

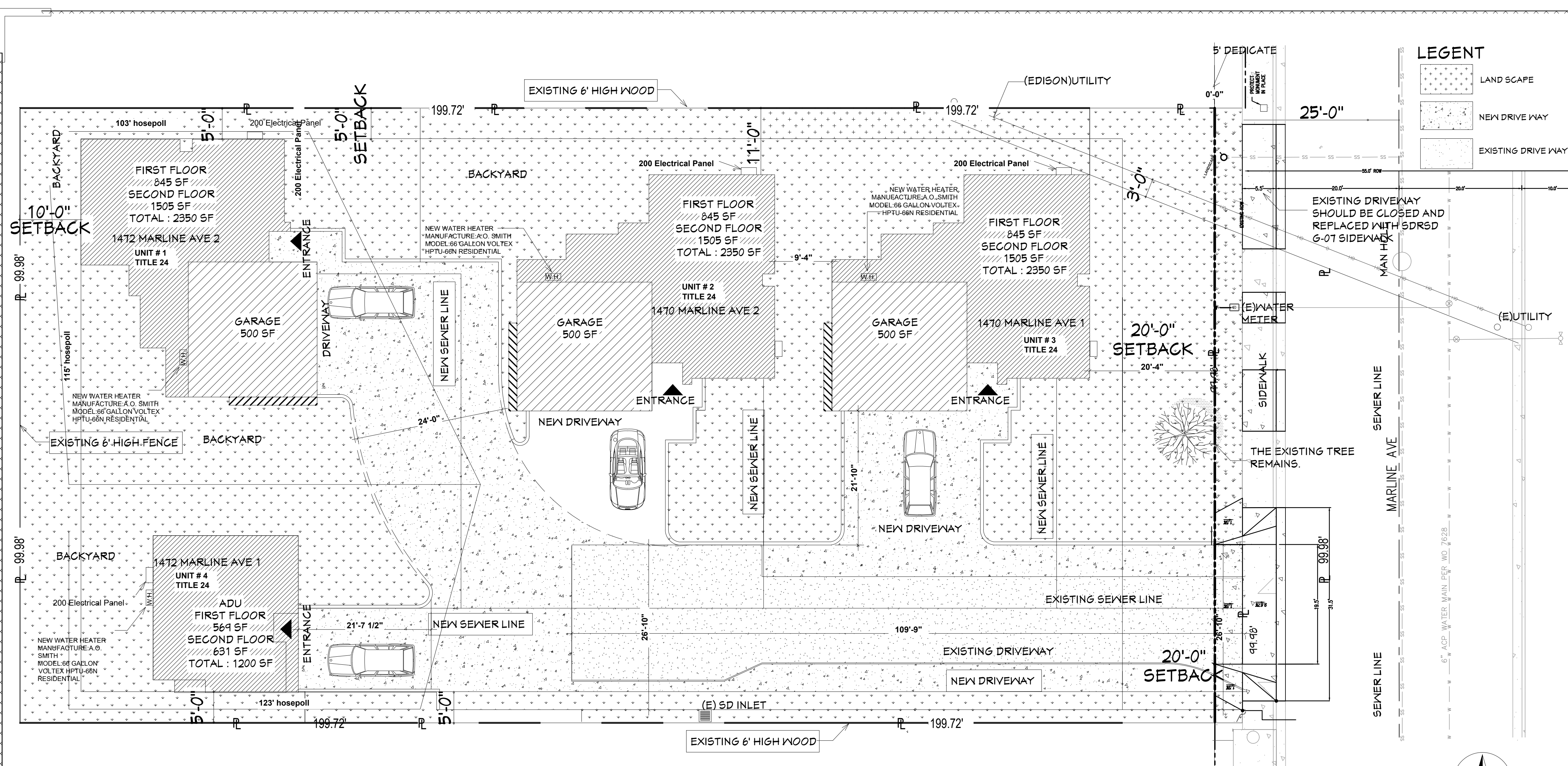
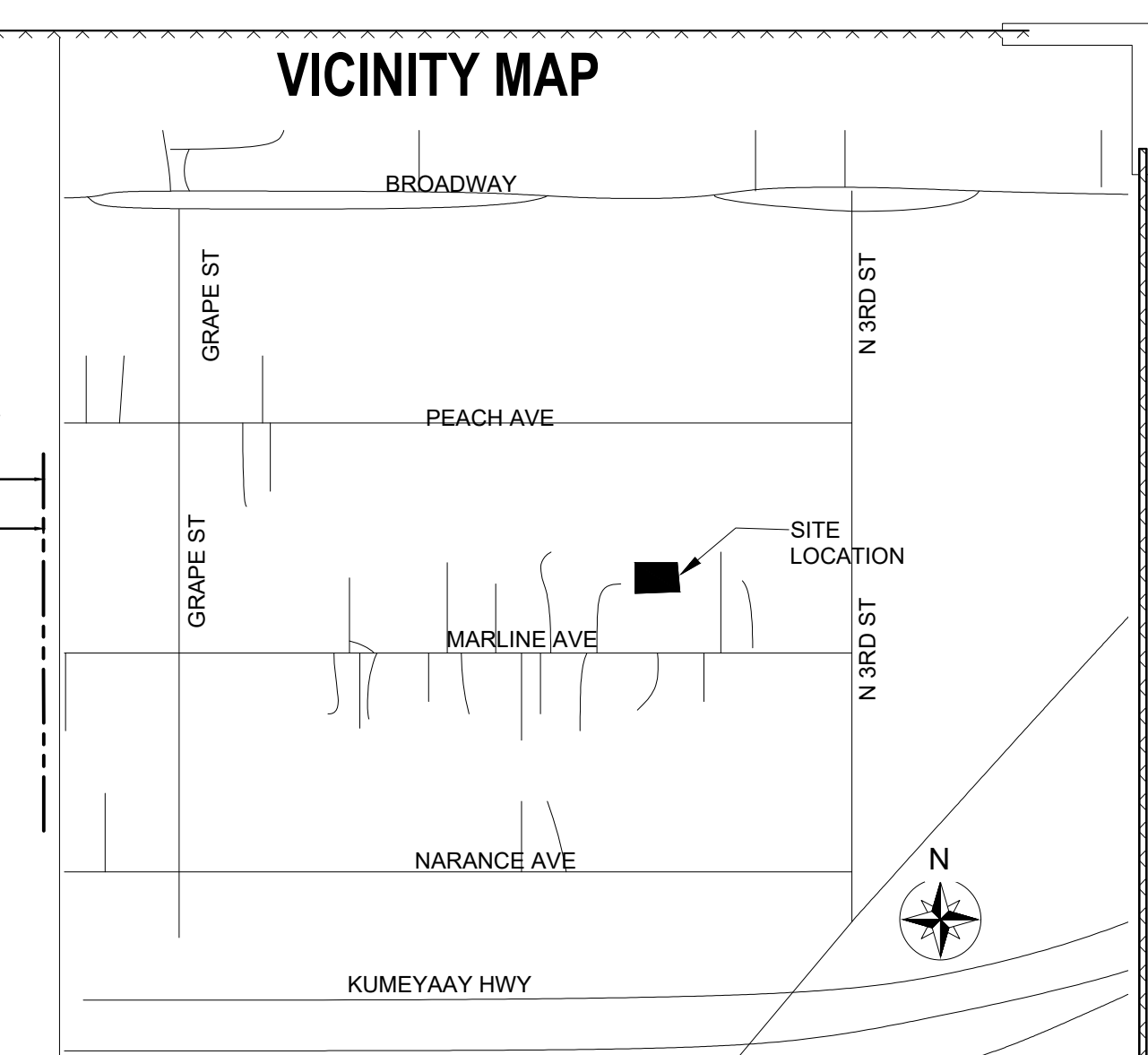
NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED CONSENT OF MBE BUILDING DESIGN & BUILD

12/10/2024 10:20:15 PM

2100 N. 10th St. El Cajon, CA 92021

1470 V1-V2 MARLINE AVE - ADU REVIT 1470 MARLINE AVE

LAST - 2/28/2024 06:05:00 0123080012652420000174



SCOPE OF WORK:

- ADDING NEW 3 HOUSE 2350 SF EACH, AND 1 NEW ADU 1200 SF
- NO LANDSCAPE PROPOSED

PROJECT DATA:

PROJECT NAME: MARLINE AVE HOUSES AND ADU
OWNER: 1090 S MOLLISON LLC
CONSTRUCTION BY:
PROJECT ADDRESS: 1470 NARLINE AVE
EL CAJON, CA 92021
APN: 507-282-22-00
LEGAL DESCRIPTION: LOT:4 CITY: EL CAJON
SUBD:BOSTANIA ACRES
LEGAL: BLK LOT 4 TR 001833
YEAR BUILT: 1941
LOT SIZE: 20310 SF
OCCUPANCY: R-2
ZONE: RM-6000
SET BACK: 20' FYSB, 5' IYSB, 10' RYSB
WATER BY: HELIX WATER DISTRIC
SEWER BY: CITY OF EL CAJON
ELECTRIC BY: SDG&E
NATURAL GAS BY: SDG&E

STORM WATER QUALITY NOTES - CONSTRUCTION BMP'S:

PRIOR TO ANY SOIL DISTURBANCE, TEMPORARY SEDIMENT CONTROLS SHALL BE INSTALLED BY THE CONTRACTOR OR QUALIFIED PERSON(S) AS INDICATED BELOW:

1. ALL REQUIREMENTS OF THE CITY OF SAN DIEGO "STORMWATER STANDARDS MANUAL" BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING IMPROVEMENTS CONSISTENT WITH THE APPROVED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND/OR WATER POLLUTION CONTROL PLAN (WPCCP) FOR CONSTRUCTION LEVEL BMPs AND, IF APPLICABLE, THE STORMWATER QUALITY MANAGEMENT PLAN (SWQMP) FOR POST-CONSTRUCTION BMPs.
2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL STORM DRAIN INLET PROTECTION, INLET PROTECTION IN THE PUBLIC RIGHT-OF-WAY MUST BE TEMPORARILY REMOVED PRIOR TO A RAIN EVENT TO ENSURE NO FLOODING OCCURS AND REINSTALLED AFTER RAIN IS OVER.
3. ALL CONSTRUCTION BMPs SHALL BE INSTALLED AND PROPERLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
4. THE CONTRACTOR SHALL ONLY GRADE, INCLUDING CLEARING AND GRUBBING, AREAS FOR WHICH THE CONTRACTOR OR QUALIFIED CONTACT PERSON CAN PROVIDE EROSION AND SEDIMENT CONTROL MEASURES.
5. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB-CONTRACTORS AND SUPPLIERS ARE AWARE OF ALL ALL STORMWATER BMPs AND IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED SWPPP/WPCP WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS, CIVIL PENALTIES, AND/OR STOP WORK NOTICES.
6. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL BE RESPONSIBLE FOR CLEANUP OF ALL SILT, DEBRIS, AND MUD ON AFFECTED AND ADJACENT STREETS AND STORM DRAIN SYSTEM DUE TO CONSTRUCTION VEHICLES/EQUIPMENT AND CONSTRUCTION ACTIVITY AT THE END OF EACH WORK DAY.
7. THE CONTRACTOR SHALL PROTECT NEW AND EXISTING STORMWATER CONVEYANCE SYSTEMS FROM SEDIMENTATION, CONCRETE RINSE, OR OTHER CONSTRUCTION-RELATED DEBRIS AND DISCHARGES WITH THE APPROPRIATE BMPs THAT ARE ACCEPTABLE TO THE CITY RESIDENT ENGINEER AND AS INDICATED IN THE SWPPP/WPCP.
8. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CLEAR DEBRIS, SILT, AND MUD FROM ALL DITCHES AND SWALES PRIOR TO AND WITHIN 3 BUSINESS DAYS AFTER EACH RAIN EVENT OR PRIOR TO THE NEXT RAIN EVENT, WHICHEVER IS SOONER.
9. "A NON-STORM WATER DISCHARGE LEAVES THE SITE, THE CONTRACTOR SHALL IMMEDIATELY STOP THE ACTIVITY AND REPAIR THE DAMAGES. THE CONTRACTOR SHALL NOTIFY THE CITY RESIDENT ENGINEER OF THE DISCHARGE, PRIOR TO RESUMING CONSTRUCTION ACTIVITY, ANY AND ALL WASTE MATERIAL, SEDIMENT, AND DEBRIS FROM EACH NON-STORM WATER DISCHARGE SHALL BE REMOVED FROM THE STORM DRAIN CONVEYANCE SYSTEM AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
10. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES. ALL NECESSARY MATERIALS SHALL BE STOCKPILED ON-SITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID DEPLOYMENT OF CONSTRUCTION BMPs WHEN RAIN IS IMMINENT.
11. THE CONTRACTOR SHALL RESTORE AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPs TO WORKING ORDER YEAR-ROUND.
12. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DUE TO THE UNFORESEEN CIRCUMSTANCES OF NON-STORM WATER AND SEDIMENT LOADS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.
14. ALL EROSION AND SEDIMENT CONTROL MEASURES PROVIDED PER THE APPROVED SWPPP/WPCP SHALL BE INSTALLED AND MAINTAINED. ALL EROSION AND SEDIMENT CONTROLS FOR INTERIM CONDITIONS SHALL BE PROPERLY DOCUMENTED AND INSTALLED TO THE SATISFACTION OF THE CITY RESIDENT ENGINEER.
15. AS NECESSARY, THE CITY RESIDENT ENGINEER SHALL SCHEDULE MEETINGS FOR THE PROJECT TEAM (GENERAL CONTRACTOR, QUALIFIED CONTACT PERSON, EROSION CONTROL SUBCONTRACTOR IF ANY, ENGINEER OF WORK, OWNER/DEVELOPER, AND THE CITY RESIDENT ENGINEER) TO EVALUATE THE ADEQUACY OF THE EROSION AND SEDIMENT CONTROL MEASURES AND OTHER BMPs RELATIVE TO ANTICIPATED CONSTRUCTION ACTIVITIES.
16. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CONDUCT VISUAL INSPECTIONS AND MAINTAIN ALL BMPs DAILY AND AS NEEDED. VISUAL INSPECTIONS AND MAINTENANCE OF ALL BMPs SHALL BE CONDUCTED BEFORE, DURING, AND AFTER EVERY RAIN EVENT AND EVERY 24 HOURS DURING ANY PROLONGED RAIN EVENT. THE CONTRACTOR SHALL MAINTAIN AND REPAIR ALL BMPs AS SOON AS POSSIBLE AS SAFETY ALLOWS.
17. CONSTRUCTION ENTRANCE AND EXIT AREA, TEMPORARY CONSTRUCTION ENTRANCE AND EXITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CASQA FACT SHEET TC-10R CAL TRANS FACT SHEET TC-01 TO PREVENT TRACKING OF SEDIMENT AND OTHER POTENTIAL POLLUTANTS ONTO PAVED SURFACES AND TRAVELED WAYS. WIDTH SHALL BE 10' OR THE MINIMUM NECESSARY TO ACCOMMODATE VEHICLES AND EQUIPMENT WITHOUT BY-PASSING THE ENTRANCE. (a) NON-STORM WATER DISCHARGES SHALL BE EFFECTIVELY MANAGED PER THE CITY OF EL CAJON MUNICIPAL CODE CHAPTER 4, ARTICLE 3, DIVISION 3 "STORMWATER MANAGEMENT AND DISCHARGE CONTROL".

PLAN CHECKER NOTES

- ADUS ARE SUBJECT TO ALL REGULATIONS AS SPECIFIED IN SDMC SECTION 141.0302 (A) THRU (D).
- WATER METERS FOR COMBINED DOMESTIC WATER & FIRE SPRINKLER SYSTEMS SHALL NOT BE INSTALLED UNTIL FIRE SPRINKLER SYSTEM HAS BEEN SUBMITTED & APPROVED BY THE BUILDING OFFICIAL.
- DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL, AT EACH STAIRWAY, IN ALL STORAGE AND CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, AND WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CFC 3315.1.
- BUILDINGS UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION SHALL CONFORM TO CFC CHAPTER 33. WELDING, CUTTING, AND OTHER HOT WORK SHALL BE IN CONFORMANCE WITH CFC CHAPTER 35.
- ADDRESS IDENTIFICATION SHALL BE PROVIDED FOR NEW AND EXISTING BUILDINGS IN A LOCATION THAT IS PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY, WHERE ACCESS IS BY WAY OF A PRIVATE ROAD AND THE BUILDING ADDRESS CANNOT BE VIEWED FROM THE PUBLIC WAY, AN APPROVED SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE. PREMISES IDENTIFICATION SHALL CONFORM TO CBC 901.2.
- OPEN FLAMES, FIRE, AND BURNING ON ALL PREMISES IS PROHIBITED, EXCEPT AS SPECIFICALLY PERMITTED BY THE CITY OF SAN DIEGO AND CFC 308.
- RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65 PERCENT OF THE NON-HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS CODE, CHAPTER 4, DIVISION 4.4 [CBCSG 4.408.1].
- AFTER THE BUILDING PERMIT HAS BEEN ISSUED, THE OWNER SHALL BE RESPONSIBLE FOR ANY COSTS INCURRED AS A RESULT OF CHANGES TO THE DESIGN OF THE FIRE SPRINKLER SYSTEM WHICH PRODUCE A HIGHER GPM AND A LARGE METER SIZE REQUIREMENT.
- OWNER SIGNATURE

ENGINEERING NOTES:

1. THE PROJECT PROPOSES TO EXPORT 0 CUBIC YARDS OF MATERIAL FROM THE SITE. ALL EXPORT MATERIAL SHALL BE DISCHARGED TO A LEGAL DISPOSAL SITE. THE APPROVAL OF THIS PROJECT DOES NOT ALLOW PROCESSING AND SALE OF THE MATERIAL. ALL SUCH ACTIVITIES REQUIRE A SEPARATE CONDITIONAL USE PERMIT.
2. ALL NEW DRAINAGE SHALL BE DISCHARGED THROUGH LANDSCAPED AREAS BEFORE ENTERING PUBLIC STORM DRAIN SYSTEM.

CODE COMPLIANCE:

CA RESIDENTIAL CODE 2022 EDITION
CA GREEN BUILDING CODE 2022 EDITION
CA ELECTRICAL CODE 2022 EDITION
CA MECHANICAL CODE 2022 EDITION
CA PLUMBING CODE 2022 EDITION
CA FIRE CODE 2022 EDITION
CA BUILDING ENERGY EFFICIENCY STANDARDS 2022 EDITION
CA BUILDING CODE 2022 EDITION WHERE APPLICABLE

DEFERRED PLAN FOR FIRE SPRINKLER

REMOVE & REPLACE EXISTING DRIVEWAY PER SDRS G-26. WORK TO BE DONE UNDER SEPERATE PERMIT.

SITE PLAN
1" = 10'-0"

IMPERVIOUS SURFACE AREA TABLE

DESCRIPTION	EXISTING (SF)	NEW (SF)
EXISTING HOUSE		
NEW HOUSE(3)+GARAGE (3)		7050
NEW ADU		1200
DRIVEWAY	1793	7857
DJ		899

TOTAL DISTURBED AREA: 9650

Table 17.140.110 Lot Coverage	
0-5	See Chapter 17.155
PRD	See Chapter 17.165
RS-40	30%
RS-20	40%
RS-14	40%
RS-9	40%
RS-6	40%
RM-6000	40%
RM-4300	50%
RM-2500	55%
RM-2200	55%
RM-1450	60%
RM-HR	90%

FIRST FLOOR NEW HOUSE (3) =2,529
GARAGE AREA (3) = 1,512
FIRST FLOOR ADU = 551

LOT COVERAGE FOR ZONE RM 6000 IS 40%
TOTAL LOT COVERAGE:
2,529+1,512+1,512 =4,592 / 20,310 = 0.2260 X 100 = 22.60 %

LEGEND:

- W WATER METER
- G GAS METER
- E ELECTRICAL PANEL
- S SEWER LINE
- EXISTING STRUCTURES
- AREA OF WORK
- DIRECTION OF DRAINAGE
- SETBACK LINE
- PROPERTY LINE

SHEET INDEX

SHEET NUMBER	SHEET NAME
A 1.0	SITE PLAN
A 1.1	BMP PLAN
A 2.0	HOUSE (P) FLOOR PLAN
A 2.1	HOUSE (P) FLOOR & ROOF PLAN
A 2.2	ADU (P) FLOOR PLAN
A 3.0	HOUSE ELEVATIONS
A 3.1	ADU ELEVATIONS
A 3.3	SECTIONS
A 4.0	DETAILS
A 5.0	HOUSE UTILITY PLANS
A 5.1	ADU UTILITY PLANS
A 6.0	TRUSS PLAN HOUSE
A 6.1	TRUSS PLAN ADU
HFX1	ANCHORAGE DETAILS
HFX2	FRAMING DETAILS
HFX3	FLOOR SYSTEM DETAIL
S-1.0	STRUCTURAL NOTES
S-1.1	STRUCTURAL SCHEDULES
S-2.0	STRUCTURAL FOUNDATION PLAN
S-3.0	STRUCTURAL FRAMING PLAN
S-3.1	ROOF FRAMING PLAN
S-3.2	ROOF FRAMING PLAN / FOUNDATION
S-4.0	STRUCTURAL DETAIL
S-5	STRUCTURAL DETAIL2
T 1	CF1R/ MF1R- UNIT 1&3
T 2	CF1R/ MF1R-UNIT 1&3
T 3	CF1R/ MF1R-UNIT 2
T 4	CF1R/ MF1R-UNIT 2
T 7	CF1R/ MF1R-UNIT 4
T 8	CF1R/ MF1R-UNIT 4

ADDRESS
3675 RUFFIN RD SAN DIEGO, CA 92123
PHONE
949-617-7888

ECT

(N) HOUSES- (N) ADU

A.P.N. 507-282-22-00

1470 V1-V2, 1472 V1-V2 Marline Avenue ,
El Cajon, CA 92021

DESIGNER:
RACHEL S. ASERCE

SHEET NAME

SITE PLAN

REVISION

Revision Schedule		
Rev. #	Description	Date

12/10/2024 12:20:18 PM

SHEET

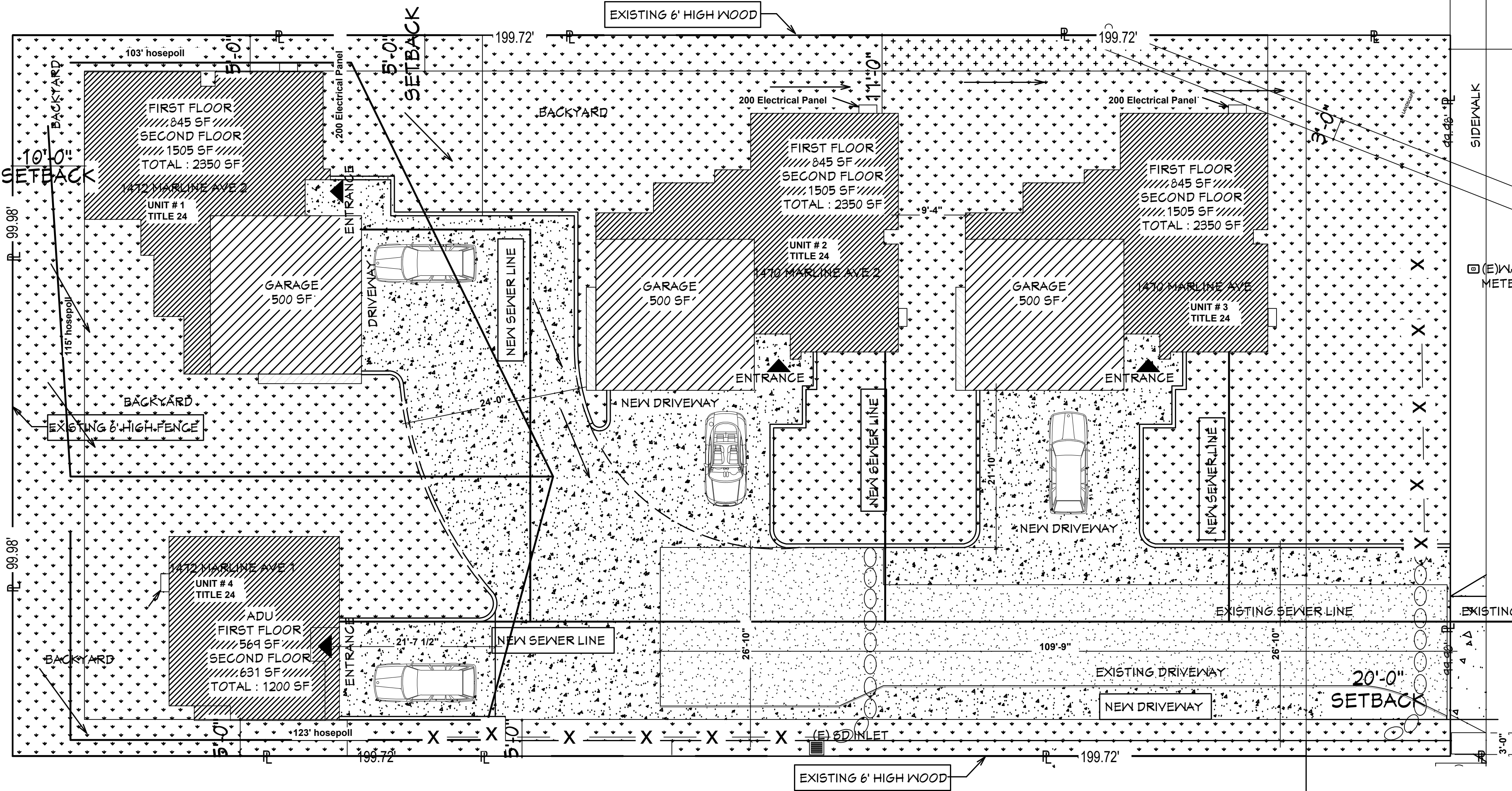
A 1.0

NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED CONSENT OF HBR BUILDING

15/10/2024 15:55:55 PM

25'0" RUFFIN RD SAN DIEGO, CA 92123

1470 MARLINE AVE EL CAJON CA 92021



LEGENT

	LAND SCAPE
	NEW DRIVE WAY
	EXISTING DRIVE WAY

Legend (Per Caltrans' Standards)

	Direction of Flow
	Fiber Rolls (SC-5)
	Gravel Bags (SC-6)
	Silt Fence (SC-1)
	Material Storage
	Solid Waste Management
	Concrete Waste Management
	Sanitary Waste Management

Table 17.140.110
Lot Coverage

O-8	See Chapter 17.155
PRD	See Chapter 17.165
RS-40	30%
RS-20	30%
RS-14	40%
RS-9	40%
RS-6	40%
RM-6000	40%
RM-4300	50%
RM-2500	55%
RM-2000	55%
RM-1450	60%
RM-HR	50%

LEGEND:

	WATER METER
	GAS METER
	ELECTRICAL PANEL
	SEWER LINE
	EXISTING STRUCTURES
	AREA OF WORK
	DIRECTION OF DRAINAGE
	SETBACK LINE
	PROPERTY LINE



BMP PLAN
1" = 10'-0"

REMOVE & REPLACE EXISTING DRIVEWAY
PER SDRS G-26. WORK TO BE DONE
UNDER SEPERATE PERMIT.

DEFFERED PLAN FOR FIRE SPRINKLER

Project Address 1470 MARLINE AVE EL CAJON CA 92021
Project APN 507-282-2200
Permit Number
Applicant Name RUMEYSA SERCE
Applicant Address 3675 RUFFIN RD SAN DIEGO, CA 92123

IMPERVIOUS SURFACE AREA TABLE

DESCRIPTION	EXISTING (SF)	NEW (SF)
EXISTING HOUSE		
NEW HOUSE(3)+GARAGE (3)		8550
NEW ADU		1200
DRIVEWAY	1793	5072

TOTAL DISTURBED AREA: 14,822

Erosion Control Plan

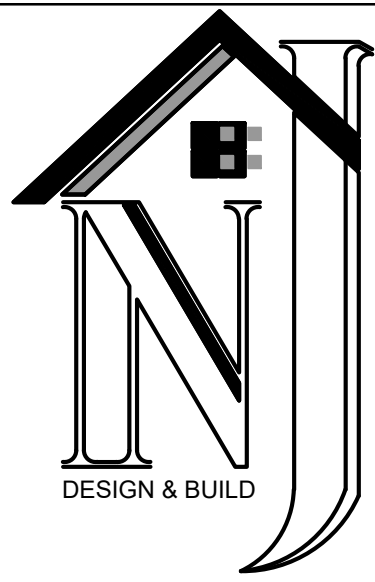
City of El Cajon

GENERAL STORM WATER NOTES

- ALL OPERATION WILL COMPLY WITH THE CITY'S JURISDICTIONAL RUNOFF MANAGEMENT PLAN (JTMP).
- THE OWNER AND THE OWNER'S CONTRACTOR ARE RESPONSIBLE FOR POLLUTION PREVENTION PRACTICES TO PREVENT THE DISCHARGE OF SEDIMENT AND POLLUTANTS TO THE PUBLIC STORM DRAIN SYSTEM.
- OWNER AND THE OWNER'S CONTRACTOR ARE RESPONSIBLE FOR THE PREVENTION OF EROSION CAUSED BY CLEARING OF VEGETATION, GRADING, DEMOLITION OR CONSTRUCTION.
- SEDIMENT, POLLUTION AND EROSION CONTROL MEASURES WILL BE IMPLEMENTED STARTING THE FIRST DAY OF CLEARING, GRADING OR SOIL DISTURBANCE, OR CONSTRUCTION. THESE CONTROLS WILL REMAIN IN EFFECT UNTIL ALL RELEVANT OPERATIONS HAVE BEEN COMPLETED AND DISTURBED SOILS HAVE EITHER: 1) ESTABLISHED VEGETATION, OR 2) OTHER PERMANENT EROSION CONTROL AT 70% COMPLETION.

EROSION AND SEDIMENT CONTROL NOTES

- IN CASE OF EMERGENCY, CONTACT: NAME: MOHAMMED ALMOUSWAI PHONE: 619-966-7766
- THE CONTRACTOR WILL MAINTAIN ALL SEDIMENT AND EROSION CONTROL DEVICES IN GOOD WORKING ORDER TO THE SATISFACTION OF THE CITY ENGINEER THROUGHOUT EVERY PHASE OF THE PROJECT.
- THE CONTRACTOR WILL INSTALL ALL EROSION CONTROL MEASURE ADDITIONAL TO THOSE SPECIFIED BY THE APPROVED EROSION CONTROL PLAN IF REQUIRED TO DO SO BY THE CITY ENGINEER.
- THE CONTRACTOR AND PROPERTY OWNER WILL PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.
- GRADED AREAS AROUND THE PROJECT PERIMETER WILL DRAIN AWAY FROM THE FACE OF SLOPES AT THE END OF EACH WORKING DAY.
- ALL GRAVEL BAGS SHALL HAVE 3/4 INCH MINIMUM AGGREGATE (NO SANDBAGS AND NO BURLAP TYPE BAGS ALLOWED).
- THE EROSION CONTROL BMP'S MUST BE INSTALLED PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION ACTIVITIES. PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE CITY STORM WATER INSPECTOR AT 619-441-1653.



ADDRESS
3675 RUFFIN RD SAN DIEGO, CA 92123
PHONE
949-617-7888

ECT

(N) HOUSES- (N) ADU

A.P.N. 507-282-22-00

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER:

RUMEYSA SERCE

SHEET NAME

BMP PLAN

REVISION

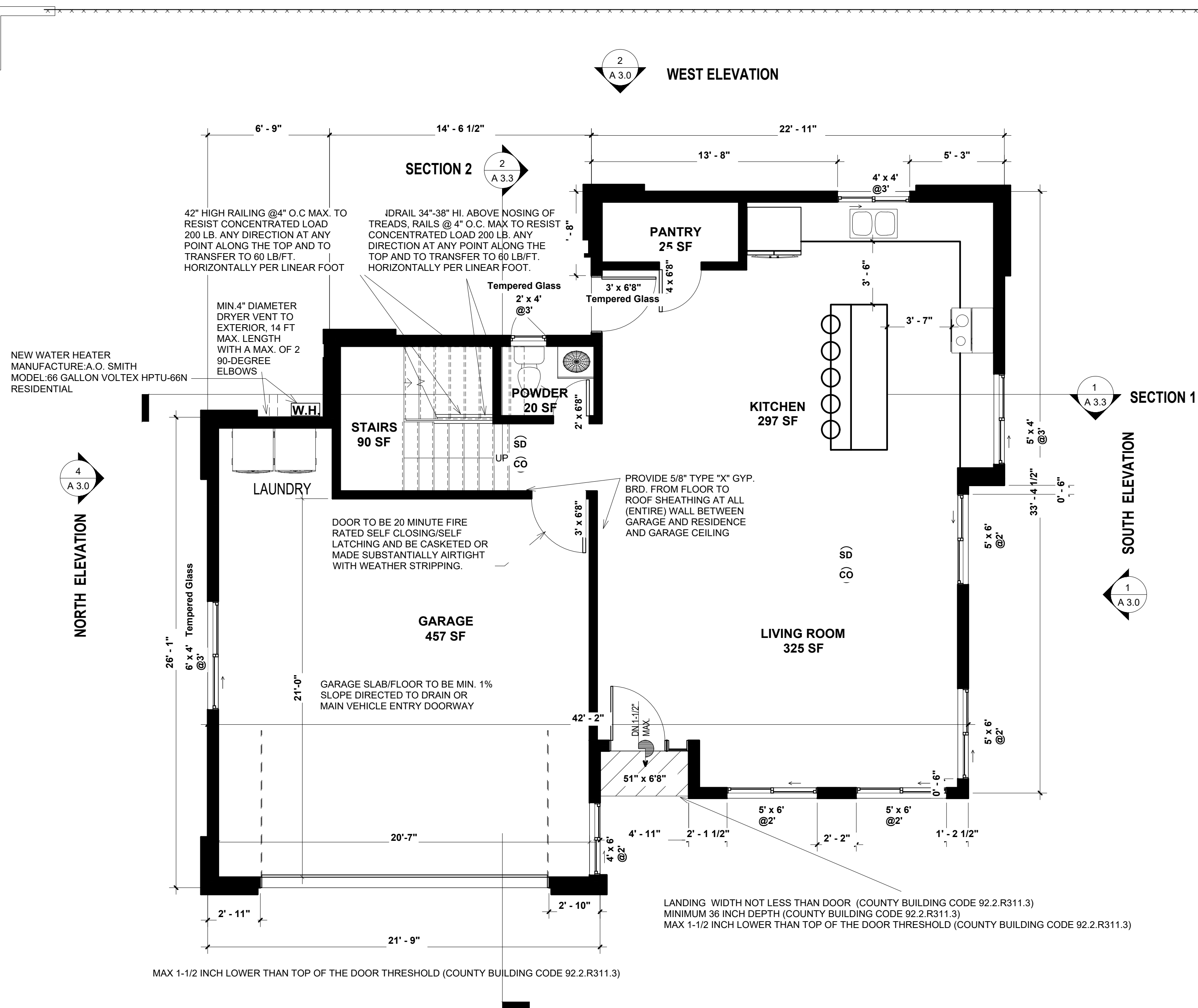
Revision Schedule		
Rev. #	Description	Date

12/10/2024 12:20:36 PM

SHEET

A 1.1

NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESS CONSENT OF MBE BUILDING



- SD) PROPOSAL SMOKE DETECTOR CRC R314.4, CRC R314.6, CRC R315.5
- CO) PROPOSAL CARBON MONOXIDE DETECTOR CRC R315.1.7, CRC R315.15

DOORS / WINDOWS NOTES:

- ALL WINDOWS SHALL BE DUAL GLAZED (GLAZING FRAMES MADE OF VINYL MATERIALS SHALL WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND LOW-E VALUE (U.N.O).
- EXTERIOR DOORS SHALL COMPLY WITH ONE OF THE FOLLOWING:
 - EXTERIOR SURFACE OR CLADDING OF NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL
 - BE SOLID-CORE WOOD MIN. 1-3/8" INCH THICK.
- ALL WINDOWS HEADER HEIGHT (HD HT) DIMENSION IS THE VERTICAL DISTANCE FROM BOTTOM OF HEADER TO FLOOR DIRECTLY BELOW.
- SIZE AND SHAPE PER SHEET A1 & A3
- INTERIOR DOORS HEIGHT IS SPECIFIED ON SHEET A1.
- emergency escape and rescue windows shall have a minimum net clear opening of 5.7 sq. ft.

FLOOR FINISH MATERIALS:

- WOOD FLOORING AT ENTIRE LIVING AREA AND KITCHEN.
- TILE AT ALL BATHROOMS.

WALL NOTE:

- ALL EXTERIOR WALLS SHALL BE 2X6 STUDS @ 16" O.C.
- ALL INTERIOR WALL SHALL BE 2X4 STUDS @ 16" O.C. (u.n.o)
- ALL Walls BETWEEN HOUSE & GARAGE SHALL BE 2X6 STUDS @ 16" O.C.
- ALL PLUMBING wall shall be 2x6 studs @ 16" o.c.

2022 CALIFORNIA FIRE CODE COMPLIANCE LIST:	
1. voice/alarm communication system control unit.	2. silent communications system.
3. system zoning annunciator panel required by Section 907.6.4.3.	4. visually indicating the location of the elevators and whether they are operational.
5. control panels for air distribution systems.	6. control panels for fire alarm systems.
7. The fire alarm control panel required by Section 908.10 for smoke control systems installed in the building.	8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.	10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.	12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighter air-replenishment systems, fire-fighting equipment and fire department access, and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions.
13. An approved Building Information Card that includes, but is not limited to, all of the following information: <ul style="list-style-type: none">General building information that includes: property name, address, the number of floors in the building above and below grade, use and occupancy classification (for mixed uses, identify the different types of occupancies on each floor) and the estimated building population during the day, night and weekend.Building emergency contact information that includes: a list of the building's emergency contacts including but not limited to building manager, building engineer and their respective work phone number, cell phone number and email address.Building construction information that includes: the type of building construction including but not limited to floors, walls, columns and roof assembly.Exit access stairways and exit stairway information that includes: number of exit access stairways and exit stairways in building, each exit access stairway and exit stairway designation and floors served; location where each exit access stairway and exit stairway discharges, interior exit stairways that are pressurized; exit stairways provided with emergency lighting; each exit stairway that allows reentry; exit stairways providing roof access; elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve; location of elevator machine rooms, control rooms and control spaces; location of sky lobby; and location of freight elevator banks.Building services and system information that includes: location of mechanical rooms, location of building management system, location and capacity of all fuel oil tanks, location of emergency generator and location of natural gas service.Fire protection system information that includes: location of standpipes, location of the fire pump room, location of fire department connections, floors protected by automatic sprinklers and location of different types of automatic sprinkler systems installed including but not limited to dry, wet and pre-action.Hazardous material information that includes: location and quantity of hazardous material.	14. Work table.
15. Generator supervision devices, manual start and transfer features.	16. Public address system, where specifically required by other sections of this code.
17. Elevator fire recall switch in accordance with ASME A17.1/CSA B44.	18. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
19. A master switch for unlocking elevator lobby doors permitted by Section 1910.2.12.1.	

AGING IN PLACE DESIGN AND FALL PREVENTION DETAIL

R327.1 Aging-in-place design and fall prevention. Newly constructed dwellings subject to the requirements of this code shall be designed and constructed in accordance with Sections R327.1.1 through R327.1.4. Exceptions:

1. Covered multifamily dwellings designed and constructed in accordance with Chapter 11A of the California Building Code.

2. Public housing and places of public accommodation required to comply with Chapter 11B of the California Building Code.

R327.1.1 Reinforcement for grab bars. At least one bathroom on the entry level shall be provided with reinforcement installed in accordance with this section. Where there is no bathroom on the entry level, at least one bathroom on the second or third floor of the dwelling shall comply with this section.

1. Reinforcement shall be solid lumber or other construction materials approved by the enforcing agency.

2. Reinforcement shall not be less than 2 by 8 inch (51 mm by 203 mm) nominal lumber, [11/2 inch by 71/4 inch (38 mm by 184 mm) actual dimension] or other construction material providing equal height and load capacity. Reinforcement shall be located between 32 inches (812.8 mm) and 39 1/4 inches (997 mm) above the finished floor flush with the wall framing.

3. Water closet reinforcement shall be installed on both side walls of the fixture, or one side wall and the back wall.

4. Shower reinforcement shall be continuous where wall framing is provided.

5. Bathtub and combination bathtub/shower reinforcement shall be continuous on each end of the bathtub and the back wall. Additionally, back wall reinforcement for a lower grab bar shall be provided with the bottom edge located no more than 6 inches (152.4 mm) above the bathtub rim.

Exceptions:

1. Where the water closet is not placed adjacent to a side wall capable of accommodating a grab bar, the bathroom shall have provisions for installation of floor-mounted, foldaway or similar alternate grab bar reinforcements approved by the enforcing agency.

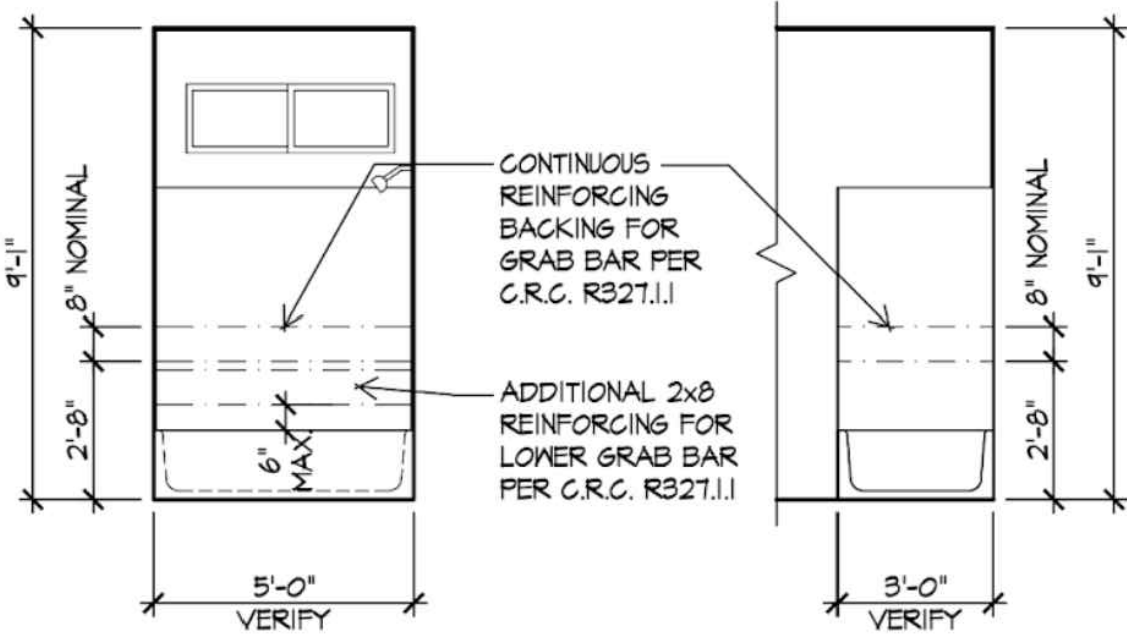
2. Reinforcement shall not be required in wall framing for pre-fabricated shower enclosures and bathtub wall panels with integral factory-installed grab bars or when factory-installed reinforcement for grab bars is provided.

3. Shower enclosures that do not permit installation of reinforcement and/or grab bars shall be permitted, provided reinforcement for installation of floor-mounted grab bars or an alternate method is approved by the enforcing agency.

4. Bathtubs with no surrounding walls, or where wall panels do not permit the installation of reinforcement shall be permitted, provided reinforcement for installation of floor-mounted grab bars adjacent to the bathtub or an alternate method is approved by the enforcing agency.

5. Reinforcement of floors shall not be required for bathtubs and water closets installed on concrete slab floors.

R327.1.1.1 Documentation for grab bar reinforcement. Information and/or drawings identifying the location of grab bar reinforcement shall be placed in the operation and maintenance manual in accordance with the California Green Building Standards Code, Chapter 4, Division 4.4.



DOOR NOTES / VERY HIGH FIRE RATING ZONE REQ'S

- GLAZED OPENINGS WITHIN EXTERIOR DOORS SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF CRC R308 FOR SAFETY GLAZING
- ALL GLAZING IN DOORS SHALL BE TEMPERED.
- GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWDA 101/1.S.2 STRUCTURAL REQUIREMENTS.
- EXTERIOR DOOR ASSEMBLIES SHALL BE SOLID CORE WOOD HAVING STILES AND RAILS NOT LESS THAN 1 3/8 INCHES THICK WITH INTERIOR FIELD PANEL THICKNESS NO LESS THAN 1 1/4 INCHES THICK, OR SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257.
- SEE FLOOR PLANS AND ELEVATIONS FOR OPENING DIRECTIONS.
- EXTERIOR DOORS CONSTRUCTED OF SOLID CORE WOOD SHALL HAVE A 1 MINUTE FIRE RATING
- SLIDING GLASS DOORS TO HAVE AN AVERAGE U-VALUE OF 0.30 BTU/HR. COEFFICIENT OF 0.25.
- GARAGE ENTRY DOORS & ENTRANCE DOORS TOGETHER WITH PERIMETER WALLS SHALL HAVE A STC RATING OF NOT LESS THAN 26.
 - SLIDING GLASS DOORS SHALL HAVE A STC RATING OF NOT LESS THAN 31.

WINDOW NOTES / VERY HIGH FIRE RATING ZONE REQ'S

- AGING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWDA 101/1.S.2 STRUCTURAL REQUIREMENTS." [SDMC 149.0327(G)].
- ALL GLAZING WITHIN A 24" ARC OF EITHER SIDE OF DOORS, ADJACENT TO A WALKING SURFACE (ONLY WHEN GLASS AREA IS GREATER THAN 9 S.F., BOTTOM EDGE IS LESS THAN 18" FROM THE FLOOR AND TOP EDGE IS GREATER THAN 36" FROM THE FLOOR), ADJACENT TO A STAIR LANDING, ADJACENT TO A TUB OR SHOWER, AND IN RAILINGS MUST TEMPERED. (CBC SECTION 2406.4)
- GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWDA 101/1.S.2 STRUCTURAL REQUIREMENTS.
- EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET. THE MINIMUM NET CLEAR OPENING SHALL BE:
 - EMERGENCY ESCAPE GRADE-LEVEL OPENINGS SHALL BE 5 SQUARE FEET.
 - EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE FOLLOWING DIMENSIONS: THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES. THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES. THE NET CLEAR OPENING DIMENSION SHALL BE THE RESULT OF NORMAL OPERATION OF THE OPENING.
 - EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR.
- SEE FLOOR PLANS AND ELEVATIONS FOR OPENING DIRECTIONS.
- ALL EXTERIOR WINDOW AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257
- ALL EXTERIOR WINDOW AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF CRC R308 FOR SAFETY GLAZING
- MANUFACTURED WINDOWS SHALL HAVE A CERTIFIED LABEL ATTACHED BY THE NATIONAL FENESTRATION RATING COUNCIL (NFRC) AND SHOWING COMPLIANCE WITH THE ENERGY CALCULATIONS. MECHANICAL VENTILATION IS REQUIRED PER 2016 C.B.C. SEC 1203.

FLOOR PLANS NOTES:

- A MINIMUM 36" DEEP FLOOR OR LANDING ON EACH SIDE OF EACH EXTERIOR DOOR WITH A SLOPE NOT EXCEEDING 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2%). THE WIDTH OF EACH LANDING SHALL NOT BE LESS THAN THE DOOR SERVED.
- SLOPE NOT EXCEEDING 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL
- EXTERIOR LANDING SHALL NOT BE MORE THAN 7.75 INCHES BELOW THE TOP OF THE THRESHOLD FOR DOORS OTHER THAN REQUIRED EGRESS DOORS
- ALL EXTERIOR DOORS SHALL BE A MINIMUM 20-MINUTE FIRE-RESISTANCE RATING
- HANDRAIL ENDS SHALL RETURN OR TERMINATING IN NEWEL POST OR SAFETY TERMINALS
- DUCTS IN THE GARAGE AND DUCTS PENETRATING WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF MINIMUM NO. 26 GAUGE SHEET STEEL OR OTHER APPROVED MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE.
- SHOWER COMPARTMENTS AND BATHTUBS WITH INSTALLED SHOWER HEADS SHALL BE FINISHED WITH A NONABSORBENT SURFACE THAT EXTENDS TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR
- A LISTED RACEWAY TO FACILITATE FUTURE INSTALLATION OF ELECTRIC VEHICLE CHARGER.
- RACEWAY SHALL BE NOT LESS THAN TRADE SIZE 1 (NOMINAL 1-IN. DIAMETER) TO ACCOMMODATE A DEDICATED 208/240-VOLT BRANCH CIRCUIT.
- 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 THE EV CHARGER.
- RACEWAY SHALL BE CONTINUOUS AT ENCLOSED, INACCESSIBLE OR CONCEALED AREAS AND SPACES.
- THE SERVICE PANEL OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40- AMPER MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE.
- THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY:
 - A) THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) FOR FUTURE EV CHARGING AS "EV CAPABLE"
 - B) THE RACEWAY TERMINATION LOCATION AS "EV CAPABLE"

DOOR NOTES:

DOORS SIDE HINGED SWINGING TYPE (COUNTY BUILDING CODE 92.2.R311.2)

MAIN DOOR FOR SFD IS A SWING DOOR

MINIMUM 32 INCH CLEAR WIDTH (COUNTY BUILDING CODE 92.2.R311.2)

WINDOW NOTES:

WINDOW SIZES ON FLOOR PLAN. ALL WINDOWS GLAZING SHOULD BE TEMPERED SAFETY GLAZING .32 U-FACTOR .25SHGC

DOOR SIZES ON FLOOR PLAN. ALL DOORS TO BE FLUSH DOORS UNLESS THE OWNER SELECT DIFFERENT TYPE ANY GLAZING ON DOORS SHOULD BE TEMPERED SAFETY GLAZING .32 U-FACTOR .25SHGC

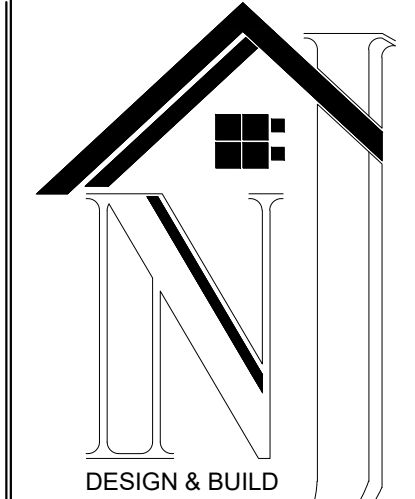
WALL LEGEND:

—— (E) 2X WALLS

--- (E) TO DEMOLISH

—— (P) 2X WALLS PLUMBING WALLS TO BE 2X6 WALLS

----- ONE-HOUR FIRE RESISTANT WALL CONSTRUCTION RATED FOR EXPOSURE TO FIRE FROM BOTH SIDES, CONTINUOUS FROM FOUNDATION TO UNDERSIDE OF UPPER ROOF SHEATHING



ADDRESS
3675 RUFFIN RD SAN DIEGO, CA 92123

PHONE
949-617-7268

ECT

(N) HOUSES- (N) ADU

1470 Marine Avenue,
El Cajon, CA 92021

DESIGNER:

RICHY SASSERRE

SHEET NAME

HOUSE (P) FLOOR PLAN

REVISION

Revision Schedule		
Rev. #	Description	Date

12/10/2024 12:20:24 PM

SHEET

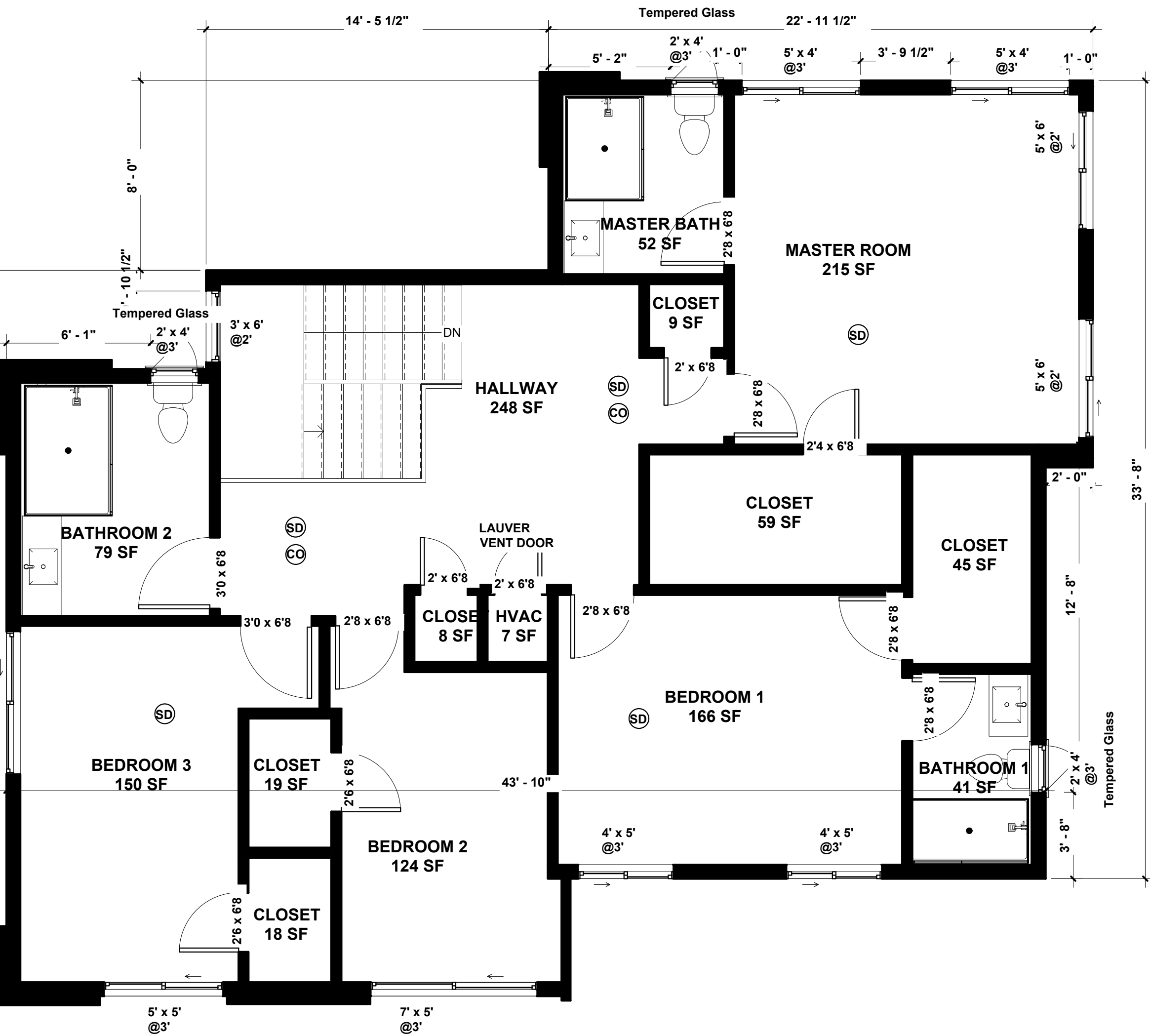
A 2.0

NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NHB BUILDING DESIGN & BUILD

2100 NUTCRACKERS - 1470 MARLINE AVE - ADJACENT 1470 MARLINE AVE

LAST = 2024-06-05 12:20:27 PM

12/19/2024 12:20:27 PM



FLOOR PLAN - LEVEL 2
1/4" = 1'-0"

- SD** PROPOSAL SMOKE DETECTOR CRC R314.4 , CRC R314.6 , CRC R315.5
- CO** PROPOSAL CARBON MONOXIDE DETECTOR CRC R315.1.7 , CRC R315.15

DOOR NOTES / VERY HIGH FIRE RATING ZONE REQ'S

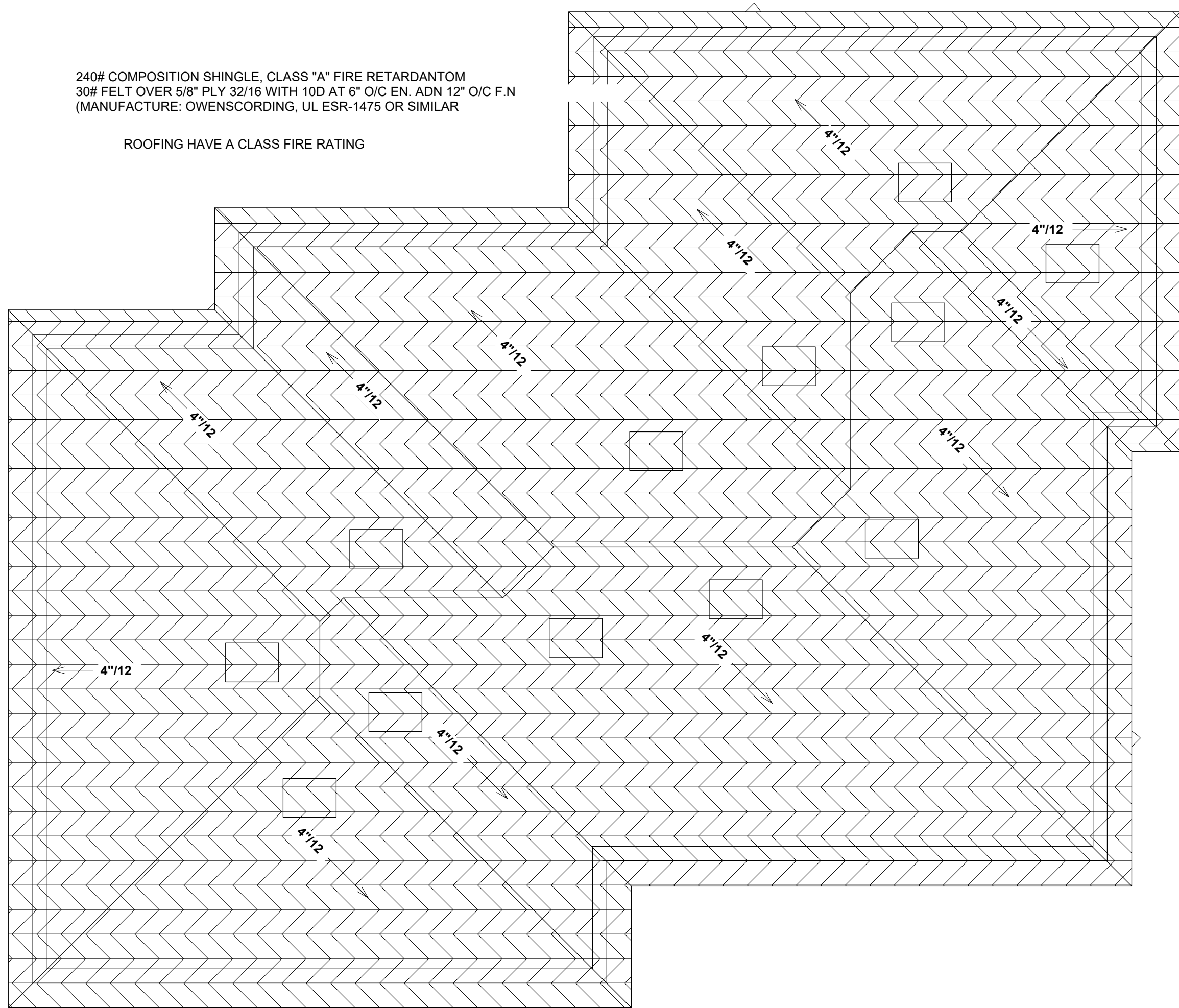
- GLAZED OPENINGS WITH AN EXTERIOR DOOR SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF CRC R308 FOR SAFETY GLAZING
- ALL GLAZING IN DOORS SHALL BE TEMPERED.
- GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWDDA 101/I.S.2 STRUCTURAL REQUIREMENTS.
- EXTERIOR DOOR ASSEMBLIES SHALL BE SOLID CORE WOOD HAVING STILES AND RAILS NOT LESS THAN 1 3/8 INCHES THICK WITH INTERIOR FIELD PANEL THICKNESS NO LESS THAN 1 1/4 INCHES THICK, OR SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257.
- SEE FLOOR PLANS AND ELEVATIONS FOR OPENING DIRECTIONS.
- ALL EXTERIOR DOORS CONSTRUCTED OF SOLID CORE WOOD SHALL HAVE A 20 MINUTE FIRE RATING
- SLIDING GLASS DOORS TO HAVE AN AVERAGE U-VALUE OF 0.30 BTU/HR.
- SLIDING GLASS DOORS TO HAVE AN AVERAGE SOLAR HEAT GAIN COEFFICIENT OF 0.25.
- GARAGE ENTRY DOORS & ENTRANCE DOORS TOGETHER WITH PERIMETER SEALS SHALL HAVE A STC RATING OF NOT LESS THAN 26.
- ALL SLIDING GLASS DOORS SHALL HAVE A STC RATING OF NOT LESS THAN 31.

WINDOW NOTES / VERY HIGH FIRE RATING ZONE REQ'S

- GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWDDA 101/I.S.2 STRUCTURAL REQUIREMENTS.
- ALL GLAZING WITHIN A 24" ARC OF EITHER SIDE OF DOORS, ADJACENT TO A GLASS SURFACE ONLY WHEN GLASS AREA IS GREATER THAN 9 S.F., BOTTOM EDGE IS LESS THAN 18" FROM THE FLOOR AND TOP EDGE IS LESS THAN 36" FROM THE FLOOR, ADJACENT TO A STAIR LANDING, ADJACENT TO A TUB OR SHOWER, AND IN RAILINGS MUST TEMPERED. (CBC SECTION 2408.4)
- GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWDDA 101/I.S.2 STRUCTURAL REQUIREMENTS.
- EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET, THE MINIMUM NET CLEAR OPENING FOR EMERGENCY ESCAPE GRADE-LEVEL OPENINGS SHALL BE 5 SQUARE FEET.
- EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE FOLLOWING DIMENSIONS: THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 20 INCHES, THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES, THE NET CLEAR OPENING DIMENSION SHALL BE THE RESULT OF NORMAL OPERATION OF THE OPENING.
- EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR.
- SEE FLOOR PLANS AND ELEVATIONS FOR OPENING DIRECTIONS.
- ALL EXTERIOR WINDOW AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257.
- ALL EXTERIOR WINDOW AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF CRC R308 FOR SAFETY GLAZING
- MANUFACTURED WINDOWS SHALL HAVE A CERTIFIED LABEL ATTACHED BY THE NATIONAL FENESTRATION RATING COUNCIL (NFRC) AND SHOWING COMPLIANCE WITH THE ENERGY CALCULATIONS. - MECHANICAL VENTILATION IS REQUIRED PER 2016 C.B.C. SEC 1203.

FLOOR PLANS NOTES:

- A MINIMUM 36" DEEP FLOOR OR LANDING ON EACH SIDE OF EACH EXTERIOR DOOR, WITH A SLOPE NOT EXCEEDING 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2%). THE WIDTH OF EACH LANDING SHALL NOT BE LESS THAN THE DOOR SERVED.
- SLOPE NOT EXCEEDING 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL
- EXTERIOR LANDING SHALL NOT BE MORE THAN 7.75 INCHES BELOW THE TOP OF THE THRESHOLD FOR DOORS OTHER THAN REQUIRED EGRESS DOORS
- ALL EXTERIOR DOORS SHALL BE A MINIMUM 20-MINUTE FIRE-RESISTANCE RATING
- HANDRAIL ENDS SHALL RETURN OR TERMINATING IN NEWEL POST OR SAFETY TERMINALS
- DUCTS IN THE GARAGE AND DUCTS PENETRATING WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF MINIMUM NO. 26 GAUGE SHEET STEEL OR OTHER APPROVED MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE.
- SHOWER COMPARTMENTS AND BATHTUBS WITH INSTALLED SHOWER HEADS SHALL BE FINISHED WITH A NONABSORBENT SURFACE THAT EXTENDS TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR
- A LISTED RACEWAY TO FACILITATE FUTURE INSTALLATION OF ELECTRIC VEHICLE CHARGER.
- RACEWAY SHALL BE NOT LESS THAN TRADE SIZE 1 (NOMINAL 1-IN. DIAMETER) TO ACCOMMODATE A DEDICATED 208/240-VOLT BRANCH CIRCUIT.
- 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 THE EV CHARGER.
- RACEWAY SHALL BE CONTINUOUS AT ENCLOSED, INACCESSIBLE OR CONCEALED AREAS AND SPACES.
- THE SERVICE PANEL OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40- AMPER MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE.
- THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY: A) THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) FOR FUTURE EV CHARGING AS "EV CAPABLE" B) THE RACEWAY TERMINATION LOCATION AS "EV CAPABLE"



HOUSE ROOF PLAN
1/4" = 1'-0"

Step 1 - Determine the square feet of code-required ventilation

Enter Total Square Feet of Attic Space to be Ventilated: 1578

Select Required Method: 300 STANDARD

Calculate = 5.26 sq. ft.

Step 2 - Convert square feet of code-required ventilation to square inches: 5.26 sq. ft. x 144

Square Inches of ventilation required = 757.44 sq. in.

Step 3 - Select Material and Determine Vents Required

Total O'Hagin Vents Required for 757.44 sq. in.

CHOOSE MATERIAL: Composition Shingle

Low Profile - "Tapered"
72 sq. in. NFVA



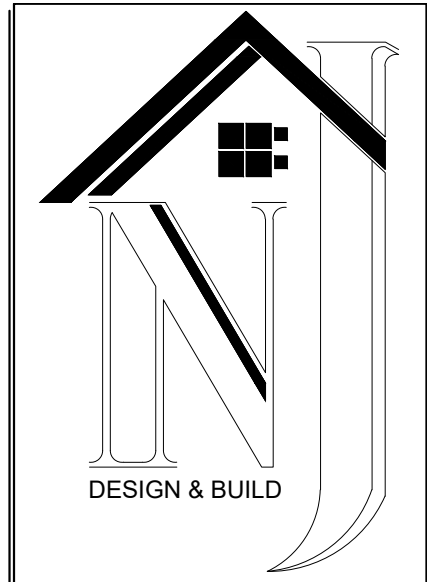
Total Vents Required	12
757.44 sq. in. / 72 sq. in. NFVA	
Low / Intake Vents Needed	6
High / Exhaust Vents Needed	6



26" X 19" OHAGIN VENT

WALL LEGEND:

- (E) 2X WALLS
- (E) TO DEMOLISH
- (P) 2X WALLS PLUMBING WALLS TO BE 2X6 WALLS
- ONE-HOUR FIRE RESISTANT WALL CONSTRUCTION RATED FOR EXPOSURE TO FIRE FROM BOTH SIDES, CONTINUOUS FROM FOUNDATION TO UNDERSIDE OF UPPER ROOF SHEATHING



ADDRESS
3875 RUFFIN RD SAN DIEGO, CA 92123

PHONE
949-617-7888

ECT

(N) HOUSES- (N) ADU

A.P.N. 507-282-22-00

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER:
RICHARD S. SERGE

SHEET NAME

HOUSE (P) FLOOR & ROOF PLAN

REVISION

Revision Schedule		
Rev. #	Description	Date

12/10/2024 12:20:27 PM

SHEET

A 2.1

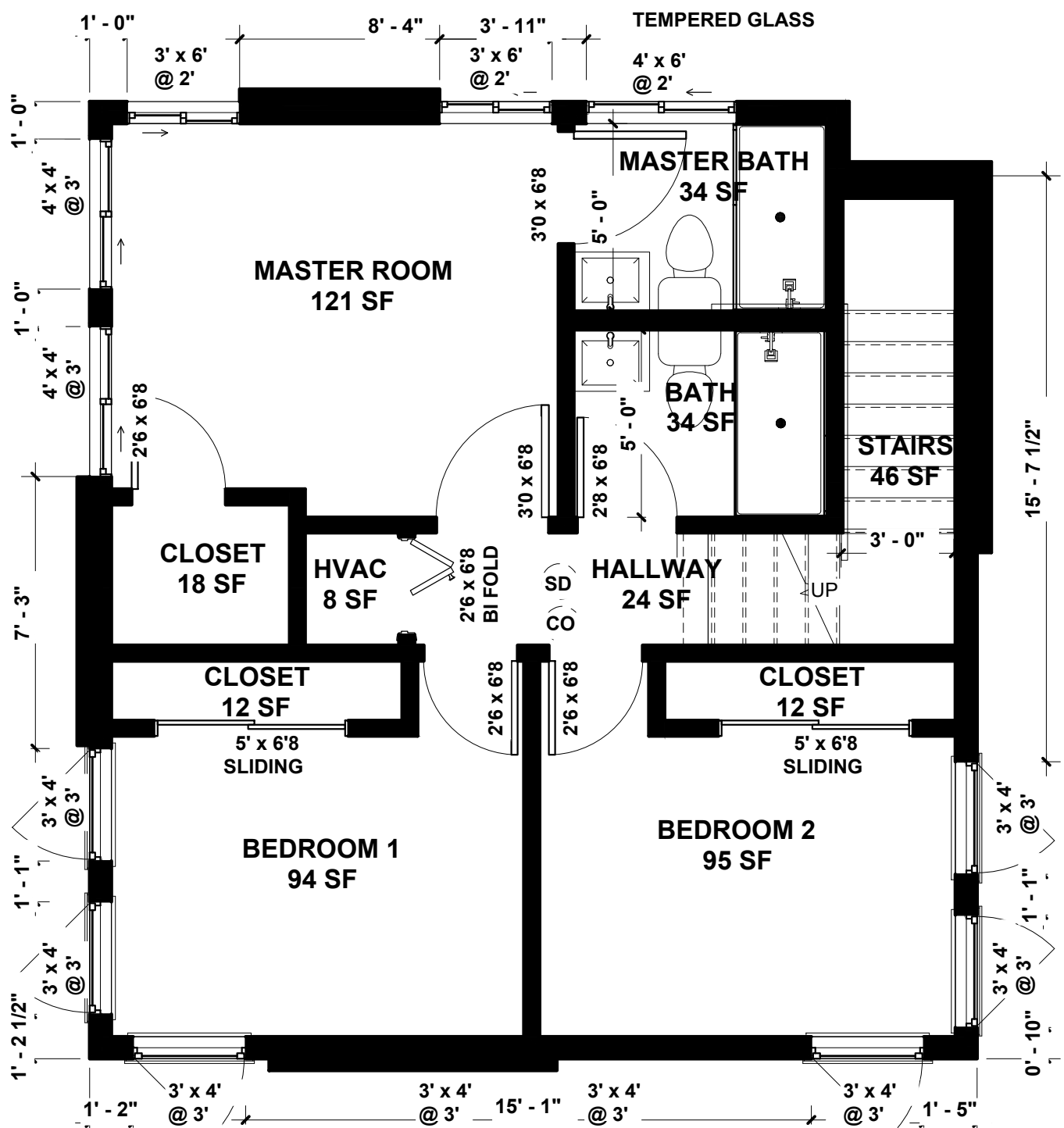


(E) 2X WALLS

(E) TO DEMOLISH

(P) 2X WALLS
PLUMBING WALLS TO BE
2X6 WALLS

ONE-HOUR FIRE RESISTANT WALL
CONSTRUCTION RATED FOR
EXPOSURE TO FIRE FROM BOTH
SIDES. CONTINUOUS FROM
FOUNDATION TO UNDERSIDE OF
UPPER ROOF SHEATHING

[illegible]

ADU ROOF PLAN
1/4" = 1'-0"

NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED CONSENT OF VMS BUILDING

23.00 AUTOCAD YEARS - 1470 MARLINE AVE - ADVA REVIT 1470 MARLINE AVE
LAST = 2024-06-10 12:20:01 PM

12/10/2024 12:20:01 PM

ELEVATION KEYNOTES:

- 7/8" EXTERIOR STUCCO ON WIRE LATH OVER WP MEMBRANE (EGG SHELL-LAHABRA) SMOOTH FINISH.
- METAL STUCCO SCREED MIN 4" A.F.G.
- MAIN ENTRY DOOR (DARK BROWN COLOR).
- GARAGE DOOR, WITH AUTOMATIC REMOTE CONTROL OPERATOR (DARK BROWN COLOR).
- LIGHT SCNCE (BRONZE COLOR).
- FASCIA TRIM (COLOR DARK BROWN).
- EXTERIOR 8" WOOD SIDING
- WINDOW TRIM (WHITE) , PROPOSED DESIGN
- BRICK WALL PANEL

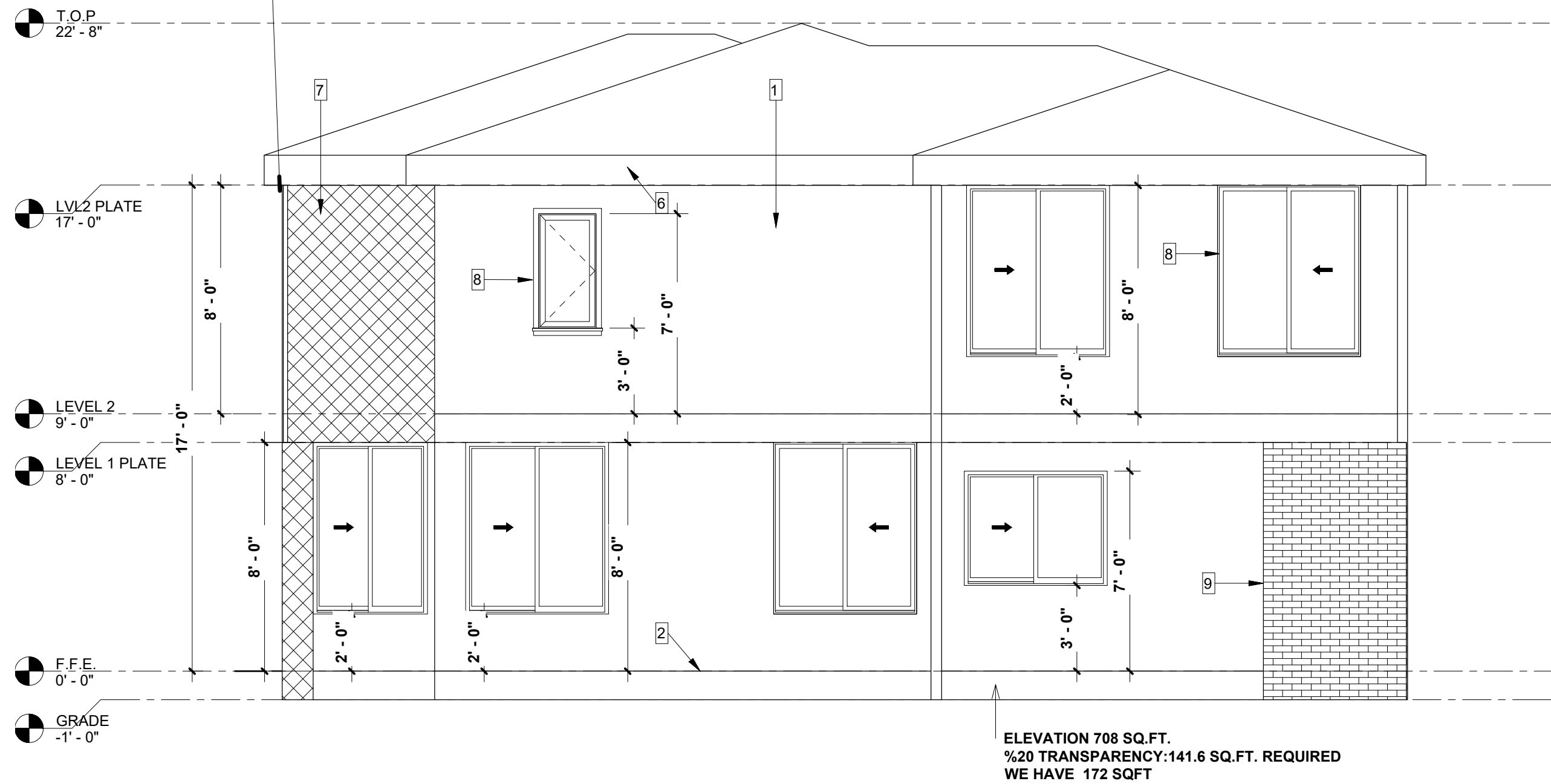
Fire Notes

During construction, at least one extinguisher shall be provided on each floor level at each stairway, in all storage and construction sheds, in locations where flammable or combustible liquids are stored or used, and where other special hazards are present per CFC 33156.1.
Buildings undergoing construction, alteration, or demolition shall conform to CFC Chapter 33. Welding, cutting, and other hot work shall be in conformance with CFC Chapter 35.
2022 CALIFORNIA RESIDENTIAL CODE
Ducts in the garage and ducts penetrating walls or ceilings separating the dwelling from the garage shall be constructed of minimum No. 26 gauge sheet steel or other approved material and shall have no openings into the garage. [CRC R302.5.2]
Shower compartments and bathtubs with installed shower heads shall be finished with a nonabsorbent surface that extends to a height of not less than 6 feet above the floor. [CRC R307.2]
Smoke alarms and smoke detectors shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance.
Smoke alarms shall be installed not less than a 3-foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by other sections of the CRC.
Smoke alarms and smoke detectors shall not be installed within a 36-inch horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow of those registers.
Smoke alarms shall be interconnected so that actuation of one alarm will activate all the alarms within the individual dwelling unit. In new construction smoke alarms shall receive their primary power source from the building wiring and shall be equipped with battery backup and low battery signal.

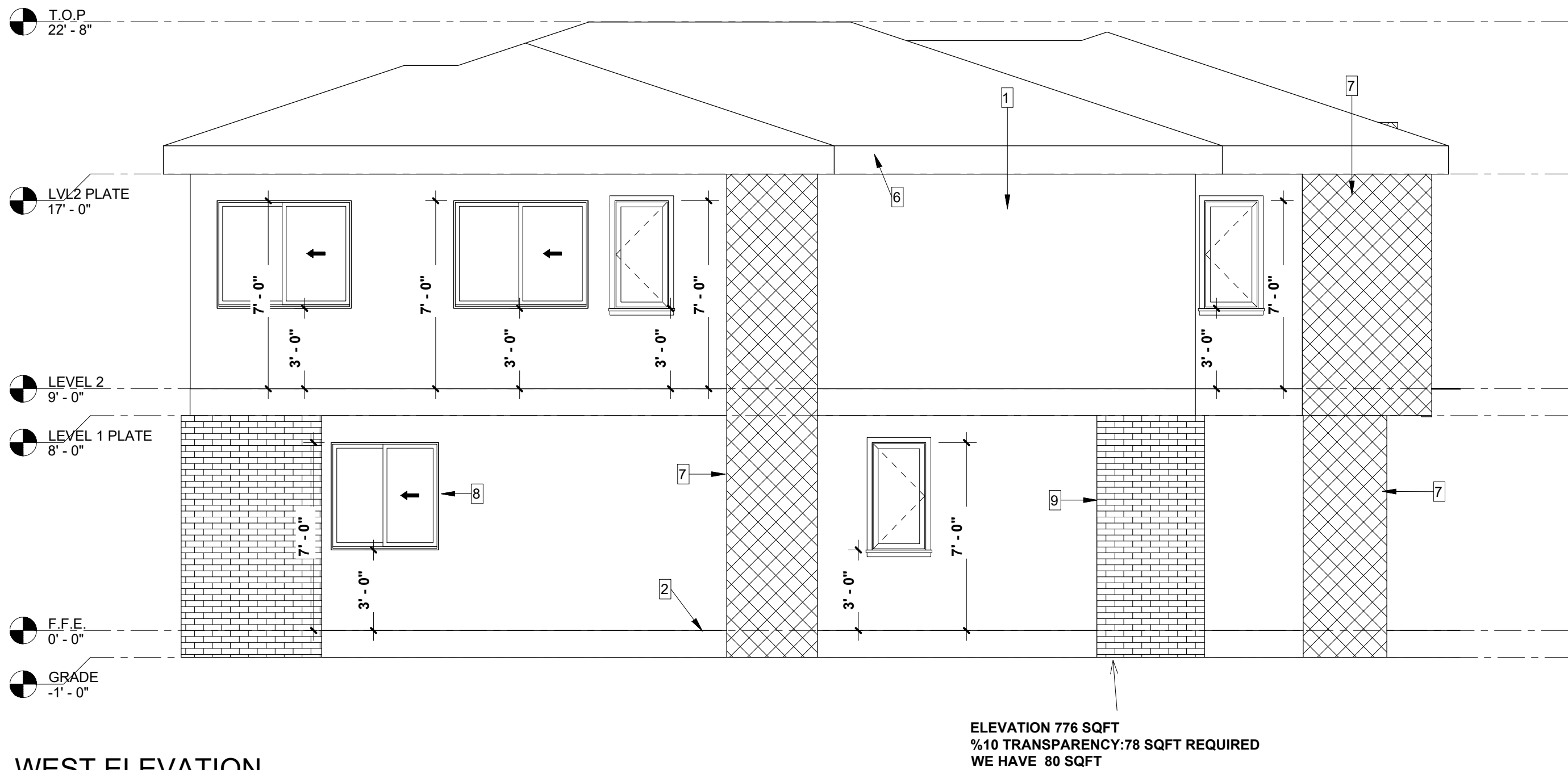
Smoke alarms shall comply with NFPA 72 and shall be listed in accordance with UL 217.
Combination smoke and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 2034.
Smoke alarm systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose for which they are installed.
Window opening control devices serving emergency escape and rescue openings shall comply with ASTM F2090. [CRC R310.1.1]
Add note on plans: "Window fall control device shall comply with ASTM F2090. At the emergency escape windows, the device after operation should release the control device allowing the windows to fully open providing the clear net opening area required for emergency escape window in accordance with CRC R310.2.1.
2022 RESIDENTIAL - VERY HIGH FIRE HAZARD ZONE SEVERITY ZONE
Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter. All roof gutters and downspouts shall be constructed of non-combustible materials. [CRC R337.5.4]
Drip edge flashing used at the free edges of roofing materials shall be non-combustible.
Valley flashings shall be not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley. [CRC R337.5.3]
Chimneys, flues or stovepipes attached to any fireplace, stove, barbecue or other solid or liquid fuel burning equipment or device shall be equipped with an approves spark arrestor.
Turbine attic vents shall be equipped to allow one-way direction rotation only and shall not free spin in both directions.
Glazing frames made of vinyl materials shall have welded corners, metal reinforcement in the interlock area, and be certified to the most current edition of ANSI/AAMA/NWWDA 101/I.S.2 structural requirements.

FRAMING MEMBERS SUPPORTING PROJECTIONS BETWEEN 3'-5" OF P.L. OR I.P.L. SHALL BE FIRE RATED LUBMER

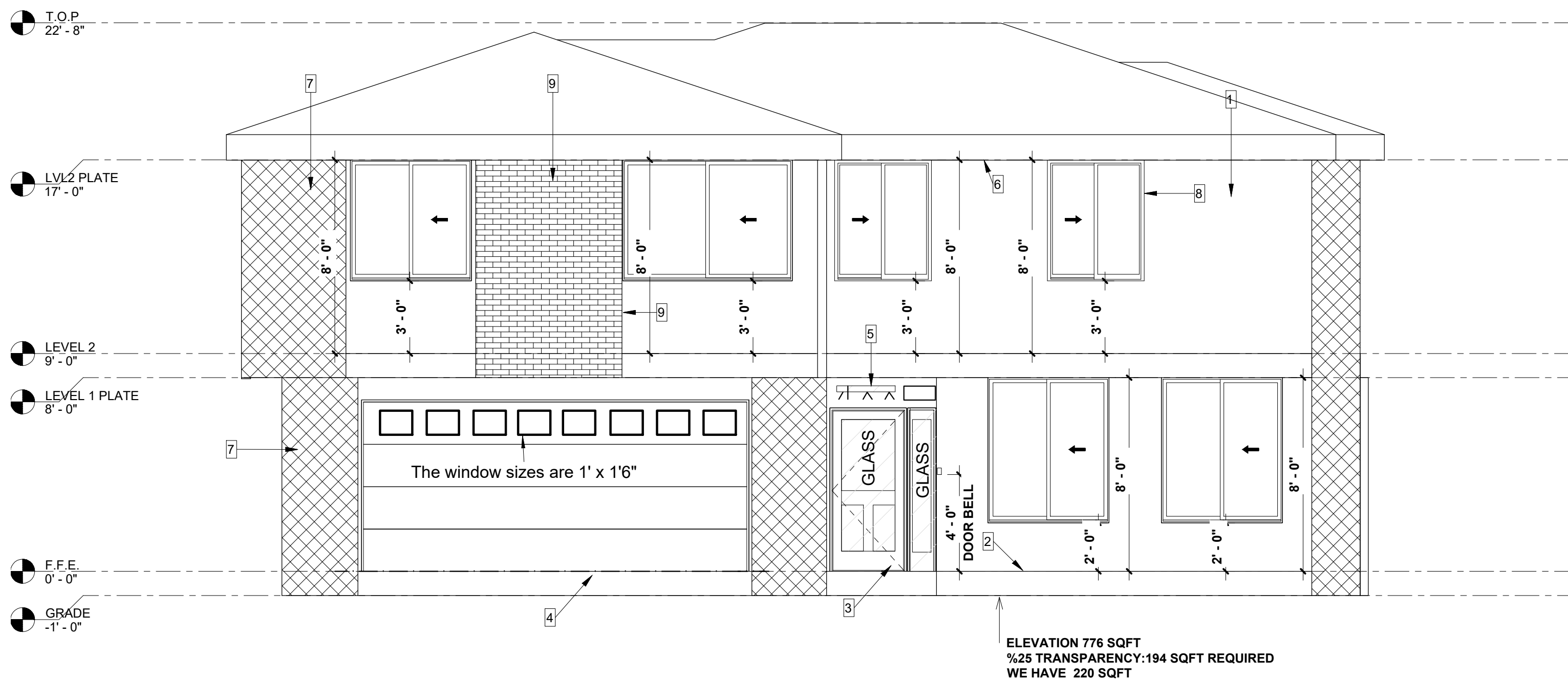
EAVES HAVE MIN 12" OVERHANG PER MUNICIPAL CODE SECTION 17.140.170(B)



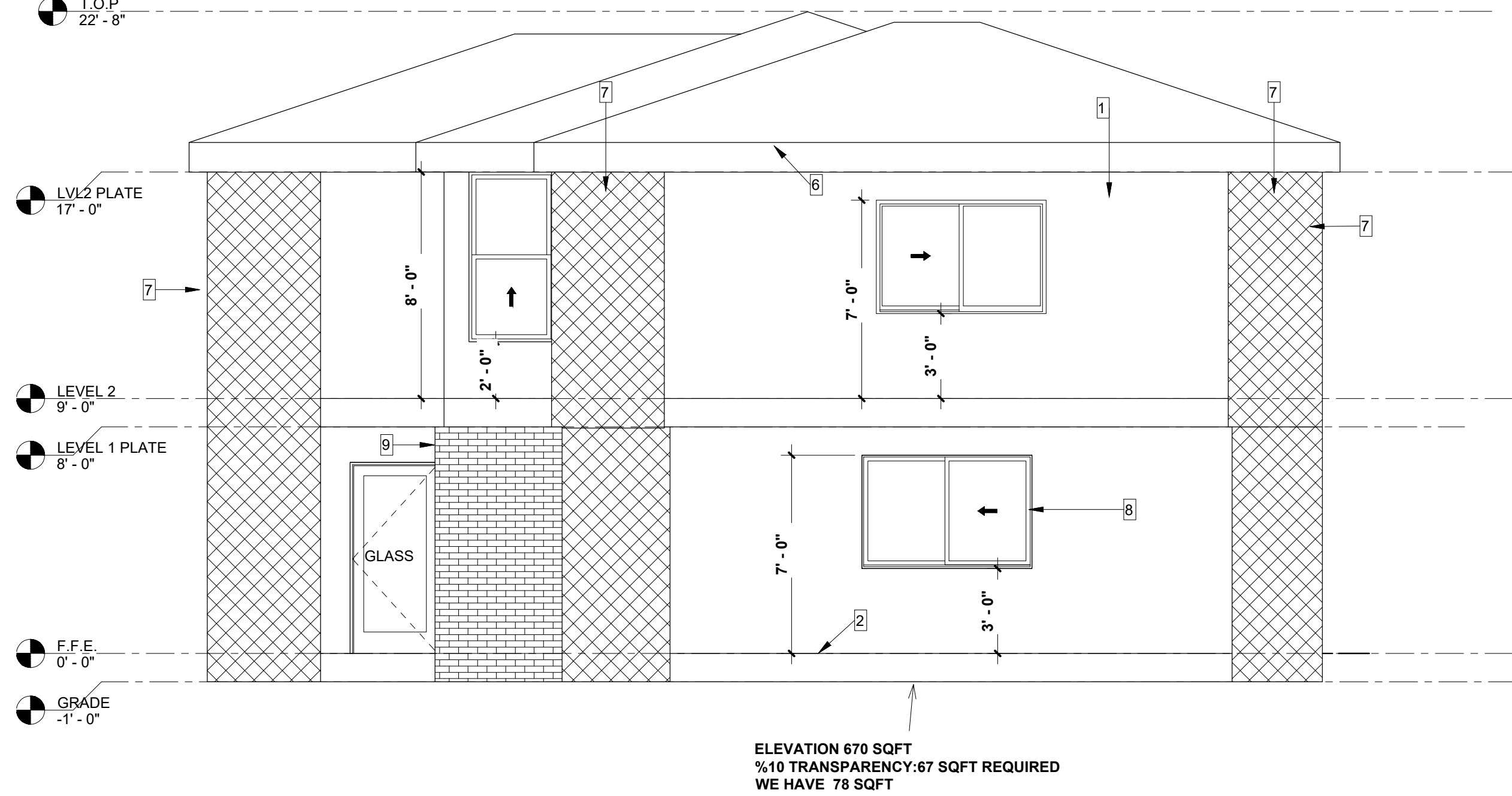
SOUTH ELEVATION
1/4" = 1'-0"



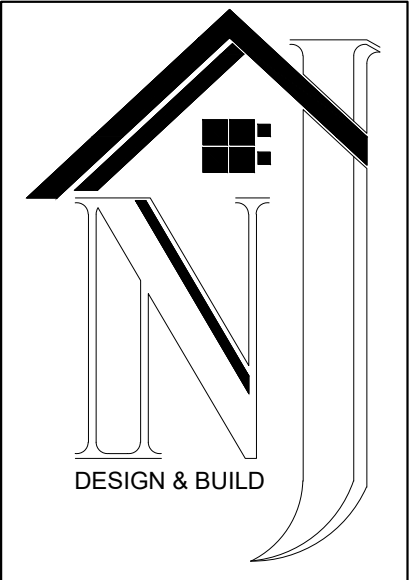
WEST ELEVATION
1/4" = 1'-0"



EAST ELEVATION
1/4" = 1'-0"



NORTH ELEVATION
1/4" = 1'-0"



ADDRESS:
3675 RUFFIN RD SAN DIEGO, CA 92123
PHONE:
949-617-7688

ECT

(N) HOUSES- (N) ADU

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER:
RUMEYSASERCE

SHE NAME

HOUSE ELEVATIONS

REVISION

Rev.	Description	Date
1		

12/10/2024 12:20:21 PM

SHEET

A 3.0

C:\Users\jreyes\OneDrive\00_NITerra\FAIRIS - 1470 MARLINE AVE - ADU\REVIT\1470 MARLINE AVE - EAST.W

5/21/2024 1:37:29 PM

NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED CONSENT OF MSP BUILDING

ELEVATION KEYNOTES:

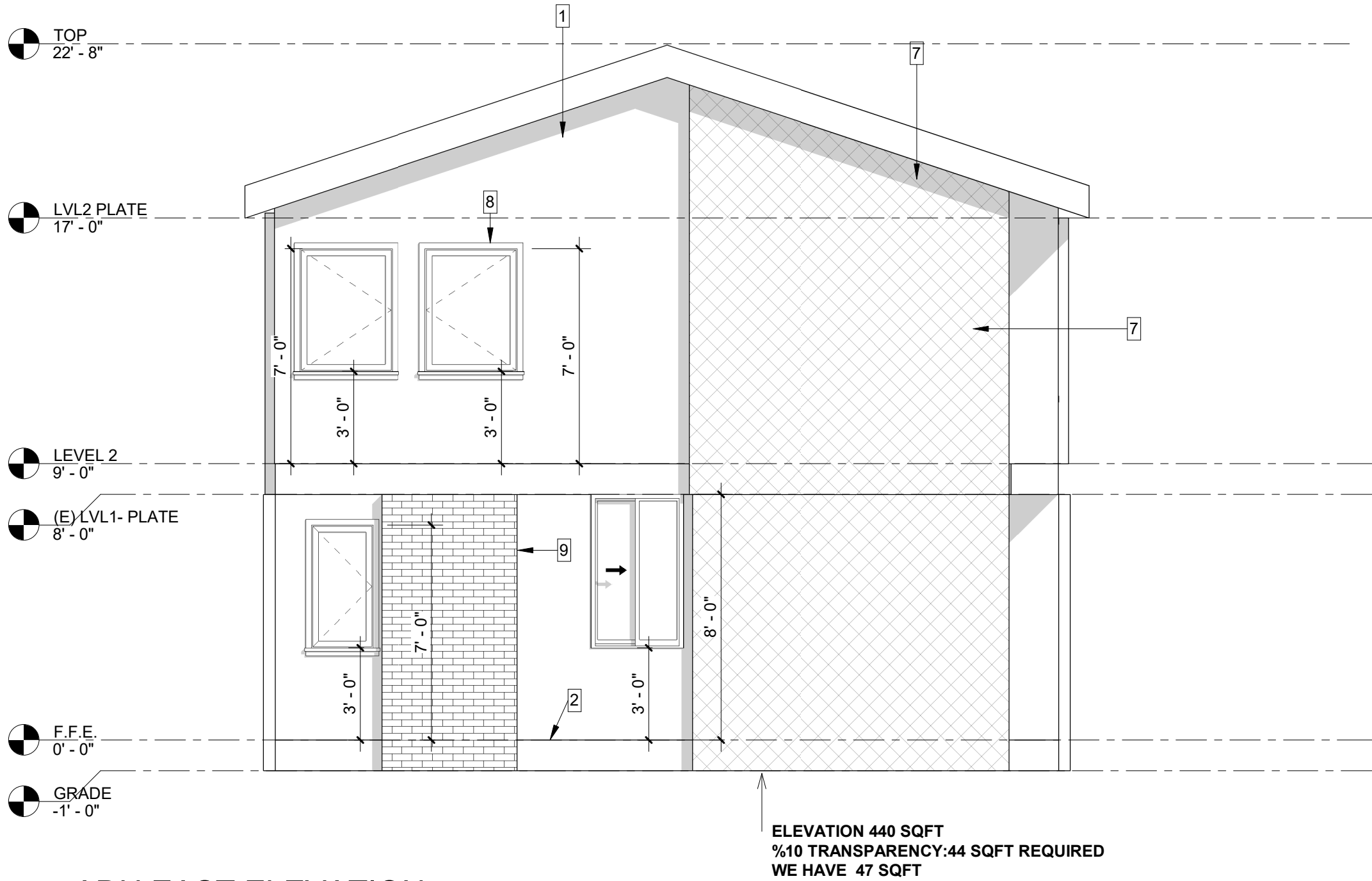
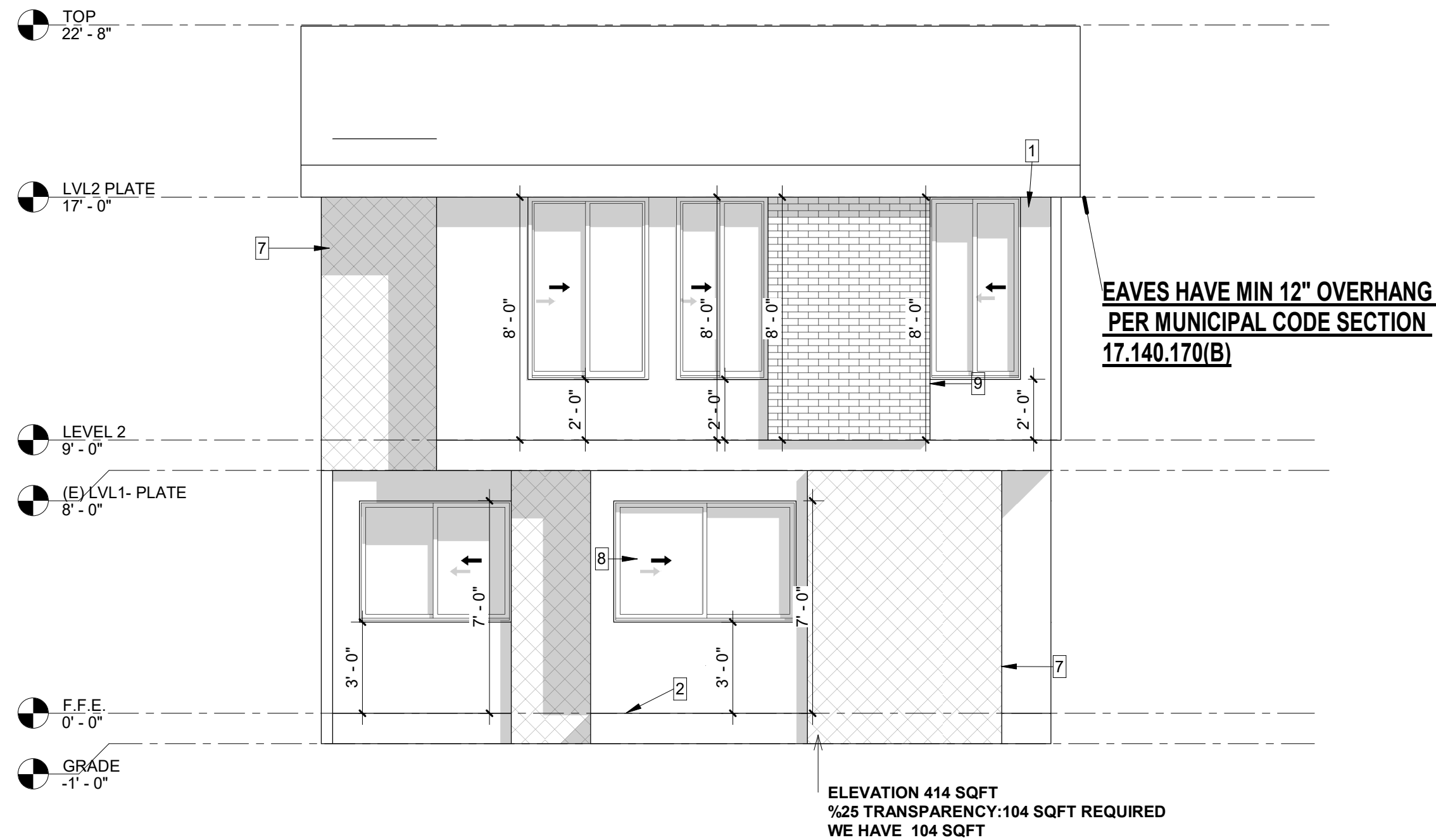
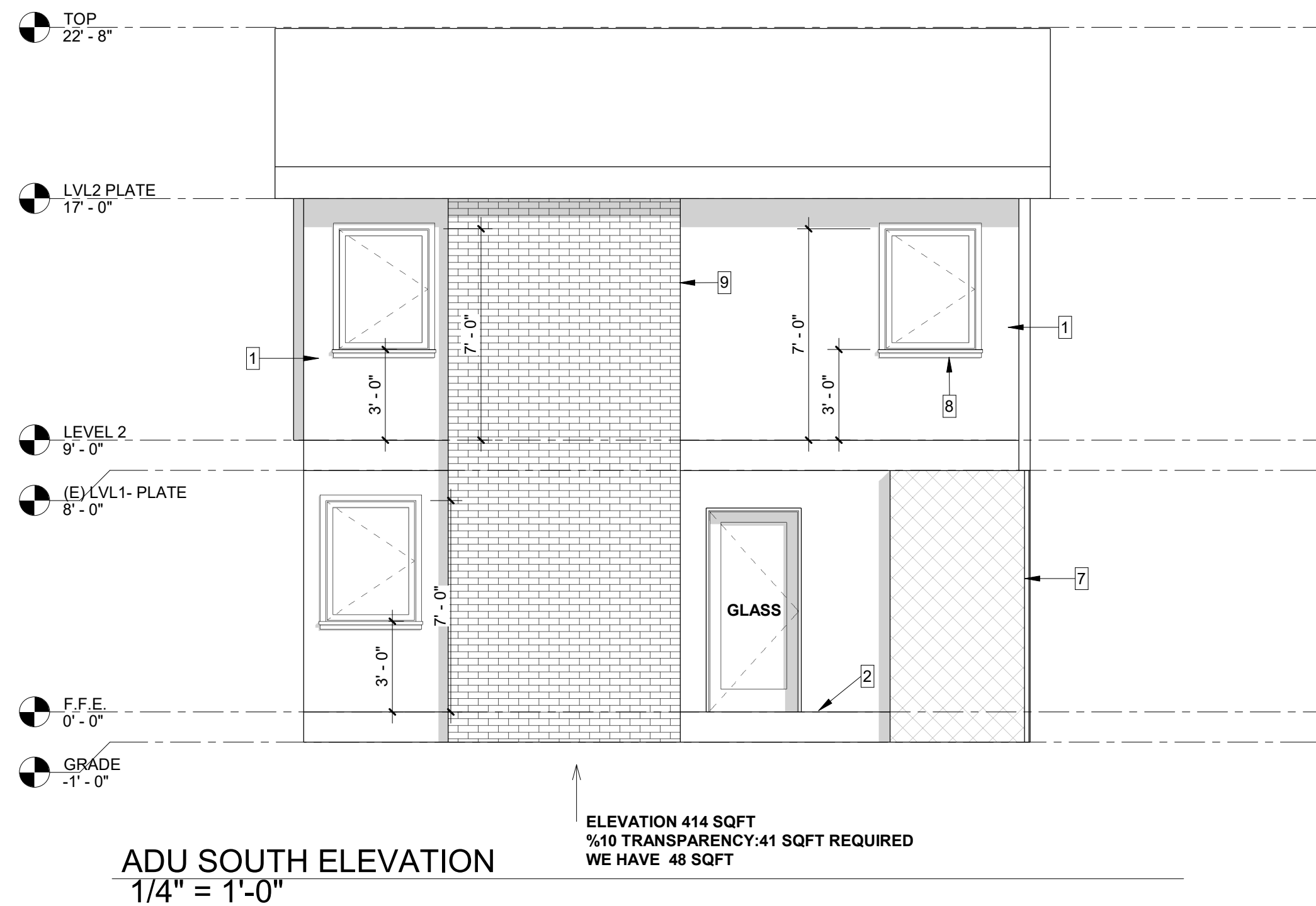
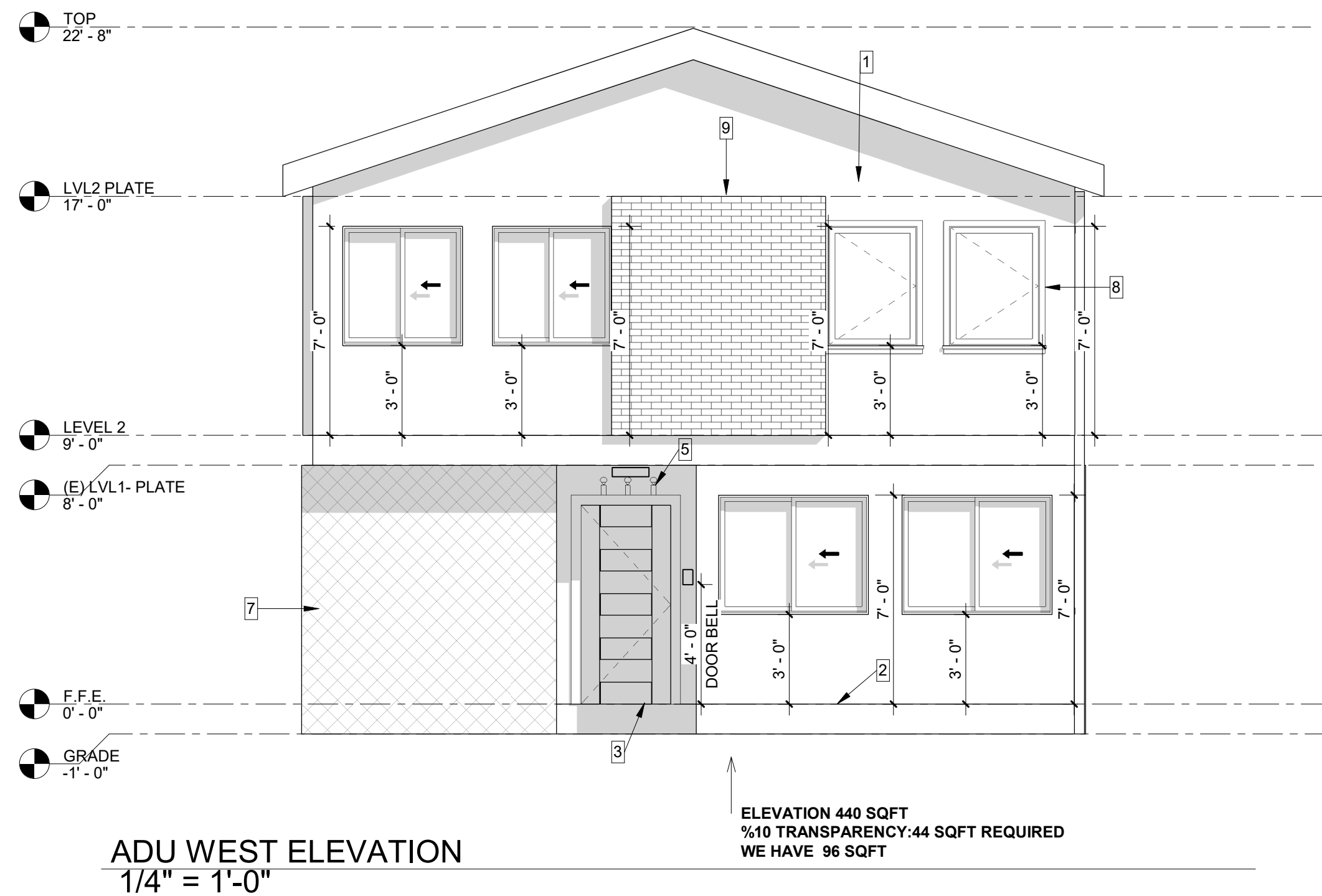
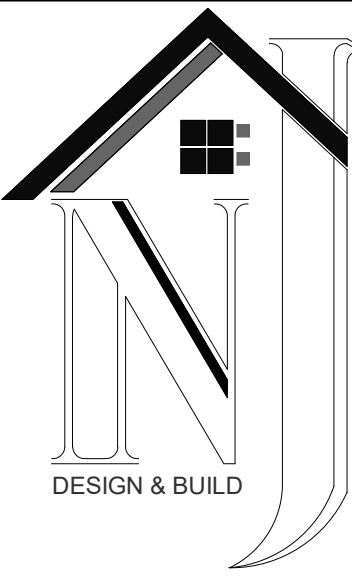
- 7/8" EXTERIOR STUCCO ON WIRE LATH OVER WP MEMBRANE (EGG SHELL-LAHABRA) SMOOTH FINISH.
- METAL STUCCO SCREED MIN 4" A.F.G.
- MAIN ENTRY DOOR (DARK BROWN COLOR).
- GARAGE DOOR, WITH AUTOMATIC REMOTE CONTROL OPERATOR (DARK BROWN COLOR).
- LIGHT SCONCE (BRONZE COLOR).
- FASCIA TRIM (COLOR DARK BROWN).
- EXTERIOR 8" WOOD SIDING
- WINDOW TRIM (WHITE)
- BRICK WALL PANEL

Fire Notes

- During construction, at least one extinguisher shall be provided on each floor level at each stairway, in all storage and construction sheds, in locations where flammable or combustible liquids are stored or used, and where other special hazards are present per CFC 33156.1.
- Buildings undergoing construction, alteration, or demolition shall conform to CFC Chapter 33. Welding, cutting, and other hot work shall be in conformance with CFC Chapter 35.
- 2022 CALIFORNIA RESIDENTIAL CODE**
 - Ducts in the garage and ducts penetrating walls or ceilings separating the dwelling from the garage shall be constructed of minimum No. 26 gauge sheet steel or other approved material and shall have no openings into the garage. [CRC R302.5.2]
 - Shower compartments and bathtubs with installed shower heads shall be finished with a nonabsorbent surface that extends to a height of not less than 6 feet above the floor. [CRC R307.2]
 - Smoke alarms and smoke detectors shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance.
 - Smoke alarms shall be installed not less than a 3-foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by other sections of the CRC.
 - Smoke alarms and smoke detectors shall not be installed within a 36-inch horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow of those registers.
 - Smoke alarms shall be interconnected so that actuation of one alarm will activate all the alarms within the individual dwelling unit. In new construction smoke alarms shall receive their primary power source from the building wiring and shall be equipped with battery backup and low battery signal.

- Smoke alarms shall comply with NFPA 72 and shall be listed in accordance with UL 217.
- Combination smoke and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 2034.
- Smoke alarm systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose for which they are installed.
- Window opening control devices serving emergency escape and rescue openings shall comply with ASTM F2090. [CRC R310.1.1]
- Add note on plans: "Window fall control device shall comply with ASTM F2090. At the emergency escape windows, the device after operation should release the control device allowing the windows to fully open providing the clear net opening area required for emergency escape window in accordance with CRC R310.2.1.
- 2022 RESIDENTIAL - VERY HIGH FIRE HAZARD ZONE SEVERITY ZONE**
 - Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter. All roof gutters and downspouts shall be constructed of non-combustible materials. [CRC R337.5.4]
 - Drip edge flashing used at the free edges of roofing materials shall be non-combustible.
 - Valley flashings shall be not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley. [CRC R337.5.3]
 - Chimneys, flues or stovepipes attached to any fireplace, stove, barbeque or other solid or liquid fuel burning equipment or device shall be equipped with an approves spark arrester.
 - Turbine attic vents shall be equipped to allow one-way direction rotation only and shall not free spin in both directions.
 - Glazing frames made of vinyl materials shall have welded corners, metal reinforcement in the interlock area, and be certified to the most current edition of ANSI/AAMA/NWDA 1011.S.2 structural requirements.

FRAMING MEMBERS SUPPORTING PROJECTIONS BETWEEN 3'-5' OF P.L. OR I.P.L. SHALL BE FIRE RATED LUBMER



PROJECT

(N) HOUSES- (N) ADU

1470 Marline Avenue,
El Cajon, CA 92021

SHEET NAME

ADU ELEVATIONS

REVISION

Revision Schedule		
Rev. #	Description	Date

5/21/2024 1:37:29 PM

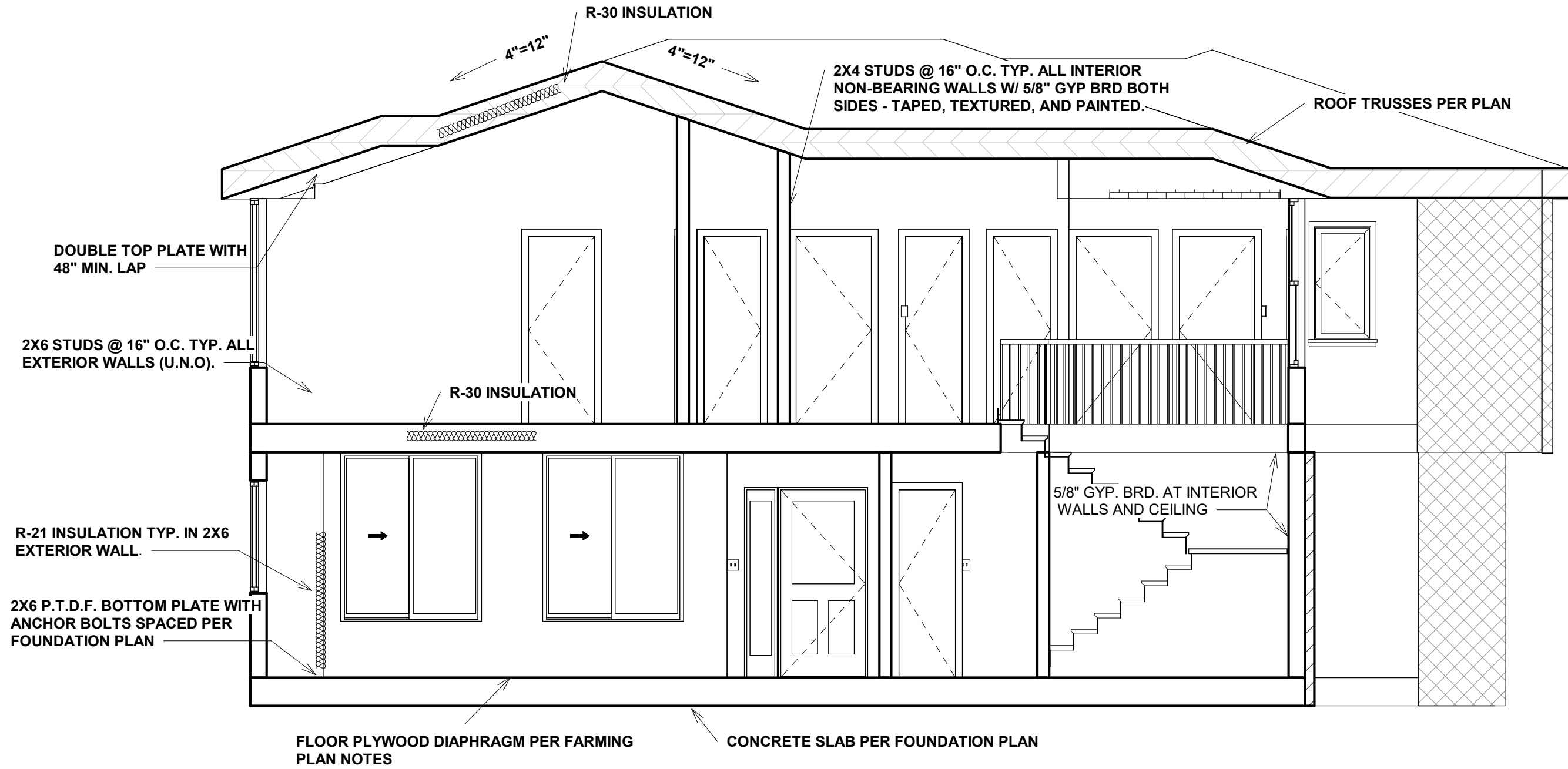
SHEET

A 3.1

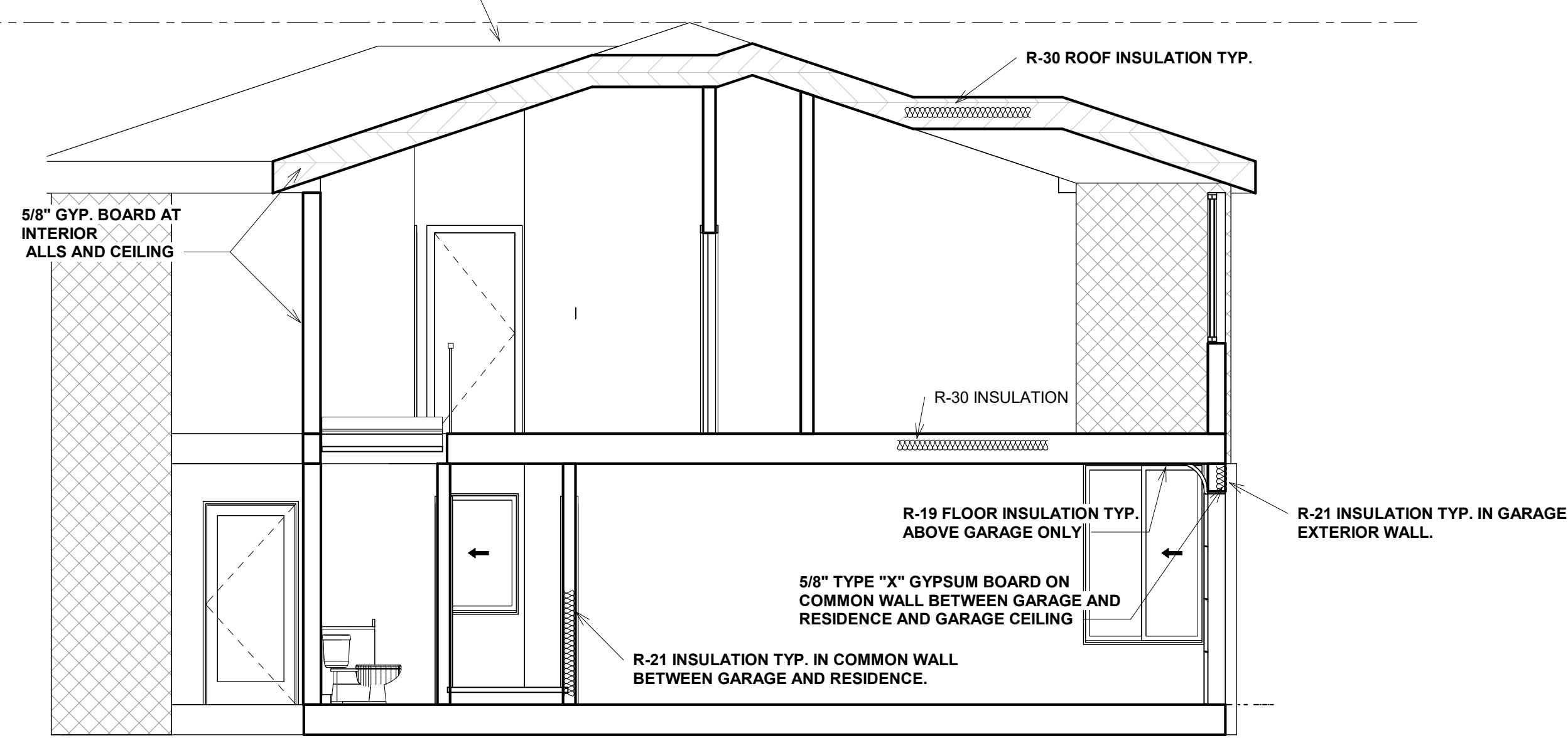
C:\Users\jreney\OneDrive\00_NITerra\EARIS - 1470 MARLINE AVE - EASTW
NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESS CONSENT OF MSP BUILDING

ADU SECTION 1
1/4" = 1'-0"

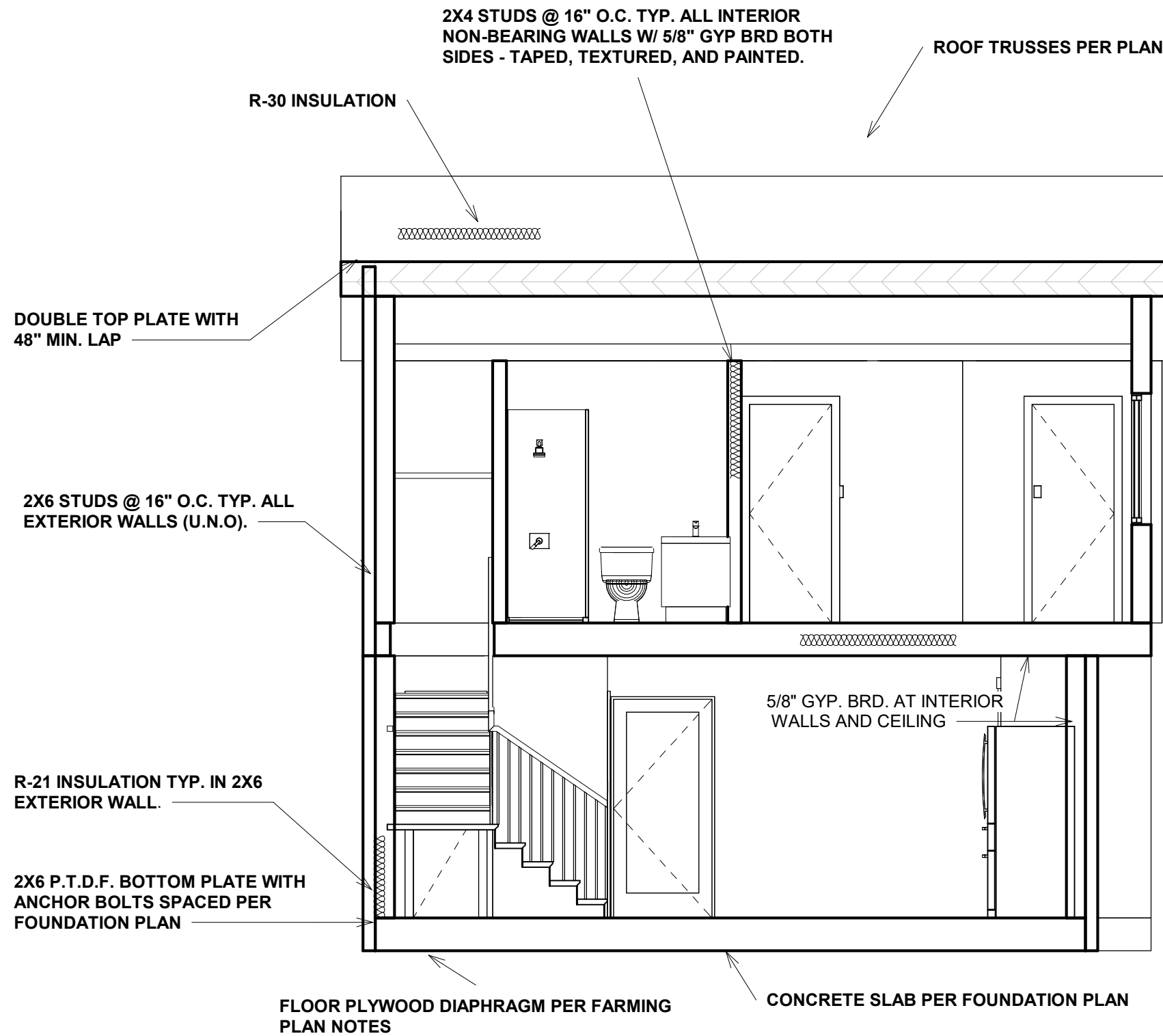
5/21/2024 1:37:29 PM



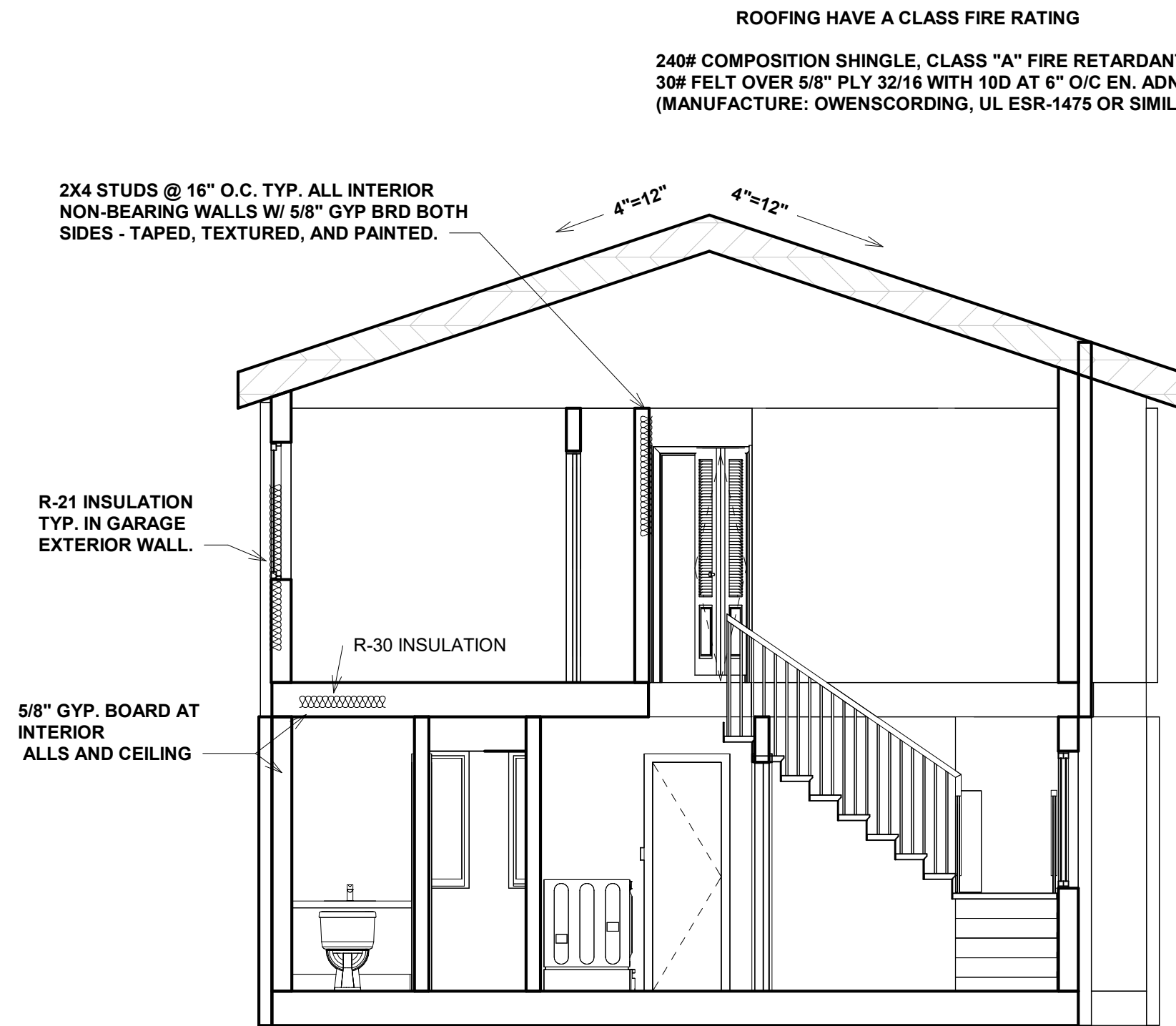
SECTION 1
1/4" = 1'-0"



SECTION 2
1/4" = 1'-0"



ADU SECTION 1
1/4" = 1'-0"



ADU SECTION 2
1/4" = 1'-0"

INSULATION RECOMMENDATION PER TITLE 24:

- RESIDENCE EXTERIOR WALLS R-21
- RESIDENCE ROOF R-30
 - WALLS BETWEEN RESIDENCE AND garage R-21
 - garage exterior walls R-21
 - FLOOR (ABOVE GARAGE ONLY) R-19

R-21 INSULATION TYP. IN 2X6 EXTERIOR WALL

2X6 P.T.D.F. BOTTOM PLATE WITH ANCHOR BOLTS SPACED PER FOUNDATION PLAN

ENERGY EFFICIENCY REQUIREMENTS:

1- HERS VERIFICATION REQUIRED FOR THE FOLLOWING ENERGY EFFICIENCY MEASURES (CBEES 10-103):

- Building-level Verifications:
- QUALITY INSULATION INSTALLATION (QII)
 - Indoor air quality ventilation

Cooling System Verifications:

- Minimum Airflow
- Verified EER

Heating System Verifications:

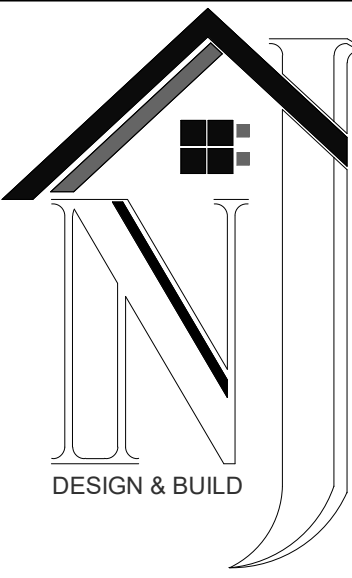
- NONE

HVAC Distribution System Verifications:

- Duct leakage testing
- DUCTS LOCATED ENTIRELY IN CONDITIONED SPACE CONFIRMED BY DUCT LEAKAGE TESTING.

Domestic Hot Water System Verifications:

- NONE



ADDRESS:
3675 RUFFIN RD SAN DIEGO, CA 92123
PHONE:
949-617-7888

PROJECT

(N) HOUSES- (N) ADU

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER:

RICKY SASSER

SHEET NAME

SECTIONS

REVISION

Revision Schedule		
Rev. #	Description	Date

5/21/2024 1:37:29 PM

SHEET

A 3.3

C:\Users\jreney\OneDrive\00_NITeams\FAIRIS - 1470 MARLINE AVE - 5/21/2024 1:37:30 PM
NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED CONSENT OF MSR BUILDING
ADD: REVISION 1470 MARLINE AVE - EASTVIEW

FLOOR-CEILING SYSTEMS, WOOD-FRAMED

GA FILE NO. FC 5116	PROPRIETARY†	1 HOUR FIRE	50 to 54 STC SOUND
---------------------	--------------	-------------	--------------------

WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS, GLASS FIBER INSULATION

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws at 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 16" o.c. with 1 1/4" Type W drywall screws. Wood joists supporting 5/8" interior plywood with exterior glue subfloor and 1 5/8" perlite-sand concrete reinforced with No. 19 SWG galvanized hexagonal wire mesh. 3" glass fiber insulation 0.90 pcf in joist space stapled to subfloor.

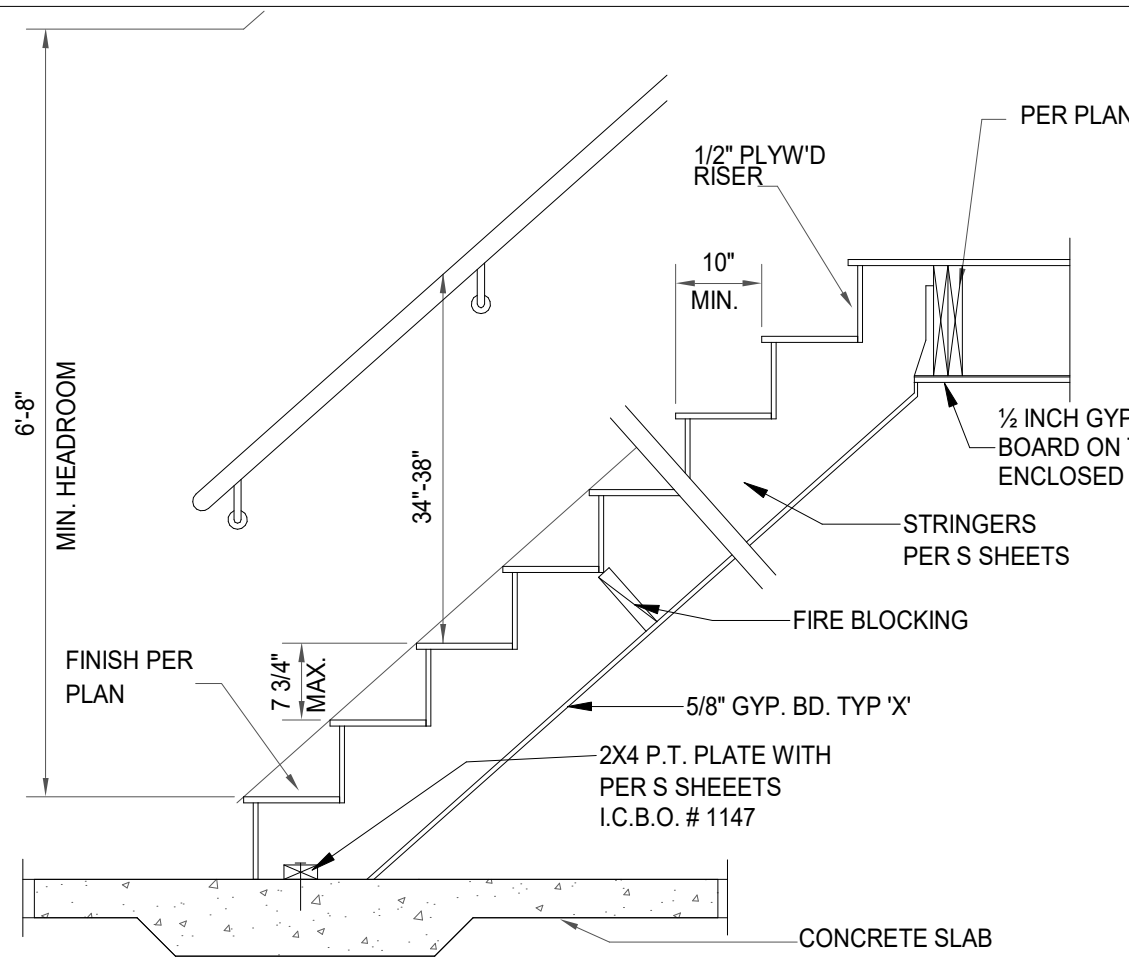
PROPRIETARY GYPSUM BOARD

American Gypsum Company	5/8" FIREBLOC TYPE C	Approx. Ceiling Weight:	2 psf
CertainTeed Gypsum, Inc.	5/8" ProRock Type C Gypsum Panels	Fire Test:	UL R3453-7, 5-1-70;
G-P Gypsum	5/8" ToughRock® Fireguard® C		Based on UL R3660-7, -8,
Lafarge North America Inc.	5/8" Firecheck® Type C		11-12-87; R2717-61, 8-18-87;
National Gypsum Company	5/8" Gold Bond® Brand FIRE-SHIELD™ Gypsum Wallboard		Based on UL R7094,
			90NK10635, 10-24-90;
PABCO Gypsum	5/8" FLAME CURB® Super 'C'		Based on UL R8742,
Temple-Inland Forest Products Corporation	5/8" TG-C		88NK22591, 10-6-88;
			UL Design L516
			UL Design L514
		Sound Test:	KAL L 224-28-65, 3-30-65
		IIC & Test:	(74 C & P)
			KAL L 224-27-65, 3-30-65

†Contact the manufacturer for more detailed information on proprietary products.

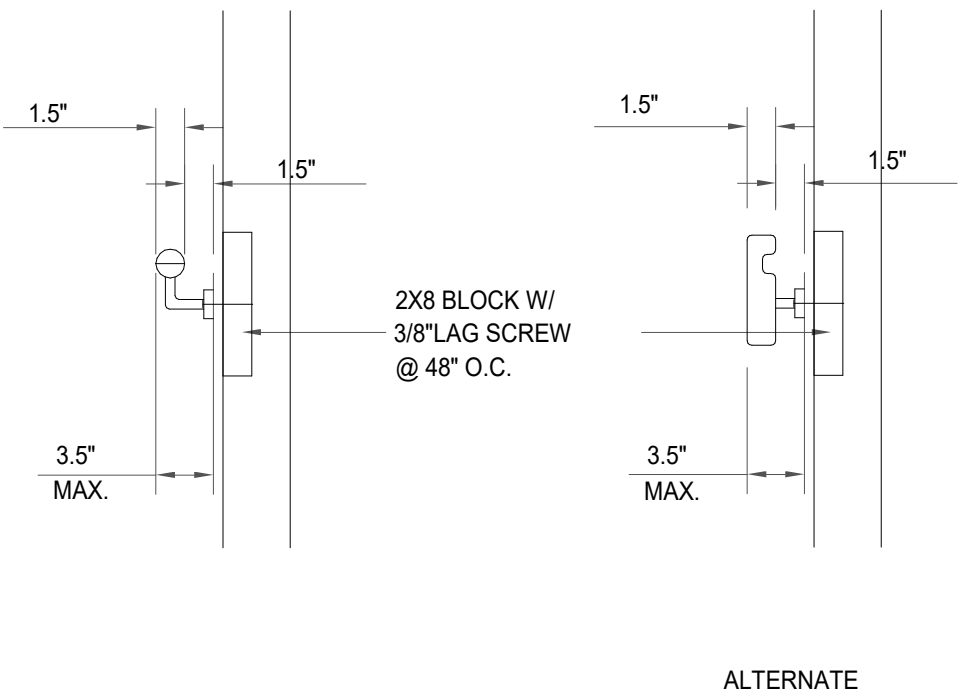
1 HR FLOOR-CEILING SYASTEM, WOOD-FRAMED

| G



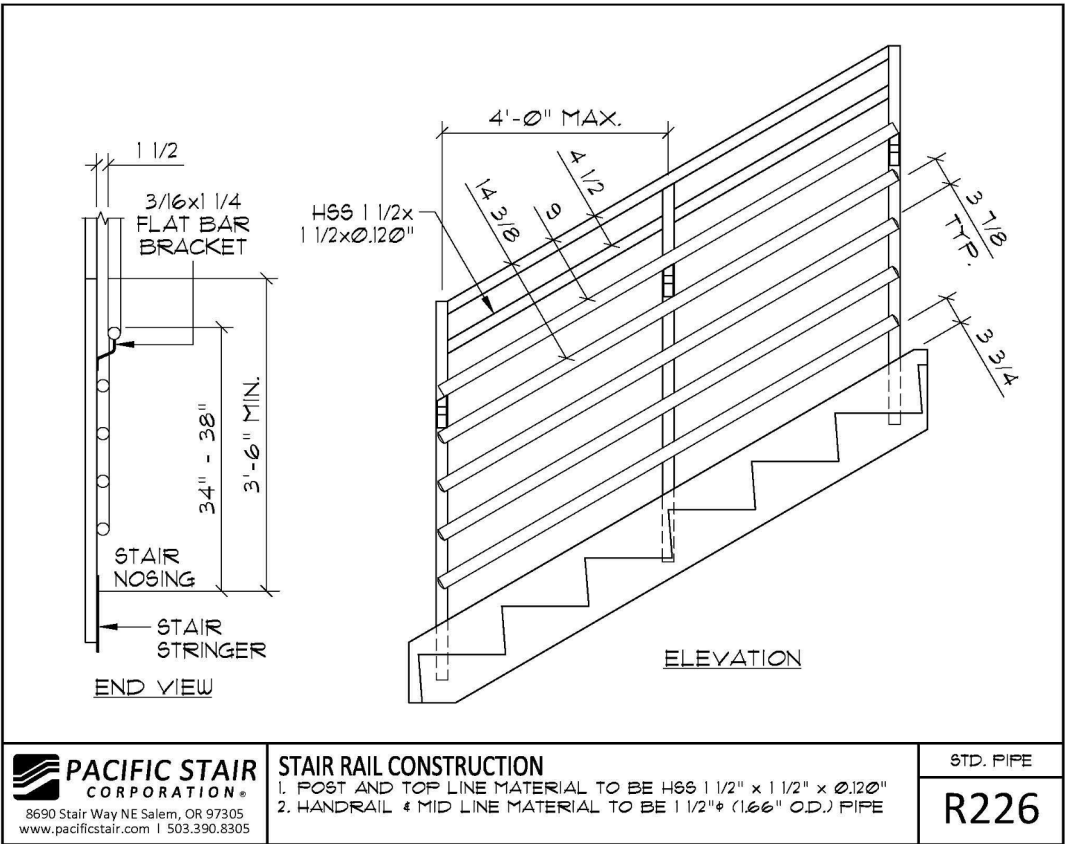
TYP. STAIR

| F



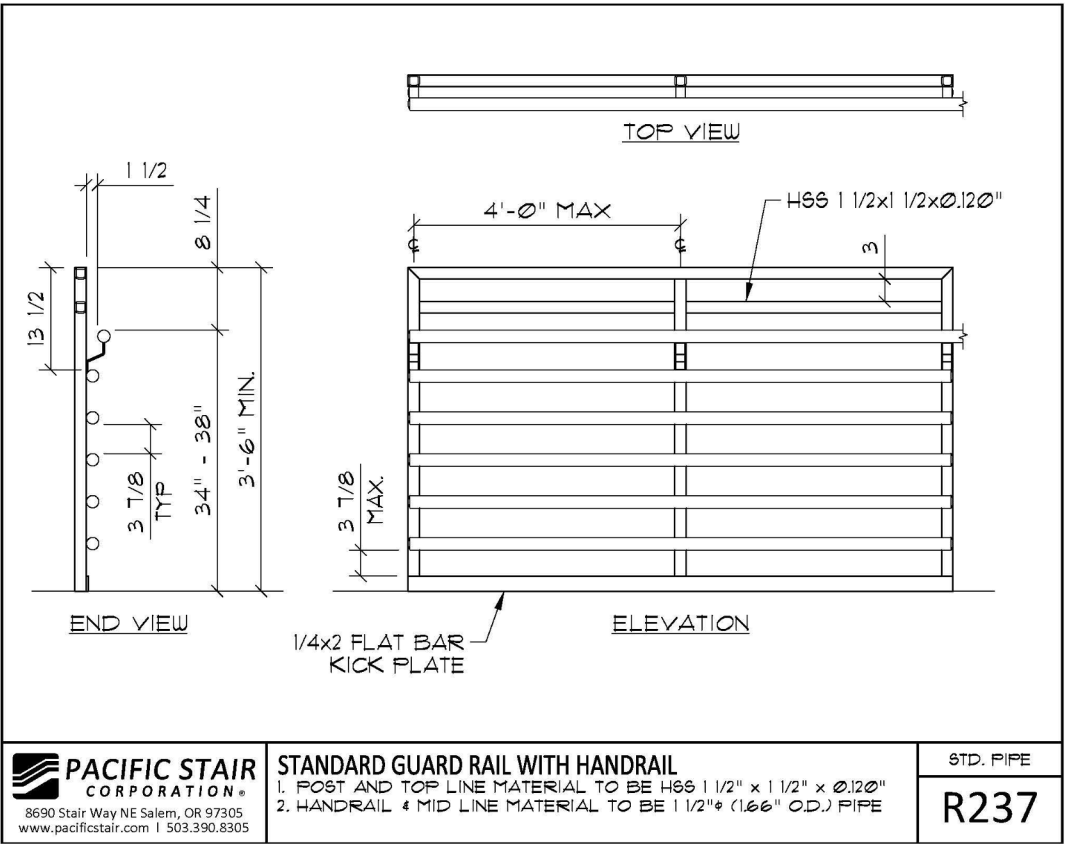
TYP. HANDRAIL

| L



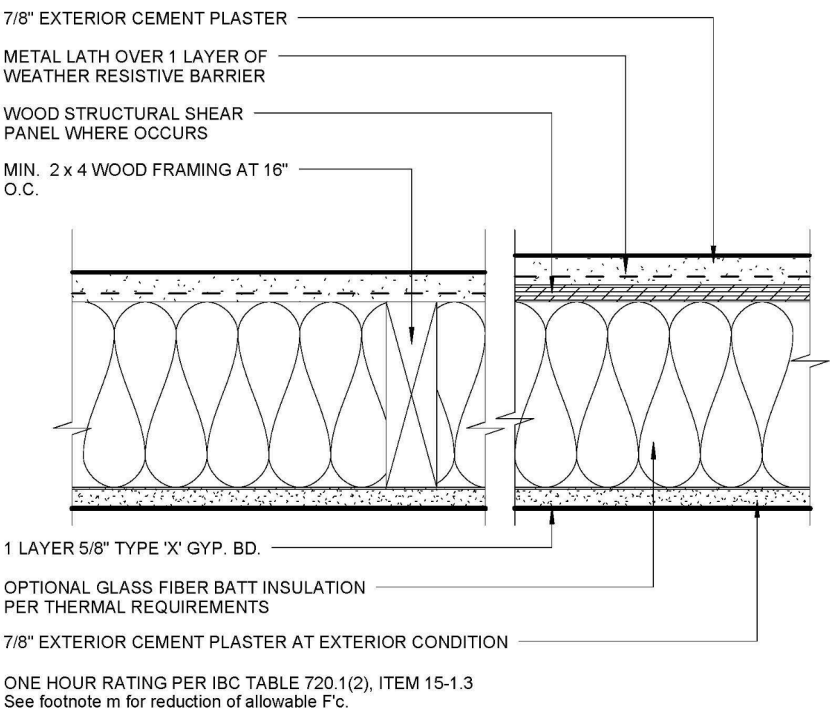
STAIR RAIL CONSTRUCTION

| A



GUARDRAIL AT DECK

| B



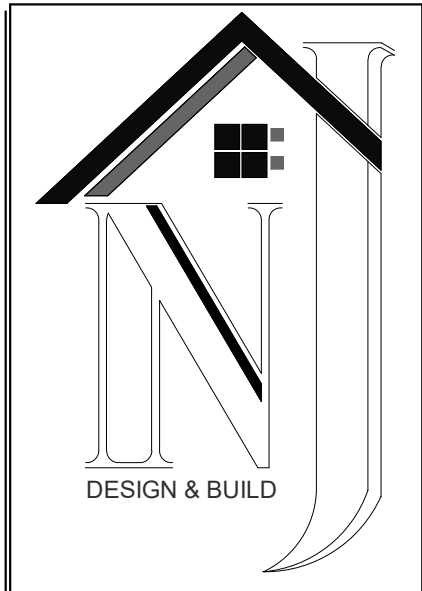
1 HR EXTERIOR STUCCO WALL STC-52

| C

FLOOR-CEILING SYSTEMS, WOOD-FRAMED			
GA FILE NO. FC 5111	GENERIC	1 HOUR FIRE	50 to 54 STC SOUND
WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS			
Base layer 1/2" type X gypsum wallboard applied at right angles to resilient channels 16" o.c. with 1 1/4" Type S drywall screws 12" o.c. Resilient channels applied at right angles to minimum 9 1/2" deep wood joists, with minimum 1 1/4" deep x 1 1/2" wide flanges and minimum 3/8" webs, 24" o.c. with 1 1/4" Type W drywall screws. Face layer 1/2" type X gypsum wallboard applied at right angles to channels with 1 5/8" Type S drywall screws 12" o.c. Face layer end joints located midway between channels and attached to base layer with 1 1/2" type S screws 12" o.c. Edge joints offset 24" from base layer edge joints. Wood l-plats supporting 5/8" oriented strand board applied at right angles to l-plats with 6d common nails 12" o.c.			
STC and IIC tested with 40 oz carpet over 1/4" foam pad.			
Approx. Ceiling Weight:		5 psf	
Fire Test:		NRCC A-4440.1 (Revised), 6-24-97	
Sound Test:		NRCC B-3150.2, 6-30-00	
IIC & Test:		NRCC B-3150.2, 6-30-00	
ASTM E119 AND UL 263			

1 HR FLOOR CEILING /WOOD

| D



ADDRESS:
3875 RUFFIN RD SAN DIEGO, CA 92123
PHONE:
949-617-7888

PROJECT

(N) HOUSES- (N) ADU

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER:
RICKY S. ASERBE

SHEET NAME

DETAILS

REVISION

Revision Schedule		
Rev. #	Description	Date

5/21/2024 1:37:30 PM

SHEET

A 4.0

CAL GREEN APPLIES TO ALL NEW RESIDENTIAL OCCUPANCIES INCLUDING LOW RISE AND HIGH RISE BUILDINGS. IT ALSO APPLIES TO ALL RESIDENTIAL ALTERATIONS AND ADDITIONS WHERE THE ADDITION OR ALTERATION INCREASES THE BUILDING'S CONDITIONAL AREA, VOLUME OR SIZE. THE REQUIREMENTS APPLY ONLY TO WITHIN THE SPECIFIC AREA OF THE ALTERATION OR ADDITION.

- THE FOLLOWING TABLE DEMONSTRATES A 20 PERCENT REDUCTION OF INDOOR WATER USE. PERCENT REDUCTION, EACH PLUMBING FIXTURE AND FITTING MUST MEET REDUCED FLOW RATES SPECIFIED IN THE TABLE BELOW.

FIXTURE TYPE	FLOW RATE
SHOWERHEADS	1.8 GPM @ 80 PSI
LAVATORY FAUCETS, RESIDENTIAL	1.2 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 80 PSI
GRAVITY TANK - TYPEWATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER TANKWATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER VALVEWATER CLOSETS	1.28 GALLONS/FLUSH
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS/FLUSH
URINALS	0.5 GALLONS/FLUSH

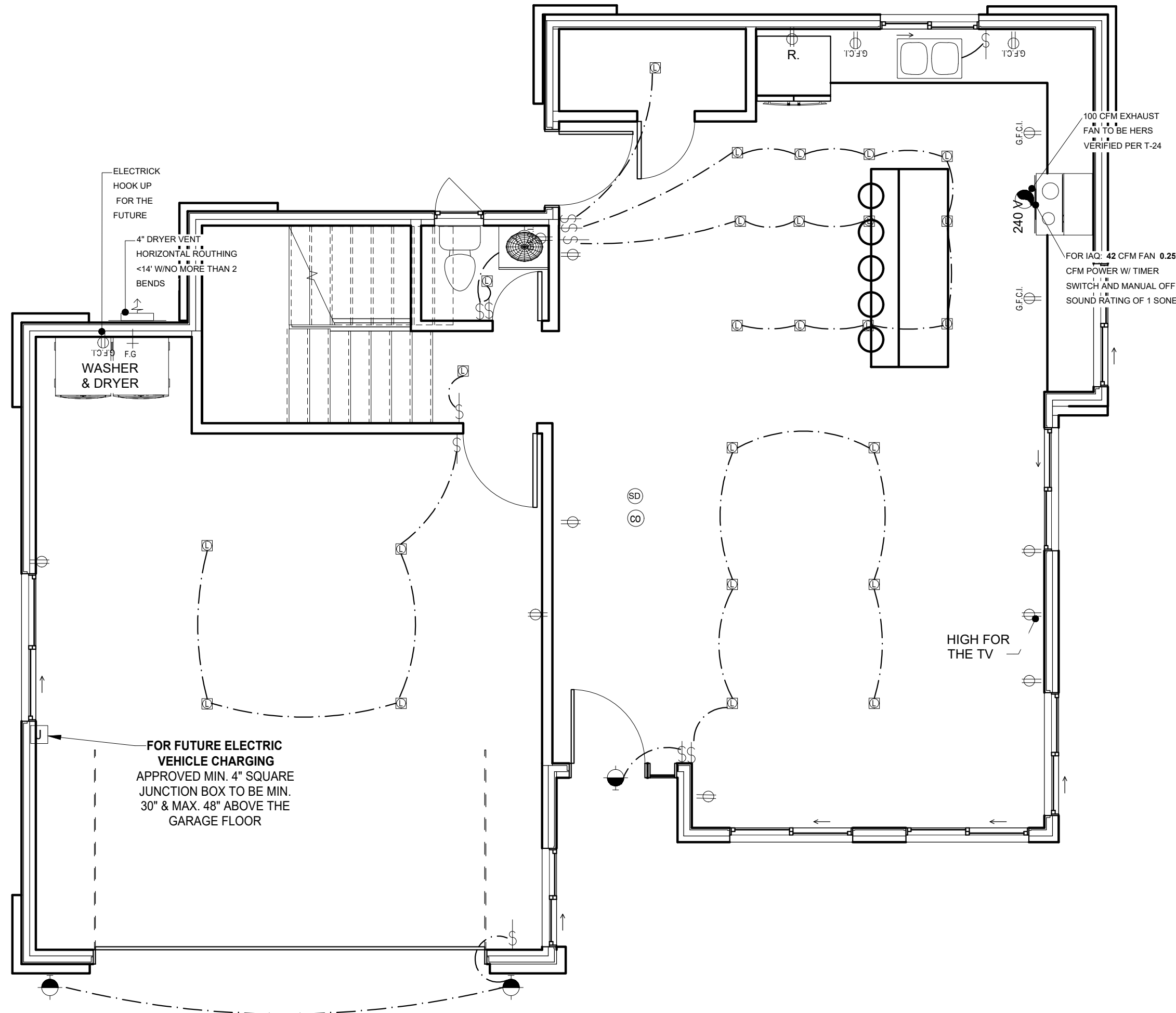
- INCLUDES SINGLE AND DUAL FLUSH WATER CLOSETS WITH AN EFFECTIVE FLUSH OF 1.28 GALLONS OR LESS.
 1. SINGLE FLUSH TOILETS: THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS (4.8 LITERS). THE EFFECTIVE FLUSH VOLUME IS THE AVERAGE FLUSH VOLUME WHEN TESTED IN ACCORDANCE WITH ASME A112.19.23.2.
 2. DUAL FLUSH TOILETS: THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS (4.8 LITERS). THE EFFECTIVE FLUSH VOLUME IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FKUSHES AND ONE FULL FLUSH. FLUSH VOLUMES WILL BE TESTED IN ACCORDANCE WITH ASME A112.19.2 AND ASME A112.19.14.
 - LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM AT 20 PSI.
2. PER SEE 3.303.3 PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL MEET THE STANDARDS REFERENCED IN THE TABLE BELOW.

REQUIRED STANDARDS	
WATER CLOSETS (TOILETS) - FLUSHOMETER VALVE-TYPE SINGLE FLUSH, MAXIMUM FLUSH VOLUME	ASME A 112.19.2/CSA B45.1 - 1.28 GAK (4.8L)
WATER CLOSETS (TOILETS) - FLUSHOMETER VALVE-TYPE DUAL FLUSH, MAXIMUM FLUSH VOLUME	ASME A 112.19.14 AND U.S. EPA WATERSENSE TANK-TYPE HIGH-EFFICIENCY TOILET SPECIFICATION - 1.28 GAL (4.8 L)
WATER CLOSETS (TOILETS) - TANK TYPE	U.S. EPA WATERSENSE TANK-TYPE HIGH-EFFICIENCY TOILET SPECIFICATION
URINALS, MAXIMUM FLUSH VOLUME	ASME A 112.19.2/CSA B45.1 - 0.5 GAL (1.9L)
URINALS, NONWATER URINALS	ASME A 112.19.19 (VITREOUS CHINA) ANSI Z124.9-2004 OR IAPMO Z124.9 (PLASTIC)
PUBLIC LAVATORY FAUCETS: MAXIMUM FLOW RATE - 0.5 GPM (1.9 L/MIN)	ASME A 112.18.1/CSA B125.1
PUBLIC METERING SELF-CLOSING FAUCETS: MAXIMUM WATER USE - 0.25 GAL (1.0L) PER METERING CYCLE	ASME A 112.18.1/CSA B125.1
RESIDENTIAL BATHROOM LAVATORY SINK FAUCETS: MAXIMUM FLOW RATE - 1.5 GPM (5.7L/MIN)	ASME A 112.18.1/CSA B125.1

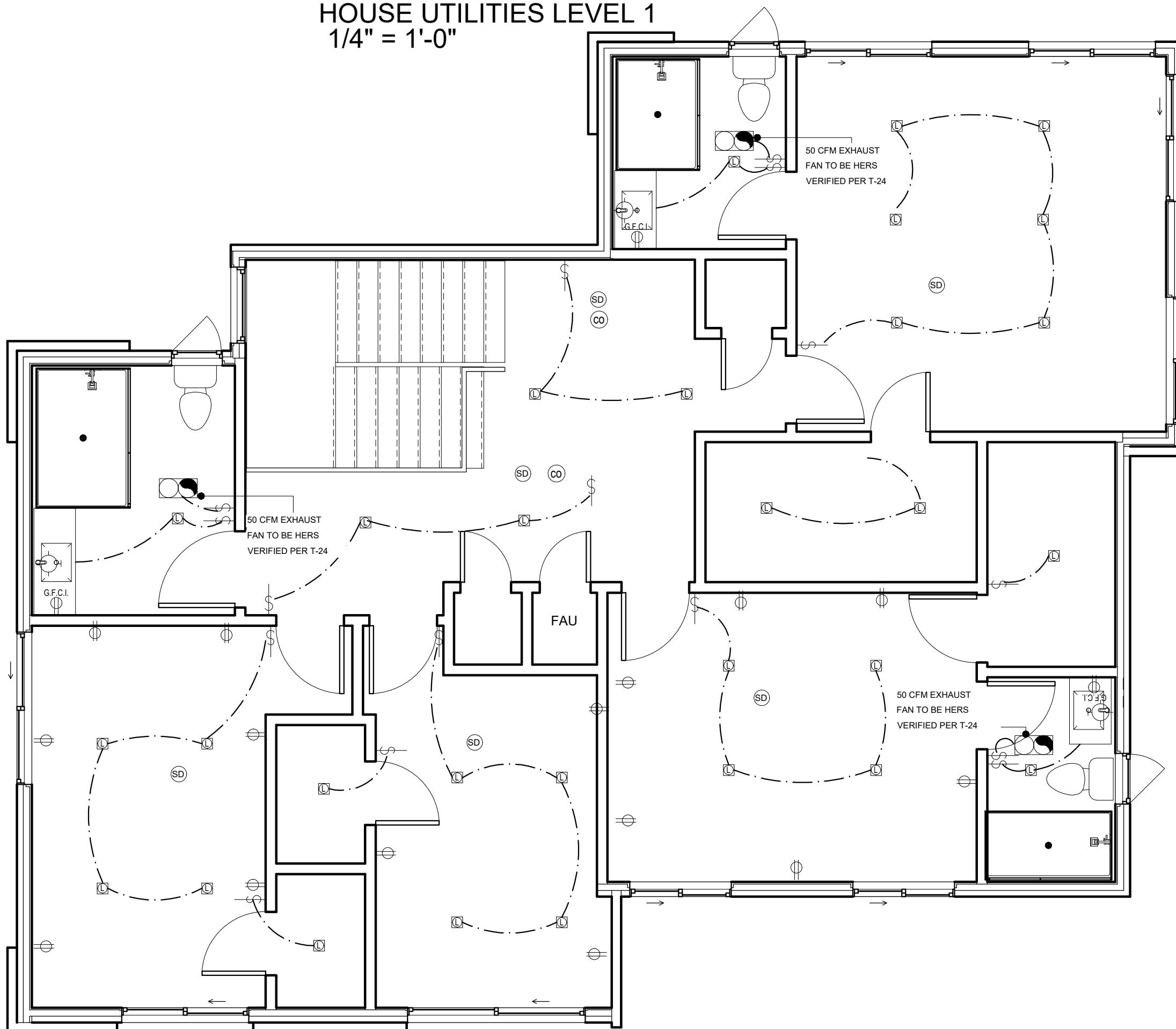
- A PLUMBING FIXTURE CERTIFICATION MUST BE COMPLETED AND SIGNED BY EITHER A LICENSED GENERAL CONTRACTOR, A PLUMBING SUBCONTRACTOR, OR THE BUILDING OWNER CERTIFYING THE FLOW RATE OF THE FIXTURES INSTALLED. A COPY OF THIS CERTIFICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT.
- ALL DOORS AND OPENINGS, ANNUAL SPACES, DRAINING PIPES, ELECTRICAL CABLES, CONDUITS, OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.
- BEFORE FINAL INSPECTION, A COMPLETE OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER OR OCCUPANT OR THE BUILDING OWNER'S DESIGNATED REPRESENTATIVE FOR THE DELIVERY OF SUCH MATERIAL.
- A COPY OF COMPLETE OPERATION AND MAINTENANCE MANUAL AS OUTLINED IN THE NOTES ABOVE WILL BE DELIVERED TO THE BUILDING OCCUPANT OR OWNER. CONTRACTOR OR OWNER SHALL SUBMIT AN AFFIDAVIT THAT CONFIRMS THE DELIVERY OF SUCH
- DUCT OPENINGS AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED DURING CONSTRUCTION.
- ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS.
- PAINTS, STAINS AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS SET IN CALGREEN 4.504.2.2 AND TABLE 4.504.3
- AEROSOL PAINTS AND COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR VOC AND OTHER TOXIC COMPOUNDS AS SPECIFIED IN CALGREEN 4.504.3.2.
- A CERTIFICATION COMPLETED, SIGNED BY THE GENERAL CONTRACTOR, SUBCONTRACTOR OR BUILDING OWNER CERTIFYING THAT THE PAINT, STAIN, AND ADHESIVES, COMPLIES WITH THE REQUIREMENTSOF THE CALIFORNIA GREEN BUILDING CODE, A COPY OF THE FORM CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT .
- CARPET AND CARPET SYSTEMS SHALL BE COMPLIANT WITH VOC LIMITS, A LETTER FROM THE CONTRACTOR SUBCONTRACTOR AND/OR THE BUILDING OWNER CERTIFYING WHAT MATERIALS USED COMPLIES WITH CALIFORNIA GREEN BUILDING CODE.
- HARDWOOD PLYWOOD, PARTICLEBOARD, AND MEDIUM DENSITY FIBERBOARD (MDF) composite wood product USED ON THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN ARB'S AIR QUALITY CONTROL REGULATIONS CHAPTER 9.5, ARTICLE 9.6.
- A CERTIFICATION COMPLETED, SIGNED BY THE GENERAL CONTRACTOR, SUBCONTRACTOR OR BUILDING OWNER CERTIFYING THAT THE RESILIENT FLOORING, COMPOSITE WOOD PRODUCT, PLYWOOD, PARTICLE BOARD, ETC. COMPLY WITH THE VOC LIMITS AND FORMALDEHYDE LIMITS SPECIFIED IN THE NOTES ABOVE AND IN CALGREEN 4.504.3.2.
- BUILDING MATERIALS INCLUDING FRAMING MEMBERS, WALLS, CEILING, FLOORS, PARTITIONS, ROOFS, WINDOWS, DOORS, WALLS AND FLOORS FRAMING SHALL NOT BE ENCLOSED WHEN FRAMING MEMBERS EXCEED 19% MOISTURE CONTENT.
- THE MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING IS CHECKED BEFORE ENCLOSURE. MOISTURE CONTENT SHALL BE VERIFIED BY EITHER A PROBE TYPE OR CONTACT TYPE MOISTER METER.
- EXHAUST FANS WHICH TERMINATE OUTSIDE THE BUILDING ARE PROVIDED IN EVERY BATHROOM THAT CONTAINS A SHOWER OR BAThtub, UNLESS FINANCING A LARGE PORTION OF THE WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH CAN ADJUST BETWEEN 20% TO 80%.

- IN EXISTING DWELLINGS, WHERE A PERMIT IS REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS EXCEEDING \$1,000 DOLLARS, EXISTING DWELLING UNITS THAT HAVE ATTACHED GARAGES OR FUEL-BURNING APPLIANCES SHALL BE PROVIDED WITH CARBON MONOXIDE ALARMS. [SEC. R315.2]
- PROVIDE CARBON MONOXIDE ALARMS IN THE FOLLOWING LOCATIONS: 1) OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S); 2) ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS. [SEC. R315.3]
- BATTERY OPERATED CARBON MONOXIDE ALARMS: IN EXISTING DWELLING UNITS A CARBON MONOXIDE ALARM IS PERMITTED TO BE SOLELY BATTERY OPERATED WHERE REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF WALL AND CEILING FINISHES OR THERE IS NO ACCESS BY MEANS OF ATTIC, BASEMENT OR CRAWL SPACE. [SEC. R315.4, EXCEPTION 2]. IN NEW CONSTRUCTION, BATTERY OPERATED CARBON MONOXIDE ALARMS SHALL BE INSTALLED WITHIN THE DWELLING UNIT OR WITHIN A SLEEPING UNIT THE ALARM SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. [SEC. R315.2.2]

- WHEN ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A GENERAL NOTES, PERMIT OCCUR IN EXISTING DWELLINGS, THE INDIVIDUAL DWELLING UNIT SHALL BE EQUIPPED WITH SMOKE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS [SEC. R314.3.1].
- PROVIDE SMOKE ALARMS IN THE FOLLOWING LOCATIONS:
 - 1. IN EACH SLEEPING ROOM.
 - 2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
- SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED IN EXISTING AREAS BUILDINGS UNDERGOING ALTERATIONS OR REPAIRS THAT DO NOT RESULT IN THE REMOVAL OF INTERIOR WALLS OR CEILING FINISHES EXPOSING THE STRUCTURE, UNLESS THERE IS AN ATTIC, CRAWL SPACE OR BASEMENT AVAILABLE WHICH COULD PROVIDE ACCESS FOR BUILDING WIRING WITHOUT THE REMOVAL OF INTERIOR FINISHES [SEC. R314.4. EXCEPTION 3].
- INTERCONNECTION: WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING THE ALARM DEVICES SHALL BE INSTALLED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT [SEC. R314.3].



HOUSE UTILITIES LEVEL 1
1/4" = 1'-0"



HOUSE UTILITIES LEVEL 2
1/4" = 1'-0"

	H.E. RECESSED LED FIXTURE
	JUNCTION BOX
	H.E. EXTERIOR WALL FIXTURE, PHOTOCONTROL AND A MOTION SENSOR
	H.E. INTERIOR WALL FIXTURE
	SMOKE DETECTOR
	CARBON MONOXIDE DETECTOR
	RECESSED EXHAUST FAN 100 CFM
	KITCHENS, 50 CFM BATHS
	FAN AND LIGHT COMBINATION
	ELECTRICAL SWITCH, ONE WAY
	ELECTRICAL SWITCH, VACANCY SENSOR
	ELECTRICAL SWITCH, DIMMER
	ELECTRICAL SWITCH, THREE WAY
	FORCED GAS OUTLET
	HOSE BIBB
	CEILING FAN WITH H.E. LIGHT
	DUPLEX OUTLET
	DUPLEX OUTLET WITH GROUND FAULT CIRCUIT INTERRUPTER
	WEATHER PROTECTED / DUPLEX OUTLET WITH GROUND FAULT CIRCUIT INTERRUPTER
	4 PLEX AFC
	4" DRYER VENT HORIZONTAL ROUTING <14" W/ NO MORE THAN 2 BENDS
	MINI SPLIT COMPRESSOR PER TITLE 24
	MINI SPLIT WALL UNIT

KITCHENS: ALL THE INSTALLED WATTAGE OF LUMINAIRES IN KITCHES SHALL BE HIGH EFFICACY AND SHALL HAVE A MANUAL ON/OFF IN ADDITION TO A VACANCY SENSOR OR DIMMER. UNDER CABINET LIGHTING SHALL BE SEPARATELY WIRED.

OTHER ROOMS: ALL LUMINAIRES SHALL BE HIGH EFFICACY AND SHALL HAVE A MANUAL ON/OFF IN ADDITION TO A VACANCY SENSOR OR DIMMER.

OUTDOOR LIGHTING: ALL LUMINAIRES MOUNTED TO THE BUILDING OR TO THE EXTERIOR BUILDING STRUCTURE SHALL BE HIGH EFFICACY LUMINAIRES AND MUST BE CONTROLLED BY A MANUAL ON AND OFF SWITCH, AND CONTROLLED BY ONE OF THESE AUTOMATIC CONTROL TYPES: PHOTOCONTROL AND A MOTION SENSOR, OR ASTRONOMICAL TIME CLOCK, OR ENERGY MANAGEMENT SYSTEM.

VENTS: EXHAUST DUCTS AND DRYER VENTS SHALL BE EQUIPPED WITH BACK-DRAFT DAMPERS ENVIRONMENTAL AIR DUCTS AND EXHAUST TERMINATIONS SHALL TERMINATE NOT LESS THAN 3' FEET FROM A PROPERTY LINE AND 3' FEET FROM THE EXTERIOR OF THE BUILDING.

ALL LUMINAIRES SHALL BE HIGH EFFICACY AND SHALL HAVE A MANUAL ON/OFF IN ADDITION TO A VACANCY SENSOR OR DIMMER

ALL PLUMBING FIXTURES AND FITTINGS WILL BE WATER CONSERVING AND WILL COMPLY WITH THE 2010 GREEN BUILDING CODE.

MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH THE FOLLOWING:

1. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO EXHAUST OUTSIDE THE BUILDING.
2. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT.

- ALL LINIMINARE SHALL BE HIGH-EFFICIENCY IN ACCORDANCE WITH CREEE TABLE 150.0-A
- ALL LED LINIMINARES AND LAMPS SHALL BE MARKED "JAS-2019" AND LISTED IN THE CALIFORNIA ENERGY COMMISSION DATABASE AT WWW.CEC.CA.GOV (CALIFORNIA ENERGY COMMISSION'S APPLIANCE/CATALOG ASPP)
- RECESSED DOWNLIGHT LINIMINARES IN CEILING SHALL NOT BE USED
- BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS: AT LEAST ONE LINIMINARE IN EACH SPACE SHALL BE CONTROLLED BY A VACUANCY "JAS-2019" OR "JAS-2019-E" MARKINGS SHALL BE CONTROLLED BY A DIMMER OR VACUANCY SENSOR
- EXCEPTION: CLOSETS LESS THAN 70 SF
- EXCEPTION: HALLWAYS
- OUTDOOR LIGHTING FIXTURE/MOUNTED TO BUILDING SHALL BE CONTROLLED BY ONE OF THE FOLLOWING:
 - 1. PHOTOCONTROL AND MOTOR SENSOR
 - 2. PHOTOCONTROL AND AUTOMATIC TIME-SWITCH CONTROL
 - 3. ASTRONOMICAL TIME CLOCK
 - ENERGY MANAGEMENT CONTROL SYSTEM PER CREEE 150.0(K)(3)(AIC)
 - A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINED THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE-BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION
 - AN INTERMITTENT OR CONTINUOUSLY OPERATING LOCAL MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH A BATHTUB, SHOWER, OR SIMILAR MOISTURE SOURCE AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION
 - THE MINIMUM FLOW RATE FOR MECHANICAL EXHAUST SHALL BE 60 CFM IN BATHROOMS AND 75 CFM IN KITCHENS
 - CONTINUOUS LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 20 CFM IN BATHROOMS AND 5 AIR CHANGES PER HOUR IN KITCHENS BASED ON KITCHEN VOLUME
 - THE MAIN ELECTRICAL SERVICE PANEL SHALL INCLUDE RESERVED SPACE ALLOWING FOR INSTALLATION OF A CIRCUIT BREAKER, A FUSE OR FUSE HOLDER, OR A DISCONNECTING SWITCH. THE RESERVED SPACE SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EVC LABEL"

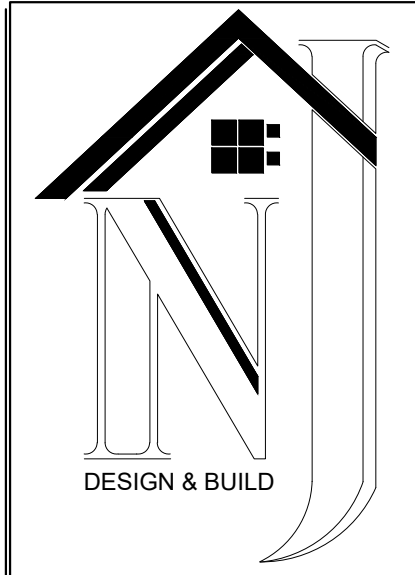
A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINATION THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE-BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION.

1. MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH BATHTUB, SHOWER, OR TUB AND SHOWER, AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION. INTERMITTENT LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 50 CFM IN BATHROOMS AND 100 CFM IN KITCHENS. CONTINUOUS LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 20 CFM IN BATHROOMS AND 5 AIR CHANGES PER HOUR IN KITCHENS BASED ON KITCHEN VOLUME.

2. THE MAIN ELECTRICAL SERVICE PANEL SHALL INCLUDE RESERVED SPACE ALLOWING FOR INSTALLATION OF A CIRCUIT BREAKER FOR A FUTURE ELECTRICAL VEHICLE CHARGING SYSTEM. THE RESERVED SPACE SHALL BE: -

- APPROVED MINIMUM 4-INCH-SQUARE ELECTRICAL JUNCTION BOX LOCATED ON THE INTERIOR OF THE GARAGE AT MINIMUM 30 INCHES AND MAXIMUM 48 INCHES ABOVE THE GARAGE FLOOR.
- MINIMUM 1-INCH-DIAMETER LISTED ELECTRICAL METALLIC RACEWAY ORIGINATING AT THE MAIN ELECTRICAL SERVICE PANEL AND TERMINATING AT THE REQUIRED ELECTRICAL JUNCTION BOX.

ELECTRICAL JUNCTION BOX SHALL BE PERMANENTLY AND VISIBLY MARKED AS 'FOR FUTURE ELECTRICAL VEHICLE CHARGING.'



ADDRESS:
3675 RUFFIN RD SAN DIEGO, CA 92123

PHONE:
949-617-7688

ECT

(N) HOUSES- (N) ADU

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER

RUMEYSASERCE

S H E	N A M E
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

HOUSE UTILITY PLANS

REVISION

Revision Schedule		
Rev. #	Description	Date

S H E E T

A 5.0

NO PART OF THESE PLANS TO BE PRODUCED WITHOUT THE EXPRESSED CONSENT OF NBE BUILDING DESIGN & BUILD

2400 NUTMEAT FARMS - 1470 MARLINE AVE. ADDRESS: 1470 MARLINE AVE. CITY: SAN DIEGO, CA 92123

12/10/2024 12:20:34 PM

CALGREEN BUILDING STANDARDS CODE NOTES:

CAL GREEN APPLIES TO ALL NEW RESIDENTIAL OCCUPANCIES INCLUDING LOW RISE AND HIGH RISE BUILDINGS. IT ALSO APPLIES TO ALL RESIDENTIAL ALTERATIONS AND ADDITIONS WHERE THE ADDITION OR ALTERATION INCREASES THE BUILDING'S CONDITIONAL AREA, VOLUME OR SIZE. THE REQUIREMENTS APPLY ONLY TO WITHIN THE SPECIFIC AREA OF THE ALTERATION OR ADDITION.

- THE FOLLOWING TABLE DEMONSTRATES A 20 PERCENT REDUCTION OF INDOOR WATER USE. PERCENT REDUCTION, EACH PLUMBING FIXTURE AND FITTING MUST MEET REDUCED FLOW RATES SPECIFIED IN THE TABLE BELOW.

FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE
SHOWERHEADS	1.8 GPM @ 80 PSI
LAVATORY FAUCETS, RESIDENTIAL	1.2 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 80 PSI
GRAVITY TANK - TYPEWATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMERTER TANKWATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER VALVEWATER CLOSETS	1.28 GALLONS/FLUSH
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS/FLUSH
URINALS	0.5 GALLONS/FLUSH

- INCLUDES SINGLE AND DUAL FLUSH WATER CLOSETS WITH AN EFFECTIVE FLUSH OF 1.28 GALLONS OR LESS.
 - SINGLE FLUSH TOILETS: THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS (4.8 LITERS). THE EFFECTIVE FLUSH VOLUME IS THE AVERAGE FLUSH VOLUME WHEN TESTED IN ACCORDANCE WITH ASME A112.19.233.2.
 - DUAL FLUSH TOILETS: THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS(4.8 LITERS). THE EFFECTIVE FLUSH VOLUME IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FKUSHES AND ONE FULL FLUSH. FLUSH VOLUMES WILL BE TESTED IN ACCORDANCE WITH ASME A112.19.2 AND ASME A112.19.14.
- LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM AT 20 PSI.
- PER SE. 3.303.3 PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL MEET THE STANDARDS REFERENCED IN THE TABLE BELOW.

STANDARDS FOR PLUMBING FIXTURES AND FIXTURE FITTING

REQUIRED STANDARDS

WATER CLOSETS (TOILETS) -FLUSHOMETER VALVE-TYPE SINGLE FLUSH, MAXIMUM FLUSH VOLUME	ASME A 112.19.2/CSA B45.1 - 1.28 GAK (4.8L)
WATER CLOSETS (TOILETS) -FLUSHOMETER VALVE-TYPE DUAL FLUSH, MAXIMUM FLUSH VOLUME	ASME A 112.19.14 AND U.S. EPA WATERSENSE TANK-TYPE HIGH-EFFICIENCY TOILET SPECIFICATION - 1.28 GAL (4.8 L)
WATER CLOSETS (TOILETS) - TANK TYPE	U.S. EPA WATERSENSE TANK-TYPE HIGH-EFFICIENCY TOILET SPECIFICATION
URINALS, MAXIMUM FLUSH VOLUME	ASME A 112.19.2/CSA B45.1 - 0.5 GAL (1.9L)
URINALS, NONWATER URINALS	ASME A 112.19.19 (VITREOUS CHINA) ANSI Z124.9-2004 OR IAPMO Z124.9 (PLASTIC)
PUBLIC LAVATORY FAUCETS: MAXIMUM FLOW RATE - 0.5 GPM (1.9 L/MIN)	ASME A 112.18.1/CSA B125.1
PUBLIC METERING SELF-CLOSING FAUCETS: MAXIMUM WATER USE - 0.25 GAL (1.0L) PER METERING CYCLE	ASME A 112.18.1/CSA B125.1
RESIDENTIAL BATHROOM LAVATORY SINK FAUCETS: MAXIMUM FLOW RATE -1.5 GPM (5.7L/MIN)	ASME A 112.18.1/CSA B125.1

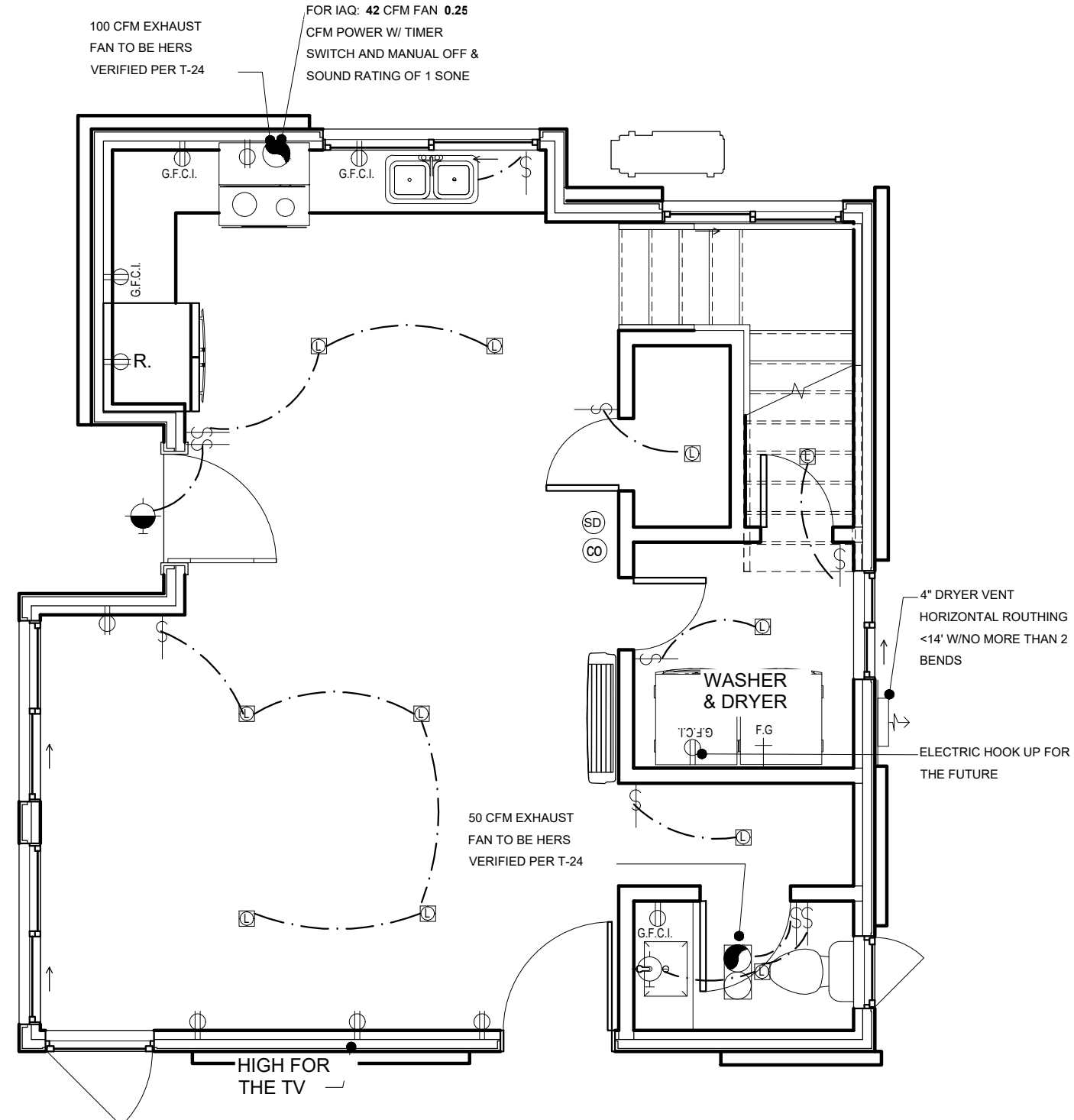
- A PLUMBING FIXTURE CERTIFICATION MUST BE COMPLETED AND SIGNED BY EITHER A LICENSED GENERAL CONTRACTOR, A PLUMBING SUBCONTRACTOR, OR THE BUILDING OWNER CERTIFYING THE FLOW RATE OF THE FIXTURES INSTALLED. A COPY OF THIS CERTIFICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT.
- JOINTS AND OPENINGS, ANNULAR SPACES AROUND CABLES, CONDUITS, OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.
- BEFORE FINAL INSPECTION, A COMPLETE OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OCCUPANT OR OWNER. CONTRACTOR OR OWNER SHALL SUBMIT AN AFFIDAVIT THAT CONFIRMS THE DELIVERY OF SUCH A COPY OF COMPLETE OPERATION AND MAINTENANCE MANUAL AS OUTLINED IN THE NOTES ABOVE WILL BE DELIVERED TO THE BUILDING OCCUPANT OR OWNER. CONTRACTOR OR OWNER SHALL SUBMIT AN AFFIDAVIT THAT CONFIRMS THE DELIVERY OF SUCH.
- DUCT OPENINGS AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED DURING CONSTRUCTION.
- ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS.
- PAINTS, STAINS AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS SET IN CALGREEN 4.504.2.2 AND TABLE 4.504.3
- AEROSOL PAINTS AND COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR VOC AND OTHER TOXIC COMPOUNDS AS SPECIFIED IN CALGREEN 4.504.2.3
- A CERTIFICATION COMPLETED, SIGNED BY THE GENERAL CONTRACTOR, SUBCONTRACTOR OR BUILDING OWNER CERTIFYING THAT THE PAINT, STAIN, AND ADHESIVES, COMPLIES WITH THE REQUIREMENTSOF THE CALIFORNIA GREEN BUILDING CODE. A COPY OF THE FORM CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT.
- CARPET AND CARPET SYSTEMS SHALL BE COMPLIANT WITH VOC LIMITS. A LETTER FROM THE CONTRACTOR SUBCONTRACTOR AND OR THE BUILDING OWNER CERTIFYING WHAT MATERIALS USED COMPLIES WITH CALIFORNIA GREEN BUILDING CODE.
- HARDWOOD PLYWOOD, PARTICLEBOARD, AND MEDIUM DENSITY FIBERBOARD (MDF) COMPOSITE WOOD PRODUCT USED ON THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN ARB'S AIR TOXIC CONTROL MEASURE FOR COMPOSITE WOOD AS SPECIFIED IN CAL GREEN 4.504.5 AND TABLE 4.504.5
- A CERTIFICATION COMPLETED, SIGNED BY THE GENERAL CONTRACTOR, SUBCONTRACTOR OR BUILDING OWNER CERTIFYING THAT THE RESILIENT TILE, RESILIENT TILE, COMPOSITE WOOD PRODUCT, FLYWOOD, PARTICLE BOARD, ETC. COMPLY WITH THE VOC LIMITS AND FORMALDEHYDE LIMITS SPECIFIED IN THE NOTES ABOVE AND IN CALGREEN
- BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALLS AND FLOORS FRAMING SHALL NOT BE ENCLOSED WHEN FRAMING MEMBERS EXCEED 19% MOISTURE CONTENT.
- THE MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING IS CHECKED BEFORE ENCLOSURE. MOISTURE CONTENT SHALL BE VERIFIED BY EITHER A PROBE TYPE OR CONTACT TYPE MOISTURE METER.
- EXHAUST FANS WHICH TERMINATE OUTSIDE THE BUILDING ARE PROVIDED IN EVERY BATHROOM THAT CONTAINS A SHOWER OR TUB. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH CAN ADJUST BETWEEN 50 TO 80%

CARBON MONOXIDE NOTES:

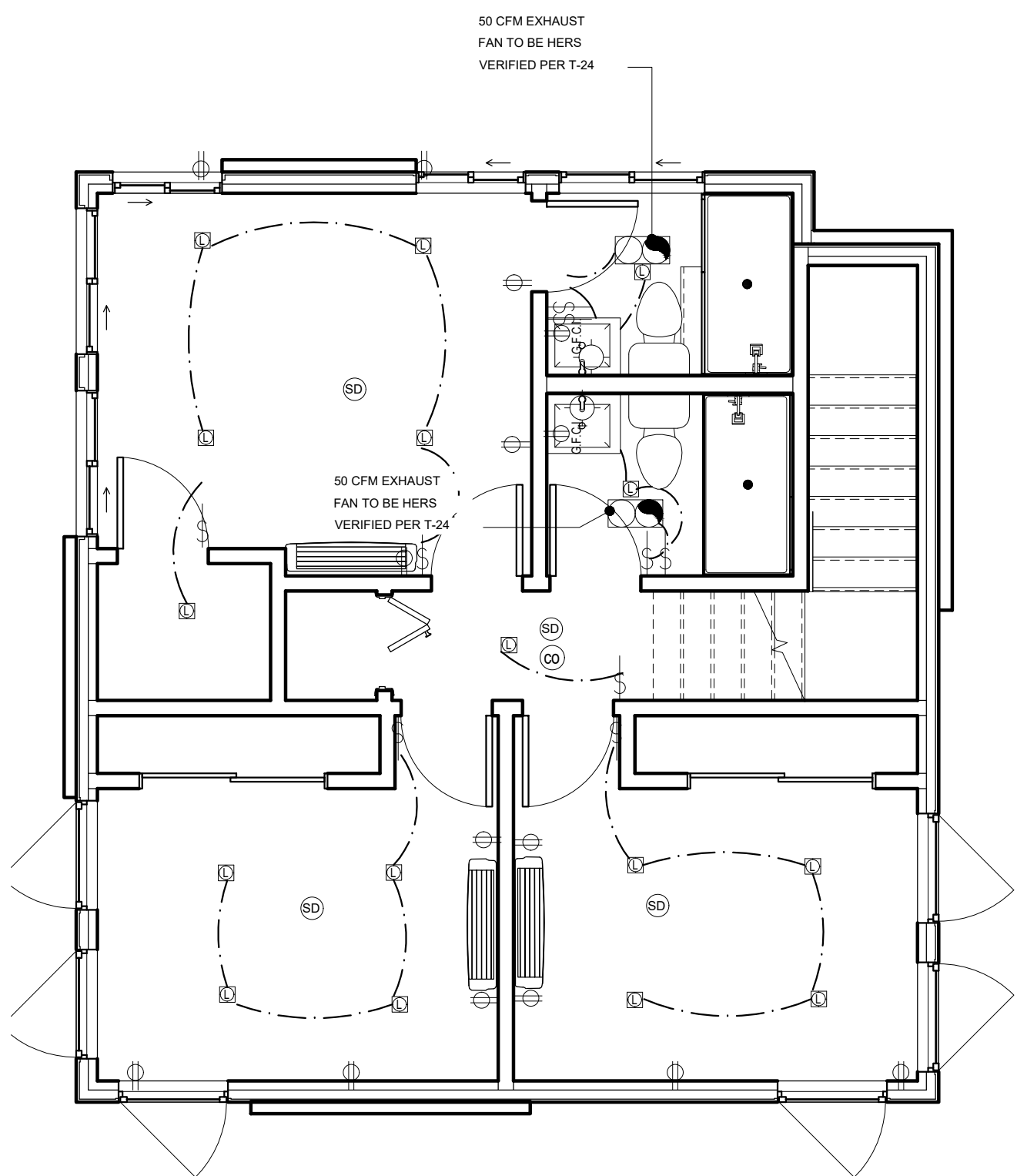
- IN EXISTING DWELLINGS, WHERE A PERMIT IS REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS EXCEEDING \$1,000 DOLLARS, EXISTING DWELLING UNITS THAT HAVE ATTACHED GARAGES OR FUEL-BURNING APPLIANCES SHALL BE PROVIDED WITH CARBON MONOXIDE ALARMS. [SEC. R315.2]
- PROVIDE CARBON MONOXIDE ALARMS IN THE FOLLOWING LOCATIONS: 1) OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S); 2) ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS. [SEC. R315.3]
- BATTERY OPERATED CARBON MONOXIDE ALARMS: IN EXISTING DWELLING UNITS A CARBON MONOXIDE ALARM IS PERMITTED TO BE SOLELY BATTERY OPERATED WHERE REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF WALL AND CEILING FINISHES OR THE REMOVAL OF ACCESS BY MEANS OF A TIE, CRAWL SPACE, OR BASEMENT AVAILABLE WHICH COULD PROVIDE ACCESS FOR BUILDING WIRING WITHOUT THE REMOVAL OF INTERIOR FINISHES [SEC. R314.4, EXCEPTION 3].
- INTERCONNECTION: WHEN MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. [SEC. R315.2.2].

SMOKE ALARM NOTES:

- WHEN ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A GENERAL NOTES, PERMIT OCCUR IN EXISTING DWELLINGS, THE INDIVIDUAL DWELLING UNIT SHALL BE EQUIPPED WITH SMOKE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS [SEC. R314.3.1].
- PROVIDE SMOKE ALARMS IN THE FOLLOWING LOCATIONS:
 - IN EACH SLEEPING ROOM.
 - OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
- SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED IN EXISTING AREAS OF BUILDINGS UNDERGOING ALTERATIONS OR REPAIRS THAT DO NOT RESULT IN THE REMOVAL OF INTERIOR WALLS OR CEILING FINISHES EXPOSINGTHE STRUCTURE, UNLESS THERE IS AN ATTIC, CRAWL SPACE OR BASEMENT AVAILABLE WHICH COULD PROVIDE ACCESS FOR BUILDING WIRING WITHOUT THE REMOVAL OF INTERIOR FINISHES [SEC. R314.4, EXCEPTION 3].
- INTERCONNECTION: WHEN MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT [SEC. R314.3].



ADU UTILITIES LEVEL 1
1/4" = 1'-0"



ADU UTILITIES LEVEL 2
1/4" = 1'-0"

UTILITY PLAN LEGEND

	H.E. RECESSED LED FIXTURE
	JUNCTION BOX
	H.E. EXTERIOR WALL FIXTURE, PHOTOCONTROL AND A MOTION SENSOR
	H.E. INTERIOR WALL FIXTURE
	SMOKE DETECTOR
	CARBON MONOXIDE DETECTOR
	RECESSED EXHAUST FAN 100 CFM KITCHENS, 50 CFM BATHS
	FAN AND LIGHT COMBINATION
	ELECTRICAL SWITCH, ONE WAY
	ELECTRICAL SWITCH, VACANCY SENSOR
	ELECTRICAL SWITCH, DIMMER
	ELECTRICAL SWITCH, THREE WAY
	FORCED GAS OUTLET
	HOSE BIBB
	CEILING FAN WITH H.E. LIGHT
	DUPLEX OUTLET
	DUPLEX OUTLET WITH GROUND FAULT CIRCUIT INTERRUPTER
	WEATHER PROTECTED / DUPLEX OUTLET WITH GROUND FAULT CIRCUIT INTERRUPTER 4 PLEX AFC.
	4" DRYER VENT HORIZONTAL ROUTING <14' W/ NO MORE THAN 2 BENDS
	MINI SPLIT COMPRESSOR PER TITLE 24
	MINI SPLIT WALL UNIT

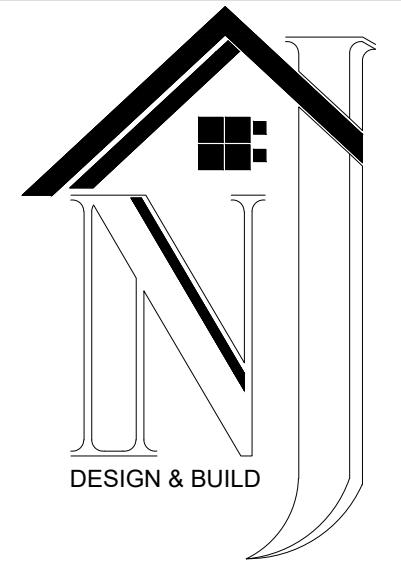
GENERAL UTILITY NOTES:

- KITCHENS:** ALL THE INSTALLED WATTAGE OF LUMINAIRES IN KITCHES SHALL BE HIGH EFFICACY AND SHALL HAVE A MANUAL ON/OFF IN ADDITION TO A VACANCY SENSOR OR DIMMER. UNDER CABINET LIGHTING SHALL BE SWITCHED SEPARATELY.
- OTHER ROOMS:** ALL LUMINAIRES SHALL BE HIGH EFFICACY AND SHALL HAVE A MANUAL ON/OFF IN ADDITION TO A VACANCY SENSOR OR DIMMER.
- OUTDOOR LIGHTING:** ALL LUMINAIRES MOUNTED TO THE BUILDING OR TO OTHER BUILDINGS ON THE SAME LOT SHALL BE HIGH EFFICACY LUMINAIRES AND MUST BE CONTROLLED BY A MANUAL ON AND OFF SWITCH, AND CONTROLLED BY ONE OF THE FOLLOWING TYPES: PHOTOCONTROL, AND A MOTION SENSOR, OR ASTRONOMICAL TIME CLOCK, OR ENERGY MANAGEMENT CONTROL SYSTEM.
- VENTS:** EXHAUST DUCTS AND DRYER VENTS SHALL BE EQUIPPED WITH BACK-DRAFT DAMPERS ENVIRONMENTAL AIR DUCTS AND EXHAUST TERMINATION SHALL TERMINATE NOT LESS THAN 3' FEET FROM A PROPERTY LINE AND 3' FROM OPENINGS INTO THE BUILDING.
- ALL LUMINAIRES** SHALL BE HIGH EFFICACY AND SHALL HAVE A MANUAL ON/OFF IN ADDITION TO A VACANCY SENSOR OR DIMMER.
- ALL PLUMBING FIXTURES AND FITTINGS** WILL BE WATER CONSERVING AND WILL COMPLY WITH THE 2019 CGSBOC SEC. 4303.1
- MECHANICAL EXHAUST FANS** WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH THE FOLLOWING:
 - FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
 - UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT.

- ALL LUMINAIRES SHALL BE HIGH-EFFICACY IN ACCORDANCE WITH GRES TABLE 150.0-4
- ALL LED LUMINAIRES AND LAMPS SHALL BE MARKED "JAB-2019" AND LISTED IN THE CALIFORNIA ENERGY COMMISSION DATABASE AT [HTTPS://CACERTAPLANCES.COMENERGY.CA.GOV/PAGES/APPLIANCESARCH.ASPX](https://cacertaplances.comenergy.ca.gov/pages/appliancesearch.aspx)
- RECESSED DOWNLIGHT LUMINAIRES IN CEILINGS SHALL NOT BE SCREW-BASED
- BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS: AT LEAST ONE LUMINAIRE IN EACH SPACE SHALL BE CONTROLLED BY A VACANCY SENSOR
- ALL LUMINAIRES REQUIRING "JAB-2019" OR "JAB-2019-E" MARKING SHALL BE CONTROLLED BY A DIMMER OR VACANCY SENSOR
- EXCEPTION: CLOSETS LESS THAN 70 SF.
- EXCEPTION: HALLWAYS
- OUTDOOR LIGHTING PERMANENTLY MOUNTED TO BUILDING SHALL BE CONTROLLED BY ONE OF THE FOLLOWING:
 - PHOTOCONTROL AND MOTION SENSOR
 - PHOTOCONTROL AND AUTOMATIC TIME-SWITCH CONTROL
 - ASTRONOMICAL TIME CLOCK
- ENERGY MANAGEMENT CONTROL SYSTEM PER CBEES 150.0K3A10JC
- A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINATION THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE-BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION
- AN INTERMITTENTLY OR CONTINUOUSLY OPERATING LOCAL MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH A BATHTUB, SHOWER, OR SIMILAR MOISTURE SOURCE AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION. INTERMITTENT LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 50 CFM IN BATHROOMS AND 100 CFM IN KITCHENS. CONTINUOUS LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 20 CFM IN BATHROOMS AND 5 AIR CHANGES PER HOUR IN KITCHENS BASED ON KITCHEN VOLUME
- THE MAIN ELECTRICAL SERVICE PANEL SHALL INCLUDE RESERVED SPACE ALLOWING FOR INSTALLATION OF A CIRCUIT BREAKER FOR A FUTURE ELECTRIC VEHICLE CHARGING SYSTEM. THE RESERVED SPACE SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE."

NOTES:

- A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINATION THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE-BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION.
- AN INTERMITTENTLY OR CONTINUOUSLY OPERATING LOCAL MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH A BATHTUB, SHOWER, OR SIMILAR MOISTURE SOURCE AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION. INTERMITTENT LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 50 CFM IN BATHROOMS AND 100 CFM IN KITCHENS. CONTINUOUS LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 20 CFM IN BATHROOMS AND 5 AIR CHANGES PER HOUR IN KITCHENS BASED ON KITCHEN VOLUME
- THE MAIN ELECTRICAL SERVICE PANEL SHALL INCLUDE RESERVED SPACE ALLOWING FOR INSTALLATION OF A CIRCUIT BREAKER FOR A FUTURE ELECTRIC VEHICLE CHARGING SYSTEM. THE RESERVED SPACE SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE."
- APPROVED MINIMUM 4-INCH-SQUARE ELECTRICAL JUNCTION BOX LOCATED ON THE INTERIOR OF THE GARAGE AT MINIMUM 30 INCHES AND MAXIMUM 48 INCHES ABOVE THE GARAGE FLOOR
- MINIMUM 1-INCH-DIAMETER LISTED ELECTRICAL METALLIC RACEWAY ORIGINATING AT THE MAIN ELECTRICAL SERVICE PANEL AND TERMINATING AT THE REQUIRED ELECTRICAL JUNCTION BOX
- ELECTRICAL JUNCTION BOX SHALL BE PERMANENTLY AND VISIBLY MARKED AS "FOR FUTURE ELECTRIC VEHICLE CHARGING."



ADDRESS
3675 RUFFIN RD SAN DIEGO, CA 92123

PHONE
949-617-7688

ECT

(N) HOUSES-(N) ADU

1470 Marline Avenue,
El Cajon, CA 92021

DESIGNER:

RUMEYSASERCE

SHE

NAME

ADU UTILITY PLANS

REVISION

Revision Schedule		
Rev. #	Description	Date

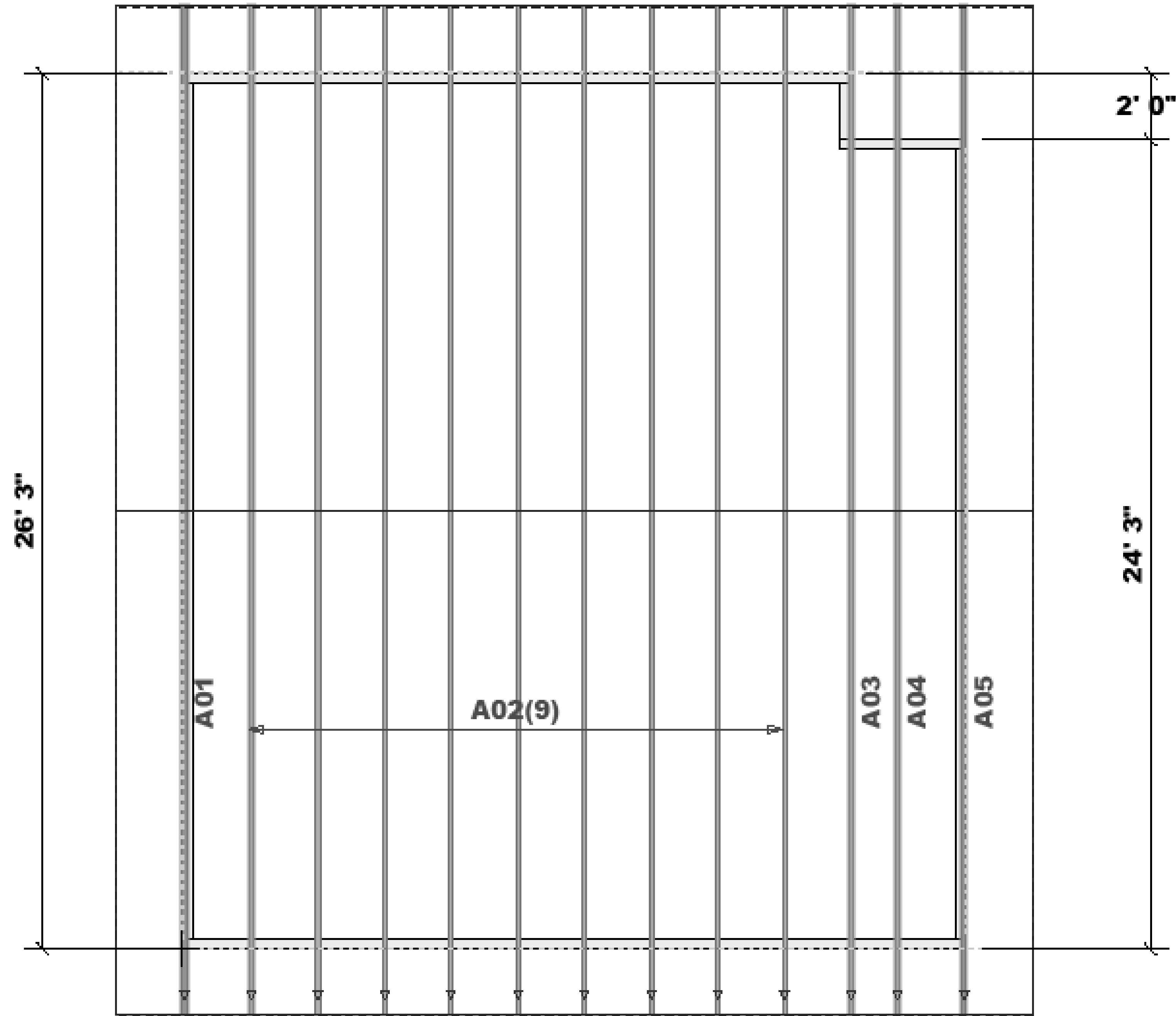
12/10/2024 12:20:34 PM

SHEET

A 5.1



ROOF PITCH: 4:12
CEILING PITCH: X:12
HEELS: 3-15/16"
OVERHANG: 24"
BLOCKS: BEVEL
SPACING: 24" O.C. U.N.O.



GENERAL

1. ALL NEW CONSTRUCTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND THE 2022 CALIFORNIA BUILDING CODE.
2. THESE GENERAL NOTES SUPERSEDE THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS. IN CASE OF CONFLICT BETWEEN THE PLANS AND SPECIFICATIONS, CONTACT THE OWNER'S REPRESENTATIVE.
3. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURE'S INSTRUCTION OR REQUIREMENT OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.
4. TYPICAL DETAILS AND GENERAL NOTES APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR UNLESS NOTED OTHERWISE (U.N.O.)
5. THE STRUCTURAL DRAWINGS ILLUSTRATE THE NEW STRUCTURAL MEMBERS. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR NON-STRUCTURAL ITEMS WHICH REQUIRE SPECIAL PROVISIONS DURING THE CONSTRUCTION OF THE STRUCTURAL MEMBERS.
6. REFER TO ARCHITECTURAL DRAWING FOR FLOOR DEPRESSIONS, EDGE OF SLAB, OPENINGS, SLOPES, DRAINS, CURBS, PADS, EMBEDDED ITEMS, NON-BEARING PARTITIONS, ETC. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, OPENINGS, AND HANGERS FOR PIPES AND EQUIPMENT.
7. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL VERIFY ALL DIMENSIONS AND CONDITIONS WHICH IMPACT THE WORK. FIELD VERIFY SIZE. ELEVATIONS, HOLE LOCATIONS, ETC. PRIOR TO FABRICATION.
8. DRAWING DIMENSIONS ARE TO FACE OF FINISH, JOINT CENTERLINE OR GRID CENTERLINE UNLESS NOTED OTHERWISE, DO NOT SCALE THE DRAWINGS.
9. CONTRACTOR SHALL CAREFULLY REVIEW THE DRAWINGS TO IDENTIFY THE SCOPE OF WORK REQUIRED. VISIT THE SITE TO RELATE THE SCOPE OF WORK TO EXISTING CONDITIONS AND DETERMINE THE EXTENT TO WHICH THOSE CONDITIONS AND PHYSICAL SURROUNDINGS WILL IMPACT THE WORK.
11. THE CONTRACTOR SHALL RESOLVE ANY CONFLICTS ON THE DRAWINGS OR IN THE SPECIFICATIONS WITH THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
12. ANY DEVIATION, MODIFICATION & SUBSTITUTION FROM THE APPROVED SET OF STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
13. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHORES, BRACES AND GUYS REQUIRED TO SUPPORT ALL LOADS TO WHICH THE BUILDING STRUCTURE AND COMPONENTS, SOIL, OTHER STRUCTURES AND UTILITIES MAY BE SUBJECTED DURING CONSTRUCTION. SHORING SYSTEM SHALL BE DESIGNED AND STAMPED BY A CIVIL ENGINEER LICENSED IN THE STATE OF CALIFORNIA VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.
14. THE CONTRACTOR SHALL PROVIDE MEANS, METHOD, TECHNIQUES, SEQUENCE AND PROCEDURE OF CONSTRUCTIONS AS REQUIRED. SITE VISITS PERFORMED BY THE OWNER'S REPRESENTATIVE DO NOT INCLUDE INSPECTIONS OF MEANS AND METHODS OF CONSTRUCTION PERFORMED BY CONTRACTOR.
15. THE CONTRACTOR SHALL PROTECT ALL WORK, MATERIALS AND EQUIPMENT DURING CONSTRUCTION.
16. STRUCTURAL OBSERVATIONS PERFORMED BY ENGINEER DURING CONSTRUCTION ARE NOT THE CONTINUOUS AND SPECIAL INSPECTION SERVICES AND DO NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR. OBSERVATION ALSO DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION.
17. CONTRACTORS SHALL REVIEW SHOP DRAWINGS FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL STAMP SHOP DRAWINGS PRIOR TO SUBMISSION TO OWNER'S REPRESENTATIVE.
18. REVIEW OF THE SHOP DRAWINGS SHALL NOT BE CONSTRUED AS AUTHORIZATION TO DEVIATE FROM CONTRACT DOCUMENTS.
19. SHOP DRAWINGS WILL NOT BE PROCESSED DUE TO INCOMPLETENESS, LACK OF CO-ORDINATION WITH RELEVANT OF CONTRACT DOCUMENTS, LACK OF CALCULATIONS IF REQUIRED AND SUBSTITUTIONS ARE INDICATED WITHOUT PRIOR WRITTEN APPROVAL FROM OWNER'S REPRESENTATIVE.
20. ALLOW FOURTEEN WORKING DAYS FOR PROCESSING SHOP DRAWINGS AFTER RECEIPT.
21. PRIOR TO ALL CORING, THE CONTRACTOR SHALL IDENTIFY EXISTING REINFORCING LOCATIONS BY TACHOMETER, PROBING, CHIPPING, ETC. TO AVOID DAMAGE EXISTING REINFORCING.
- 22.
- A. STRUCTURAL LUMBER SHALL COMPLY WITH DOC PS20.DF LARCH
- B. WOOD STRUCTURAL PANEL SHALL COMPLY WITH DOC PS1-OR DOC PS2
- C. THE LUMBER AND SIZE OF WOOD FASTENER SHALL NOT BE LESS THAN SET FORTH TABLE 2304.10.1
- D. CONCRETE CEMENT TYPE V & WATER-CEMENT RATIO. TRY IN MIX TICKET.

INSPECTION

1. CONTINUOUS SPECIAL INSPECTION IS REQUIRED PER CBC SECTION 1704.1. IN SECTION 15.04.350 FOR THE FOLLOWING WORK:
- 1.1 EPOXY DOWELS.
- 1.2 HOLDINGS
- 1.3 WALL ANCHORAGE
2. APPROVAL BY THE INSPECTOR DOES NOT MEAN APPROVAL OF FAILURE TO COMPLY WITH THE PLANS OR SPECIFICATIONS. ANY DETAIL THAT FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE STRUCTURAL ENGINEER FOR INTERPRETATION OR CLARIFICATION.
1. THE ALLOWABLE SOIL BEARING PRESSURES ARE AS FOLLOWS:
- A. WALL FOOTINGS: 3,000 POUNDS PER SQUARE FOOT. FOOTING SHALL BE A MINIMUM 12 INCHES IN WIDTH, 18 INCHES IN DEPTH BELOW THE LOWEST ADJACENT GRADE, AND 18 INCHES INTO THE RECOMMENDED BEARING MATERIAL.
- B. COLUMN FOOTINGS: 1,000 POUNDS PER SQUARE FOOT. FOOTING SHALL BE A MINIMUM 18 INCHES IN WIDTH, 18 INCHES IN DEPTH BELOW THE LOWEST ADJACENT GRADE, AND 18 INCHES INTO THE RECOMMENDED BEARING MATERIAL
- C. ALLOWABLE BEARING VALUES MAY BE INCREASED BY 33 PERCENT FOR SHORT TERM LOADING.
2. ALL EXISTING FILL MATERIALS & ANY LOOSE UPPER NATIVE SOILS SHALL BE REMOVED & RECOMPACTED TO CREATE A COMPACTED FILL PAD FOR THE SUPPORT OF THE BUILDING. IN ADDITION, THE PROPOSED REMOVALS SHALL EXTEND A MINIMUM OF THREE FEET BELOW THE PROPOSED FOUNDATIONS.
3. REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE. THE GEOTECHNICAL ENGINEER SHALL INSPECT AND APPROVE ALL EXCAVATIONS, SOIL COMPACTION WORK PRIOR TO PLACEMENT OF ANY REBAR OR CONCRETE, SHORING INSTALLATIONS, BACKFILL MATERIALS AND BACK FILLING PROCEDURES.
4. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.
5. REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.
7. PLACE BACKFILL BEHIND RETAINING WALLS AFTER CONCRETE OR MASONRY HAS ATTAINED FULL DESIGN STRENGTH. BRACE BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHED FLOORS AND SLABS ON GRADE ARE COMPLETE AND HAVE ATTAINED FULL DESIGN STRENGTH.

GLUED- LAMINATED TIMBER

1. ALL GLUED-LAMINATED TIMBER SHALL BE IN CONFORMANCE WITH THE MATERIALS, MANUFACTURE AND QUALITY CONTROL AS SPECIFIED BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC).
2. GLUED-LAMINATED TIMBER SHALL BE MARKED ANSI/AITC STANDARD A190.1, AND AN APPROVED "CERTIFICATE OF COMPLIANCE" SHALL BE PROVIDED TO THE USA INSPECTOR OF RECORD PRIOR TO ERECTION OF THE MEMBERS.
3. MEMBERS SHALL BE LOAD WRAPPED INDIVIDUALLY WITH A WATER-RESISTANT COVERING FOR SHIPMENT. A MAJORITY OF THE WRAPPING SHALL REMAIN ON THE MEMBER DURING ERECTION UNTIL ADDITIONAL FRAMING IS APPLIED.
4. STRUCTURAL GLUED-LAMINATED MEMBERS EXPOSED TO WEATHER AND NOT PROPERLY PROPERLY PROTECTED BY A ROOF, EAVE OR SIMILAR COVERING SHALL BE PRESSURE TREATED AFTER MANUFACTURE WITH AN APPROVED PRESERVATIVE. THE TREATMENT PROCESS SHALL NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE MEMBER.
5. SIMPLE SPAN BEAMS SHALL BE COMBINATION 24F-V4, DF/DF.
6. CANTILEVER BEAMS SHALL BE COMBINATION 24F-V8, DF/DF.
7. PROVIDE CAMBER ONLY WHERE INDICATED ON DRAWINGS.
8. SHOP INSPECTION REQUIRED FOR ALL GLUED LAMINATED TIMBER FABRICATION BY CBC.
9. TYPE OF GLUE SHALL BE FOR WET USE GLUE.
10. ALL STRUCTURAL GLUED-LAMINATED TIMBER SHALL BE CONTINUOUSLY INSPECTED DURING FABRICATION BY AN INSPECTOR SPECIALLY APPROVED BY THE DIVISION OF THE STATE ARCHITECT. AN AITC CERTIFICATE WILL NOT MEET THIS REQUIREMENT.

WOOD FRAMING

1. WOOD FRAMING SHALL BE DOUGLAS FIR-LARCH MARKED BY W.W.P.A. OR W.C.L.I.B. AS FOLLOWS, UNLESS NOTED OTHERWISE:
- | DESCRIPTION | GRADE |
|--|-----------------|
| VERTICAL MEMBERS:
2X, 4X & LARGER | NO. 1 OR BETTER |
| HORIZONTAL MEMBERS:
2X, 4X & LARGER | NO. 1 OR BETTER |
2. ALL SHEATHING SHALL BE APA RATED SHEATHING, GRADE, THICKNESS AND PANEL INDEX AS INDICATED ON DRAWINGS. ALL SHEETS SHALL BE BONDED WITH EXTERIOR GLUE. NAILING SHALL BE INSPECTED PRIOR TO COVERING.
3. EACH SHEATHING SHEET SHALL HAVE A MINIMUM AREA OF 8 SQUARE FEET AND A MINIMUM DIMENSION IN ANY DIRECTION OF 2 FEET.
4. WOOD PLATES IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED OR REDWOOD.
5. ALL NAILS SHOWN ON PLANS SHALL BE COMMON WIRE NAILS AND SHALL COMPLY WITH TABLE 2304.10.1 OF THE BUILDING CODE UNLESS NOTED OTHERWISE.
6. PLYWOOD AND/OR LUMBER SHIMS IF USED AS FILLER MATERIALS SHALL BE GLUED AT FULL CONTACT AREA IN STRICT COMPLIANCE WITH A.P.A. REQUIREMENTS. THE USE OF SHIMS MUST BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.
7. ALL FRAMING HARDWARE ARE STRONG-TIE CONNECTORS AS MANUFACTURED BY SIMPSON COMPANY, UNLESS NOTED OTHERWISE. INSTALL PER MANUFACTURER'S RECOMMENDATION. NO SUBSTITUTION WITHOUT WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
8. BOLT SHALL CONFORM TO ASTM A-307. PROVIDE WASHERS UNDER ALL BOLTS, NUTS, AND SCREW HEADS PER SCHEDULE.
9. ALL NAILS SHOWN ON USE OF MACHINE NAILING IS SUBJECT TO A SATISFACTORY JOBSITE DEMONSTRATION FOR EACH PROJECT AND THE APPROVAL BY THE PROJECT ARCHITECT OR STRUCTURAL ENGINEER AND THE OFFICE OF THE STATE ARCHITECT. THE APPROVAL IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. MACHINE NAILING WILL NOT BE APPROVED IN 3/4" PLYWOOD. IF NAILHEADS PENETRATE THE OUTER PLY MORE THAN WOULD BE NORMAL FOR A HAND HAMMER OF IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED THE PERFORMANCE WILL BE DEEM UNSATISFACTORY.
10. ALL FRAMING "E" VALUE ARE 1.7X1000000

MANUFACTURED WOOD I-JOISTS

1. MANUFACTURED WOOD I-JOISTS SHALL BE BY REDBUILT, LLC AND SHALL CONFORM TO THE REQUIREMENTS OF A VALID ICC REPORT ESR-2994.
2. SUBSTITUTION SHALL BE EQUIVALENT AND SHALL BE REVIEWED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND USA. SUBSTITUTION MUST HAVE MINIMUM SECTION PROPERTIES OF THE I-JOISTS SPECIFIED ON THE DRAWINGS FOR MOMENT, SHEAR, AND DEFLECTION. SECTION PROPERTIES SHALL ONLY BE USED IN DEFLECTION CALCULATIONS
3. ROOF I-JOISTS SHALL BE DESIGNED FOR ALL APPLICABLE LOADS AND DEFLECTION LIMITS AZ SHOWN ON THE DRAWINGS AND IN THE PROJECT DESIGN CRITERIA.
4. MANUFACTURER SHALL PROVIDE SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER IN THE STATE OF CALIFORNIA, AND SHALL BE RESPONSIBLE FOR SUBMITTING TO, GAINING ACCEPTANCE/REVIEW FROM, AND MEETING ANY OTHER REQUIREMENTS OF THE DIVISION OF THE STATE ARCHITECT.
5. ALL I-JOIST HANGERS SHALL BE ICC APPROVED. USE SKEWED HANGERS AT SKEWED CONDITIONS. PURLIN HANGER CAPACITY TO MATCH OR SHEAR CAPACITY OF THE MEMBER SUPPORTED.
6. THE MANUFACTURER SHALL PROVIDE CALCULATIONS AND HANGERS AS REQUIRED FOR MULTIPLE, I-JOISTS WHERE SHOWN ON PLAN OR WHERE REQUIRED BY THE MANUFACTURER'S DESIGNS.
7. THE MANUFACTURER SHALL VERIFY IN WRITING THAT TOP CHORD OF THE I-JOIST IS DESIGNED TO AVOID SPLITTING FOR NAILING OF SHEATHING, STRAPS, AND ANCHORS AS INDICATED ON PLANS AND DETAILS.
8. A SPECIFIC WRITTEN AUTHORIZATION SHALL BE OBTAINED FROM RODRIGUEZ ENGINEERING FOR ANY SUBSTITUTION AND/OR VARIATIONS FROM THESE CONTRACT DOCUMENTS.
9. PROVIDE CONTINUOUS I-JOIST METAL BRIDGING (SIMP. "TB" AS PER CBC SECTION 2324A.3.1.4. TABLE 23A-VI-D AND SECTION 2324A.3.1.3. BRIDGING SPACING AT 8'-0" O.C. MINIMUM.
10. SUBMITTALS: COMPLETE SHOP DRAWINGS AND HANGER ICC REPORTS.

CONCRETE

PER ACI 318-19

1. CONCRETE IS REINFORCED AND CAST-IN-PLACE UNLESS OTHERWISE NOTED. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.
2. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:
- | | |
|--------------------|------------------------|
| ALL OTHER CONCRETE | 2500 PSI NORMAL WEIGHT |
|--------------------|------------------------|
3. ALL STRUCTURAL CONCRETE MIXES SHALL BE TYPE V W/ 0.45 W/C RATIO MAX. CEMENT AND SHALL BE DESIGNED BY AN APPROVED LABORATORY.
4. ADMIXTURES CONTAINING CALCIUM CHLORIDE ARE NOT ALLOWED AT CONCRETE FILL OVER METAL DECK.
5. NORMAL WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33. LIGHT WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-330.
6. NO MORE THAN ONE GRADE OF CONCRETE SHALL BE ON THE JOB SITE AT ANY ONE TIME.
7. THOROUGHLY CLEAN AND ROUGHEN ALL HARDENED CONCRETE AND MASONRY SURFACES TO RECEIVE NEW CONCRETE. INTERFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4" UNLESS NOTED OTHERWISE.
8. KEY AND DOWEL POUR JOINTS AS SHOWN ON THE PLANS. ANY DEVIATION FROM POUR JOINTS SHOWN ON THE PLANS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
9. NON-SHRINK CEMENT GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 PSI. USE "FIVE STAR GROUT" (COLA RR # 23616) OR "MASTERFLOW 928" (COLA RR # 23137).
10. DEFECTIVE CONCRETE (BOIDS, ROCK POCKETS, HONEYCOMBS, CRACKING, ETC.) SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

REINFORCEMENT

1. REINFORCING TO CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED:
- A. REINFORCING STEEL U.N.O.: ASTM A615 OR A706, 60 KSI
- B. REINFORCING STEEL TO BE WELDED: ASTM A706, 60 KSI
- C. WELDED STEEL WIRE FABRIC: ASTM A185, 70 KSI
- D. SMOOTH DOWELS IN SLAB ON GRADE: ASTM A36, 36 KSI
2. REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVERAGE. PLACE BARS AS NEAR TO THE CONCRETE SURFACE AS THESE MINIMUMS PERMIT WHEREVER POSSIBLE UNLESS NOTED OTHERWISE:
- | | MIN. CONCRETE COVER |
|---------------------------------------|---------------------|
| CONCRETE POURED AGAINST EARTH | 3" |
| FORMED CONCRETE IN CONTACT WITH EARTH | 2" |
| EXPOSED TO WEATHER (#6 AND LARGER) | 2" |
| EXPOSED TO WEATHER (#5 AND SMALLER) | 1-1/2" |
| SLABS & WALLS NOT EXPOSED TO WEATHER | 1" |
| NOT EXPOSED TO WEATHER | 1-1/2" |
3. #5 AND LARGER REINFORCING BARS SHALL NOT BE SPLICED EXCEPT AS LOCATED AND DETAILED ON THE DRAWINGS. #4 AND SMALLER BARS WITH LENGTH NOT SHOWN SHALL BE CONTINUOUS, LAPPING 1'-6" MINIMUM IN CONCRETE (SEE TYPICAL DETAILS). HORIZONTAL WALL SPLICES SHALL BE STAGGERED. VERTICAL BARS SHALL NOT BE SPLICED EXCEPT AT HORIZONTAL SUPPORT, SUCH AS FLOOR OR ROOF, UNLESS DETAILED OTHERWISE. ALL BARS ENDING AT THE FACE OF A WALL, COLUMN, OR BEAM SHALL EXTEND TO WITHIN 2" OF THE FAR FACE AND HAVE A 90 DEGREE HOOK UNLESS OTHERWISE SHOWN.
4. BARS SHALL BE FIRMLY SUPPORTED AND ACCURATELY PLACED AS REQUIRED BY THE A.C.I. STANDARDS, USING TIE AND SUPPORT BARS IN ADDITION TO REINFORCEMENT SHOWN WHERE NECESSARY FOR FIRM AND ACCURATE PLACING. ALL DOWELS SHALL BE ACCURATELY SET IN PLACE BEFORE PLACING CONCRETE.
5. DRAWINGS SHOW TYPICAL REINFORCING CONDITIONS. CONTRACTOR SHALL PREPARE DETAILED PLACEMENT DRAWINGS OF ALL CONDITIONS SHOWING QUANTITY, SPACING, SIZE, CLEARANCES, LAPS, INTERSECTIONS AND COVERAGE, REQUIRED BY STRUCTURAL DETAILS, APPLICABLE CODE AND TRADE STANDARDS. CONTRACTOR SHALL NOTIFY REINFORCING INSPECTOR OF ANY ADJUSTMENTS FROM TYPICAL CONDITIONS THAT ARE PROPOSED IN PLACEMENT DRAWINGS TO FACILITATE FIELD PLACEMENT OF REINFORCING STEEL AND CONCRETE.
6. NO WELDING OF REINFORCEMENT (INCLUDING TACK WELDING) SHALL BE DONE UNLESS SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWINGS, WELDING OF REINFORCING STEEL SHALL BE PERFORMED BY WELDERS SPECIFICALLY CERTIFIED FOR REINFORCING STEEL. USE E90XX ELECTRODES.

PROJECT DESIGN CRITERIA

1. CODE: CALIFORNIA BUILDING CODE, 2022 EDITION AND STANDARDS REFERENCED THEREIN.
2. STRUCTURAL DESIGN INFORMATION:

DESIGN LOADS	
SNOW LOAD	ZERO
ROOF	DEAD LOAD = 18 PSF LIVE LOAD = 20 PSF (REDUCIBLE)
FLOOR	DEAD LOAD = 15 PSF LIVE LOAD = 40 PSF (REDUCIBLE)
DECK/BALCONY	DEAD LOAD = 20 PSF LIVE LOAD = 60 PSF (REDUCIBLE)
EXTERIOR WALL	DEAD LOAD = 15 PSF
INTERIOR WALL	DEAD LOAD = 10 PSF

SEISMIC BASE SHEAR (SIMPLIFIED PROCEDURE USED)	
STRUCTURAL ANALYSIS	ASCE / SEI 7-16
IMPACT FACTOR	= 1
RISK CATEGORY	= II
BASIC SEISMIC-FORCE-RESISTING SYSTEM	= SHEAR WALLS
ANALYSIS PROCEDURE USED	= EQ. LAT. FORCE
REDUNDANCY FACTOR	= 1.3
RESPONSE FACTOR	= 6.5/1.3=5
SEISMIC DESIGN CATEGORY	= D
SITE COEFFICIENT Fa	= 1.2
SITE COEFFICIENT Fv	= 0
SPECTRAL RESPONSE ACCELERATION Sa	= 0.753
PECTRAL RESPONSE ACCELERATION S1	= 0.278
SPECTRAL RESPONSE ACCELERATION S0.1	= 0.602
SPECTRAL RESPONSE ACCELERATION SD1	= 0
Cs	= 0.065
DESIGN BASE SHEAR TOTAL WEIGHT 1ST FLOOR	= 54.2
DESIGN BASE SHEAR TOTAL WEIGHT ROOF	= 48.2
WIND FORCES: METHOD 1 (SIMPLIFIED PROCEDURE USED)	
WIND EXPOSURE	= C
WIND IMPORTANCE FACTOR	= 1
BASIC WIND SPEED	= 97
COMPONENTS & CLADDING PRESSURE	= 12.1 psf
SOIL LOADING BEARING VALUE	= 1500 PSF

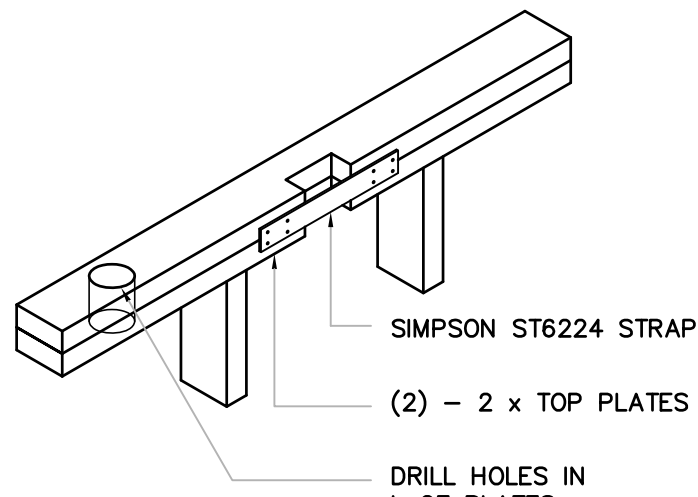
NOTE

- THE BUILDING OFFICIAL RESERVES THE RIGHT TO REQUIRE A SOIL OR SLOPE INSTABILITY CONDITIONS AT THE SITE WARRANT A FOUNDATION AND SOIL INVESTIGATION.

ADHESIVE AND EXPANSION ANCHORS

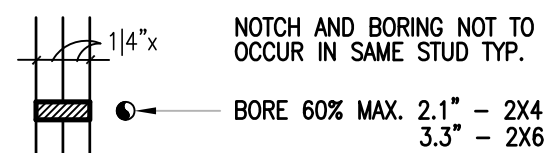
1. ADHESIVE ANCHORS AND DOWELS INSTALLED INTO CONCRETE
- HILTI HIT-HY 150 MAX-SD ADHESIVE ANCHORS BY HILTI (ICC ESR #3013) OR SIMPSON SET-XP ADHESIVE ANCHORS (ICC ESR-2508)
3. ADHESIVE DOWELS: ASTM A615 GRADE 60 REINFORCING STEEL.
4. ALL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ICC AND COLA REPORT AND MANUFACTURERS RECOMMENDATIONS.
5. UNLESS OTHERWISE NOTED, PROVIDE MINIMUM EMBEDMENT OF ANCHORS PER ICC REPORTS & MANUFACTURERS RECOMMENDATIONS.

NOTE:
THIS DETAIL IS NOT TO BE USED
IN STRUCTURAL WALL WITHOUT
THE APPROVAL OF THE ENGINEER

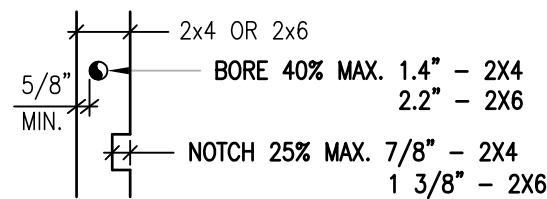


TYPICAL STUD NOTCHING

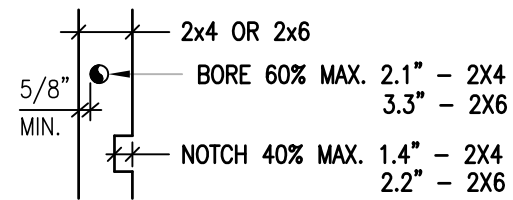
NOT TO SCALE



DOUBLE STUDS-BEARING OR NOT



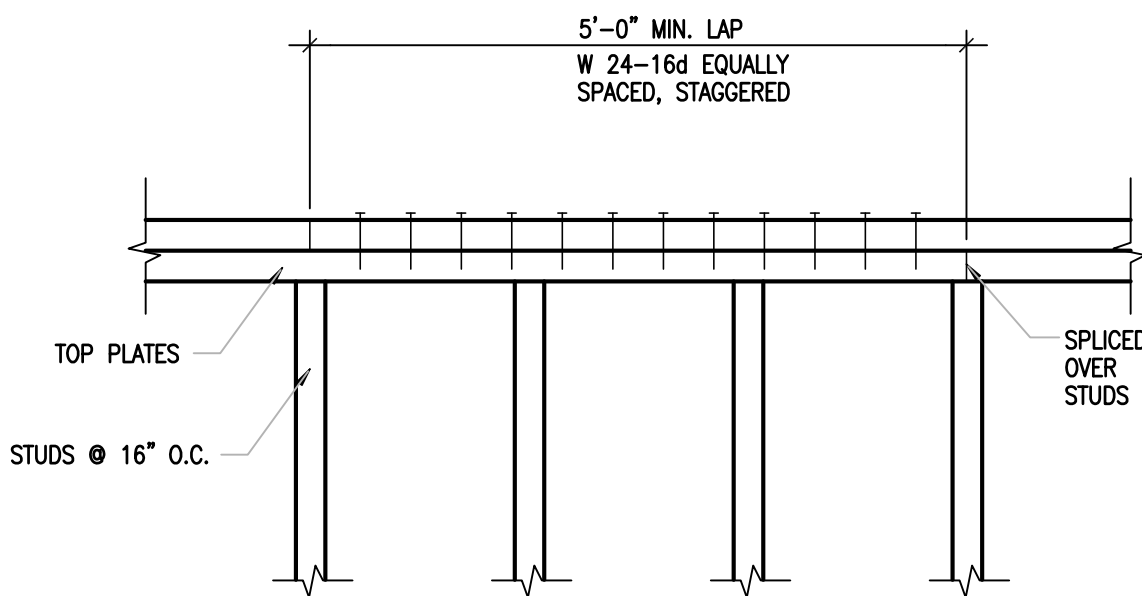
BEARING STUDS



NON-BEARING STUDS

TYP. STUD NOTCHING

NOT TO SCALE



TYPICAL CHORD SPLICE

NOT TO SCALE

2022 NAILING SCHEDULE:

CONNECTION	NAILING	LOCATION
Joist to sill or girder	3-8d common	toenail
Bridging to joist	2-8d common	toenail each end
1" x 6" Subfloor or less to each joist	2-8d common	face nail
Wider than 1" x 6" Subfloor to each joist	3-8d common	face nail
2" Subfloor to joist or girder	2-16d common	blind & face nail
Sole plate to joist or blocking	16d at 16" o.c.	typical face nail
Sole plate to joist or blocking at braced wall panel	16d at 16" o.c.	braced wall panels
Top plate to stud	2-16d common	end nail
Stud to sill plate	4-8d common	toenail
	2-16d common	end nail
Doultle studs	16d at 24" o.c.	face nail
Doultle top plate	16d at 16" o.c.	typical face nail
Doultle top plate	8-16d common	lap splice
Blocking between joists or rafter to top pl.	3-8d common	toenail
Rim joist to top plate	8d at 6" o.c.	toenail
Top plates, laps & intersections	2-16d common	face nail
Continuous header, two pieces	16d common	16" o.c. along edge
Ceiling joists to plate	3-8d common	toenail
Continuous header to stud	4-8d common	toenail
Ceiling joists, laps over partitions	3-16d common	face nail
Ceiling joists to parallel rafters	3-16d common	face nail
Rafter to plate	3-8d common	toenail
1" diagonal brace to each stud and plate	2-8d common	toenail
1" x 8" sheathing to each bearing	3-8d common	face nail
Wider 1" x 8" sheathing to each bearing	3-8d common	face nail
Built-up corner studs	16d common	24" o.c. 16" o.c.
Built-up corner studs	20d common	face nail at top and bottom staggered on opposite sides
	2-20d common	face nail at ends and each splice
2" planks	16d common	at each bearing
Collar tie to rafter	3-10d common	face nail
Jack rafter to hip	3-10d common	toenail
Roof rafter to 2-by ridge beam	2-16d common	toenail
	2-16d common	face nail
Joist to band joist	3-16d common	face nail
Ledger strip	3-16d common	face nail at ea. jst.



UR Buildings
Consulting Engineers
18001 Irvine Blvd. Suite 206
Tustin, CA 92780
Tel: (949) 929-2483
Fax: (949) 656-7722
Email: info@urbldings.com

REVISIONS	DATE

GENERAL NOTES



JOB DESCRIPTION: TWO STORY HOUSES & ADU
OWNER: MR. ANTHONY J. ETTNER
ADDRESS: 1470 MARLINE AVENUE
EL CAJON, CA 92021

DRAWN BY :

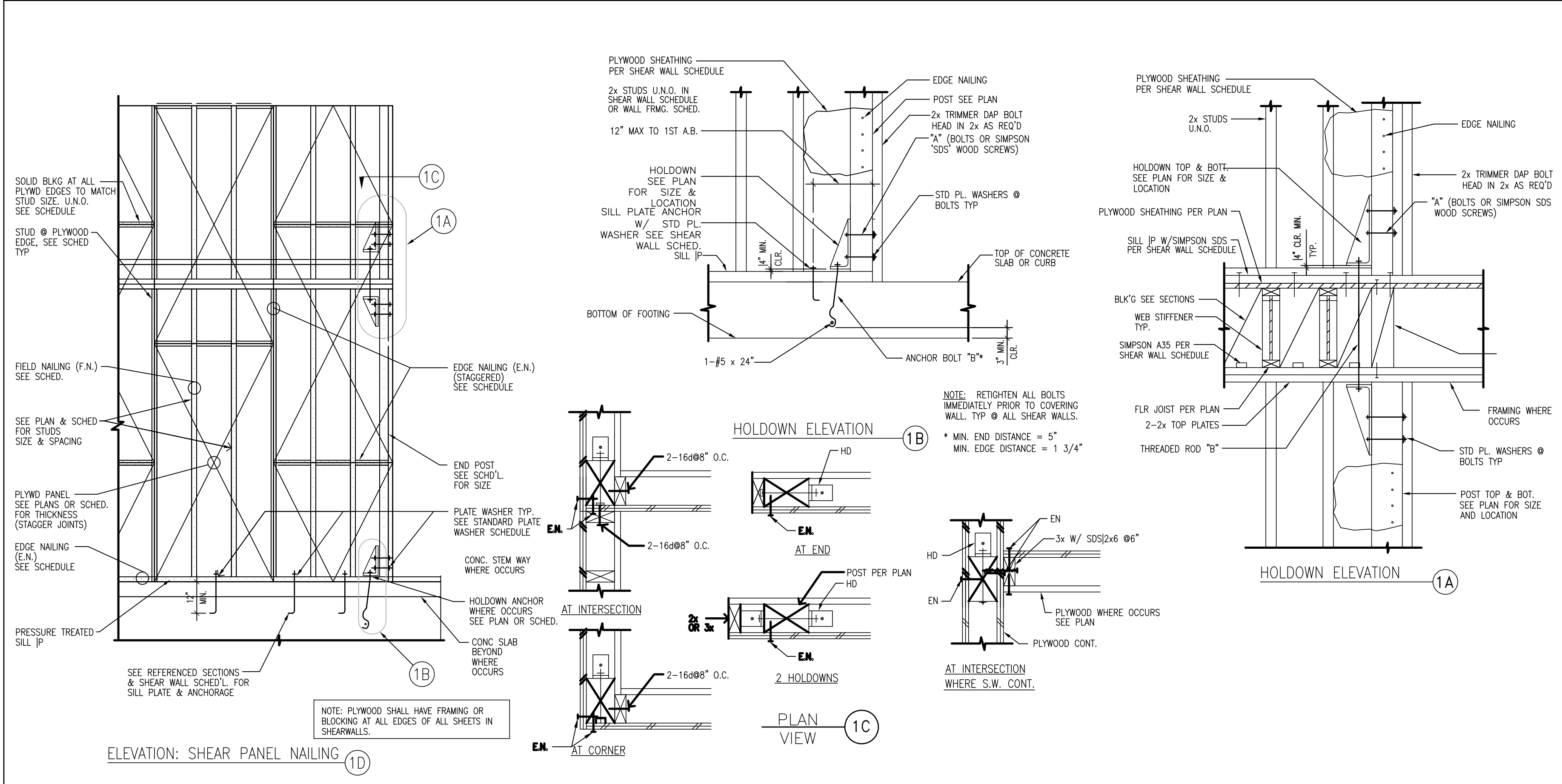
DATE: 04-01-2024

SCALE: AS NOTED

JOB NO: URB24-01470

S-1.0

SHEETS



SHEAR WALL SCHEDULE								
MARK	MATERIAL	NO. OF SIDES	NAILING		A35 SHEAR CLIPS	SILL PLATE ATTACHMENT U.N.O.		ALLOW SHEAR (#/FT)
			EDGE (E.N.)	FIELD (F.N.)		FRAMED FLOOR	FOUNDATION (A307 BOLTS)	
	7/8" STUCCO	1	8d @ 6" O.C.	8d @ 12" O.C.	32" O.C.	SIMPSON SDS @ 16" O.C.	5/8" A.B. @ 48" O.C.	90
	15/32" STRUCT-I PLYWD (PI 32/16) 5-PLY	1	8d @ 6" O.C.	8d @ 12" O.C.	32" O.C.	SIMPSON SDS @ 16" O.C.	5/8" A.B. @ 48" O.C.	280
	15/32" STRUCT-I PLYWD (PI 32/16) 5-PLY	1	10d @ 6" O.C.	10d @ 12" O.C.	24" O.C.	SIMPSON SDS @ 12" O.C.	5/8" A.B. @ 32" O.C.	340
	15/32" STRUCT-I PLYWD (PI 32/16) 5-PLY	1	8d @ 4" O.C.	10d @ 12" O.C.	16" O.C.	SIMPSON SDS @ 8" O.C.	5/8" A.B. @ 24" O.C.	430
	15/32" STRUCT-I PLYWD (PI 32/16) 5-PLY	1	10d @ 4" O.C.	10d @ 12" O.C.	12" O.C.	SIMPSON SDS @ 6" O.C.	5/8" A.B. @ 20" O.C.	510
	15/32" STRUCT-I PLYWD (PI 32/16) 5-PLY	1	8d @ 3" O.C.	10d @ 12" O.C.	10" O.C.	2 ROWS SIMPSON SDS @ 8" O.C.	5/8" A.B. @ 16" O.C.	550
	15/32" STRUCT-I PLYWD (PI 32/16) 5-PLY	1	10d @ 3" O.C.	10d @ 12" O.C.	8" O.C.	SIMPSON SDS @ 6" O.C.	5/8" A.B. @ 12" O.C.	665

ABBREVIATIONS	
R.R.	ROOF RAFTER.
F.J.	ROOF JOIST
D.J.	FLOOR JOIST.
C.J.	DECK JOIST.
BM.	CEILING JOIST.
K.P.	BEAM.
K.S.	KING POST.
BFW	BALLOON FRAMED WALL.
HDR	HEADER.
PC	PIPE COLUMN.
FL. BM.	FLUSH BEAM.
DP. BM.	DROPPED BEAM.
DBL.	DOUBLE.
BLK'G.	BLOCKING.
F.H.	FULL HEIGHT.
D.S.	DRAG STRUT.
MSB.	MULTI STUDS BEARING.
S.P.N.	SILL PLATE NAILING.
D.T.	DOUBLE 2 X TRIMMER.
T.&B.	TOP AND BOTOM.
E.S.	EACH SIDE.
U.N.O.	UNLESS NOTED OTHERWISE.
P.A.	POST ABOVE.
M.B.	MACHINE BLOTS.
N.R.	NOT REQUIRED

STANDARD PLATE WASHER SCHEDULE		
BOLTS SIZE	PLATE SIZE	REMARKS
5/8" DIA.	5/16" x 3" x 3"	
3/4" DIA.	5/16" x 3" x 3"	
7/8" DIA.	5/16" x 3" x 3"	
1" DIA.	3/8" x 3 1/2" x 3 1/2"	
1 1/8" DIA.	3/8" x 3 1/2" x 3 1/2"	

FASTENERS AND CONNECTORS TO BE GALVANIZED FOR PRESERVATIVE TREATED WOOD. CBC 2304.9.5.1

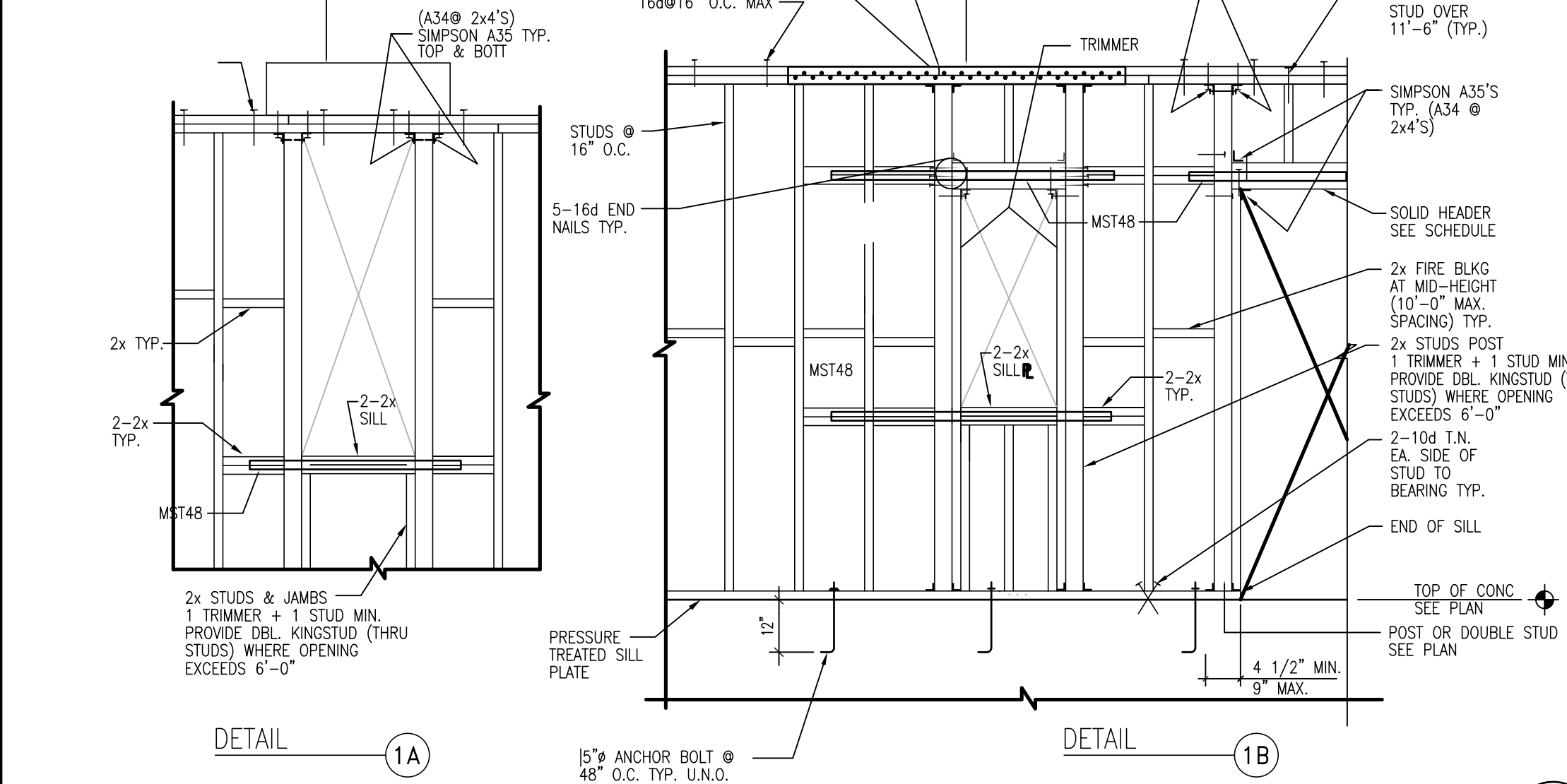
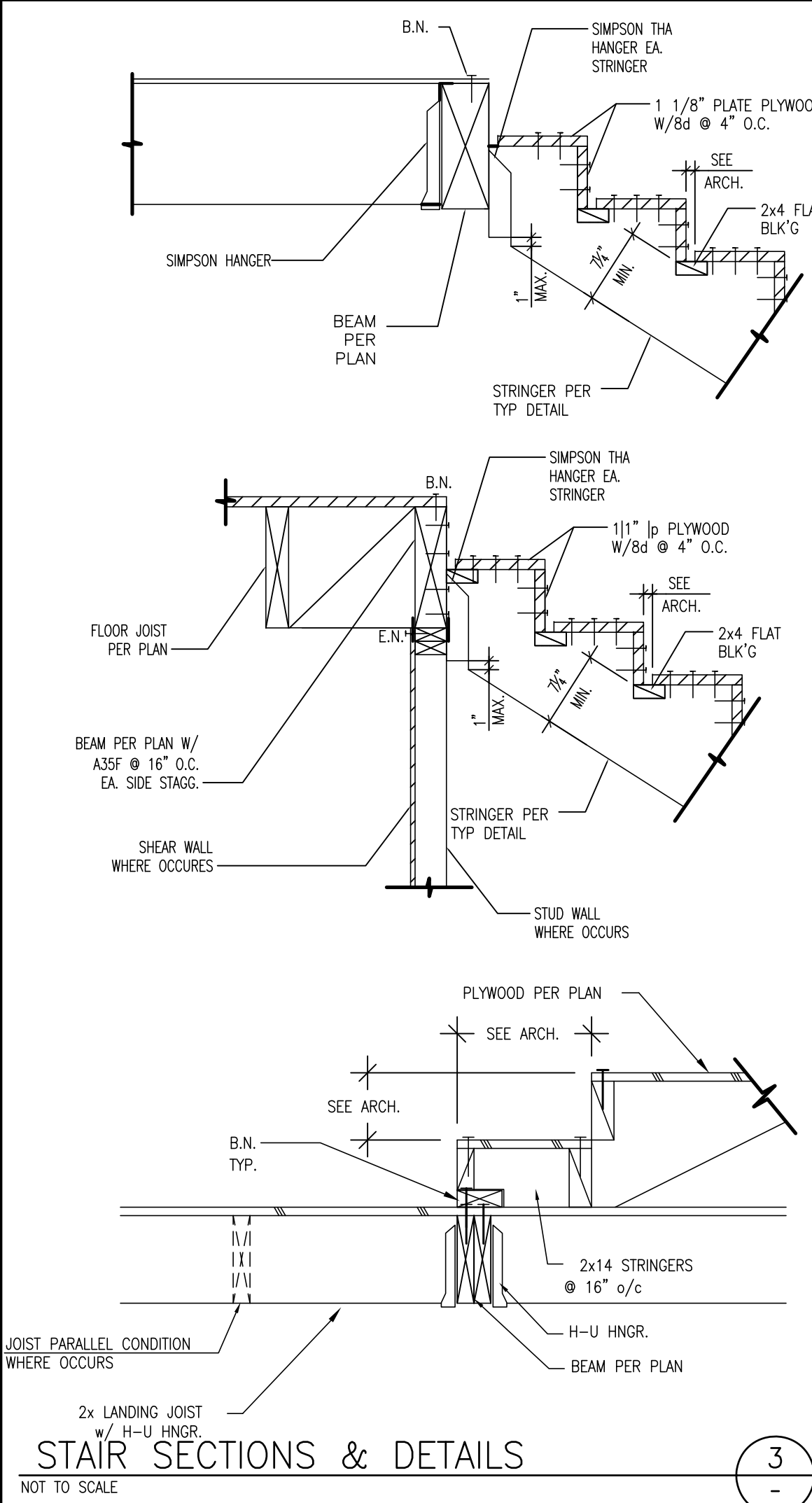
HOLDOWN SCHEDULE			
HOLDOWN TYPE	UPLIFT VALUE	ANCHOR BOLTS BOLT DIA. (in)	
1 HDU2	3,075 LBS	5/8	
2 HTT5	4,555 LBS	5/8	
3 HDU4	4,565 LBS	5/8	
4 HDU5	5,645 LBS	5/8	
5 HDQ8	7630 LBS	7/8	
6 HHQ11	11,810 LBS	1	
7 HHQ14	13,710 LBS	1	

HOLDOWNS "SIMPSON TIES" CODE LISTING PER ICC-ESR-2330

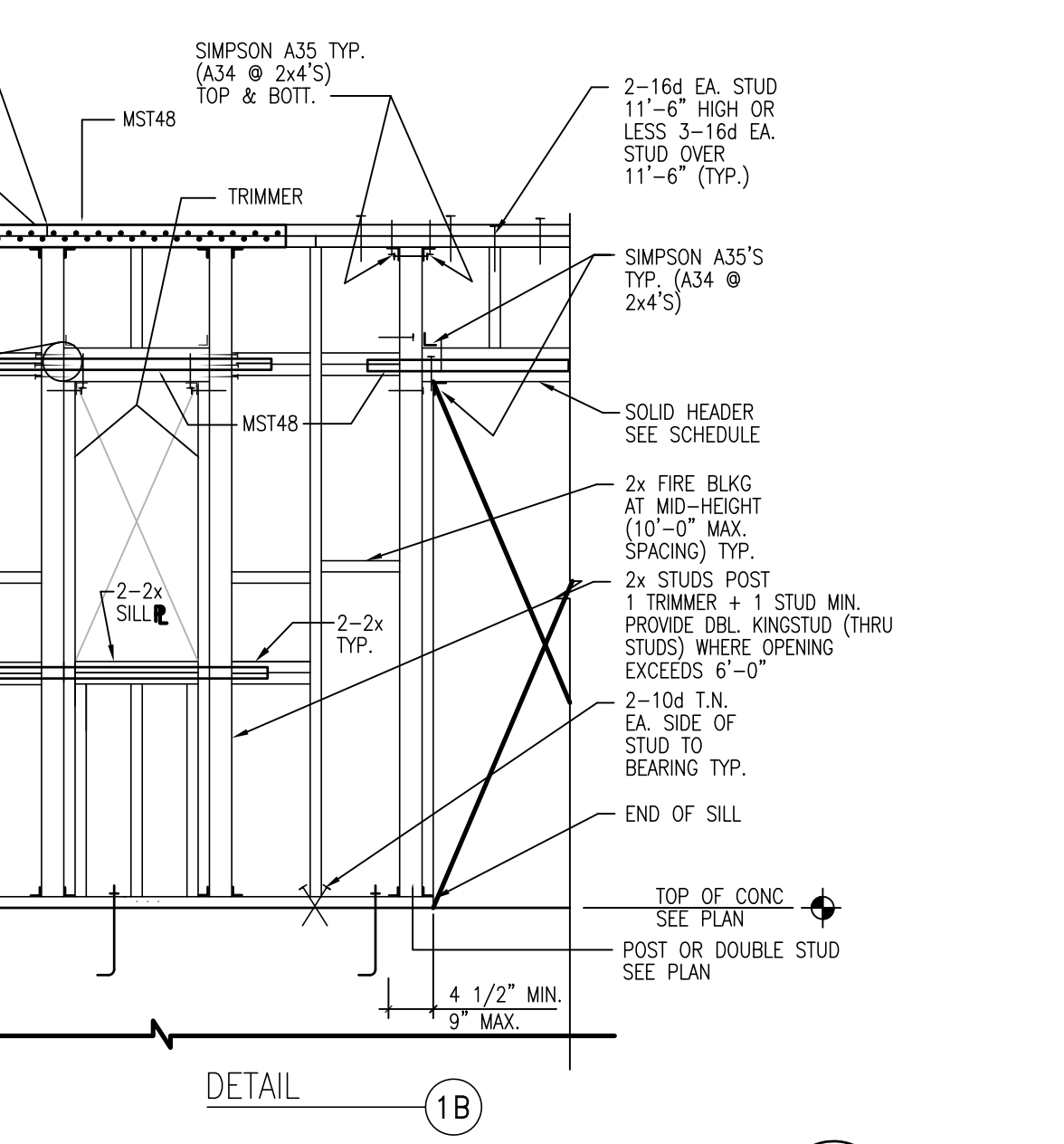
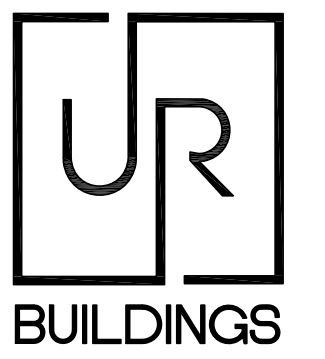
- SHEAR WALL SCHEDULE NOTES:**
- FOR SHEAR WALLS W/ ALLOWABLE SHEAR EXCEEDING 350 LB/FT, FRAMING AT ADJOINING PANEL EDGES SHALL BE 3" (INCH) NOMINAL OR THICKER (i.e. MIN 3x VERTICAL STUDS, SOLE PLATES, SILL PLATES AND BLOCKING) NAILS SHALL BE STAGGERED IN TWO LINES ALONG PANEL EDGES WHERE NAILS ARE SPACED 2" INCHES ON CENTER OR WHEN 10d COMMON NAILS SPACED 3" O.C. PENETRATE FRAMING MORE THAN 1 5/8".
 - WHERE PLYWOOD APPLIES ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6" INCHES ON CENTER ON EITHER SIDE. PANEL JOINTS SHALL HAVE MIN 3x (VERTICAL STUDS AND BLOCKING) AND NAILS SHALL BE STAGGERED. OFFSET PANEL JOINTS TO FALL ON DIFFERENT FRAMING MEMBER WHERE PLYWOOD IS PLACED AT BOTH FACES.
 - NAILS SHALL BE PLACED NOT LESS THAN 1/2 INCH FROM PANEL EDGES.
 - DEEPEN FOOTINGS AS REQUIRED AT HOLDOWNS. PROVIDE 3" MIN. DEPTH OF CONC. BELOW HOLDDOWN ANCHOR.
 - FOR HOLD-DOWNS AT THE END OF THE SHEAR WALL, SEE PLANS AND SCHEDULE. PROVIDE PLATE WASHER PER STANDARD PLATE WASHER SCHEDULE AT ALL SILL PLATE ANCHOR BOLTS AND AT ALL HOLD-DOWN BOLTS CONNECTED TO VERTICAL POSTS.
 - USE WELDED STUD BOLTS OF SAME SIZE & SPACING AS OF SILL PL. ANCH. BOLTS, WHERE STEEL BEAM OCCURS UNDER SHEAR WALL.
 - PROVIDE DOUBLE PARALLAM BLOCKING TO ACCOMMODATE 2 ROWS OF SIMPSON SDS SCREWS.
 - FOUNDATION SILL PLATE SHALL BE 2x. U.N.O. - USE 3 x SILL PL WHEN ALLOWABLE SHEAR EXCEEDS 350#/FT. FOR ALL WALLS, PROVIDE MINIMUM TWO BOLTS PER PIECE OF SILL PLATE & ONE LOCATED WITHIN 12" AND NOT LESS THAN 7 BOLT DIAMETER OR 4 3/4" OF EACH END OF EACH SILL PLATE.
 - SIMPSON SDS 1/4"x6" WOOD SCREWS. TYP. USE 1/4"x4 1/2" SDS INTO NAILER AT STEEL BEAMS.
 - WHERE 2-2x SILL PLATE ARE USED SCREW LOWER PLATE TO FRAMING BELOW. DRILL HOLE IN UPPER SILL PLATE FOR SCREW HEAD SO THAT UPPER PLATE SITS FLAT ON LOW SILL PLATE.
 - AT (E) FOUNDATION, SILL ANCHORS SHALL BE 5/8" @ KBL EXPANSION ANCHORS W/ 5" MIN. EMBED. SPACING SHALL BE AS SAME AS ANCHOR BOLT SPACING PER SHEAR WALL SCHED.
 - PROVIDE NOT LESS THAN 5/8" DIA. ANCHOR BOLTS EMBEDMENT 7" INTO CONCRETE OR MASONRY, MAX. 4'-0" O.C. MIN. 2-BOLTS PER PLATE, ONE BOLT NOT MORE THAN 12" OR LESS THAN 4" OF PLATE ENDS. STEEL PLATES AND WASHERS SHALL BE DIPPED ZINC-COATED STEEL. SEC. 2304.9.5, 2308.6

NOTES:

- HEADERS, KINGSTUDS AND OTHER REFERENCES ON PLAN GOVERN OVER TYPICAL DETAIL
- SEE SHEARWALL PLYWOOD NAILING DETAIL FOR ADDITIONAL INFORMATION
- AT WOOD FRAMED WALLS USE SILL CONNECTION PER SHEARWALL SCHEDULE.
- WIDTH OF HEADER SHALL MATCH STUD WALL U.N.O.
- FOR FLUSH HEADER USE 6x10 MIN. TO FLUSH HEADER SEE NOTE 5



HEADER SCHEDULE			
OPEN'G WIDTH	NOMINAL DEPTH		
BEARING WALL	NON-BEARING WALL		TRIMMERS
UP TO 4'-0"	6	4	1-2x
4'-0" TO 6'-0"	8	6	2-2x
6'-0" TO 8'-0"	10	8	2-2x
8'-0" TO 10'-0"	12	10	3-2x



UR Buildings
Consulting Engineers
18001 Irvine Blvd. Suite 206
Tustin, CA 92780
Tel: (949) 929-2483
Fax: (949) 656-7722
Email: info@urbldings.com

REVISIONS	DATE

**TYPICAL DETAILS
SHEAR WALL SCHEDULES**



JOB DESCRIPTION: TWO STORY HOUSES & ADU
OWNER: MR. ANTHONY J. ETTNER
ADDRESS: 1470 MARLINE AVENUE
EL CAJON, CA 92021

DRAWN BY:

DATE: 04-01-2024

SCALE: AS NOTED

JOB NO: URB24-01470

S-1.1

SHEETS

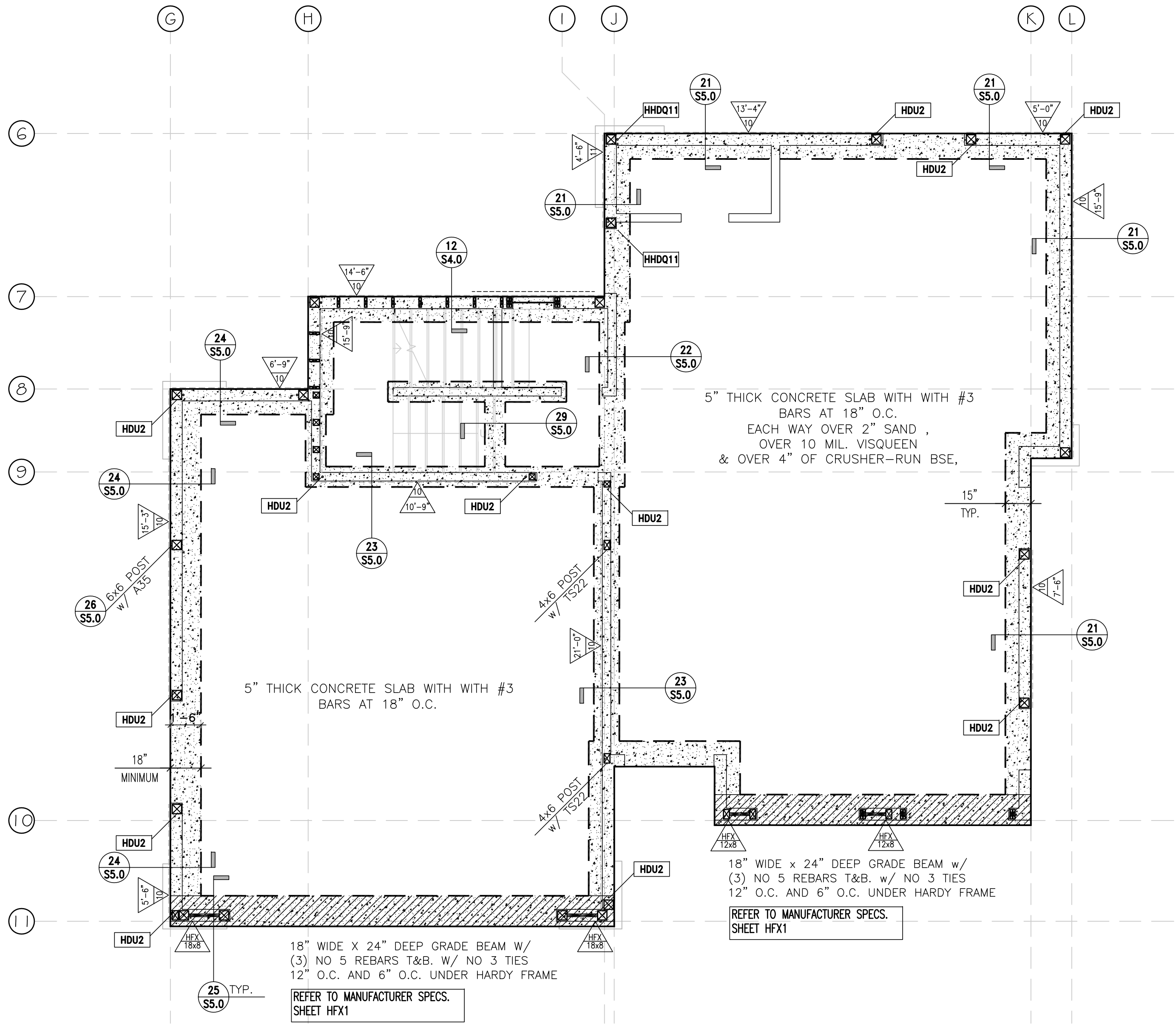
TYP. SHEAR WALL DETAILS

NOT TO SCALE

5

3

2



Foundation Plan

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

- FOUNDATION NOTES:**
1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE SHEETS S1.0 S1.1.
 2. SOIL BEARING PRESSURE: 1500 PSF.
 3. FOR GRID LINE DIMENSIONS, SEE ARCHITECTURAL DRAWINGS.
 4. CONCRETE SLAB ON GRADE: 5" THICK WITH WITH #3 BARS AT 18" O.C. EACH WAY OVER 2" SAND , OVER 10 MIL. VISQUEEN & OVER 4" OF CRUSHER-RUN BSE, COMPACTED IN PLACE BY MECHANICAL MEANS.
 5. ALL FOOTINGS SHALL EXTEND THROUGH ALL EXISTING FILL SOILS AND BE FOUNDED A MINIMUM 24 INCHES INTO COMPETENT NATIVE MATERIALS.
 6. ALL FOUNDATION EXCAVATIONS MUST BE OBSERVED AND APPROVED BY THE PROJECT ENGINEERING GEOLOGIST OR PROJECT GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL.
 7. SILL PLATE ANCHOR BOLTS AT WALLS OTHER THAN SHEAR WALLS: 3/8" WITH 9" MIN. EMBEDMENT, INSTALLED WITH PLATE WASHERS, SPACED AT 4'-0" O.C. FOR ALL WALLS, PROVIDE MINIMUM TWO BOLTS PER PIECE OF SILL PLATE & ONE LOCATED WITHIN 12" AND NOT LESS THAN 7 BOLT DIAMETER OR 4 3/4" OF EACH END OF EA. SILL PLATE.
 8. BEFORE ANY CONCRETE IS PLACED EXCAVATIONS FOR FOOTINGS SHALL BE INSPECTED AND APPROVED BY BUILDING AND SAFETY.
 9. ALL SLAB SUB GRADE AREAS SHALL BE PRE MOISTENED BEFORE PLACING MOISTURE BARRIER.
 10. ALL HOLDOWN HARDWARE IS TO BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.
 11. ALL HOLDOWNS SHALL BE RETIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
 12. SHEAR WALLS SHALL RUN CONTINUOUSLY FROM FOUNDATION TO ROOF OR FLOOR FRAMING.
 13. CONTRACTOR TO VERIFY THE CONDITION OF EXISTING FOOTINGS.

FOUNDATION TO BE MIN.
(N) 15" WIDEX 24" DEEP CONC. W/ 2-#5 @
TOP & BOTTOM

FOUNDATION LEGEND:

INDICATES NEW FOUNDATION

INDICATES NEW GRADE BEAM

UR Buildings
Consulting Engineers

18001 Irvine Blvd. Suite 206
Tustin, CA 92780
Tel: (949) 929-2483
Fax: (949) 656-7722
Email: info@urbldings.com

REVISIONS	DATE

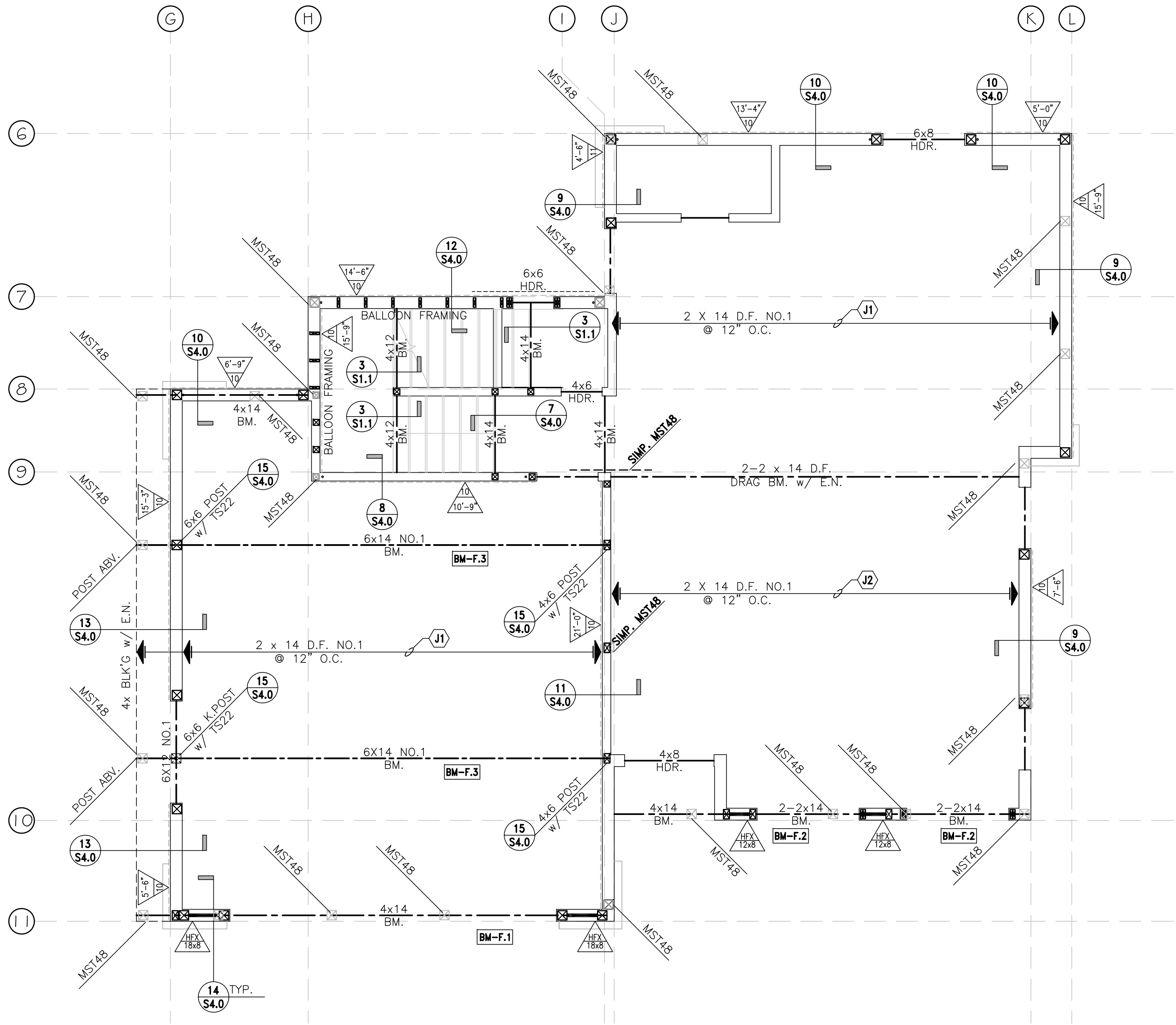
FOUNDATION PLAN

JOB DESCRIPTION: TWO STORY HOUSES & ADU

OWNER: MR. ANTHONY J. ETTNER

ADDRESS: 1470 MARLINE AVENUE
EL CAJON, CA 92021

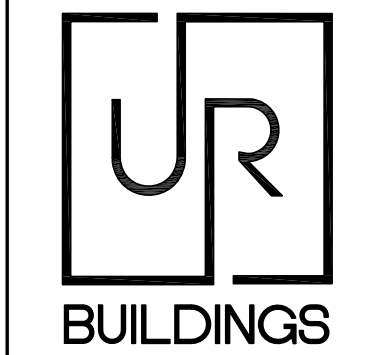
DRAWN BY :
DATE: 04-01-2024
SCALE: AS NOTED
JOB NO: URB24-01470
<div>S-2.0</div> <div>SHEETS</div>



2nd Floor Framing Plan

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

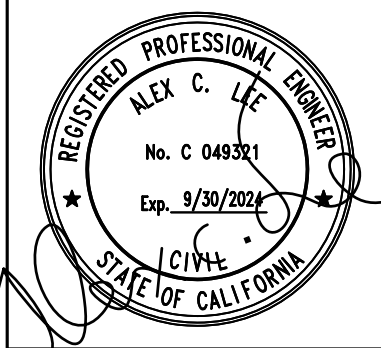
- NOTES:**
1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE SHEETS S1.0, S1.1
 2. PLYWOOD ROOF SHEATHING: 1/2" CDX PLWD. (PANEL IDENTIFICATION INDEX 24/0) NAILED WITH 10d COMMONS SPACED AT 6" O.C. ALONG ALL BOUNDARIES (B.N.) AND PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.). UNBLOCKED PANEL EDGES, SEE TYP. DETAILS.
 3. PLYWOOD FLOOR SHEATHING : 3/4" T&G CDX PLWD. (PANEL IDENTIFICATION INDEX 48/24) NAILED WITH 10d COMMONS SPACED AT 4" O.C. ALONG BOUNDARIES (B.N.), 6" ALONG PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.). BLOCK ALL PANEL EDGES, SEE TYP. DETAILS.
 4. PLYWOOD WALL SHEATHING: AT ALL EXTERIOR WALLS OTHER THAN SHEAR WALLS, 1/2" CDX PLYWOOD NAILED WITH 8d COMMONS SPACED AT 6" O.C. ALONG ALL PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.)
 5. ALL EXTERIOR & INTERIOR BEARING & SHEAR WALLS FRAMING: 2X4 STUDS AT 16" O.C. USE 3X4 STUD WALL @ 16" O.C. WHEN BEARING WALL 12 FT AND HIGHER
 6. ALL POSTS ARE 4x DEPTH OF WALL U.N.O.
 7. TOP PLATE SPLICE -LAP PLATE 48" MIN. WITH (20) 16D NAILS OR SIMP. MST48 (U.O.N.).
 8. ALL STRUCTURAL HARDWARE TO BE "SIMPSON STRONG TIE" SILVER METAL W/ LATEST ACCEPTED I.C.C. APPROVALS (U.O.N.).
 9. PROVIDE STEEL PLATE TIES (16 GA. MIN. 1 1/2" X 24") OR SIMPSON ST22 ACROSS TOP & OR BOTTOM PLATE WHERE INTERRUPTED OR CUT BY FRAMING MEMBER.
 10. PROVIDE SAME SIZE POST UNDER ALL POSTS FROM ABOVE (P.A.)
 11. ALL NAILING SHALL BE PER 2022 C.B.C. SEE NAILING SCHEDULE SHEET S1 (GENERAL NOTES).
 12. NOTIFY ENGINEER OF RECORD IF CERTAIN CONDITIONS ARE NOT SHOWN OR DETAILED.
 13. ALL DBL. FLOOR JOISTS SHALL BE FACE NAILED W/16D @12" O.C. STAGGERED 2" FROM EACH EDGE (U.O.N.).
 14. REFER TO ARCHITECTURAL PLANS FOR ANY DIMENSIONS DON'T SCALE STRUCTURAL PLANS
 15. ALL BEAMS SHOWN ON PLANS SHOWN BE PLACED AT CENTER OF ALL POINT LOAD FROM ABOVE OR BEARING WALL OR / SHEAR WALL
 16. PROVIDE 1 X 6 TIE JUST ABOVE CEILING JOIST WHERE CEILING JOIST ARE NOT PARALLEL LAP WITH RAFTERS AND SPIKE WITH 3-16D.
 17. BEAM BEARING ON POST TO HAVE "BC", "PC", "CC" POST CONNECTORS BEAM TO POST (U.O.N.) OR DETAILED OTHERWISE ON PLAN.
 18. WOOD BEAMS 4" & WIDER SHALL BE D.F. #1 OR BETTER (U.O.N.).



UR Buildings
Consulting Engineers
18001 Irvine Blvd. Suite 206
Tustin, CA 92780
Tel: (949) 929-2483
Fax: (949) 656-7722
Email: info@urbldings.com

REVISIONS	DATE

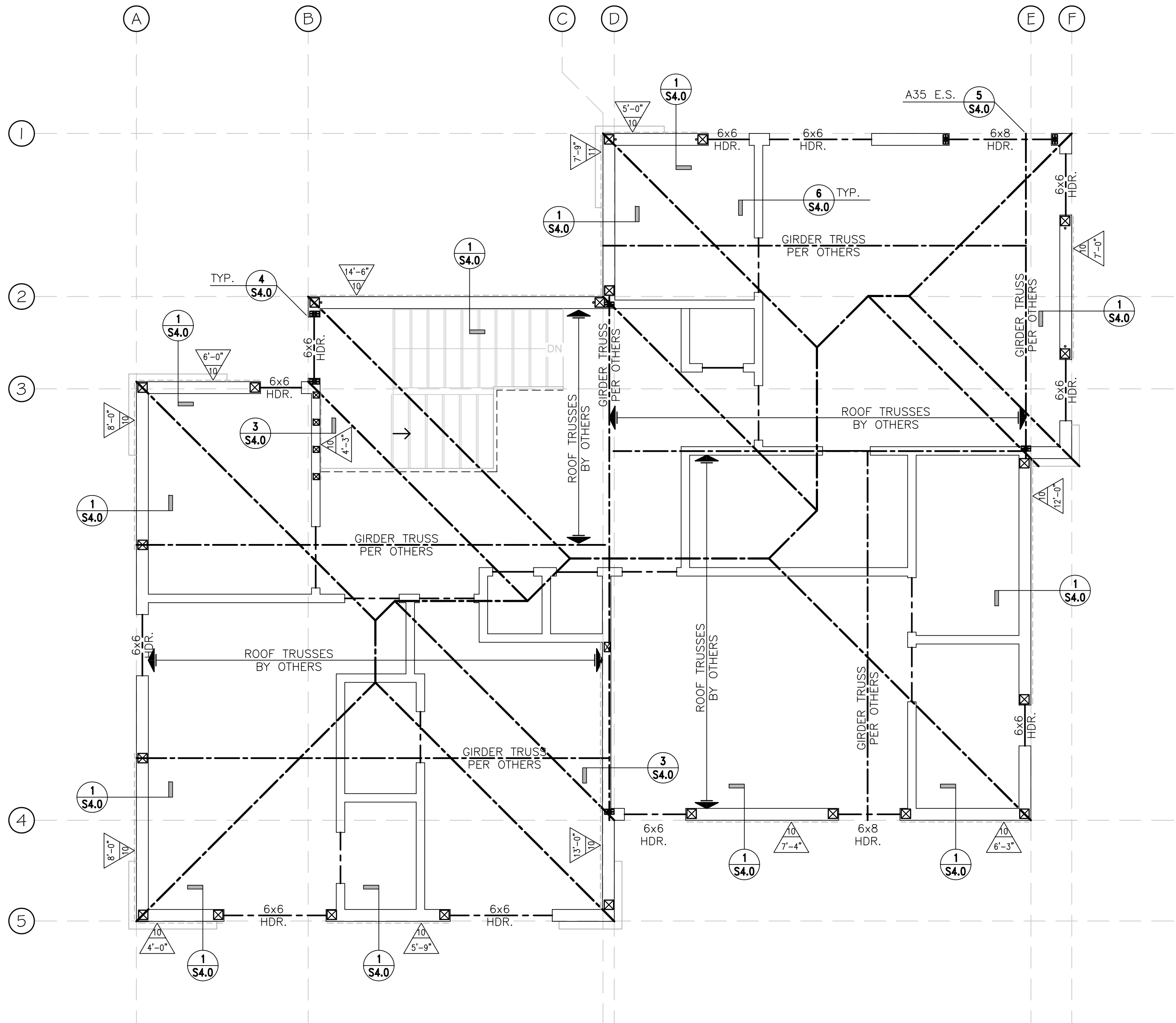
2ND FLOOR FRAMING PLAN



JOB DESCRIPTION: TWO STORY HOUSES & ADU
OWNER: MR. ANTHONY J. ETTNER
ADDRESS: 1470 MARLINE AVENUE
EL CAJON, CA 92021

DRAWN BY :
DATE: 04-01-2024
SCALE: AS NOTED
JOB NO: URB24-01470

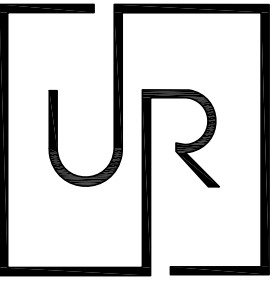
S-3.0



Roof Framing Plan

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

- NOTES:**
1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE SHEETS S1.0, S1.1
 2. PLYWOOD ROOF SHEATHING: 1/2" CDX PLWD. (PANEL IDENTIFICATION INDEX 24/0) NAILED WITH 10d COMMONS SPACED AT 6" O.C. ALONG ALL BOUNDARIES (B.N.) AND PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.), UNBLOCKED PANEL EDGES, SEE TYP. DETAILS.
 3. PLYWOOD FLOOR SHEATHING : 3/4" T&G CDX PLWD. (PANEL IDENTIFICATION INDEX 48/24) NAILED WITH 10d COMMONS SPACED AT 4" O.C. ALONG BOUNDARIES (B.N.), 6" ALONG PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.). BLOCK ALL PANEL EDGES, SEE TYP. DETAILS.
 4. PLYWOOD WALL SHEATHING: AT ALL EXTERIOR WALLS OTHER THAN SHEAR WALLS, 1/2" CDX PLYWOOD NAILED WITH 8d COMMONS SPACED AT 6" O.C. ALONG ALL PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.)
 5. ALL EXTERIOR & INTERIOR BEARING & SHEAR WALLS FRAMING: 2X4 STUDS AT 16" O.C. USE 3X4 STUD WALL @ 16" O.C. WHEN BEARING WALL 12 FT AND HIGHER
 6. ALL POSTS ARE 4x DEPTH OF WALL U.N.O.
 7. TOP PLATE SPLICE -LAP PLATE 48" MIN. WITH (20) 16D NAILS OR SIMP. MST48 (U.O.N.).
 8. ALL STRUCTURAL HARDWARE TO BE "SIMPSON STRONG TIE" SILVER METAL W/ LATEST ACCEPTED I.C.C. APPROVALS (U.O.N.).
 9. PROVIDE STEEL PLATE TIES (16 GA. MIN. 1 1/2" X 24) OR SIMPSON ST22 ACROSS TOP & OR BOTTOM PLATE WHERE INTERRUPTED OR CUT BY FRAMING MEMBER.
 10. PROVIDE SAME SIZE POST UNDER ALL POSTS FROM ABOVE (P.A.)
 11. ALL NAILING SHALL BE PER 2022 C.B.C. SEE NAILING SCHEDULE SHEET S1 (GENERAL NOTES).
 12. NOTIFY ENGINEER OF RECORD IF CERTAIN CONDITIONS ARE NOT SHOWN OR DETAILED.
 13. ALL DBL. FLOOR JOISTS SHALL BE FACE NAILED W/16D @12" O.C. STAGGERED 2" FROM EACH EDGE (U.O.N.).
 14. REFER TO ARCHITECTURAL PLANS FOR ANY DIMENSIONS DON'T SCALE STRUCTURAL PLANS
 15. ALL BEAMS SHOWN ON PLANS SHOWN BE PLACED AT CENTER OF ALL POINT LOAD FROM ABOVE OR BEARING WALL OR / SHEAR WALL.
 16. PROVIDE 1 X 6 TIE JUST ABOVE CEILING JOIST WHERE CEILING JOIST ARE NOT PARALLEL LAP WITH RAFTERS AND SPIKE WITH 3-16D.
 17. BEAM BEARING ON POST TO HAVE "BC", "PC" , "CC" POST CONNECTORS BEAM TO POST (U.O.N.) OR DETAILED OTHERWISE ON PLAN.
 18. WOOD BEAMS 4" & WIDER SHALL BE D.F. #1 OR BETTER (U.O.N.).



UR Buildings
Consulting Engineers
18001 Irvine Blvd. Suite 206
Tustin, CA 92780
Tel: (949) 929-2483
Fax: (949) 656-7722
Email: info@urbldings.com

REVISIONS	DATE

ROOF FRAMING PLAN



JOB DESCRIPTION: TWO STORY HOUSES & ADU
OWNER: MR. ANTHONY J. ETTNER
ADDRESS: 1470 MARLINE AVENUE
EL CAJON, CA 92021

DRAWN BY :

DATE: 04-01-2024

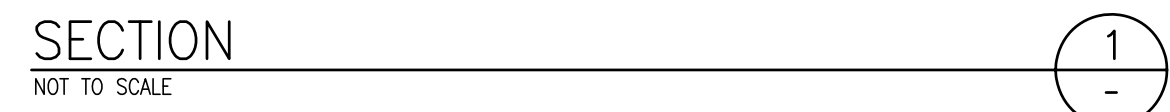
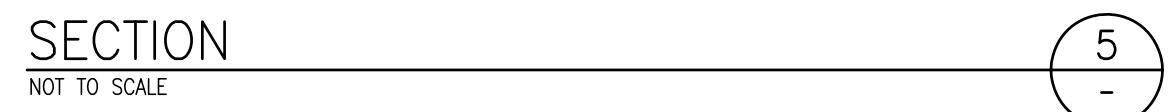
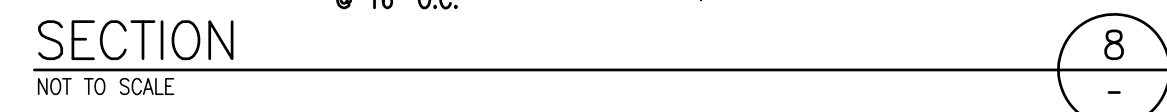
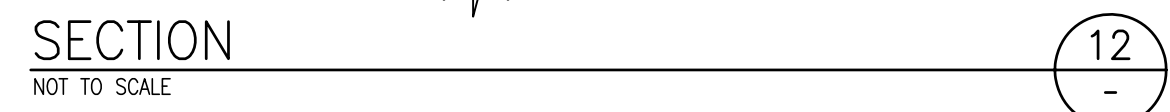
SCALE: AS NOTED

JOB NO: URB24-01470

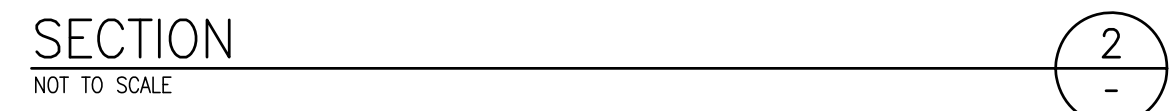
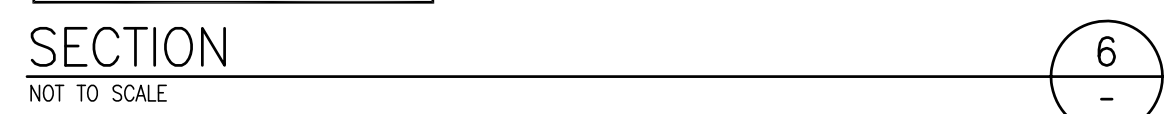
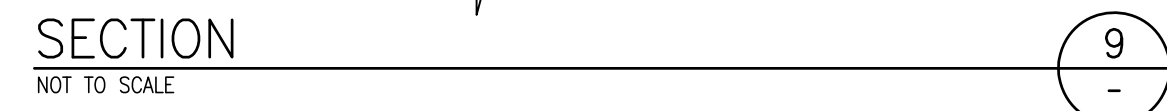
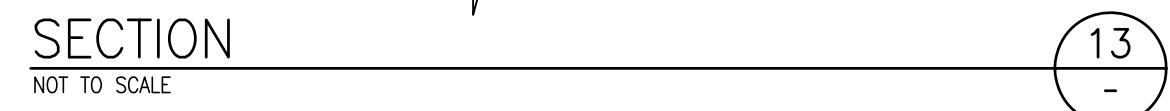
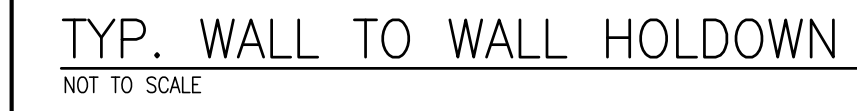
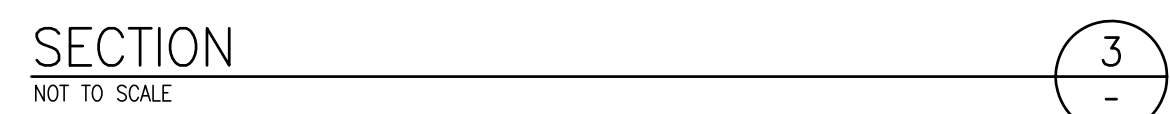
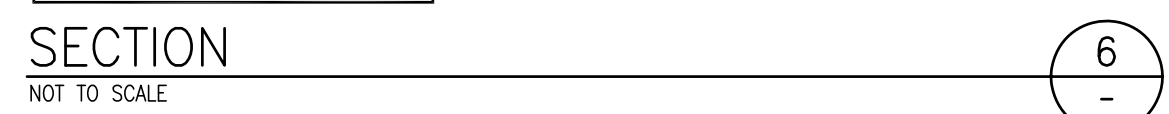
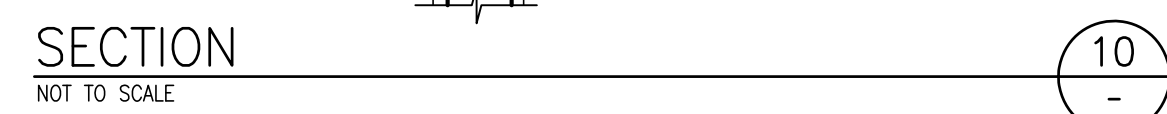
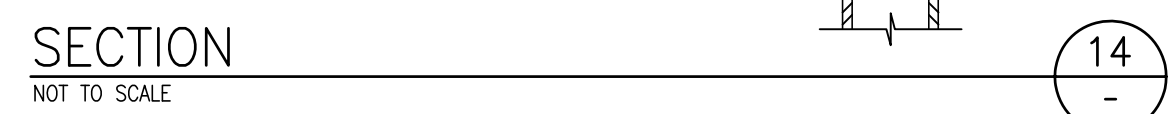
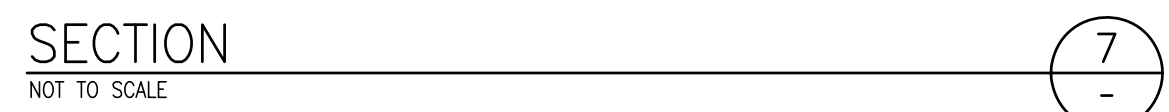
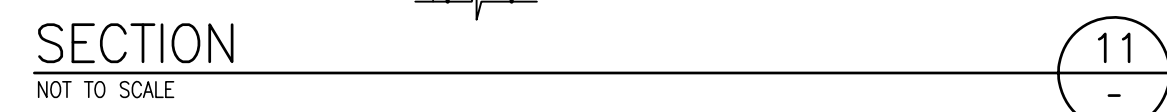
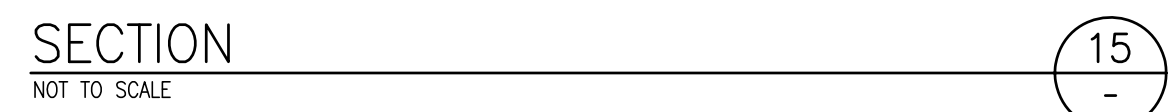
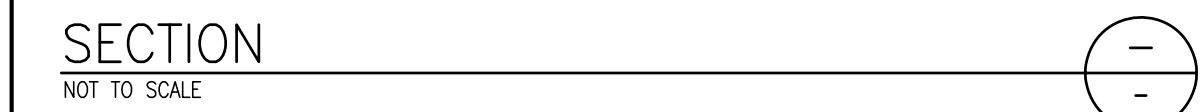
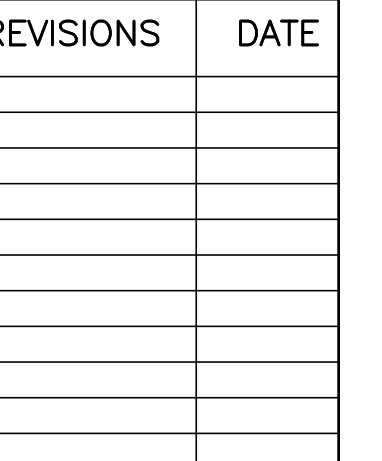
S-3.1

SHEETS

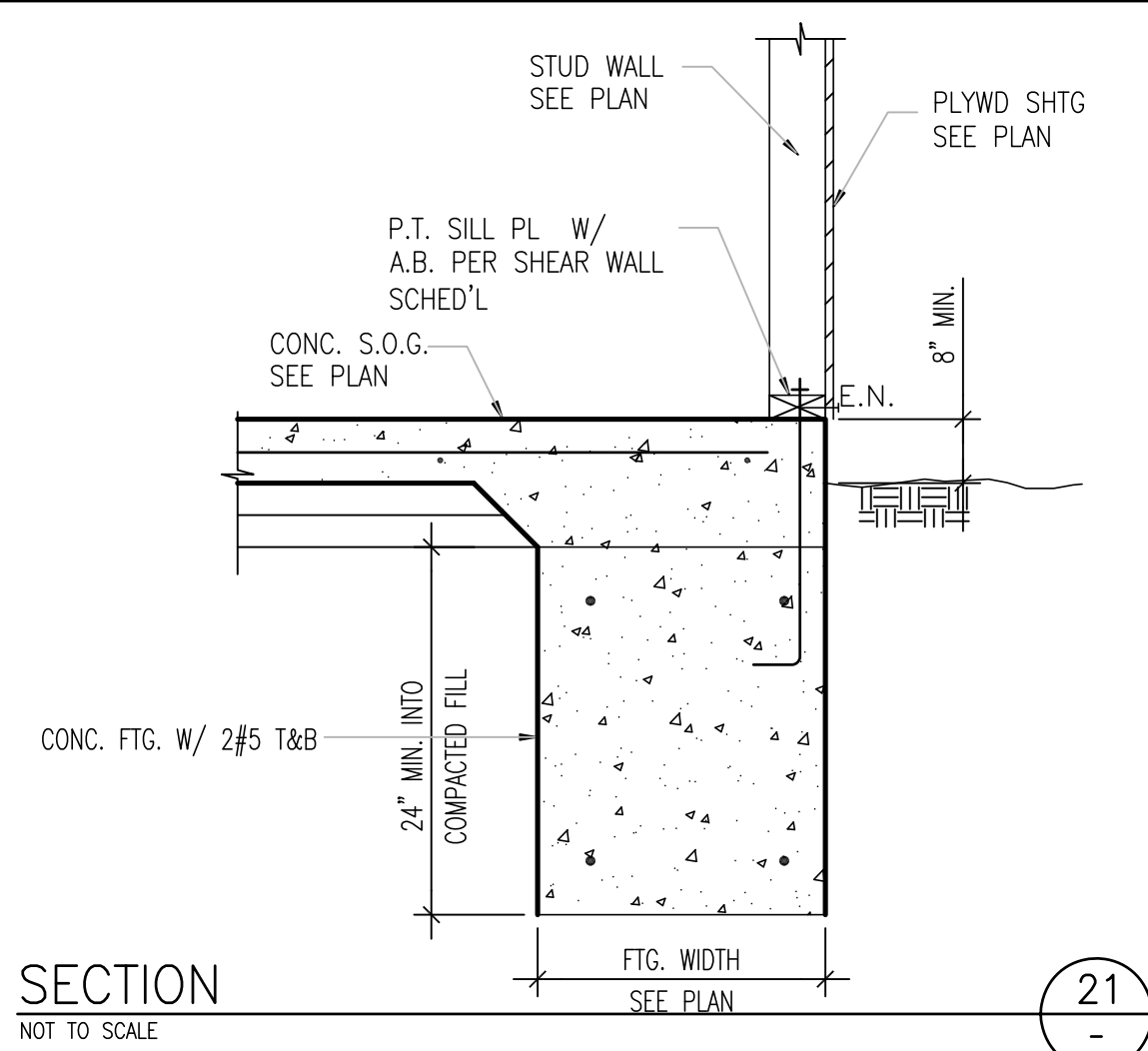
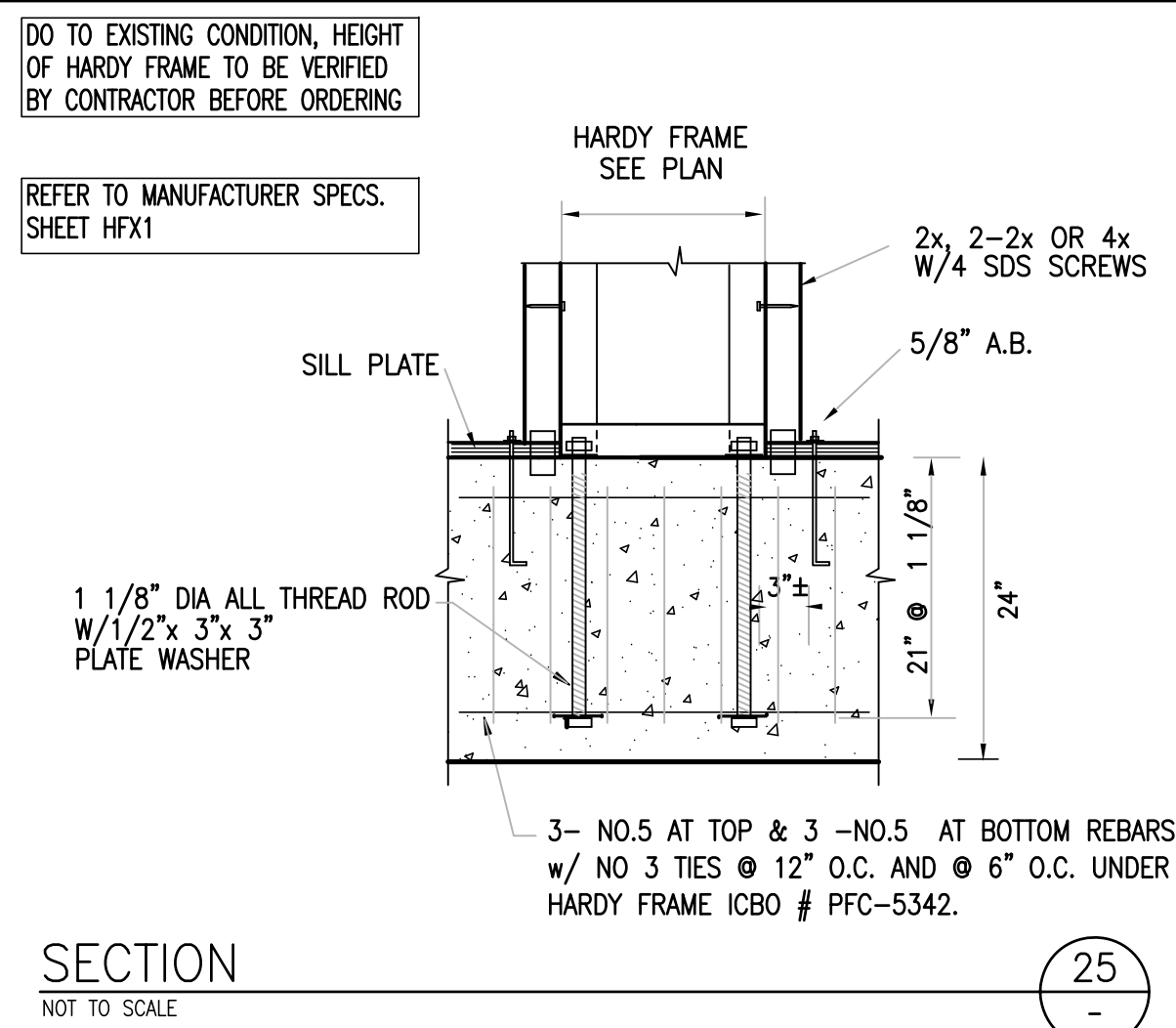
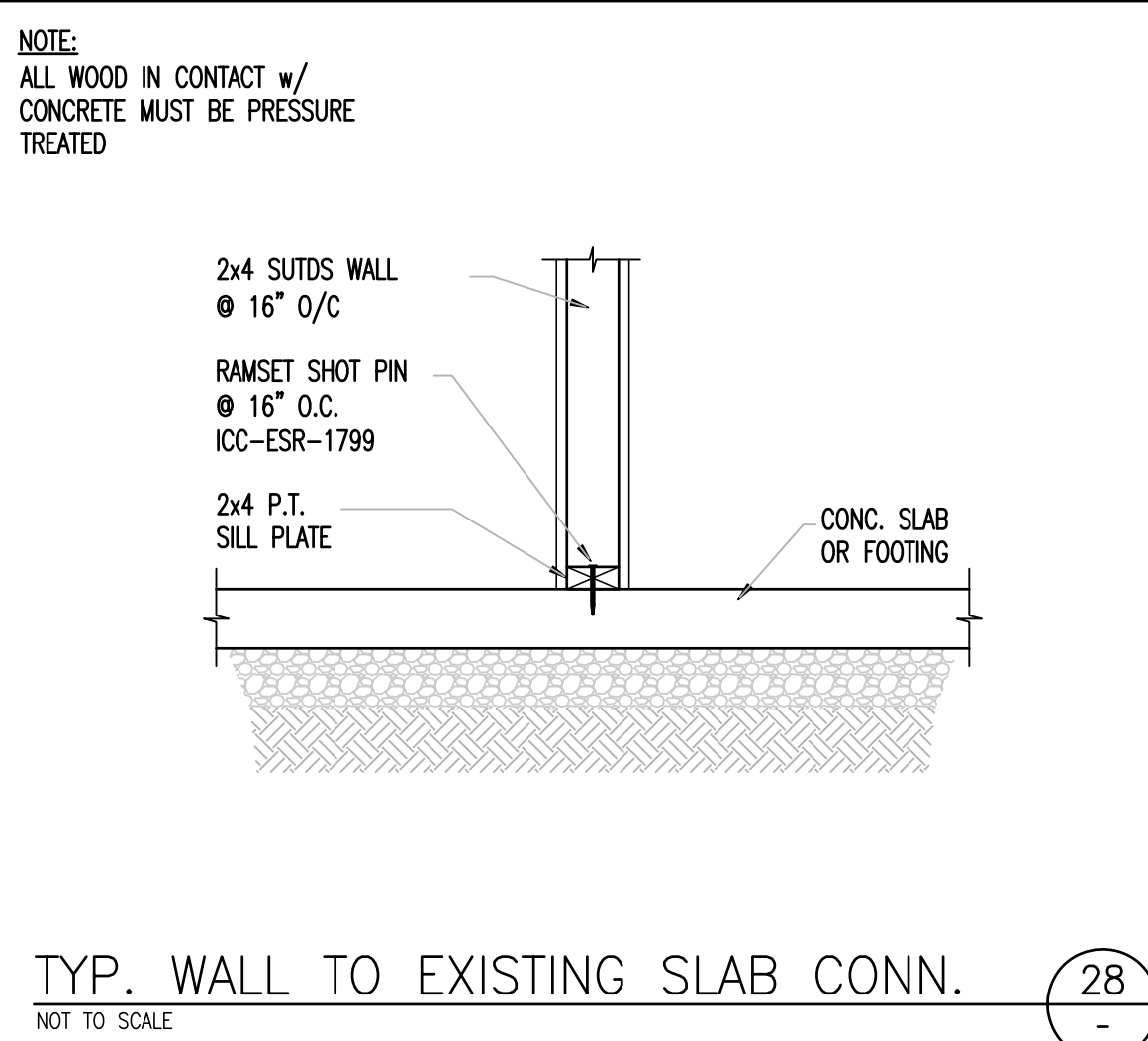
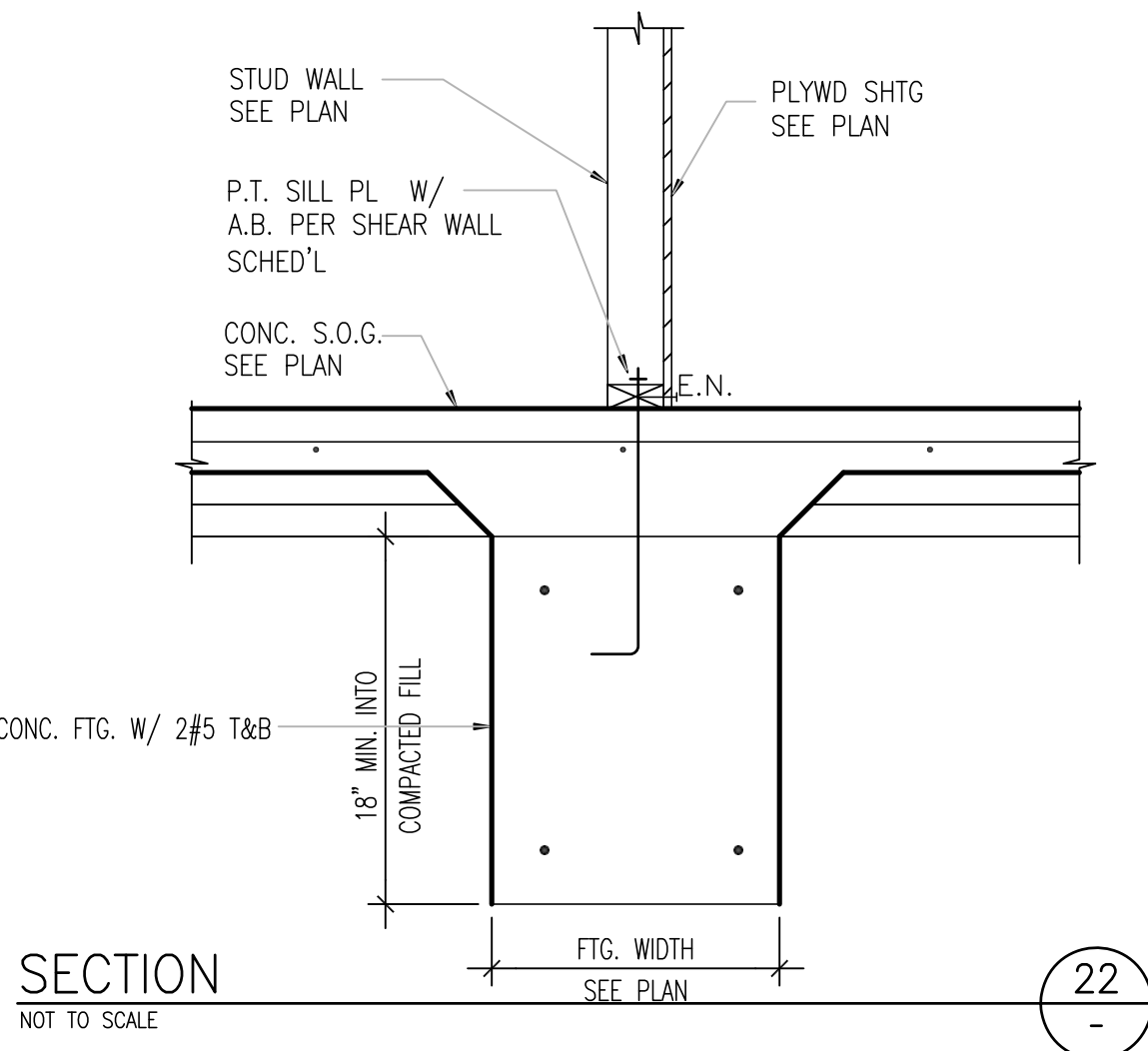
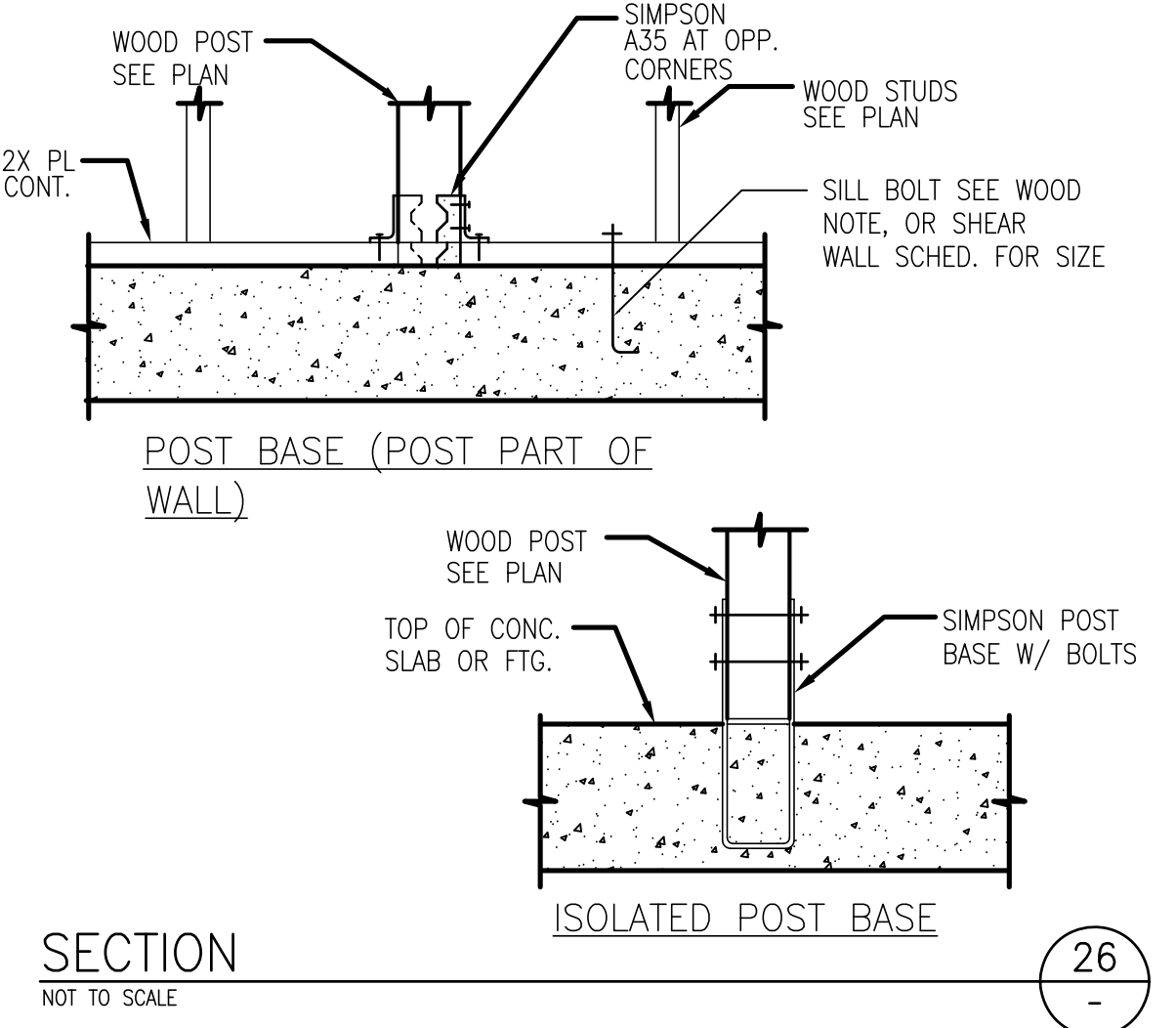
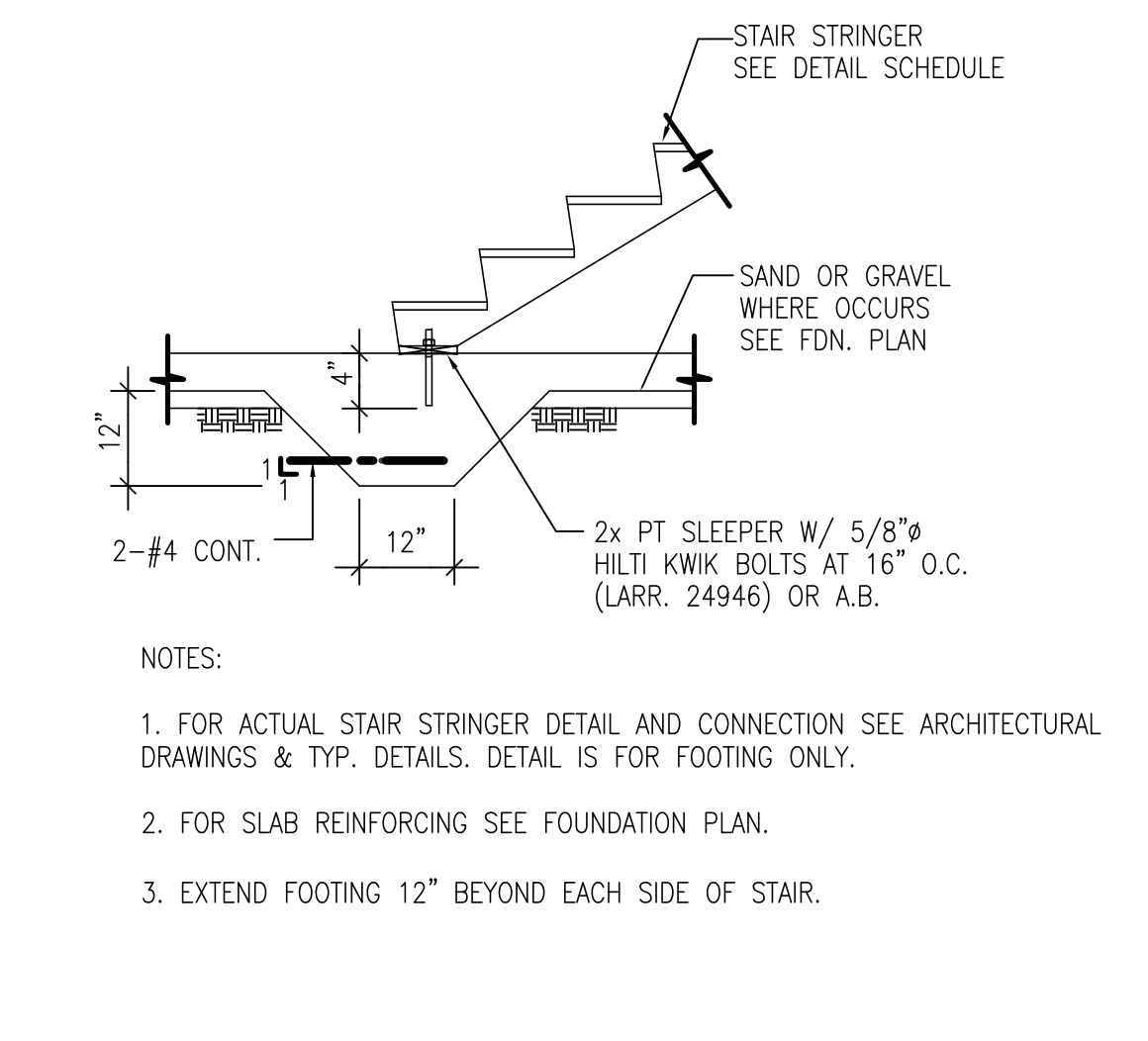
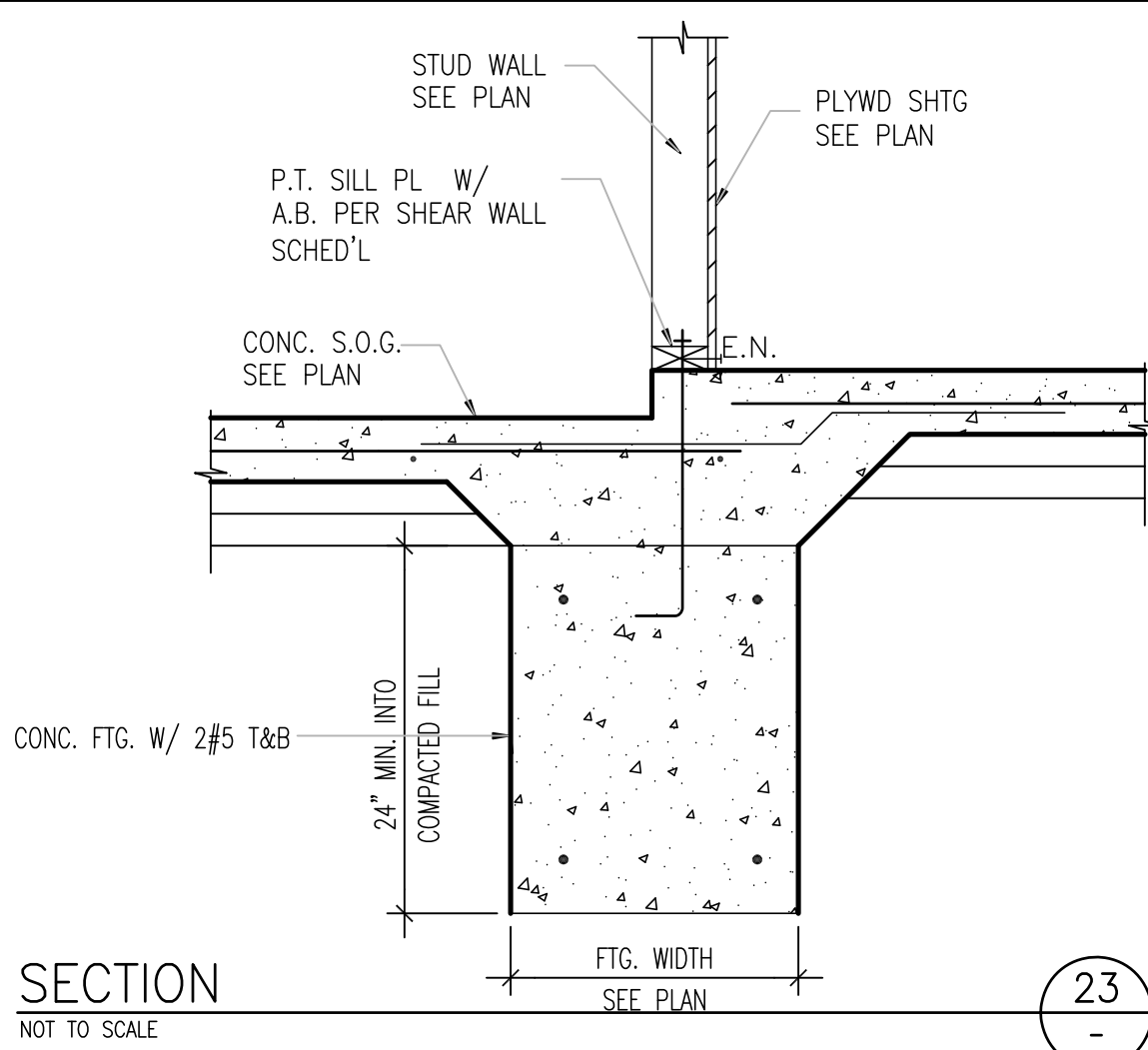
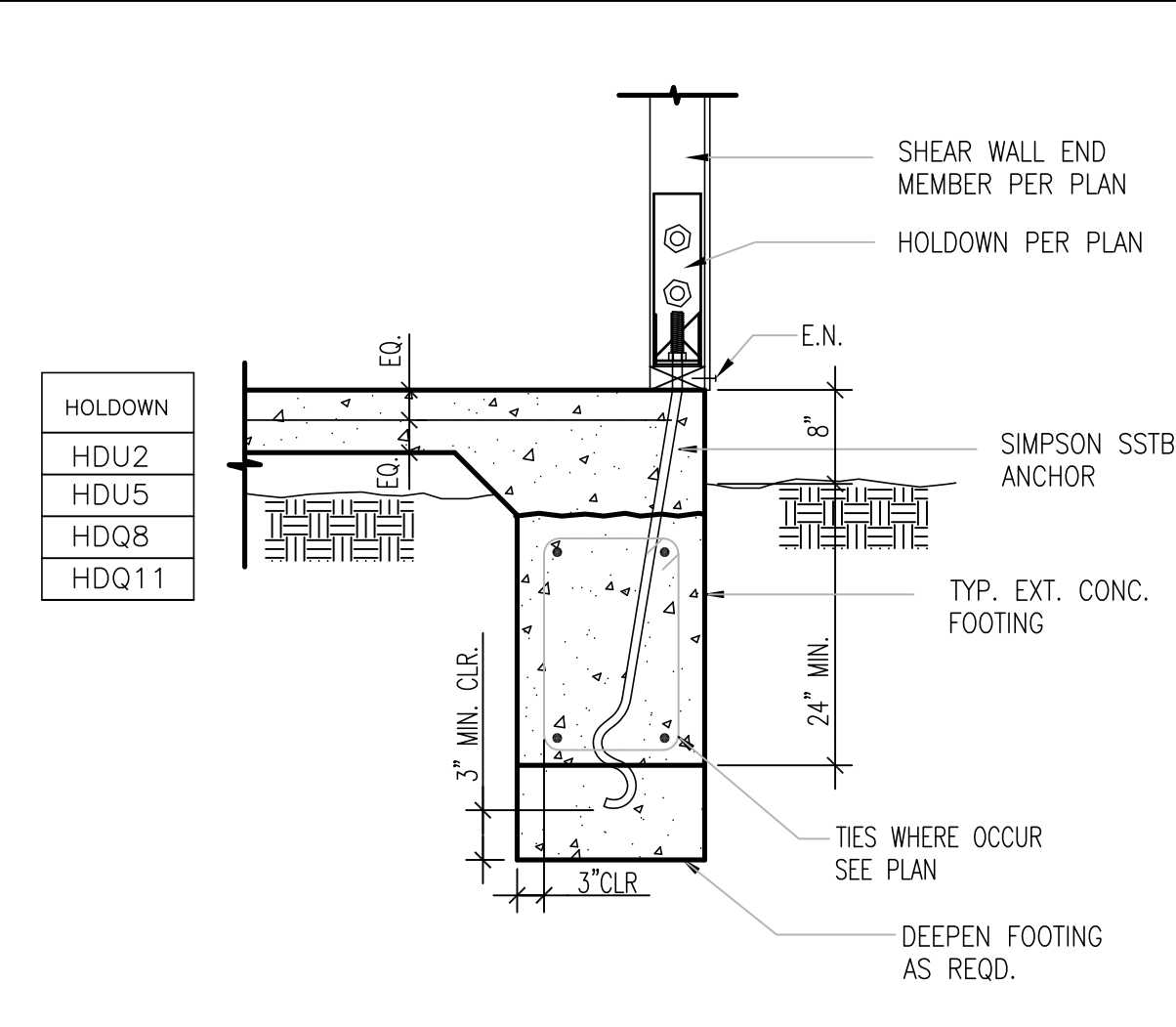
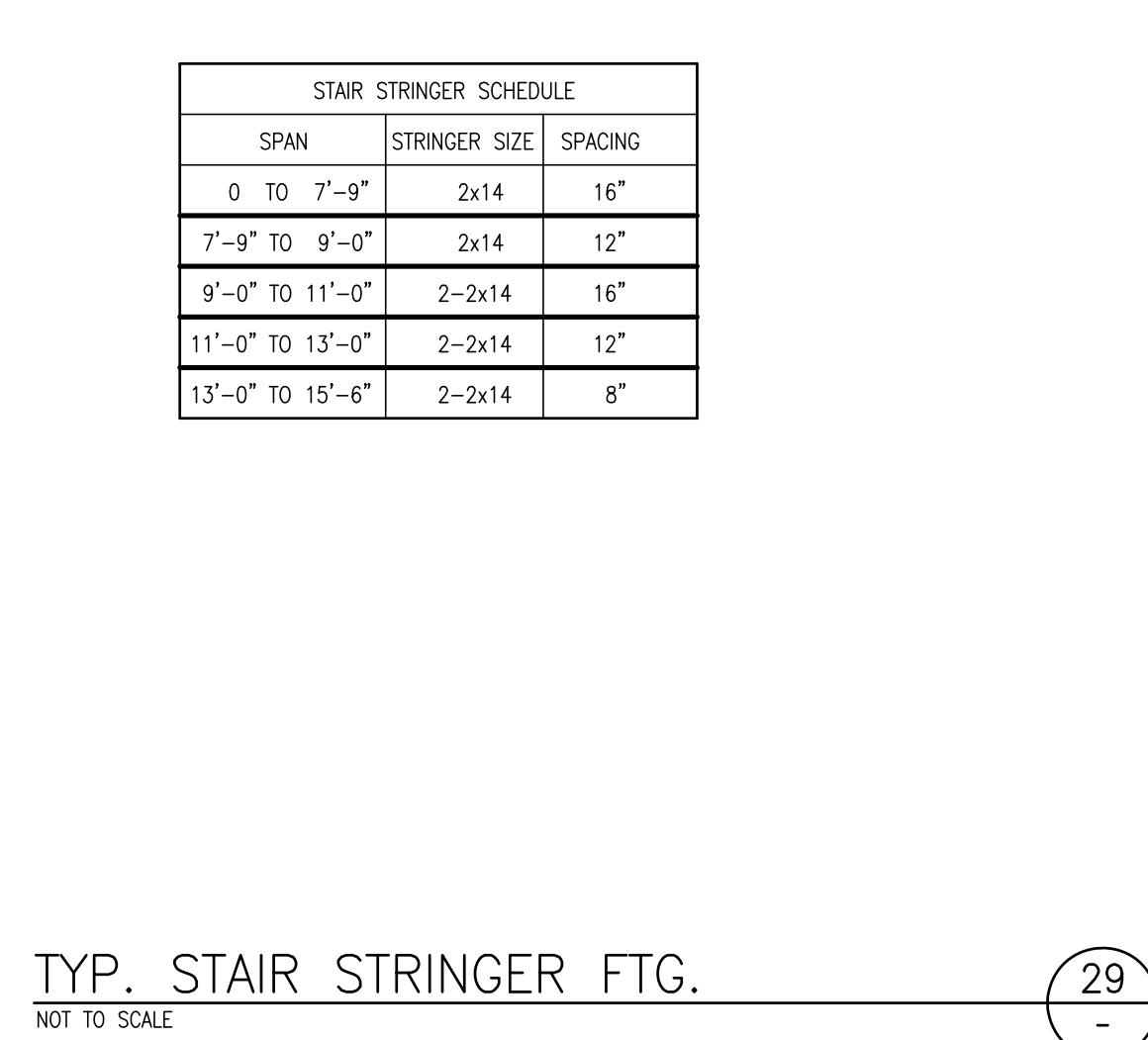
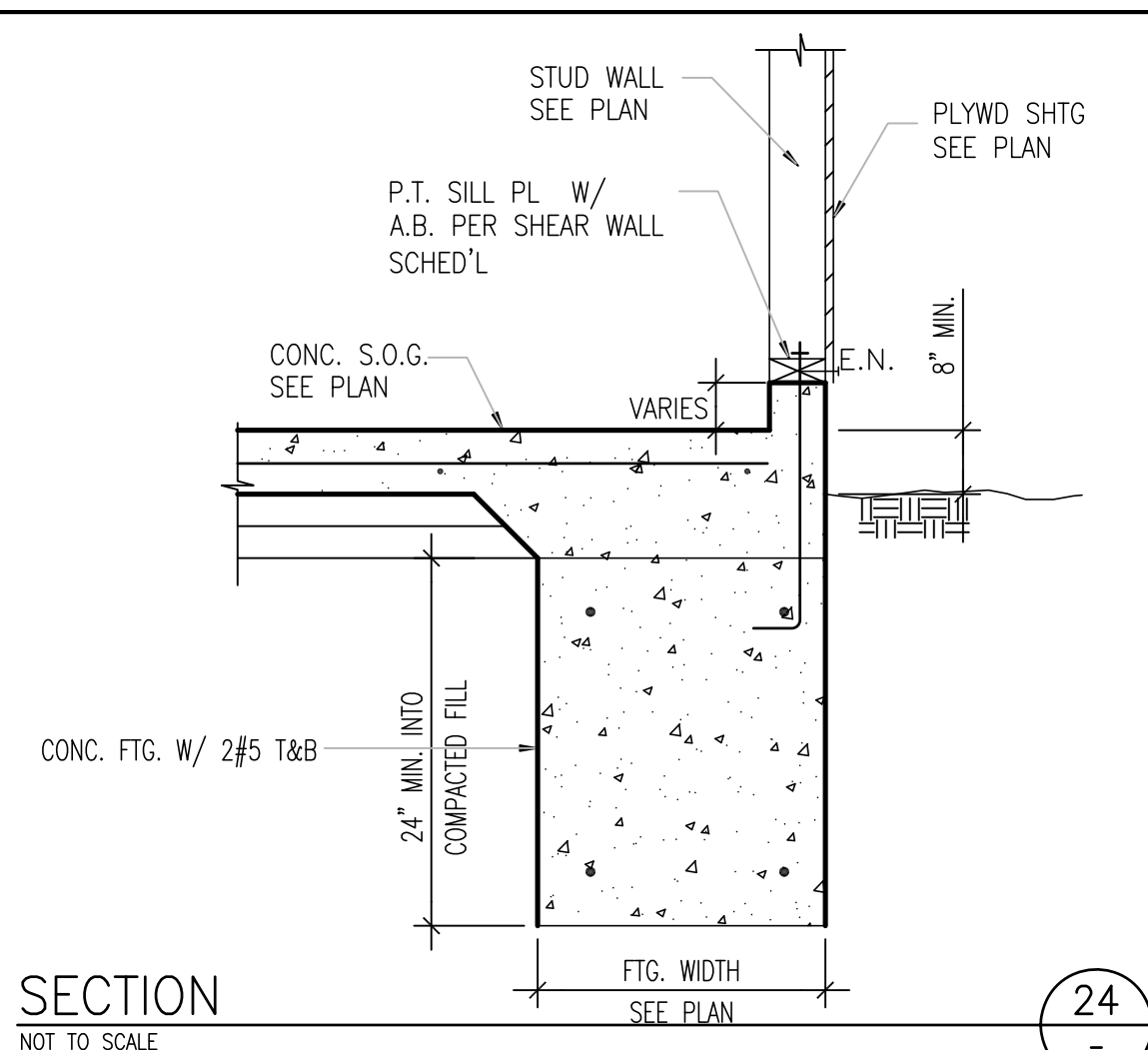
ETS



WOOD JOIST / BMS TO WOOD BM. 16
NOT TO SCALE -



ETS



SSTB SCHEDULE					CODES: ICBO 4935, CITY OF LA RR 25152 FOR CONCRETE FOUNDATION ONLY HOLD DOWN MODEL NO
MODEL NO	STEM WIDTH	DIA.	LENG.	MINIMUM EMBED	
SSTB16	6	5/8	17	12	HDU2, HD2A, HTT16
SSTB20	6	5/8	21	16	HDU4, HD5A, MIT28B
SSTB24	6	5/8	25	20	HTT22
SSTB28	8	7/8	29	24	HDU5, HD6A, HD8A, HD10A
SSTB34	8	7/8	34	28	
SSTB36	8	7/8	36	30	

CODES: BOCA, ICBO, SBCCI
 NER-39.3, NER-469,CITY
 OF L.A. RR 2468, RR
 25158 AND RR 25293

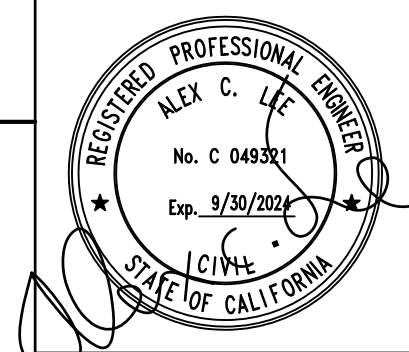
SECTION

NOT TO SCALE

27

[illegible]

Structural Details



JOB DESCRIPTION: TWO STORY HOUSES & ADU
OWNER: MR. ANTHONY J. ETTNER
ADDRESS: 1470 MARLINE AVENUE
EL CAJON, CA 92021

DRAWN BY :

DATE: 04-01-2024

SCALE: AS NOTED

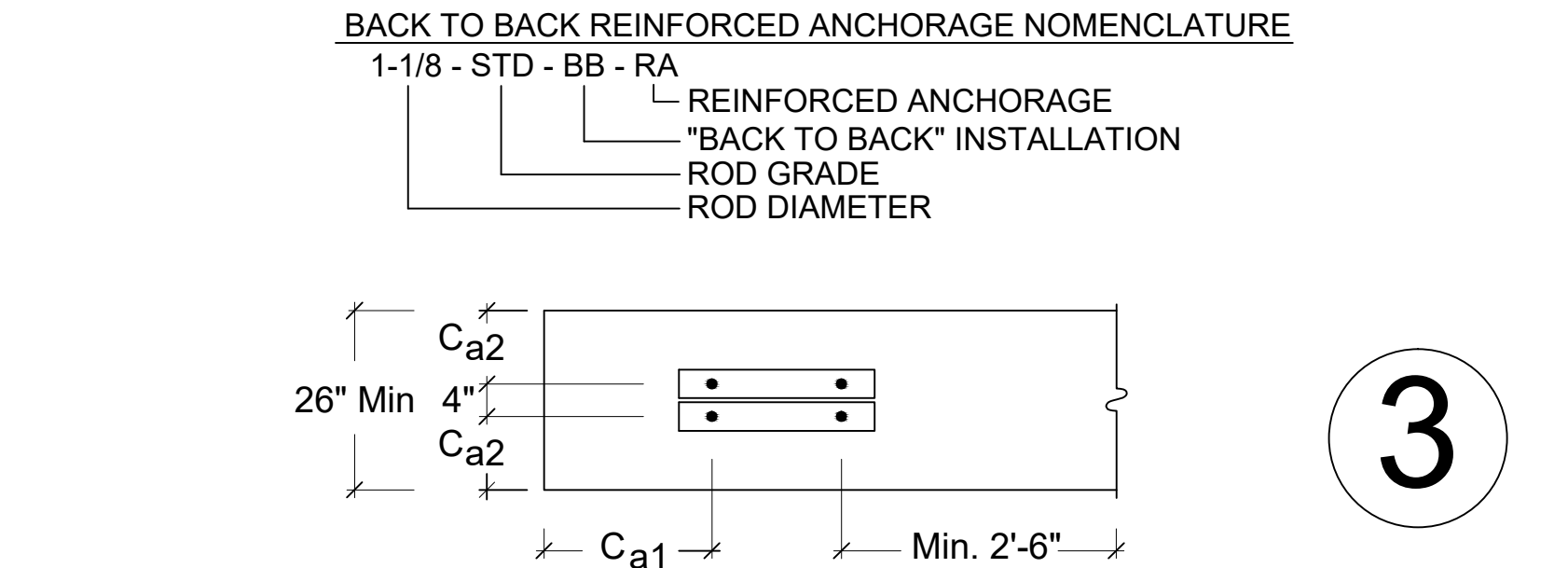
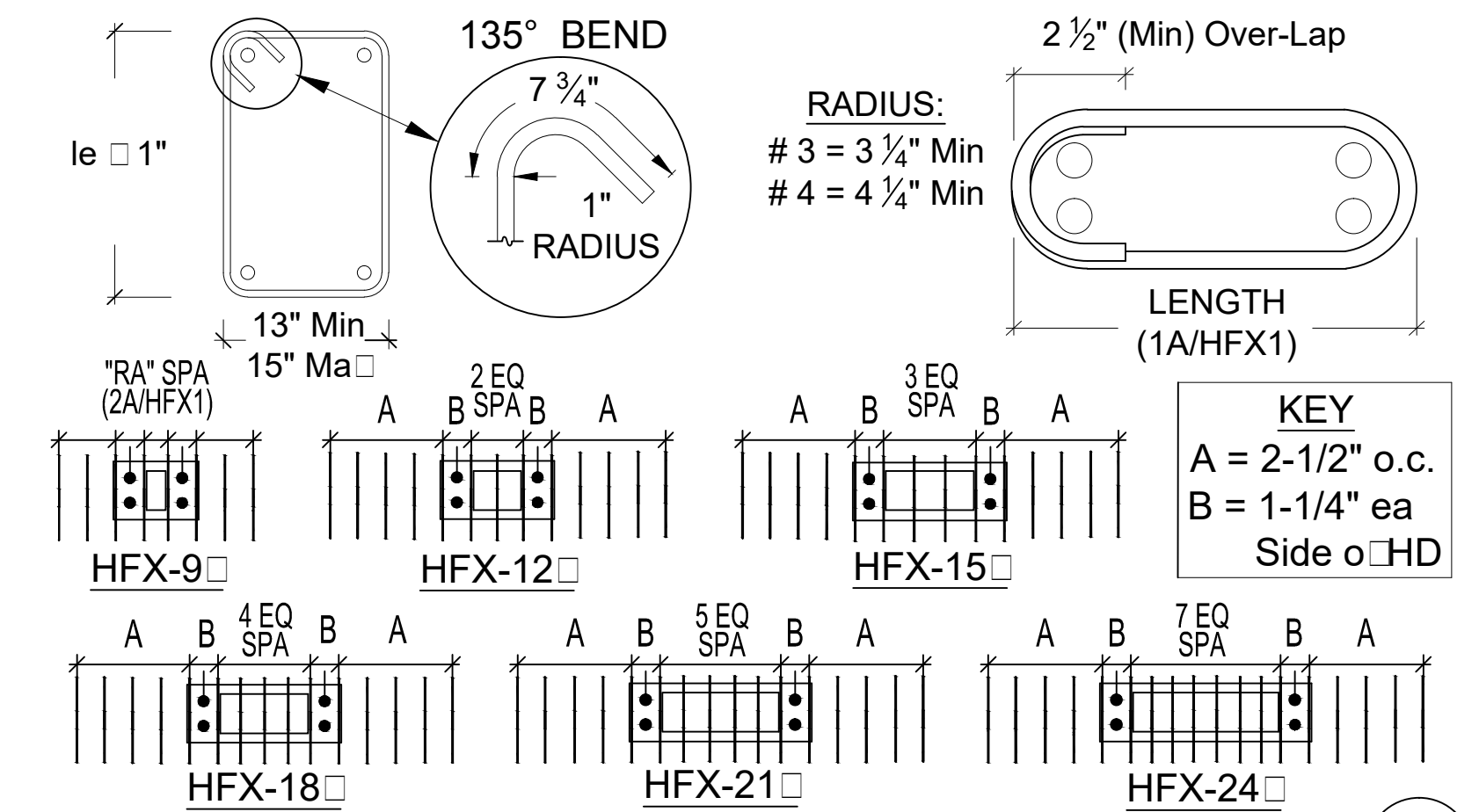
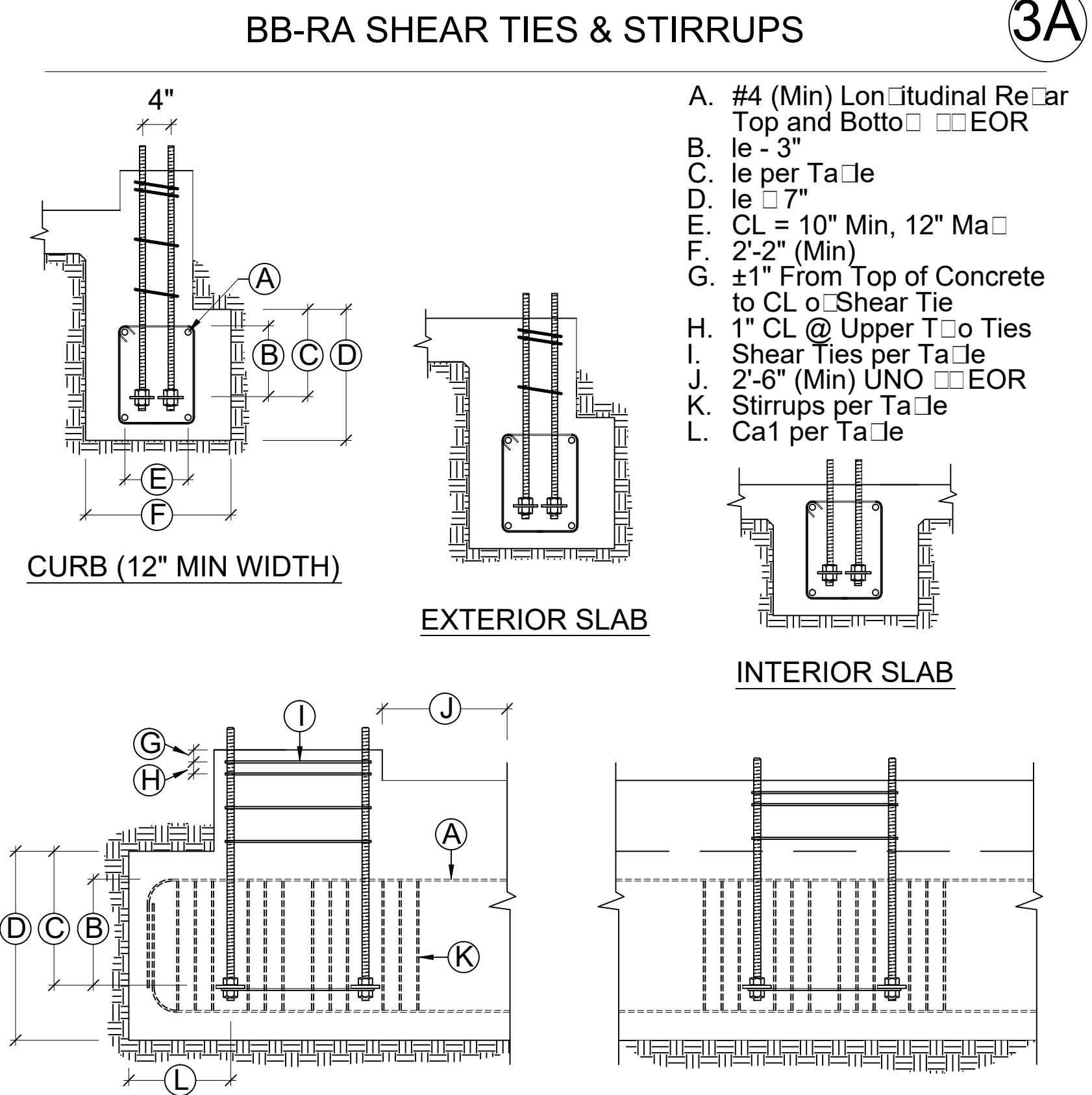
JOB NO: URB24-01470

S-5.0

SHEETS

BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

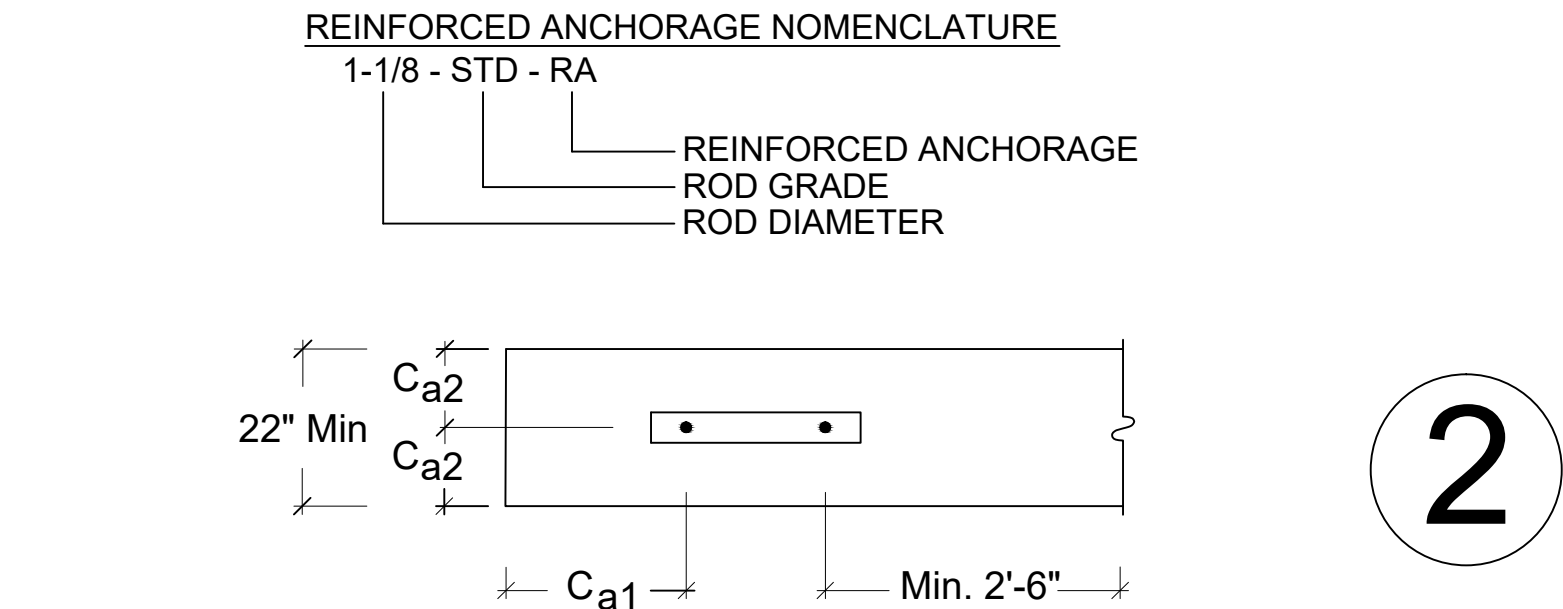
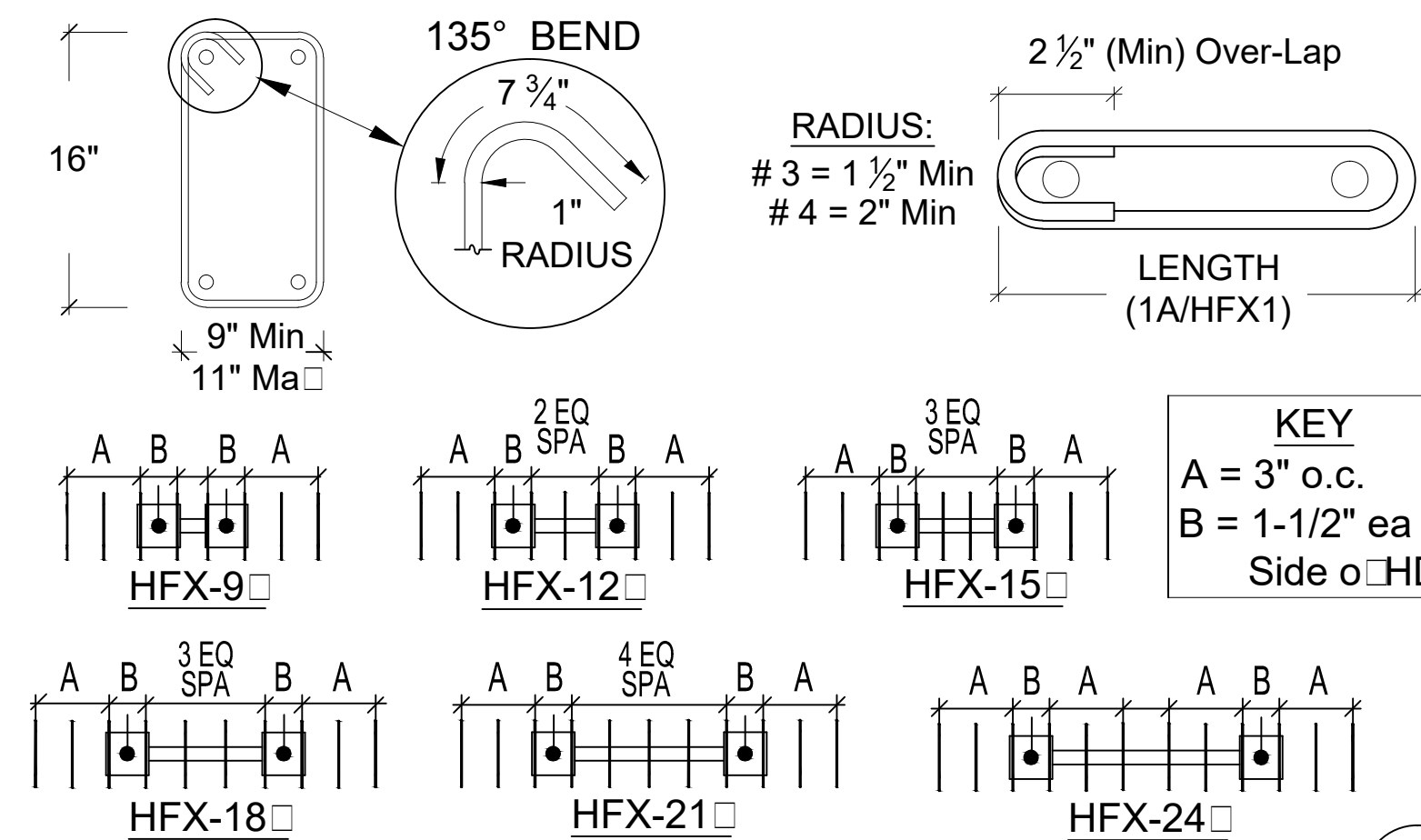
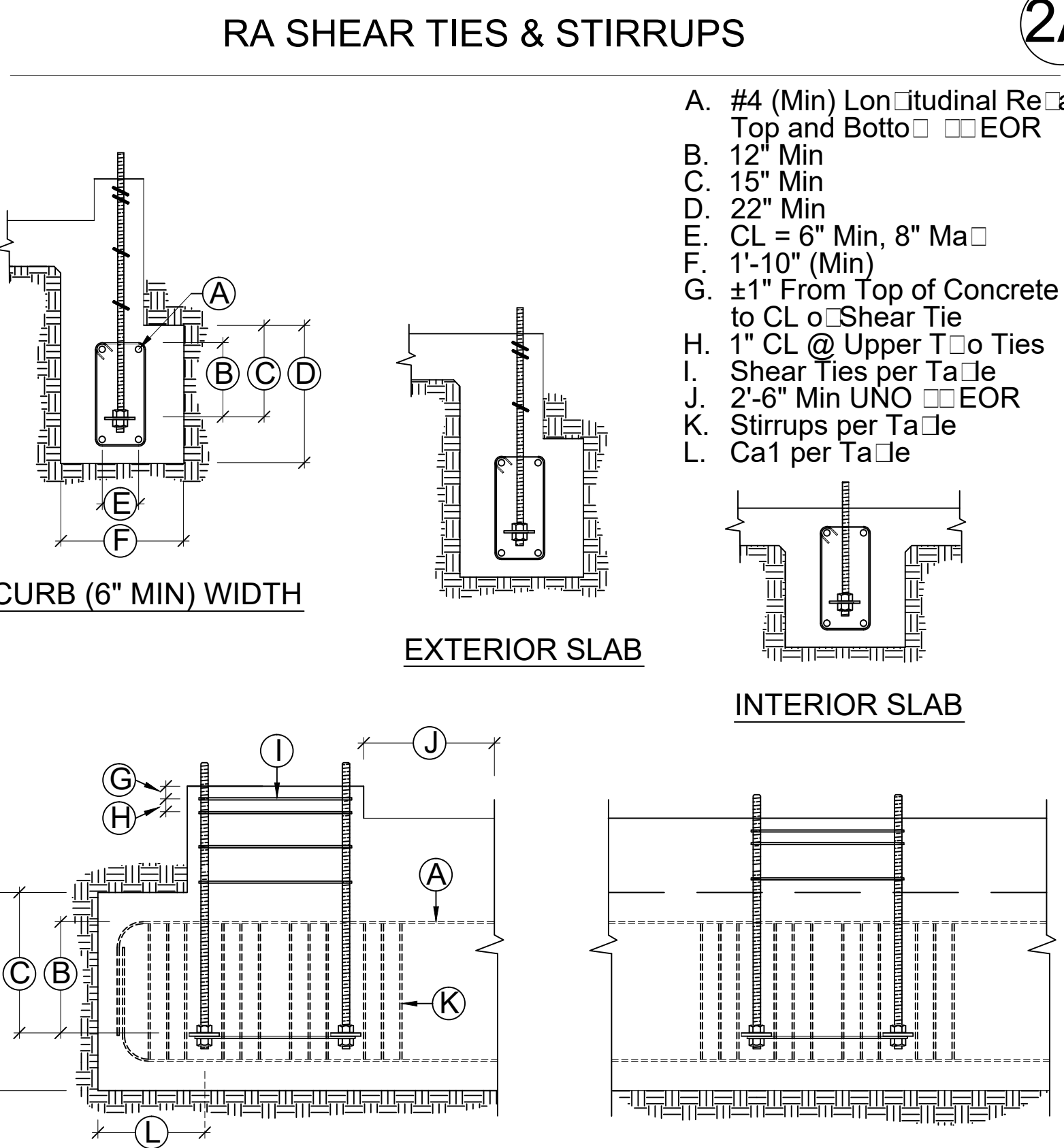
Model	Panel Width (in)	Anchor ^a 1	Rod Dia (in)	Rod 2,3 Grade	le ⁴ (in)	Ca ⁵ 1 (in)	Ca ⁶ 2 (in)	Stirrups ⁹ (in)	Shear ⁷ Ties	
HFX-9	9	1-1/8-STD-BB-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (□ in) @ 3-3/4" OC	
HFX-12	12	1-1/8-STD-BB-RA		STD	23			20-5/8	13 - # 4	# 3 (□ in) @ 4" OC
		1-1/8-HS-BB-RA		HS						
HFX-15	15	1-1/8-STD-BB-RA		STD		14 - # 4			# 4 (□ in) @ 4" OC	
		1-1/8-HS-BB-RA		HS						
HFX-18	18	1-1/8-STD-BB-RA		STD	15 - # 4					
		1-1/8-HS-BB-RA		HS						
HFX-21	21	1-1/8-STD-BB-RA		STD						
		1-1/8-HS-BB-RA	HS	16 - # 4						
HFX-24	24	1-1/8-STD-BB-RA	STD	18 - # 4						
		1-1/8-HS-BB-RA	HS							



BB-RA SECTIONS & ELEVATIONS

REINFORCED ANCHORAGE (RA)

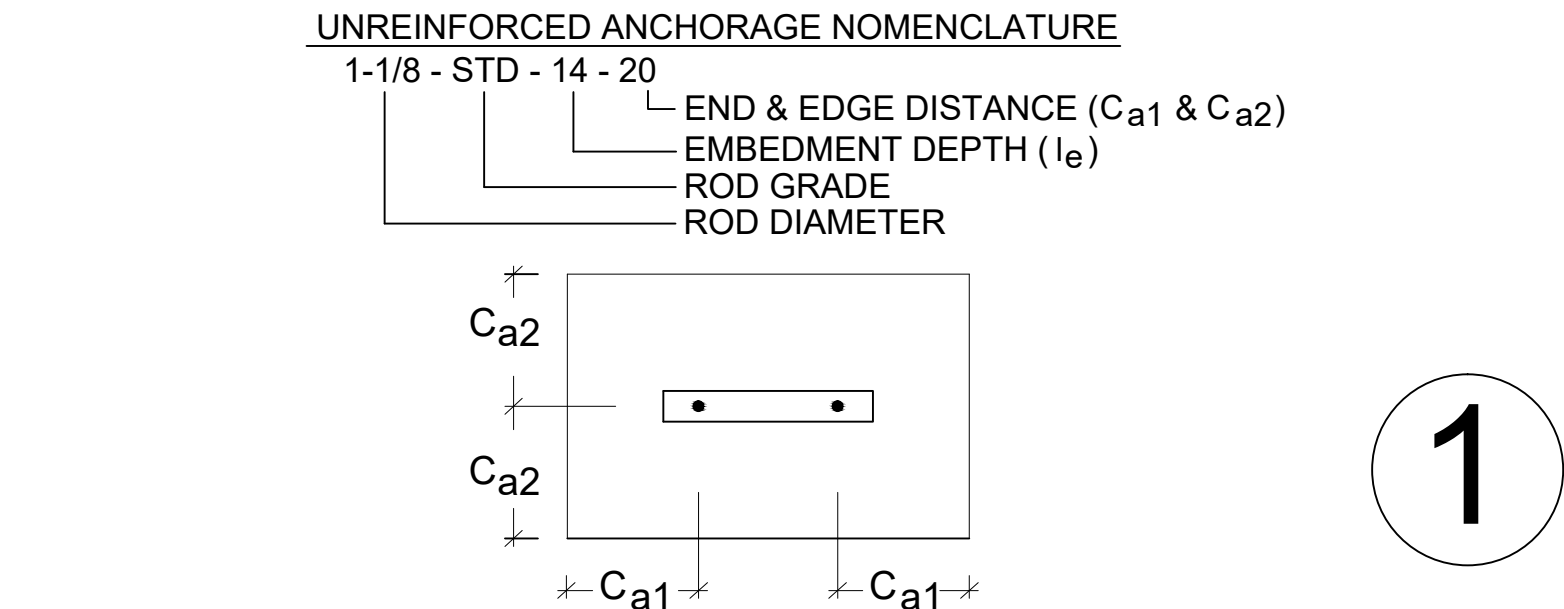
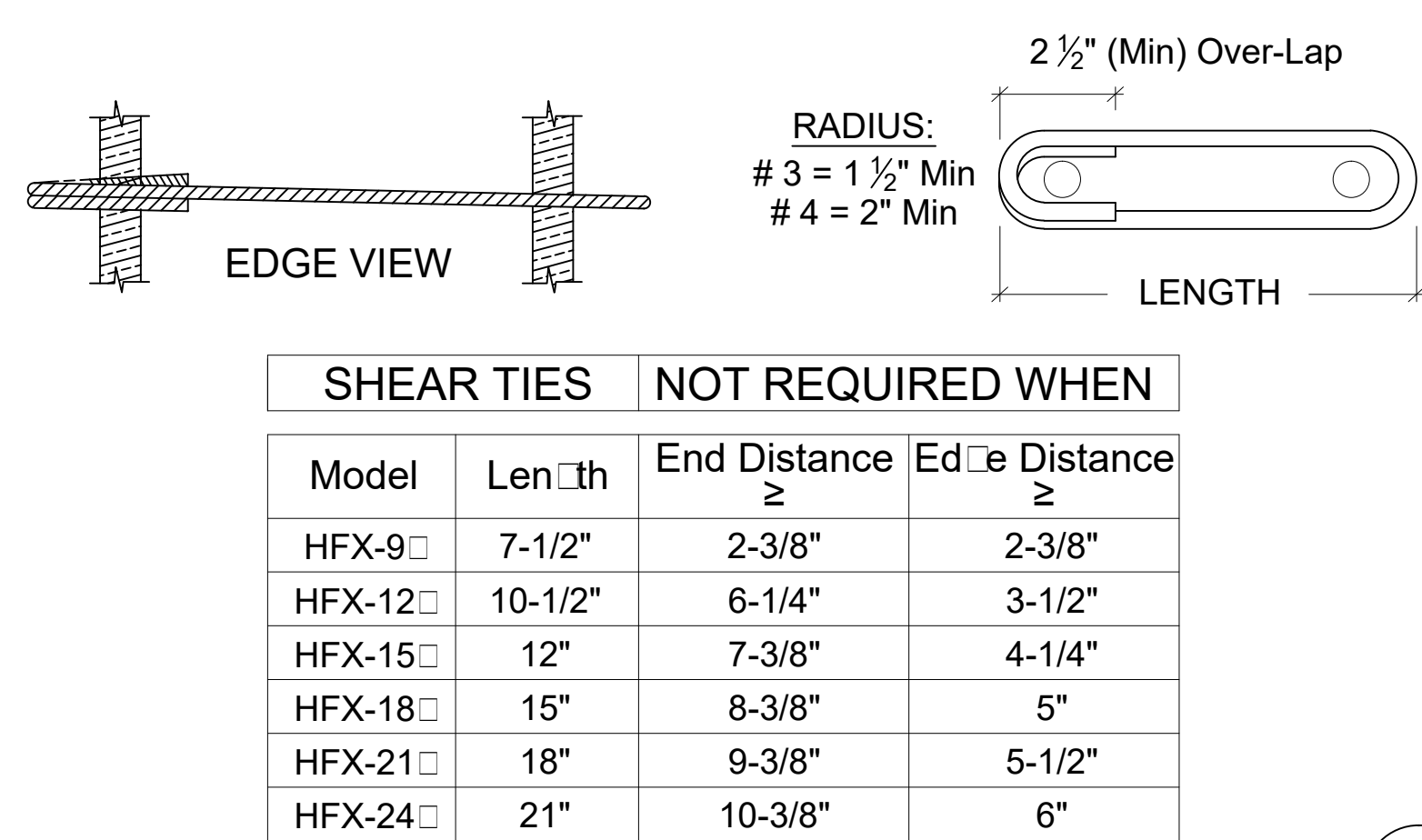
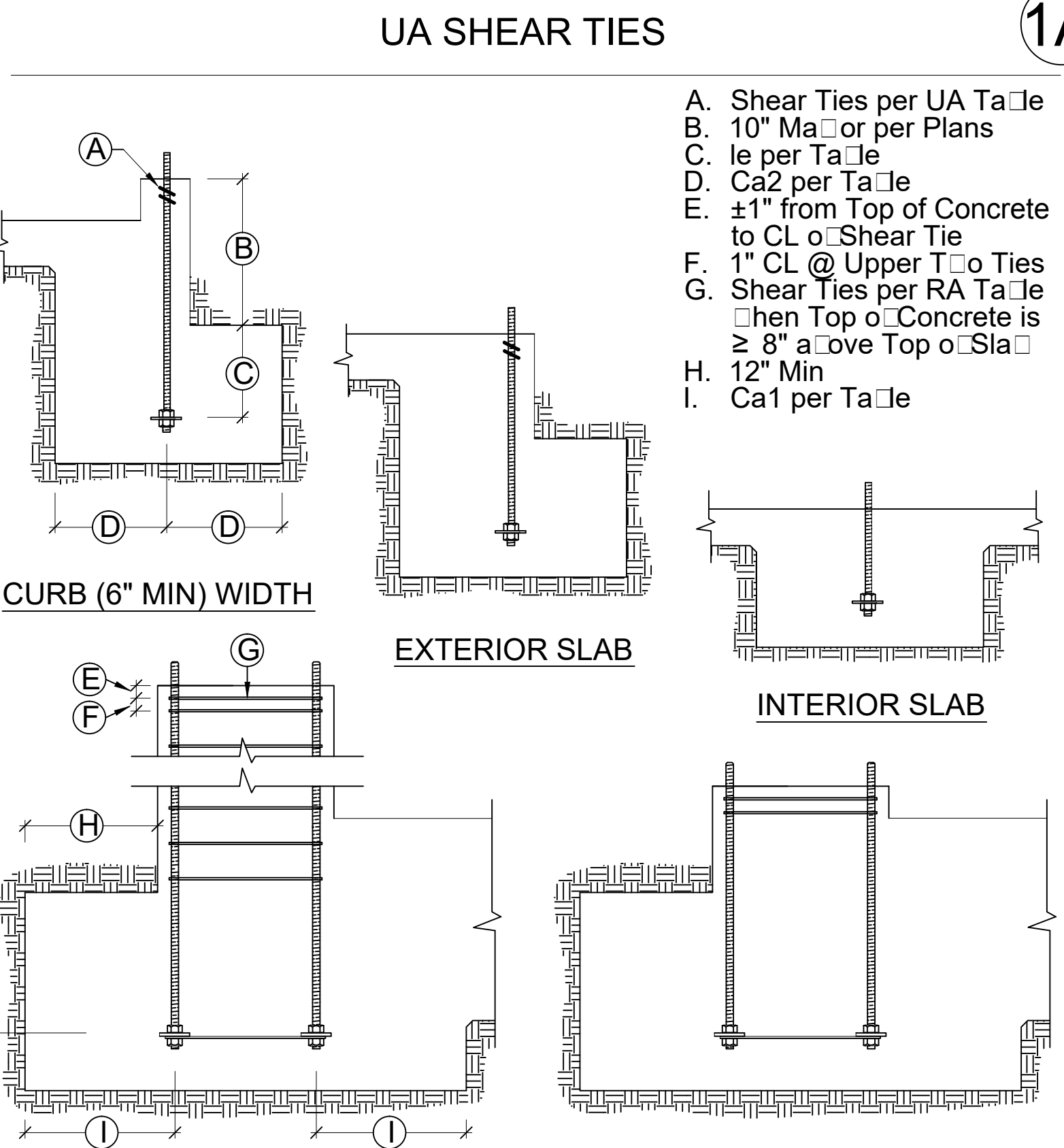
Model	Panel Width (in)	Anchor _{a1}	Rod Dia (in)	Rod 2,3 Grade	RA _{le} ⁴ (in)	Ca ₁ ⁵ (in)	Ca ₂ ⁶ (in)	Stirrups ⁹ (in)	Shear ⁷ Ties
HFX-9	9	1-1/8-STD-RA	1-1/8	STD	19-3/4	11	20-5/8	8 - # 4	# 3 (□ in) @ 3-3/4" OC
HFX-12	12	1-1/8-STD-RA 1-1/8-HS-RA		STD HS				9 - # 4	# 3 (□ in) @ 4" OC
HFX-15	15	1-1/8-STD-RA 1-1/8-HS-RA		STD HS				10 - # 4	
HFX-18	18	1-1/8-STD-RA 1-1/8-HS-RA		STD HS				11 - # 4	
HFX-21	21	1-1/8-STD-RA 1-1/8-HS-RA		STD HS				12 - # 4	# 4 (□ in) @ 4" OC
HFX-24	24	1-1/8-STD-RA 1-1/8-HS-RA		STD HS					



RA SECTIONS & ELEVATIONS

UNREINFORCED ANCHORAGE (UA)

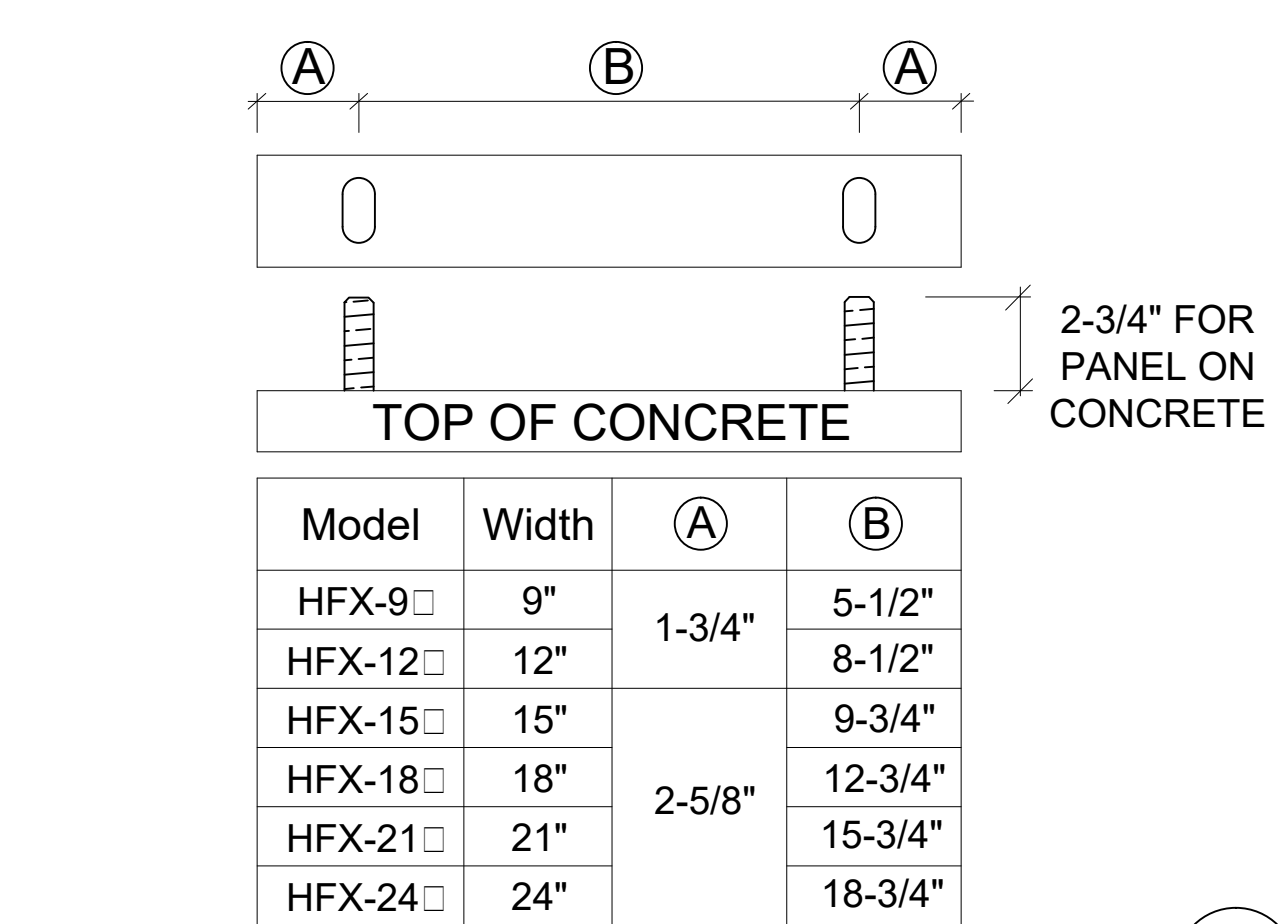
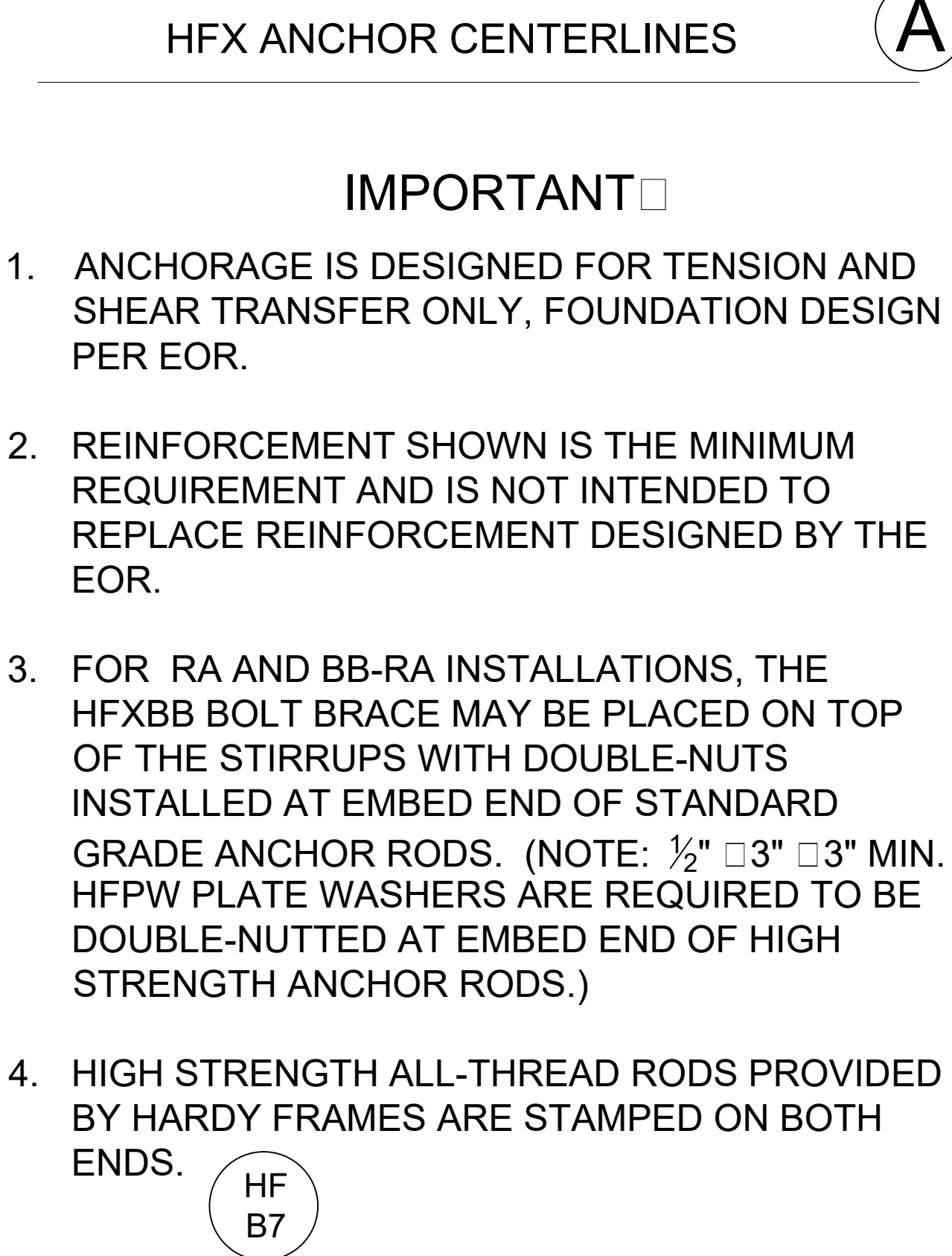
Model	Panel Height	Anchor _{a1}	Rod Dia (in)	Rod 2,3 Grade	UA _{le} ⁴ (in)	Ca ₁ ⁵ & Ca ₂ ⁶ (in)	Shear ^{7,8} Ties
HFX-9	79.5" - 8'	1-1/8-STD-13-19	1-1/8	STD	13	19	1 - # 3
HFX-12	78" - 10'	1-1/8-HS-20-30		HS	20	30	
HFX-15	78" - 13'	1-1/8-STD-14-20		STD	14	20	
HFX-18	14' - 20'	1-1/8-HS-20-30		HS	20	30	
HFX-21	78" - 13'	1-1/8-STD-14-20 1-1/8-HS-23-34		STD HS	14 23	20 34	2 - # 3
HFX-24	14' - 20'	1-1/8-HS-20-30		HS	20	30	



UA SECTIONS & ELEVATIONS

TABLE NOTES

- DESIGNS ARE TO RESIST LOADING PER ACI 318-14, SECTION 17.2.3.4.3.
- STD INDICATES ANCHORS COMPLYING WITH ASTM F1554 GRADE 36 WITH A HARDY FRAME BOLT BRACE (HFXBB) INSTALLED WITH DOUBLE NUTS ON THE EMBED END.
- HS INDICATES ANCHORS COMPLYING WITH ASTM A193 GRADE B7 WITH A 1/2"x3"x3"(MIN) HFPW PLATE WASHER INSTALLED WITH DOUBLE NUTS ON THE EMBED END (HFXBB NOT REQUIRED).
- LE = LENGTH OF EMBEDMENT FROM THE TOP OF FOOTING OR GRADE BEAM TO THE TOP OF THE HFXBB BOLT BRACE (TOP OF THE EMBEDDED HFPW PLATE WASHER @ HS ANCHORS)
- CA1 = DISTANCE FROM HD CENTERLINE TO THE END OF THE FOOTING OR GRADE BEAM.
- CA2 = DISTANCE FROM HD CENTERLINE TO BOTH THE FRONT AND THE BACK FACE OF THE FOOTING OR GRADE BEAM.
- SHEAR TIES ARE GRADE 60 (MIN) REBAR AND REQUIRED FOR NEAR EDGE DISTANCE CONDITIONS PER ACI-318-14, F'C = 2,500 PSI. CURBS AND STEM WALLS MUST BE 6 INCH (MIN) WIDTH FOR UA AND RA, 12 INCH (MIN) WIDTH FOR BB-RA.
- FOR UA APPLICATIONS, ADDITIONAL TIES MAY BE REQUIRED AT STEM WALLS. SHEAR TIES ARE NOT REQUIRED FOR INSTALLATION AWAY FROM EDGE (SEE DETAIL 1A), INSTALLATION ON WOOD FRAMING, OR FOR IRC BRACED WALL PANEL APPLICATIONS.
- STIRRUPS ARE GRADE 60 (MIN) REBAR. SEE TABLE FOR SIZE AND SPACING. SEE "STIRRUP LAYOUT" DIAGRAMS AND "KEY" FOR LAYOUT PATTERNS.
- CONCRETE EDGE DISTANCES MUST COMPLY WITH ACI 318-14, SECTION 17.7.1



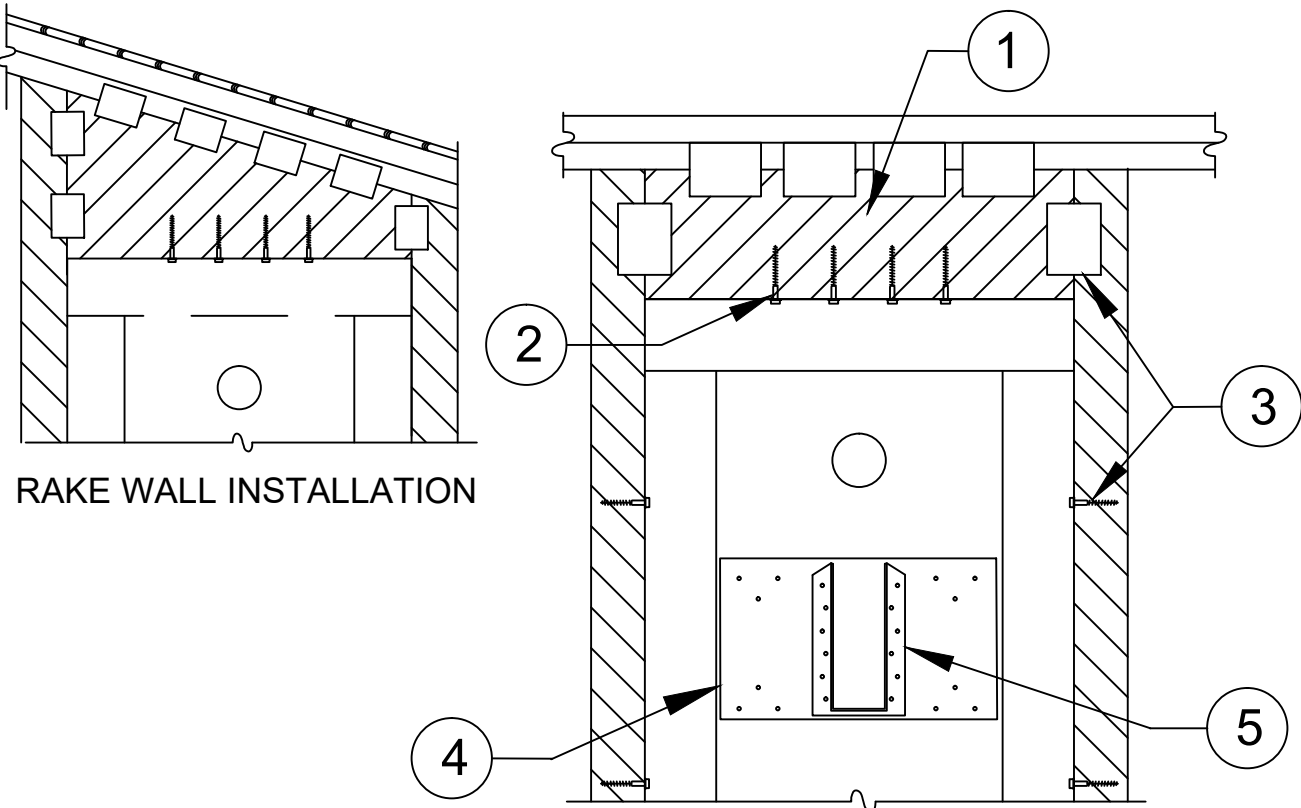
IMPORTANT NOTES

- ANCHORAGE IS DESIGNED FOR TENSION AND SHEAR TRANSFER ONLY, FOUNDATION DESIGN PER EOR.
- REINFORCEMENT SHOWN IS THE MINIMUM REQUIREMENT AND IS NOT INTENDED TO REPLACE REINFORCEMENT DESIGNED BY THE EOR.
- FOR RA AND BB-RA INSTALLATIONS, THE HFXBB BOLT BRACE MAY BE PLACED ON TOP OF THE STIRRUPS WITH DOUBLE-NUTS INSTALLED AT EMBED END OF STANDARD GRADE ANCHOR RODS. (NOTE: 1/2" □ 3" □ 3" MIN. HFPW PLATE WASHERS ARE REQUIRED TO BE DOUBLE-NUTTED AT EMBED END OF HIGH STRENGTH ANCHOR RODS.)
- HIGH STRENGTH ALL-THREAD RODS PROVIDED BY HARDY FRAMES ARE STAMPED ON BOTH ENDS.

SECTION A

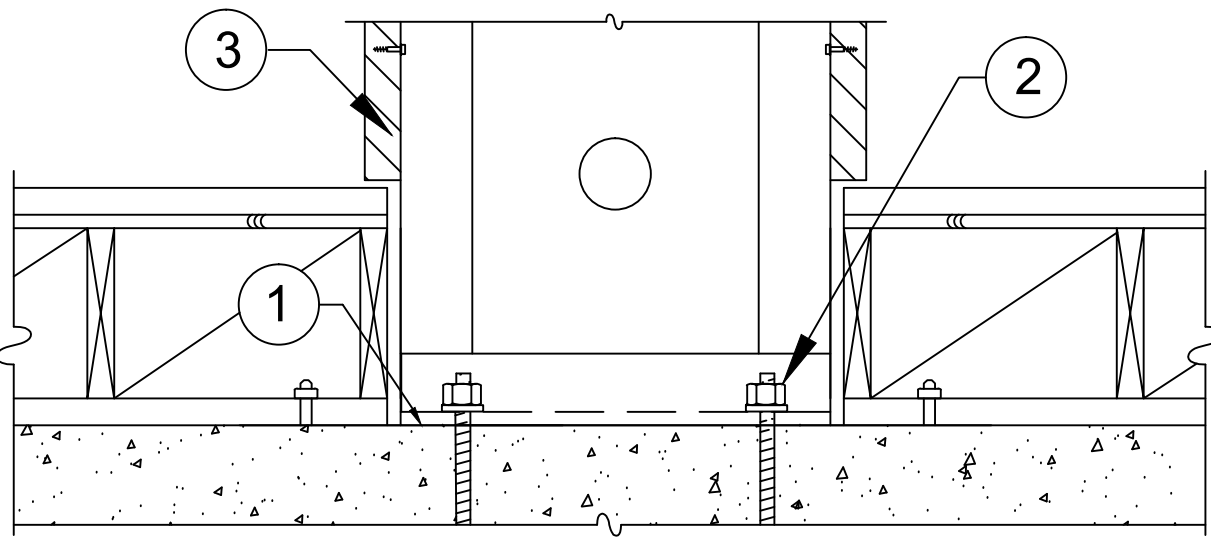
1. CAVITY ORIENTED FOR CONNECTION ACCESS.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. NOMINAL 8 INCH FRAMING ABOVE (MIN).
4. A 2" FILLER WITH 1/4" x 4-1/2" MINIMUM WS SCREWS IS PERMITTED.
5. FIELD INSTALLED WOOD BACKING AS NEEDED.

BACK TO BACK INSTALLATION



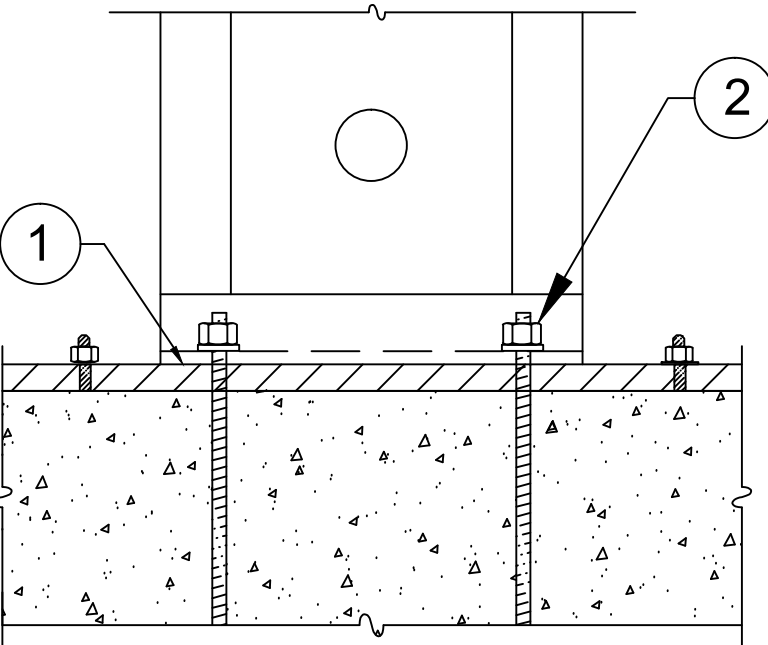
1. WOOD FILLER WITH USP MP4F CONNECTORS BOTH SIDES, QUANTITY BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED THROUGH PRE-PUNCHED HOLES IN PANEL EDGES REQUIRED WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE TO BRACE OUT-OF-PLANE HINGE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.
4. PRE-DRILL 3/16" DIA. HOLES, EVENLY SPACED IN FACE OF PANEL NO LESS THAN 2-1/4" OC AND INSTALL 1/4" DIA. WOOD SCREWS INTO 2" (MIN.) WOOD "LEDGER" IN PANEL CAVITY.
5. CONNECTOR AND ATTACHMENT BY BUILDING DESIGN PROFESSIONAL.

FILLER GREATER THAN 1-1/2 IN.



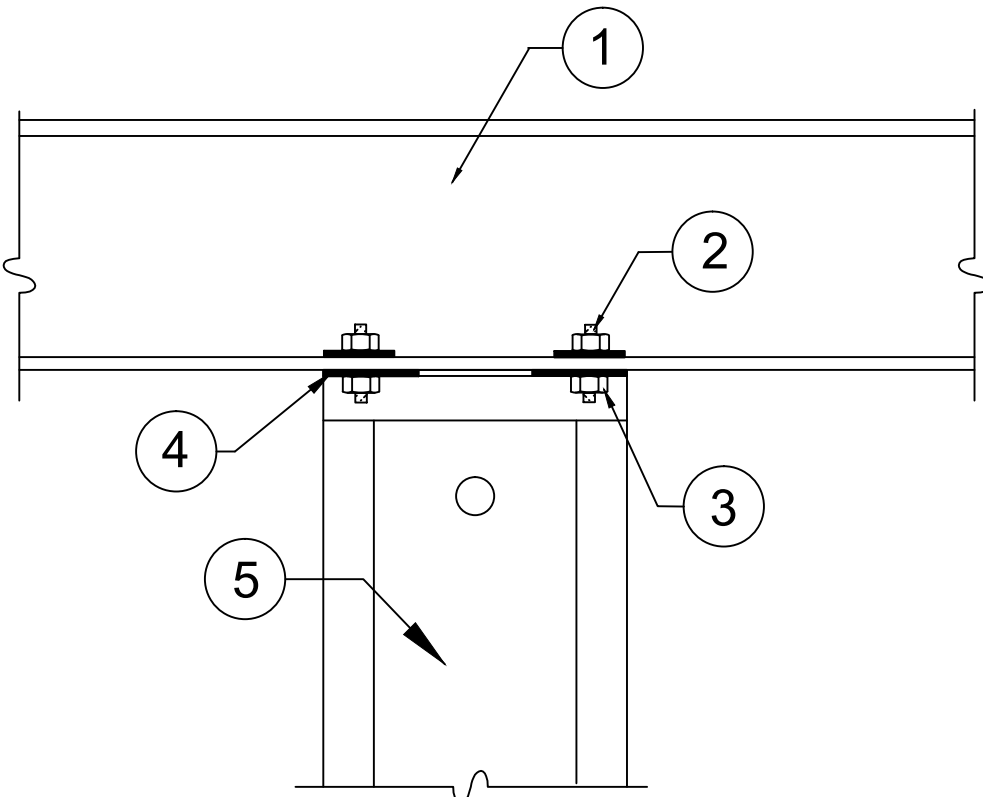
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED AT THE PANEL EDGES WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.

RAISED FLOOR HEAD-OUT



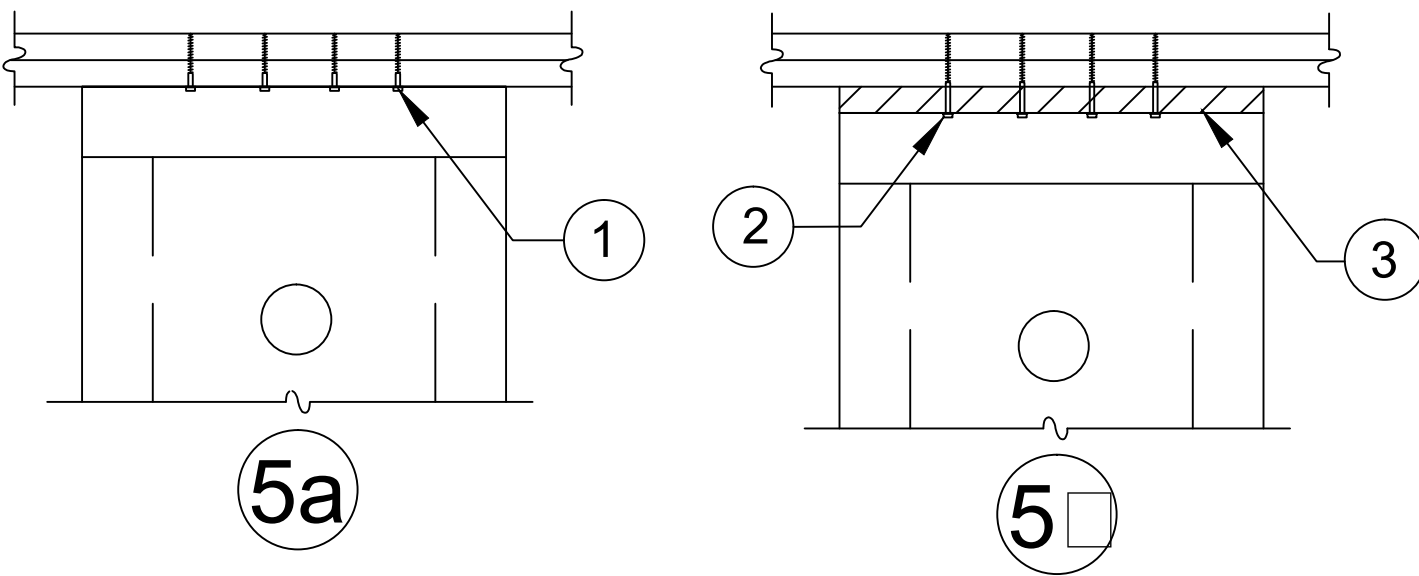
- ALLOWABLE VALUES ON 2" PLATE ARE LESS THAN INSTALLATION ON CONCRETE
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND TREATED PLATE.
 2. NUTS AND WASHERS PER TABLE NOTE 1.

INSTALLATION ON 2" PLATE



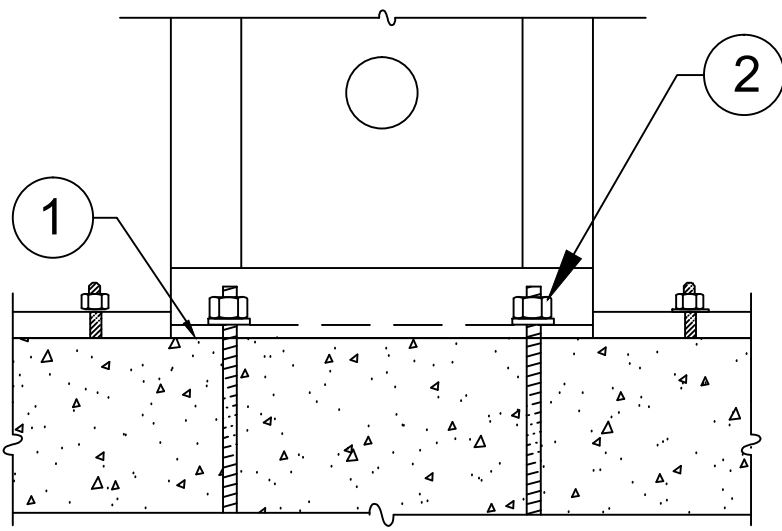
1. STEEL BEAM PER PLANS
2. ALL THREAD RODS THRU-BOLTED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. HARDY FRAME" STACKING WASHERS (HFSW) (REQUIRED TO BE WELDED INSIDE TOP CHANNEL OF LOWER PANEL.
5. HARDY FRAME" "STK" PANEL WITH STACKING WASHERS WELDED INSIDE THE TOP CHANNEL BY MANUFACTURER.

STEEL BEAM ABOVE THRU-BOLT



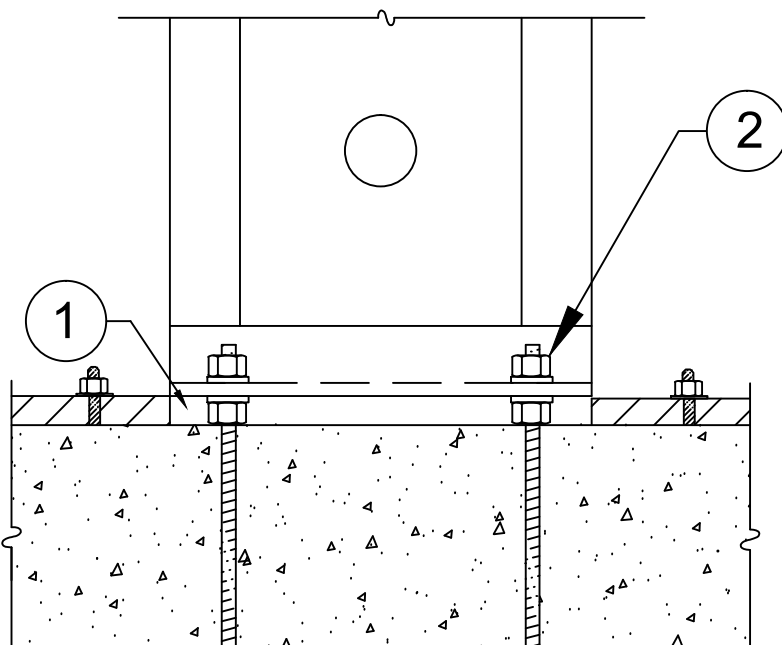
1. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. 2" WOOD FILLER.

TOP PLATE CONNECTIONS



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

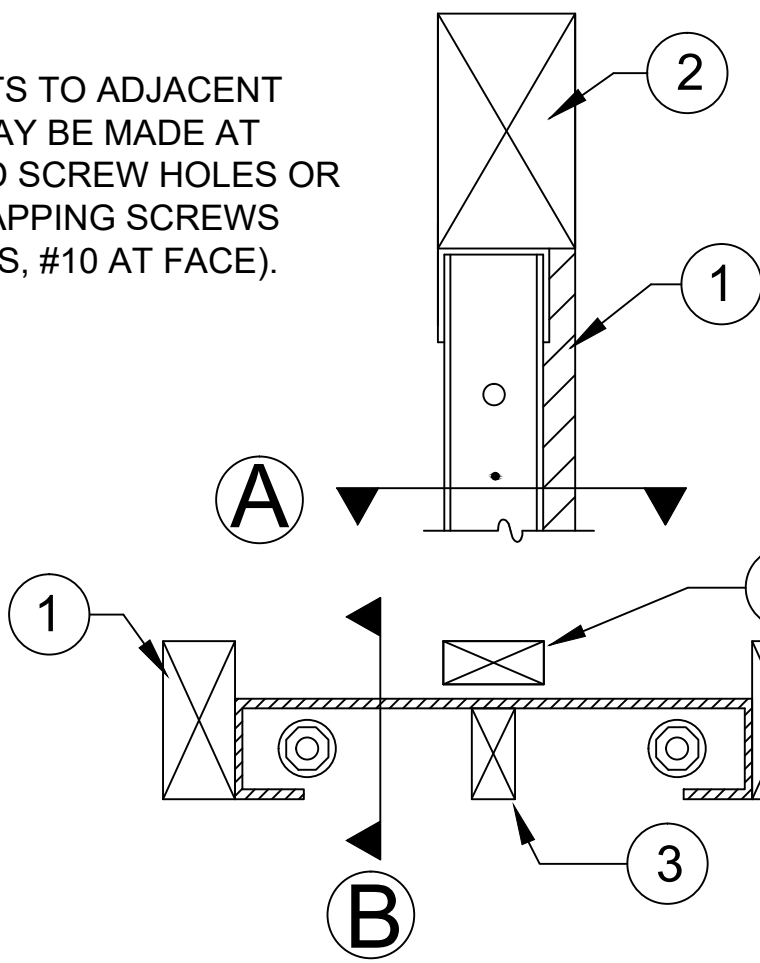
INSTALLATION ON CONCRETE



- ALLOWABLE VALUES ON N&W ARE LESS THAN INSTALLATION ON CONCRETE
1. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH 5,000 PSI NON-SHRINK GROUT (MINIMUM).
 2. NUT AND WASHER GRADES PER TABLE NOTE 1.

INSTALLATION ON NUTS & WASHERS

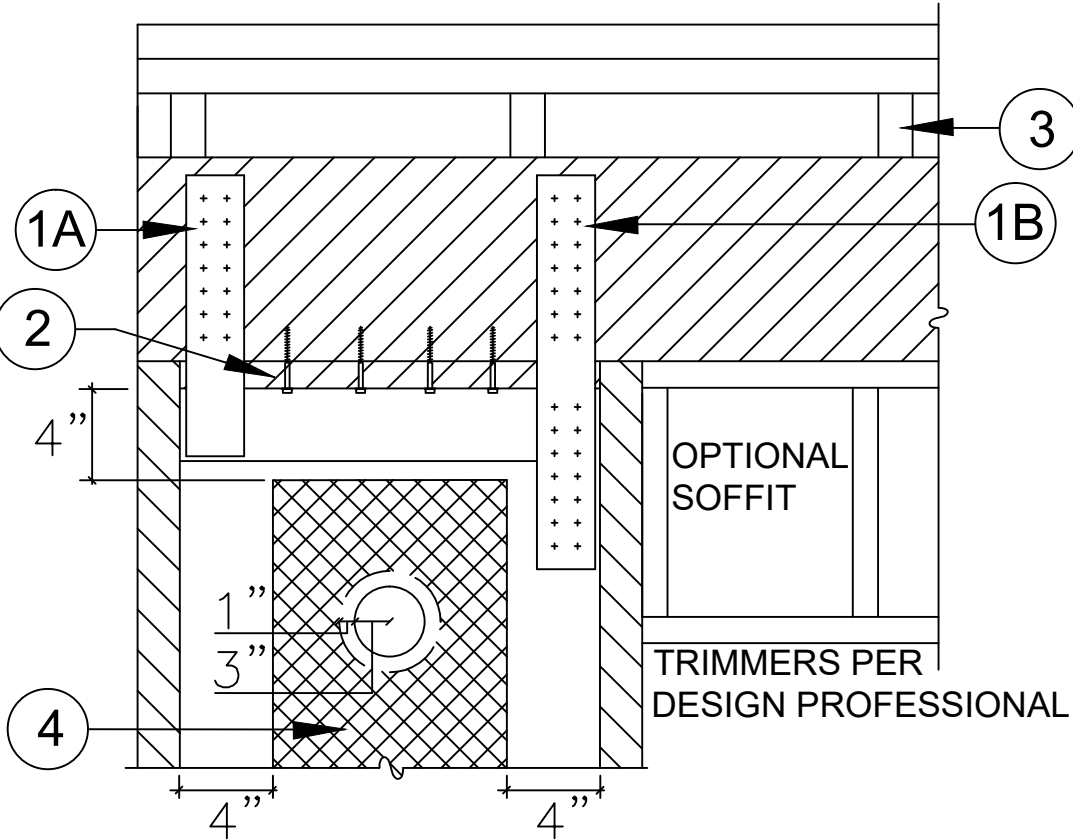
NOTE:
ATTACHMENTS TO ADJACENT TRIMMERS MAY BE MADE AT PREPUNCHED SCREW HOLES OR WITH SELF TAPPING SCREWS (#12 AT EDGES, #10 AT FACE).



1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY BUILDING DESIGN PROFESSIONAL.
2. 6" HEADER.
3. WOOD MEMBERS FOR BACKING MAY BE INSERTED VERTICALLY OR HORIZONTALLY IN THE PANEL CAVITY AS NEEDED.
4. WOOD MEMBER FLUSH TO FACE OF WALL FOR BACKING AS NEEDED.

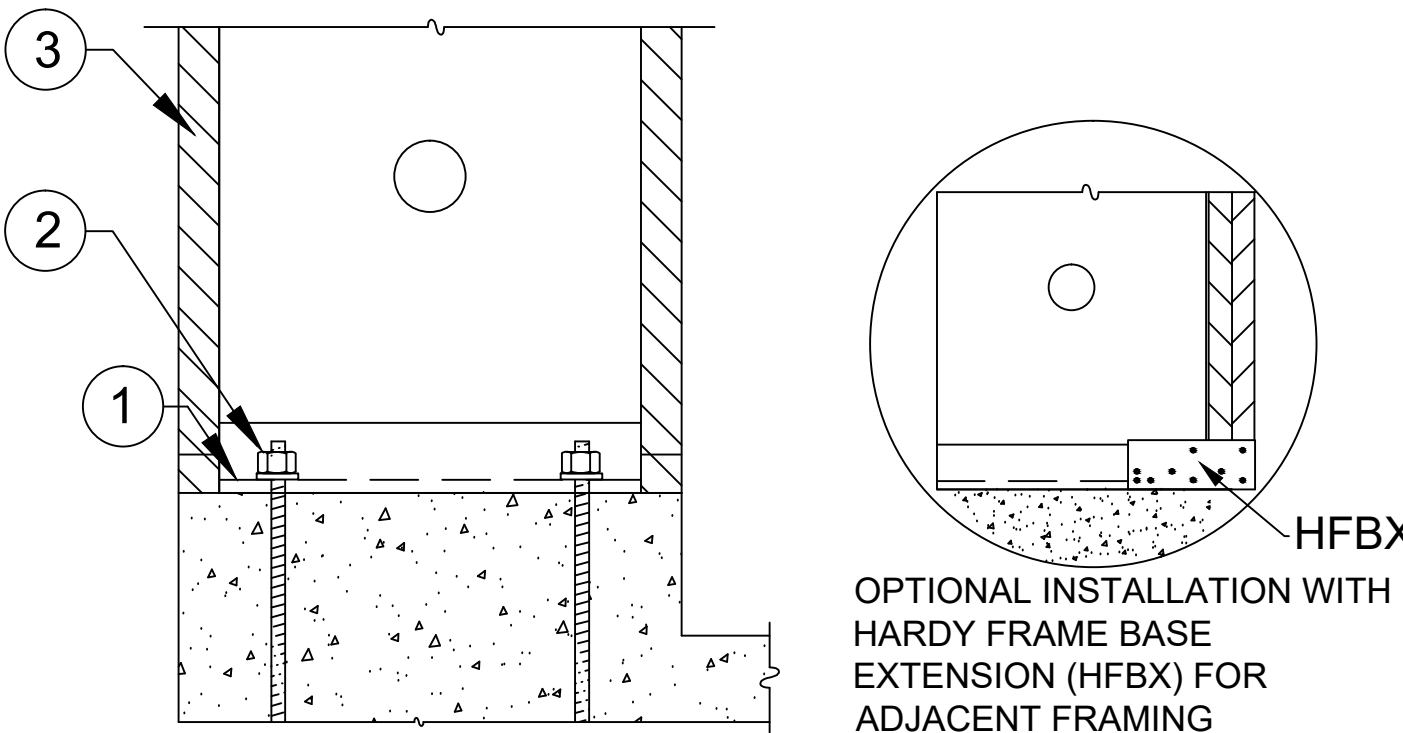
6" HEADER ABOVE-SECTIONS

NOTE:
TO PREVENT DRILLING ADDITIONAL HOLES ORIENT THE PANEL CAVITY TOWARD THE FIXTURE BEING INSTALLED.



1. (A) PRE-WELDED STRAPS ARE PROVIDED ON 78" AND 79-1/2" PANEL HEIGHTS. THEY ARE AVAILABLE FOR OTHER HEIGHTS UPON REQUEST. (B) FIELD INSTALLED STRAPS WITH SELF TAPPING SCREWS ARE PERMITTED. THE DESIGN AND CONNECTION IS BY THE DESIGN PROFESSIONAL.
2. A 2" WOOD FILLER WITH 1/4" x 4-1/2" (MIN.) WS SCREWS IS PERMITTED.
3. WHEN CRIPPLE STUDS OCCUR, SHEAR TRANSFER DESIGN TO BE PER THE BUILDING DESIGN PROFESSIONAL.
4. A 1" DIA. HOLE MAY BE ADDED IN THE PANEL FACE WHEN IT IS LOCATED IN THE UPPER HALF OF THE PANEL HEIGHT AND IS 4" MINIMUM FROM ANY EDGE. FOR PANELS MORE THAN 12" WIDE, ADDITIONAL HOLES MUST BE OFFSET 1" MINIMUM FROM THE 3" DIA. PREPUNCHED HOLE. FOR HOLES LARGER THAN 1" DIAMETER OR TO ADD MORE THAN ONE HOLE CONTACT MITEK HARDY FRAME TECHNICAL SUPPORT AT (800) 754-3030.

TOP CONNECTION TO HEADER



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING OPTIONAL U.N.O. BY BUILDING DESIGN PROFESSIONAL.

INSTALLATION ON CURB

HFX PANELS 78 IN. THROUGH NOMINAL 13 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter ¹ (in)	Top Screws Qty ² (ea)	Screw Qty Available at Edges (ea) ³
HFX-12,15,18,21 & 24x78	78	3-1/2	1-1/8	9" Width = 5	4
HFX-9x79.5	79-1/2			12" Width = 6	
HFX-12,15,18,21 & 24x8	92-1/4			15" Width = 8	
HFX-9x8	93-3/4			18" Width = 10	5
HFX-12,15,18,21 & 24x9	104-1/4			21" Width = 12	
HFX-12,15,18,21 & 24x10	116-1/4			24" Width = 14	6
HFX-15,18,21 & 24x11	128-1/4	3-1/2	1-1/8	15" Width = 8	6
HFX-15,18,21 & 24x12	140-1/4			18" Width = 10	
HFX-15,18,21 & 24x13	152-1/4			21" Width = 12	

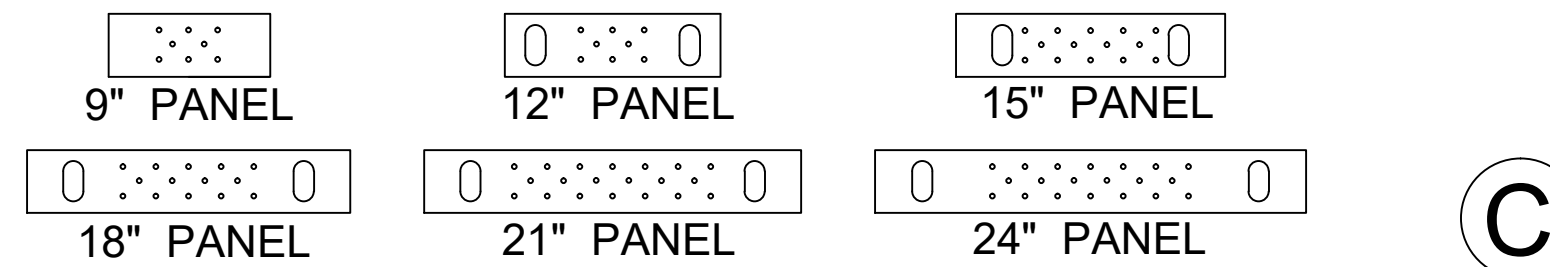
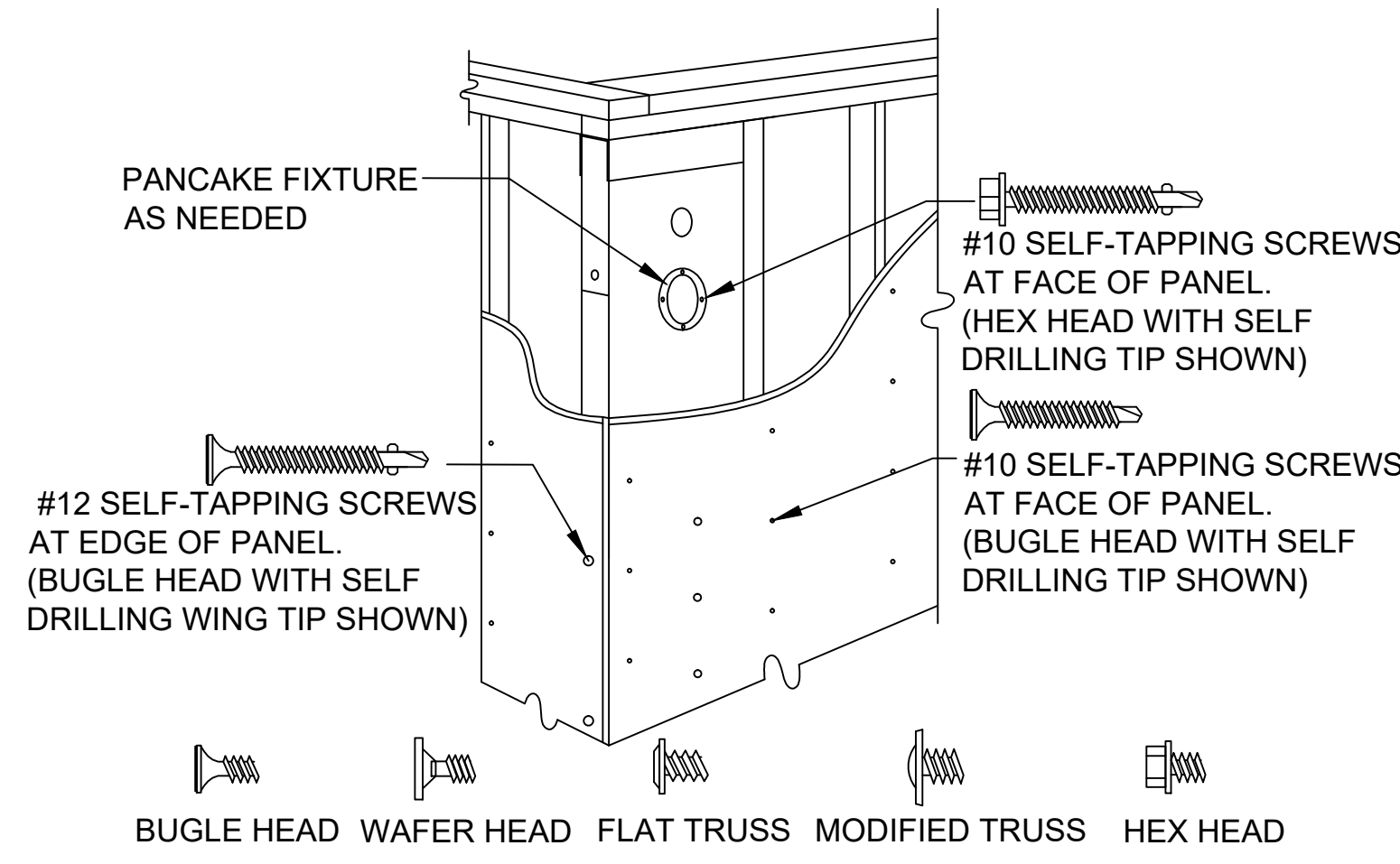
BALLOON PANELS 14 FEET THROUGH 20 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter ¹ (in)	Top Screws Qty ² (ea)	Screw Qty Available at Edges (ea) ³
HFX-15,18,21 & 24x14	164-1/4	3-1/2	1-1/8	15" Width = 8	6
HFX-15,18,21 & 24x15	176-1/4			18" Width = 10	
HFX-15,18,21 & 24x16	188-1/4			21" Width = 12	
HFX-15,18,21 & 24x17	200-1/4			24" Width = 14	8
HFX-15,18,21 & 24x18	212-1/4				
HFX-15,18,21 & 24x19	224-1/4				
HFX-15,18,21 & 24x20	236-1/4	3-1/2	1-1/8		

1. HOLD DOWN ANCHOR BOLTS CONNECT TO THE PANEL BASE WITH HARDENED ROUND WASHERS BELOW GRADE 8 NUTS. ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS ON EACH BOLT. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK" PRO SERIES" WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHED DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2" FILLER ABOVE THE PANEL.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS IS REQUIRED AT THE PANEL EDGES WHEN INSTALLING A FILLER ABOVE THE TOP CHANNEL THAT IS GREATER THAN 1-1/2" OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

INSTALLATION INSTRUCTIONS

1. WHEN INSTALLING ON CONCRETE CONNECT WITH (1 EA) HARDENED ROUND WASHER BELOW (1 EA) GRADE 8 NUT, SECURE WITH A DEEP SOCKET (RECOMMENDED) UNTIL SNUG TIGHT. ALTERNATE WASHERS AND NUTS ARE PROVIDED IN TABLE NOTE 1.
2. INSTALLATION ON CONCRETE PROVIDES THE HIGHEST ALLOWABLE VALUES. CONFIRM WITH THE DESIGN PROFESSIONAL BEFORE INSTALLING ON OTHER SUPPORTING SURFACES.
3. USE 1/4"x4-1/2" MITEK" PRO SERIES" WS SCREWS AT TOP CONNECTIONS WITH A 2" FILLER. IF THE TOP OF PANEL IS IN DIRECT CONTACT WITH THE COLLECTOR ABOVE (TOP PLATES, HEADER, BEAM, ETC.) USE 1/4" x 3" (MINIMUM)
4. FOR INSTALLATIONS WITH A FILLER GREATER THAN 1-1/2" ABOVE, OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL, ADJACENT KING POSTS TO BRACE THE OUT-OF-PLANE HINGE CAN BE CONNECTED WITH 1/4" DIA. SCREWS THROUGH PRE-PUNCHED HOLES AT THE PANEL EDGES.



- NOTES:
- A. SURFACE FINISHES, CONNECTORS AND FIXTURES ARE ATTACHED TO THE PANEL FACE WITH # 10 SELF-TAPPING SCREWS SPACED NO LESS THAN 2-1/4" OC.
 - B. ATTACHMENTS TO THE PANEL EDGES ARE MADE WITH # 12 SELF-TAPPING SCREWS.
 - C. STRUCTURAL CONNECTIONS ARE TO BE DESIGNED BY THE DESIGN PROFESSIONAL.
 - D. STRUCTURAL HARDWARE USED TO TRANSFER LOADS SHOULD NOT EXCEED 12 GAUGE.

REVISIONS	DATE

FRAMING DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH MITEK" HARDY FRAME" PRODUCTS

HARDY FRAME
SHEAR WALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

MiTek

DATE:
1-1-2018

HFX2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 1 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

GENERAL INFORMATION					
01	Project Name	Marline Avenue Residential Unit #1			
02	Run Title	Title 24 Analysis			
03	Project Location	1470 Marline Avenue, Unit #1			
04	City	El Cajon	05	Standards Version	2022
06	Zip code	92021	07	Software Version	EnergyPro 9.2
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	180
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	4
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.28
18	Total Cond. Floor Area (ft ²)	2130	19	Glazing Percentage (%)	13.80%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

Registration Number: 424-P010238118A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 15:33:36

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 2 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)
Standard Design	38.8	40.8	28.5			
Proposed Design	33.5	34.2	22	5.3	6.6	6.5
RESULT³: PASS						
¹ Efficiency EDR includes improvements like a better building envelope and more efficient equipment ² Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries ³ Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
<ul style="list-style-type: none"> Standard Design PV Capacity: 3.24 kWdc Proposed PV system(s) scaled by a factor of 0.937 due to cap of 1 x proposed design electricity use 						



Registration Number: 424-P010238118A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 15:33:36

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 3 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft ² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft ² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	2.43	10.98	1.69	7.7	0.74	3.28
Space Cooling	0.95	21.22	0.87	20.06	0.08	1.16
IAQ Ventilation	0.36	3.78	0.36	3.78	0	0
Water Heating	1.23	13.03	0.86	9.53	0.37	3.5
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	4.97	49.01	3.78	41.07	1.19	7.94
Photovoltaics	-1.74	-48.57	-1.95	-54.87		
Battery			0	0		
Flexibility						
Indoor Lighting	0.74	7.18	0.74	7.18		
Appl. & Cooking	3.14	21.47	3.15	21.57		
Plug Loads	3.01	30.74	3.01	30.74		
Outdoor Lighting	0.19	1.67	0.19	1.67		
TOTAL COMPLIANCE	10.31	61.5	8.92	47.36		

Registration Number: 424-P010238118A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 4 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft ² - yr)	Proposed Design (kBtu/ft ² - yr)	Compliance Margin (kBtu/ft ² - yr)	Margin Percentage
Gross EUI ¹	15.29	13.94	1.35	8.83
Net EUI ²	6.45	4.06	2.39	37.05
Notes 1. Gross EUI is Energy Use Total (not including PV) / Total Building Area. 2. Net EUI is Energy Use Total (including PV) / Total Building Area.				

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
0.94	NA	Standard (14-17%)	Fixed	none	false	90	Degrees	22	4.85	96	100
1.87	NA	Standard (14-17%)	Fixed	none	false	180	Degrees	22	4.85	96	100
0.94	NA	Standard (14-17%)	Fixed	none	false	270	Degrees	22	4.85	96	100

REQUIRED SPECIAL FEATURES											
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.											
<ul style="list-style-type: none"> Floor has high level of insulation Insulation below roof deck Non-standard duct location (any location other than attic) Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed 											

Registration Number: 424-P010238118A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 15:33:36

Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 5 of 13)

Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

HERS FEATURE SUMMARY						
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry						
<ul style="list-style-type: none">Quality insulation installation (QII)Indoor air quality ventilationKitchen range hoodMinimum AirflowVerified EER/EER2Verified SEER/SEER2Verified Refrigerant ChargeFan Efficacy Watts/CFMDuct leakage testingDucts located entirely in conditioned space confirmed by duct leakage testingCompact distribution system expanded credit						

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Marline Avenue Residential Unit #1	2130	1	4	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status
1st Floor Zone	Conditioned	Res HVAC1	790	8	DHW Sys 1	New
2nd Floor Zone	Conditioned	Res HVAC1	1340	8	DHW Sys 1	New

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
Front Wall	1st Floor Zone	R-21 Wall w/R-2	180	Front	164	61	90

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 6 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Left Wall	1st Floor Zone	R-21 Wall w/R-2	270	Left	268	20	90
Back Wall	1st Floor Zone	R-21 Wall w/R-2	180	Front	164	40.7	90
Right Wall	1st Floor Zone	R-21 Wall w/R-2	90	Right	268	24	90
Front Wall 2	2nd Floor Zone	R-21 Wall w/R-2	0	Back	320	60	90
Left Wall 2	2nd Floor Zone	R-21 Wall w/R-2	90	Right	240	24	90
BackWall	2nd Floor Zone	R-21 Wall w/R-2	180	Front	320	70	90
Right Wall 2	2nd Floor Zone	R-21 Wall w/R-2	270	Left	240	32	90
Wall to Garage	1st Floor Zone>> __Garage__	R-15 Wall	n/a	n/a	114	20	n/a
EastWall to Garage	1st Floor Zone>> __Garage__	R-15 Wall	n/a	n/a	142	0	n/a
Roof	2nd Floor Zone	R-38 HP Attic	n/a	n/a	1340	n/a	n/a
Raised Floor	2nd Floor Zone	R-30 Floor No Crawlspace	n/a	n/a	93	n/a	n/a
2nd Floor over 1st	2nd Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	790	n/a	n/a
2nd Floor over Garage	2nd Floor Zone	R-19 Floor No Crawlspace	n/a	n/a	457	n/a	n/a
GarageWallFront	__Garage__	Garage Ext Wall	180	Front	176	113	90
GarageWallLeft	__Garage__	Garage Ext Wall	270	Left	208	20	90
GarageWallRight	__Garage__	Garage Ext Wall	90	Right	108	0	90
GarageWallRear	__Garage__	Garage Ext Wall	0	Back	54	0	90

ATTIC							
01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic 2nd Floor Zone	Attic Roof2nd Floor Zone	Ventilated	4	0.1	0.85	No	No

Registration Number: 424-P010238118A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 7 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Front Windows	Window	Front Wall	Front	180			1	40	0.28	NFRC	0.2	NFRC	Bug Screen
Left Windows	Window	Left Wall	Left	270			1	20	0.28	NFRC	0.2	NFRC	Bug Screen
Back Windows	Window	Back Wall	Front	180			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Right Windows	Window	Right Wall	Right	90			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Front Windows 2	Window	Front Wall 2	Back	0			1	60	0.28	NFRC	0.2	NFRC	Bug Screen
Left Windows 2	Window	Left Wall 2	Right	90			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Back Windows 2	Window	BackWall	Front	180			1	70	0.28	NFRC	0.2	NFRC	Bug Screen
Right Windows 2	Window	Right Wall 2	Left	270			1	32	0.28	NFRC	0.2	NFRC	Bug Screen
GarageWindow Left	Window	GarageWallLeft	Left	270			1	20	0.28	NFRC	0.2	NFRC	Bug Screen

OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft ²)	U-factor
Entry Door	Front Wall	21	0.2
Back Door	Back Wall	16.7	0.2
Door	Wall to Garage	20	0.2
GarageCarDoorFront	GarageWallFront	113	0.7

Registration Number: 424-P010238118A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 8 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	1st Floor Zone	790	160	none	0	80%	No
GarageSlab	__Garage__	457	54	none	0	0%	No

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Garage Ext Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-21 Wall w/R-2	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / 2	0.058	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-2 Sheathing Exterior Finish: 3 Coat Stucco
R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.086	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Other Side Finish: Gypsum Board
Attic Roof2nd Floor Zone	Attic Roofs	Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-19	None / 0	0.055	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

Registration Number: 424-P010238118A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 15:33:36

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 9 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-30 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-30	None / None	0.034	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.045	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION				
01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	Expanded	DHW Sys 1-hers-dhw	DHW Heater 1 (1)

Registration Number: 424-P010238118A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 10 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

WATER HEATERS - NEEA HEAT PUMP							
01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTU 50N 120 (50 gal)	TankZone	__Garage__	__Garage__

WATER HEATING - COMPACT DISTRIBUTION						
01	02	03	04	05	06	07
Dwelling Unit type	Water Heating System Name	Master Bath distance of furthest fixture to Water Heater (ft)	Kitchen distance of furthest fixture to Water Heater (ft)	Furthest Third furthest fixture to Water Heater (ft)	Compactness Factor	HERS Verification
Dwelling	DHW Sys 1	n/a	n/a	n/a	0.6	Expanded Credit

WATER HEATING - HERS VERIFICATION						
01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Required	Expanded	Not Required	Not Required

SPACE CONDITIONING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Res HVAC1	Heating and cooling system other	Heating Component 1	1	Cooling Component 1	1	HVAC Fan 1	Air Distribution System 1	Setback

Registration Number: 424-P010238118A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 11 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

HVAC - HEATING UNIT TYPES				
01	02	03	04	05
Name	System Type	Number of Units	Heating Efficiency	Heating Unit Brand
Heating Component 1	Central gas furnace	1	AFUE - 96	n/a

HVAC - COOLING UNIT TYPES								
01	02	03	04	05	06	07	08	09
Name	System Type	Number of Units	Efficiency Metric	Efficiency EER/EER2/CEER	Efficiency SEER/SEER2	Zonally Controlled	Mult-speed Compressor	HERS Verification
Cooling Component 1	Central split AC	1	EER2/SEER2	12.2	15	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION					
01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEERSEER2	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Conditioned space-entirely	Non-Verified	R-8	R-8	Conditioned Zone	Conditioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

Registration Number: 424-P010238118A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #1

Calculation Date/Time: 2024-04-23T15:32:47-07:00

(Page 12 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 01.ribd22x

HVAC DISTRIBUTION - HERS VERIFICATION								
01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS			
01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION		
01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS								
01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	99	0.35	Exhaust	No	n/a / n/a	No	Yes	

Registration Number: 424-P010238118A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF1R-PRF-01-E

Project Name: Marline Avenue Residential Unit #1**Calculation Date/Time:** 2024-04-23T15:32:47-07:00**(Page 13 of 13)****Calculation Description:** Title 24 Analysis**Input File Name:** Single Family 01.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Wisam AlSaffar	Documentation Author Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Signature Date: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Diego, CA 92128	Phone: 5103598673
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: <ol style="list-style-type: none">1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Wisam AlSaffar	Responsible Designer Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Date Signed: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	License:
City/State/Zip: San Diego, CA 92128	Phone: 5103598673

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Registration Number: 424-P010238118A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:33:36

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 1 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

GENERAL INFORMATION					
01	Project Name	Marline Avenue Residential Unit #2			
02	Run Title	Title 24 Analysis			
03	Project Location	1470 Marline Avenue, Unit #2			
04	City	El Cajon	05	Standards Version	2022
06	Zip code	92021	07	Software Version	EnergyPro 9.2
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	270
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	4
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.28
18	Total Cond. Floor Area (ft ²)	2130	19	Glazing Percentage (%)	13.80%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

Registration Number: 424-P010238119A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

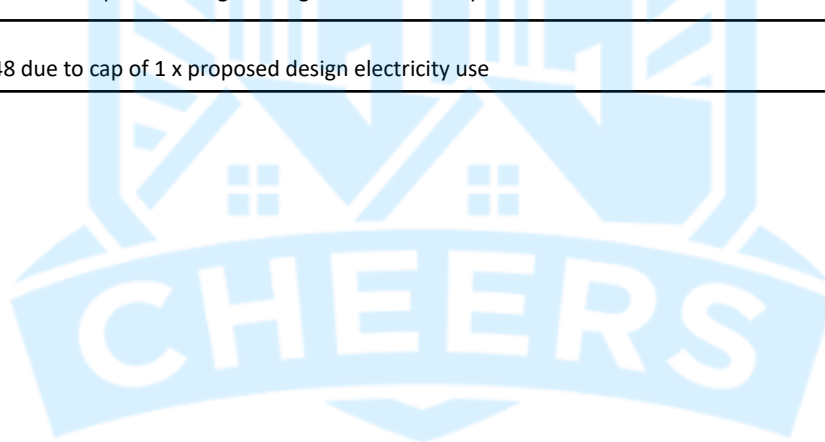
CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 2 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)
Standard Design	38.8	40.8	28.5			
Proposed Design	35.3	36.7	23	3.5	4.1	5.5
RESULT³: PASS						
¹ Efficiency EDR includes improvements like a better building envelope and more efficient equipment ² Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries ³ Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
<ul style="list-style-type: none"> Standard Design PV Capacity: 3.24 kWdc Proposed PV system(s) scaled by a factor of 0.948 due to cap of 1 x proposed design electricity use 						


Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 16:03:51

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 3 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft ² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft ² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	2.43	10.98	2.16	9.81	0.27	1.17
Space Cooling	0.95	21.22	0.9	20.8	0.05	0.42
IAQ Ventilation	0.36	3.78	0.36	3.78	0	0
Water Heating	1.23	13.03	0.87	9.76	0.36	3.27
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	4.97	49.01	4.29	44.15	0.68	4.86
Photovoltaics	-1.74	-48.57	-1.97	-55.54		
Battery			0	0		
Flexibility						
Indoor Lighting	0.74	7.18	0.74	7.18		
Appl. & Cooking	3.14	21.47	3.14	21.47		
Plug Loads	3.01	30.74	3.01	30.74		
Outdoor Lighting	0.19	1.67	0.19	1.67		
TOTAL COMPLIANCE	10.31	61.5	9.4	49.67		

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 4 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft ² - yr)	Proposed Design (kBtu/ft ² - yr)	Compliance Margin (kBtu/ft ² - yr)	Margin Percentage
Gross EUI ¹	15.29	14.57	0.72	4.71
Net EUI ²	6.45	4.58	1.87	28.99
Notes 1. Gross EUI is Energy Use Total (not including PV) / Total Building Area. 2. Net EUI is Energy Use Total (including PV) / Total Building Area.				

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
0.95	NA	Standard (14-17%)	Fixed	none	false	90	Degrees	22	4.85	96	100
1.9	NA	Standard (14-17%)	Fixed	none	false	180	Degrees	22	4.85	96	100
0.95	NA	Standard (14-17%)	Fixed	none	false	270	Degrees	22	4.85	96	100

REQUIRED SPECIAL FEATURES	
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.	
<ul style="list-style-type: none"> Floor has high level of insulation Insulation below roof deck Non-standard duct location (any location other than attic) Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed 	

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 5 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

HERS FEATURE SUMMARY						
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry						
<ul style="list-style-type: none"> Quality insulation installation (QII) Indoor air quality ventilation Kitchen range hood Minimum Airflow Verified EER/EER2 Verified SEER/SEER2 Verified Refrigerant Charge Fan Efficacy Watts/CFM Duct leakage testing Ducts located entirely in conditioned space confirmed by duct leakage testing Compact distribution system expanded credit 						

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft ²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Marline Avenue Residential Unit #2	2130	1	4	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft ²)	Avg. Ceiling Height	Water Heating System 1	Status
1st Floor Zone	Conditioned	Res HVAC1	790	8	DHW Sys 1	New
2nd Floor Zone	Conditioned	Res HVAC1	1340	8	DHW Sys 1	New

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Front Wall	1st Floor Zone	R-21 Wall w/R-2	270	Front	164	61	90

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 16:03:51

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 6 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Left Wall	1st Floor Zone	R-21 Wall w/R-2	0	Left	268	20	90
Back Wall	1st Floor Zone	R-21 Wall w/R-2	90	Back	164	40.7	90
Right Wall	1st Floor Zone	R-21 Wall w/R-2	180	Right	268	24	90
Front Wall 2	2nd Floor Zone	R-21 Wall w/R-2	270	Front	320	60	90
Left Wall 2	2nd Floor Zone	R-21 Wall w/R-2	0	Left	240	24	90
BackWall	2nd Floor Zone	R-21 Wall w/R-2	90	Back	320	70	90
Right Wall 2	2nd Floor Zone	R-21 Wall w/R-2	180	Right	240	32	90
Wall to Garage	1st Floor Zone>> __Garage__	R-15 Wall	n/a	n/a	114	20	n/a
EastWall to Garage	1st Floor Zone>> __Garage__	R-15 Wall	n/a	n/a	142	0	n/a
Roof	2nd Floor Zone	R-38 HP Attic	n/a	n/a	1340	n/a	n/a
Raised Floor	2nd Floor Zone	R-30 Floor No Crawlspace	n/a	n/a	93	n/a	n/a
2nd Floor over 1st	2nd Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	790	n/a	n/a
2nd Floor over Garage	2nd Floor Zone	R-19 Floor No Crawlspace	n/a	n/a	457	n/a	n/a
GarageWallFront	__Garage__	Garage Ext Wall	270	Front	176	113	90
GarageWallLeft	__Garage__	Garage Ext Wall	0	Left	208	20	90
GarageWallRight	__Garage__	Garage Ext Wall	180	Right	108	0	90
GarageWallRear	__Garage__	Garage Ext Wall	90	Back	54	0	90

ATTIC							
01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic 2nd Floor Zone	Attic Roof2nd Floor Zone	Ventilated	4	0.1	0.85	No	No

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 16:03:51

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 7 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Front Windows	Window	Front Wall	Front	270			1	40	0.28	NFRC	0.2	NFRC	Bug Screen
Left Windows	Window	Left Wall	Left	0			1	20	0.28	NFRC	0.2	NFRC	Bug Screen
Back Windows	Window	Back Wall	Back	90			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Right Windows	Window	Right Wall	Right	180			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Front Windows 2	Window	Front Wall 2	Front	270			1	60	0.28	NFRC	0.2	NFRC	Bug Screen
Left Windows 2	Window	Left Wall 2	Left	0			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Back Windows 2	Window	BackWall	Back	90			1	70	0.28	NFRC	0.2	NFRC	Bug Screen
Right Windows 2	Window	Right Wall 2	Right	180			1	32	0.28	NFRC	0.2	NFRC	Bug Screen
GarageWindow Left	Window	GarageWallLeft	Left	0			1	20	0.28	NFRC	0.2	NFRC	Bug Screen

OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft ²)	U-factor
Entry Door	Front Wall	21	0.2
Back Door	Back Wall	16.7	0.2
Door	Wall to Garage	20	0.2
GarageCarDoorFront	GarageWallFront	113	0.7

Registration Number: 424-P010238119A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 8 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	1st Floor Zone	790	160	none	0	80%	No
GarageSlab	__Garage__	457	54	none	0	0%	No

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Garage Ext Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-21 Wall w/R-2	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / 2	0.058	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-2 Sheathing Exterior Finish: 3 Coat Stucco
R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.086	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Other Side Finish: Gypsum Board
Attic Roof2nd Floor Zone	Attic Roofs	Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-19	None / 0	0.055	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 16:03:51

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 9 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-30 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-30	None / None	0.034	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.045	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION				
01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	Expanded	DHW Sys 1-hers-dhw	DHW Heater 1 (1)

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 10 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

WATER HEATERS - NEEA HEAT PUMP							
01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTU 50N 120 (50 gal)	TankZone	__Garage__	__Garage__

WATER HEATING - COMPACT DISTRIBUTION						
01	02	03	04	05	06	07
Dwelling Unit type	Water Heating System Name	Master Bath distance of furthest fixture to Water Heater (ft)	Kitchen distance of furthest fixture to Water Heater (ft)	Furthest Third furthest fixture to Water Heater (ft)	Compactness Factor	HERS Verification
Dwelling	DHW Sys 1	n/a	n/a	n/a	0.6	Expanded Credit

WATER HEATING - HERS VERIFICATION						
01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Required	Expanded	Not Required	Not Required

SPACE CONDITIONING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Res HVAC1	Heating and cooling system other	Heating Component 1	1	Cooling Component 1	1	HVAC Fan 1	Air Distribution System 1	Setback

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 11 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

HVAC - HEATING UNIT TYPES				
01	02	03	04	05
Name	System Type	Number of Units	Heating Efficiency	Heating Unit Brand
Heating Component 1	Central gas furnace	1	AFUE - 96	n/a

HVAC - COOLING UNIT TYPES								
01	02	03	04	05	06	07	08	09
Name	System Type	Number of Units	Efficiency Metric	Efficiency EER/EER2/CEER	Efficiency SEER/SEER2	Zonally Controlled	Mult-speed Compressor	HERS Verification
Cooling Component 1	Central split AC	1	EER2/SEER2	12.2	15	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION					
01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEERSEER2	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Conditioned space-entirely	Non-Verified	R-8	R-8	Conditioned Zone	Conditioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

Registration Number: 424-P010238119A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #2

Calculation Date/Time: 2024-04-23T16:02:54-07:00

(Page 12 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 02.ribd22x

HVAC DISTRIBUTION - HERS VERIFICATION								
01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS			
01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION		
01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS								
01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	99	0.35	Exhaust	No	n/a / n/a	No	Yes	

Registration Number: 424-P010238119A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF1R-PRF-01-E

Project Name: Marline Avenue Residential Unit #2**Calculation Date/Time:** 2024-04-23T16:02:54-07:00**(Page 13 of 13)****Calculation Description:** Title 24 Analysis**Input File Name:** Single Family 02.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Wisam AlSaffar	Documentation Author Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Signature Date: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Diego, CA 92128	Phone: 5103598673
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: <ol style="list-style-type: none">1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Wisam AlSaffar	Responsible Designer Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Date Signed: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	License:
City/State/Zip: San Diego, CA 92128	Phone: 5103598673

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Registration Number: 424-P010238119A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 16:03:51

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 1 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

GENERAL INFORMATION					
01	Project Name	Marline Avenue Residential Unit #3			
02	Run Title	Title 24 Analysis			
03	Project Location	1470 Marline Avenue, Unit #3			
04	City	El Cajon	05	Standards Version	2022
06	Zip code	92021	07	Software Version	EnergyPro 9.2
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	180
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	4
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.28
18	Total Cond. Floor Area (ft ²)	2130	19	Glazing Percentage (%)	13.80%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

Registration Number: 424-P010238116A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 15:15:43

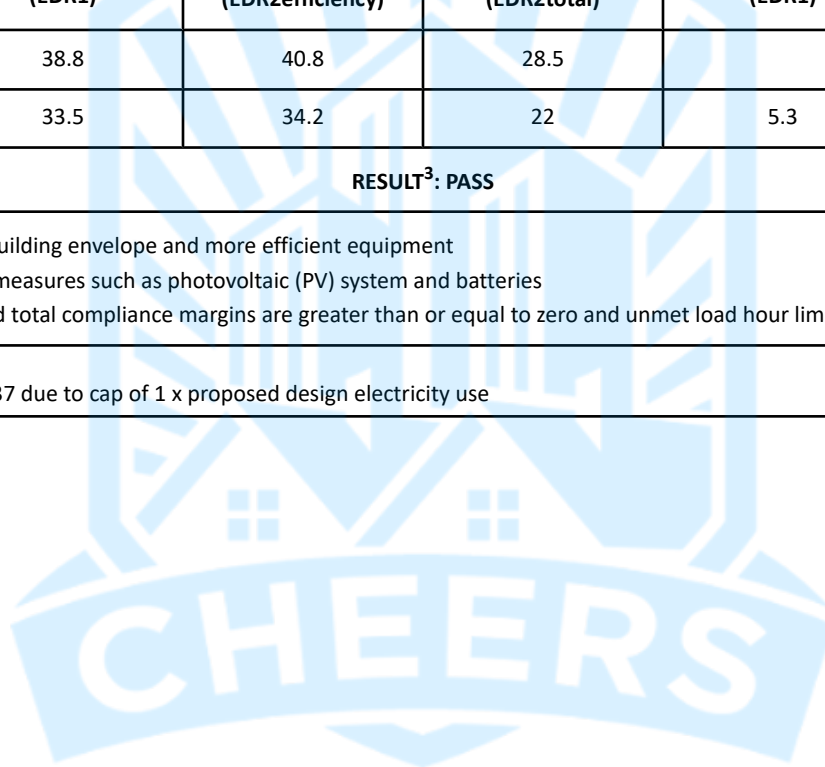
CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 2 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)
Standard Design	38.8	40.8	28.5			
Proposed Design	33.5	34.2	22	5.3	6.6	6.5
RESULT³: PASS						
¹ Efficiency EDR includes improvements like a better building envelope and more efficient equipment ² Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries ³ Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
<ul style="list-style-type: none"> Standard Design PV Capacity: 3.24 kWdc Proposed PV system(s) scaled by a factor of 0.937 due to cap of 1 x proposed design electricity use 						



CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 3 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft ² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft ² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	2.43	10.98	1.69	7.7	0.74	3.28
Space Cooling	0.95	21.22	0.87	20.06	0.08	1.16
IAQ Ventilation	0.36	3.78	0.36	3.78	0	0
Water Heating	1.23	13.03	0.86	9.53	0.37	3.5
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	4.97	49.01	3.78	41.07	1.19	7.94
Photovoltaics	-1.74	-48.57	-1.95	-54.87		
Battery			0	0		
Flexibility						
Indoor Lighting	0.74	7.18	0.74	7.18		
Appl. & Cooking	3.14	21.47	3.15	21.57		
Plug Loads	3.01	30.74	3.01	30.74		
Outdoor Lighting	0.19	1.67	0.19	1.67		
TOTAL COMPLIANCE	10.31	61.5	8.92	47.36		

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 4 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft ² - yr)	Proposed Design (kBtu/ft ² - yr)	Compliance Margin (kBtu/ft ² - yr)	Margin Percentage
Gross EUI ¹	15.29	13.94	1.35	8.83
Net EUI ²	6.45	4.06	2.39	37.05
Notes 1. Gross EUI is Energy Use Total (not including PV) / Total Building Area. 2. Net EUI is Energy Use Total (including PV) / Total Building Area.				

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
0.94	NA	Standard (14-17%)	Fixed	none	false	90	Degrees	22	4.85	96	100
1.87	NA	Standard (14-17%)	Fixed	none	false	180	Degrees	22	4.85	96	100
0.94	NA	Standard (14-17%)	Fixed	none	false	270	Degrees	22	4.85	96	100

REQUIRED SPECIAL FEATURES											
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.											
<ul style="list-style-type: none"> Floor has high level of insulation Insulation below roof deck Non-standard duct location (any location other than attic) Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed 											

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 5 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

HERS FEATURE SUMMARY						
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry						
<ul style="list-style-type: none"> Quality insulation installation (QII) Indoor air quality ventilation Kitchen range hood Minimum Airflow Verified EER/EER2 Verified SEER/SEER2 Verified Refrigerant Charge Fan Efficacy Watts/CFM Duct leakage testing Ducts located entirely in conditioned space confirmed by duct leakage testing Compact distribution system expanded credit 						

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft ²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Marline Avenue Residential Unit #3	2130	1	4	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft ²)	Avg. Ceiling Height	Water Heating System 1	Status
1st Floor Zone	Conditioned	Res HVAC1	790	8	DHW Sys 1	New
2nd Floor Zone	Conditioned	Res HVAC1	1340	8	DHW Sys 1	New

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Front Wall	1st Floor Zone	R-21 Wall w/R-2	180	Front	164	61	90

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 15:15:43

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 6 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Left Wall	1st Floor Zone	R-21 Wall w/R-2	270	Left	268	20	90
Back Wall	1st Floor Zone	R-21 Wall w/R-2	180	Front	164	40.7	90
Right Wall	1st Floor Zone	R-21 Wall w/R-2	90	Right	268	24	90
Front Wall 2	2nd Floor Zone	R-21 Wall w/R-2	0	Back	320	60	90
Left Wall 2	2nd Floor Zone	R-21 Wall w/R-2	90	Right	240	24	90
BackWall	2nd Floor Zone	R-21 Wall w/R-2	180	Front	320	70	90
Right Wall 2	2nd Floor Zone	R-21 Wall w/R-2	270	Left	240	32	90
Wall to Garage	1st Floor Zone>> __Garage__	R-15 Wall	n/a	n/a	114	20	n/a
EastWall to Garage	1st Floor Zone>> __Garage__	R-15 Wall	n/a	n/a	142	0	n/a
Roof	2nd Floor Zone	R-38 HP Attic	n/a	n/a	1340	n/a	n/a
Raised Floor	2nd Floor Zone	R-30 Floor No Crawlspace	n/a	n/a	93	n/a	n/a
2nd Floor over 1st	2nd Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	790	n/a	n/a
2nd Floor over Garage	2nd Floor Zone	R-19 Floor No Crawlspace	n/a	n/a	457	n/a	n/a
GarageWallFront	__Garage__	Garage Ext Wall	180	Front	176	113	90
GarageWallLeft	__Garage__	Garage Ext Wall	270	Left	208	20	90
GarageWallRight	__Garage__	Garage Ext Wall	90	Right	108	0	90
GarageWallRear	__Garage__	Garage Ext Wall	0	Back	54	0	90

ATTIC							
01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic 2nd Floor Zone	Attic Roof2nd Floor Zone	Ventilated	4	0.1	0.85	No	No

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 7 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Front Windows	Window	Front Wall	Front	180			1	40	0.28	NFRC	0.2	NFRC	Bug Screen
Left Windows	Window	Left Wall	Left	270			1	20	0.28	NFRC	0.2	NFRC	Bug Screen
Back Windows	Window	Back Wall	Front	180			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Right Windows	Window	Right Wall	Right	90			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Front Windows 2	Window	Front Wall 2	Back	0			1	60	0.28	NFRC	0.2	NFRC	Bug Screen
Left Windows 2	Window	Left Wall 2	Right	90			1	24	0.28	NFRC	0.2	NFRC	Bug Screen
Back Windows 2	Window	BackWall	Front	180			1	70	0.28	NFRC	0.2	NFRC	Bug Screen
Right Windows 2	Window	Right Wall 2	Left	270			1	32	0.28	NFRC	0.2	NFRC	Bug Screen
GarageWindow Left	Window	GarageWallLeft	Left	270			1	20	0.28	NFRC	0.2	NFRC	Bug Screen

OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft ²)	U-factor
Entry Door	Front Wall	21	0.2
Back Door	Back Wall	16.7	0.2
Door	Wall to Garage	20	0.2
GarageCarDoorFront	GarageWallFront	113	0.7

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 8 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	1st Floor Zone	790	160	none	0	80%	No
GarageSlab	__Garage__	457	54	none	0	0%	No

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Garage Ext Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-21 Wall w/R-2	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / 2	0.058	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-2 Sheathing Exterior Finish: 3 Coat Stucco
R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.086	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Other Side Finish: Gypsum Board
Attic Roof2nd Floor Zone	Attic Roofs	Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-19	None / 0	0.055	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 9 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-30 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-30	None / None	0.034	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.045	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION				
01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	Expanded	DHW Sys 1-hers-dhw	DHW Heater 1 (1)

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 10 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

WATER HEATERS - NEEA HEAT PUMP							
01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTU 50N 120 (50 gal)	TankZone	__Garage__	__Garage__

WATER HEATING - COMPACT DISTRIBUTION						
01	02	03	04	05	06	07
Dwelling Unit type	Water Heating System Name	Master Bath distance of furthest fixture to Water Heater (ft)	Kitchen distance of furthest fixture to Water Heater (ft)	Furthest Third furthest fixture to Water Heater (ft)	Compactness Factor	HERS Verification
Dwelling	DHW Sys 1	n/a	n/a	n/a	0.6	Expanded Credit

WATER HEATING - HERS VERIFICATION						
01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Required	Expanded	Not Required	Not Required

SPACE CONDITIONING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Res HVAC1	Heating and cooling system other	Heating Component 1	1	Cooling Component 1	1	HVAC Fan 1	Air Distribution System 1	Setback

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 11 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

HVAC - HEATING UNIT TYPES				
01	02	03	04	05
Name	System Type	Number of Units	Heating Efficiency	Heating Unit Brand
Heating Component 1	Central gas furnace	1	AFUE - 96	n/a

HVAC - COOLING UNIT TYPES								
01	02	03	04	05	06	07	08	09
Name	System Type	Number of Units	Efficiency Metric	Efficiency EER/EER2/CEER	Efficiency SEER/SEER2	Zonally Controlled	Mult-speed Compressor	HERS Verification
Cooling Component 1	Central split AC	1	EER2/SEER2	12.2	15	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION					
01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEERSEER2	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Conditioned space-entirely	Non-Verified	R-8	R-8	Conditioned Zone	Conditioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential Unit #3

Calculation Date/Time: 2024-04-23T15:14:57-07:00

(Page 12 of 13)
Calculation Description: Title 24 Analysis

Input File Name: Single Family 03.ribd22x

HVAC DISTRIBUTION - HERS VERIFICATION								
01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS			
01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION		
01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS								
01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	99	0.35	Exhaust	No	n/a / n/a	No	Yes	

Registration Number: 424-P010238116A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF1R-PRF-01-E

Project Name: Marline Avenue Residential Unit #3**Calculation Date/Time:** 2024-04-23T15:14:57-07:00**(Page 13 of 13)****Calculation Description:** Title 24 Analysis**Input File Name:** Single Family 03.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Wisam AlSaffar	Documentation Author Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Signature Date: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Diego, CA 92128	Phone: 5103598673
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: <ol style="list-style-type: none">1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Wisam AlSaffar	Responsible Designer Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Date Signed: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	License:
City/State/Zip: San Diego, CA 92128	Phone: 5103598673

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Registration Number: 424-P010238116A-000-000-0000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 15:15:43

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 1 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

GENERAL INFORMATION					
01	Project Name	Marline Avenue Residential ADU			
02	Run Title	Title 24 Analysis			
03	Project Location	1470 Marline Avenue, Unit #4			
04	City	El Cajon	05	Standards Version	2022
06	Zip code	92021	07	Software Version	EnergyPro 9.2
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	90
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	3
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.34
18	Total Cond. Floor Area (ft ²)	1200	19	Glazing Percentage (%)	30.83%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

Registration Number: 424-P010238117A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 2 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)
Standard Design	36.9	40	29			
Proposed Design	32.4	40	21.5	4.5	0	7.5
RESULT³: PASS						
¹ Efficiency EDR includes improvements like a better building envelope and more efficient equipment ² Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries ³ Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
<ul style="list-style-type: none"> Standard Design PV Capacity: 2.54 kWdc Proposed PV system(s) scaled by a factor of 0.850 due to cap of 1 x proposed design electricity use 						


Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2024-04-23 22:46:03

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 3 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft ² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft ² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	1.54	7.04	1.38	9.42	0.16	-2.38
Space Cooling	1.34	30.93	1.27	34.12	0.07	-3.19
IAQ Ventilation	0.42	4.39	0.42	4.39	0	0
Water Heating	1.99	20.27	1.34	14.55	0.65	5.72
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	5.29	62.63	4.41	62.48	0.88	0.15
Photovoltaics	-2.42	-67.93	-3.13	-88.65		
Battery			0	0		
Flexibility						
Indoor Lighting	0.81	7.8	0.81	7.8		
Appl. & Cooking	4.68	30.49	4.67	30.4		
Plug Loads	4.56	46.63	4.56	46.63		
Outdoor Lighting	0.2	1.76	0.2	1.76		
TOTAL COMPLIANCE	13.12	81.38	11.52	60.42		

Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 4 of 12)

Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft ² - yr)	Proposed Design (kBtu/ft ² - yr)	Compliance Margin (kBtu/ft ² - yr)	Margin Percentage
Gross EUI ¹	20.17	19.49	0.68	3.37
Net EUI ²	7.87	3.59	4.28	54.38
Notes 1. Gross EUI is Energy Use Total (not including PV) / Total Building Area. 2. Net EUI is Energy Use Total (including PV) / Total Building Area.				

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
0.85	NA	Standard (14-17%)	Fixed	none	false	90	Degrees	22	4.85	96	100
1.7	NA	Standard (14-17%)	Fixed	none	false	180	Degrees	22	4.85	96	100
0.85	NA	Standard (14-17%)	Fixed	none	false	270	Degrees	22	4.85	96	100

REQUIRED SPECIAL FEATURES	
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.	
<ul style="list-style-type: none">Cool roofCeiling has high level of insulationFloor has high level of insulationInsulation below roof deckVariable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed	

Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 5 of 12)

Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

HERS FEATURE SUMMARY						
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry						
<ul style="list-style-type: none">Quality insulation installation (QII)Building air leakage/reduced infiltrationIndoor air quality ventilationKitchen range hoodVerified EER/EER2Verified SEER/SEER2Verified Refrigerant ChargeAirflow in habitable rooms (SC3.1.4.1.7)Verified HSPFVerified heat pump rated heating capacityWall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)						

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Marline Avenue Residential ADU	1200	1	3	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status
1st Floor Zone	Conditioned	Res HVAC1	569	8	DHW Sys 1	New
2nd Floor Zone	Conditioned	Res HVAC1	631	8	DHW Sys 1	New

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 6 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Front Wall	1st Floor Zone	R-21 Wall	90	Front	208	61	90
Left Wall	1st Floor Zone	R-21 Wall	180	Left	168	16	90
Back Wall	1st Floor Zone	R-21 Wall	270	Back	208	18	90
Right Wall	1st Floor Zone	R-21 Wall	0	Right	168	33	90
Front Wall 2	2nd Floor Zone	R-21 Wall	90	Front	208.1	208	90
Left Wall 2	2nd Floor Zone	R-21 Wall	180	Left	192	28	90
BackWall	2nd Floor Zone	R-21 Wall	270	Back	208	24	90
Right Wall 2	2nd Floor Zone	R-21 Wall	0	Right	192	24	90
R-38 Roof	2nd Floor Zone	R-49 Roof Attic	n/a	n/a	631	n/a	n/a
Raised Floor	2nd Floor Zone	R-30 Floor No Crawlspace	n/a	n/a	62	n/a	n/a
Interior Floor	2nd Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	569	n/a	n/a

ATTIC							
01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic 2nd Floor Zone	Attic Roof2nd Floor Zone	Ventilated	4	0.2	0.85	Yes	Yes

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Front Windows	Window	Front Wall	Front	90			1	40	0.34	NFRC	0.33	NFRC	Bug Screen
Left Windows	Window	Left Wall	Left	180			1	16	0.34	NFRC	0.33	NFRC	Bug Screen

Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 7 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Back Windows	Window	Back Wall	Back	270			1	18	0.34	NFRC	0.33	NFRC	Bug Screen
Right Windows	Window	Right Wall	Right	0			1	12	0.34	NFRC	0.33	NFRC	Bug Screen
Front Windows 2	Window	Front Wall 2	Front	90			1	208	0.34	NFRC	0.33	NFRC	Bug Screen
Left Windows 2	Window	Left Wall 2	Left	180			1	28	0.34	NFRC	0.33	NFRC	Bug Screen
Back Windows 2	Window	BackWall	Back	270			1	24	0.34	NFRC	0.33	NFRC	Bug Screen
Right Windows 2	Window	Right Wall 2	Right	0			1	24	0.34	NFRC	0.33	NFRC	Bug Screen

OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft ²)	U-factor
Entry Door	Front Wall	21	0.5
Entry Door 2	Right Wall	21	0.5

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Covered Slab	1st Floor Zone	569	90	none	0	80%	No

Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 8 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
Attic Roof2nd Floor Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-13	None / 0	0.078	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-0.0 insul.
R-49 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-49	None / None	0.02	Over Ceiling Joists: R-39.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-30 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-30	None / None	0.034	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION				
01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	Required	480.0	3

Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 9 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

WATER HEATING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP							
01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTU 50N 120 (50 gal)	Outside	2nd Floor Zone	2nd Floor Zone

WATER HEATING - HERS VERIFICATION						
01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS								
01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Res HVAC1	Heat pump heating cooling	Heat Pump System 1	2	Heat Pump System 1	2	n/a	n/a	Setback

Registration Number: 424-P010238117A-000-000-00000000-0000

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
CF1R-PRF-01-E
Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 10 of 12)
Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

HVAC - HEAT PUMPS												
01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Heating Efficiency Type	HSPF/HS PF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SE ER2	EER/EER 2/CEER			
Heat Pump System 1	VCHP-ductless	2	HSPF	9	21600	12700	EERSEER	18.5	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION								
01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Required	Required	Yes	Yes	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION									
01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 1	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

INDOOR AIR QUALITY (IAQ) FANS								
01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	65	0.35	Exhaust	No	n/a / n/a	No	Yes	

Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF1R-PRF-01-E

Project Name: Marline Avenue Residential ADU

Calculation Date/Time: 2024-04-23T22:45:00-07:00

(Page 11 of 12)

Calculation Description: Title 24 Analysis

Input File Name: ADU Mini-Split.ribd22x

PROJECT NOTES

Demonstrates a Variable Capacity Heat Pump



Registration Number: 424-P010238117A-000-000-00000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF1R-PRF-01-E

Project Name: Marline Avenue Residential ADU**Calculation Date/Time:** 2024-04-23T22:45:00-07:00**(Page 12 of 12)****Calculation Description:** Title 24 Analysis**Input File Name:** ADU Mini-Split.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Wisam AlSaffar	Documentation Author Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Signature Date: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Diego, CA 92128	Phone: 5103598673
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: <ol style="list-style-type: none">1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Wisam AlSaffar	Responsible Designer Signature: <i>Wisam AlSaffar</i>
Company: Babylon Engineers, Inc.	Date Signed: 10/05/2024
Address: 16769 Bernardo Center Dr, 1-292	License:
City/State/Zip: San Diego, CA 92128	Phone: 5103598673

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Registration Number: 424-P010238117A-000-000-0000000-0000

Registration Date/Time: 10/05/2024 12:21

HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Report Generated: 2024-04-23 22:46:03

Schema Version: rev 20220901