

# ARROWOOD KITCHEN ALTERATIONS

440 ARROWOOD DRIVE  
SANTA ROSA, CA 95407

**HGA** | 222 SUTTER STREET, SUITE 500  
SAN FRANCISCO, CALIFORNIA 94108  
TELEPHONE: 415.814.6910

HGA COMMISSION NUMBER: 5378-001-00

01.16.2025

## PROJECT INFORMATION

PROJECT NAME: ARROWOOD KITCHEN ALTERATIONS

PROJECT DESCRIPTION: KITCHEN IMPROVEMENT THAT INCLUDES BUT NOT LIMITED TO: CLEANING AND REPAIRING FINISHES, REMOVING AND/OR REPLACING OLD/UNUSED EQUIPMENT AND DEVICES, ADDING NEW EQUIPMENT, COUNTERTOPS AND TABLES, NO CHANGE TO WALL OR CEILING LAYOUT/CONSTRUCTION.

PROJECT ADDRESS:  
ARROWOOD KITCHEN  
440 ARROWOOD DRIVE  
SANTA ROSA, CA 95407

PRIMARY OCCUPANCY: R-2.1 TYPE OF CONSTRUCTION: V-B

FULLY SINKERED: NO APN: 037-225-019

BUILDING LEVELS: ONE BUILDING HEIGHT: 16 FT

PROJECT LEVEL: ONE FLOOR AREA: 25,271 SF

PROJECT AREA: 1,200 SF

## CONTACT INFORMATION

APPLICANT: SONOMA COUNTY PHONE: (707) 565-1957  
CONTACT: MIKE VOLATILE EMAIL: MIKE.VOLATILE@SONOMACOUNTY.GOV  
ADDRESS: 400 AVIATION BLVD. SUITE 100, SANTA ROSA, CA 95403

ARCHITECT: HAMMEL, GREEN AND ABRAHAMSON PHONE: (916) 787-5145  
CONTACT: BETH YOUNG EMAIL: BYOUNG@HGA.COM  
ADDRESS: 222 SUTTER ST. SUITE 500, SAN FRANCISCO, CA 94108

MEP ENGINEERING: HAMMEL, GREEN AND ABRAHAMSON EMAIL: KMARTIN@HGA.COM  
MECHANICAL/PLUMBING CONTACT: KENNETH MARTIN  
ELECTRICAL CONTACT: CONNOR FRAZIER EMAIL: CFRAZIER@HGA.COM  
ADDRESS: 222 SUTTER ST. SUITE 500, SAN FRANCISCO, CA 94108

OWNER: NORTH BAY PROPERTY ADVISORS PHONE: (707) 523-2700  
CONTACT: NICK ABBOTT EMAIL: NABBOTT@NORTHBAYPROP.COM  
ADDRESS: 823 SONOMA AVE., SANTA ROSA, CA 95404

## CODE INFORMATION

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC)  
PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)

2022 CALIFORNIA BUILDING CODE (CBC)  
PART 2, TITLE 24, CCR, BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC)

2022 CALIFORNIA ELECTRICAL CODE (CEC)  
PART 3, TITLE 24, CCR, BASED ON THE 2020 NATIONAL ELECTRICAL CODE (NEC)

2022 CALIFORNIA MECHANICAL CODE (CMC)  
PART 4, TITLE 24, CCR, BASED ON THE 2021 UNIFORM MECHANICAL CODE (UMC)

2022 CALIFORNIA PLUMBING CODE:  
PART 5, TITLE 24, CCR, BASED ON THE 2021 UNIFORM PLUMBING CODE (UPC)

2022 CALIFORNIA FIRE CODE(CFC)  
PART 9, TITLE 24, CCR, BASED ON THE 2021 INTERNATIONAL FIRE CODE (IFC)

LIFE SAFETY CODE:  
2000 NFPA 101 LIFE SAFETY CODE

ACCESSIBILITY CODE:  
CHAPTER 11/18, 2016 CBC AND 2010 ADA (28 CFR PART 36)

ENERGY CODE:  
2022 CALIFORNIA ENERGY CODE - PART 6, TITLE 24, CCR

SIGN CODE:  
AMERICANS WITH DISABILITIES ACT (ADA), CBC (TITLE 24), & UFC (TITLE 19)

ANSI:  
CABO/ANSI A117-1 - 1992 (ACCESSIBILITY)

LOCAL CODES:  
CITY OF SANTA ROSA CODES AND ORDINANCES

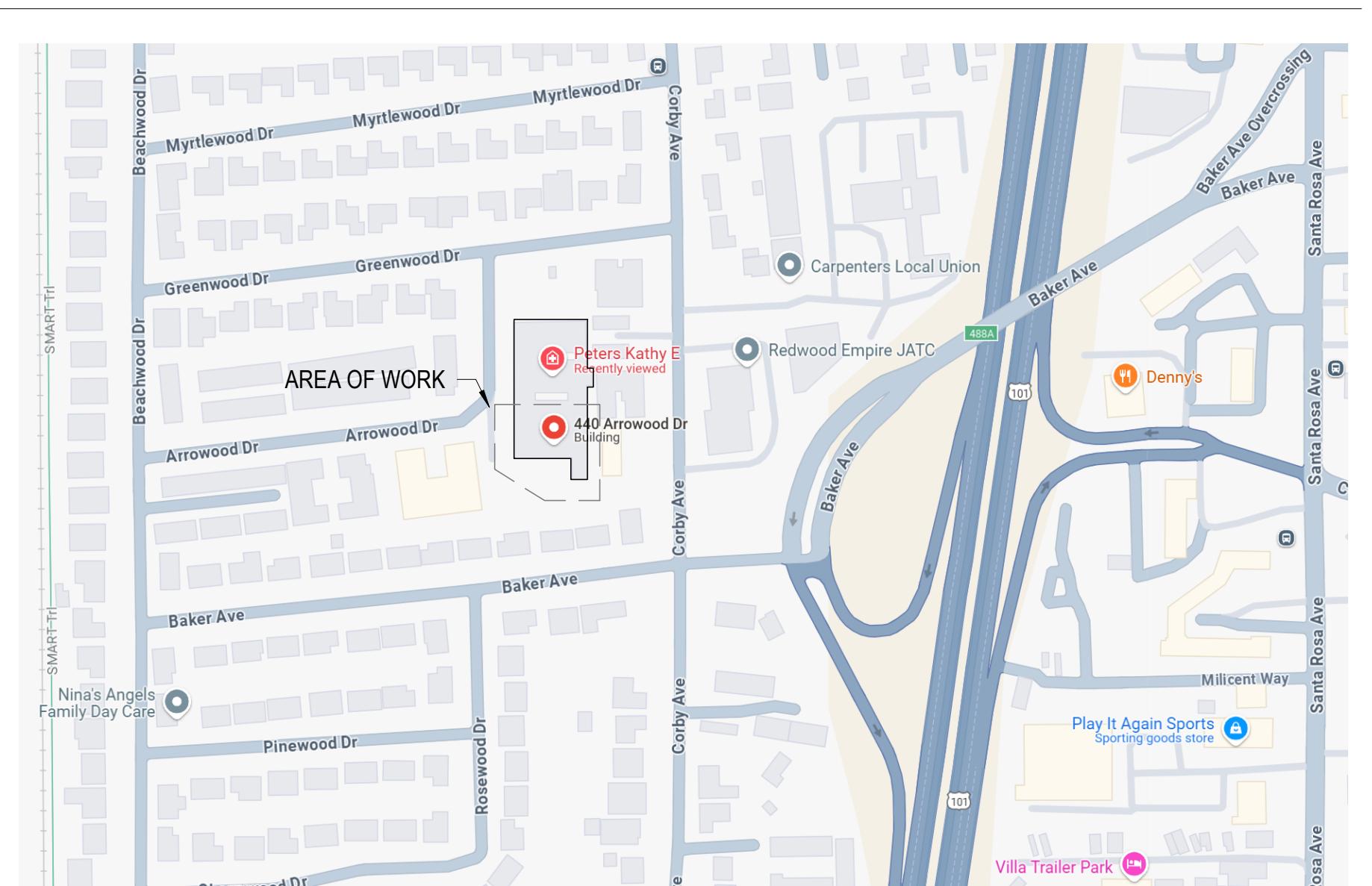
AUTHORITY HAVING JURISDICTION:  
CITY OF SANTA ROSA

COUNTY OF:  
SONOMA

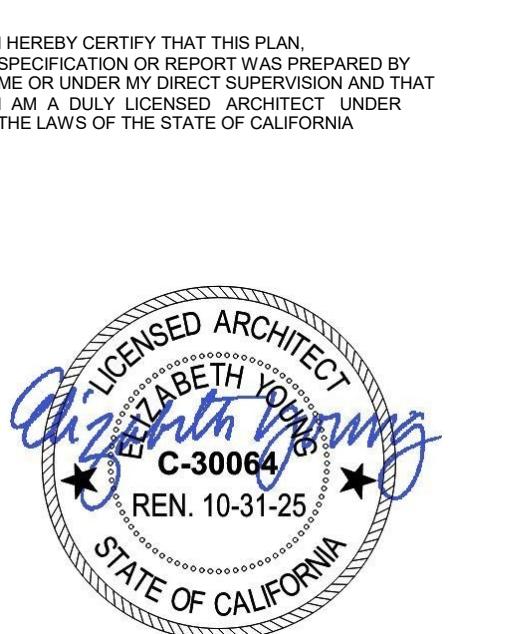
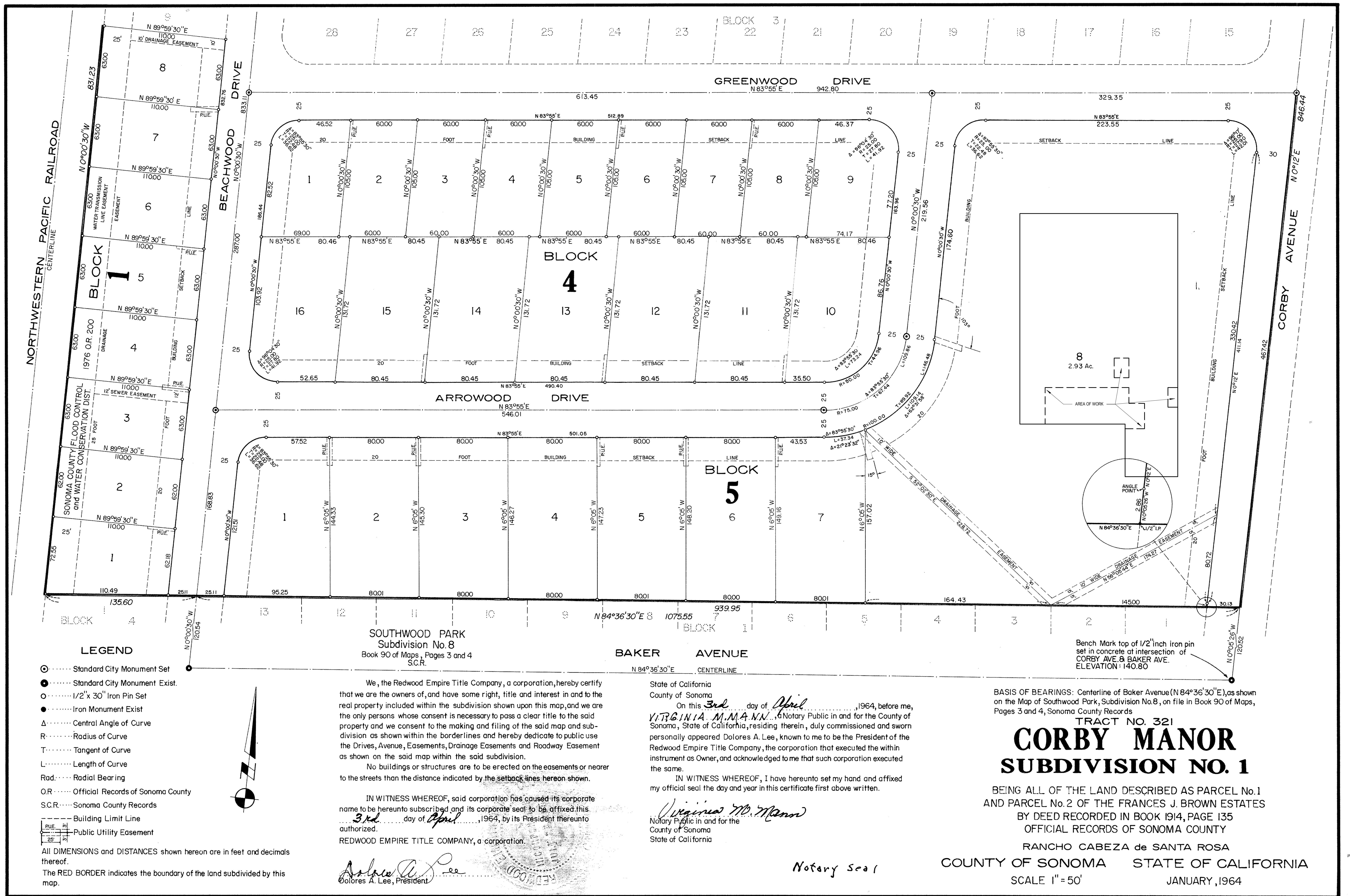
## DRAWING INDEX

REV	NUMBER	SHEET NAME
0-GENERAL		
G000	COVERSHEET	
G010	EXISTING SITE PLAN (FOR REFERENCE ONLY)	
G015	LIFE SAFETY PLAN LEVEL 01	
G016	PHASING & SITE LOGISTICS PLAN	
G020	SITE PLAN & DETAILS	
G021	SITE DETAILS	
1-ARCHITECTURAL		
A010	GENERAL NOTES AND SYMBOLS	
A011	SCHEDULES	
A101	DEMOLITION PLAN - LEVEL 01	
A201	FLOOR PLAN - LEVEL 01	
A301	REFLECTED CEILING PLAN - LEVEL 01	
A600	TYPICAL MOUNTING HEIGHTS AND CLEARANCES	
A601	SIGNAGE + DESIGN GUIDE - MOUNTING HEIGHTS	
A640	INTERIOR ELEVATIONS & DETAILS	
A900	HEET SPECIFICATIONS	
Grand total: 15		
2-MECHANICAL		
M001	MECHANICAL GENERAL NOTES AND SYMBOLS	
M002	MECHANICAL SHEET SPECIFICATIONS	
M040	TITLE 24	
M101	MECHANICAL DEMOLITION PLAN	
M201	HVAC NEW WORK FLOOR PLAN	
Grand total: 5		
3-ELECTRICAL		
E000	ELECTRICAL GENERAL NOTES AND SYMBOLS	
E001	ELECTRICAL SPECIFICATIONS	
E301	OVERALL POWER PLAN - LEVEL 01	
E510	PANELBOARD SCHEDULE AND ONE LINE DIAGRAM	
E600	ELECTRICAL DETAILS	
Grand total: 5		
4-PLUMBING		
P001	PLUMBING GENERAL NOTES AND SYMBOLS	
P002	PLUMBING SHEET SPECIFICATIONS	
P101	OVERALL PLUMBING DEMOLITION AND NEW WORK PLAN - LEVEL 01	
Grand total: 3		
COMBINED TOTAL: 28		

## PROJECT LOCATION:



G000



NO.	DESCRIPTION	DATE
1	PLAN CHECK	01/16/2025

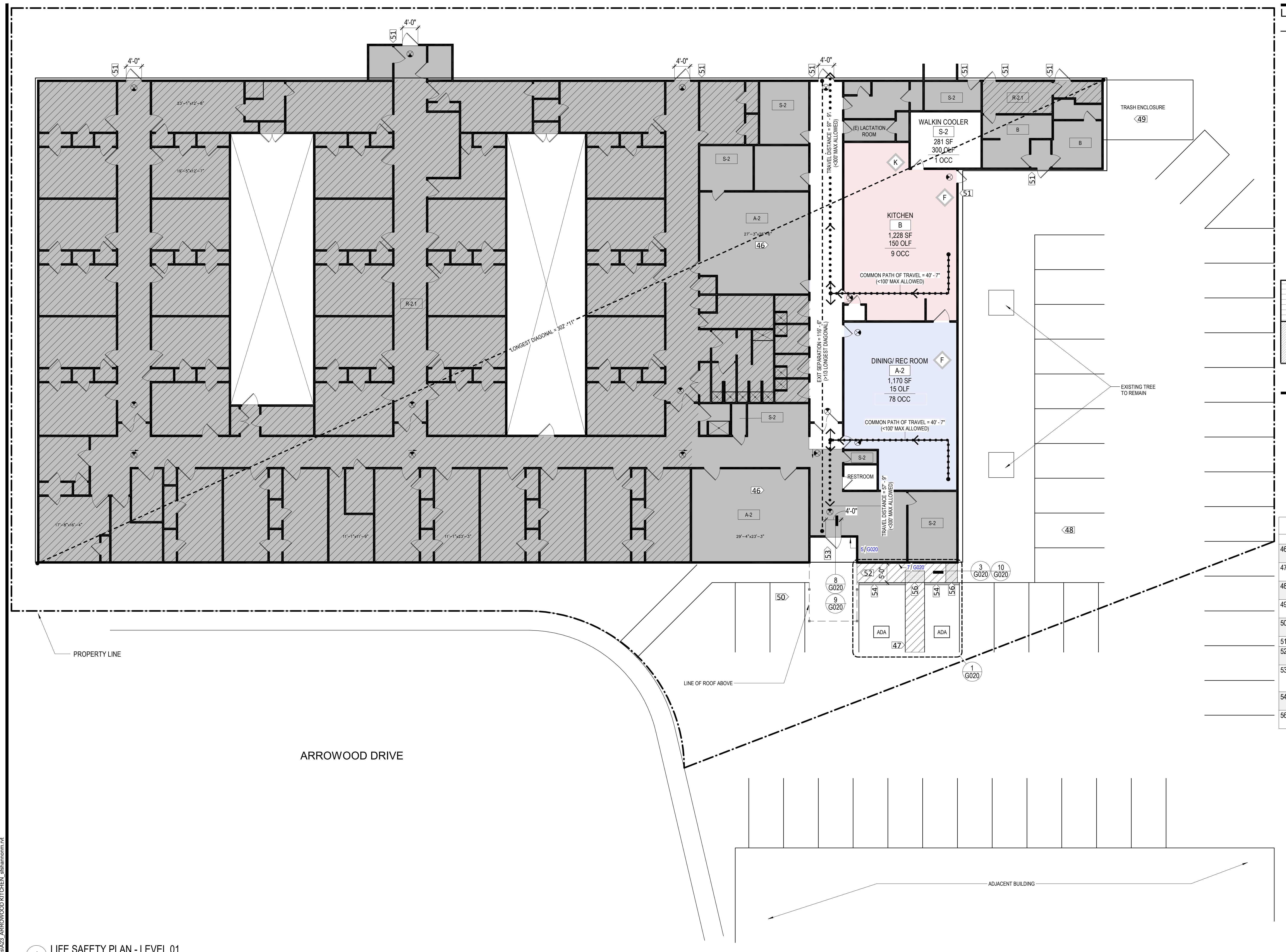
ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

**EXISTING SITE PLAN (FOR REFERENCE ONLY)**

DATE: JANUARY 16, 2025

KITCHEN IMPROVEMENTS

LIFE SAFETY PLAN SYMBOL DESIGNATIONS  
(SYMBOLS ONLY - SEE LIFE SAFETY PLANS FOR ACTUAL INFORMATION)

R-2.1

BUILDING CODE OCCUPANCY TYPE

OFFICE	PRIMARY USE
B	OCCUPANCY GROUP
1,000 SF	TOTAL SQUARE FEET
150 OLF	OCCUPANT LOAD FACTOR
15 OCC	OCCUPANT LOAD

EXIT/ACCESS COMPONENT (E.G. STAIR, EXIT)  
100 OCC NUMBER OF OCCUPANTS USING EXIT/ACCESS COMPONENT  
0.2" ECF EGRESS CAPACITY FACTOR  
32" MIN MINIMUM REQUIRED CLEAR WIDTH (INCHES)  
34" CLR AVAILABLE CLEAR WIDTH (INCHES)

NUMBER OF OCCUPANTS USING EXIT/ACCESS COMPONENT  
TRAVEL DISTANCE TO NEAREST EXIT  
COMMON PATH OF TRAVEL OR EXIT ACCESS TRAVEL DISTANCE  
TRAVEL DISTANCE TO SMOKE DOOR

AREA OF WORK, PHASE 1	AREA NIC, OCCUPIED PHASE 1
AREA OF WORK, PHASE 2	AREA TEMPORARY CERTIFICATE OF OCCUPANCY (TCO), PHASE 2

FIRE EXTINGUISHER K TYPE K FIRE EXTINGUISHER

## OCCUPANCY GROUP

A-2	R-2.1
B	S-2

NUMBER OF SEATS IN DINING ROOM: 30

KEYNOTES	
#	DESCRIPTION
46	LISTENING DEVICES AVAILABLE FOR RESIDENT USE TO BE STORED IN THIS ROOM. SEE DETAIL 9/A601.
47	(N) STRIPING AT ACCESSIBLE PARKING STALLS, ACCESS AISLE, AND WALKWAY AS REQUIRED BY INDICATED DETAILS
48	REMOVE EXISTING NON-COMPLIANT ADA PARKING STRIPING. PROVIDE TYPICAL PARKING STRIPING.
49	(E) EXTERIOR TRASH ENCLOSURE. PROVIDE SEPARATE BINS FOR TRASH, RECYCLING, AND COMPOST.
50	PROVIDE (N) 12" ILLUMINATED BUILDING ADDRESS CHARACTERS PER SANTA ROSA FIRE DEPT STANDARDS.
51	CONFIRM (E) DIRECTIONAL SIGNAGE TO ACCESSIBLE ENTRANCE.
52	DEMOLISH (E) PLANTINGS, AND CURB TO ALLOW FOR (N) ACCESS AISLE.
53	CONFIRM (E) ENTRANCE DOOR CLOSER SPEED/PRESSURE, AND THRESHOLD MEET REQUIREMENTS OF DETAILS 8 & 9 ON SHEET G020, ADJUST TO MEET REQUIREMENTS.
54	PROVIDE (N) PAINTED CURB TO DELINATE SEPARATION BETWEEN ACCESS AISLE AND ACCESSIBLE PARKING.
56	PROVIDE (N) WET SET TRUNCATED DOME PAD, REFER TO DETAIL 3/G020.

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM RESPONSIBLE FOR ITS PREPARATION AND USE IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA

LICENSED ARCHITECT  
BETH YOUNG  
C-30064  
REN: 10-31-25

NAME: BETH YOUNG  
DATE: 01/16/2025  
REGISTRATION NUMBER: C-30064

NO. DESCRIPTION DATE  
1 PLAN CHECK 01/16/2025

ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

## LIFE SAFETY PLAN LEVEL 01

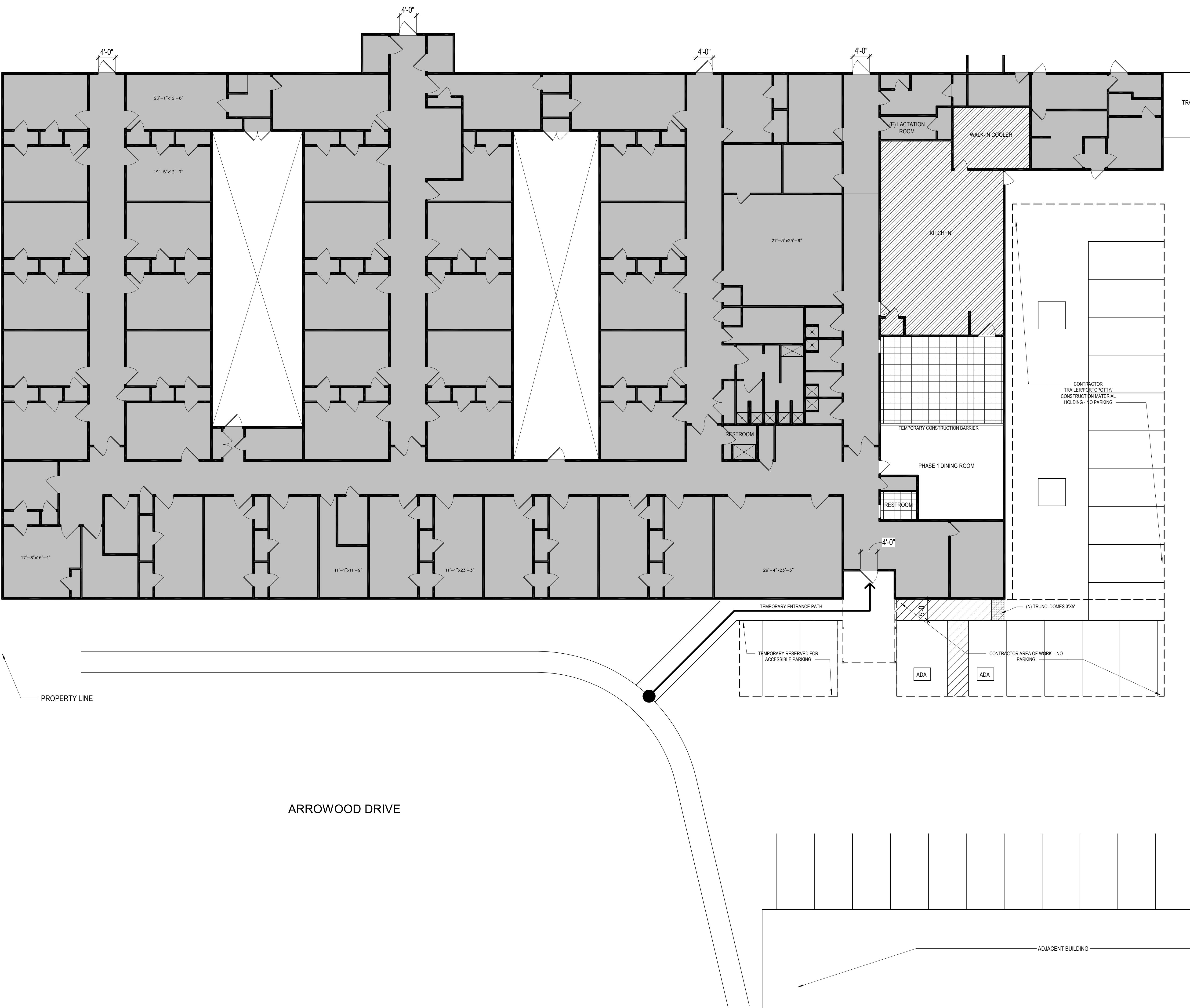
DATE: JANUARY 16, 2025  
KITCHEN IMPROVEMENTS

G015

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CODE REVIEW - OCCUPANCY - LEVEL 01				
FUNCTION OF SPACE	PRIMARY USE	OCCUPANT LOAD FACTOR (PER SF)	AREA (SF)	OCCUPANT LOAD
LEVEL 01				
S-2	KITCHEN STORAGE	300	173 SF	1
S-2	STORAGE	300	810 SF	6
S-2	WALKIN COOLER	300	281 SF	1
			1,264 SF	8
A-2	CONFERENCE	15	1,457 SF	98
A-2	DINING/ REC ROOM	15	1,170 SF	78
			2,627 SF	176
B	BUSINESS	150	486 SF	4
B	KITCHEN	150	1,228 SF	9
			1,714 SF	13
R-2.1	NIC AREA	200	19,456 SF	99
			19,456 SF	99
GRAND TOTAL			25,061 SF	296

CODE REVIEW - EXIT ACCESS - LEVEL 01		
DESCRIPTION	REQUIRED	PROVIDED
LEVEL 01		
EXIT ACCESS		
COMMON PATH OF TRAVEL	(<100' MAX ALLOWED)	40' - 7 47/256"
COMMON PATH OF TRAVEL	(<100' MAX ALLOWED)	40' - 7 47/256"
TRAVEL DISTANCE	(<300' MAX ALLOWED)	57' - 8 175/256"
TRAVEL DISTANCE	(<300' MAX ALLOWED)	97' - 8 175/256"
DOORWAY CONFIGURATION		
EXIT SEPARATION	(>1/3 LONGEST DIAGONAL)	116' - 6"
LONGEST DIAGONAL		302' - 10 121/128"
EXIT DOORWAY WIDTH - REQUIRED	0.2" PER OCCUPANT	REQUIRED: 298 X 0.2" = 59.6"
EXIT DOORWAY WIDTH - PROVIDED	0.2" PER OCCUPANT	PROVIDED: 48" + 48" + 48" + 48" = 240"
		(6) EXITS PROVIDED



LIFE SAFETY PLAN SYMBOL DESIGNATIONS (SYMBOLS ONLY - SEE LIFE SAFETY PLANS FOR ACTUAL INFORMATION)		
R-2.1		BUILDING CODE OCCUPANCY TYPE
OFFICE	PRIMARY USE	
B	OCCUPANCY GROUP	
1,000 SF	TOTAL SQUARE FEET	
150 OLF	OCCUPANT LOAD FACTOR	
15 OCC	OCCUPANT LOAD	
EXIT/STAIR	EXIT-ACCESS COMPONENT (E.G. STAIR, EXIT)	
100 OCC	NUMBER OF OCCUPANTS USING EXIT-ACCESS COMPONENT	
0.2 ECF	EGRESS CAPACITY FACTOR	
32" MIN	MINIMUM REQUIRED CLEAR WIDTH (INCHES)	
34" CLR	AVAILABLE CLEAR WIDTH (INCHES)	
##	NUMBER OF OCCUPANTS USING EXIT/EXIT-ACCESS COMPONENT	
.....	TRAVEL DISTANCE TO NEAREST EXIT	
→	COMMON PATH OF TRAVEL OR EXIT ACCESS TRAVEL DISTANCE	
←	TRAVEL DISTANCE TO SMOKE DOOR	
AREA OF WORK, PHASE 1	AREA NIC, OCCUPIED PHASE 1	
AREA OF WORK, PHASE 2		AREA TEMPORARY CERTIFICATE OF OCCUPANCY (TCO), PHASE 2
F FIRE EXTINGUISHER		K TYPE K FIRE EXTINGUISHER

ARROWOOD KITCHEN  
440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED ARCHITECT IN THE STATE OF CALIFORNIA



NAME: BETH YOUNG  
DATE: 01/16/2025  
REGISTRATION NUMBER: C-30064

NO.	DESCRIPTION	DATE
1	PLAN CHECK	01/16/2025

ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

PHASING & SITE LOGISTICS PLAN

DATE: JANUARY 16, 2025

KITCHEN IMPROVEMENTS

G016

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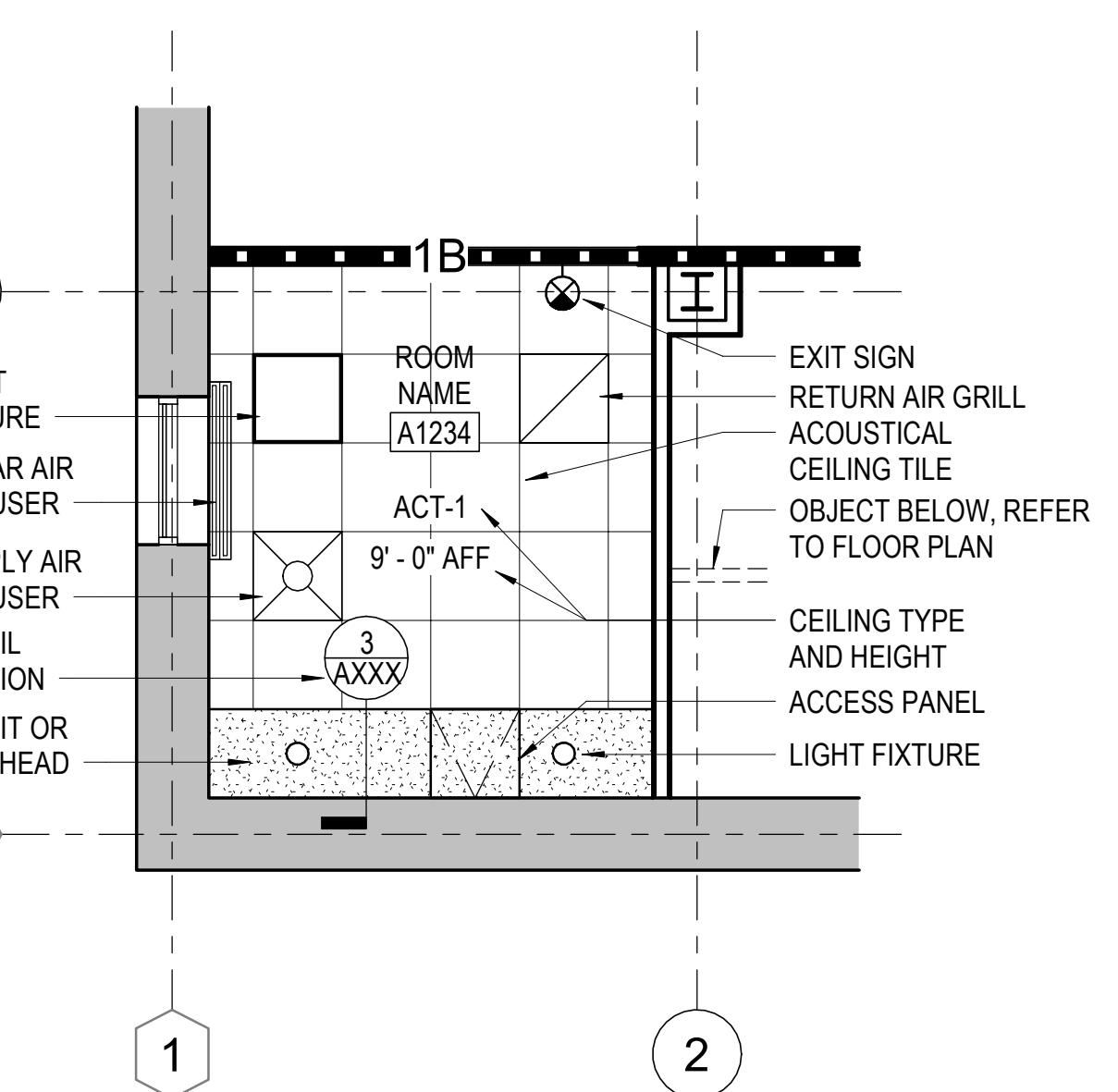




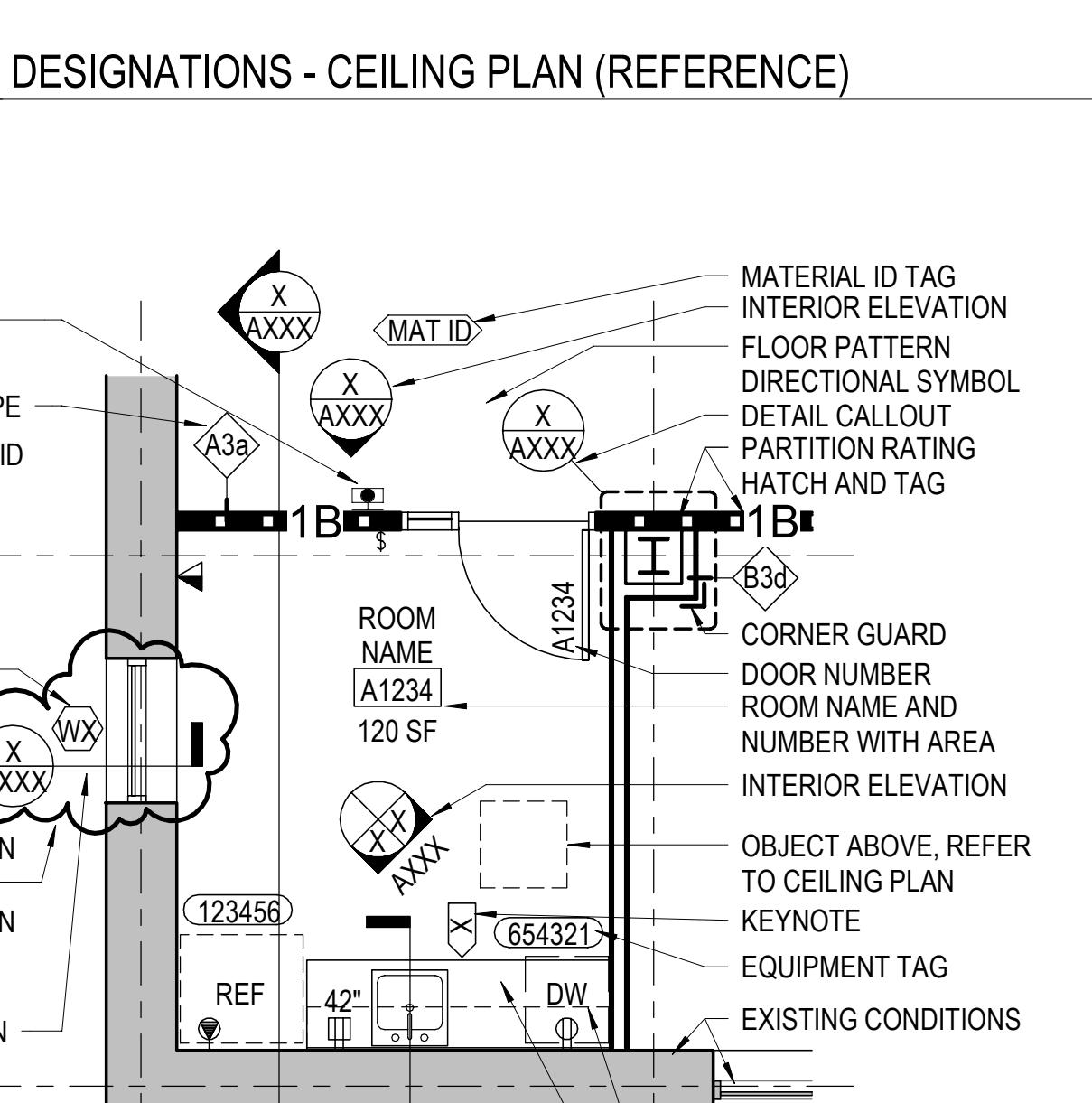
A/E	ARCHITECT/ENGINEER	FO	FACE OF	PC	PRECAST
ACOUS	ACOUSTICAL	FOC	FACE OF CONCRETE	PERF	PERFORATED
AD	ACCESS DOOR	FOW	FACE OF WALL	PERIM	PERIMETER
ADA	THE AMERICANS WITH DISABILITIES ACT	FP	FILLER PANEL	PGBD	PEG BOARD
ADD	ADDENDUM	FSTR	FASTEN(ED) (ER)	PL	PLATE
ADL	ADDITIONAL	FT	FOOT, FEET	PLAM	PLASTIC LAMINATE
ADJ	ADJUSTABLE	FTG	FOOTING	PLBG	PLUMBING
ADJC	ADJACENT	G	GAS	PLYWD	PLYWOOD
AED	DEFIBRILLATOR	G	GAUGE	PNEU	PNEUMATIC
AF	ACCESS FLOOR	GA	GALVANIZED	PNL	PANEL
AFF	ABOVE FINISH FLOOR	GALV	GRAB BAR	PR	PAIR
AL	ALUMINUM	GB	GENERAL CONTRACTOR	PRCST	PRECAST
ALT	ALTERNATE	GEN	GENERATOR	PREFAB	PREFABRICATED
AP	ACCESS PANEL	GL	GLASS	PTD	PAINTED
APPROX	APPROXIMATE(LY)	GR	GRADE	PTN	PARTITION
ARCH	ARCHITECT(URAL)	GWB	GYPSUM WALL BOARD	PTS	PNEUMATIC TUBE STATION
ASC	ABOVE SUSPENDED CEILING	H	HIGH, HEIGHT	QTY	QUANTITY
ASPH	ASPHALT	HB	HOSE BIB	R	RADIUS; RADII; RISER (STAIR)
B	BOARD	HD	HEAD	RCP	REFLECTED CEILING PLAN
BLDG	BUILDING	HDW	HARDWARE	RD	ROOF DRAIN
BLKG	BLOCKING	HGT	HEIGHT	REC	RECESSED
BM	BEAM	HM	HOLLOW METAL	RECP	RECEPTACLE
BO	BOTTOM OF	HMD	HOLLOW METAL DOOR	REF	REFERENCE)
BOT	BOTTOM	HO	HOLD OPEN	REFR	REFRIGERATOR
BRKT	BRACKET	HORIZ	HORIZONTAL	REINF	REINFORC(E) (ED) (ING) (EMENT)
BS	BACKSPLASH	HP	HIGH POINT	REQD	REQUIRED
BSMT	BASEMENT	HR	HANDRAIL(S)	RESIL	RESILIENT
BTW	BETWEEN	HT	HEIGHT	REV	REVISE(E) (ED) (ION)
BYND	BEYOND	HVAC	HEATING, VENTILATION, AIR CONDITIONING	RH	RIGHT HAND
C	CABINET	HYDR	HYDRAULIC	RHR	RIGHT HAND REVERSE
CEN	CENTER(ER) (TRAL)	I	INTERIOR	RM	ROOM
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	ID	INSIDE DIAMETER/DIMENSION	RO	ROUGH OPENING
CG	CORNER GUARD	IN	INCH(ES)	S	S
CIP	CAST IN PLACE	INCL	INCLUDE(D) (DED) (DING) (SIVE)	SCHED	SCHEDULE
CJ	CONTROL/CONSTRUCTION JOINT	INSUL	INSULAT(E) (ED)	SECT	SECTION
CL	CENTER LINE	INT	INTERIOR	SF	SQUARE FOOT/FEET
CLG	CEILING	INTR	INTERIOR	SHT	SHEET(ING)
CLR	CLEAR(ANCE)	J	JANITOR	SHTG	SHEATHING
CLR	CLEAR	JST	JOIST	SIM	SIMILAR
CMPST	COMPOSITE	JT	JOINT	SKLT	SKYLIGHT(S)
CMU	CONCRETE MASONRY UNIT	K	KOP	SPEC(S)	SPECIFICATION(S)
CNTFG	CENTRIFUGE	KPL	KICK PLATE	SPK	SPEAKER
CNTR	COUNTER	KS	KNEE SPACE	SS	STAINLESS STEEL
CO	CASED OPENING; CLEAN OUT	L	L	ST	STREET
COL	COLUMN	L	ANGLE (STRU) SHAPE)	STAG	STAGGER
CONC	CONCRETE	LAB	LABORATORY	STD	STANDARD
CONN	CONNECTION	LAV	LAVATORY	STL	STEEL
CONST	CONSTRUCTION	LB	POUND	STOR	STORAGE
CONT	CONTINU(E) (OUS) (ATION)	LENGTH	LENGTH	STRUC	STRUCTURE) (AL)
CONT	CONTINUOUS	LF	LINEAR FOOT	SUSP	SUSPENDED
CORR	CORRIDOR	LFEEET	LINEAL FOOT, FEET	SYM	SYMMETRY) (ICAL)
CR	CARD READER	LH	LEFT HAND	T	TREAD
CYL	CYLINDER	LHR	LEFT HAND REVERSE	T&G	TONGUE AND GROOVE
D	DEEP, DEPTH	LKR	LOCKER	T/D	TELEPHONE DATA OUTLET
DBL	DOUBLE	LNTL	LNTL	TEL	TELEPHONE
DED	DEDICATED	LT	LIGHT	TEMP	TEMPORARY
DEC	DEGREE	LTG	LIGHTING	THK	THICKNESS
DEMO	DEMO(LISH) (ITION)	LTWT	LIGHTWEIGHT	TME	TO MATCH EXISTING
DEPT	DEPARTMENT	LVL	LEVEL	TO	TOP OF
DET	DETAIL	LVR	LOUVER	TOB	TOP OF BEAM
DF	DRINKING FOUNTAIN	M	MACH	TOC	TOP OF CONCRETE
DIA	DIAMETER	MATL	MACHINE	TOS	TOP OF STEEL
DIM	DIMENSION	MAS	MAINT	TV	TELEVISION
DISP	DISPENSER	MATL	MAINTENANCE	TYP	TYPICAL
DN	DOWN	MECH	MECHANICAL(LY)	U	U
DO	DATA OUTLET	MEZ	MEMBRANE	UC	UNDER CABINET
DR	DOOR	MFR	METAL	UCL	UNDER CABINET LIGHTING
DWG(S)	DRAWING(S)	MH	MEZZ	UR	URINAL
E	E	MIN	MANUFACTURER	UV	ULTRAVIOLET
(E)	EXIST	MIR	MANHOLE	V	V
E	ELEVATOR	MISC	MEZZANINE	VAC	VACUUM
EA	EACH	MO	MANUFACTURER	VAR	VARY( IES) (IATION)
EIFS	EXTERIOR INSULATION FINISH SYSTEM	MOB	MASONRY OPENING	VCT	VINYL COMPOSITION TILE
EJ	EXPANSION JOINT	MOUNT(ED)	MASONRY	VEN	VENeer
EL	ELEVATION	MTL	MEZZANINE	VERT	VERTICAL
ELEC	ELECTRIC(AL)	MUL	METAL	VERT	VERTICAL
ELEV	ELEVATOR	MVBL	MULLION	VEST	VESTIBULE
EMER	EMERGENCY	N	MVBL	VIF	VERIFY IN FIELD
EMI	ELECTROMAGNETIC INTERFERENCE	N	W	W	WIDE, WIDTH
ENCL	ENCLOSURE	N/A	OXYGEN	W/	WITH
EO	ELECTRICAL OUTLET	O2	OXYGEN	W/O	WITHOUT
EOS	EDGE OF SLAB	OC	OC	WC	WATER CLOSET
EP	ELECTRICAL PANEL	OD	ON CENTER	WD	WOOD
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	OF	OUTSIDE DIAMETER/DIMENSION	WP	WATERPROOFING
EPRF	EXPLOSION PROOF	OFF	OUTSIDE FACE	WSCT	WANSCT
EQ	EQUAL	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED	WT	WEIGHT
EQUIP	EQUIPMENT	OFFICE	OWNER FURNISHED, OWNER INSTALLED	XP(D)	EXPOSE(D)
ETR	EXISTING TO REMAIN	OFOI	OWNER FURNISHED, VENDOR INSTALLED		
EXCL	EXCLUD(E) (ED) (ING)	OFVI	OVERHEAD		
EXG	EXISTING	OH	OPPOSITE HAND		
EXH	EXHAUST	OHSC	OVERHEAD SERVICE CARRIER		
EXP	EXPAND(SION)	OPG	OPENING		
EXT	EXTERIOR	OPP	OPPOSITE		
EXTR	EXTERIOR	OPT	OPTION(AL)		
F	FACE TO FACE	P	P		
FA	FIRE ALARM	PA	POWER ASSIST		
FACP	FIRE ALARM PANEL	PAR	PARALLEL		
FAS	FASTEN(ED) (ER)	PART	PARTICLE, PARTIAL		
FB	FLAT BAR	PB	PANIC BAR		
FCO	FLOOR CLEAN OUT				
FD	FLOOR DRAIN				
FDC	FIRE DEPARTMENT CONNECTION				
FDN	FOUNDATION				
FE	FIRE EXTINGUISHER				
FEC	FIRE EXTINGUISHER CABINET				
FF	FLOOR FINISH				
FHC	FIRE HOSE CABINET				
FHP	FULL HEIGHT PARTITION				
FIN	FINISH				
FL	FLASHING				
FLR	FLOOR(ING)				

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10292025 12417 PM



OTHER CEILING PLAN SYMBOL DESIGNATIONS	
○ RECESSED DOWNLIGHT	TV CONNECTION (SEE ELECTRICAL DRAWINGS)
○ RECESSED WALL WASHER	HORN (SEE ELECTRICAL DRAWINGS)
○ PENDANT MOUNTED LIGHT FIXTURE	TRACK LIGHT FIXTURE (SEE ELECTRICAL DRAWINGS)
○ CEILING-MOUNTED EXIT LIGHT (SEE ELECTRICAL DRAWINGS)	EQUIPMENT MOUNTING TRACKS
○ WALL-MOUNTED EXIT LIGHT (SEE ELECTRICAL DRAWINGS)	SPRINKLER HEAD
(S) SMOKE DETECTOR (SEE ELECTRICAL DRAWINGS)	SPEAKER (SEE ELECTRICAL DRAWINGS)



OTHER FLOOR PLAN SYMBOL DESIGNATIONS	
△ EXISTING DOOR TO REMAIN	△ EXISTING DOOR TO DEMO
■ EXISTING WALL TO REMAIN	■ EXISTING WALL TO DEMO
— NEW WALL	— TEMPORARY BARRIER
■■■ NEW RATED WALL	



**ARROWOOD KITCHEN ALTERATIONS - REBID  
EQUIPMENT AND FIXTURE SCHEDULE**

EQUIPMENT AND FIXTURE SCHEDULE						
EQUIP-ID	QUANT	ITEM	MAKE	MODEL	DIMENSIONS (W/D/H)	ELECTRICAL (P/V/A/W) per UNIT
KITCHEN EQUIPMENT & FIXTURES						
EQ-01	2	Gas Range (60 in w/ griddle, 6 burners, two ovens)	Vulcan	SX60F-6B24G	60" x 34" x 58"	N/A
EQ-05	1	Ice Machine (Flake Ice)	Hoshizaki	F0300BAJ	36" x 24.25" x 40"	1P / 115V / 7.8A
EQ-05.5	1	Water Filter for Ice Machine	3M Cuno	ICE125-S	6" x -- x 17"	N/A
EQ-06	2	Dishwasher, ADA Undercounter (low temp)	Hobart	EUL-1	23" x 24" x 32.5"	1P / 120V / 15.5A
EQ-08	1	Air Curtain (at Exterior Door)	Berner	IDC12-1036A-1	36" x 18" x 15"	1P / 120V / 6.5A
EQ-9	1	Counter, S/S, 4" backsplash (Ice Machine, right of 3-basin sink)	Regency	600WTS30X72B	72" x 24" x 34"	N/A
EQ-10	3	Tables, S/S (Prep Area)	Regency	600TSS2460S	60" x 24" x 34"	N/A
EQ-18	1	Counter, S/S, 4" backsplash, open base (Left of 3-basin sink)	Regency	600WTS24120B	120" x 24" x 34"	N/A
EQ-26 / GT-1	1	Grease Separator	Big Dipper	W-350-IS	28.13" x 24.30" x 21.83"	1P / 115V / 12.2V
EQ-28	1	Faucet	T&S	B-0178	-- x -- x 16.3125"	N/A
EQ-31	4	Dunnage Rack, stationary	New Age	2029	24" x 18" x 12"	N/A
EWH-1	1	Water Heater, POU	Krowne	HS-MTH25	11" x 11" x 16"	N/A
P-2	1	Sink, ADA	Kohler Sterling	24765-NA	32" x 18" x 6"	N/A
SUBTOTALS:						
DINING ROOM EQUIPMENT & FIXTURES						
CAB-1	6	Cabinets	-	-	SEE ELEVATION	-
CT-1	2	Tile Splash	DALTILE	ARCTIC WHITE	3" X 6"	-
EQ-32	1	Chilled Water Dispenser	Bunn	DWSLV Refresh	10" x 26.5" x 27"	1P / 115V / 9.4A / 1.25H
EQ-32.5	1	Water Filter for Chilled Water Dispenser	3M Cuno	ICE125-S	6" x -- x 17"	N/A
FRP-1	2	FRP	MATCH (E)	MATCH (E)	4' X 8'	-
P-3	1	Sink	AMRN STD	DANVILLE SINGLE	-	-
P-4	1	Faucet	AMRN STD	4932.41	-	-
SSF-1	2	Countertop	DALTILE	QTZ NOUGAT	-	-

GENERAL: CONTRACTOR TO INSTALL ALL ITEMS ACCORDING TO MANUFACTURERS INSTRUCTIONS INCLUDING ALL NECESSARY UTILITIES

## MATERIAL IDENTIFICATION LIST

CTF-1	QUARRY TILE TO MATCH EXISTING; 6" X 6"; COLOR: TERRACOTTA, EPOXY GROUT
FRP-1	8' HIGH PANEL TO MATCH (E)
CT-1	DALTILE ARCTIC WHITE 3"X6" TILE, INSTALL RUNNING BOND
PT-1	PAINT
SSF-1	SOLID SURFACE TO MATCH (E) - DALTILE QUARTZ 660 NOUGAT

# ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

I HEREBY CERTIFY THAT THIS PLAN,  
SPECIFICATION OR REPORT WAS PREPARED BY  
ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM A DULY LICENSED ARCHITECT UNDER  
THE LAWS OF THE STATE OF CALIFORNIA

NAME: BETH YOUNG  
DATE: 01.16.2025  
REGISTRATION NUMBER: Q-202624

HGA NO: 5378-001-00

## SCHEDULES

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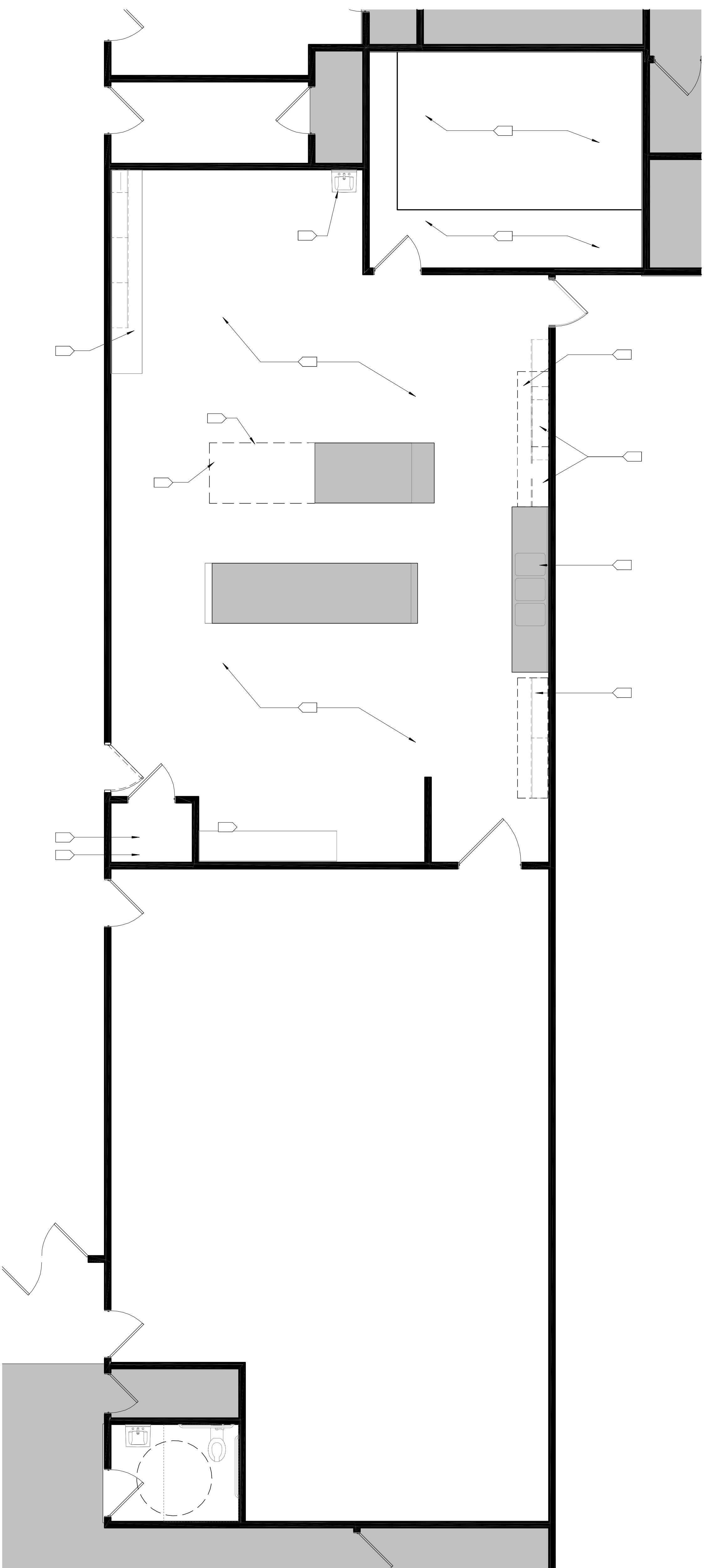
DATE: JANUARY 16, 2025

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A011

## GENERAL NOTES - DEMO PLAN

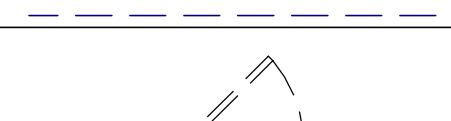
1. REPAIR, CLEAN, SEAL ALL FLOOR TILES AND TILE WALL BASE. MAINTAIN 3/8" RADIUS COVE BASE.
2. EXISTING FRP WALL PANELING TO REMAIN IN KITCHEN UP TO 8' ABOVE FINISH FLOOR MINIMUM.
3. REMOVE MISCELLANEOUS INACTIVE WALL MOUNTED EQUIPMENT, HANGARS, CONDUIT, ETC. TOUCH UP PAINT AS NEEDED.
4. NO RAW WOOD IN CABINERY TO REMAIN; PATCH AND TOUCH UP PAINT AS NEEDED.
5. ADJUST CABINET DOORS/DRAWERS THROUGHOUT KITCHEN, TYPICAL.
6. ADJUST ALL (7) KITCHEN AND DINING ROOM DOORS TO ENSURE PROPER OPERATION. CHANGE DOOR CLOSER AND REKEY. COORDINATE WITH PROJECT MANAGER, TYPICAL.



KEYNOTES	
#	DESCRIPTION
2	PREP/REMOVE (E) FLOOR COVERING TO ENSURE EXCEPTIONAL BOND. (E) WALK-IN COOLER TO REMAIN. PROVIDE QUARRY TILE, EPOXY GROUT, TO FLOOR IN AND AROUND COOLER. PROVIDE 4" HIGH TILE BASE WITH INTEGRAL 3/8" RADIUS COVE (AT INSIDE AND OUTSIDE OF COOLER). INSTALL (N) S/S SHELVES FOR FOOD STORAGE. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION.
8	SPLIT COUNTERTOP AT SEAM, DEMOLISH SECTION AS SHOWN. REPLACE WITH NEW 34" HIGH ACCESSIBLE COUNTER TOP WITH KNEE SPACE. PROVIDE NEW SINK, FAUCET, INSTAHOT WATER HEATER, ADD GFCI DUPLEX OUTLET UNDER SINK AND ONE EITHER END OF COUNTER. REFER TO PLUMBING DRAWINGS, HANDSINK TO DISCHARGE DIRECTLY TO SEWER, BYPASSING GREASE TRAP. REFER TO ELEVATION 3 ON A640.
9	(E) 3-COMPARTMENT SINK TO REMAIN, ADD (N) S/S BACKSPLASH, SEE ELEVATION 2/A640, WELD EDGE TO ADJACENT S/S TABLE. REFER TO PLUMBING DRAWINGS, 3-COMPARTMENT SINK TO DISCHARGE THROUGH EXISTING GREASE TRAP.
14	DEMO (E) LOWER CABINETS. PATCH & PAINT WALL AND PATCH/GROUT FLOOR/COVER WITH QUARRY TILE. SALVAGE COUNTERTOP.
19	(E) TRAY MACHINE TO REMAIN; CHANGE OUT WASH WAND AND INSTALL WATER HAMMER ARRESTOR. REFER TO PLUMBING DRAWINGS PRE-RINSE SINK TO DISCHARGE THROUGH NEW GREASE TRAP; MAIN DISHWASHER TO BYPASS NEW GREASE TRAP AND DISCHARGE DIRECTLY TO SEWER.
29	(E) MOP SINK TO REMAIN. CONFIRM SINK HAS BACKFLOW PROTECTION. REFER TO PLUMBING DRAWINGS, MOP SINK TO DISCHARGE DIRECTLY TO SEWER. PROVIDE WALL MOUNTED HOOKS FOR MOP AND MOP BUCKET AND SHELF FOR CLEANING SUPPLIES.
30	CLOSET TO MAINTAIN (E) QUARRY TILE, GROUT. 4" INTEGRAL TILE BASE WITH 3/8" COVE RADIUS. PATCH HOLES IN WALLS. PROVIDE 8' FRP PANELING ABOVE BASE AROUND ALL FOUR WALLS IN CLOSET.
34	(E) COUNTER AND CABINET TO REMAIN, REPLACE MISSING TILE BASE, THIS END ONLY.
35	REMOVE (E) POT RACK AND SUPPORT, PATCH AND REPAIR CEILING TO MATCH ADJACENT FINISH..
41	ACCESSIBLE HANDWASHING SINK TO REMAIN. SEE DETAIL 3/A600. REFER TO PLUMBING DRAWINGS, HANDWASHING SINK TO DISCHARGE DIRECTLY TO SEWER.
57	REPAIR, CLEAN, AND SEAL ALL QUARRY TILE AT FLOOR AND WALL BASE. MAINTAIN 3/8" RADIUS COVE BASE.
59	DEMO (E) WALL CABINETS. PATCH & PAINT WALL.

## **DEMOLITION PLAN LEGEND**

SEE A010 FOR ALL GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS

(E) CONSTRUCTION TO REMAIN	[REDACTED]
(E) CONSTRUCTION TO BE REMOVED	- - - - - - - - - - - - - - -
TEMPORARY BARRIER	- - - - - - - - - - - - - - -
DOOR TO BE DEMOLISHED	

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

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I AM A DULY LICENSED ARCHITECT UNDER  
THE LAWS OF THE STATE OF CALIFORNIA

AME: BETH YOUNG  
ATE: 01.16.2025  
EGISTRATION NUMBER:C-30064

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NO DESCRIPTION DATE

## ISSUANCE HISTORY - THIS SHEET

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HGA NO: 5378-001-00

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## DEMOLITION

# DEMOLITION PLAN LEVEL 21

# PLAN - LEVEL 01

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DATE. JANUARY 16, 2025

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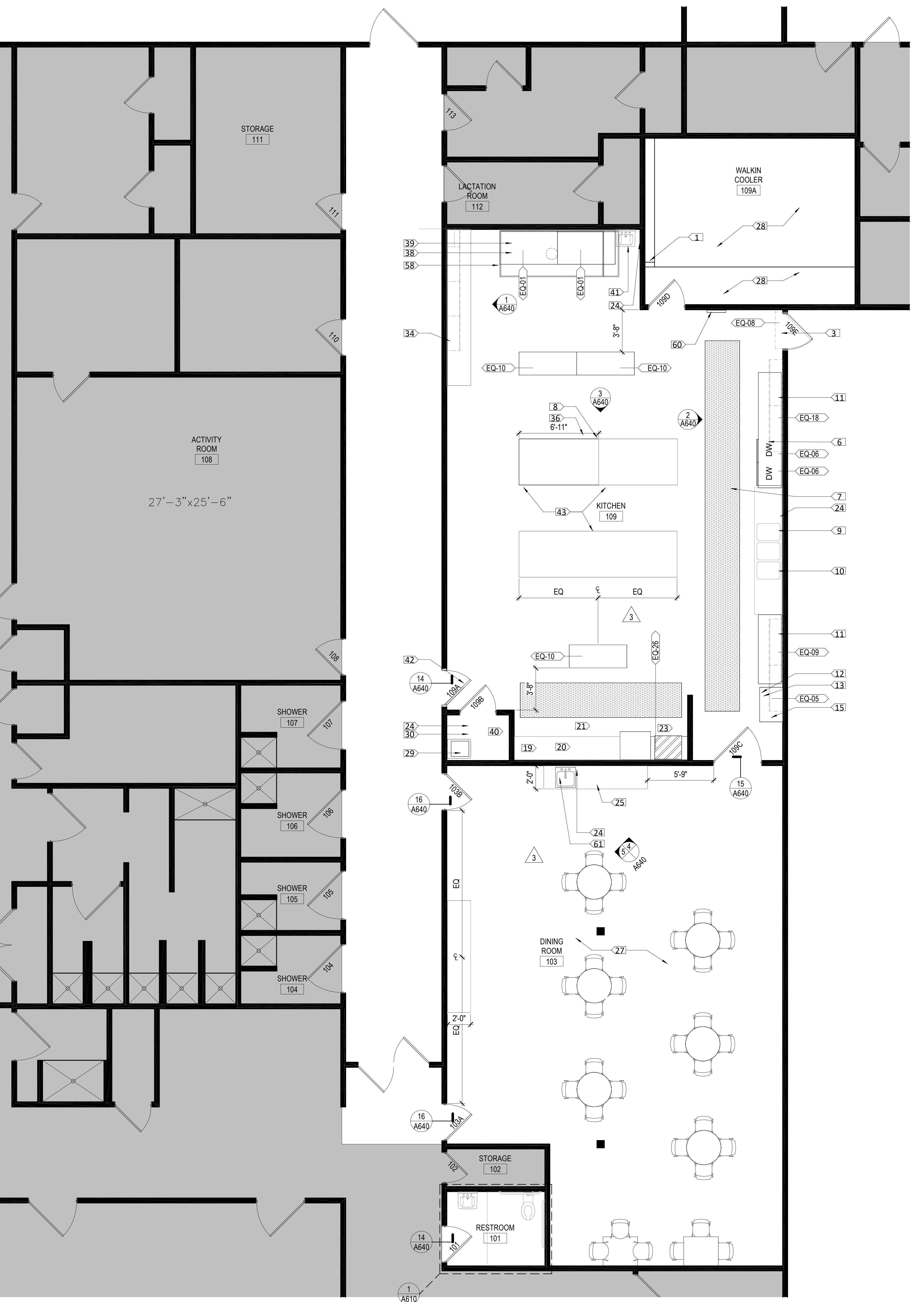
## KITCHEN IMPROVEMENTS

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A101

# AT&T

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## GENERAL NOTES

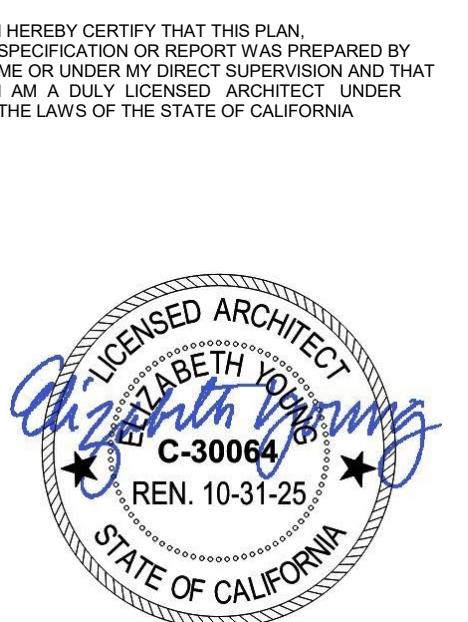
1. REPAIR, CLEAN, SEAL ALL FLOOR TILES AND TILE WALL BASE. MAINTAIN 3/8" RADIUS COVE BASE.
2. EXISTING FRP WALL PANELING TO REMAIN IN KITCHEN UP TO 8' ABOVE FINISH FLOOR MINIMUM.
3. SEAL GAPS AND HOLES AROUND KITCHEN. TOUCH UP PAINT AS NEEDED.
4. REMOVE MISCELLANEOUS INACTIVE WALL MOUNTED EQUIPMENT, HANGARS, CONDUIT, ETC. TOUCH UP PAINT AS NEEDED.
5. PROVIDE ONE CLASS K FIRE EXTINGUISHER.
6. PROVIDE ONE CLASS A FIRE EXTINGUISHER AT KITCHEN AND ONE AT DINING ROOM.
7. NO RAW WOOD IN CABINETRY TO REMAIN. PATCH AND TOUCH UP PAINT AS NEEDED.
8. REPLACE TWO EXISTING SMOKE/HEAT DETECTORS WITH NEW COMPATIBLE UNITS.
9. INSTALL (2) MED KITS AND (2) EYE WASH WALL STATIONS.
10. ADJUST CABINET DOORS/DRAWERS THROUGHOUT KITCHEN, TYPICAL.
11. ADJUST ALL KITCHEN AND DINING ROOM DOORS TO ENSURE PROPER OPERATION. CHANGE DOOR CLOSER AND REKEY, COORDINATE WITH PROJECT MANAGER, TYPICAL.
12. GC TO CONFIRM ALL DOOR HANDLES AND LATCHES ARE INSTALLED BETWEEN 24" AND 48" ABOVE THE FINISHED FLOOR. IN ADDITION, OPERATION MUST OCCUR WITHOUT TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. DOOR LEVER TO RETURN TO WITHIN 1/2" OF THE FACE OF THE DOOR TO PREVENT CLOTHING, ETC FROM CATCHING.
13. ALL NEW SWITCH OR RECEPTACLE COVERS/PLATES TO BE STAINLESS STEEL; REPLACE (E) TO REMAIN RECEPENTACLES COVERED WITH (N) STAINLESS STEEL COVERPLATE.
14. ANY SINK, FIXTURE, OR RELATED EQUIPMENT THAT IS USED FOR FOOD PREPARATION, COOKING, AND CLEAN-UP OR HAS THE POTENTIAL TO DISCHARGE FATS, OILS, AND GREASE SHALL BE CONNECTED TO A GREASE REMOVAL DEVICE. TYPICAL PLUMBING FIXTURES INCLUDE BUT ARE NOT LIMITED TO 3-COMPARTMENT SINKS, POTS AND PAN SINKS AND PRE-RINSE SINK STATIONS.
15. THE DISHWASHER, MOP SINK, AND/OR HAND WASH SINKS SHALL BE PLUMBED DIRECTLY TO THE SANITARY SEWER AND BYPASS THE GREASE TRAP.
16. THIS PROJECT REQUIRES A SITE INSPECTION AND APPROVAL BY THE CITY OF SANTA ROSA ENVIRONMENTAL COMPLIANCE SECTION UPON COMPLETION AND BEFORE BUILDING OCCUPANCY CAN BE APPROVED FOR OCCUPANCY. GC TO CONTACT THE ENVIRONMENTAL SERVICES SECTION AT 707-543-3369 AT LEAST 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION.

## ABBREVIATION KEY:

(E)	EXISTING
(N)	NEW
S/S	STAINLESS STEEL
TRASH, RECYCLING, COMPOST WASTE CONTAINERS LOCATION	

KEYNOTES		
#	DESCRIPTION	
1	INSTALL (N) 4" HIGH BY 4" MIN. WIDE PRESSURE TREATED CURB. INSTALL FULL HEIGHT METAL PANELING ABOVE CURB TO BLOCK ACCESS BETWEEN WALK-IN COOLER AND WALL. EPOXY SEAL METAL EDGES.	
3	INSTALL MEP FOR (N) AIR CURTAIN ABOVE DOOR, VERIFY WITH MECHANICAL DRAWINGS. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
5	INSTALL MEP FOR (N) AIRPORT DRIP COFFEE MAKER (FOR CARAFES) & WATER FILTER	
6	INSTALL MEP FOR (N) ADA UNDERCOUNTER DISHWASHERS; NEW 34" HIGH COUNTERTOP. REFER TO PLUMBING DRAWINGS. DISHWASHER TO DISCHARGE DIRECTLY TO SEWER, BYPASSING GREASE TRAP. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
7	(N) NON-SLIP MAT, LESS THAN 1/4" THICKNESS, TYP. @ FLOOR HATCH	
8	SPLIT COUNTERTOP AT SEAM, DEMOLISH SECTION AS SHOWN. REPLACE WITH NEW 34" HIGH ACCESSIBLE COUNTER TOP AT KNEE SPACE. PROVIDE NEW SINK, FAUCET, INSTAHOT WATER HEATER, ADD GFCI DUPLEX OUTLET UNDER SINK AND ONE EITHER END OF COUNTER. REFER TO PLUMBING DRAWINGS, HANDSINK TO DISCHARGE DIRECTLY TO SEWER, BYPASSING GREASE TRAP. REFER TO ELEVATION 3 ON A640.	
9	3-COMPARTMENT SINK TO REMAIN. ADD (N) S/S BACKSPASH. SEE ELEVATION 2/A640. WELD EDGE TO ADJACENT S/S TABLE. REFER TO PLUMBING DRAWINGS. 3-COMPARTMENT SINK TO DISCHARGE THROUGH EXISTING GREASE TRAP.	
10	ADD (N) FRP PANELS UP TO 8' MINIMUM ABOVE COVE BASE AROUND SINK (OTHER THAN WINDOW)	
11	INSTALL (N) S/S TABLE. 34" HIGH. WELD SEAM TO (E) 3-COMPARTMENT SINK. SEE EQUIPMENT LIST	
12	INSTALL MEP FOR (N) CONTRACTOR SUPPLIED CLEAN OUT AT DRAIN	
13	INSTALL MEP FOR (N) CONTRACTOR SUPPLIED FLOOR SINK	
15	INSTALL MEP FOR (N) FREE STANDING ICE MACHINE & WATER FILTER. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
16	INSTALL RUBBERMID SLIM-JIM WASTE BINS FOR TRASH, RECYCLING, COMPOST. MULTIPLE LOCATIONS REFERENCE KEY. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
18	INSTALL (N) S/S TABLE. 34" HIGH. SEE EQUIPMENT LIST	
19	(E) TRAY MACHINE TO REMAIN. CHANGE OUT WASH WAND AND INSTALL WATER HAMMER ARRESTOR. REFER TO PLUMBING DRAWINGS. PRE-RINSE SINK TO DISCHARGE THROUGH NEW GREASE TRAP. MAIN DISHWASHER TO BYPASS NEW GREASE TRAP AND DISCHARGE DIRECTLY TO SEWER.	
20	EPOXY SEAL S/S EDGE TO COUNTERTOP. TYPICAL THROUGHOUT KITCHEN AND DINING ROOM	
21	CONTACT SUPPLIER TO FIT OUT KITCHEN WITH CLEANING SOLUTIONS FOR TRAY MACHINE, HAND SINK, MOP SINK, ETC.	
23	CONTRACTOR TO REPLACE SWAMP COOLER, SEE MECHANICAL DRAWINGS.	
24	PROVIDE NEW WALL PAPER TOWEL AND HAND SOAP DISPENSER, OPERABLE PARTS TO BE 48" MAX. AFF.	
25	INSTALL MEP FOR (N) CABINETS WITH COUNTERTOP (SALVAGED FROM KITCHEN), LOCKING DOORS. CHILLED WATER DISPENSER. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
26	SIS SHELVING FOR STORAGE. CONTRACTOR TO FIX TO WALL. SEE EQUIPMENT LIST	
27	(E) LVT FLOORING IN DINING ROOM TO REMAIN.	
28	PROVIDE QUARRY TILE, EPOXY GROUT, TO FLOOR IN AND AROUND COOLER. PROVIDE 4" HIGH TILE BASE WITH INTEGRAL 3/8" RADIUS COVE (AT INSIDE AND OUTSIDE OF COOLER). INSTALL (N) S/S SHELVES FOR FOOD STORAGE. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
29	(E) MOP SINK TO REMAIN. CONFIRM SINK HAS BACKFLOW PROTECTION. REFER TO PLUMBING DRAWINGS. MOP SINK TO DISCHARGE DIRECTLY TO SEWER. PROVIDE WALL MOUNTED HOOKS FOR MOP AND MOP BUCKET AND SHELF FOR CLEANING SUPPLIES.	
30	CLOSET TO MAINTAIN (E) QUARRY TILE, GROUT. 4" INTEGRAL TILE BASE WITH 3/8" COVE RADIUS. PATCH HOLES IN WALLS. PROVIDE 8' FRP PANELING ABOVE BASE AROUND ALL FOUR WALLS IN CLOSET.	
31	INSTALL (N) S/S SHELVING FOR STORAGE. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
32	INSTALL MEP FOR (N) FULL SIZE INSULATED S/S HEATED HOLDING CABINET ON CASTERS. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION.	
33	INSTALL MEP FOR FUTURE MID-SIZE MIXER. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION.	
34	(E) COUNTER AND CABINET TO REMAIN. REPLACE MISSING TILE BASE, THIS END ONLY.	
36	PATCH CONCRETE SUB-FLOOR: INSTALL NEW UNDERLAYMENT AND QUARRY TILE WITH 4" HIGH 3/8" RADIUS COVE BASE UNDER SINK CABINET.	
37	PROVIDE NEW WALL PAPER TOWEL AND HAND SOAP DISPENSER, COUNTER TOP MODEL, OPERABLE PARTS TO BE WITHIN 48" MAX. REACH AFF.	
38	ADJUST DISPERAL ANSUL HEADS ACCORDINGLY. REFER TO MECHANICAL DRAWINGS	
39	INSTALL MEP FOR (N) APPLIANCES. SET APPLIANCES AND INSTALL FLOOR LOCKS TO ALIGN WITH ANSUL HEAD. SEE EQUIPMENT LIST FOR QTY/DESCRIPTION	
40	PATCH AND REPAIR WALL AFTER REMOVAL OF OLD ELECTRICAL PANEL, MATCH SURFACE TEXTURE AND PAINT.	
41	ACCESSIBLE HANDWASHING SINK TO REMAIN. SEE DETAIL 3/A600. REFER TO PLUMBING DRAWINGS, HANDWASHING SINK TO DISCHARGE DIRECTLY TO SEWER.	
42	EXISTING DOOR TO BE REMOVED, AND MIRRORED IN (E) FRAME TO PROVIDE ACCESSIBLE DOOR APPROACH CLEARANCE.	
43	EXISTING 4" HIGH, 3/8" COVE RADIUS QUARRY TILE TO REMAIN. PATCH/REPAIR FOR CONTINUOUS SURFACE. SEE DETAIL 6/A640 FOR ADDITIONAL INFORMATION.	
46	LISTENING DEVICES AVAILABLE FOR RESIDENT USE TO BE STORED IN THIS ROOM. SEE DETAIL 9/A601.	
55	PROVIDE (N) CLEANABLE VCT FLOORING: ARMSTRONG FLOORING STANDARD EXCELON VINYL COMPOSITION TILE, 12"X12", SOFT COOL GRAY 51860.	
58	(E) TYPE 1 HOOD TO REMAIN	
60	GENERAL CONTRACTOR TO INSTALL SHARPS CABINET AT EXISTING WALL	
61	NEW HANDSINK. REFER TO PLUMBING DRAWINGS. HANDSINK TO BYPASS GREASE TRAP AND DISCHARGE DIRECTLY TO SEWER.	

## ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407NAME: BETH YOUNG  
DATE: 01-16-2025  
REGISTRATION NUMBER: C-30064

NO.	DESCRIPTION	DATE
1	PLAN CHECK	01/16/2025
2	EH PLAN CHECK	03/24/2025
3	EH PLAN REVIEW	05/14/2025
4	ISSUE FOR BID	10/29/2025

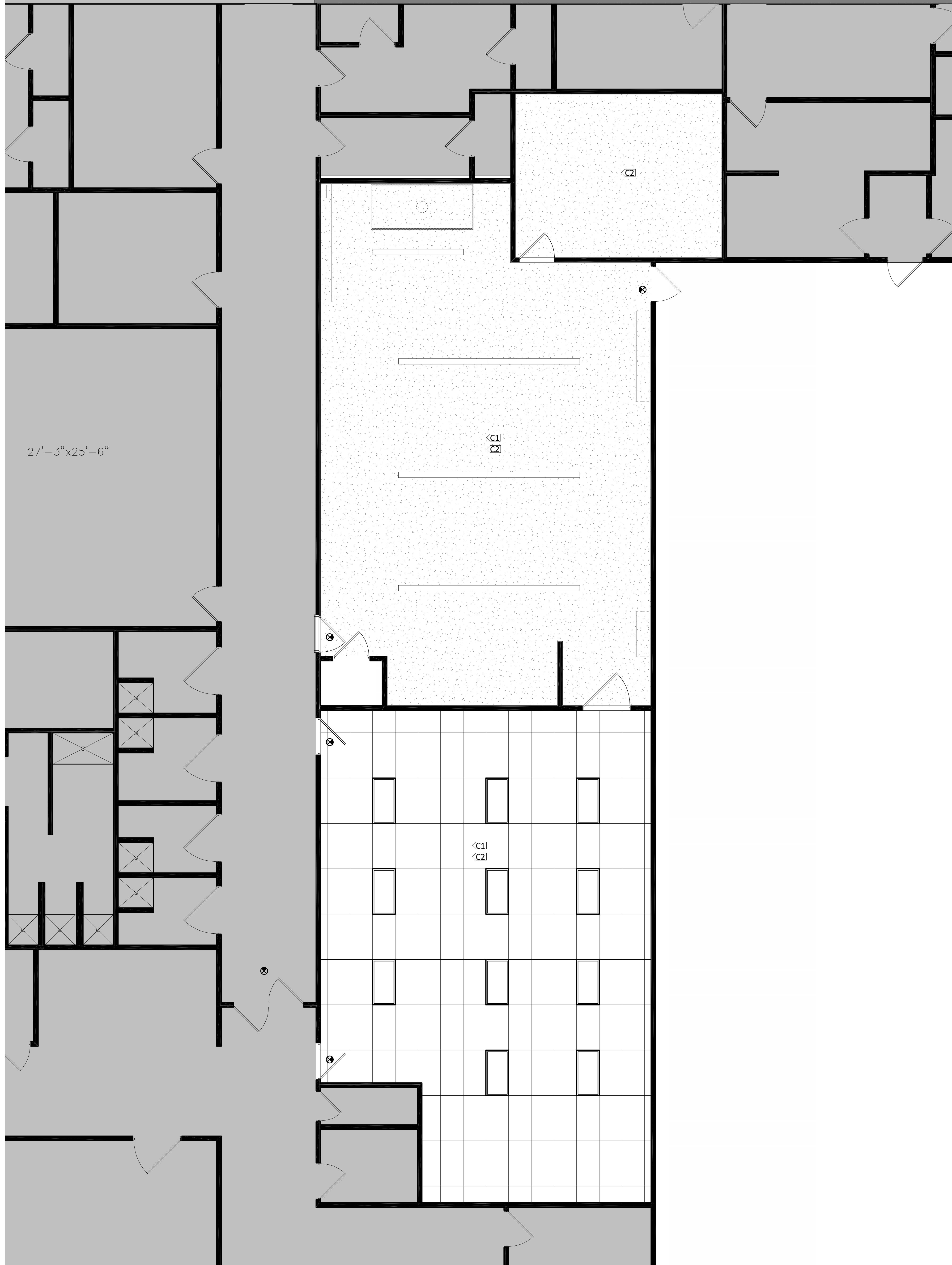
ISSUANCE HISTORY - THIS SHEET  
HGA NO: 5378-001-00

FLOOR PLAN - LEVEL 01

DATE: JANUARY 16, 2025

KITCHEN IMPROVEMENTS

A201



1 REFLECTED CEILING PLAN  
1/4" = 1'-0"

GENERAL NOTES - CEILING PLAN

- A. CEILING HEIGHTS ARE DIMENSIONED FROM FLOOR DATUM ELEVATION TO FINISHED CEILING, UNLESS OTHERWISE NOTED.
- B. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION RELATIVE TO DEVICE AND FIXTURE LOCATIONS.
- C. COORDINATE INTEGRATION OF CEILING SYSTEMS WORK INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL, SPRINKLER AND FIRE PROTECTION, TELECOMMUNICATIONS, AND STRUCTURAL SYSTEMS, TO MAINTAIN CEILING HEIGHT INDICATED. NOTIFY ARCHITECT OF CONFLICTS PRIOR TO PROCEEDING WITH THE WORK.
- D. LOCATE COMPONENTS WITHIN CEILING PLENUM TO MAXIMIZE CLEAR AREA FOR INSTALLATION OF LIGHT FIXTURES AND ACCOMMODATE FIXTURE LAYOUT AS INDICATED.
- E. WHERE DOORS WITH HOLD-OPEN DEVICES ARE REQUIRED, PROVIDE SMOKE DETECTOR WITHIN 5 FEET OF OPENING ON BOTH SIDES OF DOORWAY. VERIFY LOCATION OF SMOKE DETECTORS WITH ARCHITECT PRIOR TO INSTALLATION.
- F. PROVIDE ACCESS PANELS AT GYPSUM BOARD CEILINGS AND WHERE ACCESS IS REQUIRED FOR ITEMS OF MECHANICAL, PLUMBING AND ELECTRICAL WORK LOCATED BEHIND OR ABOVE FINISHED WALLS OR CEILINGS WHICH REQUIRE ACCESS, WHETHER OR NOT SUCH PANELS ARE INDICATED ON DRAWINGS. VERIFY LOCATION OF ACCESS PANELS WITH ARCHITECT PRIOR TO INSTALLATION.
- G. REVIEW LOCATION OF LIFE-SAFETY DEVICES AND/OR EQUIPMENT NOT SHOWN ON THE DRAWINGS WITH ARCHITECT PRIOR TO INSTALLATION.
- H. ACOUSTICAL CEILING GRID AND LIGHTING SHALL BE CENTERED IN ROOM(S) UNLESS NOTED OTHERWISE.
- I. CENTER RECESSED LIGHTS, ELECTRICAL, MECHANICAL DEVICES AND SPRINKLER HEADS WHEN SHOWN IN CEILING TILES. WHERE RECESSED LIGHTS ARE SHOWN OFF-CENTER IN 2X4 SCORED CEILING TILE, CENTER THE FIXTURE WITHIN THE 2X2 PORTION OF THE TILE.
- J. CEILING FINISHES ADJACENT TO OR WITHIN THE LIMITS OF CONSTRUCTION DISTURBED OR DAMAGED BY CONSTRUCTION SHALL BE PATCHED TO MATCH EXISTING ADJACENT CEILING FINISH.

RCP LEGEND

- 2x4 ACT; SEE PLAN FOR CEILING HEIGHTS
- HATCHED AREA INDICATES AREA OF EXISTING CEILING TO REMAIN. CLEAN EXISTING GRID, REGISTERS AND OTHER DEVICES AND REPAIR OR REPLACE DAMAGED COMPONENTS TO MATCH EXISTING.
- GYPSUM BOARD CEILING; SEE PLAN FOR CEILING HEIGHTS
- 2X4 LIGHT FIXTURE
- 1X4 LIGHT FIXTURE
- RECESSED DOWN LIGHT FIXTURE
- LINEAR LIGHT FIXTURE
- EXIT SIGN

ARROWOOD  
KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

I HEREBY CERTIFY THAT THIS PLAN  
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ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM RESPONSIBLE FOR ITS PREPARATION AND USE  
THE LAWS OF THE STATE OF CALIFORNIA



NAME: BETH YOUNG  
DATE: 01/16/2025  
REGISTRATION NUMBER: C-30064

NO.	DESCRIPTION	DATE
1	PLAN CHECK	01/16/2025

ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

REFLECTED  
CEILING PLAN -  
LEVEL 01

DATE: JANUARY 16, 2025

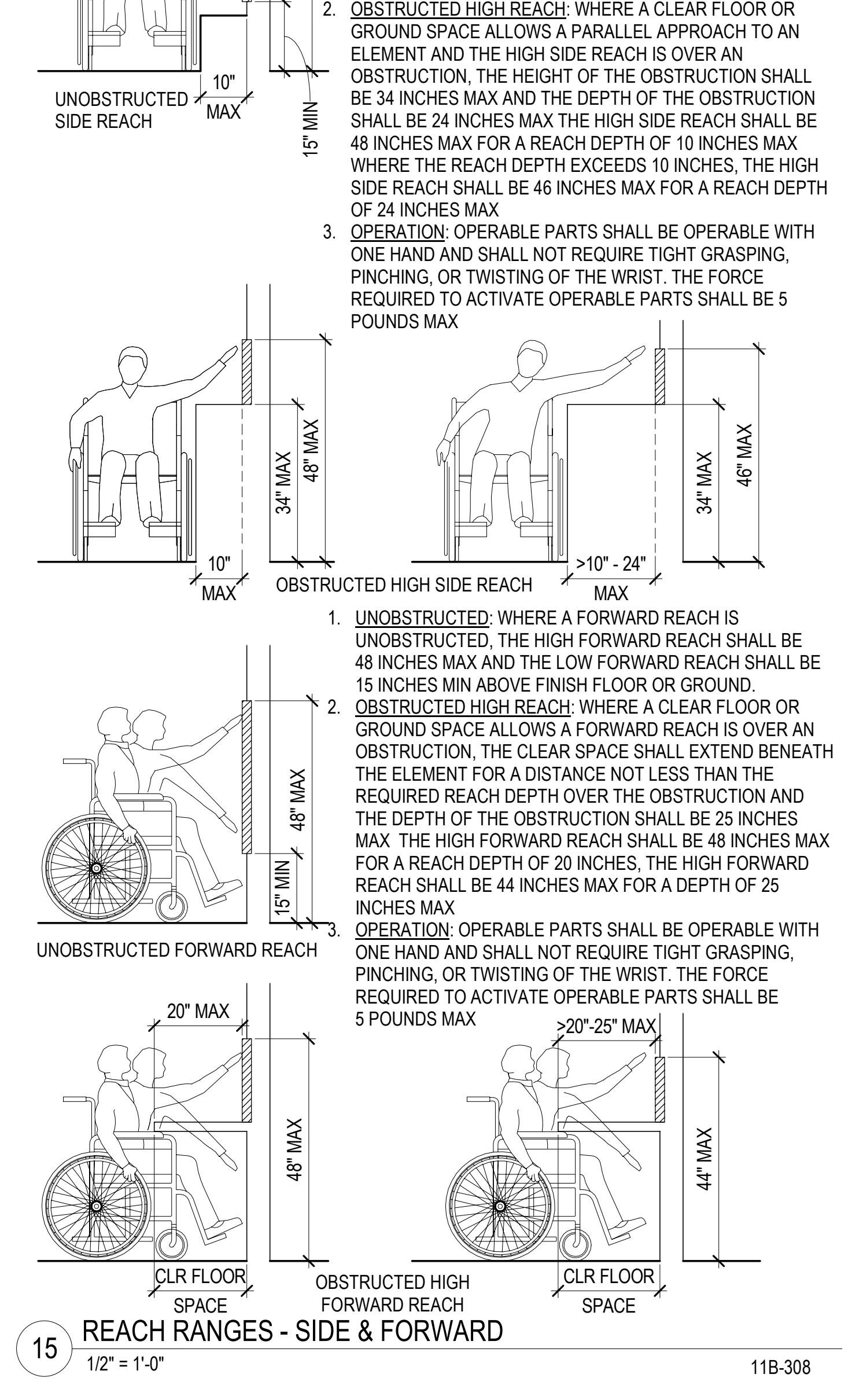
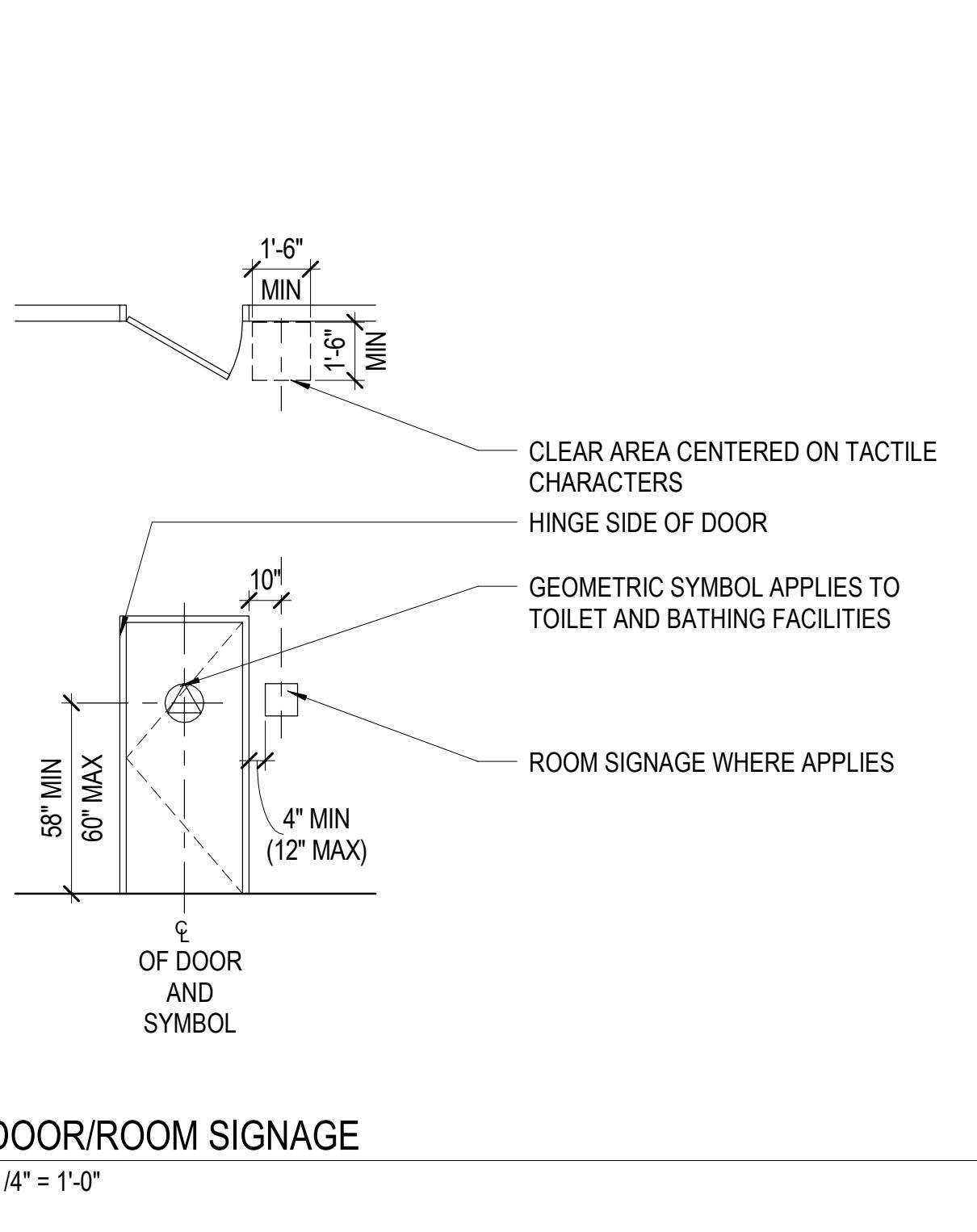
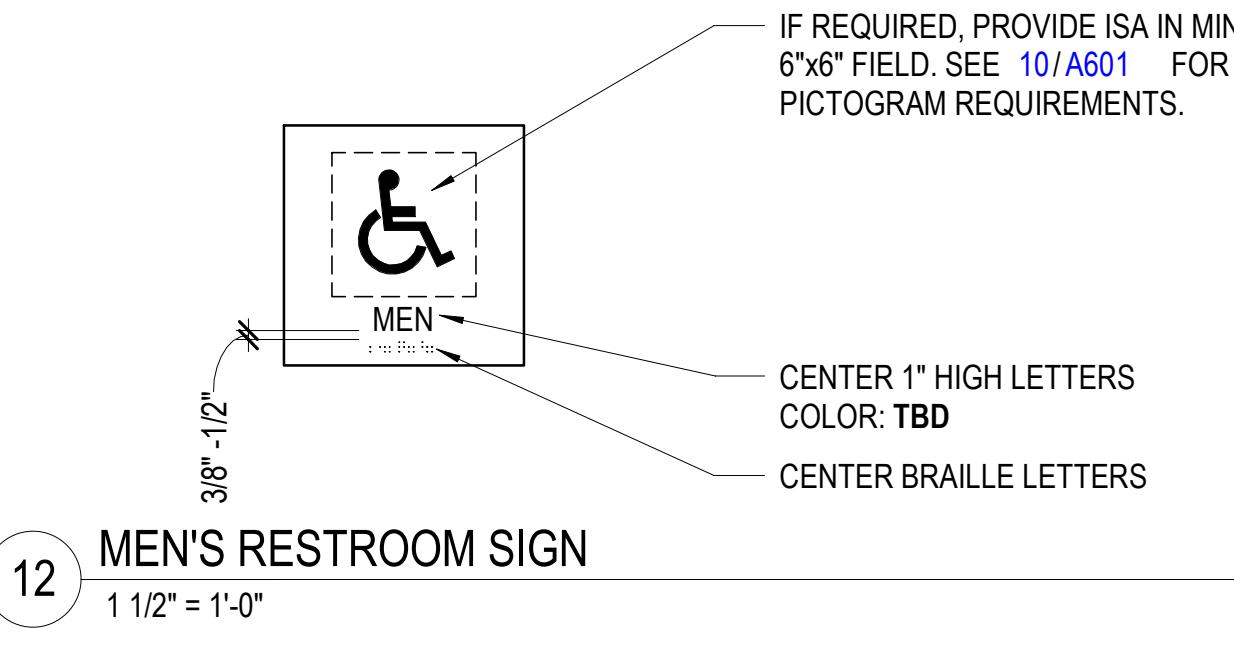
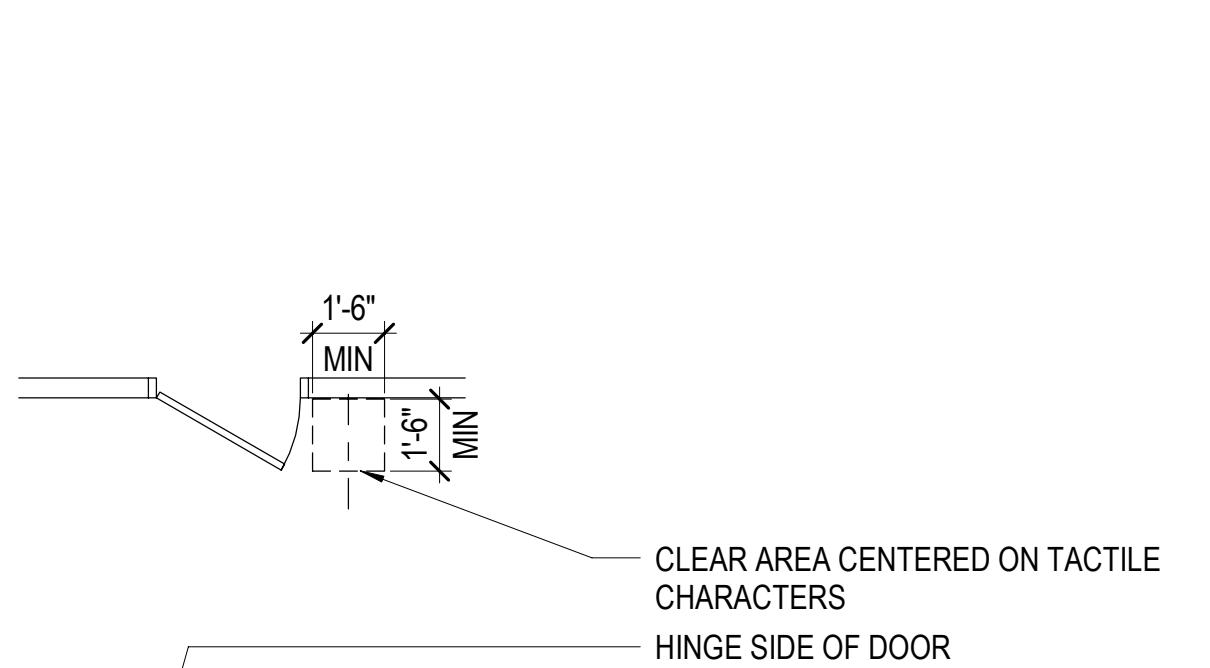
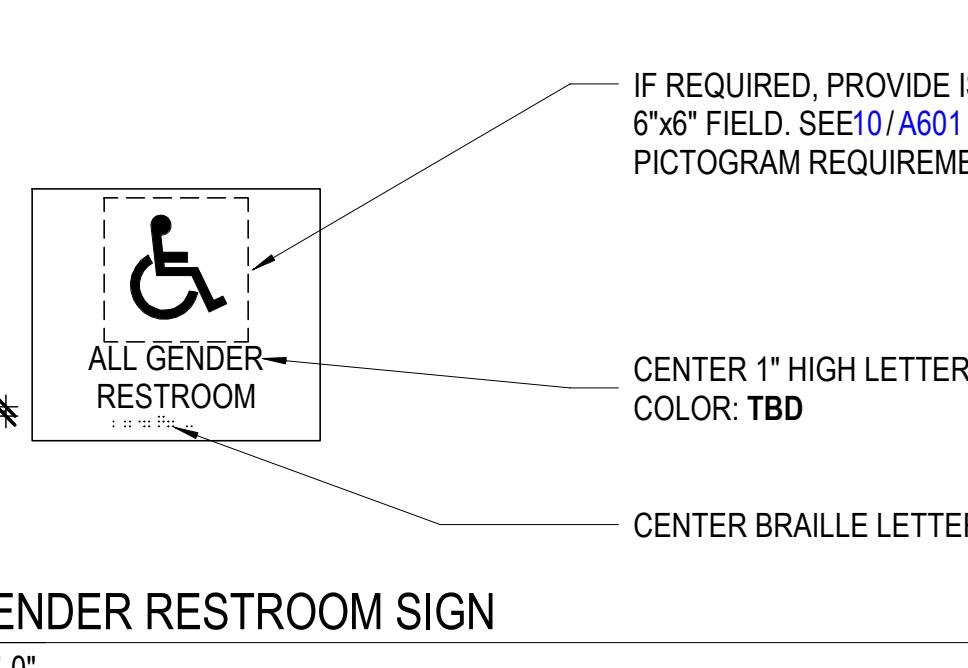
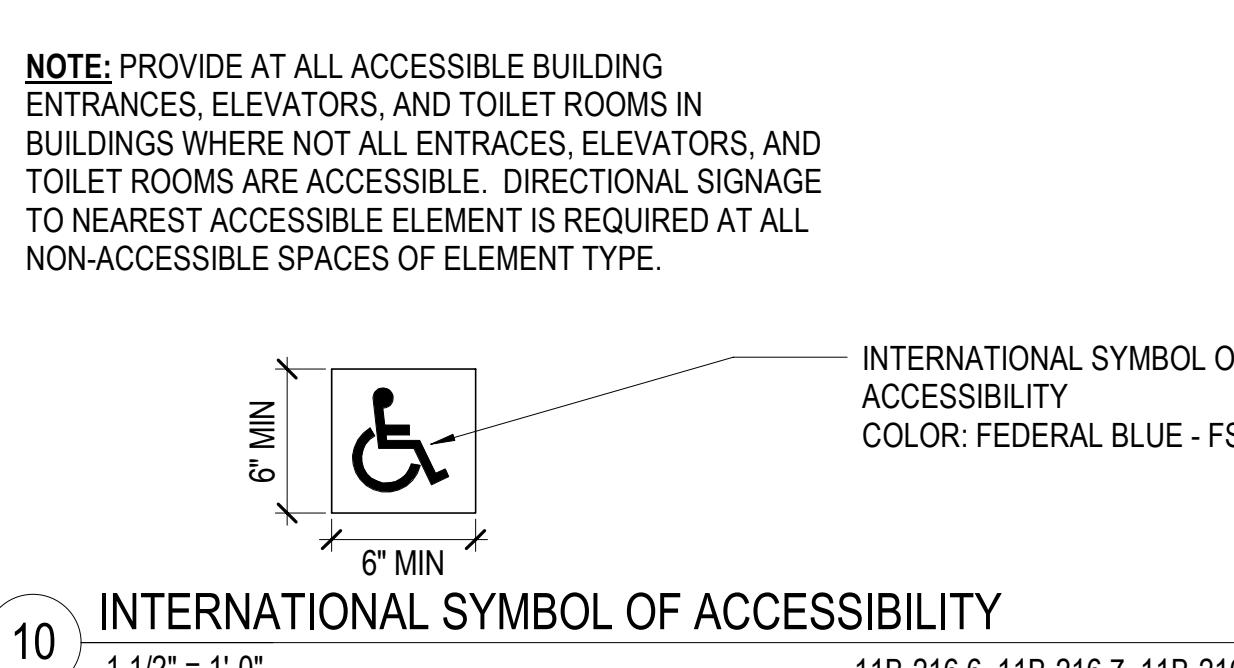
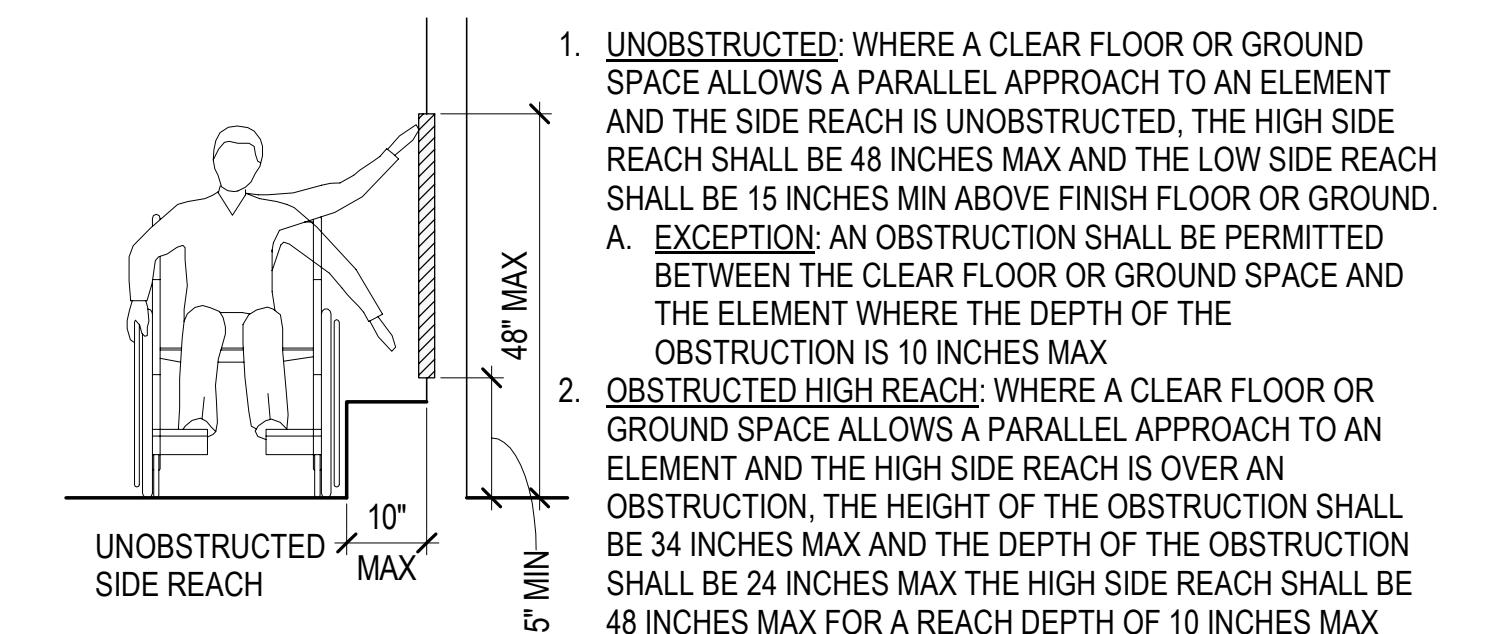
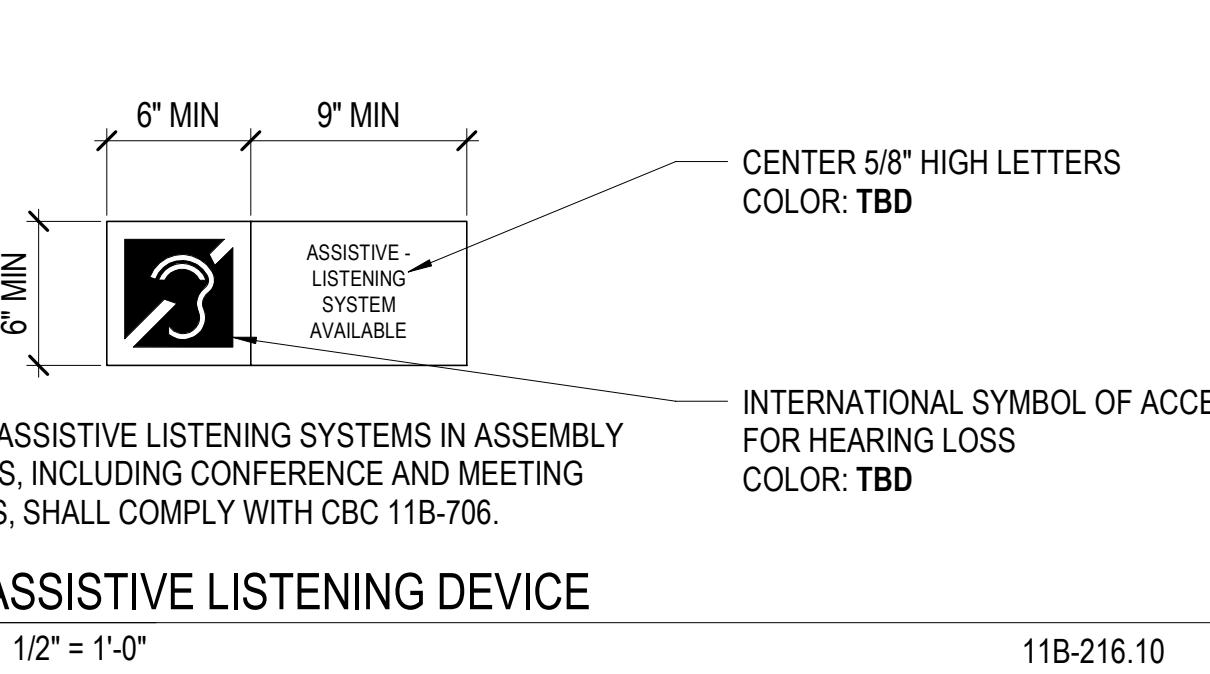
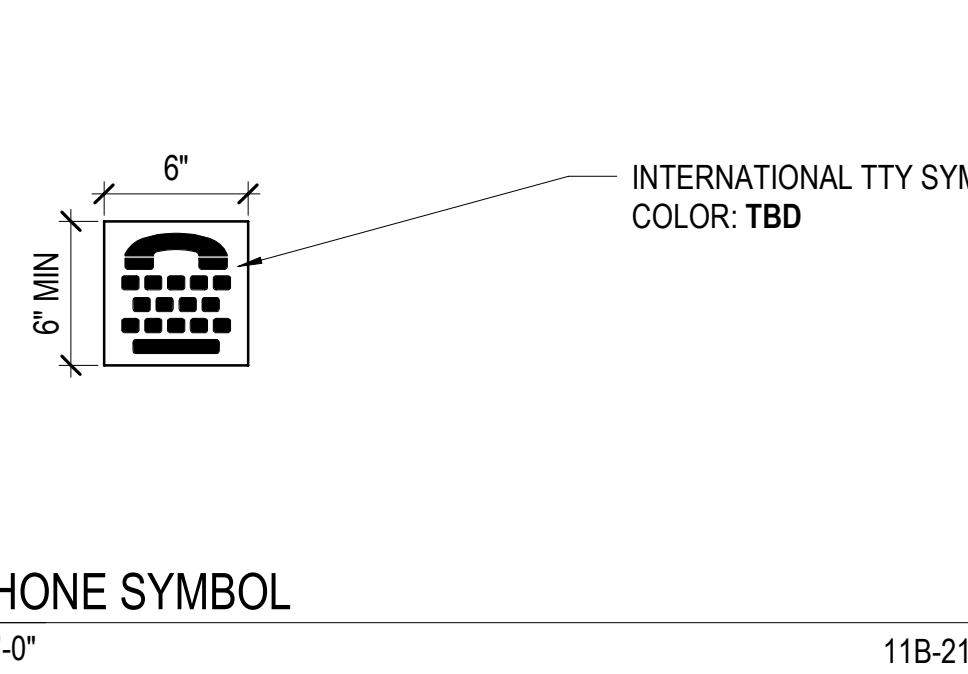
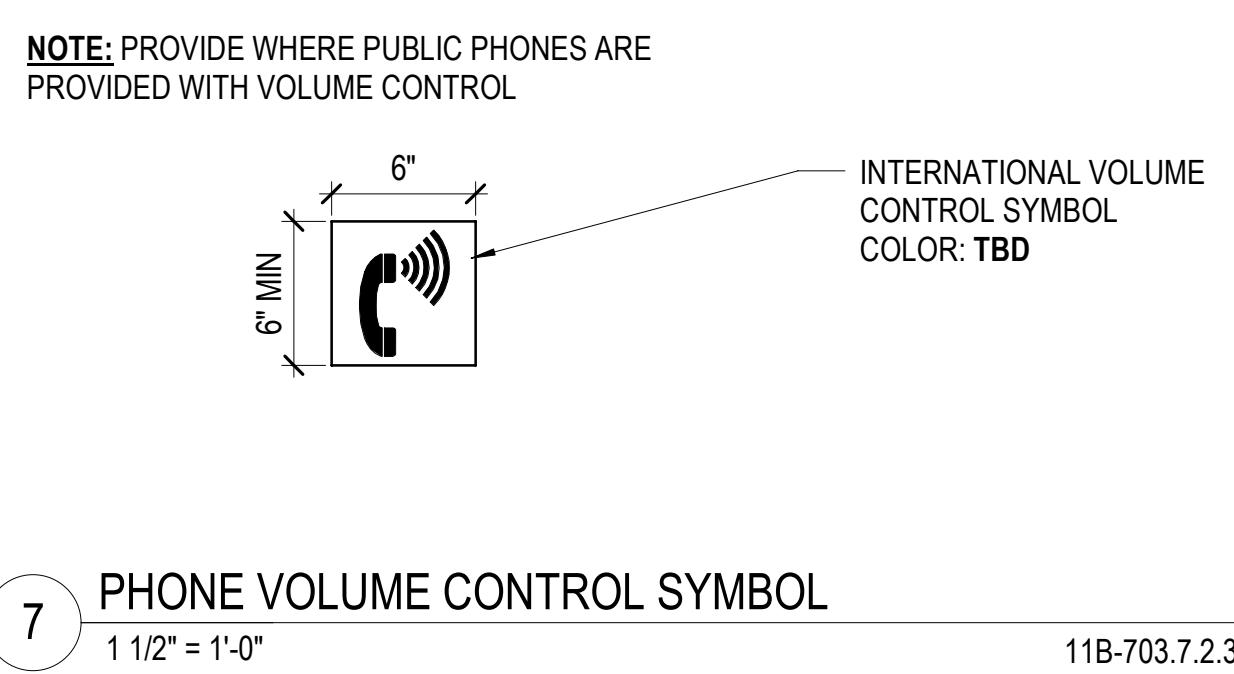
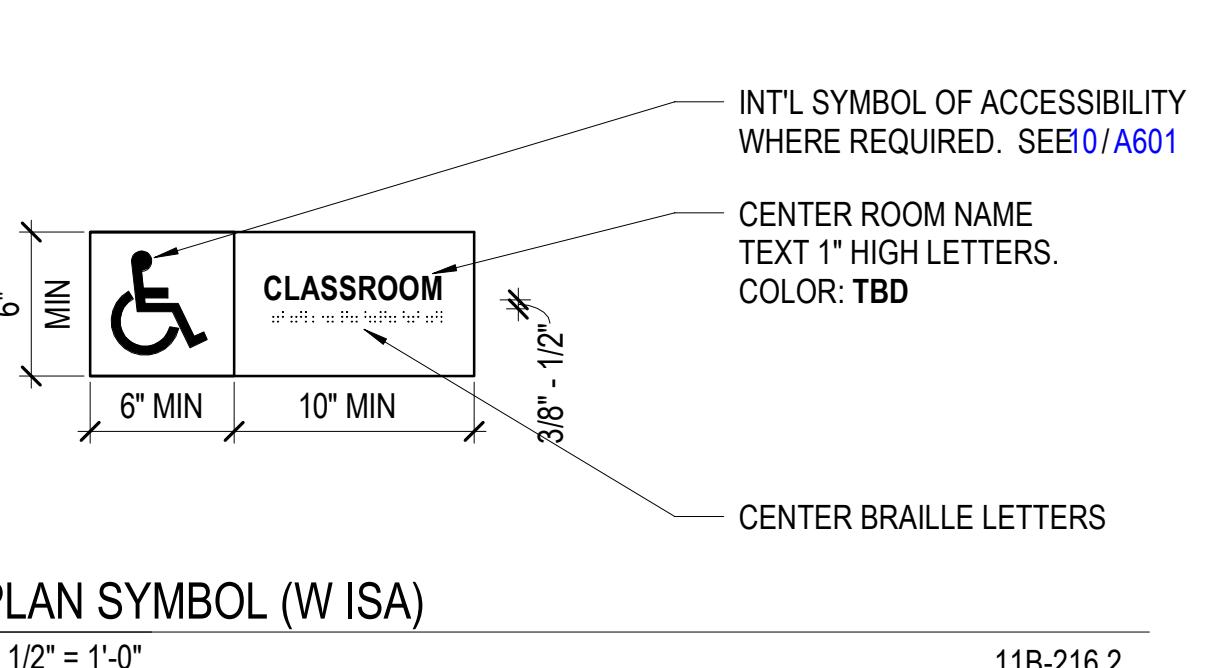
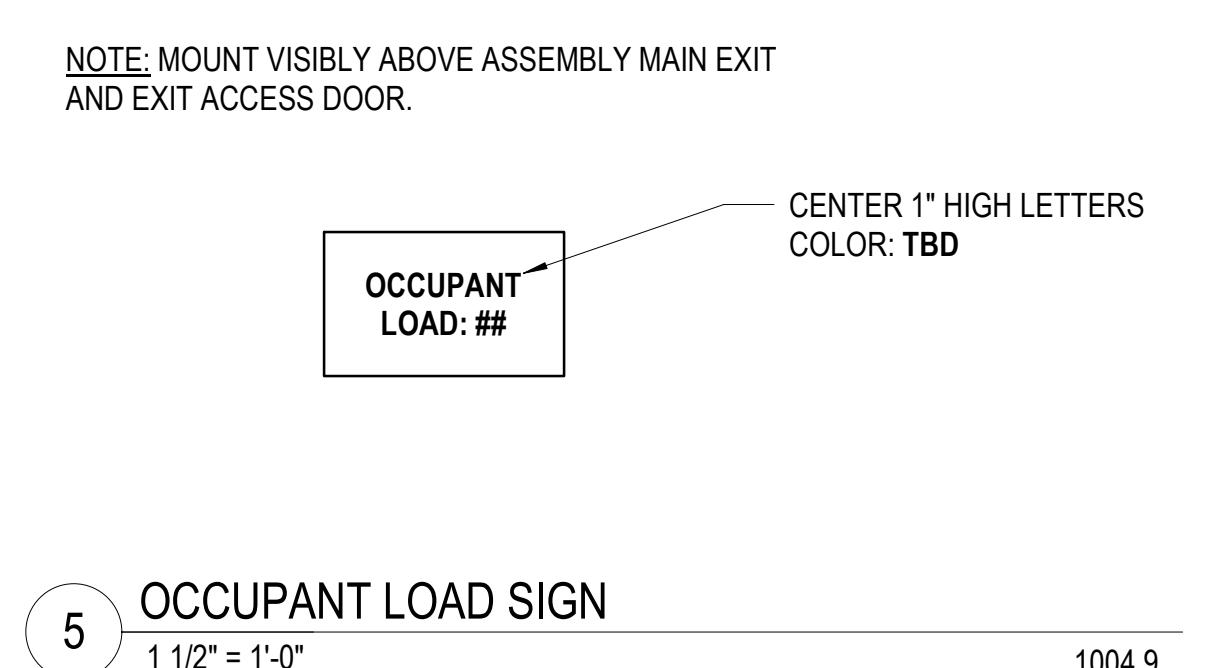
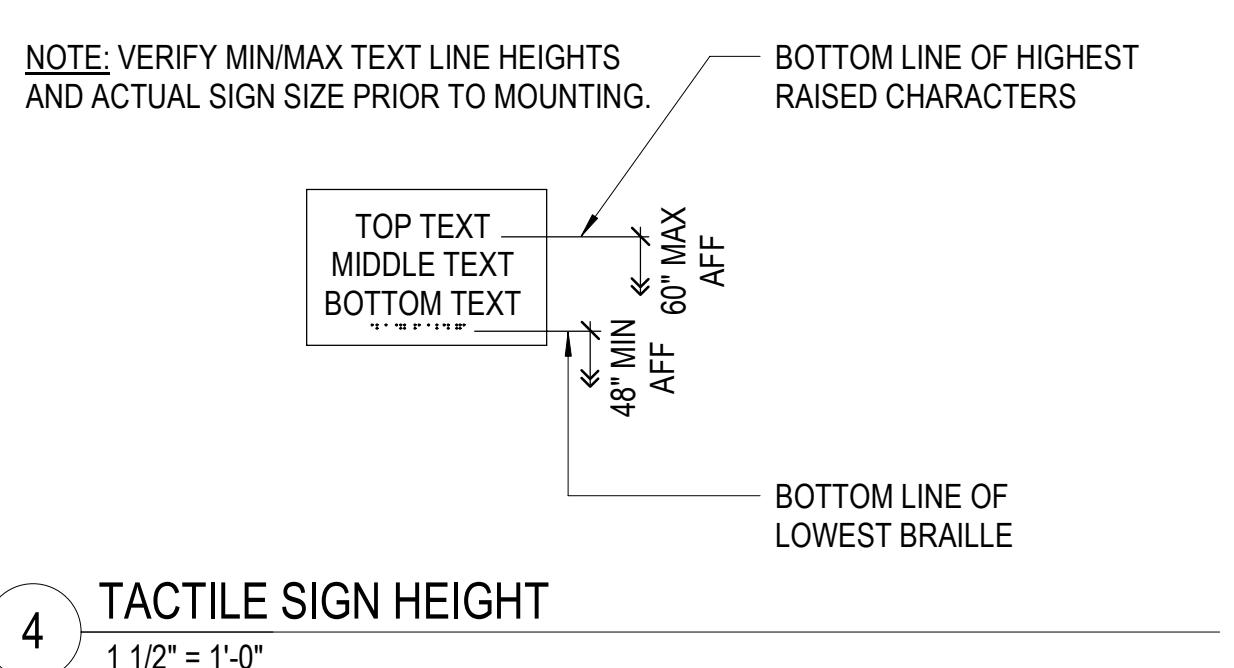
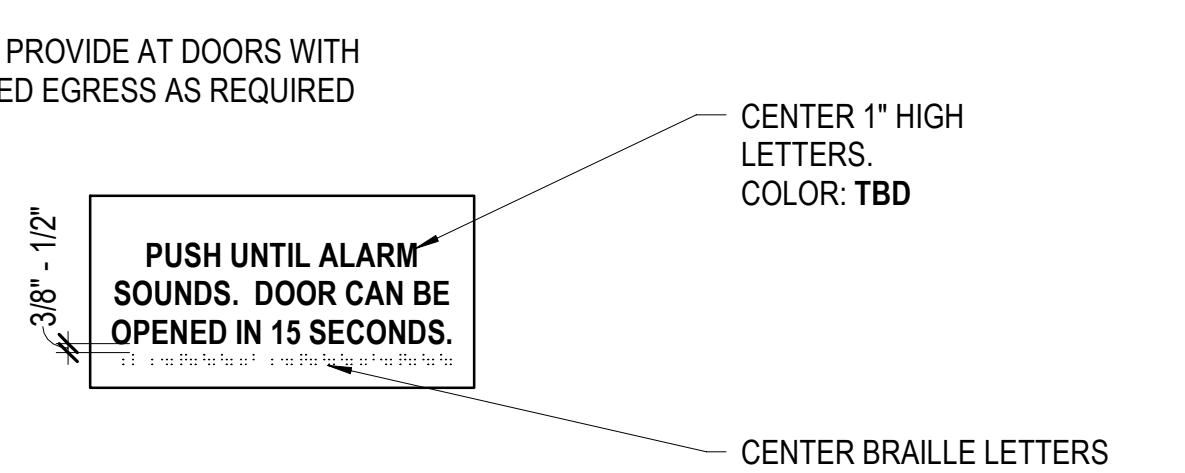
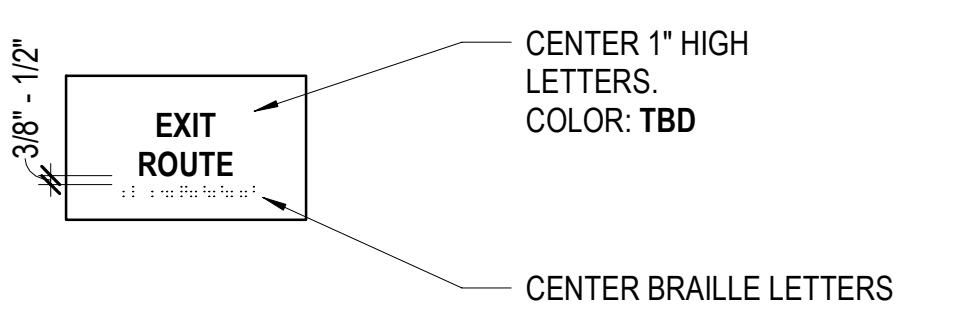
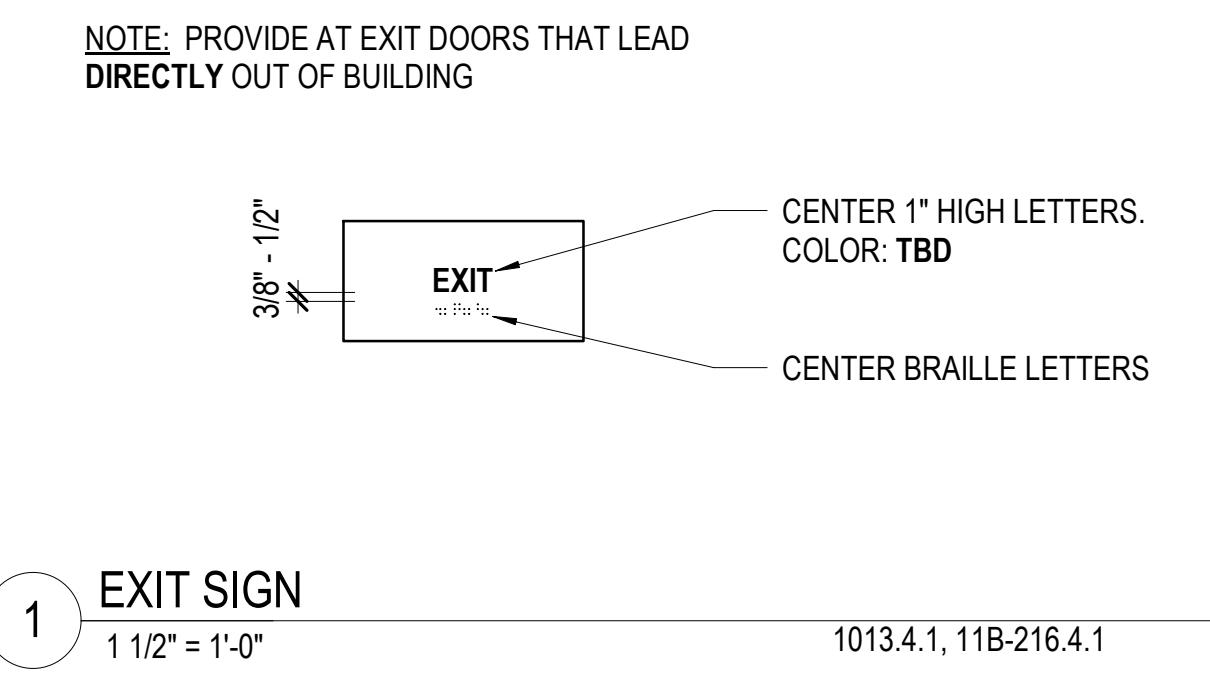
KITCHEN IMPROVEMENTS

A301



## GENERAL NOTES - SIGNAGE

- A. CHARACTER TYPE: RAISED CHARACTERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM AND SHALL BE SANS SERIF UPPERCASE CHARACTERS DUPLICATED IN GRADE 2 BRAILLE COMPLYING WITH CBC 11B-703.2
- B. CHARACTER SIZE: RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8" AND A MAXIMUM OF 2" HIGH. VISUAL CHARACTERS PLACED ABOVE RAISED CHARACTER RANGES COMPLY WITH CBC TABLE 11B-703.5 BASED ON HEIGHT ABOVE FLOOR.
- C. FINISH AND CONTRAST: CHARACTERS, SYMBOLS, AND THEIR BACKGROUNDS SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND. EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
- D. PROPORTION: VISUAL AND RAISED CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MIN AND 110% MAX OF THE HEIGHT OF THE UPPERCASE LETTER "I". STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15% MAX OF THE HEIGHT OF RAISED CHARACTERS. VISUAL CHARACTER STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 10% MIN AND 20% MAX OF THE HEIGHT OF THE CHARACTER.
- E. LINE SPACING: CHARACTER SPACING BETWEEN THE BASELINES OF SEPARATE LINES SHALL BE 135% MIN AND 170% MAX OF THE CHARACTER HEIGHT.
- F. BRAILLE: BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH SECTIONS 11B-703.3 AND 11B-703.4 OF CBC. BRAILLE DOTS SHALL HAVE A DOMED OR ROUNDED SHAPE AND SHALL COMPLY WITH TABLE 11B-703.3.1 OF CBC. THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NAMES AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS AND ACRONYMS.
- G. COMPLIANCE: ALL SIGNAGE MUST COMPLY WITH ARTICLE 11B-703 OF CBC AS WELL AS CURRENT ADA STANDARDS.
- H. WHERE SIGNAGE MUST BE INSTALLED DIRECTLY TO GLAZING, PROVIDE BLANK SIGN ON OPPOSITE SIDE OF GLAZING.



440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

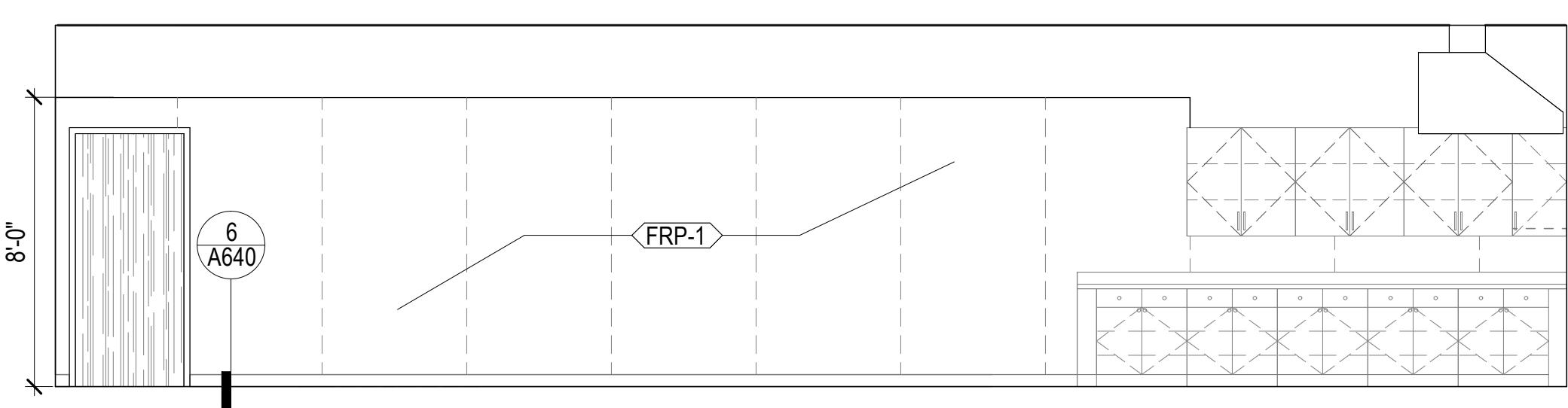
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED THEREIN.  
THE LAWS OF THE STATE OF CALIFORNIA  
LICENCED ARCHITECT  
BETH YOUNG  
C-30064  
REN: 10-31-25  
STATE OF CALIFORNIA

NAME: BETH YOUNG  
DATE: 01/16/2025  
REGISTRATION NUMBER: C-30064  
ISSUANCE HISTORY - THIS SHEET  
HGA NO: 5378-001-00

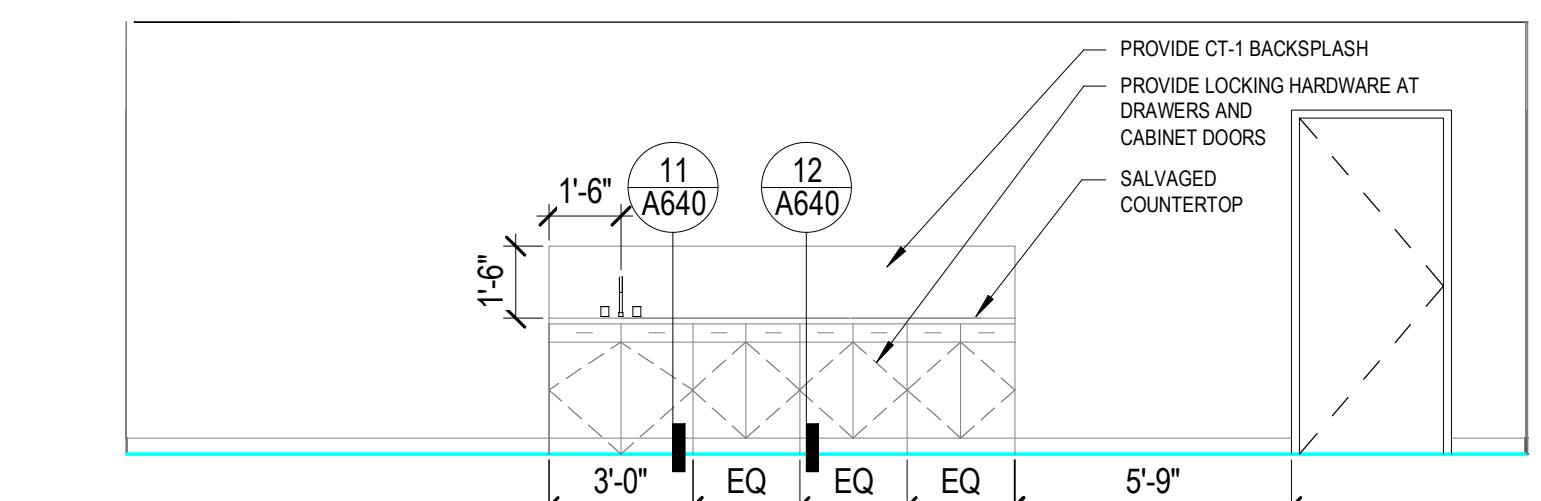
SIGNAGE +  
DESIGN GUIDE -  
MOUNTING  
HEIGHTS  
(FOR REFERENCE ONLY)  
DATE: JANUARY 16, 2025  
KITCHEN IMPROVEMENTS

A601

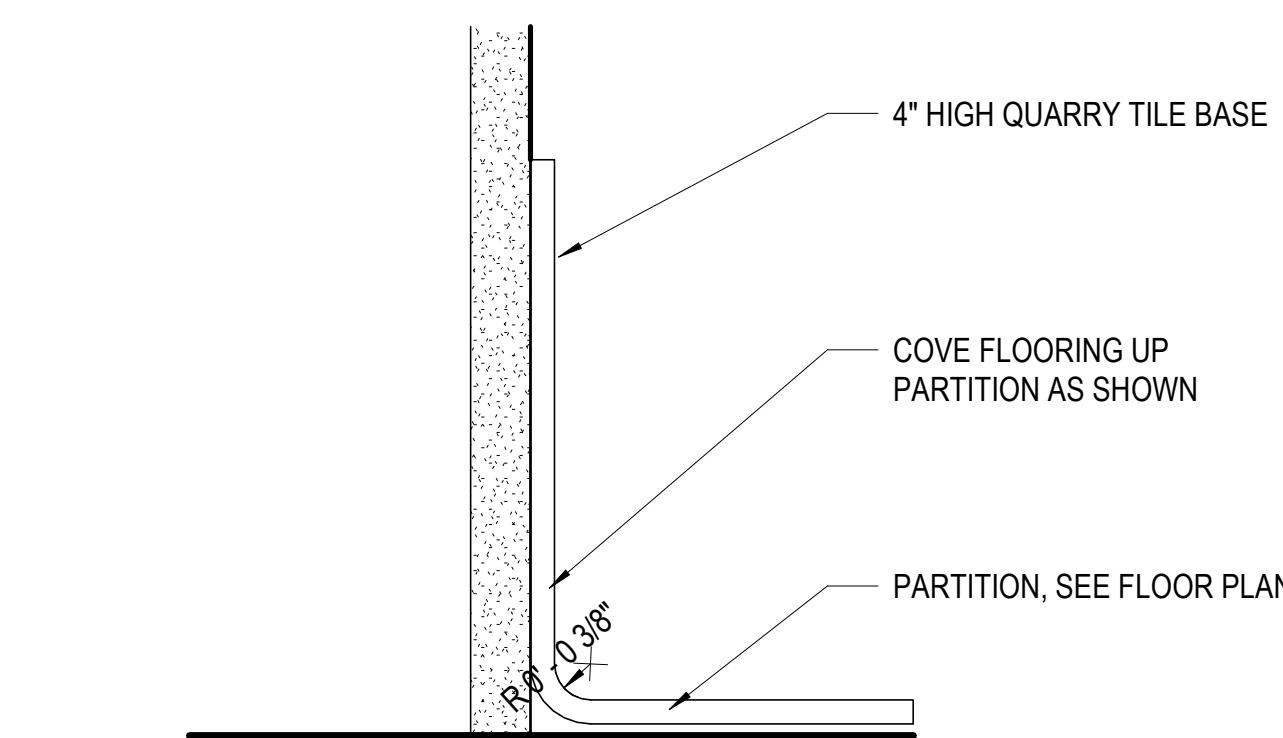
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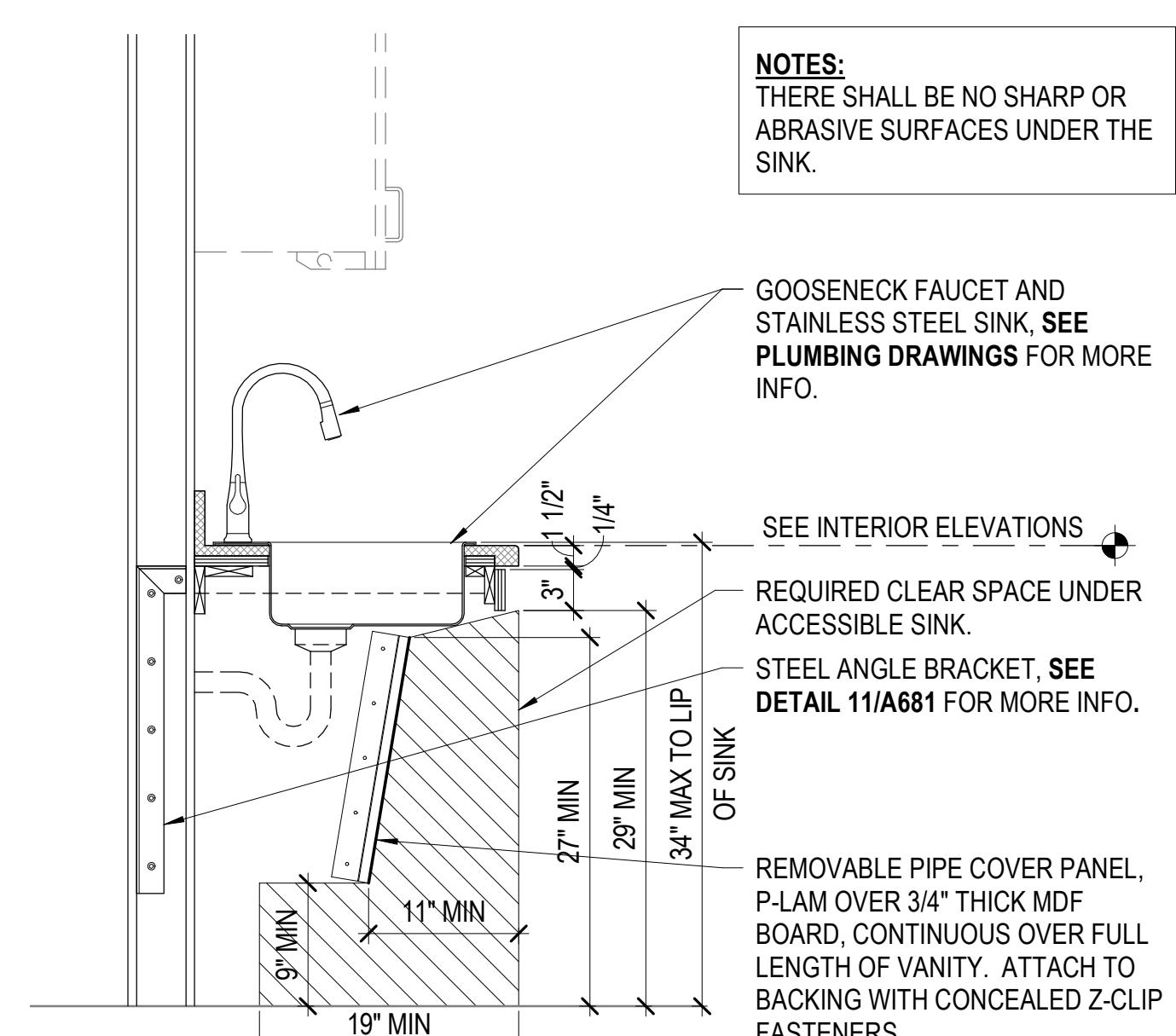
1 KITCHEN - PLAN WEST



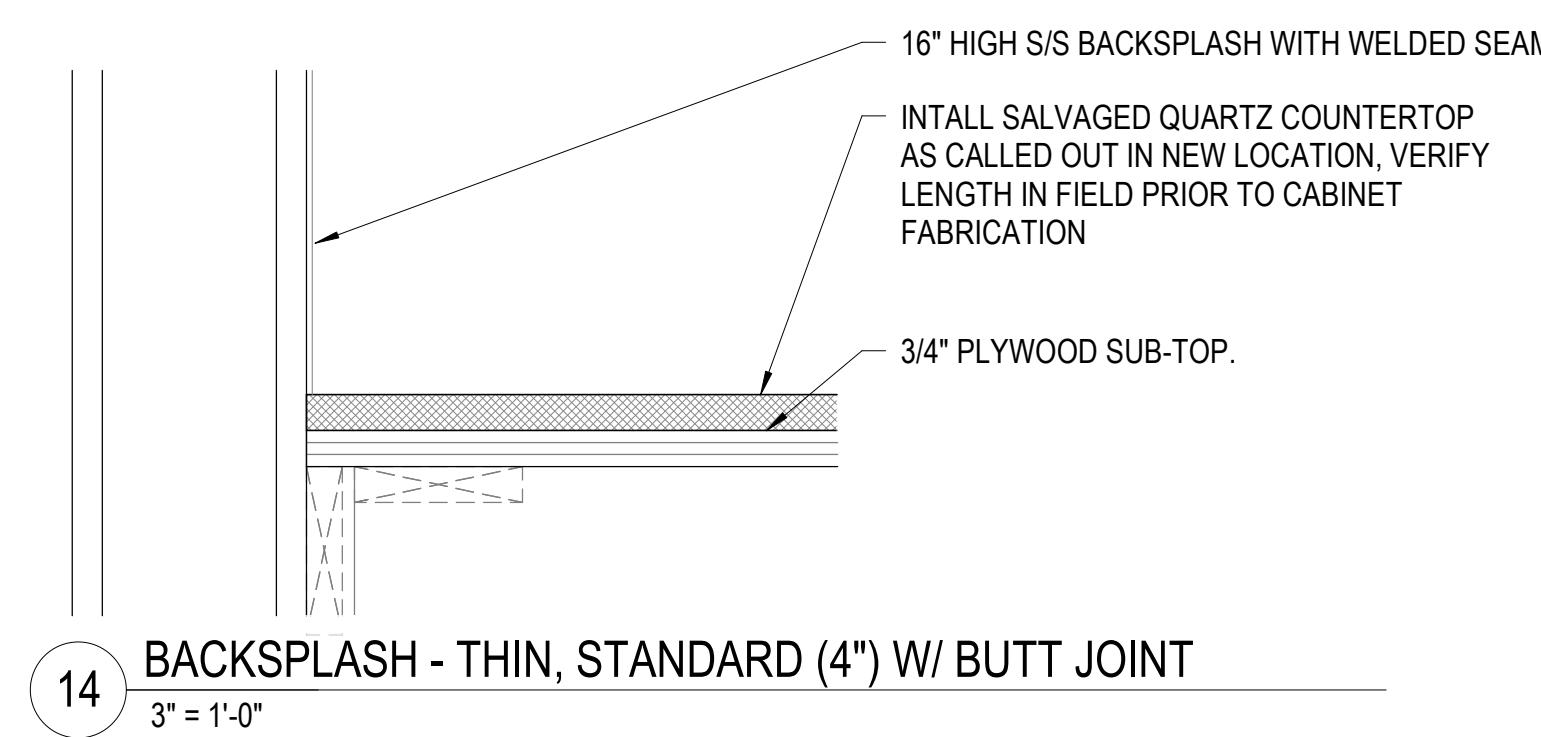
4 DINING ROOM - PLAN NORTH



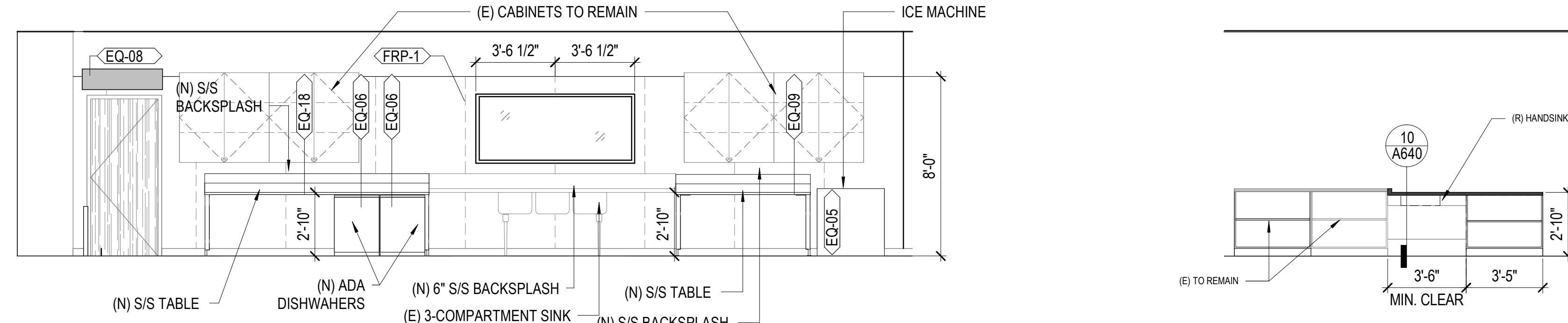
6 INTEGRAL COVED BASE



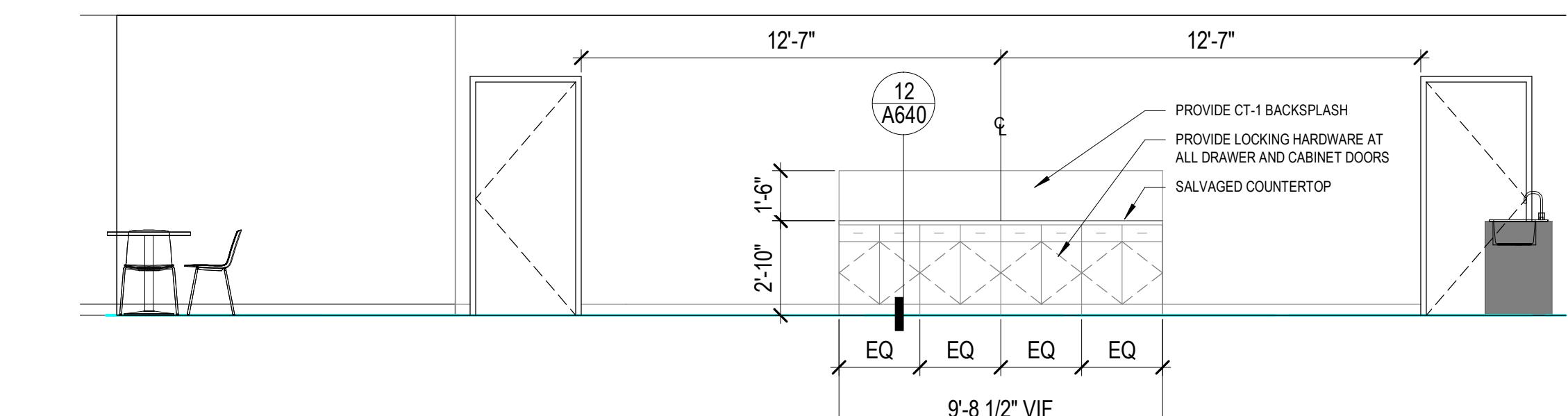
10 BASE CABINET WITH ACCESSIBLE HANDWASH SINK



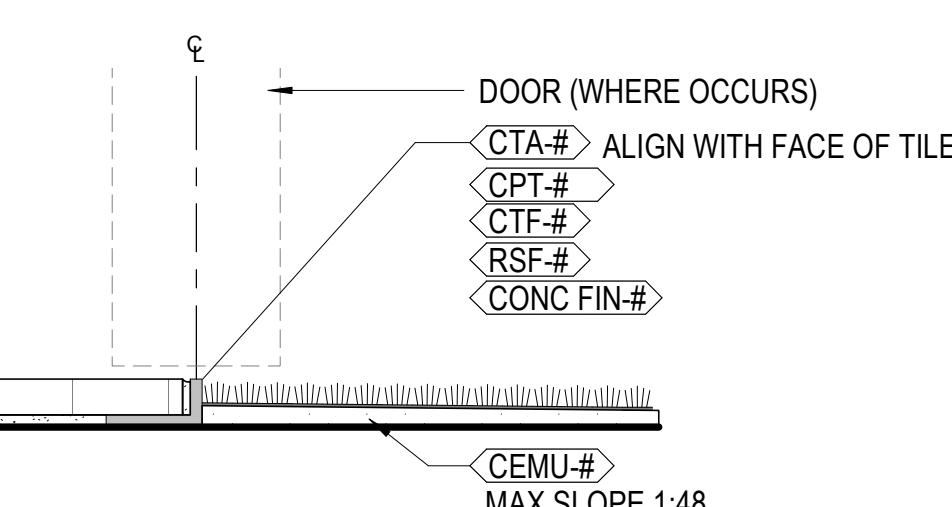
14 BACKSPLASH - THIN, STANDARD (4") W/ BUTT JOINT



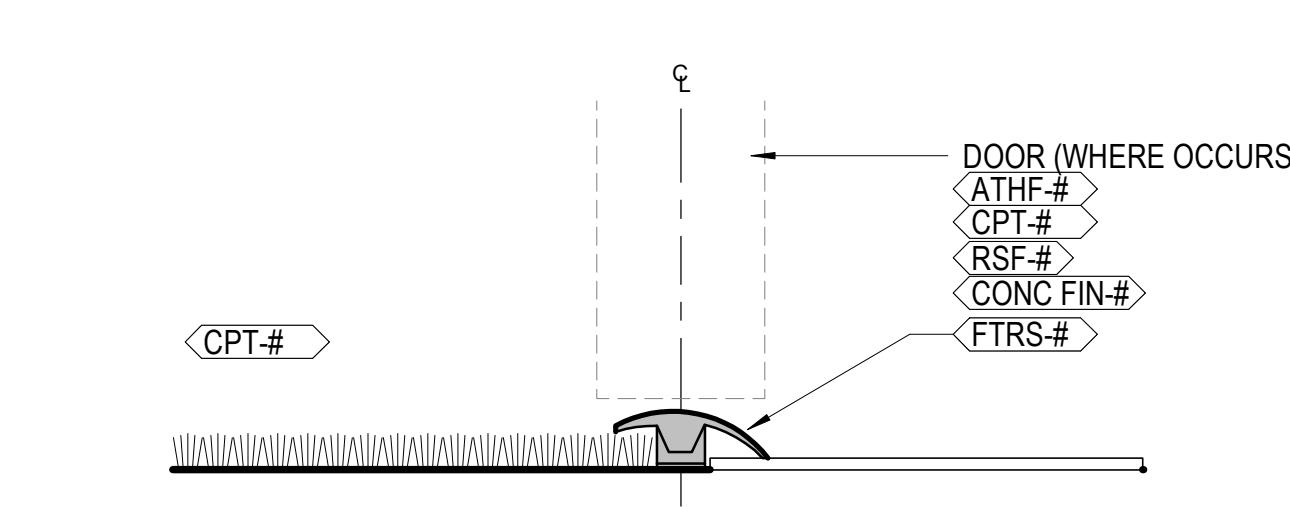
2 KITCHEN - PLAN EAST



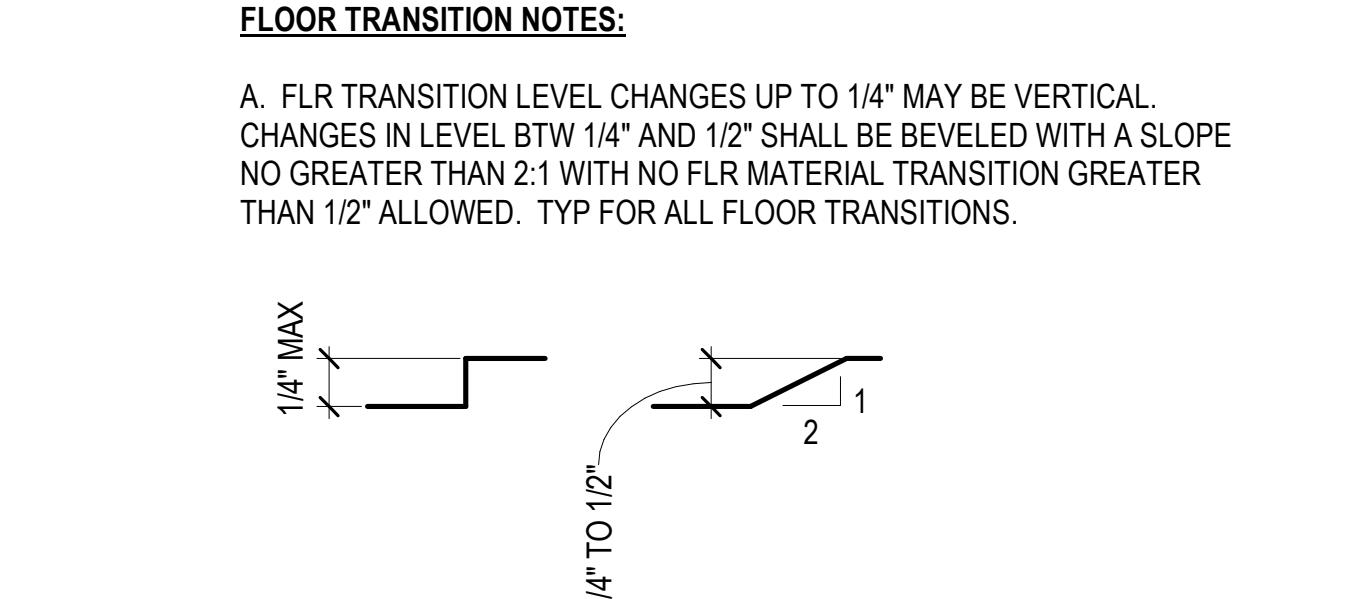
5 DINING ROOM - PLAN WEST



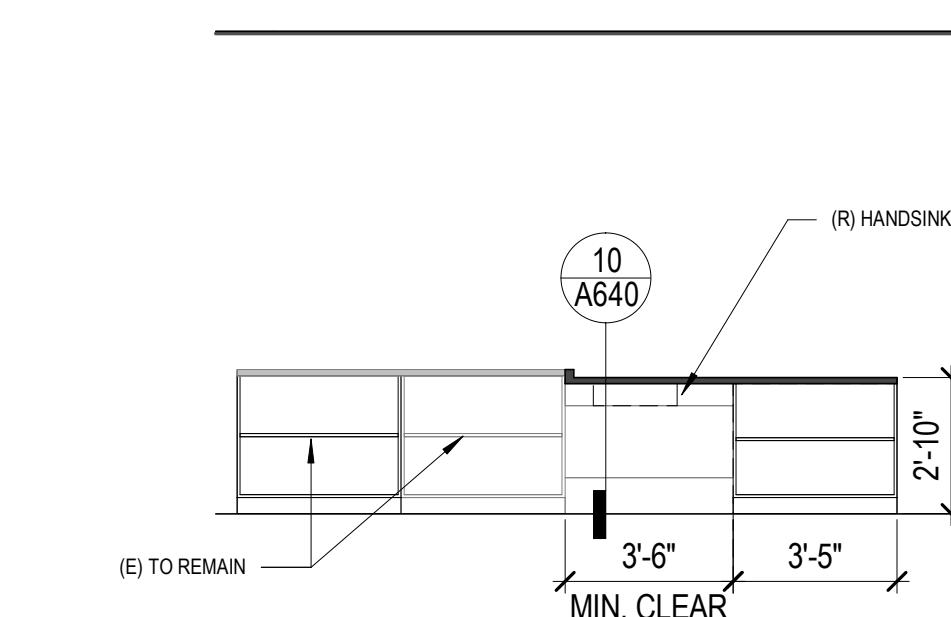
7 FLOOR TRANSITIONS - TILE/CARPET\*



8 FLOOR TRANSITIONS - CARPET/RESILIENT\*



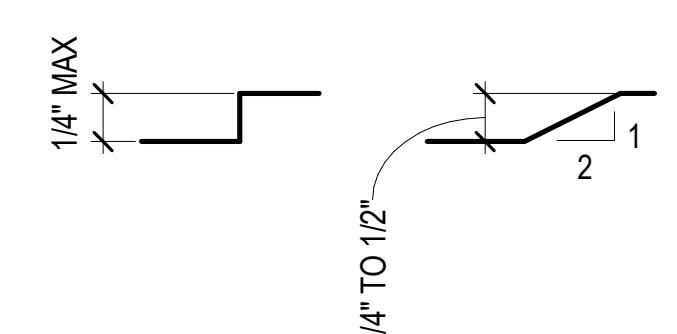
9 FLOOR TRANSITIONS - TILE/RESILIENT\*2



3 KITCHEN - ISLAND

**FLOOR TRANSITION NOTES:**

A. FLR TRANSITION LEVEL CHANGES UP TO 1/4" MAY BE VERTICAL. CHANGES IN LEVEL BTW 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 2:1 WITH NO FLR MATERIAL TRANSITION GREATER THAN 1/2" ALLOWED. TYP FOR ALL FLOOR TRANSITIONS.



B. DOOR CLEARANCES SHALL BE PER DOOR MFR'S STANDARDS OR AS REQUIRED BY CODE.

C. FIELD VERIFY & COORDINATE HEIGHTS OF MATERIALS PRIOR TO FABRICATION AND/OR INSTALLATION OF TRANSITION STRIPS.

## ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

I HEREBY CERTIFY THAT THIS PLAN  
SPECIFICATION OR REPORT WAS PREPARED BY  
ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM RESPONSIBLE FOR ITS PREPARATION  
ACCORDING TO THE LAWS OF THE STATE OF CALIFORNIA

LICENSED ARCHITECT  
ELIZABETH YOUNG  
C-30064  
REN: 10-31-25

NAME	DESCRIPTION	DATE
1	PLAN CHECK	01/16/2025
2	EH PLAN CHECK	03/24/2025
4	ISSUE FOR BID	10/29/2025

ISSUANCE HISTORY - THIS SHEET

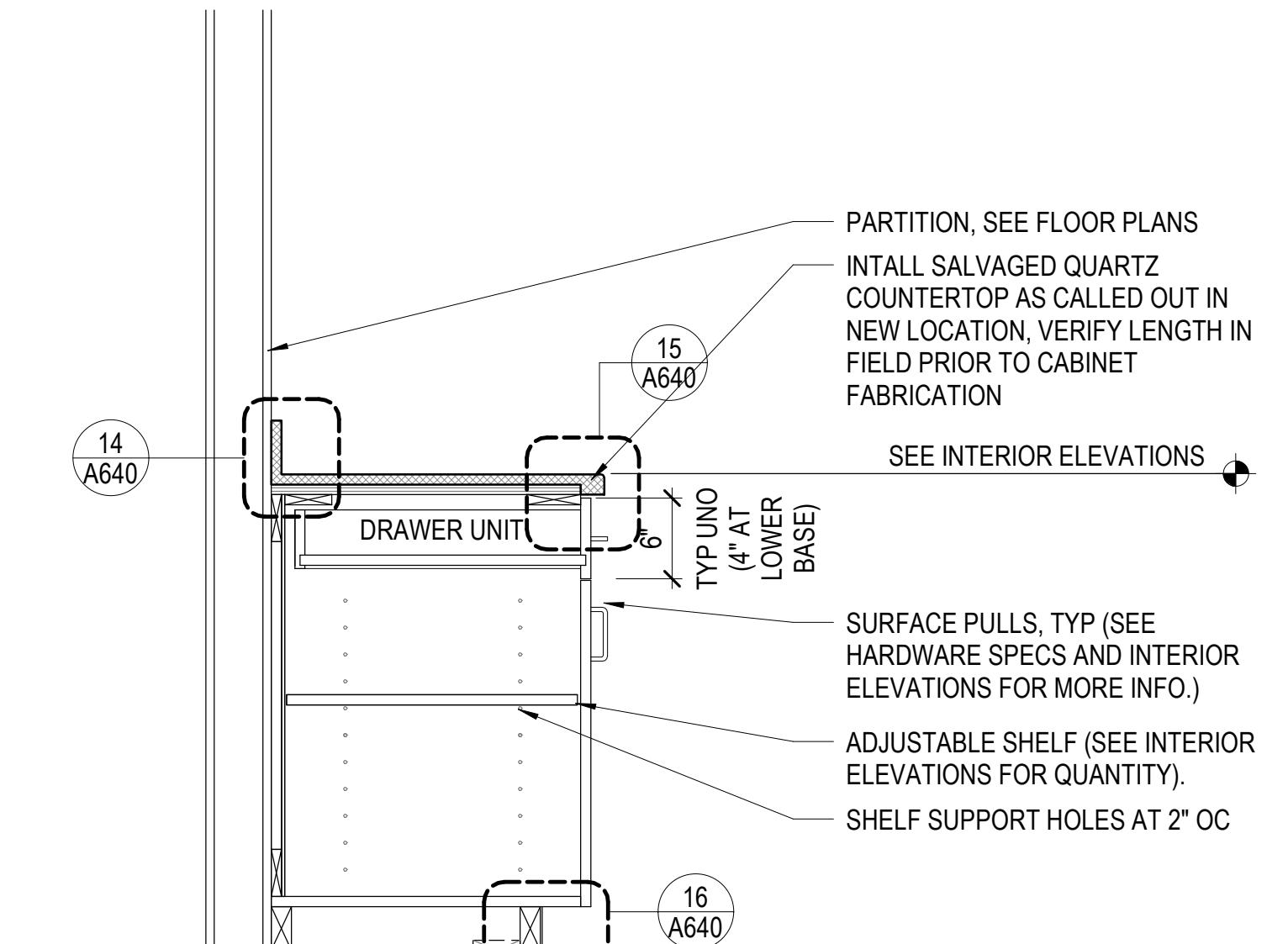
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## INTERIOR ELEVATIONS & DETAILS

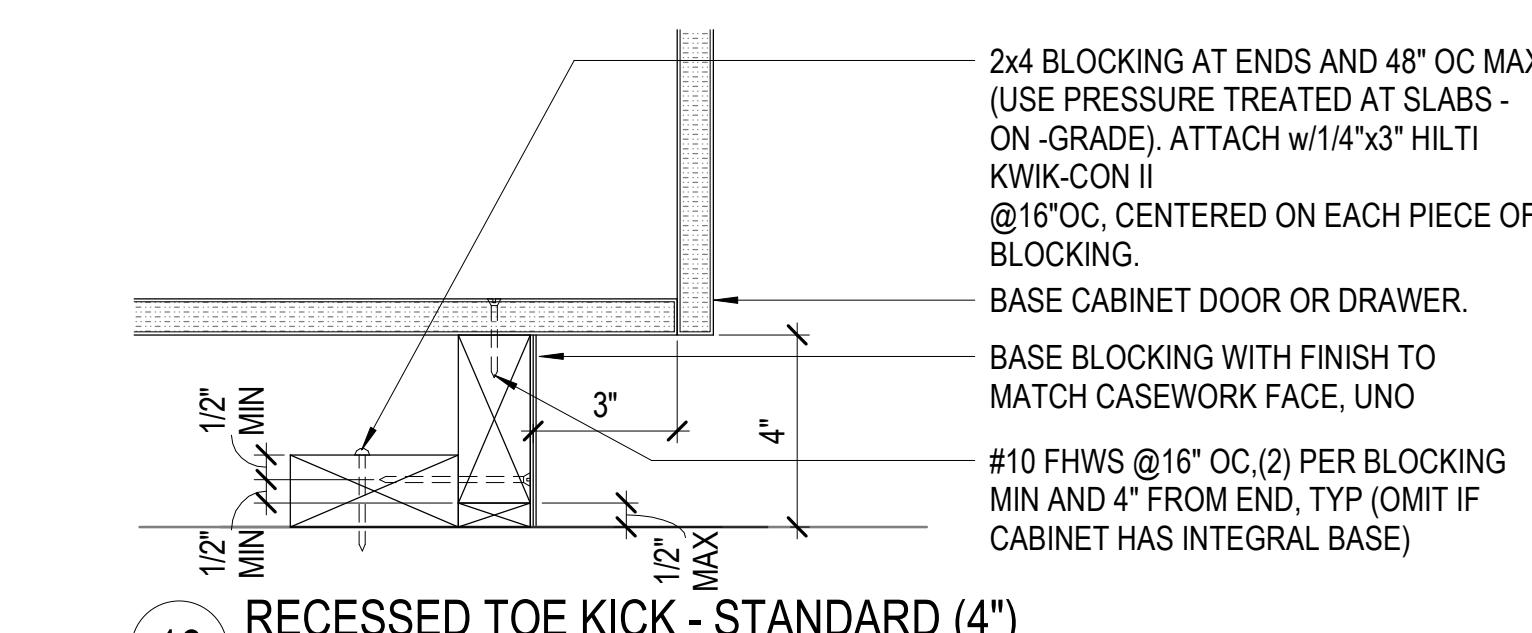
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KITCHEN IMPROVEMENTS

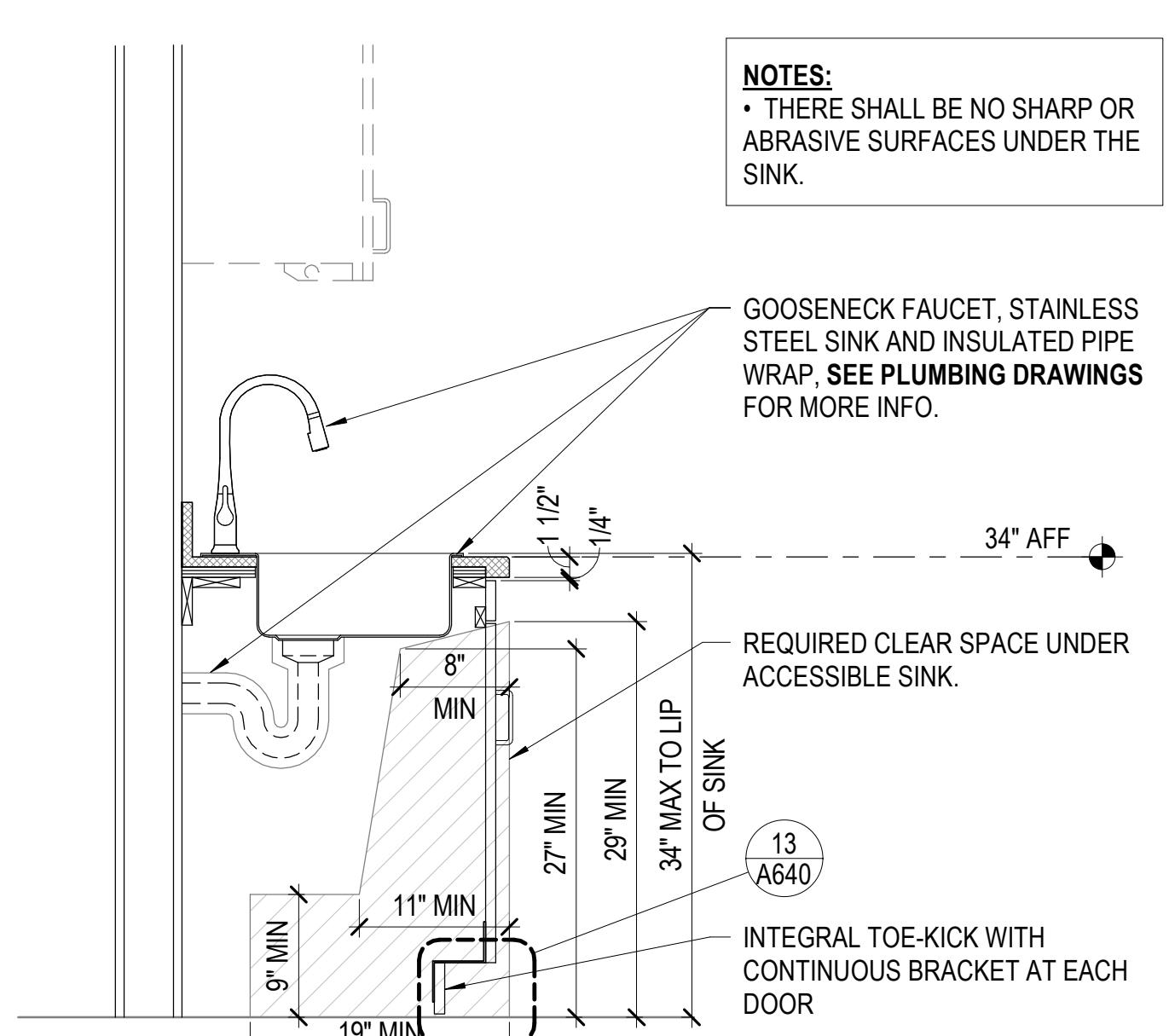
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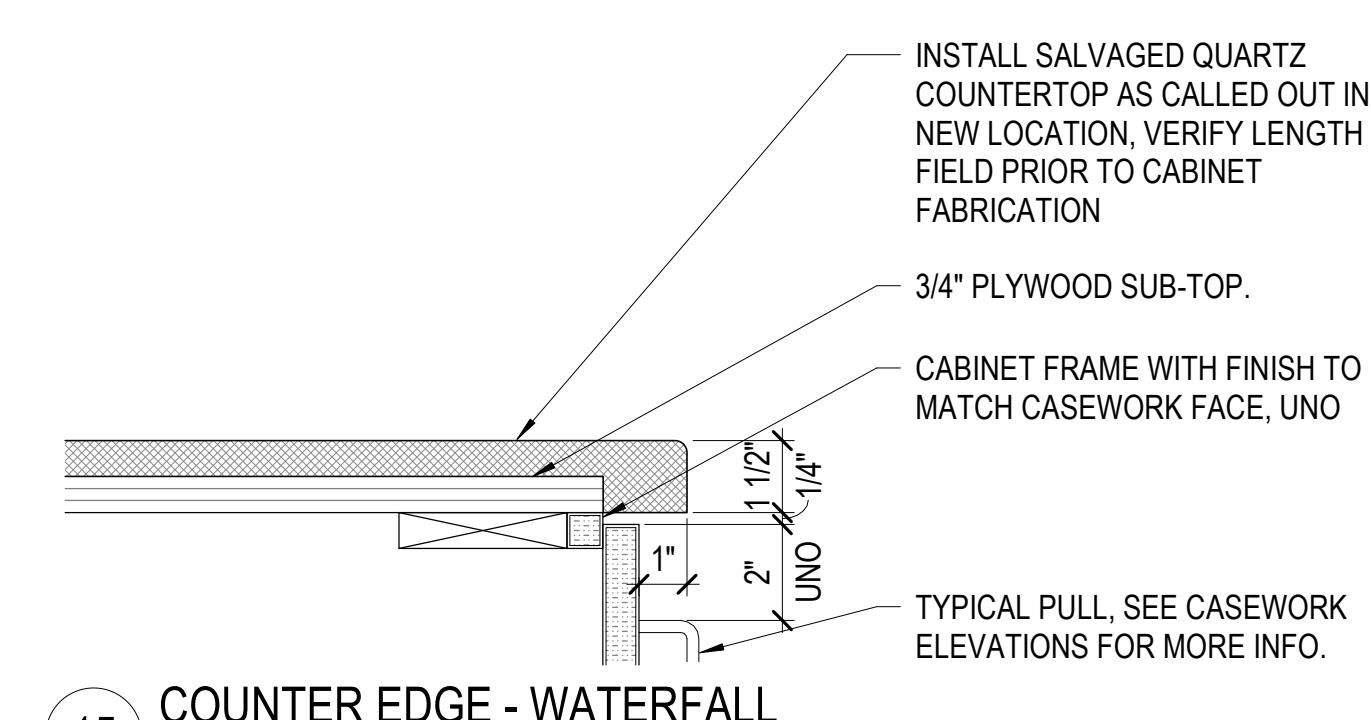
12 BASE CABINET WITH DRAWER



16 RECESSED TOE KICK - STANDARD (4")



11 BASE CABINET WITH ACCESSIBLE SINK (FRONT APPROACH)



15 COUNTER EDGE - WATERFALL

## SHEET SPECS

000110  
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FOR GENERAL REQUIREMENTSDIVISION 00 PROCUREMENT AND CONTRACTING  
REQUIREMENTS

## 000110 Table of Contents

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## DIVISION 06 WOOD, PLASTICS, AND COMPOSITES

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## DIVISION 09 FINISHES

## 093000 Tiling

## 099000 Painting

## DIVISION 10 SPECIALTIES

## 101420 Interior Door Signage

## 102813 Toilet Accessories

## 105113 Metal Lockers

## DIVISION 12 FURNISHINGS

## 123640 Stone Countertops

## END OF SECTION

## SECTION 035415 - CEMENTITIOUS UNDERLAYMENT

## PART 1 - GENERAL

1.1 Cementitious underlayment and accessories. Submit product data in accordance with submittals procedures in Section 010000.

1.3 Submit letter certifying that underlayment contains no gypsum material.

1.4 Before, during and after installation of underlayment, enclose and maintain building interior at a temperature above 40 degrees F and below 100 degrees F until structure and subfloor temperature are stabilized.

## PART 2 - PRODUCTS

2.1 Self-leveling cementitious poured floor underlayment: Ardex K-15 cementitious underlayment by Ardex, Inc., Coraopolis, PA (612)284-4240.

2.2 Self-leveling concrete poured floor topping: Ardex K-500 or A-300 pourable concrete topping by Ardex, Inc., Coraopolis, PA (612)284-4240.

2.3 Aggregate: Well washed, graded, fine gravel or larger aggregate as recommended by underlayment manufacturer for use intended. Provide with primer and finish coat at thicker areas.

2.4 Mix water: Potable, free from impurities.

2.5 Subfloor primer: Ardex P-51 or Ardex P082 high strength floor primer as recommended by underlayment manufacturer for use intended.

## PART 3 - EXECUTION

3.1 Condition and cleaning of subfloor: Ascertain structurally sound subfloor. Clean subfloor to remove mud, oil, grease, and other contaminating factors.

3.2 Concrete substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.

3.3 Allow floors to thoroughly dry. Installation indicates acceptance of floor condition.

3.4 Protection from heavy loads: During construction, place temporary wood plankings over underlayment wherever it will be subject to heavy wheeled or concentrated loads.

## SECTION 064000 - ARCHITECTURAL WOODWORK

## PART 1 - GENERAL

1.1 Summary: Custom-fabricated architectural woodwork, wood, laminate, solid surface, custom fabricated items, countertops, hardware and accessories, requirements for fabrication and installation.

## 1.2 Submittals:

A. Show work in related and dimensional position with sections shown in not less than 1-1/2 inch scale and details at full size.

B. Indicate materials and wood species, component profiles, fastening, jointing, details, finishes and accessories.

C. Indicate locations of plumbing and electrical service field conditions.

D. Component Samples: Two sets of samples in 8 inch by 10 inch size, unless otherwise indicated, for each of the following items:

1. Hardware sample for appearance.

2. Work surface for appearance review.

E. Unit Samples: Units may be used as part of work if approved.

1. Cabinetwork base (with door and drawer) without countertop.

F. Manufacturer/fabricator qualifications.

1.3 Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurement before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.

1.4 Delivery, Handling and Storage: Maintain minimum relative humidity less than 50 percent; in cold weather, provide heat for at least 10 days prior to delivery.

## PART 2 - PRODUCTS

2.1 Solid Surface Fabrications (SSF): MATCH EXISTING.

A. Performance Requirements:

1. Flame Spread less than 25. Flammability Class I fire rating.

2. Rockwell hardness (M scale) minimum of 55 per ASTM D785.

3. Impact strength (IZOD) minimum of 22 ft-lbs/in. per ASTM D256.

2.2 Core:

A. Acceptable Manufacturer: Sierra Pine Composite Solution; Medex.

- B. Provide water resistant coreboard for countertops with sinks or designated wet areas.
- C. Medium-Density Fiberboard: ANSI A208.2, Grade 155, made with binder containing no urea formaldehyde (FSC product).

- 2.3 Edges:
  - A. Wood Shelf Edge: Hardwood edge band with tongue and groove joint to shelf; miter at ends on shelves.
  - B. Band all shelf edges.

- 2.4 Architectural Cabinet Tops:
  - A. Plastic Laminate Cladding: High pressure decorative plastic laminate complying with NEMA LD 3 and as specified herein.
  - 1. Colors, Patterns, and Finishes: As selected from laminate manufacturer's standard products, solid colors.
  - 2. Refer to details, and Material Identification Codes for selection.

- 2.5 Edge Treatment: 3 mm PVC edge molding, finish as selected to match counter.

- Cabinet Hardware:
  - A. (HDWR-H1) Fixed pin, steel hinges, dull chrome, 2-3/4 inch by 0.095 thick, BHMA A156.9, B01361.
  - B. (HDWR-H2) Glass America, #3903, concealed, all metal hinges, 107-110 degree opening, self-closing, 3-way adjustable. Provide 3 per leaf over 48 inches high, 2 per leaf elsewhere. BHMA A156.9 B01602.
  - C. Knap & Vogt #346 NP, pin size 1/4 inch diameter by 3/8 inch long.
  - 1. Provide at adjustable shelves in cabinetwork.
  - D. (HDWR-H3): Minimum 150 lbs. load rating.
  - E. (HDWR-P): Refer to Architectural drawings for type and product information.
  - F. Disc tumbler, master-keyed, dull chrome finish by CCL Security Products #0737 and #0738.
  - 1. Provide at hinged doors and drawers, where indicated.
  - G. Other Acceptable Manufacturers: CompX National Hafele.

- 2.6 Adjustable Shelf Standards and Brackets:
  - A. Knap & Vogt #161 heavy duty 14 inch bracket and K&V #83 standards. Provide for 3 shelves, with 9 brackets.

- 2.7 Accessories:
  - A. Woodwork Fabrications – General: Methods, construction and assembly shall meet these standards.
  - B. Cabinetwork Fabrication: Fabricate cabinetwork in accordance with reviewed shop drawings and AWS Custom Grade Standards.

- C. Paint types and colors: Refer to material identification codes.

## PART 3 - PRODUCTS

## 3.1 Installation:

- A. General: Install architectural woodwork in accordance with Architectural Woodwork Standards (AWS) and in accordance with reviewed shop drawings and manufacturer's instructions.

- B. Wood Fabrications: Install woodwork assemblies in accordance with approved shop drawings.

- C. Wood Paneling: Anchor woodwork to supporting substrate with concealed panel-hanger clips and by blind nailing on backup strips, splined-connection strips, and similar associated trim and framing.

- D. Solid Surfacing: Install solid surfacing in accordance with reviewed shop drawings and manufacturer's instructions.

- E. Cabinetwork Installation: Install cabinets to comply with same AWS Grade as item was fabricated.

- F. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

## PART 3 - EXECUTION

## 3.1 Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as specified, for each particular substrate condition. Provide barrier coats over incompatible primers or remove and reprime as required. Notify architect in writing of anticipated problems in using specified coating systems with substrate primed by others.

- A. Remove hardware, hardware accessories, plates, lighting fixture, and similar items in-place and not to be 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 by workmen skilled in trades involved.

- B. Clean surfaces to be painted before applying paint or surface treatment. Remove oil and grease with clean cloths and cleaning solvents prior to mechanical cleaning.

- C. Mix water: Potable, free from impurities.

- D. Subfloor primer: Ardex P-51 or Ardex P082 high strength floor primer as recommended by underlayment manufacturer for use intended.

- E. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

## SECTION 093000 - TILING

## PART 1 - GENERAL

- 1.1 Summary: Work of this Section includes, but is not limited to, the following:

- 1. Tiles.

- 2. Waterproofing and crack isolation membranes.

- 3. Setting materials and grouts.

- 4. Accessories.

- 5. Installation.

- 1.2 Samples: Submit in accordance with submittal procedures in Section 010000, for color selection and appearance acceptance.

- 1.3 Comply with TCNA manual unless otherwise indicated.

- A. Provide tile to comply with Standard Grade Requirements of ANSI A137.1.

- B. Provide materials obtained from one source for each type and color of tile, grout, and setting materials.

- C. Provide sufficient heat and ventilation in areas where work of this section is being performed, so as to allow ceramic tile to properly set. Take precautionary measures necessary to ensure that excessive temperature changes do not occur.

## PART 2 - PRODUCTS

## 2.1 (CTW) Ceramic tile: 6"x6" Quarry Tile, Terracotta color

- 2.2 Latex-portland cement mortar (thin set): ANSI A118.6, color as indicated.

- 2.3 Standard sand and unsanded epoxy grout: ANSI A118.6, color to match existing.

- 2.4 Fluid-applied waterproofing system: Provide continuous and seamless waterproofing and crack isolation system, including premixed or single-component self-curing liquid-latex rubber or elastomeric-polymer membrane; ANSI A118.10 and ANSI 118.12; ASTM C627 extra heavy service rating; IAPMO-approved as shower pan liner; and recommended by the manufacturer for the application indicated.

## PART 3 - EXECUTION

## 3.1 Install tile work in accordance with applicable parts of ANSI A108 and manufacturer's printed instructions.

- Comply with TCNA installation methods as applicable to installation conditions.

## SECTION 099000 - PAINTING

## PART 1 - GENERAL

## 1.1 Section includes painting and finishing of new materials.

- Preparation of surfaces for painting and finishing.

- Refinishing and refinishing of existing surfaces as directed in Section 010000, cutting and patching.

- Product data: For each paint system specified. Include block fillers and primers.

- A. Material list: Provide inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish systems, and application. Identify

- each material by manufacturer's catalog number and general classification.

- B. Manufacturer's information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing and applying each coating material proposed for use.

- C. Certification by manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

- 1.4 Samples: Submit paint and transparent finish samples in accordance with submittal procedures in Section 010000, for color selection and finish acceptance.

- Schedule: For acceptance, submit 3 copies of complete schedule showing each product by number and brand name proposed to be used at each surface and location. Generally, follow specified outline and list number of coats.

- 1.5 Single-source responsibility: Provide primers and undercoat paint produced by same manufacturer's as finish coats.

- Environmental requirements: Comply with manufacturer's recommendations as to environmental conditions under which painting and finishing can be applied. Do not apply finish in areas where dust is being generated.

## PART 1 - GENERAL

## 1.1 Section includes: Toilet and bath accessories.

- Product data: Illustrate each accessory at large scale and show installation method.

- 1.3 Submit finish samples.

- 1.4 Schedule indicating types, quantities, sizes, and installation locations (by room) for each toilet accessory item to be provided for project.

- 1.5 Setting drawings where cutouts are required in other work, including templates, substrates preparation instruction, and directions for preparing cutouts and installing anchorage devices.

- 1.6 Maintenance instructions, including replaceable parts and service recommendations.

- 1.7 Product options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the toilet and bath accessory schedule.

- A. Do not modify aesthetics, as judges solely by architect, except with architect's approvals. Where modifications are proposed, submit comprehensive explanatory data to architect for review.

- B. Protect adjacent or adjoining finished surfaces and work and damage during installation of work of this section.

- C. Coordinate access locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.



## 230500 COMMON WORK RESULTS FOR HVAC

### BASIS OF DESIGN

- EQUIPMENT MANUFACTURERS LISTED ON THE EQUIPMENT SCHEDULES ARE THE BASIS-OF-DESIGN. MANUFACTURES LISTED IN THE SPECIFICATION OTHER THAN THE BASIS-OF-DESIGN MANUFACTURE ARE ACCEPTABLE SUBSTITUTIONS. EQUIPMENT SCHEDULES ARE ON THE DRAWINGS. REFER TO SPECIFICATIONS FOR UNSCHEDULED EQUIPMENT.
- SUBSTITUTIONS: CONTRACTOR CAN SUBMIT AN ALTERNATE MANUFACTURER IF APPROVED BY ENGINEER BEFORE SUBMITTALS ARE ISSUED. ALTERNATIVE MANUFACTURER MUST MEET OR EXCEED MECHANICAL AND ELECTRICAL PERFORMANCE, PHYSICAL ATTRIBUTES, AND OTHER ITEMS LISTED IN SPECIFICATIONS.

### SUBMITTALS

- EQUIPMENT STARTUP REPORTS.
- COORDINATION DRAWINGS: SUBMIT ONE COPY FOR THE ENGINEERS USE. DIVISION 23 COORDINATION DRAWINGS WILL NOT BE RETURNED.
- EQUIPMENT CUT SHEETS AND PERFORMANCE DATA.

### COORDINATION

- ARGANCE FOR PIPE SPACES, CHASES, SLOTS, AND OPENINGS IN BUILDING STRUCTURE DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR HVAC INSTALLATIONS.
- COORDINATE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SET SLEEVES IN Poured-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS AS THEY ARE CONSTRUCTED.
- COORDINATE REQUIREMENTS FOR ACCESS PANELS AND DOORS FOR HVAC ITEMS REQUIRING ACCESS THAT ARE CONCEALED BEHIND FINISHED SURFACES. ACCESS PANELS AND DOORS ARE SPECIFIED IN DIVISION 08 SECTION "ACCESS DOORS AND FRAMES."

### EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

- INSTALL HVAC EQUIPMENT ACCORDING TO THE EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS INDICATED ON THE DRAWINGS. RESOLVE CONFLICTING INSTRUCTIONS WITH THE ARCHITECT BEFORE MOUNTING EQUIPMENT.
- INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE INDICATED.
- INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS IN EXPOSED INTERIOR SPACES, UNLESS OTHERWISE INDICATED.
- INSTALL HVAC EQUIPMENT TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO ACCESSIBLE LOCATIONS.
- INSTALL EQUIPMENT TO ALLOW RIGHT OF WAY FOR PIPING INSTALLED AT REQUIRED SLOPE.
- REFER TO EQUIPMENT SHOP DRAWINGS FOR ROUGH IN LOCATIONS; DO NOT SCALE DRAWINGS.

### PAINTING

- PAINTING OF HVAC SYSTEMS, EQUIPMENT, AND COMPONENTS IS SPECIFIED IN ARCHITECTURAL SPECIFICATION SECTIONS "INTERIOR PAINTING" AND "EXTERIOR PAINTING."
- COORDINATE WITH PAINTING CONTRACTOR TO COVER AND PROTECT ALL CONTROLS, DEVICES AND PIECES OF EQUIPMENT WHERE MANUFACTURER DOES NOT RECOMMEND PAINTING THAT ASSOCIATED SURFACE.
- DAMAGE AND TOUCHUP: REPAIR MARRED AND DAMAGED FACTORY-PAINTED FINISHES WITH MATERIALS AND PROCEDURES TO MATCH ORIGINAL FACTORY FINISH.

### SEALANTS

- COMPLY WITH JOINT-SEALANT MATERIALS AND APPLICATIONS SPECIFIED IN ARCHITECTURAL SECTION "FIRESTOPPING".

### 23300 AIR DUCT ACCESSORIES

#### DUCT LINER

- FIBROUS-GLASS DUCT LINER: COMPLY WITH ASTM C 1071, NFPA 90A, OR NFPA 90B; AND WITH NAIMA AH124, "FIBROUS GLASS DUCT LINER STANDARD."
- MAXIMUM THERMAL CONDUCTIVITY:
  - A. TYPE I, FLEXIBLE: 0.27 BTU X IN/H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.
  - B. TYPE II, RIGID: 0.23 BTU X IN/H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.
- ANTIMICROBIAL EROSION-RESISTANT COATING: APPLY TO THE SURFACE OF THE LINER THAT WILL FORM THE INTERIOR SURFACE OF THE DUCT TO ACT AS A MOISTURE REPELLENT AND EROSION-RESISTANT COATING. ANTIMICROBIAL COMPOUND SHALL BE TESTED FOR EFFICACY BY AN NRTL AND REGISTERED BY THE EPA FOR USE IN HVAC SYSTEMS.
- MAXIMUM AIR VELOCITY: 4,000 FPM.
- ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH ASTM C 534, TYPE II, GRADE 1; AND WITH NFPA 90A OR SURFACE-BURNING CHARACTERISTICS: MAXIMUM FLAME-SPREAD INDEX OF 25 AND MAXIMUM SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO UL 723, CERTIFIED BY AN NRTL.
- LINER ADHESIVE: AS RECOMMENDED BY INSULATION MANUFACTURER AND COMPLYING WITH NFPA 90A OR NFPA 90B.
- INSULATION PINS AND WASHERS:
  - A. CUPPED-HEAD, CAPACITOR-DISCHARGE-WELD PINS: COPPER- OR ZINC-COATED STEEL PIN, FULLY ANNEALED FOR CAPACITOR-DISCHARGE WELDING. 0.135-INCH-DIAMETER SHANK, LENGTH TO SUIT DEPTH OF INSULATION INDICATED WITH INTEGRAL 1-1/2-INCH GALVANIZED CARBON-STEEL WASHER.
  - B. INSULATION-RETAINING WASHERS: SELF-LOCKING WASHERS FORMED FROM 0.016-INCH-THICK GALVANIZED STEEL OR ALUMINUM; WITH BEVELED EDGE SIZED AS REQUIRED TO HOLD INSULATION SECURELY IN PLACE BUT NOT LESS THAN 1-1/2 INCHES IN DIAMETER.

#### INDOOR DUCT LINER SCHEDULE

- EXPOSED OR CONCEALED, RECTANGULAR SUPPLY-AIR DUCT 5'-0" DOWNSTREAM OF VAV BOX:
  - A. FIBROUS-GLASS DUCT LINER: 1 INCHES THICK AND 0.75-LB/CU. FT. NOMINAL DENSITY.
- EXPOSED OR CONCEALED, RECTANGULAR RETURN TRANSFER DUCT:
  - A. FIBROUS-GLASS DUCT LINER: 1 INCHES THICK AND 0.75-LB/CU. FT. NOMINAL DENSITY.
- EXPOSED OR CONCEALED, RECTANGULAR SUPPLY OR RETURN AIR DUCT DOWNSTREAM OF RTU:
  - A. FIBROUS-GLASS DUCT LINER: 1 INCHES THICK AND 0.75-LB/CU. FT. NOMINAL DENSITY.
  - B. LENGTH SHOWN ON FLOOR PLANS

### CONNECTIONS

- MAKE CONNECTIONS TO EQUIPMENT WITH FLEXIBLE CONNECTORS ACCORDING TO DIVISION 23 SECTION "DUCT ACCESSORIES."
- FOR BRANCH CONNECTIONS COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE," FIGURES 2-5 AND 2-6.
- FOR INLET AND OUTLET CONNECTIONS COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE," FIGURES 2-14 AND 2-15.
- FOR EQUIPMENT CONNECTIONS COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE," FIGURES 2-17.

### FIRESTOPPING

- REFER TO ARCHITECTURAL SPECIFICATIONS FOR FIRE RESISTANT SEALANTS AND FIRE-STOPPING MATERIALS FOR USE AROUND DUCT PENETRATIONS AND FIRE DAMPER INSTALLATIONS IN FIRE RATED FLOORS, PARTITIONS, AND WALLS.

### FLEXIBLE DUCTS

- INSULATED-ACOUSTIC-FLEXIBLE DUCT: UL 181, CLASS 1, SPUN BOND NYLON FABRIC LINER SUPPORTED BY HELICALLY WOUND GALVANIZED STEEL, MECHANICALLY FASTENED TO FABRIC LINER WITHOUT USE OF ADHESIVE. FIBERGLASS INSULATION R-6.0 WITH ALUMINIZED VAPOR BARRIER.
- PRESSURE RATING:
  - A. SIZES 6-INCHES: 6-INCH WG POSITIVE AND 5-INCH WG NEGATIVE.
  - B. MAXIMUM AIR VELOCITY: 5000 FPM.
  - C. TEMPERATURE RANGE: MINUS 20 TO PLUS 250 DEGREES.
- MINIMUM ACOUSTIC PERFORMANCE:
  - A. THE INSERTION LOSS (dB) OF A 6 FOOT LENGTH OF DUCT SHALL BE TESTED IN ACCORDANCE WITH ASTM E 477 AT A VELOCITY OF 1000 FEET PER MINUTE.
- FLEXIBLE DUCT CONNECTORS:
  - A. CLAMPS: NYLON STRAP IN SIZES 3 THROUGH 18 INCHES, TO SUIT DUCT SIZE.

### AIR DUCT ACCESSORIES

- STEEL, MANUAL VOLUME DAMPERS
  - A. MAXIMUM VELOCITY: 1500 FPM.
  - B. STANDARD LEAKAGE RATING, WITH LINKAGE OUTSIDE AIRSTREAM.
  - C. INC-PLATED, DIE-CAST CORE WITH DIAL AND HANDLE MADE OF 3/32-INCH-THICK ZINC-PLATED STEEL, AND A 3/4-INCH HEXAGON LOCKING NUT.
- TURNING VANE:
  - A. MANUFACTURED TURNING VANE FOR METAL DUCTS: CURVED BLADES OF GALVANIZED SHEET STEEL; SUPPORT WITH BARS PERPENDICULAR TO BLADES; SET IN VANE RUNNERS SUITABLE FOR DUCT MOUNTING.
  - B. ACOUSTIC TURNING VANE: FABRICATE AIRFOIL-SHAPED ALUMINUM EXTRUSIONS WITH PERFORATED FACES AND FIBROUS-GLASS FILL.
  - C. COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", FIGURES 4-3, "VANES AND VANE RUNNERS," AND 4-4, "VANE SUPPORT IN ELBOWS."
- DUCT-MOUNTED ACCESS DOORS:
  - A. DOUBLE WALL, RECTANGULAR GALVANIZED SHEET METAL WITH INSULATION FILL AND THICKNESS AS INDICATED FOR DUCT PRESSURE CLASS.
  - B. HINGES AND LATCHES: 1-BY-1-INCH BUTT OR PIANO HINGE AND CAM LATCHES.
  - C. FABRICATE DOORS AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.
- FLEXIBLE CONNECTORS:
  - A. INDOOR SYSTEM FLEXIBLE CONNECTOR: FABRIC GLASS FABRIC DOUBLE COATED WITH NEOPRENE.
  - B. MINIMUM WEIGHT: 26 OZ./SQ. YD.
  - C. TENSILE STRENGTH: 480 LB/INCH IN THE WARP AND 360 LB/INCH IN THE FILLING.
  - D. SERVICE TEMPERATURE: MINUS 40 TO PLUS 200 DEG F.
  - E. FIRE SMOKING COMBINATION DAMPERS:
    - A. TYPE DYNAMIC RATED AND LABELED ACCORDING TO UL 555 AND UL 555S BY AN NRTL.
    - B. CLOSING RATE IN DUCTS UP TO 4-INCH WG STATIC PRESSURE CLASS AND MINIMUM 2000-FPM VELOCITY.
    - C. FIRE RATING: 1-HR AND 3 HOURS. REFER TO DRAWINGS.
    - D. FRAME: HAT-SHAPED, 0.063-INCH-THICK GALVANIZED SHEET STEEL, WITH WELDED AND MOUNTING FLANGE.
    - E. HEAT-RESPONSIVE DEVICE: RESETTABLE, 165 DEG F RATED FUSIBLE LINKS.
    - F. SMOKE DETECTOR: INTEGRAL, FACTORY WIRED FOR SINGLE-POINT CONNECTION.
    - G. BLADES: ROLL-FORMED, HORIZONTAL, OVERLAPPING, 0.063-INCH-THICK, GALVANIZED SHEET STEEL.
    - H. LEAKAGE: CLASS I
    - I. ACCESSORIES:
      - A. TOGGLE SWITCHES FOR SIGNALING POSITION INDICATION, DAMPER MOUNTED.

## 23113 METAL DUCTS

### SHEET METAL MATERIALS

- COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS. MATERIAL THICKNESS, AND DUCT CONSTRUCTION METHODS, UNLESS OTHERWISE INDICATED. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.
- Galvanized Sheet Steel: Lock-forming quality, complying with ASTM A 653 and having G90 coating designation.
- Carbon-Steel Sheets: ASTM A100/A100M, Cold-Rolled Sheets, Commercial Quality, with Oiled, Matte Finish for Exposed Ducts.
- Stainless Steel: ASTM A 480, Type 316, and having a No. 2D Finish for Concealed Ducts and No. 4 Finish for Exposed Ducts.
- Aluminum Sheets: Comply with ASTM B 209 Alloy 3003, H14 Temper, with Mill Finish for Concealed Ducts, and Standard, One-Side Bright Finish for Duct Surfaces Exposed to View.
- Materials: All Ducts shall be Galvanized Steel.

### DUCT FABRICATION

- GENERAL: FABRICATE DUCTS, ELBOWS, TRANSITIONS, OFFSETS, BRANCH CONNECTIONS, AND OTHER CONSTRUCTION ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE." COMPLY WITH REQUIREMENTS FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE-ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.
- APPLY JOINTS USING MANUFACTURER'S "DUCT CONSTRUCTION STANDARDS" FOR MATERIAL THICKNESS, REINFORCEMENT SIZE AND SPACING, AND JOINT REINFORCEMENT. "DUCT CONSTRUCTION STANDARDS" MUST BE BASED ON THE REFERENCED SMACNA STANDARDS.
- LABORATORY FUME HOOD EXHAUST DUCTS: FABRICATE LABORATORY EXHAUST DUCTS (RECTANGULAR AND ROUND), AND OTHER DUCTS AS INDICATED WITH 18 GAUGE MINIMUM STAINLESS STEEL SHEETS. DUCTS SHALL BE LIQUID-TIGHT OVER THEIR ENTIRE LENGTH. FLANGED JOINTS MAY BE USED AT EQUIPMENT CONNECTIONS.
- UNLESS OTHERWISE INDICATED, THE NET FREE AREA OF THE DUCT DIMENSIONS GIVEN ON THE DRAWINGS SHALL BE MAINTAINED. THE DUCT DIMENSIONS SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR LINER THICKNESS.
- TIE-RODS: GALVANIZED STEEL, 3/8-INCH MINIMUM DIAMETER, RIGID CONDUIT, MINIMUM 3 1/4-INCH, CAN BE USED IN ACCORDANCE WITH REFERENCED STANDARDS.
- DUCTS SHALL HAVE MILL-PHOSPHATIZED "PAINT-GRIP" FINISH FOR SURFACES OF DUCTS EXPOSED TO VIEW THAT ARE SCHEDULED FOR FIELD PAINTING.

## 230529 HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

### METAL PIPE HANGERS AND SUPPORTS

- Carbon-Steel Pipe Hangers and Supports:
  - Description: MSS SP-58, Types 1 through 58, Factory-Fabricated Components.
  - Description: MSS SP-58, Types 1 through 58, Factory-Fabricated Components.
  - Galvanized Metallic Coatings: Pre-Galvanized or Hot Dipped.
  - Nonmetallic Coatings: Plastic Coating, Jacket, or Liner.
  - Padded Hangers: Hanger with Fiberglass or Other Pipe Insulation Pad or Cushion to Support Bearing Surface of Piping.
  - Hanger Rods: Continuous-Thread Rod, Nuts, and Washer Made of Carbon Steel.
  - Copper Pipe Hangers:
    - Description: MSS SP-58, Types 1 through 58, Copper-Coated-Steel, Factory-Fabricated Components.
    - Description: MSS SP-58, Types 1 through 58, Copper-Coated-Steel, Factory-Fabricated Components.

### TRAPEZE PIPE HANGERS

- Description: MSS SP-69, Type 59, Shop- or Field-Fabricated Pipe-Support Assembly Made from Structural Carbon-Steel Shapes with MSS SP-58 Carbon-Steel Hanger Rods, Nuts, Saddles, and U-Bolts.

### HANGER INSTALLATION

- Load Distribution: Install Hangers and Supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- Attaching to Insulated Piping:
  - Piping operating above ambient air temperature: clamp may project through insulation.
  - Piping operating below ambient air temperature: use thermal-hanger shield insert with clamp sized to match od of insert.
  - Trim excess length of continuous-thread hanger and support rods to 1/2 inches.
  - Provide roof supports securely attached to roofing system for all roof mounted piping approved for high wind applications per Florida building code.

### VIBRATION CONTROLS

- Restrained Isolation Roof-Curb Rails:
  - Description: Factory-Assembled, Fully Enclosed, Insulated, Air- and Watertight Curb Rail Designed to Resiliently Support Equipment and to Withstand 125-MPH Wind Impinging Laterally Against Side of Equipment.
  - Upper Frame: Upper Frame Shall Provide Continuous and Captive Support for Equipment.
  - Lower Support Assembly: The Lower Support Assembly Shall be Formed Sheet Metal Section Containing Adjustable and Removable Steel Springs That Support Upper Frame. The Lower Support Assembly Shall have a Means for Attaching to Building Structure and a Wood Nailer for Attaching Roof Materials and Shall be Insulated with a Minimum of 2 inches of Rigid Glass-Fiber Insulation on Inside of Assembly. Adjustable, Restrained-Spring Isolators Shall be Mounted on Elastomeric Vibration Isolation Pads and Shall have Access Ports, for Level Adjustment, with Removable Waterproof Covers at All Isolator Locations. Isolators Shall be Located so They are Accessible for Adjustment at Any Time During the Life of the Installation without Interfering with the Integrity of the Roof.
  - Overall Height: 30".
- Elastomeric Isolation Pads:
  - Description: Waffle Pattern in 2" x 2" or 4" x 4" increments. Pad Shall be Designed to Bear Weight of Equipment. Pad Shall be Compatible with Associated Outdoor Climate Conditions.

## 230533 IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

### EQUIPMENT LABELS

- General Requirements for Equipment Labels: Black Plastic 1/8 Inch Thick with White Letter Engraving.
- Lettering Size: At Least 1-1/2 Inches High.

### PIPE LABELS

- General Requirements for Manufactured Pipe Labels: Preprinted, Color-Coded, with Lettering Indicating Service, and Showing Flow Direction.
- Pretensioned Pipe Labels: Precoiled, Semi-Rigid Plastic Formed to Cover Full Circumference of Pipe and to Attach to Pipe Without Fasteners or Adhesive.
- Pipe Label Contents: Include Identification of Piping Service Using Same Designations or Abbreviations as Used on Drawings, Pipe Size, and an Arrow Indicating Flow Direction.
- Flow-Direction Arrows: Integral with Piping System Service Lettering to Accommodate Both Directions or As Separate Unit on Each Pipe Label to Indicate Flow Direction.
- Lettering Size: At Least 1-1/2 Inches High.
- Installation: Locate Pipe Labels Where Piping Above Accessible Ceilings in Finished Spaces; Machine Rooms; Accessible Maintenance Spaces Such as Plenums; in Addition to:
  - A. Near Penetrations Through Walls, Floors, Ceilings, and Inaccessible Enclosures.
  - B. Spaced at Maximum Intervals of 40 Feet Along Each Run. Reduce Intervals to 20 Feet in Areas of Congested Piping and Equipment.
  - C. Where Located in an Exposed Finish Public Space, Locate Pipe Label Near Upper Top Quarter Portion of Pipe.

### DUCTWORK LABELS

- General Requirements for Manufactured Duct Labels: Preprinted, Color-Coded, with Lettering Indicating Service, and Showing Flow Direction.
- Self-Adhesive Duct Labels: Printed Plastic with Contact-Type, Permanent-Adhesive Backing.
- Adhesive: Contact-Type Permanent Adhesive, Compatible with Label and with Substrate.
- Lettering Size: At Least 1-1/2 Inches High.
- Installation: Locate Duct Labels Where Piping Above Accessible Ceilings in Finished Spaces; Machine Rooms; Accessible Maintenance Spaces Such as Plenums; in Addition to:
  - A. Near Penetrations Through Walls, Floors, Ceilings, and Inaccessible Enclosures.
  - B. Spaced at Maximum Intervals of 40 Feet Along Each Run. Reduce Intervals to 20 Feet in Areas of Congested Piping and Equipment.
  - C. Where Located in an Exposed Finish Public Space, Locate Duct Label Near Upper Side of Ductwork.

### VALVE TAGS

- Valve Tags: stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch numbers.
- Tag Material: Brass, 0.032-inch minimum thickness, and having predrilled or stamped holes for attachment hardware.
- Fasteners: Brass wire-link or beaded chain, or S-hook.
- Valve Schedules: For each piping system, on 8 1/2-by-11-inch bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutdown and similar special uses.

## SECTION 23053 GENERAL PROCEDURES FOR TESTING, ADJUSTING, AND BALANCING (TAB)

- Perform testing and balancing procedures on each system according to the procedures contained in AABC's "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE," ASHRAE 111, NEBB's "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING," AABC's "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE" OR NEBB's "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS" SMACNA'S "HVAC SYSTEMS - TESTING, ADJUSTING, AND BALANCING."
- Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for tab procedures.
- After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts.
- Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish.
- Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.
- Take and report testing and balancing measurements in inch-pound (IP) units.
- Tolerances:
  - Supply return, and exhaust fans and equipment with fans: plus 5 to plus 10 percent.
  - Air outlets and inlets: 0 to plus or minus 10 percent.
- Report:
  - Prepare a tab report that includes the following:
    - Instrumentation that were used, including calibration certification.
    - List of all equipment and air devices listing unit tag, location, manufacturer, and model.
<li

STATE OF CALIFORNIA  
**Mechanical Systems**  
CALIFORNIA ENERGY COMMISSION  
NRC-MCH-4

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.

Project Name: Sonoma Kitchen  
Project Address: 440 Arrowood Dr, Santa Rosa, CA 95407  
Report Page: 2025-01-12T16:55:34-05:00  
Date Prepared: 2025-01-12T16:55:34-05:00  
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**A. GENERAL INFORMATION**

Project Location (city)	Santa Rosa	04 Total Conditioned Floor Area	12287
Climate Zone	2	05 Total Unconditioned Floor Area	0
03 Occupancy Types Within Project:	06 # of Stories (Habitable Above Grade)	1	
• Restaurant			

**B. PROJECT SCOPE**

This table indicates mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
<input type="checkbox"/> Heating Air System	<input type="checkbox"/> Water Economizer	<input type="checkbox"/> Air Economizer
<input checked="" type="checkbox"/> Cooling Air System	<input type="checkbox"/> Pumps	<input type="checkbox"/> Electric Resistance Heat
Mechanical Controls		
<input checked="" type="checkbox"/>	<input type="checkbox"/> System Piping	<input type="checkbox"/> Fan Systems
Mechanical Controls (existing to remain, altered or new)		
<input checked="" type="checkbox"/>	<input type="checkbox"/> Cooling Towers	<input type="checkbox"/> Ductwork (existing to remain, altered or new)
<input type="checkbox"/> Chillers	<input type="checkbox"/> Boilers	<input type="checkbox"/> Ventilation
<input type="checkbox"/> Zonal Systems/ Terminal Boxes		

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CERTIFICATE OF COMPLIANCE  
Project Name: Sonoma Kitchen Report Page: 2025-01-12T16:55:34-05:00  
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**C. COMPLIANCE RESULTS**

This table will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, or the table indicated as not compliant for guidance.

01 System Summary	02 Pumps AND 140.4(b), 170.2(c)4i	03 Fan Economizers AND 140.4(c), 140.4(e), 170.2(c)1	04 Sensors Controls AND 120.2, 140.4(f), 170.2(c)	05 Ventilation AND 120.1, 160.2	06 Terminal Box AND 140.4(i), 170.2(f)4b	07 Distribution AND 120.3, 140.4(l), 160.2, 160.3	08 Cooling Towers AND 110.2(e)2	09 Compliance Results
<small>(See Table F) (See Table G) (See Table H) (See Table I) (See Table J) (See Table K) (See Table L) (See Table M)</small>								
Yes	AND	AND	AND	Yes	AND	AND	AND	COMPLIES
Mandatory Measures Compliance (See Table Q for Details)								
COMPLIES								

**D. EXCEPTIONAL CONDITIONS**

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)**

Space Conditioning System Information

01 System Name	02 Quantity	03 System Serving	04 System Status	05 Space Type	06 Utilizing Recovered Heat
EC-1	1	Single zone	Alteration		

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CERTIFICATE OF COMPLIANCE  
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**F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)**

Dry System Equipment Sizing (Includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11	
Equipment Sizing per Mechanical Schedule (kBtu/h)											
140.4(a&b), 170.2(c)1 & 170.2(c)2											
Name or Item Tag	Equipment Category per Tables 110.2 and 170.2(c)3ai	Equipment Type per Tables 110.2 and Title 20	Smallest Size Category	140.4(a) & 170.2(c)1	140.4(a) & 170.2(c)1	Per Design (kBtu/h)	Rated (kBtu/h)	Sup. Sensible Heating Output <sup>1,2</sup> (kBtu/h)	Rated (kBtu/h)	Total Sensible Cooling Load (kBtu/h)	Load Calculations <sup>3,4</sup>
EC-1	Unitary AC/ Cond. (no elec. resistance)	Condensing units, evaporatively cooled	Yes			99	99		135		

<sup>1</sup>FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per 140.4(a) and 170.2(c)1. Household fixtures are exempt.

<sup>2</sup>It is the responsibility of the designer to ensure that equipment sizing complies with the equipment schedule. Sensible cooling output comes from specification sheet tables.

<sup>3</sup>If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.

<sup>4</sup>Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c).

**Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)**

01	02	03	04	05	06	07	08	09
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Requirements Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
EC-1	>135,000					EER	13.5	13.5
						IEER	14	14

**G. PUMPS**

This section does not apply to this project.

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STATE OF CALIFORNIA  
**Mechanical Systems**  
CALIFORNIA ENERGY COMMISSION  
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CERTIFICATE OF COMPLIANCE  
Project Name: Sonoma Kitchen Report Page: 2025-01-12T16:55:34-05:00  
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**H. FAN SYSTEMS & AIR ECONOMIZERS**

This section does not apply to this project.

**I. SYSTEM CONTROLS**

This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L, or requirements in 141.0(b)2E 180.2(b)2 for altered space conditioning systems.

01 System Name	02	03	04	05	06	07	08	09	10
System Name	Conditioners	Thermostats	Shut-Off Controls	Isolation Zone	Demand Response	Supply Air Temperature Reset	Window Interlocks per 140.4(n)	Direct Digital Control (DDC) per 120.2	
Kitchen Exhaust System	1st Floor Area Being Served	110.2(b)9 & (c)1	120.2(b)9 & (c)2 or 140.4(n)2 & 170.2(c)4L	120.2(b)2 & 160.3(a)2	160.3(a)2	140.4(f) & 170.2(c)4L	NA: Single Zone	NA: Alteration Project	
	Single zone <25,000 ft <sup>3</sup>	EMCS	EMCS	NA: Single Zone	NA: PTAC, PTHP, Rm AC, HP	NA: Single Zone	NA: Single Zone		

<sup>1</sup>FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

**J. VENTILATION AND INDOOR AIR QUALITY**

This section does not apply to this project.

**K. TERMINAL BOX CONTROLS**

This section does not apply to this project.

**L. DISTRIBUTION (DUCTWORK and PIPING)**

This section does not apply to this project.

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STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION  
NRC-PLB-4

CERTIFICATE OF COMPLIANCE  
Project Name: Sonoma Kitchen Report Page: 2025-01-12T17:06:20-05:00  
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**F. DOMESTIC HOT WATER EQUIPMENT**

This table is used to demonstrate compliance with mandatory equipment requirements in 110.1 and 110.3. Compliance with prescriptive requirements in 140.5(c) / 170.2(d) must also be demonstrated with and 141.0 / 180.1 / 180.2 for addition and alteration scopes.

03	04	05	06						
System Name	EWH-1	Exception to 140.5(c) / 170.2(d)3	Exceptions Do Not Apply						
				Gas Service Water Heating System > 1MMBtu/h <sup>1</sup>					
07	08	09	10	11	12	13	14	15	
Name or Item Tag	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Max GPM/ First Hour Rating (FHR)	Rated Efficiency	Minimum Efficiency Required	Efficiency Unit	Designed Standby Loss	Maximum Standby Loss
EWH-1	Conventional	<=2	0 < GPM <1.7	0.91	0.91	UEF			
EWH-2	Conventional	<=2	0 < GPM <1.7	0.91	0.91	UEF			

<sup>1</sup>FOOTNOTE: In systems > 1MMBtu/h with multiple units, gas water heaters with input capacity > 100,000 Btu/h may meet 90% Et requirements via an input capacity-weighted average.

<sup>2</sup>FOOTNOTE: Compliant equipment may be found in the Modernized Appliance Efficiency Database System (MAEDBS) on the Energy Commission website: <https://sacerappliance.energy.ca.gov/Pages/Search/AdvancedSearch.aspx>

**I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Selections have been made based on information provided in this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. Additional Remarks: These documents must be provided to the building inspector during construction and can be found online at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4>

**J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

There are no forms required for this project.

**K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION**

There are no forms required for this project.

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**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION  
NRC-PLB-4

CERTIFICATE OF COMPLIANCE  
Project Name: Sonoma Kitchen Report Page: 2025-01-12T17:06:20-05:00  
(Page 4 of 5)  
Date Prepared: 2025-01-12T17:06:20-05:00

**F. DOMESTIC HOT WATER EQUIPMENT**

Water Heating Equipment All Occupancies

Yes	No	Not Applicable	Requirement
18	<input type="checkbox"/>	<input type="checkbox"/>	Unfilled storage tank insulation shall have internal >R-16 OR External >R-3.5. Label required per 110.3(c)3
19	<input type="checkbox"/>	<input type="checkbox"/>	New state buildings 60% of energy for service water heating from site solar energy or recovered energy per 110.3(c)5
20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Isolation valves for instantaneous water heating with input rating >6.8 kBtu/H or 2 kW has been specified per 110.3(c)6
21	<input type="checkbox"/>	<input type="checkbox"/>	School buildings < 25,000 ft <sup>2</sup> and < 4 stories must install a heat pump water heating system per 140.5(a)11. Water heating systems serving an individual bathroom space may be instantaneous electric water heater.

**I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Selections have been made based on information provided in this document. If any selection needs to be changed, an explanation should be included in Table E. Additional Remarks: These documents must be provided to the building inspector during construction and can be found online at [https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-4](https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4)

**J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

There are no forms required for this project.

**K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION**

There are no forms required for this project.

Generated Date/Time: Documentation Software: Energy Code Ace  
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.000 Compliance ID: 253751-0125-0002 Schema Version: rev 20220101 Report Generated: 2025-01-12 13:55:59  
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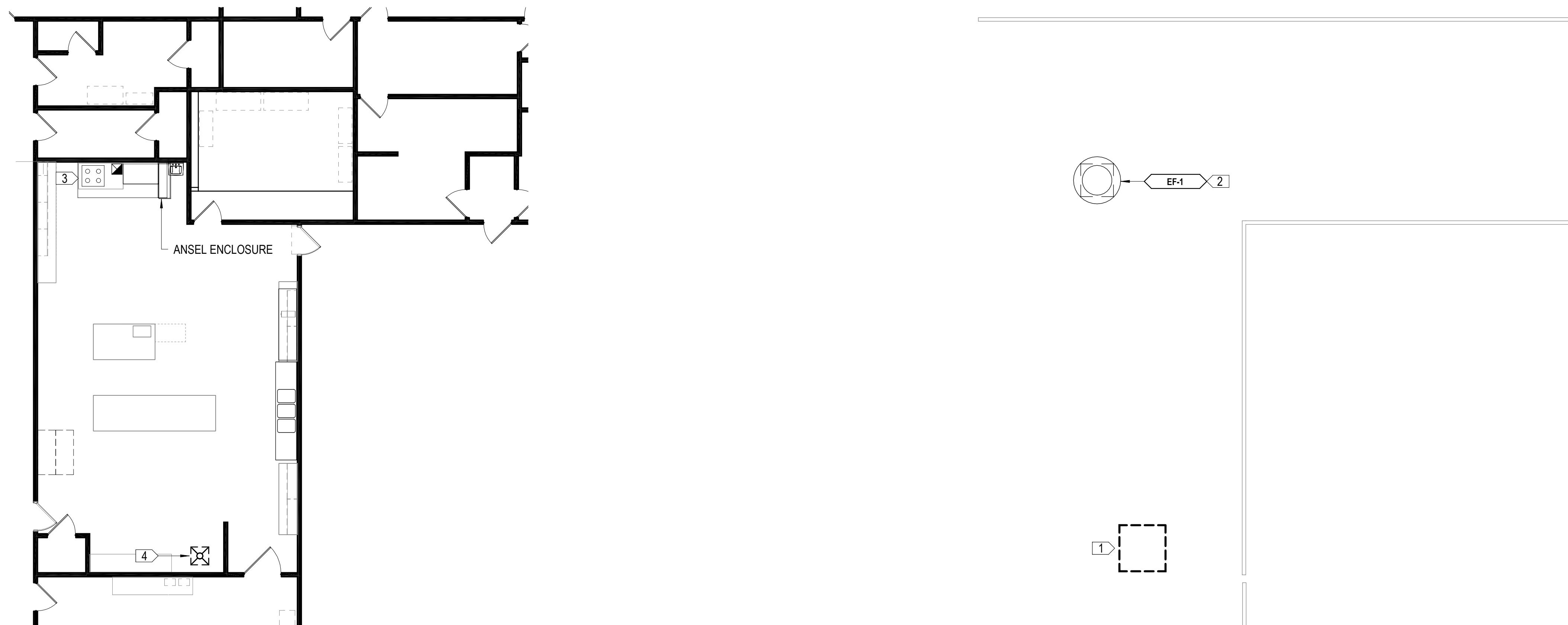
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CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.000 Compliance ID: 253751-0125-0002 Schema Version: rev 20220101 Report Generated: 2025-01-12 14:06:21  
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ISSUANCE HISTORY - THIS SHEET  
HGA NO: 5378-001-000  
TITLE 24  
DATE: MARCH 25, 2025  
KITCHEN IMPROVEMENTS

M040  
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KEYNOTES	
#	DESCRIPTION
1	REMOVE EXISTING CHAMPION COOLER DOWN DRAFT EVAPORATIVE COOLER (MODEL: 5500DD) AND ALL ASSOCIATED APPURTEANCES.
2	EXISTING CAPTIVE-AIRE SYSTEMS POWER VENTILATOR FAN (MODEL: NCA16FA) SERVING COMMERCIAL KITCHEN EXHAUST HOOD TO REMAIN.
3	EXISTING CAPTIVE-AIRE KITCHEN TYPE I EXHAUST HOOD, PREPARE TO BE REUSED. BOTTOM AT 78" AFF. INSPECT EXHAUST SYSTEM FOR ANY DEPOSITS FROM GREASE-LADEN VAPORS. IF FOUND, SYSTEM SHALL BE CLEANED BY PROPERLY TRAINED, QUALIFIED, AND CERTAIN PERSON(S) ACCEPTABLE TO THE AHJ.
4	REMOVE EXISTING SUPPLY GRILLE OPENING THROUGH ROOF SERVING COMMERCIAL KITCHEN.



# 1 MECHANICAL DEMOLITION PLAN - LEVEL 01

1/8" = 1'-0"

# 2 MECHANICAL DEMOLITION PLAN - ROOF

1/8" = 1'-0"

---

# ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

A circular professional engineer stamp. The outer ring contains the text "PROFESSIONAL ENGINEER" at the top and "STATE OF CALIFORNIA" at the bottom. The center of the stamp contains the name "KENNETH W. MARTIN" above the license number "M 27428". Below the license number is the expiration date "EXP. 6/30/25". The words "MECHANICAL" are printed between the license number and the expiration date. The stamp is signed with a cursive "K.W. MARTIN" and a date "JUN 1925".

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HGA NO: 5378-001-00

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# MECHANICAL DEMOLITION PLAN

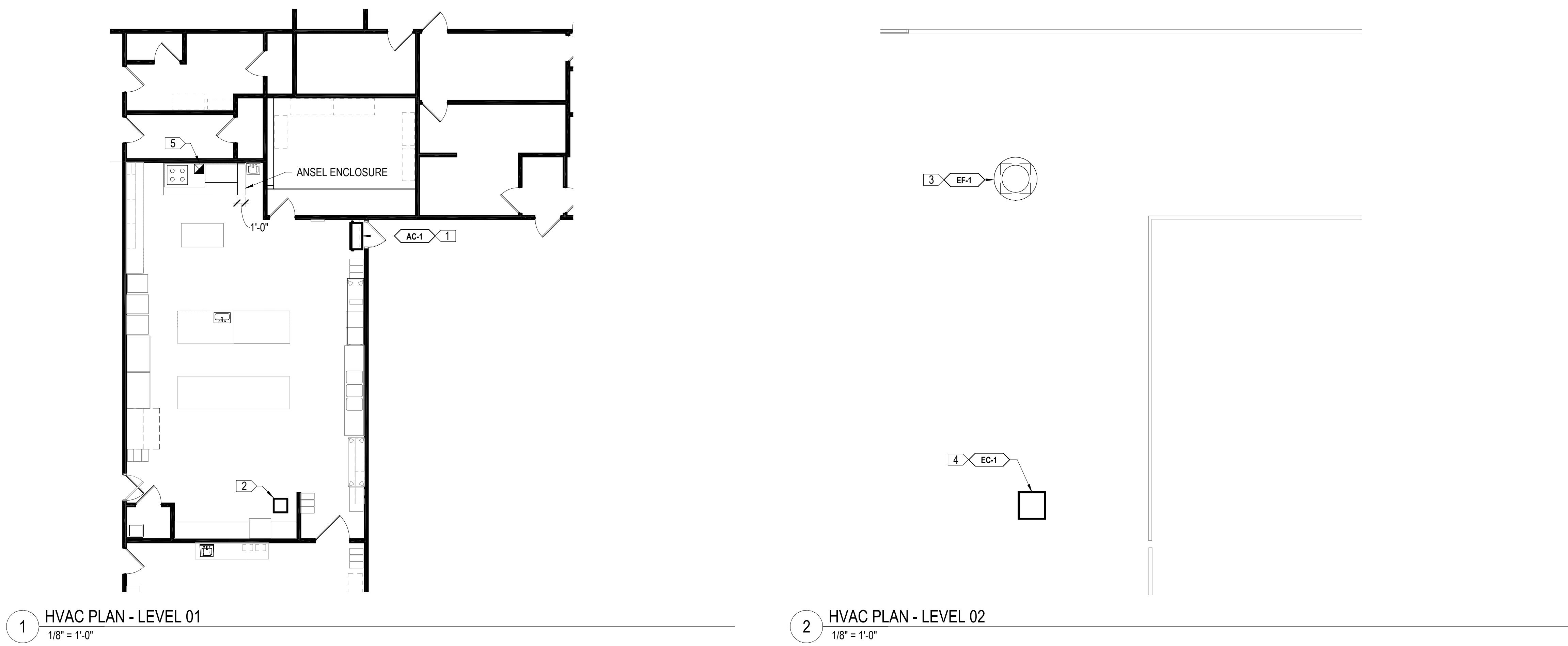
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DATE: MARCH 25, 2025

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## KITCHEN IMPROVEMENTS

# M101



# HVAC PLAN - LEVEL 01

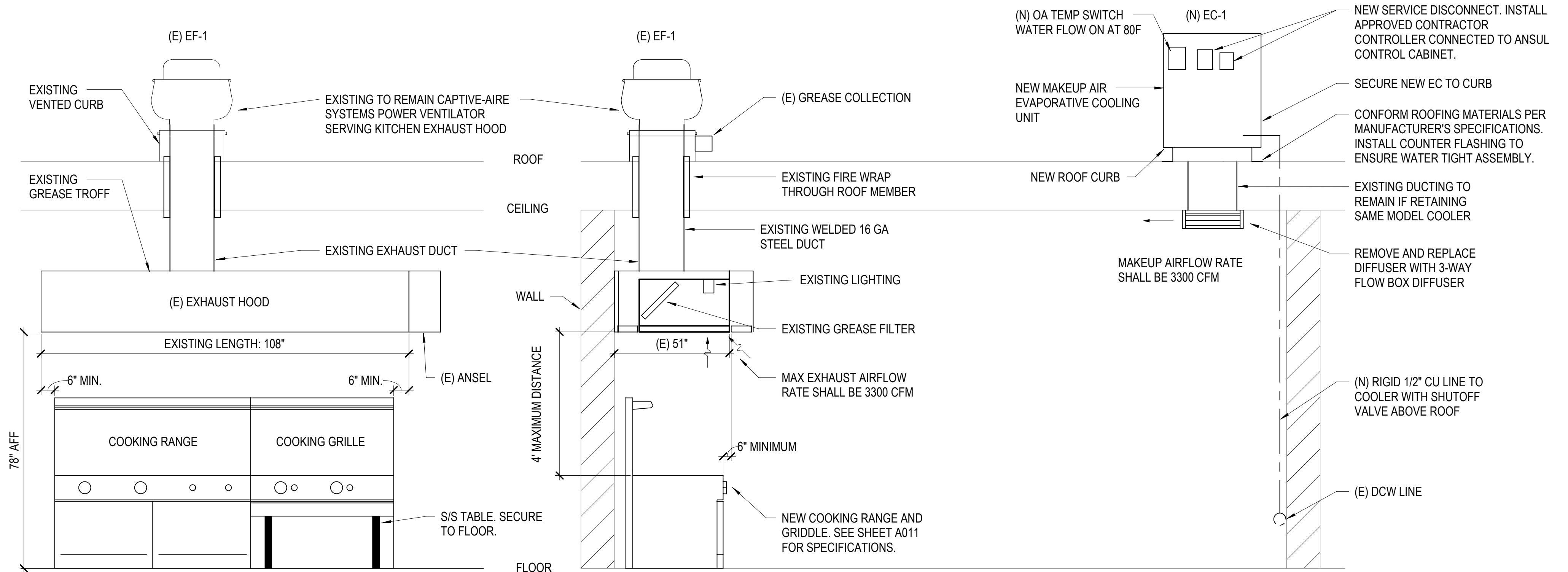
2 HVAC PLAN - LEVEL 02  
1/8" = 1'-0"

AIR CURTAIN (AC)															
UNIT NUMBER	LOCATION	ENCLOSURE			MOUTING HEIGHT (FT)	AIRFLOW (CFM)	OUTLET VELOCITY (FPM)	EAT (°F)	MAX NC (dBA)	ELECTRICAL			BASIS OF DESIGN		NOTES
		LENGTH (IN)	HEIGHT (IN)	WIDTH (IN)						VOLTAGE	PHASE	HP	MANUFACTURER	MODEL	
AC-1	KITCHEN	39	15	18	4" ABOVE DOOR	1,512	1,728	AMBIENT	0	120	1	1/2	BERNER	IDC12-1036A	1,2,3

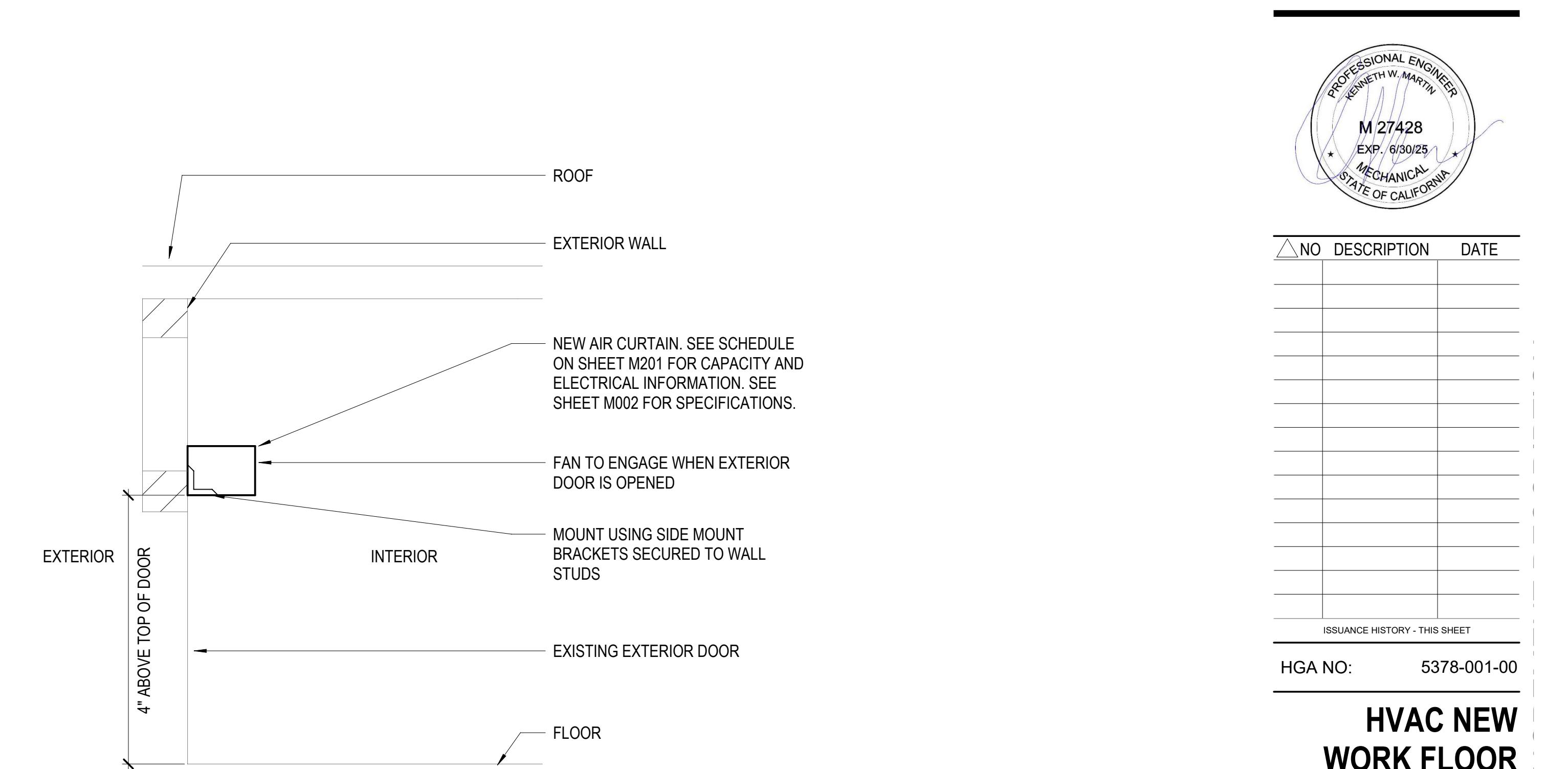
1. UNIT SHALL BE BASIS OF DESIGN OR APPROVED EQUAL.
2. PROVIDE SWITCHING WITH DOOR OPENING.
3. PROVIDE SHOP FABRICATED 14 GA STAINLESS STEEL ANGLE FRAMING ON BOTH SIDES FOR SUPPORT.

EVAPORATIVE COOLER SCHEDULE (EC)												
UNIT NUMBER	SUPPLY FAN MOTOR				EFFECTIVENESS	EVAPORATIVE PERFORMANCE				BASIS OF DESIGN		NOTES
	SUPPLY AIRFLOW (CFM)	HP	TSP (IN WG)	SPEED CONTROL		EAT (DB)	EAT (WB)	LAT (DB)	LAT (WB)	MANUFACTURER	MODEL	
EC-1	3300	3/4	0.50	SINGLE SPEED	70%	95 °F	65 °F	74 °F	65 °F	CHAMPION COOLER	5000DD	1,2,3,4,5

1. UNIT SHALL BE BASIS OF DESIGN OR APPROVED EQUAL.
2. BOTH EF-1 AND EC-1 ARE TO BE POWERED FROM THE ANSEL CONTROL PANEL LOCATED ON THE SIDE OF THE EXISTING TYPE I HOOD AND SHALL ENGAGE AND UN-ENGAGE PER THE CURRENT CONTROL SEQUENCE IN THE ANSEL SYSTEM
3. THE NEW EVAPORATIVE COOLER SHALL BE THE SAME MAKE AND DIMENSIONS OF THE EXISTING COOLER IN ORDER TO RETAIN THE EXISTING ROOF CURB, ROOFING AND DUCTING.
4. REMOVE EXISTING SOFT COPPER TUBING FROM BELOW AND REPLACE WITH RIGID COPPER PIPING WITH ROOFTOP SHUT OFF VALVE.
5. PROVIDE OUTDOOR AIR TEMPERATURE SENSOR TO ENGAGE WATER FLOW AT 80F OUTDOOR TEMPERATURE.



# 3 KITCHEN EXHAUST TYPE I CANOPY HOOD & MAKEUP AIR DIAGRAM NTS



4 (NEW) AIR CURTAIN  
NTS

# HGA

Sutter Street, Suite 500  
Francisco, California 94108  
Telephone 415.814.6910

# M201



NO. DESCRIPTION DATE

ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

## ELECTRICAL GENERAL NOTES AND SYMBOLS

DATE: NOVEMBER 22, 2024

KITCHEN IMPROVEMENTS

E000

SYMBOL EXPLANATION		COMMUNICATIONS ROUGH-IN REQUIREMENTS												ELECTRICAL SYMBOLS														
		BACK BOX SIZE			RACEWAY SIZE			NOMINAL MOUNTING HEIGHT			SYMBOL			DESCRIPTION			NOMINAL MOUNTING HEIGHT			SYMBOL			DESCRIPTION			NOMINAL MOUNTING HEIGHT		
<sup>b</sup>	1. UPPPER CASE LETTERS WITH NUMBER INDICATES LUMINAIRE TYPE. (REFER TO THE E500 LUMINAIRE SCHEDULE) 2. NUMBER INDICATES CIRCUIT CONNECTION. 3. LOWER CASE LETTER INDICATES CONTROL DEVICE.	W	WALL PHONE VOICE OUTLET	4" x 4" SQUARE W/ SINGLE GANG TRIM RING	3/4"							RECESSED MOUNTED LIGHT FIXTURES	"		POWER DISTRIBUTION	"						FIRE ALARM						
	SPECIAL RECEPTACLES. THE NEMA STANDARD TYPE IS SHOWN WITH AN UPPPER CASE LETTER. TYPE AS NOTED. EXAMPLE: NEMA L6-30R, 250V, SINGLE PHASE, 30A, TWIST-LOCK RECEPTACLE											SURFACE MOUNTED LIGHT FIXTURES	"		MOTOR	"						FAUC	FIRE ALARM CONTROL UNIT					
	THE CIRCUIT DESIGNATION IS SHOWN BY NUMBER ADJACENT TO EQUIPMENT. ABBREVIATION NEXT TO CIRCUIT NUMBER INDICATES A DEDICATED CIRCUIT FOR THAT TYPE OF EQUIPMENT. EXAMPLE: WALL MOUNTED DUPLEX RECEPTACLE ON DEDICATED CIRCUIT NUMBER 2 FOR A PRINTER.											SUSPENDED MOUNTED LIGHT FIXTURES	"		SAFETY DISCONNECT SWITCH	"						FAA	FIRE ALARM ANNUNCIATOR					
	SYMBOL WITH EQUIPMENT IDENTIFICATION. SEE MECHANICAL EQUIPMENT SCHEDULE FOR COMPLETE ELECTRICAL INFORMATION. EXAMPLE: EXHAUST FAN #1											RECESSED LIGHT FIXTURES ON CRITICAL POWER CIRCUIT	"		FUSED STARTER	"						NAC	NOTIFICATION CIRCUIT POWER BOOSTER, EXTENDER PANEL (# DENOTES UNIT NUMBER)					
	PLAN KEY NOTE. SEE KEY NOTE SCHEDULE ON THAT DRAWING. ARROW POINTS TO THE ITEM TO WHICH THE NOTE APPLIES.											SURFACE MOUNTED LIGHT FIXTURES ON CRITICAL POWER CIRCUIT	"		COMBINATION STARTER	"						DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER					
	INDIVIDUAL HOME RUN TO BRANCH CIRCUIT PANELBOARD. PANELBOARD AND CIRCUIT DESIGNATION ARE PLACED ADJACENT TO HOMERUN ARROW. REFER TO PANEL SCHEDULES FOR AMPS AND NUMBER OF POLES. EXAMPLE: HOMERUN TO PANEL ELP1. UNDESIGNATED TICK MARKS INDICATE #12 CONDUCTORS. NO TICK MARKS INDICATE #12 CONDUCTORS. CONDUCTOR SIZES INDICATED ADJACENT TO SLASH SHALL APPLY TO ENTIRE CIRCUITS. PROVIDE MINIMUM #12 AWG CONDUCTORS FOR HOMERUNS, #10 AWG CONDUCTORS FOR HOMERUNS THAT EXCEED 100 FEET (3048mm) FOR 120VOLT CIRCUITS AND 250F (7620mm) FOR 277VOLT CIRCUITS. HOMERUNS SHALL BE CONSIDERED TO ORIGINATE FROM THE FIRST PIECE OF EQUIPMENT OR DEVICE.											DRY TYPE TRANSFORMER-FLOOR MOUNT	"		MNS	MASS NOTIFICATION SYSTEM INTERFACE						AIM	ADDRESSABLE INPUT MONITOR MODULE					
	WIRELESS DEVICE: ANY DEVICES IN THE SYMBOLS LEGEND THAT INCLUDES THE WIRELESS SYMBOL SHALL BE CONSIDERED A WIRELESS DEVICE.											DRY TYPE TRANSFORMER-CEILING/WALL MOUNT	"		AOM	ADDRESSABLE OUTPUT CONTROL MODULE						SMOKE DETECTOR						
	CEILING MOUNTED FIRE ALARM DEVICES SHALL HAVE THE LETTER "C" NEXT TO THE DEVICE.											RECESSED LIGHT FIXTURES ON LIFE SAFETY (S) POWER CIRCUIT	"		SMOKE DETECTOR - BEAM RECEIVER						SBR	SMOKE DETECTOR - BEAM TRANSMITTER						
		COMMUNICATIONS ROUGH-IN REQUIREMENT NOTES:												COMMUNICATION														
		A. PROVIDE CONDUIT FROM WALL MOUNTED COMMUNICATIONS DEVICE BACK BOXES TO NEAREST ACCESSIBLE CABLE TRAY. CONDUIT SHALL RUN BETWEEN ACCESSIBLE CEILING SPACES AND ACOUSTICAL CEILINGS.												VOICE OUTLET														
		B. ROUGH-IN BACK BOX FOR WIRELESS LAN ACCESS POINTS SHOWN AT PRACTICE ROOMS, FACULTY OFFICES, ETC. SHALL BE MOUNTED BETWEEN ACCESSIBLE CEILING SPACES AND ACOUSTICAL CEILINGS. LOCATE ABOVE SHELF IN REHEARSAL ROOMS.												WALL PHONE VOICE OUTLET														
		C. FOLLOW PROPER INSTALLATION OF BACK BOXES AND RACEWAYS PENETRATING THROUGH ACOUSTICAL WALLS AND VAPOR BARRIERS.												WIRELESS LAN OUTLET														
		D. PROVIDE PULL STRINGS IN ALL ROUGH-INS.												POLE MOUNTED LIGHT FIXTURE														
		ABBREVIATIONS												WALL MOUNTED LIGHT FIXTURE														
A	AEROSOL	DED	DEDICATED CIRCUIT	H	HANDHOLE	M	MINIMUM CIRCUIT AMPACITY	P	POLE	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR																	
A or AMP	AMPERE	DIA	DIAMETER	HH	HALON	MCA	MAIN CIRCUIT BREAKER	PB	PULL BOX	TIA	TELECOMMUNICATIONS INDUSTRIES ASSOCIATION																	
AV or AV	AUDIO/VISUAL	DL	DELUGE FIRE SPRINKLER	HL	HALON	MCB	MAIN CIRCUIT BREAKER	PF	POWER FACTOR	U	TYPICAL																	
AC	ALTERNATING CURRENT	DSP	DIGITAL SIGNAL PROCESSOR	HMT	HARMONIC MITIGATING	MH	MANHOLE	PH	PHASE																			
ACS	AUTOMATIC CONTROL SYSTEM	DW	DISH WASHER	HP	HORSE POWER	MLO	MAIN LUG ONLY	PNL	PANEL																			
AFF	ABOVE FINISHED FLOOR	ELEC	ELECTRICAL	HRZ	HORIZONTAL	MMCS	MANUAL MOTOR CONTROL	POS	POINT OF SALE	UL	UNDERWRITERS LABORATORIES																	
AIC	AMPERE INTERRUPTING RATING	EMI	ELECTROMAGNETIC INTERFERENCE	Hz	HERTZ	MOCP	MAXIMUM OVERCURRENT PROTECTION	PR	PAIR	UNO	NOTE/DUELESS NOTED OTHERWISE																	
AL	ALUMINUM	EMT	ELECTRICAL METALLIC TUBING	I/O	IN-BOARD/OUT-BOARD	MSS	MOTOR STARTER SWITCH	PTR	PRINTER	W	UNINTERRUPTABLE POWER SUPPLY																	
ATS	AUTOMATIC TRANSFER SWITCH	EWC	ELECTRIC WATER COOLER	IG	ISOLATED GROUND	MTD	MOUNTED	PITZ	PAN TILT ZOOM	UPS	UNINTERRUPTABLE POWER SUPPLY																	
AUX	AUXILIARY	EXST	EXISTING	IP	INTERNET PROTOCOL	PVC	POLYVINYL CHLORIDE	RCPT	RECEPTACLE	V	VOLT																	
AWG	AMERICAN WIRE GAUGE	F	INTERGRATED POWER CENTER	IR	INFRARED	R	RADIO FREQUENCY	REF	REFRIGERATOR	VA	VOLT-AMPERE																	
BAS	BUILDING AUTOMATION SYSTEM	FA	FIRE ALARM	K	KIRK KEY	N	NEUTRAL	RF	RADIO FREQUENCY	VEND	VENDING																	
BIO	BIOMETRIC	FAAP	FIRE ALARM ANNUNCIATOR PANEL	FLA	FULL-LOAD AMPERE	NAC	NOTIFICATION APPLIANCE	RX	RECEIVE/RECEIVER	VGA	VIDEO GRAPHICS ARRAY																	
BMS	BUILDING MANAGEMENT SYSTEM	FACU	FIRE ALARM CONTROL UNIT	FO	FOAM	NEC	NATIONAL ELECTRICAL CODE	SCCR	SHORT CIRCUIT CURRENT RATING	VSD/VFD	VARIABLE SPEED DRIVE/																	
C	CONDUIT	F	FURNITURE POWER	FP	FURNITURE POWER	SEC	SECONDARY	SPD	SURGE PROTECTION DEVICE	VFD	FREQUENCY DRIVE /																	
CA	CLEAN AGENT	FSS	FUSED SAFETY SWITCH	GAP	GENERATOR ANNUNCIATOR PANEL	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	ST	SHUNT TRIP	WAP	WIRELESS ACCESS POINT																	
CATV	CABLE TELEVISION	GD	GARAGE DISPOSAL	GD	GARAGE DISPOSAL	NFSS	NON-FUSED SAFETY SWITCH	NTS	NOT TO SCALE	W	WATT																	
CLG	CEILING	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	LED	LIGHT EMITTING DIODE	NTS																						

ELECTRICAL SPECIFICATIONS	
<b>260500 COMMON WORK RESULTS FOR ELECTRICAL</b>	<b>260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES</b>
A. General	A. Branch circuit conductors shall be THW or THWN/THHN solid copper through #10 and stranded copper #8 and larger. Minimum wire size is #12. 75 degree C ampacities shall be used for sizing conductors and conduit fill shall conform to NEC. Feeder conductors #6 and larger shall be THW or THWN/THHN. All conductors shall be in raceways with color coded insulation and each voltage system shall be separately identified.
1. Scope: Project shall be provided with a complete electrical installation, including lighting, power, and signal systems in the building as defined in the drawings and specifications.	
2. Codes: Electrical work shall comply with the currently adopted National Electrical Code and all state and local codes that apply. Secure and pay for all permits, licenses and inspection fees, and coordinate all work with local inspection authorities.	
3. Quality Assurance: All materials shall be new and free from defects, bearing certification for use as required by Underwriter's Laboratory, National Electrical Manufacturer's Association, National Fire Protection Association, American Society for Testing and Material, American National Standards Institute, and other standards that apply. Material shall be assembled in a manner consistent with the highest standards of construction practice. Work such as carpentry, painting or welding related to the electrical construction shall be performed by persons skilled in the related trade.	
4. Testing and Adjustment: All electrical power systems shall be tested for insulation integrity and wiring continuity prior to energization. All grounding systems shall be tested for earth path resistance and continuity. After energization, phase rotation and voltage at distribution equipment and motors shall be verified, and all loads shall be balanced on the distribution system to within 5% of each other.	
5. Cutting, Patching and Excavation: Electrical Contractor shall be responsible for all cutting, patching, and excavation required by the work. All work shall be accomplished in a manner complying with the requirements of General Specifications. Do not cut or drill structural members without Structural Engineer approval.	
6. Rubbish Removal and Storage: Electrical Contractor shall remove all rubbish associated with the work at the end of the project and as required to prevent hazard. Electrical Contractor shall be responsible for obtaining and securing a space for material storage and staging. This space shall not interfere with construction nor shall it constitute a hazard.	
7. Cleaning, Painting and Labeling: All fixtures and equipment shall be cleaned free from construction dust, paint and foreign matter both externally and internally. All equipment shall be primed and painted or galvanized in a factory finish, or in the field if so specified, using methods to assure maximum durability. Provide a typewritten index in all panelboards and an engraved plastic laminate label identifying all distribution equipment, distribution panelboards, and major equipment disconnects and control devices. Using permanent marker, label each system junction box on the face of the cover in exposed construction and at the interior in finished construction.	
8. Shop drawings, Submittals, and Owner's Manual: Shop drawings shall be submitted for approval on all devices and plates, distribution equipment, control equipment, light fixtures and lamps, specified utilization equipment and systems. Alternates to specified equipment may be proposed if submitted for approval ten days prior to bid date and time. No equipment shall be considered approved until such approval is made by Addendum. The Electrical Contractor shall maintain a set of accurate as-built drawings. Two copies of Owner's manuals shall be assembled with operating and maintenance manuals for all building equipment and systems, copies of all shop drawings, specialized utilization procedures and as-built drawings. Manuals shall be submitted for approval.	
9. The drawings are diagrammatic. Field verify equipment, light fixture and device locations. Coordinate electrical work with the other trades.	
B. Temporary Electric Services: Provide temporary electric power and lighting services for all trades. Provide service equipment, feeders, panelboards, receptacles, and lighting as required for the trades to perform quality work in a safe environment. Work shall include ground fault protection where required and comply with OSHA and the NEC. Remove facilities prior to occupancy.	
C. Outages: Outages shall be requested in writing, scheduled with the landlord, and coordinated with the electric utility where applicable. All work shall be done to minimize down time and inconvenience.	
D. Remodeling: Provide removal and remodel work necessary for the installation of new electrical work. De-energize circuit conductors for removal and remove back to energizing panelboard or nearest energizing source. Exposed raceway systems shall be removed and concealed raceways may be abandoned. Existing equipment and circuits that remain in a remodeled area shall be energized. Turn over to the Owner equipment, devices, and lighting fixtures he wants to keep and dispose of all other equipment off of the site. Check ballasts for PCBs and dispose of properly. Fluorescent lamps shall be recycled. Include costs for recycling lamps and ballast disposal.	
E. Abandoned Circuits and Equipment: Remove all wire back to its source wherever existing circuits are abandoned. Remove abandoned raceways and boxes unless concealed in concrete masonry construction, or if in a wall that is remaining and can be patched without removing box. Remove all abandoned electrical equipment.	
<b>260526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS</b>	<b>260572 SHORT-CIRCUIT STUDIES</b>
A. Provide grounding of all equipment comprising a permanent bonding together of all metallic, non-current carrying parts of the electrical system like raceways, boxes, panels, cabinets, equipment enclosures, housings, motor frames, cable trays, ducts, and lighting fixtures. Scrape light fixture finish to assure a good ground. Provide grounding conductors in all nonmetallic conduit systems, flexible conduit lengths, and surface raceways.	A. Summary
B. Ground all transformers and secondary neutrals to the transformer case and to the nearest grounded building structural steel. Motor circuits shall have a ground conductor pulled with the phase conductors.	1. Computer-based, fault-current study.
<b>260529 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS</b>	2. Software Capability
A. Equipment Support: Provide support of all electrical work through the use of hanger rods, clamps, structural framing, fastening devices, and backboards. Provide vibration isolation in all supporting hardware for vibrating electrical equipment installed by this Contractor. Provide 4" high concrete pads for floor mounted equipment.	1. Comply with IEEE 399 and IEEE 551.
<b>260533 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS</b>	C. Execution
A. Conduits: Rigid steel, rigid aluminum, PVC coated rigid steel, IMC, EMT, Flexible steel and Liquid-tight, and PVC conduits will be used where customary with approved fittings. Provide complete raceway systems including outlet boxes, pull boxes, and fittings. Conceal conduits in finished spaces. Group conduits on racks leaving 25% conduit space and suspend from the structure. Size conduits, boxes, and bends per the NEC where not specified on plan. Provide expansion fittings, conduit seals, drain tees, conduit hubs, fire/smoke barriers where required. Metal conduits shall have continuous grounding integrity and PVC conduits shall be complete with a properly sized circuit grounding conductor.	1. Fault-Current Study: Electrical distribution system from normal and alternate power sources.
B. Wireways: Wireways shall be used where shown on the plans. Wireways shall be galvanized steel, painted grey, with hinge cover and all flanges, elbows, connections and partitions necessary for a complete system. Wireways shall be deburred, complete with a grounding conductor, NEMA 1 inside and NEMA 3R outside.	2. Begin short-circuit current analysis at the service, extending down to the system overcurrent protective devices as follows:
C. Surface Metal Raceways: Surface metal raceways shall be complete with all fittings, devices, plate covers, green grounding conductor, and mounting supports to make a complete system. The following Wiremold numbers identify type to be used: Type 2100, Type 2200, Type G-3000, Type G-4000 with divider, and Type G-6000. Locate devices on 18" centers and use specification grade devices in type G-3000 and larger.	3. To normal system low-voltage load buses where fault current is 10 kA or less.
D. Pull & Junction Boxes: Indoor boxes shall be NEMA 1, constructed of a single piece code gauge steel, with folded and welded corners, complete with flat removable screw down cover. Outdoor boxes utilizing rigid metal conduit shall be cast iron with cast iron gasketed cover held down with stainless steel screws. Outdoor boxes utilizing PVC conduit shall be plastic with screw down gasketed cover. Size all boxes per NEC article 370. Boxes are not shown on plan. Provide boxes to comply with code and to provide ease of conductor installation.	4. Exclude equipment rated 240-V ac or less when supplied by a single transformer rated less than 125 kVA.
E. Floor Boxes: Provide floor boxes to match underfloor duct or raceway systems installed. Finishes of coverplates, trimmings, and carpet flanges will be aluminum. Provide poke through floor outlets installed in core drilled holes with devices as shown on the drawings. AV poke through devices shall be Wiremold 6AT Evolution series AV version with AV input devices per AV contractor requirements. All other poke throughs to be Wiremold RC4 with aluminum flange with nonmetallic aluminum cover.	5. Computer software program for plotting and diagramming time-current-characteristic curves and for reporting settings and ratings of all overcurrent protective devices.
F. Outlet Boxes and Fittings: Interior outlet boxes shall be galvanized steel, non-gangable, with knockouts and covers or extension rings as required. [Non-metallic boxes may only be used in conjunction with cable systems permitted under section 16120.] Exterior surface outlet boxes shall be cast iron alloy with threaded hubs and screw down gasketed WP covers.	6. Optional Computer Program Features:
G. Cabinets: Cabinets shall be constructed of code gauge steel without factory knockouts, surface or flush mounted as noted on plans and schedules, and shall appear as a panelboard with a hinged and latched door. Provide barriers to separate low voltage and power wiring as required.	1. Arcing faults.
<b>260536 CABLE TRAYS FOR ELECTRICAL SYSTEMS</b>	2. Simultaneous faults.
A. Cable Tray: Provide a complete cable tray system including all necessary fittings, hardware, vertical and horizontal offsets, expansion joints, cable drop out exits, and supports where shown on the drawings. Secure cables in tray every 2' and bond sections together for electrical continuity.	3. Explicit negative sequence.
<b>260553 IDENTIFICATION FOR ELECTRICAL SYSTEMS</b>	4. Mutual coupling in zero sequence.
A. Identification: Provide engraved nameplates, wire and cable markers, embossed tape, and device plate cover engraving where required or specified on the drawings. Provide engraved nameplates on electrical distribution and control equipment and the loads they serve, main power and special system cabinets, motor control centers, motor starters and variable frequency drives, capacitors, and disconnects.	C. Execution
<b>262416 PANELBOARDS</b>	1. Begin short-circuit momentary and interrupting duties for a three-phase bolted fault at:
	2. Electric utility's supply termination point.
	3. Incoming switchgear.
	4. Unit substation primary and secondary terminals.
	5. Low-voltage switchgear.
	6. Motor-control centers.
	7. Control panels.
	8. Standby generators and automatic transfer switches.
	9. Branch circuit panelboards.
	10. Disconnect switches.
<b>262726 WIRING DEVICES</b>	<b>SECTION 260573 COORDINATION STUDIES</b>
A. Switches shall be specification grade, 20 amp, 120 volt, quiet toggle. Provide single pole, double pole, 3-way, 4-way, or SPDT as required. Similar to Hubbell 1221 series.	A. Summary
B. Receptacles shall be specification grade, duplex or single outlet, voltage, and NEMA configuration as required or shown on the drawings. Provide GFI where shown on the drawings. GFI receptacles shall have test and reset buttons and meet UL 2003 standards. Specification grade shall be similar to Hubbell 5362 series. Hospital grade shall be similar to 8300 series.	B. Software Capability
C. Provide GFCI receptacles for all outdoor receptacle devices. Include a low profile expandable weatherproof while in use cover.	1. Comply with IEEE 242 and IEEE 399.
D. Devices connected to normal power shall be ivory.	2. Computer software program for plotting and diagramming time-current-characteristic curves and for reporting settings and ratings of all overcurrent protective devices.
	3. Connected to Emergency Power System: Red.
	4. TVSS Devices: Blue.
	5. Isolated-Ground Receptacles: Orange.
E. Interior device plate covers shall be stainless steel and galvanized steel in unfinished areas; exterior device plates shall be in-use type cover.	C. Execution
F. Dimmers complete with calibrated linear vertical slide control, separate push on-push off illuminated switch, square law dimming, concealed fins, and preset feature with high adjust trim. Install dimmers where shown on the drawings. Group dimmers so that finished installation appears ganged without breaking off any cooling fins.	1. Begin analysis at the service, extending down to the system overcurrent protective devices as follows:
G. Occupancy Sensors: Dual-technology, self-adaptive. Wall switch shall have a 180deg. field of view, ceiling mount shall have a 360deg. field of view. Provide power packs and accessories as required. Rooms indicated with occupancy sensor symbols shall be provided with devices to provide full coverage of area indicated, regardless of quantity of devices indicated. Provide submittals to include product data and manufacturer approved plans indicating full coverage. Approved manufacturer is Wattstopper or approved equal.	2. To normal system low-voltage load buses where fault current is 10 kA or less.
	3. Exclude equipment rated 240-V ac or less when supplied by a single transformer rated less than 125 kVA.
	4. Study electrical distribution system from normal and alternate power sources.
	5. Coordination study includes the following:
	6. Transformer primary overcurrent protective devices.
	7. Motors served by voltages more than 600 V.
	8. Conductor protection.
	9. Generator protection.
	10. Protective device evaluation.
	11. Load-flow and voltage-drop study.
	12. Motor-starting study.
	13. Field Adjusting: Adjust relay and protective device settings to the settings provided by the coordination study.
<b>262816 ENCLOSED SWITCHES AND CIRCUIT BREAKERS</b>	<b>SECTION 260574 ARC-FLASH HAZARD ANALYSIS</b>
A. Disconnect Switches shall be heavy duty, horsepower rated, 250 volt or 600 volt, 2-pole, solid neutral, or 3-pole fused or un-fused and as required. Switch shall be quick-make quick-break with interlock and lockable enclosure door for opening. Provide NEMA 1 enclosure indoors, NEMA 3R outdoors, and NEMA 4X in interior wet locations. Fusible switches shall use current limiting fuses with rejection type fuse clips. Provide sizes shown on the drawings.	A. Summary
B. Circuit Breaker Disconnects: Provide molded case disconnect switches, 250 volt or 600 volt, 2-pole or 3-pole without thermal overload protection, with silver alloy contacts, common trip and trip indicator. Circuit breaker AIC rating shall coordinate with the circuit.	B. Software Capability
	1. Computer-based, arc-flash study to determine the arc-flash hazard distance and the incident energy to which personnel could be exposed during work on or near electrical equipment.
	2. Produce 3.5-by-5-inch (76-by-127-mm) labels for each work location included in the analysis.
	C. Execution
	1. Calculate the arc-flash protection boundary and incident energy at locations in the electrical distribution system where personnel could perform work on energized parts.
	2. Include medium- and low-voltage equipment locations, except 240-V ac and 208-V ac systems fed from transformers less than 125 kVA.
	3. Specify safe working distances based on the calculated arc-flash boundary at incident energy of 1.2 cal/sq.cm.
	4. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.
	5. Apply one arc-flash label on the front cover of each section of the equipment for each equipment included in the study. Base arc-flash label data on highest values calculated at each location.



HGA NO: 5378-001-00

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## ELECTRICAL

# SPECIFICATIONS

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DATE: NOVEMBER 22, 2024

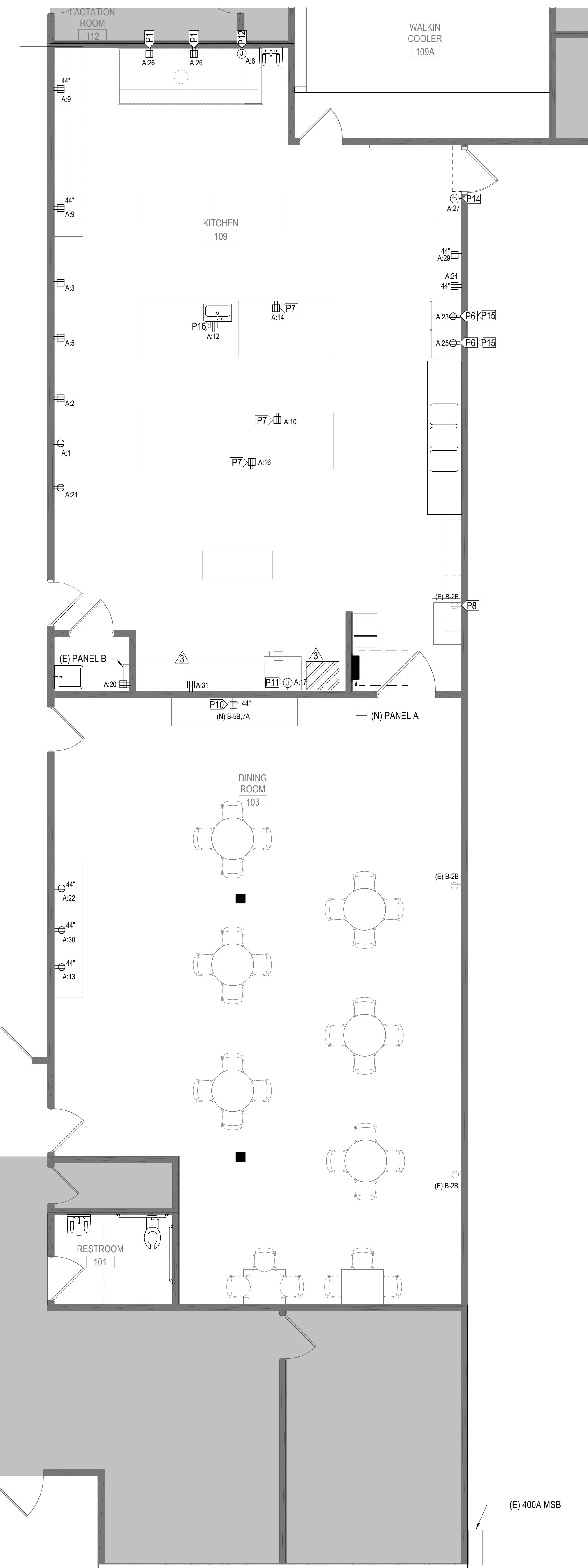
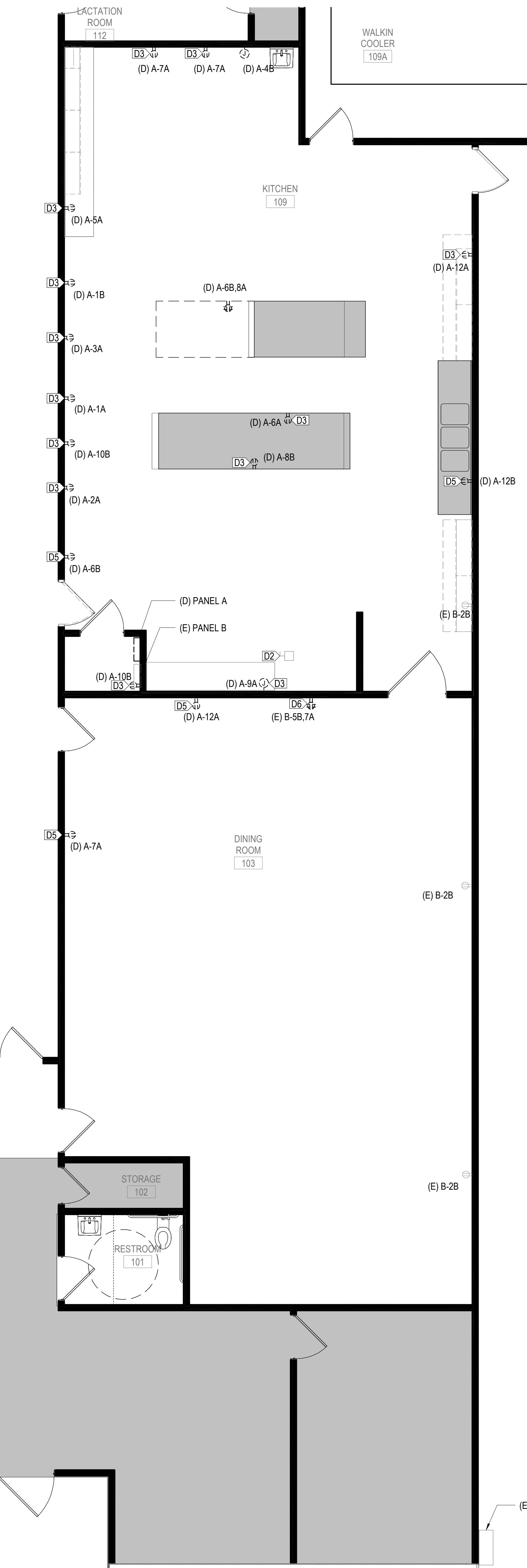
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## KITCHEN IMPROVEMENTS

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E001



## GENERAL NOTES

A. EXISTING EQUIPMENT, DEVICES, AND LIGHTS INDICATED ON PLAN WERE TAKEN FROM EXISTING PLANS AND/OR FIELD OBSERVATION, AND SHALL NOT BE CONSIDERED COMPLETELY ACCURATE. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS OF EXISTING SYSTEMS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES WHICH MAY AFFECT ANY WORK UNDER THIS CONTRACT.

B. CONTRACTOR SHALL FIELD VERIFY EXACT CONDITIONS PRIOR TO ANY DEMOLITION. ELECTRICAL CONTRACTOR SHALL MAINTAIN CONTINUITY OF ADJACENT CIRCUITS TO DEVICES OR EQUIPMENT THAT ARE TO REMAIN DURING CONSTRUCTION. REROUTE CONDUIT AND WIRING AS NECESSARY.

C. ELECTRICAL DEVICES AND EQUIPMENT SHOWN AS BOLD AND DASHED ARE TO BE DEMOLISHED AND IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO DISPOSE OF UNLESS NOTED OTHERWISE. ELECTRICAL DEVICES/EQUIPMENT SHOWN WITH HALFTONED/LIGHT SOLID LINE TYPE ARE EXISTING TO REMAIN. ANY ITEMS TO BE TURNED OVER TO FACILITIES MANAGEMENT WILL BE NOTED.

D. PANEL A IS BEING DEMOLISHED AND REPLACED WITH A NEW PANEL. ALL RECEPTACLES ON PANEL A SHALL BE SHOWN AS DEMOLISHED, WHERE POSSIBLE, REUSE CONDUIT, CONDUCTORS AND JUNCTION BOXES FOR NEW RECEPTACLES ON NEW POWER PLANS.

E. MAKE READY AS MUCH OF THE NEW DEVICES AND INSTALLATION AS POSSIBLE TO REDUCE THE AMOUNT OF DOWNTIME. THIS BUILDING WILL BE OCCUPIED 24/7 AND REDUCING THE AMOUNT OF TIME THAT PANEL A IS DOWN IS A HIGH PRIORITY.

## KEYNOTES

#	DESCRIPTION
D2	EXISTING ROOF MOUNTED CHAMPION COOLER TO BE DEMOLISHED AND REPLACED IN-KIND. REUSE POWER CONDUIT AND CONDUCTORS FOR POWER TO NEW ROOF MOUNTED CHAMPION COOLER. IF ANY OF THE ASSOCIATED ELECTRICAL NEEDS TO BE REPLACED FOR THIS TO BE INSTALLED, MATCH EXISTING.
D3	JUNCTION BOX, CONDUIT AND CONDUCTORS FOR THIS RECEPTACLE CAN BE REUSED TO SERVE THE NEW DEVICE.
D5	PROVIDE BLANK PLATE COVER FOR JUNCTION BOX.
D6	INSTALL BLANK COVERPLATE FOR THIS JUNCTION BOX AT THIS LOCATION AND EXTEND POWER TO NEW LOCATION FOR NEW COUNTERTOP RECEPTACLE.
P1	RECEPTACLE FOR DEVICE POWER ON GAS STOVES. BREAKER FOR THIS CIRCUIT SHALL BE INSTALLED WITH AN ASSOCIATED SHUNT TRIP BREAKER. NEW SHUNT TRIP DEVICE SHALL BE CONNECTED TO THE EXISTING ANSUL SYSTEM. WHEN THE HOOD'S FIRE SUPPRESSION SYSTEM IS ACTIVATED, ALL POWER FOR ELECTRIC AND HEAT SOURCES SHALL SHUT OFF AND THE FIRE ALARM SYSTEM SHALL SOUND.
P6	RECEPTACLE FOR ADA DISHWASHER.
P7	DEDICATED RECEPTACLE FOR COUNTERTOP TO BE USED FOR GENERAL KITCHEN APPLIANCES.
P8	RECEPTACLE FOR ICE MACHINE.
P10	RELOCATED RECEPTACLE TO SERVE COUNTERTOP APPLIANCES. REFERRED FROM EXISTING LOCAL RECEPTACLE CIRCUIT.
P11	JUNCTION BOX FOR EXISTING TRAY MACHINE.
P12	POWER TO EXISTING FUME HOOD.
P14	POWER FOR AIR CURTAIN 120V, 0.51KW, 1/2HP
P15	RECEPTACLE HAS GCFI PROTECTION VIA BREAKER ON PANEL A. SEE SHEET E510 FOR BREAKERS TO BE EQUIPPED WITH GCFI PROTECTION.
P16	POWER UNDER SINK FOR WATER HEATER. 120V, 12A, 1440W. INTERCEPT AND EXTEND CONDUCTORS FROM EXISTING JUNCTION BOX UNDER SINK TO PROVIDE POWER TO RECEPTACLE AT THIS LOCATION.

## ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

NO.	DESCRIPTION	DATE
3	EH PLAN CHECK	5/14/2025
4	ISSUE FOR BID	10/28/2025

ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

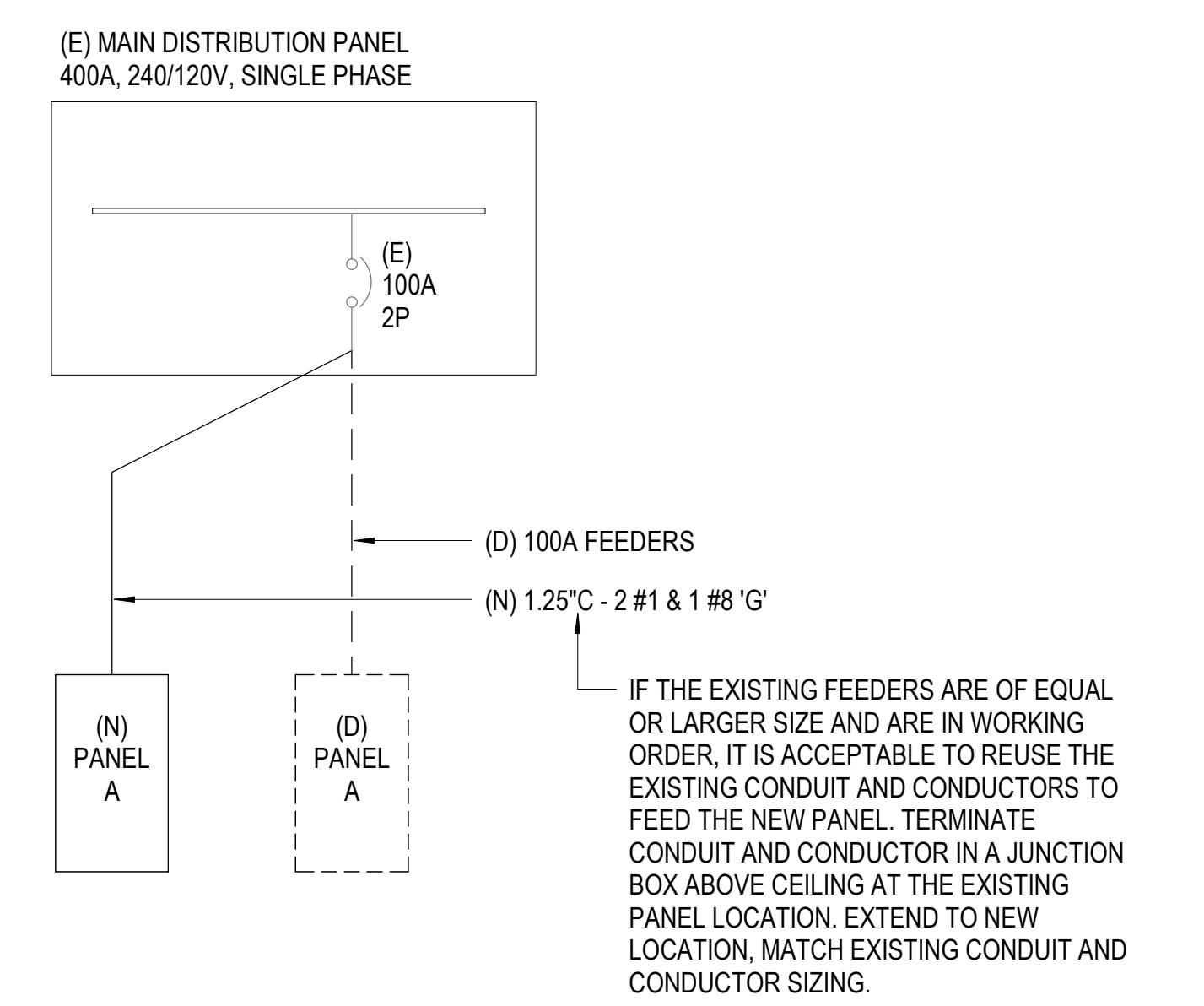
## OVERALL POWER PLAN - LEVEL 01

DATE: NOVEMBER 22, 2024

## KITCHEN IMPROVEMENTS

E301

COPRIGHT HAMMEL, GREEN AND ASSOCIATES, INC.



# ELECTRICAL ONE-LINE/RISER DIAGRAM

# ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407



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HGA NO: 5378-001-00

# PANELBOARD SCHEDULE AND ONE LINE DIAGRAM

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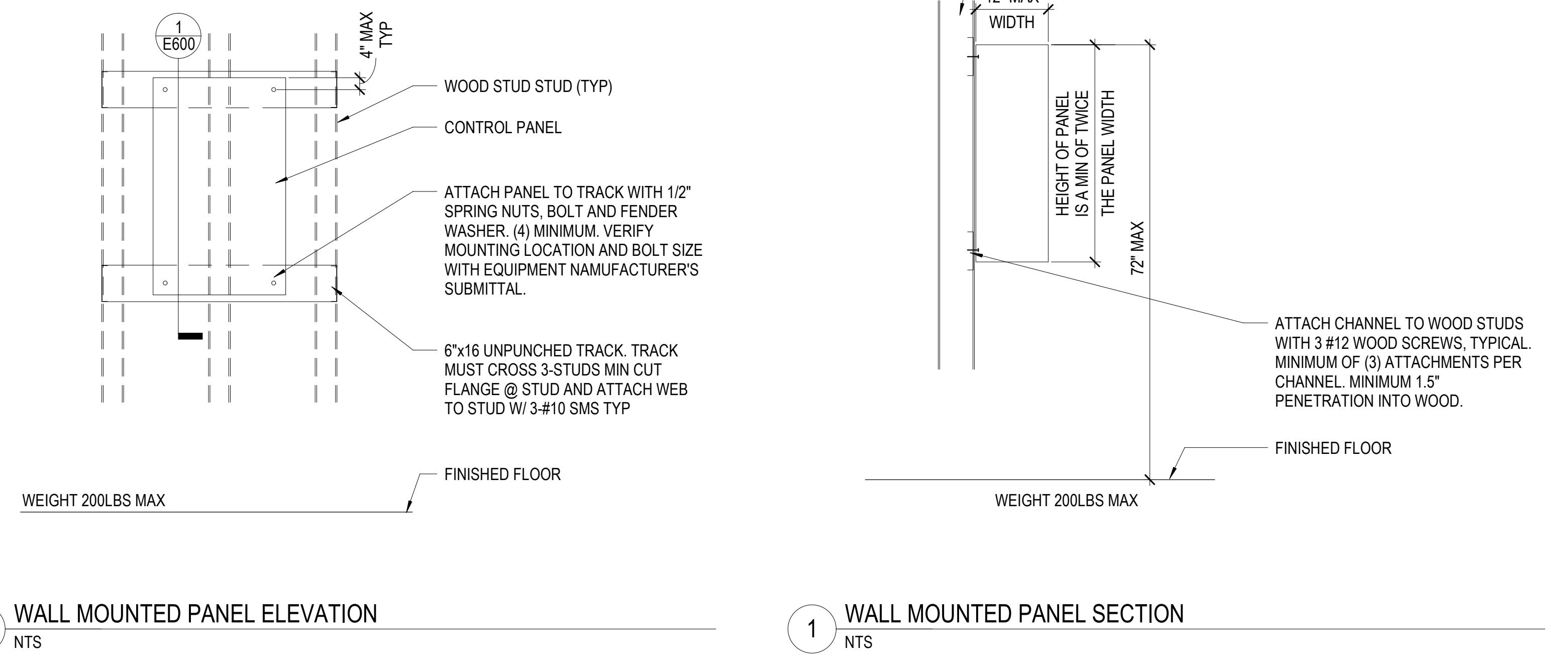
DATE: NOVEMBER 22 2024

## KITCHEN IMPROVEMENTS

4 5412

E5 10

MEL, GREEN AND ABRAHAMSON, INC.



## WALL MOUNTED PANEL ELEVATION

# 1 WALL MOUNTED PANEL SECTION

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# ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
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HGA NO: 5378-001-00

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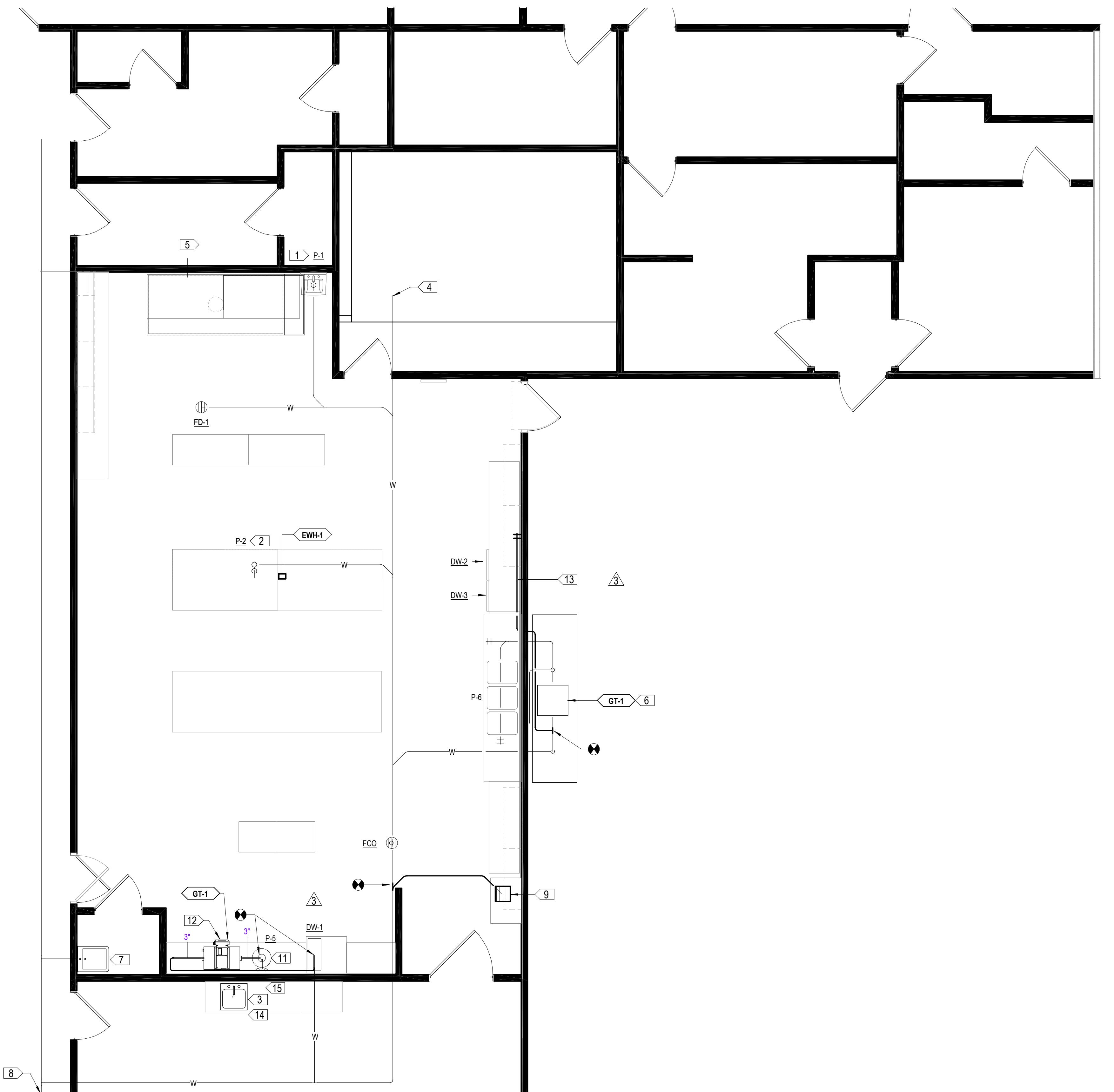
# ELECTRICAL DETAILS

DATE: NOVEMBER 22, 2024

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# E600





1 OVERALL PLUMBING PLAN - LEVEL 01

1/4" = 1'-0"

ELECTRIC WATER HEATER SCHEDULE (EWH)									
UNIT NUMBER	LOCATION	EWT (°F)	LWT (°F)	ELECTRICAL		BASIS OF DESIGN		COMMENTS	
				VOLTAGE	PHASE	EMERGENCY POWER	MANUFACTURER	MODEL	
EWH-1	KITCHEN	50	140	120	1	N	KROWNE	HS-MTH25	1

1. UNIT SHALL BE BASIS OF DESIGN OR APPROVED EQUAL.

PLUMBING FIXTURE SCHEDULE									
UNIT NUMBER	TYPE	DESCRIPTION	NOTE	WASTE (IN)	VENT (IN)	DOMESTIC SUPPLY			COMMENTS
						FLOW	CW	HW	
P-1	HAND SINK	EXISTING HAND SINK AND FAUCET TO REMAIN		1 1/2"	1 1/2"	1.5 GPM	1/2"	1/2"	
P-2	HAND SINK	EXISTING HAND SINK AND FAUCET TO BE REMOVED AND RE-MOUNTED IN NEW COUNTER.	2	1 1/2"	1 1/2"	1.5 GPM	1/2"	1/2"	
P-3	DINING ROOM SINK	AMERICAN STANDARD DANVILLE SINGLE BOWL 30 X 18" UNDERMOUNT	1	1 1/2"	1 1/2"	1.5 GPM	1/2"	1/2"	
P-4	DINING ROOM FAUCET	AMERICAN STANDARD EDGEWATER PULL-DOWN BAR FAUCET MODEL 4932.410, 1.5 GPM @ 60 PSI	1	1 1/2"	1 1/2"	1.5 GPM	1/2"	1/2"	
P-5	DISHWASHER SINK	EXISTING DISHWASHING SINK AND DISHWASHER TO REMAIN	3	1 1/2"	1 1/2"	1.5 GPM	1/2"	1/2"	
P-6	KITCHEN SINK	EXISTING 3 COMPARTMENT SINK AND DRAIN BOARDS TO REMAIN. DISCHARGES TO EXISTING GREASE TRAP		1 1/2"	1 1/2"	1.5 GPM	1/2"	1/2"	

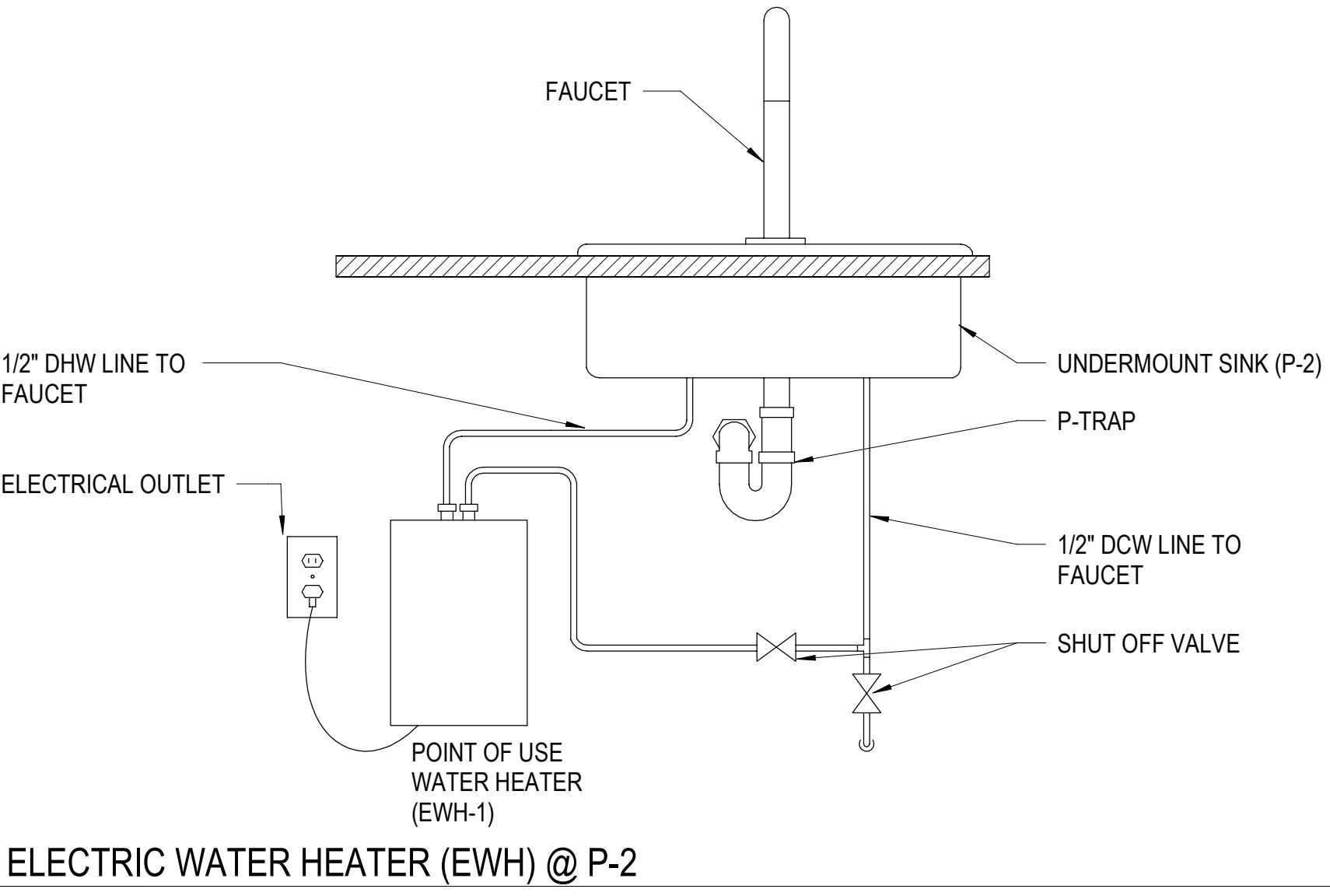
1. UNIT SHALL BE BASIS OF DESIGN OR APPROVED EQUAL.  
2. DOMESTIC HOT WATER AT EXISTING P-2 HANDSINK SHALL BE CONNECTED TO EWH-1.  
3. PROVIDE MEDIUM MESH STRAINER FOR SINK.

GREASE TRAP SCHEDULE (GT)									
UNIT NUMBER	MOUNTING	BODY MATERIAL	GREASE CAPACITY (GAL)	CONNECTION SIZES		ELECTRICAL		BASIS OF DESIGN	
				INLET (IN)	OUTLET (IN)	VOLTAGE	FREQUENCY	WATTAGE	MANUFACTURER
GT-1	FLOOR	STAINLESS STEEL	2.5	3	3	115	60 Hz	1173	BIG DIPPER
									W-350-IS
									1

1. UNIT SHALL BE BASIS OF DESIGN OR APPROVED EQUAL.

KEYNOTES	
#	DESCRIPTION
1	EXISTING HANDWASHING SINK TO REMAIN. HOT AND COLD WATER CONNECTIONS ARE EXISTING.
2	EXISTING HANDWASHING SINK TO REMAIN. PROVIDE NEW ELECTRIC TANK WATER HEATER IN ADJACENT CABINET COMPARTMENT. CONNECT DOMESTIC HOT WATER AT EXISTING SINK, P-2, TO NEW EWH-1. SEE DETAIL 02P101.
3	EXISTING 1/2" COPPER DOMESTIC COLD WATER WITH VALVE LOCATED IN WALL.
4	EXISTING SANITARY LINE FROM FREEZER CONDENSATE DRAINS.
5	EXISTING LOW PRESSURE NATURAL GAS LINE WITH AUTOMATIC SHUT-OFF. CONNECT NEW RANGE AND GRIDDLE. INSTALL NEW GAS LINES PER LATEST CALIFORNIA PLUMBING CODE.
6	EXISTING OUTDOOR ENCLOSURE FOR EXISTING GREASE TRAP. WASTE LINES ARE ABOVE GROUND LEVEL. FLOW DISCHARGED TO UNDERGROUND. DIMENSIONS ARE 24" X 24" X 12".
7	EXISTING MOP SINK TO REMAIN.
8	EXISTING SANITARY LINE TO STREET.
9	PROVIDE NEW DOMESTIC COLD WATER LINE TO NEW ICE MACHINE. PROVIDE WITH NEW FILTER. PROVIDE NEW FLOOR SINK BELOW ICE MACHINE AND TIE INTO EXISTING SANITARY LINE.
11	REMOVE EXISTING DRAIN FROM EXISTING SINK TO EXISTING DISHWASHER. CAP HOLE IN TOP OF STAINLESS STEEL COLLECTION BOX.
12	PROVIDE NEW 3" SANITARY LINE FROM SINK TO NEW GREASE TRAP. PROVIDE NEW 3" DISCHARGE FROM GREASE TRAP TO EXISTING SANITARY. Rework AS NEEDED.
13	DISCHARGE DISHWASHERS 2 AND 3 TO TOP OF 2" SANITARY HEADER. LOCATE 2" HEADER ALONG INSIDE OF WALL WITH 0.25" FOOT SLOPE. PENETRATE EXTERIOR WALL AS SHOWN AND RUN ALONG EXTERIOR WALL WITH 0.25" FOOT SLOPE. DISCHARGE 2" SANITARY INTO DISCHARGE OF THE EXISTING GREASE TRAP.
14	PROVIDE NEW SINGLE BOWL SINK IN DINING SERVING CABINETRY. TIE INTO EXISTING DOMESTIC COLD WATER LINE BEHIND WALL NORTH OF DINING ROOM. TIE INTO EXISTING SANITARY LINE IN WALL. SINK SHALL BE VENTED BY EXISTING VENT SERVING EXISTING SANITARY LINE. VERIFY EXISTING UTILITY LOCATIONS PRIOR TO FINAL CONNECTION. CONNECT DOMESTIC HOT WATER TO EXISTING ON OTHER SIDE OF THE WALL.
15	EXISTING 2" SANITARY LINE IN WALL TO BE TIED TO NEW SINK

## ARROWOOD KITCHEN

440 ARROWOOD DR.  
SANTA ROSA, CA  
95407

2 ELECTRIC WATER HEATER (EWH) @ P-2

1/8" = 1'-0"

PROFESSIONAL ENGINEER  
KENNETH W. MARTIN  
#5378  
10/28/2025  
ARROWOOD KITCHEN, INC.  
MECHANICAL  
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE
3	EH PLAN CHECK	05/14/2025
4	ISSUE FOR BID	10/28/2025

ISSUANCE HISTORY - THIS SHEET

HGA NO: 5378-001-00

**OVERALL PLUMBING DEMOLITION AND NEW WORK PLAN - LEVEL 01**  
DATE: MARCH 25, 2025  
KITCHEN IMPROVEMENTS

**P101**  
4

## 220500 COMMON WORK RESULTS FOR PLUMBING

## BASIS OF DESIGN

1. EQUIPMENT MANUFACTURERS LISTED ON THE EQUIPMENT SCHEDULES ARE THE BASIS-OF-DESIGN. MANUFACTURES LISTED IN THE SPECIFICATION OTHER THAN THE BASIS-OF-DESIGN MANUFACTURE ARE ACCEPTABLE SUBSTITUTIONS. EQUIPMENT SCHEDULES ARE ON THE DRAWINGS. REFER TO SPECIFICATIONS FOR UNSCHEDULED EQUIPMENT.
2. SUBSTITUTIONS: CONTRACTOR CAN SUBMIT AN ALTERNATE MANUFACTURER IF APPROVED BY ENGINEER BEFORE SUBMITTALS ARE ISSUED. ALTERNATE MANUFACTURER MUST MEET OR EXCEED MECHANICAL AND ELECTRICAL PERFORMANCE, PHYSICAL ATTRIBUTES, AND OTHER ITEMS LISTED IN SPECIFICATIONS.

## SUBMITTALS

1. PRODUCT DATA
2. EQUIPMENT STARTUP REPORTS
3. COORDINATION DRAWINGS
4. EQUIPMENT CUT SHEETS AND PERFORMANCE DATA.

## COORDINATION

1. ARRANGE FOR PIPE SPACES, CHASES, SLOTS, AND OPENINGS IN BUILDING STRUCTURE DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR HVAC INSTALLATIONS.
2. COORDINATE REQUIREMENTS FOR ACCESS PANELS AND DOORS FOR PLUMBING ITEMS REQUIRING ACCESS THAT ARE CONCEALED BEHIND FINISHED SURFACES. ACCESS PANELS AND DOORS ARE SPECIFIED IN DIVISION 08 SECTION "ACCESS DOORS AND FRAMES."
3. COORDINATE PLUMBING EQUIPMENT INSTALLATION WITH OTHER BUILDING COMPONENTS.
4. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF PLUMBING MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. COORDINATE INSTALLATION OF LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING IN THE BUILDING.
5. COORDINATE CONNECTION OF PLUMBING SYSTEMS WITH EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES.
6. COORDINATE CONNECTION OF PLUMBING EQUIPMENT AND SYSTEMS WITH BUILDING ELECTRICAL SYSTEMS.

## EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

1. INSTALL PLUMBING EQUIPMENT ACCORDING TO THE EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS INDICATED ON THE DRAWINGS. RESOLVE CONFLICTING INSTRUCTIONS, WITH THE ARCHITECT BEFORE MOUNTING EQUIPMENT.
2. INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE NOT INDICATED.
3. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS IN EXPOSED INTERIOR SPACES, UNLESS OTHERWISE INDICATED.
4. INSTALL PLUMBING EQUIPMENT TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO ACCESSIBLE LOCATIONS.
5. INSTALL EQUIPMENT TO ALLOW RIGHT OF WAY FOR PIPING INSTALLED AT REQUIRED SLOPE.
6. REFER TO EQUIPMENT SHOP DRAWINGS FOR ROUGH-IN LOCATIONS; DO NOT SCALE DRAWINGS.

## PLUMBING DEMOLITION

1. DISCONNECT, DEMOLISH, AND REMOVE PLUMBING SYSTEMS, EQUIPMENT, AND COMPONENTS INDICATED TO BE REMOVED. A. PIPING TO BE REMOVED: REMOVE PORTION OF PIPING INDICATED TO BE REMOVED AND CAP OR PLUG REMAINING PIPING WITH SAME OR COMPATIBLE PIPING MATERIAL.
- B. EQUIPMENT TO BE REMOVED AND REINSTALLED: DISCONNECT AND CAP SERVICES AND REMOVE, CLEAN, AND STORE EQUIPMENT; WHEN APPROPRIATE, REINSTALL, RECONNECT, AND MAKE EQUIPMENT OPERATIONAL.
- C. EQUIPMENT TO BE REMOVED AND SALVAGED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT AND DELIVER TO OWNER.
2. IF PIPE, INSULATION, OR EQUIPMENT TO REMAIN IS DAMAGED IN APPEARANCE OR IS UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

## GROUTING

1. MIX AND INSTALL GROUT FOR PLUMBING EQUIPMENT BASE BEARING SURFACES, PUMP AND OTHER EQUIPMENT BASE PLATES, AND ANCHORS.
2. CLEAN SURFACES THAT WILL COME INTO CONTACT WITH GROUT.
3. PROVIDE FORMS AS REQUIRED FOR PLACEMENT OF GROUT.
4. AVOID AIR ENTRAPMENT DURING PLACEMENT OF GROUT.
5. PLACE GROUT, COMPLETELY FILLING EQUIPMENT BASES.
6. PLACE GROUT ON CONCRETE BASES AND PROVIDE SMOOTH BEARING SURFACE FOR EQUIPMENT.
7. PLACE GROUT AROUND ANCHORS.
8. CURE PLACED GROUT.

## 22116 DOMESTIC WATER PIPING

## SUBMITTALS

1. PRODUCT DATA

## PIPING MATERIALS

1. POTABLE-WATER PIPING, AND COMPONENTS SHALL COMPLY WITH NSF 14 AND NSF 61 ANNEX G. PLASTIC PIPING COMPONENTS SHALL BE MARKED WITH "NSF-PW."

## COPPER TUBE AND FITTINGS

1. HARD COPPER TUBE: ASTM B 88, TYPE L WATER TUBE, DRAWN TEMPER.
2. CAST-COPPER, SOLDER-JOINT FITTINGS: ASME B16.18, PRESSURE FITTINGS.
3. WROUGHT-COPPER, SOLDER-JOINT FITTINGS: ASME B16.22, WROUGHT-COPPER PRESSURE FITTINGS.
4. BRONZE FLANGES: ASME B16.24, CLASS 150, WITH SOLDER-JOINT ENDS.
5. CAST COPPER UNIONS: MSS SP-123, CAST-COPPER-ALLOY, HEXAGONAL-STOCK BODY, WITH BALL-AND-SOCKET, METAL-TO-METAL SEATING SURFACES AND SOLDER-JOINT OR THREADED ENDS.
6. WROUGHT COPPER UNIONS: ASME B16.22.
7. COPPER-TUBE, MECHANICALLY FORMED TEE FITTING: FOR FORMING T-BRANCH ON COPPER WATER TUBE.
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. T-DRILL INDUSTRIES INC.
  2. DESCRIPTION: TEE FORMED IN COPPER TUBE IN ACCORDANCE WITH ASTM F204.
8. GROOVED-MECHANICAL-JOINT COPPER TUBE APPURTENANCES.
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. ANVL INTERNATIONAL/SMITH-COOPER INTERNATIONAL, TAILWIND CAPITAL, LLC.
  2. SHURJOINT: A PART OF ALBERTS INTEGRATED PIPING SYSTEMS.
  3. VICTAULIC COMPANY.
- B. GROOVED-END COPPER FITTINGS: ASTM B75 COPPER TUBE OR ASTM B584 BRONZE CASTINGS.
- C. GROOVED-END-TUBE COUPLINGS: TO FIT COPPER-TUBE DIMENSIONS; RIGID PATTERN UNLESS OTHERWISE INDICATED; GASKETED FITTING, EPDM-RUBBER GASKET, UL CLASSIFIED PER NSF 61 AND NSF 3/2, AND RATED FOR MINIMUM 180 DEG F, FOR USE WITH FERROUS HOUSING AND STEEL BOLTS AND NUTS, 300 PSIG MINIMUM CWP PRESSURE RATING.
9. COPPER TUBE, PRESSURE-SEAL-JOINT FITTINGS.
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. APOLLO VALVES: A PART OF ALBERTS INTEGRATED PIPING SYSTEMS.
  2. ELKHART PRODUCTS CORPORATION: A PART OF ALBERTS INTEGRATED PIPING SYSTEMS.
  3. MUELLER STREAMLINE CO., A COMPANY OF MUELLER INDUSTRIES.
  4. NIBCO INC.
  5. VIEGA LLC.
- B. FITTINGS: CAST-BRASS, CAST-BRONZE, OR WROUGHT-COPPER WITH EPDM O-RING SEAL IN EACH END.
- C. MINIMUM 200-PSIG WORKING-PRESSURE RATING AT 250 DEG F.
10. COPPER-TUBE, PUSH-ON-JOINT FITTINGS:
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. APOLLO VALVES: A PART OF ALBERTS INTEGRATED PIPING SYSTEMS.
  2. ELKHART PRODUCTS CORPORATION: A PART OF ALBERTS INTEGRATED PIPING SYSTEMS.
  3. NIBCO INC.
  4. VICTAULIC COMPANY.
- B. DESCRIPTION:
- C. CAST-COPPER FITTING COMPLYING WITH ASME B16.18 OR WROUGHT-COPPER FITTING COMPLYING WITH ASME B 16.22.
- D. STAINLESS STEEL TEETH AND EPDM-RUBBER, O-RING SEAL IN EACH END INSTEAD OF SOLDER-JOINT ENDS.

## PIPING APPLICATIONS

1. TRANSITION AND SPECIAL FITTINGS WITH PRESSURE RATINGS AT LEAST EQUAL TO PIPING RATING MAY BE USED IN APPLICATIONS BELOW UNLESS OTHERWISE INDICATED.
2. FLANGES AND UNIONS MAY BE USED FOR ABOVEGROUND PIPING JOINTS UNLESS OTHERWISE INDICATED.
3. FITTING OPTION: EXTRUDED-TEE CONNECTIONS AND BRAZED JOINTS MAY BE USED ON ABOVEGROUND COPPER TUBING.
4. ABOVEGROUND DOMESTIC WATER PIPING, NPS 3 AND SMALLER, SHALL BE ONE OF THE FOLLOWING:
  - A. DRAWN-TEMPER COPPER TUBE, ASTM B88, TYPE L; COPPER PRESSURE-SEAL-JOINT FITTINGS; AND PRESSURE-SEALED JOINTS.
  - B. DRAWN-TEMPER COPPER TUBE, ASTM B88, TYPE L; COPPER PRESSURE-SEAL-JOINT FITTINGS; AND PRESSURE-SEALED JOINTS.

## CONNECTIONS

1. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALTIES.
2. WHEN INSTALLING PIPING ADJACENT TO EQUIPMENT AND MACHINES, ALLOW SPACE FOR SERVICE AND MAINTENANCE.
3. CONNECT DOMESTIC WATER PIPING TO EXTERIOR WATER-SERVICE PIPING. USE TRANSITION FITTING TO JOIN DISSIMILAR PIPING MATERIALS.
4. CONNECT DOMESTIC WATER PIPING TO WATER-SERVICE PIPING WITH SHUTOFF VALVE; EXTEND AND CONNECT TO THE FOLLOWING:
  - A. WATER HEATERS: COLD-WATER INLET AND HOT-WATER OUTLET PIPING IN SIZES INDICATED, BUT NOT SMALLER THAN SIZES OF WATER HEATER CONNECTIONS.
  - B. PLUMBING FIXTURES: COLD- AND HOT-WATER-SUPPLY PIPING IN SIZES INDICATED, BUT NOT SMALLER THAN THAT REQUIRED BY PLUMBING CODE.

## 223300 ELECTRIC, DOMESTIC WATER HEATER

## SUBMITTALS

1. PRODUCT DATA: FOR EACH TYPE AND SIZE OF DOMESTIC-WATER HEATER INDICATED, INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND FURNISHED SPECIALTIES AND ACCESSORIES.

## COMMERCIAL, LIGHT-DUTY, STORAGE, ELECTRIC, DOMESTIC-WATER HEATERS:

1. SOURCE LIMITATIONS: OBTAIN DOMESTIC-WATER HEATERS FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
2. STANDARD: UL 174.
3. STORAGE-TANK CONSTRUCTION: STEEL, VERTICAL ARRANGEMENT.
  - A. TAPPINGS: ASME B1.20.1 PIPE THREAD.
  - B. PRESSURE RATING: 150 PSIG (1035 KPA).
  - C. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING LINING MATERIAL INTO TAPPINGS.
4. SUPPORT: BRACKET FOR WALL MOUNTING.
  - A. CAPACITY AND CHARACTERISTICS:
    1. REFER TO EQUIPMENT SCHEDULES FOR CAPACITY AND CHARACTERISTICS.

## SOURCE QUALITY CONTROL

1. FACTORY TESTS: TEST AND INSPECT DOMESTIC-WATER HEATERS SPECIFIED TO BE ASME-CODE CONSTRUCTION, ACCORDING TO ASME BOILER AND PRESSURE VESSEL CODE.
2. HYDROSTATICALLY TEST COMMERCIAL DOMESTIC-WATER HEATERS TO MINIMUM OF ONE AND ONE-HALF TIMES PRESSURE RATING BEFORE SHIPMENT.
3. ELECTRIC, DOMESTIC-WATER HEATERS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.
4. PREPARE TEST AND INSPECTION REPORTS.

## INSTALLATION

1. ELECTRIC DOMESTIC-WATER HEATER MOUNTING: INSTALL ELECTRIC DOMESTIC-WATER HEATERS AT LEAST 18 INCHES ABOVE FLOOR ON WALL BRACKET.
  - A. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES.
  - B. ARRANGE UNITS SO CONTROLS AND DEVICES THAT REQUIRE SERVICING ARE ACCESSIBLE.
  - C. PLACE AND SECURE ANCHORAGE DEVICES. USE SETTING DRAWINGS, TEMPLATES, DIAGRAMS, INSTRUCTIONS, AND DIRECTIONS FURNISHED WITH ITEMS TO BE EMBEDDED.
  - D. INSTALL ANCHOR BOLTS TO ELEVATIONS REQUIRED FOR PROPER ATTACHMENT TO SUPPORTED EQUIPMENT.
  - E. ANCHOR DOMESTIC-WATER HEATERS TO SUBSTRATE.
2. INSTALL ELECTRIC, DOMESTIC-WATER HEATERS LEVEL AND PLUMB, ACCORDING TO LAYOUT DRAWINGS, ORIGINAL DESIGN, AND REFERENCED STANDARDS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES. ARRANGE UNITS SO CONTROLS AND DEVICES NEEDING SERVICE ARE ACCESSIBLE.
  1. INSTALL SHUTOFF VALVES ON DOMESTIC-WATER-SUPPLY PIPING TO DOMESTIC-WATER HEATERS AND ON DOMESTIC-HOT-WATER OUTLET PIPING, COMPLY WITH REQUIREMENTS FOR SHUTOFF VALVES.
  3. INSTALL COMMERCIAL ELECTRIC, DOMESTIC-WATER HEATERS WITH SEISMIC-RESTRAINT DEVICES.
  4. INSTALL COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES IN TOP PORTION OF STORAGE TANKS. USE RELIEF VALVES WITH SENSING ELEMENTS THAT EXTEND INTO TANKS. EXTEND COMMERCIAL-WATER-HEATER RELIEF-VALVE OUTLET, WITH DRAIN PIPING SAME AS DOMESTIC-WATER PIPING IN CONTINUOUS DOWNWARD PITCH, AND DISCHARGE BY POSITIVE AIR GAP ONTO CLOSEST FLOOR DRAIN.
  5. INSTALL COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES IN WATER PIPING FOR ELECTRIC, DOMESTIC-WATER HEATERS WITHOUT STORAGE. EXTEND COMMERCIAL-WATER-HEATER RELIEF-VALVE OUTLET, WITH DRAIN PIPING SAME AS DOMESTIC-WATER PIPING IN CONTINUOUS DOWNWARD PITCH, AND DISCHARGE BY POSITIVE AIR GAP ONTO CLOSEST FLOOR DRAIN.
  6. INSTALL WATER-HEATER DRAIN PIPING AS INDIRECT WASTE TO SPILL BY POSITIVE AIR GAP INTO OPEN DRAINS OR OVER FLOOR DRAINS. INSTALL HOSE-END DRAIN VALVES AT LOW POINTS IN WATER PIPING FOR ELECTRIC, DOMESTIC-WATER HEATERS THAT DO NOT HAVE TANK DRAINS.
  7. INSTALL THERMOMETERS ON OUTLET PIPING OF ELECTRIC, DOMESTIC-WATER HEATERS.
  8. ASSEMBLE AND INSTALL INLET AND OUTLET PIPING MANIFOLD KITS FOR MULTIPLE ELECTRIC, DOMESTIC-WATER HEATERS. CONNECT, MODIFY, OR ARRANGE MANIFOLDS FOR BALANCED WATER FLOW THROUGH EACH ELECTRIC, DOMESTIC-WATER HEATER. INCLUDE SHUTOFF VALVE AND THERMOMETER IN EACH DOMESTIC-WATER HEATER INLET AND OUTLET, AND THROTTLING VALVE IN EACH ELECTRIC, DOMESTIC-WATER HEATER OUTLET.
  9. INSTALL PRESSURE-REDUCING VALVE WITH INTEGRAL BYPASS RELIEF VALVE IN ELECTRIC, DOMESTIC-WATER BOOSTER-HEATER INLET PIPING AND WATER HAMMER ARRESTER IN BOOSTER-HEATER OUTLET PIPING. SET PRESSURE-REDUCING VALVE FOR OUTLET PRESSURE OF 25 PSIG.
  10. INSTALL PIPING-TYPE HEAT TRAPS ON INLET AND OUTLET PIPING OF ELECTRIC, DOMESTIC-WATER HEATER STORAGE TANKS WITHOUT INTEGRAL OR FITTING-TYPE HEAT TRAPS.
  11. FILL ELECTRIC, DOMESTIC-WATER HEATERS WITH WATER.
  12. CHARGE DOMESTIC-WATER COMPRESSION TANKS WITH AIR.

## CONNECTIONS

1. COMPLY WITH REQUIREMENTS FOR PIPING SPECIFIED IN "DOMESTIC WATER PIPING." DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALTIES.
2. WHERE INSTALLING PIPING ADJACENT TO ELECTRIC, DOMESTIC-WATER HEATERS, ALLOW SPACE FOR SERVICE AND MAINTENANCE OF WATER HEATERS. ARRANGE PIPING FOR EASY REMOVAL OF DOMESTIC-WATER HEATERS.
1. UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

## 220719 PLUMBING PIPING INSULATION

## GENERAL INSTALLATION REQUIREMENTS

1. INSTALL INSULATION MATERIALS, ACCESSORIES, AND FINISHES WITH SMOOTH, STRAIGHT, AND EVEN SURFACES; FREE OF VOIDS THROUGHOUT THE LENGTH OF PIPING INCLUDING FITTINGS, VALVES, AND SPECIALTIES.
2. INSTALL INSULATION MATERIALS, FORMS, VAPOR BARRIERS OR RETARDERS, JACKETS, AND THICKNESSES REQUIRED FOR EACH ITEM OF PIPE SYSTEM AS SPECIFIED IN INSULATION SYSTEM SCHEDULES.
3. INSTALL ACCESSORIES COMPATIBLE WITH INSULATION MATERIALS AND SUITABLE FOR THE SERVICE. INSTALL ACCESSORIES THAT DO NOT CORRODE, SOFTEN, OR OTHERWISE ATTACK INSULATION OR JACKET IN EITHER WET OR DRY STATE.
4. INSTALL INSULATION WITH LONGITUDINAL SEAMS AT TOP AND BOTTOM OF HORIZONTAL RUNS.
5. INSTALL MULTIPLE LAYERS OF INSULATION WITH LONGITUDINAL AND END SEAMS STAGGERED.
6. DO NOT WELD BRACKETS, CLIPS, OR OTHER ATTACHMENT DEVICES TO PIPING, FITTINGS, AND SPECIALTIES.
7. KEEP INSULATION MATERIALS DRY DURING APPLICATION AND FINISHING.
8. INSTALL INSULATION WITH TIGHT LONGITUDINAL SEAMS AND END JOINTS. BOND SEAMS AND JOINTS WITH ADHESIVE RECOMMENDED BY INSULATION MATERIAL MANUFACTURER.
9. INSTALL INSULATION WITH LEAST NUMBER OF JOINTS PRACTICAL.
10. WHERE VAPOR BARRIER IS INDICATED, SEAL JOINTS, SEAMS, AND PENETRATIONS IN INSULATION AT HANGERS, SUPPORTS, ANCHORS, AND OTHER PROJECTIONS WITH VAPOR-BARRIER MASTIC.
- A. INSTALL INSULATION CONTINUOUSLY THRU HANGERS AND AROUND ANCHOR ATTACHMENTS.
- B. FOR INSULATION APPLICATION WHERE VAPOR BARRIERS ARE INDICATED, EXTEND INSULATION ON ANCHOR LEGS FROM POINT OF ATTACHMENT TO SUPPORTED ITEM TO POINT OF ATTACHMENT TO STRUCTURE. TAPER AND SEAL ENDS AT ATTACHMENT TO STRUCTURE WITH VAPOR-BARRIER MASTIC.
- C. INSTALL INSERT MATERIALS AND INSTALL INSULATION TO TIGHTLY JOIN THE INSERT. SEAL INSULATION TO INSULATION INSERTS WITH ADHESIVE OR SEALING COMPOUND RECOMMENDED BY INSULATION MATERIAL MANUFACTURER.
- D. COVER INSERTS WITH JACKET MATERIAL MATCHING ADJACENT PIPE INSULATION. INSTALL SHIELDS OVER JACKET, ARRANGED TO PROTECT JACKET FROM TEAR OR PUNCTURE BY HANGER, SUPPORT, AND SHIELD.
11. APPLY ADHESIVES, MASTICS, AND SEALANTS AT MANUFACTURER'S RECOMMENDED COVERAGE RATE AND WET AND DRY FILM THICKNESSES.
- A. INSTALL INSULATION WITH FACTORY-APPLIED JACKETS PER MANUFACTURER'S INSTRUCTIONS
12. CUT INSULATION IN A MANNER TO AVOID COMPRESSING INSULATION MORE THAN 75 PERCENT OF ITS NOMINAL THICKNESS.
13. FINISH INSTALLATION WITH SYSTEMS AT OPERATING CONDITIONS. REPAIR JOINT SEPARATIONS AND CRACKING DUE TO THERMAL MOVEMENT.
14. REPAIR DAMAGED INSULATION FACINGS BY APPLYING SAME FACING MATERIAL OVER DAMAGED AREAS. EXTEND PATCHES AT LEAST 4 INCHES BEYOND DAMAGED AREAS. ADHERE, STAPLE, AND SEAL PATCHES SIMILAR TO BULK JOINTS.

## PENETRATIONS

1. BINSULATION INSTALLATION AT INTERIOR WALL AND PARTITION PENETRATIONS (THAT ARE NOT FIRE RATED): INSTALL INSULATION CONTINUOUSLY THROUGH WALLS AND PARTITIONS.
2. INSULATION INSTALLATION AT FIRE-RATED WALL AND PARTITION PENETRATIONS: INSTALL INSULATION CONTINUOUSLY THROUGH PENETRATIONS OF FIRE-RATED WALLS AND PARTITIONS.
  - A. COMPLY WITH REQUIREMENTS IN DIVISION 07 "FIRESTOPPING" FOR FIRESTOPPING AND FIRE-RESISTIVE JOINT SEALERS.
3. INSULATION INSTALLATION AT FLOOR PENETRATIONS:
  1. PIPE: INSTALL INSULATION CONTINUOUSLY THROUGH FLOOR PENETRATIONS.
  2. SEAL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES.

## INDOOR PIPING INSULATION SCHEDULE

1. A. DOMESTIC COLD WATER:
  1. NPS 1 AND SMALLER: INSULATION SHALL BE THE FOLLOWING:
    1. A. MINERAL-FIBER PIPE INSULATION, TYPE I: 1/2 INCH THICK.
    2. NPS 1-1/4 AND LARGER: INSULATION SHALL BE THE FOLLOWING:
      1. A. MINERAL-FIBER PIPE INSULATION, TYPE I: 1 INCH THICK.

## 221316 SANITARY WASTE AND VENT PIPING

## FIELD CONDITIONS

1. INTERRUPTION OF EXISTING SANITARY WASTE SERVICE: DO NOT INTERRUPT SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SERVICE ACCORDING TO REQUIREMENTS INDICATED:
  - A. NOTIFY CONSTRUCTION MANAGER AND OWNER NO FEWER THAN TWO DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF SANITARY WASTE SERVICE.
  - B. DO NOT PROCEED WITH INTERRUPTION OF SANITARY WASTE SERVICE WITHOUT CONSTRUCTION MANAGER'S AND OWNER'S WRITTEN PERMISSION.

## PIPING SCHEDULE

1. FLANGES AND UNIONS MAY BE USED ON ABOVEGROUND PRESSURE PIPING UNLESS OTHERWISE INDICATED.
2. ABOVEGROUND AND UNDERGROUND, SOIL AND WASTE PIPING NPS 4 AND SMALLER SHALL BE THE FOLLOWING:
  - A. HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS HEAVY-DUTY HUBLESS-PIPING COUPLINGS; AND COUPLED JOINTS.

## PERFORMANCE REQUIREMENTS

1. COMPONENTS AND INSTALLATION SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING MINIMUM WORKING PRESSURE UNLESS OTHERWISE INDICATED:
  - A. SOIL, WASTE, AND VENT PIPING: 10-FOOT HEAD OF WATER.
  2. SEISMIC PERFORMANCE: SOIL, WASTE, AND VENT PIPING AND SUPPORT AND INSTALLATION SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI 7.
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