

Flyway Brewing Taproom WMC Parking Deck 09 Retail, Zone 04 Bentonville, AR

Dated 3/10/25

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VICINITY MAP



Flyway Brewing Company

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Architects Planners

3 Lenon Place
Little Rock, AR 72207
(+) 501-707-0115
Cert. Author. # LL-21

CODE ANALYSIS

CODES USED TO PREPARE ANALYSIS: Building Code 2021 AR Fire Prevention Code Vol.2
Mechanical code 2021 International code w/ appendix A and 2021 revisions
Electrical code 2020 National Electric code w/ City of Little Rock Ordinances, Chapter 8, revised.
Plumbing code 2018 Arkansas plumbing code w/ appendices B, C, D, & F (Based on 2018 IPC)
Energy code 2014 Arkansas Energy code (Based on 2009IECC, Chapter 5 or ASHRAE 90.0 2007w/ AEC for new building construction supplements & amendments 2014.
Accessibility Standard 2021IBC Chapter 11 and 2010 ADA Design Standards for Accessible Design

FIRE PROTECTION SYSTEMS: The building will be currently fully sprinklered, complying with NFPA 13. Multi-purpose fire extinguishers will be installed at each exit point. An approved Ansul Grease Hood extinguishing system will be installed at one grease hood.

USE OR OCCUPANCY: The tenant space, which will house a Dining area will be designed as A-2 - Assembly occupancy classification as defined in Section 308. The 1400 sf Kitchen area will be designated as Kitchen.

INTERPRETATIONS:

OCCUPANT LOAD BY GSF:	Total	GSF	Occupant Load
Dining	4150	15 SF/person	184 Occupants
Kitchen	2750	200 SF/person	8 Occupants
Total	1400	15 SF/person	192 Occupants

Four fire exits are provided from area to exterior for 192 total occupants.
Outdoor Dining Total 1250 NSF 15 SF/person 84 Occupants
Three fire exits are provided from area to exterior for 84 total occupants.

MEANS OF EGRESS: Dining areas have 2 exits (72" wide) and 1 exit (36" wide) and kitchen have 2 exits (36" wide) providing egress to grade. Travel distance between exits is an average of 50'. Maximum travel distance on lower level is 82'.

Capacity of Egress (Section 1005): Corridor: Required and provided open egress width shall be as determined in Section 1005.1, but not less than 44 inches per 1005.3.2. Corridor width complies with this requirement.

Exit Access Travel Distance - Table 1016.2: Occupancy A-2 With Sprinkler System 200 Linear Feet
Travel distance complies with this requirement.

Minimum Corridor Width - Table 1018.2: Occupancy A-2 Occupant access and egress Access to & utilization of mech, plumb or elec systems*
Width 44 Inches
24 Inches

ACCESSIBILITY: Chapter 11, Comply with all sections of this IBC chapter 11 and 2010 ADA accessibility Standards.

GENERAL BUILDING LIMITATIONS: Construction Type 1 A

Height Limitations: (Table 503)	A-1 Occupancy	Allowed UL	Proposed 1 Story 23 Feet
Dead ends in corridors shall not be more than 100 feet (By section 1018.4) - sprinkled buildings. Dead end corridor length complies with this requirement.	unlimited	proposed 4150 SF on one floor	

FIRE ALARM: Each tenant will be equipped with Fire Alarm System

BUILDING MATERIALS: Foundation: Spread concrete Footings
Structural Frame: Steel & Concrete frame
Floors: Concrete slab on grade
Roof Assembly: Concrete precast beams w/ parking above
Exterior Walls: Masonry walls

TYPES OF CONSTRUCTION: Construction Type: Existing Construction - Type 1 A
Fire resistance ratings of structure elements:
Structural Frame 3 HR
Exterior 3 HR
Interior Demising walls 3 HR
Roof 2 HR

INTERIOR FINISH REQUIREMENTS (Table 803.9): Walls in contact with open flames (Cook Line under Hood) will be non-combustible
"Int Exit Stairways, Ramps & Exit Passageways:" B
Corridors & Enclosures for Exit Access: C
Rooms & Enclosed Spaces: C



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Project No:
HW24-821

Date:
03/10/2025

Sheet Title:
COVER SHEET
SITE PLAN &
INDEX

of
Sheet No:

C1.1

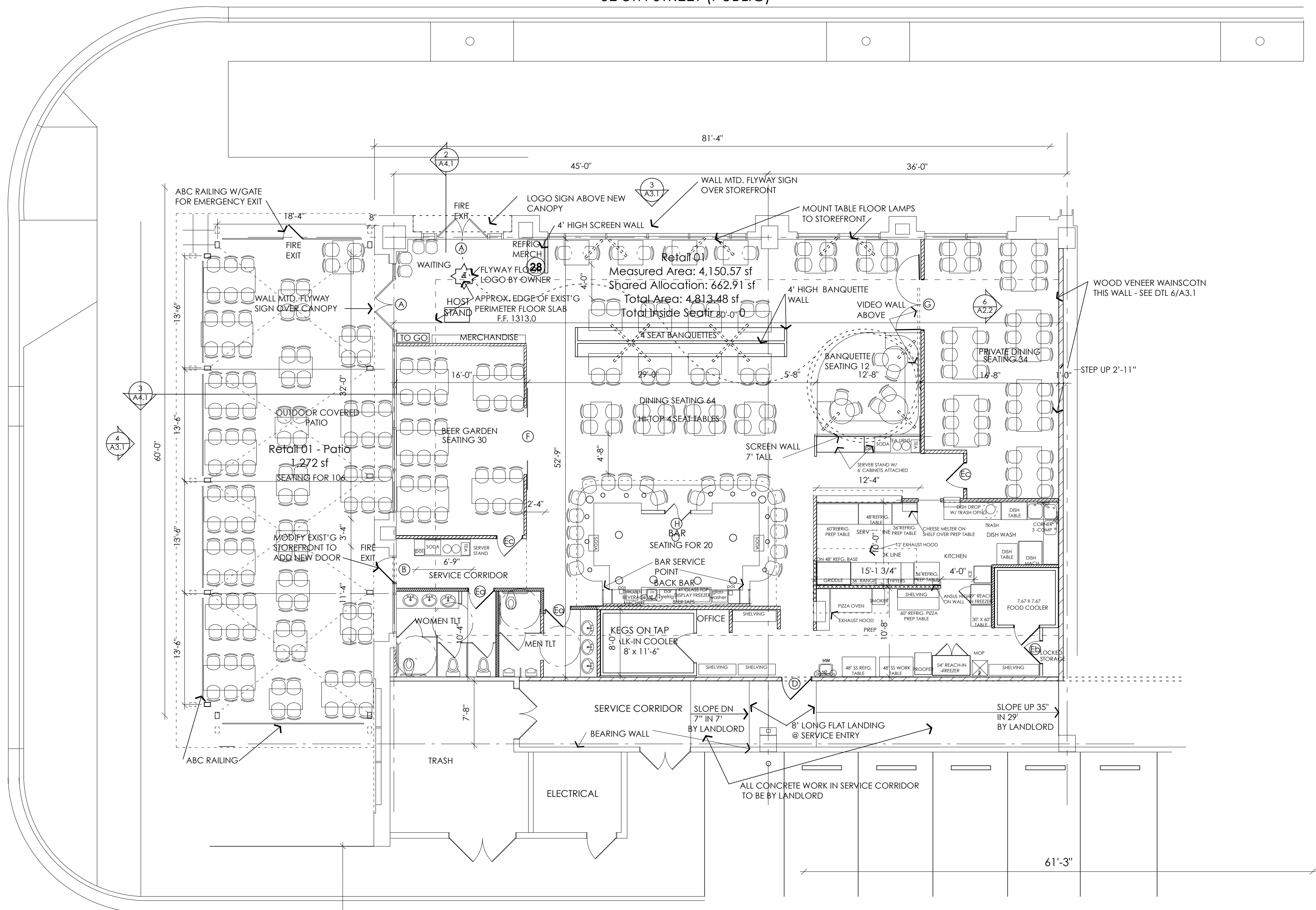


SE 8TH STREET (PUBLIC)

- NON-COMBUSTIBLE WALL
- INSULATED WALL
- FIRE RATED WALL - 2 HRS
- NEW WALL
- OPENING KEY

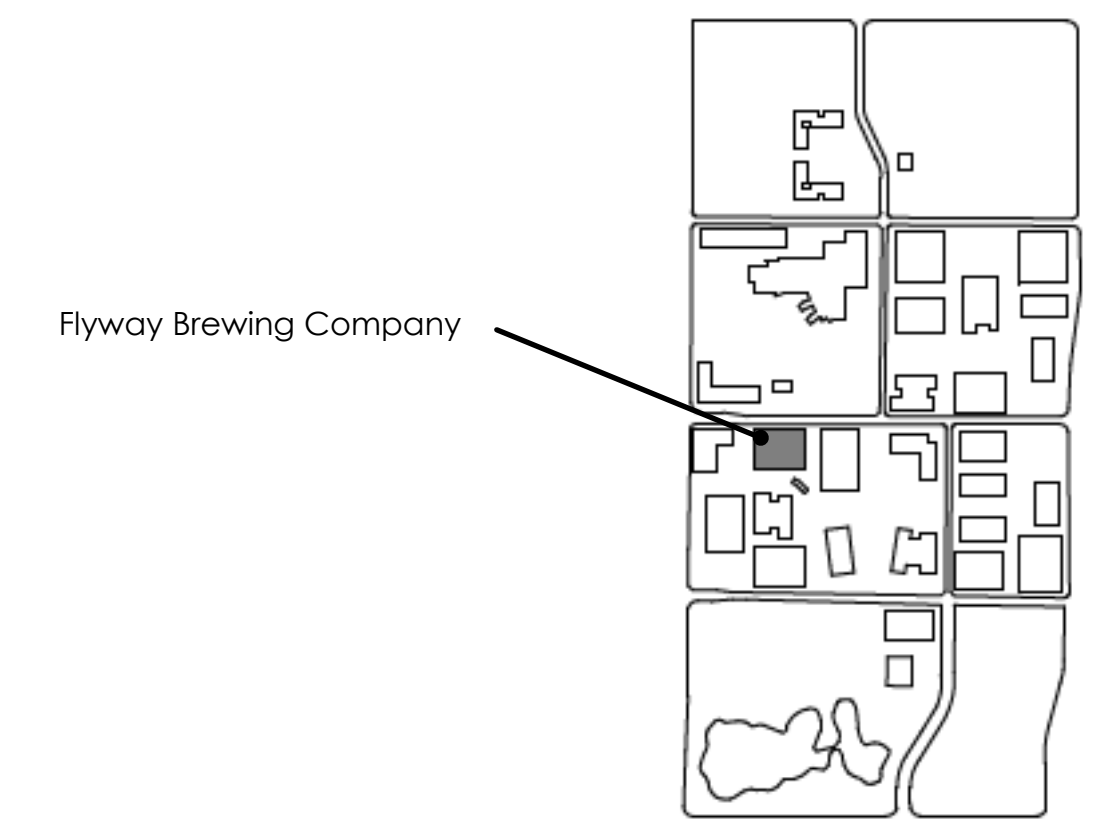
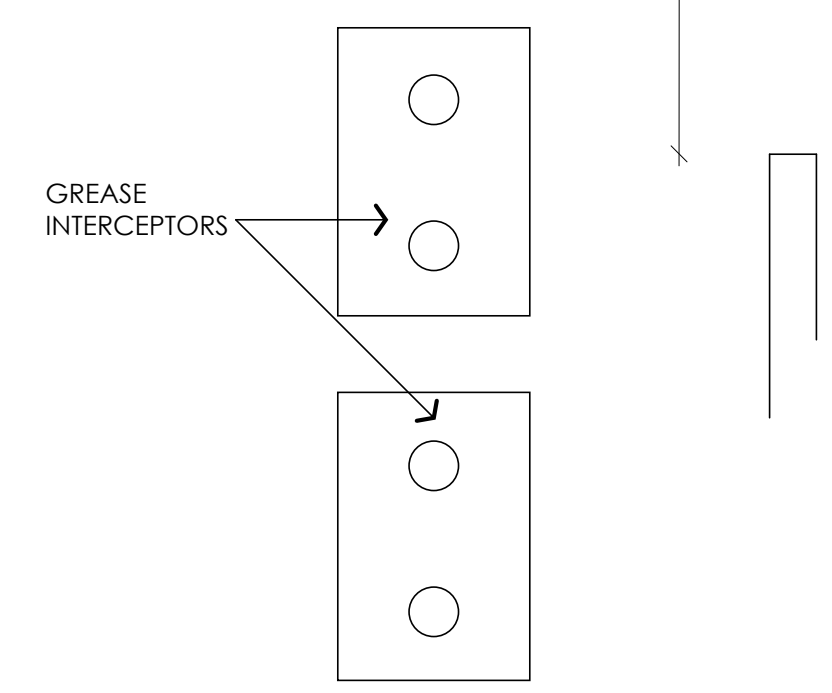
FLOOR PLAN LEGEND

SE CUSTOMER BLVD (PRIVATE)



FIRST FLOOR
SCALE 1/8"=1'-0"

is this pre-piped or do we cut concrete????



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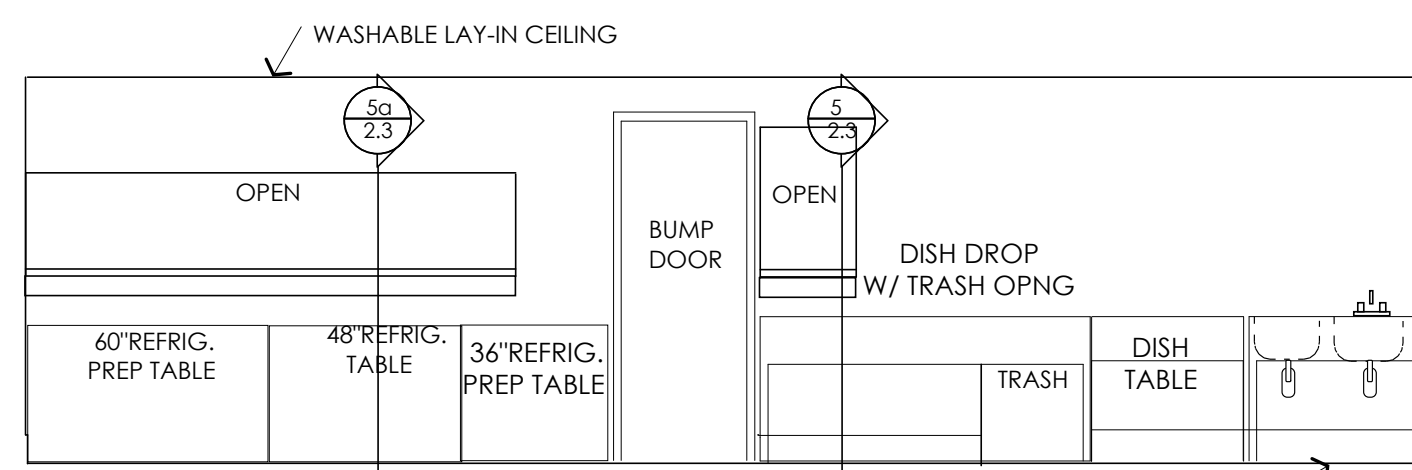
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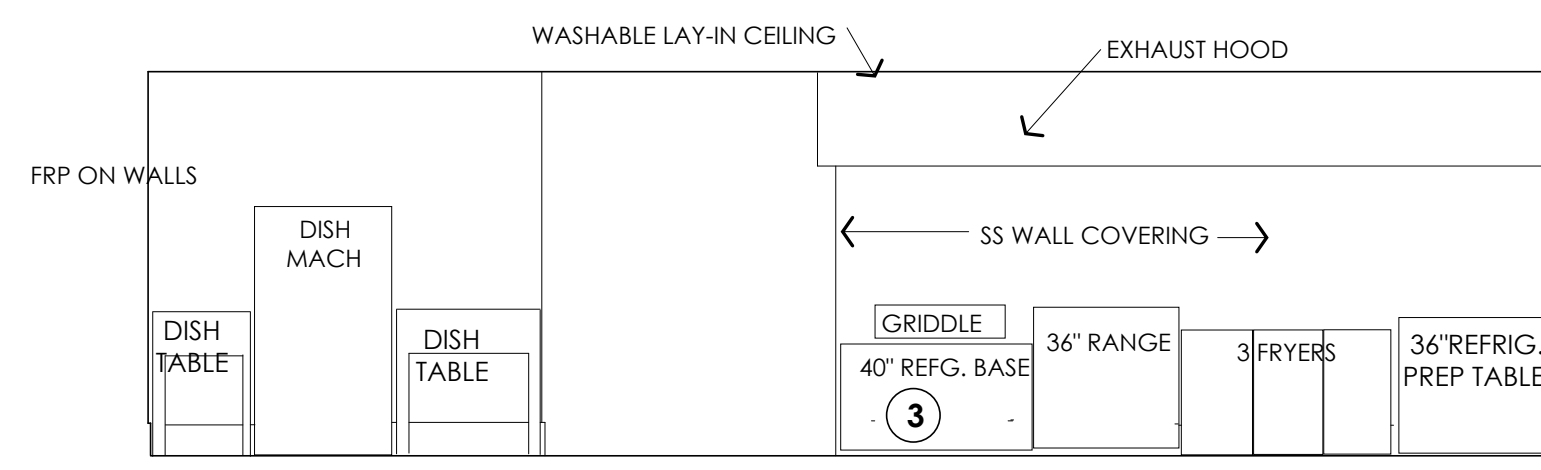
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FLOOR PLAN

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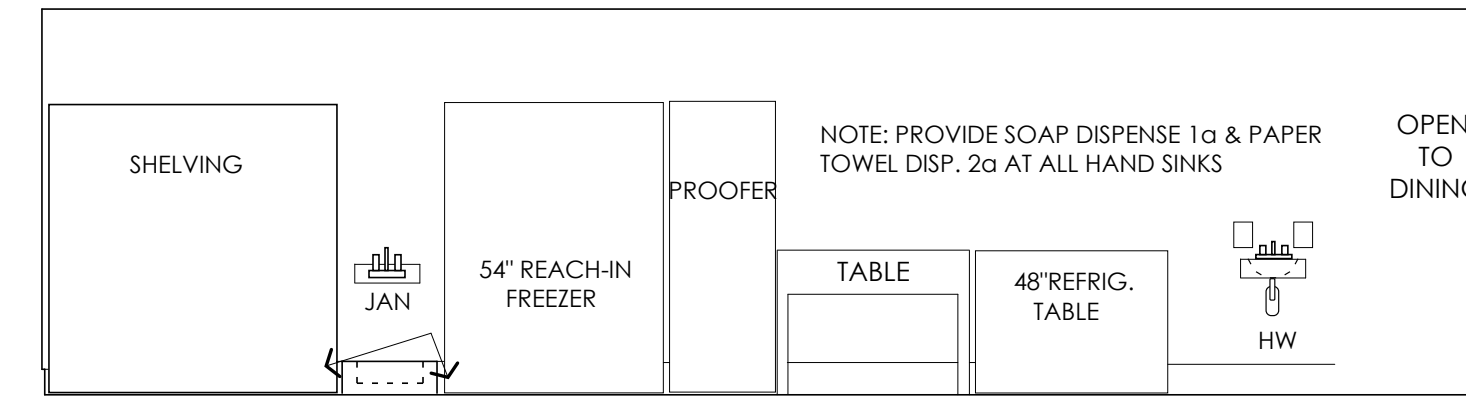
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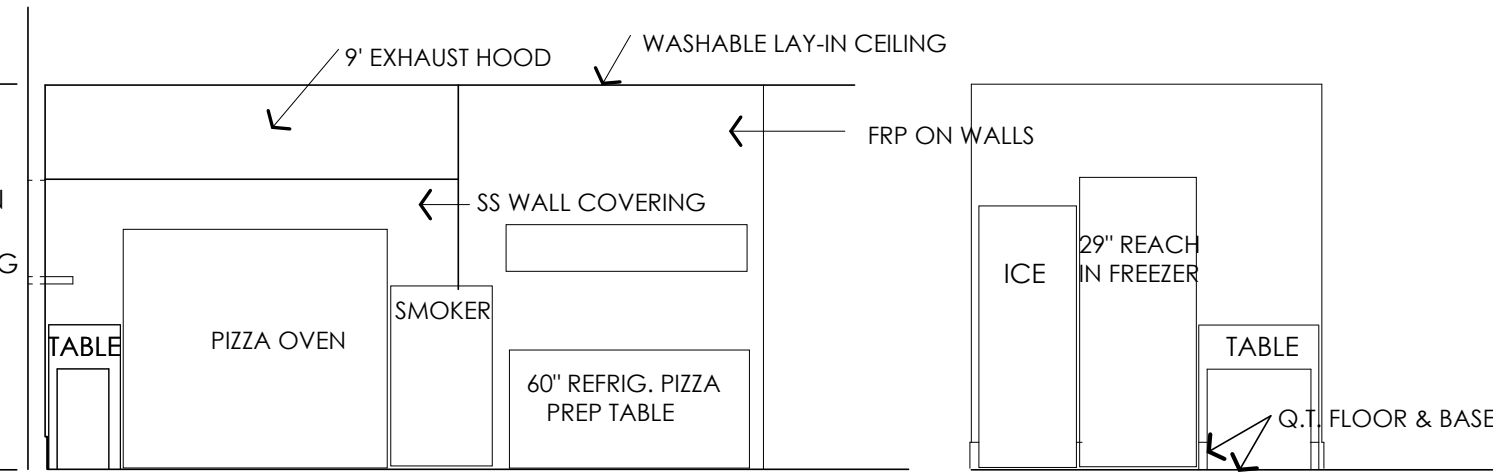
1a INT. ELEV. @ SERVICE LINE
SCALE 1/4" = 1'-0"



1b INT. ELEV. @ COOK LINE
SCALE 1/4" = 1'-0"



1c INT. SOUTH ELEV. @ PIZZA PREP
SCALE 1/4" = 1'-0"

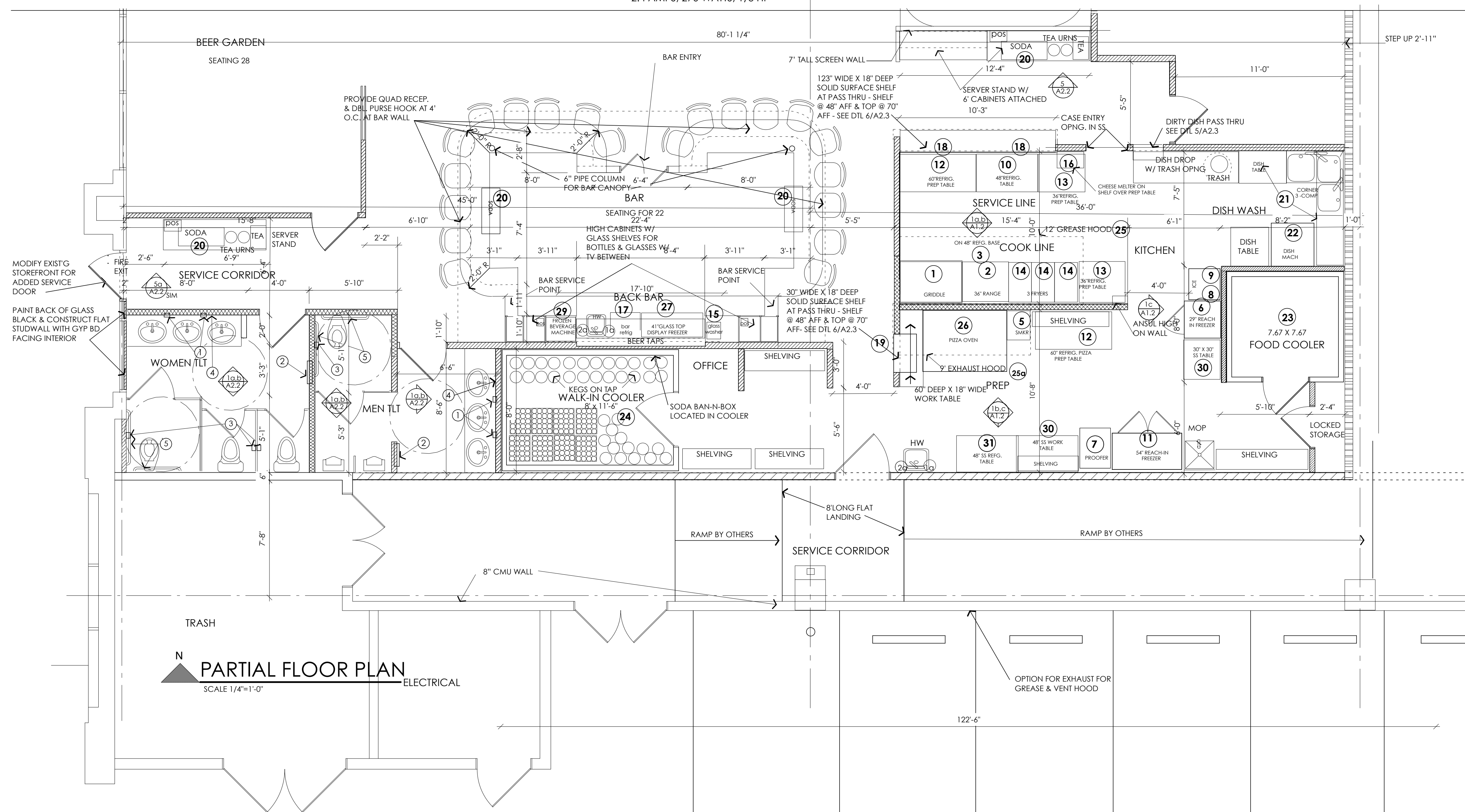


1d INT. ELEV. @ PIZZA LINE 1e EAST ELEV. @ PIZZA LINE
SCALE 1/4" = 1'-0"

28 TO BE PLACED NEAR ENTRY DOOR - SEE FLOOR PLAN
48\"/>

KITCHEN EQUIPMENT INFORMATION

- 1 COUNTERTOP GRIDDLE, COOKING PERFORMANCE GROUP GM-CPG-60-NL, 48" GAS COUNTER TOP GRIDDLE W/MANUAL CONTROLS - 150,000 BTU
- 2 RANGE, COOKING PERFORMANCE GROUP S36-N, NAT. GAS 36" RANGE W/ STANDARD OVEN, 210,000 BTU
- 3 CHEF BASE AVANTCO CBE-48-HC 48" 2 DRAWER REFRIGERATED CHEF BASE, 115V/60 HZ/ 1 PHASE, 4.32 AMPS, 343 WATTS, 1/3 HP
- 4 MIXER, AVANTCO MX40H, 40 QT. PLANETARY MIXER W/ GUARD, 240V/ 60 HZ/ 1 PHASE, 2 HP, NEMA 6-15P PLUG
- 5 SMOKER - SMOKE-N-TEX MODEL 1400 SERIES PRO-SERIES SMOKER -120V 15A PLUG - 700 WATT ELEMENT
- 6 29" REACH IN FREEZER, AVANTCO A-23F-HC 29" SOLID DOOR REACH IN FREEZER, 115V, 60 HZ, 1 PHASE, 4.2 AMPS, 396 WATTS, 2/3 HP, 2080 BTU
- 7 HOLDING/PROOFING CABINET - AVENTCO HPI-1836DC FULL SIZED, NON INSULATED CABINET W/ GLASS DOOR-120V/60HZ/1 PHASE, 12 AMPS.
- 8&9 ICE MAKER, MANITOWOC IYTO620A INDIGO NXT 22" AIR COOLER HALF DICE ICE MACHINE W/ BIN, 115V/60 HZ/ 1 PHASE, 12.2 AMPS.
- 10 UNDERCOUNTER REFRIGERATOR, AVANTCO AU-48R-HC 48", 115V/60HZ, 1 PHASE, 7.2 AMPS, 890 WATTS, 1/3 HP 1 2/7 HP
- 11 54" REACH-IN FREEZER, AVANTCO A-49F-HC54 SOLID DOOR FREEZER, 115V/60HZ/1 PHASE, 8.5 AMPS, 780 WATTS, 1 2/7 HP
- 12 PIZZA PREP REFRIG. AVANTCO SS-PT-60M-HC60" 2 DOOR MEGATOP REFG. TABLE, 115V/60HZ/1 PHASE, 5.4 AMPS, 540 WATTS 1/2 HP
- 13 SANDWICH/SALAD PREP REFRIG.-(2 REQ'D) AVANTCO APT-36-HC36", 115V/60HZ/1 PHASE, 4.3 AMPS, 430 WATTS, 1/4 HP
- 14 GAS FLOOR FRYER-(3 REQ'D.) AVANTCO MODEL FF100, 70-100 LBS. EACH, SS TUBE FRYER 150,000 BTU
- 15 GLASS WASH UNDERCOUNTER (2 REQ'D) - AMERICAN DISH SERVICE ET SERIES, UNDERCOUNTER, 1.5 HP PUMP, 115V, 20AMP, 50/69HZ, 1 PHASE
- 16 CHEESE MELTER, VOLLRATH CM4-20835PA JW30PA 35" PLATE ACTIVATED COUNTERTOP CHEESE MELTER - 208V/60 HZ/ 1 PHASE, 17.6 AMPS, 3660 WATTS
- 17 BACK BAR REFRIGERATOR, AVANTCO UBB-48-HC, 48", 115V/60 HZ/ 1 PHASE, 3.5 AMPS, 325 WATTS, 3/7 HP
- 18 EXPO STRIP WARMER, (2 REQUIRED) SERVIT SWID-60 - 60", 120V, /60 HZ/1 PHASE, 15560 WATTS W/ INFINIT CONTROL
- 19 EXPO STRIP WARMER, (1 REQUIRED) SERVIT SWID-30 - 30", 120V, /60 HZ/1 PHASE, 660 WATTS W/ INFINIT CONTROL
- 20 SOFT DRINK MACHINE W/ BAG-IN-THE-BOX - SODA DISPENSER SHOP, 6-FLAVOR SODA GUN SYSTEM, W/ ICE BIN COLD PLATE (19"X 36")
- 21 REGNCY 4' DISHWASH PACKAGE
- 22 3D-S DISH MACHINE BY AMERICAN DISH SERVICE - 115V SINGLE PAHSE
- 23 WALK-IN COOLER/FREEZER UNIT - 7'-8" X 7'-8" FLOORLESS WALK IN COOLER & TOP MOUNTED REFRIGERATION BY BARR REFRIG-ERATION SUPERSTORE, OSHKOSH, WI - 1 PHASE, 220V
- 24 WALK-IN COOLER UNIT - 11'-6" X 8' FLOORLESS WALK IN COOLER W/ 1 DOOR & TOP MOUNTED REFRIGERATION BY U.S. COOLER & RUSSEL REFRIGERATION - OUTDOOR CONDENSER 208-230/1 PHASE/60HZ
- 25 LOW CEILING SLOPED FRONT COMMERCIAL 4' X 12' KITCHEN HOOD ACCUREX XBEW TYPE 1 BAFFLE SINGLE WALL - EXHAUST ONLY WALL CANOPY - 8' LONG
- 25a COMMERCIAL 4' X 9' VENT HOOD FOR NON-GREASE APPLIANCES
- 26 PIZZA OVEN, MIDDLEBY MARSHALL PS638, NATURAL GAS DOUBLE PIZZA DECK OVEN, 65.25" L, 49" D X 42" T, 89,000 BTU, 208/240V, 1 PHASE, 60 HZ, 4A RUN & 10 A START
- 27 41" DISPLAY FREEZER, MASTER-BILT MSC-41AA 41" CURVED TOP DISPLAY FREEZER, 115V/ 60 HZ/ 1 PHASE, 1.5 AMPS, 3/8 HP
- 28 48" REFRIGERATED MERCHANDIZER, AVANTCO GDC-40-HC 48" BLACK, CUSTOMIZABLE W/ LED LIGHTING, 115V/ 60 HZ/ 1 PHASE, 1/2 HP
- 29 FROZEN BEVERAGE MACHINE, FETCO BY ELMECO PEL0301 TRIPLE 3.2 GAL. 115V/60 HZ/ 1 PHASE, 12 AMPS, 1380 WATTS, 3/4 HP
- 30 COMMERCIAL WORK TABLE, REGENCY 30" X 30" & 30" X 48" SS TABLE W/ UNDERSHELF AND POT RACK
- 31 REFRIGERATED WORK TABLE, AVANTCO SS-WT-48R-HC, 48" 2 DRWR WORK REFRIG. W/ BACKSPLASH, 115V/60 HZ/ 1 PHASE, 2.4 AMPS, 270 WATTS, 1/3 HP



- 1 SEMI-RECESSED SOAP DISPENSER
- 10 SURF. MTD. SOAP DISPENSER
- 2 SEMI-RECESSED PAPER TOWEL DISPENSER
- 20 SURFACE MTD. PAPER TOWEL DISPENSER
- 3 DBL. TOILET PAPER HOLDER
- 4 MIRROR BY OWNER
- 5 GRAB BARS

TOILET ACCESSORIES

NOTE: COMPLY WITH ALL REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT WHEN CONSTRUCTING ALL ASPECTS OF THIS PROJECT
NOTE: PROVIDE SOAP DISPENSE 1a & PAPER TOWEL DISP. 2a AT ALL HAND SINKS



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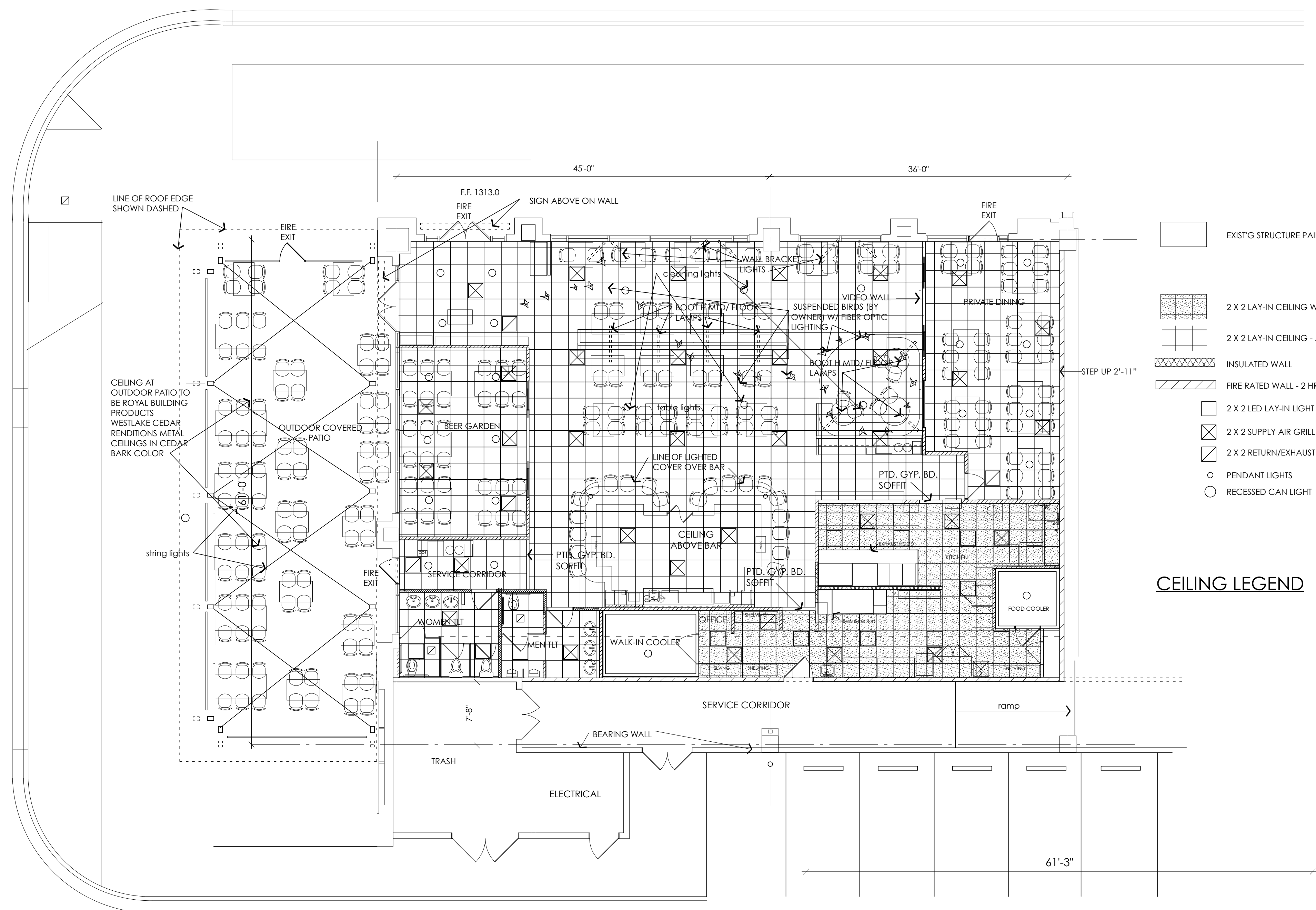
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Date:
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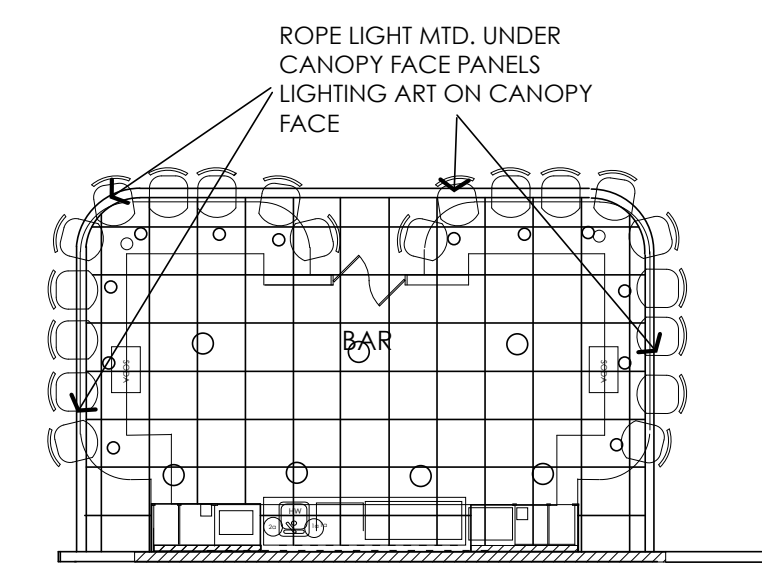
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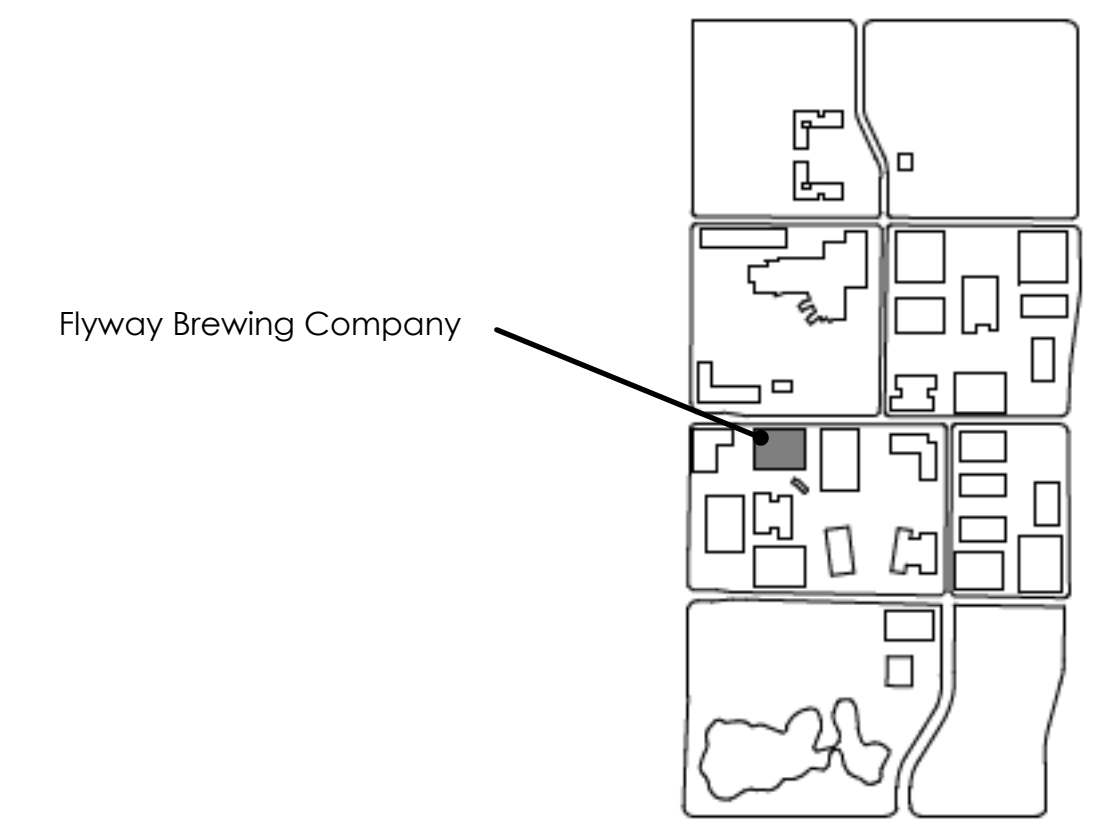


- CEILING LEGEND**
- EXISTG STRUCTURE PAINTED
 - 2 X 2 LAY-IN CEILING WASHABLE
 - 2 X 2 LAY-IN CEILING - ACOUSTICAL
 - INSULATED WALL
 - FIRE RATED WALL - 2 HRS
 - 2 X 2 LED LAY-IN LIGHT
 - 2 X 2 SUPPLY AIR GRILL
 - 2 X 2 RETURN/EXHAUST AIR GRILL
 - PENDANT LIGHTS
 - RECESSED CAN LIGHT

REFLECTED CEILING PLAN
SCALE 1/8"=1'-0"



BAR REFLECTED CEILING PLAN
SCALE 1/8"=1'-0"



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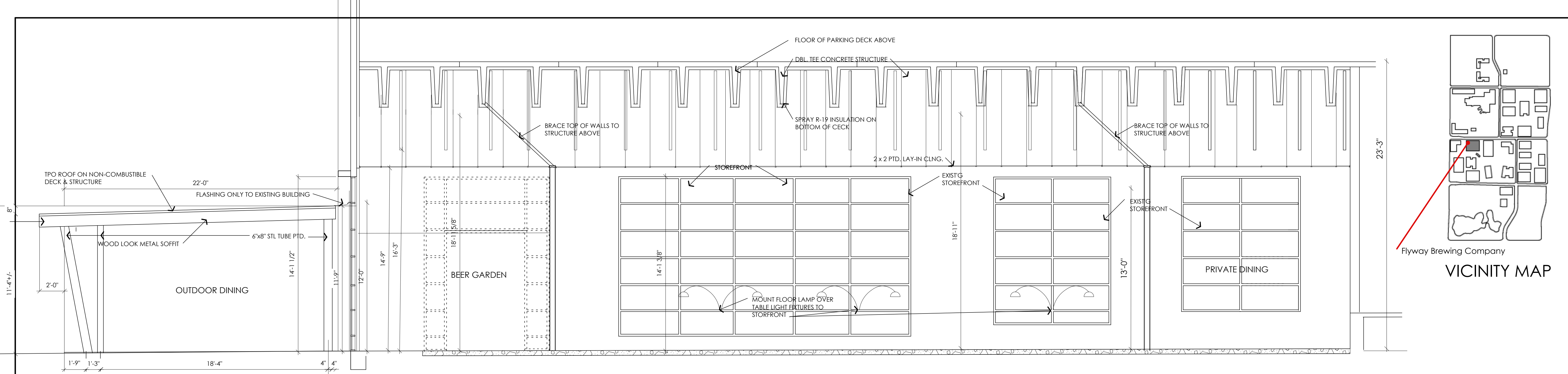
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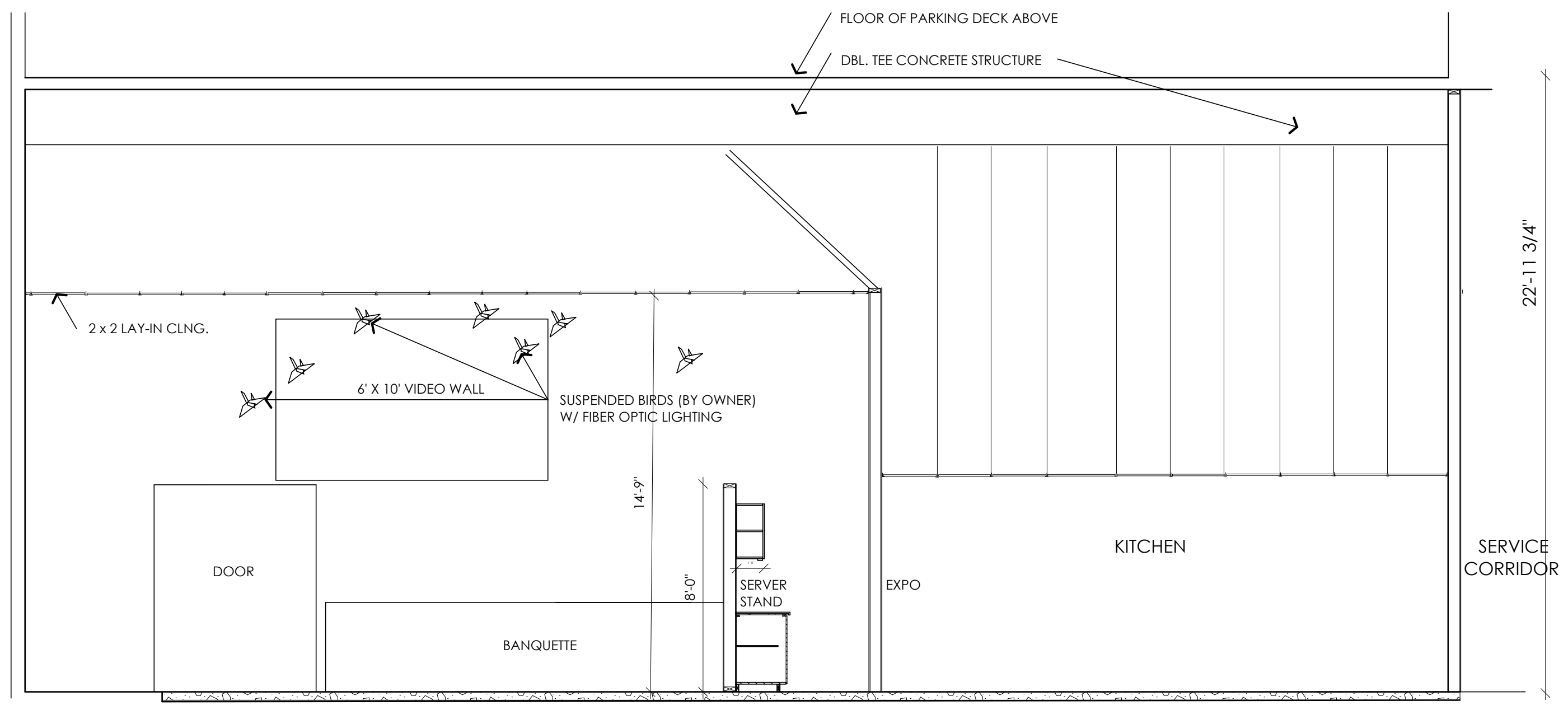
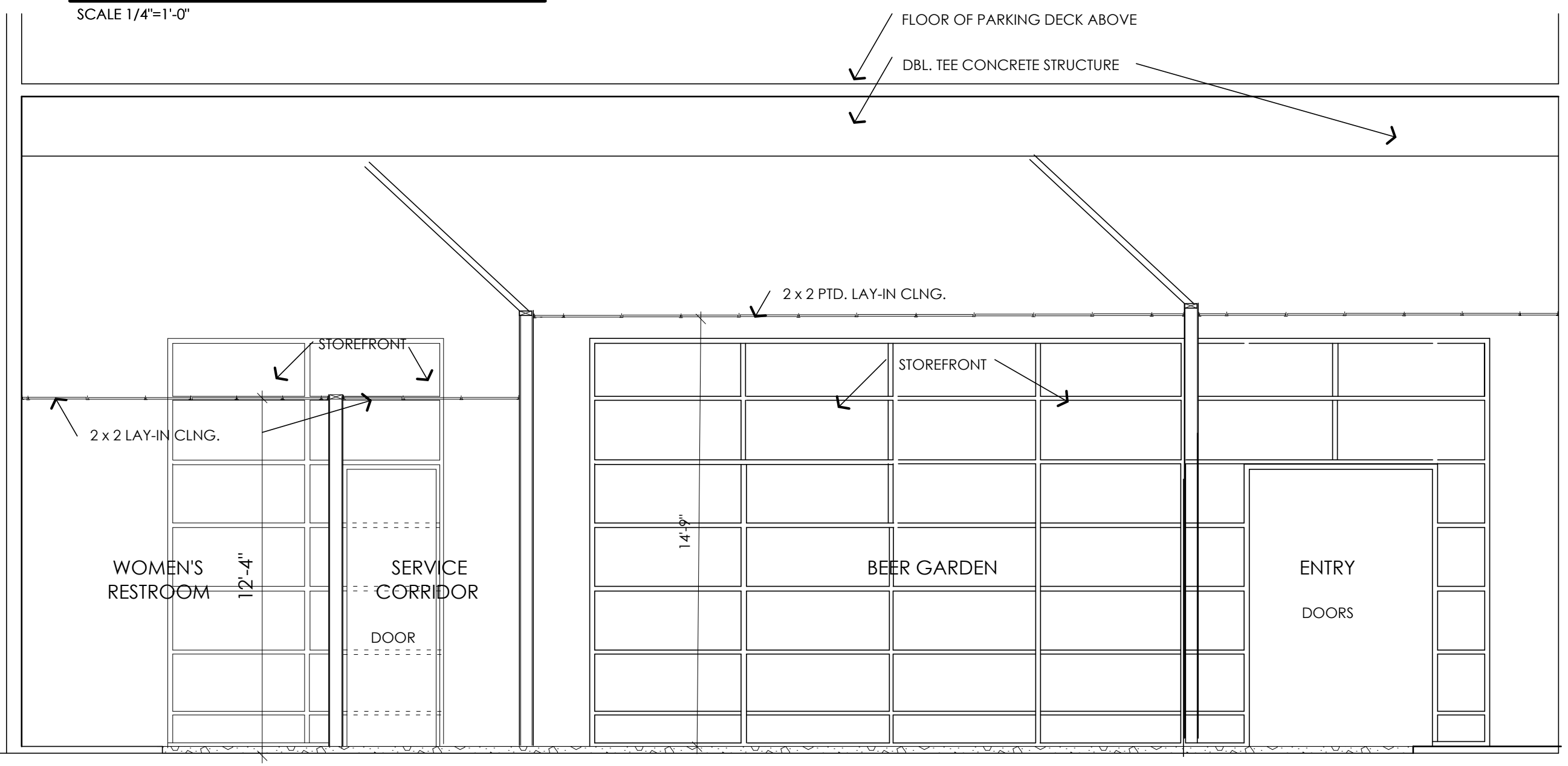
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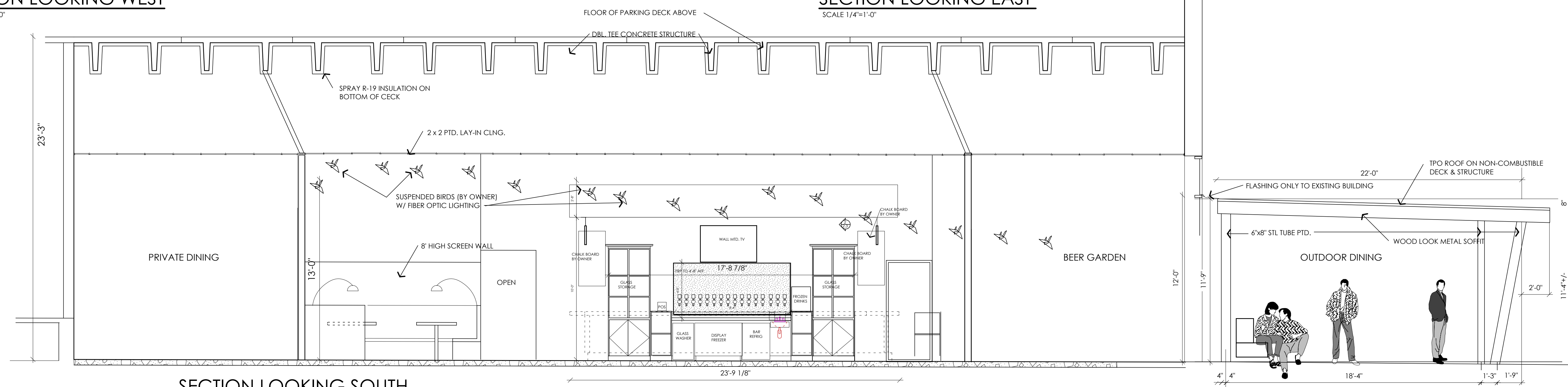
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SECTION LOOKING NORTH
SCALE 1/4"=1'-0"



SECTION LOOKING WEST
SCALE 1/4"=1'-0"

SECTION LOOKING EAST
SCALE 1/4"=1'-0"



SECTION LOOKING SOUTH
SCALE 1/4"=1'-0"

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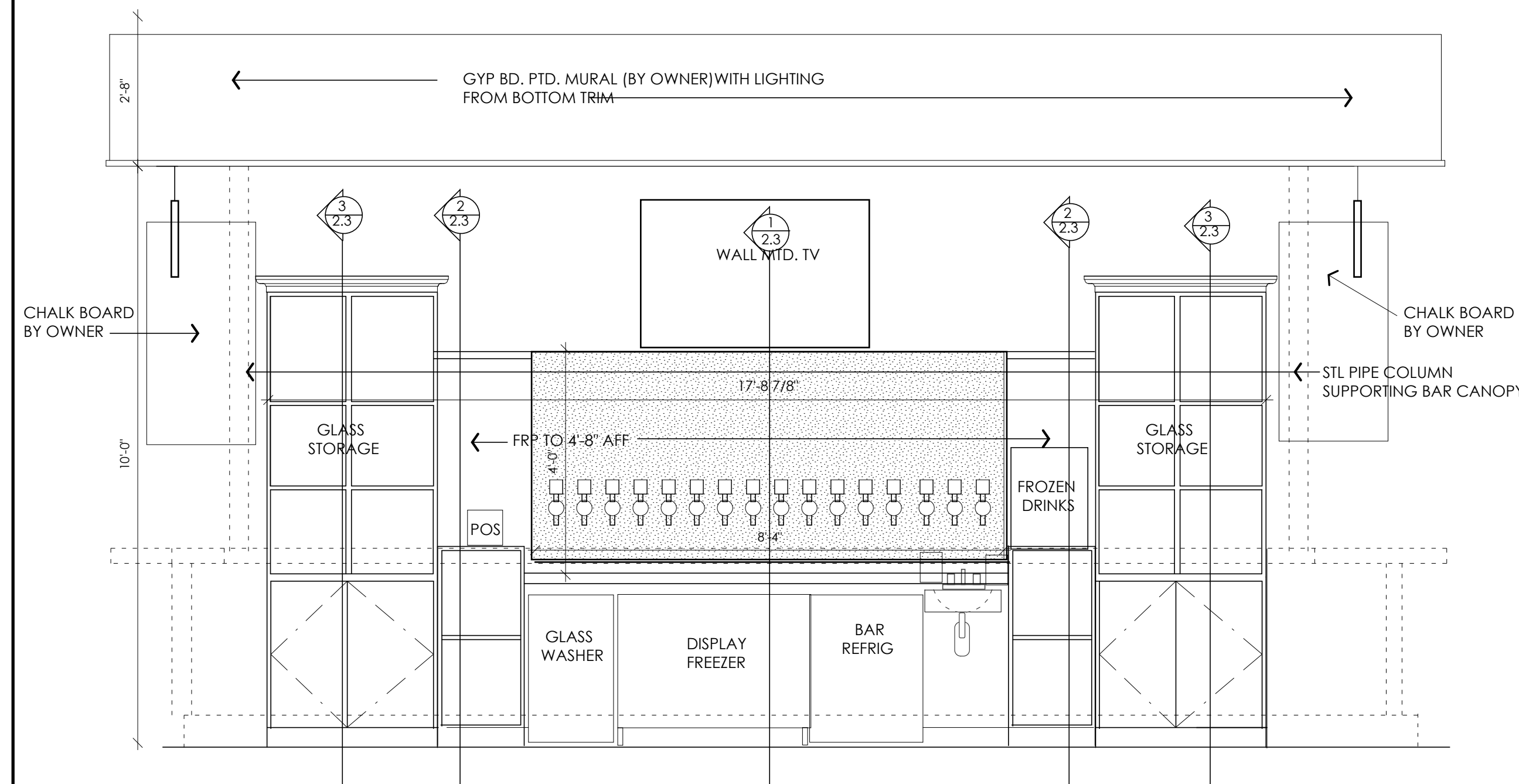
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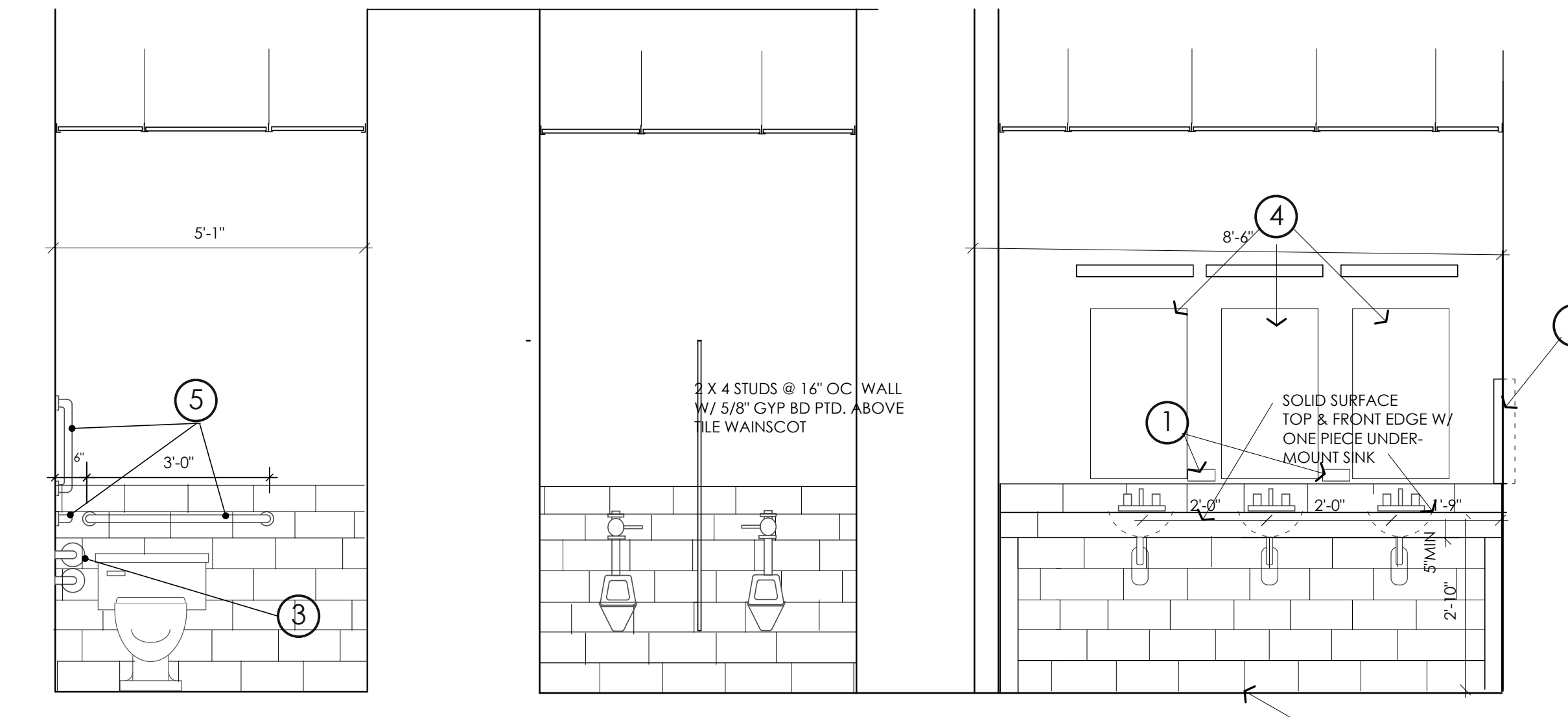
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BUILDING SECTIONS

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1 BACKBAR ELEVATION
SCALE 1" = 1'-0"

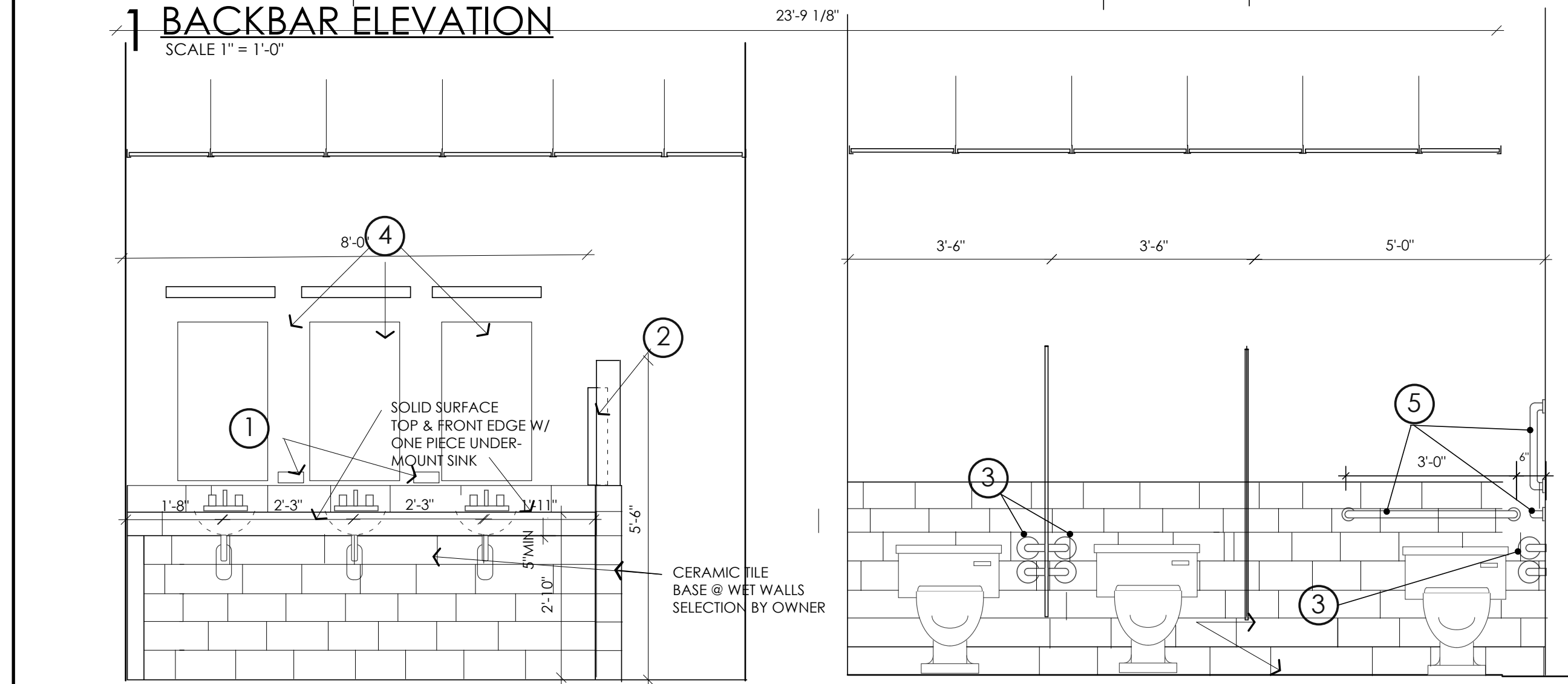


2 MEN'S TOILET ROOM ELEVATIONS
1/2" = 1'-0"

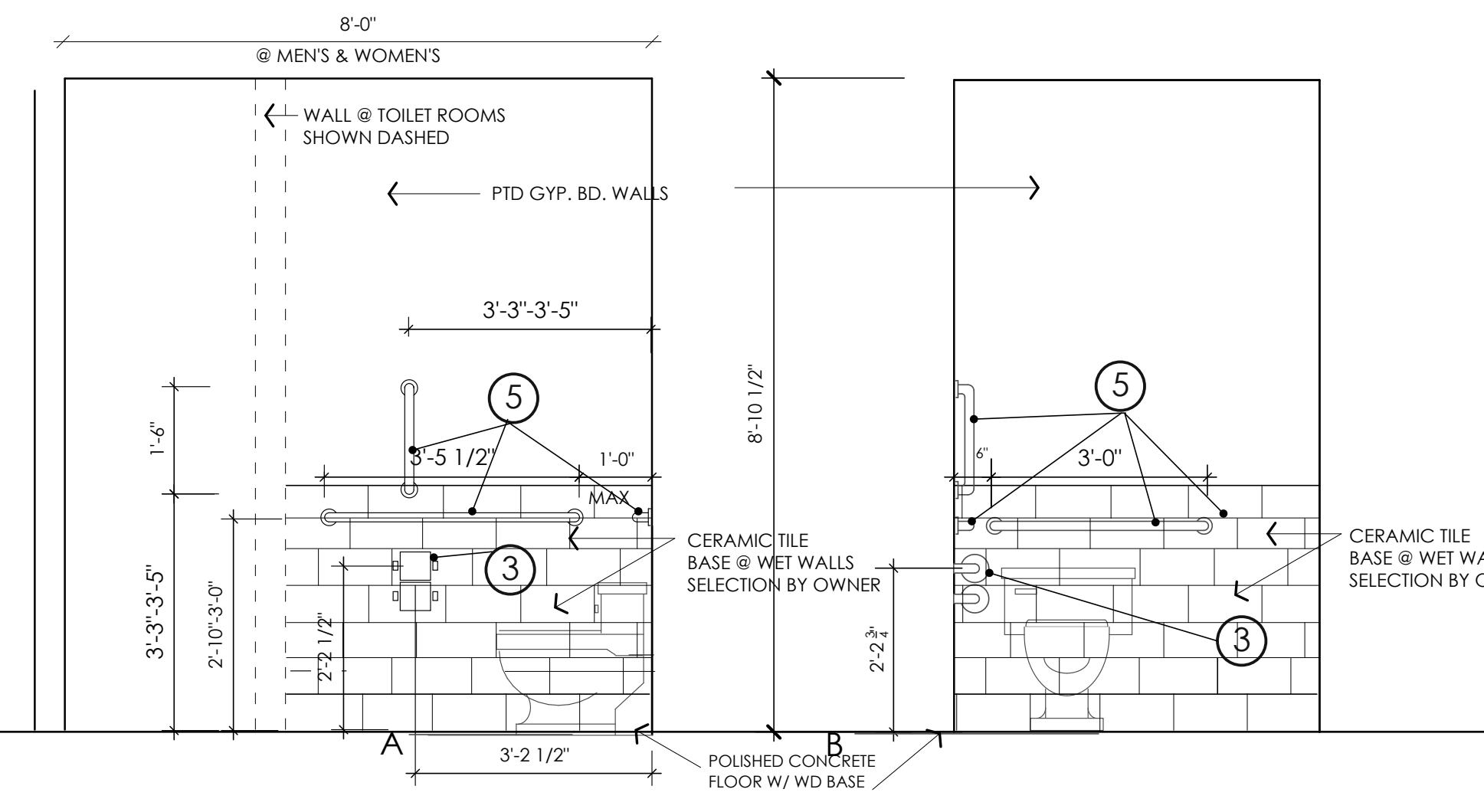
- 1 SEMI-RECESSED SOAP DISPENSER
- 1a SURF. MTD. SOAP DISPENSER
- 2 SEMI-RECESSED PAPER TOWEL DISPENSER
- 2a SURFACE MTD. PAPER TOWEL DISPENSER
- 3 DBL. TOILET PAPER HOLDER
- 4 MIRROR BY OWNER
- 5 GRAB BARS

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NOTE: PROVIDE SOAP DISPENSE 1a & PAPER TOWEL DISP. 2a AT ALL HAND SINKS

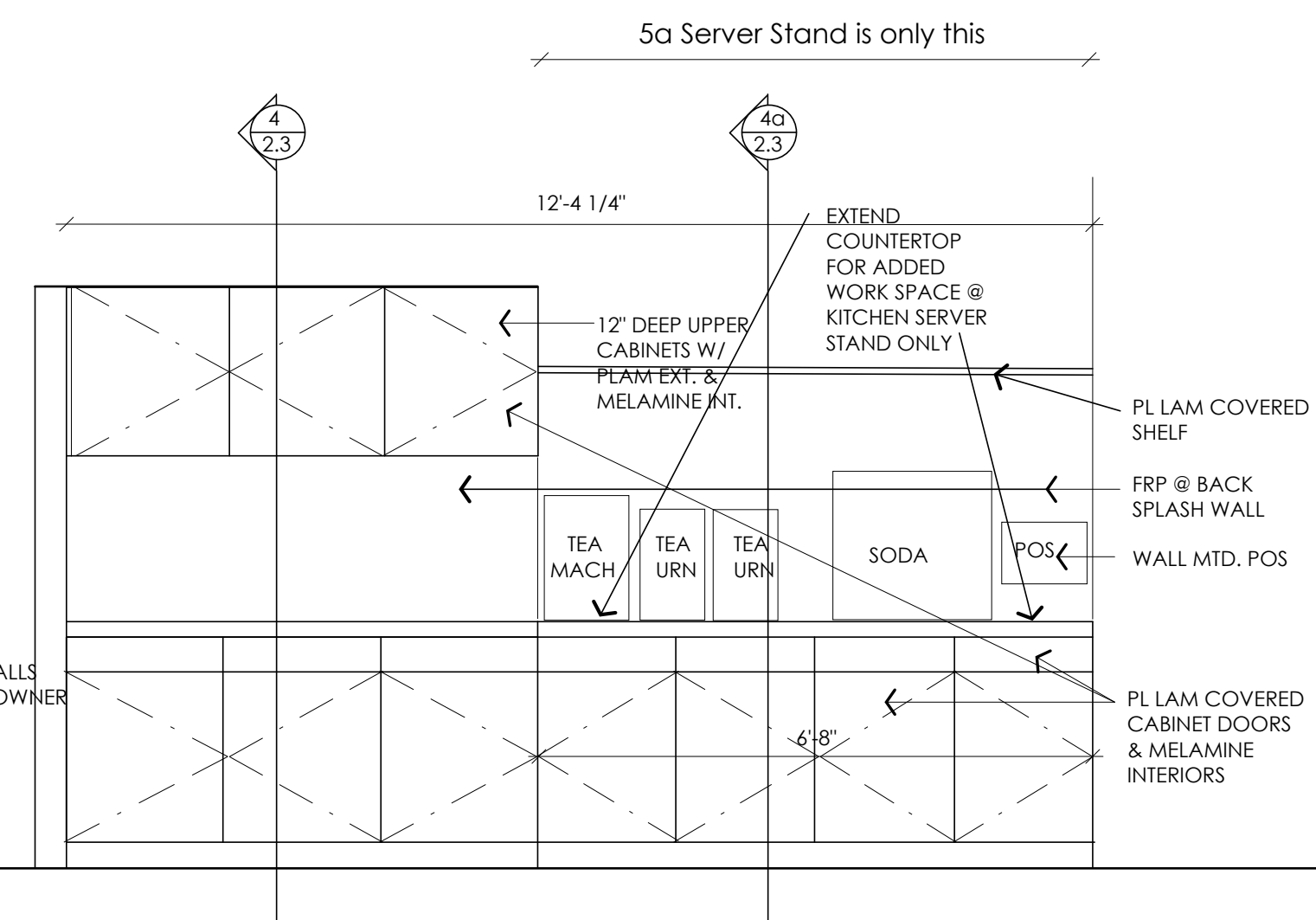
TOILET ACCESSORIES



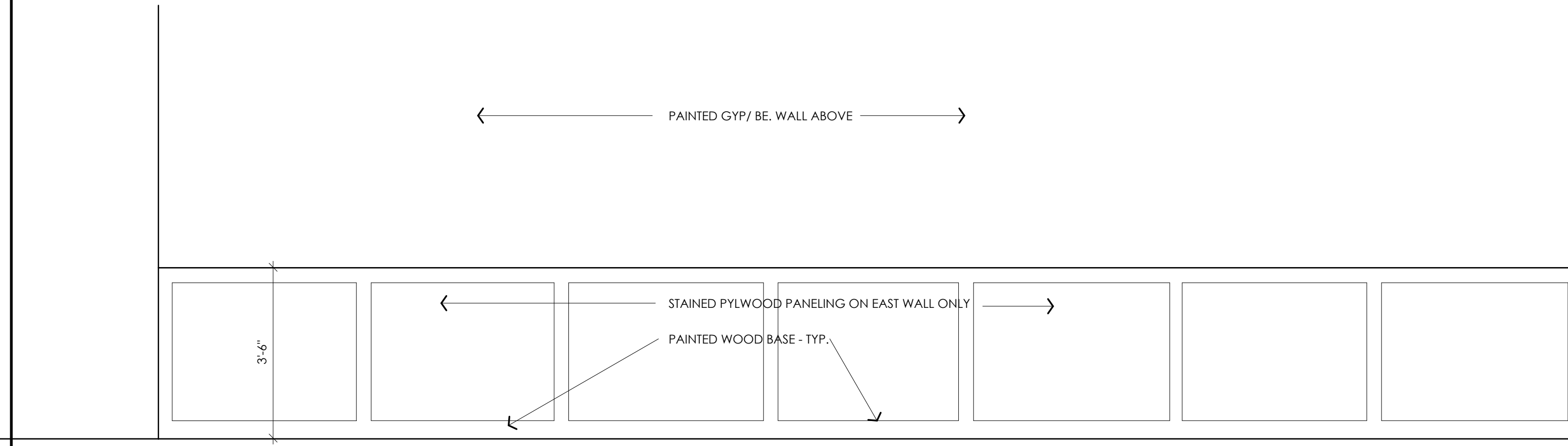
3 WOMEN'S TOILET ROOM ELEVATIONS
1/2" = 1'-0"



4 INT. TYPICAL TOILET ROOM ELEVATIONS - ADA INFORMATION
1/2" = 1'-0"



5 INT. ELEVATION SERVER STAND
1/2" = 1'-0"



6 EAST WALL AT PRIVATE DINING
1 1/2" = 1'-0"

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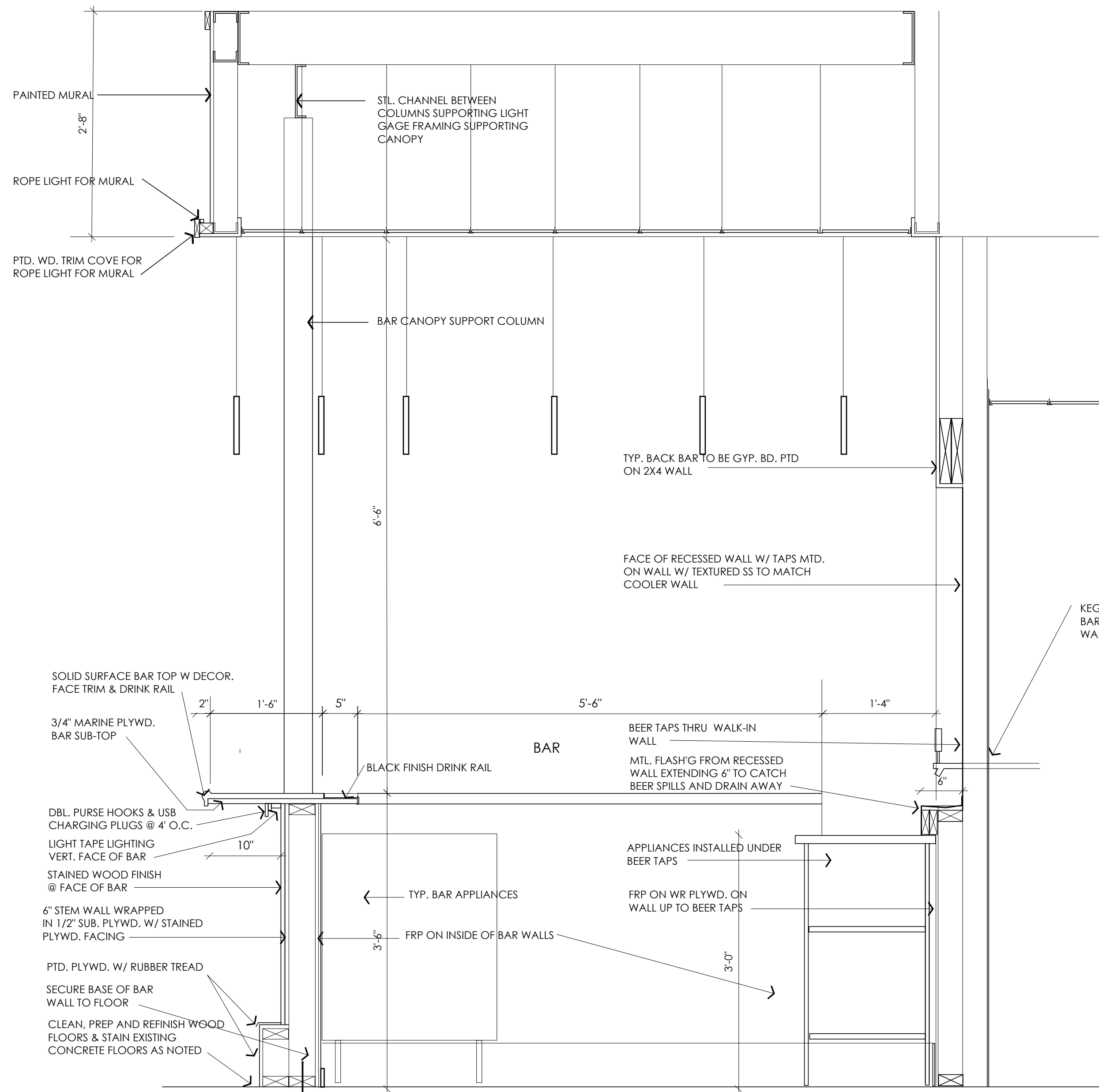
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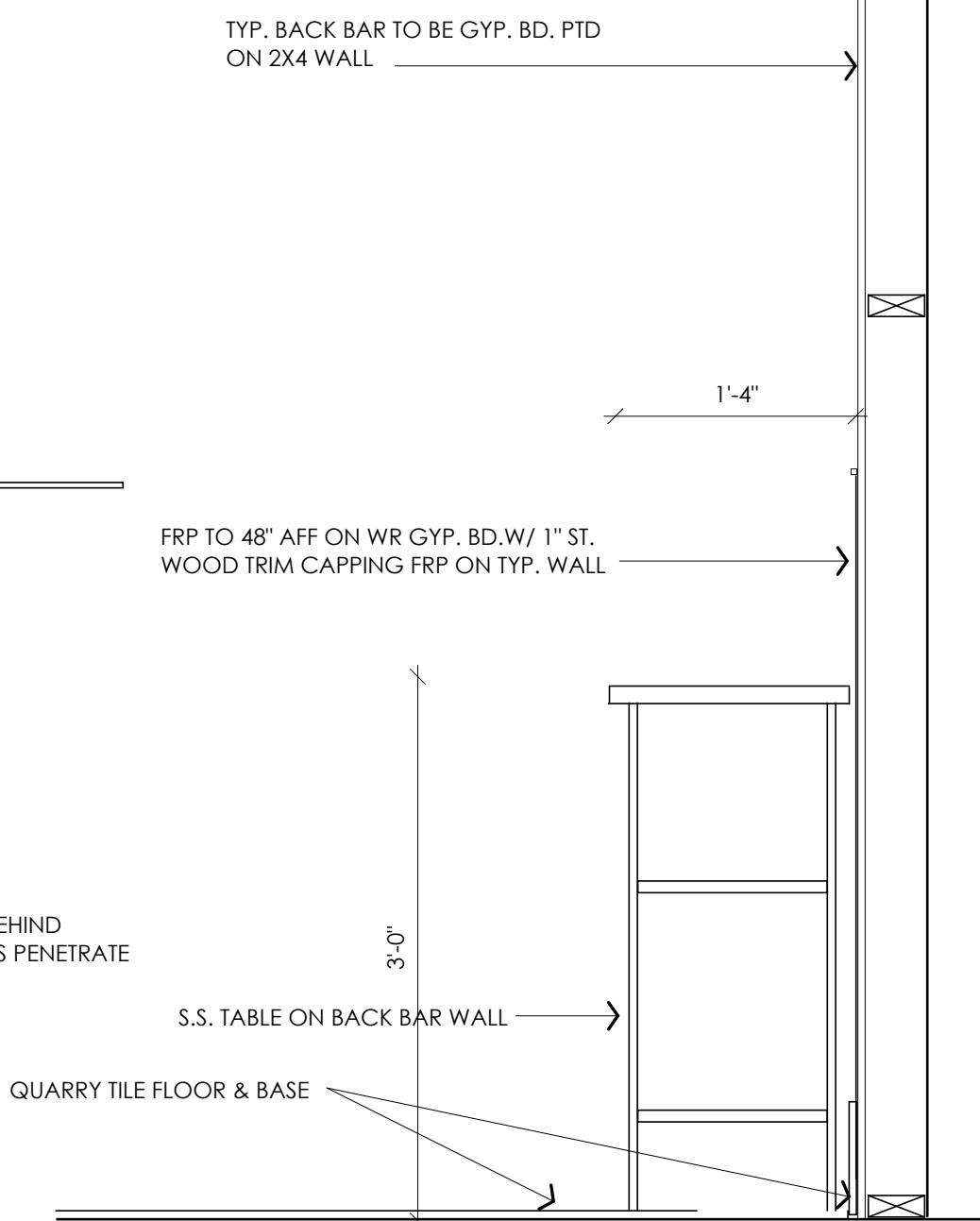
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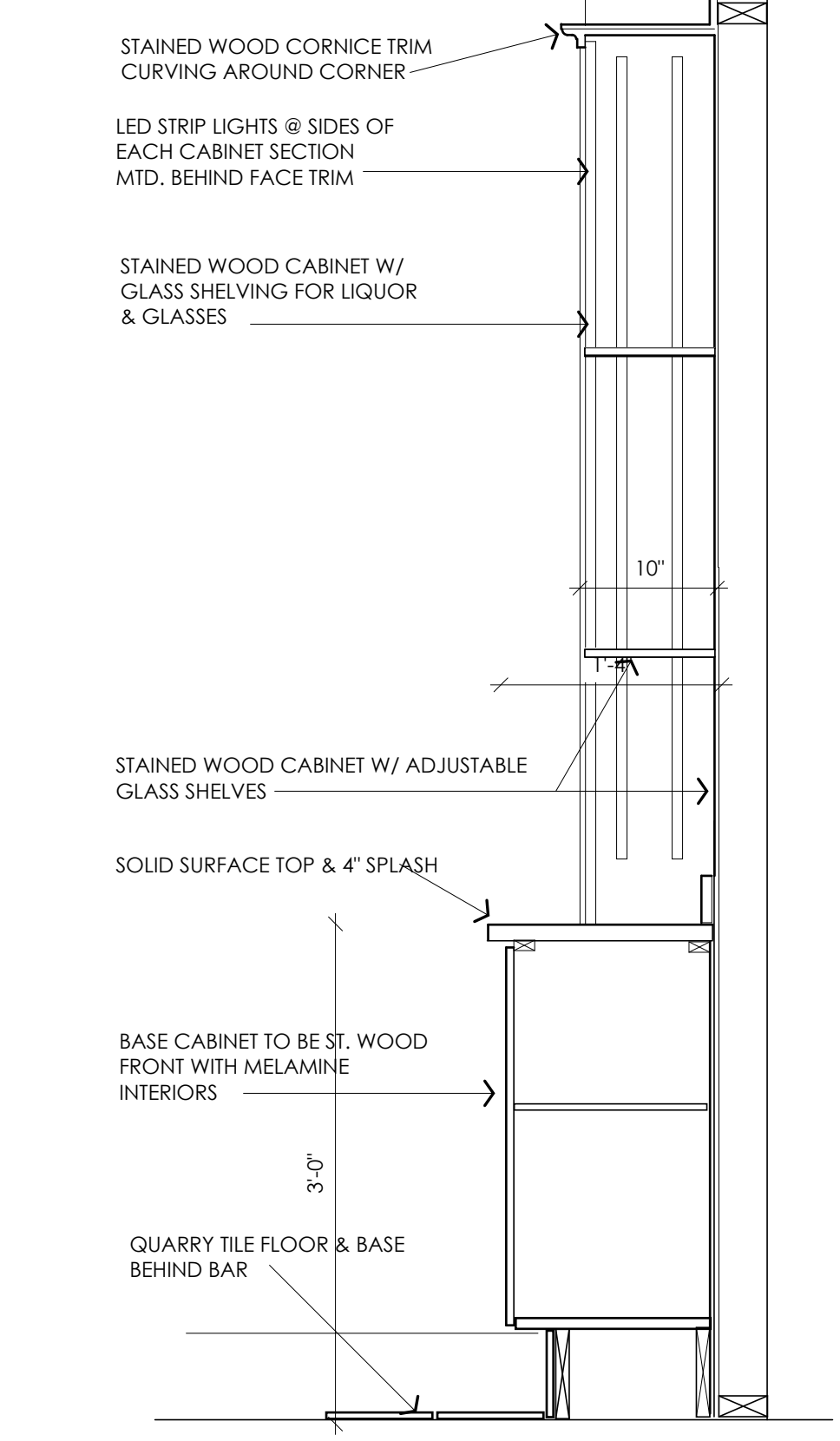
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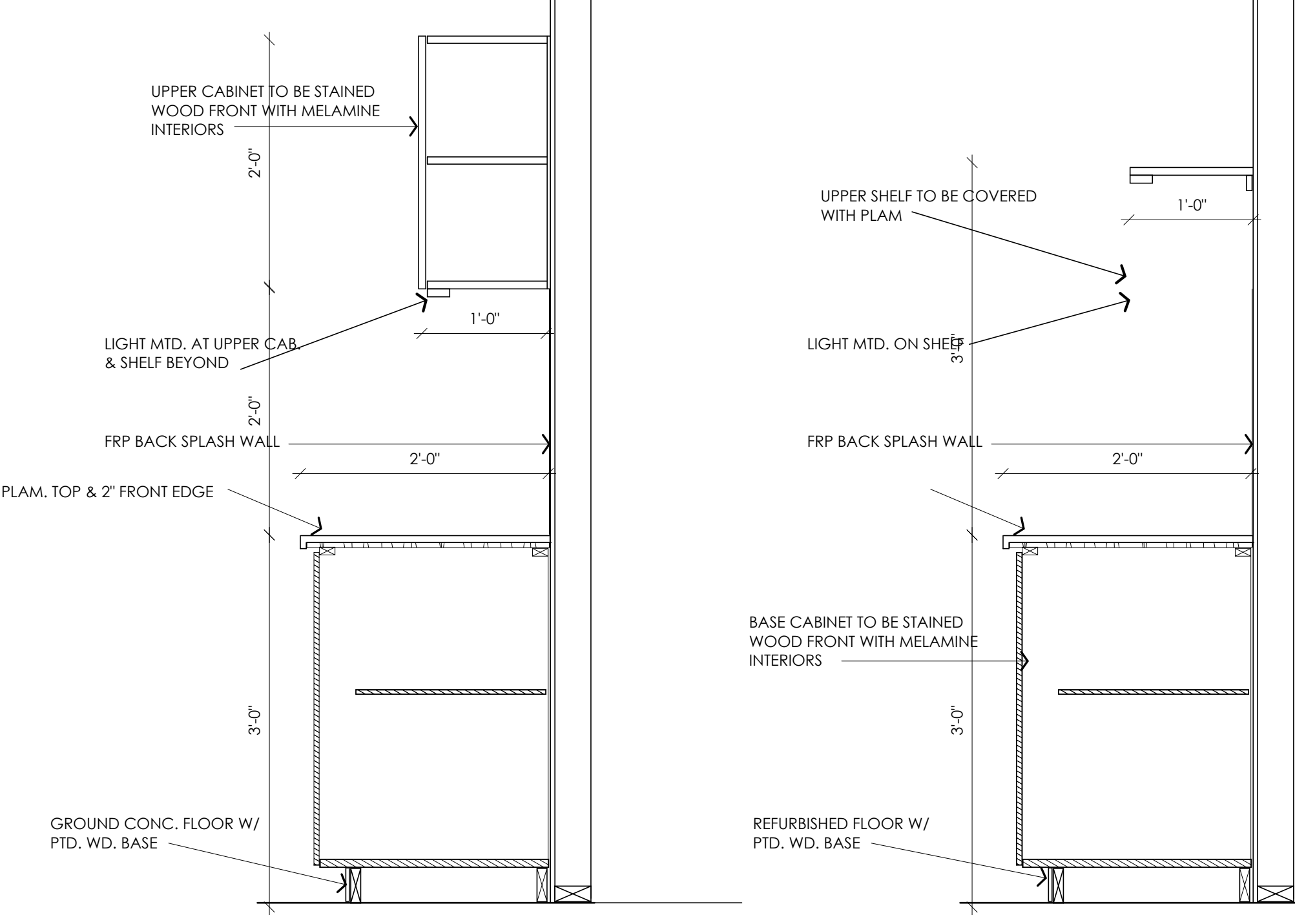
1 BAR/BACKBAR SECTIONS & BAR SECTION @ BEER TAPS
SCALE 1" = 1'-0"



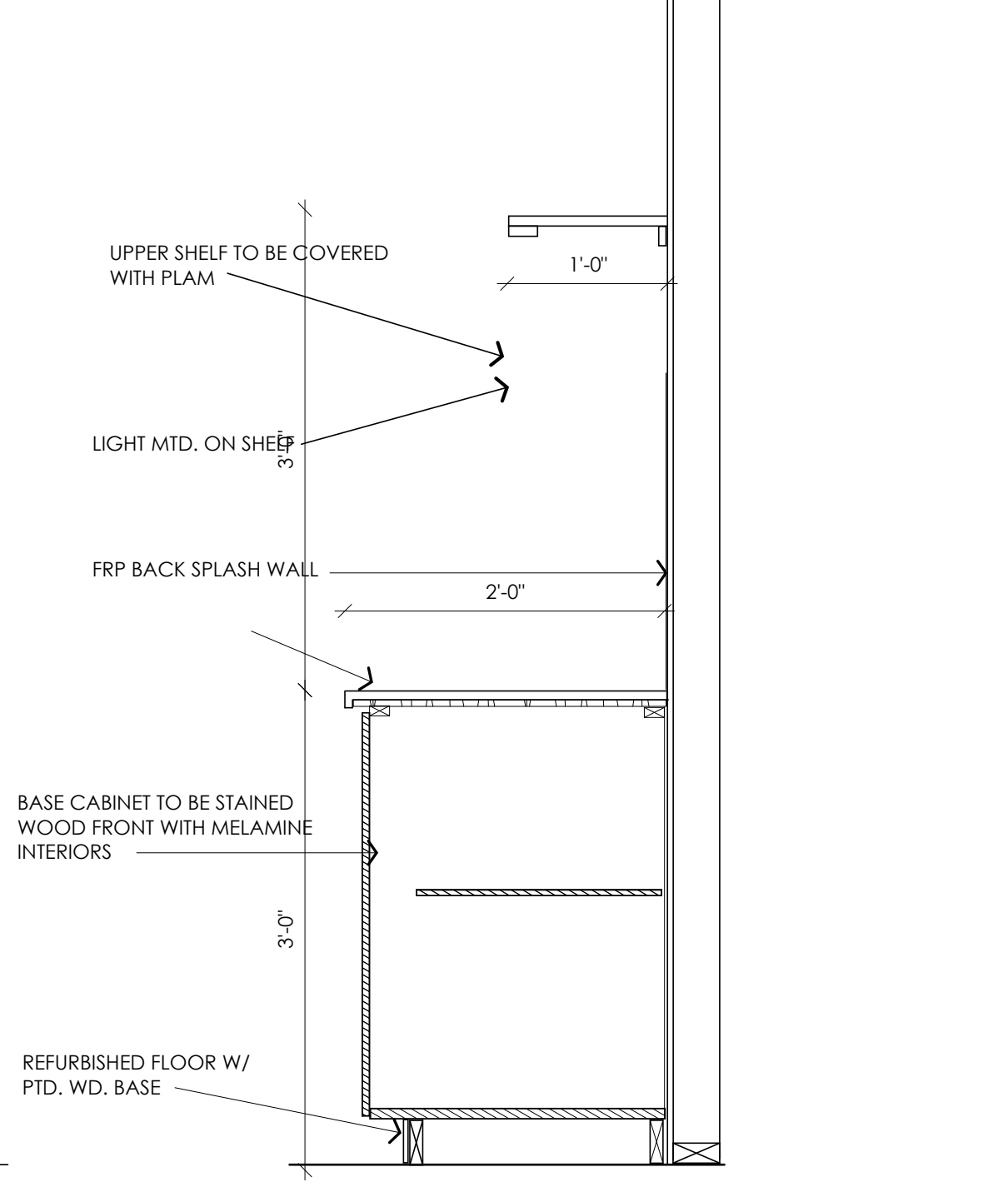
2 SECTION @ TYPICAL BACK BAR
SCALE 1" = 1'-0"



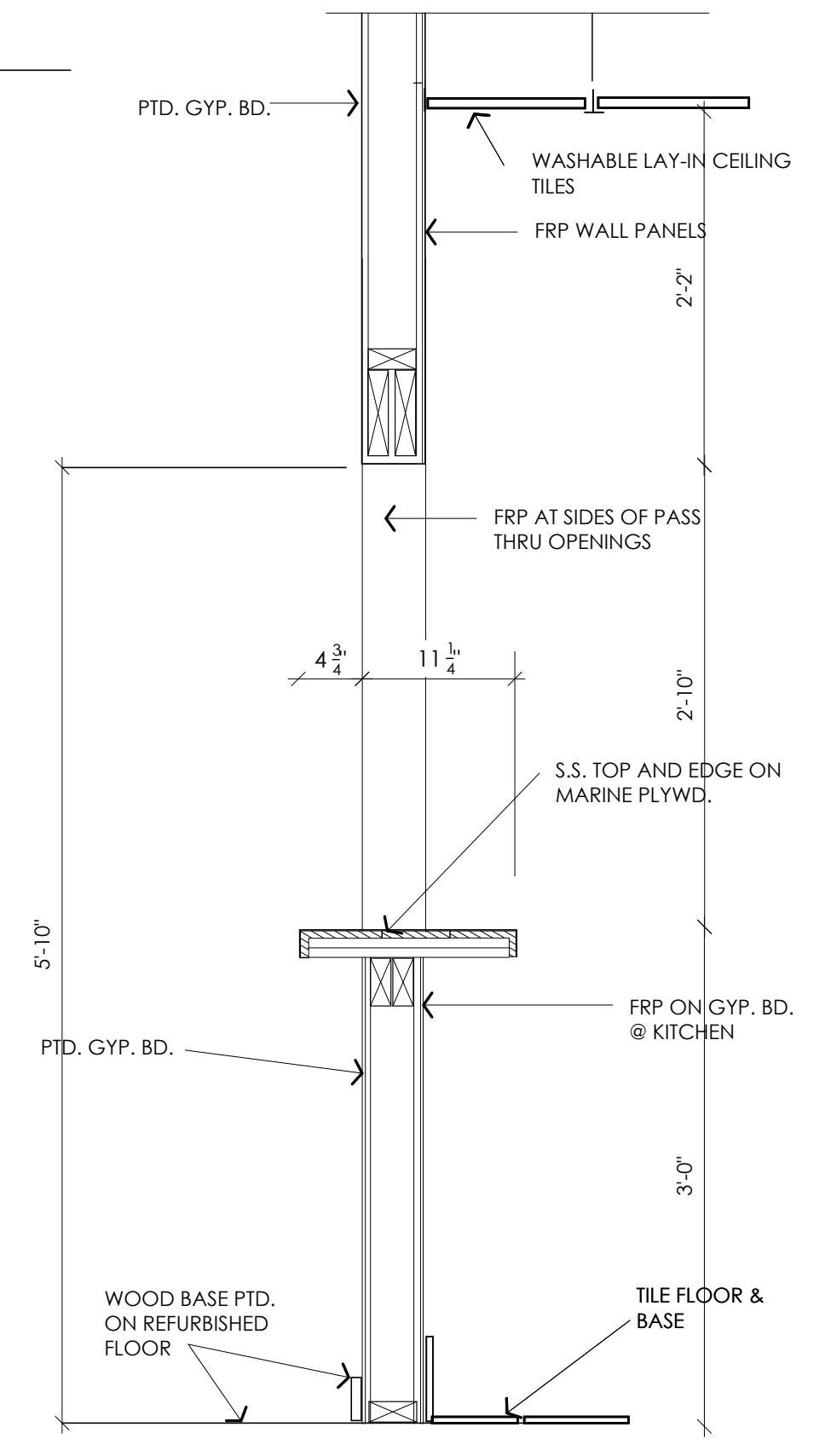
3 SECTION @ BACK BAR DISPLAY
SCALE 1" = 1'-0"



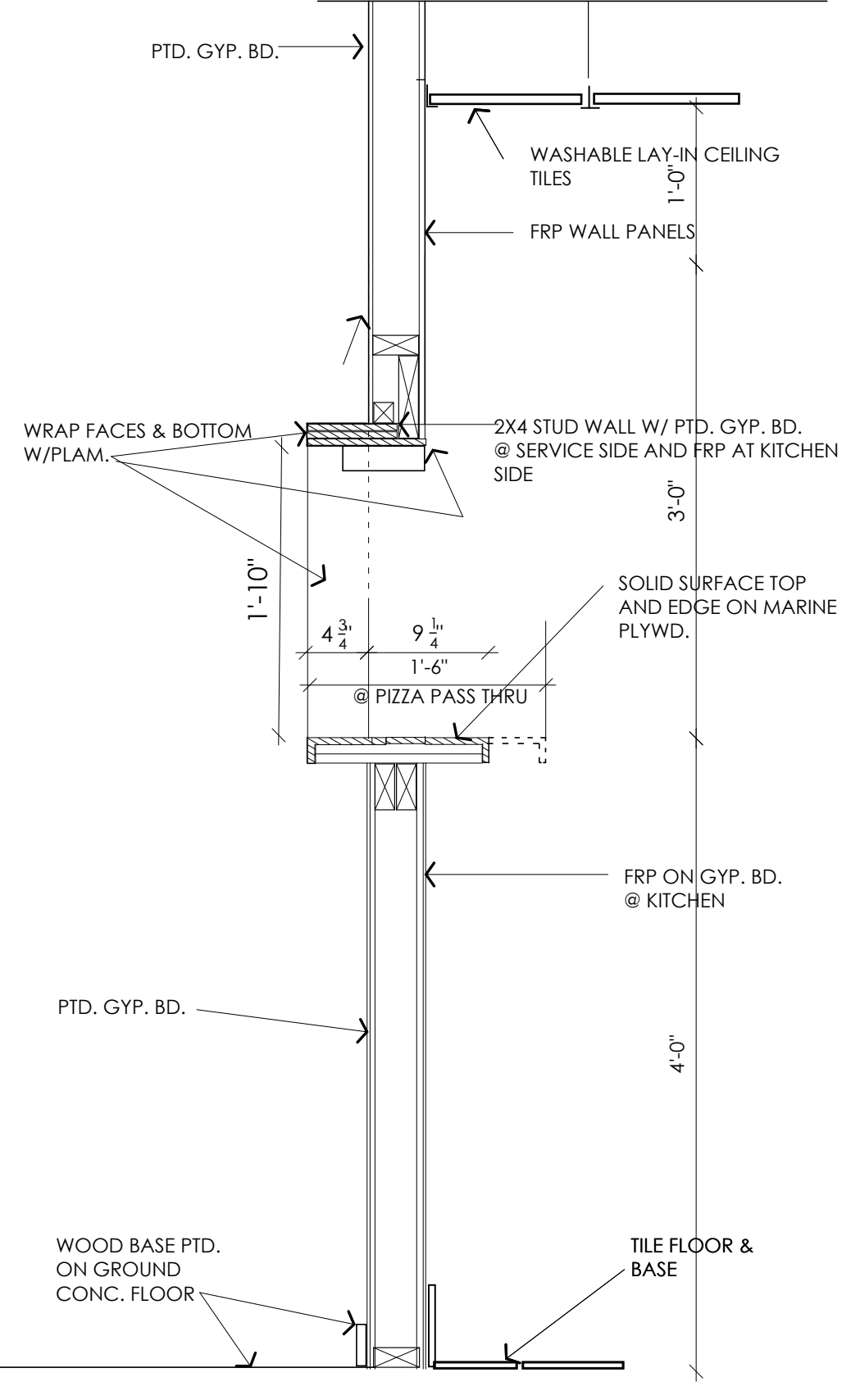
4 SECTION @ SERVER STATION
SCALE 1" = 1'-0"



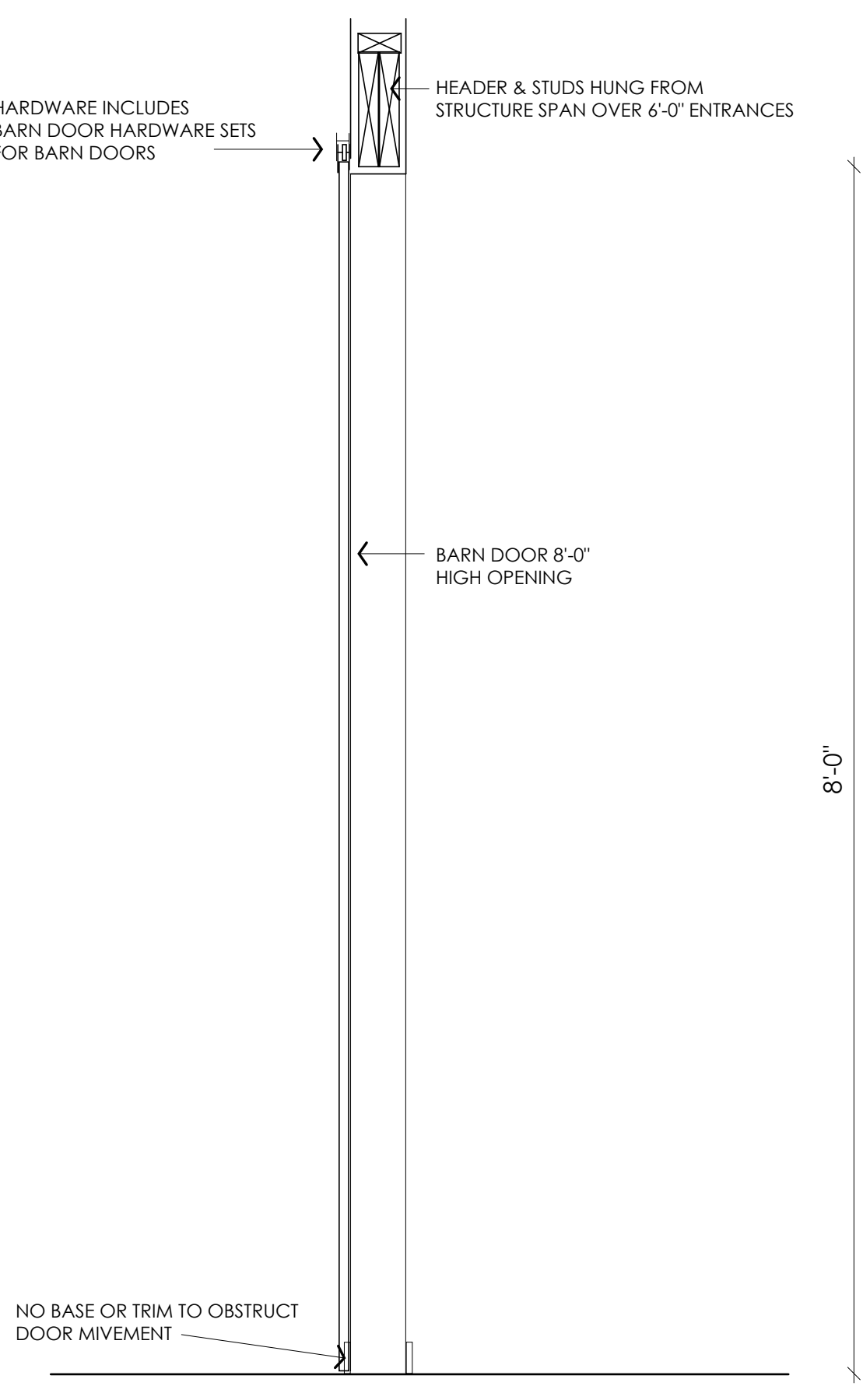
4a SECTION @ SERVER STATION
SCALE 1" = 1'-0"



5 DISH PASS SECTION
SCALE 1" = 1'-0"



5a EXPO/PIZZA SECTION
SCALE 1" = 1'-0"



6 SECTION @ BARN DOORS
SCALE 1" = 1'-0"



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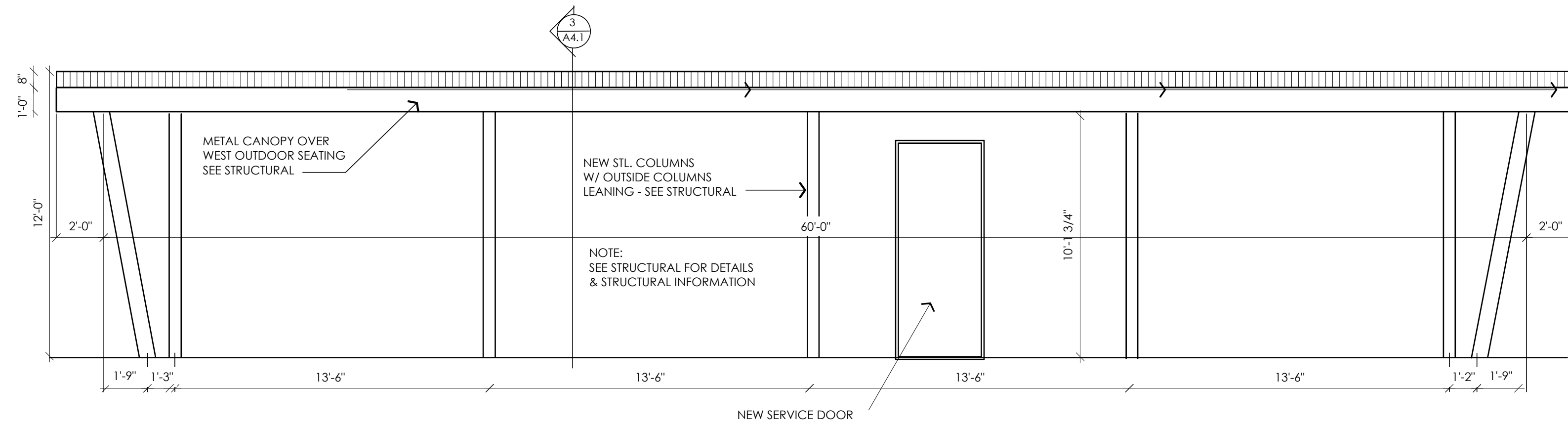
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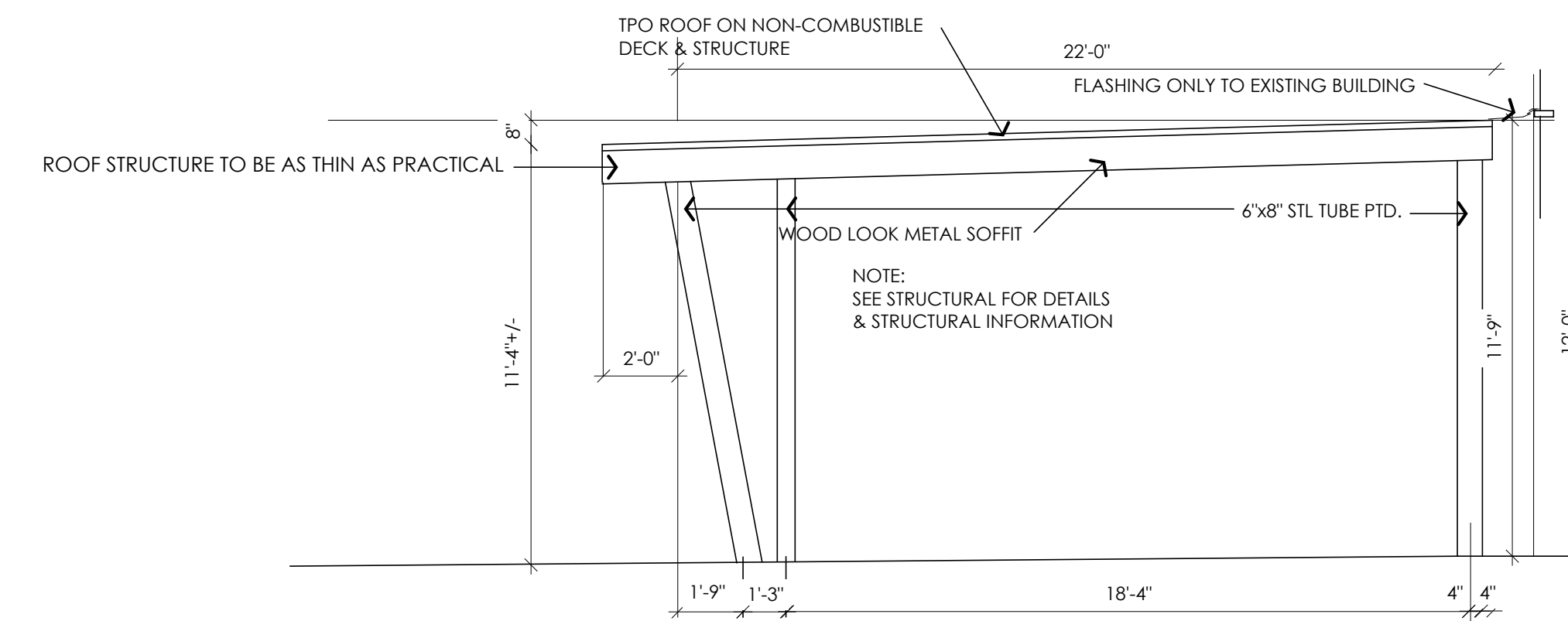
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INTERIOR DETAILS

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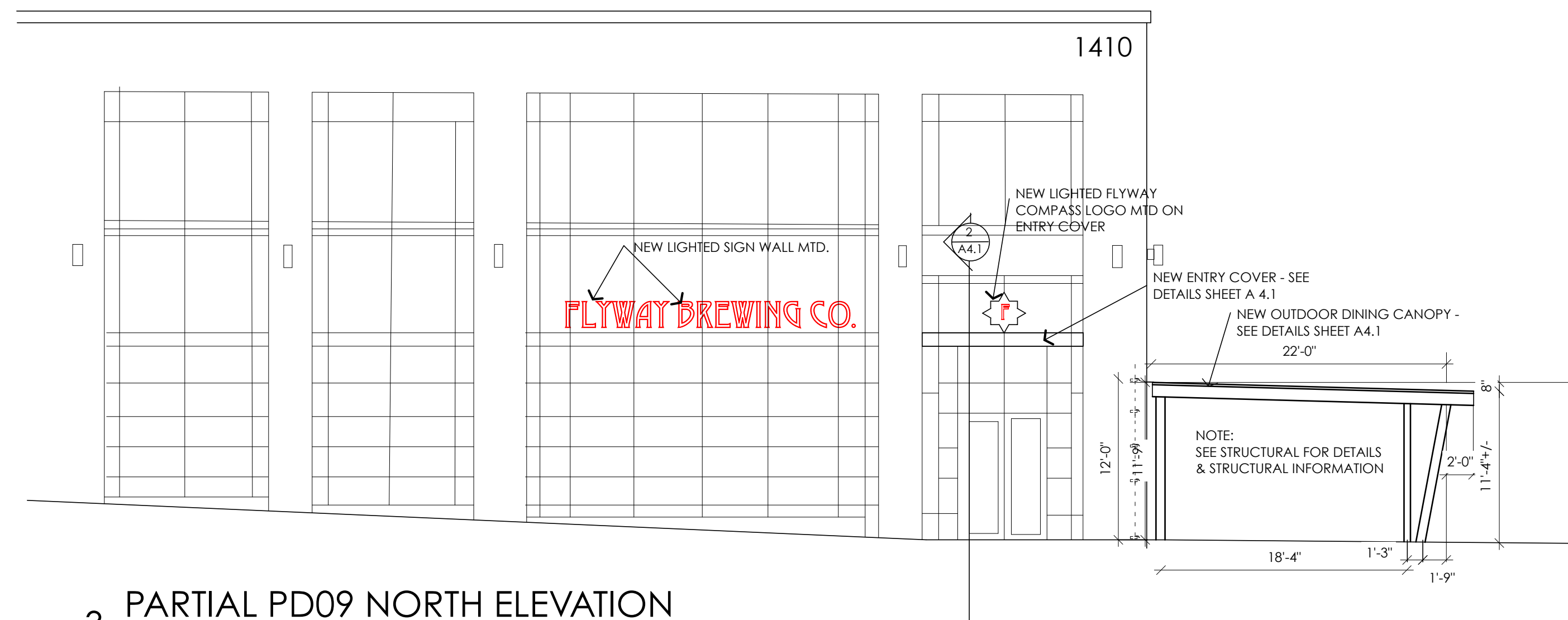
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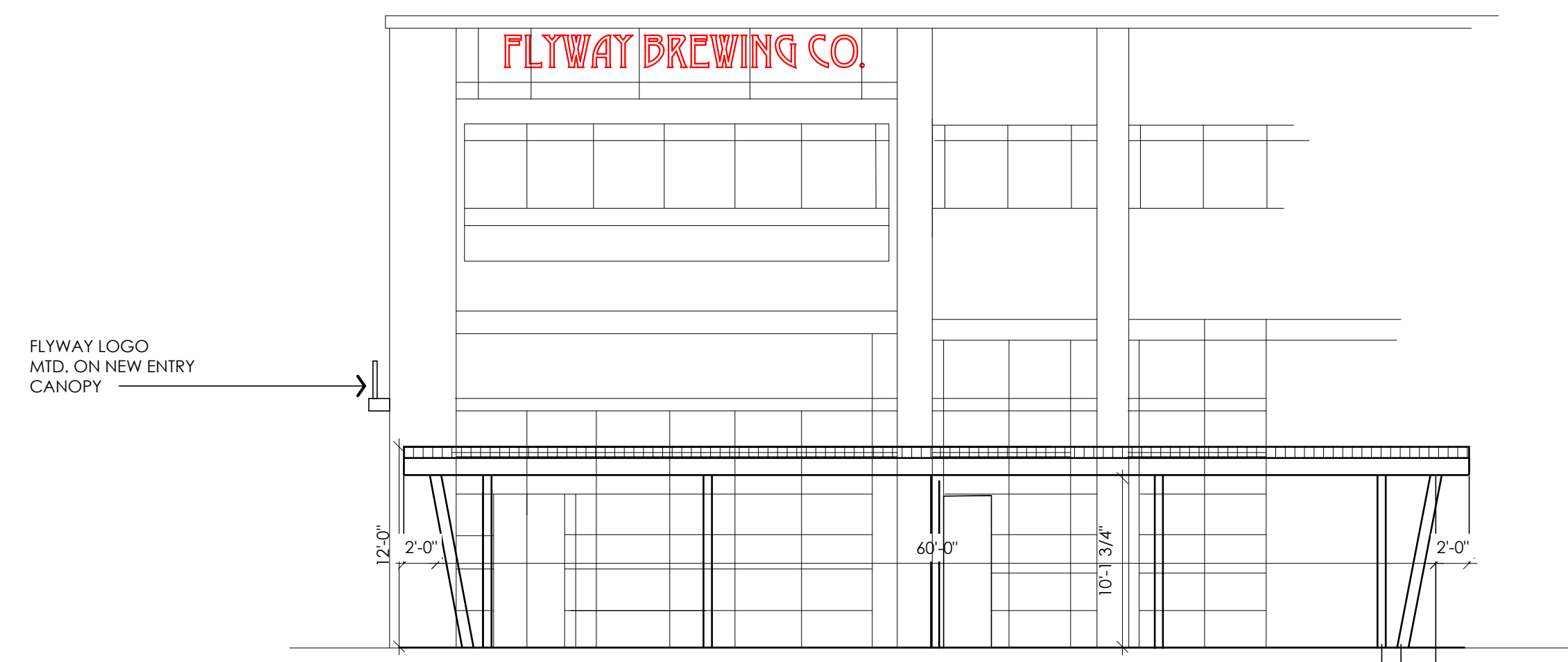
1 PARTIAL NEW CANOPY ELEVATION LOOKING WEST
SCALE 1/4"=1'-0"



2 SECTION @ NEW CANOPY LOOKING NORTH
SCALE 1/4"=1'-0"



3 PARTIAL PD09 NORTH ELEVATION
SCALE 1/8"=1'-0"



4 PARTIAL PD09 WEST ELEVATION
SCALE 1/8"=1'-0"



VICINITY MAP



REV	DATE	DESCRIPTION

FLYWAY TAPROOM
WMC Parking Deck 09
Bentonville, Arkansas



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Heiple+Wiedower
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3 Lenon Place
Little Rock, AR 72207
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Cert. Author. # LL-21

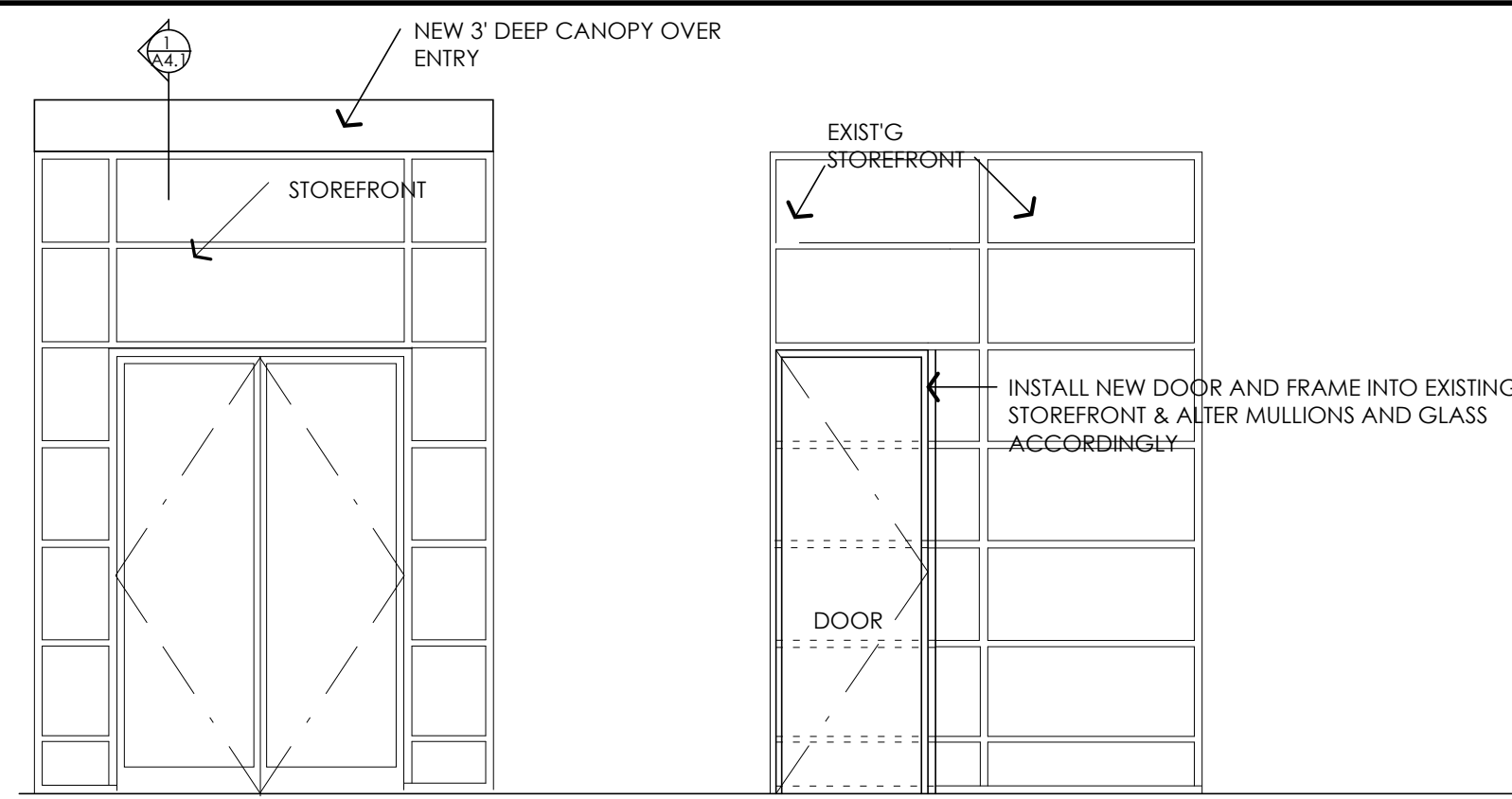
Project No:
HW24-821

Date:
03/10/2025

Sheet Title:
EXTERIOR ELEVATIONS
& SECTIONS

of
Sheet No:

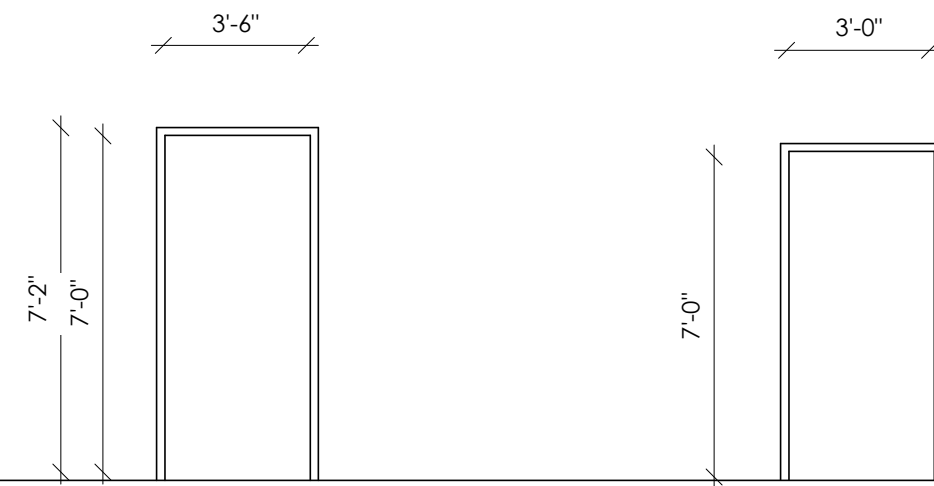
A3.1



A EXIST'G ALUM. STOREFRONT W/ PAIR OF DOORS TO REMAIN. HARDWARE, IF NOT EXIST'G, TO INCLUDE CLOSERS, WEATHERSTRIPPING, DOOR BOTTOM AND LOCKS TO MEET LIFE SAFETY REQUIREMENTS

B EXIST'G ALUM. STOREFRONT TO BE MODIFIED BY ADDING NEW FULL GLASS ALUMINUM DOOR TO MATCH EXISTING. HARDWARE TO INCLUDE HINGES, CLOSER, WEATHERSTRIPPING, DOOR BOTTOM, PANIC DEVICES, PULLS, PUSHPLATES, LATCHES AND LOCKS TO MEET LIFE SAFETY REQUIREMENTS

C NOT USED

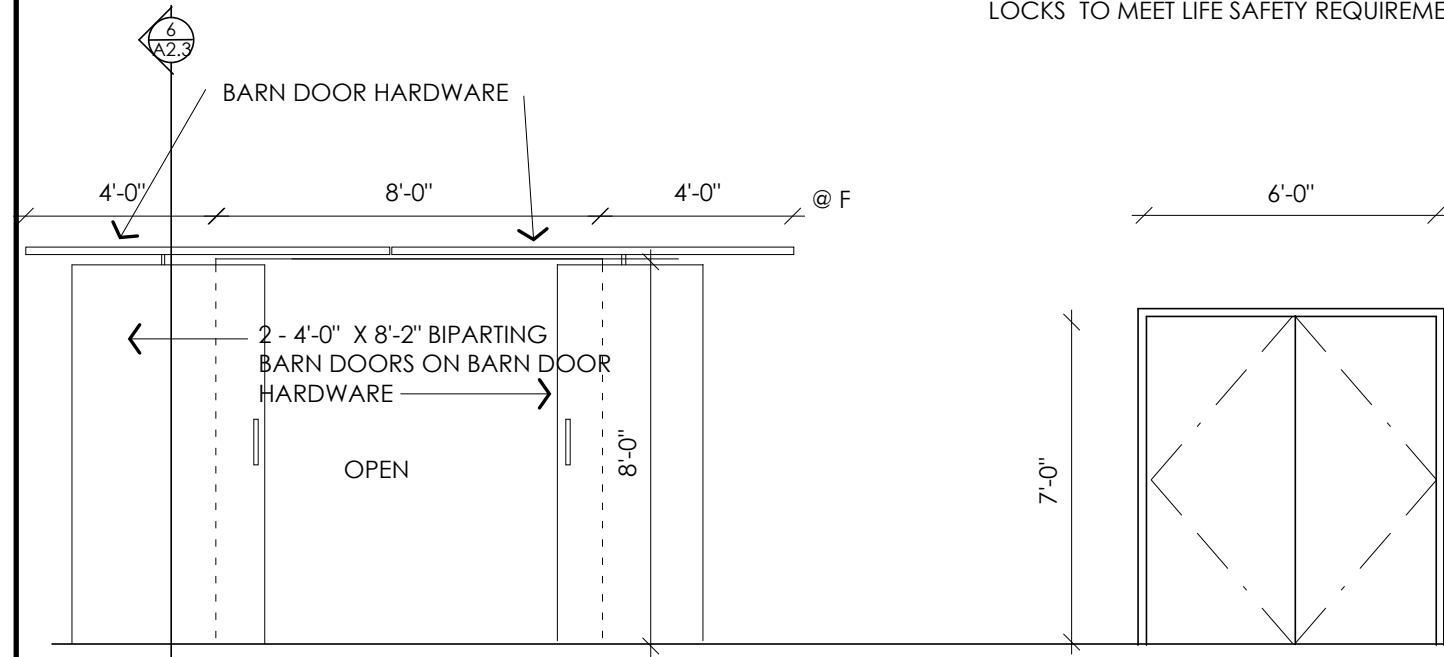


D NEW 42" WIDE HM DOOR IN HM FRAME W/ 2 HR FIRE RATING -PTD. HARDWARE TO INCLUDE: HINGES, CLOSER & ENTRY LOCKSET

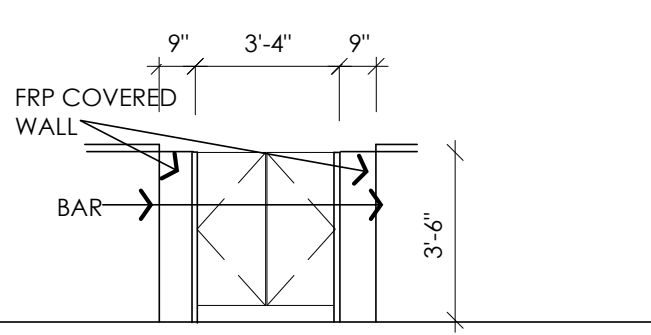
Ea NEW SC WD. DOOR IN HM FRAME, HARDWARE: HINGES, CLOSER, PUSH PLATE & PULL BAR

Eb SIMILAR TO Ea EXCEPT HARDWARE TO INCLUDE: HINGES & ENTRY LOCK SET

Ec SIMILAR TO Ea EXCEPT HARDWARE TO INCLUDE: HINGES, CLOSER & PANIC BAR EXIT DEVICE



F NEW PAIR OF BI-PARTING BARN DOORS 4'-0" WIDE X 8'-2" TALL - HARDWARE TO INCLUDE RECESSED 5" LONG RECT. BARN DOOR PULLS BOTH SIDES @ ALL DOORS AND BARN DOOR HARDWARE SET W/TRACK AND ROLLERS IN BLACK FINISH AT EACH BARN DOOR



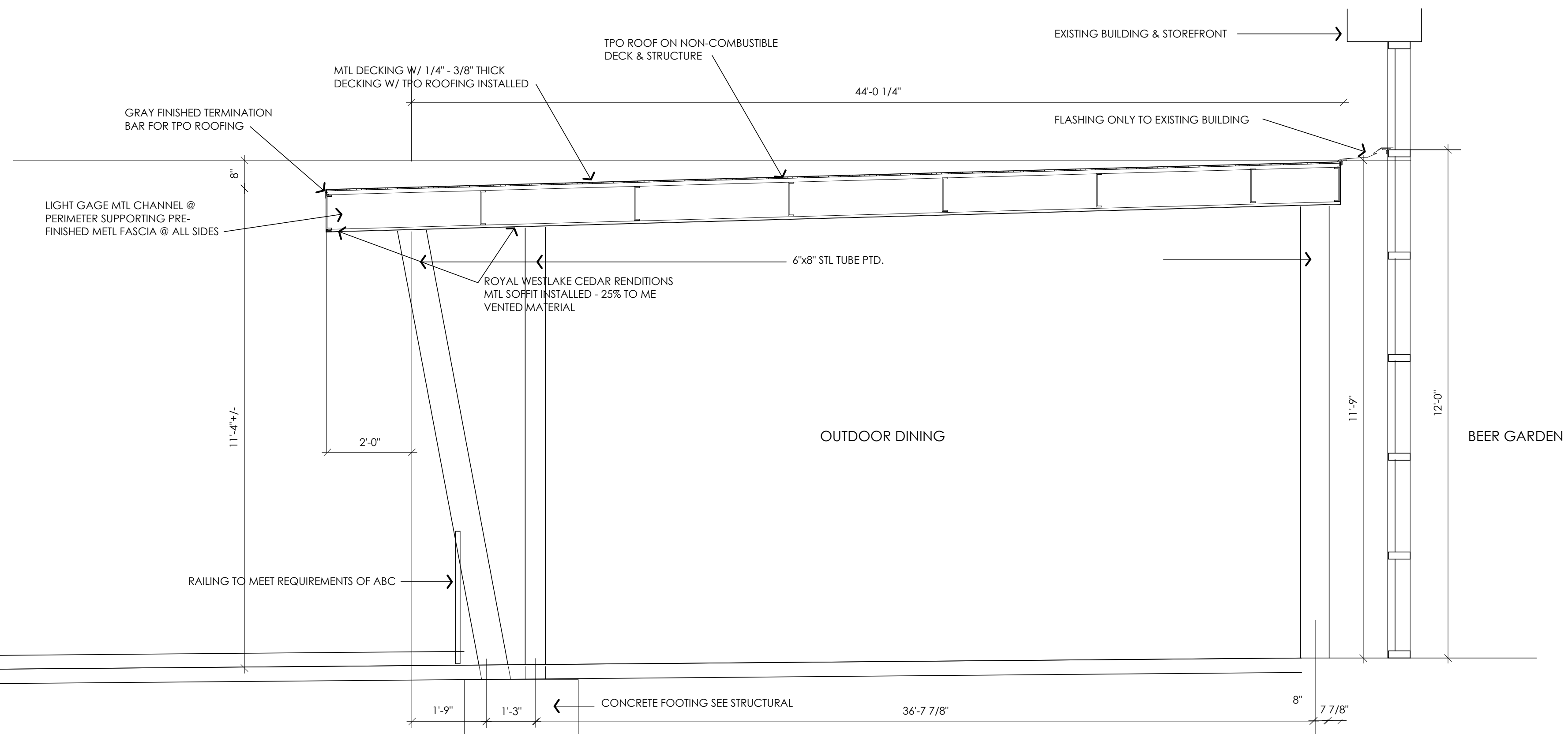
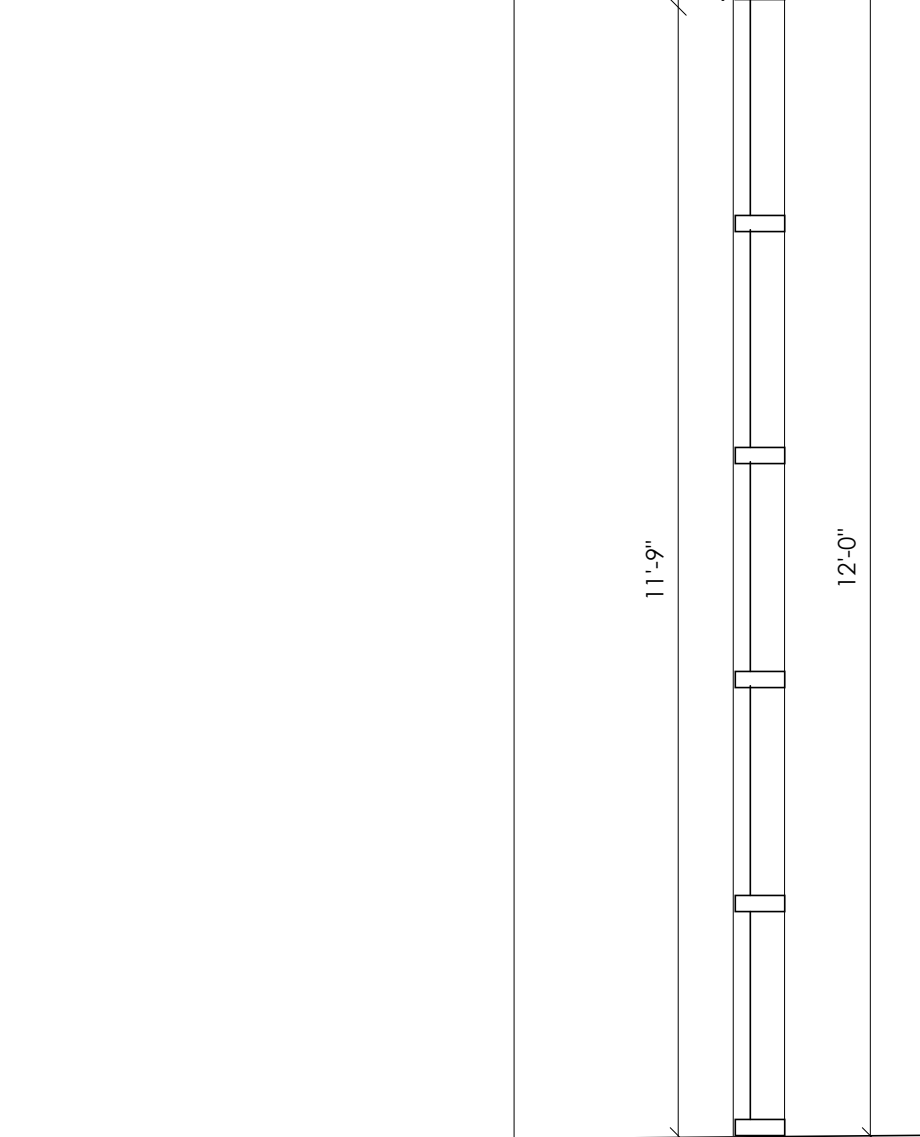
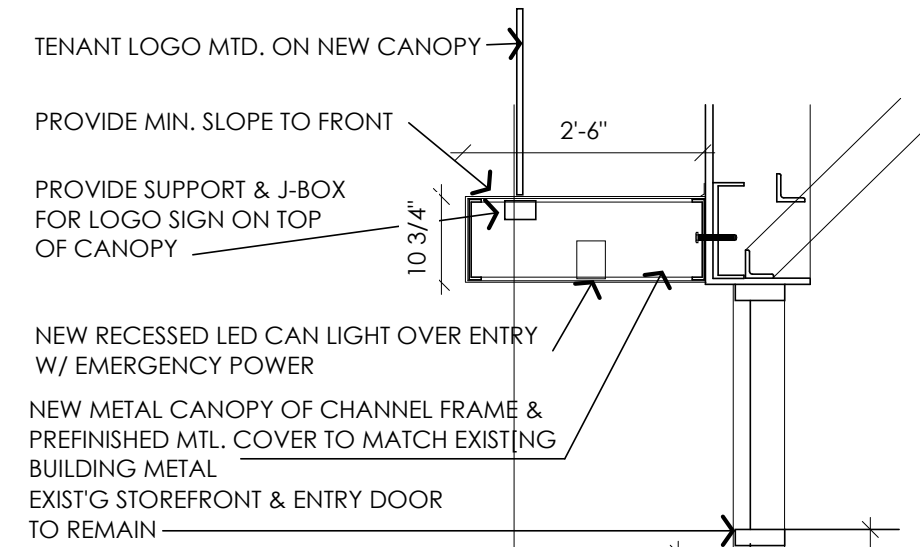
G NEW PAIR OF SC WD. DOORS IN HM FRAME, HARDWARE: HINGES, CLOSERS, HOLD-OPENS, LATCHSET & FLOOR AND HEAD BOLT IN INACTIVE LEAF



H NEW 3/4" PLAM COVERED PLYWOOD BI-DIRECTIONAL SWINGING PAIR OF BARN DOORS-HARDWARE TO INCLUDE SPRING HINGES W/ SELF RETURN TO CENTER

DOOR AND WINDOW SCHEDULE

1/4" = 1'-0"



2 SECTION @ NEW ENTRY CANOPY LOOKING EAST
SCALE 1/4"=1'-0"

2 SECTION @ NEW CANOPY LOOKING NORTH
SCALE 1/2"=1'-0"

FINISH SCHEDULE	FLOOR		BASE	WAINSCOT	WALLS	CLNG	REMARKS
	CLEANED & SEALED CONCRETE	QUARRY TILE SPECIAL COLOR	NEW LVT FLOORING	4" FTD WOOD BASE	6" QUARRY TILE BASE-SPECIAL COLOR	4" RUBBER BASE	
ROOM							
MAIN DINING	●						1
BEER GARDEN	●						2
BAR	●						3 7
PRIVATE DINING	●						1 5 8
KITCHEN	●						4
KITCHEN WALK-IN COOLER	●						4
LOCKED STORAGE	●						4
BEER WALK-IN COOLER	●						4
MENS TOILET ROOM	●						3 6
WOMENS TOILET ROOM	●						3 6
SERVICE HALLWAY	●						2



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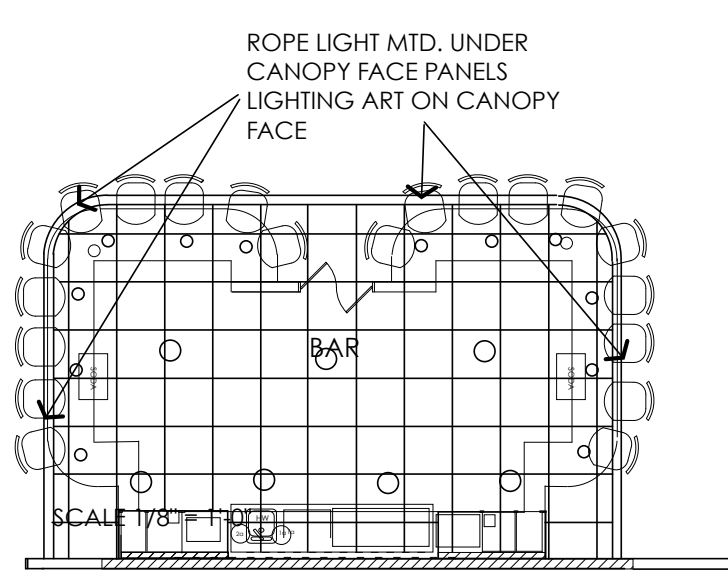
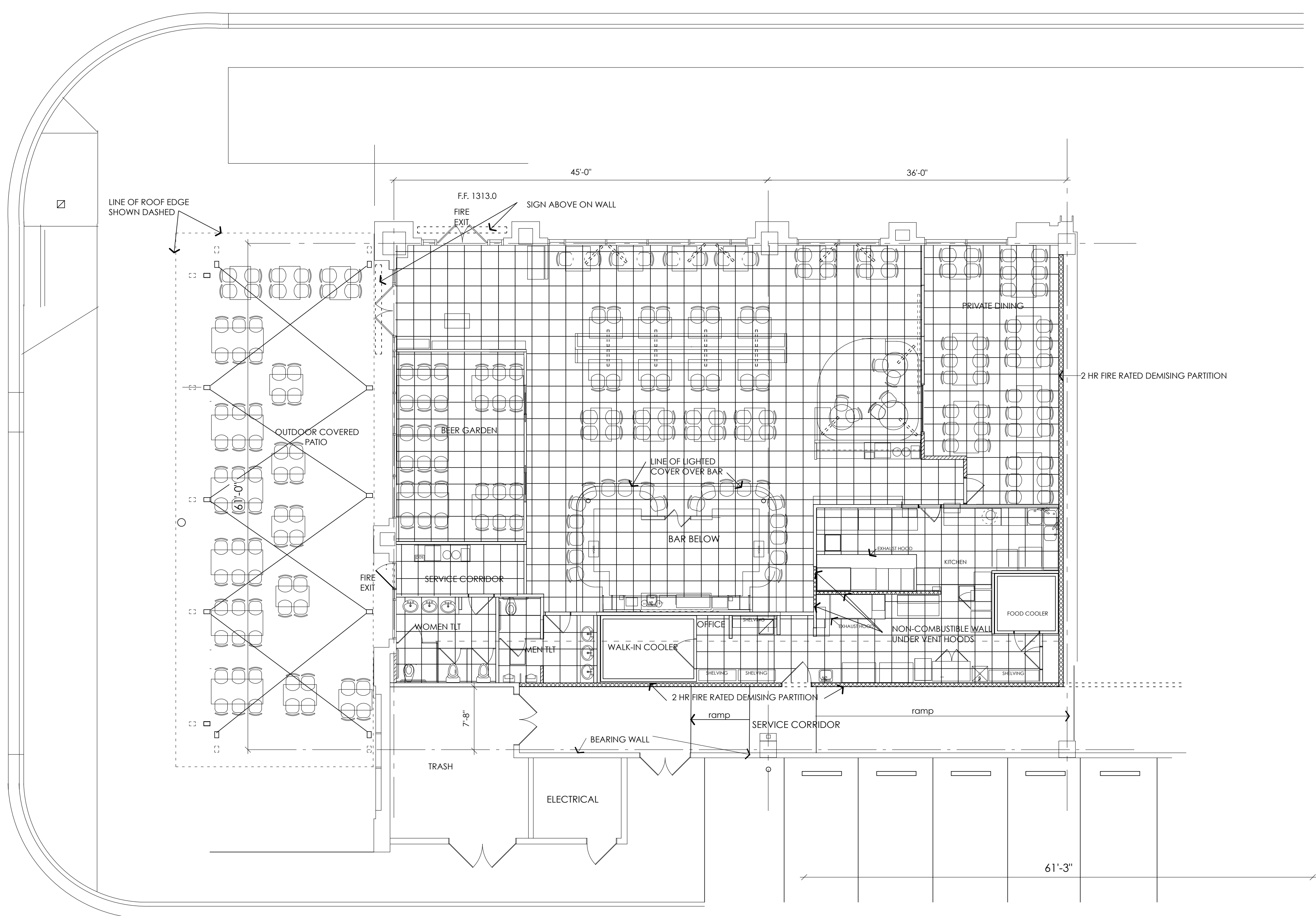
Project No:
HW24-821

Date:
03/10/2025

Sheet Title:
SCHEDULES & DETAILS

of
Sheet No:

A4.1

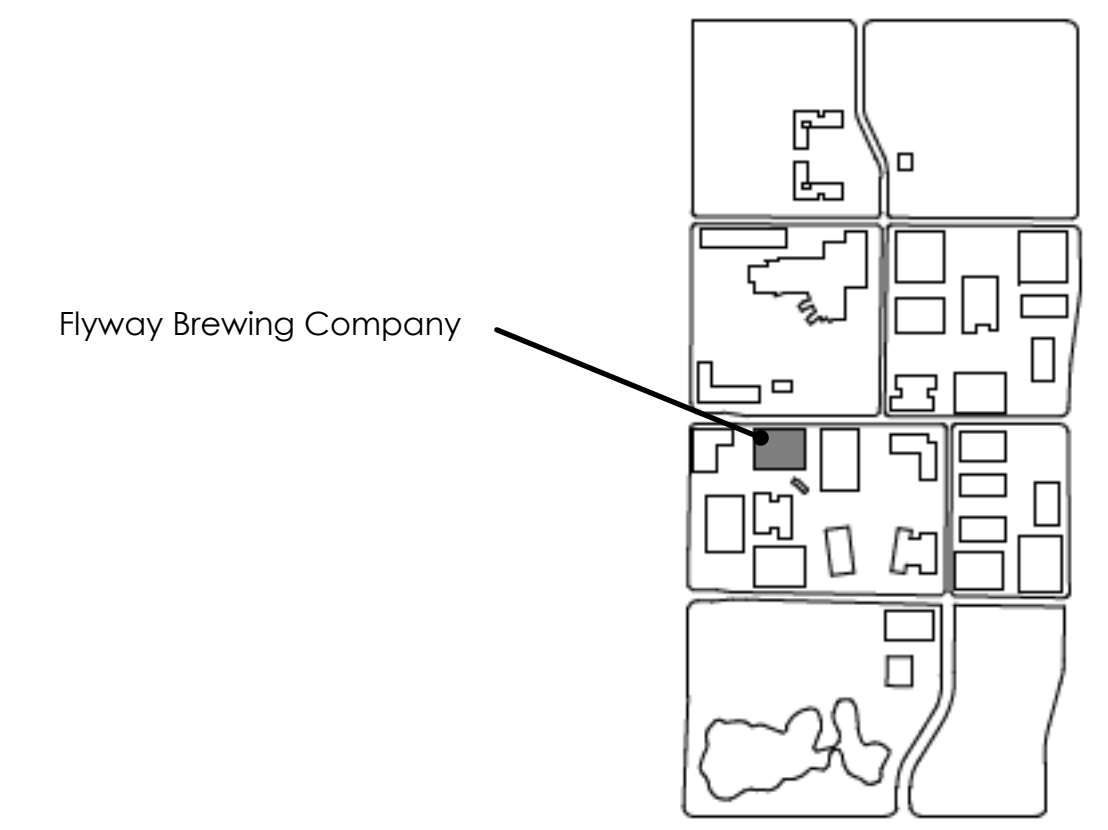


BAR FIRE PROTECTION & FIRE ALARM PLAN
SCALE 1/8"=1'-0"

FIRE PROTECTION & ALARM PLAN
SCALE 1/8"=1'-0"

FIRE ALARM SYSTEM
THIS TENANT SPACE TO HAVE A FIRE ALARM SYSTEM INSTALLED TO MEET THE REQUIREMENT OF THE IBC. COORDINATE WITH BUILDING OWNERS FOR COMPATIBLE INSTALLER AND CODE ENFORCEMENT FOR EXACT REQUIREMENTS

FIRE SPRINKLER SYSTEM
THIS TENANT SPACE WILL HAVE ALL SPRINKLERS INSTALLED TO SERVE THE REVISED PLAN OF THIS SPACE AS SHOWN ON THIS DRAWING ACCORDING TO NFPA 13. ALL LAYOUT AND MODIFICATIONS TO BE DIRECTED AND INSTALLED BY A CERTIFIED FIRE SPRINKLER CONTRACTOR, IN ACCORDANCE WITH NFPA 13.



VICINITY MAP

REV	DATE	DESCRIPTION

FLYWAY TAPROOM
Walmart Campus
Parking Deck 09
Bentonville, Arkansas



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Cert. Author. # LL-21

Project No:
HW24-821

Date:
03/10/2025

Sheet Title:
FIRE PROTECTION
& FIRE ALARM

of
Sheet No:

FP-1



REV	DATE	DESCRIPTION

FLYWAY TAPROOM
WMC Parking Deck 09
 Bentonville, Arkansas



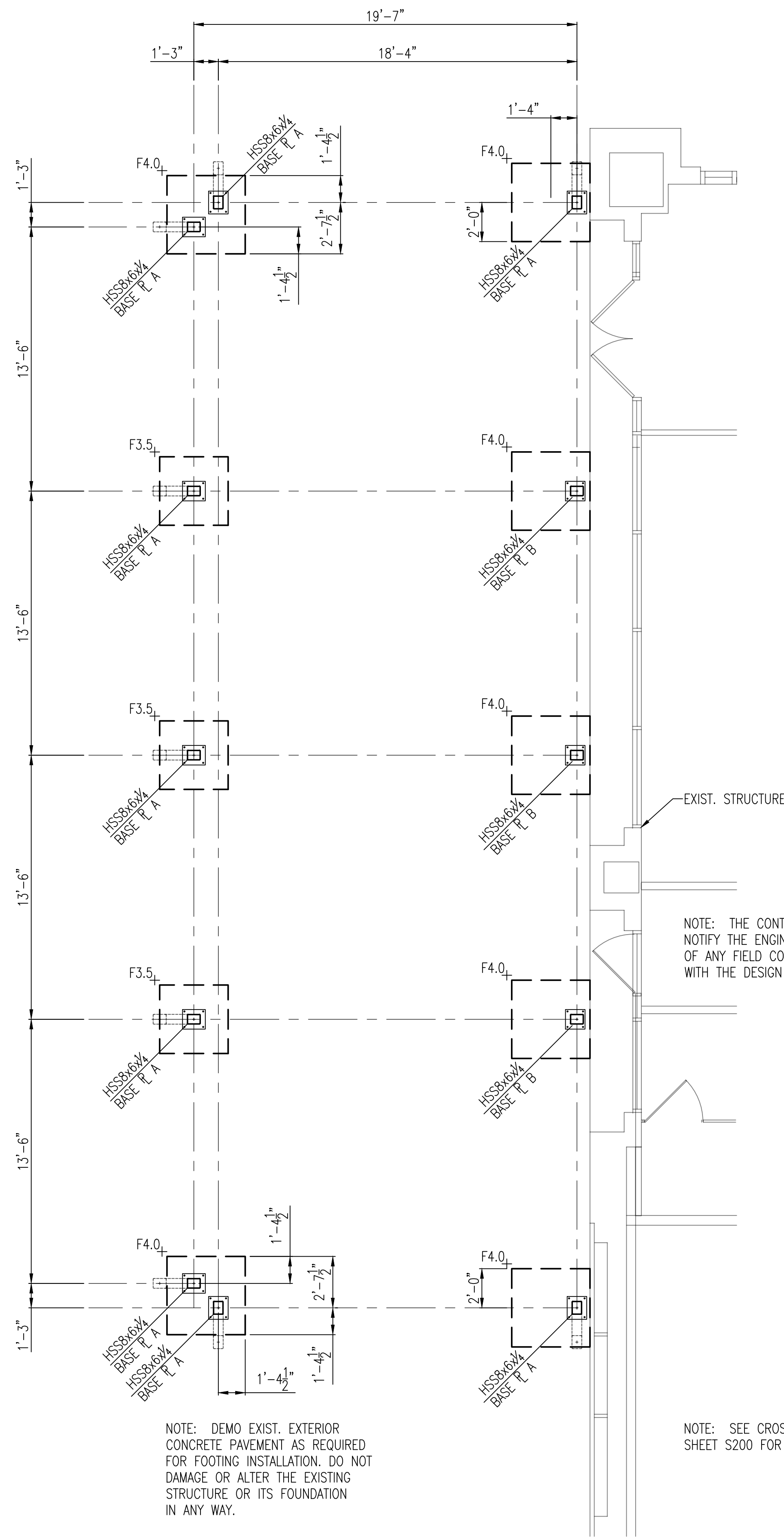
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 (c) 501-681-6840

Project No:
 HW24-821
 Date:
 03/10/2025
 Sheet Title:
 Foundation Plan and Details

of _____
 Sheet No:

S100

MARK	LxWxD	REINFORCEMENT	NOTES
F3.5	3'-6" x 3'-6" x 1'-6"	(4)-#4 E.W. MAT TOP & BOT.	#4 EA. CORNER OR STANDEES
F4.0	4'-0" x 4'-0" x 1'-6"	(5)-#4 E.W. MAT TOP & BOT.	#4 EA. CORNER OR STANDEES



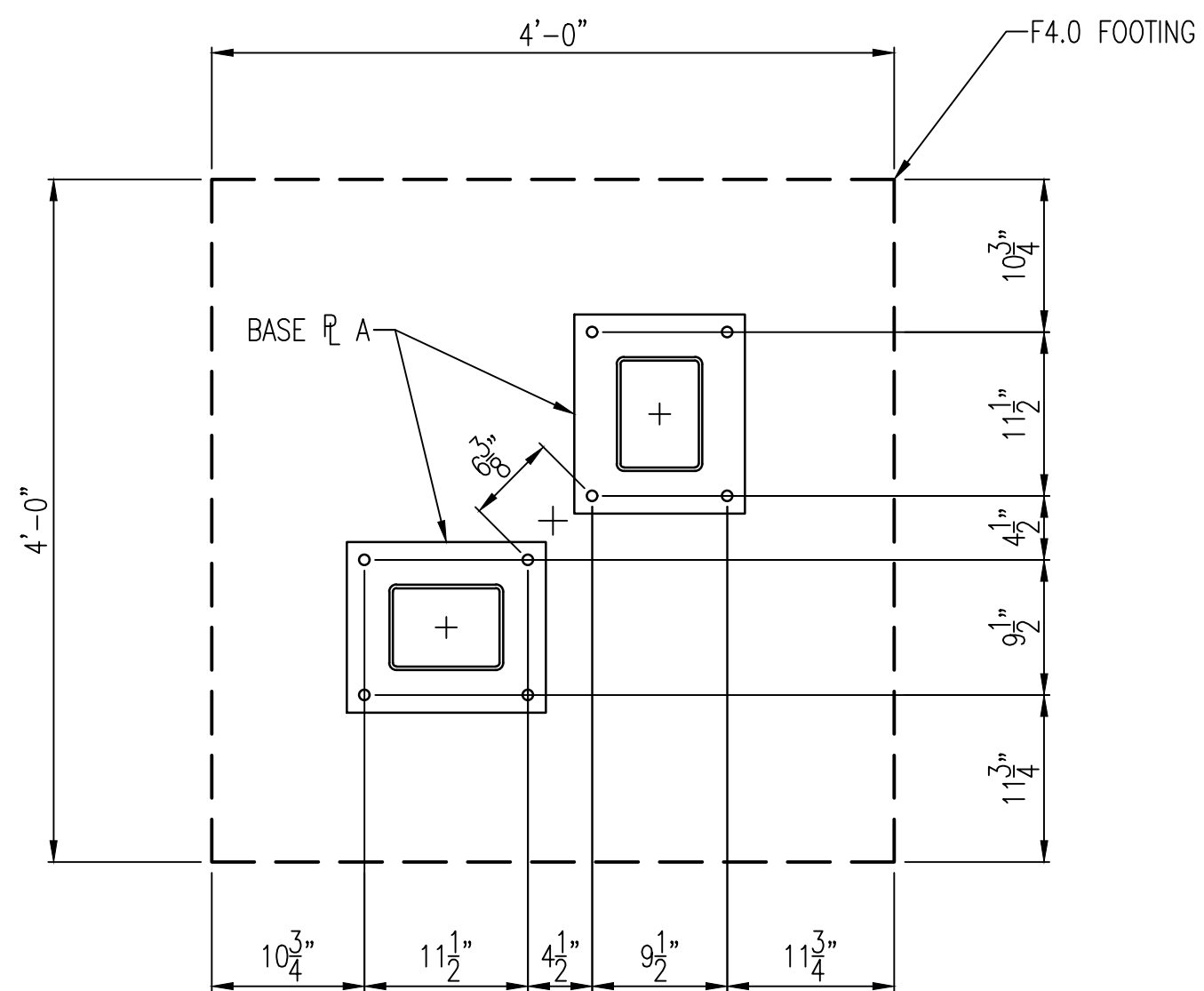
NOTE: DEMO EXIST. EXTERIOR CONCRETE PAVEMENT AS REQUIRED FOR FOOTING INSTALLATION. DO NOT DAMAGE OR ALTER THE EXISTING STRUCTURE OR ITS FOUNDATION IN ANY WAY.

NOTE: THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO FABRICATION OF ANY FIELD CONDITIONS THAT CONFLICT WITH THE DESIGN DRAWINGS.

NOTE: SEE CROSS SECTIONS ON SHEET S200 FOR MORE INFORMATION.

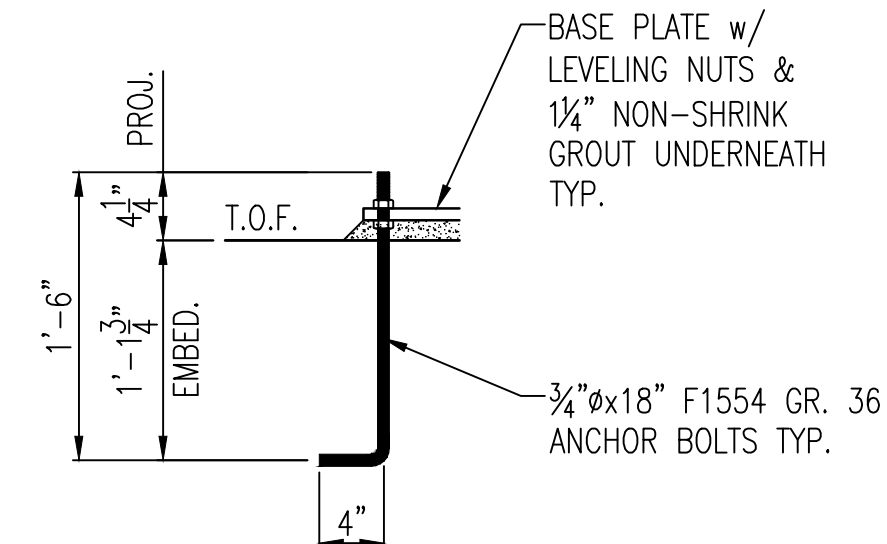
FOUNDATION PLAN

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



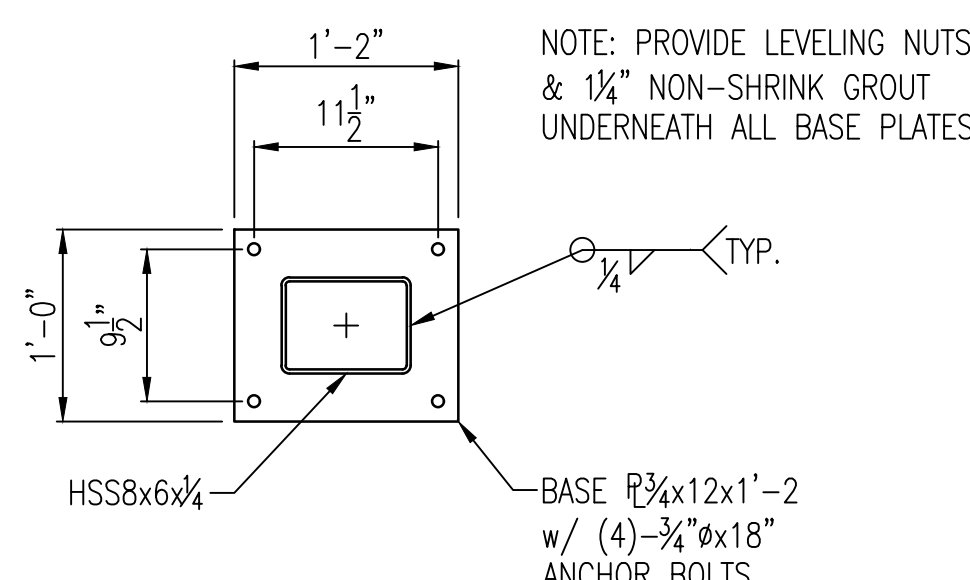
CORNER ANCHOR TEMPLATE

SCALE: 1" = 1'-0"



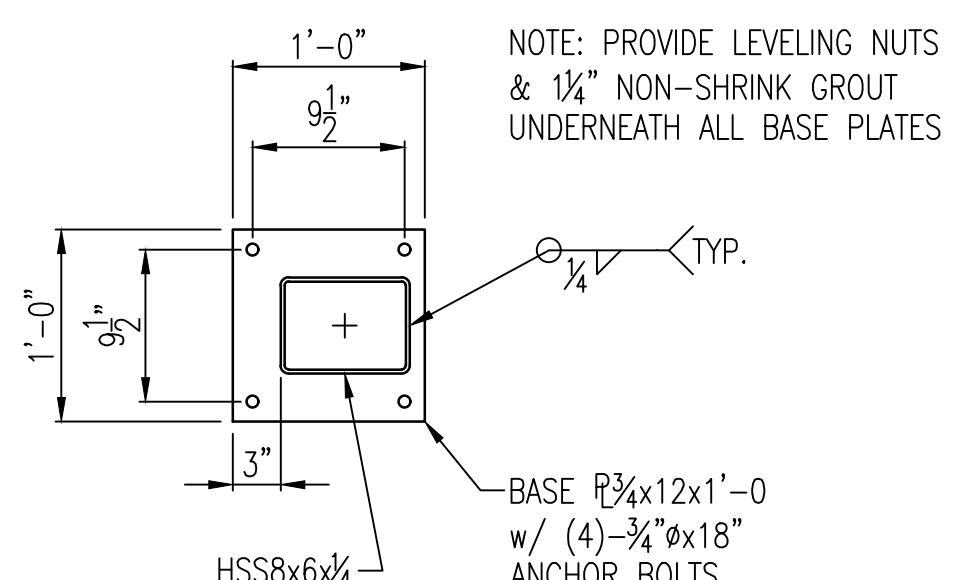
TYP. ANCHOR BOLT DETAIL

SCALE: 1" = 1'-0"



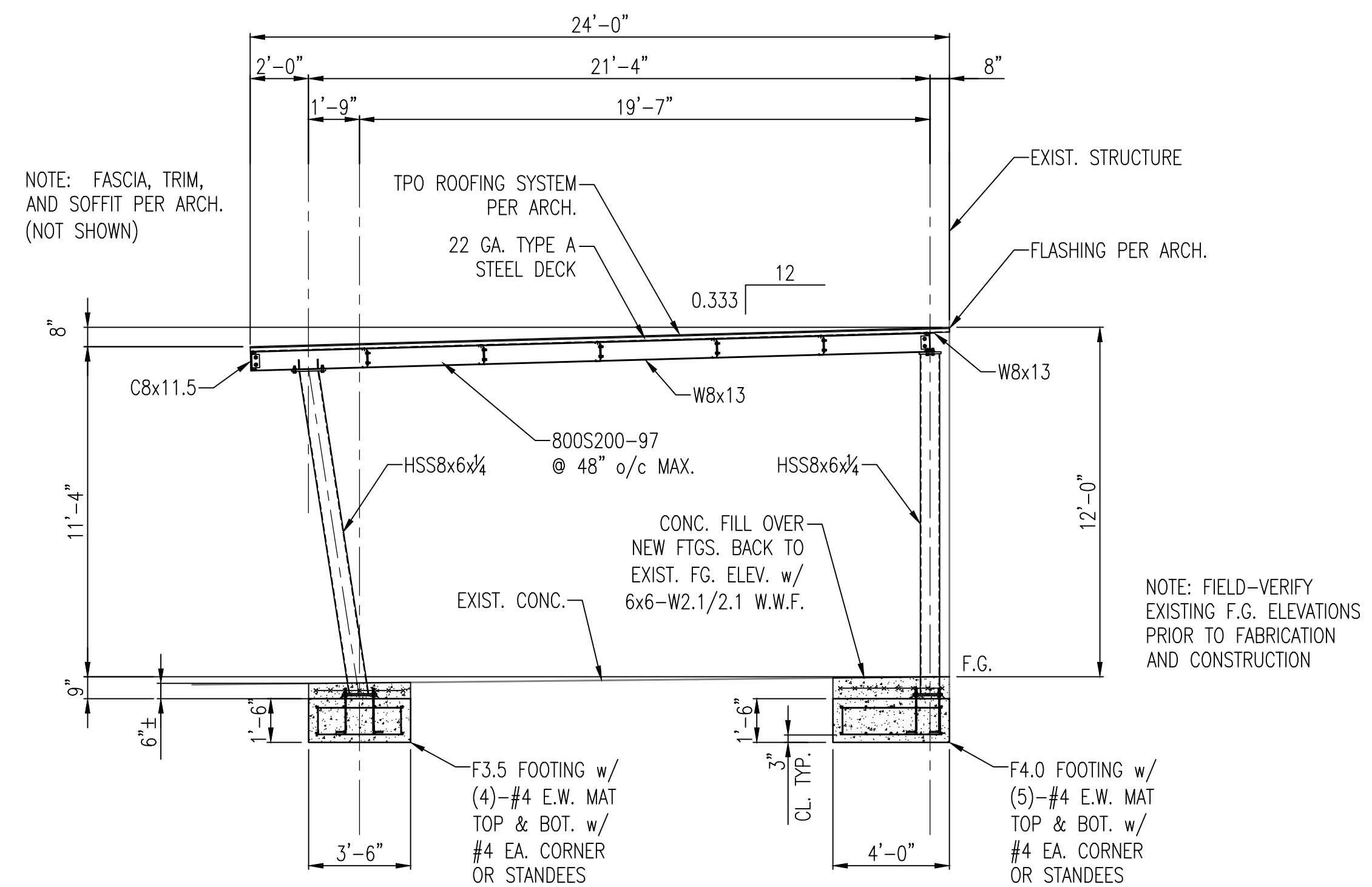
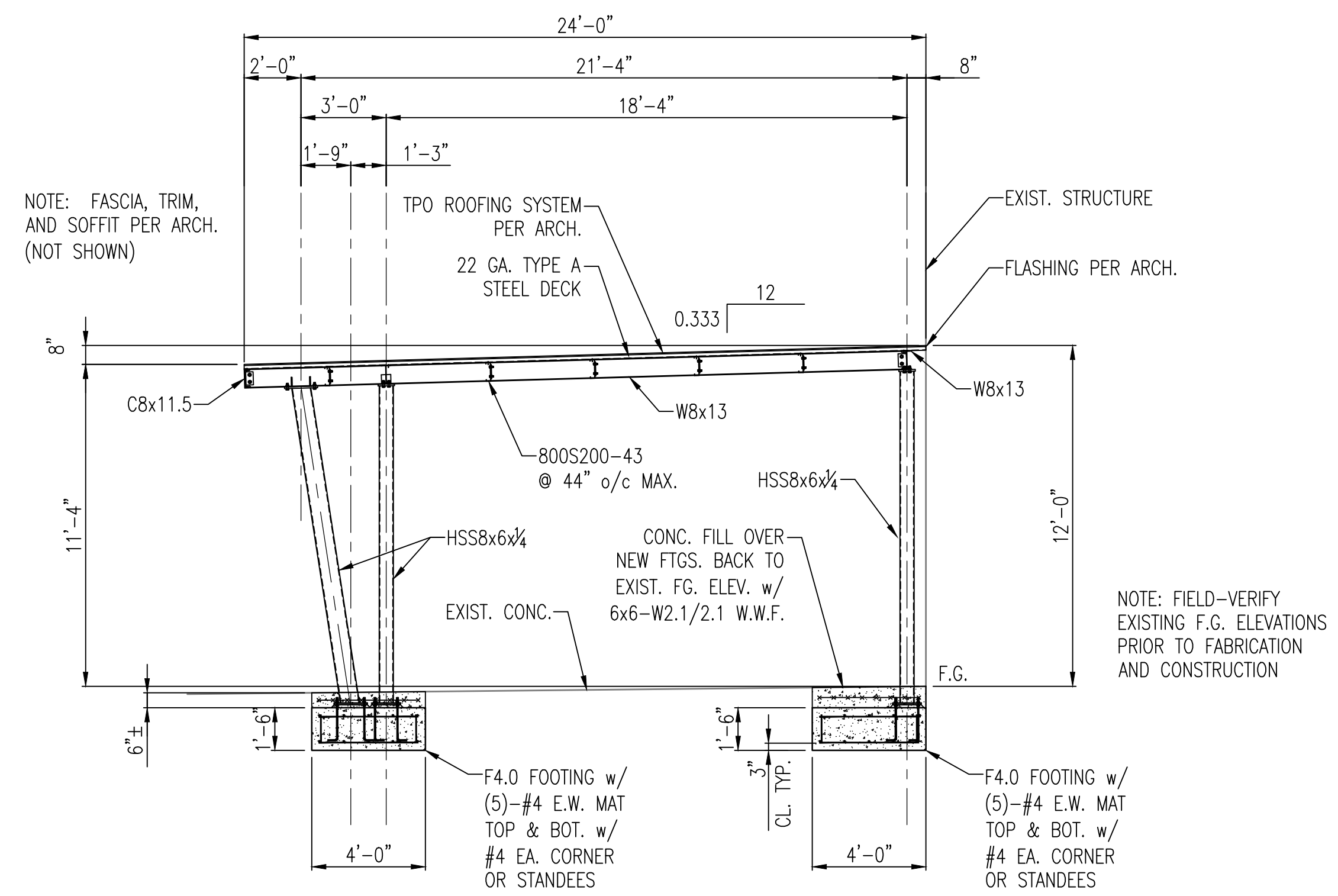
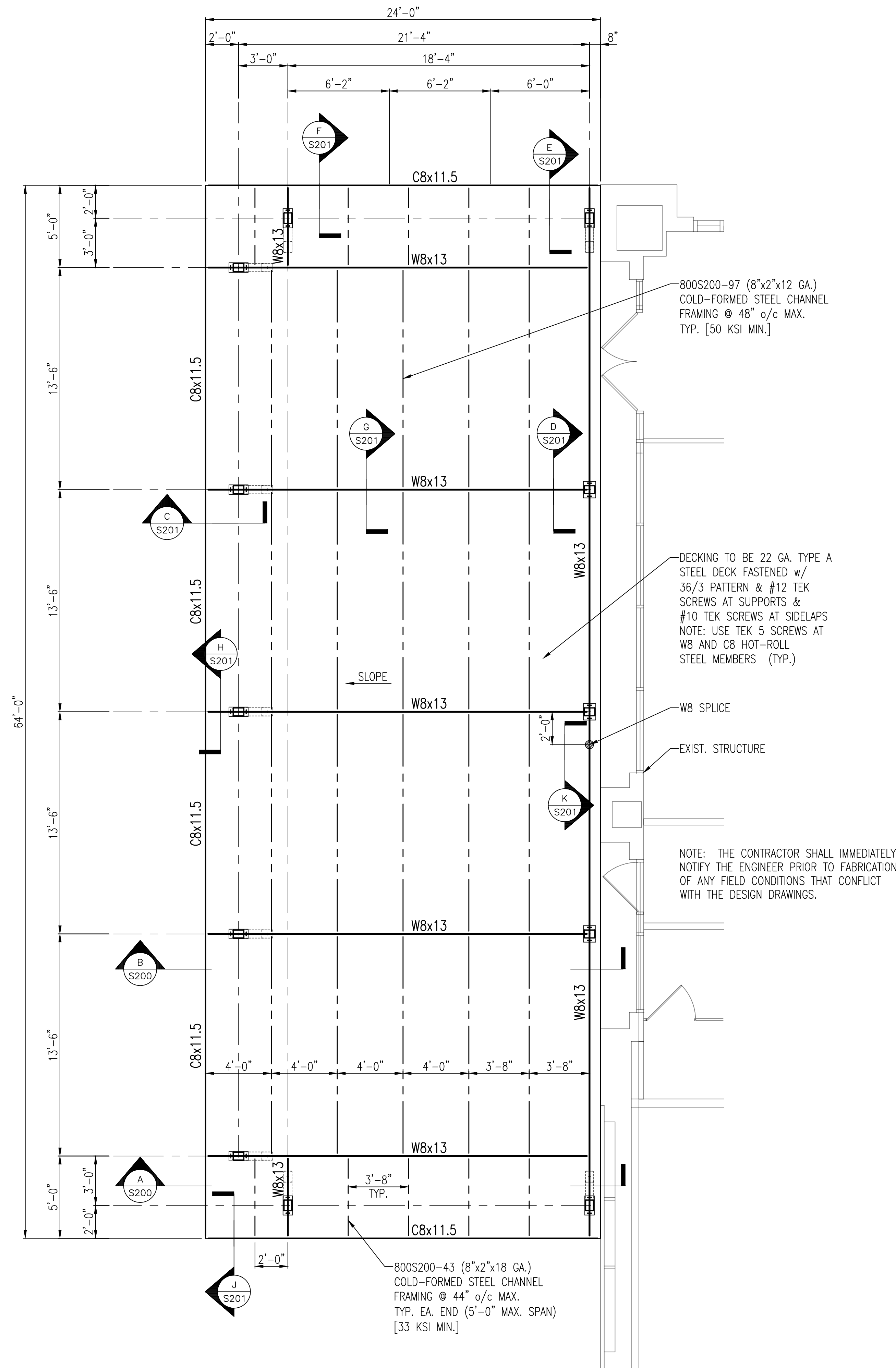
BASE PLATE A DETAIL

SCALE: 1" = 1'-0"



BASE PLATE B DETAIL

SCALE: 1" = 1'-0"



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Project No:
HW24-821

Date:
03/10/2025

Sheet Title:

Roof Framing Plan
and Details

of _____
Sheet No:

S200



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FLYWAY TAPROOM
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Bentonville, Arkansas



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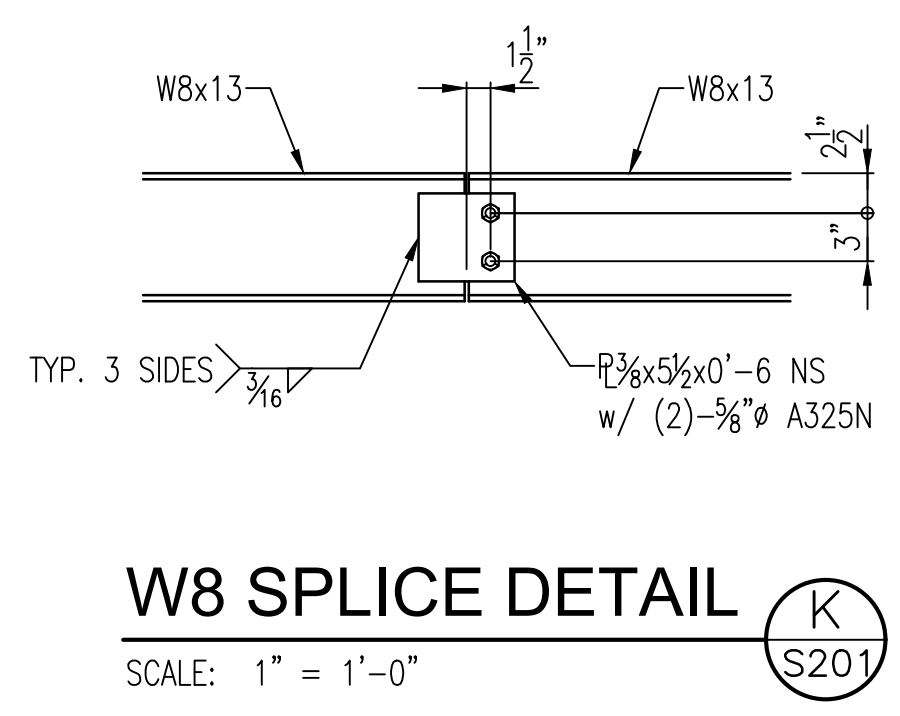
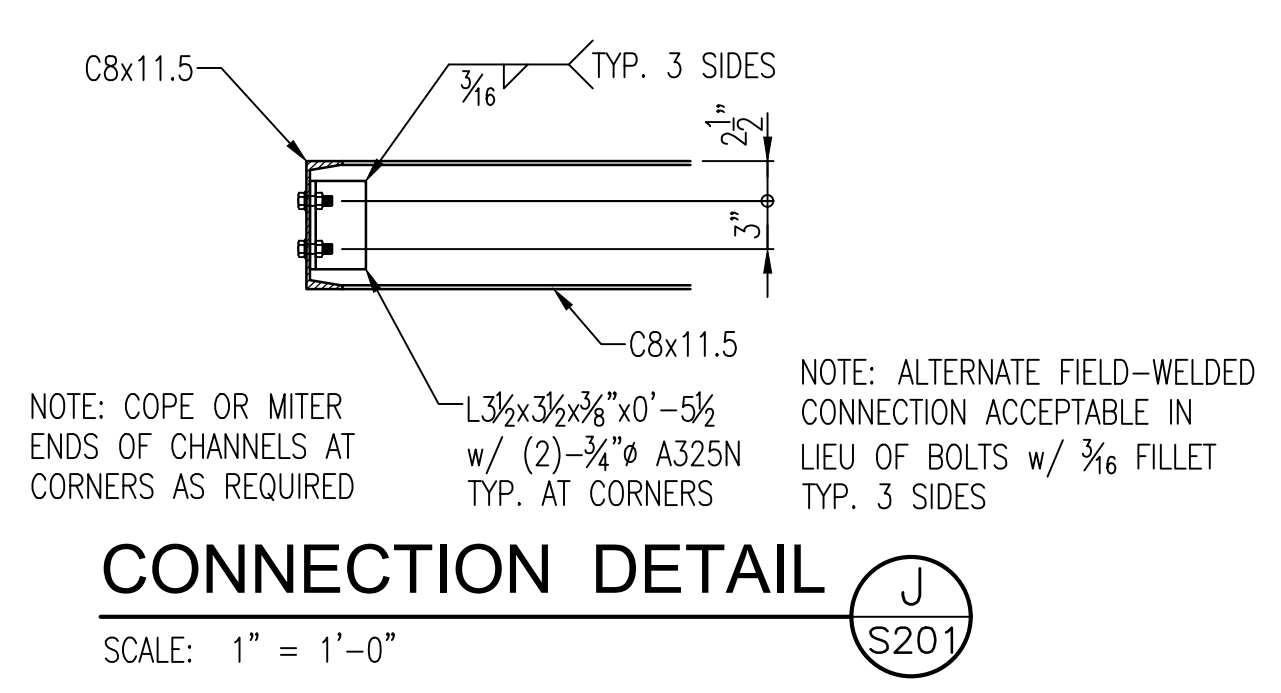
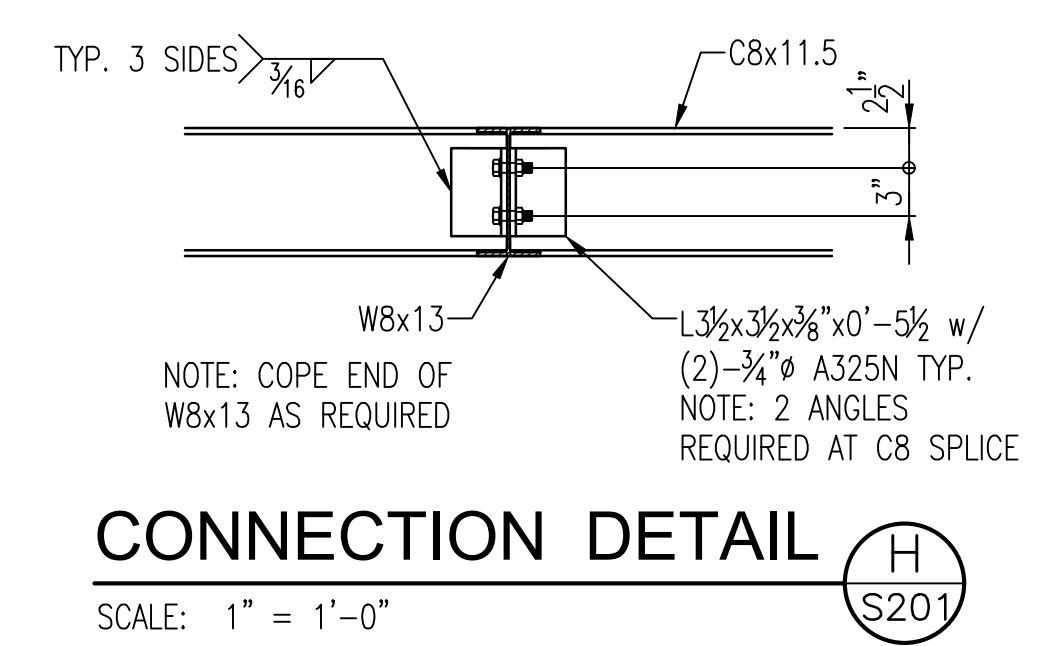
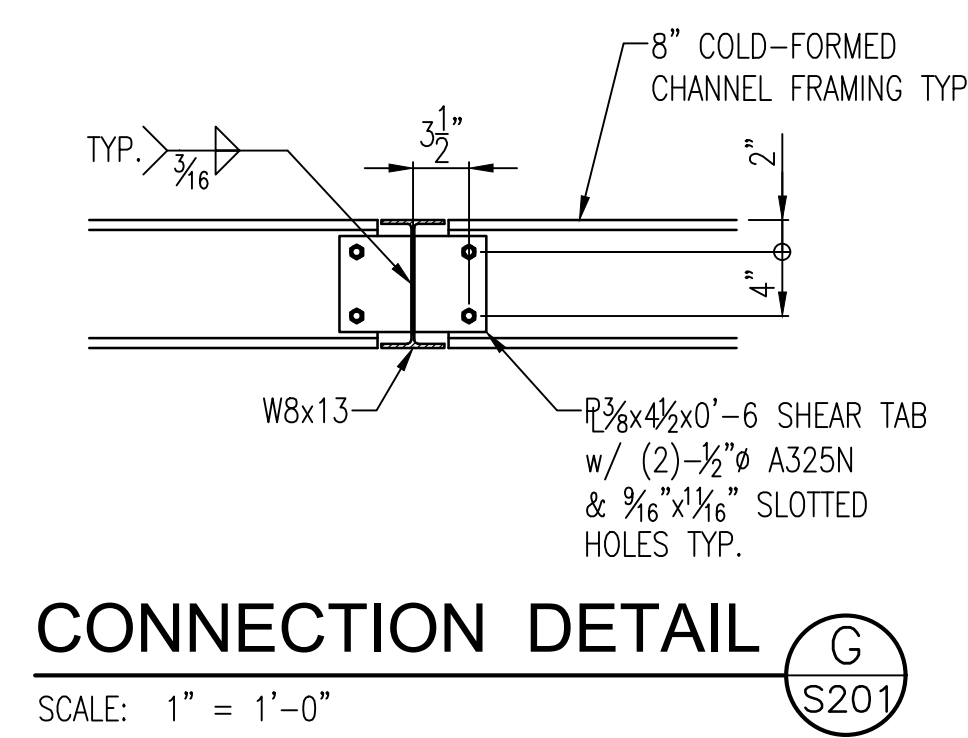
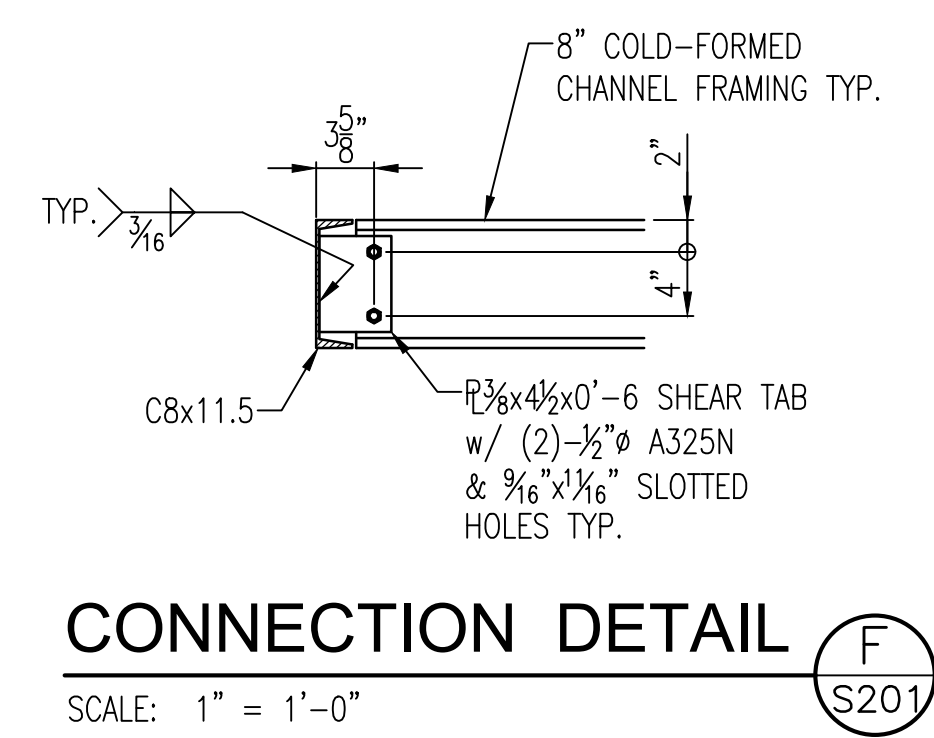
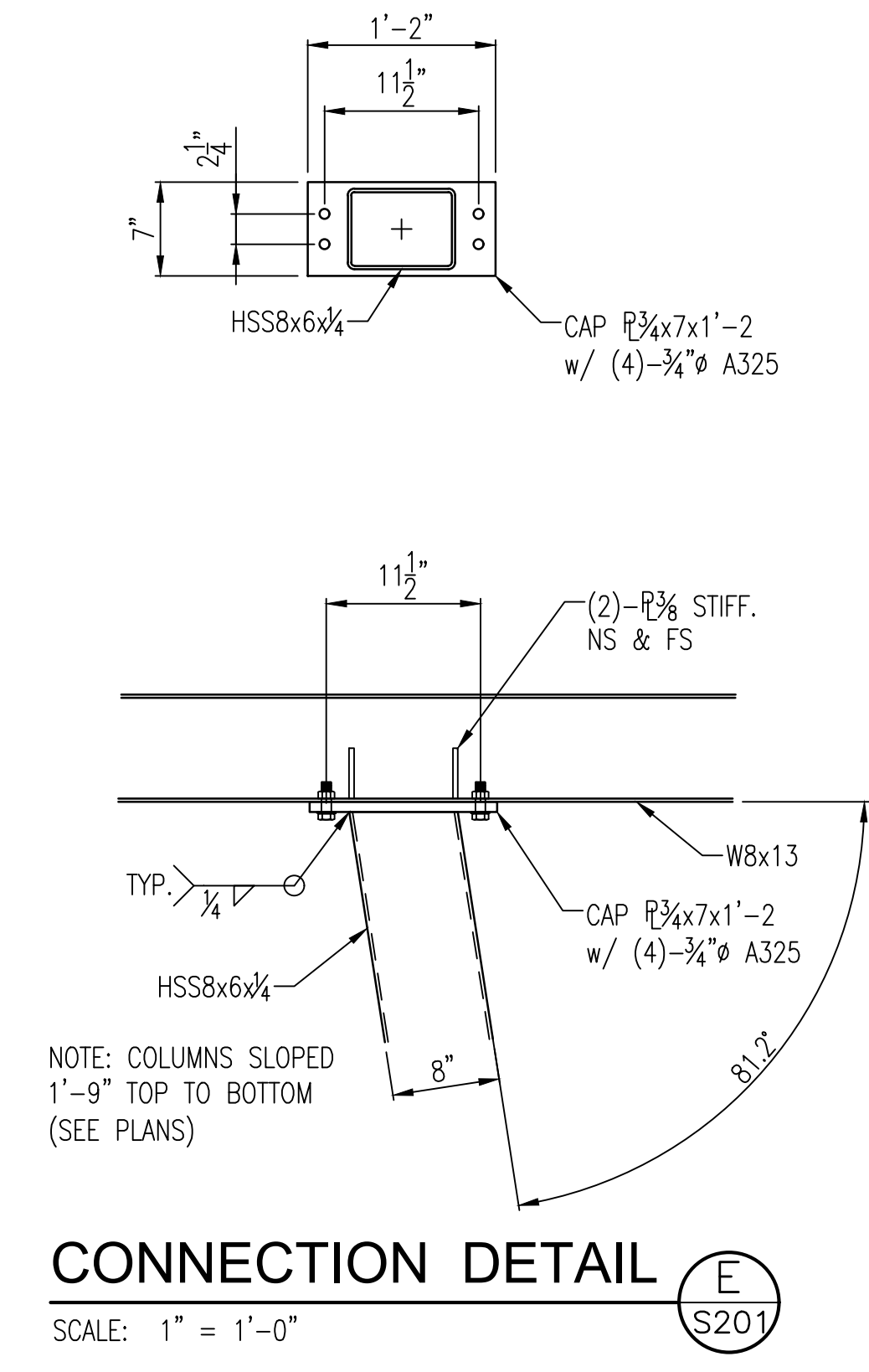
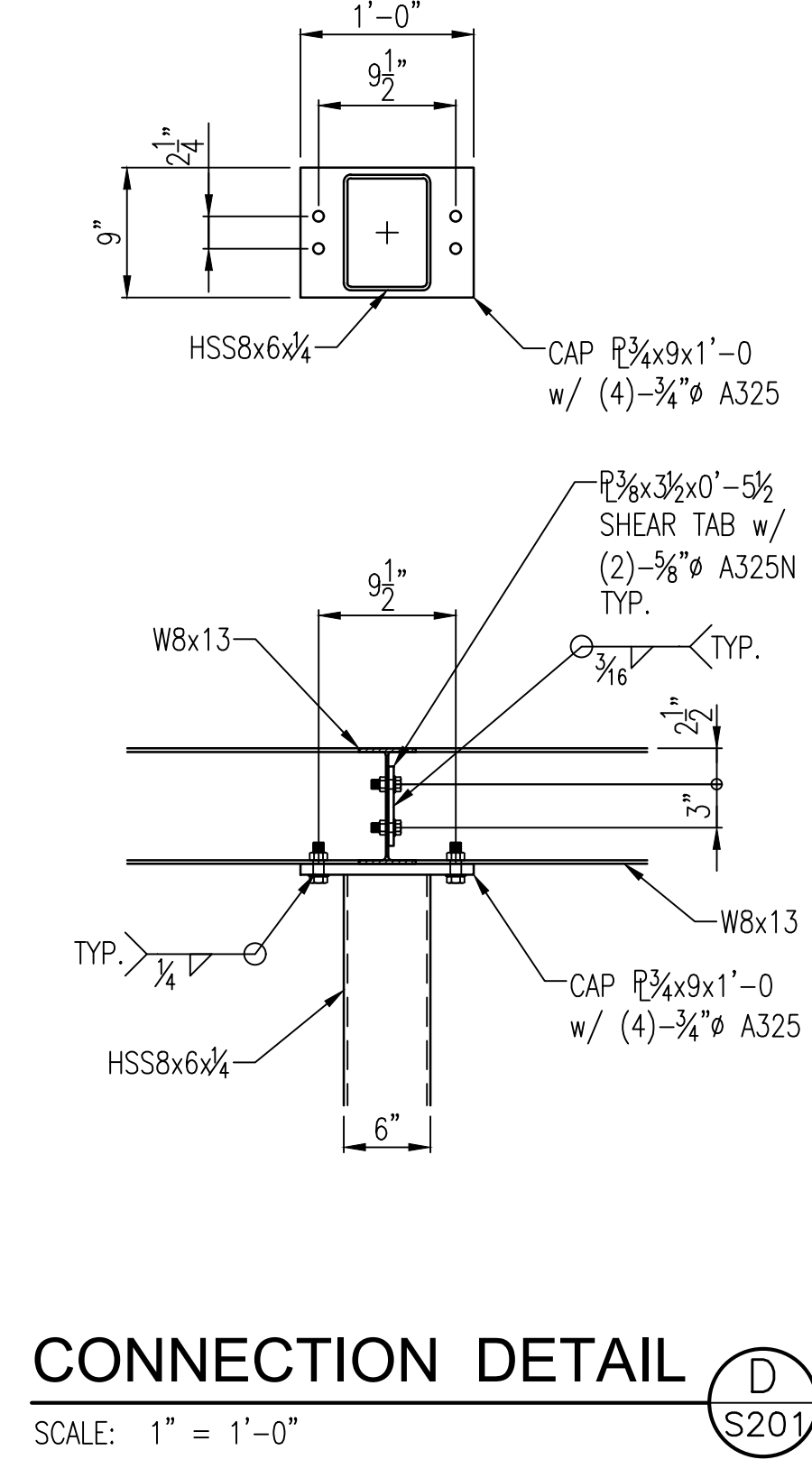
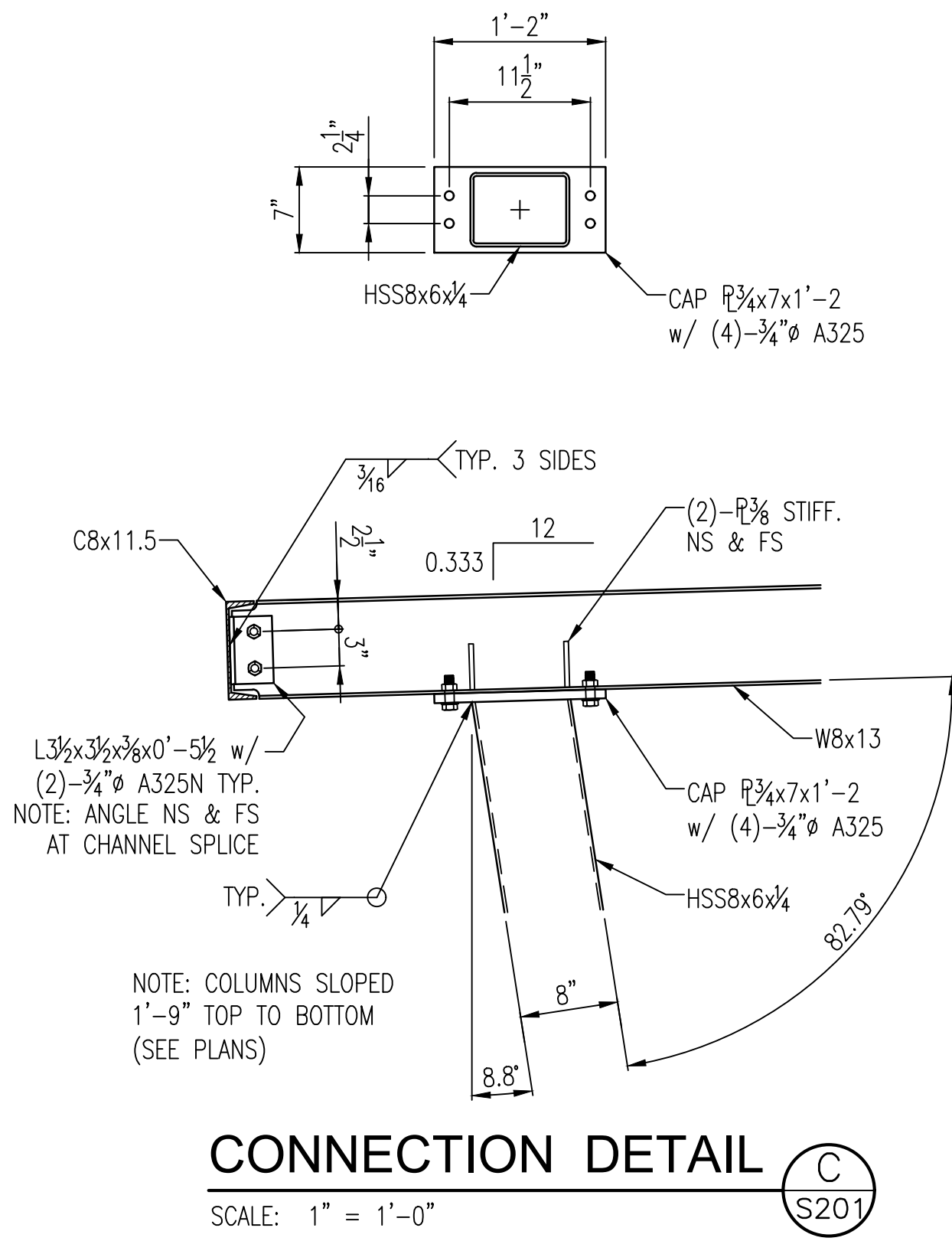
Project No:
HW24-821

Date:
03/10/2025

Sheet Title:
Roof Framing
Details

of _____
Sheet No:

S201



SECTION 01 – GENERAL

1.01 CONTRACT DOCUMENTS AND GENERAL REQUIREMENTS

- A. Refer to and comply with all other sections of the project specifications and project plans for the installation of all Mechanical work. Unless specifically noted as "HVAC" or "Plumbing", all references generally to "Mechanical" shall refer to both "HVAC" and "Plumbing".
- B. All plan disciplines are intended to complement one another and therefore the plans shall not be split apart and provided piecemeal to various trades, vendors, etc. for individual coordination. These plans are diagrammatic in nature and are intended to establish size, general routing and location, and performance and are not intended to show all possible conditions. All work shall be fully coordinated with other trades to ensure the installation of a complete, operating system that fits in the space allotted. Provide all labor, equipment, appurtenances and materials necessary, and perform all operations required for the installation of complete, functional mechanical systems as outlined on the drawings and described in the specifications.
- C. Because this project is a new installation of several trades, unknown circumstances, interferences and possible discrepancies may occur. The contractor is responsible for studying the work of all trades prior to any bid, rough-in, fabrication and shop drawing preparation. The contractor shall be responsible for making the minor adjustments necessary to ensure all systems are installed complete, operative and warrantable. Where major deviations are required, prior to the placement of any related work, the contractor shall submit a proposed solution to the Architect and Engineer for approval. No additional compensation shall be granted for lack of coordination between the mechanical, plumbing, electrical, structural, architectural and civil trades.
- D. Visit the site prior to any bid submission and become familiar with the existing site conditions. Coordinate with all other trades and make adjustments in routing and location and, if necessary, in size, in order to achieve the specified performance without incurring additions to the contract. Where actual site field conditions differ significantly enough from design to affect pricing, the contractor shall notify the building Owner's Representative prior to bid submission for a resolution. No allowance will be made for lack of knowledge of field conditions.
- E. Refer to architectural floor plans and reflected ceiling plans to coordinate mechanical equipment with layout of walls and partitions and locations of all ceiling mounted devices. For any items not shown on the reflected ceiling plans, prepare drawings of the proposed locations and present to the Owner's Representative for approval prior to installation.
- F. All materials and equipment shall be new except those existing items indicated to be re-used. Any equipment or devices to be re-used shall be thoroughly cleaned and serviced to good working condition. All new equipment shall bear the label of the appropriate testing agency (UL, ETL, FM, CSA, AIA, ASTM, AMCA, PDI, CISPL, etc.). Unless otherwise noted, provide minimum one (1) year parts and labor warranty on all new equipment, systems and components, including workmanship.
- G. Provide start-up of all equipment provided under this contract. Start-up will adhere to manufacturer's requirements and recommendations.
- H. See all notes on drawings for additional information, requirements, and restrictions regarding the mechanical work for this project.
- I. Maintain a clean set of mechanical "as-built" record drawings separate from the field construction set. All changes to the original mechanical design shall be noted in the as-built record drawings in a neat, clear and orderly manner, and in colored ink or pencil. At project completion these drawings shall be submitted to the Architect/Engineer for approval prior to submission to the owner.

1.02 CODES, ORDINANCES, INSPECTIONS AND PERMITS

- A. All work, materials, methods and equipment furnished and installed for this project is to comply with, be executed, and be inspected in accordance with local and state codes, laws, ordinances, rules and regulations applicable to particular class of work. Any fees or costs in connection therewith are to be paid by the contractor in order to provide a turn-key installation of all work. All requirements of all respective codes and authorities having jurisdiction shall be provided and complied with, whether or not all specific, applicable requirements are shown on the plans. Provide all energy code regulatory documentation and/or third party inspections/certifications required by the authority having jurisdiction at no additional cost to the Owner.
- B. Coordinate with all respective local utilities to ensure complete and operative systems. All service fees, connection fees, meter fees, etc. required by the local utility shall be paid by the contractor. All utility fees shall be determined prior to bid and included in the contractor's price as part of a turn-key job to the owner.
- C. Arrange with Authority Having Jurisdiction (AHJ) for complete inspection, paying all charges and fees pertaining thereto.
- D. Any insulation thickness listed in this specification or shown on the drawings is the minimum acceptable thickness, but is not to be used in lieu of minimum thickness required by locally adopted energy codes. Where a thickness shown on plans or in specifications differs from those required by code, the greater of the two thickness dimensions will be used.
- E. All motors will comply with the local energy code

1.03 SHOP DRAWINGS, SUBMITTALS AND SUBSTITUTIONS

- A. Equipment scheduled or specified on drawings with "equal to", "reference product", or similar designations establish the minimum acceptable quality of equipment required for the project. If alternate manufacturer(s) or model(s) are proposed, they will, as a minimum, have the same availability, features, options, safety devices, capacities, quality of construction, serviceability, and characteristics as those of the scheduled or specified equipment. If a list of "acceptable" or "alternate" manufacturers are listed, only products from those manufacturers, in addition to the "equal to" or "reference product" manufacturer will be considered for approval.
- B. Substitution products, when approved, shall be carefully coordinated by the contractor among all connecting disciplines to ensure a complete and operative installation with respect to electrical, structural, architectural, sheet metal, piping, etc. Any changes required to install the substitution products shall be the contractor's responsibility.
- C. Submit in PDF electronic format manufacturer's catalog sheets and/or shop drawings covering all equipment and devices included in this contract. Indicate models, capacities, weights (shipping, installed, operating), finishes, furnished specialties, options, wiring diagrams, control diagrams and sequences, and accessories. Arrange submittals in a single, categorized, book-marked PDF file. Information shall not be submitted piecemeal.
- D. Submittals are required even though equipment being furnished is exactly as specified.
- E. Final decision as to whether or not a specific piece of equipment meets specifications will rest with Architect/Engineer.

1.04 GENERAL MECHANICAL EQUIPMENT AND MATERIAL INSTALLATION

- A. **Preconstruction Meeting:** Prior to the execution of any work, the project superintendent for each Mechanical trade (HVAC and Plumbing) shall have a pre-construction conference with the General Contractor's project superintendent to fully coordinate the work of all trades. It is recommended that the G.C. project superintendent include the other project trades (e.g. electrical, fire protection, etc.) to ensure a fully coordinated project scope of work. The General Contractor shall be responsible for any lack of coordination between trades and shall pay for all changes and/or repairs required.
- B. The engineering construction drawings are design intent drawings, not shop drawings. The engineering construction drawings do not provide for all means and methods required to put in place the scope of work of this project. The contractor shall be responsible for all means and methods of construction, activities and installation coordination, in particular coordination with the work of other trades. This includes, but not limited to ductwork/piping and ceiling heights/conditions, ductwork and structural elements, mechanical elements and fire/smoke rated building elements, piping risers and chases/wet wall cavity thicknesses, gravity drain flowline invert coordination with other building elements, sink/faucet tolerances and casework/cabinetry and equipment service access and nearby building elements. Adjustments shall be made as required to install all of the work contained here-in whether explicitly stated or reasonably implied. The contractor's submission of a bid is an admission to the Owner, Engineer, and Architect that the contractor is experienced and knowledgeable with the materials and products required to put in place the scope of work of this project, including the details of means and methods required to install all products, equipment and materials.
- C. Mechanical equipment shall be as indicated in the equipment schedule or approved equivalent, and installed per the manufacturer's recommendations. Coordinate with Electrical Division before ordering equipment requiring electrical connections; coordinate quantity, size, and type of connection(s) and overcurrent protection; and disconnect(s), and starter(s) requirements. Do not mount disconnect switches over unit nameplates. All electrical work shall be done in conformance with these specifications, electrical division specifications, the National Electric Code, and local codes. Where conflicting requirements may occur, the more stringent shall govern.
- D. Support all ductwork, piping and equipment from structure. Do not support from other ductwork, piping, conduit, etc. Support all ductwork with hangers and supports per SMACNA. Support all piping with hangers, supports, anchors and guides per ANSI Code for pressure piping, ANSI B31.1 with addenda 31.1 OA-69. Sizing and spacing of hangers shall be per these standards, unless otherwise noted. "C" clamps shall not be used unless tack welded or strapped to structural steel members.
- E. Insulation shall be continuous at all wall and floor penetrations (except at fire dampers) and at hanger supports. Hanger supports for insulated piping shall be outside insulation; provide insulated inserts and sleeves at hangers. Insulation vapor barrier shall be sealed at all joints and seams, and at penetrations by appurtenances (damper rods, valve stems, etc.). Repair insulation at existing ductwork which has been reworked. Tears and punctures of vapor barrier shall be repaired and sealed. All piping and ductwork pressure testing shall be performed before insulation is applied.
- F. Provide sleeves, clamps for piping at all wall and floor penetrations, and fire proofing at all rated wall and floor penetrations. Provide escutcheon plates at all visible wall and ceiling penetrations. Sleeves through concrete floors, concrete or CMU walls and concrete foundations shall be schedule 40 galvanized steel pipe. Sleeves through non-cementitious cavity wall construction shall be minimum 20 gauge galvanized sheet steel with welded longitudinal joints. Sleeves in rated construction shall be provided in accordance with the listing of the particular U.L. design being utilized for the protection of the through-penetration. Sleeves through exterior walls, slabs on grade or foundations shall be sealed weathertight using an engineered sleeve seal equal to Metraseal. Provide riser clamps on all floor-floor pipe risers.
- G. Locate new equipment away from walls to structure and rated walls as necessary to provide required clearances for proper operation, maintenance and inspection.
- H. Install all new ductwork as high as possible, tight to structure above. Transition ductwork flat on top to maintain maximum bottom of duct elevation. Install all piping above ceiling as high as possible, with sloped piping as high as slope will allow. Raise any existing ductwork and piping as required to avoid conflict with new ceiling features and new light fixtures, field verify height of existing mechanical work.

- I. Flexible duct runouts to diffusers shall be sized to match the device neck, unless otherwise noted. Maximum low pressure flex duct length is 3 ft. Do not install flex duct through walls to structure, install only hard round steel ductwork through non-rated walls to structure (provide FD's at rated wall penetrations). Flexible duct runouts to diffusers shall be adequately supported and installed free of kinks and sags.
- J. Locate diffusers and return air grilles as close as possible to positions indicated on drawings and as required to avoid conflict with new light fixtures and other ceiling mounted devices. Adjust length of duct connection to diffusers to the minimum length required to provide smooth, long radius bend connections, free of kinks and sags, and without unnecessary length or bends. Reduce length of connection by removing excess flex duct and reconnecting. Extend connections by adding necessary length of insulated, hard round steel duct at trunk duct top and reconnecting existing flex duct to end.
- K. All supply air and make-up air devices shall be installed min. 48" clear from any return air or exhaust air devices.
- L. All terminations of o.a. and e.a. shall be coordinated prior to rough-in to ensure that any e.a. termination existing or new (ex. fan duct, furnace flue, kitchen hood exhaust, etc.) is minimum 10' away from any o.a. intake termination. Field adjustments shall be made as required.
- M. Portions of ductwork visible through air distribution devices in finished areas shall be painted flat black.
- N. Provide access panels in non-accessible ceilings and in walls to structure to allow adequate room for maintenance of equipment and balancing of system. Access panels shall maintain the fire rating of the wall or ceiling where required. See Architectural drawings.
- O. All condensate producing coils shall be trapped as appropriate for either draw-through or blow-through arrangement. Condensate traps shall have a minimum 2" deep water seal for all low pressure sire distribution systems. The depth of all draw-through and blow through traps for medium pressure and high pressure air distribution systems shall be adjusted at TAB procedures to be measured system external static pressure + 1". Condensate drain lines shall be sized to match unit connection size (3/4" minimum) and as noted on plans and shall be routed with a minimum slope of 1/8" per foot. Drain lines shall:
 - a. Be terminated turned down with minimum 2" air gap for all interior drain terminations;
 - b. Be terminated on roof at roof drains or roof gutters. Condensate shall not discharge directly onto roof surfaces.
 - c. Be terminated on the building exterior at splash blocks or dry wells/French drains.
 - d. Be pumped where continuous minimum slope cannot be maintained on a gravity drain system. Discharge from pump shall terminate immediately to a high point and then gravity drained, sloped down to the drain termination point. The Contractor shall be responsible for coordinating all requirements for drain pump installation (electrical connections, drain termination, code compliance for ceiling plenum installations, etc.)
 - e. Not be routed to sanitary sewer unless prior approval is received from the Authority Having Jurisdiction PRIOR TO BID.
 - f. Not discharge onto pedestrian walkways.
- P. Route equipment and piping system auxiliary drains to discharge locations approved by the AHJ. Where drain termination is not specifically noted on the plans, the Engineer shall be notified for direction.
- Q. Equipment mounted above ceiling shall be suspended from structure above with all-thread hanger rods, sized per equipment weight requirements. Provide combination spring/neoprene vibration isolators for equipment with moving parts (fans, compressors, etc.). Equipment supports (angles, channels, etc.) shall extend sufficiently past footprint of equipment to allow for installation of vibration isolators above supports and within equipment height. Locate equipment to provide adequate room from structure, walls above ceiling, and ceiling features to allow for maintenance of equipment and balancing of system. Provide auxiliary drain pan beneath entire unit for water storing equipment (water heaters) and equipment with cooling coils.
- R. Flash all roof and exterior wall penetrations and seal water-tight. Provide wall sleeves for all wall penetrations.
- S. All exterior steel piping shall be painted using a metal primer coat, second coat of enamel, top coat of enamel, and a finish coat of gloss. Natural gas piping shall be painted yellow. All other bare steel service piping color selections shall be approved by the Architect/Engineer prior to applying primer coat.
- T. All piping below handicap accessible sinks shall be insulated and installed as high as possible and as far back as possible to provide maximum wheelchair access, per ADA requirements.
- U. All waste and vent (DWV) piping 3" and above shall be sloped at 1/8" per foot minimum, piping 2-1/2" and smaller shall be sloped at 1/4" per foot minimum. Provide cleanouts at all changes in directions. Provide additional cleanouts in all DWV piping at maximum 75 ft. intervals for 4" piping and above, and at maximum 50 ft. intervals for 3" piping and smaller.
- V. All overhead horizontal water piping shall be pitched to drain to low points.
- W. All equipment suspended from roof structure shall be mounted on structural steel supports frames (channels or angles) bolted to supports and to equipment at each equipment support point (min. two points each on a min. of two frame members). Support frames shall be suspended by bolted all-thread rods from like sized frame members welded or positively bolted to a minimum of two roof frame members above. Support framing system shall be sized to support 200 percent of the total distributed equipment weight, frame members and all-thread rods shall be sized to support 200 percent of their respective point load weights.
- X. Provide pipe supports at all piping changes in direction and at maximum center distances per ANSI Code for pressure piping, with sizing and spacing of hangers per these standards, unless otherwise noted. Mount piping on hangers within 12" of roof support structure above or provide seismic bracing for longer hanger lengths. Support grouped piping on trapeze type channel supports with two hanger rods, anchored to structure above; or rack type channels, supported from floor or grade below with two pipe stands and floor plates bolted to floor; clamp piping to supports. Support individual pipes from above with clevis, adjustable "J", or adjustable band type hangers with hanger rods anchored to structure above; or from wall with wall bracket. Provide riser clamps at floor penetrations and wall support brackets at vertical piping. Vertical risers shall be racked on walls, resiliently mounted to walls with "Unistrut" wall brackets and "Unisorb" clamping, or equivalent. Hanger rods shall be anchored to structure above with concrete anchors, beam clamps, or "C" clamps tack welded or strapped to steel structure. Hangers shall not support insulated piping directly from pipe and shall not crush the insulation system. Hangers shall be mounted outside the insulation with Foam-Glas inserts at all support points. Provide 18 ga. sheet metal saddles at all insulated piping hangers, saddles shall have width equal to 1/2 the pipe circumference and length equal to 4 times the insulation outer diameter. Galvanized pipe support hangers or other metals susceptible to galvanic corrosion are prohibited.

1.05 FIRE/SMOKE DETECTION AND PROTECTION OF RATED CONSTRUCTION

- A. Smoke Detection Device Requirements:
 - a. All smoke detectors shall be installed in return air and/or supply air systems in accordance with the requirements of the AHJ, governing codes (e.g. mechanical code), or governing standards (e.g. NFPA 101) whether or not the specific requirements are indicated in the construction documents.
 - b. Smoke detectors shall be installed in accordance with NFPA 72 and shall be connected to a fire alarm system. Actuation of the duct smoke detector shall shut-down the air distribution system and activate a visible and audible supervisory signal in a normally attended location.
 - c. In occupancies where a fire alarm system is not required, actuation of the duct smoke detector shall shut down the air distribution system and activate a stand-alone visible and audible signal in an AHJ approved, normally occupied location. The stand-alone signal device shall be labeled "AIR DUCT DETECTOR TROUBLE".
 - d. In systems that are incapable of spreading smoke beyond the enclosing walls, floors and ceilings of the room or space in which the smoke is generated, smoke detectors shall not be required.
 - e. At a minimum, smoke detectors shall be provided:
 - (1) Air distribution systems with a design capacity of 2,000 cfm or greater. Locate the smoke detector in the return air duct downstream of the last return air branch duct connection and upstream of any fresh air duct connection, filters, exhaust air connection, or decontamination equipment and appliances.
 - (2) Air distribution systems where return air risers serve two or more stories and serve any portion of a return air system having a design capacity greater than 15,000 cfm. Locate the smoke detector at each story, upstream of the connection between the return air riser and any return air ducts or plenums.
- B. Through Penetration Protection:
 - a. General: All penetrations through fire and/or smoke rated construction shall be sealed utilizing U.L. listed materials and designs to maintain the rating. The U.L. design utilized for each penetration type shall be provided to the Architect, Engineer, and Owner upon request. It is not to be assumed that the Engineer has accounted for all rated construction. Refer to the Architectural and/or Life Safety plans for the locations, details, and types of all rated construction.
 - b. Piping: Mechanical piping at rated through-penetrations shall be sleeved and sealed with U.L. listed through-penetration designs. Rated mechanical piping shall be provided (fire caulking is not permitted) in the annular space between the sleeve and pipe.
 - c. Ductwork and Transfer Air Openings: All fire, smoke and combination dampers shall be U.L. 555, U.L. 555S, or U.L. 555C listed as is appropriate for damper and installation type, and installed in strict accordance with the damper manufacturer's instructions and the damper's listing. Duct mounted access doors shall be provided at all fire dampers not located at air devices. Access doors shall be installed in a fully accessible location and sized as appropriate for full service access to damper fusible links, motorized actuators, etc.

1.06 WARRANTY AND OPERATION INSTRUCTIONS

- A. All materials, equipment, and work will carry, as a minimum, a full one (1) year warranty from time Owner accepts building or the date of substantial completion, whichever is earlier, regardless of start-up date of equipment.
 - B. A minimum of two (2) bound copies of operation and maintenance manuals for the entire mechanical system including controls) will be prepared by the Contractor and provided to the Owner. The Owner will be fully instructed in the operation and maintenance of the entire system by the Contractor.
- 1.07 EQUIPMENT CONNECTIONS
- A. Each equipment item with drain connection will be provided with a properly sized drain run to the nearest floor drain or as directed. Minimum drain size will be equal to connection size or as indicated.
 - B. Rough-in and make final connection to all equipment provided under other Divisions of these specifications or by the Owner.
 - C. Contractor will install rough-ins only after he has received approved shop drawings or has obtained drawings and/or specifications for equipment provided by others.
- 1.08 FLASHINGS

- A. Roof flashings for mechanical (HVAC and Plumbing) penetrations are to be furnished and installed under the roofing division specifications. Generally, roof flashings shall be provided in strict compliance with the roof system manufacturer's approval. Proposed mechanical roof flashing designs and materials shall be submitted for approval directly to the architect.
- B. Wall flashings for mechanical (HVAC and Plumbing) penetrations are to be provided in compliance with the exterior wall construction manufacturer's instructions, or as is appropriate per the latest industry construction standards for the exterior wall construction type to result in a weathertight building envelope system. The mechanical penetration type shall be coordinated with all relevant trades prior to rough-in. Details of wall flashing designs for mechanical penetrations shall be submitted directly to the architect for approval prior to rough-in.

1.09 CUTTING AND PATCHING

- A. Provide all cutting and patching required to perform the mechanical work.
- B. All cutting, patching and repair work will be done by workmen skilled in the trade required.
- C. The contractor shall be responsible for a neat and clean cutting and patching operation. Where cutting of openings are excessive in size or openings in walls, ceilings, or floors are not trimmed, cut, sawcut, core drilled, etc. in a neat and clean manner, the Contractor shall be responsible for making repairs as directed by the Architect at no additional cost to the owner.

1.10 EXCAVATION, TRENCHING AND BACKFILLING

- A. All excavation, trenching and backfilling in connection with the mechanical system is included as part of this Division.
- B. All excavation, trenching and backfilling required will be done as part of the contract price regardless of any implied conditions on the drawings or in these specifications.
- C. Have all underground utilities located and marked before excavating. Instruct employees on markings and color codes and train employees on excavation and safety procedures for natural gas lines. When excavation approaches gas lines, expose lines by carefully probing and hand digging.
- D. Walls of trenches shall be minimum 6" from side of nearest mechanical work. Install pipes with minimum 6" clearance between when located in same trench.
- E. Pipe Trenching: Dig trenches to depth, width, configuration, and grade appropriate to piping being installed. Dig trenches to 6" below level of bottom of pipe to be installed. Install 6" bed of pea gravel or fine granular material, mechanically tamped to firm bed for piping, true to line and grade. Provide depressions only at hubs, couplings, flanges, or other normal pipe protrusions.
- F. Do not backfill until work has been inspected, tested, approved. Do not bury lumber, metal, or other debris with backfill.
- G. Trench Backfill: Backfill to 12" above top of piping with pea gravel or fine granular material. Compact properly and install marker warning tape. Continue backfill to finish grade in 6" layers, each properly moistened and mechanically compacted. Do not compact by hydraulic jetting. Settling shall be refilled, tamped and refinished.

1.11 SUPPORTS AND FOUNDATIONS

- A. Provide all supporting systems required to support all of the mechanical systems in the scope of work of this contract. Seismic bracing, when required, shall be provided by a qualified seismic bracing firm. Seismic bracing shop drawings and calculations shall be required, all sealed/signed by a Professional Engineer with current and active registration in the State in which the project resides.
- B. Interior floor-mounted mechanical equipment shall be mounted on a minimum 4" high (or height noted on plans, whichever is greater) concrete housekeeping pad with 3/4" chamfered edges extending on all sides to fully support the equipment +4".
- C. Unless specifically noted on the plans, all exterior ground-mounted mechanical equipment shall be installed on minimum 4" thick concrete mechanical pads with minimum 6x6 w.w.f., 3/4" chamfered edges and sloped away from any structure minimum 1%. Mechanical pads shall extend min. 12" beyond the edges of the equipment. A common pad may be provided for groups of equipment located in close proximity to one another provide all required manufacturer's recommended service clearances are maintained between the equipment.
- D. Provide adequate pipe, duct, equipment foundations, and suspension systems in accordance with recognized industry standards. Mechanical suspension systems will be equal to those manufactured by Grinnell/Anvil or Gripple.
- E. Maximum allowable piping support intervals (unless reduced by local code):
 - a. Vertical piping – 15 ft. on center
 - b. Horizontal ferrous piping through 1" diameter – 6 ft. on center
 - c. Horizontal ferrous piping 1-1/4" through 2" diameter – 10 ft. on center
 - d. Horizontal ferrous piping over 2" diameter – 12 ft. on center
 - e. Horizontal cast iron – support twice in each section of pipe, minimum.
 - f. Plastic, PVC and CPVC piping – support at half the distance as ferrous pipe.

1.12 ELECTRICAL

- A. Furnish and install all electrical interlock and control wiring for proper operation and control of all mechanical equipment. All power and low voltage control wiring to mechanical equipment shall be installed in conduit. Provide conduit as specified in the Electrical drawings and specifications.
- B. Supervise and coordinate all electrical work in connection with mechanical system.
- C. Furnish all motor controllers or contactors for proper operation of all motors.
- D. Furnish equipment with factory supplied starters and disconnects where available.

1.13 VALVES

- A. General:
 - a. Valves listed below are for general purpose plumbing and mechanical use.
 - b. All valve construction shall not contain "yellow brass".
- B. Ball Valves: Nibco 585-70 series.
- C. Butterfly Valves: Nibco LD-2000
- D. Gate Valves: Nibco T-113 or F-619.
- E. Globe Valves: Nibco T-211 or F-718-B.
- F. Check Valves: Nibco T-413-B or F-918-B.
- G. Gas Cock (1" and below): Crane No. 270.
- H. Gas Cock (1-1/4" and above): Rockwell No. 114 or No. 116.

1.14 TESTING – PLUMBING

- A. Test all piping systems. Test buried pipe before backfilling.
- B. Water piping shall be hydrostatically tested at 100 psi for not less than eight hours with no discernible pressure loss.
- C. All gas piping shall be tested at twice the operating pressure or 150 psi, whichever is greater, with dry compressed air or nitrogen for a continuous period of not less than eight hours with no discernible pressure loss.
- D. Storm, waste and vent systems shall be tested to a minimum hydrostatic head of ten feet, and this pressure shall be maintained a minimum of three hours and proved tight.

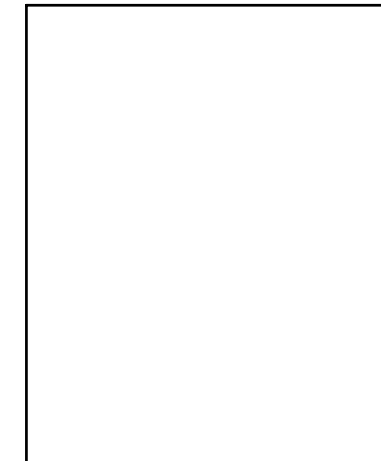
1.15 TESTING, ADJUSTING, AND BALANCING – HVAC

- A. Start-up for all mechanical equipment shall be provided under this contract in strict accordance with the equipment manufacturer's start-up instructions. Operate all HVAC equipment for a sufficient period of time to demonstrate that it is operating properly. Contractor will be required to make adjustments as necessary during the first year. Where factory start-up is required, the manufacturer shall provide certified factory personnel. Factory start-up shall also require manufacturer's documentation of successful start-up to be included in the project closeout documentation.
- B. HVAC testing, adjusting, and balancing shall be performed by a NEBB certified agency. All mechanical components and air distribution systems will be tested and balanced by to provide flow rates as indicated on the drawings. All testing and balancing services (including those of independent test and balance contractors) will be done as part of the contract price. Provide a minimum of 5 original bound copies of a complete, typewritten test and balance reports for review upon project completion. Test and balance all equipment and air distribution devices to capacities indicated. Adjust drives as required. Report condition and operation of all controls and controlled devices.
- C. Kitchen ventilation systems and respective fire suppression system shall be tested in accordance with the manufacturer's listing and all requirements of the local AHJ. Requirements to be determined prior to bid.
- D. Test all equipment controls for proper response to all applicable operation sequences: cooling, heating, economizer, and ventilation/exhaust cycles; normal, after hours, night setback, morning warm-up/cool down, and emergency modes.



DESCRIPTION	REV	DATE

FLYWAY TAPROOM
Walmart Campus
Parking Deck 09
Bentonville, Arkansas



Project No:
HW24-821

Date:
3/18/25

Sheet Title:
MECHANICAL SPECIFICATIONS

of

Sheet No:

MP0.2

- E. Balance all system components to the following tolerances of design quantities indicated:
- Supply Air and Return Air: +10% to -5%
 - Exhaust Air: +0% to -10%
 - Outside Air: +10% to -0%
- F. Measure and record entering, leaving, and operating characteristics at all equipment for comparison with design capacities scheduled. Measurements/recordings include, but are not limited to, the following: entering and leaving temperatures, pressures, velocities, and flow rates for all fluids (air, water, refrigerant, etc.); all electrical operating characteristics (voltage, amps, watts); unit model numbers, component sizes, and operating speeds (both motor and driven equipment rpm's).
- G. Where initial measurements indicate equipment to be operating at conditions significantly different from scheduled capacities, measure all entering, leaving, and operating conditions for diagnostic purposes; note any discrepancies between design requirements and installed conditions; and report same to the architect/engineer in writing as soon as possible.

1.16 MECHANICAL IDENTIFICATION

- A. All piping, valves, and equipment will be appropriately identified with permanent markings. Markings and colors will comply with local AHJ requirements, and will indicate: equipment tag number; fluid (and pressures, where applicable) contained in pipe; direction of flow, etc.
- B. Pipe lines accessible for maintenance shall be identified as to service with Seton Set-Mark or equal semi-rigid plastic identification markers. Direction of flow arrow shall be included on each marker. Color-coded background shall be in accordance with ANSI A13.1-1975, "Scheme for the Identification of Piping Systems". Locations shall be as follows:
- Adjacent to each valve and fitting (except plumbing fixtures)
 - At each branch and riser takeoff
 - At each pipe passage through wall, floor and ceiling
 - At each pipe passage to underground
 - On horizontal runs: at 25' intervals
- C. Provide engraved plastic laminate equipment tags on all new and existing mechanical equipment. Nomenclature shall be proposed by HVAC contractor and approved by owner prior to fabrication.
- D. Provide for each new and existing device controlling mechanical equipment (thermostat, sensor, switch, timer, etc.) a permanent label (metal, bakelite, plastic, or equivalent) with the controlled equipment name/tag/mark permanently embossed into the label. Mount label permanently affixed to device cover (or on inside of hinged covers) and located so as not to block device operation or instructions.

1.17 STORAGE, CLEANUP, AND DEBRIS REMOVAL

- A. Coordinate storage of all equipment and materials with the owner's representative and general contractor. Continually maintain the construction site to keep areas clear of materials and debris. Additionally, provide cleanup and removal at the end of each daily work period.

*** END OF SECTION 01 SPECIFICATIONS ***

SECTION 22 - PLUMBING

22.01 FIXTURES AND TRIM

- A. Fixtures will be equal to those scheduled on drawings, with all necessary support, trim and accessories required for a neat, clean, complete and operative installation provided under this contract.
- B. All exposed finished metal parts will be chromium-plated, and all fixtures will be provided with some form of supply stop.
- C. All supply angle stop valves shall be chrome plated brass body, wheel handle, and escutcheon plate. Provide angle stop valves at CW and HW supply connections at all fixtures (point of use electric instantaneous type water heaters, sinks and lavatories, etc.) with flexible risers; and at all appliances (dishwashers, ice makers, coffee makers, vending machines, etc.)
- D. All equipment shut-off valves shall be full-port ball valves with 2-piece bronze body, stainless steel ball, and Teflon seat and packing; or Milwaukee "Butterball" with bronze body, stainless steel disk, and Viton disk seat. Provide shut-off valves and unions at all equipment connections (storage type water heaters, pumps, etc.).
- E. The exact location, elevation, and orientation of all plumbing fixtures shall be coordinated with and provided in accordance with the architectural plans. The Contractor shall coordinate the exact location, elevation, and orientation of all plumbing fixtures prior to any rough-in or top-out of any plumbing piping and services. Where any fixture or fixture group is designated as ADA accessible, the installation of the fixture or fixture groups shall comply with the requirements of the latest revision of ADAAG, whether or not the requirements are indicated specifically on the drawings.

22.02 POTABLE WATER PIPING

- A. General: All materials shall be ANSI/NSF 14/61 listed for potable water service. "NSF-pw" or "NSF 61" shall be factory, permanently stamped on all materials potable water for potable water use.
- B. Below Grade Beyond 5 Feet of Building Footprint on Customer Service Side of Water Meter:
- ASTM F 441/F 441M, CPVC, Schedule 40 pipe; CPVC, Schedule 40 socket fittings; and solvent-cemented joints. Do not use inside building or below slabs.
- C. Below Grade Within 5 Feet of Building Footprint and Beneath Slab:
- 2" diameter and smaller: Copper tubing ASTM B88 Type K annealed with AWS A5.8 BcUp silver brazed (lead free) joints, no fittings.
 - Over 2" diameter: Copper tubing ASTM B88 Type K hard drawn with ASME A16.18 cast bronze or ASME 16.22 wrought copper or bronze fittings and AWS A5.8 BcUp silver brazed (lead free) joints.
 - No joints allowed below slab or grade. Wrap all below grade copper piping with continuous Armaflex insulation or Polyethylene sleeve.
- D. Above Grade/Slab:
- 2-1/2" diameter and smaller: Copper tubing ASTM B88 Type L hard drawn with ASME A16.18 cast bronze or ASME 61.22 wrought copper or bronze fittings and ASTM B32 Grade B51A solder (lead free) joints.
 - Over 2-1/2" diameter: Copper tubing ASTM B88 Type K hard drawn with ASME A16.18 cast bronze or ASME 16.22 wrought copper or bronze fittings and AWS A5.8 BcUp silver brazed (lead free) joints OR Galvanized Steel pipe ASTM B53 schedule 40 with Cast Iron fittings and grooved mechanical joints.
 - Where exposed at fixtures, use seamless brass pipe, chrome plated.

22.03 SANITARY WASTE AND VENT PIPING / STORM DRAIN PIPING

- A. Below Grade Beyond 5 Feet of Building Footprint:
- Cast Iron pipe and fittings: ASTM A74 service weight hub and plain end with CISPI 301 or ASTM C564 neoprene elastomeric compression type gaskets.
 - PVC pipe and fittings: ASTM D3034 or ASTM F679 type SDR 26 hub and plain end with ASTM F477 elastomeric compression type gaskets.
- B. Below Grade Within 5 Feet of Building Footprint and Below Slab:
- Cast Iron pipe and fittings: ASTM A74 service weight hub and plain end with ASTM C564 neoprene elastomeric compression type gaskets.
 - PVC pipe and fittings: ASTM D2665, solid wall, schedule 40, ASTM D2564 solvent weld.
- C. Above Grade:
- Cast Iron pipe and fittings: CISPI 301 service weight hubless with CISPI 310 neoprene elastomeric gaskets and stainless steel clamp-and-shield assemblies.
 - Cast Iron pipe and fittings: ASTM A74 service weight hub and plain end with ASTM C564 neoprene elastomeric compression type gaskets.
 - Copper Tubing and fittings: ASTM B306 type DWV with ASME B16.23 cast bronze or ASME B16.29 wrought copper fittings and ASTM B32 grade 50B solder joints.
 - ASTM D2665 PVC is an acceptable alternate above grade if all of the following criteria are satisfied:
 - Allowed by local code;
 - PVC is not routed exposed in any return air plenums or air chases;
 - PVC is not routed in areas exposed to vehicular or forklift traffic.
 - PVC sanitary waste risers above grade in buildings 3 stories or taller will be externally insulated with min. 1" fiberglass insulation for sound attenuation.
 - PVC is not allowed for storm drain risers in walls of occupied spaces. These risers will be insulated cast-iron for sound attenuation.

22.04 GREASE WASTE AND VENT PIPING

- A. General: Drain pipe shall be cast-iron as specified here-in. Vent piping may be PVC as specified for "SANITARY WASTE AND VENT PIPING".
- B. Below Grade Beyond 5 Feet of Building Footprint:
- Cast Iron pipe and fittings ASTM A74 service weight hub and plain end with CISPI 301 or ASTM C564 neoprene elastomeric compression type gaskets.
- C. Below Grade Within 5 Feet of Building Footprint:
- Cast Iron pipe and fittings ASTM A74 service weight hub and plain end with ASTM C564 neoprene elastomeric compression type gaskets.
- D. Above Grade:
- Cast Iron pipe and fittings CISPI 301 service weight hubless with CISPI 310 neoprene elastomeric gaskets and stainless steel clamp-and-shield assemblies.
 - Cast Iron pipe and fittings ASTM A74 service weight hub and plain end with ASTM C564 neoprene elastomeric compression type gaskets. Copper Tubing and fittings ASTM B306 type DWV with ASME B16.23 cast bronze or ASME B16.29 wrought copper fittings and ASTM B32 grade 50B solder joints.

22.05 NATURAL GAS PIPING

- A. Below Grade:
- Black steel pipe ASTM A 53 Schedule 40 with ASTM A 234/A234M forged steel welding type fittings and ASME B31.1 welded joints. Cover pipe with AWWA C105 polyethylene jacket or double layer, half-lap 10 mil polyethylene tape.
 - ASTM D2513 fusion welded polyethylene, DR-11.
 - Andeless rises equal to Central Plastics Company or Wiliett Manufacturers Products shall be provided for transitions from below grade to above grade natural gas service.
- B. Above Grade:
- Less than 2" diameter: Black steel pipe ASTM A 53 Schedule 40 with ASME B16.3 malleable iron fittings. Joints NFPA 54 threaded.
 - 2" diameter and over: Black steel pipe ASTM A 53 Schedule 40 ASTM A 234/A234M forged steel welding type fittings, welded to ANSI B31.
 - Paint all exposed and exterior gas piping with primer and finish coat of enamel. Exterior piping to have two coats of enamel. Unless otherwise noted, interior and exterior gas piping exposed to view shall be painted "OSHA safety yellow."
 - Final connections to equipment located within building interiors only may be made utilizing ASTM A240, type 300 stainless steel corrugated tubing with ASTM E84 compliant 10 mil polyethylene jacketing. Maximum length shall be 24'.

22.06 INSULATION

- A. Domestic Cold Water (Above-Grade): Equal to Owens-Corning 1 inch thick one-piece fiberglass pipe insulation with factory-applied White All-Service (ASJ) Vapor Barrier Jacket. Fittings will be molded or mitered fiberglass for sizes under 3 inch, and molded fiberglass for sizes 3 inch and larger.
- B. Domestic Hot Water and Hot Water Recirculation (Above-Grade): Equal to Owens-Corning 1 inch thick fiberglass, one-piece, pipe insulation with factory-applied White All-Service (ASJ) Vapor Barrier Jacket. Fittings will be insulating cement for sizes under 3 inch, and molded fiberglass for sizes 3" and larger.
- C. Domestic Hot and Cold Water (Below-Grade): Insulate piping located below slab or grade with "Foamglas" 3/4 inch thick and apply asphaltic coating equal to PC Pitco 300. Insulation will be installed in accordance with manufacturer's instructions.
- D. Exposed Hot Water, Cold Water, and Drain Pipes Serving Lavatories: Where hot and cold water pipe serving fixtures are exposed, insulate for ADA compliance with product equal to Handi-Land-Guard as manufactured by Trueboro, Inc., Ellington, CT.
- E. All insulated piping located exterior to the building will have the exterior of the insulation covered with an aluminum jacket.
- F. Where water lines are installed in ventilated attics or above the building insulation envelope, and where another method of freeze protection has not been provided, fiberglass batt type attic insulation equivalent to R-30 will be draped over the water lines. Insulation joints will be taped tight. This insulation requirement is in addition to pipe insulation.

22.07 TREATMENT, FLUSHING, AND ISOLATION

- A. All potable water systems and equipment will be treated and purified in compliance with local health codes and local water jurisdiction requirements. As a minimum, flush entire system, introduce chlorine or hypochlorite to standards required by local utility and health department, but not less than 50 ppm residual chlorine. During sterilization, operate all valves, faucets, etc. so that all portions of the system are reached. Let stand for 24 hours minimum. Flush system with clean water until chlorine content is reduced to 1 ppm at point furthest from where chlorine was introduced. After flushing has been completed provide laboratory report of bacteriological tests on samples taken from system. Repeat sterilization process until satisfactory tests are obtained and approved by Health Department. System shall not be put into service until such approval has been obtained.
- B. After the installation of all new sanitary sewer piping systems and prior to building occupancy, all new and existing (when applicable) sanitary drainage piping shall be hydrojetted and cleared.
- C. Furnish and install backflow prevention devices where potable water systems are stubbed out for connection to mechanical make-up water systems, at stub-outs for landscape irrigation systems, and for connections to any other non-potable type systems.

*** END OF SECTION 22 SPECIFICATIONS ***

SECTION 23 - HVAC

23.01 EQUIPMENT

- A. All equipment will be equal to the reference products scheduled on the drawings. Minimum standards of quality in features, construction, manufacturing, performance, testing and certification shall be established by the basis of design equipment, whether or not specifically noted in the schedule or on the drawings. Equipment designated as OF/CI is to be Owner Furnished, Contractor Installed.
- B. All exposed rotating machinery will be equipped with guards for safety. Guards used on equipment located on the exterior of the building will also serve as weather shields.
- C. All outside air dampers on all equipment shall have low-leakage blade and edge seals. Damper assembly tested leakage shall not exceed 8 cfm/s.f. @ 4" e.s.p.
- D. All outdoor equipment shall be provided with field-powered convenience receptacle integral to the unit when offered as a factory option.
- E. All equipment suspended overhead containing water coils or capable of producing condensate shall be provided with 2" high auxiliary drain pans beneath them. Drain pans shall be continuous, water tight, and shall be provided with Beckett float switches interlocked to shut-down system operation and signal an alarm condition when a DDC systems is provided.
- F. Warranties: Unless noted otherwise on the plans, minimum equipment warranties shall be as follows:
- Equipment: 1-year full unit parts and labor.
 - All refrigeration compressors: 5-years parts
 - Aluminized-steel heat exchangers: 10-years parts
 - Stainless steel heat exchangers (primary and/or secondary): 15-years parts

23.02 PIPING

- A. Refrigerant Piping: ASTM B280, type ACR copper, hard temper, cleaned, dehydrated, and sealed. Fittings shall be wrought copper with cadmium-free solder, 45% silver brazing alloy, and class Bag-5.
- B. Condensate Drain Piping:
- ASTM D1785 schedule 40 PVC pipe and ASTM D2665 fittings.
 - ASTM B88 hard drawn copper with ANSI B16.22 wrought copper fittings.
 - ASTM B306 type DWV copper with ANSI B16.29 wrought copper fittings.
 - Join copper with ASTM B32 lead free solder, grade 95-1A 95-5 tin-antimony.
 - All condensate drain piping routed on building exterior shall be copper.
 - All PVC condensate drain piping routed in plenum spaces shall be thoroughly and continuously wrapped with Armaflex insulation such that no PVC surfaces are visible and/or exposed to the plenum space. If the piping system can't be completely insulated in this fashion for any reason, the piping shall be copper as specified herein.

23.03 PIPE INSULATION, DUCT INSULATION AND DUCT LINER

- A. Minimum R-Values shall be provided for all insulated ductwork and insulated piping to meet the requirements of the applicable Energy Code of the Authority Having Jurisdiction or as follows, whichever is more stringent:
- B. All ductwork and piping shall be insulated, unless specifically noted otherwise. All insulation and liner will be UL listed with flame spread/fuel contributed/smoke developed rating of 25/25/50 in accordance with ASTM E 84.
- C. All insulated piping and ductwork located exterior to the building will have the exterior of the insulation covered with a weathertight aluminum jacket/cladding of type and material recommended by the insulation system manufacturer. Cladding to be installed in strict accordance with the manufacturer's requirements.
- D. Refrigerant Suction: Elastomer closed-cell flexible equal to Armstrong Armaflex-22 pipe insulation, 1 inch minimum thickness.
- E. Condensate Drain (Overhead Horizontal): Elastomer closed-cell flexible equal to Armstrong Armaflex-22 pipe insulation, 1/2 inch minimum thickness.
- F. Air Devices: Insulate the top of all air devices exposed to unconditioned plenums or attics with minimum of blanket of 2" thick 3/4 pound density fiberglass faced duct wrap type with factory-applied flame retardant foil-reinforced Kraft facing.
- G. Duct Wrap: Equal to ASTM C1290 type III, ASTM C553 type 150, ASTM C1136 type II, flexible blanket, 1.5 PCF density, factory-applied flame retardant foil-reinforced Kraft facing, Knaf Atmosphere Duct Wrap or equal.
- H. Duct Liner, Flexible: Equal to ASTM C1071, type 1 flexible duct liner, 1.5 PCF density, 1" thickness, equal to Knaf Atmosphere Duct Liner.
- I. Duct Insulation Schedule:
- Exposed Rectangular and Round Ductwork: 1" Duct Liner, R-4.2 installed.
 - Concealed Rectangular and Round Ductwork, Supply and Return: 2" Duct Wrap, R-6.4 installed
 - Concealed Rectangular and Round Ductwork, Exhaust and Outside Air: 1-1/2" Duct Wrap, R-4.8 installed
- J. Grease Hood Exhaust Duct Fire Wrap: Apply fire resistive duct wrap insulation continuously to ductwork as indicated on Drawings. Provide two layers of 1.5" thick 3M Fire Barrier Duct Wrap 15A per layer with 4" overlaps or two layers of 2.0" thick 3M Fire Barrier Duct Wrap 20A per layer with 3" overlaps. Full installation shall be provided in strict accordance with the insulation manufacturer's instructions and the product's listing.

23.04 SHEET METAL

- A. All sheet metal ductwork will be fabricated, installed and sealed in accordance with SMACNA "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE". No ductwork will be less than 26 gauge.
- B. SMACNA Duct Pressure Class and Ratings:
- Supply Air, Low Pressure: 1", Seal Class A
 - Return Air, Low Pressure: 1", Seal Class A
 - Exhaust Air, Low Pressure: 1", Seal Class A
 - Make-up Air / Outside Air, Low Pressure: 1", Seal Class A
- C. Unless noted otherwise, all rigid rectangular, round, and oval ductwork will be:
- G-60 galvanized steel for interior ductwork.
 - G-90 galvanized steel for exterior ductwork.
- D. Manufactured Double-Wall Spiral Duct and Fittings: ASTM A-653, G-60/G-90, galvanized steel duct and fittings. Provide solid inner and outer wall with 1" thick 1.5# R3.6 insulation.
- E. All duct dimensions indicate required clear inside duct dimensions. Fabricate duct accordingly to compensate for internal duct liner when applicable.
- F. Exposed sheet metal duct work to be field painted shall have paint grip finish. All stickers, oil, dirt, etc. shall be thoroughly cleaned from the duct surfaces prior to painting.
- G. Provide flexible connections at each air-handling device with fan or where otherwise indicated on the drawings.
- H. Unless noted otherwise, Round-round supply air take-offs shall be a 45-degree duct take-off fitting.
- I. Rectangular-round supply air and return air take-offs shall be equal to Air-Tite HETDQ galvanized high-efficiency 45-degree fitting with neoprene gasket on flange, integral damper with locking quadrant lever and 2" stand-off bracket.
- J. Provide adequate dampers so the dampers at the grilles are not required to balance the system. Install in accessible locations or at access panels / doors. Ganging of multiple diffusers onto one balancing damper is not acceptable unless specifically shown. Dampers shall have locking quadrant lever and 2" stand-off bracket.
- K. Grilles, diffusers and registers will be equal to those indicated on drawings.
- L. Louvers will be Greenheck or equal, size and type as indicated on the drawings. All louvers shall be aluminum construction, drainable hood type with bird screens. Finish shall be Kynar. Refer to the plans and schedules for other required features.
- M. Grease Hood Exhaust Duct: Grease exhaust duct must be not less than 16 gauge carbon steel. All seams and joints are to have a liquid tight weld with duct sloped toward hood to prevent collection of grease residue. Duct construction and installation must comply with NFPA 96. Grease duct hangers will be 2x2x1/4" angle saddles supported by 1/2" diameter all-thread rod at 6' o.c. All-thread will be supported from the above structure. The exhaust duct must have a fire rated access door for cleaning duct at all changes in direction. Horizontal ductwork shall pitch to drain back to hood at 1/4" per foot.
- N. Grease Duct Access Door: NFPA 96 compliant. Pre-engineered, manufactured assembly equal to Best Access Doors Grease Duct Panel or FireWrap Elite Access Door System. Door will be bolt in unit with no bolts penetrating to the interior of the duct. Door will have two handles for easy removal and installation. Door will be 16 Gage galvanized steel. Duct access doors will be installed and insulated in accordance with the fire wrap insulation manufacturer's instructions to ensure the entire grease duct insulation system is continuous and unbroken.
- O. Vapor Hood Exhaust Duct: Stainless steel with watertight welded joints from hood to fan. Horizontal ductwork shall pitch to drain back to hood at 1/4" per foot.

23.05 FLEXIBLE AIR DUCTS

- A. Listed under UL-181 standards as Class I Air Duct material. Minimum operating pressure 6" w.c., minimum working velocity 4,000 FPM. Insulated with 1" thick, 3/4 lb. density fiberglass insulation. Material must be acceptable to authority having jurisdiction. Note: Flexible ducts are not allowed on exposed round ducts.

23.06 FABRIC DUCT SYSTEM

- A. Shall be porous fabric duct with moderate-throw openings equal to Fabricaire Combi-80 with Oriflow openings at 135-degrees and 225-degrees where applicable (see plans for throw patterns), and all-in-one Type 5 H-Rail suspension system. Color to be selected by owner from manufacturer's standard color range. Install in strict accordance with the manufacturer's recommendations.

23.07 CONDENSATE PUMPS

- A. Equal to a Little Giant VCMA-20ULST; 25 GPH at 15', 1/30 HP, 120/1/60, 1.5 amps.
- 1/2-gallon collection tank with three 1-1/8" diameter inlet openings (two fitted with removable cap plug)
 - Vertical centrifugal pump design with thermally protected, fan cooled motor
 - Stainless steel motor shaft
 - Automatic start and stop operation
 - Floet (solid polymer) activated switch for automatic high-level water detection (overflow detection switch)
 - Overflow detection switch with two 5" switch lead wires: dual function NO and NC operation, set to NO from factory for equipment shut down connection. Field wire to shut-down cooling system.
 - 3/8" O.D. barbed discharge adapter with built-in check valve and 20' x 3/8" I.D. vinyl discharge tubing
 - Built-in wall mount tabs on tank
 - Removable pump float locking tab for safety during transportation (remove at time of installation)
 - Maximum water temperature: 140°F
 - 6 ft., 3-conductor cable with grounded 3-prong plug

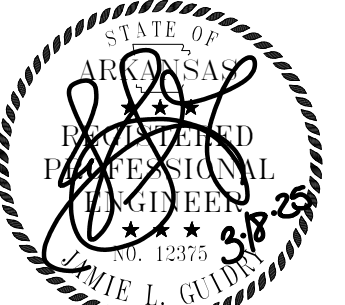
23.08 DAMPERS AND DETECTORS

- A. Provide U.L. listed fire, smoke, and combination fire-smoke dampers where indicated and/or noted. Verify the locations of all fire, smoke, and combination fire/smoke rated partitions with the architectural plans and provide rated dampers where required, whether or not they are specifically noted on the mechanical drawings. Rated dampers shall be U.L. Listed (#555 and/or #555S, as applicable) according to the type required. All dampers shall be installed in strict accordance with the manufacturer's instructions according to the damper's listing, rating, service type and installation requirements. Fire dampers shall be provided with duct access doors where not installed close to and accessible through adjacent air devices. Access doors shall be installed in an accessible location and shall be airtight.
- B. Balancing and control dampers will be provided as indicated and where required to allow balancing of supply air to each air device, and to allow balancing of return air and outside air ratios. Rectangular balancing dampers shall be opposed blade configuration, 5-inch deep 20-gauge galvanized hot channel frame, 16 gauge galvanized steel blades, 1/2-inch plated steel axes, oil impregnated bronze bearings, manual hand quadrant with 2" stand-off bracket, Greenheck MBD-15 or equal. Round balancing dampers shall be 6-inch wide 20-gauge galvanized steel frame, 20 gauge galvanized steel blade, 3/8-inch square plated steel axle turning in oetal bearings, manual hand quadrant with 2" stand-off bracket, Greenheck MBD-50 or equal.
- C. Ionization type duct smoke detectors will be provided where indicated, noted and required or as required by code. At a minimum, smoke detectors are required in the return air ducts of air handling systems 2000 cfm or greater. Interlock all detectors for unit shutdown.

23.09 CONTROLS

- A. Provide all temperature controls in accordance with recommendations of the equipment manufacturer and as indicated on the drawings.
- B. User-controlled wall-mounted temperature controls shall be mounted at 48" a.f.f. measured to the centerline of the user interface (buttons, touch-screen, etc.).
- C. Controls shall be Stand Alone type.
- D. Thermostats and temperature sensors shall not be located on exterior walls. Where it is unavoidable to do so, provide a minimum 1" thick rigid insulation thermal break between the thermostat/sensor base and the wall. The insulation shall be covered with sheet metal or other means to result in a neat, clean and workmanlike appearance.
- E. Stand-alone thermostats shall be digital, touch screen, wi-fi enabled, 7-day programmable type with "occupied/unoccupied" functionality, partial lockout, humidification/dehumidification control, and any other feature including cooling/heating staging or CO2 control for demand control ventilation as required for the complete, operative and warrantable installation of the HVAC systems.
- F. Provide heavy-duty locking metal thermostat covers in all potentially high-abuse areas including, but not limited to, gyms. Provide heavy-duty locking clear plastic lock boxes over all other thermostats when required by the owner.
- G. Provide all wiring, wiring devices, junction boxes, etc. required for complete and operative mechanical systems. Control wiring shall be minimum 18-gauge multi-strand plenum rated wiring. All wiring located in, above, or behind inaccessible construction, and wiring exposed to view in open areas shall be installed in 3/4" EMT conduit. All wiring shall be routed continuously from the control device to the controller, thermostat, or interface panel. Splicing shall not be permitted. Wiring connections shall be either crimped or soldered.
- H. Furnish complete wiring diagrams showing all interlock wiring in addition to temperature control wiring diagrams. Wiring is to be color-coded and installed in accordance with NEC.
- I. The mechanical contractor shall provide training to the owner on all HVAC control systems.

*** END OF SECTION 23 SPECIFICATIONS ***



REV	DATE	DESCRIPTION

FLYWAY TAPROOM
Walmart Campus
Parking Deck 09
Bentonville, Arkansas



Project No:
HW24-821

Date:
3/18/25

Sheet Title:
MECHANICAL SPECIFICATIONS

of

Sheet No:

MPO.3

PLUMBING GENERAL NOTES

- A. DUE TO THE SMALL SCALE OF THE PLANS, IT IS NOT ALWAYS POSSIBLE TO INCLUDE ALL PLUMBING LINE SIZES ON THE PLANS. REFER TO THE PLUMBING RISERS, DETAILS AND NOTES FOR ALL LINE SIZES NOT INDICATED ON THE PLUMBING PLANS.
- B. ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON NON-DESTRUCTIVE SITE OBSERVATIONS AND THE ORIGINAL BUILDING SHELL. DRAWINGS DATED JUNE 24, 2024. IT IS EXPECTED THAT THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING THE ADJUSTMENTS NEEDED DURING CONSTRUCTION TO INSTALL THE WORK COMPLETE AND OPERATIVE BASED ON THE ACTUAL EXISTING CONDITIONS. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED PRIOR TO ANY ROUGH-INS.
- C. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE PLUMBING SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES AND CONTROLS COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED TO. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE PLUMBING SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, LOCAL AUTHORITIES HAVING JURISDICTION AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE OWNER. THE WORD "PROVIDE" SHALL MEAN FURNISH AND INSTALL. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS. THE "I WAS HERE FIRST" RULE DOES NOT QUALIFY AS COORDINATION.
- D. STUDY THE FULL SET OF CONTRACT DOCUMENTS FOR ALL DISCIPLINES AND BECOMING FAMILIAR WITH THE SCOPE OF THE ENTIRE PROJECT PRIOR TO BID AND THE COMMENCEMENT OF ANY WORK. ANY CONFLICTS OF WORK SHALL BE BROUGHT TO THE ARCHITECT'S/ENGINEER'S ATTENTION BY THE CONTRACTOR PRIOR TO SHOP DRAWING DEVELOPMENT, PURCHASE OF EQUIPMENT OR COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING FOR ANY LACK OF CONSTRUCTION COORDINATION BETWEEN DISCIPLINES. ANY CONFLICTS OF WORK SHALL BE BROUGHT TO THE ARCHITECT'S AND ENGINEER'S ATTENTION BY THE CONTRACTOR PRIOR TO PURCHASE OF EQUIPMENT OR COMMENCEMENT OF WORK.
- E. THE WORK SPECIFIED HEREIN SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, SUPPLIES AND SUPERVISION REQUIRED TO INSTALL AND PLACE IN OPERATION THE MECHANICAL SYSTEMS AND APPURTENANCES SPECIFIED HEREIN AND/OR INDICATED ON THE DRAWINGS OR REASONABLY IMPLIED AS NECESSARY FOR COMPLETION OF THE VARIOUS SYSTEMS. ALL WORK SHALL BE COMPLETED IN A NEAT AND CLEAN MANNER IN ACCORDANCE WITH CURRENT INDUSTRY STANDARDS.
- F. ALL WORK SPECIFIED HEREIN SHALL BE PERFORMED BY PROPERLY LICENSED, TRAINED, AND EXPERIENCED TRADESMEN. THE CONTRACTOR SHALL PROVIDE A FIELD SUPERVISOR WITH THE EXPERIENCE REQUIRED TO COORDINATE BETWEEN THE PLUMBING WORK AND THE INTERFACING WORK OF THE OTHER PROJECT DISCIPLINES AND IDENTIFY INTERFACE ISSUES IN ADVANCE OF THE PLACEMENT OF THE WORK. THE FIELD SUPERVISOR SHALL HAVE THE AUTHORITY REQUIRED TO INSTRUCT THE WORK, MAKE JOB DECISIONS, AND ACT ON BEHALF OF THE CONTRACTOR IN MATTERS PERTAINING TO THE CONTRACT DOCUMENTS. THE FIELD SUPERVISOR SHALL THOROUGHLY STUDY THE COMPLETE SET OF CONTRACT DOCUMENTS DURING THE PRE-CONSTRUCTION PERIOD, IDENTIFY INTERFACE ISSUES, AND COORDINATE THESE INTERFACE WITH THE ARCHITECT AND ENGINEER PRIOR TO SHOP DRAWING PREPARATION, FABRICATION OR ROUGH-IN.
- G. REMOVE ALL RESPECTIVE CONSTRUCTION WASTE AND DEBRIS FROM THE SITE AND SHALL BE RESPONSIBLE FOR THE LAWFUL DISCARD OF SUCH WASTE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS. THE COMPLETED WORK AND THE ADJACENT AFFECTED AREAS SHALL BE THOROUGHLY CLEANED TO THE SATISFACTION ON THE OWNER, ARCHITECT, AND ENGINEER.
- H. PROVIDE ALL CUTTING, PATCHING, AND PAINTING REQUIRED BY THE RESPECTIVE WORK. EXCESSIVE, UNNECESSARY PENETRATIONS OR OVERSIZED PENETRATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE ARCHITECT, ENGINEER, AND OWNER. IF THE ARCHITECT/ENGINEER DEEMS NECESSARY, ANY CONSTRUCTION DAMAGED FROM CUTTING OR PENETRATION ACTIVITIES SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. THERE SHALL BE NO CUTTING OR PENETRATING OF CONSTRUCTION THAT WILL COMPROMISE THE STRUCTURAL INTEGRITY OF THE BUILDING SYSTEM. IF THE CONTRACTOR DEEMS IT NECESSARY TO ALTER, CUT, OR PENETRATE A STRUCTURAL MEMBER, EXPRESS PERMISSION SHALL BE GIVEN BY THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING. IT IS PERMISSIBLE FOR BEAMS TO BE PENETRATED WITH SMALL SCREWS WITHOUT PRIOR APPROVAL.
- I. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL TRADES. PIPE ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, ETC. TO AVOID INTERFERENCE WITH EQUIPMENT, PIPING, DUCT WORK, LIGHTS, CONDUIT, STRUCTURAL MEMBERS, ETC. ALL INVERTS SHALL BE VERIFIED IMMEDIATELY FOLLOWING AWARD OF CONTRACT. ALL INVERTS SHALL BE COORDINATED WITH STRUCTURAL FOOTINGS.
- J. HANG ALL OVERHEAD PIPING FROM THE STRUCTURAL MEMBERS (W-SHAPES, BAR JOISTS). PIPING SHALL NOT BE SUPPORTED FROM THE METAL DECK. OVERHEAD WATER PIPING SHALL BE PITCHED TO DRAIN TO LOW POINTS.
- K. COORDINATE ALL UNDERGROUND PIPING WITH GRADE BEAMS, WALL FOOTINGS, COLUMN FOUNDATIONS AND OTHER STRUCTURAL CONDITIONS. SEE STRUCTURAL PLANS FOR DETAILS REGARDING ANY PIPING PARALLEL TO, THROUGH OR UNDER FOOTINGS AND PIPERS. ALL STRUCTURAL PENETRATIONS (SLEEVES, BLOCKOUTS, ETC.) ARE TO BE LOCATED AND COORDINATED IN THE FIELD BY THE CONTRACTOR IN RELATION TO THE REQUIREMENTS OF FINAL EQUIPMENT AND FIXTURES SELECTED.
- L. COORDINATE ALL FLOOR PENETRATIONS WITH STRUCTURAL DRAWINGS. SET SLEEVES IN FLOORS AND WALLS AND ATTACHMENTS FOR HANGERS AS CONSTRUCTION PROGRESSES. COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES WITH STRUCTURAL ENGINEER. ALL PENETRATIONS MUST BE SEALED AND HELD AS TIGHT TO COLUMNS OR WALLS AS POSSIBLE.
- M. WALL PENETRATIONS:
 - 1. STAINLESS STEEL PIPE ESCUTCHEONS SHALL BE PROVIDED AT ALL INTERIOR, EXPOSED PIPE PENETRATIONS THROUGH WALLS. ESCUTCHEONS SHALL BE SECURED TIGHT TO WALL SURFACES.
 - 2. ALL PIPING PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE SLEEVED. THE INTERSTITIAL SPACE BETWEEN THE SLEEVE AND THE PIPE SHALL BE CAULKED/SEALED WEATHERTIGHT. STAINLESS STEEL ESCUTCHEONS SHALL BE PROVIDED ON BOTH SIDES OF THE SLEEVE FOR A NEAT AND CLEAN FINISH.
 - 3. ALL PENETRATIONS THROUGH FIRE/SMOKE RATED CONSTRUCTION SHALL BE SEALED UTILIZING U.L. LISTED MATERIALS AND DESIGNS TO MAINTAIN FIRE-RATING. U.L. LISTED DESIGNS FOR EACH PENETRATION TYPE UTILIZED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER FOR APPROVAL.
- N. UNLESS SPECIFICALLY NOTED OTHERWISE:
 - 1. ALL SEWER DRAIN/WASTE LINES SHOWN IN PLAN VIEW ARE ASSUMED BELOW THE FLOOR LEVEL OF THE RESPECTIVE PLAN VIEW.
 - 2. ALL SEWER VENT LINES SHOWN IN PLAN VIEW ARE ASSUMED OVERHEAD OF THE FLOOR LEVEL OF THE RESPECTIVE PLAN VIEW.
 - 3. ALL WATER LINES SHOWN IN PLAN VIEW ARE ASSUMED OVERHEAD OF THE FLOOR LEVEL OF THE RESPECTIVE PLAN VIEW.
- O. VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID.
- P. REFER TO THE ARCHITECTURAL PLANS FOR ALL ROOM NAMES AND NUMBERS.
- Q. COORDINATE AS REQUIRED TO ENSURE NO WATER LINES PASS OVER ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, POWER PANELS, FIRE ALARM CONTROL PANELS, TRANSFORMERS, AND PHONE/DATA BOARDS.
- R. ALL PIPING SYSTEMS SHALL BE PROTECTED AGAINST DISSIMILAR METAL GALVANIC CORROSION BY SEPARATION, INSULATION, OR ENGINEERED CONNECTIONS SUCH AS DIELECTRIC UNIONS.
- S. PIPE INSULATION SHALL BE CONTINUOUS AND UNBROKEN THROUGH ALL HANGERS, SUPPORTS, WALL PENETRATIONS, ETC.
- T. PROVIDE SERVICE/SHUT-OFF VALVES ON ALL WATER BRANCH LINES SERVING INDIVIDUAL FIXTURES/EQUIPMENT. VALVES SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION. PROVIDE SHUT-OFF VALVES IN ACCORDANCE WITH AND WHERE REQUIRED BY THE RELEVANT PLUMBING CODE AND THE AUTHORITY HAVING JURISDICTION, WHETHER OR NOT VALVES ARE SPECIFICALLY NOTED ON THE PLANS.
- U. ALL DWV PIPING AND POTABLE WATER PIPING SHALL BE CONCEALED INSIDE WALLS AND PIPE CHASES OR ABOVE CEILINGS AS HIGH AS POSSIBLE. PROVIDE ACCESS PANELS FOR SHOCK ABSORBERS, TRAP PRIMERS AND ALL VALVES LOCATED ABOVE NON-ACCESSIBLE CEILINGS AND INSIDE PIPE CHASES. EXACT LOCATION MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
- V. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES. EXACT LOCATION OF ALL PLUMBING FIXTURES MUST BE VERIFIED IN FIELD PRIOR TO INSTALLATION. FINAL LOCATION SHALL BE AS DIRECTED BY ARCHITECT.
- W. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT INDICATED ON DRAWINGS. FINAL CONNECTION SHALL INCLUDE ANY ADAPTERS, NIPPLES SHUT-OFF VALVES, PRESSURE REGULATING VALVES, SHOCK ABSORBERS, BACKFLOW PREVENTION DEVICES, ETC. PROVIDE A BACKFLOW PREVENTION DEVICE AT ALL CONNECTIONS TO MECHANICAL EQUIPMENT, IRRIGATION, VENDING MACHINES, ETC. AS REQUIRED BY CODE AND LOCAL AUTHORITIES. CONTRACTOR IS TO VERIFY WITH THE LOCAL AUTHORITY THE TYPE OF BACKFLOW PREVENTION DEVICE REQUIRED FOR ALL APPLICATIONS PRIOR TO INSTALLATION. PROVIDE FIELD TESTABLE BACKFLOW PREVENTION DEVICE IN LINES SERVING HOSE BIBBS.
- X. PRIOR TO BID AND ROUGH-IN, PROCURE A FULL SET OF THE KITCHEN EQUIPMENT SHOP DRAWINGS. CONFIRM ALL PLUMBING CONNECTION AND INSTALLATION REQUIREMENTS AND PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION OF ALL KITCHEN EQUIPMENT AND SYSTEMS REQUIRING PLUMBING UTILITIES.
- Y. INDIRECT WASTE RECEPTORS MUST BE LOCATED WHERE READILY ACCESSIBLE FOR INSPECTION AND CLEANING. ALL INDIRECT WASTE PIPING SHALL DISCHARGE THROUGH AN AIR GAP OR AIR BREAK INTO A WASTE RECEPTOR. ALL INDIRECT WASTE PIPING THAT EXCEEDS TWO (2) FEET IN DEVELOPED LENGTH MEASURED HORIZONTALLY OR FOUR (4) FEET IN TOTAL DEVELOPED LENGTH, SHALL BE TRAPPED.
- Z. VERIFY VOLTAGE, PHASE AND WIRE SIZE OF PLUMBING EQUIPMENT REQUIRING ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASE OF EQUIPMENT.

PLUMBING FIXTURE SCHEDULE

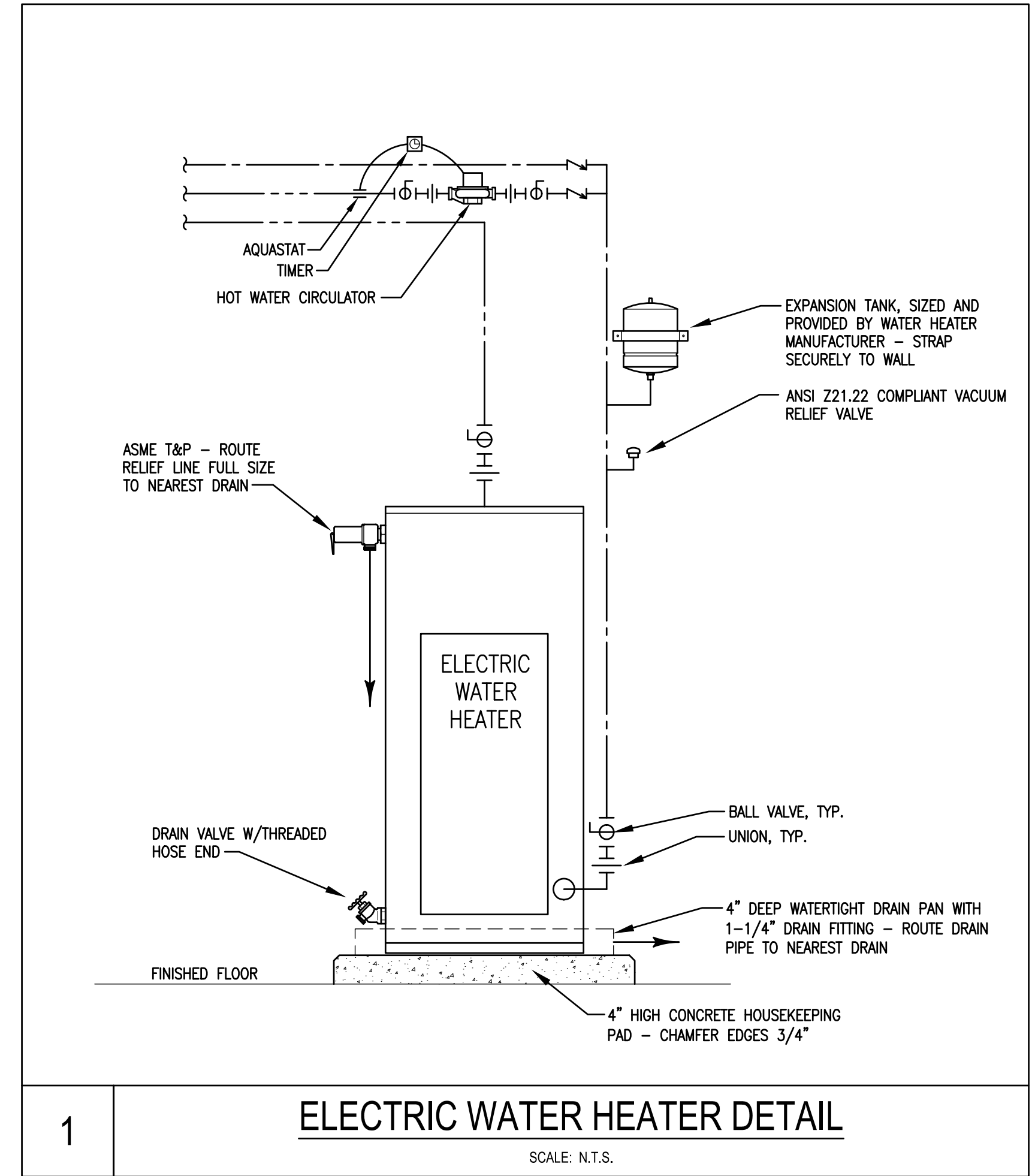
NOTES:
 1. ALL INSTALLATION APPURTENANCES REQUIRED FOR THE COMPLETE AND OPERATIVE INSTALLATION OF ALL PLUMBING FIXTURES SHALL BE PROVIDED, WHETHER OR NOT SPECIFICALLY INDICATED IN THIS SCHEDULE.
 2. WHERE THE PLANS INDICATE THE CONNECTION OF A FIXTURE DRAIN TO A COMBINATION WASTE/VENT SYSTEM, THE TRAP SIZE INDICATED IN THIS SCHEDULE SHALL BE INCREASED BY ONE FULL PIPE SIZE.
 3. IN ACCORDANCE WITH FEDERAL LAW, WHETHER OR NOT SPECIFICALLY INDICATED IN THE PLUMBING FIXTURE SCHEDULE OR IN THE PLANS, ALL PLUMBING EQUIPMENT AND MATERIALS CONVEYING POTABLE WATER SHALL BE CONSTRUCTED WITH LEAD FREE MATERIALS IN ACCORDANCE WITH REDUCTION OF LEAD IN DRINKING WATER ACT.
 4. REFER TO THE ARCHITECTURAL PLANS REGARDING THE MOUNTING HEIGHTS OF ALL FIXTURES. ALL ACCESSIBLE FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH ADAAG, WHETHER OR NOT THE REQUIREMENTS ARE SPECIFICALLY INDICATED ON THE DRAWINGS.
 5. WHERE FIXTURE/EQUIPMENT LOCATIONS, MOUNTING HEIGHTS, ETC. ARE IN DOUBT, THE CONTRACTOR SHALL SEEK CLARIFICATION PRIOR TO BID AND ROUGH-IN.
 6. BASIS OF DESIGN FIXTURE TO BE SELECTED BY DIRECT COORDINATION BETWEEN THE CONTRACTOR AND THE OWNER.

MARK/ DESCRIPTION	MANUFACTURER/MODEL		SERVICES (INCHES)				REMARKS
			WASTE	VENT	CW	HW	
WC-1 WATER CLOSET MANUAL FLUSH VALVE	BOWL	KOHLER #K-96053	4	2	1-1/2	---	WHITE VITREOUS CHINA, ELONGATED BOWL, SIPHON JET FLUSH, 10" OR 12" ROUGH-IN, 1-1/2" TOP SPUD, 14-3/4" HIGH, 1.28 GPF FLUSH VALVE, OPEN FRONT WHITE SEAT, SEAL, BOLT CAPS.
	SEAT	KOHLER #K-4670-C					
	FLUSH VALVE	ZURN Z6000-HET					
WC-2 WATER CLOSET MANUAL FLUSH VALVE ADA COMPLIANT	BOWL	KOHLER #K-96057	4	2	1-1/2	---	WHITE VITREOUS CHINA, ELONGATED BOWL, SIPHON JET FLUSH, 10" OR 12" ROUGH-IN, 1 1/2" TOP SPUD, 16-1/2" HIGH, 1.28 GPF FLUSH VALVE, HANDLE INSTALLED TO WIDE SIDE OF TOILET ROOM, OPEN FRONT WHITE SEAT, SEAL, BOLT CAPS.
	SEAT	KOHLER #K-4670-C					
	FLUSH VALVE	ZURN Z6000-HET					
U-1.2 URINAL WALL-HUNG MANUAL FLUSH VALVE	BOWL	KOHLER #K-4991-ET	2	1-1/2	3/4	---	WHITE VITREOUS CHINA, WASHOUT TYPE, 3/4" TOP SPUD, 2" OUTLET, REMOVABLE BEEHIVE STRAINER, BUILT-IN TRAP, 1.0 GAL FLUSH VALVE, AND CARRIER. MOUNT U-1 AT 24" A.F.F. MEASURED TO RIM. MOUNT U-2 ADA COMPLIANT AT 17" A.F.F. MEASURED TO RIM.
	FLUSH VALVE	ZURN #Z6003-WS1					
	CARRIER	ZURN #Z1221 SERIES					
L-1 LAVATORY SELF-RIMMING	BASIN	KOHLER #K-2196	2	1-1/2	1/2	1/2	WHITE VITREOUS CHINA, COUNTER MOUNTED, 20"x17" BASIN W/SEALED OVERFLOW, COMMERCIAL CHROME-PLATED SOLID BRASS 4" CENTER FAUCET, INDEXED LEVER HANDLES, GRID STRAINER W/TALPIECE, CAST BRASS P-TRAP, ANGLE SUPPLIES W/STOPS, AND INSULATION ON DRAIN AND SUPPLIES. INSULATION ON DRAIN AND SUPPLIES IS NEEDED ONLY IF AREA BENEATH COUNTER IS OPEN TO PUBLIC - VERIFY WITH COUNTER CONSTRUCTION. PROVIDE AN ASSE 1070 LISTED POINT-OFF-USE THERMOSTATIC MIXING VALVE ON THE HOT WATER SUPPLY.
	FAUCET	T&S BRASS #B-0871					
	STOPS	BRASSCRAFT #JCR1912AZ C					
	GRID STRAINER	BRASSCRAFT #0701					
	TRAP	BRASSCRAFT #0010					
	INSULATION	TRUEBRO LAW-GUARD 2					
	MIXING VALVE	LEONARD #170-LF-BP-BRKT					
SS-1 SERVICE SINK FLOOR BASIN	BASIN	MUSTEE #63M	3	1-1/2	3/4	3/4	WHITE MOLDED FIBERGLASS FLOOR BASIN, 24"x24"x10" DEEP BASIN, REMOVABLE CHROME PLAT STRAINER, WALL FAUCET W/VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK, AND THREADED HOSE END, HOSE AND HOSE BRACKET, 3-CLAMP MOP HANGER, BUMPER GUARDS, AND STAINLESS STEEL WALL GUARDS.
	FAUCET	MUSTEE #63.600A					
	BUMPER GUARDS	MUSTEE #63.401					
	MOP HANGER	MUSTEE #63.600					
	HOSE/CLAMPS	MUSTEE #65.700					
	WALL GUARD	MUSTEE #63.2436					
HD 4X2 OPEN HUB DRAIN	4x2 INCREASER	RECTORSEAL SURESEAL	4	2	---	---	DEDICATED TO INDIRECT WASTE DISCHARGE. MATCH CONNECTING PIPING SYSTEM MATERIAL. INSTALL ACCESSIBLE FOR SERVICE WITH RIM OF HUB AT FINISHED FLOOR LEVEL. PROVIDE ASSE 1072 AF-GW CERTIFIED TRAP GUARD SEAL.
FD-1 FLOOR DRAIN LIGHT DUTY ROUND GRATE	ZURN #ZN-415-6B	RECTORSEAL SURESEAL	2	1-1/2	---	---	COATED CAST-IRON BODY, ADJUSTABLE STRAINER TOP, AND 6" ROUND NICKEL BRONZE GRATE. PROVIDE ASSE 1072 AF-GW CERTIFIED TRAP GUARD SEAL.
FS-1 FLOOR SINK	ZURN #ZN-1901-2	RECTORSEAL SURESEAL	4	2	---	---	CAST-IRON BODY, ENAMEL COATED INTERIOR, 12" SQUARE x 8" DEEP, NICKEL BRONZE 1/2 GRATE, AND ABS PLASTIC DOME STRAINER IN DRAIN OPENING. PROVIDE ASSE 1072 AF-GW CERTIFIED TRAP GUARD SEAL.
FS-2 FLOOR SINK	ZURN #FD2378	RECTORSEAL SURESEAL	4	2	---	---	CAST-IRON BODY, ENAMEL COATED INTERIOR, 8" SQUARE x 6" DEEP, NO GRATE, AND ABS PLASTIC DOME STRAINER IN DRAIN OPENING. PROVIDE ASSE 1072 AF-GW CERTIFIED TRAP GUARD SEAL.
FCO FLOOR CLEANOUT	ZURN #Z1400-BP		SEE PLAN	---	---	---	CAST IRON CLEANOUT WITH THREADED ADJUSTABLE HOUSING, FLANGED FERRULE AND ROUND SECURED NICKEL BRONZE TOP. SEE PLUMBING PLAN FOR SEWER LINE CONNECTION SIZES.
WHA WATER HAMMER ARRESTOR	WADE SHOKSTOP		---	---	SEE PLAN	---	PISTON TYPE, TYPE L COPPER CASING, AIR CHAMBER SEALED W/(2) BUNA-N RINGS AND POLY-PISTON - OR - BELLOWS TYPE, NITROGEN PRECHARGED, STAINLESS STEEL BELLOWS AND STAINLESS STEEL CASING. SEE PLANS FOR PDI RATING OF INDIVIDUAL ARRESTORS.
WH-1 ELECTRIC WATER HEATER	A.O. SMITH DVE-120-45	184 GPH RECOVERY @ 100°F TEMP. RISE	---	---	1-1/2	1-1/2	120 GALLON STORAGE, ELECTRIC TANK-TYPE, 45 KW TOTAL, (9) 5.0 KW ELEMENTS, 480/3/60, 54.1 FLA, ALKALINE BOROSILICATE GLASS LINED TANK, FOAM TANK INSULATION WITH COATED SHEET METAL OUTER JACKET, CONTROL PANEL WITH LCD DISPLAY, IMMERSION TEMPERATURE THERMISTOR, DUAL EXTRUDED HIGH DENSITY ANODE RODS, INTERNAL POWER CIRCUIT FUSING, LINEAR HEATING ELEMENT SEQUENCING, MANUAL RESET HIGH LIMIT, DRAIN VALVE, AND ASME T&P. PROVIDE ANSIZ21.22 VACUUM RELIEF VALVE AND THERMAL EXPANSION TANK.
P-1 DOMESTIC HOT WATER CIRCULATOR	TACO 009	4.0 GPM @ 22' TDH	---	---	---	3/4	CAST IRON OR BRONZE BODY, ALUMINUM STATOR HOUSING, STAINLESS STEEL CARTORIDGE, NON-METALLIC IMPELLER, CERAMIC SHAFT, CARBON BEARINGS, EPDM O-RINGS AND GASKETS, AQUASTAT CONTROL SET AT 120°F (ADJUSTABLE).

WATER HAMMER ARRESTOR SCHEDULE

P.D.I. UNITS	A	B	C	D	E	F
WSFU	1-11	12-32	33-60	61-113	114-154	155-330

- NOTES:
 1. PROVIDE WATER HAMMER ARRESTORS IMMEDIATELY UPSTREAM OF ALL QUICK CLOSING VALVES (E.G. FLUSH VALVES, DISHWASHERS, ICE MAKERS, SOLENOID VALVES, ETC.)
 2. REFER TO THE APPLICABLE PLUMBING CODE FOR THE WATER SERVICE FIXTURE VALUE (WSFU) FOR EACH PLUMBING FIXTURE / EQUIPMENT SUPPLY.
 3. FOR MULTIPLE FIXTURE BRANCH LINES LESS THAN 20' IN LENGTH, THE WATER HAMMER ARRESTOR SHOULD BE INSTALLED BETWEEN THE LAST TWO FIXTURES.
 4. FOR MULTIPLE FIXTURE BRANCH LINES OVER 20' IN LENGTH, TWO WATER HAMMER ARRESTORS SHOULD BE USED, WITH THE SECOND UNIT PLACED AT THE APPROXIMATE MIDPOINT OF THE LINE. THE SUM OF THE UNIT RATINGS FOR THE TWO WATER HAMMER ARRESTORS SHOULD BE EQUAL TO, OR GREATER THAN, THE TOTAL FIXTURE UNITS FOR THE LINE.



ELECTRIC WATER HEATER DETAIL

SCALE: N.T.S.

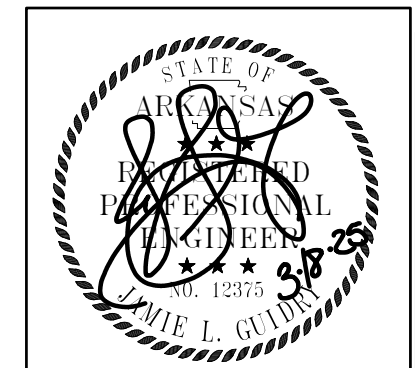


DESCRIPTION	REVISION	DATE

FLYWAY TAPROOM
 Walmart Campus
 Parking Deck 09
 Bentonville, Arkansas

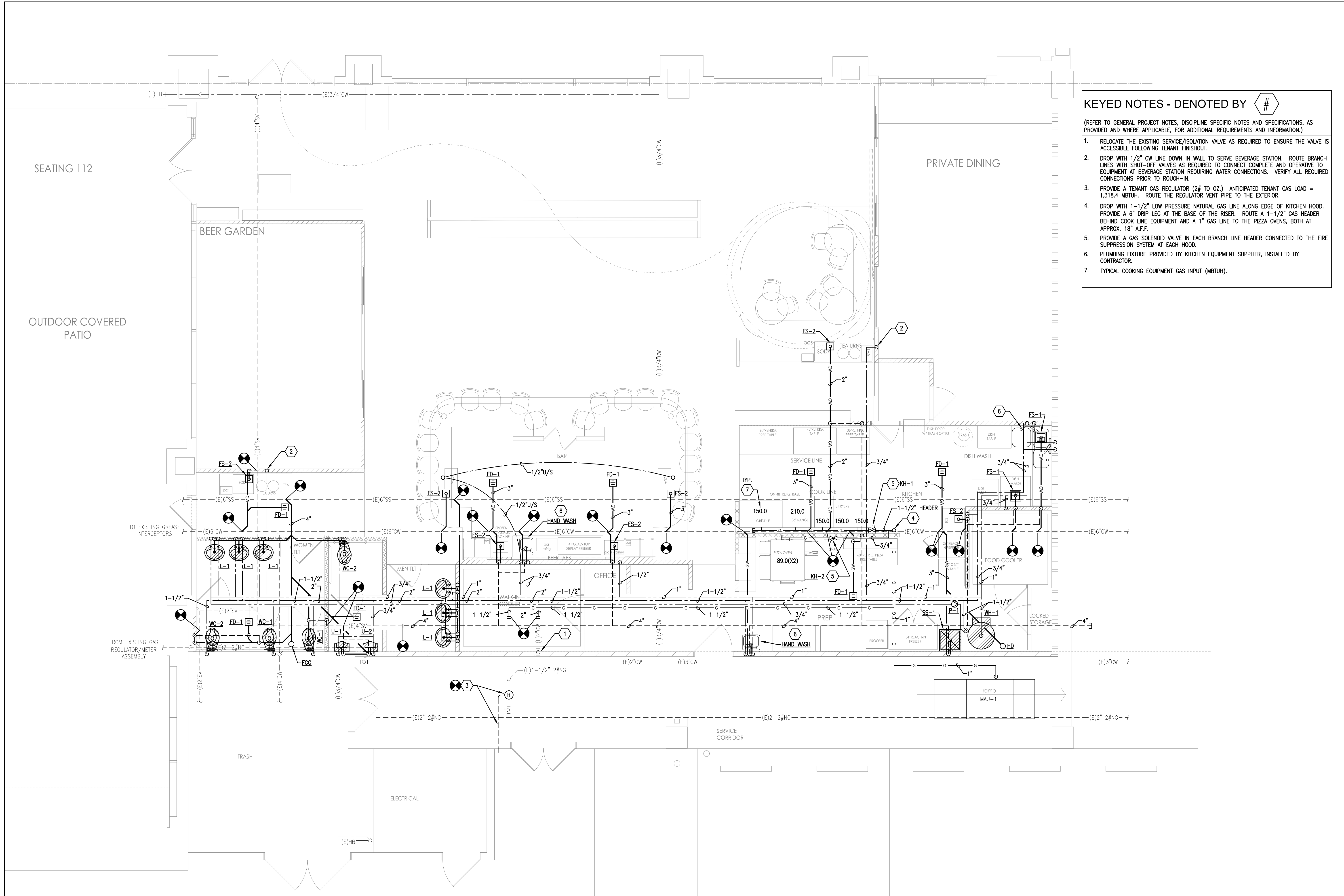


Project No: HW24-821
Date: 3/18/25
Sheet Title: PLUMBING SCHEDULE AND GEN. NOTES
of
Sheet No: P0.1



KEYED NOTES - DENOTED BY #

- (REFER TO GENERAL PROJECT NOTES, DISCIPLINE SPECIFIC NOTES AND SPECIFICATIONS, AS PROVIDED AND WHERE APPLICABLE, FOR ADDITIONAL REQUIREMENTS AND INFORMATION.)
1. RELOCATE THE EXISTING SERVICE/ISOLATION VALVE AS REQUIRED TO ENSURE THE VALVE IS ACCESSIBLE FOLLOWING TENANT FINISHOUT.
 2. DROP WITH 1/2" CW LINE DOWN IN WALL TO SERVE BEVERAGE STATION. ROUTE BRANCH LINES WITH SHUT-OFF VALVES AS REQUIRED TO CONNECT COMPLETE AND OPERATIVE TO EQUIPMENT AT BEVERAGE STATION REQUIRING WATER CONNECTIONS. VERIFY ALL REQUIRED CONNECTIONS PRIOR TO ROUGH-IN.
 3. PROVIDE A TENANT GAS REGULATOR (2# TO 0Z). ANTICIPATED TENANT GAS LOAD = 1,318.4 MBTUH. ROUTE THE REGULATOR VENT PIPE TO THE EXTERIOR.
 4. DROP WITH 1-1/2" LOW PRESSURE NATURAL GAS LINE ALONG EDGE OF KITCHEN HOOD. PROVIDE A 6" DRIP LEG AT THE BASE OF THE RISER. ROUTE A 1-1/2" GAS HEADER BEHIND COOK LINE EQUIPMENT AND A 1" GAS LINE TO THE PIZZA OVENS, BOTH AT APPROX. 18" A.F.F.
 5. PROVIDE A GAS SOLENOID VALVE IN EACH BRANCH LINE HEADER CONNECTED TO THE FIRE SUPPRESSION SYSTEM AT EACH HOOD.
 6. PLUMBING FIXTURE PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY CONTRACTOR.
 7. TYPICAL COOKING EQUIPMENT GAS INPUT (MBTUH).



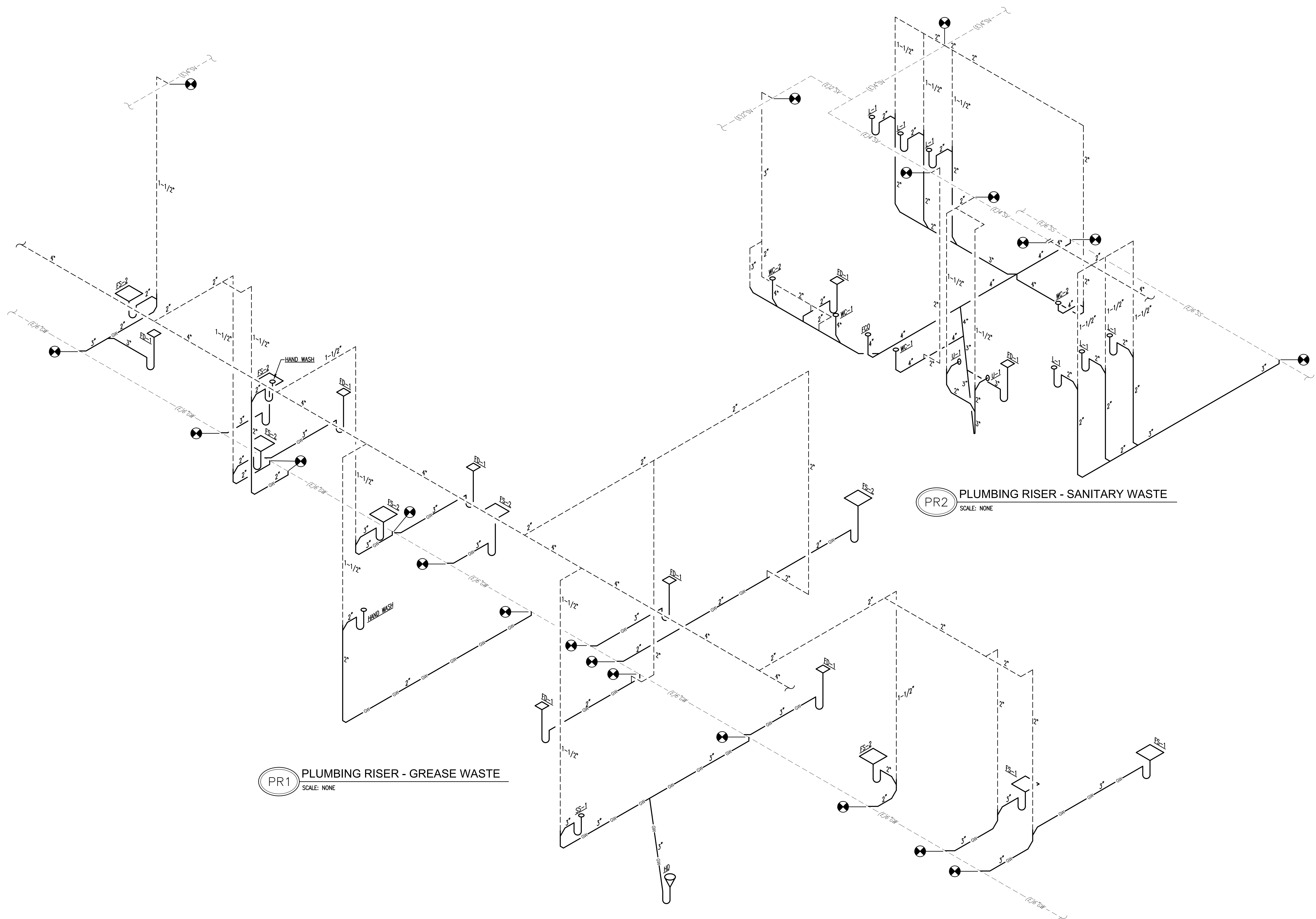
REV	DATE	DESCRIPTION

FLYWAY TAPROOM
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 Bentonville, Arkansas



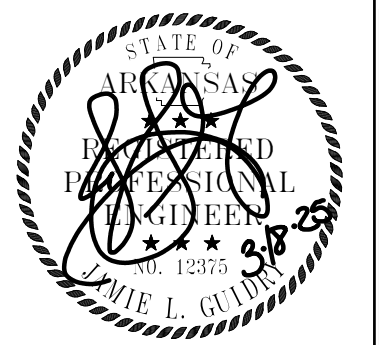
PLUMBING PLAN
 SCALE: 3/4" = 1'-0"
 PROJECT NORTH

Project No: HW24-821
Date: 3/18/25
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of
Sheet No: P1.1



PR1 PLUMBING RISER - GREASE WASTE
SCALE: NONE

PR2 PLUMBING RISER - SANITARY WASTE
SCALE: NONE



REV	DATE	DESCRIPTION

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Walmart Campus
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Bentonville, Arkansas



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Project No:
HW24-821

Date:
3/18/25

Sheet Title:
**PLUMBING
RISERS**

of
Sheet No:

P2.1

HVAC GENERAL NOTES

- A. ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON NON-DESTRUCTIVE SITE OBSERVATIONS AND THE ORIGINAL BUILDING SHELL DRAWINGS DATED JUNE 24, 2024. IT IS EXPECTED THAT THE CONTRACTOR WILL BE RESPONSIBLE FOR THE ADJUSTMENTS NEEDED DURING CONSTRUCTION TO INSTALL THE WORK COMPLETE AND OPERATIVE BASED ON THE ACTUAL EXISTING CONDITIONS. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED PRIOR TO ANY ROUGH-INS.
- B. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT COMPLETE HVAC SYSTEMS BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES AND CONTROLS COMPLETELY COORDINATED WITH ALL DISCIPLINES. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE HVAC SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, LOCAL AFJ REQUIREMENTS AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE OWNER. THE WORD "PROVIDE" SHALL MEAN FURNISH AND INSTALL. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS. THE "I WAS HERE FIRST" RULE DOES NOT QUALIFY AS COORDINATION.
- C. STUDY THE FULL SET OF CONTRACT DOCUMENTS FOR ALL DISCIPLINES AND BECOME FAMILIAR WITH THE SCOPE OF THE ENTIRE PROJECT PRIOR TO BID AND THE COMMENCEMENT OF ANY WORK. ANY CONFLICTS OF WORK SHALL BE BROUGHT TO THE ARCHITECT'S/ENGINEER'S ATTENTION BY THE CONTRACTOR PRIOR TO SHOP DRAWING DEVELOPMENT, PURCHASE OF EQUIPMENT OR COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING FOR ANY LACK OF CONSTRUCTION COORDINATION BETWEEN DISCIPLINES.
- D. COORDINATE ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELECTRICAL TRADES. MECHANICAL SYSTEM ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, ETC. TO AVOID INTERFERENCE WITH EQUIPMENT, PIPING, DUCT WORK, LIGHTS, CONDUIT, STRUCTURAL MEMBERS, ETC. ALL BURIAL DEPTHS AND MOUNTING HEIGHTS SHALL BE VERIFIED IMMEDIATELY FOLLOWING AWARD OF CONTRACT.
- E. THE WORK SPECIFIED HEREIN SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, SUPPLIES AND SUPERVISION REQUIRED TO INSTALL AND PLACE IN OPERATION THE MECHANICAL SYSTEMS INDICATED EXPLICITLY IN THE CONTRACT DOCUMENTS OR REASONABLY IMPLIED AS NECESSARY FOR A COMPLETE, OPERABLE, AND WARRANTABLE INSTALLATION OF THE VARIOUS SYSTEMS. ALL WORK SHALL BE COMPLETED IN A NEAT AND CLEAN MANNER IN ACCORDANCE WITH CURRENT INDUSTRY STANDARDS.
- F. ALL WORK SPECIFIED HEREIN SHALL BE PERFORMED BY PROPERLY LICENSED, TRAINED, AND EXPERIENCED TRADESMEN. THE CONTRACTOR SHALL PROVIDE A FIELD SUPERVISOR WITH THE EXPERIENCE REQUIRED TO COORDINATE BETWEEN THE MECHANICAL WORK AND THE INTERFACING WORK OF THE OTHER PROJECT DISCIPLINES AND IDENTIFY INTERFACE ISSUES IN ADVANCE OF THE PLACEMENT OF THE WORK. THE FIELD SUPERVISOR SHALL HAVE THE AUTHORITY REQUIRED TO INSTRUCT THE WORK, MAKE JOB DECISIONS, AND ACT ON BEHALF OF THE CONTRACTOR IN MATTERS PERTAINING TO THE CONTRACT DOCUMENTS. THE FIELD SUPERVISOR SHALL THOROUGHLY STUDY THE COMPLETE SET OF CONTRACT DOCUMENTS DURING THE PRE-CONSTRUCTION PERIOD, IDENTIFY INTERFACE ISSUES, AND COORDINATE THESE INTERFACE WITH THE ARCHITECT AND ENGINEER PRIOR TO SHOP DRAWING PREPARATION, FABRICATION OR ROUGH-IN.
- G. VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID.
- H. REMOVE ALL RESPECTIVE CONSTRUCTION WASTE AND DEBRIS FROM THE SITE AND SHALL BE RESPONSIBLE FOR THE LAWFUL DISCARD OF SUCH WASTE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS. THE COMPLETED WORK AND THE ADJACENT AFFECTED AREAS SHALL BE THOROUGHLY CLEANED TO THE SATISFACTION ON THE OWNER, ARCHITECT, AND ENGINEER.
- I. PROVIDE ALL CUTTING, PATCHING, AND PAINTING REQUIRED BY THE RESPECTIVE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFACTORILY REPAIRING EXCESSIVE, UNNECESSARY PENETRATIONS OR OVERSIZED PENETRATIONS THROUGH CONSTRUCTION. IF THE ARCHITECT/ENGINEER DEEMS NECESSARY, ANY CONSTRUCTION DAMAGED FROM CUTTING OR PENETRATION ACTIVITIES SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. THERE SHALL BE NO CUTTING OR PENETRATING OF CONSTRUCTION THAT WILL COMPROMISE THE STRUCTURAL INTEGRITY OF THE BUILDING SYSTEM. IF THE CONTRACTOR DEEMS IT NECESSARY TO ALTER, CUT, OR PENETRATE A STRUCTURAL MEMBER, EXPRESS PERMISSION SHALL BE GIVEN BY THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING. IT IS PERMISSIBLE FOR BEAMS TO BE PENETRATED WITH SMALL SCREWS WITHOUT PRIOR APPROVAL.
- J. THE GRAPHICAL REPRESENTATION OF ALL BRANCH DUCT TAKE-OFFS ON THE PLANS IS GENERIC. PROVIDE SPECIFIC BRANCH DUCT TAKE-OFF FITTINGS AS DETAILED.
- K. REFER TO THE ARCHITECTURAL PLANS AS REQUIRED TO CAREFULLY COORDINATE THE REQUIRED MOUNTING HEIGHTS AND LOCATIONS OF ALL DIFFUSERS, REGISTERS, AND GRILLES RELATIVE TO THE VARIOUS CEILING AND WALL CONDITIONS/TYPES THROUGHOUT THE BUILDING.
- L. ALL EQUIPMENT INSTALLED AND CONCEALED ABOVE GYPSUM BOARD CEILINGS SHALL HAVE ACCESS DOORS FOR FULL SERVICE AND REMOVAL. ACCESS DOORS SHALL HAVE CONCEALED HINGES AND SHALL BE LOCKABLE. COORDINATE THE EXACT AND FINAL LOCATION OF THE CONCEALED EQUIPMENT AND THE RESPECTIVE ACCESS DOORS WITH THE ARCHITECT, ENGINEER AND OWNER PRIOR TO ROUGH-IN OF ANY AIR HANDLING SYSTEMS. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL BE RESPONSIBLE FOR AND RELOCATION REQUIRED DUE TO FAILURE TO COORDINATE THE FINAL LOCATIONS OF CONCEALED EQUIPMENT.
- M. ALL OUTDOOR EQUIPMENT UNDER 20-TONS SHALL BE INSTALLED ON A 4" THICK CONCRETE MECHANICAL PAD WITH 6x6 W.W.F. ALL OUTDOOR EQUIPMENT OVER 20-TONS SHALL BE INSTALLED ON A 6" THICK CONCRETE MECHANICAL PAD WITH #4 REBAR AT 12" O.C.E.W. MECHANICAL PADS SHALL HAVE 3/4" CHAMFERED EDGES, BE SLOPED AWAY FROM BUILDINGS MIN. 1% AND EXTEND MIN. 6" BEYOND THE EDGES OF THE MECHANICAL UNITS. PADS SHALL ALSO BE SIZED TO MAINTAIN MIN. REQUIRED SERVICE CLEARANCE SEPARATION BETWEEN MECHANICAL UNITS AND SIZED TO MAINTAIN SERVICE CLEARANCES BETWEEN THE MECHANICAL UNIT(S) AND ADJACENT BUILDINGS, SCREEN WALLS AND OTHER OBSTRUCTIONS.
- N. MAINTAIN MANUFACTURER'S REQUIRED MINIMUM SERVICE CLEARANCE (BUT NO LESS THAN 30") ON THE SERVICE/CONTROL/DISCONNECT SIDE OF ALL FLOOR MOUNTED AND OVERHEAD MOUNTED EQUIPMENT. FINAL EQUIPMENT LOCATIONS SHALL MAXIMIZE THE AVAILABLE SERVICE CLEARANCE TO ALL EQUIPMENT.
- O. PROVIDE REMOTE BOWDEN CABLE CONTROLS EQUAL TO YOUNG REGULATOR 270 SERIES FOR ALL DAMPERS CONCEALED ABOVE GYPSUM BOARD CEILINGS. THE EXACT LOCATION OF THE ACTUATOR CONTROL SHALL BE DETERMINED BY THE ARCHITECT, OWNER AND ENGINEER PRIOR TO ROUGH-IN.
- P. ALL DUCT SIZES ARE MINIMUM CLEAR INSIDE DIMENSIONS, EXPRESSED IN INCHES.
- Q. ALL CHANGES IN DUCT DIRECTION 45-DEGREES OR GREATER SHALL BE FULL RADIUS TURNS WITH AN INSIDE RADIUS EQUAL TO THE DUCT WIDTH. IN RECTANGULAR DUCTWORK, WHERE SPACE CONSTRAINTS DO NOT PERMIT RADIUS TURNS, OR WHERE THE CONTRACT DOCUMENTS REFLECT OTHERWISE, MITERED ELBOWS WITH SINGLE THICKNESS TURNING VANES SHALL BE PROVIDED. RECTANGULAR 90'S WITH A RADIUS HEEL AND A MITERED THROAT ARE NOT ACCEPTABLE.
- R. PROVIDE MINIMUM 3/4" GAP BENEATH THE DOOR FOR R.A. IN SPACES WITH 125 CFM S.A. OR LESS AND WHERE THERE IS NO DEDICATED R.A. DUCT OR TRANSFER DUCT.
- S. ALL CEILING MOUNTED AIR DEVICES INSTALLED IN LAY-IN CEILINGS SHALL BE POSITIONED IN THE FULL GRID SPACE NEAREST TO THE LOCATION SHOWN ON THE PLANS.
- T. REFRIGERANT PIPING:
 - 1. REFRIGERANT PIPING SHALL BE ROUTED FROM THE OUTDOOR UNIT CONCEALED UP IN THE EXTERIOR WALL TO ABOVE CEILING AND CONTINUE AS DIRECTLY AS POSSIBLE TO EACH RESPECTIVE INDOOR COIL WITH AS FEW BENDS AND ELBOWS AS POSSIBLE.
 - 2. EXACT REFRIGERANT LINE SET ROUTING SHALL BE FIELD DETERMINED PRIOR TO ROUGH-IN.
 - 3. EXACT REFRIGERANT PIPE SIZING SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER, INCLUDING THE MANUFACTURER'S STANDARD LONG LINE LENGTH KITS WHERE REQUIRED BY THE MANUFACTURER.
- U. CONDENSATE DRAIN PIPING:
 - 1. CONDENSATE DRAIN FROM THE COOLING COILS SHALL BE A DESIGN-BUILD SCOPE ITEM. TRAPPED, INSULATED CONDENSATE DRAIN LINES SHALL BE ROUTED, PITCHED TO DRAIN CONCEALED ABOVE CEILINGS AND/OR IN WALLS, AND TERMINATE INDIRECTLY AT THE DESIGNATED HUB DRAIN.
 - 2. FIELD VERIFY THE EXACT ROUTING TO MINIMIZE THE PIPING. PIPING SHALL BE CONSOLIDATED WHERE POSSIBLE. PIPING FROM SINGLE COILS SHALL BE FULL SIZE OF CONNECTION TO COIL, BUT IN NO CASE SMALLER THAN 3/4". PIPING COMBINED FROM TWO OR THREE COILS SHALL BE NO LESS THAN 1". PIPING COMBINED FROM 4 OR MORE COILS SHALL BE 1-1/2". THE CONTRACTOR SHALL SUBMIT A PROPOSED CONDENSATE PIPING PLAN TO THE ARCHITECT FOR APPROVAL PRIOR TO ROUGH-IN.
 - 3. WHERE THERE IS NOT ENOUGH ELEVATION TO GRAVITY DRAIN FROM THE COIL LOCATION TO AN EXTERIOR WALL, A CONDENSATE PUMP SHALL BE PROVIDED AS SPECIFIED TO LIFT THE CONDENSATE TO DRAIN AS REQUIRED TO TERMINATION.
 - 4. CONDENSATE SHALL NOT DISCHARGE INTO SANITARY SEWER. CONDENSATE SHALL NOT DISCHARGE ONTO PATHWAYS, WALK-WAYS OR SIDEWALKS.
- V. ALL MECHANICAL PIPING SYSTEMS SHALL BE PROTECTED AGAINST DISSIMILAR METAL GALVANIC CORROSION BY SEPARATION, INSULATION, OR ENGINEERED CONNECTIONS SUCH AS DIELECTRIC UNIONS.
- W. THE CONTRACTOR SHALL COORDINATE THE EXACT REFRIGERANT LINE SET LENGTH(S) WITH THE EQUIPMENT MANUFACTURER. THE EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR ALL REFRIGERANT LINE SET SIZING AND RECOMMENDING ANY ADDITIONAL PIPING APPURTENANCES REQUIRED FOR LONG LINE SET APPLICATIONS TO RESULT IN A COMPLETE, OPERATIVE, AND WARRANTABLE INSTALLATION.
- X. WHERE MULTIPLE DX MECHANICAL UNITS ARE LOCATED ON A COMMON PAD, THE REFRIGERANT PIPING SHALL BE GROUPED TOGETHER ON COMMON PIPE STANDS AND SUPPORTS, ROUTED PERPENDICULAR AND PARALLEL WITH BUILDING LINES, AND SHALL PENETRATE EXTERIOR WALLS IN COMMON LOCATIONS. ONLY WHERE SPECIFICALLY INDICATED ON THE PLANS SHALL PIPES FROM EQUIPMENT LOCATED ON A COMMON MECHANICAL PAD ENTER BUILDINGS IN DIFFERING LOCATIONS.
- Y. PROVIDE ENGRAVED PLASTIC LAMINATE EQUIPMENT TAGS ON ALL HVAC UNITS. NOMENCLATURE SHALL BE PROPOSED BY HVAC CONTRACTOR AND APPROVED BY OWNER PRIOR TO FABRICATION.
- Z. THE MECHANICAL CONTRACTOR SHALL PROVIDE TRAINING TO THE OWNER ON ALL HVAC CONTROL SYSTEMS.

FAN COIL UNIT SCHEDULE																
GENERAL			FAN				DX COOLING COIL				HEATING		ELECTRICAL			REMARKS
MARK	MANUF'R./MODEL*	SERVES	DRIVE	S.A. (CFM)	O.A. (CFM)	ESP	FAN HP	TOT. CAP. (BTUH)	SENS. CAP. (BTUH)	EDB (°F)	EWB (°F)	CAPACITY (BTUH)	AUX. HEAT (KW)	VOLTAGE	MCA	
(E)AHU	DAIKIN ASPT61D14	BAR	DIRECT	2,000	225	0.5	1	NOMINAL 5-TON				9.0	208/1/60	52.0	60A	NOTE 15
FC-1	CARRIER FX4CNF048	BEER GARDEN	DIRECT	1,600	200	0.5"	3/4	MATCH OUTDOOR UNIT	80.0	67.0	MATCH ODU	11.3	208/3/60	47.7	50A	NOTES 1-14
FC-2	CARRIER FX4CNF048	KITCHEN	DIRECT	1,600	150	0.5"	3/4	MATCH OUTDOOR UNIT	80.0	67.0	MATCH ODU	6.8	208/3/60	32.0	35A	NOTES 1-14
FC-3	CARRIER FX4CNF048	PRIVATE DINING	DIRECT	1,600	300	0.5"	3/4	MATCH OUTDOOR UNIT	80.0	67.0	MATCH ODU	11.3	208/3/60	47.7	50A	NOTES 1-14
FC-4	CARRIER FX4CNF048	MAIN DINING	DIRECT	1,600	250	0.5"	1/2	MATCH OUTDOOR UNIT	80.0	67.0	MATCH ODU	11.3	208/3/60	47.7	50A	NOTES 1-14
FC-5	CARRIER FX4CNF048	MAIN DINING	DIRECT	1,600	250	0.5"	1/2	MATCH OUTDOOR UNIT	80.0	67.0	MATCH ODU	11.3	208/3/60	47.7	50A	NOTES 1-14

* OR APPROVED EQUAL IN TRANE, LENNOX, OR RHEEM

NOTES:
 1. 1" MERV-8 PLEATED MEDIA
 2. R-410 COIL
 3. FACTORY TVV
 4. ECM BLOWER MOTOR
 5. FACTORY PAINTED CABINET
 6. HORIZONTAL-VERTICAL MULTI-POISE INSTALLATION CAPABILITY
 7. CONTINUOUS CABINET INSULATION, R-4.2 WITH VAPOR BARRIER
 8. 2% MAXIMUM CABINET LEAKAGE AT 1" E.S.P.
 9. TOOL-LESS FILTER ACCESS
 10. FACTORY INSTALLED AUXILIARY HEATER
 11. 5-AMP FUSE OVERCURRENT PROTECTION FOR 40VA CONTROL TRANSFORMER
 12. INTEGRAL CIRCUIT BREAKER
 13. FAN COIL AND HEAT PUMP UNIT SHALL ALL BE THE PRODUCTS OF THE SAME MANUFACTURER
 14. PROVIDE DIGITAL PROGRAMMABLE THERMOSTAT
 15. SCHEDULE INFORMATION FOR EXISTING SPLIT SYSTEM IS FROM EXISTING PLANS. FIELD VERIFY EXACT PERFORMANCE DATA AND ADJUST AS REQUIRED. FIELD COORDINATE ANY ELECTRICAL DISCREPANCIES BETWEEN SCHEDULE DATA AND ACTUAL INFORMATION PERTAINING TO EXISTING SYSTEM.

HEAT PUMP UNIT SCHEDULE														
GENERAL			COOLING			HEATING			ELECTRICAL				REMARKS	
MARK	MANUF'R./MODEL	SERVES	TOT. CAP. (BTUH)	SENS. CAP. (BTUH)	AMB (F)	TOT. CAP. (BTUH)	AMB (F)	COP	VOLTAGE	MCA	BKR	SEER		
(E)HP	DAIKIN DZ16SA060	BAR	NOMINAL 5-TONS				208/1/60				37.0	60A	-	NOTE 12
HP-1	CARRIER 25HCB348	BEER GARDEN	46,000	34,360	95.0	48,500	47.0	3.6	460/3/60	10.0	15A	14.0	NOTES 1-11	
HP-2	CARRIER 25HCB348	KITCHEN	46,000	34,360	95.0	48,500	47.0	3.6	460/3/60	10.0	15A	14.0	NOTES 1-11	
HP-3	CARRIER 25HCB348	PRIVATE DINING	46,000	34,360	95.0	48,500	47.0	3.6	460/3/60	10.0	15A	14.0	NOTES 1-11	
HP-4	CARRIER 25HCB348	MAIN DINING	46,000	34,360	95.0	48,500	47.0	3.6	460/3/60	10.0	15A	14.0	NOTES 1-11	
HP-5	CARRIER 25HCB348	MAIN DINING	46,000	34,360	95.0	48,500	47.0	3.6	460/3/60	10.0	15A	14.0	NOTES 1-11	

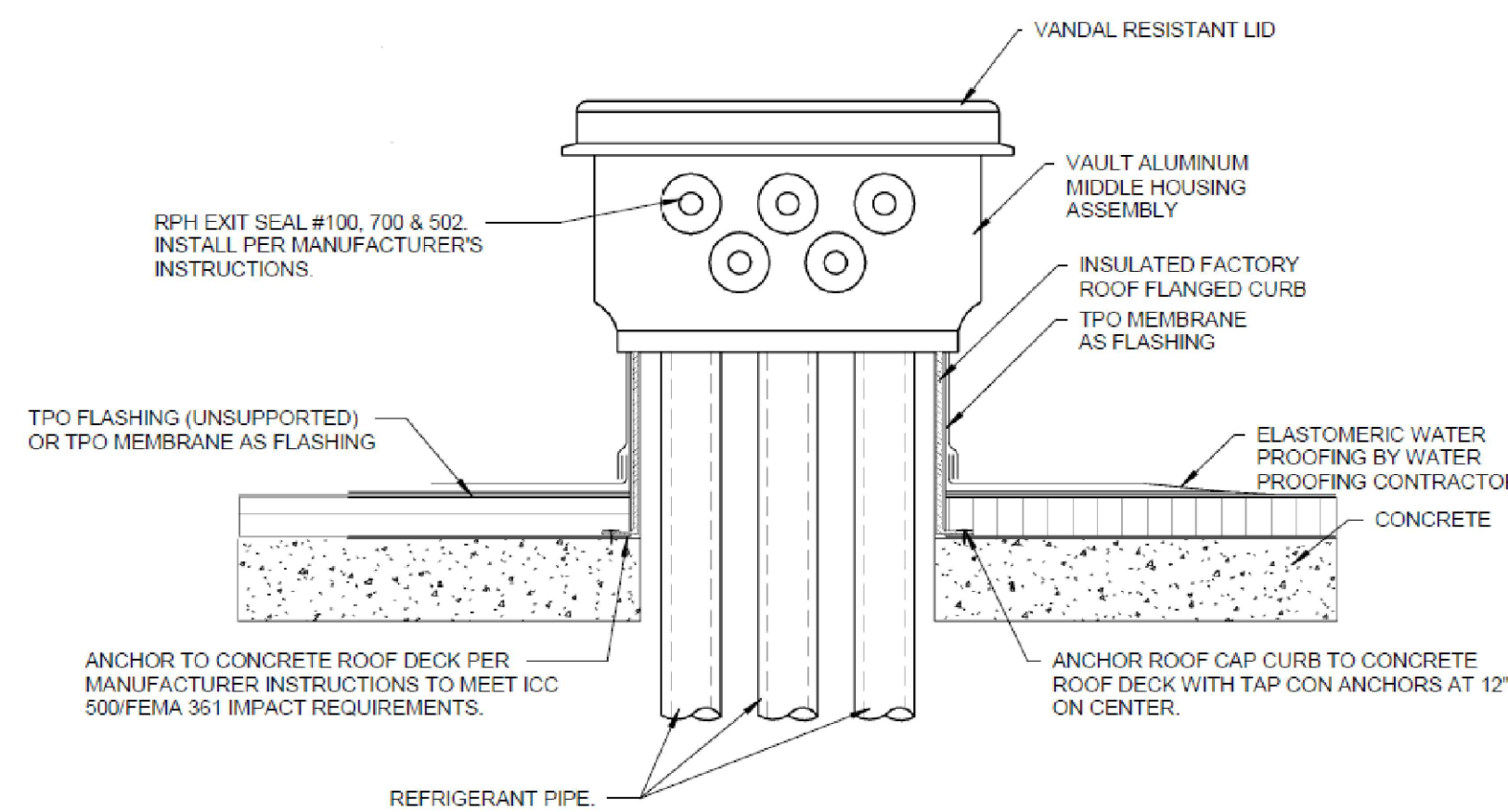
* OR APPROVED EQUAL IN TRANE, YORK OR LENNOX

NOTES:
 1. SCROLL COMPRESSOR
 2. CRANKCASE HEATER
 3. HIGH AND LOW PRESSURE SWITCHES
 4. SOLID STATE TIME OFF DEVICE
 5. FIELD INSTALLED FILTER/DRYER AND SILENCE KIT
 6. LIQUID AND SUCTION LINE SERVICE VALVES
 7. LOW AMBIENT CONTROL TO 30 DEGREES F
 8. LOUVERED HAIL GUARDS
 9. REFRIGERANT SHALL BE R-410A
 10. 1-YEAR UNIT PARTS AND LABOR/5-YEAR COMPRESSOR WARRANTY
 11. PROVIDE NEOPRENE AND CORK VIBRATION ISOLATORS AT ALL FOUR CORNERS EQUAL TO KINETICS #NPC.
 12. SCHEDULE INFORMATION FOR EXISTING SPLIT SYSTEM IS FROM EXISTING PLANS. FIELD VERIFY EXACT PERFORMANCE DATA AND ADJUST AS REQUIRED. FIELD COORDINATE ANY ELECTRICAL DISCREPANCIES BETWEEN SCHEDULE DATA AND ACTUAL INFORMATION PERTAINING TO EXISTING SYSTEM.

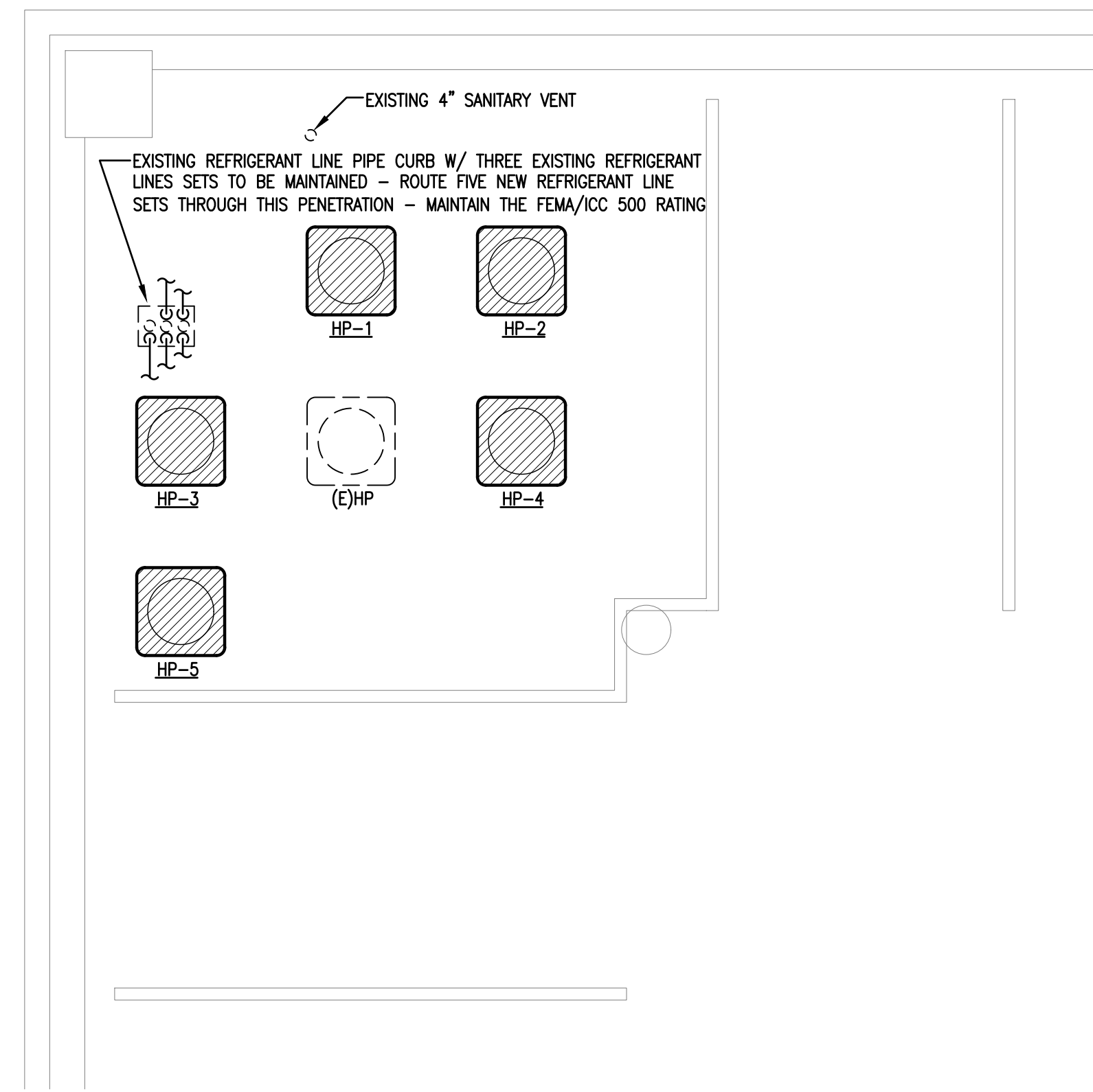
EXHAUST FAN SCHEDULE													
GENERAL			FAN				ELECTRICAL						REMARKS
MARK	MANUF'R./MODEL	SERVES	DRIVE	TYPE	CFM	ESP	RPM	SONES	VOLTAGE	MOTOR	CONTROL		
EF-1	GREENHECK SP-A200	MEN TLT	DIRECT	CENT.	210	1/4"	866	1.5	120/1/60	48 W	INTERLOCK W/ROOM LIGHTS		SEE NOTES
EF-2	GREENHECK SP-A200	WOMEN TLT	DIRECT	CENT.	210	1/4"	866	1.5	120/1/60	48 W	INTERLOCK W/ROOM LIGHTS		SEE NOTES

* OR APPROVED EQUAL

NOTES:
 1. FACTORY MOUNTED INTEGRAL DISCONNECT AND BACKDRIFT DAMPER.
 2. SOLID STATE SPEED CONTROL FACTORY WIRED AND MOUNTED ON FAN HOUSING.
 3. VIBRATION ISOLATION KIT.

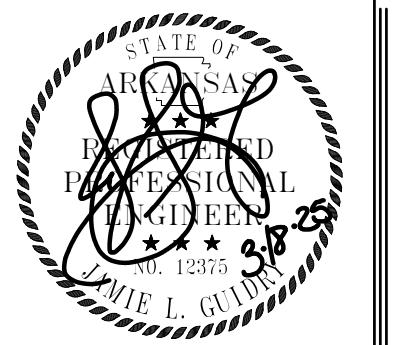


FEMA/ICC 500 RATED REF PENETRATION DETAIL
 SCALE: NTS REF: /



HVAC ROOF PLAN
 SCALE: 1/4" = 1'-0"

PROJECT NORTH



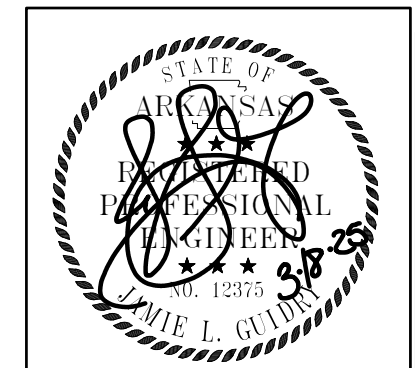
DESCRIPTION	REVISION	DATE

FLYWAY TAPROOM
 Walmart Campus
 Parking Deck 09
 Bentonville, Arkansas



Project No: HW24-821
Date: 3/18/25
Sheet Title: HVAC GEN. NOTES AND SCHEDULES
of
Sheet No:

M0.1



REV	DATE	DESCRIPTION

FLYWAY TAPROOM
 Walmart Campus
 Parking Deck 09
 Bentonville, Arkansas



Project No:
HW24-821

Date:
3/18/25

Sheet Title:
HVAC PLAN

of _____
 Sheet No:
M1.1

KEYED NOTES - DENOTED BY #

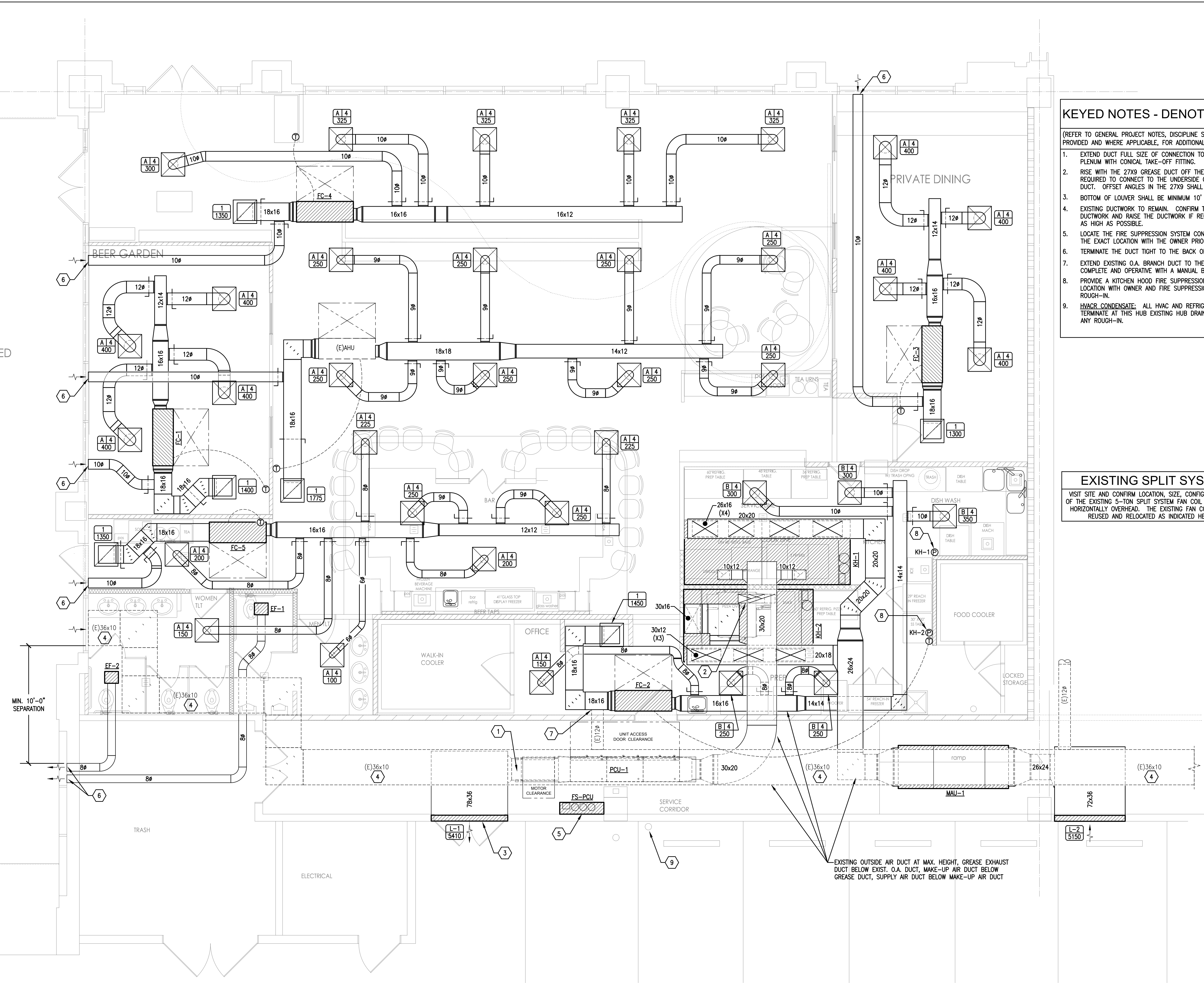
- (REFER TO GENERAL PROJECT NOTES, DISCIPLINE SPECIFIC NOTES AND SPECIFICATIONS, AS PROVIDED AND WHERE APPLICABLE, FOR ADDITIONAL REQUIREMENTS AND INFORMATION.)
1. EXTEND DUCT FULL SIZE OF CONNECTION TO MECHANICAL UNIT. TERMINATE AT EXHAUST PLENUM WITH CONICAL TAKE-OFF FITTING.
 2. RISE WITH THE 27X9 GREASE DUCT OFF THE TOP OF THE HOOD AND OFFSET AS REQUIRED TO CONNECT TO THE UNDERSIDE OF THE OVERHEAD 30X20 MAIN EXHAUST DUCT. OFFSET ANGLES IN THE 27X9 SHALL BE FULL RADIUS AND GRADUAL AS POSSIBLE.
 3. BOTTOM OF LOUVER SHALL BE MINIMUM 10' ABOVE FINISHED FLOOR.
 4. EXISTING DUCTWORK TO REMAIN. CONFIRM THE INSTALLED HEIGHT OF THE EXISTING DUCTWORK AND RAISE THE DUCTWORK IF REQUIRED TO ENSURE THE DUCT IS MOUNTED AS HIGH AS POSSIBLE.
 5. LOCATE THE FIRE SUPPRESSION SYSTEM CONTROL CABINET IN THIS VICINITY. CONFIRM THE EXACT LOCATION WITH THE OWNER PRIOR TO ROUGH-IN.
 6. TERMINATE THE DUCT TIGHT TO THE BACK OF THE BIRDSCREEN AT THE EXISTING LOUVER.
 7. EXTEND EXISTING O.A. BRANCH DUCT TO THE NEW RETURN AIR DUCT AND CONNECT COMPLETE AND OPERATE WITH A MANUAL BALANCING DAMPER.
 8. PROVIDE A KITCHEN HOOD FIRE SUPPRESSION SYSTEM PULL STATION. VERIFY EXACT LOCATION WITH OWNER AND FIRE SUPPRESSION SYSTEM MANUFACTURER PRIOR TO ROUGH-IN.
 9. HVACR CONDENSATE: ALL HVAC AND REFRIGERATION CONDENSATE SHALL BE ROUTED TO TERMINATE AT THIS HUB EXISTING HUB DRAIN. CONFIRM THE EXACT LOCATION PRIOR TO ANY ROUGH-IN.

EXISTING SPLIT SYSTEM

VISIT SITE AND CONFIRM LOCATION, SIZE, CONFIGURATION, ETC. OF THE EXISTING 5-TON SPLIT SYSTEM FAN COIL UNIT MOUNTED HORIZONTALLY OVERHEAD. THE EXISTING FAN COIL SHALL BE REUSED AND RELOCATED AS INDICATED HERE-IN.

SEATING 112

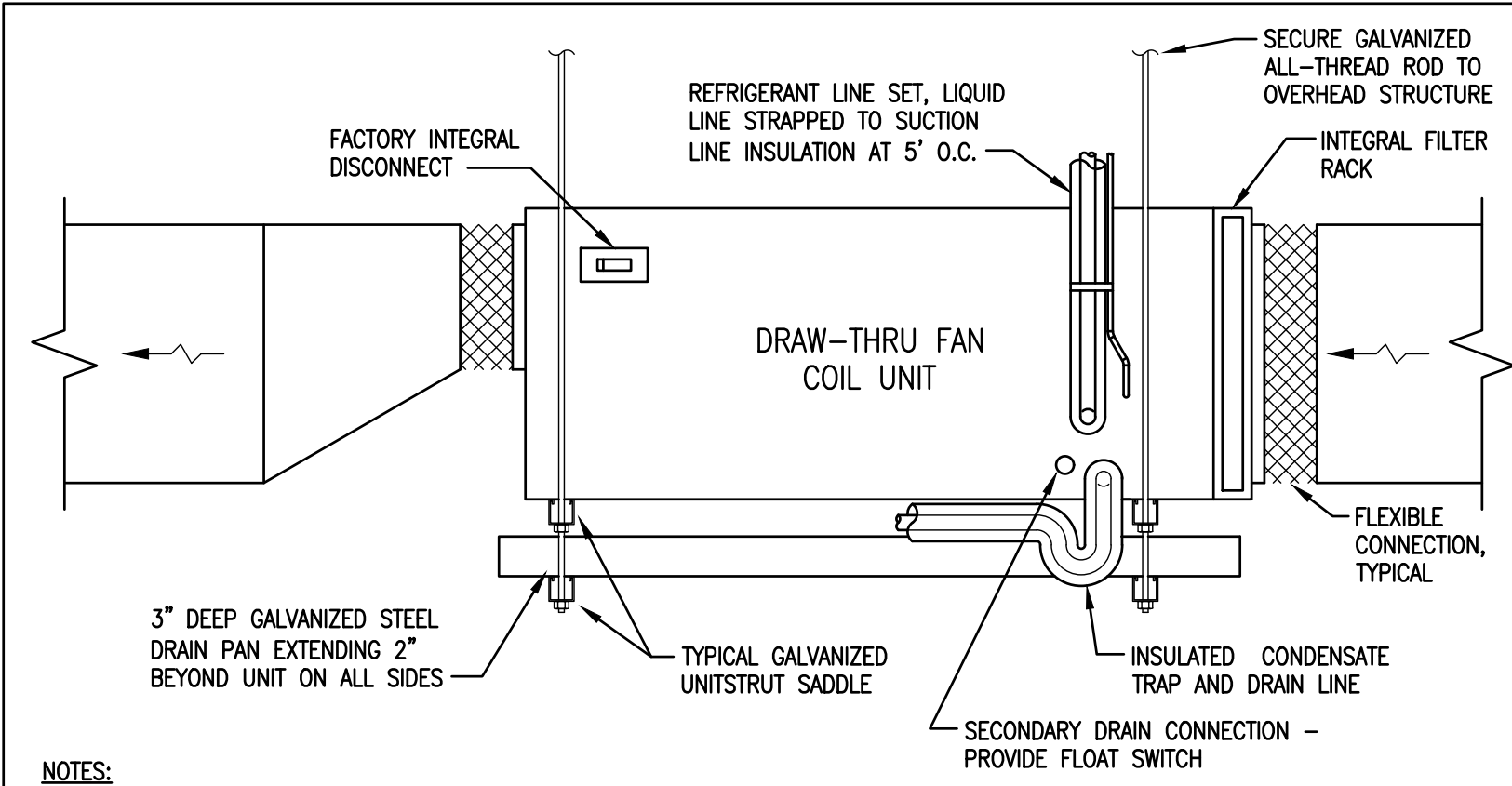
OUTDOOR COVERED PATIO



MIN. 10'-0" SEPARATION

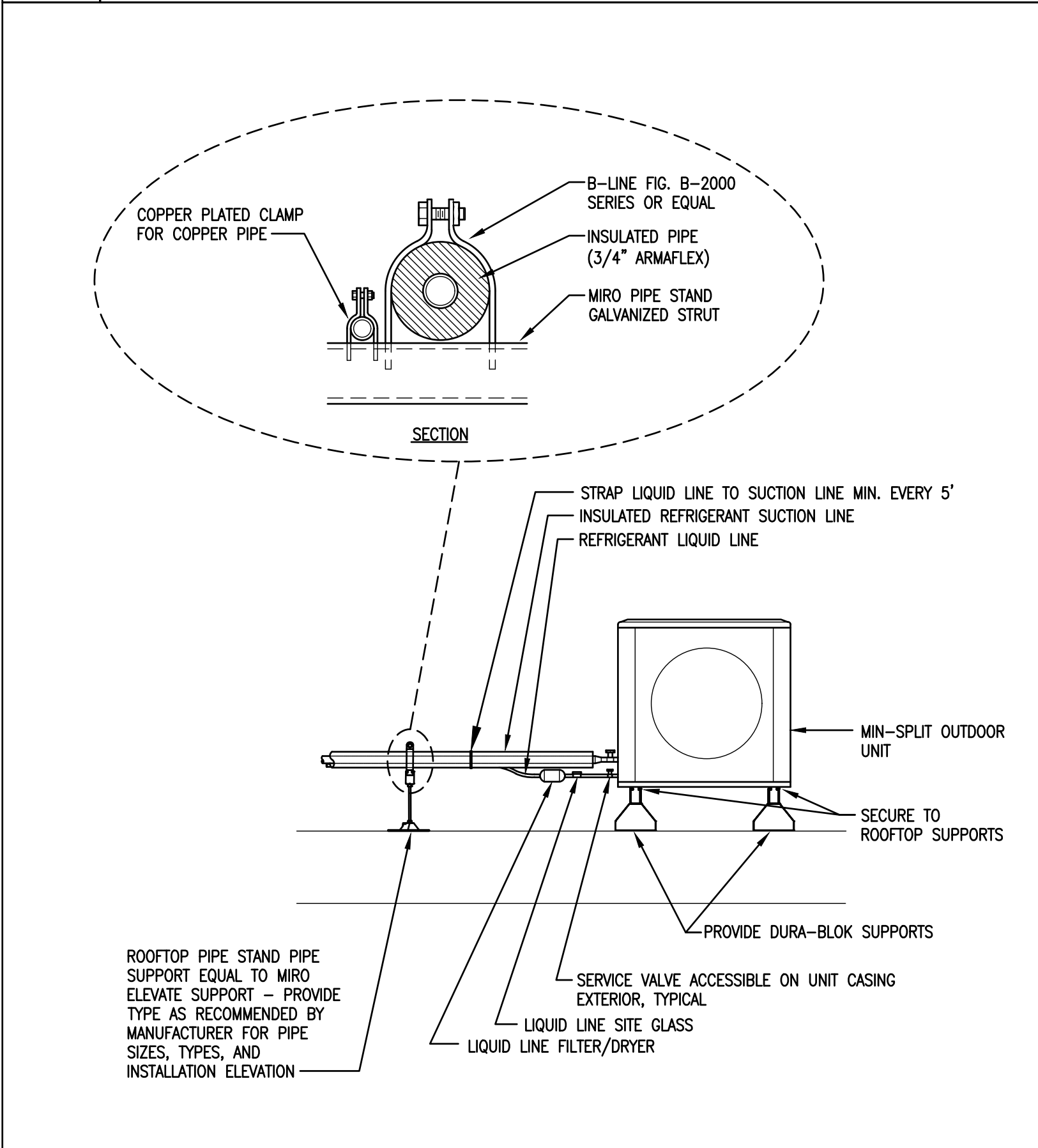
EXISTING OUTSIDE AIR DUCT AT MAX. HEIGHT, GREASE EXHAUST DUCT BELOW EXIST. O.A. DUCT, MAKE-UP AIR DUCT BELOW GREASE DUCT, SUPPLY AIR DUCT BELOW MAKE-UP AIR DUCT

HVAC PLAN
 SCALE: 1/4" = 1'-0"
 PROJECT NORTH

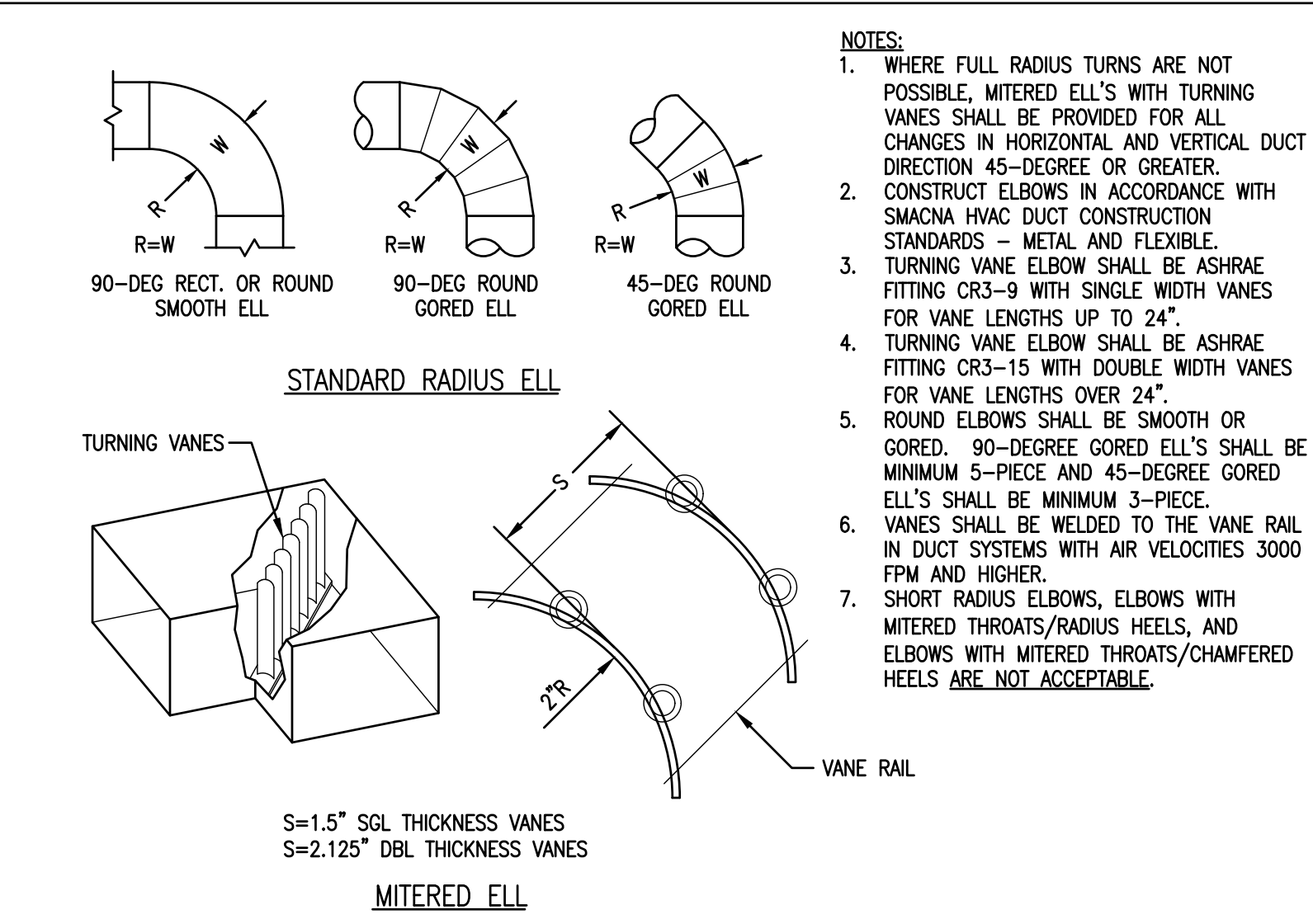


- NOTES:**
1. INSTALL THE FAN COIL UNIT COMPLETE AND OPERATIVE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 2. THE DETAIL IS INTENDED TO BE GENERIC, THEREFORE THE PIPING CONNECTIONS SHOWN WILL VARY FROM INSTALLATION TO INSTALLATION. PROVIDE REFRIGERANT PIPING AND CONDENSATE PIPING IN ACCORDANCE WITH THE AIR HANDLING UNIT MANUFACTURER'S RECOMMENDATIONS.
 3. COORDINATE DRAIN PAN AND SUPPORTING STRUT/ALL-THREAD LOCATIONS TO ENSURE PROPER CONDENSATE TRAP AND DRAIN INSTALLATION. ADJUST AS NEEDED WHERE A CONDENSATE PUMP IS REQUIRED.
 4. PROVIDE A FACTORY FLOAT SWITCH IN THE SECONDARY DRAIN CONNECTION OR FIELD MOUNTED IN THE AUXILIARY DRAIN PAN INTERLOCKED WITH THE SYSTEM POWER. THE DRAIN PAN FLOAT SWITCH SHALL BE EQUAL TO A BECKETT 1500 SERIES, WIRED NORMALLY CLOSED, WITH OPEN CIRCUIT ACTIVATION.

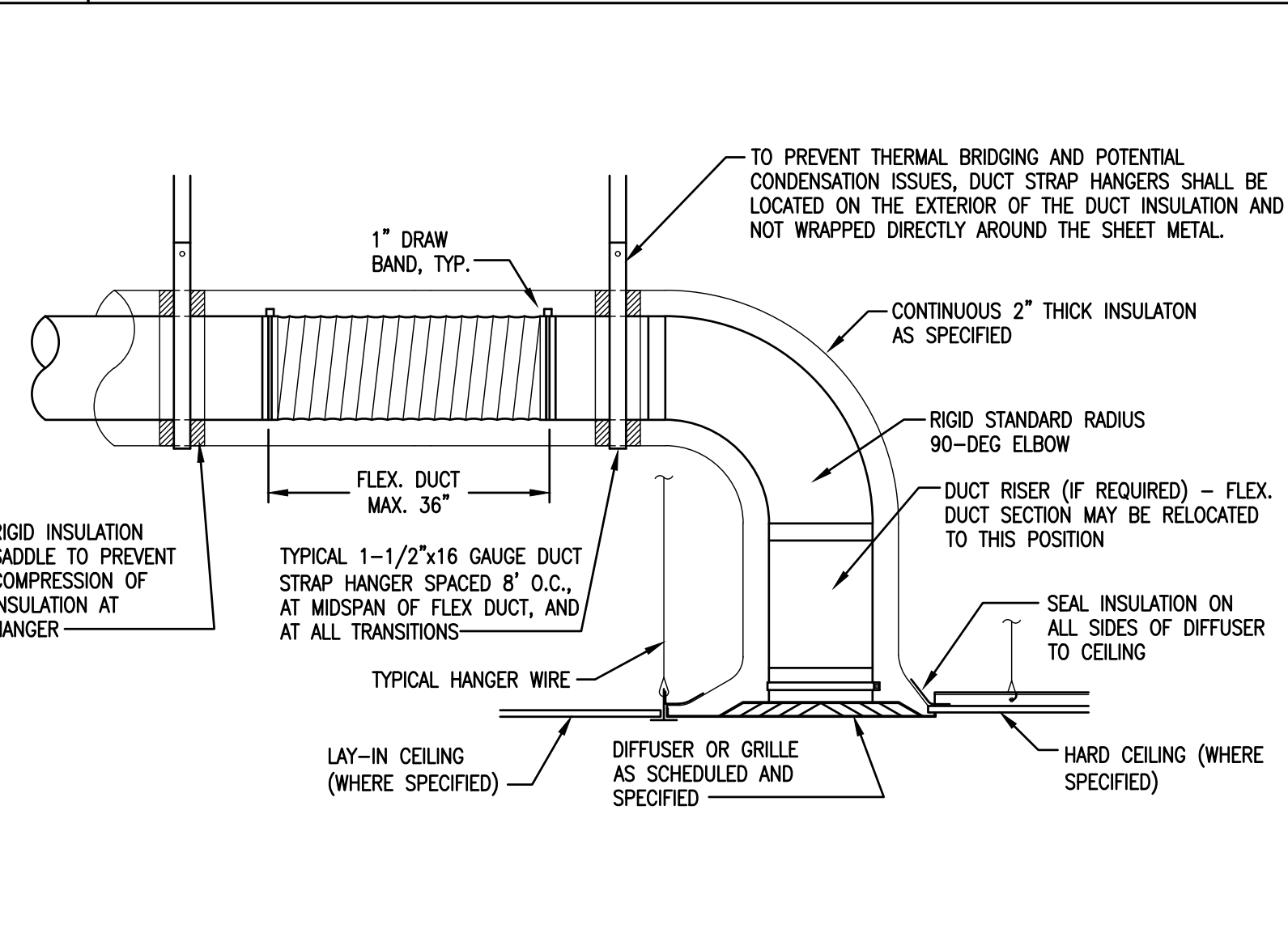
1 HORIZONTAL FAN COIL DETAIL
SCALE: N.T.S.



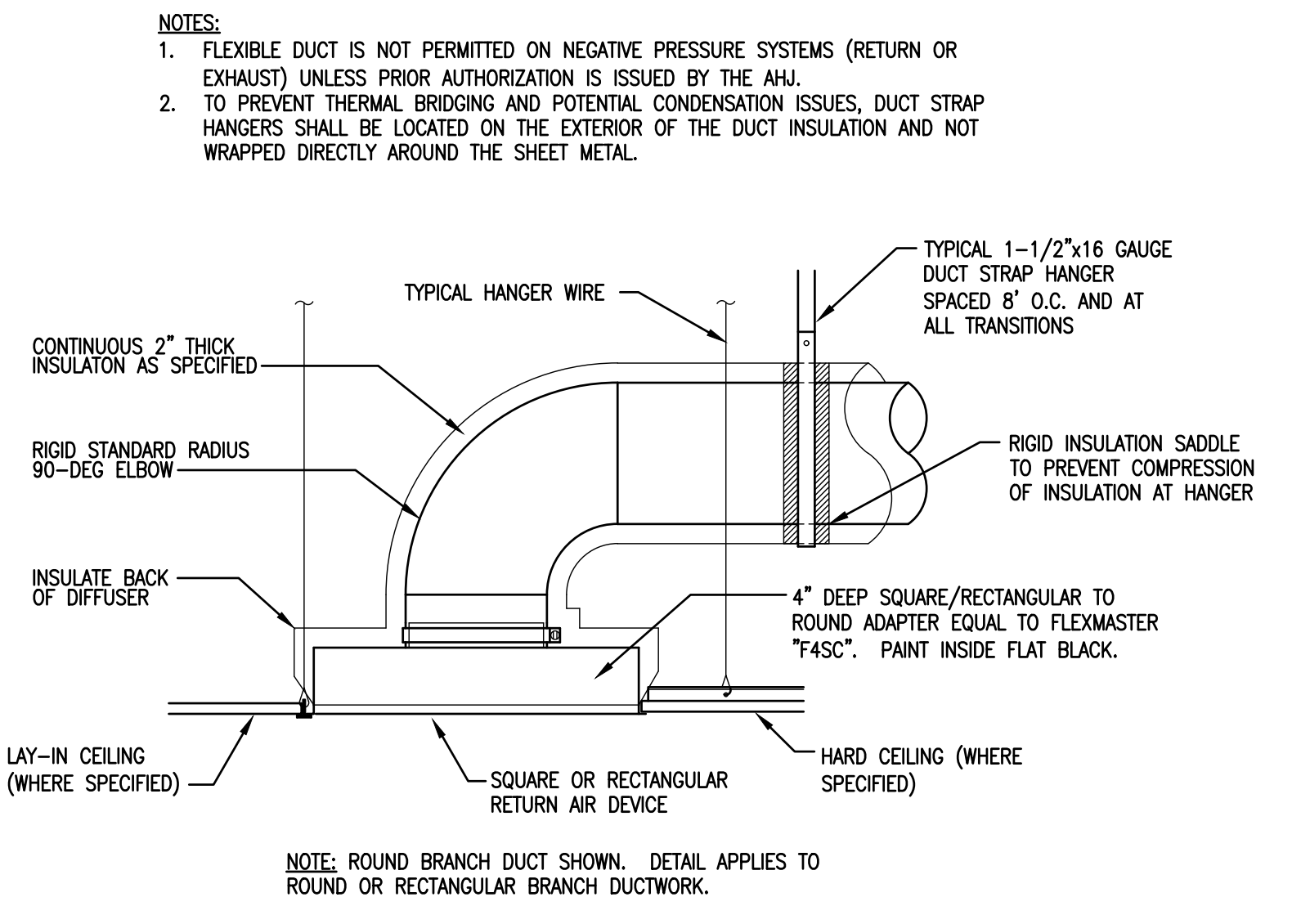
2 HEAT PUMP DETAIL
SCALE: N.T.S.



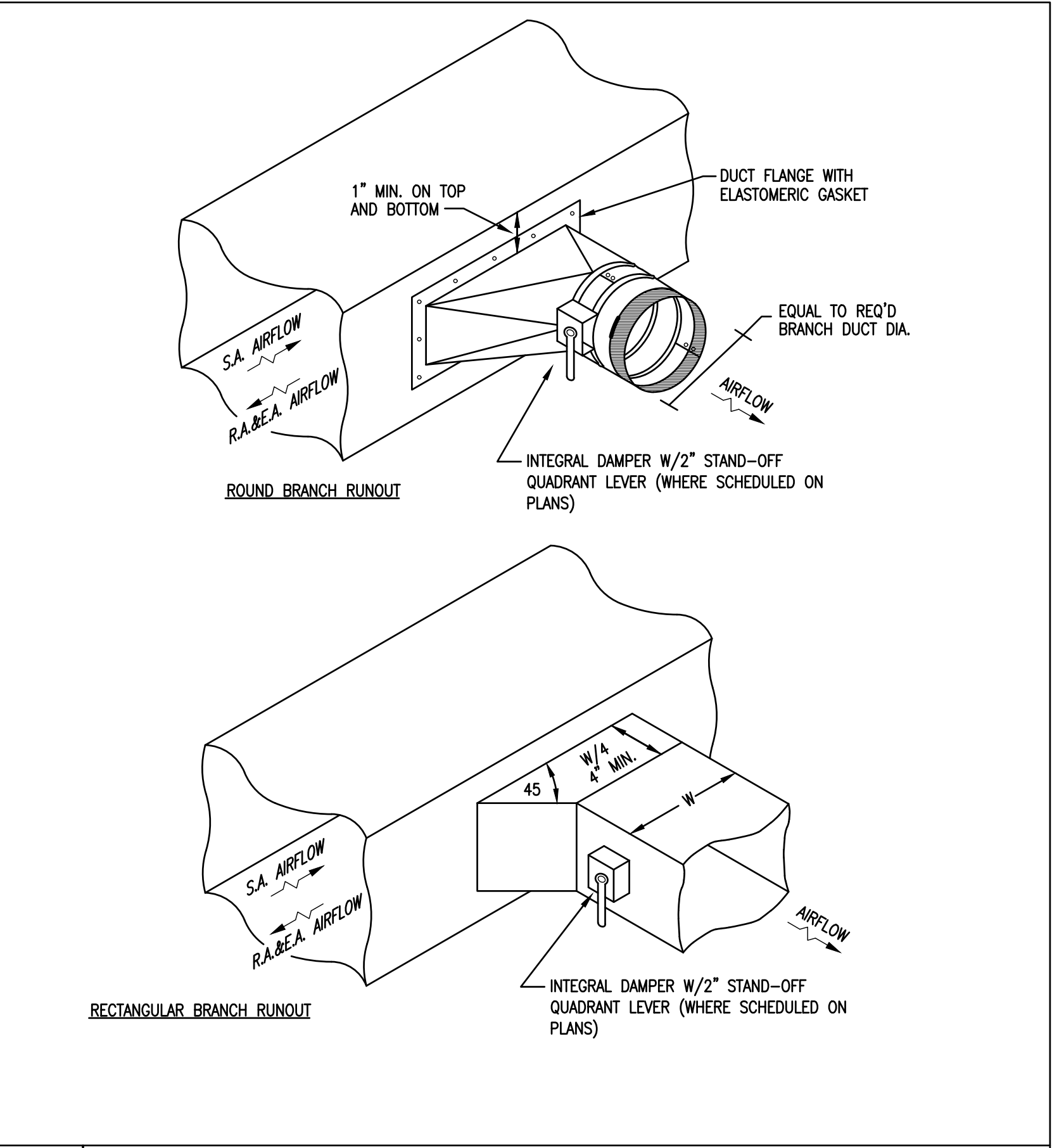
3 DUCT ELL DETAIL
SCALE: N.T.S.



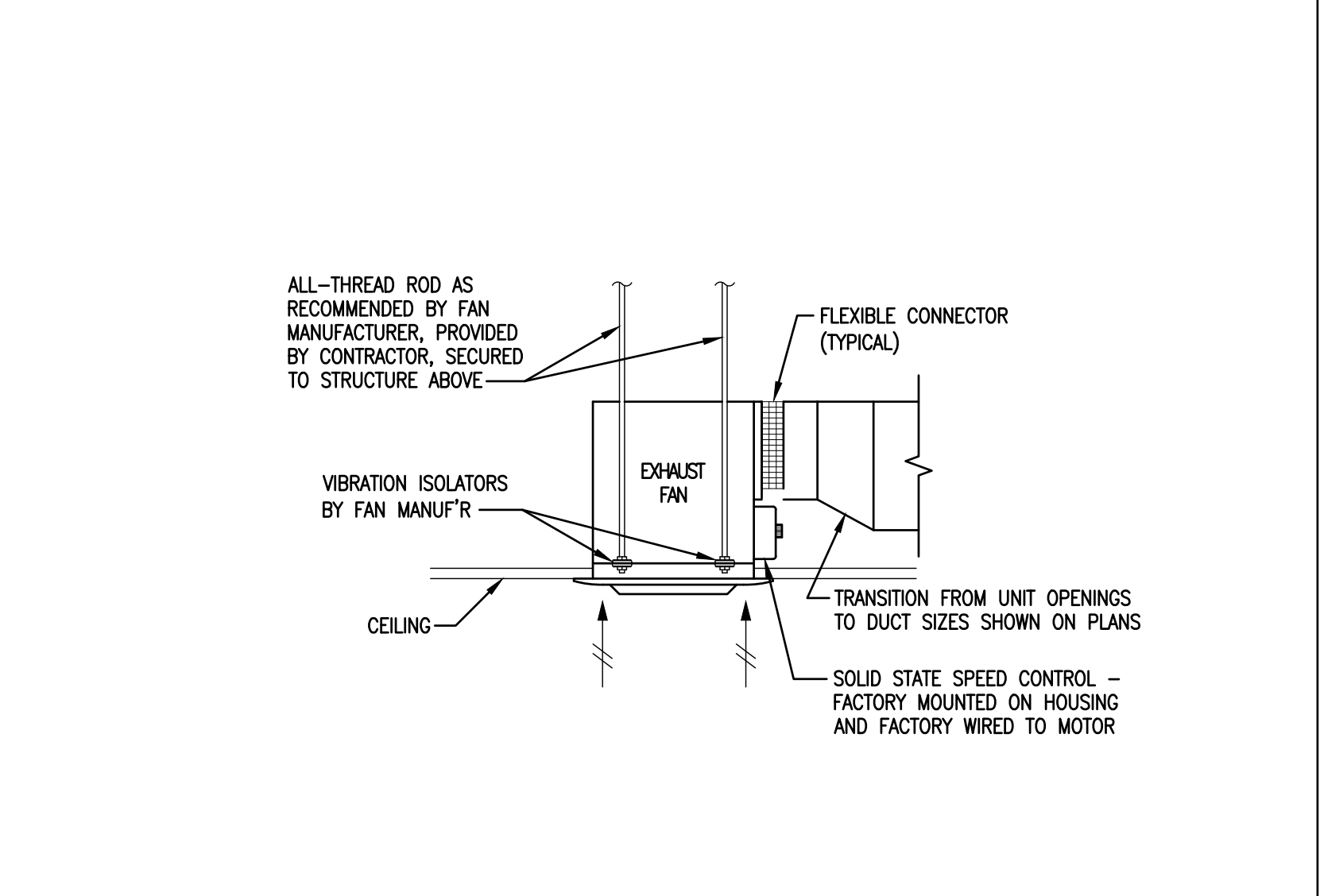
4 AIR DEVICE INSTALLATION DETAIL
SCALE: N.T.S.



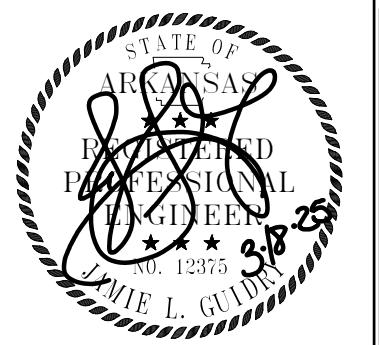
5 RETURN AIR DEVICE INSTALLATION DETAIL
SCALE: N.T.S.



6 BRANCH DUCT TAKE-OFF DETAIL
SCALE: N.T.S.



7 CEILING EXHAUST FAN DETAIL
SCALE: N.T.S.



REV	DATE	DESCRIPTION

FLYWAY TAPROOM
Walmart Campus
Parking Deck 09
Bentonville, Arkansas



Project No: HW24-821
Date: 3/18/25
Sheet Title: HVAC DETAILS



DESCRIPTION
REV. DATE

FLYWAY TAPROOM
Walmart Campus
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Bentonville, Arkansas



Project No:
HW24-821
Date:
3/18/25
Sheet Title:
KITCHEN
VENTILATION
DETAILS
of
Sheet No:

M2.2

HOOD INFORMATION																	
HOOD NO.	MARK	GREENHECK MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	TOTAL CFM	EXHAUST COLLAR(S)					SUPPLY MUA CFM	AC CFM	HANGING WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT				WIDTH	LENGTH	DIA.	CFM	S.P.				
1	KH-1	GXEW-78-S	78	48	24	430 SS WHERE EXPOSED	HEAVY	1300	10	12		1300	0.502	1250		465	LEFT
2	KH-1	GXEW-78-S	78	48	24	430 SS WHERE EXPOSED	HEAVY	1325	10	12		1325	0.521	1250		267	RIGHT

HOOD INFORMATION														
HOOD NO.	MARK	LIGHTING DETAILS				GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE	BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL	MATERIAL	QTY	SIZE (IN.)	LOCATION	FIRE SYSTEM	CONTROLS		
1	KH-1	INCANDESCENT (GLOBE)	100W A19 (BULBS NOT INCL.)	4	46.14	X-TRACTOR (SPARK ARRESTOR INCL.)	STAINLESS STEEL	1	16 20	LEFT	AMEREX KP	SIZE	MODEL	INTERFACE
2	KH-1	INCANDESCENT (GLOBE)	100W A19 (BULBS NOT INCL.)	4	46.14	X-TRACTOR (SPARK ARRESTOR INCL.)	STAINLESS STEEL	3	3 20					

SUPPLY PLENUM INFORMATION																		
HOOD NO.	MARK	POS.	TYPE	SIZE (IN.)			INSULATED	DAMPER(S)	LED LIGHT(S)		TOTAL CFM	TOTAL S.P.	COLLARS					
				L	W	H			SUPPLIED	QTY			TYPE	MOUNTING	QTY	W	L	DIA.
1	KH-1	FRONT	ASP	90	18	4	NO	YES	NO	1250	0.01	MUA	FACTORY	2	16	30	625	188
2	KH-1	FRONT	ASP	79	18	4	NO	YES	NO	1250	0.01	MUA	FACTORY	2	16	26	625	216

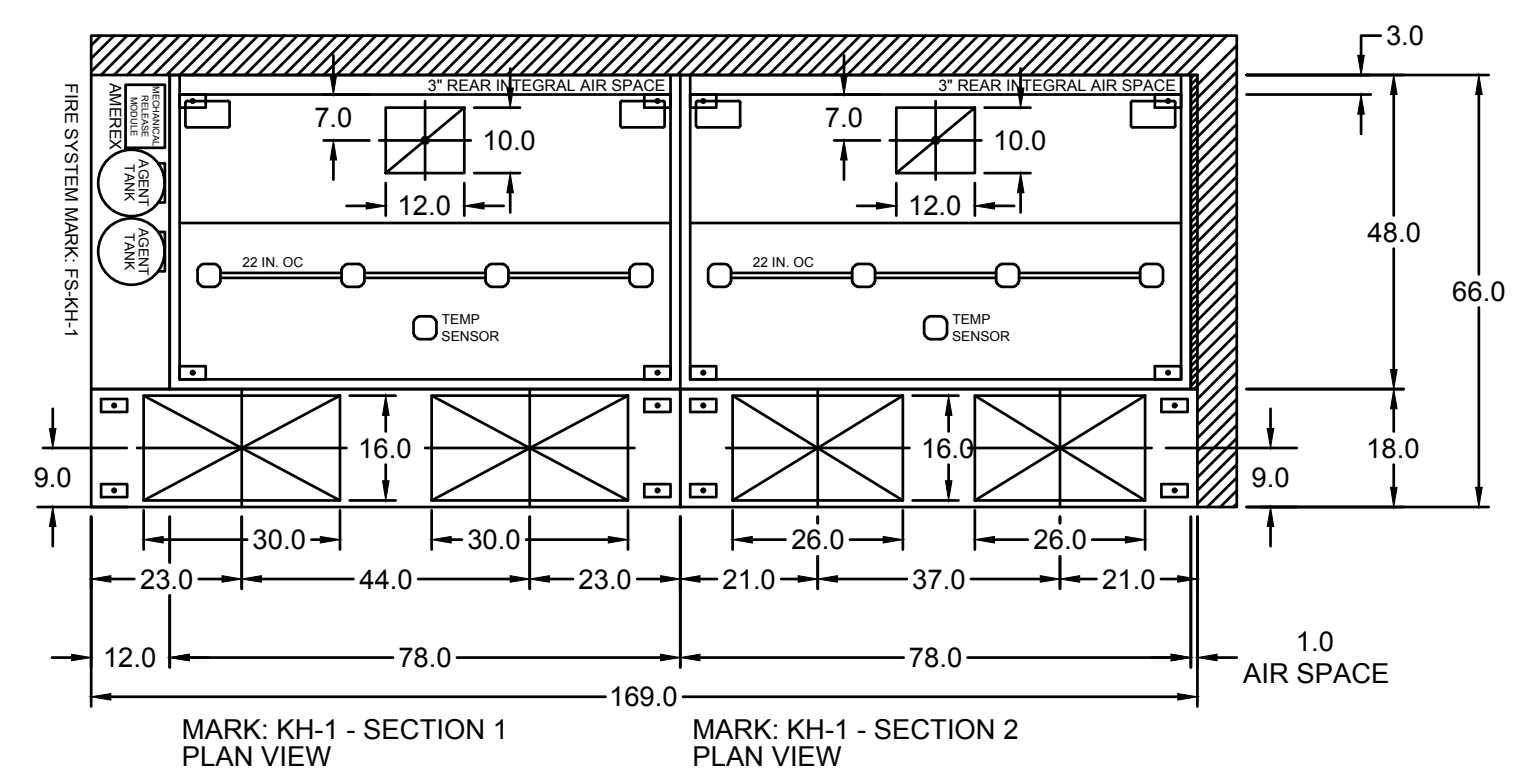
HOOD OPTIONS
 UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #MH11726
 BACK INTEGRAL AIR SPACE - 3 IN WIDE
 RIGHT NON-INTEGRAL AIR SPACE - 1 IN THICK - ZERO CLEARANCE
 12 IN HIGH CEILING ENCLOSURES - FRONT LEFT - FIELD INSTALLED
 CONTINUOUS CAPTURE
 FACTORY MOUNTED EXHAUST COLLAR(S)
 PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
 STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

HOOD INFORMATION																	
HOOD NO.	MARK	GREENHECK MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	TOTAL CFM	EXHAUST COLLAR(S)					SUPPLY MUA CFM	AC CFM	HANGING WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT				WIDTH	LENGTH	DIA.	CFM	S.P.				
1	KH-2	GXEW-102-S	102	60	24	430 SS WHERE EXPOSED	HEAVY	2785	9	27		2785	0.904	2650		506	SINGLE

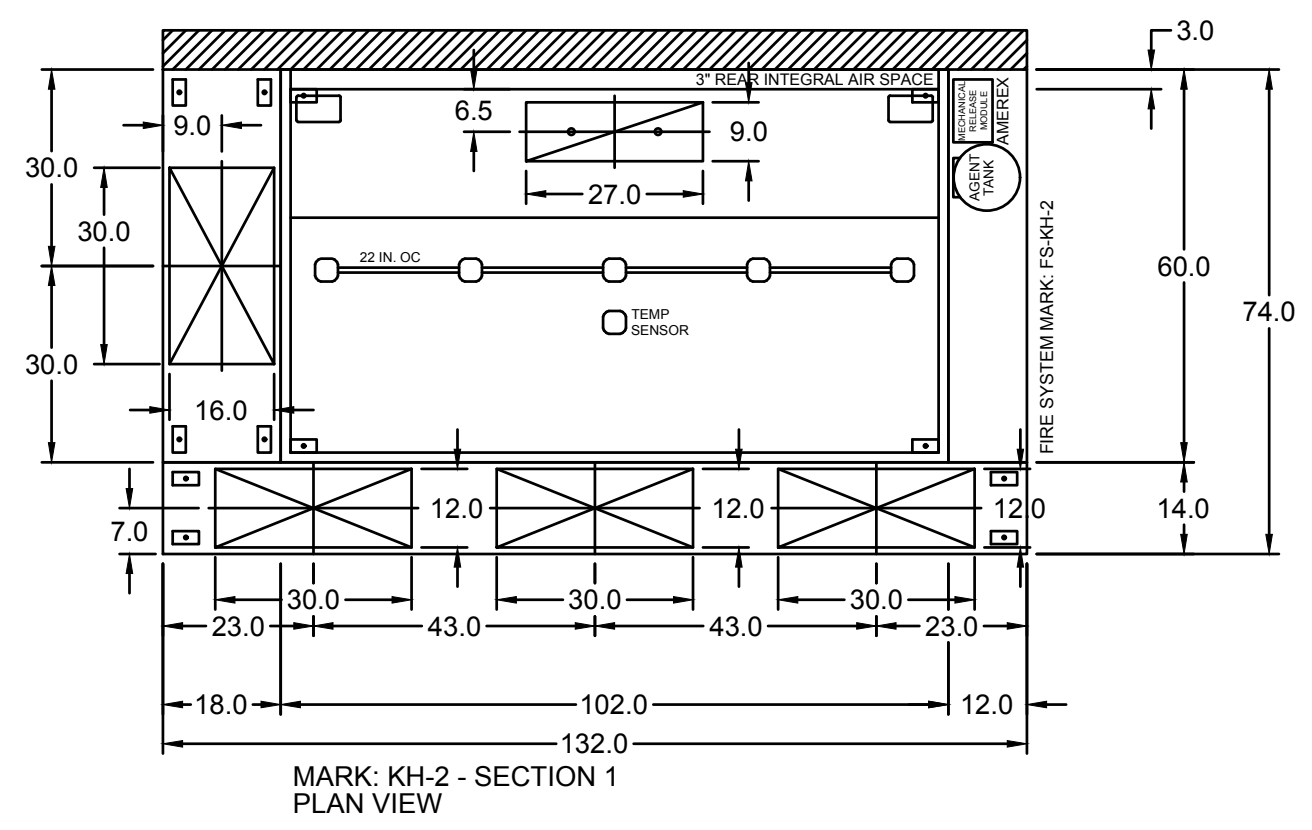
HOOD INFORMATION														
HOOD NO.	MARK	LIGHTING DETAILS				GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE	BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL	MATERIAL	QTY	SIZE (IN.)	LOCATION	FIRE SYSTEM	CONTROLS		
1	KH-2	INCANDESCENT (GLOBE)	100W A19 (BULBS NOT INCL.)	5	48.41	X-TRACTOR (SPARK ARRESTOR INCL.)	STAINLESS STEEL	1	16 20	RIGHT	AMEREX KP	SIZE	MODEL	INTERFACE

SUPPLY PLENUM INFORMATION																		
HOOD NO.	MARK	POS.	TYPE	SIZE (IN.)			INSULATED	DAMPER(S)	LED LIGHT(S)		TOTAL CFM	TOTAL S.P.	COLLARS					
				L	W	H			SUPPLIED	QTY			TYPE	MOUNTING	QTY	W	L	DIA.
1	KH-2	FRONT	ASP	132	14	4	NO	YES	NO	1825	0.01	MUA	FACTORY	3	12	30	608	243
2	KH-2	LEFT	ASP	60	18	4	NO	YES	NO	825	0.01	MUA	FACTORY	1	16	30	825	248

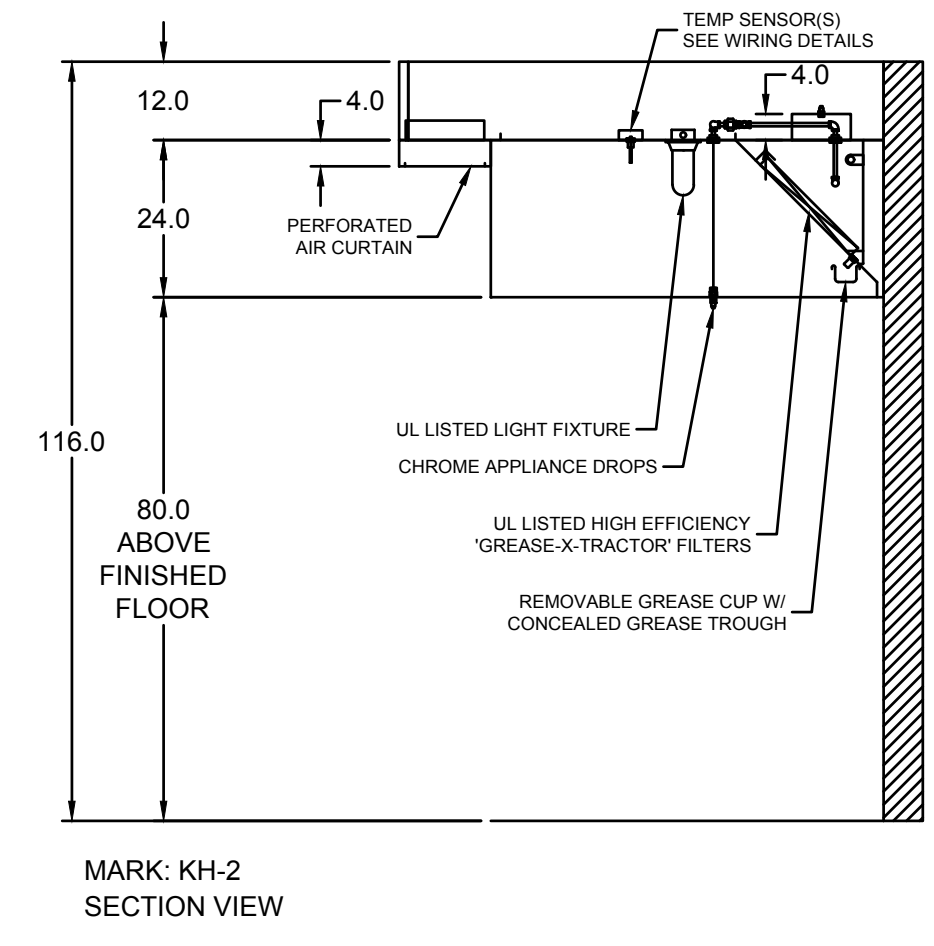
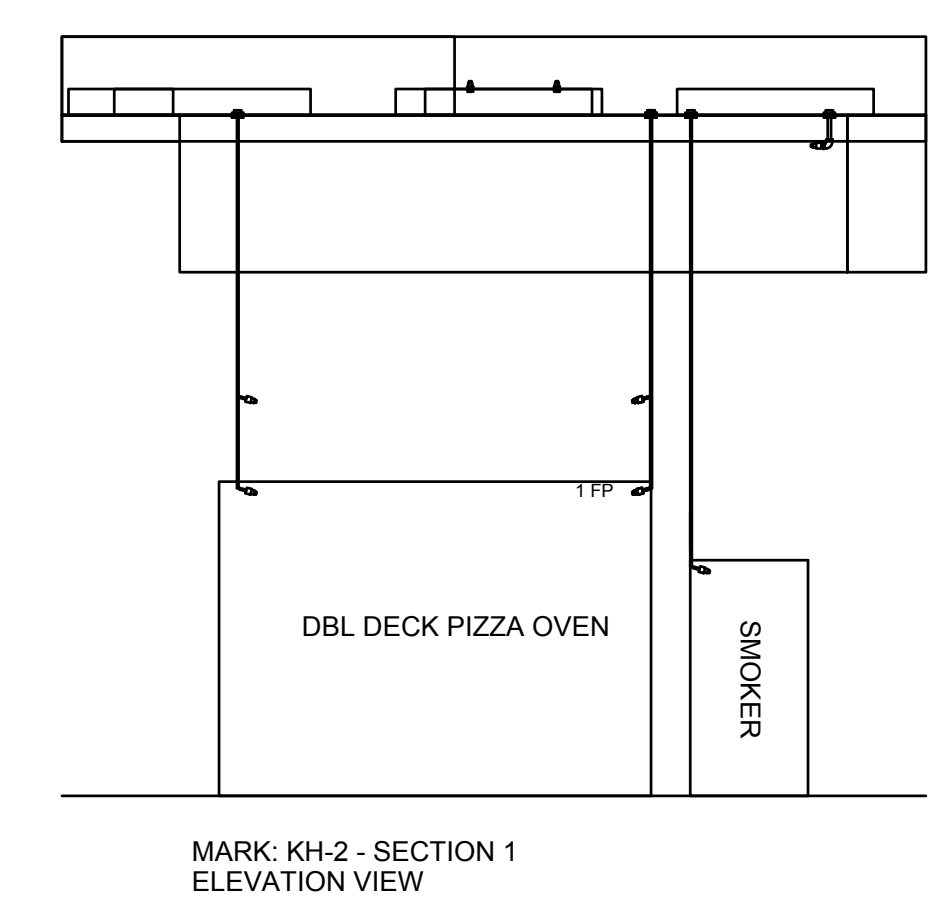
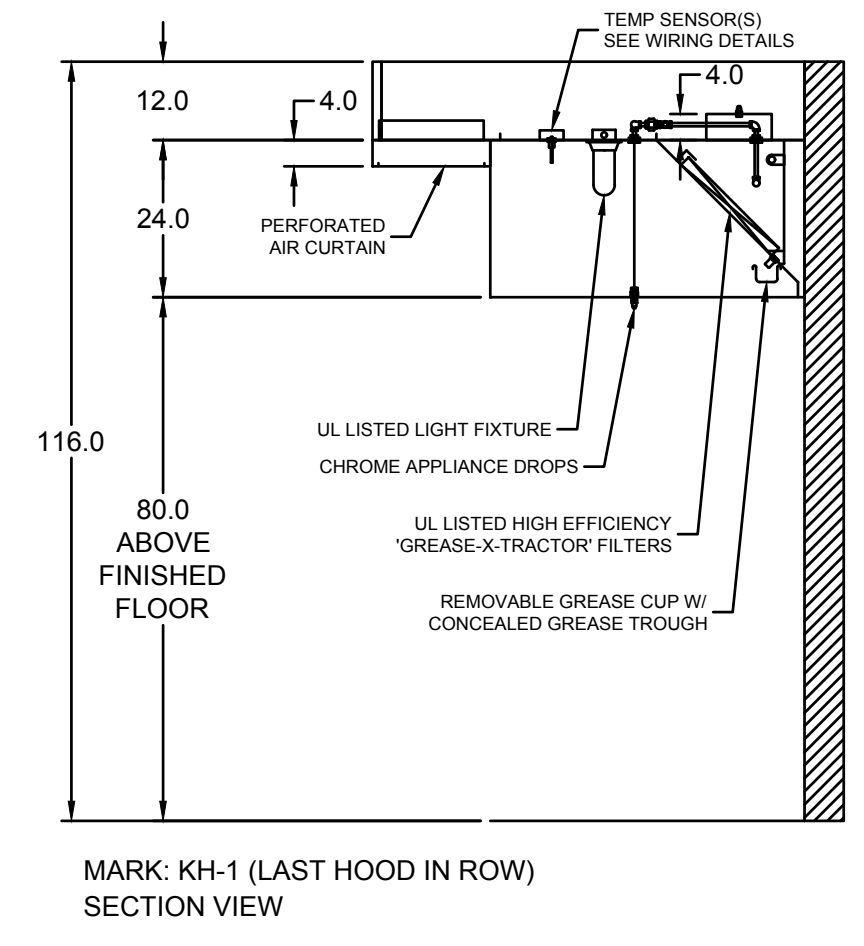
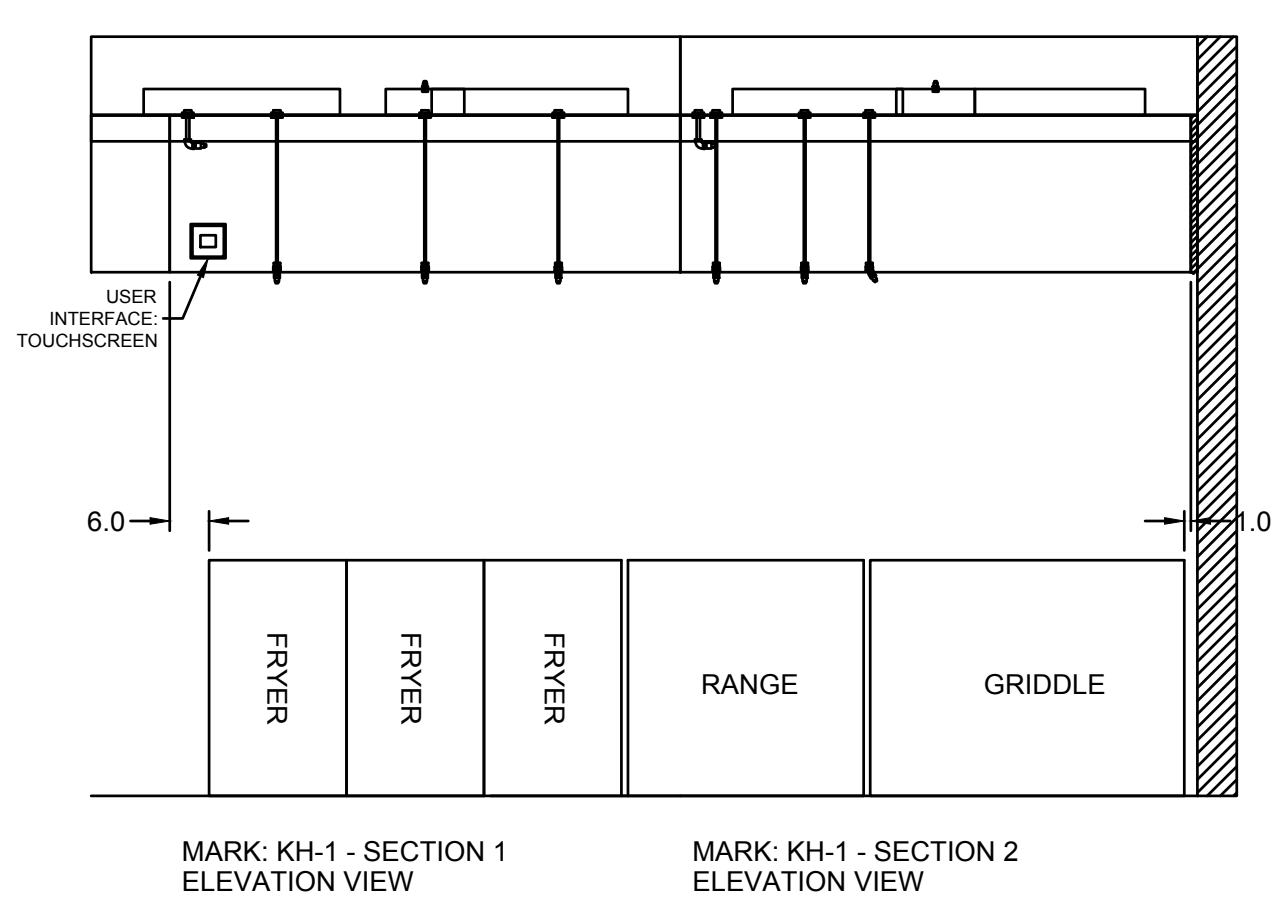
HOOD OPTIONS
 UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #MH11726
 BACK INTEGRAL AIR SPACE - 3 IN WIDE
 12 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED
 FACTORY MOUNTED EXHAUST COLLAR(S)
 PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
 STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



CONFIRM FIRE SUPPRESSION SYSTEM (PIPING / DROPS / NOZZLES, ETC.) WITH KITCHEN EQUIPMENT LAYOUT AND SPECIFICATIONS PRIOR TO SHOP DRAWINGS OR ROUGH-IN



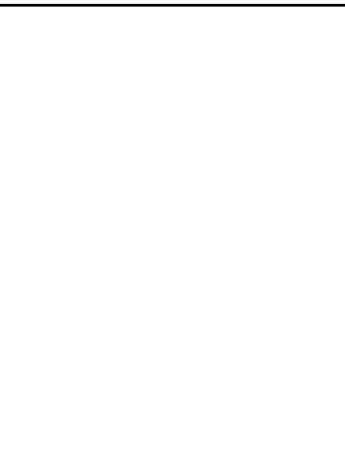
FIRE (PIPING/DROPS/NOZZLES, ETC.) SUBJECT TO CHANGE. AS-BUILT DRAWINGS CAN BE PROVIDED AT TIME OF ORDER AND INCLUDED WITH PRODUCT SHIPMENT





REV#	DATE	DESCRIPTION

FLYWAY TAPROOM
Walmart Campus
Parking Deck 09
Bentonville, Arkansas



Project No:
HW24-821

Date:
3/18/25

Sheet Title:
KITCHEN
VENTILATION
DETAILS

of

Sheet No:
M2.4

CONTROL INFORMATION

MARK	ELECTRICAL CONTROL PACKAGE		USER INTERFACE		FANS CONTROLLED											
	GREENHECK MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
KITCH VENT CONTROLS	GKC-CV-S-11-3-1-0	SHIP LOOSE ENCLOSURE	FULL COLOR TOUCHSCREEN	HOOD - FACE MOUNT LEFT END OF KH-1 SECTION 1	1	EXHAUST	E1	PCU-1	1	5410	7.5	460	60	3	NO	NO
					2	SUPPLY	S1	MAU-1	1	5146	3	460	60	3	NO	NO

CONTROL FEATURES

HOOD LIGHT CONTROL
TEMP SENSORS (FACTORY INSTALLED) - QTY. 3
DRY FIRE CONTACTS - QTY. 2
LIGHTS OFF DURING FIRE
EXHAUST MAX DURING FIRE
SUPPLY OFF DURING FIRE

FIRE SYSTEM INFORMATION

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
			HOODS	PCU			
FS-PCU	ANSUL R-102 WET CHEMICAL	WALL CABINET - REMOTE	16 UTILIZED 22 AVAILABLE	22 AVAILABLE	CONTINUOUS	FUSIBLE LINK	PCU-1 SECTION

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
HOOD SUPPRESSION TANK - INCLUDED - 0 GAL. - [0 TANK(S)]
PCU SUPPRESSION AGENT - INCLUDED - 6.00 GAL. - [(2) 3.0 TANK(S)]

FIRE SYSTEM INFORMATION

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
			HOODS	PCU			
FS-KH-1	AMEREX KP WET CHEMICAL	CABINET - LEFT END OF KH-1	16 UTILIZED 22 AVAILABLE		CONTINUOUS	FUSIBLE LINK	KH-1 SECTION 1 KH-1 SECTION 2

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
METAL BLOW-OFF CAPS - INCLUDED
GAS VALVE - INCLUDED - ELECTRICAL SHUTOFF VALVE, 2", 110V, 60HZ - PART# 455398
HOOD SUPPRESSION TANK - INCLUDED - 7.5 GAL. - [(2) 3.75 TANK(S)]
REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS

FIRE SYSTEM INFORMATION

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
			HOODS	PCU			
FS-KH-2	AMEREX KP WET CHEMICAL	CABINET - RIGHT END OF KH-2	10 UTILIZED 11 AVAILABLE		CONTINUOUS	FUSIBLE LINK	KH-2 SECTION 1

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
METAL BLOW-OFF CAPS - INCLUDED
GAS VALVE - INCLUDED - ELECTRICAL SHUTOFF VALVE, 2", 110V, 60HZ - PART# 455398
HOOD SUPPRESSION TANK - INCLUDED - 3.75 GAL. - [(1) 3.75 TANK(S)]
REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
	LED LIGHT FIXTURE - CEILING MOUNTED
	LED LIGHT FIXTURE EQUIPPED WITH 2-LAMP SELF-CONTAINED EMERGENCY BATTERY BACKUP DRIVER
	LED LIGHT FIXTURE - CEILING MOUNTED
	LED LIGHT FIXTURE EQUIPPED WITH 2-LAMP SELF-CONTAINED EMERGENCY BATTERY BACKUP DRIVER
	LED STRIP LIGHT - CEILING MOUNTED OR CHAIN HUNG
	LED STRIP LIGHT - EQUIPPED WITH 2-LAMP SELF-CONTAINED EMERGENCY BATTERY BACKUP DRIVER
	LED STRIP LIGHT - WALL MOUNTED
	LED LIGHT FIXTURE - WALL MOUNTED
	CEILING MOUNTED LED DOWNLIGHT WITH TRIM AND DRIVER
	CEILING MOUNTED LED DOWNLIGHT WITH TRIM AND DRIVER ON EMERGENCY POWER CIRCUIT OR EQUIPPED WITH BATTERY BACKUP DRIVER
	WALL MOUNTED LED LIGHT FIXTURE WITH WALL BLOCKING AS NECESSARY
	RECESSED WALL WASH LED LIGHT FIXTURE - ARROW INDICATES DIR. OF LIGHT OUTPUT
	LED AREA LIGHT WITH POLE AND BASE
	DUAL HEAD LED AREA LIGHTS WITH POLE AND BASE
	EMERGENCY LED LIGHT FIXTURE MOUNTED 7' AFF OR AS DIRECTED BY ARCHITECT
	EXIT LIGHTS - WALL MT. & CEILING MT. SHOWN - SHADING INDICATES FACE(S), DIRECTIONAL ARROWS SHALL BE AS SHOWN ON PLANS
	SINGLE-POLE TOGGLE SWITCH
	TWO-POLE TOGGLE SWITCH
	THREE-WAY TOGGLE SWITCH (K3-KEYED 3-WAY)
	FOUR-WAY TOGGLE SWITCH (K4-KEYED 4-WAY)
	DIMMER CONTROL SWITCH OR STATION (AS SPECIFIED ON PLANS AND/OR RISER) RATED FOR LOAD AND LOAD TYPE.
	MANUAL MOTOR STARTER WITH OVERLOADS, TOGGLE OPERATED
	SINGLE-POLE TOGGLE SWITCH - KEY OPERATED
	BRANCH TO CONNECTION
	FLUSH TWIST LOCK (L5-20R) RECEPTACLE IN CEILING WITH #12 SO CORD DROPPED TO 6' AFF. L5-20P PLUG AND 97111 PLATE ON ONE END 5-20R IN CONNECTOR BODY ON OTHER END. COORDINATE EXACT PLACEMENT WITH EQUIPMENT BEING SERVED.
	SINGLE-POLE TOGGLE SWITCH - KEY OPERATED AND WEATHERPROOF TYPE
	DUPLEX RECEPTACLE SWITCHED - HUBBELL WIRING DEVICE #CR20WHTR W/ TOP RECEPTACLE SWITCHED AS SHOWN.
	DUPLEX RECEPTACLE - HUBBELL WIRING DEVICE #CR20WHTR W/ COVERPLATE MOUNT WITH GROUND TERMINAL UP 18" TO BOTTOM OF BOX (UNO).
	QUADRAPLEX RECEPTACLE - (2) HUBBELL WIRING DEVICE #CR20WHTR W/ COVERPLATE. MOUNT WITH GROUND TERMINAL UP 18" TO BOTTOM OF BOX (UNO).
	DUPLEX RECEPTACLE MOUNTED HORIZONTALLY ABOVE COUNTER TOP - VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS AND MILLWORK DETAILS.
	GROUND FAULT RECEPTACLE - HUBBELL WIRING DEVICE #GFR20W W/ COVERPLATE.
	DUPLEX CONVENIENCE RECEPTACLE WITH DUAL USB PORTS - HUBBELL WIRING DEVICE #USB20X2W WITH COVERPLATE.
	WEATHERPROOF IN USE TYPE RECEPTACLE - HWD #GRFT20W W/RW57500 IN USE WEATHERPROOF HOUSING. MOUNT AT 18" TO BOTTOM OF BOX (UNO).
	NON-METALIC FLUSH MULTI SERVICE FLOOR BOX WITH UNIVERSAL COVER FOR EITHER CARPET OR TILE AS NECESSARY. COORDINATE WITH ARCHITECT. FLOOR BOX TO ACCOMMODATE DUPLEX CONVENIENCE RECEPTACLE AND (4) TELE/DATA PORTS. HWD SYSTEM ONE TYPE.
	WALL MOUNTED MEDIA BOX WITH DUPLEX RECEPTACLE EQUAL TO CHIEF MFG #PACS26 WITH (2) CAT6 AND (1) RG6U TO DATA RACK. MOUNT +60" TO CENTER.
	SPECIAL PURPOSE OUTLET - NEMA CONFIGURATION (VOLTAGE, AMPACITY) AS NOTED ON DRAWINGS
	SURFACE MOUNTED DUAL COMPARTMENT RACEWAY WITH DEVICES AS SHOWN HUBBELL #HBL4750 SERIES
	ALUMINUM POWER POLE - HUBBELL WIRING DEVICE #HBLPPAL W/ATB - (10')
	CORD REEL - HUBBELL #HBL45123C20 MTD FROM CEILING JOIST TO 10' AFF

NOTE:

1. NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT.
2. SYMBOLS SHOWN DASHED ON PLANS INDICATES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC.

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
	DATA/TELE OUTLET: # INDICATES RJ45 DATA MODULES IN 2 GANG, 3 1/2" DEEP BACKBOX. PROVIDE (1) 1-1/4"C. WITH PULL STRING TO ACCESSIBLE LOCATION ABOVE CEILING FOR DATA AND (1) 1"C. ABOVE CEILING FOR TELE. SEE COMM RISER FOR CABLING.
	TELEVISION OUTLET - SINGLE GANG FLUSH OUTLET BOX WITH 3/4"C & PULL STRING TO ACCESSIBLE LOCATION ABOVE CEILING IN CORRIDOR.
	JUNCTION BOX - SIZED TO ACCOMMODATE CONNECTION
	DISCONNECT SWITCH
	COMBINATION MOTOR STARTER / DISCONNECT SWITCH
	MOTOR STARTER
	EMERGENCY POWER OFF STATION (REMOTE SHUNT TRIP) - REFER TO "POWER RISER DIAGRAM"
	BRANCH CIRCUIT IN CONDUIT - SWITCH LEG, PHASE LEG, NEUTRAL, ISOLATED GROUND, AND EQUIPMENT GROUND INDICATED
	BRANCH CIRCUIT HOMERUN - PANEL AND CIRCUIT NUMBER INDICATED
	CONDUIT CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE
	EXISTING CONDUIT
	FLEXIBLE CONDUIT
	EMERGENCY CIRCUIT(S) (SHOWN WITH NON-ARCHED LINES)
	SURFACE MOUNTED PANELBOARD - SEE SCHEDULE
	FLUSH MOUNTED PANELBOARD - SEE SCHEDULE
	TELEPHONE TERMINAL BOARD 4"x8"x3/4" PLYWOOD PAINTED GREY
	TRANSFORMER
	CONTACTOR
	TIME CLOCK
	DOOR HOLD OPEN. POWER AND CONNECT TO SMOKE DETECTORS PER CODE.
	AUDIO/VISUAL SPEAKER - SEE DETAIL ON SHEET E4
	INTERCOM SPEAKER - TWO WAY 1"x2" CEILING MOUNTED SPEAKER BOGEN #CSD1X2. REFERENCE INTERCOM DETAIL ON SHEET E5
	WALL MOUNTED VOLUME CONTROL FOR CEILING SPEAKER. MOUNT 44" TO BOTTOM OF OUTLET BOX.
	INTERCOM CALL STATION - BOGEN #MCWESS. PROVIDE WALL MOUNT TELEPHONE JACK. REFERENCE DETAIL ON SHEET E5.
	4"DEEP, 8"WIDE FLEXTRAY WIRE MANAGEMENT SYSTEM - B-LINE #FT4XB10 WALL HUNG IN CORRIDOR 12" BELOW DECK. #FTB18CS BRACKETS 5' O.C.
	THERMOSTAT - E.C. TO FURNISH & INSTALL BACKBOX & 1/2" CONDUIT TO ABOVE ACCESSIBLE CEILING & TERMINATE
	CCTV - PROVIDE CAMERA, CONNECTION AND DVR COMPLETE.
	SR
	SMT
	ST
	US2
	DT2
	US1
	DT1
	PP

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
	FIRE ALARM AUDIO/VISUAL DEVICE - NUMBER INDICATES INDICATES MINIMUM CANDELA RATING OF STROBE
	FIRE ALARM VISUAL ONLY DEVICE - NUMBER INDICATES MINIMUM CANDELA RATING OF STROBE
	FIRE ALARM DOUBLE ACTION PULL STATION
	HEAT DETECTOR
	SMOKE DETECTOR
	DUCT MOUNTED SMOKE DETECTOR
	FLOW SWITCH - FURNISHED BY OTHERS (VERIFY LOCATION AND QUANTITY)
	TAMPER SWITCH - FURNISHED BY OTHERS (VERIFY LOCATION AND QUANTITY)
	CR
	M
	EB
	EBM
	AC
	AFF
	AFG
	BFC
	EP
	EPO
	GFI
	GRD
	IG
	MTD
	NFDS
	ns
	OHE
	SDBC
	SP
	TC
	UGE
	UON
	VFD
	WP

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE 2020 EDITION OF THE NATIONAL ELECTRIC CODE (N.E.C.) WITH CITY OF BENTONVILLE, AR AMENDMENTS.
2. THE SPECIFICATIONS ARE AS BINDING ON THE CONTRACTOR AS THE DRAWINGS. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND SHALL INCLUDE ALL ITEMS REQUIRED BY THE SPECIFICATIONS BEFORE SUBMITTING A BID.
3. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED. MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED. ALL CONDUIT IN OR BELOW FLOOR SLABS AND BELOW GRADE SHALL BE 1" MINIMUM UNLESS OTHERWISE NOTED.
4. EACH CIRCUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR. MULTI-WIRE CIRCUITS FOR SINGLE PHASE LOADS SHALL NOT SHARE NEUTRALS. EACH SINGLE PHASE 120V OR 277V CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR PER PHASE. MINIMUM EQUIPMENT GROUND AND NEUTRAL SHALL BE #12AWG COPPER.
5. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER, EXCEPT WHERE FLEXIBILITY IS REQUIRED, AND ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER USING BOLTED LUGS AT TERMINALS.
6. ALL ELECTRICAL EQUIPMENT (CONDUIT, BOXES, SUPPORTS, ETC.) INSTALLED IN EXPOSED CEILING AREAS SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT.
7. PVC CONDUIT IS NOT ALLOWED EXCEPT FOR UNDERGROUND SERVICE FEEDERS ENCASED IN 3" OF CONCRETE. ELBOWS AND RISERS TO 6" ABOVE FLOOR TO BE RGS.
8. THE ELECTRICAL CONTRACTOR SHALL CLOSELY COORDINATE WITH MECHANICAL & PLUMBING CONTRACTORS FOR EXACT LOCATION AND EQUIPMENT CONNECTIONS OF ALL PLUMBING AND MECHANICAL EQUIPMENT SCHEDULED ELSEWHERE ON DRAWINGS.
9. BRANCH CIRCUITS TO 5 HORSEPOWER AND LARGER THREE PHASE MOTORS SHALL BE PROVIDED WITH PHASE LOSS PROTECTION. PHASE LOSS SHALL BE INTEGRAL TO DRIVES AND/OR STARTERS SERVING MOTOR.
10. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES (HEATERS) IN STARTERS BASED ON ACTUAL NAMEPLATE RATINGS ON THE MOTORS BEING INSTALLED PER N.E.C. 430.6(A)(2).
11. ALL LOW VOLTAGE INTERLOCKING OF HVAC EQUIPMENT SHALL BE BY THE CONTROLS CONTRACTOR. ALL OTHER "LINE AND LOW VOLTAGE" WIRING SHALL BE BY ELECTRICAL CONTRACTOR AND SHALL BE IN CONDUIT. COORD. WITH OTHER TRADES.
12. TELE/DATA OUTLETS AS INDICATED IN LEGEND ARE TO BE INSTALLED AND CONNECTED AS PER INDUSTRY STANDARD AND IN ACCORDANCE WITH OWNER'S IT DEPARTMENT. COORDINATE ALL EQUIPMENT SELECTION, CABLE ROUTING, CABLE MANAGEMENT AND LABELING WITH OWNER PRIOR TO BEGINNING WORK (WHERE APPLICABLE TO SCOPE).
13. ALL WIRING RUN EXPOSED ABOVE CEILING SHALL BE PLENUM RATED.
14. MOUNTING HEIGHT ABOVE FLOOR TO BOTTOM OF DEVICE OUTLET BOX SHALL BE AS FOLLOWS FOR RECEPTACLES, MICROPHONE OUTLETS, TELEPHONE, TELEVISION AND COMPUTER OUTLETS SHOWN ON PLANS UNLESS NOTED OTHERWISE:

GENERAL THROUGHOUT	18"
MECHANICAL EQUIPMENT ROOMS	52"
ABOVE COUNTER TOPS	30" H
	36" H
	36" H
	44" H
	48" H
ABOVE BACKSPASH TOP	2" MINIMUM
ABOVE RADIATORS	6" MINIMUM
ABOVE OR ADJACENT TO LAVATORIES	44"
BEHIND DOMESTIC REFRIGERATORS	44"
BEHIND DOMESTIC WASHERS/DRYERS	52"
SERVING DOMESTIC DISHWASHERS	36"
WALL MOUNTED TELEPHONES	2"
TOGGLE SWITCHES	44"
PULL STATIONS (FIRE ALARM)	48"
CALL IN STATIONS (INTERCOM)	44"
HORN/STROBES (FIRE ALARM)	44"
	80"

15. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND SECURE A FULL SET OF CONTRACT DOCUMENTS TO ENSURE COMPLETE ELECTRICAL BID PACKAGE.
16. PROVIDE ENGRAVED NAMEPLATES ON ALL OF THE FOLLOWING EQUIPMENT: PANELBOARDS, DISCONNECT SWITCHES, MANUAL & AUTOMATIC STARTERS, COMBINATION STARTER/DISCONNECTS, TRANSFORMERS,
17. FIELD-VERIFY EXACT LOCATIONS & ELEVATIONS OF ALL WALL MOUNTED EQUIPMENT AND DEVICES.
18. ALL ELECTRICAL EQUIPMENT (CONDUIT, BOXES, SUPPORTS, ETC.) INSTALLED IN EXPOSED CEILING AREAS OR ON BUILDING EXTERIOR SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT.
19. MC CABLE SHALL NOT BE USED ON THIS PROJECT IN LENGTHS EXCEEDING 6' AND ONLY FOR CONNECTING RECEPTACLES IN WALLS OR LIGHT FIXTURE WHIPS.



DESCRIPTION
REV# DATE

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Project No:
HW24-821

Date:
03/18/25

Sheet Title:
**ELECTRICAL
LEGEND/NOTES**

of
Sheet No:

E0.1

SECTION 16000 — ELECTRICAL SPECIFICATIONS

16000-1

1. GENERAL REQUIREMENTS:

A. GENERAL CONDITIONS: The bidders will examine a complete set of construction documents to avoid omissions, duplications and to ensure complete and working execution of the work for electrical construction.

B. GENERAL: The work under this section shall include labor, materials and equipment and incidental costs necessary to furnish and install electrical work, equipment, lamps, etc. indicated on drawings, as specified herein, or both.

C. SCOPE: Furnish labor, materials, tools, equipment, etc., required for a complete installation of electrical systems and work, in accordance with federal, state, and local codes, and governing bodies having jurisdiction.

2. WORKMANSHIP:

A. Use capable and experienced superintendents, authorized by the contractor to instruct work, make job decisions and act for the contractor in matters pertaining to the contract documents.

3. PERMITS, TESTS AND INSPECTIONS:

A. Apply for, secure and pay for required permits, fees, licenses and royalties to accomplish the work.

B. Apply for, secure and pay for required tests and inspections necessary to accomplish the work in conformance with codes and governing bodies having jurisdiction.

4. CODES, RULES, AND REGULATIONS:

A. The contractor shall furnish, without extra charge, any additional materials and labor that may be required for compliance with governing laws, rules and regulations even though the work is not mentioned in these specifications or shown on the drawings. Nothing in plans or specifications shall be deemed as authority to violate any governing code.

B. Product shall be UL and CSA certified and labeled. Meet listed NEMA standards and be suitable for the intended use/service required for the device.

5. ACCURACY OF DATA:

A. The data given herein and on the drawings are as exact as could be secured, but their absolute accuracy is not guaranteed. The specifications and drawings are for the assistance and guidance of the contractor. Exact locations, distances, levels, etc. will be governed by the site conditions. The contractor shall use the data contained herein with this understanding.

6. CLEAN-UP:

A. Remove surplus material, equipment and debris incidental to this work and leave the premises in a condition acceptable to the owner and tenant (if applicable).

7. GUARANTEE:

A. Furnish a written certified guarantee, in acceptable form to owner, against any defective workmanship, material and operating equipment. This guarantee shall be in force and effective for a period of (1) year after acceptance of the installation.

8. STRUCTURAL CONDITIONS:

A. Notching and boring of structural members will not be permitted unless approved in writing by the structural engineer. Where notches and holes are approved they shall be carefully held to the minimum sizes actually required.

9. BASIC MATERIALS AND METHODS:

A. RACEWAYS AND BOXES

1. Where size of raceway or boxes are not indicated, the electrical sub-contractor shall size these items as required by code.

2. Raceways shall be rigid metal conduit unless otherwise indicated.

3. Intermediate metal conduit may be used wherever rigid conduit is required except for raceways embedded in concrete slabs, in contact with the earth, underground not encased in concrete and in corrosive locations.

4. Electrical metallic tubing may be used for raceways above furred ceilings, within dry wall partitions, in equipment rooms where not subject to physical damage.

5. Schedule 40 PVC may be used underground or in areas indicated on drawings provided elbows and penetrations thru slab are rigid steel.

6. Wiring connections to motors, transformers, or other devices, which are subject to vibration or require adjustment, shall be flexible metallic conduit. The flexible metal conduit shall not exceed 18 inches in length. Where these connections are outdoors, or in damp locations, or are connections to any kitchen or commercial laundry type equipment, liquid tight flexible conduit shall be used.

7. Elbows shall be of the same materials as the conduit except for PVC installations. All PVC conduit systems shall have rigid metal elbows unless otherwise noted. Elbows in EMT and small rigid conduits may be job-fabricated with a bender made specifically for the purpose.

8. Conduits shall be sized as indicated on the drawings and as required to accommodate the wires to be pulled into the conduit. Conduit shall not be less than three-quarters inch (3/4).

9. For each thermostat (by HVAC), provide 4 X 4 outlet box with 3/4" empty conduit. Stubbed up into hung ceiling and bushed. Provide steel drag wire for each location.

10. Provide pull line in all empty raceways.

10. GROUNDING:

A. Non-current equipment, including the following items, shall be properly grounded:

1. Secondary feeder conduit and equipment enclosures.
2. Panelboard enclosures, pull and junction boxes, cable troughs.
3. Conduits, metal molding and outlet boxes.
4. Equipment housings exposed on the structure or on grade.

11. MOTOR AND RELATED EQUIPMENT WIRING:

A. Provide required conduit, wiring and safety switches for motors, and other related electrical equipment.

B. Motors shall be furnished and set under other divisions. The work of this division shall include necessary all connections to ensure proper operation and control.

C. Starting devices, motor controllers, float switches, level sensors, alarm devices, remote control pushbuttons, etc., unless specified by others shall be provided under this contract. Contractor shall set these devices and provide all connections.

12. WIRING DEVICES:

A. Devices shall be UL and CSA certified, listed NEMA Standard, and suitable for the service required for the intended use of the device in this installation.

B. Where devices manufactured by Arrow Hart, Bryant, Hubbell, P & S, Leviton, Walker/Wiremold, Thomas & Betts, Square D, or Sierra are named, only equivalent devices by the other of these manufacturers will be acceptable. Unless otherwise indicated, devices shall be as follows:

1. Wall Switches: 20 ampere, 120 volt AC, back or side wired
2. Dimmer Switches: 20 ampere, 120 volt AC, Sized to accommodate load
3. Convenience Outlets: Hospital Grade Duplex receptacles, 20 ampere, 125 volt side and back wired with a pair of NEMA 5-20R Standard 3 contact grounded parallel slot contacts. Devices to be white unless otherwise directed by owner/architect.
4. Isolated Grounded Receptacles: NEMA 5-20R. 3 contact Grounded parallel Slot contacts. Provide stainless steel coverplate.
5. Ground Fault Circuit Interrupter Convenience Outlets: Side wired 20 ampere, 120 volt with appropriate wall plate. (Provide within 6' of sink and/or outdoors)
6. Special equipment outlets shall be furnished and installed to match the connecting plugs as provided by the owner on specialized equipment.
7. Manual Motor Starters: Overload heater sized to the motor nameplate rating.

C. COVERPLATES:

1. General: Opening in Plates shall properly fit the wiring Devices associated with the outlets. Plates shall overlap outlet box edges for installation over finished room surfaces and shall be the non-over hanging type to fit conduit boxes used with exposed conduit runs. All plates shall be type high impact white thermoplastic type coverplates with matching screws unless otherwise noted.
2. All Outlet boxes are to be provided with Coverplate, even those for use by others.

13. WIRE AND CABLES:

A. AC-AL-HCF type cabling may be used for fixture whips and inside walls between outlets only. It may not be used in runs exceeding 10 feet or for homeruns.

B. No wire shall be smaller than No. 12 AWG may be used for branch circuit wiring for lighting and general purpose receptacles and control wiring. All wire No. 8 and larger shall be stranded type. All wire No. 10 and smaller shall be solid.

C. Wire and cable shall be factory color coded. Colors for each phase and neutral shall be used consistently throughout each system. The following color codes shall be used and maintained throughout the system:

120/240 V SYSTEMS		
Phase A	Neutral	Switch Legs
Black	White	Yellow with Tracer Phase
Phase B	Ground	
Red	Green	
Phase C		
Blue		

D. Homeruns more than 100 feet shall be minimum #10 AWG Cu wire unless noted otherwise. Homeruns more than 225 feet shall be minimum #8 AWG Cu wire unless noted otherwise. Contractor shall adjust the wire size accordingly.

14. LIGHTING AND POWER PANELS:

A. Panelboards (commercial projects) shall be circuit breaker type with copper buss installed in code gauge galvanized sheet steel cabinets, flush or surface mounted as indicated on drawings. Each cabinet shall be complete with hinged doors, cylinder lock, directory frame and neatly typed directory charts. All panels shall be keyed alike.

B. Load Centers (residential grade projects only) shall be circuit breaker type with tin plated aluminum buss installed in galvanized steel cabinets, flush or surface mounted as indicated on drawings. Each cabinet shall be complete with hinged doors, cylinder lock, directory frame and neatly typed directory charts. All load centers shall be keyed alike.

B. The branch circuit breakers, in general, shall be molded case, bolt-on type, rated 22,000 AIC for 120/240V, 35,000 AIC for 480/277 Volt Systems or larger interrupting capacity as may be indicated on plans. Thermal magnetic trip, single, two or three pole as shown on drawings. Multiple pole breakers for panels where indicated on the drawing schedules. Main breaker characteristics shall be as indicated on the drawings. Main buswork of all panels shall, as a minimum, be designed to carry the full rating of the feeder switch supplying the panel, at a current density of 800 amperes per square inch of cross section. Buswork shall be high conductivity copper.

C. Panel sections shall be such that no live parts are exposed after installation. They shall be so arranged that each breaker is readily removable from the panel without disturbing adjacent breakers.

D. Phase legs shall be alternately bussed to each circuit breaker in a manner to affect balancing the branch circuit connections as nearly as possible over each phase.

E. Branch panelboards on 240/120V systems shall be equipped with GE type THQB; square D type QOB; or Westinghouse type BAB bolt-in circuit breakers with a minimum interrupting capacity of 10,000 amperes symmetrical on 120 VAC, 60 Hertz. Where indicated on panelboard schedules higher interrupting capacities shall be furnished.

F. Provide a neatly, typewritten directory of circuits for each existing panelboard as indicated for additions or modifications.

15. LIGHTING FIXTURES:

A. Lighting fixtures shall be supplied and stored by the contractor. The contractor shall be responsible for the repair or replacement of any defective fixtures.

B. The contractor shall provide the necessary labor and materials for the complete installation of the lighting fixtures as indicated on the drawings.

C. Lamps shall be provided as specified or required for all fixtures. Contractor shall provide burn-in time per the manufacturer's recommendation.

D. See electrical drawings for light fixture description.

16. LIGHTING ACCESSORIES:

A. Furnish and install equipment for lighting control of night and exterior lighting fixtures as indicated on the contract documents.

B. Contactors shall be mounted not higher than 6'-6" above finished floor to top of cabinet and not lower than 4'-0" finished floor to bottom surface of cabinet.

C. Test system to assure satisfactory operation upon completion of installation. Supply manufacturer brochures and manuals to owner's representative.

17. DISCONNECT SWITCHES:

A. Disconnect switches serving motor loads shall be properly NEMA rated. They shall be environmentally rated for the areas where located with NEMA rain-tight construction for units located outdoors.

B. Disconnects shall be heavy duty, quick-make and quick-break. They shall be fused type as indicated in the contract documents.

C. Install disconnects for motors, controllers and other equipment as indicated in the contract documents.

18. FUSES:

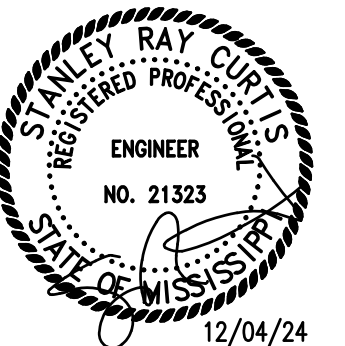
A. Furnish and install required fuses in each device furnished under Division 16.

B. Fuse for motor loads shall be time delay.

19. METERING:

A. Metering will be accomplished through equipment furnished by the utility co. and installed by the contractor in accordance with the latest utilities company published standards.

B. Contractor shall obtain standard for the required meter enclosure. Contractor shall obtain meter enclosure together with installation instructions and shall furnish labor, material, and tools to properly install the enclosure as directed by the utility company.



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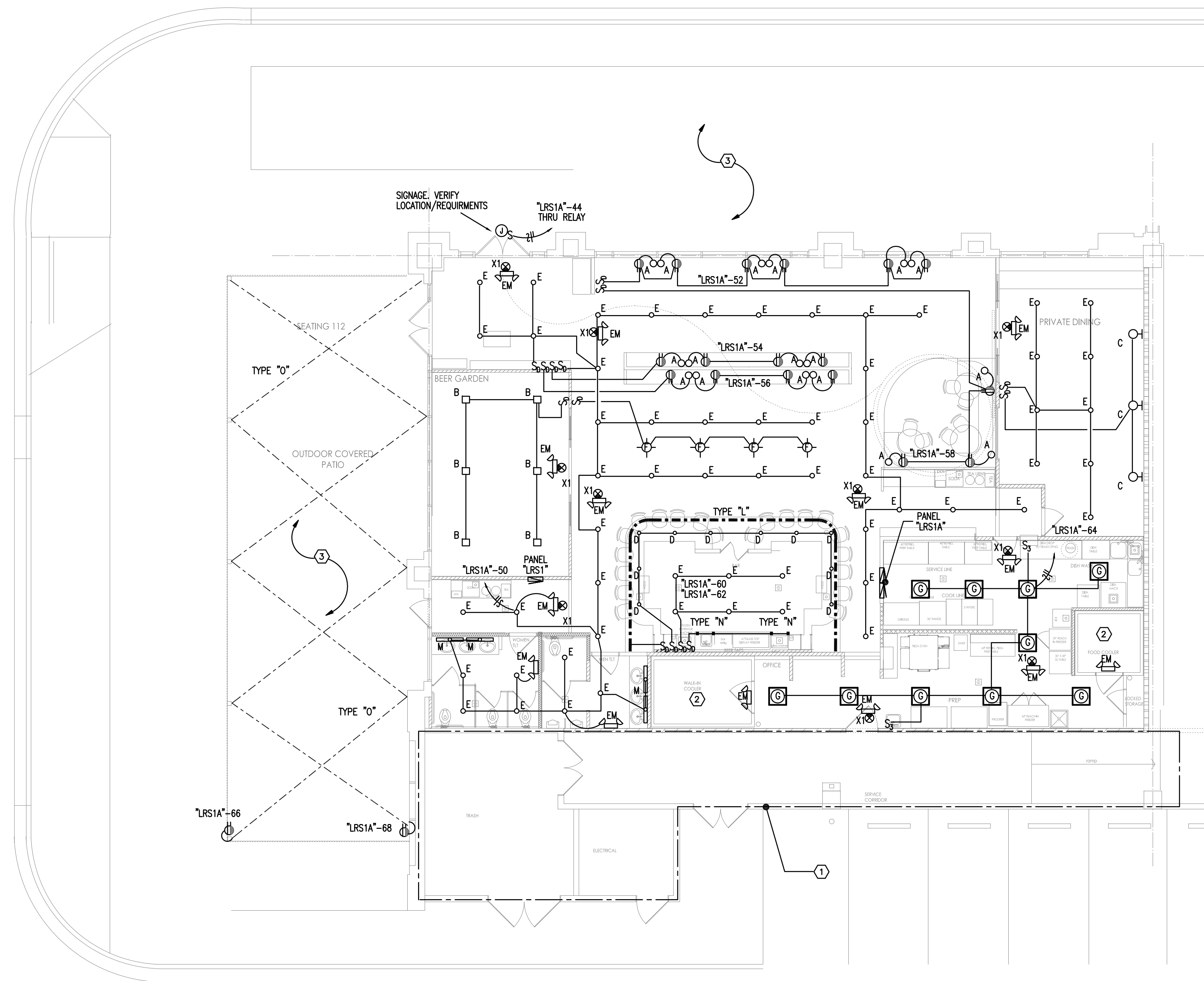
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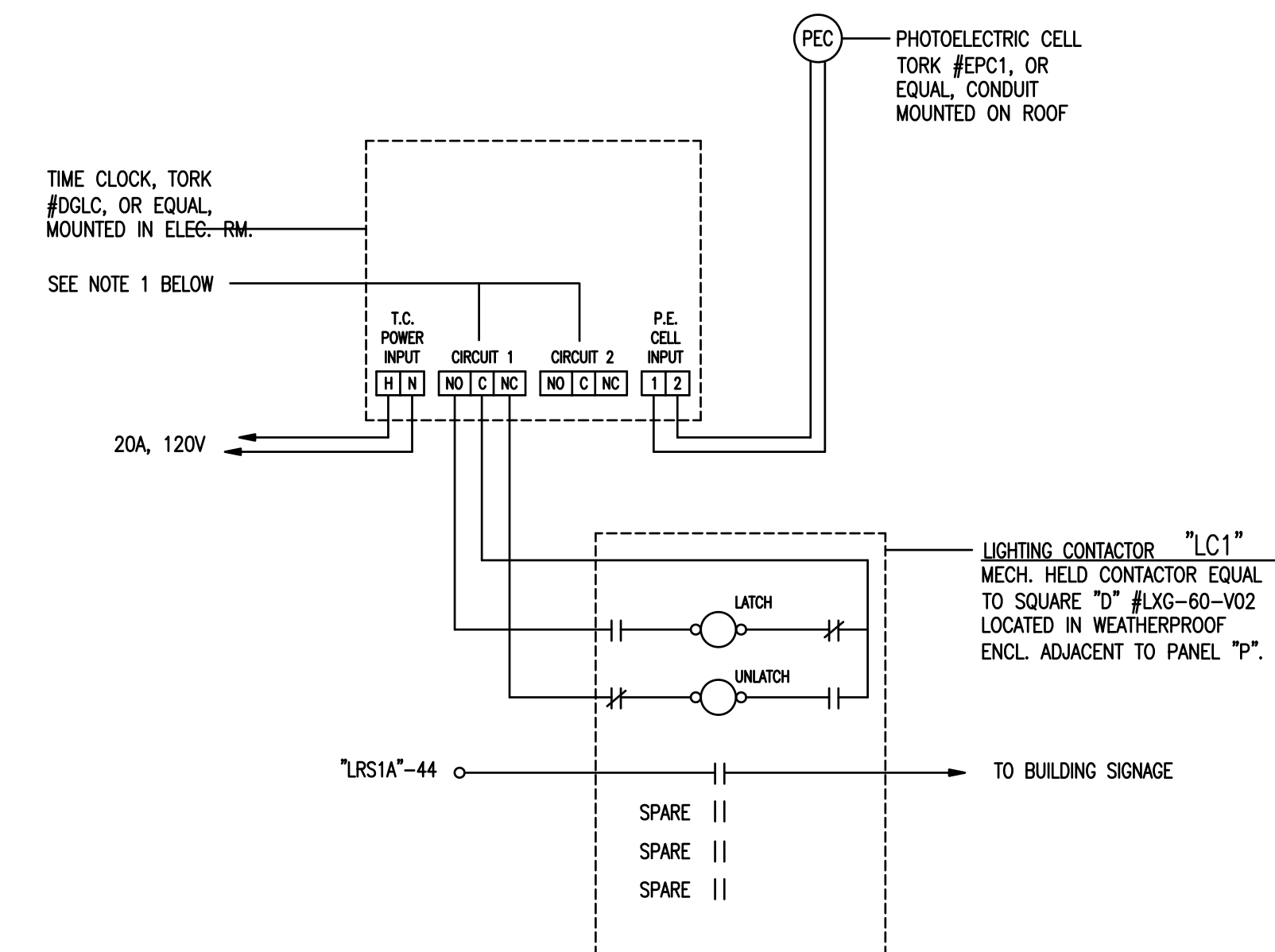
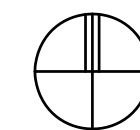
Sheet Title:
**ELECTRICAL
SPECIFICATIONS**

of _____
Sheet No:

E0.2



1 FLOOR PLAN - LIGHTING
SCALE 1/8" = 1'-0"



2 EXTERIOR LIGHTING CONTROL WIRING DIAGRAM
N.T.S.

- NOTE:**
1. TIME CLOCK CIRCUIT #1 PROVIDES (PHOTO ON / TIME OFF) OPERATION. CIRCUIT #2 PROVIDES (PHOTO ON / PHOTO OFF) OPERATION. VERIFY DESIRED OPERATION WITH OWNER.
 2. TIE IN TO BMS SYSTEM. VERIFY REQUIREMENTS WITH MECHANICAL CONTRACTOR.

KEYED NOTES - DENOTED BY #

1. EXISTING LIGHTING AND POWER THIS AREA PROVIDED UNDER SHELL DESIGN TO REMAIN.
2. LIGHTING PROVIDED BY EQUIPMENT VENDOR. VERIFY ALL REQUIREMENTS WITH KITCHEN CONSULTANT DRAWINGS. VENDOR LIGHTING TO BE PROVIDED WITH BATTERY BACKUP OR RUN THRU INVERTER TO ENSURE CODE REQUIRED EGRESS LIGHTING.
3. EXISTING NORMAL AREA LIGHTING AND BATTERY BACKUP EGRESS LIGHTING INSTALLED UNDER SHELL BUILDING DESIGN TO REMAIN. COORDINATE CONTROL BETWEEN OWNER AND TENANT AND SWITCH AS NECESSARY.

LIGHTING PLAN - GENERAL NOTES

- A. COORDINATE MOUNTING OF ALL LIGHTING FIXTURES WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO ORDERING FIXTURES TO ENSURE PROPER PLACEMENT.
- B. CIRCUIT ALL EXIT AND EMERGENCY FIXTURES UNSWITCHED ON SEPARATE CIRCUIT LRS1A-48 VIA 2#12, #12G, 3/4".
- C. REFERENCE LIGHT FIXTURE SPECIFICATIONS ON SHEET E3.1.
- D. CONTACT GENE GEPHARDT AT 501.529.0216 FOR ALL LIGHTING AND LIGHTING CONTROLS BILL OF MATERIAL.



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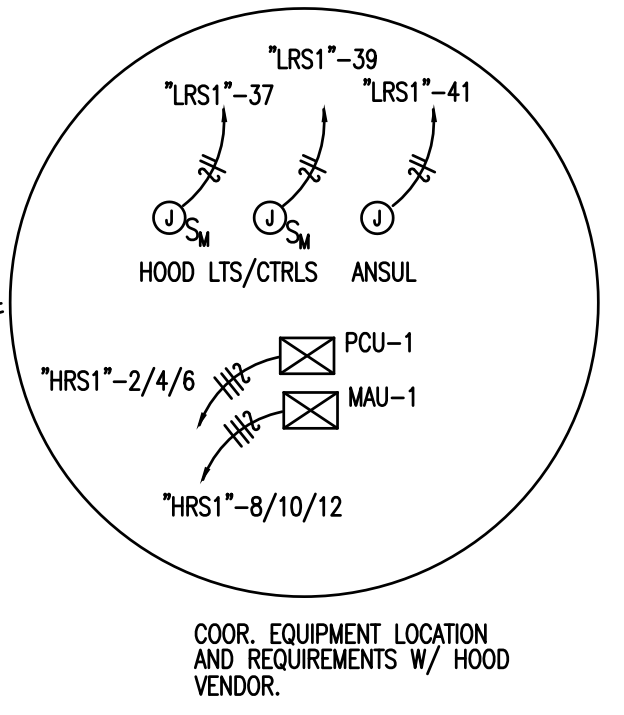
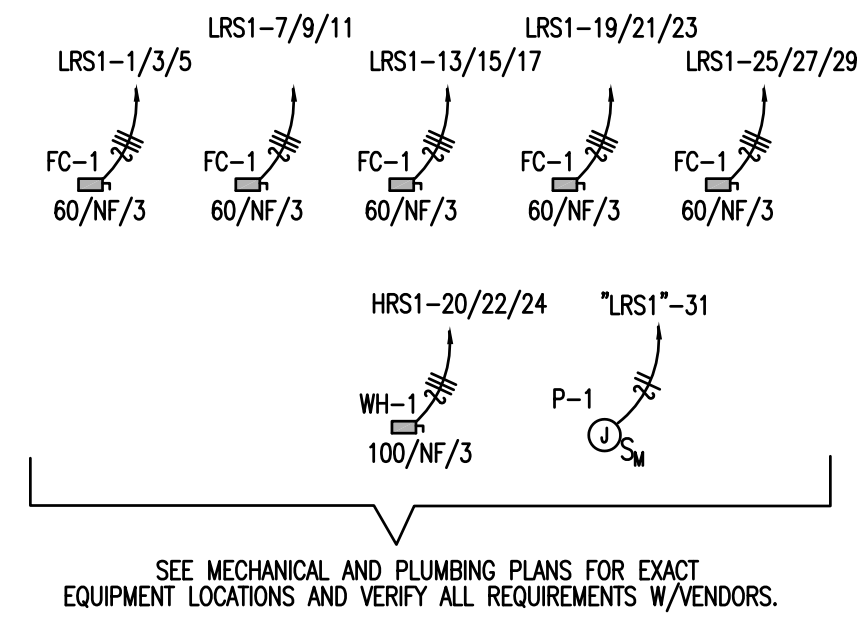
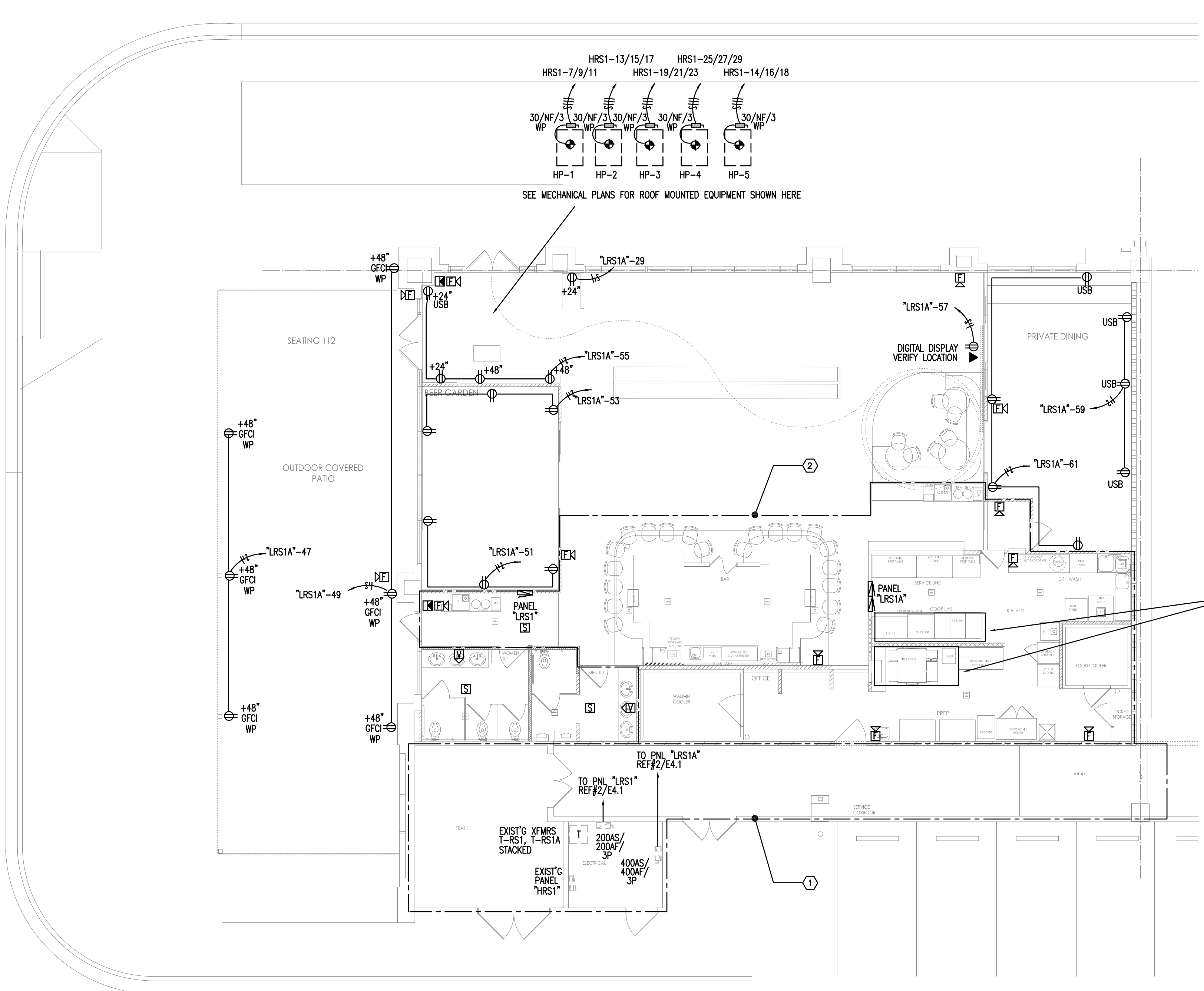
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Sheet Title:
FLOOR PLAN -
LIGHTING

of
Sheet No:

E1.1



1 FLOOR PLAN - LIGHTING
 SCALE 1/8" = 1'-0"

- KEYED NOTES - DENOTED BY** #
- EXISTING LIGHTING AND POWER THIS AREA PROVIDED UNDER SHELL DESIGN TO REMAIN.
 - POWER AND DATA THIS AREA SHOWN ON ENLARGED KITCHEN PLAN ON SHEET E2.2.

- POWER AND LV PLAN - GENERAL NOTES**
- CONTRACTOR SHALL REFER TO KITCHEN EQUIPMENT VENDOR PLANS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR ALL KITCHEN EQUIPMENT.
 - ALL RECEPTACLES IN KITCHEN SHALL BE PROVIDED WITH GROUND FAULT CIRCUIT INTERRUPTING FEATURE AS REQUIRED BY CODE.
 - EXHAUST HOOD, MAKE-UP AIR UNIT, WALK IN COOLER AND HVAC UNITS ARE TO COORDINATED WITH VENDOR REQUIREMENTS. FIELD VERIFY ALL CONDITIONS.
 - FIRE ALARM DEVICES TO BE COMPATIBLE WITH EXISTING SHELL BUILDING FIRE ALARM CONTROL PANEL LOCATED IN ROOM 1B-E20. REFER TO FA RISER ON SHEET E4.1.

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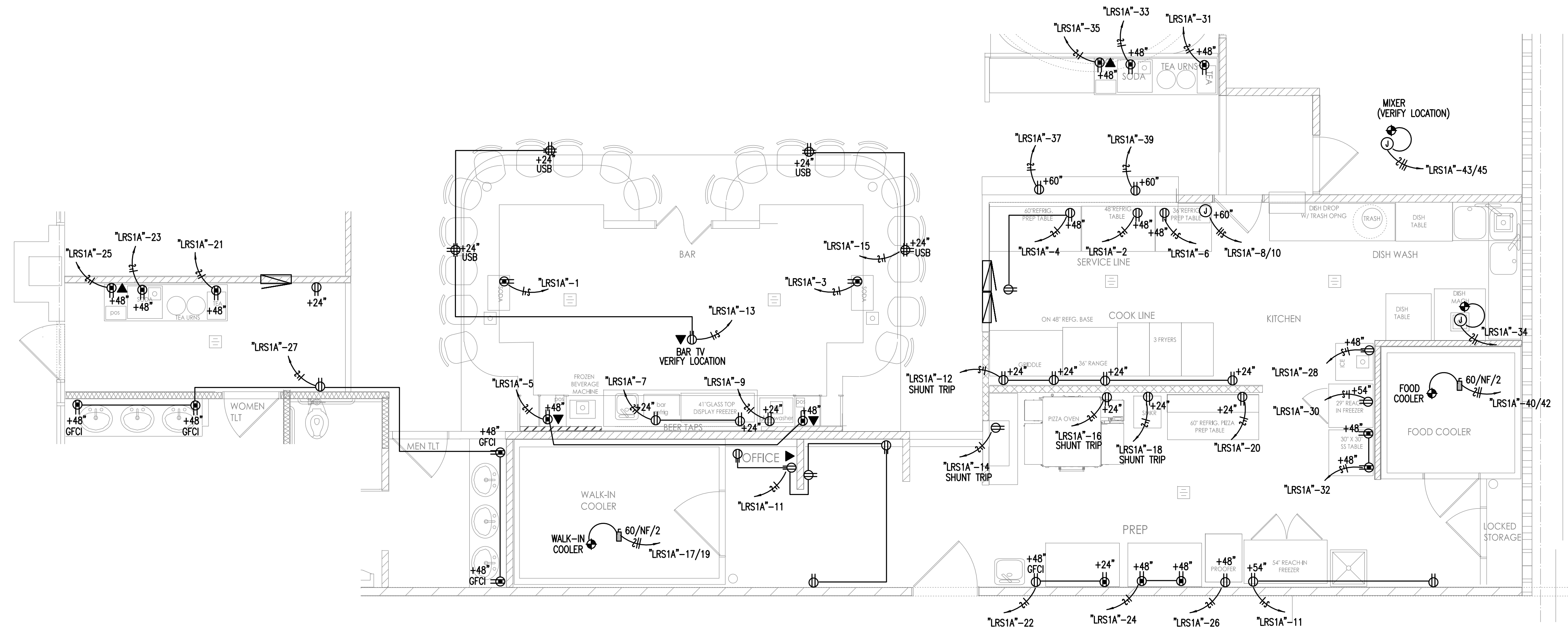
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 HW24-821

Date:
 03/18/25

Sheet Title:
**FLOOR PLAN
 -POWER**

of
 Sheet No:

E2.1



1 ENLARGED KITCHEN PLAN - ELECTRICAL
 SCALE 1/4" = 1'-0"

POWER PLAN - GENERAL NOTES

- A. CONTRACTOR SHALL REFER TO KITCHEN EQUIPMENT VENDOR PLANS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR ALL KITCHEN EQUIPMENT.
- B. ALL RECEPTACLES IN KITCHEN SHALL BE PROVIDED WITH GROUND FAULT CIRCUIT INTERRUPTING FEATURE AS REQUIRED BY CODE.
- C. EXHAUST HOOD, MAKE-UP AIR UNIT, WALK-IN COOLER AND HVAC UNITS ARE TO COORDINATED WITH VENDOR REQUIREMENTS. CONNECT EXISTING EQUIPMENT BEING REUSED TO NEW CIRCUITS AS INDICATED. FIELD VERIFY ALL CONDITIONS.

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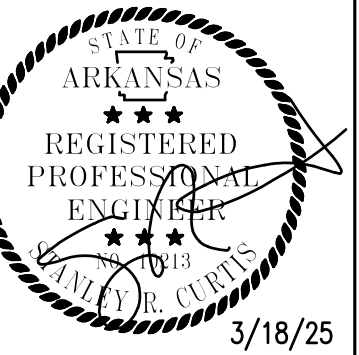
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Sheet Title:
 ENLARGED
 KITCHEN ELECT
 PLAN

of
 Sheet No:

E2.2



LUMINAIRE SCHEDULE

TYPE	MANUFACTURER/DESCRIPTION	VOLTAGE	LAMPS		MOUNTING
			NUMBER	TYPE	
A	76" TALL DECORATIVE FLOOR LAMP. ELK #D3226-ELK	120	-	9W MED BASE LED	FLOOR MOUNED COORD W/SEATING
B	6" SQUARE CYLINDER MOUNTED OVER TABLES GOTHAM LIGHTING #V06SQCYL-SC-15LM-30K-80CRI-WD-DARK-MVOLT-NLIGHT-L7-JBX-P5 (TRIMC)(TRIM F)(CYLINDER F)	120	-	15W 3000K LED	PENDANT MOUNTED SEE ARCH ELEVATIONS
C	38" WALL SCONCE ELK #002-TS-LED	120	-	12W CTBS	WALL MOUNTED SEE ARCH ELEVATIONS
D	MICRO CYLINDER SUSPEND OVER BAR BETA CALCO #MICYL2P24-CR90-CTA30-BA45-V1-DA01-FA28-CF47-FB59-HLA03	120	-	16W 3000K LED	PENDANT MOUNTED SEE ARCH ELEVATIONS
E	6" DOWNLIGHT LITHONIA #V04-D-20LM-30K-80CRI-MD-MINI-MVOLT-NLIGHT-NCH-P-X-X-X	120	-	15W 3000K LED	RECESSED CEILING
EM	EMERGENCY BATTERY BACKUP EMERGENCY EGRESS LIGHT LITHONIA #CU2	120	-	INCLUDED	WALL MOUNT AT 7'6"
EMW	EMERGENCY BATTERY BACKUP EXTERIOR EGRESS LIGHT LITHONIA #EU2C-WET	120	-	INCLUDED	WALL MOUNT OVER EXIT
F	TABLE LAMP, COORD MOUNTING WITH ARCH/LTG CONSULTANT LIGHTOLOGY #ZFF1267025-FINISH	120	-	3W LED CTBS	TABLE TOP LAMP
G	RECESSED 2X2 FLAT PANEL LED LITHONIA LIGHTING #CPX-2X2-3200-80CRI-40K-SWL-MIN10ZT-MVOLT	120	-	31W 4000K LED	RECESSED GRID CEILING
L	TAPE LIGHT IN VARIOUS LENGTHS DIODE LIGHTING #D1-24V-SE-NBL2-27-24-MTCH AL-TUC-010 F+F	120	-	7W/LF LED TAPE LT	SEE ARCH. ELEVATIONS
M	WALL MOUNTED 36" VANITY FIXTURE ELK #8147-CH-FA	120	-	38W LED	SURFACE WALL MOUNTED SEE ARCH. ELEVATIONS
N	TAPE LIGHT IN VARIOUS LENGTHS DIODE LIGHTING #D1-24V-BLBS1-24-8-545-BL-PD-3M-010 FA	120	-	2W/LF LED TAPE LT	SURFACE CEILING MOUNTED
O	DURALED CABLE WITH LAMP IN LENGTHS AS SHOWN TARGETTI # DLD-CL-MD-24-BK-X-X-X	120	-	10W/FT LED	COORD. W/ARCH
X1	COMBO LED EXIT SIGN - VERIFY RED OR GREEN W/OWNER LITHONIA #EXEMDCC-X-S-B-B	120	1	5W LED INCLUDED	WALL MOUNTED

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E3.1



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 Bentonville, Arkansas



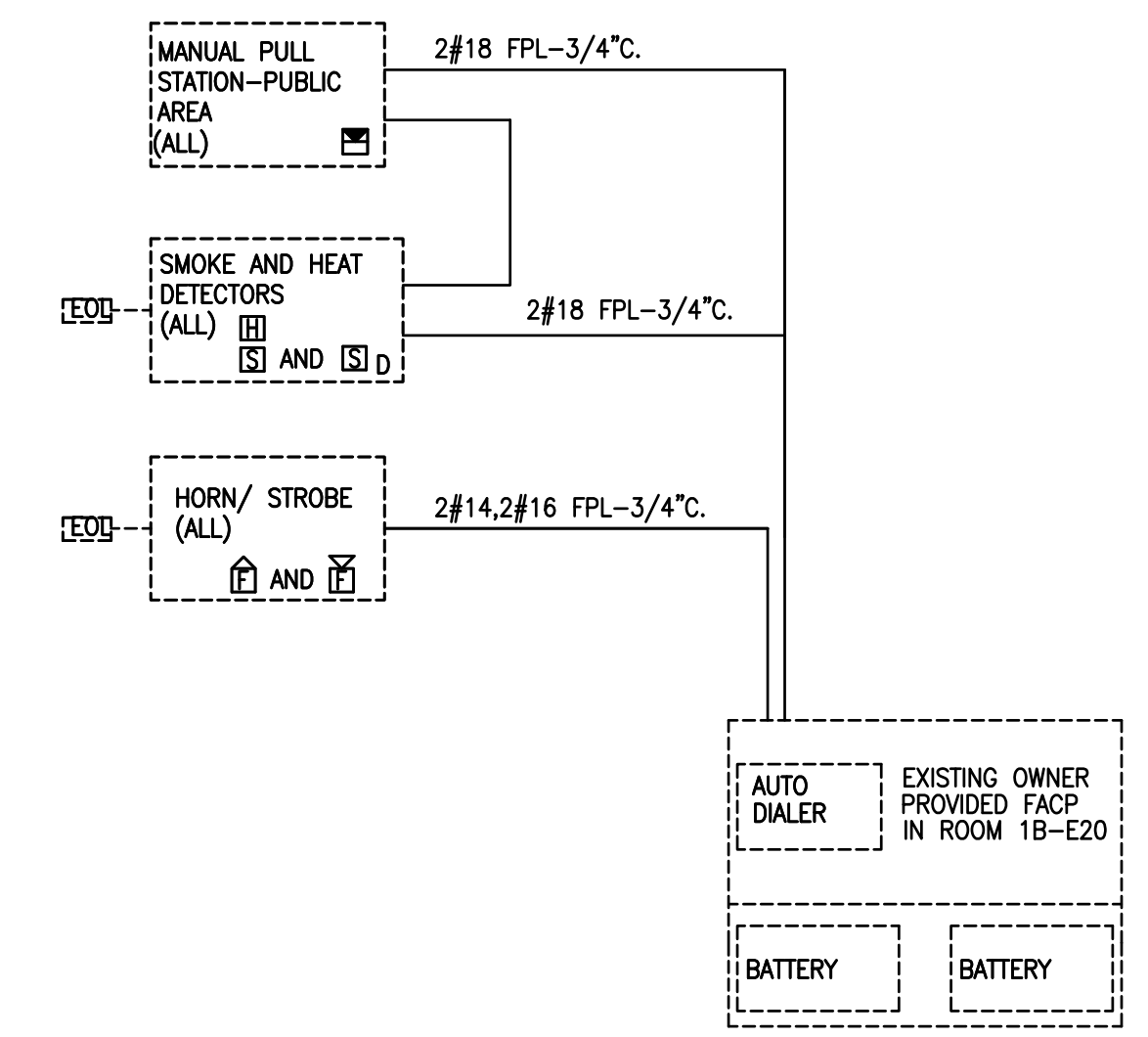
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Project No:
HW24-821

Date:
03/18/25

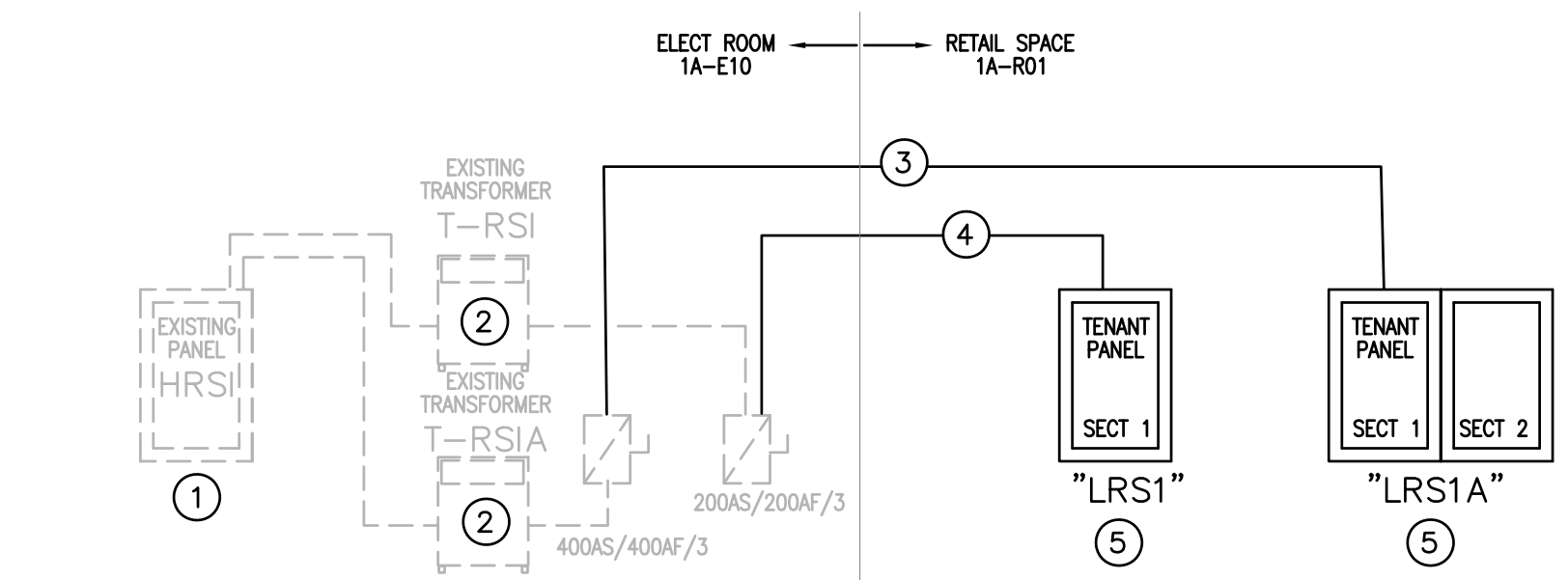
Sheet Title:
ELECTRICAL
RISERS

of _____
 Sheet No:
E4.1



1 FIRE ALARM SYSTEM RISER DIAGRAM
 SCALE NONE

- NOTES:**
1. FPL MEANS FIRE PROTECTION POWER LIMITED
 2. CL-2 MEANS LOW VOLTAGE WIRING LESS THAN 50 VOLTS
 3. (EACH) MEANS EACH DEVICE IN THE SYSTEM
 4. (ALL) MEANS ALL DEVICES IN THE SYSTEM POWER LIMITED.



2 ELECTRICAL SERVICE RISER DIAGRAM
 SCALE NONE

- POWER RISER KEYED NOTES:**
1. EXISTING RETAIL BUILDING SHELL 277Y/480V PANEL TO BE REWORKED AS INDICATED ON PANEL SCHEDULE SHEET E4.2. PANEL IS FED FROM 350A/3P CIRCUIT BREAKER IN EXISTING PANEL "RMDP".
 2. EXISTING TRANSFORMERS T-RS1 AND T-RS1A STACKED ON WALL ADJACENT TO EXISTING PANEL "HRS1". 75KVA TRANSFORMER T-RS1 FEEDS 200AS/200AF/3 FUSED DISCONNECT SWITCH AND 112.5 KVA TRANSFORMER T-RS1A FEEDS 400AS/400AF/3 FUSED DISCONNECT SWITCH THIS ROOM.
 3. EXTEND 2 SETS: (4) #3/0 AND (1) #3 GROUND IN 2" CONDUIT EACH FROM 400A DISCONNECT SWITCH TO NEW TENANT PANEL "T-RS1A" IN FLYWAY TENANT SPACE. SEE SHEET E2.1 FOR LOCATION.
 4. EXTEND (4) #3/0 AND (1) #3 GROUND IN 2" CONDUIT FROM 200A DISCONNECT SWITCH TO NEW TENANT PANEL "T-RS1" IN FLYWAY TENANT SPACE. SEE SHEET E2.1 FOR LOCATION.
 5. NEW TENANT PANELS FOR FLYWAY TAPROOM. SEE LOCATIONS ON SHEET E2.1. SEE SCHEDULES ON SHEET E4.2

