PROJECT DATA

A.P.N.: 799-08-053
OCCUPANCY TYPE: A3
CONSTRUCTION TYPE: ⅤB, NOT SPRINK. △1
REMODEL AREA: APPROX. 504 S.F.

PROJECT DESCRIPTION

REMODEL EXISTING KITCHEN INCLUDING EXPANSION INTO ADJACENT STORAGE ROOM AND REPLACEMENT OF EXISTING HOOD AND KITCHEN EQUIPMENT WITH MODIFICATION OF UTILITIES AS REQUIRED.

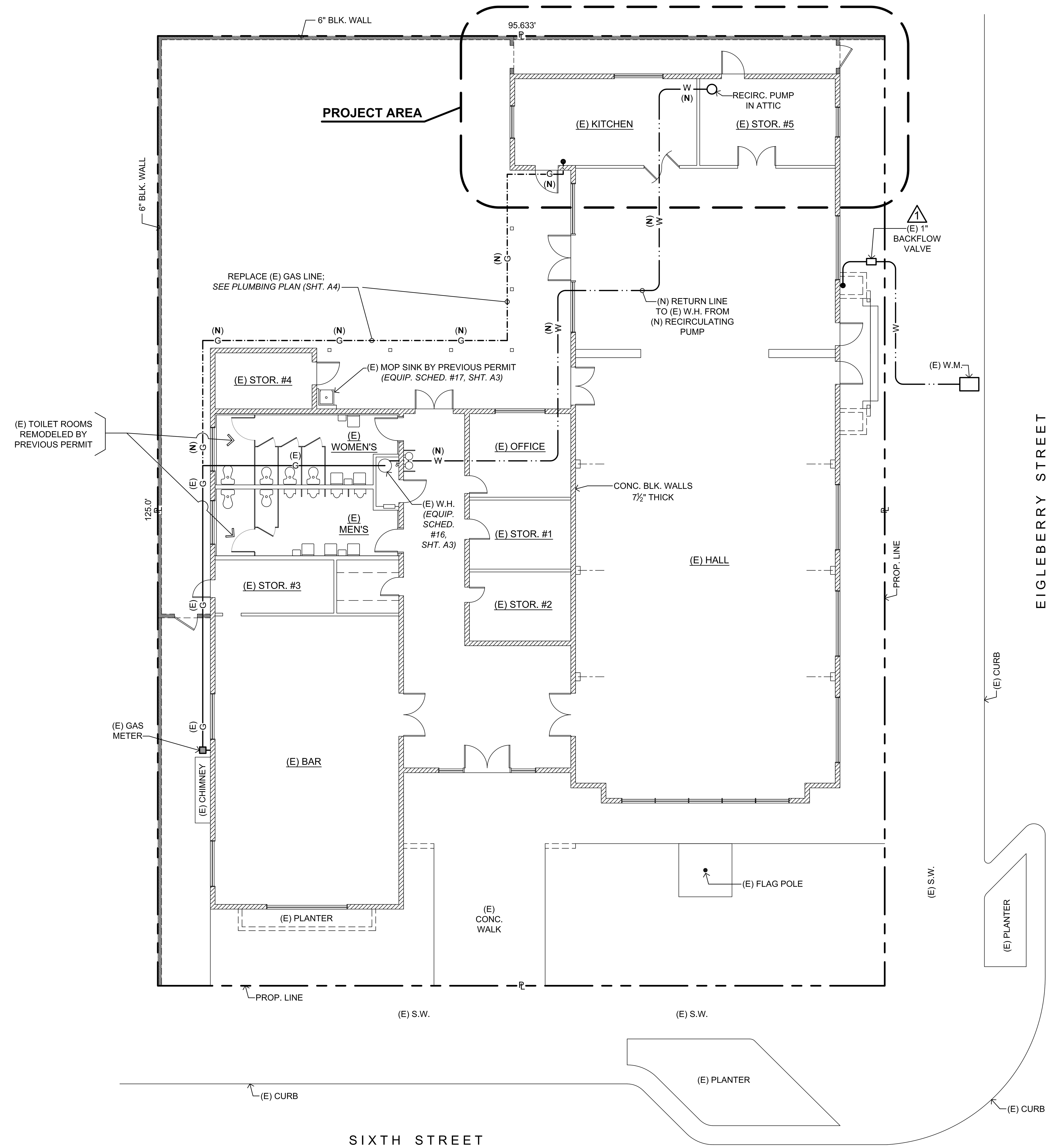
GENERAL NOTES

1. VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. ALL WORK TO BE DONE IN COMPLIANCE WITH 2022 C.B.C., C.M.C., C.P.C., C.F.C., C.E.C., AND ALL PERTINENT LOCAL, STATE AND FEDERAL CODES AND ORDINANCES.
3. THE ARCHITECT AND HIS CONSULTANTS DO NOT ASSUME ANY RESPONSIBILITY FOR THE METHOD AND/OR MANNER OF CONSTRUCTION NOR FOR ANY JOB SITE SAFETY DURING CONSTRUCTION.
4. ALL FINISH MATERIALS, COLORS, TEXTURES, PATTERNS, ETC. TO BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
5. ALL NEW & EXISTING EXPOSED SURFACES NOT FACTORY FINISHED TO BE PAINTED WITH QUALITY COMMERCIAL GRADE PAINT (2 FINISH COATS) OVER PROPERLY PRIMED OR PREPARED SURFACE PER PAINT MANUFACTURER RECOMMENDATIONS. ALL PAINT IN KITCHENS TO BE WASHABLE SEMI-GLOSS.
6. ALL DOOR PUSH PLATES, PULL HANDLES, LOCKSETS, ETC. TO BE HANDICAP APPROVED AND MOUNTED +34"- 44". ALL LOCKSETS OR LATCHSETS TO HAVE HANDICAP APPROVED LEVER HANDLES SIMILAR TYPE TO EXISTING. VERIFY ALL HARDWARE FINISHES WITH OWNER. VERIFY (E) & MODIFY AS REQUIRED.
7. ALL NEW DOORS TO BE 1¾" FLUSH SOLID CORE WOOD. FINISH COLOR AND MATERIAL TO MATCH EXISTING. DOOR HEIGHT TO BE 7'-0" U.N.O.
8. PROVIDE A 10" HT. STAINLESS STEEL KICK PLATE ON PUSH SIDE OF ALL KITCHEN DOORS.
9. ALL NEW GSM WORK TO BE 24 GA. MIN. DONE IN CONFORMANCE WITH APPROPRIATE SMACNA RECOMMENDATIONS AND DETAILS.
10. ALL NEW PENETRATIONS OF ROOF OR EXTERIOR WALL TO BE FLASHED AND/OR CAULKED AS APPROPRIATE TO PROVIDE WATER PROOF SEAL.
11. ALL AREAS DAMAGED BY DEMOLITION OR NEW CONSTRUCTION TO BE REPAIRED & FINISHED AS REQUIRED TO MATCH (E) ADJACENT SURFACES UNLESS SPECIFICALLY NOTED OTHERWISE.
12. △1 PROVIDE A COMPLETE ANSUL FIRE PROTECTION SYSTEM AT HOOD BY SEPARATE PERMIT.

DRAWING INDEX

BID ALTERNATES

1. REPLACE TWO (E) WINDOWS IN KITCHEN W/ (N) MILGARD ALUMINUM FRAME LOCKABLE SLIDING WINDOWS W/ TINTED DOUBLE GLAZING & INSECT SCREEN.
2. EPOXY FLOOR (TERA-LITE, DEX-O-TEX OR APPROVED EQUAL) IN LIEU OF QUARRY TILE.



6" BLK. WALL
95.633'
PROJECT AREA
(E) KITCHEN
(E) STOR. #5
RECIRC. PUMP IN ATTIC
(E) 1" BACKFLOW VALVE
6" BLK. WALL
REPLACE (E) GAS LINE; SEE PLUMBING PLAN (SHT. A4)
(N) RETURN LINE TO (E) W.H. FROM (N) RECIRCULATING PUMP
(E) W.M.
(E) MOP SINK BY PREVIOUS PERMIT (EQUIP. SCHED. #17, SHT. A3)
(E) STOR. #4
(E) TOILET ROOMS REMODELED BY PREVIOUS PERMIT
(E) WOMEN'S
(E) MEN'S
(E) OFFICE
(E) W.H. (EQUIP. SCHED. #16, SHT. A3)
CONC. BLK. WALLS 7½" THICK
(E) STOR. #1
(E) STOR. #2
(E) STOR. #3
(E) HALL
125.0'
PROP. LINE
EIGLEBERRY STREET
(E) CURB
(E) GAS METER
(E) CHIMNEY
(E) BAR
(E) FLAG POLE
(E) S.W.
(E) PLANTER
(E) CONC. WALK
PROP. LINE
(E) S.W.
(E) S.W.
(E) PLANTER
(E) CURB
(E) CURB
SIXTH STREET

EXISTING FLOOR / SITE PLAN

⅛" = 1'-0"

PLAN NORTH

REVISIONS	BY
29 MAR. 2024	
10 JUN. 2024	
△1 5 AUG. 2024	

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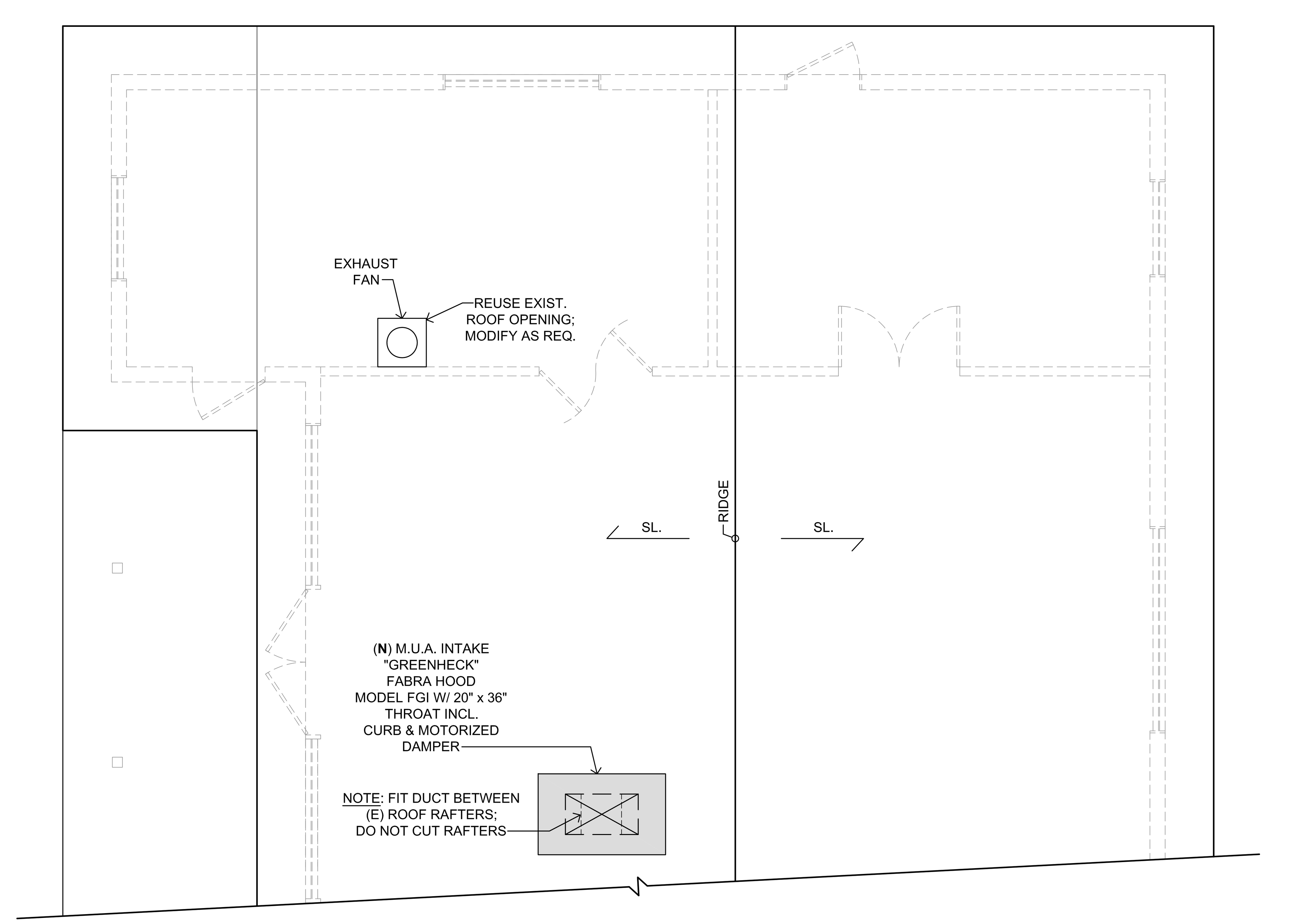
LICENSED ARCHITECT JON DAVIS C7193 [illegible] SEP. '25 RENEWAL DATE STATE OF CALIFORNIA

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEM. DIST.
74 WEST SIXTH ST.
GILROY, CA

DRAWN
CHECKED
DATE 10 FEB. 2024
SCALE AS NOTED
JOB NO. 2208
SHEET A1
OF SHEETS

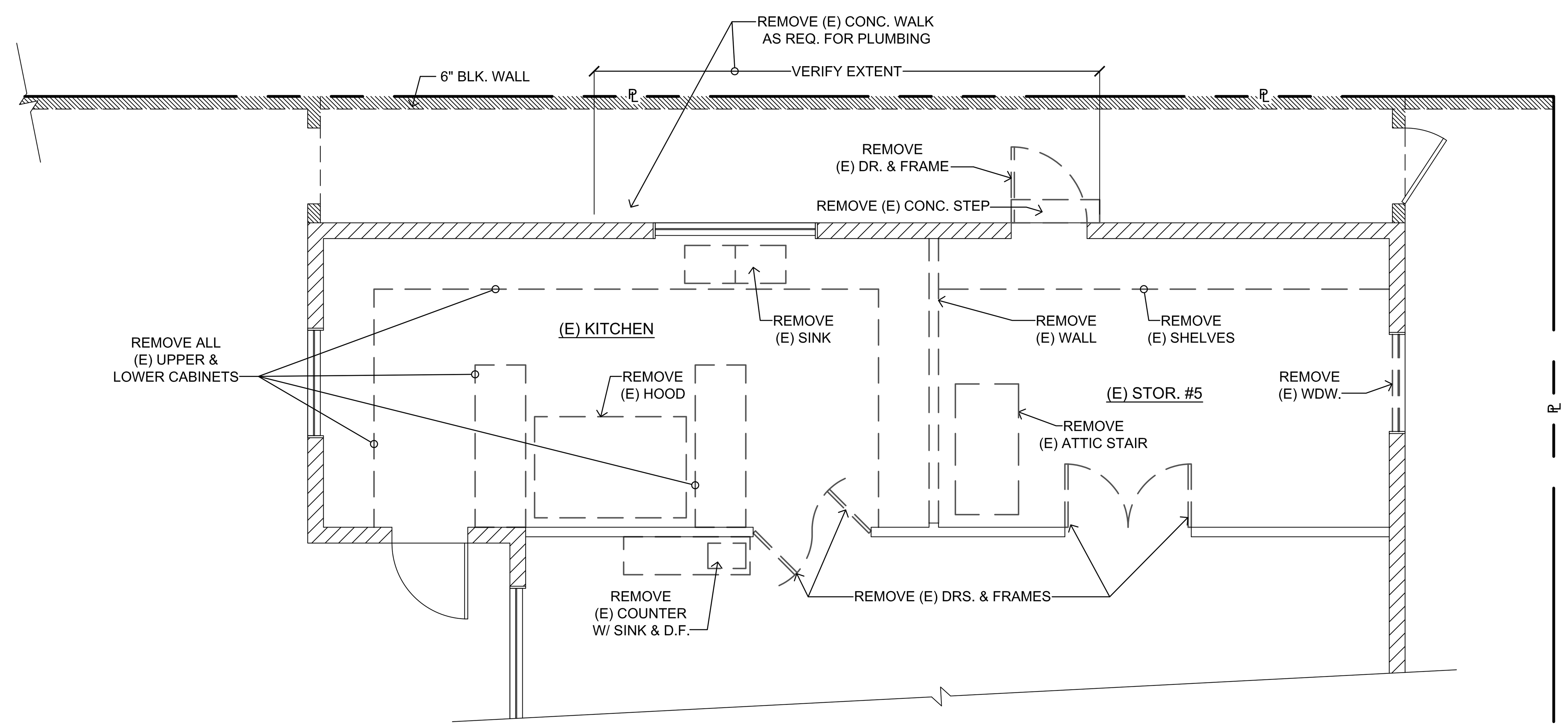


NOTE: ALL ROOF PENETRATIONS TO BE PROPERLY FLASHED TO PREVENT WATER INFILTRATION.

PARTIAL ROOF PLAN

¼" = 1'-0"

PLAN NORTH



EXISTING FLOOR / DEMO PLAN

(PROJECT AREA) ¼" = 1'-0"

PLAN NORTH

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C7193
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SEP. '25
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10 FEB. 2024

SCALE
AS NOTED

JOB NO.
2208

SHEET
A2

OF SHEETS

EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	PLAN DIM. (WIDTH x DEPTH)	GAS / ELECT.	WATER	DRAIN	REMARKS
1	GARLAND GAS GRIDDLE	$35\frac{7}{16}$" x 32"		-	-	WITH STAND ON CASTERS
2	EXISTING MONTAGUE 36" GAS RANGE	36" x $33\frac{3}{4}$"	120,000 BTU	-	-	
3	VULCAN VSP SERIES STOCKPOT RANGE	18" x $24\frac{1}{2}$"	110,000 BTU	-	-	WITH STAND ON CASTERS
4	TRUE T-23-HC REFRIGERATOR	27" x $29\frac{1}{2}$"	115 / 60 / 1 $\frac{1}{4}$ H.P. 2.2A	-	-	ON CASTERS
5	BEVERAGE-AIR TMF IHC FREEZER	$26\frac{9}{32}$" x $33\frac{9}{16}$"	115 / 60 / 1 $\frac{1}{2}$ H.P. 4.73A			ON CASTERS
6	REGENCY 3-COMP. SINK	100" x $25\frac{1}{2}$"	-	H.W. & C.W.	DRAIN TO GREASE TRAP	
7	GSW HS-2017W HAND SINK	$20\frac{1}{2}$" x $17\frac{1}{2}$"	-	H.W. & C.W.	DRAIN TO (E) SAN. SEWER	PROVIDE SOAP & TOWEL DISP. ADJACENT TO SINK
8	GSW SH2424IL FOOD PREP. SINK	$51\frac{1}{8}$" x 30"	-	H.W. & C.W.	DRAIN TO FLR. SK.	
9	VULCAN VC4G SINGLE CONVECTION OVEN	$40\frac{1}{4}$" x $37\frac{3}{4}$"	50,000 BTU	-	-	ON CASTERS
10	TRUE TUC-60-HC UNDER COUNTER REFRIG.	$60\frac{3}{8}$" x $30\frac{1}{8}$"	115 / 60 / 1 $\frac{1}{4}$ H.P. 4.0A	-	-	ON CASTERS
11	SOLWAVE #180MW1000SS MICROWAVE	20" x $18\frac{1}{2}$"	120 / 60 / 1 1,000W 8.3A	-	-	PROVIDE S.S. SHELF; VERIFY TYPE W/ OWNER
12	REGENCY WIRE STORAGE CAGES	4'-0" x 2'-0"	-	-	-	LOCKABLE UNITS ON WHEELS
13	MOVABLE TRASH CONTAINERS	→	→	→	→	VERIFY TYPE WITH OWNER
14	STAINLESS STEEL TABLE WITH SHELF	(A) 5'-0" x 30" (B) 5'-0" x 24"	-	-	-	14B ON WHEELS
15	VENT HOOD	13'-0" x 4'-6"		-	-	
16	EXISTING WATER HEATER BRADFORD / WHITE M-2-XR7556BN	26" DIA.	76,000 BTU	EXISTING	EXISTING	INSTALL (N) RECIRCULATING PUMP ON LINE TO KITCHEN; PROVIDE SHUT OFF SWITCH IN KITCHEN. *NOT SHOWN BELOW; SEE SITE PLAN (SHT. A1)*
17	EXISTING MOP SINK	→	→	→	→	INSTALLED BY PREVIOUS PERMIT. *NOT SHOWN BELOW; SEE SITE PLAN (SHT. A1)*
18	GREASE TRAP	→	→	→	→	*NOT SHOWN BELOW; SEE PLUMBING PLAN (SHT. A4)*
19	ULINE STOR. CBNT. H-6316 CLEANING SUPPLIES	18" x 18"	-	-	-	LOCKABLE
20	S.S. SHELF	6'-0" x 18"	-	-	-	

FINISH SCHEDULE (VERIFY ALL COLORS W/ TENANT)

ROOM	FLOOR ◇2 ◇6	BASE ◇3	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	WNSCT.	CEILING	REMARKS
KITCHEN AREA #1	QUARRY TILE	QUARRY TILE	SEE REMARKS	FRP FULL HEIGHT ◇7			-	SMOOTH GYP. BD. PAINTED ◇1	S.S ON NORTH WALL; FULL HT. UNDER HOOD
KITCHEN AREA #2	QUARRY TILE	QUARRY TILE	FRP FULL HEIGHT ◇7				-	SMOOTH GYP. BD. PAINTED ◇1	
TABLE STORAGE	QUARRY TILE	QUARRY TILE	FRP FULL HEIGHT ◇7				-	SMOOTH GYP. BD. PAINTED ◇1	
MAIN HALL	(E)	(E)	(E)	(E)	PAINT COMPLETE WALL	(E)	-	(E)	

NOTES:

◇1 SMOOTH FINISH WITH SEMI-GLOSS ENAMEL.

◇2 VERIFY COLOR W/ TENANT & SUBMIT SAMPLE TO HEALTH DEPT. FOR APPROVAL. ALL TILE IN WALK AREAS TO BE SLIP RESISTANT.

◇3 ALL BASES TO BE $\frac{3}{8}$" RADIUS COVE W/ 6" MIN. HT.

◇4 ALL WALLS & CEIL. WITHIN KITCHEN AREAS TO BE LIGHT COLOR (LIGHT REFLECTANCE VALUE OF 70 % OR GREATER).

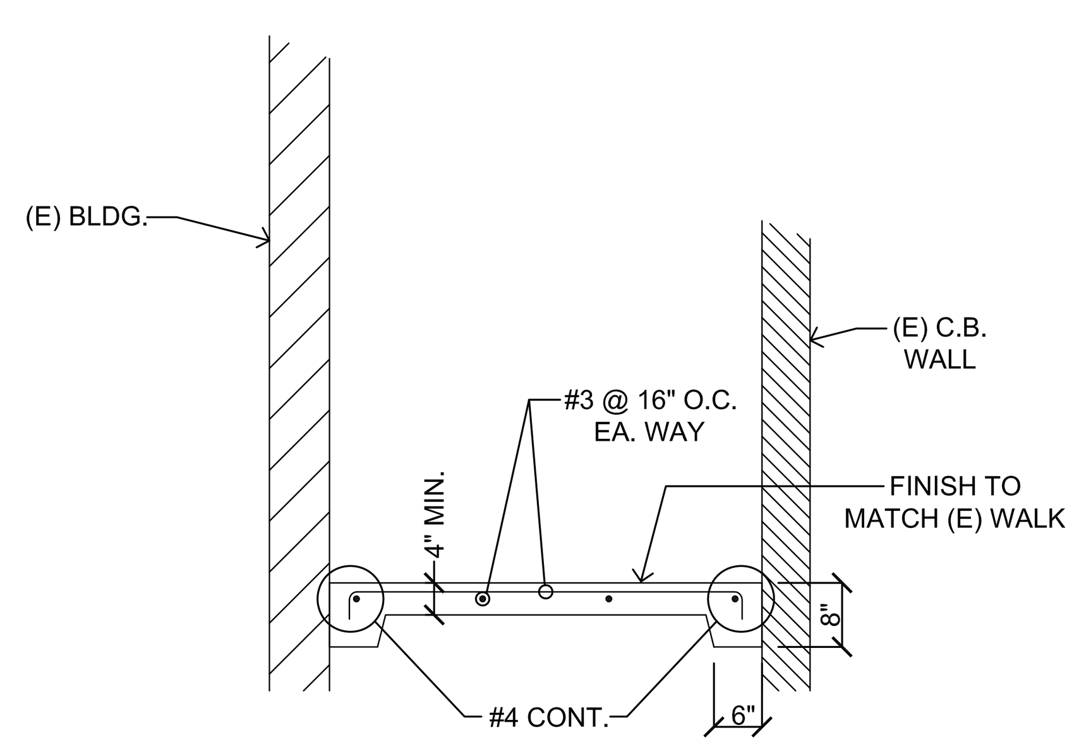
◇5 ALL GYP. BD. BEHIND FRP, TILE OR SIMILAR MATERIAL TO BE MOISTURE RESISTANT.

◇6 PROVIDE ALUM. RAMP TRANSITIONS MEETING A.D.A. REQ. AT ALL DOORS TO ACCOMMODATE VARIABLE HEIGHTS OF ADJACENT FLOOR FINISHES.

◇7 VERIFY COLOR & FINISH WITH TENANT

NOTES:

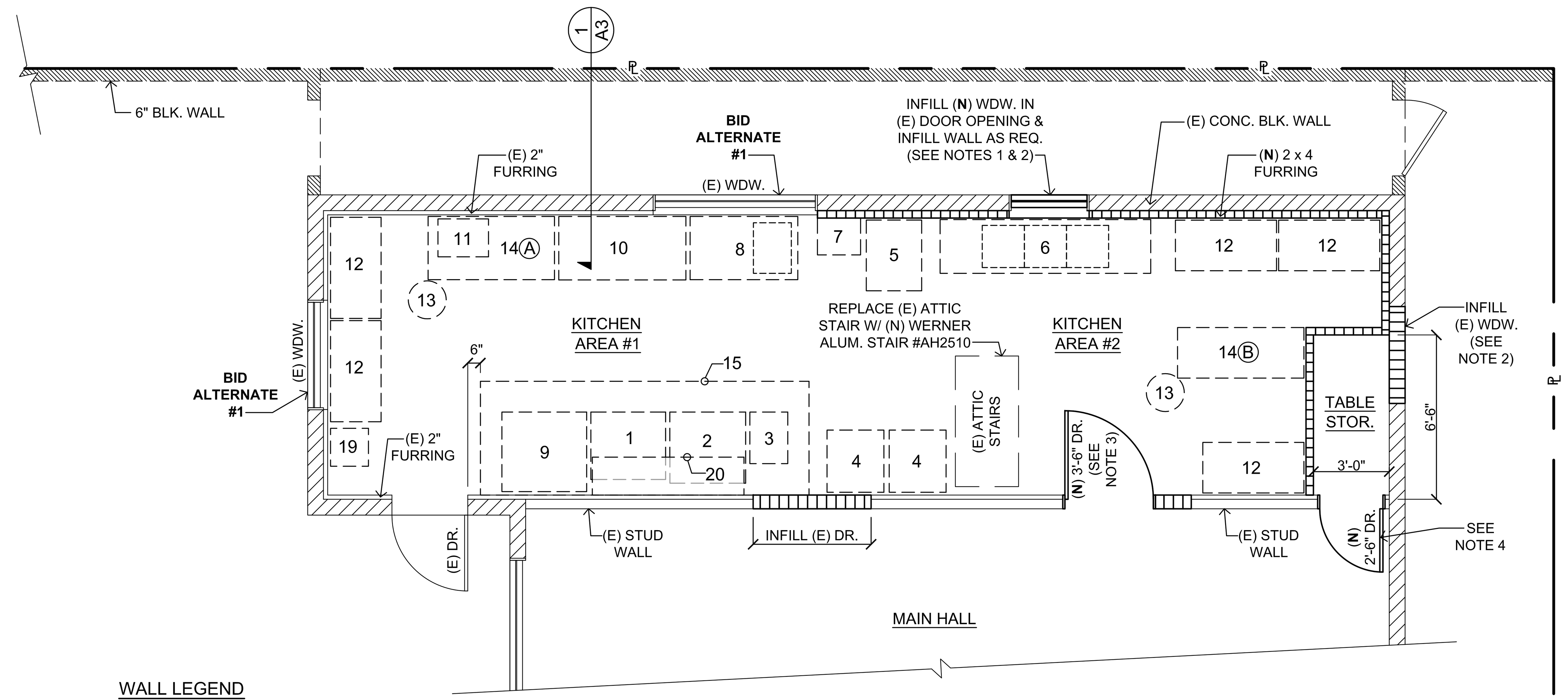
1. (N) WINDOW WIDTH TO FIT (E) DOOR OPENING & HEIGHT TO MATCH (E) WINDOWS. WINDOW TO BE MILGARD ALUM. FRAME LOCKABLE SLIDING WINDOW W/ TINTED DOUBLE GLAZING & INSECT SCREEN.
2. WINDOW INFILL TO BE CONC. BLK. TO MATCH (E) WALL.
3. DOOR HARDWARE: (3) 5" HT. x 0.180" THK. FULL MORTISE, BALL BEARING HINGES; SCHLAGE ALX SERIES (FUNCTION 70 CLASSROOM LOCK); KICK DOWN DOOR STOP (HA SHI OR APPROVED EQUAL); 36" HT. STAIN. STL. PUSH PLATE ON PUSH SIDE OF DOOR.
4. DOOR HARDWARE: (3) $4\frac{1}{2}$" HT. x 0.134" THK. FULL MORTISE PLAIN HINGES; SCHLAGE ALX SERIES (FUNCTION 70 CLASSROOM LOCK).
5. REPLACE CONCRETE WALK AS REQUIRED; SEE 1/A3



NOTE: PROVIDE CONTROL JOINTS APPROX. 4'-0" O.C.

1 CONCRETE WALK SECTION

$\frac{1}{2}$" = 1'-0"



WALL LEGEND

▨ (E) CONC. BLOCK (C.B.) WALL

(E) WOOD STUD WALL

(**N**) WOOD STUD WALL / (**N**) FURRING

NEW FLOOR / EQUIPMENT PLAN

(PROJECT AREA) $\frac{1}{4}$" = 1'-0"

PLAN NORTH

REVISIONS	BY
29 MAR. 2024	
10 JUN. 2024	

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LICENSED ARCHITECT DON DAVIS C7193 RENEWAL DATE STATE OF CALIFORNIA

KITCHEN REMODEL
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74 WEST SIXTH ST.
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CHECKED

DATE 10 FEB. 2024

SCALE AS NOTED

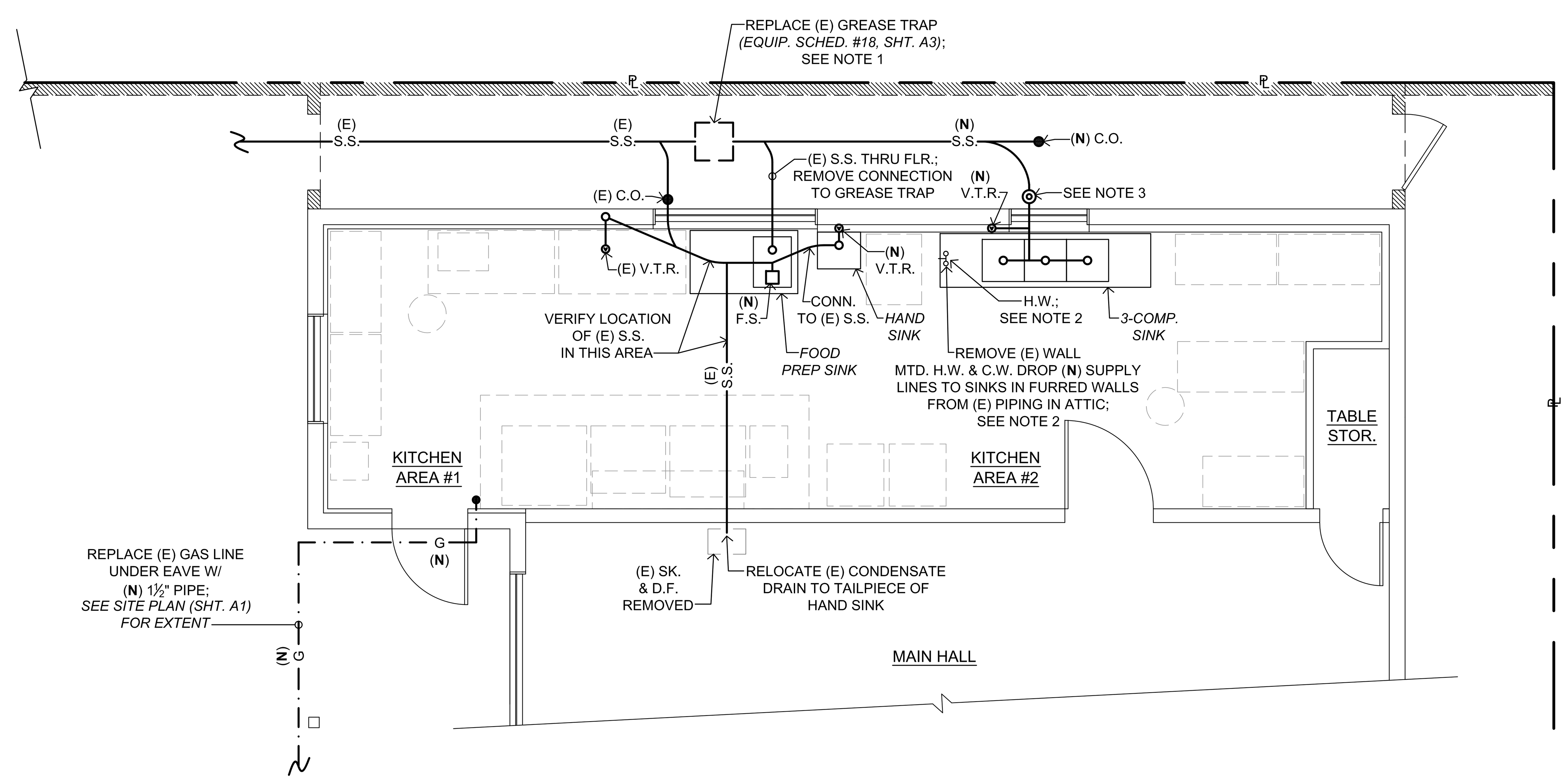
JOB NO. 2208

SHEET A3

OF SHEETS

NOTES:

1. (N) GREASE TRAP TO BE 'ASHLAND' POLY-TRAP MDL.#4820 (40# GREASE CAPACITY) W/ HD DIAMOND PLATE COVER.
2. ON (E) HOT WATER SUPPLY PROVIDE REQ. PIPING & RECIRCULATION PUMP IN ATTIC FROM (E) WATER HEATER. PROVIDE SWITCH FOR PUMP IN KITCHEN W/ INDICATOR LIGHT WHEN ON (SEE ELECT.). SEE SHEET A-1 FOR (E) WATER HEATER LOCATION.
3. DRAIN FROM SINK THRU (E) DOOR OPENING AND DROP BELOW GRADE OUTSIDE WALL.
4. CONNECT (E) WATER LINE IN ATTIC TO (N) M.U.A. UNIT SHOWN ON SHEET A5.
5. CONNECT CONDENSATE DRAIN FROM (N) M.U.A. UNIT IN ATTIC TO (E) CONDENSATE DRAIN FROM (E) HVAC UNIT.
6. VERIFY REQ. FOR (N) M.U.A. UNIT IN ATTIC (SEE A5) AND PROVIDE WATER LINE AS REQUIRED.



NEW PLUMBING PLAN

(PROJ. AREA) $\frac{1}{4}$" = 1'-0"

PLAN NORTH

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LICENSED ARCHITECT JON DAVIS C7193 RENEWAL DATE 5-?-'25 STATE OF CALIFORNIA
[illegible]

KITCHEN REMODEL
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DATE
10 FEB. 2024
SCALE
AS NOTED
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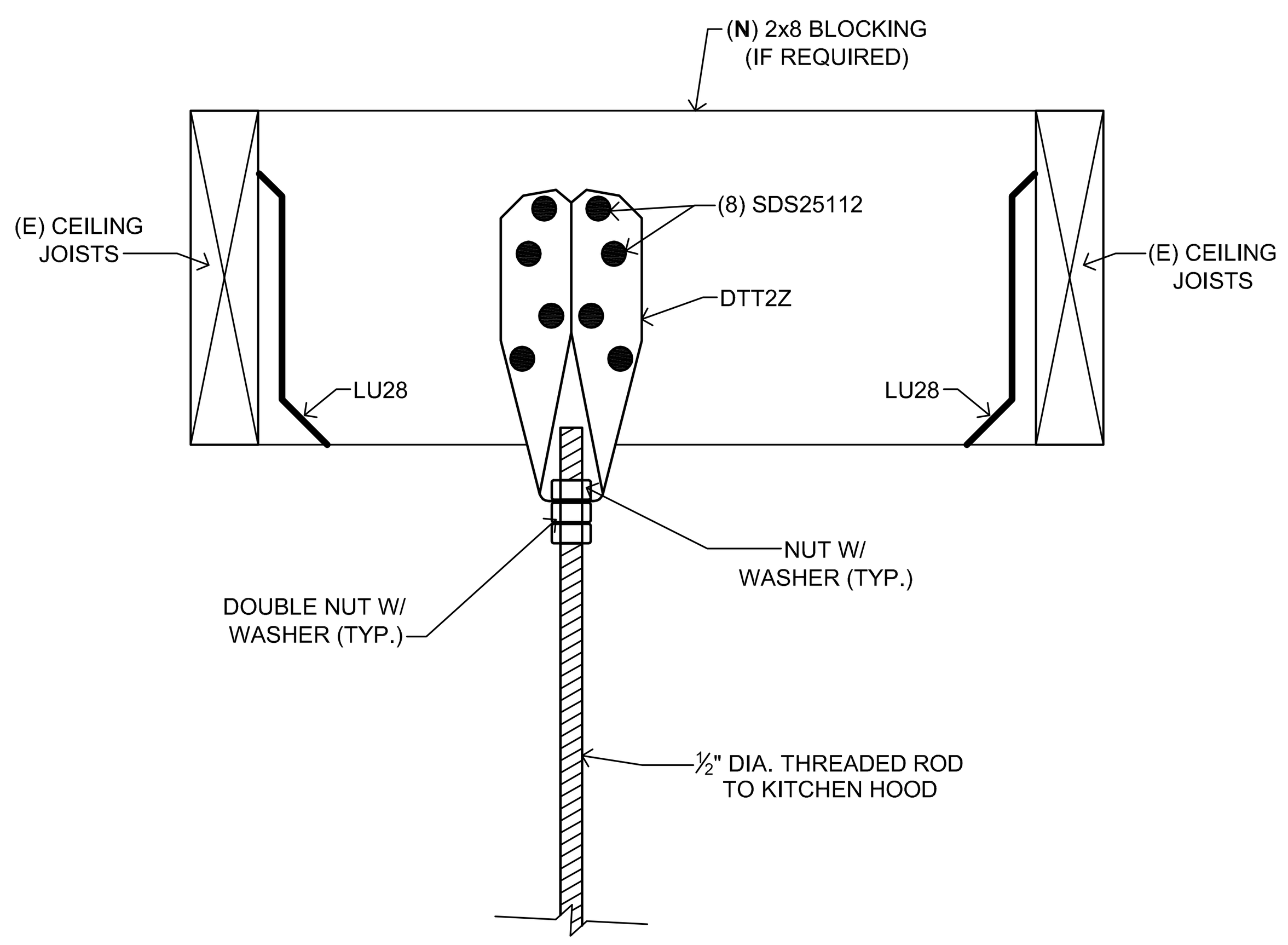
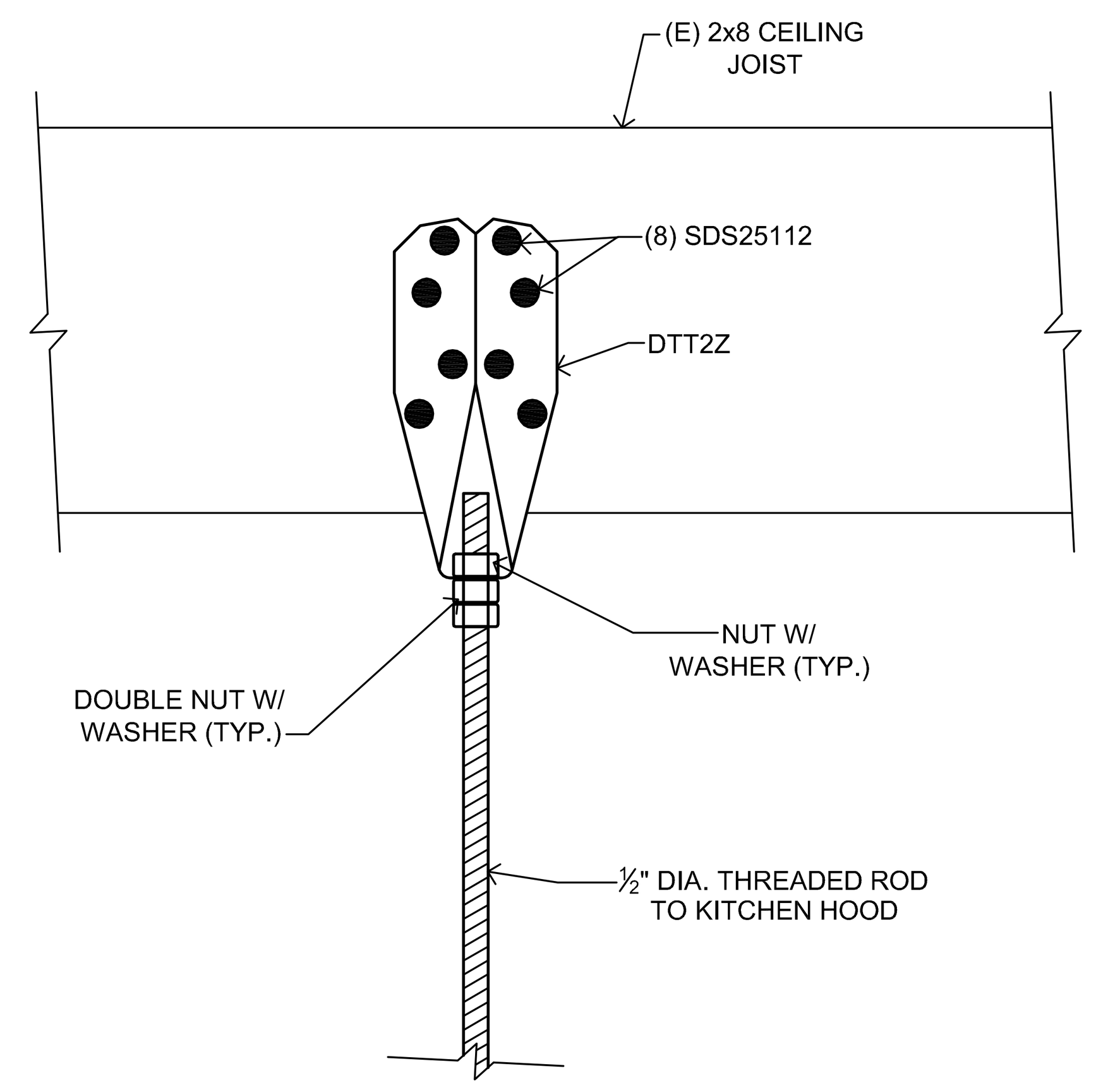
2208
SHEET
A4
OF SHEETS



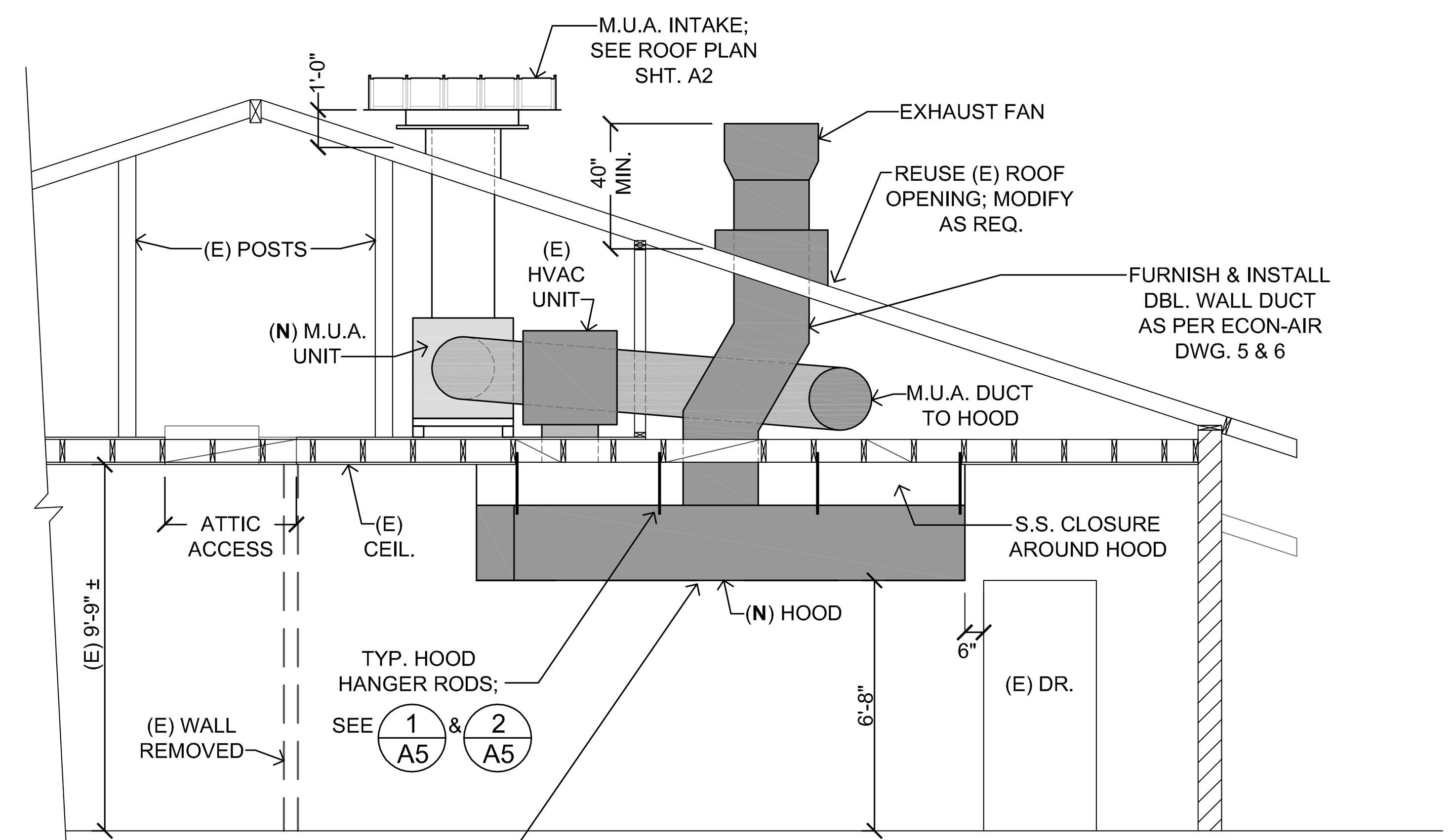
1 HANGER ROD: IF BLOCKING IS REQUIRED

N.T.S.



2 HANGER ROD: DIRECT TO JOIST

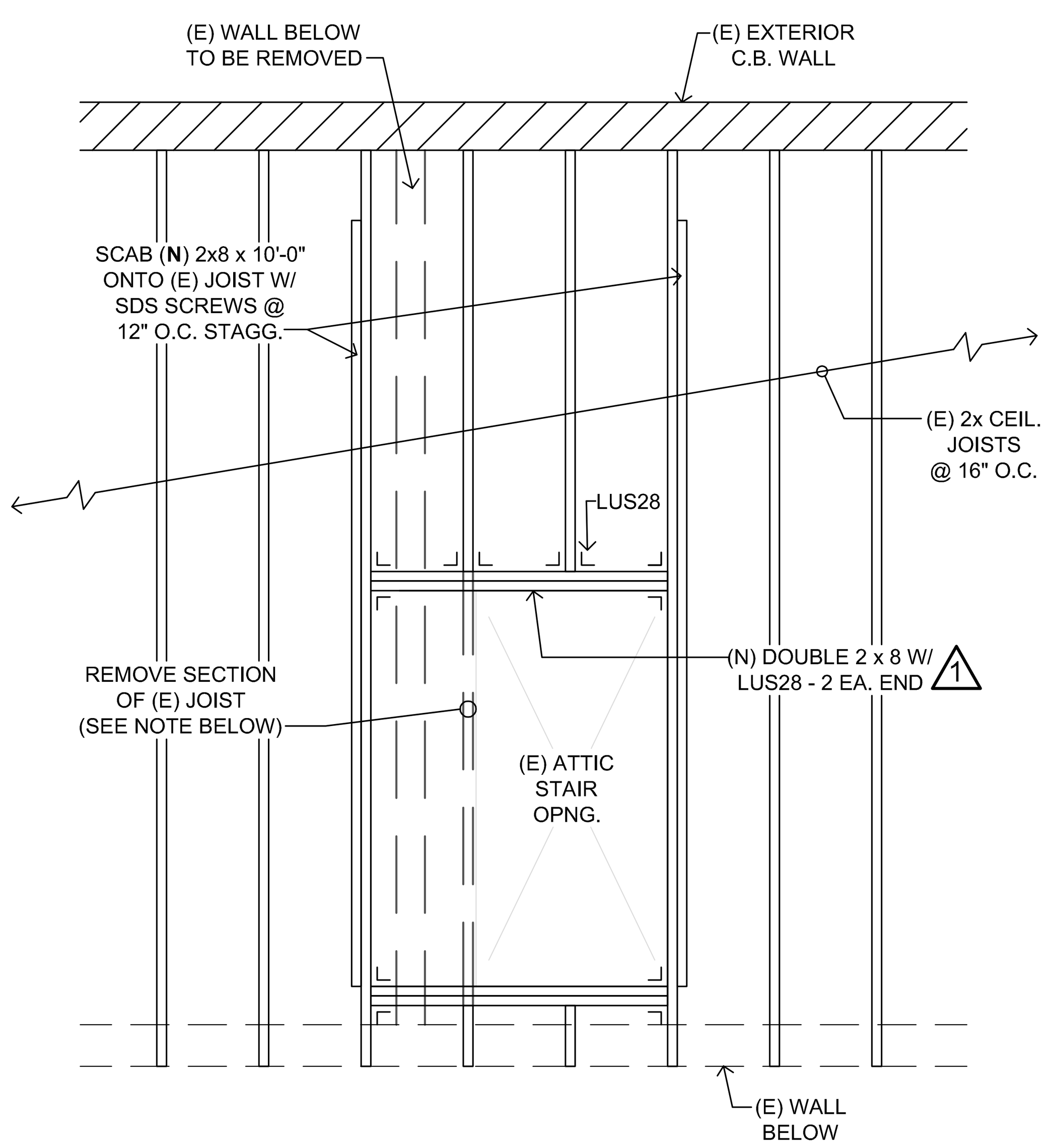
N.T.S.



NOTE: PROVIDE A COMPLETE ANSUL FIRE PROTECTION SYSTEM AT HOOD BY SEPARATE PERMIT (1)

A SECTION AT HOOD

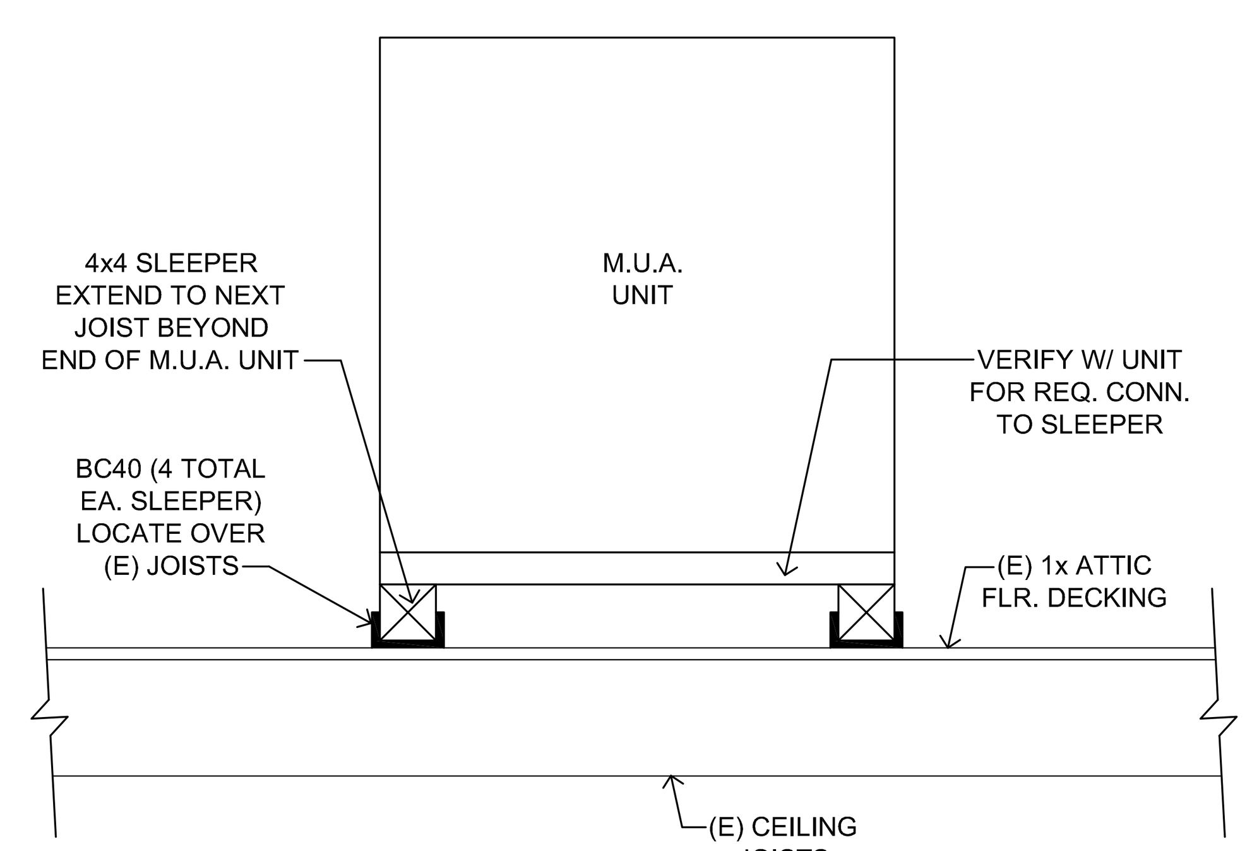
¼" = 1'-0"



NOTE: AFTER M.U.A. UNIT INSTALLATION, REFRAME OPENING AS REQUIRED FOR (N) ATTIC STAIR.

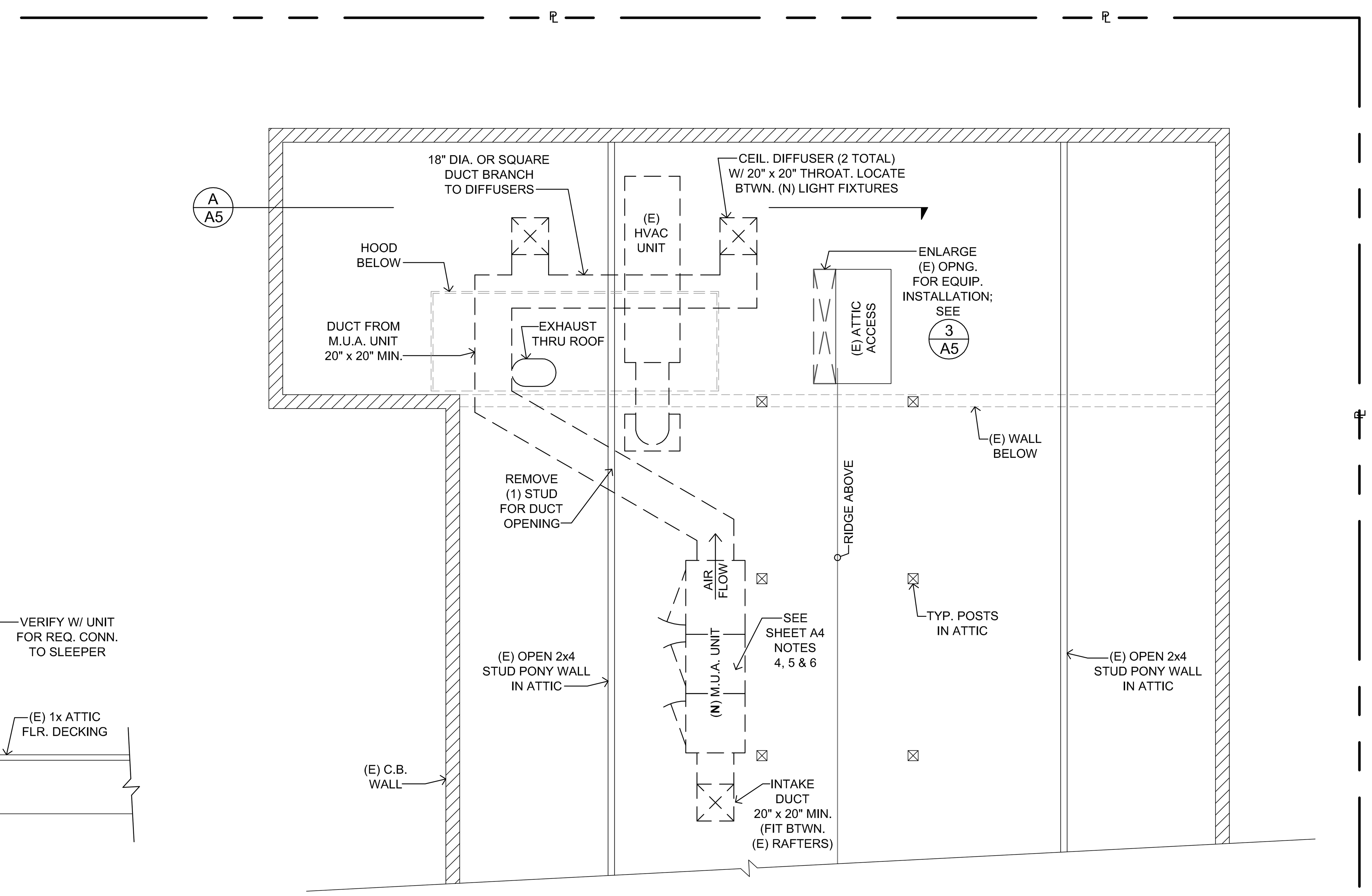
3 TEMPORARY ENLARGEMENT OF ATTIC ACCESS OPENING

½" = 1'-0"



4 M.U.A. UNIT SLEEPER

1" = 1'-0"



NEW PARTIAL ATTIC PLAN

¼" = 1'-0"

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CHECKED

DATE 10 FEB. 2024

SCALE AS NOTED

JOB NO. 2208

SHEET A5

OF SHEETS

AIA California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (July 2024 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

Y | N/A | RESPON. PARTY

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS. [BSC-CG] The provisions of individual sections of Chapter 5 apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of $200,000 or above (for occupancies within the authority of California Building Standards Commission). Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.

A code section will be designated by a banner to indicate where the code section only applies to newly constructed buildings [N] or to additions and/or alterations [A]. When the code section applies to both, no banner will be used.

301.3.1 Nonresidential additions and alterations that cause updates to plumbing fixtures only:

Note: On and after January 1, 2014, certain commercial real property, as defined in Civil Code Section 1101.3, shall have its noncompliant plumbing fixtures replaced with appropriate water-conserving plumbing fixtures under specific circumstances. See Civil Code Section 1101.1 *et seq*. for definitions, types of commercial real property affected, effective dates, circumstances necessitating replacement of noncompliant plumbing fixtures, and duties and responsibilities for ensuring compliance.

301.3.2 Waste Diversion. The requirements of Section 5.408 shall be required for additions and alterations whenever a permit is required for work.

301.4 PUBLIC SCHOOLS AND COMMUNITY COLLEGES. (see GBSC)
301.5 HEALTH FACILITIES. (see GBSC)

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

SECTION 303 PHASED PROJECTS

303.1 PHASED PROJECTS. For shell buildings and others constructed for future tenant improvements, only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.

303.1.1 Initial Tenant improvements. The provisions of this code shall apply only to the initial tenant improvements to a project. Subsequent tenant improvements shall comply with the scoping provisions in Section 301.3 non-residential additions and alterations.

ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
OSHPD	Office of Statewide Health Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

CHAPTER 5
NONRESIDENTIAL MANDATORY MEASURES

DIVISION 5.1 PLANNING AND DESIGN

SECTION 5.101 GENERAL

5.101.1 SCOPE
The provisions of this chapter outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

SECTION 5.102 DEFINITIONS

5.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

CUTOFF LUMINAIRES. Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5 percent) at an angle of 90 degrees above nadir, and 100 (10 percent) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

ELECTRIC VEHICLE (EV). [BSC-CG, HCD] An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the California Electrical Code, off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats and the like, are not included.

ELECTRIC VEHICLE (EV) CAPABLE SPACE. [BSC-CG, DSA-SS and HCD] A vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted, to support EV charging.

ELECTRIC VEHICLE (EV) CHARGER. [BSC-CG, HCD] Off-board charging equipment used to charge an electric vehicle.

ELECTRIC VEHICLE CHARGING SPACE (EV SPACE). [HCD] A space intended for future installation of EV charging equipment and charging of electric vehicles.

ELECTRIC VEHICLE CHARGING STATION (EVCS). [BSC-CG, DSA-SS, HCD] One or more electric vehicle charging spaces served by EVSE or receptacle(s).

ELECTRIC VEHICLE (EV) READY SPACE. [HCD] A vehicle space which is provided with a branch circuit; any necessary raceways, both underground and/or surface mounted; to accommodate EV charging, terminating in a receptacle or a charger.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).[BSC-CG, DSA-SS and HCD] The conductors, including the ungrounded, grounded and equipment grounding conductors and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

SECTION 5.105 DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES

5.105.1 Scope. [BSC-CG] Effective July 1, 2024, alteration(s) to existing building(s) where the combined altered floor area is 100,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 100,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3. Effective January 1, 2026, the combined floor area shall be 50,000 square feet or greater.

[DSA-SS] Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3.

Exception [BSC-CG, DSA-SS]: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section 5.105.2.

5.105.2 Reuse of existing building. An alteration or addition to an existing building shall maintain at a minimum 45 percent combined of the existing building's primary structural elements (foundations; columns, beams, walls, and floors; and lateral elements) and existing building enclosure (roof framing, wall framing and exterior finishes). Window assemblies, insulation, portions of buildings deemed structurally unsound or hazardous, and hazardous materials that are remediated as part of the project shall not be included in the calculation.

5.105.2.1 Verification of compliance. Documentation shall be provided in the construction documents to demonstrate compliance with Section 5.105.2.

Note: Sample Worksheet WS-3 in Chapter 8 may be used to assist in documenting compliance with this section.

5.105.3 Deconstruction (Reserved).

Y | N/A | RESPON. PARTY

SECTION 5.106 SITE DEVELOPMENT

5.106.1 STORM WATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE OF LAND. Newly constructed projects and additions which disturb less than one acre of land, and are not part of a larger common plan of development or sale, shall prevent the pollution of storm water runoff from the construction activities through one or more of the following measures:

5.106.1.1 Local ordinance. Comply with a lawfully enacted storm water management and/or erosion control ordinance.

5.106.1.2 Best Management Practices (BMPs). Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMPs.

1. Soil loss BMPs that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
   a. Scheduling construction activity during dry weather, when possible.
   b. Preservation of natural features, vegetation, soil, and buffers around surface waters.
   c. Drainage swales or lined ditches to control stormwater flow.
   d. Mulching or hydroseeding to stabilize disturbed soils.
   e. Erosion control to protect slopes.
   f. Protection of storm drain inlets (gravel bags or catch basin inserts).
   g. Perimeter sediment control (perimeter silt fence, fiber rolls).
   h. Sediment trap or sediment basin to retain sediment on site.
   i. Stabilized construction exits.
   j. Wind erosion control.
   k. Other soil loss BMPs acceptable to the enforcing agency.
2. Good housekeeping BMPs to manage construction equipment, materials, non-stormwater discharges and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
   a. Dewatering activities.
   b. Material handling and waste management.
   c. Building materials stockpile management.
   d. Management of washout areas (concrete, paints, stucco, etc.).
   e. Control of vehicle/equipment fueling to contractor's staging area.
   f. Vehicle and equipment cleaning performed off site.
   g. Spill prevention and control.
   h. Other housekeeping BMPs acceptable to the enforcing agency.

5.106.2 STORMWATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB ONE OR MORE ACRES OF LAND. Comply with all lawfully enacted stormwater discharge regulations for projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development sale.

Note: Projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of the larger common plan of development or sale must comply with the post-construction requirements detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board or the Lahontan Regional Water Quality Control Board (for projects in the Lake Tahoe Hydrologic Unit).

The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff (pre-project hydrology) with the installation of postconstruction stormwater management measures. The NPDES permits emphasize runoff reduction through on-site stormwater use, interception, evapotranspiration, and infiltration through nonstructural controls, such as Low Impact Development (LID) practices, and conversation design measures. Stormwater volume that cannot be addressed using nonstructural practices is required to be captured in structural practices and be approved by the enforcing agency.

Refer to the current applicable permits on the State Water Resources Control Board website at: www.waterboards.ca.gov/constructionstormwater. Consideration to the stormwater runoff management measures should be given during the initial design process for appropriate integration into site development.

5.106.4 BICYCLE PARKING. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2

5.106.4.1 Bicycle parking. [BSC-CG] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.

5.106.4.1.1 Short-term bicycle parking. If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.
Exception: Additions or alterations which add nine or less visitor vehicular parking spaces.

5.106.4.1.2 Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.3 For additions or alterations that add 10 or more tenant-occupant vehicular parking spaces, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one bicycle parking facility.

5.106.4.1.4 For new shell buildings in phased projects provide secure bicycle parking for 5 percent of the anticipated tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.5 Acceptable bicycle parking facility for Sections 5.106.4.1.2, 5.106.4.1.3, and 5.106.4.1.4 shall be convenient from the street and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.

5.106.4.2 Bicycle parking. [DSA-SS] For public schools and community colleges, comply with Sections 5.106.4.2.1 and 5.106.4.2.2

5.106.4.2.1 Student bicycle parking. Provide permanently anchored bicycle racks conveniently accessed with a minimum of four two-bike capacity racks per new building.
5.106.4.2.2 Staff bicycle parking. Provide permanent, secure bicycle parking conveniently accessed with a minimum of two staff bicycle parking spaces per new building. Acceptable bicycle parking facilities shall be convenient from the street or staff parking area and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

5.106.5.3 Electric vehicle (EV) charging. [N] [BSC-CG] Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 Electric vehicle charging stations (EVCS)—Power allocation method and associated Table 5.106.5.3.6 and shall be provided in accordance with regulations in the *California Building Code* and the *California Electrical Code*.

Exceptions:
1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
   a. Where there is no local utility power supply
   b. Where the local utility is unable to supply adequate power.
   c. Where there is evidence suitable to the local enforcement agency substantiating the local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.
2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

5.106.5.3.1 EV capable spaces. [N] EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements:
1. Raceways complying with the California Electrical Code and no less that 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the EV capable and into a suitable listed cabinet, box,enclosure or equivalent. A common raceway may be used to serve multiple EV charging spaces.
2. A service panel or subpanel (s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.
3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.
4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective devices space(s) as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

Note: A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by an enforcement agency. See vehicle Code Section 22511.2 for further details.

Y | N/A | RESPON. PARTY

TABLE 5.106.5.3.1		
TOTAL NUMBER OF ACTUAL PARKING SPACES	**NUMBER OF REQUIRED EV CAPABLE SPACES**	**NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)[1,2]**
0-9	0	0
10-25	2	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 AND OVER	20 percent of actual parking spaces[1]	25 percent of EV capable spaces[1]

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2.
3. At least one Level 2 EVSE shall be provided.

5.106.5.3.2 Electric vehicle charging stations (EVCS) EV capable spaces shall be provided with electric vehicle supply equipment (EVSE) to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 shall be provided with Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. At least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable space is accumulatively supplied to the EV charger.

The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.3.2.1 The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.3.2.2 The installation of two low power Level 2 EV charging receptacles shall be permitted to reduce the minimum number of required EV capable spaces without EVSE in Table 5.106.5.3.1 by one.

5.106.5.3.3 Use of automatic load management systems (ALMS).
ALMS shall be permitted for EVCS. When ALMS is installed, the required electrical load capacity specified in Section
5.106.5.3.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.

5.106.5.3.4 Accessible EVCS.
When EVSE is installed, accessible EVSC shall be provided in accordance with the *California Building Code*, Chapter 11B, Section 11B-228.3.

Note: For EVCS signs, refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

5.106.5.3.4 Accessible electric vehicle charging station (EVCS). When EVSE is installed, accessible EVCS shall be provided in accordance with the *California Building Code*, Chapter 11B, Section 11B-228.3.

5.106.5.3.5 Electric vehicle charging station signage. Electric vehicle charging stations shall be identified by signage or pavement markings in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

Power allocation method shall include the following:
1. Use any kVA combination of EV capable spaces, low power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

5.106.5.3.6 Electric vehicle charging stations (EVCS)—power allocation method. The power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table 5.106.5.3.1. Use Table 5.106.5.3.6 to determine the total power in kVA required based on the total number of actual parking spaces.

TABLE 5.106.5.3.6		
TOTAL NUMBER OF ACTUAL PARKING SPACES	**MINIMUM TOTAL kVA @ 6.6 kVA**	**TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE,3,4 LOW POWER LEVEL 2, LEVEL 2, 1, 2 OR DCFC**
0-9	0	0
10-25	26.4	26.4
26-50	52.8	52.8
51-75	85.8	85.8
76-100	112.2	112.2
101-150	165	165
151-200	231	231
201 AND OVER	20 percent of actual parking spaces x 6.6	Total required kVA = P × .20 × 6.6 Where P = Parking spaces in facility

1. Level 2 EVSE @ 6.6 kVA minimum.
2. At least one Level 2 EVSE shall be provided.
3. Maximum allowed kVA to be utilized for EV capable spaces is 75 percent.
4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

5.106.5.4 Additions or alterations to existing buildings or parking facilities [A]. [BSC-CG] Existing buildings or parking facilities being modified by one of the following shall comply with Section 5.106.5.4.1 or 5.106.5.4.2. When EVSE is installed, accessible EVCS shall be provided in accordance with the *California Building Code*, Chapter 11B, Section 11B-228.3.

1. When the scope of construction work includes an increase in power supply to an electric service panel as part of a parking facility addition or alteration.
2. When a new photovoltaic system is installed covering existing parking spaces.
3. When additions or alterations to existing buildings are triggered pursuant to code Section 301.3 and the scope of work includes an increase in power supply to an electric service panel.

Exceptions:
1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
   a. Where there is no local utility power supply.
   b. Where the local utility is unable to supply adequate power.
   c. Where there is evidence suitable to the local enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.
   d. Where demonstrated as impracticable excluding local utility service or utility infrastructure issues.
2. Remote parking facilities that do not have access to the building service panel.
3. Parking area lighting upgrades where no trenching is part of the scope of work.
4. Emergency repairs, including but not limited to water line break in parking facilities, natural disaster repairs, etc.

5.106.5.4.1 Existing buildings or parking areas without previously installed EV capable infrastructure [A]. When EV capable infrastructure does not exist at an existing parking facility or building, and the parking facility or building undergoes an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 for the total number of actual parking spaces being added or altered.

5.106.5.4.2 Existing buildings or parking areas with previously installed EV capable infrastructure [A]. When EV capable infrastructure is available at an existing parking facility or building, and the parking facility or building is undergoing an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 utilizing the existing EV capable allocated power and infrastructure for the total number of actual parking spaces being added or altered. If the area being added or altered exceeds the existing EV capable capacity, allocated power and infrastructure, provide additional EV charging as needed to comply with this section.

Y | N/A | RESPON. PARTY

5.106.5.5 Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] [BSG-CG] Construction shall comply with Section 5.106.5.5.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces shall also comply with Section 5.106.5.5.1 for future installation of medium- and heavy-duty EVSE.

Exceptions:
1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
   a. Where there is no local utility power supply.
   b. Where the local utility is unable to supply adequate power.
   c. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code*, the *California Electrical Code* and as follows:

5.106.5.5.1 Electric vehicle charging readiness requirements for warehouses, grocery stores, office buildings, and manufacturing facilities and retail stores with planned off-street loading spaces. [N]

In order to avoid future demolition when adding EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s) or subpanel(s) shall be installed at the time of construction in accordance with the *California Electrical Code*. Construction plans and specifications shall include, but are not limited to, the following:

1. The transformer, main service equipment and subpanels shall meet the minimum power requirement in Table 5.106.5.5.1 to accommodate the dedicated branch circuits for the future installation of EVSE.

2. The construction documents shall indicate one or more location(s) convenient to the planned off-street loading space(s) reserved for medium- and heavy-duty ZEV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the charging cabinet(s) and dispenser(s), as shown in Table 5.106.5.5.1.

3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium- and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipment for medium- and heavy-duty vehicles.

4. The raceway(s) or busway(s) shall be of sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty ZEVs as shown in Table 5.106.5.5.1.

TABLE 5.106.5.5.1 RACEWAY CONDUIT AND PANEL POWER REQUIREMENTS FOR MEDIUM- AND HEAVY-DUTY EVSE [N]			
BUILDING TYPE	**BUILDING SIZE (SQ. FT.)**	**NUMBER OF OFF-STREET LOADING SPACES**	**ADDITIONAL CAPACITY REQUIRED (KVA) FOR RACEWAY & BUSWAY AND TRANSFORMER & PANEL**
Grocery	10,000 to 90,000	1 or 2	200
		3 or Greater	400
	Greater than 90,000	1 or Greater	400
Manufacturing Facilities	10,000 to 50,000	1 or 2	200
	10,000 to 50,000	3 or Greater	400
	Greater than 50,000	1 or Greater	400
Office Buildings	10,000 to 135,000	1 or 2	200
	10,000 to 135,000	3 or Greater	400
	Greater than 135,000	1 or Greater	400
Retail	10,000 to 135,000	1 or 2	200
		3 or Greater	400
	Greater than 135,000	1 or Greater	400
Warehouse	20,000 to 256,000	1 or 2	200
		3 or Greater	400
	Greater than 256,000	1 or Greater	400

5.106.5.6 Electric vehicle (EV) charging at public schools and community colleges. [DSA-SS] Electric vehicle infrastructure and electric vehicle charging stations shall comply with Section 5.106.5.6 and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code.

Exceptions:
1. On a case-by-case basis where compliance with this section has been demonstrated to be not feasible based upon one of the following conditions,and with concurrence by the Division of the State Architect (DSA), compliance with Section 5.106.5.6 shall not be required.
   a. Where there is no local utility power supply.
   b. Where the local utility is unable to supply adequate power.
   c. The installation of EVCS is impracticable.
2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with Section 5.106.5.6.

5.106.5.6.1 EV capable spaces. EV capable spaces shall be provided in accordance with Table 5.106.5.6.1 and the following requirements:

1. Raceways complying with the California Electrical Code and no less than 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area and shall terminate in close proximity to the proposed location of the EV capable space and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV capable spaces.

2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.

3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.

4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

TABLE 5.106.5.6.1		
TOTAL NUMBER OF ACTUAL PARKING SPACES	**NUMBER OF REQUIRED EV CAPABLE SPACES**	**NUMBER OF REQUIRED EVCS[2]**
0-9	0	0
10-25	4	1
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 AND OVER	20 percent of total spaces[1]	25 percent of EV capable spaces[1]

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. Each EVCS shall reduce the number of required EV capable spaces by the same number.

5.106.5.6.2 Electric vehicle charging stations (EVCS). EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.6.1 and shall comply with Section 5.106.5.6.2. EVCS shall be serviced by Level 2 or Direct Current Fast Charging (DCFC) EVSE, or with EVSE in any combination of Level 2 and DCFC. Accessible EVCS shall be provided in accordance with *California Building Code* Chapter 11B.

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEM. DIST.
74 WEST SIXTH ST.
GILROY, CA

CG1

AIA California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 2 (July 2024 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

5.106.5.6.2.1 Reduced number of EV capable spaces. The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces indicated in Table 5.106.5.6.1 by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.6.2.2 Multiple connectors. EVSE with multiple vehicle connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.6.1 for each EV capable space is accumulatively supplied to the EVSE.

5.106.5.6.2.3 Use of automatic load management systems (ALMS). ALMS shall be permitted for EVCS installed in accordance with Section 5.105.5.6.2. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.6.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.

5.106.5.6.3 EVCS alternative compliance. In lieu of compliance with Section 5.106.5.6.2, EVCS shall be provided with Level 1, low power Level 2, or Level 2, or any combination of Level 1, low power Level 2 or Level 2 EVSE such that the total power supplied by the combination of EVSE meets the minimum power indicated in Table 5.106.5.6.3, based on the total number of actual parking spaces in each parking facility.

TABLE 5.106.5.6.3	
NUMBER OF PARKING SPACES IN A PARKING FACILITY	MINIMUM TOTAL POWER (KVA) REQUIRED FOR EVCS
0-9	0
10-25	7
26-50	14
51-75	20
76-100	27
101-150	40
151-200	60
201 AND OVER	Total required KVA = P × .05 × 6.6 Where P = Parking spaces in facility

5.106.5.6.4 EVCS for alterations of or additions to parking facilities. Alterations of or additions to parking facilities shall provide EVCS in compliance with Section 5.106.5.6.4. The installation of infrastructure for EV capable spaces required to be provided without EVSE shall not be required.

5.106.5.6.4.1 Alterations of and additions to parking facilities. EVCS shall be provided in accordance with the number indicated in Table 5.106.5.6.1 or minimum power indicated in Table 5.106.5.6.3 when the scope of work includes an increase in power supply to an electric panel serving light fixtures illuminating the parking area or when area containing parking spaces is added to a parking facility. The number of required EVCS shall be based on the total number of existing and new parking spaces in the parking facility.

5.106.5.6.4.2 Alterations consisting of the installation of photovoltaic systems. EVCS shall be provided in accordance with the number indicated in Table 5.106.5.6.1 or maximum power indicated in Table 5.106.5.6.3 when a new photovoltaic system is installed in an existing parking facility.

5.106.5.6.5 Requirement to install EVSE. Level 2 EVSE shall be provided in all existing EV capable spaces to create EVCS when a project is required by California Administrative Code Section 4-309 to be submitted for plan approval to the Division of the State Architect. When EVSE is installed in existing EV capable spaces, accessible EVCS shall be provided in accordance with *California Building Code* Chapter 11B.

Exception: Projects in which improvements in parking areas consist only of accessibility improvements are not required to comply with Section 5.106.5.6.5.

5.106.8 LIGHT POLLUTION REDUCTION. [N]. I Outdoor lighting systems shall be designed and installed to comply with the following:

1. The minimum requirements in the California Energy Code for Lighting Zones 0-4 as defined in Chapter 10, Section 10-114 of the California Administrative Code; and
2. Backlight (B) ratings as defined in IES TM-15-11 (shown in Table A-1 in Chapter 8);
3. Uplight and Glare ratings as defined in California Energy Code (shown in Tables 130.2-A and 130.2-B in Chapter 8) and
4. Allowable BUG ratings not exceeding those shown in Table 5.106.8, [N] or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

Exceptions: [N]

1. Luminaires that qualify as exceptions in Sections 130.2 (b) and 140.7 of the California Energy Code.
2. Emergency lighting.
3. Building facade meeting the requirements in Table 140.7-B of the California Energy Code, Part 6.
4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction.
5. Luminaires with less than 6,200 initial luminaire lumens.

TABLE 5.106.8 [N] MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS 1,2					
ALLOWABLE RATING	LIGHTING ZONE LZ0	LIGHTING ZONE LZ1	LIGHTING ZONE LZ2	LIGHTING ZONE LZ3	LIGHTING ZONE LZ4
MAXIMUM ALLOWABLE BACKLIGHT RATING 3					
Luminaire greater than 2 mounting heights (MH) from property line	N/A	No Limit	No Limit	No Limit	No Limit
Luminaire back hemisphere is 1-2 MH from property line	N/A	B2	B3	B4	B4
Luminaire back hemisphere is 0.5-1 MH from property line	N/A	B1	B2	B3	B3
Luminaire back hemisphere is less than 0.5 MH from property line	N/A	B0	B0	B1	B2
MAXIMUM ALLOWABLE UPLIGHT RATING (U)					
For area lighting 3	N/A	U0	U0	U0	U0
For all other outdoor lighting,including decorative luminaires	N/A	U1	U2	U3	UR
MAXIMUM ALLOWABLE GLARE RATING 4 (G)					
MAXIMUM ALLOWABLE GLARE RATING 4 (G)	N/A	G1	G2	G3	G4
MAXIMUM ALLOWABLE GLARE RATING 4 (G)	N/A	G0	G1	G1	G2
MAXIMUM ALLOWABLE GLARE RATING 4 (G)	N/A	G0	G0	G1	G1
MAXIMUM ALLOWABLE GLARE RATING 4 (G)	N/A	G0	G0	G0	G1

1. IESNA Lighting Zones 0 and 5 are not applicable; refer to Lighting Zones as defined in the *California Energy Code* and Chapter 10 of the *California Administrative Code.*

2. For property lines that abut public walkways, bikeways, plazas and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the centerline of the public roadway or public transit corridor for the purpose of determining compliance with this section.

3. General lighting luminaires in areas such as outdoor parking, sales or storage lots shall meet these reduced ratings. Decorative luminaries located in these areas shall meet *U*-value limits for "all other outdoor lighting"

5.106.8.1 Facing- Backlight
Luminaries within 2MH of a property line shall be oriented so that the nearest property line is behind the fixture, and shall comply with the backlight rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point of that property line.

Exception: Corners. If two property lines (or two segments of the same property line) have equidistant point to the luminaire, then the luminaire may be oriented so that the intersection of the two lines (the corner) is directly behind the luminaire. The luminaire shall still use the distance to the nearest points(s) on the property lines to determine the required backlight rating.

5.106.8.2 Facing-Glare.
For luminaires covered by 5.106.8.1, if a property line also exists within or extends into the front hemisphere within 2MH of the luminaire then the luminaire shall comply with the more stringent glare rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point on the nearest property line within the front hemisphere.

Note: [N]
1.See also *California Building Code*, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways.
2.Refer to Chapter 8 (Compliance Forms, Worksheets and Reference Material) for IES TM-15-11 Table A-1, *California Energy Code* Tables 130.2-A and 130.2-B.
3. Refer to the *California Building Code* for requirements for additions and alterations.

5.106.10 GRADING AND PAVING. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales.
2. Water collection and disposal systems.
3. French drains.
4. Water retention gardens.
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.
   Exception: Additions and alterations not altering the drainage path.

5.106.12 SHADE TREES [DSA-SS]. Shade Trees shall be planted to comply with Sections 5.106.12.1, 5.106.12.2, and 5.106.12.3. Percentages shown shall be measured at noon on the summer solstice. Landscape irrigation necessary to establish and maintain tree health shall comply with Section 5.304.6.

5.106.12.1 Surface parking areas. Shade tree plantings, minimum #10 container size or equal, shall be installed to provide shade over 50 percent of the parking area within 15 years.

Exceptions: Surface parking area covered by solar photovoltaic shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5 shall be permitted in whole or in part in lieu of shade tree planting.

5.106.12.2 Landscape areas. Shade tress plantings, minimum #10 container size or equal shall be installed to provide shade of 20% of the landscape area within 15 years.

Exceptions: Playfields for organized sport activity are not included in the total area calculation.

5.106.12.3. Hardscape areas. Shade tree plantings, minimum #10 container size or equal shall be installed to provide shade over 20 percent of the hardscape area within 15 years.

Exceptions:
1. Walks, hardscape areas covered by solar photovoltaic shade structures or shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5 shall be permitted in whole or in part in lieu of shade tree planting.
2. Designated and marked play areas of organized sport activity are not included in the total area calculation.

DIVISION 5.2 ENERGY EFFICIENCY

SECTION 5.201 GENERAL

5.201.1 Scope [BSC-CG]. ***California Energy Code [DSA-SS].*** For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory building standards.

DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION

SECTION 5.301 GENERAL

5.301.1 Scope. The provisions of this chapter shall establish the means of conserving water use indoors, outdoors and in wastewater conveyance.

SECTION 5.302 DEFINITIONS

5.302.1 Definitions. The following terms are defined in Chapter 2 *(and are included here for reference)*

EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETAF) [DSA-SS]. An adjustment factor when applied to reference evapotranspiration that adjusts for plant factors and irrigation efficiency, which ae two major influences on the amount of water that needs to be applied to the landscape.

FOOTPRINT AREA [DSA-SS]. The total area of the furthest exterior wall of the structure projected to natural grade, not including exterior areas such as stairs, covered walkways, patios and decks.

METERING FAUCET. A self-closing faucet that dispenses a specific volume of water for each actuation cycle. The volume or cycle duration can be fixed or adjustable.

GRAYWATER. Pursuant to Health and Safety Code Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines and laundry tubs, but does not include waste water from kitchen sinks or dishwashers.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO). The California ordinance regulating landscape design, installation and maintenance practices that will ensure commercial, multifamily and other developer installed landscapes greater than 2500 square feet meet an irrigation water budget developed based on landscaped area and climatological parameters.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO). [HCD] The California model ordinance (California Code of Regulations, Title 23, Division 2, Chapter 2.7), regulating landscape design, installation and maintenance practices. Local agencies are required to adopt the updated MWELO, or adopt a local ordinance at least as effective as the MWELO.

POTABLE WATER. Water that is drinkable and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the California Plumbing Code, Part 5.

POTABLE WATER. [HCD] Water that is satisfactory for drinking, culinary, and domestic purposes, and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards and the requirements of the Health Authority Having Jurisdiction.

RECYCLED WATER. Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur [Water Code Section 13050 (n)]. Simply put, recycled water is water treated to remove waste matter attaining a quality that is suitable to use the water again.

SUBMETER. [HCD 1] A secondary device beyond a meter that measures water consumption of an individual rental unit within a multiunit residential structure or mixed-use residential and commercial structure. (See Civic Code Section 1954.202 (g) and Water code Section 517 for additional details.)

WATER BUDGET. Is the estimated total landscape irrigation water use which shall not exceed the maximum applied water allowance calculated in accordance with the Department of Water Resources Model Efficient Landscape Ordinance (MWELO).

SECTION 5.303 INDOOR WATER USE

5.303.1 METERS. Separate submeters or metering devices shall be installed for the uses described in Sections 503.1.1 and 503.1.2.

5.303.1.1 Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:

1. For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop.
2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:
   a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
   b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
   c. Steam and hot water boilers with energy input more than 500,000 Btu/h (147 kW).

5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day.

5.303.3 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

5.303.3.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

5.303.3.2 Urinals.
5.303.3.2.1 Wall-mounted Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush.

5.303.3.2.2 Floor-mounted Urinals. The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush.

5.303.3.3 Showerheads. [BSC-CG]
5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.
Note: A hand-held shower shall be considered a showerhead.

5.303.3.3 Showerheads. [BSC-CG]
5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.
Note: A hand-held shower shall be considered a showerhead.

5.303.3.4 Faucets and fountains.
5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.

5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than1.8 gallons per minute/20 [rim space (inches) at 60 psi].

5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle.

5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per minute/20 [rim space (inches) at 60 psi].

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

5.303.3.4.6 Pre-rinse spray value
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7), and shall be equipped with an integral automatic shutoff.

FOR REFERENCE ONLY: The following table and code section have been reprinted from the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).

TABLE H-2	
STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALUES MANUFACTURED ON OR AFTER JANUARY 28, 2019	
PRODUCT CLASS [spray force in ounce force (ozf)]	**MAXIMUM FLOW RATE (gpm)**
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

5.303.4 COMMERCIAL KITCHEN EQUIPMENT.

5.303.4.1 Food Waste Disposers. Disposers shall either modulate the use of water to no more than 1 gpm when the disposer is not in use (not actively grinding food waste/no-load) or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water.
Note: This code section does not affect local jurisdiction authority to prohibit or require disposer installation.

5.303.5 AREAS OF ADDITION OR ALTERATION. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Section 5.303.3 and 5.303.4 shall apply to new fixtures in additions or areas of alteration to the building.

5.303.6 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code* and in Chapter 6 of this code.

SECTION 5.304 OUTDOOR WATER USE

5.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

Notes:
1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code of Regulations, Title 23, Chapter 2.7, Division 2.
2. MWELO and supporting documents, including a water budget calculator, are available at: https://www.water.ca.gov/.

5.304.6 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. For public schools and community colleges, landscape projects as described in Sections 5.304.6.1 and 5.304.6.2 shall comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, *California Code of Regulations*, except that the evapotranspiration adjustment factor (ETAF) shall be 0.65 with an additional water allowance for special landscape areas (SLA) of 0.35.

Exception: Any project with an aggregate landscape area of 2,500 square feet or less may comply with the prescriptive measures contained in Appendix D of the MWELO.

5.304.6.1 Newly constructed landscapes. New construction projects with an aggregate landscape area equal to or greater than 500 square feet.

5.304.6.2 Rehabilitated landscapes. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,200 square feet.

DIVISION 5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION 5.401 GENERAL

5.401.1 SCOPE. The provisions of this chapter specify the requirements of achieving material conservation, resource efficiency, and greenhouse gas (GHG) emission reduction through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, the installation of products with lower GHG emissions and building commissioning or testing and adjusting.

SECTION 5.402 DEFINITIONS

5.402.1 DEFINITIONS. The following terms are defined in Chapter 2 *(and are included here for reference)*

ADJUST. To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust a damper.

BALANCE. To proportion flows within the distribution system, including sub-mains, branches and terminals, according to design quantities.

BUILDING COMMISSIONING. A systematic quality assurance process that spans the entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements.

BUY CLEAN CALIFORNIA ACT (BCCA). The Buy Clean California Act (BCCA) (Public Contract Code Sections 3500-3505) targets carbon emissions associated with the production of structural steel (hot-rolled sections, hollow structural sections, and plate), concrete reinforcing steel, flat glass, and mineral wool board insulation. The maximum acceptable global warming potential (GWP) limits are established by the Department of General Services (DGS), in consultation with the California Air Resources Board (CARB).

CRADLE-TO-GRAVE. Activities associated with a product or building's life cycle from the extraction stage through disposal stage, and covering modules A1 through C4 in accordance with ISO Standards 14025 and 21930.

ORGANIC WASTE. Food waste, green waste, landscape and pruning wste, nonhazardous wood waste, and food soiled paper waste that is mixed in with food waste.

REFERENCE STUDY PERIOD. The period of use for the building, in years, that will be assumed for life cycle assessment.

TEST. A procedure to determine quantitative performance of a system or equipment

TYPE III ENVIRONMENTAL PRODUCT DECLARATION (EPD). A third-party verified report that summarizes how a product impacts the environment. Type III EPDs can be either product-specific, factory-specific, or industry-wide EPDs. See "Cradle-to-Gate."

FACTORY-SPECIFIC EPD. A product-specific Type III EPD in which the environmental impacts can be attributed to a single manufacturer and manufacturing facility.

INDUSTRY-WIDE EPD (IW-EPD). A Type III EPD in which the environmental impacts are an average of the typical manufacturing impacts for a range of products within the same product category for a group of manufacturers.

PRODUCT-SPECIFIC EPD. A Type III EPD in which the environmental impacts can be attributed to a product design and manufacturer across multiple facilities.

SECTION 5.407 WATER RESISTANCE AND MOISTURE MANAGEMENT

5.407.1 WEATHER PROTECTION. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1402.2 (Weather Protection), manufacturer's installation instructions or local ordinance, whichever is more stringent.

5.407.2 MOISTURE CONTROL. Employ moisture control measures by the following methods.

5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent spray on structures.

5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows:

5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following:

1. An installed awning at least 4 feet in depth.
2. The door is protected by a roof overhang at least 4 feet in depth.
3. The door is recessed at least 4 feet.
4. Other methods which provide equivalent protection.

5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65% of the non-hazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance, submit a construction waste management plan that:

1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
3. Identifies diversion facilities where construction and demolition waste material collected will be taken.
4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

5.408.1.2 Waste Management Company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section.

Note: The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company.

Exceptions to Sections 5.408.1.1 and 5.408.1.2:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.
3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.

5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65% minimum requirement as approved by the enforcing agency.

5.408.1.4 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1, through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Nonresidential)" located www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen may be used to assist in documenting compliance with the waste management plan.
2. Mixed construction and demolition debris processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

5.408.2 UNIVERSAL WASTE. [A] Additions and alterations to a building or tenant space that meet the scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents.

Note: Refer to the Universal Waste Rule link at: http://www.dtsc.ca.gov/universalwaste/

5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

Exception: Reuse, either on or off-site, of vegetation or soil contaminated by disease or pest infestation.

Notes:

1. If contamination by disease or pest infestation is suspected, contact the County Agricultural Commissioner and follow its direction for recycling or disposal of the material.
2. For a map of know pest and/or disease quarantine zones, consult with the California Department of Food and Agriculture. (www.cdfa.ca.gov)

SECTION 5.409 LIFE CYCLE ASSESSMENT

5.409.1 SCOPE. [BSC-CG] Effective July 1, 2024, projects consisting of newly constructed building(s) with a combined floor area of 100,000 square feet or greater shall comply with either Section 5.409.2 or Section 5.409.3. Alteration(s) to existing building(s) where the combined altered floor area is 100,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 100,000 square feet or greater shall comply with either Section 5. 105.2, Section 5.409.2, or Section 5.409.3. Effective January 1, 2026, the combined floor area shall be 50,000 square feet or greater.

[DSA-SS] Projects consisting of newly constructed building(s) with a combined floor area of 50,000 square feet or greater shall comply with either Section 5.409.2 or Section 5.409.3. Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3.

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEM. DIST.
74 WEST SIXTH ST.
GILROY, CA

CG 2

AIA California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 3 (July 2024 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

5.409.2 Whole building life cycle assessment. Projects shall conduct a cradle-to-grave whole building life cycle assessment performed in accordance with ISO 14040 and ISO 14044, excluding operating energy, and demonstrating a minimum 10-percent reduction in global warming potential (GWP) as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of the California Energy Code currently in effect. Software used to conduct the whole building life cycle assessment, including reference baseline building, shall have a data set compliant with ISO 14044, and ISO 21930 or EN 15804, and the software shall conform to ISO 21931 and/or EN 15978. The software tools and data sets shall be the same for evaluation of both the baseline building and the proposed building.

Notes:
1. Software for calculating whole building life cycle assessment is available for free at Athena Sustainable Materials Institute (https://calculatelca.com/software/impact-estimator/) and OneClick LCA-Planetary (www.oneclickLca.com/planetary/). Paid versions include, but are not limited to, Sphera GaBi Solutions (gabi.sphera.com), SimaPro (simapro.com), One-Click LCA (www.oneclickLca.com) and Tally for Revit (apps.autodesk.com).

2. ASTM E2921-22 "Standard Practice for Minimum Criteria for Comparing Whole Building Life Cycle Assessments for Use with Building Codes, Standards, and Rating Systems" may be consulted for the assessment.

3. In addition to the required documentation specified in Section 5.409.2.3, Worksheet WS-9 may be required by the enforcing entity to demonstrate compliance with the requirements.

5.409.2.1 Building components. Building enclosure components included in the assessment shall be limited to glazing assemblies, insulation, and exterior finishes. Primary and secondary structural members included in the assessment shall be limited to footings and foundations, and structural columns, beams, walls, roofs, and floors.

5.409.2.2 Reference study period. The reference study period of the proposed building shall be equal to the reference baseline building and shall be 60 years.

5.409.2.3 Verification of compliance. A summary of the GWP analysis produced by the software and Worksheet WS-4 signed by the design professional of record shall be provided in the construction documents as documentation of compliance. A copy of the whole building life cycle assessment which includes the GWP analysis produced by the software, in addition to maintenance and training information, shall be included in the operation and maintenance manual and shall be provided to the owner at the close of construction. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

5.409.3 Product GWP compliance—prescriptive path. Each product that is permanently installed and listed in Table 5.409.3 shall have a Type III environmental product declaration (EPD), either product-specific or factory-specific.

TABLE 5.409.3
PRODUCT GWP LIMITS

BUY CLEAN CALIFORNIA MATERIALS PRODUCT CATEGORY[1]	MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)	UNIT OF MEASUREMENT
Hot-rolled structural steel sections	1.77	MT CO_2e/MT
Hollow structural sections	3.00	MT CO_2e/MT
Steel plate	2.61	MT CO_2e/MT
Concrete reinforcing steel	1.56	MT CO_2e/MT
Flat glass	2.50	MT CO_2e/MT [4]
Light-density mineral wool board insulation	5.83	kg CO_2e/MT
Heavy-density mineral wool board insulation	14.28	kg CO_2e/MT
Concrete, Ready-Mixed[2], [3]		
CONCRETE PRODUCT CATEGORY	**MAXIMUM GWP ALLOWED VALUE ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	450	kg CO_2e/m^3
2500–3499 psi	489	kg CO_2e/m^3
3500–4499 psi	566	kg CO_2e/m^3
4500–5499 psi	661	kg CO_2e/m^3
5500–6499 psi	701	kg CO_2e/m^3
6500 psi and greater	799	kg CO_2e/m^3
Concrete, Lightweight Ready-Mixed[2]		
CONCRETE PRODUCT CATEGORY	**MAXIMUM GWP ALLOWED VALUE ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	875	kg CO_2e/m^3
2500–3499 psi	956	kg CO_2e/m^3
3500–4499 psi	1039	kg CO_2e/m^3

1. The GWP values of the products listed in Table 5.409.3 are based on 175 percent of Buy Clean California Act (BCCA) GWP values, except for concrete products which are not included in the BCCA.
2. For concrete, 175 percent of the National Ready Mixed Concrete Association (NRMCA) 2022 version 3 Pacific Southwest regional benchmark values are used for the GWP allowed, except for High Early Strength.
3. Concrete High Early Strength ready-mixed shall be calculated at 130 percent of the ready-mixed concrete GWP allowed values for each product category.
4. The GWP unit for flat glass has been adjusted to correct an error in the express terms. With the revised unit (MT CO2e/MT), reported GWP values will align with industry data as published in the CLF North American Material Baselines (2023).

5.409.3.1 Products shall not exceed the maximum GWP value specified in Table 5.409.3.

Exception: Concrete may be considered one product category to meet compliance with this section. A weighted average of the maximum GWP for all concrete mixes installed in the project shall be less than the weighted average maximum GWP allowed per Table 5.409.3 using Exception Equation 5.409.3.1. Calculations shall be performed with consistent units of measurement for the material quantity and the GWP value.

For the purposes of this exception, industry-wide EPDs are acceptable.

Exception EQUATION 5.409.3.1

$GWP_n < GWP_{allowed}$
where
$GWP_n = \Sigma\ (GWP_n)(v_n)$
and
$GWP_{allowed} = \Sigma\ (GWP_{allowed})(v_n)$
and
$_n$ = each concrete mix installed in the project
GWP_n = the GWP for concrete mix $_n$ per concrete mix EPD, in kg CO2e/m3
$GWP_{allowed}$ = the GWP potential allowed for concrete mix $_n$ per Table 5.409.3
v_n = the volume of concrete mix $_n$ installed in the project, in m3

5.409.3.2 Verification of compliance. Calculations to demonstrate compliance, Type III EPDs for products required to comply, if included in the project, and Worksheet WS-5 signed by the design professional of record shall be provided on the construction documents. Updated EPDs for products used in construction shall be provided to the owner at the close of construction and to the enforcement entity upon request. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

SECTION 5.410 BUILDING MAINTENANCE AND OPERATIONS

5.410.1 RECYCLING BY OCCUPANTS. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code 42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section.

5.410.1.1 Additions. All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30% or more in floor area, shall provide recycling areas on site.

Exception: Additions within a tenant space resulting in less than a 30% increase in the tenant space floor area.

5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the *Public Resources Code*. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act).

Note: A sample ordinance for use by local agencies may be found in Appendix A of the document at the CalRecycle's web site.

5.410.2 COMMISSIONING. [N] New buildings 10,000 square feet and over. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. For I-occupancies that are not regulated by OSHPD or for I-occupancies and L-occupancies that are not regulated y the California Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.

Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting systems and controls, as well as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements

Commissioning requirements shall include:

1. Owner's or Owner representative's project requirements.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.
6. Documentation and training.
7. Commissioning report.

Exceptions:

1. Unconditioned warehouses of any size.
2. Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses.
3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1.
4. Open parking garages of any size, or open parking garage areas, of any size, within a structure.

Note: For the purposes of this section, unconditioned shall mean a building, area or room which does not provide heating and/or air conditioning.

Informational Notes:

1. . Functional performance testing for heating, ventilation, air conditioning systems and lighting controls must be performed in compliance with the *California Energy Code*.

5.410.2.1 Owner's or Owner Representative's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:
1. Environmental and sustainability goals.
2. Building sustainable goals.
3. Indoor environmental quality requirements.
4. Project program, including facility functions and hours of operation, and need for after hours operation.
5. Equipment and systems expectations.
6. Building occupant and operation and maintenance (O&M) personnel expectations.

5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:

1. Renewable energy systems.
2. Landscape irrigation systems.
3. Water reuse system.

5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include the following:
1. General project information.
2. Commissioning goals.
3. Systems to be commissioned. Plans to test systems and components shall include:
   a. An explanation of the original design intent.
   b. Equipment and systems to be tested, including the extent of tests.
   c. Functions to be tested.
   d. Conditions under which the test shall be performed.
   e. Measurable criteria for acceptable performance.
4. Commissioning team information.
5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included.

5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

5.410.2.5 Documentation and training. [N] A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in *California Code of Regulations* (CCR), Title 8, Section 5142, and other related regulations.

5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:
1. Site information, including facility description, history and current requirements.
2. Site contact information.
3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log.
4. Major systems.
5. Site equipment inventory and maintenance notes.
6. A copy of verifications required by the enforcing agency or this code.
7. Other resources and documentation, if applicable.

5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:
1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces).
2. Review and demonstration of servicing/preventive maintenance.
3. Review of the information in the Systems Manual.
4. Review of the record drawings on the system/equipment.

5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.

5.410.4 TESTING AND ADJUSTING. New buildings less than 10,000 square feet. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.

5.410.4.2 (Reserved)

Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting system and controls, as well as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements and Sections 120.5, 120.6, 130.4, and 140.9(b)3 for additional testing requirements of specific systems.

5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project:

1. Renewable energy systems.
2. Landscape irrigation systems.
3. Water reuse systems.

5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system.

5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.

5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.

DIVISION 5.5 ENVIRONMENTAL QUALITY

SECTION 5.501 GENERAL

5.501.1 SCOPE. The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

SECTION 5.502 DEFINITIONS

5.502.1 DEFINITIONS. The following terms are defined in Chapter 2 *(and are included here for reference)*

ARTERIAL HIGHWAY. A general term denoting a highway primarily for through traffic usually on a continuous route.

A-WEIGHTED SOUND LEVEL (dBA). The sound pressure level in decibels as measured on a sound level meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting adjustments have been made.

1 BTU/HOUR. British thermal units per hour, also referred to as Btu. The amount of heat required to raise one pound of water one degree Fahrenheit per hour, a common measure of heat transfer rate. A ton of refrigeration is 12,000 Btu, the amount of heat required to melt a ton (2,000 pounds) of ice at 32^0 Fahrenheit.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL). A metric similar to the day-night average sound level (Ldn), except that a 5 decibel adjustment is added to the equivalent continuous sound exposure level for evening hours (7pm to 10pm) in addition to the 10 dB nighttime adjustment used in the Ldn.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, timber, prefabricated wood I–joists or finger–jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120.1(a).

Note: See CCR, Title 17, Section 93120.1.

DAY-NIGHT AVERAGE SOUND LEVEL (Ldn). The A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours (10p.m. to 7 a.m.).

DECIBEL (db). A measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, sound intensity) with respect to a reference quantity.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the *California Electrical Code*, off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included.

ELECTRIC VEHICLE CHARGING STATION(S) (EVCS)). One or more spaces intended for charging electric vehicles.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

ENERGY EQUIVALENT (NOISE) LEVEL (Leq). The level of a steady noise which would have the same energy as the fluctuating noise level integrated over the time of period of interest.

EXPRESSWAY. An arterial highway for through traffic which may have partial control of access, but which may or may not be divided or have grade separations at intersections.

FREEWAY. A divided arterial highway with full control of access and with grade separations at intersections.

GLOBAL WARMING POTENTIAL (GWP). The radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time. Carbon dioxide is the reference compound with a GWP of one.

GLOBAL WARMING POTENTIAL VALUE (GWP VALUE). A 100-year GWP value published by the Intergovernmental Panel on Climate Change (IPCC) in either its Second Assessment Report (SAR) (IPCC, 1995); or its Fourth Assessment A-3 Report (AR4) (IPCC, 2007). The SAR GWP values are found in column "SAR (100-yr)" of Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14.

HIGH-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that is: (a) a chlorofluorocarbon, a hdrochlorofluorocarbon, a hydrofluorocarbon, a perfluorocarbon, or any compound or blend of compounds, with a GWP value equal to or greater than 150, or (B) any ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, sec.82.3 (as amended March 10, 2009).

LONG RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.5 times the pipe diameter.

LOW-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that: (A) has a GWP value less than 150, and (B) is not an ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, sec.82.3 (as amended March 10, 2009).

MERV. Filter minimum efficiency reporting value, based on ASHRAE 52.2–1999.

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base REactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundreths of a gram (g O^3/g ROC).

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

PSIG. Pounds per square inch, guage.

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

SCHRADER ACCESS VALVES. Access fittings with a valve core installed.

SHORT RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.0 times the pipe diameter.

SUPERMARKET. For the purposes of Section 5.508.2, a supermarket is any retail food facility with 8,000 square feet or more conditioned area, and that utilizes either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units.

VOC. A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

Note: Where specific regulations are cited from different agencies such as SCAQMD, ARB, etc., the VOC definition included in that specific regulation is the one that prevails for the specific measure in question.

SECTION 5.503 FIREPLACES

5.503.1 FIREPLACES. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

5.503.1.1 Woodstoves. Woodstoves and pellet stoves shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits.

SECTION 5.504 POLLUTANT CONTROL

5.504.1 TEMPORARY VENTILATION. The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction.

5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site until final startup of the heating, cooling and ventilation equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.

5.504.4 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.

5.504.4.1 Adhesives, sealants and caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:
1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with Section 94507.

TABLE 5.504.4.1 - ADHESIVE VOC LIMIT[1,2]

Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVES	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT SPECIFICALLY LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP & TRIM ADHESIVE	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168, www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF

TABLE 5.504.4.2 - SEALANT VOC LIMIT

Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NONPOROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

NOTE: FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEM. DIST.
74 WEST SIXTH ST.
GILROY, CA

CG3

AIA California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 4 (July 2024 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply.

5.504.4.3.1 Aerosol Paints and coatings. Aerosol paints and coatings shall meet the PWMIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

COATING CATEGORY	CURRENT VOC LIMIT
FLAT COATINGS	50
NONFLAT COATINGS	100
NONFLAT HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH-TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS:	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS
2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.
3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:
1. Manufacturer's product specification
2. Field verification of on-site product containers

5.504.4.4 Carpet Systems.
All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Version 1.2, January 2017 (Emission testing method for California Specifications 01350).

See California Department of Public Health's website for certification programs and testing labs.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health,"Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers,"Version 1.2, January 2017 (Emission testing method for California Specifications 01350).

See California Department of Public Health's website for certification programs and testing labs.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1.

5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.) Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.

5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:
1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.),
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards.
5. Other methods acceptable to the enforcing agency.

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.
2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCHES (8 MM).

5.504.4.6 Resilient flooring systems. Where resilient flooring is installed, at least 80 percent of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health,"Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specifications 01350)

See California Department of Public Health's website for certification programs and testing labs.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

5.504.4.7 Thermal insulation
Comply with the requirements of the California Department of Public Health, "Standard Method of the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, "Version 1.2, January 1.2, January 2017 (Emission testing method for California Specification 01350).
See California Department of Public Health's website for certification programs and testing labs.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.7.1 Verification of compliance.
Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.

5.504.4.8 Acoustical ceiling and wall panels.
Comply with the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, " Version 1.2, January 2017 (Emission testing method for California Specification 01350).
See California Department of Public Health's website for certification programs and testing labs.

5.504.4.8.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.

5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a Minimum Efficiency Reporting Value (MERV) of 13. MERV 13 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Exceptions: Existing mechanical equipment.

5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.

5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions.

SECTION 5.505 INDOOR MOISTURE CONTROL

5.505.1 INDOOR MOISTURE CONTROL. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1202 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures, see Section 5.407.2 of this code.

SECTION 5.506 INDOOR AIR QUALITY

5.506.1 OUTSIDE AIR DELIVERY. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements For Ventilation) of the *California Energy Code*, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.

5.506.2 CARBON DIOXIDE (CO_2) MONITORING. For buildings or additions equipped with demand control ventilation, CO_2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120(c)(4).

5.506.3 Carbon dioxide (CO2) monitoring in classrooms.
(DSA-SS) Each public K-12 school classroom, as listed in Table 120.1-A of the *California Energy Code,* shall be equipped with a carbon dioxide monitor or sensor that meets the following requirements:
1. The monitor or sensor shall be permanently affixed in a tamper-proof manner in each classroom between 3 and 6 feet (914 mm and 1829 mm) above the floor and at least 5 feet (1524 mm) away from door and operable windows.
2. When the monitor or sensor is not integral to an Energy Management Control System (EMCS), the monitor or sensor shall display the carbon dioxide readings on the device. When the sensor is integral to an EMCS, the carbon dioxide readings shall be available to and regularly monitored by facility personnel.
3. A monitor shall provide notification though a visual indicator on the monitor when the carbon dioxide levels in the classroom have exceeded 1,100ppm. A sensor integral to an EMCS shall provide notification to facility personnel through a visual and/or audible indicator when the carbon dioxide levels in the classroom have exceeded 1,100ppm.
4. The monitor or sensor shall measure carbon dioxide levels at minimum 15- minute intervals and shall maintain a record of previous carbon dioxide measurements of not less than 30 days duration.
5. The monitor or sensor used to measure carbon dioxide levels shall have the capacity to measure carbon dioxide levels with a range of 400ppm to 2000ppm or greater.
6. The monitor or sensor shall be certified by the manufacturer to be accurate within 75ppm at 1,000ppm carbon dioxide concentration and shall be certified by the manufacturer to require calibration no more frequently than once every 5 years.

SECTION 5.507 ENVIRONMENTAL COMFORT

5.507.4 ACOUSTICAL CONTROL. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413, or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2.

Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures and utility buildings.

Exception: [DSA-SS] For public schools and community colleges, the requirements of this section and all subsections apply only to new construction.

5.507.4.1 Exterior noise transmission, prescriptive method. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:

1. Within the 65 CNEL noise contour of an airport.

   Exceptions:

   1. L_{dn} or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan.
   2. L_{dn} or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element.

2. Within the 65 CNEL or L_{dn} noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan.

5.507.4.1.1. Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB L_{eq} - 1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).

5.507.4.2 Performance Method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation.

5.507.4.2.1 Site Features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.

5.507.4.2.2 Documentation of Compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.

5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Note: Examples of assemblies and their various STC ratings may be found at the California Office of Noise Control: www.toolbase.org/PDF/CaseStudies/stc_icc_ratings.pdf.

SECTION 5.508 OUTDOOR AIR QUALITY

5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.

5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.

5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.

Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO_2), and potentially other refrigerants.

5.508.2.1 Refrigerant piping. Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below.

5.508.2.1.1 Threaded pipe. Threaded connections are permitted at the compressor rack.

5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less.

5.508.2.1.2.1 Anchorage. One-fouth-inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.

5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil.

Exception: Single-flared tubing connections may be used with a multiring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.

5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows.

5.508.2.2 Valves. Valves Valves and fittings shall comply with the *California Mechanical Code* and as follows.

5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.

5.508.2.2.1.1 Pressure detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.

5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use.

5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.

5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place.

5.508.2.2.2.2.1 Chain tethers. Chain tethers to fit ovr the stem are required for valves designed to have seal caps.

Exception: Valves with seal caps that are not removed from the valve during stem operation.

5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.

5.508.2.3.1 Coil coating. Consideration shall be given to the heat transfer efficiency of coil coating to maximize energy efficiency.

5.508.2.4 Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device tha indicates the level of refrigerant in the receiver.

5.508.2.5 Pressure testing. The system shall be pressure tested during installation prior to evacuation and charging.

5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.

5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.

5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge.

5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging.

5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and hold for 30 minutes.

5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for 30 minutes.

5.508.2.6.3 Third vacuum. Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

[BSC-CG] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

703 VERIFICATIONS

703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEM. DIST.
74 WEST SIXTH ST.
GILROY, CA

CG4

GENERAL NOTES:

1. THIS PROJECT INVOLVES RENOVATION OF AND/OR INTERFACING WITH EXISTING FACILITIES. ALL REPRESENTATIONS OF EXISTING CONDITIONS ARE BASED ON OWNER-FURNISHED AS-BUILT DRAWINGS AND/OR LIMITED FIELD VERIFICATION. PRIOR TO BEGINNING CONSTRUCTION OR ORDERING EQUIPMENT, CONTRACTOR SHALL VISIT THE SITE AND PERFORM FIELD INVESTIGATIONS TO DETERMINE ACTUAL EXISTING CONDITIONS INCLUDING LOCATIONS OF UTILITIES, EQUIPMENT, AND OBSTRUCTIONS.
2. THESE DOCUMENTS MAKE NO REPRESENTATION AS TO THE EXISTENCE OR LOCATION OF EXISTING HAZARDOUS MATERIALS (INCLUDING ASBESTOS CONTAINING MATERIALS) AT THE SITE. REMOVAL OR ABATEMENT OF HAZARDOUS MATERIALS IS NOT INCLUDED IN THE SCOPE OF THIS PROJECT. SHOULD CONTRACTOR DISCOVER SUSPECTED HAZARDOUS MATERIALS AT THE SITE HE SHALL IMMEDIATELY BRING IT TO THE ATTENTION OF THE OWNER AND THE ARCHITECT PRIOR TO STARTING OR CONTINUING WORK INVOLVING THOSE MATERIALS.
3. ALL WORK SHOWN IS NEW UNLESS OTHERWISE INDICATED AS EXISTING (E), RELOCATED (RL) OR FUTURE.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO 2022 CALIFORNIA MECHANICAL CODE (CMC), 2022 CALIFORNIA PLUMBING CODE (CPC), 2022 CALIFORNIA BUILDING CODE (CBC), 2022 CALIFORNIA FIRE CODE (CFC), 2022 CALIFORNIA ELECTRICAL CODE, 2022 CALIFORNIA ENERGY CODE (CAL. CFR TITLE 24, PART 6), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
5. SUBMITTALS: REFER TO SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
6. ALL EQUIPMENT SHALL BE MOUNTED AND ATTACHED TO STRUCTURE SO THAT IT IS RESTRAINED IN THE CASE OF A SEISMIC EVENT IN ACCORDANCE WITH THE REQUIREMENTS OF 2022 CBC.
7. RECORD DRAWINGS: CONTRACTOR SHALL KEEP OF AN ACCURATE RECORD DURING CONSTRUCTION OF AS-BUILT CONDITIONS ON A SET OF CONTRACT DRAWINGS. RED LINE RECORD DRAWING MARK-UPS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE WITHIN 30 DAYS OF COMPLETION OF THE PROJECT.
8. OPERATION & MAINTENANCE (O&M) MANUALS: AT COMPLETION OF PROJECT CONTRACTOR SHALL SUBMIT TO THE OWNER 4 COPIES OF O&M MANUALS WHICH SHALL INCLUDE:
   - MFGR'S. O&M INSTRUCTIONS FOR ALL EQUIPMENT
   - COPIES OF APPROVED SUBMITTAL DATA SHOWING EQUIPMENT SPECIFICATIONS, CAPACITIES, ETC.
   - 11x17 (FOLDED) COPIES OF ALL SHOP DRAWINGS
   - 11x17 (FOLDED) COPIES OF CONTRACT RECORD DRAWINGS

   ALL O&M MANUALS SHALL BE INDEXED & BOUND IN 3 RING BINDERS WITH CLEAR LABELING & TABBED DIVIDERS.

LIGHTING FIXTURE SCHEDULE

FIX NO.	MANUFACTURER	CATALOG NO.	LAMP TYPE	LUMENS	COLOR TEMP	DIM	T24 WATTS	BRANCH CKT DESIGN WATTS	MOUNTING/ HEIGHT	REMARKS/ACCESSORIES
A1	METALUX	22CGTX 45HE L830	LED	4413	3000K	0-10V	40	50	SURFACE CEILING	
A1-EM	METALUX	22CGTX 45HE EL14W L830	LED	4413	3000K	0-10V	40	50	SURFACE CEILING	14W EMERG BATTERY; EM LLF = 0.38; 1676LU
B1	LITHONIA	STL2 20L EZ1 LP830	LED	1960	3000K	N/A	20	25	SURFACE CEILING	

AFG - ABOVE FINISH GRADE/AFS - ABOVE FINISH SLAB/ASC - ABOVE SUSPENDED CEILING/AFF - ABOVE FINISH FLOOR/ARF - ABOVE RAISED FLOOR

MECHANICAL EQUIPMENT

	VOLT	PHASE	HP	FLA	VA	EQUIP. FDR C.B.	EQUIP. DISC. SIZE	EQUIP. DISC. FUSE SIZE	REMARKS
EQ-4A	115	1	-	2.2	253	20A-1P	NEMA 5-15	N/A	TRUE REACH IN REFER T-23-HC
EQ-4B	115	1	-	2.2	253	20A-1P	NEMA 5-15	N/A	TRUE REACH IN REFER T-23-HC
EQ-5	115	1	-	4.7	544	20A-1P	NEMA 5-15	N/A	BEVERAGE-AIR TMF 1HC FREEZER
EQ-9	120	1	-	7.7	924	20A-1P	NEMA 5-15	N/A	VULCAN VC4G OVEN
EQ-10	115	1	-	6.5	748	20A-1P	NEMA 5-15	N/A	TRUE REACH IN REFER TUC-60-HC
EQ-11	120	1	-	10.0	1200	20A-1P	NEMA 5-15	N/A	SOLWAVE MICROWAVE
EF-1	240	1	3	21.4	5136	30A-2P	(8)	-	RANGE HOOD / INPUT POWER: 240V-1PH; MOTOR 3PH (2)
MAU-1	240	1	3	21.4	5136	30A-2P	(8)	-	MAKE UP AIR / INPUT POWER: 240V-1PH; MOTOR 3PH
WP-1	120	1	(2)	1.0	120	20A-1P	(8)		HOT WATER LOOP PUMP

(1) CONTRACTOR TO FIELD VERIFY ALL EQUIPMENT ELECTRICAL CHARACTERISTICS.
(2) TOGGLE TYPE MOTOR RATED DISCONNECT SWITCH, PROVIDED WITH EQUIPMENT OVERLOADS.
(3) COMBINE WITH LIGHTING CIRCUITS.
(4) PROVIDE EQUIP. SERVICE DISC. SWITCH IF UNIT DOES NOT HAVE INTEGRAL DISCONNECTING MEANS.
(5) PROVIDE RECEPTACLE TO MATCH UNIT CORD.
(6) PROVIDE MOTOR THERMAL OVERLOAD PROTECTION IF MOTOR DOES NOT HAVE MOTOR THERMAL OVERLOAD PROTECTION.
(7) SIZE PER EQUIPMENT FULL LOAD NAMEPLATE CURRENT.
(8) SEE ELECTRICAL PLAN.
N/A - NOT APPLICABLE.

ELECTRICAL DRAWING INDEX

ELECTRICAL SYMBOLS & ABBREVIATIONS

NO SCALE

PANELS

- VOLTAGE AND PHASE AS NOTED PER DWGS.
- 120/240V, 1 PHASE PANEL
- 240/120V, 3 PHASE PANEL
- 120/208V, 1 PHASE PANEL
- 208/120V, 3 PHASE PANEL
- 480/277V, 3 PHASE PANEL
- 480V, 3 PHASE PANEL
- SPECIAL VOLTAGE PANEL
- EMERGENCY POWER PANEL

CONDUIT

- CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE
- CONDUIT RUN CONCEALED IN CEILING OR WALL, U.O.N.
- C — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR COMMUNICATION SYSTEM
- E — EMERGENCY SYSTEM CIRCUITING
- PA — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR PA SYSTEM
- P — P — PRIMARY
- S — S — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR SECURITY SYSTEM
- T — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR TELEPHONE SYSTEM
- HOME RUN TO POWER SOURCE
- CONDUIT TURN DOWN
- CONDUIT TURN UP
- GROUND CONDUCTOR
- NEUTRAL CONDUCTOR
- POWER CONDUCTORS
- LOW VOLTAGE CONTROL CONDUCTORS
- 1 1/2" — CONDUIT SIZE

DEVICES

- SINGLE POLE SWITCH, +46" U.O.N. a - CIRCUIT # & SWITCHING 2 - DOUBLE POLE 3 - 3 WAY 4 - 4 WAY
- DUPLEX RECPT, NEMA 5-20R, +18" U.O.N.
- FOUR-PLEX RECPT, NEMA 5-20R, +18" U.O.N.
- GFCI DUPLEX RECPT, W/GROUND FAULT INTERUPTER +44", U.O.N.
- ROOF/CEILING/RECEPT/DROP RECEPT
- ROOF/CEILING 4 PLEX/DROP RECEPT
- FLOOR RECEPTACLE
- PP POWER PACK
- 240V RECEPT
- 208V RECEPT
- 480V RECEPT
- T/C TIME CLOCK
- J JUNCTION BOX
- TELEPHONE OUTLET
- TELCO/DATA OUTLET
- DATA OUTLET
- CABLE TV OUTLET
- A.C. MOTOR GENERAL SYMBOL
- SAFETY SWITCH, SIZE AS NOTED
- MAGNETIC STARTER
- COMBINATION STARTER
- MANUAL STARTER
- P / S DISTRIBUTION TRANSFORMER P - PRIMARY S - SECONDARY
- NXX — BOX SIZE — PULL BOX - POWER; TEL; COMMUNICATION

LIGHTING DEVICES

- FLUORESCENT FIXTURE, RECESSED IN CEILING
- FLUORESCENT FIXTURE, SURFACE OR PENDANT MOUNTED
- FLUORESCENT FIXTURE, WALL MOUNTED
- FLUORESCENT STRIP, SURFACE, PENDANT, OR WALL MOUNTED AS NOTED.
- NL / EM — NL= NIGHT LIGHT EM= EMERGENCY LIGHT
- LIGHT FIXTURE
- EMERGENCY BATTERY POWERED LIGHT
- EXIT SIGN, WITH DIRECTIONAL ARROWS AS SHOWN
- SINGLE POLE SWITCH, +46" U.O.N. a - CIRCUIT # & SWITCHING 2 - DOUBLE POLE 3 - 3 WAY 4 - 4 WAY
- LIGHTING CONTROL STATION
- XX CEILING / XXX WALL — OS = OCCUPANCY SENSOR DS = DAYLIGHT SENSOR IR = INFRARED SENSOR
- SINGLE OR DUAL SWITCH OCCUPANCY SENSOR
- RCX ROOM CONTROL X=CONTROL REFERENCE NUMBER

IDENTIFICATION LABELS

- (E) LIGHT FIXTURE TAG
- (AA) MECHANICAL EQUIPMENT TAG
- (#) COMPLY WITH LETTER OR NUMBER NOTE ON SHEET
- (# / E4) SEE DETAIL 8, SHEET E4
- (XXXYY) FEEDER IDENTIFICATION TAG
  XXX=FEEDER:
  YY=
  - P-PRIMARY POWER
  - S-SECONDARY POWER
  - E-ELECTRIC POWER
  - EM-EMERGENCY POWER
  - T-TELCO SERVICE
  - TD-TELCO DATA
  - CA-CABLE SERVICE

ABBREVIATIONS

A - AMP	EQUIP - EQUIPMENT	QTY - QUANTITY
ADMIN - ADMINISTRATION	ES - ENERGY SAVING	(R) - REMOVE
AFF - ABOVE FINISHED FLOOR	EXIST - EXISTING	(RL) - RELOCATE
AFG - ABOVE FINISHED GRADE	FA - FIRE ALARM	RGS - RIGID GALVANIZED STEEL
AFS - ABOVE FINISHED SLAB	FACP - FIRE ALARM CONTROL PANEL FAP - FIRE ALARM PANEL	(RRE) - REMOVE AND REPLACE EXISTING
AL - ALUMINUM	FDR - FEEDER	(RRN) - REMOVE AND REPLACE NEW
ARCH - ARCHITECT	GND - GROUND	SCH - SCHEDULE
ARF - ABOVE RAISED FLOOR	HP - HORSEPOWER	STRUCT - STRUCTURAL
ASC - ABOVE SUSPENDED CEILING	MAX - MAXIMUM	SW - SWITCH
BD - BOARD	MECH - MECHANICAL	SWBD - SWITCHBOARD
BLDG - BUILDING	MFG - MANUFACTURER	SYM - SYMETRICAL
C - CONDUIT	MIN - MINIMUM	SYS - SYSTEM
CKT - CIRCUIT	MSB - MAIN SWITCH BOARD	TELE - TELEPHONE
CO - CONDUIT ONLY	MTG - MOUNTING	TERM - TERMINAL
CONC - CONCRETE	(N) - NEW	TRANS - TRANSFORMER
CONN - CONNECT	NL - NIGHT LIGHT	TYP - TYPICAL
CU - COPPER	(NL) - NEW LOCATION	UG - UNDERGROUND
DISC - DISCONNECT	NFDS - NON-FUSED DISC. SW.	UON - UNLESS OTHERWISE NOTED
DWG - DRAWING	OH - OVERHEAD	VIF - VERIFY IN FIELD
(E) - EXISTING	PB - PULL BOX	V - VOLTS
ELEC - ELECTRICAL	P.O.C - POINT OF CONNECTION	WP - WEATHERPROOF
EM - EMERGENCY	PG&E - PACIFIC GAS AND ELECTRIC	WRGS - WRAPPED RIGID GALVANIZED STEEL
EP - EXPLOSION PROOF	PNL - PANEL	# - PHASE

NOTE: DIMENSIONS TO CENTERLINE, UNLESS OTHERWISE NOTED.

REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — E 13492 — EXPIRATION DATE: 09-30-26 — ELECTRICAL — STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
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23-045-0

REVISIONS	BY
1 PLAN CK 1 08-05-24	DGS
2 UPDATE HOOD ELECT 01-21-25	DGS

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architecture
planning
consultation

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEMORIAL DISTRICT
74 WEST SIXTH ST.
GILROY, CA

DRAWN
CHECKED
DATE
SCALE: AS NOTED
JOB NO.
SHEET: E0.00
OF SHEETS

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-LTI-E

This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

Project Name: Vets Hall Gilroy KITCHEN REMODEL	**Report Page:** (Page 1 of 7)
Project Address:	**Date Prepared:** 2024-01-31T13:26:40-05:00

A. GENERAL INFORMATION

01	Project Location (city)	gilroy	04	Total Conditioned Floor Area (ft²)	451.58
02	Climate Zone	4	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

● Restaurant

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System	N/A	0	N/A	0
☐ New Lighting System - Parking Garage	N/A	0	N/A	0
☒ Altered Lighting System	Area Category Method	451.58	N/A	0
Total Area of Work (ft²)	451.58			

STATE OF CALIFORNIA
Indoor Lighting
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C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)					Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)				Compliance Results
	01	02	03	04	05	06	07		08	09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 / 170.2(e)4	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+)	Tailored 140.6(c)3 / 170.2(e)4B (+)	**Total Allowed** (Watts)	Total Designed (Watts)	Adjustments PAF Lighting Control Credits 140.6(a)2 / 170.2(e)1B (-)		**Total Adjusted** (Watts) *Includes Adjustments	**05 must be >= 08 140.6 / 170.2(e)**
	(See Table I)	(See Table I)	(See Table J)	(See Table K)		(See Table F)	(See Table P)			
Conditioned		452.67			= 452.67	≥ 420			= 420	COMPLIES
Unconditioned					=	≥			=	
								Controls Compliance (See Table H for Details)		COMPLIES
								Rated Power Reduction Compliance (See Table Q for Details)		

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.

Generated Date/Time:
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220101
Documentation Software: Energy Code Ace
Compliance ID: 165832-0124-0006
Report Generated: 2024-01-31 10:26:43

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-LTI-E

Project Name: Vets Hall Gilroy KITCHEN REMODEL	**Report Page:** (Page 3 of 7)
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F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)3 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
A1	CGTX 2X2	No	NA	40	Mfr. Spec	10	No	400	☐	☐
B1	STL2	No	NA	20	Mfr. Spec	1	No	20	☐	☐
							Total Designed Watts: CONDITIONED SPACES	420		

[1]*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*

[2]*Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03	
		Field Inspector	
		Pass	Fail
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	☐	☐
NA < 4,000W subject to multilevel	See Area/Space Level Controls		

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)4A	Multi-Level Controls 130.1(b) / 160.5(b)4B	Shut-Off Controls 130.1(c) // 160.5(b)4C	Primary/Sky lit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(d) / 160.5(b)4D	Interlocked Systems 140.6(a)1/ 170.2(e)2A	Field Inspector	
								Pass	Fail
FOOD PREP 1	Kitchen/ Food Preparation	Readily Accessible	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: General Ltg < 120W	No	☐	☐
FOOD PREP 2	Kitchen/ Food Preparation	Readily Accessible	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: General Ltg < 120W	No	☐	☐
STORAGE	Storage - MF common areas	Readily Accessible	NA: Enclosed area <100SF	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
					13				
					Plan Sheet Showing Daylit Zones:				

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used .

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
FOOD PREP 1	Kitchen/ Food Preparation	0.95	278.7	264.77	No	No
FOOD PREP 2	Kitchen/ Food Preparation	0.95	187.6	178.22	No	No
STORAGE	Storage - MF common areas	0.45	21.5	9.68	No	No
		TOTALS:	487.8	452.67	See Tables J, or P for detail	

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J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

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	Date Prepared: 2024-01-31T13:26:40-05:00

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, 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

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	FOOD PREP 1; FOOD PREP 2; STORAGE

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Project Name: Vets Hall Gilroy KITCHEN REMODEL	**Report Page:** (Page 7 of 7)
Project Address:	**Date Prepared:** 2024-01-31T13:26:40-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: David Smith, P.E.	Documentation Author Signature:
Company: CENTRAL PACIFIC ENGINEERING, INC	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: David Smith, P.E.	Responsible Designer Signature:
Company: CENTRAL PACIFIC ENGINEERING, INC	Date Signed:
Address:	License:
City/State/Zip:	Phone:

Generated Date/Time:
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
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Compliance ID: 165832-0124-0006
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REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09-30-25
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
P.O. Box 1727, Capitola, CA 95010
831-476-1525
www.cpeinc.com

23-045-0

REVISIONS	BY
1 PLAN CK 1 08-05-24	DGS
2 UPDATE HOOD ELECT 01-21-25	DGS

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fax (408) 683-4244
P.O. Box 1621
Morgan Hill, CA 95038

architecture
planning
consultation

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEMORIAL DISTRICT
74 WEST SIXTH ST.
GILROY, CA

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JOB NO.
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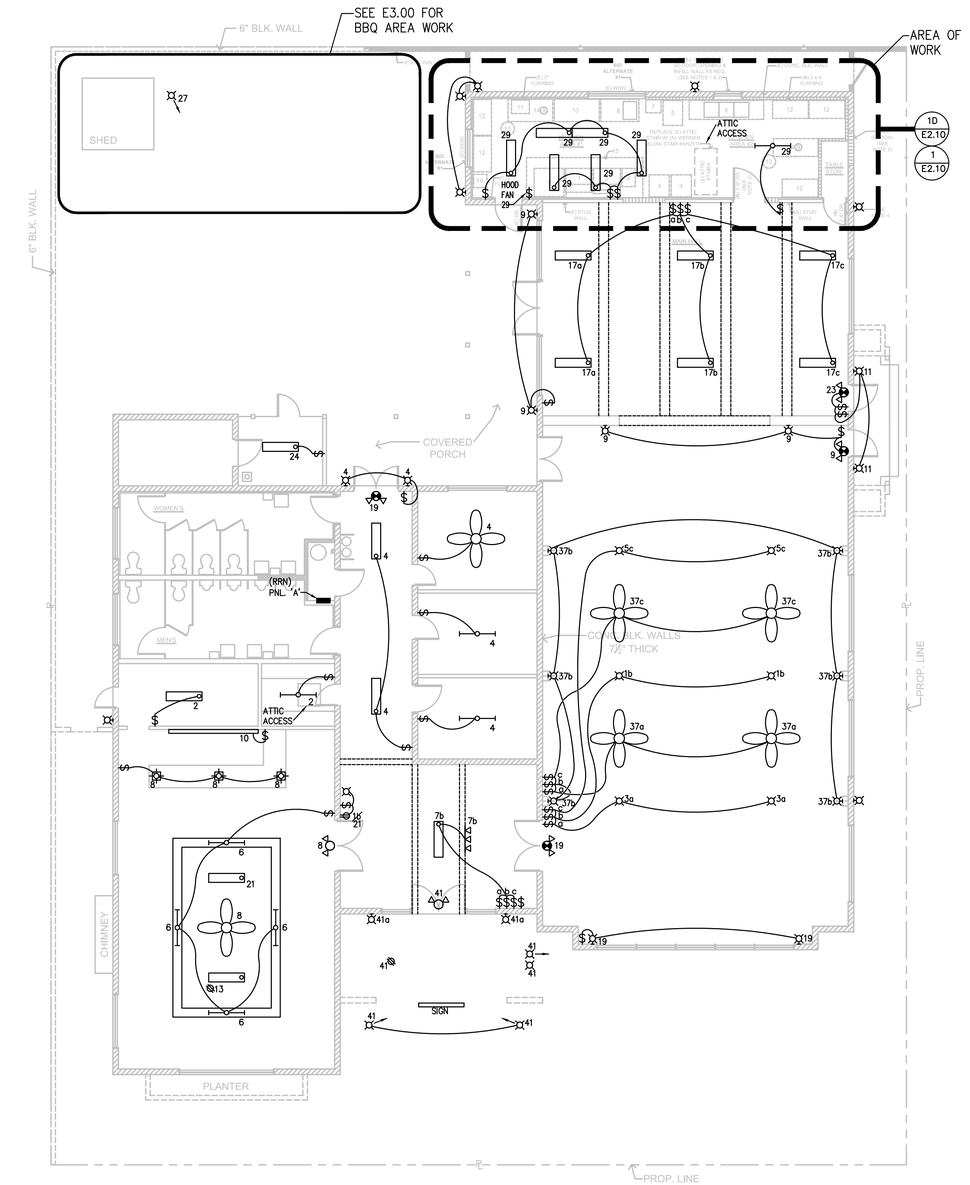

1 LIGHTING PLAN – OVERALL
SCALE: 1/8" = 1'-0"

8 0 8 16
SCALE: 1" = 8'-0"

N

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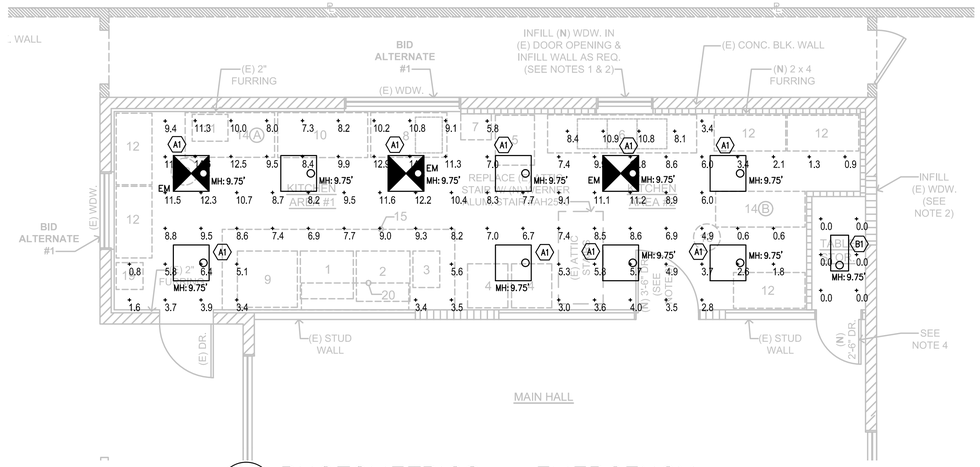
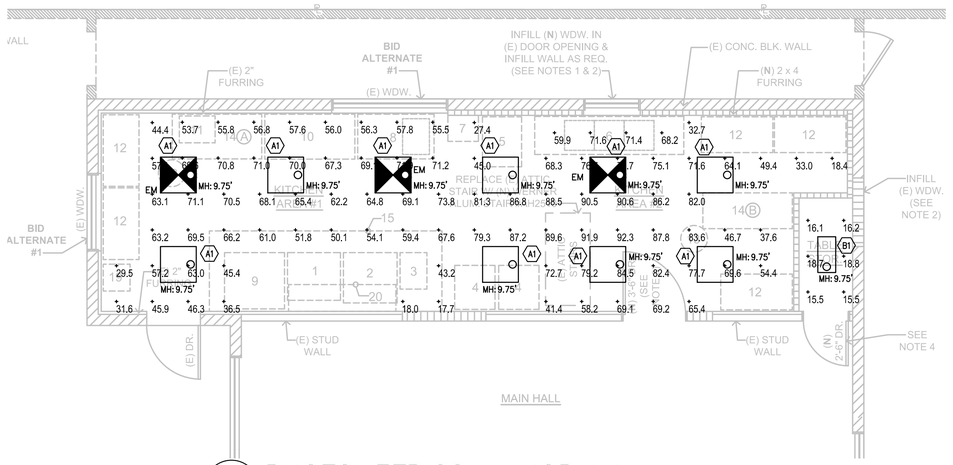


2E PHOTOMETRICS – EMERGENCY

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



2 PHOTOMETRICS – NORMAL

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

4 0 4 8

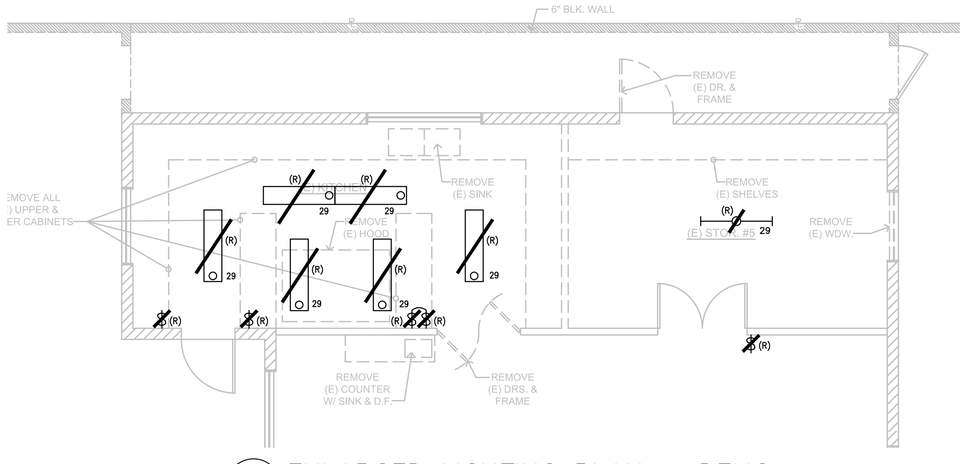
SCALE: 1" = 4'-0"

N

GENERAL DEMOLITION NOTES:

1. REMOVE ALL ELECTRICAL CONDUIT, WIRE, BOXES, FIXTURES, PANELS, ETC, ETC, BACK TO LAST ACTIVE J-BOX.
2. THE INTENT OF THESE DRAWINGS IS TO PROVIDE THE CONTRACTOR WITH GENERAL REMOVAL WORK TO BE PROVIDED. EXISTING SITE CONDITIONS MAY EXIST SUCH THAT ACTUAL QUANTITIES ARE DIFERENT FROM THESE DOCUMENTS. THE CONTRACTOR SHALL PROVIDE LABOR AND MATERIALS AT NO ADDITIONAL COST TO OWNER TO PROVIDE COMPLETE RENOVATION AS SHOWN WITHIN THESE AND ASSOCIATED CONSTRUCTION DOCUMENTS. ALL MAJOR ADJUSTMENTS SHALL BE PROVIDED TO THE ENGINEER IN WRITING FOR REVIEW AND COMMENT.
3. CONTRACTOR TO COORDINATE ALL DEMOLITION WORK WITH THE CONSTRUCTION WORK REQUIREMENTS.
4. CONTRACTOR TO REMOVE ALL UNUSED CONDUCTORS, CONDUITS AND ASSOCIATED HARDWARE.
5. CONTRACTOR TO REVIEW MECHANICAL AND OTHER CONSTRUCTION DRAWINGS FOR MECHANICAL AND OTHER EQUIPMENT TO BE REMOVED. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL TO THESE UNITS.

DWG SYMBOL	LIGHTING CONTROL DEVICE		
	MFG	MODEL	DESCRIPTION
OS-LT	WATTSTOPPER	DT-355	DUAL TECHNOLOGY CEILING OCCUPANCY SENSOR – LINE VOLTAGE
$D	LUTRON	DVSTV-XX (XX=COLOR)	WALL SWITCH (0-10V LINE VOLTAGE SLIDE DIMMER)
◆A	WATTSTOPPER	PW-100	PIR WALL SWITCH SENSOR



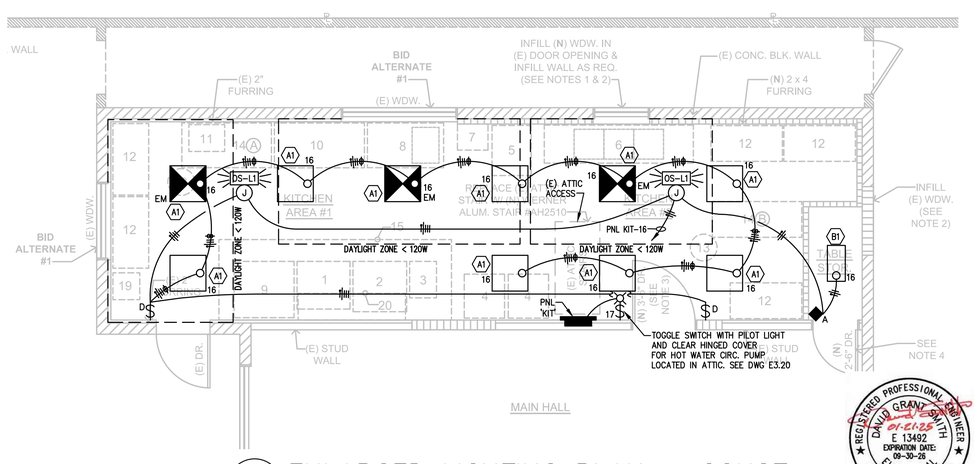
1D ENLARGED LIGHTING PLAN – DEMO

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

4 0 4 8

SCALE: 1" = 4'-0"

N



1 ENLARGED LIGHTING PLAN – CONST

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

REGISTERED PROFESSIONAL ENGINEER DAVID GRANT SMITH E 13492 ELECTRICAL STATE OF CALIFORNIA
07-12-25
EXPIRATION DATE: 09-30-25

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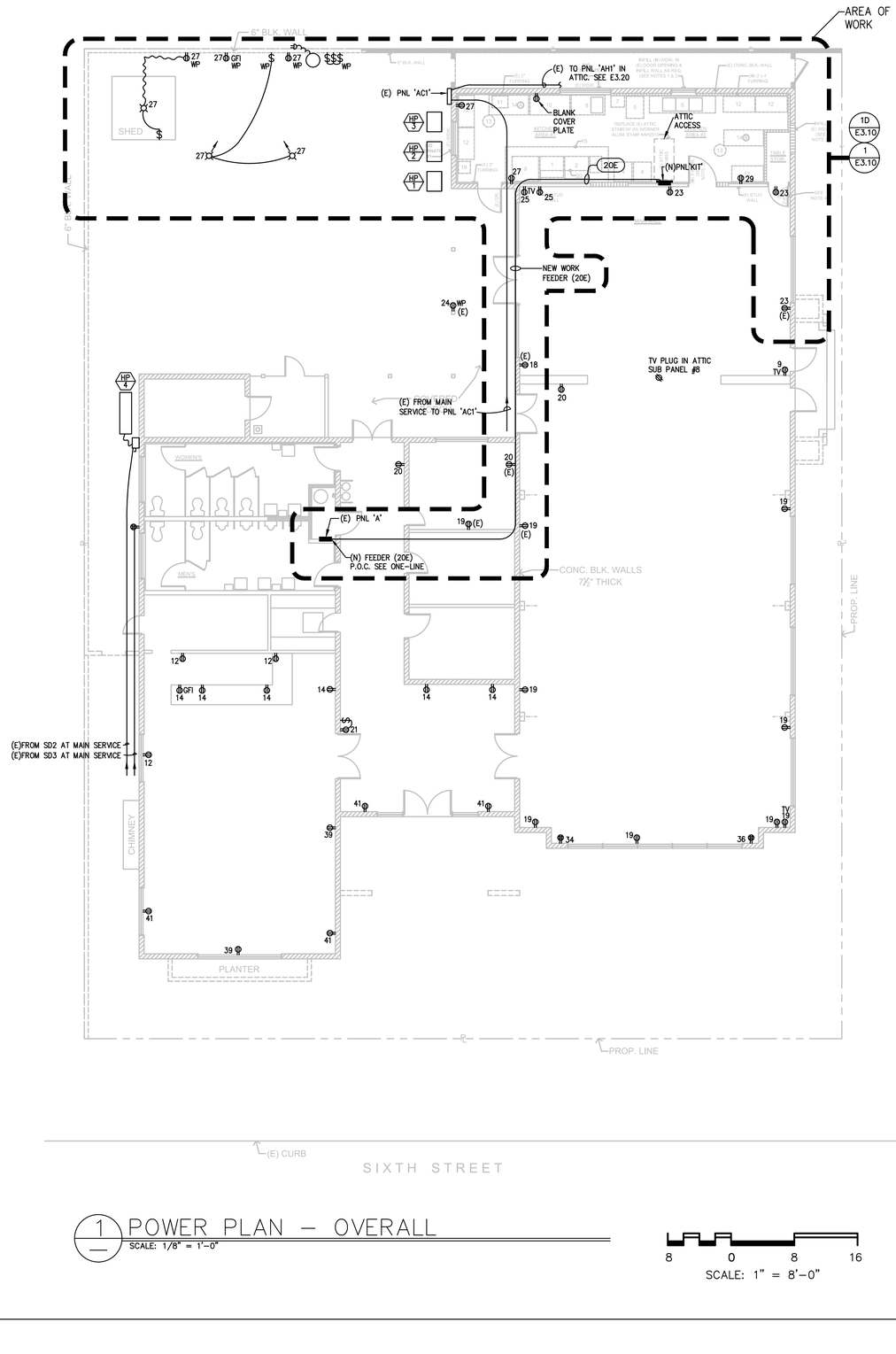

1 POWER PLAN – OVERALL
SCALE: 1/8" = 1'-0"

8 0 8 16
SCALE: 1" = 8'-0"

N

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PROJECT
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01-21-25
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GENERAL DEMOLITION NOTES:

1. REMOVE ALL ELECTRICAL CONDUIT, WIRE, BOXES, FIXTURES, PANELS, ETC, ETC, BACK TO LAST ACTIVE J-BOX.
2. THE INTENT OF THESE DRAWINGS IS TO PROVIDE THE CONTRACTOR WITH GENERAL REMOVAL WORK TO BE PROVIDED. EXISTING SITE CONDITIONS MAY EXIST SUCH THAT ACTUAL QUANTITIES ARE DIFERENT FROM THESE DOCUMENTS. THE CONTRACTOR SHALL PROVIDE LABOR AND MATERIALS AT NO ADDITIONAL COST TO OWNER TO PROVIDE COMPLETE RENOVATION AS SHOWN WITHIN THESE AND ASSOCIATED CONSTRUCTION DOCUMENTS. ALL MAJOR ADJUSTMENTS SHALL BE PROVIDED TO THE ENGINEER IN WRITING FOR REVIEW AND COMMENT.
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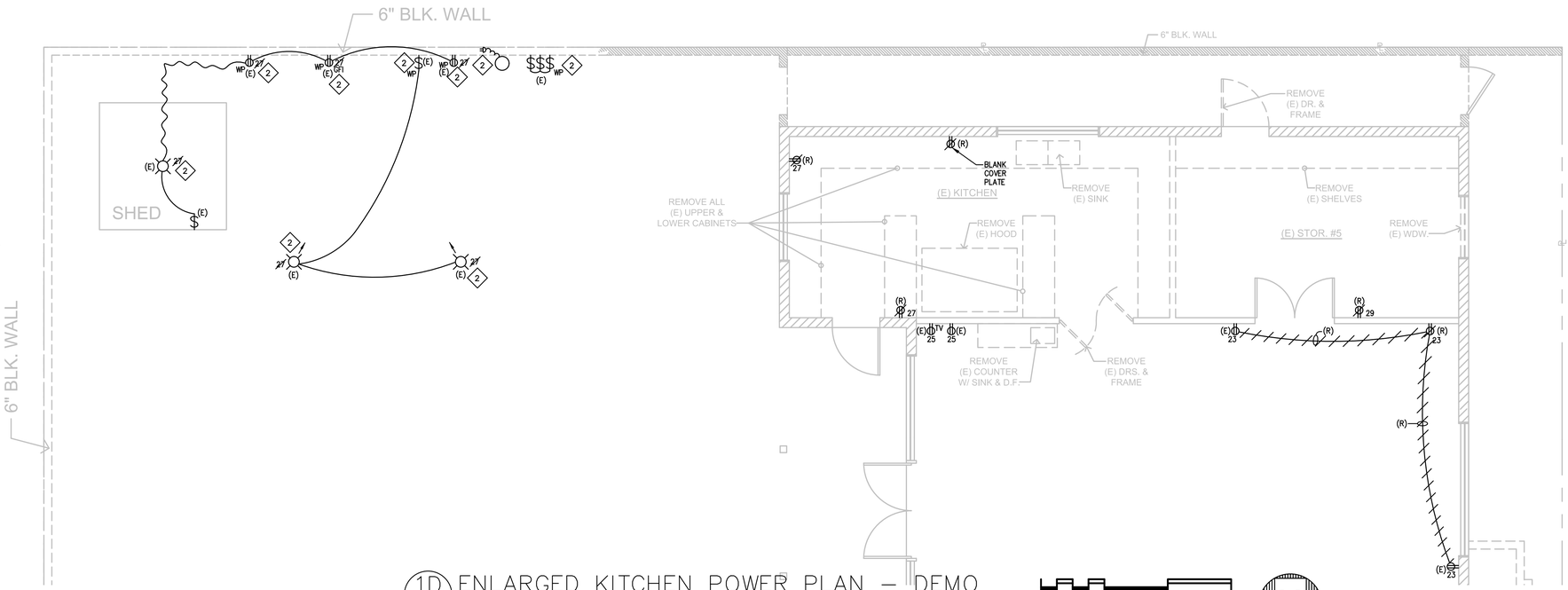


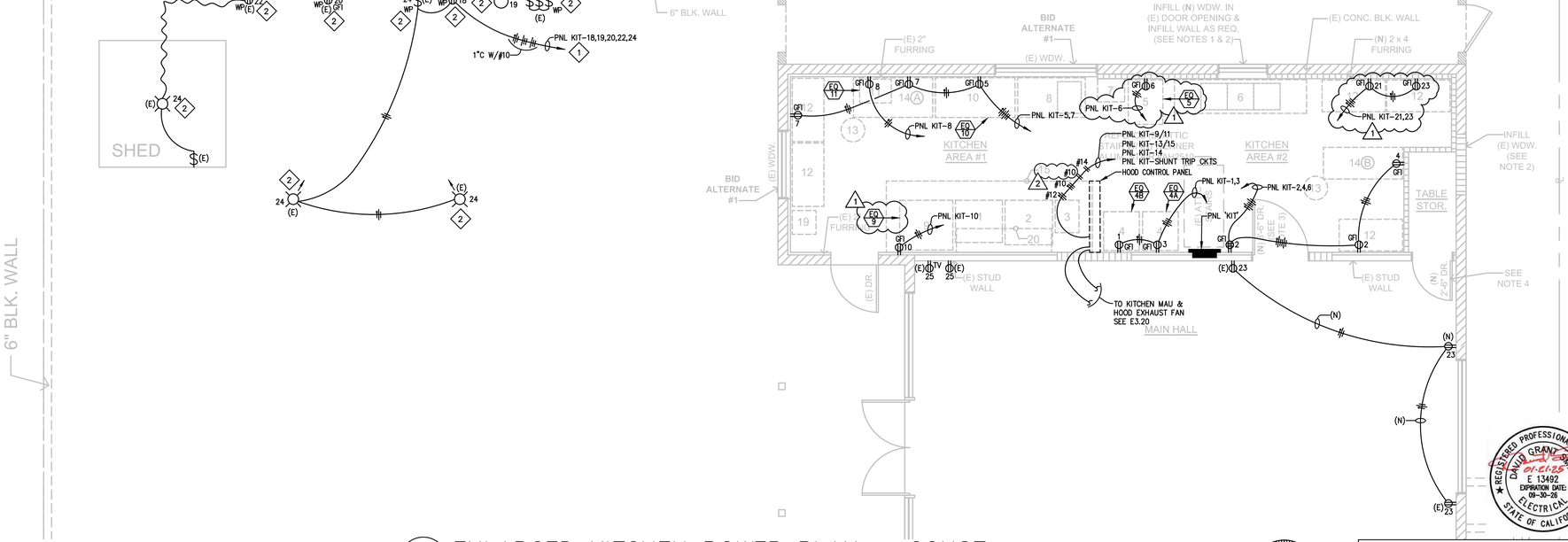
1D ENLARGED KITCHEN POWER PLAN – DEMO

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

SCALE: 1" = 4'-0"

GENERAL CONSTRUCTION NOTES:

1. FOOD PREP AREA'S & RESTROOMS, ALL SINGLE PHASE RECEPTACLES RATED 150V TO GROUND OR LESS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL.



1 ENLARGED KITCHEN POWER PLAN – CONST

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

SCALE: 1" = 4'-0"

SHEET NOTES:

1. PROVIDE NEW HOME RUN TO PANEL 'KIT', WITH CKTS 18, 19, 20, 22, 24
2. REWIRE EXISTING BBQ AREA TO NEW ASSIGNED CKTS, REPLACE WIRING AS REQUIRED.

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KITCHEN REMODEL
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REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09-30-25
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STATE OF CALIFORNIA
01-21-25

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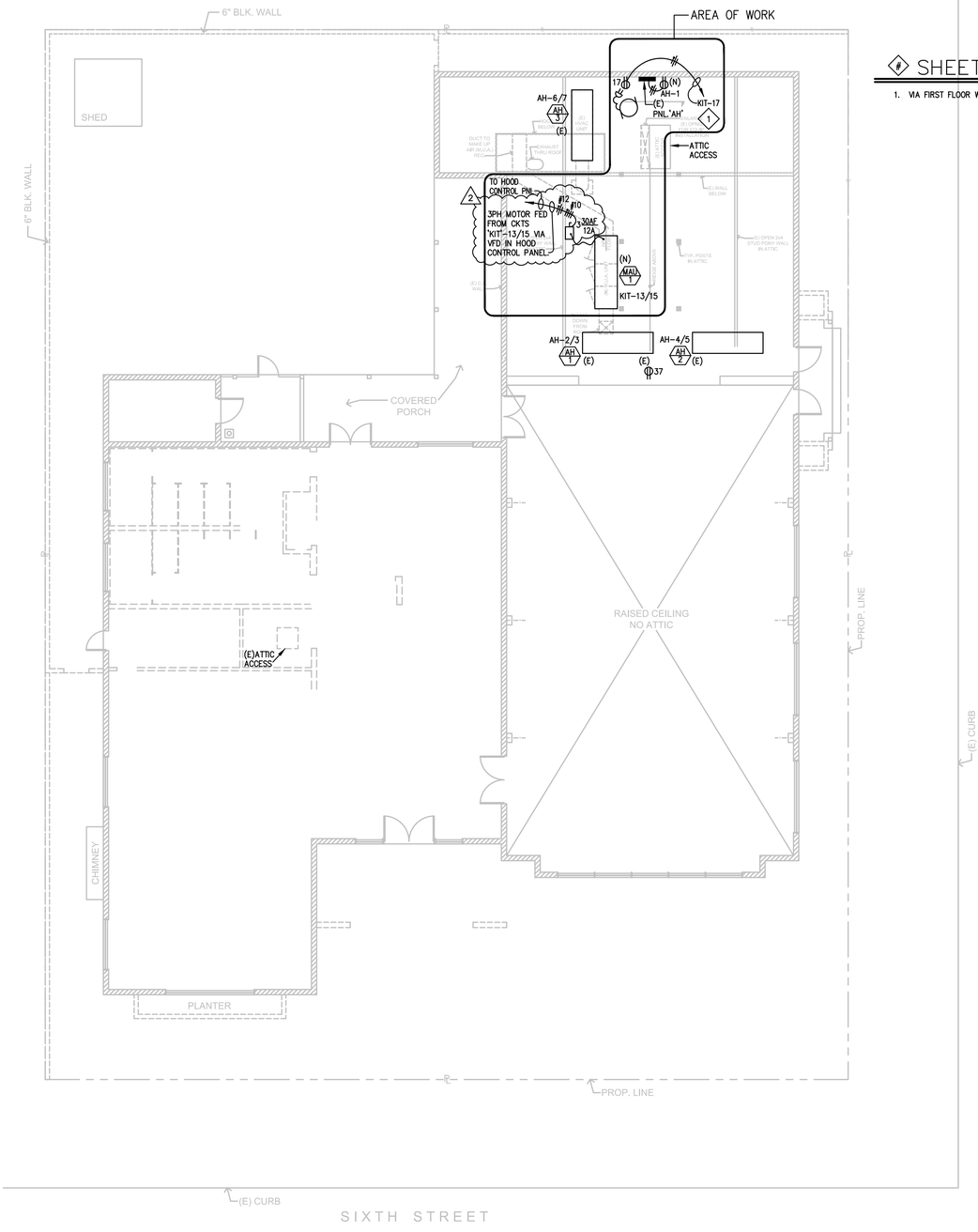
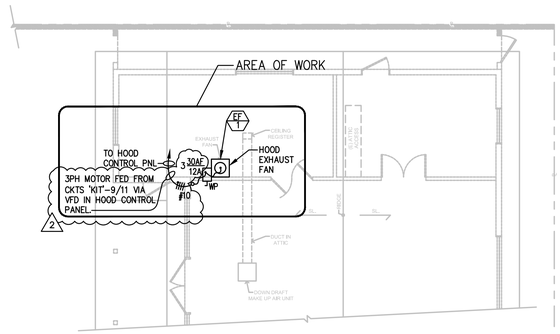
SHEET	E3.10
OF	SHEETS



1 ATTIC POWER PLAN – OVERALL
SCALE: 1/8" = 1'-0"

8 0 8 16
SCALE: 1" = 8'-0"



2 ROOF POWER PLAN
SCALE: 1/8" = 1'-0"

8 0 8 16
SCALE: 1" = 8'-0"

SHEET NOTES:

1. VIA FIRST FLOOR WALL SWITCH BY (E) DBL DOORS. SEE DETAIL 1/E2.10

REVISIONS	BY
1 PLAN CK 1 08-05-24	DGS
2 UPDATE HOOD ELECT 01-21-25	DGS

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KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEMORIAL DISTRICT
74 WEST SIXTH ST.
GILROY, CA

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
01-21-25
E 13492
EXPIRATION DATE: 09-30-26
ELECTRICAL
STATE OF CALIFORNIA

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Professional Engineers
P.O. Box 1727, Capitola, CA 95010
831-476-1525
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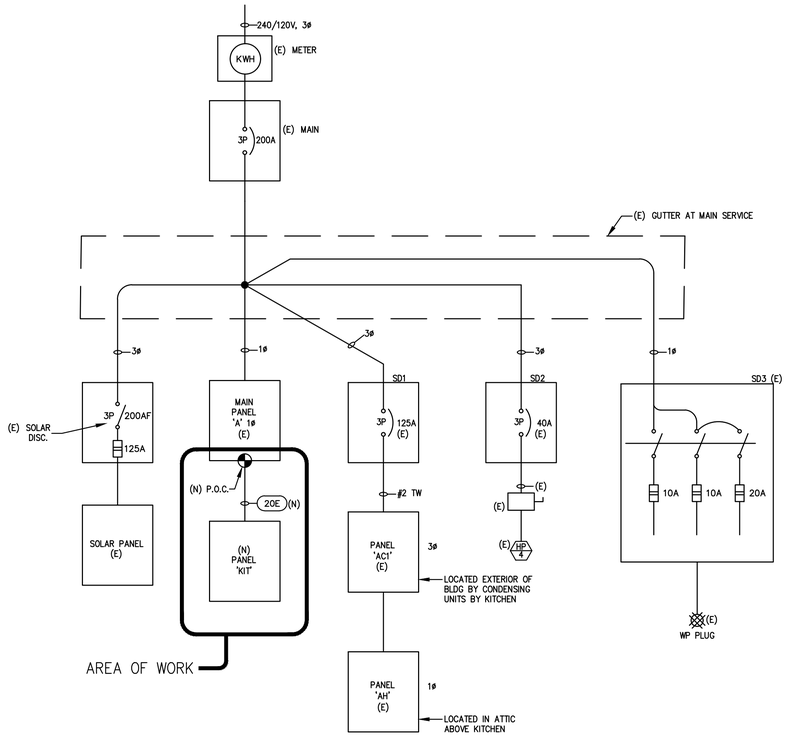
DRAWN	
CHECKED	
DATE	
SCALE	AS NOTED
JOB NO.	
SHEET	E3.20
OF	SHEETS

FEEDER SCHEDULE

MARK	WIRE SIZE	WIRE TYPE	CONDUIT SIZE	CONDUIT TYPE	ESTIMATED FEEDER LENGTH	FEEDER SEGMENT VOLTAGE DROP (V)	FEEDER SEGMENT VOLTAGE DROP (%)
20E	3–#1CU + #6CU GND	THHN/THWN	2"	EMT	105	1.94	0.81%

NOTE: ALL WIRE TO BE CU UNLESS OTHERWISE NOTED.



1 ONE–LINE
NO SCALE

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CHECKED
DATE
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JOB NO.
SHEET E5.00
OF SHEETS

EXISTING PANELS

PANEL NAME: (E) A — LOCATION: CLOSET — PANEL TYPE: ☒ PANEL BOARD ☐ LOAD CENTER
VOLTAGE: 120/240 — BUS RATING: 400 — 1 PHASE 3 WIRE + GND. — ENCLOSURE TYPE: NEMA 1 — MOUNTING: ☒ SURFACE ☒ FLUSH
SHORT CIR RATING: 22 KAIC — BUS TYPE: ☒ COPPER ☐ ALUMINUM — INTERIOR: ☒ MAIN LUGS ☐ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☒BOLT-ON ☐PLUG-ON — DEVICE FAMILY: ☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ΦA	VOLT ΦB	AMPS ΦA	AMPS ΦB	BRK.	CKT NO.	BUS A	BUS B	CKT NO.	BRK.	VOLT ΦA	VOLT ΦB	AMPS ΦA	AMPS ΦB	PWR	LTG	DESCRIPTION
MAIN ROOM LIGHTS	X		200				20	1			2	20	180				X	X	SECURITY PLUG & STORAGE LTS
MAIN ROOM LIGHTS	X			200			20	3			4	20			250			X	HALLWAY OFFICE STORAGE LIGHTS
MAIN ROOM LIGHTS	X		200				20	5			6	20	200					X	BAR LIGHTS
ENTRY LIGHTS	X			300			20	7			8	20			200			X	BAR CAN LIGHTS
DINING HALL TV RECEPT		X	250				20	9			10	20	40				X	X	BAR PLUG/ BOTTLE UPLIGHT
EXISTING LOAD		X		500			20	11			12	20			720		X	X	BAR ROOM PLUGS EXT. LTS.
ATTIC SERVICE LIGHTS	X		150				20	13			14	20	900				X		BAR / LOBBY PLUGS
BACK BAR		X		360			20	15			16	20			500		X		EXISTING LOAD
DINING HALL LIGHTS	X		450				20	17			18	20	360				X		DINING HALL REFER PLUG
MAIN ROOM PLUGS & SCONCES	X	X		1200			20	19			20	20			360		X		OFFICE AND PLUG IN MAIN ROOM
DISPLAY, LOBBY		X	600				20	21			22	20	800				X		BACK BAR COOLERS
BACK BAR RM PLUGS		X		180			20	23			24	20			360		X		OUTSIDE REFER PLUG AND GFI
DINING HALL PLUGS		X	720				20	25			26	20	180				X		BACK BAR PLUG
BBQ KITCHEN PLUGS		X		640			20	27			28	20			1800		X		ICE MACHINE OUTSIDE
KITCHEN LIGHTS	X		600				20	29			30								SPACE
EXIST LOAD		X		500			20	31			32								SPACE
EXIST LOAD		X	500				20	33			34	20	360				X		DEDICATED PLUGS FOR A/V
BACK BAR RM PLUG		X		180			20	35			36	20			360		X		DEDICATED PLUGS FOR A/V
MAIN ROOM FANS		X	800				20	37			38	20	200					X	RESTROOM LIGHTING
FRONT BAR WALL PLUGS		X		1600			20	39			40								SPACE
FRONT BAR WALL PLUGS & FRONT EXT LTS	X	X	1600				20	41			42	20	500				X		EXISTING LOAD
SECURITY ALARM		X		250			20	43			44								SPACE
SPACE								45			46								SPACE
SPACE								47			48								SPACE
SPACE								49			50								SPACE
SPACE								51			52								SPACE
SPACE								53			54								SPACE
SPACE								55			56								SPACE
SPACE								57			58								SPACE
SPACE								59			60								SPACE
SPACE								61			62								SPACE
SPACE								63			64								SPACE
SPACE								65			66								SPACE
SPACE								67			68								SPACE
SPACE								69			70								SPACE
SPACE								71			72								SPACE
SPACE								73			74								SPACE
SPACE								75			76								SPACE
SPACE								77			78								SPACE
SPACE								79			80								SPACE
KIT PANEL		X		10439		100		81			82								SPACE
KIT PANEL		X	9695			–		83			84								SPACE
TOTALS			15765	16349									3720	4550					

NEW WORK

BUS A 19.5 KVA
BUS B 20.9 KVA
TOTAL 40.4 KVA

ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: ____ }
COLOR — COVER: ☒ DOOR-IN-DOOR ☒ KEYED LATCH ☐ OTHER: ____
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

PANEL NAME: (E) AH — LOCATION: KITCHEN ATTIC — PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 240 — BUS RATING: 100 — 1 PHASE 2 WIRE + GND. — ENCLOSURE TYPE: NEMA 1 — MOUNTING: ☒ SURFACE ☐ FLUSH
SHORT CIR RATING: 10 KAIC — BUS TYPE: ☐ COPPER ☒ ALUMINUM — INTERIOR: ☒ MAIN LUGS ☐ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐BOLT-ON ☒PLUG-ON — DEVICE FAMILY: ____ ☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ΦA	AMPS ΦB	BRK.	CKT NO.	BUS A	BUS B
ATTIC SERVICE RECEPT		X	240		20	1		
AH1		X		900	15	2		
AH1		X	900		–	3		
AH2		X		900	15	4		
AH2		X	900		–	5		
AH3		X		900	15	6		
AH3		X	900		–	7		
SPACE						8		
TOTALS			2940	2700				

NEW WORK

BUS A 3.0 KVA
BUS B 2.7 KVA
TOTAL 5.7 KVA

PANEL NAME: (E) AC1 — LOCATION: PATIO — PANEL TYPE: ☒ PANEL BOARD ☐ LOAD CENTER
VOLTAGE: 240/120 — BUS RATING: 125 — 3 PHASE 4 WIRE + GND. — ENCLOSURE TYPE: NEMA 3R — MOUNTING: ☒ SURFACE ☐ FLUSH
SHORT CIR RATING: ____ — BUS TYPE: ☐ COPPER ☒ ALUMINUM — INTERIOR: ☐ MAIN LUGS ☐ MAIN CIRCUIT BREAKER – SEE ONE LINE
O.C. DEVICES: ☐BOLT-ON ☒PLUG-ON — DEVICE FAMILY: ____ ☐ SUB-FEED CIRCUIT BREAKER – SEE ONE LINE

DESCRIPTION	LTG	PWR	VOLT • AMPS ΦA	ΦB	ΦC	BRK.	CKT NO.	BUS A	BUS B	BUS C	CKT NO.	BRK.	VOLT • AMPS ΦA	ΦB	ΦC	PWR	LTG	DESCRIPTION
HP1		X	4008				40	1			2	30	3456				X	HP3
HP1		X		4008			–	3			4	–		3456			X	HP3
HP2		X			4008		40	5			6	30			2700	X		AH SUB
HP2		X	4008				–	7			8	–	2700				X	AH SUB
SPACE								9			10							SPACE
SPACE								11			12							SPACE
TOTALS			8016	4008	4008								6156	3456	2700			

BUS A 14.2 KVA
BUS B 7.5 KVA
BUS C 6.8 KVA
TOTAL 28.5 KVA

'B' PHASE HIGH-LEG

CONST PANELS

PANEL NAME: KIT — LOCATION: KIT #2 — PANEL TYPE: ☒ PANEL BOARD ☐ LOAD CENTER
VOLTAGE: 120/240 — BUS RATING: 200 — 1 PHASE 3 WIRE + GND. — ENCLOSURE TYPE: NEMA 1 — MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC — BUS TYPE: ☒ COPPER ☐ ALUMINUM — INTERIOR: ☒ MAIN LUGS ☐ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☒BOLT-ON ☐PLUG-ON — DEVICE FAMILY: ____ ☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ΦA	VOLT ΦB	AMPS ΦA	AMPS ΦB	BRK.	CKT NO.	BUS A	BUS B	CKT NO.	BRK.	VOLT ΦA	VOLT ΦB	AMPS ΦA	AMPS ΦB	PWR	LTG	DESCRIPTION
1 REFER (EQ-4A)		X	253				20	1			2	20	360				X		GFI RECPT.
REFER (EQ-4B)		X		253			20	3			4	20			360		X		GFI RECPT.
REFER (EQ-10)		X	748				20	5			6	20	544				X		1 FREEZER (EQ-5)
GFI RECPT.		X		360			20	7			8	20			1200		X		MICROWAVE (EQ-11)
EF-1 HOOD		X	2568				30	9			10	20	924				X		CONVECTION OVEN (EQ-9)
EF-1 HOOD		X		2568			–	11			12	ST			0		X		CKT 10 – SHUNT TRIP
MAU-1		X	2568				30	13			14	20	550				X		HOOD CONTROLS
MAU-1		X		2568			–	15			16	20			550			X	LIGHTS
CIRC PUMP		X	100				20	17			18	20	360				X		OUTDOOR KIT PLUGS
1 WATER HEATER		X		1500			20	19			20	20			360		X		OUTDOOR KIT PLUGS
GFI RECPT.		X	360				20	21			22	20	360				X		OUTDOOR KIT PLUGS
GFI RECPT.		X		360			20	23			24	20			360			X	OUTDOOR KIT LIGHTS
SPACE								25			26								SPACE
SPACE								27			28								SPACE
SPACE								29			30								SPACE
SPACE								31			32								SPACE
SPACE								33			34								SPACE
SPACE								35			36								SPACE
SPACE								37			38								SPACE
SPACE								39			40								SPACE
TOTALS			6597	7609									3098	2830					

NEW WORK

BUS A 9.7 KVA
BUS B 10.5 KVA
TOTAL 20.2 KVA

ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: ____ }
COLOR — COVER: ☒ DOOR-IN-DOOR ☒ KEYED LATCH ☐ OTHER: ____
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

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REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — 01-21-25 — E 13492 — EXPIRATION DATE: 09-30-26 — ELECTRICAL — STATE OF CALIFORNIA

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BASIC ELECTRICAL REQUIREMENTS

SECTION 260000

1. PART 1 GENERAL

1.1 SECTION INCLUDES

A. BASIC ELECTRICAL REQUIREMENTS SPECIFICALLY APPLICABLE TO DIVISION 16 SECTIONS, IN ADDITION TO DIVISION 1 - GENERAL REQUIREMENTS.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS TOOLS, TRANSPORTATION, EQUIPMENT, SERVICES, AND FACILITIES REQUIRED FOR THE COMPLETE AND PROPER INSTALLATION OF ALL ELECTRICAL WORK SHOWN ON THE DRAWINGS AND/OR OUTLINED IN THESE SPECIFICATIONS. WORK SHALL INCLUDE ALL MATERIALS, APPLIANCES, AND APPARATUS NOT SPECIFICALLY MENTIONED HEREIN OR NOTED ON THE PLANS BUT NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION OF ALL ELECTRICAL SYSTEMS SHOWN OR DESCRIBED HEREIN.

1.2 WORK SEQUENCE

A. INSTALL WORK IN STAGES DURING THE CONSTRUCTION PERIOD AND COORDINATE ELECTRICAL SCHEDULE AND OPERATIONS WITH OTHER CONTRACTORS DOING WORK OF VARIOUS TRADES EMPLOYED IN CONSTRUCTION OF THE BUILDING. REFER TO CONSTRUCTION DRAWINGS AND SPECIFICATIONS FOR DETAILS.

1.3 SUBMITTALS

A. SUBMITTAL PROCEDURES

1. SCHEDULE SUBMITTALS TO EXPEDITE THE PROJECT, AND DELIVER TO ARCHITECT/ENGINEER AT BUSINESS ADDRESS.

2. IDENTIFY VARIATIONS FROM CONTRACT DOCUMENTS AND PRODUCT OR SYSTEM LIMITATIONS, THAT MAY BE DETRIMENTAL TO SUCCESSFUL PERFORMANCE OF THE COMPLETED WORK.

3. SUBMITTALS SHALL BE MARKED AND / OR HIGHLIGHTED TO IDENTIFY SPECIFIC PRODUCTS BEING SUPPLIED AND/OR INSTALLED. THE MARKING SHALL MAKE REFERENCE TO REFERENCE TO THE CORRESPONDING EQUIPMENT THAT THE MATERIAL IS RELATED TO. EXAMPLE; A SUBMITTAL FOR DISCONNECT SWITCH WOULD HAVE THE MECHANICAL REFERENCE "EF-1", "SF-5" PLACED ON THE SUBMITTAL SHEET.

WHERE BEING SUPPLIED AND/OR INSTALLED ON THE PROJECT SUBMIT ON THE FOLLOWING ITEMS:

A. GROUND ROD, GROUND CLAMPS
B. OVERHEAD WIREWAY AND MOUNTING HARDWARE
C. DISCONNECT SWITCHES
D. MOTOR STARTERS
E. COMBINATION MOTOR STARTER DISCONNECT SWITCHES
F. FUSES
G. PLUGS, SWITCHES AND COVER PLATES
H. TRANSFORMERS
I. WIRE
J. WIRE PULLING LUBRICANT
K. WIREMOLD RACEWAY, COVER PLATES, DEVICE MOUNTING HARDWARE, FITTINGS
L. CONDUIT
M. CONDUIT FITTINGS, CONNECTORS AND COUPLINGS – WEATHERPROOF AND NON-WEATHERPROOF
N. WIRENUTS
O. COMPRESSION CONNECTORS FOR CONDUCTORS
P. WRAPPING MATERIALS AND TAPE
Q. PANELS
R. CIRCUIT BREAKERS
S. ENCLOSED CIRCUIT BREAKERS
T. BOXES
U. STRUT, HANGERS, BRACKETS, MOUNTING HARDWARE

1.4 QUALITY CONTROL

A. QUALITY ASSURANCE/CONTROL OF INSTALLATION

1. MONITOR QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP, TO PRODUCE WORK OF SPECIFIED QUALITY.

2. COMPLY FULLY WITH MANUFACTURER'S INSTRUCTIONS, INCLUDING EACH STEP IN SEQUENCE.

3. COMPLY WITH SPECIFIED STANDARDS AS A MINIMUM QUALITY FOR THE WORK EXCEPT WHEN MORE STRINGENT TOLERANCES, CODES, OR SPECIFIED REQUIREMENTS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.

1.5 SAFETY AND INDEMNITY

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING, MAINTAINING AND SUPERVISING ALL NECESSARY SAFETY PRECAUTIONS WHICH WILL INSURE AGAINST INJURY TO PERSONS OR DAMAGE TO PROPERTY AS A RESULT OF ANY OF HIS WORK, TOOLS OR EQUIPMENT ON OR OFF THE PROJECT, BEFORE, DURING OR AFTER NORMAL WORKING HOURS. NO DRAWING REVIEW, CONSTRUCTION REVIEW OR ANY OTHER ACT OR SERVICE RENDERED BY THE OWNER, ENGINEER, THEIR EMPLOYEES OR CONSULTANTS SHALL BE CONSTRUED TO APPROVE OR JUDGE UPON THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.

B. THE CONTRACTOR SHALL HOLD HARMLESS, INDEMNIFY AND DEFEND THE OWNER, ENGINEER, THEIR EMPLOYEES AND CONSULTANTS FROM ANY AND ALL LIABILITY CLAIMS, LOSSES OR DAMAGE ARISING OR ALLEGED TO ARISE FROM THE PERFORMANCE OF THE WORK DESCRIBED HEREIN, BUT NOT INCLUDING THE SOLE NEGLIGENCE OF THE OWNER, ENGINEER, THEIR EMPLOYEES OR CONSULTANTS.

1.6 MATERIALS AND EQUIPMENT

A. PRODUCTS

1. PRODUCTS: MEANS NEW MATERIAL, MACHINERY, COMPONENTS, EQUIPMENT, FIXTURES, AND SYSTEMS FORMING THE WORK. DOES NOT INCLUDE MACHINERY AND EQUIPMENT USED FOR PREPARATION, FABRICATION, CONVEYING AND ERECTION OF THE WORK. PRODUCTS MAY ALSO INCLUDE EXISTING MATERIALS OR COMPONENTS REQUIRED FOR REUSE.

2. DO NOT USE MATERIALS AND EQUIPMENT REMOVED FROM EXISTING PREMISES, EXCEPT AS SPECIFICALLY PERMITTED BY THE CONTRACT DOCUMENTS.

B. SUBSTITUTIONS

1. THE ENGINEER WILL CONSIDER REQUESTS FOR SUBSTITUTIONS ONLY WITHIN 15 DAYS AFTER DATE OF OWNER-CONTRACTOR AGREEMENT.

2. SUBSTITUTIONS MAY BE CONSIDERED WHEN A PRODUCT BECOMES UNAVAILABLE THROUGH NO FAULT OF THE CONTRACTOR.

3. DOCUMENT EACH REQUEST WITH COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH CONTRACT DOCUMENTS.

C. DELIVERY, STORAGE, AND HANDLING

1. DELIVER, STORE, PROTECT, AND HANDLE PRODUCTS TO SITE.

1.7 CONTRACT CLOSEOUT

A. CLOSEOUT PROCEDURES

1. SUBMIT WRITTEN CERTIFICATION THAT CONTRACT DOCUMENTS HAVE BEEN REVIEWED, WORK HAS BEEN INSPECTED, AND THAT WORK IS COMPLETE IN ACCORDANCE WITH CONTRACT DOCUMENTS AND READY FOR ENGINEER'S INSPECTION.

B. FINAL CLEANING

1. EXECUTE FINAL CLEANING PRIOR TO FINAL INSPECTION.
2. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION.
3. REMOVE WASTE AND SURPLUS MATERIALS, RUBBISH, AND CONSTRUCTION FACILITIES FROM THE SITE.

1.8 REGULATORY REQUIREMENTS

A. CONFORM TO APPLICABLE UNIFORM BUILDING CODE.
B. CONFORM TO NFPA 70.
C. CONFORM TO LOCAL ORDINANCES AND REGULATIONS.
D. OBTAIN PERMITS, AND REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.
E. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES, INC. AND TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION AS SUITABLE FOR PURPOSE SPECIFIED AND SHOWN.
F. SHOULD THERE BE ANY CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, OR REGULATORY REQUIREMENTS; THE MOST STRINGENT CONDITION SHALL GOVERN, UNLESS APPROVED BY THE ENGINEER.
G. FURNISH WITHOUT EXTRA CHARGE ADDITIONAL MATERIALS AND LABOR WHICH MAY BE REQUIRED FOR COMPLIANCE WITH THESE LAWS, RULES AND REGULATIONS EVEN THOUGH THE WORK IS NOT MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE DRAWINGS.

1.9 PROJECT/SITE CONDITIONS

A. INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS.

B. PREPARE DRAWINGS SHOWING PROPOSED REARRANGEMENT OF WORK TO MEET PROJECT CONDITIONS, INCLUDING CHANGES TO WORK SPECIFIED IN OTHER SECTIONS. OBTAIN PERMISSION OF ENGINEER BEFORE PROCEEDING.

2. PART 2 PRODUCTS

2.1 CONDUIT REQUIREMENTS

A. MINIMUM SIZE: 1/2 INCH UNLESS OTHERWISE SPECIFIED.

B. UNDERGROUND INSTALLATIONS:

1. USE PVC SCH 40 NONMETALLIC CONDUIT.
2. MINIMUM SIZE: 3/4 INCH.

C. OUTDOOR LOCATIONS, ABOVE GRADE:

1. EXPOSED: USE RIGID GALVANIZED STEEL CONDUIT.
2. CONCEALED: USE PVC SCH 40 NONMETALLIC CONDUIT.

D. IN SLAB:

1. USE PVC SCH 40 NONMETALLIC CONDUIT.
2. MINIMUM SIZE CONDUIT IN SLAB: 3/4 INCH, UNLESS OTHERWISE SPECIFIED.
3. MAXIMUM SIZE CONDUIT IN SLAB: 1 INCH, UNLESS OTHERWISE SPECIFIED.

E. WET AND DAMP LOCATIONS:

1. EXPOSED: USE RIGID GALVANIZED STEEL CONDUIT.
2. CONCEALED: USE PVC SCH 40 NONMETALLIC CONDUIT.

F. INDOOR DRY LOCATIONS:

1. CONCEALED: USE RIGID GALVANIZED STEEL CONDUIT, ELECTRICAL METALLIC TUBING, PVC SCH 40 NONMETALLIC CONDUIT.
2. EXPOSED: USE RIGID GALVANIZED STEEL CONDUIT, AND ELECTRICAL METALLIC TUBING.

2.2 BUILDING WIRE AND CABLE

A. DESCRIPTION: SINGLE CONDUCTOR INSULATED STRANDED WIRE.

1. CONDUCTOR: COPPER.
2. INSULATION VOLTAGE RATING: 600 VOLTS.
3. INSULATION: ANSI/NFPA 70, TYPE THHN/THWN.
4. SIZE: 12 AWG. MINIMUM UNLESS OTHERWISE NOTED.

B. DESCRIPTION: FLEXIBLE METAL CLAD CABLE "MC"

1. CONDUCTOR: SOLID/ STRANDED COPPER.
2. VOLTAGE RATING: 600 VOLTS.
3. TEMPERATURE RATING: 90 DEGREE C. (DRY)
4. CONDUCTOR INSULATION: ANSI/NFPA 70, TYPE THHN/XHHW.
5. CONDUCTOR SIZE: 12 AWG. WITH 10 AWG NEU. FOR SHARED NEUTRAL MINIMUM UNLESS OTHERWISE NOTED.
6. ASSEMBLY COVERING: MYLAR TYPE

ARMOR: GALVANIZED OR ALUMINUM STEEL

2.3 OUTLET BOXES

A. SHEET METAL OUTLET BOXES: ANSI/NEMA OS 1, GALVANIZED STEEL.

1. LUMINAIRE AND EQUIPMENT SUPPORTING BOXES: RATED FOR WEIGHT OF EQUIPMENT SUPPORTED.

B. NONMETALLIC OUTLET BOXES: ANSI/NEMA OS 2.

C. CAST BOXES: NEMA FB 1, TYPE FD, GALVANIZED STEEL. PROVIDE GASKETED COVER By BOX MANUFACTURER. PROVIDE THREADED HUBS.

2.4 PULL AND JUNCTION BOXES

A. SHEET METAL BOXES: NEMA OS 1, GALVANIZED STEEL.

B. SURFACE-MOUNTED CAST METAL BOX: NEMA 250, TYPE 4; FLAT-FLANGED, SURFACE-MOUNTED JUNCTION BOX.

1. MATERIAL: CAST GALVANIZED STEEL.
2. COVER: FURNISH WITH GROUND FLANGE, NEOPRENE GASKET, AND STAINLESS STEEL COVER SCREWS.

2.5 WALL SWITCHES

A. MANUFACTURERS:

1. LEVITON: SPECIFICATION GRADE.

B. DESCRIPTION: HEAVY-DUTY, AC ONLY GENERAL-USE SWITCH.
C. DEVICE BODY: WHITE PLASTIC WITH "STANDARD" HANDLE.
D. VOLTAGE RATING: 120-277 VOLTS, AC.
E. CURRENT RATING: 20 AMPERES.

2.6 RECEPTACLES

A. MANUFACTURERS:

1. SLATER; MODEL: MEDALIST.

B. DESCRIPTION: HEAVY-DUTY, RECEPTACLE - COMMERCIAL UNITS
C. DEVICE BODY: WHITE PLASTIC.
D. CONFIGURATION: TYPE AS SPECIFIED AND INDICATED.
E. CONVENIENCE RECEPTACLE: TYPE 5-20R.
F. GFCI RECEPTACLE: CONVENIENCE RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER TO MEET REGULATORY REQUIREMENTS, WITH LED STATUS INDICATOR LIGHT.

2.7 WALL PLATES

A. DECORATIVE COVER PLATE: WHITE SMOOTH PLASTIC.

1. LEVITON.

B. WEATHERPROOF COVER PLATE: GASKETED IN USE TYPE WITH METAL HINGED GASKETED DEVICE COVER.

2.8 CORDS AND CAPS

A. MANUFACTURERS:

1. APPLETON
2. HUBBELL
3. SLATER
4. ARROW-HART

B. ATTACHMENT PLUG CONSTRUCTION: CONFORM TO NEMA.
C. CONFIGURATION: MATCH RECEPTACLE CONFIGURATION AT OUTLET PROVIDED FOR EQUIPMENT.
D. CORD CONSTRUCTION: MULTICONDUCTOR FLEXIBLE CORD WITH IDENTIFIED EQUIPMENT GROUNDING CONDUCTOR, SUITABLE FOR USE IN DAMP LOCATIONS.
E. SIZE: SUITABLE FOR CONNECTED LOAD OF EQUIPMENT, LENGTH OF CORD, AND RATING OF BRANCH CIRCUIT OVERCURRENT PROTECTION.

2.9 SUPPORTING DEVICES

A. MATERIALS AND FINISHES: PROVIDE ADEQUATE CORROSION RESISTANCE.

B. PROVIDE MATERIALS, SIZES, AND TYPES OF ANCHORS, FASTENERS AND SUPPORTS TO CARRY THE LOADS OF EQUIPMENT AND CONDUIT. CONSIDER WEIGHT OF WIRE IN CONDUIT WHEN SELECTING PRODUCTS.

C. ANCHORS AND FASTENERS:

1. CONCRETE STRUCTURAL ELEMENTS: USE PRECAST INSERT SYSTEM, EXPANSION ANCHORS, POWDER ACTUATED ANCHORS AND PRESET INSERTS.
2. CONCRETE SURFACES: USE SELF-DRILLING ANCHORS AND EXPANSION ANCHORS.
3. HOLLOW MASONRY, PLASTER, AND GYPSUM BOARD PARTITIONS: USE TOGGLE BOLTS AND HOLLOW WALL FASTENERS.
4. SOLID MASONRY WALLS: USE EXPANSION ANCHORS AND PRESET INSERTS.
5. SHEET METAL: USE SHEET METAL SCREWS.
6. WOOD ELEMENTS: USE WOOD SCREWS.

2.10 NAMEPLATES AND LABELS

A. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON BLACK BACKGROUND.

B. LOCATIONS:

1. EACH ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT ENCLOSURE.

C. LETTER SIZE:

1. USE 1/4 INCH (6 MM) LETTERS FOR IDENTIFYING INDIVIDUAL EQUIPMENT AND LOADS.

D. LABELS: EMBOSSED ADHESIVE TAPE, WITH 3/16 INCH (5 MM) WHITE LETTERS ON BLACK BACKGROUND. USE ONLY FOR IDENTIFICATION OF INDIVIDUAL WALL SWITCHES AND RECEPTACLES.

2.11 WIRE MARKERS

A. DESCRIPTION: CLOTH, TAPE, SPLIT SLEEVE, OR TUBING TYPE WIRE MARKERS.

B. LOCATIONS: EACH CONDUCTOR AT PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND EACH LOAD CONNECTION.

C. LEGEND:

1. POWER AND LIGHTING CIRCUITS: BRANCH CIRCUIT OR FEEDER NUMBER INDICATED ON DRAWINGS.
2. CONTROL CIRCUITS: CONTROL WIRE NUMBER INDICATED ON SCHEMATIC AND INTERCONNECTION DIAGRAMS ON DRAWINGS/ SHOP DRAWINGS.

2.12 PANELBOARDS/LOADCENTERS (AS SCHEDULED)

A. MANUFACTURE:

1. SQUARE "D"
2. CUTLER-HAMMER
3. SIEMENS
4. GENERAL ELECTRIC.

B. ENCLOSURE: GENERAL PURPOSE, NEMA 1; UNLESS OTHERWISE NOTED.
C. PROVIDE FLUSH/SURFACE (AS SCHEDULED) BOX, AND LATCH ON DOOR. FINISH IN MANUFACTURER'S STANDARD GRAY ENAMEL.
D. PROVIDE BUS RATINGS AND MATERIALS AS SCHEDULED.
E. MINIMUM INTEGRATED SHORT CIRCUIT RATING: 10,000 AMPERES RMS SYMMETRICAL.
F. MOLDED CASE CIRCUIT BREAKERS: BOLT-ON/PLUG-ON (AS SCHEDULED) TYPE THERMAL MAGNETIC TRIP CIRCUIT BREAKERS, WITH COMMON TRIP HANDLE FOR ALL POLES. PROVIDE UL CLASS A GROUND FAULT INTERRUPTER CIRCUIT BREAKERS WHERE SCHEDULED.
G. DO NOT USE TANDEM CIRCUIT BREAKERS.

2.13 LUMINAIRES

A. FURNISH PRODUCTS AS SPECIFIED IN SCHEDULE ON DRAWINGS.
B. SUBSTITUTIONS: UNDER PROVISIONS OF THE CONTRACT.
C. INSTALL DRIVERS, LEDS, AND SPECIFIED ACCESSORIES AT FACTORY.
D. SPECIFY AN IN-LINE DISCONNECT TO MEET NEC. FURTHER REQUIRE THAT THE LIGHTING MANUFACTURER PROVIDE A "WIRE NUT" CONNECTION ON THE LOAD SIDE OF THE DISCONNECT TO FACILITATE LIGHT FIXTURE SERVICING.
E. COLOR TEMPERATURE & CRI: 3500K, CRI $\geq$ 80.
F. LED DRIVERS SHALL HAVE THE FOLLOWING CHARACTERISTICS (UNLESS APPROVED BY ENGINEER):

1. MAXIMUM DRIVE CURRENT: 350MA.
2. MINIMUM EFFICIENCY: 85%.
3. OPERATING TEMPERATURE RANGE: -40°C TO 50°C.
4. MINIMUM RATED LIFE: 50,000 HOURS.
5. DIMMING RANGE: 100% TO 10%
6. UL CLASS I OR II OUTPUT.
7. POWER FACTOR: 90%.
8. TOTAL HARMONIC DISTORTION: 20%.
9. COMPLY WITH FCC 47 CFR PART 15 NON-CONSUMER RFI/EMI STANDARDS.

G. ACCESSORIES: PROVIDE LUMINAIRE ACCESSORIES AS INDICATED.

2.14 ENCLOSED SWITCHES

A. FUSIBLE SWITCH ASSEMBLIES: NEMA 1 - INDOOR, NEMA 3R - OUTDOOR, TYPE HD (HEAVY DUTY) LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION. FUSE CLIPS: DESIGNED TO ACCOMMODATE CLASS R FUSES.

B. NONFUSIBLE SWITCH ASSEMBLIES: NEMA 1- INDOOR, NEMA 3R - OUTDOOR, TYPE HD LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION.

2.15 FUSES

A. MANUFACTURERS:

1. BUSSMAN.
2. GOULD - SCHAWMUT.

B. DESCRIPTION: DUAL ELEMENT, CURRENT LIMITING, ONE-TIME FUSE, 250 OR 600 VOLT AS APPLICATION REQUIRES.
C. INTERRUPTING RATING: 200,000 RMS AMPERES.

3. PART 3 EXECUTION

3.1 CONDUIT

A. INSTALL CONDUIT IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION."
B. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND PRESENT NEAT APPEARANCE.
C. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS.
D. MAINTAIN 12 INCH (300 MM) CLEARANCE BETWEEN CONDUIT AND SURFACES WITH TEMPERATURES EXCEEDING 104 DEGREES F (40 DEGREES C).
E. CUT CONDUIT SQUARE USING SAW OR PIPECUTTER; DE-BURR CUT ENDS.
F. BRING CONDUIT TO SHOULDER OF FITTINGS; FASTEN SECURELY.
G. JOIN NON-METALLIC CONDUIT USING CEMENT AS RECOMMENDED BY MANUFACTURER. WIPE NONMETALLIC CONDUIT DRY AND CLEAN BEFORE JOINING. APPLY FULL EVEN COAT OF CEMENT TO ENTIRE AREA INSERTED IN FITTING. ALLOW JOINT TO CURE FOR 20 MINUTES, MINIMUM.
H. USE CONDUIT HUBS OR SEALING LOCKNUTS TO FASTEN CONDUIT TO SHEET METAL BOXES IN DAMP AND WET LOCATIONS AND TO CAST BOXES.
I. INSTALL NO MORE THAN EQUIVALENT OF THREE 90-DEGREE BENDS BETWEEN BOXES. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION, AS AROUND BEAMS. USE HYDRAULIC ONE-SHOT BENDER TO FABRICATE FACTORY ELBOWS FOR BENDS IN METAL CONDUIT LARGER THAN 2 INCH (50 MM) SIZE.

3.2 BUILDING WIRE & CABLE

A. PULL ALL CONDUCTORS INTO RACEWAY AT SAME TIME.
B. USE SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE.
C. USE SUITABLE CABLE FITTINGS AND CONNECTORS.
D. NEATLY TRAIN AND LACE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.
E. CLEAN CONDUCTOR SURFACES BEFORE INSTALLING LUGS AND CONNECTORS.
F. MAKE SPLICES,TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITH NO PERCEPTIBLE TEMPERATURE RISE.
G. USE COMPRESSION CONNECTORS FOR COPPER CONDUCTOR SPLICES AND TAPS, 8 AWG AND LARGER. TAPE UNINSULATED CONDUCTORS AND CONNECTOR WITH ELECTRICAL TAPE TO 150 PERCENT OF INSULATION RATING OF CONDUCTOR.
H. USE INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS FOR COPPER CONDUCTOR SPLICES AND TAPS, 10 AWG AND SMALLER.
I. BRANCH CIRCUIT WIRING MAXIMUM 30 AMPS, MAY BE FLEXIBLE METAL CLAD CABLE "MC" OR METAL WHERE CONCEALED IN WOOD FRAMED SPACES, ALL OTHER WIRING, INCLUDING LOW-VOLTAGE WIRING, SHALL BE INSTALLED IN CONDUIT.

3.3 BOXES

A. INSTALL ELECTRICAL BOXES AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND COMPLIANCE WITH REGULATORY REQUIREMENTS.
B. INSTALL ELECTRICAL BOXES TO MAINTAIN HEADROOM AND TO PRESENT NEAT MECHANICAL APPEARANCE.
C. INSTALL BOXES TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER ELEMENTS, USING MATERIALS AND METHODS UNDER THE PROVISIONS IN THE SPECIFICATIONS.
D. SUPPORT BOXES INDEPENDENTLY OF CONDUIT EXCEPT CAST BOX THAT IS CONNECTED TO TWO RIGID METAL CONDUITS BOTH SUPPORTED WITHIN 12 INCHES (300 MM) OF BOX.
E. USE GANG BOX WHERE MORE THAN ONE DEVICE IS MOUNTED TOGETHER. DO NOT USE SECTIONAL BOX.
F. USE GANG BOX WITH PLASTER RING FOR SINGLE DEVICE OUTLETS.
G. USE CAST OUTLET BOX IN EXTERIOR LOCATIONS EXPOSED TO THE WEATHER AND WET LOCATIONS.

3.4 WIRING DEVICES

A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL DEVICES PLUMB AND LEVEL.
C. INSTALL SWITCHES WITH OFF POSITION DOWN.
D. INSTALL RECEPTACLES WITH GROUNDING POLE ON BOTTOM.
E. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR WHEN INSTALLED PER DRAWINGS.
F. CONNECT WIRING DEVICES BY WRAPPING CONDUCTOR AROUND SCREW TERMINAL.
G. COORDINATE LOCATIONS OF OUTLET BOXES TO OBTAIN MOUNTING HEIGHTS SPECIFIED AND INDICATED ON DRAWINGS.
H. INSTALL WALL SWITCH 46 INCHES (1.2 M) ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.
I. INSTALL CONVENIENCE RECEPTACLE 15 INCHES (381 MM) ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.
J. INSTALL CONVENIENCE RECEPTACLE 6 INCHES (153 MM) ABOVE COUNTER, UNLESS OTHERWISE NOTED.

3.5 EQUIPMENT WIRING AND SYSTEMS

A. MAKE ELECTRICAL CONNECTIONS IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
B. MAKE CONDUIT CONNECTIONS TO EQUIPMENT USING FLEXIBLE CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT WITH WATERTIGHT CONNECTORS IN DAMP OR WET LOCATIONS.
C. MAKE WIRING CONNECTIONS USING WIRE AND CABLE WITH INSULATION SUITABLE FOR TEMPERATURES ENCOUNTERED IN HEAT PRODUCING EQUIPMENT.
D. INSTALL DISCONNECT SWITCHES, CONTROLLERS, CONTROL STATIONS, AND CONTROL DEVICES AS INDICATED.
E. MODIFY EQUIPMENT CONTROL WIRING WITH TERMINAL BLOCK JUMPERS AS INDICATED.
F. PROVIDE INTERCONNECTING CONDUIT AND WIRING BETWEEN DEVICES AND EQUIPMENT WHERE INDICATED.

3.6 SUPPORTING DEVICES

A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. PROVIDE ANCHORS, FASTENERS, AND SUPPORTS IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION".
C. DO NOT FASTEN SUPPORTS TO PIPES, DUCTS, MECHANICAL EQUIPMENT, AND CONDUIT.
D. OBTAIN PERMISSION FROM ARCHITECT/ENGINEER BEFORE DRILLING OR CUTTING STRUCTURAL MEMBERS.

3.7 ELECTRICAL IDENTIFICATION

A. DEGREASE AND CLEAN SURFACES TO RECEIVE NAMEPLATES AND LABELS.
B. INSTALL NAMEPLATE AND LABEL PARALLEL TO EQUIPMENT LINES.
C. SECURE NAMEPLATE TO EQUIPMENT FRONT USING SCREWS, OR RIVETS.

3.8 PANELBOARDS/LOADCENTERS (AS SCHEDULED)

A. INSTALL PLUMB AND FLUSH WITH WALL FINISHES, IN CONFORMANCE WITH NEMA PB 1.1.
B. HEIGHT: 6 FT (2 M), TO TOP OF BOX.
C. PROVIDE FILLER PLATES FOR UNUSED SPACES.
D. PROVIDE TYPED CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT PANELBOARD/LOADCENTER. REVISE DIRECTORY TO REFLECT CIRCUITING CHANGES REQUIRED TO BALANCE PHASE LOADS.
E. MEASURE STEADY STATE LOAD CURRENTS AT EACH PANELBOARD/LOADCENTERS FEEDER. SHOULD THE DIFFERENCE BETWEEN PHASES EXCEED 20 PERCENT, REARRANGE CIRCUITS IN THE PANELBOARD/LOADCENTER TO BALANCE THE PHASE LOADS WITHIN 20 PERCENT. TAKE CARE TO MAINTAIN PROPER PHASING FOR MULTI-WIRE BRANCH CIRCUITS.
F. VISUAL AND MECHANICAL INSPECTION: INSPECT FOR PHYSICAL DAMAGE, PROPER ALIGNMENT, ANCHORAGE, AND GROUNDING. CHECK PROPER INSTALLATION AND TIGHTNESS OF CONNECTIONS FOR CIRCUIT BREAKERS, FUSIBLE SWITCHES, AND FUSES.

3.9 LUMINAIRES

A. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
B. INSTALL SURFACE MOUNTED LUMINAIRES AND PLUMB AND ADJUST TO ALIGN WITH BUILDING LINES AND WITH EACH OTHER. SECURE TO PROHIBIT MOVEMENT.
C. INSTALL WALL MOUNTED LUMINAIRES, AT HEIGHT AS INDICATED ON DRAWINGS.
D. INSTALL SPECIFIED LAMPS / LED COLOR, OUTPUT AND DRIVERS IN EACH LUMINAIRE.
E. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND DELETERIOUS MATERIALS.
F. REMOVE DIRT AND DEBRIS FROM ENCLOSURE.
G. CLEAN PHOTOMETRIC CONTROL SURFACES AS RECOMMENDED BY MANUFACTURER.
H. CLEAN FINISHES AND TOUCH UP DAMAGE.

3.10 ENCLOSED SWITCHES

A. INSTALL DISCONNECT SWITCHES WHERE INDICATED.
B. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES.
C. PROVIDE ADHESIVE LABEL ON INSIDE DOOR OF EACH SWITCH `INDICATING UL FUSE CLASS AND SIZE FOR REPLACEMENT.

END OF SECTION 260000

SECTION 260050

MINOR ELECTRICAL DEMOLITION FOR REMODELING

PART I - GENERAL

1.01 SECTION INCLUDES:

A. ELECTRICAL DEMOLITION.

PART II – PRODUCTS

2.01 MATERIALS AND EQUIPMENT:

A. MATERIALS AND EQUIPMENT FOR PATCHING AND EXTENDING WORK: AS IN INDIVIDUAL SECTIONS.

PART III – EXECUTION

3.01 EXAMINATION:

A. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS ARE AS SHOWN ON DRAWINGS.
B. VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES.
C. DEMOLITION IS BASED ON CASUAL FIELD OBSERVATION. REPORT DISCREPANCIES TO ARCHITECT/ENGINEER BEFORE DISTURBING EXISTING INSTALLATION.
D. BEGINNING OF DEMOLITION MEANS INSTALLER ACCEPTS EXISTING CONDITIONS.

3.02 PREPARATION:

A. DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.
B. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS. USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
C. EXISTING ELECTRICAL SERVICE: MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR SERVICE. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM OWNER AT LEAST 48 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION.

3.03 DEMOLTION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. REMOVE, RELOCATE AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
B. REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY.
C. REMOVE EXPOSED ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOORS AND PATCH SURFACES.
D. DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT SERVICING THEM IS ABANDONED AND REMOVED. PROVIDE BLANK COVER FOR ABANDONED OUTLETS WHICH ARE NOT REMOVED.
E. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK.

END OF SECTION 260050

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
01-21-25
E 13492
EXPIRATION DATE: 09-30-26
ELECTRICAL
STATE OF CALIFORNIA

PROPRIETARY DATA

Central Pacific Engineering, Inc.
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P.O. Box 1727, Capitola, CA 95010
831-476-1525
www.cpeinc.com

23-045-0

REVISIONS	BY
1 PLAN CK 1 08-05-24	DGS
2 UPDATE HOOD ELECT 01-21-25	DGS

DAVCO ASSOCIATES (408) 778-2525
architecture
planning
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Morgan Hill, CA 95038

KITCHEN REMODEL
VETERAN'S HALL
SOUTH SANTA CLARA VALLEY MEMORIAL DISTRICT
74 WEST SIXTH ST.
GILROY, CA

DRAWN

CHECKED

DATE

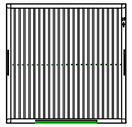
SCALE
AS NOTED

JOB NO.

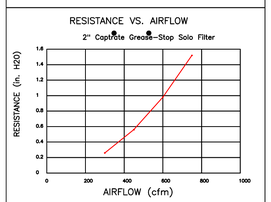
SHEET

E7.00

OF SHEETS



Captrate
Grease–Stop Solo Filter



Filter Detail

CAPTRATE •

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)

SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED

TOTAL DUCT AREA=144 X $\frac{\text{CFM}}{\text{FPM(*)}}$

DUCT LENGTH= $\frac{\text{TOTAL DUCT AREA}}{\text{DUCT DEPTH}}$

GREASE–STOP SOLO FILTER IS ETL LISTED UNDER FILE NUMBER 3064494–001 AND COMPLIES WITH UL1046 STANDARD, NSF STANDARD #2, NFPA 96 AND IMC

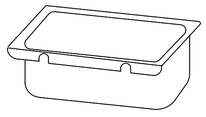
* CAPTIVE–AIRE VENTILATOR DUCT SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1600–1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM PLEASE CONSULT FACTORY FOR MAXIMUM ALLOWABLE DUCT SIZES

CALCULATIONS UTILIZED

CAPTIVE–AIRE HOODS ARE BUILT IN COMPLIANCE WITH:

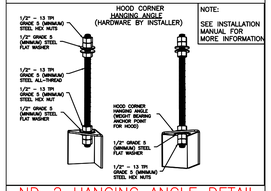
- NFPA #96
- B.O.C.A. #93–16
- I.C.B.O. 3441R
- SBCCI PST & ESI NO. 93137
- E.T.L. LISTED 3054804–001
- LOS ANGELES RR#8080
- ETL IS LISTED TO ULC STANDARDS

BUILDING CODES



GREASE CUP WILL BE SUPPORTED BY TWO STUDS ON THE INSIDE WALL OF THE HOOD. THE GREASE WILL DRAIN THROUGH A CONCEALED GREASE TROUGH AND INTO THIS REMOVEABLE/CLEANABLE CUP.

1/2 Pint Grease Cup Detail



ND–2 HANGING ANGLE DETAIL

HANGING ANGLES WILL BE LOCATED IN THE FOLLOWING LOCATIONS FOR WALL CANOPIES

HOOD STYLE		DIM FROM REAR	DIM FROM FRONT (24" High Hood)	DIM FROM FRONT (30" High Hood)
Wall	Exhaust Only	4.166"	2.25"	2.25"
	With MUA		2.25"	2.25"
Back Shelf	Exhaust Only	4.166"	2.25"	2.25"
	With MUA		2.25"	2.25"
Condensate		2.25"	2.25"	

HANGING ANGLE LOCATIONS

HOOD INFORMATION – JOB#6847224

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1		5424 EX–2	ECON–AIR	13' 0"	600 DEG	I	HEAVY	250	3250			4"	18"	3250	1839	–0.549"	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

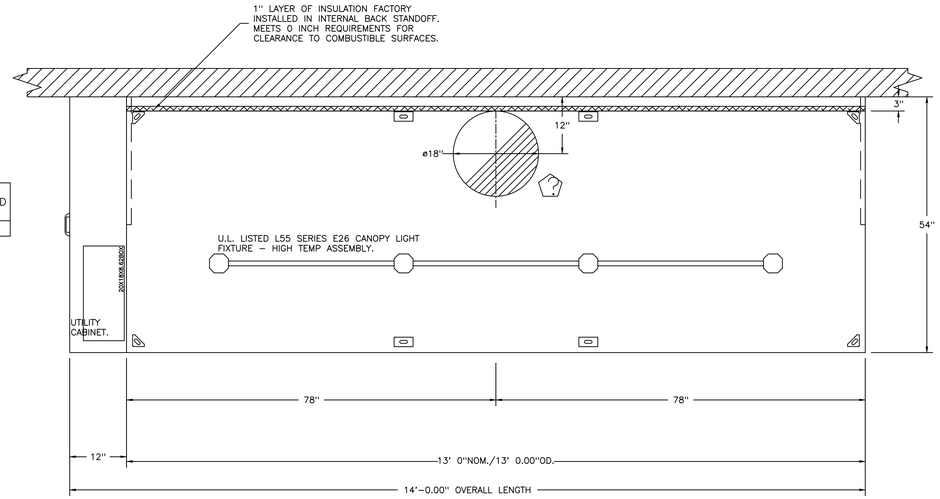
HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1		SS BAFFLE WITH HANDLES	9	20"	16"	30%	4	L55 SERIES E26	NO	LEFT	12"x54"x24"			SC–311110MA	1 LIGHT 1 FAN	NO	1029 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.
		INSULATION FOR TOP OF HOOD.
		STRUCTURAL FRONT PANEL.
		INSULATION FOR BACK OF HOOD.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		DI–PSP 12" 600CFM [QTY. 6].

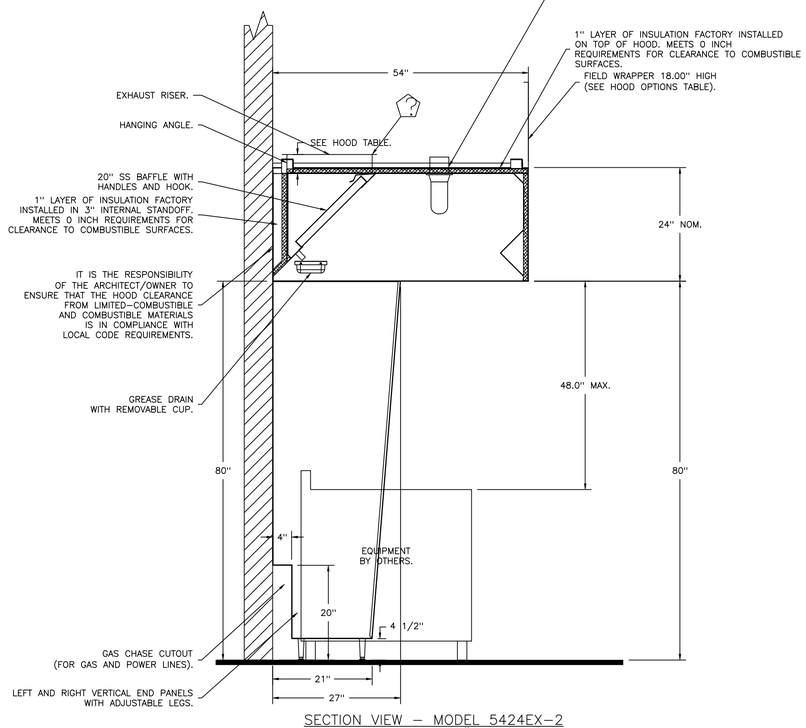
DIFFUSER SCHEDULE

TAG	MODEL	CEILING HEIGHT	NOMINAL FACE SIZE	RISER DIA	CFM	DUCT VELOCITY (FPM)	FACE DISCHARGE VELOCITY (FPM)	T50 AFF	SP	NOISE CRITERIA	LINKED FAN	LINKED HOOD
	DI–PSP–12–24X24	16'	24 X 24	12	600	764	179	8.05'	0.233"	46		5424EX–2



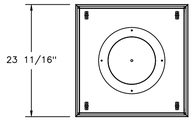
PLAN VIEW – HOOD #1
13' 0.00" LONG 5424EX–2

NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.

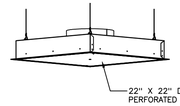


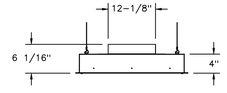
SECTION VIEW – MODEL 5424EX–2
HOOD – #1

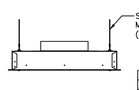
QTY 6–DROP–IN PERFORATED SUPPLY PLENUM DIFFUSER (DI–PSP)



FEATURES:
STAINLESS STEEL PERFORATION AND TRIM
REMOVABLE PERFORATION FOR PLENUM CLEANING
DOUBLE PERFORATION FOR EVEN AIR DISTRIBUTION
1/2" THICK INSULATION ON EXTERIOR TOP AND SIDES
APPROX. WEIGHT = 20 lbs







INSTALLATION NOTES:
INTENDED FOR INSTALLATION IN LAY IN (DROP) CEILINGS
INSTALL SLIDING RADIAL DAMPER ON TOP SIDE OF COLLAR

VERTICAL THROW DATA (ft)			
CFM	T150	T100	T50
600	1.25'	3.00'	7.75'
500	0.50'	2.50'	6.25'
400	–––	1.25'	4.50'
300	–––	–––	3.75'
200	–––	–––	0.50'

DIFFUSER SPECIFICATION

NOTE
ALL WALLS THAT COME WITHIN 18" OF THE TYPE I HOOD MUST BE METAL STUD AND SHEETROCK. IF WOOD STUDS FACTORY INSTALLED INSULATION REQUIRED, PLEASE ADVISE CAPTIVE AIRE PRIOR TO FABRICATION.

NOTE– Exhaust Collar Must be Factory Installed. If A Different Size Or Location is Required, Please Note Change On Submittal.

Rear Discharge Is Available. Contact CaptiveAire For Possible Locations.

All Hoods, Exhaust Fans, Tempered/Untempered Make–Up Air Units and Electrical Package to be Start–ed Up and Commissioned by Facotry Field Service Technician. Start–Up Report to be Sent to Engineer by Manufacturer When Complete.

FOR QUESTIONS CALL:
REECE MCNULTY
LOS ANGELES SALES OFFICE
REFERENCE JOB NUMBER
PHONE: 310.876.8505 REG81@CAPTIVEAIRE.COM

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VETERANS HALL ECON – Gilroy, CA rev3
Gilroy, CA, 95020

DATE: 6/10/2024

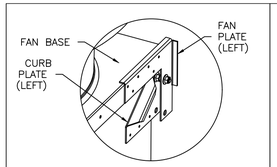
DWG.#: 6847224

DRAWN BY: RMM

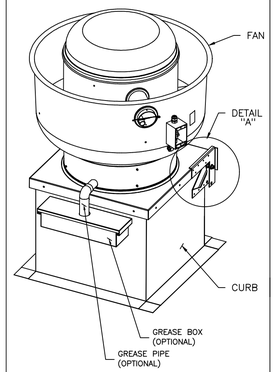
SCALE: 3/4" = 1'–0"

MASTER DRAWING

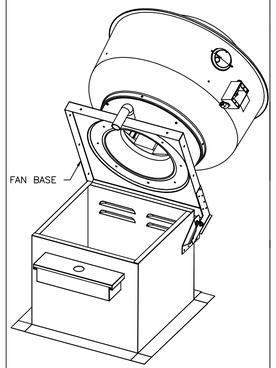
SHEET NO. 1



HINGE KIT DETAIL

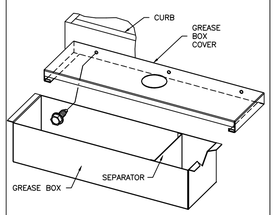


FAN IN CLOSED POSITION

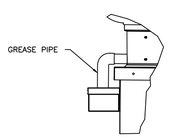


ATTENTION: INSTALLER SHOULD SUPPLY ENOUGH ELECTRICAL CORD TO LET FAN MAKE COMPLETE SWING.

FAN IN OPEN POSITION



ATTACH GREASE BOX COVER TO THE CURB 3" BELOW TOP EDGE OF CURB.
USING (3) LONG (3/4" LG.) SCREWS AS SHOWN.
INSTALL GREASE PIPE AS SHOWN.



GREASE BOX INSTALLATION

1. A PRE-WIRED ELECTRICAL CONTROL PACKAGE SHALL BE PROVIDED TO OPERATE THE HOOD LIGHTS AND FANS.
2. PACKAGE SHALL CONSIST OF SWITCH PANEL WITH LIGHT SWITCH(ES) AND RED-LIGHTED FAN SWITCH(ES), STARTER/OVERLOAD ASSEMBLY FOR EACH FAN(OPTIONAL) NUMBERED INPUT/OUTPUT TERMINAL STRIPS, AND A TERMINAL FOR DOUBLE-DIAL FIRE SYSTEM MICROSWITCH CONNECTION.
3. ONE RELAY IS WIRED TO MICROSWITCH (IN FIRE SYSTEM) FOR SUPPLY FAN SHUTDOWN AND OTHER RELAY FOR ADDITIONAL FIRE SYSTEM ACTIVATED DRY CONTACTS.
4. ELECTRICAL CONDUIT DROPS FROM THE FAN(S) SHALL BE CONNECTED TO THE NUMBERED TERMINAL STRIP. CONDUIT BETWEEN THE PRE-WIRE PACKAGE AND FAN(S) SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR.

ELECTRICAL PACKAGE NOTES

EXHAUST FAN INFORMATION – JOB#6847224

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF-1	1	DU180HFA	CAPTIVEAIRE	3250	1.500	1320	ODP,PREMIUM	3.000	1.7950	3	208	9.5	751 FPM	189	20

MUA FAN INFORMATION – JOB#6847224

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	EVAP FLOW RATE (Gal/Hr)	EVAP COOLER ENTERING DB TEMP	EVAP COOLER ENTERING WB TEMP	EVAP COOLER LEAVING DB TEMP	EVAP COOLER LEAVING WB TEMP	WEIGHT (LBS)	SONES
2	MAU-1	1	EA-A2-20D	20MF-2-MOD	A2	1500	3250	0.750	1469	ODP,PREMIUM	3.000	1.7390	3	208	9.5	11.9A	20A	4.83	90.0°F	62.0°F	71.0°F	62.0°F	692	18.3

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX
		1	HINGE KIT – SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
2	MAU-1	1	EVAPORATIVE COOLER WIRING HARNESS
		1	INSULATION OPTION FOR VBANK FILTER SECTION
		1	A2 INDOOR HANGING OPTION – INCLUDES 2 HSA125 HANGING SPRING ISOLATORS PER UNI-STRUT
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) – THREE PHASE ONLY
		1	2 YEAR PARTS WARRANTY

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF-1	YES						
2	MAU-1				YES			

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	43 LBS	CURB	26.500"W X 26.500"L X 20.000"H 3.000:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.

FAN #1 DU180HFA – EXHAUST FAN (KEF-1)

TOP VIEW

FEATURES:

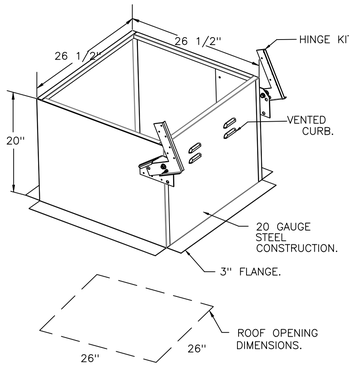
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

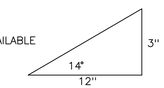
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

- GREASE BOX.
- HINGE KIT – SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
- 2 YEAR PARTS WARRANTY.



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

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VETERANS HALL ECON – Gilroy, CA rev3
Gilroy, CA, 95020

DATE: 6/10/2024

DWG.#: 6847224

DRAWN BY: RMM

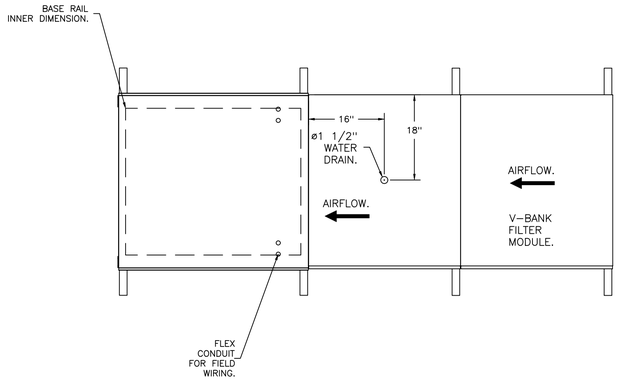
SCALE: 3/4" = 1'-0"

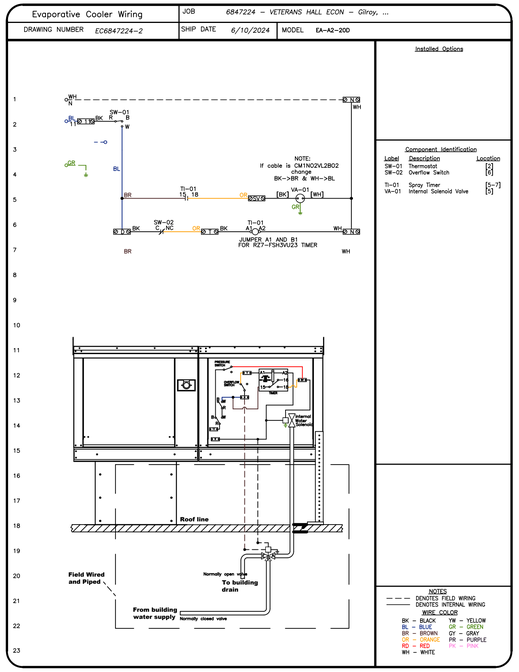
MASTER DRAWING

SHEET NO. 2

FAN #2 EA-A2-20D – SUPPLY FAN (MAU-1)
1. UNTEMPERED SUPPLY UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN IN SIZE #2 HOUSING.
2. EVAP COOLER (CELDEK) & V-BANK WITH 2" TA-13 FILTERS – INDOOR.
3. SIDE DISCHARGE – AIR FLOW RIGHT -> LEFT.
4. 120V WIRING CONNECTION TO ENERGIZE EVAPORATIVE COOLERS FROM UNTEMPERED SUPPLY FANS.
5. "INSULATION" FOR V-BANK INTAKE OPTION.
6. INDOOR HANGING CRADLE FOR THE SIZE 2 UNTEMPERED UNIT. 2 HSA125 HANGING ISOLATORS PER UNI-STRUT INCLUDED.
7. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
8. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/EVAP SECTION).
9. 2 YEAR PARTS WARRANTY.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED STRAIGHT DUCT SIZE IS 26" x 26".





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Gilroy, CA, 95020

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DWG.#: 6847224

DRAWN BY: RMM

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

MASTER DRAWING

SHEET NO. 3

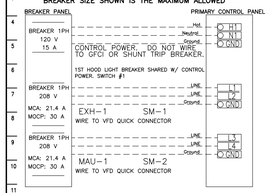
ELECTRICAL PACKAGE – JOB#6847224

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		SC-311110MA	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-1	EXHAUST	3	3.000	208	9.5
				HOOD # 1	1 FAN		MAU-1	SUPPLY	3	3.000	208	9.5

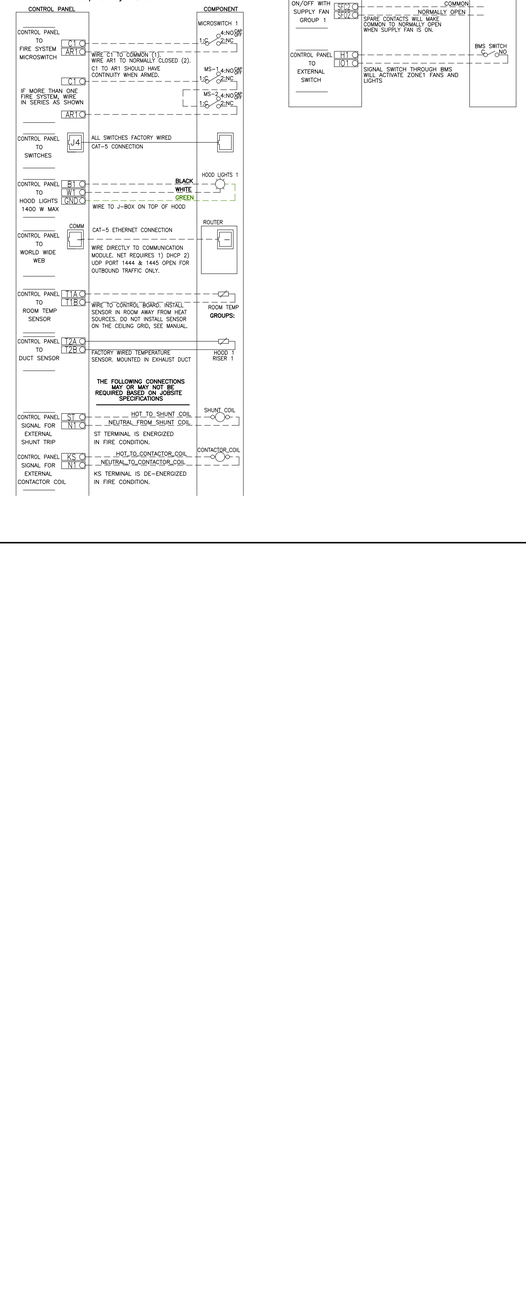
JOB NO	JOB NUMBER	DATE	INSTALL
6847224	SC-311110MA	1/21/2025	ECP #1-1
	JOB NAME: VETERANS HALL ECON – Gilroy, ...		

DESCRIPTION OF OPERATION:
3 Phase w/ control for 1 Exhaust Fan, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED



CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician



CONTROL PANEL TO FANS
Responsibility: Electrician

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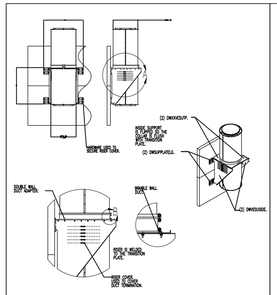
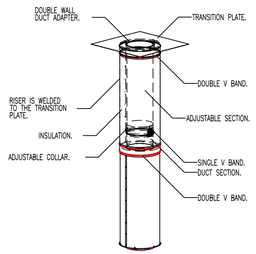
MASTER DRAWING

SHEET NO. 4

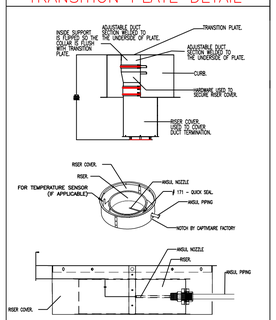


VERTICAL SUPPORT MAXIMUM SPACING (FT)	
DUCT DIAMETER	MAXIMUM SPACING (FT)
8"	10'
10"	10'
12"	10'
14"	10'
16"	10'
18"	10'
20"	10'
24"	10'

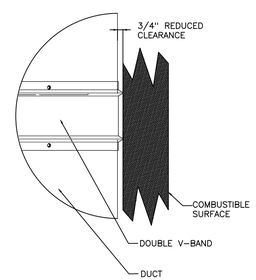
DUCT SUPPORT ASSEMBLY



TRANSITION PLATE DETAIL



OUTER DUCT BAND DETAIL



REDUCED CLEARANCE DETAIL

1. DUCT RUN TO BE FIELD VERIFIED, PARTS SUBJECT TO CHANGE.
2. DUCT RUNS TO HAVE CLEANOUTS EVERY 10', AND EVERY CHANGE OF DIRECTION UNLESS SPECIFIED OTHERWISE.
3. VERTICAL HANGING SUPPORTS TO BE PER SUPPORT DETAIL TABLE TO RIGHT. HORIZONTAL HANGING SUPPORTS TO BE PER SUPPORT DETAIL TABLE TO RIGHT.
4. ADJUSTABLE DUCT OVERLAP TO BE NO LESS THAN 6", UNLESS INNER DIAMETER IS 8" (4" OVERLAP) OR 10" (5" OVERLAP).
5. 3/4" CLEARANCE TO COMBUSTIBLES IS FROM OUTER SHELL. V-BAND IS LISTED TO BE AGAINST SURFACE.

DUCTWORK NOTES

DUCTWORK #1 PARTS – JOB#6847224 DOUBLE WALL

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
H1–E1	DW22DWRISER–2R–S	3250				–0.549	10.73	0.00	1	DOUBLE WALL RISER COVER – USED ON 18" INNER RISER, 4" LONG – 2 LAYERS REDUCED CLEARANCE – 22" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
P1	DW1847DWAJD–2R–S	3250				–0.009	107.98	1839.12	1	DOUBLE WALL ADJUSTABLE DUCT – 18" INNER DUCT – 2 LAYERS REDUCED CLEARANCE – 22" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P2	DW1845DWASY–2R–S	3250				–0.0416	26.22	1839.12	1	DOUBLE WALL DUCT – 18" INNER 45 DUCT – 2 LAYERS REDUCED CLEARANCE – 22" STAINLESS STEEL OUTER SHELL.
P3	DW1845DWASY–2R–S	3250				–0.0371	26.22	1839.12	1	DOUBLE WALL DUCT – 18" INNER 45 DUCT – 2 LAYERS REDUCED CLEARANCE – 22" STAINLESS STEEL OUTER SHELL.
P4 ASSEMBLED W/P5	DW1847DWAJDTP–2R–S	3250				–0.01	108.88	1839.12	1	DOUBLE WALL ADJUSTABLE DUCT TRANSITION PLATE – 18" INNER DUCT – 2 LAYERS REDUCED CLEARANCE – 22" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P5 ASSEMBLED W/P4 O=B	DW2618TPDBEX	3250					9.00	1839.12	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 18" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA16HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON–STANDARD PART.
SYSTEM AT P5						–0.6467	0.00			
RC1	DW22DWRISER–2R–S						10.73		1	DOUBLE WALL RISER COVER – USED ON 18" INNER RISER, 4" LONG – 2 LAYERS REDUCED CLEARANCE – 22" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
	3M–2000PLUS						0.80		2	DUCT – 3M FIRE BARRIER 2000 PLUS SILICONE – USED AS SEALANT TO SEAL DUCT JOINTS.
	DW18DWCLASY–2R–S						8.70		1	DUCT – 18" DUCT – 22" DOUBLE "V" CLAMP – 2R INSULATION & SINGLE "V" CLAMP INCLUDED – REDUCED CLEARANCE.
TOTAL WEIGHT							310.06			

Furnish double wall, factory built grease duct for use with Type I kitchen hoods, which conforms to the requirements of NFPA–96. Products shall be ETL listed to UL–1978 and UL–2221 for venting air and grease vapors from commercial cooking operation. Models DW–2R, 3R and 3Z are used for grease duct applications when installed in accordance with these instructions and National Fire Protection Association "NFPA 96"; Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. Double wall grease ducts are listed for a continuous internal temperature of 500 degrees F and intermittent temperatures of 2000 degrees F.

The duct sections shall be constructed of an inner duct wall and an outer wall with insulation in between. The inner duct wall shall be constructed of .036 inch thick, 430 type stainless steel and be available in diameters 8" through 24". The outer wall shall be constructed of stainless steel at a minimum of .024 inch thickness. The duct, based on model number, shall include layers of Super Wool 607 Plus insulation between the inner and outer wall. Grease duct joints shall be held together by means of formed V clamps and sealed with 3M Fire Barrier 2000+. The duct wall assembly shall be tested and listed at ¾" or zero inch clearance, according to classifications.

Classifications and Clearances

UL 2221: Standard for Fire Resistive Grease Duct Enclosure Assemblies. Chapter 7 of this standard references a test labeled Internal Fire Test. Section 7.1.1 references two installation conditions, Condition A and Condition B. Condition A represents all installation condition except for installation within non–ventilated combustible enclosures. Condition B represents installation within a non–ventilated combustible enclosure.

Model DW–3Z is classified under UL2221 (Test of Fire Resistive Duct Enclosure Assemblies) as an alternate to 2–Hr. fire resistive shaft enclosures with a minimum zero clearance to combustibles (sizes 8" to 24" diameter). Model 3Z is listed in accordance with the requirements for duct enclosure Condition A and B.

Model DW–3R is classified under UL2221 (Test of Fire Resistive Duct Enclosure Assemblies) as an alternate to 2–Hr. fire resistive shaft enclosures with a reduced clearance to combustibles (sizes 8" to 24" diameter). Model 3R is listed in accordance with the requirements for duct enclosure Condition B.

Model DW–2R is classified under UL2221 (Test of Fire Resistive Duct Enclosure Assemblies) as an alternate to 2–Hr. fire resistive shaft enclosures with a reduced clearance to combustibles (sizes 8" to 16" diameter). Model 2R is listed in accordance with the requirements for duct enclosure Condition B.

REVISIONS

	DESCRIPTION	DATE:
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VETERANS HALL ECON – Gilroy, CA rev3

Gilroy, CA, 95020

DATE: 6/10/2024

DWG.#: 6847224

DRAWN BY: RMM

SCALE: 3/4" = 1'–0"

MASTER DRAWING

SHEET NO. 5

DOUBLE WALL FACTORY BUILT DUCTWORK

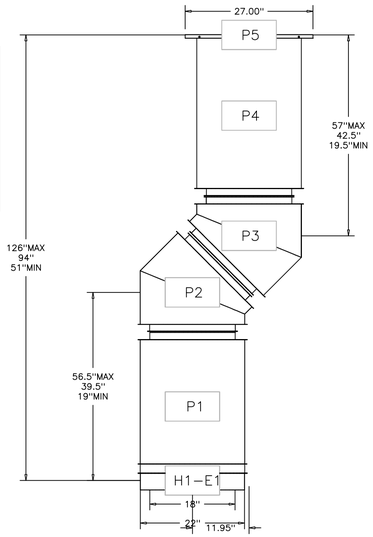
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16'' PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16'' PER LINEAR FOOT.

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5''	7'
6''	7'
7''	7'
8''	7'
10''	7'
12''	7'
14''	7'
16''	7'
18''	5'
20''	5'
22''	5'
24''	5'
26''	5'
28''	5'
30''	5'
32''	5'
34''	5'
36''	5'

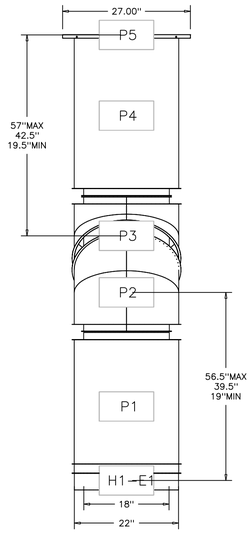
VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5''–16'')	20'	24'	24'
2R (18'')	18'	24'	24'
3R & 3Z (5''–24'')	10'	24'	24'
3Z (26'' –36'')	10'	20'	20'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

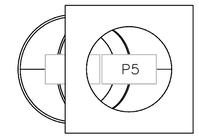
DUCTWORK #1 FRONT VIEW



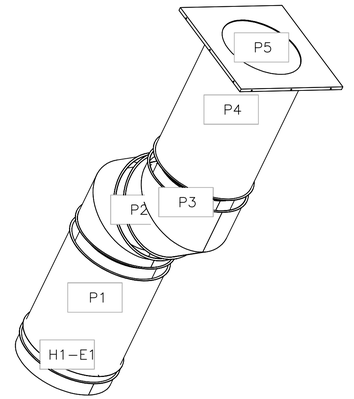
DUCTWORK #1 SIDE VIEW



DUCTWORK #1 TOP VIEW



DUCTWORK #1 SE VIEW



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MASTER DRAWING

SHEET NO. 6