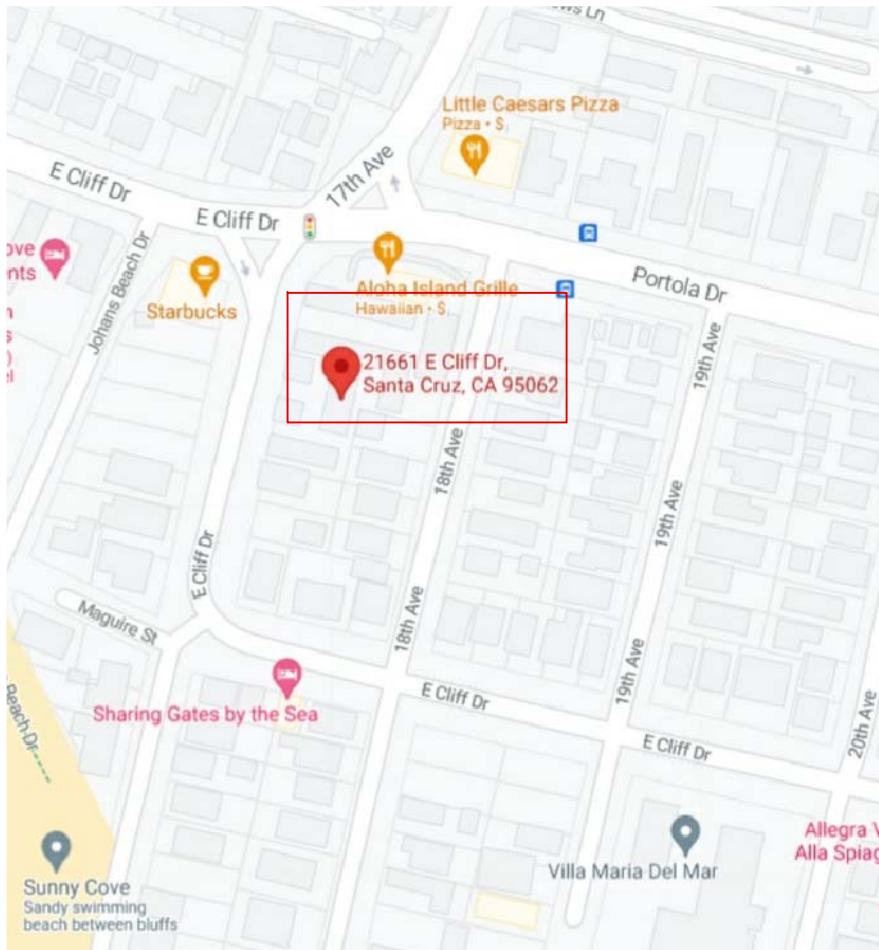


5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ CA. 95062



PROJECT DATA

APN	028-164-13
EXISTING STRUCTURE	9 BUILDINGS (1 & 2 STORY)
PARCEL AREA	27,706 SQFT (.6360 ACR)
OCCUPANCY	R-2
ZONE	VA
TYPE OF CONSTRUCTION	V-B
FIRE SPRINKLER SYSTEM	NO
FIRE RATING	1HR

CODES

CALIFORNIA BUILDING CODE (CBC)	2019
CALIFORNIA ELECTRICAL CODE (CEC)	2019
CALIFORNIA MECH. CODE (CMC)	2019
CALIFORNIA PLUMBING CODE (CPC)	2019
CALIFORNIA ENERGY CODE	2019
CALIFORNIA FIRE CODE (CFC)	2019
CALIFORNIA GREEN BUILDING STANDARD CODE	2019

SCOPE OF WORK

- A- DEMOLITION WORK
- 1- REMOVAL OF BOTH STAIRCASES TO 2ND FLOOR
 - 2- REMOVAL OF ALL KITCHEN AND BATH FIXTURES
 - 3- REMOVAL OF 2ND FLOOR DECK AND RAILINGS
 - 4- REMOVAL OF ALL DOORS AND WINDOWS
- B- NEW CONSTRUCTION WORK
- 1- REPLACE AS NEEDED ROTTED EXTERIOR WALLS WOOD SIDING
 - 2- RE-CONSTRUCT 2ND FLOOR DECK AND RAILINGS
 - 3- CONSTRUCT NEW ONE STAIRCASE TO 2ND FLOOR
 - 4- INSTALLATION DOORS AND WINDOWS
 - 5- INSTALLATION OF MECHANICAL, W.H. & HVAC
 - 6- INSTALLATION OF MECHANICAL, KITCHEN AND BATH FAN VENTS
 - 7- INSTALLATION OF PLUMBING PIPING AND FIXTURES
 - 8- INSTALLATION OF ELECTRICAL WIRING AND FIXTURES
 - 9- INTERIOR FINISH WORK.

FIRE DEPT. NOTES

- 1-THESE PLANS ARE IN COMPLIANCE WITH CALIFORNIA BUILDING AND FIRE CODES (2019) AND ***CENTRAL FIRE DISTRICT LOCAL AMENDMENTS***
- 2- WHERE ADDRESS NUMBERS WILL BE POSTED AND MAINTAINED. NOTE ON PLANS THAT ADDRESS NUMBERS SHALL BE A MINIMUM OF SIX (6) INCHES IN HEIGHT AND OF A COLOR CONTRASTING TO THEIR BACKGROUND.
- 3-THE ROOF COVERINGS TO BE NO LESS THAN CLASS "B" RATED ROOF.
- 4- A 30-FOOT CLEARANCE WILL BE MAINTAINED WITH NON-COMBUSTIBLE VEGETATION AROUND ALL STRUCTURES.

1

CONSTRUCTION AND DEMOLITION WASTE NOTE:

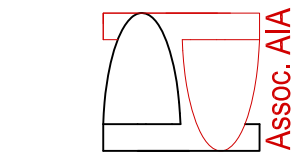
A MINIMUM OF 65% OF THE NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE SHALL BE RECYCLED AND/OR SALVAGED.

1

DRAWING INDEX

CS	COVER SHEET, SITE PLAN & PROJECT DATA
ST	EXISTING LOT SURVEY
A1	EXISTING PLANS AND ELEVATIONS
A2	NEW FLOORS & ROOF PLANS
A3	NEW FLOOR PLANS-LIGHTING AND ELEC.
A4	GENERAL NOTES- RESIDENTIAL
A5	NEW EXTERIOR ELEVATIONS
A6	BUILDING SECTIONS AND DETAILS
S1	GENERAL NOTES
S2	FOUNDATION AND FRAMING PLAN
SD-1	STRUCTURAL DETAILS
SD-2	STRUCTURAL DETAILS
SD-3	STRUCTURAL DETAILS
E0.1	ELECTRICAL SINGLE LINE
E0.2	ELECTRICAL NOTES
E1.1	ELECTRICAL FLOOR PLANS
E2.1	ELEC CONTROLS
E2.2	ELEC PANEL SCHEDULE & LEGEND
M0.1	MECHANICAL SCHEDULES
M1.1	MECHANICAL FLOOR PLANS
M2.1	MECH. DETAILS
P0.1	PLUMBING SCHEDULE
P1.1	PLUMBING FLOOR PLANS WASTE
P1.2	PLUMBING FLOOR PLANS SUPPLY
P1.3	PLUMBING FLOOR PLANS GAS
T1	TITLE 24
T2	TITLE 24
T3	TITLE 24
CGM	CAL-GREEN MANDATORY MEASURES

FAHEH HABAYEB
PLANNING & DESIGN
2640 SENTER CREEK CT.
SAN JOSE, CA. 95111
408 483-0302
habayeb3@aol.com



5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ CA. 95062

NO.	DATE	ISSUE
1	9/20/2022	PC

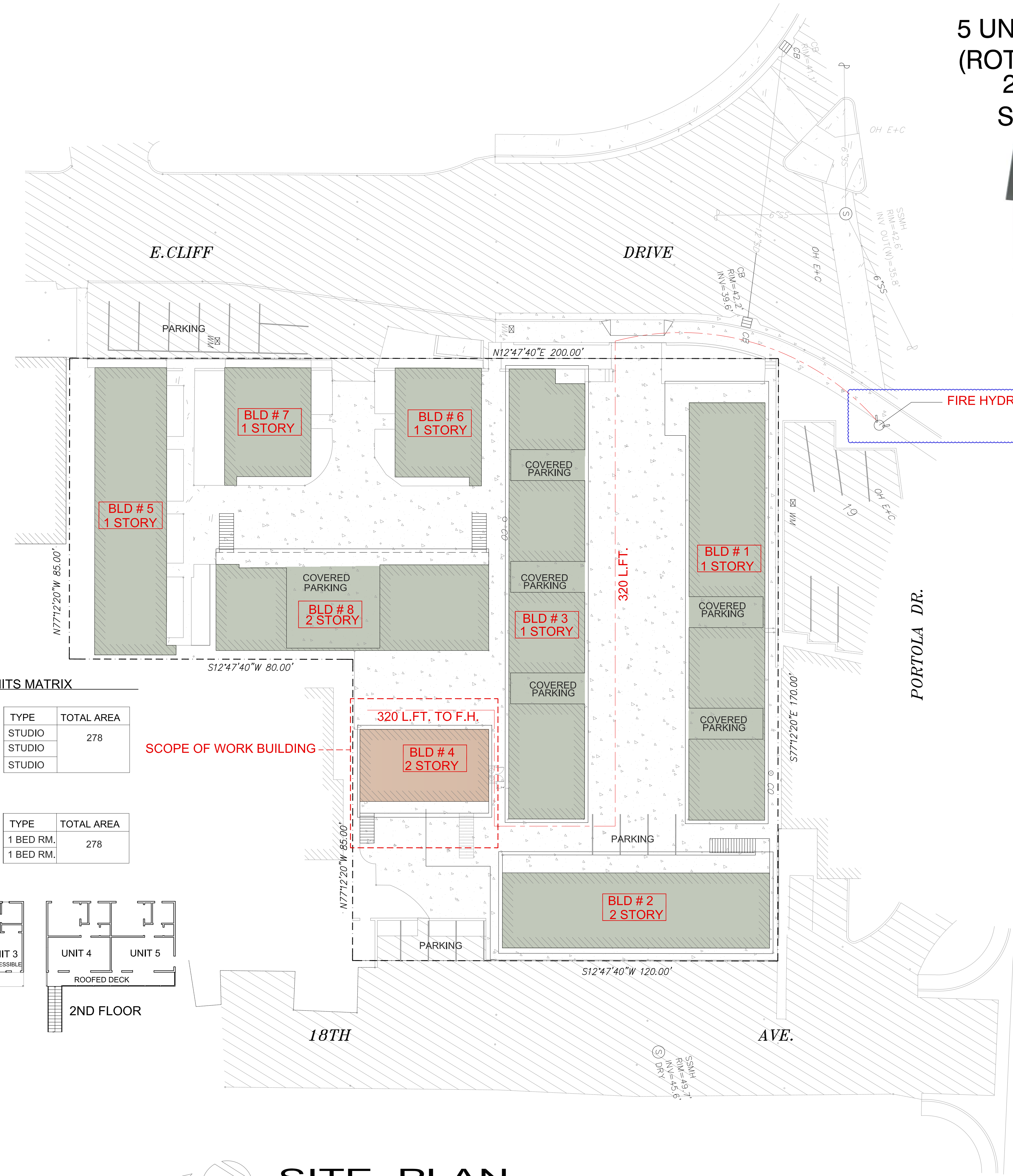
COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO.	0621
SCALE	AS NOTED
DRAWN BY	FH
SHEET NO.	

CS

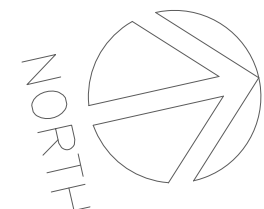
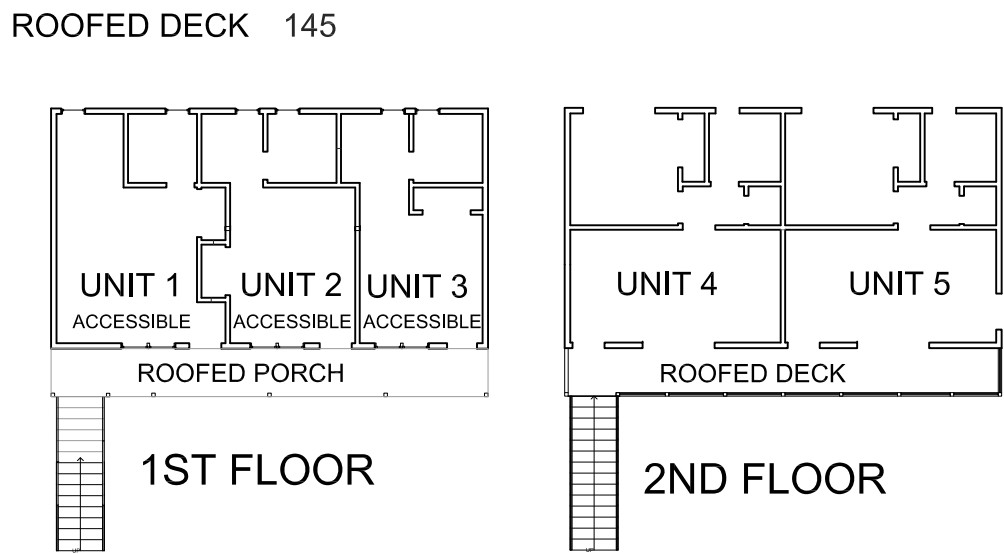


UNITS MATRIX

1ST FLOOR			
UNIT #	UNIT COVERAGE	TYPE	TOTAL AREA
UNIT 1	268	STUDIO	278
UNIT 2	233	STUDIO	
UNIT 3	227	STUDIO	

2ND FLOOR

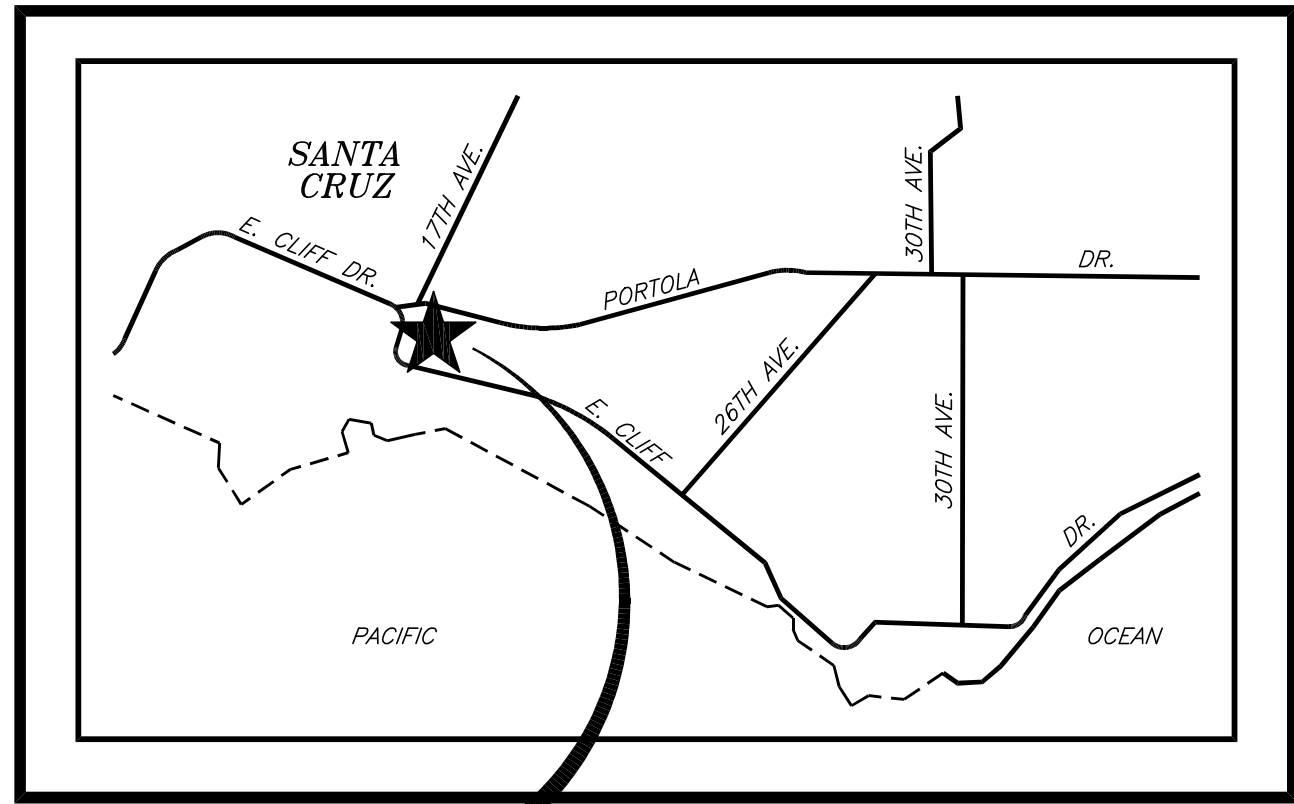
UNIT #	UNIT COVERAGE	TYPE	TOTAL AREA
UNIT 4	364	1 BED RM.	278
UNIT 5	364	1 BED RM.	



SITE PLAN

1/16"=1'-0"

VICINITY MAP
N.T.S.



PROJECT
SITE

TOPOGRAPHIC & BOUNDARY SURVEY OF
21661 E. CLIFF DR.
SANTA CRUZ, CA 95062
APN 028-164-13

LEGEND:

- ASPHALT
- CONCRETE
- PAVING BRICK
- CURB AND GUTTER
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAIN LINE
- STORM DRAIN MANHOLE
- ELECTRIC OVERHEAD LINE
- COMMUNICATION OVERHEAD LINE
- OVERHEAD UTILITY LINE
- WATER LINE
- WATER METER
- WATER VALVE
- JOINT POLE
- GAS METER
- ELECTRIC METER
- WOOD FENCE
- CHAIN LINK FENCE
- BENCH MARK
- FOUND MONUMENT PER REFERENCES
- LOT NUMBERS PER 05 MAPS 82

BENCHMARK:

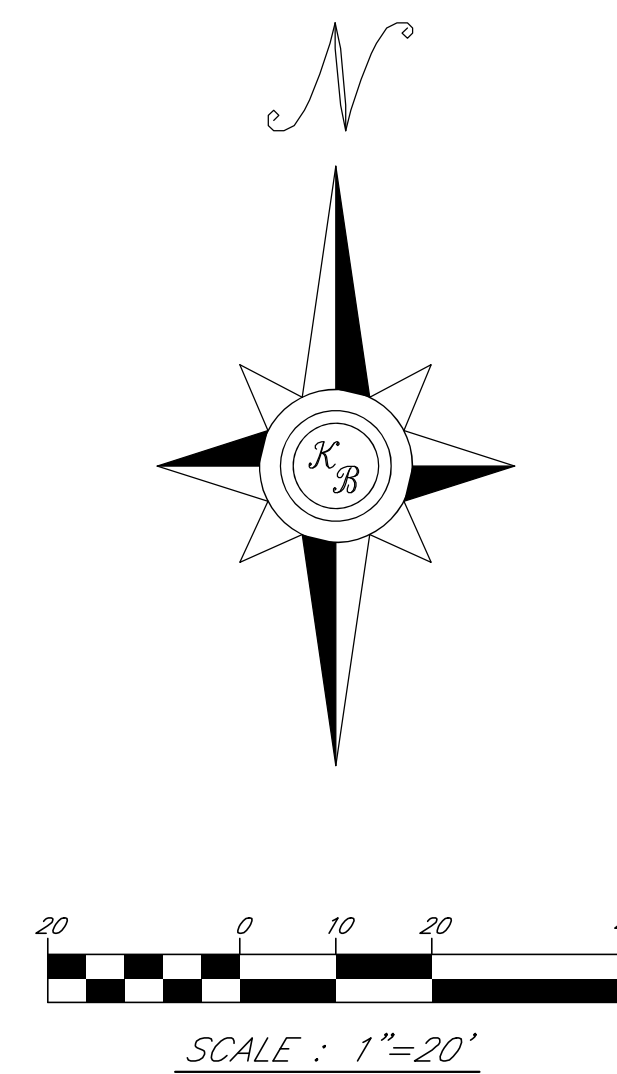
A SANTA CRUZ COUNTY SURVEYOR BRASS DISK AT THE NWLY CORNER OF LOT 18, HAVING AN NAVD88 ELEVATION OF 44.66', IS THE BASIS OF ALL ELEVATIONS SHOWN ON THIS MAP.

REFERENCES:

R1 BOOK 05 MAPS 82, SANTA CRUZ COUNTY RECORDS

UTILITY NOTES:

THE UTILITIES AS DRAFTED ARE AS THEY ARE BELIEVED TO EXIST BASED ON SURFACE EVIDENCE. UTILITIES MAY EXIST THAT ARE NOT INDICATED. NO SUBSURFACE INVESTIGATIONS WERE PERFORMED.



COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:
Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.
BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

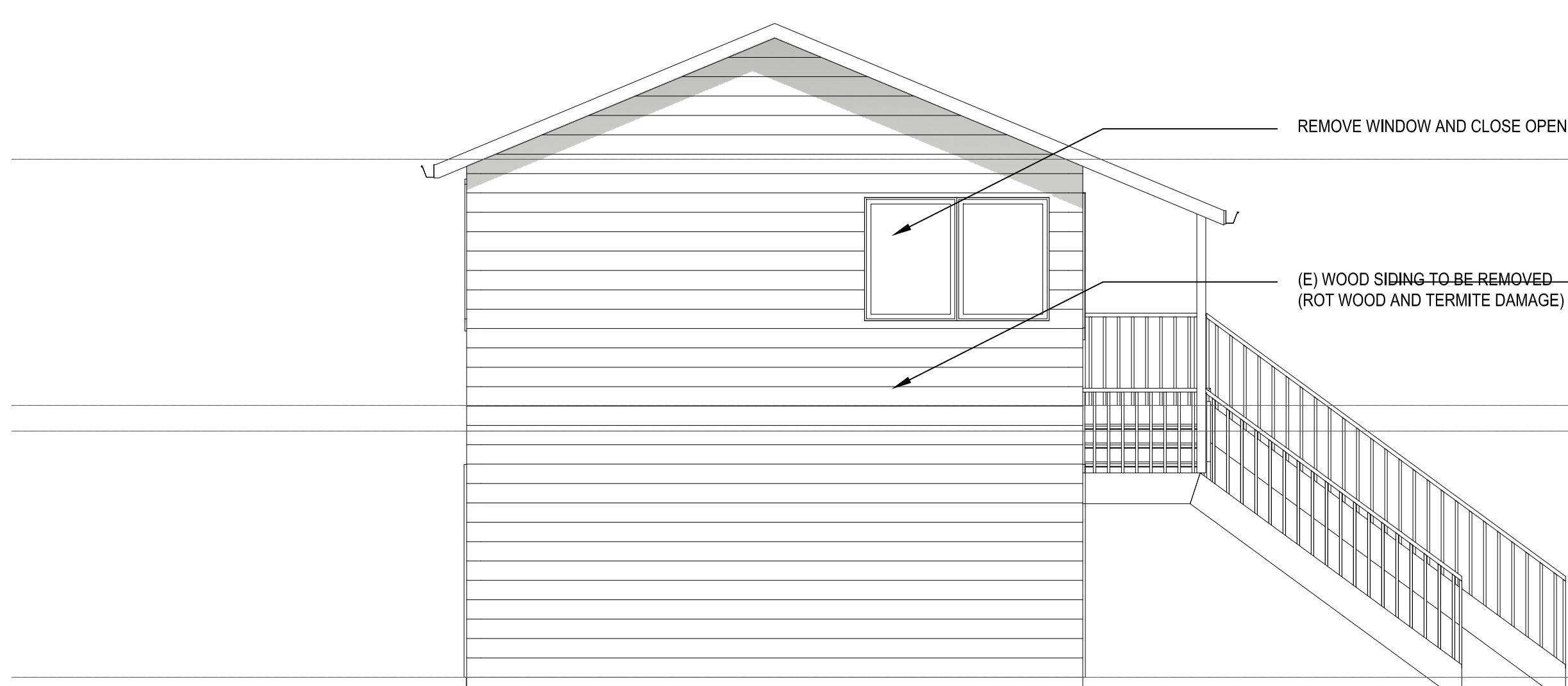


SURVEY PREPARED FOR
K&K HOMES
AUGUST 20, 2021

THE BRONSON COMPANY
SURVEYING SERVICES
6206 EPPS DRIVE
WINTON, CA 95388
(209)606-7340 kevin@thebronsonco.com

TOPOGRAPHIC SURVEY OF
LOTS 10-11, 13-18 OF BLOCK
15, 05MAPS82,
CITY OF SANTA CRUZ,
COUNTY OF SANTA CRUZ,
STATE OF CALIFORNIA

NO.	REVISION	DATE
PROJECT MANAGER Kevin Bronson		
DRAWN BY KB	CHECKED BY	
DATE AUGUST 2021		
CAD FILE		
JOB NUMBER 4470		
SHEET ST		OF 1



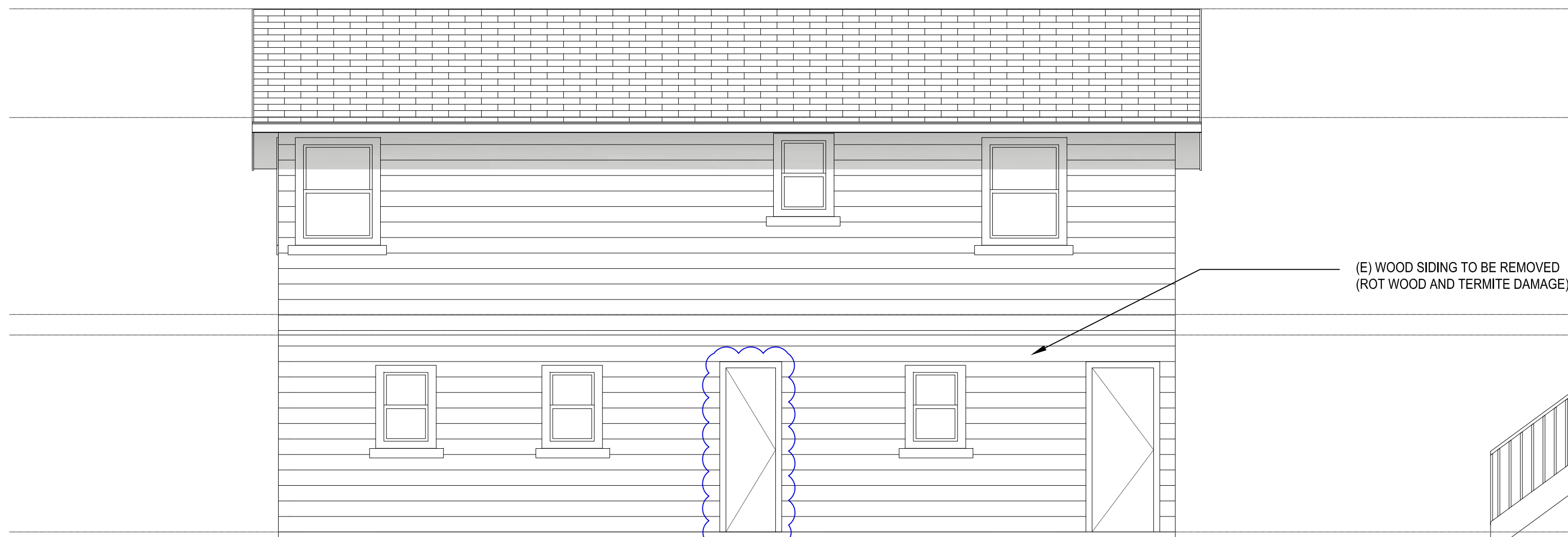
(E) LEFT SIDE ELEVATION

1/4"



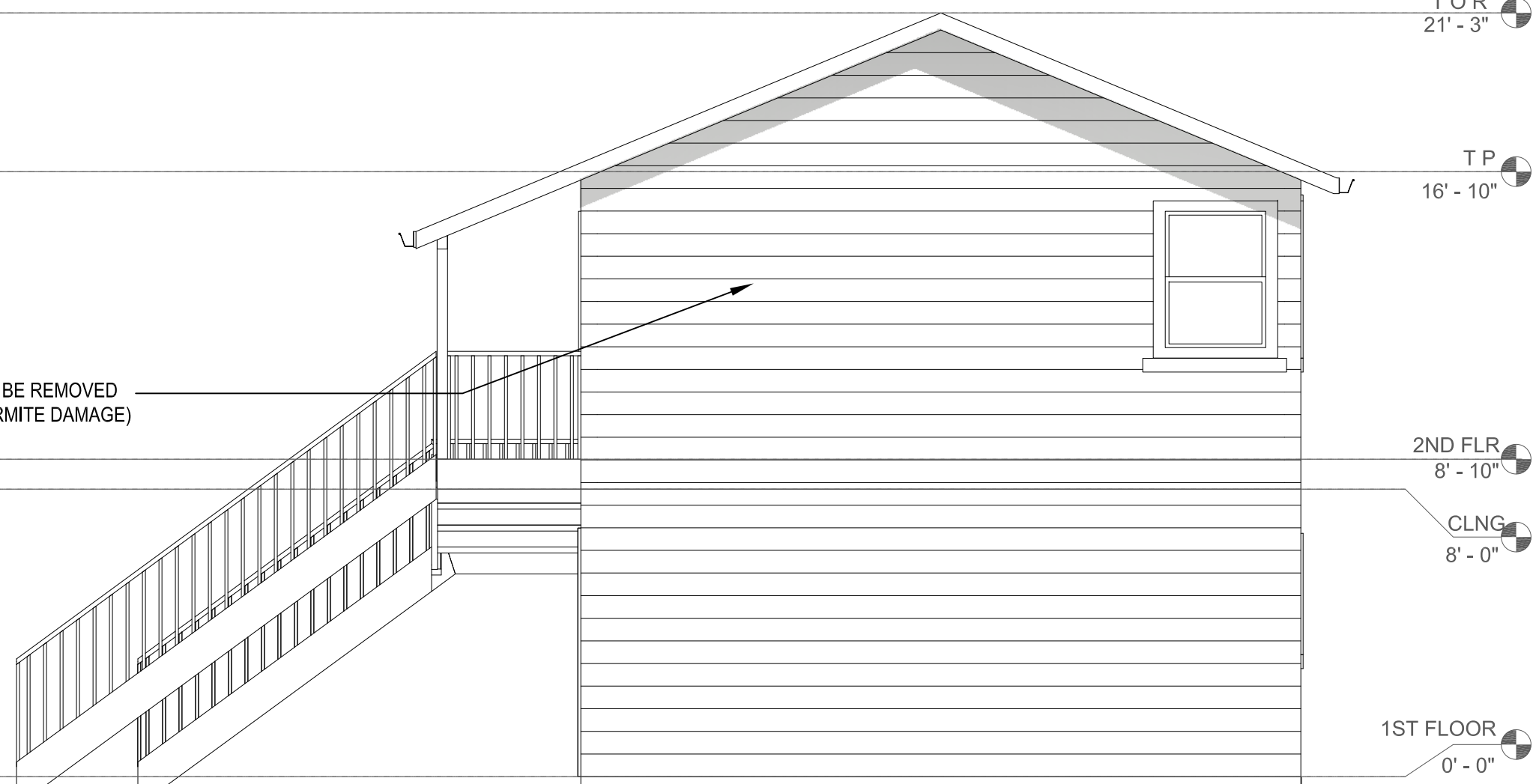
(E) FRONT ELEVATION

1/4"



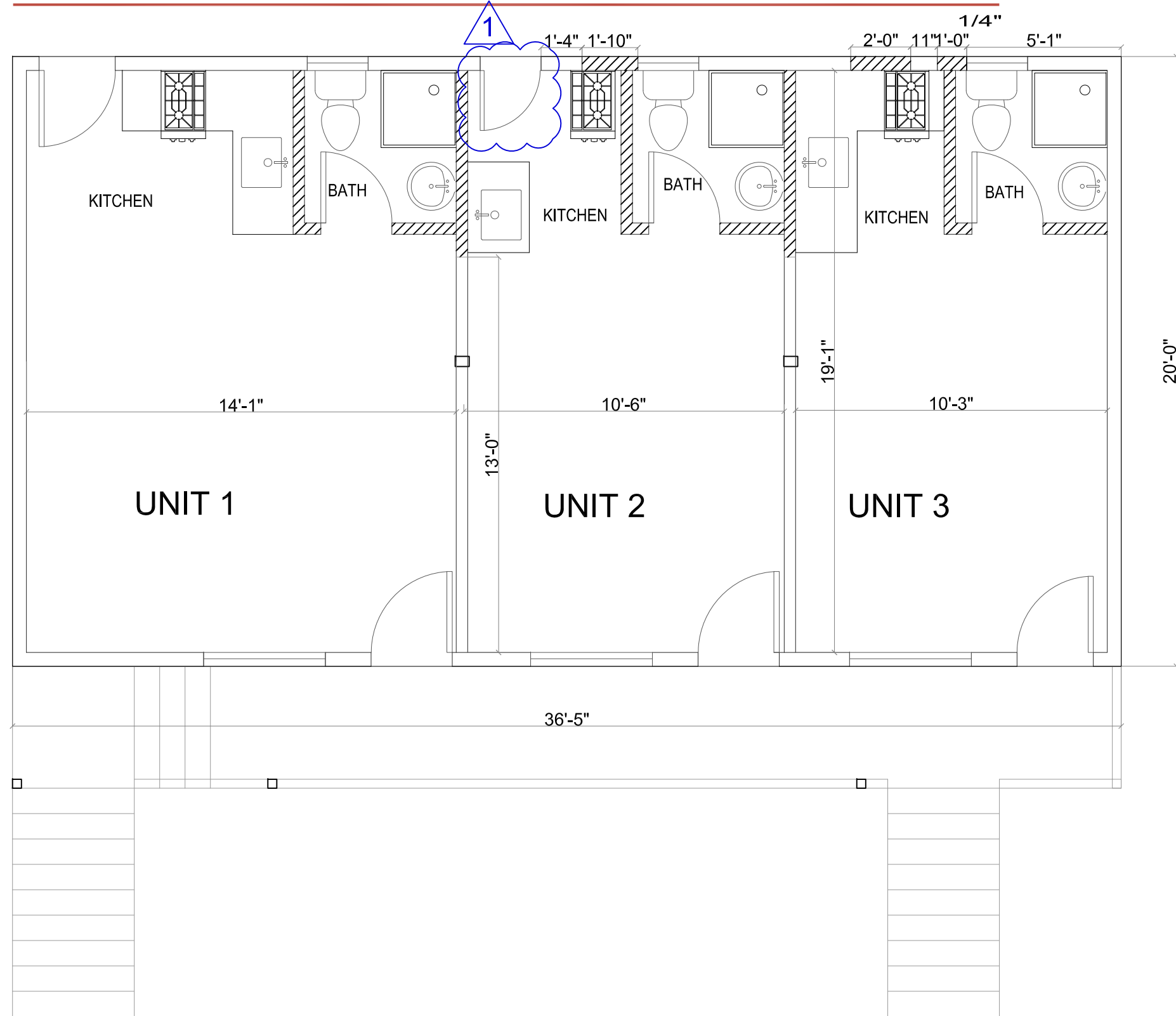
(E) REAR ELEVATION

1



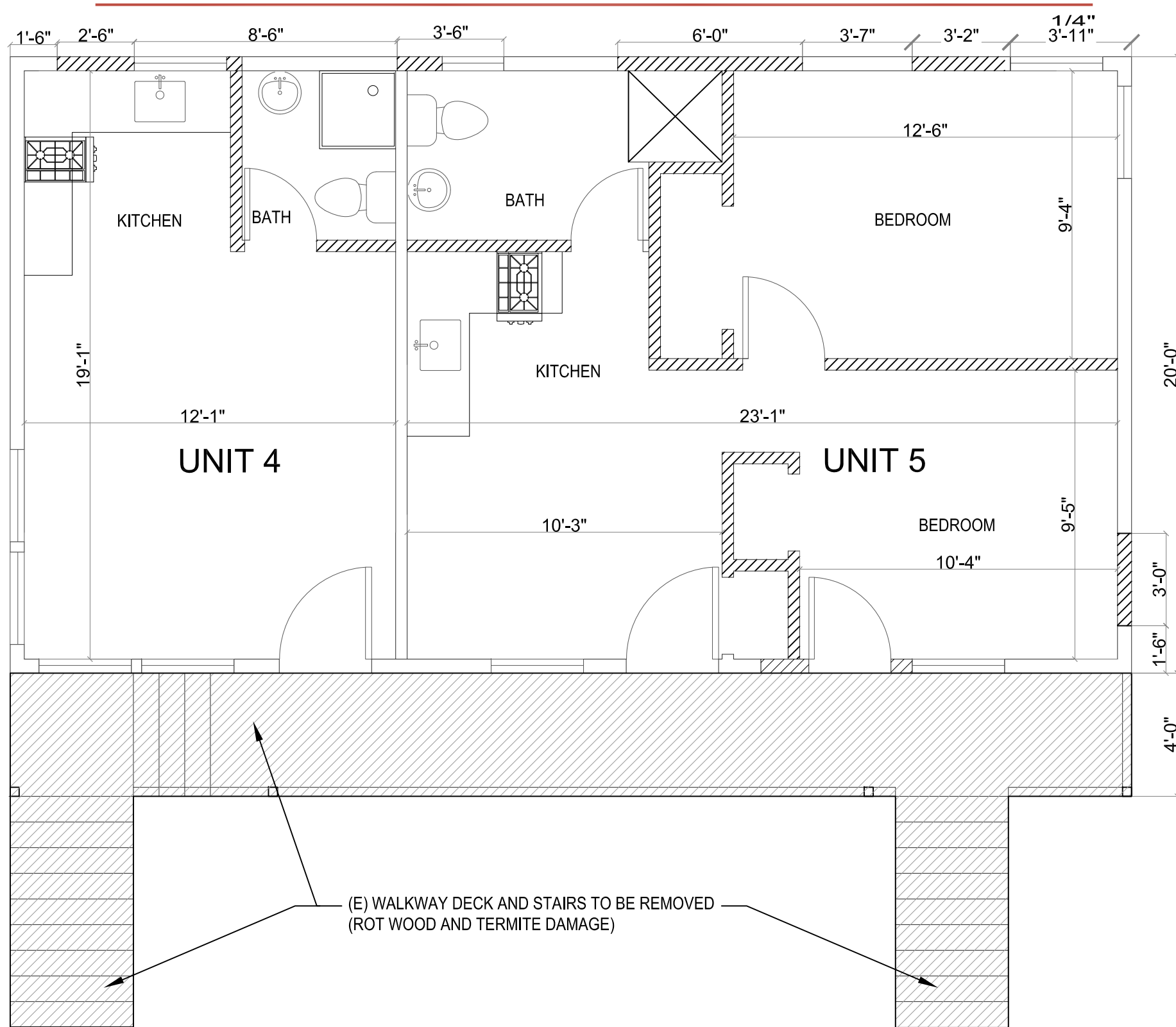
(E) RIGHT SIDE ELEVATION

1/4"



(E) 1ST FLOOR PLAN,

1/4"



(E) 2ND FLOOR PLAN

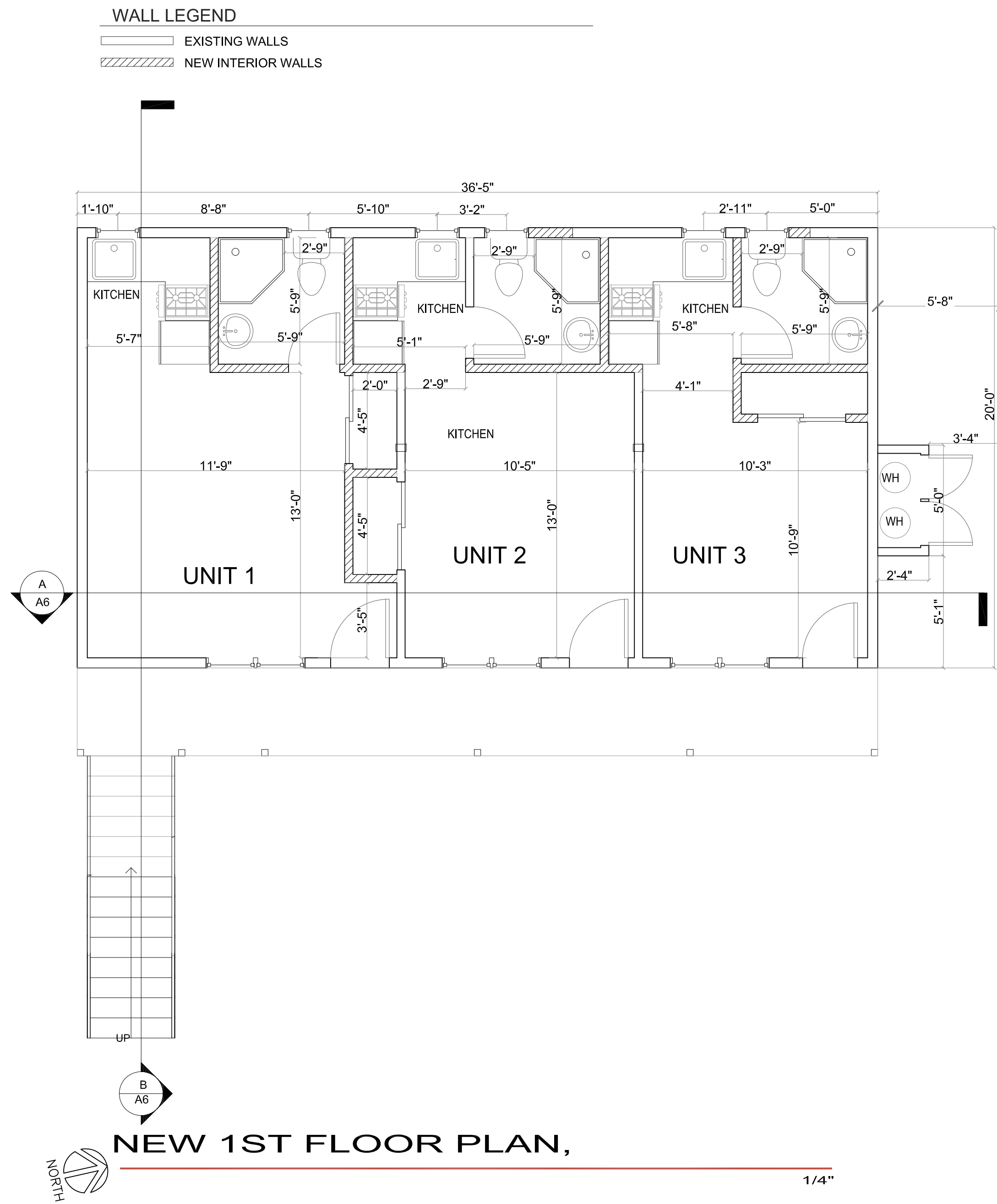
1/4"

WALL LEGEND

- EXISTING WALLS TO REMAIN (TO REPLACE DAMAGED AS NEEDED)
EXISTING WALLS TO BE REMOVED

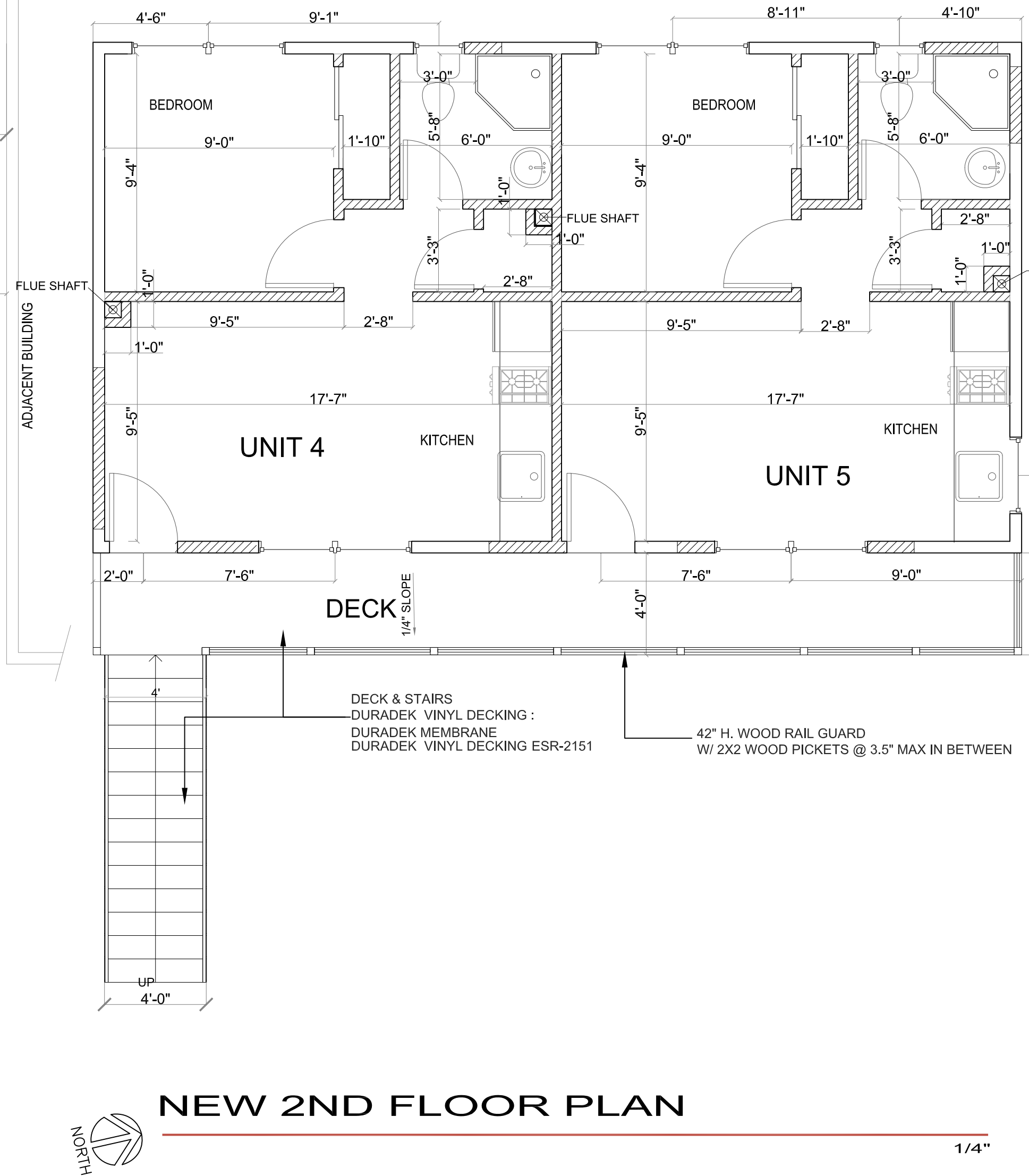
DEMOLITION NOTES

- 1- ALL OF THE EXISTING WINDOWS AND DOORS TO BE REMOVED.
2- ALL OF THE EXISTING PLUMBING AND ELECTRIC FIXTURES TO BE REMOVED.
3- ALL OF THE EXISTING EXTERIOR WALL WOOD SIDING TO BE REMOVED
4- DAMAGED WOOD STRUCTURES, FLOORS AND WALLS (ROT OR TERMITE) TO BE REMOVED
5- ROOF STRUCTURE TO REMAIN, ONLY ROOFING MATERIAL TO BE REMOVED
6- ALL EXISTING INTERIOR DRYWALL, ON BOTH THE WALLS AND THE CEILINGS, BE REMOVED
7- ALL (E) EXPOSED ELECTRICAL IN WALLS AND CEILINGS BE REMOVED AND REPLACED
8- ALL (E) EXPOSED PLUMBING IN WALLS AND CEILINGS BE REMOVED AND REPLACED



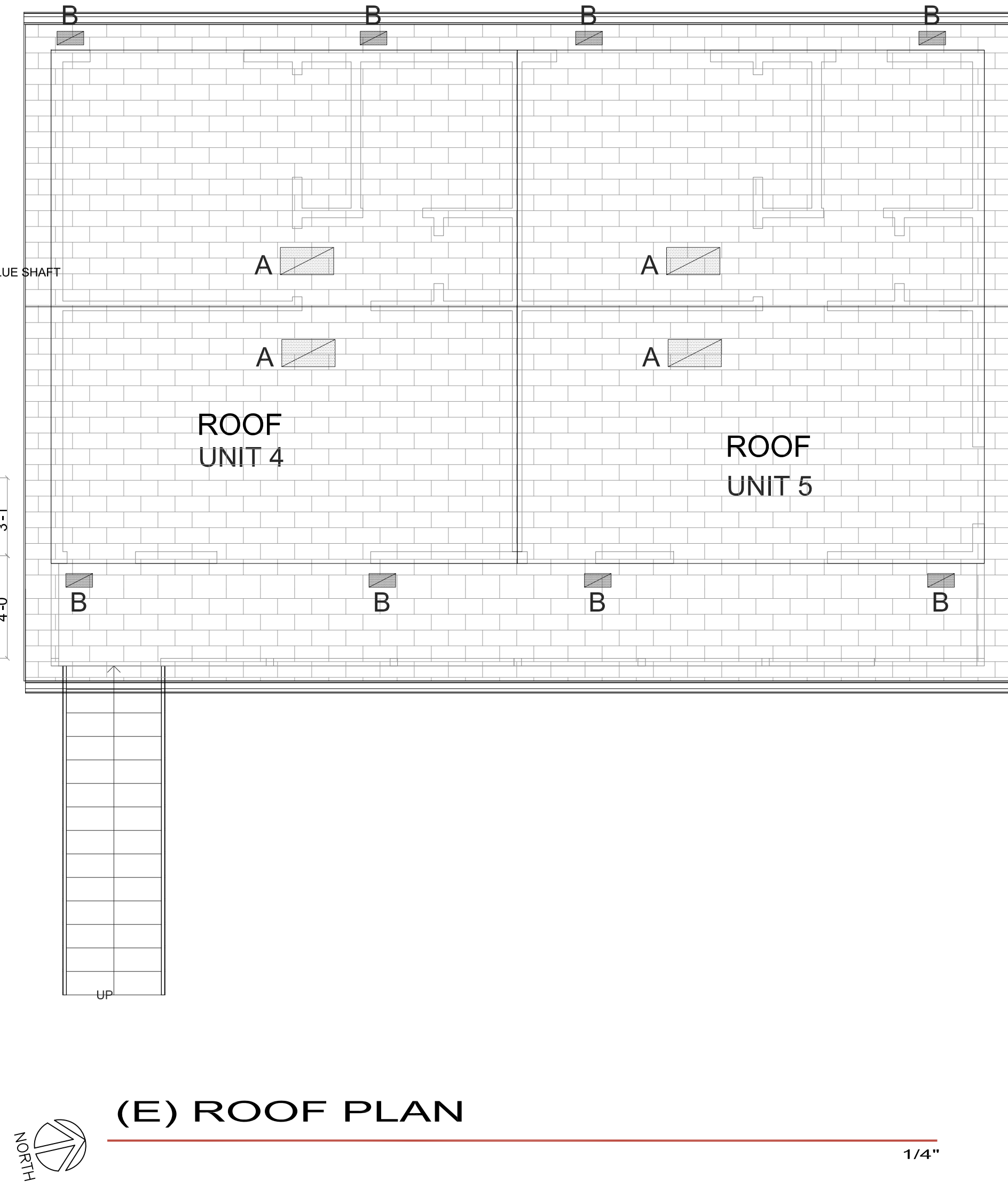
NEW 1ST FLOOR PLAN,

1/4"



NEW 2ND FLOOR PLAN

1/4"



(E) ROOF PLAN

1/4"

ATTIC VENTILATION CALCULATIONS			
ROOF UNIT -4	365 SQFT (VENTED ROOF AREA) / 150 = 2.5 SQFT OF VENT OPENING TO BE PROVIDED		
	TYPE		OPENING
	A	(2) OF 16"X10" (EYEBROW) ROOF MOUNTED (1 SQFT EACH)	2.0 SQFT
	B	(4) OF OPEN FREEZE BLOCK (0.5 SQFT EACH)	2.0 SQFT
TOTAL			4.0 SQFT
ROOF UNIT -5	365 SQFT (VENTED ROOF AREA) / 150 = 2.5 SQFT OF VENT OPENING TO BE PROVIDED		
	TYPE		OPENING
	A	(2) OF 16"X10" (EYEBROW) ROOF MOUNTED (1 SQFT EACH)	2.0 SQFT
	B	(4) OF OPEN FREEZE BLOCK (0.5 SQFT EACH)	2.0 SQFT
TOTAL			4.0 SQFT

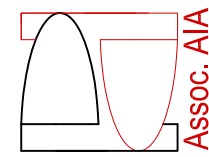
DOWNSPOUT & GUTTER NOTE

1- DOWNSPOUTS SHOULD BE FASTENED TO THE WALL BY LEADERSTRAPS OR HOOKS. ONE STRAP SHOULD BE INSTALLED AT THE TOP, ONE AT THE BOTTOM, AND ONE AT EACH INTERMEDIATE JOINT. AN ELBOW IS USED AT THE BOTTOM TO GUIDE THE WATER TO A SPLASH BLOCK, WHICH CARRIES THE WATER AWAY FROM THE FOUNDATION. THE MINIMUM LENGTH OF A SPLASH BLOCK SHOULD BE 3 FEET.

2- THE RAINWATER DOWNSPOUTS SHALL BE DISCONNECTED AND RUNOFF DIRECTED TO A LANDSCAPE AREA.

3- DOWNSPOUTS MAY BE CONNECTED TO A POP-UP DRAINAGE EMITTER IN THE LANDSCAPED AREA OR MAY DRAIN TO SPLASH BLOCKS OR COBBLESTONES THAT DIRECT WATER AWAY FROM THE BUILDING. "THRU-CURB" DRAINS ARE NOT ALLOWED.

FAHED HABAYEB
PLANNING & DESIGN
2640 SENTER CREEK CT.
SAN JOSE, CA, 95111
408 483-0302
habayeb3@aol.com



5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ CA.95062

NO. DATE ISSUE
1 9/20/2022 PC

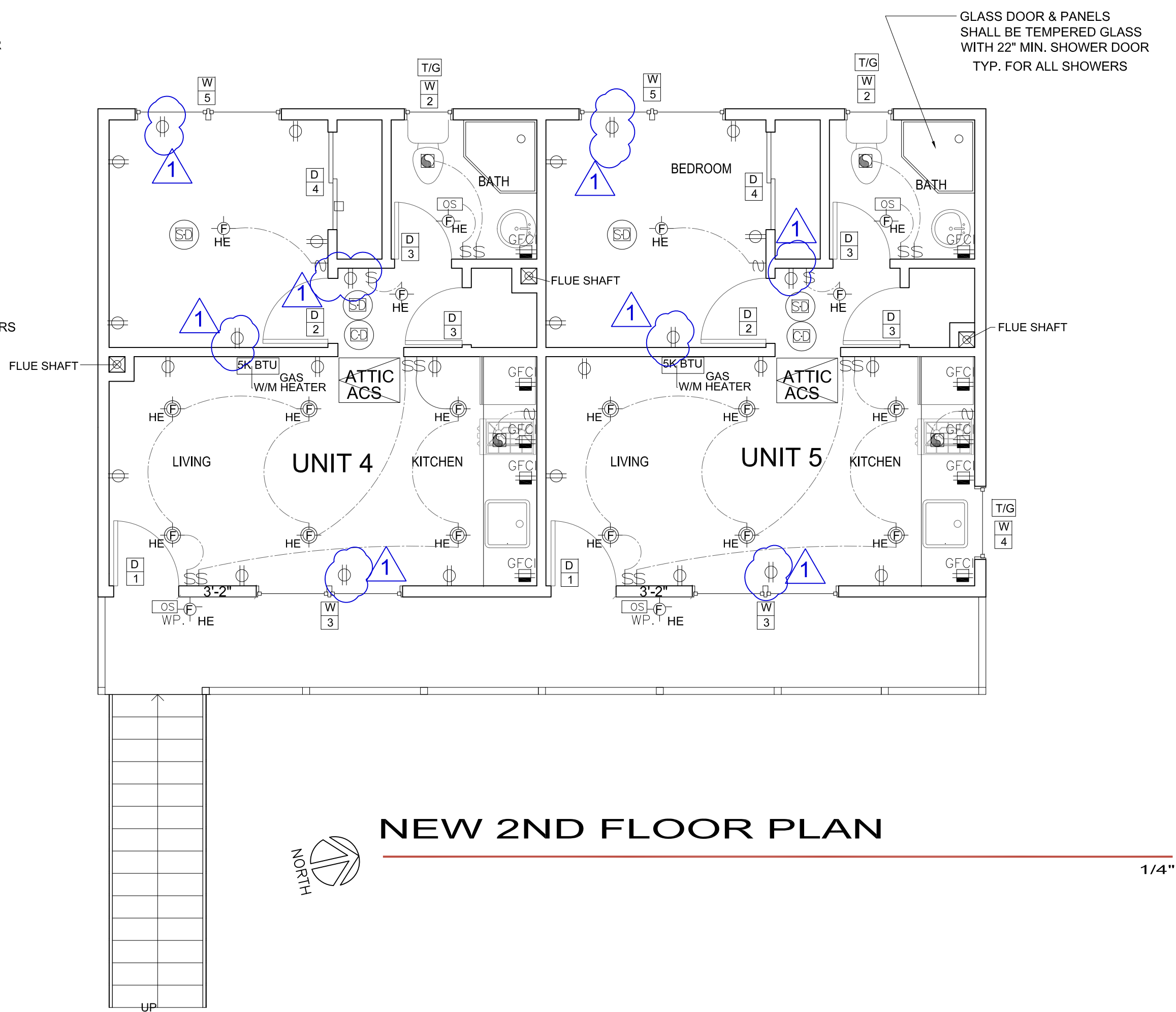
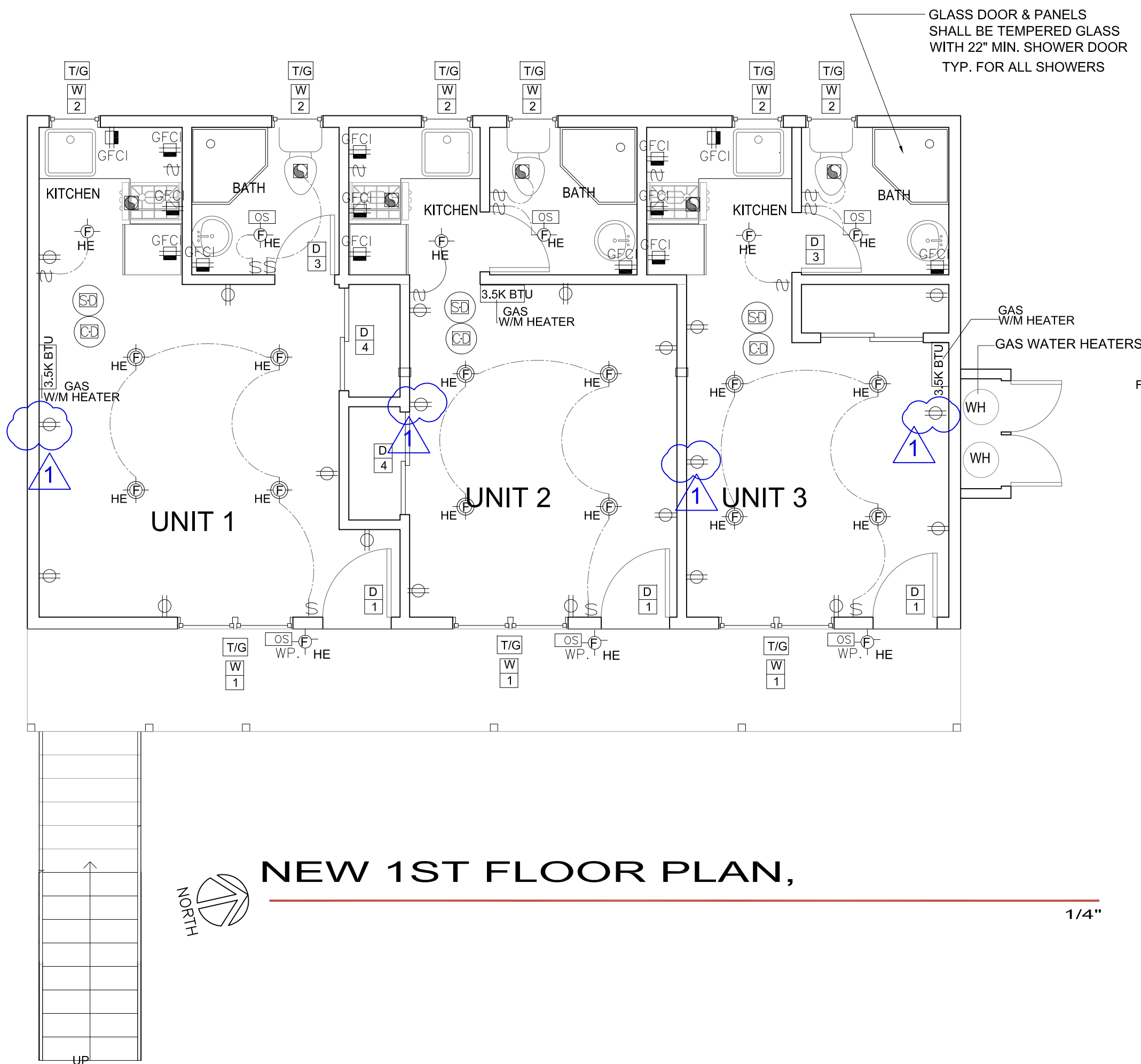
COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO. 0621
SCALE AS NOTED
DRAWN BY FH
SHEET NO.

A2



REFER TO SHEET A5 NOTES FOR OUTDOOR LIGHTING CONTROLS.

SMOKE AND CARBON MONOXIDE ALARMS NOTES:

- SMOKE ALARMS ARE REQUIRED IN ALL AREAS/ROOMS USED FOR SLEEPING, IN THE IMMEDIATE VICINITY OUTSIDE THESE AREAS/ROOMS AND AT BOTH THE TOP AND BOTTOM LANDING OF THE INTERIOR STAIRCASE. SMOKE ALARMS INSTALLED WITHIN 20 FT. OF A KITCHEN, BATHROOM, OR ROOM CONTAINING A FIREPLACE OR WOOD BURNING STOVE SHALL BE OF THE PHOTOELECTRIC TYPE.
- CARBON MONOXIDE AND SMOKE ALARM SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING. BE EQUIPPED WITH BATTERY BACK-UP AND BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS.
- FOR PLACEMENT OF SMOKE ALARMS AND CARBON MONOXIDE ALARMS IN ROOMS WITH VARIATIONS IN CEILING HEIGHT (SLOPED, PITCHED ETC.), AND PLACEMENT PROHIBITS SMOKE ALARMS WITHIN 3 FEET OF A DOOR TO A BATHROOM THAT CONTAINS A SHOWER. REFER TO THE MANUFACTURERS GUIDELINES FOR PROPER PLACEMENT.

DOOR NOTES

- DOORS SHALL A NET CLEAR OPENING WIDTH OF NOT LESS THAN 32" (FOR SWINGING DOORS, 3'-0" MINIMUM NOMINAL).
- CHANGES IN FLOOR LEVELS AND THRESHOLDS AT EXTERIOR DOORS: FOR GROUND FLOOR UNITS, CHANGES IN LEVEL SHALL NOT EXCEED 1/2 INCH AT THE PRIMARY ENTRY. A 3/4" HIGH THRESHOLD IS ALLOWED AT SECONDARY EXTERIOR DOORS. (CBC 1132A.4 & 1132A.4.1)

OPERABLE WINDOWS WHERE THE OPENINGS ARE PROVIDED WITH WINDOW FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F2090.

DOOR SCHEDULE

MARK	SIZE	TYPE	NOTES
D1	3'X7'	WOOD S/C	EXTERIOR DOOR
D2	2'-8" X 7'	WOOD S/C	INTERIOR DOOR
D3	2'-8" X 7'	WOOD H/C	INTERIOR DOOR
D4	4'X7'	WOOD S/C	INTERIOR CLOSET SLIDE DOOR

WINDOW SCHEDULE

MARK	SIZE W X H	TYPE	NOTES
W1	4'X4'-6"	VINYL / SLIDE	3' A.F.F. TEMPERED GLASS
W2	2'X4'	VINYL / SHUNG	3' A.F.F.
W3	6'X5'	VINYL / SLIDE	2' A.F.F.
W4	3'X3'	VINYL / SLIDE	4' A.F.F. TEMPERED GLASS
W5	6'X4'	VINYL / SLIDE	3' A.F.F. EGRESS

U-FACTOR = 0.2
SHGC VALUES = 0.23

EXTERIOR WINDOWS AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL COMPLY WITH ONE OF THE FOLLOWING: BE CONSTRUCTED OF MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 72406 SAFETY GLAZING OR CONSTRUCTED OF GLASS BLOCK UNITS OR HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257 OR BE TESTED TO MEET THE PERFORMANCE

UTILITY LEGEND

- SURFACE MOUNTED CEILING HIGH EFFICACY LIGHT FIXTURE.
- RECESSED HIGH EFFICACY LIGHT FIXTURE.
- HANGING HIGH EFFICACY LIGHT FIXTURE.
- RECESSED LIGHT FIXTURE WITH VAPORPROOF LENS COVER.HIGH EFFICACY
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED SCONCE LIGHT
- SURFACE MOUNTED FLUORESCENT FIXTURE / UNDER CABINET LIGHT FIXTURE.
- LOW WATTAGE LED LIGHT STRIP COUNSELED INSIDE SOFFIT
- RECESSED FRACTIONAL HP EXHAUST FAN, CONTROLLED. CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR. FOR BATHROOMS TO HAVE HUMIDISTAT CONTROLS
- RECESSED COMBINATION LIGHT / EXHAUST FAN, SWITCH CONTROLLED. CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
- RECESSED COMBINATION HEATER / EXHAUST FAN, SWITCH CONTROLLED. CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
- 120V. DUPLEX CONVENIENCE RECEPTACLE
- 240V. SINGLE CONVENIENCE RECEPTACLE
- 120V. DUPLEX CONVENIENCE RECEPTACLE, SWITCH CONTROLLED, 1/2 HOT.
- 120V. DUPLEX CONVENIENCE RECEPTACLE BELOW (INCL. INSIDE CABINET OR ABOVE AT CEILING)
- 120V. WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE.
- 120V. GROUND FAULT CIRCUIT-INTERRUPTER (G.F.C.I.) DUPLEX CONVENIENCE RECEPTACLE.
- 120V. WEATHERPROOF G.F.C.I. DUPLEX CONVENIENCE RECEPTACLE
- DEDICATED COMPUTER OUTLET
- 120V. FLOOR TYPE DUPLEX RECEPTACLE, W/COVER
- SINGLE POLE LIGHT SWITCH.
- HIGH EFFICACY LIGHT SWITCH.
- THREE - WAY LIGHT SWITCH.
- FOUR - WAY LIGHT SWITCH.
- SINGLE POLE LIGHT SWITCH W/ DIMMER CONTROL
- SINGLE POLE LIGHT SWITCH. W/ MANUAL/ MOTION OCCUPANCY SENSOR
- TELEVISION ANTENNA / CABLE JACK
- TELEPHONE JACK.
- PUSH BUTTON FOR DOOR CHIMES OR GARAGE DOOR OPENER
- DOOR CHIMES
- THERMOSTAT, VERIFY LOCATION WITH HEATING AND AC LAYOUT
- JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED
- SMOKE DETECTOR, ICBO APPROVED, CEILING MOUNTED, HARD WIRED AND W/ BATTERY BACKUP
- CEILING FAN JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED
- LIGHTED ADDRESS SIGN (VISIBLE FROM STREET) (LINE VOLTAGE) TIED TO PHOTOCELL.
- VACUUM LOCATION
- MANUAL ON, AUTOMATIC OFF VACANCY SENSOR
- FLOOR DRAIN (FD) OR AREA DRAIN (AD), AS NOTED
- ROOF DRAIN (RD)
- HOSE BIB (HB)
- HOSE BIB W/ SHUT OFF VALVE (HB/SOV)
- FUEL GAS OUTLET (FG)
- LOOSE KEY VALVE (KEY)
- WATER STUB OUT FOR ICE MAKER
- CARBON MONOXIDE ALARM HARD WIRE W/ BATTERY BACKUP
- GARAGE DOOR OPENER
- AIR SUPPLY REGISTER

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ CA.95062

NO. DATE ISSUE
1 9/20/2022 PC

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO. 0621
SCALE AS NOTED
DRAWN BY FH
SHEET NO.

A3

FAHEH HABAYEB
PLANNING & DESIGN
2640 SENTER CREEK CT.
SAN JOSE, CA. 95111
408 483-0302
habayeb3@aol.com



- GENERAL CAL GREEN NOTES:
- 1- AT THE TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF WATER, DUST OR DEBRIS, WHICH MAY ENTER THE SYSTEM PER SECTION 4.504.1.

2- PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS PER SECTION 4.504.2.2.

3- AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC AND OTHER REQUIREMENTS PER SECTION 4.504.2.3.

4- DOCUMENTATION WILL BE PROVIDED, AT THE REQUEST OF THE BUILDING DIVISION, TO VERIFY COMPLIANCE WITH VOC FINISH MATERIALS PER SECTION 4.504.2.4.

6- CARPET SYSTEM INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS PER SECTION 4.504.3.

7- WHERE RESILIENT FLOORING IS INSTALLED, AT LEAST 80% OF THE FLOOR AREA RECEIVING RESILIENT FLOORING WILL COMPLY WITH THE REQUIREMENTS PER SECTION 4.504.4.

8- HARDWOOD PLYWOOD, PARTICLE BOARD, AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR AND EXTERIOR OF THE BUILDING SHALL COMPLY WITH THE LOW FORMALDEHYDE EMISSION STANDARDS PER SECTION 4.504.5.

9- A CAPILLARY BREAK SHALL BE INSTALLED IF A SLAB ON GRADE FOUNDATION SYSTEM IS USED. THE USE OF A 4" THICK BASE OF ½" OR LARGER CLEAN AGGREGATE UNDER A 6 MIL VAPOR RETARDER WITH JOINT LAPPED NOT LESS THAN 6" WILL BE PROVIDED PER SECTION 4.505.2 AND R506.2.3.

10- BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALL AND FLOOR FRAMING SHALL NOT BE ENCLOSED WHEN THE FRAMING MEMBERS EXCEED 19% MOISTURE CONTENT. MOISTURE CONTENT SHALL BE CHECKED PRIOR TO FINISH MATERIAL BEING APPLIED PER SECTION 4.505.3.

11- HEATING AND AIR-CONDITIONING SYSTEM SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE FOLLOWING METHODS:

1. HEAT LOSS/HEAT GAIN VALUES IN ACCORDANCE WITH ANSI/ACCA 2 MANUAL J-2004 OR EQUIVALENT;

2. DUCT SYSTEMS ARE SIZED ACCORDING TO ANSI/ACCA 1, MANUAL D-2009 OR EQUIVALENT;

3. SELECT HEATING AND COOLING EQUIPMENT IN ACCORDANCE WITH ANSI/ACCA 3, MANUAL S-2004 OR EQUIVALENT.

12- HVAC SYSTEM INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS AND EQUIPMENT BY A RECOGNIZED TRAINING OR CERTIFICATION.

GENERAL NOTE

- 1- ALL GLAZING USED FOR BATH TUB AND SHOWER ENCLOSURES, PANELS AND DOORS, SHALL BE FULLY TEMPERED GLASS, LAMINATED SAFETY GLASS
- 2- BATHTUB AND SHOWER FLOORS, WALLS ABOVE BATHTUBS WITH A SHOWERHEAD, AND SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE (E.G., CERAMIC TILE OR FIBERGLASS) OVER A MOISTURE RESISTANT UNDERLAYMENT (E.G., CEMENT, FIBER CEMENT, OR GLASS MAT GYPSUM BACKER) EXTENDING TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE DRAIN INLET. WATER-RESISTANT GYPSUM BACKING BOARD SHALL NOT BE USED OVER A VAPOR RETARDER IN SHOWER OR BATHTUB COMPARTMENTS.
- 3- LANDING OUTSIDE EXTERIOR DOORS NOT MORE THAN 7-3/4 INCHES LOWER THAN THRESHOLD FOR IN-SWINGING DOOR

WINDOW AND DOOR NOTES

1. ENERGY FORM CF2R, THE INSTALLATION AND INSULATION CERTIFICATES SHALL BE POSTED ON THE JOB SITE DURING CONSTRUCTION OF THE PROJECT.
2. TEMPORARY LABELING ON NEW WINDOW AND SLIDING DOOR SHALL NOT BE REMOVED UNTIL INSPECTED BY THE ENFORCEMENT AGENCY
3. A COMPLETED CF-2R-LTG-01-E FORM MUST BE PROVIDED TO THE TOWN BUILDING INSPECTOR, PRIOR TO FINAL INSPECTION.

1

GENERAL ELECTRICAL NOTES:

- 1- ALL ELECTRICAL WORK TO COMPLY WITH LATEST TITLE 24 STANDARDS, AND 2019 CEC.
- 2- PROVIDE HIGH EFFICACY LIGHTING IN KITCHEN UP TO 50% OF THE TOTAL WATTAGE (ALL HIGH-EFFICACY AND LOW-EFFICACY LIGHTING MUST BE CONTROLLED SEPARATELY.)
- 3- A- AT LEAST ONE LIGHT IN ALL BATHROOMS IS HIGH EFFICACY.
B- ALL OTHER BATHROOM LIGHTS ARE HIGH EFFICACY LUMINARIES OR CONTROLLED BY A VACANCY SENSOR (MANUAL-ON OCCUPANCY SENSOR AND MOTION SENSOR THAT COMPLIES WITH CA ENERGY CODE 150.0(K)21, 150.0(K)2J AND 150.0(K)3A) AND SHALL NOT HAVE A CONTROL THAT ALLOWS THE LUMINARIES TO BE TURNED ON AUTOMATICALLY OR THAT HAS AN OVERRIDE ALLOWING THE LUMINARIES TO BE ALWAYS ON).
- 4- PROVIDE HIGH EFFICACY OR MANUAL-ON OCCUPANCY SENCER OR DIMMER INTERIOR ROOMS (INCLUDING ALL BEDROOMS, LIVING, DINING AND HALLWAYS (EXCEPT CLOSET LESS THAN 70 SQFT.) COMPLIES WITH CA ENERGY CODE 150.0(K)21, 150.0(K)2J AND 150.0(K)3A.
- 5- PROVIDE HIGH EFFICACY OR CONTROLLED BY MOTION SENCER + PHOTOCONTROL FOR OUTDOOR LIGHTING ATTACHED TO BUILDING. COMPLIES WITH CA ENERGY CODE 150.0(K)21, 150.0(K)2J AND 150.0(K)3A.
- 6- PROVIDE TWO SEPARATE 20 AMP CIRCUITS FOR SMALL KITCHEN APPLIANCES.
- 7- PROVIDE ONE SEPARATE 20 AMP CIRCUITS FOR BATHROOM RECEPTACLE OUTLETS.
- 8- ALL ELECTRICAL OUTLETS IN THE KITCHEN AND BATHROOM SHALL BE GFCI PROTECTED OUTLET.
- 9- ALL EXTERIOR ELECTRICAL OUTLETS SHALL BE WATER PROOF GFCI PROTECTED OUTLET.
- 10- ALL BRANCH CIRCUITS THAT SUPPLY OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOM, DINING ROOM, LIVING ROOM, BEDROOMS, KITCHEN, LAUNDRY, CLOSETS, AND HALLWAYS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER, PER CEC 210.12(A).
- 11- ALL 15 AMP AND 20 AMP DWELLING UNIT RECEPTACLE OUTLETS SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES.
- 12- ALL RECESSED LUMINARIES IN CEILING SHALL BE 'IC' RATED, ELECTRONIC BALLAST AND AIR-TIGHT
- 13- FURNACES ARE TO BE ON A DEDICATED CIRCUIT. AIR CONDITIONING UNITS/ CONDENSERS ARE ALLOWED TO BE ON THIS SAME CIRCUIT.

GENERAL MECHANICAL & PLUMBING NOTES:

- 1- ALL SHOWER (S) & TUB/SHOWER (S) SHALL BE PROVIDED WITH PRESSURE BALANCE OR THERMOSTATIC MIXING VALVE CONTROLS
- 2- ALL WATER PIPING SHALL BE METALIC
- 3- A MINIMUM 50 CFM INTERMITTENT BATHROOM EXHAUST FAN FOR EACH BATHROOM HAVING A SHOWER AND/OR TUB. ALTERNATIVELY, 20 CFM CONTINUOUS BATHROOM FANS WITHOUT INTERVENTION MAY BE INSTALLED. THESE FANS SHALL BE ENERGY STAR RATED AND WHEN NOT PART OF THE WHOLE HOUSE VENTILATION SYSTEM SHALL HAVE A HUMIDISTAT CONTROL.
- 4- EXHAUST FANS SHALL BE ENERGY STAR COMPLIANCE. TERMINATE OUTSIDE THE BUILDING. BE CONTROLLED BY HUMIDITY CONTROL CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE 50 TO 80 PERCENT

1

TABLE 4.504.2 - SEALANT VOC LIMIT	
(Less Water and Less Exempt Compounds in Grams per Liter)	
SEALANTS	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS2,3	
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS	VOC LIMIT
COATING CATEGORY	
FLAT COATINGS	50
NON-FLAT 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 COATINGS1	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.

TABLE 4.504.1 - ADHESIVE VOC LIMIT1,2	
(Less Water and Less Exempt Compounds in Grams per Liter)	
ARCHITECTURAL APPLICATIONS	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 ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT 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.

TABLE - MAXIMUM FIXTURE WATER USE	
FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

NO.	DATE	ISSUE
1	9/20/2022	PC

GENERAL NOTS

JOB NO.	0621
SCALE	AS NOTED
DRAWN BY	FH
SHEET NO.	

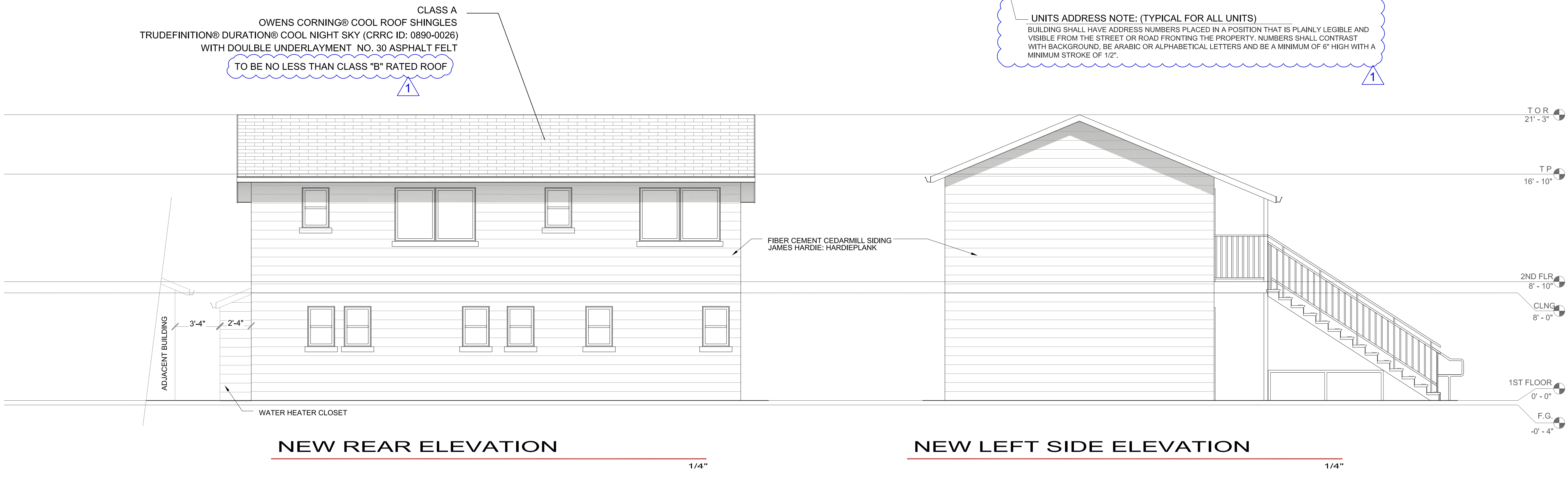
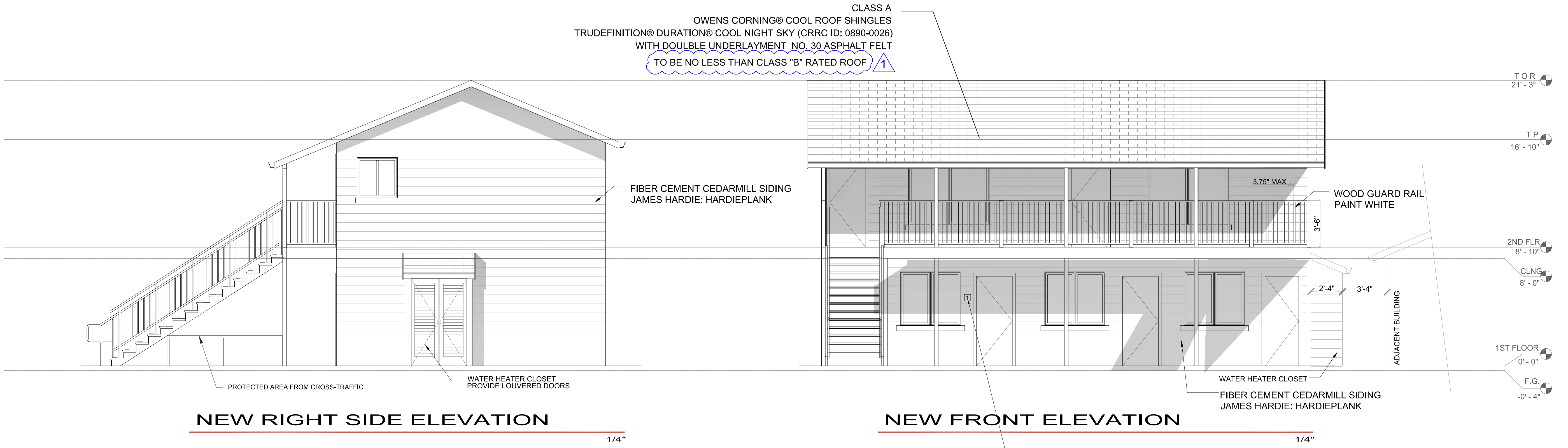
A4



9-10-2022

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ CA.95062

FAHEH HABAYEB
PLANNING & DESIGN
2640 SENTER CREEK CT.
SAN JOSE, CA. 95111
408 483-0302
habayeb3@aol.com



FAHED HABAYEB
PLANNING & DESIGN

2640 SENTER CREEK CT.
SAN JOSE, CA. 95111
408 483-0302
habayeb3@aol.com

REGISTERED PROFESSIONAL ARCHITECT
MOHAMMED S. GEMAYEL
C61578
EXP. 6/30/23
CIVIL
STATE OF CALIFORNIA
9-10-2022

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)

21661 E CLIFF DR.
SANTA CRUZ CA.95062

NO.	DATE	ISSUE
1	9/20/2022	PC

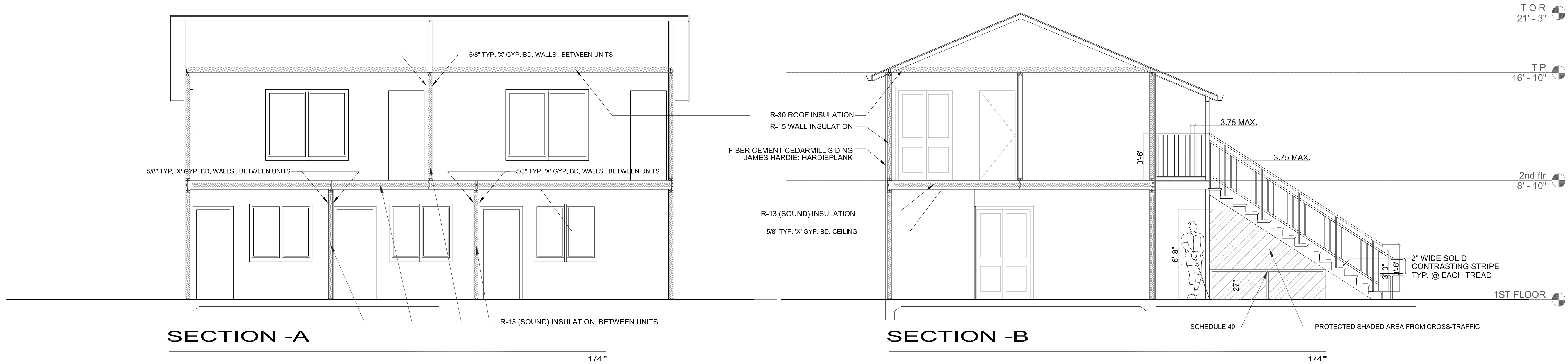
COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO.	0621
SCALE	AS NOTED
DRAWN BY	FH
SHEET NO.	



SEPARATION WALLS. WALLS SEPARATING DWELLING UNITS IN THE SAME BUILDING, WALLS SEPARATING SLEEPING UNITS IN THE SAME BUILDING AND WALLS SEPARATING DWELLING OR SLEEPING UNITS FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN THE SAME BUILDING SHALL BE CONSTRUCTED AS FIRE PARTITIONS IN ACCORDANCE WITH CBC 420.2 SECTION 708.

HORIZONTAL SEPARATION. FLOOR ASSEMBLIES SEPARATING DWELLING UNITS IN THE SAME BUILDINGS, FLOOR ASSEMBLIES SEPARATING SLEEPING UNITS IN THE SAME BUILDING AND FLOOR ASSEMBLIES SEPARATING DWELLING OR SLEEPING UNITS FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN THE SAME BUILDING SHALL BE CONSTRUCTED AS HORIZONTAL ASSEMBLIES IN ACCORDANCE WITH CBC 420.3 SECTION 711.

OPENINGS. OPENINGS IN A FIRE PARTITION SHALL BE PROTECTED IN ACCORDANCE WITH CBC 708.6 SECTION 716.

PENETRATIONS. PENETRATIONS OF FIRE PARTITIONS SHALL COMPLY WITH CBC 708.7 SECTION 714.

JOINTS. JOINTS MADE IN OR BETWEEN FIRE PARTITIONS SHALL COMPLY WITH CBC 708.8 SECTION 715.

DUCTS AND AIR TRANSFER OPENINGS. PENETRATIONS IN A FIRE PARTITION BY DUCTS AND AIR TRANSFER OPENINGS SHALL COMPLY WITH CBC 708.9 SECTION 717.

- RATED WALLS:
ASSEMBLIES SHALL COMPLY WITH THE UL U303
- RATED FLOOR /CEILING:
ASSEMBLIES SHALL COMPLY WITH THE UL DES L512
- PENETRATIONS OF FIRE PARTITIONS:
3M™ FIRE BARRIER CP 25WB+ SEALANT, ASTM E 84

UL L512

ONE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO 2 X 10 WOOD JOISTS 16" O.C. WITH 5D NAILS, 1 5/8" LONG, 0.099 SHANK, 1/4" HEADS, 6" O.C. NAILS PLACED 3/4" FROM BOARD EDGE JOINTS AND 1/2" FROM BOARD END JOINTS. WOOD JOISTS SUPPORTING 1" NOMINAL T & G WOOD SUB-FLOOR AND 1" NOMINAL WOOD FINISH FLOOR, OR 1/2" PLYWOOD FINISHED FLOOR WITH LONG EDGES T & G AND 15/32" INTERIOR PLYWOOD WITH EXTERIOR GLUE SUB-FLOOR PERPENDICULAR TO JOISTS WITH JOINTS STAGGERED.

1 X 6 HARDIEPLANK LAP SIDING
COLOR: DARK STAINED
BY: JAMES HARDIE BUILDING PRODUCTS, INC
WUIC LISTING No. 8140-2026:0001

2 LAYER GRADE "D" BLACK PAPER

PLYWOOD

STATER TRACK

26 GA. DRIP FLASHING

EXPOSED CONC.

NOTE: THE GALVANIZED WEEP SCREED TO INSTALL AT THE FOUNDATION PLATE LINE AT LEAST 6" ABOVE GRADE OR 2" ABOVE CONC. OR PAVING.

PAINTED 36" - 42" H.
WOOD RAIL W/ 2X2 PICKETS
SPACED @ MAX. OF 3.75" BETWEEN

42"

4" MAX

METAL FLASHING

GUTTER

DECK

1/4" SLOPE

FLOOR JOIST

WOOD COL.

WEEP SCREED AT 2" MINIMUM ABOVE THE DECKING.

24 GA. METAL FLASHING

DECK

INSIDE

DURADEK VINYL DECKING +
DURADEK MEMBRANE

DURADEK VINYL DECKING ESR-2151

DOOR THRESHOLD

1/4" SLOPE

FLOOR JOIST

WATER PROOFING:
SUBFLOOR WATERPROOFING MEMBRANE
3/4" PLYWOOD DECKING

1 EXTERIOR WOOD SIDING SYSTEM

NTS

2 DECK FLOOR @ GUARD RAIL

NTS

3 DECK FLOOR

NTS

3.75" MAX

1-1/2"

42" GUARD RAIL

11" 12"

11"

14"

36" HAND RAIL

42" GUARD RAIL

12"

2" WIDE SOLID CONTRASTING STRIPE
TYP. @ EACH TREAD

1" MAX.
FROM EDGE
OF TREAD

11" MIN

1"

SEE STRUCTURAL PLANS

HANDRAIL NOTE:
HANDRAILS SHALL BE CONSTRUCTED WITH NO SHARP CORNERS, AT A HEIGHT OF 34" - 38" ABOVE NOSING, EXTENDING CONTINUOUSLY FROM TOP TO A POINT DIRECTLY ABOVE THE LOWEST RISER, AND TERMINATED AT NEWEL POSTS, SAFETY TERMINALS, OR RETURN TO WALLS

11" MIN.

30" MAX

1/2" RADIUS MAX.

4" 7" MAX

2"

1-1/4" MAX

4 HANDRAIL @ STAIRS

1/2"

5 STAIRS NOSING & RISER DETAIL

NTS

WATER RESISTANT GYPSUM BACKING BOARD (I.E. GREEN BOARD) SHALL NOT BE USED IN BATH TUBS OR SHOWERS WHERE THERE WILL BE DIRECT EXPOSURE TO WATER OR SUBJECT TO CONTINUOUS HIGH HUMIDITY PER CRC SECTION R702.3.8.1. FOR GYPSUM BOARD USED AS THE BACKER OR BASE FOR CERAMIC TILES OR OTHER NON-ABSORBENT FINISH MATERIALS, PROVIDE FIBER-CEMENT, FIBER-MAT REINFORCED CEMENT, GLASS MAT GYPSUM OR FIBER-REINFORCED GYPSUM BACKERS SUCH AS WONDER-BOARD, HARDI-BACKER, DENS SHIELD OR EQUIVALENT.

WALL TILE

4" BACKSLASH

15" 15"

30" MIN. CLEAR

1.28 GAL. W.C.

BASE TILE

VANITY

MIRROR

PROVIDE WATER RESISTANT MEMBRANE UNDER FLOOR TILE

6 BATHROOM

NTS

**5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ CA.95062**

NO.	DATE	ISSUE
1	9/20/2022	PC

**COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT**
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	0621
SCALE	AS NOTED
DRAWN BY	FH
SHEET NO.	

A6

SHEAR WALL SCHEDULE

MARK	SHEATING	NO. OF SIDES	EDGE NAIL	FIELD NAIL	PLATE NAIL (6" LONG)	SHEAR CLIP	MUDSILL ANCHORS		ALLOWABLE SHEAR (plf)	REMARKS SEE SHEAR WALL NOTES
							2X MUDSILL	3X MUDSILL		
	1/2" OSB OR PLY'D	Single	8d @ 6"	8d @ 12"	1/4" Screws @ 0'-8"	A35 @ 2'-0"	5/8" x 10 @ 4'-0"	5/8" x 12 @ 4'-0"	260	1
	1/2" OSB OR PLY'D	Single	8d @ 4"	8d @ 12"	1/4" Screws @ 0'-6"	A35 @ 1'-4"	5/8" x 10 @ 4'-0"	5/8" x 12 @ 4'-0"	350	1
	1/2" OSB OR PLY'D	Single	8d @ 3"	8d @ 12"	1/4" Screws @ 0'-4"	A35 @ 1'-4"	5/8" x 10 @ 2'-8"	5/8" x 12 @ 2'-8"	490	1,2
	1/2" OSB OR PLY'D	Single	8d @ 2"	8d @ 12"	1/4" Screws @ 0'-4"	A35 @ 1'-0"	5/8" x 10 @ 1'-4"	5/8" x 12 @ 1'-4"	640	1,2
	1/2" STRUCT I	Single	10d @ 2"	10d @ 12"	1/4" Screws @ 0'-8"	A35 @ 0'-8"	5/8" x 10 @ 1'-4"	5/8" x 12 @ 1'-4"	870	1,2
	1/2" OSB OR PLY'D EACH SIDE	Double	8d @ 3"	8d @ 12"	3/8" Screws @ 0'-3"	A35 @ 0'-8" (OR TWO SIDES @ 16")	5/8" x 10 @ 1'-4"	5/8" x 12 @ 1'-4"	980	1,2
	1/2" OSB OR PLY'D EACH SIDE	Double	8d @ 2"	8d @ 12"	3/8" Screws @ 0'-3"	A35 @ 0'-5" (OR TWO SIDES @ 10")	5/8" x 10 @ 1'-0"	5/8" x 12 @ 1'-0"	1280	1,2
	1/2" STRUCT I EACH SIDE	Double	10d @ 2"	10d @ 12"	1/4"SDS SCREWS@0'-3"	A35 @ 0'-4" (OR TWO SIDES @ 8")	5/8" x 10 @ 0'-10"	5/8" x 12 @ 1'-0"	1740	1,2

HOLD-DOWN SCHEDULE

MARK	FASTENRES	MINIMUM WOOD MEMBER THICKNESS	ANCHOR BOLT	EPOXY INSTALLED ANCHORS	CAPACITY (lbs)
HDU2	(6)- SDS1/4x2 1/2"	2-2X4 / 4X4	5/8" (SB5/8X24)	5/8" X 12" EMBED	3075
HDU4	(10)- SDS1/4x2 1/2"	4X4	5/8" (SB5/8X24)	5/8" X 12" EMBED	4565
HDU5	(14)- SDS1/4x2 1/2"	4X4	5/8" (SB5/8X24)	5/8" X 12" EMBED	5645
HDU8-L	(20)- SDS1/4x2 1/2"	4X4	7/8" (SB7/8X24)	7/8" X 14" EMBED	5980
HDU8-H	(20)- SDS1/4x2 1/2"	4X6 OR LARGER	7/8" (SB7/8X24)	7/8" X 14" EMBED	7870
HDU11-L	(30)- SDS1/4x2 1/2"	4X6 OR LARGER	1" (SB1X30)	1" X 18" EMBED	9535
HDU11-H	(30)- SDS1/4x2 1/2"	4X8 OR LARGER	1" (SB1X30)	1" X 18" EMBED	11175
HDU14	(36)- SDS1/4x2 1/2"	4X8 OR LARGER	1" (SB1X30)	1-1/8" X 18" EMBED	14445

HOLD-DOWN STRAP SCHEDULE

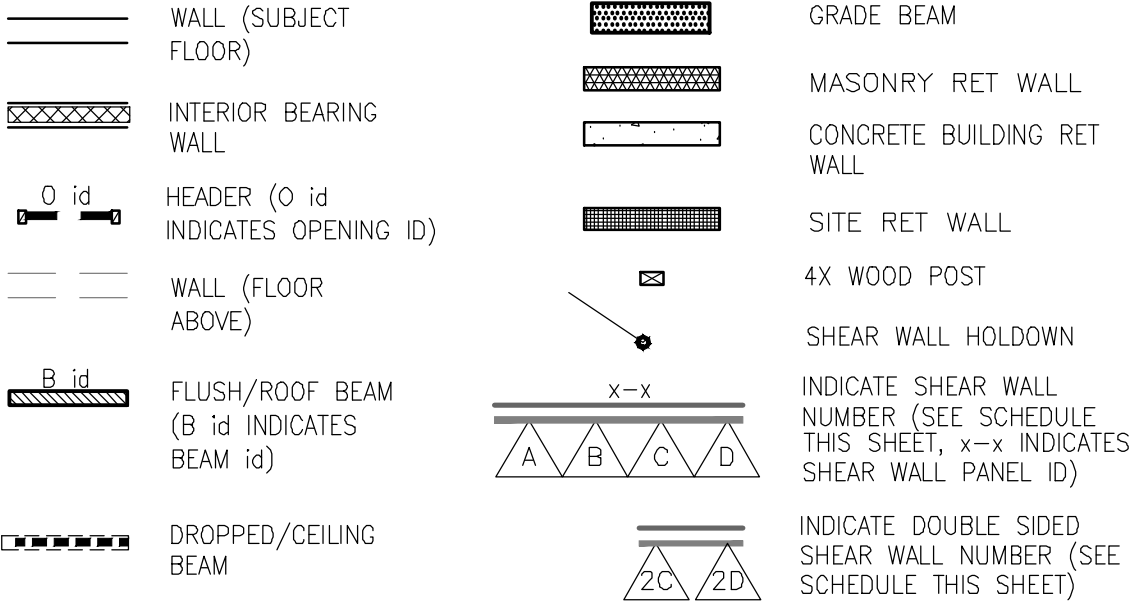
MARK	FASTENRES	MINIMUM WOOD MEMBER THICKNESS	CLEAR SPAN	CAPACITY (lbs)	REMARKS
MST37	20-16d	(2) 2 x 4 OR 4X4	18"	2465	
MST48	32-16d	(2) 2 x 4 OR 4X4	18"	3695	
MST60	46-16d	(2) 2 x 4 OR 4X4	18"	4830	
CMST14	64-16d	4X4	18"	6630	6FT LONG
CMST12	74-16d	4X6	18"	9215	6FT LONG

SHEAR WALL NOTES

1. WALL SHALL BE FRAMED WITH STUDS AT 16" O.C. OR PANELS ARE APPLIED WITH LONG DIMENSION ACROSS STUDS.
2. 3-INCH NOMINAL MEMBER OR TWO 2-INCH NOMINAL MEMBERS FASTENED IN ACCORDANCE WITH SECTION 2306.1 TO TRANSFER THE DESIGN SHEAR VALUE BETWEEN FRAMING MEMBERS. WOOD STRUCTURAL PANEL JOINT AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
3. ALL HARDWARE SHALL BE USP STRUCTURAL CONNECTORS OR SIMPSON STRONG TIE U.O.N.
4. ALL EXTERIOR WALLS SHALL BE SHEATHED WITH 3/8" PLYWOOD WITH 8d AT 6" O.C. EDGES AND 12" O.C. THE FIELD UNLESS OTHERWISE NOTED IN THE SHEAR WALL SCHEDULE.
5. WHERE 3X ADJOINING STUDS ARE REQUIRED AND THERE ARE EXISTING 2X STUDS, DOUBLE EXISTING STUDS AND STITCH NAIL WITH 16d SPACED AT 2 1/2" o.c.

DESIGN LOADS		
LOAD TYPE	PARAMETERS	VALUE UNIT
LIVE LOADS:	UNINHABITABLE ATTICS WITHOUT STORAGE	10 PSF
	UNINHABITABLE ATTICS WITH LIMITED STORAGE	20 PSF
	DECKS AND BALCONIES	60 PSF
	ALL OTHER AREAS	40 PSF
	ROOF LIVE LOADS:	20 PSF
WIND DESIGN:	WIND VELOCITY	110 MPH
	WIND EXPOSURE CATEGORY	B
	IMPORTANCE FACTOR	1.00
SEISMIC DESIGN:	SS	D
	S1	D
	SOIL CLASS	D
	RISK CATEGORY	II
	IMPORTANCE FACTOR	1.00
	SEISMIC CATEGORY	
	RESPONSE MODIFICATION FACTOR (LIGHT FRAME)	6.50
	OVER-STRENGTH COEFFICIENT (OMEGA)	3.00
	ALLOWABLE STRESS BASE SHEAR	- * W

LEGEND:



GENERAL NOTES:

GENERAL

1. ALL WORK SHALL CONFORM TO 2019 CBC AND LOCAL ORDINANCES.
2. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND WHAT IS SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.
3. ANY OMISSIONS OR CONFLICTS BETWEEN THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE ANY RELATED WORK IS STARTED.
4. SHOP DRAWINGS REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION, AND ALLOW REASONABLE TIME FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING THE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES. ANY DEVIATIONS MUST BE APPROVED PRIOR TO ERECTION.
6. MECHANICAL EQUIPMENT MUST BE FIRMLY ATTACHED TO THE STRUCTURE. ALL MECHANICAL EQUIPMENT INTENDED TO BE SUPPORTED ON, OR FROM THE STRUCTURE, UNLESS INDICATED WITHIN STRUCTURAL DRAWINGS, SHALL BE SUBMITTED TO THE ARCHITECT FOR ENGINEER'S APPROVAL PRIOR TO INSTALLATION.
7. ALL CONDITIONS NOT CLEARLY SHOWN OR DETAILED SHALL BE OF THE SAME TYPE AND CHARACTER AS THOSE SHOWN FOR SIMILAR CONDITIONS.

FOUNDATION

FOUNDATION DESIGN BASED ON 1500PSF BEARING CAPACITY (CBC TABLE R401.4.1)

CONCRETE

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS
2. CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150#/CF). AGGREGATE SHALL CONFORM TO ASTM C33, U.O.N.
3. CEMENT SHALL CONFORM TO ASTM C150, TYPE 1 OR 2.
4. PLACEMENT OF CONCRETE SHALL BE IN CONFORMANCE WITH ACI 301.
5. CONCRETE SHALL BE MACHINE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C-94. SUBMIT MIX DESIGN TO THE ENGINEER FOR APPROVAL PRIOR TO PLACING CONCRETE.
6. PROVIDE MINIMUM CLEAR COVER OF CONCRETE OVER REINFORCING AS FOLLOWS:
A) AGAINST EARTH - 3 INCHES
B) EXPOSED TO EARTH BUT POURED AGAINST FORM #3, #4 AND #5 REBARS 1.5", #6 AND LARGER = 2"
C) PROTECTED BY CONFORM FORM AND WATERPROOFING - 1 INCHES

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A615 GRADE 60 FOR # 5 AND LARGER BARS AND GRADE 40 FOR # 3 AND # 4.
2. ALL REINFORCING STEEL SHALL BE LAPPED AS NOTED BELOW. #4: 24" FOR BOTTOM BARS AND 28" FOR TOP BARS #5: 30" FOR BOTTOM BARS AND 35" FOR TOP BARS. #6: 40" FOR BOTTOM BARS AND 46" FOR TOP BARS AT SPLICES UNLESS OTHERWISE NOTED IN PLANS. SPLICES SHALL BE LOCATED AS DETAILED IN THE PLANS. STAGGER ALL LAPS AND SPLICES.

3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A82 AND A185.

4. ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE BEFORE CONCRETE IS PLACED, USE CUT THREAD ANCHOR BOLTS ONLY.

WOOD FRAME CONSTRUCTION

1. GENERAL WOOD FRAMING: WOOD FRAMING THROUGHOUT THE BUILDING SHALL BE CONSTRUCTED IN ACCORDANCE WITH 2019 CALIFORNIA BUILDING CODE AND THE STANDARD PRACTICES RECOMMENDED BY AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND WCLA GRADING. BOLTS IN WOOD FRAMING SHALL BE STANDARD MACHINE BOLTS WITH STANDARD MALLEABLE IRON WASHERS.
2. JOIST HANGER AND MISCELLANEOUS CONNECTORS: MEMBERS NOT RESTING ON, OR FRAMED OVER THEIR SUPPORT SHALL BE SUPPORTED BY MEANS OF "SIMPSON STRONG-TIE" JOIST HANGERS. HANGERS SHALL COMPLY WITH AND BE NAILED IN ACCORDANCE WITH MANUFACTURER'S ESR APPROVALS.

3. WOOD IN DIRECT CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED. HOT DIPPED GALVANIZED CONNECTORS AND FASTENERS SHALL BE USED IN ALL PRESSURE TREATED WOOD CONNECTIONS.

4. UNLESS OTHERWISE NOTES ON DRAWINGS OR IN SPECIFICATIONS FRAMING MEMBERS SHALL HAVE THE FOLLOWING GRADING:
A) ALL BEAMS, COLUMNS, POSTS AND CANTILEVER JOISTS AT BALCONIES: DOUGLAS FIR, GRADE MARK - NO. 1.
B) FRAMING: JOISTS, STUDS, PLATES, RAFTERS: DOUGLAS FIR - NO. 2.

(TYPICAL) WALL FRAMING

MAXIMUM ALLOWABLE PLATE HEIGHT*							
LOCATION	STUDS	EXTERIOR WALLS			INTERIOR BEARING		
		12"	16"	24"	12"	16"	24"
WALLS SUPPORTING ONE STORY (ROOF)**	2X4	10'	9'	8'	12'	10'	9'
	2X6	14'	12'	9'	14'	12'	10'
WALLS SUPPORTING TWO-STORY (ROOF+1 FLR)**	2X4	8'	8'	8'	10'	9'	8'
	2X6	10'	9'	8'	12'	10'	9'
WALLS SUPPORTING THREE-STORY (ROOF + 2 FLR)**	2X4	-	-	-	9'	8'	-
	2X6	10'	9'	8'	10'	9'	8'

- * LISTED HEIGHTS ARE DISTANCE BETWEEN POINTS OF LATERAL SUPPORT PREPENDICULAR TO THE PLANE OF THE WALL. INCREASES IN UNSUPPORTED HEIGHTS ARE PERMITTED WHERE JUSTIFIED BY ANALYSIS.
- ** MAXIMUM SUPPORTED SPAN FOR ROOF IS 35FT AND FOR FLOOR 24FT.
- ***STUD GRADE SHALL BE DOUGLAS FIR LARCH #2

SPECIAL INSPECTIONS (EPOXY):

- A. PROVIDE SPECIAL INSPECTION FOR EPOXY INSTALLED ANCHOR BOLTS FOR SHEAR WALL HOLD-DOWNS

STRUCTURAL OBSERVATIONS:

- A. FOUNDATION REBAR REINFORCEMENT AND EMBEDDED SHEAR WALL ANCHORS
- B. INSPECTION OF SHEAR WALLS TYPES C, D, 2C AND 2D INCLUDING NAILING, MUDSILL ANCHORS AND HOLDOWNS

5. PLYWOOD SHEATHING: SHALL BE DFPA CDX OR EQUAL UNLESS OTHERWISE NOTED ON DRAWINGS; SOFTWOOD PLYWOOD USED. STRUCTURALLY SHALL CONFORM TO PRODUCT STANDARDS PS 1-83 AND SHALL BEAR THE DFPA GRADE - TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION. ROOF SHEATHING SHALL BE 1/2 INCHES THICK (32/16). FLOOR SHEATHING SHALL BE 3/4 INCHES THICK (48/24), TONGUE AND GROOVED AND SHALL BE GLUED AND NAILED. WALL SHEATHING SHALL BE A MIN. DF 3/8 INCHES THICK, UN.G.
6. LUMBER SHALL HAVE A MOISTURE CONTENT NOT EXCEEDING 19 PERCENT AT TIME OF CONSTRUCTION OR FABRICATION
7. FRAMING CONTRACTOR SHALL PROTECT HIS WORK FROM ANY DAMAGES DUE TO WEATHER CONDITIONS AT TIME OF CONSTRUCTION.
8. WOOD JOISTS SHALL BEAR ON THE FULL WIDTH OF SUPPORTING MEMBERS

PARALLEL STRAND LUMBER (PSL) BEAMS:

ALL PARALLEL STRAND LUMBER BEAMS SHALL BE TRUSS JOIST MACMILLAN PARALLAM (PSL) SHALL COMPLY WITH NES REPORT NO. NER-481
Fb = 2900 PSI Fc = 2900 PSI Fv = 290 PSI E = 2000 KSI
ALL EXPOSED PSL BEAMS SHALL BE WOLMANIZED (OR EQUIVALENT FORM OF PRESSURE TREATMENT)

VERSA LAM:

VERSA LAM 3100 (CAN BE USED TO REPLACE PARALLAM PSL 2.0E)
Fb = 3100 PSI Fc = 3100 PSI Fv = 285 PSI E = 2000 KSI

LAMINATED VENEER LUMBER:

LAMINATED VANEER LUMBER (LVL) SHALL BE BOISE CASCADE VERSALAM 3100 (ABOVE) OR APPROVED EQUAL

NAIL SCHEDULE

1. WOOD MEMBERS SHALL BE CONNECTED WITH NAILING INDICATED IN 2019 CBC TABLE 2304.10.1 UNLESS GREATER SIZES AND NUMBER OF NAILS ARE SHOWN OR NOTED ON DRAWINGS; NAILS EXPOSED TO WEATHER SHALL BE GALVANIZED; NAILS SHALL BE COMMON WIRE NAILS; HOLES FOR NAILS SHALL BE PROVIDED WHERE THE WOOD MEMBERS TEND TO SPLIT; SPLIT WOOD MEMBERS SHALL BE REPLACED AND REMOVED FROM JOB PROMPTLY. SHORT PLYWOOD NAILS FOR EQUIVALENT SHEAR VALUE MAY BE USED. SEE PLANS FOR NAIL SPACING. ROOF SHEATHING 8d AT 6 INCHES O.C. AT SUPPORTED EDGES. 8d AT 12 INCHES O.C. INTERMEDIATE SUPPORTS. FLOOR SHEATHING 8d AT 6 INCHES O.C. AT BOUNDARIES AND PANEL EDGES AND 8d AT 10 INCHES O.C. AT INTERMEDIATE SUPPORTS. PLYWOOD WALL SHEATHING SHALL BE NAILED PER SHEAR WALL SCHEDULE AT SHEAR WALLS, AND AT A MINIMUM OF 8d AT 6 INCHES O.C. ALL OTHER EDGES.
2. FOR PRESSURE TREATED LUMBER USE HOT-DIPPED GALVANIZED OR STAINLESS STEEL.



CIVIL STRUCTURAL PLANING DEVELOPMENT

1. This sheet is part of a set and is not to be used alone.
2. This sheet is not to be used for construction unless the architect's and/or engineer's stamp and signature appear on drawings and the status box indicates drawings have been released for construction.
3. These plans and specifications are instruments of service, are owned by engineer or architect and are for use on this project only. Reproduction and/or distribution without the prior written consent of engineer or architect is forbidden.
4. Copyright: M.S. Gendy also GPM Engineers, 2022

DRAWING HISTORY	DATE
REVISION HISTORY	
	-
	-
	-
	-
	-

PROJECT

RENOVATION OF 5 UNIT APARTMENT BUILDING

AT

21661 E CLIFF DR.
SANATA CRUZ



4-10-2022

GENERAL NOTES

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.
BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

Drawn by: EH

Drawing Number

Checked by: MG

Project Number 22-212 SHEET 1 OF 5

S-1

1. This sheet is part of a set and is not to be used alone.
2. This sheet is not to be used for construction unless the architect's and/or engineer's stamp and signature appear on drawings and the notes and indicated drawings have been released for construction.
3. These plans and prints (herein), as instruments of service, are issued by engineer or architect and are for use only on the project only. Reproduction (copying, distribution) without the prior written consent of engineer or architect is forbidden.
4. Copyright M.S. Genidy also GPM Engineers, 2022

DRAWING HISTORY	DATE
REVISION HISTORY	

PROJECT

RENOVATION OF 5 UNIT APARTMENT BUILDING

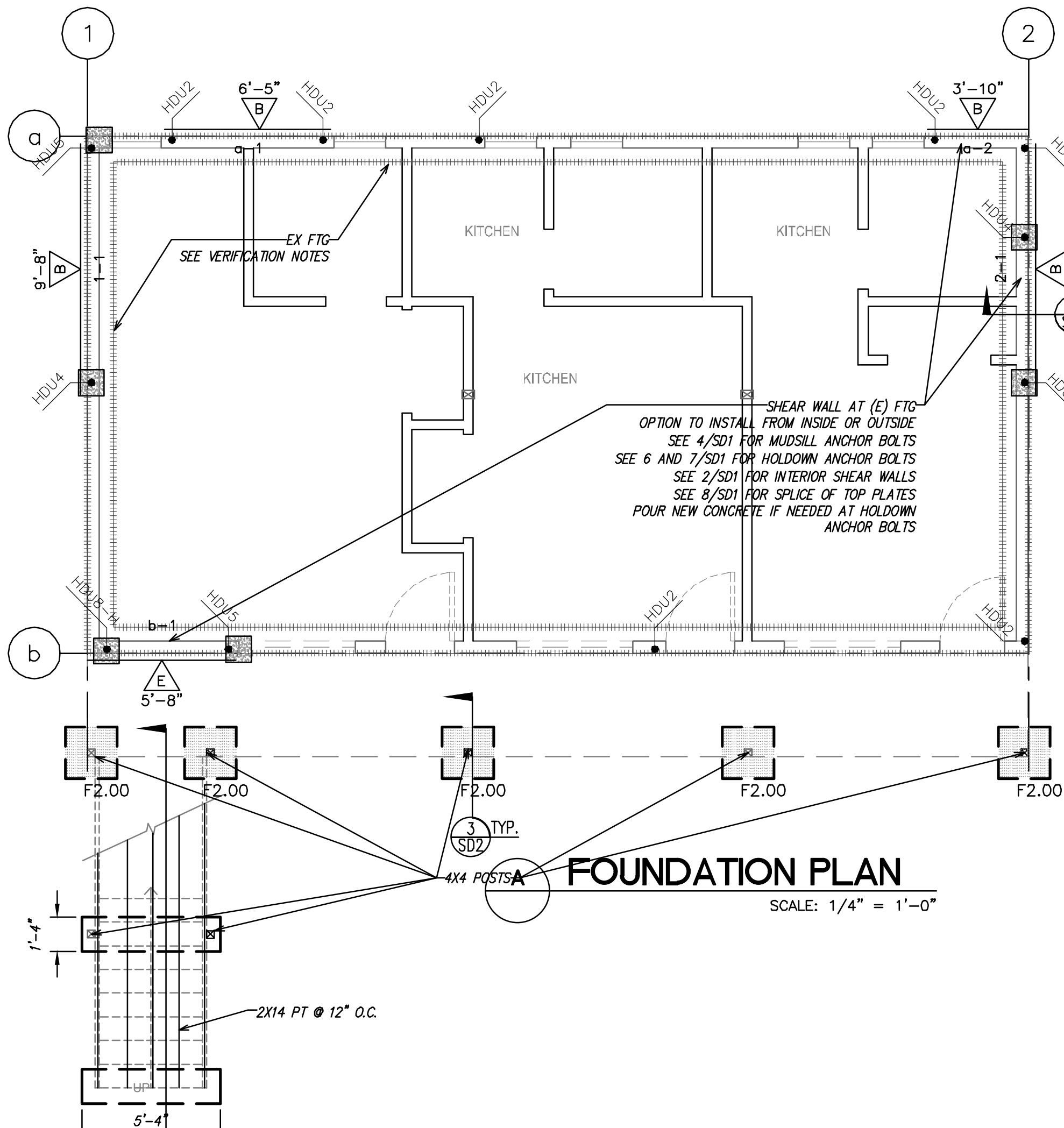
AT

21661 E CLIFF DR.
SANATA CRUZ



4-10-2022

FOUNDATION AND FRAMING PLAN



NEW FOUNDATION NOTES:

- SPREAD FOOTINGS SHALL BE 16" WIDE UNLESS OTHERWISE NOTED ON PLAN
- FOOTINGS SHALL BE 18" BELOW ADJACENT GRADE (MINIMUM).
- ALL HOLDOWNS ANCHORS SHALL BE TIED IN PLACE PRIOR TO CALLING FOR A FOUNDATION INSPECTION.
- ALL WOOD IN CONTACT W/ CONCRETE OR EXPOSED WOOD SHALL BE P.T. USE ONLY HOT DIPPED GALVANIZED CONNECTORS, BOLTS AND FASTENERS.

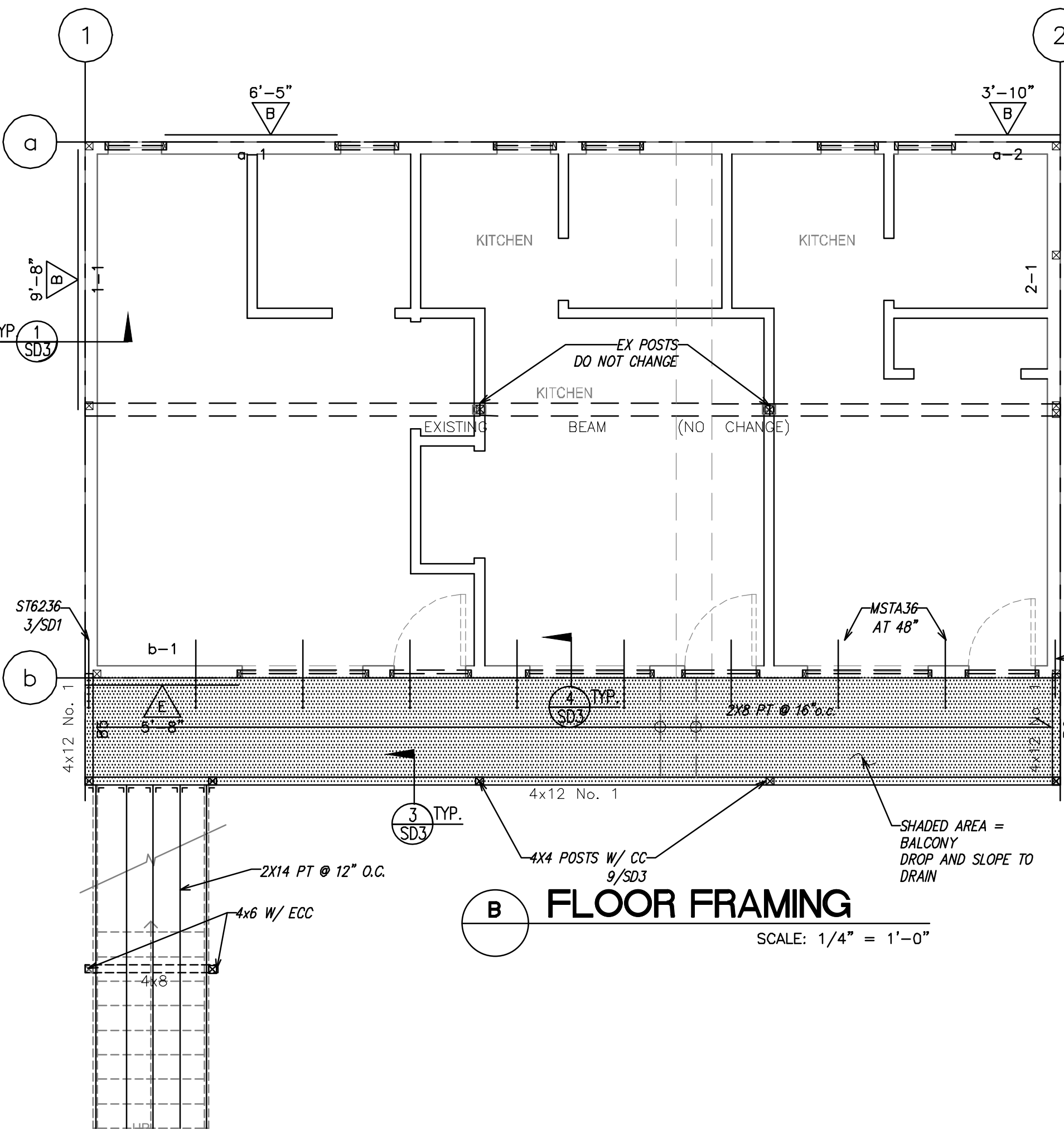
FOOTING SCHEDULE

FOOTING	DIMENSIONS (MINIMUM)			REBARS
	LENGTH	WIDTH	THICKNESS MIN. *	
F1.50	1'-6"	1'-6"	SEE DET.	2-#4 EA WAY
F2.00	2'-0"	2'-0"	SEE DET.	3-#4 EA WAY
F2.50	2'-6"	2'-6"	SEE DET.	3-#4 EA WAY
F3.00	3'-0"	3'-0"	SEE DET.	3-#4 EA WAY
F3.50	3'-6"	3'-6"	SEE DET.	4-#4 EA WAY
F4.00	4'-0"	4'-0"	SEE DET.	4-#4 EA WAY

* DEEPEN FOOTING AS REQUIRED AT HOLDOWN BOLTS

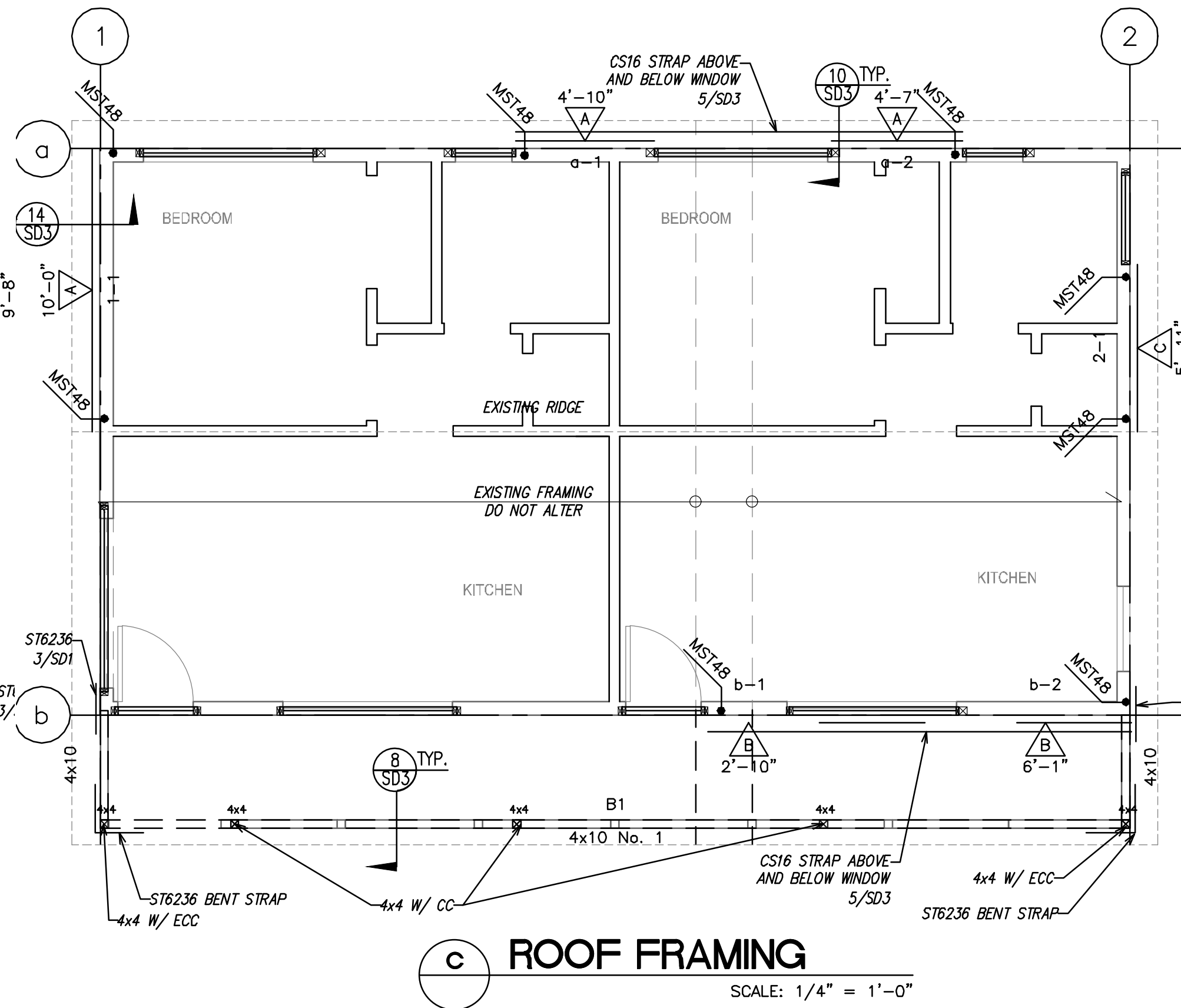
WALL FRAMING NOTES

- SEE SCHEDULE ON SHEET S1 FOR STUD SIZES AND SPACING BASED ON WALL HEIGHT AND LOCATION UNLESS OTHERWISE SHOWN ON PLAN
- USE BALLOON FRAMED WALLS AT:
 - A- VAULTED CEILINGS
 - B- BESIDE STAIR OPENINGS
 - C- BESIDE FLOOR OPENINGS ABUTTING EXTERIOR WALLS
 - D- WHEN CALLED ON PLANS
- SPLICE TOP PLATES BETWEEN NEW AND EXISTING TOP PLATES (WHERE OCCURS), AT CUTS FOR PLUMBING PIPES, AND LOCATIONS WHERE TOP PLATES ARE INTERRUPTED BY DROPPED BEAMS OR CONTINUOUS POSTS.



FLOOR FRAMING NOTES:

- FLOOR SHEATHING: 3/4" CDX T&G PLYWOOD
- NAILING: BOUNDARY = 10d @ 6" O.C.
FIELD = 10d @ 10" O.C.
(STAGGER PANEL JOINTS, GLUE AND NAIL)
(USE 16d NAILING IF 1 1/8" PLY'D IS USED)
- PROVIDE BLOCKING AT SPANS GREATER THAN 10 FEET.
- PROVIDE 2 (TWO) FLOOR JOISTS UNDER WALLS PARALLEL TO JOISTS.
- PROVIDE SOLID BLOCKING UNDER WALLS PERPENDICULAR TO JOISTS.
- ALL HEADERS SHALL BE 4x12 OR 6x10 UNLESS OTHERWISE NOTED.
- ALL POSTS SUPPORTING BEAMS WHICH FALL BELOW THE TOP PLATE SHALL HAVE A 'CC' TYPE COLUMN CAP.
- ALL EXPOSED WOOD SHALL BE P.T. WITH HOT DIPPED GALVANIZED CONNECTORS, BOLTS AND FASTENERS.
- EDGE NAIL PLY'D AT ALL FLOOR BEAMS
- POSTS SUPPORTING BEAMS, ROOF GIRDERS AND SHEAR WALL HOLDOWNS TO BE EXTENDED DOWN TO THE FOUNDATIONS OR SUPPORTED BY FLOOR BEAMS.
- ALL POSTS SHALL BE 4X POST AT ALL FLOOR BEAMS U.O.N. ON PLANS



ROOF FRAMING NOTES

1. ROOF SHEATHING: 1/2" CDX PLYWOOD
NAILING: BOUNDARY = 8d @ 6" O/C.
FIELD = 8d @ 12" O/C.
PANEL INDEX: 32/16
2. ALL HEADERS SHALL BE 4x12 OR 6x10 UNLESS OTHERWISE NOTED.
3. USE ST6236 STRAP AT ALL BEAM TO TOP PLATE CONNECTION WHERE THE TOP PLATE IS DISCONTINUOUS.
4. ALL BEAMS RESTING ON THE TOP PLATE SHALL BE ATTACHED TO THE TOP PLATE WITH ONE A35 FRAMING CLIP EACH SIDE.
5. SEE DET. 2/SD1 FOR INTERIOR SHEAR WALL E.N. AT FLOOR AND ROOF
6. INSTALL DOUBLE STUDS OR 4X POST AT ALL CEILING BEAMS U.O.N. ON PLANS
7. POSTS SUPPORTING BEAMS AND SHEAR WALL HOLDOWNS TO BE EXTENDED DOWN TO THE FOUNDATIONS OR SUPPORTED BY FLOOR BEAMS.
8. RAFTER AND CEILING JOIST SPANS SHALL NOT EXCEED THOSE SHOWN ON TABLES ON THESE SHEET

SEE CEILING FRAMING TABLE FOR SIZE AND SPACING OPTIONS FOR CEILING JOISTS TO COVER SPAN WHERE REQUIRED

CEILING FRAMING SPAN TABLE			
JOIST SIZE	SPAN AT 12" O.C.	SPAN AT 16" O.C.	SPAN AT 24" O.C.
2x4	12'-5"	11'-3"	9'-10"
2x6	19'-6"	17'-8"	15'-0"
2x8	25'-8"	23'-4"	19'-1"
2x10	26'-0"	26'-0"	23'-3"

* SELECT JOIST SPACING TO MATCH RAFTERS
** USE ONLY IF NO JOIST SIZE IS CALLED OUT ON ROOF FRAMING PLAN.
*** BASED ON CBC TABLE 2308.7.1(1) WITH DL=5PSF AND LL=10PSF

RAFTER FRAMING SPAN TABLE*	
RAFTER SIZE	SPAN AT 24" O.C.
2x4	6'-11"
2x6	10'-2"
2x8	12'-10"
2x10	15'-8"
2x12	18'-3"

* USE ONLY IF NO RAFTER SIZE IS CALLED OUT ON ROOF FRAMING PLAN.

**COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT**
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

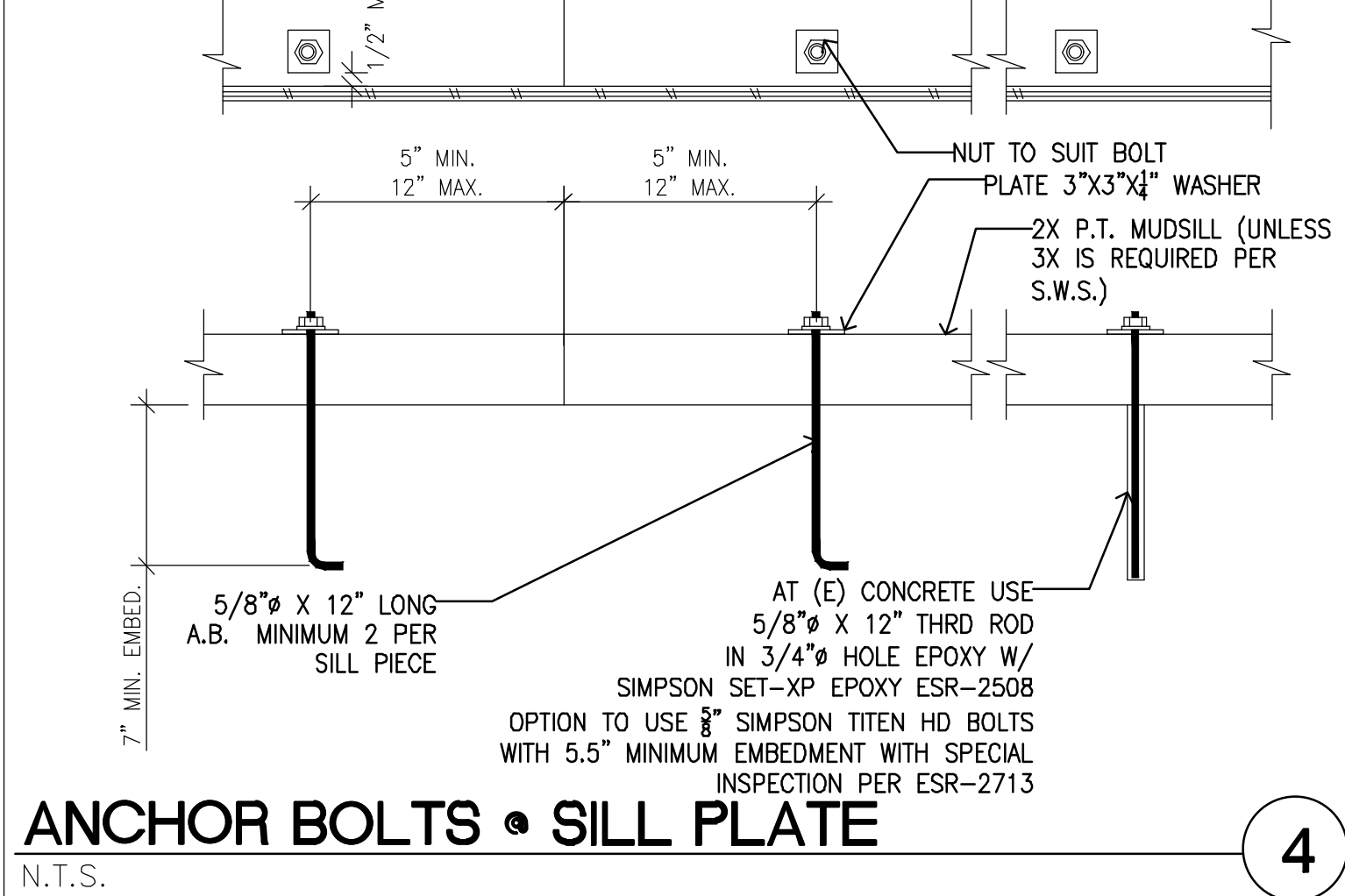
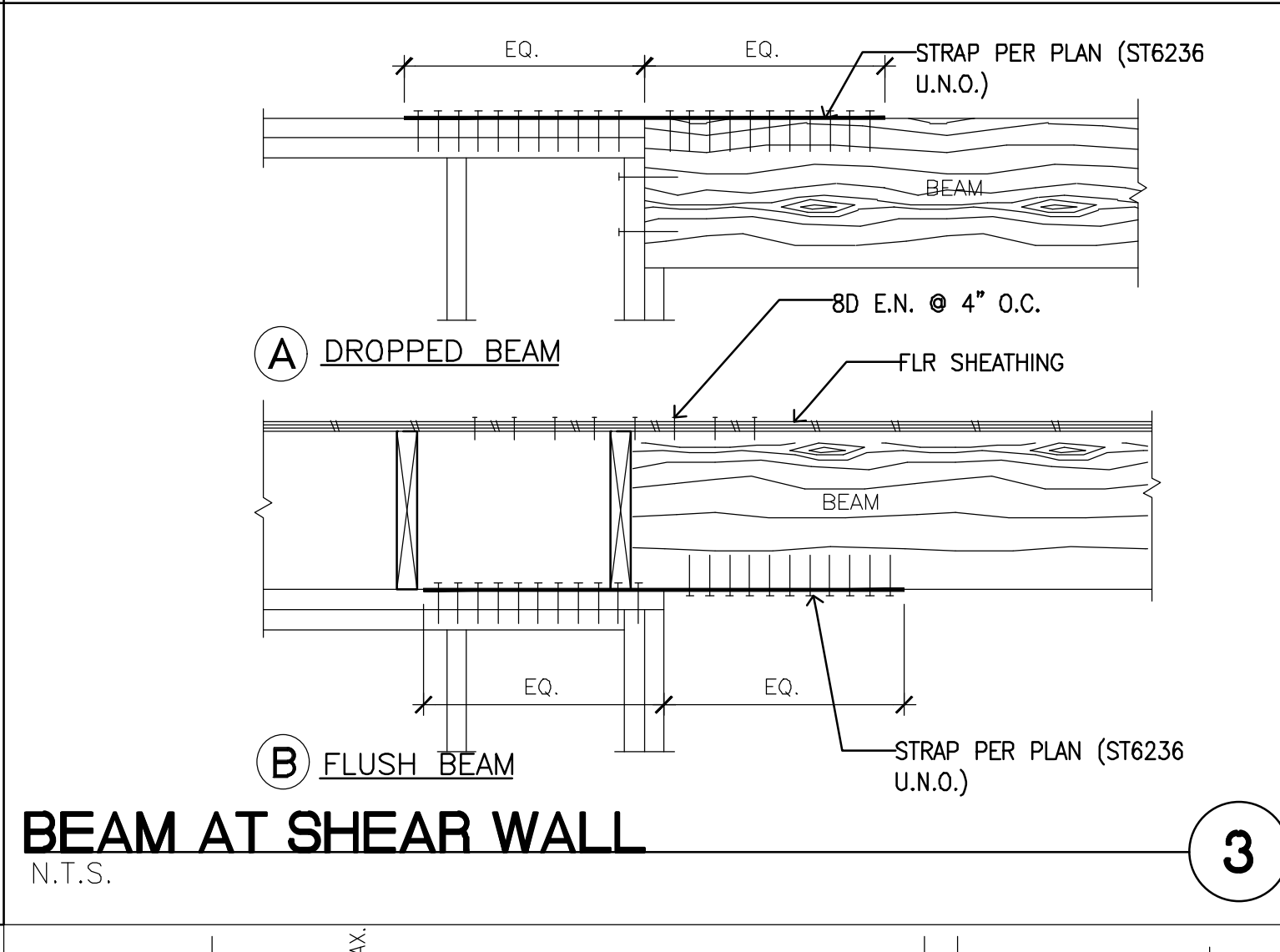
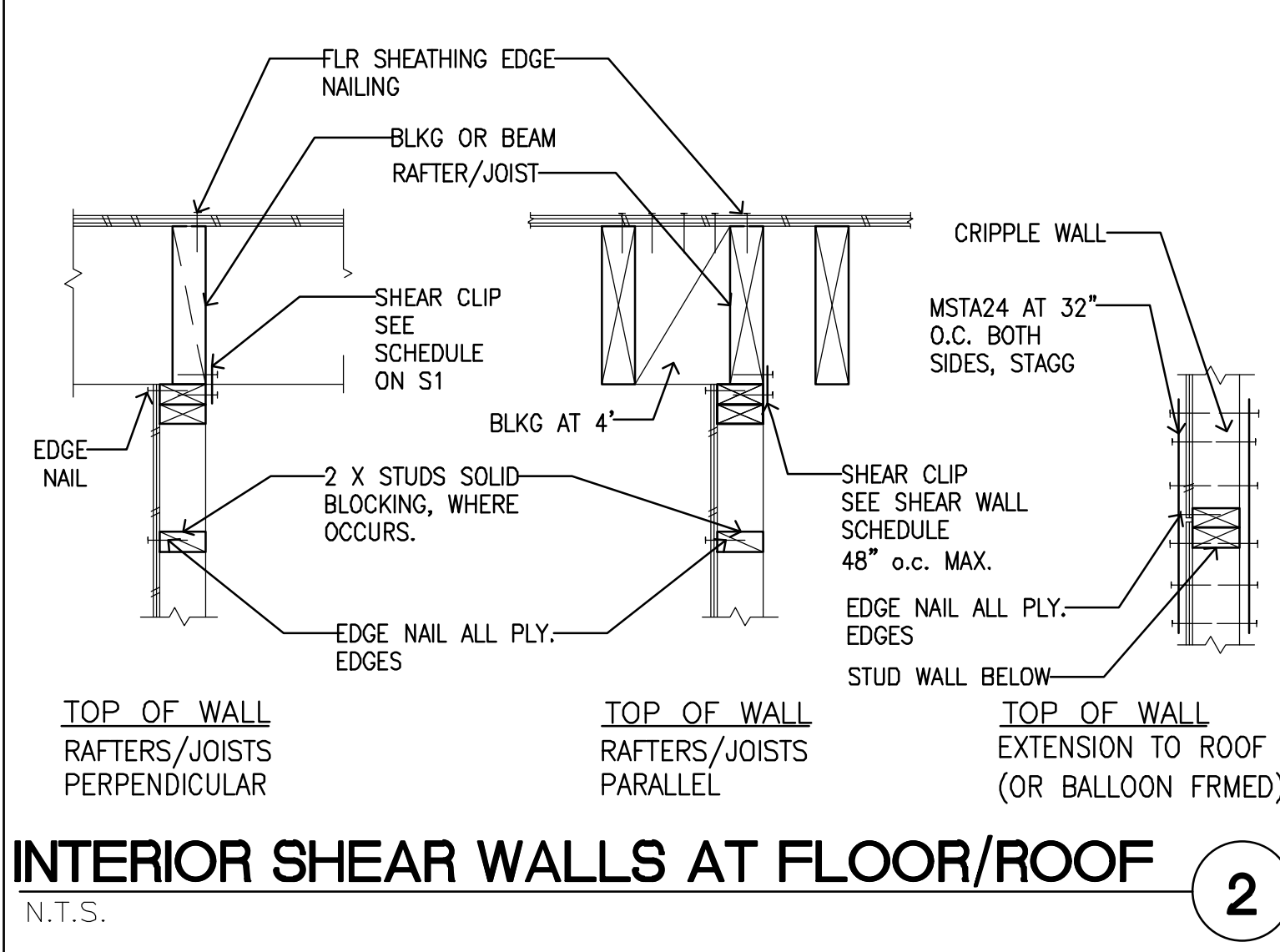
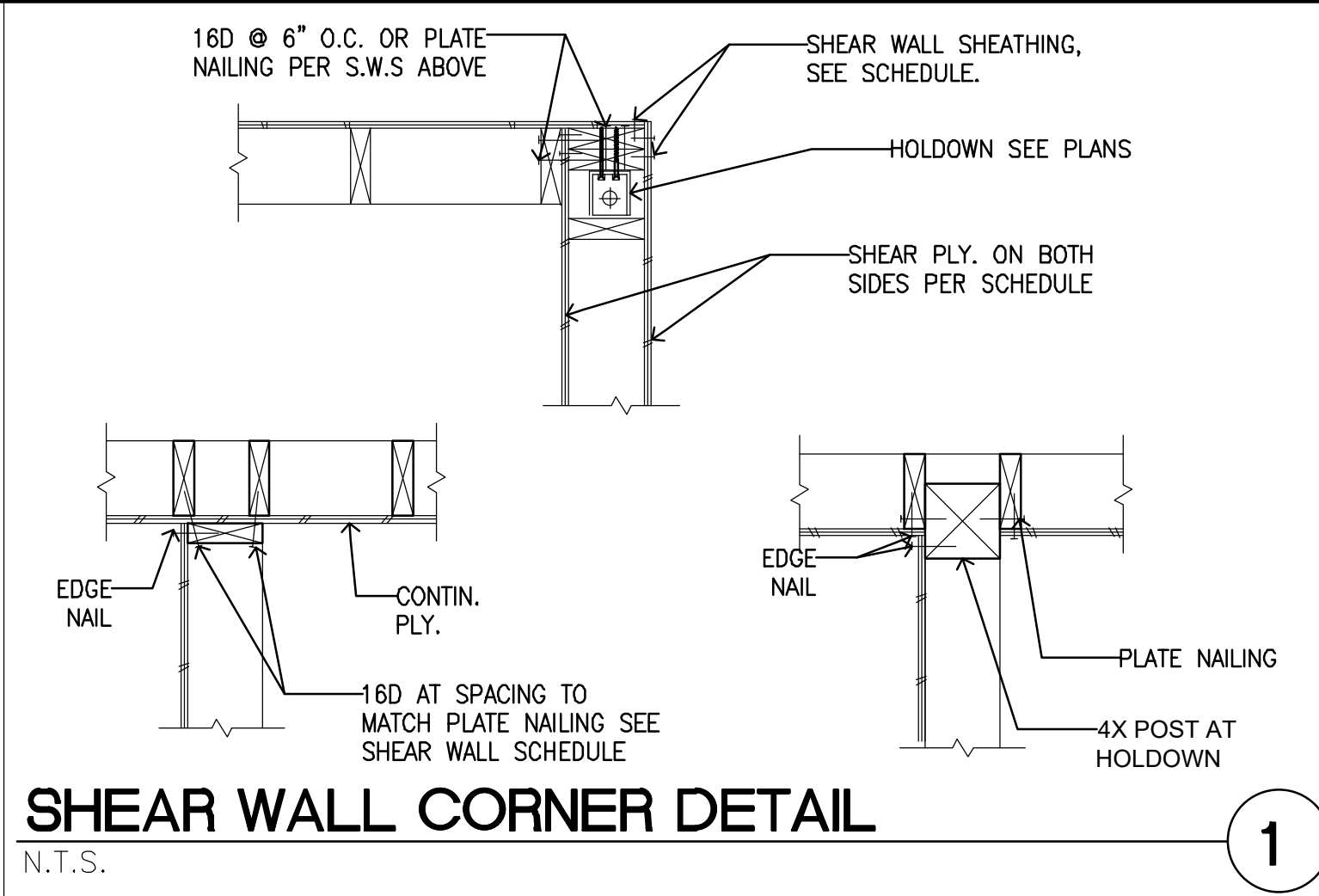
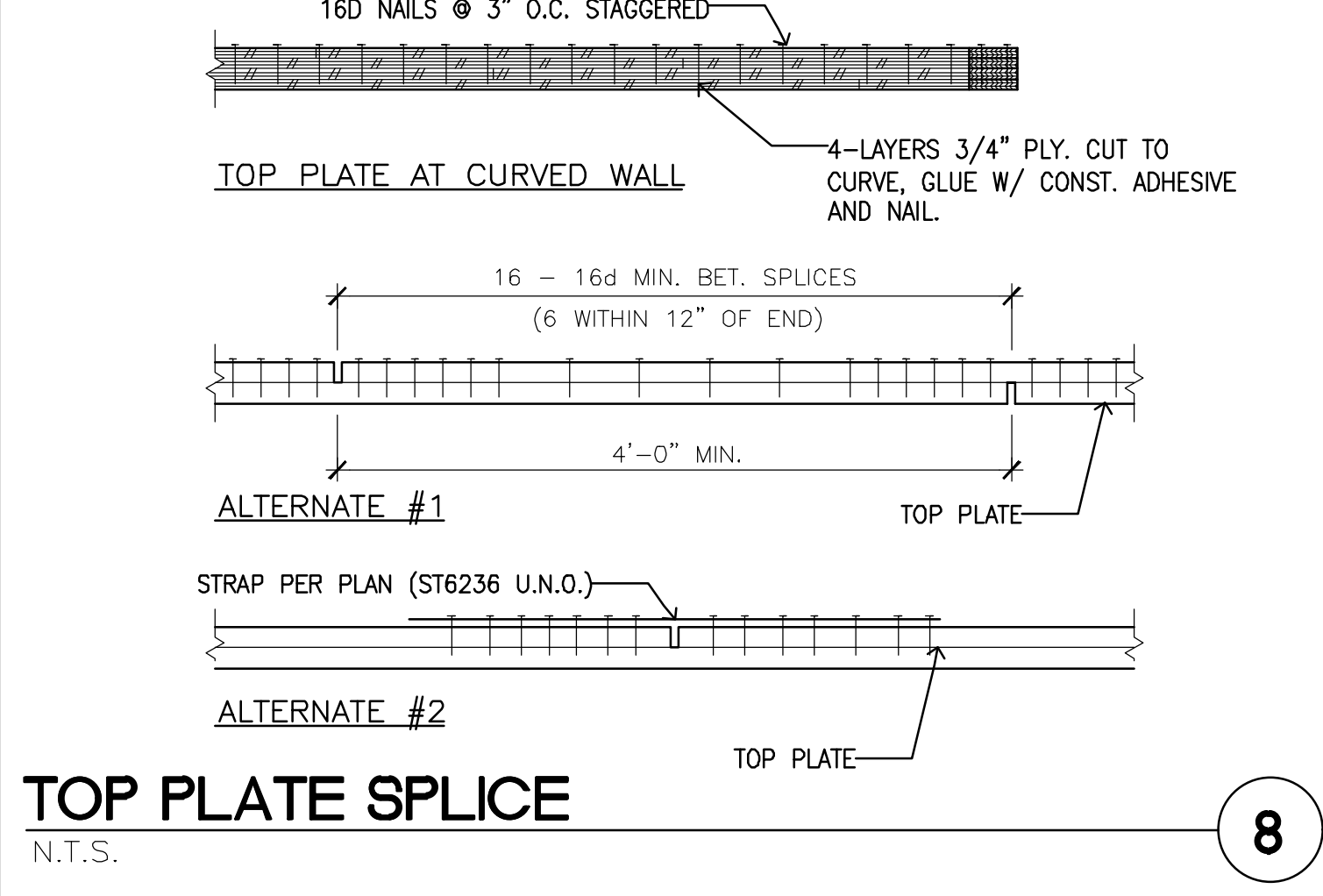
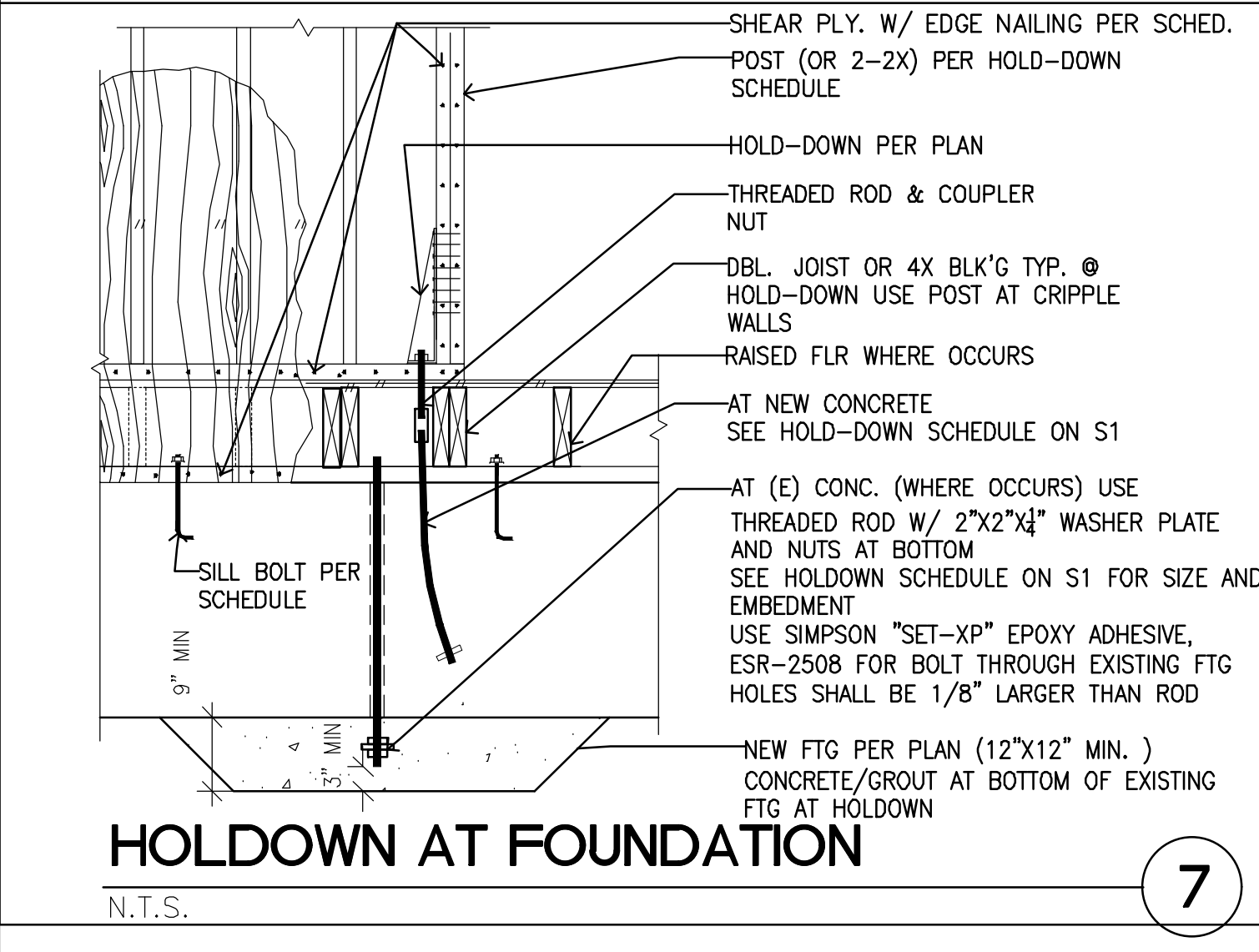
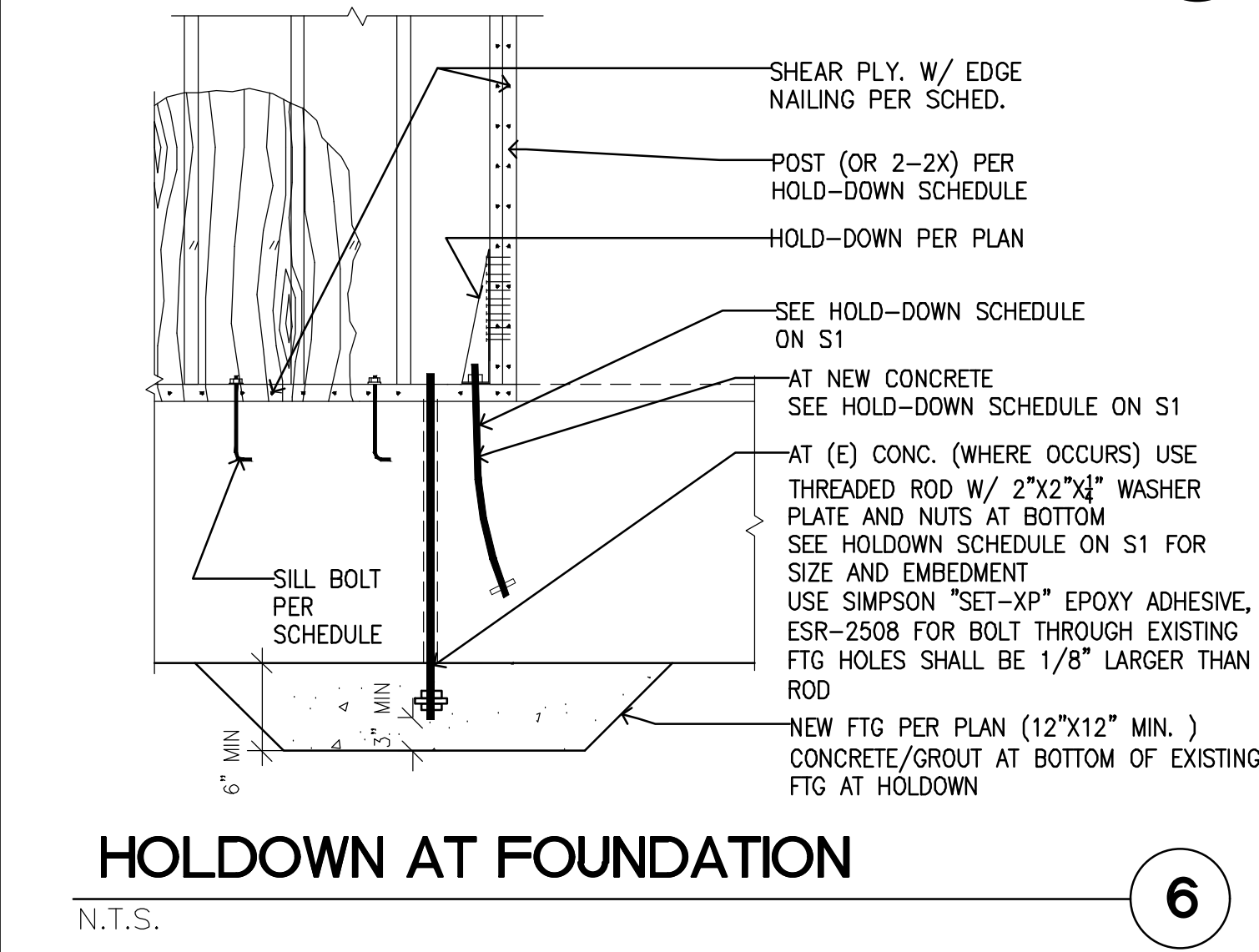
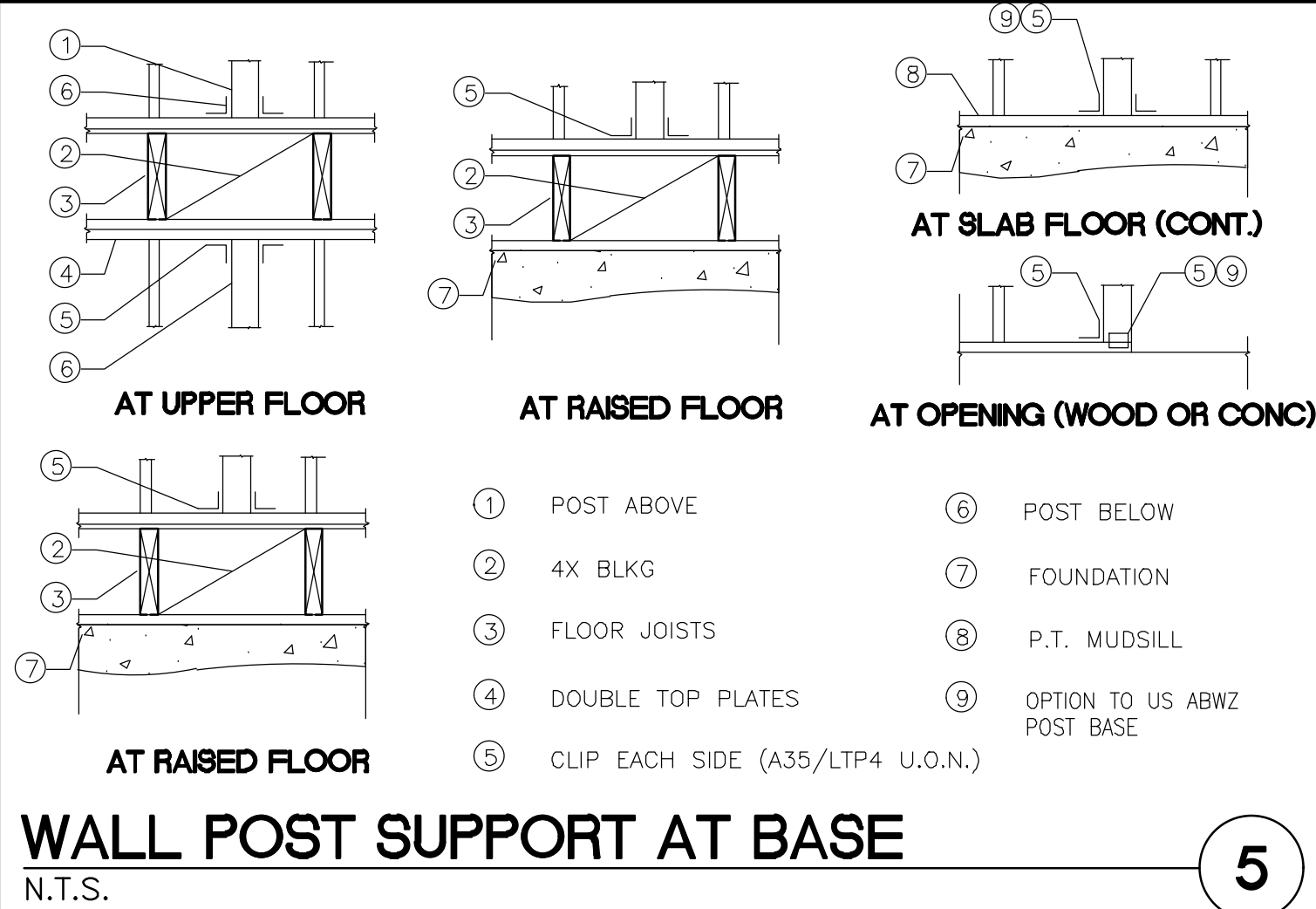
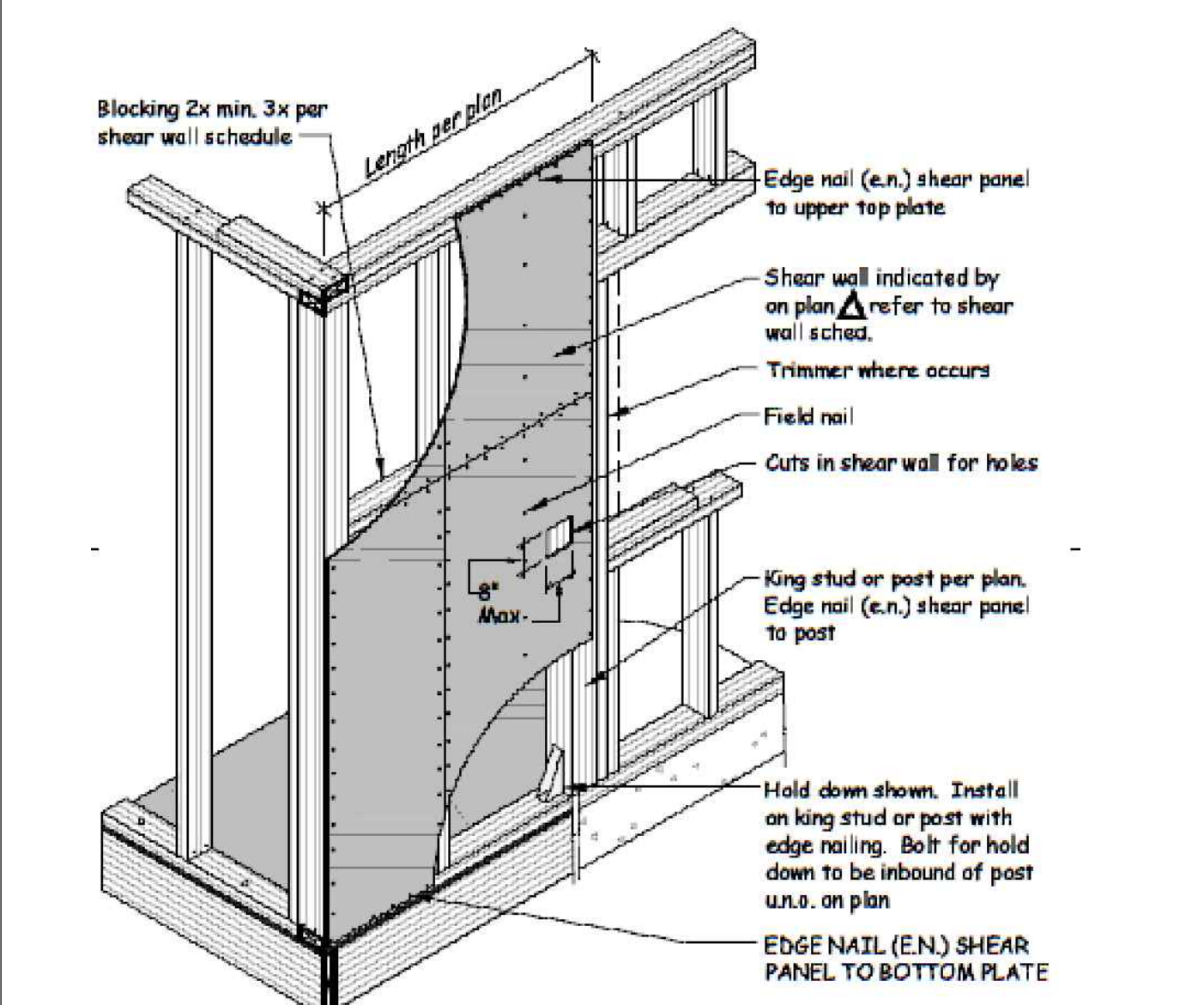
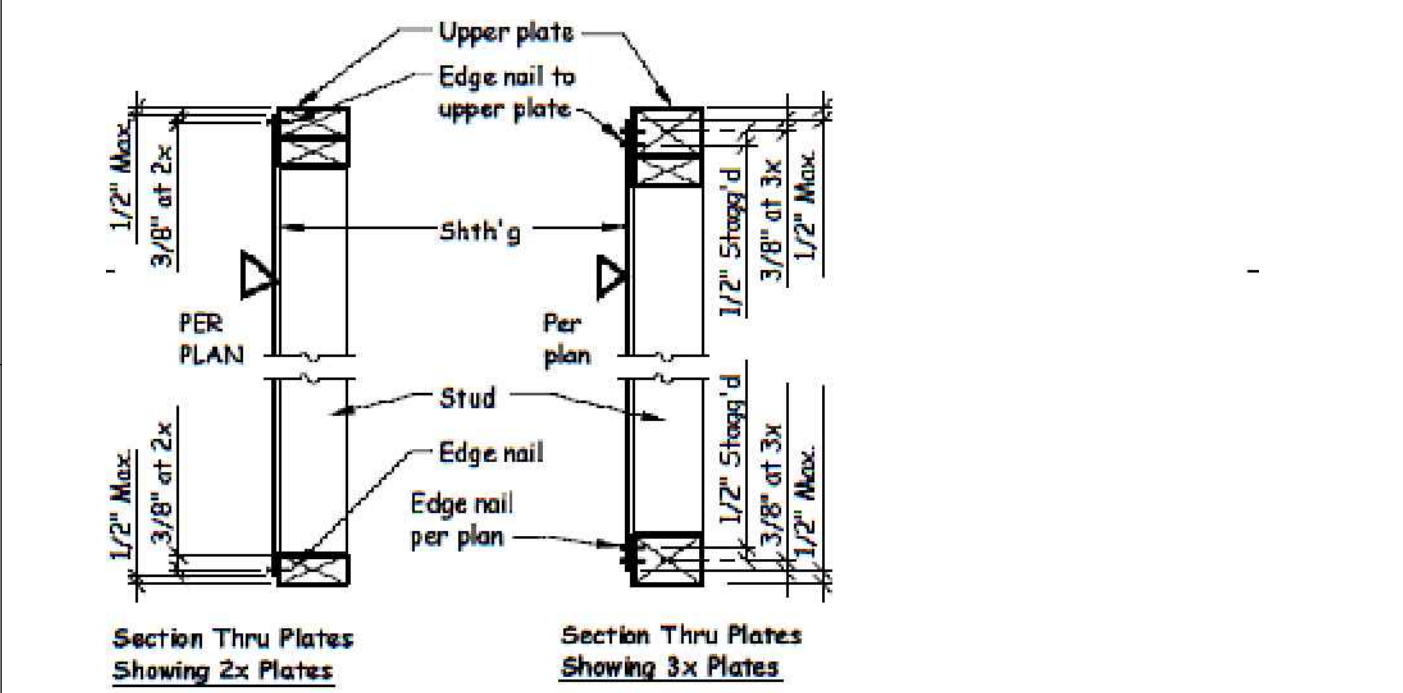
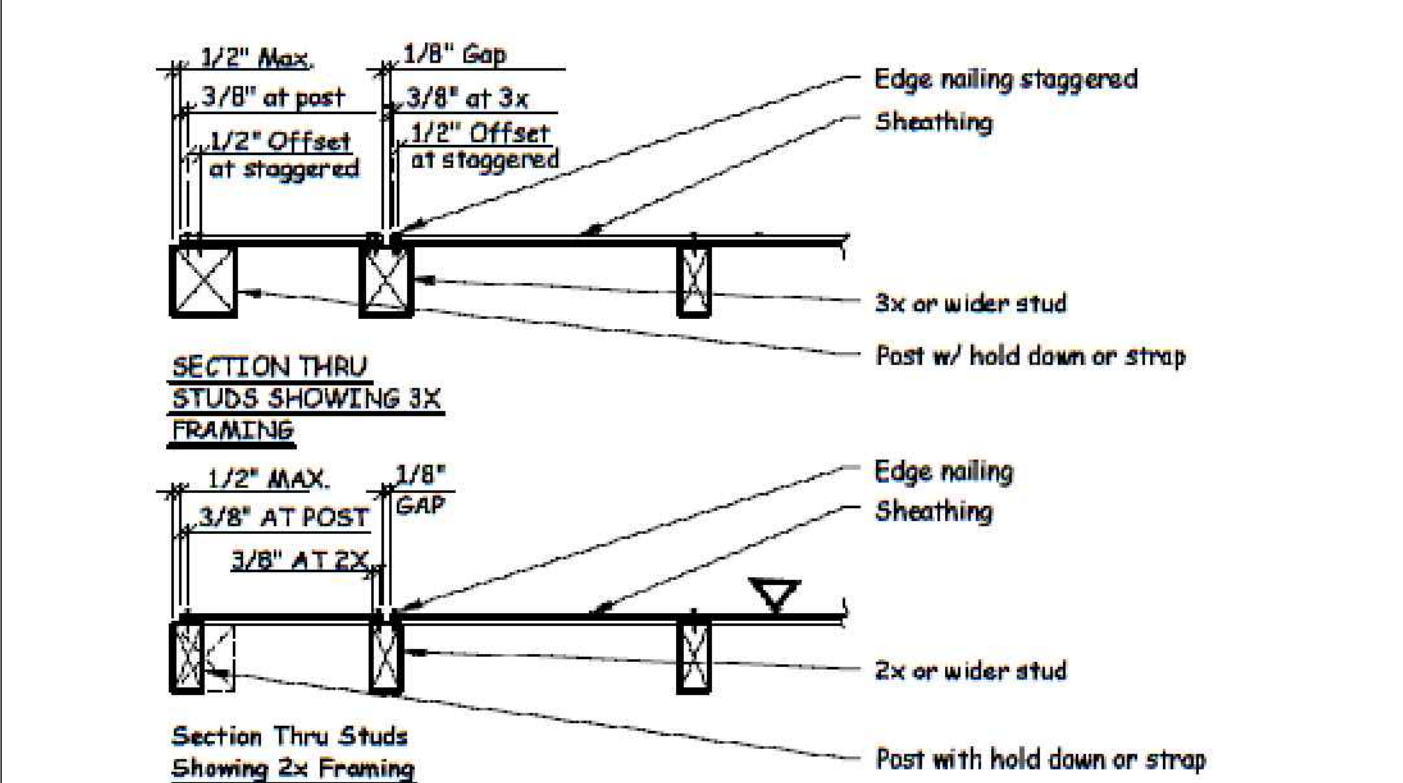
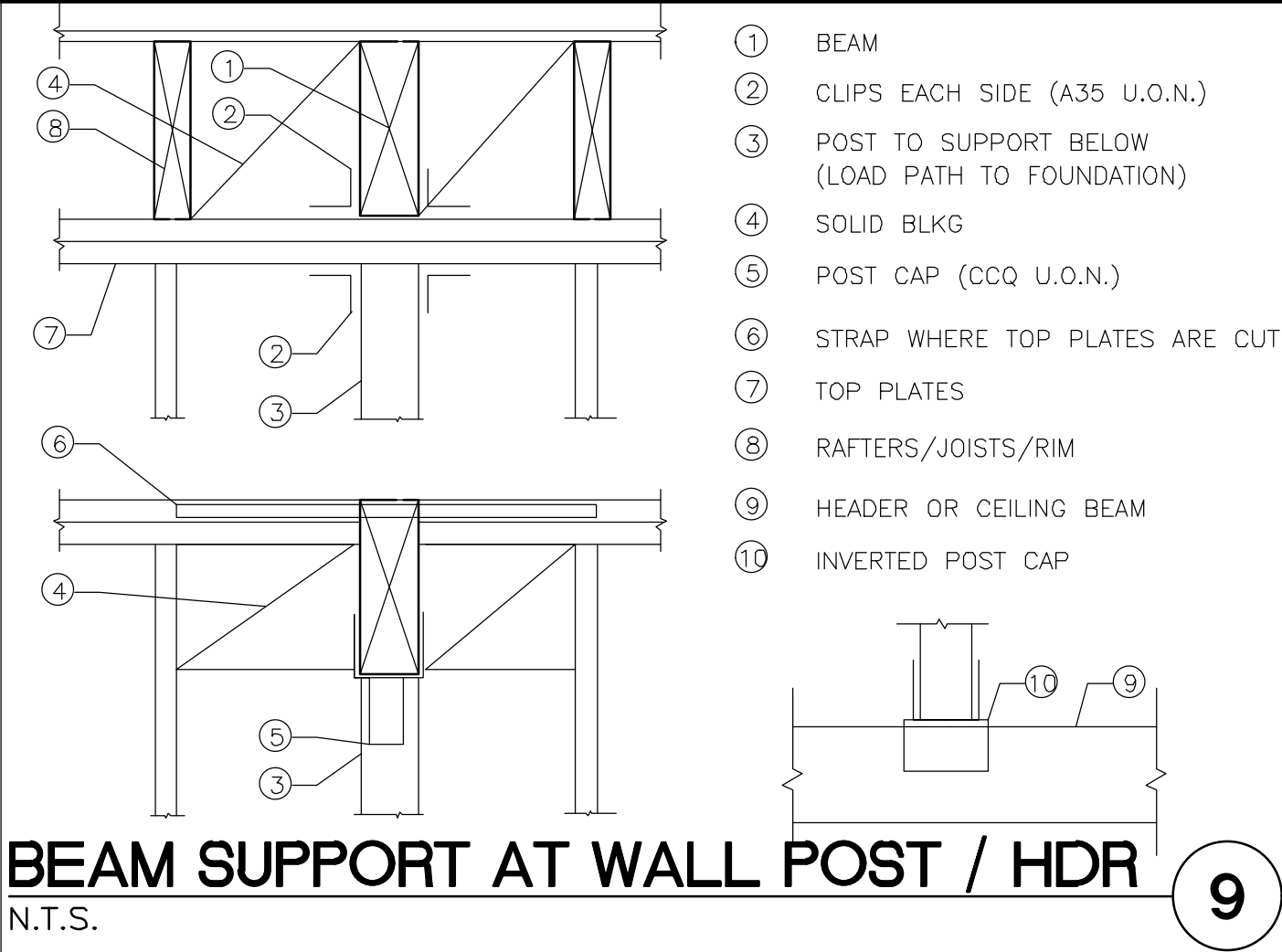
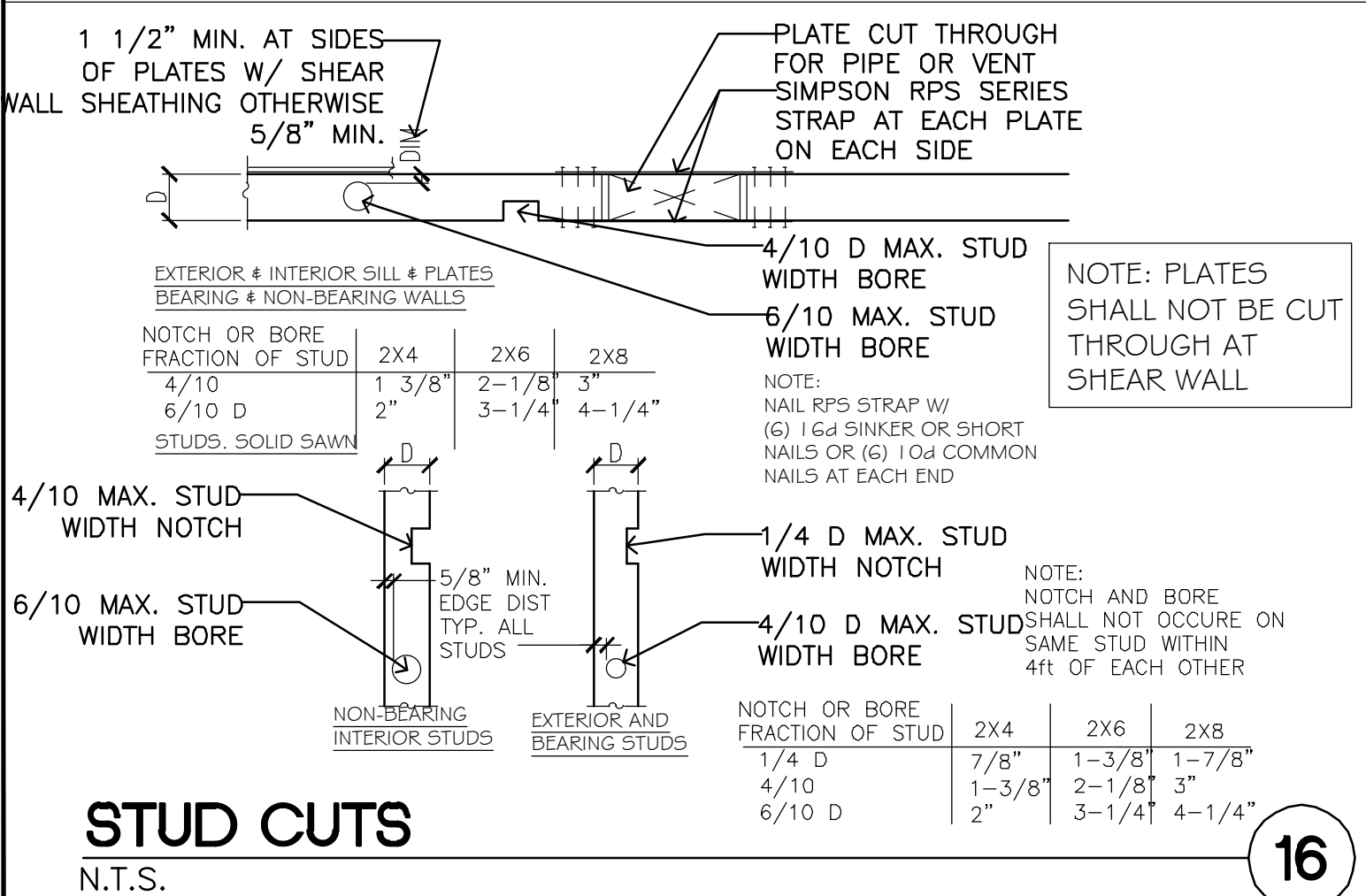
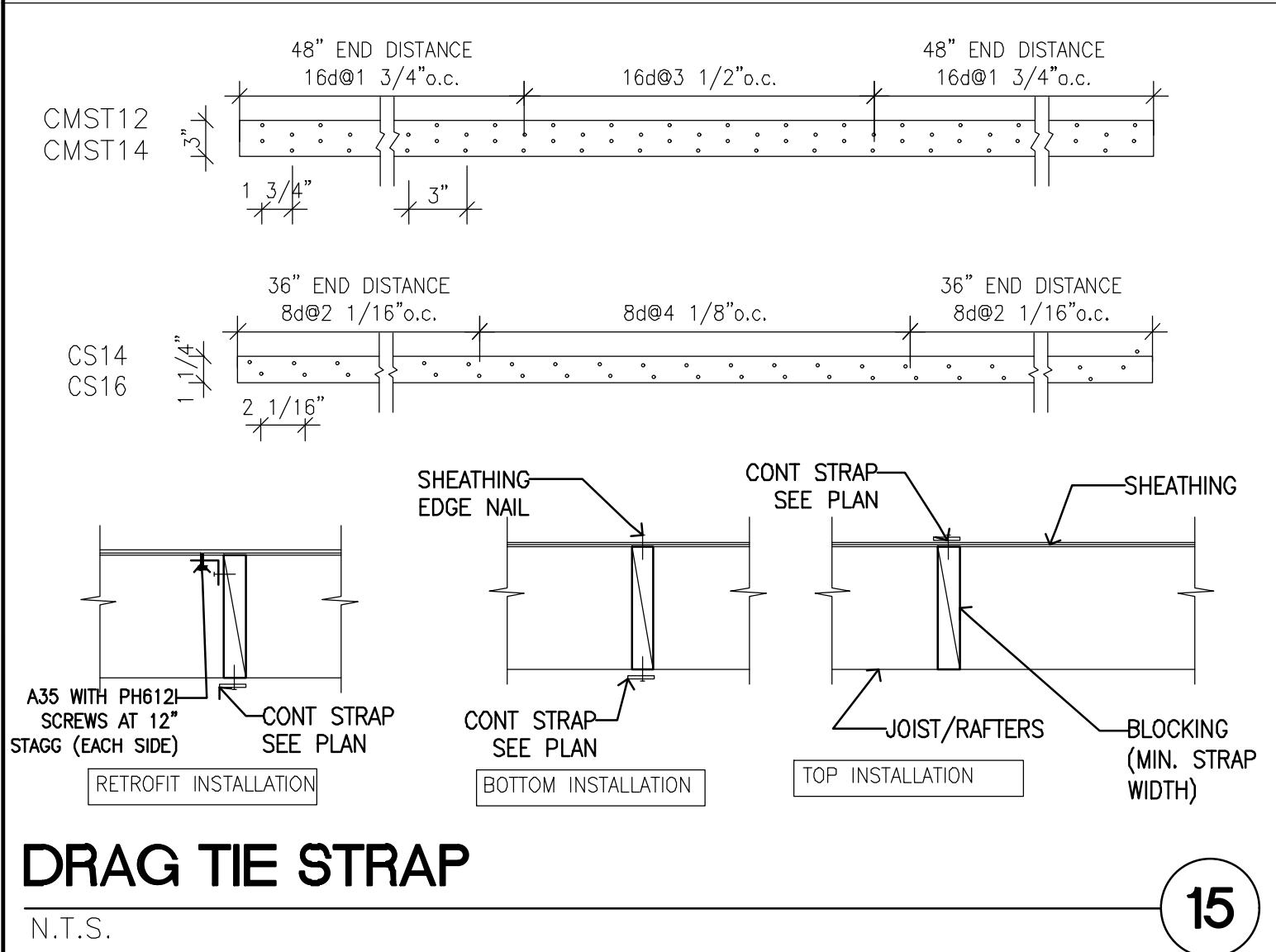
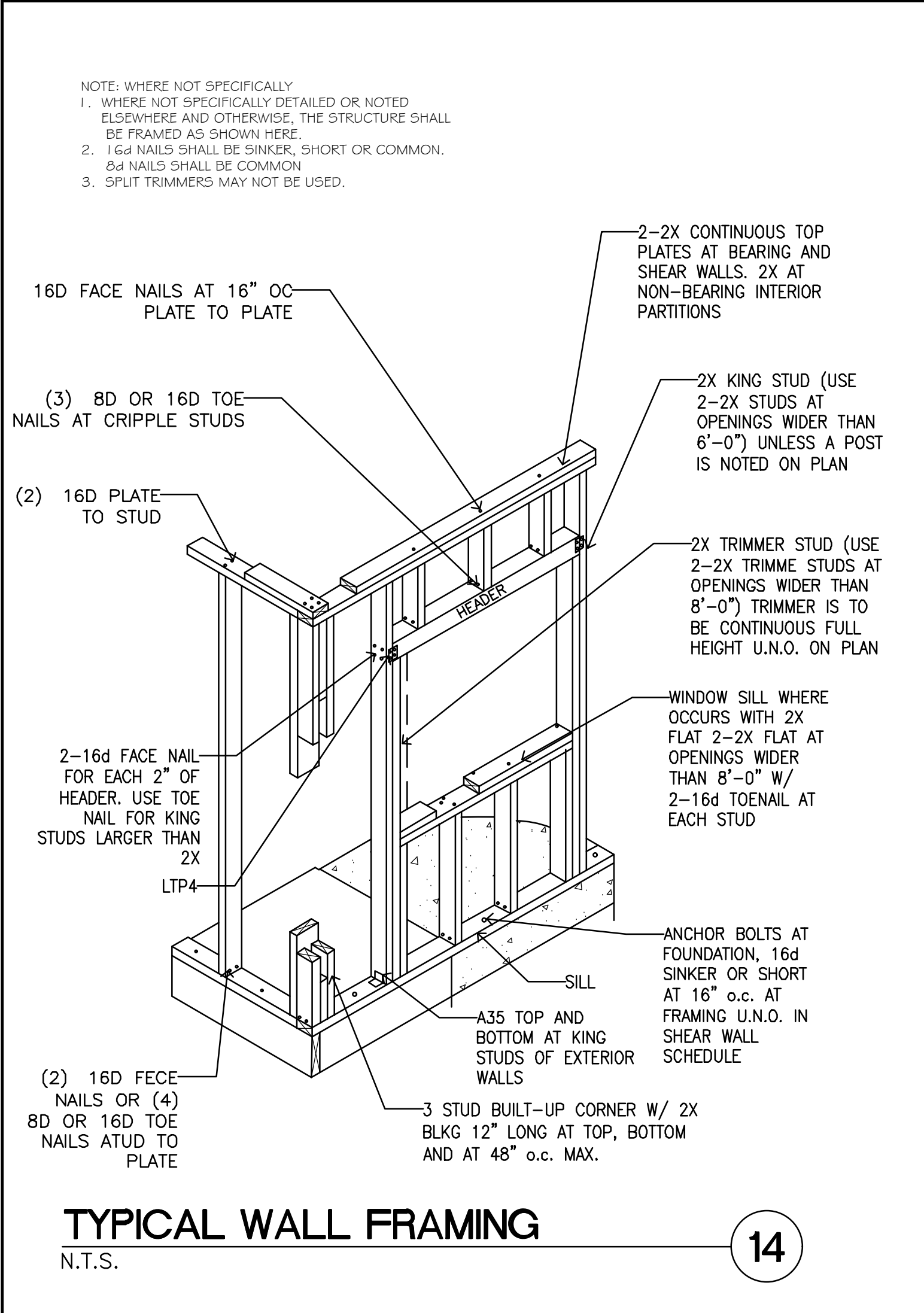
BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

Drawn by: _____ Drawing Number: _____

Checked by: _____

Project Number: _____

22-212 SHEET 2 OF 5



DRAWING HISTORY	DATE

PROJECT

RENOVATION OF 5 UNIT APARTMENT BUILDING

AT

21661 E CLIFF DR.
SANATA CRUZ

REGISTERED PROFESSIONAL ENGINEER
EXPIRATION DATE 6/30/23
C61578
DATE OF CALIFORNIA EXAM 12/29/2022
4-10-2022

COUNTY OF SANTA CRUZ PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:
Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

STRUCTURAL DETAILS

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOINTS IN CONCRETE

N.T.S.

13

TYPICAL LAP SPLICES - CONC.

N.T.S.

14

		DIAMETER OF BENDS					
D1	D2	1 1/2" FOR #3 BARS 2" FOR #4 BARS 2 1/2" FOR #5 BARS			"D1" — FOR STIRRUPS, TIES AND WALL REINF. AT OPENINGS		
		6d FOR #3 THRU #8 BARS 8d FOR #9, #10 & #11 BARS			"D2" — FOR ALL OTHERS		

CONCRETE STRENGTH	F'c = 2500 & 3000 PSI				F'c = 4000 PSI			
	CLASS "A"		CLASS "B"		CLASS "A"		CLASS "B"	
CLASS OF LAP SPLICE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	1'-10"	1'-5"	2'-4"	1'-10"	1'-7"	1'-3"	2'-0"	1'-7"
#4	2'-5"	1'-10"	3'-1"	2'-5"	2'-1"	1'-7"	2'-8"	2'-1"
#5	3'-0"	2'-4"	3'-11"	3'-0"	2'-7"	2'-0"	3'-4"	2'-7"
#6	3'-7"	2'-9"	4'-8"	3'-7"	3'-1"	2'-5"	4'-0"	3'-1"
#7	5'-3"	4'-0"	6'-9"	5'-2"	4'-8"	3'-6"	5'-11"	4'-6"
#8	6'-0"	4'-7"	7'-9"	5'-11"	5'-2"	4'-0"	6'-9"	5'-2"
#9	6'-9"	5'-2"	8'-9"	6'-9"	5'-10"	4'-6"	7'-7"	5'-10"

NOTES:

- UNLESS INDICATED OTHERWISE, USE THE CLASS "B" LAP SPLICE LENGTHS, MULTIPLIED BY THE APPLICABLE FACTOR(S) LISTED BELOW.
- WHERE CLEAR SPACE BETWEEN BARS LAP SPICED AT ANY SECTION IS LESS THAN 2 BAR DIAMETERS, OR WHERE THE BAR COVER IS LESS THAN OR EQUAL TO THE BAR DIAMETER, INCREASE THE LAP LENGTH BY 50%.
- A CLASS "A" SPLICE MAY BE USED ONLY WHERE NOTED ON THE DRAWINGS.
- WHERE LIGHTWEIGHT AGGREGATE CONCRETE IS USED, INCREASE LAP SPLICE LENGTH BY 30%.
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
- SPLICES OF HORIZONTAL REINFORCEMENT IN WALLS SHALL BE STAGGERED.
- SPLICES IN WALLS CONTAINING TWO CURTAINS OF REINFORCEMENT SHALL NOT OCCUR IN THE SAME LOCATION.
- IN SHOTCRETE WALLS SPLICES IN REINFORCING BARS SHALL BE BY THE NON-CONTACT LAP SPLICE METHOD WITH AT LEAST 2 INCHES CLEARANCE BETWEEN BARS. THE BUILDING OFFICIAL MAY PERMIT THE USE OF CONTACT LAP SPLICES WHEN NECESSARY FOR THE SUPPORT OF THE REINFORCING PROVIDED IT CAN BE DEMONSTRATED BY MEANS OF PRE-CONSTRUCTION TESTING, THAT ADEQUATE ENCASEMENT OF THE BARS AT THE SPLICE CAN BE ACHIEVED, AND PROVIDED THAT THE SPLICES ARE PLACED SO THAT A LINE THROUGH THE CENTER OF THE TWO SPLICED BARS IS PERPENDICULAR TO THE SURFACE OF THE SHOTCRETE WORK.

REBAR OFFSET AND LAP SPLICE

N.T.S.

16

SHEAR & EX WALLS

N.T.S.

1

EXTERIOR STAIR FRAMING

N.T.S.

2

EXTERIOR POST FTG

N.T.S.

3

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

GPM ENGINEERS
3340 WALNUT AVE., SUITE 292
FREMONT, CA 94538-2215
TEL. (650) 331-7264 FAX (650) 472-9004
MGENDY@GPMENGINEERS.COM

CIVIL STRUCTURAL PLANNING DEVELOPMENT

1. This sheet is part of a set and is not to be used alone.

2. This sheet is not to be used for construction unless the architect's and/or engineer's stamp and signature appear on drawings and the status box indicates drawings have been released for construction.

3. These plans and prints, in whole or in part, are the property of GPM Engineers, Inc. and are not to be used for any other project without the prior written consent of GPM Engineers, Inc.

4. Copyright M.S. Gendy dba GPM Engineers, 2022

DRAWING HISTORY DATE

REVISION HISTORY

PROJECT

RENOVATION OF
5 UNIT APARTMENT
BUILDING

AT

21661 E CLIFF DR.
SANATA CRUZ

4-10-2022

STRUCTURAL
DETAILS

Drawn by: Drawing Number

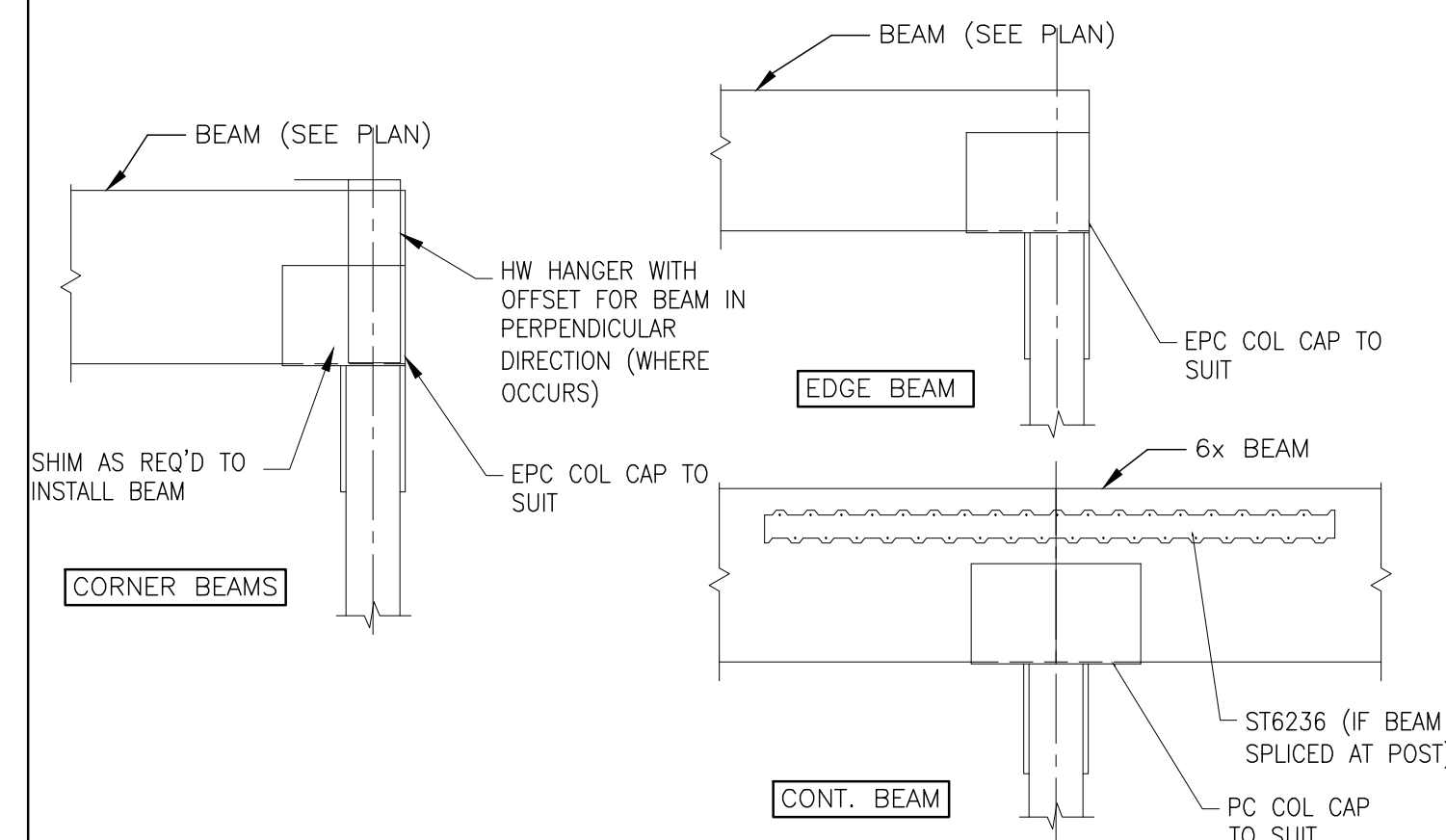
EH

Checked by: SD2

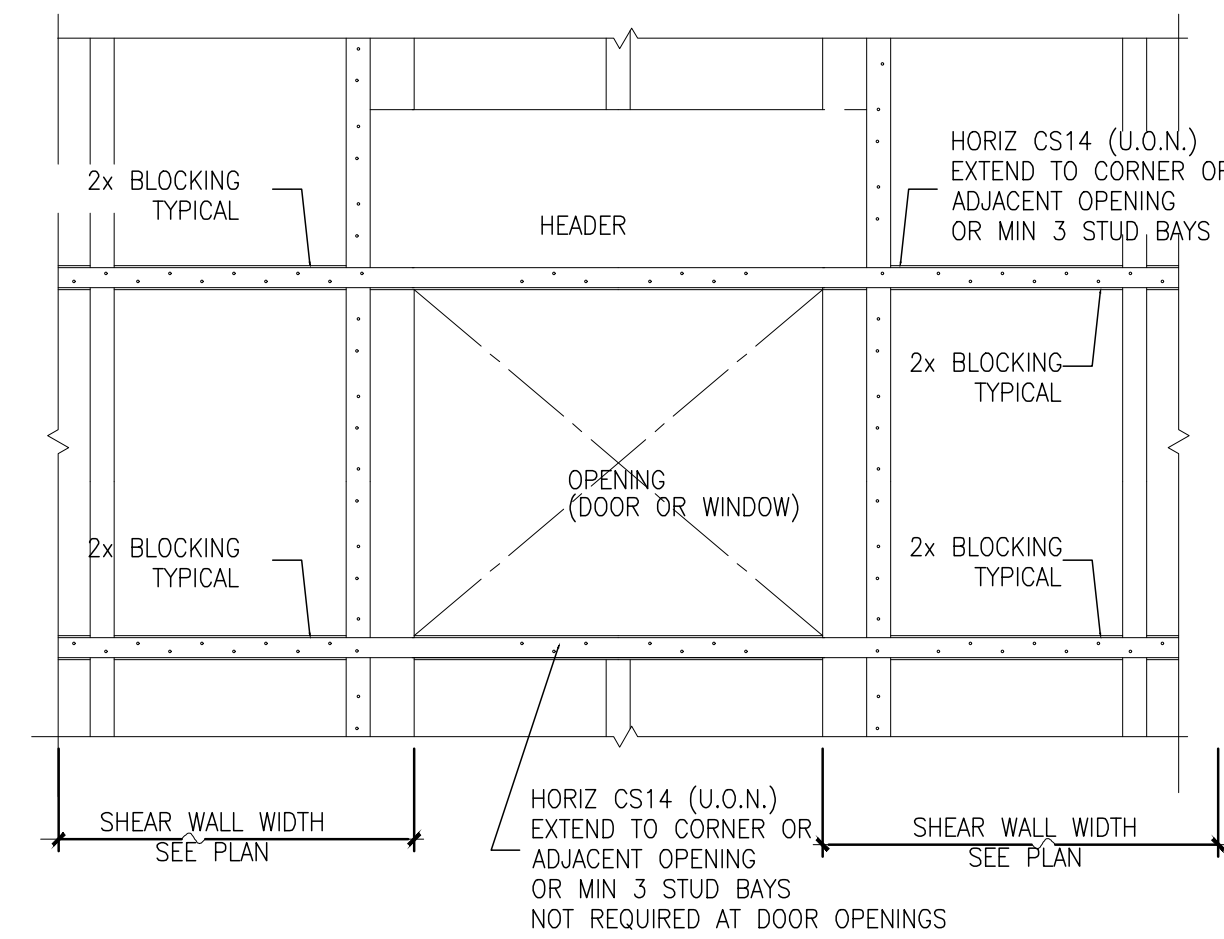
MG

Project Number SHEET 4 OF 5

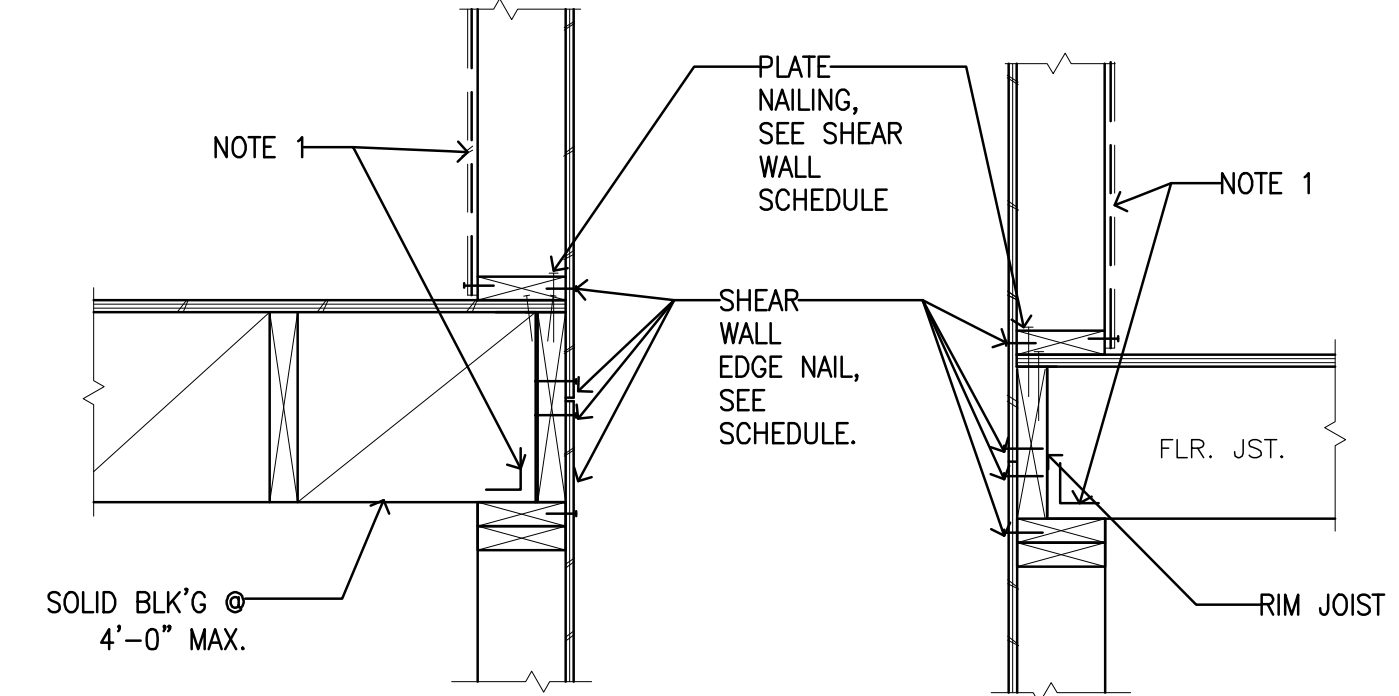
22-212



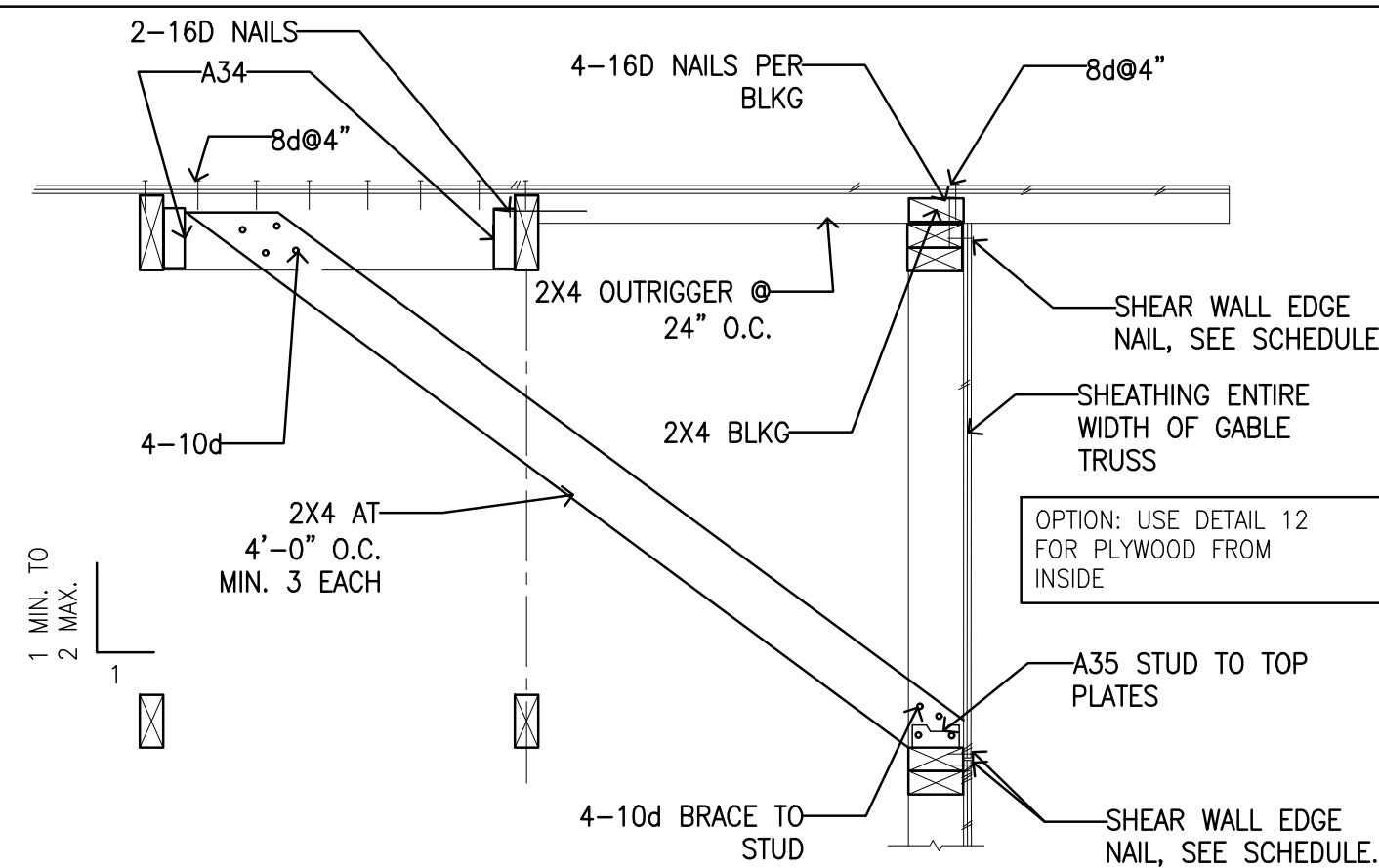
BEAM @ POST
N.T.S.



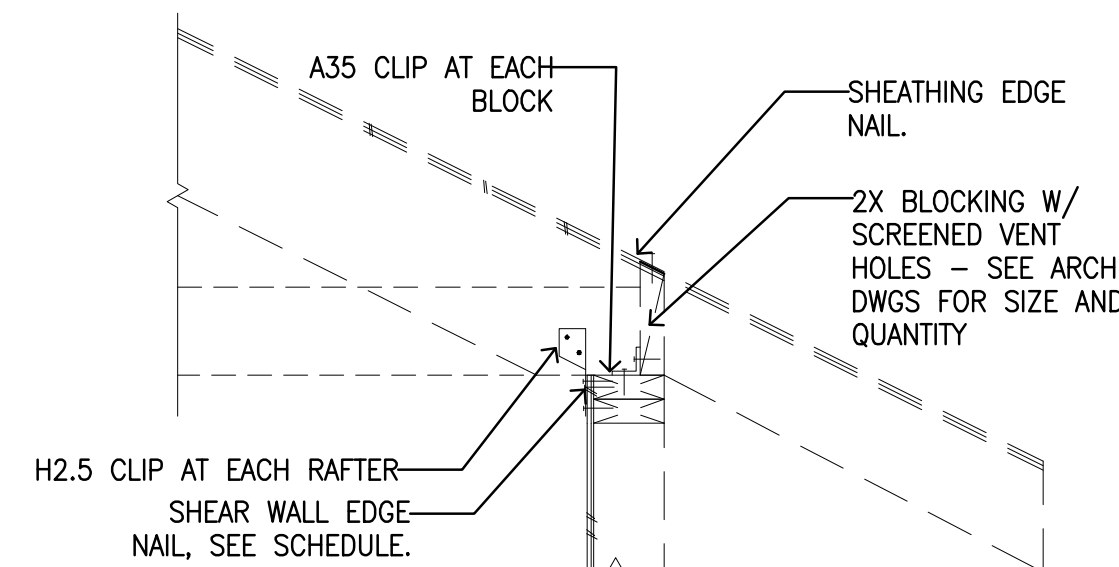
OPENINGS IN SHEAR WALLS
(WHERE CALLED OUT ON PLAN)
N.T.S.



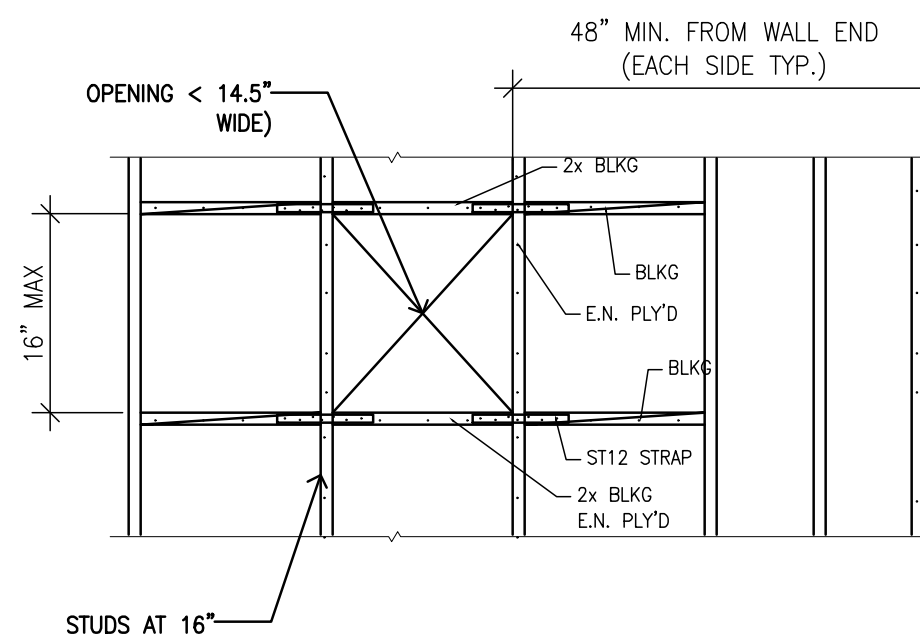
SHEAR AT FLOOR
N.T.S.



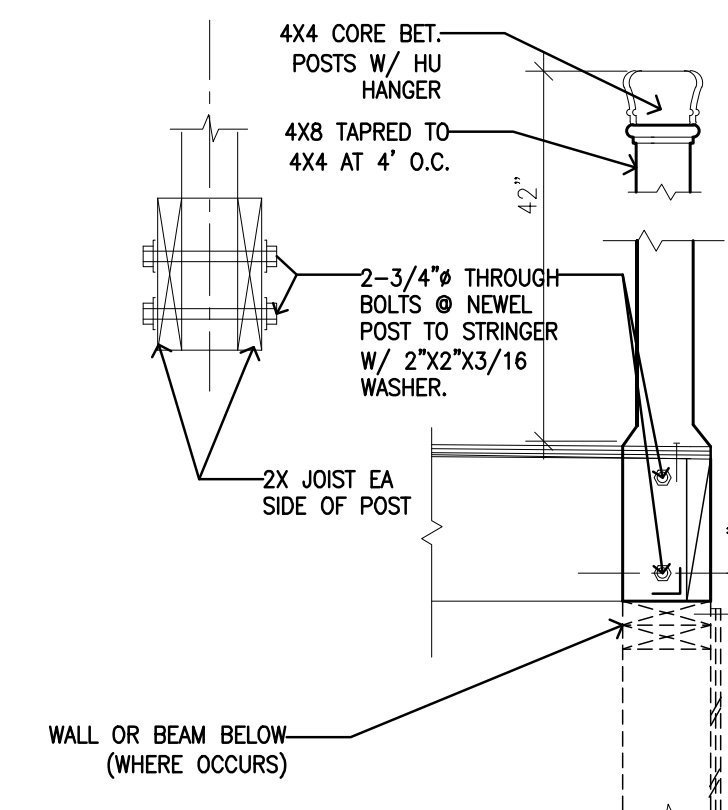
RAKE DET. (DROPPED CEILING)
N.T.S.



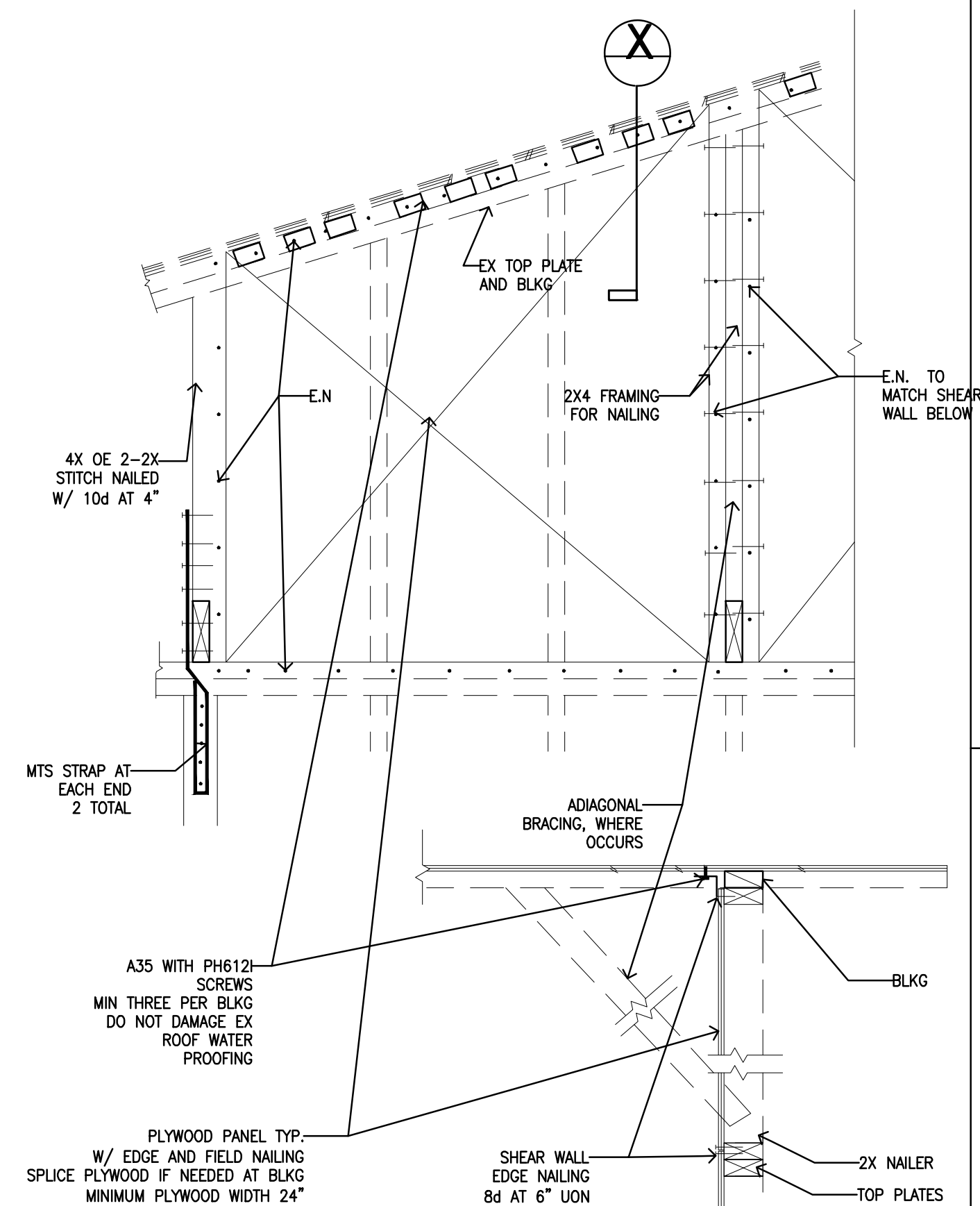
SHEAR @ ROOF



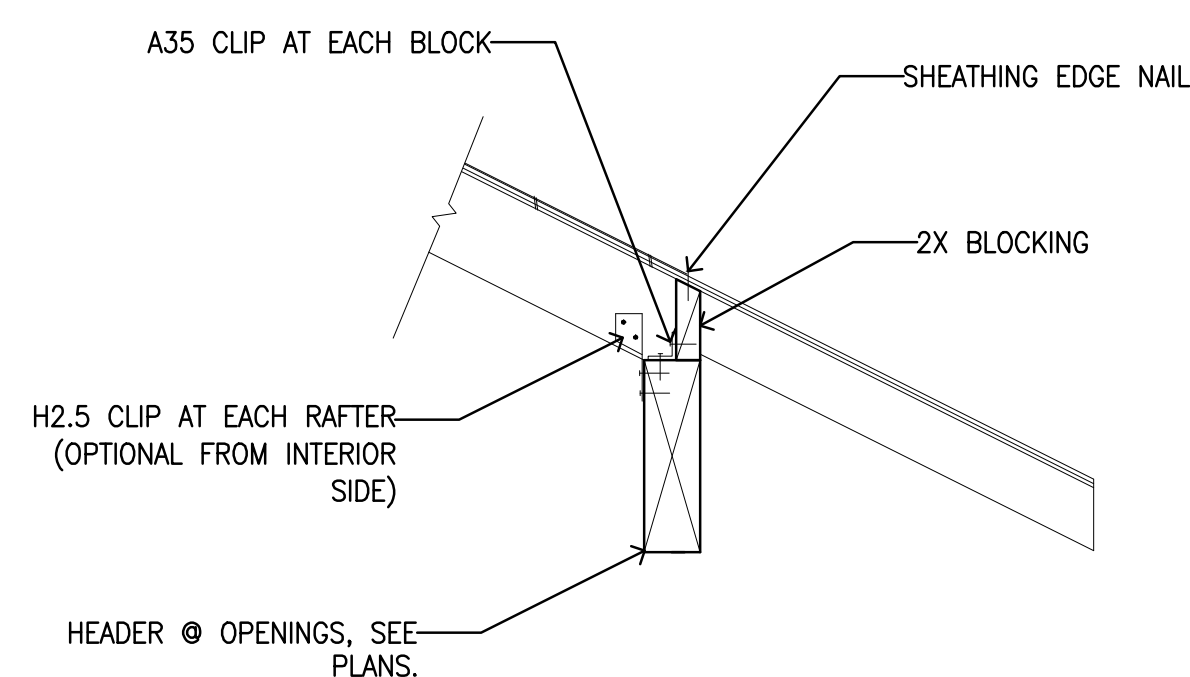
OPENING IN SHEAR WALLS



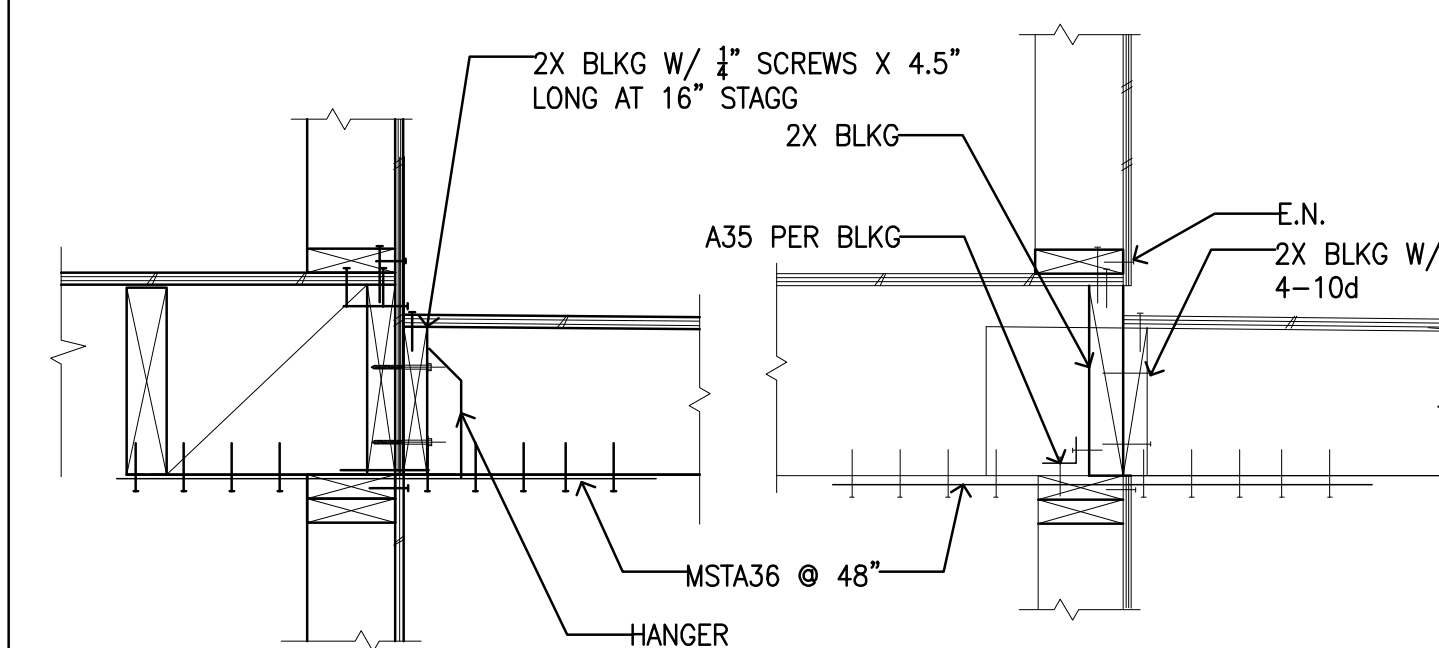
GUARDRAIL DET.
N.T.S.



SHEAR WALL AT INSIDE OF GABLE WALL
N.T.S.



EAVE DET.
N.T.S.



DECK AT WALL
N.T.S.

1. This sheet is part of a set and is not to be used alone.
2. This sheet is not to be used for construction unless the architect's and/or engineer's stamp and signature appear on drawings and the above box indicates drawings have been released for construction.
3. These plans and prints thereof, as instruments of service, are owned by engineer or record and are for use on this project only. Reproduction and/or distribution without the prior written consent of engineer of record is forbidden.
4. Copyright M.S. Genidy dba GPM Engineers, 2022

[illegible]

PROJECT

RENOVATION OF 5 UNIT APARTMENT BUILDING

AT

21661 E CLIFF DR.
SANATA CRUZ



4-10-2022

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

STRUCTURAL DETAILS

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

Drawn by: _____ Drawing Number _____

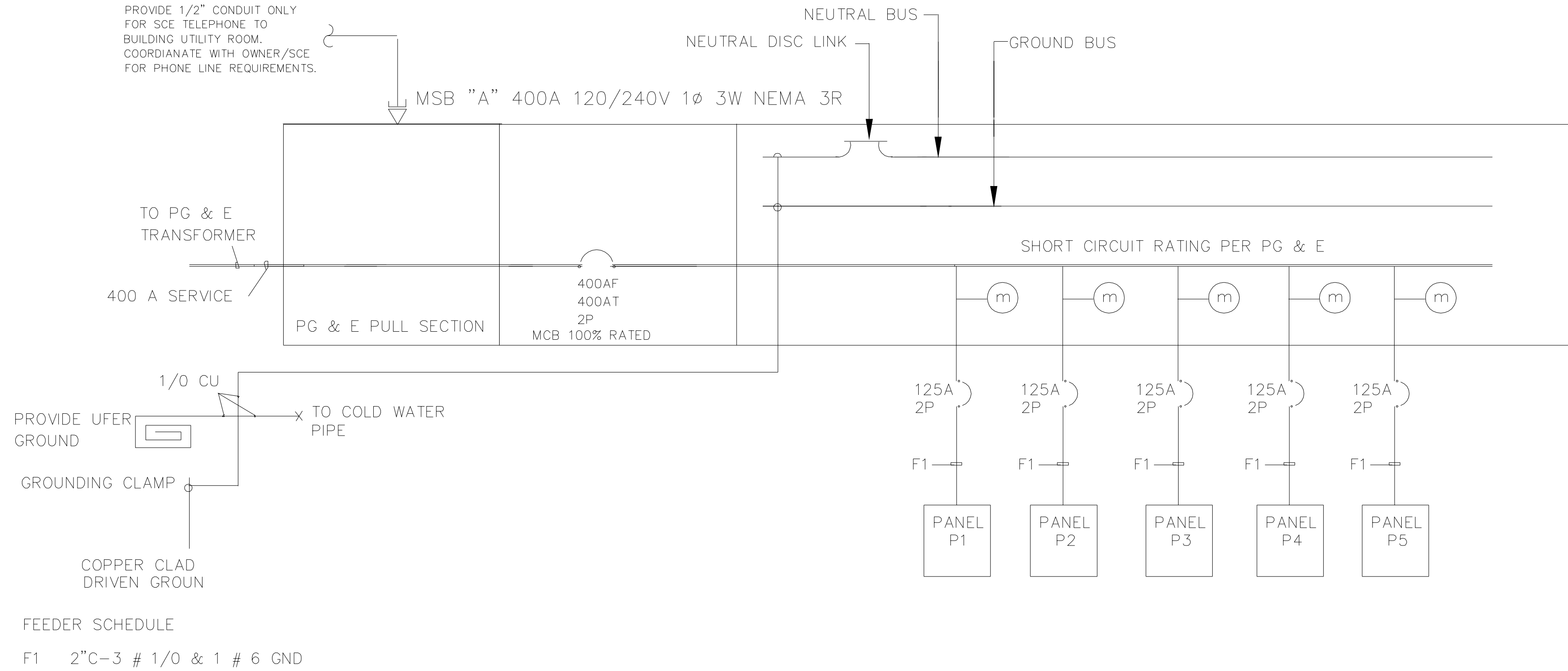
EH

Checked by:

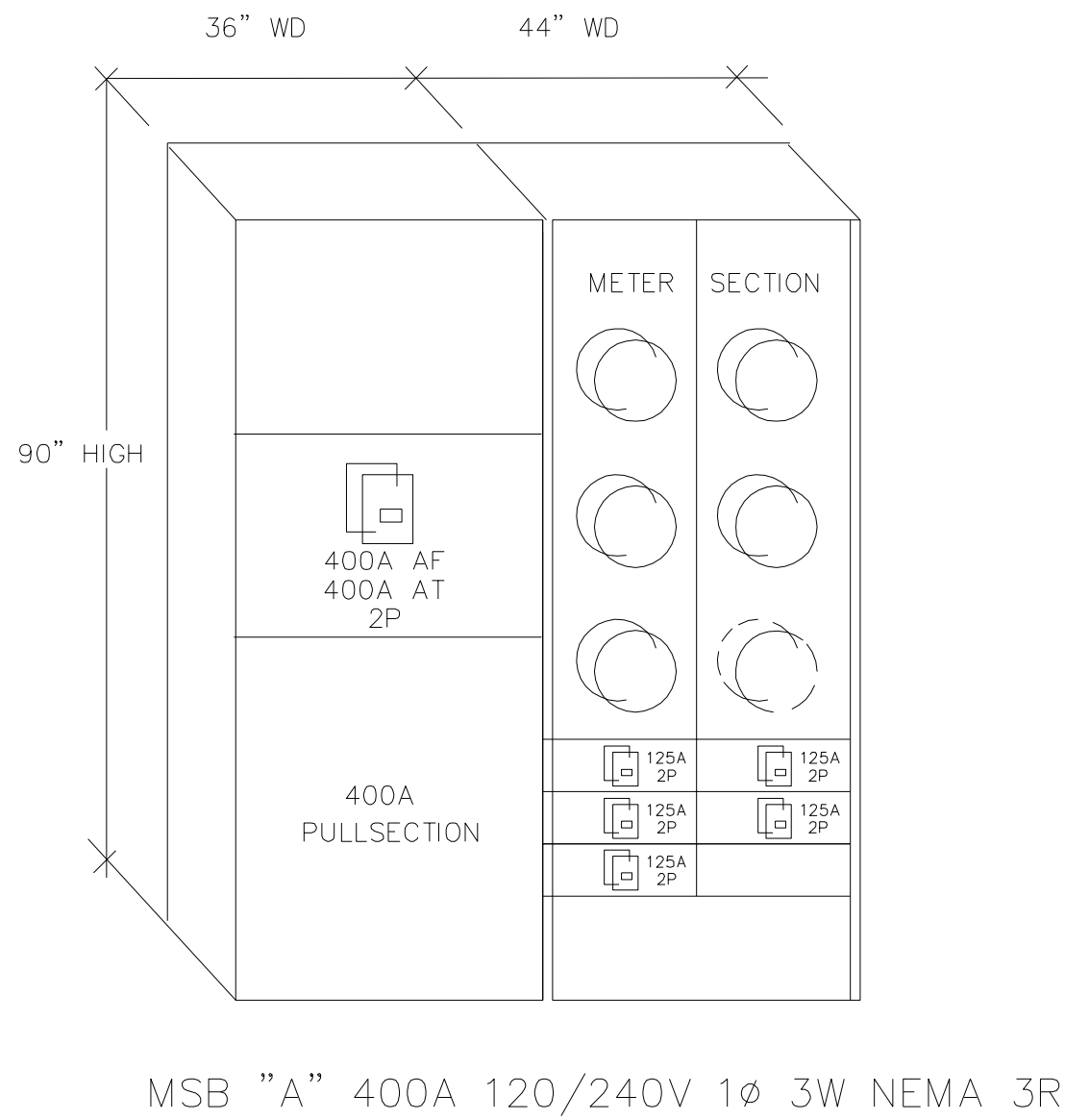
MG

Project Number

22-212



SINGLE LINE DRAWING



COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

CODES RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, OSHA AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.

Mechanical & Electrical Engineers

940 HAMLIN COURT, SUNNYVALE, CA 94089

PH: 408.272.8800 FAX: 408.272.5645

www.amconconsultants.com



Anil R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)

21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	02.02.22	OWNER COMMENTS

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

EO.1

<p>B. MATERIAL AND INSTALLATION</p> <p>ALL WORK AND MATERIAL SHALL CONFORM TO THE LATEST RULES OF THE GOVERNING ELECTRICAL CODE AND INSTALLATION SHALL BE OF THE LATEST INDUSTRY STANDARDS OF WORKMANSHIP.</p> <p>ALL MATERIALS SHALL BE NEW AND LISTED BY UNDERWRITERS LABORATORY (U.L.), OR ANOTHER ACCEPTABLE INDEPENDENT TESTING LABORATORY.</p> <p>1. CONDUITS</p> <p>CONDUITS SHALL BE EMT, RIGID OR REDUCED WALL FLEXIBLE TYPE. FLEXIBLE CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH UL-1, USED ONLY FOR LIGHTING FIXTURE CONNECTION, SHORT MOTOR CONNECTION OR FOR THE EQUIPMENT REQUIRING VIBRATION ISOLATION OR WHERE THE USE OF EMT IS IMPRACTICAL DUE TO STRUCTURAL CONDITIONS. A GROUND WIRE IS REQUIRED IN ALL FLEXIBLE CONDUIT. CONCEAL ALL CONDUITS, UNLESS OTHERWISE NOTED.</p> <p>2. SWITCHES AND RECEPTABLES</p> <p>PROVIDE 20 AMP NEMA RATED SWITCHES, OF SPECIFICATION GRADE. ALL SWITCHES SHALL BE RATED FOR 120 VOLT, UNLESS OTHERWISE NOTED.</p> <p>THE EXACT LOCATION OF ALL CONDUIT DROPS SHALL BE ADJUSTED TO CLEAR LIGHTS, DIFFUSERS, DUCTS, ETC. COORDINATE LOCATION WITH USER.</p> <p>3. WIRE AND CABLE IDENTIFICATION</p> <p>IDENTIFY FEEDERS WITH THE CORRESPONDING CIRCUIT DESIGNATION AT THE OVERCURRENT DEVICE, LOAD END, AND IN PULLBOXES.</p> <p>IDENTIFY BRANCH CIRCUITS WITH CORRESPONDING CIRCUIT DESIGNATION AT THE OVERCURRENT DEVICE, AT ALL SPLICES, AND IN JUNCTION BOXES.</p> <p>MARK CIRCUIT DESIGNATION ON ALL JUNCTION BOX COVERS. CIRCUIT DESIGNATION MEANS PANEL DESIGNATION AND CIRCUIT NUMBER, I.E., D-1.</p> <p>IDENTIFY DATA & COMMUNICATION PULL ROPE OR CABLE AT BOTH ENDS DESIGNATING OPPOSITE TERMINUS.</p> <p>USE PLASTIC COATED SELF-STICKING MARKERS SUCH AS THOMAS & BETTS E-Z CODE FOR IDENTIFICATION OF CONDUCTORS AND METAL EDGE BANDED PAPER TAGS ON PULL ROPES.</p> <p>4. CONDUCTORS</p> <p>DELIVER ALL CONDUCTORS TO THE JOB SITE IN ORIGINAL UNBROKEN CARTON OR REEL, PROPERLY TAGGED WITH U.L. LABEL, SIZE, TYPE, MANUFACTURER'S TRADE NAME AND THE DATE MANUFACTURED (MUST BE MANUFACTURED WITHIN 6 MONTHS).</p> <p>PROVIDE COPPER CONDUCTORS. #12 AWG MINIMUM, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. PROVIDE SOLID CONDUCTORS, #10 AWG AND SMALLER UNLESS OTHERWISE NOTED. PROVIDE STRANDED CONDUCTORS, #8 AWG AND LARGER UNLESS OTHERWISE NOTED. AT EQUIPMENT SUBJECT TO VIBRATION, USE STRANDED CONDUCTORS. #12 AND #10 STRANDED CONDUCTORS SHALL BE TERMINATED WITH CRIMP TYPE TERMINALS, T&B STA-KON, OR EQUAL.</p> <p>USE CONDUCTORS WITH THHN/THWN 600 VOLTS INSULATION.</p> <p>INSTALLATION OF 600 VOLT CONDUCTORS: CONDUCTORS SHALL BE CONTINUOUS BETWEEN OUTLETS OR JUNCTION BOXES. MAKE SPLICES IN OUTLET BOXES, PULLBOXES OR PANELBOARD GUTTERS. DO NOT SPLICE PANELBOARD FEEDERS.</p> <p>5. LIGHTING FIXTURES</p> <p>FURNISH AND INSTALL LIGHTING FIXTURES OF THE TYPE SPECIFIED ON THE DRAWINGS. PROVIDE APPROPRIATE MOUNTING HARDWARE FOR THE CEILING TYPE INDICATED ON THE ARCHITECT'S DRAWINGS. FIELD VERIFY EXISTING CEILINGS. ENERGY SAVING LAMPS AND BALLASTS OF THE TYPE INDICATED BY THE FIXTURE SCHEDULE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. (BALLASTS AND FLUORESCENT LUMINAIRES SHALL BE CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION).</p> <p>PROVIDE FIXTURES FOR TANDEM WIRING WHERE REQUIRED BY THE CALIFORNIA ADMINISTRATIVE CODE, TITLE 24. ALL PRE-MANUFACTURED WIRING COLOR SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. CONDUCTOR INSULATION SHALL BE GREATER THAN THE BALLAST OPEN CIRCUIT VOLTAGE.</p> <p>PROVIDE AN INVERTER BALLAST FOR THE BATTERY POWERED FIXTURE</p> <p>THE INVERTER SHALL TRANSFER THE POWER SOURCE TO BATTERY UPON THE LOSS OF BUILDING POWER. THE BATTERY SHALL LAST A MINIMUM OF 90 MINUTES FOR TWO 4 FOOT T-8 LAMPS.</p> <p>C. EXECUTION</p> <p>CAREFULLY PROTECT ALL WALLS, TRIM, FLOORS, EQUIPMENT, UTILITY LINES AND MATERIALS. WHEN WORKING ON FINISHED SURFACES, LIMIT DAMAGE TO THE CONFINED SPACE AND RESTORE TO THE ORIGINAL CONDITION ALL SURFACES WHICH ARE DAMAGED BECAUSE OF THE INSTALLATION OF THIS WORK.</p> <p>EQUIPMENT, MATERIALS AND SUPPLIES REMOVED FOR PROTECTION SHALL BE REPLACED IN ORIGINAL LOCATIONS. ANY MATERIALS DAMAGED SHALL BE REPLACED WITH NEW MATERIALS OF LIKE KIND AND QUALITY AT NO COST TO OWNER.</p> <p>DO ALL CUTTING AND PATCHING OF FLOORS, WALLS, CEILINGS, ETC., TO MATCH EXISTING. SCHEDULE CUTTING AND PATCHING OF FLOORS WITH THE OWNER. CORE DRILLING FOR CONCRETE WILL BE THE ONLY METHOD PERMITTED.</p> <p>ANY EXISTING CONDUITS, PIPING, ETC. DAMAGED DURING THE PROCESS OF CONSTRUCTION SHALL BE INSTALLED AND/OR RECONNECTED AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. NO ADDITIONAL CHARGES WILL BE ALLOWED FOR ANY EQUIPMENT WHICH IS DAMAGED BY THIS CONTRACTOR DUE TO THE INSTALLATION OF THE WORK OR FOR PUTTING EXISTING SYSTEMS BACK INTO A COMPLETE OPERATING CONDITION.</p> <p>PAINT ALL NEW EXPOSED ELECTRICAL RACEWAYS, CABINETS, ENCLOSURES AND FITTINGS TO MATCH ADJACENT SURFACES IN FINISHED AREAS.</p> <p>SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS, CEILINGS, FLOORS, ETC., TO MAINTAIN THE FIRE RATING. FURNISH AND INSTALL FIRE RATED ENCLOSURES FOR ALL EQUIPMENT PENETRATING INTO FIRE RATED ENVELOPES, SPACES, ETC.</p>		<p>SPECIFICATIONS AND GENERAL NOTES</p> <p>A. GENERAL</p> <p>1. SCOPE</p> <p>THE DRAWINGS AND THESE SPECIFICATIONS DESCRIBE THE SYSTEMS. FURNISH ALL MATERIALS AND DO ALL WORK REQUIRED BY THE DRAWINGS AND SPECIFICATIONS. UNLESS SPECIFICALLY NOTED TO THE CONTRARY, FURNISH AND INSTALL ALL NEW MATERIAL AND EQUIPMENT AS REQUIRED TO PRODUCE A COMPLETE OPERATING SYSTEM.</p> <p>2. PERMITS AND CHARGES</p> <p>OBTAIN AND PAY FOR ALL NECESSARY CONSTRUCTION PERMITS, INSPECTION FEES, AND OTHER CHARGES BY AGENCIES HAVING JURISDICTION.</p> <p>3. REGULATIONS AND CODES</p> <p>PROVIDE AND INSTALL ALL MATERIALS IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE, CALIFORNIA ADMINISTRATIVE CODE, TITLE 8 AND TITLE 24, AND OTHER CODES AND REGULATIONS HAVING JURISDICTION. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE INSPECTING AUTHORITY AND THE MANUFACTURERS RECOMMENDATIONS.</p> <p>4. VERIFYING EXISTING CONDITIONS</p> <p>BEFORE SUBMITTING BID, BECOME THOROUGHLY FAMILIAR WITH ACTUAL EXISTING CONDITIONS AT THE BUILDING. THE INTENT OF THE WORK IS SHOWN ON THE DRAWINGS AND DESCRIBED HEREINAFTER. BY THE ACT OF SUBMITTING A BID PROPOSAL FOR WORK, THE CONTRACTOR SHALL BE DEEMED TO HAVE MADE SUCH A STUDY AND EXAMINATION AND TO ACCEPT ALL CONDITIONS PRESENT AT THE SITE. NO REQUEST FOR ADDITIONAL PAYMENT SHALL BE CONSIDERED AS VALID DUE TO FAILURE TO ALLOW FOR CONDITIONS WHICH MAY EXIST.</p> <p>5. COORDINATION</p> <p>COORDINATE ALL WORK WITH OTHER TRADES. OBTAIN ALL DRAWINGS THAT WILL REQUIRE COORDINATION AND PROVIDE ALL ELECTRICAL CONNECTIONS REQUIRED WHETHER SHOWN ON ELECTRICAL DRAWINGS OR NOT.</p> <p>REFER TO ARCHITECTURAL, REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHTING FIXTURES, CEILING DIFFUSERS, ETC.</p> <p>LOCATIONS OF ELECTRICAL EQUIPMENT, J-BOXES, AND CONDUIT RUNS SHOWN ON THE DRAWINGS ARE APPROXIMATE. FIELD VERIFY FOR EXACT LOCATION AND ROUTING OF EXISTING EQUIPMENT AND COORDINATE ALL NEW WORK WITH THE OTHER DISCIPLINES TO AVOID CONFLICTS.</p> <p>THIS CONTRACTOR IS TO OBTAIN AND REFER TO H.V.A.C., PLUMBING AND OTHER DRAWINGS AND PROVIDE ALL CONTROL WIRING, RELAYS, STARTERS, TIME SWITCHES, CONDUITS, ETC. INDICATED THEREON AS BEING PROVIDED UNDER THE ELECTRICAL WORK.</p> <p>6. SERVICE CONTINUITY</p> <p>UNINTERRUPTED SERVICES, INCLUDING LIFE SAFETY SYSTEMS WHERE APPLICABLE, SHALL BE MAINTAINED TO ALL PARTS OF THE BUILDING OTHER THAN WORK AREAS. SCHEDULE SHUTDOWNS WITH THE OWNER, TO MAKE ALTERATIONS AND/OR ADDITIONS TO MAIN SWITCHGEAR, ASSEMBLIES, FEEDERS. PROVIDE ANY TEMPORARY SERVICES AS MAY BE REQUIRED. REQUESTS FOR SHUTDOWN SHALL BE MADE AT LEAST 72 HOURS IN ADVANCE TO THE OWNER AT WHICH TIME THE OWNER SHALL SCHEDULE THE EXACT TIME AND DATE. IDENTIFY AT BID TIME, ALL WORK TO BE DONE ON PREMIUM TIME AND TOTAL OVERTIME MAN-HOURS REQUIRED FOR COMPLETION.</p> <p>7. AS BUILT</p> <p>PROVIDE RECORD DRAWINGS TO THE OWNER WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT. RECORD DRAWINGS SHALL BE SIGNED AND DATED BY CONTRACTOR.</p> <p>8. GUARANTEE</p> <p>CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE ALL LABOR AND MATERIALS ON ALL WORK AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR, EXCEPT FOR LIGHTING FIXTURE LAMPS.</p> <p>9. SHOP DRAWINGS</p> <p>SUBMIT REQUIRED SHOP DRAWINGS FOR REVIEW WITHIN ONE WEEK OF BID AWARD. ALL EQUIPMENT TO BEAR U.L. LABEL OR THAT OF ANOTHER ACCEPTABLE TESTING LABORATORY. SHOP DRAWINGS MUST BE STAMPED BY THE CONTRACTOR FOR CONFORMANCE PRIOR TO SUBMITTING.</p> <p>SUBMITTALS SHALL INCLUDE THE PROJECT NAME AND CONTRACTORS NAME. SUBMIT SIX SETS OF SHOP DRAWINGS AND AWAIT ENGINEERING REVIEW COMMENTS PRIOR TO PURCHASING ALL PANELBOARDS, LIGHTING FIXTURES AND LENSES, CONTACTORS, AND DISCONNECT SWITCHES.</p> <p>SUBMITTALS ARE REQUIRED FOR THE FOLLOWING LIGHT FIXTURES AND LAMPS, LIGHTING CONTROL SYSTEMS AND COMPONENTS OCCUPANCY SENSING DEVICES, PANELBOARDS AND CIRCUIT BREAKERS, UNDERFLOOR DUCT SYSTEMS.</p> <p>10. CONTRACTOR BID</p> <p>CONTRACTOR'S BID SHALL BE BASED ON ALL WORK SHOWN ON THE PLANS AND AS SPECIFIED. ALL PREMIUM TIME COSTS REQUIRED SHALL BE INCLUDED IN THE BID. IF CONTRACTOR PROPOSES TO SUBSTITUTE FOR EQUIPMENT SPECIFIED, HE SHALL SUBMIT HIS REQUEST FOR CONSIDERATION TO THE OWNER AND ENGINEER PRIOR TO THE BID IN WRITING. ALL SUBSTITUTIONS MUST BE REVIEWED BY THE ENGINEER. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE AT HIS OWN EXPENSE FOR ANY CHANGES RESULTING FROM HIS PROPOSED SUBSTITUTIONS WHICH AFFECT OTHER PARTS OF HIS OWN WORK OR THE WORK OF OTHER CONTRACTORS.</p>	
--	--	--	--

ELECTRICAL SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SINGLE POLE DISCONNECT SWITCH		DIMMER SWITCH
	2 POLE OR 3W SWITCH - AS INDICATED		DIGITAL WALL SWITCH - AS INDICATED
	DISCONNECT SWITCH		MOTION SENSOR SWITCH - AS INDICATED
	FUSED DISCONNECT SWITCH		WEATHERPROOF
	COMBINATION MAGNETIC STARTER		ABOVE FINISH FLOOR
	JUNCTION BOX - F = FLOOR		TELEPHONE TERMINAL CABINET
	DUPLEX CONVENIENCE RECEPTACLE		GROUND FAULT INTERRUPTER
	4-PLEX CONVENIENCE RECEPTACLE		HORSEPOWER
	FLOOR MOUNTED DUPLEX RECEPTACLE		FLOOR OR WALL
	SPECIAL DUPLEX RECEPTACLE		ELECTRIC WATER COOLER
	SPECIAL RECEPTACLE 208V/1PH		CEILING
	CLOCK RECEPTACLE - 7'-6" A.F.F.		DRAWING
	TELE. BOX & 3/4" C. UP TO CEILING		CIRCUIT
	1-STAT BOX & 1/2" C. UP TO CEILING		FULL LOAD AMPERES
	MOTOR - HP AS INDICATED INSIDE		BUILDING
	BREAKER - SIZE AS INDICATED		MOUNTING
	MOTOR OPERATING SWITCH		NOT TO SCALE
	PANEL - PNL		LIGHTING
	MAIN DISTRIBUTION PANEL		DOWN
	EXIT SIGNS		FIXTURE
	NIGHT LIGHT		EXHAUST FAN
	SOUND VOLUME CONTROL		ROOF-TOP UNIT
	BELL OR ALARM ASSEMBLY		AIR HANDLING UNIT
	WIREMOLD - OUTLETS AS SPECIFIED		CONDENSING UNIT
	ELECTRIC BASEBOARD		INDICATES CONDUIT UP OR DOWN
	EMERGENCY BATTERY LIGHTS		TELEPHONE CONDUIT
	FLEXIBLE CONDUIT- APPROVED TYPE		EMERGENCY CONDUIT
	SPEAKER		UNDERFL. COND., RIGID STL HEAVY WALL
	CONDUIT		INDICATES NUMBER OF HOME RUNS
	EMERGENCY PANEL, CIRCUIT OR SYSTEM		2#10 COPPER WIRES IN 3/4" CONDUIT
	NATIONAL ELECTRIC CODE		3#10 COPPER WIRES IN 3/4" CONDUIT
	LIGHTING PANEL		4#10 COPPER WIRES IN 3/4" CONDUIT
	POWER PANEL		SEP. ISOL'D INSUL'D COPPER GRND COND.
	NIGHT LIGHT		SOUND SYSTEM RACEWAY
	GROUNDING		DOOR CONTRACTOR
	AMPERES		MOTION SENSOR
			PHOTO SENSOR

OUTLET HEIGHT SCHEDULE

1. WALL RECEPTACLES- GENERAL (BOTTOM OF RECEPTACLE)	1'-3"
2. RECEPTACLES OVER COUNTER, TABLES, WORKBENCHES EXCEPT AS INDICATED ON DRAWINGS.	4'-2"
3. TELEPHONE OUTLETS (BOTTOM OF RECEPTACLE)	1'-3"
4. TELEPHONE OUTLETS OVER COUNTER, TABLES, WORK-BENCHES- EXCEPT AS INDICATED ON DRAWINGS.	4'-2"
5. WALL SWITCHES- GENERAL (TOP OF SWITCH)	4'-0"
6. WALL PUSHBUTTONS	4'-0"
7. MOTOR CONTROLLERS	4'-2"
8. BELLS, BUZZERS	8'-0"
9. CLOCK OUTLETS	8'-0"
10. WALL LAMP RECEPTACLES AND WALL FIXTURE OUTLETS	6'-10"

NOTE: ALL HEIGHTS SHALL BE VERIFIED IN FIELD WITH OWNER AND SATISFY "ADA" RERQUIREMENTS PRIOR TO FINAL INSTALLATION.

NOTE:
ALL ELECTRICAL WORK SHALL COMPLY WITH 2019 CALIFORNIA ELECTRICAL CODE AND 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.

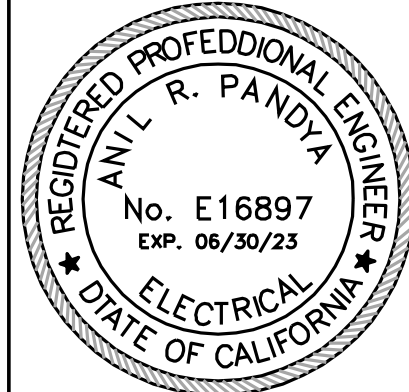
CODES RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, OSHA AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Anil R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
	09.22.21	CITY SUBMITTAL
	10.04.22	CITY COMMENTS

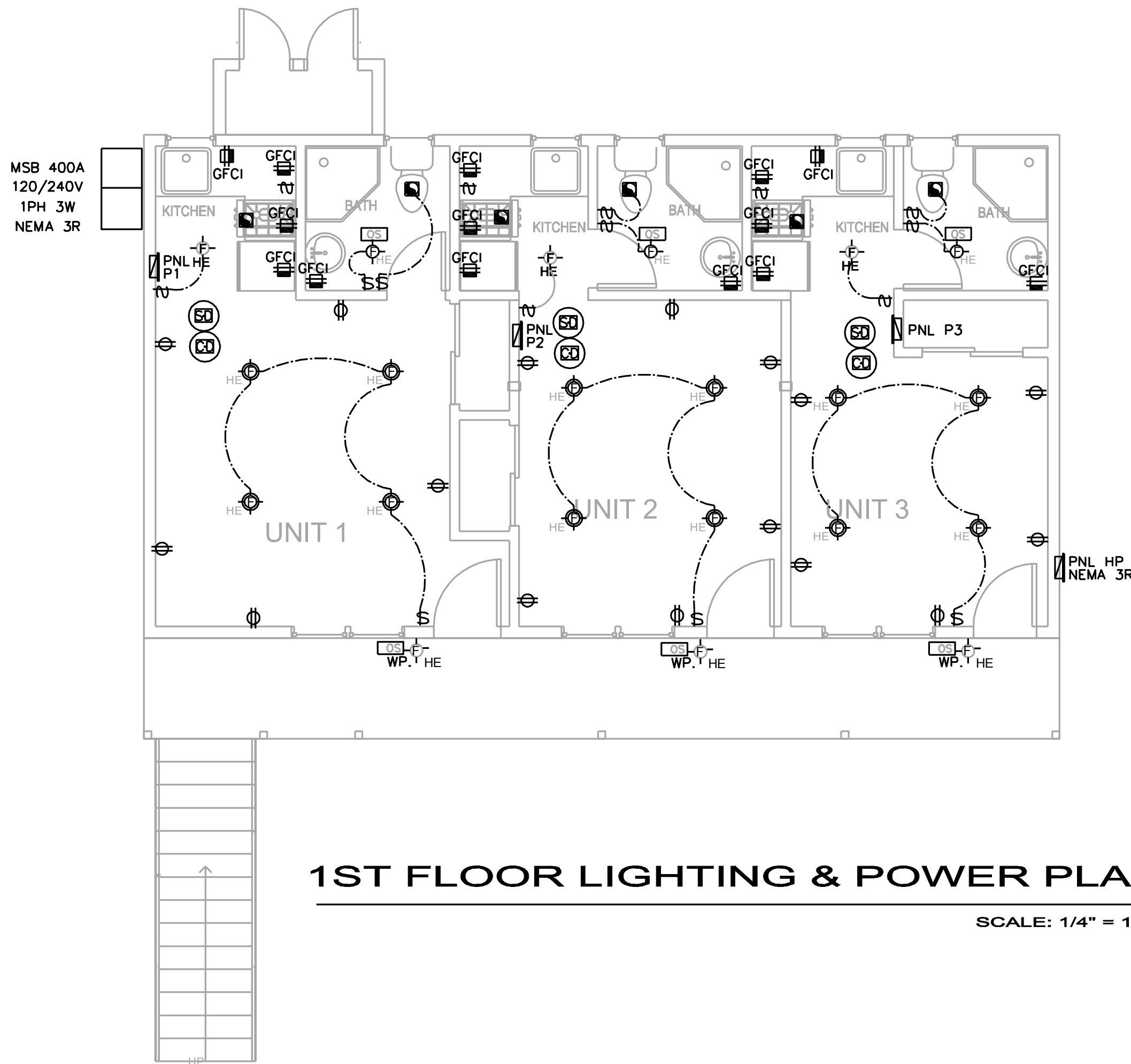
COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

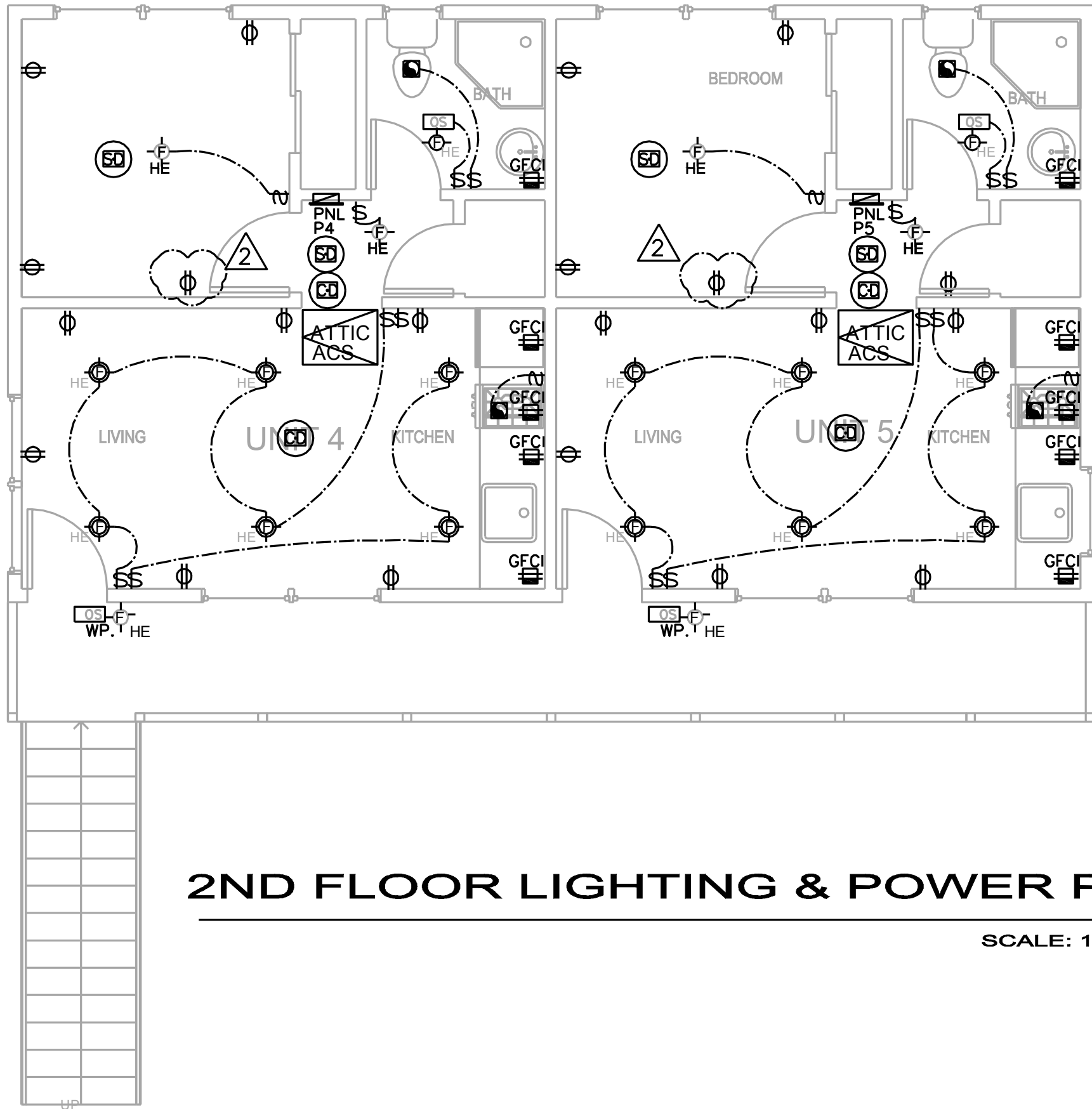
BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

E0.2



1ST FLOOR LIGHTING & POWER PLAN
SCALE: 1/4" = 1'-0"



2ND FLOOR LIGHTING & POWER PLAN
SCALE: 1/4" = 1'-0"

ELECTRICAL NOTES:

- ALL 125-VOLT, 15- AND 20 AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT.
- ALL BRANCH CIRCUITS THAT SUPPLY 125VOLT, SINGLE-PHASE, 15- AND 20-AMPERE OUTLETS (I.E. RECEPTACLES, LIGHTS, SMOKE ALARMS, ETC.) TO BE PROTECTED BY ARC-FAULT CIRCUIT INTERRUPTER (AFCI) LISTED TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT PER CEC 210-12(B) IN KITCHENS, LAUNDRY ROOMS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, BEDROOMS, CLOSETS, HALLWAY, AND SIMILAR LIVING SPACES.
- ALL HIGH EFFICACY LIGHT FIXTURES REQUIRED TO BE CERTIFIED TO JA8 SHELL BE CONTROLLED BY A DIMMER OR VACANCY SENSOR.
- JA8 MARKING IS REQUIRED FOR THE FOLLOWING:
 - ALL LIGHT SOURCES IN CEILING RECESSED DOWNLIGHT LUMINAIRES.
 - CEILING RECESSED DOWNLIGHT LUMINAIRES SHALL NOT HAVE SCREW BASES REGARDLESS OF LAMP TYPE AS DESCRIBED IN CA ENERGY.
 - GU24 SOCKETS CONTAINING LED LIGHT SOURCES. A GU24 LAMP FITTING IS A TWO-PIN CONNECTOR FOR COMPACT FLUORESCENT LAMPS (CFL) OR LED LAMPS THAT USES A BAYONET MOUNT-LIKE TWIST-LOCK TWO-PIN CONNECTOR INSTEAD OF AN EDISON SCREW FITTING.
 - ANY LIGHT SOURCE NOT OTHERWISE LISTED ABOVE AND CERTIFIED TO THE COMMISSION AS COMPLYING WITH JOINT APPENDIX 8.

SMOKE AND CARBON MONOXIDE ALARMS NOTES:

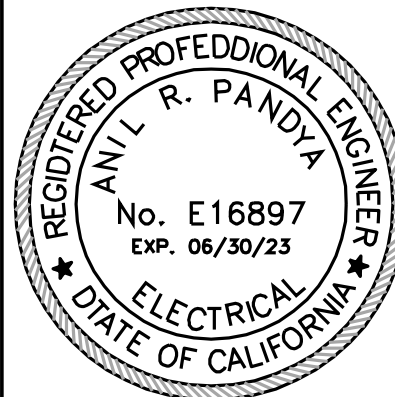
- SMOKE ALARMS ARE REQUIRED IN ALL AREAS/ROOMS USED FOR SLEEPING, IN THE IMMEDIATE VICINITY OUTSIDE THESE AREAS/ROOMS AND AT BOTH THE TOP AND BOTTOM LANDING OF THE INTERIOR STAIRCASE. SMOKE ALARMS INSTALLED WITHIN 20 FT. OF A KITCHEN, BATHROOM, OR ROOM CONTAINING A FIREPLACE OR WOOD BURNING STOVE SHALL BE OF THE PHOTOELECTRIC TYPE.
- CARBON MONOXIDE AND SMOKE ALARM SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING. BE EQUIPPED WITH BATTERY BACK-UP AND BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS. PLEASE NOTE THIS COMMENT ON SHEET A3.
- FOR PLACEMENT OF SMOKE ALARMS AND CARBON MONOXIDE ALARMS IN ROOMS WITH VARIATIONS IN CEILING HEIGHT (SLOPED, PITCHED ETC.), REFER TO THE MANUFACTURERS GUIDELINES FOR PROPER PLACEMENT.

UTILITY LEGEND		
	SURFACE MOUNTED CEILING HIGH EFFICACY LIGHT FIXTURE.	
	RECESSED HIGH EFFICACY LIGHT FIXTURE.	
	HANGING HIGH EFFICACY LIGHT FIXTURE.	
	RECESSED LIGHT FIXTURE WITH VAPORPROOF LENS COVER. HIGH EFFICACY.	
	WALL MOUNTED LIGHT FIXTURE.	
	WALL MOUNTED SCONCE LIGHT	
	SURFACE MOUNTED FLUORESCENT FIXTURE / UNDER CABINET LIGHT FIXTURE.	
	LOW WATTAGE LED LIGHT STRIP COUNSELED INSIDE SOFFIT	
	RECESSED FRACTIONAL HP EXHAUST FAN, CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR. FOR BATHROOMS TO HAVE HUMIDISTAT CONTROLS	
	RECESSED COMBINATION LIGHT / EXHAUST FAN, SWITCH CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.	
	RECESSED COMBINATION HEATER / EXHAUST FAN, SWITCH CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.	
	120V. DUPLEX CONVENIENCE RECEPTACLE	
	240V. SINGLE CONVENIENCE RECEPTACLE	
	120V. DUPLEX CONVENIENCE RECEPTACLE, SWITCH CONTROLLED, 1/2 HOT.	
	120V. DUPLEX CONVENIENCE RECEPTACLE BELOW (INCL. INSIDE CABINET OR ABOVE AT CEILING)	
	120V. WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE.	
	120V. GROUND FAULT CIRCUIT-INTERRUPTER (G.F.C.I.) DUPLEX CONVENIENCE RECEPTACLE.	
	120V. WEATHERPROOF G.F.C.I. DUPLEX CONVENIENCE RECEPTACLE	
	DEDICATED COMPUTER OUTLET	
	120V. FLOOR TYPE DUPLEX RECEPTACLE, W/COVER	
	SINGLE POLE LIGHT SWITCH.	
	HIGH EFFICACY LIGHT SWITCH.	
	THREE - WAY LIGHT SWITCH.	
	FOUR - WAY LIGHT SWITCH.	
	SINGLE POLE LIGHT SWITCH W/ DIMMER CONTROL	
	SINGLE POLE LIGHT SWITCH. W/ MANUAL / MOTION OCCUPANCY SENSOR	
	TV. TELEVISION ANTENNA / CABLE JACK	
	PH. TELEPHONE JACK.	
	PUSH BUTTON FOR DOOR CHIMES OR GARAGE DOOR OPENER	
	DOOR CHIMES	
	THERMOSTAT, VERIFY LOCATION WITH HEATING AND AC LAYOUT	
	JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED	
	SMOKE DETECTOR, ICBO APPROVED, CEILING MOUNTED, HARD WIRED AND W/ BATTERY BACKUP	
	CEILING FAN JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED	
	LIGHTED ADDRESS SIGN (VISIBLE FROM STREET) (LINE VOLTAGE) TIED TO PHOTOCELL.	
	VACUUM LOCATION	
	MANUAL ON, AUTOMATIC OFF VACANCY SENSOR	
	FLOOR DRAIN (FD) OR AREA DRAIN (AD), AS NOTED	
	ROOF DRAIN (RD)	
	HOSE BIB (HB)	
	HOSE BIB W/ SHUT OFF VALVE (HB/SOV)	
	FUEL GAS OUTLET (FG)	
	LOOSE KEY VALVE (KEY)	
	WATER STUB OUT FOR ICE MAKER	
	CARBON MONOXIDE ALARM HARD WIRE W/ BATTERY BACKUP	

CODES RULES AND REGULATIONS
ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, CSHA, AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION
CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND FOUND TO BE IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Anil R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	02.04.22	OWNER COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

E1.1

PLAN NOTES:

- 1) PROVIDE SEPARATE ELECTRICAL CIRCUITS FOR: DISPOSAL, DISHWASHER, FAU, (2) 20 AMP SMALL APPLIANCES, 20 AMP FOR BATH, 20AMP FOR LAUNDRY ROOMS & FOR JACUZZI MOTOR.
- 2) ALL BRANCH CIRCUIT THAT SUPPLY 120 VOLT, SINGLE PHASE 15 & 20 AMP INSTALLED IN ALL ROOMS, HALLWAYS, CLOSETS, KITCHENS OTHER THAN BATHROOMS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER.
- 3) ALL RECEPTACLE OUTLET IN BATHROOMS TO BE GFCI.
- 4) PROVIDE GFCI RECEPTACLE AT 4' O.C. AT KITCHEN COUNTERTOP.
- 5) ALL OUTDOOR & GARAGE RECEPTACLE OUTLET SHOULD BE GFCI.
- 6) INSTALL ENERGY STAR BATH ROOM FANS ON TIMER OR HUMIDISTAT.
- 7) INSTALL ENERGY STAR APPLIANCES, IN COMPLIANCE W/ TITLE 24 & GREEN POINT CHECK LIST.
- 8) THE SMOKE ALARM & CARBON MONOXIDE ALARAM SHALL BE AC/DC & INTERCONNECTED HARD WIRED.
- 9) ALL RECEPTACLES ARE TO BE TAMPER PROOF .
- 10) ALL CAN LIGHTS WITH ZERO CLEARANCE TO BE UL- IC RATED.
- 11) SMOKE ALARMS SHALL BE TESTED & MAINTAINED PER MFR INSTRUCTIONS. REPLACE NON-FUNCTIONING OR AFTER 10 YERAS OF MFRG.DATE, PER R314.3.2.

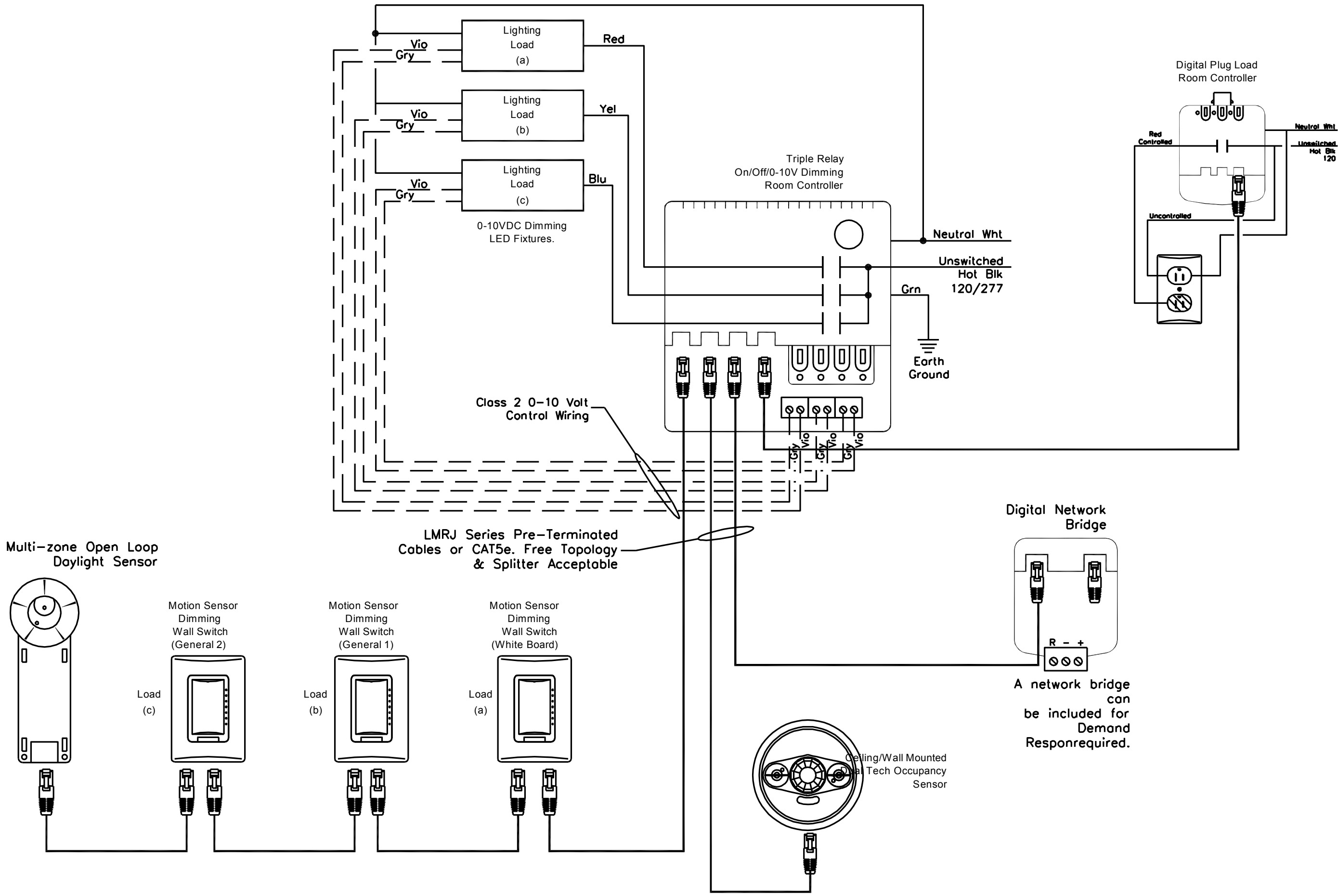
SWITCHES & OUTLETS MOUNTING HEIGHT:

SWITCHES : 48" A.F.F.
SWITCHES ABOVE CABINETS : ABOVE SPLASH BLOCK OR 48" A.F.F.
DUPLEX OUTLETS MOUNTING HEIGHT ARE AS FOLOWS:
GENERAL PURPOSE CONVENIENCE OUTLETS: 15" A.F.F. U.O.N.
KITCHEN COUNTER : ABOVE SPLASH BLOCK OR 48" A.F.F.
VANITY COUNTER : ABOVE SPLASH BLOCK . U.O.N.
EXTERIOR OUTLETS : AT PORCHES NOT MORE THAN 6"-6" ABOVE GRADE, ALL OUTLETS MUST BE WITHIN 6'-6" OF GRADE & WATER PROOF

TITLE 24 COMPLIANCE NOTES:

1. COMPLETED FORM CF-2R-LTG-01-E MUST BE PROVIDED TO THE CITY BUILDING INSPECTOR PRIOR TO FINAL INSPECTION.
2. KITCHEN ALL LIGHTING IN THE KITCHEN ARE HIGH EFFICACY LUMINARIES. EQUIPPED WITH DIMMER SWITCH & VACANCY SENSOR WHERE INDICATED
3. BATHROOM INSTALL HIGH EFFICACY FIXTURE IN THE BATH ROOMS. SWITCH SEPARATELY LIGHING THAT IS INTEGRAL TO CEILING FAN FROM VENTILATION INCLUDE VACANCY SENSOR WHERE INDICATED ON SWITCHES
4. LIVING RM. DINING RM. BED RMS. HALLWAYS INSTALL HIGH EFFICACY FIXTURE IN THESE LOCATIONS EQUIPPED WITH DIMMER SWITCH OR VACANCY SENSOR OR BOTH AS INDICATED ON PLAN.
5. GARAGE LAUNDRY RM. UTILITY RM. INSTALL HIGH EFFICACY FIXTURE IN THESE LOCATION OR HIGH EFFICACY LUMINARIES, EQUIPPED W/ VACANCY SENSOR (MANUALLY ON OCCUPANCY SENSOR & MOTION SENSOR THAT COMPLYS W/ CEC SECTION 110.9 (b) & SHALL NOT HAVE A CONTROL THAT ALLOWS THE LUMINARIES TO BE TURNED ON AUTOMATICLY OR HAVE AN OVERRIDE THAT ALLOWS THE LUMINARIES TO BE ALWAYS ON.
5. OUTDOOR LIGHTING ATTACHED TO BLDG. INSTALL LOW EFFICACY LIGHTING CONTROLLED BY MOTION SENSOR & A PHOTOCONTROL, ASRSTONOMICAL TIME CLOCK OR "EMCS"TO AUTOMATICLY REDUCE LIGHTING ENERGY USE WHEN SUFFICIENT DAY LIGHT IS AVAILABLE. LIGHTING MUST BE CONTROLLED BY A MANUAL ON-OFF SWITCH THAT IS NOT CAPABLE OF TURNING ON ANY LIGHTING THAT HAS BEEN SHUT-OFF BY AUTOMATIC LIGHTING CONTROL. LANDSCAPE LIGHTING ARE EXEMPT FROM LIGHTING REQUIREMENT.

CEILING DEVICE LEGENDS						
SYMBOL	DESCRIPTION	MANUFACTURER	MODEL NUMBER	COLOR	MOUNTING	REMARKS
	CEILING MOUNTED OCCUPANCY SENSOR	LEWTON OR APPROVED EQUAL	CEILING MOUNTED SENSOR	WHITE	ACT: 6 OF TILE SHOWN CYP: INDICATED ON PLANS	
	CEILING MOUNTED PHOTO SENSOR	LEWTON OR APPROVED EQUAL	CEILING MOUNTED SENSOR	WHITE	ALL SWITCHES, DIMMERS, AND WALL OCCUPANCY SENSORS TO BE GANGED INTO ONE PLATE.	
	WALL MOUNTED DIMMER SWITCH	LEWTON OR APPROVED EQUAL	WHERE SWITCHES/DIMMERS & WALL OCC. SENSORS ARE REQ. PROVIDE ALL-IN-ONE UNIT	WHITE	ALL SWITCHES, DIMMERS, AND WALL OCCUPANCY SENSORS TO BE GANGED INTO ONE PLATE.	
	CEILING MOUNT PARTIAL MOTION SENSOR FOR STAIRWELL & CORRIDORS	LEWTON OR APPROVED EQUAL	CEILING MOUNTED SENSOR	WHITE	ALL SWITCHES, DIMMERS, AND WALL OCCUPANCY SENSORS TO BE GANGED INTO ONE PLATE.	
	CEILING MOUNTED EXIT SIGN	DUAL LITE OR APPROVED EQUAL	LE SERIES LE-C-SEE PLAN-R- SEE PLAN-W-E	RED FACE WHITE TRIM	ACT: 6 OF TILE SHOWN CYP: INDICATED ON PLANS	
	WALL MOUNTED EXIT SIGN	DUAL LITE OR APPROVED EQUAL	LE SERIES LE-W-SEE PLAN-R- SEE PLAN-W-E	RED FACE WHITE TRIM	WHERE SHOWN ON PLANS	
	END MOUNTED EXIT SIGN	DUAL LITE OR APPROVED EQUAL	LE SERIES LE-E-SEE PLAN-R- SEE PLAN-W-E	RED FACE WHITE TRIM	WHERE SHOWN ON PLANS	



ELECTRICAL LIGHTING CONTROLS

CODES RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, OSHA AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Anil R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
09.22.21	CITY	SUBMITTAL
10.04.22	CITY	COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

E2.1

PANEL "P1, P2 & P3" SCHEDULE																			
MAIN BUS 125 AMPS					MAIN BREAKER: 125 AMPS					TYPE: TRIM:									
120/208 Phase 1 WIRE 3																			
TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT
LIGHTING	1.2		1	RECEPTACLE	1.2		2	LIGHTING	1.2		1	RECEPTACLE	1.2		2	LIGHTING	1.2		1
RECEPTACLE	1.2		3	RECEPTACLE	1.2		4	RECEPTACLE	1.2		3	RECEPTACLE	1.2		4	RECEPTACLE	1.2		3
RECEPTACLE	1.2		5	GF1	1.2		5	RECEPTACLE	1.2		6	GF1	1.2		6	RECEPTACLE	1.2		5
GF1	1.2		7	FRIDGE	1.2		7	GF1	1.2		8	FRIDGE	1.2		8	GF1	1.2		7
GF1	1.2		9	OVEN	1.2		9	GF1	1.2		10	OVEN	1.2		10	GF1	1.2		9
			11	DISH WASHER	1.2		11				12	DISH WASHER	1.2		12				11
			13				13				14				14				13
			15				15				16				16				15
			17				17				18				18				17
			19				19				20				20				19
			21				21				22				22				21
			23				23				24				24				23
			25				25				26				26				25
			27				27				28				28				27
			29				29				30				30				29
			31				31				32				32				31
			33				33				34				34				33
			35				35				36				36				35
			37				37				38				38				37
			39				39				40				40				39
			41				41				42				42				41
TOTAL LOAD PER PHASE 3.6 2.4 -					3.6 3.6 - TOTAL LOAD PER PHASE														
TOTAL CONNECTED LOAD 13.2 KVA					HIGH PHASE LOAD 60.0 AMPS														

NOTE: ALL LIGHTING CIRCUITS VIA 7 DAY PROGRAMMABLE TIMECLOCK LIGHTING CONTROL LUTRON 128 DIMMING & SWITCHING CONTROL PANEL.

PANEL "P4 & P5" SCHEDULE																			
MAIN BUS 125 AMPS					MAIN BREAKER: 125 AMPS					TYPE: TRIM:									
120/208 Phase 1 WIRE 3																			
TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT	TYPE OF LOAD AND LOCATION	VOLT - AMP	BRKR	CKT
LIGHTING	1.2		1	RECEPTACLE	1.2		2	LIGHTING	1.2		1	RECEPTACLE	1.2		2	LIGHTING	1.2		1
RECEPTACLE	1.2		3	RECEPTACLE	1.2		4	RECEPTACLE	1.2		3	RECEPTACLE	1.2		4	RECEPTACLE	1.2		3
RECEPTACLE	1.2		5	GF1	1.2		5	RECEPTACLE	1.2		6	GF1	1.2		6	RECEPTACLE	1.2		5
GF1	1.2		7	FRIDGE	1.2		7	GF1	1.2		8	FRIDGE	1.2		8	GF1	1.2		7
GF1	1.2		9	OVEN	1.2		9	GF1	1.2		10	OVEN	1.2		10	GF1	1.2		9
RECEPTACLE	1.2		11	DISH WASHER	1.2		11				12	DISH WASHER	1.2		12				11
			13				13				14				14				13
			15				15				16				16				15
			17				17				18				18				17
			19				19				20				20				19
			21				21				22				22				21
			23				23				24				24				23
			25				25				26				26				25
			27				27				28				28				27
			29				29				30				30				29
			31				31				32				32				31
			33				33				34				34				33
			35				35				36				36				35
			37				37				38				38				37
			39				39				40				40				39
			41				41				42				42				41
TOTAL LOAD PER PHASE 3.6 3.6 -					3.6 3.6 - TOTAL LOAD PER PHASE														
TOTAL CONNECTED LOAD 14.4 KVA					HIGH PHASE LOAD 60.0 AMPS														

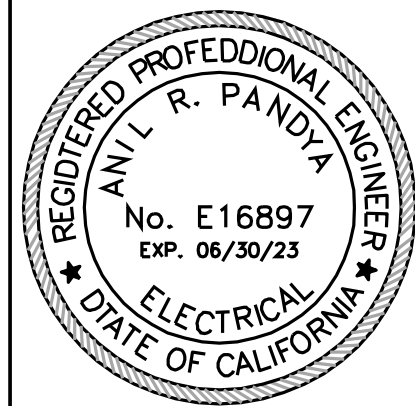
NOTE: ALL LIGHTING CIRCUITS VIA 7 DAY PROGRAMMABLE TIMECLOCK LIGHTING CONTROL LUTRON 128 DIMMING & SWITCHING CONTROL PANEL.

UTILITY LEGEND	
	SURFACE MOUNTED CEILING HIGH EFFICACY LIGHT FIXTURE.
	RECESSED HIGH EFFICACY LIGHT FIXTURE.
	HANGING HIGH EFFICACY LIGHT FIXTURE.
	RECESSED LIGHT FIXTURE WITH VAPORPROOF LENS COVER, HIGH EFFICACY
	WALL MOUNTED HIGH EFFICACY LIGHT FIXTURE.
	WALL MOUNTED SCONCE LIGHT
	SURFACE MOUNTED HIGH EFFICACY / UNDER CABINET LIGHT FIXTURE.
	LOW WATTAGE LED LIGHT STRIP COUNSELED INSIDE SOFFIT
	RECESSED FRACTIONAL HP EXHAUST FAN, CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR, FOR BATHROOMS TO HAVE HUMIDISTAT CONTROLS
	RECESSED COMBINATION LIGHT / EXHAUST FAN, SWITCH CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
	RECESSED COMBINATION HEATER / EXHAUST FAN, SWITCH CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
	120V. DUPLEX CONVENIENCE RECEPTACLE
	240V. SINGLE CONVENIENCE RECEPTACLE
	120V. DUPLEX CONVENIENCE RECEPTACLE, SWITCH CONTROLLED, 1/2 HOT.
	120V. DUPLEX CONVENIENCE RECEPTACLE BELOW (NCL. INSIDE CABINET OR ABOVE AT CEILING)
	120V. WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE.
	120V. GROUND FAULT CIRCUIT-INTERRUPTER (G.F.C.I.) DUPLEX CONVENIENCE RECEPTACLE.
	120V. WEATHERPROOF G.F.C.I. DUPLEX CONVENIENCE RECEPTACLE
	DEDICATED COMPUTER OUTLET
	120V. FLOOR TYPE DUPLEX RECEPTACLE, W/COVER
	SINGLE POLE LIGHT SWITCH.
	HIGH EFFICACY LIGHT SWITCH.
	THREE - WAY LIGHT SWITCH.
	FOUR - WAY LIGHT SWITCH.
	SINGLE POLE LIGHT SWITCH W/ DIMMER CONTROL
	SINGLE POLE LIGHT SWITCH, W/ MANUAL/ MOTION OCCUPANCY SENSOR
	TELEVISION ANTENNA / CABLE JACK
	TELEPHONE JACK.
	PUSH BUTTON FOR DOOR CHIMES OR GARAGE DOOR OPENER
	DOOR CHIMES
	THERMOSTAT, VERIFY LOCATION WITH HEATING AND AC LAYOUT
	JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED
	SMOKE DETECTOR, ICBO APPROVED, CEILING MOUNTED, HARD WIRED AND W/ BATTERY BACKUP
	CEILING FAN JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED
	LIGHTED ADDRESS SIGN (VISIBLE FROM STREET) (LINE VOLTAGE) TIED TO PHOTOCELL.
	VACUUM LOCATION
	OCCUPANT SENSOR
	FLOOR DRAIN (FD) OR AREA DRAIN (AD), AS NOTED
	ROOF DRAIN (RD)
	HOSE BIB (HB)
	HOSE BIB W/ SHUT OFF VALVE (HB/SOV)
	FUEL GAS OUTLET (FG)
	LOOSE KEY VALVE (KEY)
	WATER STUB OUT FOR ICE MAKER
	CARBON MONOXIDE ALARM HARD WIRE W/ BATTERY BACKUP
	GARAGE DOOR OPENER
	AIR SUPPLY REGISTER
	POWER SWITCH DISCONNECT

CODES RULES AND REGULATIONS
ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, OSHA AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION
CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDINGS HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Anil R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
A	09.22.21	CITY SUBMITTAL
A	12.28.22	COWNER REVISIONS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DDCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

E2.2

GAS WALL TOP VENT FURNACE SCHEDULE							
TAG	MAKE	MODEL	CFM	SP	BTUH	WEIGHT	REMARK
WF1	WILLIAMS	3509622A	-	-	35000	156#	C/W 7 DAY PROGRAMMABLE THERMOSTAT
WF2	WILLIAMS	2509622A	-	-	25000	122#	C/W 7 DAY PROGRAMMABLE THERMOSTAT

FAN / LITE EXHAUST FAN SCHEDULE									
TAG	MANUFACTURER	MODEL	CFM	SP	RPM	WATTS	VOLTAGE	WEIGHT	REMARK
EF1	BROAN	XB101L	110	0.2	1050	135	120V/1Ø	36 #	CEILING MOUNT C/W BACK DRAFT DAMPER. INTERLOCK WITH LIGHT SWITCH
EFV1	PANASONIC	FV-04E1	40	0.1	-	24	120V/1Ø	21 #	CEILING MOUNT C/W BACK DRAFT DAMPER. INTERLOCK WITH LIGHT SWITCH

KITCHEN HOOD FAN / LITE EXHAUST FAN SCHEDULE									
TAG	MANUFACTURER	MODEL	CFM	SP	WIDTH	WATTS	VOLTAGE	WEIGHT	REMARK
KH1	BROAN	402404	190	0.2	24"	130	120V/1Ø	14#	UNDER CABINET MOUNT C/W LIGHT AND FAN/FILTER

VENTLLATION BASED ON ASHRAE 62.2 TABLE 4.2	
REQUIRED VENTILATION FOR HOUSE PER FLOOR = 105 CFM	
FIRST FLOOR BATHROOM EXHAUST FAN EF-1 & 2 PROVIDES 190 CFM EXHAUST	
SECOND FLOOR BATHROOM EXHAUST FAN EF-3 PROVIDES 70 CFM EXHAUST	
THIRD FLOOR BATHROOM EXHAUST FAN EF-4 & EF-6 PROVIDES 190 CFM EXHAUST	
USING FACTOR 2.1 FROM ASHRAE 62.2 TABLE 4.2	
REQUIRED VENTILATION CFM = 2.1 x 50 CFM = 105 CFM	
VENTILATION CFM PROVIDED IN LOWER FLOOR = 190 CFM	
VENTILATION CFM PROVIDED IN MAIN FLOOR = 70 CFM	
VENTILATION CFM PROVIDED IN UPPER FLOOR = 190 CFM	
HENCE COMPLIES WITH ASHRAE 62.2 SECTION 4	
NOTE: VENTILATION CFM IS PROVIDED BY INFILTRATION AIR WHEN EXHAUST FANS RUN.	

Ventilation air requirements

Based on ASHRAE 62.2, Table 4.2

This chart estimates the required CFM need for non-continuous ventilation systems.

Non-Continuous Run Time Multipliers				
Based on ASHRAE 62.2, Table 4.2: This chart estimates the required cfm need for non-continuous ventilation systems.				
% on During Cycle	Cycle Time (hrs): On + Off Time			
	0-4	4-8	8-12	12-24
10%	10.0	12.7	n/a	n/a
20%	5.0	6.0	8.9	n/a
30%	3.3	3.7	4.7	n/a
40%	2.5	2.7	3.1	12.5
50%	2.0	2.1	2.3	3.8
60%	1.7	1.7	1.8	2.3
70%	1.4	1.5	1.5	1.7
80%	1.3	1.3	1.3	1.3
90%	1.1	1.1	1.1	1.1
100%	1.0	1.0	1.0	1.0

39



GENERAL NOTES

- SHOP FABRICATED DUCTS, FLEXIBLE ALUMINUM DUCTS, AND FIBERGLASS--WRAPPED FLEXIBLE DUCTS SHALL BE U.L. LISTED AND LABELED UL-181 FOR THEIR USE.
THE DUCT SYSTEM SHALL BE CONSTRUCTED PER TABLE NOS. 6-A, 6-B AND 6-C PER CMC STDS. 6-1 OR 6-3. UMC 601.2
- ALL PIPE AND DUCTWORK SHALL BE INSULATED IN FULL ACCORD WITH THE UNIFORM MECHANICAL CODE 1997 AND TABLE(S) 4-3 AND 4-4 OF SECTION 4.2 OF THE TITLE 24 ENERGY EFFICIENCY MANUAL AND THE ENERGY CONSERVATION PROVISIONS OF TITLE 24.
- DUCT LINER, WRAPPED DUCT INSULATION, AND PIPE INSULATION SHALL BE LISTED UL-273, CLASS 1 WITH A FLAME SPREAD RATING NOT MORE THAN 25, AND SMOKE DEVELOPED RATING NOT MORE THAN 50.
- ALL DUCT MATERIALS SHALL BE INSULATED IN FULL ACCORDANCE WITH LOCAL CALIFORNIA MECHANICAL CODES. TRANSVERSE JOINTS ON DUCTS OPERATING AT A GREATER PRESSURE THAN 0.75" W.G. SHALL BE SEALED BY MACHINE INJECTION OF UNITED DUCT SEALER DURING FABRICATION. SPIRAL SEAMS ARE AIRTIGHT AT FABRICATION AND NEED NO ADDITIONAL SEALING. ON LOW PRESSURE DUCTWORK, STANDARD GREY DUCT TAPE SHALL BE USED TO SEAL ALL TRANSVERSE JOINTS. LOW PRESSURE LONGITUDINAL JOINTS DO NOT REQUIRE A TAPE SEAL.
- DUCT WRAP/DUCT LINER SHALL BE INSTALLED AS FOLLOWS:
ALL SUPPLY & RETURN AIR DUCTS ON THE ROOF SHALL BE INSULATED WITH 1-1/2" THICK, 1-1/2 LB./CUBIC FOOT DENSITY DUCT LINER, OR WITH 1-1/2" THICK, 1-1/2 LB./CUBIC FOOT DENSITY DUCT WRAP. WHEN A WEATHERPROOF BARRIER IS INSTALLED OVER DUCT WRAP, THE BARRIER SHALL BE PAINTED OFF-WHITE BY THE GENERAL CONTRACTOR. ALL SUPPLY & RETURN DUCTS IN THE BUILDING SHALL BE INSULATED WITH 1" THICK, 3/4 LB./CUBIC FOOT DENSITY DUCT LINER, OR WITH FOIL FACED 1" THICK, 3/4 LB./CUBIC FOOT DENSITY DUCT WRAP.
- ALL ELECTRICAL LINE VOLTAGE, WIRING BY ELECTRICAL CONTRACTOR, EXCEPT NOTED OTHERWISE.
- ALL STRUCTURAL BASES, PADS AND SUPPORTS ARE TO BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR.
- ALL CUTTING, PATCHING, SEALING, PAINTING, ETC. OF WALL OPENINGS ARE BY THE GENERAL CONTRACTOR.
- CONDENSING DRAIN PIPING BY PLUMBING CONTRACTOR.

MECHANICAL SCHEDULES & DETAILS

DUCTWORK SYMBOLS	
DUCTWORK	
RECTANGULAR DUCTWORK (SIZE INDICATED - FIRST FIGURE IS SIDE SHOWN)	COIL, HC - HEATING CC - COOLING
ROUND DUCTWORK (SIZE INDICATED)	90° ELBOW WITH SPLITTER TURNING VANES
FLEXIBLE AIR DUCT (SIZE INDICATED)	
ACOUSTICAL DUCT LINING	ACCESS DOOR
RECTANGULAR TO ROUND TRANSITION	FLEXIBLE CONNECTOR
CHANGE IN ELEVATION (UP OR DN IN DIRECTION OF AIR FLOW)	TERMINAL UNIT
RECTANGULAR DUCT SECTION, POSITIVE PRESSURE	SMOKE DETECTOR
RECTANGULAR DUCT SECTION, NEGATIVE PRESSURE	90° ELBOW WITH TURNING VANES
ROUND DUCT SECTION	
EXTRACTOR	CONICAL TEE
RECTANGULAR EXHAUST GRILLE, CEILING	RECTANGULAR SUPPLY DIFFUSER, CEILING
THROW DIRECTION 3-WAY (OTHER DIRECTIONS SIMILAR)	ROUND SUPPLY DIFFUSER, CEILING
GRILLE REGISTER OR DIFFUSER DESIGNATION (ITEM NUMBER AND CFM INDICATED)	SUPPLY, RETURN OR EXHAUST GRILLE/REGISTER SIDEWALL
RECTANGULAR RETURN GRILLE, CEILING	
DAMPERS & ACTUATORS	
ELECTRIC DAMPER ACTUATOR	BACKDRAFT DAMPER
PNEUMATIC DAMPER ACTUATOR	OPPOSED BLADE DAMPER
FIRE DAMPER	PARALLEL BLADE DAMPER
SMOKE DAMPER	VOLUME DAMPER
	SPLITTER DAMPER

MECHANICAL DUCTWORK	
SHEET METAL DUCTWORK	
A. DUCTWORK SHALL BE FABRICATED OF GALVANIZED SHEET STEEL. METAL GAUGES, CONSTRUCTION SUPPORTS, BRACING AND INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS, LATEST ISSUE. THE LATEST RECOMMENDATIONS OF ASHRAE, AND SHALL CONFORM TO NFPA 90A.	
RECTANGULAR DUCTS	UP TO 12" 26 GA 13" THRU 18" 24 GA
ROUND DUCTS	UP TO 12" 24 GA 13" THRU 18" 22GA
B. DUCT SEALING: SEAMS AND JOINTS IN RECTANGULAR DUCTS AND ROUND DUCTS SHALL BE MADE COMPLETELY AIR TIGHT BY THE APPLICATION OF UNI-SEAL DUCT SEALER BY UNITED MCGILL CORP., OR APPROVED EQUAL.	
FLEXIBLE DUCTWORK	
A. CONNECTIONS BETWEEN SHEET METAL DUCTWORK AND AIR OUTLETS WHERE SHOWN SHALL BE MADE WITH INSULATED FLEXIBLE DUCTWORK. GLASS FLEX SL-181 OR APPROVED EQUAL MINIMUM R-6.	

MECHANICAL SYMBOLS	
SYMBOL & ABBREVIATION	DESCRIPTION
MECHANICAL SYMBOLS	
SA/SUP	SUPPLY AIR (RISE/DROP)
RA/RET	RETURN AIR DUCT (RISE/DROP)
EA/EXH	EXHAUST AIR DUCT (RISE/DROP)
CD/SR	CEILING DIFFUSER/SUPPLY REGISTER (ARROWHEAD REPRESENTS NUMBER OF THROW)
RR/RG	RETURN REGISTER/GRILLE
ER/EG	EXHAUST REGISTER/GRILLE
	RECTANGULAR DUCT ELBOW WITH TURNING VANES
FC	FLEXIBLE CONNECTION
MVD	MANUAL VOLUME DAMPER
FD	FIRE DAMPER
(L)	DUCT LINING (1" THICK UNLESS OTHERWISE NOTED)
	SINGLE LINE DUCT BRANCH TAKE-OFF
	DUCT TRANSITION (RECTANGULAR TO ROUND)
FLEX	FLEXIBLE DUCT (5'-0 MAXIMUM)
T-STAT	PROGRAMMABLE THERMOSTAT
CD	CONDENSATE DRAIN
DIA.	DIAMETER
DL	DOOR LOUVER
UC	DOOR UNDERCUT (3/4" MINIMUM)
M	FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
CRD	CEILING RADIATION DAMPER
E	FURNISHED AND INSTALLED BY CONTRACTOR
M/E	FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR
SD-1	AIR OUTLET/INLET DEVICE DESIGNATION(S-SUPPLY, R-RETURN, E-EXHAUST)
400	AIR QUANTITY IN CFM
RTU	MECHANICAL EQUIPMENT DESIGNATION
	DESIGNATED NUMBER
A/C, AC	AIR CONDITIONING
BDD	BACK DRAFT DAMPER
CB	CIRCUIT BREAKER
CLG.	CEILING
CONN.	CONNECT/CONNECTION
CONT.	CONTINUATION
CONTR	CONTRACTOR
CFM	CUBIC FEET PER MINUTE
DET.	DETAIL
DISC.	DISCONNECT
DTR	DOWN THRU ROOF
EF	EXHAUST FAN
GA.	GAGE/GAUGE
GC	GENERAL CONTRACTOR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
MFR.	MANUFACTURER
MECH.	MECHANICAL
(N)	NEW
OA/OSA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
S/S	STAINLESS STEEL
TYP.	TYPICAL
UTR	UP THRU ROOF
NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS ARE NECESSARILY USED IN THIS PROJECT.	

6000S RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, CGA, AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amil R. Pandey

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

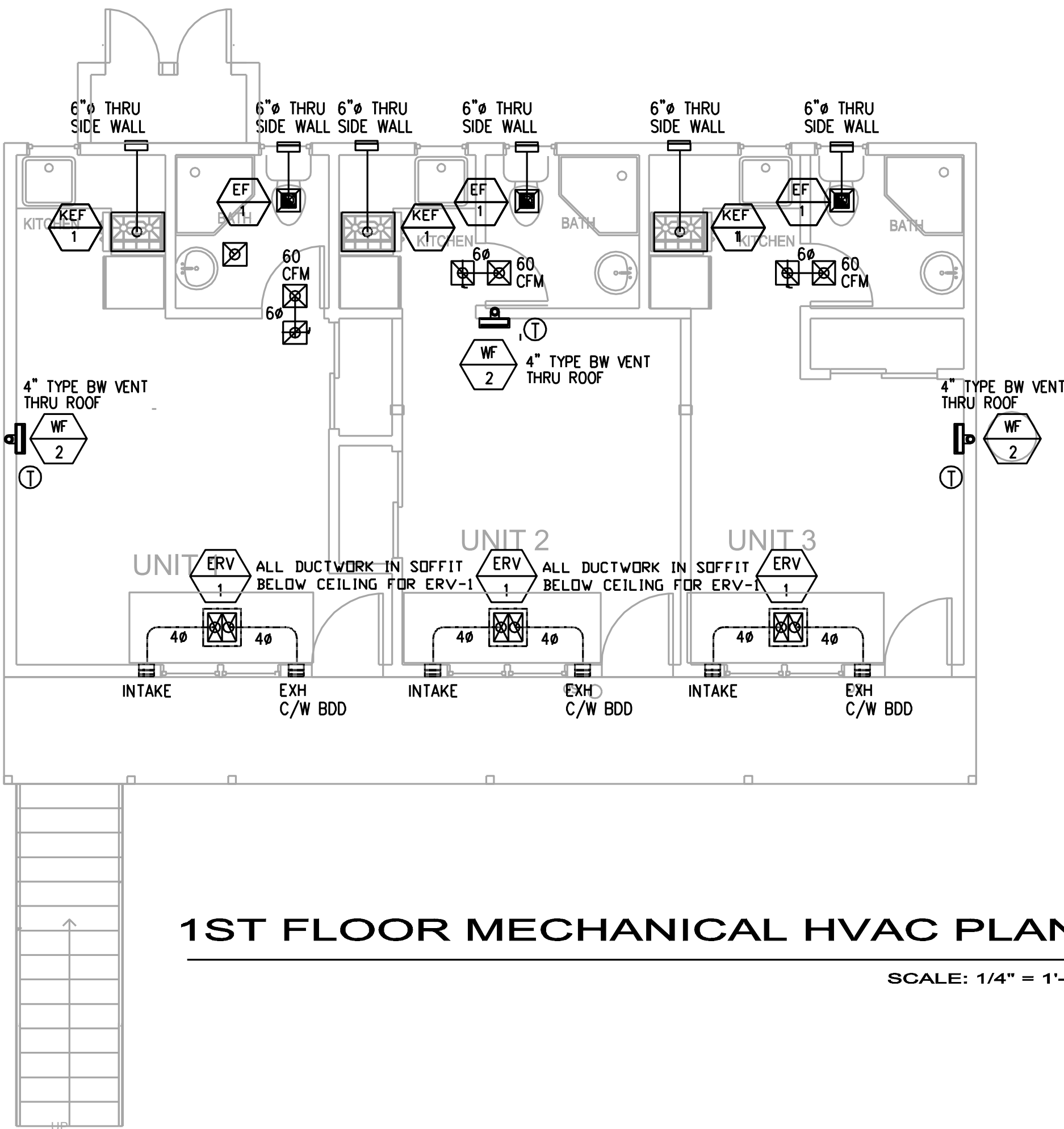
NO. DATE ISSUE

09.22.21 CITY

02.02.22 SUBMITTAL

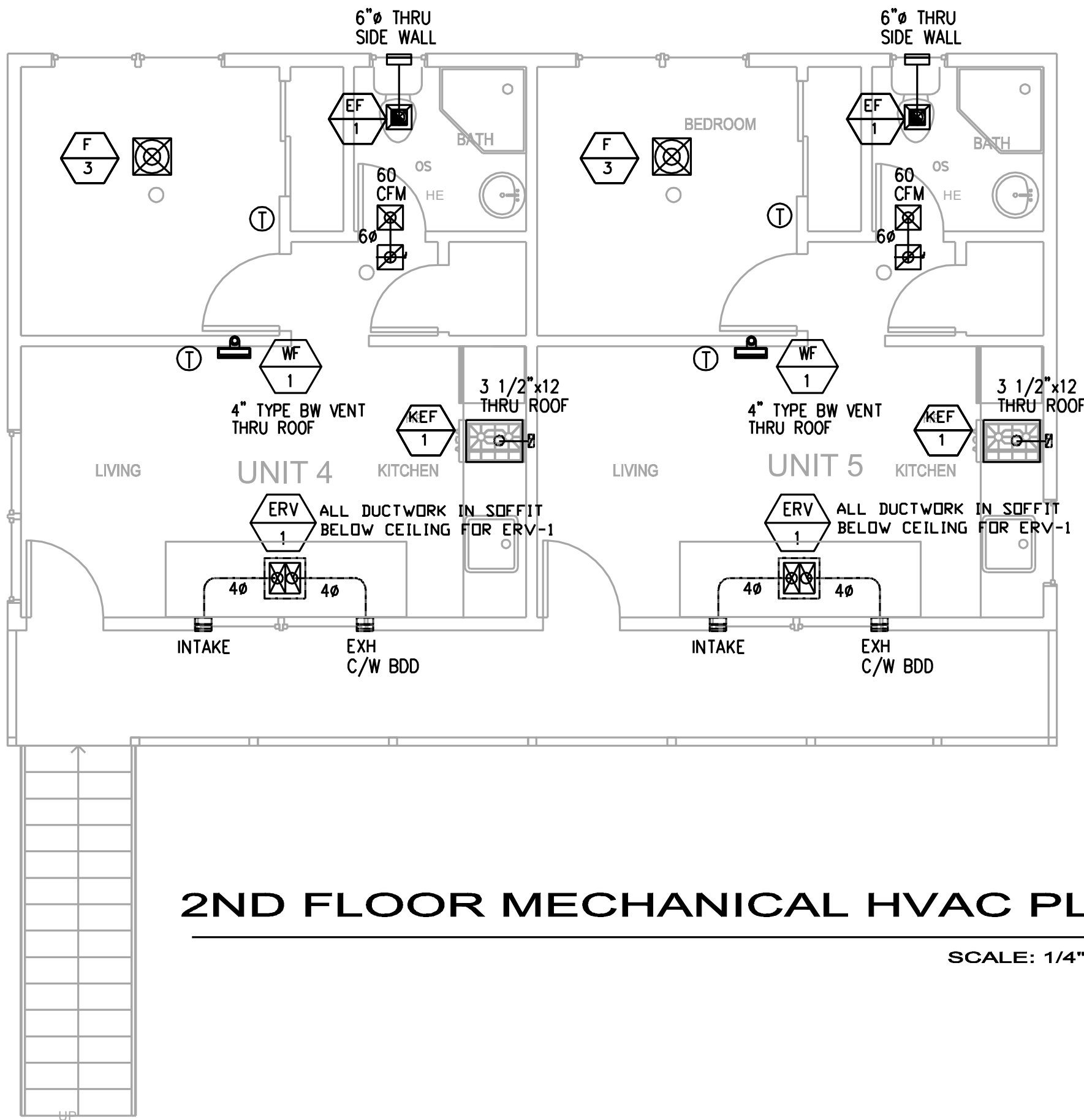
02.02.22 OWNER

REVISIONS



1ST FLOOR MECHANICAL HVAC PLAN

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

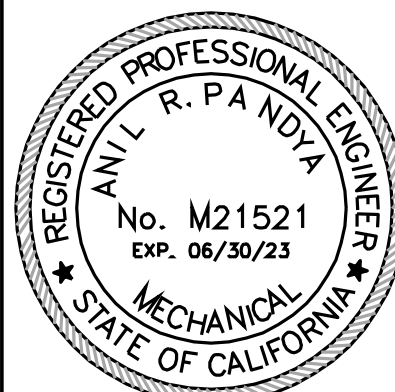


2ND FLOOR MECHANICAL HVAC PLAN

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

SEE MECHANICAL SYMBOL LIST ON DWG. M0.1

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amil R. Pandey

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	02.02.22	OWNER COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

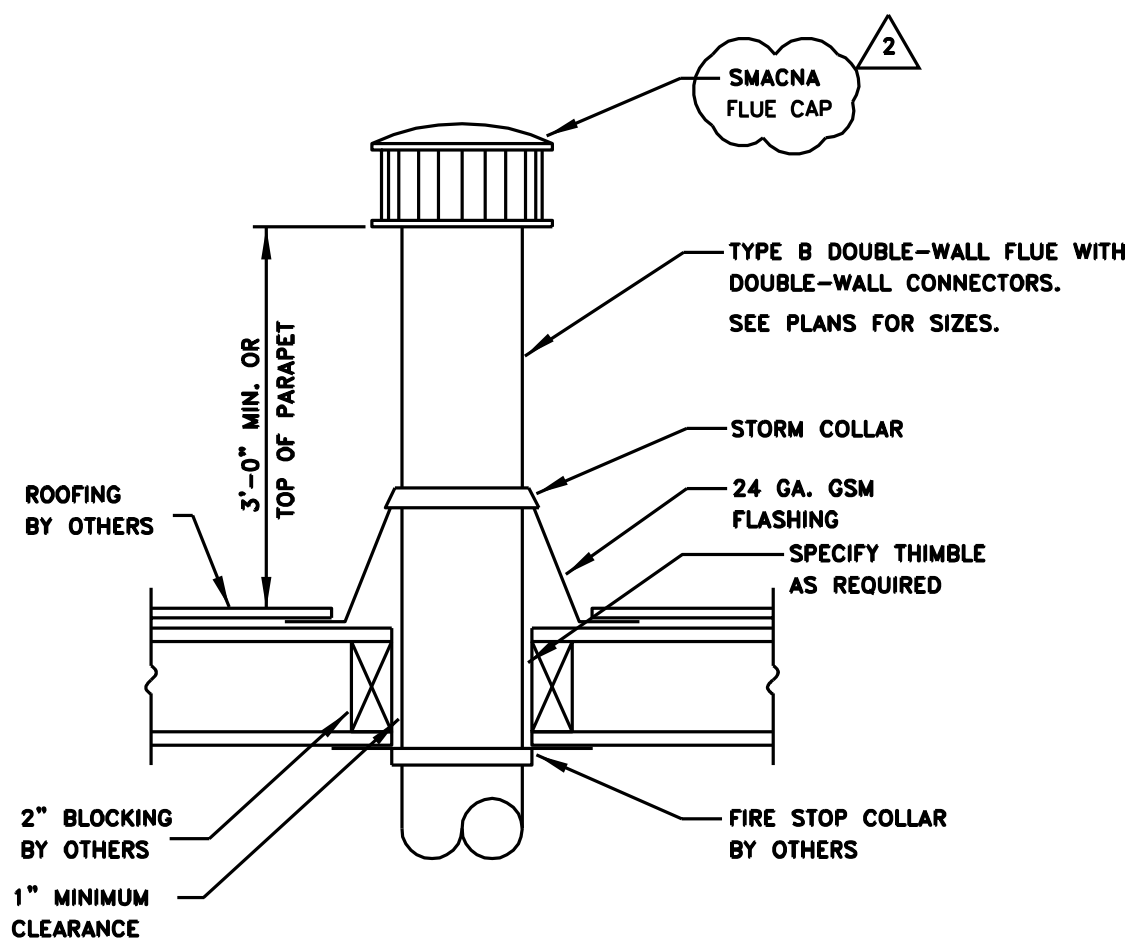
BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

CODES RULES AND REGULATIONS
ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST
RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY
COMPANY, OSHA AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN
THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT
CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION
CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL
BUILDINGS HAVE BEEN REVIEWED AND FOUND TO BE IN SUBSTANTIAL COMPLIANCE.

M1.1



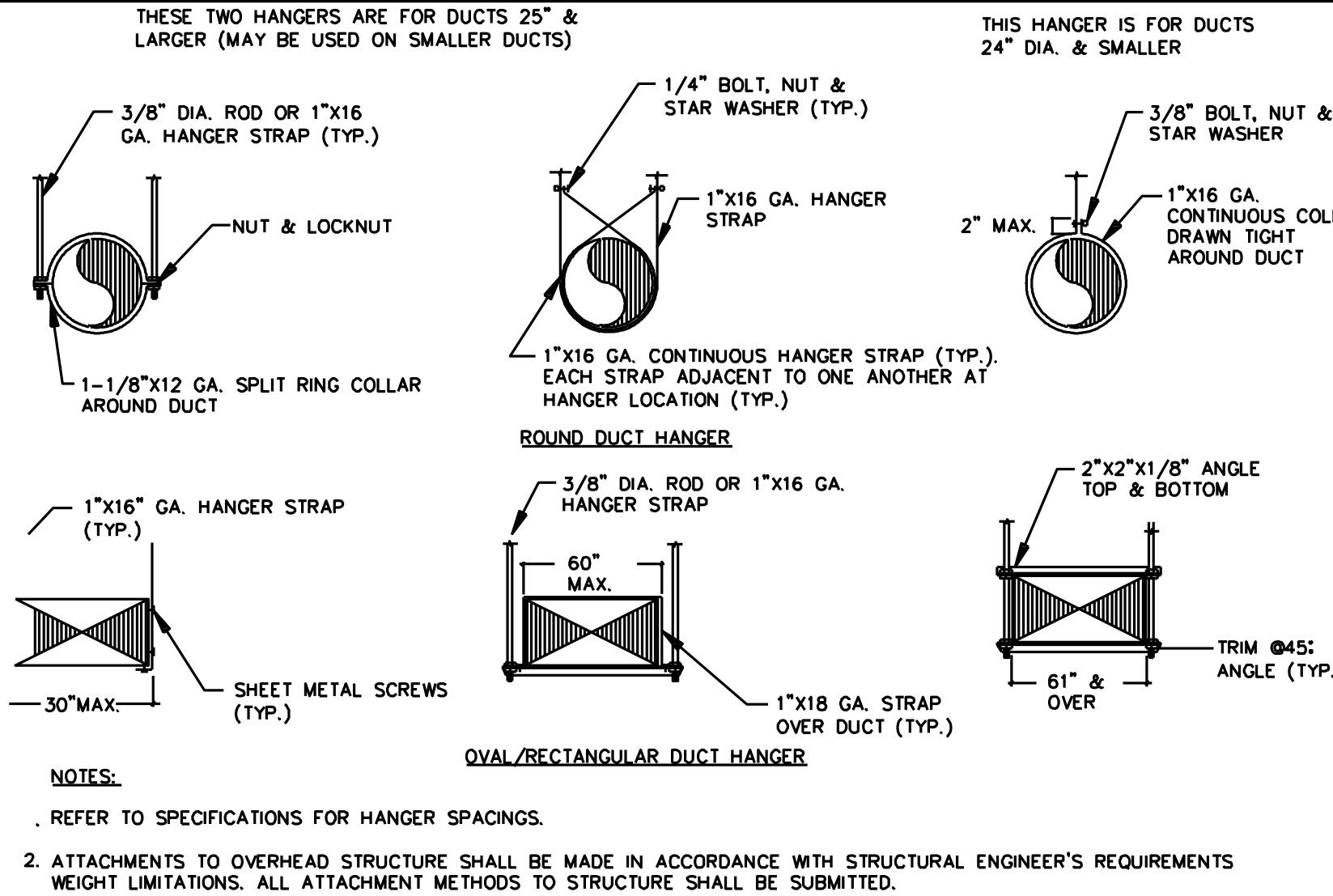
DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESSES		
RECTANGULAR DUCTS		
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NOMINAL)	ALUMINUM (MINIMUM THICKNESS, NOMINAL)
THROUGH 12	0.022 INCH (26 GAGE, GALV.)	0.020 INCH (NO. 24 B&S GAGE)
13 THROUGH 30	0.028 INCH (24 GAGE, GALV.)	0.025 INCH (NO. 22 B&S GAGE)
31 THROUGH 54	0.034 INCH (22 GAGE, GALV.)	0.032 INCH (NO. 20 B&S GAGE)
55 THROUGH 84	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (NO. 18 B&S GAGE)
OVER 84	0.052 INCH (18 GAGE, GALV.)	0.051 INCH (NO. 16 B&S GAGE)
ROUND DUCTS		
MAXIMUM SIZE (INCHES)	SPIRAL SEAM DUCT STEEL (MINIMUM THICKNESS, NOMINAL)	LONGITUDINAL SEAM DUCT STEEL (MINIMUM THICKNESS, NOMINAL)
THROUGH 12	0.019 INCH (28 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)
13 THROUGH 18	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)
19 THROUGH 28	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)
29 THROUGH 36	0.034 INCH (22 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)
37 THROUGH 52	0.040 INCH (20 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)
FITTINGS		
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NOMINAL)	ALUMINUM (MINIMUM THICKNESS, NOMINAL)
THROUGH 12	0.019 INCH (28 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)
13 THROUGH 18	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)
19 THROUGH 28	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)
29 THROUGH 36	0.034 INCH (22 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)
37 THROUGH 52	0.040 INCH (20 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)

FLUE THRU ROOFDETAIL

NTS

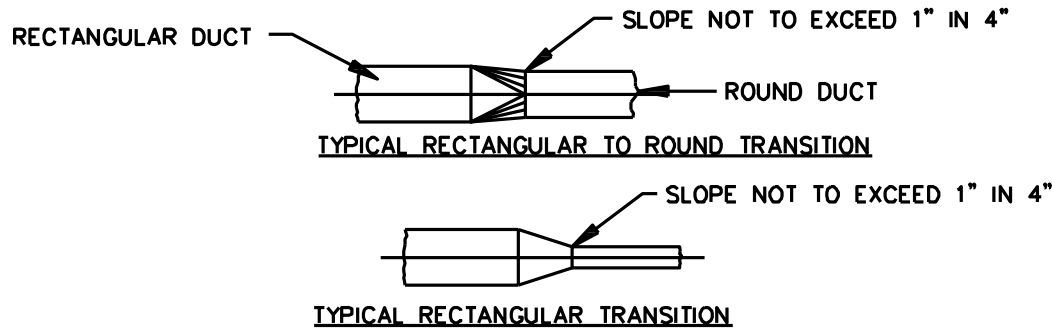
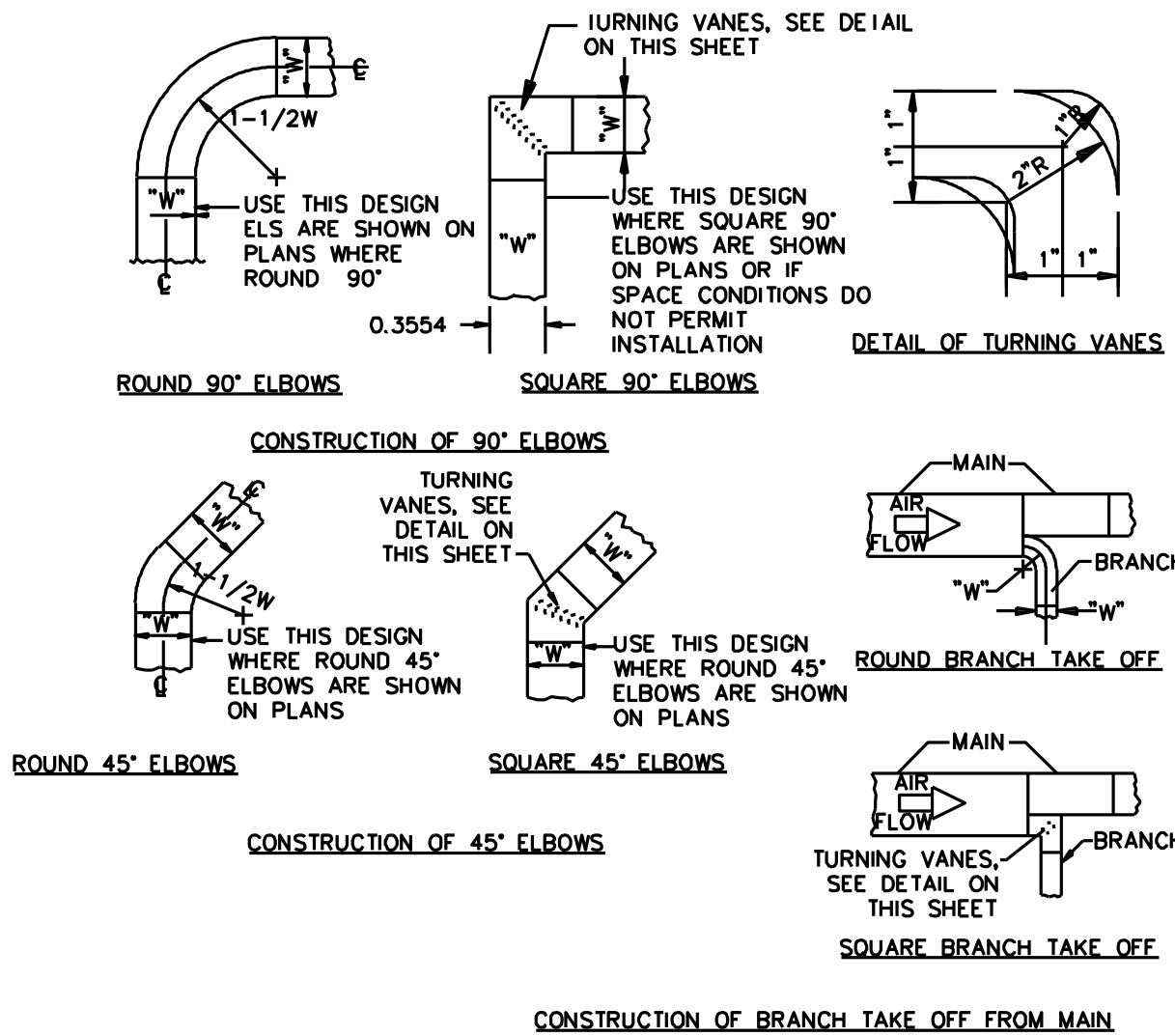
METAL GAGES

NTS 1



DUCT SUPPORT

NTS 2



DUCT CONSTRUCTION DETAILS

NTS 3

CODES RULES AND REGULATIONS
ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, OSHA AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION
CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amir R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	02.02.22	OWNER REVISIONS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

M2.1

FIXTURE AND EQUIPMENT SCHEDULE					
MARK	FIXTURE / EQUIPMENT	MODEL NO.	SIZE / CAPACITY	TRIM / ACCESSORIES	REMARKS
FD	FLOOR DRAIN	"J.R. SMITH" 2010 AD	PIPE SIZE PER DWG 4" MAXIMUM	TOP SET FLUSH WITH FLOOR TRAP PRIMER CONNECTION	
PCO	FLOOR CLEANOUT	"J.R. SMITH" 4032	PIPE SIZE 4" MAXIMUM	TOP SET FLUSH WITH FLOOR	
WCO	WALL CLEANOUT	"J.R. SMITH" 4472	PIPE SIZE 4" MAXIMUM	LOCATE ON FIXTURE SIDE	
COTG	CLEANOUT TO GRADE	"J.R. SMITH" 4291	PIPE SIZE 4" MAXIMUM	CHRISTY G-5 CONCRETE BOX W/ C.I. LID MARKED "SEWER"	
HB-2	HOSE BOX	"ACORN" 9159	3/4" PIPE SIZE	STAINLESS STEEL RECESSED HOSE BOX W/ WALL PLANGE	
RD-1	ROOF DRAIN	"J.R. SMITH" 1010-CRU	PIPE SIZE 4" MAXIMUM	UNDER DECK CLAMP, SUMP RECEIVER, CAST IRON DOME	
WH-1 WH-2	GAS WATER HEATER	"AO SMITH" GCRL-50	50 GAL 40 MBH	PRESSURE RELIEF TO GRAVEL PIT INSTALL SEISMIC STRAPS	

WATER HEATER SIZING UNIT 1 THRU 5			
FIXTURE	QUANTITY	HOT WATER DEMAND GPM	TOTAL GPM
LAV	5	0.5	2.5
SHOWER	5	1.75	8.75
KITCHEN SINK	5	1.5	7.5
DISHWASHER	5	3	15
CLOTHES WASHER	-	-	-
TOTAL			33.75
QUANTITY	2		
MANUFACTURER	A.O. SMITH		
MODEL NO.	HPTU-80N HEAT PUMP WH		
ELECTRICAL	4.5 KW		
GPM CAPACITY RANGE	83 GPH		

DOMESTIC WATER PIPE SIZING CALCS UNIT 1 THRU 5	
TOTAL BUILDING SUPPLY DEMAND: = 59.5 FU	
MINIMUM PRESSURE @ HIGHEST FIXTURE: 15 PSI	
SERVICE PRESSURE @ METER: 60 PSI	
DEVELOPED LENGTH FROM FIXTURE: 120 FT TO HIGHEST FIXTURE	
ELEVATION @ HIGHEST FIXTURE: 20 FT	
DEMAND GPM FROM CHART A-2: 54 GPM	
PRESSURE AVAILABLE FOR FRICTION LOSS: 60-15-(0.43x20)= 36.4 PSI	
PRESSURE LOSS PER 100 FT: 36.4/1.2 = 30.33 PSI	
SUPPLY SIZE FROM CHART A-4: 1 1/2" CW. USE 2" CW.	

WATER CONSERVATION SCHEDULES		
WC-1	WATER CLOSET	HIGH EFFICIENCY TOILET 1.28 GPF
L-1	LAVATORY	0.5 GPM
SH-1	SHOWER	2.0 GPM
KS-1	MOP SINK	0.5 GPM

FIXTURE CONNECTION SCHEDULES						
MARK	DESCRIPTION	TRAP	W	V	CW	HW
WC-1	WATER CLOSET	INTEGRAL	3"	2"	1"	-
L-1	LAVATORY	2"	2"	1 1/2"	1/2"	1/2"
BT-1	BATH TUB	2"	2"	1 1/2"	1/2"	1/2"
HS-1	KITCHEN SINK	2"	2"	1 1/2"	1/2"	1/2"
CW-1	CLOTHES WASHER	2"	2"	1 1/2"	1/2"	1/2"

FIXTURE UNIT CALCULATIONS					
FIXTURE	QUANTITY	DRAINAGE SYSTEM		WATER SYSTEM	
		F.U.	TOTAL F.U.	F.U.	TOTAL F.U.
WC-1	5	2.5	12.5	2.5	12.5
LAV	5	1	5	1	5
SHOWER	5	4	20	4	20
KITCHEN SINK	5	1.5	7.5	1.5	7.5
DISHWASHER	5	1.5	7.5	1.5	7.5
CLOTHES WASHER	5	4	2	4	2
HOSE BIBB	5	1	5	1	5
TOTAL			59.5		59.5

PLUMBING LEGEND		
SYMBOL	ABBREV	DESCRIPTION
_____	W	WASTE BELOW FLOOR OR GRADE
_____	W	WASTE ABOVE FLOOR
_____	V	VENT LINE
_____	CW	COLD WATER
_____	HW	HOT WATER (140°)
_____	G	FUEL GAS - 8"W.C.
_____	A	COMPRESSED AIR
_____		DIRECTION OF FLOW IN LINE
⊙	POC	POINT OF CONNECTION
⊙	POD	POINT OF DISCONNECT
_____	NPC	NON-POTABLE COLD WATER
_____	EXIST	EXISTING PIPING (CW, HW, ETC)
////////		EXISTING PIPING TO BE REMOVED
_____	_____	CAP OR PLUG
_____	FCO	FLOOR CLEANOUT
_____	WCO	WALL CLEANOUT
_____	COVB	CLEANOUT IN YARDBOX
_____	SOV	SHUT OFF VALVE
_____	U	UNION
_____	PG	PRESSURE GAUGE W/COCK
_____	T	THERMOMETER
_____	HW	INDIRECT WASTE
_____		EXISTING EQUIPMENT OR FIXTURE TO BE REMOVED
_____	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER

PIPING MATERIALS	
SANITARY SEWER	ABS SCH 40 C.I. NO HUB SOIL OR COPPER DWV
DOMESTIC WATER	TYPE "L" COPPER (U/G) TYPE "M" COPPER (ABV/C)
CONDENSATE DRAIN	TYPE M COPPER
GAS	GALVANISED STEEL SCH 40
VENT	ABS SCH 40 C.I. NO HUB SOIL OR COPPER DWV
NOTE:	ALL HOT WATER PIPING 3/4" REQUIRE 1" INSULATION AND LARGER REQUIRE WITH 1 1/2" INSULATION.

NOTE:
ALL PLUMBING WORK SHALL COMPLY WITH THE 2019 CALIFORNIA PLUMBING CODE.

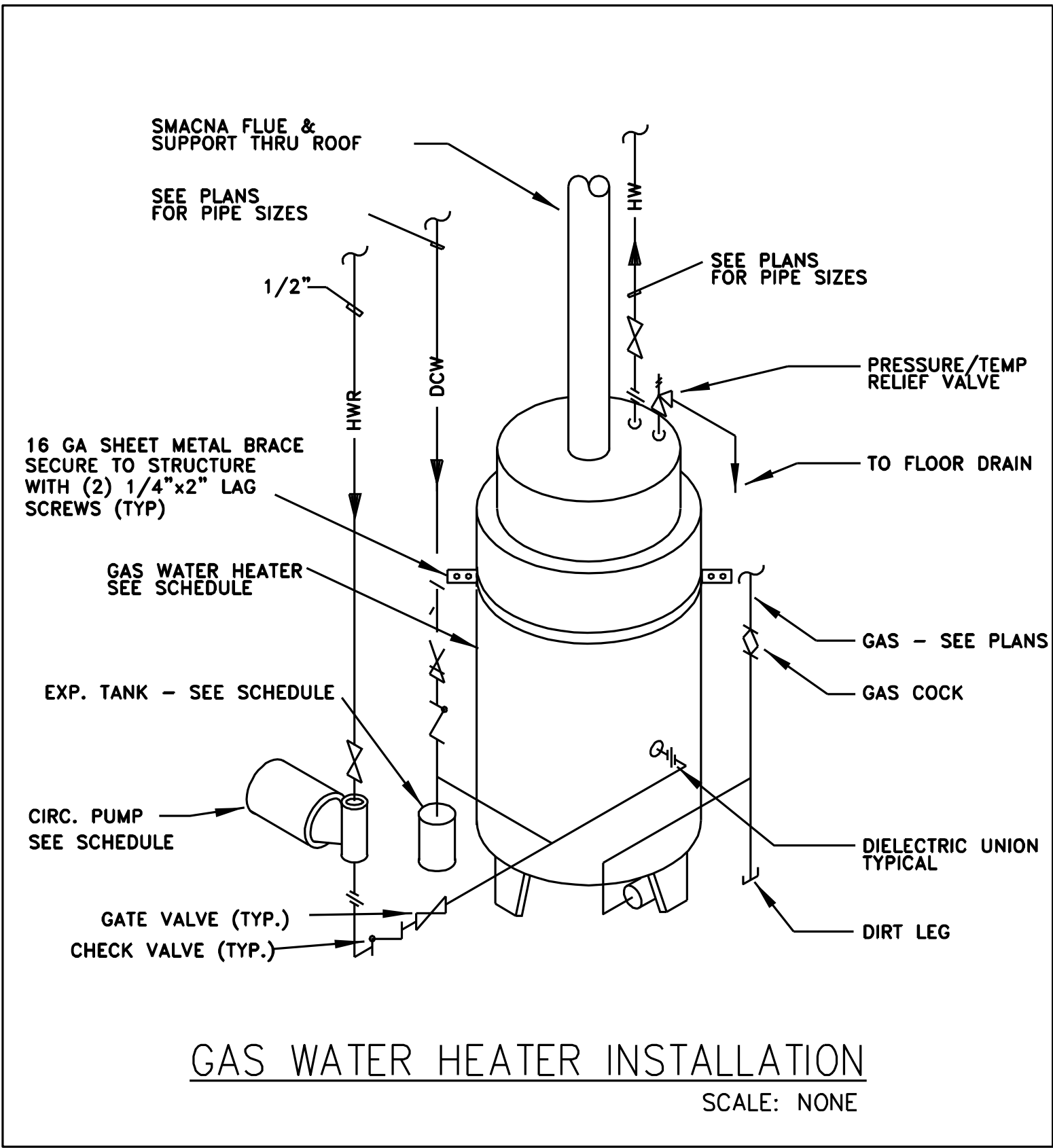
REFERENCE NOTE:
FIELD VERIFY AN APPROVED BACKWATER VALVE ON DRAINAGE PIPING SERVING FIXTURES THAT HAVE FLOOD LEVEL RIMS LESS THAN 12 INCHES ABOVE THE ELEVATION OF NEXT UPSTREAM MANHOLE. CPC 710.0

FIXTURE UNIT LOADING SCHEDULE ①									
MAXIMUM FIXTURE UNIT LOADING OF WATER, DRAIN AND VENT PIPING									
SERVICE	NOMINAL PIPE SIZE - INCHES								
	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
WATER (SERVING FLUSH VALVES)	-	-	5	10	18	45	140	250	-
WATER (NO FLUSH VALVES)	4	10	20	50	50	120	220	-	-
DRAINAGE (VERTICAL)	-	-	-	-	2 ②	16 ④	32 ④	48	256
DRAINAGE (HORIZONTAL)	-	-	-	-	1 ④	8	14 ④	35	180
VENT	-	-	-	1 ③	8 ④	24 ④	48	84	256
X	X	X	X	X	X	X	X	X	X

- ① THIS SCHEDULE SHALL BE USED TO SIZE PIPING NOT SHOWN ON DRAWINGS. REFER ALSO TO LATEST EDITION OF CALIFORNIA PLUMBING CODE ② FOR REQUIREMENTS NOT COVERED IN THIS SCHEDULE, ON PLANS OR IN SPECIFICATIONS. WHERE UNIFORM PLUMBING CODE DIFFERS FROM THE CONTRACT DOCUMENTS, THE MOST STRINGENT REQUIREMENT WILL GOVERN.
- ② EXCEPT SINKS AND URINALS.
- ③ VERTICAL ONLY.
- ④ EXCEPT SIX-UNIT TRAPS OR WATER CLOSETS.

EQUIPMENT SCHEDULE NOTES:	
1. SCHEDULE LISTS MODEL NUMBERS OF THE FOLLOWING MANUFACTURERS UNLESS NOTED OTHERWISE: FIXTURES - AMERICAN STANDARD FIXTURE BRASS - CHICAGO FIXTURE STOPS - SPEEDWAY FIXTURE SUPPORTS & DRAINS - SMITH STAINLESS STEEL SINKS - JUST	WATER CLOSET SEATS - CHURCH TRAP PRIMERS & CLEANOUTS - SMITH FLUSH VALVES - SLOAN "ROYAL"
2. CONCEAL ALL TRAP PRIMER PIPING WITH TRAP PRIMERS ACCESSIBLE BEHIND ACCESS PANEL.	
3. PROVIDE EACH WATER HEATER WITH CASH-ACME, OAS, AGA RATED TEMPERATURE AND PRESSURE RELIEF VALVE MOUNTED ON TOP OF TANK. USE TYPE PVX-5 FOR UNITS UP TO 135,000 BTU/HR AND TYPE PVM WITH "T" STEM FOR UNITS OVER 135,000 BTU/HR. RELIEF VALVE RATING SHALL SUIT TEMPERATURE AND PRESSURE RATING OF TANK. INSTALL SHUT-OFF VALVES ON INLET AND OUTLET OF EACH WATER HEATER WITH UNION BETWEEN EACH VALVE AND TANK. PROVIDE EXPANSION TANK AMTROL ST-80V ON DHW SYSTEM.	
4. PROVIDE STAINLESS STEEL HUDER RIMS FOR ALL COUNTER-MOUNTED LAVATORIES, SINKS AND DRINKING FOUNTAINS. EXCEPT SELF-RIMMING UNITS. UNLESS NOTED OTHERWISE.	
5. STAINLESS STEEL SINKS SHALL BE SEAMLESS, FULLY WELDED CONSTRUCTION, REINFORCED AND WITH SOUND DEADENING UNDERCOAT. EXPOSED SURFACES POLISHED TO A #4 SATIN FINISH.	
6. LOCATE 1 1/4" x 1 1/2" CAST BRASS TRAP IN WALL BEHIND 12" x 16" ACCESS DOOR.	
7. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR EACH FIXTURE/EQUIPMENT.	

- GENERAL NOTES:
- ① SEE ARCHITECTURAL DRAWINGS FOR EXACT PLACEMENT AND QUANTITY OF ALL FIXTURES.
 - ② BEFORE STARTING WORK, VERIFY LOCATIONS, ELEVATIONS AND SIZES OF ALL PIPING AND EQUIPMENT REQUIRING PLUMBING CONNECTIONS.
 - ③ VERIFY EXACT LOCATION, INVERT ELEVATION AND SIZES OF EXISTING LINES BEFORE TRENCHING FOR NEW WORK.
 - ④ COORDINATE ALL PLUMBING WORK WITH ALL OTHER WORK TO AVOID CONFLICTS. RUN ALL PIPING TO AVOID ARCHITECTURAL OPENINGS, STRUCTURAL MEMBERS, DUCTS OR OTHER OBSTRUCTIONS. OFFSET PLUMBING PIPING WHERE REQUIRED.
 - ⑤ COMBINE ALL VERTICAL VENTS WHERE PRACTICAL.
 - ⑥ INSTALL CLEANOUTS IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE AND LOCAL CODE REQUIREMENTS. CLEANOUTS SHALL BE ACCESSIBLE AND CONCEALED OR PLACED IN AN UNOBSTRUCTIVE LOCATION WHEREVER POSSIBLE.
 - ⑦ WATER HEATERS ARE NEW. CAPACITY 60 GALLON.
 - ⑧ PROVIDE WATER HAMMER ARRESTORS IN HW AND CW PIPES AT END OF RUN. IN LAUNDRY ROOM.
 - ⑨ RUN ALL CW AND HW ABOVE CEILING UNLESS NOTED OTHERWISE.
 - ⑩ PIPE PENETRATION THROUGH RATED FRAMED WALL SHALL USE 3M FIRE RATED CAULK TO SEAL PENETRATION ACCORDANCE WITH ASTM E814 & UL 1479.



PLUMBING SCHEDULES & DETAILS

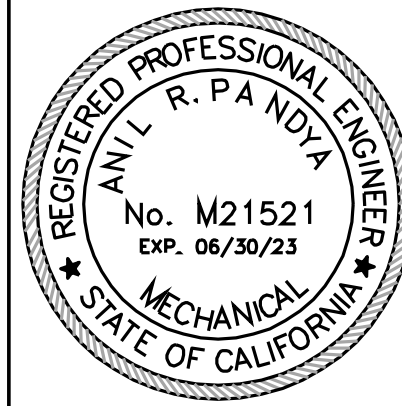
CODES RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, CSHA, AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND THE BUILDING DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amil R. Pandey

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
△	09.22.21	CITY SUBMITTAL
△	10.04.22	CITY COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

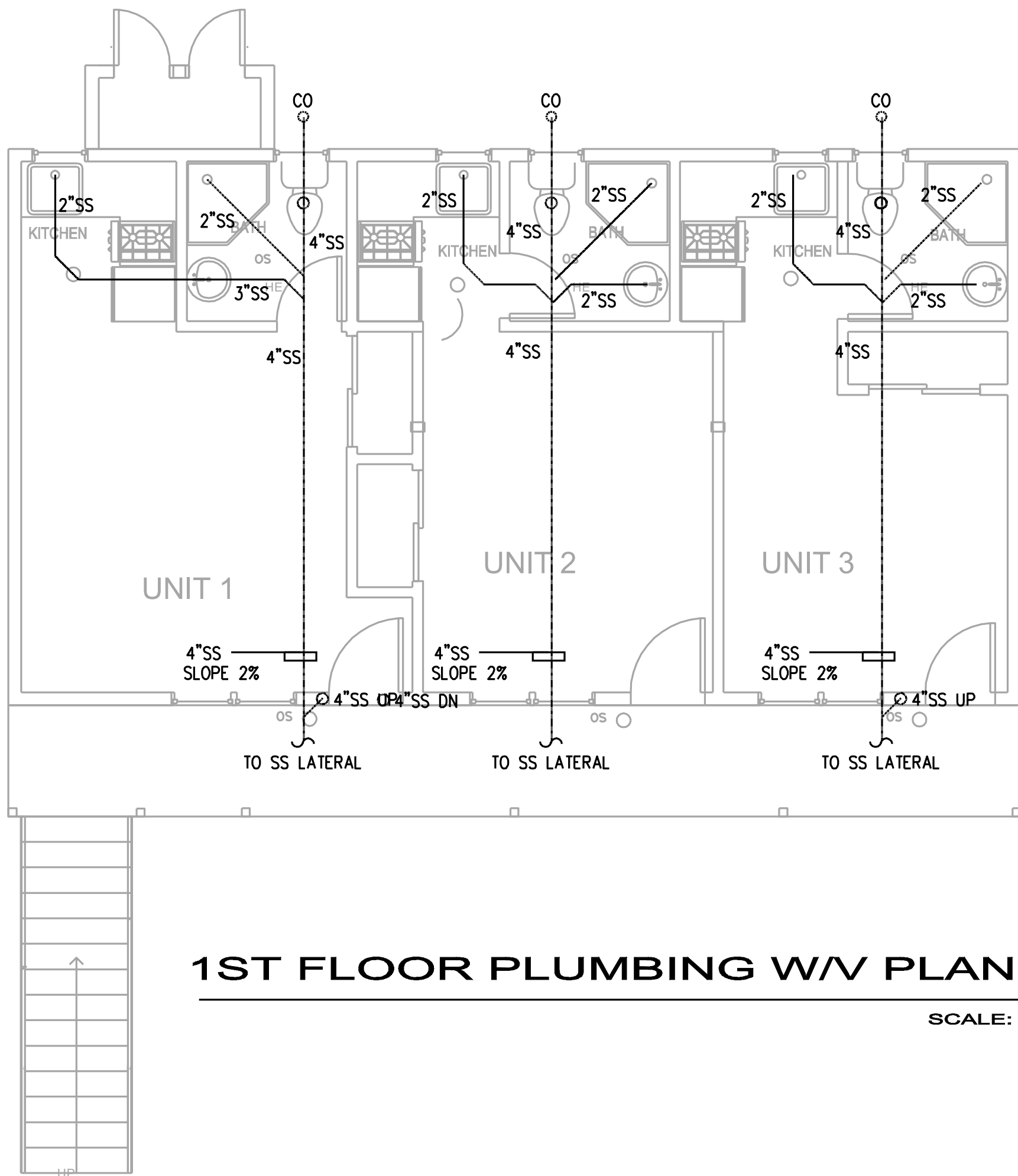
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

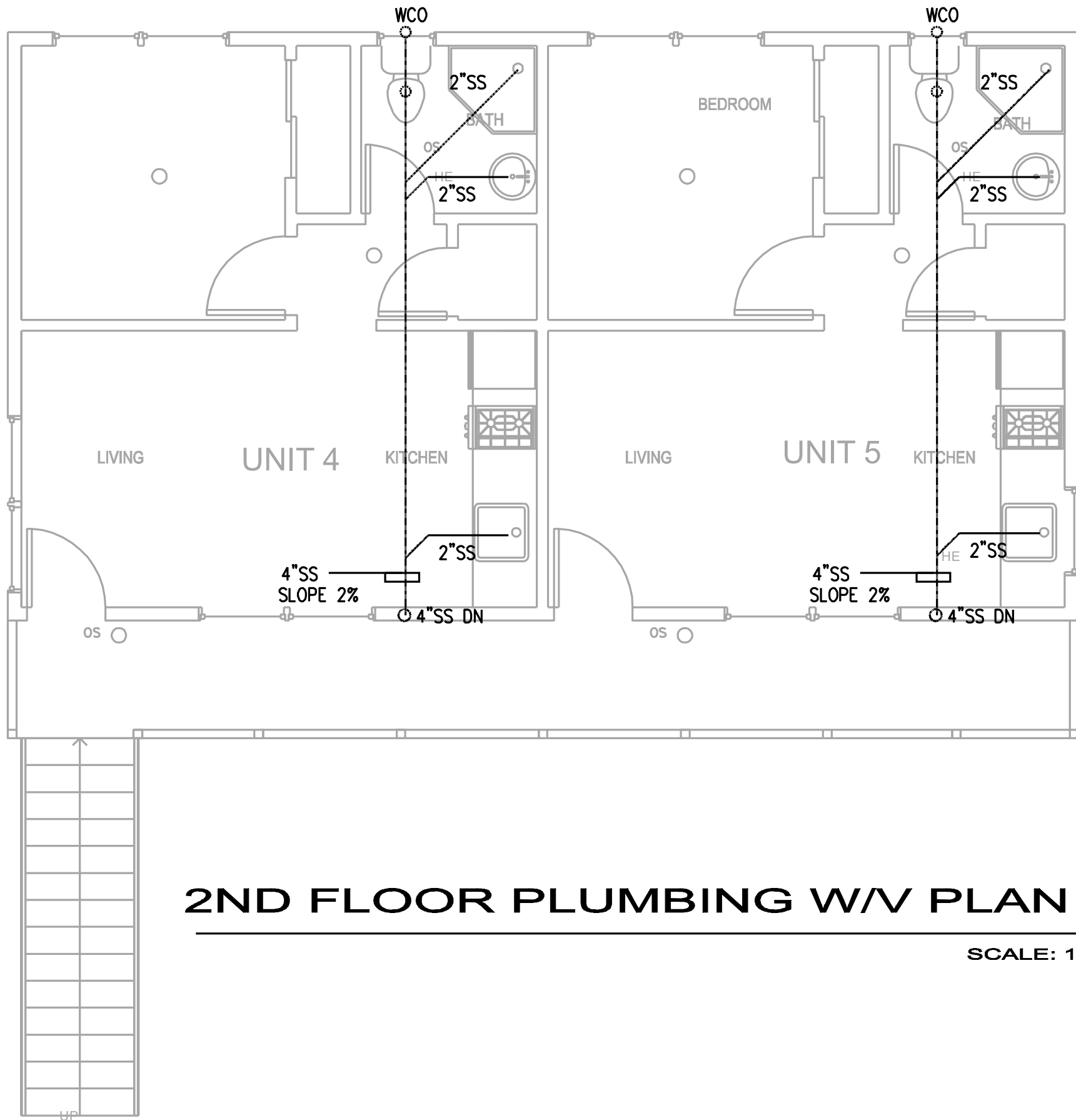
JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

P0.1



1ST FLOOR PLUMBING W/V PLAN

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



2ND FLOOR PLUMBING W/V PLAN

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

UTILITY LEGEND

- SURFACE MOUNTED CEILING HIGH EFFICACY LIGHT FIXTURE.
- RECESSED HIGH EFFICACY LIGHT FIXTURE.
- HANGING HIGH EFFICACY LIGHT FIXTURE.
- RECESSED LIGHT FIXTURE WITH VAPORPROOF LENS COVER. HIGH EFFICACY.
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED SCONCE LIGHT.
- SURFACE MOUNTED FLUORESCENT FIXTURE / UNDER CABINET LIGHT FIXTURE.
- LOW WATTAGE LED LIGHT STRIP COUNSELED INSIDE SOFFIT.
- RECESSED FRACTIONAL HP EXHAUST FAN, CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR. FOR BATHROOMS TO HAVE HUMIDISTAT CONTROLS.
- RECESSED COMBINATION LIGHT / EXHAUST FAN, SWITCH CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
- RECESSED COMBINATION HEATER / EXHAUST FAN, SWITCH CONTROLLED, CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
- 120V. DUPLEX CONVENIENCE RECEPTACLE.
- 240V. SINGLE CONVENIENCE RECEPTACLE.
- 120V. DUPLEX CONVENIENCE RECEPTACLE, SWITCH CONTROLLED, 1/2 HOT.
- 120V. DUPLEX CONVENIENCE RECEPTACLE BELOW (INCL. INSIDE CABINET OR ABOVE AT CEILING).
- 120V. WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE.
- 120V. GROUND FAULT CIRCUIT-INTERRUPTER (G.F.C.I.) DUPLEX CONVENIENCE RECEPTACLE.
- 120V. WEATHERPROOF G.F.C.I. DUPLEX CONVENIENCE RECEPTACLE.
- DEDICATED COMPUTER OUTLET.
- 120V. FLOOR TYPE DUPLEX RECEPTACLE, W/COVER.
- SINGLE POLE LIGHT SWITCH.
- HIGH EFFICACY LIGHT SWITCH.
- THREE - WAY LIGHT SWITCH.
- FOUR - WAY LIGHT SWITCH.
- SINGLE POLE LIGHT SWITCH W/ DIMMER CONTROL.
- SINGLE POLE LIGHT SWITCH. W/ MANUAL / MOTION OCCUPANCY SENSOR.
- TV. TELEVISION ANTENNA / CABLE JACK.
- PH. TELEPHONE JACK.
- PUSH BUTTON FOR DOOR CHIMES OR GARAGE DOOR OPENER.
- DOOR CHIMES.
- THERMOSTAT, VERIFY LOCATION WITH HEATING AND AC LAYOUT.
- JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED.
- SMOKE DETECTOR, ICBO APPROVED, CEILING MOUNTED, HARD WIRED AND W/ BATTERY BACKUP.
- CEILING FAN JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED.
- LIGHTED ADDRESS SIGN (VISIBLE FROM STREET) (LINE VOLTAGE) TIED TO PHOTOCELL.
- VACUUM LOCATION.
- MANUAL ON, AUTOMATIC OFF VACANCY SENSOR.
- FLOOR DRAIN (FD) OR AREA DRAIN (AD), AS NOTED.
- ROOF DRAIN (RD).
- HOSE BIB (HB).
- HOSE BIB W/ SHUT OFF VALVE (HB/SOV).
- FUEL GAS OUTLET (FG).
- LOOSE KEY VALVE (KEY).
- WATER STUB OUT FOR ICE MAKER.
- CARBON MONOXIDE ALARM HARD WIRE W/ BATTERY BACKUP.

CODES RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, CGA, AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDINGS HAVE BEEN REVIEWED AND FOUND TO BE IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amir R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	10.04.22	CITY COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

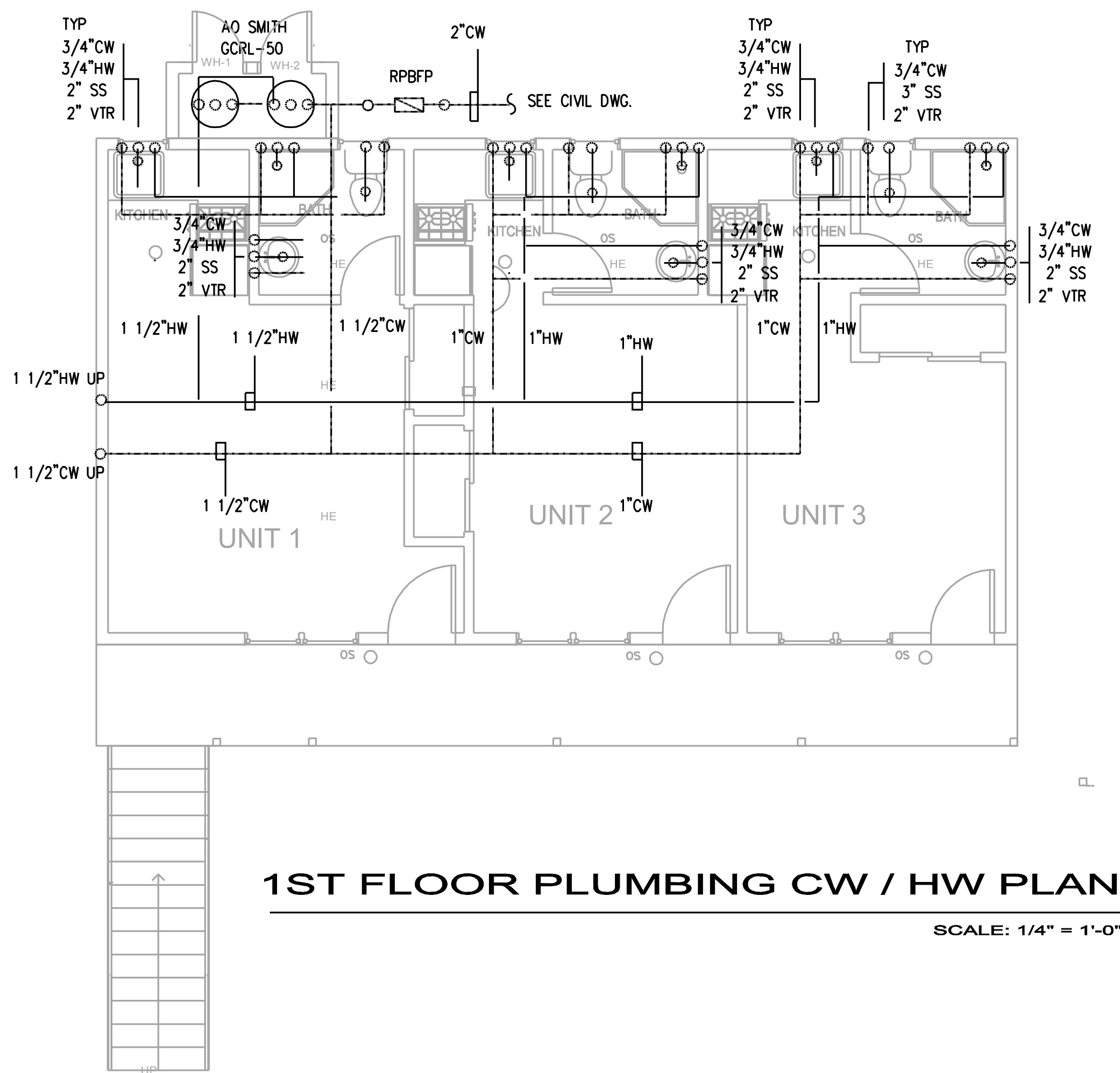
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

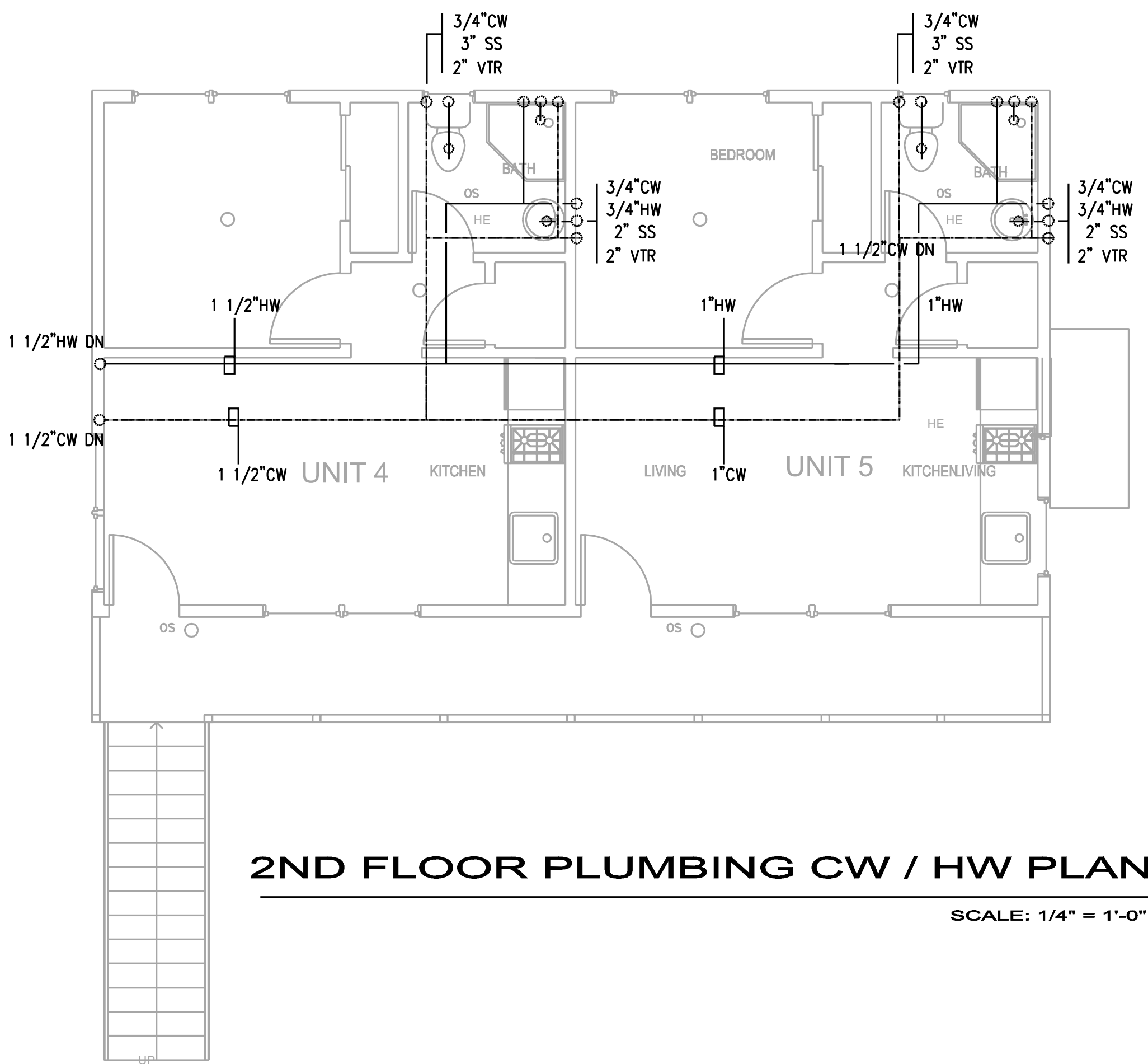
BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

P1.1



1ST FLOOR PLUMBING CW / HW PLAN
SCALE: 1/4" = 1'-0"



2ND FLOOR PLUMBING CW / HW PLAN
SCALE: 1/4" = 1'-0"

UTILITY LEGEND

- SURFACE MOUNTED CEILING HIGH EFFICACY LIGHT FIXTURE.
- RECESSED HIGH EFFICACY LIGHT FIXTURE.
- HANGING HIGH EFFICACY LIGHT FIXTURE.
- RECESSED LIGHT FIXTURE WITH VAPORPROOF LENS COVER. HIGH EFFICACY
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED SCONCE LIGHT
- SURFACE MOUNTED FLUORESCENT FIXTURE / UNDER CABINET LIGHT FIXTURE.
- LOW WATTAGE LED LIGHT STRIP
COUNSELED INSIDE SOFFIT
- RECESSED FRACTIONAL HP EXHAUST FAN, CONTROLLED. CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR. FOR BATHROOMS TO HAVE HUMIDISTAT CONTROLS
- RECESSED COMBINATION LIGHT / EXHAUST FAN, SWITCH CONTROLLED. CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
- RECESSED COMBINATION HEATER / EXHAUST FAN, SWITCH CONTROLLED. CAPABLE OF PROVIDING (5) AIR CHANGES PER HOUR.
- 120V. DUPLEX CONVENIENCE RECEPTACLE
- 240V. SINGLE CONVENIENCE RECEPTACLE
- 120V. DUPLEX CONVENIENCE RECEPTACLE, SWITCH CONTROLLED, 1/2 HOT.
- 120V. DUPLEX CONVENIENCE RECEPTACLE BELOW (INCL. INSIDE CABINET OR ABOVE AT CEILING)
- 120V. WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE.
- 120V. GROUND FAULT CIRCUIT-INTERRUPTER (G.F.C.I.) DUPLEX CONVENIENCE RECEPTACLE.
- 120V. WEATHERPROOF G.F.C.I. DUPLEX CONVENIENCE RECEPTACLE
- DEDICATED COMPUTER OUTLET
- 120V. FLOOR TYPE DUPLEX RECEPTACLE, W/COVER
- SINGLE POLE LIGHT SWITCH.
- HIGH EFFICACY LIGHT SWITCH.
- THREE - WAY LIGHT SWITCH.
- FOUR - WAY LIGHT SWITCH.
- SINGLE POLE LIGHT SWITCH W/ DIMMER CONTROL
- SINGLE POLE LIGHT SWITCH. W/ MANUAL / MOTION OCCUPANCY SENSOR
- TV. TELEVISION ANTENNA / CABLE JACK
- PH. TELEPHONE JACK.
- PUSH BUTTON FOR DOOR CHIMES OR GARAGE DOOR OPENER
- DOOR CHIMES
- THERMOSTAT. VERIFY LOCATION WITH HEATING AND AC LAYOUT
- JUNCTION BOX. WITH COVER OR ADAPTOR AS REQUIRED
- SMOKE DETECTOR, ICBO APPROVED, CEILING MOUNTED, HARD WIRED AND W/ BATTERY BACKUP
- CEILING FAN JUNCTION BOX, WITH COVER OR ADAPTOR AS REQUIRED
- LIGHTED ADDRESS SIGN (VISIBLE FROM STREET) (LINE VOLTAGE) TIED TO PHOTOCELL.
- VACUUM LOCATION
- MANUAL ON, AUTOMATIC OFF VACANCY SENSOR
- FLOOR DRAIN (FD) OR AREA DRAIN (AD), AS NOTED
- ROOF DRAIN (RD)
- HOSE BIB (HB)
- HOSE BIB W/ SHUT OFF VALVE (HB/SOV)
- FUEL GAS OUTLET (FG)
- LOOSE KEY VALVE (KEY)
- WATER STUB OUT FOR ICE MAKER
- CARBON MONOXIDE ALARM
HARD WIRE W/ BATTERY BACKUP

CODES RULES AND REGULATIONS

ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, CSHA, AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION

CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND **CONFIRMED** DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amir R. Pandya

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	10.04.22	CITY COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

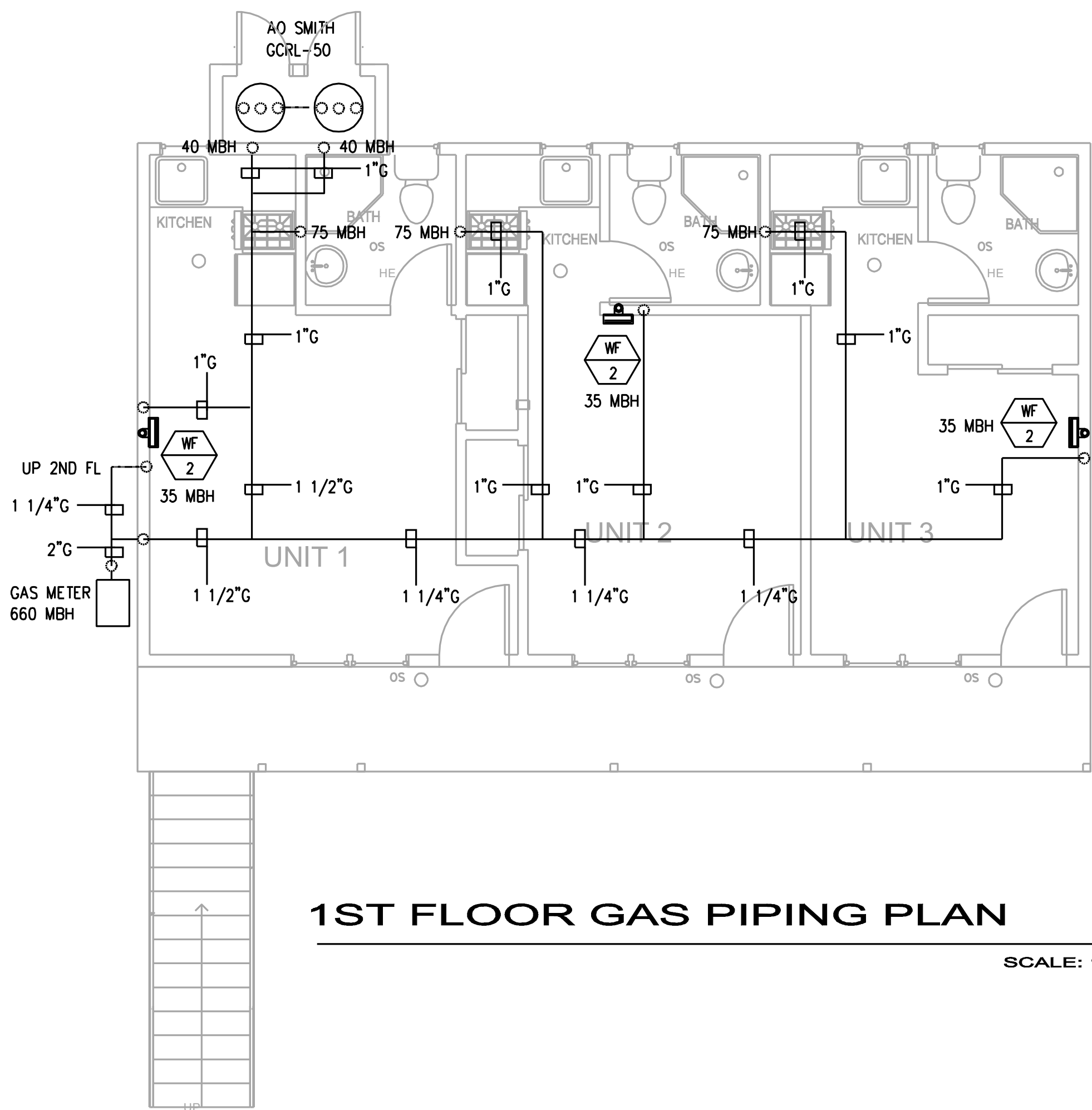
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

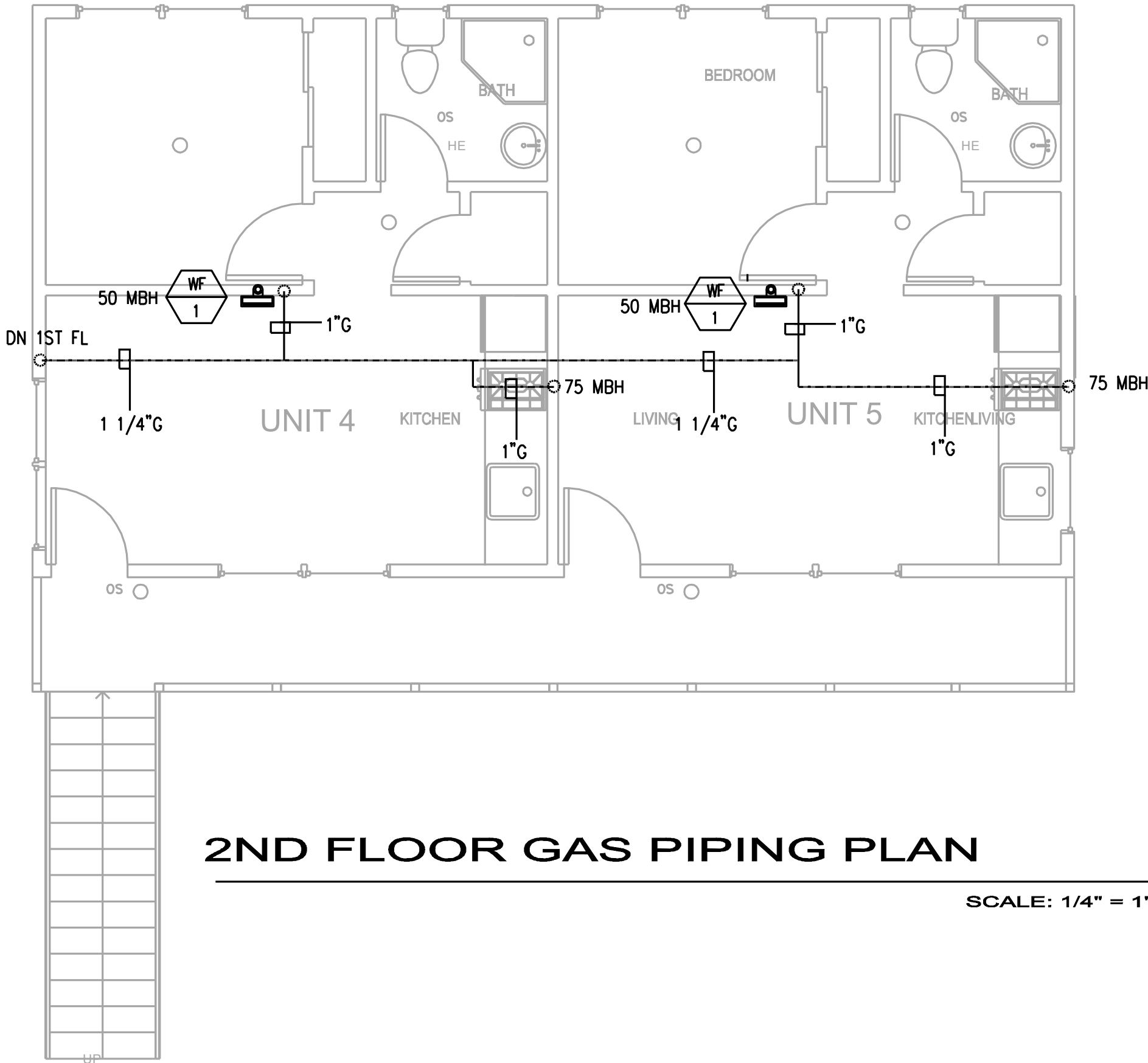
BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

P2.1



1ST FLOOR GAS PIPING PLAN
SCALE: 1/4" = 1'-0"



2ND FLOOR GAS PIPING PLAN
SCALE: 1/4" = 1'-0"

CODES RULES AND REGULATIONS
ALL MATERIAL AND WORK SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL TITLE 24, UTILITY COMPANY, OSHA, AND STATE AND LOCAL GOVERNING AGENCIES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE STANDARDS.

TITLE 24 COMPLIANCE DOCUMENTATION
CALIFORNIA ENERGY CONSERVATION STANDARDS TITLE 24 FOR RESIDENTIAL BUILDING HAVE BEEN REVIEWED AND **CONFORMS** DESIGN DESCRIBED ON THIS DRAWING IS IN SUBSTANTIAL COMPLIANCE.

AMCON CONSULTANTS, INC.
Mechanical & Electrical Engineers
940 HAMLIN COURT, SUNNYVALE, CA 94089
PH: 408.272.8800 FAX: 408.272.5645
www.amconconsultants.com



Amil R. Pandey

5 UNITS BUILDING REMODEL
(ROT AND TERMITE DAMAGE)
21661 E CLIFF DR.
SANTA CRUZ, CA 95062

NO.	DATE	ISSUE
1	09.22.21	CITY SUBMITTAL
2	12.29.22	OWNER REVIEW COMMENTS

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include
supplemental documents that are
required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

JOB NO.	9081-21
SCALE	AS NOTED
DRAWN BY	FS
SHEET NO.	

P3.1

RESIDENTIAL MEASURES SUMMARY

RMS-1

Project Name: East Cliff Drive Remodel

21661 E Cliff Drive Santa Cruz

Building Type: Single Family

California Energy Climate Zone 03

Completion Date: 3/8/2022

1,456

0

5

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Wall	Wood Framed	R 15	73		Altered
Door	Opaque Door	R-5	105		New
Wall	Wood Framed	R 15	160		Altered
Wall	Wood Framed	R 15	80		Altered
Slab	Unheated Slab on Grade	no insulation	268	Perim = 48"	Existing
Wall	Wood Framed	R 15	49		Altered
Wall	Wood Framed	R 15	80		Altered
Slab	Unheated Slab-on-Grade	- no insulation	233	Perim = 23"	Existing

FENESTRATION

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (E)	114.0	0.300	0.23	none	none	N/A	New
Rear (W)	112.0	0.300	0.23	none	none	N/A	New
Right (N)	8.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
5	Gravity Wall Furnace	67% AFUE	No Cooling	14.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
HVAC System	Ductless / No Fan	Ductless	N/A	n/a	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
2	Small Storage Gas	50	0.65	Standard	Altered

EnergyPro 8.2 by EnergySoft

User Number: 6249

ID: 22-030811

Page 15 of 22

Carstairs Energy Inc.

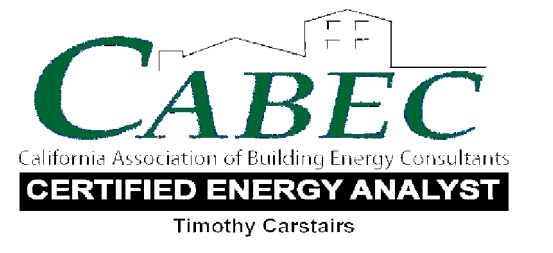
2238 Bayview Heights Drive, Suite E
Los Osos, CA 9302
805-904-9048 info24@yahoo.com
www.carstairsenergy.com



East Cliff Drive Remodel

21661 E Cliff Drive

Santa Cruz, CA 95062



Call Us for
HERS Testing

Serving San Luis Obispo and Santa Barbara Counties

03/8/2022

22-030811

DRAWN BY: Timothy Carstairs

SCALE: N/A

SHEET:

T24.2

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG

REVIEW DATE: 12/29/2022

ISSUED PERMIT: B-223585

CHANGE DOCS:

Supplemental Documents

Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

2019 Low-Rise Residential Mandatory Measures Summary

Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer

Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.

Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.

Water Piping. Solar water-heating system piping, and Space Conditioning System Line Insulation. All domestic hot water air piping must be insulated as specified in Section 905.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is associated with a domestic hot water redistribution system, from the heating source to storage tank or between tanks, buried below grade; and from the heating source to kitchen fixtures.*

Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water resistant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.

Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "ground" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and label with the words "Water 240V UL" or Category III or IV vent, or a Type II vent with straight pipe between the outside termination and the space where the water heater is installed, a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance, and a gas supply line with a capacity of at least 200,000 Btu per hour.

Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)(9).

Solar Water-Heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), The International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO RST), or by a listing agency that is approved by the Executive Director.

Ducts and Fans Measures:

Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.

CMC Compliance. All air distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-2008 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-4.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1, 4.3, 6). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and other mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*

Factory-Fabricated Duct Systems. Factory fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures, joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.

Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.

Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.

Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.

Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, steel metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water resistant and provides shielding from solar radiation.

Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.

Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)(1) and Reference Residential Appendix RA3.

Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or be one inch if sized per ASHRAE 150.0-A. Pressure drops and leakage must meet the requirements of § 150.0(m)(2). Filters must be accessible for regular service.*

Space Conditioning System Airflow Rate and Fan Efficiency. Space conditioning systems that use ducts to supply cooling must have a total for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficiency ≥ 0.45 watts per CFM for gas furnace air handlers and ≥ 0.58 watts per CFM for all other air handlers. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficiency < 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

CERTIFICATE OF COMPLIANCE

Project Name: East Cliff Drive Remodel

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-03-08T12:36:14-08:00

Input File Name: East Cliff Drive Remodel (21661) rhd15x

CERT-PRF-01E

(Page 12 of 12)

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

Documentation Author Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

CERTIFICATE OF COMPLIANCE

Project Name: East Cliff Drive Remodel

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-03-08T12:36:14-08:00

Input File Name: East Cliff Drive Remodel (21661) rhd15x

CERT-PRF-01E

(Page 11 of 12)

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

Documentation Author Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

CERTIFICATE OF COMPLIANCE

Project Name: East Cliff Drive Remodel

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-03-08T12:36:14-08:00

Input File Name: East Cliff Drive Remodel (21661) rhd15x

CERT-PRF-01E

(Page 11 of 12)

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

Documentation Author Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

CERTIFICATE OF COMPLIANCE

Project Name: East Cliff Drive Remodel

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-03-08T12:36:14-08:00

Input File Name: East Cliff Drive Remodel (21661) rhd15x

CERT-PRF-01E

(Page 10 of 12)

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

Documentation Author Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

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

Documentation Reviewer Name: Timothy Carstairs

Signature: Timothy Carstairs

Date: 2022-03-08 12:55:28

2238 Bayview Heights Drive, Suite E

Los Osos, CA 93042

805-904-4048

RESIDENTIAL MEASURES SUMMARY

RMS-1

Project Name: East Cliff Drive Remodel

21661 E Cliff Drive Santa Cruz

Building Type: Single Family

California Energy Climate Zone 03

Completion Date: 3/8/2022

1,456

0

5

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Roof	Wood Framed Attic	R 30	364		Altered
Demising	Wood Framed w/o Crawl Space	- no insulation	726		New
Wall	Wood Framed	R 15	93		Altered
Wall	Wood Framed	R 15	112		Altered
Wall	Wood Framed	R 15	151		Altered
Roof	Wood Framed Attic	R 30	364		Altered

FENESTRATION

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (E)	114.0	0.300	0.23	none	none	N/A	New
Rear (W)	112.0	0.300	0.23	none	none	N/A	New
Right (N)	8.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
5	Gravity Wall Furnace	67% AFUE	No Cooling	14.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
HVAC System	Ductless / No Fan	Ductless	N/A	n/a	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
2	Small Storage Gas	50	0.65	Standard	Altered

EnergyPro 8.2 by EnergySoft

User Number: 6249

ID: 22-030811

Page 17 of 22

2019 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply.

Building Envelope Measures:

§ 110.6(a): Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 1011.5 2/A440-2011.*

§ 110.6(a)(5): Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 110.11(a).

§ 110.6(b): Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6.A, 110.6.B, or J44.5 for exterior doors. They must be caulked and/or weather stripped.*

§ 110.7: Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.*

§ 110.8(a): Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHSGS).*

§ 110.8(b): Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(b).

§ 110.8(c): Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(c) and be labeled per § 110.113 when the installation of a cool roof is specified on the CFIR.*

§ 110.8(d): Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.

§ 110.8(e): Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling, or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*

§ 150.0(a): Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.

§ 150.0(b): Wall Insulation. Minimum R-13 insulation in 2x6 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.074 or less. Opaque non-thermal assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*

§ 150.0(d): Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U factor.*

§ 150.0(f): Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without foaming, no greater than 0.3 percent; have a water vapor permeance no greater than 0.2 pperm per inch; be protected from physical damage and UV light deterioration; and when installed as part of a heated slab floor, must the requirements of § 110.8(b).*

§ 150.0(g): Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception in § 150.0(d).*

§ 150.0(g)(2): Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U factor of all fenestration must not exceed 0.58.*

Fireplaces, Decorative Gas Appliances, and Gas Log Measures:

§ 110.5(e): Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.

§ 150.0(a): Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.

§ 150.0(e)(2): Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and lightlifting damper or combustion-air control device.*

§ 150.0(g): Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*

Space Conditioning, Water Heating, and Plumbing System Measures:

§ 110.0-§ 110.3: Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*

§ 110.2(a): HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*

§ 110.2(b): Controls for Heat Pumps with Supplemental Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone, and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*

§ 110.2(c): Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*

§ 110.2(d): Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)(4).*

§ 110.3(c)(6): Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for isolating the water heater when the valves are closed.

§ 110.5: Pilot Lights. Continuously burning pilot lights are prohibited for natural gas, fan-type central furnaces, household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*

§ 150.0(h): Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)(2).*

RESIDENTIAL MEASURES SUMMARY

RMS-1

Project Name: East Cliff Drive Remodel

21661 E Cliff Drive Santa Cruz

Building Type: Single Family

California Energy Climate Zone 03

Completion Date: 3/8/2022

1,456

0

5

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Demising	Wood Framed	- no insulation	552		New
Wall	Wood Framed	R 15	49		Altered
Wall	Wood Framed	R 15	80		Altered
Wall	Wood Framed	R 15	160		Altered
Slab	Unheated Slab on Grade	no insulation	227	Perim = 43"	Existing
Wall	Wood Framed	R 15	93		Altered
Wall	Wood Framed	R 15	160		Altered
Wall	Wood Framed	R 15	112		Altered

FENESTRATION

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (E)	114.0	0.300	0.23	none	none	N/A	New
Rear (W)	112.0	0.300	0.23	none	none	N/A	New
Right (N)	8.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
5	Gravity Wall Furnace	67% AFUE	No Cooling	14.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
HVAC System	Ductless / No Fan	Ductless	N/A	n/a	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
2	Small Storage Gas	50	0.65	Standard	Altered

EnergyPro 8.2 by EnergySoft

User Number: 6249

ID: 22-030811

Page 16 of 22

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG

REVIEW DATE: 12/29/2022

ISSUED PERMIT: B-223585

CHANGE DOCS:

Supplemental Documents

Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.



Requirements for Ventilation and Indoor Air Quality:	
§ 150.00(i):	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.00(j).
§ 150.00(j):	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Section 4.1.1 and 4.1.2 and as specified in § 150.00(k).
§ 150.00(k):	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with ASHRAE 62.2 and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit exhaust leakage must be ≤ 0.3 CFM at 50 Pa (each tested unit passes the test). The system must be designed to envelope stairways and vestibules in accordance with Performance Residential Appendix A-FAS.16.
§ 150.00(l):	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by ASHRAE 62.2. All unit airflows must be within 20 percent of the unit with the lowest airflow rate in relation to the individual unit's minimum required airflow rate needed for compliance.
§ 150.00(m):	Kitchen Exhaust Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.00(n):	Field Verification and Diagnostic Testing. Dwelling-unit ventilation must be verified in accordance with Reference Residential Appendix B-FAS.7.4. A kitchen range hood must be verified in accordance with Reference Residential Appendix FAS.7.4.3 to confirm it is rated by HVAC company with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.04(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency claim with the Appliance Efficiency Regulations, an energy/water-mounted outdoor, or a heater that allows shutting off the heater without adjusting the thermostat setting; a permanent waterproof plug or cord with opening instructions; and must not use electric resistance heating.
§ 110.04(b):	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the floor and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for a future solar heating.
§ 110.04(c):	Covers. Outdoor pools or spas that have a heat pump or gas heater must allow for a cover.
§ 110.04(d):	Directional Lights and Time Switches for Pools. Pools must have directional lights that automatically turn the pool water, and a time switch that is not electrically programmed to turn on the lights during the winter months.
§ 110.05:	Pilot Light. Natural gas pool or spa heaters must not have a continuously burning pilot light.
§ 150.00(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.
Lighting Measures:	
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.
§ 150.00(A):	General Efficiency. All installed luminaires must meet the requirements in Table 150.00-A.
§ 150.00(B):	Blank Electrical Boxes. The number of electrical boxes that must be more than five feet above the finished floor and do not contain a luminaire or other device must not be greater than the number of bedrooms. These electrical boxes must be serviced by a dimmer, vacancy sensor control, or fan speed control.
§ 150.00(C):	Recessed Downlights in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation control (IC rated), acoustical, seismic, and/or listed for use in damp or wet locations as specified in § 150.00(C).
§ 150.00(D):	Recessed Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.00(E):	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by a vacancy sensor system if they are rated to consume no more than 3 watts of power and are no more than 120 lumens.
§ 150.00(F):	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.00(F).
§ 150.00(G):	Screw Based Luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA.8.
§ 150.00(H):	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.00(I):	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources external to drawers, cabinets or linen closets are not required to comply with Table 150.0-A or be controlled by a vacancy sensor system if they are rated to consume no more than 3 watts of power and are no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.00(JA):	Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL.7A.
§ 150.00(KB):	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.
§ 150.00(LC):	Interior Switches and Controls. Light switches have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.
§ 150.00(M):	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.00(N):	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.00(N).
§ 150.00(P):	Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.



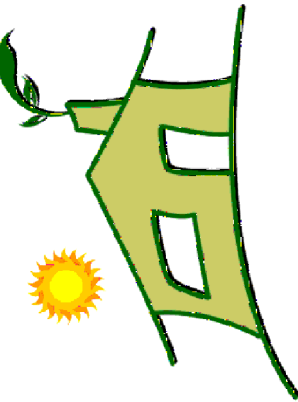
§ 150.00(G)	Inter Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements of § 150.00(G) #1. Provides functionality of the specified control according to § 110.9, meets the Installation Certificate requirements of § 130.4, meets the EMCs requirements of 138.0 and the EMCs requirements of § 150.00(G) #2.
§ 150.00(H)	Inter Switches and Controls. A multisense programming controller may be used to comply with dimmer requirements in § 150.00(G) #4. Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.00(G).
§ 150.00(I)	Inter Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaires in each of those spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic control functionality. If an occupant sensor is installed, it must be initially configured to maintain-on-control using the manual control required under Section 150.00(G).
§ 150.00(J)	Inter Switches and Controls. Luminaires that are not a light source might require that meet Reference: Joseph JAAE requirements for dimming. The dimming system must be installed consistently or uniformly.
§ 150.00(K)	Inter Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.00(L)	Residential Outdoor Lighting. For single-family residential buildings, (a) outdoor lighting prominently mounted to a residential building, or to the buildings on the same lot, must meet the requirements in Item § 150.00(J)(3)(a) (On/Off switching) and the requirements in either § 150.00(J)(3)(a) (photocell) and either a motion sensor or automatic time switch controls or § 150.00(J)(3)(a) (astronomical time clock), or an EMCS.
§ 150.00(M)	Residential Outdoor Lighting. For single-family residential buildings, (b) outdoor lighting for private patios, porches, entrance balconies, and porches, and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.00(J)(3) or with the applicable requirements in Sections 110.0, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.00(N)	Residential Outdoor Lighting. For single-family residential buildings, (c) outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and with outdoor lighting not regulated by § 150.00(J)(3) or § 150.00(J)(3) or with the applicable requirements in Sections 110.0, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.00(O)	Internally Illuminated address signs. Internally illuminated address signs must comply with § 140.8, or must consume no more than 5 watts of power as defined according to § 140.8.
§ 150.00(P)	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.0, 130.0, 130.1, 130.4, 140.8, and 141.0.
§ 150.00(Q)	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas and building must be comply with Table 500.0-A and be controlled by an occupant sensor.
§ 150.00(R)	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas that building must:
§ 150.00(S)	Comply with the applicable requirements in Sections 110.0, 130.0, 130.1, 140.6 and 141.0, and
§ 150.00(T)	Occupying sensors in corridors, stairways, and other areas of the building that are to be controlled by the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off at designed points of ingress and egress.
Solar Ready Buildings:	
§ 150.00(U)	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which has a photovoltaic system must comply with the requirements of § 150.00(U) through § 150.00(V).
§ 150.00(V)	Low-rise Multifamily Buildings. Low-rise multifamily buildings that do not have a photovoltaic system installed must comply with the requirements of § 150.00(U) through § 150.00(V).
§ 150.00(W)	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, moisture ventilation, and zoning requirements as specified in Table 24. Part 4 of other sections of the Title 24 or in any requirements adopted by local jurisdiction. The solar zone must be a minimum of 10,000 square feet for buildings with less than 100,000 square feet for buildings with roof areas less than or equal to 10,000 square feet or less than 100 square feet for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof overhanging the building and have a total area no less than 10,000 square feet. For multifamily residences, the solar zone must be located on the roof overhanging the building, or on the roof overhanging of another building within 250 feet of the building, or on a covered parking structure with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed use occupancies.
§ 150.00(X)	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 0 degrees and 300 degrees of true north.
§ 150.00(Y)	Shading. The solar zone must not contain any obstructions, including but not limited to, vents, chimneys, architectural features, and roof projections.
§ 150.00(Z)	Shading. Any obstruction located on the roof or any part of the building that projects above a solar zone must be located at the least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone.
§ 150.00(A)	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be directly indicated on the construction documents.
§ 150.00(B)	Connective Pathways. The connective documents must indicate a location pathway for inverters and metering equipment and a pathway reserved for running of wires from the solar zone to the main interconnection with the electrical service, and for single family residences central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 150.00(C)	Documentation. A copy of the construction documents or a comparable document including the information from § 150.00(U) through § 150.00(V) must be provided to the applicant.
§ 150.00(D)	Main Electrical Service Panel. The main electrical service panel must have a minimum branch rating of 200 amps.
§ 150.00(E)	Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

[illegible]

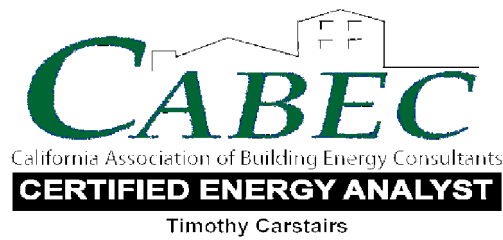
* Total includes ventilation load for zonal systems



2238 Bayview Heights Drive, Suite E
Los Osos, CA 93402
805-904-9048 title2@yahoo.com
www.carstairsenergy.com



East Cliff Drive Remodel
21661 E Cliff Drive
Santa Cruz, CA 95062



Call Us for

HERS Testing

Serving San Luis Obispo and Santa Barbara Counties

03/8/2022

22-030811

DRAWN BY: Timothy Carstairs

SCALE: N/A

SHEET:

T24.3

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE

REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:

Supplemental Documents
Issued documents include supplemental documents that are required to be on the construction site.

BUILDING INSPECTORS MAY REQUIRE ADDITIONAL PLANS AND ANALYSIS IF IN THEIR JUDGEMENT THE WORK DONE EXCEEDS THE SCOPE OF THE PERMIT AND/OR CONVENTIONAL CONSTRUCTION PRACTICES.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)	
See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.	
2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE	
SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS
Chapter 1 – ADMINISTRATION		Chapter 4 – RESIDENTIAL MANDATORY MEASURES		EV charging: 1- & 2-family dwellings/townhouses with attached private garages		EV charging space (EV space) locations		Single EV space required	
101.3.1		Division 4.1 – PLANNING AND DESIGN		4.106.4.1		4.106.4.2.1		4.106.4.2.3	
Applies to ALL newly constructed residential buildings; low-rise, high-rise, and hotels/motels.		Storm water drainage and retention during construction		• Install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each dwelling unit.		Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least 1 EV space shall be located in the common use parking areas and shall be available for use by all residents.		• Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.	
102.3		4.106.2		• Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter).		EV charging stations (EVCS)		• Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter).	
Requires a completed Residential Occupancies Application Checklist or alternate method acceptable to the enforcing agency to be used for documentation of conformance.		Projects which disturb less than 1 acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction.		• Raceway shall originate at the main service or subpanel and terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger.		When EV chargers are installed, EV spaces (required by Section 4.106.4.2.2, Item 3.) shall comply with at least 1 of the following options:		• Raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV space.	
Chapter 3 – GREEN BUILDING		4.106.3		• Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces.		1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.		• Construction documents shall identify the raceway termination point.	
Additions and alterations		Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Exception: Additions and alterations which do not alter the existing drainage path.		• Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.		2. The EV space shall be located on an accessible route to the building, as defined in the California Building Code, Chapter 2.		• Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.	
301.1.1		Electric vehicle (EV) charging for new construction		Identification		Exception: EVCS designed and constructed in compliance with the California Building Code Chapter 11B are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.		Multiple EV spaces required	
• Applies to additions or alterations of residential buildings where the addition or alteration increases the building's conditioned area, volume, or size.		• Comply with Section 4.106.4.1, 4.106.4.2 or 4.106.4.3 for future installation and use of EV chargers.		EV charging for multifamily dwellings		Exception: EVCS designed and constructed in compliance with the California Building Code Chapter 11B are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.		• Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics, and electrical load calculations to verify electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE.	
301.2		Exception:		• Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.		EV charging space (EV space) dimensions		4.106.4.2.4	
Low-rise and high-rise residential buildings		1. On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon 1 of the following: 1.1. Where there is no commercial power supply. 1.2. Verification that meeting requirements will alter the local utility infrastructure design requirements on the utility side of the meter (increasing costs to the homeowner/developer by more than \$400.00 per dwelling unit.		4.106.4.1.1		EV spaces shall be designed to comply with the following: 1. The minimum length of each EV space shall be 18 feet. 2. The minimum width of each EV space shall be 9 feet. 3. In any 25 EV spaces, but not less than 1, shall also have an 8-foot wide minimum aisle. A 5-foot wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet. a. Surface slope for this EV space and aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction.		• Plan design shall be based upon a 40-ampere minimum branch circuit.	
Mixed occupancy buildings		2. Accessory Dwelling Units and Junior Accessory Dwelling Units without additional parking facilities. Note: For definitions of Accessory Dwelling Units and Junior Accessory Units, see CALGreen Chapter 2.		4.106.4.2		4.106.4.2.2		4.106.4.2.5	
Requires each portion of mixed occupancy buildings to comply with CALGreen measures applicable for the specific occupancy.		• Banners identify provisions applicable to low-rise only [LR] or high-rise only [HR].		• Applies to all multifamily dwelling units with parking facilities on the site.		1. The minimum length of each EV space shall be 18 feet. 2. The minimum width of each EV space shall be 9 feet. 3. In any 25 EV spaces, but not less than 1, shall also have an 8-foot wide minimum aisle. A 5-foot wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet. a. Surface slope for this EV space and aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction.		Service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.	
302.1		Exception:		• 10% of the total number of parking spaces provided for all types of parking facilities, but in no case less than 1, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the number of EV spaces shall be rounded up to the nearest whole number. Note: Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.		4.106.4.2.2		Identification	
• Accessory structures and accessory occupancies serving residential buildings to comply with Chapter 4 and Appendix A4, as applicable.		• Live/work units complying with the California Building Code Section 419 shall not be considered a mixed occupancy. Live/work units are required to comply with Chapter 4 and Appendix A4, as applicable.		4.106.4.2		1. The minimum length of each EV space shall be 18 feet. 2. The minimum width of each EV space shall be 9 feet. 3. In any 25 EV spaces, but not less than 1, shall also have an 8-foot wide minimum aisle. A 5-foot wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet. a. Surface slope for this EV space and aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction.		Service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.	
Page 1 of 16		Page 2 of 16		Page 3 of 16		Page 4 of 16		Page 5 of 16	

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)	
See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.	
2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE	
SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS
EV charging for hotels and motels		Multiple EV spaces required (similar to 4.106.4.2.4)		Division 4.3 – WATER EFFICIENCY AND CONSERVATION		Construction waste management		Waste stream reduction alternative [LR]	
4.106.4.3		4.106.4.3.4		4.303.1		4.408.1		4.408.4 & 4.408.4.1	
• Applies to all newly constructed hotels and motels.		• Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE.		Plumbing fixtures and fittings shall comply with the following: 4.303.1.1 – Water closets: ≤ 1.28 gpf/flush. 4.303.1.2 – Wall mounted urinals: ≤ 0.125 gpf/flush; all other urinals ≤ 0.5 gpf/flush. 4.303.1.3.1 – Single showerheads: ≤ 1.8 gpm @ 80 psi. 4.303.1.3.2 – Multiple showerheads: combined flow rate of all showerheads controlled by a single valve shall not exceed 1.8 gpm @ 80 psi, or only 1 shower outlet is to be in operation at a time. 4.303.1.4.1 – Residential lavatory faucets: maximum flow rate ≤ 1.2 gpm @ 60 psi; minimum flow rate ≥ 0.8 gpm @ 20 psi. 4.303.1.4.2 – Lavatory faucets in common and public use areas of residential buildings: ≤ 0.5 gpm @ 80 psi. 4.303.1.4.3 – Metering faucets: ≤ 0.2 gallons per cycle. 4.303.1.4.4 – Kitchen faucets: ≤ 1.8 gpm @ 60 psi; temporary increase to 2.2 gpm allowed but shall default to 1.8 gpm.		• Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance. • Provide documentation to the enforcing agency per Section 4.408.5.		• Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 3.4 pounds per square foot of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.406.1.	
4.106.4.3.1		4.106.4.3.5		4.303.2		4.408.2		4.410.1	
Table 4.106.4.3.1 shows the number of required EV spaces based on the total number of parking spaces provided for all types of parking facilities.		• Plan design shall be based upon a 40-ampere minimum branch circuit. • Required raceways and related components planned to be installed underground, enclosed, inaccessible or, in concealed areas and spaces shall be installed at the time of original construction.		Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet applicable standards referenced in Table 1701.1 of the California Plumbing Code.		1. Excavated soil and land-clearing debris. 2. Alternative waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite. 3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the hard boundaries of the diversion facility.		Operation and maintenance manual	
EV charging space (EV space) dimensions		4.106.4.3.6		4.304.1		4.408.3		4.410.2	
EV spaces shall be designed to comply with the following: • Minimum length of each EV space shall be 18 feet. • Minimum width of each EV space shall be 9 feet.		Service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.		New residential 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.		Submit a construction waste management plan meeting Items 1 through 5 in Section 4.408.2. Plans shall be updated as necessary and shall be available for examination during construction.		Recycling by occupants	
Single EV space required (similar to 4.106.4.2.3)		Division 4.2 – ENERGY EFFICIENCY		Division 4.4 – MATERIAL CONSERVATION & RESOURCE EFFICIENCY		Waste management company		Fireplaces - General	
• Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.		4.201.1 & 5.201.1		4.406.1		Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.		Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas) that serves all buildings on the site and is identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.	
• Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter).		Scope		Rodent proofing		4.408.3		Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.	
• Raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV space.		• Energy efficiency requirements for low-rise residential (Section 4.201.1) and high-rise residential/hotels/motels (Section 5.201.1) are now in both residential and nonresidential chapters of CALGreen.		Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be closed with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency to prevent passage of rodents.		4.408.3		Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove 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. Woodstoves, pellet stoves, and fireplaces shall also comply with all applicable local ordinances.	
• Construction documents shall identify the raceway termination point.		• Standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the 2019 California Energy Code.		4.406.1		4.408.3		4.408.3	
• Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.		4.201.1 & 5.201.1		4.406.1		Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.		4.408.3	
Page 6 of 16		Page 7 of 16		Page 8 of 16		Page 9 of 16		Page 10 of 16	

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
REVIEWED FOR CODE COMPLIANCE
REVIEWER: CSG
REVIEW DATE: 12/29/2022
ISSUED PERMIT: B-223585
CHANGE DOCS:
Supplemental Documents
issued documents include
supplemental documents that are
required to be on the construction site.
BUILDING INSPECTORS MAY REQUIRE
ADDITIONAL PLANS AND ANALYSIS IF IN THEIR
JUDGEMENT THE WORK DONE EXCEEDS THE
SCOPE OF THE PERMIT AND/OR CONVENTIONAL
CONSTRUCTION PRACTICES.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)		2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)	
See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.		See specific referenced sections for complete details on CALGreen mandatory requirements.	
2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE		2019 CALGREEN CODE	
SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS	SECTION	REQUIREMENTS
Protection of mechanical equipment during construction		Aerosol paints and coatings		Resilient flooring systems		Concrete slab foundations		Bathroom exhaust fans		CHAPTER 7 – INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS	
4.504.1	At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air intake and distribution component openings shall be covered. Tape, plastic, sheetrock or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris entering the system may be used.	4.504.2.3 & 4.504.2.4	• Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances. In Sections 94522(e)(1) and (f)(1) 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 shall additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49. • Documentation is required per Section 4.504.2.4.	4.504.4	Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall comply with 1 or more of the following: 1. Products compliant with 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 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database. 2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program). 3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program. 4. Meet 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 1.1, February 2010 (also known as Specification 01350).	4.505.2	Concrete slab foundations or concrete slab-on-ground floors required to have a vapor retarder by the California Building Code, Chapter 19, or the California Residential Code, Chapter 5, respectively, shall also comply with this section. Capillary break A capillary break shall be installed in compliance with at least 1 of the following: 1. A 4-inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curing, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06. 2. Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.	4.506.1	Each bathroom shall be mechanically ventilated and shall comply with the following: 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control. a. Humidity controls shall be capable of manual or automatic adjustment between a relative humidity range of 5 to 50% to a maximum of 80%. b. A humidity control may be a separate component to the exhaust fan and is not required to be integral or built-in. Note: For CALGreen, a bathroom is a room which contains a bathtub, shower, or tub/shower combination. Fans or mechanical ventilation is required in each bathroom.	702.1	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.
4.504.2.1	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 1188 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products shall also 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. 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 1 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 (CCR), Title 17, commencing with Section 94507.	4.504.3	Carpet installed in the building interior shall meet the testing and product requirements of 1 of the following: 1. Carpet and Rug Institute's Green Label Plus Program. 2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level. 4. Scientific Certifications Systems Indoor Advantage™ Gold.	Composite wood products • Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in the Air Resources Board's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), as shown in Table 4.504.5. • Documentation is required per Section 4.504.5.1.		4.505.3	1. Moisture content shall be determined with either a probe-type or a contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements in Section 101.8. 2. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified. 3. At least 3 random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.	4.507.2	Heating and air-conditioning systems shall be sized, designed and equipment selected using the following methods: 1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J – 2016 (Residential Load Calculation). ASHRAE handbooks or other equivalent design software or methods. 2. Duct systems are sized according to ANSI/ACCA 1 Manual D – 2016 (Residential Duct Systems). ASHRAE handbooks or other equivalent design software or methods. 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S – 2014 (Residential Equipment Selection) or other equivalent design software or methods. Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.	702.2	When required by the enforcing agency, special inspectors must be qualified and able to demonstrate competence to the enforcing agency in the discipline in which they are inspecting.
4.504.2.2	Architectural paints and coatings shall comply with VOC limits in Table 1 of the Air Resources Board Architectural Suggested Control Measure, as shown in Table 4.504.3, 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 4.504.3 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, 4.26, 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 4.504.3 shall apply.	4.504.3.1	Carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.	4.504.5 & 4.504.5.1	• Definition of Composite Wood Products: Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" do not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists, or finger-joined lumber, all as specified in CCR, Title 17, Section 93120.1(a).	Insulation products that are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Manufacturers' drying recommendations shall be followed for wet-applied insulation products prior to enclosure.				703.1	Documentation of compliance shall include, but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the local enforcing agency. Other specific documentation or special inspections necessary to verify compliance are specified in appropriate sections of CALGreen.
		4.504.3.2	Carpet adhesives shall meet the requirements of Table 4.504.1.								