GENERAL NOTES

1 ALL WORK SHALL COMPLY WITH THE 2022 CALIFORNIA BUILDING CODE (CBC) 2022 CALIFORNIA RESIDENTIAL CODE (CRC) 2022 CALIFORNIA ELECTRICAL CODE (CEC) 2022 CALIFORNIA MECHANICAL CODE (CMC) 2022 CALIFORNIA PLUMBING CODE (CPC) 2022 CALIFORNIA ENERGY CODE (CEC) 2022 CALIFORNIA GREEN BUILDING CODE (CAL GREEN) 2022 CALIFORNIA FIRE CODE (CFC) AND ALL LOCAL CODES AND ORDINANCES
2 CONTRACTORS SHALL VERYFY AND CHECK ALL CONDITIONS AND DIMENSIONS ON THE JOB SITE IN COORDINATION WITH THE PLANS AND SHALL NOTIFYTHE DESIGNER/ARCHITECT OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATON SHOWN ON DRAWINGS BEFORE PROCEEDING WITH ANY WORK
3 MECHANICAL ELECTRICAL AND FIRE PROTECTION CONTRACT DOCUMENTS AND ALL OTHER DESIGN-BUILD CONTRACT DOCUMENTS NOT INCLUDED HEREIN SHALL BE SUBMITTED TO THE TOWN OF LOS GATOS FOR SEPARATE PERMITS
4 ALL GLAZING SHALL CONFORM TO THE FEDERAL GLAZING REGULATIONS AND CHAPTER 24 OF THE C R C
5 DO NOT SCALE DIMENSION GOVERN
6 INTERIOR DIMENSIONS ARE TO FACE OF GYP BD (U N O)
7 EXTERIOR DIMENSIONS ARE TO FACE OF PLYWOOD (U N O)

PROJECT INFORMATION

PROJECT ADDRESS:	16488 BONNIE LN LOS GATOS CA 95032
A P N :	532-02-014
OCCUPANCY GROUP:	R-3 / U
TYPE OF CONSTRUCTION:	V-B
STORIES:	2
FIRE SPRINKLER:	NONE
LOT AREA	12 085 00 SQ FT
EXISTING FIRST FLOOR AREA	1 954 00 SQ FT
EXISTING SECOND FLOOR AREA	676 00 SQ FT
EXISTING DETACHED GARAGE	541 00 SQ FT
EXISTING ADU	354 00 SQ FT
PROPOSED FIRST FLOOR ADDITION	0 00 SQ FT
PROPOSED SECOND FLOOR ADDITION	406 00 SQ FT
TOTAL FIRST FLOOR AREA	1 954 00 SQ FT
TOTAL SECOND FLOOR AREA	(676 + 406) = 1 082 00 SQ FT
TOTAL PROPOSED MAIN RESIDENCE	(1954 + 1082) = 3,036.00 SQ FT.
LOT COVERAGE:	(1954 + 541) / 12085 = 0 2065 or 20% 2

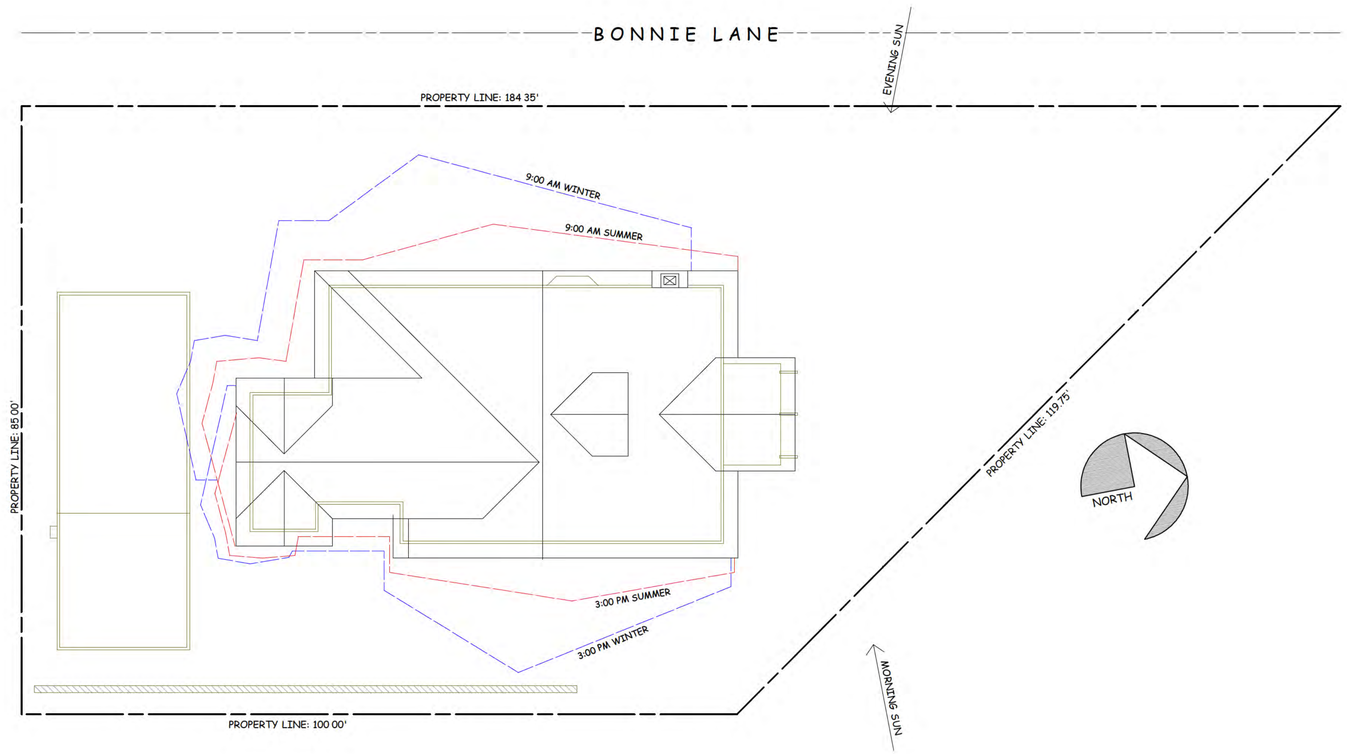
SCOPE OF WORK

1- SECOND FLOOR ADDITION
2-REMODEL KITCHEN LIVING & DINING
3-NEW BALCONY

VICINITY MAP

CONSULTANTS

STRUCTURAL ENGINEERS	ORANGE ENGINEERING 4005 CLIPPER COURT FREEMONT CA 94538 408-888-7836
ENERGY CONSULTANT:	CARSTAIRS ENERGY CALCULATIONS P O BOX 4736 SAN LUIS OBISPO CA 93403 805-904-9048



SHADOW DIAGRAM

A P N : 532-02-014 SCALE: 1" = 10'

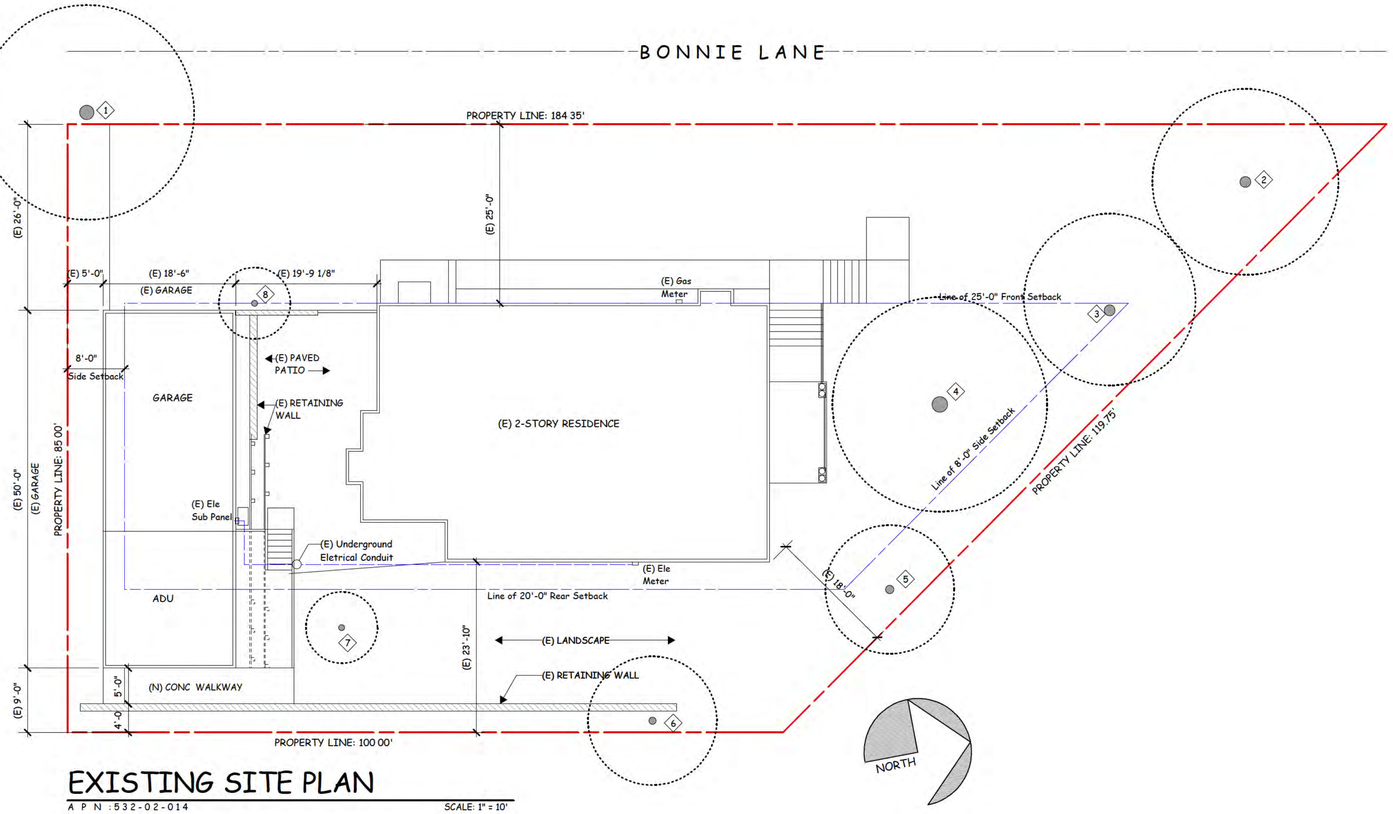
INDEX

REVISIONS
2 Jan 16 2025 Planning Comments

NGUYENPHAN
DESIGN CONSULTING
7080 AVENIDA ROTELLA
SAN JOSE CALIFORNIA
Dong Nº 408-206-7332
email: dongtnp@aim.com

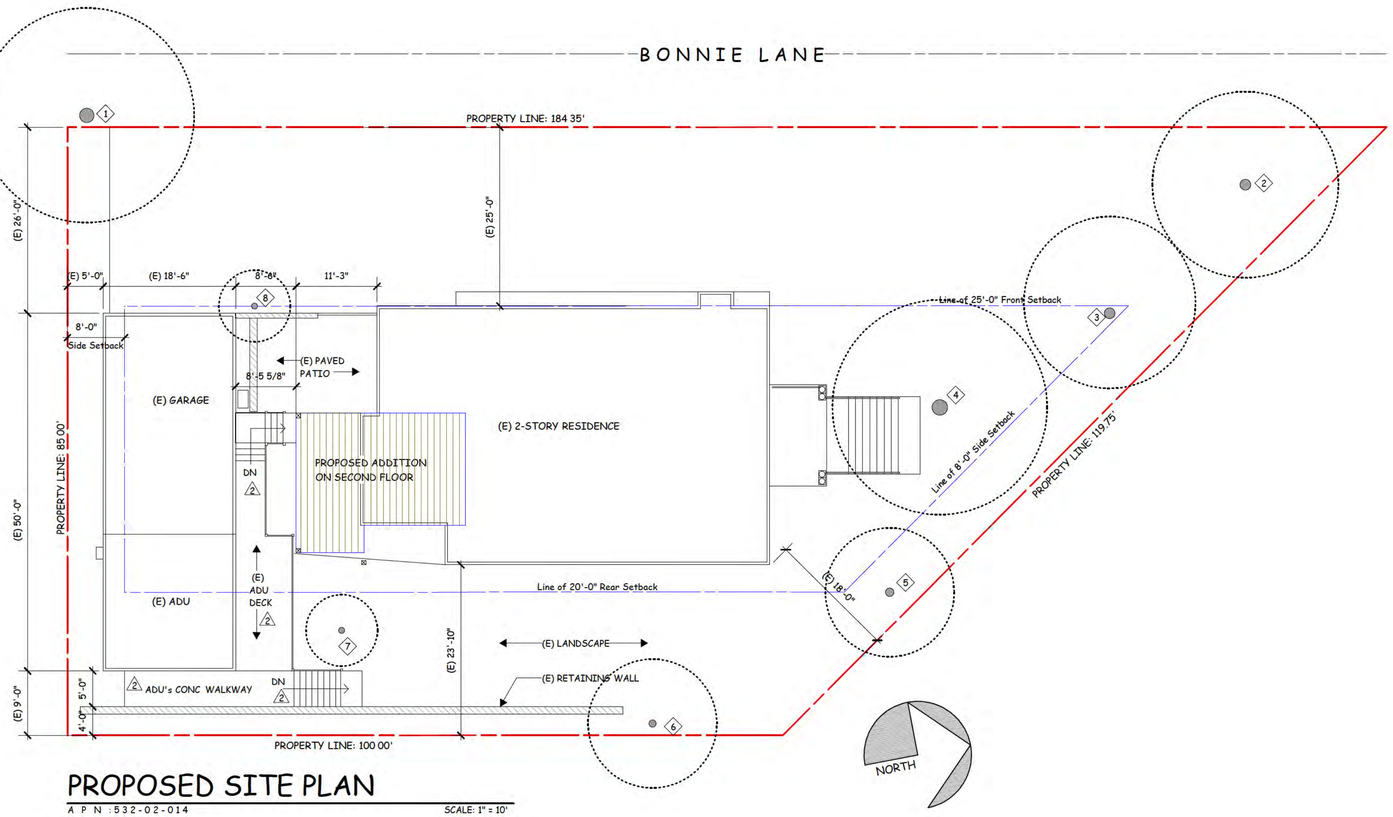
PROPOSED REMODLE AND ADDITION FOR :
[redacted] RESIDENCE
16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-1
OF 22 SHEETS



EXISTING SITE PLAN

A P N : 532-02-014 SCALE: 1" = 10'



PROPOSED SITE PLAN

A P N : 532-02-014 SCALE: 1" = 10'

LEGEND

1. 26" REDWOOD TREE
2. 14" FRUITLESS TREE
3. 18" FRUIT TREE
4. 26" PINE TREE
5. 14" FRUIT TREE
6. 12" FRUIT TREE
7. 10" FRUIT TREE
8. 10" FRUITLESSTREE

REVISIONS

2	
1	Jan 16 2025 Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA
SAN JOSE CALIFORNIA
Dong Nº: 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :
[redacted] RESIDENCE
16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-1.1
OF 22 SHEETS

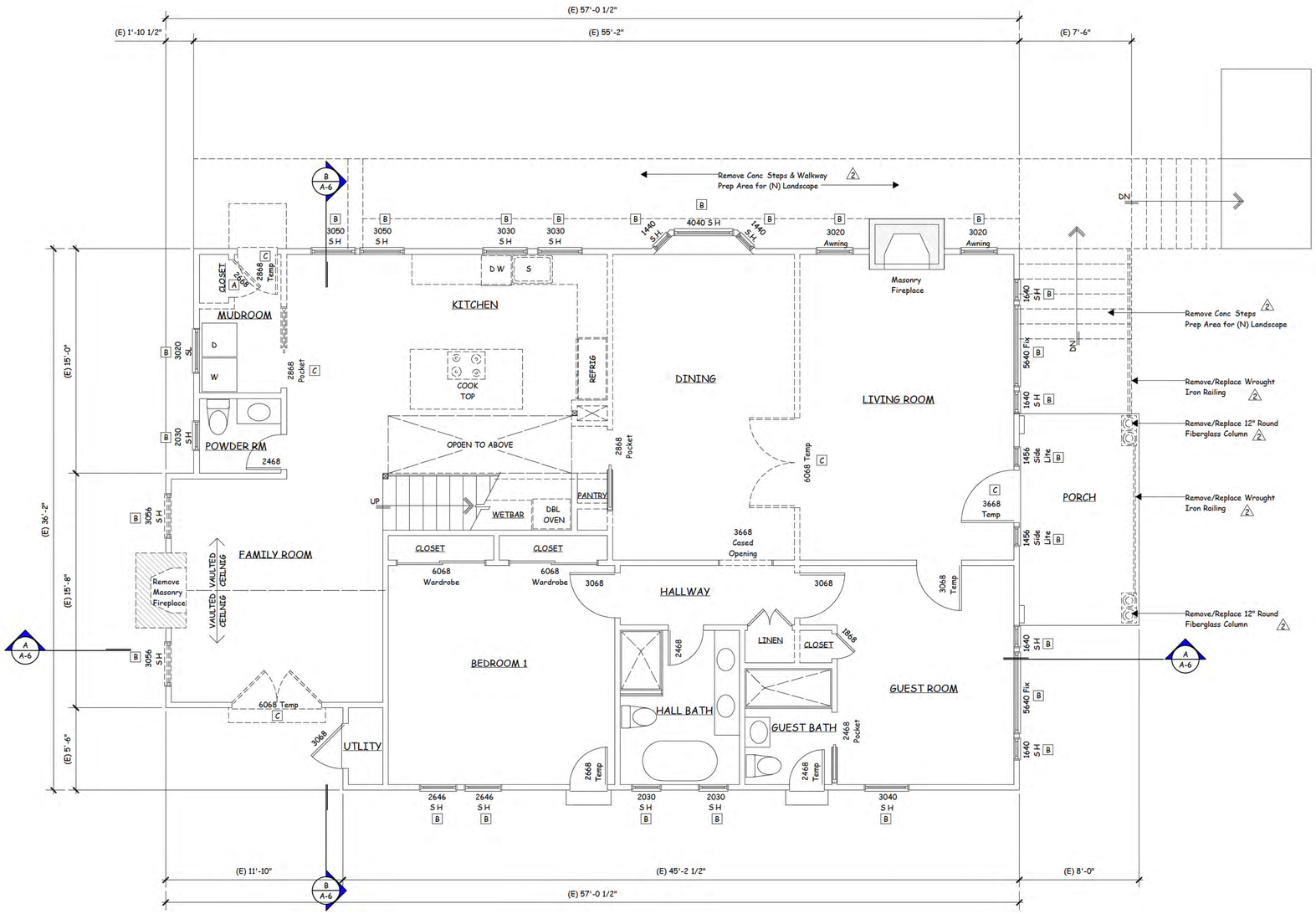
LEGEND:

- DENOTES EXISTING WALL TO REMAIN
- REMOVE EXI TING WALL PREP AREA FOR NEW CON TRUCTION
- 2 A — WOOD DOOR TO BE REMOVED OR REPLACE
- 2 B — WOOD SACH WINDOW TO BE REMOVED/ REPLACE
- 2 C — GLASS DOOR TO BE REMOVED OR REPLACE
- 2 S H — SINGLE HUNG

1 DEMOLITION PLAN IS PROVIDED FOR REFERENCE ONLY GENERAL CONTRACTOR SHALL CAREFULLY COORDINATE DEMOLITION AND REMOVAL WITH NOTES AND DIMENSIONS INDICATING THE EXTENT AND NATURE OF NEW CONSTRUCTION SHOWN ELSEWHWERE IN THESE DOCUMENTS

2 GENERAL CONTRACTOR IS RESPONSIBLE FOR SERCURELY SHORING IN PLACE ALL OVERHEAD STRUCTURES PRIOR TO THE REMOVAL OF ANY EXISTING SUP-PORT STRUCTURES

3 CAP OFF ALL PLUMBING GAS AND ELECTRICAL LINES AS REQUIRED



EXISTING FIRST FLOOR PLAN / DEMOLITION PLAN

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

NORTH

REVISIONS	
2	Jan 16 2025 Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA SAN JOSE CALIFORNIA
Dong Nº 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :

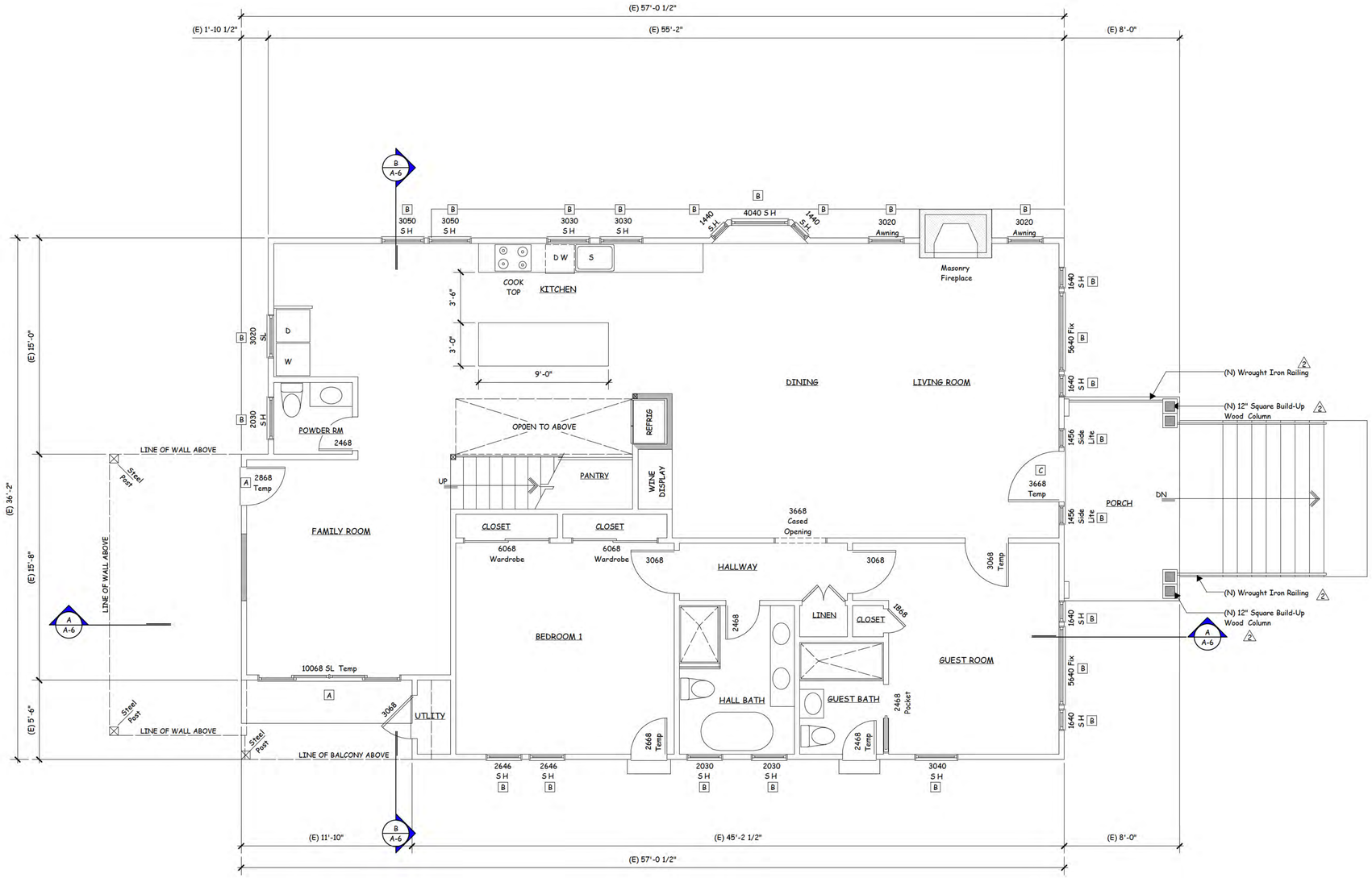
RESIDENCE

16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-2
OF 22 SHEETS

LEGEND:

	DENOTES EXISTING WALL TO REMAIN
	DENOTES NEW WALL FINISH TO MATCH EXISTING
2 A	(N) GLASS DOOR
2 B	REPLACE (E) WINDOW WITH FIBERGLA CLAD WOOD WINDOW
2 C	REPLACE (E) GLASS DOOR
2 S H	SINGLE HUNG
2 SL	SLIDING



PROPOSED FIRST FLOOR PLAN

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

NORTH

REVISIONS	
2 A	Jan 16 2025 Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA SAN JOSE CALIFORNIA
Dong Nº. 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :
[redacted] RESIDENCE
16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-2.1
OF 22 SHEETS

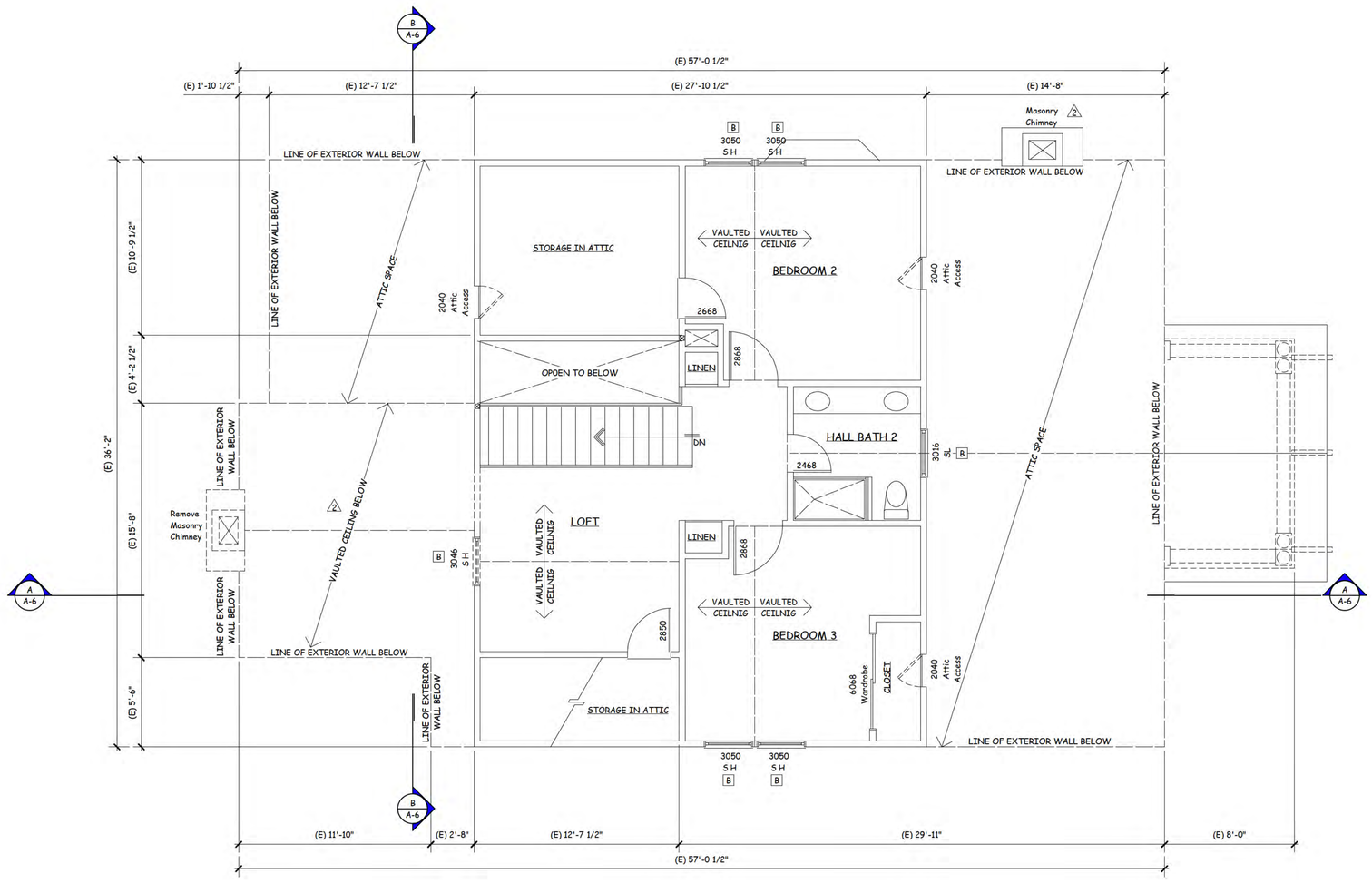
LEGEND:

	DENOTES EXISTING WALL TO REMAIN
	REMOVE EXI TING WALL PREP AREA FOR NEW CON TRUCTION
2 A	WOOD DOOR TO BE REMOVED OR REPLACE
2 B	WOOD SACH WINDOW TO BE REMOVED/ REPLACE
2 C	GLASS DOOR TO BE REMOVED OR REPLACE
S H	SINGLE HUNG
SL	SLIDING

1 DEMOLITION PLAN IS PROVIDED FOR REFERENCE ONLY GENERAL CONTRACTOR SHALL CAREFULLY COORDINATE DEMOLITION AND REMOVAL WITH NOTES AND DIMENSIONS INDICATING THE EXTENT AND NATURE OF NEW CONSTRUCTION SHOWN ELSEWHWERE IN THESE DOCUMENTS

2 GENERAL CONTRACTOR IS RESPONSIBLE FOR SERCURELY SHORING IN PLACE ALL OVERHEAD STRUCTURES PRIOR TO THE REMOVAL OF ANY EXISTING SUP-PORT STRUCTURES

3 CAP OFF ALL PLUMBING GAS AND ELECTRICAL LINES AS REQUIRED



EXISTING SECOND FLOOR PLAN

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

NORTH

REVISIONS	
2	Jan 16 2025: Planning Comments

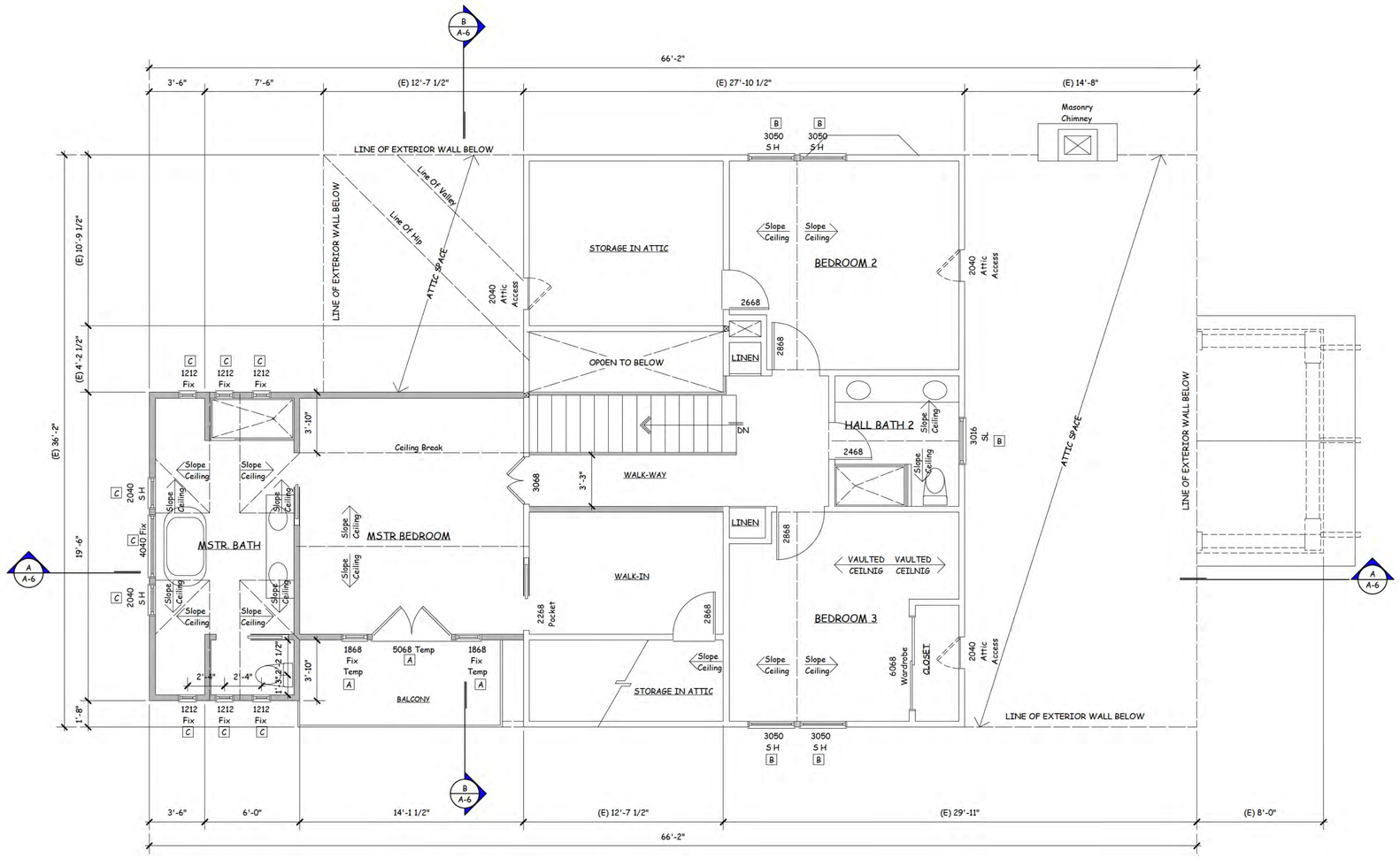
NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA SAN JOSE CALIFORNIA
Dong NP. 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :
[redacted] RESIDENCE
16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-3
OF 22 SHEETS

LEGEND:

	DENOTES EXISTING WALL TO REMAIN
	DENOTES NEW WALL FINISH TO MATCH EXISTING
2 A	(N) GLASS DOOR
2 B	REPLACE (E) WINDOW WITH FIBERGLASS CLAD WOOD WINDOW
2 C	(N) FIBERGLASS CLAD WOOD WINDOW
2 S H	SINGLE HUNG
2 SL	SLIDING



PROPOSED SECOND FLOOR PLAN

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

NORTH

REVISIONS	
2	Jan 16 2025 Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA SAN JOSE CALIFORNIA
Dong Nº: 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :
[redacted] RESIDENCE
16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-3.1
OF 22 SHEETS

EXISTING ROOF PLAN

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

NORTH

REVISIONS	
2	Jan 16 2025 Planning Comments

NGUYENPHAN
DESIGN
CONSULTING
7080 AVENIDA ROTELLA
SAN JOSE CALIFORNIA
Dong NP. 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :
[redacted] RESIDENCE
16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024
SCALE: AS NOTED
DRAWN: DongTNP
JOB:
SHEET A-4
OF 22 SHEETS

PROPOSED ROOF PLAN

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

NORTH

REVISIONS	
2	Jan 16 2025 Planning Comments

NGUYENPHAN
DESIGN
CONSULTING
7080 AVENIDA ROTELLA
SAN JOSE CALIFORNIA
Dong NP. 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR :

RESIDENCE

16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024

SCALE: AS NOTED

DRAWN: DongTNP

JOB:

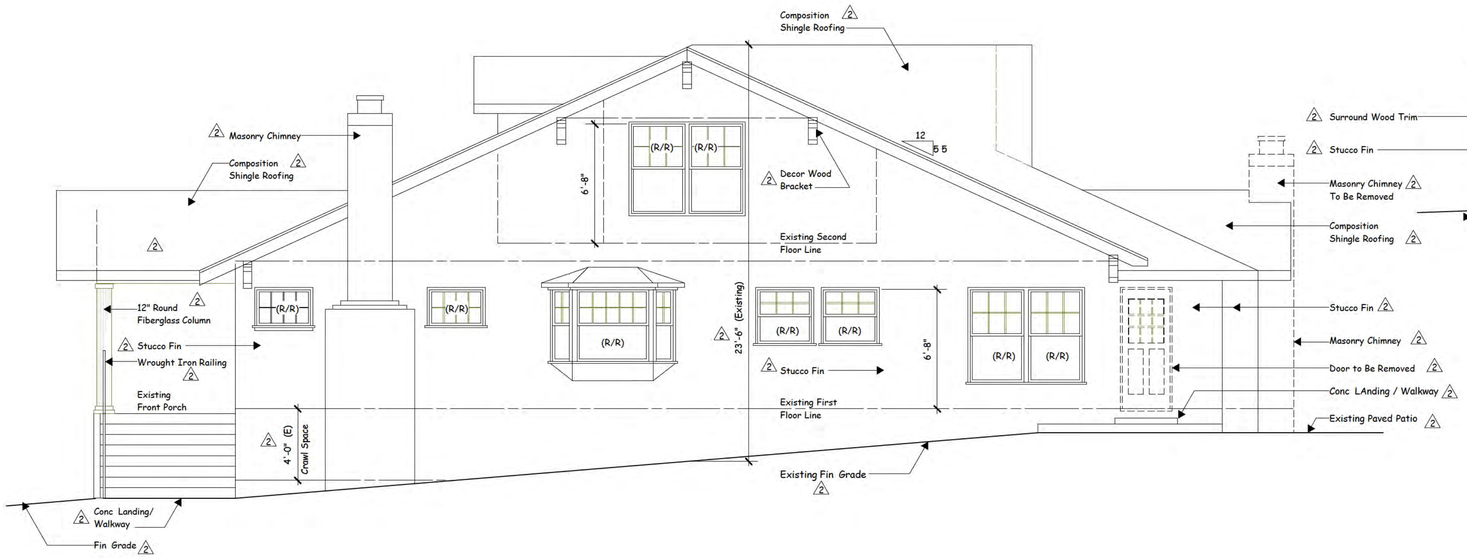
SHEET
A-4.1
OF 22 SHEETS

NOTES :

1 SEE FLOOR PLAN AND FLOOR PLAN LEGEND FOR EXISTING / PROPOSED WINDOW' SIZE TYPE MATERIAL REMOVAL REPLACEMENT OR NEW

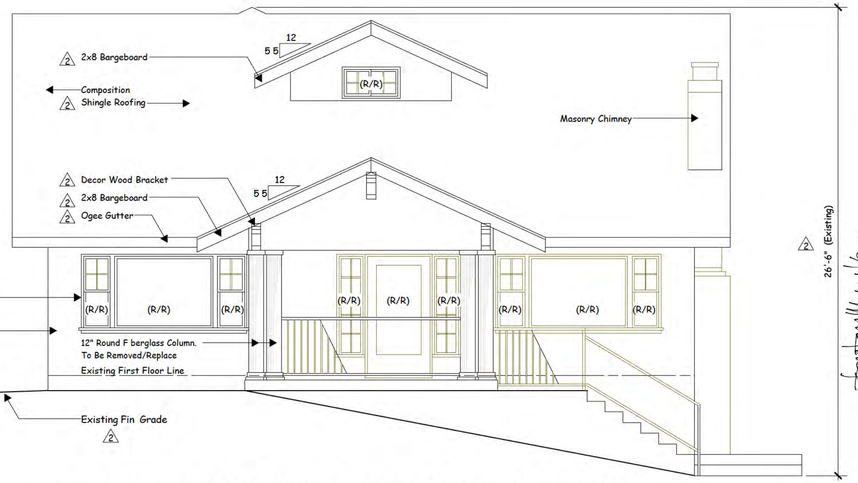
2 PRIOR TO FINAL - EXT LIGHTING: PRIOR TO FINAL OCCUPANCY ALL EXTERIOR LIGHTING SHALL BE KEPT TO A MINIMUM AND SHALL BE DOWN DIRECTED FIXTURES THAT WILL NOT REFLECT OR ENCROACH ONTO ADJACENT PROPERTIES ALL LIGHTING SHALL UTILIZE SHIELDS SO THAT NO BULB IS VISIBLE AND TO ENSURE THAT THE LIGHT IS DIRECTED TO THE GROUND SURFACE AND DOES NOT SPILL LIGHT ONTO NEIGHBORING PARCELS OR PRODUCE GLARE WHEN SEEN FROM NEARBY HOMES NO FLOOD LIGHTS SHALL BE USED UNLESS IT CAN BE DEMONSTRATED THAT THEY ARE NEEDED FOR SAFETY OR SECURITY

(R/R) REMOVE and rEPLACE



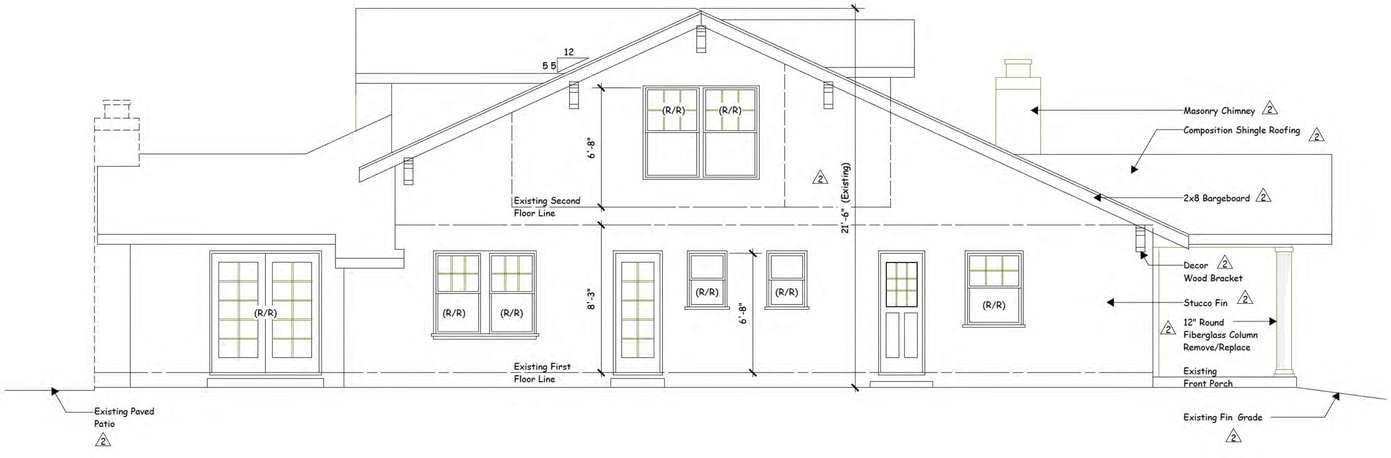
EXISTING WEST ELEVATION (BONNIE LANE)

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



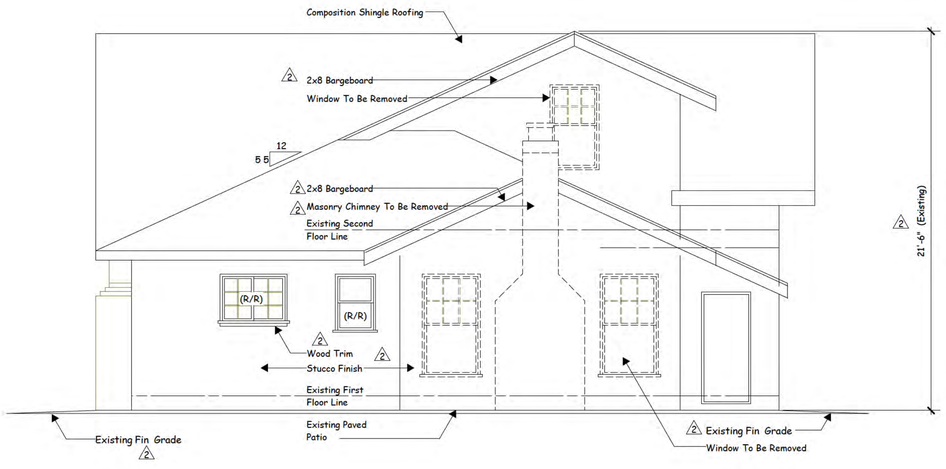
EXISTINGNORTH ELEVATION (FRONT)

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



EXISTING EAST ELEVATION

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



EXISTING SOUTH ELEVATION (REAR)

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

REVISIONS

2	Jan 16 2025: Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA SAN JOSE CALIFORNIA
Dong Nº: 408-206-7332
email: dongtnp@sbcglobal.net

PROPOSED REMODLE AND ADDITION FOR :

RESIDENCE

16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024

SCALE: AS NOTED

DRAWN: DongTNP

JOB:

SHEET A-5

OF 22 SHEETS

NOTES :

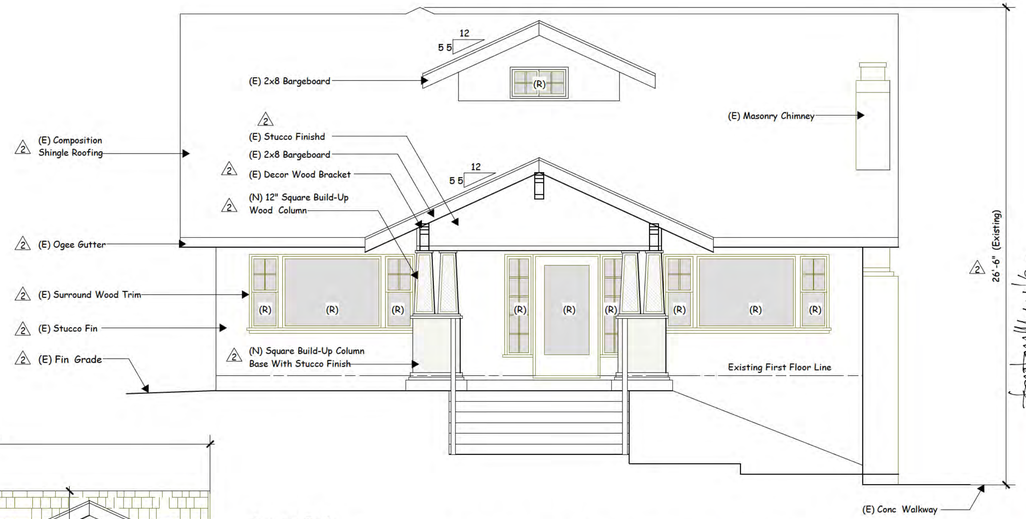
1 SEE FLOOR PLAN AND FLOOR PLAN LEGEND FOR EXISTING / PROPOSED WINDOW' SIZE TYPE MATERIAL REMOVAL REPLACEMENT OR NEW

2 PRIOR TO FINAL - EXT LIGHTING: PRIOR TO FINAL OCCUPANCY ALL EXTERIOR LIGHTING SHALL BE KEPT TO A MINIMUM AND SHALL BE DOWN DIRECTED FIXTURES THAT WILL NOT REFLECT OR ENCROACH ONTO ADJACENT PROPERTIES ALL LIGHTING SHALL UTILIZE SHIELDS SO THAT NO BULB IS VISIBLE AND TO ENSURE THAT THE LIGHT IS DIRECTED TO THE GROUND SURFACE AND DOES NOT SPILL LIGHT ONTO NEIGHBORING PARCELS OR PRODUCE GLARE WHEN SEEN FROM NEARBY HOMES NO FLOOD LIGHTS SHALL BE USED UNLESS IT CAN BE DEMONSTRATED THAT THEY ARE NEEDED FOR SAFETY OR SECURITY

(R) REPLACEMENT

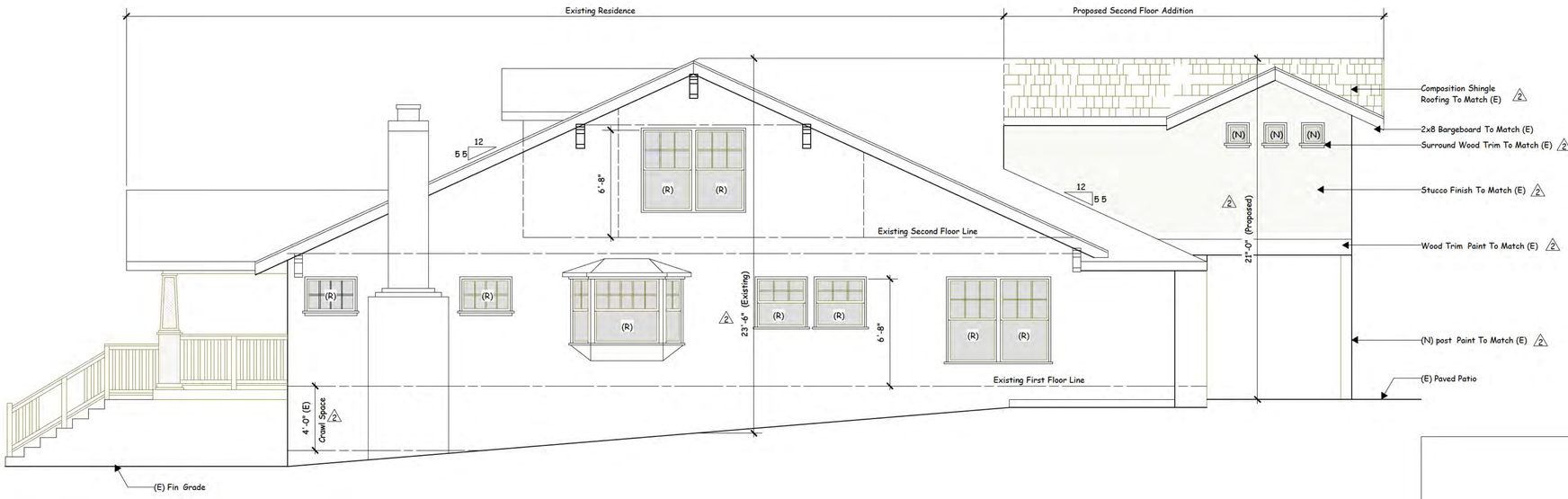
(E) EXISTING

(N) NEW



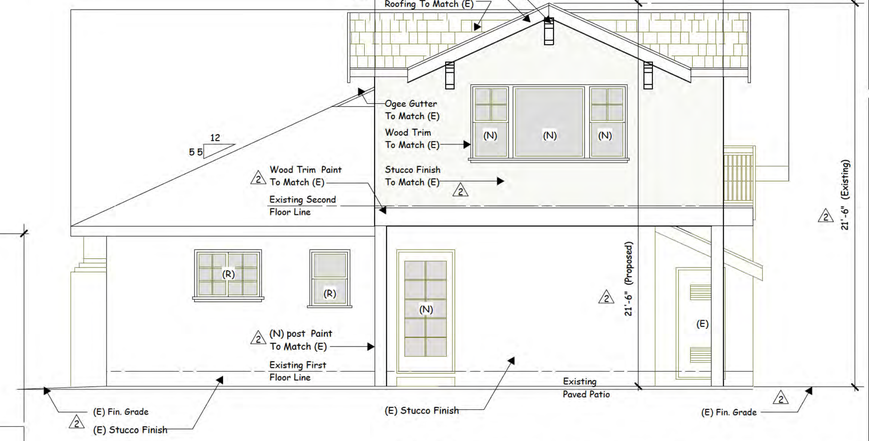
PROPOSED NORTH ELEVATION (FRONT)

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



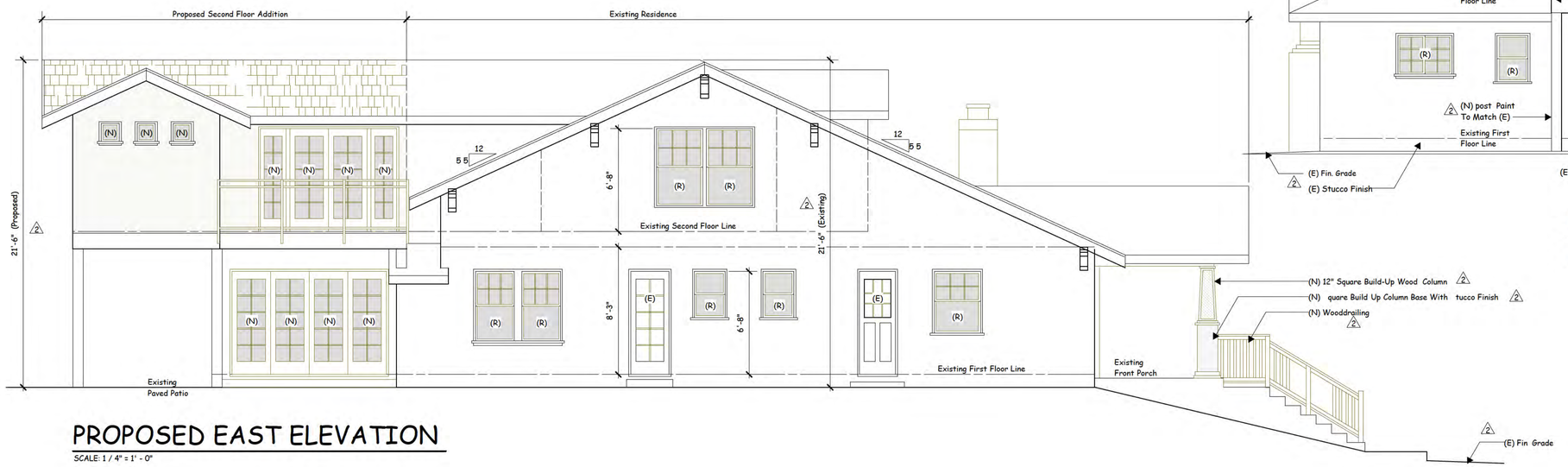
PROPOSED WEST ELEVATION (BONNIE LANE)

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



PROPOSED SOUTH ELEVATION (REAR)

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



PROPOSED EAST ELEVATION

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

REVISIONS

2	Jan 16 2025: Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA SAN JOSE CALIFORNIA
Dong Nº: 408-206-7332
email: dongtnp@sbcglobal.com

PROPOSED REMODLE AND ADDITION FOR :

RESIDENCE

16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024

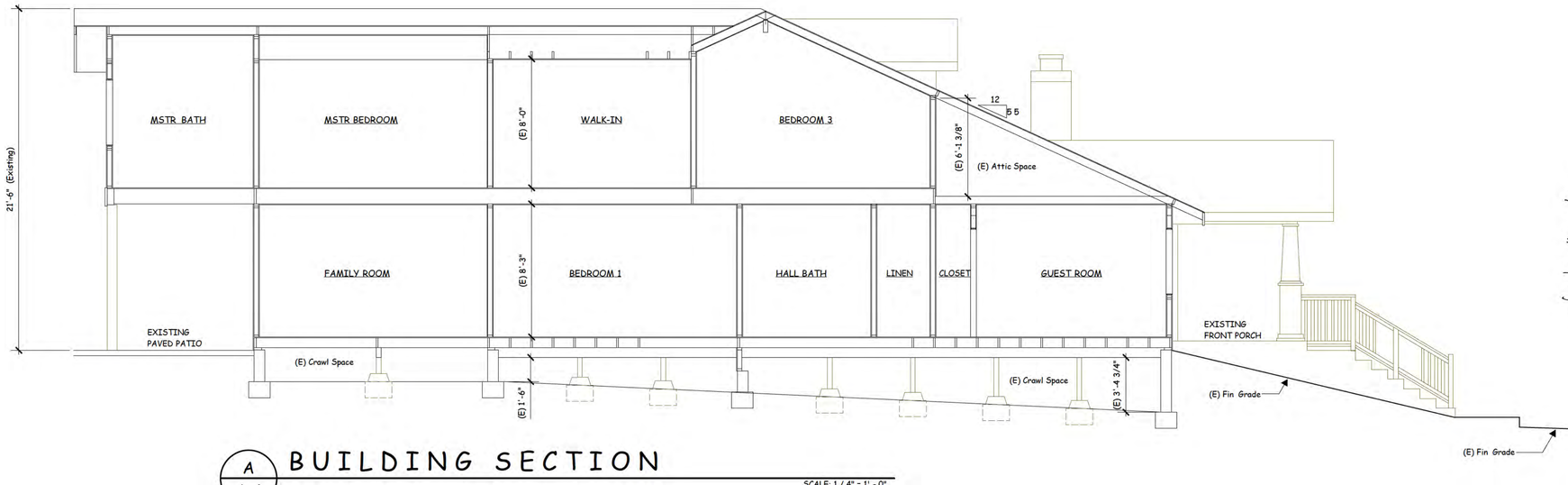
SCALE: AS NOTED

DRAWN: DongTNP

JOB:

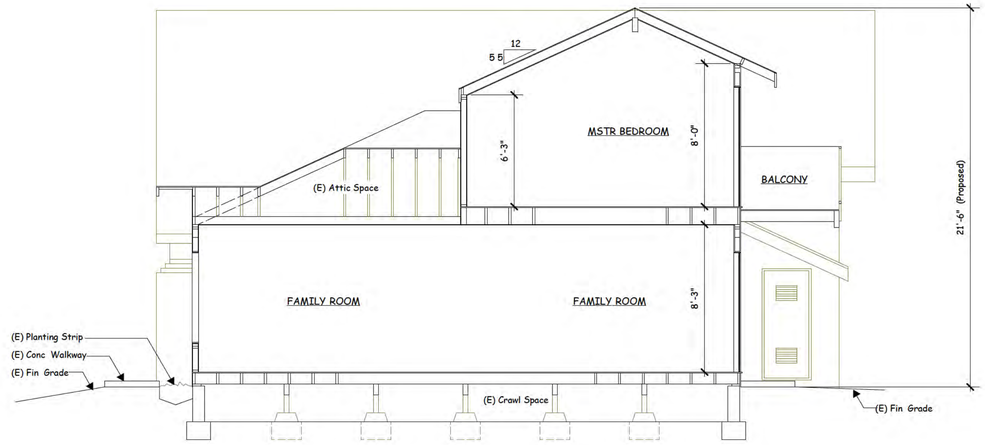
SHEET A-5.1

OF 22 SHEETS



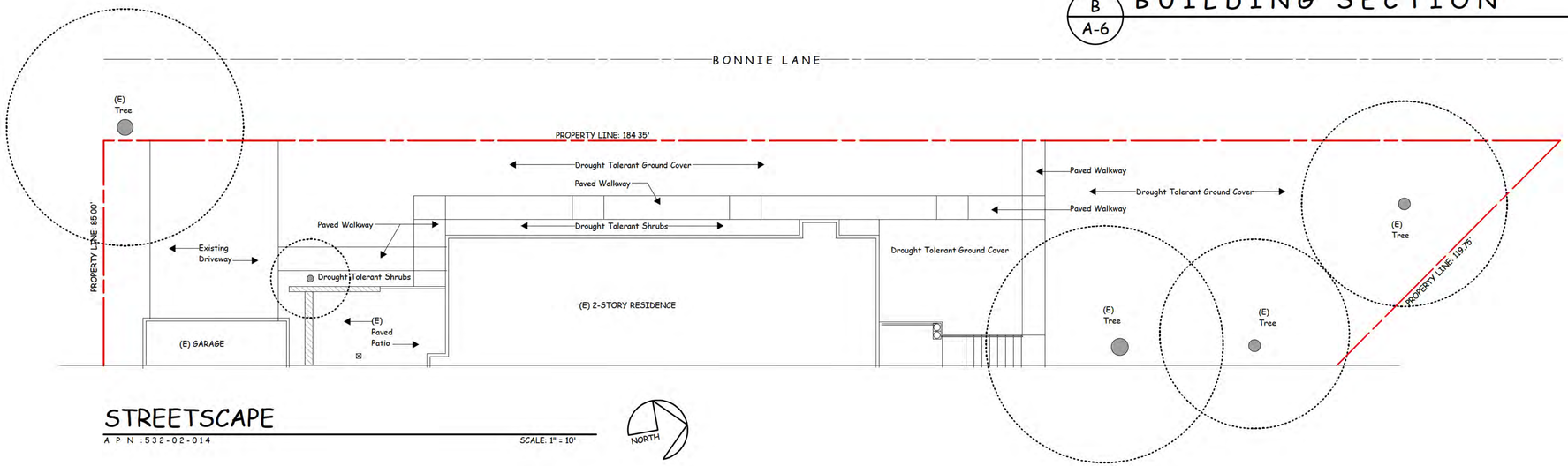
A / A-6 BUILDING SECTION

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



B / A-6 BUILDING SECTION

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



STREETSCAPE

A P N : 532-02-014

SCALE: 1" = 10'

REVISIONS

2	Jan 16 2025: Planning Comments

NGUYENPHAN DESIGN CONSULTING
7080 AVENIDA ROTELLA
SAN JOSE CALIFORNIA
Dong Nº: 408-206-7332
email: dongtnp@aim.com

PROPOSED REMODLE AND ADDITION FOR : RESIDENCE

16448 BONNIE LANE, LOS GATOS, CALIFORNIA

DATE: Nov. 25, 2024

SCALE: AS NOTED

DRAWN: DongTNP

JOB:

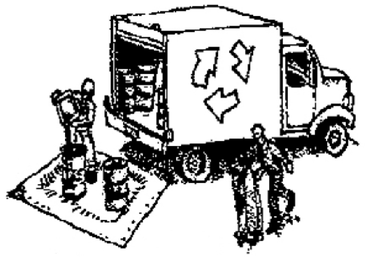
SHEET A-6

OF 22 SHEETS

Construction Best Management Practices (BMPs)

Construction projects are required to implement year-round stormwater BMPs.

Materials & Waste Management



Non-Hazardous Materials

- ❑ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or when they are not in use.
- ❑ Use (but don't overuse) reclaimed water for dust control.
- ❑ Ensure dust control water doesn't leave site or discharge to storm drains.

Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with City, County, State and Federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and do not use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ❑ Cover and maintain dumpsters. Check frequently for leaks. Place dumpsters under roofs or cover with tarps or plastic sheeting secured around the outside of the dumpster. A plastic liner is recommended to prevent leaks. Never clean out a dumpster by hosing it down on the construction site.
- ❑ Place portable toilets away from storm drains. Make sure they are in good working order. Check frequently for leaks.
- ❑ Dispose of all wastes and demolition debris properly. Recycle materials and wastes that can be recycled, including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and cleared vegetation.
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.
- ❑ Keep site free of litter (e.g. lunch items, cigarette butts).
- ❑ Prevent litter from uncovered loads by covering loads that are being transported to and from site.

Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control

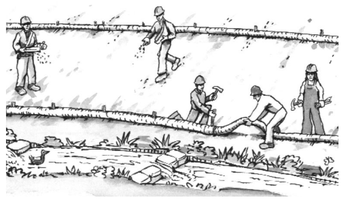
Maintenance and Parking

- ❑ Designate an area of the construction site, well away from streams or storm drain inlets and fitted with appropriate BMPs, for auto and equipment parking, and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment, and do not use diesel oil to lubricate equipment or parts onsite.

Spill Prevention and Control

- ❑ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ❑ Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up leaks, drips and other spills immediately and dispose of cleanup materials properly.
- ❑ Use dry cleanup methods whenever possible (absorbent materials, cat litter and/or rags).
- ❑ Sweep up spilled dry materials immediately. Never attempt to "wash them away" with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills to the appropriate local spill response agencies immediately. If the spill poses a significant hazrd to human health and safety, property or the environment, you must report it to the State Office of Emergency Services. (800) 852-7550 (24 hours).

Earthmoving



Grading and Earthwork

- ❑ Schedule grading and excavation work during dry weather.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Remove existing vegetation only when absolutely necessary, plant temporary vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Prevent sediment from migrating offsite and protect storm drain inlets, drainage courses and streams by installing and maintaining appropriate BMPs (i.e. silt fences, gravel bags, fiber rolls, temporary swales, etc.).
- ❑ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

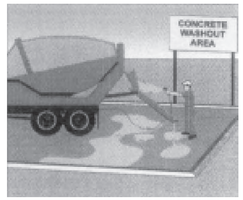
Contaminated Soils

- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.
- ❑ If the above conditions are observed, document any signs of potential contamination and clearly mark them so they are not distrurbed by construction activities.

Landscaping

- ❑ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ❑ Stack bagged material on pallets and under cover.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

Concrete Management and Dewatering



Concrete Management

- ❑ Store both dry and wet materials under cover, protected from rainfall and runoff and away from storm drains or waterways. Store materials off the ground, on pallets. Protect dry materials from wind.
- ❑ Wash down exposed aggregate concrete only when the wash water can (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) block any storm drain inlets and vacuum washwater from the gutter. If possible, sweep first.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area onsite, where the water will flow into a temporary waste pit, and make sure wash water does not leach into the underlying soil. (See CASQA Construction BMP Handbook for properly designed concrete washouts.)

Dewatering

- ❑ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible, send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer, call your local wastewater treatment plant.
- ❑ Divert run-on water from offsite away from all disturbed areas.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Paving/Asphalt Work

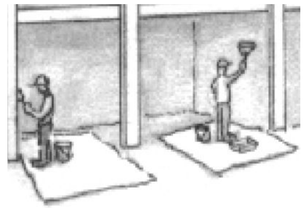
Paving

- ❑ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when applying seal coat, slurry seal, fog seal, or similar materials.
- ❑ Collect and recycle or properly dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.

Sawcutting & Asphalt/Concrete Removal

- ❑ Protect storm drain inlets during saw cutting.
- ❑ If saw cut slurry enters a catch basin, clean it up immediately.
- ❑ Shovel or vacuum saw cut slurry deposits and remove from the site. When making saw cuts, use as little water as possible. Sweep up, and properly dispose of all residues.

Painting & Paint Removal



Painting Cleanup and Removal

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ❑ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ❑ Sweep up or collect paint chips and dust from non-hazardous dry stripping and sand blasting into plastic drop cloths and dispose of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Santa Clara Valley
Urban Runoff
Pollution Prevention Program

Storm drain polluters may be liable for fines of up to $10,000 per day!

GENERAL REQUIREMENTS

1. VERIFICATION: VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. CONFLICTS: NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS IN CASE OF CONFLICT.
3. SUBSTITUTIONS: PROVIDE MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS ICC REPORTS AND A LIST OF ALL PROPOSED SUBSTITUTIONS TO THE ENGINEER FOR REVIEW AND WRITTEN APPROVAL BEFORE FABRICATION.
4. SIMILAR WORK: WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, SUCH DETAILS SHALL BE THE SAME AS FOR SIMILAR WORK SHOWN ON THE DRAWINGS.
5. PIPES, DUCTS, SLEEVES, CHASES, ETC.: SHALL NOT BE PLACED IN SLABS, BEAMS, OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC., UNLESS SPECIFICALLY SHOWN. OBTAIN PRIOR WRITTEN APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS, ETC.
6. EXCAVATIONS: LOCATE AND PROTECT UNDERGROUND OR CONCEALED CONDUIT, PLUMBING OR OTHER UTILITIES WHERE NEW WORK IS BEING PERFORMED.
7. CONSTRUCTION LOADS: MATERIALS SHALL BE EVENLY DISTRIBUTED IF PLACED ON FRAMED FLOORS OR ROOFS. LOADS SHALL NOT EXCEED THE ALLOWABLE LOADING FOR THE SUPPORTING MEMBERS AND THEIR CONNECTIONS.
8. CONSTRUCTION METHODS AND PROJECT SAFETY: THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE METHODS, PROCEDURES OR SEQUENCE OF CONSTRUCTION. TAKE NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE DURING CONSTRUCTION. NEITHER THE OWNER NOR ARCHITECT/ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
9. CHANGES TO THE DRAWINGS: OBTAIN PRIOR WRITTEN APPROVAL.

REINFORCED CONCRETE

1. MATERIALS:
   CEMENT....................ASTM C-150 TYPE II
   AGGREGATE..............ASTM C-33 STANDARD WEIGHT
   REINFORCEMENT.......ASTM A-615 GRADE 60 TYPICAL
   ANCHOR BOLTS........ASTM A-307 HOOKED ANCHOR BOLTS
   ANCHOR BOLTS........ASTM A-307 HEADED MACHINE BOLTS
2. CONCRETE STRENGTHS: THE CONCRETE STRENGTHS SHOWN IN THE FOLLOWING TABLE ARE THE MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS; AND THE AGGREGATE (AGG) SHOWN IS THE MAXIMUM SIZE. CONCRETE SHALL BE STANDARD WEIGHT CONCRETE (145 PCF).

ITEM OF CONSTRUCTION	STRENGTH (PSI)	AGG (IN)	SLUMP (IN)
FOUNDATIONS........................	2,500	1 1/2	4
POUR IN PLACE WALL........ ...	2,500	1 1/2	4
SLABS-ON-GRADE..................	2,500	1	4

(DESIGN STRENGTH BASED ON 2,500 PSI NO SPECIAL INSPECTION IS PROVIDED)

EXCEPTION:

A) THE WEIGHT PERCENTAGE OF SULFATE	STRENGTH(PSI)
> 1.0	4000
> 2.0	4500

B) SHOTCRETE CONCRETE STRENGTH = 4000 PSI MIN.

3. REINFORCEMENT:
   A) DETAILING, FABRICATION AND PLACING: SHALL CONFORM TO AND ACI 318.
   B) MINIMUM CONCRETE COVER:
      CAST AGAINST & EXPOSED TO EARTH ....3"
      EXPOSED TO EARTH OR WEATHER ....2"
      NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
      SLABS, WALLS, JOISTS ....3/4"
      BEAMS, COLUMNS (TIES, STIRRUPS, SPIRALS)........1-1/2"
   C) CHAIRS, SPACERS AND SAND PLATES: AS REQUIRED TO MAINTAIN CONCRETE COVER.
   D) VERTICAL REINFORCEMENT: SHALL BE DOWELED TO SUPPORTING MEMBERS WITH THE SAME SIZE AND SPACING OF REINFORCEMENT AS SHOWN IN THE DRAWINGS AND GENERAL NOTES.
   E) SPACING: CLEAR DISTANCE BETWEEN PARALLEL REINFORCEMENT IN A LAYER SHALL NOT BE LESS THAN 1-1/2 TIMES THE NOMINAL DIAMETER OF THE REINFORCEMENT, OR 1-1/3 TIMES MAXIMUM SIZE AGGREGATE, NOR LESS THAN 1-1/2".
   F) TACK WELDING, WELDING, HEATING OR CUTTING OF BARS: NOT PERMITTED U.O.N.
   G) SLAB CORNERS: PROVIDE 2-#4 X 4'-0" AT RE-ENTRANT CORNERS AND EACH CORNER OF RECTANGULAR HOLES IN SLABS. PLACE BARS DIAGONALLY.
   H) SPLICES (STANDARD LAPS): LAP SPLICE PER DETAIL 1/SD2.0. STAGGER BOTTOM SPLICES AT LEAST 5'-0" FROM SPLICES IN OTHER BOTTOM REINFORCEMENT. STAGGER SPLICES FOR TOP REINFORCEMENT SIMILARLY.
4. ANCHOR BOLTS, DOWELS AND HOLD DOWN ANCHORS: SECURELY HELD IN PLACE PRIOR TO FOUNDATION INSPECTION BY THE BUILDING OFFICIAL AND OBSERVATION BY THE ENGINEER.
5. PIPES, SLEEVES AND DUCTS: NOT TO BE PLACED IN WALLS, BEAMS, SLABS, FOOTINGS OR COLUMNS UNLESS SPECIFICALLY DETAILED.
6. CHAMFER: 3/4 INCH ON EXPOSED CORNERS.
7. ADMIXTURES: REVIEWED BY THE ENGINEER. CALCIUM CHLORIDE OR ADDED CHLORIDES ARE NOT PERMITTED.
8. CONSTRUCTION JOINTS: ACI 117.9 & 6.4, 1/4 INCH AMPLITUDE MINIMUM OR EYED JOINTS PER PLAN. LOCATION OF JOINTS TO BE REVIEWED BY THE ENGINEER. WAIT 48 HOURS BETWEEN POURS.
9. SLAB-ON-GRADE JOINTS: LOCATION OF ALL CONSTRUCTION, CONTROL AND WEAKENED PLANE JOINTS NOT SPECIFICALLY INDICATED ON THE DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO THE PLACING OF REINFORCEMENT. MAX MUM SPACING 15 FEET ON CENTER.
10. ACTUAL DIMENSIONS: SLAB, WALL, BEAM AND COLUMN DIMENSIONS SHOWN ARE ACTUAL DIMENSIONS NOT NOMINAL DIMENSIONS (i.e. A 4 INCH SLAB IS 4 INCHES THICK, NOT 3-1/2 INCHES.)
11. CONCRETE CURING: ACI 318
12. VIBRATION: ALL CONCRETE SHALL BE CONSOLIDATED WITH MECHANICAL VIBRATORS.

ENGINEERED LUMBER

1. LVL - LAMINATED VENEER LUMBER SHALL BE 2.0E MICROLLAM LVL.
2. PSL - PARALLEL STRAND LUMBER SHALL BE 2.0E PARALLAM PSL.
3. LSL - LAMINATED STRAND LUMBER SHALL BE 1.3E TIMBERSTRAND FOR STUDS, RIM BOARDS AND BLOCKING, 1.55E TIMBERSTRAND FOR JOIST, BEAMS AND HEADERS.

ENGINEERED LUMBER I-JOISTS

I-JOIST SHALL BE APA PERFORMANCE RATED MANUFACTURED IN CONFORMANCE WITH PRI-400, PERFORMANCE STANDARD FOR APA EWS. I-JOIST FLANGES TO HAVE MINIMUM WIDTH OF 1 1/2" 7 MINIMUM THICKNESS OF 1 5/16". WEBS TO BE PLYWOOD OR OSB WITH MINIMUM THICKNESS OF 3/8". FOR ONE HOUR CONSTRUCTION, PRI-50 JOISTS ARE REQUIRED AT 24" OC. MAX., SEE ESR-1405. PROPER STORAGE, HANDLING AND INSTALLATION SHALL BE FOR THESE PLANS AND MANUFACTURER'S RECOMMENDATIONS.

WOOD

1. GRADE STAMPED DOUGLAS FIR/LARCH (SEE LUMBER GRADES).
2. NAILS: COMMON WIRE UNLESS OTHERWISE NOTED. EDGE SEE NAILING NOTE BELOW.
3. THE SPACING CENTER TO CENTER OF NAILS IN THE DIRECTION OF STRESS
4. SHALL NOT BE LESS THAN THE REQUIRED PENETRATION. HOLES FOR NAILS, WHERE NECESSARY TO PREVENT SPLITTING, SHALL BE BORED TO A IAMETER SMALLER THAN THAT OF THE NAIL.
5. ANCHOR BOLTS (FOUNDATION ANCHOR BOLTS): PROVIDE 5/8 INCH DIAMETER ANCHOR OR MACHINE BOLTS WITH A MINIMUM OF 7 INCHES EMBEDMENT INTO THE CONCRETE AND WITHIN 12 INCHES OF EACH END OF EACH PLATE. SPACE ANCHORS AT 48 INCHES ON CENTER U.O.N. ANCHORS SHALL BE LOCATED A MAXIMUM OF 2 INCHES FROM THE FACE OF STUD RECEIVING WOOD STRUCTURAL PANELS. ANCHOR BOLT HOLES 1/32 TO 1/16 INCH LARGER THAN THE ANCHOR BOLT DIAMETER. HOLES MORE THAN 1/16 INCH LARGER THAN THE ANCHOR BOLT SHALL BE EPOXY FILLED UNDER THE CONTINUOUS SUPERVISION OF A LICENSED SPECIAL INSPECTOR.
6. BOLTS: NOT LESS THAN 7 BOLT DIAMETERS FROM THE END AND 4 DIAMETERS FROM THE EDGE OF THE MEMBER. BOLT HOLES 1/32 TO 1/16 INCH LARGER THAN THE BOLT DIAMETER. ALL NUTS SHALL BE TIGHTENED WHEN INSTALLED AND RE-TIGHTENED AT THE COMPLETION OF WORK OR BEFORE CLOSING IN. THREAD PROJECTION SHALL BE 1/16 INCH MIN MUM BEYOND THE NUT. BOLTS IN SPECIFIED SLOTTED HOLES SHALL BE CENTERED IN THE SLOT UON.
7. LAG SCREW CLEARANCE & LEAD HOLES SHALL BE BORED AS FOLLOWS: THE CLEARANCE HOLE FOR THE SHANK SHALL HAVE THE SAME DIAMETER AS THE SHANK, AND THE SAME DEPTH OF PENETRATION AS THE LENGTH OF UNTHREADED SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 60% TO 75% OF THE SHANK DIAMETER AND A LENGTH EQUAL TO AT LEAST THE LENGTH OF THE THREADED PORTION.
8. SQUARE STEEL PLATE WASHERS (PW): ANCHOR BOLTS, BOLTS, LAGS AND NUTS, NOTED PW, SHALL BE SQUARE STEEL PLATE WASHERS:

BOLT DIAM (IN)	THICKNESS (IN)	SIZE (IN)
1/2	1/4	3 X 3
5/8	1/4	3 X 3
3/4	5/16	3 X 3
7/8	5/16	3 X 3
1	3/8	3 1/2 X 3 1/2

9. CUT STEEL WASHERS: FOR BOLTS, LAGS AND NUTS, UON.
10. FRAMING CONNECTORS: PER MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS ICC APPROVED AND INSTALLED ACCORDINGLY. SIZE AND NUMBER OF NAILS TO BE MAXIMUM SPECIFIED BY THE MANUFACTURER UON.
11. NAILED/SCREWED HOLD DOWN ANCHORS: INSTALL PER MANUFACTURER'S APPROVED ICC PRODUCT EVALUATION REPORT. INSTALL HOLD DOWNS 1/2 INCH MINIMUM ABOVE THE PLATE TO ALLOW FOR TIGHTENING ANCHOR BOLT. THE HOLD DOWN SHALL BE INSTALLED TIGHT TO THE HOLD DOWN POST WITHOUT FILLERS OR DAPPING. DO NOT BEND HOLD DOWN ANCHORS.
12. BOLTED HOLD DOWN ANCHORS: INSTALL PER MANUFACTURER'S APPROVED ICC PRODUCT EVALUATION REPORT. INSTALL HOLD DOWNS 1/2 INCH MINIMUM ABOVE THE PLATE TO ALLOW FOR TIGHTENING ANCHOR BOLT. TIGHTEN HOLD DOWN ANCHOR BEFORE TIGHTENING POST BOLTS. USE EXTRA CARE IN BORING THE POST BOLT HOLES (1/32 TO 1/16 LARGER THAN THE BOLT DIAMETER). THE HOLD DOWN SHALL BE INSTALLED TIGHT TO THE HOLD DOWN POST WITHOUT FILLERS OR DAPPING. THE POST BOLTS SHALL NOT BE COUNTERSUNK INTO THE HOLD DOWN POST UON. DO NOT BEND HOLD DOWN ANCHORS.
13. PRESERVATIVE TREATED WOOD: WOOD EXPOSED TO THE WEATHER; FOUNDATION PLATES ON CONCRETE SLABS, FOUNDATIONS WHICH ARE IN DIRECT CONTACT WITH EARTH SHALL BE TREATED WOOD WITH PRESERVATIVE RETENTION AS REQUIRED FOR USE. NEWLY EXPOSED SURFACES RESULTING FROM FIELD CUTTING, BORING OR HANDLING SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA M-4.
14. TOP PLATES: TWO PIECES, SAME SIZE AS STUDS, STAGGER SPLICE 4'-0" MINIMUM. CENTER SPLICES OVER STUDS. SPLICE WITH 12-16d MINIMUM UON.
15. FULL-DEPTH SOLID BLOCKING OR CROSS BRACING: INSTALLED AT INTERVALS NOT EXCEEDING 8 FEET FOR ALL JOISTS AND RAFTERS 2x12 AND DEEPER.
16. SOLID BLOCKING: TWO INCH FULL WIDTH BLOCKING (FIRE STOPS) IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS AND AT 10-FOOT INTERVALS BOTH VERTICAL AND HORIZONTAL.
17. CUTTING AND NOTCHING: DO NOT CUT, BORE, COUNTERSINK OR NOTCH WOOD MEMBERS EXCEPT WHERE SHOWN IN THE DETAILS. HOLES THROUGH PLATES, STUDS AND DOUBLE PLATES IN WALLS SHALL FOLLOW DETAIL 5/SD1.0, THE MEMBER WIDTH AND SHALL BE LOCATED IN THE CENTER OF THE MEMBER.
18. PARTITIONS: DOUBLE JOISTS UNDER PARTITIONS PARALLEL TO JOISTS AND PROVIDE SOLID BLOCKING UNDER PARTITIONS PERPENDICULAR TO JOISTS.
19. END SUPPORT: ROOF AND FLOOR JOISTS OVER 4 INCHES DEEP SHALL HAVE THEIR ENDS HELD IN POSITION WITH EITHER:
    FULL DEPTH SOLID BLOCKING;
    NAILED BRIDGING;
    NAILING OR BOLTING TO OTHER FRAMING MEMBERS; OR
    APPROVED JOIST HANGERS.
20. HOT DIPPED ZINC-COATED GALVANIZING: ALL EXPOSED STEEL TIMBER HARDWARE, FASTENERS AND CONNECTORS.
21. FASTENERS FOR PRESERVATIVE TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL

LUMBER GRADES DOUGLAS FIR/LARCH

COMPLY WITH PS 20, AMERICAN SOFTWOOD LUMBER STANDARD AND STANDARD GRADING RULES FOR WESTERN LUMBER. 19% MAXIMUM MOISTURE CONTENT AT TIME OF PLACEMENT.

1. DIMENSION LUMBER: BLOCKING
   (2" TO 4" THICK, 2" TO 4" & NONBEARING STUDS WIDE; STANDARD) (10' MAXIMUM)
2. DIMENSION LUMBER: BEARING
   (2" TO 4" THICK, 2" TO 4" STUDS JOISTS & RAFTERS WIDE; NO. 2)
3. DIMENSION LUMBER: JOISTS AND RAFTERS
   (2" TO 4" THICK, 5" AND STUDS, BLOCKING, WIDER; NO. 2)
4. BEAMS AND STRINGERS:
   (5" AND THICKER, WIDTH MORE THAN 2" GREATER THAN THICKNESS; NO. 1)
5. POSTS AND TIMBERS:
   (4" AND 6", AND LARGER, WIDTH NOT MORE THAN 2" GREATER THAN THICKNESS; NO.2)
6. HOLD DOWN POSTS: (NO. 2)

ABBREVIATION:

&	AND	FTG.	FOOTING
ARCH.	ARCHITECTURAL	GLB	GLU-LAM BEAM
BLDG.	BUILDING	JST	JOIST
BM.	BEAM	M.B.	MACHINE BOLT
BOT.	BOTTOM	MIN.	MINIMUM
CONC.	CONCRETE	No. or #	NUMBER
CONT.	CONTINUOUS	O.C.	ON CENTER
DBL.	DOUBLE	REF.	REFERENCE
DET.	DETAIL	SIM.	SIMILAR
DIA.	DIAMETER	SQ.	SQUARE
DIM.	DIMENSION	STAGG.	STAGGERED
EA.	EACH	STD.	STANDARD
E.E.	EACH END	STL.	STEEL
E.F.	EACH FACE	T.&B.	TOP & BOTTOM
EL.	ELEVATION	THK.	THICK
E.N.	EDGE NAILING	TYP.	TYPICAL
EQ.	EQUAL	U.O.N.	UNLESS OTHERWISE NOTED
E.S.	EACH SIDE		
E.W.	EACH WAY		
F.G.	FINISH GRADE	VERT.	VERTICAL
FL.	FLOOR	W/	WITH
		W/O	WITHOUT

NAILING

1. ALL NAILING SHALL BE COMMON WIRE NAILS AND FOLLOW THIS TABLE:

SIZE PENNY	DIAMETER INCHES	WIRE GAGE	PENETRATION INCHES
8d	0.134	10-1/4	1-5/8
10d	0.148	9	1-7/8
16d	0.165	8	2
20d	0.203	6	2-3/8

PENETRATION IS MEASURED INTO THE PIECE RECEIVING THE NAIL POINT. 1-1/2 INCHES OF PENETRATION FOR 10d AND 16d NAILS IS ACCEPTABLE FOR TOP PLATES AND DOUBLED 2X MEMBERS. WHERE THE NAIL PENETRATION WILL BE LESS THAN SPECIFIED, INCREASE NAIL LENGTH (SIZE) TO OBTAIN THE PENETRATION REQUIRED FOR THE NAIL SPECIFIED.

2. FASTENER SCHEDULE FOR STRUCTURAL MEMBERS - THE CONNECTIONS LISTED ARE THE MINIMUM PERMISSIBLE. USE COMMON WIRE NAILS FOR ALL NAILED CONNECTIONS. WHERE POSSIBLE, NAILS DRIVEN PERPENDICULAR TO THE GRAIN SHALL BE USED INSTEAD OF TOE NAILS. SEE THE DRAWINGS FOR ADDITIONAL NAILING REQUIREMENTS.

ROOF

1. CL'G. JOIST/RAFTER/TRUSS TO TOP PLATE/OTHER FRAMING BELOW, EACH END, TOE NAIL 3-8d
   BLOCKING (NOT AT THE WALL TOP PLATE) TO RAFTER OR TRUSS,EACH END, TOENAIL 2-8d
   BLOCKING (NOT AT THE WALL TOP PLATE) TO RAFTER OR TRUSS,END NAIL 2-16d
   FLAT BLOCKING TO TRUSS AND WEB FILLER, FACE NAIL ....14d @ 6" O.C.
1. CL'G. JOIST TO TOP PLATE, EACH JOIST, TOENAIL..............................3-8d
2. CL'G. JOIST LAPS OVER PARTITIONS(NO THRUST),FACE NAIL....................3-16d
3. CL'G. JOIST ATTACHED TO PARALLEL RAFTER(HEEL JOINT), FACE NAIL PER DETAIL
4. COLLAR TIE TO RAFTER,FACE NAIL 3-10d
5. RAFTER OR ROOF TRUSS TO TOP PLATE,TOENAIL..............................3-10d
6. ROOF FATHERS TO RIDGE VALLEY OR HIP RAFTERS OR RIDGE BOARD,END NAIL 2-16d
   ROOF FATHERS TO RIDGE VALLEY OR HIP RAFTERS OR RIDGE BOARD, TOENAIL 3-10d

WALL

1. STUD TO STUD (NOT AT BRACED WALL PANELS),FACE NAIL ....16d @24" O.C.
2. STUD TO STUD & ABUTTING STUDS AT INTERSECTING WALL CORNER, FACE NAIL ....16d @16" O.C.
3. BUILT-UP HEADER(2" TO 2" HEADER),EACH EDGE, FACE NAIL.......16d @16"O.C.
4. CONTINUOUS HEADER TO STUD,TOENAIL 4-8d
5. TOP PLATE TO TOP PLATE,FACE NAIL..............................16d @16"O.C.
6. TOP PLATE TO TOP PLATE(AT END JOISTS),EACH SIDE OF END JOINT, FACE NAIL..8-16d
7. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS),FACE NAIL..............................16d @16"O.C.
8. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING),FACE NAIL ....2-16d @16"O.C.
9. STUD TO TOP OR BOTTOM PLATE,TOENAIL..4-8d
10. STUD TO TOP OR BOTTOM PLATE,END NAIL......................................2-16d
11. TOP PLATES,LAPS AT CORNERS AND INTERSECTIONS,FACE NAIL............2-16d
12. 1" BRACE TO EACH STUD AND PLATE,FACE NAIL..................................2-8d
13. 1"x6" SHEATHING TO EACH BEARING,FACE NAIL..................................2-8d
14. 1"x8" AND WIDER SHEATHING TO EACH BEARING,FACE NAIL.......................3-8d

FLOOR

1. JOIST TO SILL,TOP PLATE OR GIRDER,TOENAIL.....................................3-8d
2. RIM /BAND JOIST/ BLK'G TO TOP PLATE/SILL/OTHER FRAMING BELOW, TOENAIL ....8d @ 6" O.C.
3. 1"X6" SUBFLOOR OR LESS TO EACH JOIST,FACE NAIL..............................2-8d
4. 2" SUBFLOOR TO JOIST OR GIRDER,FACE NAIL.....................................2-16d
5. 2"PLANKS(PLANK & BEAM - FLOOR&ROOF),EACH BEATING,FACE NAL.......2-16d
6. BUILT-UP GIRDERS AND BEAM,2" LUMBER LAYERS,FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES.......................................20d @32" O.C.
   BUILT-UP GIRDERS AND BEAM,2" LUMBER LAYERS,EACH SPLICE ,FACE NAIL 2-20d
7. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS,EACH JOIST OR RAFTER, FACE NAIL 3-16d
8. JOIST TO BAND JOIST OR RIM JOIST,END NAIL....................................3-16d
9. BRIDGING OR BLOCKING TO JOIST,RAFTER OR TRUSS,EACH END, TOENAIL 2-8d

WOOD STRUCTURAL PANELS (PANEL)

1. REFERENCES: PS1, PS2, APA STANDARD PRP-108, NATIONAL EVALUATION SERVICE REPORT NER-108
2. WALL PANELS.............OSB OR STRUCTURAL I, 15/32 INCH 32/16
3. ROOF PANELS.............OSB OR STRUCTURAL I, 15/32 INCH 32/16
4. FLOOR PANELS......................STURD-I-FLOOR, SANDED 19/32 INCH 20 OC, T&G (EXTERIOR EXPOSURE AT BALCONIES AND DECKS)
5. BLOCKING:
   A) WALLS: ALL UNSUPPORTED PANEL JOINTS SHALL BE BLOCKED SOLID WITH 3x BLOCKING
   B) FLOORS & ROOFS: WHERE NOTED ON THE DRAWINGS, ALL SUPPORT PANEL JOINTS SHALL BE BLOCKED SOLID WITH 3x4 FLAT BLOCKING.
6. NAILING: COMMON WIRE NAILS. PANEL NAILS SHALL BE DRIVEN SO THAT THE HEADS ARE FLUSH WITH THE SURFACE OF THE PANEL. FIELD NAILING (FN) SHALL BE 12 INCHES ON CENTER AND THE MINIMUM PANEL EDGE DISTANCES SHALL BE MAINTAINED.
7. MACHINE NAILING: SUBJECT TO A SATISFACTORY JOB SITE DEMONSTRATION FOR THIS PROJECT AND REVIEW BY THE ENGINEER. THE USE OF MACHINE NAILING IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. PANEL NAILS SHALL BE DRIVEN SO THAT THE HEADS ARE FLUSH WITH THE SURFACE OF THE PANEL AND THE MINIMUM PANEL EDGE DISTANCES ARE MAINTAINED.
8. GLUED FLOORS: FIELD GLUE TO ALL SUPPORTS AND T&G EDGES PER APA, AFG-01. FRAMING SHALL BE FREE OF SURFACE MOISTURE & DEBRIS PRIOR TO GLUING.
9. WOOD STRUCTURAL PANELS (PANELS): WHERE ADJACENT WALLS ARE PANELED, PANELS SHALL BE INSTALLED OVER AND UNDER OPENINGS.

WALL STUDS TABLE

TRIB WIDTH = 10 FT, ROOF DL= 20, LL= 20, FLOOR DL=15, LL=40

STUD SIZE	STUD HEIGHT	MAX. SPACING					
		1 STORY	2 STORY		3 STORY		
			2ND LEVEL	1ST LEVEL	3RD LEVEL	2ND LEVEL	1ST LEVEL
2X4	10'-0"	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.	N/A
2X4	12'-0"	16" O.C.	16" O.C.	12" O.C.	16" O.C.	12" O.C.	N/A
3X4	12'-0"	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.
2X6	12'-0"	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.	12" O.C.
2-2X4	12'-0"	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.
2-2X6	12'-0"	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.	16" O.C.

*LOWER STUDS MUST BE INLINE WITH UPPER STUDS

STRUCTURAL STEEL

1. All structural steel materials and construction shall conform to the requirements specified in Building Code, Chapter 22 & Reference.
2. Steel shall be primed with a rust resistance primer & should conform to ASTM A36 (fy=36 ksi) as a minimum, unless otherwise noted. All W shapes to be ASTM A992. (fy=50 ksi)
3. Steel pipe shall conform to ASTM A53, Grade B (Fy=35 ksi).
4. Round HSS tubing shall conform to ASTM A500 Grade B (Fy=42 ksi)
5. Rectangular and square HSS tubing shall conform to ASTM A500, Grade B (Fy=46 ksi).
6. HP sections shall conform to ASTM A572, Grade 50 (Fy=50 ksi).
7. All structural welding procedures and materials shall conform to Building Code, Section 2204.1. All welding shall be by the shield metal arc welding process or the submerged arc welding process using E7OXX-low hydrogen electrodes, unless otherwise noted.
8. All bolts for connections of steel members shall conform to Building Code, Section 2204.2 & ASTM A325N, unless otherwise noted. Holes for bolts should be drilled or punched & shall be 1/16" larger than bolt diameter.
9. Prefabricated steel moment frames per manufacturer. Steel moment frame manufacturer shall submit shop drawing, design calculations, and approved moment frame test report (ICC, IAMPO, or test per Appendix S of AISC SEISMIC PROVISION) to E.O.R. for review.
10. All shop welding and fabrication must be done in a shop approved by a special inspection agency which is approved by the Building Official. All field welding must be performed by a certified welder and a special inspector shall continuously inspect all structural field welding. Both shall be approved by the Building Official.

CONCRETE MASONRY

1. All concrete masonry materials and construction shall be in accordance with Building Code, Chapter 21.
2. All materials making up finished concrete masonry construction shall conform to standards required by Building Code Sec. 2103.
3. Mortar shall be type M or S as applicable and conforming with ASTM C270 and shall be proportioned per Article 2.1 & 2.6A of Specification for Masonry Structures (TMS 602-13/ACI 530.1-13/ASCE 6-13).
4. Grout shall comply with Article 2.2 & 2.6 of TMS 602-13/ACI 530.1-13/ASCE 6-13 and shall attain a minimum compression streng h at 28 days of 2000 psi or the required compression, f'm, whichever is greater. The compressive strength of grout shall be determined in accordance with ASTM C-1019.
5. Concrete masonry units shall conform to ASTM C90 for load bearing concrete masonry units. Concrete brick shall conform to ASTM C55, Specifications for Concrete Building Brick.
6. Grade N concrete bricks are for use as architectural veneer and facing, limited to in exterior walls.
7. Grade S concrete bricks are for general use where moderate strength and resistance to frost action and moisture penetration is required.
8. The specified compressive strength of masonry, f'm, shall be 2000 psi, unless noted otherwise.
9. Special inspec ion for concrete masonry construction shall be carried out in accordance with Building Code Section 1704 and requirements in Special Inspection tables on sheet SN1.0. Masonry compressive strength, f'm shall be verified by Unit strength method or Prism test method prior to and during construction as described in Building Code, Section 2105.

SHOTCRETE

1. STRUCTURAL WET-MIX SHOTCRETE SHALL BE ALLOWED WHEN SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS AND WHERE THE OWNER, CONTRACTOR AND CONCRETE SUPPLIER COMPLY WITH THESE PROCEDURES, IN ADDITION TO THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE (CBC) SECTION 1913.
2. LIMITATIONS:
   A) STRUCTURAL WET-MIX SHOTCRETE SHALL NOT BE PLACED WHERE THE STREAM FROM THE NOZZLE CANNOT DIRECTLY IMPINGE ON THE SURFACE ON WHICH THE SHOTCRETE IS TO BE PLACED. WHERE CONDITIONS PRECLUDE THE POSSIBILITY OF OBTAINING CORES FROM THE STRUCTURE, THIS METHOD SHALL NOT BE USED.
   B) THE MAXIMUM SIZE OF REINFORCEMENT SHALL BE #5 BARS UNLESS IT CAN BE DEMONSTRATED BY PRE-CONSTRUCTION TESTS THAT ADEQUATE ENCASEMENT OF LARGER BARS WILL BE ACHIEVED.
   C) LAP SPLICES OF REINFORCING BARS SHALL UTILIZE NONCONTACT LAP SPLICES UNLESS IT CAN BE DEMONSTRATED BY PRE-CONSTRUCTION TESTS THAT ADEQUATE ENCASEMENT OF BARS WILL BE ACHIEVED, AND PROVIDED THAT THE SPLICE IS ORIENTED SO THAT A PLANE THROUGH THE CENTER OF THE LAPPED BARS IS PERPENDICULAR TO THE SURFACE OF THE SHOTCRETE.
   D) SHOTCRETE SHRINKAGE SHALL BE LIMITED TO 0.06 PERCENT AT THREE MONTHS AS DETERMINED BY ASTM C157.
   E) SHOTCRETE MAY ONLY BE APPLIED TO TIED COLUMNS WHERE THE SPACING OF THE REINFORCING STEEL IS THE SAME AS FOR WALLS UNLESS IT CAN BE DEMONSTRATED BY PRE-CONSTRUCTION TESTS THAT ADEQUATE ENCASEMENT OF THE BARS USED IN THE DESIGN CAN BE ACHIEVED
3. INSPECTION
   A) SHOTCRETE REQUIRES CONTINUOUS INSPECTION BY A REGISTERED DEPUTY INSPECTOR.
   B) CONTINUOUS INSPECTION SHALL BE PROVIDED FOR THE PLACEMENT OF ALL REINFORCING STEEL, THE PLACEMENT OF SHOTCRETE AND THE ASSEMBLY, SHOOTING, TESTING AND DISASSEMBLY OF PRE-CONSTRUCTION TEST PANELS
4. PRE-CONSTRUCTION TEST:
   A) TEST PANELS SHALL BE REPRESENTATIVE OF THE PROJECT AND SIMULATE JOB CONDITIONS AS CLOSE AS POSSIBLE. PANEL THICKNESS AND REINFORCING SHALL REPRODUCE THE THICKEST AND MOST CONGESTED AREA SPECIFIED IN STRUCTURAL DESIGN. MULTIPLE TEST PANELS MAY BE NECESSARY TO PROVIDE A COMPLETE REPRESENTATION OF THE ACTUAL CONDITIONS WHERE SHOTCRETE IS TO BE USED.
   B) THE TEST PANELS SHALL BE SHOT AT THE SAME ANGLE, USING THE SAME EQUIPMENT AND NOZZLEMAN, AND WITH THE SAME CONCRETE MIX DESIGN THAT WILL BE USED ON THE PROJECT.
   C) THE TEST PANELS SHALL BE CURED, THEN DISASSEMBLED, EXAMINED, SAWED AND/OR CORE DRILLED AT THE DISCRETION OF THE STRUCTURAL ENGINEER AND NSPECTOR, AND TESTED PRIOR TO COMMENCEMENT OF SHOTCRETE WORK.
   D) TEST PANELS SHALL BE A MINIMUM OF 4 FEET SQUARE.
5. MATERIALS:
   A) CEMENT SHALL COMPLY WITH ASTM C150, TYPE I OR TYPE II LOW ALKALI.
   B) AGGREGATE HALL BE NORMAL WEIGHT COMPLYING WITH ASTM C33. OMBINED AGGREGATE GRADATION SHALL MEET ACI 506R, TABLE 1.1, RADATION NO. 2.
   C) WATER SHALL BE CLEAN AND POTABLE
   D) ADD WATERPROOFING ADMIXTURE PER WATERPROOFING CONSULTANT'S RECOMMENDATIONS AT PERIMETER RETAINING WALLS.
6. CONDITIONS:

A. FLASH COATS AND FINISH COATS ARE NOT PERMITTED UNLESS FULL DESIGN THICKNESS IS ACHIEVED WITHOUT CONSIDERING THE FLASH COAT OR FINISH COAT.
B. MINIMUM SLUMP SHALL BE 1 1/2" AND MAXIMUM SLUMP SHALL BE 2 1/2". SLUMP SHALL BE MEASURED AT THE POINT OF DISCHARGE FROM THE MIXER, EXCEPT THE BUILDING INSPECTOR MAY REQUIRE SLUMP TESTS AT THE DISCHARGE POINT WHERE WATER MAY HAVE BEEN ADDED.
C. A CAPABLE NOZZLEMAN'S HELPER WITH AN AIR BLOW PIPE SHALL BE PROVIDED TO ASSIST THE NOZZLEMAN IN KEEPING ALL REBOUND BUILD-UP OUT OF THE WORK.
D. ADDITIONAL WORKERS MAY BE REQUIRED TO TAKE THE REBOUND FROM THE WORK IF THE REBOUND CANNOT BE REMOVED BY THE AIR BLOW PIPE.
E. NO KEY WAYS OR EMBEDMENTS SHALL BE PLACED IN THE FRONT FACE THAT WILL INTERFERE WITH THE STREAM FROM THE NOZZLE.
F. THE CONTRACTOR AGREES TO PROVIDE A DESIGNATED LIAISON BETWEEN HIS CREW, THE DEPUTY INSPECTOR AND THE GOVERNING AGENCY.
G. THE DEPUTY INSPECTOR SHALL BE INTERVIEWED AND APPROVED BY GOVERNING AGENCY PRIOR TO INSPECTING WORK AT THE JOB SITE. ONE DEPUTY INSPECTOR SHALL BE ASSIGNED TO EACH NOZZLE.
H. RIGID OR OTHER APPROVED BACKING SHALL BE PLACED AGAINST THE EARTH WHERE THERE IS ANY POTENTIAL OF SOIL BEING DISLODGED IN SUFFICIENT QUANTITY TO DAMAGE THE SHOTCRETE DURING THE APPLICATION OF THE SHOTCRETE. RIGID OR OTHER APPROVED NON-ORGANIC BACKING SHALL BE USED TO BRIDGE VOIDS IN THE EMBANKMENT.
I. IN THE EVENT THAT A PREVIOUSLY PRESUMED SOLID EMBANKMENT SHOULD SLOUGH OR SHED DIRT IN SUFFICIENT QUANTITY TO DAMAGE THE CONCRETE, THE WET-MIX SHOTCRETE PLACEMENT WORK IN THAT AREA SHALL CEASE UNTIL RIGID BACKING IS INSTALLED AND CONTAMINATED SHOTCRETE IS REMOVED.
J. TO REDUCE THE POSSIBILITY OF LAMINATIONS, SECTIONS SHOULD BE GUNNED TO THEIR FULL DESIGN THICKNESS IN ONE LAYER BY BENCH OR SHELF SHOOTING.
K. THE HEIGHT OF A LAYER SHALL NOT EXCEED 3 FEET AND SUCCEEDING LAYERS SHALL NOT BE PLACED IN LESS THAN 3 HOURS. NO SLOUGHING OR SAGGING SHALL BE PERMITTED. WHEN SPECIFICALLY DESIGNED BY THE ENGINEER OF RECORD THAT A SUCCEEDING LAYER IS TO BE PLACED IN LESS THAN 3 HOURS, A LESSER TIME MAY BE APPROVED BY THE GOVERNING AGENCY.
L. DETAILS OF COLD JOINTS, INCLUDING SLOPE OF JOINTS, SHALL BE SHOWN ON THE APPROVED PLANS. WHEN SHOOTING UP TO THE UNDERSIDE OF EXISTING CONCRETE, THE LAST 2 INCHES SHALL BE DRY PACKED OR AN APPROVED METHOD OF DRY PNEUMATIC CONCRETE USED. EXCEPTION: PROVIDED THE DETAIL OF THE JOINT IS SLOPED SO THAT THE CLOSURE OF THE COLD JOINT MADE WITH STRUCTURAL WET-MIX SHOTCRETE DOES NOT SAG AWAY FROM THE UPPER SURFACE AND PROVIDED BOTH SIDES OF THE COLD JOINT HAVE TAKEN THEIR INITIAL SET, THE JOINT CLOSURE MAY BE MADE WITH WET-MIX SHOTCRETE.
M. REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE IN A MANNER THAT PREVENTS ANY MOVEMENT DURING THE APPLICATION OF THE SHOTCRETE.
N. CONCRETE OR MASONRY TO RECEIVE SHOTCRETE SHALL HAVE THE ENTIRE SURFACE THOROUGHLY CLEANED AND ROUGHENED AND JUST PRIOR TO RECEIVING SHOTCRETE, SHALL BE THOROUGHLY CLEANED OF ALL DEBRIS, DIRT AND DUST. CONCRETE AND MASONRY SHALL BE WETTED BEFORE SHOTCRETE IS DEPOSITED, BUT NOT SO WET AS TO OVERCOME SUCTION. SAND USED FOR SANDBLASTING SHALL BE CLEAN, SHARP AND UNIFORM IN SIZE, WITH NO PARTICLES THAT WILL PASS A 50-MESH SCREEN.

SHEET INDEX

PROJECT DESIGN DATA

GOVERNING CODE: 2022 CALIFORNIA BUILDING CODE (CBC).

STRUCTURAL DESIGN LOADS:

1. ROOF LOADS:
   DEAD LOAD....................................... 15 PSF
   LIVE LOAD .... 20 PSF
2. CEILING LOADS: (ATTICS WITHOUT STORAGE)
   DEAD LOAD... 5 PSF
   LIVE LOAD .... 10 PSF
3. FLOOR LOADS:
   DEAD LOAD....................................... 15 PSF
   LIVE LOAD .... 40 PSF
4. DECK LOADS:
   DEAD LOAD....................................... 15 PSF
   LIVE LOAD .... 60 PSF

WIND DESIGN

1. WIND SPEED 92 MPH RISK CATEGORY II, EXPOSURE C, WIND PRESSURE MIN 16 PSF USED
   Kh=0.85, Kzt=1, Kd=0.25, I=1

SEISMIC DESIGN

1. SEISMIC BASE SHEAR FOR LIGHT-FRAME WALLS SHEATHED WITH WOOD STRUCTURAL SYSTEM = 0.211W (ALLOWABLE STRESS DESIGN)
   RISK CATEGORY: II S_S = 2.446 S_1 = 0.894 C_S=0.301
   SEISMIC DESIGN CATEGORY: E S_{DS} = 1.957 S_{D1} = 1.013 ρ =1.3
   FA = 1.2 FV= 1.7 R= 6.5 (LIGHT-FRAME WALLS SYSTEM)

FOUNDATION

1. FOUNDATION MATERIAL: SEE REINFORCED CONCRETE
2. MINIMUM FOUNDED DEPTH & WIDTH OF FOOTINGS:
   BELOW ROUGH PAD GRADE..24"
   BELOW LOWEST ADJACENT FINISHED GRADE....................24"
   WIDTH..16" MIN.
3. BASE OF FOOTINGS & SLABS: SEE PLAN
4. ALLOWABLE SOIL PRESSURES:
   DL + LL LOAD...1,500 PSF
   ALL LOAD (WIND/SEISMIC) FORCES................................2,000 PSF
5. ROOF AND AREA DRAINAGE: SHALL BE DIRECTED AWAY FROM THE FOUNDATIONS.
6. BACK FILL: EXCAVATIONS SHALL BE PROPERLY BACKFILLED. BACK FILL FOR WALLS SHALL BE PERVIOUS MATERIAL. DO NOT PLACE BACK FILL BEHIND WALLS BEFORE THEY HAVE ATTAINED THEIR DESIGN STRENGTH. SHORE AND PROTECT WALLS FROM LATERAL LOADS UNTIL THE SUPPORTING MEMBERS ARE IN PLACE HAVE DEVELOPED SPECIFIED STRENGTHS.

SPECIAL INSPECTION REQUIREMENTS

SPECIAL INSPECTION REQUIREMENTS

1. SPECIAL INSPECTION AGENCY EMPLOYED BY THE OWNER.
2. REPORTS: PREPARED AND SIGNED BY THE INSPECTOR, SUBMITTED TO THE BUILDING OFFICIAL AND THE ENGINEER. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF NOT CORRECTED, TO THE BUILDING OFFICIAL AND THE ENGINEER.
3. CERTIFICATION: INSPECTOR MUST BE CITY CERTIFIED BY THE BUILDING OFFICIAL TO PERFORM THE TYPES OF INSPECTIONS SPECIFIED.
4. RESPONSIBILITY: IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INFORM THE SPECIAL INSPECTOR OR INSPECTION AGENCY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION.
5. SPECIAL INSPECTIONS REQUIRED FOR THE FOLLOWING ITEM.:
   (A) SHEAR WALLS WITH NAILING 4" SPACING OR LESS
   (B) HFX STEEL STRONG WALL

CITY/COUNTY STAMP SPACE

ORANGE ENGINEERING
4005 CLIPPER CT
FREMONT, CA 94538
TEL (408) 888-7836

REGISTERED PROFESSIONAL ENGINEER
DI YANG
No. C92766
12/31/25
CIVIL
STATE OF CALIFORNIA

ADU & ADDITION

16488 BONNIE LN,
LOS GATOS, CA 95032

DATE: 08/22/24
JOB NO. OES24086

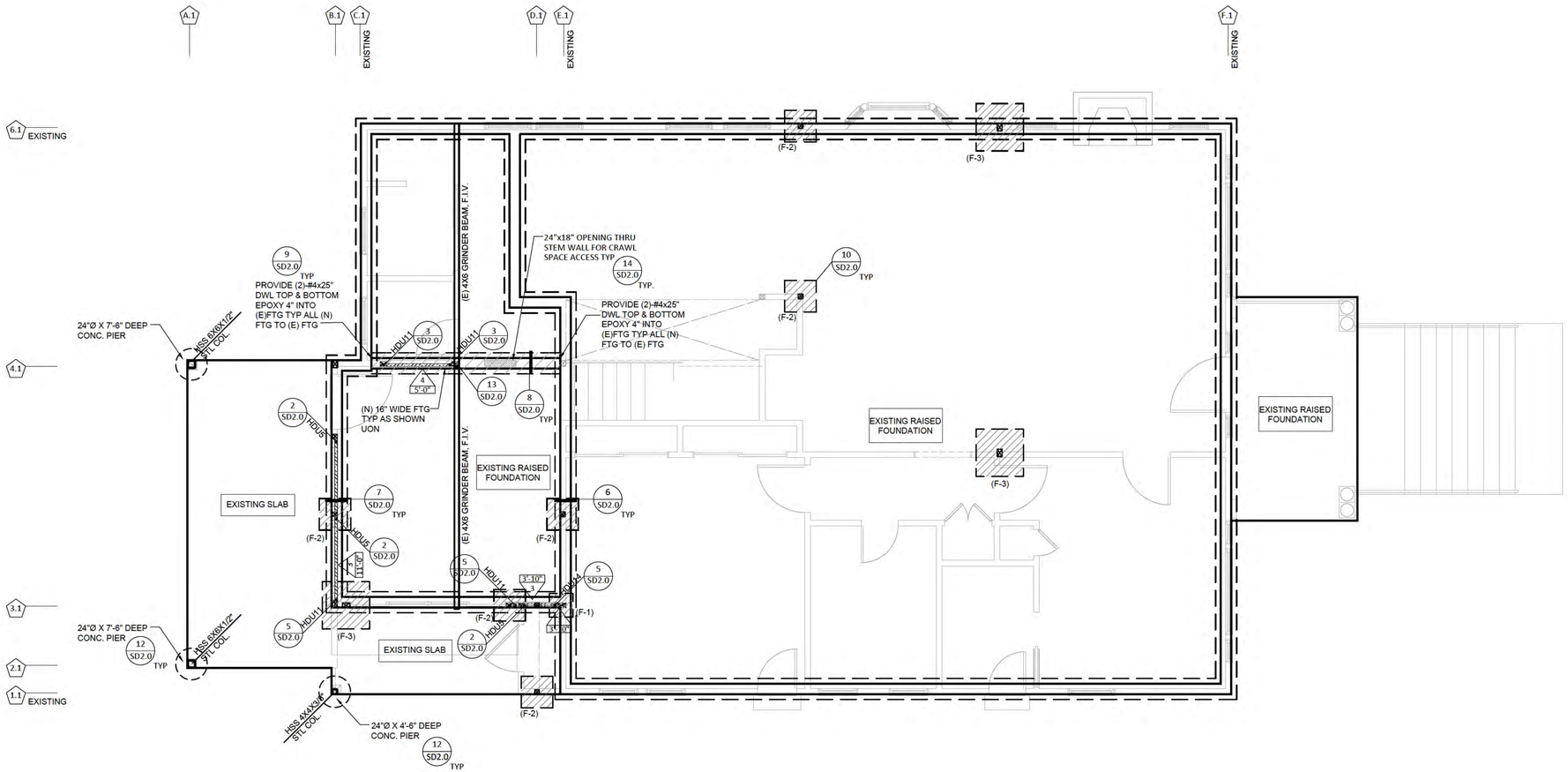
ISSUE & REVISION

	mm/dd/yy	CITY SUBMITTAL
1		
2		
3		
4		
5		
6		
7		
8		
9		

SHEET NAME.
GENERAL NOTES

SHEET NO.
SN1.0

DRAWN BY:



FOUNDATION PLAN

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

PAD FOOTING SCHEDULE				
MARK	FOOTING SIZE	1-STORY THICKNESS	2-STORY THICKNESS	REINFORCING
(F-1)	1'-6" x 1'-6"	18"	24"	3-#4 EA. WAY
(F-2)	2'-0" x 2'-0"	18"	24"	4-#4 EA. WAY
(F-3)	3'-0" x 3'-0"	18"	24"	4-#5 EA. WAY
(F-4)	4'-0" x 4'-0"	18"	24"	6-#5 EA. WAY
(F-5)	5'-0" x 5'-0"	18"	24"	7-#5 EA. WAY

PLYWOOD SHEAR WALL SCHEDULE														
EDGE NAILING			FDN. SILL PLATE		ANCHOR BOLT SPACING		A35/LTP4 CLIPS SPACING		PLATE CONNECTION NAILING				CAPACITY (PLF)	
MARK	TYPE	SPACING	1 SIDE	2 SIDE	1 SIDE	2 SIDE	1 SIDE	2 SIDE	1 SIDE	RIM/BLKG	2 SIDE	RIM/BLKG	1 SIDE	2 SIDE
SW1	1	6" O.C.	2x		32" O.C.		18" O.C.		16d @ 6" O.C.	2x			310	
SW2	2	4" O.C.	2x	3x	24" O.C.	12" O.C.	12" O.C.	12" O.C. EA. SIDE	16d @ 4" O.C.	3x	SDS @ 6" O.C.	3x	460	920
SW3	3	3" STAGG.	3x	3x	16" O.C.	8" O.C.	9" O.C.	9" O.C. EA. SIDE	(2) 16d @ 6" O.C.	3x	(2) SDS @ 10" O.C.	4x	600	1200
SW4	4	2" STAGG.	3x	3x	12" O.C.	6" O.C.	6" O.C.	6" O.C. EA. SIDE	SDS @ 6" O.C.	3x	(2) SDS @ 6" O.C.	4x	770	1540

1. ALL SHEAR PANEL SHALL BE 1/2" OSB OR CDX PLYWOOD. ALL FIELD NAILING SHALL BE 10d @ 12" O.C.
2. STUDS SHALL BE 2X4 MIN MUM AND SPACED @ 16" O.C. MAXIMUM. U.N.
3. INTERIOR SHEAR WALLS SHALL BE EXTENDED THROUGH THE ATTIC TO THE ROOF SHEATHING.
4. NAILS SHALL BE COMMON NAILS, PLACED AT LEAST 1/2" FROM PANEL EDGES AND AT LEAST 1/2" FROM THE EDGE OF CONNECTION MEMBER OF ALL PANELS.
5. NAILS SHALL BE STAGGERED IN TWO LINES ALONG PANEL EDGES WHEN NAIL SPACING IS 3" OR LESS O.C. (MINIMUM SPACING BETWEEN NAIL LINES IS 1/2")
6. NAILS FOR PRESERVATIVE-TREATED WOOD SHALL BE HOT-DIP GALVANIZED.
7. SDS DENOTES 1/4"Ø SDS WOOD SCREWS WITH 2" MINIMUM PENETRATION INTO FRAMING BELOW. ROWS OF SDS SHALL BE STAGGERED 1/2" APART.
8. ALL ANCHOR BOLTS SHALL HAVE 3"SQ.x1/4" W/ 11/16"x1 3/4"DIAGONAL SLOT *USE STD. CUT WASHER O/ PLATE WASHER) PLATE WASHERS. USE 3"x4 1/2" AT 6" THICK SHEAR WALL. PLATE WASHER. PLATE WASHER TO EXTEND TO WITHIN 1/2" OF THE EDGED OF THE SILL PLATE ON THE SIDE WITH SHEATHING.
   a. 5/8Ø" A.B. W/ x 7" MINIMUM EMBEDMENT INTO CONCRETE. OR
   b. SIMPSON RETROFIT FOUNDATION PLATES URFP/FRFP PER MANUFACTURE'S RECOMENDATION.
   c. 5/8Ø" x 7" SIMPSON TITEN HD.
   d. IN NON-P.T. SLABS, 5/8Ø" EXPENSION BOLT W/ 2 3/4" MIN. EMBEDMENT W/ MINIMUM 9" EDGE DISTANCE.

SYMBOLS LEGEND

- WOOD POST
- WOOD POST ABOVE
- DIRECTION OF JOISTS
- SHEAR PANEL LENGTH AND SCHEDULE
- SHEAR PANEL LENGTH AND SCHEDULE
- DETAIL
- BEAM NUMBER, REFER TO E.O.R. CALCULATIONS
- SHEAR LINE
- CALIFORNIA FRAMING
- PAD FOOTING
- (E) FOUNDATION
- (N) FOUNDATION

FRAMING NOTES

- R1 — 2 X 6 ROOF RAFTERS @ 12" O.C.
- F1 — 1 3/4" x 11 1/4" LVL FLOOR JOIST @ 16" O.C.
- D1 — 2 X 8 DECK JOIST @ 16" O.C.

FOUNDATION NOTES

1. CONFIRM ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
   PLAN SHOWS STRUCTURAL SLAB, WALLS, ABOVE FOUNDATION.
   ARCHITECTURAL BACKGROUND INDICATES NON-STRUCTURAL WALLS.
   CONFIRM ALL BACKGROUND INFORMATION WITH CURRENT ARCHITECTURAL DRAWINGS.
2. SEE STRUCTURAL SPECIFICATIONS ON SHEET SN1.0.
3. NEW STEM WALL FTG. SHALL BE 16" WIDE CONT. FTG. W/ (2)-#4 T&B & #3 VERT @ 24" O.C. TYP.
4. PROVIDE 2x SOLID BLOCKING @ 8' OC BETWEEN FL JOIST TYP.
5. ALL FLOOR USE 3/4" PLYWOOD T&G WITH 10d@ 6" O.C. EDGE NAILS 10" O.C. FIELD NAILS TYP AT FLOOR AREA GLUED AND NAILED.
6. PROVIDE FLOOR PLYWOOD EDGE NAILS FULL LENGTH AT ALL SHEAR WALL LINE.
7. FL JST, GIRDER W/ HUTF HGR AT END TO WALL SILL PL TYP.
8. HOLDOWNS SHOULD BE RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
9. ALL HOLDOWNS REQUIRED 4x4 MINIMUM POST.
10. THE NEW FOUNDATION TYPE MUST MATCH EXISTING FOUNDATION, REPORT TO ENGINEER OF RECORD IF IT IS DIFFERENT.
11. HOLDOWN ANCHOR BOLT TO BE SET AND POSITIONED IN PLACE PRIOR TO CALLING FOR FOUNDATION INSPECTION.

CITY/COUNTY STAMP SPACE

ORANGE ENGINEERING
4005 CLIPPER CT
FREMONT, CA 94538
TEL (408) 888-7836

REGISTERED PROFESSIONAL ENGINEER
DI YANG
No. C92766
12/31/25
CIVIL
STATE OF CALIFORNIA

ADU & ADDITION
16488 BONNIE LN,
LOS GATOS, CA 95032

DATE: 08/22/24
JOB NO. OES24086

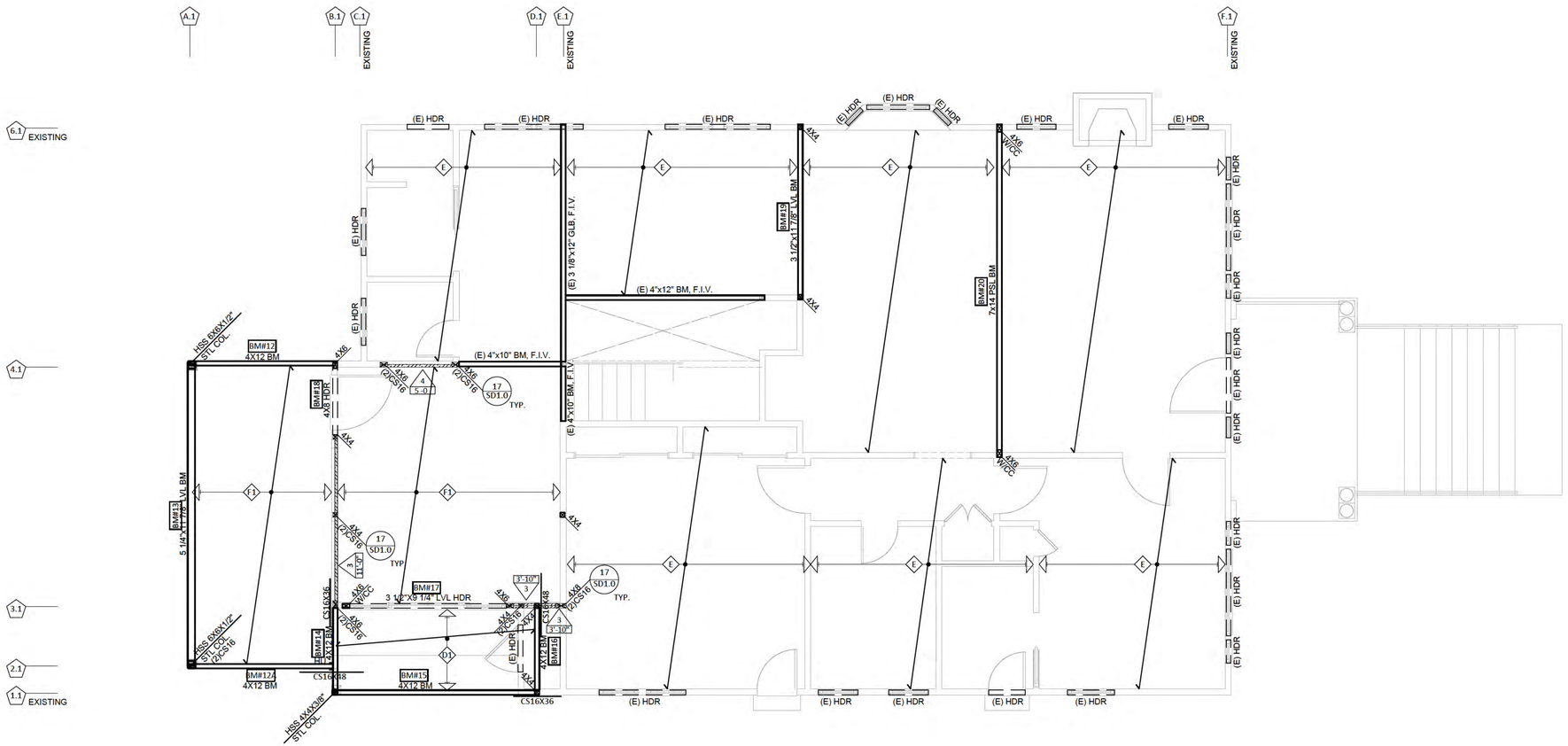
ISSUE & REVISION

	mm/dd/yy	CITY SUBMITTAL
1		
2		
3		
4		
5		
6		
7		
8		
9		

SHEET NAME.
FOUNDATION PLAN

SHEET NO.
S1.0

DRAWN BY:



FLOOR FRAMING PLAN

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

SYMBOLS LEGEND

- WOOD POST / WOOD POST ABOVE
- DIRECTION OF JOISTS
- SHEAR PANEL LENGTH AND SCHEDULE
- SHEAR PANEL LENGTH AND SCHEDULE
- DETAIL
- BEAM NUMBER, REFER TO E.O.R. CALCULATIONS
- SHEAR LINE
- CALIFORNIA FRAMING
- PAD FOOTING
- (E) FOUNDATION
- (N) FOUNDATION

FRAMING NOTES

- R1 — 2 X 6 ROOF RAFTERS @ 12" O.C.
- F1 — 1 3/4" x 11 1/4" LVL FLOOR JOIST @ 16" O.C.
- D1 — 2 X 8 DECK JOIST @ 16" O.C.

FRAMING NOTES

1. CONFIRM ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
   PLAN SHOWS STRUCTURAL WALLS, ROOF LINES ABOVE FOUNDATION.
   ARCHITECTURAL BACKGROUND INDICATES NON-STRUCTURAL WALLS
   CONFIRM ALL BACKGROUND INFORMATION WITH CURRENT
   ARCHITECTURAL DRAWINGS.
2. SEE STRUCTURAL SPECIFICATIONS ON SHEET SN1.0.
3. FULL HEIGHT STUDS SHALL BE USED ON EXTERIOR WALLS OF ROOM WITH VAULTED CEILINGS. 2x6 STUD @ 16" O.C. FOR 12'-0" OR MORE WALL HIGH.
4. ALL ROOF USE 1/2" OSB PLYWOOD WITH 10d @ 6" O.C. EDGE NAILS AND 12" OC FIELD NAILS UNBLOCKED TYPICAL.
5. ALL FLOOR 3/4" PLYWOOD T&G WITH 10d@ 6" OC EDGE NAILS 10" O.C. FIELD NAILS TYP AT FLOOR AREA GLUED AND NAILED.
6. PROVIDE SIMP. CS16x30" @ SIDE OF EXTERIOR WALL & SHEAR WALL WHERE TOP PLATES SPLICED OR CONNECTED TO BM TYP AS SHOWN.
7. ALL BEAM TO BEAM SUPPORT USE HANGER PER HANGER SCHEDULE.
8. PROVIDE SIMP. CS16x30"MIN @ SIDE OF EXTERIOR WALL & SHEAR WALL WHERE TOP PLATES SPLICED OR CONNECTED TO BM TYP.
9. PROVIDE PC4 CAP & BC4 BASE TYP AT EA END OF DROPPED FLOOR BM EXTEND POST DOWN TO FOUNDATION.
10. SOLID BLOCKING SHALL BE PROVIDED AT ALL HORIZONTAL JOINTS OCCURRING IN BRACED WALL PANELS.
11. ALL BEAMS PROVIDE 4x BEAM WIDTH POST.
12. HOLDOWN SHALL BE RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
13. ALL EXTERIOR WALLS AND WOOD FRAMED CHIMNEYS MUST BE SHEATHED WITH SHEAR PANEL U.N.
14. PLYWOOD OF ALL INTERIOR SHEAR WALL TO BE EXTENDED UP TO ROOF.
15. THE NEW FOUNDATION TYPE MUST MATCH EXISTING FOUNDATION, REPORT TO ENGINEER OF RECORD IF IT IS DIFFERENT.
16. HOLDOWN ANCHOR BOLT TO BE SET AND POSITIONED IN PLACE PRIOR TO CALLING FOR FOUNDATION INSPECTION.
17. GC SHALL VERIFY ALL BEARING WALL LOCATIONS PRIOR TO DEMOLITION AND REPORT TO EOR IF THERE ARE ANY DISCREPANCIES WITH CONSTRUCTION DOCUMENTS.

HANGER SCHEDULE (U.N.O.)		
SUPPORTED MEMBER SIZE	HANGER	MIN. POST SIZE REQ.
2X RAFTERS, DBL. RAFTERS	LSSJ, LSSR	- -
2X CEILING / FLOOR JOISTS, DBL. JOISTS	LUS, HU	- -
TJI FLOOR I-JOISTS	ITS	- -
4X BEAM SAWN LUMBER	HU	4X4 DF#2
6X BEAM SAWN LUMBER	HU	4X6 DF#2
3 1/2" WIDE ENGINEERED BEAM	HHUS	4X4 DF#2
5 1/4" WIDE ENGINEERED BEAM	HHUS	4X6 DF#2
7" WIDE ENGINEERED BEAM	HGUS	6X6 DF#1 / 4X8 DF#1
1 3/4" MICROLAM	LSU, HU	2-2X4 DF#2
TRUSS HANGERS	USE MANUF. SUPPLIED HANGERS	

PLYWOOD SHEAR WALL SCHEDULE

EDGE NAILING			FDN. SILL PLATE		ANCHOR BOLT SPACING		A35/LTP4 CLIPS SPACING		PLATE CONNECTION NAILING				CAPACITY (PLF)	
MARK	TYPE	SPACING	1 SIDE	2 SIDE	1 SIDE	2 SIDE	1 SIDE	2 SIDE	1 SIDE	RIM/BLKG	2 SIDE	RIM/BLKG	1 SIDE	2 SIDE
SHEAR PANEL	1	6" O.C.	2x		32" O.C.		18" O.C.		16d @ 6" O.C.	2x			310	
SHEAR PANEL	2	4" O.C.	2x	3x	24" O.C.	12" O.C.	12" O.C.	12" O.C. EA. SIDE	16d @ 4" O.C.	3x	SDS @ 6" O.C.	3x	460	920
SHEAR PANEL	3	3" STAGG.	3x	3x	16" O.C.	8" O.C.	9" O.C.	9" O.C. EA. SIDE	(2) 16d @ 6" O.C.	3x	(2) SDS @ 10" O.C.	4x	600	1200
SHEAR PANEL	4	2" STAGG.	3x	3x	12" O.C.	6" O.C.	6" O.C.	6" O.C. EA. SIDE	SDS @ 6" O.C.	3x	(2) SDS @ 6" O.C.	4x	770	1540

1. ALL SHEAR PANEL SHALL BE 1/2" OSB OR CDX PLYWOOD. ALL FIELD NAILING SHALL BE 10d @ 12" O.C.
2. STUDS SHALL BE 2X4 MINIMUM AND SPACED @ 16" O.C. MAXIMUM. U.N.
3. INTERIOR SHEAR WALLS SHALL BE EXTENDED THROUGH THE ATTIC TO THE ROOF SHEATHING.
4. NAILS SHALL BE COMMON NAILS, PLACED AT LEAST 1/2" FROM PANEL EDGES AND AT LEAST 1/2" FROM THE EDGE OF CONNECTION MEMBER OF ALL PANELS.
5. NAILS SHALL BE STAGGERED IN TWO LINES ALONG PANEL EDGES WHEN NAIL SPACING IS 3" OR LESS O.C. (MINIMUM SPACING BETWEEN NAIL LINES IS 1/2")
6. NAILS FOR PRESERVATIVE-TREATED WOOD SHALL BE HOT-DIP GALVANIZED.
7. SDS DENOTES 1/4"Ø SDS WOOD SCREWS WITH 2" MINIMUM PENETRATION INTO FRAMING BELOW. ROWS OF SDS SHALL BE STAGGERED 1/2" APART.
8. ALL ANCHOR BOLTS SHALL HAVE 3"SQ.x1/4" W/ 11/16"x1 3/4"DIAGONAL SLOT *USE STD. CUT WASHER O/ PLATE WASHER) PLATE WASHERS. USE 3"x4 1/2" AT 6" THICK SHEAR WALL. PLATE WASHER. PLATE WASHER TO EXTEND TO WITHIN 1/2" OF THE EDGED OF THE SILL PLATE ON THE SIDE WITH SHEATHING.
   a. 5/8Ø" A.B. W/ x 7" MINIMUM EMBEDMENT INTO CONCRETE. OR
   b. SIMPSON RETROFIT FOUNDATION PLATES URFP/FRFP PER MANUFACTURE'S RECOMENDATION.
   c. IN NON-P.T. SLABS, 5/8Ø" EXPENSION BOLT W/ 2 3/4" MIN. EMBEDMENT W/ MINIMUM 9" EDGE DISTANCE.

CITY/COUNTY STAMP SPACE

ORANGE ENGINEERING
4005 CLIPPER CT
FREMONT, CA 94538
TEL (408) 888-7836

REGISTERED PROFESSIONAL ENGINEER
DI YANG
No. C92766
12/31/25
STATE OF CALIFORNIA

ADU & ADDITION
16488 BONNIE LN,
LOS GATOS, CA 95032

DATE: 08/22/24
JOB NO. OES24086

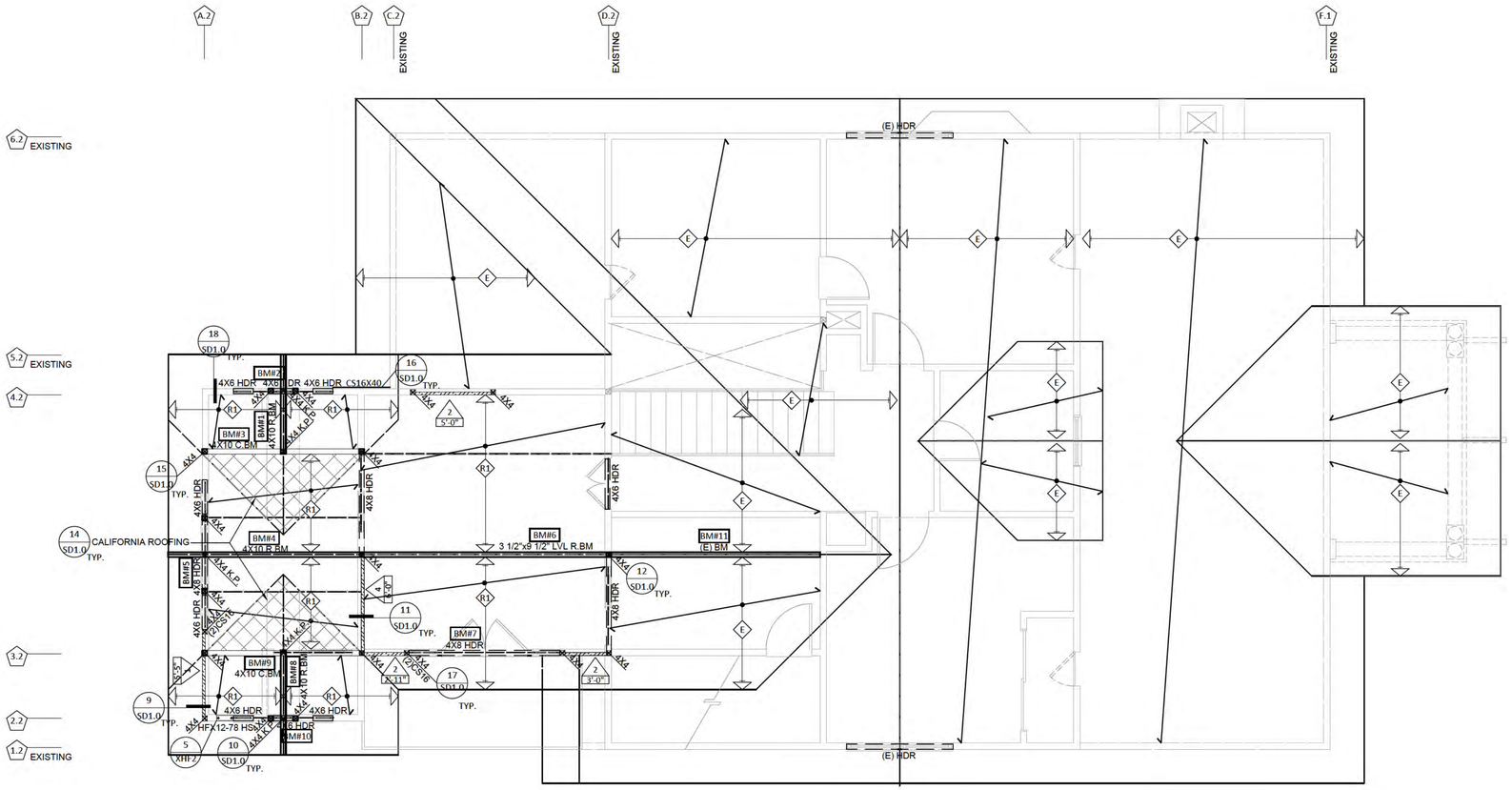
ISSUE & REVISION

	mm/dd/yy	CITY SUBMITTAL
1		
2		
3		
4		
5		
6		
7		
8		
9		

SHEET NAME.
FLOOR FRAMING PLAN

SHEET NO.
S2.0

DRAWN BY:



ROOF FRAMING PLAN

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

SYMBOLS LEGEND

- WOOD POST
- WOOD POST ABOVE
- DIRECTION OF JOISTS
- SHEAR PANEL LENGTH AND SCHEDULE
- SHEAR PANEL LENGTH AND SCHEDULE
- DETAIL
- BEAM NUMBER, REFER TO E.O.R. CALCULATIONS
- SHEAR LINE
- CALIFORNIA FRAMING
- PAD FOOTING
- (E) FOUNDATION
- (N) FOUNDATION

FRAMING NOTES

- R1 — 2 X 6 ROOF RAFTERS @ 12" O.C.
- F1 — 1 3/4" x 11 1/4" LVL FLOOR JOIST @ 16" O.C.
- D2 — 2 X 8 DECK JOIST @ 16" O.C.

FRAMING NOTES

1. CONFIRM ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
   PLAN SHOWS STRUCTURAL WALLS, ROOF LINES ABOVE FOUNDATION.
   ARCHITECTURAL BACKGROUND INDICATES NON-STRUCTURAL WALLS
   CONFIRM ALL BACKGROUND INFORMATION WITH CURRENT ARCHITECTURAL DRAWINGS.
2. SEE STRUCTURAL SPECIFICATIONS ON SHEET SN1.0.
3. FULL HEIGHT STUDS SHALL BE USED ON EXTERIOR WALLS OF ROOM WITH VAULTED CEILINGS. 2x6 STUD @ 16" O.C. FOR 12'-0" OR MORE WALL HIGH.
4. ALL ROOF USE 1/2" OSB PLYWOOD WITH 10d @ 6" O.C. EDGE NAILS AND 12" OC FIELD NAILS UNBLOCKED TYPICAL.
5. ALL FLOOR 3/4" PLYWOOD T&G WITH 10d@ 6" OC EDGE NAILS 10" O.C. FIELD NAILS TYP AT FLOOR AREA GLUED AND NAILED.
6. PROVIDE SIMP. CS16x30" @ SIDE OF EXTERIOR WALL & SHEAR WALL WHERE TOP PLATES SPLICED OR CONNECTED TO BM TYP AS SHOWN.
7. ALL BEAM TO BEAM SUPPORT USE HANGER PER HANGER SCHEDULE.
8. PROVIDE SIMP. CS16x30"MIN @ SIDE OF EXTERIOR WALL & SHEAR WALL WHERE TOP PLATES SPLICED OR CONNECTED TO BM TYP.
9. PROVIDE PC4 CAP & BC4 BASE TYP AT EA END OF DROPPED FLOOR BM EXTEND POST DOWN TO FOUNDATION.
10. SOLID BLOCKING SHALL BE PROVIDED AT ALL HORIZONTAL JOINTS OCCURRING IN BRACED WALL PANELS.
11. ALL BEAMS PROVIDE 4x BEAM WIDTH POST.
12. HOLDOWN SHALL BE RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
13. ALL EXTERIOR WALLS AND WOOD FRAMED CHIMNEYS MUST BE SHEATHED WITH SHEAR PANEL U.N.
14. PLYWOOD OF ALL INTERIOR SHEAR WALL TO BE EXTENDED UP TO ROOF.
15. THE NEW FOUNDATION TYPE MUST MATCH EXISTING FOUNDATION, REPORT TO ENGINEER OF RECORD IF IT IS DIFFERENT.
16. HOLDOWN ANCHOR BOLT TO BE SET AND POSITIONED IN PLACE PRIOR TO CALLING FOR FOUNDATION INSPECTION.
17. GC SHALL VERIFY ALL BEARING WALL LOCATIONS PRIOR TO DEMOLITION AND REPORT TO EOR IF THERE ARE ANY DISCREPANCIES WITH CONSTRUCTION DOCUMENTS.

HANGER SCHEDULE (U.N.O.)

SUPPORTED MEMBER SIZE	HANGER	MIN. POST SIZE REQ.
2X RAFTERS, DBL. RAFTERS	LSSJ, LSSR	- -
2X CEILING / FLOOR JOISTS, DBL. JOISTS	LUS, HU	- -
TJI FLOOR I-JOISTS	ITS	- -
4X BEAM SAWN LUMBER	HU	4X4 DF#2
6X BEAM SAWN LUMBER	HU	4X6 DF#2
3 1/2" WIDE ENGINEERED BEAM	HHUS	4X4 DF#2
5 1/4" WIDE ENGINEERED BEAM	HHUS	4X6 DF#2
7" WIDE ENGINEERED BEAM	HGUS	6X6 DF#1 / 4X8 DF#1
1 3/4" MICROLAM	LSU, HU	2-2X4 DF#2
TRUSS HANGERS	USE MANUF. SUPPLIED HANGERS	

PLYWOOD SHEAR WALL SCHEDULE

EDGE NAILING			FDN. SILL PLATE		ANCHOR BOLT SPACING		A35/LTP4 CLIPS SPACING		PLATE CONNECTION NAILING				CAPACITY (PLF)	
MARK	TYPE	SPACING	1 SIDE	2 SIDE	1 SIDE	2 SIDE	1 SIDE	2 SIDE	1 SIDE	RIM/BLKG	2 SIDE	RIM/BLKG	1 SIDE	2 SIDE
SW1	1	6" O.C.	2x		32" O.C.		18" O.C.		16d @ 6" O.C.	2x			310	
SW2	2	4" O.C.	2x	3x	24" O.C.	12" O.C.	12" O.C.	12" O.C. EA. SIDE	16d @ 4" O.C.	3x	SDS @ 6" O.C.	3x	460	920
SW3	3	3" STAGG.	3x	3x	16" O.C.	8" O.C.	9" O.C.	9" O.C. EA. SIDE	(2) 16d @ 6" O.C.	3x	(2) SDS @ 10" O.C.	4x	600	1200
SW4	4	2" STAGG.	3x	3x	12" O.C.	6" O.C.	6" O.C.	6" O.C. EA. SIDE	SDS @ 6" O.C.	3x	(2) SDS @ 6" O.C.	4x	770	1540

1. ALL SHEAR PANEL SHALL BE 1/2" OSB OR CDX PLYWOOD. ALL FIELD NAILING SHALL BE 10d @ 12" O.C.
2. STUDS SHALL BE 2X4 MINIMUM AND SPACED @ 16" O.C. MAXIMUM. U.N.
3. INTERIOR SHEAR WALLS SHALL BE EXTENDED THROUGH THE ATTIC TO THE ROOF SHEATHING.
4. NAILS SHALL BE COMMON NAILS, PLACED AT LEAST 1/2" FROM PANEL EDGES AND AT LEAST 1/2" FROM THE EDGE OF CONNECTION MEMBER OF ALL PANELS.
5. NAILS SHALL BE STAGGERED IN TWO LINES ALONG PANEL EDGES WHEN NAIL SPACING IS 3" OR LESS O.C. (MINIMUM SPACING BETWEEN NAIL LINES IS 1/2")
6. NAILS FOR PRESERVATIVE-TREATED WOOD SHALL BE HOT-DIP GALVANIZED.
7. SDS DENOTES 1/4"Ø SDS WOOD SCREWS WITH 2" MINIMUM PENETRATION INTO FRAMING BELOW. ROWS OF SDS SHALL BE STAGGERED 1/2" APART.
8. ALL ANCHOR BOLTS SHALL HAVE 3"SQ.x1/4" W/ 11/16"x1 3/4"DIAGONAL SLOT "USE STD. CUT WASHER O/ PLATE WASHER) PLATE WASHERS. USE 3"x4 1/2" AT 6" THICK SHEAR WALL. PLATE WASHER. PLATE WASHER TO EXTEND TO WITHIN 1/2" OF THE EDGED OF THE SILL PLATE ON THE SIDE WITH SHEATHING.
   a. 5/8Ø" A.B. W/ x 7" MINIMUM EMBEDMENT INTO CONCRETE. OR
   b. SIMPSON RETROFIT FOUNDATION PLATES URFP/FRFP PER MANUFACTURE'S RECOMENDATION.
   c. 5/8Ø" x 7" SIMPSON TITEN HD.
   d. IN NON-P.T. SLABS, 5/8Ø" EXPENSION BOLT W/ 2 3/4" MIN. EMBEDMENT W/ MINIMUM 9" EDGE DISTANCE.

CITY/COUNTY STAMP SPACE

ORANGE ENGINEERING

4005 CLIPPER CT
FREMONT, CA 94538
TEL (408) 888-7836

REGISTERED PROFESSIONAL ENGINEER
DI YANG
No. C92766
12/31/25
CIVIL
STATE OF CALIFORNIA

ADU & ADDITION

16488 BONNIE LN,
LOS GATOS, CA 95032

DATE: 08/22/24

JOB NO. OES24086

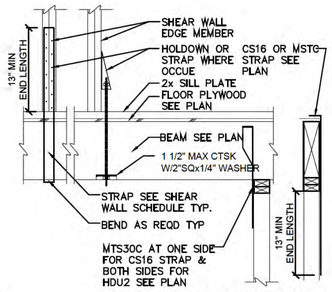
ISSUE & REVISION

	mm/dd/yy	CITY SUBMITTAL
1		
2		
3		
4		
5		
6		
7		
8		
9		

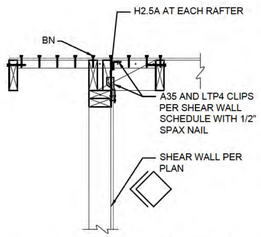
SHEET NAME.
ROOF FRAMING PLAN

SHEET NO.
S3.0

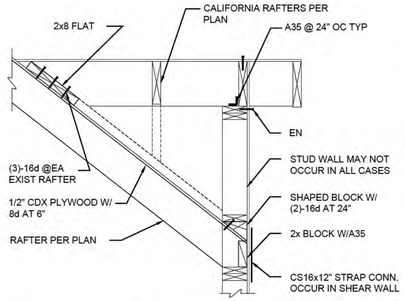
DRAWN BY:

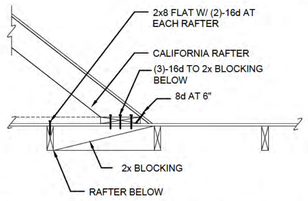


17 STRAP AND HOLDOWN DETAIL

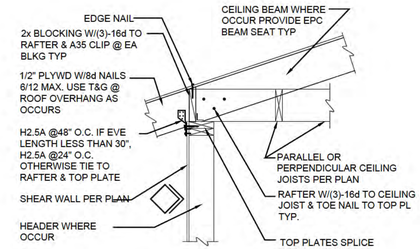


18 EXTERIOR WALL & ROOF DETAIL

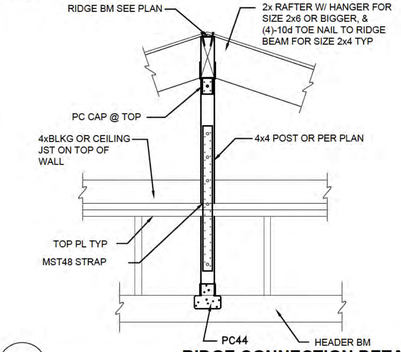




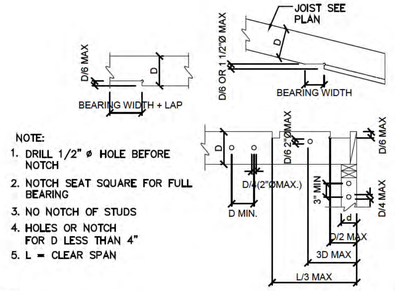
14 CALIFORNIA ROOF FRAMING



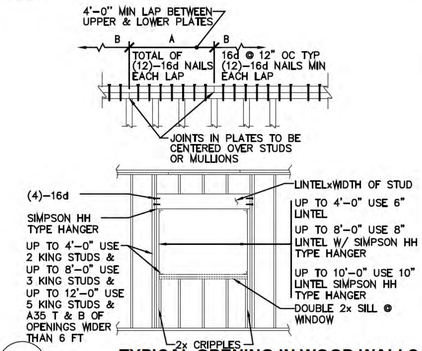
9 SHEAR TRANSFER AT EAVE



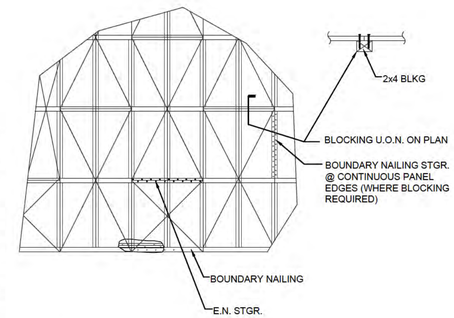
10 RIDGE CONNECTION DETAIL



5 NOTCH DETAIL

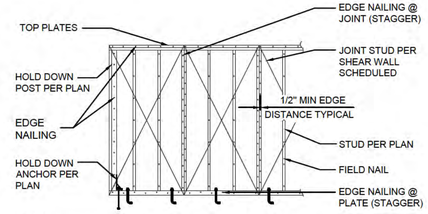


6 TYPICAL OPENING IN WOOD WALLS



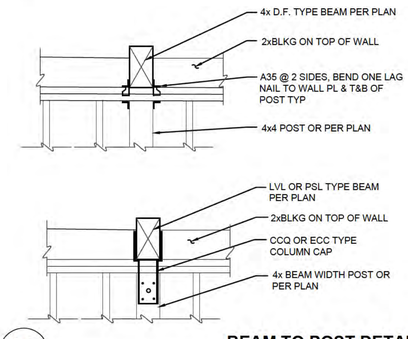
NOTES:
1. FOR ITEMS NOT NOTED SEE PLANS.
2. MINIMUM PANEL DIMENSION IS 2'-0".

1 TYPICAL ROOF & FL DIAPHRAGM

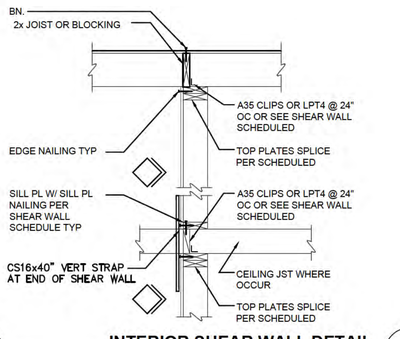


NOTES:
1) FOR ITEMS NOT NOTED SEE PLAN & SHEAR WALL SCHEDULED
2) MINIMUM PANEL DIMENSION IS 1'-0"
3) USE FULL SIZE PANELS WHERE POSSIBLE.
4) FIELD NAILING (FIELD NAIL) @ 12" U.O.N.
5) 3x SOLID BLOCKING @ HORIZONTAL JOINTS.

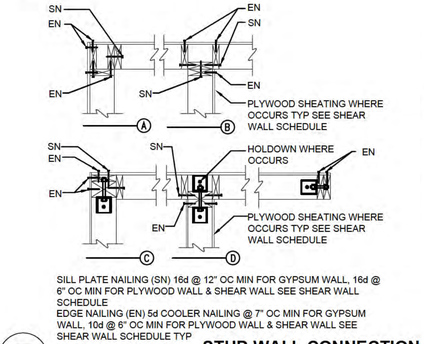
2 TYPICAL SHEAR WALL ELEVATION



15 BEAM TO POST DETAIL

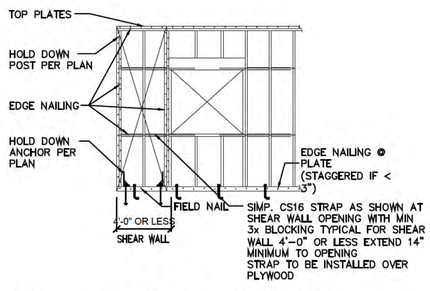


11 INTERIOR SHEAR WALL DETAIL

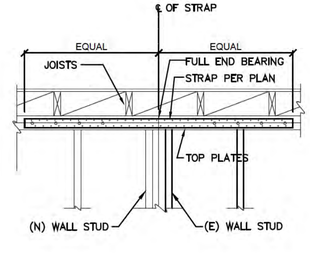


SILL PLATE NAILING (SN) 16d @ 12" OC MIN FOR GYPSUM WALL, 16d @ 6" OC MIN FOR PLYWOOD WALL & SHEAR WALL SEE SHEAR WALL SCHEDULE
EDGE NAILING (EN) 5d COOLER NAILING @ 7" OC MIN FOR GYPSUM WALL, 10d @ 6" OC MIN FOR PLYWOOD WALL & SHEAR WALL SEE SHEAR WALL SCHEDULE TYP

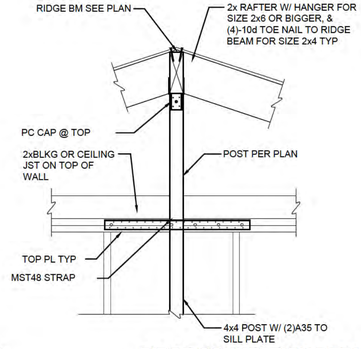
7 STUD WALL CONNECTION



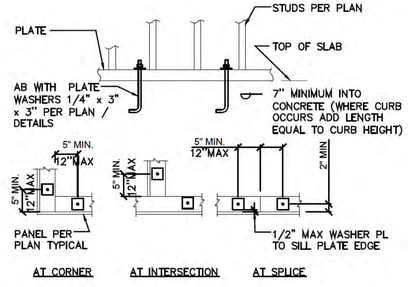
3 SHEAR WALL W/ OPENING ELEVATION



16 DRAG DETAIL



12 RIDGE CONNECTION DETAIL



8 TYPICAL PLATE ANCHOR BOLTS

CITY/COUNTY STAMP SPACE

ORANGE ENGINEERING
4005 CLIPPER CT
FREMONT, CA 94538
TEL (408) 888-7836

REGISTERED PROFESSIONAL ENGINEER
DI TANG
No. C92766
12/31/25
STATE OF CALIFORNIA

ADU & ADDITION
16488 BONNIE LN,
LOS GATOS, CA 95032

DATE: 08/22/24
JOB NO. OES24086

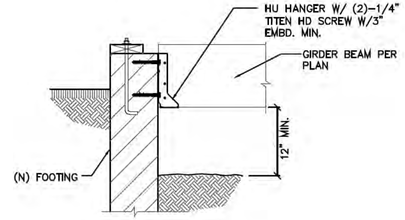
ISSUE & REVISION

	mm/dd/yy	CITY SUBMITTAL
1		
2		
3		
4		
5		
6		
7		
8		
9		

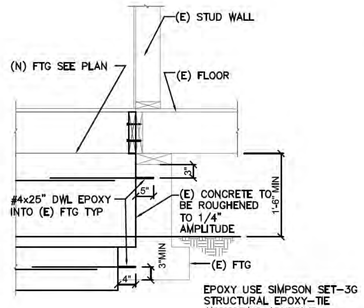
SHEET NAME.
DETAILS

SHEET NO.
SD1.0

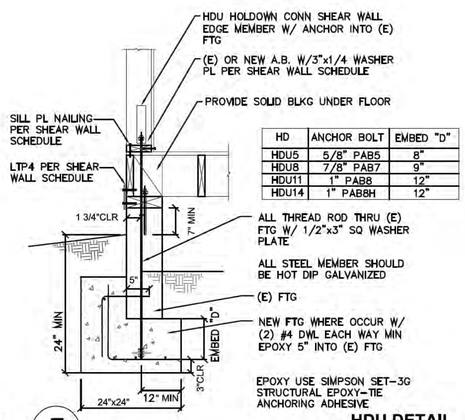
DRAWN BY:



13 GIRDER BEAM TO (N) FOOTING

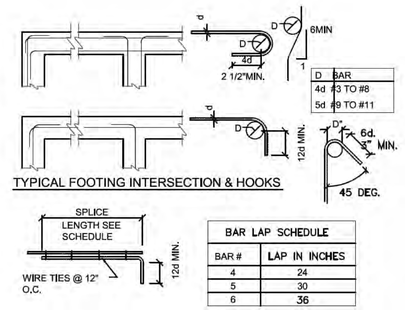


9 (N) FTG TO (E) FTG



HD	ANCHOR BOLT	EMBED "D"
HDU5	5/8" PAB5	8"
HDU8	7/8" PAB7	9"
HDU11	1" PAB8	12"
HDU14	1" PAB8H	12"

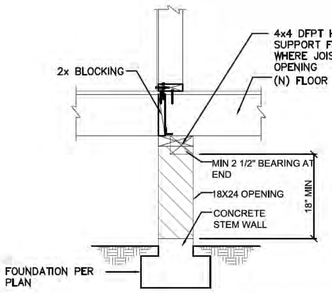
5 HDU DETAIL



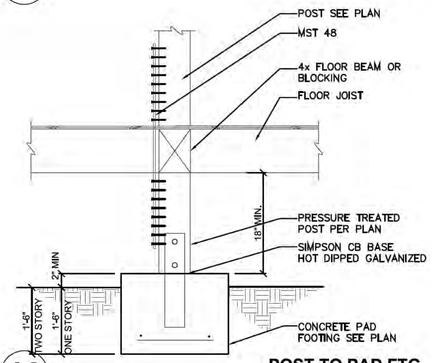
D BAR
4d #3 TO #8
5d #9 TO #11

BAR LAP SCHEDULE	
BAR #	LAP IN INCHES
4	24
5	30
6	36

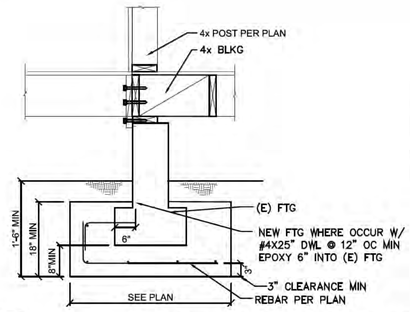
1 REBARS TYPICAL BENDING



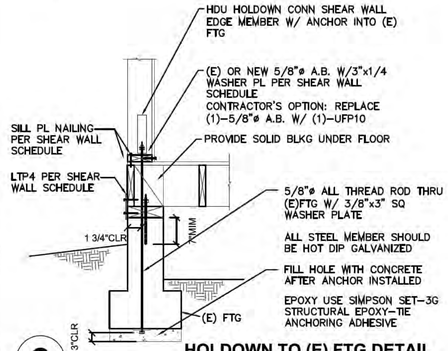
14 (N) FL JST TO (N) FL JST W/ (N) FTG



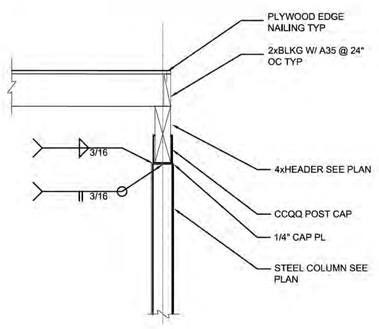
10 POST TO PAD FTG

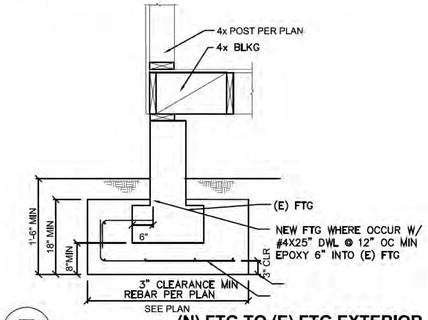


6 (N) FTG TO (E) FTG INTERIOR

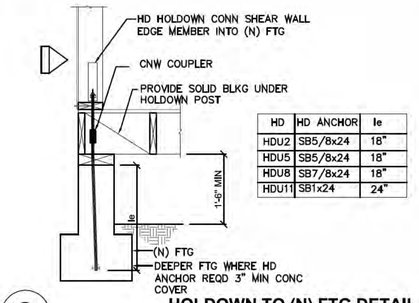


2 HOLDOWN TO (E) FTG DETAIL



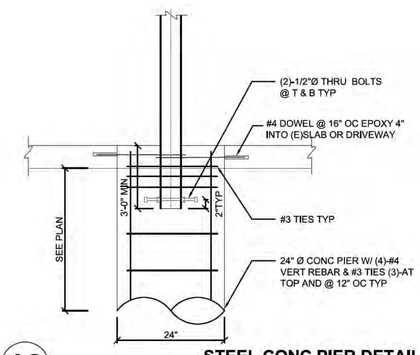


7 (N) FTG TO (E) FTG EXTERIOR

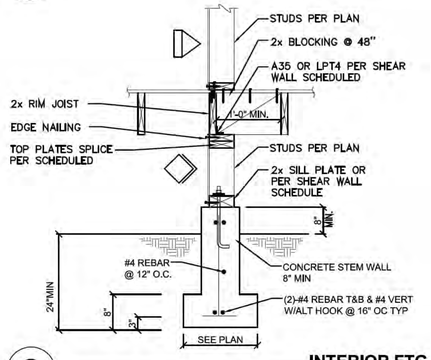


HD	HD ANCHOR	le
HDU2	SB5/8x24	18"
HDU5	SB5/8x24	18"
HDU8	SB7/8x24	18"
HDU11	SB1x24	24"

3 HOLDOWN TO (N) FTG DETAIL



12 STEEL CONC PIER DETAIL



8 INTERIOR FTG

CITY/COUNTY STAMP SPACE

ORANGE ENGINEERING
4005 CLIPPER CT
FREMONT, CA 94538
TEL (408) 888-7836

REGISTERED PROFESSIONAL ENGINEER D T YANG No. C92766 12/31/25 CIVIL STATE OF CALIFORNIA

ADU & ADDITION

16488 BONNIE LN,
LOS GATOS, CA 95032

DATE: 08/22/24
JOB NO. OES24086

ISSUE & REVISION

	mm/dd/yy	CITY SUBMITTAL
1		
2		
3		
4		
5		
6		
7		
8		
9		

SHEET NAME:
DETAILS

SHEET NO.
SD2.0

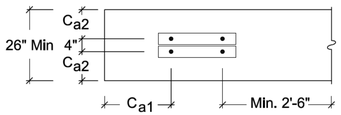
DRAWN BY:

BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

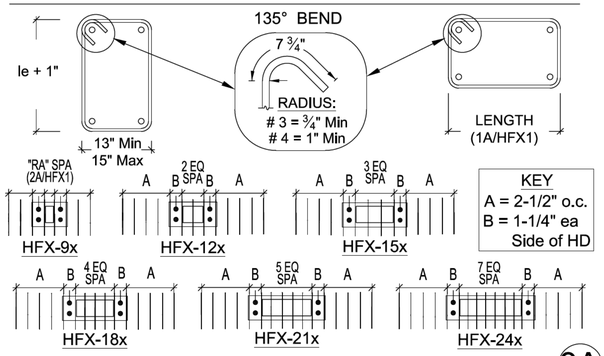
Model	Panel Width (in)	Anchorage[1]	Rod Dia (in)	Rod Grade[2,3]	BB-RA le[4] (in)	BB-RA Ca1[5] (in)	BB-RA Ca2[6] (in)	Stirrups[9] (in)	Shear Ties[7]
HFX-9x	9	1-1/8-STD-BB-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-BB-RA		STD	23			13 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-15x	15	1-1/8-STD-BB-RA		STD		20-5/8		14 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-18x	18	1-1/8-STD-BB-RA		STD				15 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-21x	21	1-1/8-STD-BB-RA		STD				16 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-24x	24	1-1/8-STD-BB-RA		STD				18 - # 4	
		1-1/8-HS-BB-RA		HS					

BACK TO BACK REINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - BB - RA
- REINFORCED ANCHORAGE
- "BACK TO BACK" INSTALLATION
- ROD GRADE
- ROD DIAMETER

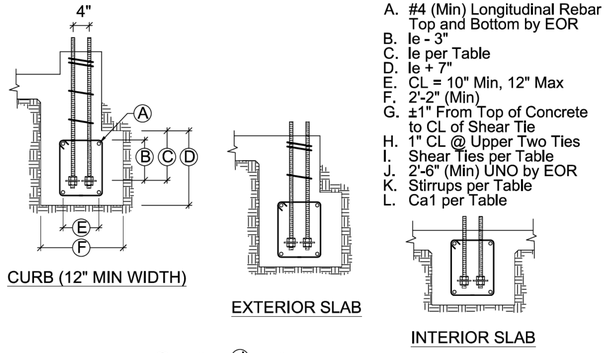


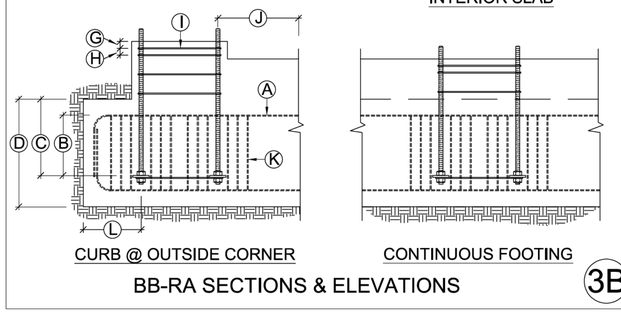
3



BB-RA SHEAR TIES & STIRRUPS

3A





BB-RA SECTIONS & ELEVATIONS

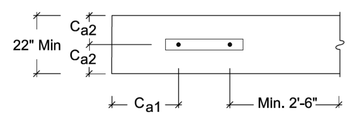
3B

REINFORCED ANCHORAGE (RA)

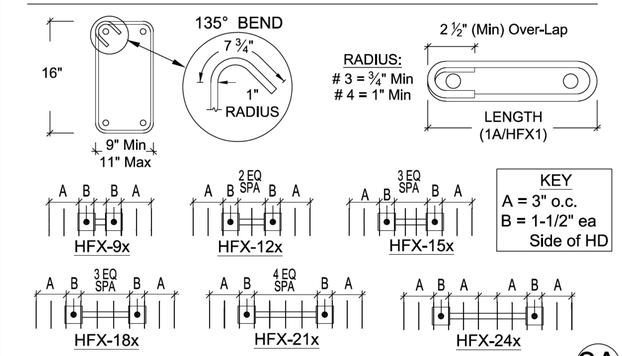
Model	Panel Width (in)	Anchorage[1]	Rod Dia (in)	Rod Grade[2,3]	RA le[4] (in)	RA Ca1[5] (in)	RA Ca2[6] (in)	Stirrups[9] (in)	Shear Ties[7]
HFX-9x	9	1-1/8-STD-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-RA		STD				9 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-15x	15	1-1/8-STD-RA		STD		20-5/8		10 - # 4	
		1-1/8-HS-RA		HS					
HFX-18x	18	1-1/8-STD-RA		STD					
		1-1/8-HS-RA		HS					
HFX-21x	21	1-1/8-STD-RA		STD				11 - # 4	
		1-1/8-HS-RA		HS					
HFX-24x	24	1-1/8-STD-RA		STD				12 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-RA		HS					

REINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - RA
- REINFORCED ANCHORAGE
- ROD GRADE
- ROD DIAMETER

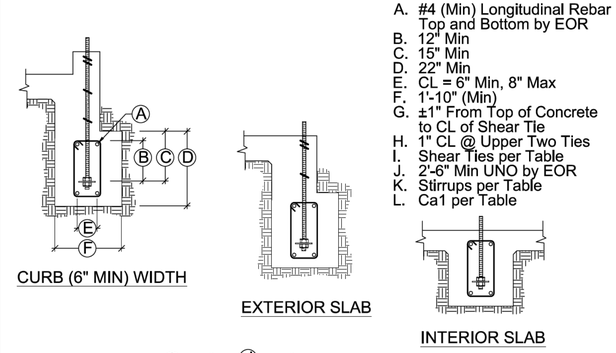


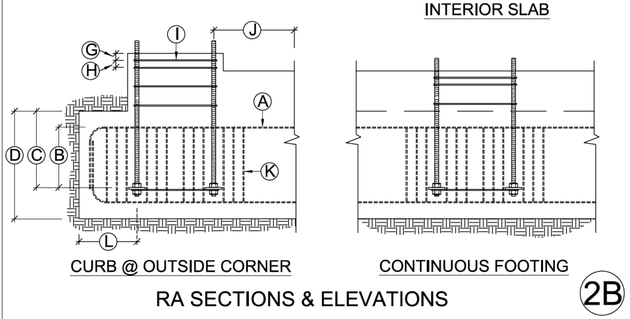
2



RA SHEAR TIES & STIRRUPS

2A





RA SECTIONS & ELEVATIONS

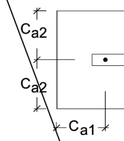
2B

UNREINFORCED ANCHORAGE (UA)

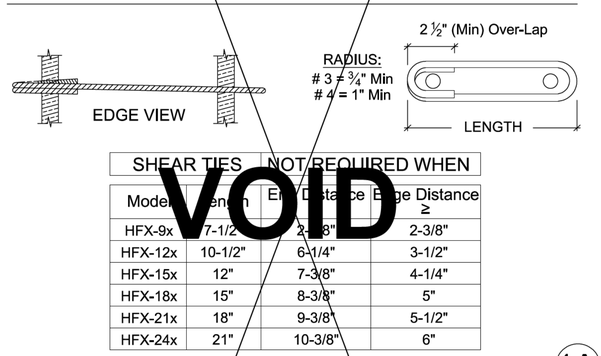
Model	Panel Height	Anchorage[1]	Rod Dia (in)	Rod Grade[2,3]	UA le[4] (in)	UA Ca1[5] & Ca2[6] (in)	Shear Ties[7,8]
HFX-9x	79.5" - 8'	1-1/8-STD-13-19	1-1/8	STD	13	19	1 - # 3
HFX-12x	78" - 10'	1-1/8-HS-20-30		HS	20	30	
HFX-15x, 18x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
HFX-15x, 18x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30	
HFX-21x, 24x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
		1-1/8-HS-23-34		HS	23	34	2 - # 3
HFX-21x, 24x Balloon	14' - 20'	1-1/8-HS-20-30			20	30	

UNREINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - 14 - 20
- END & EDGE DISTANCE (C_{a1} & C_{a2})
- EMBEDMENT DEPTH (l_e)
- ROD GRADE
- ROD DIAMETER



1

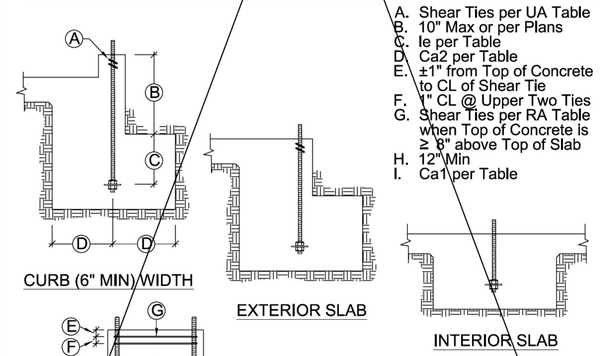


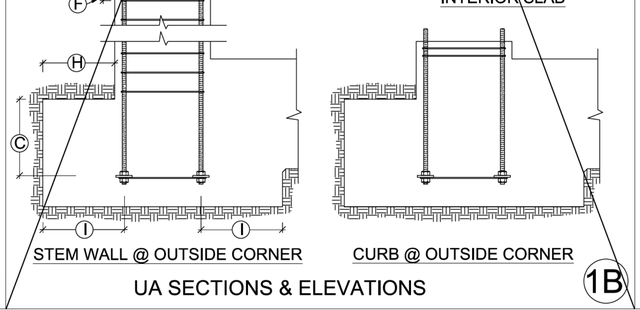
SHEAR TIES NOT REQUIRED WHEN			
Model	Length	End Distance ≥	Edge Distance ≥
HFX-9x	7-1/2"	2-1/8"	2-3/8"
HFX-12x	10-1/2"	6-1/4"	3-1/2"
HFX-15x	12"	7-3/8"	4-1/4"
HFX-18x	15"	8-3/8"	5"
HFX-21x	18"	9-3/8"	5-1/2"
HFX-24x	21"	10-3/8"	6"

VOID

UA SHEAR TIES

1A

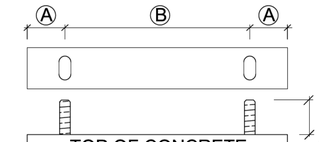




UA SECTIONS & ELEVATIONS

1B

1. DESIGNS ARE TO RESIST LOADING PER ACI 318-19, SEC 17.10.5.3.
2. STD INDICATES ANCHORS COMPLYING WITH ASTM F1554 GRADE 36 WITH A HARDY FRAME BOLT BRACE (HFXBB) INSTALLED WITH STD OR GRADE 8 DOUBLE NUTS ON THE EMBED END.
3. 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).
4. 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)
5. CA1 = DISTANCE FROM HD CENTERLINE TO THE END OF THE FOOTING OR GRADE BEAM.
6. CA2 = DISTANCE FROM HD CENTERLINE TO BOTH THE FRONT AND THE BACK FACE OF THE FOOTING OR GRADE BEAM.
7. SHEAR TIES ARE GRADE 60 (MIN) REBAR AND REQUIRED FOR NEAR EDGE DISTANCE CONDITIONS PER ACI 318-19, 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.
8. 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.
9. STIRRUPS ARE GRADE 60 (MIN) REBAR. SEE TABLE FOR SIZE AND SPACING. SEE "STIRRUP LAYOUT" DIAGRAMS AND "KEY" FOR LAYOUT PATTERNS.
10. CONCRETE EDGE DISTANCES MUST COMPLY WITH ACI 318-19, SECTION 17.9.2. COATED REINFORCEMENT MAY BE SPECIFIED BY THE EOR TO LIMIT EXPOSURE AND THEREFORE REDUCE MINIMUM CONCRETE COVER. COATED REINFORCEMENT MUST COMPLY WITH ACI 318-19, SECTION 20.5.2.



Model	Width	A	B
HFX-9x	9"	1-3/4"	5-1/2"
HFX-12x	12"		8-1/2"
HFX-15x	15"	2-5/8"	9-3/4"
HFX-18x	18"		12-3/4"
HFX-21x	21"		15-3/4"
HFX-24x	24"		18-3/4"

HFX ANCHOR CENTERLINES

A

IMPORTANT!

1. ANCHORAGE IS DESIGNED FOR TENSION AND SHEAR TRANSFER ONLY, FOUNDATION DESIGN PER EOR.
2. REINFORCEMENT SHOWN IS THE MINIMUM REQUIREMENT AND IS NOT INTENDED TO REPLACE REINFORCEMENT DESIGNED BY THE EOR.
3. 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: ½" x 3" x 3" MIN. HFPW PLATE WASHERS ARE REQUIRED TO BE DOUBLE-NUTTED AT EMBED END OF HIGH STRENGTH ANCHOR RODS.)
4. HIGH STRENGTH ALL-THREAD RODS PROVIDED BY HARDY FRAMES ARE STAMPED ON BOTH ENDS. HF B7

IMPORTANT NOTES

B

REVISIONS	DATE

ANCHORAGE DETAILS - HFX PANELS

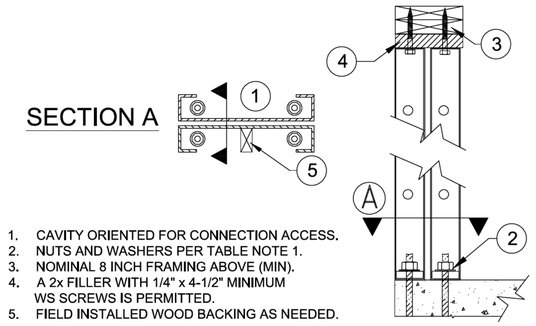
THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH *HARDY FRAME* PRODUCTS

HARDY FRAME SHEAR WALL SYSTEMS
16023 SWINGLEY RIDGE RD
CHESTERFIELD, MO 63017
(800) 325-8075
WWW.HARDYFRAME.COM

MiTek®

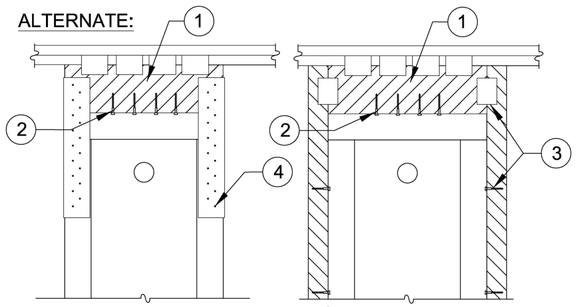
DATE: 1-1-2023

HFX1



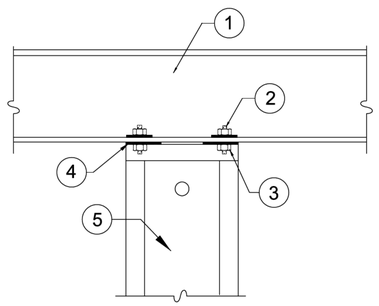
1. CAVITY ORIENTED FOR CONNECTION ACCESS.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. NOMINAL 8 INCH FRAMING ABOVE (MIN).
4. A 2x FILLER WITH 1/4" x 4-1/2" MINIMUM WS SCREWS IS PERMITTED.
5. FIELD INSTALLED WOOD BACKING AS NEEDED.

BACK TO BACK INSTALLATION 3



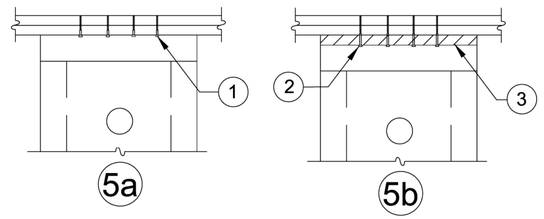
1. WOOD FILLER (13 3/8" MAX DEPTH) WITH USP MP4F CONNECTORS BOTH SIDES, QUANTITY BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED THROUGH PRE-PUNCHED HOLES IN PANEL EDGES REQ'D WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE TO BRACE OUT-OF-PLANE HINGE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.
4. MiTek HFFB FILLER BRACE WITH 1/4" x 1-1/2" WS SCREWS TO FILLER (FILL ALL HOLES) AND 1/4" SELF-TAPPING SCREWS TO PANEL (5 MIN. EACH FACE) REQ'D WHEN INSTALLING A FILLER GREATER THAN 3-1/4" ABOVE TO BRACE OUT-OF-PLANE HINGE OR WHEN SPECIFIED BY THE BUILDING DESIGN PROFESSIONAL.

FILLER GREATER THAN 1-1/2 IN. 6



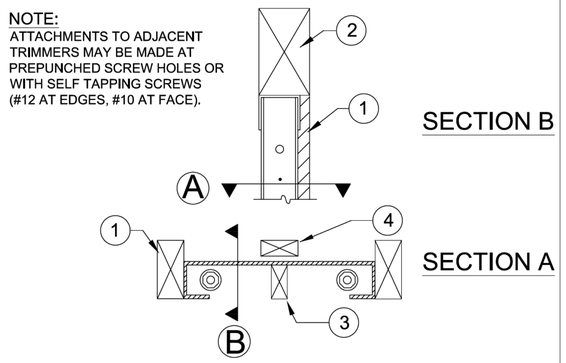
1. STEEL BEAM PER PLANS
2. ALL THREAD RODS THRU-BOLTED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. *HARDY FRAME*® STACKING WASHERS (HFSW) REQUIRED TO BE WELDED INSIDE TOP CHANNEL OF LOWER PANEL.
5. *HARDY FRAME*® "STK" PANEL WITH STACKING WASHERS WELDED INSIDE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

STEEL BEAM ABOVE THRU-BOLT 2



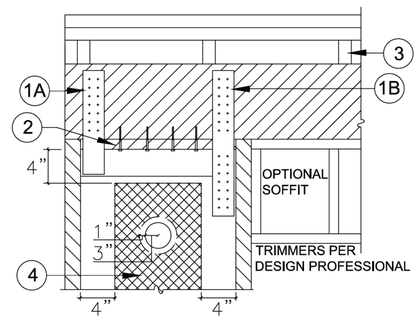
1. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. 2x WOOD FILLER.

TOP PLATE CONNECTIONS 5



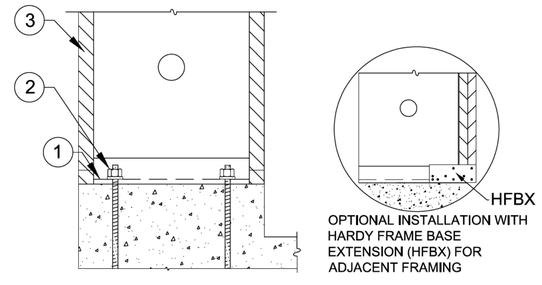
1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY BUILDING DESIGN PROFESSIONAL.
2. 6x HEADER.
3. WOOD MEMBERS FOR BACKING MAY BE INSERTED VERTICALLY OR HORIZONTALLY IN THE PANEL CAVITY AS NEEDED.
4. WOOD MEMBER FLUSH TO FACE OF WALL FOR BACKING AS NEEDED.

6x HEADER ABOVE-SECTIONS 1



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 2x WOOD FILLER WITH 1/4"x4-1/2" (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 4



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 9

HFX PANELS 78 IN. THROUGH NOMINAL 13 FEET

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

BALLOON PANELS 14 FEET THROUGH 20 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw 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 18" Width = 10	6
HFX-15,18,21 & 24x15	176-1/4				
HFX-15,18,21 & 24x16	188-1/4				
HFX-15,18,21 & 24x17	200-1/4			21" Width = 12	7
HFX-15,18,21 & 24x18	212-1/4				
HFX-15,18,21 & 24x19	224-1/4			24" Width = 14	8
HFX-15,18,21 & 24x20	236-1/4				

TABLE NOTES

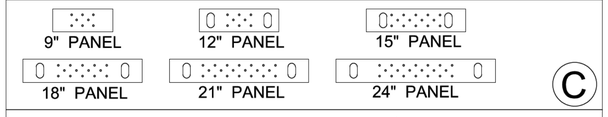
1. FOR STD OR HS GRADE HOLD DOWN ANCHOR BOLTS CONNECT TO THE PANEL BASE WITH HARDENED ROUND WASHERS BELOW GRADE 8 NUTS. ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS ON EACH BOLT. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHED DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x 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.

A

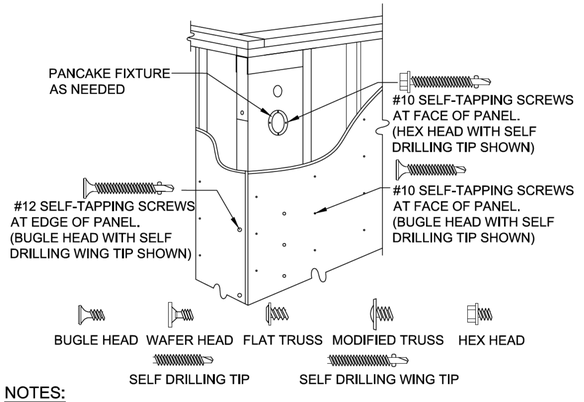
INSTALLATION INSTRUCTIONS

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 2x FILLER. IF THE TOP OF PANEL IS IN DIRECT CONTACT WITH THE COLLECTOR ABOVE (TOP PLATES, HEADER, BEAM, ETC.) USE1/4 x 3" (MIN)
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.

B



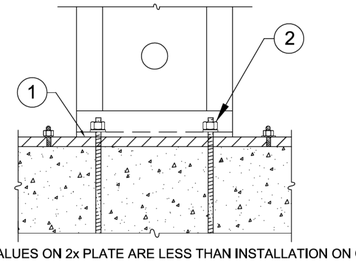
C



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.

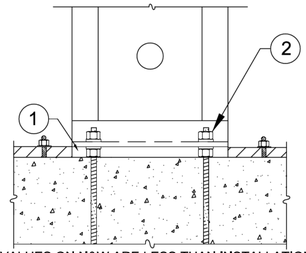
D



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

ALLOWABLE VALUES ON 2x PLATE ARE LESS THAN INSTALLATION ON CONCRETE

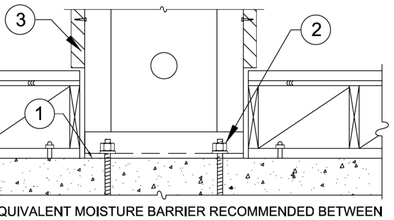
INSTALLATION ON 2x PLATE 11



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.

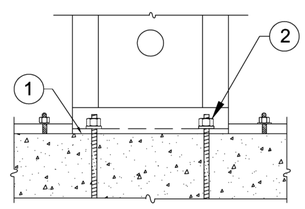
ALLOWABLE VALUES ON N&W ARE LESS THAN INSTALLATION ON CONCRETE

INSTALLATION ON NUTS & WASHERS 10



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

RAISED FLOOR HEAD-OUT 8



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

INSTALLATION ON CONCRETE 7

REVISIONS	DATE

FRAMING DETAILS - HFX PANELS

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

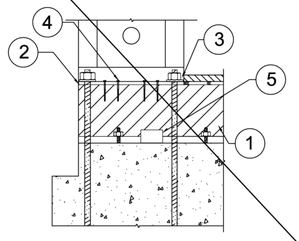
HARDY FRAME SHEAR WALL SYSTEMS
16023 SWINGLEY RIDGE RD
CHESTERFIELD, MO 63017
(800) 325-8075
WWW.HARDYFRAME.COM

MiTek®

DATE: 1-1-2023

HFX2

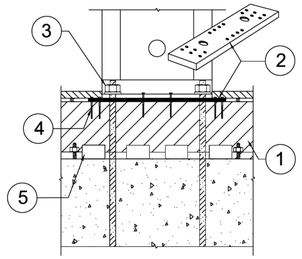
NOTES:
A. INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE, BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS
B. COUPLERS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® PANEL DIRECTLY ON RIM.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. 1/4" x 4-1/2" (MINIMUM) WS SCREWS THROUGH BOTTOM OF PANEL MINIMUM QUANTITY PER TABLE.
5. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

RAISED-OS CORNER 4

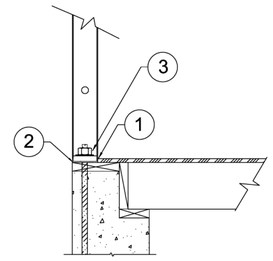
NOTE:
COUPLERS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
5. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

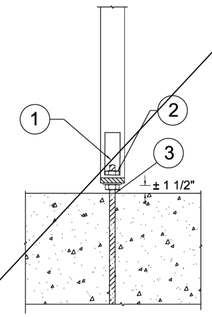
RAISED BEARING PLATE 3

NOTES:
A. CHECK WALL HEIGHT, *HARDY FRAME*® BEARING PLATES BELOW THE PANEL BASE OR CUSTOM HEIGHT PANELS ARE AVAILABLE TO AVOID FILLERS GREATER THAN 1-1/2".
B. FOR MAXIMUM ALLOWABLE VALUES INSTALL PANEL ON CONCRETE



1. FLOOR SHEATHING NOTCHED, INSTALL PANEL ON WOOD PLATE.
2. 15# FELT OR EQUIVALENT RECOMMENDED BETWEEN PANEL BASE AND TREATED MUDSILL
3. NUTS AND WASHERS PER TABLE NOTE 1.

RAISED STEM WALL 2



1. ACCESS HOLE LOCATED AT EDGE OF POST.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH 5,000 PSI STRENGTH NON-SHRINK GROUT (MIN).

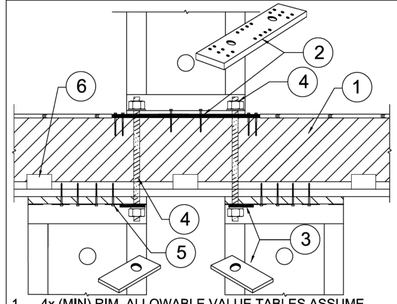
POST ON N&W 1

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Screw Quantity			Screw Qty[4] Available at Edges (ea)
				Panel	Top[2] (ea)	Bott[3] (ea)	
HFX-12,15,18,21 & 24x8	92-1/4	3-1/2	1-1/8	12" Width	6	6	4
HFX-12,15,18,21 & 24x9	104-1/4			15" Width	8	8	
HFX-12,15,18,21 & 24x10	116-1/4			18" Width	10	10	5
HFX-15,18,21 & 24x11	128-1/4			21" Width	12	12	
HFX-15,18,21 & 24x12	140-1/4			24" Width	14	14	6
HFX-15,18,21 & 24x13	152-1/4						

NOTE: *HARDY FRAME*® STACKING WASHERS (HFSW) ARE REQUIRED IN THE TOP OF PANELS WHEN CONNECTING TO TENSION ANCHORS FROM ABOVE. *HARDY FRAME*® "STK PANELS" INCLUDE HFSW WASHERS PRE-WELDED IN THE TOP CHANNEL.

1. HOLD DOWN TENSION ANCHORS SPECIFIED AS STANDARD GRADE (STD) MUST COMPLY WITH ASTM F1554 GRADE 36 (OR EQUAL). HOLD DOWN TENSION ANCHORS SPECIFIED AS HIGH STRENGTH (HS) MUST COMPLY WITH ASTM A 193 GRADE B7 (OR EQUAL). TENSION ANCHORS (BOTH GRADES) CONNECT TO THE UPPER AND LOWER PANELS WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS. A *HARDY FRAME*®"HFSW" STACKING WASHER IS REQUIRED IN THE TOP CHANNEL OF THE LOWER PANEL (AVAILABLE PRE-WELDED IN A *HARDY FRAME*®"STK" PANEL). ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS AT EACH ANCHOR CONNECTION. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHING DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x FILLER ABOVE THE PANEL.
3. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 4-1/2" (MINIMUM) AT CONNECTIONS TO FLOOR SYSTEMS AND BEAMS BELOW.
4. 1/4" DIAMETER SCREWS ARE REQUIRED AT THE EDGES WHEN INSTALLING A FILLER GREATER THAN 1-1/2 INCH ABOVE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

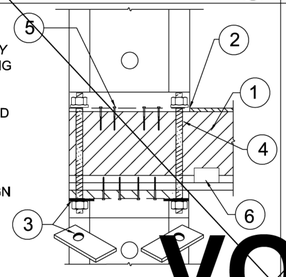
A



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8 IN. DIA HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

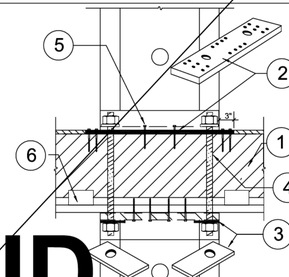
PYRAMID STACK 8

NOTE:
INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE, BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



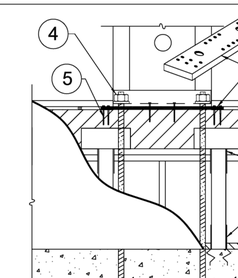
1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® PANEL DIRECTLY ON RIM.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STACK @ OS CORNER 7



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STRAIGHT STACK 6



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. USP POST CAP AND POST BASE BY THE BUILDING DESIGN PROFESSIONAL.
4. NUTS AND WASHERS PER TABLE NOTE 1.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.

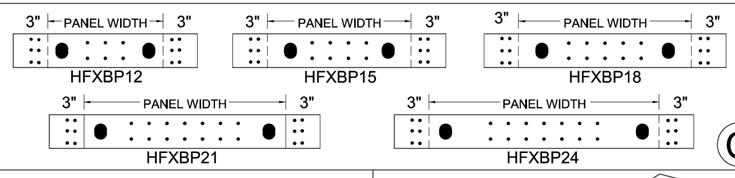
CRIPPLE WALL 5

INSTALLATION ON FLOOR SYSTEMS WITH *HARDY FRAME*® BEARING PLATE (HFXBP)

1. WITH HOLES PRE-DRILLED FOR 1-1/8" DIA.TENSION ANCHORS, INSTALL A SOLID 4x (MINIMUM) RIM IN FLOOR SYSTEM AT PANEL LOCATION. ALLOWABLE VALUE TABLES ASSUME THE RIM IS ENGINEERED WOOD PRODUCT (EWP).
2. NOTCH FLOOR SHEATHING THEN INSTALL HFXBP ON RIM WITH 6 EACH 1/4"X4-1/2" (MIN) "WS" SCREWS AT EACH END.
3. PLACE PANEL ON HFXBP.
4. WHEN STACKING PANELS, INSTALL "HFSW" STACKING WASHERS IN THE TOP CHANNEL OF THE LOWER PANEL. CONNECT LOWER TO UPPER PANELS WITH TENSION ANCHORS (GRADE PER PLANS) AND SECURE AT BOTH ENDS WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS TO BE SNUG TIGHT. *HARDY FRAME* "STK" PANELS THAT INCLUDE "HFSW" STACKING WASHERS PRE-WELDED IN THE TOP CHANNEL ARE AVAILABLE,
5. WHEN MORE THAN 12 SCREWS ARE REQUIRED FOR THE BOTTOM CONNECTION OR JOINTS IN FRAMING MEMBERS OCCUR AT SCREW LOCATIONS, INSTALL ADDITIONAL 1/4"x4-1/2" WS SCREWS THROUGH THE BASE OF PANEL WHERE THEY ALIGN WITH HOLES IN THE HFXBP.
6. FOR STANDARD WALL HEIGHTS, INSTALL A 2x FILLER ABOVE PANEL (DTL 5/HFX2). FOR FILLERS GREATER THAN 1-1/2 IN. SEE DETAIL 6/HFX2.

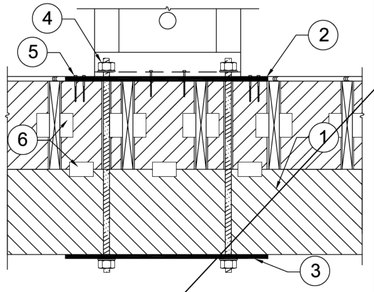
NOTE: INSTALLATIONS MAY VARY WITH JOB SPECIFIC CONDITIONS AND/OR SPECIFICATIONS BY THE BUILDING DESIGN PROFESSIONAL.

B



C

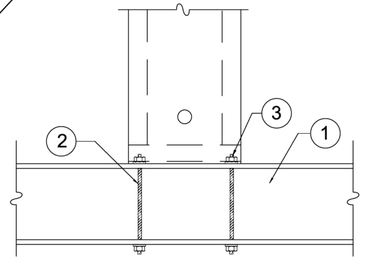
LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



1. DROP BEAM WITH FLOOR JOIST ABOVE PER PLAN.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® BEARING PLATE (HFXBP) OR BEARING PLATE WASHER AT UNDERSIDE OF BEAM SIZED PER BUILDING DESIGN PROFESSIONAL TO LIMIT CRUSHING FROM TENSION ANCHOR FORCES.
4. NUTS AND WASHERS PER TABLE NOTE 1.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP CONNECTORS BY DESIGN PROFESSIONAL

DROP BM - FL SYSTEM 14

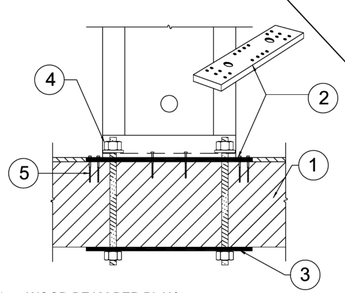
LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



1. STEEL BEAM PER PLANS
2. HOLD DOWN ALL THREAD RODS THRU-BOLTED TO BOTTOM FLANGE OF STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS AT PANEL BASE PER TABLE NOTE 1

STEEL BM THRU-BOLT 13

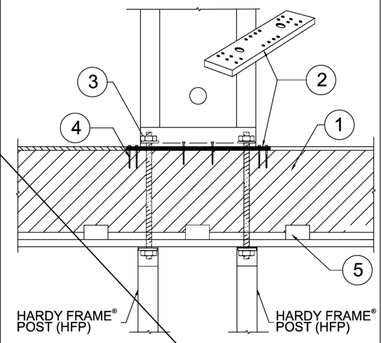
LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



1. WOOD BEAM PER PLAN.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® BEARING PLATE (HFXBP) OR BEARING PLATE WASHER AT UNDERSIDE OF BEAM SIZED PER BUILDING DESIGN PROFESSIONAL TO LIMIT CRUSHING FROM TENSION ANCHOR FORCES.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.

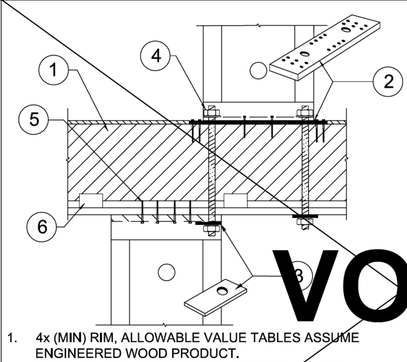
WOOD BM THRU-BOLT 12

LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



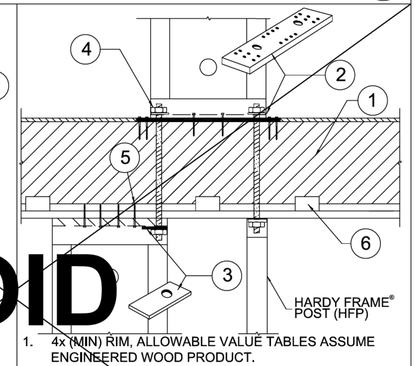
1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
4. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
5. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

HFP POSTS BELOW 11



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STAGGERED THRU-BOLT 10



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STAGGERED-HFP POST 9

VOID

REVISIONS	DATE

FLOOR SYSTEM DETAILS - HFX PANELS

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

MiTek®
HARDY FRAME SHEAR WALL SYSTEMS
16023 SWINGLEY RIDGE RD
CHESTERFIELD, MO 63017
(800) 325-8075
WWW.HARDYFRAME.COM

DATE:
1-1-2023

HFX3

GENERAL INFORMATION					
01	Project Name	Ā AÀ ÁÂ À ÃÄÄAĀ			
02	Run Title	ĂAÅÀÅĄ Ã ÂÅÆÉAÉ			
03	Project Location	CĆĄĈĈ Ā AÀ ÁÂ À			
04	City	ÁÉ Í ÂÄÉ	05	Standards Version	ÅĤÅÅ
06	Zip code	ÌĨĤĪ Á	07	Software Version	Ė À ĢÆĘĢ Ì ĈĪ
08	Climate Zone	Ą	09	Front Orientation (deg/ Cardinal)	H
10	Building Type	ĘA ĐÅĂĜÃÉ AÅÆ	11	Number of Dwelling Units	C
12	Project Scope	ÃÄÄAĀ Â ÄĚĢ ÃÅÀĄĀA	13	Number of Bedrooms	Ĩ
14	Addition Cond. Floor Area (ft^2)	ĄĤĆ	15	Number of Stories	Á
16	Existing Cond. Floor Area (ft^2)	ÅĈĪ H	17	Fenestration Average U-factor	HĊĪ
18	Total Cond. Floor Area (ft^2)	Ī HĪ Ć	19	Glazing Percentage (%)	CĄĈĪĈĪ
20	ADU Bedroom Count	Ë Â	21	ADU Conditioned Floor Area	Ë Â
22	Fuel Type	E ÃÆĘĢÅÅĐÅÉ	23	No Dwelling Unit:	E

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	Building does not require field testing or HERS verification
03	This building incorporates one or more Special Features shown below

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	H	CCĈĊĄ	H	CCĪ ĈĪÁ	H	HĊĪĪ
Space Cooling	H	ĆĈĈĪĪ	H	ĈĪ ĈĪC	H	HĊĈĈ
IAQ Ventilation	H	H	H	H	H	H
Water Heating	H	ÁCĊĈ	H	ÁCĊĈ	H	H
Self Utilization/Flexibility Credit				H		H
Efficiency Compliance Total	0	205.99	0	204.36	0	1.63
Photovoltaics		H		H		
Battery				H		
Flexibility						
Indoor Lighting	H	ĆĊĪĪ	H	ĆĊĪĪ		
Appl. & Cooking	H	CĈĊÌÁ	H	CĈĊÌÁ		
Plug Loads	H	ÅĪ ĊĦÁ	H	ÅĪ ĊĦÁ		
Outdoor Lighting	H	CĊĈ	H	CĊĈ		
TOTAL COMPLIANCE	0	257.97	0	256.34		

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]	ÅĈĊĄ	ÅĈĊĪÁ	HĊC	HĊĪĪ
Net EUI[2]	ÅĈĊĄ	ÅĈĊĪÁ	HĊC	HĊĪĪ

E Ã ÀÉ
ÈÈÈĈĢÉÆÈĪ Ì AÉ À ĢÆĪ ÆÀÄ ÂÅB Ã A ĜÈÄĐ FĦĈĖ ÄĀ ÂÅÄÈÅÅĐ ÃĢÀĈ
ÈÈÈĈĖÅÄÈĪ Ì AÉ À ĢÆĪ ÆÀÄ ÂÅB A ĜÈÄA ĐFĦĈĖ ÄĀ ÂÅÄÈÅÅĐ ÃĢÀĈ

REQUIRED SPECIAL FEATURES

ÃÌÀ ĜÅÅ Į A ĐÂĢĄ ĜÀÃĘĢÀÉÃÂ ÃÉ ÈÅĐÀA ÆÃ ÅÀ ÃÆĜÃÄ A Ģ É ÀÄÅĐ ÃÀ É ÃÀ ÅÄ À À ĢÆĖĤÀĢĢ É Â ĜÀĢ ÃÀÆĢÉ ĤÈÃĢÂ ÂÅÆÉAÉĈ
Ĳ EÀĮ ÄÈĢĄ Ģ J ÃÄÄÀÄ AÅÆÉÅÃ ÅĪ ĜÅA ÅĐÃ

HERS FEATURE SUMMARY

ÃÌÀ ĜÅÅ Į A ĐAÅÆÈÉÈÉ ÂĢÆĜ ÃÀ ĜÀÃĘĢÀÉÃÂ ÃÉ ÈÅĐÀĜÅÃĜĢÀĢĜÀÄ ĐÆÂ ĜÀĢÃĜÃÂÈÈĐĘ ĐÃÄĢÂÆÃ ĜÄA ÃÀ Ģ É ÀÄÃ ĐÃÀ É ÃÀ ÅÃÀ À ĢÆĖÀĢĢ É Â ĜÀĢ ÃÀÆĢÉ ĤÈÃĢÂ ÂÅÆÉAÅĜÃÄAÃÅ ÄÄÄAÅÉĢ GAÃÄ A ÃÀ DÈAÃÄA ÅĐÅÄĐÅĮ ĈĐÀĐÅĢÀĢÀ ĜÎÅĐÉÃ Ã ĜÎĪ ĐÉÃĐĄ ĢÀÈÀĢÀÃ Ã DÀĜÉ ĤÅÃÀ A ÃÀ ÈÈĐĘ ĐÀĐAÆĘÆ

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
Ā AÀ ÁÂ À ÃÄÄAĀ	Ī HĪ Ć	C	Ĩ	Á	H	C

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
ÈĎAÆÅ ĐÁAĜ ĐÃĢÀÂ	Ĝ ÄAÄA À Ä	ĖĤÃĜ ĘÆÃÄÉ C	ÅĈĪ H	Ĉ	ĖĖĶ ĘÆĖC	ÈĎAÆÈĐ Ī ĜIÂ Đ ÀÄ
EÀĮ ÁAĜ ĐÃĢÀÂ	Ĝ ÄAÄA À Ä	ĖĤÃĜ ĘÆÃÄÉ C	ĄĤĆ	Ĉ	ĖĖĶ ĘÆĖC	EÀĮ

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
ĴĢ ÃĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	H	ĴĢ Ã	ÅĈĈ	CHÅĈĈ	Ì H	À	ÈĎAÆÅ Đ	E
ÁÀĜÃĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	Ì H	ÁÀĜÃ	ÅĪ Ć	ĈĪ Ì ĈĪ	Ì H	À	ÈĎAÆÅ Đ	E
ĐÀÂĢĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	CĈH	ÃÅĠ	ÅĈĈ	Ī H	Ì H	À	ÈĎAÆÅ Đ	E
ĐAĐÃĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	ÅĪ H	ĐAĐÃ	ÅĪ Ć	Ï H	Ì H	À	ÈĎAÆÅ Đ	E
ĴĢ ÃĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	H	ĴĢ Ã	ÅĈĈ	ĄĈĪ	Ì H	À	ÈĎAÆÅ Đ	E
ÁÀĜÃĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	Ì H	ÁÀĜÃ	Ī ĄH	Ī H	Ì H	À	ÈĎAÆÅ Đ	E
ĐÀÂĢĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	CĈH	ÃÅĠ	CĆĄ	H	Ì H	À	ÈĎAÆÅ Đ	E
ĐAĐÃĶ ÂÅÅ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤĶ ÂÅÅ	ÅĪ H	ĐAĐÃ	Ī ĄH	Ī H	Ì H	À	ÈĎAÆÅ Đ	E
ĴĢ ÃĶ ÂÅÅ	E ÀĮ ÁAĜ ĐÃĢÀÂ	ĐĢĈ Ķ ÂÅÅ	H	ĴĢ Ã	Ī Á	H	Ì H	ÈĎÃÄÉA	E ÀĮ	Ë Â
ÁÀĜÃĶ ÂÅÅ	E ÀĮ ÁAĜ ĐÃĢÀÂ	ĐĢĈ Ķ ÂÅÅ	Ì H	ÁÀĜÃ	CĈĈ	Ī ĈĈĪ	Ì H	ÈĎÃÄÉA	E ÀĮ	Ë Â
ĐÀÂĢĶ ÂÅÅ	E ÀĮ ÁAĜ ĐÃĢÀÂ	ĐĢĈ Ķ ÂÅÅ	CĈH	ÃÅĠ	ĈĪ Ć	Ī Á	Ì H	ÈĎÃÄÉA	E ÀĮ	Ë Â
ĐAĐÃĶ ÂÅÅ	E ÀĮ ÁAĜ ĐÃĢÀÂ	ĐĢĈ Ķ ÂÅ	ÅĪ H	ĐAĐÃ	CĈĈ	Ī	Ì H	ÈĎÃÄÉA	E ÀĮ	Ë Â
ĐĜ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĈ ĐĜ ÃÄÄĜ	Ë Â	Ë Â	ĈĪ Á	Ë Â	Ë Â		ÈĎAÆÅ Đ	E
ĐĜ Á	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĈ ĐĜ ÃÄÄĜ	Ë Â	Ë Â	ĈĪ Ć	Ë Â	Ë Â		ÈĎAÆÅ Đ	E
ĐĜ Ī	E ÀĮ ÁAĜ ĐÃĢÀÂ	ĐĢĪH ĐĜ ÃÄÄĜ	Ë Â	Ë Â	ĄĤĆ	Ë Â	Ë Â		E ÀĮ	Ë Â
ĐÂAÆÄÅĢ	ÈĎAÆÅ ĐÁAĜA Đ ÃĢÀÂ	ĐĢĤÅĢ ĜĢĮ ÅÆĤÅĜ	Ë Â	Ë Â	CÌ Ī Ą	Ë Â	Ë Â		ÈĎAÆÅ Đ	E
Ì ÃÀĢĄĢ ĘÈĢÃĜ	E ÀĮ ÁAĜ ĐÃĢÀÂ	ĐĢĤÅĢ E ĜĢĮ ÅÆĤÅĜ	Ë Â	Ë Â	ĄĤĆ	Ë Â	Ë Â		E ÀĮ	Ë Â

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
ÃÄÄĜĖĎAÆÅ ĐÁAĜ ĐÃĢÀÂ	ÃÄÄĜĐĜĖĎAÆÃ ĐÁAĜ ĐÃĢÀÂ	ĤÀ ÄAÅÄÃ	Ī ĈĪ	HĊC	HĊĈ	E	E	ÈĎAÆÅ Đ	E
ÃÄÄĜĖ ÀĮ ÁAĜ ĐÃĢÀÂ	ÃÄÄĜĐĜĖÀ Į ÁAĜ ĐÃĢÀÂ	ĤÀ ÄAÅÄÃ	Ī ĈĪ	HĊC	HĊĈ	LÀÉ	E	E ÀĮ	Ë Â

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
ĶAÄĮ	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Á	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	ÅÅ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Ī	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Ą	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	Ī ĈĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Ĩ	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	Ī ĈĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Ć	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Ï	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	ÅÅ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ Ĉ	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
ĶAÄĮ Ì	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	CÁ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CH	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CC	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CÁ	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	ĈĈĈ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CĪ	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	ĈĈĈ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĘÅAÄAĐÅÂÆÉ ĖĢ	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	ĆĈĈĪ	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	ÃÄÅĢÀÃ	E
ĴĢÀĠI ĖĢ	ĶAÄĮ	ĐÀÂĢĶ ÂÅÅ	ÃÅĠ	CĈH			C	CĈ	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	ÃÄÅĢÀÃ	E
ĶAÄĮ CĄ	ĶAÄĮ	ĐÀÂĢĶ ÂÅÅ	ÃÅĠ	CĈH			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CĪ	ĶAÄĮ	ĐÀÂĢĶ ÂÅÅ	ÃÅĠ	CĈH			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CĆ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	CĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CĪ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ CĈ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	Ì	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
ĶAÄĮ CĪ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅH	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	CĆ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅC	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅÅ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĪ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	Ć	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĄ	ĶAÄĮ	ĴĢ ÃĶ ÂÅÅ	ĴĢ Ã	H			C	ĄĈĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĪ	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	CĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĆ	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	CĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĪ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	CĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĈ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	CĪ	CĊÅĈ	ÃÄDÅA CCHĊĢĄÃ	HĊĈ	ÃÄDÅA CCHĊĢĄÃ	ÃÈĐĘĢÀA	ÈĎAÆÅ Đ	E
ĶAÄĮ ÅĪ	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	C	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī H	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	C	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī C	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	C	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
ĶAÄĮ Ī Á	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	CC	HĊĪ	EĴĐ Ĝ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ī	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	CC	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĴĢÀĠI ĖĢ Á	ĶAÄĮ	ÁÀĜÃĶ ÂÅÅ	ÁÀĜÃ	Ì H			C	Ī Ī ĈĪ	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ą	ĶAÄĮ	ĐÀÂĢĶ ÂÅÅ	ÃÅĠ	CĈH			C	Ĉ	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ĩ	ĶAÄĮ	ĐÀÂĢĶ ÂÅÅ	ÃÅĠ	CĈH			C	CĆ	HĊĪ	EĴĐ Ĝ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ć	ĶAÄĮ	ĐÀÂĢĶ ÂÅÅ	ÃÅĠ	CĈH			C	Ĉ	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ï	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	C	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ĉ	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	C	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ
ĶAÄĮ Ī Ì	ĶAÄĮ	ĐAĐÃĶ ÂÅÅ	ĐAĐÃ	ÅĪ H			C	C	HĊĪ	EĴĐĜ	HĊÅ	EĴĐĜ	ÃÈĐĘĢÀA	E ÀĮ	EÃ

OPAQUE DOORS

01	02	03	04	05	06
Name	Side of Building	Area (ft^2)	U-factor	Status	Verified Existing Condition
ĖĢ	ĴĢ ÃĶ ÂÅÅ	ÅH	HĊĪ	ÈĎAÆÅ Đ	E
ĖĢ Á	ÁÀĜÃĶ ÂÅÅ	CĪ	HĊĪ	ÈĎAÆÅ Đ	E
ĖĢ Ī	ÁÀĜÃĶ ÂÅÅ	CĄ	HĊĪ	ÈĎAÆÅ Đ	E

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
ĐĢĤĶ ÂÅÅ	ÈĎÃÄĢĄĢ Ķ ÂÅÅÉ	Ķ Ä ĴĢÂÉ ÀÄ Ķ ÂÅÅ	ÁĎĄĹ CĆ A ĈĹ ĊĜĈ	ĐĢH	E À Ë E À	HĊĪCC	Ì ÆAÄÄAAÉIĒ ÆÉÈÈ ÃÂĢ Ã ĜÃĜAÆĖĪ ĢÂÉ ÀÉ AÉÈÅĖ ÅĎĄ ÈĎÃÄĢĄĢ ĴAAÉIĒ ĜÃ ÃĘÆĖĜĜ
ĐĢĈ Ķ ÂÅÅ	ÈĎÃÄĢĄĢ Ķ ÂÅÅÉ	Ķ Ä ĴĢÂÉ ÀÄ Ķ ÂÅÅ	ÁĎĄĹ CĆ A ĈĹ ĊĜĈ	ĐĢĈ	E ÀĖ E À	HĊĤĪ	Ì ÆAÄÄAAÉIĒ ÆÉÈÈ ÃÂĢ Ã ĜÃĜAÆĖĪ ĢÂÉ ÀÉĐĢĈ ĖÅĎĄ ÈĎÃÄĢĄĢ ĴAAÉIĒ ĜÃ ÃĘÆĖĜĜ
ÃÄÄĜĐĜĖĎAÆÃ ĐÁAĜ Đ ÃĢÀÂ	ÃÄÄĜĐĜ É	Ķ Ä ĴĢÂÉ ÀÄ ĜÀÅÅĐ	ÁĎĄĹ ÅĄ A ĈĹ ĊĜĈ	ĐĢH	E À ĖH	HĊĈĄ	ĐĜA Đ ĖÁĐI ÃĐĜ BÃÉĤIÂÄÅĮA ĐÅĈ ĐĜ ĖÀĠĖĶ Ã ĘÃÅĐ ĖÉIÀÄÄA ĐĖÄÄĜI A Đ ĜÃĜAÆĖĪ ĢÂÉ ÀÉ AÉÈÅĖ ÅĎĄ
ÃÄÄĜĐĜĖÀ Į ÁAĜ Đ ÃĢÀÂ	ÃÄÄĜĐĜ É	Ķ Ä ĴĢÂÉ ÀÄ ĜÀÅÅĐ	ÁĎĄĹ ÅĄ A ĈĹ ĊĜĈ	ĐĢH	E À ĖH	HĊĈĄ	ĐĜA Đ ĖÁĐI ÃĐĜ BÃÉĤIÂÄÅĮA ĐÅĈ ĐĜ ĖÀĠĖĶ Ã ĘÃÅĐ ĖÉIÀÄÄA ĐĖÄÄĜI A Đ ĜÃĜAÆĖĪ ĢÂÉ ÀÉ AÉÈÅĖ ÅĎĄ
ĐĢĤÅĢ ĜĢĮ ÅÆĤÅĜ	ĴÅĢ ÆĹĜÀĢ ĜĢĮ ÅÆĤÅĜ	Ķ Ä ĴĢÂÉ ÀÄ ĴÅĢ	ÁĎĈĹ CĆ A ĈĹ ĊĜĈ	ĐĢH	E À Ë E À	HĊÅÄ	ĴÅĢ ĘĖĢÃĜÆĖĜÂĜÀÄÄÄ ĴÅĢ ĖÀĠĖĶ Ã ĘÃÅĐ ĖÉIÀÄÄA ĐĖÄÄĜI A Đ ĜÃĜAÆĖĪ ĢÂÉ ÀÉ AÉÈÅĖ ÅĎĈ
ĐĢĈ ĐĜ ÃÄÄĜ	ĜÀAÅÅAÉBĐÅ Į ÃÄÄĜ	Ķ Ä ĴĢÂÉ ÀÄ ĜÀÅÅĐ	ÁĎĄĹ ÅĄ A ĈĹ ĊĜĈ	ĐĢĈ	E À Ë E À	HĊĤĮ	ĽĜÀĢĜÀAÅ ĐĮA ÆÉÉĐĜĪĈĪ A ÉĒÅ ĜÃĜAÆĖĪ ĢÂÉ ÀÉĐĜĪĈĖ ÅĎĄ Ì ÆAÄÄAAÉIĒ ÆÉÈÈ ÃÂĢ Ã
ĐĢĪH ĐĜ ÃÄÄĜ	ĜÀAÅÅAÉBĐÅ Į ÃÄÄĜ	Ķ Ä ĴĢÂÉ ÀÄ ĜÀÅÅĐ	ÁĎĄĹ ÅĄ A ĈĹ ĊĜĈ	ĐĢĪH	E À Ë E À	HĊĤÁ	ĽĜÀĢĜÀÅĐ ĮAÆÉÉĐĜÅĈĪ AÉĖÅĈ ĜÃĜAÆĖĪ ĢÂÉ ÀÉĐĜĪĈĖ ÅĎĄ Ì ÆAÄÄAAÉIĒ ÆÉÈÈ ÃÂĢ Ã

Carstairs Energy Inc.
2238 Bayview Heights Drive, Suite E
Los Osos, CA 93402
805-904-9048 title24@yahoo.com
www.carstairsenergy.com

Bonnie Lane Addition

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E

Project Name: [illegible] Calculation Date/Time: [illegible] (Page 10 of 13)

Calculation Description: [illegible] Input File Name: [illegible]

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
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER HEATING SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)	Status	Verified Existing Condition	Existing Water Heating System
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

WATER HEATERS														
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Heating Efficiency Type	Efficiency	Rated Input Type	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	Tank Location	Status	Verified Existing Condition
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E

Project Name: [illegible] Calculation Date/Time: [illegible] (Page 11 of 13)

Calculation Description: [illegible] Input File Name: [illegible]

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
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SPACE CONDITIONING SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Existing HVAC System
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

HVAC - HEATING UNIT TYPES				
01	02	03	04	05
Name	System Type	Number of Units	Heating Efficiency	Heating Unit Brand
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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	Mulit-speed Compressor	HERS Verification
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E

Project Name: [illegible] Calculation Date/Time: [illegible] (Page 12 of 13)

Calculation Description: [illegible] Input File Name: [illegible]

HVAC - DISTRIBUTION SYSTEMS															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts >= 25 ft
			Supply	Return	Supply	Return	Supply	Return							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

HVAC - FAN SYSTEMS			
01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
[illegible]	[illegible]	[illegible]	[illegible]

HVAC FAN SYSTEMS - HERS VERIFICATION		
01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
[illegible]	[illegible]	[illegible]

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E

Project Name: [illegible] Calculation Date/Time: [illegible] (Page 13 of 13)

Calculation Description: [illegible] Input File Name: [illegible]

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
[illegible]	
[illegible] Timothy Carstairs, CEA, HERS, GPR	[illegible] (signature)
[illegible] Carstairs Energy Inc.	[illegible] 10/30/2024
[illegible] 2238 Bayview Heights Drive, Suite E	[illegible] CC2006065
[illegible] Los Osos, CA 93402	[illegible] 805-904-9048

RESPONSIBLE PERSON'S DECLARATION STATEMENT	
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

RESIDENTIAL MEASURES SUMMARY RMS-1

Project Name	Building Type	Date
Bonnie Lane Addition	☑ Single Family ☐ Addition Alone ☐ Multi Family ☑ Existing+ Addition/Alteration	10/30/2024

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
16488 Bonnie Lane Los Gatos	CA Climate Zone 04	3,036	406	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Floor	Wood Framed w/Crawl Space	- no insulation	1,954		Existing
Wall	Wood Framed	- no insulation	185		Existing
Door	Opaque Door	- no insulation	20		Existing
Wall	Wood Framed	- no insulation	317		Existing
Door	Opaque Door	- no insulation	17		Existing
Door	Opaque Door	- no insulation	14		Existing
Wall	Wood Framed	- no insulation	258		Existing
Wall	Wood Framed	- no insulation	386		Existing

FENESTRATION Total Area 449 Glazing Percentage 14.8% New/Altered Average U-Factor 0.30

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (N)	87.1	1.280	0.80	none	none	N/A	Existing
Left (E)	71.6	1.280	0.80	none	none	N/A	Existing
Left (E)	66.7	0.300	0.23	none	none	N/A	Altered
Rear (S)	18.0	0.300	0.23	none	none	N/A	Altered
Rear (S)	12.0	1.280	0.80	none	none	N/A	Existing
Right (W)	100.0	1.280	0.80	none	none	N/A	Existing
Left (E)	58.3	0.300	0.23	none	none	N/A	New
Rear (S)	32.0	0.300	0.23	none	none	N/A	New
Right (W)	3.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Gas Central Furnace	80% AFUE	Split Air Conditioner	14.0 SEER	Setback	Existing

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
HVAC System	Ducted	Ducted	Attic	8.0	Altered

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

RESIDENTIAL MEASURES SUMMARY RMS-1

Project Name	Building Type	Date
Bonnie Lane Addition	☑ Single Family ☐ Addition Alone ☐ Multi Family ☑ Existing+ Addition/Alteration	10/30/2024

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
16488 Bonnie Lane Los Gatos	CA Climate Zone 04	3,036	406	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Roof	Wood Framed Attic	R 19	872		Existing
Wall	Wood Framed	- no insulation	284		Existing
Wall	Wood Framed	- no insulation	310		Existing
Wall	Wood Framed	- no insulation	164		Existing
Wall	Wood Framed	- no insulation	310		Existing
Roof	Wood Framed Attic	R 19	676		Existing
Wall	Wood Framed	R 15	32		New
Wall	Wood Framed	R 15	130		New

FENESTRATION Total Area 449 Glazing Percentage 14.8% New/Altered Average U-Factor 0.30

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

Carstairs Energy Inc.
2238 Bayview Heights Drive, Suite E
Los Osos, CA 93402
805-904-9048 title24@yahoo.com
www.carstairsenergy.com

Bonnie Lane Addition

RESIDENTIAL MEASURES SUMMARY RMS-1

Project Name	Building Type	Date
Bonnie Lane Addition	☑ Single Family ☐ Addition Alone ☐ Multi Family ☑ Existing+ Addition/Alteration	10/30/2024

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
16488 Bonnie Lane Los Gatos	CA Climate Zone 04	3,036	406	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 15	124		New
Wall	Wood Framed	R 15	185		New
Roof	Wood Framed Attic	R 30	406		New
Demising	Wood Framed w/o Crawl Space	- no insulation	406		New

FENESTRATION Total Area 449 Glazing Percentage 14.8% New/Altered Average U-Factor 0.30

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flex ble ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

This Page
Intentionally
Left Blank