/4 in.	100%	5/8 in.	1 hr.	N/A
Z	2A	2 in.	Min. 1/4 in.	3.21 in.	5/8 in.	1 hr.	N/A

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

Hilti Firestop Systems

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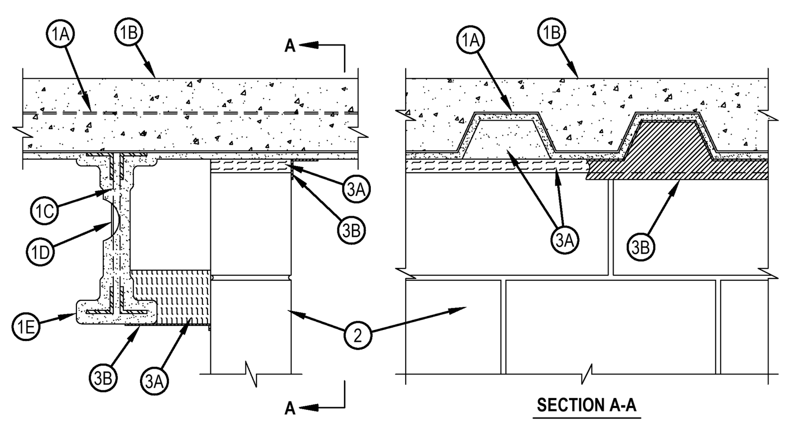
System No. HW-D-0389

HWD 0389

Classified by Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

ANSI/UL2079	CAN/ULC S115
Assembly Rating — 2 Hr	F Rating — 2 Hr
Nominal Joint Width - 1 In.	FT Rating — 2 Hr
Class II Movement Capabilities — 12.5% Compression or Extension	FH Rating — 2 Hr
L Rating At Ambient — Less Than 1 CFM/ lin ft	FTH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/lin ft	Nominal Joint Width - 1 In.
	Class II Movement Capabilities — 12.5% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/lin ft
	L Rating At 400 F — Less Than 1 CFM/lin ft



Hilti Firestop Systems

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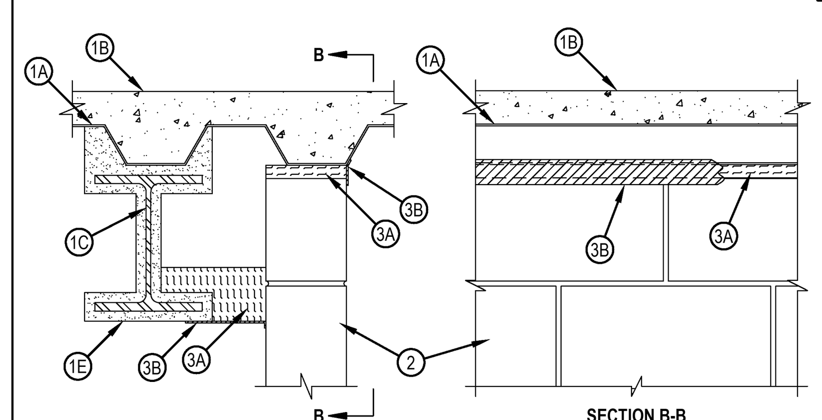
Page: 1 of 4

System No. HW-D-0389

HWD 0389



1. Floor Assembly — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the floor assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The floor assembly shall include the following construction features:
   A. Steel Floor and Floor Units* — Max 3 in. (76 mm) deep galv steel fluted floor units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Structural Steel Support — Steel beam or open-web steel joist, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented parallel to and min 2 in. (51 mm) to max 6 in. (152 mm) from wall assembly.
   D. Steel Lath — When structural steel support (Item 1C) consists of open-web steel joists, 3/8 in. (10 mm) diamond mesh expanded steel lath having a nom weight of 1.7 to 3.4 lb per sq yd (0.9 to 1.8 kg/m2) shall be installed to completely cover one side of each joist which is located within 6 in. (152 mm) of wall assembly. The lath shall be secured with steel tie wire and shall be fully covered with spray applied fire resistive material.
   E. Spray-Applied Fire Resistive Material* — Steel floor units and structural steel supports to be sprayed with the thickness of material specified in the individual D700 Series Design or the structural steel supports to be sprayed in accordance with the specifications in the individual D900 Series Design. The flutes of the steel floor units above the structural steel supports shall be filled with spray-applied fire resistive material. The spray-applied fire resistive material in the flutes above the wall, when required, shall be applied to follow the contour of the steel floor units.
   GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY, MK-6/HY ES, MK-6s, RG, MK-10HB
   ISOLATEK INTERNATIONAL — Type 300, Type 400

1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly (Item 1), a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The roof assembly shall include the following construction features:

Hilti Firestop Systems

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System No. HW-D-0389

HWD 0389

   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Roof Insulation — Mineral and Fiber Board* — Min 3/4 in. (19 mm) thick boards applied in one or more layers directly over steel roof deck or over gypsum board sheathing laid atop steel roof deck.
   C. Roof Covering* — Hot-mopped or cold-application materials compatible with mineral and fiber board insulation.
   D. Structural Steel Support — Steel beam or open-web steel joist, as specified in the individual P700 Series Roof-Ceiling Design, used to support steel floor units. Structural steel support oriented parallel to and min 2 in. (51 mm) to max 6 in. (152 mm) from wall assembly.
   E. Steel Lath — When structural steel support (Item 1D) consists of open-web steel joists, 3/8 in. (10 mm) diamond mesh expanded steel lath having a nom weight of 1.7 to 3.4 lb per sq yd (0.9 to 1.8 kg/m2) shall be installed to completely cover one side of each joist which is located within 6 in. (152 mm) of wall assembly. The lath shall be secured with steel tie wire and shall be fully covered with spray applied fire resistive material.
   F. Spray-Applied Fire Resistive Material* — Steel roof deck and structural steel supports to be sprayed with a thickness of spray applied fire resistive material as specified in the individual P700 Series Roof-Ceiling design. The flutes of the steel deck above the structural steel supports shall be filled with spray-applied fire resistive material. The spray-applied fire resistive material in the flutes above the wall shall be applied to follow the contour of the steel roof deck.
   GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY, MK-6/HY ES, MK-6s, RG, MK 10HB
   ISOLATEK INTERNATIONAL — Type 300, Type 400
2. Wall Assembly — Min 6 in. (152 mm) thick steel-reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) structural concrete. Wall may also be constructed of any UL Classified Concrete Blocks*.
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
3. Joint System — Max separation between bottom of the spray applied fire resistive material on the steel floor units and top of wall (at time of installation of joint system) is 1 in. (25 mm) when D700 series assembly is used. Max separation between bottom of the steel floor units and top of wall (at time of installation of joint system) is 1 in. (25 mm) when D900 series assembly is used. Separation between spray applied fire resistive material on structural support member and surface of wall is min 1 in. (25 mm) to max 4 in. (102 mm). The joint system is designed to accommodate a max 12.5 percent compression or extension from its installed width as measured between the bottom plane of the steel floor unit or spray-applied fire resistive material on the steel floor unit and the top of the wall. The joint system shall consist of forming and fill materials, as follows:
   A. Forming Material* — Nom 4 pcf (64 kg/m3) density mineral wool batt insulation. Sections of mineral wool batt cut to a width of 4 in. (102 mm) and stacked to attain a thickness which is 50 percent greater than the width of the linear gap between the spray applied fire resistive material on the structural steel member and the surface of the wall assembly. Stacked sections of mineral wool compressed 33 percent in thickness and installed cut edge first into linear gap until the bottom edge is flush with or extend max 1-1/2 in. (38 mm) below the bottom surface of the spray applied fire resistive material on the structural steel member. On the opposite side of the wall, sections of mineral wool batt insulation cut to the width of the wall inserted edge-first between the top of the wall and the valleys of the steel deck (D900 series assembly) or the spray-applied fire resistive material on the valleys of the steel deck (D700 series assembly), compressed approx 50 percent in thickness beneath each valley and flush with the wall surface. Additional pieces of mineral wool batt cut to the shape of the steel deck flute, stacked to a min 6 in. (152 mm) thickness and installed in the flutes above the wall flush with the wall surface.
   INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing
   JOHNS MANVILLE — Safing
   ROCK WOOL MANUFACTURING CO — Delta Board
   ROCKWOOL MALAYSIA SDN BHD — SAFE
   ROCKWOOL — SAFE
   THERMAFIBER INC — Type SAF

Hilti Firestop Systems

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System No. HW-D-0389

HWD 0389

   A1. Forming Material* — Plugs — (Optional, Not Shown) - Preformed mineral wool plugs, formed to the shape of the fluted deck, friction fit to completely fill the flutes. The plugs shall be flush with both wall surfaces. Additional forming material, described in Item 3A, to be used in conjunction with the plugs to fill the gap between the top of the wall and bottom of steel deck.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP777 Speed Plugs
   B. Fill, Void or Cavity Material* — Sealant — Min 1/8 in. (3.2 mm) wet thickness or 1/16 in. (1.6 mm) dry thickness of fill material spray or brush applied over the forming material on each side of the wall. Fill material to overlap a min of 1/2 in. (13 mm) onto the wall surface and a min of 2 in. (51 mm) onto the steel floor units or spray-applied fire resistive material on the steel floor units and on the spray applied fire resistive material on the structural steel support member.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP672 Firestop Spray or CFS-SP WB Firestop Joint Spray

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

Hilti Firestop Systems

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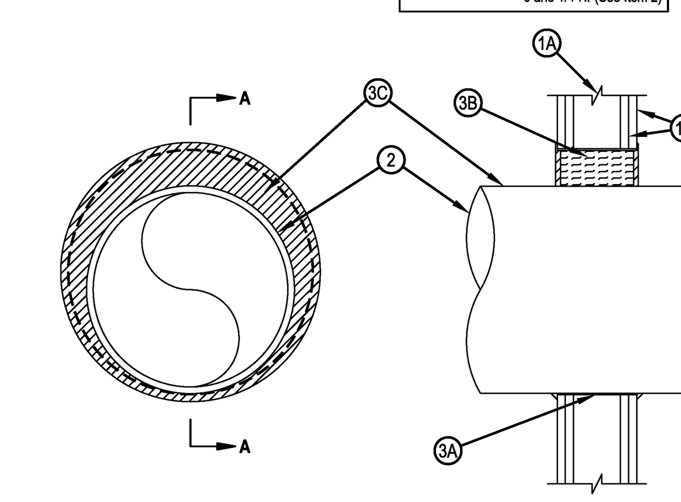
System No. W-L-1058

WL 1058

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 0 and 1/4 Hr (See Item 2)	FT Rating — 0 and 1/4 Hr (See Item 2)
	FH Rating — 2 Hr
	0 and 1/4 Hr (See Item 2)



1. Wall Assembly — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — Two layers of nom 5/8 in. (16 mm) thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls and 20 in. (508 mm) for steel stud walls. Diam of circular through opening to be min 3/8 in. (5 mm) to max 2-3/4 in. (70 mm) larger than diam of through penetrants (Item 2).
2. Through-Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — 17-1/4 in. (438 mm) diam (or smaller) by 0.125 (3.2 mm) (or heavier) steel pipe. The annular space shall be min 0 to max 2-3/4 in. (70 mm). The T, FT and FTH Rating is 1/4 hr when steel pipe is used.
   B. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing. The annular space shall be min 0 to max 3 in. (76 mm). The T, FT and FTH rating is 0 hr when copper tubing is used.

Hilti Firestop Systems

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System No. W-L-1058

WL 1058

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

   C. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) regular (or heavier) copper pipe. The annular space shall be min. 0 to max 3 in. (76 mm). The T, FT and FTH rating is 0 hr when copper pipe is used.
3. Firestop System — The firestop system shall consist of the following:
   A. Steel Wire Mesh — No. 8 steel wire mesh having a min 1 in. (25 mm) lap along the longitudinal seam. Length of steel wire mesh to be 4-3/4 in., (121 mm) centered and formed to fit periphery of through opening.
   B. Packing Material — Min 4-1/2 in. (114 mm) thickness of flexible urethane sheet or mineral wool insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
   C. Fill, Void or Cavity Material* — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe and wall, a min 1/2 in. (13 mm) diam bead of caulk shall be applied at the wall/pipe interface on both surfaces of wall assembly.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

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

Hilti Firestop Systems

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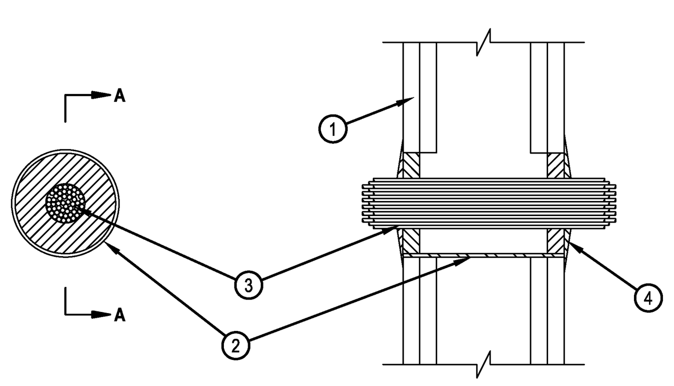
System No. W-L-3111

WL 3111

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

F Rating — 1 and 2 Hr
T Rating — 0 Hr



1. Wall Assembly — The fire — rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified if the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of either wood studs or channel shaped steel studs. Wood studs to consist of 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide, fabricated from min 25 MSG galvanized steel, spaced max 24 in. OC.
   B. Gypsum Board* — 5/8 in. 4 ft wide with square or tapered edges. The gypsum wallboard type, number of layers and sheet orientation shall be as specified in the individual U300 or U400 Series Designs in the UL Fire Resistance Directory. Max diam of opening is 4 in.
2. Metallic Sleeve — Optional — The nominal 4 in. diam steel electrical metallic tubing (EMT) or Schedule 5 steel pipe friction fit into wall assembly and installed flush with wall surfaces.
3. Cables — Aggregate cross — sectional area of cables in cable tray to be max 25 percent of the cross — sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 1/8 in. to max 3/4 in. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of cables may be used:
   A. 6 pair — No. 24 AWG telephone cable with polyvinyl chloride (PVC) insulation and PVC jacket.
   B. 24 fiber optic cable with polyvinyl chloride (PVC) outer and subunit jacket.
   C. Type RGU/59 coaxial cable with polyethylene (PE) insulation and polyvinyl (PVC) jacket.
   D. The 2/C No. 10 AWG cable with ground with polyvinyl (PVC) insulation and jacket.
   E. 3/C No. 12 AWG cable with polyvinyl chloride (PVC) insulation in a nominal 1/2 in. flexible metal conduit.
4. Fill, Void or Cavity Material* — Putty — Min 5/8 in. thickness of fill material applied within annulus flush with both surfaces of wall. Fill material to be forced into interstices of cable bundle to the max extent possible on both surfaces of wall. Additional fill material to be installed such that a min 1/4 in. crown is formed around the cable bundle and lapped over the steel sleeve.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC — CP618 Firestop Putty Stick

*Bearing the UL Classification Mark

Hilti Firestop Systems

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No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Penetrations 3

STATE OF FLORIDA · LARS W. YOUNG · AR0016755 · REGISTERED ARCHITECT
Florida Registration # AR0016755

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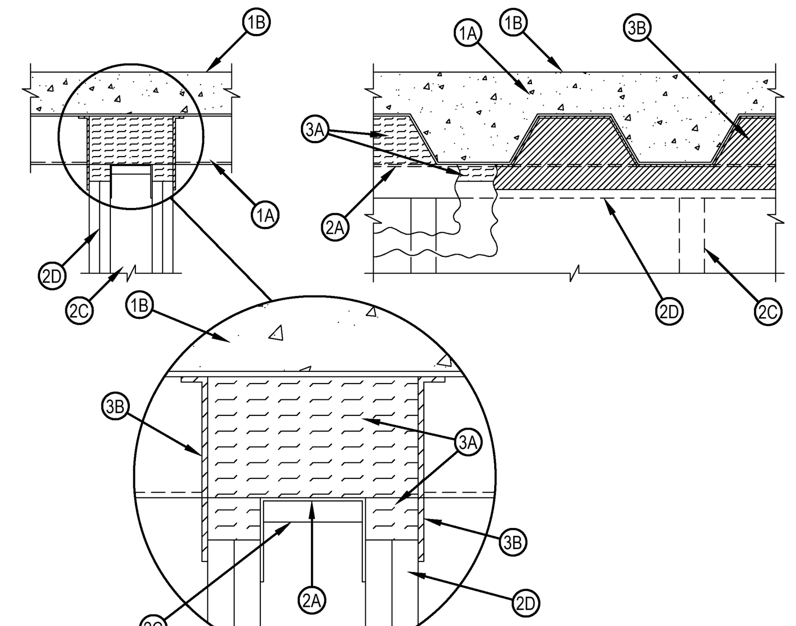
System No. HW-D-0042

HWD 0042

Classified by Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Items 2 and 3A)	F Ratings — 1 and 2 Hr (See Items 2 and 3A)
Nominal Joint Width - 1 In.	FT Ratings — 1 and 2 Hr (See Items 2 and 3A)
Class II Movement Capabilities — 50% Compression or Extension	FH Ratings — 1 and 2 Hr (See Items 2 and 3A)
L Rating At Ambient — Less Than 1 CFM/Lin Ft	FTH Ratings — 1 and 2 Hr (See Items 2 and 3A)
L Rating At 400°F — Less Than 1 CFM/Lin Ft	Nominal Joint Width - 1 In.
	Class II Movement Capabilities — 50% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/Lin Ft
	L Rating At 400°F — Less Than 1 CFM/Lin Ft



CONFIGURATION A

Hilti Firestop Systems

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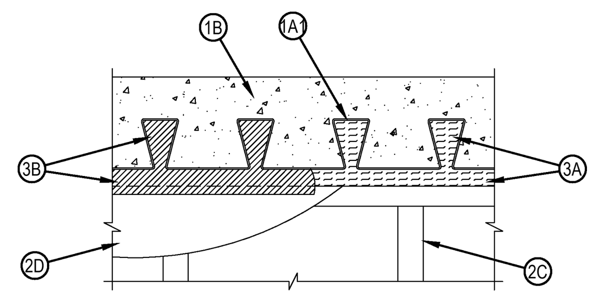
System No. HW-D-0042

HWD 0042



CONFIGURATION B

1. Floor Assembly — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor And Form Units* — Max 3 in. (76 mm) deep galv steel fluted units.
      A1. Steel Floor And Form Units* (Configuration B) — Composite max 2.5 in. (64 mm) deep galv steel fluted units.
         EPIC METALS CORP — Types "EC" or "Toris C"
      A2. Steel Floor And Form Units* (Configuration B) — Composite max 2 in. (51 mm) deep galv steel fluted units.
         NEW MILLENNIUM BUILDING SYSTEMS L L C — Versa-Dek®
      A3. Steel Floor And Form Units* (Configuration B) – Composite max 2 in. (51 mm) deep galv steel fluted units.
         Verco Decking Inc – A Nucor Co – Type 2.0D FORMLOK
      A4. Steel Floor And Form Units* (Configuration B) – Composite max 2 in. (51 mm) deep galv steel fluted units.
         VULCRAFT, DIV OF NUCOR CORP – Type 2.0D FORMLOK
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials* — (Optional, Not Shown) — Prior to or after the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B, respectively) the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1-3/4 in. (45 mm) thickness of fire resistive material.
      GCP APPLIED TECHNOLOGIES INC — Types MK-6-HY or MK-10HB
      ISOLATEK INTERNATIONAL — Type 300

1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      A1. Steel Floor And Form Units* (Configuration B) — Composite max 2.5 in. (64 mm) deep galv steel fluted units.
         EPIC METALS CORP — Types "Toris C" or "ER2R"
      A2. Steel Floor And Form Units* (Configuration B) — Composite max 2 in. (51 mm) deep galv steel fluted units.
         NEW MILLENNIUM BUILDING SYSTEMS L L C — Versa-Dek®
      A3. Steel Floor And Form Units* (Configuration B) – Composite max 2 in. (51 mm) deep galv steel fluted units.
         Verco Decking Inc – A Nucor Co – Type 2.0D FORMLOK
      A4. Steel Floor And Form Units* (Configuration B) – Composite max 2 in. (51 mm) deep galv steel fluted units.
         VULCRAFT, DIV OF NUCOR CORP – Type 2.0D FORMLOK
   B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.

Hilti Firestop Systems

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System No. HW-D-0042

HWD 0042

1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
      A1. Steel Floor And Form Units* (Configuration B) — Composite max 2.5 in. (64 mm) deep galv steel fluted units.
         EPIC METALS CORP — Type "Toris C"
   B. Spray Applied Fire Resistive Materials* — (Not Shown) — Prior to or after the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
      GCP APPLIED TECHNOLOGIES INC — Types MK-6-HY or MK-10HB
      ISOLATEK INTERNATIONAL — Type 300

2. Wall Assembly — The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor And Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2C). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC. before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
A1. Light Gauge Framing* — Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2A, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Slotted ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC before optional spray-applied fire resistive material is used. Ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC. before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   CEMCO, LLC — CST
   CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H
   CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — SDT250, SDT300
   MARINO/WARE, DIV OF WARE INDUSTRIES INC — Type SLT
   METAL-LITE INC — The System
   OLMAR SUPPLY INC — STT250, STT300
   R & P SUPPLY — SCT250, SCT300
   RAM SALES L L C — RAM Slotted Track
   SCAFCO STEEL STUD MANUFACTURING CO
   TELLING INDUSTRIES L L C — True-Action Deflection Track
A2. Light Gauge Framing* — Vertical Deflection Ceiling Runner — When the nom joint width is less than or equal to 3/4 in. (19 mm), vertical deflection ceiling runner may be used as an alternate to the ceiling runners in Items 2A and 2A1. Vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2C). Vertical deflection ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC. before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   THE STEEL NETWORK INC — VertiTrack VTD250, VTD362, VTD400, VTD600 and VTD800

Hilti Firestop Systems

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System No. HW-D-0042

HWD 0042

A3. Light Gauge Framing* — Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A3, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2C). Notched ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC. before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   OLMAR SUPPLY INC — Type SCR
   B. Steel Attachment Clips — (Optional — Not Shown) — When spray applied fireproofing is used ceiling runner may be secured to deck with Z-shaped clips formed from min 1 in. (25 mm) long strips of min 20 ga galv steel. Length of clips should not exceed the width (thickness) of the wall. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom of the steel deck with 1-1/2 or 2 in. (38 or 51 mm) long upper and lower legs. Legs of clips fastened to valleys of steel deck (prior to application of spray-applied fire-resistive materials) and top of ceiling runner with steel masonry anchors, steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC.
   C. Studs — Steel studs to be min 2-1/2 in. (64 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. When Epic Metals composite floor or roof deck (Item 1A1) is used, steel studs to be min 3-5/8 in. (92 mm) wide. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through the bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.
   D. Gypsum Board* — Gypsum board installed to a min total thickness of 5/8 in. and 1-1/4 in. (16 and 32 mm) on each side of wall for 1 and 2 hr rated assemblies, respectively. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom of the steel deck units and the top row of screws shall be installed into the studs 1-1/2 to 2 in. (38 to 51 mm) below the bottom of the ceiling runner. The hourly rating of the joint system is dependent on the hourly rating of the wall.

3. Joint System — Max separation between bottom of floor or roof and top of wall at time of installation of joint system is 1 in. (13 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width. The joint system consists of forming material and a fill material, as follows:
   A. Forming Material* — Nom 4 pcf (64 kg/m3) density mineral wool batt insulation cut with a length approx equal to the overall thickness of the wall. Multiple pieces stacked on top of each other, as needed, and then compressed 25 percent in thickness and inserted into the flutes of the steel deck above the top of the ceiling runner. The mineral wool batt insulation is to project beyond each side of the ceiling runner, flush with wall surfaces. Alternately, nom 4 pcf (64 kg/m3) forming material cut to shape of flute and nom 1 in. (25 mm) longer than thickness of wall; mineral wool compressed from ends and firmly packed into each flute to attain a min compression rate of 14.3 percent in the length (wall thickness) direction to be flush with both wall surfaces. When Composite Steel Form and Floor Units (Items 1A1, 1A2, 1A3, 1A4) are used, the mineral wool is to be tightly packed into the inverted flutes to the full thickness of the wall. In addition, for the Epic Metals "Toris C" deck, the mineral wool is to be packed to min 25% compression within the recessed indentations immediately above the ceiling runners. For the New Millennium Versa-Dek, pieces of mineral wool shall be packed to the maximum depth possible to fill any embossments within the valleys of the fluted deck. Additional 5/8 in. and 1-1/4 in. (16 and 32 mm) wide strips for 1 and 2 hr rated assemblies, respectively, of nom 4 pcf (64 kg/m3) mineral wool batt insulation are to be cut to fill the gap between the top of the gypsum board and bottom of the steel deck. The strips of mineral wool are compressed 50 percent and tightly packed, cut edge first, into the gap between the top of the gypsum board and bottom of the steel deck on both sides of the wall.
      INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing
      ROCK WOOL MANUFACTURING CO — Delta- Board
      ROCKWOOL — SAFE
      THERMAFIBER/OWENS CORNING — Type SAF

Hilti Firestop Systems

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System No. HW-D-0042

HWD 0042

A1. Forming Material* — Plugs — (Optional, Not Shown) — Preformed mineral wool plugs, formed to the shape of the trapezoidal fluted floor units, friction fit to completely fill the flutes above the ceiling channel. The plugs shall project beyond each side of the ceiling runner, flush with wall surfaces. Additional forming material, described in Item 3A, to be used in conjunction with the plugs to fill the gap between the top of gypsum board and bottom of steel floor units.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP777 Speed Plugs
A2. Forming Material* — Strips — (Optional) — Nom 5/8 in. and 1-1/4 in. (16 and 32 mm) wide by 2 in. (51 mm) high precut mineral wool strips for 1 and 2 hr rated assemblies respectively. The strips are compressed 50 percent and firmly packed, cut edge first, into the gap between the top of the gypsum board and bottom of the steel floor units on both sides of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 767 Speed Strips
   B. Fill, Void or Cavity Material* — Min 1/16 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material sprayed or troweled on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on both sides of wall. When Spray-Applied Fire Resistive Material* is applied to the Steel Floor and Form Units*, the fill material is to overlap the gypsum board a min of 1/2 in. (13 mm) and the Spray-Applied Fire Resistive Material a min of 2 in. (51 mm) on both sides of wall. When spray-applied fire resistive materials are used, the firestop joint spray shall overlap the wall a min 1/2 in. (13 mm) and overlap the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of the wall.
      HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-SP WB Firestop Joint Spray

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

Hilti Firestop Systems

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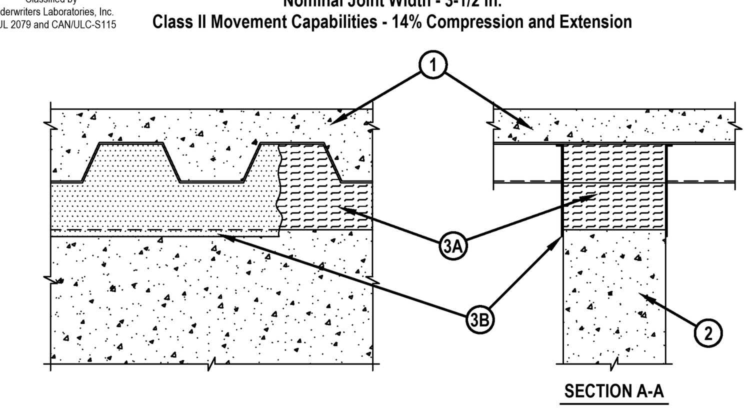
System No. HW-D-1037

HWD 1037

Classified by Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

Assembly Rating - 2 Hr
Nominal Joint Width - 3-1/2 In.
Class II Movement Capabilities - 14% Compression and Extension



SECTION A-A

1. Floor Assembly — The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Form Units* — Max 3 in. (76 mm) deep galv steel fluted floor units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials* — (Optional)—(Not Shown)—Prior to the installation of the forming material and fill, void or cavity material (Items 3A, 3B) the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1-3/4 in. (44 mm) thickness of fire resistive material.
      W R GRACE & CO - CONN — Type MK-6-HY
1A. Roof Assembly (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.
1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Spray-Applied Fire Resistive Materials* — (Not Shown) - Prior to the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
2. Wall Assembly — Min 8 in. (203 mm) thick steel reinforced lightweight or normal weight (100-150 pcf) (1600 -2400 kg/m3) structural concrete. Wall may also be constructed of any UL Classified Concrete Blocks*.
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

Hilti Firestop Systems

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System No. HW-D-1037

HWD 1037

Classified by Underwriters Laboratories, Inc. to UL 2079 and CAN/ULC-S115

Assembly Rating - 2 Hr
Nominal Joint Width - 3-1/2 In.
Class II Movement Capabilities - 14% Compression and Extension

3. Joint System — Max separation between bottom of floor units and top of concrete wall at time of installation is 3-1/2 in. (89 mm). The joint system is designed to accommodate a max 14 percent compression or extension from its installed width. The joint system shall consists of the following:
   A. Forming Material* — Nom 4 in. (102 mm) thick pieces of nom 4 pcf (64 kg/m3) forming material sized to attain a min compression rate of 50 percent in the thickness direction firmly packed to completely fill the flutes. Additional pieces of batt insulation, min 8 in. (203 mm) wide, shall be compressed 50 percent in thickness and installed edge first into joint opening between bottom of fluted floor or roof units and top of concrete wall.
      THERMAFIBER INC — Type SAF
   A1. Forming Material*—Plugs — Optional-Not Shown) Performed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling runner. The plugs shall be flush with both wall surfaces. Additional forming material, described in Item 3A, to be used in conjunction with the plugs to fill the gap between the top of the wall and the bottom of the steel floor units.
      HILTI CONSTRUCTION CHEMICALS, DIV OF
      HILTI INC — CP777 Speed Plugs
   A2. Forming Material — As an alternate to Item 3A, min 6 pcf (96 kg/m3) ceramic blanket insulation installed in joint as a permanent form. Nominal 4 in (102 mm) thick pieces of nominal 6 pcf (96 kg/m3) forming material sized to attain a min compression rate of 50 percent in the thickness direction firmly packed to completely fill the flutes. Additional pieces of batt insulation, min 8 in. (203 mm) wide, shall be compressed 50 percent in thickness and installed edge first into joint opening between bottom of fluted floor or roof units and top of concrete wall.
   B. Fill, Void or Cavity Material* - Sealant — A 1/8 in. (3.2 mm) wet thickness of fill material sprayed of trowled on each side of wall to completely cover mineral wool forming material and to overlap a min 1/2 in. (13 mm) onto steel floor units and concrete wall. When spray-applied fire resistive material* is applied to the steel deck, the fill material is to overlap the wall a min ½ in. and the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of the wall.
      HILTI CONSTRUCTION CHEMICALS, DIV OF
      HILTI INC — CP672 Firestop Spray or CFS-SP WB Firestop Joint Spray

*Bearing the UL Classification Mark

Hilti Firestop Systems

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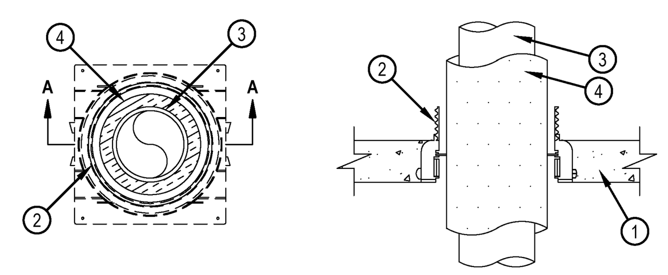
System No. F-A-5015

FA 5015

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 1/2 and 3/4 Hr (See Item 3)	FT Rating — 1/2 and 3/4 Hr (See Item 3)
	FH Rating — 2 Hr
	FTH Rating — 1/2 and 3/4 Hr (See Item 3)



SECTION A-A

1. Floor Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series Designs in the UL Fire Resistance Directory and as summarized below:
   A. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete floor assembly in accordance with accompanying installation instructions with a max 2 in. (51 mm) projection above the top surface of the concrete.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP 682-75/2.5", CP 682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-M 6", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6", CP 680-PX 2", CP 680-PX 3"
3. Through Penetrants — One metallic pipe, conduit or tubing to be installed within the firestop device. Pipe, conduit or tubing to be rigidly supported on both sides of floor assembly. The following types of pipe, conduit or tubing may be used:
   A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
   C. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

Hilti Firestop Systems

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System No. F-A-5015

FA 5015

The firestop device and metallic penetrant shall be sized as follows:

Nom Pipe Diam, in. (mm)	Nom Thick. Of Pipe Insul., in. (mm)	Firestop Device	T-Rating, Hr
1/2 (13)	1 (25)	CP 680-75/2.5"N, CP 682-72/2.5"CP 680-M 2", CP 680-P 2", CP 680-P 2"	3/4
1 (25)	3/4 (19)	CP 680-75/2.5"N CP 680-P 3", CP 680-P 3"	1/2
1 (25)	1 (25)	CP 680-M 3", CP 680-P 3", CP 680-P 3"	1/2
1 (25) (see Item 5)	1 (25)	CP 682-110/4"CP 680-M 4"	1/2
2 (51)	1 (25)	CP 680 110/4"N, CP682 110/4"CP 680-M 4", CP 680-P 4"	1/2
2 (51)	3/4 (19) or 1 (25)	CP 680-100/4"NCP 680-P 4", CP 680-M 4"	1/2
4 (102)	3/4 (19) or 1 (25)	CP 680-160/6"NCP 680-P 6", CP 680-M 6"	1/2

4. Tube Insulation - Plastics+ — Nom ¾ or 1 in. (19 or 25 mm) thick acryonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing.
   See Plastics+ (QMFZ2) Category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.
5. Packing Material — (Not Shown) - When using a 1 in. (25 mm) diam pipe with 1 in. (25 mm) thick AB/PVC pipe insulation in a 4 in. (102 mm) device, and a min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation shall be firmly packed into top of devices, flush with the top of the device.

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

STATE OF FLORIDA — LARS W YOUNG — AR0016755 — REGISTERED ARCHITECT

Hilti Firestop Systems

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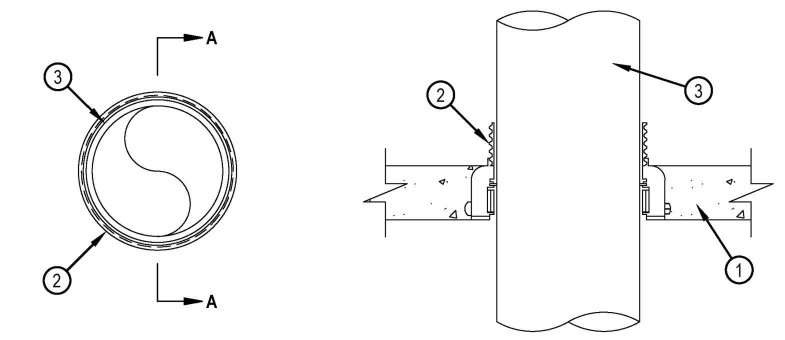
System No. F-A-2053

FA 2053

Classified by Underwriters Laboratories, Inc. to UL 1479

F Rating — 2 Hr
T Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 3)
L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 3)
W Ratings — Class 1 (See Items 3, 4 and 4A)



SECTION A-A

1. Floor Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series designs in the UL Fire Resistance Directory and as summarized below:
   A. Concrete — Min 2-1/2 in (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
   B. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.
2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete assembly in accordance with accompanying installation instructions. The 3, 4 and 6 in. devices may extend a max 2 in. (51 mm) above the top surface of the concrete. The max extension above the slab for the 2 and 2.5 in. devices is not restricted.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6", CP 680-PX 2", CP 680-PX 3"

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System No. F-A-2053

FA 2053

3. Through Penetrants — One nonmetallic pipe or conduit to be installed within the firestop system. Pipe or conduit to be rigidly supported on both sides of floor assembly. For W Rating with Water Barrier Module, pipe shall be installed from bottom of device. The following types and sizes of nonmetallic pipes or conduits may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 6 in. (152 mm) diam (or smaller) SDR11 or SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
   C. Rigid Nonmetallic Conduit+ — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).
The firestop devices and nonmetallic penetrants shall be sized as follows:

Nom Pipe Diameter	Firestop Device
1/2 in. to 2 in. (19 mm to 51 mm)	CP 680-75/2.5"N CP 680-P 2" CP 680-PX 2"
3 in. (76 mm)	CP 680-P 3" CP 680-PX 3"
3 in. to 4 in. (76 mm to 102 mm)	CP 680-110/4"N CP 680-P 4"
6 in. (152 mm)	CP 680-160/6"N CP 680-P 6"

++ L Rating applies only to CP 680-P(X) devices and only when the nom diam of pipe equals size of device (2 in. diam pipe in 2" device etc.) L Rating does not apply to CP 680N devices.
4. Firestop Device* — (Not shown) -Top Seal Plug for use with CP 680-P(X) 2" device Installed in accordance with the manufacturer's instructions. The Top Seal Plug is optional for nom 1-1/2 in. (38 mm) pipes and conduits. Top Seal Plugs are required for all pipes and conduits less than nom 1-1/2 in. (38 mm). W Rating applies only to the IPS Top Seal Plug and nom 2 in. diam penetrants, and to CPS Top Seal Plugs with nom 1/2 to 2 in. (13 to 51 mm) diam penetrants.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CPS and IPS Top Seal Plugs
4A. Firestop Device* - Water Barrier Module — (Optional, Not Shown) - Used as an alternate to the top seal plug (Item 4). Applies to nom 2", 3", 4" and 6" water barrier modules used in combination with the CP 680-P(X) 2", CP 680-P(X) 3", CP 680-P 4" CP 680-P 6" devices, respectively, and supplied by device manufacturer. Module is threaded onto top of device. W Rating applies only when water barrier module is used and nom diam of penetrant equals size of device.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — Water Barrier Module

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

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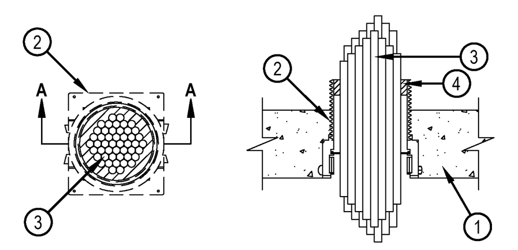
System No. F-A-3007

FA 3007

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0, 1/4, 1/2 Hr (See Items 3 and 4)	FT Rating — 0, 1/4, 1/2 Hr (See Items 3 and 4)
	FH Rating — 3 Hr
	FTH Rating — 0, 1/4, 1/2 Hr (See Items 3 and 4)



SECTION A-A

1. Floor Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series designs in the UL Fire Resistance Directory and as summarized below:
   A. Concrete — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
   B. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.
2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement in accordance with accompanying installation instructions.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP682-72/2.5", CP682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6", CP 680-PX 2", CP 680-PX 3"
3. Cables — Cables to be rigidly supported on both sides of the assembly. Any combination of the following types and sizes of copper conductor cables may be used:
   A. Max 1/C 750 kcmil (or smaller) copper conductor cable with polyvinyl chloride (PVC) insulation and jacket.
   B. Max 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket.
   C. Max 300 pair No. 24 AWG telephone cable with PVC insulation and jacket.
   D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 1/2 in. (13 mm).
   E. Max 3/C No. 12 AWG with ground with polyvinyl chloride jacketed steel clad Type MC cable.

Hilti Firestop Systems

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System No. F-A-3007

FA 3007

The firestop device and max cable bundle diameter shall be sized as follows:

Max Bundle Diameter	Firestop Device	T Rating-Hr
2 in. (51 mm)	CP 680-75/2.5"N, CP 682-75/2.5" CP 680-M 2", CP 680-P 2", CP 680-PX 2"	1/4
3 in. (76 mm)	CP 680-75/2.5"N, CP 682-75/2.5" CP 680-M 3", CP 680-P 3", CP 680-PX 3"	1/2
4-1/2 in. (114 mm)	CP 680-110/4"N, CP 682-110/4" CP 680-M 4", CP 680-P 4"	1/2
6-1/2 in. (165 mm)	CP 680-160/6"N CP 680-P 6"	0

4. Fill, Void or Cavity Material* - Putty — Min 1 in.(25 mm) thickness of fill material applied within annulus flush with top surface of device. Fill material is optional for 2-1/2 (64 mm) diam (or larger) cable bundle installed in 3 in. device and 3 in. (76 mm) diam (or larger) cable bundle installed in 4 in. device and 2 in. (51 mm) diam (or larger) cable bundle installed in 2 in. or 2.5 in. device. The T Rating for the firestop system is 1/4 hr when fill material or packing material (Item 4 or 4A) is not used.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 618 Firestop Putty Stick
4A. Packing Material (Not Shown) — As an alternate to Item 4, min 2 in. thickness of min 4 pcf (64 kg/m3) mineral wool insulation firmly packed to the fullest extent possible within annulus flush with top surface of device.
   * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

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Page: 2 of 2

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Penetrations 3

STATE OF FLORIDA — LARS W YOUNG — AR0016755 — REGISTERED ARCHITECT
Florida AR0016755

Lars W Young Inc
Architecture
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Naples, FL 34109
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A0.26

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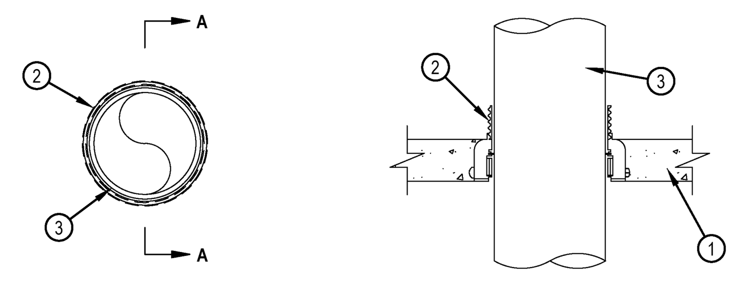
System No. F-A-1016

FA 1016

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 3)	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 3)	FTH Rating — 0 Hr
W Rating — Class 1 (See Items 4B and 4B1)	L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 3)
	L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 3)



1. Floor Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
1A. Floor Assembly — (Optional, Not Shown)—The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series designs in the UL Fire Resistance Directory and as summarized below:
  A. Concrete — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete.
  B. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.
2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete floor assembly in accordance with accompanying installation instructions. The devices may extend a max of 2 in. (51 mm) above the top surface of the concrete.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680N-75/2.5", CP 680N-110/4", CP 680N-160/6", CP 682-75/2.5", CP 682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-M 6", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6", CP 680-PX 2", CP 680-PX 3"
3. Through Penetrants — One metallic pipe, conduit or tubing to be installed within the firestop device. Pipe, conduit or tubing to be rigidly supported on both sides of floor assembly. The following types of pipe, conduit or tubing may be used:
  A. Steel Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  B. Iron Pipe — Nom 6 in. (152 mm) diam (or smaller) cast or ductile iron pipe.
  C. Conduit — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.
  D. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.
  E. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
  F. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular) or heavier copper pipe.

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Hilti Firestop Systems

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System No. F-A-1016

FA 1016

The firestop device and metallic penetrant shall be sized as follows:

Nom Pipe Diam +, ++	Firestop Device
1-1/2 to 2-1/2 in.(38 to 64 mm) - Other than copper pipe or tubing	CP680N-75/2.5"or CP682-75/2.5"
1-1/2 to 2 in.(38 to 51 mm) - Other than copper pipe or tubing	CP 680-M 2", CP 680-P 2, CP 680-PX 2"
2 to 2-1/2 in. (51 to 64 mm) - Copper pipe or tubing	CP680N-75/2.5"or CP682-75/2.5"
	CP 680-M 2", CP 680-P 2", CP 680-PX 2"
2-1/2 to 3 in. (64 to 76 mm)	CP 680-M 3", CP 680-P 3", CP 680-PX 3"
4 in. (102 mm)	CP680N-110/4"or CP682-110/4"
	CP 680-M 4", CP 680-P 4"
6 in. (152 mm)	CP680N-160/6"
	CP 680-M 6", CP 680-P 6"

+ When metallic pipes of diameters smaller than those shown above are installed within the device, CP618 Firestop Putty Stick or mineral wool insulation shall be installed within the device.
++ L Rating applies only to CP 680-M and -P(X) devices and only when the nom diam of pipe equals size of device (2 in. diam pipe in 2" device etc.). L Rating does not apply to CP 680N and CP682 devices.
4. Fill, Void or Cavity Material* - Putty (Not Shown) — Min 1 in. (25 mm) thickness of fill material applied within annulus flush with top surface of device.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 618 Firestop Putty Stick
4A. Packing Material (Not Shown) — As an alternate to Item 4, min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool insulation firmly packed to the fullest extent possible within annulus flush with top surface of device.
4B. Firestop Device* - Top Seal Plug — (Optional. Not Shown) - Top seal plug for use with CP 680-M 2" and CP 680-P 2" devices and nom pipe, conduit or tubing sizes of 1/2 in. (13 mm) to 2 in. (51 mm) diam. Plug is friction fit into top of firestop device (Item 2) in accordance with the manufacturer's instructions. When top seal plug is used, no putty (Item 4) or packing material (Item 4A) is required. W Rating applies only to nom 1, 1-1/4, 1-1/2 and 2 in. (25, 32, 38 and 51 mm) diam copper pipe/tube in conjunction with 2" CPS Top Seal and CP 680-M 2" or CP 680-P(X) 2" devices.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CPS Top Seal Plug

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System No. F-A-1016

FA 1016

4B1. Firestop Device* - Water Barrier Module — (Optional, Not Shown) - Used as an alternate to the top seal plug (Item 4B) and in combination with the CP 680-M and CP 680-P(X) devices to achieve a W Rating. Module is threaded onto top of device. See Table below for sizes of device/module and penetrants covered. When water barrier module is used, a W Rating applies to the water barrier module, device and penetrant sizes specified in Table below. For W Rating with Water Barrier Module, pipe shall be installed from bottom of device.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — Water Barrier Module

Penetrant Type (See Item 3 above)	Nom Penetrant Diam	Size of Device/Module
A, B, C, D	2"	2"
	2-1/2"	3"
	3"	3"
	4"	4"
	6"	6"
E, F	2"	2"
	3"	3"
	4"	4"
	6"	6"

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

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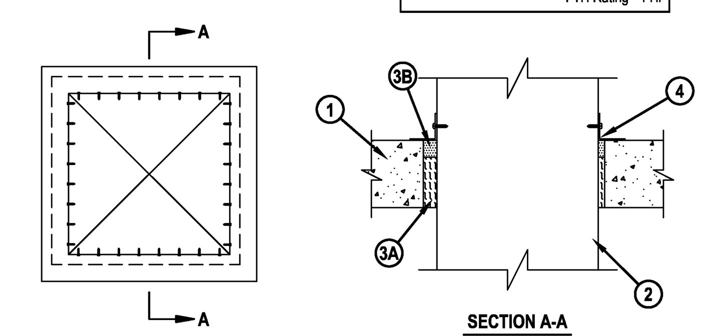
Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. June 29, 2015

System No. C-AJ-7051

CAJ 7051

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 3 Hr	F Rating — 3 Hr
T Rating - 1 Hr	FT Rating - 1 Hr
	FH Rating - 3 Hr
	FTH Rating - 1 Hr



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor or min 5-1/2 in. (140 mm) thick lightweight on normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 1024 in. sq (6606 cm2) with a max dimension of 32 in. (813 mm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Steel Duct — Nom 30 by 30 in. (762 by 762 mm) by No. 24 gauge (or heavier) galv steel duct. One steel duct to be positioned within the firestop system. The annular space shall be min 1/4 in. (6 mm) to max 1-3/4 in. (44 mm). Duct to be rigidly supported on both sides of floor or wall assembly.
2A. Coated Duct* — As an alternate to Item 2, nom 30 by 30 in. (762 by 762 mm) (or smaller) steel air duct; duct supplied coated with BW11 coating material. One duct to be installed within the firestop system with an annular space of min 1/4 in. (6 mm) to max 1-3/4 in. (44 mm). Duct sections shall be assembled using bolted flanges or SMACNA approved Transverse Joint Reinforcements. Duct to be rigidly supported on both sides of the floor or wall assembly.
FIRESPRAY INTERNATIONAL LTD — FLAMEBAR BW11 FIRE RATED DUCTWORK
3. Firestop System — The firestop system shall consist of the following:
  A. Packing Materials — Min 3-1/2 in. (89 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form between the bare steel duct and the periphery of the opening. Packing material to be recessed from top surface of floor or both surfaces of wall as required to accommodate the required thickness of fill material.
  B. Fill, Void or Cavity Material* — Sealant — Min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
  HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 606 Flexible Firestop Sealant, FS-ONE Sealant or FS-ONE MAX Intumescent Sealant
4. Steel Retaining Angle — Nom 2 in. by 2 in. (51 by 51 mm) by No. 16 gauge (or heavier) steel angles attached to all four sides of the steel duct or coated duct on the top surface of floor or both surfaces of the wall. The angles shall be attached with No. 8 (or larger) steel sheet metal screws spaced max of 1 in. (25 mm) from each end and a max of 3 in. (76 mm) OC.

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

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Hilti Firestop Systems

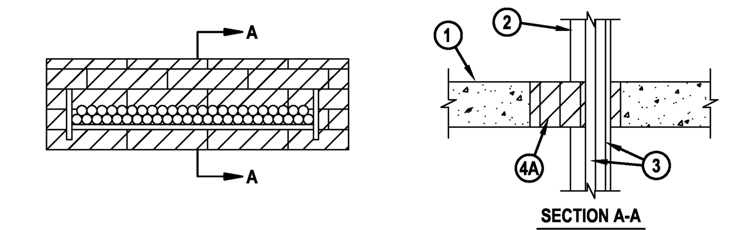
Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. October 27, 2017

System No. C-AJ-4035

CAJ 4035

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 3 Hr
	FTH Rating — 0 Hr



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 270 sq in (1742 cm2) with max dimension of 30 in. (762 mm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Cable Tray* — Max 24 in. (610 mm) wide by max 4 in. (102 mm) deep open-ladder or solid-back cable tray with channel-shaped side rails formed of 0.10 in. (2.54 mm) thick aluminum or 0.060 in. (1.52 mm) thick galv steel and with 1-1/2 in. (38 mm) wide by 1 in. (25 mm) channel shape rungs spaced 9 in. (229 mm) OC or a 0.029 in. (0.74 mm) thick steel solid back, respectively. The annular space between the cable tray and the periphery of the opening shall be min 1 in. (25 mm) to max 4 in. (102 mm). Cable tray to be rigidly supported on both sides of floor or wall assembly.
3. Cables — Aggregate cross-sectional area of cables in cable tray to be max 40 percent of the cross-sectional area of the cable tray. Any combination of the following types and sizes of copper conductor or fiber optic cables may be used:
  A. 1/C, 500 kcmil with thermoplastic insulation and PVC jacket.
  B. 300 pair — No. 24 AWG cable with PVC insulation and jacket.
  C. 24 fiberoptic cable with PVC subunit and jacket.
  D. Three 1/C No. 12 AWG wire, insulated with polyvinyl chloride, in a nominal 3/4 in. (19 mm) flexible metal conduit.
  4. Firestop System — The firestop system shall consist of the following:
  A. Fill, Void or Cavity Material* — Fire blocks installed with the long dimension placed horizontally within the opening, flush with bottom of floor assembly or centered within wall opening. In concrete block walls, fire block to fill entire thickness of wall opening unless wall is solid filled. Blocks to be firmly packed and completely fill the entire width and height of opening. Either one or a combination of the block specified below may be used.
  HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS 657 Fire Block or CFS-BL Firestop Block
  B. Fill, Void or Cavity Material* -Sealant or Putty- Not Shown — Fill material to be forced into interstices of cables and between cables and cable trays to max extent possible on both surfaces of the penetration.
  HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant, FS-ONE MAX Intumescent Sealant or CP618 Firestop Putty Stick.

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

HILTI
Hilti Firestop Systems

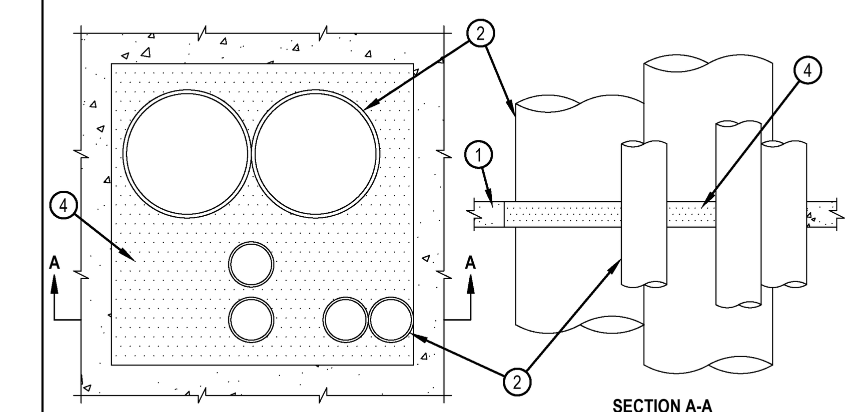
Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 14, 2015

System No. C-AJ-1140

F Rating -- 3 Hr
T Rating -- 0 Hr

CAJ 1140

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



1. Floor or Wall Assembly — Min 2-1/2 in. (63 mm) thick reinforced lightweight or normal weight (100-150 pcf or1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks *. Max area of opening is 1024 sq in. (.66 sq m) with max dimension of 32 in. (81.3 cm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrants — One or more penetrants to be installed in opening. Min clearance between pipes, conduits or tubing is 0 in. (0 mm). (point contact). Min clearance between pipes, conduit or tubing and periphery of through opening is 1 in. (25 mm). Min clearance between pipes, conduit or tubing and periphery of any single surface of through opening is 0 in. (point contact). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
  A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  B. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.
  C. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
  D. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
3. Forms — (Not Shown) — Used as a form to prevent leakage of fill material during installation. Forms to be a rigid sheet material, cut to fit the contour of the penetrating item and positioned as required to accommodate the required thickness of fill material. Forms may be removed after fill material has cured.
4. Firestop System — The details of the firestop system shall be as follows:
  A. Packing Material — (Optional, Not Shown) - For floors greater than 2-1/2 in. (63 mm) thick, mineral wool batt insulation firmly packed into opening as a permanent or temporary form and recessed from the top surface of floor to accommodate the required thickness of the fill material.
  B. Fill, Void or Cavity Material* — Mortar — Min 2-1/2 in. (63 mm) thickness of fill material applied within the annulus. Fill material is mixed at a rate of 2.5 parts dry mix to one part water by weight in accordance with the installation instructions supplied with fill material.
  HILTI CONSTRUCTION CHEMICALS, DIV OF
  HILTI INC — Type CP636 or CP637
*Bearing the UL Classification Mark

HILTI
Hilti Firestop Systems

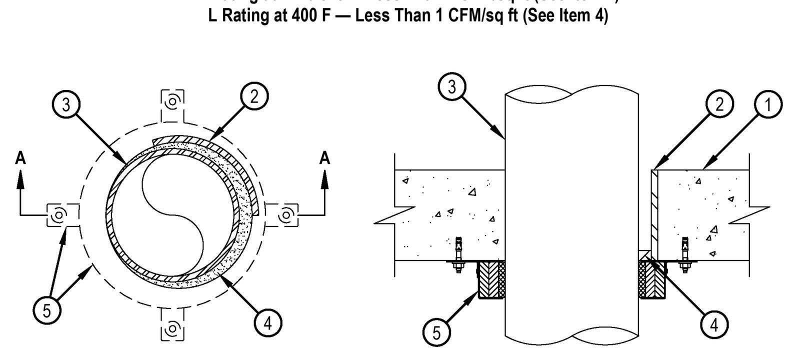
Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. March 19, 2012

System No. C-AJ-2109

F Ratings — 2 and 3 Hr (See Item 3)
T Ratings — 0, 2 and 3 Hr (See Items 2 and 3)
W Rating - Class 1 (See Items 2, 3 and 4)
L Rating at Ambient — Less Than 1 CFM/sq ft (See Item 4)
L Rating at 400 F — Less Than 1 CFM/sq ft (See Item 4)

CAJ 2109

Classified by Underwriters Laboratories, Inc. to UL 1479



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 12 in. (305 mm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufactures.
2. Steel Sleeve — (Optional) — Nom 12 in. (305 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces a max of 3 in. (76 mm) above the floor. If the steel sleeve extends above the floor, the T Rating of the firestop system is 0 Hr and a min 1/2 in. (13 mm) annular space is required between the through penetrant (Item 3) and the periphery of the opening. The W Rating does not apply when the steel sleeve is used.
3. Through Penetrants — One nonmetallic pipe to be installed either concentrically or eccentrically within the firestop system. For max 6 in. (152 mm) diam pipes, the annular space between the pipe and the periphery of opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm). For nom 8 in. (203 mm) and 10 in. (254 mm) diam pipes, the annular space between the pipe and the periphery of opening shall be min 0 in. (0 mm, point contact) to max 1-1/4 in. (32 mm). If the steel sleeve extends above the floor (Item 2), a min 1/2 in. (13 mm) annular space is required between the through penetrant (Item 3) and the periphery of the opening. Pipe to be rigidly supported on both sides of floor or wall assembly. For systems with a W Rating, the max annular space is 1/2 in. (13 mm). The T Ratings are dependent on the size and/or type of pipe as shown in the table below. The following types and sizes of nonmetallic pipes may be used:
  A. Polyvinyl Chloride (PVC) Pipe — Nom 10 in. (254 mm) diam (or smaller) Schedule 40 solid core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. For systems with a W Rating, the nom diam of pipe shall not exceed 6 in. (152 mm).
  B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 10 in. (254 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems. For systems with a W Rating, the nom diam of pipe shall not exceed 6 in. (152 mm).
  C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 solid-core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
  D. Flame Retardant Polypropylene (FRPP) Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

HILTI
Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. July 31, 2018

System No. C-AJ-2109

CAJ 2109

Pipe Type	Nom Pipe Diam, In. (mm)	F Rating Hr
PVC, CPVC	Greater than 6 (152)	2
PVC, CPVC, ABS, FRPP	6 (152) or smaller	3
Pipe Type	**Nom Pipe Diam, In. (mm)**	**T Rating Hr**
PVC, CPVC, ABS, FRPP	1-1/2, 2, 3 (38, 51, 76)	2
PVC, CPVC, ABS, FRPP	4 (102)	3
PVC, CPVC, ABS+, FRPP	6 (152)	3
PVC, CPVC	Greater than 6 (152)	0
ABS++	6 (152)	0

+ Indicates solid core ABS only.
++ Indicates cellular core ABS only.

4. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top or bottom surface of floor or both surfaces of wall. Sealant is optional for pipes having a max diam of 6 in. (152 mm) in unsleeved openings. For systems with W Rating and/or L Rating, min 1/2 in. (13 mm) thickness of CP 601S, CFS-S SIL GG, CFS-S SIL SL (floors only) Sealant shall be applied within the annulus, flush with top or bottom surface of floor.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant, CP 601S Sealant, CFS-S SIL GG, CFS-S SIL SL (floors only) Sealant
4A. Packing Material — (Not Shown) — Min 1/2 in. (13 mm) thickness of 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into annular space and recessed from the top surface of floor to accommodate the required thickness of fill material. Required only when CP 604 Sealant is used.
5. Firestop Device* — Firestop Collar — Firestop collar shall be installed in accordance with the accompanying installation instructions. Collar to be installed and latched around the pipe and secured to underside of floor or both sides of wall using the anchor hooks provided with the collar. Minimum two anchor hooks for nom 1-1/2 and 2 in. (38 and 51 mm) diam pipes. Minimum three anchor hooks required for nom 3 and 4 in. (76 and 102 mm) diam pipes. Minimum four anchor hooks required for nom 6 in. (152 mm) diam pipes. Minimum ten anchor hooks required for nom 8 in (203 mm) diam pipes. Minimum twelve anchor hooks required for nom 10 in. (254 mm) diam pipes. The anchor hooks are to be secured with min 1/4 in. (6 mm) diam by min 1-1/4 in. (32 mm) long steel expansion bolts or min 0.145 in. (3.7 mm) diam by 1-1/4 in. (32 mm) long powder actuated fasteners utilizing a 1-7/16 in. (37 mm) diam by 1/16 in. (1.6 mm) thick steel washer. As alternates to the anchors specified above, Hilti 1/4 in. (6 mm) diam by 1-1/4 in. (32 mm) long KWIK-CON II+ concrete screw anchor, Hilti 1/4 in. (6 mm) diam by 1-3/4 in. (45 mm) long KWIK-BOLT 3 steel expansion anchor or Hilti X-DNI 27 P8 S15 powder actuated floor pin with integral nom 9/16 in. (15 mm) diam washer may be used.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643N 50/1.5", CP 643N 63/2", CP 643N 90/3", CP 643N 110/4", CP 643 160/6", CP 644-200/8" US or CP 644-250/10" US Firestop Collar
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

HILTI
Hilti Firestop Systems

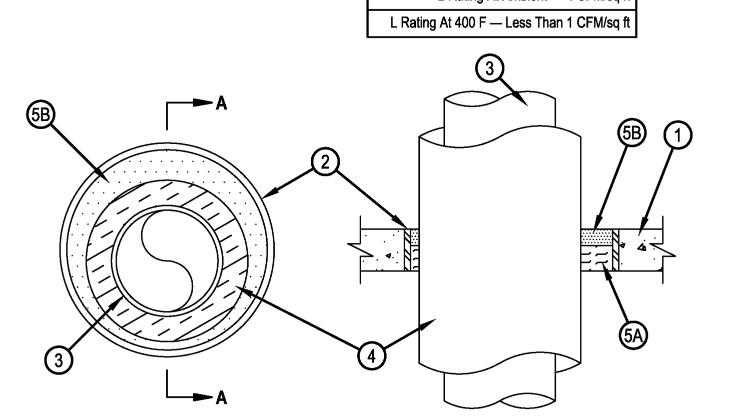
Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. July 31, 2018

System No. C-AJ-5096

CAJ 5096

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — 4 CFM/sq ft	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — 4 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



1. Floor or Wall Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 18 in. (457 mm).
  See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 18 in. (457 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
  A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  B. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
  C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
4. Pipe Covering — Min 1/2 in. (13 mm) to max 1-1/2 in. (38 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. (13 mm) to a max 1-7/8 in. (48 mm).
  See Pipe Equipment Covering — Materials — (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

HILTI
Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 13, 2015

System No. C-AJ-5096

CAJ 5096

5. Firestop System — The firestop system shall consist of the following:
  A. Packing Material — Min 1-1/2 in. (38 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
  B. Fill, Void or Cavity Material* — Sealant — Min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
  HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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Hilti Firestop Systems

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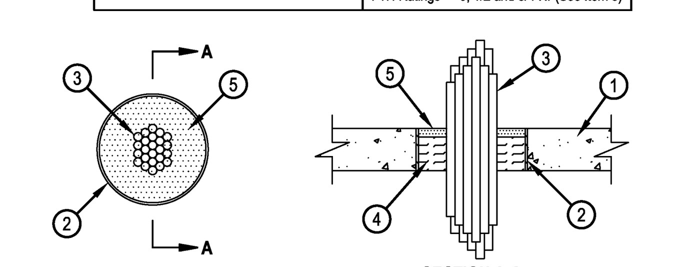
System No. C-AJ-3095

CAJ 3095

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Ratings — 0, 1/2 and 3/4 Hr (See Item 3)	FT Ratings — 0, 1/2 and 3/4 Hr (See Item 3)
	FH Rating — 3 Hr
	FTH Ratings — 0, 1/2 and 3/4 Hr (See Item 3)



1. Floor or Wall Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600 2400 kg/m3) concrete floor or min 3 in. (76 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in. (152 mm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Sleeve — (Optional) — Nom 6 in. (152 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max 3 in. (76 mm) above the floor or both surfaces of the wall. If the steel sleeve extends above the floor or both surfaces of the wall, the T Rating of the firestop system is 0 Hr.
3. Cables — Aggregate cross-sectional area of cables in opening to be min 25 percent to max 45 percent of the aggregate cross-sectional area of the opening. Cables to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of metallic conductor or fiber optic cable may be used:
  A. Max 500 kcmil single copper connector power cable with thermoplastic insulation and polyvinyl chloride (PVC) jacket. When single copper conductor power cable is used, T, FT and FTH Rating is 0 hr.
  B. Max 350 kcmil single conductor power cables with either aluminum or copper conductors and cross-linked polyethylene (XPLE) insulation. When single aluminum conductor power cable is used, T Rating is 0 hr. When single copper conductor power cable is used, T, FT and FTH Rating is 1/2 hr.
  C. Max 300 pair No. 24 AWG copper conductor telecommunication cables with polyvinyl chloride (PVC) insulation and jacket material. When telecommunication cable is used, T, FT and FTH Rating is 0 hr.
  D. Max three copper connector No. 6 AWG cable with polyvinyl chloride (PVC) insulation and jacket material. When multi-connector power cable is used, T Rating is 0 hr.
  E. Max 7/C copper conductor No. 12 AWG multiconductor power and control cables with PVC or cross-linked polyethylene (XLPE) insulation and PVC jacket. When multiconductor power and control cable is used, T, FT and FTH Rating is 3/4 hr.
  F. Multiple fiber optical communication cables jacketed with PVC and having a max outside diam of 1/2 in. When fiber optic cable is used, T, FT and FTH Rating is 3/4 hr.
  G. Max 3/C copper conductor No. 12 AWG with Bare aluminum ground, polyvinyl chloride (PVC) insulated steel, Metal-clad cable+. When MC cable is used, T, FT and FTH Rating is 0 hr.
  AFC CABLE SYSTEMS INC

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Hilti Firestop Systems

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System No. C-AJ-3095

CAJ 3095

  H. Max 3/C with ground 2/0 AWG copper conductor SER cable with cross-linked polyethylene (XLPE) insulation and polyvinyl chloride (PVC) jacket. When SER cable is used, T, FT and FTH Rating is 0 hr.
  I. Max RG/U coaxial cable with polyethylene (PE) insulation and polyvinyl chloride (PVC) jacket having a max outside diameter of ½ in. When coaxial cable is used, T Rating is 0 hr.
  J. Fire Resistive Cables* - Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other type of cable. When Fire Resistive Cables *are used, T, FT and FTH Rating is 0 hr.
  K. Through Penetrating Product* — Any Cables, Metal-Clad Cable+ or Armored Cable+ currently Classified under the Through Penetrating Products category.
  See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers.
4. Packing Material — Min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed 1/2 in. (13 mm) from top surface of floor or from both surfaces of wall to accommodate the fill material. If the steel sleeve (Item 2) extends above the top of the floor, the packing material shall be flush with the bottom surface of the floor.
5. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

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

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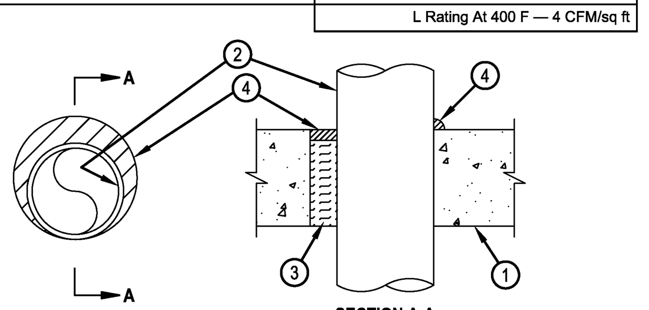
System No. C-AJ-1149

CAJ 1149

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating —2 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 2 Hr
L Rating At 400 F — 4 CFM/sq ft	FTH Rating — 0 Hr
W Rating — Class 1 (See Item 4)	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — 4 CFM/sq ft



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks *. Max diam of opening is 12 in. (305 mm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrants — One metallic pipe, conduit or tubing to be installed within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The annular space shall be 0 in. (point contact) to max 1-1/4 in. (32 mm). The following types and sizes of metallic pipes, conduits or tubing may be used:
  A. Steel Pipe — Nom 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  B. Iron Pipe — Nom 10 in. (254 mm) diam (or smaller) cast or ductile iron pipe.
  C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.
  D. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
  E. Copper Pipe — Nom 4 in. (102 in.) diam (or smaller) Regular (or heavier) copper pipe.
3. Packing Material — Min 3 in. (76 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation for nom 4 in. diam (and smaller) pipes, conduits or tubings and a min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation for pipe greater than nom 4 in. diam, firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material.
4. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with the top surface of floor or both surfaces of wall. At the point of contact location between pipe and concrete, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the concrete/pipe interface on the top surface of floor and on both surfaces of wall. W Rating applies only when CFS-S SIL GG, CFS-S SIL SL (floors only), CP601S, CP604 sealant or FS-ONE MAX Intumescent Sealant is used. For W Rating when FS-ONE MAX is used, packing material to be a min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S, CP604, CFS-S SIL GG, CFS-S SIL SL (floors only), CP606 or FS-ONE Sealant or FS-ONE MAX Intumescent Sealant.

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

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Hilti Firestop Systems

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No.	Description	Date

Project #	23.1083
Date:	9.30.25
Drawn:	Author
Checked:	Checker
Scale	

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Life Safety- Penetrations 4

STATE OF FLORIDA LARS W. YOUNG AR0016755 REGISTERED ARCHITECT
Florida Registration # AR0016755

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10' FPL EASEMENT

10' FPL EASEMENT

CONSERVATION EASEMENT (BUFFER INCLUDED IN THE CONSERVATION EASEMENT AS PER PUD SECTION 6.9.C)

10' FPL EASEMENT

100' POSSIBLE FUTURE R.O.W.

100.00'

Offices

HB

13.00 NAVD

PROVIDE CONDUIT FOR FUTURE SIGN LIGHTING

STATION ENTRANCE

FLAGPOLE

WATER MANAGEMENT AREA

FUELING POD
UL 2085 AST

CONCRETE DRIVE

PROPOSED FIRE STATION

CONCRETE DRIVE

GENERATOR SUBMITTED UNDER SEPARATE PERMIT

DUMPSTER

PROVIDE CONDUIT FOR FUTURE GATE OPERATOR

60' HIGH CHAIN LINK SWING GATE SYSTEM. GATE MFR TO SUBMIT SHOP DRAWINGS FOR REVIEW

TARPON COVE ENTRANCE

1 A1.1 Fire Station Site Plan Overall
1/16" = 1'-0"

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale 1/16" = 1'-0"

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110

For: North Collier Fire Control & Rescue District

Overall Site Plan

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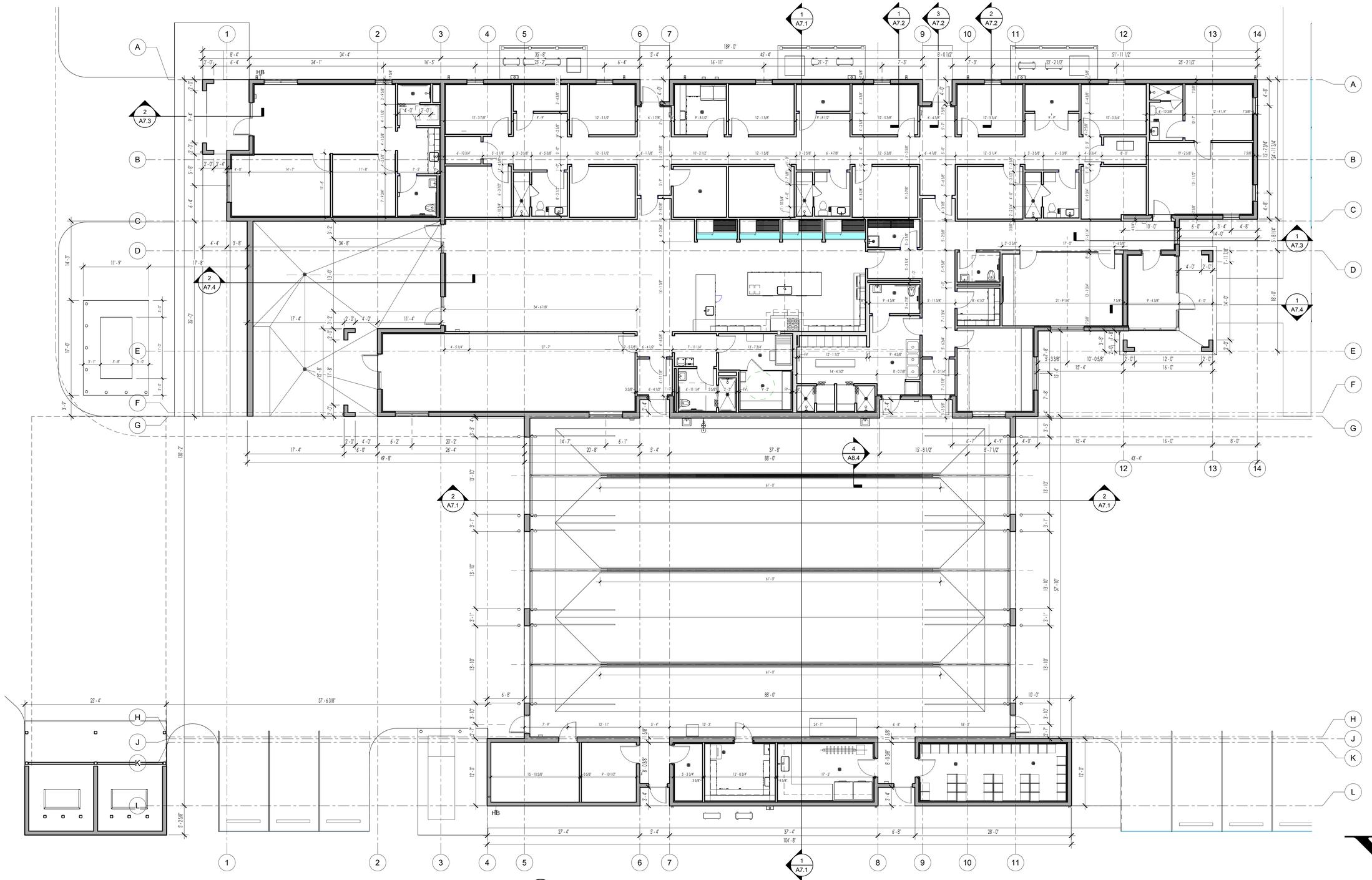

1 A2.1 Fire Station Floor Plan- Dimensions
1/8" = 1'-0"

Floor Plan Notes:

DO NOT SCALE DRAWINGS.
REFER TO SHEET A6.XX FOR SCHEDULES AND WLL TYPE DESCRIPTIONS.

DIMENSIONS ARE FROM OUTSIDE FACE OF EXTERIOR WALLS INCLUDING STRUCTURAL SHEATHING (EXCLUDING STUCCO OR OTHER FINISH) AND OUTSIDE EDGES OF STRUCTURE OF INTERIOR WALLS.

REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS NOT FOUND ON FLOOR PLAN SHEETS.

ENLARGED DETAILS SHALL GOVERN
CONTACT ARCHITECT FOR CLARIFICATION IF REQUIRED

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Floor Plans- Dimensions

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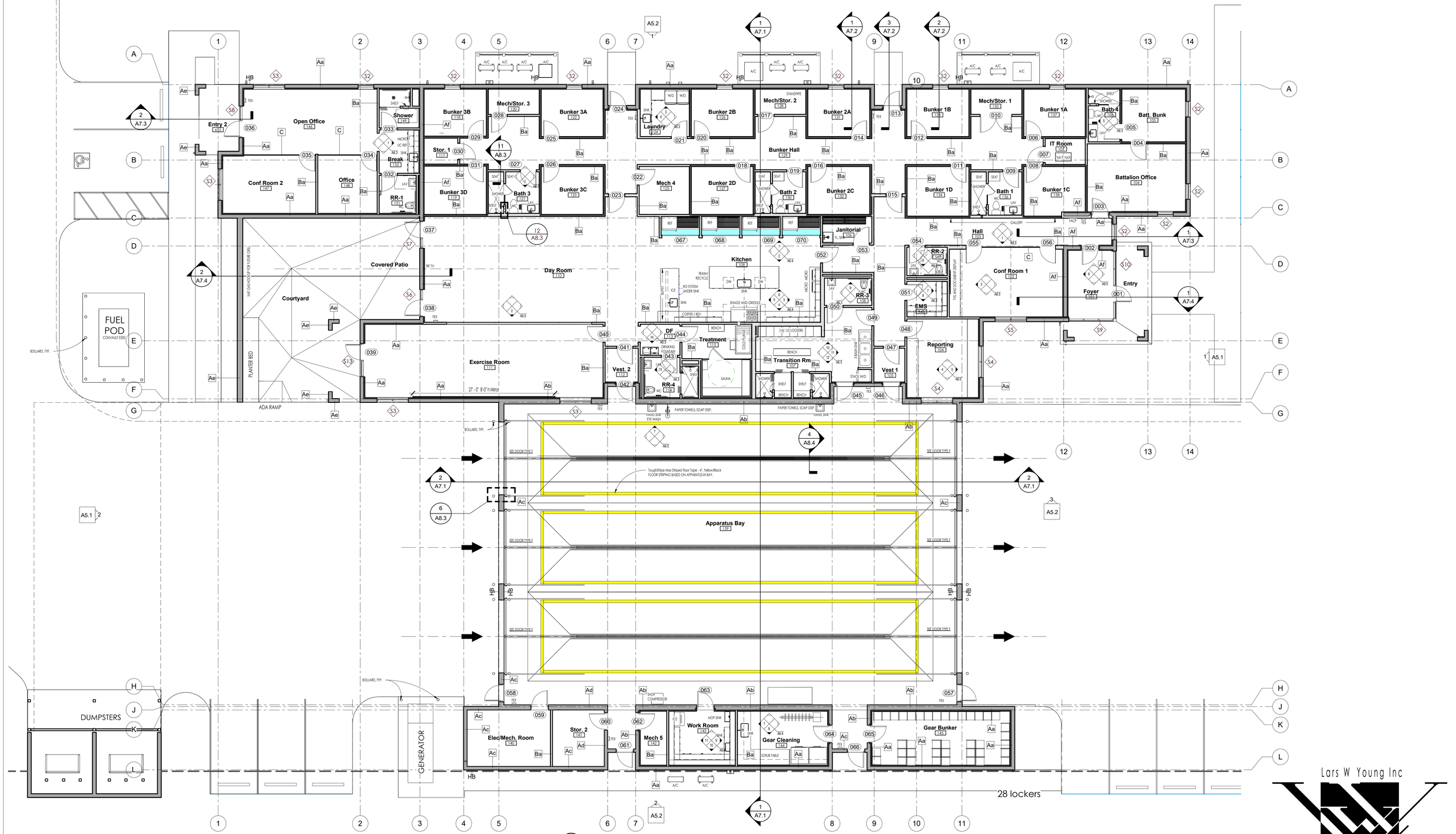

1 Fire Station Floor Plan- Notes
1/8" = 1'-0"

Floor Plan Notes:

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No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Floor Plan- Notes and Misc

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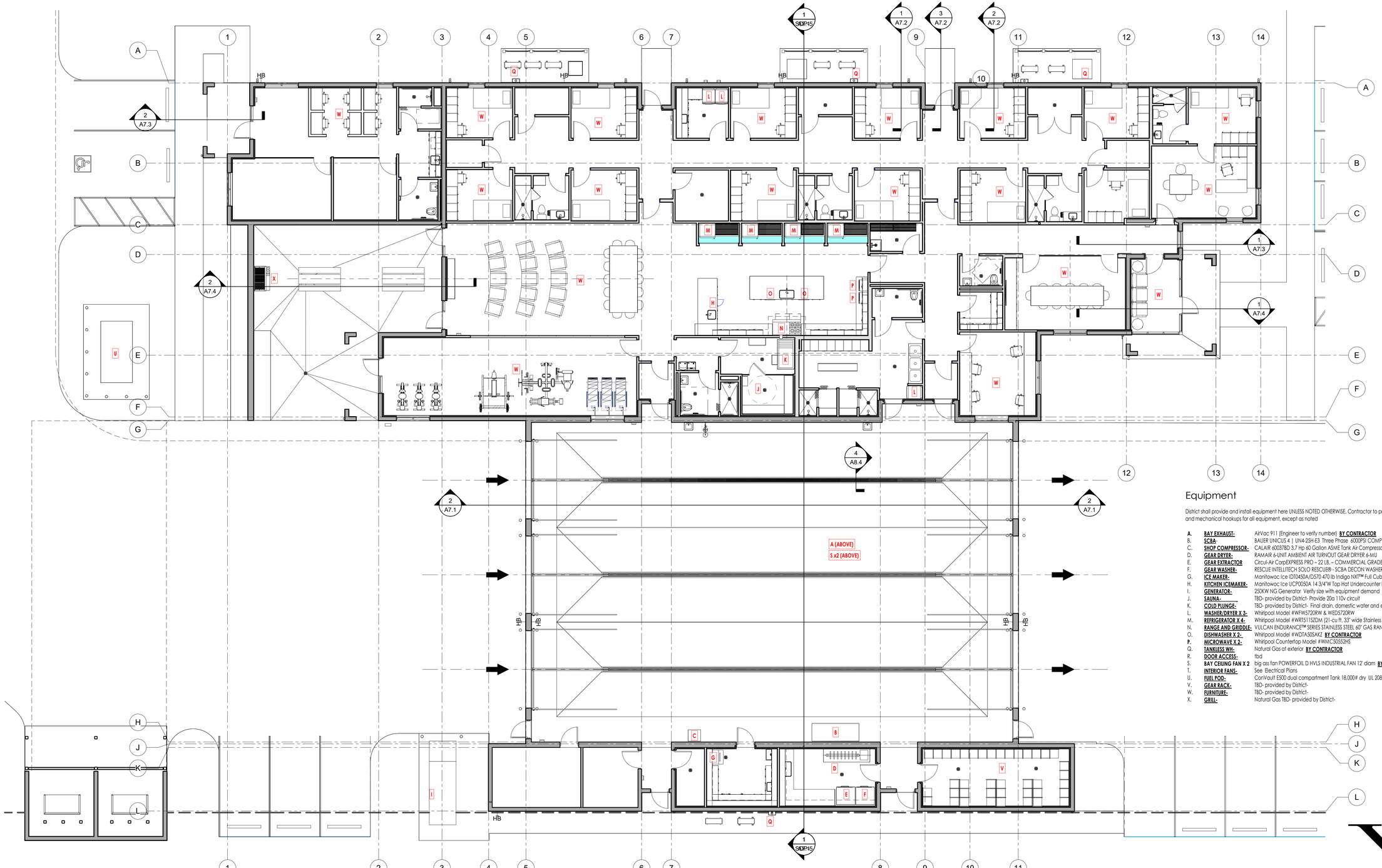

1 Fire Station Floor Plan- Furniture
A2.3 1/8" = 1'-0"

Floor Plan Notes:

DO NOT SCALE DRAWINGS.
REFER TO SHEET A6.XX FOR SCHEDULES AND WLL TYPE DESCRIPTIONS.

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ENLARGED DETAILS SHALL GOVERN
CONTACT ARCHITECT FOR CLARIFICATION IF REQUIRED

Equipment

District shall provide and install equipment here UNLESS NOTED OTHERWISE. Contractor to provide electrical, plumbing and mechanical hookups for all equipment, except as noted

A.	**BAY EXHAUST-**	AirVac 911 (Engineer to verify number) **BY CONTRACTOR**
B.	**SCBA-**	BAUER UNICUS 4 | UN4-25H-E3 Three Phase 6000PSI COMPRESSOR
C.	**SHOP COMPRESSOR-**	CALAIR 60037BD 3.7 Hp 60 Gallon ASME Tank Air Compressor
D.	**GEAR DRYER-**	RAMAIR 6-UNIT AMBIENT AIR TURNOUT GEAR DRYER 6-MU
E.	**GEAR EXTRACTOR**	Circul-Air CorpEXPRESS PRO – 22 LB. – COMMERCIAL GRADE SOFT MOUNT EXTRACTOR GCWM1069CS7
F.	**GEAR WASHER-**	RESCUE INTELLITECH SOLO RESCUE® - SCBA DECON WASHER 400 V / 415 V 3-phase, 50 Hz :
G.	**ICE MAKER-**	Manitowoc Ice IDT0450A/DS70 470 lb Indigo NXT™ Full Cube Ice Machine w/ Bin - 532 lb Storage, Air Cooled, 115v
H.	**KITCHEN ICEMAKER-**	Manitowoc Ice UCP0050A 14 3/4"W Top Hat Undercounter Ice Machine - 52 lbs/day, Air Cooled **BY CONTRACTOR**
I.	**GENERATOR-**	250KW NG Generator Verify size with equipment demand
J.	**SAUNA-**	TBD- provided by District- Provide 20a 110v circuit
K.	**COLD PLUNGE-**	TBD- provided by District- Final drain, domestic water and electrial connection TBD by selection.
L.	**WASHER/DRYER X 3-**	Whirlpool Model #WFW5720RW & WED5720RW
M.	**REFRIGERATOR X 4-**	Whirlpool Model #WRT511SZDM (21-cu ft, 33" wide Stainless w/o ice maker)
N.	**RANGE AND GRIDDLE-**	VULCAN ENDURANCE™ SERIES STAINLESS STEEL 60" GAS RANGE-MODEL: #60SC-4B36GN **BY CONTRACTOR**
O.	**DISHWASHER X 2-**	Whirlpool Model #WDTA50SAKZ **BY CONTRACTOR**
P.	**MICROWAVE X 2-**	Whirlpool Countertop Model #WMC50550HS
Q.	**TANKLESS WH-**	Natural Gas at exterior **BY CONTRACTOR**
R.	**DOOR ACCESS-**	tbd
S.	**BAY CEILING FAN X 2**	big ass fan POWERFOIL D HVLS INDUSTRIAL FAN 12' diam **BY CONTRACTOR**
T.	**INTERIOR FANS-**	See Electrical Plans
U.	**FUEL POD-**	ConVault E500 dual compartment Tank 18,000# dry UL 2085 compliant (2) chambers 500 gallons each.
V.	**GEAR RACK-**	TBD- provided by District-
W.	**FURNITURE-**	TBD- provided by District-
X.	**GRILL-**	Natural Gas TBD- provided by District-

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Floor Plan- Furniture and Equipment Plan

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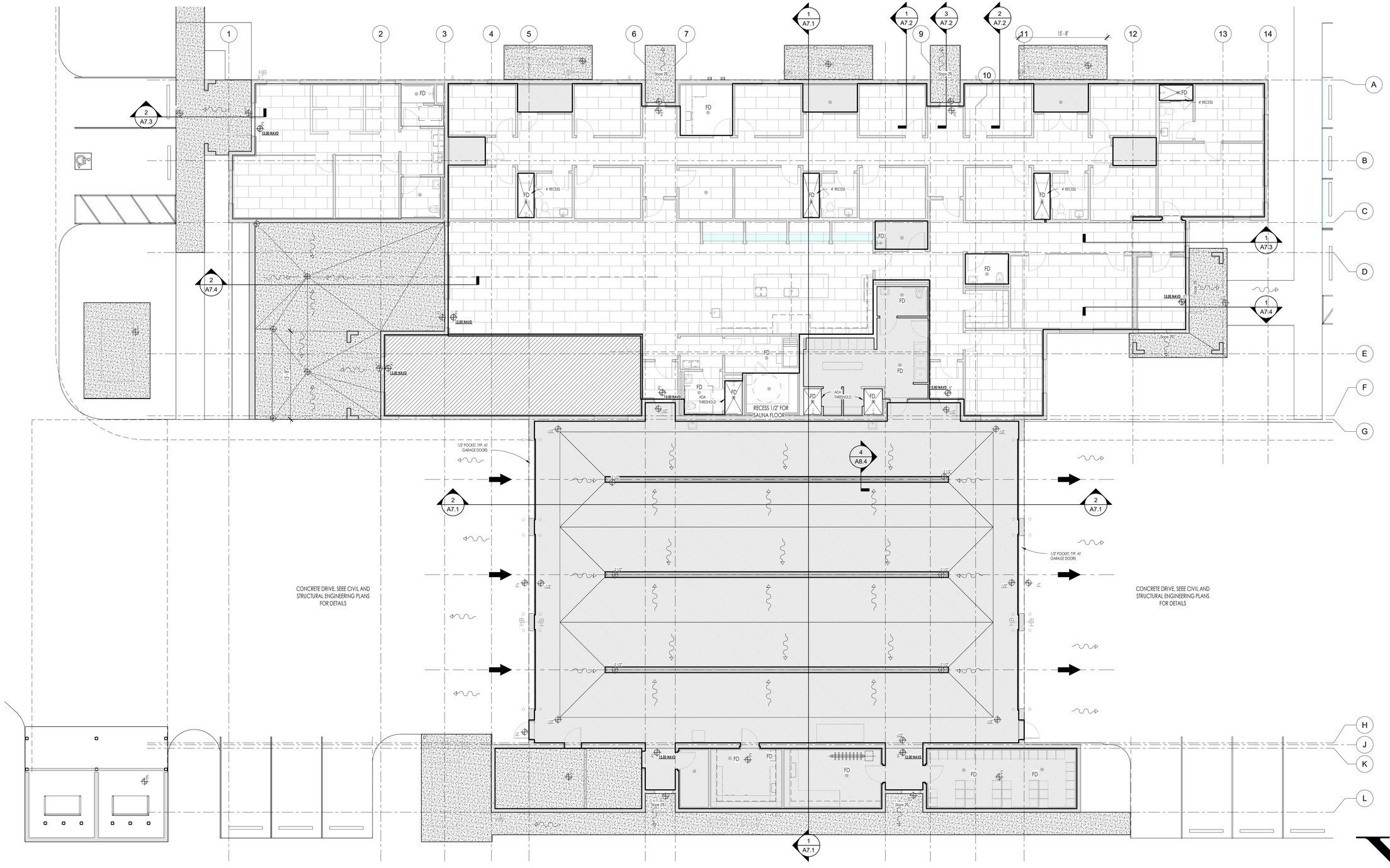

Floor Finish Legend

See Interior Design docs for flooring selection, colors, and transition treatments.

Elevation Target represents finished floor height

- Tile
- Broom finished Concrete
- Epoxy
- Carpet (notused)
- Resiliant Flooring

Floor Plan Notes:

DO NOT SCALE DRAWINGS.
REFER TO SHEET A6.XX FOR SCHEDULES AND WLL TYPE DESCRIPTIONS.

DIMENSIONS ARE FROM OUTSIDE FACE OF EXTERIOR WALLS INCLUDING STRUCTURAL SHEATHING (EXCLUDING STUCCO OR OTHER FINISH) AND OUTSIDE EDGES OF STRUCTURE OF INTERIOR WALLS.

REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS NOT FOUND ON FLOOR PLAN SHEETS.

ENLARGED DETAILS SHALL GOVERN
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1 / A2.4 Fire Station Floor Plan- Slab
1/8" = 1'-0"

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Floor Plan- Slab

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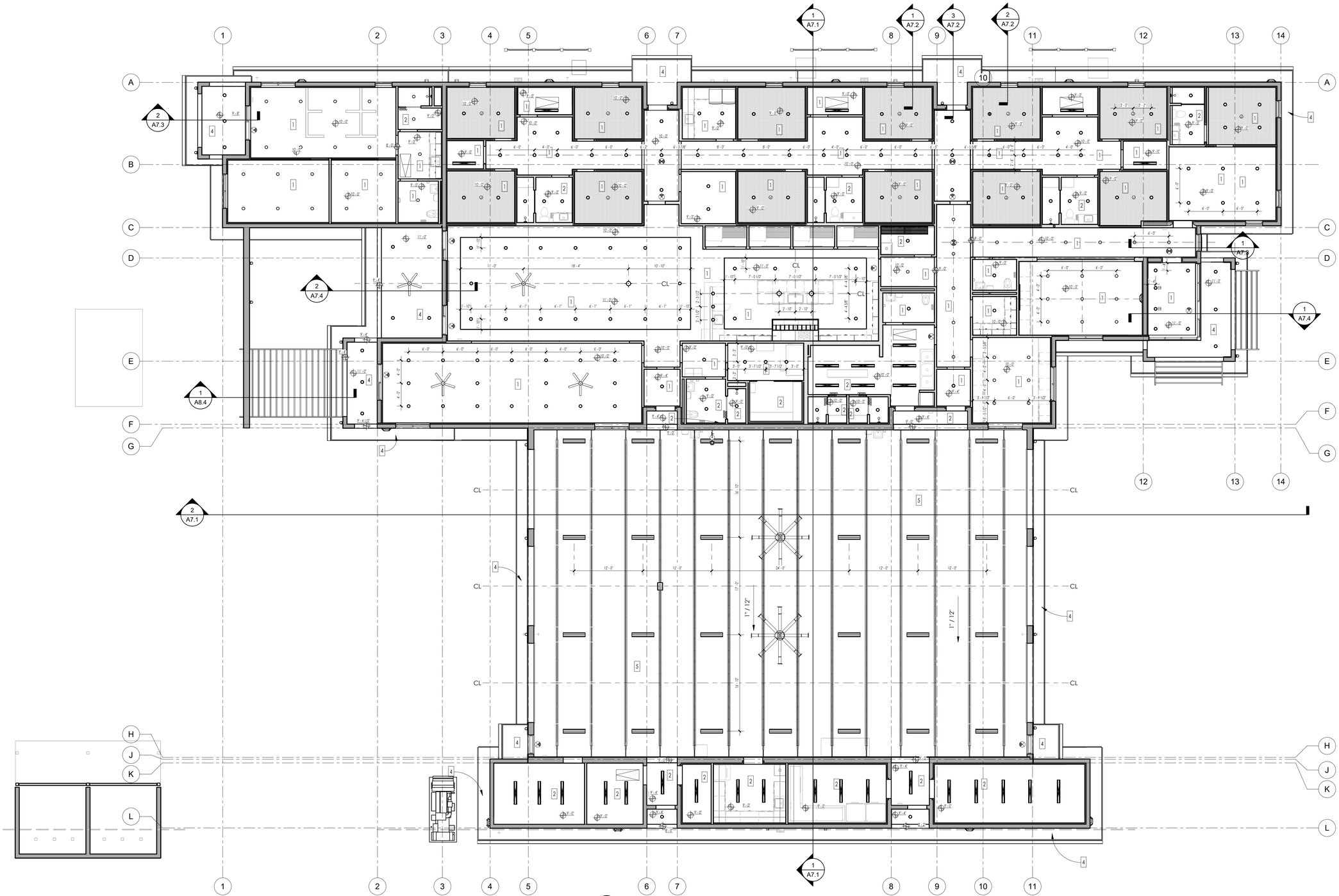
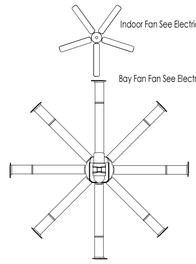


1 A3.1 Reflected Ceiling Plan
1/8" = 1'-0"

Ceiling Symbol Legend

- SOUND ATTENUATING FIBERGLASS BATTS ABOVE CEILING, R-13 MIN.
- ATTIC ACCESS-BA KSTDW 24" X 48" FOR DRYWALL ASSEMBLIES
- EXIT SIGN
- ELEVATION IDENTIFICATION
- 4" RECESSED LED LIGHT
- PENDANT LIGHT /CHANDELIER FIXTURE
- JUNCTION BOX FOR FUTURE CEILING FAN
- SURFACE MOUNT FLUORESCENT FIXTURE
- SUPPLY GRILL
- RETURN GRILL
- EXHAUST FAN GRILL
- WALL-MOUNTED LIGHT FIXTURE
- SOFFIT FLOOD LIGHTS
- EXIT SIGN

Indoor Fan See Electrical Plans



Bay Fan Fan See Electrical Plans

Ceiling Legend:

1. **GYPSUM BOARD**- 5/8" GYPSUM BOARD WITH LEVEL 4 FINISH OVER FRAMING.
2. **M.R. CEILING**- 5/8" MOISTURE RESISTANT GYPSUM CEILING WITH LEVEL 4 FINISH OVER CEILING FRAMING.
3. **Not Used**
4. **STUCCO**- 3/4" STUCCO OVER GALV RIBLATH
5. **EXPOSED STRUCTURE-** EXPOSED CORRUGATED STEEL PAN AND BAR JOISTS. COLOR FINISH WHITE

Floor Plan Notes:

DO NOT SCALE DRAWINGS.
REFER TO SHEET A6.XX FOR SCHEDULES AND WLL TYPE DESCRIPTIONS.

DIMENSIONS ARE FROM OUTSIDE FACE OF EXTERIOR WALLS INCLUDING STRUCTURAL SHEATHING (EXCLUDING STUCCO OR OTHER FINISH) AND OUTSIDE EDGES OF STRUCTURE OF INTERIOR WALLS.

REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS NOT FOUND ON FLOOR PLAN SHEETS.

ENLARGED DETAILS SHALL GOVERN
CONTACT ARCHITECT FOR CLARIFICATION IF REQUIRED

No.	Description	Date

Project #	23.1083
Date:	9.30.25
Drawn:	Author
Checked:	Checker
Scale	As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110

For: North Collier Fire Control & Rescue District

Reflected Ceiling Plan

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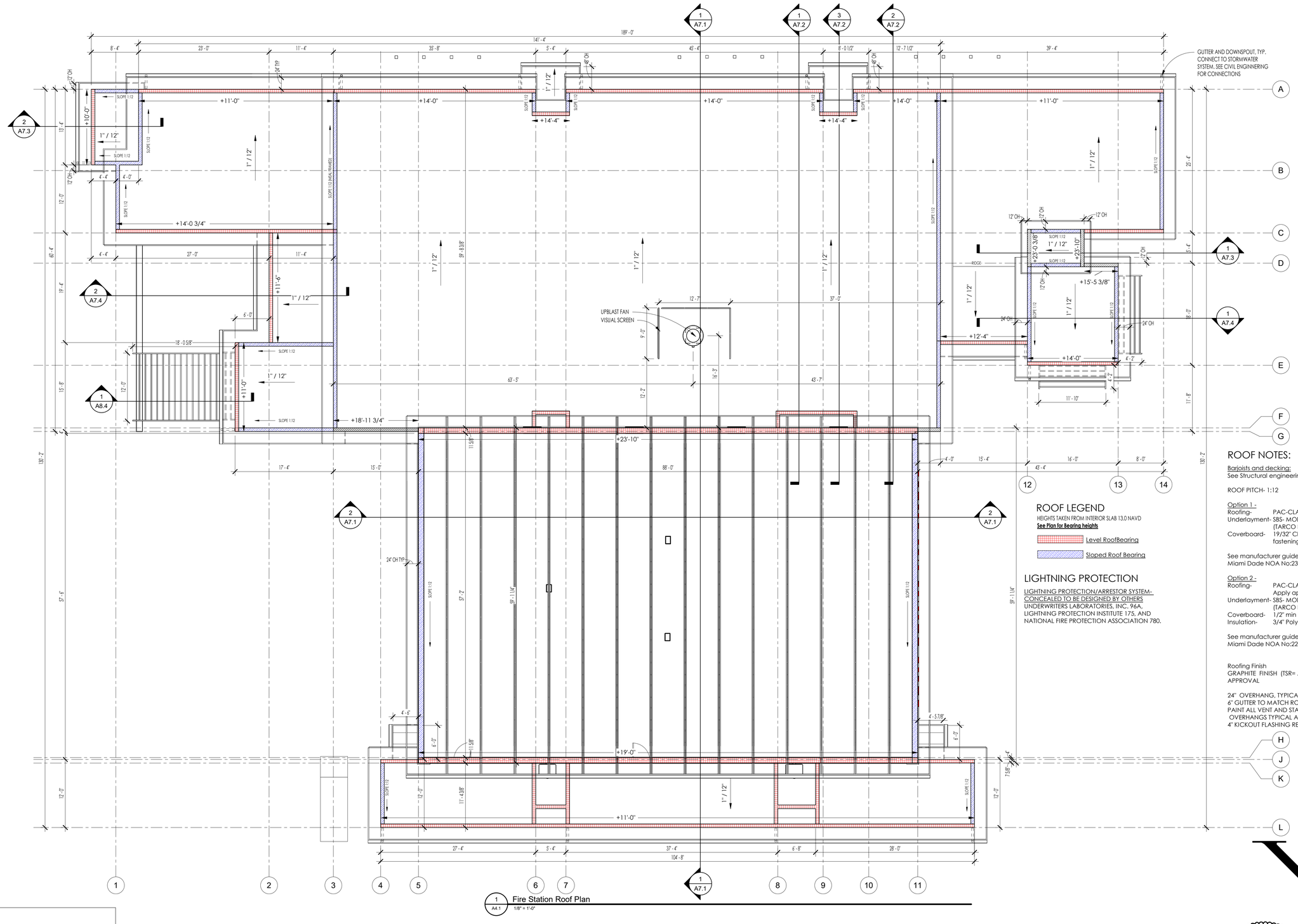

1 A4.1 Fire Station Roof Plan
1/8" = 1'-0"

ROOF LEGEND

HEIGHTS TAKEN FROM INTERIOR SLAB 13.0 NAVD

See Plan for Bearing heights

Level RoofBearing

Sloped Roof Bearing

LIGHTNING PROTECTION

LIGHTNING PROTECTION/ARRESTOR SYSTEM- CONCEALED TO BE DESIGNED BY OTHERS
UNDERWRITERS LABORATORIES, INC. 96A, LIGHTNING PROTECTION INSTITUTE 175, AND NATIONAL FIRE PROTECTION ASSOCIATION 780.

ROOF NOTES:

Barjoists and decking:
See Structural engineering plans for details

ROOF PITCH- 1:12

Option 1 -
Roofing- PAC-CLAD PAC-150 1.5" Snap-Clad .032" Alum. X 16"
Underlayment- SBS- MODIFIED SELF ADHESIVE ROOFING MEMBRANE (TARCO PS200HT OR APPROVED EQUAL)
Coverboard- 19/32" CDX plywood. See sctructural for plywood fastening schedule.

See manufacturer guidelines and NOA of installation requirements.
Miami Dade NOA No:23-1205.08 Exp. 02/22/2029

Option 2 -
Roofing- PAC-CLAD Tite-Loc Plus 2" 032" Alum. X 16" Apply approved seam sealat at seam
Underlayment- SBS- MODIFIED SELF ADHESIVE ROOFING MEMBRANE (TARCO PS200HT OR APPROVED EQUAL)
Coverboard- 1/2" min GP- DensDeck roof board
Insulation- 3/4" Polyiso board (20 psf min com strength)

See manufacturer guidelines and NOA of installation requirements.
Miami Dade NOA No:22-0329.13 Exp. 04/06/2027

Roofing Finish
GRAPHITE FINISH (TSR= .33, SRI=34) SUBMIT SAMPLES FOR FINAL APPROVAL

2'4" OVERHANG, TYPICAL.
6" GUTTER TO MATCH ROOF FINISH
PAINT ALL VENT AND STACKS TO MATCH ROOF
OVERHANGS TYPICAL AS ABOVE UNLESS OTHERWISE NOTED
4" KICKOUT FLASHING REQUIRED AT ALL WALL / FASCIA CONNECTIONS

Floor Plan Notes:

DO NOT SCALE DRAWINGS.
REFER TO SHEET A6.XX FOR SCHEDULES AND WLL TYPE DESCRIPTIONS.

DIMENSIONS ARE FROM OUTSIDE FACE OF EXTERIOR WALLS INCLUDING STRUCTURAL SHEATHING (EXCLUDING STUCCO OR OTHER FINISH) AND OUTSIDE EDGES OF STRUCTURE OF INTERIOR WALLS.

REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS NOT FOUND ON FLOOR PLAN SHEETS.

ENLARGED DETAILS SHALL GOVERN
CONTACT ARCHITECT FOR CLARIFICATION IF REQUIRED

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Roof Plan

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
Naples, FL 34109
Phone: 239.591.8899
lwyarch@gmail.com
STATE OF FLORIDA · LARS W. YOUNG · AR0016755 · REGISTERED ARCHITECT · Florida

A4.1

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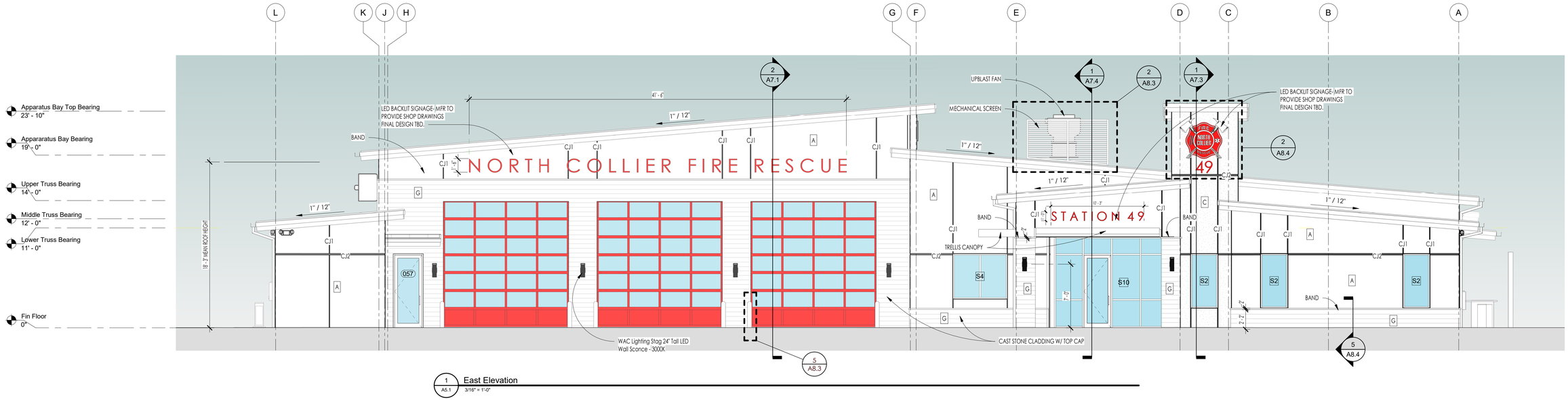
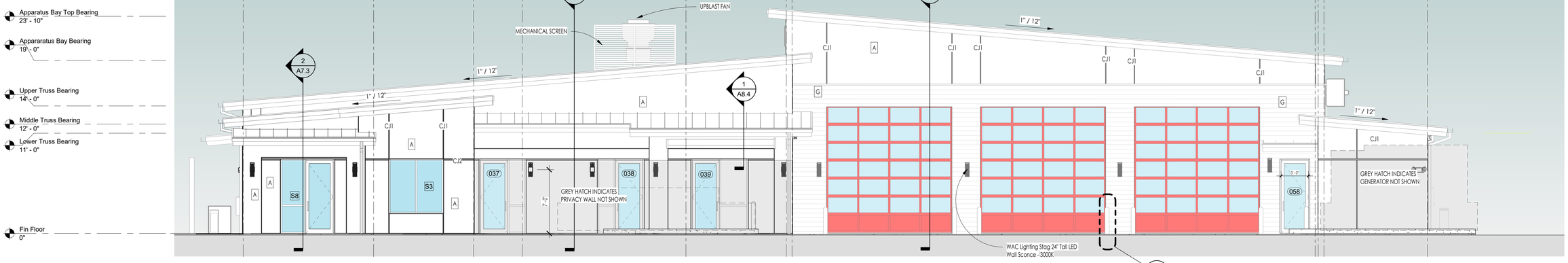


1 A5.1 **East Elevation**
3/16" = 1'-0"



2 A5.1 **West Elevation**
3/16" = 1'-0"

Color Selections and Legend

A Primary Exterior Wall Pure White, typical all ext walls
Sherwin Williams SW 7005 Pure White
Sherwin-Williams Pure White SW 7005

B Primary Exterior Trim, columns, Fascia.
Sherwin Williams SW 7005 Pure White

C Secondary Exterior Wall,typical all ext walls
Sherwin Williams SW 7015 Repose Gray

D Window, Door Frames
Bronze (Factory Finish by ESW
sample provided for close approximation)
SW 7048 URBANE BRONZE

E Roofing:
Standing Seam w. esp finish
SLATE GREY FINISH (TSR= .33, SRI=34) SUBMIT SAMPLES FOR FINAL APPROVAL
SLATE GRAY

F Gutter and Downspout, Mechanical Screen
SLATE GREY FINISH (TSR= .33, SRI=34) SUBMIT SAMPLES FOR FINAL APPROVAL
SLATE GRAY

G Stone Finish
DC Kerckhoff Cast stone
0004 Ritz Regular texture, Finial selection based on submitted samples.
004 Ritz
Regular

H Apparatus Door
OSHA SAFETY RED Safety Red

CJ-1 1/2" REVEAL PVC CONTROL JOINT. SEE DETAILS

CJ-2 1-1/2" REVEAL PVC CONTROL JOINT. SEE DETAILS.

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Exterior Elevations

STATE OF FLORIDA LARS W YOUNG REGISTERED ARCHITECT AR0016755

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
Naples, FL 34109
phone: 239.591.8899
lwyarch@gmail.com

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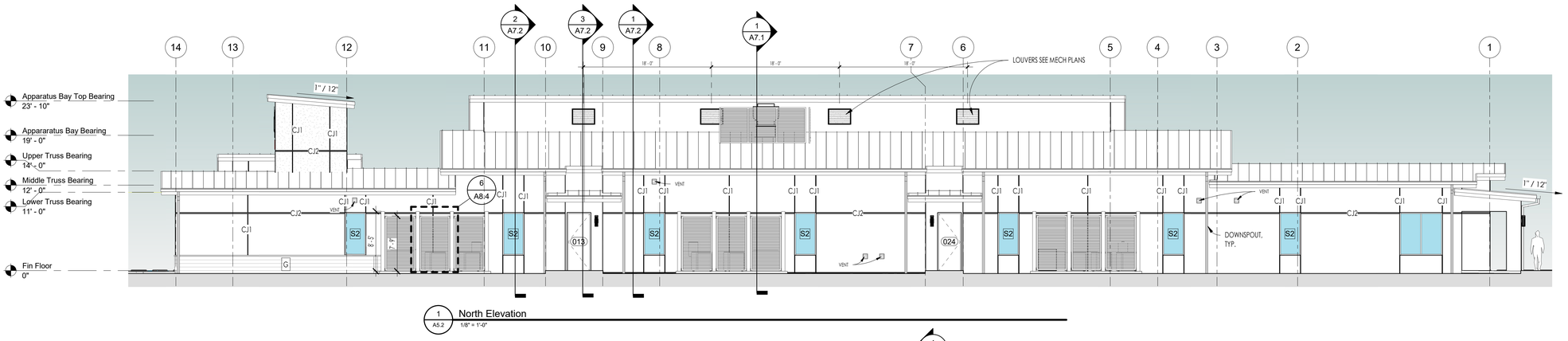
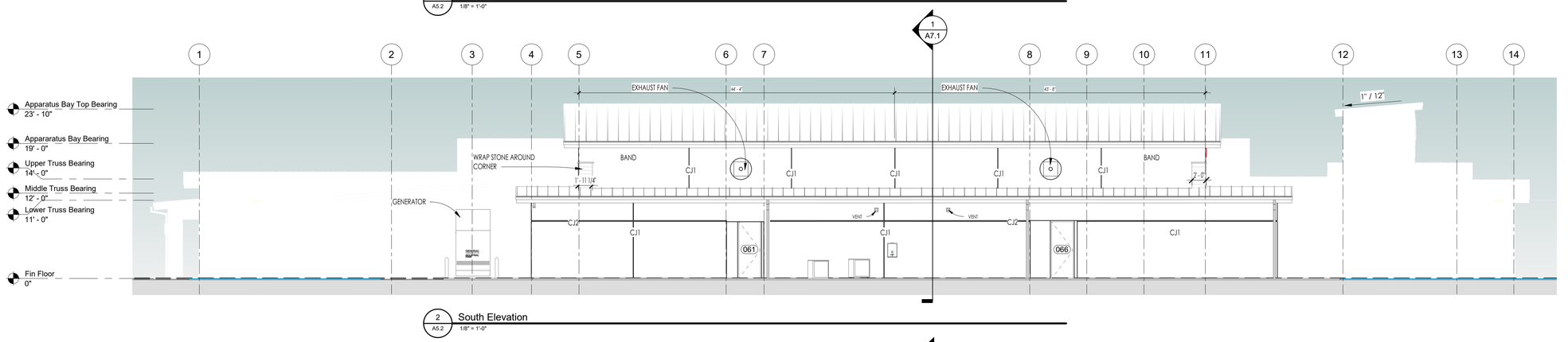
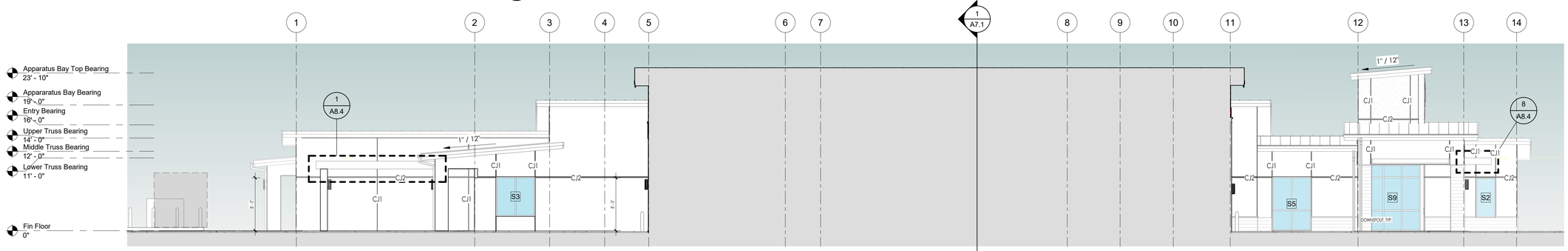


1 A5.2 North Elevation
1/8" = 1'-0"



2 A5.2 South Elevation
1/8" = 1'-0"



3 A5.2 South Elevation 2
1/8" = 1'-0"

Color Selections and Legend

A Primary Exterior Wall Pure White, typical all ext walls
Sherwin Williams SW 7005 Pure White

B Primary Exterior Trim, columns, Fascia.
Sherwin Williams SW 7005 Pure White

Sherwin-Williams Pure White SW 7005

C Secondary Exterior Wall,typical all ext walls
Sherwin Williams SW 7015 Repose Gray

D Window, Door Frames
Bronze (Factory Finish by ESW sample provided for close approximation)

SW 7048 URBANE BRONZE

E Roofing:
Standing Seam w. esp finish
SLATE GREY FINISH (TSR= .33, SRI=34) SUBMIT SAMPLES FOR FINAL APPROVAL

SLATE GRAY

F Gutter and Downspout, Mechanical Screen
SLATE GREY FINISH (TSR= .33, SRI=34) SUBMIT SAMPLES FOR FINAL APPROVAL

SLATE GRAY

G Stone Finish
DC Kerckhoff Cast stone
0004 Ritz Regular texture, Finial selection based on submitted samples.

004 Ritz

Regular

H Apparatus Door
OSHA SAFETY RED Safety Red

CJ-1 1/2" REVEAL PVC CONTROL JOINT. SEE DETAILS

CJ-2 1-1/2" REVEAL PVC CONTROL JOINT. SEE DETAILS.

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Exterior Elevations 2

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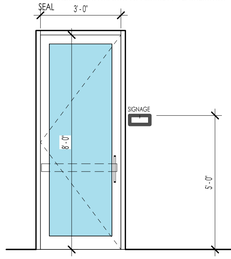
ES WINDOWS 8000T STOREFRONT DOOR FRAME AND DOOR SYSTEM

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION
MAGLOCK:
SEE SCHEDULE AND NOTES

1/2" ADA COMPLIANT ALUMINUM THRESHOLD.
SET THRESHOLD IN MASTIC TO ASSURE A WEATHERTIGHT SEAL

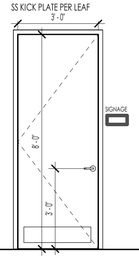


A

DAYBAR DELTA STEEL DOOR AND STEEL DOOR KNOCKDOWN FRAME
HOLLOW METAL PREHUNG, PREBORED SINGLE PANEL SWING DOOR, SMOOTH FINISH, PREPRIMED, PAINT 6 SIDES

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
ASSA ABLOY DCS000 SERIES CLOSER OR EQ.
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION

SS KICK PLATE PER LEAF

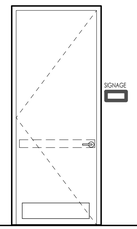


B

DAYBAR DELTA STEEL DOOR AND FRAME FOR MASONRY OPENINGS.
STEEL DOOR HOLLOW METAL PREHUNG, PREBORED SINGLE PANEL SWING DOOR. SMOOTH FINISH, PREPRIMED, PAINT 6 SIDES

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION

SS KICK PLATE PER LEAF

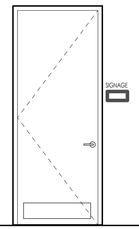


C

DAYBAR DELTA **GALVANIZED** STEEL DOOR AND FRAME FOR MASONRY OPENINGS.
STEEL DOOR HOLLOW METAL PREHUNG, PREBORED SINGLE PANEL SWING DOOR. SMOOTH FINISH, PREPRIMED, PAINT 6 SIDES

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION

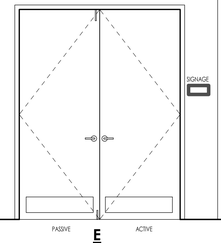
SS KICK PLATE PER LEAF



D

DAYBAR DELTA STEEL DOOR AND FRAME FOR MASONRY OPENINGS.
STEEL DOOR HOLLOW METAL PREHUNG, PREBORED SINGLE PANEL SWING DOOR. SMOOTH FINISH, PREPRIMED, PAINT 6 SIDE

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION
PASSIVE LEAF- FLUSH BOLT AT DOOR EDGE
SS KICK PLATE PER LEAF



E

OVERHEAD DOOR MODEL 5215 (FBC) ALUMINUM WIND RATED SECTIONAL DOOR
FL PRODUCT APPROVAL 17629.1
DESIGN PRESSURE: +48.00/-54.00
MATERIAL EXTRUDED 6061-T6 ALUMINUM

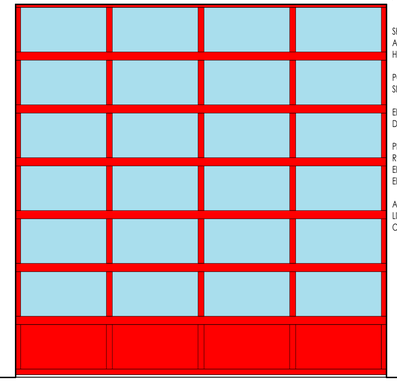
SHORT PANEL WITH GLAZING, SOLID AT BOTTOM PANEL.
HIGH LIFT TRACKS

POWDERCOAT FINISH RAL 3001 SIGNAL RED

ELECTRIC OPERATOR: RHX HEAVY DUTY SIDE MOUNT OPERATOR

PROVIDE 2 SAFETY DEVICES AS REQUIRED: PHOTOELECTRIC AND ELECTRIC SENSING EDGE (SAFETY EDGE)

AT EXIT DOORS (EAST SIDE) LED EXIT LIGHT SAFETY SYSTEM, "BRINK ALERT" OR APPROVED AQUAL



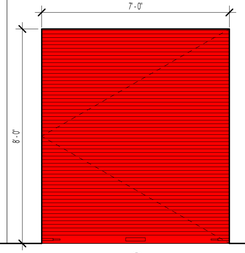
F

OVERHEAD DOOR MODEL 652 ROLLING INTERIOR DOOR

MATERIAL ANODIZED ALUMINUM

MANUAL PUSH UP WITH TORSION COUNTERBALANCE
CYLINDER LOCK SEPARATELY KEYED

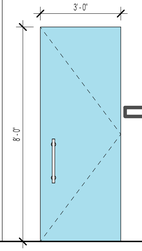
POWDERCOAT FINISH RAL 3001 SIGNAL RED



G

5/8"" CLEAR TINT FREE TEMPERED PLATE GLASS DOOR SYSTEM, SQUARE EDGE
SEE MFR INSTALLATION DETAILS FOR GLASS REQUIREMENTS.

HANDLE:
SEE SCHEDULES AND NOTES
LOCKSET:
NONE
HINGE:
Assa Abloy floor mount pivot PF-ADJ-PIV
PFD-10 Glass door bottom patch and cover
Assa Abloy top pivot PV-WALK8EAM
PFD-20 Glass door top patch and cover
CLOSER:
AT PIVOT. SEE HINGE

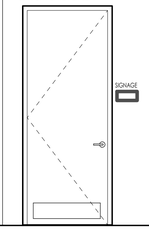


H

VT INDUSTRIES HERITAGE HIGH PRESSURE LAMINATE (OR APPROED EQUAL) SOLID CORE WOOD DOOR AND STEEL FRAME FOR MASONRY OR FRAME OPENINGS.
PREHUNG, PREBORED SINGLE PANEL SWING DOOR.
SMOOTH FINISH, PREFINISHED . SEE COLOR AND FINISH SELECTIONS.

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION

SS KICK PLATE PER LEAF



J

1 A6.1 Door Elevations
3/8" = 1'-0"

VT INDUSTRIES HERITAGE HIGH PRESSURE LAMINATE (OR APPROED EQUAL) SOLID CORE WOOD DOOR AND STEEL FRAME FOR MASONRY OR FRAME OPENINGS.
PREHUNG, PREBORED SINGLE PANEL SWING DOOR.
SMOOTH FINISH, PREFINISHED . SEE COLOR AND FINISH SELECTIONS.

HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION
PASSIVE LEAF- FLUSH BOLT AT DOOR EDGE
SS KICK PLATE PER LEAF

K

SAME AS "J"
WITH TEMPERED GLASS INSERT

L

DAYBAR DELTA **GALVANIZED** STEEL DOOR AND FRAME FOR MASONRY OPENINGS.
90 MINUTE RATED
STEEL DOOR HOLLOW METAL PREHUNG, PREBORED SINGLE PANEL SWING DOOR, SMOOTH FINISH, PREPRIMED, PAINT 6 SIDES

TEMPERED GLASS INSERT 90 MINUTE RATED SAFETY CERAMIC
HANDLE:
SEE SCHEDULE AND NOTES
HINGE:
(2) PAIR SS SQUARE EDGE HINGES PER LEAF
CLOSER:
SEE SCHEDULE AND NOTES
LOCKSET:
SEE SCHEDULE AND NOTES
LEVER STYE HANDLE TO MATCH EXISTING SHAPE AND FINISH
SEE SCHEDULE FOR FUNCTION

SS KICK PLATE PER LEAF

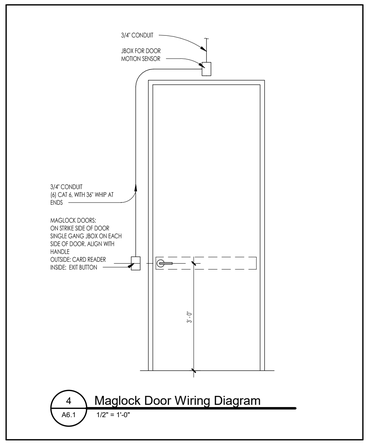
M

3 A6.1 Door Elevations1
3/8" = 1'-0"

2 A6.1 Room Signage
3" = 1'-0"

Door Schedule

MARK	Type	Manufacturer	SIZE WIDTH	SIZE HEIGHT	SIZE THICKNESS	THRESHOLD	FIRE RATING	COMMENTS	Type Mark	Hardware
001	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock, Entry Lever, Closer
002	Interior SC Wood M.O.	Vt Industries	3' - 0"	8' - 0"	1 3/4"				J	Passage Lever, Maglock, Closer, Kickplate
003	Interior SC Wood M.O.	Vt Industries	3' - 0"	8' - 0"	1 3/4"				J	Office Lever , Kickplate
004	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
005	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
006	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
007	Interior SC Wood D.W. 45 min	VT Industries	3' - 0"	8' - 0"	1 3/8"		45 min.		J	Storage Lever, Maglock, Kickplate
008	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
009	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
010	Interior SC Wood D.W.	Trudoor	6' - 0"	8' - 0"	1 3/4"		NR		K	Storage Lever, Kickplate, Flush Bolt
011	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
012	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
013	Exterior HM M.O. Galvanized	Daybar	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		D	Entry Lever, Maglock, Kickplate, Closer, Exterior Sweep
014	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
015	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Push, Pull Plate, Kickplate, Closer
016	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
017	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Storage Lever, Maglock, Kickplate
018	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
019	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
020	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
021	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Passage Lever, Kickplate
022	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Storage Lever, Maglock, Kickplate
023	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Push, Pull Plate, Kickplate, Closer
024	Exterior HM M.O. Galvanized	Daybar	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		D	Entry Lever, Maglock, Kickplate, Closer, Exterior Sweep
025	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
026	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
027	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
028	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Storage Lever, Maglock, Kickplate
029	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
030	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Storage Lever, Kickplate
031	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
032	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
033	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever
034	GLASS 3'-0" X 8'-0"	TBD	3' - 0"	8' - 0"	5/8"		NR		H	Glass Push/ Pull Bar
035	GLASS 3'-0" X 8'-0"	TBD	3' - 0"	8' - 0"	5/8"		NR		H	Glass Push/ Pull Bar
036	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock Entry Lever, Closer
037	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock Entry Lever, Closer
038	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock Entry Lever, Closer
039	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock Entry Lever, Closer
040	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Passage Lever, Kickplate
041	Interior SC Wood D.W. w/ lite	VT Industries	3' - 0"	8' - 0"	1 3/8"		NR		L	Push, Pull Plate, Kickplate, Closer
042	Interior HM M.O. 90 min w/ lite	Daybar	3' - 0"	8' - 0"	1 3/4"		90 min.		M	Maglock Entry Lever, Kickplate, Closer
043	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever, Kickplate
044	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever, Kickplate
045	Interior HM M.O. 90 min w/ lite	Daybar	3' - 0"	8' - 0"	1 3/4"		90 min.		M	Maglock Entry Lever, Kickplate, Closer
046	Interior HM M.O. 90 min w/ lite	Daybar	3' - 0"	8' - 0"	1 3/4"		90 min.		M	Maglock, Entry Lever, Kickplate, Closer
047	Interior SC Wood D.W. w/ lite	VT Industries	3' - 0"	8' - 0"	1 3/8"		NR		L	Push, Pull Plate, Kickplate, Closer
048	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Passage Lever, Kickplate
049	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever, Kickplate
050	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Passage Lever, Kickplate
051	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Storage Lever, Maglock, Kickplate,
052	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Passage Lever, Kickplate
053	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Storage Lever, Kickplate
054	Interior SC Wood D.W.	Vt Industries	3' - 0"	8' - 0"	1 3/8"		NR		J	Privacy Lever, Kickplate
055	GLASS 3'-0" X 8'-0"	TBD	3' - 0"	8' - 0"	5/8"		NR		H	Glass Push/ Pull Bar
056	GLASS 3'-0" X 8'-0"	TBD	3' - 0"	8' - 0"	5/8"		NR		H	Glass Push/ Pull Bar
057	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock, Entry Lever, Closer
058	Storefront Single	ES Windows	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		A	Maglock Entry Lever, Closer
059	Interior HM M.O.	Daybar	3' - 0"	8' - 0"	1 3/4"		NR		C	Storage Lever, Maglock, Kickplate, Closer, Panic Bar
060	Interior HM M.O.	Daybar	3' - 0"	8' - 0"	1 3/4"		NR		C	Storage Lever, Kickplate
061	Exterior HM M.O. Galvanized	Daybar	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		D	Entry Lever,Maglock, Kickplate, Closer, Exterior Sweep
062	Interior HM M.O.	Daybar	3' - 0"	8' - 0"	1 3/4"		NR		C	Storage Lever, maglock, Kickplate
063	Interior HM M.O.	Daybar	3' - 0"	8' - 0"	1 3/4"		NR		C	Storage Lever, Kickplate, Flush Bolt
064	Interior HM M.O.	Daybar	3' - 0"	8' - 0"	1 3/4"		NR		C	Storage Lever, Kickplate
065	Interior HM M.O.	Daybar	3' - 0"	8' - 0"	1 3/4"		NR		C	Storage Lever, Kickplate
066	Exterior HM M.O. Galvanized	Daybar	3' - 0"	8' - 0"	1 3/4"	1/2" ADA	NR		D	Entry Lever. Maglock, Kickplate, Closer, Exterior Sweep
067	Roll Up Door	Overhead Door Corp.	7' - 0"	8' - 0"			NR		G	Padlock Ready
068	Roll Up Door	Overhead Door Corp.	7' - 0"	8' - 0"			NR		G	Padlock Ready
069	Roll Up Door	Overhead Door Corp.	7' - 0"	8' - 0"			NR		G	Padlock Ready



4 A6.1 Maglock Door Wiring Diagram
1/2" = 1'-0"

Door Hardware

Lever Handle-	
Passage-	Schlage ALX Series "Neptune", 626 Satin Chrome Finish
Office-	Schlage ALX Series "Neptune", 626 Satin Chrome Finish
Storage-	Schlage ALX Series "Neptune", 626 Satin Chrome Finish
Entry-	Schlage ALX Series "Neptune", 626 Satin Chrome Finish
Deadbolt-	Schlage ALX Series B Grade 2, 626 Satin Chrome Finish
Dummy-	Schlage ALX Series B Grade 2, 626 Satin Chrome Finish
Entry Pull/Pushbar-	Ives 9266F Flat Tip, Straight Long Pull 24" -US32D Stainless Steel
Closer-	ASSA ABLOY DCS000 SERIES CLOSER OR EQ. 626 Satin Chrome Finish
Push Plate-	Ives 8200 – 4" x 16" x .050, US32D Satin Stainless Steel
Pull Plate-	Ives 8302 ADA Pull Plate – 4" x 16", US32D Satin Stainless Steel
Flush Bolt-	Ives FB458 Manual Flush Bolt, US26D Satin Chrome Finish
Kick Plate-	Ives 8400 Series Kick Plate – US32D Stainless Steel
Threshold-	Pemko 170_ Saddle Threshold ADA, Mill Finish
Exterior Sweep-	Pemko 216_V Door Bottom Shoe with Rain Drip
Interior Sweep-	Pemko 217_V Door Bottom Shoe
Storefront Sweep-	Pemko 411ARL Full Mortise Automatic Door Bottom, Mill Finish Aluminum
Maglock-	Maglock Security System for security and entry control. Design by others.
Glass Push Pull Bar-	Ives 9266F Flat Tip, Straight Long Pull 24" -US32D Stainless Steel
Panic Bar-	ASSA ABLOY ACCENTRA™ 1500 Series Exit Device 626 Satin Chrome
Finish	

Door hardware subcontractor to submit shop drawings for review. Equal substitutions shall be consdered.

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Finish Schedules

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Architecture
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Naples, FL 34109
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STATE OF FLORIDA · LARS W YOUNG · REGISTERED ARCHITECT · AR0016755 · Florida

A6.1

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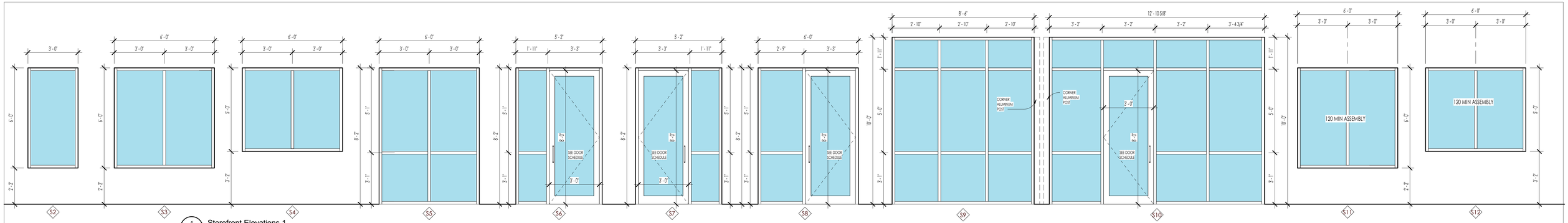
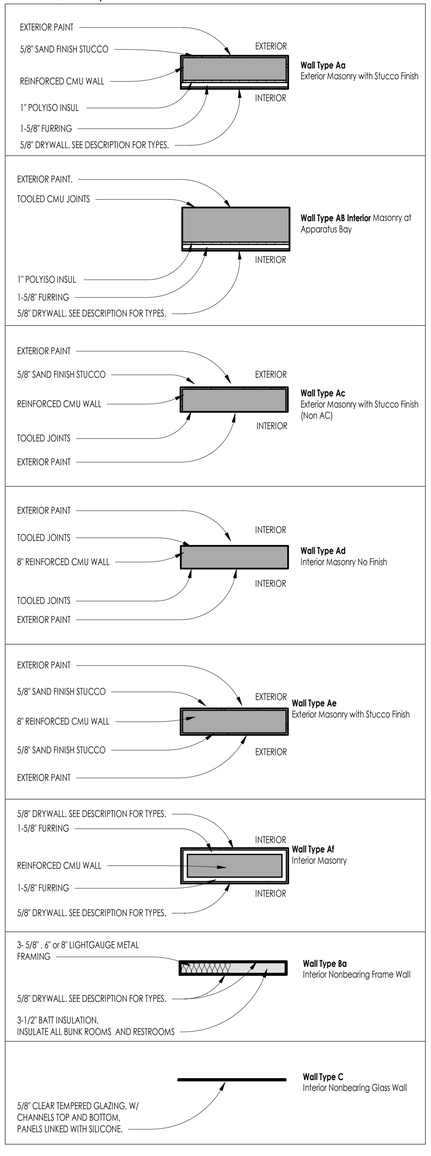


1 A6.2 Storefront Elevations 1
3/8" = 1'-0"

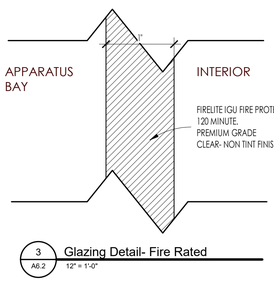
Wall Descriptions



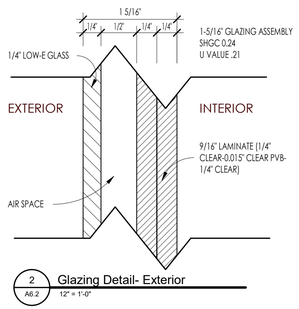
North Collier Station 49 Color and Finish Selections

Label	Finish	Selection	Comments
	Interior		
PT-1	Walls 1	Sherwin Williams SW 7005 Pure White- Satin	
PT-2	Walls 2	Sherwin Williams SW 7015 Repose Gray- Satin	
PT-3	Door Frames	Sherwin Williams SW 7048 Urbane Bronze Semigloss	
Lam-1	Interior Door Finish	Wilsonart Ebony Recon Laminate	
PT-3	Exterior Door Finish	Sherwin Williams SW 7020 Black Fox Semigloss	
Tile-1	Floor Tile	Daltile Outlander Sterling OU57 24" x 48"	1/3 offset - Sealed Grout Mapei Keracolor S- Color TBD
Rubber-1	Exercise Room Flooring	Regupol Activ Rolled Flooring- Gray Hound	
	Baseboard	(to match flooring)	4" with roundover edge, typical except at wall tile locations
Tile-2	Wall Tile	Daltile Wanderwise roam WW03 matt plank 6" x 24"	1/3 offset -Sealed Grout Mapei Keracolor S- Color TBD-
Tile-3	Shower Tile	Satori Carbon Hexagon	Sealed Grout Mapei Keracolor S- Color TBD
		Daltile Portfolio Dove Grey 6" x 24"	
	Countertops	Corian Neutral Beige	
	Sink Bowl	Corian Glacier White	
	Cabinets	Weatherstrong- Lighthouse Gray (Final TBD)	
	Stainless Steel Countertops		
	Work Room Countertop	Hardwood Reflections Acacia	Seal per mfr
FRP-1	FRP Panel	Marlite Standard FRP S 490N Light Grey	
	Apparatus Bay		
PT-4	Apparatus Bay Interior	Sherwin Williams SW 7015 Repose Gray- Satin	
PT-5	Apparatus Bay Ceiling	Sherwin Williams SW 7018 Dovetail- Satin	
PT-6	Apparatus Bay Stripe	RAL 3001 Signal Red	
Epoxy-1	Apparatus Bay Flooring	EliteCrete Medium Gray or Quartz Grey RAL 7039 (Final TBD)	
	Exterior		
PT-7	Stucco Wall 1	Sherwin Williams SW 7005 Pure White Eggshell	
PT-8	Stucco Wall 2	Sherwin Williams SW 7017 Dorian Gray Eggshell	
Stone -1	Stone Wainscot	DC Kerkhoff Ritz Medium Texture	
	Apparatus By Doors	RAL 3001 Signal Red Satin	Factory Finish
	Window and Door frames	PPG Duranar UC109850 Duranar Bronze or match	Factory Finish
		Kynar 500 Graphite	
	Trellis	PPG Duranar UC109850 Duranar Bronze or match	Factory Finish
		Kynar 500 Graphite	
	Roof	Pac-Clad Slate Gray	Factory Finish
	Gutters and Downspouts	Pac-Clad Slate Gray	Factory Finish
	Hardware	Brushed Stainless	
	Bollards	Uline H-9231Y Yellow	Factory Finish

*Submit Samples for approval



3 A6.2 Glazing Detail- Fire Rated
12" = 1'-0"



2 A6.2 Glazing Detail- Exterior
12" = 1'-0"

Window Notes

1. ES WINDOWS 8000T ALUMINUM STOREFRONT, LOW-E.
2. AT EXTERIOR- IMPACT RATED **LEVEL E** GLASS. SEE STRUCTURAL PLANS FOR REQUIREMENTS.
3. AT INTERIOR APPARATUS BAY (EXTERIOR GLAZING)- TGP FIRELITE IGU 120 MINUTE FIRE PROTECTIVE GLASS- NO TINT
4. SEE DETAILS FOR FOR TYPICAL ASSEMBLY- SEE MANUFACTURER REQUIREMENTS
5. SAFETY GLASS AT ALL SWINGING DOORS, IN ALL GLASS WITHIN 24" OF DOOR IN CLOSED POSITION

Paint Notes

Interior:

Walls: Sherwin Williams Superpaint paint and prime system. Apply per manufacturer requirements. Satin Finish.

Ceiling: Sherwin Williams Premium Ceiling Paint. Apply per manufacturer requirements. Flat Finish

Interior Trim: Sherwin Williams Emerald Urethane Trim Enamel. Apply per manufacturer requirements. Semigloss Finish

Apparatus Bay:

Walls: Sherwin Williams Loxon XP paint and prime system. Apply per manufacturer requirements. Satin Finish.

Ceiling: Sherwin Williams Steel-Master 9500, paint and prime system. Apply per manufacturer requirements. Satin Finish.

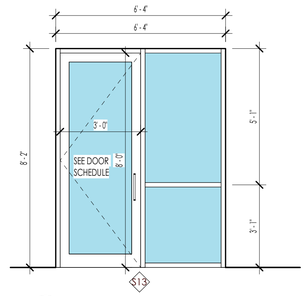
Exterior:

Stucco: Sherwin Williams Loxon XP paint and prime system. Apply per manufacturer requirements. Satin Finish. Color TBD

Aluminum Trim: ESP or Factory applied finish. See MFR Specs.

Room Finish Schedule

Room Name	Floor Finish	Base	Wall Finish	Ceiling Finish	Area
Apparatus Bay	Epoxy	Epoxy	Tooled CMU	N/A	5081 SF
Bath 1	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall XP mold resistant	53 SF
Bath 2	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall XP mold resistant	50 SF
Bath 3	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall XP mold resistant	51 SF
Bath 4	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall XP mold resistant	41 SF
Batt. Bunk	Tile 1	Tile 1	Drywall	Drywall	120 SF
Battalion Office	Tile 1	Tile 1	Drywall	Drywall	239 SF
Break	Tile 1	Tile 1	Drywall	Drywall	63 SF
Bunker 1A	Tile 1	Tile 1	Drywall	Drywall	105 SF
Bunker 1B	Tile 1	Tile 1	Drywall	Drywall	106 SF
Bunker 1C	Tile 1	Tile 1	Drywall	Drywall	106 SF
Bunker 1D	Tile 1	Tile 1	Drywall	Drywall	110 SF
Bunker 2A	Tile 1	Tile 1	Drywall	Drywall	105 SF
Bunker 2B	Tile 1	Tile 1	Drywall	Drywall	105 SF
Bunker 2C	Tile 1	Tile 1	Drywall	Drywall	107 SF
Bunker 2D	Tile 1	Tile 1	Drywall	Drywall	107 SF
Bunker 3A	Tile 1	Tile 1	Drywall	Drywall	105 SF
Bunker 3B	Tile 1	Tile 1	Drywall	Drywall	105 SF
Bunker 3C	Tile 1	Tile 1	Drywall	Drywall	107 SF
Bunker 3D	Tile 1	Tile 1	Drywall	Drywall	108 SF
Bunker Hall	Tile 1	Tile 1	Drywall	Drywall	828 SF
Conf Room 1	Tile 1	Tile 1	Drywall	Drywall	283 SF
Conf Room 2	Tile 1	Tile 1	Drywall	Drywall	194 SF
Courtyard	Concrete	N/A	Stucco	N/A	774 SF
Covered Patio	Concrete	N/A	Stucco	Stucco	221 SF
Day Room	Tile 1	Tile 1	Drywall	Drywall	862 SF
DF	Tile 1	Tile 1	Drywall	Drywall	44 SF
Elec/Mech. Room	Epoxy	Epoxy	Tooled CMU	Drywall XP mold resistant	170 SF
EMS	Tile 1	Tile 1	Drywall	Drywall	52 SF
Entry	Concrete	N/A	Drywall	Stucco	138 SF
Entry 2	Concrete	N/A	Stucco	Stucco	106 SF
Exercise Room	Rubber	Vinyl	Drywall	Drywall	630 SF
Foyer	Tile 1	Tile 1	Drywall	Drywall	117 SF
Gear Bunker	Epoxy	Epoxy	Drywall/FRP	Drywall	269 SF
Gear Cleaning	Epoxy	Epoxy	Drywall XP/FRP	Drywall	176 SF
Hall	Tile 1	Tile 1	Drywall	Drywall	424 SF
IT Room	Epoxy	Epoxy	Drywall	Drywall	37 SF
Janitorial	Epoxy	Epoxy	Drywall XP/ Tile 2	Drywall	47 SF
Kitchen	Tile 1	Tile 1	Drywall/ Stainless Steel	Drywall	571 SF
Laundry	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall XP mold resistant	84 SF
Mech 4	Epoxy	Epoxy	Drywall XP	Drywall	86 SF
Mech 5	Epoxy	Epoxy	Drywall XP/Tooled CMU	Drywall XP mold resistant	51 SF
Mech/Stor. 1	Epoxy	Epoxy	Drywall XP	Drywall XP mold resistant	46 SF
Mech/Stor. 2	Epoxy	Epoxy	Drywall XP	Drywall XP mold resistant	46 SF
Mech/Stor. 3	Epoxy	Epoxy	Drywall XP	Drywall XP mold resistant	46 SF
Office	Tile 1	Tile 1	Drywall	Drywall	124 SF
Open Office	Tile 1	Tile 1	Drywall	Drywall	303 SF
Reporting	Tile 1	Tile 1	Drywall	Drywall	203 SF
RR-1	Tile 1	Tile 1	Drywall XP	Drywall	51 SF
RR-2	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall	41 SF
RR-3	Epoxy	Epoxy	Drywall XP/ Tile 2	Drywall	46 SF
RR-4	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall	73 SF
Shower	Tile 2	Tile 2	Drywall XP/ Tile 2	Drywall XP mold resistant	49 SF
Stor. 1	Epoxy	Epoxy	Drywall	Drywall	31 SF
Stor. 2	Epoxy	Epoxy	Tooled CMU	Drywall XP mold resistant	105 SF
Transition Rm	Epoxy	Epoxy	Drywall XP/ Tile 2	Drywall XP mold resistant	297 SF
Treatment	Tile 1	Tile 1	Drywall XP/ Tile 2	Drywall XP mold resistant	87 SF
Vest 1	Epoxy	Epoxy	Drywall	Drywall XP mold resistant	38 SF
Vest. 2	Epoxy	Epoxy	Drywall	Drywall XP mold resistant	40 SF
Work Room	Epoxy	Epoxy	Drywall XP/FRP	Drywall XP mold resistant	129 SF



4 A6.2 Storefront Elevations 2
3/8" = 1'-0"

Finish Schedule Notes:

Finish materials based on purchased selection, to be determined by Owner and ID.
Recess slab as needed to accommodate flooring material thickness.

Floors:

Epoxy: *Elite Crete "Stout" High Performance Epoxy Floor Coating or appr equal. 40 mil finish thickness.*
Smooth finish concrete deck. 2-pt epoxy sealer . 1/8" per ft Slope for positive drainage to floor drains. Install per manufacturerer requirements.

Tile 1: Porcelain tile: 24" x 48" 1/8" grout joint or approved equal. Tile shall be installed in accordance with the Stone council of America methods of installation. Installer shall select the method of installation based on the application. Provide anti-crack membrane at all tile areas. Differential Coefficient of Friction >0.42. Mapei Ultraflex LFT mortal or eq.

Tile 3: (Showers and wet areas) Porcelain tile: 2" x 2". 1/8" grout joint or approved equal. Selections through ID. Tile shall be installed in accordance with the Stone council of America methods of installation. Bullnose tile at steps. Installer shall select the method of installation based on the application. Provide anti-crack membrane at all tile areas. At Floors, provide anti-crack membrane at all tile areas. Differential Coefficient of Friction >0.42. Light Gray Finish. AT SHOWER AND WET LOCATIONS, USE SCHLUTER 'DITRA AND KERDI' SYSTEMS AND ACCESSORIES Install per manufacturerer requirements.

Rubber 1 : Rubberized rolled flooring system. Install per manufacturerer requirements.

Base:

Epoxy Base: *Match epoxy floor finish.*
install over 1/2" x5" Durrock backerboard. Radius floor corners. Smooth finish concrete deck, 2-pt epoxy sealer . Install per manufacturerer requirements.

Tile 1: *Daltile base system to match Tile 1 floor. Bullnose edge or approved equal to match floors for sanitary base 4" high min.*

Vinyl: Johnsonite Baseworks TS 4" Color TBD to match flooring. Install per manufacturerer requirements.

Walls:

See wall type descriptions for details.

Drywall: Provide 5/8" gypsum ceiling board secured to furring @16" o.c.with 1-1/2" type "W" bugle head screws spaced 7" O.C. maximum at panel edges and intermediate supports. Drywall finish shall be level 4. Drywall application shall be continuous, including areas to be concealed by drop ceilings.
5/8" drywall level 4 finish typical througout.
-Install 5/8" XP mold resistant gypsum drywall at bottom 48" of all exterior walls and at all bathrooms, utility room.
-Install 5/8" GP DensShield or approved equal at all tile backer locations

FRP: Marlite Standard FRP. Install over MR drywall backing; stagger joints, Install per mfr Recommendations.

Stainless Steel: Stainless Wall Panels w/ Seam Strips & End Caps (481 x 120"H) 18 gauge- type 304 to conform with NSF Standard 51, divider trim, top caps and corner trim as required. Provdie ship drawings Install per manufacturer requirements.

Tile 2: Porcelain tile 6" x 24" 1/8" grout joint or approved equal. Running bond pattern. Selections through ID. Tile shall be installed in accordance with the Stone council of America methods of installation. Bullnose tile at steps. Installer shall select the method of installation based on the application. Provide anti-crack membrane at all tile areas. At Floors, provide anti-crack membrane at all tile areas. Differential Coefficient of Friction >0.42. Light Gray Finish. AT SHOWER AND WET LOCATIONS, USE SCHLUTER 'DITRA AND KERDI' SYSTEMS AND ACCESSORIES Install per manufacturerer requirements.
At shop areas, and areas prone to damage install 48" H SS cornerguards.

Ceilings:

See reflected ceiling plans for layout.

Drywall: Underside of concrete floor or lightgauge framing : Provide 5/8" gypsum ceiling board secured to furring to trusses @16" o.c. above with 1-1/2" type "W" bugle head screws spaced 7" O.C. maximum at panel edges and intermediate supports. Drywall finish shall be level 4. Drywall application shall be continuous, including areas to be concealed by drop ceilings.

5/8" drywall level 4 finish typical throughout.
-Install 5/8" XP mold resistant gypsum drywall at all bathrooms, utility rooms wet areas.

Lars W Young Inc

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Finish Schedules 2

STATE OF FLORIDA · LARS W YOUNG · AR0016755 · REGISTERED ARCHITECT · Florida License AR0016755

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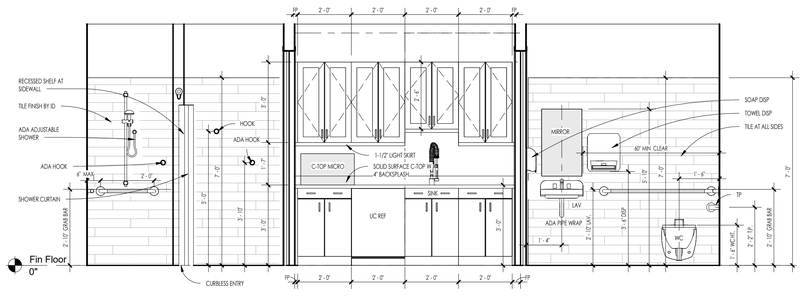
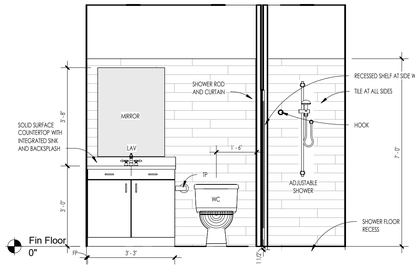


Fin Floor 0"

1 A6.3 Elevation 1 Open Office
3/8" = 1'-0"



Fin Floor 0"

2 A6.3 Elevation 2 Typical Bathroom
3/8" = 1'-0"
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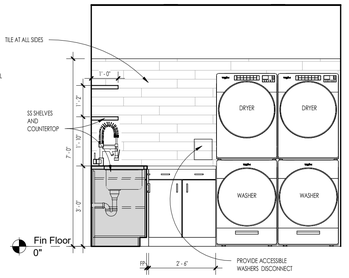
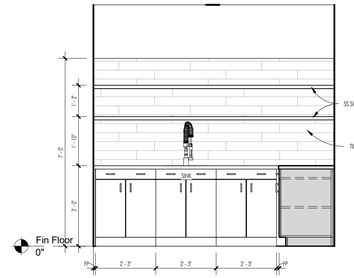


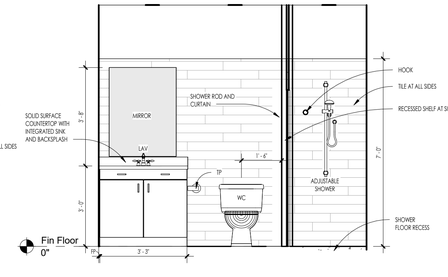
Fin Floor 0"

3 A6.3 Bunker Laundry 1
3/8" = 1'-0"



Fin Floor 0"

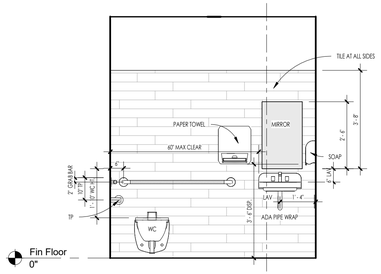
4 A6.3 Bunker Laundry 2
3/8" = 1'-0"



Fin Floor 0"

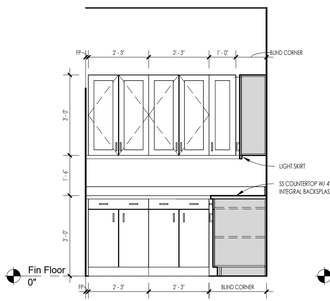
5 A6.3 Bath 4 (Battalion)
3/8" = 1'-0"
(PRIVATE USE ONLY)

10



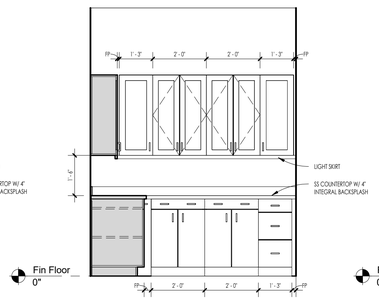
Fin Floor 0"

6 A6.3 Restroom 2
3/8" = 1'-0"



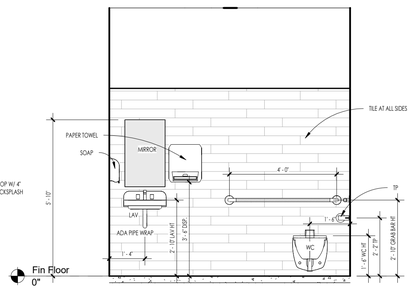
Fin Floor 0"

7 A6.3 EMS Storage 1
3/8" = 1'-0"



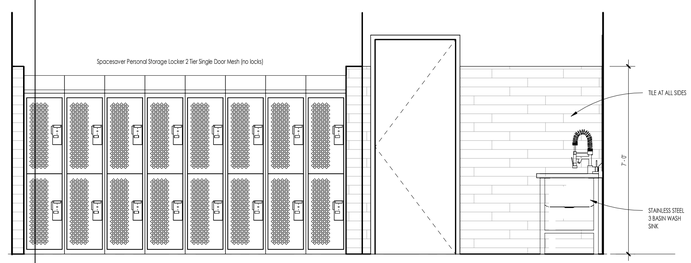
Fin Floor 0"

8 A6.3 EMS Storage 2
3/8" = 1'-0"



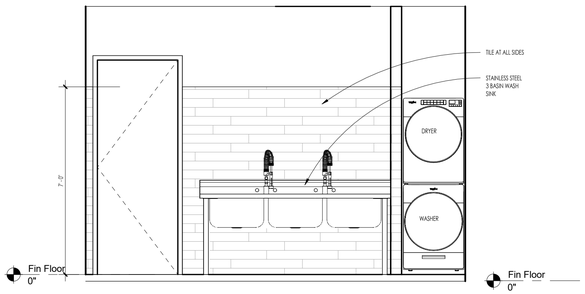
Fin Floor 0"

9 A6.3 Restroom 3
3/8" = 1'-0"



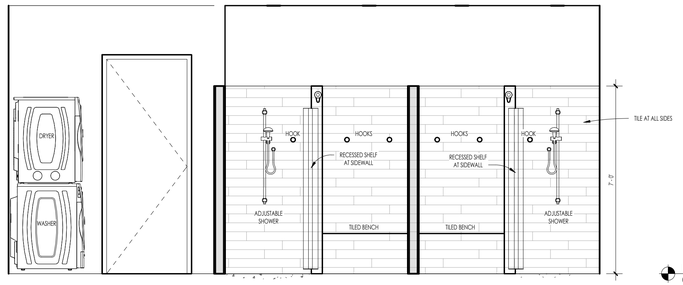
Fin Floor 0"

10 A6.3 Transition Room 1
3/8" = 1'-0"



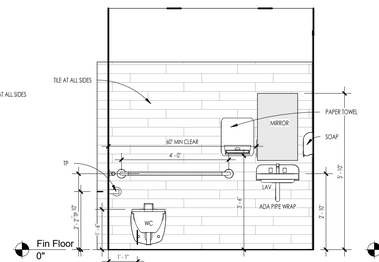
Fin Floor 0"

11 A6.3 Transition Room 2
3/8" = 1'-0"



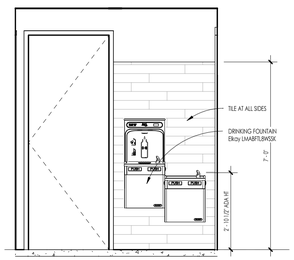
Fin Floor 0"

12 A6.3 Transition Room 3
3/8" = 1'-0"



Fin Floor 0"

13 A6.3 Restroom 4
3/8" = 1'-0"



Fin Floor 0"

14 A6.3 Drinking Fountain
3/8" = 1'-0"

Interior Elevation Notes

1. See sheets A0.10-12 for required mount height of wall reinforcing an grab bar locations.
2. Wall tile selection to be determinded by ID. Final partial height wall height determind by tile size.
3. Wall mounted paper tower dispensers, soap dispensers, toilet paper dispensers based on ID selections. See sheets A0.10-12 for required mount heights.
4. See ID drawings for additional interior elevations and details.
5. Provide 8" x 12" recessed shelf and hook at all showers
6. Provide (2) hooks at all shower changing areas
7. Provide 2x6 PT blocking at all cabinets, shelves, lockets, grab bar, and accessory locations. Provide an additional 50 linear feet of 2x6 pt blocking, locations TBD by the District.

Countertop and Cabinets

Manufacturer to supply shop drawings for review and approval. Fabricate and install per manufacturer requirements.

1. Acyric Polymer Solid Surface Countertop, and Sink (where applicable)- Corain Solid Surface countertop with "Accessible 8254" integrated sink and backsplash.
   Color Selections: Sink- Glacier White
   Countertop- Neutral Concrete
2. Stainless Steel Countertop and Shelves- ASTM A240 16 ga 304 stailness steel sheet,1-1/2" thick formed edge, coved integrated backsplash, top edge and return flange. factory weld sinks, add sound deadening at sinks.
3. Butcher Block Countertop- "Hardwood Reflections" Acacia 1-1/2" thick countertop and backsplash or approved equal. Miter corner seams. Seal with manufacturere approved oil per requirements.
4. Stainless Steel Cabinetry- JW Metals "Stainless Supply" or eq, 304 Stainless Steel. 18 ga framing, 14 ga foundational 4" wire pull (Liberty P604DC-SC-C1 or eq)
5. Cabinetry- WeatherStrong HDPE cabinetry Lower cabinets-"Miami" Upper cabinets-"Sanibel" Stainless steel legs, snap on toe kicks, 4" wire pull (Liberty P604DC-SC-C1 or eq)
   Color Selection: Lighthouse Gray (Final selection based on submitted samples by mfr)

Accessories

See Interior elevationa an ADA guidelines for mounting heights

Paper Towel Dispenser-	Georgia-Pacific EnMotion 59462A Plastic Black
Toilet Paper Dispenser-	Georgia- Pacific 56796A Steel Stainless
Soap Dispenser-	Gojo LTX 1200ml, H-5066 Plastic Black/Grey

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110

For: North Collier Fire Control & Rescue District

Interior Elevations

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
Naples, FL 34109
Phone: 239.591.8899
lwyarch@gmail.com

STATE OF FLORIDA — LARS W. YOUNG — AR0016755 — REGISTERED ARCHITECT — Florida License AR0016755

A6.3

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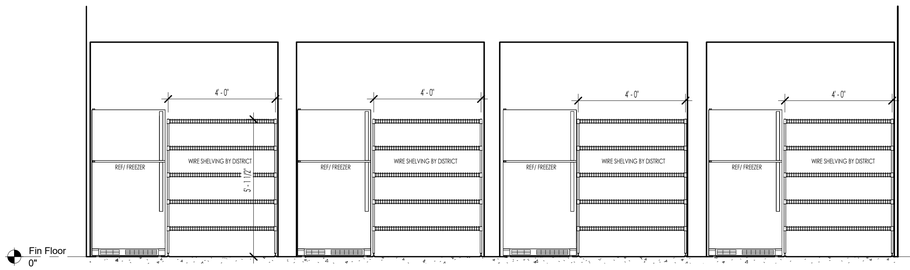
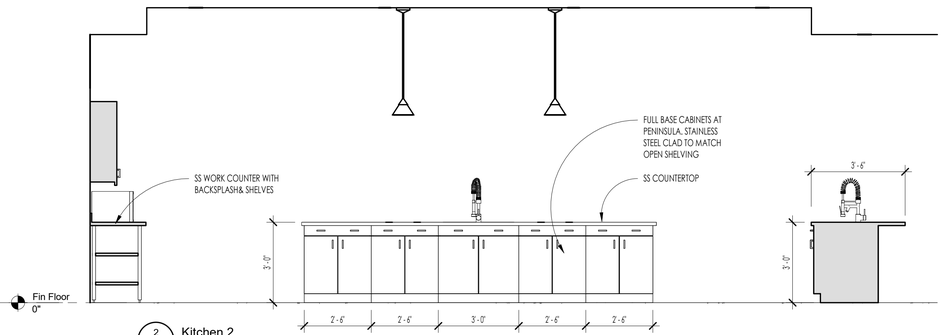
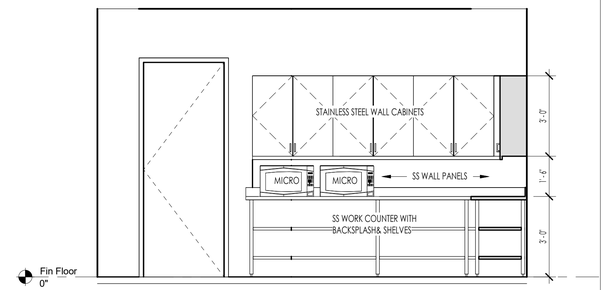


1 A6.4 Kitchen 1
3/8" = 1'-0"



2 A6.4 Kitchen 2
3/8" = 1'-0"



3 A6.4 Kitchen 3
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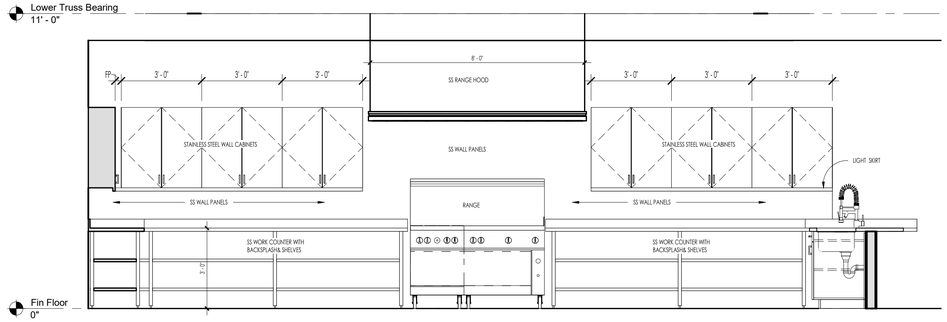
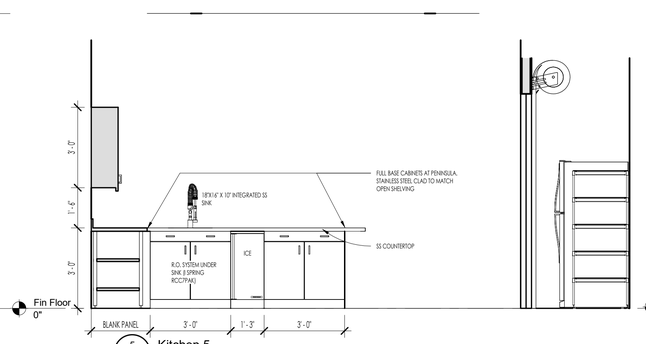
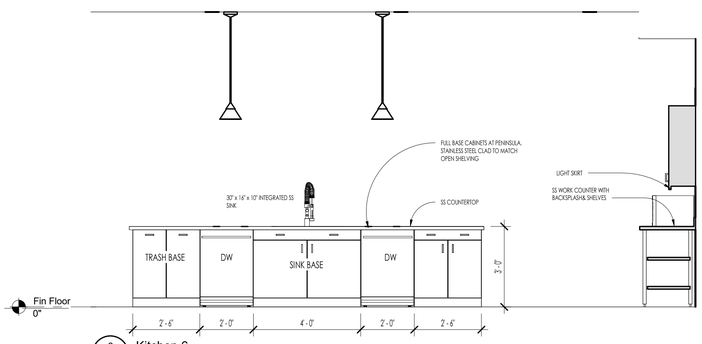


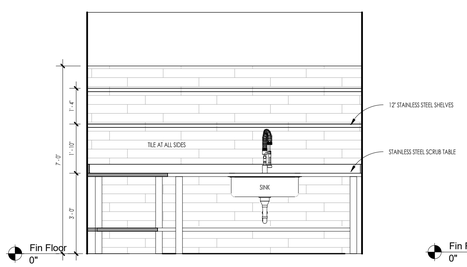
4 A6.4 Kitchen 4
3/8" = 1'-0"



5 A6.4 Kitchen 5
3/8" = 1'-0"

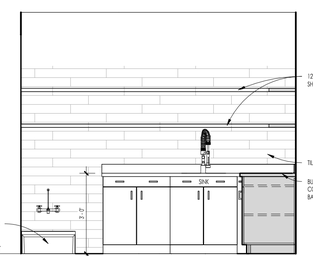


6 A6.4 Kitchen 6
3/8" = 1'-0"

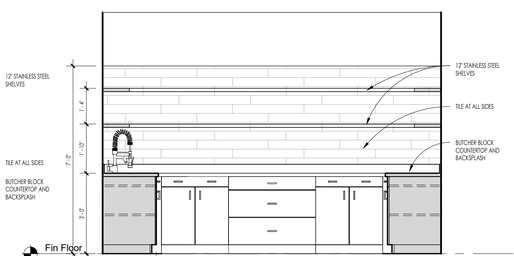


7 A6.4 Gear Cleaning 1
3/8" = 1'-0"

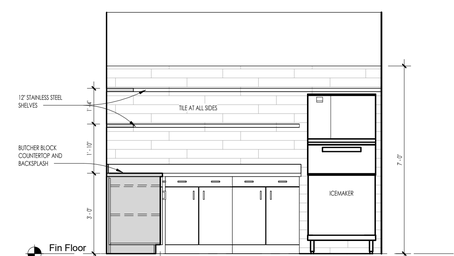
8 A6.4 Gear Cleaning 2
3/8" = 1'-0"



9 A6.4 Work Room 1
3/8" = 1'-0"



10 A6.4 Work Room 2
3/8" = 1'-0"



11 A6.4 Work Room 3
3/8" = 1'-0"

Interior Elevation Notes

1. See sheets A0.10-12 for required mount height of wall reinforcing an grab bar locations.
2. Wall tile selection to be determinded by ID. Final partial height wall height determind by tile size.
3. Wall mounted paper tower dispensers, soap dispensers, toilet paper dispensers based on ID selections. See sheets A0.10-12 for required mount heights.
4. See ID drawings for additional interior elevations and details.
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Countertop and Cabinets

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   Countertop- Neutral Concrete
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3. Butcher Block Countertop- "Hardwood Reflections" Acacia 1-1/2" thick countertop and backsplash or approved equal. Miter corner seams. Seal with manufacturere approved oil per requirements.
4. Stainless Steel Cabinetry- JW Metals "Stainless Supply" or eq, 304 Stainless Steel, 18 ga framing, 14 ga foundational 4" wire pull (Liberty P604DC-SC-C1 or eq)
5. Cabinetry- WeatherStrong HDPE cabinetry Lower cabinets-"Miami" Upper cabinets-"Sanibel" Stainless steel legs, snap on toe kicks, 4" wire pull (Liberty P604DC-SC-C1 or eq)
   Color Selection: Lighthouse Gray (Final selection based on submitted samples by mfr)

Accessories

See Interior elevationa dn ADA guidelines for mounting heights

Paper Towel Dispenser-	Georgia-Pacific EnMotion 59462A Plastic Black
Toilet Paper Dispenser-	Georgia- Pacific 56796A Steel Stainless
Soap Dispenser-	Gojo LTX 1200mL H-5066 Plastic Black/Grey

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Interior Elevations 2

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
Naples, FL 34109
Phone: 239.591.8899
lwyarch@gmail.com
STATE OF FLORIDA
LARS W YOUNG
AR0016755
REGISTERED ARCHITECT
Florida Registration Number 0016755

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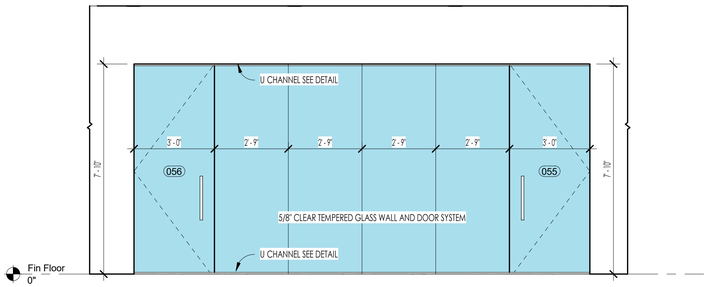
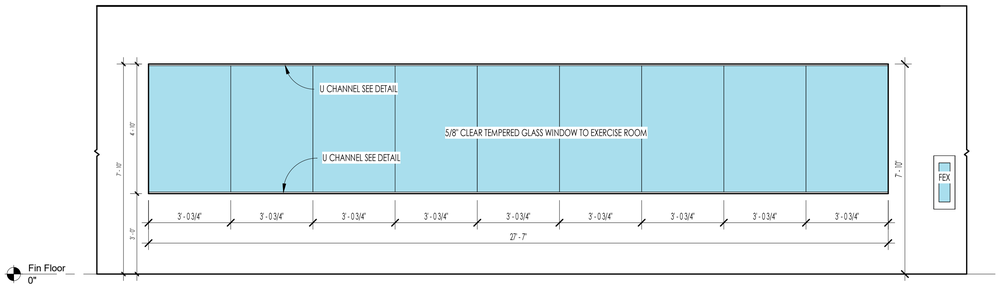
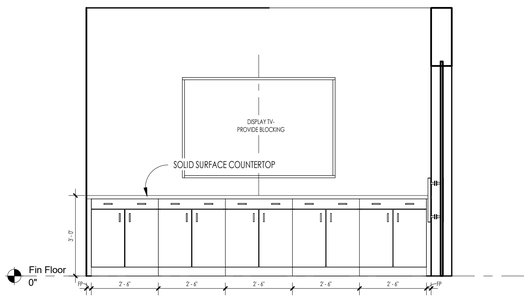


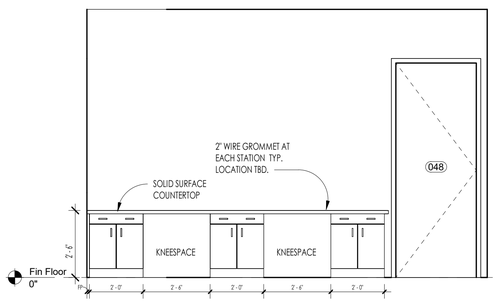
1 A6.5 Conf Room Glass Wall
3/8" = 1'-0"



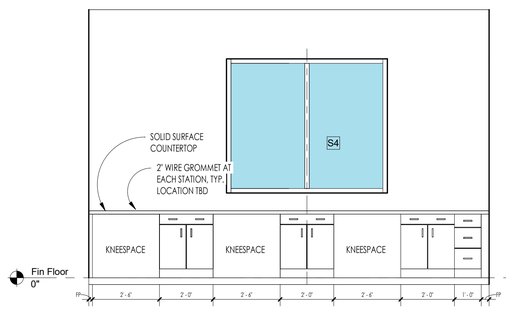
2 A6.5 Day Room to Exercise Room
3/8" = 1'-0"



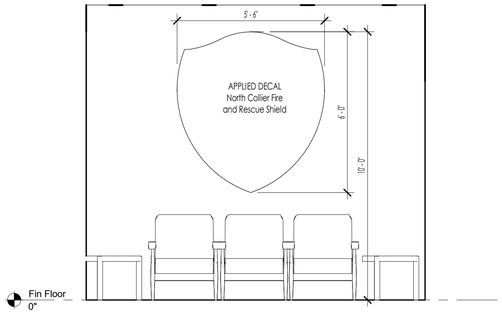
3 A6.5 Conference Room Wall
3/8" = 1'-0"



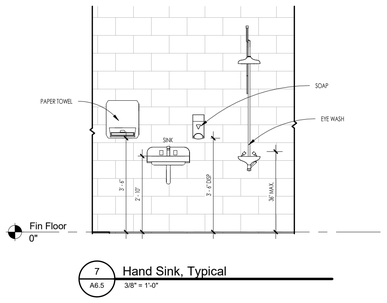
4 A6.5 Reporting Room Wall 1
3/8" = 1'-0"



5 A6.5 Reporting Room Wall 2
3/8" = 1'-0"



6 A6.5 Lobby Wall
3/8" = 1'-0"



7 A6.5 Hand Sink, Typical
3/8" = 1'-0"

Interior Elevation Notes

1. See sheets A0.10-12 for required mount height of wall reinforcing an grab bar locations.
2. Wall tile selection to be determinded by ID. Final partial height wall height determind by tile size.
3. Wall mounted paper tower dispensers, soap dispensers, toilet paper dispensers based on ID selections. See sheets A0.10-12 for required mount heights.
4. See ID drawings for additional interior elevations and details.
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7. Provide 2x6 PT blocking at all cabinets, shelves, lockets, grab bar, and accessory locations. Provide an additional 50 linear feet of 2x6 pt blocking, locations TBD by the District.

Countertop and Cabinets

Manufacturer to supply shop drawings for review and approval. Fabricate and install per manufacturer requirements.

1. Acyric Polymer Solid Surface Countertop, and Sink (where applicable)- Corain Solid Surface countertop with "Accesible 8254" integrated sink and backsplash.
   Color Selections: Sink- Glacier White
   Countertop- Neutral Concrete
2. Stainless Steel Countertop and Shelves- ASTM A240 16 ga 304 stailness steel sheet.1-1/2" thick formed edge, coved integrated backsplash, top edge and return flange. factory weld sinks, add sound deadening at sinks.
3. Butcher Block Countertop- "Hardwood Reflections" Acacia 1-1/2" thick countertop and backsplash or approved equal. Miter corner seams. Seal with manufacturere approved oil per requirements.
4. Stainless Steel Cabinetry- JW Metals "Stainless Supply" or eq. 304 Stainless Steel. 18 ga framing. 14 ga foundational 4" wire pull (Liberty P604DC-SC-C1 or eq)
5. Cabinetry- WeatherStrong HDPE cabinetry Lower cabinets-"Miami" Upper cabinets-"Sanibel" Stainless steel legs, snap on toe kicks. 4" wire pull (Liberty P604DC-SC-C1 or eq)
   Color Selection: Lighthouse Gray (Final selection based on submitted samples by mfr)

Accessories

See Interior elevationa dn ADA guidelines for mounting heights

Paper Towel Dispenser-	Georgia-Pacific EnMotion 59462A Plastic Black
Toilet Paper Dispenser-	Georgia- Pacific 56796A Steel Stainless
Soap Dispenser-	Gojo LTX 1200mL H-5066 Plastic Black/Grey

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110

For: North Collier Fire Control & Rescue District

Interior Elevations 3

STATE OF FLORIDA · LARS W YOUNG · AR0016755 · REGISTERED ARCHITECT · Florida

Lars W Young Inc
Architecture
6961 Sable Ridge Ln
Naples, FL 34109
Phone: 239.591.8899
lwyarch@gmail.com

A6.5

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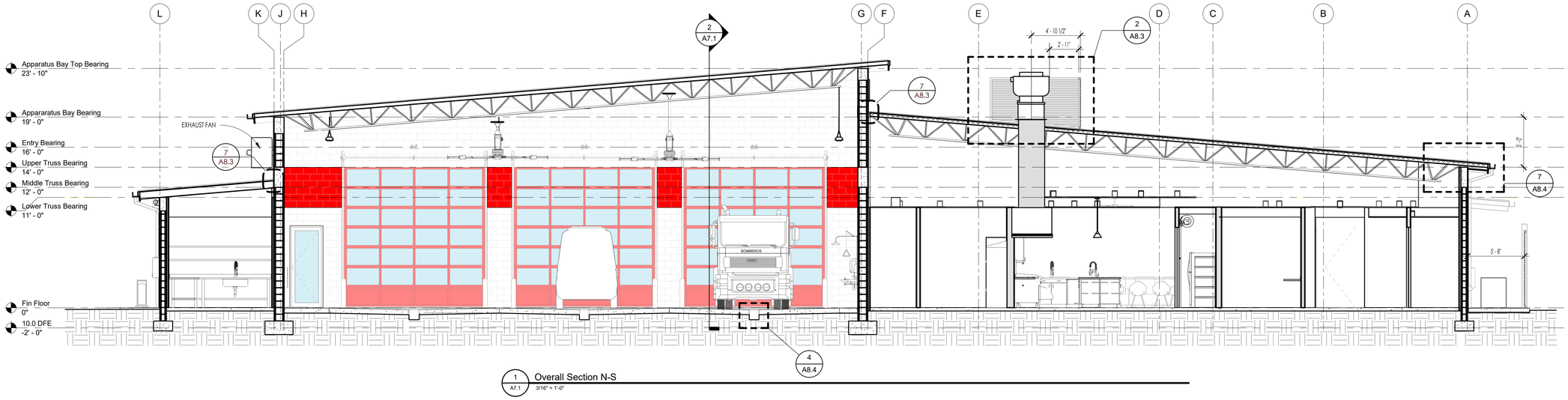
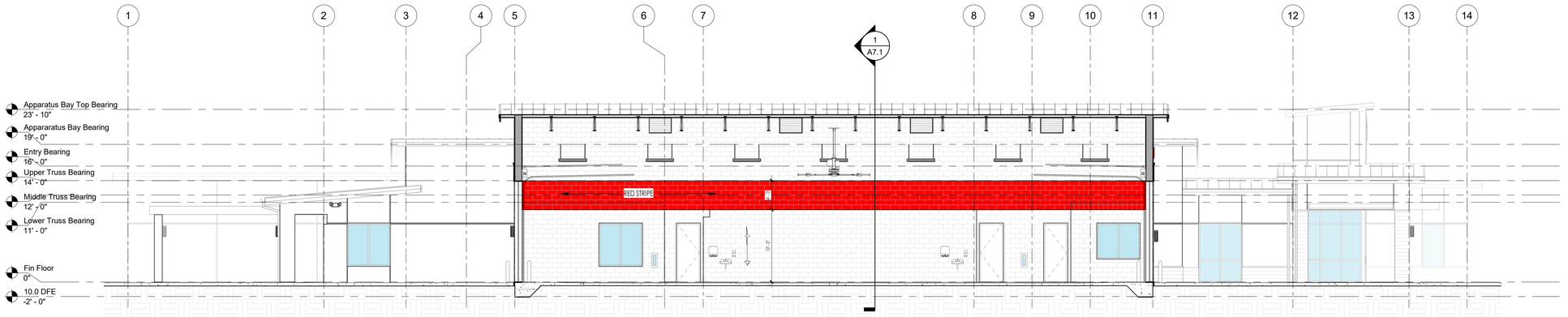


1 A7.1 Overall Section N-S
3/16" = 1'-0"



2 A7.1 Overall Section E-W
1/8" = 1'-0"

Section Legend:

1. GYPSUM BOARD- 5/8" GYPSUM BOARD WITH LEVEL 4 FINISH OVER FRAMING AT 16" O.C.
2. DROPPED HEADER- LIGHTGAUGE METAL FRAMING @ 24" O.C. W/ 5/8" GYPSUM BOARD FINISH ALL SIDES
3. SOFFIT/ DROPPED CEILING- DROPPED CEILING-5/8" GYPSUM CEILING WITH LEVEL 4 FINISH OVER LIGHT GAUGE METAL CEILING FRAMING @ 16" O.C. SEE R.C. PLAN AND SCHEDULES FOR HEIGHT, ETC.
4. M.R. DRYWALL CEILING- 5/8" XP DRYWALL ATTACH TO UNDERSIDE OF WOOD TRUSSES.
5. STUCCO-5/8" SMOOTH FINISH STUCCO OVER CONCRETE/ CONCRETE MASONRY. SEE ELEVATIONS FOR PATTERNS. USE LINK BONDING AGENT OVER CAST CONCRETE SURFACES. INSTALL PER MFR RECOMMENDATIONS. SEE WALL TYPES FOR FINISHING.
6. STUCCO OVER RIBLATH- 3/4" SAND FINISH STUCCO OVER GALV METAL RIBLATH ATTACHED TO LIGHTGAUGE METAL FRAMING.
7. VAPOR BARRIER- 6 MIL VAPOR BARRIER BELOW SLAB.
8. ALUMINUM DRIP- "STRIPPED IN" DRIP EDGE TO MATCH ROOF FINISH.
9. CONTROL JOINT- PVC CONTROL JOINT AS REQUIRED. VERIFY LOCATIONS PRIOR TO INSTALLATION.
10. WINDOW- MANUFACTURER SHALL PROVIDE ENGINEERING/ NOA TO COMPLY WITH FBC LATEST EDITION. SEE STRUCTURAL DRAWINGS FOR DESIGN PRESSURES.
11. ENTRY DOOR- MANUFACTURER SHALL PROVIDE ENGINEERING/ NOA TO COMPLY WITH FBC LATEST EDITION. SEE STRUCTURAL DRAWINGS FOR DESIGN PRESSURES.
12. BAR JOIST- SEE STRUCTURAL ENGINEERING
13. METAL ROOF DECK-SEE STRUCTURAL ENGINEERING
14. FASCIA- AZEK 5/4X12 AND 5/4X6 TRIM FASCIA, INSTALL PER MFR RECOMMENDATIONS.
15. ROOF SOFFIT- 3/4" SMOOTH FINISH STUCCO OVER GALV RIBLATH. INSTALL BLOCKING WHERE NEEDED.
16. ROOFING SYSTEM- SEE ROOF PLAN FOR DETAILS
17. CONCRETE BEAM- REINFORCED CONCRETE BEAM SEE STRUCTURAL DRAWINGS FOR INFO.
18. LINTEL- PRECAST CONCRETE LINTEL. SEE STRUCTURAL DRAWINGS FOR DETAILS AND FOR BEAM OPTIONS.
19. MASONRY OPENING WATERPROOFING- LIQUID APPLIED MASONRY WATERPROOFING AGENT (VULKEM 350 OR EQ.) AT PERIMETER OF OPENING OUT TO 2'. APPLY 2 COATS MIN. TO OPENING FACE. SEE DETAILS.
20. DRIP EDGE- CONTINUOUS STUCCO DRIP.
21. FLOOR FINISH- OWNER TO SELECT FINISHES. CONTRACTOR SHALL COORDINATE SLAB RECESS REQUIREMENTS ACCORDING TO FINISH MATERIAL. FINAL SELECTION BY OWNER.
22. BASEBOARD- SEE FINISH SCHEDULE.
23. ROOF INSULATION- 1/2# OPEN CELL SPRAY INSULATION **R-38** (ICYNENE OR EQ.) AT CEILINGS AT A/C AREAS. COAT WITH DC315 INTUMESCENT COATING THERMAL & IGNITION BARRIER.
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25. PARTITION- 5/8" DRYWALL OVER 3-5/8" LIGHTGAUGE METAL FRAMING (OR AS SHOWN ON PLAN) @ 16" O.C. SEE DETAILS FOR SPECIAL FRAMING CONSIDERATIONS. DRYWALL TO HAVE LEVEL 4 FINISH UNLESS SPECIFIED OTHERWISE. INSTALL OPEN CELL INSULATION WHERE SHOWN ON PLANS.
26. CONCRETE SLAB- REINFORCED CONCRETE SLAB. SEE STRUCTURAL DETAILS FOR INFO.
27. FILL- TERMITE TREATED COMPACTED FILL. DENSITY ASTM D1557. COMPACT IN 12" LIFTS.
28. GUTTER AND DOWNSPOUT SYSTEM- SEE OVERHANG DETAIL FOR INFO. CONNECT TO STORMWATER MANAGEMENT
29. MASONRY WALL- 7-5/8" OR 11-5/8" CONCRETE REINFORCED MASONRY WALL. SEE STRUCTURAL PLANS FOR DETAILS
30. SLOPE GRADE- SLOPE FINISH GRADE AWAY FROM BUILDING.
31. WEEP SCREED- PVC STUCCO WEEP SCREED 2" ABOVE GRADE.
32. APPARATUS BAY DOOR- SEE DOOR SCHEDULE.
33. WATERPROOFING- TREMCO PARASEAL APPLIED TO FILLED SIDE OF STEM WALL. SEE MFR FOR APPLICATION INSTRUCTIONS.
34. MECHANICAL SCREEN- SEE DETAIL FOR FURTHER INFO.
35. STONE CLADDING- SEE ELEVATIONS AND DETAILS FOR FURTHER INFO.
36. UPBLAST FAN- SEE MECHANICAL ENGINEERING AND DETAIL SHEETS FOR MORE INFO.
37. CEILING INSULATION- 5-1/2", SOUND ATTENUATING UNFACED FIBERGLASS BATTS AT ALL BUNKER ROOM CEILINGS.

No.	Description	Date

Project # 23.1083
Date: 9.30.25
Drawn: Author
Checked: Checker
Scale As indicated

North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110

For: North Collier Fire Control & Rescue District

Sections

STATE OF FLORIDA · LARS W YOUNG · AR0016755 · REGISTERED ARCHITECT · Florida

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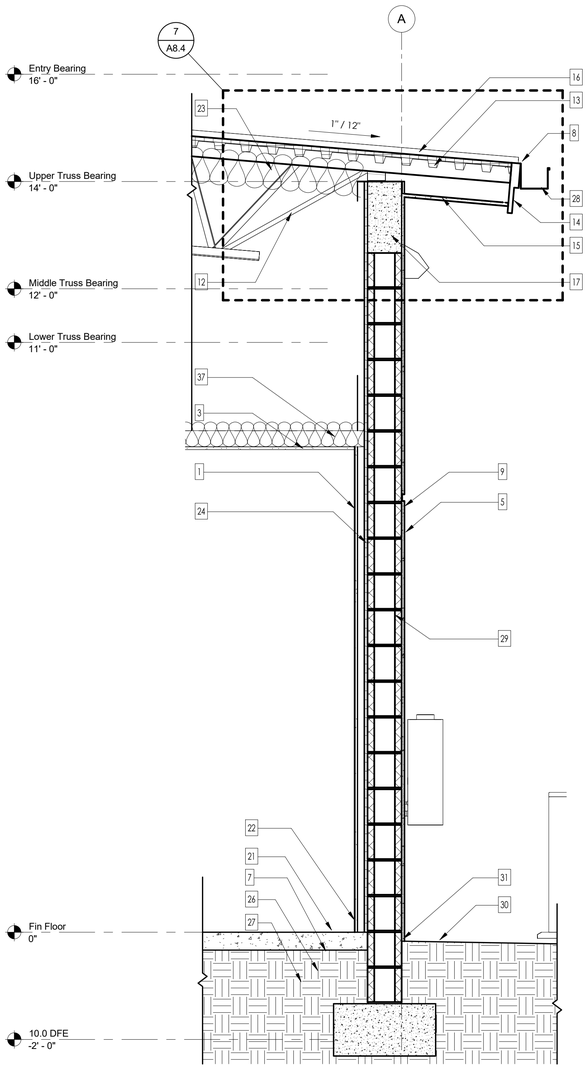
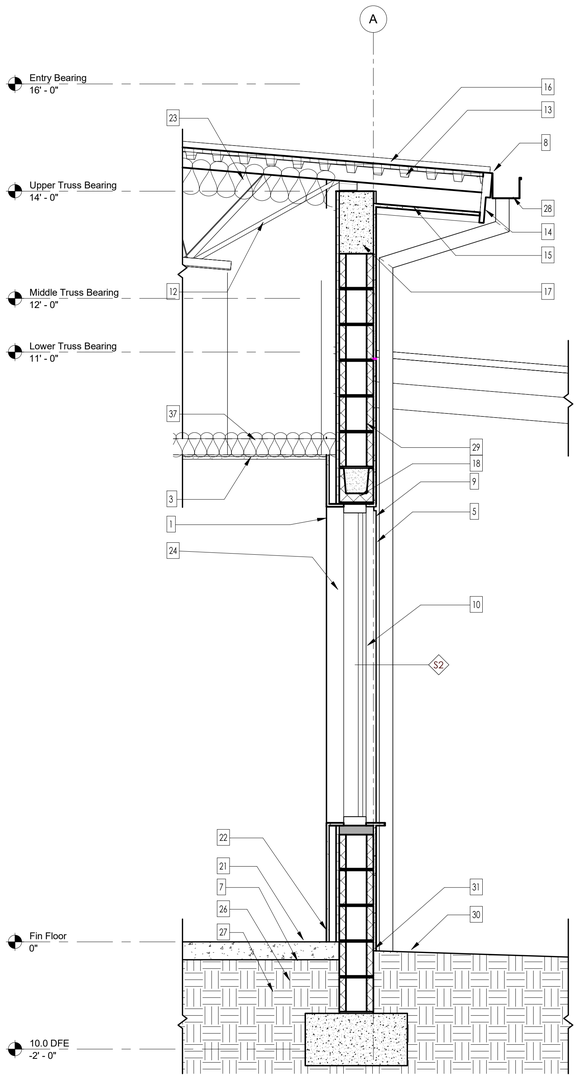
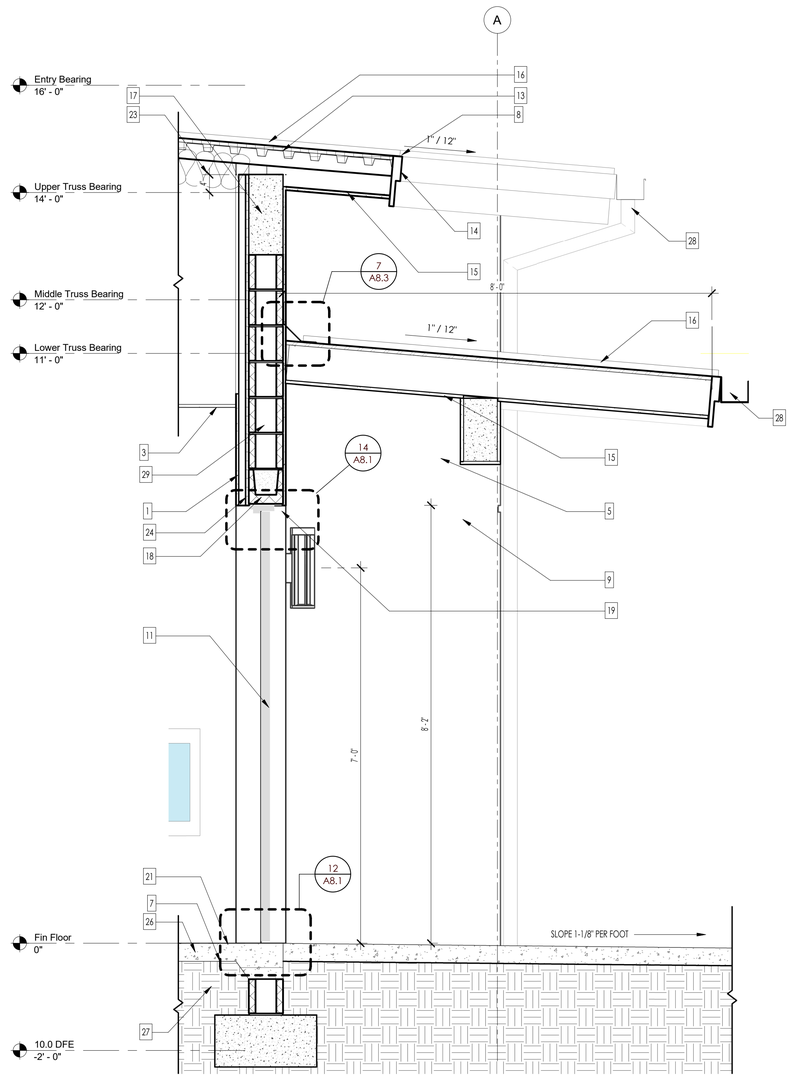


1 Section Typical Wall
A7.2 3/4" = 1'-0"



2 Section Typical Window
A7.2 3/4" = 1'-0"



3 Section at Side Door
A7.2 3/4" = 1'-0"

Section Legend:

1. GYPSUM BOARD- 5/8" GYPSUM BOARD WITH LEVEL 4 FINISH OVER FRAMING AT 16" O.C.
2. DROPPED HEADER- LIGHTGAUGE METAL FRAMING @ 24" O.C. W/ 5/8" GYPSUM BOARD FINISH ALL SIDES
3. SOFFIT/ DROPPED CEILING- DROPPED CEILING-5/8" GYPSUM CEILING WITH LEVEL 4 FINISH OVER LIGHT GAUGE METAL CEILING FRAMING @ 16" O.C. SEE R.C. PLAN AND SCHEDULES FOR HEIGHT, ETC.
4. M.R. DRYWALL CEILING- 5/8" XP DRYWALL ATTACH TO UNDERSIDE OF WOOD TRUSSES.
5. STUCCO-5/8" SMOOTH FINISH STUCCO OVER CONCRETE/ CONCRETE MASONRY. SEE ELEVATIONS FOR PATTERNS. USE LINK BONDING AGENT OVER CAST CONCRETE SURFACES. INSTALL PER MFR RECOMMENDATIONS. SEE WALL TYPES FOR FINISHING.
6. STUCCO OVER RIBLATH- 3/4" SAND FINISH STUCCO OVER GALV METAL RIBLATH ATTACHED TO LIGHTGAUGE METAL FRAMING.
7. VAPOR BARRIER- 6 MIL VAPOR BARRIER BELOW SLAB.
8. ALUMINUM DRIP- "STRIPPED IN" DRIP EDGE TO MATCH ROOF FINISH.
9. CONTROL JOINT- PVC CONTROL JOINT AS REQUIRED. VERIFY LOCATIONS PRIOR TO INSTALLATION.
10. WINDOW- MANUFACTURER SHALL PROVIDE ENGINEERING/ NOA TO COMPLY WITH FBC LATEST EDITION. SEE STRUCTURAL DRAWINGS FOR DESIGN PRESSURES.
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North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Sections 2

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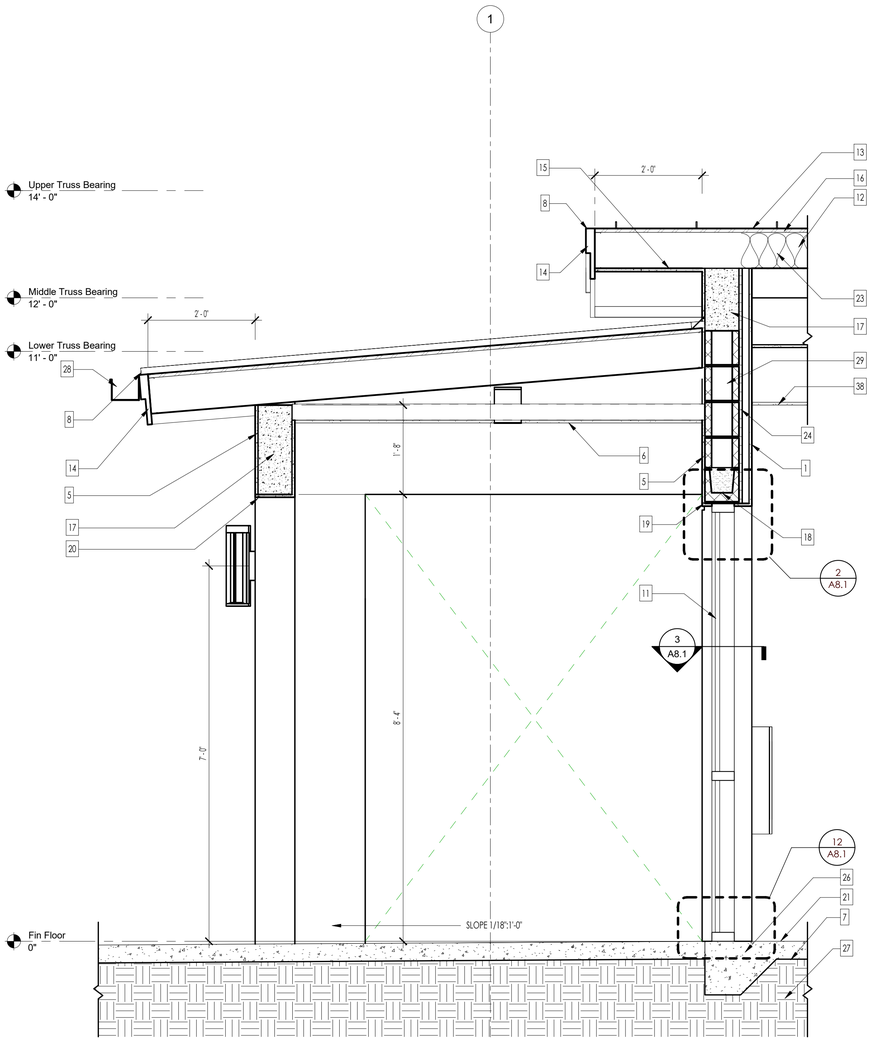
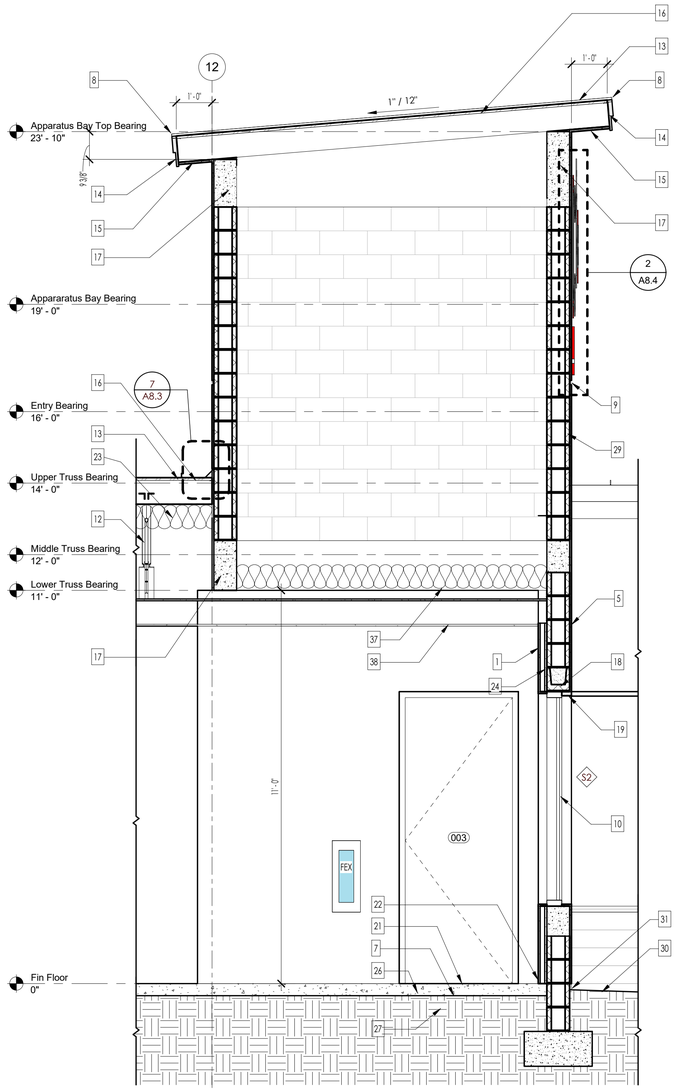


2 Section at Office Entry
A7.3 3/4" = 1'-0"



1 Section at Tower
A7.3 1/2" = 1'-0"

Section Legend:

1. GYPSUM BOARD- 5/8" GYPSUM BOARD WITH LEVEL 4 FINISH OVER FRAMING AT 16" O.C.
2. DROPPED HEADER- LIGHTGAUGE METAL FRAMING @ 24" O.C. W/ 5/8" GYPSUM BOARD FINISH ALL SIDES
3. SOFFIT/ DROPPED CEILING- DROPPED CEILING-5/8" GYPSUM CEILING WITH LEVEL 4 FINISH OVER LIGHT GAUGE METAL CEILING FRAMING @ 16" O.C. SEE R.C. PLAN AND SCHEDULES FOR HEIGHT, ETC.
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North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Sections 3

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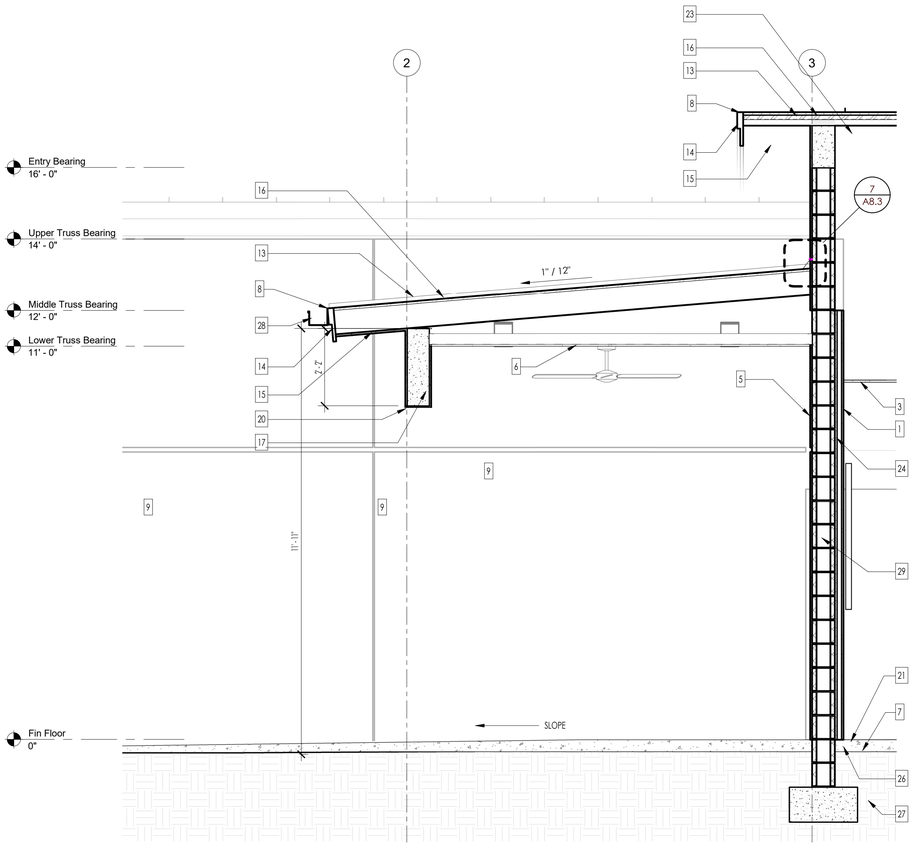
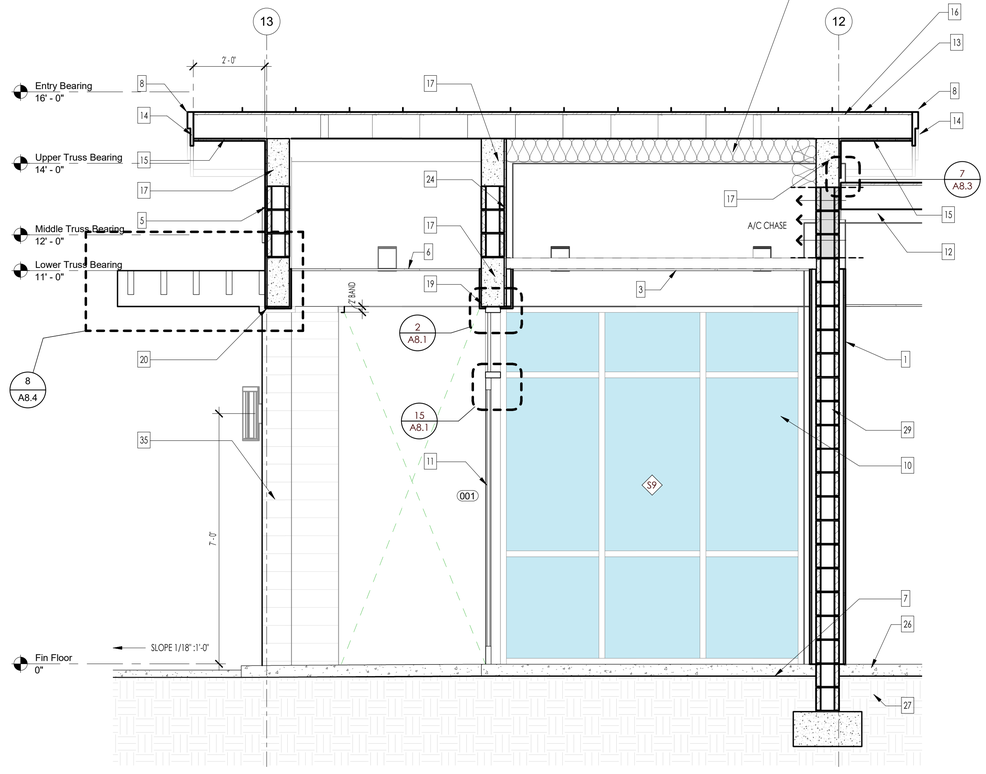


2 A7.4 Section at Porch
1/2" = 1'-0"



1 A7.4 Section at Main Entry
1/2" = 1'-0"

Section Legend:

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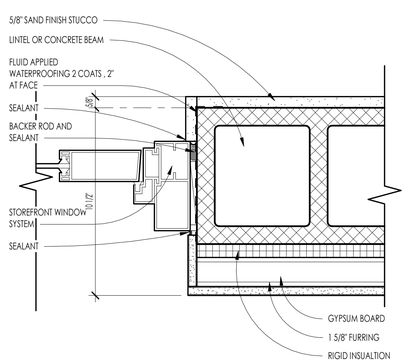
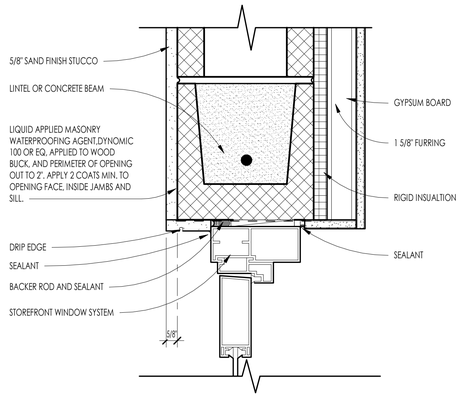
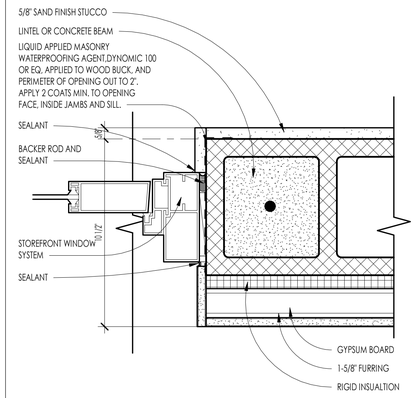


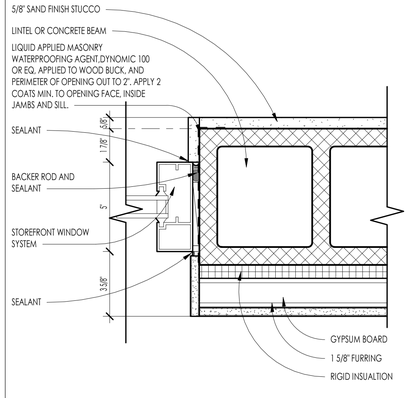
1 A8.1 — Storefront Door- Jamb
3" = 1'-0"



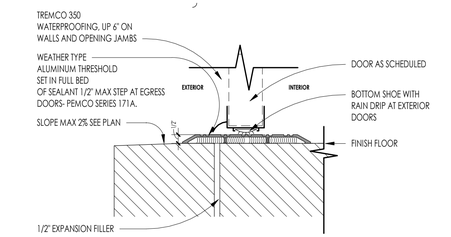
2 A8.1 — Storefront Door- Header
3" = 1'-0"



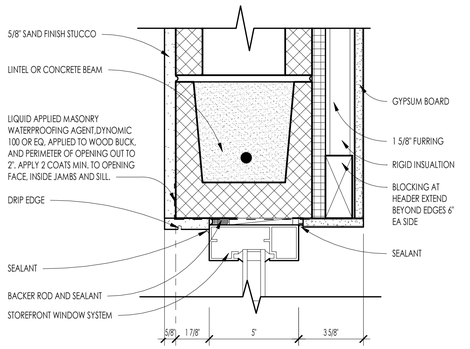
3 A8.1 — Storefront Door- Jamb
3" = 1'-0"



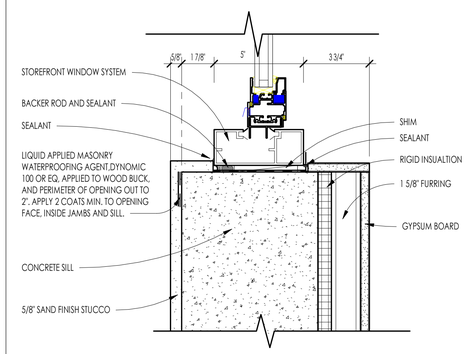
4 A8.1 — Storefront Window- Jamb
3" = 1'-0"



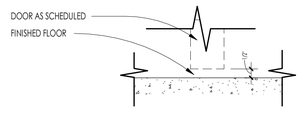
5 A8.1 — Threshold @ HM Exterior Door
3" = 1'-0"



6 A8.1 — Storefront Window- Header
3" = 1'-0"

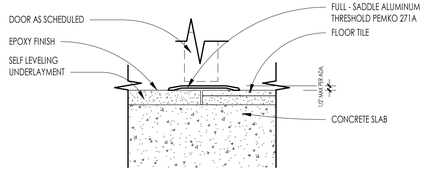


7 A8.1 — Storefront Window- Sill
3" = 1'-0"



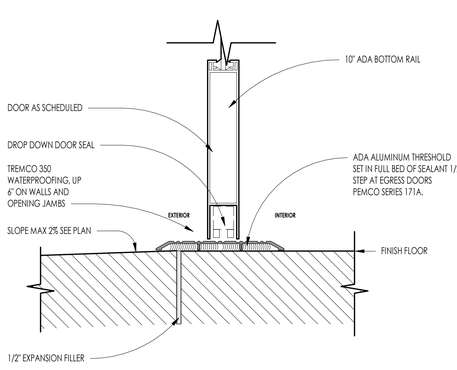
8 A8.1 — Threshold @ Hm Interior Door- Continuous Floor
3" = 1'-0"

9 A8.1 — Threshold @ Apparatus Bay/ Station Doors
3" = 1'-0"

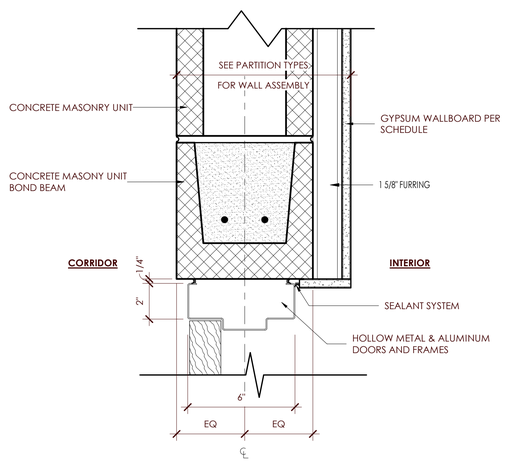


10 A8.1 — Threshold @ Hm Interior Door- Material Change Epoxy Floor
3" = 1'-0"

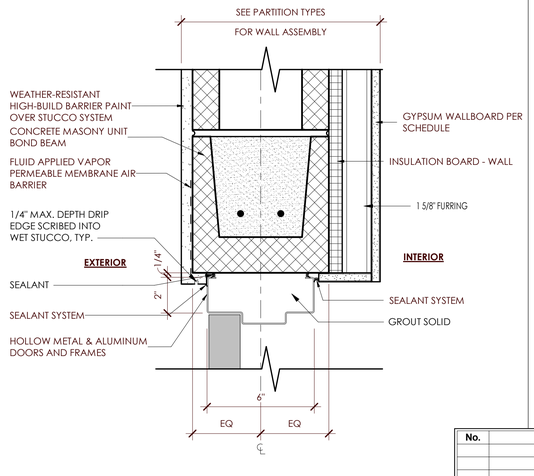
11 A8.1 — Threshold @ Hm Interior Door- Material Change Rubberized Floor
3" = 1'-0"



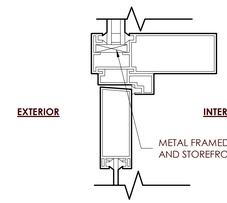
12 A8.1 — Storefront Door Entry Threshold 2
3" = 1'-0"



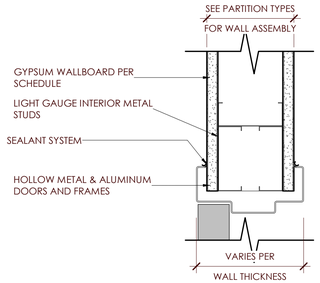
13 A8.1 — HEAD - HM FRAME @ CMU (JAMB SIMILAR)
3" = 1'-0"



14 A8.1 — HEAD - HM FRAME @ CMU (JAMB SIMILAR) Exterior
3" = 1'-0"



15 A8.1 — HEAD - AL FRAME - GLASS DOOR @ TRANSOM1
3" = 1'-0"



16 A8.1 — Door Head HM Frame- Jamb similar
3" = 1'-0"

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Scale 3" = 1'-0"

North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Window and Door Details

STATE OF FLORIDA — LARS W YOUNG — AR0016755 — REGISTERED ARCHITECT

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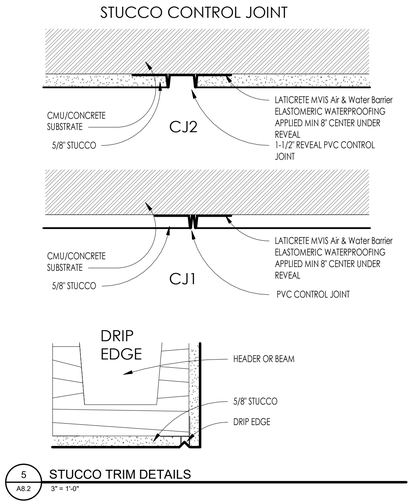
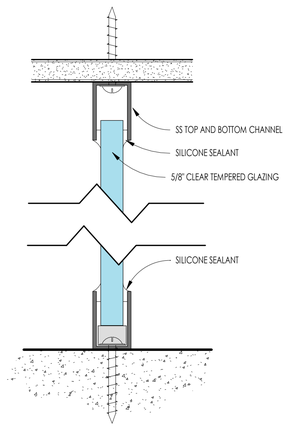
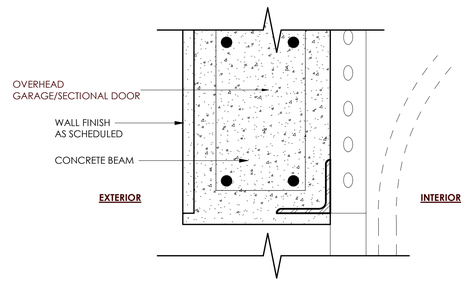


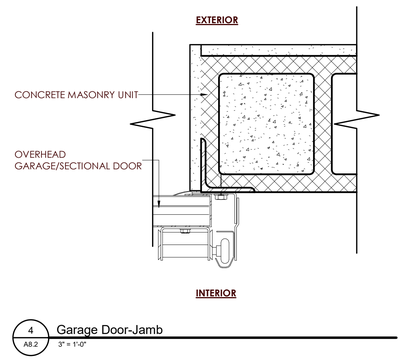
5 / A8.2 STUCCO TRIM DETAILS
3" = 1'-0"



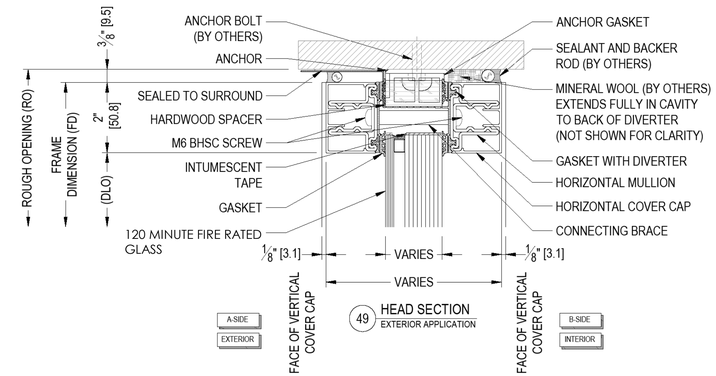
2 / A8.2 Glazing Wall Detail
6" = 1'-0"



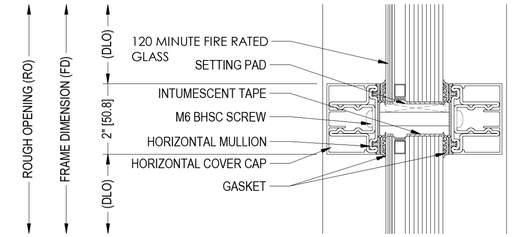
3 / A8.2 Garage Door- Head
3" = 1'-0"



4 / A8.2 Garage Door-Jamb
3" = 1'-0"

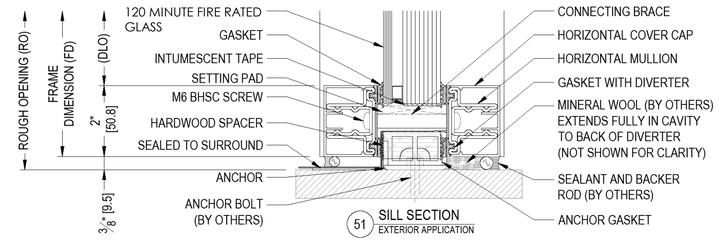


49 HEAD SECTION
EXTERIOR APPLICATION



50 INTERMEDIATE HORIZONTAL MULLION SECTION
EXTERIOR APPLICATION

"FIREFRAMES" ALUMINUM SERIES STOREFRONT SYSTEM FOR 120 MINUTE FOR FIRE PROTECTIVE GLAZING.



51 SILL SECTION
EXTERIOR APPLICATION

1 / A8.2 Fire Rated Window Details
6" = 1'-0"

No.	Description	Date

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North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Window and Door Details

Lars W Young Inc
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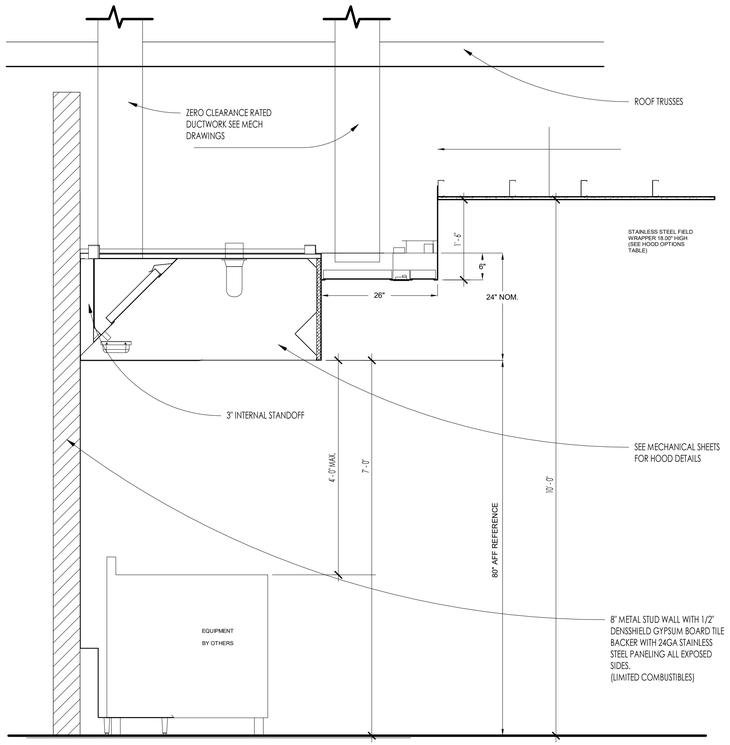
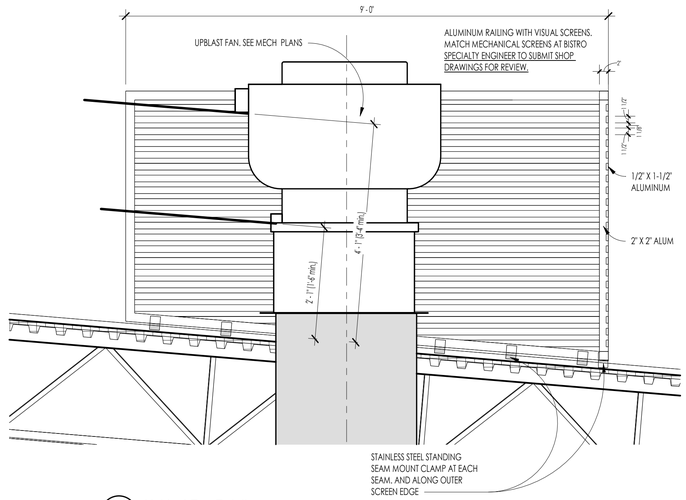
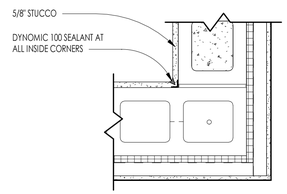


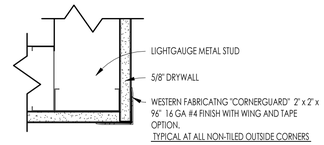
1 A8.3 **Hood Detail at Kitchen**
3/4" = 1'-0"



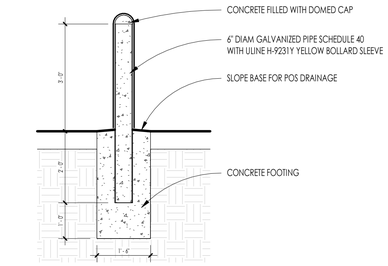
2 A8.3 **Upblast Fan Detail**
3/4" = 1'-0"



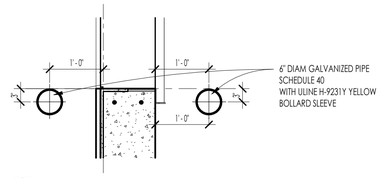
3 A8.3 **Waterproofing Corner Detail**
1 1/2" = 1'-0"



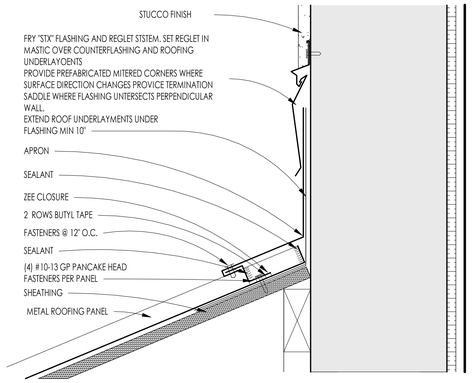
4 A8.3 **Drywall Corner**
3" = 1'-0"



5 A8.3 **Bollard Detail**
1/2" = 1'-0"



6 A8.3 **Bollard Detail @ Bay Doors**
3/4" = 1'-0"



7 A8.3 **Roof Flashing Detail**
3" = 1'-0"

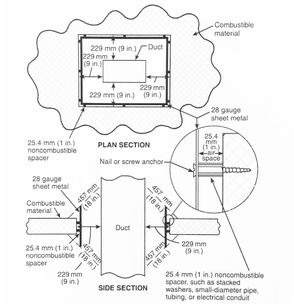


FIGURE A.4.2(g) Example of Clearance Reduction System: 229 mm (9 in.) Clearance to Combustible Material.

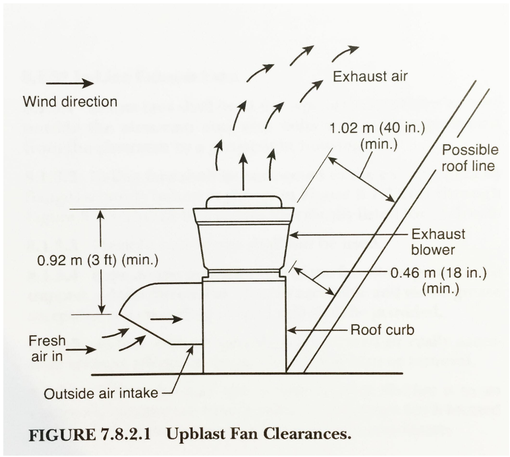
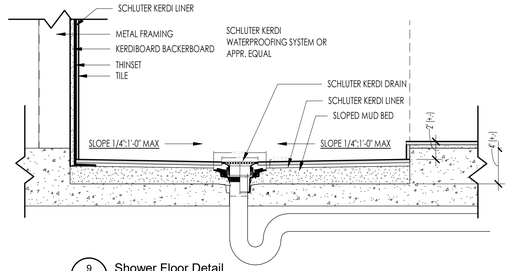
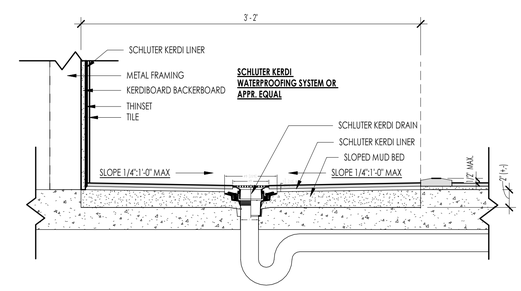


FIGURE 7.8.2.1 Upblast Fan Clearances.

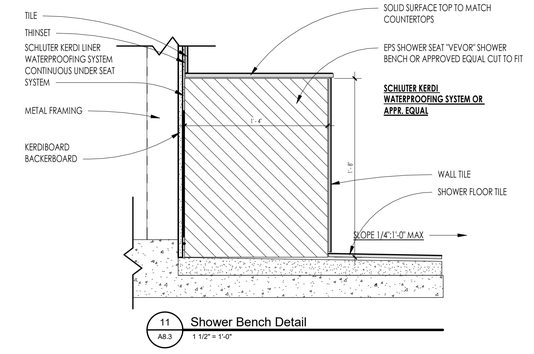
8 A8.3 **Hood Exhaust Details**
1/2" = 1'-0"



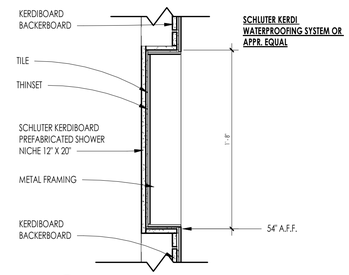
9 A8.3 **Shower Floor Detail**
1 1/2" = 1'-0"



10 A8.3 **Shower Floor Detail ADA**
1 1/2" = 1'-0"



11 A8.3 **Shower Bench Detail**
1 1/2" = 1'-0"



12 A8.3 **Shower Shelf Detail**
1 1/2" = 1'-0"

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North Collier Fire Control and Rescue District
Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Details 3

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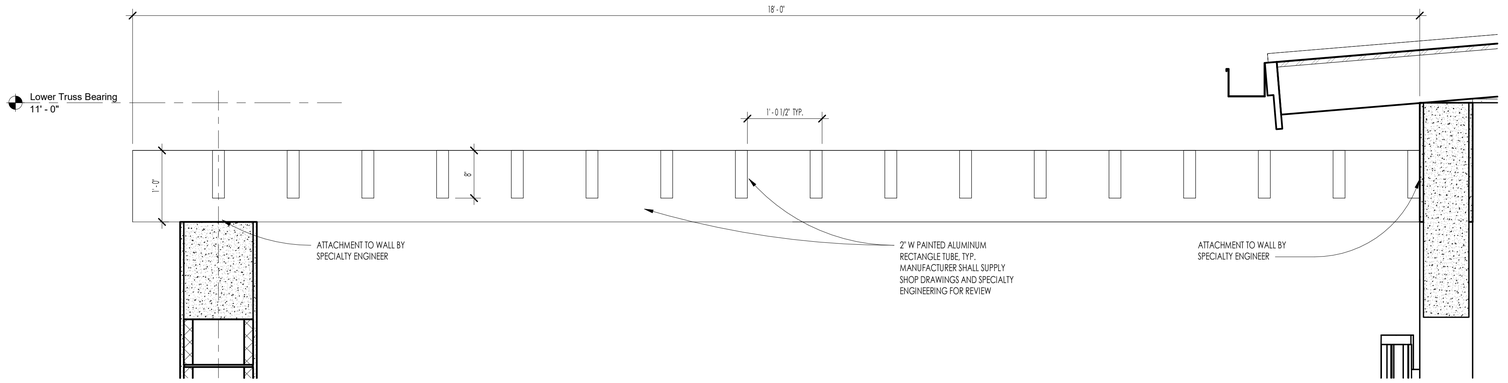
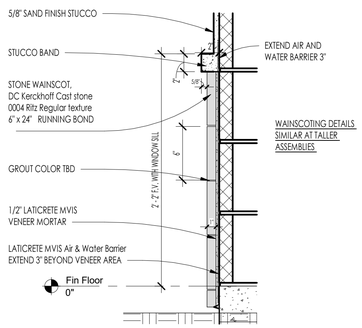


1 A8.4 Porch Canopy Detail
1" = 1'-0"

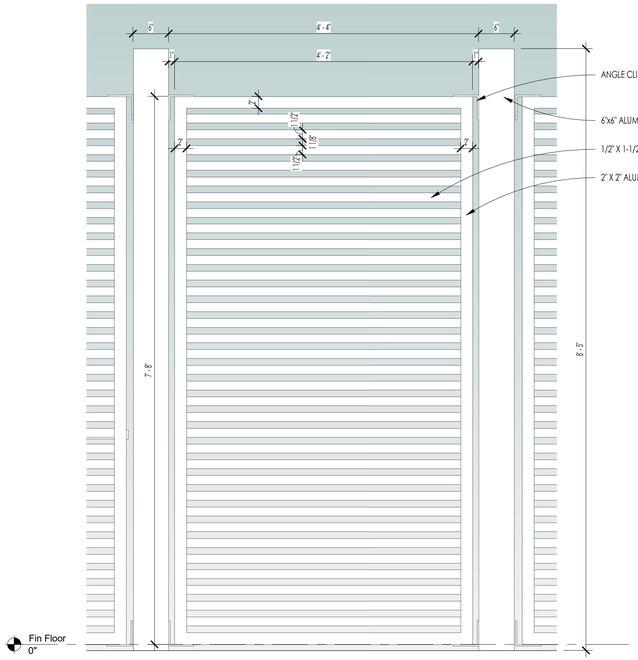
2 A8.4 FD Shield
3/4" = 1'-0"

3 A8.4 Sign Iso

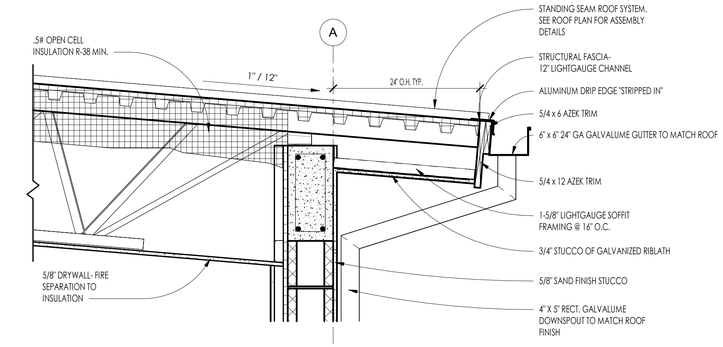
4 A8.4 Apparatus Bay Drain
1 1/2" = 1'-0"



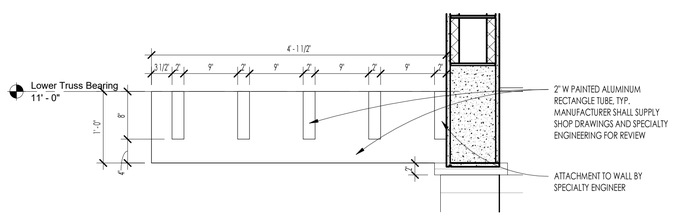
5 A8.4 Wainscot Detail
1 1/2" = 1'-0"



6 A8.4 Mechanical Screen
1" = 1'-0"



7 A8.4 Overhang Detail
1" = 1'-0"



8 A8.4 Entry Canopy Detail
1" = 1'-0"

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North Collier Fire Control and Rescue District Station #49

COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Details 4

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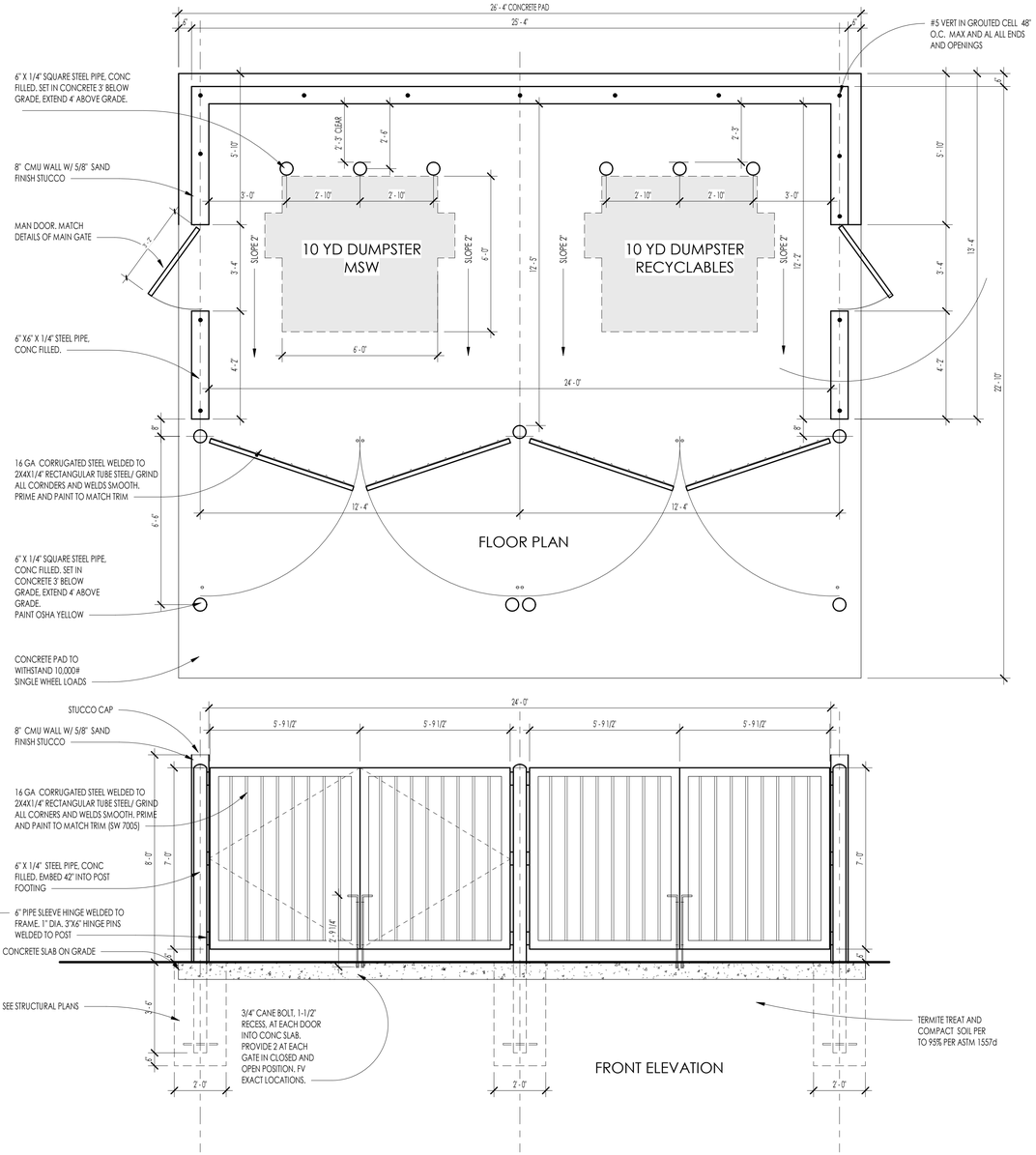

1 A9.1 Dumpster Details
3/8" = 1'-0"

No.	Description	Date

Project #	23.1083
Date:	9.30.25
Drawn:	Author
Checked:	Checker
Scale	3/8" = 1'-0"

North Collier Fire Control and Rescue District Station #49
COCOHATCHEE ROAD NAPLES FLORIDA 34110
For: North Collier Fire Control & Rescue District

Dumpster Details

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