31 S WATER STREET L L C

A NEW SHELL IMPROVEMENT - MULTI-USE SUITES

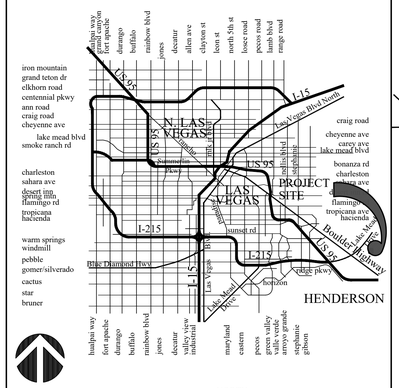
31 WATER STREET

HENDERSON STATE OF NEVADA

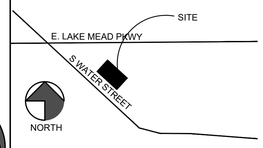
PROJECT DATA

LOCATION:	31 WATER STREET
TENANT:	SHELL
SCOPE:	NEW MIXED-USE MID-RISE DEVELOPMENT
ARCHITECT:	P. JAMES KLENK, ARCHITECT, LLC 4629 VICTORIA BEACH WAY LAS VEGAS, NV 89103 PHONE: 702.683.3277 CONTACT: PATRICK KLENK, ARCHITECT CONTACT: PIERE A BURTON JR. - PROJECT MANAGER PHONE: 702.266.5962
MEP:	MARIANO ENGINEERING 6040 SOUTH DURANGO DRIVE, STE 100 LAS VEGAS, NEVADA 89113 PHONE: 702.361.0020
STRUCTRAL:	BARKER STRUCTURAL 5960 S. RAINBOW LAS VEGAS, NV 89118 Phone: 702-310-8000 Contact: Trent D. Tolbert email: Trent Tolbert Trent@BarkerStructural.com
CIVIL:	DLC CONSULTING 2885 EAST QUAIL AVE. LAS VEGAS, NV 89120 Phone: 702-521-7021

VICINITY MAP



LOCATION MAP



SHEET INDEX

GENERAL

CV	COVER SHEET

CIVIL

1	COVER SHEET
2	NOTES & QUANTITIES
3	GRADING PLAN
4	UTILITY PLAN

ARCHITECTURAL

SP1	SITE PLAN	A6.01	BUILDING SECTIONS
SD-1	SITE DETAILS	A6.02	BUILDING SECTIONS
A1.00	ACCESSIBILITY DETAILS	A7.01	WALL SECTIONS
A1.01	EGRESS PLAN	A7.02	WALL SECTIONS
A2.00	FIRST LEVEL DIMENSION CONTROL PLAN	A8.01	SCHEDULES
A2.01	FIRST LEVEL GRAPHIC PLAN	A8.02	DETAILS
A2.20	SECOND/THIRD LEVEL DIMENSION CONTROL PLAN	A8.03	DETAILS
A2.21	SECOND/THIRD LEVEL GRAPHIC PLAN	A8.04	DETAILS
A2.40	FORTH LEVEL DIMENSION CONTROL PLAN	A9.50	REPORTS
A2.41	FORTH LEVEL GRAPHIC PLAN	A9.60	REPORTS
A2.50	FIFTH LEVEL DIMENSION CONTROL PLAN		
A2.51	FIFTH LEVEL GRAPHIC PLAN		
A2.60	FINISH LEVEL PLAN		
A3.01	FIRST LEVEL CEILING PLAN		
A3.20	SECOND/THIRD LEVEL CEILING PLAN		
A3.40	FORTH LEVEL CEILING PLAN		
A3.50	FIFTH LEVEL CEILING PLAN		
A4.01	ROOF PLAN		
A5.01	EXTERIOR ELEVATIONS		
A5.02	EXTERIOR ELEVATIONS		
A5.03	EXTERIOR ELEVATIONS		

STRUCTURAL

S1.00	GENERAL STRUCTURAL NOTES
S1.01	STATEMENT OF SPECIAL INSPECTION
S1.10	TYPICAL FOUNDATION DETAILS
S1.20	TYPICAL FRAMING DETAILS
S2.10	FOUNDATION PLAN
S2.11	CANOPY FRAMING PLAN
S2.12	SECOND FLOOR FRAMING PLAN
S2.13	THIRD FLOOR FRAMING PLAN
S2.14	FOURTH FLOOR FRAMING PLAN
S2.15	FIFTH FLOOR FRAMING PLAN
S2.16	ROOF FRAMING PLAN
S3.01	FOUNDATION DETAILS
S4.01	FRAMING DETAILS
S4.02	FRAMING DETAILS
S4.03	FRAMING DETAILS
S4.04	FRAMING DETAILS

MECHANICAL

M1.01	SPECIFICATIONS, SCHEDULES, DETAILS
M1.02	U.L. SYSTEMS
M2.01	FIRST LEVEL MECHANICAL PLAN
M2.02	SECOND LEVEL MECHANICAL PLAN
M2.03	THIRD LEVEL MECHANICAL PLAN
M2.04	FORTH LEVEL MECHANICAL PLAN
M2.05	FIFTH LEVEL MECHANICAL PLAN
M3.01	ROOF - MECHANICAL PLAN

ELECTRICAL

E1.00	SPECIFICATIONS, SCHEDULES, DETAILS
E2.00	FIRST LEVEL ELECTRICAL PLAN LOAD CALS
E3.00	SECOND LEVEL ELECTRICAL PLAN
E4.00	THIRD LEVEL ELECTRICAL PLAN
E5.00	FORTH LEVEL ELECTRICAL PLAN
E6.00	FIFTH LEVEL ELECTRICAL PLAN
E7.00	UNIT ELECTRICAL PLAN
E8.00	UNIT ELECTRICAL PLAN
E9.00	LIGHT FIXTURE SCHEDULE
E10.00	SINGLE LINE DIAGRAM - GROUDING DETAILS
E11.00	FEEDER - LOAD SCHEDULES
E12.00	PANEL LOAD SCHEDULES
E13.00	PANEL LOAD SCHEDULES
E14.00	IECC CERTIFICATE

PLUMBING

P1.00	SPECIFICATIONS, SCHEDULES, DETAILS
P2.01	BUILDING: FIRST LEVEL PLUMBING WASTE & VENT
P2.02	BUILDING: SECOND LEVEL PLUMBING WASTE & VENT
P2.03	BUILDING: THIRD LEVEL PLUMBING WASTE & VENT
P2.04	BUILDING: FORTH LEVEL PLUMBING WASTE & VENT
P2.05	BUILDING: FIFTH LEVEL PLUMBING WASTE & VENT
P2.06	ROOF PLUMBING PLAN
P2.07	SANITARY WASTE, VET & WATER RISER
P3.01	BUILDING: FIRST LEVEL PLUMBING (WATER)
P3.02	BUILDING: SECOND LEVEL PLUMBING (WATER)
P3.03	BUILDING: THIRD LEVEL PLUMBING (WATER)
P3.04	BUILDING: FORTH LEVEL PLUMBING (WATER)
P3.05	BUILDING: FIFTH LEVEL PLUMBING (WATER)
P4.00	UNIT PLUMBING PLANS
P4.01	UNIT PLUMBING PLANS

CODE ANALYSIS

ANALYSIS ITEMS

1) CODE TYP AND YEAR:
- 2018 International Building Code adopting ordinance
- 2017 National Electric Code adopting ordinance
- 2018 Uniform Plumbing Code adopting ordinance
- 2018 Uniform Mechanical Code Code adopting ordinance
- 2018 Uniform Mechanical Code Code adopting ordinance
- 2018 IFC Southern Nevada Consensus Amendments, 13Jun2018 with Justifications
- 2018 IFC Southern Nevada Consensus Amendments, 2Jul2018
  - Ordinance No. 3510 Adopting Ordinance (Signed Ordinance), 7Aug2018
  - Ordinance No. 3510 Adopting Ordinance, 7Aug2018
- City of Henderson Building & Fire Safety Administrative Code
- ANSI A117.1-2009
- ICC A117.1-2009 Accessible and Usable Buildings and Facilities

2) OCCUPANY CLASSIFICATION: MIXED-USE FUTURE A-2/R-2

3) TYPE OF CONSTRUCTION: TYPE II-B SPRINKLED

4) FIRE SPRINKLERS: YES/NO YES TYPE NFPA 13

5) FIRE ALARM YES/NO YES

6) HEIGHT: ALLOWABLE 75 FEET ACTUAL 72 FEET

7) STORIES: ALLOWABLE 5 ACTUAL 5

8) AREA: ALLOWABLE 48,000

1ST LEVEL	8,909
2ND LEVEL	8,475
3RD LEVEL	8,475
4TH LEVEL	8,475
5TH LEVEL	8,475
ACTUAL	42,953

9) OCCUPANT LOAD: SEE SHEET A1.01 EGRESS PLAN

10) NUMBER OF EXITS: SEE SHEET A1.01 EGRESS PLAN

11) FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS. (SPECIFY AREAS RECEIVING SPRAY APPLIED FIRE PROTECTION)
NOT REQUIRED

TABLE 601:FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	II-B SPRINKLED
STRUCTURAL FRAME INCLUDING COLUMNS, GIRDERS, TRUSSES	0
BEARING WALLS EXTERIOR INTERIOR	0 0
NON-BEARING WALLS AND PARTITIONS EXTERIOR INTERIOR	TABLE 602 BELOW
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	0
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	0

TABLE 602:FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPERATION DISTANCE

FIRE SEPERATION DISTANCE (feet)	TYPE OF CONSTRUCTION	GROUP A, B, E, F-2, I, R, S-2, U
5 < X < 10	II-B	A-2/R-2

16) ROOF COVERING MATERIAL:
CLASS C

17) REQUIRED PLUMBING FIXTURES. PER EGRESS PLAN SHEET A1.01

18) SPECIAL INSPECTION(S) - SEE STRUCTURAL PLANS

19) I.E.C.C. COMPLIANCE REPORTS.
PLEASE SEE MECHANICAL & ELECTRICAL FOR THE MECHANICAL AND ELECTRICAL COMPLIANCE REPORTS

DEFERRED SUBMITTAL

PLANS FOR THE SIGNAGE, FIRE SPRINKLER, FIRE ALARM, AND FIRE MONITORING, SHALL BE SUBMITTED SEPARATELY AS DEFERRED SUBMITTALS BY NEVADA LICENSED CONTRACTORS. THESE SUBMITTALS SHALL BE REVIEWED AND APPROVED PRIOR TO INSTALLATION.

ELEVATOR SHALL BE UNDER SEPARATE SUBMITTAL PERMIT

2018 IBC PROVISIONS:

PER CHAPTER 2, BUILDING DOES NOT QUALIFY AS HIGH-RISE AND < 55 FEET ABOVE

SEPERATE USE PER 2018 IBC TABLE 508.4 - HORIZONTAL SEPERATION OF NOT LESS THAN 1 HOUR AS WELL AS SEC 711.2.4.1

VERTICAL SHAFT ENCLOSURE SHALL PER COMPY WITH SECTION 713 & 707.3.1 - SHALL NOT BE LESS THAN 2 HOUR

WASTE CHUTE SHALL COMPLY WITH SECTION 713.13 & 707.3.1 - SHALL NOT BE LESS THAN 2 HOUR

ELEVATOR SHAFT CONSTRUCTION SHALL COMPLY SECTION 3002 3006, 712 & 713
PER 3006.2 SHAFT CONNECTIONS MORE THAN THREE STORIES THEREFORE 2 HOUR ASSEMBLY REQUIRED.

PER SECTION 3006.2 - ELEVATOR OPENING PROTECTION NOT REQUIRED DUE TO EXCEPTIONS NOT MET

IECC ENVELOPE

COMcheck Software Version 4.1.2.1

Envelope Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	31 S WATER STREET L L C
Location:	Henderson, Nevada
Climate Zone:	3b
Project Type:	New Construction
Vertical Glazing / Wall Area:	38%

Construction Site:	Owner/Agent:	Designer/Contractor:
31 SOUTH WATER STREET HENDERSON, NV 89015	31 S WATER STREET L L C 31 S WATER STREET L L C	P. JAMES KLENK P. JAMES KLENK, ARCHITECT AIA 4629 VICTORIA BEACH WAY LAS VEGAS, NV 89103 702-683-3277 ARCHYONTOP@GMAIL.COM

Additional Efficiency Package(s)

High efficiency HVAC. Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

Building Area	Floor Area
1-APARTMENTS (Multifamily) : Residential	33900
2-1ST LEVEL (Retail) : Nonresidential	8909

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Exterior Wall 2: Wood-Framed, 16" o.c., [Bldg. Use 1 - APARTMENTS]	33900	21.0	0.0	0.052	0.064
Window 1: Metal Frame with Thermal Break:Fixed, Perf. Specs.: Product ID SB 400, SHGC 0.15, [Bldg. Use 1 - APARTMENTS] (b)	13856	---	---	0.320	0.460
Roof 1: Attic Roof with Wood Joists, [Bldg. Use 1 - APARTMENTS]	5093	38.0	38.0	0.013	0.027
NORTH					
Exterior Wall 1: Concrete Block:8", Solid Grouted, Normal Density, Furring: None, [Bldg. Use 2 - 1ST LEVEL]	2020	---	1.1	0.323	0.123
EAST					
Exterior Wall 3: Concrete Block:8", Solid Grouted, Normal Density, Furring: None, [Bldg. Use 1 - APARTMENTS]	559	---	1.1	0.323	0.104
Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - APARTMENTS]	72	---	---	0.300	0.610

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.

Project Title: 31 S WATER STREET L L C Report date: 03/29/20
Data filename: W:\Drawing Projects\Drawings\31 Water Street\31 Comchk\31 comcechk.cck Page 1 of 10

Envelope PASSES: Design 5% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2018 IECC requirements in *COMcheck* Version 4.1.2.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: 31 S WATER STREET L L C Report date: 03/29/20
Data filename: W:\Drawing Projects\Drawings\31 Water Street\31 Comchk\31 comcechk.cck Page 2 of 10

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES ARCHITECT

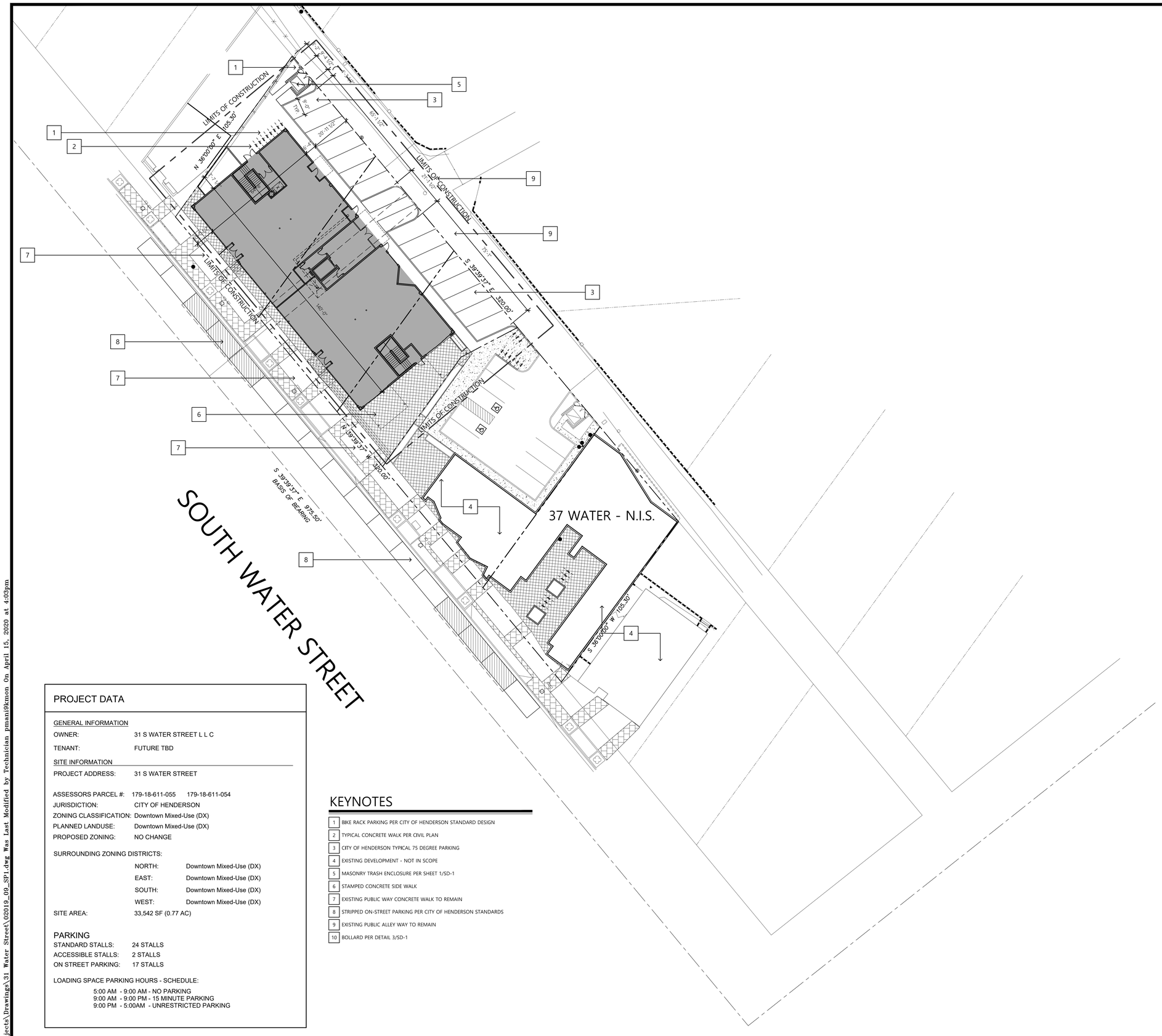
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	DESCRIPTION	DATE

SHEET
CV
COVER SHEET

W:\Drawing Projects\Drawings\31 Water Street\02018_09_CV.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:03pm



KEYNOTES

1. BIKE RACK PARKING PER CITY OF HENDERSON STANDARD DESIGN
2. TYPICAL CONCRETE WALK PER CIVIL PLAN
3. CITY OF HENDERSON TYPICAL 75 DEGREE PARKING
4. EXISTING DEVELOPMENT - NOT IN SCOPE
5. MASONRY TRASH ENCLOSURE PER SHEET 1/SD-1
6. STAMPED CONCRETE SIDE WALK
7. EXISTING PUBLIC WAY CONCRETE WALK TO REMAIN
8. STRIPPED ON-STREET PARKING PER CITY OF HENDERSON STANDARDS
9. EXISTING PUBLIC ALLEY WAY TO REMAIN
10. BOLLARD PER DETAIL 3/SD-1

PROJECT DATA

GENERAL INFORMATION

OWNER:	31 S WATER STREET L L C
TENANT:	FUTURE TBD

SITE INFORMATION

PROJECT ADDRESS:	31 S WATER STREET
ASSESSORS PARCEL #:	179-18-611-055 179-18-611-054
JURISDICTION:	CITY OF HENDERSON
ZONING CLASSIFICATION:	Downtown Mixed-Use (DX)
PLANNED LANDUSE:	Downtown Mixed-Use (DX)
PROPOSED ZONING:	NO CHANGE

SURROUNDING ZONING DISTRICTS:

NORTH:	Downtown Mixed-Use (DX)
EAST:	Downtown Mixed-Use (DX)
SOUTH:	Downtown Mixed-Use (DX)
WEST:	Downtown Mixed-Use (DX)

SITE AREA: 33,542 SF (0.77 AC)

PARKING

STANDARD STALLS:	24 STALLS
ACCESSIBLE STALLS:	2 STALLS
ON STREET PARKING:	17 STALLS

LOADING SPACE PARKING HOURS - SCHEDULE:

5:00 AM - 9:00 AM - NO PARKING
9:00 AM - 9:00 PM - 15 MINUTE PARKING
9:00 PM - 5:00AM - UNRESTRICTED PARKING

S SITE PLAN

SCALE: 1" = 20'-0"

TRUE NORTH

PLAN NORTH

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

APN #179-18-611-055

CITY OF HENDERSON , NV 89015

31 WATER STREET LLC

DATE: 07.10.2019

PROJECT NUMBER: 0201909

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

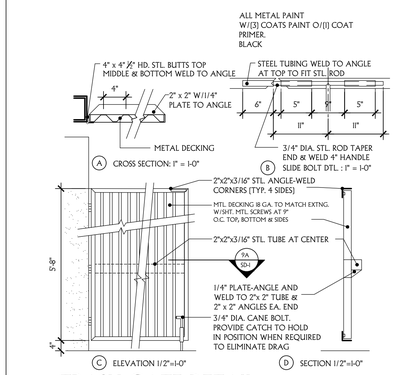
REVISIONS

REV	Description	DATE

SHEET SP1

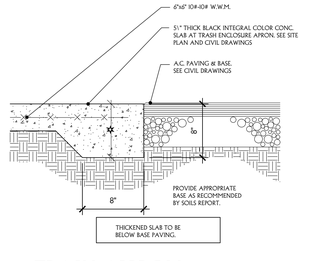
SITE PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_SP1.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:03pm



9 TRASH GATE DETAIL

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



8 TRASH APPRON

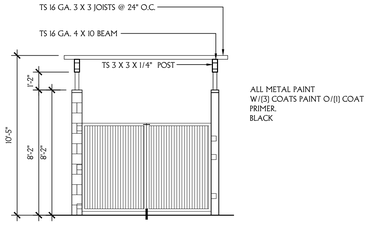
SCALE: 1/4" = 1'-0"

7 TRASH GATE HINGE DETAIL

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

6 TRASH ENCLOSURE ELEV

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

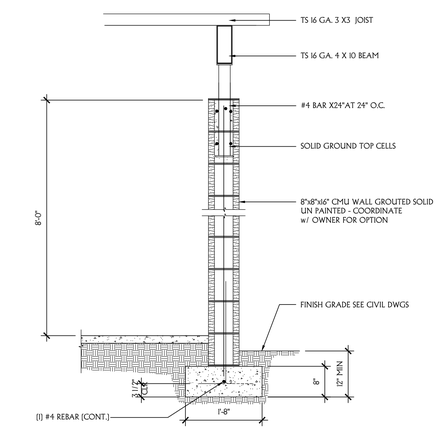


5 TRASH ENCLOSURE ELEV

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

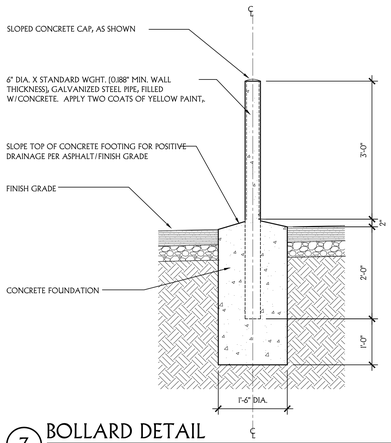
4 TRASH ENCLOSURE WALL SEC

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



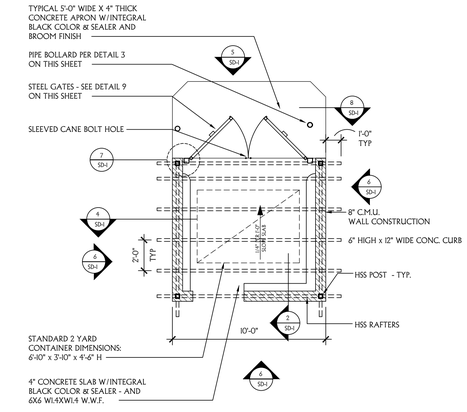
2 TRASH ENCLOSURE WALL SEC

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



3 BOLLARD DETAIL

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



1 TRASH ENCLOSURE PLAN

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

SEAL

PATRICK J KLENK
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

APN #179-18-611-055

CITY OF HENDERSON , NV 89015

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

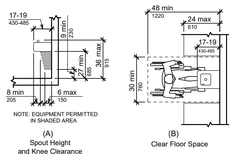
REVISIONS		
REV	Description	DATE

SHEET

SD-1

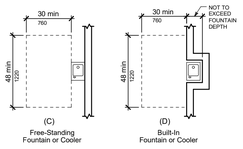
SITE DETAILS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_SD1.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:03pm



(A) Spout Height and Knee Clearance

(B) Clear Floor Space



(C) Free-Standing Fountain or Cooler

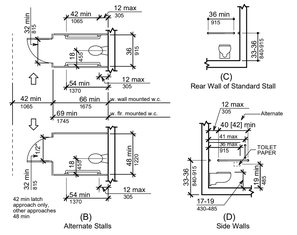
(D) Built-In Fountain or Cooler

16 DRINKING FOUNTAINS AND WATER COOLERS

SCALE: N.T.S

(A) Standard Stall

(A-1) Standard Stall (end of row)



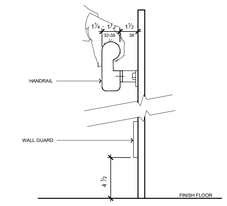
(B) Alternate Stalls

(C) Rear Wall of Standard Stall

(D) Side Walls

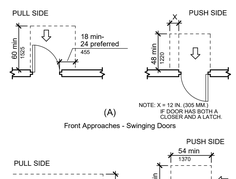
15 TOILET SEATS

SCALE: N.T.S

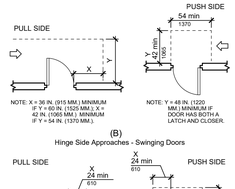


14 HANDRAIL SIZE SPACING

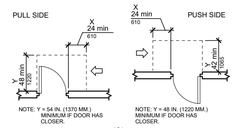
SCALE: N.T.S



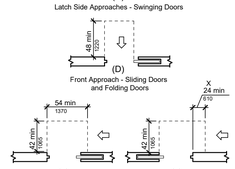
(A) Front Approaches - Swinging Doors



(B) Hinge Side Approaches - Swinging Doors



(C) Latch Side Approaches - Swinging Doors



(D) Front Approach - Sliding Doors and Folding Doors

(E) Slide Side Approach - Sliding Doors and Folding Doors

(F) Latch Side Approach - Sliding Doors and Folding Doors

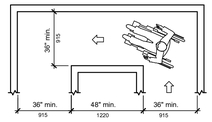
NOTE: ALL DOORS IN ALCOVES SHALL COMPLY WITH THE CLEARANCES FOR FRONT APPROACHES.

THE DETAILS ILLUSTRATED ON THIS SHEET ARE ACCESSIBILITY GUIDELINES CONFORMING TO COMPLIANCES ON THE BASIS OF DISABILITY BY PUBLIC ACCOMMODATIONS AND IN COMMERCIAL FACILITIES, AS ILLUSTRATED BY ANSI & ADAAG.

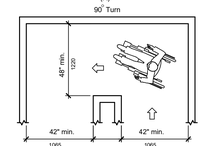
IT IS UNDERSTOOD THAT ADA IS A LIVING DOCUMENT AND SUCH GRAPHIC REFERENCES ARE SUBJECT TO CHANGE AS PROVIDED BY LAW. THE CONTRACTOR SHALL REFERENCE THESE DETAILS AND APPLY WHERE OCCURS ON SUBJECT DRAWING SET.

13 DOOR MANEUVERING CLEARANCES

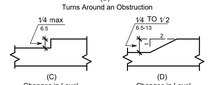
SCALE: N.T.S



(A) 90° Turn



(B) Turns Around an Obstruction

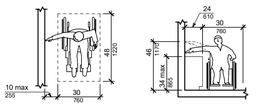


(C) Changes in Level

(D) Changes in Level

11 ACCESSIBLE ROUTE

SCALE: N.T.S

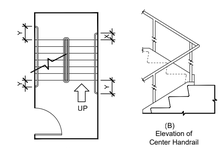


Clear Floor Space Parallel Approach

Maximum Side Reach over Obstruction

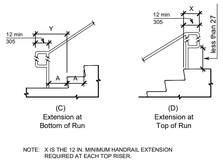
10 SIDE REACH

SCALE: N.T.S



(A) Plan

(B) Elevation of Center Handrail

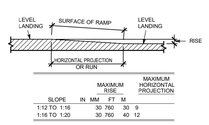


(C) Extension at Bottom of Run

(D) Extension at Top of Run

8 STAIR HANDRAILS

SCALE: N.T.S



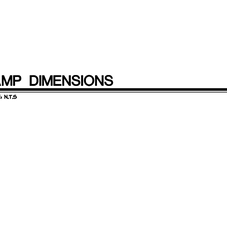
(A) Flush Riser

(B) Angled Nosing

(C) Rounded Nosing

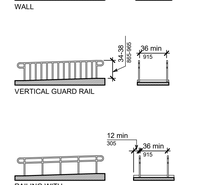
5 EDGE PROTECTION/ HNDRL. DIMS.

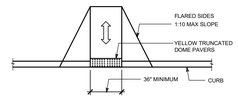
SCALE: X



6 URINAL DETAIL

SCALE: N.T.S

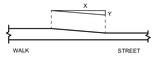




CURB RAMP

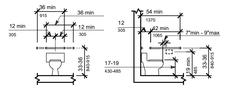
ADJOINING SLOPE SHALL NOT EXCEED 1:20

SLOPE = Y : X WHERE X IS A LEVEL PLANE



4 CURB RAMP SLOPE MEASUREMENT

SCALE: N.T.S

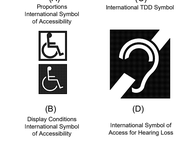


(A) BACK WALL

(B) SIDE WALL

3 GRAB BARS AT WATER CLOSETS

SCALE: N.T.S



(A) Proportions International Symbol of Accessibility

(C) International TDD Symbol

(B) Display Conditions International Symbol of Accessibility

(D) International Symbol of Access for Hearing Loss

Convention	Description
36 915	Typical dimension line showing U.S. customary units (in inches) above the line and SI units (in millimeters) below.
9 230	Dimensions for short distances indicated on arrow.
28-36 710-915	Dimension line showing range of dimensions.
	Direction of approach
max	Maximum
min	Minimum
	Boundary of clear floor area
CL	Centerline

2 GRAPHIC CONVENTIONS

SCALE: N.T.S

1 GRAPHIC CONVENTION

SCALE: N.T.S

NOTE: BUILDING SHALL COMPLY w/ ALL ASPECTS OF ANSI.A117.1.2009 AS NOTED ON COVER SHEET

SEAL

PATRICK J KLENK No. 1472 REGISTERED ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

P. JAMES KLENK ARCHITECT

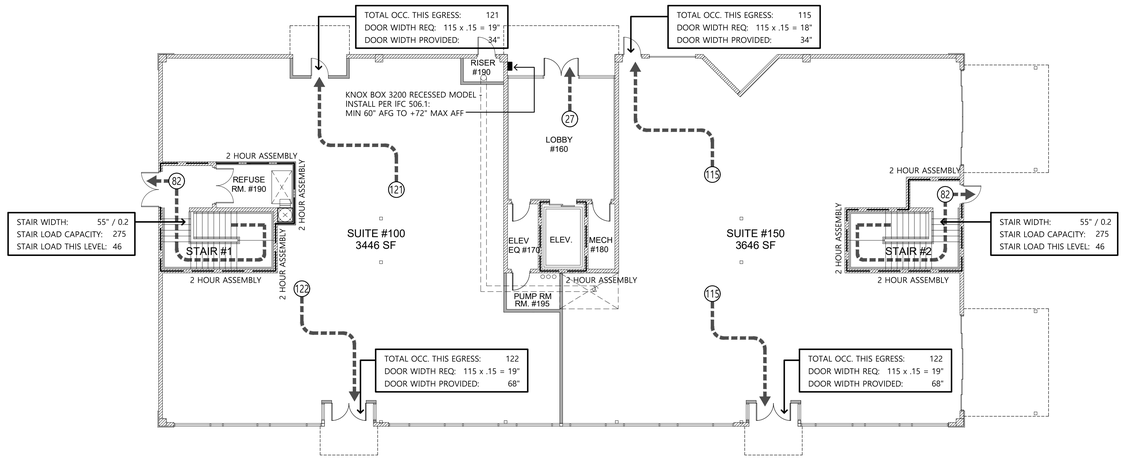
REVISIONS		
REV	Description	DATE

SHEET

A1.00

ADA REF SHEET

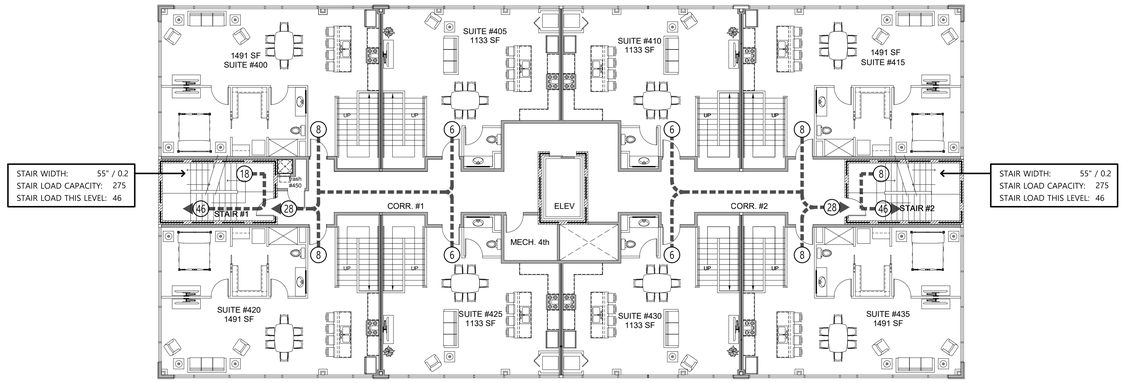
W:\Drawing Projects\Drawings\31 Water Street\02019_09_A100.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:25pm



1 FIRST LEVEL EGRESS PLAN

SCALE: 3/32" = 1'-0"

TRUE NORTH PLAN NORTH



4 FORTH LEVEL EGRESS PLAN

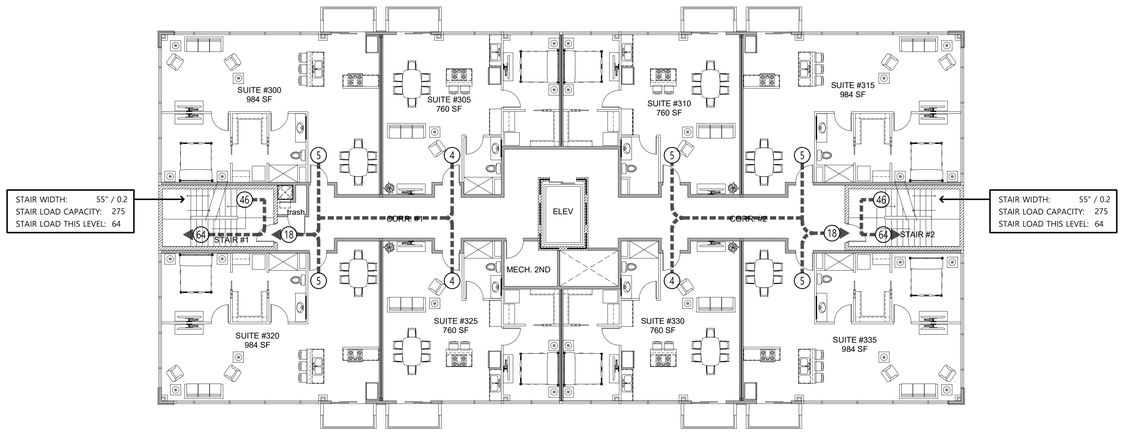
SCALE: 3/32" = 1'-0"

TRUE NORTH PLAN NORTH

2 SECOND LEVEL EGRESS PLAN

SCALE: 3/32" = 1'-0"

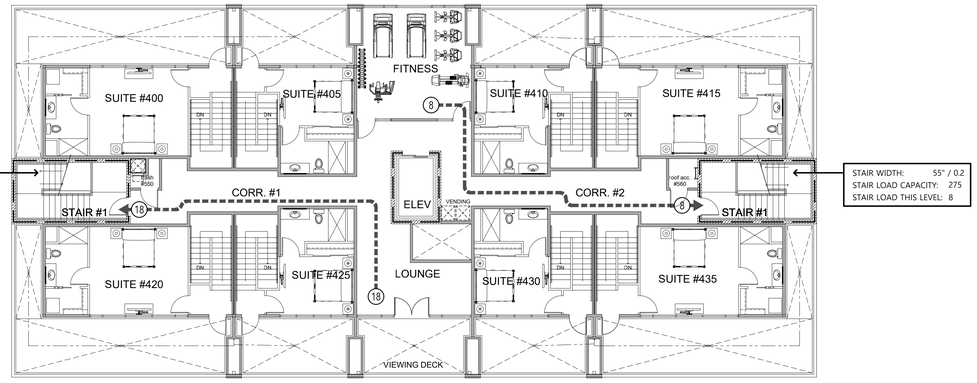
TRUE NORTH PLAN NORTH



3 THIRD LEVEL EGRESS PLAN

SCALE: 3/32" = 1'-0"

TRUE NORTH PLAN NORTH



5 FIFTH LEVEL EGRESS PLAN

SCALE: 3/32" = 1'-0"

TRUE NORTH PLAN NORTH

OCCUPANT LOAD (TABLE 1004.5)

2018 INTERNATIONAL BUILDING CODE - SHELL - MIXED USE - LEVEL #1

USE -	AREA (S.F.)	OCC. LOAD FACTOR	MAXIMUM OCCUPANCY	EXIT REQ.	EXIT PROVIDED
TENANT SHELL #100 (A2 OCC)	3446	15	230	2	2
LOBBY	395	5	27	1	1
RISER ROOM	60	300	N/A	1	1
MECHANICAL	53	300	N/A	1	1
PUMP ROOM	59	300	N/A	1	1
TENANT SHELL #150 (A2 OCC)	3646	15	243	2	2
TOTALS			497	2	2

OCCUPANT LOAD (TABLE 1004.5)

2018 INTERNATIONAL BUILDING CODE - SHELL - MIXED USE - LEVEL #2

USE -	AREA (S.F.)	OCC. LOAD FACTOR	MAXIMUM OCCUPANCY	EXIT REQ.	EXIT PROVIDED
SUITE #200	984	200	5	1	1
SUITE #205	760	200	4	1	1
SUITE #210	760	200	4	1	1
SUITE #215	984	200	5	1	1
SUITE #220	984	200	5	1	1
SUITE #225	760	200	4	1	1
SUITE #230	760	200	4	1	1
SUITE #235	984	200	5	1	1
TOTALS			36	1	2

OCCUPANT LOAD (TABLE 1004.5)

2018 INTERNATIONAL BUILDING CODE - SHELL - MIXED USE - LEVEL #3

USE -	AREA (S.F.)	OCC. LOAD FACTOR	MAXIMUM OCCUPANCY	EXIT REQ.	EXIT PROVIDED
SUITE #300	984	200	5	1	1
SUITE #305	760	200	4	1	1
SUITE #310	760	200	4	1	1
SUITE #315	984	200	5	1	1
SUITE #320	984	200	5	1	1
SUITE #325	760	200	4	1	1
SUITE #330	760	200	4	1	1
SUITE #335	984	200	5	1	1
TOTALS			36	1	2

OCCUPANT LOAD (TABLE 1004.5)

2018 INTERNATIONAL BUILDING CODE - SHELL - MIXED USE - LEVEL #4

USE -	AREA 5TH LVL MEZZ (S.F.)	OCC. LOAD FACTOR	MAXIMUM OCCUPANCY	EXIT REQ.	EXIT PROVIDED
SUITE #400	1491	200	8	1	1
SUITE #405	1133	200	6	1	1
SUITE #410	1133	200	6	1	1
SUITE #415	1491	200	8	1	1
SUITE #420	1491	200	8	1	1
SUITE #425	1133	200	6	1	1
SUITE #430	1133	200	6	1	1
SUITE #435	1491	200	8	1	1
TOTALS			56	2	2

OCCUPANT LOAD (TABLE 1004.5)

2018 INTERNATIONAL BUILDING CODE - SHELL - MIXED USE - LEVEL #5

USE -	AREA (S.F.)	OCC. LOAD FACTOR	MAXIMUM OCCUPANCY	EXIT REQ.	EXIT PROVIDED
FITNESS	370	50	8	1	1
LOUNGE	266	15	18	1	1
TOTALS			26	1	2

OCCUPANT LOAD 651

SEAL

PATRICK J KLENK No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

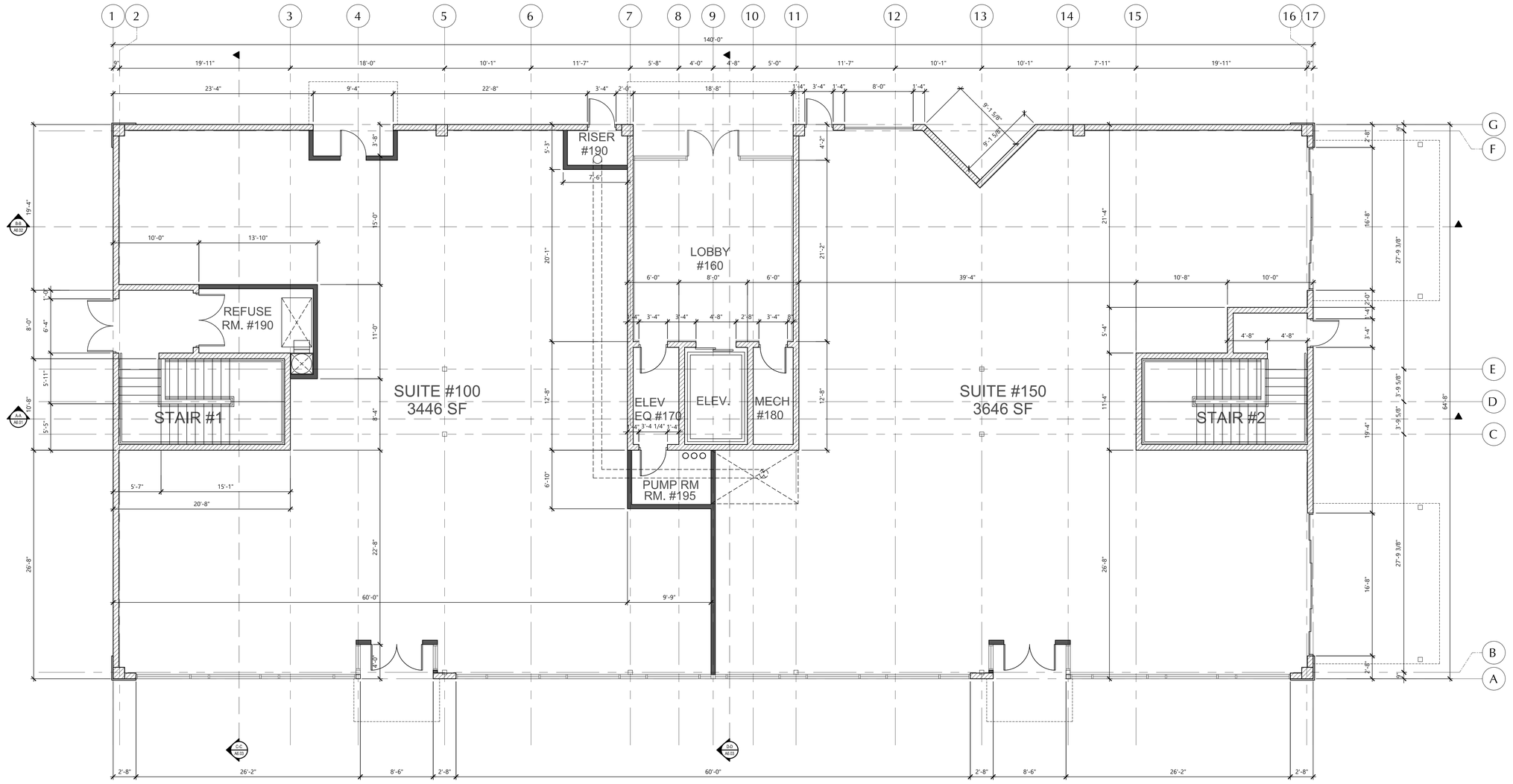
REV	Description	DATE

REVISIONS

SHEET A1.01

EGRESS PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A101.dwg Was Last Modified by Technician pmani9mon On April 15, 2020 at 4:19pm



1 DIMENSION CONTROL FLOOR PLAN - FIRST LEVEL OVERALL PLAN

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

TRUE NORTH

PLAN NORTH

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

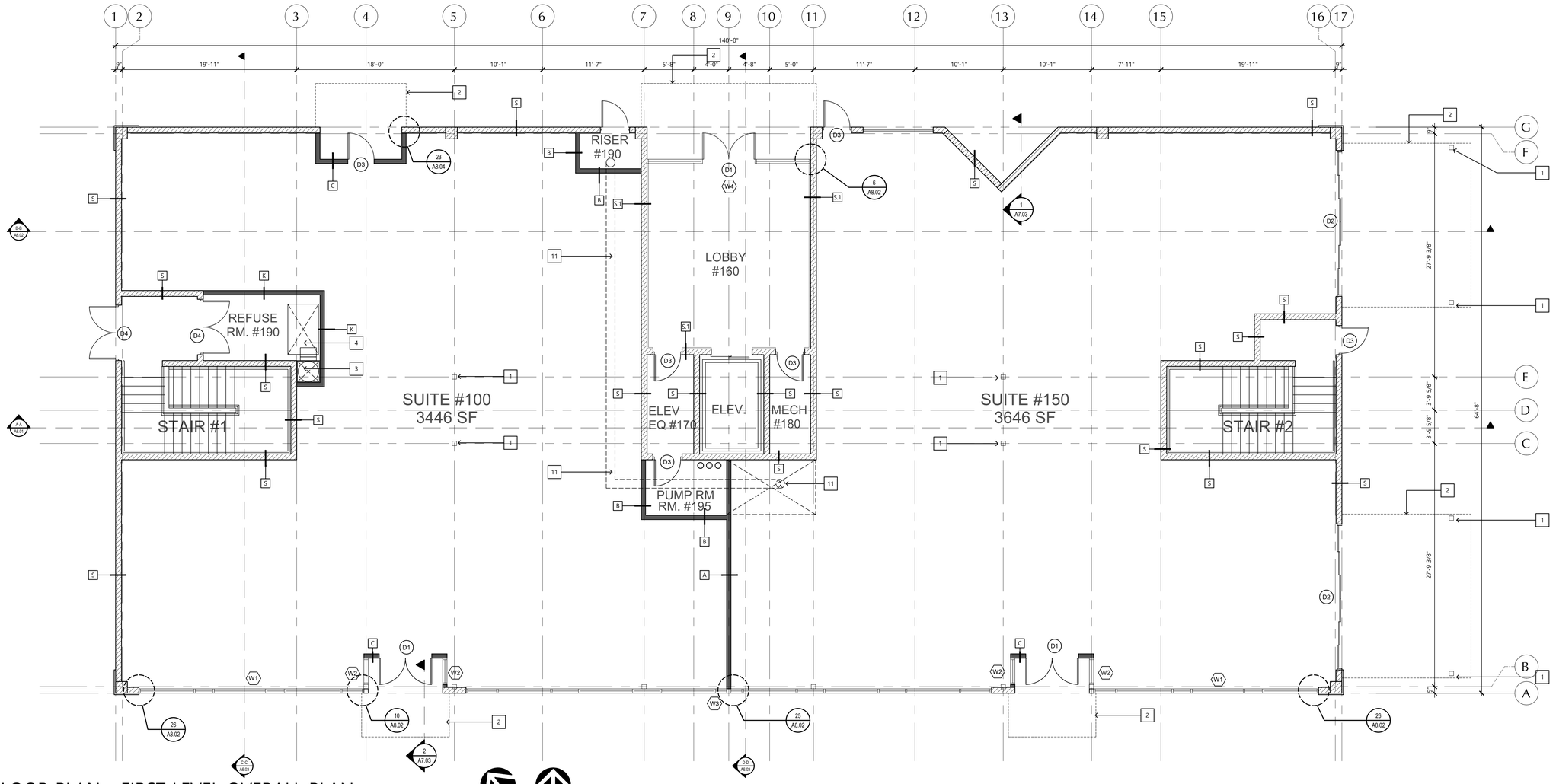
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A2.00
FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A200.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:18pm



1 GRAPHIC FLOOR PLAN - FIRST LEVEL OVERALL PLAN

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

TRUE NORTH

PLAN NORTH

WALL TYPE

- A — 6" x 1 5/8" 20 GAGE (600S162-33) METAL STUDS @ 16" O.C. TOP & BOTTOM TRACK TO BE 6" 20 GAGE (600T162-33)
- B — 5/8" TYPE "X" GYP. BD.; 2X6 WOOD STUDS @ 24" O.C.; R-21 BATT INSULATION; 5/8" TYPE "X" GYP. BD. — 1-HOUR PARTITION UL U305 - U314
- C — 5/8" GYP. BD. (DELETE FOR WALL TYPE C.1); 2X6 WOOD STUDS @ 24" O.C.; R-21 BATT INSULATION; 3/4" EXTERIOR PLYWOOD SHEATHING; 7/8" SMOOTH STUCCO FINISH; FLUID APPLIED AIR & WATER BARRIER SYSTEM
- C.1 — SAME AS WALL TYPE "C" - REMOVE GYP. BD.
- D — 5/8" GYP. BD.; 2X4 WOOD STUDS @ 24" O.C.; 5/8" GYP. BD.
- E — 5/8" MOISTURE-RESISTANT GYP. BD.; 2X4 WOOD STUDS @ 24" O.C.; 5/8" GYP. BD.

WALL TYPE

- F — 5/8" MOISTURE-RESISTANT GYP. BD.; 2X4 WOOD STUDS @ 24" O.C.
- G — 5/8" GYP. BD.; 2X4 WOOD STUDS @ 24" O.C.
- H — 5/8" QUIETROCK 530 SOUND GYP. BD. OR EQUAL MANF.; 2X4 WOOD STUDS @ 24" O.C.; 2X4 WOOD STUDS @ 24" O.C. SOUND INSULATION OR EQUAL MANF.; 2X4 WOOD STUDS @ 24" O.C.; ROCKWOOL "SAFE n SOUND" BLANKET SOUND INSULATION OR EQUAL MANF.; 5/8" QUIETROCK 530 SOUND GYP. BD. OR EQUAL MANF.
- J — FLUID APPLIED AIR & WATER BARRIER SYSTEM; 7/8" SMOOTH STUCCO FINISH; 3/4" EXTERIOR PLYWOOD SHEATHING; 2X6 WOOD STUDS @ 24" O.C.; R-21 BATT INSULATION; 3/4" EXTERIOR PLYWOOD SHEATHING; 7/8" SMOOTH STUCCO FINISH; FLUID APPLIED AIR & WATER BARRIER SYSTEM

WALL TYPE

- K — (2) 5/8" TYPE "X" GYP. BD.; 2X6 WOOD STUDS @ 24" O.C.; R-21 BATT INSULATION; (2) 5/8" TYPE "X" GYP. BD. — 2-HOUR PARTITION UL U415
- S — EXTERIOR: FLUID APPLIED AIR & WATER BARRIER SYSTEM - TYP CMU WALL; CMU BLOCK PER STRUCTURAL; INTERIOR
- S.1 — SAME AS WALL TYPE "S" - ADD 1 1/2" 20 GA FURRING STUDS @ 24" O.C. - FINISH w/ 5/8" GYP. BD.

KEYNOTES

1	STRUCTURAL COLUMNS - COORDINATE WITH STRUCTURAL PLANS
2	LINE OF SHADE FEATURE ABOVE
3	TRASH CHUTE PENETRATION - MANUFACTURER T.B.D. SEE ASSEMBLY DETAIL 1,A8.05
4	REFUSE BINS
5	TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
6	PATIO ASSEMBLY - COORDINATE WITH STRUCTURAL - SEE DETAIL
7	HOLD WALL FURRING ASSEMBLY TIGHT TO COLUMN AS POSSIBLE
8	COORDINATE w/ OWNER FOR TENANT APPLIANCE PACKAGE
9	SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURES
10	PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
11	PROPOSED FIRE RISE PATH TO RATED CHASE ABOVE
12	RATED UTILITY CHASE - SEE SHEET A8.05

LEGEND

- X — WALL TYPE PER SCHEDULE
- X — WINDOW TYPE PER SCHEDULE
- X — DOOR TYPE PER SCHEDULE
- X → KEYNOTE LEADER CALLOUT

SEAL

PATRICK J KLENK No. 1472 REGISTERED ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

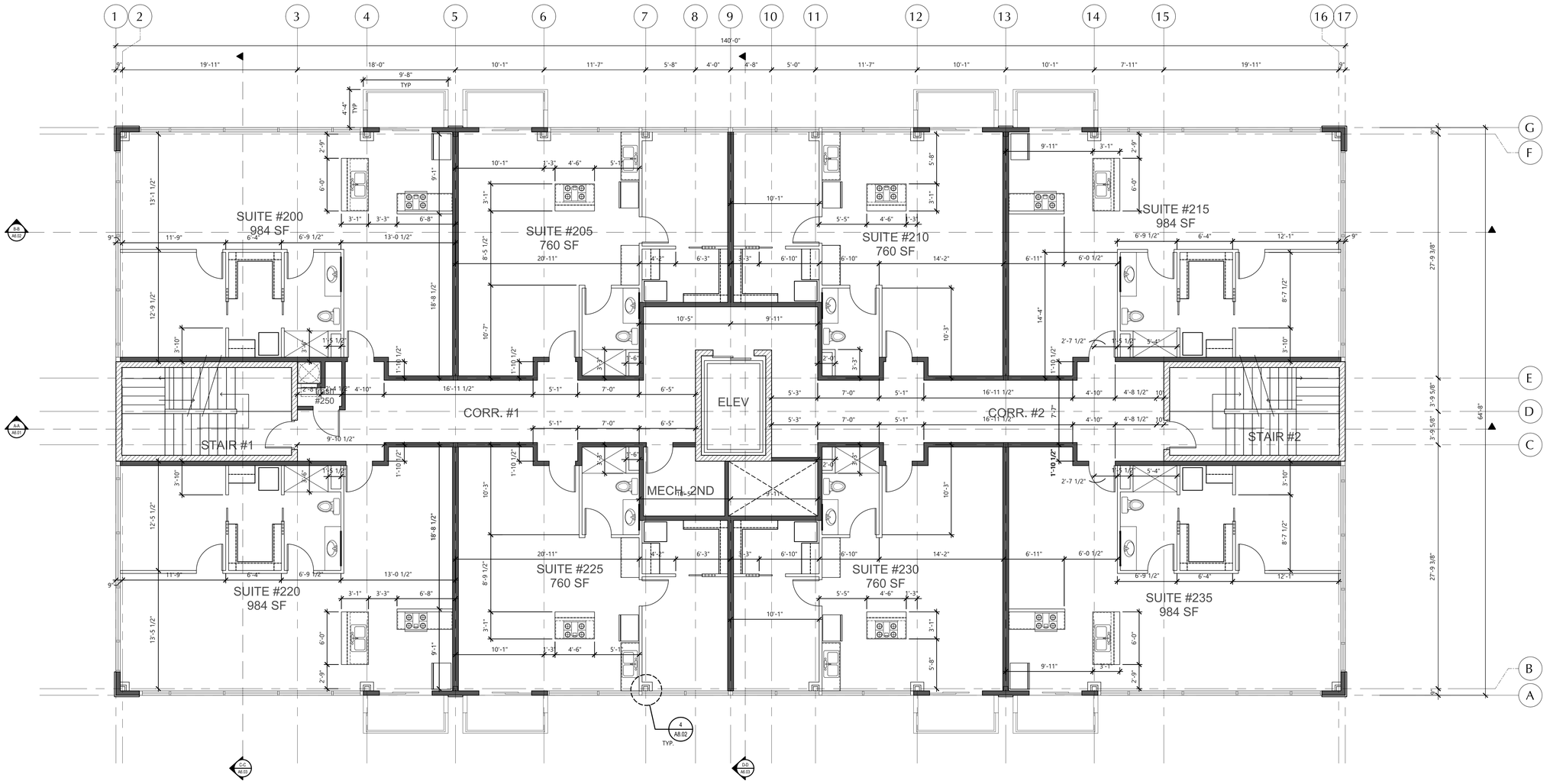
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET A2.01
FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A201.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:17pm



1 DIMENSION CONTROL FLOOR PLAN - SECOND/THIRD LEVEL OVERALL PLAN

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

TRUE NORTH

PLAN NORTH

SEAL

PATRICK J KLENK
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

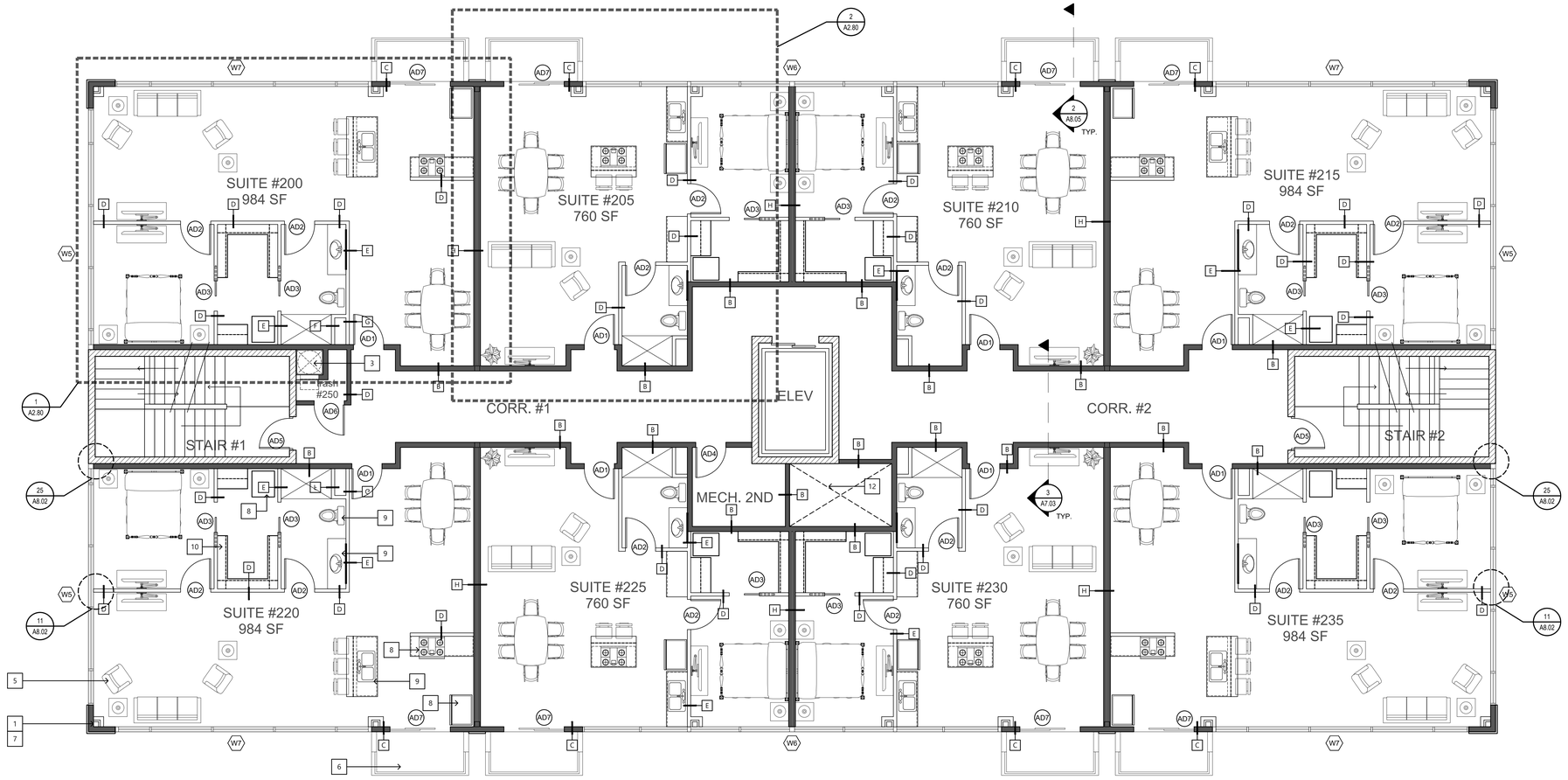
REV	Description	DATE

SHEET

A2.20

FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\020119_09_A220.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:17pm



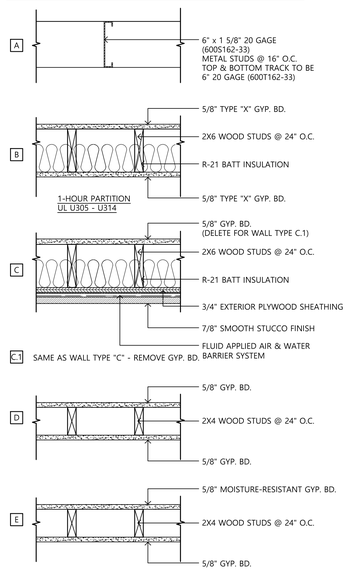
1 GRAPHIC FLOOR PLAN - SECOND/THIRD LEVEL OVERALL PLAN

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

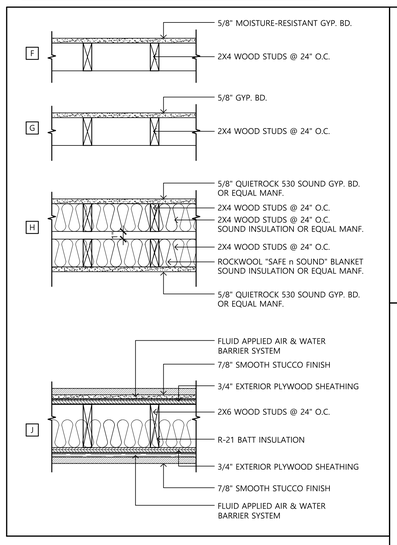
TRUE NORTH

PLAN NORTH

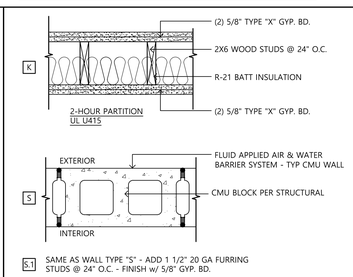
WALL TYPE



WALL TYPE



WALL TYPE



KEYNOTES

1. STRUCTURAL COLUMNS - COORDINATE WITH STRUCTURAL PLANS
2. LINE OF SHADE FEATURE ABOVE
3. TRASH CHUTE PENETRATION - MANUFACTURER T.B.D. SEE ASSEMBLY DETAIL 1.A8.05
4. REFUSE BINS
5. TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
6. PATIO ASSEMBLY - COORDINATE WITH STRUCTURAL - SEE DETAIL
7. HOLD WALL FURRING ASSEMBLY TIGHT TO COLUMN AS POSSIBLE
8. COORDINATE w/ OWNER FOR TENANT APPLIANCE PACKAGE
9. SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURES
10. PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
11. PROPOSED FIRE RISE PATH TO RATED CHASE ABOVE
12. RATED UTILITY CHASE - SEE SHEET A8.05

KEYNOTES

1. STRUCTURAL COLUMNS - COORDINATE WITH STRUCTURAL PLANS
2. LINE OF SHADE FEATURE ABOVE
3. TRASH CHUTE PENETRATION - MANUFACTURER T.B.D. SEE ASSEMBLY DETAIL 1.A8.05
4. REFUSE BINS
5. TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
6. PATIO ASSEMBLY - COORDINATE WITH STRUCTURAL - SEE DETAIL
7. HOLD WALL FURRING ASSEMBLY TIGHT TO COLUMN AS POSSIBLE
8. COORDINATE w/ OWNER FOR TENANT APPLIANCE PACKAGE
9. SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURES
10. PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
11. PROPOSED FIRE RISE PATH TO RATED CHASE ABOVE
12. RATED UTILITY CHASE - SEE SHEET A8.05

LEGEND

- X — WALL TYPE PER SCHEDULE
- X — WINDOW TYPE PER SCHEDULE
- X — DOOR TYPE PER SCHEDULE
- X → KEYNOTE LEADER CALLOUT

SEAL

PATRICK J KLENK No. 1472 REGISTERED ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

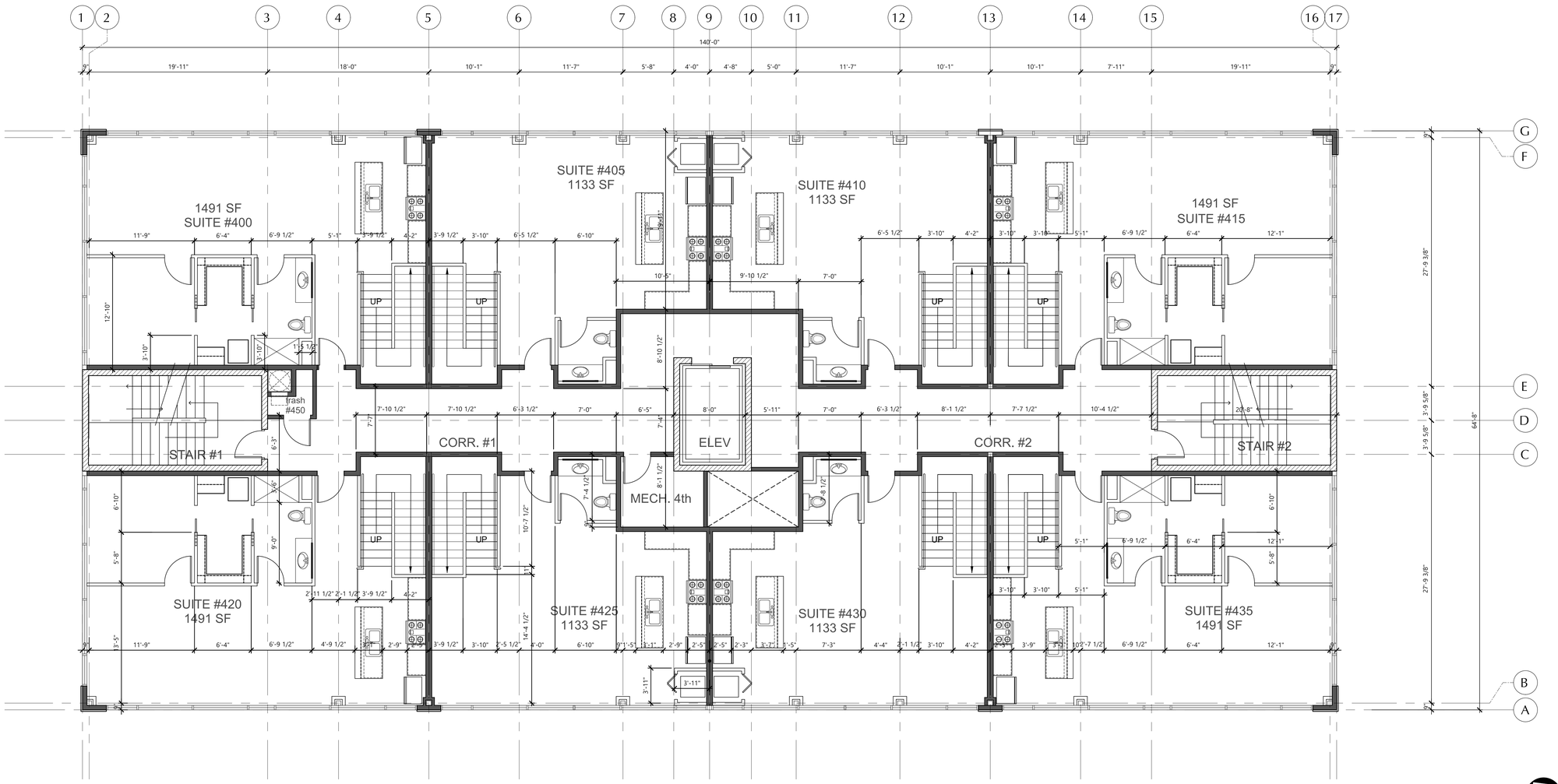
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

P. JAMES KLENK ARCHITECT

REVISIONS		
REV	Description	DATE

SHEET
A2.21
FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A22l.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:15pm



1 DIMENSION CONTROL FLOOR PLAN - FORTH LEVEL OVERALL PLAN

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

TRUE NORTH

PLAN NORTH

SEAL

PATRICK J KLENK
REGISTERED
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES KLENK ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

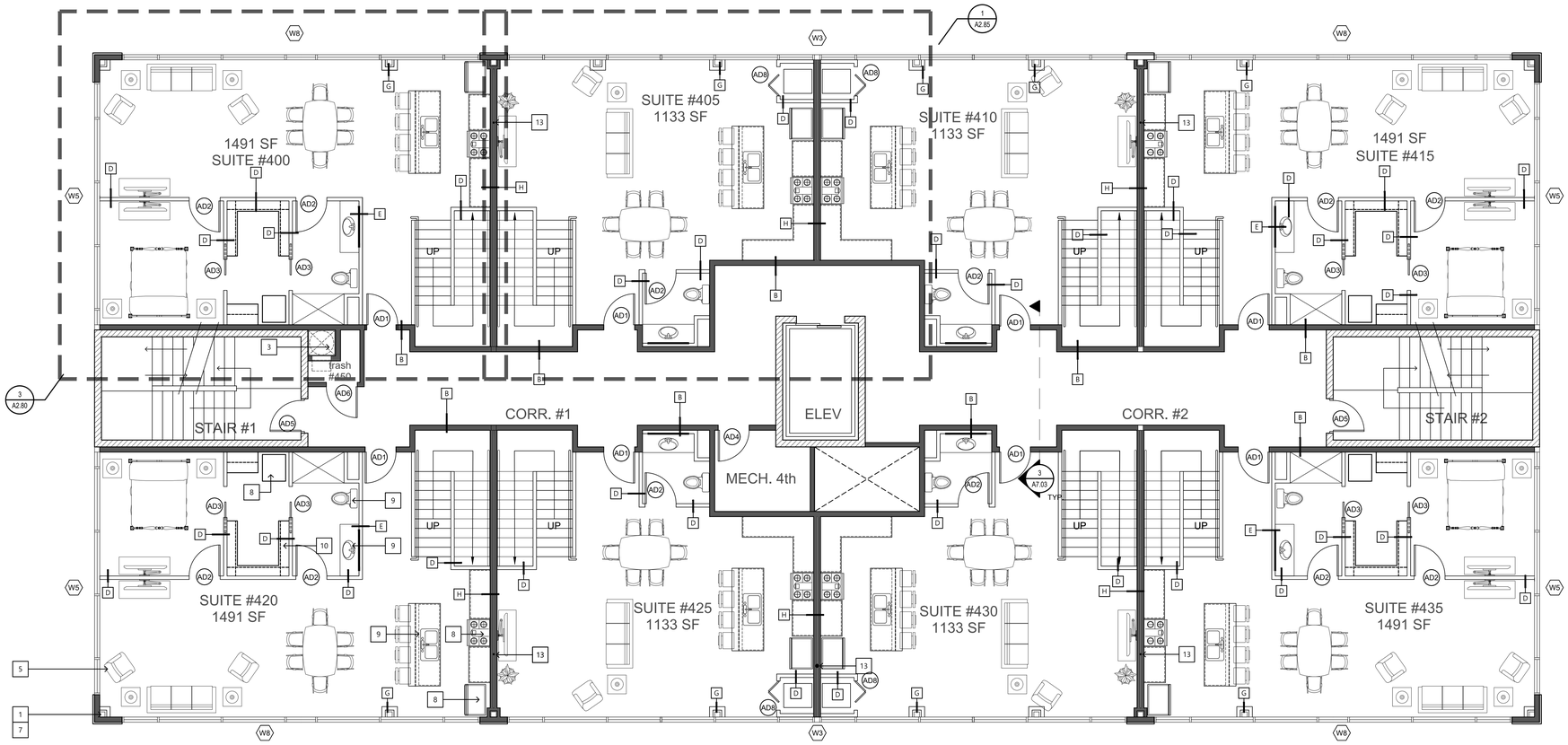
REV	Description	DATE

SHEET

A2.40

FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A240.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:15pm



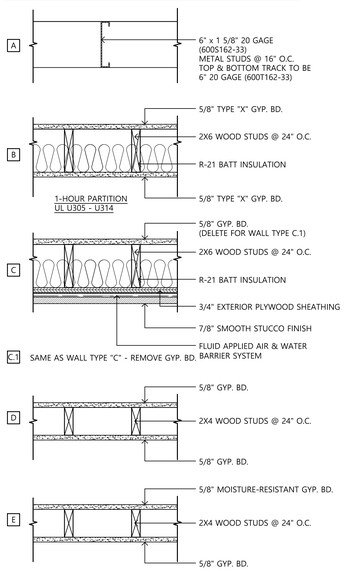
1 GRAPHIC FLOOR PLAN - FORTH LEVEL OVERALL PLAN

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

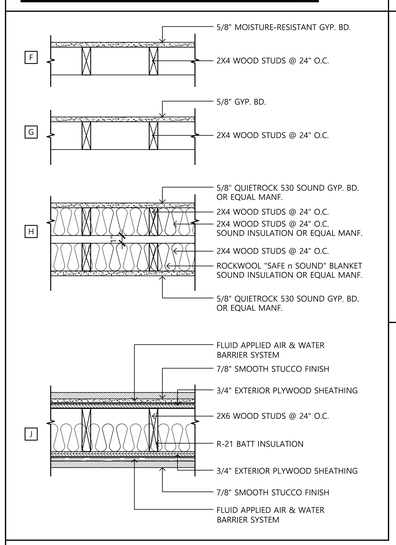
TRUE NORTH

PLAN NORTH

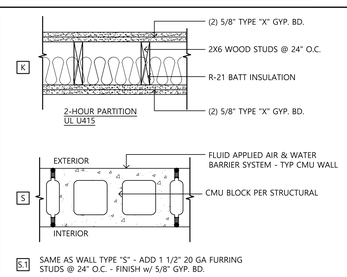
WALL TYPE



WALL TYPE



WALL TYPE



KEYNOTES

1. STRUCTURAL COLUMNS - COORDINATE WITH STRUCTURAL PLANS
2. LINE OF SHADE FEATURE ABOVE
3. TRASH CHUTE PENETRATION - MANUFACTURER T.B.D. SEE ASSEMBLY DETAIL 1.A8.05
4. REFUSE BINS
5. TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
6. PATIO ASSEMBLY - COORDINATE WITH STRUCTURAL - SEE DETAIL
7. HOLD WALL FURRING ASSEMBLY TIGHT TO COLUMN AS POSSIBLE
8. COORDINATE w/ OWNER FOR TENANT APPLIANCE PACKAGE
9. SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURES
10. PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
11. PROPOSED FIRE RISE PATH TO RATED CHASE ABOVE
12. RATED UTILITY CHASE - SEE SHEET A8.05
13. ROOF DRAINS FROM BALCONY ABOVE

LEGEND

- X — WALL TYPE PER SCHEDULE
- X — WINDOW TYPE PER SCHEDULE
- X — DOOR TYPE PER SCHEDULE
- X → KEYNOTE LEADER CALLOUT

SEAL

PATRICK J KLENK No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

DATE: 07.10.2019

31 WATER STREET LLC

PROJECT NUMBER: 0201909

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

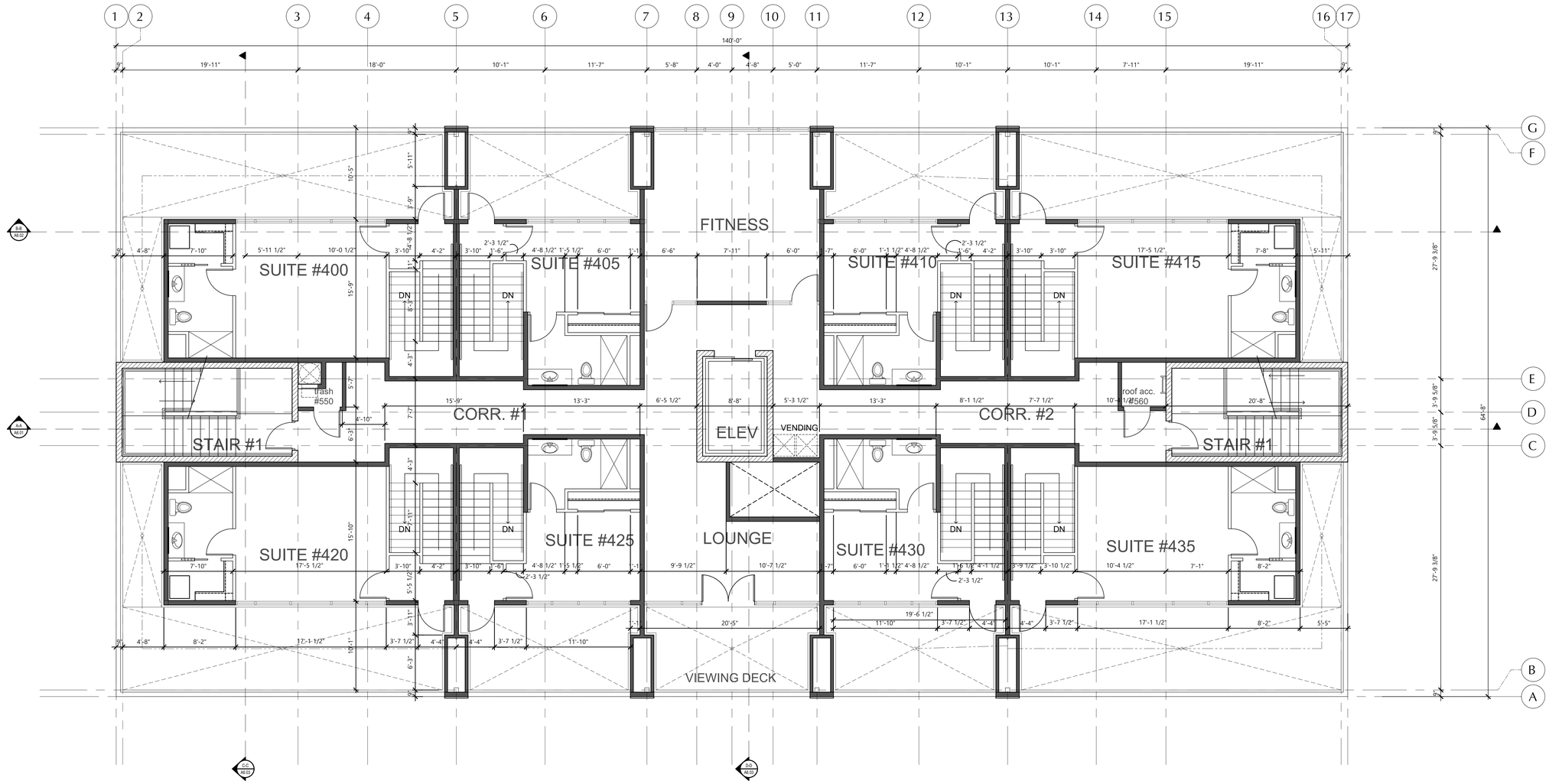
REVISIONS		
REV	Description	DATE

SHEET

A2.41

FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A241.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:14pm



1 DIMENSION CONTROL FLOOR PLAN - FIFTH LEVEL OVERALL PLAN

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

TRUE NORTH

PLAN NORTH

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES ARCHITECT

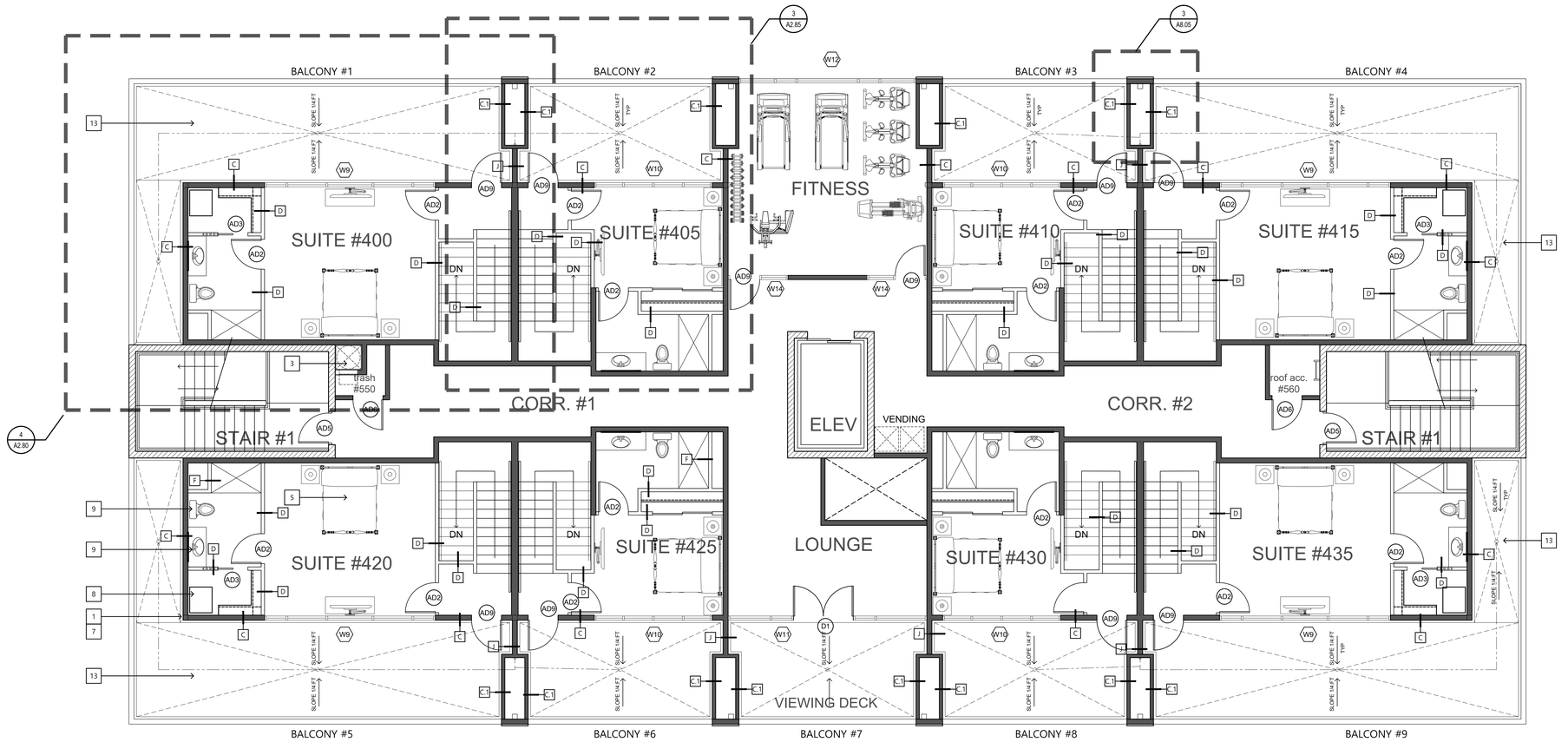
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A2.50
FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A250.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:12pm



1 GRAPHIC FLOOR PLAN - FIFTH LEVEL OVERALL PLAN

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

TRUE NORTH

PLAN NORTH

BALCONY DRAIN CALC:

100 YEAR CALCULATION PER 1611.1: 1.4" PER HOUR

DOWNSPOUT CAPACITY:
BALCONY #1 - 449 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #2 - 194 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #3 - 449 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #4 - 194 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #5 - 449 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #6 - 194 SF MIN 1" DRAIN REQ. - PROVIDED 2"

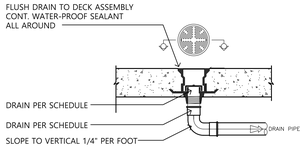
DOWNSPOUT CAPACITY:
BALCONY #7 - 184 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #8 - 194 SF MIN 1" DRAIN REQ. - PROVIDED 2"

DOWNSPOUT CAPACITY:
BALCONY #9 - 449 SF MIN 1" DRAIN REQ. - PROVIDED 2"

RAINFALL PER 2018 UPC TABLE 1106.2 STORM DRAIN

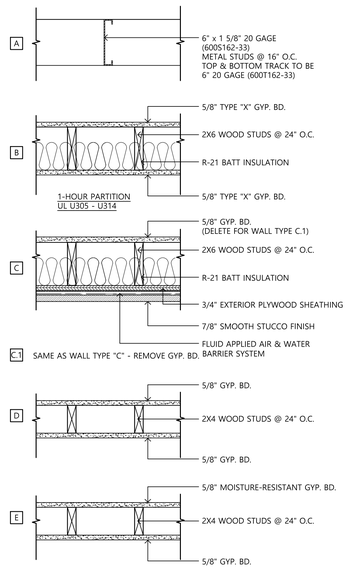
SIZE OF PIPE:	FLOW (1/4" /FOOT)	MAXIMUM ALLOWABLE HORIZONTAL PROJECTED ROOF AREAS AT VARIOUS RAINFALL RATES (SQUARE FEET)					
inches	gpm	1 (in/h)	2 (in/h)	3 (in/h)	4 (in/h)	5 (in/h)	6 (in/h)
2	30	2880	1,440	960	720	575	480
3	92	8800	4,400	2,930	2,200	1,760	1,470
4	192	18,400	9,200	6,130	4,600	3,680	3,070
5	360	34,600	17,300	11,530	8,650	6,920	5,765
6	563	54,000	27,000	17,995	13,500	10,800	9,000
8	1208	116,000	58,000	38,660	29,000	23,200	19,315



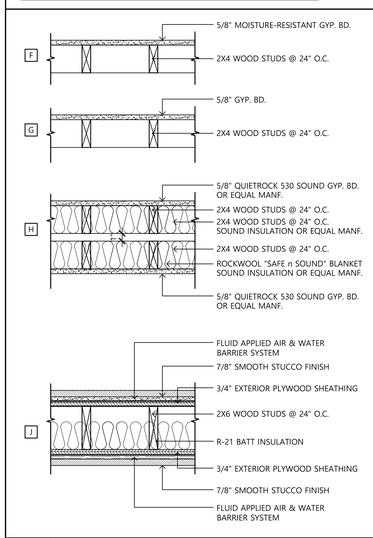
A DECK DRAIN

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

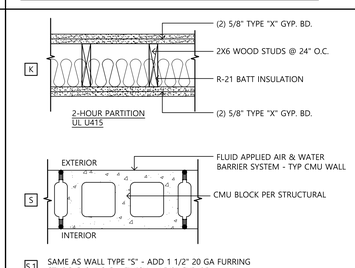
WALL TYPE



WALL TYPE



WALL TYPE



KEYNOTES

1. STRUCTURAL COLUMNS - COORDINATE WITH STRUCTURAL PLANS
2. LINE OF SHADE FEATURE ABOVE
3. TRASH CHUTE PENETRATION - MANUFACTURER T.B.D. SEE ASSEMBLY DETAIL 1.A8.05
4. REFUSE BINS
5. TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
6. PATIO ASSEMBLY - COORDINATE WITH STRUCTURAL - SEE DETAIL
7. HOLD WALL FURRING ASSEMBLY TIGHT TO COLUMN AS POSSIBLE
8. COORDINATE w/ OWNER FOR TENANT APPLIANCE PACKAGE
9. SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURES
10. PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
11. PROPOSED FIRE RISE PATH TO RATED CHASE ABOVE
12. RATED UTILITY CHASE - SEE SHEET A8.05
13. SLOPE BALCONY DECK TO DRAIN AS SHOWN: SEE DETAIL A/A251

LEGEND

- X — WALL TYPE PER SCHEDULE
- X — WINDOW TYPE PER SCHEDULE
- X — DOOR TYPE PER SCHEDULE
- X → KEYNOTE LEADER CALLOUT

SEAL

PATRICK J KLENK No. 1472 REGISTERED ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

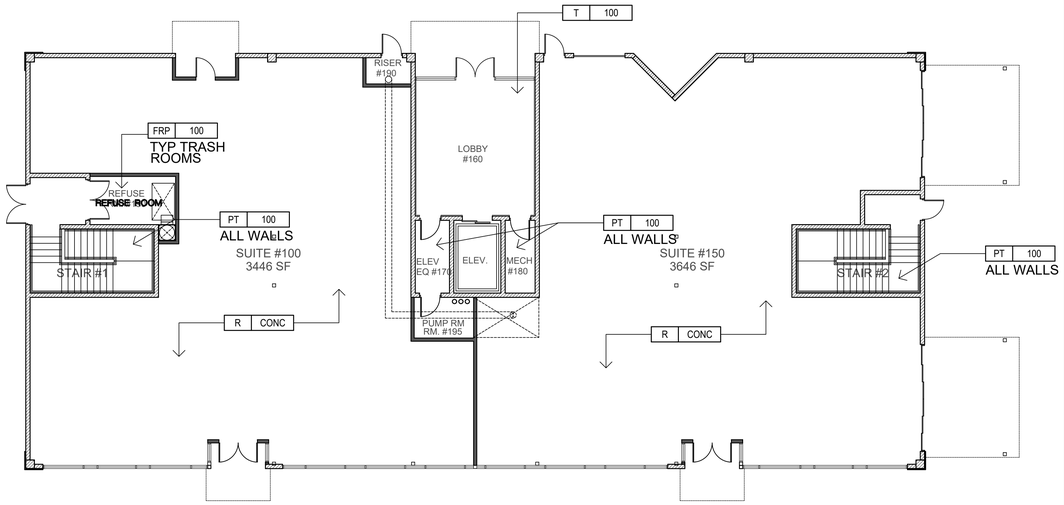
P. JAMES KLENK ARCHITECT

REVISIONS

REV	DESCRIPTION	DATE

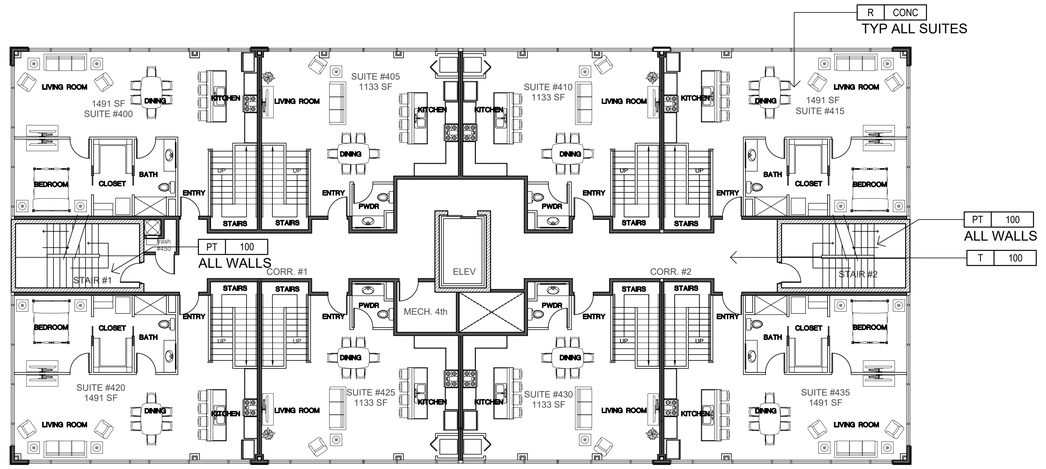
SHEET
A2.51
FLOOR PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A251.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:11pm



1 FLOOR PLAN - FIRST LEVEL OVERALL PLAN

SCALE: N.T.S.



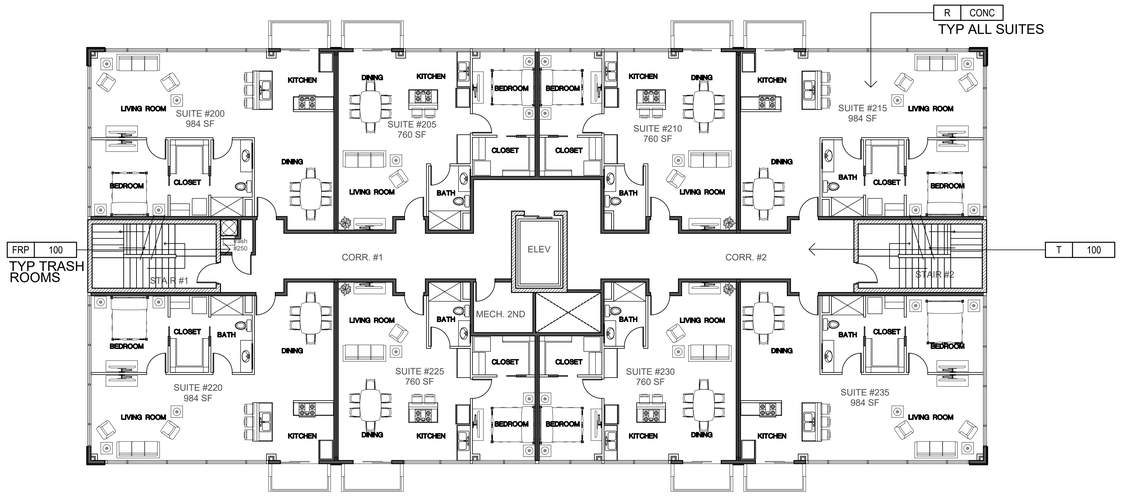
2 FLOOR PLAN - FORTH LEVEL OVERALL PLAN

SCALE: N.T.S

ABBREVIATIONS

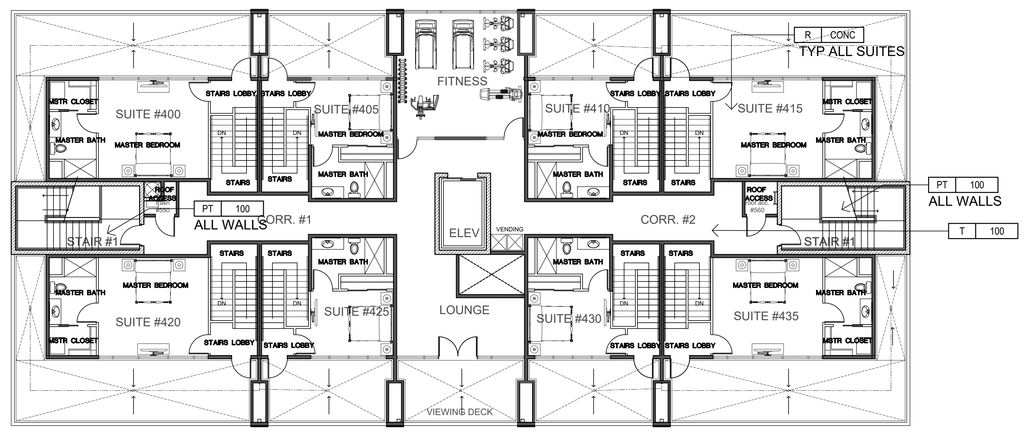
PT-100	BEHR MASONRY BRICK PAINT SELF-PRIMING - "FLAT WHITE"
PT-200	BEHR PAINT "DEEP BREATH" S460-7 - FLAT
PT-300	BEHR PAINT "PLANETARY SILVER" N460-2 - FLAT
R-CONC	RAW CONCRETE FINISH
S-CONC	SEALED CONCRETE FINISH
T-100	HARD GRAY WOOD PLANK PORCELAIN TILE
FRP-100	GREY FRP FINISH

NOTE:
ALL SUITES WALL TO BE PRIMED - PAINTED WHITE FOR TENANT CUSTOM FINISH



3 FLOOR PLAN - SECOND/THIRD LEVEL OVERALL PLAN

SCALE: N.T.S.



4 FLOOR PLAN - FIFTH LEVEL OVERALL PLAN

SCALE: N.T.S.

SEAL

PATRICK J KLENK No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES K ARCHITECT

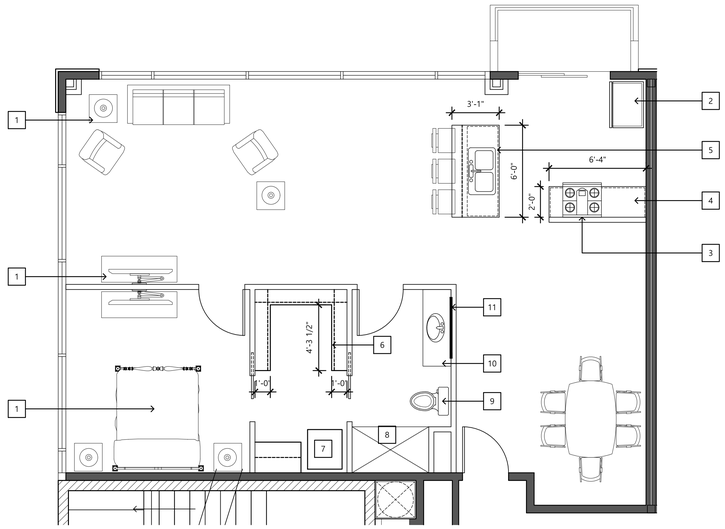
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A2.60
FINISH

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A260.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:04pm

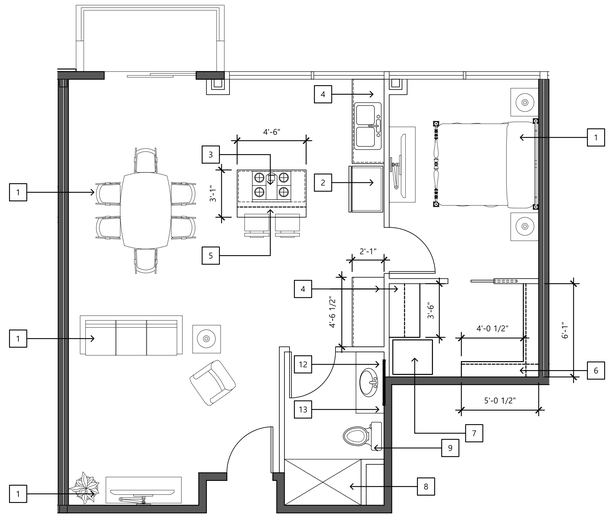


1 UNIT #200 FLOOR PLAN (SIM. #215 - #220 - #235) UNIT #300 FLOOR PLAN (SIM. #315 - #320 - #335)

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

TRUE NORTH

PLAN NORTH

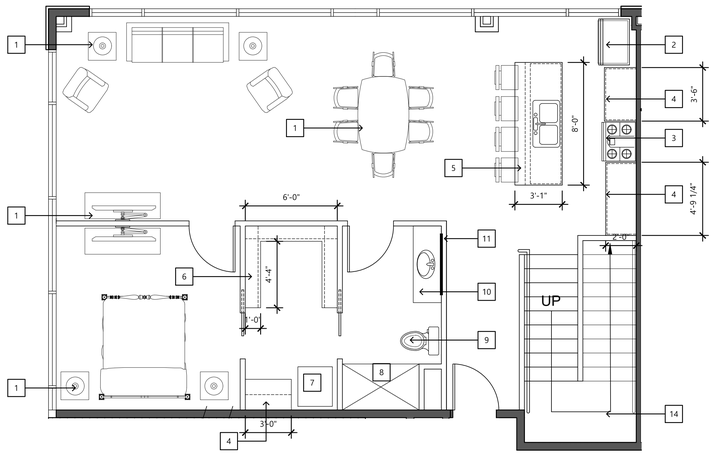


2 UNIT #205 FLOOR PLAN (SIM. #210 - #225 - #230) UNIT #300 FLOOR PLAN (SIM. #310 - #325 - #330)

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

TRUE NORTH

PLAN NORTH

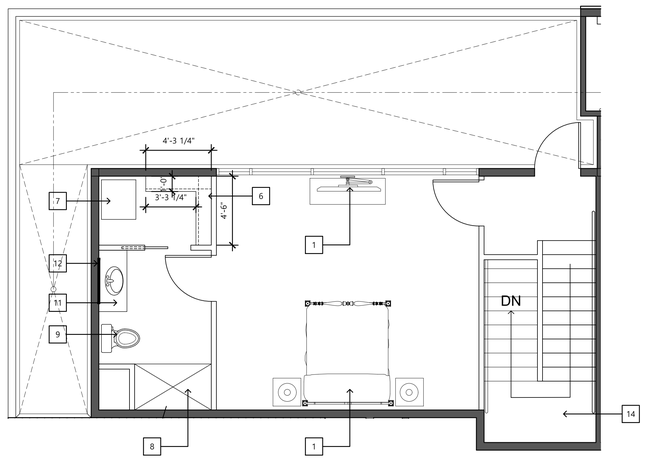


3 UNIT #400 FLOOR PLAN (SIM. #415 - #420 - #435) (BOTTOM FLOOR)

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

TRUE NORTH

PLAN NORTH



4 UNIT #400 FLOOR PLAN (SIM. #415 - #420 - #435) (TOP FLOOR)

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

TRUE NORTH

PLAN NORTH

KEYNOTES

1	TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
2	REFRIGERATOR
3	ELECTRIC RANGE
4	36" HIGH CABINET
5	36" HIGH CABINET - 42" HIGH BAR TOP
6	PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
7	STACKABLE WASHER/DRYER
8	SHOWER - SEE SHEET A8.04 FOR DETAILS
9	TOILET
10	60" x 24" BASE CABINET AND LAVATORY
11	48" X 48" ADHESIVELY APPLIED WALL MIRROR
12	36" X 48" ADHESIVELY APPLIED WALL MIRROR
13	48" x 24" BASE CABINET AND LAVATORY
14	STAIR ASSEMBLY w/ HANDRAILS - SEE ENLARGED PLAN

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES ARCHITECT

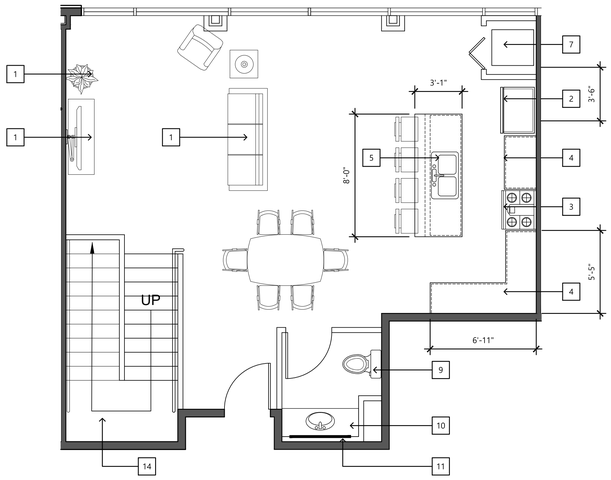
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A2.80
SUITES

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A280.dwg Was Last Modified by Technician pmanl9kmon On April 15, 2020 at 4:04pm

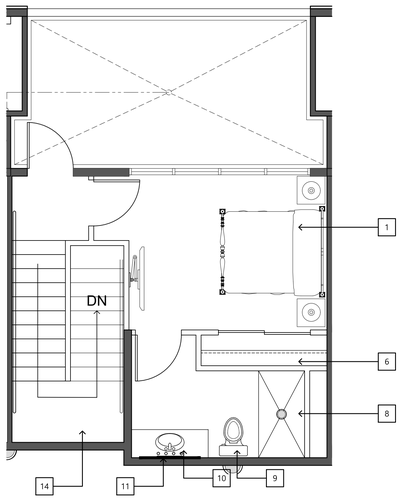


UNIT #405 FLOOR PLAN (SIM. #410 - #425 - #430)
(BOTTOM FLOOR)

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

TRUE NORTH

PLAN NORTH



UNIT #400 FLOOR PLAN (SIM. #415 - #420 - #435)
(BOTTOM FLOOR)

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

TRUE NORTH

PLAN NORTH

KEYNOTES

1	TENANT FURNITURE FOR REFERENCE ONLY - BY OTHERS
2	REFRIGERATOR
3	ELECTRIC RANGE
4	36" HIGH CABINET
5	36" HIGH CABINET - 42" HIGH BAR TOP
6	PROVIDE 12" DEEP CLOSET SHELF AND SUPPORT PER DETAIL PROVIDE BACKING AS REQUIRED
7	STACKABLE WASHER/DRYER
8	SHOWER - SEE SHEET A8.04 FOR DETAILS
9	TOILET
10	60" x 24" BASE CABINET AND LAVATORY
11	48" X 48" ADHESIVELY APPLIED WALL MIRROR
12	36" X 48" ADHESIVELY APPLIED WALL MIRROR
13	48" x 24" BASE CABINET AND LAVATORY
14	STAIR ASSEMBLY w/ HANDRAILS - SEE ENLARGED PLAN

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REV	Description	DATE

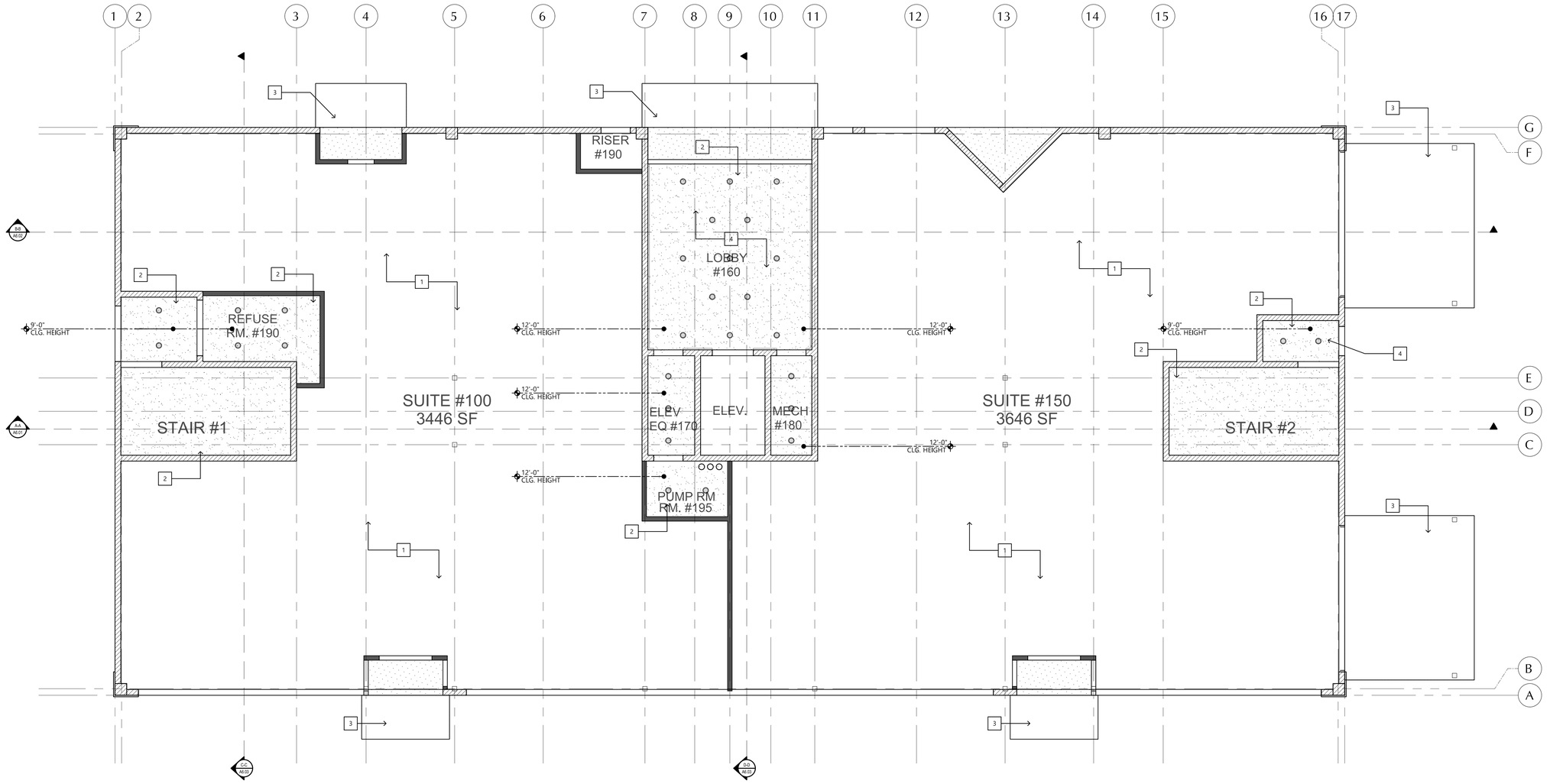
REVISIONS

SHEET

A2.85

SUITES

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A285.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:04pm



1 FLOOR PLAN - FIRST LEVEL OVERALL CEILING PLAN

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

TRUE NORTH

PLAN NORTH

SYMBOL LEGEND

SYMBOL	TYPE
	6" CAN LED RECESSED LIGHTING
	J-BOX FOR FUTURE TENANT LIGHTING
	GYPSUM BOARD LAY-IN CEILING ASSEMBLY
	STUCCO SOFFIT ASSEMBLY
	VANITY LIGHTING
	EXIT LIGHT
	WALL SCONCE LIGHT

KEYNOTES

1. UNHATCHED AREA NOTES AREA EXPOSED TO STRUCTURE ABOVE
2. INSTALL 5/8" GYPSUM BOARD LAYER IN COMMON AREAS SHOWN
3. LINE OF SHADE FEATURE - SEE STRUCTURAL DETAIL 8/S4.04
4. SHOWN LIGHT ARE FOR REFERENCE ONLY - COORDINATE w/ ELECTRICAL
5. SOFFIT ASSEMBLY - SEE WALL SECTION 1/A7.03

SEAL

PATRICK J KLENK No. 1472 REGISTERED ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

DATE: 07.10.2019

31 WATER STREET LLC

PROJECT NUMBER: 0201909

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

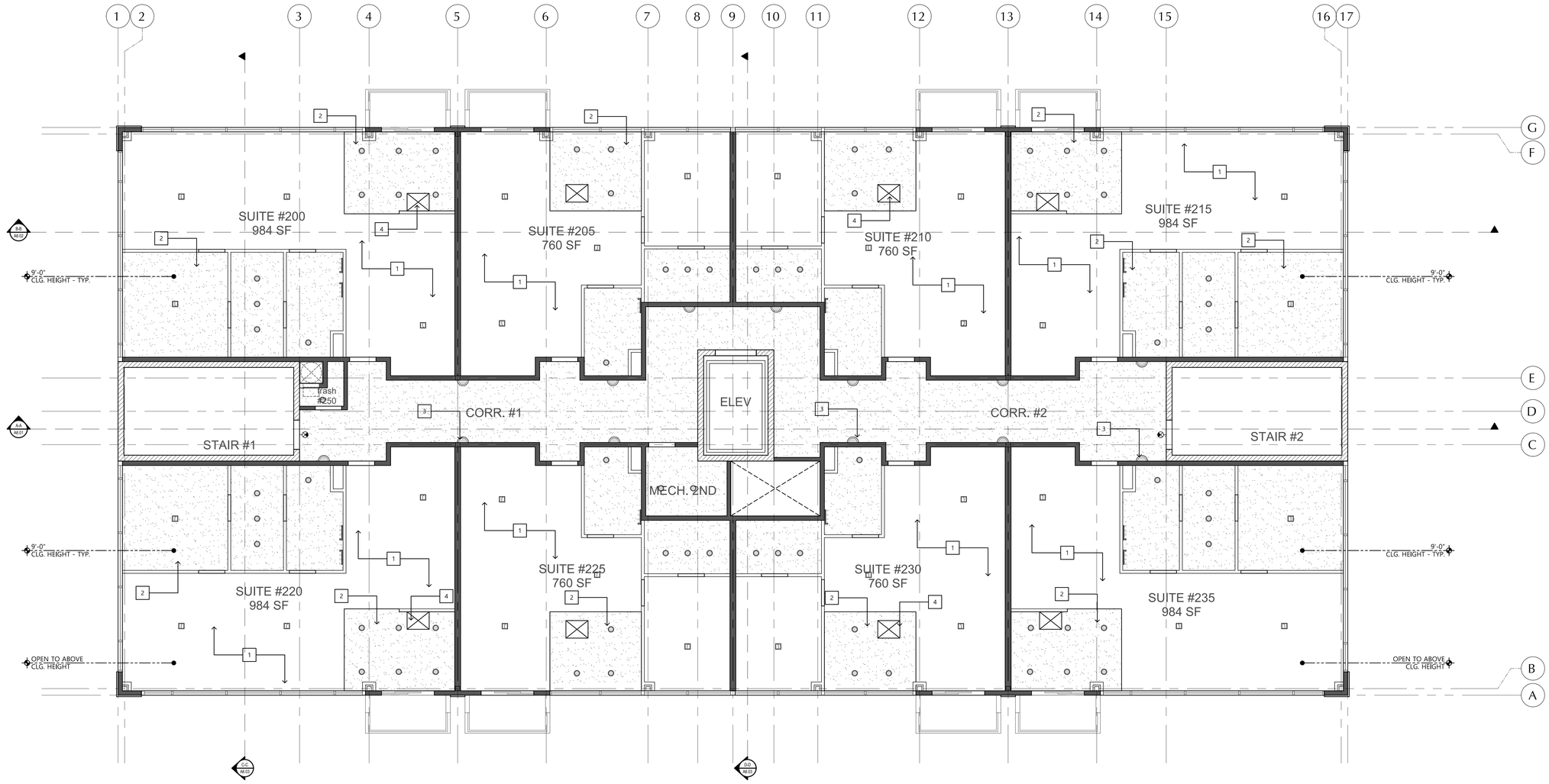
REV	Description	DATE

SHEET

A3.01

CEILING PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A301.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:11pm



1 FLOOR PLAN - SECOND/THIRD LEVEL CEILING PLAN

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

TRUE NORTH

PLAN NORTH

SYMBOL LEGEND

SYMBOL	TYPE
	6" CAN LED RECESSED LIGHTING
	J-BOX FOR FUTURE TENANT LIGHTING
	GYPSUM BOARD LAY-IN CEILING ASSEMBLY
	STUCCO SOFFIT ASSEMBLY
	VANITY LIGHTING
	EXIT LIGHT
	WALL SCONCE LIGHT

KEYNOTES

1. UNHATCHED AREA NOTES AREA EXPOSED TO STRUCTURE ABOVE - TYP.
2. INSTALL 5/8" GYPSUM BOARD LAYER IN COMMON AREAS SHOWN
3. WALL SCONCE LIGHTING PER ELECTRICAL PLANS - TYP.
4. MECHANICAL HOOD CHASE - COORDINATE WITH MECHANICAL PLANS

SEAL

PATRICK J KLENK REGISTERED No. 11472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES K ARCHITECT

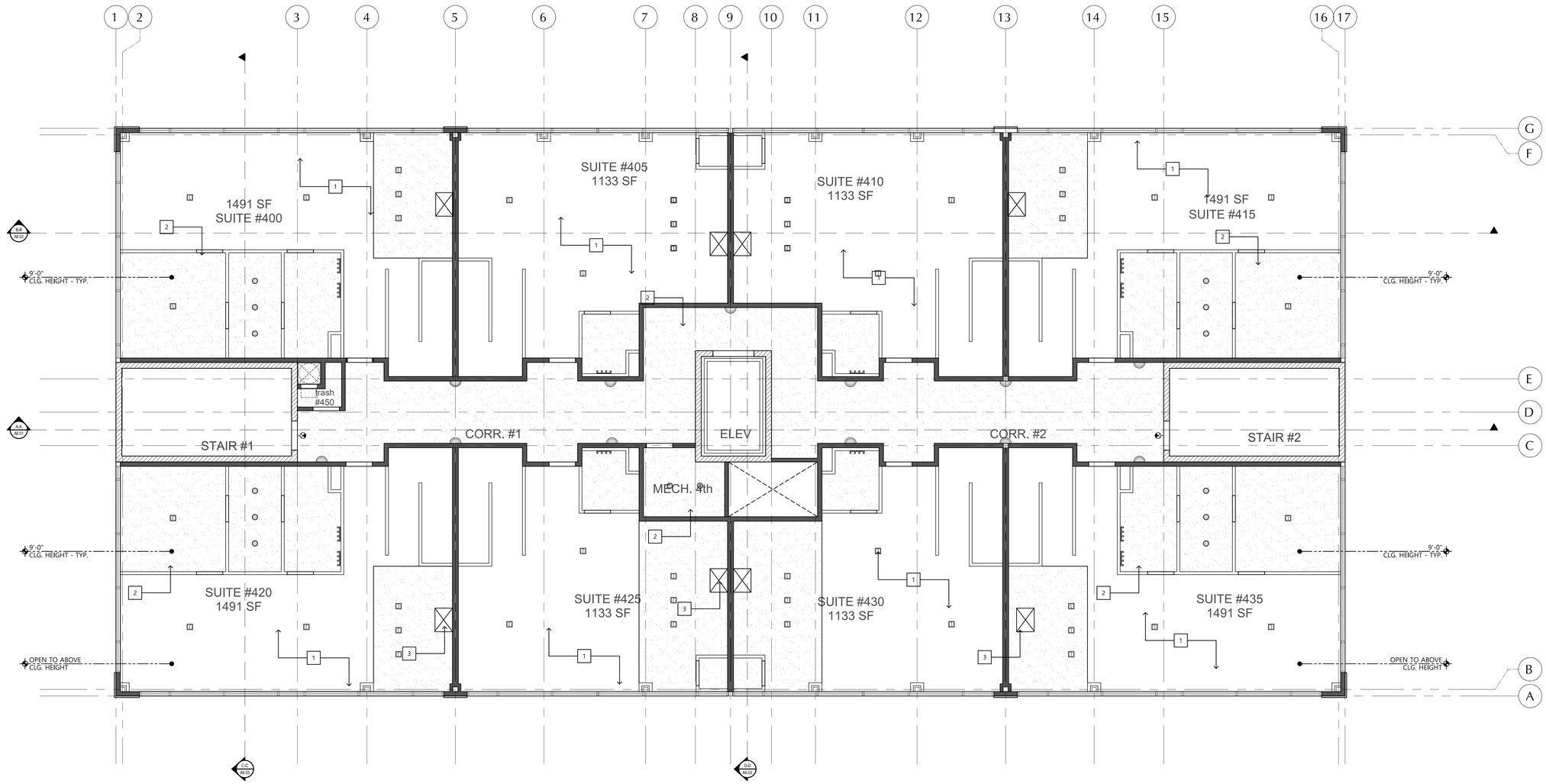
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A3.20
CEILING PLAN

W:\Drawing Projects\Drawings\31 Water Street\020919_09_A320.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:04pm



1 FLOOR PLAN - FORTH LEVEL CEILING PLAN

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

TRUE NORTH

PLAN NORTH

SYMBOL LEGEND

SYMBOL	TYPE
	6" CAN LED RECESSED LIGHTING
	J-BOX FOR FUTURE TENANT LIGHTING
	GYPSUM BOARD LAY-IN CEILING ASSEMBLY
	STUCCO SOFFIT ASSEMBLY
	VANITY LIGHTING
	EXIT LIGHT
	WALL SCONCE LIGHT

KEYNOTES

1. UNHATCHED AREA NOTES AREA EXPOSED TO STRUCTURE ABOVE
2. INSTALL 5/8" GYPSUM BOARD LAYER IN COMMON AREAS SHOWN
3. MECHANICAL HOOD CHASE - COORDINATE w/ MECHANICAL PLANS - TYP.

SEAL

PATRICK J KLENK No. 1472 REGISTERED ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

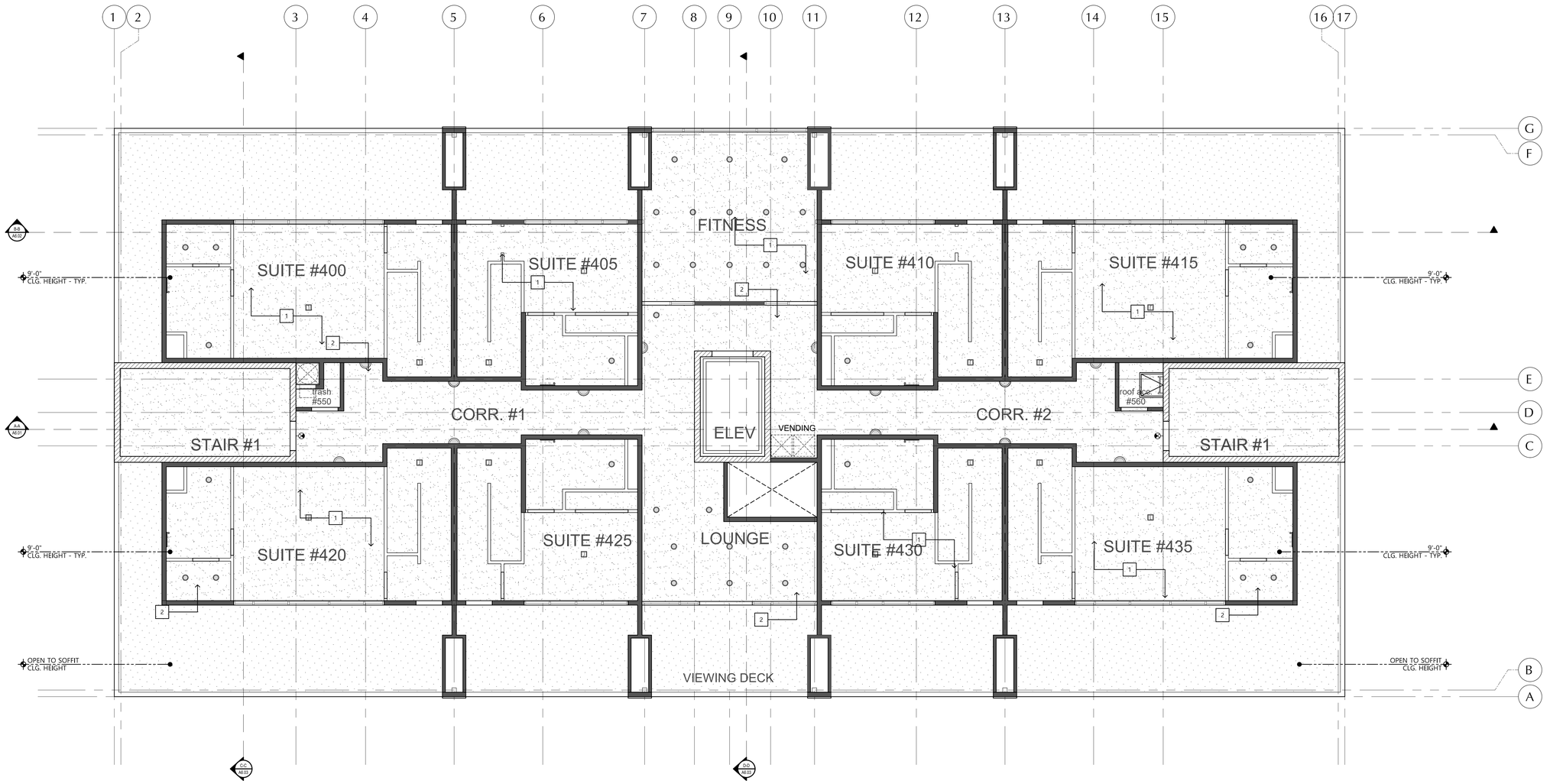
REV	Description	DATE

SHEET

A3.40

CEILING PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A340.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:10pm



1 FLOOR PLAN - FIFTH LEVEL CEILING PLAN

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

TRUE NORTH

PLAN NORTH

SYMBOL LEGEND

SYMBOL	TYPE
	6" CAN LED RECESSED LIGHTING
	J-BOX FOR FUTURE TENANT LIGHTING
	GYPSUM BOARD LAY-IN CEILING ASSEMBLY
	STUCCO SOFFIT ASSEMBLY
	VANITY LIGHTING
	EXIT LIGHT
	WALL SCONCE LIGHT

KEYNOTES

1. UNHATCHED AREA NOTES AREA EXPOSED TO STRUCTURE ABOVE
2. INSTALL 5/8" GYPSUM BOARD LAYER IN COMMON AREAS SHOWN

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES ARCHITECT

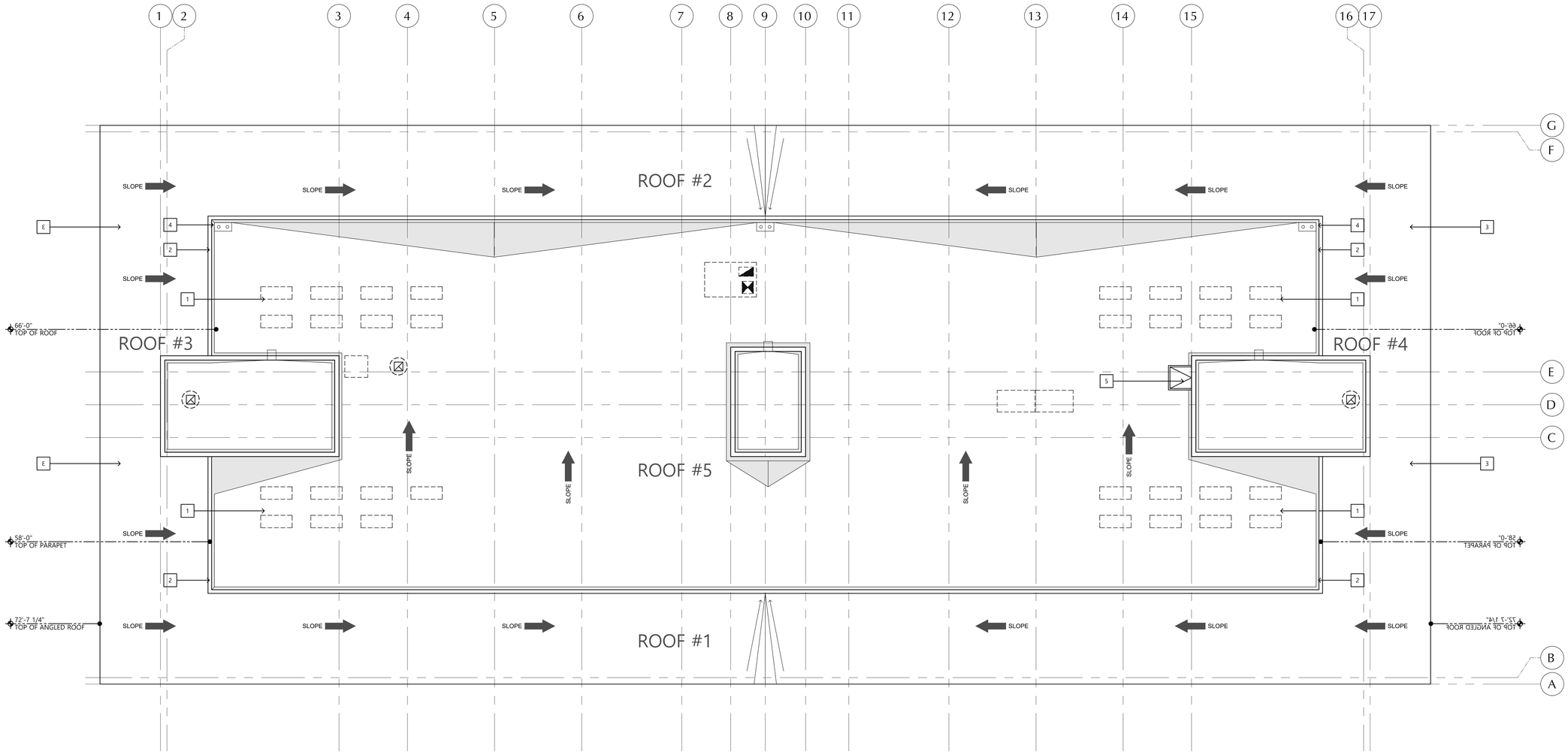
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.883.3277

REVISIONS

REV	Description	DATE

SHEET
A3.50
CEILING PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A350.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:04pm



1 ROOF PLAN

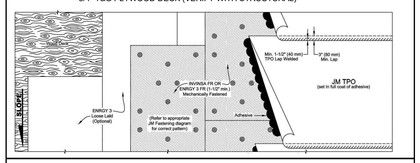
SCALE: 3/16" = 1'-0"

TRUE NORTH

PLAN NORTH

ROOF ASSEMBLY: (SHOWN FOR CLARITY - INSTALL PER MANF. RECOM.)

TPO 80 MIL ROOF MEMBRANE (ADHESIVELY ATTACHED PER MANF.)
ENRGY 3 FR RIGID INSULATION (OR EQUAL)
3/4" T&G PLYWOOD DECK (VERIFY WITH STRUCTURAL)



ROOF GUTTER CALCS

100 YEAR CALCULATION PER 1611.1: 1.4" PER HOUR

DOWNSPOUT CAPACITY:
ROOF #1 - 1,617 SF

DOWNSPOUT CAPACITY:
ROOF #2 - 1,617 SF

DOWNSPOUT CAPACITY:
ROOF #3 - 613 SF

DOWNSPOUT CAPACITY:
ROOF #4 - 613 SF

DOWNSPOUT CAPACITY:
ROOF #5 - 5,093 SF

ROOF SQUARE FOOTAGE TOTAL: 9,553 SQ. FT.

RAINFALL PER 2018 UPC TABLE 1106.2 STORM DRAIN

SIZE OF PIPE:	FLOW (1/4" /FOOT)	MAXIMUM ALLOWABLE HORIZONTAL PROJECTED ROOF AREAS AT VARIOUS RAINFALL RATES (SQUARE FEET)					
inches	gpm	1 (in/h)	2 (in/h)	3 (in/h)	4 (in/h)	5 (in/h)	6 (in/h)
2	30	2880	1,440	960	720	575	480
3	92	8800	4,400	2,930	2,200	1,760	1,470
4	192	18,400	9,200	6,130	4,600	3,680	3,070
5	360	34,600	17,300	11.530	8,650	6,920	5,765
6	563	54,000	27,000	17,995	13,500	10,800	9,000
8	1208	116,000	58,000	38,660	29,000	23,200	19,315

KEYNOTES

1. TPO ROOF ASSEMBLY PER DETAIL BELOW
2. 6" CONT. CANT STRIP FOR POSITIVE DRAINAGE DETAIL 10/A8.04
3. DECORATIVE ROOF SHADE ASSEMBLY - SEE EXTERIOR ELEVATIONS
4. ROOF DRAINS ASSEMBLY PER DETAILS 8/A8.04
5. BILCO TYPE S OR EQUAL ROOF ACCESS HATCH DETAIL 24/A8.02

SEAL

PATRICK J KLENK No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC

DATE: 07.10.2019
PROJECT NUMBER: 0201909

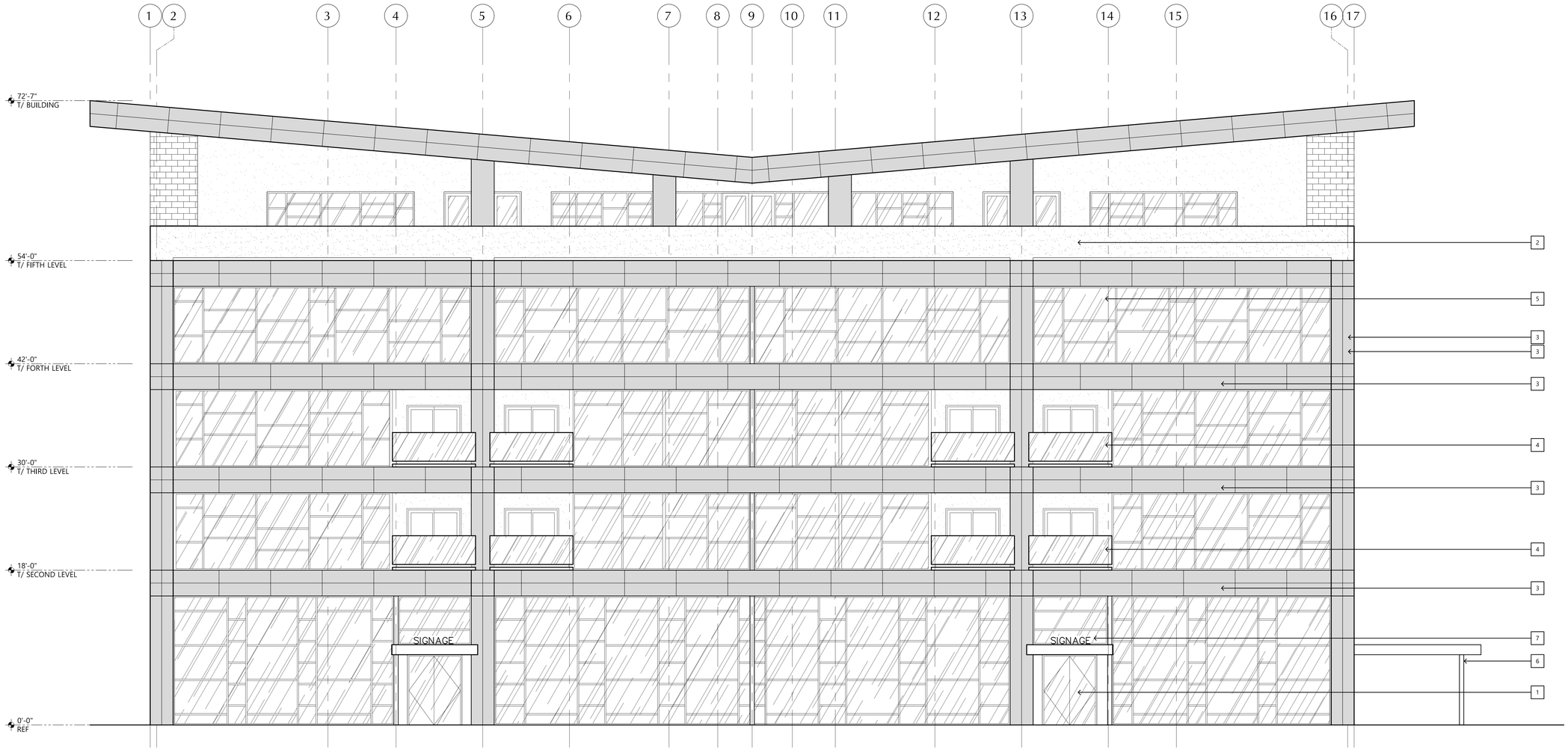
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	DATE	Description

SHEET
A4.01
ROOF PLAN

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A401.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:04pm



N EXTERIOR ELEVATION - SOUTH

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

KEYNOTES

1. STOREFRONT DOOR ASSEMBLY TO MATCH WINDOW GLAZING - SEE SCHED.
2. SMOOTH FACE STUCCO FINISH - COLOR TBD
3. ALUMINUM COMPOSITE PANEL SYSTEM - SEE DETAILS SHEET A8.02
4. TEMPERED GLASS BALCONY RAILING
5. SEE WINDOW SCHEDULE FOR GLAZING SYSTEM
6. DECORATIVE ALUMINUM SHADE STRUCTURE PER STRUCTURAL DETAILS
7. FUTURE BUILDING SIGNAGE - ADDRESS LOCATION ILLUMINATED

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

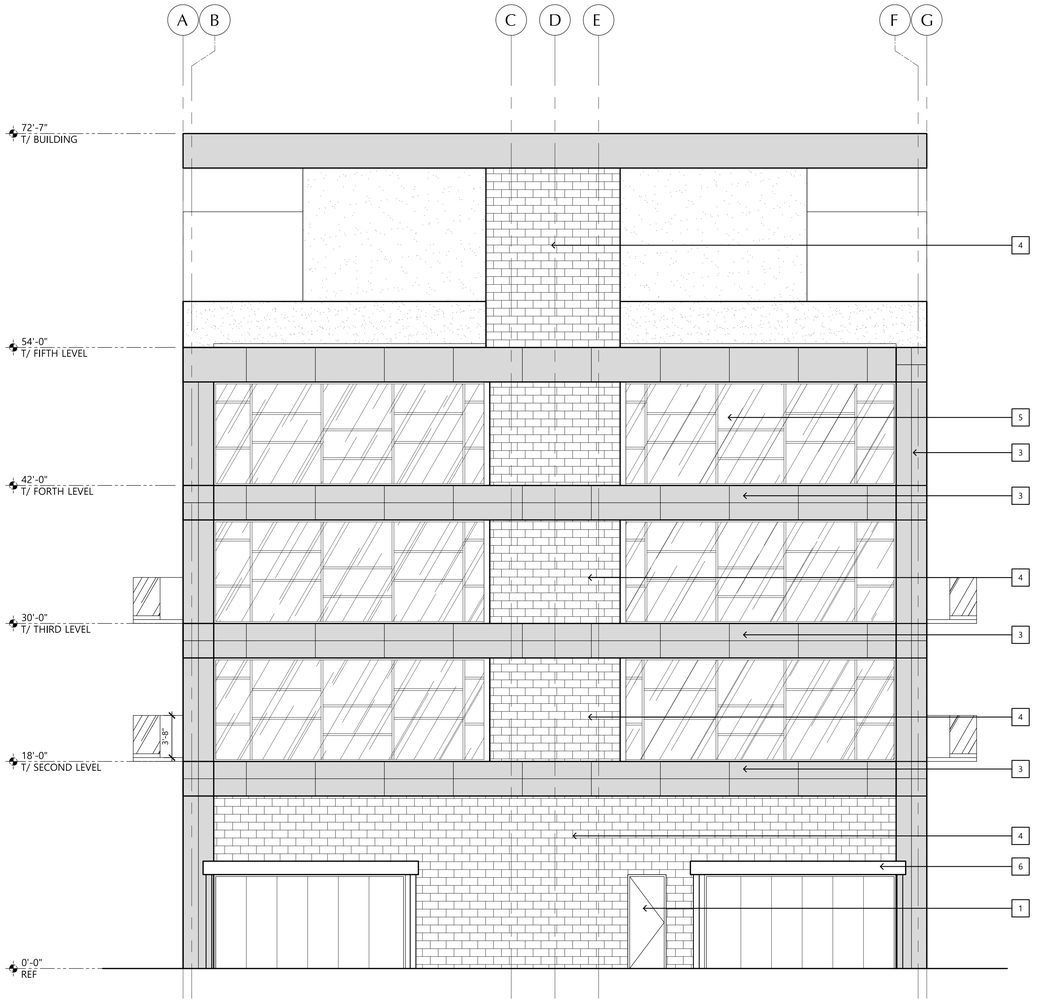
REV	Description	DATE

SHEET

A5.01

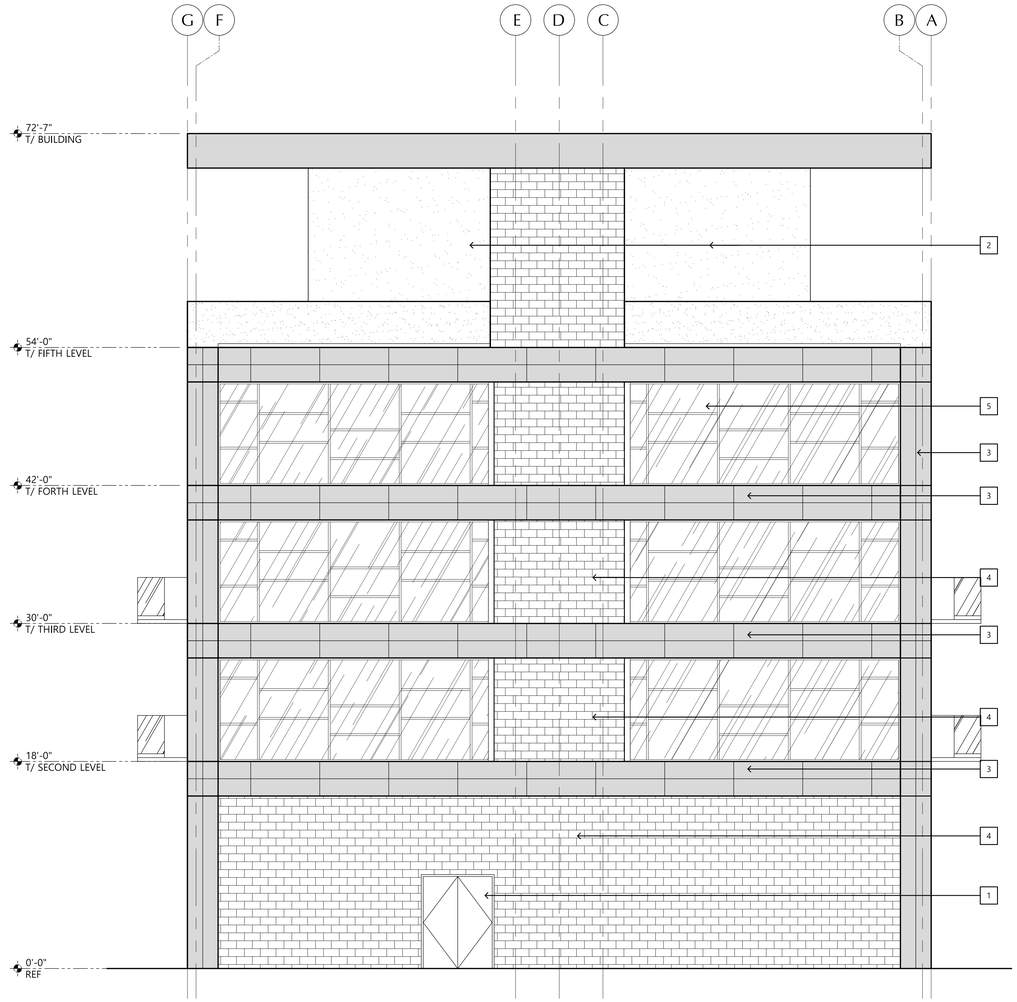
EXT ELEVATIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A501.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:05pm



E EXTERIOR ELEVATION - EAST

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



W EXTERIOR ELEVATION - WEST

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

KEYNOTES

1. HOLLOW METAL DOOR ASSEMBLY PAINTED TO MATCH BUILDING
2. SMOOTH FACE STUCCO FINISH - COLOR TBD
3. ALUMINUM COMPOSITE PANEL SYSTEM - SEE DETAILS SHEET A8.02
4. SPLIT FACE CMU - COORDINATE WITH STRUCURAL PLANS - COLOR TBD
5. SEE WINDOW SCHEDULE FOR GLAZING SYSTEM
6. DECORATIVE ALUMINUM SHADE STRUCTURE PER STRUCTURAL DETAILS
7. FUTURE BUILDING SIGNAGE - ADDRESS LOCATION ILLUMINATED

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

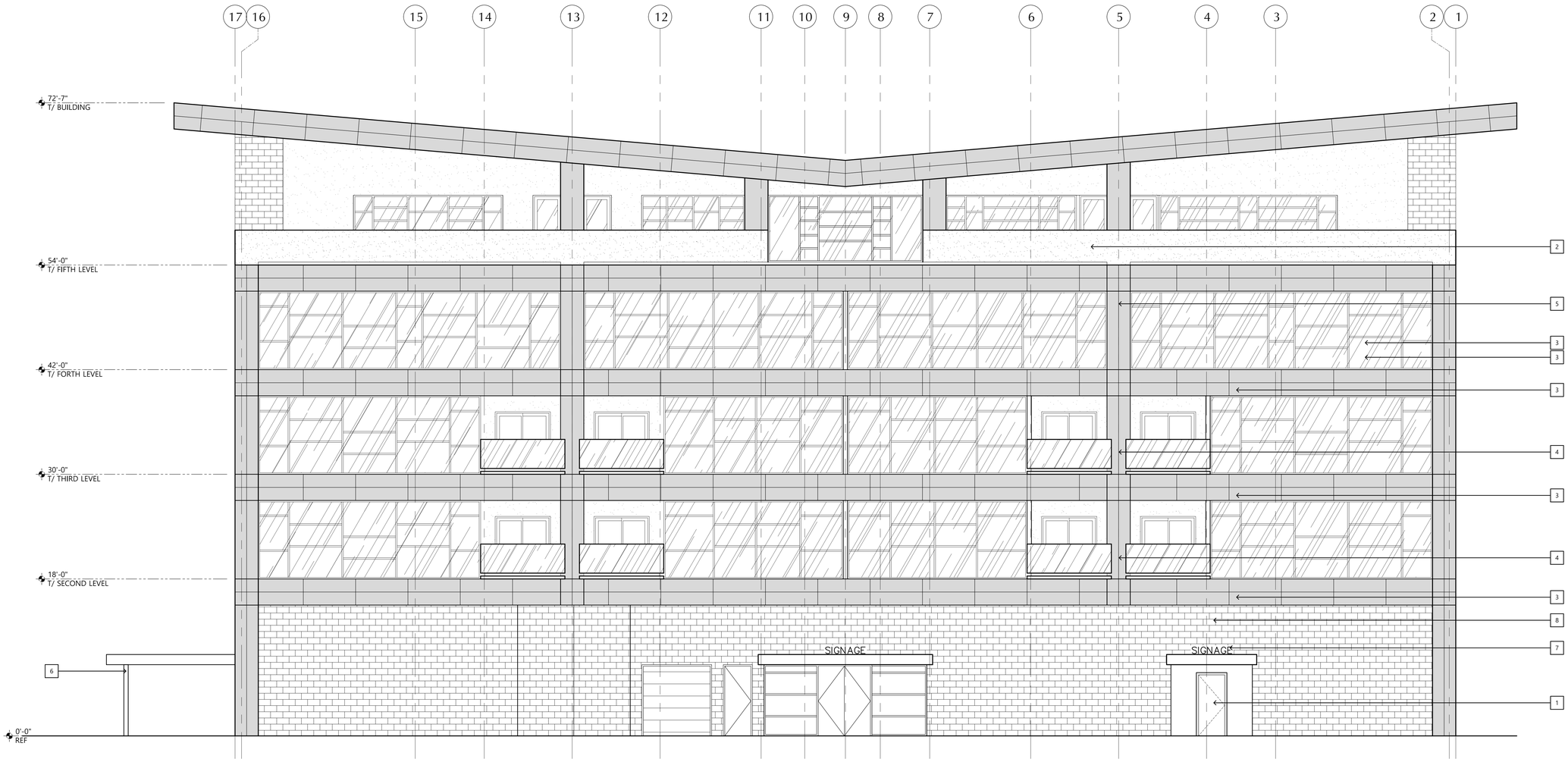
REVISIONS		
REV	Description	DATE

SHEET

A5.02

EXT ELEVATIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A502.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:05pm



N EXTERIOR ELEVATION - NORTH

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

KEYNOTES

1. HOLLOW METAL DOOR ASSEMBLY PAINTED TO MATCH BUILDING
2. SMOOTH FACE STUCCO FINISH - COLOR TBD
3. ALUMINUM COMPOSITE PANEL SYSTEM - SEE DETAILS SHEET A8.02
4. TEMPERED GLASS BALCONY RAILING
5. SEE WINDOW SCHEDULE FOR GLAZING SYSTEM
6. DECORATIVE ALUMINUM SHADE STRUCTURE PER STRUCTURAL DETAILS
7. FUTURE BUILDING SIGNAGE - ADDRESS LOCATION ILLUMINATED
8. SPLIT FACE CMU - COORDINATE WITH STRUCURAL PLANS - COLOR TBD

SEAL

PATRICK J KLENK REGISTERED ARCHITECT NO. 1472 STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

DATE: 07.10.2019

31 WATER STREET LLC

PROJECT NUMBER: 0201909

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET

A5.03

EXT ELEVATIONS

W:\Drawing Projects\Drawings\31 Water Street\(02019_09_A503.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:05pm

BUILDING SECTION A-A

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

KEYNOTES

1. EXTERIOR CMU STAIR ENCLOSURE PER STRUCTUARAL DRAWINGS
2. STAIR ASSEMBLY - SEE SHEET A8.03 FOR DETAILS
3. STAIR LANDING PER STRUCTURAL
4. FINAL ELEVATOR PIT DEPTH/REQUIREMENTS SHALL BE COORDINATED w/ FINAL SELECTED SHOP DRAWINGS
5. DOOR ASSEMBLY PER DOOR SCHEDULE
6. COORDINATE WITH STRUCTURAL DRAWINGS FOR BEARING BEAM CONNECTIONS AND LOCATIONS
7. COORDINATE SLAB/FOUNDATION ASSEMBLY WITH STRUCTURAL
8. COORDINATE FINAL ROOF ASSEMBLY WITH SHEET A4.01
9. COMPOSITE PANEL EXTERIOR FINISH - SEE SHEET A8.02
10. EXTERIOR GLAZING ASSEMLBY - SEE SHEET A8.02
11. FLOOR ASSEMBLY PER STRUCTURAL
12. INTERIOR WALL ASSEMBLY PER WALL SCHEDULE

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES ARCHITECT

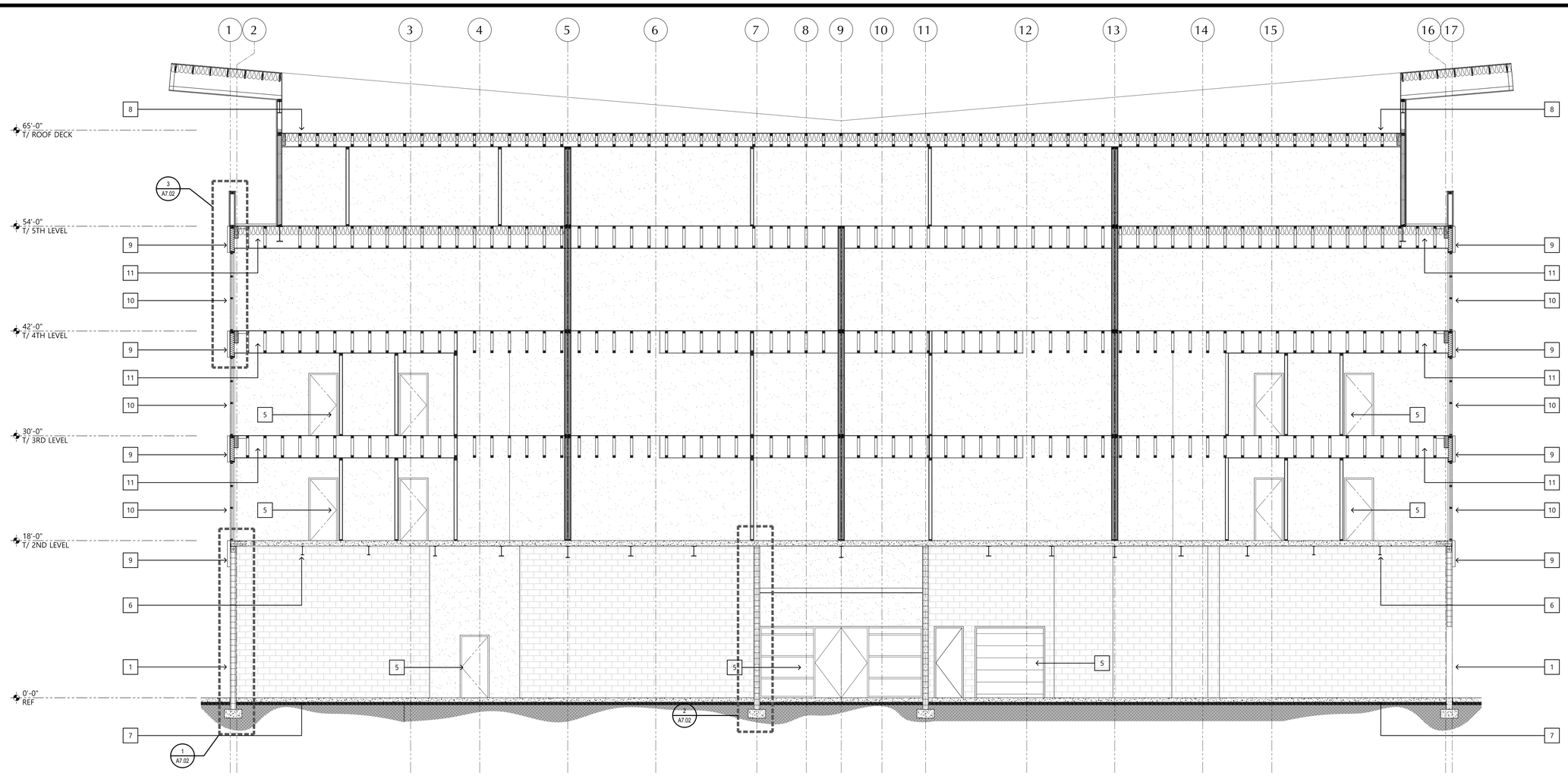
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A6.01
SECTIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A601.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:05pm



B BUILDING SECTION B-B

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

KEYNOTES

1. EXTERIOR CMU STAIR ENCLOSURE PER STRUCTUARAL DRAWINGS
2. STAIR ASSEMBLY - SEE SHEET A8.03 FOR DETAILS
3. STAIR LANDING PER STRUCTURAL
4. FINAL ELEVATOR PIT DEPTH/REQUIREMENTS SHALL BE COORDINATED w/ FINAL SELECTED SHOP DRAWINGS
5. DOOR ASSEMBLY PER DOOR SCHEDULE
6. COORDINATE WITH STRUCTURAL DRAWINGS FOR BEARING BEAM CONNECTIONS AND LOCATIONS
7. COORDINATE SLAB/FOUNDATION ASSEMBLY WITH STRUCTURAL
8. COORDINATE FINAL ROOF ASSEMBLY WITH SHEET A4.01
9. COMPOSITE PANEL EXTERIOR FINISH - SEE SHEET A8.02
10. EXTERIOR GLAZING ASSEMLBY - SEE SHEET A8.02
11. FLOOR ASSEMBLY PER STRUCTURAL
12. INTERIOR WALL ASSEMBLY PER WALL SCHEDULE

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

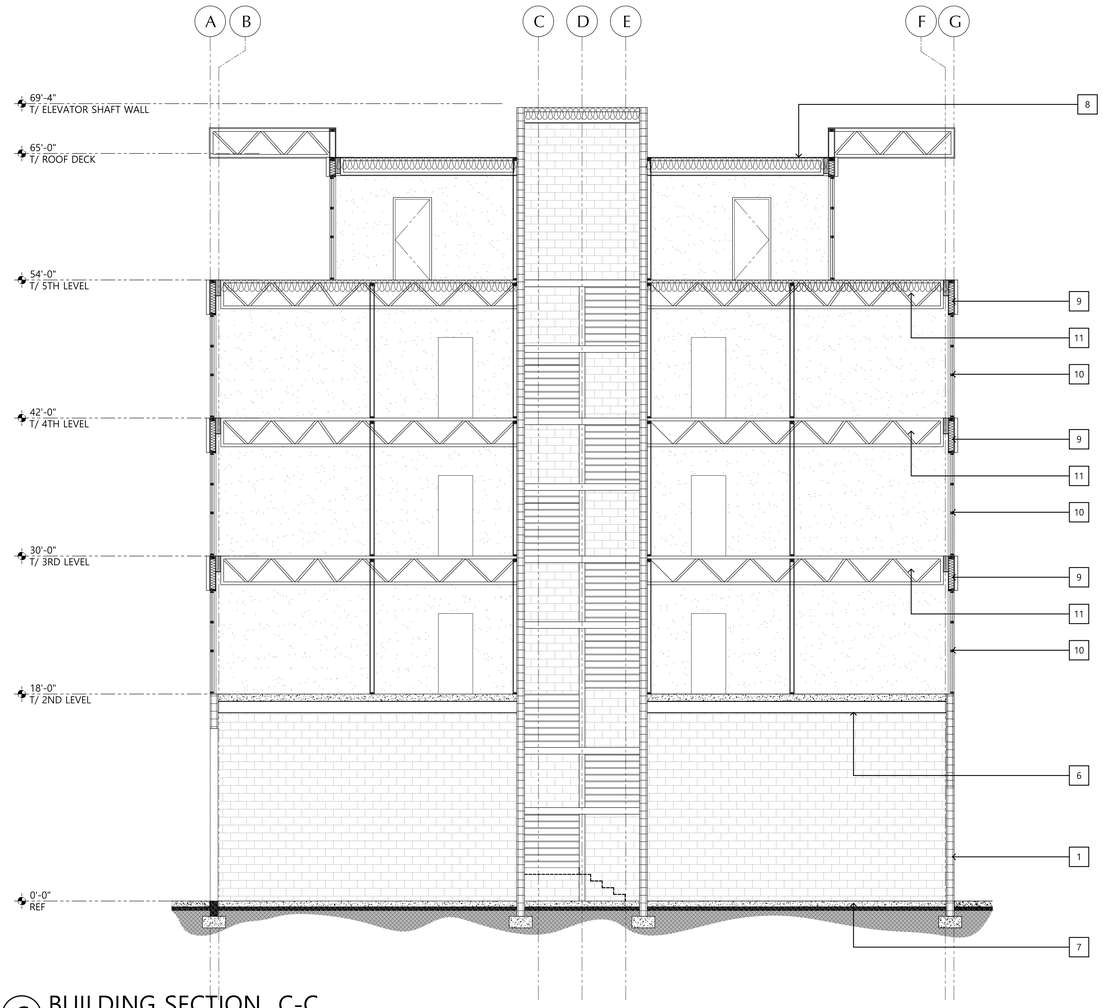
REV	Description	DATE

SHEET

A6.02

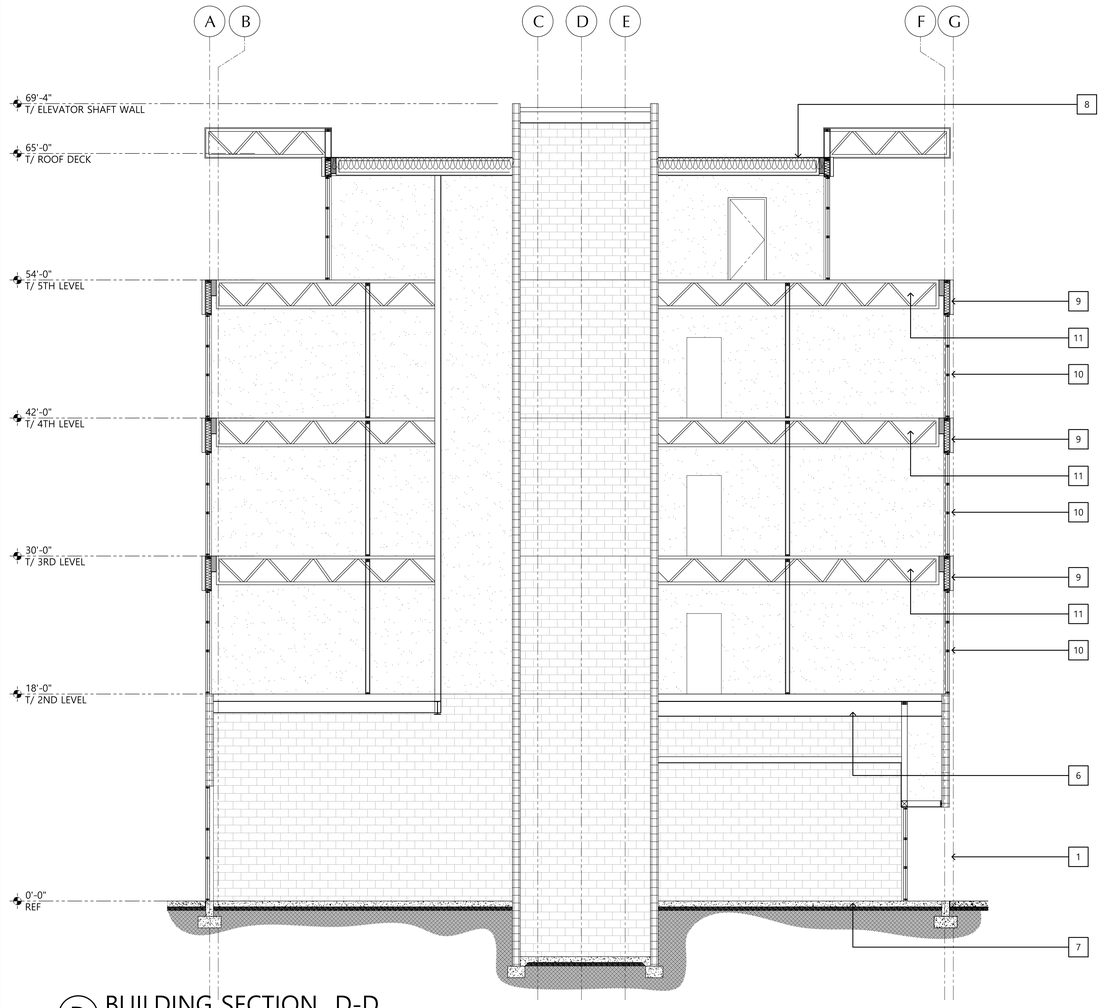
SECTIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A602.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:05pm



C BUILDING SECTION C-C

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



D BUILDING SECTION D-D

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

KEYNOTES

1. EXTERIOR CMU STAIR ENCLOSURE PER STRUCTUARAL DRAWINGS
2. STAIR ASSEMBLY - SEE SHEET A8.03 FOR DETAILS
3. STAIR LANDING PER STRUCTURAL
4. FINAL ELEVATOR PIT DEPTH/REQUIREMENTS SHALL BE COORDINATED w/ FINAL SELECTED SHOP DRAWINGS
5. DOOR ASSEMBLY PER DOOR SCHEDULE
6. COORDINATE WITH STRUCTURAL DRAWINGS FOR BEARING BEAM CONNECTIONS AND LOCATIONS
7. COORDINATE SLAB/FOUNDATION ASSEMBLY WITH STRUCTURAL
8. COORDINATE FINAL ROOF ASSEMBLY WITH SHEET A4.01
9. COMPOSITE PANEL EXTERIOR FINISH - SEE SHEET A8.02
10. EXTERIOR GLAZING ASSEMLBY - SEE SHEET A8.02
11. FLOOR ASSEMBLY PER STRUCTURAL
12. INTERIOR WALL ASSEMBLY PER WALL SCHEDULE

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

DATE: 07.10.2019

31 WATER STREET LLC

PROJECT NUMBER: 0201909

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

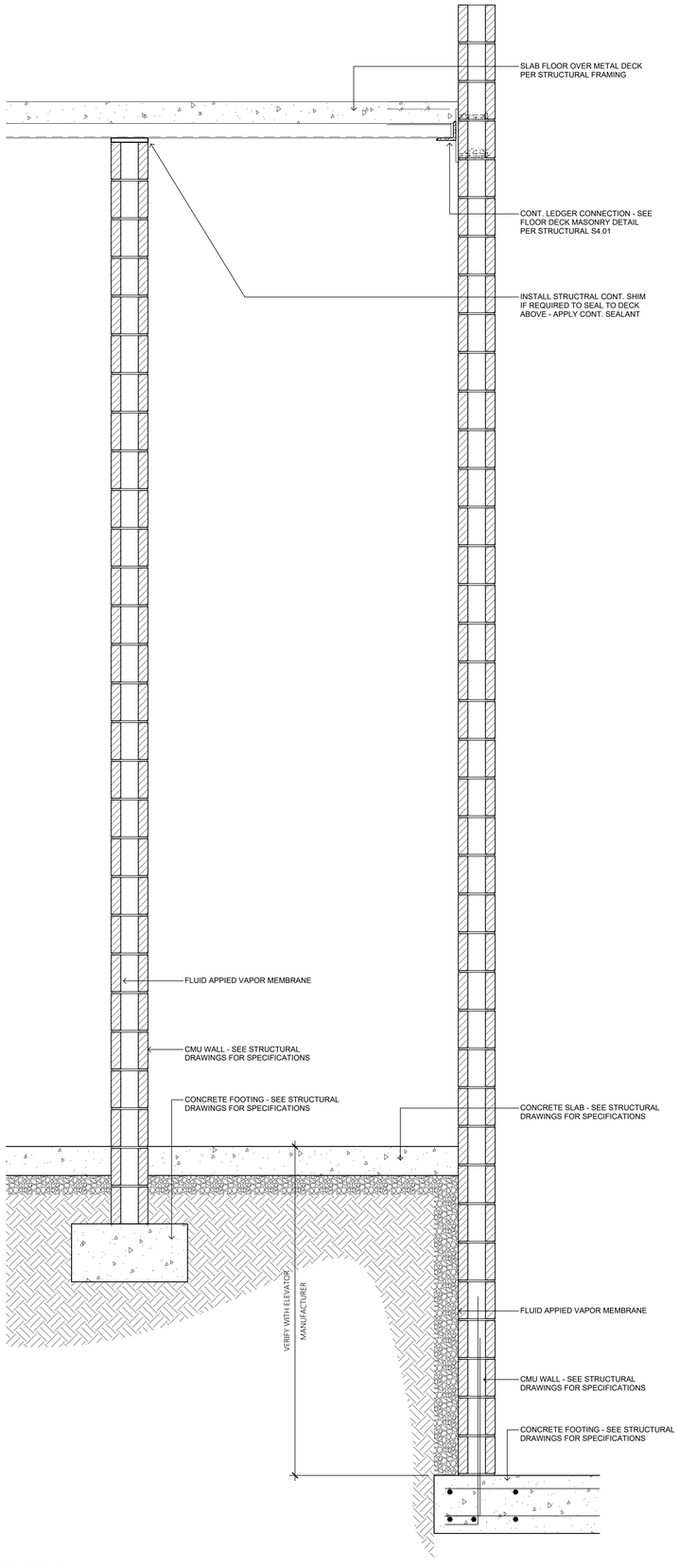
REVISIONS		
REV	Description	DATE

SHEET

A6.03

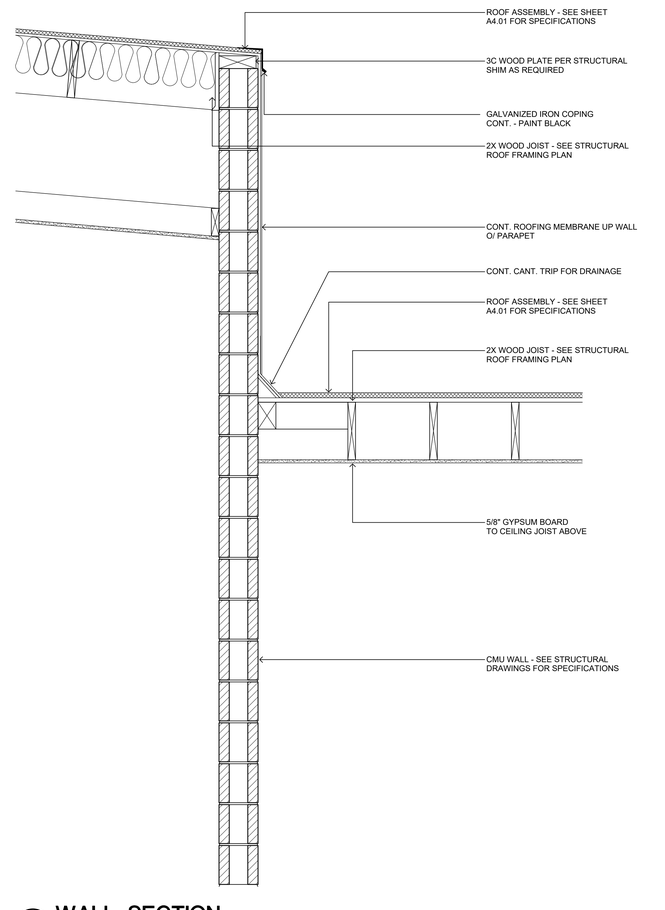
SECTIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A603.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:05pm



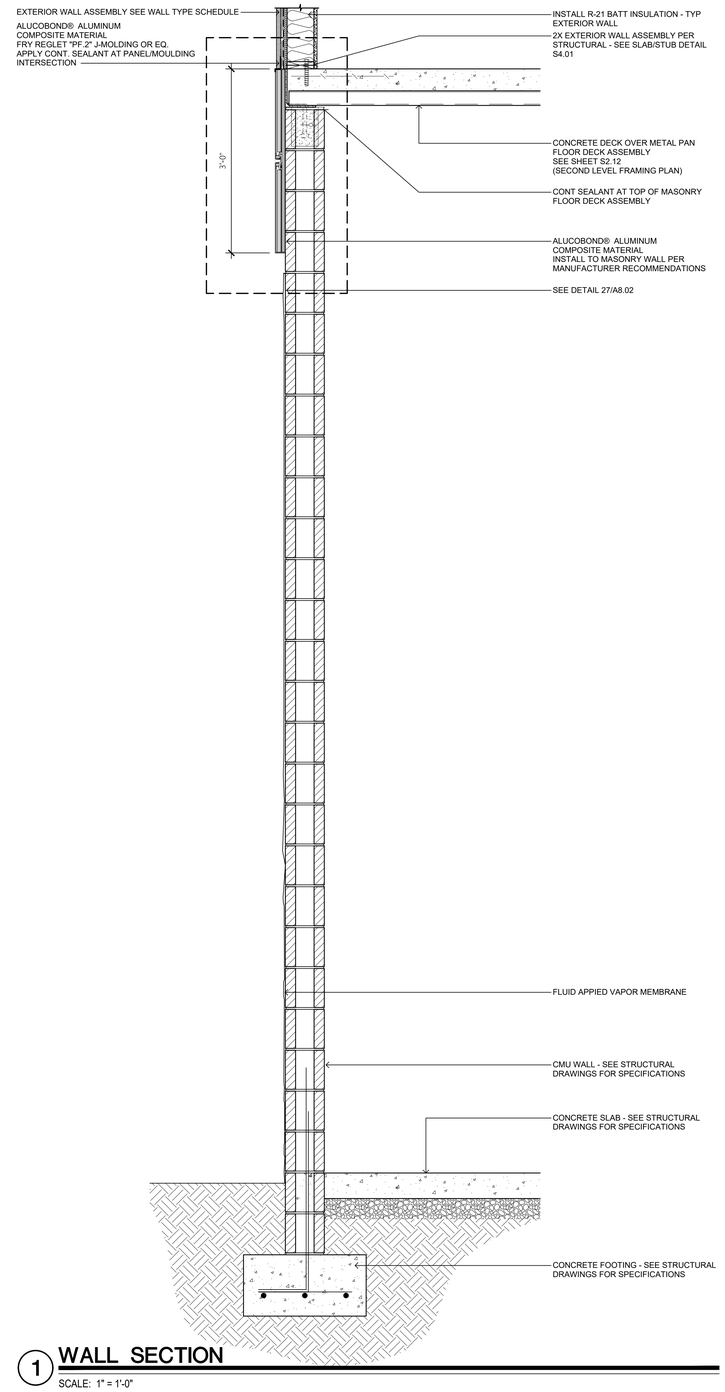
3 WALL SECTION

SCALE: 1" = 1'-0"



2 WALL SECTION

SCALE: 1" = 1'-0"



1 WALL SECTION

SCALE: 1" = 1'-0"

SEAL

PATRICK J KLENK
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

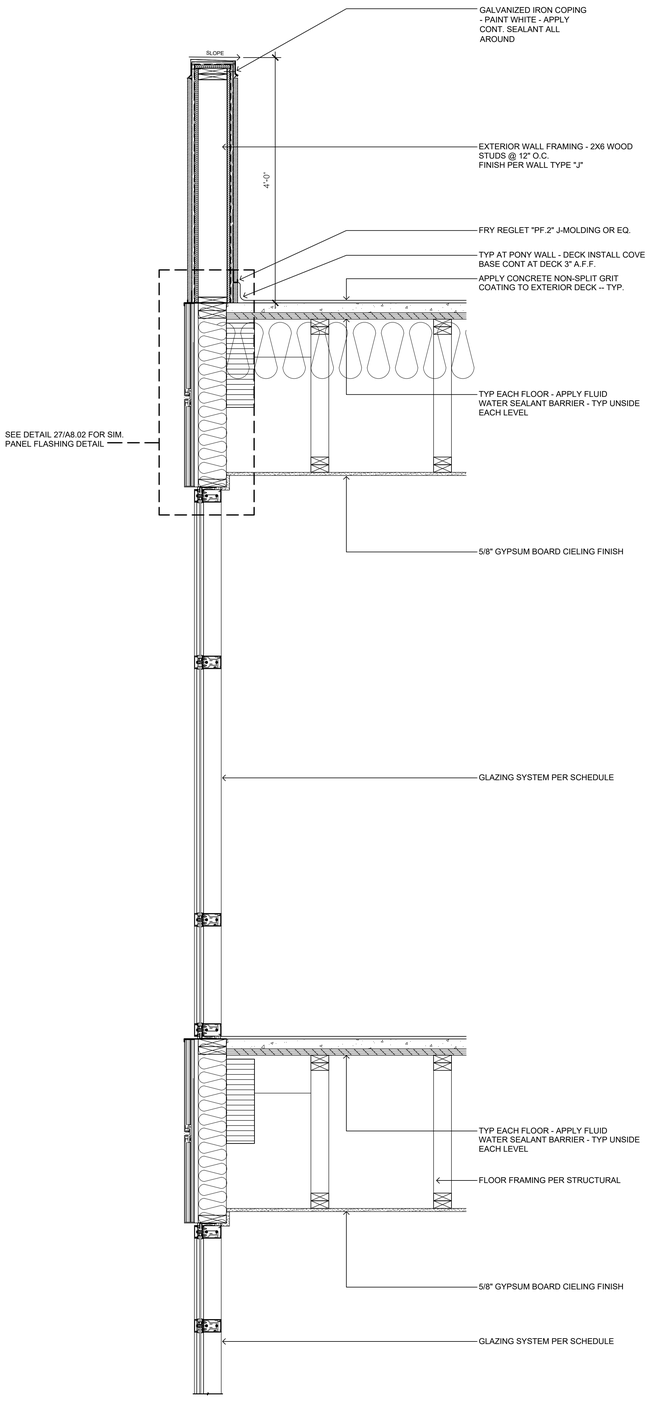
REV	Description	DATE

SHEET

A7.01

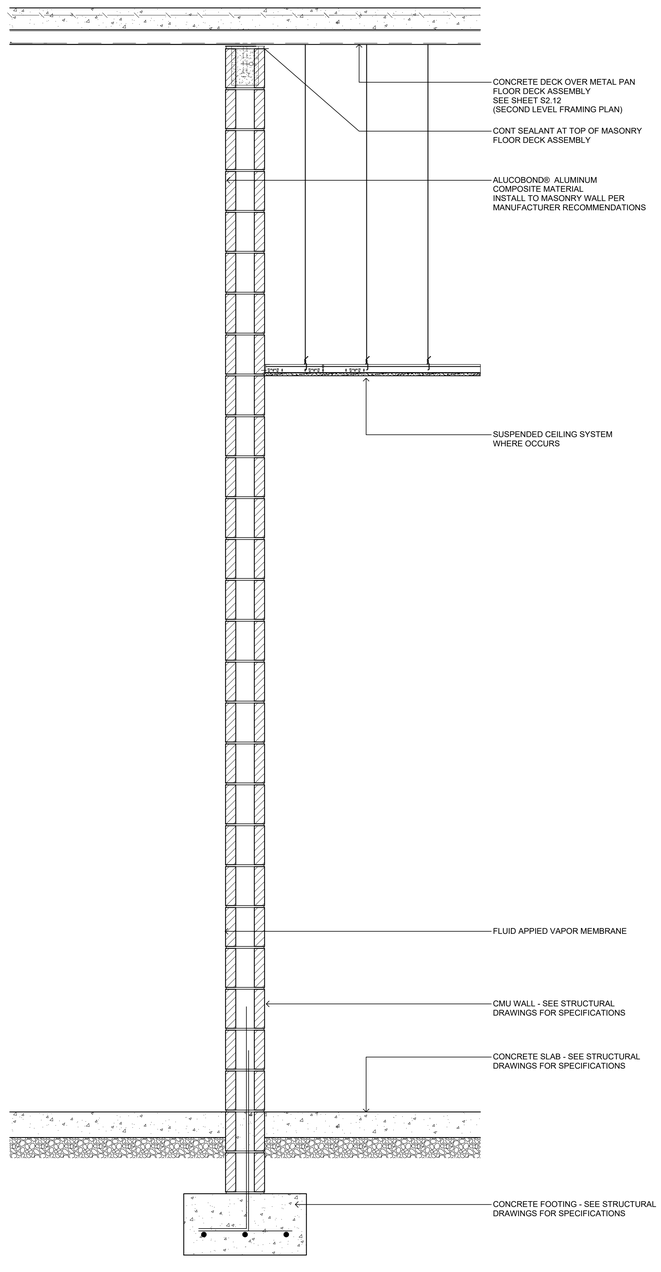
WALL SECTIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A701.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:05pm



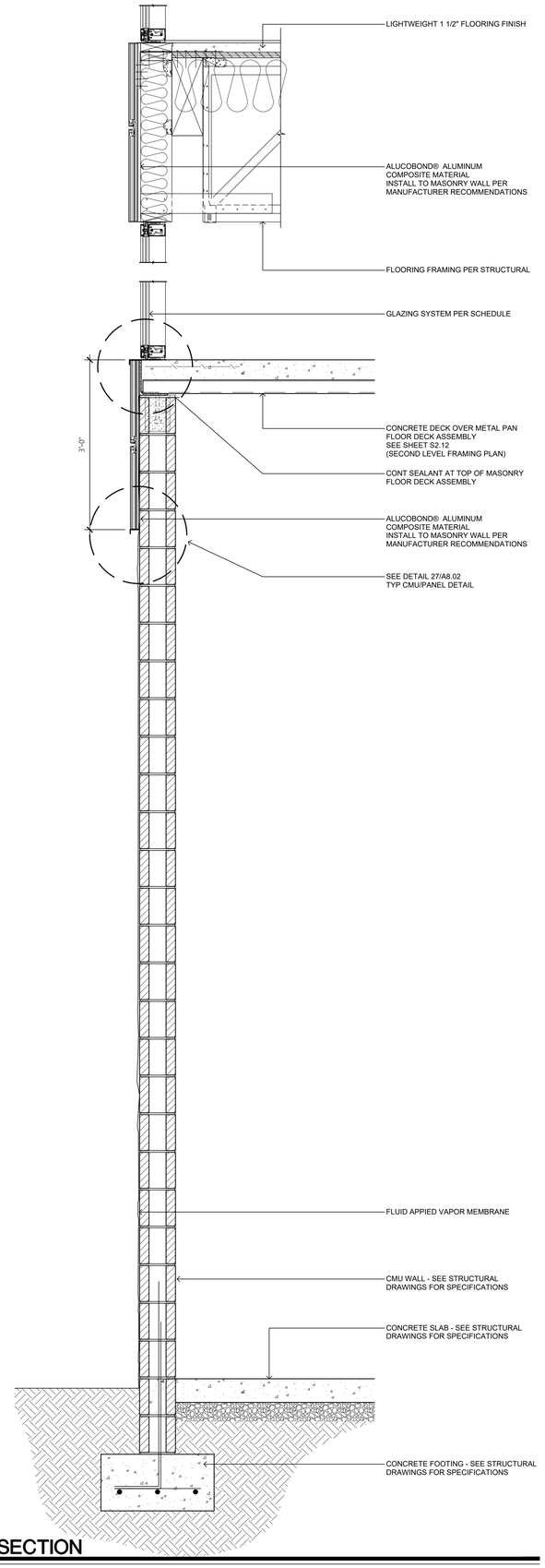
3 WALL SECTION

SCALE: 1" = 1'-0"



2 WALL SECTION

SCALE: 1" = 1'-0"



1 WALL SECTION

SCALE: 1" = 1'-0"

SEAL

PATRICK J KLENK
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

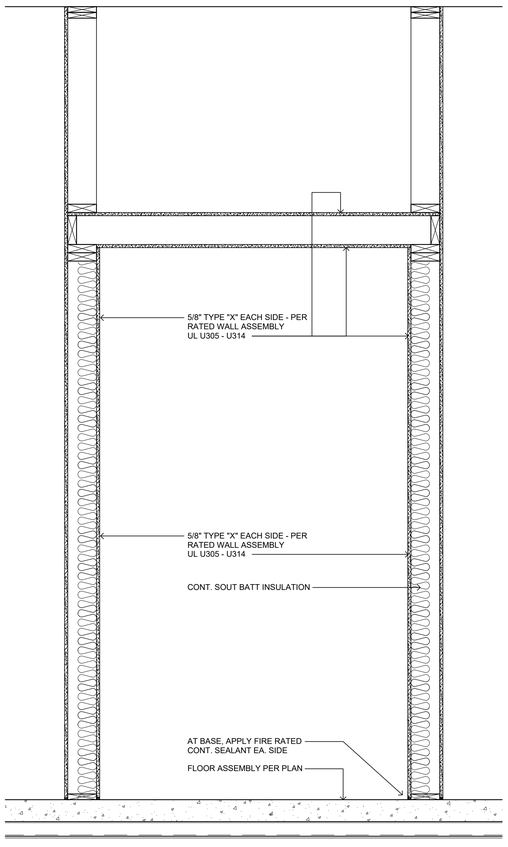
REV	Description	DATE

SHEET

A7.02

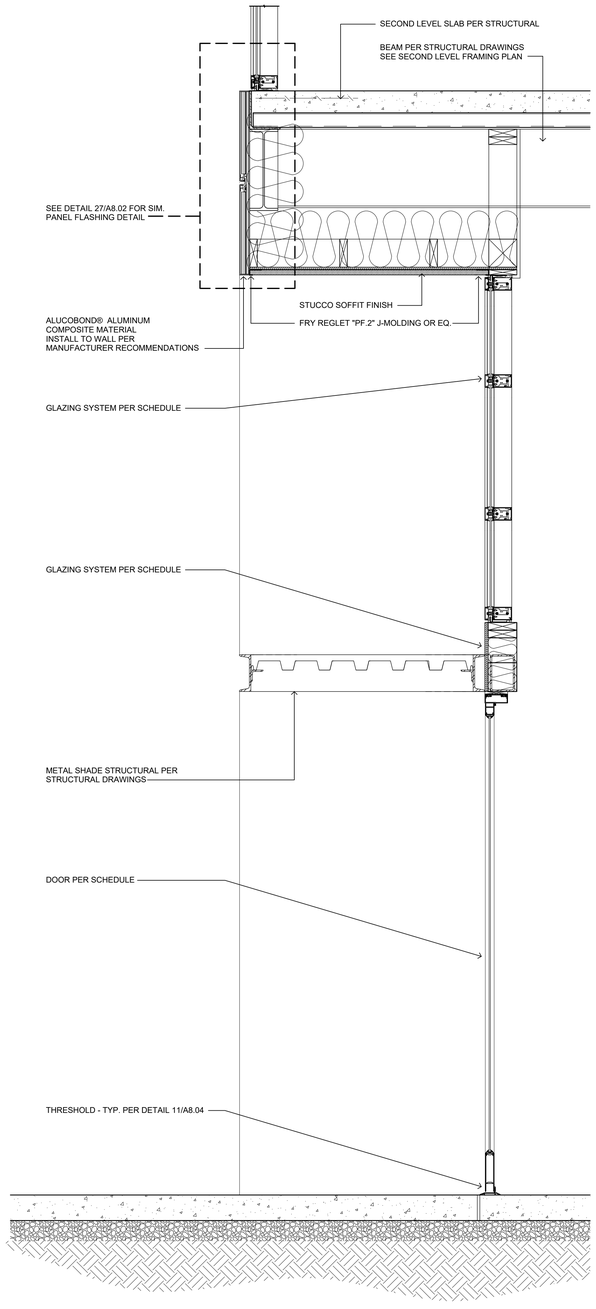
WALL SECTIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A702.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:05pm



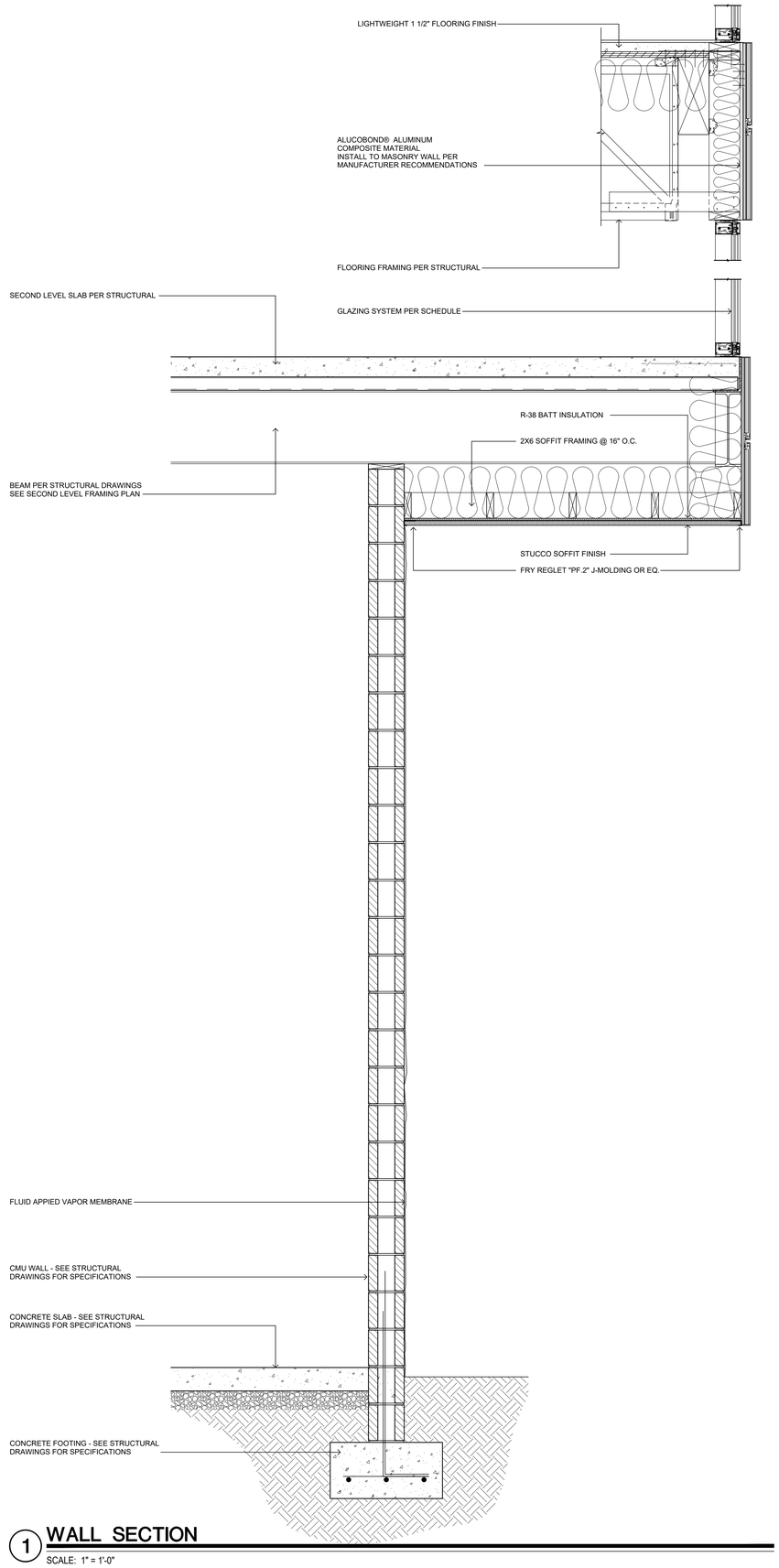
3 TYPICAL RATED CORRIDOR ASSEMBLY

SCALE: 1" = 1'-0"



2 WALL SECTION

SCALE: 1" = 1'-0"



1 WALL SECTION

SCALE: 1" = 1'-0"

SEAL

PATRICK J KLENK
REGISTERED
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

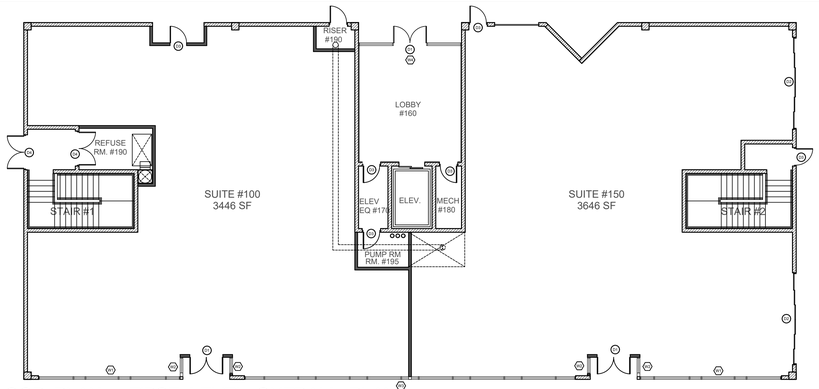
REVISIONS		
REV	Description	DATE

SHEET

A7.03

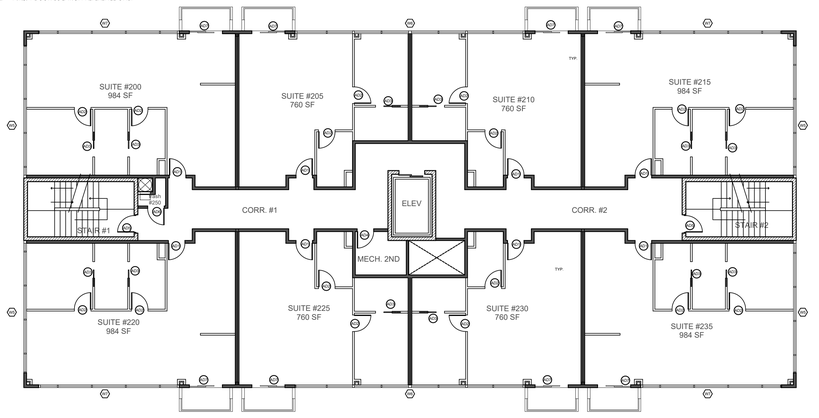
WALL SECTIONS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A703.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:05pm



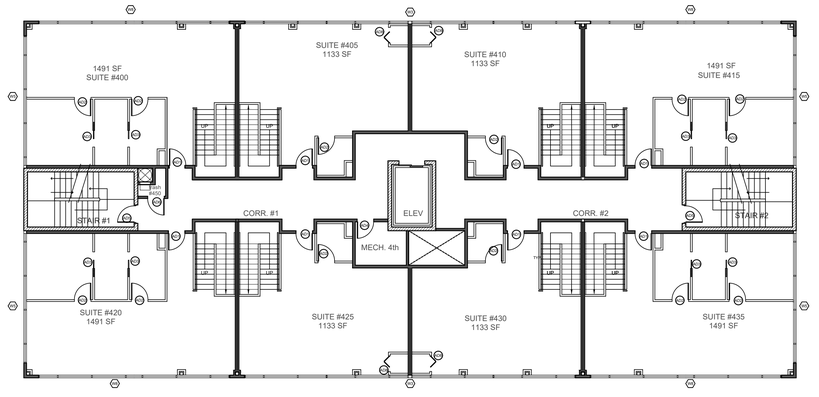
1 FLOOR PLAN - FIRST LEVEL OVERALL PLAN

SCALE: N.T.S. - DOOR LOCATION REFERENCE ONLY



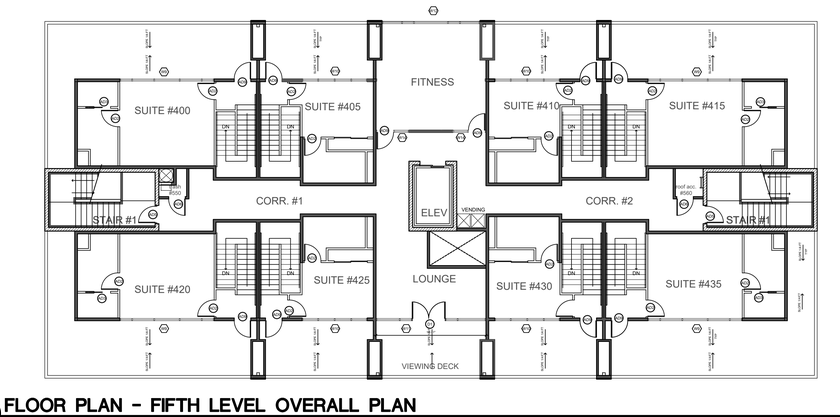
2 FLOOR PLAN - SECOND/THIRD LEVEL OVERALL PLAN

SCALE: N.T.S. - DOOR LOCATION REFERENCE ONLY



4 FLOOR PLAN - FORTH LEVEL OVERALL PLAN

SCALE: N.T.S. - DOOR LOCATION REFERENCE ONLY



5 FLOOR PLAN - FIFTH LEVEL OVERALL PLAN

SCALE: N.T.S. - DOOR LOCATION REFERENCE ONLY

door schedule

SYM.	SIZE	TYPE	DOOR FINISH	FRAME FINISH	HARDWARE	ELEV	REMARKS
D1	PAIR 3'-0 X 7'-0" X 1 3/4"	KAWNEER: 3' x 7' x 1-3/4" 350 MEDIUM STILE GL X AL WITH PANELINE MIDPANEL PANIC DEVICE. ROTON CONTINUOUS HINGE WITH LIP CONCEALED LEAF TYPE AND CYLINDER LOCK INCLUDED	PAINT	PAINT	HW3	1	
D2	16'-8 x 8'-0" 6 EQ. PANEL	CUSTOM SLIDING DOOR - TO BE DETERMINED BY FUTURE TENANT	PAINT	PAINT	HW4	SEE ELEV	
D3	3'-0 x 7'-0" x 1 3/4"	FLUSH METAL HOLLOW METAL DOOR WITH HOLLOW METAL FRAME	PAINT	PAINT	HW1 HW2 EXT	4	
D4	PAIR 3'-0 x 7'-0" x 1 3/4"	FLUSH METAL HOLLOW METAL DOOR WITH HOLLOW METAL FRAME	PAINT	PAINT	HW5	3	
D5	8'-0 x 8'-0"	ROLL UP METAL GARAGE DOOR - MANUFACTURER TBD BY FUTURE TENANT	PAINT	PAINT	HW4	SEE ELEV	
AD1	3'-0 x 7'-0" x 1 3/4"	FLUSH METAL HOLLOW METAL DOOR WITH HOLLOW METAL FRAME	PAINT	PAINT	HW6	3	60 MINUTE MIN.
AD2	3'-0 x 7'-0" x 1 3/4"	SOLID CORE PANEL INSETS	PAINT	PAINT	HW7	5	
AD3	3'-0 x 7'-0" x 1 3/4"	SOLID CORE PANEL INSETS	PAINT	PAINT	HW8	5	
AD4	3'-0 x 7'-0" x 1 3/4"	FLUSH METAL HOLLOW METAL DOOR WITH HOLLOW METAL FRAME	PAINT	PAINT	HW5	3	
AD5	3'-0 x 7'-0" x 1 3/4"	FLUSH METAL HOLLOW METAL DOOR WITH HOLLOW METAL FRAME	PAINT	PAINT	HW9	4	60 MINUTE MIN.
AD6	3'-0 x 7'-0" x 1 3/4"	FLUSH METAL HOLLOW METAL DOOR WITH HOLLOW METAL FRAME	PAINT	PAINT	HW10	3	
AD7	6'-0 x 7'-0" x 1 3/4"	SLIDING GLASS DOOR - ANDERSON 200 SERIES Perma-Shield Gliding Patio Doors	PAINT	PAINT	HW4	6	
AD8	BIFOLD 3'-0 x 7'-0" x 1 3/4"	PANTRY DOOR - HARDWARD TRACK BY MANUFACTURER	PAINT	PAINT	HW4	7	
AD9	3'-0 X 7'-0" X 1 3/4"	KAWNEER: 3' x 7' x 1-3/4" 350 MEDIUM STILE GL X AL WITH PANELINE MIDPANEL PANIC DEVICE. ROTON CONTINUOUS HINGE WITH LIP CONCEALED LEAF TYPE AND CYLINDER LOCK INCLUDED	PAINT	PAINT	HW3	2	

door hardware

HW1
1 1/2" BUTT PAIR HINGE
STORAGE ROOM KEYED LOCKSET
THRESHOLD
CLOSER W/CONTROL ARM
LEVER HANDLE
KICKDOWN DOOR STOP

HW2
1 1/2" BUTT PAIR HINGE
PANIC PUSHBAR HARDWARE
THRESHOLD
WEATHER STRIPPING
RAIN DRIP
CLOSER W/CONTROL ARM
LEVER HANDLE
KICKDOWN DOOR STOP

HW3
(1) 10" BOTTOM RAIL - KAWNEER 38-728
(1) LCN CLOSER #4041 CLOSURE TO BE MOUNTED PARALLEL
(1) LCN ADAPT PLATE AND SHOE #PA-62 & PA-18
(1) POP-PULL - KAWNEER 33-051 CO-9 - CLEAR ANODIZED
(1) THRESHOLD - DORBIN - 187-A - ALUMINUM
(1) FLOOR STOP - KAWNEER 91-167 - DULL CHROME
(1) SWEEP - KAWNEER 200-799 - MATCH FLOOR

HW4
INSTALL PER MANUFACTURER

HW5
1 1/2 PAIR BUTT HINGES
WALL DOOR STOP
STORAGE ROOM LOCKSET
SILENCERS, TYP. OF 3
CLOSER W/CONTROL ARM
KICKDOWN DOOR STOP

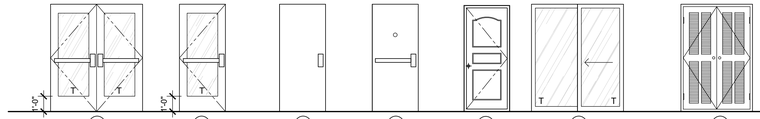
HW6
1 1/2" BUTT PAIR HINGE
ENTRANCE KEYED LOCKSET
THRESHOLD
CLOSER W/CONTROL ARM
LEVER HANDLE
DOOR CHAIN
PEEP HOLE
THUMBTURN DEADBOLT

HW7
1 1/2" BUTT PAIR HINGE
PRIVACY LOCKSET
WALL DOOR STOP
SILENCERS, TYP. OF 3

HW8
PER MANUF. - POCKET FRAME
PRIVACY LOCKSET

HW9
1 1/2" BUTT PAIR HINGE
PANIC PUSHBAR HARDWARE
CLOSER W/CONTROL ARM
KICKDOWN DOOR STOP

HW10
1 1/2" BUTT PAIR HINGE
PASSAGE LOCKSET
WALL DOOR STOP
SILENCERS, TYP. OF 3



NOTE: T = TEMPERED GLAZING

window schedule

SYM.	SIZE	TYPE	FRAME TYPE	FRAME FINISH	OPERABLE	GLASS	U-VALUE	S.H.G.C.	REMARKS
W1	26'-2" x 15'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W2	3'-0" x 15'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W3	60'-0" x 15'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W4	18'-8" x 8'-2" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W5	24'-0" x 9'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W6	41'-8" x 9'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W7	25'-6" x 9'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W8	34'-8" x 9'-0" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W9	17'-2" x 7'-2" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W10	11'-10" x 7'-2" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W11	(2) 6'-6" x 7'-2" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W12	17'-9" x 7'-2" (SEE ELEV)	KAWNEER 1600 WALL SYSTEM	CLEAR ANODIZED	FACT FINISH	NO	DUO-PANE	0.28	0.40	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"
W14	2'-10" x 7'-2" (SEE ELEV)		CLEAR ANODIZED	FACT FINISH	NO	SING-PANE	-	-	USE PPG LOW 'E' "SOLARBAN 400" - "STARPHIRE"

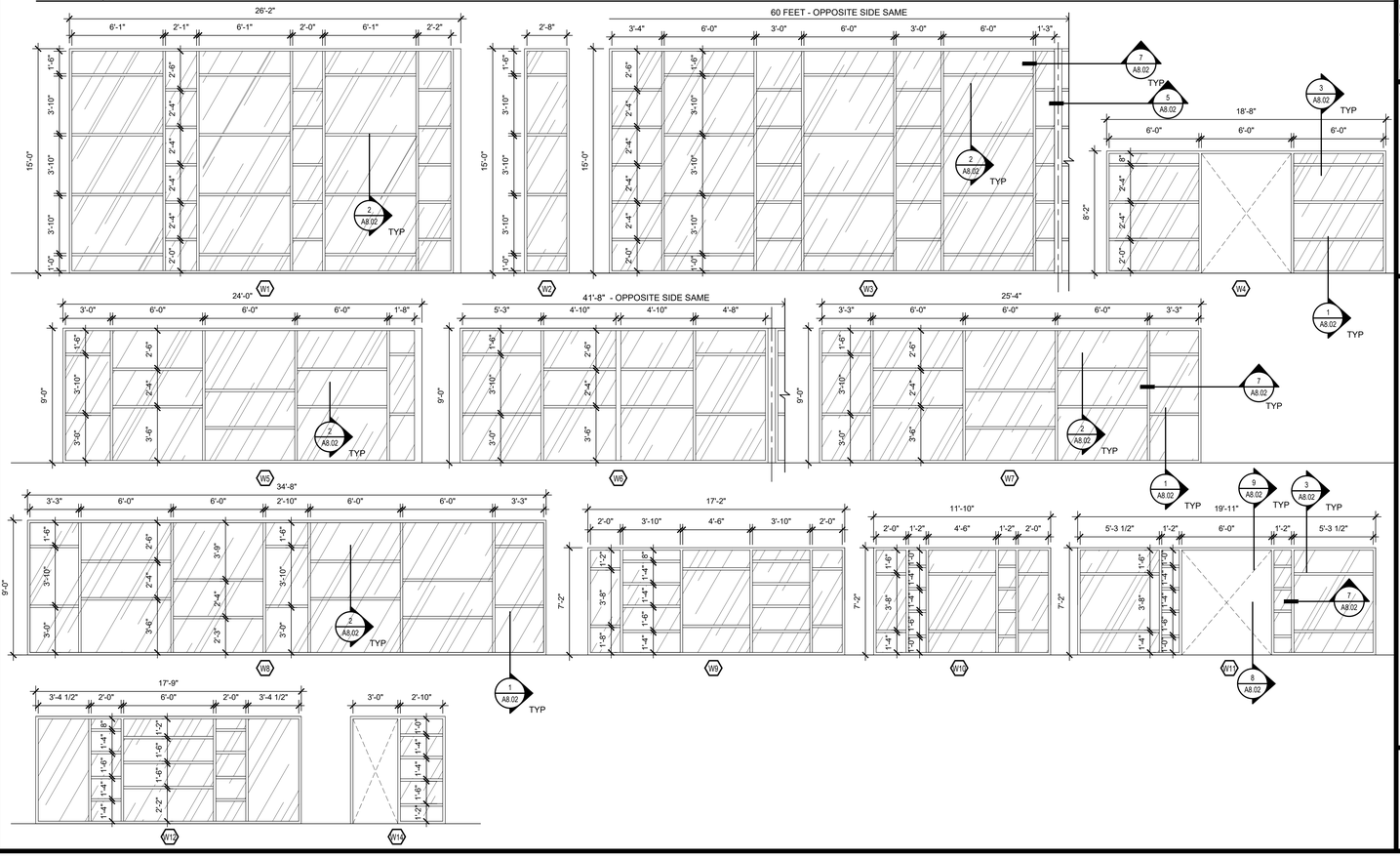
NOTES:
1. CONTRACTOR MAY SUBSTITUTE GLAZING FOR A BRAND EQUAL TO OR BETTER THAN THE PERFORMANCE VALUES SHOWN.
2. ALL EXTERIOR GLAZING TO COMPLY WITH SECTION1709.5.2 OF THE 2018 I.B.C.
3. CONTRACTOR MUST OBTAIN AN N.F.R.C. CERTIFICATION FOR ALL EXTERIOR WINDOWS FROM A CERTIFIED N.F.R.C. RATER.
4. FINAL N.F.R.C. RATING MUST BE EQUAL TO OR GREATER THAN VALUES INDICATED ON THIS SCHEDULE.
5. ALL WINDOWS TO BE TEMPERED

Insulating Glass Unit Performance Comparisons | 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites

Glass Type	Visible Light Transmittance (VLT)	Visible Light Reflectance		[(IP)U/h*ft²*F°)] NFRC U-Value		Solar Heat Gain Coefficient (SHGC)	Light to Solar Gain (LSG)
		Exterior %	Interior %	Winter Nighttime	Winter Argon		
Sungate® 400 Passive Low-E Glass							
Sungate® 400 (2) Clear + Clear	76	14	14	0.32	0.28	0.60	1.27
Sungate® 400 (2) Starphire® + Starphire®	80	14	14	0.32	0.28	0.68	1.18
Clear + Sungate® 400 (2) Clear	76	14	14	0.32	0.28	0.63	1.21
Starphire® + Sungate® 400 (2) Starphire®	80	14	14	0.32	0.28	0.73	1.10
Tuscany® + Sungate® 400 (2) Clear	66	11	13	0.32	0.28	0.44	1.50
Atlantica® + Sungate® 400 (2) Clear	58	10	12	0.32	0.28	0.35	1.66
Azuria® + Sungate® 400 (2) Clear	64	10	12	0.32	0.28	0.34	1.74
Solarblue® + Sungate® 400 (2) Clear	49	8	12	0.32	0.28	0.42	1.14
Pacifica® + Sungate® 400 (2) Clear	37	7	11	0.32	0.28	0.30	1.23
Solarbronze® + Sungate® 400 (2) Clear	46	8	12	0.32	0.28	0.44	1.05
Optigray™ + Sungate® 400 (2) Clear	54	9	12	0.32	0.28	0.46	1.17
Solargray™ + Sungate® 400 (2) Clear	36	7	12	0.32	0.28	0.39	0.97
Evantha™ I + Sungate® 400 (2) Clear	8	4	11	0.32	0.28	0.15	0.53

All performance data calculated using LBNL Window 7.3 software and represents center of glass performance data. For detailed information on the methodologies used to calculate the aesthetic and performance values in this table, please visit vitroglazings.com or request our Architectural Glass Catalog.

window types



SEAL

PATRICK J KLENK — No. 1472 — ARCHITECT — STATE OF NEVADA — 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

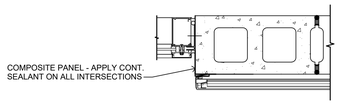
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

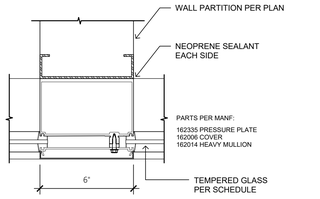
REV	DESCRIPTION	DATE

SHEET
A8.01
SCHEDULES

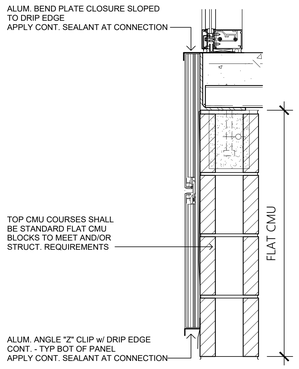
W:\Drawing Projects\Drawings\31 Water Street\(02019_09_A801.dwg Was Last Modified by Technician pmanj9kmon On April 15, 2020 at 4:05pm



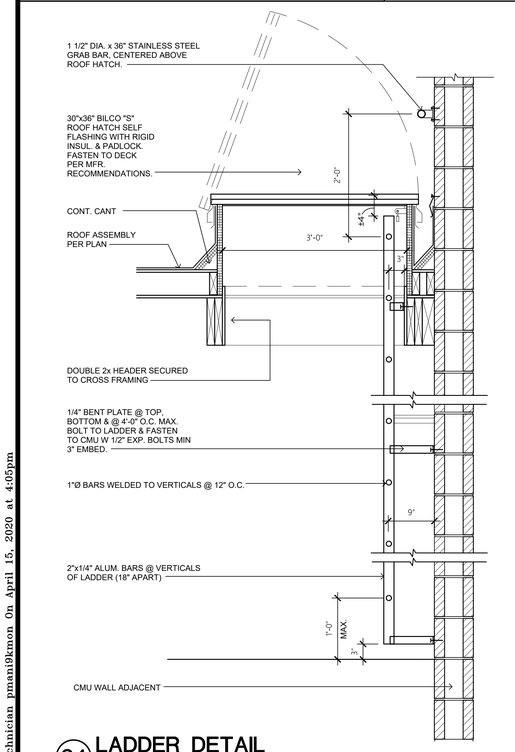
26 COMPOSITE PANEL CMU
SCALE: 1 1/2" = 1'-0"



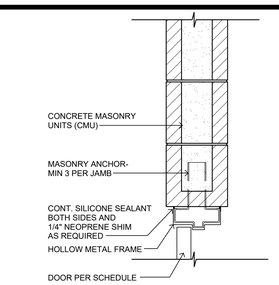
25 TYP. VERTICAL MULLION
SCALE: 3" = 1'-0"



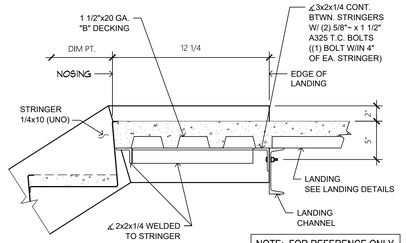
27 ENLARGED PANEL DTL
SCALE: 1 1/2" = 1'-0"



24 LADDER DETAIL
SCALE: 1" = 1'-0"

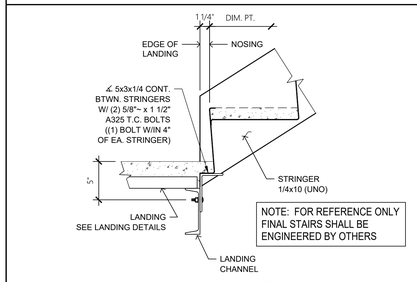


24 DOOR JAMB @ CMU
SCALE: 1 1/2" = 1'-0"



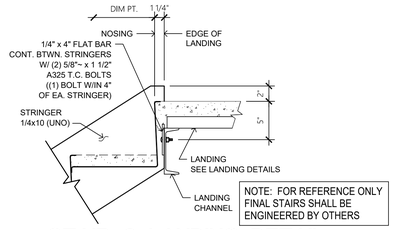
NOTE: FOR REFERENCE ONLY
FINAL STAIRS SHALL BE
ENGINEERED BY OTHERS

23 STAIR @ LANDING
SCALE: 1 1/2" = 1'-0"



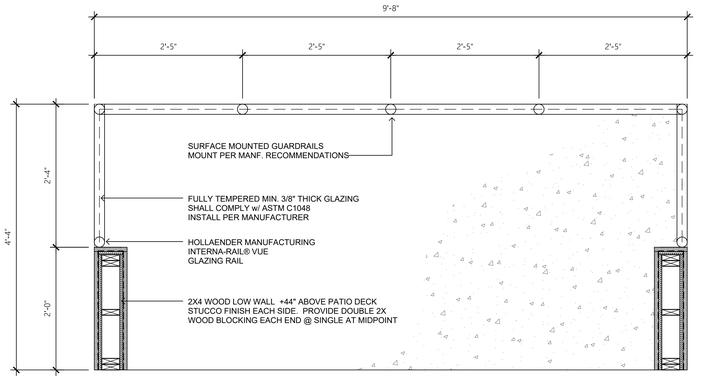
NOTE: FOR REFERENCE ONLY
FINAL STAIRS SHALL BE
ENGINEERED BY OTHERS

22 STAIR @ NEXT FLIGHT DTL.
SCALE: 1 1/2" = 1'-0"

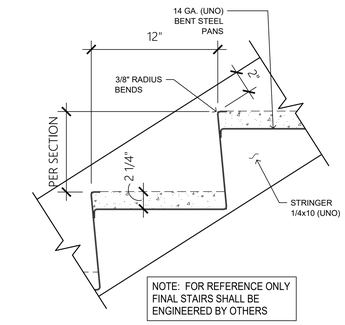


NOTE: FOR REFERENCE ONLY
FINAL STAIRS SHALL BE
ENGINEERED BY OTHERS

21 STAIR @ LANDING DETAIL
SCALE: 1 1/2" = 1'-0"

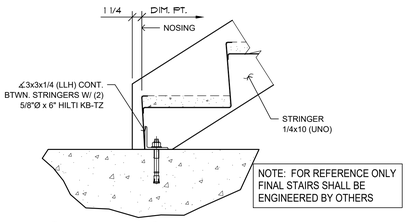


24 ENLARGED PATIO PLAN - SECTION
SCALE: 1" = 1'-0"



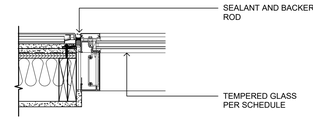
NOTE: FOR REFERENCE ONLY
FINAL STAIRS SHALL BE
ENGINEERED BY OTHERS

20 STAIR DETAIL - INTERMEDIATE
SCALE: 1 1/2" = 1'-0"

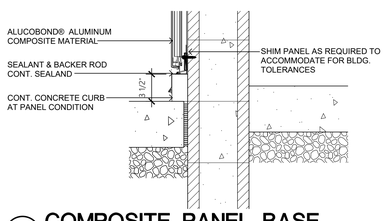


NOTE: FOR REFERENCE ONLY
FINAL STAIRS SHALL BE
ENGINEERED BY OTHERS

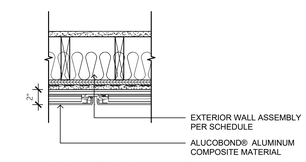
19 STAIR @ SLAB DETAIL
SCALE: 1 1/2" = 1'-0"



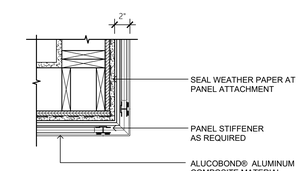
18 COMPOSITE PANEL WIN JAMB
SCALE: 1 1/2" = 1'-0"



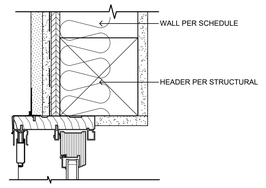
17 COMPOSITE PANEL BASE
SCALE: 1 1/2" = 1'-0"



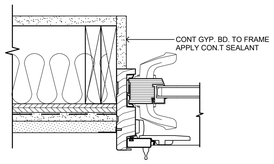
16 COMPOSITE PANEL JOINT
SCALE: 1 1/2" = 1'-0"



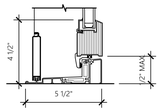
15 COMPOSITE PANEL CORNER
SCALE: 1 1/2" = 1'-0"



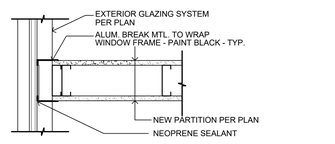
14 SLIDER SILL DETAL
SCALE: 3" = 1'-0"



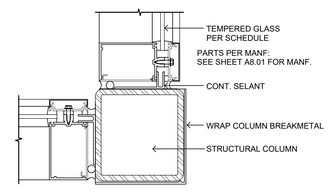
13 SLIDER SILL DETAL
SCALE: 3" = 1'-0"



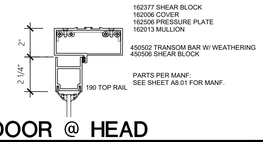
12 SLIDER SILL DETAIL
SCALE: 3" = 1'-0"



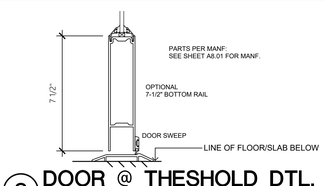
11 WALL AT GLASS DETAIL
SCALE: 1 1/2" = 1'-0"



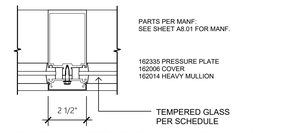
10 MULLION @ COLUMN
SCALE: 3" = 1'-0"



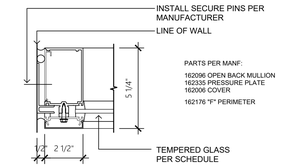
9 DOOR @ HEAD
SCALE: 3" = 1'-0"



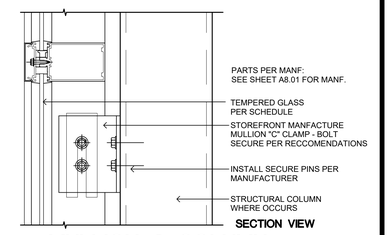
8 DOOR @ THESHOLD DTL.
SCALE: 3" = 1'-0"



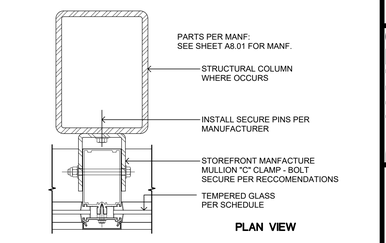
7 TYP. VERTICAL MULLION
SCALE: 3" = 1'-0"



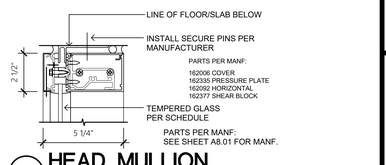
6 JAMB @ ADJACENT WALL
SCALE: 3" = 1'-0"



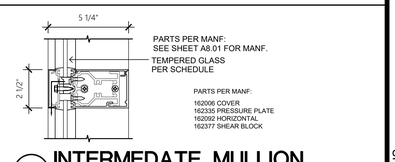
5 MULLION @ COLUMN
SCALE: 3" = 1'-0"



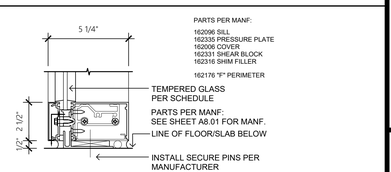
4 MULLION @ COLUMN
SCALE: 3" = 1'-0"



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



2 INTERMEDATE MULLION
SCALE: 3" = 1'-0"



1 SILL DETAIL @ GLASS
SCALE: 3" = 1'-0"

SEAL

PATRICK J KLENK
No. 1472
ARCHITECT
STATE OF NEVADA
04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

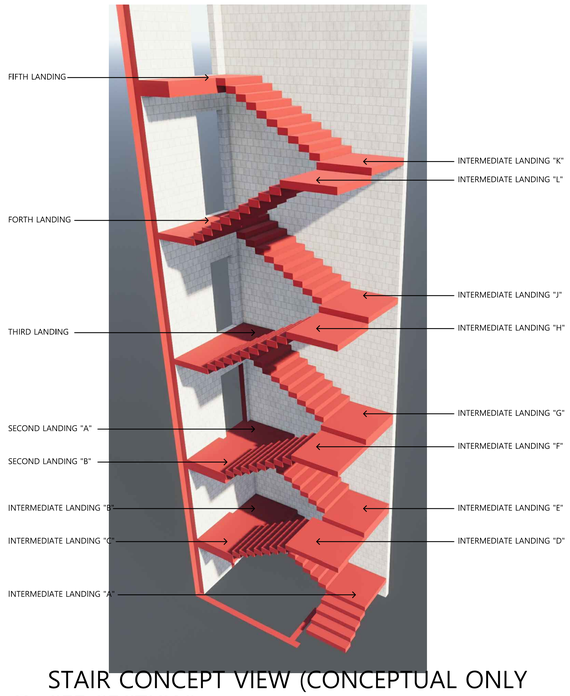
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

P. JAMES KLENK ARCHITECT

REVISIONS		
REV	Description	DATE

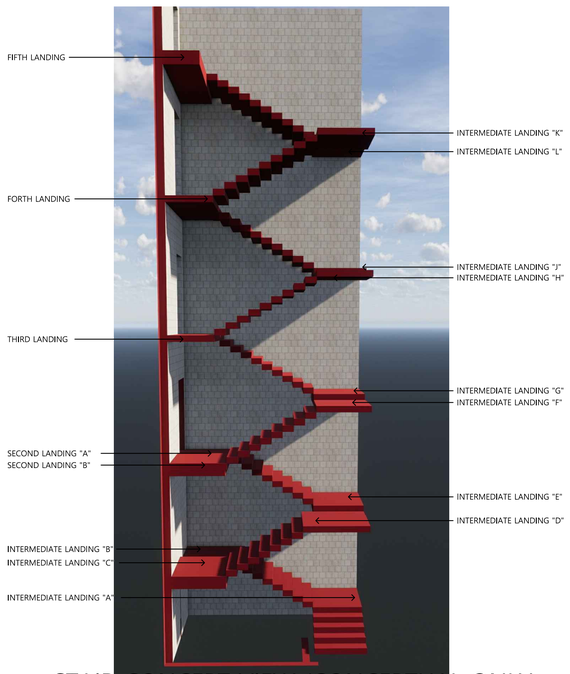
SHEET
A8.02
DETAIL

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A802.dwg, Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:05pm



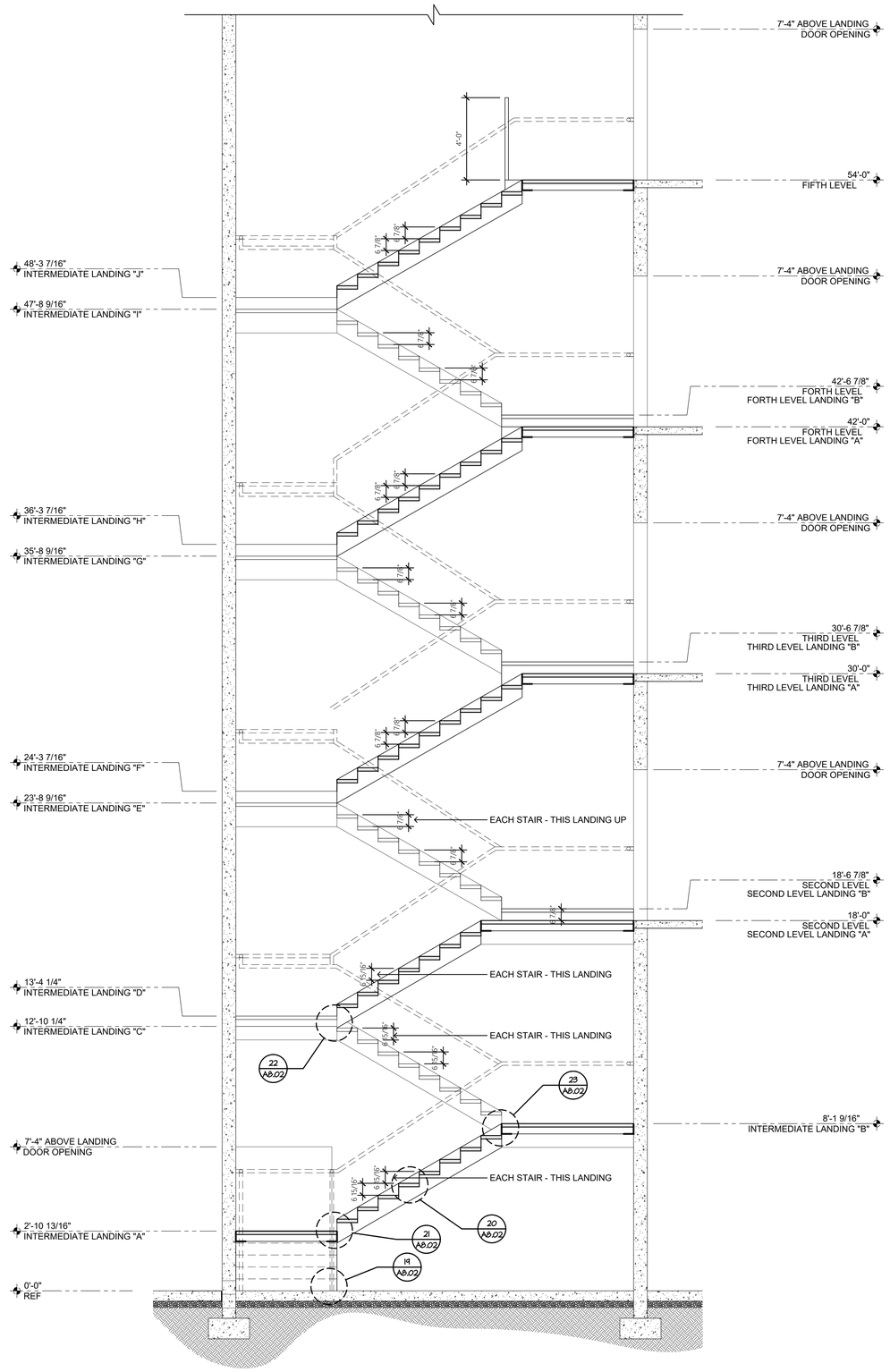
STAIR CONCEPT VIEW (CONCEPTUAL ONLY SEE SECTION)

C1 SCALE: N.T.S.



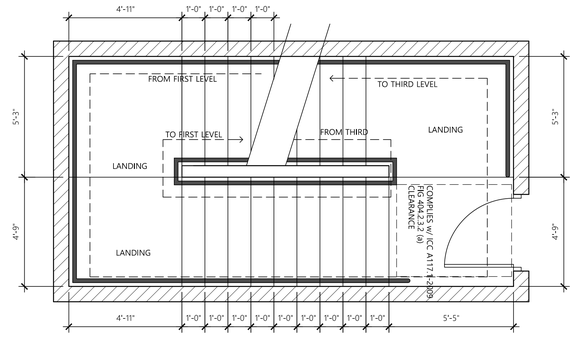
STAIR CONCEPT VIEW (CONCEPTUAL ONLY SEE SECTION)

C2 SCALE: N.T.S.



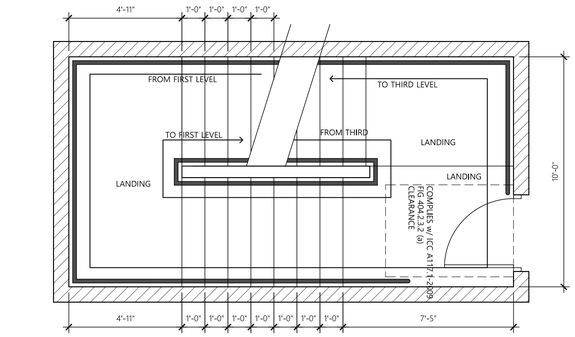
5 ENLARGED STAIR SECTION

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



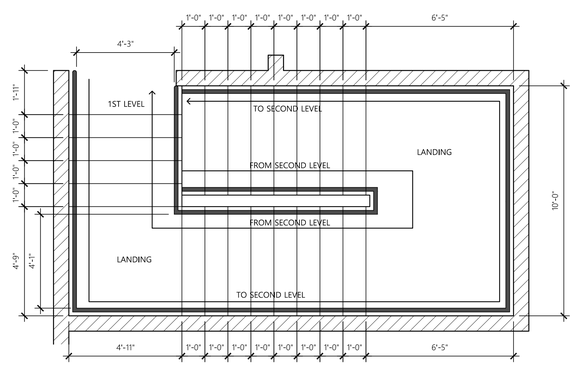
3 ENLARGED STAIR NORTH PLAN 3RD/4TH

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



2 ENLARGED STAIR NORTH PLAN 2ND

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



1 ENLARGED STAIR NORTH PLAN 1ST LEVEL

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

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES KLENK ARCHITECT

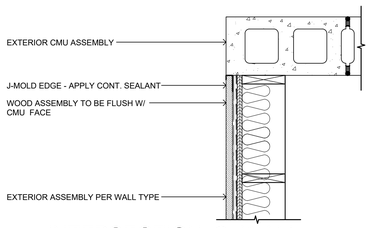
P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.883.3277

REVISIONS

REV	Description	DATE

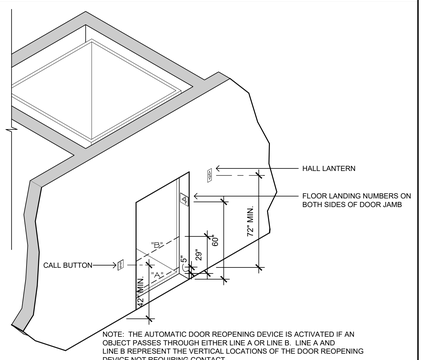
SHEET
A8.03
STAIRS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A803.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:05pm



23 INTERSECTION @ WALL

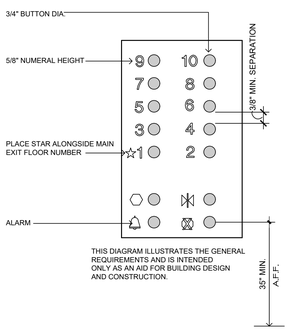
SCALE: 1 1/2" = 1'-0"



NOTE: THE AUTOMATIC DOOR REOPENING DEVICE IS ACTIVATED IF AN OBJECT PASSES THROUGH EITHER LINE A OR LINE B. LINE A AND LINE B REPRESENT THE VERTICAL LOCATIONS OF THE DOOR REOPENING DEVICE NOT REQUIRING CONTACT.

22 ELEVATOR ENTRY REFERENCE

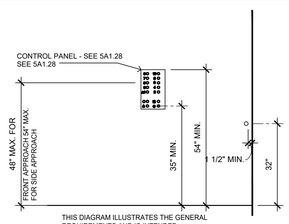
SCALE: 1" = 1'-0"



THIS DIAGRAM ILLUSTRATES THE GENERAL REQUIREMENTS AND IS INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

21 ELEVATOR CONTROL PANEL

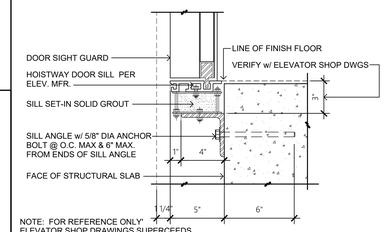
SCALE: 1" = 1'-0"



THIS DIAGRAM ILLUSTRATES THE GENERAL REQUIREMENTS AND IS INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

20 ELEVATOR CONTROL PANEL

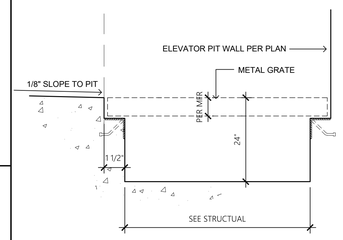
SCALE: 1" = 1'-0"



NOTE: FOR REFERENCE ONLY* ELEVATOR SHOP DRAWINGS SUPERCEEDS

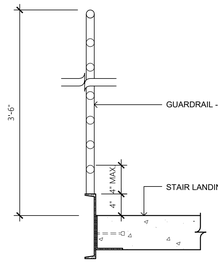
19 ELEVATOR SILL

SCALE: 1" = 1'-0"



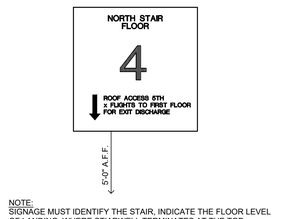
18 ELEVATOR SUMP PIT

SCALE: 1" = 1'-0"



17 5TH LEVEL TOP GUARDRAIL

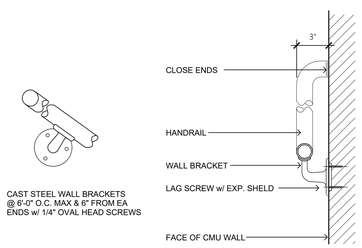
SCALE: 1" = 1'-0"



NOTE:
SIGNAGE MUST IDENTIFY THE STAIR, INDICATE THE FLOOR LEVEL OF LANDING, WHERE STAIRWELL TERMINATES AT THE TOP AND BOTTOM, AND IDENTIFY AND SHOW THE DIRECTION TO THE EXIT DISCHARGE

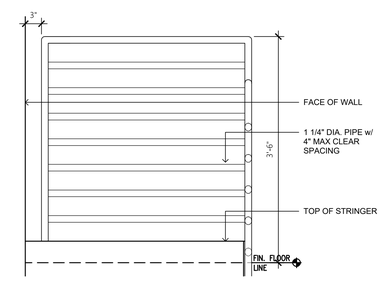
16 STAIR LANDING SIGNAGE

SCALE: 1" = 1'-0"



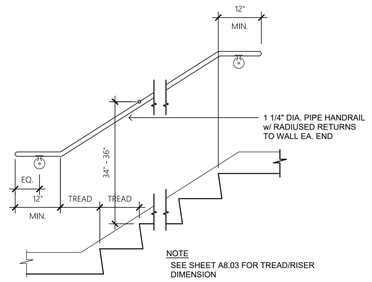
15 STAIR HANDRAIL CONNECTION

SCALE: 1" = 1'-0"



14 5TH LEVEL TOP GUARDRAIL

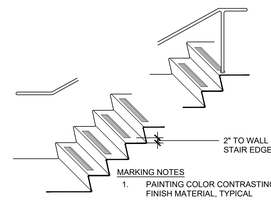
SCALE: 1" = 1'-0"



NOTE
SEE SHEET A8.03 FOR TREAD/RISER DIMENSION

13 STAIR DETAIL REFERENCE

SCALE: 1" = 1'-0"

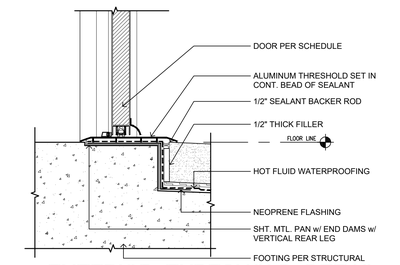


MARKING NOTES

1. PAINTING COLOR CONTRASTING MARKING W/ SLIP RESISTANT FINISH MATERIAL, TYPICAL
2. STRIP FINISH MATERIAL TO BE AS SLIP RESISTANT AS THE MATERIAL OF THE STAIR TREADS
3. WHERE CARPET OR ANY OTHER FINISH MATERIAL OTHER THAN STEEL OR CONCRETE OCCURS, USE 2 INCH WIDE CONTRASTING COLOR OF THE SAME MATERIAL

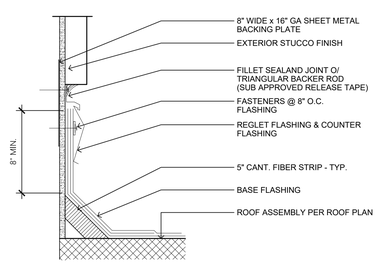
12 STAIR MARKINGS DETAIL

SCALE: 1" = 1'-0"



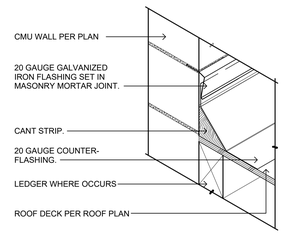
11 EXTERIOR THRESHOLD DETAIL

SCALE: 1" = 1'-0"



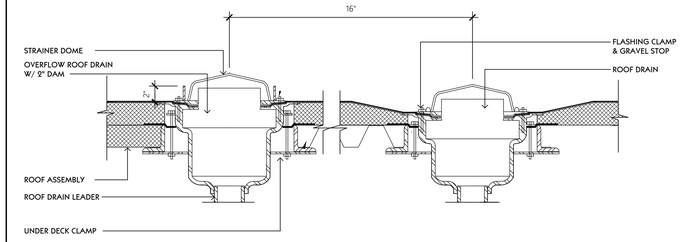
10 ROOF CANT DETAIL

SCALE: 1" = 1'-0"



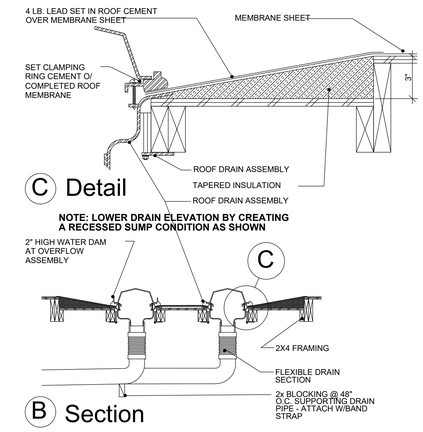
9 FLASHING AGAINST CMU

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



6 ROOF DRAIN DETAIL

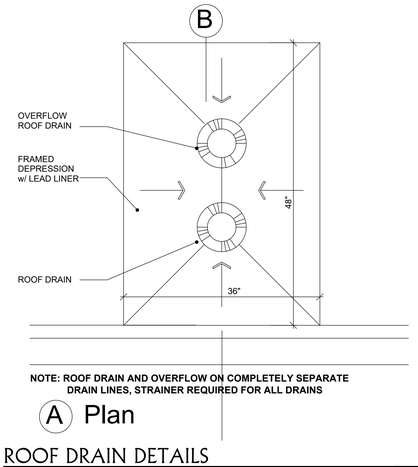
SCALE: 1 1/2" = 1'-0"



C Detail

NOTE: LOWER DRAIN ELEVATION BY CREATING A RECESSED SUMP CONDITION AS SHOWN

B Section

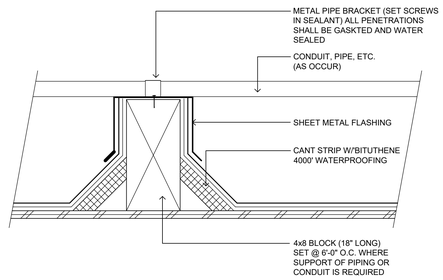


NOTE: ROOF DRAIN AND OVERFLOW ON COMPLETELY SEPARATE DRAIN LINES, STRAINER REQUIRED FOR ALL DRAINS

A Plan

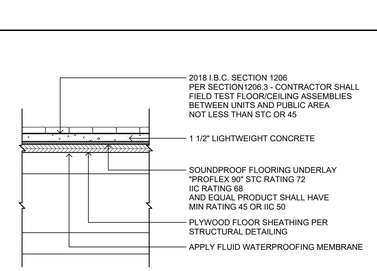
8 ROOF DRAIN DETAILS

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



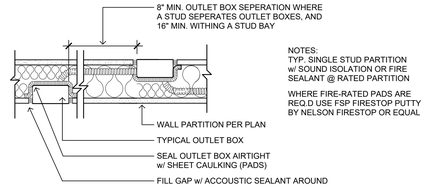
7 ROOF CONDUIT DETAIL

SCALE: 1" = 1'-0"



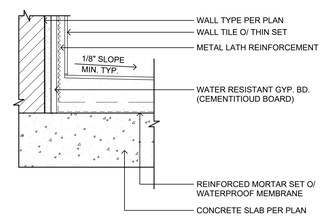
5 TYP FLOOR/CEILING ASSEMBLY

SCALE: 1" = 1'-0"



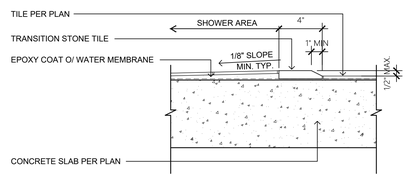
4 OUTLET IN PARTITION

SCALE: 1" = 1'-0"



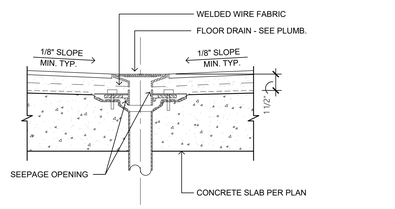
3 SHOWER @ WALL INTERSECTION

SCALE: 1" = 1'-0"



2 SHOWER CURB - TYP.

SCALE: 1" = 1'-0"



1 SHOWER DRAIN DETAIL

SCALE: 1" = 1'-0"

SEAL

PATRICK J KLENK REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

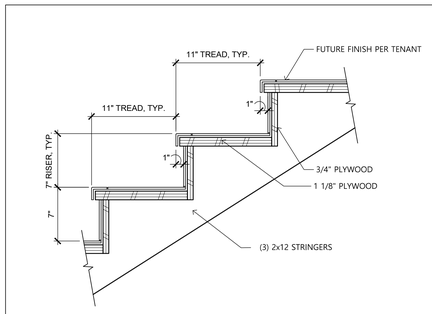
REVISIONS		
REV	Description	DATE

SHEET

A8.04

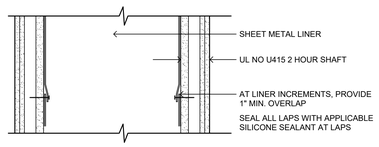
DETAIL

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A804.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:06pm



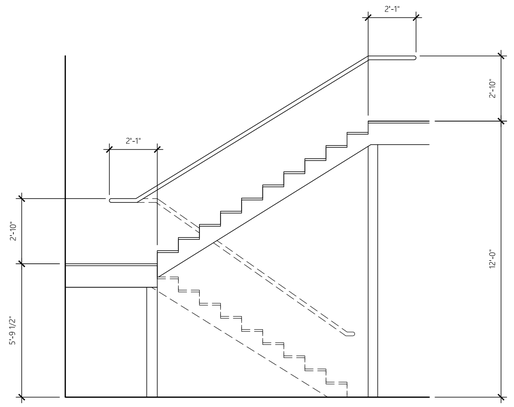
6 WOOD STAIR DETAIL

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



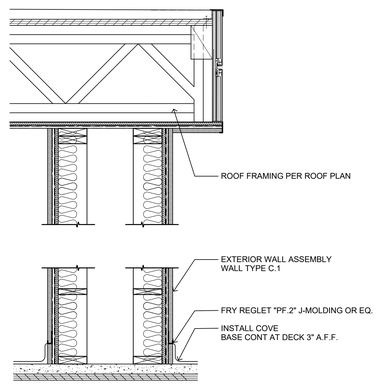
5 CHUTE ENLARGED DETAIL

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



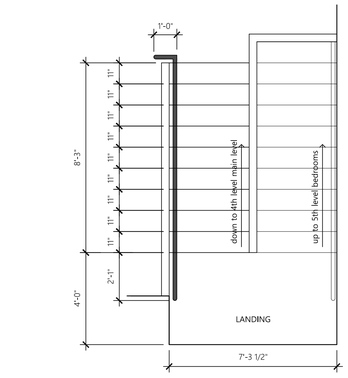
B SECTION STAIR 4TH/5TH LEVEL SUITES

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



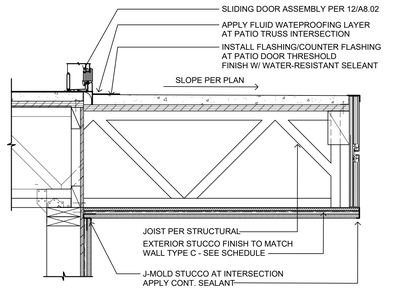
4 PATIO SECTION

SCALE: 1" = 1'-0"



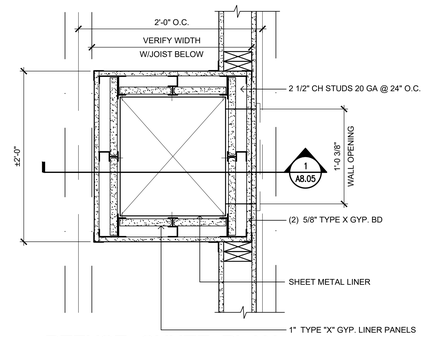
A ENLARGED STAIR 4TH/5TH LEVEL SUITES

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



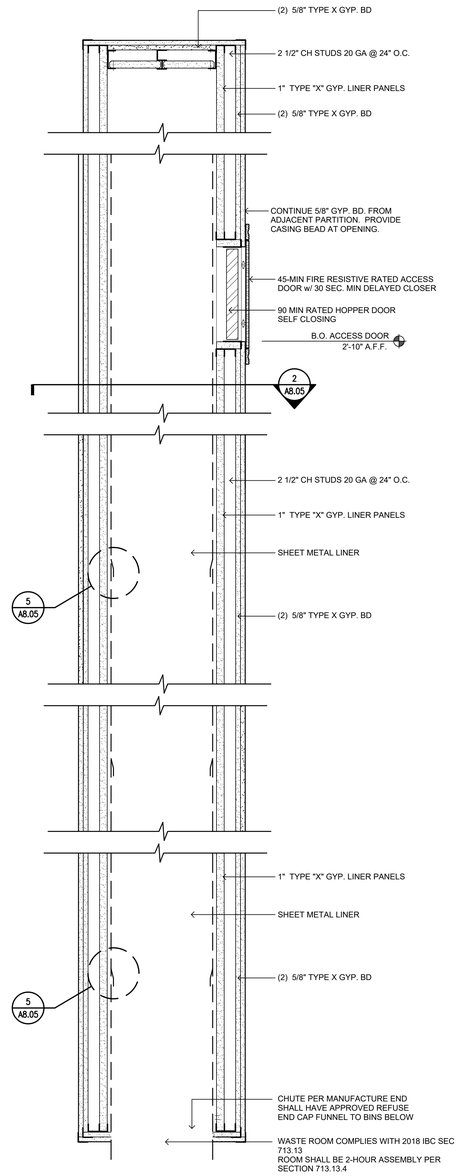
3 PATIO SECTION

SCALE: 1" = 1'-0"



2 REFUSE CHUTE PLAN

SCALE: 1 1/2" = 1'-0" UL NO U415 2 HOUR CHASE



1 REFUSE CHUTE SECTION

SCALE: 1 1/2" = 1'-0" UL NO U415 2 HOUR CHASE

SEAL

PATRICK J KLENK — No. 1472 — ARCHITECT — STATE OF NEVADA — 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

CITY OF HENDERSON , NV 89015

APN #179-18-611-055

31 WATER STREET LLC

PROJECT NUMBER: 0201909

DATE: 07.10.2019

P. JAMES K ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS		
REV	Description	DATE

SHEET

A8.05

DETAIL

W:\Drawing Projects\Drawings\31 Water Street\020109_09_A805.dwg Was Last Modified by Technician pnash19kmon On April 15, 2020 at 4:06pm

Most Widely Accepted and Trusted

ICC EVALUATION SERVICE

In Cooperation with Innovation Research Labs

ICC-ES Evaluation Report

ESR-1222

ICC-ES | (800) 423-6587 | (562) 699-0543 | www.icc-es.org

Reissued 12/2018

This report is subject to renewal 12/2019.

DIVISION: 09 00 00—FINISHES

SECTION: 09 22 26—SUSPENSION SYSTEMS

SECTION: 09 53 00—ACOUSTICAL CEILING SUSPENSION ASSEMBLIES

REPORT HOLDER:

USG INTERIORS, LLC

EVALUATION SUBJECT:

USG DONN® (DX/DXL, DXLA, DXW, DXWCE, DXCE, SDX/SDXL, ZXLA), DONN FINELINE® (DXF), DONN FINELINE 1/8 (DXFF), DONN CENTRICITEE™ (DXT) AND DONN IDENTITEE® (DXI) SUSPENDED CEILING FRAMING SYSTEMS; USG DONN PARALINE® (DXP AND DXLP) SUSPENDED CEILING SYSTEM; USG™ DRYWALL SUSPENSION SYSTEM; DONN SEISMIC COMPRESSION POST; AND ACM7 AND MAC2 CEILING ATTACHMENT CLIPS

ICC ES · ICC ES PMG · ICC ES LISTED

"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"

A Subsidiary of ICC INTERNATIONAL CODE COUNCIL

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

ANSI ACCREDITED ISO/IEC 17065 Product Certification Body #1000

Copyright © 2018 ICC Evaluation Service, LLC. All rights reserved.

ICC EVALUATION SERVICE · *Most Widely Accepted and Trusted*

ICC-ES Evaluation Report

ESR-1222

Reissued December 2018

This report is subject to renewal December 2019.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 · *A Subsidiary of the International Code Council®*

DIVISION: 09 00 00—FINISHES
Section: 09 22 26—Suspension Systems
Section: 09 53 00—Acoustical Ceiling Suspension Assemblies

REPORT HOLDER:

USG INTERIORS, LLC

EVALUATION SUBJECT:

USG DONN® (DX/DXL, DXLA, DXW, DXWCE, DXCE, SDX/SDXL, ZXLA), DONN FINELINE® (DXF), DONN FINELINE 1/8 (DXFF), DONN CENTRICITEE™ (DXT) AND DONN IDENTITEE® (DXI) SUSPENDED CEILING FRAMING SYSTEMS; USG DONN PARALINE® (DXP AND DXLP) SUSPENDED CEILING SYSTEM; USG™ DRYWALL SUSPENSION SYSTEM; DONN SEISMIC COMPRESSION POST; AND ACM7 AND MAC2 CEILING ATTACHMENT CLIPS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Interior finish
- Fire resistance
- Structural

2.0 USES

The USG suspended ceiling framing systems described in this report are suspended, exposed framing, concealed ceiling assemblies used in fire-resistance-rated and non-fire-resistance-rated construction for applications as noted in this report. The Donn Telescoping Seismic Compression Post is used as a compression post located at the lateral force bracing locations for installation between the suspended ceiling framing members and the structural roof or floor members above the ceiling. The ACM7 or MAC2 ceiling attachment clip is used to connect main and cross runners to wall molding.

3.0 DESCRIPTION

3.1 Ceiling Framing and Ceiling Systems:

3.1.1 Acoustical Tile Ceiling Framing Systems: The Donn, Donn Fineline, Donn Centricitee and Donn Identitee acoustical suspended ceiling framing systems consist of main and cross runner framing members for use with acoustical tiles.

3.1.2 Donn Paraline Suspended Ceiling System: The Donn Paraline suspended ceiling system consists of main and cross runner framing systems and Paraline metal pans used as ceiling tiles.

3.1.3 USG™ Drywall Suspension System: The USG™ Drywall Suspension System consists of main and cross runner framing systems for use with gypsum wallboard attached to the bottom of the framing members.

3.2 Donn Telescoping Seismic Compression Post:

The Donn telescoping seismic compression post consists of a $\frac{3}{4}$-inch-diameter (19.05 mm) steel tube inserted within and projecting out of a 1-inch-diameter (25.4 mm) steel tube; two plastic bushings; and a spring-steel tension ring fastened with a No. 10 by 1-inch-long (25.4 mm), hex washer head, self-tapping steel screw to the plastic bushing located in the end of the $\frac{3}{4}$-inch-diameter (19.05 mm) tube which is inserted into the 1-inch-diameter (25.4 mm) tube. The steel tubes are formed from AISI 1010 steel having a minimum yield strength of 36 ksi (248 MPa). A spring-steel clip inserted into the upper end of the compression post is used with a mechanical fastener to attach the compression post to the structural roof or floor framing. A plastic clip in the opposite end of the compression post snaps onto the bulb of the main tee of the suspended ceiling. The compression post is also connected to the suspended ceiling members by wire tying the post to the hanger wires or fastening the plastic end clip to the main tee with a No. 10 by 1-inch-long (25.4 mm) steel bolt and a matching steel hex nut. Details are noted in Table 2.

3.3 ACM7 and MAC2 Clips:

The clips are manufactured from 0.028-inch-thick (0.711 mm), hot-dipped galvanized, cold-rolled steel complying with ASTM A568.

3.4 Accessories:

Each suspended ceiling system is available with a variety of wall angles, moldings, access angles and corner caps.

3.5 Materials:

3.5.1 Framing Members: Main runners and cross runners are described in Table 1 of this report, which provides the cross-sectional dimensions, lengths and allowable transverse loads. Main runners are classified as either Intermediate or Heavy-Duty as shown in Table 1 in accordance with ASTM C635. The steel body of the suspension system members are hot-dipped galvanized in

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

Copyright © 2018 ICC Evaluation Service, LLC. All rights reserved.

accordance with ASTM A653 with a coating designation G30, except that DXFEV and ZXLA members have a G90 coating prior to being painted. The exposed surface of the bottom flange of the framing members is covered with a pre-painted flange capping of either steel or aluminum. The end clips of DX cross tees are high-strength, low alloy steel complying with ASTM A568 and ASTM A879. The end clips of the DXFEV and ZXLA cross tees are formed from Type 300 series stainless steel complying with ASTM A480.

3.5.1.1 Donn Fineline, Centricitee, Identitee and Paraline Exposed and Concealed Ceiling Suspension Systems for Use with Acoustical Tiles and Metal Pans: The cross tees, main tees and Paralock® main tees are formed from steel meeting ASTM A653 CS Type B. Carbon steel composition conforms to ASTM A568, and zinc coating conforms to ASTM A653.

3.5.1.2 USG™ Drywall Suspension System: The DGL-26 and DGLW-26 main runners and DGL and DGLW cross runners are formed from steel meeting ASTM A653 CS Type B. Carbon steel conforms to ASTM A568, and zinc coating conforms to ASTM A653.

3.5.2 Hanger Wire: Hanger wire for suspended ceiling framing members, and fixtures, must comply with ASTM C636 as referenced in 2015, 2012 and 2009 IBC Section 808.1.1.1 (2006 IBC Section 803.9.1.1) and Section 13.5.6 of ASCE 7 as referenced in 2015, 2012, 2009, and 2006 IBC Section 2506.2.1.

4.0 DESIGN AND INSTALLATION

4.1 Suspended Ceiling Framing Systems for Acoustical Tiles and Suspended Ceiling System with Paraline Metal Pans:

4.1.1 General: The suspended ceiling framing systems installed with acoustical tiles or the Paraline metal pans must be designed and installed in accordance with 2015, 2012 and 2009 IBC Sections 808, 1613, and 2506.2.1 (2006 IBC Sections 803.9, 1613 and 2506.2.1). The minimum tension and compression capacity of framing member connections is 180 pounds (800 N).

4.1.2 Main Runners: The maximum design loads for main runners must be less than or equal to the allowable capacities noted in Table 1 of this report.

4.1.3 Cross Runners: The maximum design load for cross runners must be less than or equal to the allowable capacities shown in Table 1 of this report.

4.1.4 Seismic Design:

4.1.4.1 General: Seismic design and installation details of the ceiling system, including lighting fixtures and mechanical services, must be in accordance with Section 13.5.6 of ASCE 7-10 for the 2015 and 2012 IBC (ASCE 7-05 for the 2009 and 2006 IBC) as referenced in IBC Section 1613, except as noted in Section 4.1.5 of this report. Systems with main runners classified as Intermediate-duty are limited to use in Seismic Design Categories A, B and C. Lighting fixtures may also be attached to the grid with clips complying with the ICC-ES Acceptance Criteria for Attachment Devices for Recessed Lighting Fixtures (Luminaires) in Suspended Ceiling Systems (AC184).

4.1.4.2 Partitions: Partitions must be laterally supported as required by Section 13.5.8 of ASCE 7-10 for the 2015 and 2012 IBC (ASCE 7-05 for the 2009 and 2006 IBC), as referenced by IBC Section 1613.

4.1.5 Alternate Suspended Ceiling Framing Systems for Acoustical Tiles:

4.1.5.1 Alternate Installation for Seismic Design Categories D, E and F: With this installation, the Donn, Centricitee, Fineline, Identitee and Aluminum Cap or Exposed Systems (DX/DXL, DXW, DXT, DXF, DXFF, DXI, DXLA, and ZXLA), main must be heavy duty as described in Section 3.5.1. Maximum total ceiling weight permitted is 4.0 lb/ft^2 (19.5 kg/m^2). The ACM7 clips, MAC2 clips or pop rivets are used to secure the main runners and cross runners to the perimeter members (wall closures or wall moldings) on two adjacent walls and to allow free movement of the runners on the two opposing walls. See Figures 1, 2, 2b and 2c. A nominally $\frac{7}{8}$-inch-wide wall closure angle (molding) is used in lieu of the 2-inch-wide (50.8 mm) perimeter wall molding required by ASTM E580 and Section 13.5.6.2.2 of ASCE 7-10 for the 2015 and 2012 IBC (Section 13.5.6.2.2 of ASCE 7-05 for the 2009 and 2006 IBC) for Seismic Design Categories D, E and F. Except for the use of the ACM7 clips, MAC2 clips or pop rivets and the nominally $\frac{7}{8}$-inch-wide wall molding and the elimination of spacer bars (stabilizer bars), installation of the ceiling system must be as prescribed by the applicable code.

The ACM7 clip is attached to the wall molding by sliding the locking lances over the hem of the vertical leg of the wall molding. On the two adjacent walls where the runners are fixed, the clips are attached to the runner by a sheet metal screw through the clip into the bulb of the tee (See Figure 2). The MAC2 clip is attached by fastening to the wall molding with one sheet metal screw. An additional screw is fastened through one of the side holes of the MAC2 into the top bulb of the runner (See Figure 2c). Instead of fixed connections (or restrained connections) provided by ACM7 clip (See Figure 2) or by MAC2 clip (see Figure 2c), a $\frac{1}{8}$-inch (3 mm) diameter pop rivet may be used to connect the runner end to the wall molding for a fixed connection(See Figure 2b). On the walls where the runners are not fixed (or runners are unrestrained), the ACM7 clips allow the terminal runner end to move $\frac{3}{4}$ inch (19.1 mm) towards and away from the wall (See Figure 1). The ACM7 clips, MAC2 clips or pop rivets installed in this manner are used in lieu of the spacer bars (stabilizer bars) required in Section 5 of ASTM E580 for the 2015 and 2012 IBC (CISCA for Seismic Zones 3-4 for the 2009 and 2006 IBC). ASTM E580 is referenced in ASCE 7-10, Section 13.5.6.2.2, which is referenced in 2015 and 2012 IBC Section 1613 (CISCA for Seismic Zones 3-4 is referenced in ASCE 7-05, Section 13.5.6.2.2, which is referenced in 2009 and 2006 IBC Section 1613). The assemblies described in this Section 4.1.5.1 are equivalent to that required by CISCA 3-4 and Section 5 of ASTM E580.

4.1.5.2 Alternate Installation for Seismic Design Category C: The ACM7 clip may be used in lieu of spacer bars (stabilizer bars) in suspended ceiling installations regulated by ASTM E580 for the 2015 and 2012 IBC (CISCA for Seismic Zones 0-2 for the 2009 and 2006 IBC). The ACM7 clip is attached to the wall molding by sliding the locking lances over the hem of the vertical leg of the wall molding. The ACM7 clips are placed at the intersections of all runners and the wall angle (molding) on the floating/unrestrained walls (See Figure 1), except where pop rivets or the MAC2 clips are used on the fixed or restrained walls as shown in Figures 2b and 2c. The ACM7 clips must be positioned to allow a minimum $\frac{3}{8}$-inch (9.5 mm) movement in both directions (towards and away from the wall) on two adjacent walls while the terminated ends of the main and cross runners are fixed tight to the

perimeter on the two opposite walls (See Figures 2b and 2c). The maximum ceiling weight permitted is 2.5 lb/ft^2 (12.19 kg/m^2). Except for the use of the ACM7 clip, MAC2 clip or pop rivet and the elimination of spacer bars (stabilizer bars), installation of the ceiling system must be as prescribed by the applicable code. The assemblies described in this Section 4.1.5.2 are equivalent to that required by Section 4 of ASTM E580, referenced in ASCE 7-10, Section 13.5.6.2.1, which is referenced in 2015 and 2012 IBC Section 1613(CISCA for Seismic Zones 0-2, referenced in ASCE 7-05, Section 13.5.6.2.1, which is referenced in 2009 and 2006 IBC Section 1613).

4.2 Suspended Ceiling Systems for Gypsum Wallboard:

The installation must be in accordance with manufacturer's written instructions, ASTM C636 and applicable provisions of IBC Chapter 25. Suspended ceilings constructed of lath and plaster or gypsum boards, screw or nail attached to suspended members that support a ceiling on one level that are surrounded by and connected to walls or soffits that are laterally braced to the structure above are exempt from the lateral load design requirements of ASTM E580 and CISCA for Seismic Zones 3-4, and as referenced in Section 13.5.6 of ASCE 7-10 in accordance with IBC Section 1613. The ceiling must be designed for seismic loads as required under Chapter 13.3 of ASCE 7-10 for the 2015 and 2012 IBC (ASCE 7-05 for the 2009 and 2006 IBC) as referenced in IBC Section 1613. The ceiling weight must not exceed 4 psf (19.5 kg/m^2). The capacity of the DGL and DGLW runners must not exceed the allowable load values shown in Table 1 of this report.

4.3 Fire-resistance-rated Ceiling Assemblies:

4.3.1 Donn (DXL and SDXL) Fire-resistance-rated Ceiling Systems:

4.3.1.1 Two-hour Fire-resistance-rated Exposed Floor-ceiling System: The DXL and SDXL systems consist of a bulb tee with $\frac{15}{16}$-inch-wide (23.8 mm) lower flange and main and cross-tee sizes shown in Table 1. The main tees are spaced 4 feet (1219 mm) on center and the cross tees are spaced 2 feet (610 mm) on center. The main tees are supported 48 inches (1219 mm) on center with No. 12 gage galvanized steel wires. Additionally, the same wires support the four corners of light fixtures and the center of each cross tee adjacent to the fixtures and air outlet ducts. The structural framing system consists of a minimum W8 × 15 steel beam that supports a minimum No. 18 gage, $1\frac{1}{2}$-inch-deep (38.1 mm) steel deck with flutes spaced 6 inches (152.4 mm) on center. The deck is welded to supports at 12 inches (604.8 mm) on center with welded or button-punched seams spaced 36 inches (914.4 mm) on center. Cellular steel decks may also be used. The decks are covered with normal-weight concrete having a minimum compressive strength of 3,500 psi (24.13 MPa) to a thickness of $2\frac{1}{2}$ inches (63.5 mm) over the top flute. Approved, recessed, 2-foot-by-4-foot (610 mm by 1219 mm) light fixtures may be used in the ceiling when spaced at up to 16 square feet per 100 square feet of ceiling area. The light fixtures must be independently supported by hanger wires. Approved air duct openings with approved dampers with a maximum opening dimension of 12 inches (305 mm) may be used in the ceiling, provided they are spaced at up to 113 square inches per 100 square feet of ceiling area. The lay-in acoustical material is USG Interiors, LLC $\frac{5}{8}$-inch-thick (15.8 mm), Type FR-83 nonperforated tile. The acoustical material is also used for protection of recessed light fixtures and consists of a three-sided enclosure cut to provide a 1-inch (25.4 mm) clearance around the fixture. The pieces are held together with three 6d nails on each side. Light fixtures located below or adjacent to a beam must have an additional piece of acoustical material laid on top of the enclosure. Hold-down clips spaced 2 feet (610 mm) on center are used to anchor the acoustical material weighing less than 1 psf (4.9 kg/m^2). The overall assembly depth is $24\frac{3}{8}$ inches (619 mm). The restrained and unrestrained rating of the assembly is two hours. The unrestrained beam rating is four hours. See Table 1 for allowable loads.

4.3.1.2 One-hour Fire-resistance-rated Exposed Roof-ceiling System: The DXL and SDXL systems consist of a bulb tee with $\frac{15}{16}$-inch-wide (23.8 mm) lower flange and main and cross-tee sizes as shown in Table 1. The main tees are spaced 4 feet (1219 mm) on center and the cross tees are spaced 2 feet (610 mm) on center. The main tees are supported 4 feet (1219 mm) on center with No. 12 gage galvanized steel wires. Additionally, the same size wires support the framing members at the four corners of light fixtures and the center of each cross tee adjacent to the fixtures and air outlet ducts. Approved, recessed, 2-foot-by-4-foot (610 mm by 1219 mm) light fixtures may be used in the ceiling when spaced at up to 24 square feet per 100 square feet of ceiling area. The light fixtures must be independently supported by hanger wires. Approved air duct openings with approved dampers may be used in ceilings that have a maximum opening dimension of 30 inches (762 mm), and these are spaced at up to 576 square inches (0.371 m^2) per 100 square feet (9.25 m^2) of ceiling area for steel ducts. The lay-in acoustical material is USG Interiors, LLC, $\frac{5}{8}$-inch-thick (15.8 mm), Type FR-83 ceiling panel tiles. The acoustical material is also used for protection of recessed light fixtures and consists of a three-sided rectangular enclosure cut to provide a 1-inch (25.4 mm) clearance around the fixture. The pieces are held together with three 6d nails on each side. Light fixtures located below or adjacent to a beam must have an additional piece of acoustical material laid on top of the enclosure. The overall assembly depth is 24 inches (50.8 mm). The restrained and unrestrained assembly rating is one hour. For additional support and installation details, see Figure 3. The roof consists of minimum No. 22 gage (0.020 inch thick), 1-inch-deep (25.4 mm), galvanized steel deck, with 1-inch-wide (25.4 mm) flutes at $3\frac{1}{2}$ inches (89 mm) on center. Steel joists, 10 inches (254 mm) deep, are spaced 48 inches (1219 mm) on center. Decking is secured to the joists with $\frac{1}{2}$-inch-diameter (12.7 mm) puddle welds through weld washers at 12 inches (305 mm) on center. United States Gypsum Company Type SCX gypsum wallboard, 4 feet (1219 mm) wide and $\frac{5}{8}$ inch (15.8 mm) thick, is placed with the long dimension perpendicular to the deck. Board end joints must be staggered a minimum of 1 foot (304.8 mm) from adjacent courses. A layer of vinyl vapor barrier is laminated over the wallboard. One or more layers of mineral and fiber insulation boards comprise the roof insulation. The boards are a minimum of 24 inches by 48 inches (610 mm by 1219 mm) by 1 inch (25.4 mm) thick. The first layer is placed perpendicular to the gypsum sheathing with end joints staggered a minimum of 2 feet (610 mm) from adjacent courses. Subsequent insulation board layers must have all joints staggered from adjacent layers a minimum of 12 inches (305 mm). The first two layers are secured through the gypsum sheathing into the decking with mechanical fasteners. Additional insulation board layers are adhered with hot asphalt or coal tar pitch at a rate not exceeding 25 pounds (11.3 kg) per square. A Class A, B or C built-up roof covering is applied over the insulation. The suspended ceiling grid system is hung by No. 12 gage galvanized steel wires, 48 inches (1219 mm) on center, tied to main runners and bottom chord of steel

joists. The ceiling must be suspended a minimum of 24 inches (610 mm) below the bottom of the roof deck and a minimum of 12 inches (305 mm) below steel joists.

4.3.1.3 One-hour Fire-resistance-rated Concealed Floor-ceiling Systems: These systems support an approved $\frac{3}{4}$-inch-thick (19.05 mm), 12-inch (305 mm) square non-ventilating acoustical mineral tile with kerfed edges. Hold-down clips are used for each tile around the perimeter. The galvanized steel DXL24 or SDXL24 main tee and DXL424 or SDXL424 cross-tee framing members support 2-foot-by-4-foot (610 mm-by-1219 mm) approved recessed light fixtures having slotted air openings on each side for $34\frac{1}{2}$-inch-long-by-$1\frac{1}{4}$-inch-wide (876 mm by 31.7 mm) air boots. All air boots are provided with approved fire dampers. The stabilizer bars oppose the cross tees that support the long edge of the light fixtures, and are connected to the main tee. Light fixture framing members are supported at each corner of the fixture and at midspan of the cross tees along the long edge of the fixture. The light fixtures must be independently supported by hanger wires. Hanger wires are No. 12 gage galvanized steel. All main runners are supported with the hanger wires at 48 inches (1219 mm) on center, except at light fixtures where the supports are at the fixture corners. For additional support and installation details, see Figure 3. All light fixtures are protected above by a rectangular-shaped box consisting of $\frac{5}{8}$-inch-thick (15.8 mm), approved mineral fiber board. Each side of the box is fastened to the top with four 7d coated nails. The structural framing system consists of open web steel joists spaced at 24 inches (610 mm) on center and supported by steel beams. The top and bottom of the joists are braced with $\frac{1}{2}$-inch-diameter (12.7 mm) steel bars spaced at 7 feet (2.1 m) on center and welded to each joist. Expanded 3.4 lb/yd^2 (1.8 kg/m^2), $\frac{3}{8}$-inch (9.52 mm) ribbed metal lath is placed over the joists with ribs transverse to the joists. Normal-weight concrete with a 28-day compressive strength of 3,000 psi and an average thickness of $2\frac{3}{4}$ inches (70 mm) is placed over the metal lath. The entire assembly is $21\frac{1}{2}$ inches (546 mm) deep, including the ceiling and concrete.

The approved light fixtures may occupy a maximum of 16 square feet (1.48 m^2) per 100 square feet (9.25 m^2) of ceiling area. See Table 1 for allowable loads.

4.3.2 Paraline™ (DXLP) Linear Metal Ceiling Systems in Two-hour Restrained or Unrestrained Floor-ceiling Systems: The Paraline™ (DXLP) linear metal ceiling system is a suspended ceiling consisting of $3\frac{1}{4}$-inch-wide (82 mm), channel-shaped Paraline pans of 0.018-inch to 0.024-inch (0.45 mm to 0.60 mm) aluminum that are snap-locked to the bottom of DXP or DXLP Paralock™ main tees. The system may be used as two-hour fire-resistance-rated assembly as described below. See Table 1 for allowable loads.

The ceiling system consists of the DXLP $1\frac{1}{2}$-inch-deep (38.1 mm), bulb-shaped steel main tees spaced at 48 inches (1219 mm) on center with $1\frac{1}{2}$-inch-deep (38.1 mm), DXL steel cross tees spaced at 24 inches (610 mm) on center, suspended by No. 12 gage galvanized steel hanger wires, 19 inches (482.6 mm) below minimum No. 20 gage fluted, or No. 22/22 gage cellular, $1\frac{1}{2}$-inch-deep (38.1 mm) steel decks. The decks must have $3\frac{1}{2}$-inch-wide (89 mm) flutes spaced at 6 inches (152.4 mm) on center. Allowable loading on the steel decks must be based on noncomposite design. When the deck is covered with $2\frac{1}{2}$-inch-thick (63.5 mm), 4,500 psi (31 MPa), normal-weight concrete, the assembly has a two-hour fire-resistive rating. The steel decks are supported by minimum W8 × 15 steel beams. The hanger wires are spaced a maximum of 48 inches (1219 mm) on center along each main runner adjacent to the intersection with cross tees; at the four corners of grid framing modules containing light fixtures and/or air boots; the main runners, at all four corners of air boots; at the center of all cross tees located adjacent to and parallel with walls; and within 6 inches (152.4 mm) of each main runner splice location. The following light fixtures may be used individually or mixed, as described below:

1. Nominally 24-inch-by-48-inch (610 mm by 1219 mm) fixtures spaced so that the area does not exceed 20 square feet (1.85 m^2) per 100 square feet (9.25 m^2) of ceiling area.
2. Nominally 9-inch-by-48-inch (228.6 mm by 1219 mm) fixtures spaced so that the number of fixtures does not exceed nine per 200 square feet (18.6 m^2) of ceiling area.
3. Nominally 5-inch-by-48-inch (127 mm by 1219 mm) fixtures spaced so that the number of fixtures does not exceed six per 100 square feet (9.25 m^2) of ceiling area.

Nominally 4-foot-long (1219 mm) Donn Paraline air boots with 6-inch-diameter (152.4 mm) inlets may also be used in the system. Spacing of air boots must not exceed one per 100 square feet (9.25 m^2) of ceiling area.

All light fixtures must be completely enclosed with $\frac{5}{8}$-inch-thick (15.8 mm), Type FR-83 (s) acoustical boards manufactured by USG Interiors, LLC, that are held together with three 6d nails on each side. The same acoustical board, 24 inches by 48 inches (610 mm by 1219 mm), is laid in between all cross tees and main runners.

Hold-down clips are placed over the cross tees symmetrically at 2 feet (610 mm) on center when the acoustical material weighs less than 1 psf (4.9 kg/m^2). Access clips may be used in lieu of hold-down clips, where required.

The Paraline plain or perforated metal pans Types PAR, PASP and PARP (aluminum pans) are for use with the two-hour fire rating.

4.3.3 Donn Fineline (DXLF) Ceiling Suspension System:

4.3.3.1 One-hour Fire-resistance-rated Floor-ceiling System: The Donn Fineline suspension system is designed to support acoustical panels in one-hour fire-resistive floor-ceiling assemblies as noted in Figure 4. The main runners, 4-foot-long (1219 mm) cross tees and 2-foot-long (610 mm) cross tees are designated DXLF-29, DXLF-429 and DXLF-229, respectively. The overall depths and thicknesses of the runners and cross tees are described in Table 1.

4.3.3.2 One-hour Fire-resistance-rated Roof-ceiling System: The same framing members described in Section 4.3.3.1 of this report may be used as part of a one-hour fire-resistive, restrained, roof-ceiling assembly that may be described as follows: The main runners are spaced 4 feet (1219 mm) on center. Cross tees, 4 feet (1219 mm) long, are spaced 2 feet (610 mm) on center and inserted into main runners. Cross tees 2 feet (610 mm) long are inserted perpendicular to the 4-foot (1219 mm) cross tees and spaced to provide 24-inch-by-24-inch (610 mm by 610 mm) modules. Ceiling panels are USG Interiors, LLC, GR-1(s) perforated, with dimensions of 24 inches by 24 inches by $\frac{3}{4}$ inch thick (610 by 610 by 19.05 mm).

Panels at walls are supported by No. 26 gage steel angles with $\frac{13}{16}$-inch (30.16 mm) and $\frac{5}{8}$-inch (15.8 mm) legs.

The roof consists of minimum No. 22 gage, $1\frac{1}{2}$-inch-deep (38.1 mm), galvanized steel deck, with flutes at 6 inches (152.4 mm) on center. Steel joists, 10 inches (254 mm) deep, are spaced 48 inches (1219 mm) on center. Decking is secured to the joists with $\frac{1}{2}$-inch-diameter (12.7 mm) puddle welds through weld washers at 12 inches (305 mm) on center. Water-resistant core gypsum sheathing complying with ASTM C1396, 4 feet (1219 mm) wide and $\frac{5}{8}$ inch (15.8 mm) thick, is placed with the long dimension perpendicular to the deck.

Board end joints must be staggered a minimum of 1 foot (305 mm) from adjacent courses. Optional mineral and fiber insulation boards manufactured by Manville comprise the roof insulation. The boards are a minimum of 24 inches by 48 inches by 1 inch thick (610 by 1219 by 25.4 mm). The first layer is placed perpendicular to the gypsum sheathing with end joints staggered a minimum of 2 feet (610 mm) from adjacent courses. Subsequent insulation board layers must have all joints staggered from adjacent layers a minimum of 12 inches (305 mm). The first two layers are secured through the gypsum sheathing into the decking with $3\frac{1}{4}$-inch-long (82.55 mm) screws having 0.203-inch-diameter (5.15 mm) shanks. The screws have a special tip that locks against the steel deck underside. The screws are placed through $2\frac{1}{8}$-inch-diameter (54 mm), 0.030-inch-thick (0.76 mm) steel discs at each board corner. Additional insulation board layers are adhered with hot asphalt or coal-tar pitch at a rate not exceeding 25 pounds per square. A Class A, B or C built-up roof covering is applied over the insulation. The suspended ceiling framing system is hung by No. 12 gage galvanized steel wires, 48 inches (1219 mm) on center, tied to main runners and bottom chord of steel joists. The soffit of the ceiling must be suspended a minimum of 20 inches (508 mm) below the bottom of the roof deck and a minimum of 10 inches (254 mm) below the steel joists.

4.3.4 Donn Centricitee (DXLT) One-hour Fire-resistance-rated System: The Donn DXLT Centricitee exposed grid system is designed to support lay-in acoustical panels in a one-hour fire-resistive floor-ceiling assembly. See Figure 4 for a description. The main runners, 4-foot-long (1219 mm) cross tees and 2-foot-long (610 mm) cross tees are designated as DXLT-24, DXLT-424, DXLT-218 and DXLT-222, respectively. The overall depths and thicknesses of the runners and cross tees are described in Table 1.

4.3.5 USG™ Drywall Suspension System Fire-resistance-rated Ceiling Systems: The USG™Drywall Suspension Systems are concealed, direct-hung grid systems that can be utilized as part of a fire-resistive floor-ceiling assembly as shown in Figure 5, with ratings as listed in Table 3. The main runners are either Type DGL or DGLW main runners. The cross runners are either Type DGCL or Type DGLW cross runners, except that Type DGL cross runners are used around recessed light fixtures.

The ratings apply to restrained and unrestrained assemblies as described in ASTM E119, which is referenced in IBC Section 703. General requirements of 2015 and 2012 IBC Section 711.1 (2009 IBC Section 712.1 and 2006 IBC Section 711.1) must be observed.

4.4 Special Inspection:

Suspended ceilings in Seismic Design Categories C, D, E and F, shall be subject to periodic special inspections during the installation of the suspended ceiling systems and their anchorage, in accordance with the following requirements: For installations in accordance with Section 4.1.5 of this report, special inspection must be conducted as indicated in 2012 IBC Sections 1704.3, 1705.1.1, 1705.11.4, and Item 3 of Section 1705.12; 2009 IBC Section 1704.15, 1708.4 and Item 3 of Section 1708.1; 2006 IBC Section 1704.13, 1708.5 and Item 3 of Section 1708.2, as applicable. For installations in accordance with Section 4.1.5 of this report, special inspections are required as indicated in 2015 IBC sections 1705.1.1, 1704.5 and 1705.13.2. For installations in accordance with Section 4.1, there must be compliance with the following: Section 11A.1.3.9, Item 2, of ASCE 7-10 for the 2015 and 2012 IBC (Section 13.5.6.2.2 (h) of ASCE 7-05, and 2009 IBC Section 1705.3.4, Item 3 for the 2009 IBC; Section 13.5.6.2.2 (h) of ASCE 7-05, and 2006 IBC Section 1705.3, Item 4.3 for the 2006 IBC, as applicable). The special inspector must verify that the ceiling system is as described in this report, and complies with the installation instructions in this report, and with the approved construction documents.

A statement of special inspections must be provided as required in 2015 and 2012 IBC Section 1704.3 (2009 IBC Section 1705.3.4, Item 3; and 2006 IBC Section 1705.3, Item 4.3).

5.0 CONDITIONS OF USE

The USG suspended ceiling framing systems described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The ceiling suspension main runners, cross runners, ACM7 clips, MAC2 clips and seismic compression post are fabricated and installed in accordance with this report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's installation instructions and this report, this report governs.

5.2 Design loads and spans of main and cross runners must comply with Table 1 of this report.

5.3 Suspended ceiling systems must be designed in accordance with ASCE 7, Section 13.5.6, as referenced by 2015, 2012, 2009 and 2006 IBC Section 1613. The documents must be prepared by a registered design professional where required by statutes of the jurisdiction in which the project is to be constructed.

5.4 For Seismic Design Category C, D, E or F, a quality assurance plan complying with, IBC Chapter 17, including 2015 and 2012 IBC Section 1704.3 (2009 and 2006 IBC Sections 1705.2 and 1705.3),-must be submitted to the code official.

5.5 Periodic special inspections and a statement of special inspections must be provided in accordance with Section 4.4 of this report.

5.6 The ceiling framing systems must not be used to provide lateral support for walls or partitions, except as provided for in ASCE 7, Section 13.5.8.1, as referenced in 2015, 2012, 2009 and 2006 IBC Section 1613.

5.7 The ceiling systems must be braced to resist seismic forces as determined from Section 1613 of the 2015, 2012, 2009 and 2006 IBC.

5.8 The supporting construction for the ceiling system has not been evaluated and is outside the scope of this report. The code official must approve the floor or roof construction supporting the suspended ceiling system.

5.9 The ceiling systems are limited to ceilings not considered accessible in accordance with Item 28 of 2015 and 2012 IBC Table 1607.1 (Item 31 of 2009 IBC Table 1607.1, Item 32 of 2006 IBC Table 1607.1).

5.10 The ceiling systems are limited to interior application. For exterior ceiling installations, the ceiling systems must be designed for wind loads and with due consideration of atmospheric conditions.

5.11 Lay-in ceiling panels must be justified to the satisfaction of the code official as complying with the interior finish requirements of Chapter 8 of the applicable code.

5.12 Lighting fixtures and mechanical services must be as described in Section 4.1.4.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Suspended Ceiling Framing Systems (AC368), dated July 2015.

6.2 Data in accordance with the ICC-ES Acceptance Criteria for Seismic Certification by Shake-table Testing of Nonstructural Components (AC156), dated October 2010 (editorially revised May 2015).

6.3 Reports of fire-resistance tests in accordance with ASTM E119.

7.0 IDENTIFICATION

7.1 Cartons of framing members, ACM7 clips, MAC2 clips, seismic compression posts and accessories are identified with the name and address of USG Interiors, LLC, the manufacturing location, the framing member designations and the evaluation report number (ESR-1222).

7.2 The report holder's contact information is the following:

USG INTERIORS, LLC
550 WEST ADAMS STREET
CHICAGO, ILLINOIS 60661
(800) 874-4968
www.usg.com
usg4you@usg.com

TABLE 1—DIMENSIONS AND ALLOWABLE LOADS FOR FRAMING MEMBERS

Item Number	Profile Type (figure 6)	Part Number	Member	Load Classification	Length of Member (inches) nominal	Height of Member (inches)	Metal Thickness (inches)	Maximum Span (inches)	Maximum Spacing (inches)	Ceiling Load (pounds per square foot)	Simple Span (pounds per lineal foot)	Required Lateral Support (inches on center)
DONN® Brand Exposed and Concealed Ceiling Suspension Systems												
1[1]	A	DX-24 SDX-24	Main Tee	Intermediate Duty	144	1.64	0.014	48	48	3	12	24
1a[1]	A	DX-140	Main Tee	Intermediate Duty	140	1.64	0.014	48	48	3	12	24
1b*[1]	A	DXL-24 DXL-24	Main Tee	Intermediate Duty	144	1.64	0.014	48	48	3	12	24
2[2]	A	DX-26	Main Tee	Heavy Duty	144	1.64	0.016	48	48	4	16	24
2a*[2]	A	DXL-26	Main Tee	Heavy Duty	144	1.64	0.016	48	48	4	16	24
3[3]	C	DX-216 SDX-216	Cross Tee		24	1.00	0.01	24	60	2.9	14.8	
3a*[3]	C	DXL-216 SDXL-216	Cross Tee		24	1.00	0.014	24	24	13.7	27.3	
4	C	DXD-216	Cross Tee		24	1.00	0.01	24	60	2.9	14.8	
5	C	DX-20	Cross Tee		20	1.00	0.01	20	60	5.3	26.5	20
6	C	DX-30	Cross Tee		30	1.00	0.014	30	60	2.7	13.6	30
7	C	DXD-316	Cross Tee		36	1.00	0.01	36	36	2.6	7.7	36
8	C	DX-316	Cross Tee		36	1.00	0.01	36	36	2.6	7.7	36
9*	B	DXL 324	Cross Tee		36	1.50	0.014	36	36	2.6	7.7	36
10	C	DX-416 SDX-416	Cross Tee		48	1.00	0.014	48	48	1	4.2	
11	C	DXD-416	Cross Tee		48	1.00	0.014	48	48	1	4.2	
12	B	DX-422 SDX-422	Cross Tee		48	1.50	0.01	48	48	2.3	9.1	
13[4]	B	DX-424 SDX-424	Cross Tee		48	1.50	0.014	48	48	3	12	
13a*[4]	B	DXL-424 SDXL-424	Cross Tee		48	1.50	0.014	48	48	3	12	
14	B	DX-426	Cross Tee		48	1.50	0.022	48	48	4	16	
15	B	DX-522	Cross Tee		60	1.50	0.01	60	24	2.1	4.3	60
16[5]	B	DX-524	Cross Tee		60	1.50	0.014	60	24	3.5	7.15	60
16a*[5]	B	DXL-524	Cross Tee		60	1.50	0.014	60	24	3.5	7.15	60
17	B	DX-526	Cross Tee		60	1.50	0.022	60	60	1.8	9.3	60
DONN® Brand Exposed Ceiling Suspension Systems with Aluminum Cap or Environmental												
18*	A	DXLA-24	Main Tee	Intermediate Duty	144	1.64	0.014	48	48	3	12	24
19*	A	DXLA26	Main Tee	Heavy Duty	144	1.64	0.016	48	48	4	16	24
20*	C	DXLA-216	Cross Tee		24	1.00	0.01	24	24	12.5	25	24
21*	B	DXLA-424	Cross Tee		48	1.50	0.014	48	48	3	12	
22*	A	ZXLA-24	Main Tee	Intermediate Duty	144	1.64	0.014	48	48	3	12	24
23*	A	ZXLA-26	Main Tee	Heavy Duty	144	1.64	0.016	48	48	4	16	24
24*	B	ZXLA-224	Cross Tee		24	1.50	0.014	24	24	15	30	
25*	B	ZXLA 524	Cross Tee		60	1.50	0.014	60	24	3.5	7.15	60
26*	B	ZXLA 424	Cross Tee		48	1.50	0.014	48	48	3	12	
DONN® PARALINE™ Brand Linear Metal Ceiling Suspension System												
27[6]		DXP	Main Tee	Heavy Duty	144	1.50	0.02	48	24	3	12	24
27a*[6]		DXLP	Main Tee	Heavy Duty	145	1.51	0.02	48	24	3	12	24
DONN® FINELINE® Brand Exposed Ceiling Suspension Systems												
28	F	DXFF-29	Main Tee	Intermediate Duty	144	1.80	0.015	48	48	3	12	24
29	G	DXFFH-29	Main Tee	Heavy Duty	144	1.80	0.015	48	48	4	16	24
30	F	DXFF-229	Cross Tee		24	1.80	0.015	24	60	10	50	24
31	F	DXFF-429N	Cross Tee		48	1.80	0.015	48	48	3	12	48
32	F	DXFF-529N	Cross Tee		60	1.80	0.015	60	60	1.4	7.2	30
33	D	DXF-29	Main Tee	Intermediate Duty	144	1.80	0.016	48	60	2.4	12	24
34	E	DXFH-29	Main Tee	Heavy Duty	144	1.80	0.015	48	60	3.3	16	24
35[7]	D	DXF-129	Cross Tee		12	1.80	0.016	12	60	10	50	12
36[7]	D	DXF-20	Cross Tee		20	1.80	0.015	20	60	10	50	20
37[7]	D	DXF-229	Cross Tee		24	1.80	0.015	24	60	10	50	24
38[7]	D	DXF-30	Cross Tee		30	1.80	0.015	30	60	6.7	33.6	30
39[7]	D	DXF-329	Cross Tee		36	1.80	0.015	36	36	7.3	22	18
40[7]	D	DXF-429N	Cross Tee		48	1.80	0.015	48	48	3	12	24
41[7]	D	DXF-529N	Cross Tee		60	1.80	0.015	60	24	3.4	6.9	30
42*[7]	D	DXLF-29	Main Tee	Intermediate Duty	144	1.80	0.016	48	48	3	12	24
43*[7]	D	DXLF-229	Cross Tee		24	1.80	0.015	24	60	10	50	24
44*[7]	D	DXLF-429N	Cross Tee		48	1.80	0.015	48	48	3	12	24

TABLE 1—DIMENSIONS AND ALLOWABLE LOADS FOR FRAMING MEMBERS (Continued)

Item Number	Profile Type (figure 6)	Part Number	Member	Load Classification	Length of Member (inches) nominal	Height of Member (inches)	Metal Thickness (inches)	Maximum Span (inches)	Maximum Spacing (inches)	Ceiling Load (pounds per square foot)	Simple Span (pounds per lineal foot)	Required Lateral Support (inches on center)
DONN® CENTRICITEE® Brand Exposed Ceiling Suspension Systems												
45	H	DXT-24	Main Tee	Intermediate Duty	144	1.50	0.016	48	48	3	12	24
46*	H	DXLT-24	Main Tee	Intermediate Duty	144	1.50	0.018	48	48	3	12	24
47	I	DXT-26	Main Tee	Heavy Duty	144	1.64	0.024	48	48	4	16	24
48	H	DXT-524	Cross Tee		60	1.50	0.016	60	60	1.3	6.7	30
49[8]	H	DXT-424	Cross Tee		48	1.50	0.016	48	48	3	12	24
49a*[8]	H	DXLT-424	Cross Tee		48	1.50	0.016	48	48	3	12	24
50	J	DXT-418	Cross Tee		48	1.13	0.014	48	48	0.8	3.3	48
51	H	DXT-422	Cross Tee		48	1.50	0.01	48	48	0.9	3.8	48
52[9]	J	DXT-218	Cross Tee		24	1.13	0.014	24	24	7.8	15.6	24
52a*[9]	J	DXLT-218	Cross Tee		24	1.13	0.014	24	24	7.8	15.6	24
53[10]	H	DXT-222	Cross Tee		24	1.50	0.01	24	24	10	20.5	24
53a*[10]	H	DXLT-222	Cross Tee		24	1.50	0.01	24	24	10	20.5	24
DONN® Identitee™ Brand Exposed Ceiling Suspension System												
	L	DXI-24HRC	Main Tee	Intermediate Duty	144	1.82	0.014	48	48	3	12	12 from center
	L	DXI-26HRC	Main Tee	Heavy Duty	144	1.82	0.016	48	48	4	16	12 from center
	L	DXI-424HRC	Cross Tee		48	1.82	0.014	45	45	2.6	9.9	
USG™ Drywall Suspension System												
58*	M	DGL 26	Main Tee	Heavy Duty	144	1.62	0.018	48	72	4	16	
59*	M	DGLW 26	Main Tee	Heavy Duty	144	1.62	0.018	48	72	4	16	
60*	M	DGLW 26s	Main Tee	Heavy Duty	72 - 168	1.62	0.018	48	24	4	16	
66*	B	DGL 224	Cross Tee		24	1.50	0.016	24	24		81.3	
67*	B	DGL 424	Cross Tee		48	1.50	0.016	48	48		13	
68	N	DGLW 624	Cross Tee		72	1.50	0.014	72	48		4.45	
69*	N	DGLW 224	Cross Tee		24	1.50	0.014	24	24		73.2	
70*	N	DGLW 2624	Cross Tee		26	1.50	0.014	26	24		57	
71*	N	DGLW 424	Cross Tee		48	1.50	0.014	48	48		12.1	
72*	N	DGLW 50	Cross Tee		50	1.50	0.014	50	24		11	
DONN® Brand Non-Rated Exposed Suspended Ceiling Systems												
71	K	DXW 26	Main Tee	Heavy Duty	144	1.50	0.019	48	48	4.4	17.1	24
72	K	DXW 224	Cross Tee		24	1.50	0.013	24	24	18.3	36.7	24
73	K	DXW 424	Cross Tee		48	1.50	0.013	48	48	3.3	13.4	48
74	K	DXCE-24	Main Tee	Intermediate Duty	144	1.64	0.014	48	48	3	12	24
75	K	DXCE-224	Cross Tee		24	1.50	0.014	24	24	15	30	N/A
76	K	DXCE-424	Cross Tee		48	1.50	0.014	48	48	3	12	N/A
77	K	DXWCE 26	Main Tee	Heavy Duty	144	1.50	0.019	48	48	4.4	17.1	24
78	K	DXWCE 224	Cross Tee		24	1.50	0.013	24	24	18.3	36.7	24
79	K	DXWCE 424	Cross Tee		48	1.50	0.013	48	48	3.3	13.4	48

For **SI:** 1 inch = 25.4 mm; 1 psf = 48 N/m2, 1 plf = 14.6 N/m.

1	Items 1 & 1b will be sold as **DX/DXL 24 & SDX/SDXL 24**
2	Items 2 & 2a will be sold as **DX/DXL 26**
3	Items 3 & 3a will be sold as **DX/DXL 216 & SDX/SDXL 216**
4	Items 13 & 13a will be sold as **DX/DXL 424 & SDX/SDXL 424**
5	Items 16 & 16a will be sold as **DX/DXL 524**
6	Items 27 & 27a will be sold as **DXP/DXLP 26**
7	Items 35 -44 can also be found as **DXFEV** with a galvanization Type G90
8	Items 49 & 49a will be sold as **DXT/DXLT 424**
9	Items 52 & 52a will be sold as **DXT/DXLT 218**
10	Items 53 & 53a will be sold as **DXT/DXLT 222**
*	Fire-Resistant-Rated

TABLE 2—DONN COMPRESSION POST

TYPE	TUBE LENGTHS (inches)		OVERALL COMPRESSION POST LENGTH (inches)	
	1-inch Diameter	3/4-inch Diameter	Minimum	Maximum
VSA 18/30	17	17	18	30
VSA 30/48	24	30	30	48
VSA 48/84	48	40	48	84
VSA 84/102	72	40	84	102

For **SI:** 1 inch = 25.4 mm.

TABLE 3—FIRE-RESISTANCE-RATED ASSEMBLIES

RESTRAINED OR UNRESTRAINED ASSEMBLY RATING (hours)	UNRESTRAINED BEAM RATING (hours)	CONCRETE THICKNESS (inches)	WALLBOARD THICKNESS (inch)
2	3	$2\frac{1}{2}$	$\frac{1}{2}$
3	3	$3\frac{1}{4}$	$\frac{1}{2}$
3	3	$2\frac{3}{4}$	$\frac{5}{8}$

For **SI:** 1 inch = 25.4 mm.

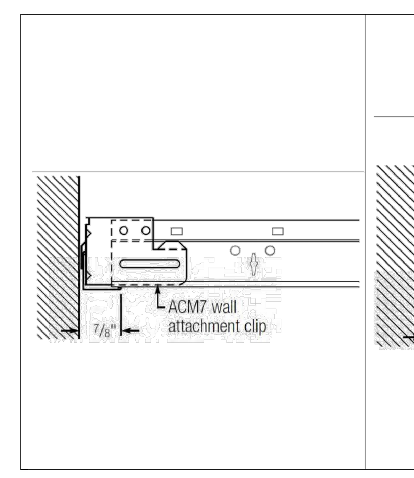


FIGURE 1—ACM7 CLIP UNRESTRAINED

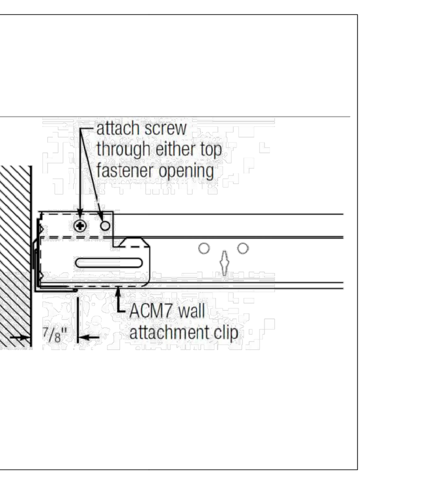


FIGURE 2—ACM7 CLIP RESTRAINED

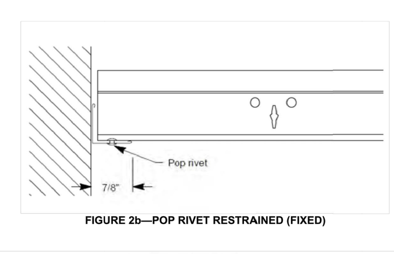


FIGURE 2b—POP RIVET RESTRAINED (FIXED)

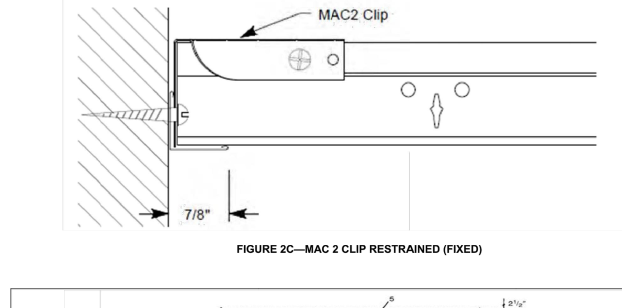


FIGURE 2C—MAC 2 CLIP RESTRAINED (FIXED)

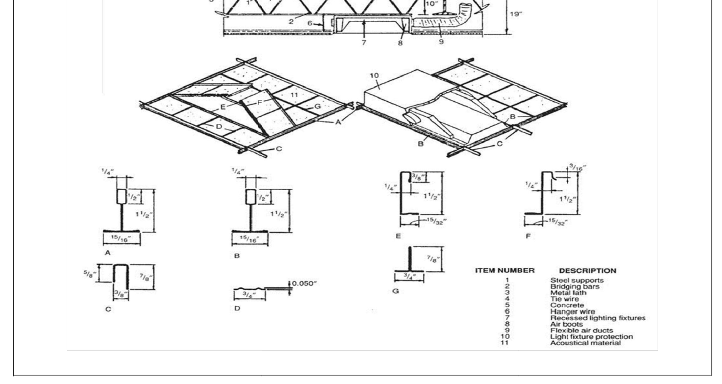
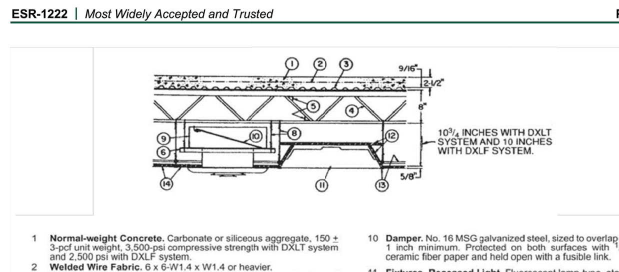
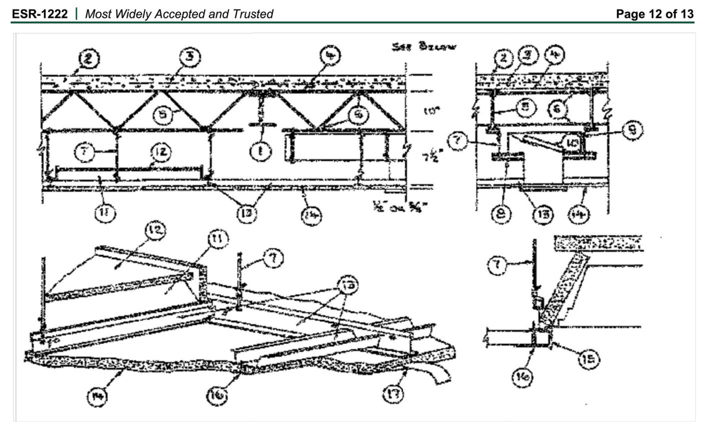


FIGURE 3—DONN DXL ONE-HOUR FIRE-RESISTANT-RATED AND CONCEALED CEILING SYSTEMS



1 **Normal-weight Concrete.** Carbonate or siliceous aggregate, 150 ± 3-pcf unit weight, 3,500-psi compressive strength with DXLT system and 2,500 psi with DXLF system.
2 **Welded Wire Fabric.** 6 x 6-W1.4 x W1.4 or heavier.
3 **Steel Form Units.** Minimum $\frac{9}{16}$-inch-deep corrugated unites of minimum No. 24 MSG galvanzied steel, welded to supports with $\frac{1}{2}$-inch puddle welds through welding washers. Welds located at each joist. Adjacent units overlapped one corrugation at the sides.
4 **Steel Joists.** Type 8H3 minimum size; spaced 24 inches on center, welded to end supports.
5 **Bridging.** One by 1-inch steel angles, welded to top and bottom chord of each joist.
6 **Duct Supports.** Nominal 1 by 1 by $\frac{1}{8}$-inch-thick steel angles or No. 16 MSG cold-rolled steel channels, $1\frac{1}{2}$ inches deep, suspended from lower chord of joists with No. 12 SWG galvanized steel wire to form a trapeze. Duct supports must be spaced at 48 inches on center maximum along length of duct and at air duct outlets.
7 **Cold-rolled Channels.** (Not shown)—No. 16 MSG cold-rolled steel channels, $1\frac{1}{2}$ inches deep with $\frac{9}{16}$-inch flanges, located as needed to provide means of attachment for hanger wires located away from steel joists. Placed on top and secured to lower chord of joists with No. 18 SWG galvanized steel wire.
8 **Hanger Wire.** No. 12 SWG galvanized steel wire, twist-tied to lower chord of joists, spaced not over 48 inches on center along main runners adjacent to cross-tee intersections. If not already present, hanger wires shall also be provided at the four corners of light fixtures, at center of cross tees supporting the long sides of light fixtures and at center of cross tees adjacent to air duct outlets.
9 **Air Duct.** No. 22 MSG minimum galvanized steel. Total area of duct openings not to exceed 113 square inches per each 100 square feet of ceiling area. Area of individual duct opening not to exceed 113 square inches. Maximum dimension of opening 12 inches.
10 **Damper.** No. 16 MSG galvanized steel, sized to overlap duct opening 1 inch minimum. Protected on both surfaces with $\frac{1}{16}$-inch-thick ceramic fiber paper and held open with a fusible link.
11 **Fixtures, Recessed Light.** Fluorescent lamp-type, steel housing, 2 by 4 foot size with DXLT system and 2 by 2 foot size with DXLF system. Fixtures spaced so their area does not exceed 24 square feet per each 100 square feet of ceiling area. Wired in conformance with the National Electrical Code.
12 **Fixture Protection—Acoustical Materials.** $\frac{5}{8}$-inch-thick USG Acoustical Products Co. GR-1(s) tiles having surface perforations cut into pieces to form a three-sided enclosure with open ends and trapezoidal in cross-section. Fixture protection consists of a $23\frac{3}{4}$-by-$47\frac{3}{4}$-inch top piece, with DXLT system and $23\frac{3}{4}$-by-$23\frac{3}{4}$-inch top piece with DXLF system, two side pieces of a width which will provide a minimum $\frac{5}{8}$ inch clearance between top piece and the fixture housing and are $47\frac{3}{4}$ and $23\frac{3}{4}$ inches long for the DXLT and DXLF systems, respectively. The side pieces are placed against the sides of the fixture and the top piece is placed on top of the side pieces. The pieces are held together by 6d nails near the center and near the ends on each long side of the fixture.
13 **Steel Framing Members.** DXLT or DXLF main runners, nominal 12 feet long spaced 4 feet on center. Cross tees, nominal 4 feet long installed perpendicular to main runners and spaced 2 feet on center. Cross tees, nominal 2 feet long, installed perpendicualr to the 4-foot cross tees and spaced 2 feet on center.
14 **Acoustical Material.** Nominal 24 by 24 by $\frac{5}{8}$-inch-thick USG Acoustical Products Co. GR-1(s) or GR-2(s). Border panels supported at walls by No. 26 MSG painted steel angles with $\frac{3}{4}$-inch and 1-inch legs or channels $1\frac{5}{8}$ inches deep with 1-inch bottom and $\frac{3}{8}$-inch top flanges. (S) = Surface perforations.

FIGURE 4—DONN DXLT AND DXLF ONE-HOUR FIRE-RATED SYSTEMS



For **SI:** 1 inch = 25.4 mm, 1 pcf = 16.02 kg/m^3, 1 psi = 6.89 kPa, 1 pound/yard^2 = 0.54 kg/m^2, 1 inch^2 = 645.16 mm^2, 1 foot^2 = 0.0920 m^2.

1. **Beam**—W8 × 24, minimum size.
2. **Normal-weight Concrete**—Carbonate or siliceous aggregate, 152 pcf ± 3 pcf unit weight, 4,500-psi compressive strength.
3. **Welded Wire Fabric**—6 by 6 inches, 10/10 SWG.
4. **Metal Lath**—$\frac{3}{8}$-inch rib, 3.4-pound-per-square-yard expanded steel. Tied to each joist at every other rib and midway between joints at side lap with 18 SWG galvanized steel wire.
5. **Steel Joists**—Type 10J2 minimum size, spaced 24 inches on center, welded to end supports.
6. **Bridging**—$\frac{1}{2}$-inch-diameter steel bars welded to top and bottom chords of each joist.
7. **Hanger Wire**—No. 12 SWG galvanized steel wire tied to lower chord of joists or cold-rolled channels tied face to face with No. 18 SWG galvanized wire. Hanger wires spaced a maximum of 48 inches on center along main runners and located at ends of main runners at walls and at corners and midspan along 4-foot sides of light fixtures.
8. **Cold-rolled Channels**—No. 16 MSG cold-rolled steel, $1\frac{1}{2}$ inches deep.
9. **Air-Duct**—No. 20 MSG galvanized steel. Total area of duct openings not to exceed 57 square inches per 100 square feet of ceiling area. Area of individual duct openings not to exceed 113 square inches. Maximum dimension of opening is 12 inches. Duct supported by cold-rolled channels, spaced approximately 24 inches on center.
10. **Damper**—No. 16 MSG galvanized steel, 16 by 16 inches, protected on both surfaces with $\frac{1}{16}$-inch-thick ceramic fiber paper and held open with a listed fusible link. Damper to overlap duct outlet a minimum of 1 inch.
11. **Fixtures, Recessed Light**—Listed fluorescent-lamp type, steel housing, 2-by-4-foot size. Fixtures spaced so their area does not exceed 24 square feet per 100 square feet of ceiling area. Fixtures and ballasts must be considered for these ambient temperature conditions before installation.
12. **Fixture Protection**—Wallboard, gypsum—$\frac{1}{2}$-and $\frac{5}{8}$-inch-thick gypsum wallboard (SHEETROCK FIRECODE Type "C" as manufactured by United States Gypsum Company), cut into pieces to form a four-sided enclosure, trapezoidal in cross section, approximately $\frac{1}{2}$ inch longer and wider than the fixture, with sufficient depth to provide at least $\frac{1}{2}$ inch clearance between the fixture and the enclosure.
13. **Steel Framing Members**—Type DGL or DGLW—main runner tees, 12 feet long, spaced 4 feet on center. Main runner ends interlocked by an integral splice end detail. Type DGLW or DGCL cross channels, measuring 4 feet long, installed perpendicular to the main runners, spaced 24 inches on center. Additional channels placed 8 inches from light fixtures and from butted end joints. Channels clipped into main runner slots and secured to wall angle using $\frac{1}{2}$-inch-long self-drilling and self-tapping screws having a thread diameter of 0.138 inch and a $\frac{5}{16}$-inch head diameter. The Type DGL cross tees, used to support the 4-foot sides of light fixtures, are 4 feet long and installed perpendicular to the main runners.
14. **Gypsum Wallboard**—$\frac{1}{2}$-and $\frac{5}{8}$-inch-thick gypsum wallboard (SHEETROCK FIRECODE Type "C" as manufactured by United States Gypsum Company), 4 feet wide, installed with the long dimension perpendicular to cross channels, with side joints centered along main runners. Wallboard fastened to cross channels using 1-inch-long wallboard screws located $\frac{1}{2}$ inch from end joints and $1\frac{3}{4}$ inches from each side joint, and spaced 12 inches on center along the end joints and in the field.
15. **Metal Trim Molding**—No. 22 MSG molding measuring $\frac{5}{8}$ inch wide, with $\frac{9}{16}$- and $1\frac{3}{8}$-inch-long legs placed on wallboard edges around light fixtures and secured to the cross tees and main runners using 1-inch-long wallboard screws. Spacing of screws approximately 8 inches on center along the 4-foot side and 10 inches on center along the 2-foot side of light fixtures.
16. **Screw, Wallboard**—Type S-12, 1 inch long, self drilling and self tapping, 0.163-inch thread diameter, $\frac{5}{16}$-inch head diameter.
17. **Finishing System**—Paper tape embedded in compound over joints and covered with additional compound. Exposed screw heads covered with compound. Edges of compound feathered out.
18. **Wall Angle**—(Not shown)—No. 26 MSG angle with $1\frac{1}{8}$-inch legs, nailed to the walls supporting the cross channels.

FIGURE 5—FIRE–RESISTIVE FLOOR-CEILING ASSEMBLY UTILIZING THE USG DRYWALL SUSPENSION SYSTEM

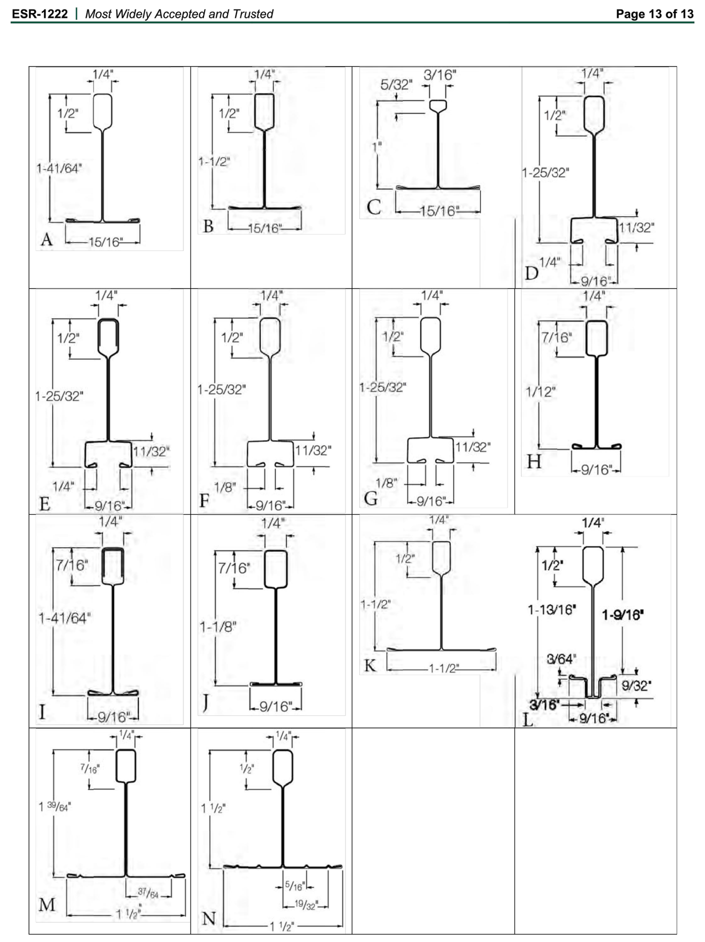
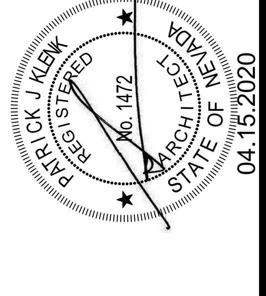


FIGURE 6—SUSPENSION SYSTEM PROFILES

1 GYPSUM BOARD CEILING ASSEMBLY

SCALE: N.T.S.

SEAL



A NEW SHELL BUILDING IMPROVEMENT

31 SOUTH WATER STREET

APN #179-18-611-055 CITY OF HENDERSON , NV 89015

31 WATER STREET LLC

DATE: 07.10.2019 PROJECT NUMBER: 0201909

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS		
REV	Description	DATE

SHEET

A9.50

REPORTS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A950.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:06pm

UL Product iQ™

BXUV.U305 -

Design/System/Construction/Assembly Usage Disclaimer

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

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

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

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

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

Design No. U305

March 10, 2020

Bearing Wall Rating — 1 Hr

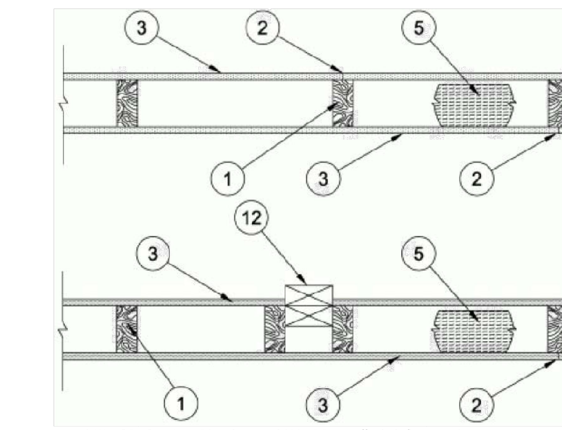
Finish Rating — See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.

STC Rating - 56 (See Item 9)

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-HOUR ASSEMBLY



1. **Wood Studs —** Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. **Joints and Nail-Heads —** Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

3. **Gypsum Board* —** 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Items 6 through 6F, **Steel Framing Members***.

When Items 6, 6B, 6C, 6D, 6E, or 6F, **Steel Framing Members***, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, **Steel Framing Members***, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

AMERICAN GYPSUM CO — Types AGX-1(finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min), Type AGX-12 (finish rating 22 min), Type LightRoc (finish rating 23 min.) or Type AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1 (finish rating 24 min)

CABOT MANUFACTURING ULC — Type X (finish rating 22 min), 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1 (finish rating 26 min); Type EGRG or GlasRoc (finish rating 23 min), GlasRoc-2, Type Habito (finish rating 26 min).

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min), Type ULIX (finish rating 20 min)

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 34 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX (finish rating 21 min), Type CLLX (finish rating 24 min)

GEORGIA-PACIFIC GYPSUM L L C — Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min), Type C (finish rating 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DS, Type DAP, Type DD (finish rating 20 min), Type DA, Type DAPC, Type LS (finish rating 23 min), Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, Type LWX (finish rating 22 min), Veneer Plaster Base-Type LWX (finish rating 22 min), Water Rated-Type LWX (finish rating 22 min), Sheathing Type-LWX (finish rating 22 min), Soffit-Type LWX (finish rating 22 min), Type DGLW (finish rating 22 min), Water Rated-Type DGLW (finish rating 22 min), Sheathing Type- DGLW (finish rating 22 min), Soffit-Type DGLW (finish rating 22 min), Type LWX (finish rating 22 min), Type LW2X (finish rating 22 min), Veneer Plaster Base - Type LW2X (finish rating 22 min), Water Rated - Type LW2X (finish rating 22 min), Sheathing - Type LW2X (finish rating 22 min), Soffit - Type LW2X (finish rating 22 min), Type DGL2W (finish rating 22 min), Water Rated - Type DGL2W (finish rating 22 min), Sheathing - Type DGL2W (finish rating 22 min)

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8, Type FSLX (finish rating 21 min).

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-4 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS, PGS-WRS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 PG-13 (Nails increased to 2 in.), or Type PG-C

PANEL REY S A — Type GREX, GRIX, PRX, PRC, PRC2; Types RHX, Guard Rey, MDX, ETX (finish rating 22 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min)

THAI GYPSUM PRODUCTS PCL — Type C, Type X (finish rating 26 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type ULIX (finish rating 20 min)

USG BORAL DRYWALL SFZ LLC — Type SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type ULX (finish rating 22 min)

3A. **Gypsum Board* —** (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LighttRoc (finish rating 25 min.)

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1 (finish rating 26 min)

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min)

NATIONAL GYPSUM CO — Type FSW (finish rating 24 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX, Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

3B. **Gypsum Board* —** (As an alternate to Item 3) — Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.
CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR, IP-AR

3C. **Gypsum Board* —** (As an alternate to Items 3, 3A and 3B) — 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.
CGC INC — Type SHX

UNITED STATES GYPSUM CO — Type SHX

USG MEXICO S A DE C V — Type SHX

3D. **Gypsum Board* —** (As an alternate to Items 3, 3A, 3B, or 3C — Not Shown) — For Direct Application to Studs 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 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and 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 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to 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 discs or tabs may be used in lieu of or in addition to the lead batten strips 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 underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RAY-BAR ENGINEERING CORP — Type RB-LBG (finish rating 24 min)

3E. **Gypsum Board* —** (As an alternate to Items 3, 3A, 3B, 3C, and 3D) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
GEORGIA-PACIFIC GYPSUM L L C — Type DGG (finish rating 20 min), GreenGlass Type X (finish rating 23 min)

3F. **Gypsum Board* —** (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) — 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Nails shall be placed 1 inch and 3 inch from horizontal joints and 7 inch OC thereafter.
CGC INC — Type USGX (finish rating 22 min)

UNITED STATES GYPSUM CO — Type USGX (finish rating 22 min.)

USG BORAL DRYWALL SFZ LLC — , Type USGX (finish rating 22 min.)

USG MEXICO S A DE C V — Type USGX (finish rating 22 min.)

3G. **Gypsum Board* —** (As an alternate to Items 3 through 3F) — 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min)

3H. **Gypsum Board* —** (As an alternate to Items 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.
NATIONAL GYPSUM CO — Type SBWB

3I. **Gypsum Board* —** (As an alternate to Items 3 through 3H, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES (finish rating 20 min)

3J. **Gypsum Board* —** (As an alternate to Item 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically or horizontally. Gypsum panels secured per item 3 or 3A.
CERTAINTEED GYPSUM INC — Type SilentFX

3K. **Gypsum Board* —** (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 8 in. OC with the last screw 1 in. from the edge of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min).

3L. **Gypsum Board* —** (As an alternate to Item 3) — For Direct Application to Studs 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 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and 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 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. Lead discs, max 5/16 in. diam by max 0.140 in. thick. compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".
MAYCO INDUSTRIES INC — "X-Ray Shielded Gypsum"

3M. **Gypsum Board* —** (As an alternate to Items 3) — For Direct Application to Studs Only — For use as the base layer or as the face layer. 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 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. 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". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

3N. **Gypsum Board* —** (As an alternate to Item 3) — 5/8 in. thick, 4 ft. wide, applied horizontally or vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3 or 3A.
CERTAINTEED GYPSUM INC — Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2 (finish rating 24 min)

3O. **Wall and Partition Facings and Accessories* —** (As an alternate to Item 3, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527 (finish rating 24 min).

3P. **Gypsum Board* —** (As an alternate to Item 3, Not Shown) — Two layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by wood studs. Horizontal joints on the same side between face and base layers need not be staggered. Base layer gypsum panels fastened to studs with 1-1/4 in. long drywall nails spaced 8 in. OC. Face layer gypsum panels fastened to studs with 1-7/8 in. long drywall nails spaced 8 in. OC starting with a 4" stagger.
NATIONAL GYPSUM CO — Type FSW (finish rating 25 min)

3Q. **Gypsum Board* —** (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

3R. **Gypsum Board* —** (As an alternate to Item 3. For use with Item 5H) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 3 above. Applied either horizontally or vertically, and screwed to panels with 1-5/8 in. long Type W coarse thread steel screws at 8 in. OC at perimeter and in the field with the last two screws 4 and 3/4 in. from the edges of the board when applied as the base layer. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

3S. **Gypsum Board* —** 3/4 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels secured as described in Item 3 with nail length increased to 2 in.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-13

3T. **Wall and Partition Facings and Accessories* —** (As an alternate to 5/8 in. thick board as outlined in Item 3) — Nominal 1-3/8 in. thick, 4 ft wide panels, applied vertically or horizontally. Fastened with #6 x 2 in. long drywall screws spaced 8 in. OC along the perimeter and 12 in. OC in the field.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 545

3U. **Gypsum Board* —** (As an alternate to Item 3 - For use with Item 5J) — 5/8 in. thick, 4 ft. wide, applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.
UNITED STATES GYPSUM CO — Type SCX

4. **Steel Corner Fasteners —** (Optional) — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. **Batts and Blankets* —** (Optional — Required when Item 6A is used (RC-1)) — Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be friction-fitted to completely fill the stud cavities.
CERTAINTEED CORP

JOHNS MANVILLE

KNAUF INSULATION LLC

MANSON INSULATION INC

ROCKWOOL — Types Acoustical Fire Batts and Type AFB, min. density 1.69 pcf / 27.0 kg/m³

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts

ROCK WOOL MANUFACTURING CO — Delta Board

THERMAFIBER INC — Type SAFB, SAFB FF

5A. **Fiber, Sprayed* —** (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product. When Item 6B is used, Fiber, Sprayed shall be INS735, INS745, INS750LD, INS765LD or INS773LD.
U S GREENFIBER L L C — INS735, INS745 and INS750LD for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD, and INS773LD are to be used for dry application only

5B. **Fiber, Sprayed* —** (Not Shown - Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.
NU-WOOL CO INC — Cellulose Insulation

5C. **Batts and Blankets* —** Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, friction-

fitted to fill interior of wall.
THERMAFIBER INC — Type SAFB, SAFB FF

5D. **Glass Fiber Insulation —** (As an alternate to Item 5C) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5E. **Batts and Blankets* —** (Required for use with Wall and Partition Facings and Accessories, Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5F. **Fiber, Sprayed* —** (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D) — As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See **Fiber, Sprayed** (CCAZ).
AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

5G. **Fiber, Sprayed* —** (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D). — As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed stud cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³.
INTERNATIONAL CELLULOSE CORP — Celbar-RL

5H. **Foamed Plastic* —** (Optional -For use with Item 3R) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.
SES FOAM INC — Nexseal™ 2.0 or Nexseal™ 2.0 LE Spray Foam and Sucraseal Spray Foam.

5I. **Fiber, Sprayed* —** (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft³.
APPLEGATE HOLDINGS L L C — Applegate Advanced Stabilized Cellulose Insulation

5J. **Foamed Plastic* —** (Optional, Not Shown - For use with Item 3U) — Spray applied, foamed plastic insulation, to completely filling stud cavity.
GACO WESTERN L L C — Types GacoEZSpray F4500, GacoProFill FR6500R, Gaco 052N, GacoOnePass F1850, GacoOnePass Low GWP F1880, and Gaco WallFoam 183M

6. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining

channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

6A. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members on 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. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. 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 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Aa) to one side of studs 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

6B. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC — Type Genie Clip

6C. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 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

6D. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, 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 a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Da) 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

6E. **Steel Framing Members* —** (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 6Ea) 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

6F. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Fa) to studs. Clips spaced 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

7. **Furring Channel —** Optional — Not Shown — For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

8. **Caulking and Sealants —** (Not Shown, Optional) — A bead of acoustical sealant applied around the partition perimeter for sound control.

9. **STC Rating —** The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above — Nailheads Shall be covered with joint compound.

B. Item 2, above — Joints As described, shall be covered with fiber tape and joint compound.

C. Item 5, above — Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above — Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

E. Item 8, above — Caulking and Sealants (Not Shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.

F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. **Wall and Partition Facings and Accessories* —** (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

11. **Cementitious Backer Units* —** (Optional Item Not Shown — For Use On Face Of 1 Hr Systems With All Standard Items Required) - 7/16 in., 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide. Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.
NATIONAL GYPSUM CO — Type DuraBacker, PermaBase, DuraBacker Plus, or PermaBase Plus

12. **Non-Bearing Wall Partition Intersection —** (Optional) —Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

13. **Mesh Netting —** (Not Shown) — Any thin, woven or non-woven fibrous netting material attached with staples to the outer face of one row of studs to facilitate the installation of the sprayed fiber from the opposite row.

14. **Mineral and Fiber Board* —** (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with 2 in. long Type W steel screws, spaced 12 in. OC. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
HOMASOTE CO — Homasote Type 440-32

14A. **Mineral and Fiber Board* —** (Optional, Not Shown) — For use with Items 14B-14E) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with minimum 1-3/8 in. long ring shanked nails or 1-1/4 in. long Type W steel screws, spaced 12 in. OC along board edges and 24 in. OC in field of board along intermediate framing. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
HOMASOTE CO — Homasote Type 440-32

14B. **Glass Fiber Insulation —** (For use with Item 14A) — 3-1/2 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ) categories for names of Classified companies.

14C. **Batts and Blankets* —** (As an alternate to Item 14B, For use with Item 14A), 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 3-1/2 in. face of the studs with staples placed 24 in. OC.
THERMAFIBER INC — Type SAFB, SAFB FF

14D. **Adhesive —** (For use with Item 14A) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 14A).

14E. **Gypsum Board* —** (For use with Item 14A) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 14A) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 14A). Secured to outermost studs and bearing plates with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. Finish Rating 30 Min.
AMERICAN GYPSUM CO — Type AG-C

CERTAINTEED GYPSUM INC — Type C

CGC INC — Types C, IP-X2, IPC-AR

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

14F. **Mineral and Fiber Board —** (Optional, Not Shown) — For optional use as an additional layer on one side of wall - Nom 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on one side of the wall in between the wood studs and the UL Classified Gypsum Board (Item 3). Fiber boards installed with 1-1/4 in. long, Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
BLUE RIDGE FIBERBOARD INC — SoundStop

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

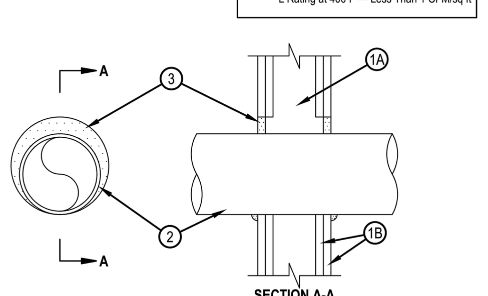
Last Updated on 2020-03-10

System No. W-L-1054

WL 1054

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings —1 and 2 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



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of 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. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
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 U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.
The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly.

Hilti Firestop Systems

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

Page: 1 of 2

System No. W-L-1054

WL 1054

2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.
D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

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

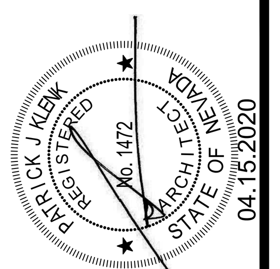
Hilti Firestop Systems

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

Page: 2 of 2

PIPE PENETRATIONS

SEAL



A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
APN #179-18-611-055
CITY OF HENDERSON , NV 89015

31 WATER STREET LLC

DATE: 07.10.2019
PROJECT NUMBER: 0201909

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS		
REV	DATE	Description

SHEET
A9.60
RATINGS

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A960.dwg Was Last Modified by Technician pmani9kmon On April 15, 2020 at 4:06pm

UL Product iQ™

BXUV.U415 -

Design/System/Construction/Assembly Usage Disclaimer

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

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

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

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

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

Design No. U415

September 27, 2019

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr

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

System A — 1 Hr.

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, ULX, USGX, WRC, WRX

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. When ULIX is used insulation, Item 8, **Batts and Blankets*** is required and minimum stud depth is 4 in.

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

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, SHX, ULX, USGX, WRC, WRX

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

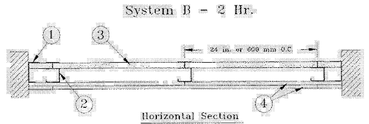
Last Updated on 2019-09-27

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

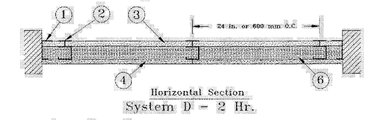
UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2020 UL LLC"

W:\Drawing Projects\Drawings\31 Water Street\02019_09_A970.dwg Was Last Modified by Technician pmain19kmon On April 15, 2020 at 4:06pm

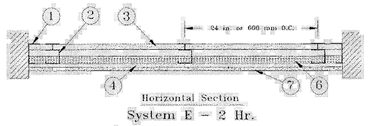
System B — 2 Hr.



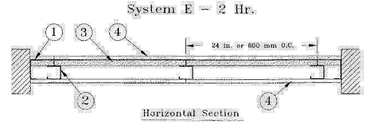
System C — 2 Hr.



System D — 2 Hr.



System E — 2 Hr.



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

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.

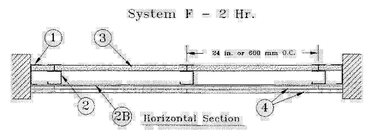
CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

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.

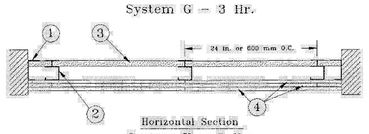
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

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

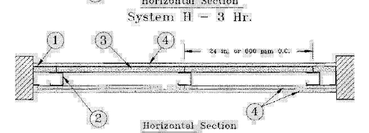
System F — 2 Hr.



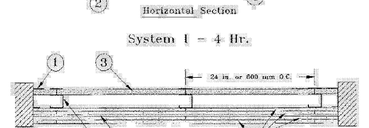
System G — 3 Hr.



System H — 3 Hr.



System I — 4 Hr.



1. **Floor, Side and Ceiling Runners —** "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is

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

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, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, 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, WRC

UNITED STATES GYPSUM CO — Type C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

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 LL 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

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

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.
RSGUPOL 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. or 1-1/2 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

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.

System A With Type ULIX Gypsum Boards

Placed in stud cavities, any min. 3-1/2 in. thick glass fiber 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.

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/m^3

THERMAFIBER INC — 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 (BYWX) 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

2-HOUR SHAFT ASSEMBLY

SEAL

PATRICK J. KLEIN REGISTERED No. 1472 ARCHITECT STATE OF NEVADA 04.15.2020

A NEW SHELL BUILDING IMPROVEMENT
31 SOUTH WATER STREET
CITY OF HENDERSON , NV 89015
APN #179-18-611-055

31 WATER STREET LLC
PROJECT NUMBER: 0201909
DATE: 07.10.2019

P. JAMES ARCHITECT

P. JAMES KLENK, ARCHITECT LLC
ARCHITECTURE
PLANNING
DESIGN
4629 VICTORIA BEACH WAY
LAS VEGAS, NV 89103
702.683.3277

REVISIONS

REV	Description	DATE

SHEET
A9.70
RATINGS