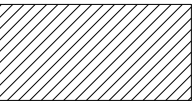
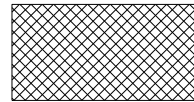
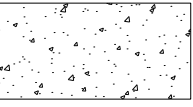
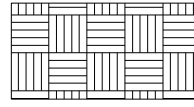
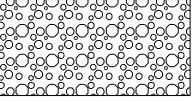
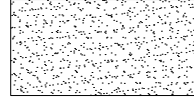
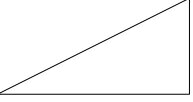
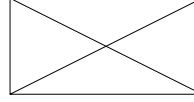
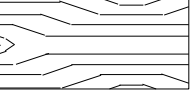
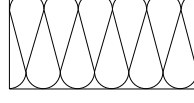

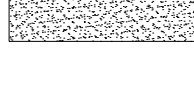

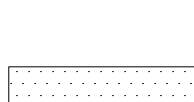




GENERAL NOTES:	
1.	ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL LOCAL LAWS, CODES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION. IN CASE OF CONFLICT BETWEEN REQUIREMENTS, THE MOST RESTRICTIVE SHALL APPLY.
2.	BIDDING CONTRACTORS SHALL VISIT THE JOBSITE AND VERIFY ALL FIELD CONDITIONS AS NECESSARY TO COMPLETE THE WORK AND COMPARE TO APPLICABLE CONSTRUCTION DOCUMENTS. REPORT DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONSTRUCTION DOCUMENTS TO ARCHITECT PRIOR TO SUBMITTING BID. FAILURE TO REPORT DISCREPANCIES DOES NOT RELIEVE CONTRACTOR OF THE RESPONSIBILITY TO PROVIDE FINISHED PRODUCT TO THE INTENT OF THE CONSTRUCTION DOCUMENTS AND SHALL NOT RESULT IN ADDITIONAL TIME OR COMPENSATION OVER AND ABOVE THE ESTABLISHED CONTRACT AMOUNTS.
3.	THE CONTRACTOR SHALL ADHERE TO THE CONSTRUCTION DOCUMENTS. SHOULD ANY ERROR OR INCONSISTENCY APPEAR REGARDING THE MEANING OR INTENT OF THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY REPORT SAME TO THE ARCHITECT WHO WILL MAKE ANY NECESSARY CLARIFICATION, OR REVISIONS AS REQUIRED.
4.	CONTRACTOR SHALL OBTAIN AND PAY FOR ALL CONSTRUCTION AND DEVELOPMENT RELATED FEES, INCLUDING, BUT NOT LIMITED TO: CONSTRUCTION PERMIT FEES, HEALTH DEPARTMENT FEES, ETC. THE SELECTED QUALIFIED BIDDER WILL BE REQUIRED TO PROVIDE A COMPLETE LINE-ITEM LIST OF ALL FEES INCLUDED IN BID BASED ON APPROPRIATE SCHEDULES.
5.	CONTRACTOR AND HIS SUBCONTRACTORS AND AGENTS SHALL HOLD ALL APPLICABLE AND REQUIRED LICENSES FOR THE JURISDICTION WHERE THE WORK WILL BE PERFORMED.
6.	CONTRACTOR SHALL ACQUAINT HIMSELF WITH ALL LANDLORD/DEVELOPER REQUIREMENTS AND SHALL COMPLY FULLY WITH SUCH.
7.	TO ENSURE COORDINATION BETWEEN DISCIPLINES, CONTRACTOR SHALL SUPPLY EACH SUBCONTRACTOR OR AGENT WITH A FULL SET OF CONSTRUCTION DOCUMENTS FOR THEIR USE.
8.	MAINTAIN SAFE EXITING AND APPROPRIATE FIRE PREVENTION PROCEDURES AT ALL TIMES DURING THE CONSTRUCTION PROCESS.
9.	ALL WORK LISTED, SHOWN OR IMPLIED IN THE CONSTRUCTION DOCUMENTS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR EXCEPT WHERE OTHERWISE NOTED. THE CONTRACTOR SHALL CLOSELY COORDINATE HIS WORK WITH THAT OF OTHER CONTRACTORS AND VENDORS TO ASSURE THAT ALL SCHEDULES ARE MET AND THAT ALL WORK IS DONE IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.
10.	CONTRACTOR SHALL PROTECT THE EXISTING CONSTRUCTION AND REPAIR ANY DAMAGE OCCURRING AS A RESULT OF THEIR OPERATIONS AT NO COST TO THE TENANT OR LANDLORD. CONTRACTOR SHALL ALSO ENSURE THAT THEIR OPERATIONS DO NOT INTERFERE WITH THE OPERATION OF THE REMAINDER OF THE DEVELOPMENT/MALL. BARRIERS TO NOISE, DUST AND SECURITY BETWEEN CONSTRUCTION AREAS AND PUBLIC AREAS SHALL BE ERECTED, MAINTAINED AND REMOVED PER THE DEVELOPMENT CRITERIA BY THE CONTRACTOR.
11.	CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION OF WORK, MATERIALS, FIXTURES, ETC. FROM LOSS, DAMAGE, FIRE, THEFT, ETC.
12.	ALL AREAS OF EXISTING LANDSCAPING DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.
13.	CONTRACTOR SHALL VERIFY AND PROVIDE ALL UTILITY CONNECTIONS (PLUMBING, ELECTRICAL, GAS, ETC. IN THE FORM OF SUPPLY AND DRAIN PIPES, CONDUIT AND PULLING WIRES, ETC.) RELATED TO EQUIPMENT AND APPLIANCES. COORDINATE WITH KITCHEN SUPPLIER.
14.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND FITTING NECESSARY TO ACHIEVE THE INTENT OF THE CONSTRUCTION DOCUMENTS
15.	NEW WORK AT EXISTING CONDITIONS SHALL ALIGN WITH AND MATCH EXISTING WORK EXCEPT WHERE OTHERWISE DIMENSIONED OR DETAILED.
16.	CONTRACTOR SHALL NEVER SCALE DRAWINGS. LOCATIONS FOR ALL PARTITIONS, WALLS, CEILINGS, ETC. WILL BE DETERMINED BY DIMENSIONS ON THE DRAWINGS. ANY AREA OF THE PLANS MISSING REQUIRED DIMENSIONS MUST BE REPORTED TO THE ARCHITECT IMMEDIATELY.
17.	DIMENSIONS ARE TO FACE OF FINISHED MATERIAL UNLESS NOTED OTHERWISE.
18.	CONTRACTOR SHALL COORDINATE THE DELIVERY AND STORAGE OF EQUIPMENT WITH EQUIPMENT SUPPLIER AND TAKE MEASURES TO ENSURE THE PROTECTION OF EQUIPMENT FROM DAMAGE DURING THE CONSTRUCTION PHASE PRIOR TO AND AFTER EQUIPMENT INSTALLATION.
19.	CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES IN THE FIELD AND PROVIDE ADDITIONAL UTILITY SERVICE AS REQUIRED TO MEET THE SCOPE AND INTENT OF THE WORK.
20.	VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION START. ANY AND ALL LOSSES OF BUSINESS TO THE LANDLORD, DEVELOPER OR OTHER PARTY RESULTING FROM DAMAGE CAUSED BY CONTRACTOR OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED/REPLACED IMMEDIATELY AT THE SOLE EXPENSE OF THE CONTRACTOR.
21.	CONTRACTOR SHALL PROVIDE DRAFT/FIRE STOPS, AS REQ'D BY GOVERNING CODES AND JURISDICTIONS. NEW AND EXISTING PENETRATIONS IN FIRE-RATED PARTITIONS OR DRAFT STOPS SHALL BE PROTECTED BY A SYSTEM LISTED BY A RECOGNIZED TESTING AGENCY.
22.	PROVIDE FIRE EXTINGUISHERS PER APPLICABLE CODES. VERIFY FINAL LOCATION WITH A.H.J.
23.	CONTRACTOR SHALL COORDINATE ALL WORK THAT AFFECTS THE ROOF WITH THE LANDLORD AND, IF REQUIRED BY THE LANDLORD, HIRE THE SHELL ROOFING SUBCONTRACTOR TO PERFORM ALL WORK OF PENETRATING THE ROOF FOR ANY AND ALL ITEMS ADDED ON THE ROOF AND PATCHING/SEALING OF SUCH PENETRATIONS DURING AND AFTER EQUIPMENT INSTALLATION.
24.	CONTRACTOR SHALL REVIEW THE DIMENSIONS OF ALL EQUIPMENT IN THE PROJECT REGARDLESS OF THE SOURCE AND COORDINATE ACCESS TO THE SPACE AND VERIFY CLEAR FLOOR SPACE IS PROVIDED AS REQUIRED TO ENSURE EASE OF INSTALLATION.
25.	CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER CONTRACTORS AND VENDORS FURNISHING LABOR, MATERIALS, ETC. ON THE PROJECT TO ENSURE THE WORK AS A WHOLE SHALL BE EXECUTED AND COMPLETED WITHOUT CONFLICT OR DELAY.
26.	CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF ANY AND ALL DRAWINGS INCLUDING ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT PRIOR TO EXECUTION OF WORK.
27.	CONTRACTOR TO VERIFY THAT EQUIPMENT HAS APPROPRIATE CLEARANCES DURING INSTALLATION INCLUDING MAINTENANCE CLEARANCES; VERIFY THOSE WHICH INVOLVE CONFLICTING UTILITIES.
28.	PROVIDE AND INSTALL ALL NECESSARY INWALL FRAMING REQUIRED TO CARRY SHELF, HANGING, AND VALANCE LOADS, RAILINGS, ETC. AS PER PLANS.
29.	PROVIDE SILICONE SEALANT AT ALL JOINTS AND INTERFACES OF ALL COUNTERTOPS, EQUIPMENT, BOOTHS, WALLS, ETC.
30.	ALL JOINTS AND OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED IN ACCORDANCE WITH THE BUILDING CODE AND ENERGY CODE.
31.	ALL WOOD IN CONTACT WITH CONCRETE MASONRY SHALL BE PRESSURE TREATED, MOISTURE RESISTANT WOOD.
32.	ALL WOOD TRIM OR OTHER PREFINISHED TRIM ITEMS SHALL BE CUT TO FIT AND RAW, EXPOSED SURFACES SHALL BE FINISHED TO MATCH ADJACENT FINISH MATERIALS.
33.	CONTRACTOR SHALL PROVIDE FIRE-RETARDANT WOOD BLOCKING, BRACING AND NAILERS AS REQ'D FOR MILLWORK, EQUIPMENT, SHELVING, ETC. COORDINATE WITH TENANT.
34.	MILLWORK BY OTHERS, CONTRACTOR TO COORDINATE PLUMBING AND ELECTRICAL WITH MILLWORK SUPPLIER
35.	ALL SURFACES WHICH ARE INDICATED TO BE FINISHED OR PAINTED SHALL BE PREPARED, SANDED, TREATED, AND PRIMED IN STRICT ACCORDANCE WITH COMMERCIAL QUALITY STANDARDS, AND IN STRICT ACCORDANCE WITH FINISH MATERIAL MANUFACTURER'S INSTRUCTIONS
36.	ALL FINISH SURFACES PENETRATED SUCH AS CEILING TILES AND MILLWORK COUNTERS FOR ANY REASON MUST HAVE AN ASSOCIATED GROMMET APPROVED FOR THAT USE.
37.	PROVIDE OCCUPANCY SIGN IN A CONSPICUOUS LOCATION IN ACCORDANCE WITH STATE & LOCAL CODES. DESIGN TO BE APPROVED BY ARCHITECT.
38.	APPLICATION OF MATERIAL OR EQUIPMENT INSTALLED BY OTHERS CONSTITUTES ACCEPTANCE OF THAT WORK, AND ASSUMPTION OF THE RESPONSIBILITY FOR SATISFACTORY INSTALLATION AND PERFORMANCE.
39.	CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING TO STRUCTURE FOR INTERIOR PARTITIONS, SOFFITS, CEILINGS, PLATFORMS, ETC. WHETHER SHOWN ON THE DRAWINGS OR NOT.

<h1>IMAGE STUDIOS</h1> <h2>840-D NW BLVD</h2> <h2>LEE'S SUMMIT, MO</h2>			
<h3>MATERIALS LEGEND:</h3>			
BRICK		CONCRETE BLOCK	
CONCRETE		EARTH	
GRAVEL		SAND	
WOOD BLOCKING		DIMENSIONAL LUMBER	
FINISH WOOD		BATT INSULATION	
CEILING TILE		GYPSUM BOARD	
PLYWOOD		RIGID INSULATION	
STEEL		METAL STUD WALL	
<h3>STANDARD ABBREVIATIONS:</h3>			
AFF Above Finished ACT Floor ACOUST Acoustical Ceiling Tile ADJ Adjustable AHJ Authority Having Jurisdiction ALUM Aluminum AMB Air-moisture barrier ANC Anchor ANOD Anodized ARCH Architectural ASSY Assembly BD Board BTG Below Finished Grade BFF Below Finished Floor BLDG Building BUKG Blocking BM Beam BOT Bottom BRG Barring BS Both Sides BTWN Between CAB Cabinet CJ Control Joint CL Center Line CLG Ceiling CLO Closet CLR Clear CMU Concrete Masonry Unit COL Column CONC Concrete CONT Continuous CONSTR Construction, Construct CT Ceramic Tile DB Double DEMO Demolition DIA Diameter DN Down DR Door DS Downspout DTL Detail DWG Drawing EA Each EIFS Exterior Insulation and Finish System EF Exhaust Fan EJ Expansion Joint EL Elevation ELEC Electrical ELEV Elevator EQ Equal EQUIP Equipment EW Each Way EWC Electric Water Cooler EXIST Existing EXP Expansion EXT Exterior FBD Fiber Board	FBO Floor Drain FE Fire Extinguisher FEC Fire Extinguisher & Cabinet FFE Fire Extinguisher, Fumes & Equipment FIN Finish FLUOR Fluorescent FLOOR Floor FLR Fiberglass Reinforced FLR Plastic FRT Fire Retardant Treated FS Floor Sirk FSE Food Service Equipment FT Feet FV Field Verify GAGE Gauge GALV Galvanized GC General Contractor GL Glass GYP BD Gypsum Board HM Hollow Core HC Hollow Metal HT Height HWND Hardwood HR Hour HVAC Heating, Ventilation and Air Conditioning IN Inch INSUL Insulation, Insulate INT Interior JST Joist LAM Laminated LAV Lavatory LLH Long Leg Horizontal LLV Long Leg Vertical MANUF Manufacturer MAX Maximum MECH Mechanical MEP Mechanical, Electrical, and Plumbing MILL Millwork MIN Minimum MISC Miscellaneous MLD Molding MO Masonry Opening MTD Mounted MTL Metal MUL Mullion NIC Not In Contract NOM Nominal RTS Not To Scale OC On Center OD Outside Diameter OFCI Owner Furnished, Contractor Installed OPT Opening OTS Open to Structure FBD Particle Board	FLD Floor Drain FE Fire Extinguisher FEC Fire Extinguisher & Cabinet FFE Fire Extinguisher, Fumes & Equipment FIN Finish FLUOR Fluorescent FLOOR Floor FLR Fiberglass Reinforced FLR Plastic FRT Fire Retardant Treated FS Floor Sirk FSE Food Service Equipment FT Feet FV Field Verify GAGE Gauge GALV Galvanized GC General Contractor GL Glass GYP BD Gypsum Board HM Hollow Core HC Hollow Metal HT Height HWND Hardwood HR Hour HVAC Heating, Ventilation and Air Conditioning IN Inch INSUL Insulation, Insulate INT Interior JST Joist LAM Laminated LAV Lavatory LLH Long Leg Horizontal LLV Long Leg Vertical MANUF Manufacturer MAX Maximum MECH Mechanical MEP Mechanical, Electrical, and Plumbing MILL Millwork MIN Minimum MISC Miscellaneous MLD Molding MO Masonry Opening MTD Mounted MTL Metal MUL Mullion NIC Not In Contract NOM Nominal RTS Not To Scale OC On Center OD Outside Diameter OFCI Owner Furnished, Contractor Installed OPT Opening OTS Open to Structure FBD Particle Board	PL Plank PLAM Plastic Laminate PLYWD Plywood PLUMB Plumbing PNL Panel PR Preparation PREFIN Prefinished PTD Painted QT Quarry Tile QTY Quantity RA Return Air RAD Radius RCP Reflected Ceiling Plan REF Reference RECPT Receptacle REFL Reflected, Reflecting REINF Reinforced, Reinforcing RELOC Relocate REQD Required REV Revision, Reversed RO Rough Opening RTU Roof Top Unit SC Solid Core SF Square Foot SHT Sheet SHTH Sheathing SS Stainless Steel SCHED Schedule SIM Similar SM Sheet Metal SPEC'D Specified STD Standard STL Steel STRUC Structural SUSP Suspended TBD To be determined TEMP Tempered TYP Typical VCT Vinyl Composition Tile VERT Vertical VWC Vinyl Wall Covering WNF Unless Noted UNO Otherwise W With WCO Without Water Closet WC Water Closet WD Wood WH Water Heater WDW Window WP Waterproofing or Waterproof WSCT Wainscot WT Weight WWF Welded Wire Fabric

CODE DATA:

APPLICABLE CODES: ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH THE PROVISIONS OF THE SPECIFICATIONS AND DRAWINGS, AND SHALL SATISFY ALL APPLICABLE CODES, ORDINANCES AND REGULATIONS OF ALL GOVERNING BODIES INVOLVED. ALL PERMITS AND LICENSES NECESSARY FOR THE PROPER EXECUTION OF THE WORK SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR INVOLVED. APPLICABLE CODES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

APPLICABLE CODES:

BUILDING & STRUCTURAL:	INTERNATIONAL BUILDING CODE	2018
PLUMBING:	INTERNATIONAL PLUMBING CODE	2018
MECHANICAL:	INTERNATIONAL MECHANICAL CODE	2018
ELECTRICAL:	NATIONAL ELECTRICAL CODE	2017
ENERGY:	INTERNATIONAL ENERGY CODE	2018
FUEL GAS:	INTERNATIONAL FUEL GAS CODE	2018
FIRE/LIFE SAFETY:	INTERNATIONAL FIRE CODE	2018
ACCESSIBILITY CODE:	ICC/ANSI A117.1	2009

OCCUPANCY TYPE: (B) BUSINESS
 CONSTRUCTION TYPE: IIB (NON COMBUSTIBLE) - SPRINKLED PER NFPA 13
 TOTAL GROSS AREA = 8,053 S.F. EXISTING

OCCUPANT LOAD:
 PER IBC 1004.5: 90 OCCUPANTS/(2 PER SINGLE STUDIO, 4 PER DOUBLE STUDIO)

EXIT CALCULATION:
 OCC. LOAD = 2 REQUIRED EXIT PER IBC 402.4.2:
 COMMON PATH OF TRAVEL = 35'-9"

REQUIRED EGRESS WIDTH (80 X 0.15) = 13.5' 2 EXITS PROVIDED = 70'

RESTROOM FIXTURE COUNT: 1 PER 25 FOR FIRST 50, 1 PER 50 AFTER
 LAVATORY FIXTURE COUNT: 1 PER 40 FOR FIRST 60

WATER CLOSETS		URINAL		LAVATORY	
REQ'D	PROVIDED	REQ'D	PROVIDED	REQ'D	PROVIDED
3	3	0	0	2	3

UNISEX

NOTE: SPRINKLER SYSTEM IS DESIGN BUILT BY GENERAL CONTRACTOR. ALL FIRE SPRINKLER DRAWINGS BY SEPARATE PERMIT AS A DEFERRED SUBMITTAL

NOTE: FIRE ALARMS WILL BE A DEFERRED SUBMITTAL

* PER IBC 2902.1.2 SINGLE USER TOILET FACILITIES SHALL CONTRIBUTE TOWARD THE TOTAL NUMBER OF REQUIRED PLUMBING FIXTURES AND SHALL BE IDENTIFIED FOR USE BY EITHER SEX.

STANDARD ABBREVIATIONS:

AFB	Above Finished Floor	FBO	Furnished by Others	PL	Plate
ACT	Acoustical Ceiling Tile	FD	Floor Drain	PLAM	Plastic Laminare
ACCUST	Acoustical	FE	Fire Extinguisher	PLYWOOD	Plywood
ADJ	Adjustable	FEC	Fire Extinguisher Cabinet	PLUMB	Plumbing
AHJ	Authority Having Jurisdiction	FFE	Furniture, Fixtures & Equipment	PNL	Panel
ALUM	Aluminum	FIN	Finish	PR	Par
AMB	Air-moisture barrier	FLOR	Fluorescent Floor	PREP	Preparation
ANC	Anchor	FLR	Fiberglass Reinforced Plastic	PTD	Painted
ANOD	Anodized	FRT	Fire Retardant Treated Floor Sirk	QT	Quarry Tile
ARCH	Architect(ural)	FSE	Food Service Equipment	QTY	Quantity
ASSY	Assembly	FV	Field Verify	RA	Return Air
BD	Board	GA	Gage	RAD	Radius
BFG	Below Finished Grade	GALV	Galvanized	RCP	Reflected Ceiling Plan
BFF	Below Finished Floor	GC	General Contractor	REF	Reference
BLDG	Building	GL	Glass	RECPT	Receptacle
BLKG	Between	HM	Hollow Metal	REFL	Reflected, Reflecting
BM	Beam	HT	Height	REIN	Reinforced, Reinforcing
BOT	Bottom	HDWD	Hardwood	RELOC	Relocate
BRG	Bearing	HR	Hour	RECD	Required
BS	Both Sides	HVAC	Heating, Ventilation and Air Conditioning	REV	Revision, Reversed
BTWN	Between	IN	Insulation, Insulate	RO	Rough Opening
CAB	Cabinet	INSUL	Insulation, Insulate	RTU	Roof Top Unit
CJ	Control Joint	INT	Interior	SC	Solid Core
CL	Center Line	JST	Joist	SF	Square Foot
CLG	Ceiling	LAM	Laminated	SHT	Sheet
CLO	Closet	LAV	Lavatory	SHTH	Sheathing
CLR	Clear	LH	Long Leg Horizontal	SHTS	Stainless Steel
CMU	Concrete Masonry Unit	LV	Long Leg Vertical	SCHD	Schedule
COL	Column	MANUF	Manufacturer	SM	Similar
CONC	Concrete	MAX	Maximum	SM	Sheet Metal
CONT	Continuous	MECH	Mechanical	SPEED	Spaced
CONIST	Construction, Construct	MEP	Mechanical, Electrical, and Plumbing	STD	Standard
CT	Ceramic Tile	MILL	Millwork	STL	Steel
DBL	Double	MIN	Minimum	STRUCT	Structural
DEMO	Demolition	MISC	Miscellaneous	SUSP	Suspended
DIA	Diameter	MLD	Molding	TBD	To be determined
DN	Down	MO	Masonry Opening	TEMP	Tempered
DR	Door	MTD	Mounted	T4B	Top and Bottom
DS	Downspout	MTL	Metal	Typ	Typical
DTL	Detail	MUL	Mullion	VCT	Vinyl Composition Tile
DWG	Drawing	NIC	Not In Contract	VERT	Vertical
EA	Each	NOM	Normal	VWC	Vinyl Wall
EIFS	Exterior Insulation and Finish System	NTS	Not To Scale	W	Covering
EF	Exhaust Fan	OC	On Center	UNO	Unless Noted Otherwise
EJ	Expansion Joint	OO	Outside Diameter	W	With
EL	Elevation	OFCI	Owner Furnished, Contractor Installed	WO	Without
ELEC	Electrical	OPNG	Opening	WC	Water Closet
ELV	Elevator	OPT	Opening	WO	Wood
EQ	Equal	OTS	Open to Structure	WH	Water Heater
EQUIP	Equipment	FBD	Particulate Board	WOW	Welded
EW	Each Way			WP	Waterproofing or Waterproof
EWG	Electric Water Cooler			WSF	Wainscot
EXIST	Existing			WST	Weight
EXP	Expansion			WWT	Welded Wire Fabric
EXT	Exterior				
FBD	Fiber Board				


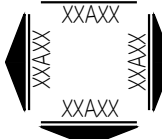


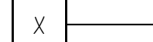
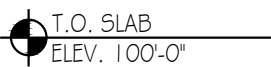

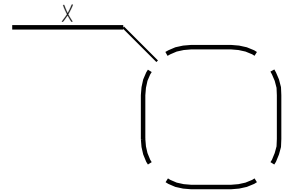

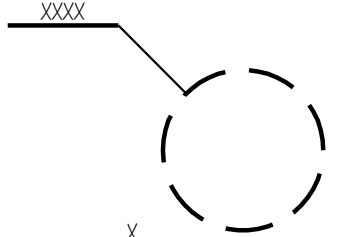




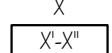

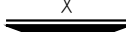
SHEET NUMBERING SYSTEM:

NOTE: DETAIL NUMBERS ARE DETERMINED BY THE BOTTOM RIGHT HAND BOX, PLEASE SEE SAMPLES ABOVE FOR DETERMINING DETAIL NUMBERS

20	16	12	8	4
19	15	11	7	3
18	14	10	6	2
17	13	9	5	1

EXAMPLE DETAIL # 4400X

STANDARD DRAWING SYMBOLS:

	NORTH ARROW INDICATOR		4-WAY ELEVATION TAG
	DRAWING KEYNOTE TAG		COLUMN GRID BUBBLE AND LINE
	WALLTYPE TAG		ELEVATION HEIGHT TAG
	DOOR TAG		DETAIL BOX TAG
	FINISH NOTE TAG		DETAIL CIRCLE TAG
	REVISION TAG		ROOM NAME AND NUMBER TAG
	WINDOW TAG		
	DEMOLITION TAG		
	CEILING MATERIAL AND HEIGHT TAG		
	SECTION CUT TAG		
	ELEVATION TAG		

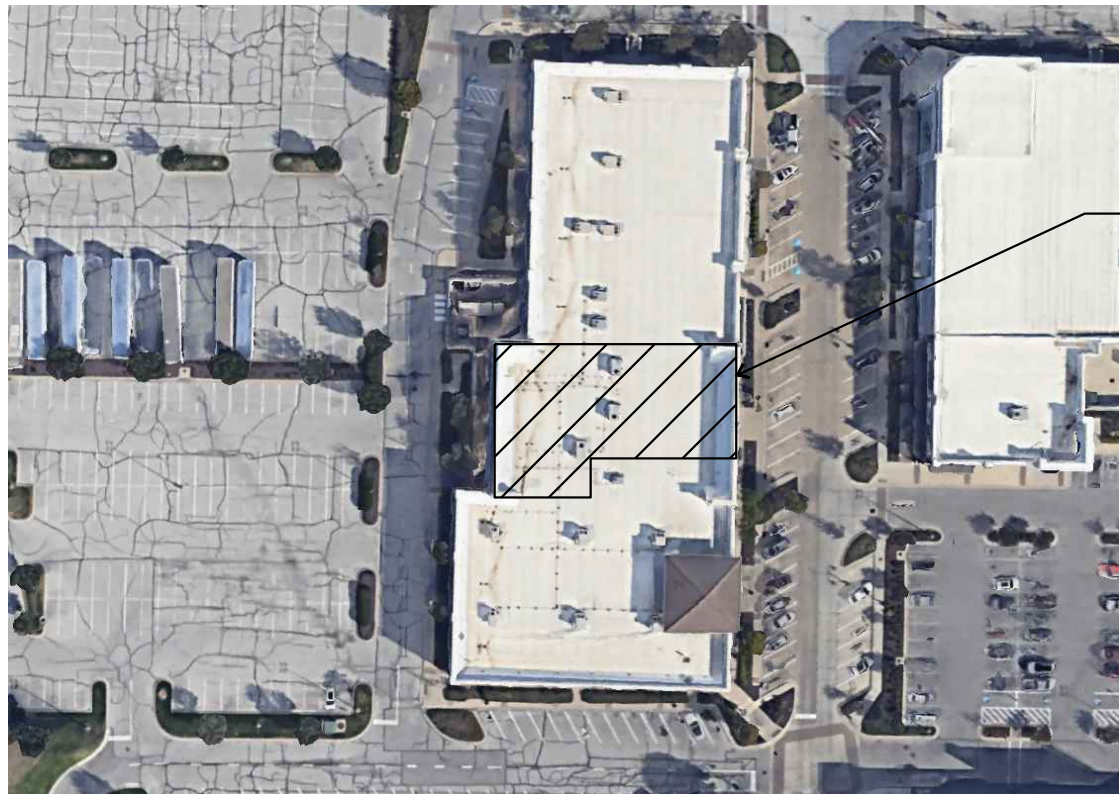
DRAWING INDEX:	
GENERAL:	
A000	COVER SHEET
A002	GENERAL ACCESSIBILITY
A003	INTERIOR ACCESSIBILITY
A004	RESPONSIBILITY SCHEDULE
A005	LIFE SAFETY PLAN
SP100	SPECIFICATIONS
SP101	SPECIFICATIONS
SP102	SPECIFICATIONS
ARCHITECTURAL:	
A100	FLOOR PLAN
A110	FIXTURE, FURNITURE, & MILLWORK PLAN
A120	FINISH FLOOR PLAN
A130	REFLECTED CEILING PLAN
A400	DETAILS
A500	INTERIOR ELEVATIONS
A501	INTERIOR ELEVATIONS
A520	ENLARGED RESTROOM PLAN
A530	ENLARGED BREAK ROOM/LAUNDRY ROOM PLAN
A540	ENLARGED UTILITY/IT ROOM PLAN
A600	DOOR TYPES & SCHEDULES
A610	WALL TYPES & DETAILS
STRUCTURAL:	
S001	GENERAL NOTES & MEZZANINE FRAMING PLAN
S100	ROOF FRAMING PLAN
MEP:	
P100	WASTE & VENT PLAN - WEST
P101	WATER & VENT PLAN - EAST
P200	WATER PLAN - WEST
P201	WATER PLAN - EAST
P300	PLUMBING SCHEDULES & DETAILS
P301	PLUMBING RISER DIAGRAMS
P302	SHAMPOO SINK DETAILS
MP00	MECH. / PLUMB. SPECIFICATION
M100	MECHANICAL PLAN
M101	MECHANICAL PLAN - EAST
M200	MECHANICAL SCHEDULE & DETAILS
M201	MECHANICAL SCHEDULES
M202	DOAS UNIT DETAILS
E1	ELECTRICAL SPECIFICATION
E2.1	ELECTRICAL LIGHTING PLAN - WEST
E2.2	ELECTRICAL LIGHTING PLAN - EAST
E3.1	ELECTRICAL POWER PLAN - WEST
E3.2	ELECTRICAL POWER PLAN - EAST
E4	ELECTRICAL ROOF PLAN & TYPICAL STUDIO PLAN
E5	ELECTRICAL SCHEDULES

PROJECT CONTACTS:		
<u>OWNER:</u>	<u>ARCHITECT:</u>	<u>MEP:</u>
LILY MANTYCH 16356 GODDARD STREET, OVERLAND PARK, KS 66221 T: 913.444.2201	KLOVER ARCHITECTS, INC. 8813 PINROSE LANE, SUITE 400, LENEA, KS 66219 T: 913.649.8181 POC: KARA BEADLESTON	BC ENGINEERS, INC. 5720 REEDER SHAWNEE, KS 66203 T: 913.262.1772 POC: BRIAN QUISSELL

LOCATION MAP:

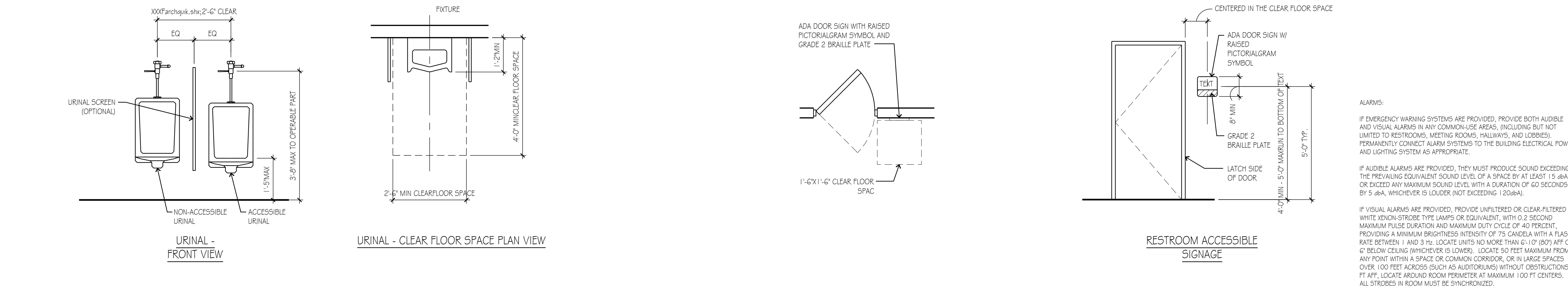
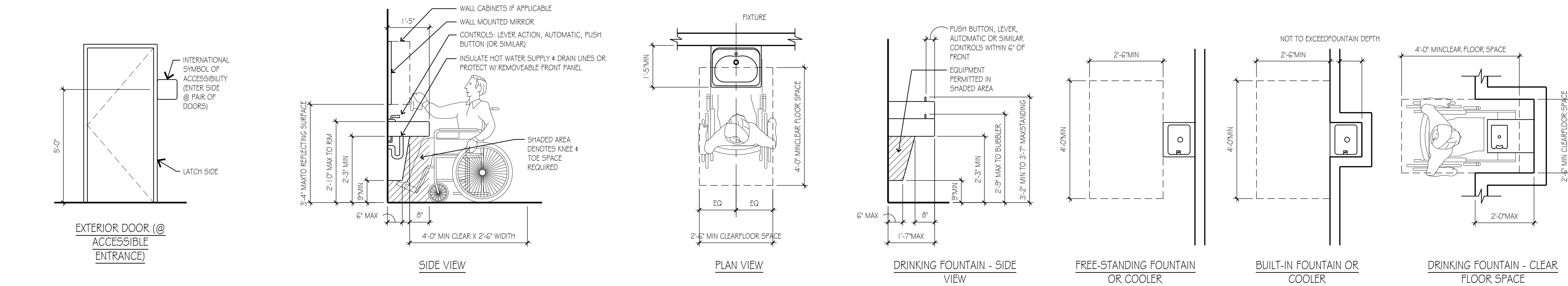
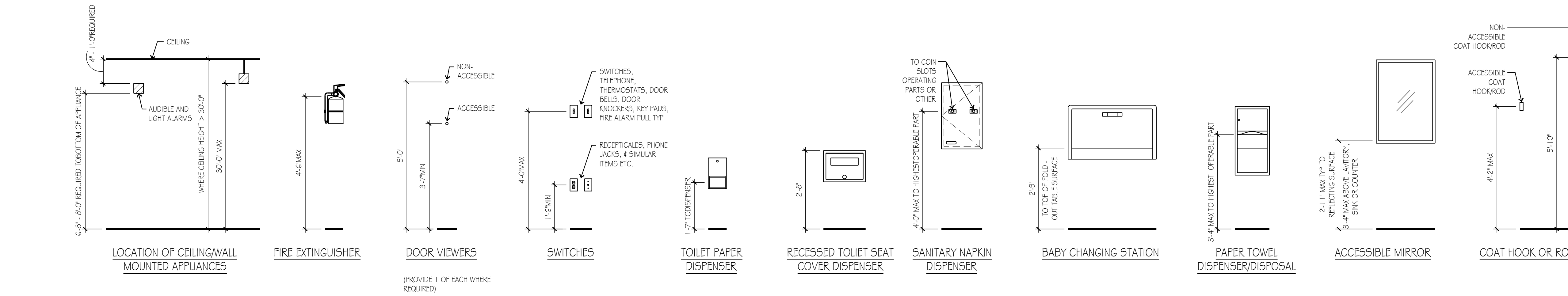
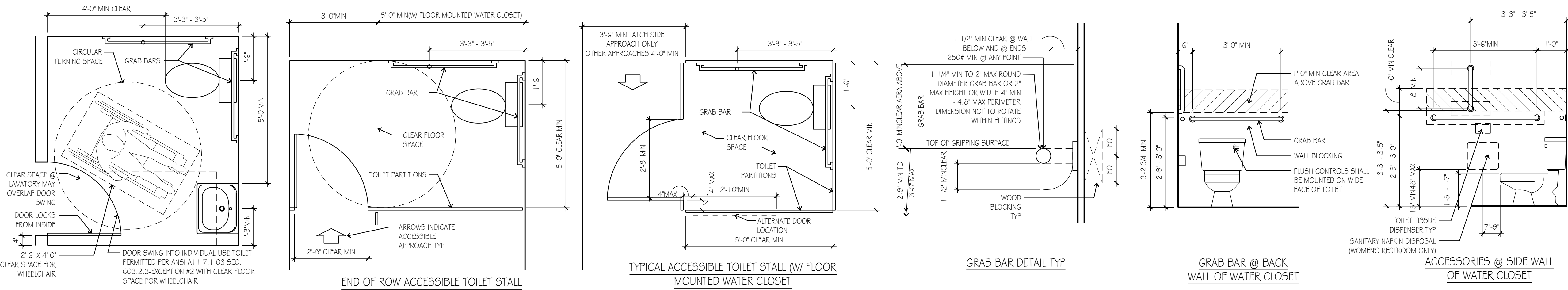
PROJECT LOCATION

VICINITY MAP:



An aerial photograph showing a large, multi-story commercial building with a white roof and a central section with a blue and white striped pattern. The building is surrounded by a parking lot filled with cars and a street with a crosswalk. A line points from the text 'PROJECT LOCATION' to the building. A small inset map in the bottom right corner shows the project location within a larger regional context.

PROJECT LOCATION



ACCESSIBLE ROUTE WITHIN BUILDING:

SPACES WITHIN BUILDINGS - PROVIDE AN ACCESSIBLE ROUTE TO EACH SPACE OR PORTION WITHIN A BUILDING, TO ACCESSIBLE BUILDING ENTRANCES - NOT PASSING THROUGH KITCHENS, STORAGE ROOMS, RESTROOMS CLOSETS OR SIMILAR SPACES (IF ONLY ONE ACCESSIBLE-ROUTE IS PROVIDED).

CONSTRUCT WORK AREAS USED ONLY BY EMPLOYEES SO THAT INDIVIDUALS WITH DISABILITIES CAN APPROACH, ENTER, AND EXIT THE AREA EXCEPT AT WORK-AREAS LESS THAN 150 SF AND ELEVATED SEVEN (7) INCHES OR MORE ABOVE GROUND OR FINISH FLOOR - WHEN THE RAISED ELEVATION IS ESSENTIAL TO THE FUNCTION OF THE WORK-AREA - PER IBC).

PROVIDE ACCESSIBLE ROUTES AT ALL COMMON-USE CIRCULATION PATHS WITHIN EMPLOYEE WORK AREAS UNLESS WORK AREA IS LESS THAN 300 SF AND DEFINED BY PERMANENTLY INSTALLED PARTITIONS, COUNTERS, CASEWORK OR FURNISHINGS

ACCESSIBILITY IS NOT REQUIRED TO NON-OCCUPIED SPACES ACCESSED ONLY BY LADDERS, CATWALKS, CRAWL SPACES OR FREIGHT (NON-PASSENGER) ELEVATORS THAT ARE FREQUENTED ONLY BY SERVICE PERSONNEL FOR MAINTENANCE PURPOSES, INCLUDING BUT NOT LIMITED TO ELEVATOR PITS, ELEVATOR PENTHOUSES, AND PIPING OR EQUIPMENT CATWALKS.

ACCESSIBLE ROUTE WITHIN BUILDING:

ACCESSIBLE-ROUTES MAY CONSIST OF ONE OR MORE OF THESE COMPONENTS:

WALKING SURFACES

RAMPS

DOORS AND DOORWAYS

ELEVATORS AND PLATFORM LIFTS

MINIMUM CORRIDOR WIDTH: 3'-0"

MINIMUM WIDTH OF ACCESS AISLES: 3'-0"

CARPETED WALKING SURFACES - BROADLOOM OR CARPET-TILE WITH FIRM CUSHIONPAD (OR WITHOUT CUSHION & PAD) WITH LEVEL LOOP, TEXTURED LOOP, LEVEL CUT, OR LEVEL CUT/JUNCT FILE TEXTURE WITH 1/8" INCH MAX FILE-HEIGHT, SECURELY ATTACH TO SUBSTRATE AND PROVIDE BEVELED EDGE-TRIM ALONG ENTIRE LENGTH OF EXPOSED EDGE PER ABOVE.

AREA-OF-RESUE ASSISTANCE

PROVIDE AN "AREA-OF-RESUE-ASSISTANCE" AT NON-ACCESSIBLE EXIT-DISCHARGE DOORS - EXCEPT IN BUILDINGS WITH A SUPERVISED AUTOMATIC FIRE-SUPPRESSION SYSTEM.

MINIMUM SIZE - PROVIDE MINIMUM OF TWO (2) EA 2'-6" X 4'-0" AREAS OR ONE (1) EACH PER 200 OCCUPANTS PER STORY SERVED NOT ENCRoACHING ON ANY REQUIRED EXIT WIDTH

TOILET ROOMS OR COMPARTMENTS:

UNI-SEX TOILET ROOM - PROVIDE AN ACCESSIBLE FACILITY WITH A SINGLE WATER-CLOSET AND LAVATORY IN ANY MERCANTILE OR ASSEMBLY OCCUPANCIES WHERE A TOTAL OF SIX (6) OR MORE MALE AND FEMALE WATER-CLOSETS ARE REQUIRED (PER IBC)

PROVIDE UNI-SEX AND SINGLE-USE TOILET ROOMS WITH DOOR LOCKING FROM INSIDE

WATER-CLOSET COMPARTMENTS: PROVIDE A MINIMUM OF ONE (1) WHEELCHAIR-ACCESSIBLE COMPARTMENT AND WHEN OVER SIX (6) WATER-CLOSETS & URINALS ARE PROVIDED IN A TOILET ROOM, PROVIDE ONE (1) TO BE AMBULATORY-ACCESSIBLE IN ADDITION TO THE WHEELCHAIR-ACCESSIBLE UNIT.

SINKS: PROVIDE NO LESS THAN ONE (1) ACCESSIBLE SINK (OR 5% OF TOTAL) WHERE PROVIDED (NO P OR SERVICE-SINKS ARE NOT REQUIRED TO BE ACCESSIBLE)

DRINKING FOUNTAINS:

IF ONLY ONE DRINKING FOUNTAIN IS PROVIDED IN A SPACE OR BUILDING, PROVIDE A "DUAL HI-LOW" TYPE UNIT ACCESSIBLE TO BOTH WHEELCHAIR USERS AND TO PERSONS WITH DIFFICULTY BENDING OR STOOPING (STANDARD HEIGHT UNIT) OR OTHER MEANS TO ACHIEVE EQUIVALENT ACCESSIBILITY FOR BOTH (PROVIDING AN ACCESSIBLE WATER COOLER, FOR EXAMPLE)

PROVIDE DRINKING FOUNTAINS IN ALCOVE OUT OF COMMON PATH OF TRAVEL

SPACING BETWEEN DRINKING FOUNTAINS: 2'-3" (27") MINIMUM

ACCESSIBLE ELEVATORS:

MINIMUM CAR SIZE -

DEPTH: 4'-3" TO FRONT WALL - 4'-6" TO DOOR

WIDTH: 50 OR MORE OCCUPANTS: 6'-8" MIN (STRETCHER TYPE)

UNDER 50 OCCUPANTS: 4'-6" MIN

MINIMUM DOOR WIDTH: 50 OR MORE OCCUPANTS: 3'-6" MIN

UNDER 50 OCCUPANTS: 2'-10" MIN

HANDRAIL AT REAR: LOCATE BETWEEN 2'-6" TO 2'-10" AFF

ELEVATOR CONTROLS: LOCATE BETWEEN 2'-11" MIN AND 4'-6" AFF MAXW

PROVIDE EMERGENCY PHONE @ 4'-0" AFF MAX WITH 2'-5" MIN CORD LENGTH

HALL-CALL BUTTONS: CENTER AT 3'-6" AFF

HALL LANTERNS: 6'-0" (72 INCH) AFF - VISUAL AND AUDIBLE

FLOOR INDICATOR SIGNS: 2" HIGH CONTRASTING LETTER SIGN WITH BRAILLE ON SIDE OF DOOR JAMB AT 60" AFF

ACCESSIBLE SEATING:

WHEN PROVIDED AT FIXED OR BUILT-IN TABLES, COUNTERS OR WORK SURFACES, PROVIDE 5% MINIMUM BUT NOT LESS THAN ONE (1) ACCESSIBLE SEATING, DISTRIBUTED THROUGHOUT.

POINT-OF-SALE (POS) OR SERVICE COUNTERS: PROVIDE NOT LESS THAN ONE (1) UNIT TO BE ACCESSIBLE DISPERSED THROUGHOUT IF COUNTERS ARE DISPERSED.

SIGNAGE:

REQUIRED ACCESSIBLE SIGNS (MINIMUM) EXCEPT AT BUILDING DIRECTORIES, MENU BOARDS, OR TEMPORARY SIGNS PROVIDE ACCESSIBLE SIGNS AS FOLLOWS:

ACCESSIBLE ENTRANCES: PROVIDE A 4 X 4" ACCESSIBILITY DECAL AT ALL ACCESSIBLE PUBLIC ENTRANCE DOORS CENTERED AT 60" AFF.

NON-ACCESSIBLE PUBLIC ENTRANCES: PROVIDE DIRECTIONAL SIGNS INDICATING LOCATION OF NEAREST ACCESSIBLE ENTRANCE.

NON-ACCESSIBLE TOILET ROOMS: PROVIDE DIRECTIONAL SIGNS INDICATING LOCATION OF NEAREST ACCESSIBLE UNITS.

ROOM (OR 5FACD) SIGNS (INCLUDING TOILET ROOMS): PROVIDE RAISED PICTOGRAMS, TACTILE CHARACTERS AND BRAILLE TEXT.

ACCEPTABLE CHARACTERS: UPPER-CASE, LOWER-CASE, OR A COMBINATION OF BOTH IN A SANS-SERIF CONVENTIONAL STYLE - NO ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE OR OTHER UNUSUAL FORMS

FINISH & CONTRAST: NON-GLARE WITH EITHER LIGHT CHARACTERS ON DARK BACKGROUND OR DARK CHARACTERS ON LIGHT BACKGROUND

ILLUMINATION LEVEL AT ACCESSIBLE SIGNS: MINIMUM 10 FOOT-CANDELES

PROVIDE CLEAR FLOOR AREA OF 1.6 X 1.6 INCHES CENTERED ON TACTILE CHARACTER SIGNS BEYOND ARC OF DOOR SWING FROM CLOSED TO 45 DEGREE OPEN POSITION

BRAILLE: CONTRACTED (GRADE 2) WITH INDICATION OF AN UPPERCASE LETTER ONLY BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS, AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, OR ACRONYM.XXXP

IF EMERGENCY WARNING SYSTEMS ARE PROVIDED, PROVIDE BOTH AUDIBLE AND VISUAL ALARMS IN ANY COMMON-USE AREAS, INCLUDING BUT NOT LIMITED TO RESTROOMS, MEETING ROOMS, HALLWAYS, AND LOBBIES, PERMANENTLY CONNECT ALARM SYSTEMS TO THE BUILDING ELECTRICAL POWER AND LIGHTING SYSTEM AS APPROPRIATE.

IF AUDIBLE ALARMS ARE PROVIDED, THEY MUST PRODUCE SOUND EXCEEDING THE PREVAILING EQUIVALENT SOUND LEVEL OF A SPACE BY AT LEAST 15 dBA OR EXCEED ANY MAXIMUM SOUND LEVEL WITH A DURATION OF 60 SECONDS BY 5 dBA, WHICHEVER IS LOUDER (NOT EXCEEDING 120dBA).

IF VISUAL ALARMS ARE PROVIDED, PROVIDE UNFILTERED OR CLEAR-FILTERED WHITE MICHON-STROBE TYPE LAMPS OR EQUIVALENT, WITH 0.2 SECOND MAXIMUM PULSE DURATION AND MAXIMUM DUTY CYCLE OF 40 PERCENT, PROVIDING A MINIMUM BRIGHTNESS INTENSITY OF 75 CANDELA WITH A FLASH RATE BETWEEN 1 AND 3 Hz. LOCATE UNITS NO MORE THAN 6'-10" (80") AFF OR 6" BELOW CEILING WHICHEVER IS LOWER. LOCATE 50 FEET MAXIMUM FROM ANY POINT WITHIN A SPACE OR COMMON CORRIDOR, OR IN LARGE SPACES OVER 100 FEET ACROSS (SUCH AS AUDITORIUMS) WITHOUT OBSTRUCTIONS 6 FT AFF. LOCATE AROUND ROOM PERIMETER AT MAXIMUM 100 FT CENTERS. ALL STROBES IN ROOM MUST BE SYNCHRONIZED.

THIS DRAWING has been prepared by the Architect, or prepared under his direct supervision as an instrument of service and is intended for use only on this project. All Drawings, Specifications, ideas and designs, including the overall layout, form, arrangement, and composition of spaces and elements portrayed, constitute the original, unpublished Work of the Architect. Any reproduction, use, or disclosure of the information contained herein without the written consent of the Architect is strictly prohibited.

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THE ARCHITECT DISCLAIMS responsibility for the existing building structure, site conditions, existing construction elements, or any documents, drawings or other instruments used for any part of this Project which do not bear the Architect's seal. The Architect's services are undertaken only in the interest of the Project Owner. No obligation is assumed by the Architect for the benefit of any other entity.

RELATED DOCUMENTS: This Drawing is a single component of an integrated set of Construction Documents. General and Supplementary Conditions of the Contract, General Requirements, Specifications and other drawings may affect the Work described. Failure to review and integrate the spirit and intent of the whole of the Construction Documents does not relieve the Contractor from providing a complete Project.

COMPLY WITH all laws, codes, ordinances and regulations with authority having jurisdiction and with requirements of the Landlord, if applicable. Do not start Work until all permits and required approvals are obtained.

VERIFY ACTUAL CONDITIONS and dimensions prior to construction. Commencement of work constitutes verification and acceptance of all existing conditions. Application of a material or equipment item to Work installed by others constitutes acceptance of that Work, and assumption of responsibility for satisfactory installation.

DIMENSIONS SHOWN are in finish size if a material value otherwise indicated. INCLUDE a MEASURE dimension - TO MEET SIZE drawings unless otherwise dictated.

project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003

drawing issuance
PERMIT/BID 03.05.24

drawing revisions
No. Description: Date:

professional seal

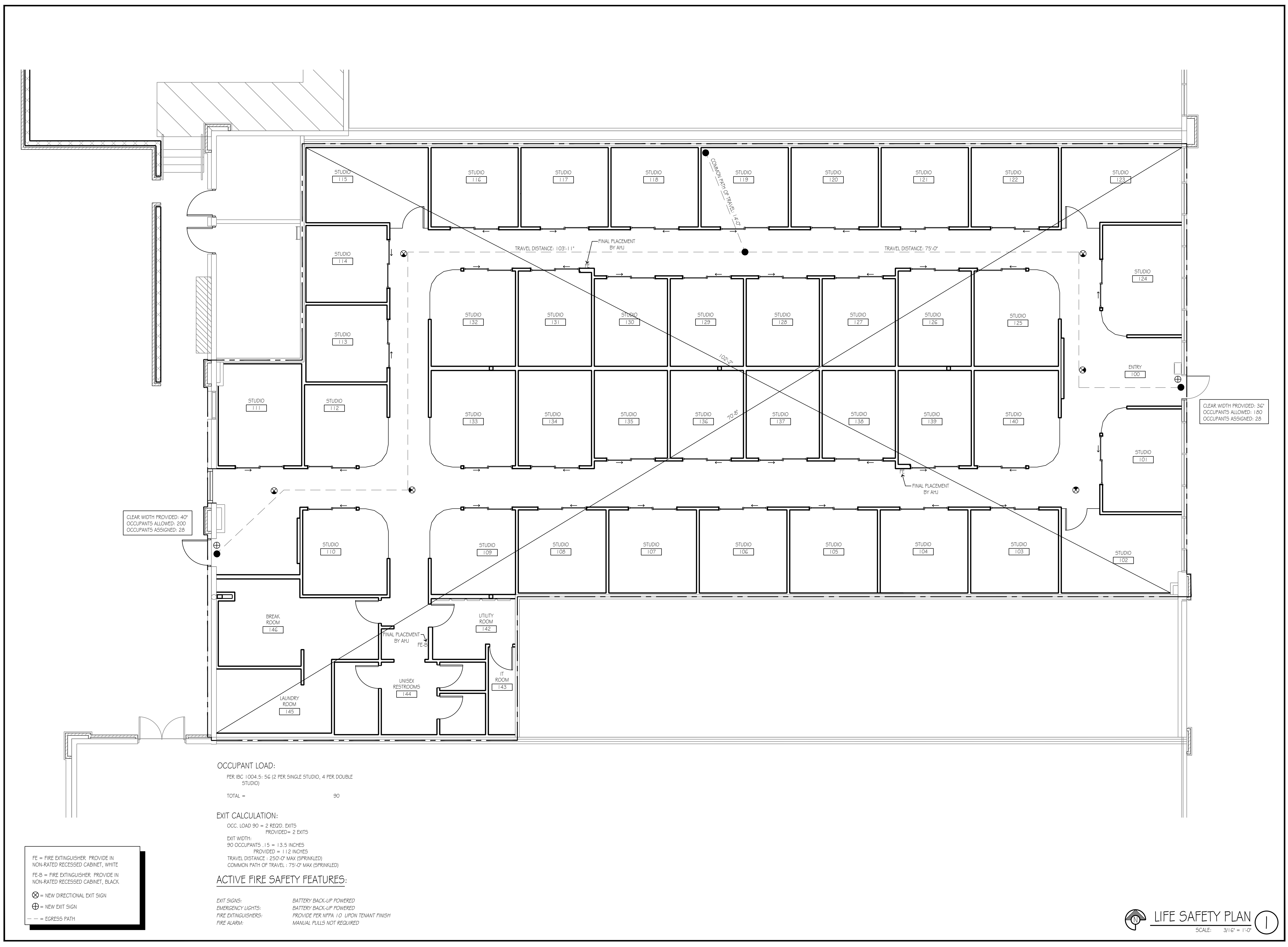
STATE OF MISSOURI
HENRY C. KLOVER
REGISTERED ARCHITECT
A-5332
Date Signed **MAR 20 2024**

drawing title

LIFE SAFETY PLAN

drawing number

A005



OCCUPANT LOAD:
PER IBC 1004.5.5: 56 (2 PER SINGLE STUDIO, 4 PER DOUBLE STUDIO)
TOTAL = 90

EXIT CALCULATION:
OCC. LOAD 90 = 2 REQ'D EXITS
PROVIDED= 2 EXITS
EXIT WIDTH:
90 OCCUPANTS / 15 = 13.5 INCHES
PROVIDED = 112 INCHES
TRAVEL DISTANCE : 250'-0" MAX (SPRINKLED)
COMMON PATH OF TRAVEL : 75'-0" MAX (SPRINKLED)

ACTIVE FIRE SAFETY FEATURES:

EXIT SIGNS:
EMERGENCY LIGHTS:
FIRE EXTINGUISHERS:
FIRE ALARM:

BATTERY BACK-UP POWERED
BATTERY BACK-UP POWERED
PROVIDE PER NFPA 10 - UPON TENANT FINISH
MANUAL PULLS NOT REQUIRED

FE = FIRE EXTINGUISHER, PROVIDE IN NON-RATED RECESSED CABINET, WHITE
FE-B = FIRE EXTINGUISHER, PROVIDE IN NON-RATED RECESSED CABINET, BLACK
⊗ = NEW DIRECTIONAL EXIT SIGN
⊕ = NEW EXIT SIGN
--- = EGRESS PATH

LIFE SAFETY PLAN
SCALE: 3/16" = 1'-0"

SECTION 09 65 00 – RESILIENT FLOORING AND BASE	PROVIDE vinyl composition tile flooring and resilient base, where noted on the drawings and as specified herein.
	FIRE PERFORMANCE CHARACTERISTICS: Provide resilient flooring materials meeting the following requirements as tested by UL or other testing agency acceptable to authorities having jurisdiction, in accordance with the following ASTM requirements: CRITICAL RADIANT FLUX: 0.45 watts per square CM or more per ASTM E 648. SMOKE DENSITY: less than 450 per ASTM E 662.
	MAINTENANCE INSTRUCTIONS: Submit manufacturer's recommended maintenance practices for each type of resilient flooring and accessory required.
	EXTRA STOCK: Deliver minimum of one (1) carton of resilient tile and twelve (12) linear feet of base material, of each type and color of material installed.
	VINYL COMPOSITION FLOOR TILE: 12" x 12" x 1/8" thick products complying with ASTM F 1066, Composition 1 (non-asbestos formulated). Manufacturer(s) and product type as indicated on the Drawings.
	RESILIENT BASE: 4" high rubber, with integral coves, topset, type as required for compatibility with flooring material. If not indicated, base color will be selected by the Owner from manufacturer's standard color range, as manufactured by one of the following manufacturers: Burke Flooring Products Division, Flexco Division, Textile Rubber Co. Johnson Rubber Co., Inc. R. C. Musson Rubber Co., Inc. Roppe Rubber Corp.
	CONCRETE SLAB PRIMER: Nonstaining type as recommended by flooring manufacturer.
	TROWELABLE UNDERLAYMENTS AND PATCHING COMPOUNDS: Latex modified, portland cement based formulation provided or approved by tile manufacturer for applications indicated.
	ADHESIVES (Cements): Latex water resistant type recommended by tile manufacturer to suit resilient floor tile products and substrate conditions indicated.
	METAL EDGE STRIPS: Extruded aluminum with mill finish, of height required to protect exposed edge of tiles, and in maximum available lengths to minimize running joints
	INSTALLATION: EXAMINE AREAS where installation of tiles will occur, with installer present, to verify that substrates and conditions are satisfactory for tile installation and comply with tile manufacturer's requirements and those specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.
	PREPARATION: Level and patch subfloor using compounds recommended by flooring manufacturer. Remove coatings from subfloor surfaces that would prevent adhesive bond, including curing compounds, adhesives, paint, oils, waxes and sealers. Broom clean or vacuum subfloor surfaces and apply primer, if recommended by flooring manufacturer, prior to application of adhesive.
	DO NOT DRY SCRAPE OR SAND existing flooring materials, and do not dry scrape or dry sweep residual backing or felt lining materials. Such materials may contain asbestos fibers that are not readily identifiable.
	VERIFY that concrete slabs comply with ASTM F 710 and that slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials whose presence would interfere with bonding of adhesive. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by tile manufacturer. Verify that subfloors are free of cracks, ridges, depressions, scale, and foreign deposits of any kind.
	GENERAL INSTALLATION: Comply with manufacturer's printed installation instructions, and as specified herein. Extend resilient flooring into toe spaces, door reveals, and into closets and similar openings. Scribe, cut and fit resilient flooring to permanent fixtures, built in furniture and cabinets, pipes, outlets and permanent columns, walls and partitions.
	ADHESIVE: Adhere flooring to substrates using full spread of waterproof, stabilized, mastic recommended for use by flooring manufacturer to suit material and substrate conditions.
	INSTALLATION OF TILE FLOORS: Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room area of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable.
	ADHERE tiles to flooring substrates without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed tile installation. Hand roll tiles where required.
	INSTALLATION OF ACCESSORIES: Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with preformed corner units, or fabricated from base materials with mitered or coped inside corners. Tightly bond base to substrate throughout length of each piece.
	INITIAL CLEANING: Immediately after completing tile installation remove visible adhesive and other surface blemishes using cleaner recommended by tile manufacturers. Sweep or vacuum floor thoroughly. Do not wash floor until time period recommended by resilient flooring manufacturer has elapsed to allow resilient flooring to become well sealed in adhesive. Damp mop floor being careful to remove black marks and excessive soil. Remove any excess adhesive or other surface blemishes, using appropriate cleaner recommended by resilient flooring manufacturers.
	STRIP EXISTING FACTORY FLOOR FINISH by scrubbing with a single disk automatic scrubbing machine and by washing with a commercial stripping solution and warm water. Do not flood floor with z e stripping solution or rinse water. Remove stripping solution by mopping. Rinse with clean water and wet vacuum or mop dry.
	SECTION 09 91 00 – PAINTING
	WORK INCLUDES surface preparation and painting or finishing of surfaces exposed to view, throughout the Project and in accordance with requirements herein. Except where a natural finish or a material is specifically noted as a surface not to be painted, paint or finish oil exposed surfaces whether or not painting is designated in the Drawings. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas.
	PAINTING NOT REQUIRED: Unless otherwise indicated, painting is not required on plastic laminate, prefinished sheet metal, plumbing fixtures, electrical equipment (excluding exposed distribution cabinet(s) or electrical devices. Painting is not required on surfaces such as walls or ceilings in concealed or inaccessible areas. Metal surfaces of anodized aluminum, stainless steel, chromium plate and similar finished materials will not require finish painting, except as otherwise indicated in the finish hardware schedule. Do not paint over code-required labels or equipment identification labels.
	PROVIDE PRIMERS and undercoat paints produced by the same manufacturer as the finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
	PREPARE surfaces and apply coatings in strict accordance with the coating manufacturer's recommendations.
	USE ONLY SKILLED painters for mixing and applying paint. Quality workmanship is required. In the acceptance or rejection of finish painting, no allowance will be made for the painters' lack of skill or in adequate lighting during painting operations.
	DELIVER MATERIALS to job site in original, new and unopened packages and containers bearing manufacturer's name and label. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue. Keep storage area neat and orderly. Remove rags and water daily. Take all precautions to ensure that workmen and Work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.
	JOB CONDITIONS: Apply paints only when temperature of surfaces to be painted and surrounding air temperatures are within recommended range permitted by the paint manufacturer's printed instructions. Do not apply paint when relative humidity exceeds 85%, or to damp or wet surfaces.
	MATERIAL QUALITY: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturers identification as a standard, best-grade product will not be acceptable.
	SURFACE PREPARATION: Clean surfaces of dirt, rust, scale, grease, moisture, or other conditions otherwise detrimental to formation of a durable paint film. Perform preparation and cleaning procedures in accordance with paint manufacturer's printed instructions for each particular substrate condition.
	REMOVE hardware, accessories, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
	CLEAN WOOD SURFACES of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
	PRIME, STAIN, OR SEAL WOOD to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling. When transparent finish is required, backprime with spar varnish. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside. Seal tops, bottoms, and caluats of unpainted wood doors with a heavy coat of varnish or sealer immediately upon delivery or after installation, if unit is cut in the field.
	CLEAN NONGALVANIZED FERROUS-METAL SURFACES that have not been shop coated, remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.
	TOUCH UP SHOP-APPLIED PRIME COATS that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.
	MATERIALS PREPARATION: Carefully mix and prepare paint materials in accordance with manufacturer's directions. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using. Use only thinners approved by the paint manufacturer, and only within recommended limits.
	APPLICATION: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
	SCHEDULING: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
	APPLY PAINT to completely cover previously painted surfaces, to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, lap marks, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
	THE NUMBER OF COATS and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.
	APPLY ADDITIONAL PAINT coats when undercoats, stains or other coatings show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
	PAINT INTERIOR SURFACES of ducts, where visible through registers or grilles with a flat, nonspecular black paint. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
	MINIMUM COATING THICKNESS: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.
	PRIME COATS: Before application of finish coats, apply a prime coat of material as recommended by the manufacturer to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.
	FIELD QUALITY CONTROL: The Owner reserves the right to engage the services of an independent testing laboratory to sample the paint material being used. Samples of material delivered to the project may be taken, identified, sealed, and certified in the presence of the Contractor. The testing laboratory will perform appropriate tests as required by the Owner. If test results show material being used does not comply with specified requirements, the Contractor may be directed to stop painting, remove noncomplying paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are noncompatible.
	CLEAN-UP: During the progress of the Work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day. Upon completion of painting Work, clean window glass and other point-spattered surfaces. Remove spattered paint or otherwise damage finish surfaces. Touchup and restore oil damaged or defaced painted surfaces after completion of Work of other trades.
	PROTECT work of other trades, whether to be painted or not, against damage by painting. Correct damage by painting, repairing or replacing, and repainting, as acceptable to Owner. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.
	PAINT MATERIALS SCHEDULE: (RE: www.paintinfo.com for MPI's "Approved Product List")
	INTERIOR DRYWALL: SATIN LATEX ENAMEL (Class A: 5-5-0) Primer Coat: MPI # 50 – Interior Latex Primer Sealer 2 Finish Coats: MPI # 52 – Interior Latex "Eggshell-like" sheen Apply finish coats with roller, unless otherwise indicated
	INTERIOR METAL: SATIN ALKYD ENAMEL (Class A: 5-5-0) First Coat: MPI # 79 – Alkyd Anti-Corrosive Metal Primer Note: Primer not required to be applied in field on pre-primed items 2nd & 3rd Coats: MPI # 51 – Interior Alkyd, Eggshell Brush apply finish coats unless otherwise indicated
	INTERIOR PAINTED WOOD & MDF: SATIN ALKYD (Class A: 5-5-0) Prime Coat: MPI # 45 – Interior Alkyd Primer Sealer 2nd & 3rd Coats: MPI # 51 – Interior Alkyd, Eggshell Brush apply finish coats unless otherwise indicated
	SECTION 10 00 00 – MISC. SPECIALTIES
	PROVIDE the following specialties where noted on the Drawings and as specified herein. Install specialty items furnished by others, as indicated on the drawings.
	TOILET ACCESSORIES (where required): Provide units as indicated in the Drawings.
	FIRE EXTINGUISHERS (FE): Provide manufacturer's standard 10 lb, 4A-60BC rated units at location(s) indicated on the Drawings, and as approved or as otherwise directed by authorities having jurisdiction.
	COORDINATION: Coordinate with other Sections to assure that the locations of miscellaneous specialties does not conflict with other related items. Examine and install inspection of floor or wall finishes, and other conditions that affect installation of miscellaneous specialties. Do not proceed until unsatisfactory conditions have been corrected.
	INSTALL the work of this Section according to manufacturers' instructions, using fasteners appropriate to substrate as recommended by unit manufacturer. Install units plumb and level, firmly anchored in locations and at heights indicated.
	SET EACH ITEM securely in place, leveled and adjusted to the correct working height. Anchor to supporting substrate where indicted and where required for sustained operation and use without shifting or dislocation. Conceal anchorages where possible.
	SECURE MIRRORS to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, according to manufacturer's instructions for type of substrate involved.
	INSTALL GRAB BARS to withstand a downward load of at least 250 lbf, complying with ASTM F 446.
	ADJUST units for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items. Clean and polish all exposed surfaces strictly according to manufacturer's recommendations after removing temporary labels and protective coatings.
	SECTION 10 14 00 – SIGNAGE
	PROVIDE signage indicated herein as required for a complete and proper installation.
	SEPARATE CONTRACT: The Owner will arrange for other signage to be provided by a separate contractor. Coordinate with that entity regarding field dimensions, shop drawings, site access, scheduling, power requirements, and other items necessary for timely installation of all project signs.
	ADA SIGNAGE: 8 x 8 x 1/8 inch minimum radius cornered Pictorial Symbol Signs, with 1/32" raised pictogram symbols, 1/32" x 5/8" high upper case raised letter text, and with 1/32" Grade II Braille text. Text and pictogram to be white on dark colored sign panel with matte finish. Provide double sided 1/32" thick Scotchmount tape for attaching at 60" above floor to center of sign on the wall adjacent to the latch side of a door: 1 each RESTROOM (at Employee Restroom) 1 ea: MEN or WOMEN (as applicable at multiple toilet rooms)
	PRESSURE SENSITIVE VINYL (PSV): "220 Scotchclad" by 3M or equal 2 mil minimum thickness, opaque, non-reflecting, cast PVC film with pressure sensitive adhesive backing, suitable for exterior as well as interior applications, colors as noted in material-color schedule. Die-cut copy characters from PSV, and mount on paper backing sheet.
	BUILDING NUMBERS: 8" high white reverse-mount to interior side of glass facing main street (comply with local code and regulations)
	REAR SERVICE ENTRANCE DOOR: Provide PSV signage indicating Company Name, Suite/Space Number, and receiving hours (verily exact text with Owner's representative. Coordinate Service Entrance Door signage with Landlord requirements, when applicable.
	INSTALL signage in accordance with the approved shop drawings, to be level, plumb, and at height indicated, free from distortion or other defects of appearance. Remove and reinstall signage materials that do not comply with these requirements.
	MOUNT plastic laminate signs directly to face of door. Use double-sided foam tape to mount to smooth non-porous surfaces. Install ADA signs centered at 60 inches above finished floor on strike side of door frame.
	CLEAN soiled sign surfaces and protect units from damage until acceptance by the Owner.
	SECTION 12 32 00 – MANUFACTURED CASEWORK
	PROVIDE prefinished, manufactured casework and countertops where indicated on the Drawings, as specified herein, and as necessary for complete installation. The intent of this Section is to provide readily available "stock" prefinished units from local retail home-supply stores, or through the Contractors other normal sources.
	COMPLY WITH the Kitchen Cabinet Manufacturing Association (KCMA) Quality Standard A161.1 for cabinets, and KCMA A161.2 for plastic-laminate countertops.
	COORDINATE layout and installation of blocking and reinforcement in partitions for support of casework.
	CASEWORK MATERIALS: Do not use adhesives or other materials that contain urea formaldehyde, and as follows: PARTICLEBOARD: ANSI A208.1, Grade M-2-Exterior Olive MEDIUM-DENSITY FIBERBOARD: ANSI A208.2, Grade MD HARDBOARD: AHA A135.4, Class 1 Tempered PLASTIC LAMINATE: High-pressure decorative laminate complying with NEMA LD-3 Post-formed Grade HGP – in medium blue color with a decorative pattern to obscure staining. THERMOSET DECORATIVE PANELS: Particleboard or medium-density fiberboard finished both sides with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1 – in "white" color typically
	EDGE BANDING: PVC or polyester edge banding complying with LMA EDG-1 – color to match exposed panels.
	CABINET HARDWARE: Provide Manufacturer's standard units complying with BHMA A156.9, including back-mounted decorative wire pulls or plastic knobs, and decorative semi-concealed (wraparound) butt hinges or pivot (knife) hinges (at Contractor's option). Provide epoxy-coated-metal, self-closing drawer guides; designed to prevent rebound when drawers are closed; with nylon-tired, ball-bearing rollers.
	CABINET FABRICATION: REVEAL OVERLAY DESIGN (door and drawer faces partially covering cabinet fronts), of either face-frame or frameless style (at Contractor's option), and as follows: DOOR AND DRAWER FRONTS: 1/2-inch-thick thermoset decorative panels CABINET ENDS: 5/8-inch thick Thermoset decorative panels
	BACK, TOP, AND BOTTOM RAILS: 3/4-by-2-1/2-inch solid wood, interlocking with end panels and rabbeted to receive top and bottom panels. Back rails secured under pressure with glue and with mechanical fasteners.
	WALL-HUNG-UNIT BACK PANELS: 3/16-inch-thick plywood fastened to rear edge of end panels and to top and bottom rails.
	DRAWERS: Fabricate with exposed fronts fastened to subfrant with mounting screws from interior of body, with 1/2 inch thick thermoset decorative panel subfrants, backs and sides, and 1/4-inch-thick prefinished hardboard drawer bottoms.
	SHELVES: 5/8-inch thick thermoset decorative panel
	PLASTIC-LAMINATE COUNTERTOPS: Rolled, self-edged or raised marine edge with rolled front (Contractor's option) on 3/4-inch thick particleboard substrate with integral one-piece curved-top post-formed back-splash. Cover exposed edge of backsplash with plastic-laminate finish.
	INSTALL CABINETS with no variations in flushness of adjoining surfaces; use concealed shims. Install without distortion so doors and drawers fit openings and are aligned. Install cabinets and countertop level and plumb to a tolerance of 1/8 inch in 8 feet. Fasten cabinets to adjacent units and to backing. Fasten wall cabinets through back, near top and bottom, at ends and not less than 24 inches OC with No. 10 wafér-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips. Fasten plastic-laminate countertops by screwing through corner blocks of base units into underside of countertop.
	ADJUST CABINETS AND HARDWARE so doors and drawers are centered in openings and operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.
	CLEAN CASEWORK on exposed and semisexposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

RELEASED FOR
CONSTRUCTION
As Noted on Plans Review

Project Services Department
David L. Summitt, Missouri
05/01/2024

klloverarchitects
incorporated

8613 PENROSE LANE, SUITE 400 • LENEXA, KS 66219
ph: 913.649.8181 • fx: 913.649.1275 • www.klover.net

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OWNER WITH all fees, costs, expenses and regulations with authorities having jurisdiction and with requirements of the Landlord, if applicable, to not start Work until all permits and required approvals are obtained.

VERIFY ACTUAL CONDITIONS and dimensions prior to construction. Commencement of work constitutes verification and acceptance of all existing conditions. Application of all materials or equipment item to Work required by others constitutes acceptance of the Work and assumption of responsibility for satisfactory installation.

DRAWINGS SHOWN are in final form as a review when otherwise indicated. OMISSION & REVISIONS: - DO NOT SCALE drawings when otherwise indicated.

project title

IMAGE STUDIOS
SUMMIT-FAIR

840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003

drawing issuance
PERMIT/BD 03.05.24

drawing revisions
No. Description: Date:

professional seal

STATE OF MISSOURI
HENRY C. KLOVER
NUMBER
A-5332
EXPIRATION
06/30/2025

Date Signed
MAR 20 2024

drawing title
SPECIFICATIONS

drawing number
SP102

GENERAL NOTES:
1. ALL DIMENSIONS ARE TO FACE OF GYPSUM BOARD.
2. RE: AG 1.0 FOR WALL TYPES



- FLOOR PLAN KEY NOTES:**
- 1. EXISTING WALL TO REMAIN.
 - 2. EXISTING STOREFRONT TO REMAIN AND BE PROTECTED.
 - 3. EXISTING COLUMN TO REMAIN & BE PROTECTED.
 - 4. EXISTING STOREFRONT DOOR TO BE REPLACED WITH STOREFRONT GLAZING TO MATCH ADJACENT GLAZING.
 - 5. NEW STOREFRONT DOOR FOR STOREFRONT MODIFICATIONS.
 - 6. MOP SINK, RE: MEP, PROVIDE FRP 4'-0" UP AT EACH SIDE WALL.
 - 7. G.C. TO PROVIDE BLOCKING FOR SCENT MACHINE AS NEEDED @ 36" A.F.F. TO BE PROVIDED BY VENDOR AND INSTALLED BY G.C.
 - 8. G.C. TO PROVIDE BLOCKING FOR STUDIO DIRECTORY SIGN AS NEEDED. TO BE PROVIDED BY OWNER AND INSTALLED BY VENDOR.
 - 9. G.C. TO PROVIDE BLOCKING FOR IMAGE INTERIOR SIGN AS NEEDED @ 72" A.F.F. TO BE PROVIDED BY OWNER AND INSTALLED BY VENDOR.
 - 10. ELECTRICAL PANELS RE: ELECTRICAL.
 - 11. NEW HM BACK DOOR WITH GLASS LITE AND PANIC HARDWARE.

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

project number
23060.003
drawing issuance
PERMIT/BD 03.05.24
drawing revisions
No. Description: Date:
CITY/OWNER COMMENTS 04.16.24

professional seal
STATE OF MISSOURI
HENRY C. KLOVER
ARCHITECT
Date Signed APR 18 2024
drawing title
FLOOR PLAN
drawing number
A100

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OWNER: With all laws, codes, ordinances and regulations with authority having jurisdiction and with requirements of the Employer, it is applicable to not start Work until all permits and required approvals are obtained.

VERY ACTUAL CONDITIONS and dimensions prior to construction. Commencement of work constitutes verification and acceptance of all existing conditions. Application of a material or equipment item to Work without the express written approval of the Architect is an assumption of responsibility for satisfactory installation.

UNLESS SHOWN on a field log it is a material whose strength is indicated. DIMENSIONS & MEASURE dimensions - 10 ME SIZE drawings unless otherwise stated.

project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

RELEASED FOR
CONSTRUCTION
Summit, Missouri
05/01/2024

kloverarchitects
incorporated
8813 PENROSE LANE SUITE 400 • LENEXA, KS 66219
ph: 913.649.8181 • fx: 913.649.1275 • www.klover.net

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UNLESS SHOWN TO THE CONTRARY, ALL DIMENSIONS ARE SHOWN AS INDICATED. INCLUDE A MEASURE dimension - 10' MEASURE dimension shown otherwise indicated.

project title

IMAGE STUDIOS
SUMMITFAR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23040.003
drawing issuance
PERMIT/BD 03.05.24
drawing revisions
No. Description: Date:
CITY/OWNER COMMENTS 04.16.24

professional seal

STATE OF MISSOURI
HENRY C. KLOVER
No. 232
ARCHITECT
Date Signed APR 18 2024

drawing title

FINISH FLOOR PLAN
drawing number

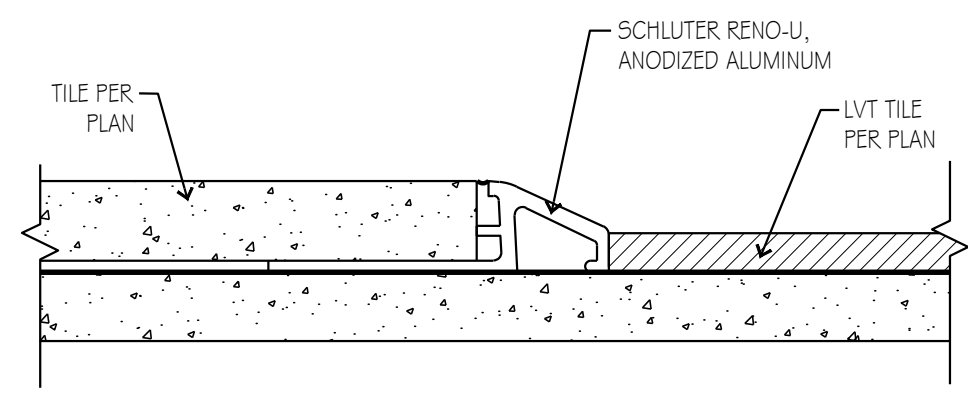
A120

NOTE:
1. SEE SHEET A600 FOR FINISH SCHEDULE.
2. OUTLETS AND FACE PLATES TO MATCH ADJACENT WALL COLOR.

NOT USED ⑤
SCALE: NTS

NOT USED ④
SCALE: NTS

NOT USED ③
SCALE: NTS



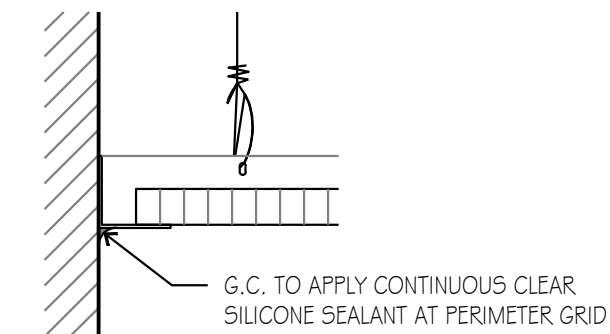
TRANSITION DETAIL ②
SCALE: 1/4" = 1'-0"

FINISH PLAN ①
SCALE: 3/16" = 1'-0"

LIGHTING FIXTURE SCHEDULE						LIGHTING FIXTURE SCHEDULE CONT.						LIGHTING FIXTURE SCHEDULE CONT.					
ITEM	SYMBOL	QTY.	MFR., ITEM NO. & STYLE	LOCATION	REMARK	ITEM	SYMBOL	QTY.	MFR., ITEM NO. & STYLE	LOCATION	REMARK	ITEM	SYMBOL	QTY.	MFR., ITEM NO. & STYLE	LOCATION	REMARK
L-1		77	METALUX, 2X4, 24 CGTS-L3C3, 3500K	STANDARD STUDIOS		L-7		1	PUVALE MODERN CRYSTAL TREE BRANCH MOUNT AT 8'-0" A.F.F.	BREAK ROOM					RE: MEP	HALLWAYS	
L-2		41	CREE LIGHTING, CRBT-825L-35K-12-E26GU24, 5CG HOUSING	RESTROOMS, BREAK ROOM, ESTHETIC STUDIOS	ALL ESTHETIC STUDIOS TO HAVE DIMMABLE FIXTURES	L-8		1	LIGHTNING LION RING CHANDELIER, LED, DIA 21.5X20H, GOLD	RESTROOM VESTIBULE					RE: MEP	STUDIOS, RESTROOMS, LAUNDRY ROOM	
L-4		14	SAYLITE, L3-P-SF-9G-LT, 2800 LUMENS, DMV-BK-35K, HCG I 2BK	COMMON AREAS	SIMILAR PRODUCT ALLOWED WITH APPROVAL	L-9		4	FARMHOUSE LIGHT, MINIMALIST BLACK LED WALL SCONCE	SELFIE AND MURAL WALL			42	ALASKA, 5A-398 MASTER-REMOTE, 2X2		STUDIOS	
L-5		2	ROYAL PEARL, LED, POWER COATED GOLD, 6000K	COMMON AREAS		L11		3	LUTHONIA LIGHTING, ZLD L48 3000LM FST M/VOLT 35K 80CRI	UTILITY ROOM, IT ROOM							
L-6		7	MODERN BUBBLE LIGHT G-CLEAR GLOBE GLASS SPUTNIK PENDANT	HALLWAYS	SIMILAR PRODUCT ALLOWED WITH APPROVAL												

- GENERAL NOTES:
1. LIGHTS ARE DIMENSIONED TO CENTER OF LIGHT.
 2. ALL LIGHTS SUSPENDED FROM STRUCTURE ARE 9'-0" A.F.F. TO BOTTOM OF LIGHT UNLESS NOTED OTHERWISE.
 3. CEILING STRUCTURE, MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS AT EXPOSED CEILING AREAS TO BE PAINTED EGGSHELL, EXTRA WHITE SW7006, RE: MATERIAL 4 COLOR SCHEDULE.
 4. RE: EQ FOR EMERGENCY LIGHT LOCATIONS.
 5. ESTHETIC STUDIOS TO HAVE UNFACED R13 SOUND BATT INSULATION ON TOP OF CEILING.

NOT USED ④
SCALE: NTS



CEILING GRID DETAIL ③
SCALE: 3" = 1'-0"

NOT USED ②
SCALE: NTS



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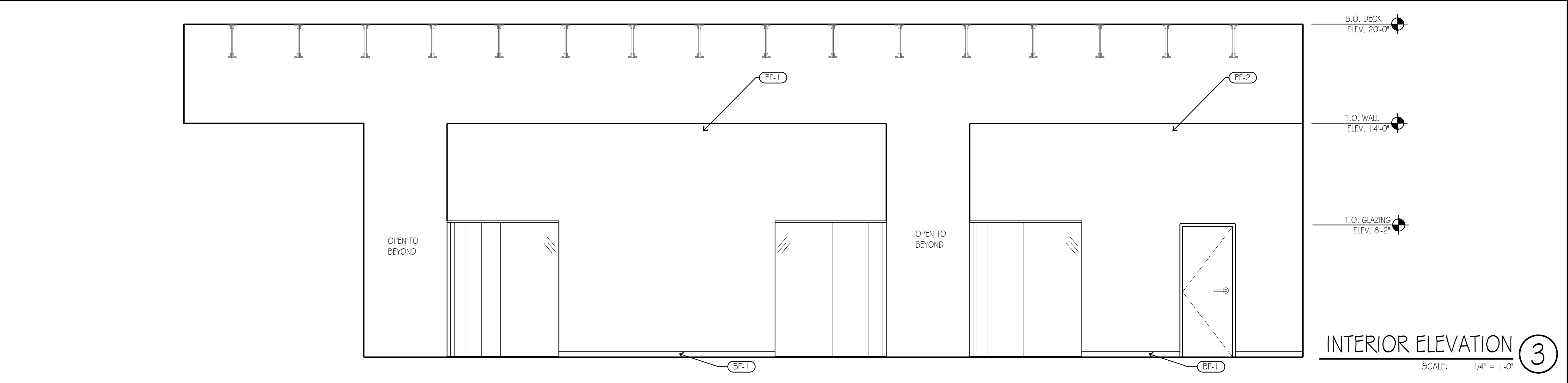
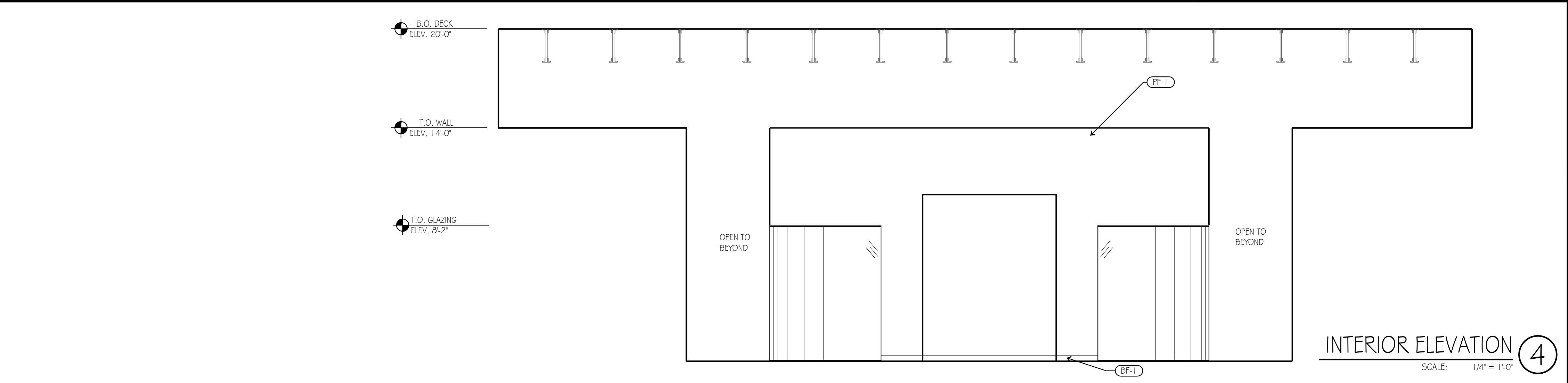
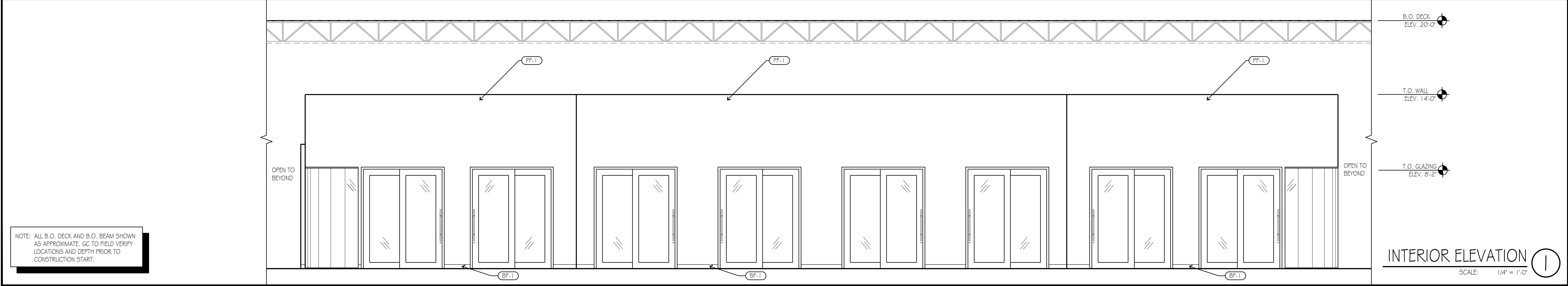
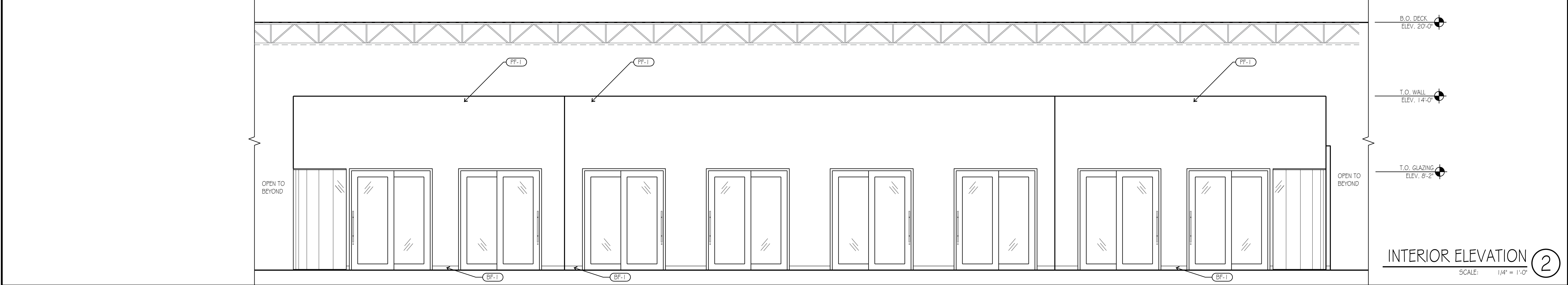
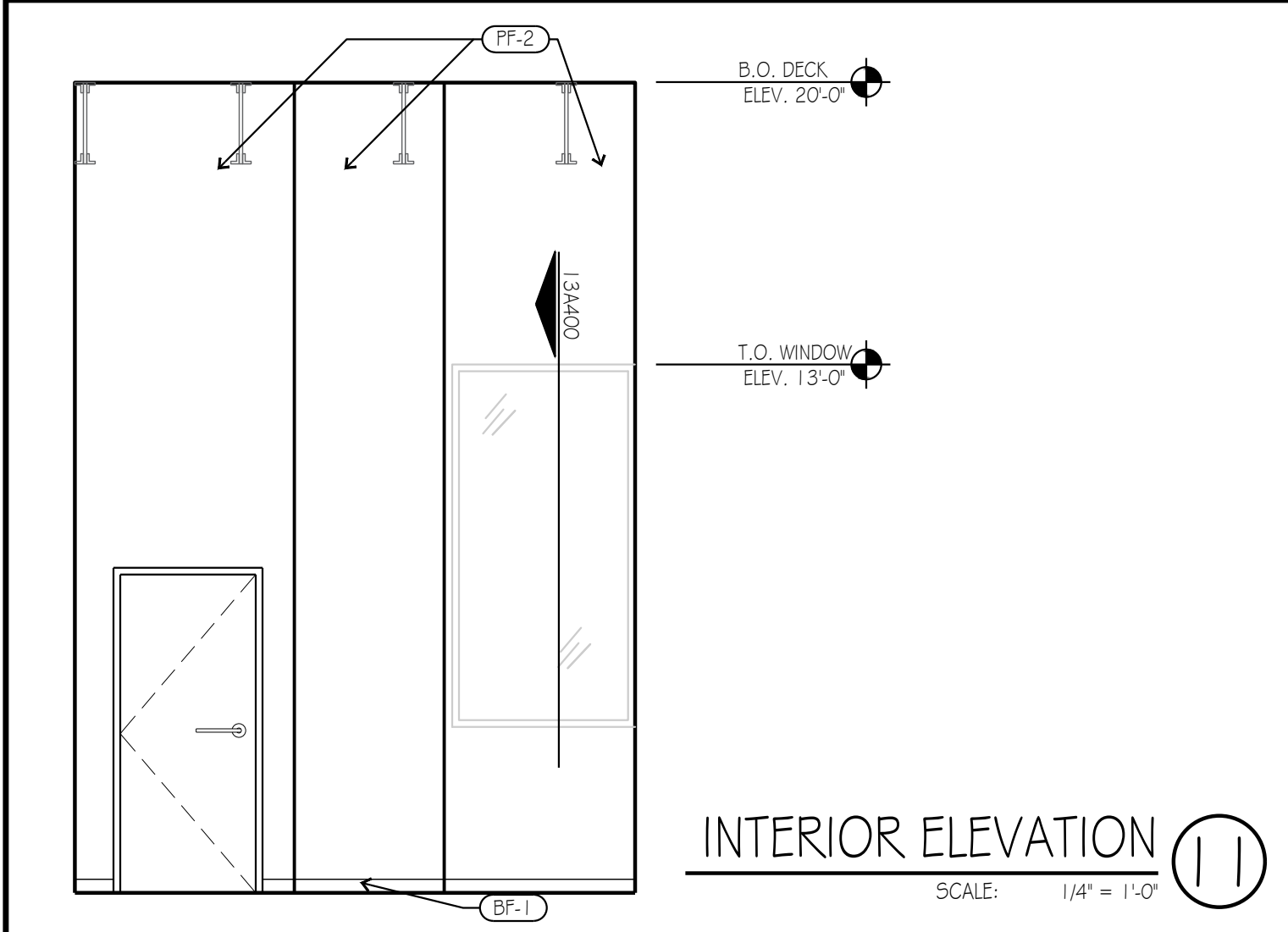
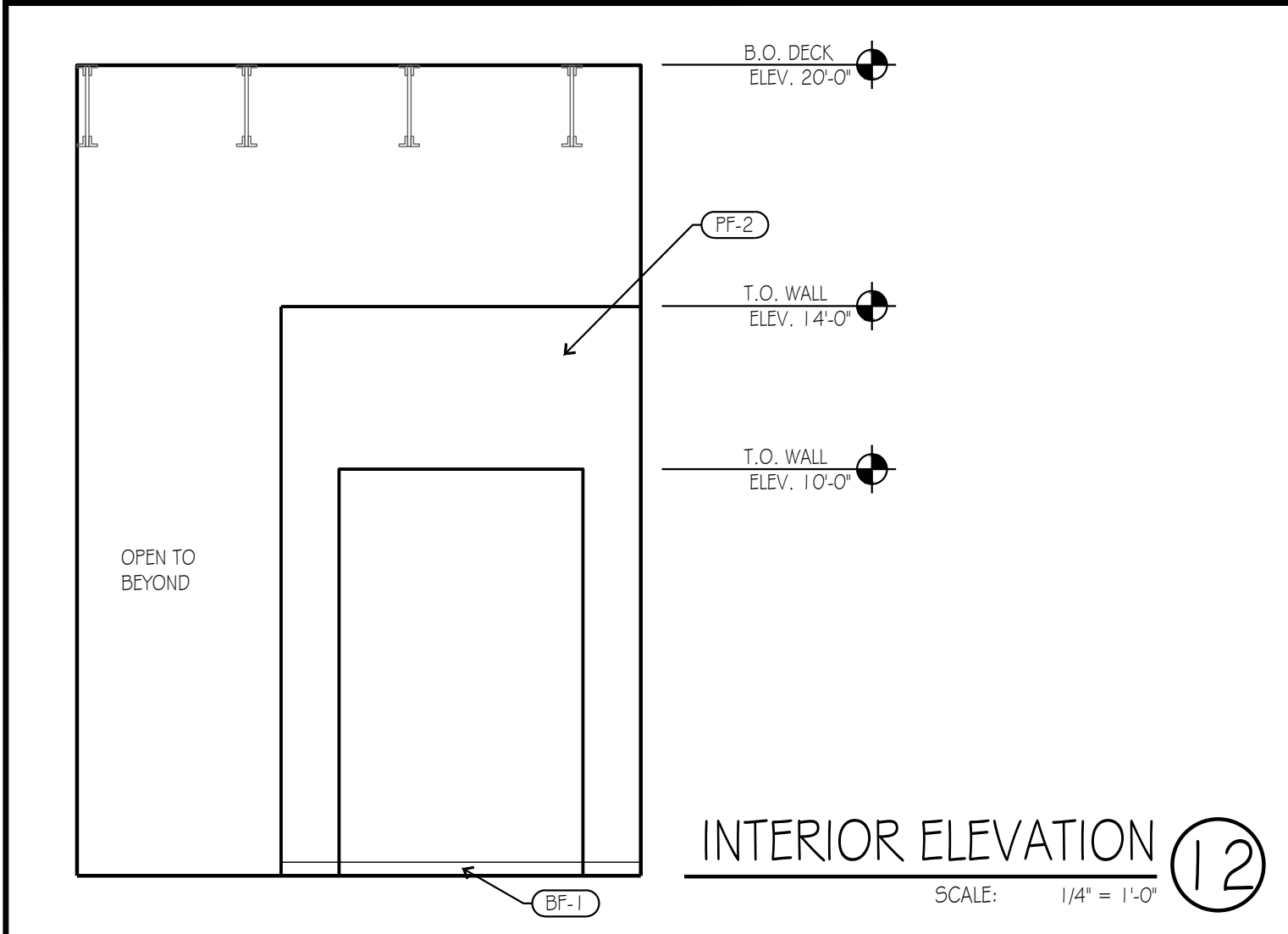
project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003
drawing issuance
PERMIT/BID 03.05.24
drawing revisions
No. Description: Date:
CITYOWNER COMMENTS 04.16.24

professional seal
STATE OF MISSOURI
BERRY C. KLOVER
No. 000000000
APR 18 2024
drawing title
INTERIOR ELEVATIONS
drawing number
A500





NOTE: ALL B.O. DECK AND B.O. BEAM SHOWN AS APPROXIMATE. GC TO FIELD VERIFY LOCATIONS AND DEPTH PRIOR TO CONSTRUCTION START.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review

kloverarchitects
incorporated
8813 PENROSE LANE SUITE 400 • LENEXA, KS 66219
ph: 913.649.8181 • fx: 913.649.1275 • www.klover.net

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project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003

drawing issuance
PERMIT/BID 03.05.24

drawing revisions
No. Description: Date:

professional seal

HENRY C. KLOVER
REGISTERED ARCHITECT
A-5232

Date Signed **MAR 20 2024**

drawing title
INTERIOR ELEVATIONS

drawing number
A501

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project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

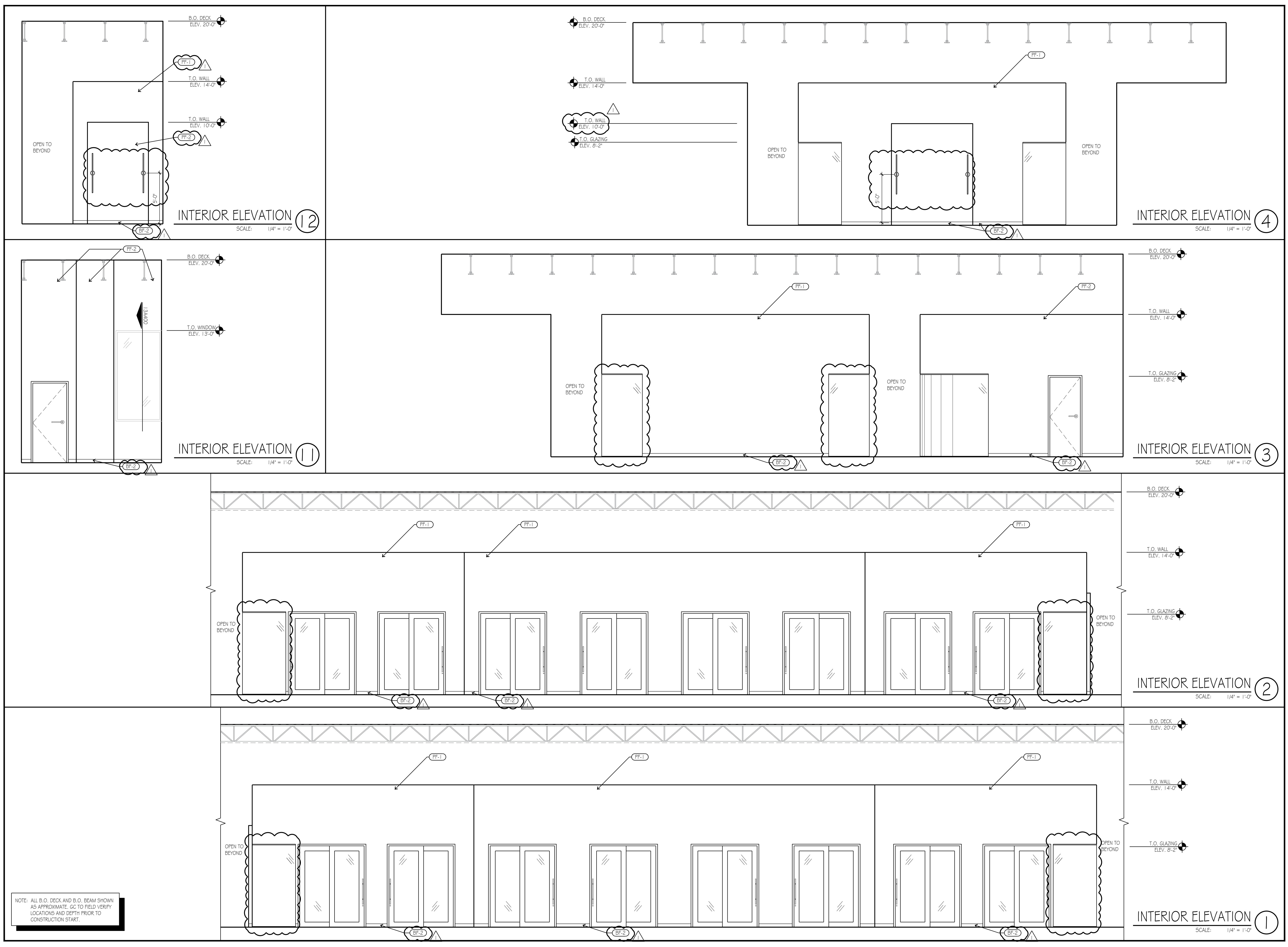
project number
23060.003
drawing issuance
PERMIT/BID 03.05.24
drawing revisions
No. Description: Date:

CITY/OWNER COMMENTS 04.16.24

professional seal

STATE OF MISSOURI
HENRY C. KLOVER
REGISTERED ARCHITECT
Date Signed APR 18 2024

drawing title
INTERIOR ELEVATIONS
drawing number
A501



RESTROOM ACCESSORY SCHEDULE

NO	DESCRIPTION
SB36	GRAB BAR, 36" LONG, PROVIDE BLOCKING
SB42	GRAB BAR, 42" LONG, PROVIDE BLOCKING
SB18	GRAB BAR, 18" LONG, PROVIDE BLOCKING
F-GB	TETOTE 24X40 BACKLIT VANITY MIRROR, MOUNT 40" A.F.F. ANCHOR TO WALL, CENTERED OVER LAVATORIES, HARDWARE OR PLUG IN OPTION.
F-1B	GLOAN, EAF-275-SOL-ISM-PB-O, 5GPM-AER-IR-IQ-FCT
F-2A	TOTO LT1535G OR SIMILAR
F-7	TOILET TISSUE DISPENSER - BOBRICK B-4288, STAINLESS
F-8	SANITARY NAPKIN DISPOSAL BOBRICK B-35139, STAINLESS
F-9A	TOWEL DISPENSER: VANNSOO, WALL MOUNT, GOLD
F-14A	ELKAY EZ H2O BOTTLE FILLING STATION & VERSATILE BI-LEVEL ADA COOLER, OR SIMILAR.
T-1	TOILET

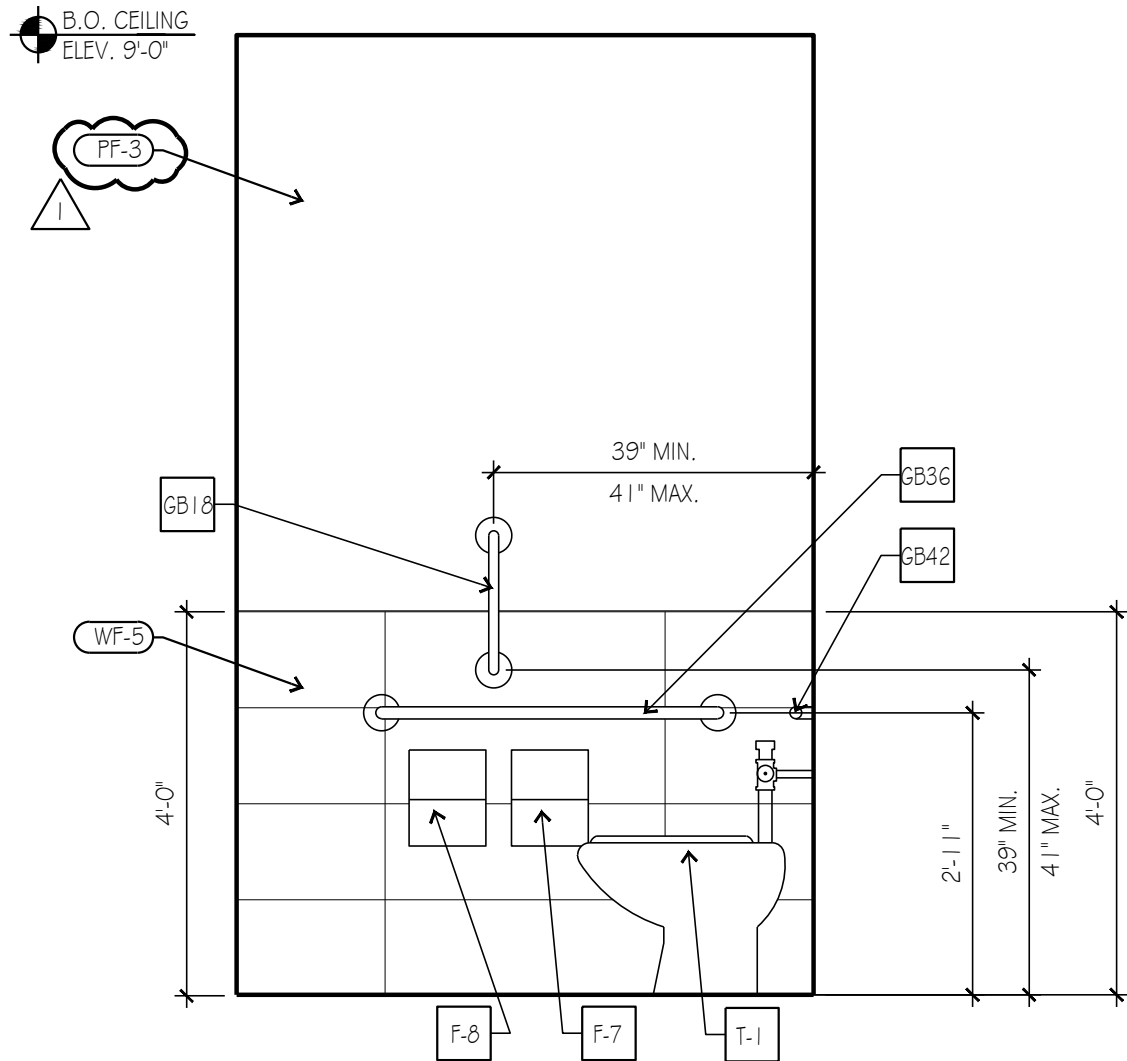
- NOTES:
- DIMENSIONS ARE TO FACE OF FINISH
 - INSTALL BLOCKING IN WALLS FOR GRAB BARS, PARTITIONS, ACCESSORIES AS REQUIRED FOR SUPPORT.
 - REFER TO SHEET A003 FOR CLEAR FLOOR SPACE INFORMATION AND FIXTURE MOUNTING HEIGHTS, E.G. GRAB BARS, TOILET FIXTURES, AND ACCESSORIES.
 - REFER TO A610 FOR WALL AND DOOR TYPES
 - INSULATE PIPES BENEATH LAVATORY

NOT USED 10

SCALE: NTS

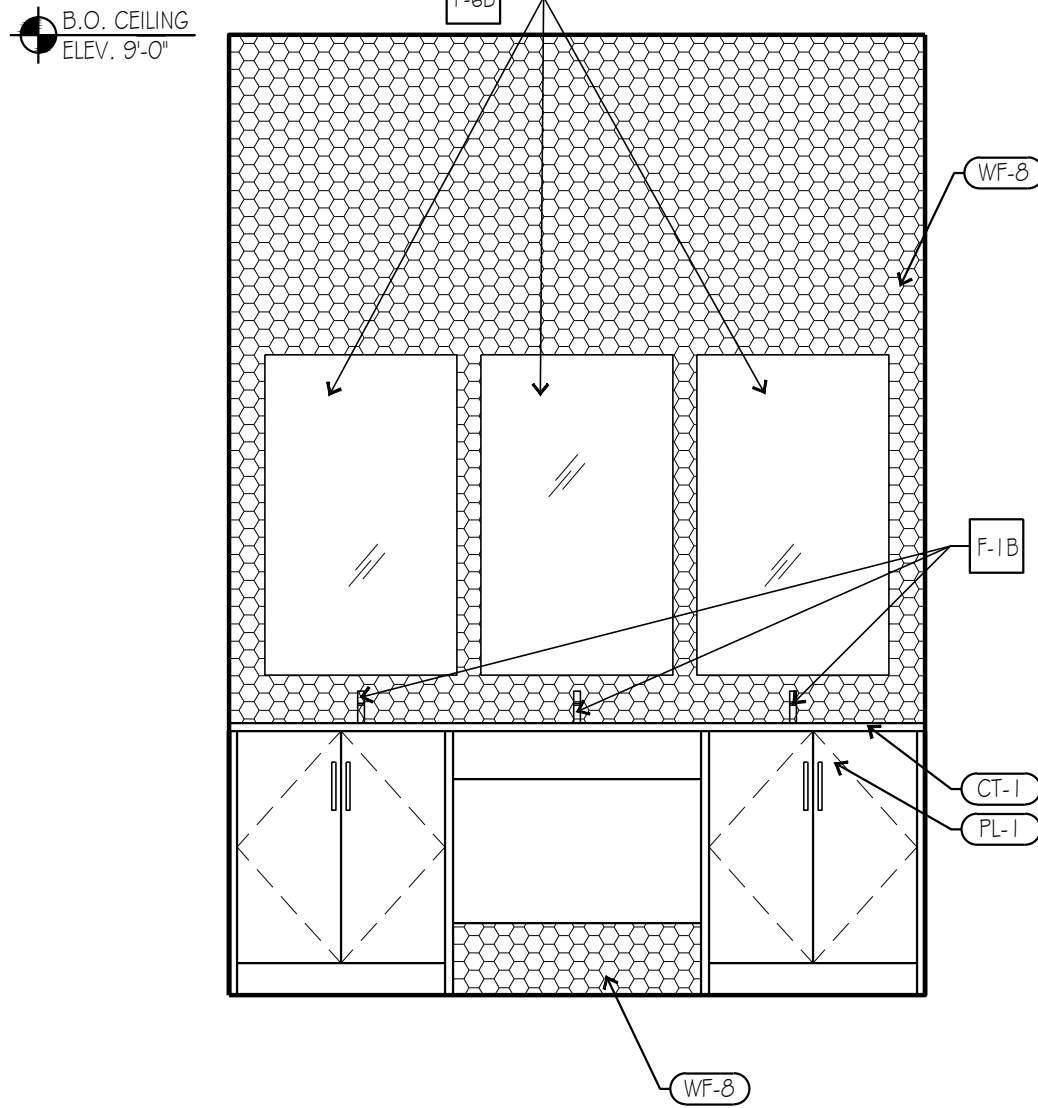
RESTROOM ELEVATION 7

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



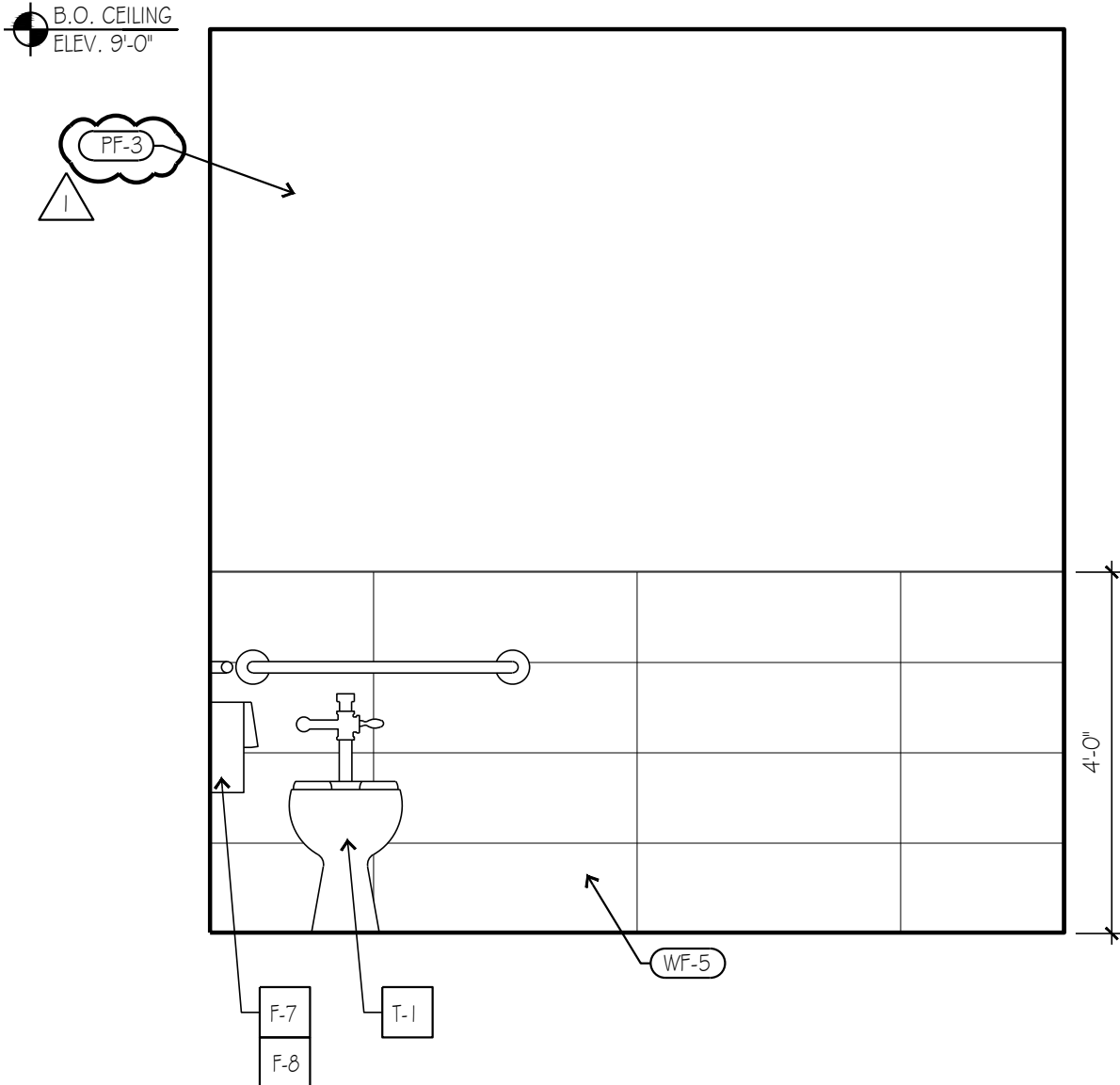
ADA RESTROOM ELEVATION 9

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



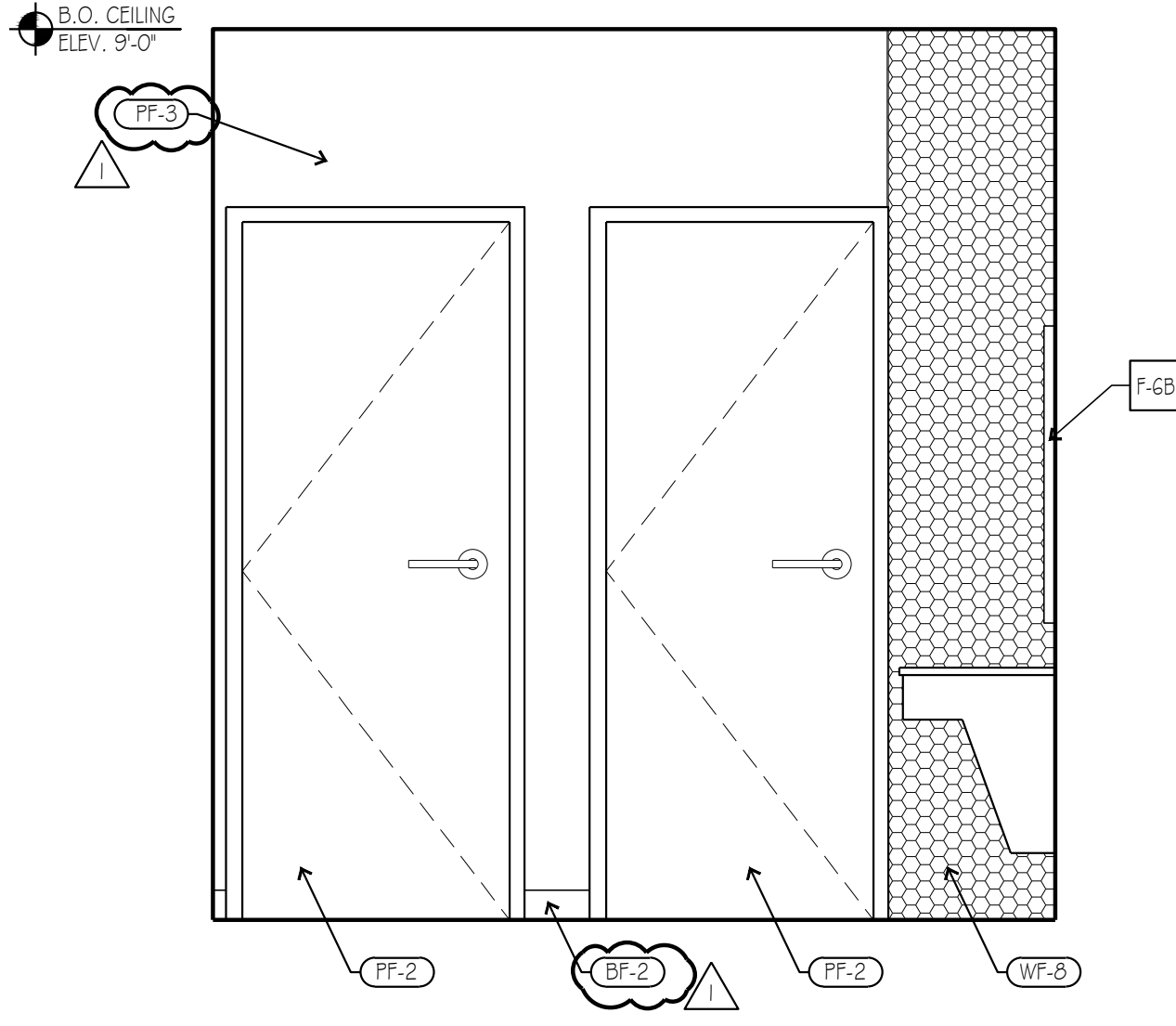
RESTROOM ELEVATION 6

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



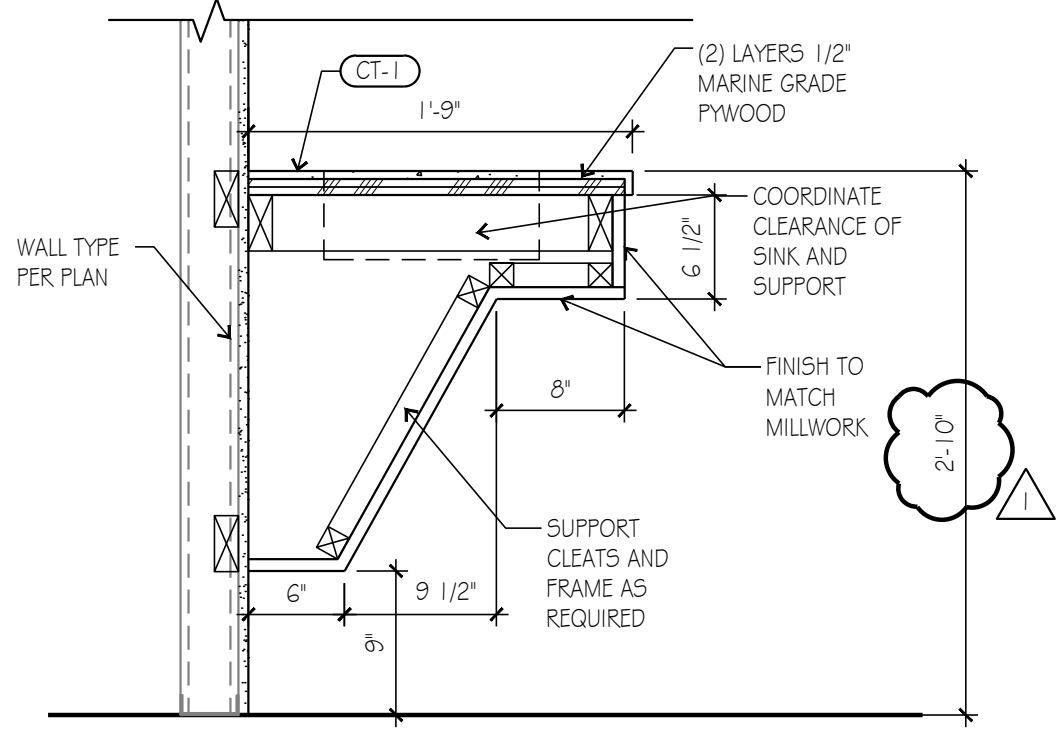
ADA RESTROOM ELEVATION 8

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



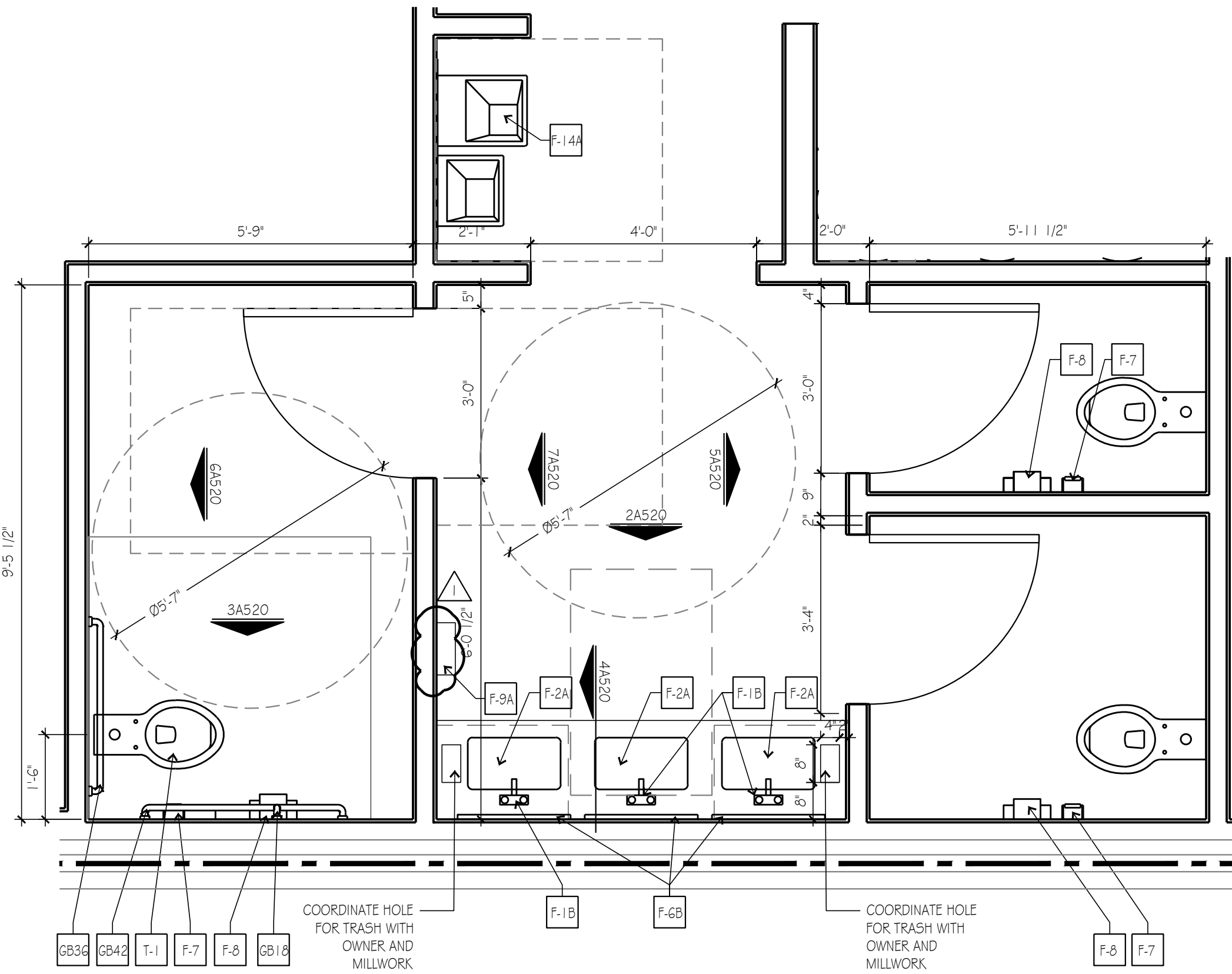
RESTROOM ELEVATION 5

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



LAVATORY CASEWORK DETAIL 4

SCALE: 1" = 1'-0"



ENLARGED RESTROOM PLAN 1

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

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RELATED DOCUMENTS: This Drawing is a single component of an integrated set of Construction Documents. General and Supplementary Conditions of the Contract, General Requirements, Specifications and other drawings may affect the Work described. Failure to review and integrate the intent of the whole of the Construction Documents does not relieve the Contractor from providing a complete Project.

COMPLY with all laws, codes, ordinances and regulations with authorities having jurisdiction and with requirements of the Contract. It is applicable to not start Work until all permits and required approvals are obtained.

VERIFY ACTUAL CONDITIONS and dimensions prior to construction. Commencement of work constitutes verification and acceptance of all existing conditions. Application of a material or equipment item to Work installed by others constitutes acceptance of that Work and assumption of responsibility for satisfactory installation.

DIMENSIONS SHOWN are in feet and inches unless otherwise indicated. INCLUDE & MEASURE dimensions - DO NOT SCALE drawings unless otherwise directed.

project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number 23060.003
drawing issuance PERMIT/BID 03.05.24
drawing revisions No. Description: Date:
CITYOWNER COMMENTS 04.16.24

professional seal

drawing title ENLARGED RESTROOM PLAN
drawing number A520

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OWNER: With all laws, codes, ordinances and regulations with authority having jurisdiction and with requirements of the contract, it is applicable to not start Work until all permits and required approvals are obtained.

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DIMENSIONS: SHOWN are in finish line and a material unless otherwise indicated. INCLUDE a MEASURE dimension - 10 MEASURE dimension shown where otherwise indicated.

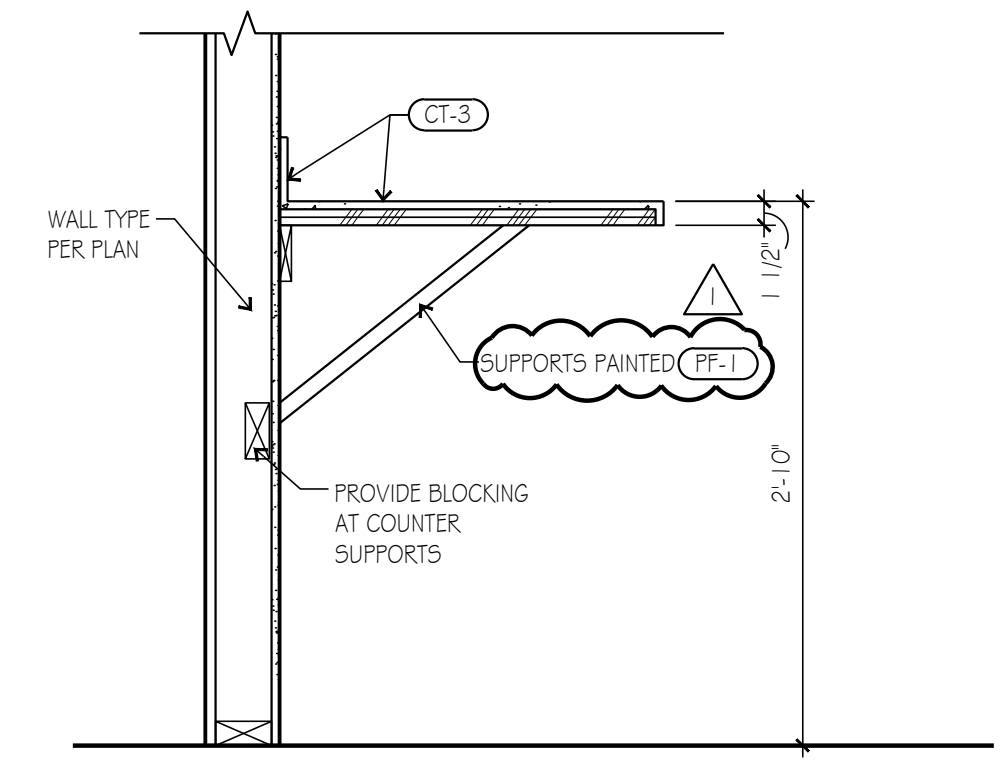
project title

IMAGE STUDIOS
SUMMITTAR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

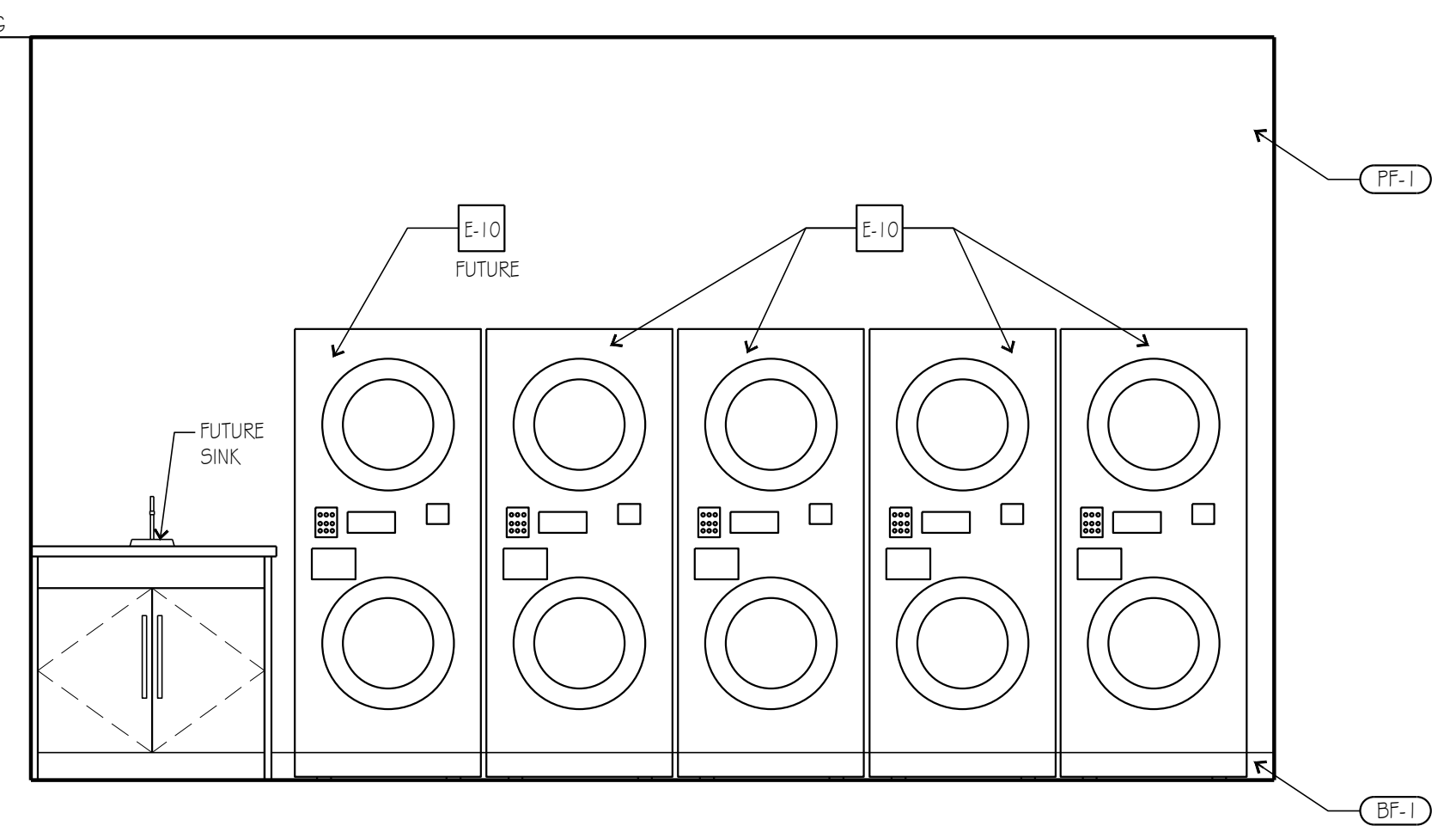
project number
23060.003
drawing issuance
PERMIT/BID 03.05.24
drawing revisions
No. Description: Date:
CITY/OWNER COMMENTS 04.16.24

professional seal

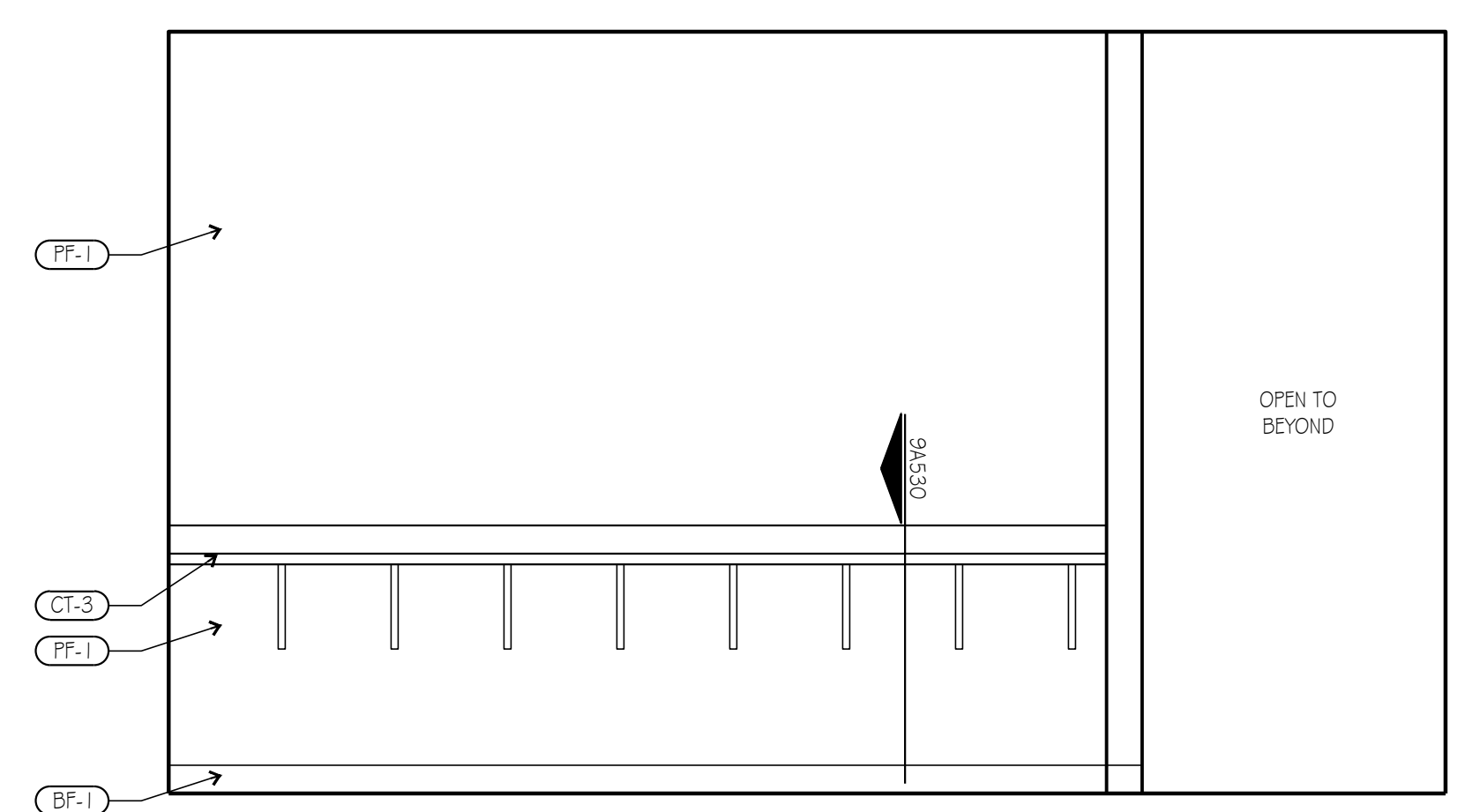
drawing title
ENLARGED BREAKROOM/LAUNDRY
ROOM PLAN
drawing number
A530



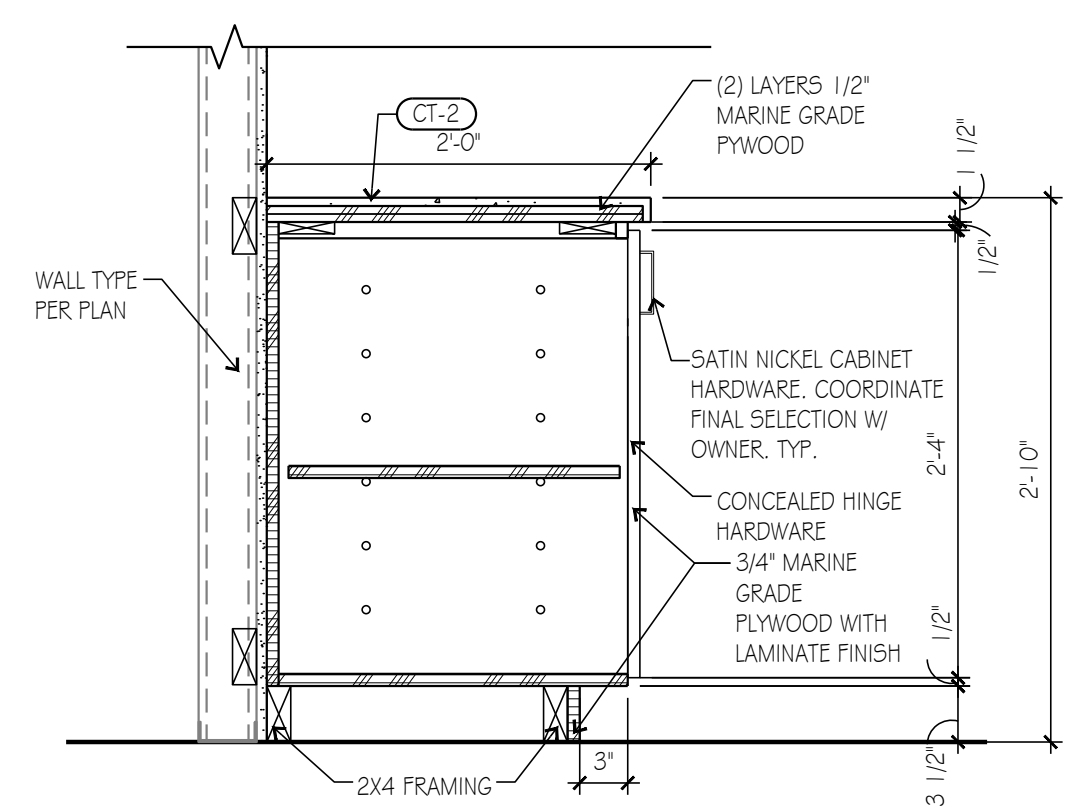
COUNTER DETAIL 9
SCALE: 1/2" = 1'-0"



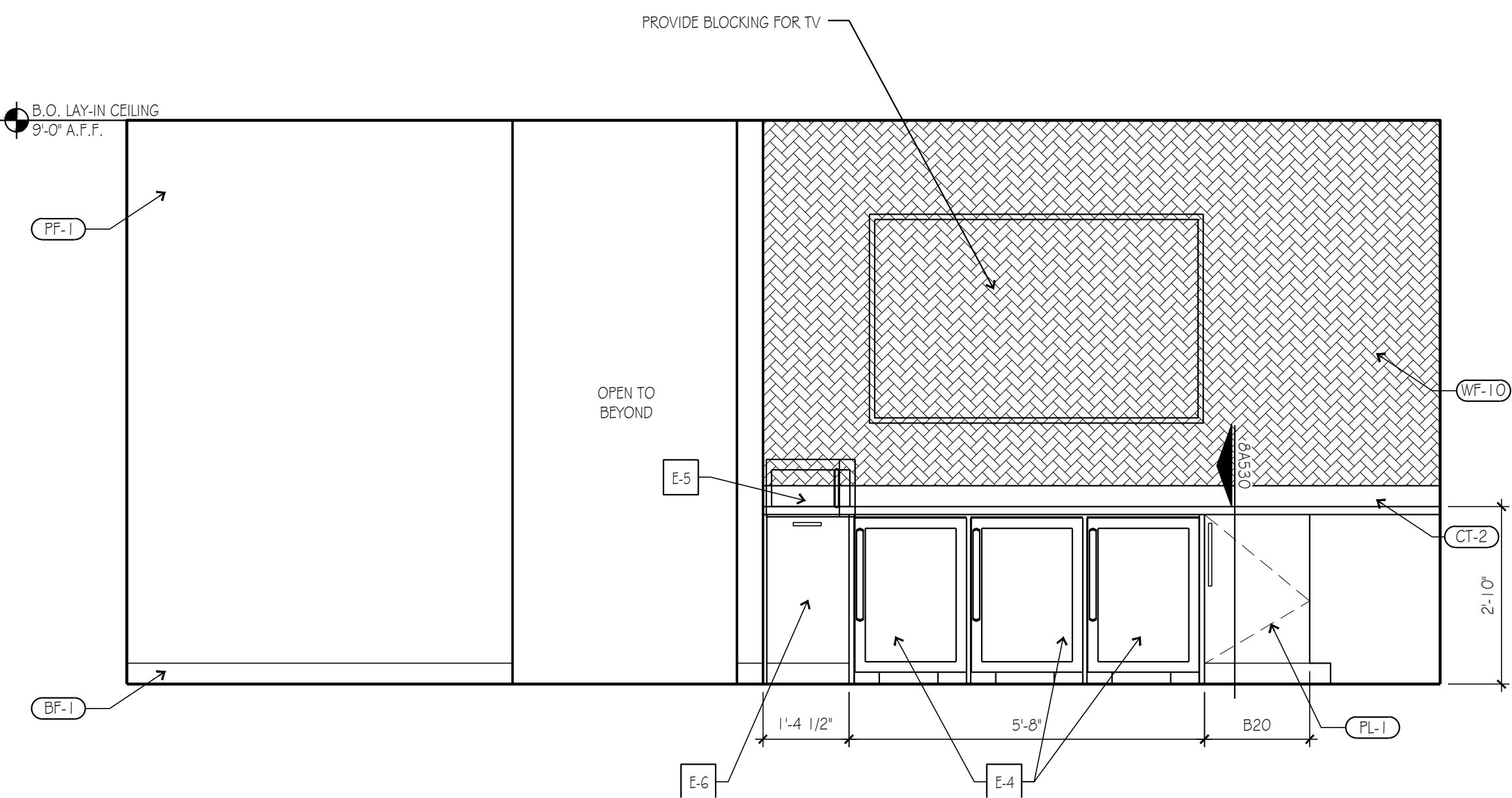
INTERIOR ELEVATION 6
SCALE: 1/2" = 1'-0"



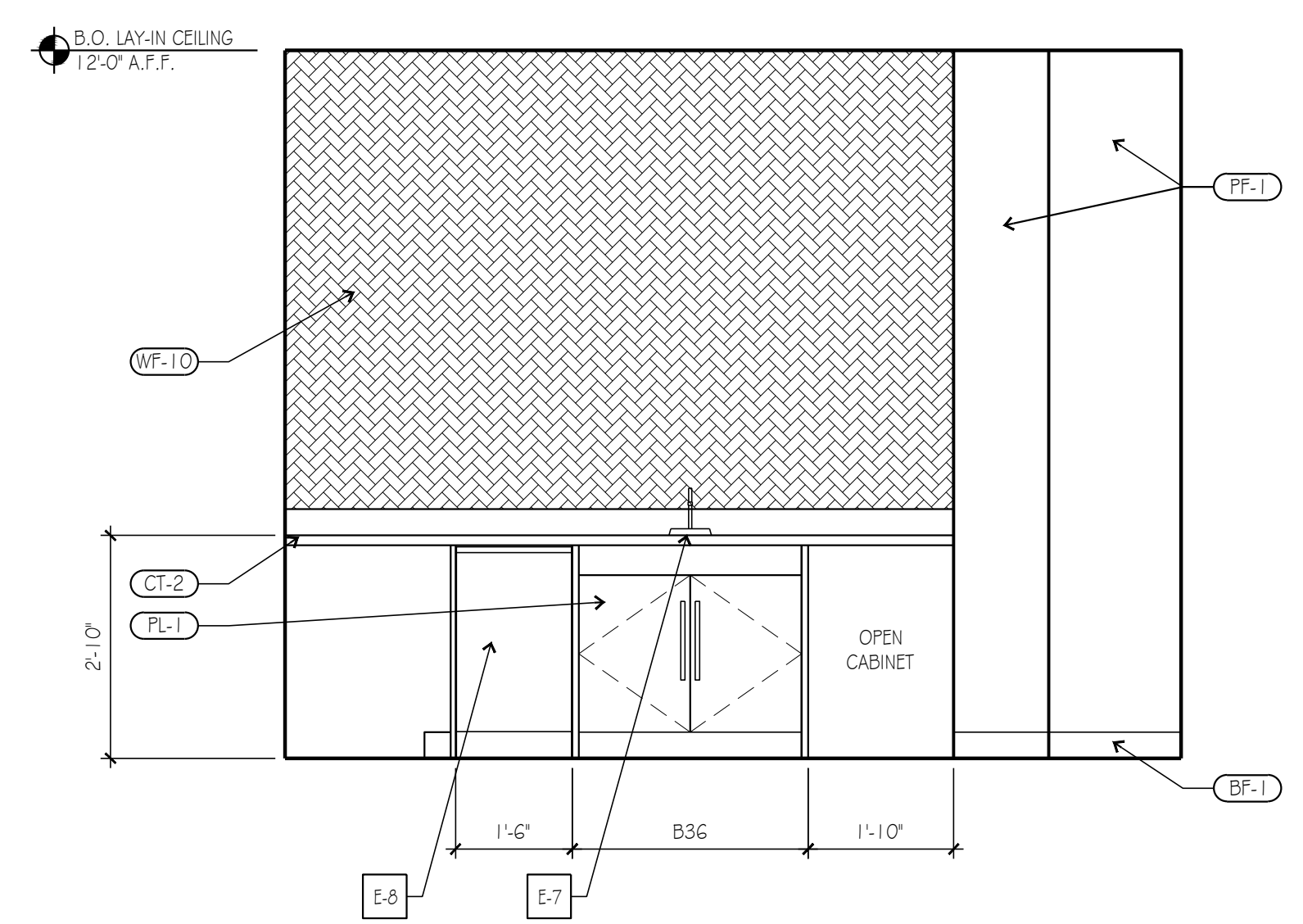
INTERIOR ELEVATION 3
SCALE: 1/2" = 1'-0"



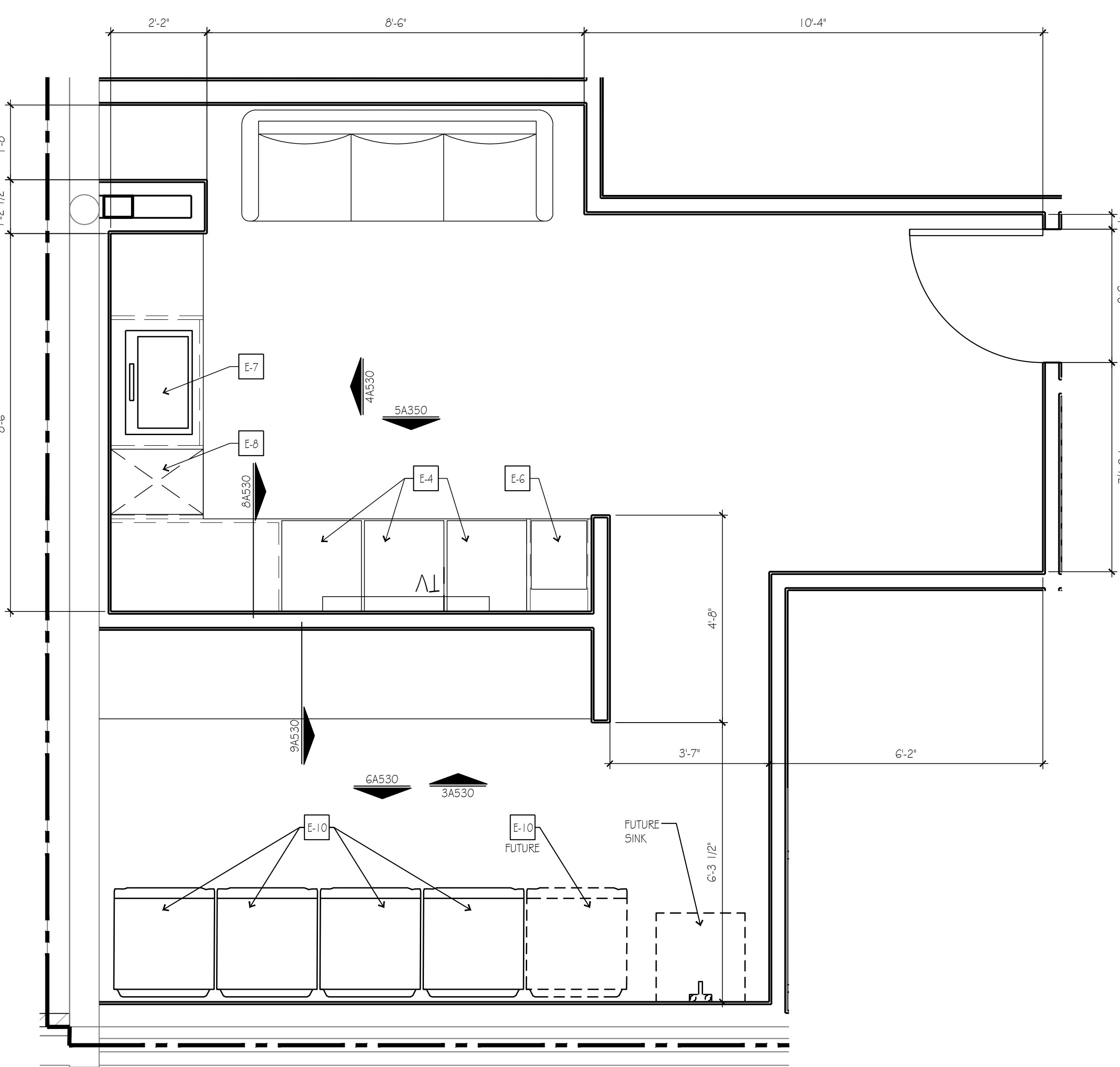
CABINET DETAIL 8
SCALE: 3/4" = 1'-0"



INTERIOR ELEVATION 5
SCALE: 1/2" = 1'-0"



INTERIOR ELEVATION 4
SCALE: 1/2" = 1'-0"



ENLARGED BREAK ROOM/ LAUNDRY PLAN 1
SCALE: 1/2" = 1'-0"

NOT USED 7
SCALE: NTS

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DRAWINGS: SHOWN are in field size if a revised sheet otherwise indicated. INCLUDE a MEASURE dimension - 10' MIN SIZE. Drawings shall otherwise detail.

project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003
drawing issuance
PERMIT/BD 03.05.24
drawing revisions
No. Description: Date:

professional seal
STATE OF MISSOURI
JERRY C. KLOVER
REGISTERED ARCHITECT
No. 13323
Date Signed APR 18 2024
drawing title
DOOR TYPES & SCHEDULES
drawing number
A600

EQUIPMENT, MILLWORK, AND FURNITURE SCHEDULE														MATERIAL & COLOR SCHEDULE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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E-1		SHAMPOO BACKWASH UNIT			KAEMARK		MALIA, 282-B-W OR 282-B-B			STUDIOS		BLACK SINK BOWL		FF-1		LVT		INTERFACE		NATURAL WOODGRAINS, A00208 SAND DUNE		ENTRY, HALLS, BREAK ROOM/LAUNDRY, & STUDIOS		ASHLAR INSTALLATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
E-2		STYLING CHAIR			KAEMARK		FANTASIA STYLING CHAIR W/ IMPORT FLAT SQUARE BASE			STUDIOS		FINISH TO BE BLACK AND STAINLESS STEEL		FF-2		TILE		EMSER		STERLINA II WHITE POLISHED 24X24, WHITE		RESTROOM		STRAIGHT LAY-DIAMOND PATTERN. USE GROUT TEC-910 BRIGHT WHITE.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
E-3		LIT MIRROR			KAEMARK		GL36R			STUDIOS		FINISH TO BE STAINLESS STEEL		BASE		BF-1		THERMOPLASTIC RUBBER BASE ROLLED		MANNINGTON COMMERCIAL		PREMIUM EDGE, BLACK, 4"		INSIDE STUDIOS		BASE MUST BE ROLLED, 4" SECTIONED BASED WILL NOT BE PERMITTED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
E-4		REFRIGERATOR			BY FRANCHISE OWNER		TBD			BREAKROOM		FINISH TO BE STAINLESS STEEL OR BLACK		BF-2		RUBBER BASE		JOHNSONITE		MONUMENT, BLACK, 4"		HALLWAY WALLS, BREAK ROOM, LAUNDRY, UTILITY, IT AND LOBBY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
E-5		MICROWAVE			BY FRANCHISE OWNER		TBD			BREAKROOM				WALLS		PF-1		WALL PAINT		SHERWIN WILLIAMS		SW 7006 EXTRA WHITE, FLAT		GENERAL PAINT RE-A1 20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
E-6		ICE MACHINE			KJSMILE		15X20.3X33.5, BLACK			BREAKROOM				PF-2		WALL PAINT		SHERWIN WILLIAMS		SW6990 CAVIAR, FLAT		GENERAL PAINT RE-A1 20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
E-7		SINK			AMERICAN STANDARD OR SIMILAR		33X22			BREAKROOM		TO INCLUDE GARBAGE DISPOSAL		PF-3		WALL PAINT		SHERWIN WILLIAMS		SW 7006 EXTRA WHITE, EPOXY		RESTROOM WALLS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
E-8		DISHWASHER			FRIGIDAIRE		FFBD1831UB, 18" BUILT IN			BREAKROOM				WF-1		NOT USED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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SET #1 SLIDING DOORS: BLACK 36" LADDER DOOR PULL DEADLOCK W/ THUMB TURN & KEYED CYLINDER BLACK ANODIZED SILL CHANNEL, ROLLERS, DOOR STOP														SET #4 EXTERIOR DOORS: TRIMCO LOCK SET STOREFRONT PULL CONT. PIANO HINGE THRESHOLD CLOSER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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COMPLY with all laws, codes, ordinances and regulations with authorities having jurisdiction and with requirements of the Landlord. If applicable, do not start Work until all permits and required approvals are obtained. Commencement of work constitutes verification and acceptance of all existing conditions. Application of a material or equipment item to Work installed by others constitutes acceptance of that Work, and assumption of responsibility for satisfactory installation.

DIMENSIONS: SHOW size to finish line if a material sizes otherwise indicated. DIMULATE & MEASURE dimensions - DO NOT MEASURE drawings unless otherwise directed.

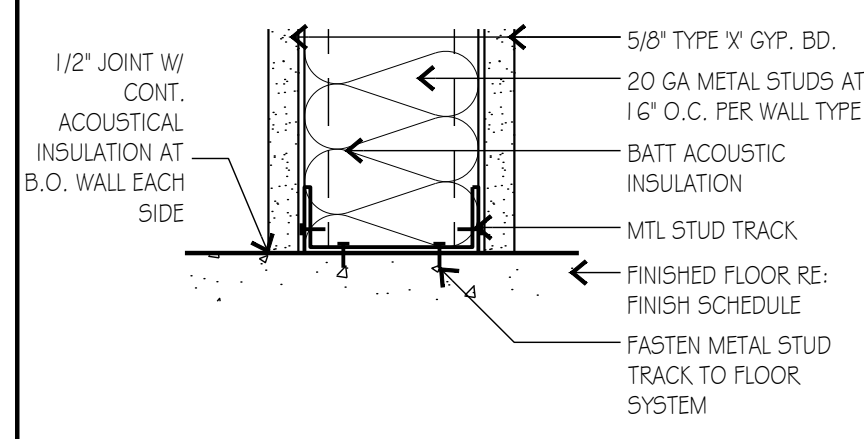
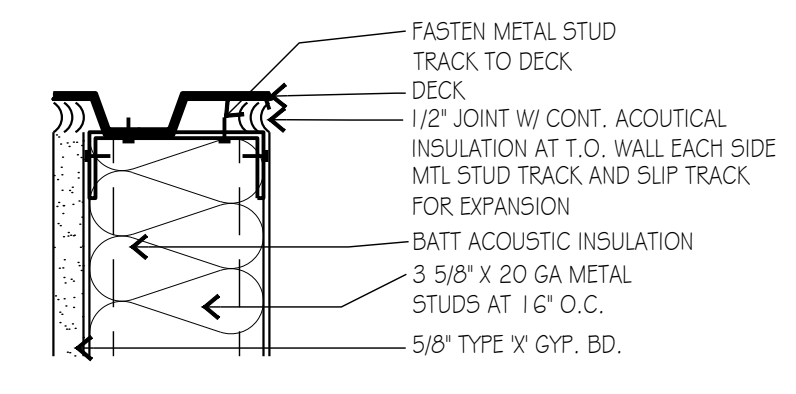
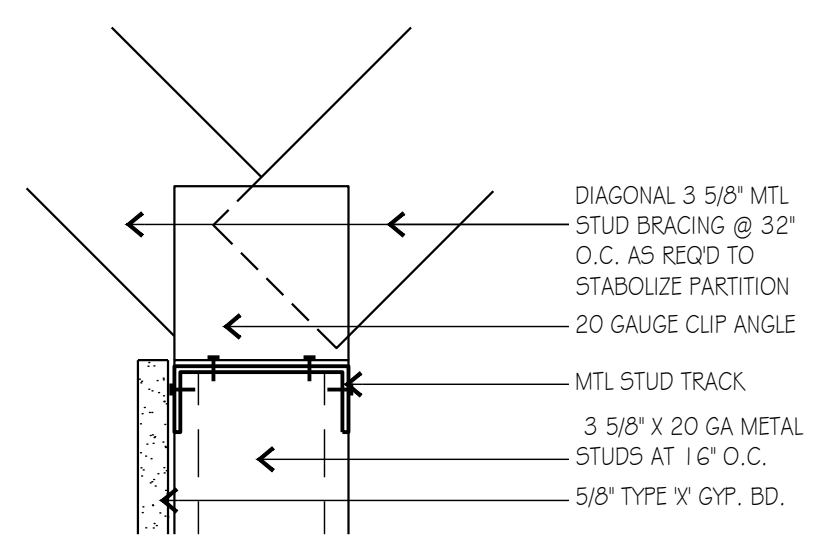
project title

IMAGE STUDIOS
SUMMITFAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

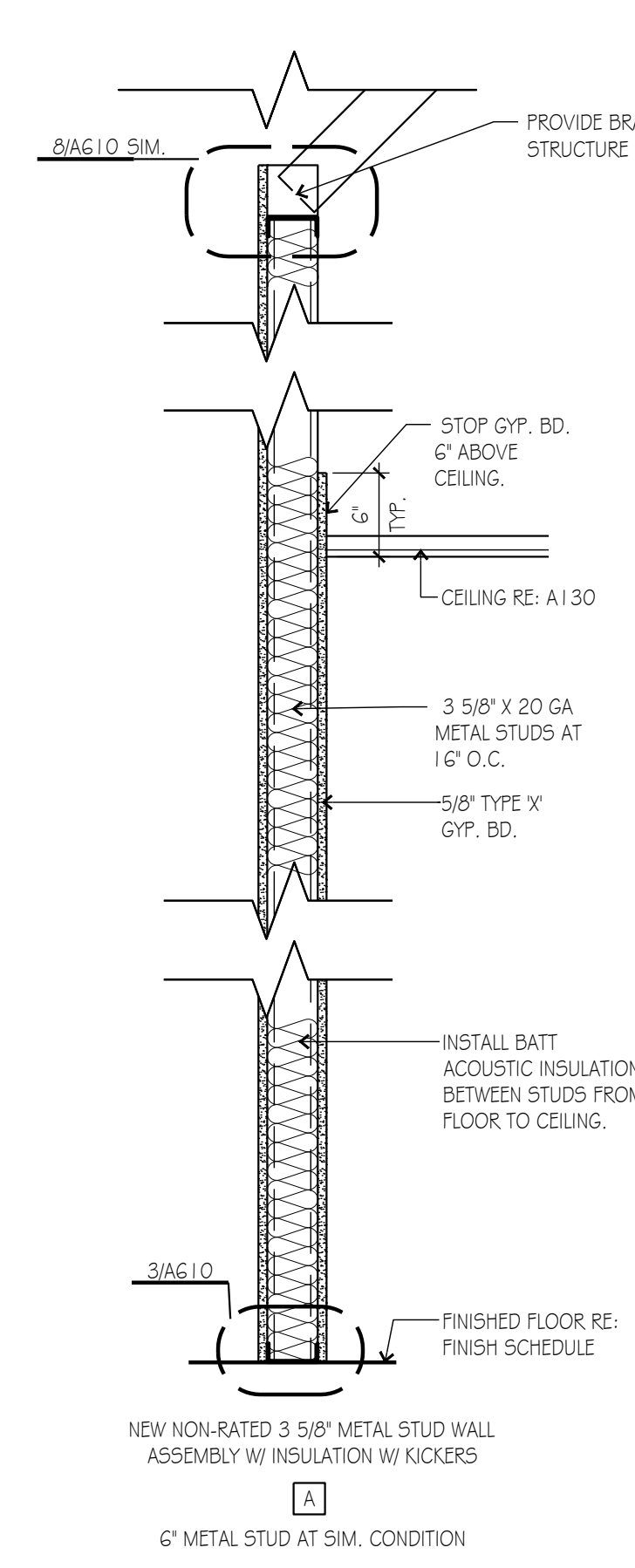
project number
23060.003
drawing issuance
PERMIT/BD 03.05.24
drawing revisions
No. Description: Date:
CITY/OWNER COMMENTS 04.16.24

professionalseal
STATE OF MISSOURI
HENRY C. KLOVER
No. 232
APR 18 2024
Date Signed

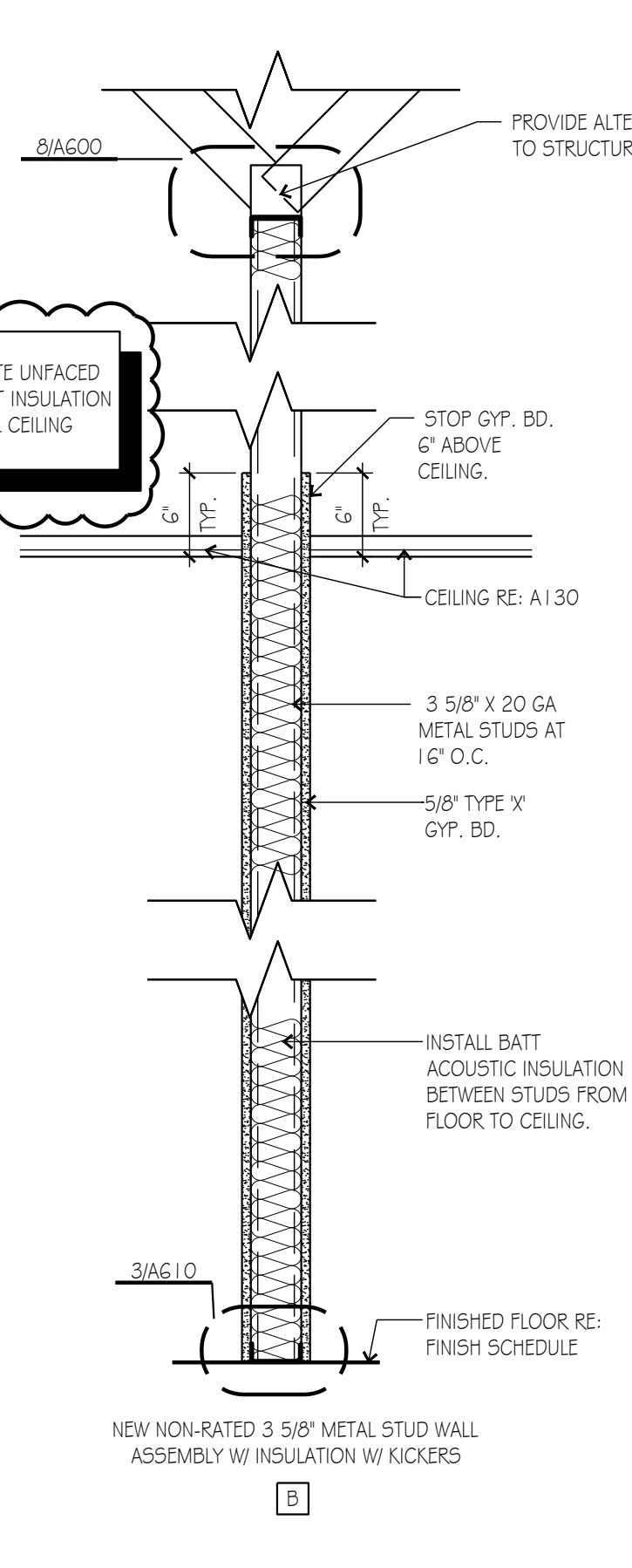
drawing title
WALL TYPES & DETAILS
drawing number
A610



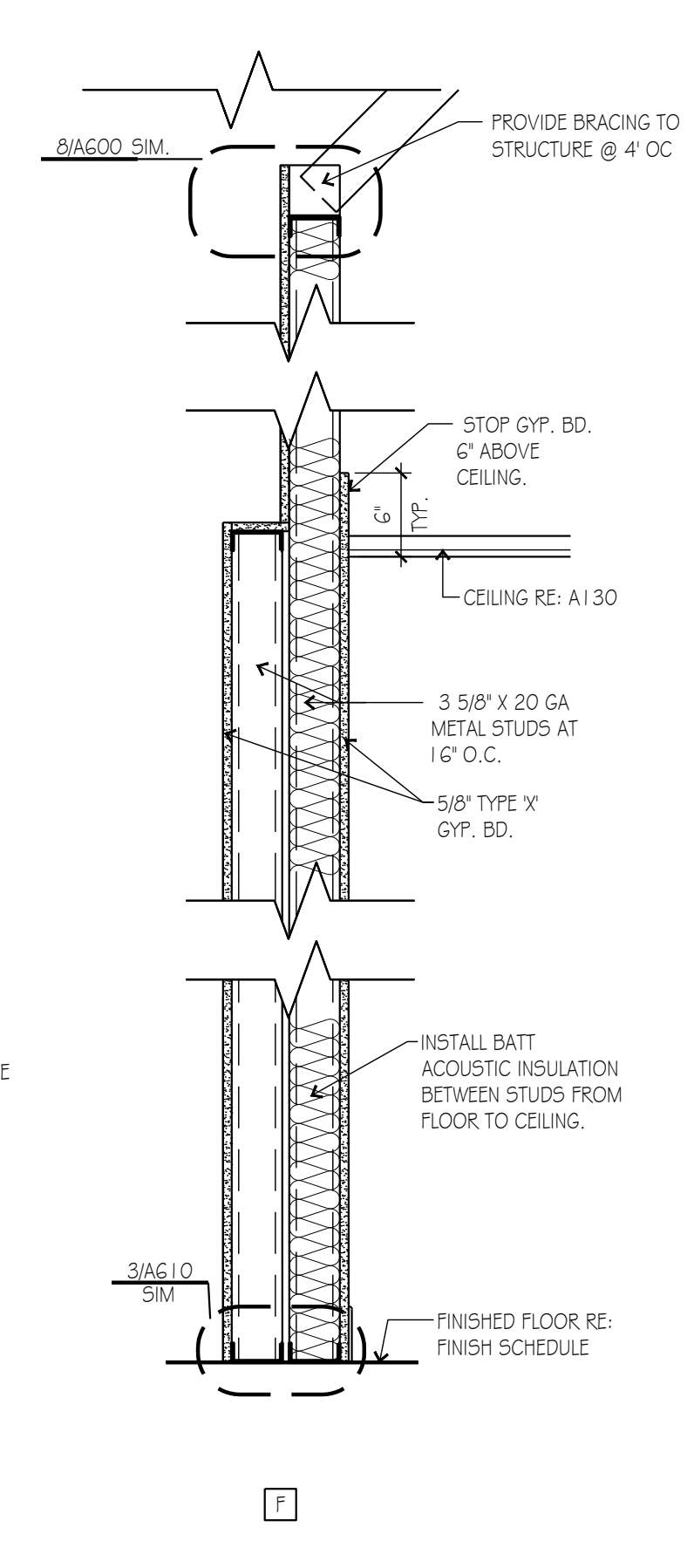
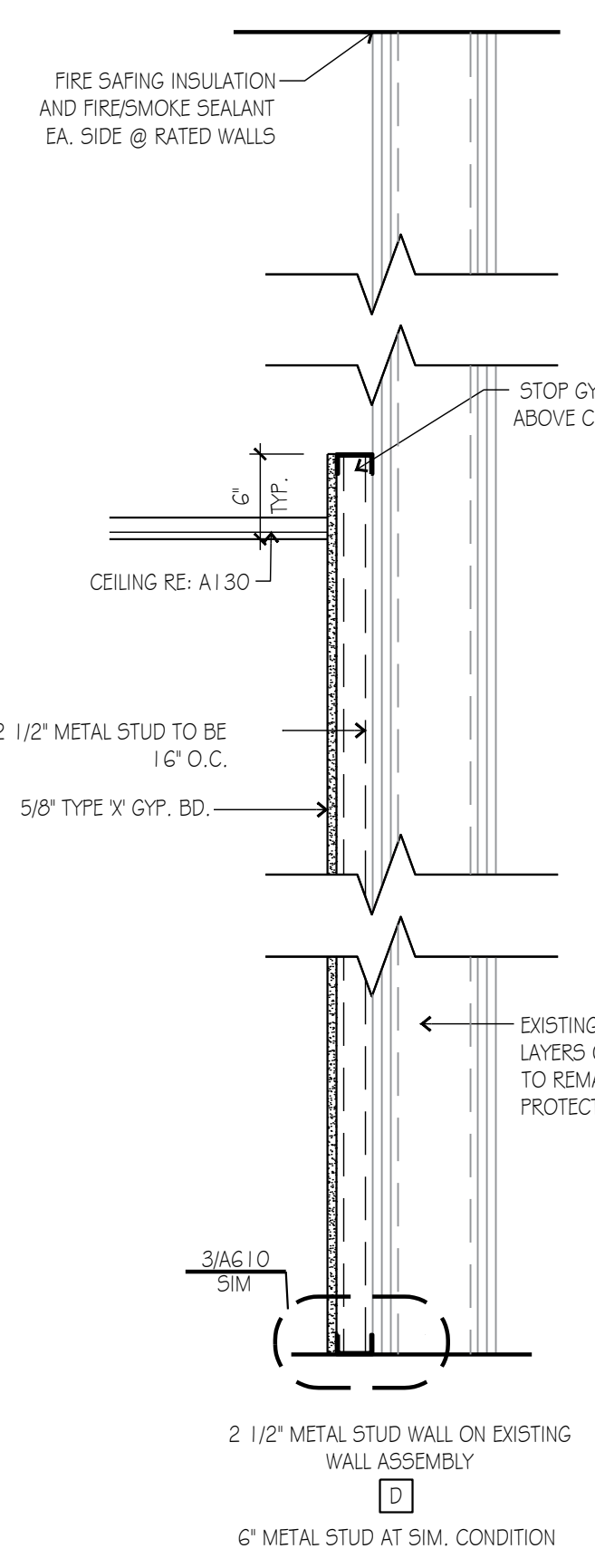
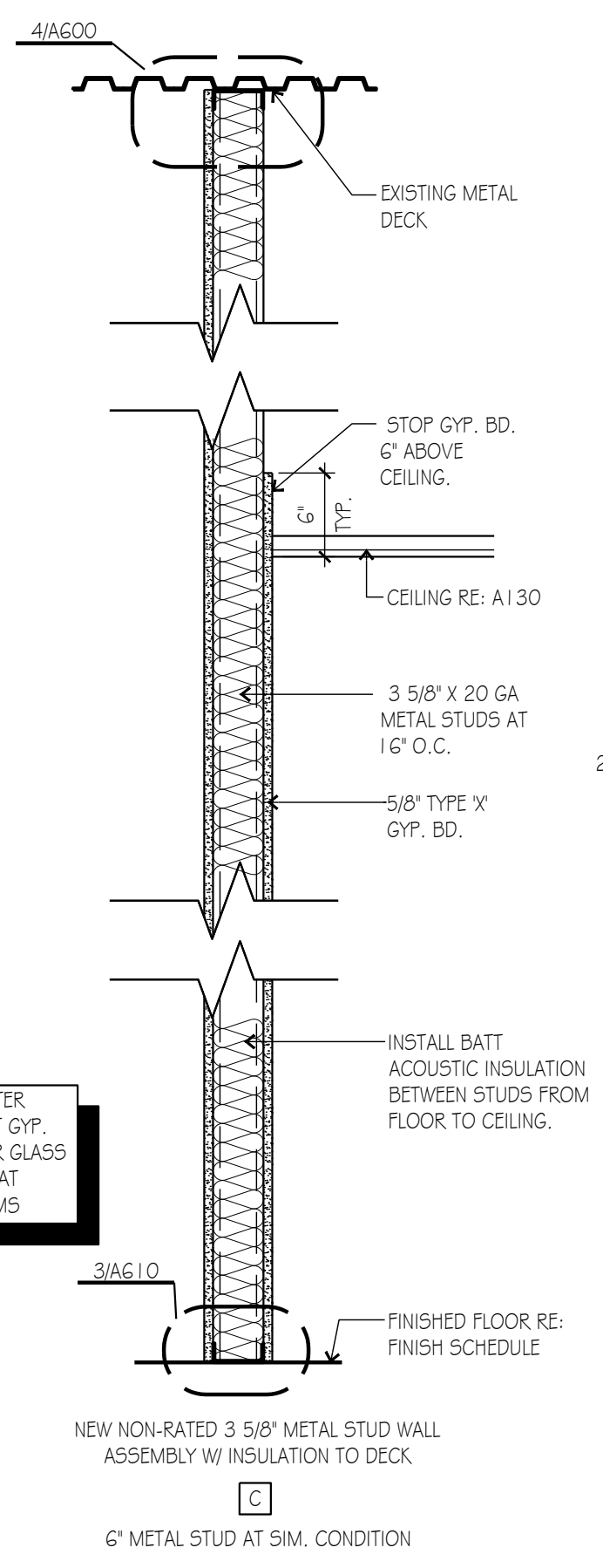
NOT USED 7. Scale: NTS



NOTE: ALTERNATE UNFACED R13 BATT INSULATION OVER ALL CEILING GRID.

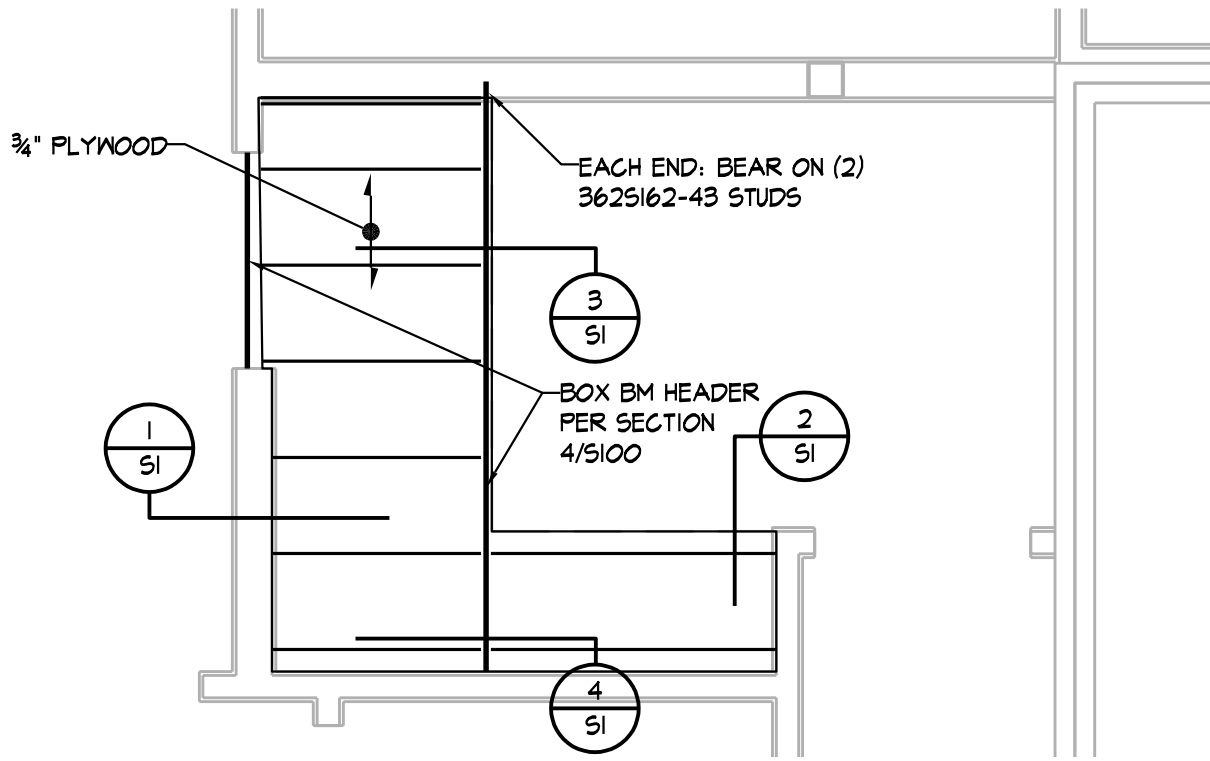


NOTE: WATER RESISTANT GYP. BOARD OR GLASS MAT GYP. AT RESTROOMS



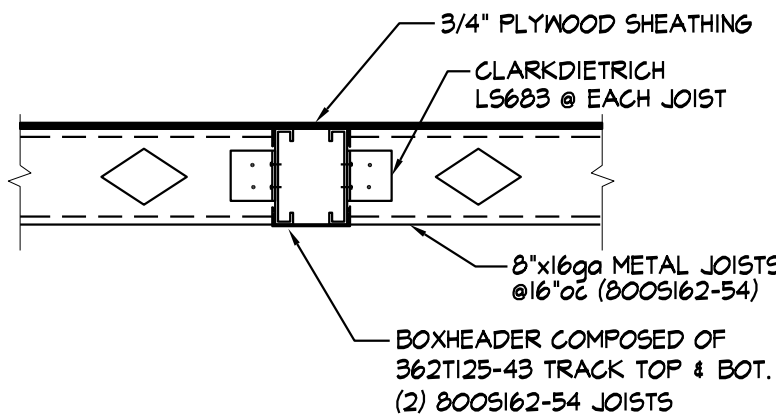
WALL TYPES 1. Scale: 1" = 1'-0"

- GENERAL NOTES - STRUCTURAL
- The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
 - The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on architectural, mechanical, or electrical drawings. All conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect or engineer's attention for direction before proceeding.
 - All design and construction work for this project shall conform to the requirements of the 2018 International Building Code, as amended by the City of Lee's Summit, Missouri.
 - These drawings are for this specific project and no other use is authorized.
 - Structural Design Load Criteria:
 - Dead Load= 10 psf
 - Live Load= 125 psf
 - Lateral Loads:
 - 1) Seismic: $S_e = 0.1$, $S_1 = 0.068$, $I_e = 1.0$
Site Classification D (assumed); $S_{ds}=0.108$; $S_{d1}=0.104$
Seismic Design Category B.
Basic Seismic Force-Resisting System:
Light Framed Walls with Shear Panels of All Other Materials
 $R=2.0$, $\Omega=2.5$; $C_d = 1.15$, $V=0.094$ W
 - This project is designed to resist the most critical effects resulting from the load combinations of section 1605.3 of the 2018 International Building Code.
6. Light Gage Metal Structural Framing
- All load bearing, light gage structural studs, track, and bridging shall be of the type, size, gage, and spacing as shown on the plans, minimum.
 - All materials shall be 55,000 psi minimum yield except studs of 16 gage or heavier shall have a minimum yield of 50,000 psi.
 - All properties, fabrication, and erection shall be in accordance with latest editions of the AISI "Specifications for the Design of Cold-Formed Structural Members."
 - All framing components shall be cut squarely or at an angle to fit squarely against abutting members. Splicing of axially loaded members is not permitted. Members shall be held firmly in place until properly fastened. Attachments of similar components shall be by welding, screw attachment, or bolting. Wire tying of components is not permitted.
 - Tracks shall be securely anchored to floor and overhead members. Special anchorage requirements required for wind bracing shall be as shown on the plans.
 - Prior to fabrication and/or erection, the contractor shall submit shop drawings complete with detail of erection, fabrication, attachments, anchorages, insets, etc. for review by the architect/engineer.
7. Copyright and Disclaimer:
- All drawings in the structural set (S-series drawings) are the copyrighted work of Bob D. Campbell and Company, Inc. These drawings may not be photographed, traced, or copies in any manner without the written permission of Bob D. Campbell and Company, Inc. Exception: Original drawings may be printed for distribution to the owner, architect, and general contractor for coordination, bidding, and construction. Subcontractors may not reproduce these drawings for any purpose or in any manner.
 - Clark A. Basinger, P.E., registered engineer and a representative of Bob D. Campbell and Company, Inc., do hereby accept professional responsibility as required by the professional registration laws of this state for the structural design drawings consisting of S-series drawings. I hereby disclaim responsibility for all other drawings in the construction document package, they being the responsibility of other design professionals whose seals and signed statements may appear elsewhere in the construction document package.



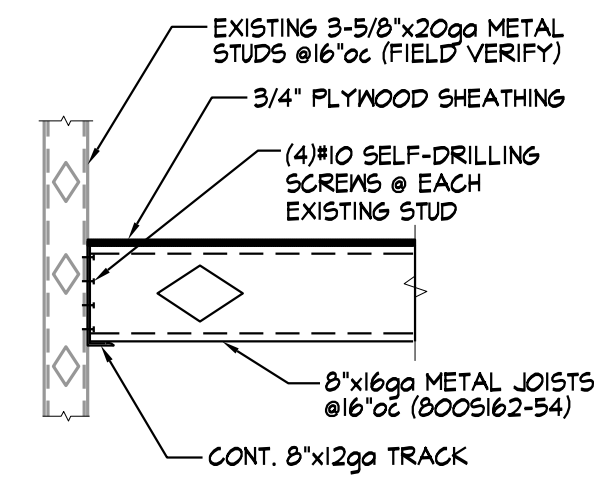
MEZZANINE FRAMING PLAN

3/8" = 1'-0"



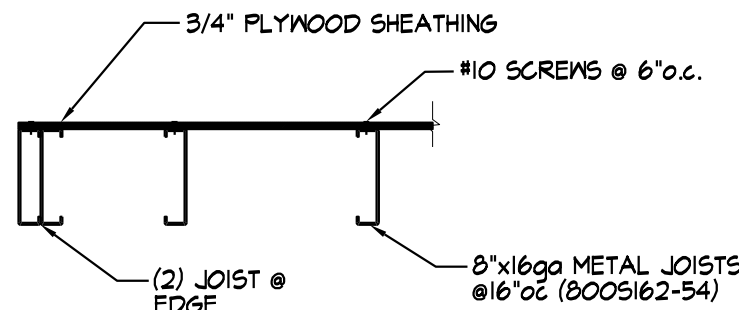
SECTION 4

3/4" = 1'-0"



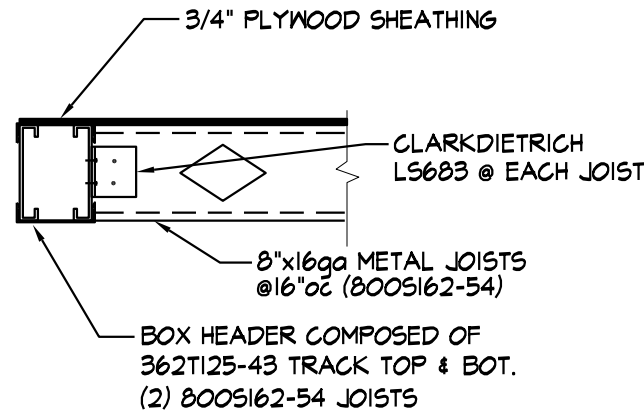
SECTION 1

3/4" = 1'-0"



SECTION 2

3/4" = 1'-0"



SECTION 3

3/4" = 1'-0"

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VERIFY ACTUAL CONDITIONS and dimensions prior to construction. Commencement of work constitutes verification and acceptance of all existing conditions. Application of a material or equipment item to Work installed by others constitutes acceptance of that Work and assumption of responsibility for satisfactory installation.

DIMENSIONS SHOWN are to finish face of a material unless otherwise indicated. OBTAIN & MEASURE dimensions - DO NOT SCALE drawings unless otherwise directed.

project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003
drawing issuance
PERMIT/BD 03.05.24
drawing revisions

No. Description Date

CITY/OWNER COMMENTS 04.16.24

professional seal



drawing title
GENERAL NOTES & MEZZANINE
FRAMING PLAN
drawing number

S001

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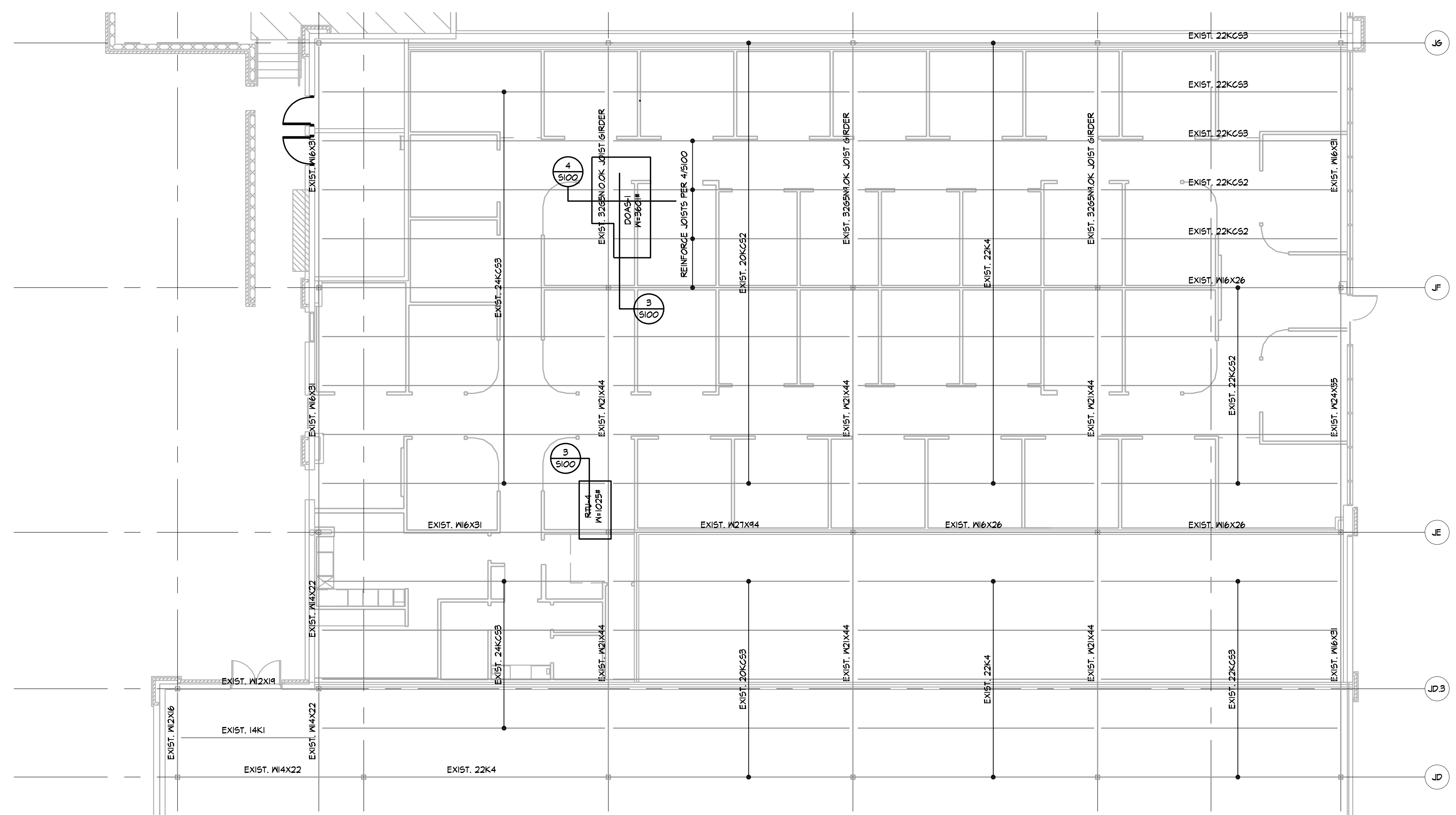
project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003
drawing issuance
PERMIT/BD 03.05.24
drawing revisions
No. Description: Date:
△ CITY/OWNER COMMENTS 04.16.24



drawing title
ROOF FRAMING PLAN
drawing number
S100



MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS
 - A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
 - B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
 - C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
 - D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
 - E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
 - F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
 - G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
2. OPERATION AND MAINTENANCE MANUALS
 - A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CAYLOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
 - B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
 - C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.
3. MANUFACTURERS
 - A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSIDERED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE. SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. MOTORS
 - A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
5. TESTING, BALANCING, AND CLEANING
 - A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
 - B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
 - C. FIRE PROTECTION PIPING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA.
 - D. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
 - E. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 90 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
 - F. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED INDEPENDENT BALANCING PERSONNEL WHO HAVE PROVIDED EXPERIENCE WITH BALANCING PROCEDURES AND ARE CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL (IAPAC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
 - 1) BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION OF PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.
 - 2) WITHIN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS. ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.
 - G. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED, AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEPARATELY TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED. IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.
6. PLUMBING
 - A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
 - B. ALL EXPOSED WASTE PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
 - C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
 - D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
 - E. CLEANOUTS
 - 1) VINYL TILE FLOOR: JR SMITH #1400, OR EQUAL.
 - 2) QUARRY TILE FLOOR: JR SMITH #4020, OR EQUAL.
 - 3) CARPETED FLOOR: JR SMITH #4020, OR EQUAL.
 - 4) UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
 - 5) WALL: JR SMITH #4020, OR EQUAL, 2" ABOVE THE FLOOR.
 - 6) WALL-FLOORS: FLOORFORK TRUCK AREAS: JR SMITH #4100, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND ROUND ADJUSTABLE SCREWED EXTRA HEAVY DUTY NICKEL BRONZE TOP.
 - F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.
 - G. WATER HEATERS
 - 1) EVERY WATER HEATER SHALL HAVE AN APPROVED MANE INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SPHING OF A STORAGE WATER HEATER OR TANK.
 - 2) BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER SUPPLY SHALL HAVE A VACUUM RELIEF VALVE INSTALLED. ANSI Z11.2.
 - 3) STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE.
 - H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
 - 1) INSTALL 1/12" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
 - 2) INSTALL 1/8" AND LARGER PIPE AT 1/8" PER FOOT FALL.
7. PIPING
 - A. DOMESTIC COLD, HOT, AND HOT WATER RECYCULATING (ABOVEGROUND).
 - 1) TYPE I, HARD DRAWN COPPER TUBING, ASTM B-88.
 - 2) WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200, ANSI B16.22, MSS SP-104.
 - 3) MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS, ASME B16.22, ASME B16.51, or ASME B16.16. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO APMSI PS-117 OR ASME B16.51.
 - B. PEK, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE.
 - 1) PEK-X AND PEK-Y MEETING ANSINSF61 AND ANSINSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-G", "NSF-61-C", OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER.
 - 2) PEK-X AND PEK-Y MEETING ANSINSF61 AND ANSINSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-G", "NSF-61-C", OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER.
 - 3) PEK MECHANICAL, CRIMP-INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. DECREASE PEK PIPING SIZES TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR POTABLE WATER SUPPLY MAINS.
 - 4) HOPE, PIGMENTED BLUE THROUGHOUT, CTS SIZES: 1/2" AWWA C901 4710 DR9 PC250 IPS SIZES 2"-3", AWWA C901 4710 DR11 PC200.
8. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS
 - 1) PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE MORE THAN 8% LEAD CONTENT.
 - 2) PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS, AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 372 AND HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS.
9. SANITARY SEWER AND VENTS
 - 1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS" FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2685, DRAIN, WASTE, AND VENT; PVC SOCKET FITTINGS: ASTM D 2685, DRAIN, WASTE, AND VENT; PVC SOCKET FITTINGS: ASTM D 2685, DRAIN, WASTE, AND VENT; PATTERNING AND TOIT SCHEDULE 40 PIPE: ADHESIVE PRIMER: ASTM F 698, SOLVENT CEMENT: ASTM D 2564.
 - 2) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 310. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF8 INTERNATIONAL.
 - 3) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
 - 4) SANITARY SEWER AND VENTS (ABOVE GROUND, INTERIOR TO THE BUILDING WHERE CONCEALED IN WALLS).
 - 1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS" FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL ABS PIPE: ASTM D 2685, DRAIN, WASTE, AND VENT; PVC SOCKET FITTINGS: ASTM D 2685, DRAIN, WASTE, AND VENT; PATTERNING AND TOIT SCHEDULE 40 PIPE: ADHESIVE PRIMER: ASTM F 698, SOLVENT CEMENT: ASTM D 2564.
 - 2) PVC PIPE AND FITTINGS: PVC PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS" FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2685, DRAIN, WASTE, AND VENT; PVC SOCKET FITTINGS: ASTM D 2685, DRAIN, WASTE, AND VENT; PATTERNING AND TOIT SCHEDULE 40 PIPE: ADHESIVE PRIMER: ASTM F 698, SOLVENT CEMENT: ASTM D 2564.
 - 3) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 310. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF8 INTERNATIONAL.
 - 4) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
 - 5) CPVC PLASTIC PIPE SHALL BE SCHEDULE 40 OR SCHEDULE 80, COMPLYING WITH ASTM D 1784. STANDARD SPECIFICATION FOR CHLORINATED POLY (VINYL CHLORIDE) (CPVC) PLASTIC PIPE, SCHEDULES 40, 80, AND 120.
 - a. CPVC PLASTIC FITTINGS SHALL BE SCHEDULE 40 OR SCHEDULE 80 TO MATCH THE PIPE, COMPLYING WITH ASTM D 2486, STANDARD SPECIFICATION FOR CHLORINATED POLY (VINYL CHLORIDE) (CPVC) PLASTIC PIPE FITTINGS, SCHEDULE 40, OR ASTM D 2467, STANDARD SPECIFICATION CHLORINATED POLY (VINYL CHLORIDE) (CPVC) PLASTIC PIPE FITTINGS, SCHEDULE 80.
 - b. JOINTS IN CPVC PLASTIC PIPING SHALL BE SOLVENT-CEMENTED IN ACCORDANCE WITH ASTM F 483, STANDARD SPECIFICATION FOR JOINTS FOR IPS CPVC PIPE USING SOLVENT CEMENT.
 - F. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).
 - 1) DWV, WROUGHT COPPER, ANSI B-16.29 (CONDENSATE INSIDE BUILDING).
 - 2) DWV, WROUGHT COPPER, ANSI B-16.29 (WATER HEATER TAP).
 - G. REFRIGERANT
 - 1) ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COLTS, SEAMLESS COPPER TUBING.
 - 2) WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS: BRAZED JOINTS, AWWA S.8. CLASSIFICATION BAG-1 (SILVER).
 - 3) TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
 - 4) SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - H. NATURAL GAS
 - 1) BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
 - a) PIPE 2" AND SMALLER, 150 LB MALLEABLE IRON, THREADED FITTINGS.
 - b) PIPE 2" AND SMALLER, WEGA MEDIUM-SEAM FOR WATER AND GAS, CSA G40.1, TSSA/MSE B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
 - c) PIPE 2-1/2" AND LARGER, WELDED.
 - d) FLUX VALVE, ROCKWELL NORDSTROM FIGURE NO. 1420, 143.
 - 2) BALL VALVE, JOHAR 1-TONE, APPROVALS: UL842, FM, CSA, NSF 614, MSS SP-110.
 - 3) GAS PIPING LABELING
 - a) ALL ELEVATED PRESSURE GAS PIPING SHALL BE LABELED EVERY 40 FEET WITH SIGNS INDICATING "ELEVATED PRESSURE".
 - 4) GAS PIPING PAINTING
 - a) ALL BLACK STEEL GAS PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE PRIMED AND PAINTED TO EITHER MATCH ADJACENT EXTERIOR WHERE LOCATED OR NEAR EXTERIOR WALL AND PAINTED SAFETY YELLOW WHERE LOCATED ON THE ROOF.
 - I. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRUNNELL, FEE AND MASON, OR EQUAL. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-94-69.
 - J. SLEEVES
 - 1) PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.
 - 2) INTERIOR PARTITIONS: 16 GAUGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
 - 3) ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
 - 4) PROTECT AGAINST CONTACT: METALLIC PIPING, EXCEPT FOR CAST IRON, DUCT, IRON, AND GALVANIZED STEEL, SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL FRAMING MEMBERS, CONCRETE, OR CONCRETE WALLS AND FLOORS OR OTHER MASONRY. METALLIC PIPING SHALL NOT BE PLACED IN DIRECT CONTACT WITH CORROSIVE SOIL. SHEATHING USED TO PREVENT DIRECT CONTACT SHALL HAVE A THICKNESS OF GREATER THAN .008" AND THE SHEATHING SHALL BE MADE OF PLASTIC. ANY PIPE THAT PASSES THROUGH A FOUNDATION WALL OR FOOTING SHALL BE PROVIDED WITH A RELIEVING AIR, OR A PIPE SLEEVE SHALL BE BUILT INTO THE FOUNDATION WALL. THE SLEEVE SHALL BE TWO SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL OR FOOTING.
 - K. PLUMBING VENTS, FLASH ROOF VENT INTO ROOFING SYSTEMS AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL, TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
 - L. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.
8. WATER HEATERS
 - A. GAS-FIRED, TANKLESS, DOMESTIC-WATER HEATERS
 1. STANDARD, ANSI Z21.10.3CSA 4.3 FOR GAS-FIRED, INSTANTANEOUS, DOMESTIC-WATER HEATERS FOR INDOOR APPLICATION.
 - B. STANDARD, ANSI Z21.10.3CSA 4.3 FOR GAS-FIRED, INSTANTANEOUS, DOMESTIC-WATER HEATERS FOR INDOOR APPLICATION.
 - C. CONSTRUCTION, COPPER TUBING OR TUBING, COMPLYING WITH NSF 61 AND NSF 372 BARRIER MATERIAL FOR POTABLE WATER, WITHOUT STORAGE CAPACITY.
 1. PRESSURE RATING: 150 PSIG.
 2. HEAT EXCHANGER: STAINLESS STEEL.
 3. INSULATION: COMPLY WITH ASHRAE 90.1.
 4. JACKET: METAL, WITH ENAMELED FINISH, OR PLASTIC.
 5. BURNER: FOR USE WITH TANKLESS, DOMESTIC-WATER HEATERS AND NATURAL-GAS FUEL.
 6. AUTOMATIC IGNITION, MANUFACTURERS PROPRIETARY SYSTEM FOR AUTOMATIC, GAS IGNITION.
 7. TEMPERATURE CONTROL: ADJUSTABLE THERMOSTAT.
 - D. SUPPORT: BRACKET FOR WALL MOUNTING.
9. DOMESTIC-WATER EXPANSION TANKS
 1. DESCRIPTION: STEEL, PRESSURE-RATED TANK CONSTRUCTED WITH WELDED JOINTS AND FACTORY-INSTALLED BUTYL RUBBER DAMPHRAM, INCLUDE AIR PRECHARGE TO MINIMUM SYSTEM-OPERATING PRESSURE AT TANK.
 2. CONSTRUCTION:
 - a. TAPPINGS: FACTORY-FABRICATED STEEL, WELDED TO TANK BEFORE TESTING AND LABELING. INCLUDE ASME B1.20.1 PIPE THREAD.
 - b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE WATER. TANK LININGS, INCLUDING EXTENDING FINISH INTO AND THROUGH TANK FITTINGS AND OUTLETS.
 - c. AIR-CHARGING VALVE: FACTORY INSTALLED.
 3. CAPACITY AND CHARACTERISTICS:
 - a. WORKING-PRESSURE RATING: 150 PSIG.
9. INSULATION AND DUCT LINING
 - A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 10, AND A SMOKE DEVELOPED RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
 - B. PIPE INSULATION - ABOVE GRADE
 - 1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER IN-HR-FT² OR LESS.
 - 2) FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY FILLED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOILED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - 3) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNGLT OR PRESLT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMAFLEX AP OR ARMAFLEX 2000.
 - C. FOR NON CIRCULATING SYSTEMS, THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
 - D. FOR CIRCULATING SYSTEMS, ALL HOT WATER PIPING IN THE CIRCULATION LOOP MUST BE INSULATED AS SPECIFIED BELOW.
 - E. INSULATION SCHEDULE:
 - a) DOMESTIC COLD WATER 1/2"
 - b) DOMESTIC HOT WATER 1" FOR PIPING UP TO 1-1/4", & 1-1/2" FOR PIPING 1-1/2" AND LARGER
 - c) HOT WATER RECYCULATING 1"
 - d) CONDENSATE DRAINS INSIDE BUILDING 1/2"
 - e) REFRIGERANT SUCTION 3/4" FOR PIPING UP TO 1-1/4", & 1" FOR PIPING 1-1/2" AND LARGER
10. DOAS UNITS
 - A. UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED, DESIGNED FOR ROOF INSTALLATION, AND SHALL CONSIST OF SCROLL TYPE COMPRESSORS, CONDENSERS, EVAPORATOR COILS, THERMAL EXPANSION VALVE, CONDENSATE DRAIN PAN, CONDENSER AND EVAPORATOR FANS, CONDENSATE AND TO BE SEQUENCED, REFRIGERATION CONTROLS, GAS FIRED HEAT EXCHANGER OR ELECTRIC HEATING SECTION, FILTERS, AND DAMPERS. CAPACITIES AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS.
 - B. COMPRESSORS: UNIT SHALL INCLUDE VIBRATION ISOLATORS AND CRANKCASE HEATER, REFRIGERANT CIRCUIT SHALL INCLUDE A FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVES, AND LIQUID LINE SERVICE VALVES.

MECHANICAL SPECIFICATIONS (CONTINUED)

- C. PIPE INSULATION - BELOW GRADE
 - 1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER IN-HR-FT² OR LESS.
 - 2) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNGLT OR PRESLT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO KFLX INSUL-TEC OR EQUAL RATED FOR UNDERGROUND INSTALLATION ABOVE THE WATER TABLE.
 - 3) PRE-INSULATED PIPE SYSTEMS WITH CLOSED CELL PE-XA FORM INSULATION AND COVERED BY A WATERPROOF CORRUGATED HOPE JACKET, UPONOR ECOPLEX OR EQUAL, ASTM F876, FE7T, CSA B137.5.
 - 4) INSULATION SCHEDULE:
 - a) DOMESTIC HOT WATER 1-1/2"
 - b) HOT WATER RECYCULATING 1-1/2"
- D. DUCTWORK: ACUSTICAL INSULATION
 - 1) DUCT LINING: 2 LB/FT², THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
 - a) DUCT LINING SCHEDULE:
 - 1) RECTANGULAR SUPPLY DUCT 1/2" THROUGHOUT THE FIRST 10 FEET OF DUCT.
 - 2) RETURN AIR DUCT 1/2" THROUGHOUT THE FIRST 10 FEET OF DUCT.
- E. DUCTWORK: THERMAL INSULATION
 - 1) DUCT COVERING: 34 LB/FT² FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING, THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - a) DUCT COVERING SCHEDULE: MINIMUM R-6
 - 1) RECTANGULAR SUPPLY DUCT 1/2" THROUGHOUT THE FIRST 10 FEET OF DUCT.
 - 2) RETURN AIR DUCT 1/2" THROUGHOUT THE FIRST 10 FEET OF DUCT.
 - 3) RETURN AIR DUCT 1/2"
 - 4) OUTDOOR AIR 3", R8
- 2) EXPOSED SPIRAL DUCT
 - a) DOUBLE WALL SPIRAL - DOUBLE WALL INSULATED SPIRAL DUCT AND FITTINGS WITH PERFORATED TUBES WITH A K VALUE OF 0.2.
- 3) SPIRAL DUCT LINING: JOHNS MANVILLE SPIRAQUSTIC PLUS ROUND DUCT LINER SYSTEM, VSD, 5D, AND 1D SIZES, R10 AND R1P, MEETS ASTM E M 2550 FLAME AND SMOKE, ASHRAE 62, MEA237-86-M, SMACNA APPLICATION STANDARDS FOR DUCT LINERS, NAIMA FIBERGLASS DUCT LINER STANDARD, 1" THICKNESS, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
- 3) DUCT COVERING (EXTERIOR SUPPLY AND RETURN)
 - a) EXTERIOR INSULATION: JOHNS MANVILLE XSPCT ISOFORM AFF BOARD, 1-1/2" THICK R-9.3, UNIFORM CLOSED-CELL POLYISOCYANURATE FOAM CORE BONDED WITH A FOIL FASER, INSTALLED PER MANUFACTURERS REQUIREMENTS, COVER ISOFORM BOARD INSULATION WITH POLYGLUARD ALUMAGUARD, COMPOSITE MEMBRANE MULTI-PLY EMBOSSED UV-RESISTANT ALUMINUM FOLY-POLYMER LAMINATE, ALL WEATHER FLEXIBLE WEATHER-PROOFING JACKET, MINIMUM R-8 RATING, MINIMUM R-12 CLIMATE ZONES 5-8.
 - b) EXTERIOR INSULATION: JOHNS MANVILLE XSPCT ISOFORM AFF BOARD, 2" THICK R-13, UNIFORM CLOSED-CELL POLYISOCYANURATE FOAM CORE BONDED WITH A FOIL FASER, INSTALLED PER MANUFACTURERS REQUIREMENTS, COVER ISOFORM BOARD INSULATION WITH POLYGLUARD ALUMAGUARD, COMPOSITE MEMBRANE MULTI-PLY EMBOSSED UV-RESISTANT ALUMINUM FOLY-POLYMER LAMINATE, ALL WEATHER FLEXIBLE WEATHER-PROOFING JACKET, MINIMUM R-12 RATING.

MECHANICAL SPECIFICATIONS (CONTINUED)

10. DUCTWORK
 - A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL, COMPLYING WITH ASTM A 572, LOCKFORMING CAPACITY, WITH G-90 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
 - B. WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL INTERFERENCES INCLUDING PILING, SEAM MARKS, ROLLER MARKS, STAINS AND DISCOLORATIONS, AND OTHER IMPERFECTIONS, FITTING THOSE WHICH WOULD IMPAIR PAINTING.
 - C. DUCTWORK, METAL GAUGES, REINFORCING, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION FOR A 2 INCH WATER GAUGE STATIC PRESSURE.
 - 1) RECTANGULAR DUCT:
 - a) ELBOWS, UNLESS INDICATED OTHERWISE SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOW WITH DOUBLE WALL STREAMLINE VANES.
 - b) RETURN AIR ACUSTICAL ELBOWS AND SLOPE BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
 - 2) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
 - 3) ROUND AND Oval SPIRAL SEAM DUCT:
 - a) PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 4 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.
 - b) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
 - c) AS AN OPTION, PROVIDE FACTORY-FABRICATED DUCT AND FITTINGS, IN LINE OF SHOP-FABRICATED DUCT AND FITTINGS.
 - 1) ELBOWS: ONE-PIECE CONSTRUCTION FOR 90 DEGREES AND 4 DEGREE ELBOW 14" AND SMALLER. PROVIDE MULTIPLE-PIECE CONSTRUCTION FOR LARGER DIAMETERS WITH STANDING SEAM CIRCUMFERENTIAL JOINT.
 - 2) DIVIDED FLOW FITTINGS: 90 DEGREE TEES, CONSTRUCTED WITH SADDLE TAP SPOT WELDED AND BONDED TO DUCT FITTING BODY.
 - 4) ROUND LONGITUDINAL SEAM DUCT: USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO DUCT FOR DIFFUSERS, UNLESS OTHERWISE INDICATED.
 - D. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEETMETAL SIZES. ALLOWANCE FOR DUCT LINER HAS BEEN MADE WHERE APPLICABLE.
 - E. INSTALLATION OF METAL DUCTWORK
 - 1) GENERAL: ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE AIR-TIGHT SYSTEMS (MAXIMUM 5% LEAKAGE, WITH NO OBJECTABLE NOISE, AND CAPABLE OF PERFORMING INDICATED SERVICE). INSTALL EACH RUN WITH MINIMUM NUMBER OF JOINTS. ALSO DUCTWORK ACCURATELY WITH INTERNAL SURFACES SMOOTH. SUPPORT DUCTS RIGIDLY WITH SUITABLE STRAPS, BRACES, HANGERS AND ANCHORS IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" LATEST EDITION. DUCT HANGERS SHALL BE OF THE TYPE WHICH WILL HOLD DUCTS TRUE-TO-SHAPE AND TO PREVENT BUCKLING. SUPPORT VERTICAL DUCTS AT EVERY FLOOR.
 - 2) AUXILIARY STEEL: PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.
 - 3) ROUTING: LOCATE DUCTWORK RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY AND AVOID DIAGONAL RUNS WHEREVER POSSIBLE. LOCATE RUNS AS INDICATED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, RUN DUCTWORK IN SHORTEST ROUTE WHICH DOES NOT OBSTRUCT USABLE SPACE OR BLOCK ACCESS FOR SERVICING BUILDING AND ITS EQUIPMENT. HOLD DUCTS CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS, AND OTHER STRUCTURAL AND PERMANENT ENCLOSURE ELEMENTS OF BUILDING. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL DUCTWORK FROM VIEW BY LOCATING IN MECHANICAL SHAFTS, HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED CEILINGS. DO NOT ENCASE HORIZONTAL RUNS IN SOLID PARTITIONS, EXCEPT AS SPECIFICALLY SHOWN. COORDINATE LAYOUT WITH SUSPENDED CEILING AND LIGHTING FIXTURES.
 - 4) DO NOT ROUTE DUCTWORK THROUGH ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES, UNLESS INDICATED OTHERWISE.
 - 5) PENETRATIONS:
 - a) WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.
 - b) WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.
 - 6) COORDINATION: COORDINATE DUCT INSTALLATIONS WITH INSTALLATION OF ACCESSORIES, DAMPERS, COIL FRAMES, EQUIPMENT, CONTROLS, AND OTHER ASSOCIATED WORK OF THE DUCTWORK SYSTEM.
 - 7) INSTALLATION: INSTALL METAL DUCTWORK IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION.
 - F. EQUIPMENT CONNECTIONS
 - 1) CONNECT METAL DUCTWORK TO EQUIPMENT AS INDICATED, PROVIDE FLEXIBLE CONNECTION FOR EACH DUCTWORK CONNECTION TO EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, AND/OR EQUIPMENT CONTAINING ROTATING MECHANISMS. PROVIDE ACCESSORIES AS REQUIRED.
 - 2) SEAL, ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. ICE BALL CAULKING AND GLAZED COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW.
 - 1) UNCONDITIONED SPACES CLASS A CLASS C CLASS B CLASS C
 - 2) CONDITIONED SPACES (PLENUM) CLASS C CLASS B CLASS B CLASS C
 11. FLEXIBLE DUCT:
 - A. ATCO #886 (R-6), OR EQUAL.
 - B. FACTORY APPLIED INSULATION WITH VAPOR BARRIER, 1-1/2" THICK.
 - C. MAXIMUM LENGTH OF 5'-0".
 12. FLUES AND ACCESSORIES
 - A. FLUE FOR GAS FIRED CONDENSING WATER HEATER SHALL BE AS RECOMMENDED BY THE GAS APPLANCE MANUFACTURER. FLUES SHALL BE SCHEDULE 40, PVC OR CPVC PIPE PER THE MANUFACTURERS INSTALLATION REQUIREMENTS.
 - B. PROVIDE MANUFACTURERS STANDARD ACCESSORY ITEMS INCLUDING BRID PROOF TOP, STORM COLLAR, ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED.
 13. DOAS UNITS
 - A. UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED, DESIGNED FOR ROOF INSTALLATION, AND SHALL CONSIST OF SCROLL TYPE COMPRESSORS, CONDENSERS, EVAPORATOR COILS, THERMAL EXPANSION VALVE, CONDENSATE DRAIN PAN, CONDENSER AND EVAPORATOR FANS, CONDENSATE AND TO BE SEQUENCED, REFRIGERATION CONTROLS, GAS FIRED HEAT EXCHANGER OR ELECTRIC HEATING SECTION, FILTERS, AND DAMPERS. CAPACITIES AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS.
 - B. COMPRESSORS: UNIT SHALL INCLUDE VIBRATION ISOLATORS AND CRANKCASE HEATER, REFRIGERANT CIRCUIT SHALL INCLUDE A FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVES, AND LIQUID LINE SERVICE VALVES.

MECHANICAL SPECIFICATIONS (CONTINUED)

- C. SAFETY CONTROLS SHALL INCLUDE:
 - a) LOW PRESSURE CUTOFF, MANUAL RESET.
 - b) HIGH PRESSURE CUTOFF, MANUAL RESET.
 - c) COMPRESSOR MOTOR OVERLOAD PROTECTION, MANUAL RESET.
 - d) ANTI-RECYCLING TIMING DEVICE.
 - e) ADJUSTABLE LOW-AMBIENT LOCKOUT.
 - f) OIL PRESSURE SWITCH.
- D. REFRIGERANT COIL: ALUMINUM FINS BONDED TO SEAMLESS COPPER TUBE BY MEANS OF MECHANICAL EXPANSION, AN EQUALIZING TYPE VERTICAL DISTRIBUTOR SHALL ENSURE EACH COIL CIRCUIT RECEIVES THE SAME AMOUNT OF REFRIGERANT.
- E. ECONOMIZER SHALL CONSIST OF RETURN AIR DAMPER, OUTDOOR AIR DAMPER, AND BAROMETRIC RELIEF DAMPER. PROVIDE POWERED EXHAUST FAN WITH MANUFACTURERS STANDARD CONTROLS FOR UNITS SCHEDULED ON THE DRAWINGS.
- F. GAS HEAT: INDIRECT FIRED, GAS HEAT EXCHANGER, AUTOMATIC SPARK IGNITION, MANUFACTURERS STANDARD GAS TRAIN WITH REGULATOR (IF REQUIRED), AGA APPROVED. VERIFY GAS SERVICE PRESSURE TO INDIVIDUAL ROOFTOP UNITS.
- G. ROOFTOP UNITS SHALL BE WIRED TO SHUTDOWN ON A SIGNAL FROM THE SMOKE DETECTORS AND SHALL AUTOMATICALLY RESET WHEN THE SMOKE DETECTORS ARE RESET.
14. ROOFTOP UNITS
 - A. UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED, DESIGNED FOR ROOF INSTALLATION, AND SHALL CONSIST OF SCROLL TYPE COMPRESSORS, CONDENSERS, EVAPORATOR COILS, THERMAL EXPANSION VALVE, CONDENSATE DRAIN PAN, CONDENSER AND EVAPORATOR FANS, CONDENSATE AND TO BE SEQUENCED, REFRIGERATION CONTROLS, GAS FIRED HEAT EXCHANGER OR ELECTRIC HEATING SECTION, FILTERS, AND DAMPERS. CAPACITIES AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS.
 - B. COMPRESSORS: UNIT SHALL INCLUDE VIBRATION ISOLATORS AND CRANKCASE HEATER, REFRIGERANT CIRCUIT SHALL INCLUDE A FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVES, AND LIQUID LINE SERVICE VALVES.
 - C. SAFETY CONTROLS SHALL INCLUDE:
 - a) LOW PRESSURE CUTOFF, MANUAL RESET.
 - b) HIGH PRESSURE CUTOFF, MANUAL RESET.
 - c) COMPRESSOR MOTOR OVERLOAD PROTECTION, MANUAL RESET.
 - d) ANTI-RECYCLING TIMING DEVICE.
 - e) ADJUSTABLE LOW-AMBIENT LOCKOUT.
 - f) OIL PRESSURE SWITCH.
 - D. REFRIGERANT COIL: ALUMINUM FINS BONDED TO SEAMLESS COPPER TUBE BY MEANS OF MECHANICAL EXPANSION, AN EQUALIZING TYPE VERTICAL DISTRIBUTOR SHALL ENSURE EACH COIL CIRCUIT RECEIVES THE SAME AMOUNT OF REFRIGERANT.
 - E. ECONOMIZER SHALL CONSIST OF RETURN AIR DAMPER, OUTDOOR AIR DAMPER, AND BAROMETRIC RELIEF DAMPER. PROVIDE POWERED EXHAUST FAN WITH MANUFACTURERS STANDARD CONTROLS FOR UNITS SCHEDULED ON THE DRAWINGS.
 - F. GAS HEAT: INDIRECT FIRED, GAS HEAT EXCHANGER, AUTOMATIC SPARK IGNITION, MANUFACTURERS STANDARD GAS TRAIN WITH REGULATOR (IF REQUIRED), AGA APPROVED. VERIFY GAS SERVICE PRESSURE TO INDIVIDUAL ROOFTOP UNITS.
 - G. ELECTRIC HEAT: ELECTRICAL RESISTANCE HEATER WITH RESET LIMIT PROTECTION, SINGLE POINT POWER SUPPLY, NICKEL CHROMIUM WIRE HEATER ELEMENTS WITH INDIVIDUAL FUSES.
 - H. ROOFTOP UNITS SHALL BE WIRED TO SHUTDOWN ON A SIGNAL FROM THE SMOKE DETECTORS AND SHALL AUTOMATICALLY RESET WHEN THE SMOKE DETECTORS ARE RESET.
15. CONTROL WIRING
 - A. ELECTRICAL WIRING AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THIS CONTRACTOR, UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS OR SPECIFICATIONS.
 - B. INSTALL CONTROL WIRING, WITHOUT SPLICES BETWEEN TERMINAL POINTS, COLOR CODED, INSTALL IN NEAT WORKMANLIKE MANNER, SECURELY FASTENED. INSTALL IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND THE OTHER IMPECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.
 - 1) INSTALL CIRCUITS OVER 25 VOLT WITH COLOR CODED NUMBER 12 WIRE.
 - 2) INSTALL CIRCUITS UNDER 25 VOLT WITH COLOR CODED NUMBER 18 WIRE WITH 0.031 INCH THICK TEMPERATURE 100 DEGREES F PLASTIC INSULATION ON EACH CONDUCTOR AND PLASTIC SHE

project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number

23060.003

drawing issuance

PERMIT/BID 03.15.24

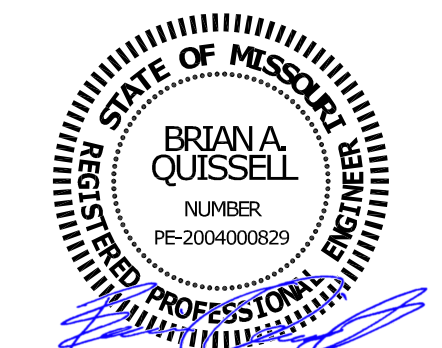
drawing revisions

No. Description Date:

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04/17/24



drawing title

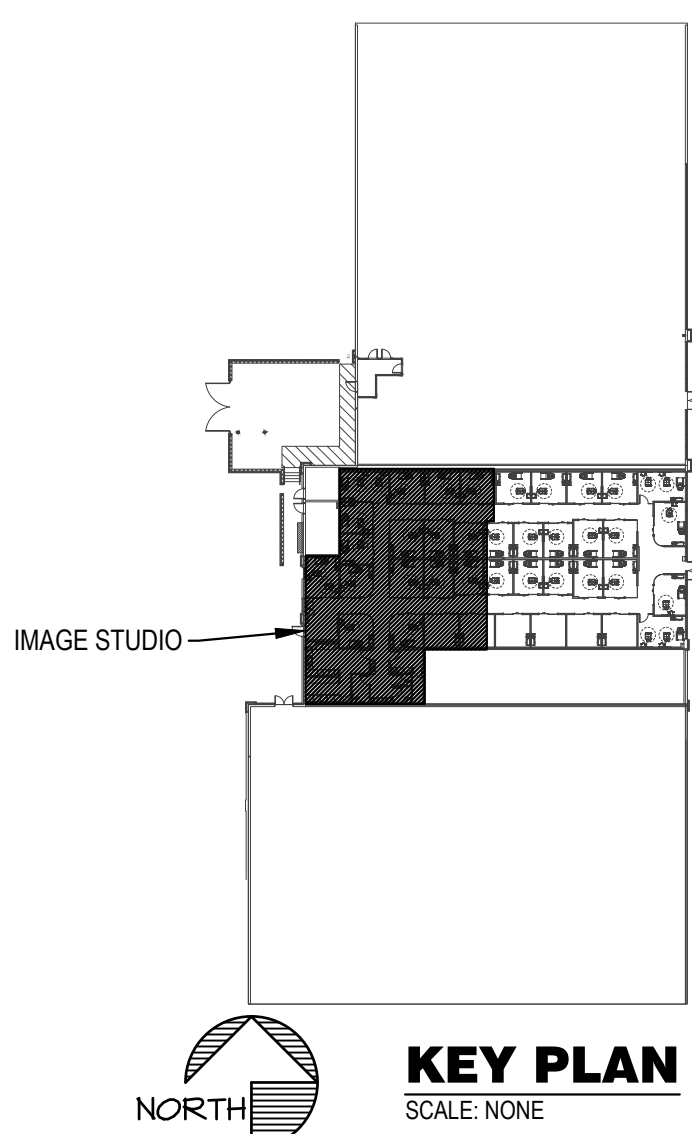
WASTE & VENT PLAN - WEST

drawing number

P100

PLUMBING PLAN NOTES: (NOT ALL NOTES MAY APPLY TO THIS SHEET)

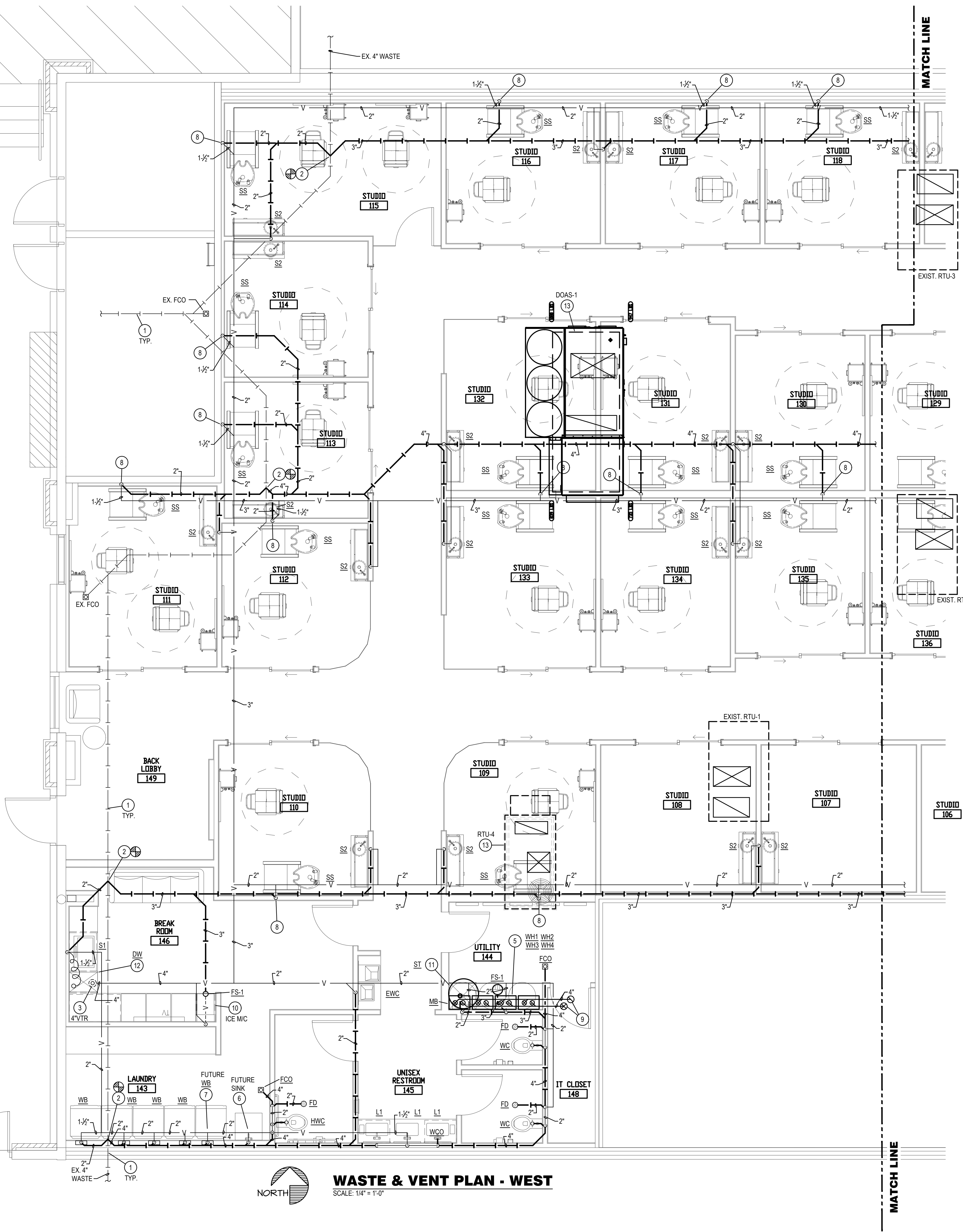
- EXISTING SANITARY WASTE WASTE TO REMAIN. VERIFY EXACT LOCATION OF EXISTING SANITARY WASTE WASTE PRIOR TO BEGINNING OF NEW WORK.
- CONNECT NEW SANITARY LINE TO EXISTING SANITARY LINE AS SHOWN ON THE PLAN AND AS REQUIRED. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF EXISTING SANITARY LINE IN FIELD PRIOR TO INSTALLATION OF NEW PIPING.
- LOCATION OF 4" VTR. CONNECT TO NEW VENT LINE TO EXISTING 3" VTR LOCATION AS REQUIRED. VERIFY EXACT LOCATION OF EXISTING VTR IN FIELD. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
- ROUTE WATER HEATER T & P DRAIN PIPE DOWN AND DISCHARGE TO MOP SINK WITH AIR GAP.
- PROVIDE PROVISION FOR WASTE & VENT AND CAP FOR CONNECTION TO FUTURE SINK.
- PROVIDE PROVISION FOR WASTE & VENT AND CAP FOR CONNECTION TO FUTURE CLOTHES WASHER.
- PROVIDE WASTE CONNECTION FOR SHAMPOO BOWL. REFER TO THE SHAMPOO SINK INSTALLATION DETAIL ON SHEET P202 FOR MORE INFORMATION.
- PROVIDE 2" PVC INTAKE AND FLUE PIPING FROM EACH WATER HEATER AND MANIFOLD TO 4" COMMON VENTS. ROUTE PIPING UP TO THE MANUFACTURERS RECOMMENDED TERMINATION AT THE ROOF. SEAL PENETRATION WEATHER TIGHT.
- CONNECT DRAIN FROM ICE MACHINE TO FLOOR SINK WITH AIR GAP PER MANUFACTURER'S INSTRUCTION.
- INSTALL HOT WATER STORAGE TANK ON PLATFORM PROVIDED BY OTHERS AT APPROXIMATELY 7' AFF. ROUTE PIPING FROM T&P VALVE AND TANK DRAIN TO MOP SINK WITH AIR GAP.
- PROVIDE FLEXIBLE DRAIN HOSE AND ROUTE FROM DISHWASHER DRAIN TO SINK TAILPIECE WITH AIR GAP FITTING AS REQUIRED BY MANUFACTURER'S INSTRUCTION.
- CONNECT CONDENSATE TO RTU AS REQUIRED AND AS DETAILED.



BC PROJECT #: 23615
MISSOURI PE COA #2009003629
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WASTE & VENT PLAN - WEST
SCALE: 1/4" = 1'-0"



project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number

23060.003

drawing issuance

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drawing title

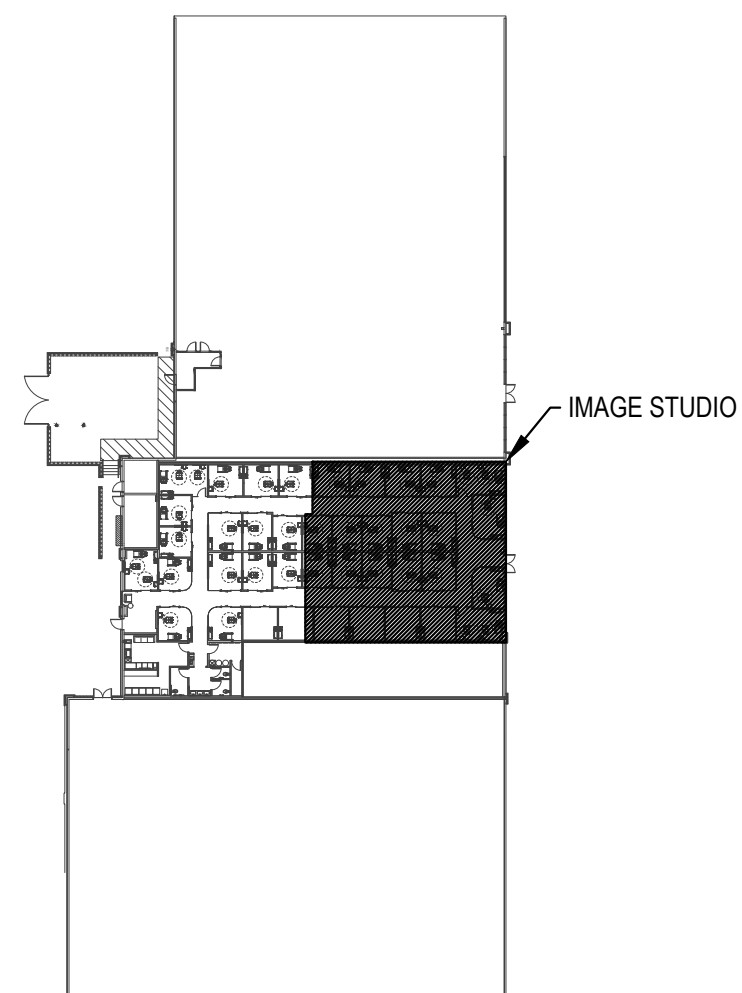
WATER & VENT PLAN - EAST

drawing number

P101

PLUMBING PLAN NOTES: (NOT ALL NOTES MAY APPLY TO THIS SHEET)

- EXISTING SANITARY WASTE WASTE TO REMAIN. VERIFY EXACT LOCATION OF EXITING SANITARY WASTE WASTE PRIOR TO BEGINNING OF NEW WORK.
- CONNECT NEW SANITARY LINE TO EXISTING SANITARY LINE AS SHOWN ON THE PLAN AND AS REQUIRED. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF EXISTING SANITARY LINE IN FIELD PRIOR TO INSTALLATION OF NEW PIPING.
- LOCATION OF 4" VTR. CONNECT TO NEW VENT LINE TO EXISTING 3" VTR LOCATION AS REQUIRED. VERIFY EXACT LOCATION OF EXISTING VTR IN FIELD. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
-
- ROUTE WATER HEATER T & P DRAIN PIPE DOWN AND DISCHARGE TO MOP SINK WITH AIR GAP.
- PROVIDE PROVISION FOR WASTE & VENT AND CAP FOR CONNECTION TO FUTURE SINK.
- PROVIDE PROVISION FOR WASTE & VENT AND CAP FOR CONNECTION TO FUTURE CLOTHES WASHER.
- PROVIDE WASTE CONNECTION FOR SHAMPOO BOWL. REFER TO THE SHAMPOO SINK INSTALLATION DETAIL ON SHEET P202 FOR MORE INFORMATION.
- PROVIDE 2" PVC INTAKE AND FLUE PIPING FROM EACH WATER HEATER AND MANIFOLD TO 6" COMMON VENTS. ROUTE PIPING UP TO THE MANUFACTURERS RECOMMENDED TERMINATION AT THE ROOF. SEAL PENETRATION WEATHER TIGHT.
- CONNECT DRAIN FROM ICE MACHINE TO SINK TAILPIPE WITH AIR GAP FITTING PER MANUFACTURER'S INSTRUCTION.
- ROUTE STORAGE TANK T & P DRAIN PIPE DOWN AND DISCHARGE TO MOP SINK WITH AIR GAP.
- PROVIDE FLEXIBLE DRAIN HOSE AND ROUTE FROM DISHWASHER DRAIN TO SINK TAILPIECE WITH AIR GAP FITTING AS REQUIRED BY MANUFACTURER'S INSTRUCTION.



KEY PLAN
SCALE: NONE

BC PROJECT #: 23615
MISSOURI PE COA #2009003629

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WASTE & VENT PLAN - EAST

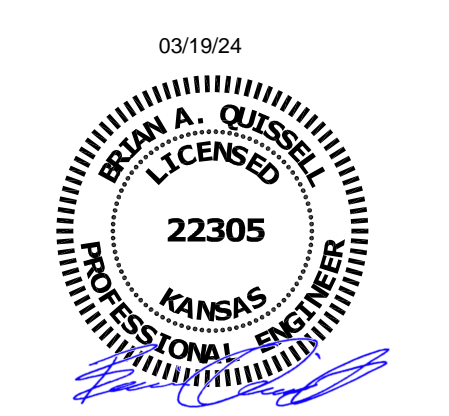
SCALE: 1/4" = 1'-0"

project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number
23060.003
drawing issuance
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drawing revisions
No. Description Date:

professional seal



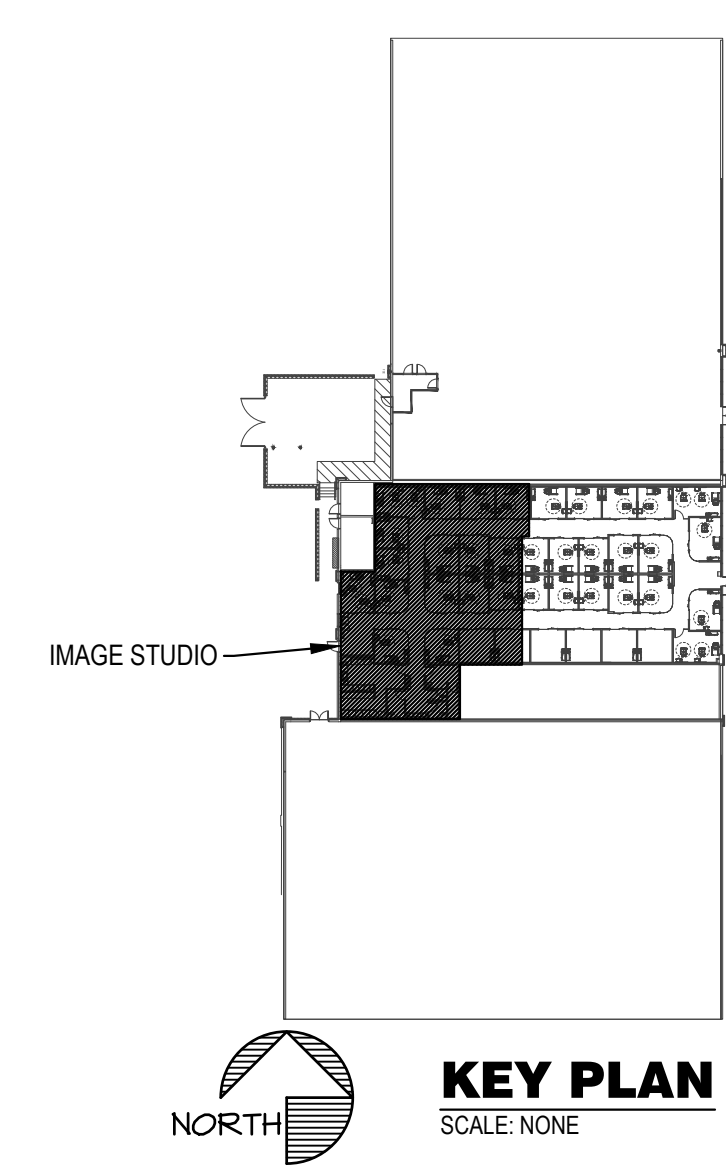
drawing title
WATER PLAN - WEST

drawing number

P200

PLUMBING PLAN NOTES:

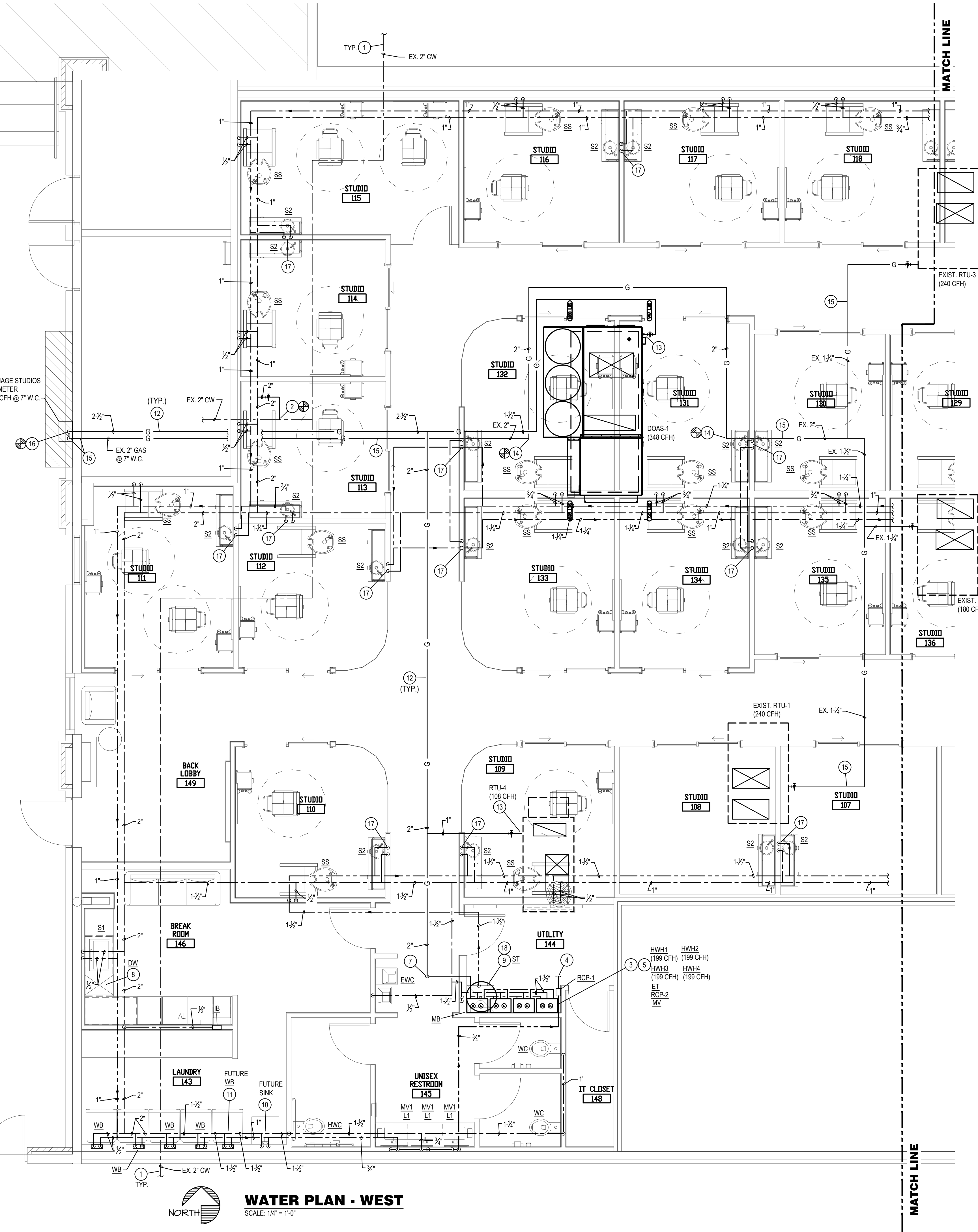
- EXISTING COLD WATER LINE TO REMAIN. PLUMBING CONTRACTOR SHALL VERIFY LOCATION OF EXISTING DOMESTIC WATER LINE IN FIELD PRIOR TO BEGINNING OF NEW WORK. TENANT TO SUB-METER WATER AS REQUIRED BY LANDLORD. COORDINATE WITH LANDLORD FOR SUB-METER REQUIREMENT.
- CONNECT 2" CW TO EXISTING DOMESTIC CW AS REQUIRED. VERIFY EXACT LOCATION AND SIZE OF EXISTING WATER LINE PRIOR TO INSTALLATION OF NEW PIPING.
- PROVIDE GAS FIRED WATER HEATER MOUNTED ON WALL UP HIGH JUST BELOW CEILING. MAKE HOT AND COLD WATER PIPING CONNECTIONS THROUGH DIELECTRIC UNIONS. PROVIDE AND INSTALL ALL HARDWARE AND APPURTENANCES FOR COMPLETE INSTALLATION PER APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE THERMAL EXPANSION TANK.
- CONNECT HOT WATER RECIRC. PIPING BACK TO HOT WATER HEATER SYSTEM AS REQUIRED. REFER TO DOMESTIC WATER RISER DIAGRAM FOR MORE INFORMATION. SEE SHEET P301 FOR CONTINUATION.
- CONNECT GAS PIPING TO WATER HEATER AS DETAILED AND AS PER THE MANUFACTURER INSTRUCTION.
- COORDINATE WITH EQUIPMENT SUPPLIER FOR EXACT LOCATION OF WATER STUB UPS FOR SHAMPOO SINK. REFER TO SHAMPOO SINK INSTALLATION DETAIL ON SHEET 202 FOR MORE INFORMATION.
- ROUTE NEW 2" GAS PIPING DOWN THRU ROOF AS REQUIRED. SEAL PENETRATION WEATHER TIGHT AS REQUIRED. ALL ROOFING WORK SHALL BE PERFORMED BY BUILDING OWNER'S ROOFING CONTRACTOR (AT THIS CONTRACTOR'S EXPENSE) TO MAINTAIN EXISTING ROOF WARRANTY. VERIFY APPROVED ROOFING CONTRACTOR WITH BUILDING OWNER PRIOR TO PERFORMING WORK.
- ROUTE 1/2" HOT WATER FROM SINK TO DISHWASHER AS REQUIRED BY MANUFACTURER'S INSTRUCTION.
- PROVIDE STORAGE TANK MOUNTED ON WALL UP HIGH ON STRUCTURAL PLATFORM PROVIDED BY OTHERS AT APPROXIMATELY 7 FT. ABOVE THE FLOOR. MAKE HOT AND COLD WATER PIPING CONNECTIONS THROUGH DIELECTRIC UNIONS. PROVIDE AND INSTALL ALL HARDWARE AND APPURTENANCES FOR COMPLETE INSTALLATION PER APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH ARCHITECT AND STRUCTURAL ENGINEER TO PROVIDE PLATFORM TO SUPPORT 80 GALLON STORAGE TANK. APPROXIMATELY 1,000 LBS.
- PROVIDE PROVISION FOR HOT & COLD WATER AND CAP IN WALL FOR CONNECTION TO FUTURE SINK.
- PROVIDE PROVISION FOR HOT & COLD WATER AND CAP IN WALL FOR CONNECTION TO FUTURE CLOTHES WASHER.
- GAS PIPING ON ROOF. SUPPORT AS REQUIRED AND AS DETAILED.
- CONNECT GAS PIPING TO ROOFTOP UNIT AS DETAILED AND AS PER THE MANUFACTURER INSTRUCTION.
- ROUTE EXISTING GAS PIPE AROUND LOCATION OF NEW DOAS UNIT AS REQUIRED. COORDINATE WITH MECHANICAL CONTRACTOR TO ALLOW PROPER CLEARANCE FOR MAINTENANCE. CONNECT GAS PIPE TO EXISTING GAS PIPE ON ROOF AS REQUIRED. FIELD VERIFY EXACT LOCATION, SIZE AND PRESSURE PRIOR TO INSTALLATION OF ANY PIPING.
- EXISTING GAS LINE TO REMAIN. PLUMBING CONTRACTOR SHALL VERIFY LOCATION OF EXISTING NATURAL GAS LINE IN FIELD PRIOR TO BEGINNING OF NEW WORK.
- MANIFOLD NEW 2 1/2" GAS PIPING WITH EXISTING 2" GAS PIPE AT EXISTING GAS METER LOCATION AS REQUIRED. COORDINATE WITH GAS COMPANY FOR CONNECTION TO A GAS METER WITH CAPACITY FOR 1,912 CFH @ 7" W.C. ROUTE PIPING UP THE FACE OF THE BUILDING AND ONTO ROOF AS REQUIRED. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
- COORDINATE WITH EQUIPMENT SUPPLIER FOR EXACT LOCATION OF WATER STUB UPS FOR HAND SINK.
- INSTALL DIGITAL MIXING VALVE PER THE MANUFACTURER'S REQUIREMENTS. SET OUTLET TEMPERATURE TO 120 DEG. F. SET STORAGE TANK TEMPERATURE TO 140 DEG. F.



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WATER PLAN - WEST
SCALE: 1/4" = 1'-0"

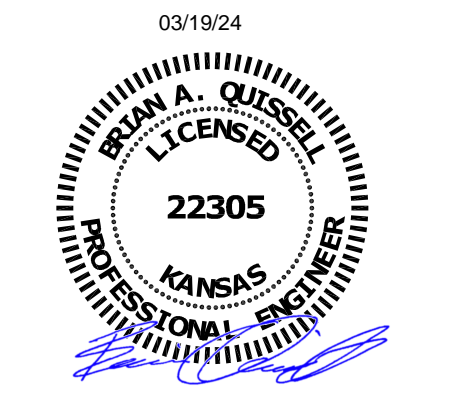


project title

IMAGE STUDIOS
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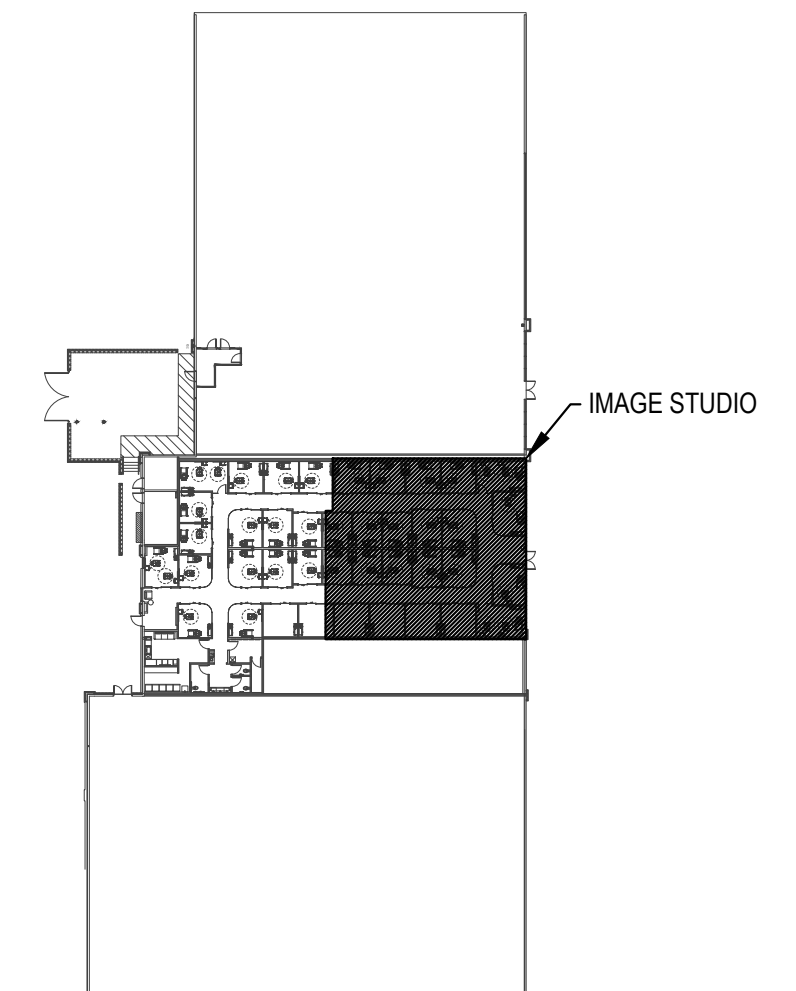
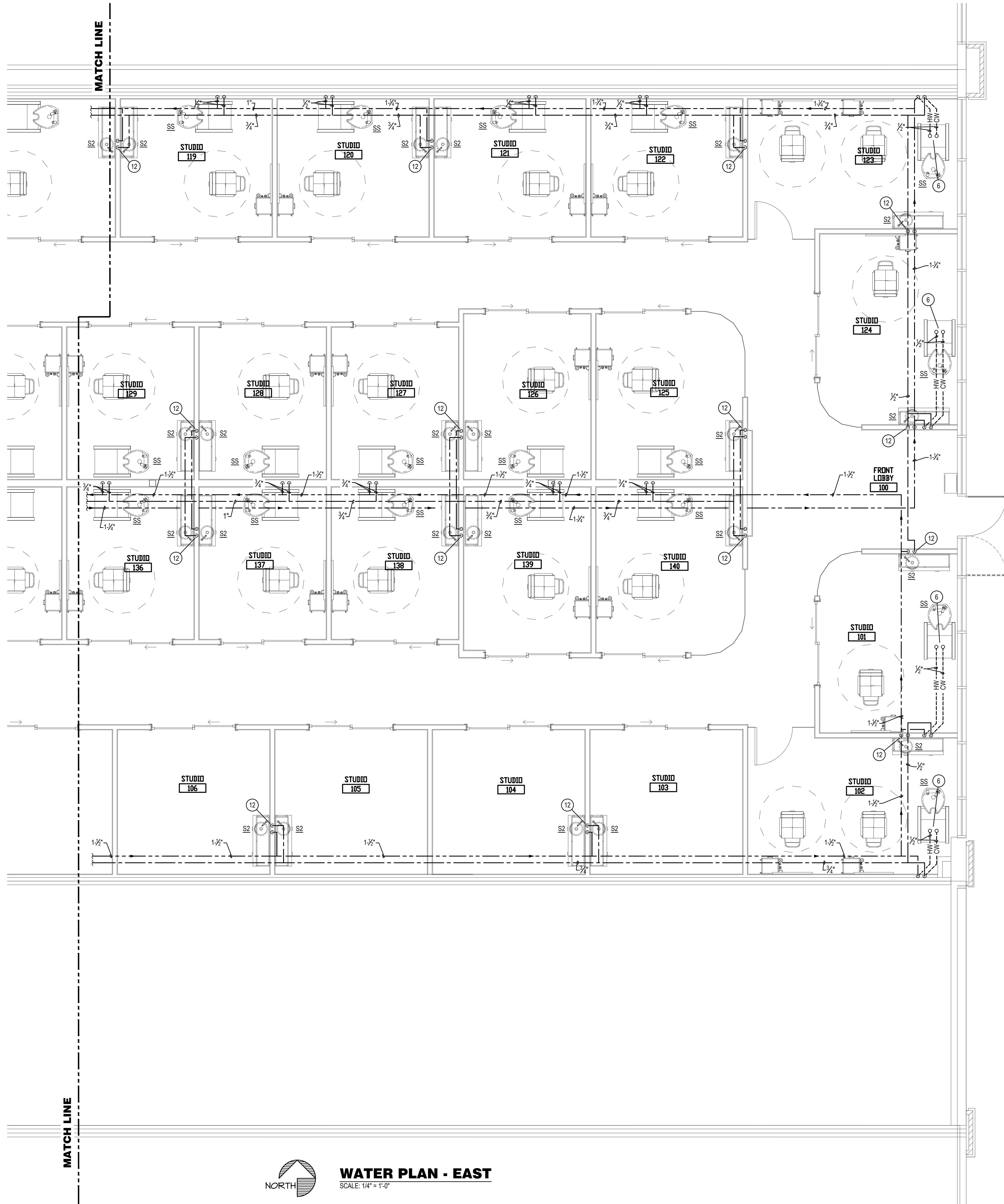


drawing title
WATER PLAN - EAST

drawing number
P201

PLUMBING PLAN NOTES:

- EXISTING COLD WATER LINE TO REMAIN. PLUMBING CONTRACTOR SHALL VERIFY LOCATION OF EXISTING DOMESTIC WATER LINE IN FIELD PRIOR TO BEGINNING OF NEW WORK. TENANT TO SUB-METER WATER AS REQUIRED BY LANDLORD. COORDINATE WITH LANDLORD FOR SUB-METER REQUIREMENT.
- CONNECT 2" CW TO EXISTING DOMESTIC CW AS REQUIRED. VERIFY EXACT LOCATION AND SIZE OF EXISTING WATER LINE PRIOR TO INSTALLATION OF NEW PIPING.
- PROVIDE GAS FIRED WATER HEATER MOUNTED ON WALL UP HIGH JUST BELOW CEILING. MAKE HOT AND COLD WATER PIPING CONNECTIONS THROUGH DIELECTRIC UNIONS. PROVIDE AND INSTALL ALL HARDWARE AND APPURTENANCES FOR COMPLETE INSTALLATION PER APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE THERMAL EXPANSION TANK.
- CONNECT HOT WATER RECIRC. PIPING BACK TO HOT WATER HEATER SYSTEM AS REQUIRED. REFER TO DOMESTIC WATER RISER DIAGRAM FOR MORE INFORMATION.
- CONNECT GAS PIPING TO WATER HEATER AS DETAILED AND AS PER THE MANUFACTURER INSTRUCTION.
- COORDINATE WITH EQUIPMENT SUPPLIER FOR EXACT LOCATION OF WATER STUB UPS FOR SHAMPOO SINK. REFER TO SHAMPOO SINK INSTALLATION DETAIL ON SHEET P302 FOR MORE INFORMATION.
- CONNECT GAS LINE TO EXISTING GAS LINE. FIELD VERIFY ALL EXISTING CONDITIONS. ROUTE NEW 1-1/2" GAS PIPING DOWN THRU ROOF. SEAL PENETRATION WEATHER TIGHT AS REQUIRED.
- ROUTE 1/2" HOT WATER FROM SINK TO DISHWASHER AS REQUIRED BY MANUFACTURER'S INSTRUCTION.
- PROVIDE STORAGE TANK MOUNTED ON WALL UP HIGH. MAKE HOT AND COLD WATER PIPING CONNECTIONS THROUGH DIELECTRIC UNIONS. PROVIDE AND INSTALL ALL HARDWARE AND APPURTENANCES FOR COMPLETE INSTALLATION PER APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH ARCHITECT AND STRUCTURAL ENGINEER TO PROVIDE PLATFORM TO SUPPORT 80 GALLON STORAGE TANK. APPROXIMATELY 1,000 LBS.
- PROVIDE PROVISION FOR HOT & COLD WATER AND CAP IN WALL FOR CONNECTION TO FUTURE SINK.
- PROVIDE PROVISION FOR HOT & COLD WATER AND CAP IN WALL FOR CONNECTION TO FUTURE CLOTHES WASHER.
- COORDINATE WITH EQUIPMENT SUPPLIER FOR EXACT LOCATION OF WATER STUB UPS FOR HAND SINK.

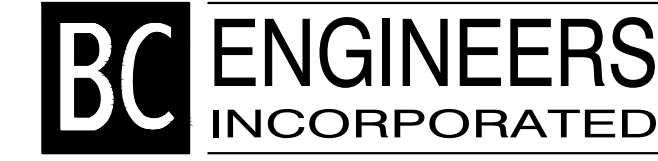


KEY PLAN
SCALE: NONE



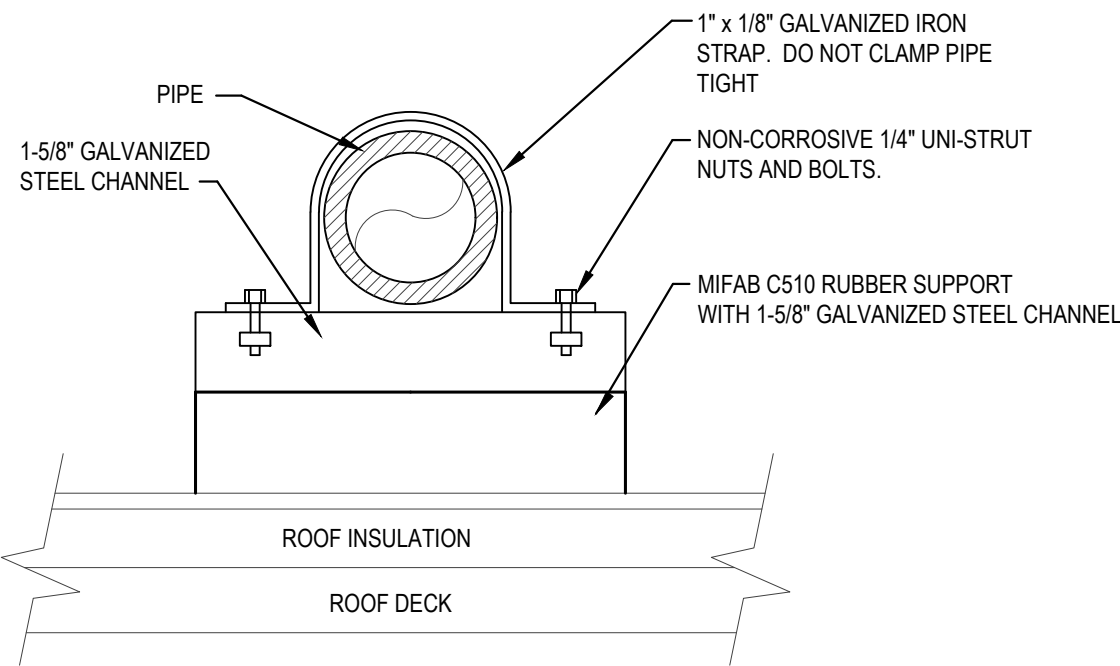
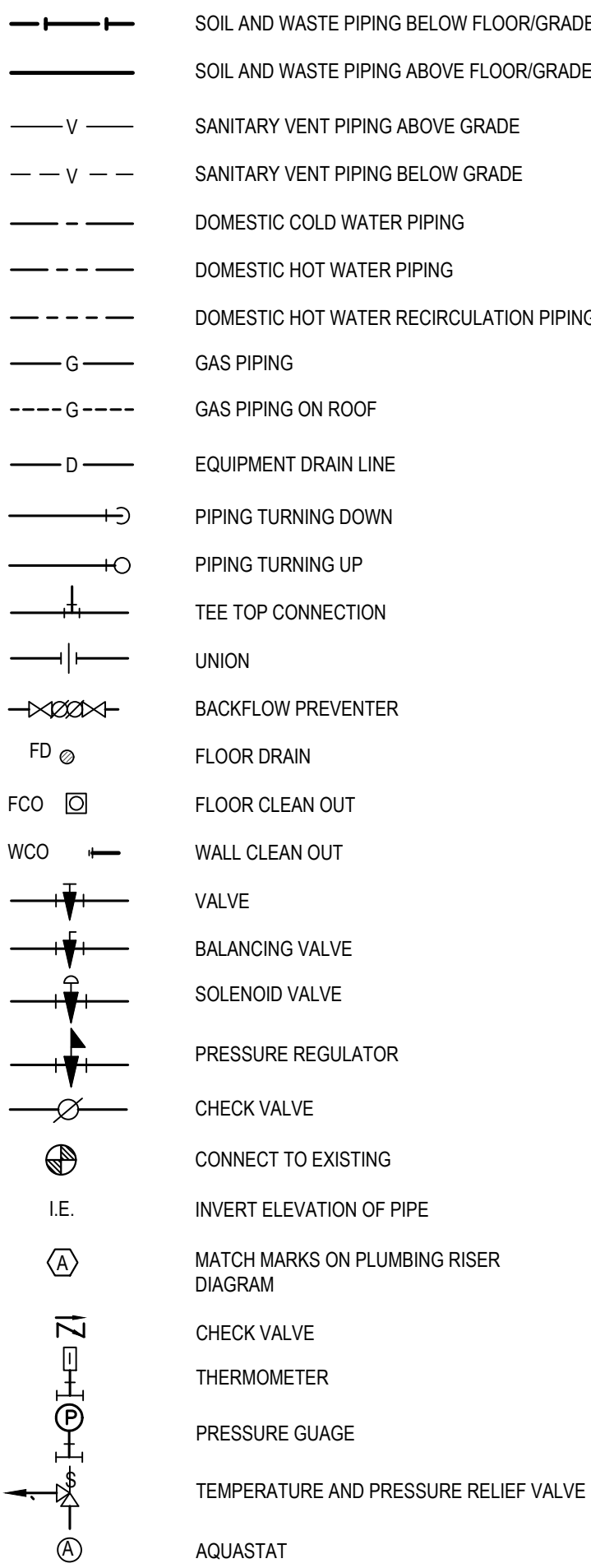
WATER PLAN - EAST
SCALE: 1/4" = 1'-0"

BC PROJECT #: 23615
MISSOURI PE COA #2009003629
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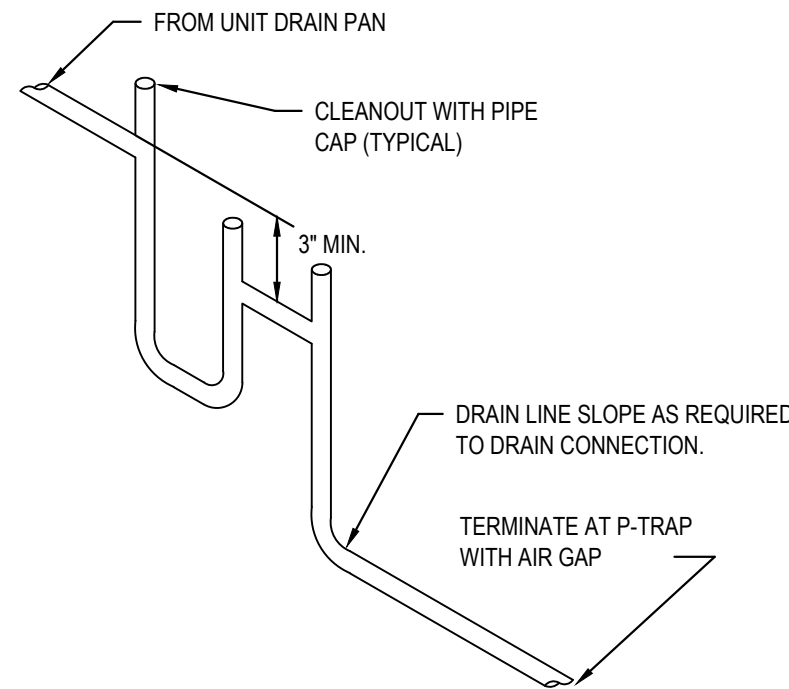
PLUMBING SYMBOLS



RUBBER ROOF PIPE SUPPORT DETAIL

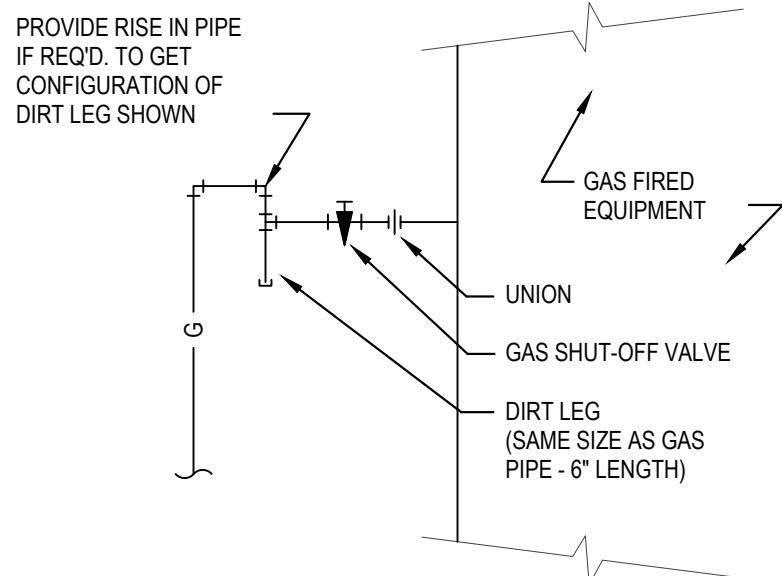
SCALE: NONE

PIPE HANGER SCHEDULE		
PIPE MATERIAL	MAXIMUM HANGER SPACING	HANGER ROD DIAMETER
ABS (All sizes)	4'	3/8"
PVC (All Sizes)	4'	3/8"
CPVC, 1 inch and smaller	3'	1/2"
CPVC, 1-1/4 inches and larger	4'	1/2"
Cast Iron (All Sizes)	5'	5/8"
Cast Iron (All Sizes) with 10 foot length of pipe	10'	5/8"
Copper Tube, 1-1/4 inches and smaller	6'	1/2"
Copper Tube, 1-1/2 inches and larger	10'	1/2"
Steel, 3 inches and smaller	12'	1/2"
Steel, 4 inches and larger	12'	5/8"
Pex, 1" and below without support channel	32"	3/8"
Pex, 1-1/4" and above without support channel	48"	3/8"
Pex 3/4" and below with support channel	6'	3/8"
Pex 1" and above with support channel	8'	3/8"



CONDENSATE DRAIN DETAIL

SCALE: NONE



GAS CONNECTION DETAIL

SCALE: NONE

PLUMBING DRAINAGE CALCULATIONS

SN	FIXTURE	QTY.	FIXTURE UNIT	TOTAL FIXTURE UNIT
1	WATER CLOSET (FLUSH VALVE)	3	6	18
2	LAVATORY	3	1	3
3	SINK - BREAKROOM	1	2	2
4	MOP BASIN	1	2	2
5	WASHER BOX	4	2	8
6	SINK - STUDIO	40	1	40
7	SINK - SHAMPOO	34	2	68
8	WATER COOLER	1	0.5	0.5
9	FLOOR DRAIN/SINK	4	2	8
TOTAL				149.5 FU
WASTE MAINS - 4" VENT VAINS - 4"				

PLUMBING FIXTURE WATER COUNT

SN	FIXTURE	QTY.	CW FU	CW TOTAL FU	HW FU	HW TOTAL FU	COMBINED FU	TOTAL COMBINED FU
1	WATER CLOSET (FLUSH VALVE)	3	10	30	0	0	10	30
2	LAVATORY	3	1.5	4.5	1.5	4.5	2	6
3	SINK - BREAKROOM	1	2.25	2.25	2.25	2.25	3	3
4	MOP BASIN	1	2.25	2.25	2.25	2.25	3	3
5	WASHER BOX	4	2.25	9.00	2.25	9.00	3	12
6	SINK - STUDIO	40	1.5	60.0	1.5	60.0	2	80
7	SINK - SHAMPOO	34	2.0	68.0	2.0	68.0	3	102
8	ICE BOX	2	0.25	0.50	0	0	0.25	0.50
9	WATER COOLER	1	0.25	0.25	0	0	0.25	0.25
TOTAL				176.75		146.00		237 FU

COLD WATER MAIN 2"
HOT WATER MAIN 1-1/2"

GAS DEMAND SCHEDULE

EQUIPMENT		GAS INPUT (BTUH)	
SN	ITEM	NEW	EXISTING
1	WATER HEATER - 1	199,000	
2	WATER HEATER - 2	199,000	
3	WATER HEATER - 3	199,000	
4	WATER HEATER - 4	199,000	
5	RTU - 4	108,000	
6	DOAS UNIT - 1	348,000	
7	RTUs - 1-3	660,000	
TOTAL BTU/HR		1,912,000	0

NEW TOTAL BTU/HR (EXISTING AND NEW) 1,912,000

NEW TOTAL CFH (EXISTING AND NEW) 1,412

MAXIMUM DEVELOPMENT LENGTH > 150 FT

NOTE

GAS LINE SIZED AS PER TABLE 402.4(2) OF IFG FOR PRESSURE OF 7" W.C..

PLUMBING GENERAL NOTES:

- INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
- COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
- SAWCUT EXISTING FLOOR AS REQUIRED FOR INSTALLATION OF UNDERFLOOR PIPING. PATCH FLOOR TO MATCH EXISTING.
- NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
- CONTRACTOR TO TEST WATER PRESSURE ON SITE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE IS OVER 80 PSI.

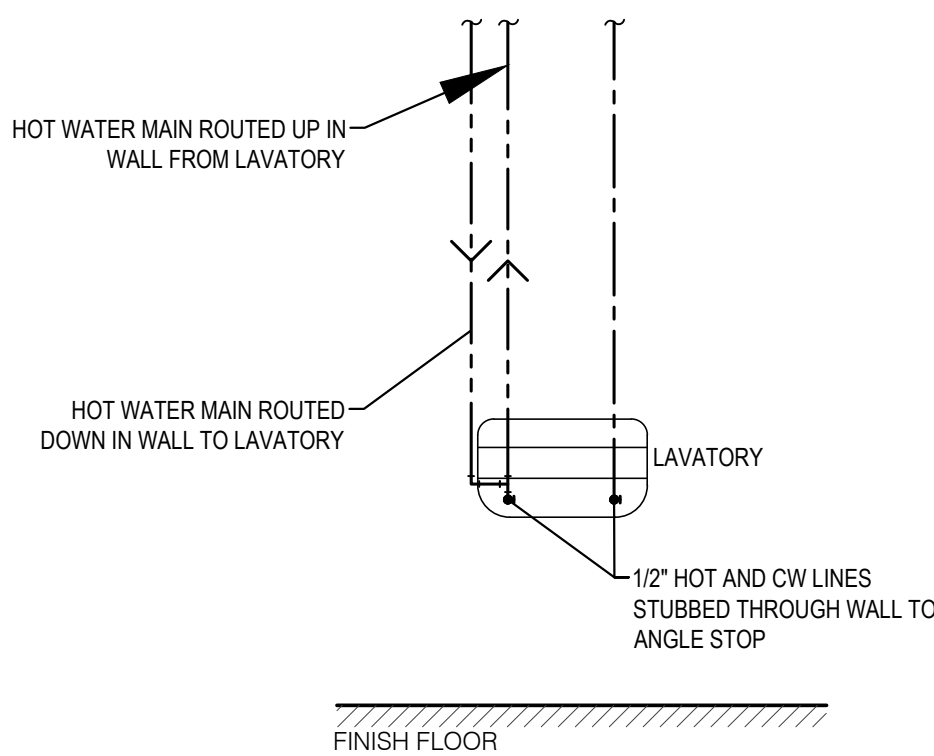
PEX PIPING REQUIREMENTS

PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. IF PEX PIPING IS USED, INCREASE PEX PIPING ONE SIZE ABOVE LISTED SIZES AS REQUIRED TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER. FOR ALL SUPPLY MAINS AND RECIRCULATION LOOPS.

PLUMBING FIXTURE BRANCH PIPING SCHEDULE

FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET (FLUSH VALVE)	4"	2"	1"	--
LAVATORY	1-1/4"	1-1/4"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
FLOOR DRAIN	2"	2"	--	--
MOP BASIN	2"	2"	3/4"	3/4"
ELECTRIC WATER COOLER (BI-LEVEL)	1-1/2"	1-1/2"	1/2"	--
WASHER BOX	1-1/2"	1-1/2"	1/2"	1/2"

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.



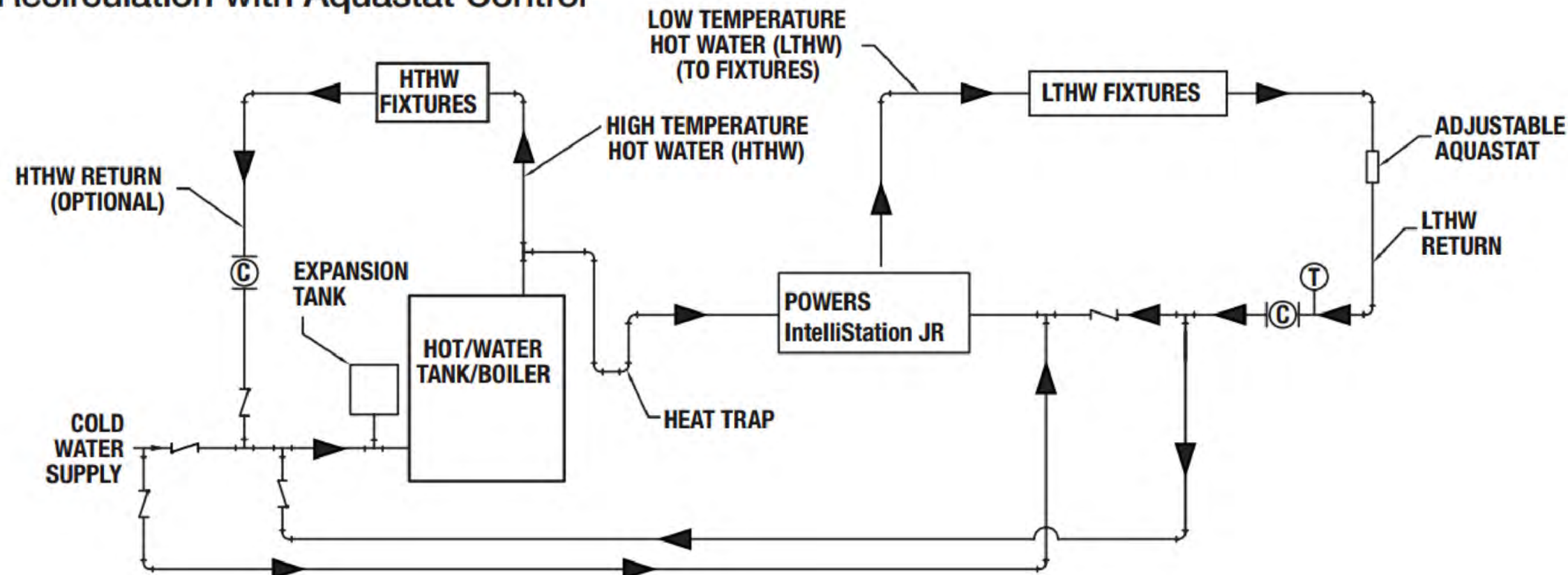
LAVATORY HOT WATER DETAIL

SCALE: NONE

PLUMBING FIXTURE SCHEDULE:

- WC** WATER CLOSET: KOHLER, #K-96053, ELONGATED BOWL, FLOOR MOUNTED, FLOOR OUTLET, VITREOUS CHINA, SIPHON-JET ACTION, SLOAN 111 MANUAL VALVE, 1.28 GAL/FLUSH, #SC534 OPEN FRONT ELONGATED SEAT WITH CHECK HINGE AND LESS COVER, CHROME PLATED ANGLE STOP AND RISER.
- HWC** HANDICAP WATER CLOSET: KOHLER, #K-96057, FLOOR MOUNTED, FLOOR OUTLET, 16-1/2" HIGH ELONGATED BOWL, VITREOUS CHINA, SIPHON-JET ACTION, SLOAN 111 MANUAL VALVE, 1.28 GAL/FLUSH, #SC534 OPEN FRONT SEAT WITH CHECK HINGE AND LESS COVER, CHROME PLATED ANGLE STOP AND RISER. HANDLE ON WIDE SIDE OF FIXTURE.
- L1** HANDICAP LAVATORY, UNDERMOUNT: TOTO #LT1535G, 17-11/16" x 13", VITREOUS CHINA, FRONT OVERFLOW, SLOAN EAF 250-ISM CP BATTERY OPERATED FAUCET, OFFSET GRID ELBOW DRAIN AND 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL WITH WALL), CHROME PLATED LOOSE KEY ANGLE STOPS AND RISERS.
- S1** BREAK ROOM SINK, SINGLE COMPARTMENT: RUVATI 33-INCH LOW-DIVIDE UNDERMOUNT TIGHT RADIUS 60/40 DOUBLE BOWL, 16 GAUGE, STAINLESS STEEL - RVH7419, AMERICAN STANDARD "EDGEWATER" #4932300.002 GOOSE NECK FAUCET, PULL OUT SPRAY, SWIVELING SPOUT, SINGLE LEVER HANDLE, AERATOR, #LK-35 BASKET STRAINER WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, IN-SINK-ERATOR#BADGER 5 DISPOSAL, 1/2 HP, 120 VOLT, CHROME PLATED ANGLE STOPS AND RISERS. SINK CUT-OUT IN CASEWORK SHALL BE BY CASEWORK CONTRACTOR.
- S2** STUDIO ROOM SINK: SINK PROVIDED BY OTHER. PROVIDE WITH CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.
- SS** SHAMPOO SINK: SINK PROVIDED BY OTHER. PROVIDE WITH CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.
- EW** ELECTRIC WATER COOLER, ELKAY, #EZ3TLBWSSK, BARRIER FREE TWO-STATION WATER COOLER WITH BOTTLE FILLING STATION, 8.0 GPM, 50 DEGREES F WATER WITH 90 DEGREES F AIR TEMPERATURE, 120 VOLT, COLOR TO BE SELECTED BY ARCHITECT AFTER AWARD OF CONTRACT, FRONT AND SIDE PUSH BARS, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED LOOSE KEY ANGLE STOP, FLOOR MOUNTED CARRIER AND CANE APRON.
- WB** WASHER BOX: SIOUX CHIEF #696-C2313XF, WASHER BOX WITH 1-1/2" DRAIN OUTLET AND TAILPIECE, BUILT IN WATER HAMMER ARRESTER AND 1/2" HOSE BIBBS.
- MB** MOP BASIN: FIAT, #MSB-2424, MOLDED STONE MOP BASIN, 2" DRAIN, 24"X24" BASIN, VINYL BUMPER GUARD, STERN WILLIAMS #T-10-VB FAUCET, SPRING CHECKS, VACUUM BREAKER, INTEGRAL STOPS, WALL BRACE & PAIL HOOK, WALL BRACKET WITH 30" HOSE.
- FD** FLOOR DRAIN: JR SMITH, #2005-A, CAST IRON FLOOR DRAIN WITH ADJUSTABLE TOP AND 6" NIKALOY STRAINER. PROVIDE WITH #2892 QUAD CLOSE TRAP SEAL DEVICE.
- HHW1** HOT WATER HEATER: RINNAI, #CU199i, GAS FIRED, 96% THERMAL EFFICIENCY, INSTANTANEOUS HEATER, 199 MBTUH INPUT, 4 GPM AT 100 DEGREES F RISE. PROVIDE WITH WALL MOUNTING BRACKET, PRESSURE RELIEF VALVE, CONDENSATE DRAIN HOSE, CONDENSATE NEUTRALIZER, VENT TERMINATORS. INTERCONNECTION CABLES FOR CASCADING.
- ST** HOT WATER STORAGE TANK: AO SMITH, #TJ-80A, 80 GALLON INSULATED STORAGE TANK, 160 PSI WORKING PRESSURE, (4) 2" THREADED CONNECTIONS, THERMOMETER, THERMOWELL, RELIEF VALVE, AND DRAIN VALVE, R12.5 INSULATION.
- ET** HOT WATER EXPANSION TANK: AMTROL, #ST-12, 4.4 GALLON EXPANSION TANK WITH DIAPHRAGM.
- RCP-1** HOT WATER RECIRCULATING PUMP: BELL & GOSSETT, #SERIES NBF-10, 3 GPM @ 10 FT. HEAD, 1/12 HP, 120 VOLT, WITH AQUASTAT & TC-1 TIMER KIT.
- RCP-2** TACO 0013-SF3 12 GPM @ 23' TOTAL HEAD, STAINLESS STEEL CONSTRUCTION, 1/6 HP, 120V. PROVIDE AQUASTAT WITH THERMOWELL FOR TANK AND TC-1 TIMER KIT.
- MV** MIXING VALVE: WATTS INTELLISTATION JR, DIGITAL WATER MIXING VALVE, #LFIS100VL, 0.5-61 GPM, 0.5 GPM MINIMUM FLOW CAPACITY, 1" INLET, 1-1/4" OUTLET, WITH INLET AND OUTLET THERMOMETERS, 1/6 HP, INTEGRAL CHECK VALVES, WFI ENABLED, 3.3" COLOR TOUCH SCREEN, 125 PSI MAXIMUM OPERATING PRESSURE, ASSE 1017 CERTIFIED, SET AT 125°F, 110V.
- MV1** MIXING VALVE: WATTS, #LFUSG-B, THERMOSTATIC CONTROLLED MIXING VALVE, LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH BRASS SHUTTLE, STAINLESS STEEL SPRINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS. (SET TO 110°F). ASSE 1070 LISTED.
- IB** ICE BOX: SIOUX CHIEF #696-1000, ICE BOX WITH 1/2" INLET AND CONNECTION AND 1/4-TURN SHUT OFF VALVE.
- FCOWCO** VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL. QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL. CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL. UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL. WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
- FS-1** FLOOR SINK: SIOUX CHIEF, #860 ROUND PVC FLOOR SINK WITH STAINLESS STEEL MESH DEBRIS SCREEN, PVC HALF OPEN STRAINER.

Recirculation with Aquastat Control



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BC ENGINEERS
INCORPORATED

5720 Reeder Shawnee, KS 66203 (913)262-1772

kloverarchitects
INCORPORATED

8813 PENROSE LANE, SUITE 400 • LENEXA, KS 66219

ph: 913.649.8181 • fx: 913.649.1275 • www.klover.net

project title

IMAGE STUDIOS

SUMMIT FAIR

840-D NW BLUE PARKWAY

LEES SUMMIT, MO 64086

project number

23060.003

drawing issuance

PERMIT/BID

03.15.24

drawing revisions

No.

Description

Date:

△ CITY/OWNER COMMENTS 04.16.24

professional seal

04/17/24



drawing title

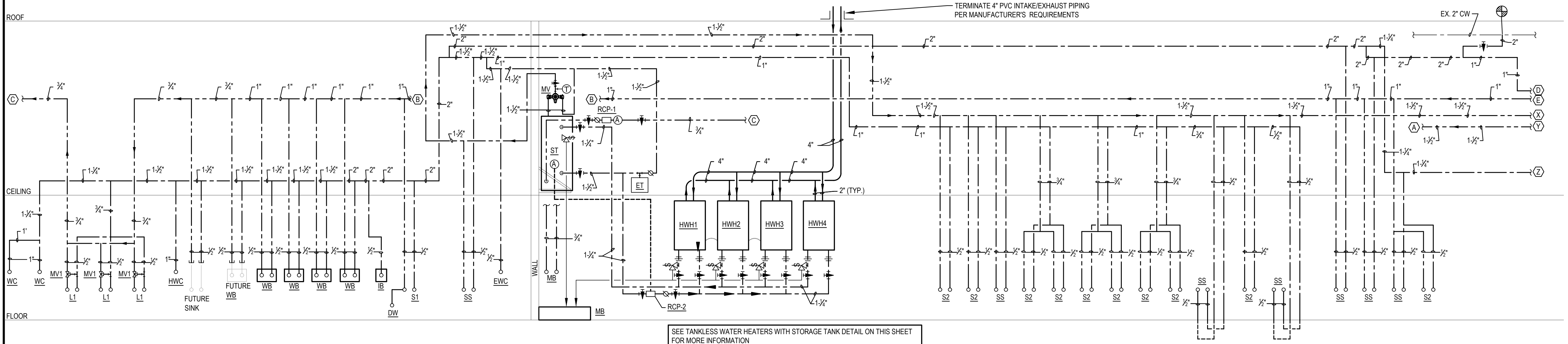
PLUMBING SCHEDULES & DETAILS

drawing number

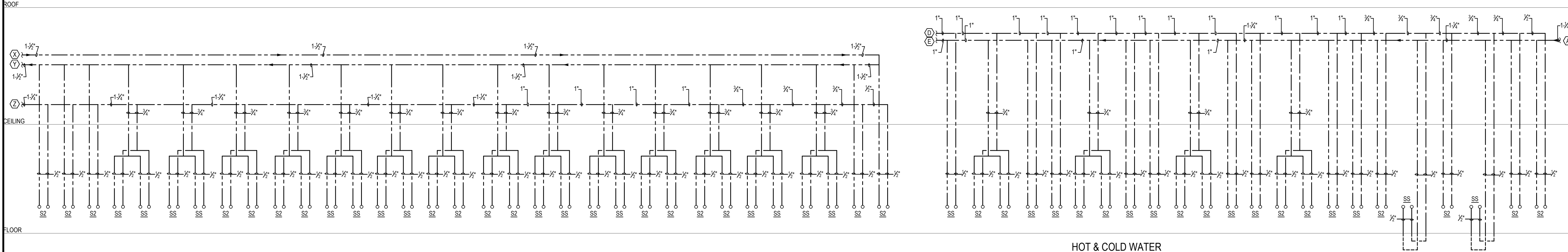
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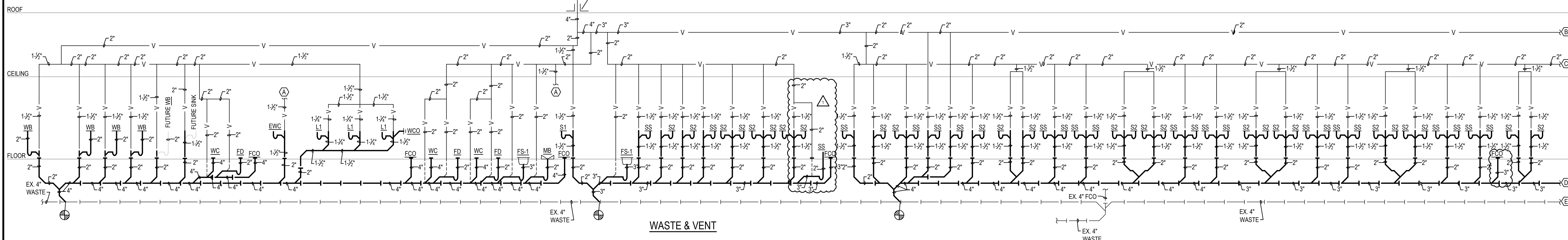
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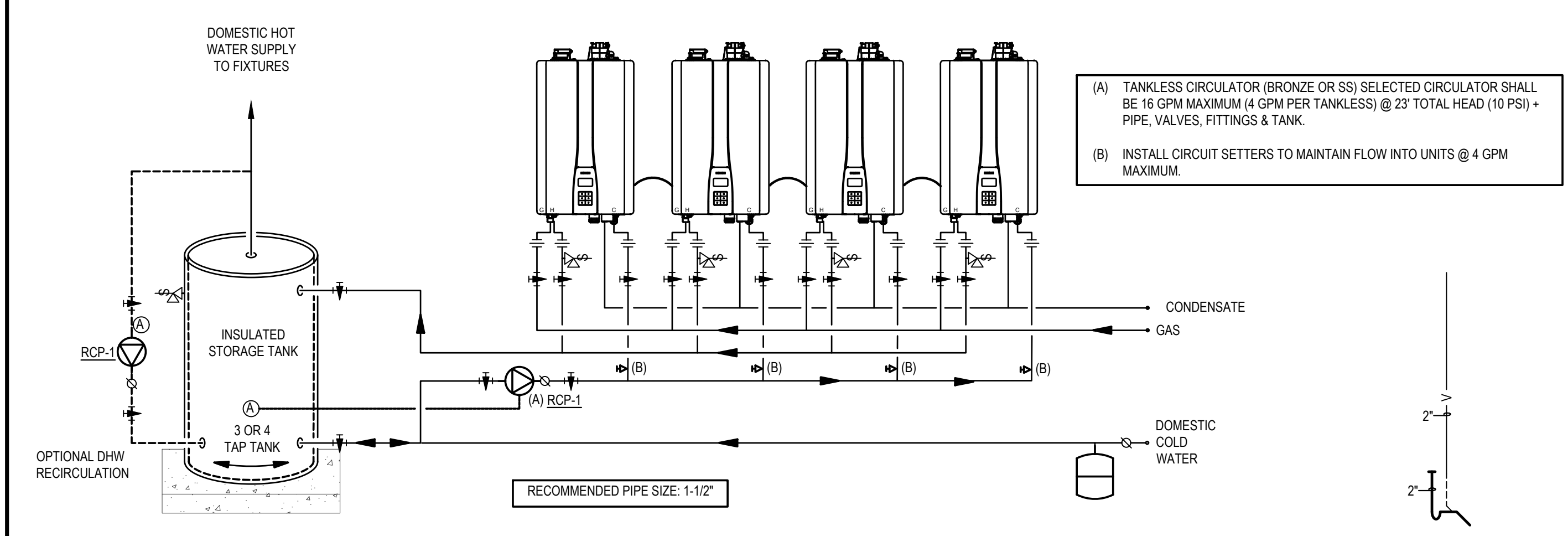
HOT & COLD WATER



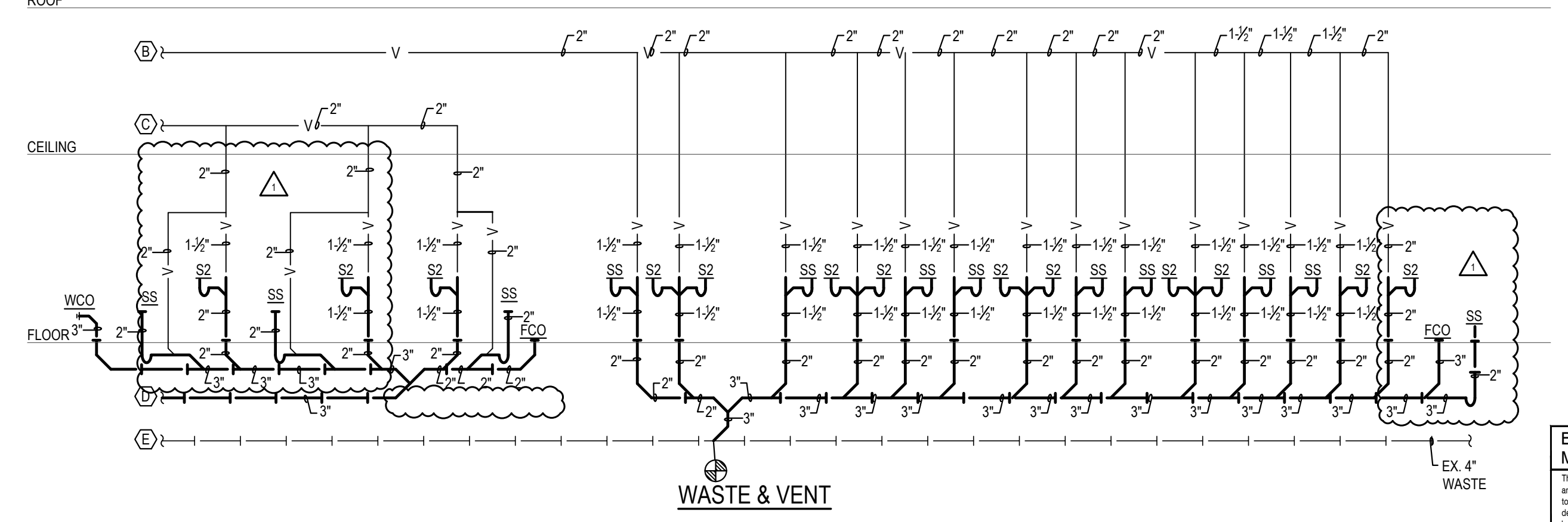
HOT & COLD WATER



WASTE & VENT



TANKLESS WATER HEATERS WITH STORAGE TANK
SCALE: NONE



WASTE & VENT

PLUMBING RISER DIAGRAMS
SCALE: NONE

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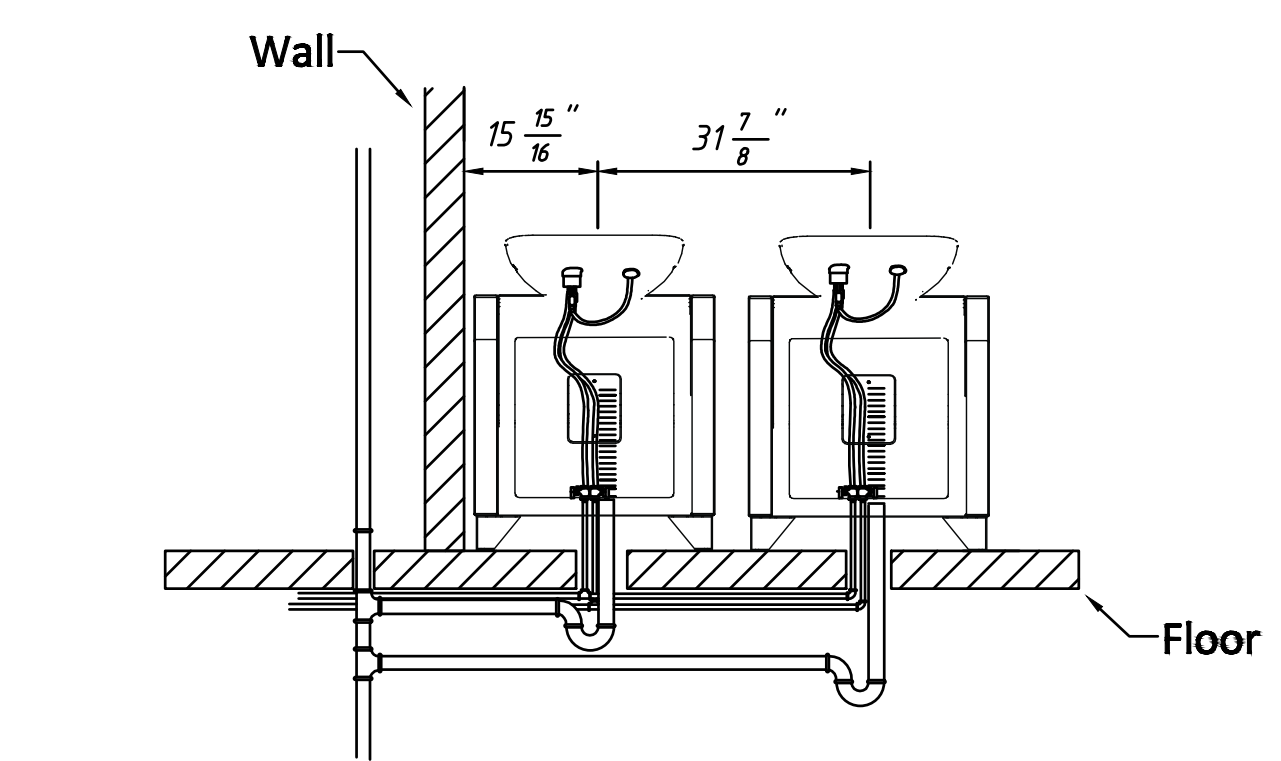
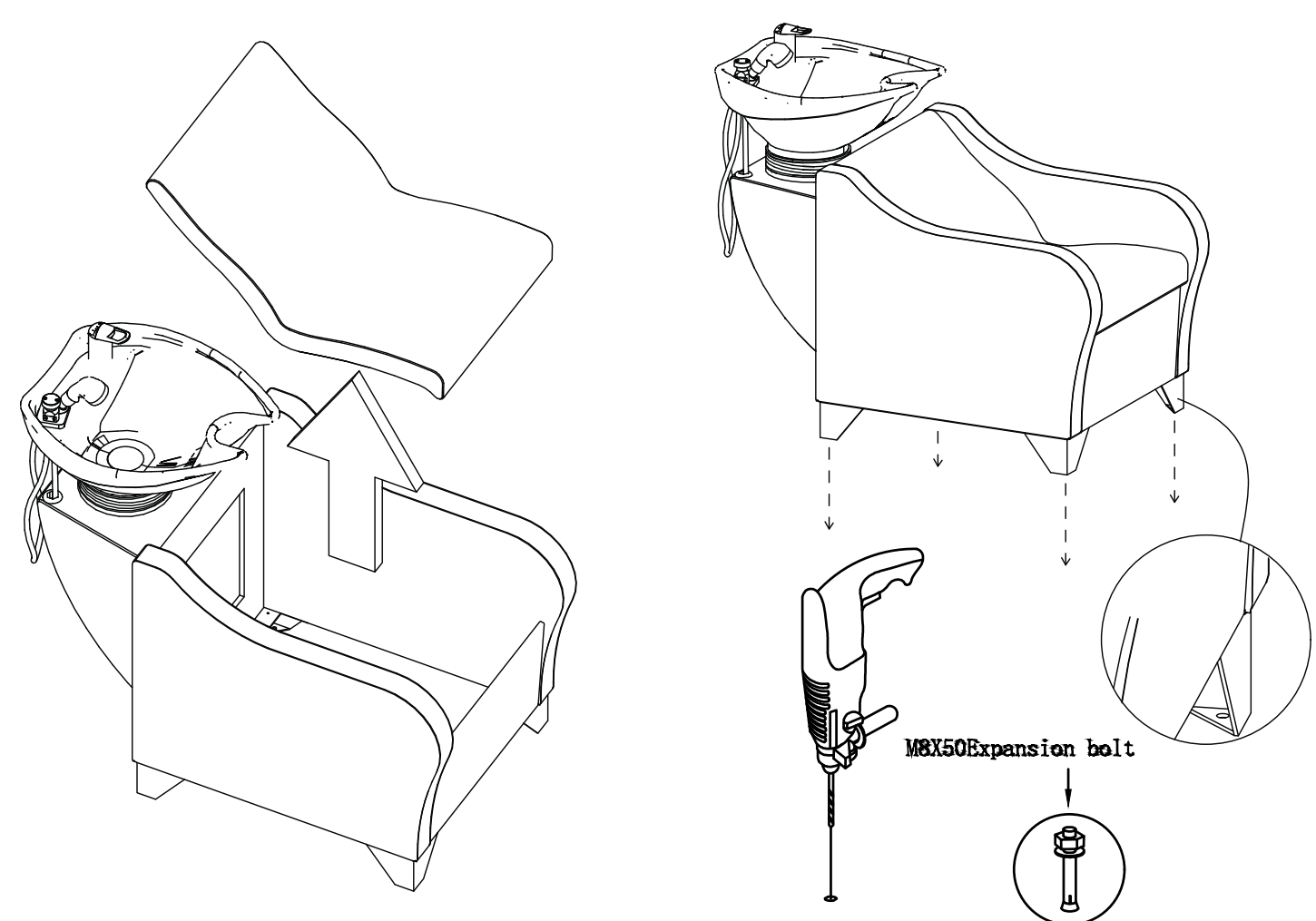
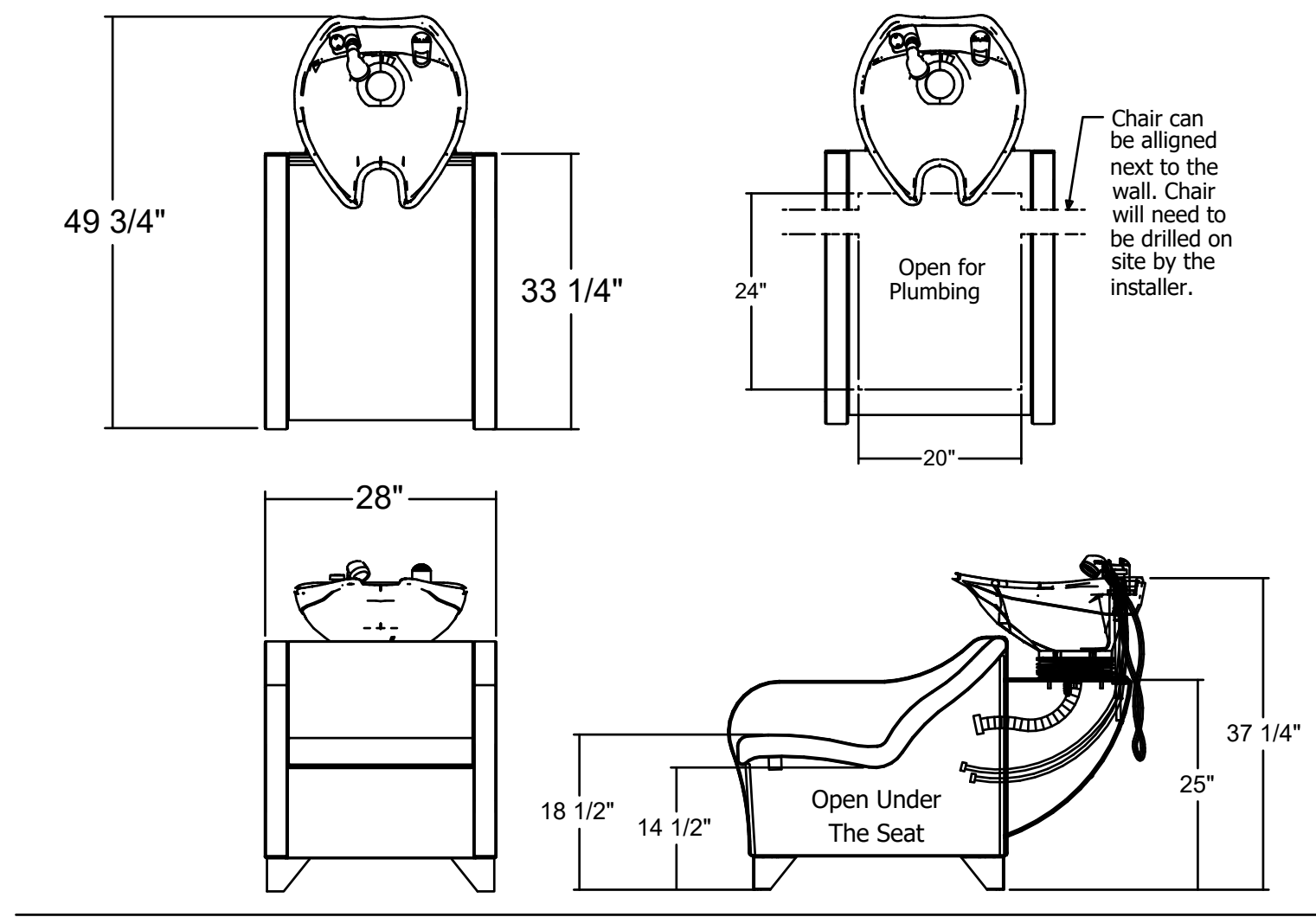
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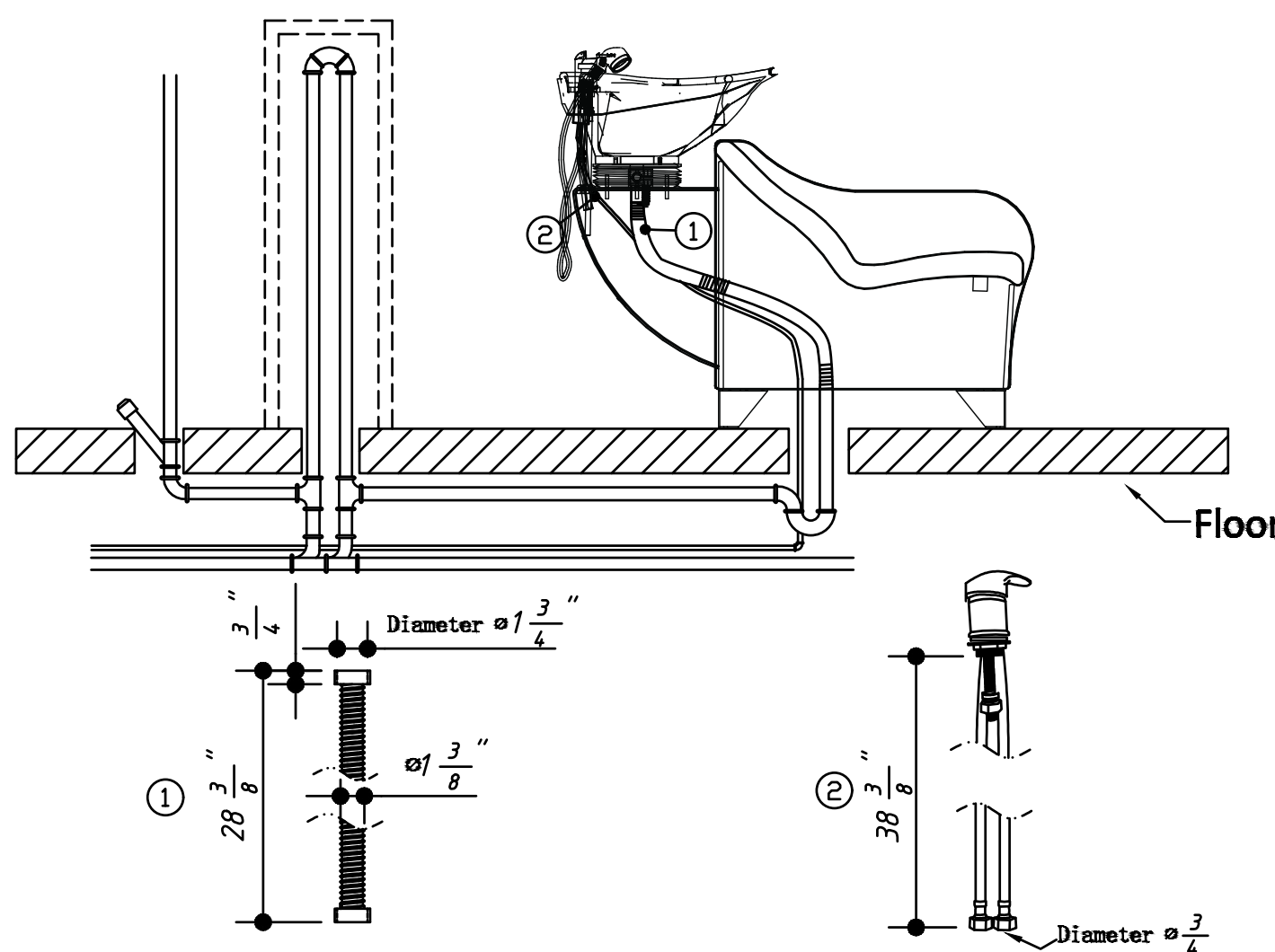
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PLUMBING RISER DIAGRAMS

drawing number

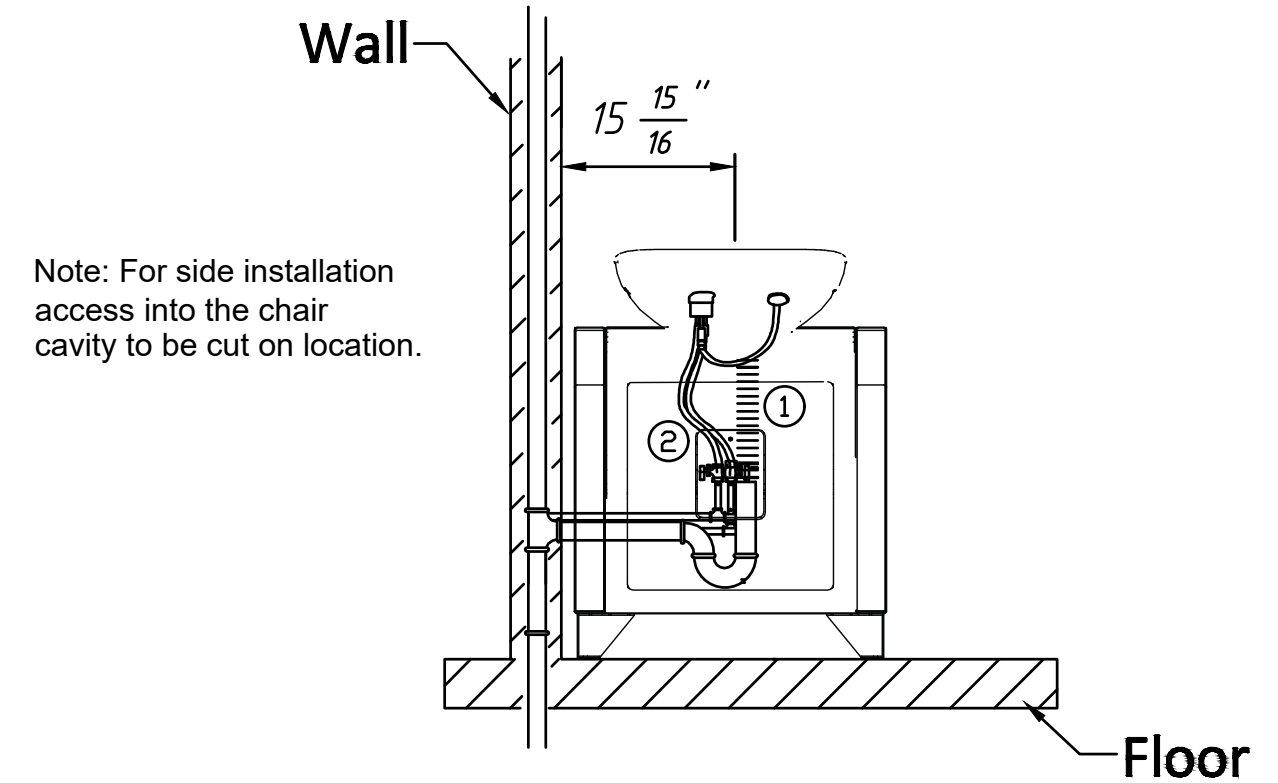
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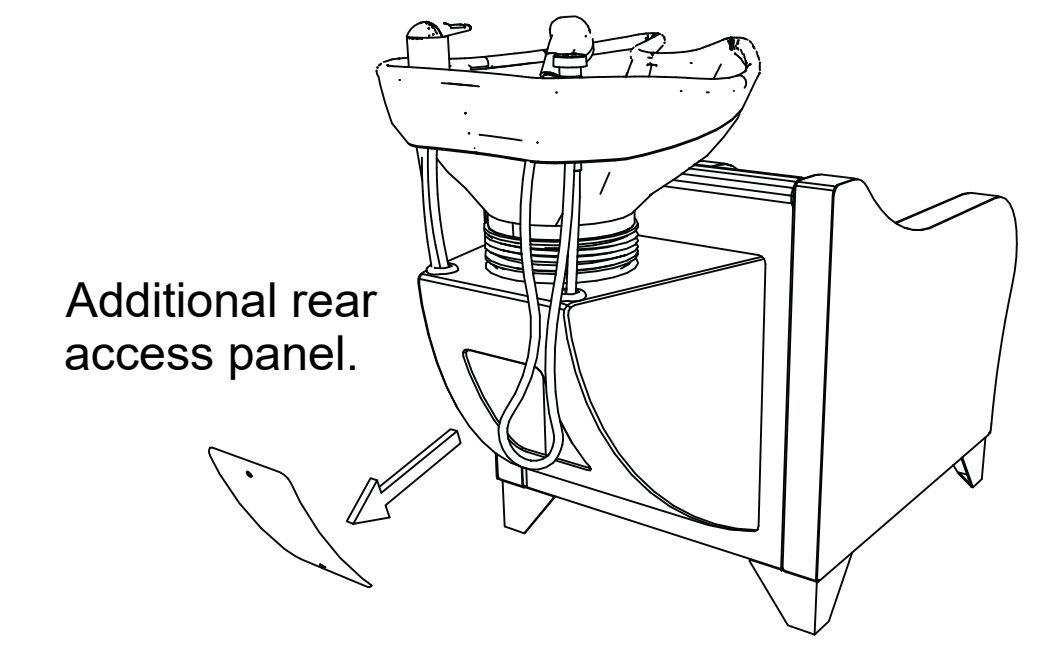
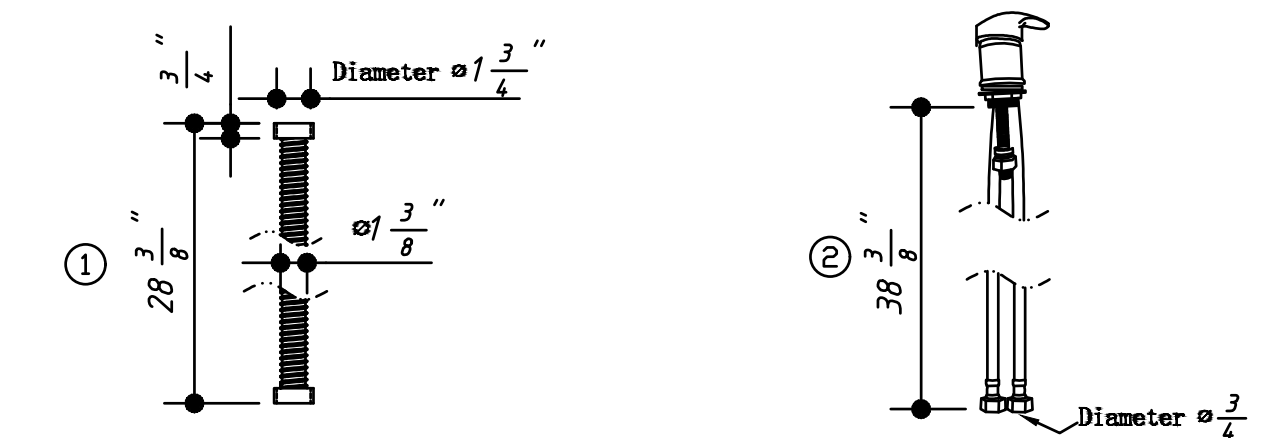
Water pipe installation A.
Water pipes go all the way inside shampoo base.



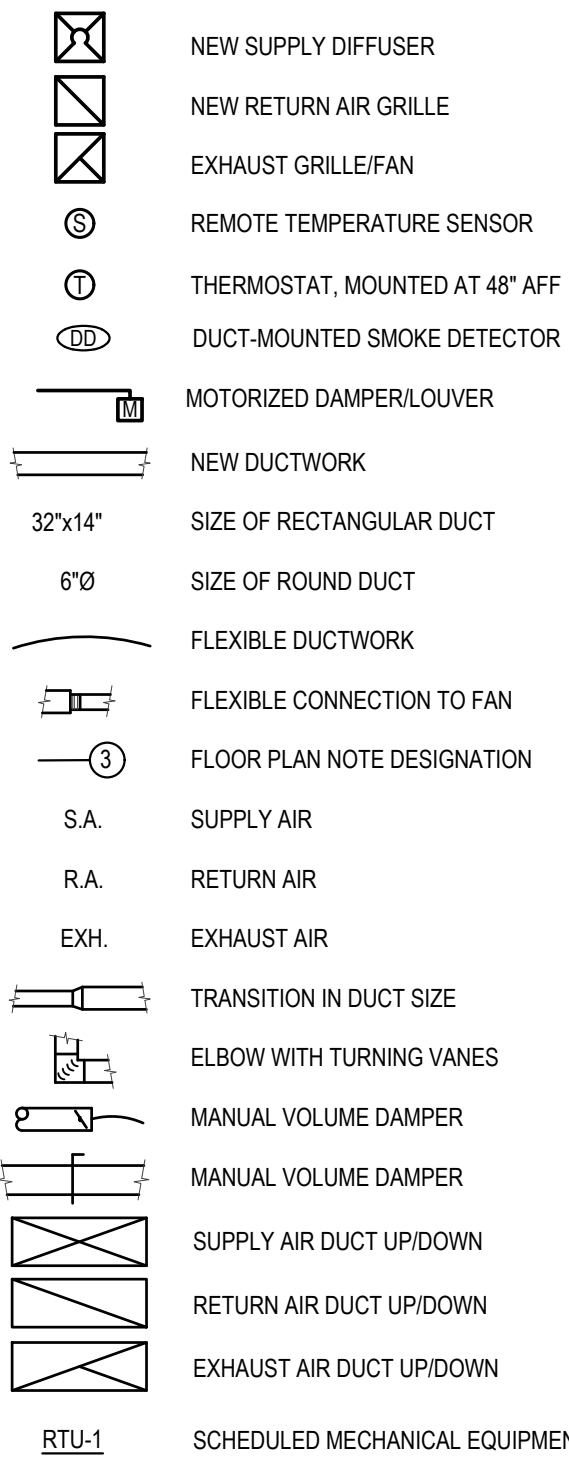
SHAMPOO SINK INSTALLATION DETAIL
SCALE: NONE



Water pipe installation B.
Side mounted Plumbing



MECHANICAL SYMBOLS



MECHANICAL GENERAL NOTES:

- COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
 - THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
 - REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
 - INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE.
 - DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
 - PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ROOFTOP UNITS, EXHAUST FANS, AND OTHER MOTORIZED EQUIPMENT.
 - NO DUCT SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
 - ALL MECHANICAL SYSTEMS SHALL BE BALANCED BY A CERTIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.
- MECHANICAL PLAN NOTES:**
- EXISTING ROOF TOP UNIT TO REMAIN AS IS. PERFORM PREVENTATIVE MAINTENANCE CHECK AS NOTED ON SHEET M200. CONNECT NEW DUCTWORK TO THE EXISTING DUCT DROPS WITH FLEXIBLE CONNECTIONS.
 - EXISTING DUCT DETECTOR TO REMAIN. VERIFY UNIT IS IN PROPER WORKING ORDER. PROVIDE REMOTE ENUNCIATOR AUDIO/VISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET MP0 FOR ADDITIONAL INFORMATION.
 - ALL SUPPLY DUCTWORK EXPOSED IN OPEN CEILING AREA SHALL BE INTERNALLY LINED. PREP DUCTWORK FOR PAINT.
 - CONNECT VENTILATION SUPPLY DUCT TO THE RTU RETURNS AND CONNECT WITH A BALANCING DAMPER. REFER TO SCHEDULE FOR OUTDOOR AIR VOLUME.
 - PROVIDE DUCT DETECTOR IN LOCATION SHOWN. PROVIDE REMOTE ENUNCIATOR AUDIO/VISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET MP0 FOR ADDITIONAL INFORMATION.
 - LOCATION OF LOCAL HMI FOR THE DOAS UNIT. THE DOAS UNIT SHALL OPERATE IN DISCHARGE AIR TEMPERATURE CONTROL AND ENGAGE HEATING, COOLING OR DEHUMIDIFICATION BASED ON THE SET POINTS IN THE SEQUENCE OF OPERATION BELOW. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE A JUNCTION BOX AND CONDUIT FOR THE HMI.
 - THERMOSTATS FOR RTU'S 1-4. PROVIDE NEW WIFI COMPATIBLE THERMOSTATS WITH REMOTE SENSORS FOR RTU-1, 2, 3.
 - LOCATION OF TEMPERATURE SENSOR FOR RTU. MOUNT SENSOR 48" ABOVE THE FINISHED FLOOR.
 - PROVIDE SOUND ABSORBING FLEX DUCT SOUND BOOT FOR EACH SUITE AS DETAILED. PROVIDE FLEXFLOW ELBOW. INSTALL AS DETAILED & AS REQUIRED BY THE MANUFACTURER.
 - PROVIDE DRYERBOX #425 FOR EACH DRYER. CONNECT 4"Ø METALLIC FLEX DUCT TO DRYER VENT BOX AS REQUIRED BY THE MANUFACTURER.
 - DRYER EXHAUST DUCT SHALL BE CONSTRUCTED OF METAL NOT LESS THAN 0.016 INCH IN THICKNESS. SUPPORT DRYER DUCT AT 4 FT. INTERVAL AND SEALED JOINTS AS SPECIFIED.
 - ROUTE 4" DRYER EXHAUST DUCT THROUGH WALL AT 12" AFF. MAINTAIN 10" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
 - CUT EXISTING ROOF AND FLASH INTO ROOF AS REQUIRED. ALL ROOFING WORK SHALL BE PERFORMED BY BUILDING OWNERS ROOFING CONTRACTOR (AT THIS CONTRACTOR'S EXPENSE) TO MAINTAIN EXISTING ROOF WARRANTY. VERIFY APPROVED ROOFING CONTRACTOR WITH BUILDING OWNER PRIOR TO PERFORMING WORK.
 -

SEQUENCE OF OPERATION

RTU SEQUENCE OF OPERATION:

- A. PACKAGED ROOFTOP UNITS
- UNIT SHALL CONSIST OF SUPPLY AIR FAN, FILTERS, DX COOLING COIL, GAS-FIRED HEAT SECTION, AND A 7-DAY PROGRAMMABLE THERMOSTAT WITH BACNET CONNECTION TO THE CENTRAL CONTROLLER.
 - PROVIDE AN OVERRIDE CONTROL TO OPERATE THE UNIT DURING UNOCCUPIED HOURS. THIS CONTROL SHALL BE PART OF THE PROGRAMMABLE THERMOSTAT. OVERRIDE SWITCH ALLOWS THE UNIT TO OPERATE FOR TWO HOURS (ADJUSTABLE).
 - OCCUPIED MODE: BASED ON THE ROOFTOP UNIT'S HOURS OF OCCUPANCY, START THE UNIT AT THE BEGINNING OF OCCUPANCY AND SHUT DOWN THE UNIT AT THE END OF OCCUPANCY (NOTE: OUTSIDE AIR DAMPER WITHIN THE RTU SHALL OPEN AND THEN THE RTU SHALL START). THE UNIT SHALL START EARLIER AS DETERMINED BY THE PROGRAM FOR EARLY WARMUP OR COOL DOWN. ON A SYSTEM STARTUP, THE RTU FAN SHALL START AND RUN CONTINUOUSLY. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE 2 SPEED SUPPLY FAN (RTU-4) SHALL REDUCE TO LOW SPEED WHEN THE UNIT IS IN FIRST STAGE HEATING OR COOLING MODE TO OPERATE THE UNIT IN SINGLE ZONE VAV MODE.
 - 3.1. ECONOMIZER MODE: WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 55° OR HAS AN ENTHALPY BELOW 28 BTU/LB, ECONOMIZER MODE SHALL BE ENABLED. ECONOMIZER MODE SHALL LINEARLY MODULATE OUTDOOR AIR CFM FROM MINIMUM OA CFM TO 100% BASED ON ENTHALPY READINGS.
 - UNOCCUPIED MODE: THE RTU INTERNAL OA DAMPERS SHALL REMAIN CLOSED WHEN THE BUILDING IS NOT OCCUPIED. THE RTU SHALL STOP HEATING/COOLING AND THE FAN SHALL STOP. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE 2 SPEED SUPPLY FAN (RTU-4) SHALL REDUCE TO LOW SPEED WHEN THE UNIT IS IN FIRST STAGE HEATING OR COOLING MODE.
 - UPON DETECTION OF SMOKE BY UNIT SMOKE DETECTOR ALL RTUS SHALL SHUT DOWN AND AN ALARM SHALL BE SENT TO THE FIRE ALARM CONTROL PANEL (WHERE APPLICABLE). LOCAL REMOTE ANNUNCIATORS SHALL ALSO BE ACTIVATED.

DOAS SEQUENCE OF OPERATION:

- THE SUPPLY / EXHAUST FAN SHALL RUN CONTINUOUSLY DURING OPERATION HOURS. THE SUPPLY / EXHAUST FAN SHALL SHUT & THE OUTSIDE AIR DAMPER SHALL BE CLOSED DURING UNOCCUPIED HOURS.
- HEATING - THE UNIT SHALL ACTIVATE HEATING WHEN THE INTAKE TEMPERATURE DROPS BELOW 45 DEG F. THE HEATING DISCHARGE TEMPERATURE SHALL BE 55 DEG F.
- COOLING - THE UNIT SHALL ACTIVATE COOLING WHEN THE INTAKE TEMPERATURE RISES ABOVE 65 DEG F. THE COOLING DISCHARGE TEMPERATURE SHALL BE 55 DEG F.
- DEHUMIDIFICATION - THE UNIT SHALL ACTIVATE DEHUMIDIFICATION WHEN THE INTAKE CONDITIONS RISE ABOVE 56 DEG F AND THE DEW POINT IN THE SPACE RISES ABOVE 56 DEG F WB.

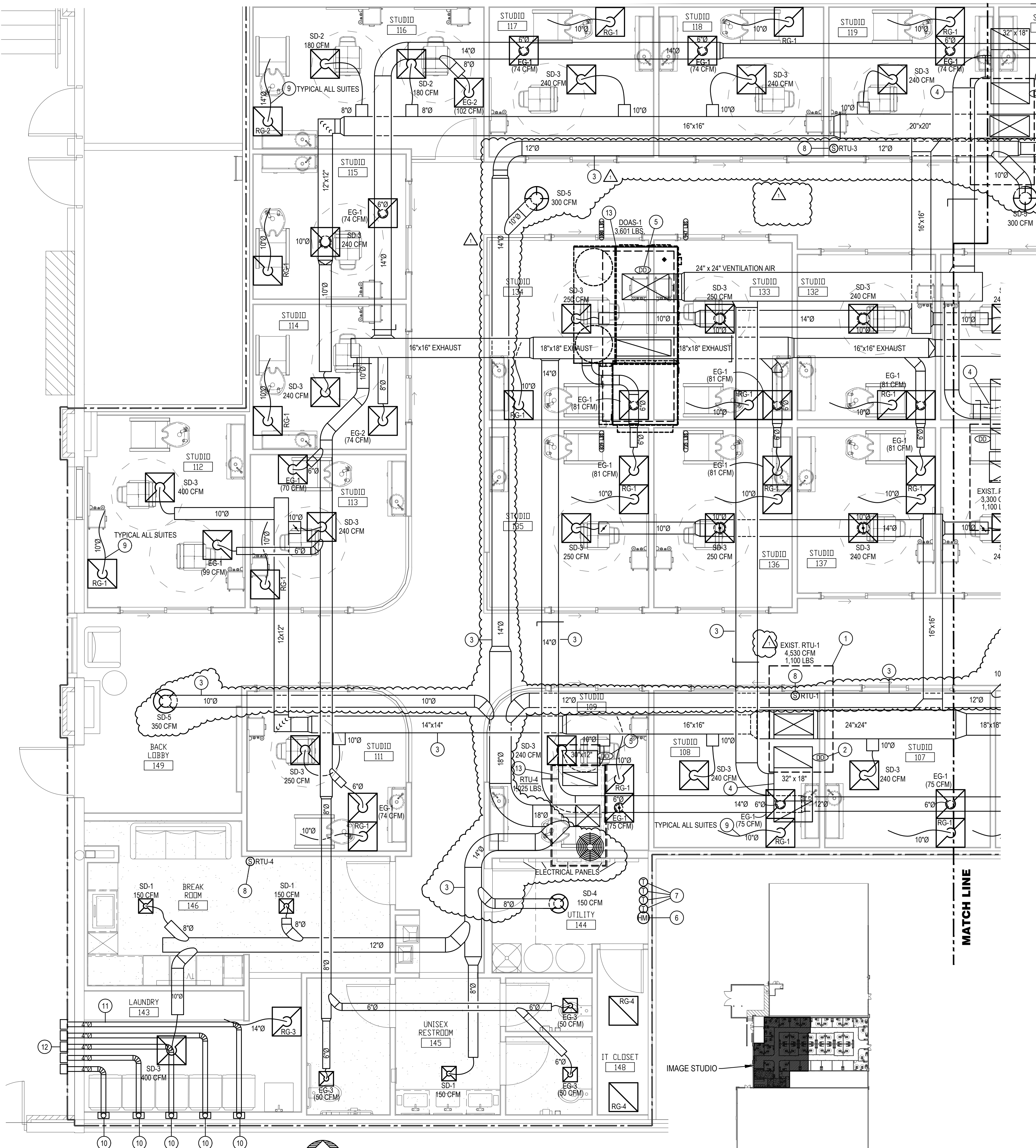
BUILDING TEMPERATURE SET POINTS

OCCUPIED MODE ZONE SET POINTS (5° DEADBAND)
COOLING SET POINT 75°F (ADJUSTABLE)
HEATING SET POINT 70°F (ADJUSTABLE)

UNOCCUPIED MODE ZONE SET POINTS
COOLING SET POINT 78°F (ADJUSTABLE)
HEATING SET POINT 65°F (ADJUSTABLE)

THE MECHANICAL CONTRACTOR SHALL ENSURE THE SYSTEMS ARE WIRED, INTERLOCKED, PROGRAMMED CORRECTLY, AND FULLY TESTED IN ALL MODES TO ENSURE THESE REQUIREMENTS ARE MET.

THE SYSTEMS SHALL BE BALANCE BY A NEBB CERTIFIED BALANCER, AND SHALL BE STARTED UP BY FACTORY TRAINED PERSONNEL.



MECHANICAL PLAN - WEST

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



KEY PLAN

SCALE: NONE

BC PROJECT #: 23615
MISSOURI PE COA #2009003629

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project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number

23060.003

drawing issuance

PERMIT/BID 03.15.24

drawing revisions

No. Description Date

△ CITY/OWNER COMMENTS 04.16.24

professional seal

04/17/24



drawing title

MECHANICAL PLAN
EAST

drawing number

M101

BC PROJECT #: 23615
MISSOURI PE COA #2009003629

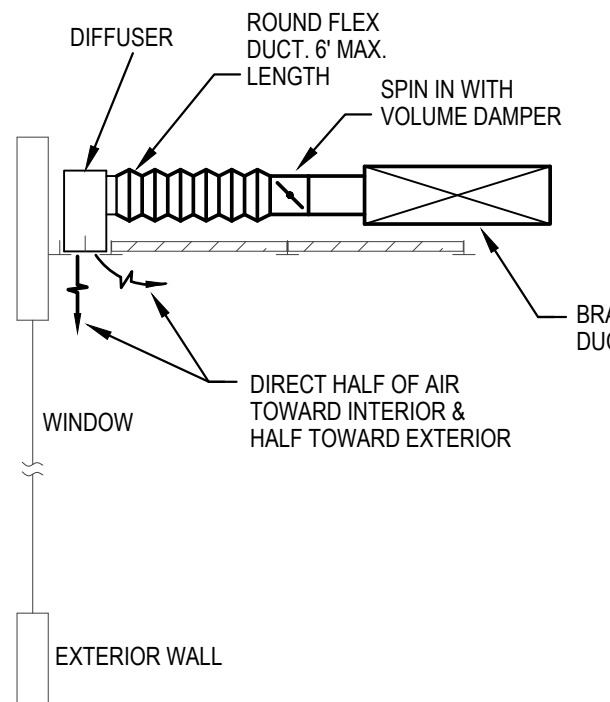
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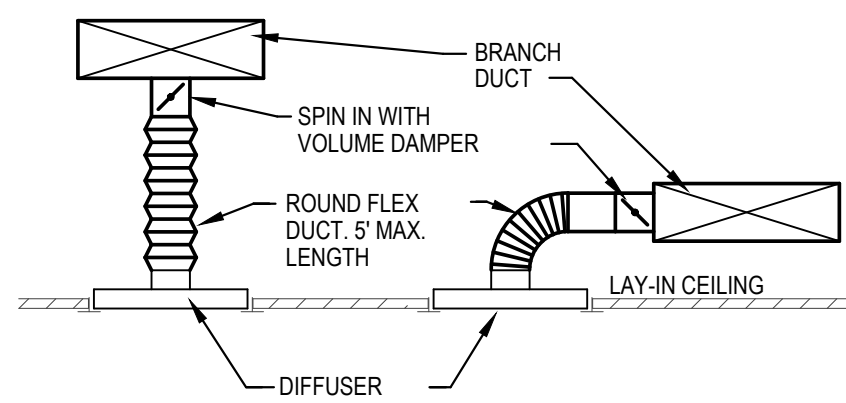
MECHANICAL PLAN NOTES:

- EXISTING ROOF TOP UNIT TO REMAIN AS IS. PERFORM PREVENTATIVE MAINTENANCE CHECK AS NOTED ON SHEET M200. CONNECT NEW DUCTWORK TO THE EXISTING DUCT DROPS WITH FLEXIBLE CONNECTIONS.
- EXISTING DUCT DETECTOR TO REMAIN. VERIFY UNIT IS IN PROPER WORKING ORDER. PROVIDE REMOTE ENUNCIATOR AUDIO/VISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET MP0 FOR ADDITIONAL INFORMATION.
- ALL SUPPLY DUCTWORK EXPOSED IN OPEN CEILING AREA SHALL BE INTERNALLY LINED. PREP DUCTWORK FOR PAINT.
- CONNECT VENTILATION SUPPLY DUCT TO THE RTU RETURNS AND CONNECT WITH A BALANCING DAMPER. REFER TO SCHEDULE FOR OUTDOOR AIR VOLUME.
- PROVIDE DUCT DETECTOR IN LOCATION SHOWN. PROVIDE REMOTE ENUNCIATOR AUDIO/VISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET MP0 FOR ADDITIONAL INFORMATION.
- PROVIDE SOUND ABSORBING FLEX DUCT SOUND BOOT FOR EACH SUITE AS DETAILED. PROVIDE FLEXFLOW ELBOW. INSTALL AS DETAILED & AS REQUIRED BY THE MANUFACTURER.
-
- LOCATION OF TEMPERATURE SENSOR FOR RTU. MOUNT SENSOR 48" ABOVE THE FINISHED FLOOR.



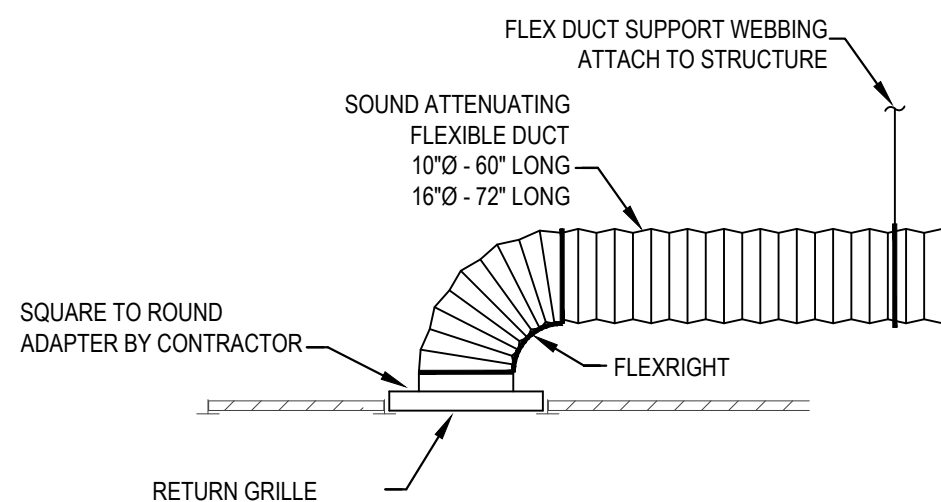
LINEAR DIFFUSER DETAIL

SCALE: NONE



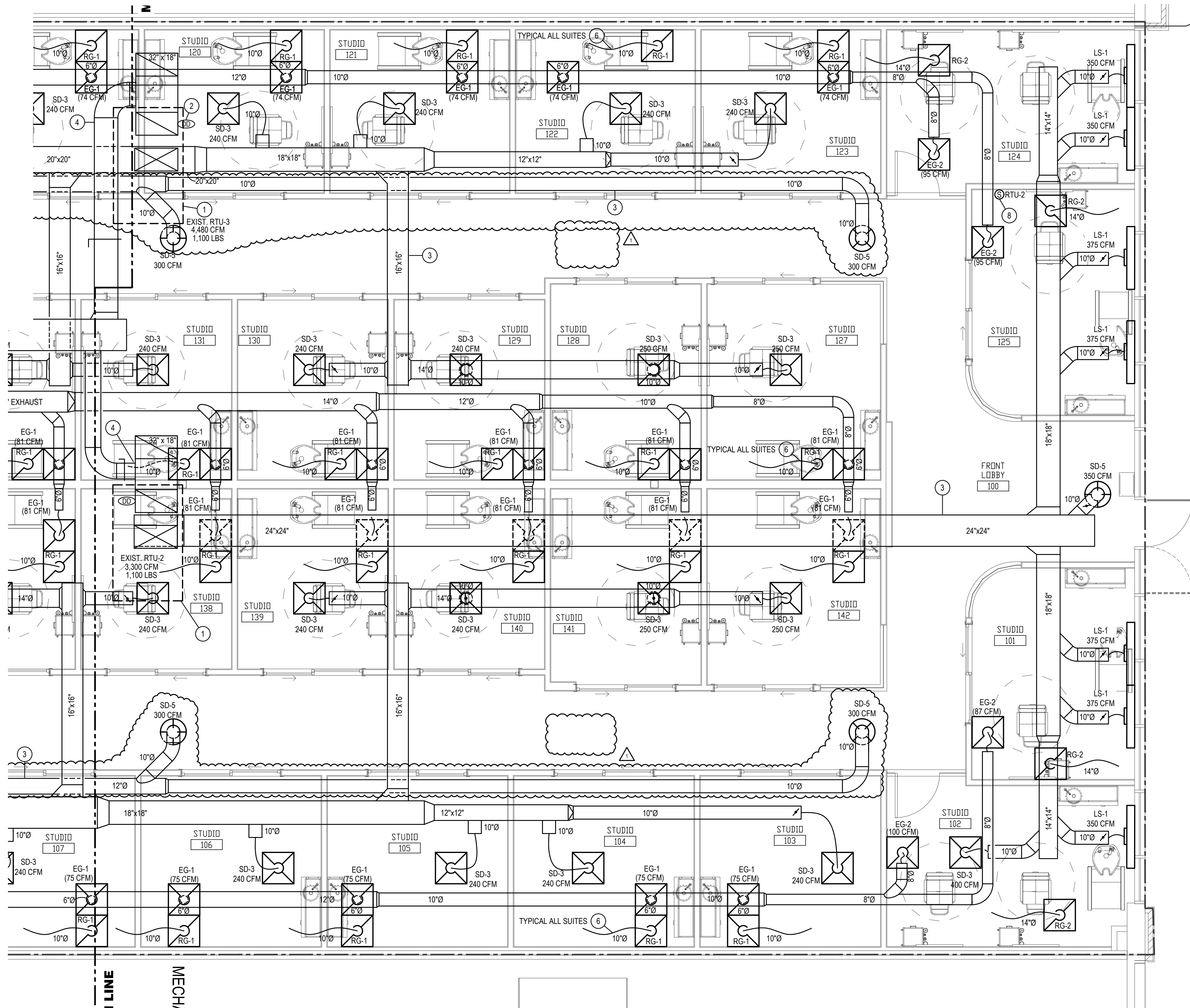
DIFFUSER DETAIL

SCALE: NONE



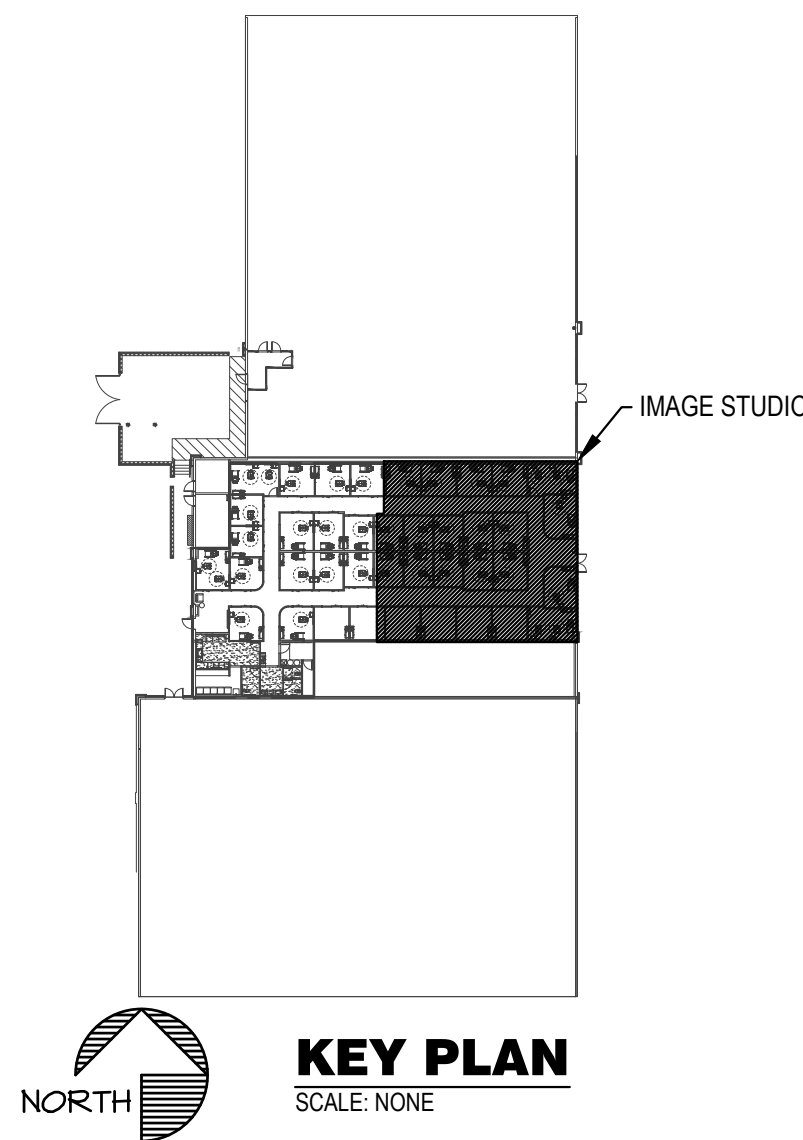
ACOUSTICAL RETURN BOOT DETAIL

SCALE: NONE



MATCH LINE

MECHANICAL ZONE



MECHANICAL PLAN - EAST

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

drawing title

MECHANICAL PLAN
EAST

drawing number

M101

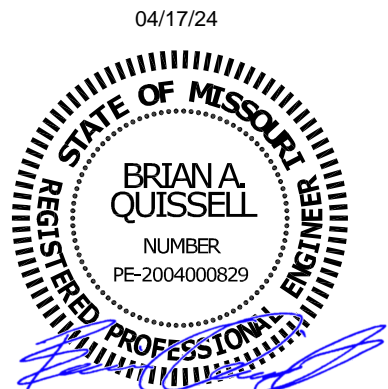


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CITY/OWNER COMMENTS 04.16.24

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drawing title
MECHANICAL SCHEDULES
& DETAILS

drawing number

M200

LINEAR DIFFUSER SCHEDULE								
MARK	MFGR	MODEL	# SLOTS	SLOT WIDTH	LENGTH	INLET	FINISH	NOTES
LS-1	TITUS	FTI-20	1	2"	48"	10"	WHITE	1,2

NOTES: 1. PROVIDE INSULATED PLENUM BOX FOR SUPPLY DIFFUSER.
2. PROVIDE WITH HIGH THROW PATTERN CONTROLLER AND BORDER TYPE 11.

DIFFUSER, REGISTER & GRILLE SCHEDULE						
MARK	MFGR	MODEL	NECK SIZE	FACE SIZE	FINISH	NOTES
SD-1	TITUS	TMS/3	6"Ø	12"x12"	WHITE	1
SD-2			8"Ø	24"x24"		2
SD-3			10"Ø	24"x24"		2
SD-4			8"Ø	18" DIA.		2
SD-5			10"Ø	22.5" DIA.		2
RG-1		PAR/3	10"Ø	24"x24"		
RG-2			14"Ø			
RG-3			14"Ø			WITH GYP FRAME
EG-1		PAR/1	6"Ø	24"x24"		2
EG-2			8"Ø			2
EG-3		PAR/3	6"Ø	12"x12"		1

NOTES: 1. PROVIDE WITH AG-75 OPPOSED BLADE DAMPER IN NECK & GYP FRAME.
2. PROVIDE WITH AG-75 OPPOSED BLADE DAMPER IN NECK.

EXISTING ROOFTOP UNIT SCHEDULE																		
MARK	MFGR	MODEL NO.	NOM. TONS	EVAP. CFM	EXHAUST CFM	EXT. STATIC P. IN. WG. (NOTE 2)	COOLING				HEATING (GAS)		ELECTRICAL	MINIMUM OUTDOOR AIR (CFM)	TOTAL WEIGHT (LBS)	EER	FREON	REMARKS
							TOTAL BTUH	SENS. BTUH	AMB.	EVAP. EAT DB/WB	BTUH INPUT	BTUH OUTPUT						
RTU-1	TRANE	-	10	4,000	4,000	1.0	113,600	85,200	105	80/67	240,000	192,000	480/3/60	1,744	1,600	12.0	R-410a	-
RTU-2	↓	-	7.5	3,000	3,000	↓	84,100	62,200	↓	↓	180,000	144,000	↓	524	1,525	12.5	↓	↓
RTU-3	↓	-	10	4,000	4,000	↓	113,600	85,200	↓	↓	240,000	192,000	↓	1,732	1,600	12.0	↓	↓

NOTES: EXISTING ROOF TOP UNIT TO REMAIN. INFORMATION PROVIDED FOR REFERENCE ONLY. PERFORM PREVENTATIVE MAINTENANCE CHECK AS LISTED BELOW.

ALL EXISTING HVAC UNITS SHOULD HAVE A PREVENTATIVE MAINTENANCE CHECK-UP TO INCLUDE THE FOLLOWING CRITERIA

- CHANGE ALL FILTERS.
- CLEAN ALL CONDENSATE DRAIN PANS AND FLUSH ALL CONDENSATE DRAIN LINES.
- CLEAN ALL EVAPORATOR AND CONDENSER COILS WITH A NON-ACID CLEANER.
- CHECK REFRIGERANT CHARGE (GUAGES OR RETURNSUPPLY TEMPERATURE VARIANCE).
- PROVIDE COMPLETE LUBRICATION OF ALL SHAFTS AND BEARINGS THAT HAVE LUBRICATION ZERKS.
- THE REPLACEMENT OF ALL BELTS, HOSES AND FABRICRUBBER COATED ITEMS THAT ARE SUBJECT TO WEAR.
- CHECK AMPS OF THE INDOOR, OUTDOOR MOTORS, AND COMPRESSORS
- TURN UNIT POWER OFF - TIGHTEN ALL ELECTRICAL CONNECTIONS, CONTACTORS, ETC.
- EXAMINE AND REPAIR ALL ELECTRICAL WIRING, CONTROLS, STARTERS, RELAYS, CAPACITORS AND LIKE ITEMS THAT TEND TO DETERIORATE OVER TIME OR BECOME NON-OPERATIONAL. THIS INCLUDES SMOKE DETECTORS.
- GREASE ALL FITTINGS
- CHECK DUCTWORK CONNECTIONS AND REPAIR AS NEEDED.
- NOTIFY GENERAL CONTRACTOR OF ANY REQUIRED PARTS OR REPAIRS NOT INCLUDED IN THIS LIST. ALL UNITS SHALL BE FUNCTIONING AND COOLING PROPERLY AT COMPLETION OF JOB.
- CHECK THE ECONOMIZER FOR PROPER FUNCTION AND CORRECT OPERATION OF THE SYSTEM WHEN A CALL FOR COOLING COMES FROM THE THERMOSTAT. REPAIR AND ADJUST AS NEEDED.
- VERIFY ANY WORK REQUIRED BY THE LANDLORD PRIOR TO BID.
- ALL FINDINGS AND VALUES TO BE NOTED AND PROVIDED TO TENANT'S CONSTRUCTION MANAGER & OR TENANT'S MAINTENANCE DIRECTOR.

ROOFTOP UNIT SCHEDULE																				
MARK	MFGR.	MODEL NO.	NOM. TONS	EVAP. CFM	EXT. STATIC P. IN. WG. (NOTE 2)	COOLING				HOT GAS REHEAT	HEATING (GAS)			ELECTRICAL					UNIT CONTROLS	BLOWER DRIVE TYPE
						COOLING STAGES	TOTAL BTUH	SENS. BTUH	AMB.		BTUH INPUT	BTUH OUTPUT	HEATING STAGES	VOLT/Ø/HZ	BLOWER MOTOR	POWER EXHAUST	MCA (AMPS)	MOCP (AMPS)		
RTU-4	LENNOX	KGB072H4B	6	2,650	1.0	2	67,300	49802	105	80/67	NO	108,000	86,000	2	480/3/60	2 HP	NO	16	20	ELECTRO-MECHANICAL

NOTES: 1. PROVIDE HINGED ACCESS DOORS, SCROLL COMPRESSORS WITH CRANKCASE HEATER, HIGH PRESSURE SWITCHES, FREEZESTAT, HAIL GUARDS. STANDARD COOLING DOWN TO 30°F.
OUTDOOR AIR DAMPER TO FULLY CLOSE W/ FAN SHUTDOWN FOR ALL UNITS.
2. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO FILTERS, COILS AND ECONOMIZERS.
THE FAN AND MOTOR SHALL BE SIZED APPROPRIATELY TO MEET THIS DEFINITION OF EXTERNAL STATIC PRESSURE.
3. PROVIDE COMMERCIAL 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER TOUCHSCREEN , WIFI COMPATIBLE THERMOSTAT WITH OPTIMUM START CONTROLS, ECONOMIZER OUTPUT FAULT DETECTION INPUT. PROVIDE REMOTE TEMPERATURE. MATCH THERMOSTAT PROVIDED FOR RTU-1, RTU-2, RTU-3.
ECONOMIZER/OUTDOOR AIR DAMPER IS TO CLOSE DURING UNOCCUPIED HOURS.
4. PROVIDE 18" HIGH (AT LOWEST POINT) PRE-FABRICATED INSULATED ROOF CURB WITH SLOPE TO MATCH SLOPE OF ROOF FOR EACH UNIT.
5. PROVIDE NEW 2" MERV 8 FILTERS UPON COMPLETION OF CONSTRUCTION.
6. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.

BC PROJECT #: 23615
MISSOURI PE COA #2009003629
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FAN INFORMATION														ELECTRICAL INFORMATION						COOLING INFORMATION						REHEAT INFORMATION				GAS HEAT INFORMATION				NOTES				
FAN UNIT NO	TAG	QTY	DDAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	HP	BHP	PHASE	VOLT	MCA	MDCP	OUTSIDE AIR DB	W/B	MIXED AIR DB	W/B	LEAVING AIR DB	W/B	DP	TOTAL	SENS.	IEER	ISMR	DISCHARGE DB	W/B	CAPACITY DESIRED	MAX	MOISTURE REMOVAL RATE	GAS TYPE		INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE
1	DDAS-1	1	CASRTU3-1400-24-1ST-ERV	CAPTIVEAIRE	24MF-3-RTU	0	4000	4000	3573	1.000	5.00	3.85	3	460	41A	45A	86.7°F	79.0°F	79.7°F	70.2°F	55.3°F	55.2°F	55.2°F	186.0 MBH	101.8 MBH	18.8	5.7	74.0°F	72.0°F	81 MBH	129.6 MBH	76.6 LBS/HR	NATURAL		347710	281645	60°F	7 IN. W.C. - 14 IN. W.C.

NOTES:

- INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL DR STAGED SCROLL NOT AN APPROVED EQUAL
- DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
- INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
- REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
- EC MOTOR CONDENSING FANS
- ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
- SUCTION LINE ACCUMULATOR
- FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
- AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
- 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
- TOTAL ENERGY RECOVERY WHEEL WITH SPEED CONTROLS FOR FROST PROTECTION AND MODULATION TO CAPACITY. INCLUDES SUPPLY AND EXHAUST FILTER & WHEEL MONITORING
- 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE, 15:1 TURNDOWN WITH NG AND 12:1 TURNDOWN WITH LP
- EXHAUST CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
- FILTERED SUPPLY AND EXHAUST AIR STREAMS WITHIN ENERGY RECOVERY VENTILATOR MODULE
- SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
- FULLY MODULATING HOT GAS REHEAT
- 4" MERV-15 IN-UNIT FILTRATION
- HAIL GUARD FOR CONDENSING COIL
- BARDMETRIC RELIEF DAMPER
- DOWN DISCHARGE/DOWN RETURN

FAN UNIT NO	TAG	EXHAUST AIR FAN (ECM)				SUPPLY AIR SUMMER		RETURN AIR DB/WB TEMP(°F)	DESIGN RECOVERED SUMMER CAPACITY			SUPPLY AIR WINTER		RETURN AIR DB/WB TEMP(°F)	DESIGN RECOVERED WINTER CAPACITY		
		CFM	SP	MOTOR HP	V/Ø/HZ	ENTERING AIR DB/WB TEMP(°F)	LEAVING AIR DB/WB TEMP(°F)		TOTAL	SENSIBLE	LATENT	ENTERING AIR DB/WB TEMP(°F)	LEAVING AIR DB/WB TEMP(°F)		TOTAL	SENSIBLE	LATENT
1	DDAS-1	3350	1.577	4.8	460/3/60	86.7/79.0	79.7/70.2	75.0/62.0	140.9 MBH	27.5 MBH	113.5 MBH	10.0/7.1	43.3/37.5	69.0/55.0	200.8 MBH	141.8 MBH	59.0 MBH

FAN UNIT NO	TAG	QTY	DESCRIPTION	IMPORTANT NOTE
1	DDAS-1	1	RTU TOTAL CFM MONITORING	<p>THIS UNIT CONTAINS AN ENERGY RECOVERY WHEEL. BY VIRTUE OF THEIR DESIGN, ALL ENERGY RECOVERY WHEELS ALLOW A LEVEL OF RETURN/EXHAUST AIR AND CONTAMINANTS TO BE RECIRCULATED INTO THE SUPPLY AIRSTREAM. ACCEPTING AND OPERATING THIS UNIT WITH OR WITHOUT THE ENERGY RECOVERY WHEEL IN OPERATION INCREASES THE RISK OF AIRBORNE BACTERIA, VIRUS AND CONTAMINANT SPREAD BETWEEN THE RETURN/EXHAUST AIR, INTO THE FRESH AIRSTREAM.</p> <p>IN ACCORDANCE WITH ANSI/ASHRAE/ASHE STANDARD 170-2017, ENERGY RECOVERY WHEEL TECHNOLOGY SHOULD NOT BE USED AS A MEANS OF VENTILATION FOR CERTAIN HEALTH CARE FACILITIES. AN ASHRAE POSITION DOCUMENT ON INFECTIOUS AEROSOLS, APPROVED BY ASHRAE BOARD OF DIRECTORS, DATED APRIL 14, 2020, ALSO RECOMMENDS THAT ENERGY RECOVERY DEVICES BE BYPASSED FOR NON-HEALTH CARE FACILITY VENTILATION TO HELP REDUCE THE SPREAD OF VIRUS.</p> <p>ANY REDUCTION OF OUTDOOR AIR % OR VOLUME BELOW WHAT THIS UNIT WAS DESIGNED FOR ELEVATES THE RISK OF AIRBORNE BACTERIA, VIRUS AND CONTAMINANT RECIRCULATION BACK INTO THE FRESH AIRSTREAM AND THE SPACE.</p> <p>OPERATING THIS UNIT WITH AN EXHAUST LEVEL LESS THAN 50% OF THE SUPPLY LEVEL NULLIFIES ALL RETURN ON INVESTMENT STATEMENTS AND LIMITS THE AMOUNT OF ENERGY RECOVERY.</p> <p>THIS UNIT, INCLUDING THE ENERGY RECOVERY WHEEL, MUST BE SERVICED AND MAINTAINED AS PER THE INSTALLATION AND OPERATION MANUAL'S RECOMMENDED FREQUENCIES.</p>
		1	FREEZESTAT	
		1	SHIP LOOSE GAS STRAINER 1"	
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU, 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTRACTS THIS UNIT, THE #28, #47, #44, OR #22 PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE	
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED	
		1	RTU3 DOWN DISCHARGE, 400, 500 MBH	
		1	OVERHEAT STAT	
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE	
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS	
		1	120V FIRE INPUT	
		1	OCCUPIED SCHEDULING	
		1	RTU3 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX	
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI	
		1	RTU3 DOWN RETURN	
		1	RTU3 ECONOMIZER BAROMETRIC RELIEF	
		1	4" MERV 15 FILTERS FOR RTU3 (QTY. 4)	
		1	RTU3 HAIL GUARD	
		1	RTU INTAKE/RETURN DAMPER - DA PERCENTAGE CONTROL	
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)	
		1	LOAD REACTOR MOUNTED IN FAN	
		1	INLET PRESSURE GAUGE, 0-35"	
		1	15 TON MODULATING COOLING OPTION, 460/480V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS	
		1	15 TON MODULATING REHEAT OPTION - DISCHARGE DEWPOINT CONTROL	
		1	ENERGY RECOVERY VENTILATOR FOR 460/480V RTU3	
		1	2" MERV 13 SUPPLY FILTERS FOR ERV3	
		1	4" MERV 15 RETURN FILTERS FOR ERV3	
		1	ERV EXHAUST FAN - MANUAL CONTROL VIA HMI	
		1	HIGH TURNDOWN OPTION FOR DDAS UNITS	
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 2 FURNACES	
		1	RTU3 CURB DUCT HANGER	
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)	

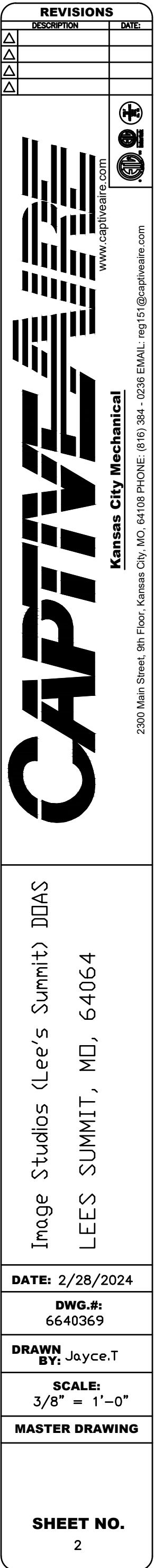


Image Studios (Lee's Summit) DOAS
LEES SUMMIT, MO, 64064

DATE: 2/28/2024

DWG.#:
6640369

DRAWN BY: Jayce.T

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

MASTER DRAWING

SHEET NO.
2

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project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEE'S SUMMIT, MO 64086

project number		
23060.003		
drawing issuance		
PERMIT/BID		03.15.24
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No.	Description:	Date:

professional seal

03/19/24

BRYAN A. QUISSLE
LICENSED
22305
KANSAS
PROFESSIONAL ENGINEER

d r a w i n g t i t l e
DOAS UNIT SCHEDULE

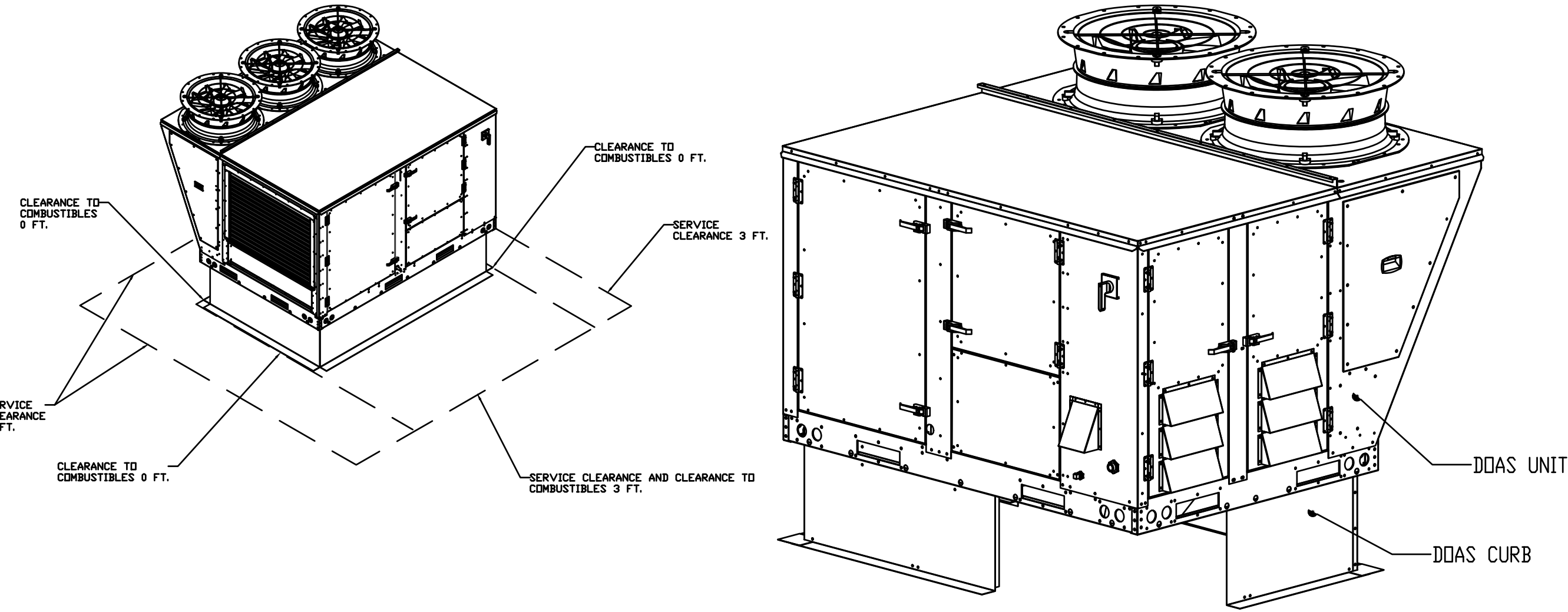
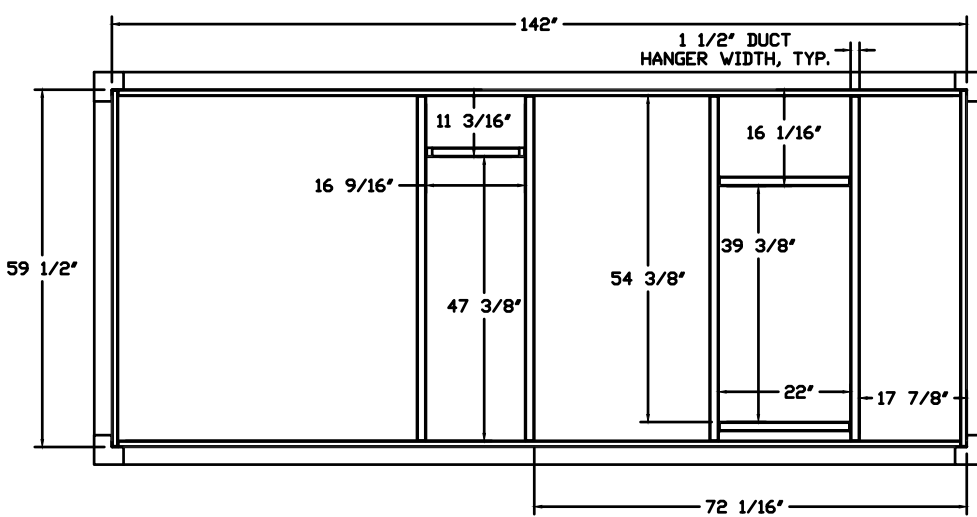
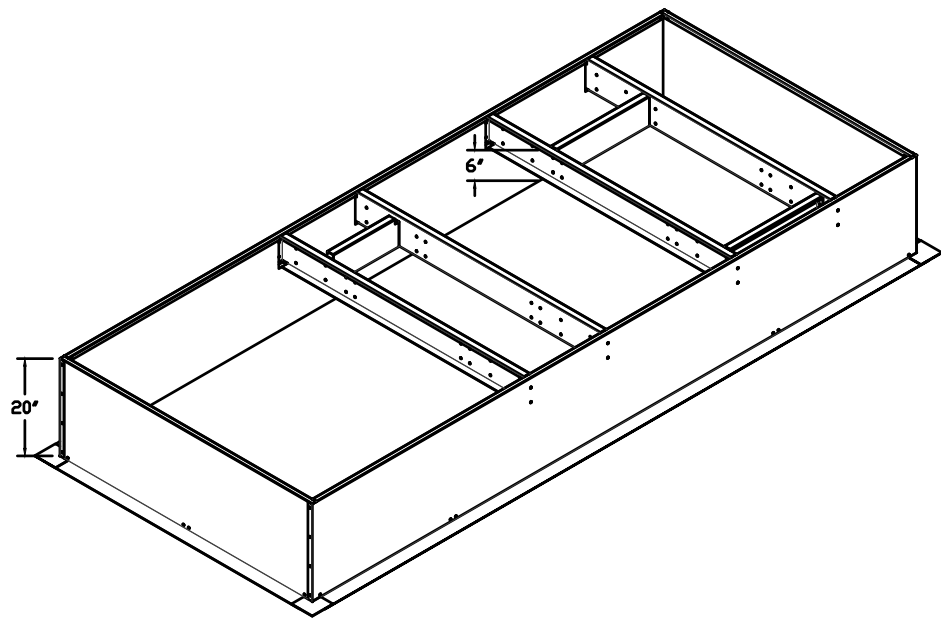
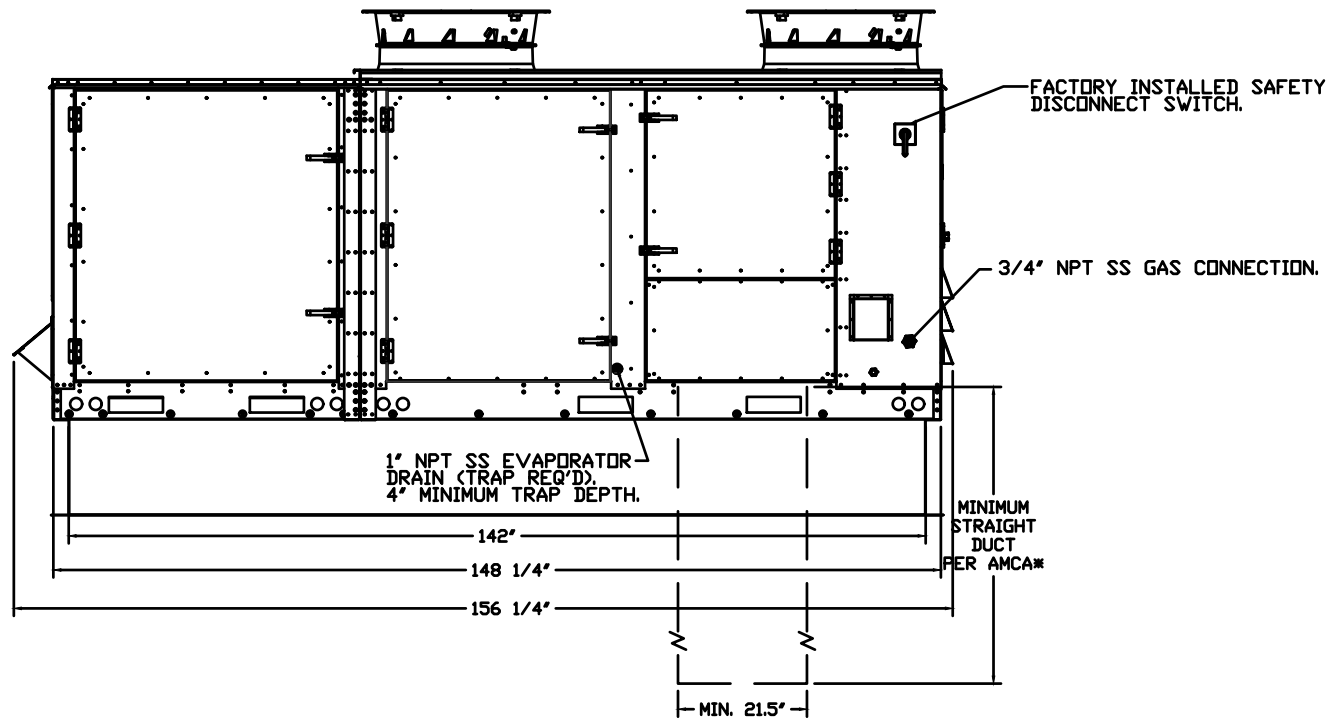
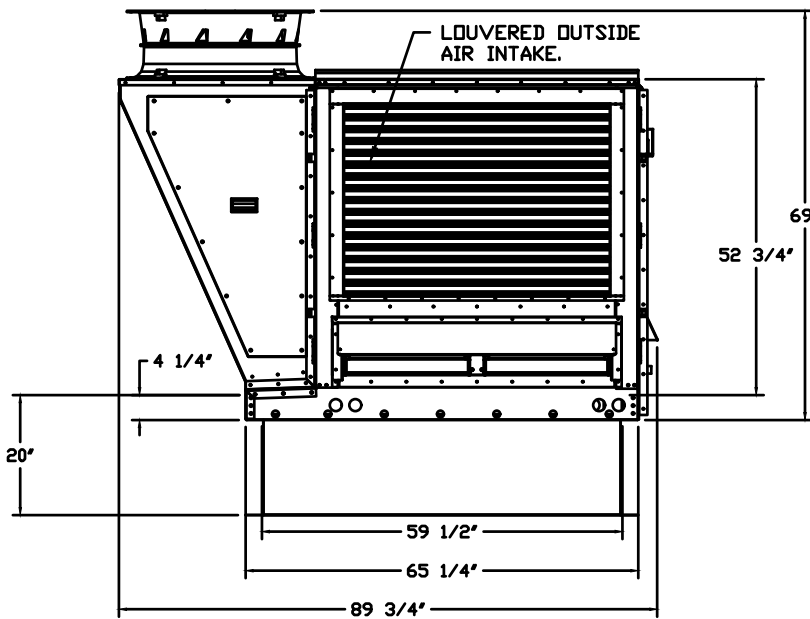
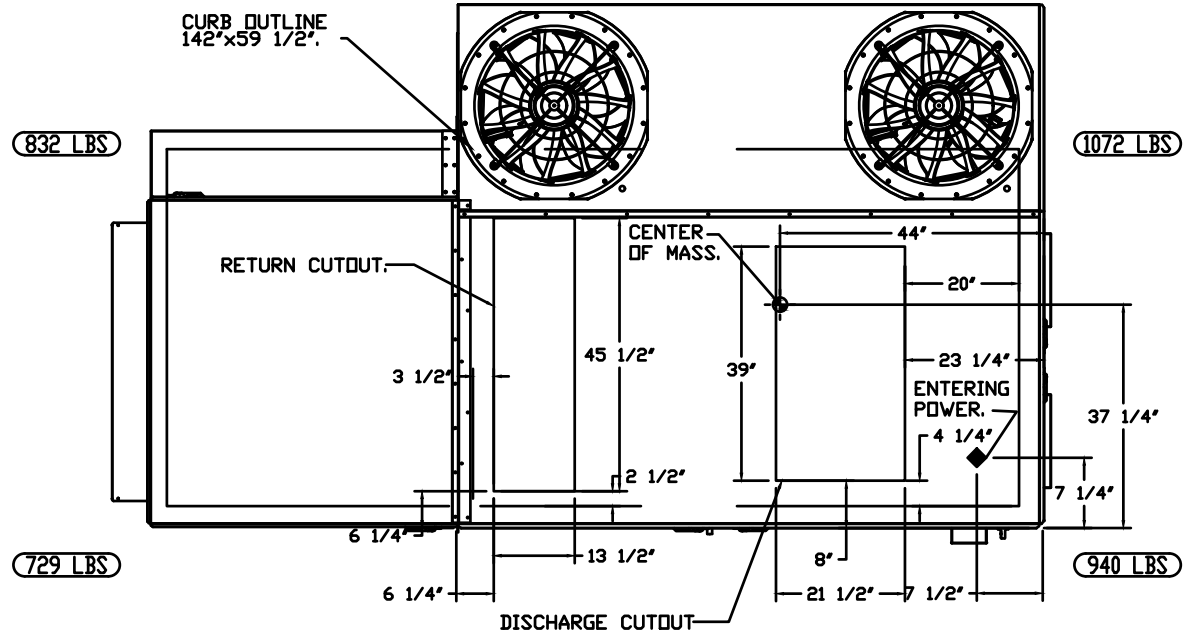
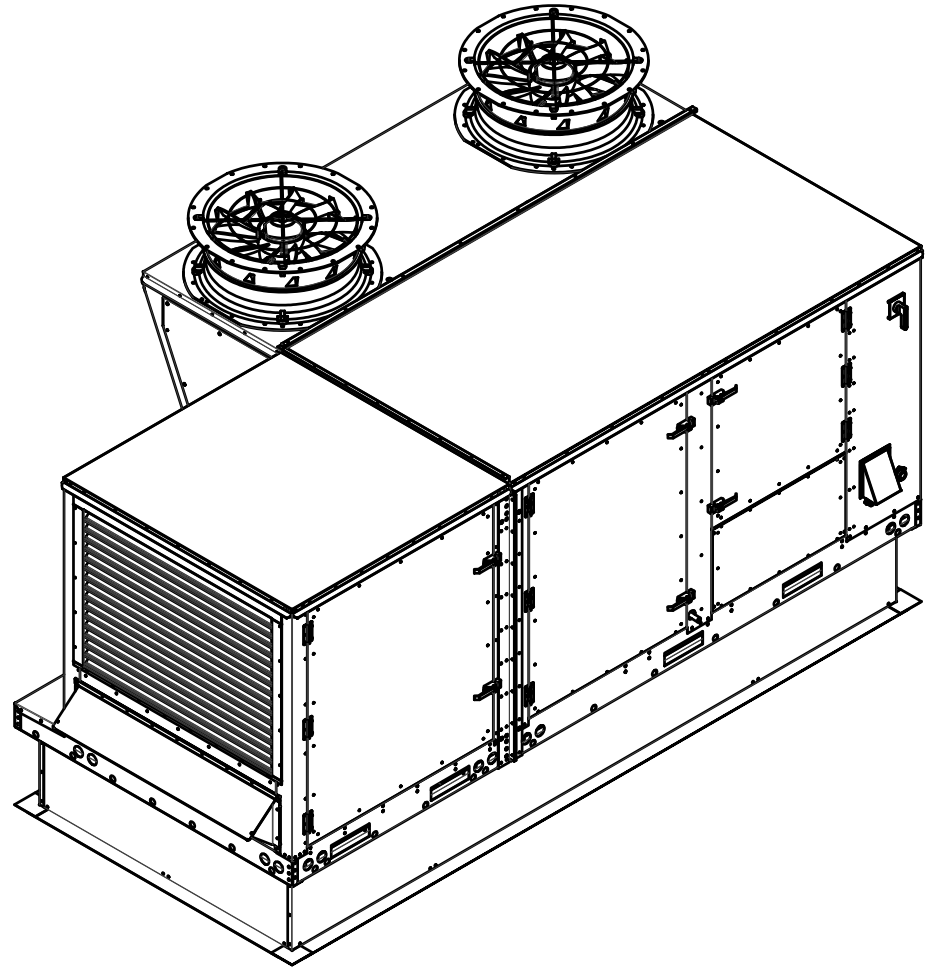
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M201

FAN #1 CASRTU3-1400-24MF-15T-ERV - HEATER (DDAS-1)

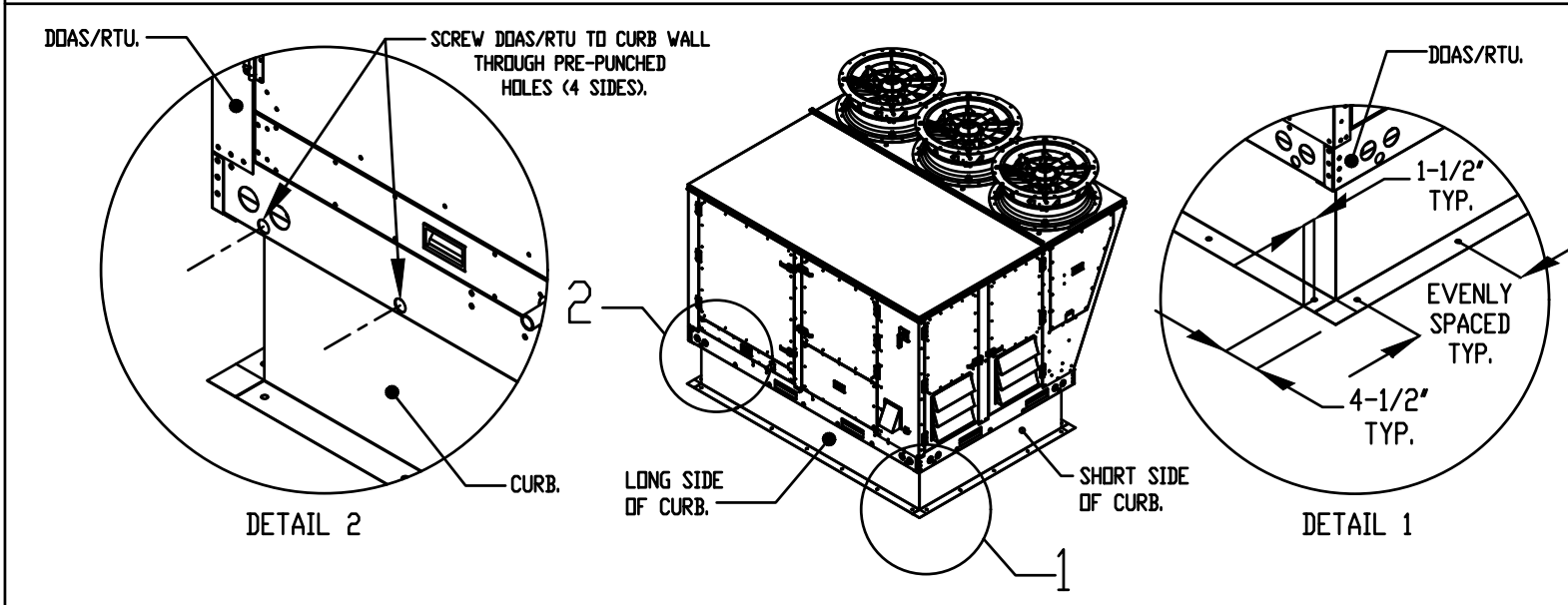
- NOTES:
- DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
 - DENOTES CORNER WEIGHT.
 - ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
 - CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 21.5" x 39".



TYPICAL DDAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

- SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW, USING 3/8" X 2" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS. SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.
- SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.



CONTROLS DESIGN SERVICE

BIANNUAL ANALYSIS OF EQUIPMENT PERFORMANCE REQUIRED BY THE MANUFACTURER TO OPTIMIZE SYSTEM POST INSTALL. DETAILED PERFORMANCE REPORT TO BE PRESENTED TO OWNERSHIP ON QUARTERLY BASIS FOR THE FIRST YEAR.

HMI SCHEDULE				
UNIT NUMBER	HMI #		HMI LOCATION	TEMP AVERAGING
FAN #1	HMI #1 - UNIT	HMI # 1	MOUNTED IN UNIT	NOT AVERAGED
FAN #1	HMI #2 - SPACE	HMI # 1		AVERAGED

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	DDAS-1	166 LBS	CURB	59.500"W X 142.000"L X 20.000"H INSULATED.

FOR QUESTIONS, CALL THE
Kansas City Mechanical
REGION 151
PHONE: (816) 384 - 0236
EMAIL: reg151@captiveaire.com



8813 PENROSE LANE, SUITE 400 • LENEXA, KS 66219
ph: 913.649.8181 • fx: 913.649.1275 • www.klover.net

project title

IMAGE STUDIOS
SUMMIT FAIR

840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number

23060.003

drawing issuance

PERMIT/BID

03.15.24

drawing revisions

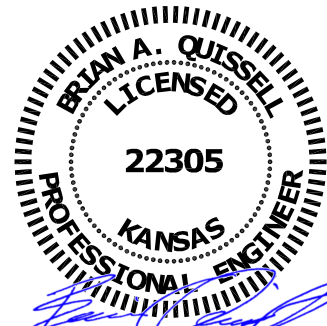
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Description

Date:

professional seal

03/19/24



drawing title

DDAS UNIT
DETAILS

drawing number

M202

BC PROJECT #: 23615
MISSOURI PE COA #2009003629

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BC ENGINEERS
INCORPORATED

5720 Reeder Shawnee, KS 66203 (913)262-1772

ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS:

- A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS OUTLINED.
- B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
- C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AND ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
- D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
- E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, CONDUIT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
- F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
- G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
- H. CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE NECESSARY FOR CONCEALED ELECTRICAL COMPONENTS.
- I. CONTRACTOR SHALL PROMPTLY CALL ENGINEERS ATTENTION TO ANY APPARENT CONTRADICTIONS, AMBIGUITIES, ERRORS, DISCREPANCIES, OR OMISSIONS IN THE PLANS OR SPECIFICATIONS.

2. OPERATION AND MAINTENANCE MANUALS:

- A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
- B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
- C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE COLLATED AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC. CONTRACTORS, ETC. DOCUMENTS SHALL BE COMPILED AND BOUND IN DIGITAL FILE OR 3 RING BINDER.

3. MANUFACTURERS:

- A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.

4. TESTING, AND BALANCING:

- A. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE CONNECTING TO THE PROPER PHASE AS DESIGNED TO BALANCE THE LOADING BETWEEN PHASES.
- B. POWER AND LIGHTING PANELS SHALL BE PROPERLY PHASED TO DISTRIBUTE THE LOAD AND SHALL BE CONNECTED AND ADJUSTED TO OPERATE AS SPECIFIED.
- C. ALL MOTORS AND SIMILAR EQUIPMENT SHALL BE CHECKED FOR PROPER PHASE ROTATION AND OPERATION.

5. RACEWAYS:

- A. CONDUIT INSIDE THE BUILDING SHALL BE METALLIC TUBING (EMT), BEARING THE UL LABEL, WITH COMPRESSION TYPE FITTINGS OR SCREW SET FITTINGS.
- B. CONDUIT EXPOSED TO THE WEATHER, INSTALLED UNDERGROUND, IN CONCRETE, OR USED FOR SERVICE ENTRANCE SHALL BE STANDARD RIGID CONDUIT (GALVANIZED) WITH THREADED FITTINGS.
- C. UNDERGROUND CONDUIT MAY BE POLYVINYL CHLORIDE WITH A DEFLECTION TEMPERATURE, UNDER LOAD AT 24 HRS. OF 75 DEGREES C, AND A TENSILE STRENGTH OF 5,200 PSI. JOINTS SHALL BE FLUSH, SOLVENT WELDED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. CONDUIT SHALL BE EQUAL TO CARLON POWER AND COMMUNICATIONS DUCT TYPE OR DIRECT BURIAL. CONDUIT AND FITTINGS SHALL BE PROVIDED BY THE SAME MANUFACTURER.
- D. FLEXIBLE METAL CONDUIT SHALL ONLY BE USED FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND LIGHT FIXTURES. MAXIMUM LENGTH SHALL BE 6'-0".

6. CONDUCTORS:

- A. WIRES SHALL BE CONTINUOUS WITHOUT SPLICES OR TAPS IN CONDUIT RUNS. ALL SPLICES SHALL BE MADE IN JUNCTION, PULL, OR OUTLET BOXES. ALL WIRE SHALL BE INSTALLED IN CONDUIT, WIREWAYS, OR OTHER PROTECTIVE COVER SANCTIONED BY CODES.
- B. CONDUCTORS FOR LIGHTING AND POWER SHALL BE COPPER, MINIMUM NO. 12 AWG, 600 VOLT.
- C. NO. 10 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.
- D. NO. 8 GAUGE AND LARGER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED, UNLESS OTHERWISE INDICATED.
- E. SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED COPPER, UNLESS OTHERWISE INDICATED.

7. MC CABLE:

- A. MC CABLE SHALL CONSIST OF INTERLOCK ARMORED CABLE MADE OF THREE OR FOUR TYPE THHN SOLID (86 AWG AND LARGER MAY BE STRANDED) COPPER CONDUCTORS RATED 90°C FOR DRY LOCATIONS, WITH NYLON OR EQUIVALENT UL LISTED JACKET. PER UL STANDARD 818, THE THREE CONDUCTORS SHALL BE TWISTED TOGETHER WITH THE COPPER GROUNDING CONDUCTOR, SUITABLE FILLERS, AND WRAPPED IN BINDER TIE. THE ASSEMBLY SHALL BE ARMORED WITH SPIRALLY WRAPPED INTERLOCKED ARMOR OF ALUMINUM OR GALVANIZED STEEL.

- B. CABLES SHALL BE TESTED IN ACCORDANCE WITH UL STANDARD 1669 FOR TYPE MC CABLE AND RATED AT 600 VOLTS, 90 DEG. C FOR DRY LOCATIONS AND 75 DEG. C FOR WET LOCATIONS.

8. WIRING DEVICES:

- A. WALL SWITCHES SHALL BE SPECIFICATION GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES.
- 1) SINGLE POLE: HUBBELL #CS1221-X, OR EQUAL.
- 2) THREE WAY: HUBBELL #CS1223-X, OR EQUAL.
- 3) AS SPECIFIED ON PLANS.
- B. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX, GROUNDING, THREE-WIRE TYPE, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES. HUBBELL #C8352-X, OR EQUAL.
- C. GROUND FAULT INTERRUPTER RECEPTACLES (GFI) SHALL BE HUBBELL #GF20-XL. DEVICE COVER PLATES SHALL BE AS HEREINAFTER SPECIFIED.
- D. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED WEATHER-RESISTANT HUBBELL #GFTR20-X OR EQUAL AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE WHICH SHALL BE INTERMEDIATE WWP1010MMX OR WWP1010MMX DIECAST METAL WEATHERPROOF RECEPTACLE COVER. COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.
- E. VERIFY DEVICES AND DEVICE COVERPLATES COLOR AND STYLE WITH ARCHITECT.

9. BOXES:

- A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.
- B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.

10. PANELBOARDS:

- A. FURNISH AND INSTALL CIRCUIT BREAKER PANELBOARDS AS SHOWN ON THE DRAWINGS. PANELBOARDS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE NO OR NF WITH BOLT IN TYPE BREAKERS. PANELBOARD LUGS SHALL BE RATED AT 75°C.
- 1) CIRCUIT BREAKER INTERRUPTING CAPACITIES SHALL MEET OR EXCEED THE AVAILABLE RMS SYMMETRICAL FAULT CURRENTS INDICATED AND AS REQUIRED TO MEET OR EXCEED THE AVAILABLE FAULT CURRENT FROM LOCAL UTILITY.
- B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA #B-1. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT MAGNETIC, WITH COMMON TRIP, UL RATED TO CARRY 80% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 40° C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.
- a) BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
- C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL, WITH IMPL. WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, CYLINDER TUMBLER TYPE LOCK, DIRECTORY CARD-HOLDER AND QUARTER-TURN ADJUSTABLE TROM CLAMPS.
- D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.
- E. BUS BAR BRACING SHALL BE UL LISTED AS INDICATED ON DRAWINGS. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.
- F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED, INCLUDING EXISTING CIRCUITS. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINAFTER SPECIFIED.

ELECTRICAL SPECIFICATIONS (CONTINUED)

11. DRY TYPE TRANSFORMERS:

- A. DRY TYPE TRANSFORMERS SHALL BE ENCLOSED IN DRIPPROOF METALLIC ENCLOSURES DESIGNED TO PROVIDE FOR AIR COOLING AND PREVENT ACCIDENTAL CONTACT WITH LIVE CONDUCTORS. MATERIALS AND FINAL PERFORMANCE SHALL COMPLY WITH APPLICABLE IEEE, ANSI AND NEMA STANDARDS. TRANSFORMERS SHALL BE FULLY RATED TWO WINDING UNITS CAPABLE OF CARRYING THE LOADS INDICATED. TRANSFORMERS SHALL BE EQUAL TO SQUARE D TYPE EP.
- B. TRANSFORMERS SHALL BE CAPABLE OF OPERATING AT 100% NAMEPLATE KVA RATING CONTINUOUSLY WHILE IN A 40°C AMBIENT WITHOUT EXCEEDING THE RATED AVERAGE WINDING TEMPERATURE RISE OF THE INSULATION USED. INSULATION SHALL BE CLASS 180C FOR TRANSFORMERS 3 KVA TO 25 KVA AND CLASS 220C FOR TRANSFORMERS 30 KVA TO 500 KVA. TRANSFORMERS SHALL BE UL APPROVED. TRANSFORMERS SHALL HAVE OVER-LOAD CAPACITY TO COMPLY WITH ANSI C57.96.0, WITH NORMAL LIFE MAINTAINED. SCODING RATINGS SHALL NOT EXCEED MAXIMUM VALUES FOR KVA RATINGS AS MEASURED PER ANSI C59.1.
- C. TRANSFORMERS 30 KVA AND LARGER SHALL BE EQUIPPED WITH TWO 2-1/2% FULL CAPACITY TAPS ABOVE AND FOUR 2-1/2% TAPS BELOW NORMAL RATED VOLTAGE. IN ADDITION, TRANSFORMERS OF THESE RATINGS SHALL BE PROVIDED WITH CLAMP-TYPE SOLDERLESS CONNECTORS SUITABLE FOR USE WITH COPPER OR ALUMINUM CABLES. THE CONNECTORS SHALL BE MOUNTED ON A TERMINAL BOARD WITH HIGH-VOLTAGE AND LOW-VOLTAGE TERMINALS HELD IN A FIXED POSITION AND CLEARLY MARKED. TRANSFORMER LUGS SHALL BE RATED AT 75°C. TRANSFORMERS 30 KVA AND LARGER SHALL BE PROVIDED WITH NEOPRENE RUBBER ISOLATION PADS MOUNTED BETWEEN THE CORE AND COIL ASSEMBLY AND ENCLOSURE TO ISOLATE SOUND AND VIBRATION.

12. DISCONNECTS:

- A. DISCONNECTS SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, QUICK-BREAK, SAFETY, WITH PROVISIONS FOR PAD LOCKING. FUSED AND NON-FUSED DISCONNECT SWITCHES SHALL BE PROVIDED AS INDICATED.
- B. INDOOR SWITCHES SHALL BE NEMA 1 AND OUTDOOR SWITCHES SHALL BE NEMA 3R, UNLESS INDICATED OTHERWISE.

13. FUSES:

- A. FUSES PROTECTING CIRCUIT BREAKER PANELS SHALL BE CURRENT LIMITING UL, CLASS RK-1 FUSES WITH 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE SILVER FOR RATINGS ABOVE 60 AMPERES.
- B. ALL OTHER FUSES SHALL BE UL, CLASS RK-5, DUAL ELEMENT WITH A MINIMUM TIME-DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL HAVE CURRENT-LIMITING SHORT-CIRCUIT LINKS AND 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE COPPER.

14. LIGHT FIXTURES:

- A. WHERE LIGHT FIXTURES ARE MOUNTED IN A LAY-IN CEILING, PROVIDE A MINIMUM OF 2 SUPPORT WIRES ATTACHED DIRECTLY BETWEEN EACH LIGHT FIXTURE AND THE BUILDING STRUCTURE. SUPPORT WIRES SHALL BE A MINIMUM OF 1/2 GAUGE GALVANIZED STEEL WIRE, SOFT ANNEALED.
- B. FIXTURES ARE REQUIRED AT ALL LIGHTING OUTLETS SHOWN ON THE DRAWINGS. APPROVED LIGHTING FIXTURE WIRE IS REQUIRED IN ALL FIXTURES AND FIXTURE RACEWAYS. WEATHERPROOF WIRING IS REQUIRED FOR EXTERIOR FIXTURES. ALL PARTS OF FIXTURES AND WIRING SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
- C. ALL FIXTURES SHALL CARRY UL AND ETL LABELS.

15. SLEEVES:

- A. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK.
- B. INTERIOR PARTITIONS: 16 GAUGE GALVANIZED STEEL, PACK BETWEEN CONDUIT AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
- C. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WEATHERPROOF SEAL, COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.

16. GROUNDING:

- A. GROUND ALL ELECTRICAL APPARATUS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 250, AND ANY LOCAL REQUIREMENTS. INSURE CONTINUOUS BOND WHERE FLEXIBLE CONDUIT IS USED. PROVIDE BONDING JUMPER INSIDE ALL FLEXIBLE CONDUIT.
- B. BOND METAL PIPING SYSTEMS IN COMPLIANCE WITH NEC 250.4(A).

17. REMODELING WORK:

- A. DEMOLITION, DISCONNECT, DEMOLISH AND REMOVE ABANDONED ELECTRICAL MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND NOT INDICATED TO BE SALVAGED OR REPAIR.
- B. EQUIPMENT TO BE SALVAGED:
- 1) DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT INDICATED TO BE REMOVED AND SALVAGED. DELIVER EQUIPMENT TO THE LOCATION DESIGNATED BY THE OWNER FOR STORAGE.
- 2) ALL MATERIALS AND EQUIPMENT DESIGNATED TO BE REUSED OR RELOCATED SHALL BE CAREFULLY REMOVED AND STORED UNTIL NEEDED FOR REMODELING WORK. ALL ITEMS SHALL BE RESTORED TO "LIKE NEW" CONDITION WITH RUST OR CORROSION REMOVED, SURFACE PAINT TOUCHED UP OR REPAIRED AS REQUIRED TO MATCH NEW CONSTRUCTION, AND THOROUGHLY CLEANED AND INSPECTED. ANY ITEMS WHICH BECOME DAMAGED BEYOND REPAIR AS A RESULT OF CONSTRUCTION OR DEMOLITION ACTIVITY SHALL BE REPLACED WITH NEW MATERIAL EQUIVALENT IN EVERY RESPECT.
- C. DISPOSAL AND CLEANUP: REMOVE FROM THE SITE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS AND EQUIPMENT NOT INDICATED TO BE SALVAGED.
- D. PROTECT ADJACENT MATERIALS INDICATED TO REMAIN. INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER REMODELING OPERATIONS ARE COMPLETE.

- E. PROVIDE ALL ALTERATIONS AND REWORK INDICATED AND/OR REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF ALL EXISTING ELECTRICAL SYSTEMS, INTEGRATING THE NEW AND EXISTING AREAS. LOCATE, IDENTIFY, AND PROTECT ELECTRICAL SERVICES PASSING THROUGH REMODELING AREA AND SERVING OTHER AREAS OUTSIDE THE REMODELING LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE REMODELING LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.

- 1) ABANDONED CONDUIT SHALL HAVE WIRE REMOVED AND SHALL BE CAPPED. ABANDONED OUTLETS IN WALLS OR PARTITIONS SHALL HAVE DEVICES AND WIRE REMOVED, AND SHALL BE COVERED.
- 2) WHERE EXISTING CONDUITS TERMINATE AT AN EXISTING OUTLET IN A WALL, CEILING, OR FLOOR TO BE REMOVED, DISCONNECT AND REMOVE DEVICE AND WIRE FROM CONDUIT. CONDUIT SHALL BE CUT BACK AND CAPPED (BELOW THE FLOOR OR ABOVE THE CEILING) SO NOT TO CREATE AN OBSTRUCTION. PATCH FLOOR TO MATCH EXISTING.
- 3) WHERE EXISTING CIRCUITS EXTEND BEYOND THE OUTLET IN THE EXISTING WALL, CEILING, OR FLOOR TO BE REMOVED, FURNISH AND INSTALL NEW CONDUIT AND WIRE TO EITHER REROUTE THE CIRCUIT OR FEED THE REMAINING OUTLET(S) FROM ANOTHER ELECTRICAL SOURCE, BUT IN SUCH A MANNER AS NOT TO REVISE THE CIRCUIT. ALL REROUTED CONDUIT SHALL BE APPROVED BY THE ARCHITECT.
- 4) WHERE EXISTING OUTLETS IN A WALL, CEILING, OR FLOOR TO BE REMOVED ARE ESSENTIAL TO MAINTAIN OPERATION OF OTHER REMAINING OUTLETS, RELOCATE THE OUTLET TO A NEW CONVENIENT LOCATION. EXISTING WIRING DEVICES SHALL NOT BE REUSED, UNLESS OTHERWISE INDICATED.
- 5) WHERE LIGHTING FIXTURES ARE INDICATED TO BE DEMOLISHED, REMOVE ALL WIRE AND MODIFY THE EXISTING CONDUIT (IF APPLICABLE) FOR THE NEW LIGHTING. ALL UNUSED CONDUIT SHALL BE REMOVED.
- 6) WHERE A TELEPHONE CIRCUIT EXTENDS BEYOND AN OUTLET IN AN EXISTING WALL, CEILING, OR FLOOR TO BE REMOVED, PROVIDE NECESSARY EMPTY CONDUIT AND NOTIFY THE OWNER WHO WILL REQUEST THE OWNER TO ARRANGE WITH THE TELEPHONE COMPANY FOR NEW WIRING TO OUTLETS THAT REMAIN.

- 7) WHERE EXISTING CONDUIT AND WIRE RUNS ARE LOCATED IN OR ATTACHED TO AN EXISTING WALL, CEILING OR FLOOR TO BE REMOVED, THEY SHALL BE REROUTED IN EITHER NEW OR EXISTING CONSTRUCTION TO MAINTAIN CONTINUITY OF CIRCUITS UNLESS OTHERWISE INDICATED.
- 8) CONDUIT SHALL BE CONCEALED WITHIN THE EXISTING BUILDING CONSTRUCTION WHEREVER POSSIBLE, EXCEPT WHERE OTHERWISE INDICATED.
- 9) EXISTING WIRE SHALL BE DISCONNECTED AND REMOVED WHEREVER EXISTING CIRCUITS ARE ABANDONED.

18. BOXES IN FIRE RATED ASSEMBLIES:

- A. OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES AND INSTALLED IN FIRE RATED WALLS SHALL NOT BE INSTALLED CLOSER THAN 2" HORIZONTAL INCHES TO OTHER OUTLET BOXES.
- B. IF BOXES MUST BE INSTALLED WITHIN 24" OF EACH OTHER THAN BOTH OUTLET BOXES SHALL BE PROTECTED WITH LISTED PUTTY PADS, 3/4" FIRE BARRIER MODULABLE PUTTY + OR EQUAL.

19. FIRE ALARM SYSTEM:

- A. ELECTRICAL CONTRACTOR SHALL PROVIDE DESIGN BUILD ENGINEERED SHOP DRAWINGS OF FIRE ALARM SYSTEM TO BE INSTALLED. PROVIDE DEVICES, CONDUIT, WIRES, CABLE, PROGRAMMING AND TESTING AS DIRECTED BY EQUIPMENT MANUFACTURER AND LOCAL FIRE DEPARTMENT FOR A CODE COMPLIANT FIRE ALARM DETECTION SYSTEM. MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE. SUBMIT ONE LINE DIAGRAM OF SYSTEM WITH SIZES AND BATTERY CALCULATIONS. EQUIPMENT TO BE NEW AND SHALL BE STAMPED, SIGNED, CALIBRATION AND TESTED BY FACTORY CERTIFIED TECHNICIAN. FIRE ALARM DEVICES ARE SHOWN FOR INFORMATION ONLY FOR PERMITTING PROCESS. CONTRACTOR IS RESPONSIBLE FOR INCLUDING IN BID DESIGN ALL NECESSARY DEVICES (ANNUNCIATORS), NOTIFICATION APPLIANCES, INITIATING DEVICES, AND ADDITIONAL COMPONENTS).

ELECTRICAL SYMBOLS LIST	
CIRCUITING & NOTES	
+46"	SPECIAL MOUNTING HEIGHT FOR ASSOCIATED DEVICE (CENTERLINE OF DEVICE)
GFI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
WP	WEATHERPROOF ENCLOSURE ON DEVICE
(TIE)	PARTIAL HOMERUN. REFER TO PLANS FOR ADDITIONAL DEVICES CONNECTED TO THIS CIRCUIT.
X	ELECTRICAL FLOOR PLAN NOTE WITH DESIGNATION
2 LP	CONDUIT CONCEALED WHERE POSSIBLE OR AS NOTED, ARROWS INDICATE HOME RUN TO PANEL. CIRCUIT NUMBERS INDICATED
⎓	#12 WIRE IN CONDUIT, UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
⎓	GROUNDING CONDUCTOR, #12 WIRE UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
LIGHTING	
⎓	EMERGENCY TWIN HEAD LIGHT FIXTURE
⎓	EXIT LIGHT WITH DIRECTIONAL ARROWS INDICATED
A	STRIP FIXTURE WITH TYPE DESIGNATION
A	RECESSED OR SURFACE MOUNTED FIXTURE WITH TYPE DESIGNATION
A	CEILING OR RECESSED FIXTURE WITH TYPE DESIGNATION
A	WALL MOUNTED FIXTURE WITH TYPE DESIGNATION
POWER DEVICES	
⎓	DUPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
⎓	FOURPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
⎓	DUPLEX RECEPTACLE ON SWITCHED CIRCUIT, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
⎓	DEVICE MOUNTED ABOVE COUNTER AND/OR SPLASH GUARD
⎓	HEAVY DUTY OUTLET - NEMA CONFIGURATION SIZE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION
⎓	PANEL BOARD, TOP OF BOX 6'-0" AFF
⎓	JUNCTION BOX
⎓	NON-FUSED DISCONNECT SWITCH
⎓	FUSED DISCONNECT SWITCH
⎓	MOTOR WITH DESIGNATION
CONTROLS	
S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
OCCUPANCY SENSORS	
1. DUAL TECHNOLOGY/ULTRASONIC CEILING SENSORS SHALL BE MOUNTED 6' FROM SUPPLY/EXHAUST AIR DIFFUSERS.	
2. LOW VOLTAGE CEILING SENSORS SHALL BE PROVIDED WITH 6' SLACK CONDUCTOR COILED AT SENSOR.	
S	WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR, WATT STOPPER #DSW-301, TOP OF BOX AT 48" AFF
S	INFRARED OCCUPANCY SENSOR WITH DIMMING, WATT STOPPER #PW-1000 LINE VOLTAGE OR #DW-311 0-10V, TOP OF BOX AT 48" AFF, VERIFY DIMMER COMPATIBILITY
S	DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSORS, WATTSTOPPER DT-300
S	OCCUPANCY SENSOR POWER PACK, WATTSTOPPER BZ-150 OR EQUAL, PROVIDE LOW VOLTAGE WIRING TO OCCUPANCY SENSORS AND MOMENTARY SWITCHES
S	MOMENTARY SWITCH, WATTSTOPPER LVSW-10X OR EQUAL, TOP OF BOX AT 48" AFF
COMMUNICATIONS	
▼	DATA/TELEPHONE OUTLET WITH MINIMUM 3/4" CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING, BOTTOM OF BOX AT 16", UNLESS NOTED OTHERWISE. PROVIDE WITH PULL STRING
TV	FLAT SCREEN TELEVISION - PROVIDE AND INSTALL ONE (1) HUBBELL #RR1510X RECESSED TAMPER-RESISTANT DUPLEX RECEPTACLE WITH COVERPLATE AND ONE(1) HUBBELL #HBL260 TWO GANG LARGE CAPACITY WALL BOX (UP TO 2" KNOCKOUT) W/ MUD RING AND COVERPLATE FOR DATA. PROVIDE 2" WITH PULL STRING TO ABOVE ACCESSIBLE CEILING FOR DATA CABLES. MOUNT BOX AT 7'-6" AFF UNLESS NOTED OTHERWISE (VERIFY)
⊙	CEILING SPEAKER
FIRE ALARM - FIRE ALARM SYSTEM IS EXISTING TO REMAIN. PROVIDE ADDITIONAL COMPATIBLE DEVICES AND CONNECT TO EXISTING SYSTEM AS REQUIRED.	
⊙	DUCT MOUNT SMOKE DETECTOR
F	FIRE ALARM PULL STATION, TOP OF BOX AT 48" AFF
⊙	FIRE ALARM HORN/STROBE COMBINATION SIGNAL, CENTERLINE AT 6'-8" AFF
⊙	FIRE ALARM VISUAL STROBE, CENTERLINE AT 6'-8" AFF
MISCELLANEOUS	
CR	ACCESS CONTROL SYSTEM CARD READER. PROVIDE 2-GANG BOX WITH SINGLE-GANG MUD RING. TOP OF BOX AT 48" AFF. PROVIDE 3/4" CONDUIT WITH PULLSTRING TO ACCESSIBLE CEILING SPACE.
DC	DOOR CONTACT. PROVIDE 3/4" CONDUIT WITH PULLSTRING TO ACCESSIBLE CEILING SPACE.
⊙	PUSH BUTTON, TOP OF BOX AT 48" UNLESS NOTED OTHERWISE

ELECTRICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
3. ALL EXPOSED RACEWAYS SHALL BE IN EMT CONDUIT, MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.
4. ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, FIXTURES, SYSTEMS, CONDUIT AND WIRE, ETC. NOT BEING REUSED, DO NOT JUST ABANDON.
5. ELECTRICAL CONTRACTOR TO COORDINATE MANUFACTURER ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT BEING FURNISHED WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. EQUIPMENT DISCONNECTS TO BE PROVIDED BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE IN MECHANICAL SCHEDULES.
6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
7. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING TRANSFORMERS, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
8. ALL ELECTRICAL DEVICES ARE EXISTING AND TO REMAIN UNLESS NOTED OTHERWISE OR CONFLICT WITH NEW CONSTRUCTION. MAINTAIN PROPER OPERATION OF ALL EXISTING ELECTRICAL.
9. ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
10. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL PER NEC 210.4.
11. FIRE ALARM SYSTEM IS SHOWN FOR SCHEMATIC PURPOSES. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR PROVIDING DESIGN AND SHOP DRAWINGS SUBMITTAL TO FIRE MARSHAL FOR APPROVAL AS REQUIRED BY THE FIRE MARSHAL. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE ADDITIONAL DEVICES, POWER SUPPLIES, ETC FOR COMPLIANCE WITH CODE.
12. PLANS INDICATE MINIMUM WIRE SIZES PER NEC. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.
13. PROVIDE LOW VOLTAGE WIRING BETWEEN ALL 0-10V DIMMING DRIVERS CONTROLLED BY 0-10V DIMMERS PER MANUFACTURER'S INSTRUCTIONS.
14. WHEREVER POSSIBLE, CONDUIT SHALL BE RUN CONCEALED WITHIN WALLS, CEILINGS, SOFFITS, ETC. SURFACE MOUNTED CONDUIT IN FINISHED SPACES MUST BE APPROVED BY THE ENGINEER OR ARCHITECT PRIOR TO INSTALLATION. EXTERIOR CONDUIT SHALL NOT BE RUN EXPOSED IN PUBLICLY VISIBLE AREAS WITHOUT APPROVAL OF THE ARCHITECT OR ENGINEER.
15. OUTLET ROUGH-IN BOXES SHALL BE COMPATIBLE WITH TWO SCREW COVER PLATES.



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ph: 913.649.8181 • fx: 913.649.1275 • www.klover.net

project title



840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

project number

23060.003

drawing issuance

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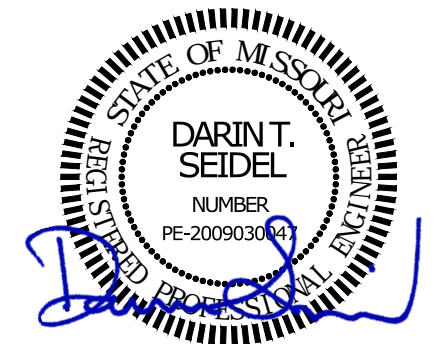
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ELECTRICAL SPECIFICATIONS

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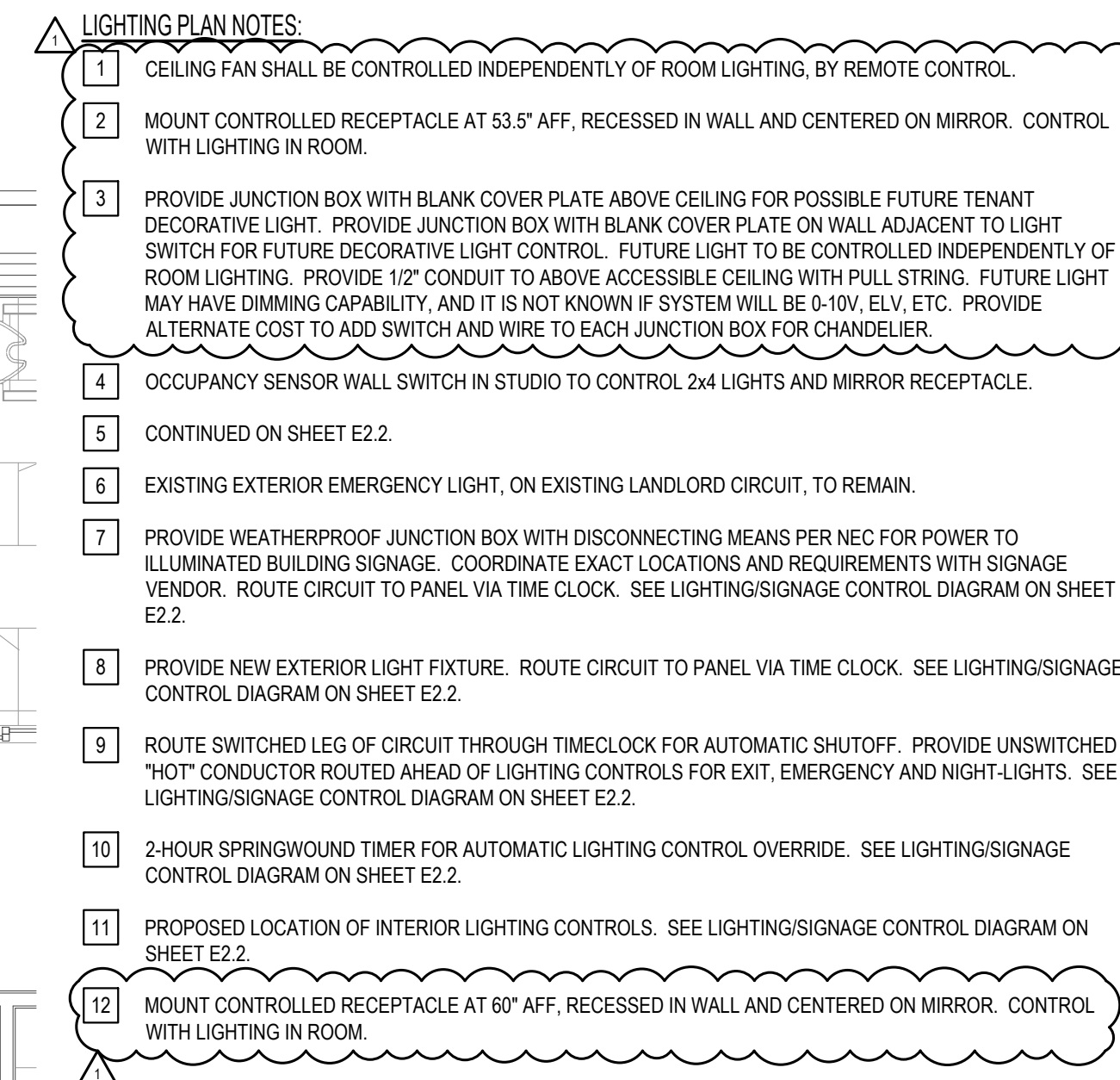
E1

BC PROJECT #: 23615
MISSOURI PE COA #2009003629

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E2.1

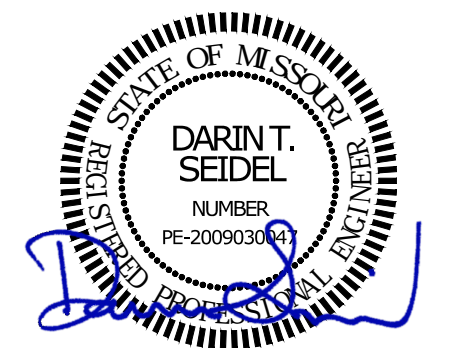


project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

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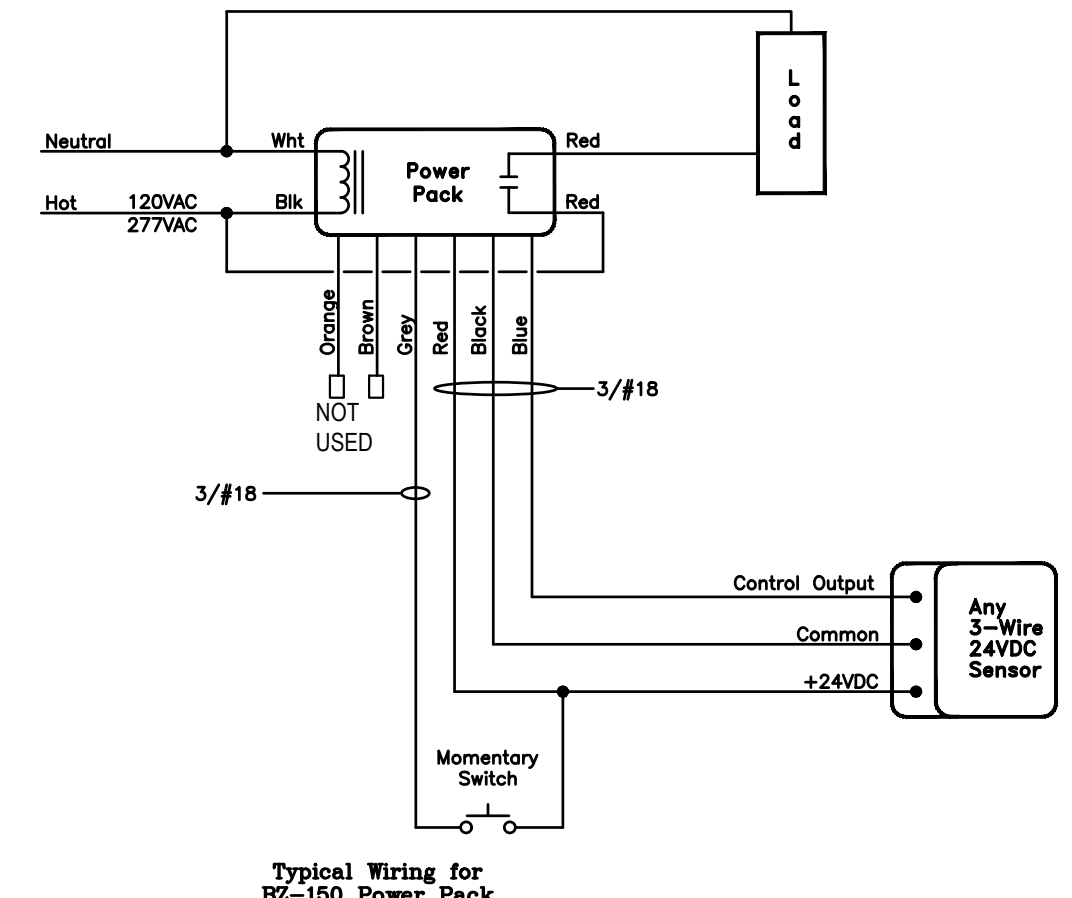


drawing title
ELECTRICAL LIGHTING PLAN - EAST

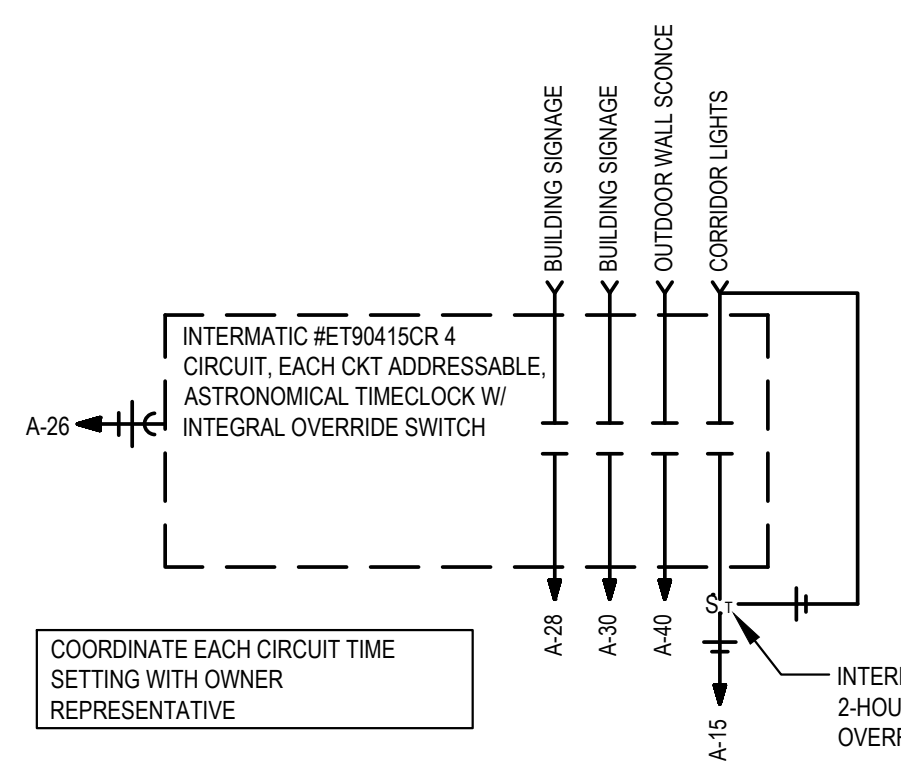
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E2.2

- LIGHTING PLAN NOTES:**
- 1 CEILING FAN SHALL BE CONTROLLED INDEPENDENTLY OF ROOM LIGHTING, BY REMOTE CONTROL.
 - 2 MOUNT CONTROLLED RECEPTACLE AT 53.5" AFF, RECESSED IN WALL AND CENTERED ON MIRROR. CONTROL WITH LIGHTING IN ROOM.
 - 3 PROVIDE JUNCTION BOX WITH BLANK COVER PLATE ABOVE CEILING FOR POSSIBLE FUTURE TENANT DECORATIVE LIGHT. PROVIDE JUNCTION BOX WITH BLANK COVER PLATE ON WALL ADJACENT TO LIGHT SWITCH FOR FUTURE DECORATIVE LIGHT CONTROL. FUTURE LIGHT TO BE CONTROLLED INDEPENDENTLY OF ROOM LIGHTING. PROVIDE 1/2" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH PULL STRING. FUTURE LIGHT MAY HAVE DIMMING CAPABILITY, AND IT IS NOT KNOWN IF SYSTEM WILL BE 0-10V, ELV, ETC. PROVIDE ALTERNATE COST TO ADD SWITCH AND WIRE TO EACH JUNCTION BOX FOR CHANDELIER.
 - 4 OCCUPANCY SENSOR WALL SWITCH IN STUDIO TO CONTROL 2x4 LIGHTS AND MIRROR RECEPTACLE.
 - 5 CONTINUED ON SHEET E2.1.
 - 6 EXISTING WALL SCONCE, ON EXISTING LANDLORD CIRCUIT, TO REMAIN.
 - 7 EXISTING JUNCTION BOX WITH DISCONNECTING MEANS FOR ILLUMINATED BUILDING SIGNAGE. ROUTE CIRCUIT TO PANEL VIA TIME CLOCK. SEE LIGHTING/SIGNAGE CONTROL DIAGRAM ON THIS SHEET.

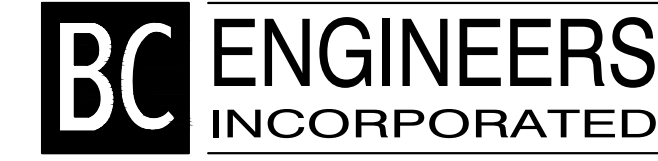


CEILING OCCUPANCY SENSOR WIRING DIAGRAM
SCALE: NONE

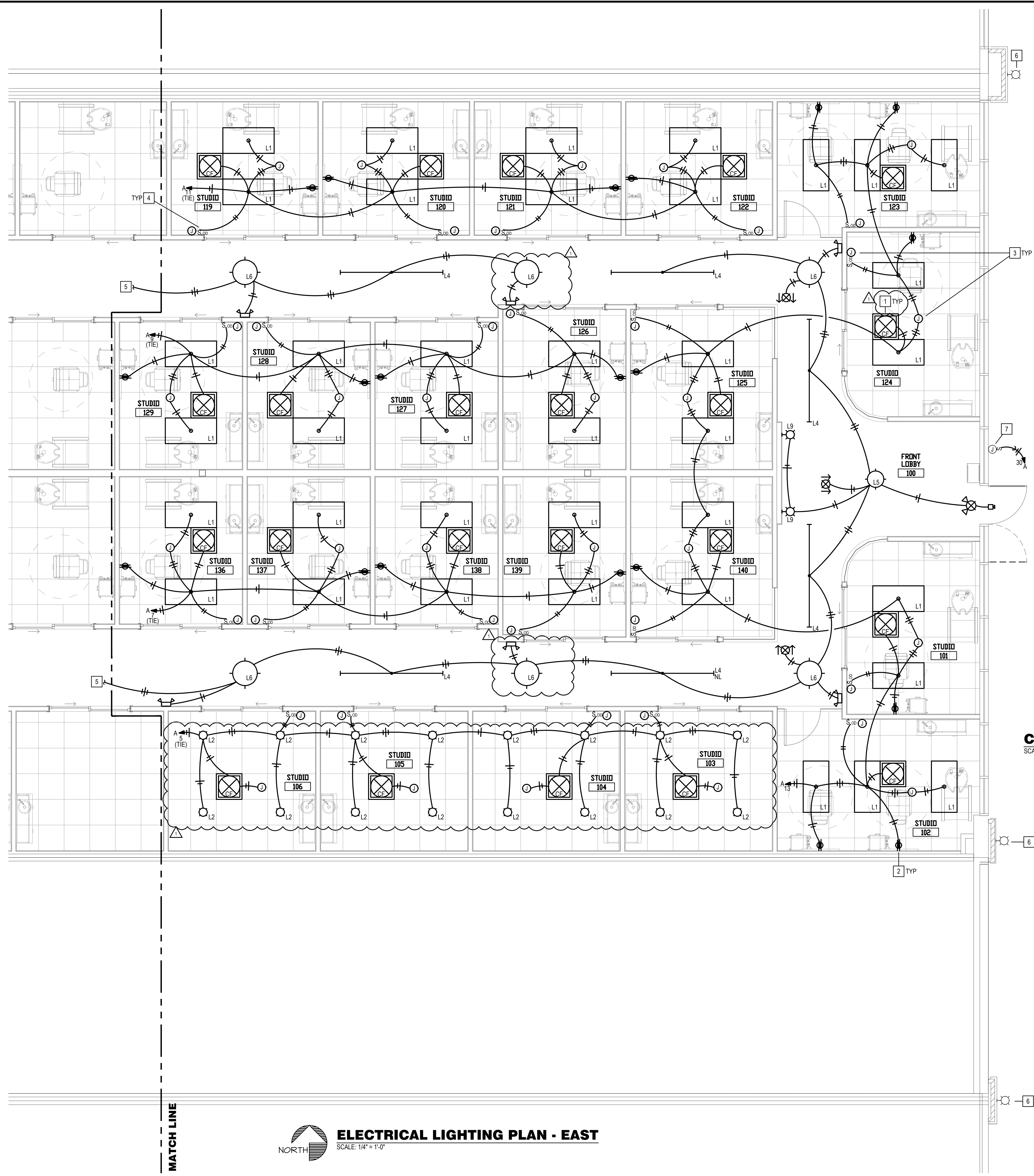


LIGHTING/SIGNAGE CONTROL DIAGRAM
SCALE: NONE

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ELECTRICAL LIGHTING PLAN - EAST
SCALE: 1/4" = 1'-0"

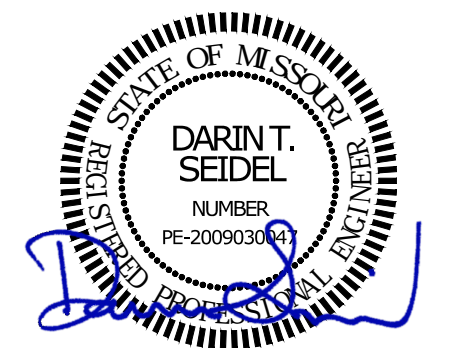


project title

IMAGE STUDIOS
SUMMIT FAIR
840-D NW BLUE PARKWAY
LEES SUMMIT, MO 64086

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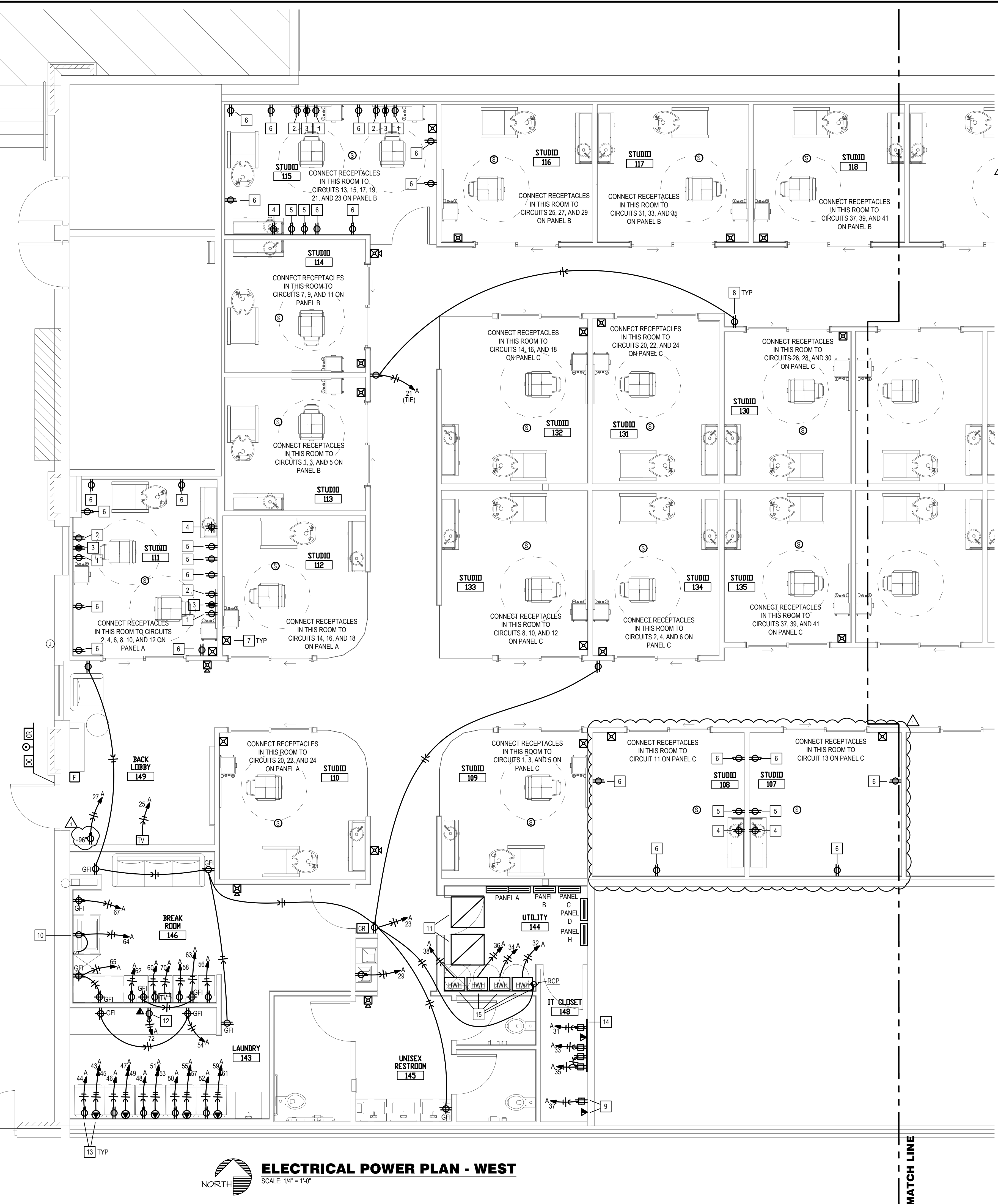


drawing title
ELECTRICAL POWER PLAN - WEST

drawing number

E3.1

- POWER PLAN NOTES:
- 1 STYLING TOOLS. RECEPTACLE. REFER TO ENLARGED TYPICAL STUDIO PLAN ON SHEET E4 FOR ADDITIONAL INFORMATION.
 - 2 BLOW DRYER. RECEPTACLE. REFER TO ENLARGED TYPICAL STUDIO PLAN ON SHEET E4 FOR ADDITIONAL INFORMATION.
 - 3 MIRROR. RECEPTACLE. REFER TO ENLARGED TYPICAL STUDIO PLAN ON SHEET E4 FOR ADDITIONAL INFORMATION. REFER TO LIGHTING PLAN ON SHEETS E2.1 & 2.2 FOR CIRCUITING.
 - 4 MILL/WORK COUNTERTOP. RECEPTACLE. REFER TO ENLARGED TYPICAL STUDIO PLAN ON SHEET E4 FOR ADDITIONAL INFORMATION.
 - 5 FUTURE MINI-FRIDGE. RECEPTACLE. REFER TO ENLARGED TYPICAL STUDIO PLAN ON SHEET E4 FOR ADDITIONAL INFORMATION.
 - 6 CONVENIENCE RECEPTACLE. REFER TO ENLARGED TYPICAL STUDIO PLAN ON SHEET E4 FOR ADDITIONAL INFORMATION.
 - 7 FIRE ALARM STROBES TO BE EITHER CEILING MOUNTED OR TO MATCH THE WALL COLOR. WALL STROBES PREFERRED DUE TO LARGE AMOUNT OF DIFFUSERS, GRILLES, LIGHTS, ETC. IN CEILINGS.
 - 8 RECEPTACLE AND COVER PLATE COLORS IN CORRIDORS WILL VARY BASED ON WALL PAINT COLOR. VERIFY REQUIREMENTS WITH ARCHITECT.
 - 9 RECEPTACLE AND JUNCTION BOX FOR AV RACK, WITH (2) 1" CONDUITS FOR CAT5 AND SPEAKER WIRE TO ABOVE ACCESSIBLE CEILING FOR SOUND SYSTEM. COORDINATE EXACT REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN.
 - 10 SPLIT SWITCHED DUPLEX RECEPTACLE LOCATED IN CABINET BELOW SINK FOR CONNECTION TO DISHWASHER AND DISPOSAL. VERIFY EXACT LOCATION.
 - 11 MOUNT TRANSFORMERS ON OVERHEAD PLATFORM.
 - 12 PROVIDE RECEPTACLE INSIDE CABINET FOR FUTURE PRINTER OR OTHER APPLIANCE. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 13 VERIFY RECEPTACLE MOUNTING HEIGHT WITH MANUFACTURER'S INSTRUCTIONS.
 - 14 PROVIDE 4'x8'x3/4" FIRE RETARDANT PLYWOOD TELECOM BACKBOARD WITH #6 CU BOND TO BUILDING ELECTRODE SYSTEM. EXTEND (2) 4" C WITH PULL STRING FROM LANDLORD'S PHONEBOARD TO ABOVE TENANT BACKBOARD.
 - 15 MAKE CONNECTIONS TO WATER HEATERS AND RE-CIRCULATION PUMP PER MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH PLUMBING CONTRACTOR.



ELECTRICAL POWER PLAN - WEST
SCALE: 1/4" = 1'-0"

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LEES SUMMIT, MO 64086

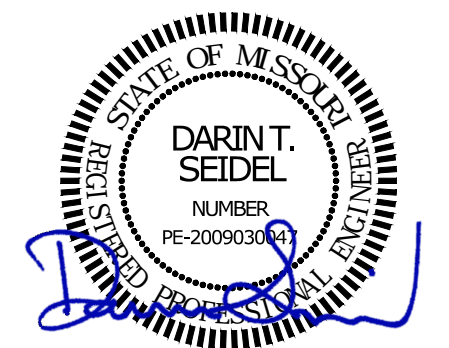
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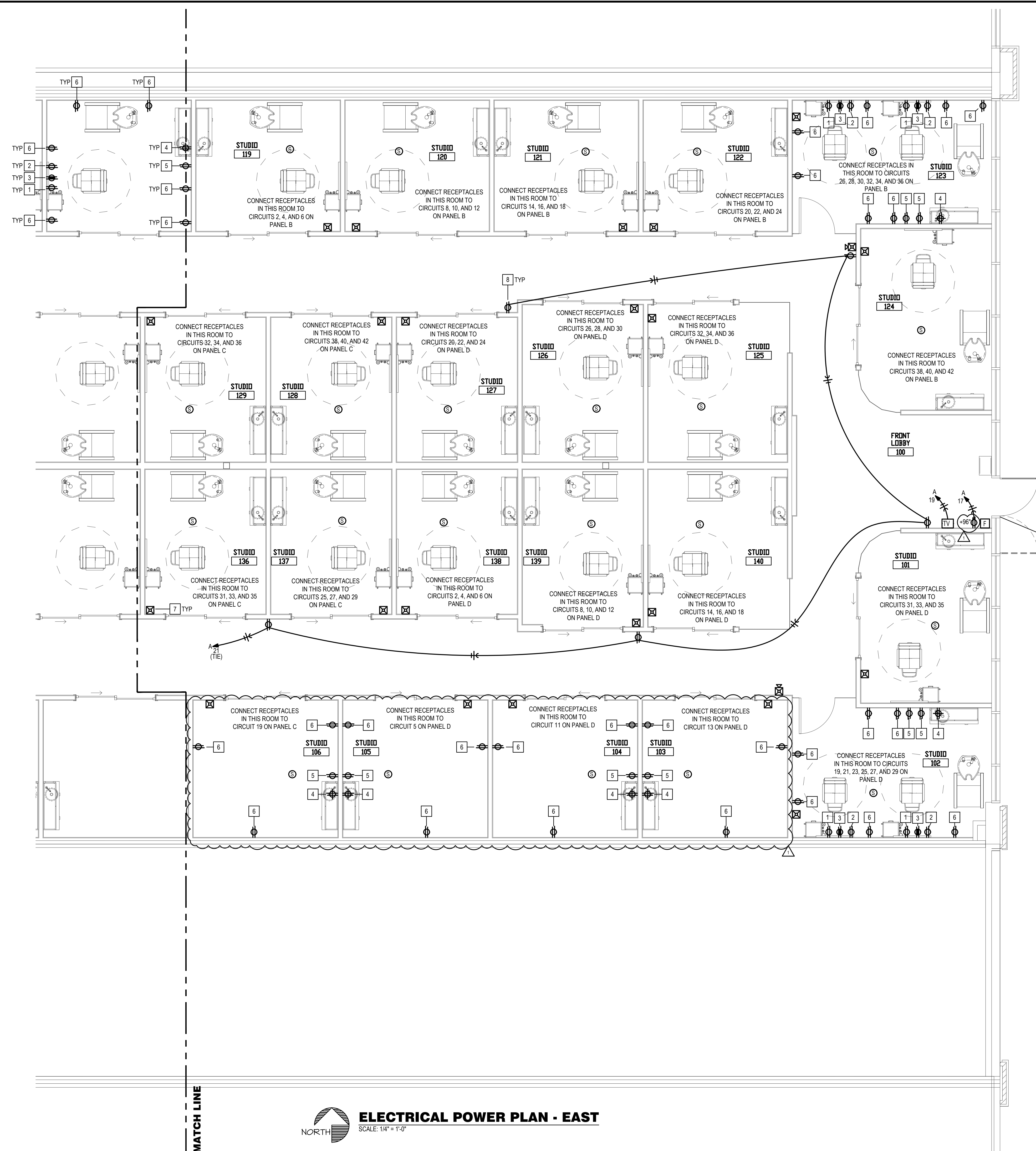
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ELECTRICAL POWER PLAN - EAST

drawing number

E3.2



project title

IMAGE STUDIOS
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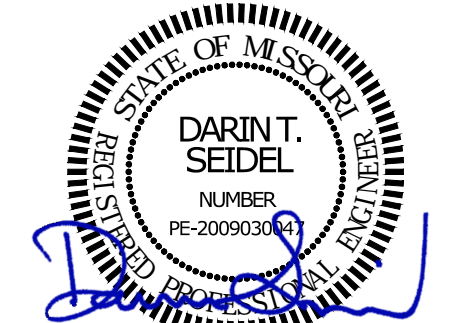
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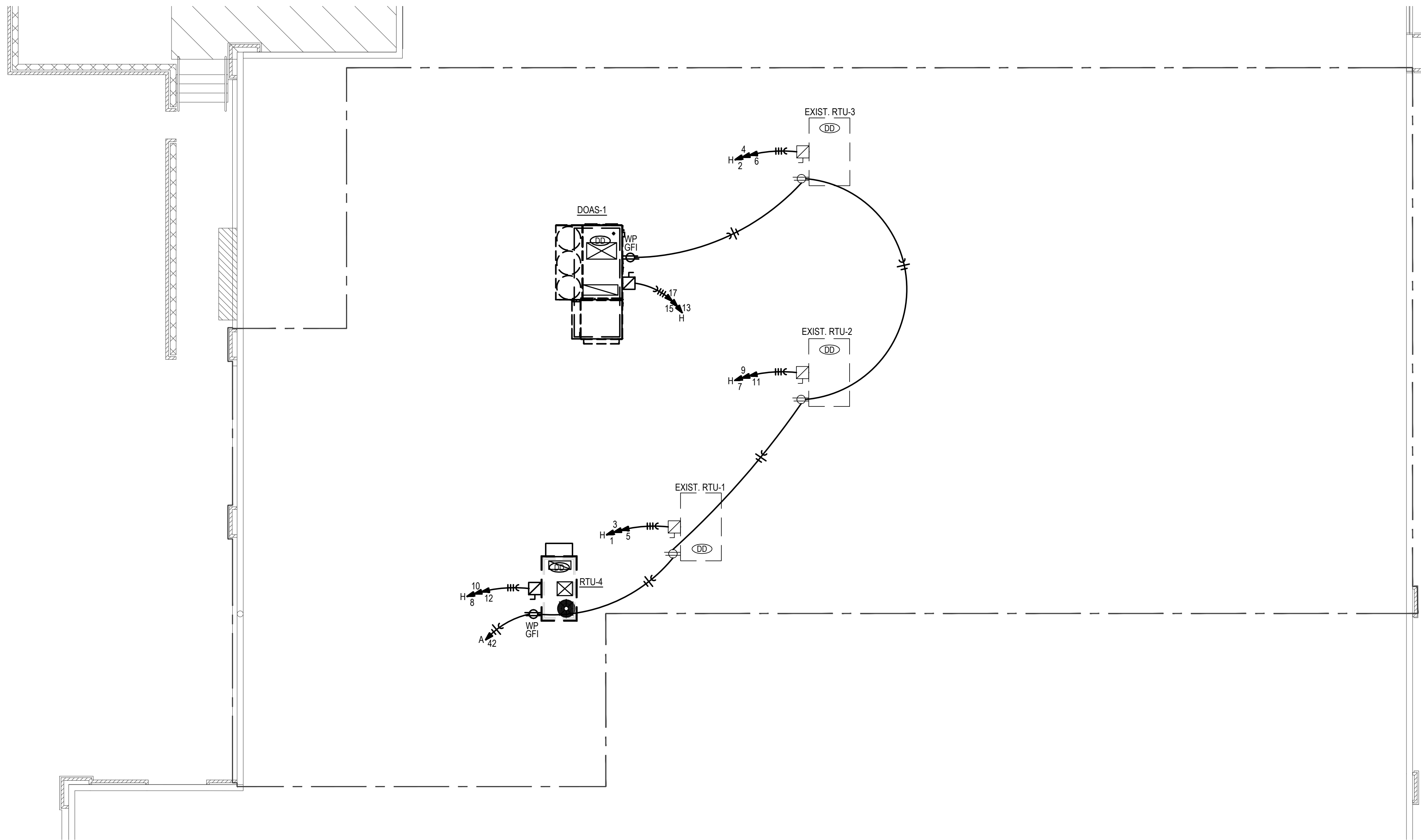


drawing title

ELECTRICAL ROOF PLAN & TYPICAL
STUDIO PLAN

drawing number

E4



PANEL: C		VOLTS: 120/208V			PH: 3Ø		WIRE: 4W		LOCATION:		UTILITY 144			MOUNTING: SURFACE			
BUS: 125A		MAIN: 100A MLO			IC:		10,000		RMS SYM AMPS					FEEDER: SEE RISER DIAGRAM			
OKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØC	ØA	ØB	ØC	WIRE	POLE	AMPS	DESCRIPTION	OKT NO		
1	STUDIO 109 STYLING TOOLS	20	1	12	1,500			1,440			12	1	20	STUDIO 131 GENERAL [GF]	2		
3	STUDIO 109 BLOW DRYER	20	1	12		1,500			1,500		12	1	20	STUDIO 134 BLOW DRYER	4		
5	STUDIO 109 GENERAL [GF]	20	1	12			1,080			1,500	12	1	20	STUDIO 134 STYLING TOOLS	6		
7	SPARE	20	1					1,080			12	1	20	STUDIO 133 GENERAL [GF]	8		
9	SPARE	20	1						1,500		12	1	20	STUDIO 133 BLOW DRYER	10		
11	STUDIO 108 GENERAL [GF]	20	1	12			900			1,500	12	1	20	STUDIO 133 STYLING TOOLS	12		
13	STUDIO 107 GENERAL [GF]	20	1	12	900			1,080			12	1	20	STUDIO 132 GENERAL [GF]	14		
15	SPARE	20	1						1,500		12	1	20	STUDIO 132 BLOW DRYER	16		
17	SPARE	20	1							1,500	12	1	20	STUDIO 132 STYLING TOOLS	18		
19	STUDIO 106 GENERAL [GF]	20	1	12	900			1,440			12	1	20	STUDIO 131 GENERAL [GF]	20		
21	SPARE	20	1						1,500		12	1	20	STUDIO 131 BLOW DRYER	22		
23	SPARE	20	1							1,500	12	1	20	STUDIO 131 STYLING TOOLS	24		
25	STUDIO 137 STYLING TOOLS	20	1	10	1,500			1,440			10	1	20	STUDIO 130 GENERAL [GF]	26		
27	STUDIO 137 BLOW DRYER	20	1	10		1,500				1,500	10	1	20	STUDIO 130 BLOW DRYER	28		
29	STUDIO 137 GENERAL [GF]	20	1	10			1,440			1,500	10	1	20	STUDIO 130 STYLING TOOLS	30		
31	STUDIO 136 STYLING TOOLS	20	1	10	1,500				1,440		10	1	20	STUDIO 129 GENERAL [GF]	32		
33	STUDIO 136 BLOW DRYER	20	1	10		1,500				1,500	10	1	20	STUDIO 129 BLOW DRYER	34		
35	STUDIO 136 GENERAL [GF]	20	1	10			1,440			1,500	10	1	20	STUDIO 129 STYLING TOOLS	36		
37	STUDIO 133 STYLING TOOLS	20	1	12	1,500				1,440		10	1	20	STUDIO 128 GENERAL [GF]	38		
39	STUDIO 135 BLOW DRYER	20	1	12		1,500				1,500	10	1	20	STUDIO 128 BLOW DRYER	40		
41	STUDIO 135 GENERAL [GF]	20	1	12			1,440			1,500	10	1	20	STUDIO 128 STYLING TOOLS	42		
NOTES:					7,800	6,000	6,300	9,360	10,500	10,500	TOTAL CONNECTED LOAD:				50,400 VA		
[GF] GFCI BRKR 5mA					17,160		16,500		16,800						NEC DEMAND LOAD:		
										DEMAND AMPS @		208		VOLT / 3Ø:		83.91	

NOTES:

[GF]-GFCI BRKR 5mA

PANEL: D			VOLTS: 120/208V			PH: 3Ø			WIRE: 4W			LOCATION:			UTILITY 144			MOUNTING: SURFACE	
BUS: 225A			MAIN: 225A MCB			IC: 10,000			RMS SYM AMPS						FEEDER:			SEE RISER DIAGRAM	
CKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØC	ØA	ØB	ØC	WIRE	POLE	AMPS	DESCRIPTION	CKT NO				
1	SPARE	20	1					1,440			10	1	20	STUDIO 13 GENERAL [GF]	2				
3	SPARE	20	1						1,500		10	1	20	STUDIO 13B BLOW DRYER	4				
5	STUDIO 105 GENERAL [GF]	20	1	12			900			1,500	10	1	20	STUDIO 136 STYLING TOOLS	6				
7	SPARE	20	1					1,440			10	1	20	STUDIO 139 GENERAL [GF]	8				
9	SPARE	20	1						1,500		10	1	20	STUDIO 139 BLOW DRYER	10				
11	STUDIO 104 GENERAL [GF]	20	1	12			900			1,500	10	1	20	STUDIO 139 STYLING TOOLS	12				
13	STUDIO 103 GENERAL [GF]	20	1	12	900			1,080			10	1	20	STUDIO 140 GENERAL [GF]	14				
15	SPARE	20	1						1,500		10	1	20	STUDIO 140 BLOW DRYER	16				
17	SPARE	20	1						1,500		10	1	20	STUDIO 140 STYLING TOOLS	18				
19	STUDIO 102 SPARE TOOLS	20	1	10	1,500			1,440			10	1	20	STUDIO 127 GENERAL [GF]	20				
21	STUDIO 102 STYLING TOOLS	20	1	10		1,500			1,500		10	1	20	STUDIO 127 BLOW DRYER	22				
23	STUDIO 102 BLOW DRYER	20	1	10			1,500			1,500	10	1	20	STUDIO 127 STYLING TOOLS	24				
25	STUDIO 102 BLOW DRYER	20	1	10	1,500			1,440			10	1	20	STUDIO 126 GENERAL [GF]	26				
27	STUDIO 102 GENERAL [GF]	20	1	10		720			1,500		10	1	20	STUDIO 126 BLOW DRYER	28				
29	STUDIO 102 GENERAL [GF]	20	1	10			900			1,500	10	1	20	STUDIO 126 STYLING TOOLS	30				
31	STUDIO 101 STYLING TOOLS	20	1	8	1,500			1,080			8	1	20	STUDIO 125 GENERAL [GF]	32				
33	STUDIO 101 BLOW DRYER	20	1	8		1,500			1,500		8	1	20	STUDIO 125 BLOW DRYER	34				
35	STUDIO 101 GENERAL [GF]	20	1	8			900			1,500	8	1	20	STUDIO 125 STYLING TOOLS	36				
37	SPARE	20	1					17,160							38				
39	SPARE	20	1						16,500		3	3	100	PANEL C	40				
41	SPARE	20	1							16,800					42				
NOTES:				5,400		3,720		5,100		25,080		25,500		25,800					
(GF) GFCI BRKR 5mA				30,480		21,220		30,960											
TOTAL CONNECTED LOAD:														90,600 VA					
NEC DEMAND LOAD:														50,300 VA					
DEMAND AMPS @ 208 VOLT / 3Ø:														138.62					

The diagram illustrates a power distribution system. It begins with an existing NEMA 3R 800A disc switch fused at 800 amps, connected to existing wiring. This wiring leads to a NEMA 3R 400A disc switch, which is fused at 400 amps and includes a meter. The system then branches into several panels: Panel H (277/480V, 400A MLO), Panel A (120/208V, 3φ, 4W, 400A MCB), Panel B (120/208V, 3φ, 4W, 100A MLO), Panel C (120/208V, 3φ, 4W, 100A MLO), and Panel D (120/208V, 3φ, 4W, 225A MCB). The system also includes a 112.5KVA transformer (480V 3φ PRI, 120/208V 3φ 4W SECONDARY) and a 75KVA transformer (480V 3φ PRI, 120/208V 3φ 4W SECONDARY). Various wiring sizes are specified, such as 400G-4W, 150G-3W, 90G-3W, and T225-4W. The diagram is labeled 'TENANT SPACE' and includes a note about the drawing being for reference only.

SCALE: NONE