



DAMIAN FARRELL DESIGN GROUP

359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331



FOR BUILDING PERMIT

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE: 01.15.2024
DESCRIPTION: PERMIT SET

DESIGN: Designer
DRAWN: Author
PROJECT NO.: 23_05_19

COVER SHEET

To.o

PERMIT SET

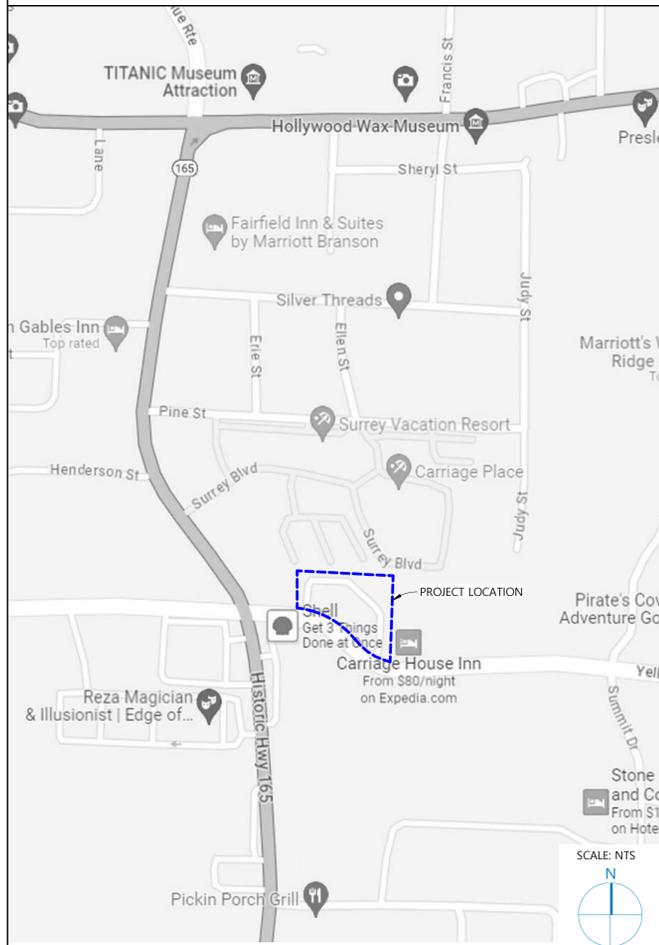
PROJECT NUMBER 23_05_19

DATE 01.15.2024

C3 - BRANSON MO

3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

VICINITY MAP



PROJECT DIRECTORY

APPLICANT
OWG II, LLC
STEPHANIE STENGER
890 E SAN MARTIN
BOLIVAR, MO 65613

ARCHITECT
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359 METTY DRIVE, SUITE 4A
ANN ARBOR MICHIGAN 48103
PH. 734.998.1331

DIRECTOR OF DESIGN + CONSTRUCTION:
C3 INDUSTRIES
4420 VARSITY DRIVE
ANN ARBOR, MI 48108
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MEP ENGINEER:
HALLBERG ENGINEERING, INC.
1750 COMMERCE COURT
WHITE BEAR LAKE, MN 55110

GENERAL PROJECT INFORMATION

LEGAL DESCRIPTION FOR PARCEL, 18-1.0-02-004-012-002.004:
LOT 37, THOUSAND HILLS SUBDIVISION, AS PER THE RECORDED RE-PLAT THEREOF, IN PLAT BOOK/SLIDE D, AT PAGE 743, OF THE TANEY COUNTY RECORDER'S OFFICE, TANEY COUNTY, MISSOURI. SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
LOT 36, THOUSAND HILLS, A SUBDIVISION, AS PER THE RECORDED PLAT THEREOF, IN PLAT BOOK 25, AT PAGES 64 THROUGH 68 OF THE RECORDER'S OFFICE OF TANEY COUNTY, MISSOURI. SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.

PROJECT DATA

MUNICIPALITY: CITY OF BRANSON
ZONING DISTRICT: CC - COMMUNITY COMMERCIAL
LOT AREA REQUIRED: 7,500 SF MIN.
LOT AREA: 2.12 ACRES
MAX. BUILDING HEIGHT: 100'
PROPOSED BUILDING HEIGHT: +/- 36' - 8" (NO CHANGE PROPOSED)

SCOPE OF WORK: THIS PROJECT INCLUDES THE INTERIOR RENOVATION OF AN EXISTING 8,972 SF BUILDING. THE PROPOSED USE IS ADULT-USE CANNABIS DISPENSARY.

CODE REVIEW

PROPOSED METHOD OF COMPLIANCE: PRESCRIPTIVE
ALTERATION LEVEL: LEVEL 3

PREVIOUS OCCUPANCY CLASSIFICATION: A-3 ASSEMBLY

PROPOSED OCCUPANCY CLASSIFICATION: M - MERCANTILE

MAXIMUM ALLOWABLE AREA (SF):
M MERCANTILE 36,000 SF TABLE 506

CONSTRUCTION TYPE: VB CHAP. 6

MAX. TRAVEL DISTANCE: TABLE 1016.2
MAX. ALLOWABLE TRAVEL DISTANCE w/ SPRINKLERS:
GROUP M MERCANTILE 250 ft.

MEANS OF EGRESS SIZING (BASED ON OCC. LOAD): SECTION 1005.3.2
0.2 (128 OCC.) = 26"

MINIMUM CORRIDOR WIDTH: 44" TABLE 1020.2

MINIMUM DOOR SIZE: 32" CLEAR SECTION 1010.1.1

DEAD END CORRIDORS: SECTION 1018.4
MAX. ALLOWABLE w/ SPRINKLERS: 20 ft.

OCCUPANCY CALCULATION: TABLE 1004.1.2

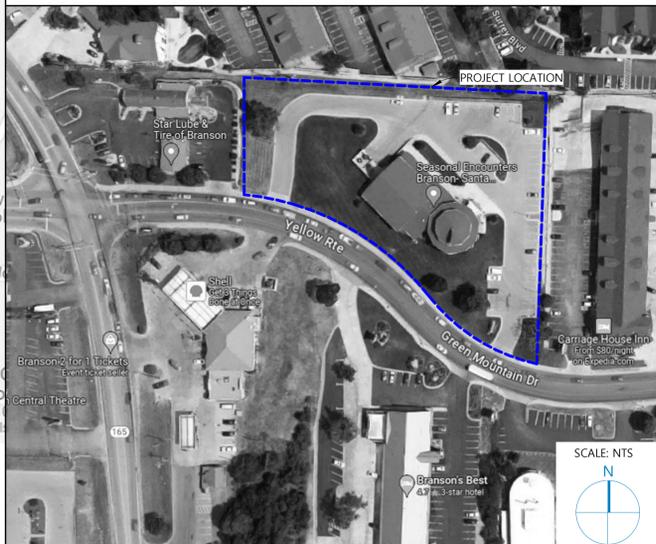
OCCUPANCY LOAD			
FUNCTION OF SPACE	OCCUPANT LOAD FACTOR	AREA	OCCUPANCY LOAD
ACCESSORY	1/300 SF	1180 SF	3.93
MERCANTILE	1/60 SF	7379 SF	122.98
MERCANTILE STORAGE	1/300 SF	414 SF	1.38
TOTAL:		8972 SF	128 OCC.

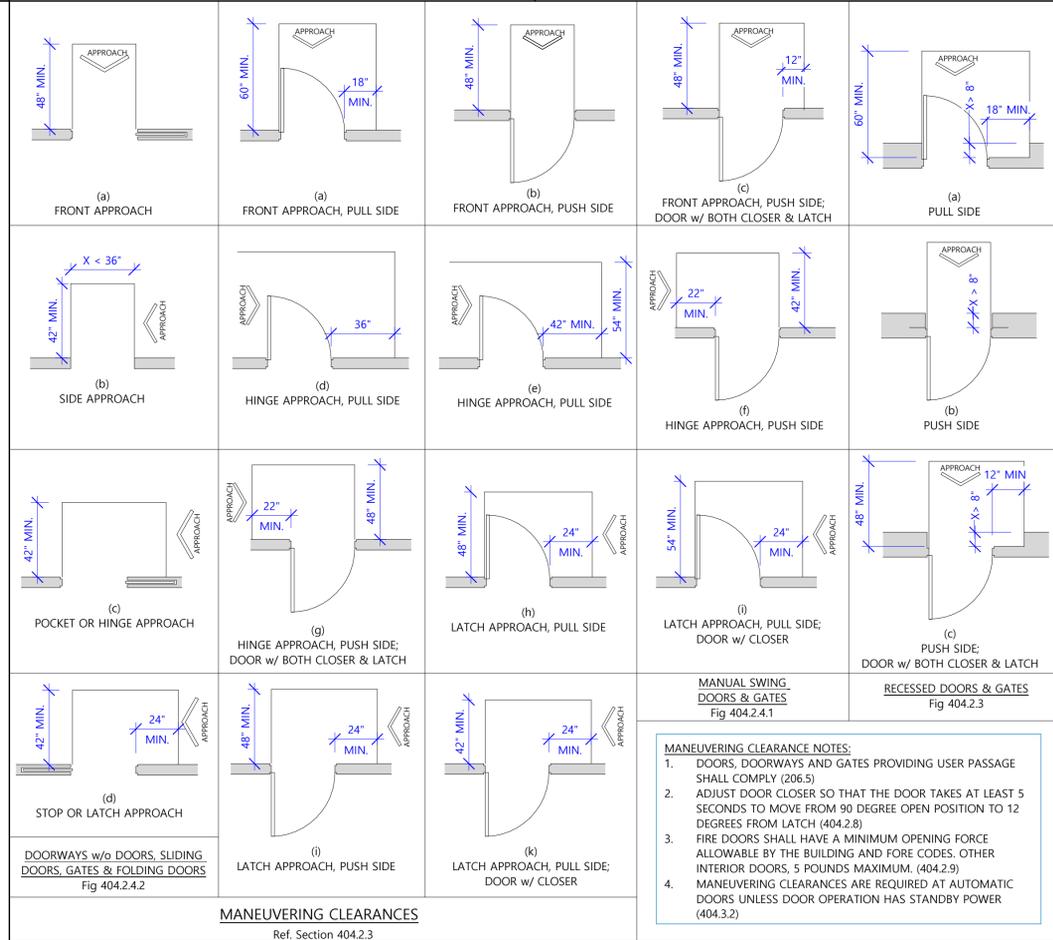
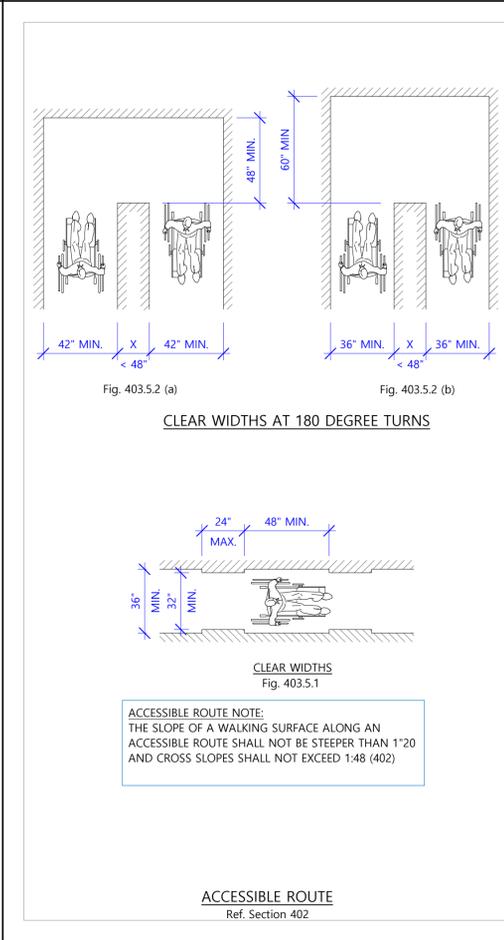
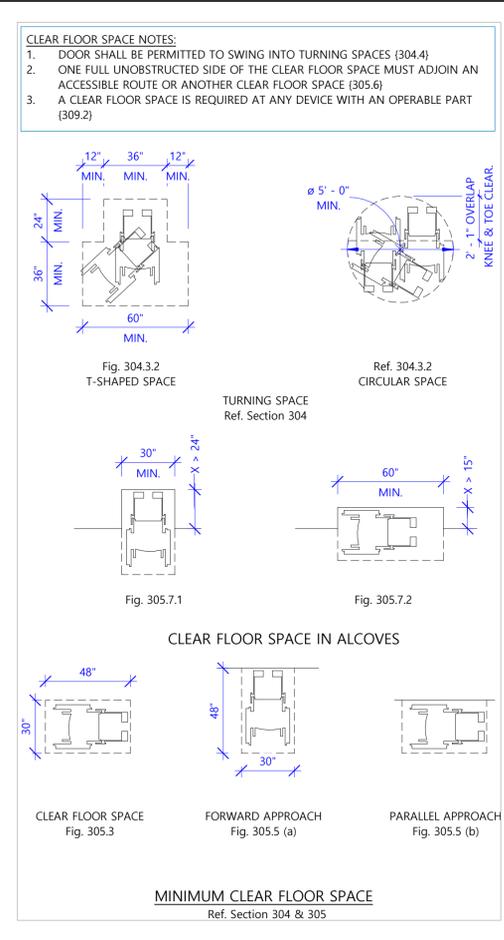
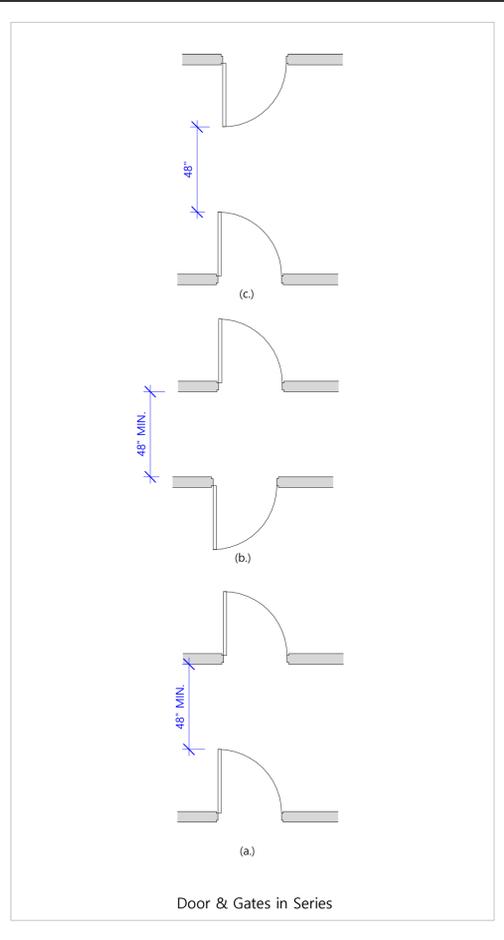
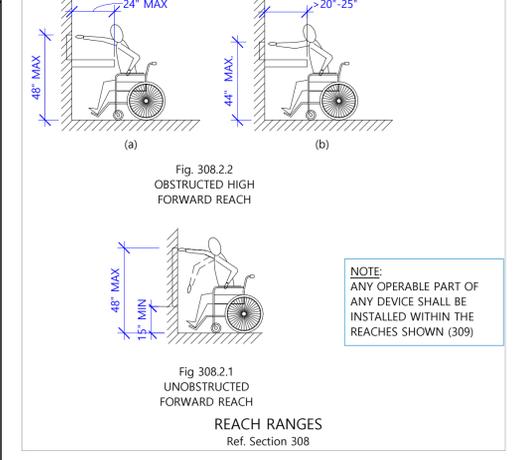
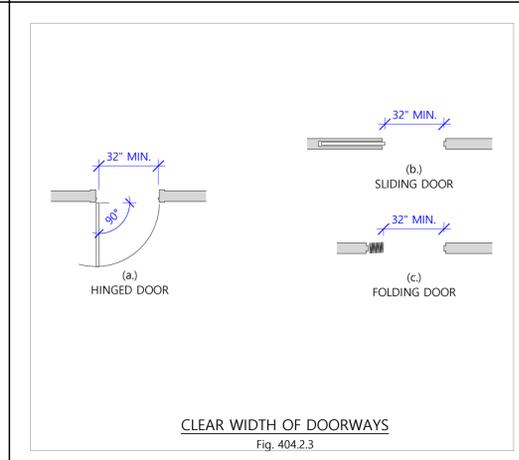
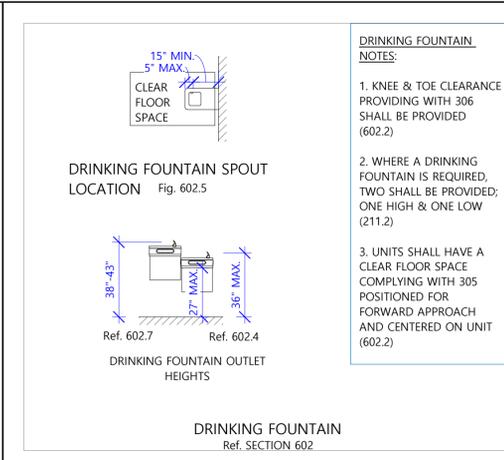
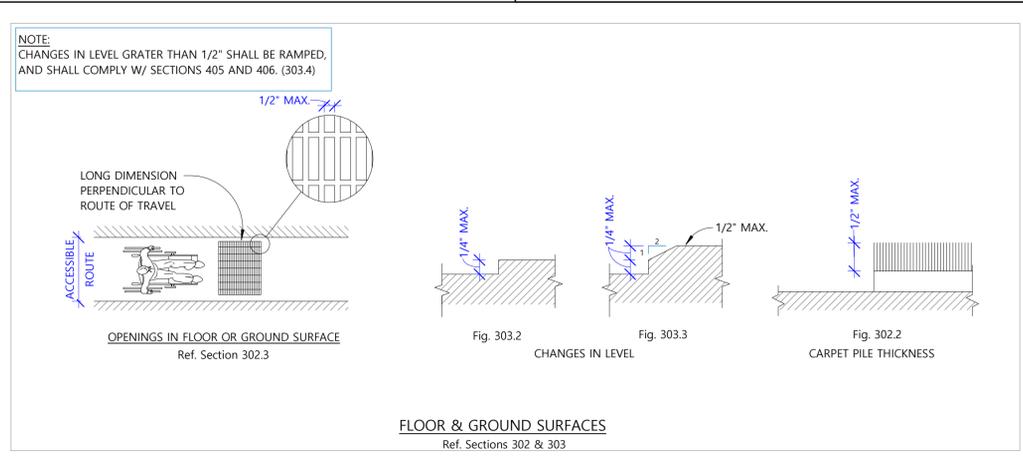
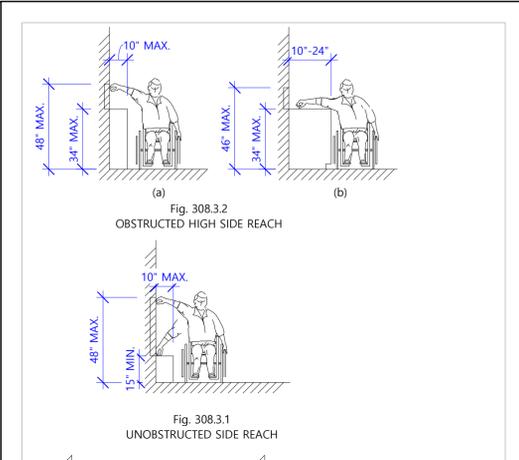
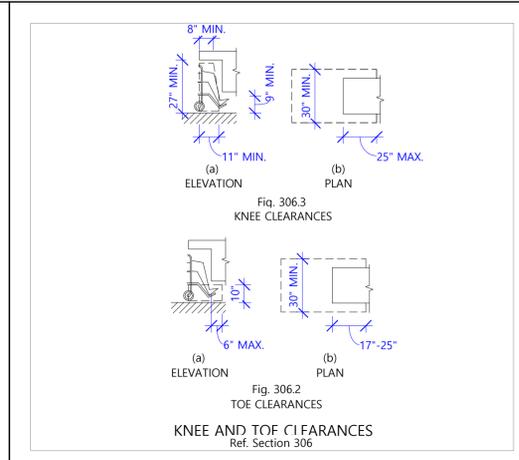
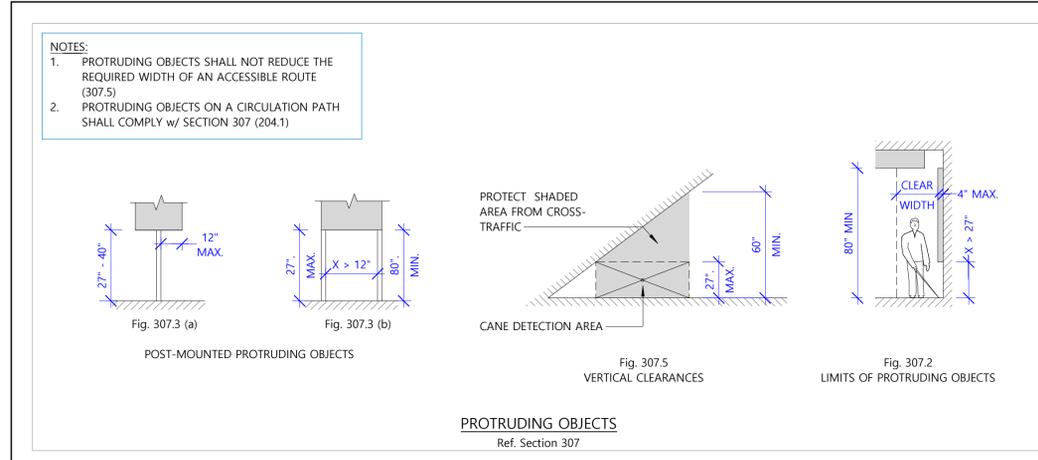
SHEET INDEX

SHEET NUMBER	SHEET NAME
T0.0	COVER SHEET
T1.0	GENERAL NOTES & ABBREVIATIONS
T2.0	ADA DETAILS - EXISTING BUILDINGS
T3.0	CODE REVIEW & LIFE SAFETY PLAN
T4.0	SCHEDULES
C1.0	SITE PLAN
D1.0	DEMO PLANS
A1.1	FLOOR PLANS
A2.1	REFLECTED CEILING PLANS
A4.0	ELEVATIONS
A5.0	BUILDING SECTIONS
A6.0	WALL SECTIONS
A6.1	COLUMN DETAILS
A8.0	INTERIOR ELEVATIONS
A8.1	RETAIL & BOH ENLARGED PLAN
A8.2	RETAIL INTERIOR ELEVATIONS
A8.3	BOH & LOBBY INTERIOR ELEVATIONS
SEC.1	SECURITY PLAN
M0.1	MECHANICAL SPECIFICATIONS
M1.1	MECHANICAL PLAN
E0.1	ELECTRICAL SPECIFICATIONS
E0.2	ELECTRICAL DETAILS AND SCHEDULES
E1.1	ELECTRICAL LIGHTING PLAN
E1.2	ELECTRICAL PLAN
P0.1	PLUMBING SPECIFICATIONS
P1.0	SANITARY PIPING PLAN
P1.1	DOMESTIC FLOOR PLAN

APPLICABLE CODES:
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL PLUMBING CODE
2014 NATIONAL ELECTRICAL CODE

LOCATION MAP





PLUMBING CALCS
OCCUPANCY CLASSIFICATION: MERCANTILE
OCCUPANT LOAD: 128 OCC.

WATER CLOSETS: 1 PER 500 OCC.
REQUIRED: 1
PROVIDED: 10

LAVATORIES: 1 PER 750 OCC.
REQUIRED: 1
PROVIDED: 6

DRINKING FOUNTAIN: 1 PER 1000 OCC.
REQUIRED: 1
PROVIDED: 1 HIGH-LOW

SERVICE SINK:
REQUIRED: 1
PROVIDED: 1

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FIRE SUPPRESSION SECTION 903

EXISTING SPRINKLER SYSTEM TO REMAIN
GROUP M: **NO SPRINKLER SYSTEM REQUIRED**
AUTOMATIC SPRINKLER SYSTEMS REQUIRED WHERE:

- FIRE AREA EXCEEDS 12,000 SF
- FIRE AREA IS LOCATED MORE THAN THREE STORIES ABOVE GRADE PLANE
- THE COMBINED AREA OF ALL GROUP M FIRE AREAS ON ALL FLOORS, INCLUDING ANY MEZZANINES, EXCEEDS 24,000 SF.
- A GROUP M OCCUPANCY USED FOR THE DISPLAY AND SALE OF UPHOLSTERED FURNITURE OR MATTRESSES EXCEEDS 5,000 SF.

FIRE ALARM & DETECTION SYSTEMS SECTION 907

GROUP M: **NO FIRE ALARM REQUIRED**

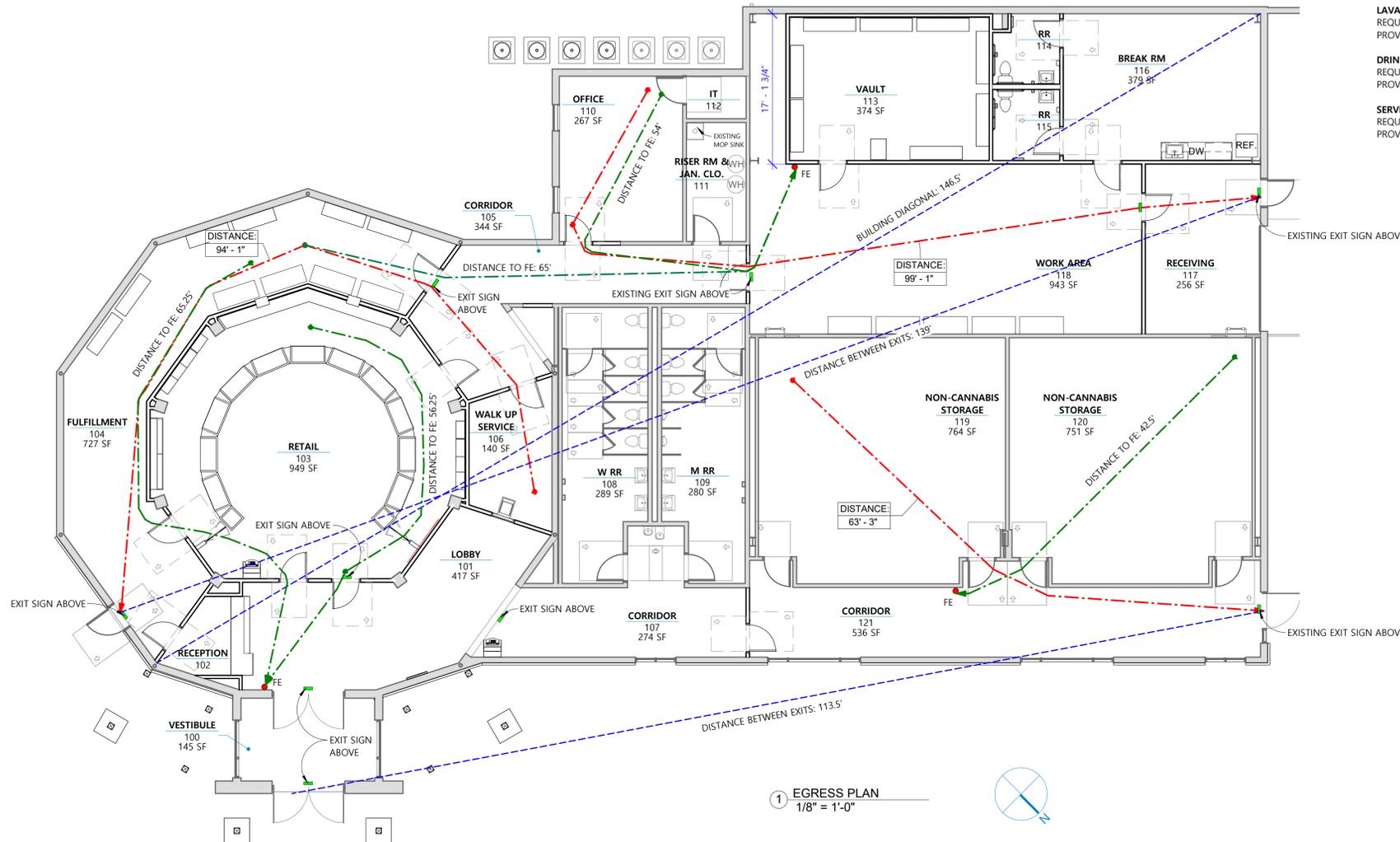
- FIRE ALARMS REQUIRED WHERE:
- GROUP M OCCUPANT LOAD OF ALL FLOORS IS 500 OR MORE PERSONS.
 - THE GROUP M OCCUPANT LOAD IS MORE THAN 100 PERSONS ABOVE OR BELOW THE LOWEST LEVEL OF EXIT DISCHARGE.

FIRE EXTINGUISHERS TABLE 906.3

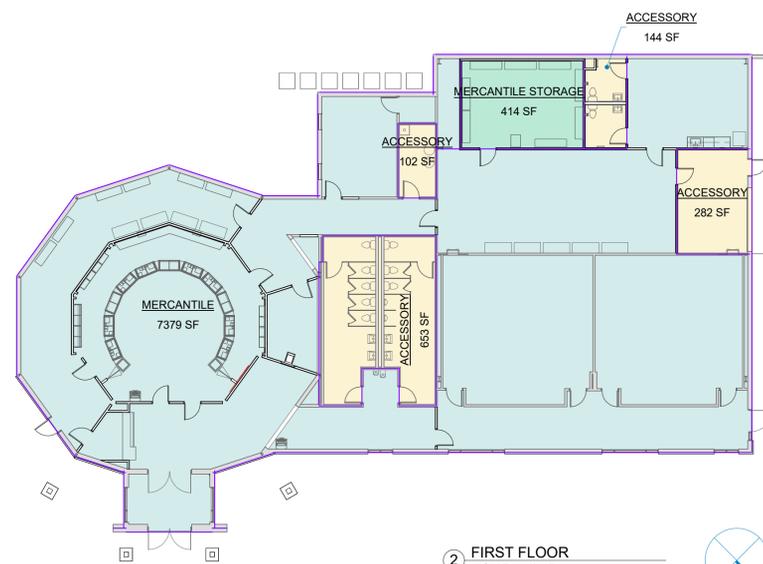
MINIMUM RATED SINGLE EXTINGUISHER: 2-A

MAXIMUM FLOOR AREA PER UNIT OF A: 3,000 SF

MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER: 75'

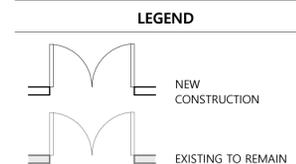


1 EGRESS PLAN
1/8" = 1'-0"



2 FIRST FLOOR
1/16" = 1'-0"

AREA LEGEND
ACCESSORY
MERCANTILE
MERCANTILE STORAGE





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DESCRIPTION PERMIT SET

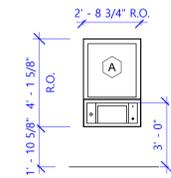
DESIGN DRAWN PROJECT NO. Designer Author 23_05_19

SCHEDULES

T4.0

DOOR SCHEDULE table with columns: LOCATION, DOOR NUMBER, DOOR SIZE (WIDTH, HEIGHT, THICKNESS), DOOR (PANEL TYPE, MATERIAL, FINISH), FRAME (MATERIAL, FINISH), OPERATION, HARDWARE SET, KEY, ACCESS CONTROLS, HINGES, ELECTRIC STRIKE, POWER SUPPLY, LOCK GUARD, CARD READER, FOB, EXIT DEVICE, EXIT DEVICE TRIM, SMOKE SEAL, KICK-DOWN HOLD OPEN, FLUSH BOLT, ASTRAGAL, PUSH PLATE, PULL PLATE, THRESHOLD, WALL BUMPER, DOOR BOTTOM, DOOR CLOSER, WEATHERSTRIPPING, AUTO DOOR BOTTOM, ADHESIVE CORNER PAD, DEADLOCK W/ VAC. INDICATOR, COMMENTS.

WINDOW SCHEDULE table with columns: TAG, WINDOW TYPE, WINDOW SIZE (WIDTH, HEIGHT), MANUFACTURER, MODEL, FINISH, COMMENTS.



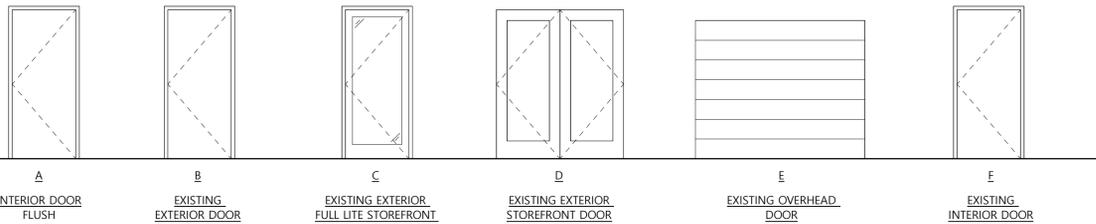
HARDWARE NOTES:

ALL HM HANDLESETS TO BE HAGER 3400 GRADE 1 OR SIM. ALL EXTERIOR CLOSERS TO BE HEAVY DUTY.

KEYING SCHEDULE

- A. KEY FOR ALL EXTERIOR DOORS. B. KEY FOR ALL INTERIOR DOORS EXCLUDING THE VAULT. C. KEY FOR VAULT ONLY.

NOTE: PROVIDE MASTER KEY FOR ALL DOORS.



NOTES:

- 1. ALL DOOR HARDWARE ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. OPERABLE PARTS OF THE HARDWARE SHALL BE BETWEEN 34 INCHES AND 48 INCHES ABOVE THE FLOOR. 2. GLASS IS TO BE TEMPERED IF IT MEETS ANY OF THE FOLLOWING: A. ALL GLASS THAT IS BOTH WITHIN 60 INCHES OF THE FLOOR AND 24 INCHES OF THE VERTICAL EDGE OF A DOOR B. GLASS IN A SWINGING OR SLIDING DOORS C. GLAZING WITH AN AREA OF GREATER THAN 9 SF AND 18 INCHES OR LESS ABOVE THE FLOOR SURFACE AND TOP EDGE GREATER THAN 36 INCHES ABOVE THE FLOOR. D. GLAZING IN GUARD RAILS AND RAILINGS E. GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMP WITHIN A 36 INCH HORIZONTAL DISTANCE OF A WALKING SURFACE AND LESS THAN 60 INCHES ABOVE THE FLOOR OR WALKING SURFACE AND 60 INCHES HORIZONTALLY FROM THE BOTTOM OF A STAIRWAY IN ANY DIRECTION F. GLAZING NEAR WET SURFACES AS OUTLINED IN 2406.4.5

ROOM FINISH SCHEDULE

Room Finish Schedule table with columns: ROOM NUMBER, ROOM NAME, AREA, PERIMETER, FINISH (FLOOR, BASE, WALL, CEILING), CEILING HEIGHT, COMMENTS.

FINISH LEGEND

Finish Legend table with columns: FINISH CODE, MATERIAL, MANUFACTURER, STYLE, COLOR, SIZE, PATTERN/COMMENTS. Includes sections for FINISH MATERIALS and BACK OF HOUSE MILLWORK/COUNTERTOPS.

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SITE PLAN

C1.0



PARKING REQUIREMENTS	
REQUIRED:	1/200 SF GFA (8,972 SF) = 45 SPACES
EXISTING:	45 SPACES

LEGEND	
	EXISTING BUILDING TO BE RENOVATED
	PROPOSED CONCRETE DRIVE
	EXISTING CONCRETE
	PROPOSED GREEN SPACE
	EXISTING GREEN SPACE
	PROPERTY LINE
	SETBACK LINE
	EXISTING FENCE
	EXISTING RETAINING WALL
	SS EXISTING SANITARY SERVICE LEAD
	W EXISTING WATER LEAD
	OH EXISTING OVERHEAD LINES
	G EXISTING GAS LEAD
	EXISTING POLE LIGHT

1 SITE PLAN
1" = 20'-0"





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DEMO PLANS

D1.0

GENERAL DEMOLITION NOTES

ALL ITEMS TO BE RELOCATED ARE TO BE REMOVED, STORED, PROTECTED, AND REINSTALLED BY THE CONTRACTOR. THE CONTRACTOR IS TO ENSURE THE ITEM IS IN WORKING ORDER PRIOR TO AND AFTER RELOCATION. OWNER IS TO BE NOTIFIED IF DEFECTS ARE FOUND.

DEMOLITION IN THE EXISTING BUILDING IS TO BE LIMITED TO WITHIN THE AREAS INDICATED. WITHIN THE DEMOLITION AREA, THE DEMOLITION IS TO INCLUDE THE FOLLOWING, UNLESS NOTED OTHERWISE: REMOVAL OF ALL INDICATED FLOOR FINISHES TO THE EXISTING SUBFLOOR; ALL INDICATED CEILING FINISHES AND SYSTEMS ARE TO BE DEMOLISHED TO THE UNDERSIDE OF EXISTING FLOOR JOISTS; ALL INDICATED WALL FINISHES ARE TO BE DEMOLISHED TO WOOD STUD FRAMING AS REQUIRED FOR THE PROPER INSTALLATION OF THE NEW FINISHES; ALL EXISTING STRUCTURAL ELEMENTS ARE TO REMAIN UNDISTURBED.

COORDINATE WITH ALL DRAWINGS AND DESIGN-BUILD REQUIREMENTS FOR ADDITIONAL AREAS OF DEMOLITION BEYOND THE EXTENT SHOWN ON THIS DRAWING. PROVIDE ALL CUT-OUT DEMOLITION REQUIRED FOR THE REMOVAL OF DUCTS, FLOOR DRAINS, ETC. THE SUBCONTRACTOR SHALL FULLY PROTECT ALL ADJACENT FINISHES AND MATERIALS AT THESE LOCATIONS.

DIMENSIONS SHOWN ON THIS DRAWING ARE FOR REFERENCE ONLY. DEMOLITION SHOULD BE SUFFICIENT TO ACCOMMODATE THE NEW WORK DESCRIBED IN THESE DRAWINGS.

PROTECT EXISTING TREES DURING CONSTRUCTION. PRESERVE ALL LANDSCAPING WHERE POSSIBLE.

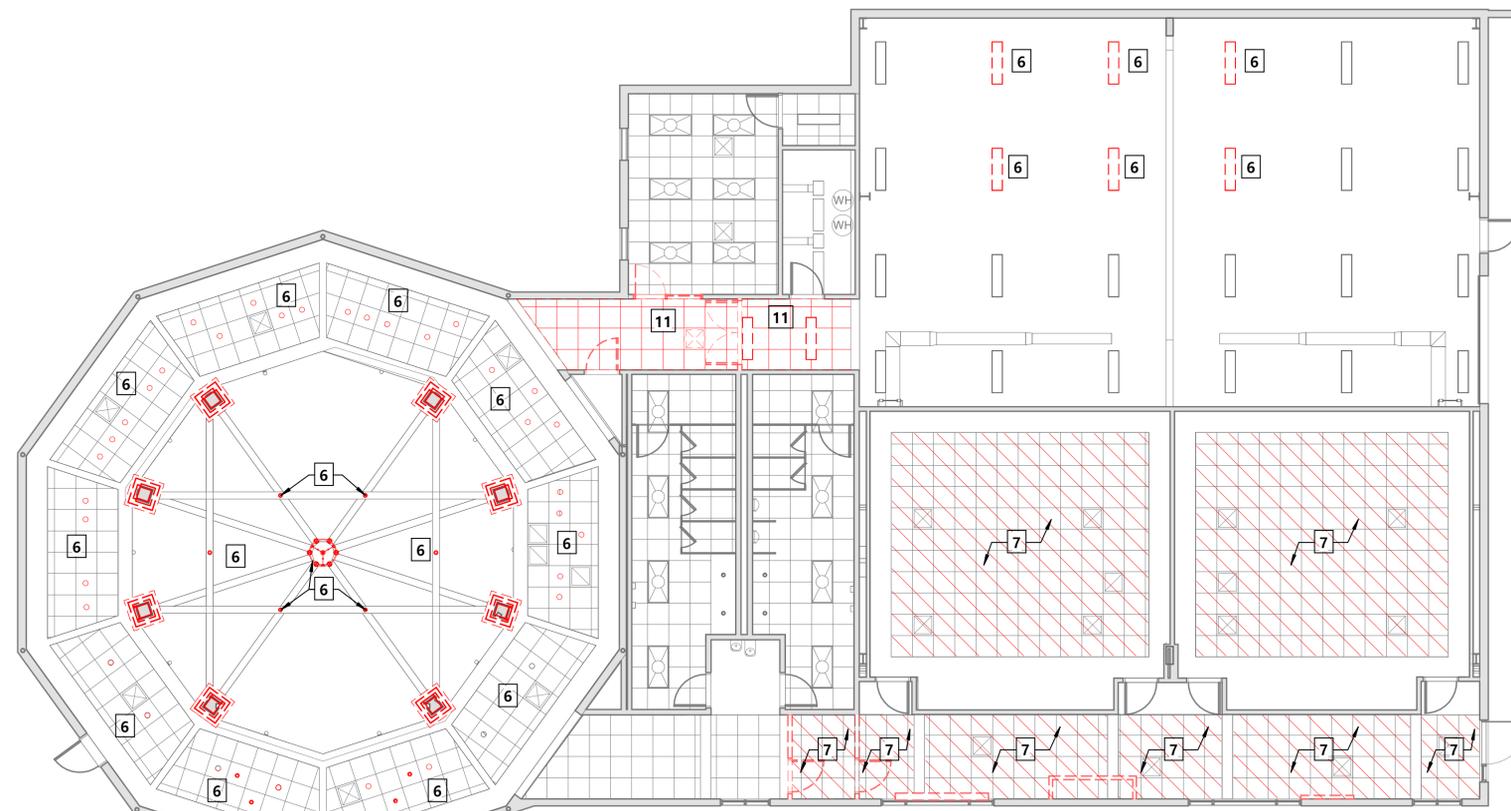
ALL CABINETS AND FIXTURES THAT ARE TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.

DEMO KEY NOTES

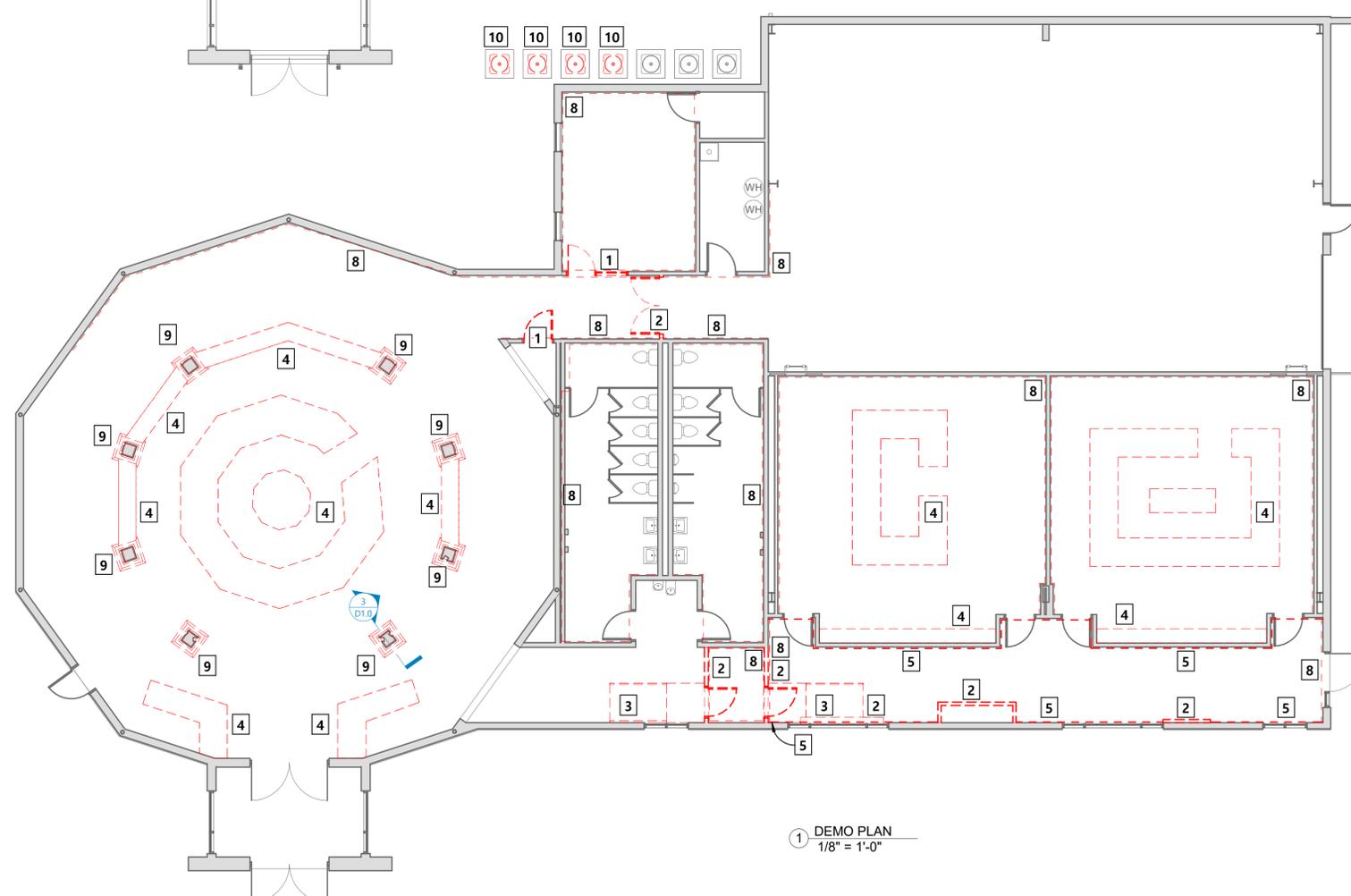
- 1 REMOVE DOORS & WINDOWS AS SHOWN.
- 2 REMOVE INTERIOR WALLS.
- 3 REMOVE RAMP, RAILING AND LANDING.
- 4 REMOVE CASEWORK.
- 5 REMOVE WALL PANELING.
- 6 REMOVE LIGHT FIXTURE.
- 7 REMOVE "CLOUD" ON CEILING.
- 8 REMOVE WALLPAPER.
- 9 REMOVE STONE BASE, WOOD BLOCKING, FIRST LAYER OF METAL FURRING AND CONCRETE CAP. SEE DETAIL 3/D1.0
- 10 REMOVE AC CONDENSER. CONCRETE PAD TO REMAIN
- 11 REMOVE DROP CEILING.

LEGEND

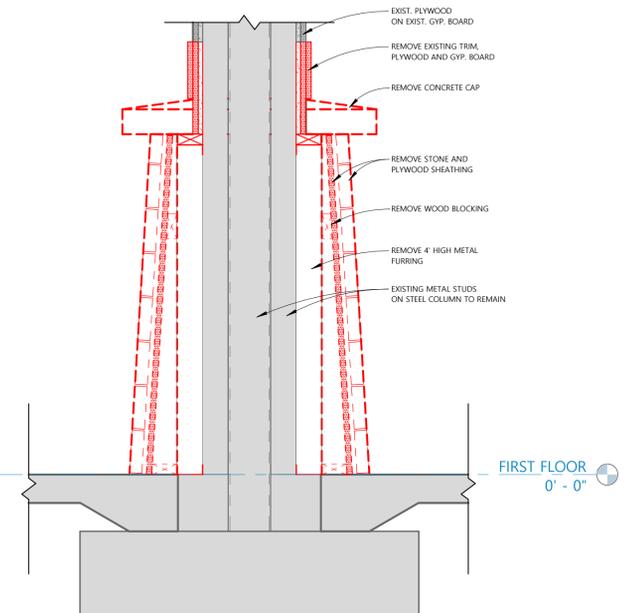
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN



2 DEMO RCP
1/8" = 1'-0"



1 DEMO PLAN
1/8" = 1'-0"



3 COLUMN DEMO
1" = 1'-0"



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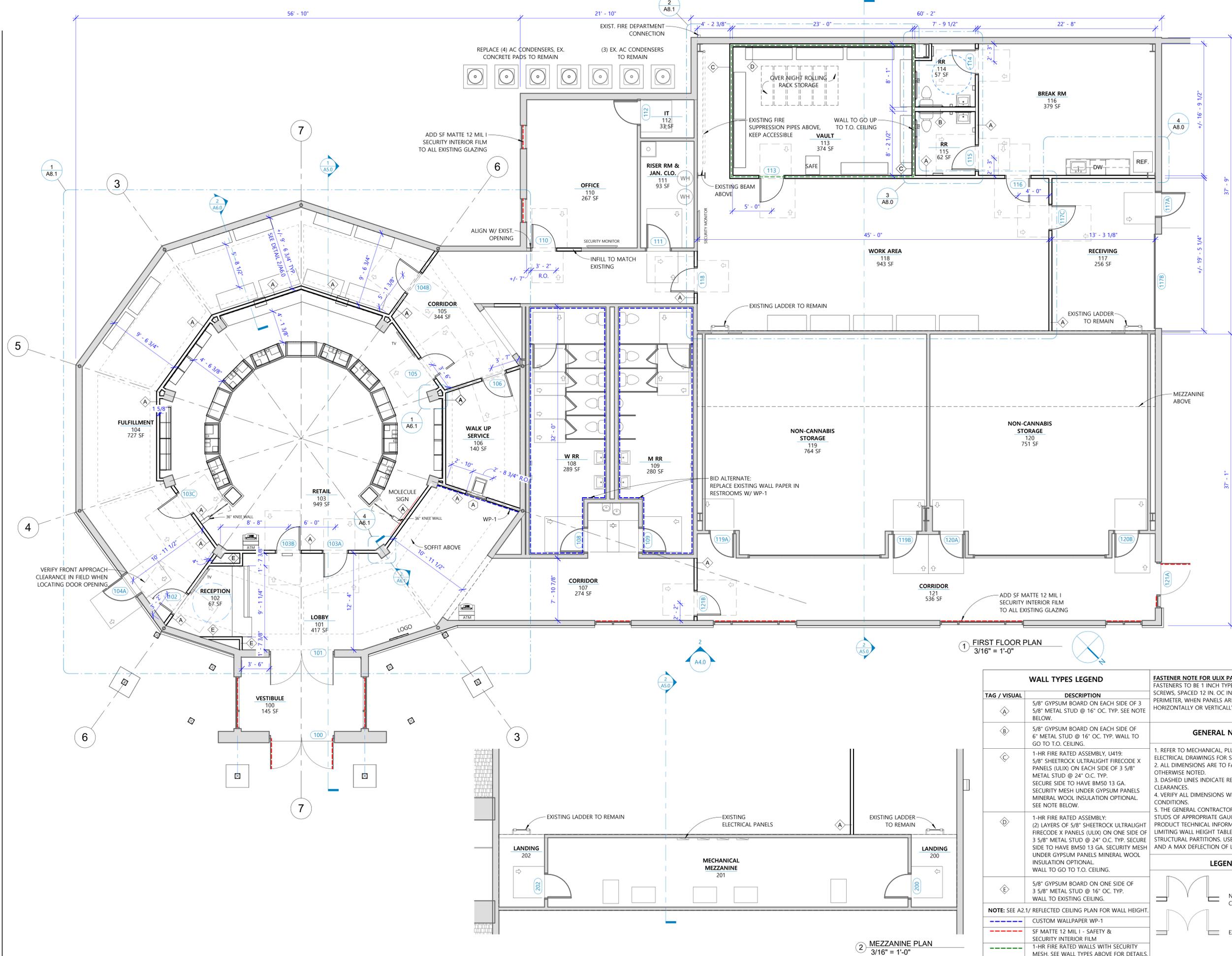
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FLOOR PLANS

A1.1



1 FIRST FLOOR PLAN
3/16" = 1'-0"

2 MEZZANINE PLAN
3/16" = 1'-0"

WALL TYPES LEGEND	
TAG / VISUAL	DESCRIPTION
A	5/8" GYPSUM BOARD ON EACH SIDE OF 3 5/8" METAL STUD @ 16" OC. TYP. SEE NOTE BELOW.
B	5/8" GYPSUM BOARD ON EACH SIDE OF 6" METAL STUD @ 16" OC. TYP. WALL TO GO TO T.O. CEILING.
C	1-HR FIRE RATED ASSEMBLY, U419: 5/8" SHEETROCK ULTRALIGHT FIRECODE X PANELS (ULIX) ON EACH SIDE OF 3 5/8" METAL STUD @ 24" O.C. TYP. SECURE SIDE TO HAVE BMSO 13 GA. SECURITY MESH UNDER GYPSUM PANELS MINERAL WOOL INSULATION OPTIONAL. SEE NOTE BELOW.
D	1-HR FIRE RATED ASSEMBLY: (2) LAYERS OF 5/8" SHEETROCK ULTRALIGHT FIRECODE X PANELS (ULIX) ON ONE SIDE OF 3 5/8" METAL STUD @ 24" O.C. TYP. SECURE SIDE TO HAVE BMSO 13 GA. SECURITY MESH UNDER GYPSUM PANELS MINERAL WOOL INSULATION OPTIONAL. WALL TO GO TO T.O. CEILING.
E	5/8" GYPSUM BOARD ON ONE SIDE OF 3 5/8" METAL STUD @ 16" OC. TYP. WALL TO EXISTING CEILING.

NOTE: SEE A2.1/ REFLECTED CEILING PLAN FOR WALL HEIGHT.

---	CUSTOM WALLPAPER WP-1
---	SF MATTE 12 MIL I - SAFETY & SECURITY INTERIOR FILM
---	1-HR FIRE RATED WALLS WITH SECURITY MESH. SEE WALL TYPES ABOVE FOR DETAILS.

FASTENER NOTE FOR ULIX PANELS:
FASTENERS TO BE 1 INCH TYPE S OR S-12 STEEL SCREWS, SPACED 12 IN. OC IN THE FIELD AND PERIMETER, WHEN PANELS ARE APPLIED HORIZONTALLY OR VERTICALLY.

GENERAL NOTES

- REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION.
- ALL DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.
- DASHED LINES INDICATE REQUIRED ADA CLEARANCES.
- VERIFY ALL DIMENSIONS WITH EXISTING CONDITIONS.
- THE GENERAL CONTRACTOR SHALL SELECT METAL STUDS OF APPROPRIATE GAUGE PER THE "SSMA PRODUCT TECHNICAL INFORMATION" MANUAL, LIMITING WALL HEIGHT TABLES FOR INTERIOR NON-STRUCTURAL PARTITIONS. USE 5 PSF LATERAL LOAD AND A MAX DEFLECTION OF L/240.

LEGEND

---	NEW CONSTRUCTION
---	EXISTING TO REMAIN

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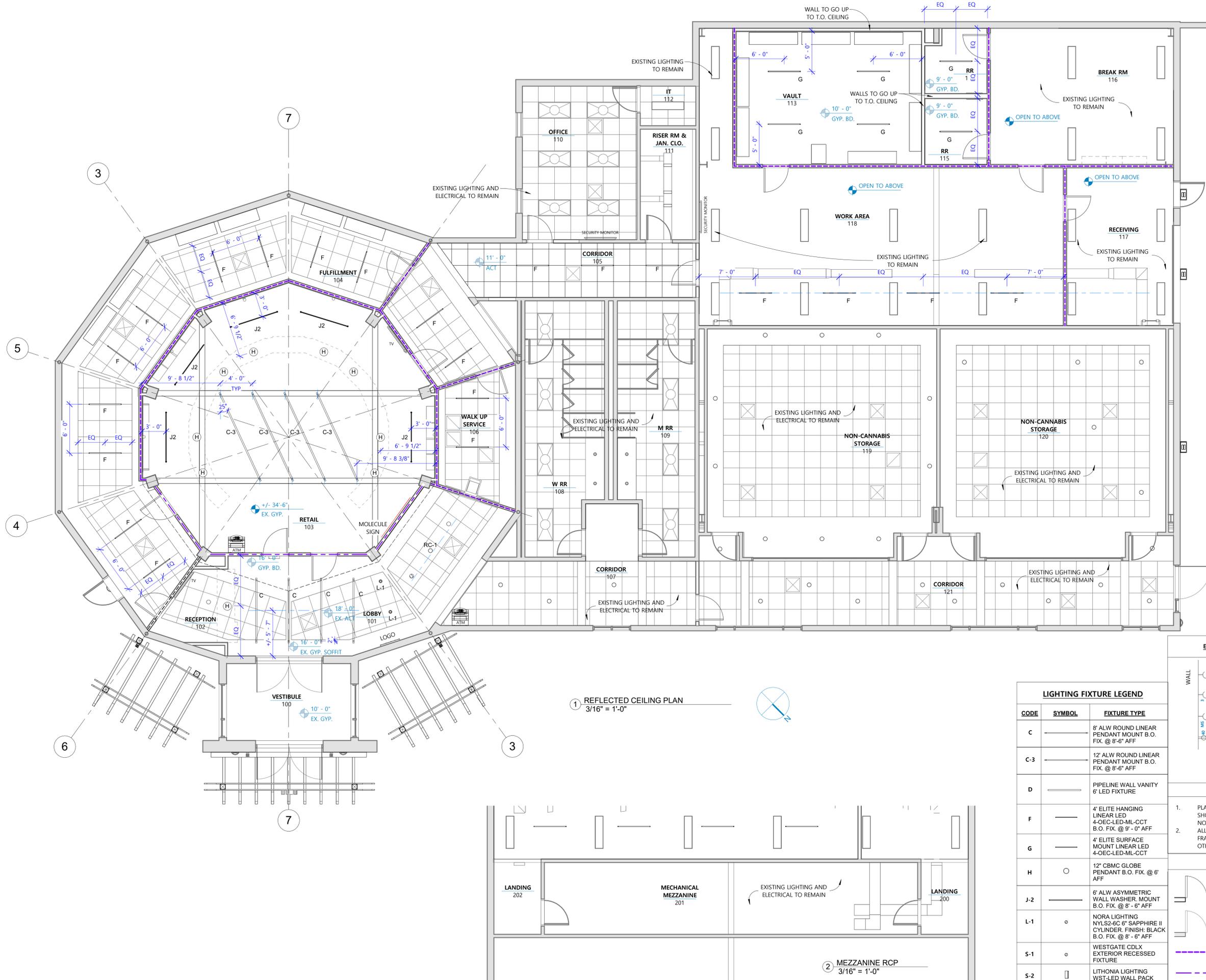
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DESCRIPTION
PERMIT SET

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DRAWN Author
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REFLECTED CEILING PLANS

A2.1



LIGHTING FIXTURE LEGEND		
CODE	SYMBOL	FIXTURE TYPE
C	—	8' ALW ROUND LINEAR PENDANT MOUNT B.O. FIX. @ 8'-6" AFF
C-3	—	12' ALW ROUND LINEAR PENDANT MOUNT B.O. FIX. @ 8'-6" AFF
D	—	PIPELINE WALL VANITY 6' LED FIXTURE
F	—	4' ELITE HANGING LINEAR LED 4-OEC-LED-ML-CCT B.O. FIX. @ 9' - 0" AFF
G	—	4' ELITE SURFACE MOUNT LINEAR LED 4-OEC-LED-ML-CCT
H	○	12" CBMC GLOBE PENDANT B.O. FIX. @ 6' AFF
J-2	—	6' ALW ASYMMETRIC WALL WASHER. MOUNT B.O. FIX. @ 8' - 6" AFF
L-1	○	NORA LIGHTING NYLS2-6C 6" SAPPHIRE II CYLINDER. FINISH, BLACK B.O. FIX. @ 8' - 6" AFF
S-1	○	WESTGATE CDLX EXTERIOR RECESSED FIXTURE
S-2	□	LITHONIA LIGHTING WST-LED WALL PACK

ELECTRICAL SYMBOL LEGEND	
WALL	SWITCH
	3-WAY SWITCH
	MOTION SENSOR
	OUTLET
	- GFI- GROUND FAULT INTERRUPTER
	- WP - WATER PROOF
	- NUMBER INDICATED INSTALLATION HEIGHT A.F.F.
ELECTRICAL NOTES	
1.	PLACE FIXTURES AND OUTLETS WHERE SHOWN AND AS REQUIRED BY CODE IF NOT SHOWN ON THESE DRAWINGS. ALL DIMENSIONS ARE TO ROUGH FRAMING OR BRICK SURFACES UNLESS OTHERWISE NOTED.
LEGEND	
	NEW CONSTRUCTION
	EXISTING TO REMAIN
	WALL TO GO UP TO B.O. DECK OR EXIST. CEILING
	WALL TO GO UP TO 16' - 6" A.F.F.

1 REFLECTED CEILING PLAN
3/16" = 1'-0"

2 MEZZANINE RCP
3/16" = 1'-0"

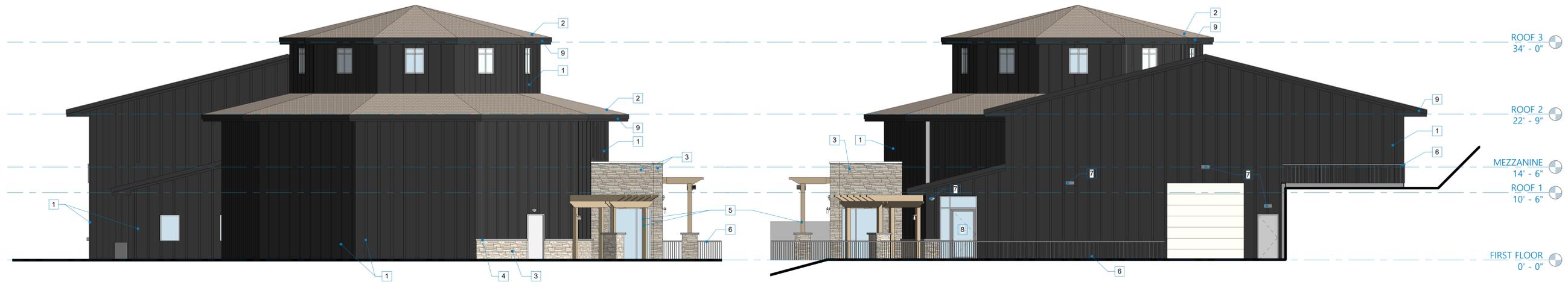
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DATE	DESCRIPTION
01.15.2024	PERMIT SET

DESIGN DRAWN PROJECT NO.	Designer Author 23_05_19
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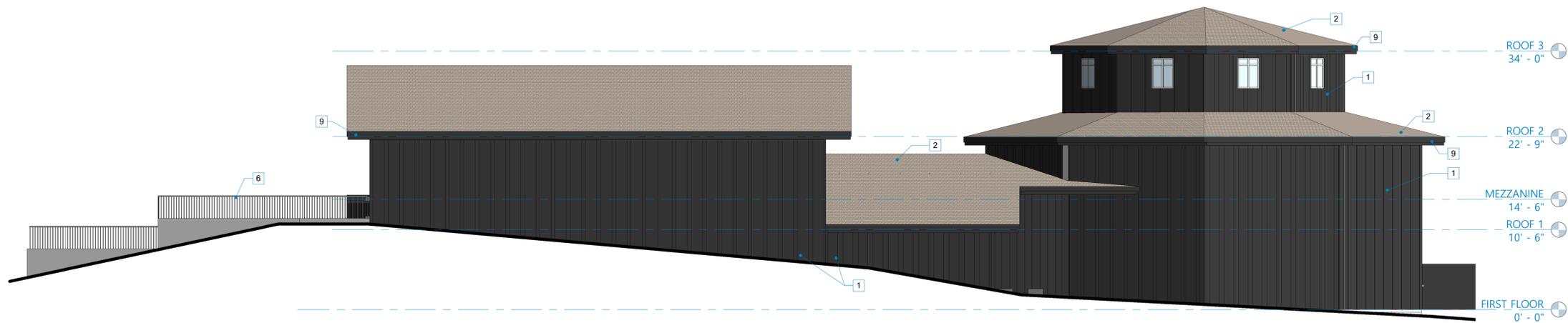
ELEVATIONS

A4.0



④ EAST ELEVATION
1/8" = 1'-0"

③ WEST ELEVATION
1/8" = 1'-0"



① SOUTH ELEVATION
1/8" = 1'-0"



② NORTH ELEVATION
1/8" = 1'-0"

MATERIAL LEGEND	
TAG	DESCRIPTION
1	PAINT EXISTING FIBER CEMENT BOARD AND BATTEN, PNT-6. REPAIR IF NECESSARY.
2	EXISTING ASPHALT SHINGLES TO REMAIN
3	EXISTING STONE TO REMAIN
4	EXISTING LIMESTONE CAP TO REMAIN
5	EXISTING CEDAR PERGOLA TO REMAIN
6	EXISTING GUARDRAIL TO REMAIN
7	EXISTING LIGHT FIXTURE TO REMAIN
8	ADD SF MATTE 12 MIL I SECURITY INTERIOR FILM TO ALL EXISTING EXTERIOR GLAZING
9	PAINT EXISTING FASCIA AND SOFFIT, PNT-6. REPAIR IF NECESSARY.



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359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

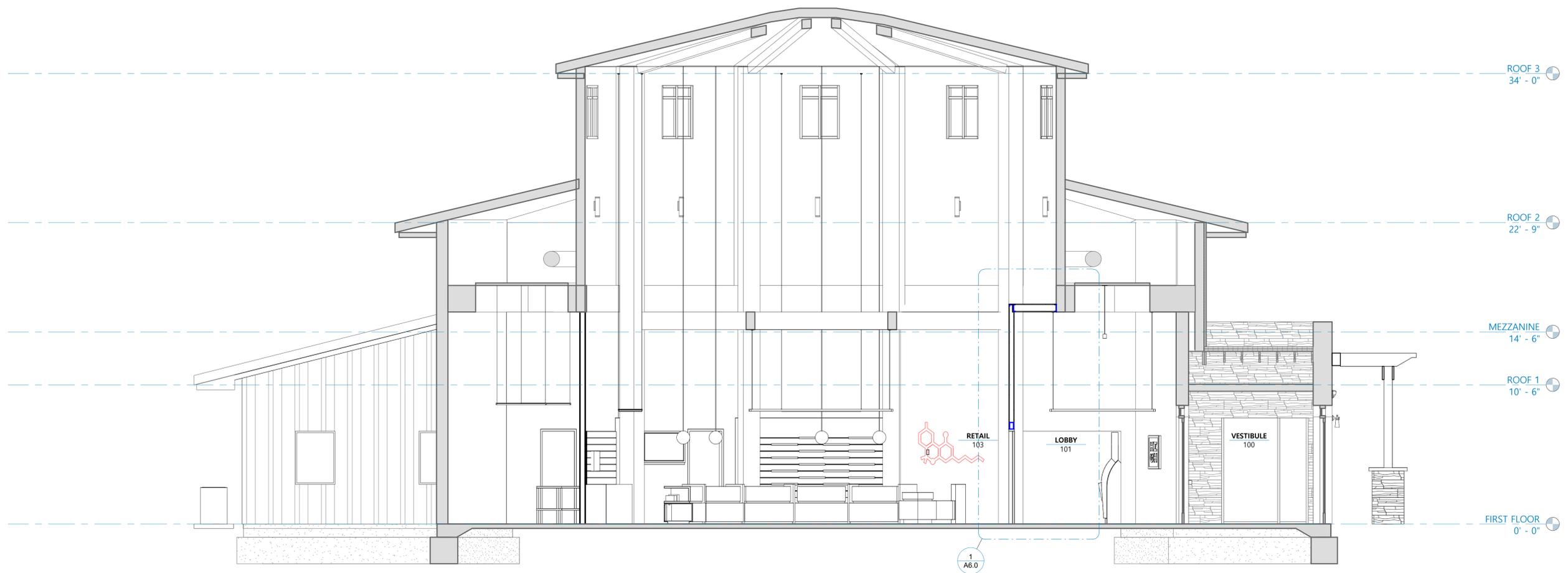
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DATE	DESCRIPTION
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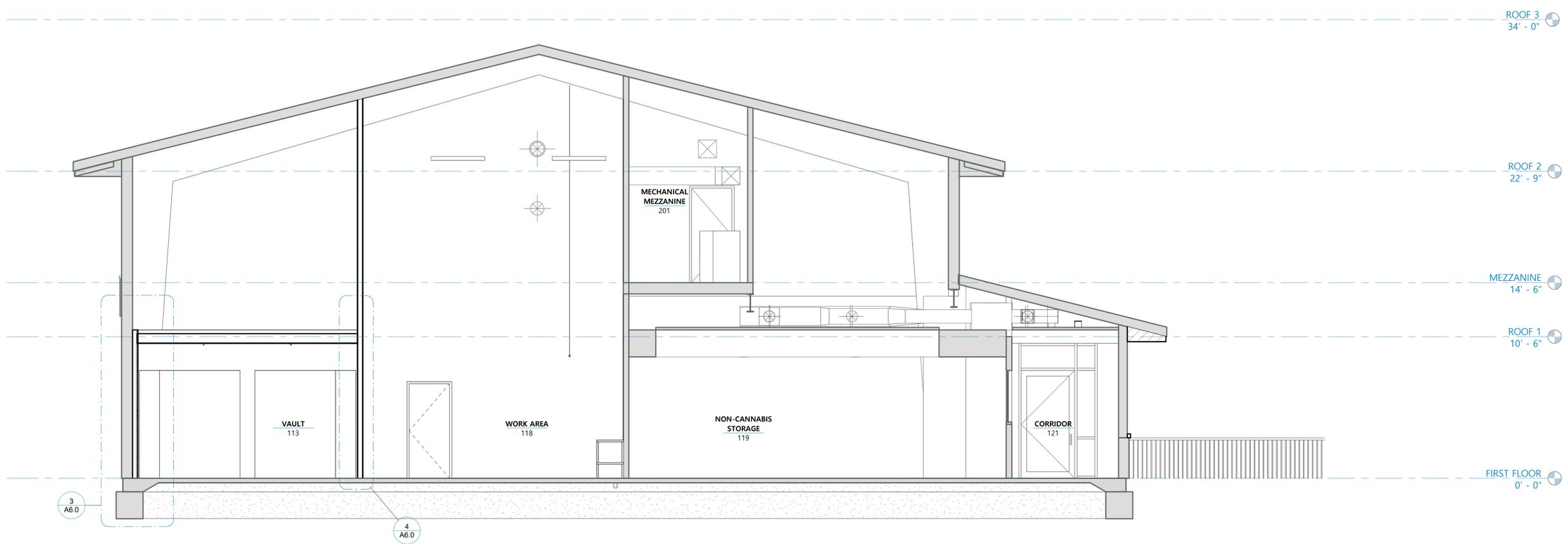
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PROJECT NO.	23_05_19

BUILDING SECTIONS

A5.0



① SECTION THROUGH RETAIL
1/4" = 1'-0"



② SECTION @ VAULT
1/4" = 1'-0"

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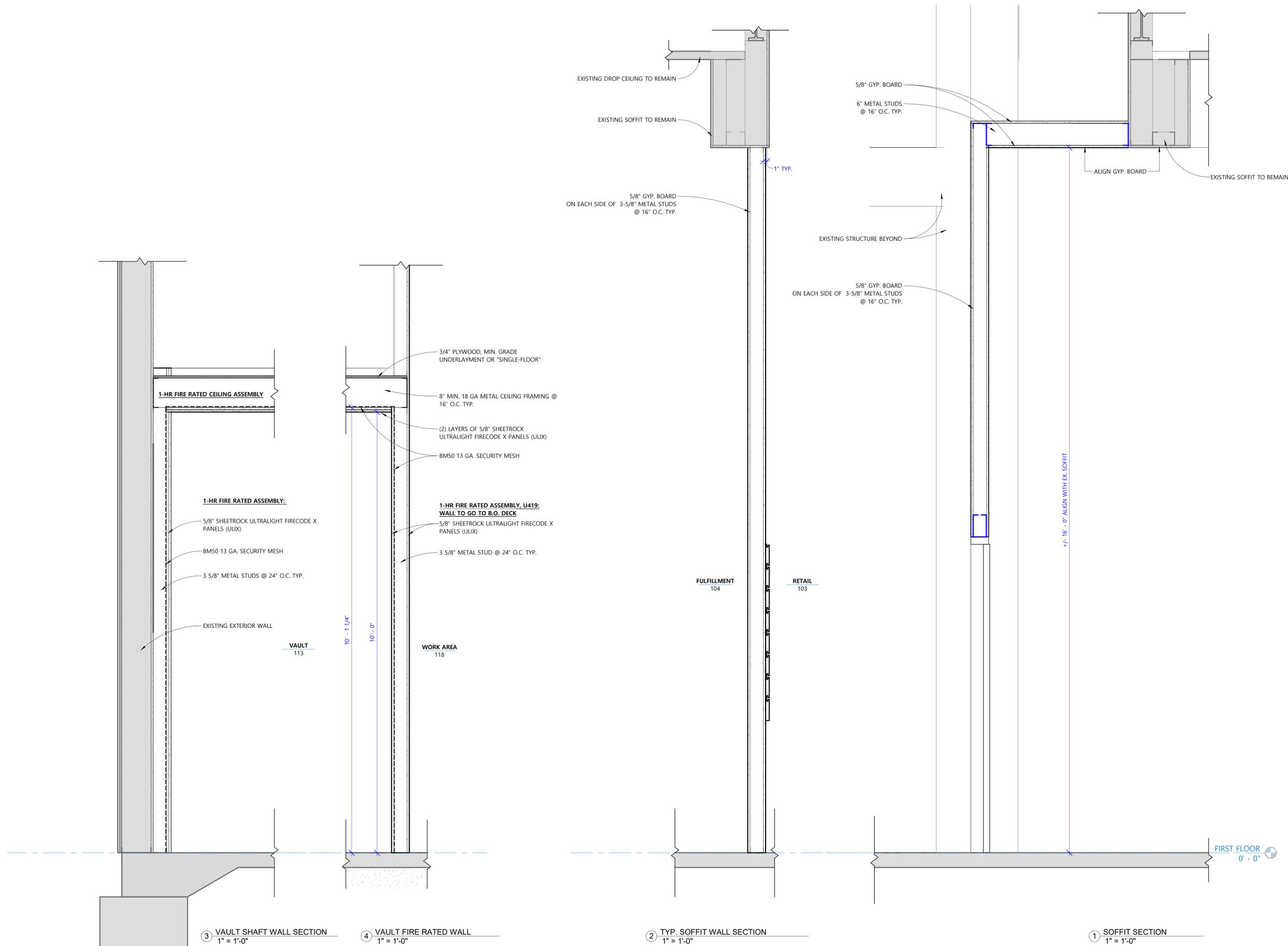
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3125 GREEN MOUNTAIN DRIVE
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WALL SECTIONS

A6.o





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3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

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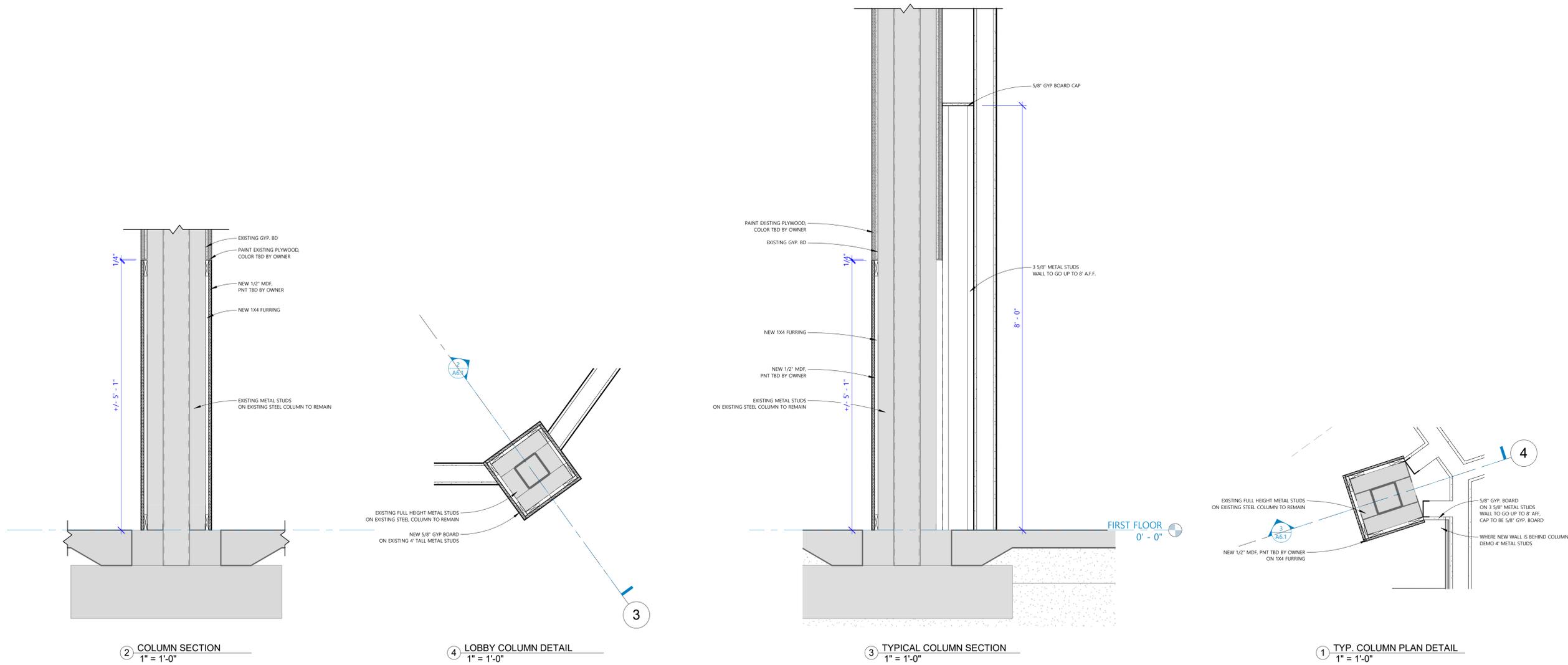
DESCRIPTION
PERMIT SET

DESIGN Designer
DRAWN Author
PROJECT NO. 23_05_19

COLUMN DETAILS

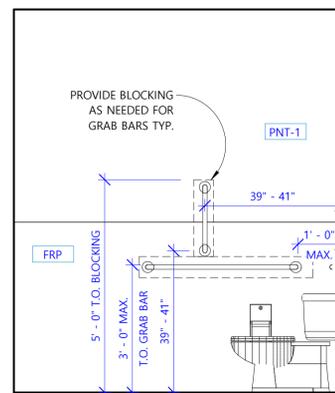
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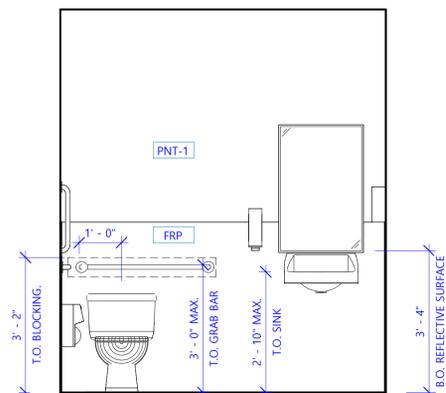


PLUMBING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	MODEL	FINISH	TRIM / FAUCET	QUANTITY	COMMENTS
KITCHENETTE SINK	ELKAY	LR1919	STAINLESS STEEL	LKD2432BH FAUCET	1	
TOILET	AMERICAN STANDARD	2467.016	WHITE	CHICAGO FAUCET 1016	2	
WALL MOUNTED SINK	AMERICAN STANDARD	LUCERNE 0355.012	WHITE	CHICAGO FAUCET 802-A317CP	2	

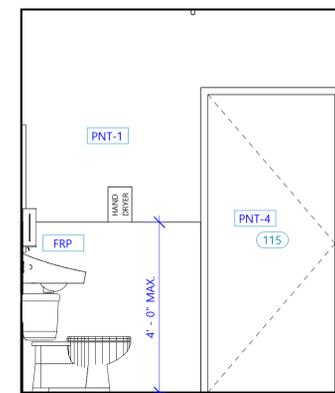
BATHROOM ACCESSORY SCHEDULE					
TYPE	MANUFACTURER	MODEL	FINISH	QUANTITY	COMMENTS
MIRROR	BOBRICK	B-165 1830	-	2	
AUTOMATIC HAND DRYER	GLOBAL INDUSTRIAL	T9F641951	STAINLESS STEEL	2	
WASTE RECEPTACLE	BOBRICK	B-43644	STAINLESS STEEL	2	
TOILET PAPER DISPENSER	BOBRICK	B-2888	STAINLESS STEEL	2	
SOAP DISPENSER	-	-	-	2	BY OWNER
GRAB BARS (SET OF THREE)	-	-	STAINLESS STEEL	2	36" (SIDE), 42" (BACK), 18" (VERTICAL)



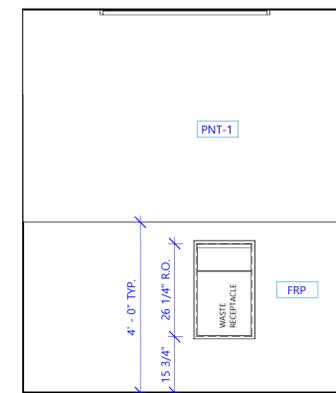
8 RR 115 - E
1/2" = 1'-0"



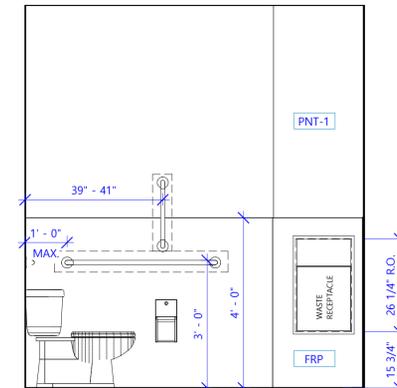
6 RR 115 - S
1/2" = 1'-0"



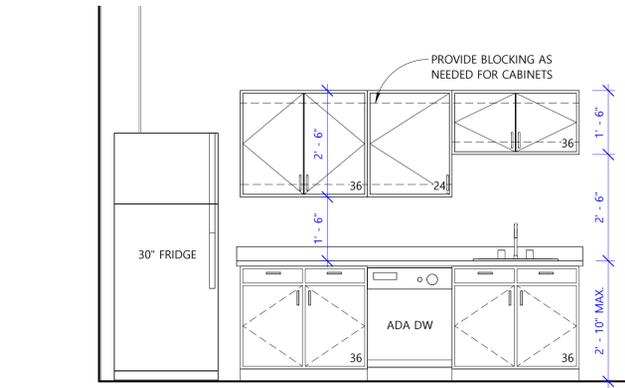
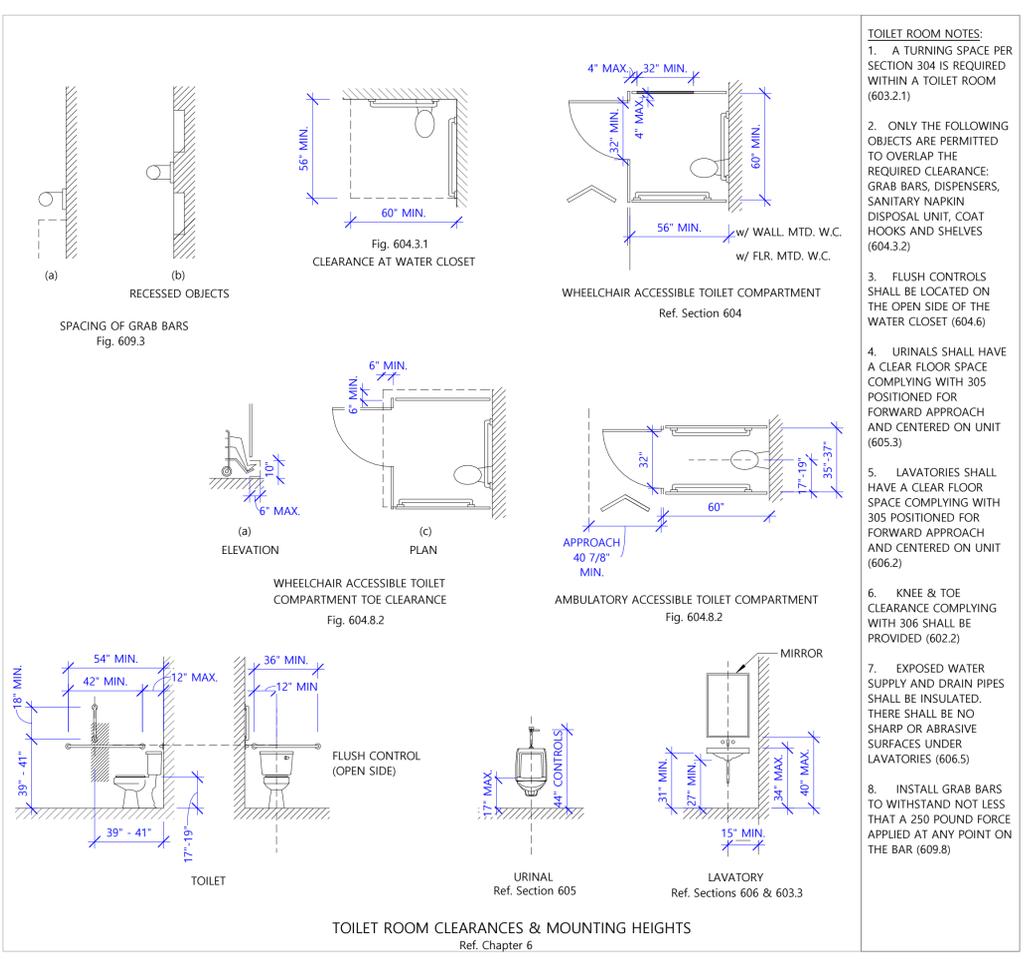
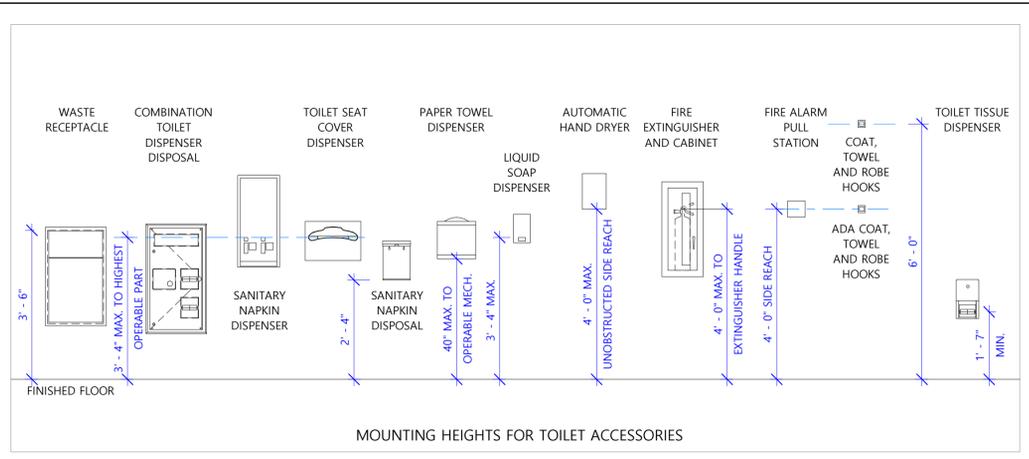
5 RR 115 - W
1/2" = 1'-0"



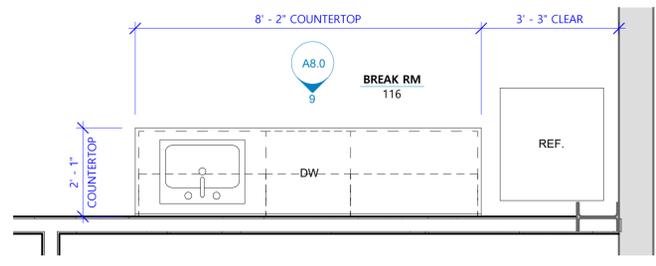
7 RR 115 - N
1/2" = 1'-0"



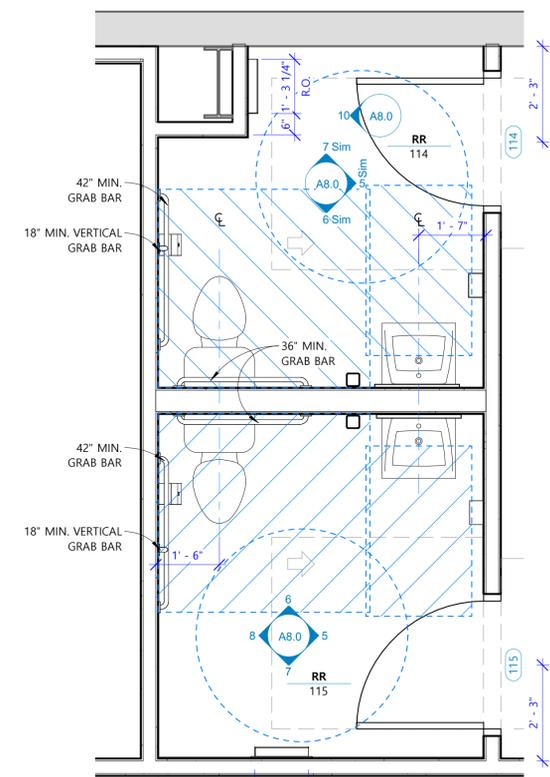
10 RR-114
1/2" = 1'-0"



9 KITCHENETTE ELEVATION
1/2" = 1'-0"



4 KITCHENETTE PLAN
1/2" = 1'-0"



3 TOILET RMS
1/2" = 1'-0"



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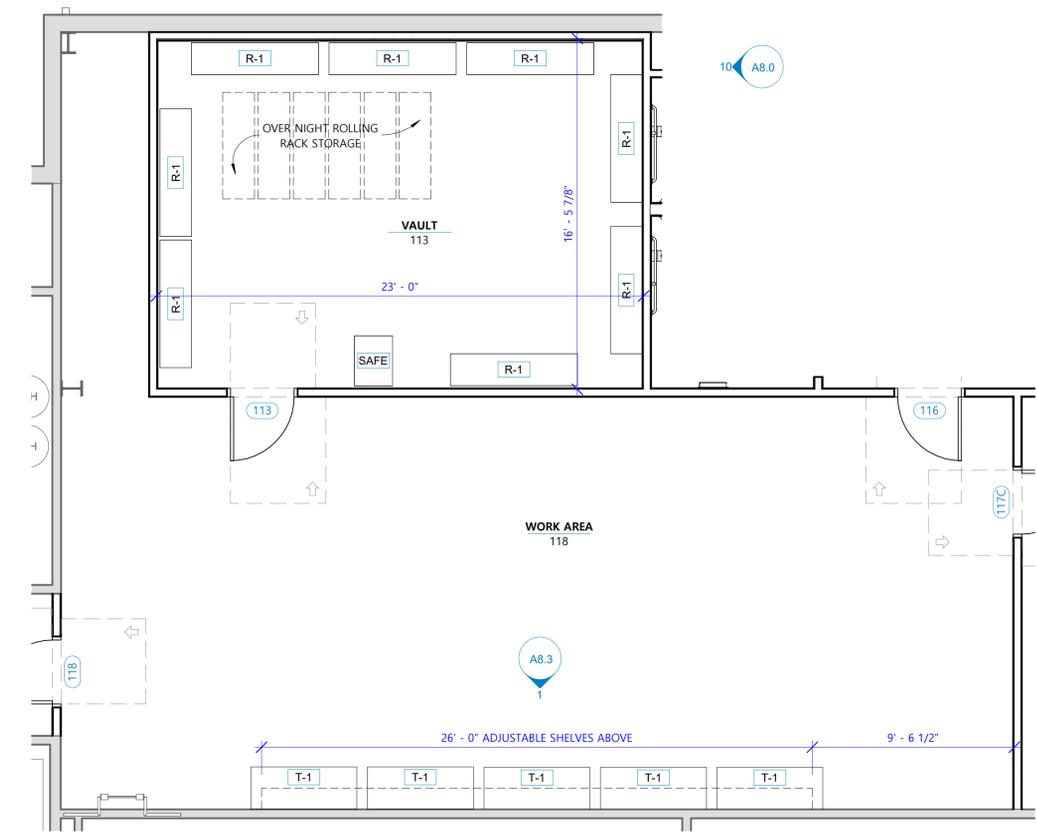
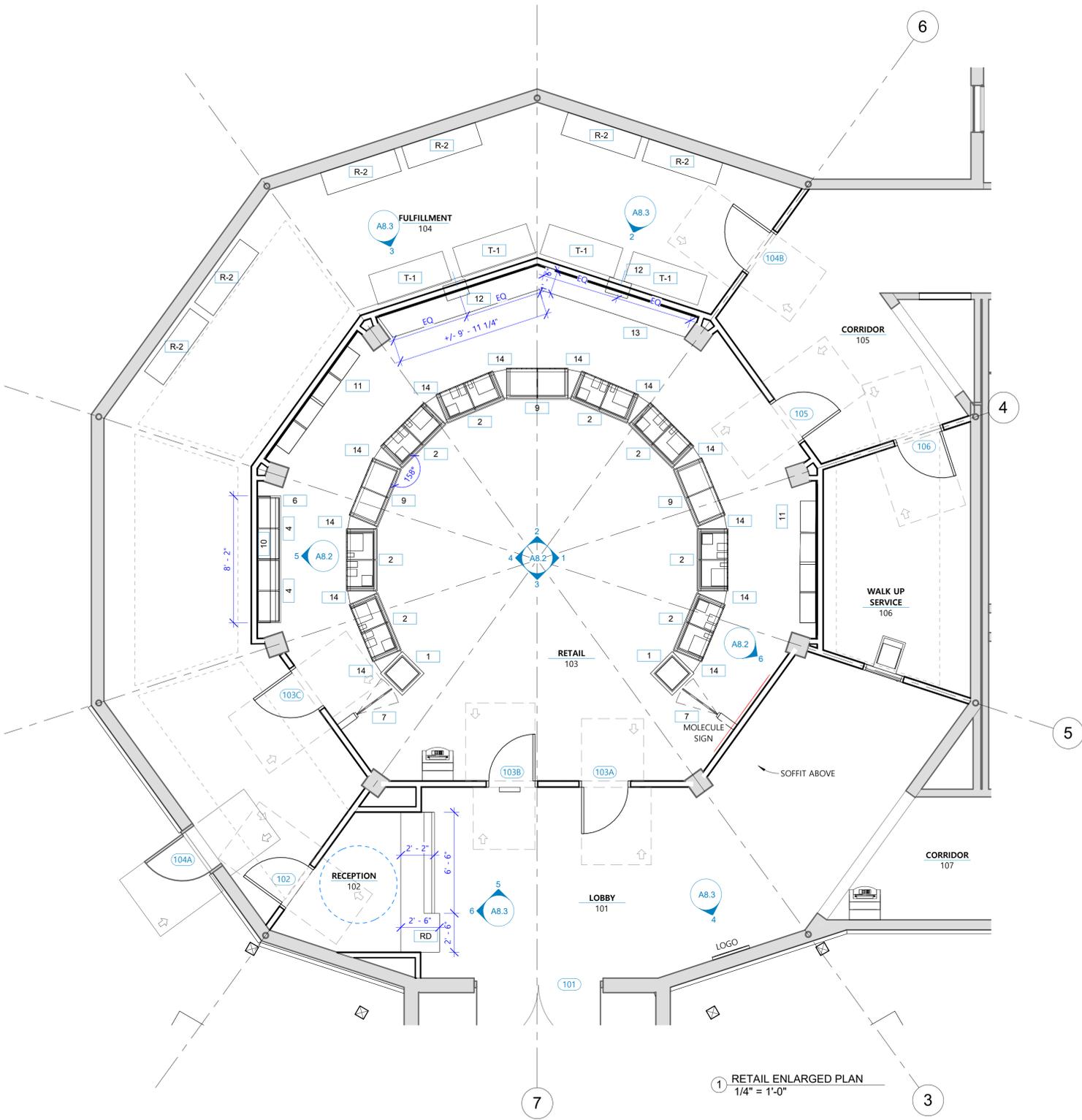
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tel: 734.998.1331

RETAIL CASEWORK SCHEDULE		
TAG	DESCRIPTION	QUANTITY
1	24x24x27 CORNER UNIT	2
2	48x24x34 POS	8
4	48x18x34 BASE BACK WALL	2
6	18.25" COUNTERTOP	1
7	MESH SWING GATE 36" MIN.	2
9	48x24x34 DISPLAY	3
10	96x48 UPR DISPLAY WALL	1
11	SLAT WALL W/ (18) 12"x24" SHELVES	2
12	PASS THRU CABINET	2
13	BACK WALL BASE CABINET	1
14	TRAPEZOIDAL FILLER CABINET	12
RD	RECEPTION DESK	1

CASEWORK TO BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR

BOH FURNITURE SCHEDULE		
TAG	DESCRIPTION	QUANTITY
R-1	ULINE CHROME WIRE SHELVING UNIT - 72"W x 18"D x 72"H	8
R-2	ULINE CHROME MOBILE SHELVING UNIT - 60"W x 18"D	6
SAFE	ARMOR SAFE TECHNOLOGIES 7300XL	1
T-1	24" x 60" STAINLESS STEEL TABLE	9

NOTE: STORAGE RACKS AND STAINLESS STEEL TABLES TO BE PROVIDED AND INSTALLED BY OWNER



FOR BUILDING PERMIT

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE
01.15.2024

DESCRIPTION
PERMIT SET

DESIGN	Designer
DRAWN	Author
PROJECT NO.	23_05_19

RETAIL & BOH ENLARGED PLAN

A8.1

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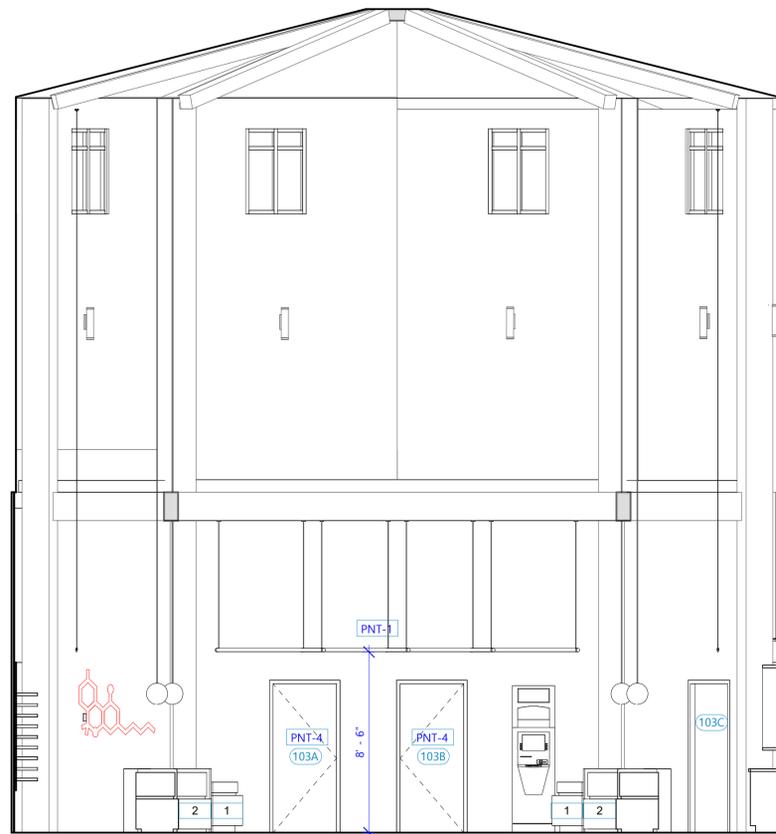
C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
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DATE	DESCRIPTION
01.15.2024	PERMIT SET

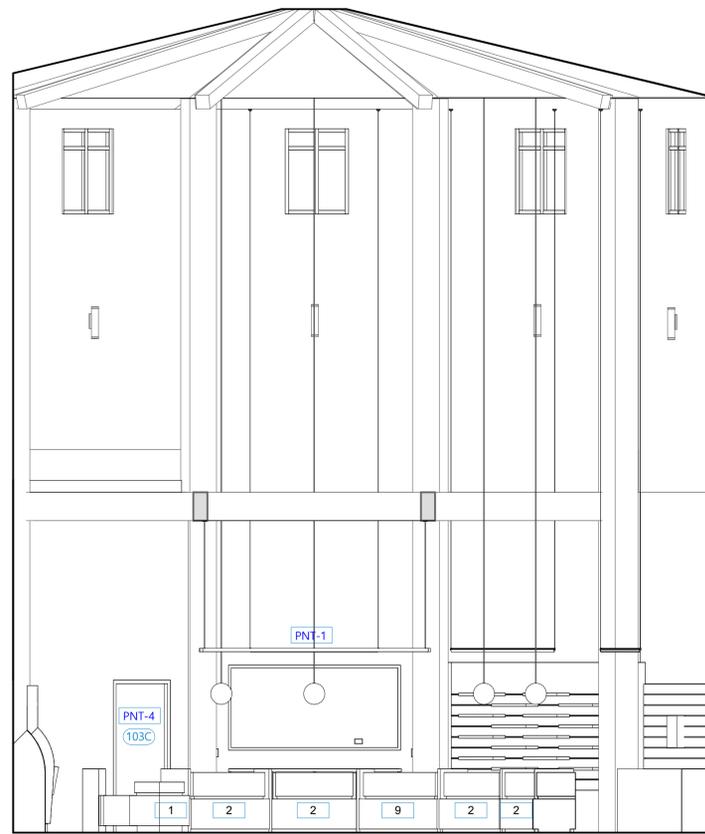
DESIGN	Designer
DRAWN	Author
PROJECT NO.	23_05_19

RETAIL INTERIOR ELEVATIONS

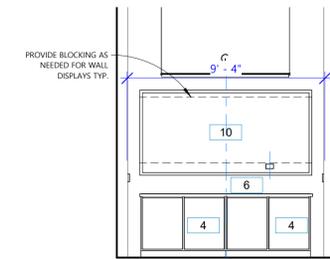
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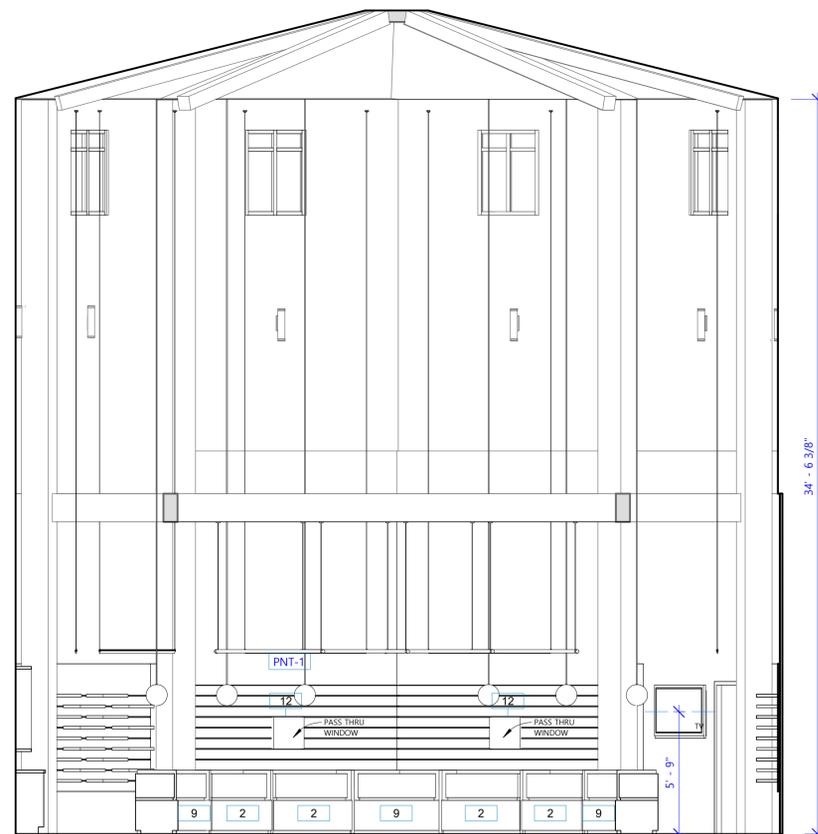
3 RETAIL - N
1/4" = 1'-0"



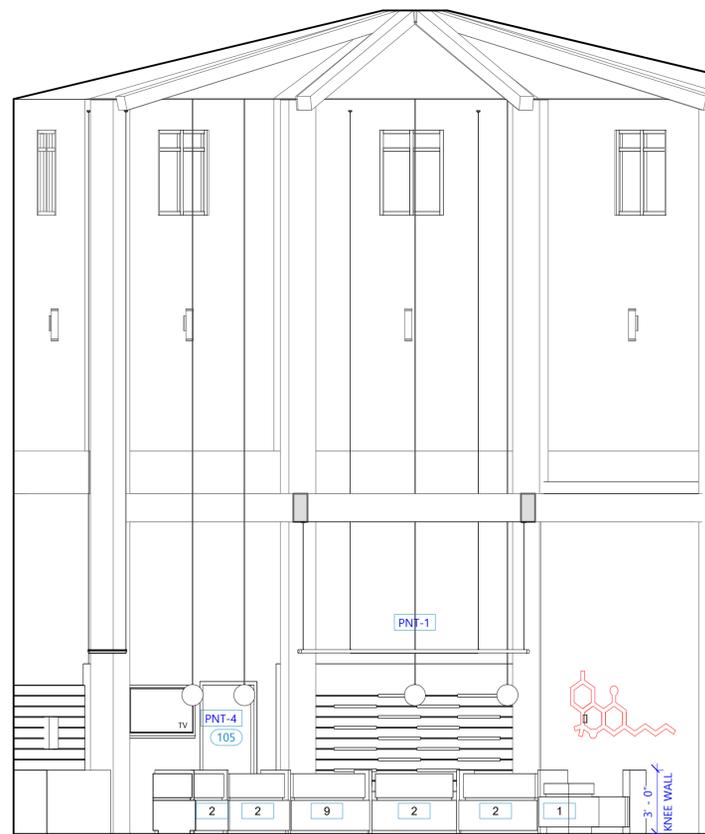
4 RETAIL - E
1/4" = 1'-0"



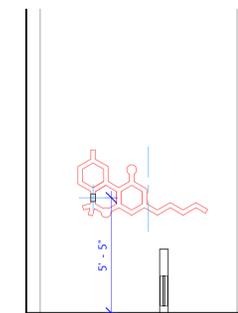
5 FLOWER DISPLAY ELEVATION
1/4" = 1'-0"



2 RETAIL - S
1/4" = 1'-0"



1 RETAIL - W
1/4" = 1'-0"

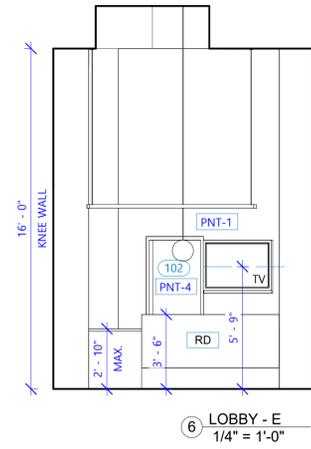


6 MOLECULE SIGN ELEVATION
1/4" = 1'-0"

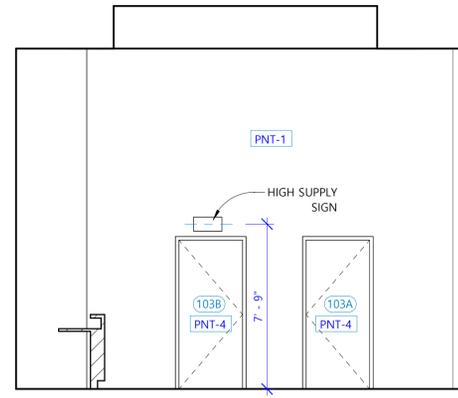


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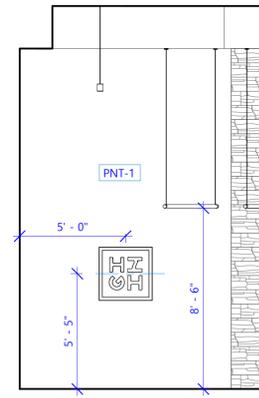
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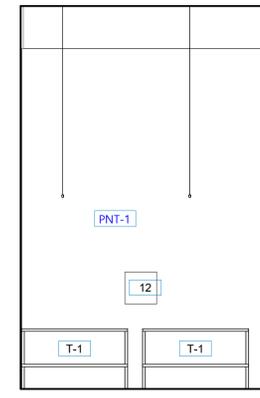
6 LOBBY - E
1/4" = 1'-0"



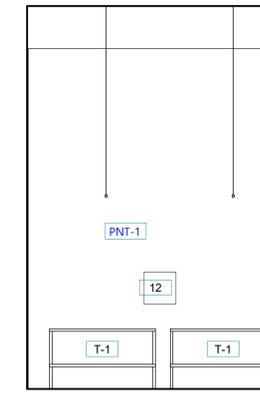
5 LOBBY - S
1/4" = 1'-0"



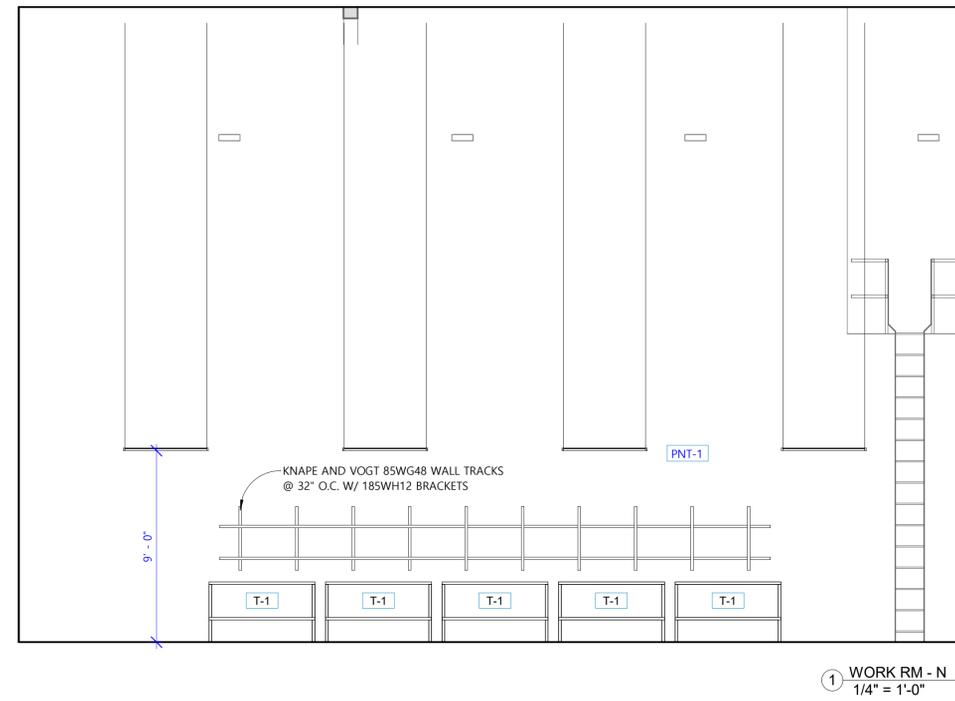
4 LOBBY - LOGO WALL
1/4" = 1'-0"



3 FULFILLMENT - 1
1/4" = 1'-0"



2 FULFILLMENT - 2
1/4" = 1'-0"



1 WORK RM - N
1/4" = 1'-0"

FOR BUILDING PERMIT

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE	DESCRIPTION
01.15.2024	PERMIT SET

DESIGN	Designer
DRAWN	Author
PROJECT NO.	23_05_19

BOH & LOBBY
INTERIOR
ELEVATIONS
A8.3



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PRELIMINARY NOT FOR CONSTRUCTION

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3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

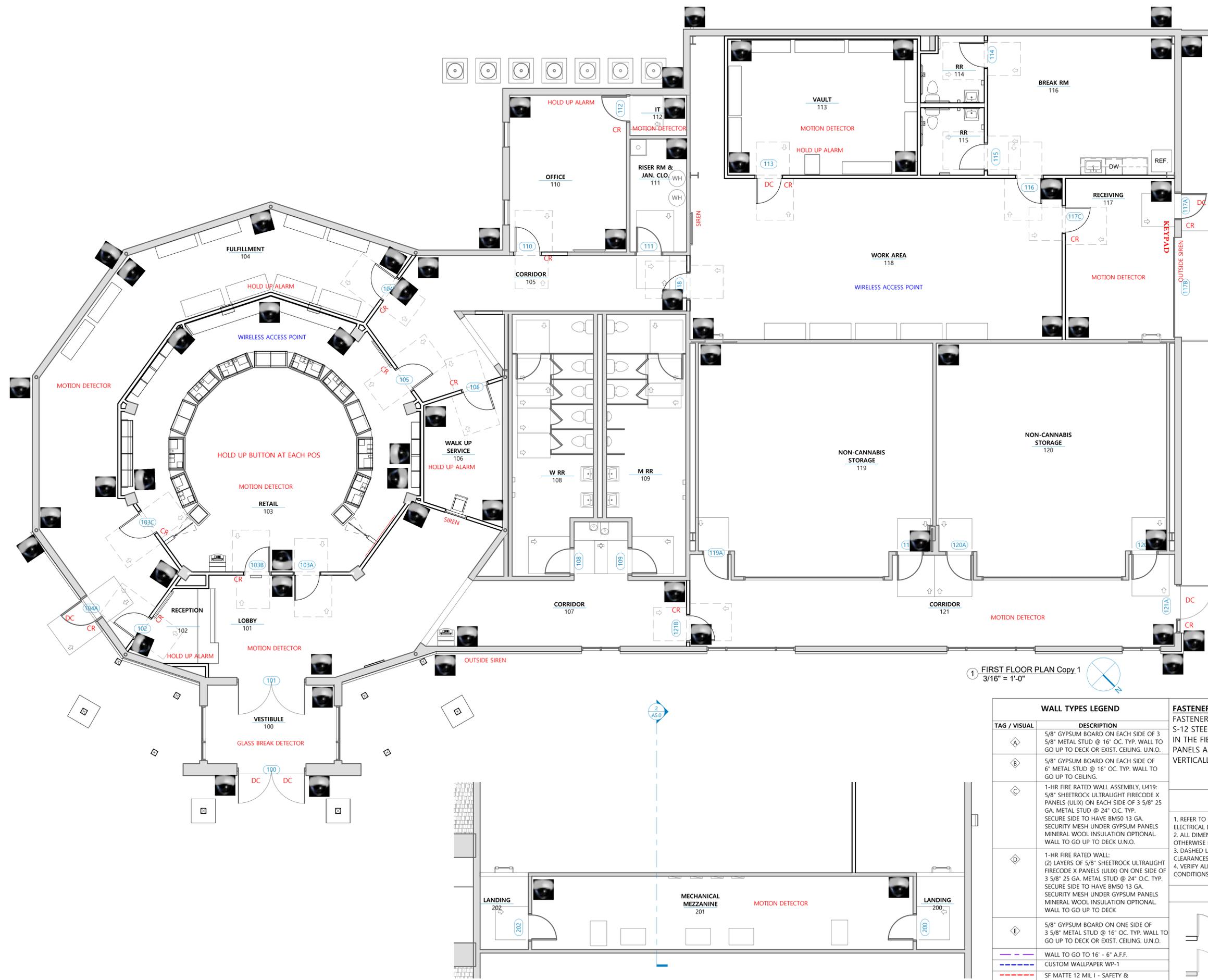
DATE

DESCRIPTION

DESIGN Designer
DRAWN Author
PROJECT NO. 23_05_19

SECURITY PLAN

SEC.1



1 FIRST FLOOR PLAN Copy 1
3/16" = 1'-0"

2 MEZZANINE PLAN Copy 1
3/16" = 1'-0"

WALL TYPES LEGEND	
TAG / VISUAL	DESCRIPTION
A	5/8" GYPSUM BOARD ON EACH SIDE OF 3 5/8" METAL STUD @ 16" O.C. TYP. WALL TO GO UP TO DECK OR EXIST. CEILING. U.N.O.
B	5/8" GYPSUM BOARD ON EACH SIDE OF 6" METAL STUD @ 16" O.C. TYP. WALL TO GO UP TO CEILING.
C	1-HR FIRE RATED WALL ASSEMBLY, U419: 5/8" SHEETROCK ULTRAUGHT FIRECODE X PANELS (ULIX) ON EACH SIDE OF 3 5/8" 25 GA. METAL STUD @ 24" O.C. TYP. SECURE SIDE TO HAVE BMS0 13 GA. SECURITY MESH UNDER GYPSUM PANELS MINERAL WOOL INSULATION OPTIONAL WALL TO GO UP TO DECK U.N.O.
D	1-HR FIRE RATED WALL: (2) LAYERS OF 5/8" SHEETROCK ULTRAUGHT FIRECODE X PANELS (ULIX) ON ONE SIDE OF 3 5/8" 25 GA. METAL STUD @ 24" O.C. TYP. SECURE SIDE TO HAVE BMS0 13 GA. SECURITY MESH UNDER GYPSUM PANELS MINERAL WOOL INSULATION OPTIONAL WALL TO GO UP TO DECK
E	5/8" GYPSUM BOARD ON ONE SIDE OF 3 5/8" METAL STUD @ 16" O.C. TYP. WALL TO GO UP TO DECK OR EXIST. CEILING. U.N.O.
- - - - -	WALL TO GO TO 16' - 6" A.F.F. CUSTOM WALLPAPER WP-1
- - - - -	SF MATTE 12 MIL I - SAFETY & SECURITY INTERIOR FILM
- - - - -	1-HR FIRE RATED WALLS WITH SECURITY MESH. SEE WALL TYPES ABOVE FOR DETAILS.

FASTENER NOTE FOR ULIX PANELS:	
FASTENERS TO BE 1 INCH TYPE S OR S-12 STEEL SCREWS, SPACED 12 IN. OC IN THE FIELD AND PERIMETER, WHEN PANELS ARE APPLIED HORIZONTALLY OR VERTICALLY.	
GENERAL NOTES	
1. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION.	
2. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.	
3. DASHED LINES INDICATE REQUIRED ADA CLEARANCES.	
4. VERIFY ALL DIMENSIONS WITH EXISTING CONDITIONS.	
LEGEND	
	NEW CONSTRUCTION
	EXISTING TO REMAIN

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ABBREVIATIONS			
AC	AIR CONDITION (-ING, -ED)	INV	INVERT
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AMP	AMPERE (AMP, AMPS)	LAT	LEAVING AIR TEMPERATURE
AP	ACCESS PANEL	LBS	POUNDS
BTU	BRITISH THERMAL UNIT	LWB	LEAVING WET BULB
CBV	CIRCUIT BALANCING VALVE	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER HOUR	MA	MIXED AIR
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CHW	CIRCULATING HOT WATER	MBH	THOUSAND BTU'S/HR
CHWR	CHILLED WATER RETURN	MIN	MINIMUM
CHWS	CHILLED WATER SUPPLY	MISC	MISCELLANEOUS
CLG	CEILING	NA	NOT APPLICABLE
CO	CLEANOUT	NC	NOISE CRITERIA
CR	CONDENSATE RETURN	NIC	NOT IN CONTRACT
CW	COLD WATER	NTS	NOT TO SCALE
DB	DECIBEL	OA	OUTSIDE AIR
DEMO	DEMOLITION	OB	OPPOSED BLADE DAMPER
DIA	DIAMETER	ORD	OVERFLOW ROOF DRAIN
DIFF	DIFFUSER	PH	PHASE (ELECTRICAL)
DWG	DRAWING	PVC	POLYVINYL CHLORIDE
DX	DIRECT EXPANSION	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	RD	ROOF DRAIN
ELEC	ELECTRICAL	REC	RECESSED
ELEV	ELEVATION	REL	RELIEF
EMS	ENERGY MANAGEMENT SYSTEM	RH	RELATIVE HUMIDITY
ESP	EXTERNAL STATIC PRESSURE	RM	ROOM
EWB	ENTERING WET BULB	RPM	REVOLUTIONS PER MINUTE
EWI	ENTERING WATER TEMPERATURE	SA	SUPPLY AIR
EXH	EXHAUST	SAN	SANITARY
EXIST	EXISTING	SD	SMOKE DAMPER
F	FAHRENHEIT	SF	SQUARE FEET
FSD	COMBINATION FIRE/SMOKE DAMPER	SP	STATIC PRESSURE
FCO	FLOOR CLEANOUT	SPEC	SPECIFICATION
FD	FIRE DAMPER	ST	STORM
FD	FLOOR DRAIN	STD	STANDARD
FDC	FIRE DEPARTMENT CONNECTION	TD	TEMPERATURE DIFFERENCE
FFE	FINISHED FLOOR ELEVATION	TSP	TOTAL STATIC PRESSURE
FLR	FLOOR	TYP	TYPICAL
FPM	FEET PER MINUTE	V	VOLTS
FT	FOOT OR FEET	VFD	VARIABLE FREQUENCY DRIVE
GA	GAGE OR GAUGE	VSD	VARIABLE SPEED DRIVE
GAL	GALLONS	VOL	VOLUME
GC	GENERAL CONTRACTOR	VTR	VENT THROUGH ROOF
GPH	GALLONS PER HOUR	W	WATTS
HP	HORSEPOWER	W/O	WITHOUT
HW	HEATING, VENTILATING, AIR CONDITIONING	WC	WATER CLOSET
HZ	HERTZ	WCO	WALL CLEANOUT
ID	INSIDE DIAMETER	WT	WEIGHT

HVAC SYMBOL LEGEND	
DUCTWORK	
SUPPLY DUCT UP	
SUPPLY DUCT DOWN	
SUPPLY DUCT UP THROUGH ROOF	
RETURN/RELIEF DUCT UP	
RETURN/RELIEF DUCT DOWN	
RETURN/RELIEF DUCT UP THROUGH ROOF	
EXHAUST DUCT UP	
EXHAUST DUCT DOWN	
EXHAUST DUCT UP THROUGH ROOF	
MANUAL VOLUME DAMPER	
MOTORIZED DAMPER	
REMOVELY ACCESSIBLE VOLUME DAMPER	
FIRE DAMPER W/ACCESS PANEL	
FIRE/SMOKE DAMPER W/ACCESS PANEL	
SMOKE DAMPER W/ACCESS PANEL	
DUCT RISE (OR DROP)	
EXISTING DUCTWORK TO REMAIN	
EXISTING DUCTWORK TO BE REMOVED	
SUPPLY AIR TERMINAL	
RETURN/EXHAUST/TRANSFER AIR TERMINAL	
VAV BOX	
ACCESS PANEL	
THERMOSTAT	
TEMPERATURE SENSOR	
SMOKE DETECTOR	
CO2 SENSOR	
LONG RADIUS ELBOW	
SHORT RADIUS ELBOW WITH VANES	
DIFFUSER TYPE NECK SIZE	
AIRFLOW QUANTITY	

PLUMBING SYMBOL LEGEND			
	FLOOR DRAIN		ANCHOR
	FLOOR SINK W/HALF GRATE		PIPE FLANGE
	FLOOR SINK W/FULL GRATE		PIPE GUIDE
	BALL VALVE		AIR CHAMBER
	GATE VALVE		WATER HAMMER ARRESTER
	CHECK VALVE		WALL HYDRANT/HOSE BIBB
	DRAIN VALVE		EXPANSION TANK
	2-WAY VALVE		WATER METER
	SOLENOID VALVE		FLOW METER
	MOTORIZED VALVE		THERMOMETER
	EMERGENCY GAS SHUT-OFF VALVE		PRESSURE GAGE
	THERMOSTATIC/PRESSURE BALANCE MIXING VALVE		STRAINER
	TRAP PRIMING VALVE		PUMP
	PRESSURE RELIEF VALVE		PLUMBING FIXTURE TAG
	BUTTERFLY VALVE		FLOOR RECEPTOR TAG
	GLOBE VALVE		FLOW SWITCH
	CIRCUIT BALANCING VALVE		3-WAY VALVE
	PLUG VALVE		BACKFLOW PREVENTER
	REDUCER		FLOW ARROW
	STEAM TRAP (F&T)		THERMOSTAT WELL
	EXPANSION JOINT		FLEXIBLE CONNECTOR
	TEST PLUG		STEAM TRAP (THERMOSTATIC)
	VACUUM RELIEF VALVE		AQUASTAT
	PIPE DOWN		PRESSURE REGULATOR
	PIPE UP		TEE DOWN
	PIPE CAP		UNION
	PIPE BREAK		

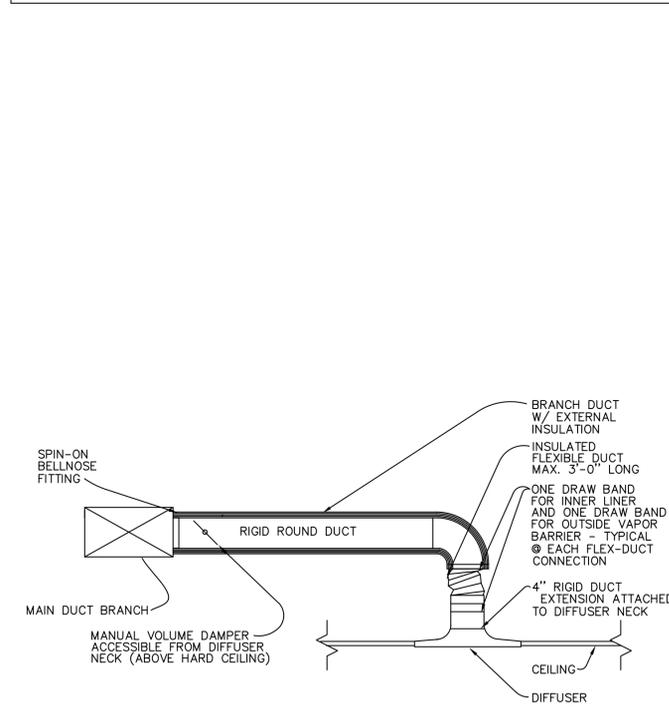
PLUMBING LINETYPE LEGEND	
	DOMESTIC COLD WATER
	DOMESTIC COLD WATER (BELOW FLOOR/GRADE)
	DOMESTIC COLD WATER (EXISTING)
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER (EXISTING)
	GAS
	GAS (ON ROOF)
	GAS (EXISTING ON ROOF)
	SANITARY SEWER (ABOVE FLOOR/GRADE)
	SANITARY SEWER (BELOW FLOOR/GRADE)
	SANITARY SEWER (EXISTING)
	VENT
	VENT (UNDERFLOOR/GRADE)
	VENT (EXISTING)

HVAC PIPING LINETYPE LEGEND	
	CONDENSATE DRAIN
	CONDENSATE DRAIN (EXISTING)

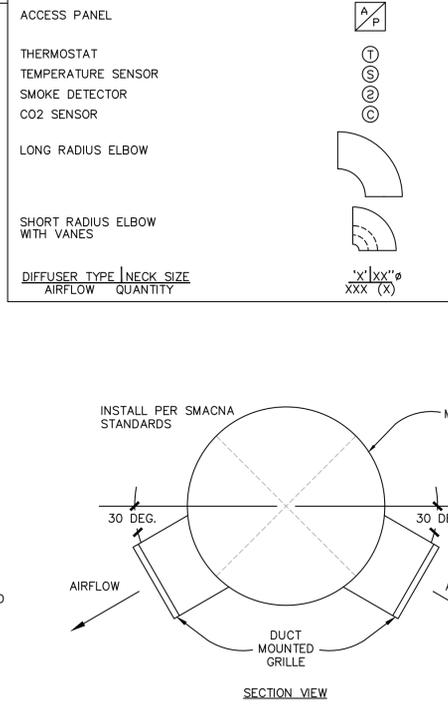
MISC. SYMBOL LEGEND	
	EQUIPMENT TAG
	CONNECTION TO EXISTING
	REVISION TRIANGLE
	KEY NOTE

SHEET INDEX	
M0.0	MECHANICAL TITLE SHEET AND DETAILS
M1.0	MAIN LEVEL HVAC PLAN
M1.1	MEZZANINE HVAC PLAN
M2.0	MECHANICAL SPECIFICATIONS
P1.0	PLUMBING PLANS
P2.0	PLUMBING RISERS, SCHEDULES AND DETAILS

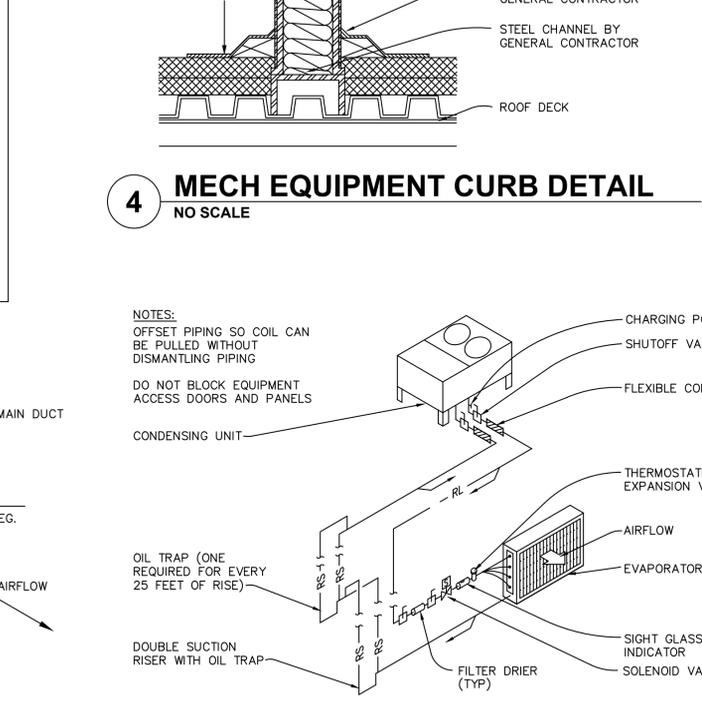
EQUIPMENT TAGS			
ACCU	AIR COOLED CONDENSING UNIT	GWH	GAS WATER HEATER
AHU	AIR HANDLING UNIT	HU	HUMIDIFIER
AHUP	AIR HANDLING UNIT PUMP	HUH	HORIZONTAL UNIT HEATER
BP	BOOSTER PUMP	HWP	HEATING WATER PUMP
CDWP	CONDENSER WATER PUMP	IH	INTAKE HOOD
CEF	CEILING EXHAUST FAN	MAU	MAKE-UP AIR UNIT
CHWP	CHILLED WATER PUMP	PCWP	PRIMARY CHILLED WATER PUMP
CP	CIRCUITING PUMP	PHWP	PRIMARY HEATING WATER PUMP
CPR	CONDENSATE PUMP AND RECEIVER	PRV	POWER ROOF VENTILATOR
CRP	CONDENSATE RETURN PUMP	REF	RELIEF EXHAUST FAN
CUH	CABINET UNIT HEATER	RF	RETURN FAN
DHC	DUCT HEATING COIL	RH	RELIEF HOOD
ECH	ELECTRIC CABINET HEATER	RTU	ROOFTOP UNIT
EF	EXHAUST FAN	SCWP	SECONDARY CHILLED WATER PUMP
EHC	ELECTRIC HEATING COIL	SEP	SEWAGE EJECTOR PUMP
ES	ELECTRONIC SENSOR	SHWP	SECONDARY HEATING WATER PUMP
EUH	ELECTRIC UNIT HEATER	SP	SUMP PUMP
EW	ELECTRIC WATER COOLER	TF	TRANSFER FAN
EWI	ELECTRIC WATER HEATER	USF	UTILITY SET FAN
FCU	FAN COIL UNIT	VAV	VARIABLE AIR VOLUME BOX
FPB	FAN POWERED VARIABLE AIR VOLUME BOX	VUH	VERTICAL UNIT HEATER
		WS	WATER SOFTENER



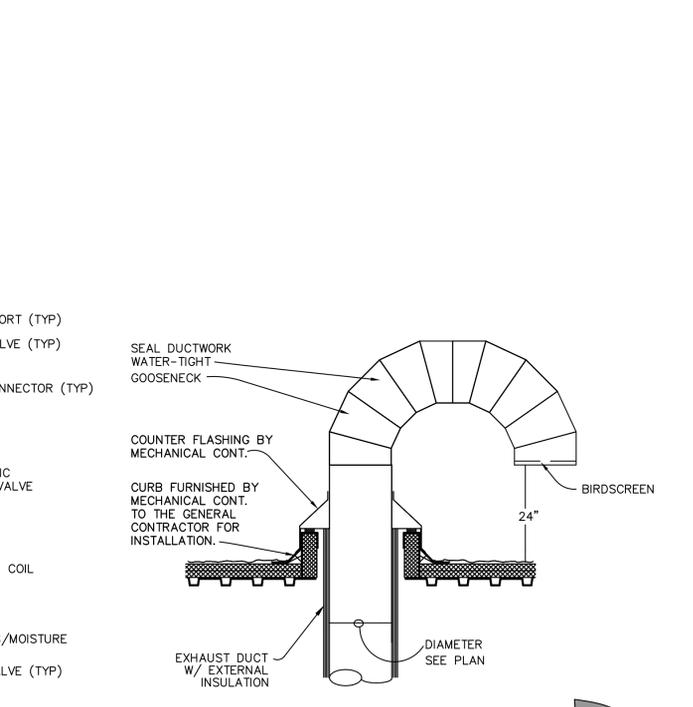
1 TYP. DIFFUSER/DUCT CONNECTIONS
NO SCALE



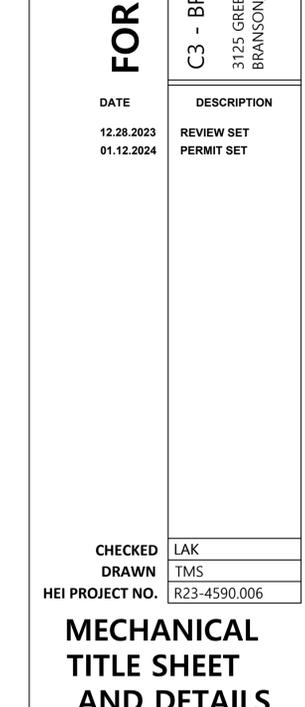
2 DUCT MOUNTED GRILLE
NO SCALE



3 REFRIGERANT PIPING
NO SCALE



4 MECH EQUIPMENT CURB DETAIL
NO SCALE



5 GOOSENECK VENT THRU ROOF
NO SCALE



DAMIAN FARRELL DESIGN GROUP

359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331



FOR PERMIT ISSUE

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

CHECKED	LAK
DRAWN	TMS
HEI PROJECT NO.	R23-4590.006

MECHANICAL TITLE SHEET AND DETAILS

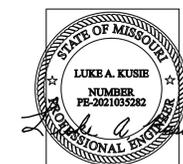
Mo.o

HALLBERG ENGINEERING
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White Bear Lake, MN 55110
Phone (651) 748-1100 • Fax (651) 748-3370



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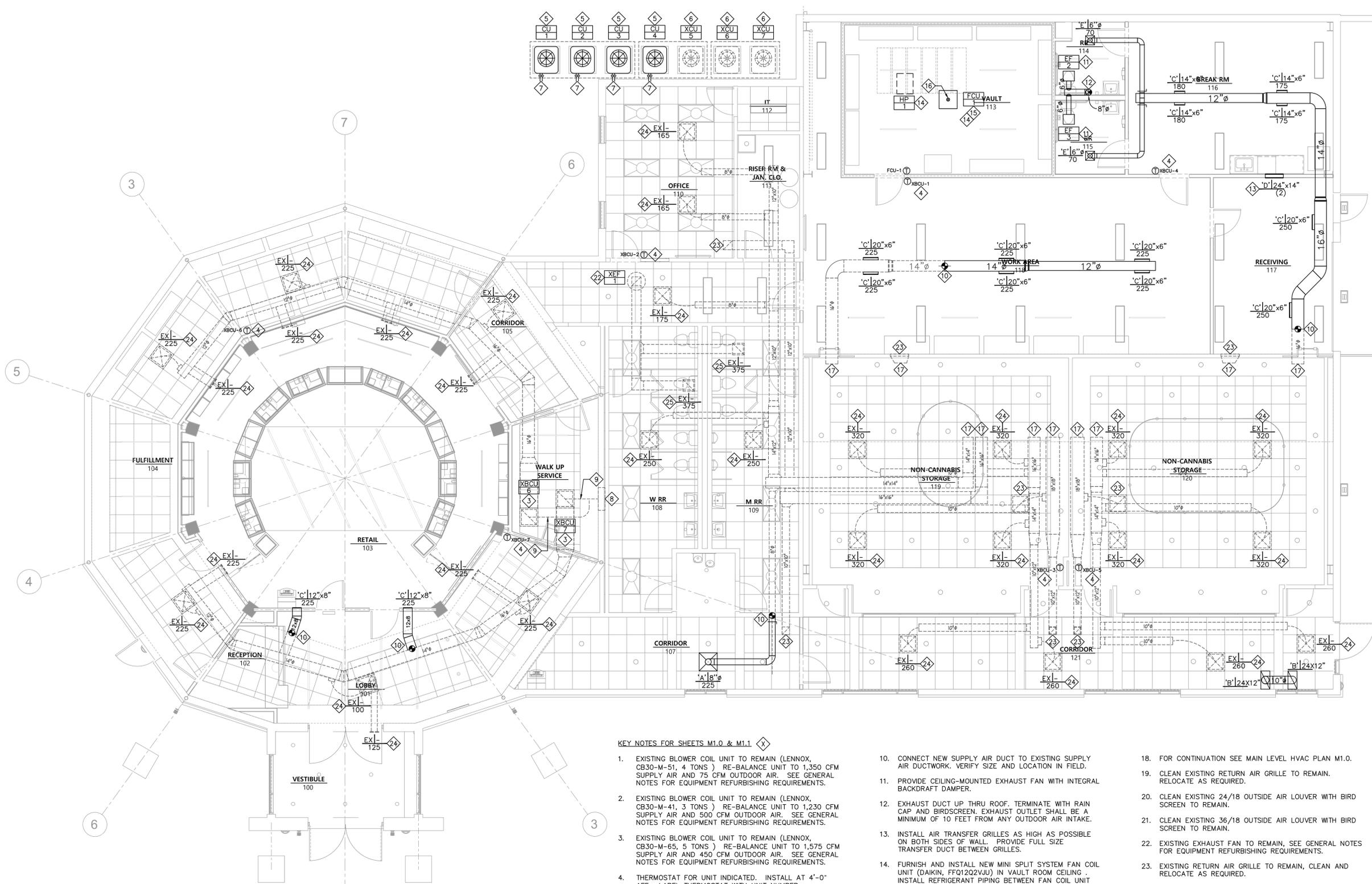
CHECKED	LAK
DRAWN	TMS
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MAIN LEVEL HVAC PLAN

M1.0



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Mechanical/Electrical Consulting Engineers
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Phone (651) 748-1100 Fax (651) 748-3370



1 MAIN LEVEL HVAC PLAN
3/16" = 1'-0"

KEY NOTES FOR SHEETS M1.0 & M1.1

- EXISTING BLOWER COIL UNIT TO REMAIN (LENNOX, CB30-M-51, 4 TONS) RE-BALANCE UNIT TO 1,350 CFM SUPPLY AIR AND 75 CFM OUTDOOR AIR. SEE GENERAL NOTES FOR EQUIPMENT REFURBISHING REQUIREMENTS.
- EXISTING BLOWER COIL UNIT TO REMAIN (LENNOX, CB30-M-41, 3 TONS) RE-BALANCE UNIT TO 1,230 CFM SUPPLY AIR AND 500 CFM OUTDOOR AIR. SEE GENERAL NOTES FOR EQUIPMENT REFURBISHING REQUIREMENTS.
- EXISTING BLOWER COIL UNIT TO REMAIN (LENNOX, CB30-M-65, 5 TONS) RE-BALANCE UNIT TO 1,575 CFM SUPPLY AIR AND 450 CFM OUTDOOR AIR. SEE GENERAL NOTES FOR EQUIPMENT REFURBISHING REQUIREMENTS.
- THERMOSTAT FOR UNIT INDICATED. INSTALL AT 4'-0" AFF. LABEL THERMOSTAT WITH UNIT NUMBER.
- FURNISH AND INSTALL NEW AIR-COOLED HEAT PUMP UNITS IN DESIGNATED AREA. VERIFY APPROVED LOCATION OF NEW UNITS IN FIELD.
- EXISTING AIR-COOLED HEAT PUMP UNITS IN DESIGNATED AREA TO REMAIN.
- ROUTE REFRIGERANT PIPING UP AND OVER TO MEZZANINE FOR CONNECTION TO UNITS ON THE MEZZANINE AREA. FOLLOW ROUTING OF EXISTING LINESETS.
- CLEAN EXISTING 30/24 OUTSIDE AIR LOUVER WITH BIRD SCREEN TO REMAIN.
- 12"Ø OUTSIDE AIR DUCT WITH BALANCING DAMPER TO REMAIN.
- CONNECT NEW SUPPLY AIR DUCT TO EXISTING SUPPLY AIR DUCTWORK. VERIFY SIZE AND LOCATION IN FIELD.
- PROVIDE CEILING-MOUNTED EXHAUST FAN WITH INTEGRAL BACKDRAFT DAMPER.
- EXHAUST DUCT UP THRU ROOF. TERMINATE WITH RAIN CAP AND BIRDSCREEN. EXHAUST OUTLET SHALL BE A MINIMUM OF 10 FEET FROM ANY OUTDOOR AIR INTAKE.
- INSTALL AIR TRANSFER GRILLES AS HIGH AS POSSIBLE ON BOTH SIDES OF WALL. PROVIDE FULL SIZE TRANSFER DUCT BETWEEN GRILLES.
- FURNISH AND INSTALL NEW MINI SPLIT SYSTEM FAN COIL UNIT (DAIKIN, FFQ1202VJU) IN VAULT ROOM CEILING. INSTALL REFRIGERANT PIPING BETWEEN FAN COIL UNIT AND ASSOCIATED CONDENSING UNIT ON ROOF (DAIKIN, RX12RMVJU9). PROVIDE CONDENSING UNIT ON ROOF SEE DETAIL 4/M.O.O. COORDINATE PIPE ROUTING AND LOCATION OF UNITS WITH OWNER. SIZE PER MANUFACTURER'S INSTRUCTIONS. PROVIDE THERMOSTAT AND MOUNT AT 4'0" AFF. BALANCE AS REQUIRED TO PROVIDE 30 CFM OUTSIDE AIR.
- EXTEND 1" PRIMARY CONDENSATE PIPES TO DISCHARGE AT MOP SINK. PROVIDE 4" DEEP TRAP ON PRIMARY CONDENSATE PIPE. PROVIDE 2" AIR GAP AT DISCHARGE. PROVIDE MANUFACTURER'S CONDENSATE PUMP.
- 4"Ø OUTDOOR AIR DUCT UP THROUGH THE ROOF TO THE GOOSENECK. SEE DETAIL 5/M.O.O. AIR INTAKE SHALL BE A MINIMUM OF 10 FEET FROM ANY EXHAUST DISCHARGE.
- FOR CONTINUATION SEE MEZZANINE HVAC PLAN M1.1.
- FOR CONTINUATION SEE MAIN LEVEL HVAC PLAN M1.0.
- CLEAN EXISTING RETURN AIR GRILLE TO REMAIN. RELOCATE AS REQUIRED.
- CLEAN EXISTING 24/18 OUTSIDE AIR LOUVER WITH BIRD SCREEN TO REMAIN.
- CLEAN EXISTING 36/18 OUTSIDE AIR LOUVER WITH BIRD SCREEN TO REMAIN.
- EXISTING EXHAUST FAN TO REMAIN, SEE GENERAL NOTES FOR EQUIPMENT REFURBISHING REQUIREMENTS.
- EXISTING RETURN AIR GRILLE TO REMAIN, CLEAN AND RELOCATE AS REQUIRED.
- EXISTING SUPPLY AIR REGISTER/DIFFUSER TO REMAIN, CLEAN AND RELOCATE AS REQUIRED. BALANCE TO CFM'S AS SHOWN.
- EXISTING EXHAUST AIR GRILLE TO REMAIN, CLEAN AND RELOCATE AS REQUIRED.
- EXISTING BLOWER COIL UNIT TO REMAIN (LENNOX, CB30-M-65, 5 TONS) RE-BALANCE UNIT TO 1,800 CFM SUPPLY AIR AND 450 CFM OUTDOOR AIR. SEE GENERAL NOTES FOR EQUIPMENT REFURBISHING REQUIREMENTS.

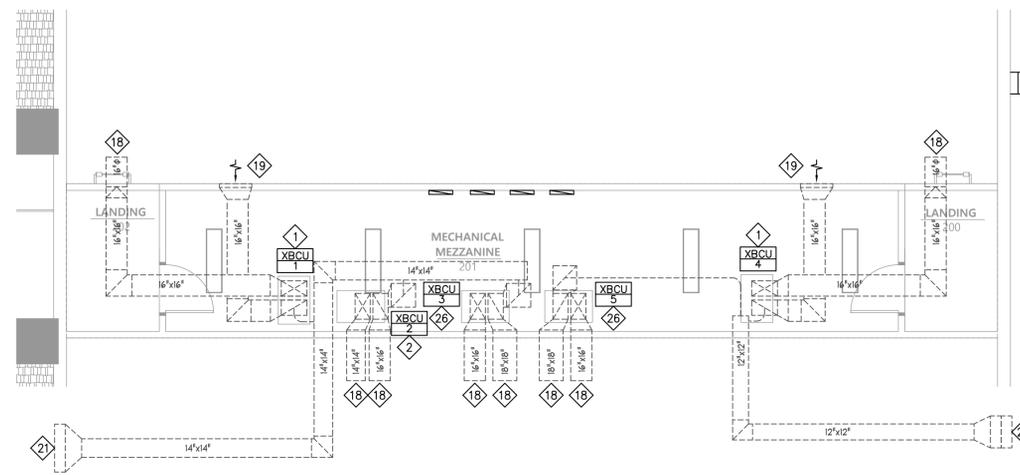
GENERAL MECHANICAL NOTES

- A. ALL REFERENCES ON THE DRAWINGS AND IN THE SPECIFICATIONS TO "CONTRACTOR" AND "MECHANICAL CONTRACTOR" REFER TO THE TENANT'S MECHANICAL CONTRACTOR, UNLESS NOTED OTHERWISE.
- B. ALL WORK SHOWN AND SPECIFIED HEREIN SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE.
- C. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID, INCLUDING ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, STUB-INS, TAPS, ETC. NO CLAIMS FOR EXTRAS DUE TO LACK OF FAMILIARITY WITH SITE CONDITIONS WILL BE APPROVED.
- D. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR ALL DIVISIONS OF WORK AND SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL HIS SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.
- E. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL FIT THE WORK TO THE JOB, CAREFULLY INVESTIGATING STRUCTURAL, MECHANICAL, ELECTRICAL AND FINISH CONDITIONS AFFECTING THE WORK, AND SHALL FURNISH AND INSTALL ALL NECESSARY BENDS, OFFSETS, FITTINGS, JUNCTIONS, ETC. WHETHER OR NOT SPECIFICALLY SHOWN OR CALLED FOR, AND SEE THAT THERE ARE NO INTERFERENCES BETWEEN THIS WORK AND THE WORK OF OTHER TRADES.
- F. PROVIDE ALL EQUIPMENT AND MATERIALS, AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY APPLICABLE CODES.
- G. INSTALL ALL MECHANICAL EQUIPMENT, MATERIALS AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, THE CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- H. ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE LANDLORD CRITERIA.
- I. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS THAT ARE NOT DIMENSIONED ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS SHALL BE BASED ON SITE CONDITIONS. INSTALL ALL EQUIPMENT AS REQUIRED TO MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
- J. COORDINATE DIFFUSER, REGISTER AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN, LIGHTING, AND OTHER CEILING-MOUNTED ITEMS, AND MAKE MINOR ADJUSTMENTS IN DIFFUSER LOCATIONS AND DUCTWORK AS REQUIRED.
- K. ALL ROOF CUTTING, PATCHING AND FLASHING REQUIRED TO INSTALL THE MECHANICAL SYSTEMS SHALL BE BY A LANDLORD-APPROVED ROOFING CONTRACTOR AT THIS CONTRACTOR'S EXPENSE. COORDINATE ROOF PENETRATIONS WITH LANDLORD AND GENERAL CONTRACTOR.
- L. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL CONNECTIONS TO LANDLORD'S BASE BUILDING SYSTEMS. RE-USE EXISTING CONNECTION POINTS WHERE POSSIBLE. COORDINATE ALL REQUIREMENTS IN FIELD WITH LANDLORD.
- M. NOTIFY TENANT'S PROJECT MANAGER IF ANY EXISTING DUCTWORK OR PIPING CONNECTION POINTS ARE SMALLER THAN SIZES SHOWN ON DRAWINGS.
- N. REPLACE UNIT COMPONENTS AS REQUIRED TO MAKE UNIT FULLY FUNCTIONAL, INCLUDING BUT NOT LIMITED TO: FANS, MOTORS, DRIVES, BELTS, BEARINGS, COILS, HEAT EXCHANGERS, REFRIGERATION, DAMPERS, DAMPER MOTORS, VALVES, AND OPERATING AND SAFETY CONTROLS. CHANGE FILTERS UPON COMPLETION OF SERVICE WORK AND JUST PRIOR TO JOB TURNOVER.
- O. REMOVE ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING SYSTEMS, CONTROLS, ETC. NOT BEING RE-USED. DO NOT ABANDON IN PLACE. MAINTAIN SERVICES PASSING THROUGH SPACE TO OTHER TENANT SPACES.
- P. CONTRACTOR MAY, AT HIS OPTION, INSTALL ROUND SPIRAL DUCTWORK OF EQUIVALENT CAPACITY IN LIEU OF RECTANGULAR DUCTWORK SHOWN AS LONG AS CEILING HEIGHTS ARE NOT AFFECTED.
- Q. FIBERGLASS DUCTBOARD IS NOT ALLOWED.
- R. BRANCH DUCT RUNOUTS TO DIFFUSERS SHALL BE SAME SIZE AS DIFFUSER NECK, UNLESS SHOWN OTHERWISE.
- S. RIGID DUCTWORK SHALL BE UTILIZED FOR ALL RUNOUTS TO DIFFUSERS IN OPEN CEILING AREAS.
- T. CONTRACTOR SHALL BALANCE ALL HVAC SYSTEMS IN ACCORDANCE WITH THE MECHANICAL SPECIFICATIONS. SUBMIT COPIES OF TEST & BALANCE REPORT TO TENANT, LANDLORD AND ENGINEER.

CONDENSING UNIT SCHEDULE				
UNIT TAG	CU-1	CU-2	CU-3	CU-4
LOCATION	GROUND	GROUND	GROUND	GROUND
MANUFACTURER	CARRIER	CARRIER	CARRIER	CARRIER
MODEL NUMBER	25SPA548A003	25SPA536A003	25SPA560A003	25SPA548A003
SERVICE	XBCU-1	XBCU-2	XBCU-3	XBCU-4
REFRIGERANT TYPE	R-410A	R-410A	R-410A	R-410A
NOMINAL CAPACITY (TON)	4	3	5	4
SEER	14.3	14.3	14.3	14.3
CIRCUITS (DUAL, SINGLE)	SINGLE	SINGLE	SINGLE	SINGLE
COMPRESSOR TYPE	SCROLL	SCROLL	SCROLL	SCROLL
QUANTITY	1	1	1	1
UNLOADING %	0-100	0-100	0-100	0-100
CONDENSER NUMBER OF FANS	1	1	1	1
HP	-	1	1	1
MBH (OUTPUT)	48.0	36.0	60.0	48.0
AMBIENT AIR TEMP	95.0	95.0	95.0	95.0
REFR SUCTION TEMP	45F	45F	45F	45F
REFRIGERANT PIPE SIZES				
LIQUID	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
SUCTION	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
HOT GAS	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
ELECTRICAL				
MCA	32.8	20.3	33.2	32.8
V-PH-CY	208/1/60	208/1/60	208/1/60	208/1/60
STARTER	DIV. 15	DIV. 15	DIV. 15	DIV. 15
DISCONNECT	DIV. 16	DIV. 16	DIV. 16	DIV. 16
OPERATING WEIGHT (LBS)	245	245	245	245
REMARKS	PROVIDE UNIT WITH LOW AMB. CONTROL CRANKCASE HEATER HARD SHUT-OFF TXV, COMPRESSOR HARD START ASSIST, FOLLOW LONGLINE GUIDE FOR PIPE SIZING.	PROVIDE UNIT WITH LOW AMB. CONTROL CRANKCASE HEATER HARD SHUT-OFF TXV, COMPRESSOR HARD START ASSIST, FOLLOW LONGLINE GUIDE FOR PIPE SIZING.	PROVIDE UNIT WITH LOW AMB. CONTROL CRANKCASE HEATER HARD SHUT-OFF TXV, COMPRESSOR HARD START ASSIST, FOLLOW LONGLINE GUIDE FOR PIPE SIZING.	PROVIDE UNIT WITH LOW AMB. CONTROL CRANKCASE HEATER HARD SHUT-OFF TXV, COMPRESSOR HARD START ASSIST, FOLLOW LONGLINE GUIDE FOR PIPE SIZING.

GRILLE AND DIFFUSER SCHED.					
TYPE	A	B	C	D	E
ITEM	SUPPLY	RETURN/TRANS	SUPPLY	TRANSFER	SUPPLY
DESCRIPTION	LAY-IN	LAY-IN	DUCT MOUNT	WALL MOUNT	LAY-IN
MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS
MODEL NUMBER	TMS	50F	300RS	350FL	TMS
REMARKS	STD. WHITE FINISH 24"x24" FACE W/EG EQUALIZING GRID, OBD & "LAY-IN" TRM FRAME	STD. WHITE FINISH W/"LAY-IN" TRM FRAME	STD. WHITE FINISH W/OBD	STD. WHITE FINISH	STD. WHITE FINISH 12"x12" FACE W/EG EQUALIZING GRID, OBD & "LAY-IN" TRM FRAME

EXHAUST FAN SCHED.		
UNIT TAG	EF-2	EF-3
AREA SERVED	TOILET ROOM 114	TOILET ROOM 115
MANUFACTURER	GREENHECK	GREENHECK
MODEL NUMBER	SP-A125	SP-A125
DRIVE (BELT, DIRECT)	DIRECT	DIRECT
FAN DATA		
CFM	100	100
ESP	0.25"	0.25"
RPM	1100	1100
HP	53 WATTS	53 WATTS
ELECTRICAL		
V-PH-CY	115/1/60	115/1/60
STARTER	-	-
DISCONNECT	DIV. 16	DIV. 16
WEIGHT (LBS)	15	15
REMARKS	WITH INTEGRAL BACKDRAFT DAMPER, E.C. SHALL INTERLOCK WITH TOILET ROOM LIGHTS	WITH INTEGRAL BACKDRAFT DAMPER, E.C. SHALL INTERLOCK WITH TOILET ROOM LIGHTS

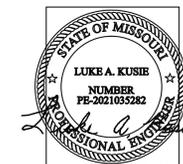


1 MEZZANINE HVAC PLAN
3/16" = 1'-0"



DAMIAN FARRELL DESIGN GROUP

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MEZZANINE HVAC PLAN

M1.1



HALLBERG ENGINEERING
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White Bear Lake, MN 55110
Phone (651) 748-1100 • Fax (651) 748-3370

MECHANICAL SPECIFICATIONS

15000 GENERAL PROVISIONS

- 0.01 DEFINITIONS: THE TERMS LISTED BELOW ARE DEFINED AS FOLLOWS WHEN USED IN DIVISION 15 WORK AND ONLY DIVISION 15 WORK.
 - A. WORK: LABOR AND MATERIALS OF THE CONTRACTOR AND/OR SUBCONTRACTOR.
 - B. FURNISH: OBTAIN, COORDINATE, SUBMIT THE NECESSARY DRAWINGS, DELIVER TO THE JOB SITE IN NEW CONDITION AND GUARANTEE.
 - C. INSTALL: RECEIVE AT THE JOB-SITE, UNLOAD, STORE, SET IN PLACE, CONNECT, PLACE IN OPERATION AND GUARANTEE.
 - D. PROVIDE: FURNISH AND INSTALL.
 - E. CONNECT: BRING SERVICE TO THE EQUIPMENT AND MAKE FINAL ATTACHMENTS INCLUDING NECESSARY PIPE FITTINGS, DUCTWORK, TRANSITIONS, ETC.
 - F. CONCEALED: HIDDEN FROM SIGHT IN CHASES, FURRED SPACES, SHAFTS, ABOVE CEILING, EMBEDDED IN CONSTRUCTION, IN CRAWL SPACES OR BURIED.
 - G. EXPOSED: NOT INSTALLED UNDERGROUND OR CONCEALED AS DEFINED ABOVE.
 - H. REMOVE: REMOVE ALL EQUIPMENT AND MATERIALS NOT BEING RE-USED. DISPOSE OF OFF-SITE IN A LEGAL AND ENVIRONMENTALLY CONSCIOUS MANNER.
- 0.02 PERFORMANCE: MECHANICAL CONTRACTOR SHALL PERFORM ALL WORK SPECIFIED, INDICATED AND REQUIRED UNLESS OTHERWISE NOTED, INCLUDING FINAL CONNECTIONS, IN A WORKMANLIKE MANNER USING WORKERS SKILLED AND EXPERIENCED IN THE TRADE.
- 0.03 SITE EXAMINATION: EXAMINE SITE BEFORE BIDDING. CLAIM NO EXTRAS RESULTING FROM LACK OF KNOWLEDGE OF SITE CONDITIONS. IF SITE CONDITIONS REQUIRE MODIFICATION OF THE SYSTEMS INDICATED IN THESE DOCUMENTS, SO ADVISE ENGINEER, AND IF ACCEPTED BY ENGINEER, INCLUDE COST OF SUCH MODIFICATIONS IN BID.
- 0.04 JOBSITE CONDITIONS: ACCEPT SOLE AND COMPLETE RESPONSIBILITY FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK.
- 0.05 FULL FUNCTION: PROVIDE ALL MINOR ITEMS NECESSARY FOR A COMPLETE AND FULLY FUNCTIONAL INSTALLATION.
- 0.06 ADMINISTRATION: PROVIDE EVIDENCE OF LICENSING, BONDING, AND INSURANCE, AND PERFORM OTHER ADMINISTRATIVE FUNCTIONS, AS REQUIRED.
- 0.07 PERMITS: PROCURE AND PAY FOR ALL REQUIRED PERMITS AND SERVICE CHARGES.
- 0.08 UTILITY SERVICES: ARRANGE FOR ALL REQUIRED UTILITY SERVICES AND PAY ALL UTILITY SERVICE FEES.
- 0.09 COORDINATION: CONFORM TO GENERAL CONSTRUCTION CONTRACT DOCUMENTS EXCEPT AS MODIFIED HEREIN. REFER ALSO TO STRUCTURAL AND ELECTRICAL CONTRACT DOCUMENTS. COORDINATE ALL WORK WITH OTHER TRADES.
- 0.10 CUTTING AND PATCHING: CUT AND PATCH AS REQUIRED. CUT OR WELD STRUCTURAL MEMBERS ONLY WITH APPROVAL OF STRUCTURAL ENGINEER. PATCHING SUBJECT TO APPROVAL BY ARCHITECT.
- 0.11 EXISTING FLOORS: TRENCH OR CORE BORE EXISTING FLOORS PER LANDLORD REQUIREMENTS.
- 0.12 ROOF PENETRATIONS: ALL ROOFING WORK SHALL BE PERFORMED BY LANDLORD-APPROVED ROOFING CONTRACTOR AT THIS CONTRACTOR'S COST. COORDINATE WITH LANDLORD.
- 0.13 EQUIPMENT SUBSTITUTIONS: REIMBURSE ELECTRICAL CONTRACTOR, AT NO CHARGE TO TENANT, FOR HIS COSTS INCURRED DUE TO SUBSTITUTION OF MECHANICAL EQUIPMENT HAVING ELECTRICAL REQUIREMENTS DIFFERING FROM THOSE INDICATED.
- 0.14 ADJUSTMENTS: MAKE MINOR ADJUSTMENTS TO WORK WHERE REQUESTED BY TENANT, WHEN SUCH ADJUSTMENTS ARE NECESSARY TO PROPER OPERATION AND WITHIN THE INTENT OF THE CONTRACT.
- 0.15 REFERENCE STANDARDS: COMPLY WITH APPLICABLE STANDARDS OF NFPA, ANSI, UL, ASHRAE, AND SMACNA, EXCEPT AS SUPERSEDED BY LOCAL AUTHORITY. CONFORM WITH CONTRACT DOCUMENTS WHERE THEY EXCEED CODE MINIMUM REQUIREMENTS.
- 0.16 LOCAL REQUIREMENTS: COMPLY WITH THE REQUIREMENTS OF APPLICABLE CODES, LANDLORD, SERVING UTILITIES, AND THE LOCAL AUTHORITY HAVING JURISDICTION. SECURE APPROVAL OF INSTALLATION BY LANDLORD, LOCAL AUTHORITY, AND OTHERS AS REQUIRED.
- 0.17 MATERIALS AND EQUIPMENT: PROVIDE NEW, UL LISTED, COMMERCIAL GRADE MATERIALS, DEVICES, EQUIPMENT, AND FIXTURES, SUITABLE FOR ENVIRONMENT. REUSE EXISTING ONLY WHEN COMPLIANT WITH THE CONTRACT DOCUMENTS, IN GOOD CONDITION, AND APPROVED BY THE ENGINEER.
- 0.18 SHOP DRAWINGS: BEFORE ORDERING EQUIPMENT AND MATERIALS, SUBMIT NOT LESS THAN FIVE CERTIFIED COPIES OF ALL SHOP AND EQUIPMENT DRAWINGS FOR ENGINEER'S REVIEW, WHO WILL RETAIN TWO COPIES. ONLY FURNISH SYSTEMS AND EQUIPMENT IN COMPLIANCE WITH ACCEPTED SHOP DRAWINGS.
- 0.19 INSTALLATION: INSTALL ALL MATERIALS, EQUIPMENT AND SYSTEMS IN FULL ACCORD WITH MANUFACTURER'S INSTRUCTIONS.
- 0.20 LAYOUT: INSTALL ALL PIPING AND DUCTWORK TO PRESENT A NEAT AND ORDERLY APPEARANCE. RUN ALL LINES PARALLEL WITH BUILDING CONSTRUCTION. MAINTAIN HEADROOM AND EQUIPMENT CLEARANCE, AND GRADIENT WHERE REQUIRED. ALLOW FOR EXPANSION AND CONTRACTION.
- 0.21 ACCESS DOORS: PROVIDE ACCESS DOORS OR PANELS FOR ALL VALVES, CLEANOUTS, DAMPERS, CONTROLS, DEVICES, AND OTHER ITEMS REQUIRING INSPECTION OR MAINTENANCE. ACCESS PANELS SERVING HVAC COMPONENTS SHALL BE 12-INCHES BY 12-INCHES MINIMUM OR LARGER TO PROVIDE SUFFICIENT WORKING CLEARANCE FOR COMPONENT BEING ACCESSED.
- 0.22 COMMISSIONING: THOROUGHLY TEST AND DEMONSTRATE PROPER OPERATION OF ALL SYSTEMS AND EQUIPMENT FURNISHED OR INSTALLED UNDER THIS CONTRACT.
- 0.23 RECORD DRAWINGS: PREPARE AND SUBMIT TO GENERAL CONTRACTOR RECORD DRAWINGS SHOWING ALL SIGNIFICANT DEVIATIONS FROM CONSTRUCTION DOCUMENTS. INCLUDE MANUFACTURER AND MODEL NUMBERS FOR ALL EQUIPMENT INSTALLED.
- 0.24 O & M MANUALS: AN OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER OR OPERATOR. THE MANUAL SHALL INCLUDE BASIC DATA RELATING TO THE OPERATION AND MAINTENANCE OF HVAC SYSTEMS AND EQUIPMENT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. WHERE APPLICABLE, HVAC CONTROLS INFORMATION SUCH AS DIAGRAMS, SCHEMATICS, CONTROL SEQUENCE DESCRIPTIONS, AND MAINTENANCE AND CALIBRATION INFORMATION SHALL BE INCLUDED.
- 0.25 WARRANTY: UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE, EXCEPT WARRANT AIR CONDITIONING COMPRESSORS FOR FIVE YEARS AND GAS-FIRED HEAT EXCHANGERS FOR 10 YEARS. DURING WARRANTY PERIOD, REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT OR WORKMANSHIP WITHOUT COST TO TENANT.
- 0.26 EQUIPMENT IDENTIFICATION: IDENTIFY ALL APPLICABLE ROOFTOP EQUIPMENT WITH TENANT'S NAME, SPACE NUMBER AND UNIT NUMBER, USING 2" HIGH PAINTED CHARACTERS OR STAMPED METAL TAG. LABEL INDOOR EQUIPMENT WITH UNIT NUMBER IN LIKE MANNER.
- 0.27 DRAWINGS ARE DIAGRAMMATIC: VERIFY ALL DIMENSIONS AND LENGTHS, AND ADJUST EQUIPMENT, PIPE AND DUCT LOCATIONS TO AVOID CONFLICTS WITH OTHER CONSTRUCTION AND TRADES.
- 0.28 DOCUMENT PRIORITY: DRAWING INDICATIONS AND NOTATIONS SUPERSEDE THESE SPECIFICATIONS.
- 0.29 RATINGS: REFER TO DRAWINGS AND SCHEDULES FOR ADDITIONAL RATINGS AND REQUIREMENTS.

0.30 PROJECT REQUIREMENTS: REFER TO DRAWINGS FOR PARTICULAR PROJECT REQUIREMENTS, AS NOT ALL ITEMS INCLUDED IN THESE SPECIFICATIONS MAY BE REQUIRED FOR THIS PROJECT.

0.31 DOCUMENT ERRORS: NOTIFY THE ENGINEER OF ANY ERRORS, DISCREPANCIES OR OMISSIONS BEFORE CONSTRUCTION OR FABRICATION OF AFFECTED WORK, OR, FAILING SUCH NOTICE, BE RESPONSIBLE FOR CORRECTING SAME WITHOUT COST TO TENANT, ARCHITECT OR ENGINEER.

15100 BASIC MATERIALS AND METHODS

1.10 PIPE HANGERS AND SUPPORTS: PROPERLY SUPPORT ALL PIPING FROM JOISTS (TOP CHORD) OR OTHER STRUCTURAL MEMBERS. FOR PIPES UP TO 4" O.D., USE GRINNELL FIG. 260 CLEVIS HANGERS WITH 3/8" ROD, OR FIG. 195 BRACKETS.

1.20 INSULATION SHIELDS: PROVIDE 18 GAUGE X 12" LONG GALVANIZED INSULATION SHIELDS AT SUPPORT POINTS FOR INSULATED PIPES.

1.30 PIPE SUPPORT SPACING: SUPPORT PIPE NOT LESS THAN 6 FT. ON CENTER FOR COPPER PIPE UP TO 2" O.D., OR NOT LESS THAN 10 FT. ON CENTER FOR STEEL PIPE UP TO 4" O.D.

1.40 COPPER CONTACT: PROVIDE COPPER PLATED HANGERS AND SUPPORTS WHERE IN CONTACT WITH COPPER PIPE.

1.50 PIPE SLEEVES: SLEEVE ALL HORIZONTAL PIPING WHICH PENETRATES WALLS WITH STANDARD WEIGHT STEEL PIPE OF 1" GREATER DIAMETER THAN PIPE OR INSULATION O.D. CUT SLEEVE FLUSH WITH WALL. FINISH BOTH SIDES.

1.60 SEALANT: SEAL PIPE SLEEVES WITH ROPE AND EXPANDO NON-SHRINK SEALANT. FIRE/SMOKE SEAL PENETRATIONS OF RATED CONSTRUCTION TO MAINTAIN RATING.

1.70 WALL PLATES: FIT UNCOVERED PIPE PASSING THROUGH WALLS WITH WALL PLATES, CRANE NO. 10 OR EQUAL.

15200 THERMAL AND ACOUSTIC INSULATION

2.10 VIBRATION ISOLATION: PROVIDE EFFECTIVE VIBRATION ISOLATION DEVICES, AND FLEXIBLE CONNECTIONS, FOR ALL MOVING MACHINERY. PROVIDE DEVICES IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE ASHRAE HANDBOOK, HVAC APPLICATIONS (LATEST EDITION), CHAPTER "SOUND AND VIBRATION CONTROL".

2.20 NOISE TRANSMISSION: INSTALL PIPING AND DUCTWORK FREE FROM CONTACT WITH STRUCTURE OR EQUIPMENT TO PREVENT NOISE TRANSMISSION.

2.30 INSULATION REQUIREMENTS: INSULATE SYSTEMS AS SPECIFIED ONLY AFTER THEY HAVE BEEN TESTED AND INSPECTED. CLEAN ALL SURFACES THOROUGHLY OF MOISTURE, FOREIGN MATERIAL, GREASE, AND RUST. INSTALL INSULATION CONTINUOUS THROUGH WALL AND FLOOR PENETRATIONS.

2.31 EXISTING SYSTEMS BEING RE-USED: INSULATE EXISTING PIPE AND DUCT SYSTEMS BEING RE-USED SAME AS SPECIFIED FOR NEW SYSTEMS. REPAIR/REPLACE EXISTING INSULATION TO LIKE-NEW CONDITION AS REQUIRED.

2.32 INSULATION HAZARDS: USE ONLY INSULATION, JACKETS, ADHESIVES, SEALERS, AND COATINGS WITH FIRE HAZARD RATING NOT TO EXCEED 25/50/50 FLAME SPREAD, FUEL CONTRIBUTED, AND SMOKE DEVELOPED, IN ACCORDANCE WITH UL 723 AND ASTM E84.

2.33 INSULATED PLUMBING SYSTEMS: INSULATE HOT AND COLD WATER PIPING WITH 1" THICK CLOSED CELL, SELF SEALING FLEXIBLE TUBING, ARMAFLEX 2000 OR EQUAL.

2.34 INSULATED HVAC PIPING SYSTEMS: INSULATE REFRIGERANT SUCTION PIPING AND COOLING COIL CONDENSATE PIPING WITH 3/4" THICK CLOSED CELL FOAM INSULATION, ARMAFLEX 2000 OR EQUAL. INSULATE HVAC HOT AND CHILLED WATER PIPING SYSTEMS, LOW PRESSURE STEAM PIPING AND STEAM CONDENSATE PIPING WITH 1-1/2" THICK HEAVY DENSITY FIBERGLASS PIPE INSULATION HAVING A FACTORY-APPLIED ALL-SERVICE JACKET WITH DOUBLE SELF-SEALING LAP, OWENS-CORNING FIBERGLASS ASJ/SSL-II, OR EQUAL.

2.35 ACOUSTICALLY LINED SUPPLY AND RETURN DUCT: UNLESS OTHERWISE INDICATED ON THE PLANS, LINE SUPPLY AND RETURN DUCTWORK WITHIN 10- FEET OF THE DISCHARGE AND INTAKE OF AIR MOVING EQUIPMENT WITH 1" THICK GLASS FIBER ACOUSTICAL DUCT LINER BOARD, OWENS-CORNING, OR EQUAL. INCREASE DUCT SIZE INDICATED ON PLANS 2" EACH DIMENSION TO ACCOMMODATE DUCT LINER. MATERIAL SHALL BE RATED FOR 4,000 FPM AIR VELOCITY AND SHALL HAVE A MOLD-, HUMIDITY-, AND CORROSION-RESISTANT SURFACE THAT MEETS THE REQUIREMENTS OF UL 181.

2.36 EXTERNALLY INSULATED SUPPLY AND RETURN DUCT: INSULATE SHEET METAL DUCTWORK WITH 1-1/2" THICK FIBERGLASS INSULATION WITH AN INTEGRAL VAPOR BARRIER FACING, OWENS-CORNING, OR EQUAL. INSULATION INSTALLED ON DUCTWORK WITHIN THE CONDITIONED SPACE OR RETURN AIR PLENUM SHALL HAVE MINIMUM R=5 HR-SQ.FT.-DEG. F/BTU-IN. THERMAL RESISTANCE. INSULATION INSTALLED ON EXTERIOR DUCTWORK SHALL HAVE MINIMUM R=8.0 HR-SQ.FT.-DEG. F/BTU-IN. THERMAL RESISTANCE. PORTIONS OF DUCTWORK WHICH ARE INTERNALLY LINED SHALL ALSO BE EXTERNALLY INSULATED. EXTERNAL INSULATION INSTALLED ABOVE CEILINGS OR OTHERWISE OUT OF VIEW SHALL BE BLANKET TYPE. EXPOSED INSULATION SHALL BE RIGID TYPE. DO NOT INSULATE SUPPLY AIR DUCTWORK IN CONDITIONED SPACES UNLESS OTHERWISE INDICATED ON THE DRAWINGS (RETURN AIR PLENUMS ARE NOT CONSIDERED CONDITIONED SPACES). RETURN AIR DUCTWORK INSTALLED IN A RETURN AIR PLENUM NEED NOT BE EXTERNALLY INSULATED. EXTERIOR DUCTWORK AND INSULATION SHALL BE PROTECTED WITH A WEATHER-PROOF JACKET.

2.37 INSULATED OUTDOOR AIR AND EXHAUST DUCTWORK: EXTERNALLY INSULATE ALL OUTDOOR AIR DUCTWORK AND EXHAUST DUCTWORK WITHIN 10- FEET OF THE BUILDING ENVELOPE PENETRATION WITH 2" THICK GLASS FIBER INSULATION WITH KRAFT FOIL VAPOR BARRIER, MINIMUM R=8.0 HR-SQ.FT.-DEG. F/BTU-IN. THERMAL RESISTANCE, OWENS-CORNING, OR EQUAL.

2.40 INSULATED FLEXIBLE DUCT: GENERAL ENVIRONMENTAL CORPORATION TYPE G30A OR EQUAL, 5'-0" MAXIMUM LENGTH WITH A MINIMUM ELBOW RADIUS OF 1.5 X D AND A MINIMUM R = 5 HR SQ. FT.- DEG. F/BTU-IN. THERMAL RESISTANCE. USE ONLY FOR FINAL CONNECTIONS TO CEILING DIFFUSERS. DO NOT USE FOR VAV BOX INLET CONNECTIONS.

15400 PLUMBING

4.10 DRAIN, WASTE AND VENT PIPING:

- A. BELOW GRADE:
 - 1. PVC PIPE ASTM D2665, WITH PVC FITTINGS AND ASTM D2855 SOLVENT WELD JOINTS WITH ASTM D2564 SOLVENT CEMENT.
 - 2. NO-HUB CAST IRON SANITARY SYSTEM PER CISPI 301-69T.
 - 3. SERVICE WEIGHT CAST IRON HUB AND SPIGOT WITH NEOPRENE GASKET, PER CISPI HSN-66T.
- B. ABOVE GRADE:
 - 1. NO-HUB CAST IRON SANITARY SYSTEM PER CISPI 301-69T.
 - 2. GALVANIZED PIPE WITH CAST IRON DRAINAGE FITTINGS.
 - 3. INDIRECT DRAINS: COPPER TUBE, ASTM B306, DWV, WITH COPPER FITTINGS AND SOLDERED JOINTS.

4.20 DOMESTIC (POTABLE) WATER SUPPLY PIPING:

- A. BELOW GRADE: TYPE K SOFT TEMPER COPPER TUBE, WITH NO JOINTS.
- B. ABOVE GRADE: TYPE L HARD TEMPER COPPER TUBE PER ASTM B88, WITH WROUGHT COPPER FITTINGS PER USAS1 B16.18 AND .18A.
- C. JOINTS: USE ONLY 95/5 LEAD-FREE SOLDER IN POTABLE WATER PIPING. PROVIDE DIELECTRIC UNIONS AT EVERY JUNCTION OF TWO DISSIMILAR METAL PIPE MATERIALS.

4.30 NATURAL GAS PIPING, ABOVE GRADE:

- A. PIPE SIZE 2" AND SMALLER: ASTM A53 SCHEDULE 40 BLACK STEEL PIPE, WITH CLASS 150 MALLEABLE IRON FITTINGS AND THREADED JOINTS.
- B. PIPE SIZE 2-1/2" AND LARGER: ASTM A53 SCHEDULE 40 BLACK STEEL PIPE, WITH FORGED STEEL FITTINGS AND BUTT-WELDED JOINTS.
- C. EXTERIOR PIPING SHALL BE GALVANIZED, PAINTED OR COATED WITH AN APPROVED RUST-RESISTANT COATING.
- D. ROOF-MOUNTED PIPING SHALL BE SUPPORTED 10' O.C. WITH PRE-MANUFACTURED PIPE SUPPORTS.

4.40 VALVES: FURNISH AND INSTALL VALVES WHERE INDICATED ON PLAN AND AS NECESSARY FOR PROPER SYSTEM OPERATION AND COMPONENT ISOLATION. PROVIDE VALVES RATED FOR 125 PSIG OR GREATER WORKING PRESSURE IN WATER PIPING.

- A. CHECK VALVE UP TO 3": CRANE NO. 37, OR EQUAL.
- B. GLOBE VALVE UP TO 3": CRANE NO. 1, 17TF, OR EQUAL.
- C. GATE VALVE UP TO 3": CRANE NO. 428, 1334, OR EQUAL.
- D. BALL VALVE UP TO 3": APOLLO SERIES 70-100, 70-200, OR EQUAL.
- E. SHOCKSTOP: WADE W-5 (HOT), WADE W-10 (COLD), OR EQUAL.
- F. BACKFLOW PREVENTER: WATTS NO. 98D, OR EQUAL.
- G. VACUUM RELIEF VALVE: WATTS NO. N36 - 3/4", OR EQUAL.
- H. PRESSURE REDUCING VALVE: WATTS NO. U5 SERIES, OR EQUAL.
- I. TRAP SEAL PRIMER: JOSAM NO. 88250.

4.50 PLUMBING FIXTURES AND EQUIPMENT: FURNISH AND INSTALL PLUMBING FIXTURES AND EQUIPMENT AS SCHEDULED ON DRAWINGS, OR APPROVED EQUAL.

4.60 INSTALLATION:

- A. INSTALL AND SECURE FIXTURES IN PLACE WITH WALL CARRIERS AND BOLTS. PROVIDE BRACKETS, BRACES AND REINFORCING ANGLES AS REQUIRED IN ALL PARTITIONS NOT SUFFICIENT IN THEMSELVES TO SUPPORT PLUMBING FIXTURES OR OTHER WALL-HUNG EQUIPMENT.
- B. INSTALL EACH FIXTURE WITH CHROME PLATED, 17 GAUGE TUBING TRAP WITH CLEANOUT, EASILY REMOVABLE FOR SERVICING AND CLEANING.
- C. INSTALL COMPONENTS LEVEL, PLUMB AND SECURE.
- D. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT, COLOR TO MATCH FIXTURE.
- E. ROUTE PIPING IN ORDERLY MANNER. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE. GROUP PIPING AT COMMON ELEVATION WHENEVER PRACTICAL. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED FIXTURES/EQUIPMENT. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.
- F. INSTALL NON-CONDUCTING DIELECTRIC CONNECTIONS WHENEVER JOINING DISSIMILAR METALS.
- G. PROVIDE SHUT-OFF VALVES AT ALL SUPPLY CONNECTIONS TO FIXTURES AND EQUIPMENT.
- H. INSULATE SUPPLY AND WASTE PIPES OF ALL HANDICAP FIXTURES. I. EXPOSED WATER PIPING SHALL BE CHROME-PLATED BRASS.

4.95 CLEANING AND TESTING: CLEAN, DISINFECT, AND TEST ALL PLUMBING AND PIPING SYSTEMS.

15500 HVAC PIPING AND SPECIALTIES

5.65 MISCELLANEOUS DRAIN LINES, RECEIVING COOLING COIL CONDENSATE, DRIP FOR HUMIDIFIERS, ETC.: TYPE "DWV" COPPER, WITH WROUGHT COPPER FITTINGS AND SOLDERED JOINTS.

15600 HVAC EQUIPMENT

6.10 GENERAL

- A. FURNISH AND INSTALL HVAC EQUIPMENT AS SCHEDULED ON DRAWINGS, OR APPROVED EQUAL.
- B. ALL EQUIPMENT SHALL BE NEW, OF COMMERCIAL QUALITY, AND MANUFACTURED BY AN APPROVED, NATIONALLY RECOGNIZED MANUFACTURER AS SCHEDULED ON DRAWINGS.
- C. ALL EQUIPMENT SHALL BE UL LISTED, AND CERTIFIED BY ARI, AMCA, OR OTHER APPLICABLE INDUSTRY STANDARD ORGANIZATION.
- D. INSTALLATION:
 - 1. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - 2. MAINTAIN SERVICE CLEARANCES RECOMMENDED BY MANUFACTURER.
 - 3. ALL EQUIPMENT SHALL BE SUPPORTED WITH VIBRATION ISOLATORS.
 - 4. ALL ROOF-MOUNTED EQUIPMENT SHALL BE SUPPORTED WITH FACTORY-FABRICATED FULL PERIMETER CURBS, UNLESS NOTED OTHERWISE. ALL SUPPORTS FOR ROOF-MOUNTED EQUIPMENT SHALL BE FLISHED INTO THE ROOF SYSTEM.
 - 5. CHANGE FILTERS ON ALL HVAC EQUIPMENT PRIOR TO TURN-OVER TO TENANT.

6.20 EXISTING EQUIPMENT BEING RE-USED SHALL BE CLEANED AND REFURBISHED AS NOTED ON DRAWINGS.

15800 DUCTWORK AND APPURTENANCES

8.10 SHEET METAL DUCTWORK:

- A. FABRICATE AND INSTALL AS RECOMMENDED IN LATEST EDITIONS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS--METAL AND FLEXIBLE AND THE ASHRAE GUIDE AND DATA BOOK FOR SHEET METAL DUCTWORK SERVING SUPPLY, RETURN AND EXHAUST SYSTEMS OPERATING BETWEEN -2.0 IN.-W.G. AND +2.0 IN.-W.G. MAXIMUM PRESSURE. INSTALL WHERE INDICATED ON THE PLANS. DUCT SIZES SHOWN ON THE DRAWINGS ARE NOMINAL INSIDE CLEAR DIMENSIONS. WHERE INTERNAL INSULATION IS PROVIDED, DUCT SIZES SHALL BE INCREASED APPROPRIATELY TO MAINTAIN THE INDICATED CLEAR INSIDE DIMENSIONS. ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICE FOR ACHIEVING AIR TIGHT (5% LEAKAGE) AND NOISELESS (NO OBJECTIONABLE NOISE) SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE. FURNISH AND INSTALL ALL REQUIRED DAMPERS, TRANSITIONS, CONNECTIONS TO AIR TERMINALS, AND OTHER ACCESSORIES NECESSARY FOR A COMPLETE AND PROPERLY OPERATING SYSTEM.
- B. FABRICATE DUCTWORK FROM GALVANIZED SHEET STEEL COMPLYING WITH ANSI/ASTM A-527, LOCKFORMING QUALITY, WITH ANSI/ASTM A-525 G90 ZINC COATING; MILL PHOSPHATIZED FOR EXPOSED LOCATIONS. MINIMUM SHEET THICKNESS AND REINFORCING SHALL BE AS FOLLOWS:
 - DUCTS UP TO 12" WIDEST DIMENSION OR DIAMETER: 26 GAUGE.
 - DUCTS 13" TO 24" WIDEST DIMENSION: 24 GAUGE.
 - DUCTS 25" TO 42" WIDEST DIMENSION: 22 GAUGE.
 - DUCTS 43" TO 84" WIDEST DIMENSION: 20 GAUGE.
- C. DUCT SEALANT: UNITED DUCT SEALER, OR EQUAL.
- D. SUPPORT MATERIALS: EXCEPT AS OTHERWISE INDICATED, PROVIDE HOT-DIPPED GALVANIZED STEEL FASTENERS, ANCHORS, RODS STRAPS, TRIM AND ANGLES FOR SUPPORT OF DUCTWORK.
- E. ANY SUPPLY DUCTWORK AND PLENUMS THAT ARE DESIGNED TO OPERATE AT STATIC PRESSURE FROM 0.25 INCHES TO 2 INCHES WATER COLUMN INCLUSIVE WHICH ARE LOCATED OUTSIDE OF THE CONDITIONED SPACE OR IN RETURN PLENUMS SHALL HAVE JOINTS SEALED IN ACCORDANCE WITH SEAL CLASS C AS DEFINED IN THE SMACNA HVAC DUCT LEAKAGE TEST MANUAL. PRESSURE SENSITIVE TAPE SHALL NOT BE USED AS THE PRIMARY SEALANT WHERE SUCH DUCTS ARE DESIGNED TO OPERATE AT STATIC PRESSURES OF 1 INCH WATER COLUMN OR GREATER.
- F. EXPOSED DUCTWORK: EXPOSED DUCTWORK SHALL HAVE A PAINTABLE FINISH ON THE EXTERIOR SURFACE.

8.20 DUCTWORK ACCESSORIES:

- A. BALANCING DAMPERS: AIR BALANCE, INC., LOUVERS & DAMPERS, INC., RUSKIN OR EQUAL. PROVIDE MANUAL, SINGLE OR MULTIBLADE DAMPERS, AS INDICATED AND AS CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS.
- B. DAMPERS SHALL HAVE RIGID 2" X 1/2" X 10 GAUGE CHANNEL FRAMES, BALL OR BRONZE SLEEVE BEARINGS, 1/2" POLISHED STEEL AXLES, 16-GAUGE, REINFORCED, FELT-EDGED BLADES (NOT OVER 8" WIDE) AND STOP FRAMES AROUND THE ENTIRE PERIMETER. VOLUME DAMPERS IN DUCTS LARGER THAN 12" X 6" SHALL BE THE OPPOSED BLADE TYPE. DAMPERS IN ROUND DUCTS AND DUCTS 12" X 6" AND SMALLER SHALL BE BUTTERFLY TYPE. ROUND BUTTERFLY TYPE VOLUME DAMPERS SHALL BE 30 GAUGE, GALVANIZED STEEL THROUGH 12" DIAMETER; 28 GAUGE FOR ABOVE 12".
- C. ALL DAMPERS SHALL BE EQUIPPED WITH STANDARD QUADRANTS OF SUITABLE SIZE IN EQUIPMENT ROOMS/AREAS AND YOUNG #301A, OR EQUAL, RECESSED-TYPE IN FINISHED AREAS. PROVIDE QUADRANT LOCKING DEVICE FOR EACH DAMPER ON ONE END OF THE SHAFT AND AN END BEARING PLATE ON THE OTHER END FOR DAMPER LENGTHS OVER 12". PROVIDE EXTENDED QUADRANT LOCKS AND EXTENDED BEARING PLATES FOR EXTERNALLY INSULATED DUCTWORK. APPROVED MANUFACTURERS ARE VENTFABRICS, AND YOUNG REGULATOR CO.
- D. DAMPERS SHALL BE COATED WITH RED ZINC CHROMATE PRIMER OVER A BOND COAT.
- E. VOLUME DAMPERS, SPLITTERS AND DEFLECTORS SHALL BE PROVIDED IN ALL DUCTS TO PERMIT ACCURATE BALANCING OF THE SYSTEM. THE DAMPERS, SPLITTERS AND DEFLECTORS SHALL BE ADJUSTED TO SATISFY THE HEATING AND VENTILATING REQUIREMENTS OF THE CONDITIONED SPACE AND LOCKED IN PLACE.
- F. WHERE SHOWN ON DRAWINGS AND IN CASES OF INACCESSIBLE VOLUME DAMPERS, PROVIDE REMOTELY ADJUSTABLE VOLUME DAMPERS, YOUNG REGULATOR, OR EQUAL.

8.40 AIR OUTLETS AND INLETS: FURNISH AND INSTALL AIR TERMINALS AS SCHEDULED ON DRAWINGS, OR APPROVED EQUAL. THE CONTRACTOR SHALL PROVIDE MISCELLANEOUS ITEMS AS NECESSARY FOR A COMPLETE AND PROPER INSTALLATION IN THE TYPES OF WALLS AND CEILINGS USED ON THE PROJECT. THIS SHALL INCLUDE SUCH ITEMS AS FASTENERS, PLASTER RINGS, SUPPORTS, ETC.

8.60 FLEXIBLE CONNECTIONS: PROVIDE FLEXIBLE DUCT CONNECTIONS WHEREVER DUCTWORK CONNECTS TO VIBRATION ISOLATED EQUIPMENT AND WHERE SHOWN OR NOTED. MAKE AIR-TIGHT JOINTS. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR THERMAL, AXIAL, TRANSVERSE AND TORSIONAL MOVEMENT.

15900 SYSTEM CONTROL AND OPERATION

9.10 SPACE TEMPERATURE CONTROL: FURNISH AND INSTALL, UNLESS NOTED OTHERWISE, ALL THERMOSTATS, SENSORS, CONTROLLERS, RELAYS, CONTACTORS, DAMPERS, ACTUATORS, TUBING, CONTROL WIRING AND ALL OTHER ITEMS AND MATERIALS NECESSARY FOR A COMPLETE AND PROPERLY OPERATING TEMPERATURE CONTROL SYSTEM AS SPECIFIED. ALL THERMOSTATS AND OTHER CONTROL COMPONENTS SHALL BE HONEYWELL, OR APPROVED EQUAL, UNLESS SPECIFIED OTHERWISE. ALL CONTROL WIRING SHALL BE BY MECHANICAL CONTRACTOR AND SHALL BE INSTALLED IN CONDUIT IN ACCORDANCE WITH DIVISION 16.

9.11 THERMOSTATS: REFER TO "HVAC CONTROLS" ON DRAWINGS.

9.20 SEQUENCE OF OPERATION: REFER TO "HVAC CONTROLS" ON DRAWINGS.

15950 TESTING, ADJUSTING, BALANCING

9.51 NEBB, AABC, OR TABB CERTIFIED TESTING AND BALANCING CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING AND BALANCING OF EVERY HEATING, VENTILATING AND AIR CONDITIONING SYSTEM. THE PERSON OR AGENCY RESPONSIBLE FOR BALANCING OF THE SYSTEMS SHALL DOCUMENT IN WRITING THE AMOUNT OF OUTDOOR AIR BEING PROVIDED AND DISTRIBUTED FOR THE BUILDING OCCUPANTS AND ANY OTHER SPECIALTY VENTILATION. TWO (2) COPIES OF A WRITTEN REPORT IN FORMAT LISTED ABOVE SHALL BE SUBMITTED TO THE OWNER, TWO (2) COPIES SHALL BE SUBMITTED TO THE LANDLORD PRIOR TO OCCUPANCY, AND TWO (2) COPIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

9.52 AIR SYSTEMS SHALL BE BALANCED IN A MANNER TO MINIMIZE LOSSES FROM DAMPER THROTTLING BY FIRST ADJUSTING FAN SPEED, THEN ADJUSTING DAMPERS IN MAIN DUCTS, AND THEN ADJUSTING DAMPERS IN BRANCH DUCTS IN ORDER TO MEET DESIGN FLOW CONDITIONS. FOR VAV SYSTEMS, ENSURE THAT ALL VAV BOXES ON THIS AIR HANDLER ARE ADJUSTED TO THEIR RESPECTIVE MAXIMUM SETPOINTS DURING BALANCING TO ENSURE PROPER AIRFLOW WHEN SYSTEM IS OPERATING AT MAXIMUM (PEAK) COOLING CAPACITY. COORDINATE SETTING OF VAV BOXES IN OTHER TENANT SPACES IN FIELD WITH LANDLORD'S FIELD REPRESENTATIVE.

9.53 HVAC CONTROL SYSTEMS SHALL BE TESTED TO ASSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND IN PROPER WORKING ORDER.

A. MECHANICAL CONTRACTOR SHALL HIRE A COMMISSIONING AGENT APPROVED BY THE AUTHORITY HAVING JURISDICTION TO PROVIDE THE COMMISSIONING OF THE FOLLOWING SYSTEMS (AS APPLICABLE FOR THIS PROJECT):

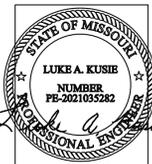
- 1. AIR SYSTEMS BALANCING.
- 2. FUNCTIONAL PERFORMANCE TESTING.
- 3. ECONOMIZERS.
- 4. CONTROLS.
- 5. MECHANICAL EQUIPMENT.

 B. COMMISSIONING AGENT SHALL PROVIDE WRITTEN REPORT ON ALL SYSTEMS COMMISSIONED. THIS REPORT SHALL BE PROVIDED TO THE TENANT, LANDLORD AND AUTHORITY HAVING JURISDICTION AS REQUIRED.



DAMIAN
FARRELL
DESIGN
GROUP

359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331



FOR PERMIT ISSUE

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET
CHECKED	LAK
DRAWN	TMS
HEI PROJECT NO.	R23-4590.006

MECHANICAL
SPECIFICATIONS

M2.0



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ENGINEERING
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01.12.2024

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3125 GREEN MOUNTAIN DRIVE
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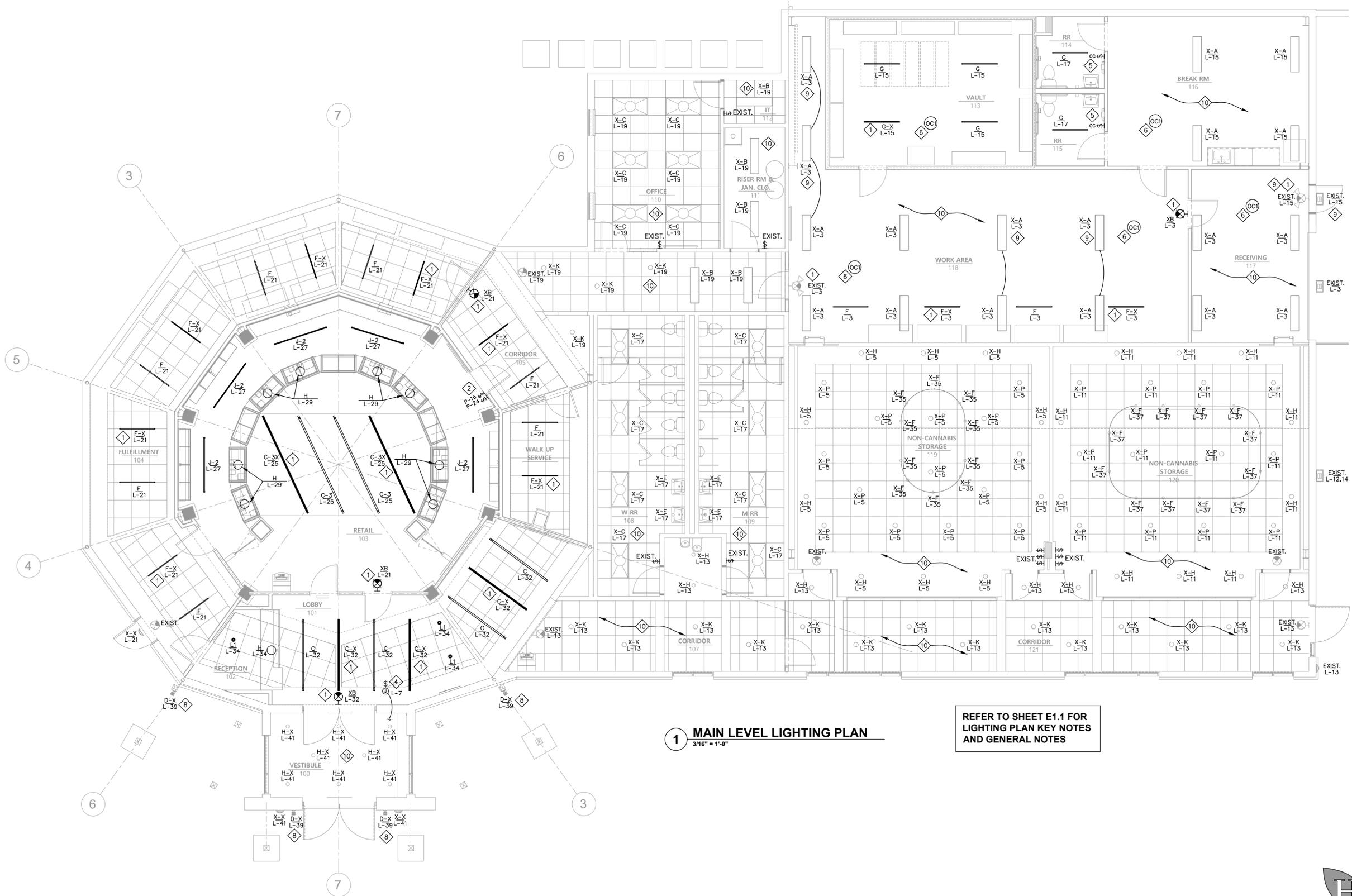
DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

CHECKED	DJQ/PJF
DRAWN	BJK
HEI PROJECT NO.	R23-4590.006

MAIN LEVEL LIGHTING PLAN

E1.0

H
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Mechanical/Electrical Consulting Engineers
1750 Commerce Court
White Bear Lake, MN 55110
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1 MAIN LEVEL LIGHTING PLAN
3/16" = 1'-0"

REFER TO SHEET E1.1 FOR
LIGHTING PLAN KEY NOTES
AND GENERAL NOTES



DAMIAN FARRELL DESIGN GROUP

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01.12.2024

FOR PERMIT ISSUE

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

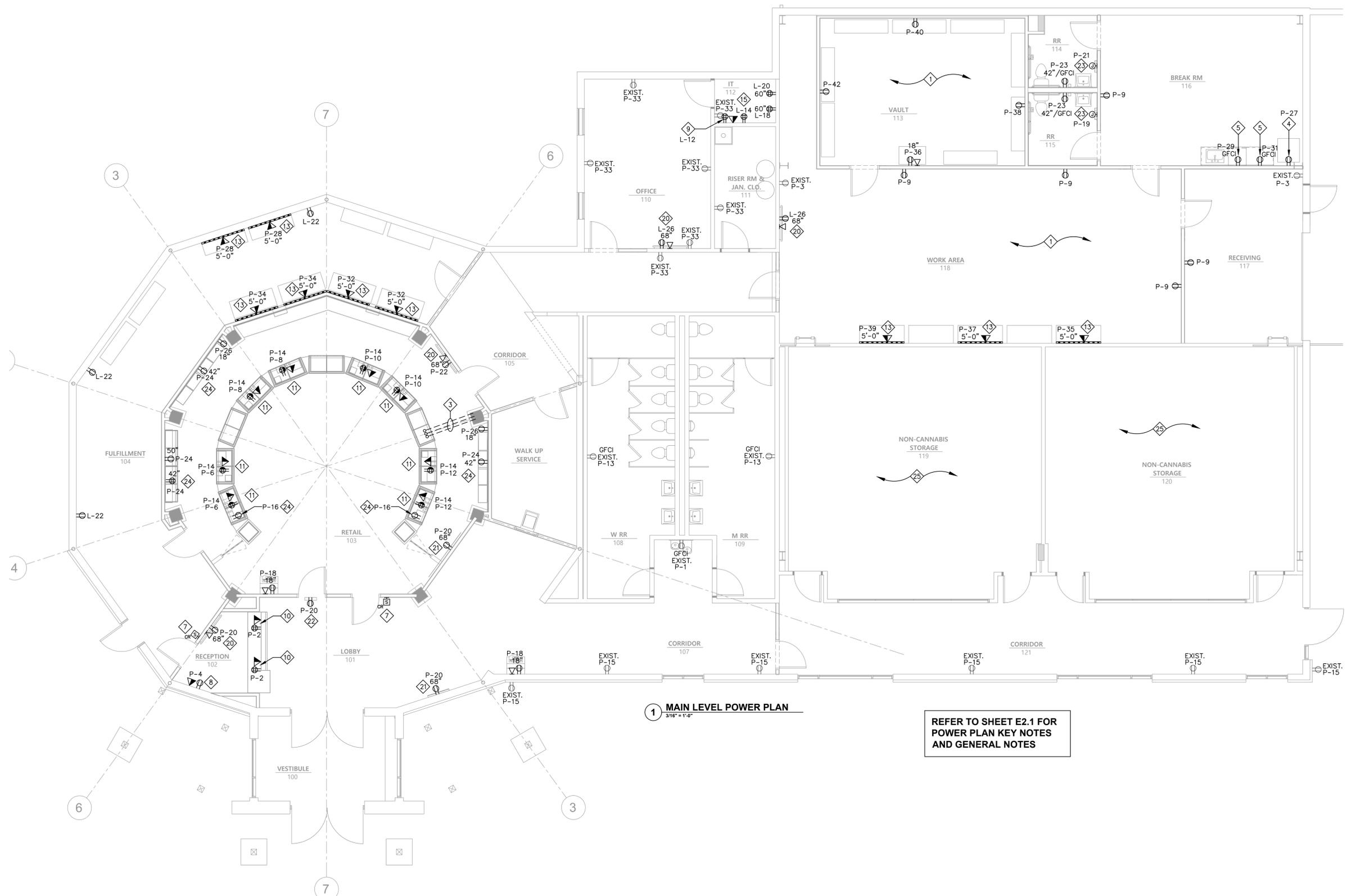
DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

CHECKED	DJQ/PJF
DRAWN	BJK
HEI PROJECT NO.	R23-4590.006

**MAIN LEVEL
POWER PLAN**

E2.0


**HALLBERG
ENGINEERING**
Mechanical/Electrical Consulting Engineers
1750 Commerce Court
White Bear Lake, MN 55110
Phone (651) 748-1100 • Fax (651) 748-3370



1 MAIN LEVEL POWER PLAN
3/16" = 1'-0"

REFER TO SHEET E2.1 FOR
POWER PLAN KEY NOTES
AND GENERAL NOTES



DAMIAN
FARRELL
DESIGN
GROUP

359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331



01.12.2024

FOR PERMIT ISSUE

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

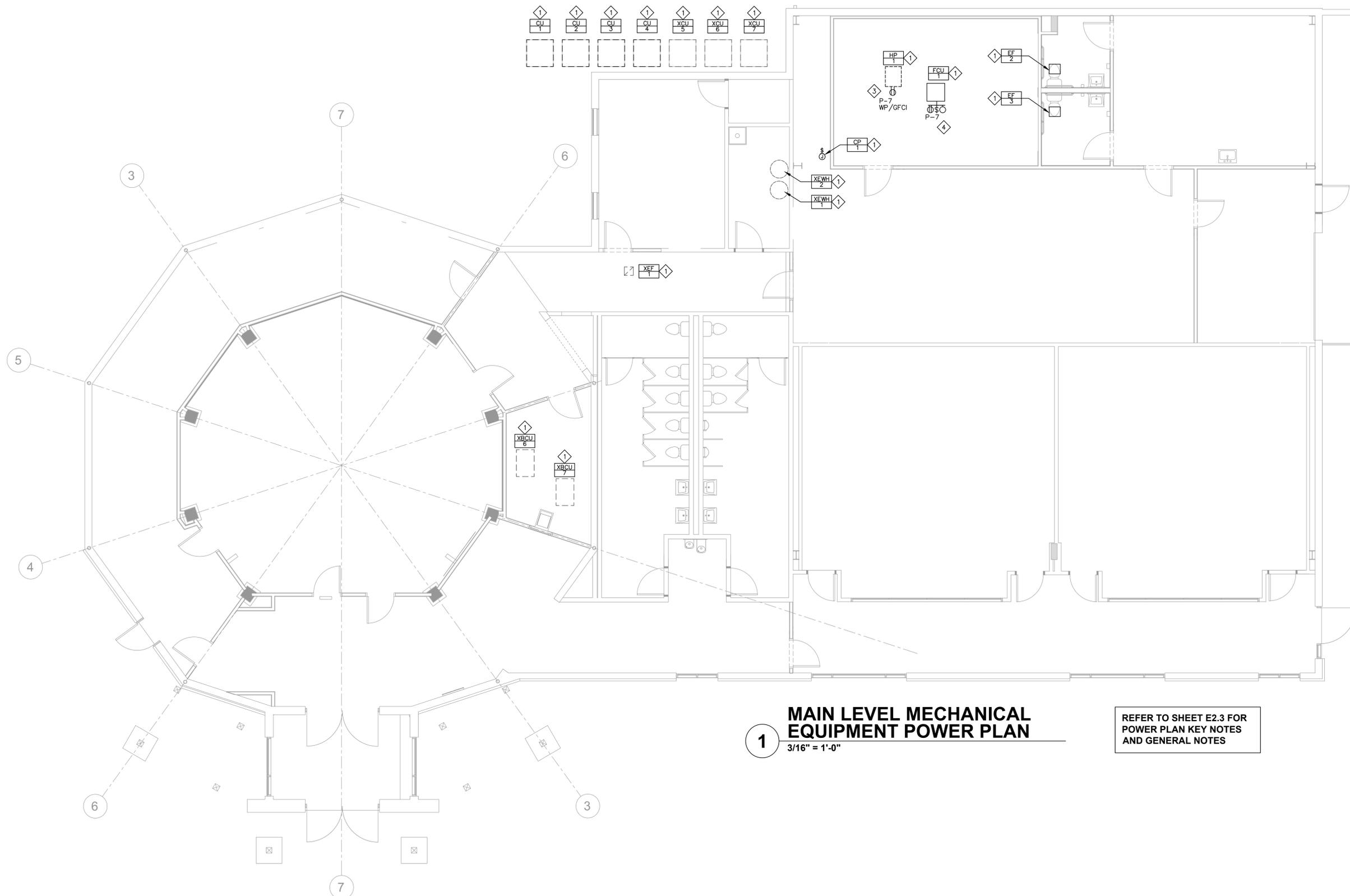
DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

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HEI PROJECT NO.	R23-4590.006

**MAIN LEVEL
MECHANICAL
EQUIPMENT PLAN**

E2.2


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01.12.2024

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

FOR PERMIT ISSUE

DATE

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01.12.2024

DESCRIPTION

REVIEW SET
PERMIT SET

CHECKED DJQ/PJF
DRAWN BJK
HEI PROJECT NO. R23-4590.006

ELEC. ONE-LINE
DIAGRAM &
PANEL SCHEDULES

E3.0



HALLBERG ENGINEERING
Mechanical/Electrical Consulting Engineers
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EXISTING PANEL 'M-A'												
Location: Mezzanine		AIC: EXISTING										208/120 Volt, 3ø, 4w
Mounting: Surface												Main: MCB 400A
Circuit Description	KVA	CB	NO.	NOTE	A	B	C	NOTE	NO.	CB	KVA	Circuit Description
WATER HEATER (XEWH-1)	3.7		1		X				2	50/2	2.8	CU-1
	3.7	40/3	3	C		X			4		2.8	
	3.7		5				X		6	30/2	1.7	CU-2
	3.7		7		X				8		1.7	
WATER HEATER (XEWH-2)	3.7	40/3	9	C		X			10	50/2	2.8	CU-3
	3.7		11				X		12		2.8	
FCU-1/HP-1	0.8	20/2	13	B	X				14	50/2	2.8	CU-4
	0.8		15			X			16		2.8	
SPARE			17				X		18	20/1		SPARE
SPACE			19		X				20			
SPACE			21			X			22	30/3		SPARE
SPACE			23				X		24			
SPACE			25		X				26		2.3	
SPACE			27			X			28	40/3	2.3	XCU-5
SPACE			29				X		30		2.3	
SPACE			31		X				32		2.3	
SPACE			33			X			34	40/3	2.3	XCU-6
SPACE			35				X		36		2.3	
SPACE			37		X				38		2.3	
SPACE			39			X			40	40/3	2.3	XCU-7
SPACE			41				X		42		2.3	
CONNECTED KVA:	163.4				A	B	C					DESIGN DEMAND KVA:
CONNECTED HIGH PHASE AMPS:	470.0				55.3	56.4	51.7					DESIGN DEMAND AMPS:
												120.9
												335.8

PANEL NOTES:
A - PROVIDE CIRCUIT BREAKER WITH LOCK-ON DEVICE.
B - PROVIDE HACR CIRCUIT BREAKER.
C - EXISTING BREAKER TO REMAIN. NO NEW LOAD ON CIRCUIT.
BALANCE PHASE LOADS TO WITHIN 10% OF EACH OTHER.

EXISTING PANEL 'M-B'												
Location: Mezzanine		AIC: EXISTING										208/120 Volt, 3ø, 4w
Mounting: Surface												Main: MLO 400A
Circuit Description	KVA	CB	NO.	NOTE	A	B	C	NOTE	NO.	CB	KVA	Circuit Description
XBCU-1	4.1		1		X				2			
	4.1	45/3	3	C		X			4	20/3		SPARE
	4.1		5				X		6			
	4.1		7		X				8			
XBCU-2	4.1	45/3	9	C		X			10	20/3		SPARE
	4.1		11				X		12			
XBCU-3	2.9	30/3	13	C	X				14		2.0	XBCU-3
	2.9		15			X			16	30/3	2.0	
	2.9		17				X		18		2.0	
	4.1		19		X				20		1.0	
XBCU-4	4.1	45/3	21	C		X			22	20/3	1.0	SPARE
	4.1		23				X		24		1.0	
	2.9		25		X				26		2.0	
XBCU-5	2.9	30/3	27	C		X			28	30/3	2.0	XBCU-5
	2.9		29				X		30		2.0	
	2.9		31		X				32		2.0	
XBCU-6	2.9	30/3	33	C		X			34	30/3	2.0	XBCU-6
	2.9		35				X		36		2.0	
	2.9		37		X				38		2.0	
XBCU-7	2.9	30/3	39				X		40	30/3	2.0	XBCU-7
	2.9		41					X	42		2.0	
CONNECTED KVA:	98.7				A	B	C					DESIGN DEMAND KVA:
CONNECTED HIGH PHASE AMPS:	274.2				32.9	32.9	32.9					DESIGN DEMAND AMPS:
												101.8
												282.7

PANEL NOTES:
A - PROVIDE CIRCUIT BREAKER WITH LOCK-ON DEVICE.
B - PROVIDE HACR CIRCUIT BREAKER.
C - EXISTING BREAKER TO REMAIN. NO NEW LOAD ON CIRCUIT.
BALANCE PHASE LOADS TO WITHIN 10% OF EACH OTHER.

EXISTING PANEL 'P'												
Location: Mezzanine		22,000 AIC										208/120 Volt, 3ø, 4w
Mounting: Surface												Main: MCB 400A
Circuit Description	KVA	CB	NO.	NOTE	A	B	C	NOTE	NO.	CB	KVA	Circuit Description
DRINKING FOUNTAIN	0.5	20/1	1	D	X				2	20/1	0.8	RECEPTION RECEPTACLES
WAREHOUSE RECEPTACLES	0.2	20/1	3	D		X			4	20/1	0.7	PRINTER/ROUTER
CP-1	0.1	20/1	5	A			X	A	6	20/1	0.8	P.O.S. DED. RECS.
HVAC UNIT LIGHT/RECEPTACLES	0.4	20/1	7		X				8	20/1	0.8	P.O.S. DED. RECS.
BACK OF HOUSE CONV. RECEPTACLES	0.9	20/1	9			X		A	10	20/1	0.8	P.O.S. DED. RECS.
SPARE			11				X	A	12	20/1	0.8	P.O.S. DED. RECS.
TOILET RECEPTACLES/EF-1	0.4	20/1	13	D	X				14	20/1	1.5	P.O.S. GENERAL RECS.
CORRIDOR RECEPTACLES	1.1	20/1	15	D		X			16	20/1	0.5	DISPLAY CASE LIGHTING
EXISTING HANDICAP DOOR ACTUATOR	1.0	20/1	17	D			X	A	18	20/1	1.0	ATM MACHINES
HAND DRYER	0.6	20/1	19	C	X			A	20	20/1	1.2	INTERIOR SIGNS
HAND DRYER	0.6	20/1	21	C		X		A	22	20/1	0.5	TV RECEPTACLES
RESTROOM RECEPTACLES	0.4	20/1	23				X	A	24	20/1	0.5	WALL CASEWORK DISPLAY LIGHTS
MEZZANINE MECH RECEPTACLES	0.8	20/1	25	D	X				26	20/1	0.4	RETAIL AREA RECEPTACLES
REFRIGERATOR	1.0	20/1	27	C			X		28	20/1	1.0	FULFILLMENT AREA PLUGMOLD
MICROWAVE	1.0	20/1	29				X		30	20/1		SPARE
APPLIANCE RECEPTACLE	0.5	20/1	31		X				32	20/1	1.0	FULFILLMENT AREA PLUGMOLD
OFFICE RECEPTACLES	1.3	20/1	33	D		X			34	20/1	1.0	FULFILLMENT AREA PLUGMOLD
WORK AREA PLUGMOLD	0.5	20/1	35				X	A	36	20/1	1.0	SAFE POWER
WORK AREA PLUGMOLD	0.5	20/1	37			X			38	20/1	0.2	VAULT P.O.S. DED. REC.
WORK AREA PLUGMOLD	0.5	20/1	39			X			40	20/1	0.2	VAULT P.O.S. DED. REC.
SPARE			41					X	42	20/1	0.2	VAULT P.O.S. DED. REC.
CONNECTED KVA:	57.4				A	B	C					DESIGN DEMAND KVA:
CONNECTED HIGH PHASE AMPS:	186.7				22.4	19.1	15.9					DESIGN DEMAND AMPS:
												64.2
												178.2

PANEL NOTES:
A - PROVIDE CIRCUIT BREAKER WITH LOCK-ON DEVICE.
B - PROVIDE HACR CIRCUIT BREAKER.
C - BREAKER SHALL BE 5 Ma 'G.F.I.' TYPE
D - EXISTING BREAKER TO REMAIN. NO NEW LOAD ON CIRCUIT.
BALANCE PHASE LOADS TO WITHIN 10% OF EACH OTHER.

EXISTING - - - - -
NEW - - - - -

POWER RISER DIAGRAM NOTES

- EXISTING PAD MOUNTED UTILITY TRANSFORMER TO REMAIN. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
- EXISTING CONDUIT(S) AND 800 AMP FEEDER WIRE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
- EXISTING 800A/3P, NEMA 3R, FUSED DISCONNECT SWITCH WITH (3) 800A FUSES. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
- EXISTING 3-1/2" C.-4#500 KCMIL CU, + 1#3 GND. TO REMAIN. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
- EXISTING 120/208V, 3PH, 4W PANELS 'M-A', 'M-B', 'P' AND 'L' TO REMAIN. REFER TO PANEL SCHEDULES ON THIS SHEET FOR ADDITIONAL INFORMATION.

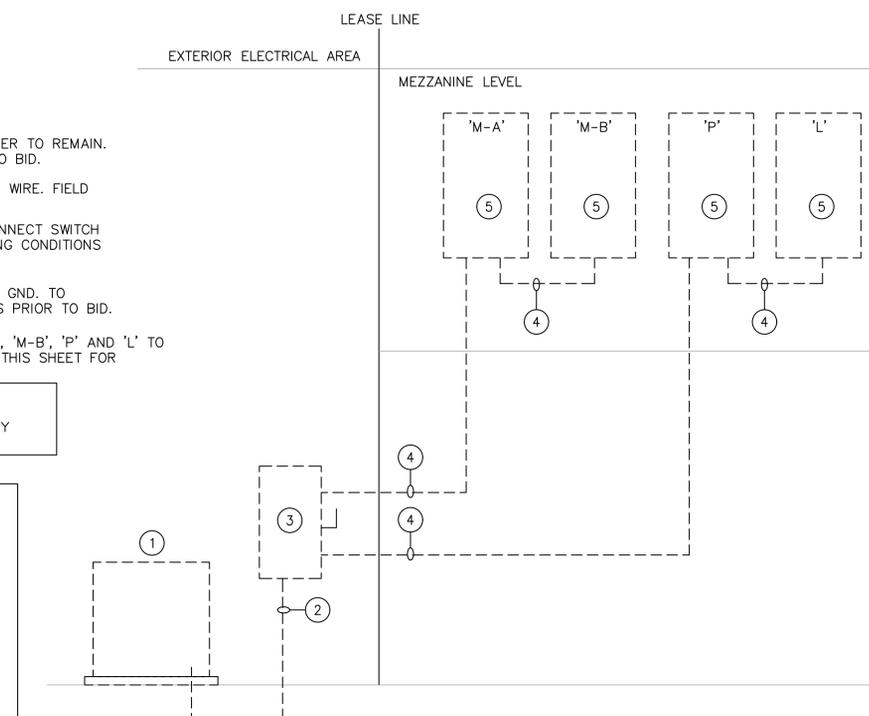
NOTE:
ELECTRICAL SYSTEM SHALL BE GROUNDED AND BONDED PER NEC REQUIREMENTS AND AUTHORITY HAVING JURISDICTION.

LOAD SUMMARY - PANEL 'M-A'			
	CONNECTED	KVA	DESIGN DEMAND
LIGHTING	0.0	1.25	0.0
RECEPTACLES	0.0	1.0	0.0
SIGN	0.0	1.25	0.0
WATER HEATER	22.2	1.0	22.2
HVAC (LARGEST)	0.0	1.25	0.0
HVAC (REMAINING)	98.7	1.0	98.7
HVAC (NONCOINCIDENTAL)	42.5	0.0	0.0
MISCELLANEOUS	0.0	1.0	0.0
TOTAL KVA:	163.4		120.9
TOTAL AMPS:	453.9		335.8

LOAD SUMMARY - PANEL 'M-B'			
	CONNECTED	KVA	DESIGN DEMAND
LIGHTING	0.0	1.25	0.0
RECEPTACLES	0.0	1.0	0.0
SIGN	0.0	1.25	0.0
WATER HEATER	0.0	1.0	0.0
HVAC (LARGEST)	12.3	1.25	15.4
HVAC (REMAINING)	86.4	1.0	86.4
HVAC (NONCOINCIDENTAL)	0.0	0.0	0.0
MISCELLANEOUS	0.0	1.0	0.0
TOTAL KVA:	98.7		101.8
TOTAL AMPS:	274.2		282.7

LOAD SUMMARY - PANEL 'P'			
	CONNECTED	KVA	DESIGN DEMAND
LIGHTING	22.2	1.25	27.8
RECEPTACLES	8.9	1.0	8.9
SIGN	4.8	1.25	6.0
WATER HEATER	0.0	1.0	0.0
HVAC (LARGEST)	0.0	1.25	0.0
HVAC (REMAINING)	0.1	1.0	0.1
HVAC (NONCOINCIDENTAL)	0.0	0.0	0.0
MISCELLANEOUS	21.4	1.0	21.4
TOTAL KVA:	57.4		64.2
TOTAL AMPS:	159.4		178.2

LOAD SUMMARY - PANEL 'L'			
	CONNECTED	KVA	DESIGN DEMAND
LIGHTING	21.2	1.25	26.5
RECEPTACLES	0.6	1.0	0.6
SIGN	3.6	1.25	4.5
WATER HEATER	0.0	1.0	0.0
HVAC (LARGEST)	0.0	1.25	0.0
HVAC (REMAINING)	0.0	1.0	0.0
HVAC (NONCOINCIDENTAL)	0.0	0.0	0.0
MISCELLANEOUS	4.8	1.0	4.8
TOTAL KVA:	30.2		36.4
TOTAL AMPS:	83.9		101.1



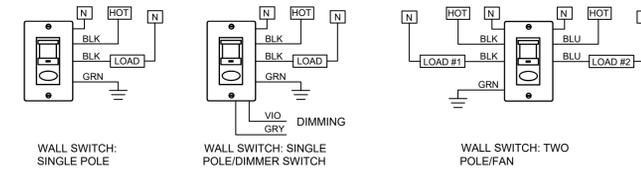
1 POWER RISER DIAGRAM NOTES

EXISTING PANEL 'L'												
Location: Mezzanine		22,000 AIC										208/120 Volt, 3ø, 4w
Mounting: Surface												Main: MLO 400A
Circuit Description	KVA	CB	NO.	NOTE	A	B	C	NOTE	NO.	CB	KVA	Circuit Description
MEZZANINE/MECH LIGHTS	1.2											

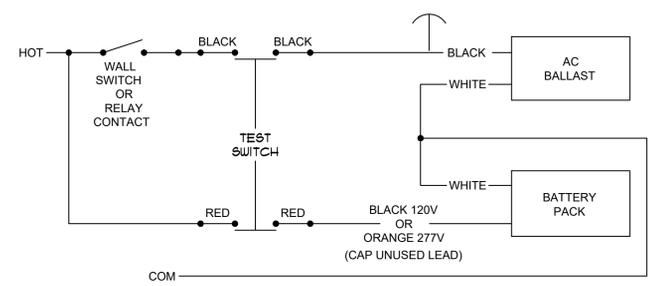
INTERIOR LIGHTING FIXTURE SCHEDULE					
TYPE	DESCRIPTION	LAMPS	VOLTAGE	MANUFACTURER AND MODEL NO.	COMMENTS
'A' NOT USED	2' x 2' SURFACE MOUNTED LED PANEL	31.4w LED 3500K	MVOLT	ELITE #22-FPL-BL-LED-3000L-DIM10-MVOLT-35K-85 W/ 22-FPL1-LED-SMK	0-10V DIMMING DRIVER, ALUMINUM FRAME AND SATIN WHITE LENS
'A2' NOT USED	2' x 2' SUSPENDED LED PANEL	31.4w LED 3500K	MVOLT	ELITE #22-FPL-BL-LED-3000L-DIM10-MVOLT-35K-85 W/ 22-FPL1-LED-SMK-GSS	0-10V DIMMING DRIVER, ALUMINUM FRAME AND SATIN WHITE LENS, WITH SUSPENSION KIT
'B' NOT USED	2' x 4' SURFACE MOUNTED LED PANEL	38.8w LED 3500K	MVOLT	ELITE #24-FPL-BL-LED-3000L-DIM10-MVOLT-35K-85	0-10V DIMMING DRIVER, ALUMINUM FRAME AND SATIN WHITE LENS
'BX' NOT USED	2' x 4' SURFACE MOUNTED LED PANEL	45.8w LED 3500K	MVOLT	ELITE #24-FPL-BL-LED-3000L-DIM10-MVOLT-35K-85 -O-EMG-LED-10W	SIMILAR TO TYPE 'B1' EXCEPT PROVIDED WITH A MINIMUM 90 MINUTE EMERGENCY BATTERY BACK-UP
'C'	8'-0" LONG PENDANT MOUNTED LINEAR LED FIXTURE	40w LED 3000K	120V	ALW #RLP1S-S8-LOW/80/3000/0-10V/S-EXT-SB-UNV	ELV DIMMING DRIVER, EXTRUDED ALUMINUM HOUSING WITH SATIN BLACK FINISH, DIFFUSED WHITE LENS
'C-X'	8'-0" LONG PENDANT MOUNTED LINEAR LED FIXTURE WITH REMOTE EMERGENCY BATTERY BACKUP	47w LED 3000K	120V	ALW #RLP1S-S8-LOW/3000/0-10V/S-EXT-SB-UNV-EMB/1	ELV DIMMING DRIVER, EXTRUDED ALUMINUM HOUSING WITH SATIN BLACK FINISH, DIFFUSED WHITE LENS
'C-2' NOT USED	10'-0" LONG PENDANT MOUNTED LINEAR LED FIXTURE	50w LED 3000K	120V	ALW #RLP1S-S10-LOW/80/3000/0-10V/S-EXT-SB-UNV	ELV DIMMING DRIVER, EXTRUDED ALUMINUM HOUSING WITH SATIN BLACK FINISH, DIFFUSED WHITE LENS
'C-2X' NOT USED	10'-0" LONG PENDANT MOUNTED LINEAR LED FIXTURE WITH REMOTE EMERGENCY BATTERY BACKUP	62w LED 3000K	120V	ALW #RLP1S-S10-LOW/3000/0-10V/S-EXT-SB-UNV-EMB/1	ELV DIMMING DRIVER, EXTRUDED ALUMINUM HOUSING WITH SATIN BLACK FINISH, DIFFUSED WHITE LENS
'C-3'	12'-0" LONG PENDANT MOUNTED LINEAR LED FIXTURE	60w LED 3000K	120V	ALW #RLP1S-S12-LOW/80/3000/0-10V/S-EXT-SB-UNV	ELV DIMMING DRIVER, EXTRUDED ALUMINUM HOUSING WITH SATIN BLACK FINISH, DIFFUSED WHITE LENS
'C-3X'	12'-0" LONG PENDANT MOUNTED LINEAR LED FIXTURE WITH REMOTE EMERGENCY BATTERY BACKUP	72w LED 3000K	120V	ALW #RLP1S-S12-LOW/3000/0-10V/S-EXT-SB-UNV-EMB/1	ELV DIMMING DRIVER, EXTRUDED ALUMINUM HOUSING WITH SATIN BLACK FINISH, DIFFUSED WHITE LENS
'D' NOT USED	PIPELINE WALL VANITY 6' LED FIXTURE	5W/FT LED 3000K	120V	ALW #RLP2C-S6-LOW/80/3000/0-10V/S-LENS-SB-UNV	DIMMING DRIVER, BRUSHED ALUMINUM CONSTRUCTION WITH EXTRUDED ACRYLIC DIFFUSER
'F'	4'-0" LONG CHAIN HUNG LED STRIP FIXTURE	47w LED 3500K	120V	ELITE #4-OEC-LED-3000L/4000L/5000L-DIM10-MVOLT-35K-85-O-EMG-LED-10W-OCGSS	0-10V DIMMING DRIVER, COLD ROLLED STEEL CHANNEL WITH BAKED WHITE ENAMEL FINISH AND FROSTED ACRYLIC SNAP ON/SNAP OFF LENS
'F-X'	4'-0" LONG CHAIN HUNG LED STRIP FIXTURE	54w LED 3500K	120V	ELITE #4-OEC-LED-3000L/4000L/5000L-DIM10-MVOLT-35K-85-O-EMG-LED-10W-OCGSS	SIMILAR TO TYPE 'F' EXCEPT PROVIDED WITH A BATTERY BACK-UP
'G'	4'-0" LONG SURFACE MOUNTED LED STRIP FIXTURE	47w LED 3500K	120V	ELITE #4-OEC-LED-3000L/4000L/5000L-DIM10-MVOLT-35K-85	0-10V DIMMING DRIVER, COLD ROLLED STEEL CHANNEL WITH BAKED WHITE ENAMEL FINISH AND FROSTED ACRYLIC SNAP ON/SNAP OFF LENS
'GX' NOT USED	4'-0" LONG SURFACE MOUNTED LED STRIP FIXTURE	54w LED 3500K	120V	ELITE #4-OEC-LED-3000L/4000L/5000L-DIM10-MVOLT-35K-85-O-EMG-LED-10W	SIMILAR TO TYPE 'G' EXCEPT PROVIDED WITH A BATTERY BACK-UP
'H'	12" DIAMETER GLASS GLOBE PENDANT MOUNTED LED FIXTURE	14w LED 3000K	120V	CBMC #ORN-141P-MB W/LED11WA19/OMN/830-DIM-B	1 X 14W LED031 PRO-T38LED (INCLUDED), BLACK FINISH, TRIAC DIMMING
'J' NOT USED	8" ASYMMETRIC WALL WASHER	9W/FT LED 3000K	120V	ALW #CMLS-S8-MED/80/3000/0-10V/S-LENS-TB-UNV-COMBO	0-10V DIMMING, TEXTURED BLACK FINISH, FIXTURE TO BE MOUNTED AT 8'-6" AFF.
'J-2'	6" ASYMMETRIC WALL WASHER	9W/FT LED 3000K	120V	ALW #CMLS-S8-MED/80/3000/0-10V/S-LENS-TB-UNV-COMBO	0-10V DIMMING, TEXTURED BLACK FINISH, FIXTURE TO BE MOUNTED AT 8'-6" AFF.
'RC-1' NOT USED	6" CYLINDER RECESSED CAN LIGHT	12w LED 3000K	120V	NORA LIGHTING #NYLS2-C15130FBB6AC	0-10V DIMMING DRIVER, ALUMINUM HOUSING WITH MATTE BLACK FINISH AND FROSTED GLASS LENS
'L-2' NOT USED	6" DIAMETER RIGID PENDANT MOUNTED FIXTURE	15.5w LED 3000K	120V	NORA LIGHTING #NYLS1-8C15130FBB6AC	0-10V DIMMING DRIVER, ALUMINUM HOUSING WITH MATTE BLACK FINISH AND FROSTED GLASS LENS
'L-3' NOT USED	6" DIAMETER DIRECTIONAL PENDANT FIXTURE	20w LED 3000K	120V	BRUCK #350441-20LM-30K-90-60-120-ELV-BK-SMBK	TO BE DETERMINED BY LIGHTING VENDOR AND OWNER
'M' NOT USED	FLEXFIRE ULTRABRIGHT ARCH. DYNAMIC TUNABLE WHITE SERIES LED STRIP LIGHT	4.4W/FT LED 3000K	120V	CORE #LSM105MX-22K-60K-PF-24V	0-10V DIMMING DRIVER, COVE LIGHTING
'XA' NOT USED	WALL MOUNTED, COMBINATION EXIT SIGN/EMERGENCY LIGHTING UNIT (2 LAMP HEADS)	(2) 1.5W LED	120/277V	BEST #CEU-3-G-2	THERMOPLASTIC HOUSING WITH WHITE FINISH AND GREEN LETTERS, HIGH OUTPUT BATTERY BACK-UP
'XB'	UNIVERSAL MOUNT EXIT SIGN FACES AND ARROWS AS INDICATED ON PLAN	1W LED	120/277V	BEST #EZRXTU2GWEM	THERMOPLASTIC HOUSING WITH WHITE FINISH AND GREEN LETTERS, HIGH OUTPUT BATTERY BACK-UP
'S-2' NOT USED	EXTERIOR WALL PACK FIXTURE	45w LED	120V	WESTGATE #CDLX-MD-15-45W-40K	
'S-3' NOT USED	EXTERIOR WALL PACK FIXTURE WITH BATTERY BACK-UP	60w LED 4000K	120V	LSI INDUSTRIES #WPSLL-6L-UNV-40-PC120-CWBB-BZA	

LIGHTING FIXTURE NOTES:

- ALTERNATE LIGHTING MANUFACTURER'S EQUIPMENT BY COOPER, PHILIPS OR HUBBELL, SHALL BE SIMILAR IN PERFORMANCE, PHYSICAL APPEARANCE AND CONSTRUCTION TO BE CONSIDERED AS EQUAL TO UNITS SPECIFIED.
- ALTERNATE LIGHTING FIXTURE TYPES PROPOSED TO BE SUBSTITUTED BY BIDDING CONTRACTOR MUST BE PRE-APPROVED DURING BIDDING. CONTRACTOR OR LIGHTING REPRESENTATIVE SHALL FAX OR EMAIL ALL SUCH REQUESTS WITH FIXTURE CUTS TO ENGINEER AT LEAST ONE WEEK PRIOR TO SUBMITTING BIDS. ENGINEER SHALL REVIEW THE PROPOSED ALTERNATE LIGHTING FIXTURES AND ISSUE A WRITTEN ACCEPTANCE OR DENIAL BY RETURN FAX OR EMAIL. VERBAL APPROVAL WILL NOT BE ACCEPTABLE.
- ALL SHOP DRAWINGS SUBMITTED AFTER AWARD OF CONTRACTOR FOR LIGHTING FIXTURES WHICH WERE NOT PRE-APPROVED WILL BE REJECTED.
- CHAIN HUNG TYPE 'F' FIXTURES WITH TOP OF FIXTURE FLUSH WITH BOTTOM OF STRUCTURAL STEEL.
- TYPE 'H' FIXTURES SHALL BE MOUNTED WITH BOTTOM AT 7'-0" AFF.
- TYPE 'J' FIXTURES SHALL BE SURFACE MOUNTED TO BOTTOM OF STRUCTURAL STEEL.
- TYPE 'L' FIXTURES SHALL BE PENDANT MOUNTED WITH BOTTOM OF FIXTURE FLUSH WITH BOTTOM OF STRUCTURAL STEEL.



TYPICAL OCCUPANCY SENSOR/WALL SWITCH WIRING DETAIL
N.T.S.



DAMIAN FARRELL DESIGN GROUP

359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331



FOR PERMIT ISSUE

C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

CHECKED	DJQ/PJF
DRAWN	BJK
HEI PROJECT NO.	R23-4590.006

LIGHT FIXTURE SCHEDULE, NOTES & DETAILS

E4.0





DAMIAN FARRELL DESIGN GROUP

359 METTY DRIVE, SUITE 4A
ANN ARBOR, MI 48103
tel: 734.998.1331



FOR PERMIT ISSUE

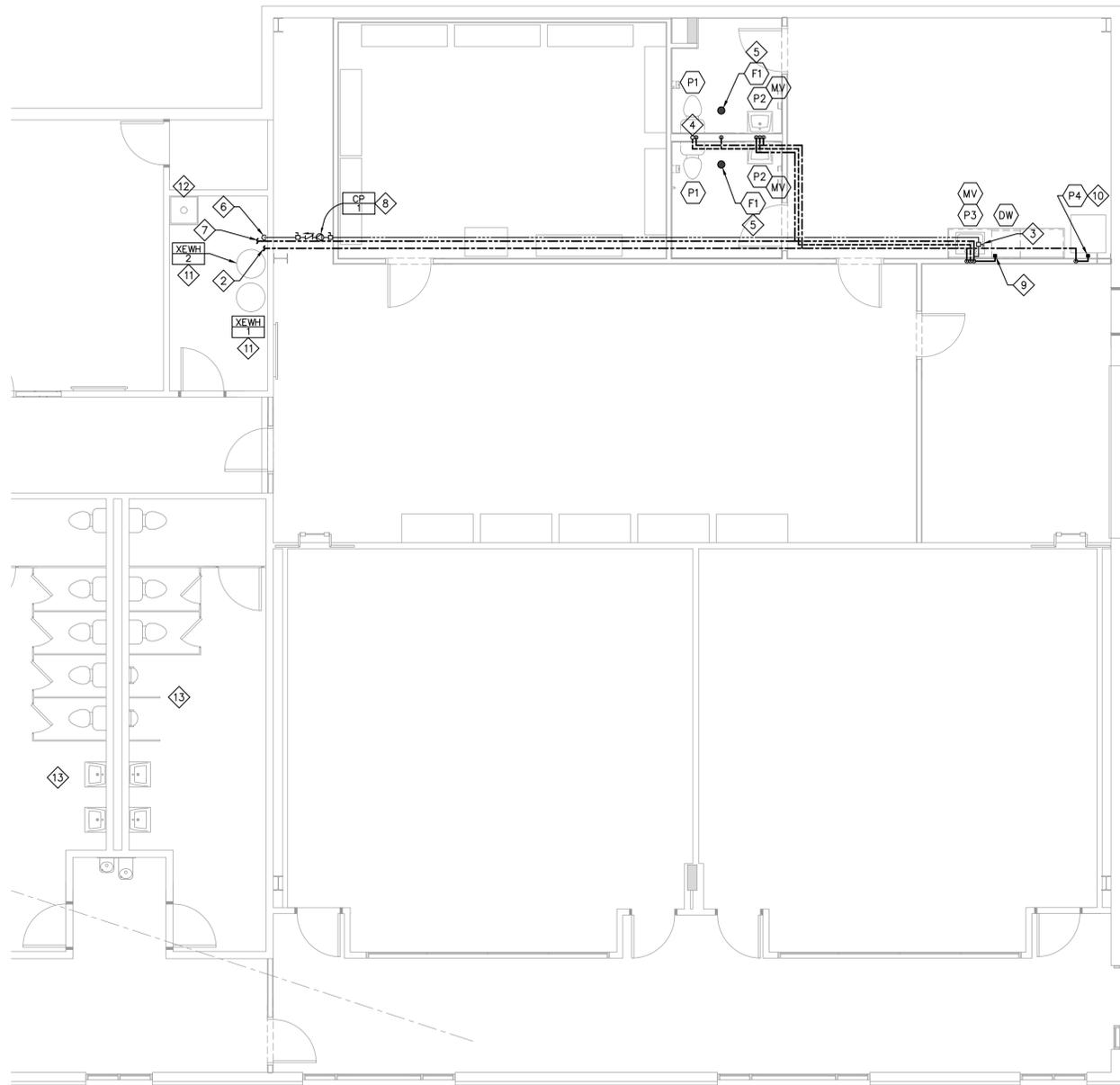
C3 - BRANSON MO
3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

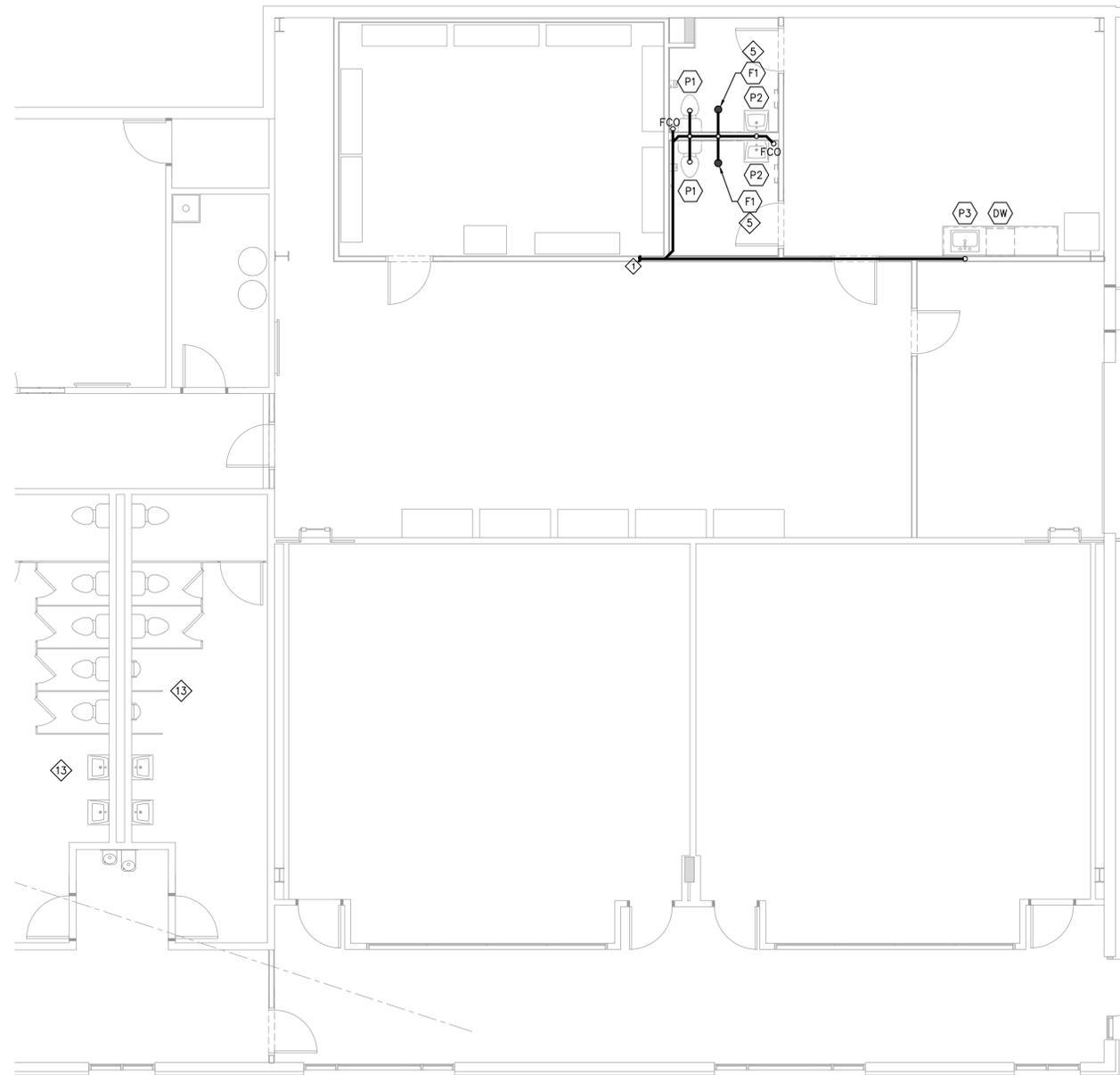
CHECKED	LAK
DRAWN	TMS
HEI PROJECT NO.	R23-4590.006

PLUMBING PLANS

P1.0



2 **FIRST FLOOR ABOVE GROUND PLUMBING PLAN**
3/16" = 1'-0"



1 **FIRST FLOOR UNDERFLOOR PLUMBING PLAN**
3/16" = 1'-0"

GENERAL NOTES

- A. SUBCONTRACTOR TO VERIFY POINT OF CONNECTION AND SCOPE OF WORK TO INSTALL ALL PLUMBING PIPING & EQUIPMENT TO SPACE PRIOR TO BID. IF INCONSISTENCIES OCCUR BETWEEN PLANS AND LANDLORD CRITERIA, OWNER'S CONSTRUCTION MANAGER SHALL BE NOTIFIED PRIOR TO BID SUBMITTAL.
- B. HORIZONTAL DRAINAGE PIPING SHALL BE RUN IN PRACTICAL ALIGNMENT AND A UNIFORM SLOPE OF NOT LESS THAN 1/8 INCH PER FOOT (20.8 MM/M) OR 2 PERCENT TOWARD THE POINT OF DISPOSAL.

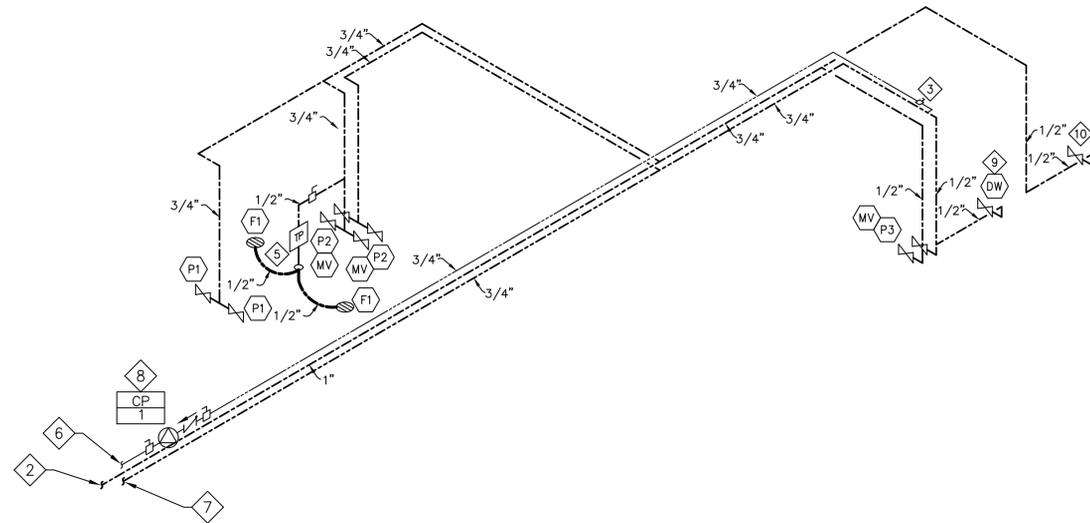
KEY NOTES

- 1. EXTEND AND CONNECT NEW 4" SANITARY SEWER TO EXISTING 4" (MIN) SANITARY SEWER PIPING. FIELD VERIFY EXACT LOCATION, SIZE, FLOW DIRECTION, AND INVERT ELEVATION OF CONNECTION POINT PRIOR TO ROUGH-IN OF NEW SANITARY SEWER. PROVIDE FCO AT POINT OF CONNECTION TO EXISTING.
- 2. EXTEND AND CONNECT NEW 1" CW PIPING TO EXISTING 1" (MIN) CW PIPING. FIELD VERIFY EXACT LOCATION OF CW PIPING PRIOR TO ROUGH-IN. PROVIDE SHUTOFF VALVE AT POINT OF CONNECTION TO EXISTING.
- 3. HOT WATER RECIRCULATION BALANCING VALVE WITH FLOW MEASUREMENT ORIFICES. SET FOR 1.0 GPM. MOUNT VALVE 1" ABOVE THE CEILING.
- 4. EXTEND NEW 2" VENT PIPING UP TO NEW 4" VTR. LOCATE TOILET VENT STACK SO THAT ALL ROOF PENETRATIONS OCCUR AT A MINIMUM OF TEN FEET (10'-0") AWAY FROM ANY MECHANICAL EQUIPMENT INTAKES OR OUTSIDE AIR INTAKE HOODS. USE ROOFING CONTRACTOR FOR ALL ROOF WORK.
- 5. PROVIDE JOSAM 88250 OR EQUAL TRAP PRIMER WITH ACCESSIBLE SHUT-OFF VALVE.
- 6. SEE DETAIL 1/P2.0 FOR CONTINUATION OF HOT WATER RECIRCULATION PIPE.
- 7. EXTEND AND CONNECT NEW 3/4" HW PIPING TO EXISTING 3/4" (MIN) HW PIPING. FIELD VERIFY EXACT LOCATION OF CW PIPING PRIOR TO ROUGH-IN. PROVIDE SHUTOFF VALVE AT POINT OF CONNECTION TO EXISTING.
- 8. FIELD COORDINATE THE INSTALLATION OF THE INLINE HOT WATER RECIRCULATION PUMP, EXPANSION TANK AND CHECK VALVE ASSEMBLY.
- 9. EXTEND AND CONNECT NEW 1/2" HW PIPING TO NEW DISHWASHER.
- 10. EXTEND AND CONNECT NEW 1/2" CW PIPING TO NEW REFRIGERATOR.
- 11. SERVICE AND CLEAN EXISTING ELECTRIC WATER HEATER TO REMAIN.
- 12. SERVICE AND CLEAN EXISTING MOP SINK TO REMAIN.
- 13. SERVICE AND CLEAN EXISTING BATHROOM FIXTURES TO REMAIN.

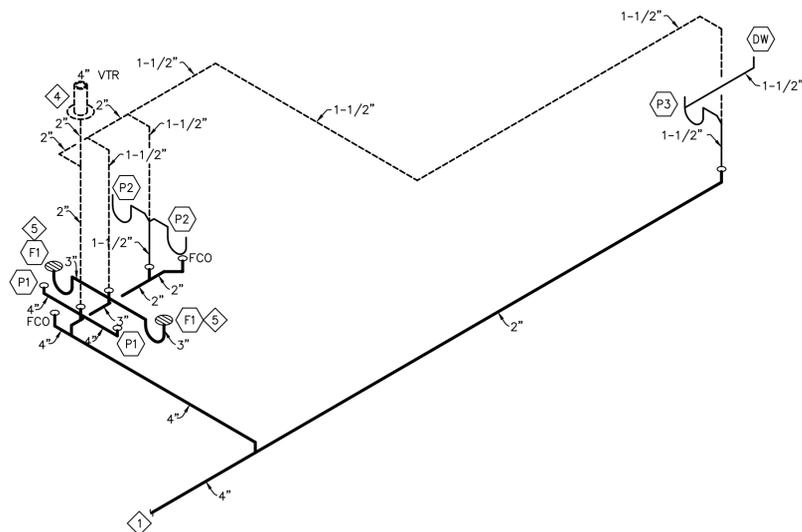
PLUMBING FIXTURE SCHEDULE

P# F#

FIXTURE NO.	FIXTURE TYPE	MANUFACTURER	TYPE & MODEL NO.	TRIM/FAUCET NO.	SUPPORT	PIPE SIZES					REMARKS
						TRAP	WASTE	VENT	CW	HW	
P1	WATER CLOSET	AMERICAN STANDARD	CADET NO. (WHITE) 2467.016	CHICAGO FAUCET 1016	FLOOR MOUNT	-	4"	2"	1/2"	-	1.6 GPF, ELONGATED, PRESSURE ASSISTED, ADA COMPLIANT 16-1/2" RIM HEIGHT. PROVIDE WITH WHITE OPEN FRONT SEAT
P2	LAVATORY	AMERICAN STANDARD	LUCERNE (WHITE) 0355.012	CHICAGO FAUCET 802-A317CP	WALL HUNG	1-1/2"	1-1/2"	1-1/2"	1/2"	1/2"	PROVIDE INSULATED CHROME P-TRAP. PROVIDE HANDICAP INSULATION KIT. (2) CHICAGO FAUCET 1016 ANGLE VALVES. PROVIDE CHICAGO NO. E2605.5 AERATOR AND WALL CARRIER.
P3	SINK	ELKAY	LR1919	LKD2432BH. FAUCET	FLOOR MOUNT	1-1/2"	1-1/2"	1-1/2"	1/2"	1/2"	PROVIDE WITH INTEGRAL BRASS DRAIN, STAINLESS STEEL DOME W/STRAINER. FAUCET W/TOP BRACE, STOPS AND VACUUM BREAKER. PROVIDE GARBAGE DISPOSAL UNDER SINK.
P4	ICE MAKER OUTLET BOX (FOR REFRIGERATOR)	GUY GRAY/IPS CORP	AB-9700 EZSTL8C	-	-	-	-	-	1/2"	-	PROVIDE W/ LEAD-FREE 1/4 TURN SHUT OFF VALVE AT POINT OF CONNECTION. PROVIDE FINAL CONNECTION TO REFRIGERATOR.
MV	THERMOSTATIC MIXING VALVE	WATTS	LFUSG-B-M2	-	-	-	-	-	1/2"	1/2"	ASSE 1070 THERMOSTATIC MIXING VALVE.
F1	FLOOR DRAIN	JOSAM	30000-6A	-	-	3"	3"	1-1/2"	-	-	PROVIDE TRAP PRIMER CONNECTION.
DW	DISHWASHER	--	--	-	-	-	5/8"	-	-	1/2"	CONNECT DISHWASHER WASTE PIPING TO TAIL PIECE OF KITCHEN SINK.



2 WATER RISER DIAGRAM
NTS



1 WASTE AND VENT RISER DIAGRAM
NTS

CIRCULATION PUMP SCHEDULE

CP #

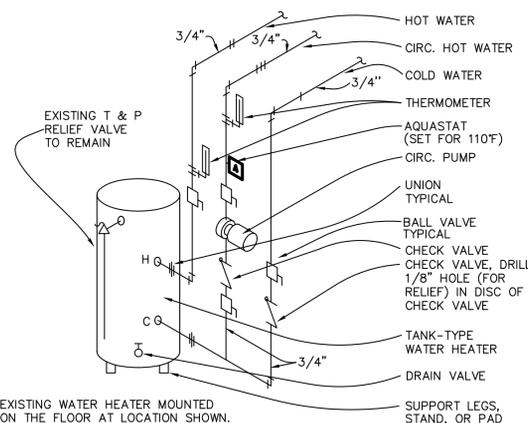
ITEM NO.	MANUFACTURER	MODEL	VOLTAGE	HP	GPM	FT. HD.	REMARKS
CP-1	BELL & GOSSETT	NBF-22U/LW	115/1/60	1/12	1.0	10	PROVIDE AQUASTAT FOR PUMP CONTROL

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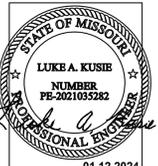


3 WATER HEATER DETAIL
NO SCALE



DAMIAN
FARRELL
DESIGN
GROUP

359 METTY DRIVE, SUITE 4A
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01.12.2024

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3125 GREEN MOUNTAIN DRIVE
BRANSON, MO 65616

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CHECKED	LAK
DRAWN	TMS
HEI PROJECT NO.	R23-4590.006

**PLUMBING RISERS,
SCHEDULES AND
DETAILS**

P2.0

H
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