CITY OF EL PASO DE ROBLES

"The Pass of the Oaks"

Development Review Committee Agenda

Monday, March 24, 2025, 3:30 PM

Large Conference Room - 2nd Floor

1000 SPRING ST

Paso Robles, CA 93446

This is an in-person meeting. Written public comments can be submitted via email to planning@prcity.com. Those received prior to 12:00 noon on the day of the meeting to be posted to the City's website as an addendum to the agenda. If submitting written comments in advance of the meeting, please note the agenda item by number or name.

AMERICANS WITH DISABILITIES ACT

Any individual, who because of a disability needs special assistance to attend or participate in this meeting, may request assistance by contacting the City Clerk's Office (805) 237-3960. Whenever possible, requests should be made four (4) working days in advance of the meeting.

Pages

A. CALL TO ORDER

B. ROLL CALL

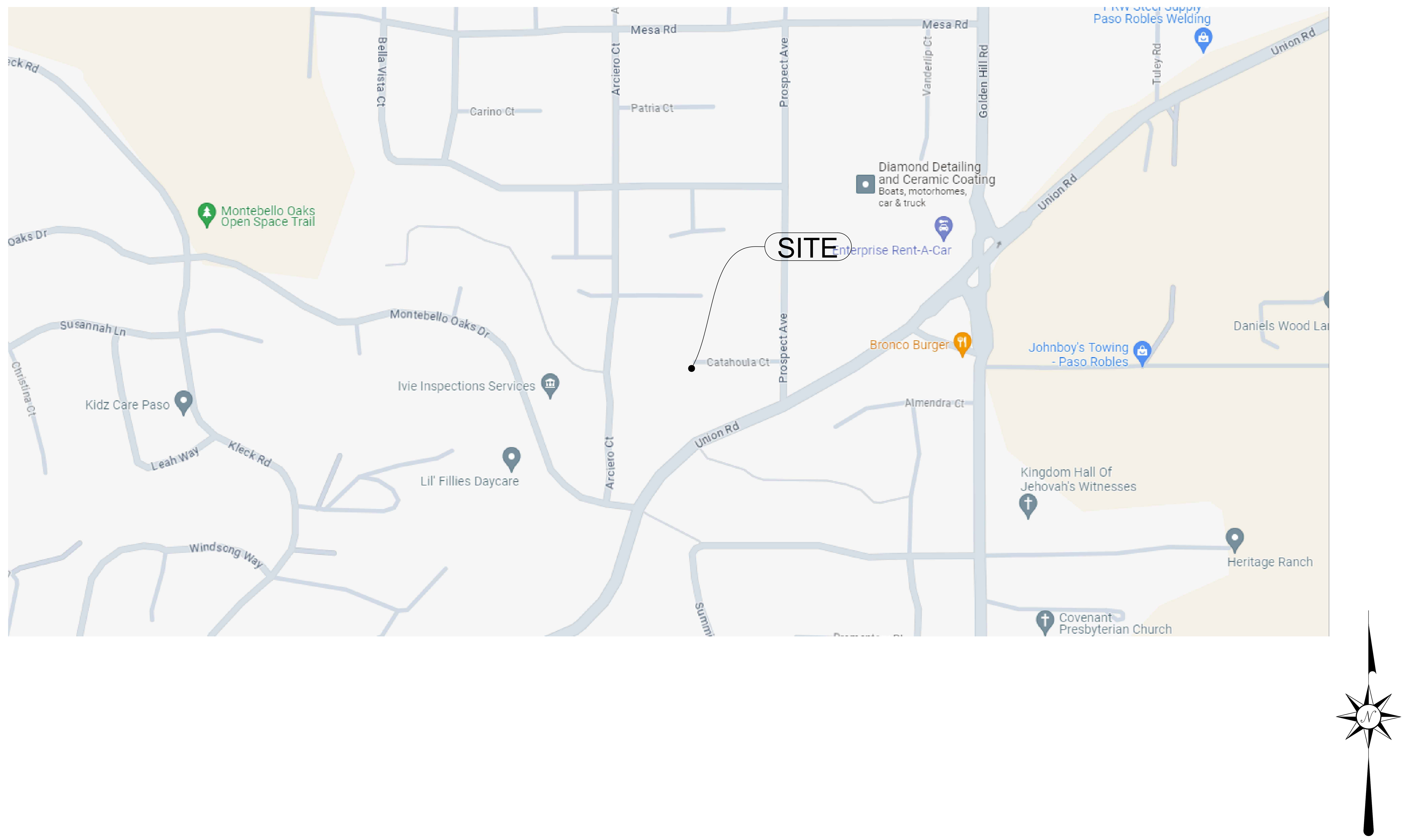
C. DISCUSSION ITEMS

1. **Item 1** 2
   File #: B24-0759
   Requested Action: DRC Final Action
   Application: Review architectural details prior to issuance of building permit.
   Location: 1908 Catahoula Court
   Applicant: Mike Harrod for Harrod Homes, Inc.

D. ADJOURNMENT

DRC Item 1

ARCHITECTURAL, CIVIL AND STRUCTURAL PLANS FOR A SINGLE FAMILY RESIDENCE CATAHULA COURT, LOT 5



VICINITY MAP

EROSION CONTROL

1. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST BE IN PLACE AND FUNCTIONAL PRIOR TO THE FIRST INSPECTION. NO INSPECTIONS CAN BE PERFORMED IF THEY ARE NOT IN PLACE OR HAVE FAILED TO PROVIDE EROSION CONTROL. FAILURE TO MAINTAIN EROSION CONTROL WILL CAUSE INSPECTIONS TO BE DELAYED UNTIL EROSION CONTROL MEASURES ARE FUNCTIONAL.
2. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED TO THE SATISFACTION OF THE BUILDING OFFICIAL AND PUBLIC WORKS DIRECTOR DURING ALL DEMOLITIONS, CONSTRUCTION AND GROUND DISTURBING ACTIVITIES
3. THE ADJOINING STREET SHALL BE CLEANED BY SWEEPING TO REMOVE DIRT, DUST, MUD AND CONSTRUCTION DEBRIS AT THE END OF EACH DAY.
4. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WHEN PERMANENT IMPROVEMENTS, PLANTINGS AND FACILITIES ARE IN PLACE. TEMPORARY MEASURES SHALL BE REMOVED PRIOR TO FINAL INSPECTION APPROVALS
5. THE FOLLOWING PERSON SHALL BE RESPONSIBLE FOR IMPLEMENTING & MONITORING THE APPROVED EROSION & SEDIMENTATION CONTROL PLAN:

MICHAEL HARROD

FIRE SAFETY PLAN

THE APPROVED PROJECT ALLOWED TO BE CONSTRUCTED BY THIS BUILDING PERMIT SHALL CONFORM TO THE FIRE SAFETY PLAN REQUIREMENTS AS DEEMED NECESSARY BY THE FIRE DEPARTMENT HAVING JURISDICTION FOR THIS PERMIT. PRIOR TO BEGINNING CONSTRUCTION THE PROPERTY OWNER SHALL READ THE FIRE SAFETY PLAN ISSUED BY THE FIRE DEPARTMENT AND BECOME FULLY AWARE OF ALL NECESSARY FIRE PROTECTION REQUIREMENTS.

1. WHEN FIRE SPRINKLERS ARE REQUIRED, A FIRE SPRINKLER PLAN AND PERMIT FOR RESIDENTIAL PROJECTS ARE REQUIRED. PROVIDE APPROVED PLANS TO BUILDING INSPECTOR PRIOR TO THE TIME OF FRAMING INSPECTION
2. PRIOR TO FINAL APPROVAL, THE PROPERTY SHALL BE IN COMPLIANCE WITH THE VEGETATION CLEARANCE. WHERE APPLICABLE, PROVIDE FIREBREAK WITHIN 30' AND 100' OF EACH BUILDING OR STRUCTURE. DOWNED LOGS, STUMPS, DEAD AND DYING WOODY SURFACE FUELS SHALL BE REMOVED. REMOVE SURFACE FUELS GREATER THAN 4 INCHES AND LOWER LIMBS OF TREES UP TO 6 FEET WITHIN AREAS OF CONTINUOUS TREE CANOPY

GENERAL GRADING NOTES

1. ANY AND ALL SITE WORK AND GRADING SHALL BE IN ACCORDANCE WITH MBC
2. A SOILS ENGINEER SHALL DETERMINE GRADING PERFORMED IS IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS AND IS SUITABLE TO SUPPORT THE INTENDED STRUCTURE(S).
3. THE BOTTOM OF ALL EXCAVATIONS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PROCESSING OR PLACING FILL.
4. AN ENCROACHMENT PERMIT IS REQUIRED FOR ANY WORK DONE WITHIN A RIGHT OF WAY MAINTAINED BY THE PRESIDING JURISDICTION.
5. MAXIMUM CUT AND FILL SLOPE TO BE 2:1.
6. THE EXISTING GROUND SURFACE SHOULD BE PREPARED FOR GRADING BY REMOVING ALL VEGETATION, TREES, LARGE ROOTS, DEBRIS, NON-COMPLYING FILL, AND ALL OTHER ORGANIC MATERIAL. VOIDS CREATED BY REMOVAL OF SUCH MATERIALS SHOULD NOT BE BACKFILLED UNTIL THE UNDERLYING SOIL HAS BEEN OBSERVED BY A SOILS ENGINEER.
7. FILL AND BACKFILL SHOULD BE PLACED AT NEAR OPTIMUM MOISTURE IN LAYERS WITH LOOSE THICKNESS NOT GREATER THAN EIGHT (8) INCHES AND COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY OBTAINABLE BY TEST METHOD ASTM-D 1557, AND CERTIFIED BY A SOILS ENGINEER.
8. IMPORT SOILS USED TO RAISE SITE GRADE SHOULD BE EQUAL TO OR BETTER THAN ON-SITE SOILS IN STRENGTH, EXPANSION AND COMPRESSIBILITY CHARACTERISTICS. IMPORT SOIL CAN BE EVALUATED BUT WILL NOT BE PRE-QUALIFIED BY THE GEOTECHNICAL ENGINEER. FINAL COMMENTS ON THE CHARACTERISTICS OF THE IMPORT SOIL WILL BE PROVIDED AFTER THE MATERIAL IS STOCKPILED AT THE PROJECT SITE.
9. FINAL SITE GRADE SHOULD BE SUCH THAT ALL WATER IS DIVERTED AWAY FROM THE STRUCTURE(S) A MINIMUM OF 5% FOR 10 FEET. WATER SHALL NOT POND. ALL SURFACE WATER SHOULD BE DIRECTED INTO APPROVED DISCHARGE STRUCTURES.
10. ACCESS ROAD/DRIVEWAYS: ANY ROAD GRADE IN EXCESS OF 12% SHALL BE PAVED WITH A NON-SKID MATERIAL. GRADE FOR FIRE ACCESS SHALL NOT EXCEED 20%.
11. ALL NON-PERMITTED FILL SHALL BE REMOVED BY CONTRACTOR.
12. ELECTRICAL, TELECOMMUNICATIONS, AND OTHER UTILITIES SHALL BE INSTALLED UNDERGROUND IN AN APPROVED METHOD OF CONSTRUCTION. THIS REGULATION APPLIES TO UTILITIES ON SITES THAT ARE 5 ACRES OR LESS AND SERVING NEW STRUCTURES AND/OR NEW UTILITY DISTRIBUTIONS.
13. UTILITY TRENCH BACKFILL SHOULD BE GOVERNED BY THE PROVISIONS OF THIS REPORT RELATING TO MINIMUM COMPACTION STANDARDS. IN GENERAL, SERVICE LINES INSIDE THE PROPERTY LINES MAY BE BACKFILLED WITH NATIVE SOILS COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY. BACKFILL OF OFF SITE SERVICE LINES WILL BE SUBJECT TO THE SPECIFICATIONS OF THE JURISDICTIONAL AGENCY OR THE GEOTECHNICAL REPORT, WHICHEVER IS GREATER.
14. LINED DRAINAGE SWALES AND DOWN DRAINS SHOULD BE PROVIDED AT THE TOPS OF CUT AND FILL SLOPES TO DIVERT DRAINAGE AWAY FROM SLOPE FACES.
15. FILL SLOPES SHOULD BE KEYED AND BENCHED INTO FIRM NATURAL GROUND WHEN THE EXISTING SLOPE TO RECEIVE FILL IS 5:1 OR STEEPER, HORIZONTAL TO VERTICAL. THE KEYS SHOULD BE TILTED INTO THE SLOPE A MINIMUM OF 2%, SHOULD BE A MINIMUM OF ONE EQUIPMENT WIDTH AND SHOULD BE A MINIMUM OF THREE (3) FEET DEEP ON THE OUTSIDE EDGE. ALL KEYS AND BENCHES SHOULD BE OBSERVED AND VERIFIED BY THE GEOTECHNICAL ENGINEER.

AIR QUALITY CONTROL

DURING CONSTRUCTION/GROUND DISTURBING ACTIVITIES, THE FOLLOWING PARTICULATE (DUST) CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR OR BUILDER SHALL BE DESIGNATED TO MONITOR THE DUST CONTROL PROGRAM AND ORDER INCREASED WATERING, AS NECESSARY, TO PREVENT TRANSPORT OF DUST OFF SITE. THEIR DUTIES SHALL INCLUDE HOLIDAY AND WEEKEND PERIODS WHEN WORK MAY NOT BE IN PROGRESS. THEIR CONTACT INFORMATION SHALL BE PRESENTED TO THE APCD PRIOR TO COMMENCEMENT OF CONSTRUCTION.

1. REDUCE THE AMOUNT OF DISTURBED AREA WHERE POSSIBLE
2. USE OR WATER TRUCKS OR SPRINKLER SYSTEMS IN SUFFICIENT QUANTITIES TO PREVENT AIRBORNE DUST FROM LEAVING THE SITE. INCREASED WATERING FREQUENCY WOULD BE REQUIRED WHENEVER WIND SPEEDS EXCEED 15 MPH. RECLAIMED (NONPOTABLE) WATER SHOULD BE USED WHENEVER POSSIBLE;
3. ALL DIRT STOCK-PILE AREAS SHOULD BE SPRAYED DAILY AS NEEDED;
4. ALL ROADWAYS, DRIVEWAYS, SIDEWALKS, ETC TO BE PAVED SHALL BE COMPLETED AS SOON AS POSSIBLE; AND
5. BUILDING PADS SHALL BE LAID AS SOON AS POSSIBLE AFTER GRADING UNLESS SEEDING OR SOIL BINDERS ARE USED.

DURING INITIAL GRADING/SCRAPING, BURNING SHALL NOT BE ALLOWED, OR IF NO ALTERNATIVE IS AVAILABLE, THE APPLICANT SHALL OBTAIN A BURN PERMIT FROM THE APCD AND COUNTY FIRE/CALIFORNIA DEPARTMENT OF FORESTRY, AND COMPLY WITH ALL CONDITIONS REQUIRED BY THESE AGENCIES.

SEPARATE PERMIT REQUIREMENTS

1. FIRE SPRINKLERS

HERS FEATURE SUMMARY REQUIREMENTS

THE FOLLOWING IS A SUMMARY OF THE FEATURES THAT MUST BE FIELD-VERIFIED BY A CERTIFIED HERS RATER AS A CONDITION FOR MEETING THE MODELED ENERGY PERFORMANCE FOR THIS COMPUTER ANALYSIS. ADDITIONAL DETAIL IS PROVIDED IN THE BUILDING TABLES BELOW. REGISTERED CF2RS AND CF3RS ARE REQUIRED TO BE COMPLETED IN THE HERS REGISTRY:

- QUALITY INSULATION INSTALLATION (QII)
- INDOOR AIR QUALITY VENTILATION
- KITCHEN RANGE HOOD
- MINIMUM AIRFLOW
- VERIFIED EER/EER2
- VERIFIED SEER/SEER2
- VERIFIED REFRIGERANT CHARGE
- AIRFLOW IN HABITABLE ROOMS (SC3.1.4.1.7)
- FAN EFFICACY WATTS/CFM
- VERIFIED HSPF2
- VERIFIED HEAT PUMP RATED HEATING CAPACITY
- WALL-MOUNTED THERMOSTAT IN ZONES GREATER THAN 150 FT2 (SC3.4.5)
- DUCTLESS INDOOR UNITS LOCATED ENTIRELY IN CONDITIONED SPACE (SC3.1.4.1.8)
- DUCT LEAKAGE TESTING

PROJECT DESCRIPTION

NEW SINGLE FAMILY RESIDENCE (3,118 SQ FT) WITH AN ATTACHED GARAGE (750 SQ FT) PER PLANS ATTACHED.

SHEET INDEX

PROJECT INFORMATION

OWNER	HARROD HOMES INC
PROJECT ADDRESS	CATAHULA COURT, LOT 5 PASO ROBLES, CA 93446
APN	025-372-005
PHONE	805-975-6141

PROJECT STATISTICS

LOT SIZE	0.55 ACRES
OCCUPANCY	R-3 (SFD) / U
CONSTRUCTION TYPE	VB
SFR	
LIVING	3,118 SF
GARAGE	750 SF
COVERED PORCH	100 SF
STORIES	1
FIRE SPRINKLERS	YES
WUI	NO

CONSULTANTS

DESIGN AND DRAFTING
DH DRAFT AND DESIGN
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610 10TH ST, SUITE A
PASO ROBLES, CA 93446
805.975.3071

CIVIL ENGINEER
ROBERTS ENGINEERING
TIM ROBERTS
2015 VISTA DE LA VINA
TEMPLETON, CA 93465
805-239-0664

SOILS ENGINEER
MIDCOAST GEOTECHNICAL
DANE JENSEN
P.O. BOX 2220
3124 EL CAMINO REAL
ATASCADERO, CA 93423
805-461-0965

STRUCTURAL ENGINEER
KUDLA ENGINEERING
DARRELL KUDLA
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PASO ROBLES, CA 93446
805-423-4844

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM WITH THE:
   2022 CBC (2021 IBC AND CALIFORNIA AMENDMENTS)
   2022 CEC (2020 NEC AND CALIFORNIA AMENDMENTS)
   2022 CMC (2021 IAPMO UMC AND CALIFORNIA AMENDMENTS)
   2022 CPC (2021 IAPMO UPC AND CALIFORNIA AMENDMENTS)
   2022 CENC AND T-24.
   2022 CALIFORNIA GREEN BUILDING CODE
   2022 CFC (2021 IFC AND CALIFORNIA AMENDMENTS)
   2022 IN-LAND COASTAL SLO COUNTY ORDINANCE
   THESE NOTES SHALL APPLY TO ALL DRAWINGS UNLESS OTHERWISE NOTED OR SHOWN. FEATURES OF CONSTRUCTION SHOWN ARE TYPICAL AND THEY SHALL APPLY GENERALLY THROUGHOUT SIMILAR CONDITIONS. ALL OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR GENERAL NOTES SHALL BE BROUGHT TO THE ATTENTION OF THE ARHCICTECT/ ENGINEER BY THE GENERAL CONTRACTOR BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
2. ALL WORK AND CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH ALL PROVISIONS OF THE BUILDING CODES AND OTHER RULES, REGULATIONS AND ORDINANCES GOVERNING THE CONSTRUCTION SITE. BUILDING CODE REQUIREMENTS IN ALL CASES TAKE PRECEDENCE OVER THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF ANYONE SUPPLYING LABOR AND/OR MATERIALS TO BRING TO THE ATTENTION OF THE ARCHITECT/ENGINEER ANY DISCREPANCIES OR CONFLICTS BETWEEN THE REQUIREMENTS OF THE CODE AND THE DRAWINGS.
3. DO NOT SCALE THE DRAWINGS. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER DRAWING SCALE OR PROPORTION. LARGE SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS.
4. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE METHOD OF CONSTRUCTION. CONTRACTOR SHALL SUPERVISE AND DIRECT WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE ARCHITECT/ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES REQUIRED FOR SAME, WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY SUPPORT SERVICES PERFORMED BY THE ARCHITECT/ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS, AND THEREFORE THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
5. CONTRACTOR HEREBY GUARANTEES TO THE OWNER AND THE ARCHITECT/ENGINEER THAT ALL MATERIALS, FIXTURES, AND EQUIPMENT FURNISHED TO THE PROJECT ARE NEW UNLESS OTHERWISE SPECIFIED. CONTRACTOR ALSO WARRANTS THAT ALL WORK WILL BE OF GOOD QUALITY AND FREE FROM ANY FAULTS AND DEFECTS FOR A PERIOD OF ONE YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION, UNLESS A GREATER WARRANTY OR GUARANTEE IS REQUIRED BY THE PROJECT SPECIFICATIONS.
6. ANYONE SUPPLYING LABOR AND/OR MATERIALS TO THE PROJECT SHALL CAREFULLY EXAMINE ALL SUBSURFACES TO RECEIVE WORK. ANY CONDITIONS DETRIMENTAL TO WORK SHALL BE REPORTED IN WRITING TO THE CONTRACTOR PRIOR TO BEGINNING WORK. COMMENCEMENT OF WORK SHALL IMPLY ACCEPTANCE OF ALL SUBSURFACES.
7. REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR DEPRESSED SLABS CURB, FINISHES, TEXTURES, CLIPS, GROUNDS, ETC., NOT SHOWN ON STRUCTURAL DRAWINGS.
8. ANY MATERIALS STORED AT THE SITE SHALL BE COMPLETELY SUPPORTED FREE OF THE GROUND, COVERED AND OTHERWISE PROTECTED TO AVOID DAMAGE FROM THE ELEMENTS.
9. MORE DETAILED INFORMATION SHALL TAKE PRECEDENCE OVER LESSER DETAILED INFORMATION. SPECIFICATIONS SHALL TAKE PRECEDENCE OVER DRAWINGS.
10. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL APPLICABLE CODES AND LOCAL ORDINANCES.
11. THE CONTRACTOR AND ALL SUB-CONTRACTORS WILL BE HELD ACCOUNTABLE TO THE ABOVE GENERAL NOTES FOR THE CONSTRUCTION OF THE PROJECT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE OR DISBURSE ANY EXCESS MATERIAL FROM PROJECT SITE.
13. THIS SET OF PLANS TO BE ON JOB SITE AT ALL TIMES DURING CONSTRUCTION. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED PLANS. NO CHANGES OR REVISIONS TO THE APPROVED PLANS OR SPECIFICATIONS SHALL BE PERMITTED UNLESS SUBMITTED TO AND APPROVED BY THE BUILDING OFFICIAL. THE ISSUANCE OF A PERMIT SHALL NOT PREVENT THE BUILDING OFFICIAL FROM REQUIRING THE CORRECTION OF ERRORS OR OMISSIONS FROM THE APPROVED PLANS AND SPECIFICATIONS. [CBC 108]
14. ALL CONTRACTORS AND SUB-CONTRACTORS MUST HAVE ON FILE WITH THE BUILDING DEPARTMENT, A LIST OF ALL SUCH CONTRACTORS AND SUB-CONTRACTORS WITH APPROPRIATE CURRENT BUSINESS LICENSE NUMBERS.
15. UNLESS NOTED OTHERWISE, ALL VESTIBULES, CLOSETS, COLUMNS, PROJECTIONS, RECESSES, OR OTHER ADJACENT AREAS WITHIN SCHEDULED AREA SHALL HAVE FINISHES AS SCHEDULED FOR THE RESPECTIVE SPACES IN WHICH THEY OCCUR.
16. CONTRACTOR SHALL VERIFY ALL SETBACKS, EASEMENTS, CONTOURS, AND BUILDING PAD PRIOR TO CONSTRUCTION.
17. TRUSS CALCULATIONS FOR APPROVED PROJECTS ARE REQUIRED TO BE ON THE JOB SITE AT TIME OF FRAMING INSPECTION WITH THE APPROPRIATE REQUIRED SIGNATURES AND STATEMENT AS FOLLOWS: TRUSS CALCULATIONS SHALL INCLUDE THE WET-STAMP AND SIGNATURE OF THE TRUSS DESIGN ENGINEER. IN ADDITION, THEY SHALL INCLUDE ON THE COVER SHEET A WET- SIGNED STATEMENT FROM THE PROJECT'S DESIGN ENGINEER THAT TRUSS CALCULATIONS AND LAYOUTS ARE IN SUBSTANTIAL CONFORMANCE WITH THE STRUCTURAL DESIGN AND INTENT OF THE STRUCTURE. FAILURE TO PROVIDE THEM AS STATED WILL RESULT IN A CORRECTION AND A FAILURE TO PASS FRAMING INSPECTION. [BSP]
18. VERIFY LOCATION OF ALL UTILITY TIE-INS AT STREET AND POINT OF CONNECTIONS AT BUILDING PRIOR TO CONSTRUCTION.
19. A COPY OF SOILS REPORT SHALL BE ON SITE DURING FOUNDATION INSPECTION.
20. ALL PROPERTY CORNERS SHOULD BE ESTABLISHED AT THE TIME OF FOUNDATION INSPECTION WITH THE MARK OF A LICENSED SURVEYOR.

DJH
DRAFT & DESIGN
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PASO ROBLES CA 93446
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805.975.3071

PLAN PREPARED FOR:
HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO.	----
FILE NAME	T-1 TITLE SHEET.DWG
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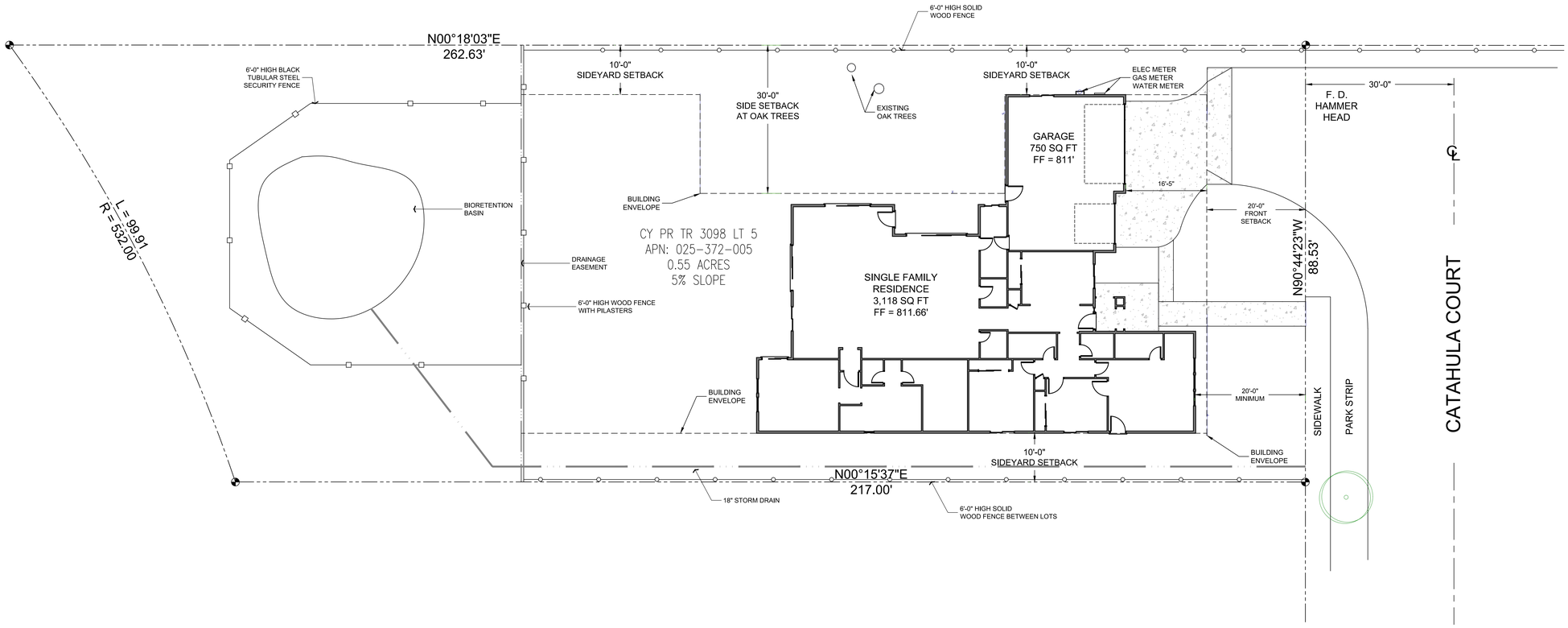
DATE	1/7/2025 12:21 PM

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1.1



GENERAL PLOT PLAN

1" = 10'

DJH
DRAFT & DESIGN
610 10TH ST. SUITE A
PASO ROBLES, CA. 93446
DJH1132@GMAIL.COM
805.975.3071

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. —

FILE NAME A-0 PLOT PLAN.DWG

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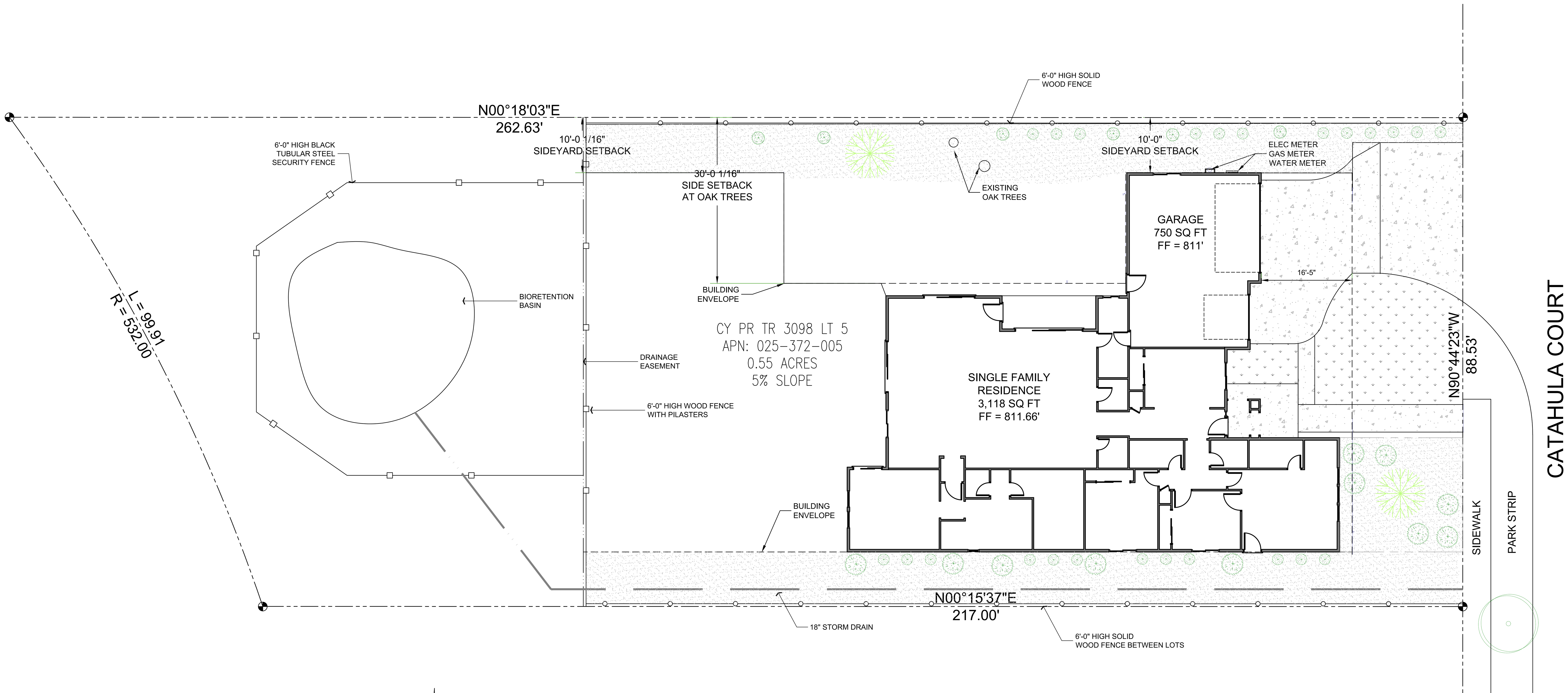
DATE 1/7/2025 12:21 PM

SHEET TITLE:

PLOT PLAN

SHEET NUMBER:

A-0



LANDSCAPE PLAN

1"= 10'-0"

PLANTING SYMBOL LEGEND

SYMBOL	COMMON NAME (BOTANICAL NAME)	SIZE	QTY	SPACING
	ESCALONIA	1 GAL.	8	60"-120" O/C.
	FLAMENCO RED HOT POKER (KNIPHOFIA UVARIA 'FLAMENCO')	1 GAL.	24	
	CLEVELAND SAGE (SALVIA CLEVLENDII)	5 GAL.	12	
	CHINESE PISTACHE TREE	36" BOX	2	

GROUND COVERS

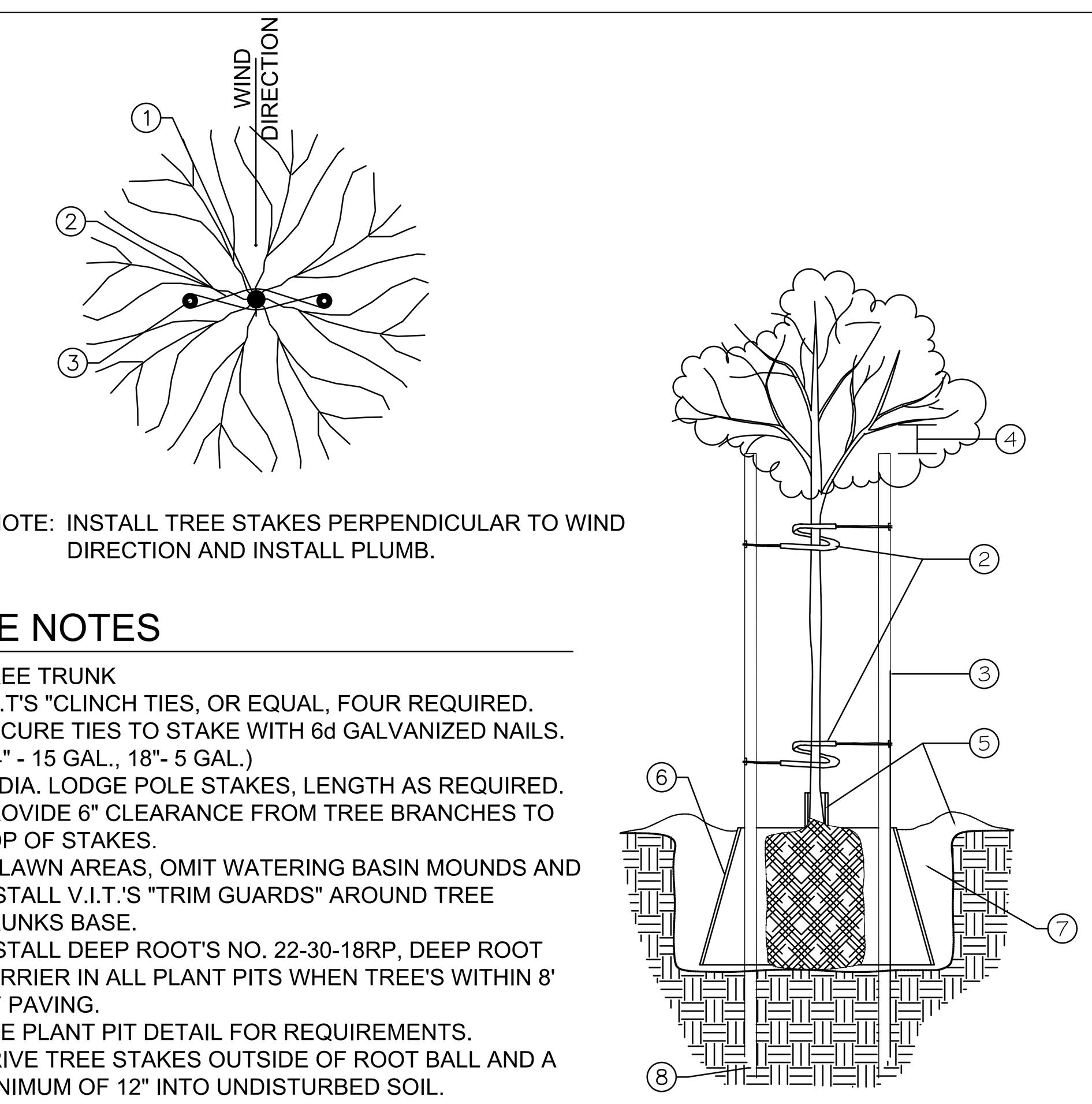
- BLUE FESCUE WITH IRRIGATION OF ¾" RIVER STONE
- 3" BARK OR MULCH

PLANTING NOTES

1. CONTRACTOR SHALL SUBMIT LABELED PHOTOS OF ALL PLANT MATERIAL, TREES AND GROUNDCOVERS. PHOTOS SHALL BE OF THE SPECIFIED CONTAINER SIZE. PHOTOS SHALL BE SUBMITTED AS A COMPLETE SUBMITTAL PACKAGE FOR REVIEW AND APPROVAL. INCLUDE PHOTOS OF ANY SUBSTITUTES, CLEARLY LABELED.
2. ALL PLANTED AREAS SHALL BE CONTINUOUSLY MAINTAINED IN A HEALTHY, GROWING CONDITION, SHALL RECEIVE REGULAR PRUNING, FERTILIZING, MOWING, AND TRIMMING, AND SHALL BE KEPT FREE OF WEEDS AND DEBRIS BY THE OWNER OR PERSON IN POSSESSION OF SUCH AREAS. ANY DAMAGED, DEAD OR DECAYING PLANT MATERIAL SHALL BE REPLACED WITHIN THIRTY (30) DAYS FROM THE DATE OF DAMAGE.
3. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL PLANT MATERIAL AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
4. PLANT SCHEDULE ON THE DRAWINGS SHALL BE USED AS A GUIDE ONLY. CONTRACTOR SHALL TAKEOFF AND VERIFY SIZES AND QUANTITIES BY PLAN CHECK. NOTIFY PROJECT LANDSCAPE ARCHITECT OF ANY MAJOR DISCREPANCIES.
5. UNLESS DESIGNATED ON THE DRAWINGS OTHERWISE, ALL STRUCTURAL AND HARDSCAPE IMPROVEMENTS SHALL BE CONSTRUCTED AND FINISHED AHEAD OF PLANTING.
6. ADJUST PLANT MATERIAL AS NECESSARY AROUND UTILITY LOCATIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY MAJOR CONFLICTS OR NECESSARY ADJUSTMENTS.
7. SOIL AMENDMENTS AND PREPARATION SHALL CONFORM TO STATE AB1881 AND LOCAL WATER EFFICIENT LANDSCAPE ORDINANCES.
8. ALL WORK ON THE IRRIGATION SYSTEM INCLUDING OPERATIONAL TESTS, AND BACKFILLING OF TRENCHES SHALL BE COMPLETED AHEAD OF PLANTING.
9. LOCATIONS OF ALL PLANT MATERIAL SHALL BE REVIEWED ON SITE BY THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO PLANTING. THE REPRESENTATIVE RESERVES THE RIGHT TO MAKE ANY ADJUSTMENTS, SUBSTITUTIONS, ADDITIONS, AND DELETIONS TO THE PLANT LAYOUT AS WORK PROGRESSES.
10. ALL GROUNDCOVER SHALL BE TRIANGULARLY SPACED, UNLESS OTHERWISE NOTED.
11. TREES SHALL BE INSTALLED NO CLOSER THAN TEN (10) FEET FROM UTILITIES.
12. TREES TO BE PLANTED WITHIN FIVE (5) FEET OF HARDSCAPE OR STRUCTURES SHALL BE INSTALLED WITH A ROOT BARRIER.
13. ALL PLANTING AREAS TO RECEIVE 3" THICK MIN. LAYER OF 'STRINGY CEDAR' BARK MULCH UNLESS NOTED OTHERWISE. PROVIDE SAMPLE FOR APPROVAL.
14. REFER TO PLANTING DETAILS FOR ADDITIONAL INFORMATION.
15. PLANT ALL SPECIMEN TREES PER NURSERY RECOMMENDATIONS INCLUDING IRRIGATION AND DRAINAGE

LANDSCAPE PLAN NOTES

1. MULCH ALL SLOPING AREAS W/ ES-2 BY AGROMIN, 2" THICK, PROVIDE SAMPLES FOR APPROVAL
2. INSTALL LANDSCAPE PLAN PER GPR, USE "OUTDOOR WATER USE" (SEE SHEET GC FOR IRRIGATION CONTROLLERS)
3. ADDRESS LABELS SHALL BE 6" IN HEIGHT AND VISIBLE FROM THE STREET AND CONTRASTING TO HOME COLORS.
4. 5' TALL STUCCO WALL FOR POOL EQUIPMENT ENCLOSURE AREA. EXTENDS TO RESIDENCE
5. TRASH ENCLOSURE WITH 4' TALL STUCCO WALLS (AREA MIN. 50 SQ.FT.)
6. SOLAR TO BE PLACED ON RESIDENCE ROOF AS SHOWN
7. 3' WIDE GATE
8. FENCE PER DETAIL "D" THIS PAGE
9. D.G. WALKWAY WITH METAL EDGING

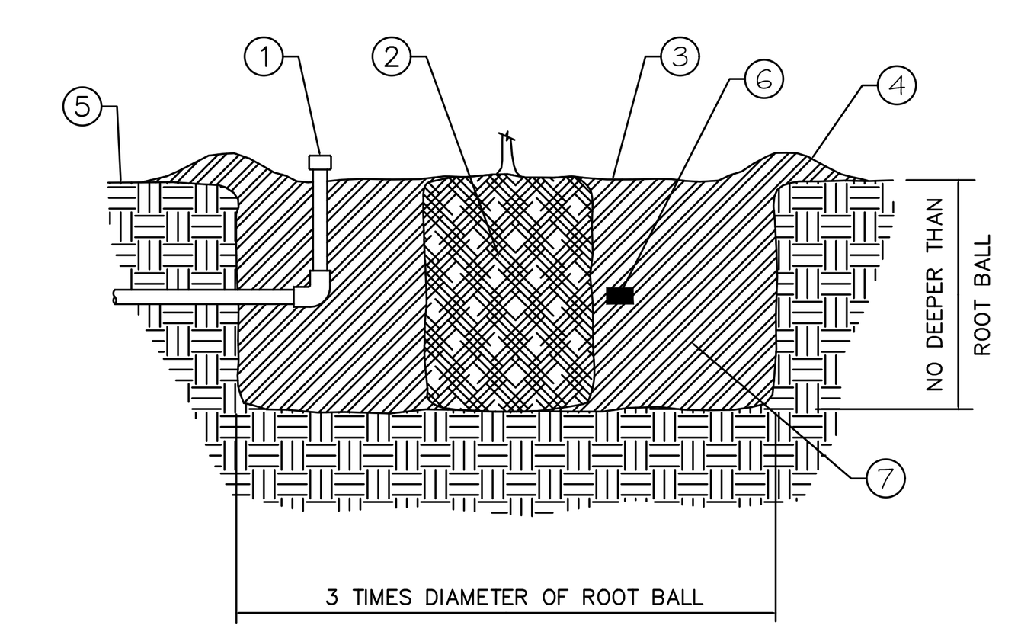


NOTE: INSTALL TREE STAKES PERPENDICULAR TO WIND DIRECTION AND INSTALL PLUMB.

TREE NOTES

1. TREE TRUNK
2. V.I.T'S "CLINCH TIES, OR EQUAL, FOUR REQUIRED. SECURE TIES TO STAKE WITH 6d GALVANIZED NAILS. (24" - 15 GAL., 18"- 5 GAL.)
3. 2" DIA. LODGE POLE STAKES, LENGTH AS REQUIRED.
4. PROVIDE 6" CLEARANCE FROM TREE BRANCHES TO TOP OF STAKES.
5. IN LAWN AREAS, OMIT WATERING BASIN MOUNDS AND INSTALL V.I.T.'S "TRIM GUARDS" AROUND TREE TRUNKS BASE.
6. INSTALL DEEP ROOT'S NO. 22-30-18RP, DEEP ROOT BARRIER IN ALL PLANT PITS WHEN TREE'S WITHIN 8' OF PAVING.
7. SEE PLANT PIT DETAIL FOR REQUIREMENTS.
8. DRIVE TREE STAKES OUTSIDE OF ROOT BALL AND A MINIMUM OF 12" INTO UNDISTURBED SOIL.

B — DOUBLE STAKE AT TREE DETAIL



PLANTING NOTES

1. BUBBLER OR DRIP EMITTER LOCATION - INSIDE WATERING BASIN.
2. ROOT BALL.
3. 1" LAYER OF NITROLIZED REDWOOD MULCH, OR SEE PLANS ON TYPE OF MUCH TO APPLY. KEEP A 3" CLEARANCE AROUND TRUNK(S) OF ALL SHRUBS AND TREES.
4. CONSTRUCTED TAMPED EARTH MOUND FOR WATERING BASIN. LOCATE AT OUTSIDE EDGE OF PLANT PIT. 2" HIGH FOR 1 AND 5 GALLON PLANTS, 4" HIGH FOR 15 GALLON, AND LARGER PLANTS. OMIT IN LAWN AREAS.
5. FINISH GRADE.
6. "AGRIFORM" 20-15-5 PLANTING TABLETS. PLACE TABLETS HALFWAY UP AND 1" AWAY FROM ROOT BALL. USE 1 TABLET FOR 1 GALLON, 2 TABLETS FOR 5 GALLON, 3 TABLETS FOR 15 GALLON AND FOR LARGER PLANTS, USE I TABLET FOR EACH 1/2" OF TRUNK DIAMETER. PLACE TABS EQUALLY SPACED AROUND ROOT BALL.
7. PLANT PIT BACKFULL. USE NOT AMENDMENTS UNLESS STATED DIFFERENTLY IN PLANTING NOTES. BACK FULL SHALL BE NATIVE SOIL BROKEN UP FINELY AND ROCK (1" OR LARGER) AND OTHER DELETERIOUS REMOVED. REMOVE ALL CLAY SLICKS FROM WALL OF PLANT PIT AND SCARIFY SIDES AND BOTTOM. WATER SETTLE PLANT PIT ONCE BACK- FILLING IS COMPLETE.
8.

A — PLANT PIT DETAIL

DJH
DRAFT & DESIGN
610 10TH ST. SUITE A
PASO ROBLES CA 93446
DJH1132@GMAIL.COM
805.975.3071

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

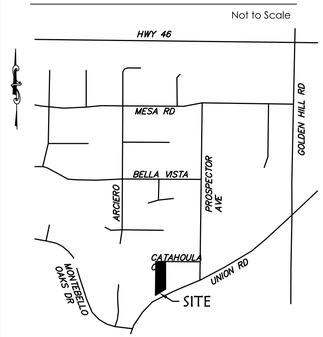
REV.	DESCRIPTION	DATE

PROJECT NO. ----
FILE NAME L-1.1 LANDSCAPE PLAN.DWG
DRAWN BY DJH
DATE 1/7/2025 12:21 PM
SHEET TITLE:
LANDSCAPE PLAN
SHEET NUMBER:
L-1.1

Harrod, 1908 Catahoula Court, Paso Robles - Grading, Drainage, & Erosion Control Plan

VICINITY MAP

Not to Scale



SCOPE OF WORK

GRADING FOR THE CONSTRUCTION OF A NEW RESIDENCE, 133 CY CUT, 379 CY FILL, TOTAL 512 CY
AREA OF DISTURBANCE = 11,762 SF

LEGAL DESCRIPTION

LOT 5 OF TRACT 3098 AS SHOWN ON MAP FILED IN BOOK 41 AT PAGE 44, IN THE CITY OF PASO ROBLES, City OF SAN LUIS OBISPO, CALIFORNIA

BENCHMARK

THE BENCHMARK FOR THIS PROJECT IS CITY OF PASO ROBLES BENCH MARK NO. 17, BEING AN ALUMINUM DISK IN TOP OF THE SOUTHEASTERLY CURB OF UNION ROAD, 20 FEET NORTHEASTERLY OF THE EASTERLY CURB RETURN AT THE SOUTHEAST CORNER OF GOLDEN HILL ROAD AND UNION ROADS.

ELEVATION 837.06 (NAVD88)

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY WAS TAKEN FROM THE EAST LINE OF LOT 33 OF PROSPECT HEIGHTS BETWEEN FOUND MONUMENTS AT AS SHOWN, BEARING N 1° 18' E PER 3 MB 19.

SURVEYOR

MICHAEL B. STANTON
3559 SOUTH HIGUERA ST.
SAN LUIS OBISPO, CA 93401
(805) 594-1960

OWNER

MIKE HARROD
2530 BEECHWOOD DRIVE
PASO ROBLES, CA 93446
mikeharrod@msn.com

APPLICABLE CODES

2022 Building Standards Codes

- California Energy Code
- California Building Code, Vols 1 & 2
- California Electrical Code
- California Fire Code
- California Green Building Code
- California Mechanical Code
- California Plumbing Code
- California Reference Standards Code
- California Residential Code City Building and Construction Ordinance - Title 19
- County Coastal Zone Land Use Ordinance - Title 23
- County Fire Code Ordinance - Title 16
- County Land Use Ordinance - Title 22

PROJECT STATISTICS

Cut 149 CY± *, Fill 206 CY± *, Total 355 CY±
Max. cut = 3 ft, Max. fill = 5 ft
Max slope = 7.6%
Parcel Area = 0.55 ac±
Pre-Project (sf ±)
Impervious Area = 0 , Total Project Area = 10,548
Post-Project (sf ±)
Total Impervious Area = 5,509 , Pervious Area = 5,039
New Imp. Area = 5,509 Removed Imp. Area = 0
Replaced Imp. Surface = 0
Total Site Disturbance = 10,548

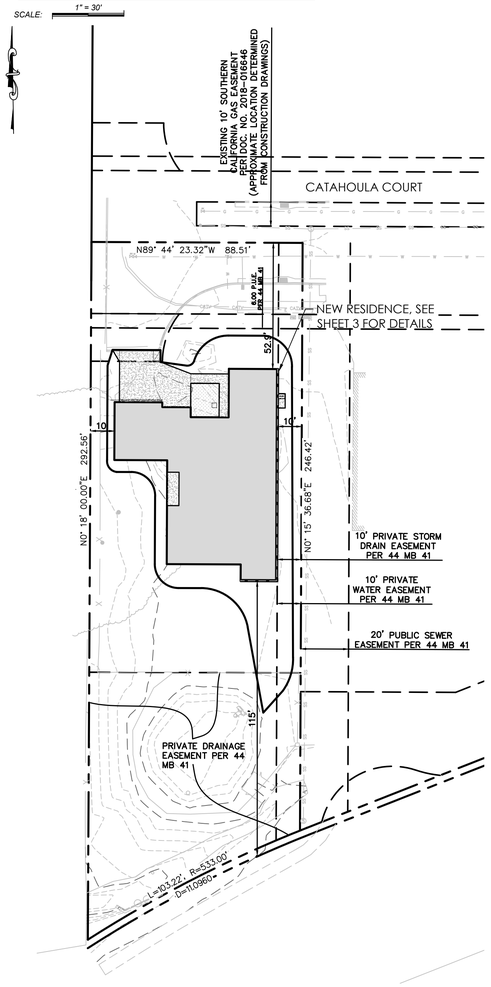
* Quantities shown are unadjusted. When subsidence and losses are considered, the earthwork will balance on site.

APN: 025-372-005

2/26/2025 3:24 P.M.

SITE MAP

SCALE: 1" = 30'



ABBREVIATIONS

AC	Asphalt Concrete Paving
AP	Angle Point
CO	Clean-out
CL	Centerline
CONC	Concrete
CONST	Construction
DIA & Ø	Diameter
ELEV	Elevation
(E) & ( )	Existing
FF	Finished Floor
FS	Finished Surface
FH	Fire Hydrant
FL	Flow Line
G	Gas
GB	Grade Break
GR	Finished Grade
HDPE	Hi-density Polyethylene
HP	High Point
INV	Invert Elevation
LT	Left
LF	Linear Feet
LP	Low Point
MH	Manhole
P	Power
PC	Point Of Curvature
PL	Property Line
PRC	Point Of Reverse Curvature
PT	Point Of Tangency
PUE	Public Utility Easement
PVC	Polyvinyl Chloride
R	Radius
RT	Right
RP	Radius Point
RW	Right-of-way
S	Slope
SD	Storm Drain
SS	Sanitary Sewer
STA	Station
T	Telephone
TW	Top Of Wall
TYP	Typical
W	Water

LEGEND

- Property Line
- Centerline
- 550 Existing Ground Contour
- 550 Finish Grade Contour
- Concrete
- Edge of Pavement
- W Water Line
- Water Valve
- Fire Hydrant
- S Sanitary Sewer Main
- E Electrical Line
- OH Overhead Line
- Utility Pole
- Guy Anchor
- E Elec. Vault / Pedestal / Pull Box
- T Telephone Line
- T Tele. Vault / Pedestal / Pull Box
- Fence
- G Gas Main
- Flowline
- Proposed Grade & Direction
- TEXT TAG/NUMBER TEXT TEXT Construction Note Reference
- Spot Elevation
- Proposed Slope

ENGINEERS NOTES:

NO PUBLIC IMPROVEMENTS ARE PLANNED OR ANTICIPATED ON THIS PROJECT EXCEPT THE DRIVEWAY APPROACH AND UTILITY CONNECTIONS. ALL ONSITE IMPROVEMENTS WILL BE SUPERVISED BY THE BUILDING CONTRACTOR OR WILL BE SUBCONTRACTED TO APPROPRIATE PROFESSIONALS. THESE PLANS RE BASE UPON ITEMS SUCH AS TOPOGRAPHY MAPS, RECORD PROPERTY MAPS, MUNICIPAL CODES AND SPECIFICATIONS, SOIL REPORTS, STRUCTURAL REPORTS, TRAFFIC REPORTS OR OTHER PROFESSIONAL REPORTS AND INFORMATION SUPPLIED BY AND PREPARED BY OTHERS. ROBERTS ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR THE INCORRECT, INACCURATE OR INSUFFICIENT INFORMATION SUPPLIED TO AT THE TIME OF PROJECT DESIGN OR REVISIONS.

SITE DISTURBANCE:

THE OWNER OR CONTRACTOR ARE TO ENSURE THAT THE LIMITS OF SITE DISTURBANCE CONFORM TO THE APPROVED GRADING LIMITS. CONTACT THE ENGINEER OF RECORD FOR ALL CHANGES THAT AFFECT THE LIMITS OF GRADING SHOWN ON THE PLANS. EXCEEDING THE DISTURBANCE AREA MAY REQUIRE ADDITIONAL SITE INSPECTIONS. IF THE AREA OF DISTURBANCE EXCEED ONE ACRE, THAT A STORM WATER POLLUTION PREVENTION PLAN IS REQUIRED BY THE STATE QUALITY CONTROL BOARD. THE LOCAL AGENCY INSPECTOR MAY REQUIRE THE ENGINEER TO CERTIFY THE AREA OF DISTURBANCE AND THIS MAY REQUIRE ADDITIONAL SITE SURVEYING.

EARTHWORK:

1. Exact shrinkage, consolidation and subsidence factors and losses are due to clearing are not included in the estimates noted. The grading contractor is responsible to determine exact quantities and bid accordingly.
2. Any excess material will be spread and stabilized onsite and be placed outside of building area as non-structural fill.

SURVEYING:

1. THE PROJECT SURVEYOR SHALL PROVIDE ELEVATIONS ON THE SAW CUT LINE AT 25-FOOT STATIONS PER PLAN. STATIONING SHALL BE NOTED EITHER ON THE STAKE OR PAINTED ON THE ASPHALT, AND A CUT SHEET SHALL BE PROVIDED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.

2. THE FOOTPRINT OF THE RESIDENCE/STRUCTURE SHOWN HEREON IS BASED UPON A GRAPHIC EXHIBIT PROVIDED BY THE OWNER. WHILE ASSUMED ACCURATE FOR PURPOSES OF THIS PLAN, IT IS NOT INTENDED FOR PRECISE BUILDING LAYOUT. THE PROJECT SURVEYOR WILL BE RESPONSIBLE TO OBTAIN THE CURRENT AND CORRECT ARCHITECTURAL PLANS AND CONFIRM PROPERTY SETBACKS.

3. IF THIS PROJECT REQUIRES FIELD STAKING AFTER DESIGN (I.E. BUILDING CORNERS, PAD LIMITS, DRIVEWAY/ROAD) THE SURVEYOR SHALL TAKE SPECIAL NOTE IF THIS DESIGN IS A USER COORDINATE SYSTEM AND NOT A WORLD COORDINATE SYSTEM SUPPLIED BY THE TOPOGRAPHIC MAP.

4.PROJECT DESIGN IS BASED ON A SURVEY UNLESS OTHERWISE NOTED. IT DOES NOT ACCOUNT FOR ANY SURVEYING OMISSIONS OR ANY EXISTING IMPROVEMENTS NOT PROVIDED SUCH AS SEPTIC SYSTEMS, WELLS, UTILITIES, ETC. THAT ARE UNDERGROUND OR OTHERWISE HIDDEN. THE SURVEYOR MAY NOT HAVE ACCESS TO NEIGHBORING PROPERTIES TO LOCATE IMPROVEMENTS AND TOPOGRAPHY THAT MAY OR MAY NOT AFFECT THE PROJECT DESIGN.

GENERAL SITE CONDITIONS

1. INFORMATION SHOWN OF ALL EXISTING IMPROVEMENTS ON THESE DRAWINGS IS TAKEN FROM FIELD SURVEY AND CITY OF PASO ROBLES RECORDS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO BEGINNING OF WORK. ALL UTILITY LOCATIONS ON THIS PLAN ARE TAKEN FROM RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A. 811) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTION OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL EXPOSE AND VERIFY ALL CRITICAL SECTIONS OF EXITING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL CONSTRUCTION WORK AND INSTALLATION SHALL CONFORM TO THE CITY OF PASO ROBLES STANDARDS AND SPECIFICATIONS, AND ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
3. WHEN INSUFFICIENT DETAILS OR SPECIFICATIONS ARE SHOWN, THE CALTRANS STANDARD SPECIFICATIONS AND STANDARD PLANS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) IS HEREBY REFERENCED AND INCLUDED.
4. D. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE DURING THE COURSE OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER, CITY AND OWNER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OF ENGINEER.
5. THE ENGINEER SHALL CERTIFY THAT THE IMPROVEMENTS, WHEN COMPLETED, ARE IN ACCORDANCE WITH THE PLANS PRIOR TO THE REQUEST FOR FINAL INSPECTION. AS-BUILT PLANS ARE TO BE PREPARED AFTER CONSTRUCTION IS COMPLETED. THE ENGINEER CERTIFYING THE IMPROVEMENTS AND PREPARING THE AS-BUILT PLANS SHALL BE PRESENT AT THE FINAL INSPECTION.
6. THE CITY MAY REQUIRE REVISIONS IN THE PLANS TO SOLVE UNFORESEEN PROBLEMS THAT MAY ARISE DURING THE COURSE OF CONSTRUCTION. ALL REVISIONS SHALL BE SUBJECT TO THE APPROVAL OF THE DEVELOPERS' ENGINEER.
7. THE CONTRACTOR SHALL HAVE COPIES OF THE PLANS AND SPECIFICATIONS FOR THIS PROJECT ON THE SITE AT ALL TIMES. ALL CHANGES OCCURRING DURING THE PROJECT CONSTRUCTION SHALL BE RECORDED ON THESE PLANS, AND THEY SHALL BE TRANSMITTED TO THE PROJECT ENGINEER TO INCORPORATE INTO THE AS-BUILT RECORD.
8. ALL STATIONING SHOWN ON THESE PLANS REFER TO CENTERLINE UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL PRACTICE SAFETY AT ALL TIMES AND SHALL FURNISH, ERECT, AND MAINTAIN SUCH FENCES, BARRICADES, DETOURS, FLAGMAN, LIGHTS AND SIGNS AS NECESSARY TO GIVE PROTECTION TO THE PUBLIC AT ALL TIMES.
10. TRAFFIC CONTROL REQUIRED PER CALTRANS AND CITY OF PASO ROBLES TECHNICAL SPECIFICATIONS FOR THIS JOB. CONTRACTOR WILL BE REQUIRED TO KEEP TWO-WAY TRAFFIC OPEN AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE CITY.
11. THE CONTRACTOR SHALL FURNISH A TRAFFIC CONTROL PLAN PRIOR TO CONSTRUCTION AND SHALL PROVIDE THE APPROVED SIGNS, LIGHTS, BARRICADE, AND FLAGGING. ROAD CLOSURES MAY BE AUTHORIZED ONLY FOR EXTREME CIRCUMSTANCES.
12. NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY THE CITY ENGINEERING DEPARTMENT. THE CITY INSPECTOR SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO THE STARTING OF CONSTRUCTION. ANY WORK DONE WITHOUT APPROVAL PRIOR TO NOTIFYING THE CITY INSPECTOR MAY BE REJECTED AT THE CONTRACTORS; AND/OR OWNERS' RISK.
13. THE NAMES AND TELEPHONE NUMBERS OF THE PROJECT CONSTRUCTION SUPERINTENDENT(S) SHALL BE SUBMITTED AND KEPT ON FILE IN THE OFFICE OF THE CITY ENGINEER.
14. THE ALLOWED HOURS OF OPERATION ARE 7:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY. ANY WORK REQUESTED ON WEEKENDS AND HOLIDAYS MUST BE SUBMITTED IN WRITING AT LEAST 24 HOURS IN ADVANCE.
15. NO FIELD CHANGE SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL BY THE CITY ENGINEER.
16. ALL UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE PROJECT AND BE PLACED AT A SUITABLE DISPOSAL SITE.
17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO BE FULLY INFORMED OF AND TO COMPLY WITH ALL LAWS, ORDINANCES, CODES, REQUIREMENTS, AND STANDARDS WHICH IN ANY MANNER AFFECT THE COURSE OF CONSTRUCTION OF THIS PROJECT, THOSE ENGAGED OR EMPLOYED IN THE CONSTRUCTION, OR THE MATERIALS USED IN THE CONSTRUCTION.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE PUBLIC AND PRIVATE PROPERTY ADJACENT TO THE WORK AREA AND SHALL EXERCISE DUE CAUTION TO AVOID DAMAGE TO SUCH PROPERTY. THE CONTRACTOR SHALL REPLACE AND REPAIR TO THEIR ORIGINAL CONDITION ALL EXISTING IMPROVEMENTS WITHIN OR ADJACENT TO THE WORK AREA WHICH ARE NOT DESIGNED FOR REMOVAL, AND ARE DAMAGED OR REMOVED AS A RESULT OF HIS OPERATIONS, AND BE REQUIRED TO REPAIR OR REPLACE SAME TO THE SATISFACTION OF AND AS DIRECTED BY THE CITY INSPECTOR OR UTILITY COMPANY.
19. ALL CONTRACTORS AND SUBCONTRACTORS WORKING WITHIN THE RIGHT-OF-WAY SHALL HAVE AN APPROPRIATE CONTRACTORS LICENSE, A LOCAL BUSINESS LICENSE, AND SHALL OBTAIN AN ENCROACHMENT PERMIT AS REQUIRED BY ANY AGENCY.

GENERAL GRADING NOTES

1. ALL GRADING SHALL CONFORM WITH THE CITY OF PASO ROBLES GRADING REQUIREMENTS AND THE 2022 CALIFORNIA BUILDING CODE, CHAPTER 18, THE STANDARDS AND REQUIREMENTS PERTAINING THERETO, AND THE RECOMMENDATIONS OF THE SOILS ENGINEER, UNDER 'ENGINEERED GRADING REQUIREMENTS'.
2. ALL GRADING SHALL CONFORM WITH THE RECOMMENDATIONS AND REQUIREMENTS OF THE PRELIMINARY SOILS INVESTIGATION REPORT BY MID-COAST GEOTECHNICAL, SOILS REPORT # 21669. THIS REPORT SHALL BE INCORPORATED INTO THIS PLAN AND MADE A PART HEREOF AS IF SPELLED OUT IN ITS ENTIRETY HEREON. GRADING INSPECTIONS SHALL BE ACCORDING TO 2022 CBC TABLES.
3. AREAS TO BE GRADED SHALL BE CLEARED OF ALL VEGETATION, INCLUDING ROOTS AND OTHER MATERIAL UNSUITABLE FOR STRUCTURAL FILL, AND SCARIFIED TO A MINIMUM DEPTH OF 12 INCHES.
4. IN AREAS TO RECEIVE FILL, THE EXISTING SOILS SHALL BE SCARIFIED AND COMPACTED TO A MINIMUM OF NINETY PERCENT OF MAXIMUM DENSITY. THE FILL MATERIAL OBTAINED FROM OTHER AREAS ON THE SITE MAY BE PLACED IN THIN LAYERS AND COMPACTED TO A MINIMUM OF NINETY PERCENT OF MAXIMUM DENSITY. WHERE FILLS ARE PLACE ON SLOPES, A KEY SHALL BE CUT AT THE TOE OF THE SLOPE AT LEAST TEN FEET WIDE AND INTO FIRM NATURAL SOILS, AS THE FILL MATERIAL IS PLACED UP THE SLOPE, BENCHES SHALL BE CUT AT REGULAR INTERVALS INTO FIRM NATURAL SOILS.
5. PRIOR TO PLACEMENT OF FILL MATERIAL, THE PREPARED AREA SHALL BE INSPECTED AND APPROVED BY A CITY GRADING INSPECTOR AND THE SUPERVISING SOILS ENGINEER.
6. CUT AND FILL SLOPES SHALL NOT EXCEED A GRADE OF 2 FEET HORIZONTAL TO 1 FOOT VERTICAL UNLESS CERTIFIED STABLE BY THE SOILS ENGINEER, AND APPROVED BY THE CITY ENGINEER.
7. FILL MATERIAL, APPROVED BY THE SUPERVISING SOILS ENGINEER, SHALL BE PLACED IN LIFTS NOT EXCEEDING 6 INCHES IN COMPACTED THICKNESS, MOISTENED OR DRIED AS NECESSARY TO NEAR OPTIMUM MOISTURE CONTENT, AND COMPACTED BY AN APPROVED METHOD.
8. FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY A.S.T.M. D-1557-78 (MODIFIED TO 3 LAYERS) AND SO CERTIFIED BY TESTS AND REPORTS BY THE SUPERVISING SOILS ENGINEER. SOILS TEST SHALL BE CONDUCTED AT NOT LESS THAN ONE TEST FOR EACH 18 INCHES OF FILL AND FOR EACH 500 CUBIC YARDS OF FILL.
9. ALL SOILS WITHIN 2 FEET OF FINISHED GRADE IN THE STREET SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
10. UTILITY TRENCH BACKFILL WITHIN THE STREET SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF PASO ROBLES.
11. SURFACE DRAINAGE SHALL NOT BE LESS THAN 2% EXCEPT FOR PAVED SURFACES AND POSITIVE DRAINAGE SHALL BE MAINTAINED AWAY FROM ALL STRUCTURES AND SLOPES.
12. ALL UNSUITABLE SOILS MATERIALS AND RUBBISH AND DEBRIS RESULTING FROM GRADING OPERATIONS SHALL BE REMOVED FROM THE JOB SITE AND DISPOSED OF PROPERLY.
13. SLOPE CONSTRUCTION REQUIREMENTS INCLUDING TERRACING SHALL BE SPECIFIED BY THE SUPERVISING SOILS ENGINEER PRIOR TO CONSTRUCTION OF GRADED SLOPES.
14. THE CONTRACTOR SHALL EMPLOY ALL LABOR, EQUIPMENT AND METHODS REQUIRED TO PREVENT HIS OPERATIONS FROM PRODUCING DUST IN AMOUNTS DAMAGING TO PROPERTY, CULTIVATED VEGETATION AND DOMESTIC ANIMALS, OR CAUSING A NUISANCE TO PERSONS OCCUPYING BUILDINGS IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST RESULTING FROM HIS OPERATIONS. DUST ABATEMENT MEASURES SHALL BE CONTINUED UNTIL RELIEF IS GRANTED BY THE GRADING INSPECTOR.
15. ALL SLOPES OVER 3 FEET HIGH SHALL BE PLANTED WITH PERENNIAL VEGETATION APPROVED BY THE CITY AND SHALL BE DENSE AND GROWING PRIOR TO FINAL INSPECTION.
16. EARTH WORK QUANTITIES: CUT: 149 CY ±. FILL: 206 CY ±.
NOTE: EXACT SHRINKAGE, CONSOLIDATION AND SUBSIDENCE FACTORS AND LOSSES DUE TO CLEARING OPERATION ARE NOT INCLUDED. ESTIMATED EARTHWORK QUANTITIES ARE BASED ON THE DIFFERENCE AS SHOWN ON THE PLAN, OR SUBGRADES, AND SHOULD VARY ACCORDING TO THESE FACTORS.
17. PRIOR TO ANY GRADING THE DEVELOPER SHALL BE RESPONSIBLE FOR SCHEDULING A PRE CONSTRUCTION MEETING WITH THE CITY AND OTHER AFFECTED AGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 24 HOURS PRIOR TO ANY WORK BEING PERFORMED, AND ARRANGE FOR INSPECTION (CALL 237-3860).
18. A SOILS ENGINEER SHALL SUPERVISE THE GRADING AND CERTIFY THAT ALL GRADING HAS BEEN COMPLETED IN CONFORMANCE WITH THESE PLANS AND THE RECOMMENDATION OF THE PRELIMINARY SOILS REPORT. FINAL SOILS REPORT SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 18 OF THE C.B.C..
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DISTURBED SHALL BE RESET AT CONTRACTORS' EXPENSE.
20. ALL TOP SOIL SHALL BE STOCKPILED FOR LATER DISTRIBUTION OVER THE LOTS AND SLOPES. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED AS NECESSARY TO ACHIEVE DENSE AND GROWING VEGETATION PRIOR TO FINAL INSPECTION. A BOND MAY BE REQUIRED IF THE WEATHER IS INAPPROPRIATE FOR HYDROSEEDING.
21. ALL ROUGH GRADING AND FINAL SOILS REPORT SHALL BE COMPLETED AND APPROVED BY THE CITY ENGINEER PRIOR TO ISSUANCE OF ANY BUILDING PERMITS.
22. ANY OAK TREES ON THE SITE SHALL BE PROTECTED DURING CONSTRUCTION, AS OUTLINED IN THE CITY'S OAK TREE PRESERVATION ORDINANCE No. 553. NO GRADING SHALL TAKE PLACE WITHIN THE DRIP LINE OF THE TREE WITHOUT THE APPROVAL OF THE DIRECTOR OF PUBLIC WORKS, AND AN INSPECTION MUST BE CALLED PRIOR TO ANY SUCH WORK TAKING PLACE. IF REMOVAL OF AN OAK TREE IS PROPOSED, AN APPLICATION MUST BE FILED WITH THE PUBLIC WORKS DEPARTMENT AND APPROVED BE THE CITY COUNCIL.
23. ANY TEMPORARY STOCKPILES OF EARTH SHALL BE APPROVED BY THE CITY, AND SHALL NOT OBSTRUCT DRAINAGE OR CREATE BLOWING DUST.
24. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN AND INSTALL THE APPROVED DRAINAGE DEVICES FOR WORK DURING THE RAINY SEASON OF OCTOBER THROUGH MARCH.

UNDERGROUND UTILITY NOTES

1. An effort has been made to define the location of underground facilities within the job site. However, all existing utility and other underground structures may not be shown on this plan and their location where shown is approximate. The construction contractor agrees that he shall assume sole and complete responsibility for locating or having located all underground utilities and other facilities and for protecting them during construction.
2. All utility companies must be notified prior to the start of construction. The construction contractor shall contact underground service alert (USA) at 811 two to ten days prior to the start of excavation and shall verify the location of any known utilities and whether or not a representative of each company will be present during excavation.

DIGALERT 811

Area Reserved for City

REGISTERED PROFESSIONAL ENGINEER TIMOTHY P. ROBERTS 35366 Exp. 9/30/25 CIVIL STATE OF CALIFORNIA

Roberts Engineering
Timothy P. Roberts
Civil Engineer - RCE 35366
2015 Vista de la Vina
Templeton, CA 93465
Phone (805) 239-0664
Fax (805) 238-6148
Email tim@robertsenginc.com
Website robertsenginc.com

Record Drawings

Timothy P. Roberts, RCE 35366 exp 09/30/25 Date

Revisions This Sheet:
1
2
3
4
5
6

Roberts Engineering, Inc.

Harrod, 1908 Catahoula Court, Paso Robles

Title Sheet

Design/Drawn	City Plan Checker	Approved for City Requirements
TR / SEB	.	Development Services Engineer Date
Job # 24-29	City W.O. No. .	2/26/2025 3:24 P.M. Timothy P. Roberts, RCE 35366 exp 09/30/25 Date
California Coordinates (CCS83, Zone 5) 5770669 E 2429300 N	.	City Road # . . 1 of 4

EROSION CONTROL NOTES

1. The site shall be maintained as to prevent flow of sediments from the project.
2. All areas over 5% grade which are disturbed by grading activities shall be hydroseeded with an approved perennial mix prior to final acceptance. Areas with established growth at the time of final acceptance need not be hydroseeded.
3. Erosion control and sediment control measures shall be provided for any site work.
4. Erosion control and sediment control measures shall be provided after construction is completed until permanent measures are in place.
5. During rainy season, all paved areas shall be kept clear of soil and debris.
6. All erosion protection measures shall be inspected and repaired as necessary at the end of each work day, and after each rainfall event.
7. An erosion control plan shall be prepared and approved by the City Engineer.
8. All projects involving site disturbance of one acre or greater shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The Developer shall submit a Notice of intent (NOI) to comply with the General Permit for Construction Activity with the Regional Water Quality Control Board (RWQCB). The Developer shall provide the City with the Waste Discharge Identification Number (WDID #) or with verification that an exemption has been granted by RWQCB.

   WDID: NA

   Person to contact 24 hours a day in the event there is an erosion control/sedimentation problem (Storm Water Compliance Officer): Name: Mike Harrod
9. Hydro Seeding Specifications:

Seed Mix:
20 LB/AC BROMUS CARINATUS CUCAMONGA SEED MIX
8 LB/AC FESTUCA MICROSTACHYS SEED MIX
3 LB/AC TRIFOLIUM WILLDENOVII SEED MIX

Mulch/Fertilizer/Binder:

1500 LB/AC WOOD FIBER MULCH
300 LB/AC 15/15/15 FERTILIZER
100 LB/AC ECOLOGY CONTROL M-BINDER TACKIFIER

SPECIAL INSPECTIONS

1. All construction & inspections shall conform to 2022 California Building Code (CBC) Chapter 17.
2. Special inspection requirement are required for this project, the owner or registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on all tasks identified below.
3. Special inspectors shall be a qualified person who shall demonstrate competence, to the satisfaction of the City Building Department. Names and qualifications of special inspector(s) shall be submitted to the City Building Department for approval.
4. Each contractor responsible for the construction of components listed in the special inspections shall submit a written statement of responsibility to the City Building Department and the owner prior to the commencement of work. The statement shall contain the items listed in CBC 1706.1.
5. A final report prepared by a soil or civil engineer shall be submitted to the field inspector stating the work performed is in substantial conformance with the approved plans, applicable codes, and is found to be suitable to support the intended structure. Such report shall include any field progress reports, compaction data etc.

Section 1705, Statement of Special Inspections:

- 1705.1 General. Where special inspection or testing is required by Section 1704, 1707 or 1708, the registered design professional in responsible charge shall prepare a statement of special inspections in accordance with Section 1705 for submittal by the permit application (see Section 1704.1.1).
- 1705.2 Content of statement of special inspections. The statement of special inspections shall identify the following:

a) The materials, systems, components and work required to have special inspection or testing by the building official or by the registered design professional responsible for each portion of the work.

b) The type and extent of each special inspection.

c) The type and extent of each test.

d) Additional requirements for special inspection or testing for seismic or wind resistance as specified in Section 1705.3, 1705.4, 1707 or 1708.

e) For each type of special inspection, identification as to whether it will be continuous special inspection or periodic special inspection.

Section (table) 1705.6 Required Verification and Inspection of Soils.

a) Verify materials below footings are adequate to achieve the design bearing capacity shall be performed periodically during task.

b) Verify excavations are extended to proper depth and have reached proper material, shall be performed periodically during task.

c) Perform classification and testing of controlled fill materials, shall be performed periodically during task.

d) Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill, shall be performed continuously during task.

e) Prior to placement of controlled fill, observe subgrade and verify that site had been prepared properly, shall be performed periodically during task.

Observation & Testing Program.

The project soils engineer shall perform the inspection & testing for the following tasks:
- Final plans
- Stripping and clearing of vegetation
- Recompaction of scarification soils
- Fill placement and compaction
- Over excavating
- Verification of soils type & depth
- Final report

The soil engineer of work shall be Mid-Coast Geotechnical
P.O. Box 2220
3124 El Camino Real
Atascadero, CA 93423
Soils Report # 21669

The project engineer of work shall perform the inspection for the following tasks:
- Rough grading & site preparation
- Final grading inspection prior to final City inspection

The project engineer of work shall be Tim Roberts of Roberts Engineering, Inc., RCE 35366, 2015 Vista de la Vina, Templeton, CA 93465, phone (805) 239-0664

The Engineer or work shall state in writing the work is in substantial conformance with the approved plans.

The person responsible for BMP inspection is:
Mike Harrod

TREE PROTECTION NOTES

1. Trees within 20 feet of grading or trenching shall be protected by placement of protective fencing as indicated.
2. Protective fencing shall be four feet high chain link or safety fence, and shall be placed at the dripline unless otherwise indicated
3. Trenching and excavation within tree driplines shall be hand dug or bored to minimize root disturbance. Any root encountered 1" diameter or greater, shall be hand cut and appropriately treated.
4. Pruning of lower limbs in the construction area shall occur prior to construction activities to minimize damage.
5. Tree protection fencing shall remain in place until the completion of construction.
6. No vehicle parking or storage of materials under oak canopies.

SPECIAL INSPECTION CONTACT INFORMATION
MID-COAST GEOTECHNICAL INC.
P.O. BOX 2220
3124 EL CAMINO REAL
ATASCADERO, CA 93423
(805) 461-0965

TABLE 1705.6 REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	INSPECTION REQUIRED
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	—	X	☒
2. Verify excavations are extended to proper depth and have reached proper material.	—	X	☒
3. Perform classification and testing of compacted fill materials.	—	X	☒
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	—	☒
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	—	X	☒

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EROSION CONTROL & INSPECTIONS

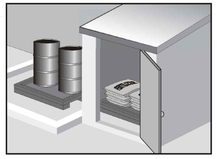
Erosion and Sediment Control Best Management Practices must be in place and functional PRIOR to the first inspection. No inspections can be performed if they are not in place or have failed to provide erosion control. Failure to maintain erosion control will cause inspections to be delayed until erosion control measures are functional.

CITY SPECIFIC EROSION CONTROL NOTES

1. STREET SWEEPING FOR BOTH OAK AND 30th STREETS REQUIRED AS NEEDED.

2. SAW-CUT CONCRETE SLURRY SHALL NOT BE ALLOWED TO ENTER STORM DRAINS OR WATERCOURSES. RESIDUE FROM GRINDING OPERATIONS SHALL BE PICKED UP BY MEANS OF VACUUM ATTACHMENT TO THE GRINDING MACHINE OR BY SWEEPING. SAW CUTTING RESIDUE SHALL NOT BE ALLOWED TO FLOW ACROSS THE PAVEMENT AND SHALL NOT BE LEFT ON THE SURFACE OF THE PAVEMENT.

Material Delivery and Storage WM-1



Categories
EC Erosion Control
SE Sediment Control
TC Tracking Control
WE Wind Erosion Control
NS Non-Stormwater Management Control
WM Waste Management and Materials Pollution Control ☒

Legend:
☑ Primary Category
☒ Secondary Category

Description and Purpose
Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Suitable Applications
These procedures are suitable for use at all construction sites with delivery and storage of the following materials:
- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease

Targeted Constituents
Sediment ☑
Nutrients ☑
Trash ☒
Metals ☑
Bacteria
Oil and Grease ☒
Organics ☒

Potential Alternatives
None

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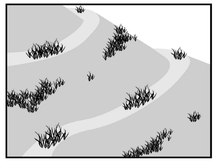
CASQA CALIFORNIA STORMWATER QUALITY ASSOCIATION

Hydroseeding EC-4



Categories
EC Erosion Control ☒
SE Sediment Control
TC Tracking Control
WE Wind Erosion Control ☒
NS Non-Stormwater Management Control
WM Waste Management and Materials Pollution Control

Legend:
☑ Primary Category
☒ Secondary Category

Description and Purpose
Hydroseeding typically consists of applying a mixture of a hydraulic mulch, seed, fertilizer, and stabilizing emulsion with a hydraulic mulcher, to temporarily protect exposed soils from erosion by water and wind. Hydraulic seeding, or hydroseeding, is simply the method by which temporary or permanent seed is applied to the soil surface.

Suitable Applications
Hydroseeding is suitable for disturbed areas requiring temporary protection until permanent stabilization is established, for disturbed areas that will be re-disturbed following an extended period of inactivity, or to apply permanent stabilization measures. Hydroseeding without mulch or other cover (e.g. EC-7, Erosion Control Blanket) is not a stand-alone erosion control BMP and should be combined with additional measures until vegetation establishment.

Typical applications for hydroseeding include:
- Disturbed soil/graded areas where permanent stabilization or continued earthwork is not anticipated prior to seed germination.
- Cleared and graded areas exposed to seasonal rains or temporary irrigation.
- Areas not subject to heavy wear by construction equipment or high traffic.

Targeted Constituents
Sediment ☑
Nutrients
Trash
Metals
Bacteria
Oil and Grease
Organics

Potential Alternatives
EC-3 Hydraulic Mulch
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-14 Compost Blanket
EC-16 Non-Vegetative Stabilization

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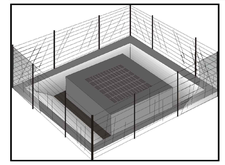
CASQA CALIFORNIA STORMWATER QUALITY ASSOCIATION

Storm Drain Inlet Protection SE-10



Categories
EC Erosion Control
SE Sediment Control ☒
TC Tracking Control
WE Wind Erosion Control
NS Non-Stormwater Management Control
WM Waste Management and Materials Pollution Control

Legend:
☑ Primary Category
☒ Secondary Category

Description and Purpose
Storm drain inlet protection consists of a sediment filter or an impounding area in, around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some filter configurations also remove sediment by filtering, but usually the ponding action results in the greatest sediment reduction. Temporary geotextile storm drain inserts attach underneath storm drain grates to capture and filter storm water.

Suitable Applications
- Every storm drain inlet receiving runoff from unstabilized or otherwise active work areas should be protected. Inlet protection should be used in conjunction with other erosion and sediment controls to prevent sediment-laden stormwater and non-stormwater discharges from entering the storm drain system.

Limitations
- Drainage area should not exceed 1 acre.
- In general straw bales should not be used as inlet protection.
- Requires an adequate area for water to pond without encroaching into portions of the roadway subject to traffic.
- Sediment removal may be inadequate to prevent sediment discharges in high flow conditions or if runoff is heavily sediment laden. If high flow conditions are expected, use

Targeted Constituents
Sediment ☑
Nutrients
Trash ☒
Metals
Bacteria
Oil and Grease
Organics

Potential Alternatives
SE-1 Silt Fence
SE-5 Fiber Rolls
SE-6 Gravel Bag Berm
SE-8 Sandbag Barrier
SE-14 Biofilter Bags
SE-13 Compost Socks and Berms

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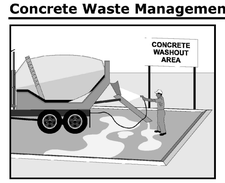
CASQA CALIFORNIA STORMWATER QUALITY ASSOCIATION

Concrete Waste Management WM-8



Categories
EC Erosion Control
SE Sediment Control
TC Tracking Control
WE Wind Erosion Control
NS Non-Stormwater Management Control ☒
WM Waste Management and Materials Pollution Control ☑

Legend:
☑ Primary Category
☒ Secondary Category

Description and Purpose
Prevent the discharge of pollutants to stormwater from concrete waste by conducting washout onsite or offsite in a designated area, and by employee and subcontractor training.

The General Permit incorporates Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Many types of construction materials, including mortar, concrete, stucco, cement and block and their associated wastes have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows and raising pH to levels outside the acceptable range.

Suitable Applications
Concrete waste management procedures and practices are implemented on construction projects where:
- Concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Slurries containing portland cement concrete (PCC) are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition.
- Concrete trucks and other concrete-coated equipment are washed onsite.

Targeted Constituents
Sediment ☑
Nutrients
Trash
Metals ☑
Bacteria
Oil and Grease
Organics

Potential Alternatives
None

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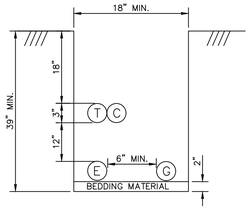
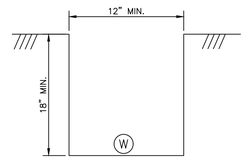
CASQA CALIFORNIA STORMWATER QUALITY ASSOCIATION



NOTES:
1. BEDDING MATERIAL TO BE PG&E APPROVED SAND.
2. BACKFILL TO BE CLEAN NATIVE COMPACTED TO 90% IN LIFTS NOT TO EXCEED 8" IN HEIGHT.

ELECTRICAL, GAS, AND COMMUNICATION TYPICAL SERVICE TRENCH DETAIL (PG&E SERVICE TRENCH DETAIL FIG. 2)

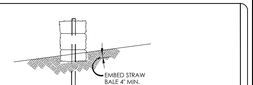
NTS



NOTES:
1. BACKFILL TO BE CLEAN NATIVE COMPACTED TO 90% IN LIFTS NOT TO EXCEED 8" IN HEIGHT.
2. WATERLINE TO BE SIZED BY FIRE SPRINKLER DESIGNER.

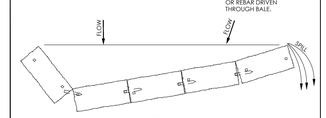
DOMESTIC WATER SERVICE TYPICAL TRENCH DETAIL

NTS



SECTION A - A

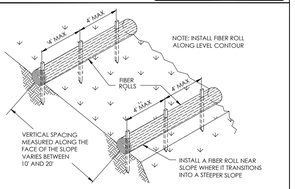
SECTION B - B



PLAN

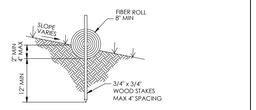
NOTES:
1. THE STRAW BALES SHALL BE PLACED ON SLOPE CONTOUR.
2. BALES TO BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING. USE STRAW, ROCKS, OR FILTER FABRIC TO FILL GAPS BETWEEN THE BALES AND TAMP THE BACKFILL MATERIAL TO PREVENT EROSION OR FLOW AROUND BALES.

STRAW BALE DIKE



TYPICAL FIBER ROLL INSTALLATION

N.T.S.

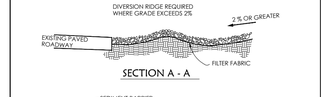


ENTRENCHMENT DETAIL

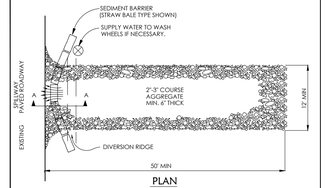
N.T.S.

NOTE:
1. INSPECT AND REPAIR FIBER ROLLS AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. FIBER ROLLS SHALL BE PLACED ALONG LEVEL SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

FIBER ROLLS



SECTION A - A



PLAN

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY P. ROBERTS
35366
Exp. 9/30/25
CIVIL
STATE OF CALIFORNIA

Roberts Engineering
Timothy P. Roberts
Civil Engineer - RCE 35366
2015 Vista de la Vina
Templeton, CA 93465
Phone (805) 239-0664
Fax (805) 238-6148
Email tim@robertsenginc.com
Website robertsenginc.com

Record Drawings

Timothy P. Roberts, RCE 35366 exp 09/30/25 Date

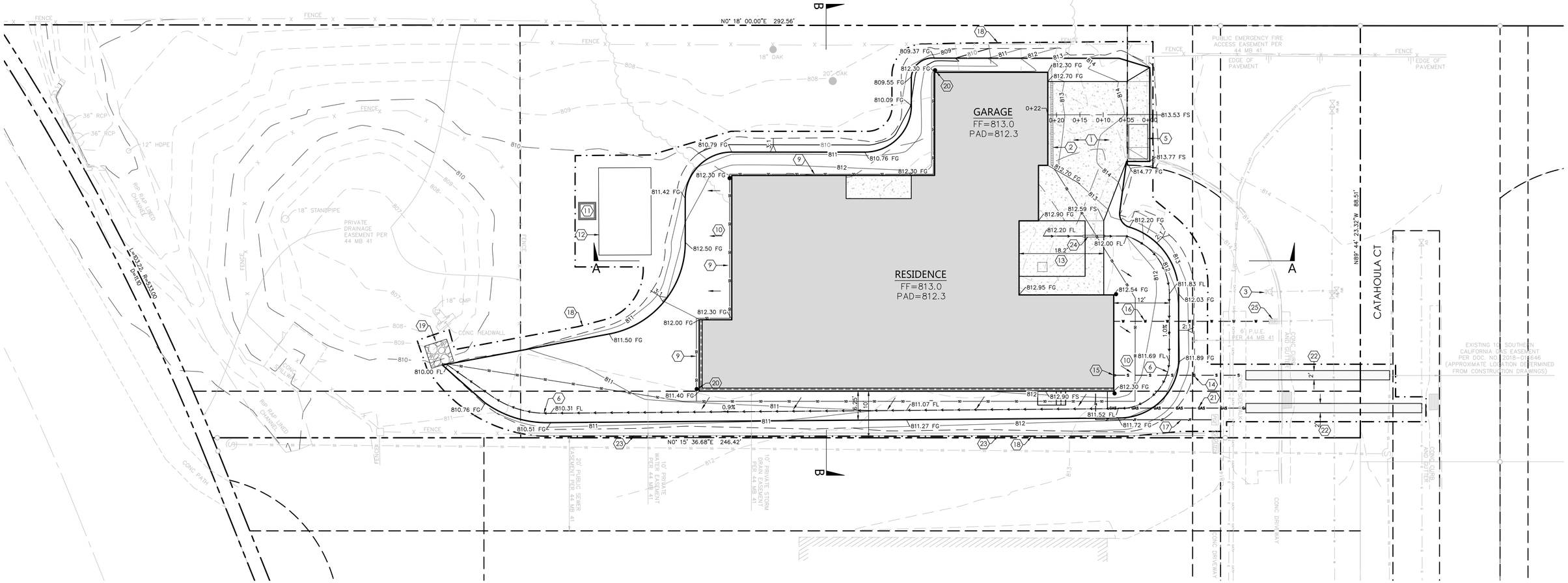
Revisions This Sheet:
1
2
3
4
5
6

Roberts Engineering, Inc.

Harrod, 1908 Catahoula Court, Paso Robles

Notes & Details

Design/Drawn	City Plan Checker	Approved for City Requirements
TR / SEB	.	Development Services Engineer Date
Job # 24-29	City W.O. No. .	2/26/2025 3:24 P.M. Timothy P. Roberts, RCE 35366 exp 09/30/25 Date
California Coordinates (CCS83, Zone 5) 5770669 E 2429300 N	.	City Road # .



CONSTRUCTION NOTES

THE FOOTPRINT OF THE RESIDENCE SHOWN HEREON IS BASED UPON A GRAPHIC EXHIBIT PROVIDED BY THE OWNER. WHILE ASSUMED ACCURATE FOR PURPOSES OF THIS PLAN, IT IS NOT INTENDED FOR PRECISE BUILDING LAYOUT.

1. CONSTRUCT DOWNWARD DRIVEWAY PER CITY STD. M-4, SEE SHEET 4 FOR DETAIL, 4" PCC DRIVEWAY OVER 4" CLASS II AB COMPACTED TO 95%, OVER 12" SCARIFIED NATIVE COMPACTED TO 90%, WIDTH PER PLAN. SEE ARCHITECTURAL PLAN FOR FINISH.
2. INSTALL TRENCH DRAIN PER DETAIL ON SHEET 4.
3. EXISTING FIRE HYDRANT.
4. NOT USED.
5. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE PER DETAIL, SEE SHEET 2.
6. CONSTRUCT EARTH VEGETATED EARTHEN SWALE - (36" WIDE BY 6" DEEP), SEE DETAIL ON SHEET 4.
7. INSTALL STRAW WATTLES, TYPICAL.
8. NOT USED.
9. INSTALL 4" SCH 40 PVC DRAINAGE PIPE.
10. GRADE TO DRAIN AWAY FROM PROPOSED STRUCTURE AT S=5% FOR 10 FEET MIN. TYPICAL.
11. CONSTRUCT CONCRETE WASHOUT STRUCTURE PER DETAIL SHEET 2.
12. CONSTRUCT TEMPORARY MATERIAL STORAGE AREA PER DETAIL SHEET 2
    INSTALL 10 LF - 4" PVC PIPE AT S = 1% ±.
13. CONSTRUCT 4" PCC FLATWORK, S=2.0% MIN. SEE ARCHITECTURAL PLAN FOR FINISH.
14. INSTALL 4" PVC SEWER LATERAL AT S=2% MIN PER CITY STANDARD F-5, SEE DETAIL ON SHEET 4.
15. INSTALL 4" SEWER CLEAN OUT.
16. INSTALL SCH 40 PVC WATER SERVICE FROM EXISTING WATER METER, LINE SIZE PER FIRE SPRINKLER DESIGN.
17. CONSTRUCT ELECTRICAL AND COMMUNICATION SERVICE PER PG&E JOINT SERVICE TRENCH STANDARDS, SEE DETAIL ON SHEET 4.
18. AREA OF DISTURBANCE, SEE SITE STATISTICS, SHEET 1.
19. CONSTRUCT ROCK RIP RAP ENERGY DISSIPATER PER CALTRANS STANDARD 72. USE BACKING NO. 3 TYPE ROCK, TYPE B PLACEMENT OVER GEOTEXTILE FABRIC. W = 5', L = 5', D = 0.75. SEE DETAIL ON SHEET 4.
20. DOWNSPOUT TYPICAL. CONNECT THE DOWNSPOUT TO THE 4" SCH 40 DRAINAGE PIPE.
21. INSTALL GAS SERVICE PER SO CAL GAS TRENCHING STANDARDS.
22. SAWCUT AND REPAIR FOR UTILITY TRENCHES PER CITY STANDARD U-2.
23. EXISTING FENCE AND TIMBER RETAINING WALL DESIGN BY OTHERS.
24. INSTALL 4" SCH 40 PVC DRAINAGE PIPE.
25. INSTALL NEW 1" WATER METER PER CITY STANDARD G-2.

0' 10' 20'

SCALE:1"= 10'

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY P. ROBERTS
35366
Exp. 9/30/25
CIVIL
STATE OF CALIFORNIA

Roberts Engineering
Timothy P. Roberts
Civil Engineer - RCE 35366
2015 Vista de la Vina
Templeton, CA 93465
Phone (805) 239-0664
Fax (805) 238-6148
Email tim@robertsenginc.com
Website robertsenginc.com

Record Drawings

Timothy P. Roberts, RCE 35366 exp 09/30/25 Date

Revisions This Sheet:
1
2
3
4
5
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Roberts Engineering, Inc.

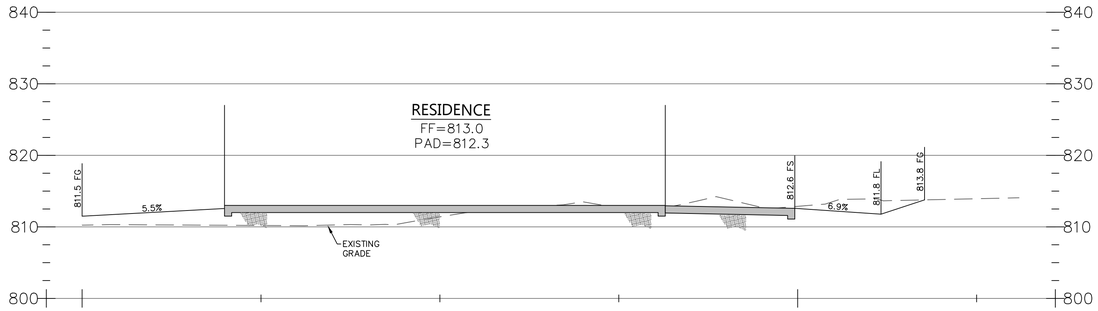
Harrod, 1908 Catahoula Court, Paso Robles

Grading, Drainage, and Erosion Control Plan

Design/Drawn	City Plan Checker	Approved for City Requirements
TR / SEB	.	Development Services Engineer Date
Job # 24-29	City W.O. No. .	2/26/2025 3:24 PM Timothy P. Roberts, RCE 35366 exp 09/30/25 Date
California Coordinates (CCS83, Zone 5) 5770669 E 2429300 N	.	City Road # .

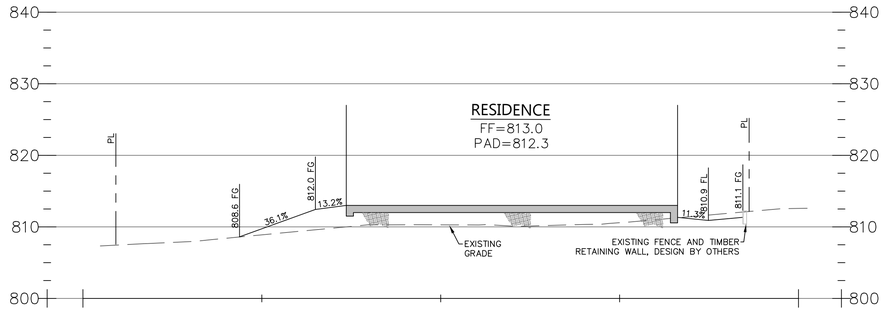
3 of 4

2/26/2025 3:24 PM



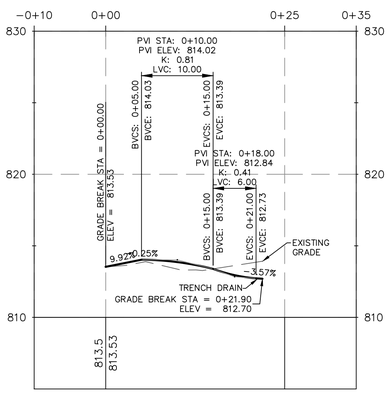
SECTION A-A

HORIZONTAL AND VERTICAL SCALE: 1"=10'



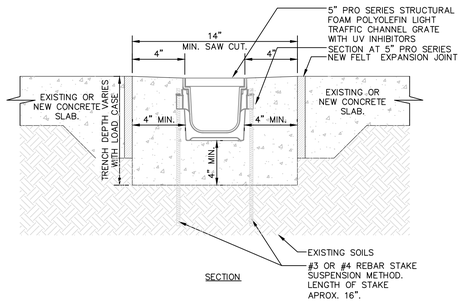
SECTION B-B

HORIZONTAL AND VERTICAL SCALE: 1"=10'



DRIVEWAY PROFILE

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

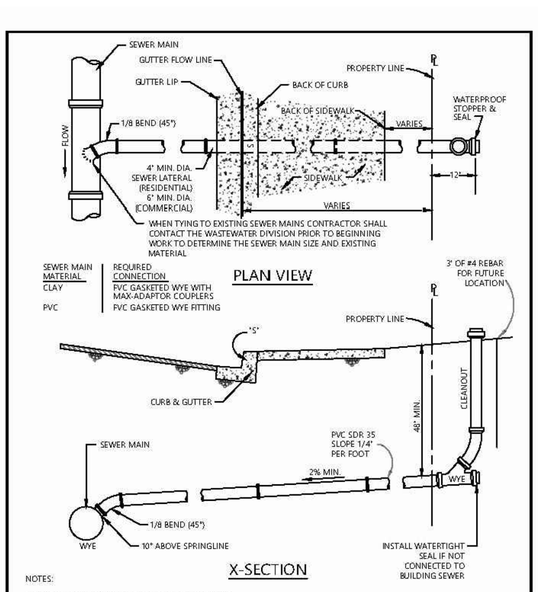


NOTES:

1. CHANNELS TO BE INSTALLED WITH GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

NDS PRO SERIES CHANNEL DRAIN SYSTEM

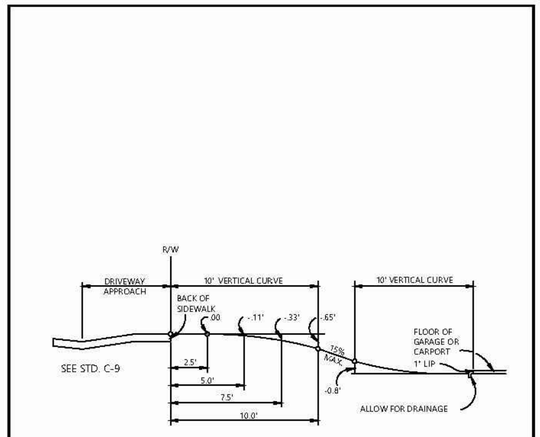
5" PRO SERIES INSTALLATION DETAIL - LOAD CLASS 'A' & 'B' - 4" ENCASEMENT REBAR SUSPENSION



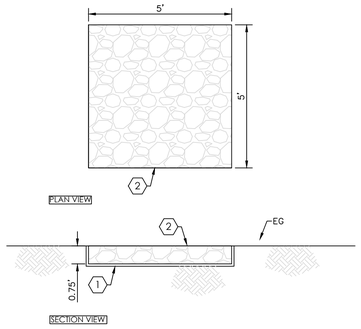
NOTES:

1. "S" SHALL BE MARKED ON CURB FACE OVER LATERAL
2. "S" SHALL BE STAMPED INTO NEW CONCRETE AND SHALL BE CHISELED INTO EXISTING CONCRETE
3. THE "S" SHALL BE NOT LESS THAN 3" HIGH, 2" WIDE AND 3/16" DEEP
4. MAINTAIN MINIMUM 10' HORIZONTAL SEPARATION FROM WATER SERVICE AND 18" VERTICAL SEPARATION UNDER WATER MAINS AT PERPENDICULAR CROSSINGS. DO NOT PROCEED WITH INSTALLATION AND NOTIFY CITY INSPECTOR IF HORIZONTAL AND VERTICAL SEPARATION CAN NOT BE MAINTAINED.
5. SEWER LATERALS SHALL NOT BE LOCATED IN DRIVEWAYS

CITY OF PASO ROBLES	SEWER LATERAL LOCATION	REVISIONS DATE / BY	DWG-NO.
ENGINEERING DIVISION			F-5
DRAWN BY.. KF DESIGNED BY.. DA			



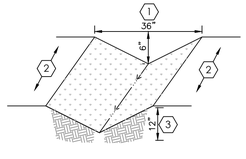
CITY OF PASO ROBLES	STANDARD DOWNWARD DRIVEWAY	REVISIONS DATE / BY	DWG-NO.
ENGINEERING DIVISION			M-4
DRAWN BY..KGE DESIGNED BY.. JF			



1. EROSION CONTROL FABRIC, US 640 OR APPROVED EQUAL.
2. USE BACKING NO. 3 TYPE ROCK, TYPE B PLACEMENT OVER GEOTEXTILE FABRIC.

STORM WATER ENERGY DISSIPATER DETAIL

NTS



1. 3' WIDE X 6" DEEP VEGETATED SWALE. HYDROSEED OR HAND BROAD CAST SEED MIX PER EROSION CONTROL NOTE 9 ON SHEET 2.
2. EXISTING OR FINISHED GRADE, (PER PLAN).
3. 12" OF CLEAN NATIVE SUBGRADE TO BE COMPACTED TO 90%.

VEGETATED EARTHEN SWALE DETAIL

NTS

3/26/2025 3:24 PM

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY P. ROBERTS
35366
Exp. 9/30/25
CIVIL
STATE OF CALIFORNIA

Roberts Engineering
Timothy P. Roberts
Civil Engineer - RCE 35366
2015 Vista de la Vina
Templeton, CA 93465
Phone (805) 239-0664
Fax (805) 238-6148
Email tim@robertsenginc.com
Website robertsenginc.com

Record Drawings

Timothy P. Roberts, RCE 35366 exp 09/30/25 Date

Revisions This Sheet:
1
2
3
4
5
6

Roberts Engineering, Inc.

Harrod, 1908 Catahoula Court, Paso Robles

Driveway Profile, Sections, and Details

Design/Drawn	City Plan Checker	Approved for City Requirements
TR / SEB	.	Development Services Engineer Date
Job # 24-29	City W.O. No. .	2/26/2025 3:24 PM Timothy P. Roberts, RCE 35366 exp 09/30/25 Date
California Coordinates (CCS83, Zone 5) 5770669 E 2429300 N	.	City Road # .

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

Project Name: Harrod Homes — **Calculation Date/Time:** 2024-05-13T08:34:12-07:00 — **(Page 1 of 14)**

Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

GENERAL INFORMATION

01	Project Name	Harrod Homes			
02	Run Title	Title 24 Analysis			
03	Project Location	Lot 5 Catahoula Court			
04	City	Paso Robles	05	Standards Version	2022
06	Zip code	93446	07	Software Version	EnergyPro 9.2
08	Climate Zone	4	09	Front Orientation (deg/ Cardinal)	0
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	5
14	Addition Cond. Floor Area (ft²)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U-factor	0.29
18	Total Cond. Floor Area (ft²)	3118	19	Glazing Percentage (%)	15.99%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

COMPLIANCE RESULTS

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

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

Project Name: Harrod Homes — **Calculation Date/Time:** 2024-05-13T08:34:12-07:00 — **(Page 2 of 14)**

Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	39.4	45.5	34.9			
Proposed Design	29	44	34.1	10.4	1.5	0.8

RESULT[3]: PASS

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 3.51 kWdc
- PV System resized to 3.51 kWdc (a factor of 3.514) to achieve 'Standard Design PV' PV scaling

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	3.92	17.36	1.51	11.46	2.41	5.9
Space Cooling	0.16	13.02	0.26	19.73	-0.1	-6.71
IAQ Ventilation	0.33	3.55	0.33	3.55	0	0
Water Heating	1.13	12.47	0.89	10.15	0.24	2.32
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	5.54	46.4	2.99	44.89	2.55	1.51
Photovoltaics	-0.99	-33.79	-0.99	-33.81		
Battery			0	0		
Flexibility						
Indoor Lighting	0.69	6.75	0.69	6.75		
Appl. & Cooking	1.91	19.92	1.91	19.91		
Plug Loads	2.34	24.36	2.34	24.36		
Outdoor Lighting	0.18	1.65	0.18	1.65		
TOTAL COMPLIANCE	9.67	65.29	7.12	63.75		

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	13.49	10.22	3.27	24.24
Net EUI[2]	7.4	4.13	3.27	44.19

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
3.51	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Window overhangs and/or fins
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Fan Efficacy Watts/CFM
- Verified HSPF2
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)
- Duct leakage testing

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Harrod Homes	3118	1	5	2	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status
Living Zone	Conditioned	HVAC1	2573	10	DHW Sys 1	New
Suite Two	Conditioned	HVAC Suite Zone2	545	10	DHW Sys 1	New

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
North Wall	Living Zone	R-21 Wall	0	Front	151	85.5	90
South Wall	Living Zone	R-21 Wall	180	Back	463	127	90
East Wall	Living Zone	R-21 Wall	90	Left	560	35	90
West Wall	Living Zone	R-21 Wall	270	Right	443	220	90
North Wall 2	Suite Two	R-21 Wall	0	Front	208	54	90
East Wall 2	Suite Two	R-21 Wall	90	Left	330	49	90
West Wall 2	Suite Two	R-21 Wall	270	Right	204	0	90
Interior Surface	Living Zone>>__Garage__	R-21 Wall1	n/a	n/a	181	0	n/a
Interior Surface 2	Suite Two>>Living Zone	R-0 Wall1	n/a	n/a	208	0	n/a
Roof	Living Zone	R-38 Roof Attic	n/a	n/a	2573	n/a	n/a
Roof 2	Suite Two	R-38 Roof Attic	n/a	n/a	545	n/a	n/a
Roof 3	__Garage__	R-0 Roof Attic	n/a	n/a	745	n/a	n/a
North Wall 3	__Garage__	R-0 Wall	0	Front	311	192	90
South Wall 2	__Garage__	R-0 Wall	180	Back	222	20.4	90
East Wall 3	__Garage__	R-0 Wall	90	Left	62	0	90
West Wall 3	__Garage__	R-0 Wall	270	Right	243	25	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic __Garage__	Attic Garage Roof Cons	Ventilated	6	0.1	0.85	Yes	No
Attic Living Zone	Attic RoofLiving Zone	Ventilated	6	0.1	0.85	Yes	No
Attic Suite Two	Attic RoofSuite Two	Ventilated	6	0.1	0.85	Yes	No

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window	Window	North Wall	Front	0			1	27.5	0.29	NFRC	0.21	NFRC	Bug Screen
Window 2	Window	North Wall	Front	0			1	10	0.29	NFRC	0.21	NFRC	Bug Screen
Window 3	Window	South Wall	Back	180			1	15	0.29	NFRC	0.21	NFRC	Bug Screen
Window 4	Window	South Wall	Back	180			1	15	0.29	NFRC	0.21	NFRC	Bug Screen
Window 5	Window	South Wall	Back	180			1	25	0.29	NFRC	0.21	NFRC	Bug Screen
SLGD	Window	South Wall	Back	180			1	72	0.29	NFRC	0.21	NFRC	Bug Screen
Window 6	Window	East Wall	Left	90			1	10	0.29	NFRC	0.21	NFRC	Bug Screen
Window 7	Window	East Wall	Left	90			1	25	0.29	NFRC	0.21	NFRC	Bug Screen
Window 8	Window	West Wall	Right	270			1	40	0.29	NFRC	0.21	NFRC	Bug Screen
Window 9	Window	West Wall	Right	270			1	72	0.29	NFRC	0.21	NFRC	Bug Screen
SLGD 2	Window	West Wall	Right	270	12	8	1	96	0.29	NFRC	0.21	NFRC	Bug Screen
Window 10	Window	West Wall	Right	270			1	12	0.29	NFRC	0.21	NFRC	Bug Screen
Window 11	Window	North Wall 2	Front	0			1	18	0.29	NFRC	0.21	NFRC	Bug Screen
Window 12	Window	North Wall 2	Front	0			1	18	0.29	NFRC	0.21	NFRC	Bug Screen
Window 13	Window	North Wall 2	Front	0			1	18	0.29	NFRC	0.21	NFRC	Bug Screen
Window 14	Window	East Wall 2	Left	90			1	25	0.29	NFRC	0.21	NFRC	Bug Screen
Window 15	Window	West Wall 3	Right	270			1	25	0.29	NFRC	0.21	NFRC	Bug Screen

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
Door	North Wall	24	0.5
Door 2	North Wall	24	0.5
Door 3	East Wall 2	24	0.2
Door 4	North Wall 3	64	0.2
Door 5	North Wall 3	128	0.2
Door 6	South Wall 2	20.4	0.5

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Window	Overhang					Left Fin				Right Fin			
	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
SLGD 2	6	0.1	6	6	0	0	0	0	0	0	0	0	0

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	Living Zone	2573	1	none	0	80%	No
Slab-on-Grade 2	Suite Two	545	0.1	none	0	80%	No
Slab-on-Grade 3	__Garage__	745	1	none	0	0%	No

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

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OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
R-21 Wall1	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.064	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Other Side Finish: Gypsum Board
R-0 Wall1	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
Attic Garage Roof Cons	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Attic RoofLiving Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Attic RoofSuite Two	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
R-0 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.481	Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board

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OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

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

WATER HEATING SYSTEMS

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

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	Rheem	PROPH50 T2 RH350 DC (50 gal)	TankZone	__Garage__	__Garage__

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
HVAC1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback
HVAC Suite Zone2	Heat pump heating cooling	Heat Pump System 2	1	Heat Pump System 2	1	n/a	n/a	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Central split HP	1	HSPF2	9.4	66000	41500	EER2SEER2	19.5	10.8	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump
Heat Pump System 2	VCHP-ductless	1	HSPF2	10	28400	25000	EER2SEER2	18	12.5	Zonally Controlled	Single Speed	Heat Pump System 2-hers-htpump

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Not Required	Required	No	Yes	Yes	Yes
Heat Pump System 2-hers-htpump	Not Required	0	Required	Required	Yes	Yes	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 2	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

HVAC - DISTRIBUTION SYSTEMS

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

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

HVAC DISTRIBUTION - HERS VERIFICATION

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

HVAC - FAN SYSTEMS

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

HVAC FAN SYSTEMS - HERS VERIFICATION

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

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	134	0.35	Exhaust	No	n/a / n/a	No	Yes	

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

Project Name: Harrod Homes — **Calculation Date/Time:** 2024-05-13T08:34:12-07:00 — **(Page 14 of 14)**

Calculation Description: Title 24 Analysis — **Input File Name:** Harrod Catahoula Ct.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Walter Jackson	Documentation Author Signature: *Walter Jackson*
Company: Duct Dynasty	Signature Date: 2024-05-13 08:58:48
Address: 610 10th St. Suite A	CEA/ HERS Certification Identification (If applicable): CC2017090
City/State/Zip: Paso Robles, CA 93446	Phone: 805-423-0436

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: dana humphrey	Responsible Designer Signature: *dana humphrey*
Company: DH DESIGNS	Date Signed: 2024-05-13 09:02:17
Address: 610 10th st, suite a	License: na
City/State/Zip: Paso Robles, CA 93446	Phone: 805-975-3071

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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DUCT DYNASTY
Title 24 | HERS Rating | Duct Plans & Testing
ID# CC2006321

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----
FILE NAME T24 1.1 TITLE 24 ENERGY COMPLIANCE.DWG
DRAWN BY WJJ
DATE 5/13/2024 12:53 PM

SHEET TITLE:

TITLE 24 ENERGY COMPLIANCE

SHEET NUMBER:

T24 1.1

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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.

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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 flexible 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 tosunlight, 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. *

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. *
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, *or* a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Harrod Homes Inc	☑ Single Family ☐ Multi Family	☐ Addition Alone ☐ Existing+ Addition/Alteration	5/13/2024

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
Lot 5 Catahoula Court Paso Robles	CA Climate Zone 04	3,118	n/a	1

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Wall	Wood Framed	R 20	1,970		New
Door	Opaque Door	- no insulation	48		New
Slab	Unheated Slab-on-Grade	- no insulation	3,118	Perim = 1'	New
Roof	Wood Framed Attic	R 38	3,118		New
Demising	Wood Framed	- no insulation	208		New
Door	Opaque Door	R-5	24		New

FENESTRATION Total Area: 499 Glazing Percentage: 16.0% New/Altered Average U-Factor: 0.29

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (N)	91.5	0.290	0.21	none	none	N/A	New
Rear (S)	127.0	0.290	0.21	none	none	N/A	New
Left (E)	60.0	0.290	0.21	none	none	N/A	New
Right (W)	124.0	0.290	0.21	none	none	N/A	New
Right (W)	96.0	0.290	0.21	6.0	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Electric Heat Pump	9.40 HSPF2	Split Heat Pump	19.5 SEER2	Setback	New
1	Electric Heat Pump	10.00 HSPF2	Split Heat Pump	18.0 SEER2	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
HVAC	Ducted	Ducted	Attic	8.0	New
HVAC Suite Zone	Ductless / No Fan	Ductless	n/a	n/a	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	50	3.20	Standard	New

EnergyPro 9.2 by EnergySoft User Number: 4327 ID: Page 17 of 32

ROOM LOAD SUMMARY

Project Name: Harrod Homes Inc — Date: 5/13/2024
System Name: HVAC — Floor Area: 2,573

ROOM LOAD SUMMARY

			ROOM COOLING PEAK			COIL COOLING PEAK			COIL HTG. PEAK	
Zone Name	Room Name	Mult.	CFM	Sensible	Latent	CFM	Sensible	Latent	CFM	Sensible
Living Zone	Living Zone	1	1,032	21,055	60	1,032	21,055	60	623	23,702
		PAGE TOTAL				1,032	21,055	60	623	23,702
		TOTAL *				1,032	21,055	60	623	23,702

* Total includes ventilation load for zonal systems.

ROOM LOAD SUMMARY

Project Name: Harrod Homes Inc — Date: 5/13/2024
System Name: HVAC Suite Zone — Floor Area: 545

ROOM LOAD SUMMARY

			ROOM COOLING PEAK			COIL COOLING PEAK			COIL HTG. PEAK	
Zone Name	Room Name	Mult.	CFM	Sensible	Latent	CFM	Sensible	Latent	CFM	Sensible
Suite Two	Suite Two	1	217	4,563	13	217	4,563	13	163	6,340
		PAGE TOTAL				217	4,563	13	163	6,340
		TOTAL *				217	4,563	13	163	6,340

* Total includes ventilation load for zonal systems.

ROOM HEATING PEAK LOADS

Project Name: Harrod Homes Inc — Date: 5/13/2024

ROOM INFORMATION		DESIGN CONDITIONS	
Room Name	Living Zone	Time of Peak	Jan 1 AM
Floor Area	2,573.00 ft²	Outdoor Dry Bulb Temperature	16 °F
Indoor Dry Bulb Temperature	68 °F		

Conduction	Area		U-Value		ΔT °F		Btu/hr
R-21 Wall	1,149.5	x	0.0725	x	52	=	4,332
Wood Door	48.0	x	0.5000	x	52	=	1,248
Residential Cooling	419.5	x	0.2900	x	52	=	6,326
Slab-On-Grade	perim = 1.0	x	0.7300	x	52	=	38
R-38 Roof Attic	2,573.0	x	0.0390	x	52	=	5,212
*R-21 Wall	181.0	x	0.0725	x	0	=	0

Items shown with an asterisk (*) denote conduction through an interior surface to another room — Page Total: 17,156

Infiltration: [1.00 (Schedule Fraction) x 1.052 (Air Sensible) x 2,573 (Area) x 10.00 (Ceiling Height) x 0.279 (ACH) / 60] x 52 (ΔT) = 6,547

TOTAL HOURLY HEAT LOSS FOR ROOM 23,702

ROOM HEATING PEAK LOADS

Project Name: Harrod Homes Inc — Date: 5/13/2024

ROOM INFORMATION		DESIGN CONDITIONS	
Room Name	Suite Two	Time of Peak	Jan 1 AM
Floor Area	545.00 ft²	Outdoor Dry Bulb Temperature	16 °F
Indoor Dry Bulb Temperature	68 °F		

Conduction	Area		U-Value		ΔT °F		Btu/hr
R-21 Wall	639.0	x	0.0725	x	52	=	2,408
Residential Cooling	79.0	x	0.2900	x	52	=	1,191
*R-0 Wall	208.0	x	0.4051	x	0	=	0
Insulated Door	24.0	x	0.2000	x	52	=	250
R-38 Roof Attic	545.0	x	0.0390	x	52	=	1,104

Items shown with an asterisk (*) denote conduction through an interior surface to another room — Page Total: 4,953

Infiltration: [1.00 (Schedule Fraction) x 1.052 (Air Sensible) x 545 (Area) x 10.00 (Ceiling Height) x 0.279 (ACH) / 60] x 52 (ΔT) = 1,387

TOTAL HOURLY HEAT LOSS FOR ROOM 6,340

F:\CAD\Harrod Homes\Harrod Catahoula\Catahoula Court\Sheets\T24 1.2 TITLE 24 MANDATORY MEASURES.dwg Walter Jackson 5/13/2024 12:45:33 PM

ID# CC206321

DUCT DYNASTY
Title 24 | HERS Rating | Duct Plans & Testing

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----
FILE NAME T24 1.2 TITLE 24 MANDATORY MEASURES.DWG
DRAWN BY WJJ
DATE 5/13/2024 12:53 PM

SHEET TITLE:
TITLE 24 MANDATORY MEASURES

SHEET NUMBER:
T24 1.2

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

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

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

SECTION 302 MIXED OCCUPANCY BUILDINGS

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

Exceptions:
1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. [HCD] For purposes of *CALGreen*, live/work units, complying with Section 419 of the *California Building Code*, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

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

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

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

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

4.106 SITE DEVELOPMENT

4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

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

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code,* Article 625.

Exceptions:
1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
   1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power.
   1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code*.

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

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exceptions:

1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.

2.When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

Notes:

a.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.

Notes:

a.Construction documents shall show locations of future EV spaces.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

3.EV Chargers. Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).
Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

4.106.4.2.2.1.1 Location.
EVCS shall comply with at least one of the following options:

1.The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2.The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.

4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.
The charging spaces shall be designed to comply with the following:

1.The minimum length of each EV space shall be 18 feet (5486 mm).

2.The minimum width of each EV space shall be 9 feet (2743 mm).

3.One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).

a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.2.1.3 Accessible EV spaces.
In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

4.106.4.2.3 EV space requirements.
1.Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/ or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

2.Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

4.106.4.2.4 Identification.
The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

4.106.4.2.5 Electric Vehicle Ready Space Signage.
Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.
When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.

Notes:

1.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

2.There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

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

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

4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

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

Note: A hand-held shower shall be considered a showerhead.

4.303.1.4 Faucets.

4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle.

4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

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

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

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

TABLE H-2

STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019

PRODUCT CLASS [spray force in ounce force (ozf)]	MAXIMUM FLOW RATE (gpm)
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

Title 20 Section 1605.3 (h)(4)(A): Commercial prerinse spray values manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)]

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.
Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code*.

4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

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

NOTES:

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

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

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

4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

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

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4..

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.410 BUILDING MAINTENANCE AND OPERATION

4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
   b. Roof and yard drainage, including gutters and downspouts.
   c. Space conditioning systems, including condensers and air filters.
   d. Landscape irrigation systems.
   e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspections verifications required by the enforcing agency or this code.
11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
12. Information and/or drawings identifying the location of grab bar reinforcements.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

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

SECTION 4.502 DEFINITIONS

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

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

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

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

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PLAN PREPARED FOR:
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REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. —
FILE NAME GC-2436.DWG
DRAWN BY DJH
DATE 1/3/2025 11:47 AM
SHEET TITLE:
GREEN CODE SHEET 1
SHEET NUMBER:
GC-1

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O^3/g ROC).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).
Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

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

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

4.503 FIREPLACES

4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

4.504 POLLUTANT CONTROL

4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter the system.

4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section.

4.504.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), except for aerosol products, as specified in Subsection 2 below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with section 94507.

4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.

4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification.
2. Field verification of on-site product containers.

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

(Less Water and Less Exempt Compounds in Grams per Liter)

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

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

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

TABLE 4.504.2 - SEALANT VOC LIMIT

(Less Water and Less Exempt Compounds in Grams per Liter)

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

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

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

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

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS

2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

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

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

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

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

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

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

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

See California Department of Public Health's website for certification programs and testing labs.

hhttps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
5. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL

4.505.1 General. Buildings shall meet or exceed the provisions of the *California Building Standards Code*.

4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or contact-type moisture meter.Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

4.506 INDOOR AIR QUALITY AND EXHAUST

4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
   a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the *California Energy Code.*

4.507 ENVIRONMENTAL COMFORT

4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are acceptable.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

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

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

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

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

Notes:

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

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

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

703 VERIFICATIONS

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

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PLAN PREPARED FOR:
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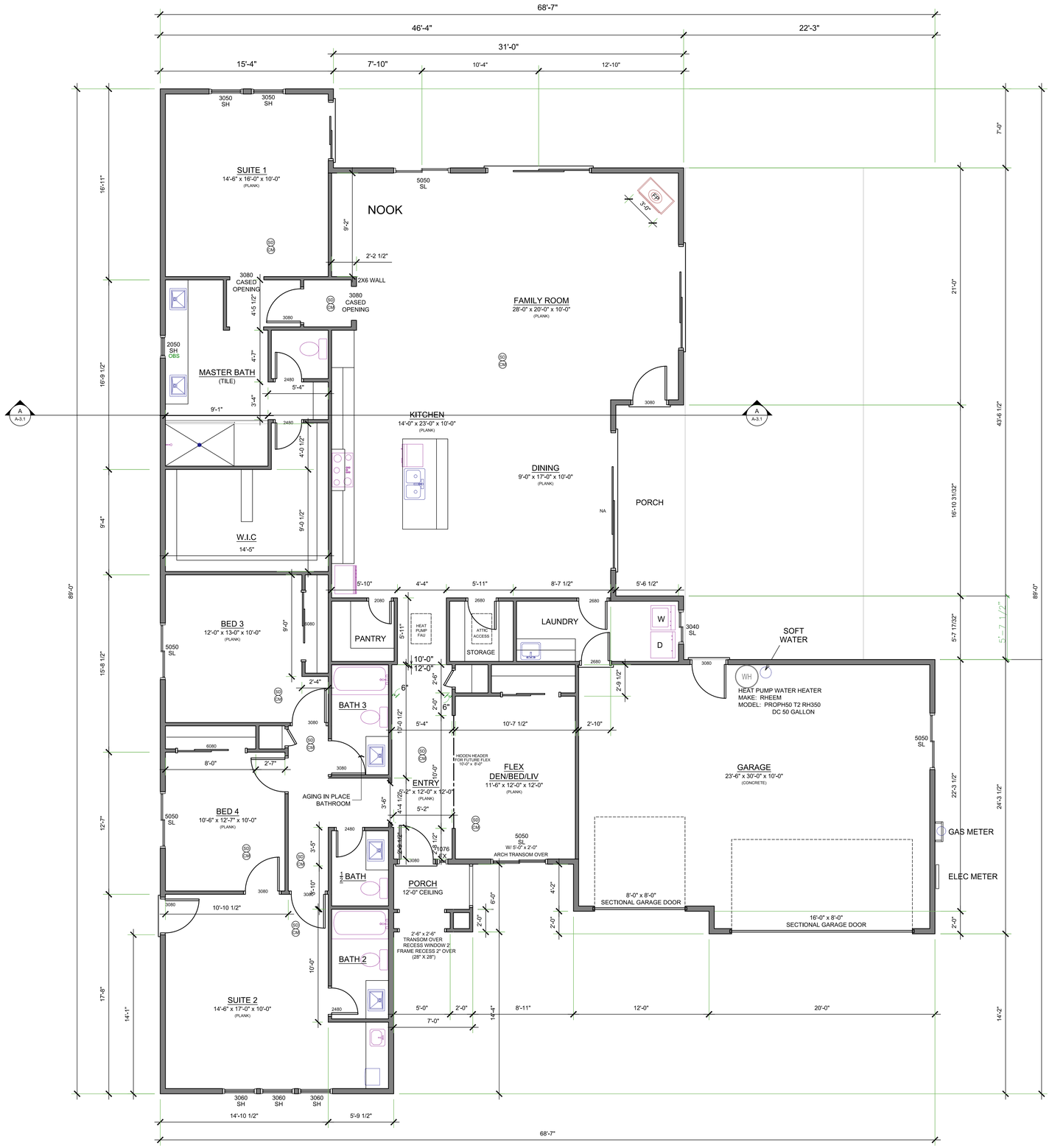
REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. --
FILE NAME GC-2436.DWG
DRAWN BY DJH
DATE 1/3/2025 11:48 AM

SHEET TITLE:
GREEN CODE SHEET 2

SHEET NUMBER:
GC-2



FLOOR PLAN

UNLESS NOTED: 1/4"=1'

ALL WALLS / LIDS 10' TALL

ALL INTERIOR DOORS 8' TALL

FIREPLACE NAPOLEON ALTITUDE-X 42" DIRECT VENT

AGING IN PLACE REQUIREMENTS

R327.1 AGING-IN-PLACE DESIGN AND FALL PREVENTION. NEWLY CONSTRUCTED DWELLINGS SUBJECT TO THE REQUIREMENTS OF THIS CODE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTIONS R327.1.1 THROUGH R327.1.4.

R327.1.1 REINFORCEMENT FOR GRAB BARS. AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH THIS SECTION. WHERE THERE IS NO BATHROOM ON THE ENTRY LEVEL, AT LEAST ONE BATHROOM ON THE SECOND OR THIRD FLOOR OF THE DWELLING SHALL COMPLY WITH THIS SECTION.

1. REINFORCEMENT SHALL BE SOLID LUMBER OR OTHER CONSTRUCTION MATERIALS APPROVED BY THE ENFORCING AGENCY.
2. REINFORCEMENT SHALL NOT BE LESS THAN 2 BY 8 INCH (51 MM BY 203 MM) NOMINAL LUMBER, [11/2 INCH BY 71/4 INCH (38 MM BY 184 MM) ACTUAL DIMENSION] OR OTHER CONSTRUCTION MATERIAL PROVIDING EQUAL HEIGHT AND LOAD CAPACITY. REINFORCEMENT SHALL BE LOCATED BETWEEN 32 INCHES (812.8 MM) AND 391/4 INCHES (997 MM) ABOVE THE FINISHED FLOOR FLUSH WITH THE WALL FRAMING.
3. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ONE SIDE WALL AND THE BACK WALL.
4. SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED.
5. BATHTUB AND COMBINATION BATHTUB/SHOWER REINFORCEMENT SHALL BE CONTINUOUS ON EACH END OF THE BATHTUB AND THE BACK WALL. ADDITIONALLY, BACK WALL REINFORCEMENT FOR A LOWER GRAB BAR SHALL BE PROVIDED WITH THE BOTTOM EDGE LOCATED NO MORE THAN 6 INCHES (152.4 MM) ABOVE THE BATHTUB RIM.

EXCEPTIONS:

1. WHERE THE WATER CLOSET IS NOT PLACED ADJACENT TO A SIDE WALL CAPABLE OF ACCOMMODATING A GRAB BAR, THE BATHROOM SHALL HAVE PROVISIONS FOR INSTALLATION OF FLOOR-MOUNTED, FOLDAWAY OR SIMILAR ALTERNATE GRAB BAR REINFORCEMENTS APPROVED BY THE ENFORCING AGENCY.
2. REINFORCEMENT SHALL NOT BE REQUIRED IN WALL FRAMING FOR PRE-FABRICATED SHOWER ENCLOSURES AND BATHTUB WALL PANELS WITH INTEGRAL FACTORY-INSTALLED GRAB BARS OR WHEN FACTORY-INSTALLED REINFORCEMENT FOR GRAB BARS IS PROVIDED.
3. SHOWER ENCLOSURES THAT DO NOT PERMIT INSTALLATION OF REINFORCEMENT AND/OR GRAB BARS SHALL BE PERMITTED, PROVIDED REINFORCEMENT FOR INSTALLATION OF FLOOR-MOUNTED GRAB BARS OR AN ALTERNATE METHOD IS APPROVED BY THE ENFORCING AGENCY.
4. BATHTUBS WITH NO SURROUNDING WALLS, OR WHERE WALL PANELS DO NOT PERMIT THE INSTALLATION OF REINFORCEMENT SHALL BE PERMITTED, PROVIDED REINFORCEMENT FOR INSTALLATION OF FLOOR-MOUNTED GRAB BARS ADJACENT TO THE BATHTUB OR AN ALTERNATE METHOD IS APPROVED BY THE ENFORCING AGENCY.
5. REINFORCEMENT OF FLOORS SHALL NOT BE REQUIRED FOR BATHTUBS AND WATER CLOSETS INSTALLED ON CONCRETE SLAB FLOORS.

R327.1.1.1 DOCUMENTATION FOR GRAB BAR REINFORCEMENT. INFORMATION AND/OR DRAWINGS IDENTIFYING THE LOCATION OF GRAB BAR REINFORCEMENT SHALL BE PLACED IN THE OPERATION AND MAINTENANCE MANUAL IN ACCORDANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS CODE, CHAPTER 4, DIVISION 4.4.

R327.1.2 ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS. ELECTRICAL RECEPTACLE OUTLETS, SWITCHES AND CONTROLS (INCLUDING CONTROLS FOR HEATING, VENTILATION AND AIR CONDITIONING) INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48 INCHES (1219.2 MM) MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15 INCHES (381 MM) MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR.

EXCEPTIONS:

1. DEDICATED RECEPTACLE OUTLETS; FLOOR RECEPTACLE OUTLETS; CONTROLS MOUNTED ON CEILING FANS AND CEILING LIGHTS; AND CONTROLS LOCATED ON APPLIANCES.
2. RECEPTACLE OUTLETS REQUIRED BY THE CALIFORNIA ELECTRICAL CODE ON A WALL SPACE WHERE THE DISTANCE BETWEEN THE FINISHED FLOOR AND A BUILT-IN FEATURE ABOVE THE FINISH FLOOR, SUCH AS A WINDOW, IS LESS THAN 15 INCHES (381 MM).

R327.1.3 INTERIOR DOORS. EFFECTIVE JULY 1, 2024, AT LEAST ONE BATHROOM AND ONE BEDROOM ON THE ENTRY LEVEL SHALL PROVIDE A DOORWAY WITH A NET CLEAR OPENING OF NOT LESS THAN 32 INCHES (812.8 MM), MEASURED WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM THE CLOSED POSITION; OR, IN THE CASE OF A TWO- OR THREE-STORY SINGLE FAMILY DWELLING, ON THE SECOND OR THIRD FLOOR OF THE DWELLING IF A BATHROOM OR BEDROOM IS NOT LOCATED ON THE ENTRY LEVEL.

R327.1.4 DOORBELL BUTTONS. DOORBELL BUTTONS OR CONTROLS, WHEN INSTALLED, SHALL NOT EXCEED 48 INCHES(1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. WHERE DOORBELL BUTTONS INTEGRATED WITH OTHER FEATURES ARE REQUIRED TO BE INSTALLED ABOVE 48 INCHES (1219.2 MM) MEASURED FROM THE EXTERIOR FLOOR OR LANDING, A STANDARD DOORBELL BUTTON OR CONTROL SHALL ALSO BE PROVIDED AT A HEIGHT NOT EXCEEDING 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON OR CONTROL.

WALL LEGEND

NEW 2x6 D.F, #2 STUDS @ 16" O.C.

LEGEND

REF/FREEZE — REFRIGERATOR & FREEZER
RANGE W/ OVEN & HOOD
DW — UNDER COUNTER DISHWASHER
DBL OVEN — DOUBLE OVEN
MICRO — BUILT IN MICROWAVE
SINK W/ DISPOSAL
LAVATORY
WATER CLOSET
PREP OR LAUNDRY SINK
BUILT-IN CURBLESS SHOWER
FREE STANDING TUB
TRASH — TRASH DRAWER
DRYER
WASHER
FAU — FORCED AIR UNIT IN ATTIC
22 X 30 ATTIC ACCESS
CONDENSER ON CONCRETE PAD
ELECTRIC FIREPLACE
WH — WALL MOUNTED TANK-LESS WATER HEATER
TOILET PAPER DISPENSER
ELEC. METER
DOOR
WINDOW
SLIDING / BI-PASS DOORS
WIDTH (FT.-IN.)
HEIGHT (FT.-IN.)
TYPE
E.G.) 3068 SC

NOTES

SCHEDULE NOTES: GENERAL:

1. WINDOW AND DOORS ARE APPROXIMATE ONLY. VERIFY ALL SIZES AND TYPES PRIOR TO ORDERING.
2. TEMPERED GLASS SHALL BE PROVIDED WHERE NEW GLASS IS REQUIRED AT ALL HAZARDOUS LOCATIONS INCLUDING INGRESS AND EGRESS DOORS, PANELS IN SLIDING OR SWINGING DOORS, DOORS AND ENCLOSURE FOR BATH TUB & SHOWER AND IF WITHIN 2 FEET OF VERTICAL EDGE OF CLOSED DOORS AND WITHIN 5 FEET OF STANDING SURFACE.

DOORS AND WINDOWS:

3. DOOR STOPS OF IN-SWINGING DOORS SHALL BE OF ONE-PIECE CONSTRUCTION WITH THE JAMB, OR JOINED BY A RABBETED JOINT TO THE JAMB.
4. ALL PIN-TYPE HINGES WHICH ARE ACCESSIBLE FROM OUTSIDE THE SECURED AREA WHEN THE DOOR IS CLOSED, SHALL HAVE NON-REMOVABLE HINGE PINS.
5. THE STRIKE PLATE FOR LATCHES AND THE HOLDING DEVICE FOR PROTECTING DEADBOLTS IN WOOD CONSTRUCTION SHALL BE SECURED TO THE JAMB AND THE WALL FRAMING WITH SCREWS NOT LESS THAN 21/2" IN LENGTH.
6. DEADBOLTS SHALL CONTAIN HARDENED INSERTS.
7. STRAIGHT DEADBOLTS SHALL HAVE A MINIMUM THROW OF 1" AND AN EMBEDMENT OF NOT LESS THAN 5/8".
8. A HOOK-SHAPED OR AN EXPANDING-LUG DEADBOLT SHALL HAVE A MINIMUM THROW OF 3/4".
9. INTERIOR AND EXTERIOR DOORS TO BE 13/4" THICK MIN. WITH SOLID CORE CONSTRUCTION, UNLESS NOTED OTHERWISE.
10. GLASS DOORS SHALL HAVE FULLY TEMPERED GLASS.

INSULATED GLASS:

11. ALL DOORS AND WINDOWS BETWEEN CONDITIONED AND UNCONDITIONED SPACES SHALL BE DUAL-GLAZED WITH INSULATED GLASS ASSEMBLIES. SAFETY GLAZING WILL BE USED FOR ASSEMBLIES WHERE REQUIRED. ALL NEW GLAZING SHALL BE LOW-E; U-FACTOR 0.29, AND SHGC .27, DUAL GLAZED ASSEMBLY.

SAFETY GLAZING:

12. WINDOW AND DOOR LIGHTS WITHIN 40" OF THE LOCKING DEVICE SHALL BE FULLY TEMPERED OR LAMINATED GLASS.
13. ALL GLAZING IN HAZARDOUS LOCATIONS PER C.B.C. SECTION 2406.4 MUST BE TEMPERED AND PERMANENTLY LABELED IN ACCORDANCE WITH APPLICABLE STANDARDS.
14. SAFETY GLAZING TO BE PROVIDED IN ALL DOORS AND ADJACENT PANELS, IN BATH AND SHOWER DOORS AND ENCLOSURES, WITHIN 12" OF A DOOR IN THE CLOSED POSITION, AND IN ALL PANELS IN EXCESS OF 6 S.F. AND WHOSE LOWEST EDGE IS LESS THAN 18" TO THE FINISH FLOOR OR WITHIN 36" OF A WALKING SURFACE.
15. ALL SLIDING GLASS DOOR ASSEMBLIES, SHOWER DOORS AND ENCLOSURES, AND ALL OTHER SAFETY GLAZING SHALL BE A MINIMUM OF 3/16" THICK.

EMERGENCY ESCAPES:

16. EMERGENCY EGRESS: EVERY SLEEPING ROOM SHALL HAVE AT LEAST ONE OPERABLE WINDOW OR EXTERIOR DOOR APPROVED FOR EMERGENCY ESCAPE. THESE EMERGENCY ESCAPE WINDOWS OR DOORS MUST PROVIDE A FULL CLEAR OPENING AND SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF SPECIAL TOOLS. ALL EMERGENCY ESCAPE WINDOWS SHALL HAVE A MINIMUM NET OPENING OF 5.7 SQ. FT. WITH A MINIMUM NET CLEAR HEIGHT OF 24 INCHES AND WIDTH OF 20 INCHES. THE SILL HEIGHT OF EMERGENCY ESCAPE WINDOWS SHALL NOT BE MORE THAN 3'-8" (44 INCHES) ABOVE THE INTERIOR FLOOR.

ROOM LEGEND

GREAT ROOM
49'-6" x 23'-3" x VLT
(PLANK)
ROOM LABEL (NAME)
CEILING HEIGHT (VAULT HEIGHT VARIES)
WIDTH (LEFT TO RIGHT ON PAGE)
HEIGHT (UP AND DOWN ON PAGE)
ASSUMED FLOORING TYPE

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805.975.3071

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ---

FILE NAME A-1.1 FLOOR PLAN.DWG

DRAWN BY DJH

DATE 1/7/2025 12:21 PM

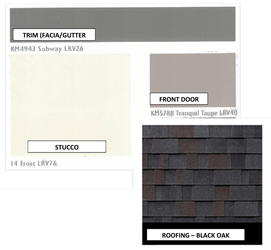
SHEET TITLE:

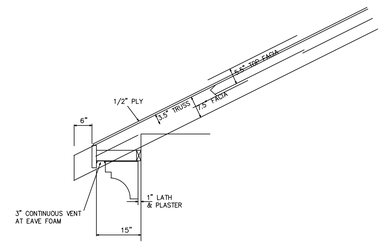
FLOOR PLAN

SHEET NUMBER:

A-1.1

1908 CATAHOULA PROJECT MATERIALS/COLORS





EAVE & EAVE FOAM DETAIL

ELEVATION NOTES

1. COMP SHINGLE ROOF
2. STUCCO SIDING OVER APPROVED MOISTER BARRIER
3. EXPOSED RAFTER TAILS TO BE 4x6 MINIMUM
4. 2X TRIM AROUND ALL DOORS AND WINDOWS AND AT ALL CORNERS (TYP)
5. 2X6 TRIM @ BOTTOM OF ALL WINDOWS
6. VALLEY FLASHINGS SHALL NOT BE LESS THAN 0.016" (NO. 26 GALV. SHEET GAGE) CORROSION-RESISTANT METAL INSTALLED OVER A MINIMUM 36" WIDE UNDERLAYMENT OF 1 LAYER OF NO. 72 ASTM CAP SHEET RUNNING THE FULL LENGTH OF VALLEY
7. 24 GAUGE GI. FLASHING @ ALL ROOF TO WALL CONNECTIONS (TYP)
8. 24 GA. G.I. CRICKET FLASHING SLOPED TO DRAIN
9. SLOPE AWAY FROM BUILDING 5% FOR 10'-0" MINIMUM (TYP)

* HOUSE ATTIC VENTILATION CALCS.

ATTIC VENTILATION CALCULATIONS:

ATTIC AREA = 3,868 SQ FT HOUSE

REQUIRED ATTIC VENTILATION = 3,868/ 300 = 12.89 SQ FT = 1,856 SQ. IN.
ATTIC VENTING REQUIRED = 1,856 SQ IN
40- 50 % REQUIRED IN UPPER ATTIC VENTING
USE (13) OHAGIN LOW PROFILE "TAPERED" VENTS(72 NFVA) =936 SQ IN
REMAINDER IN LOWER ATTIC
USE (13) OHAGIN LOW PROFILE "TAPERED" VENTS (72 NFVA)=936 SQ IN

***ATTIC VENT NOTES
ATTIC VENTS ARE REQUIRED TO BE PROTECTED WITH CORROSION RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH, PERFORATED VINYL OR SIMILAR MATERIAL. THE OPENINGS SHALL BE A MINIMUM 1/16" AND SHALL NOT EXCEED 1/4", ROOF AND ATTIC VENTS SHALL RESIST THE INTRUSION OF FLAME AND EMBERS INTO THE ATTIC AREA OF THE STRUCTURE, OR SHALL BE PROTECTED BY CORROSION-RESISTANT, NONCOMBUSTIBLE WIRE MESH WITH OPENINGS A MINIMUM OF $\frac{1}{16}$" AND SHALL NOT EXCEED $\frac{1}{4}$".

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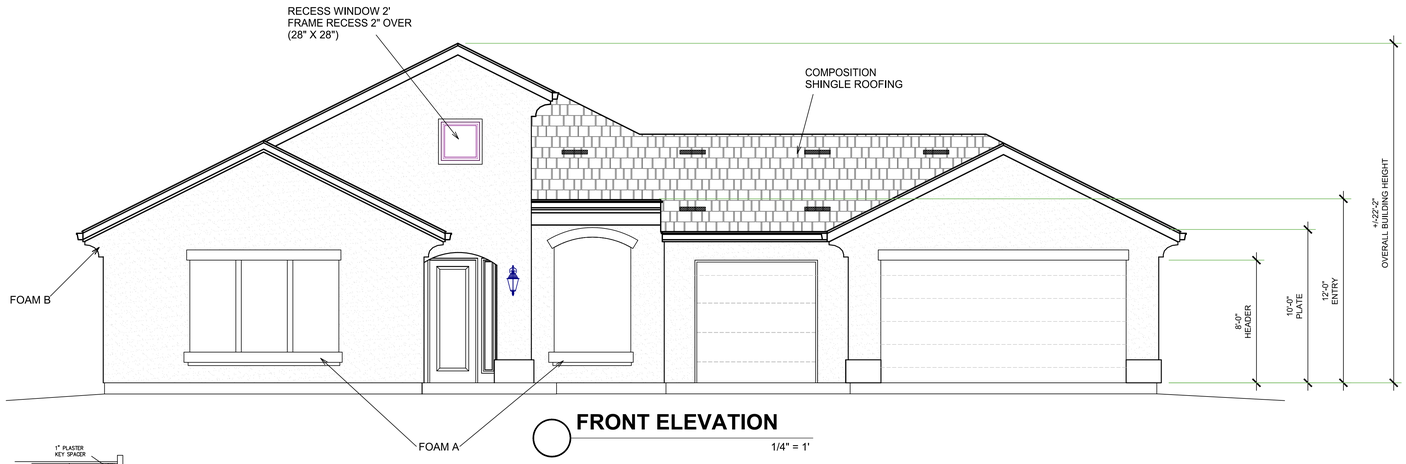
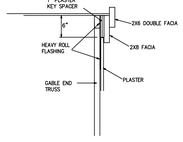
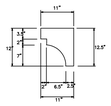


FRONT ELEVATION
1/4" = 1'

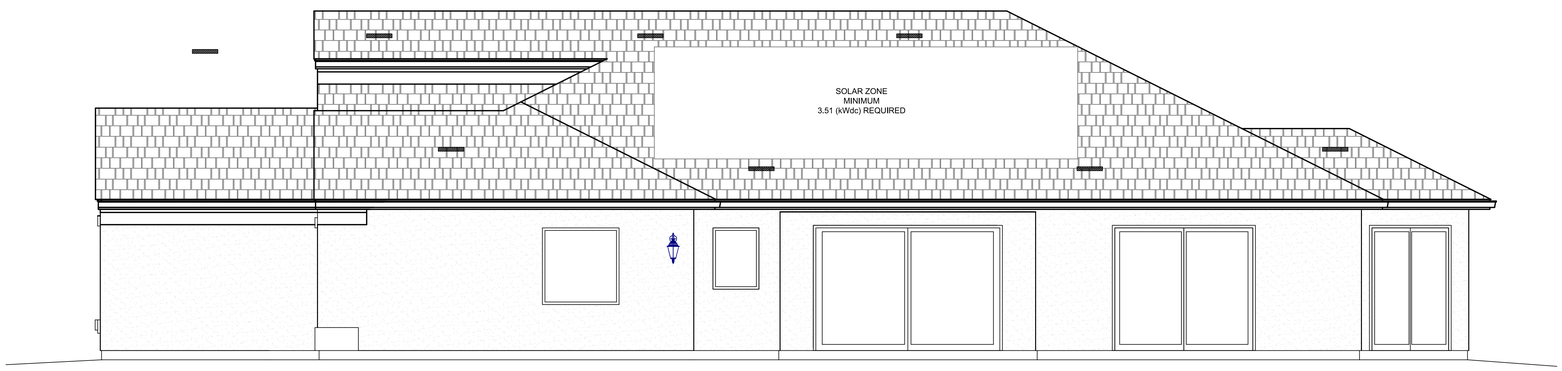


GABLE END DETAIL

FOAM A



FOAM B



RIGHT ELEVATION
1/4" = 1'

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----

FILE NAME A-2.1 ELEVATIONS.DWG

DRAWN BY DJH

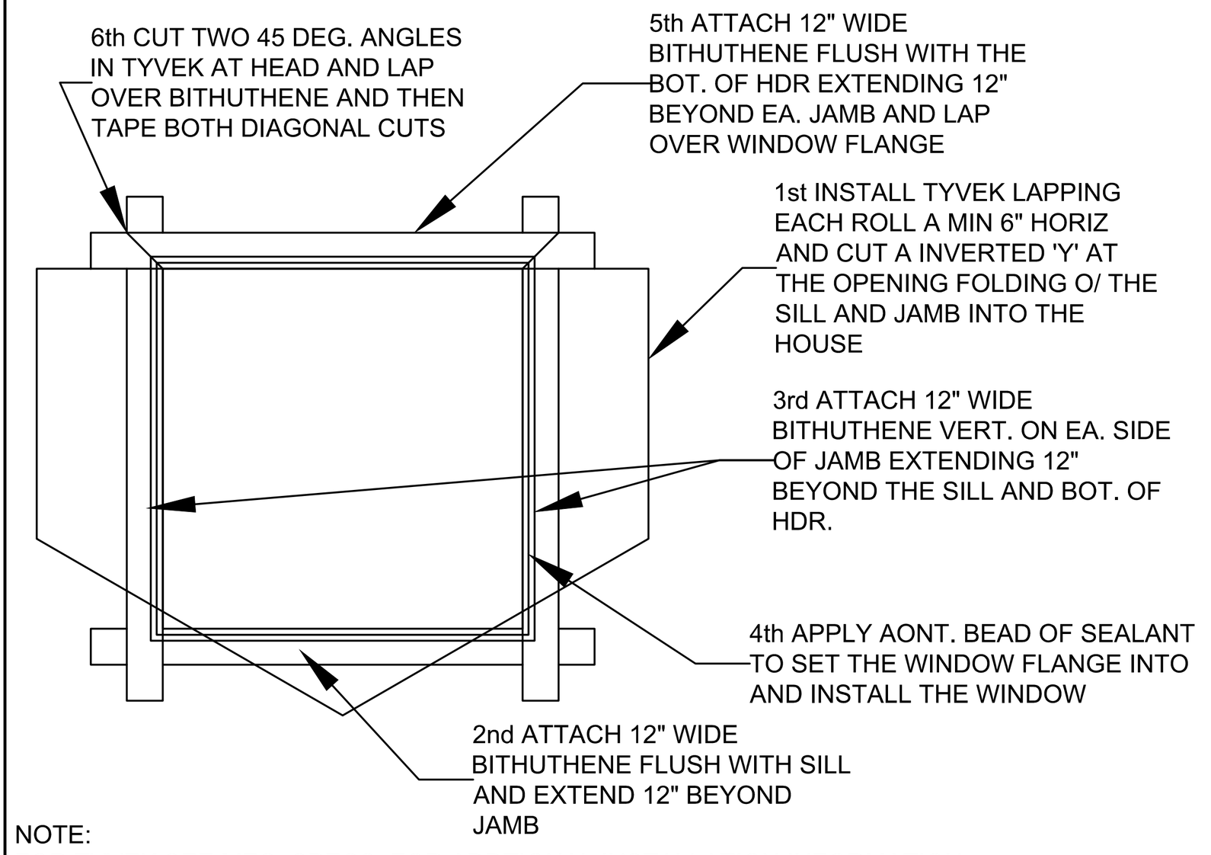
DATE 1/7/2025 12:22 PM

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

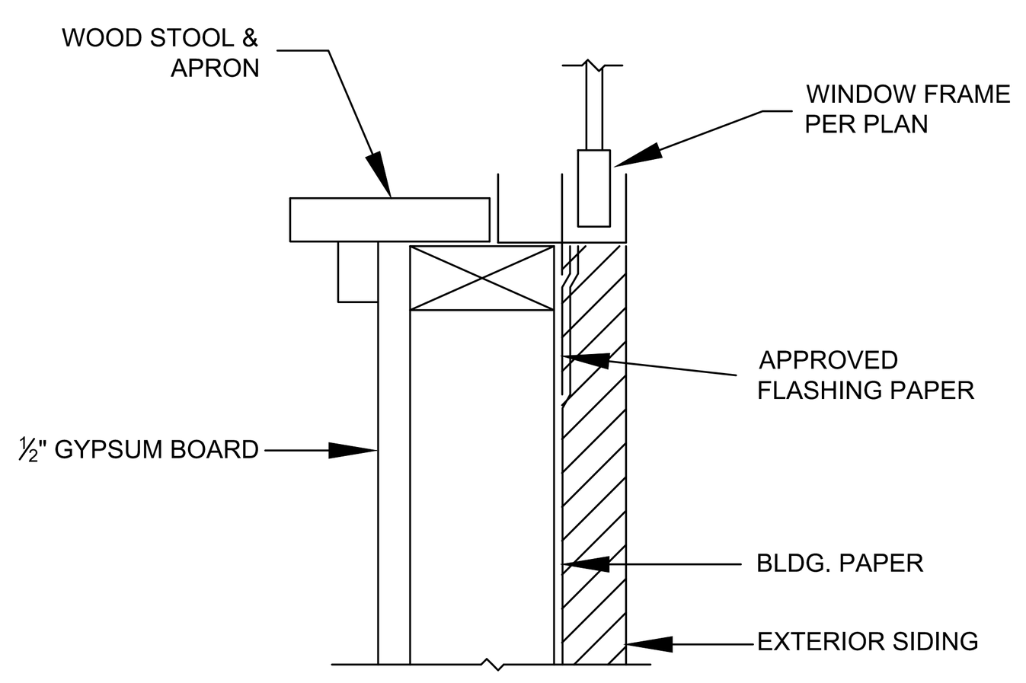
A-2.1


6th CUT TWO 45 DEG. ANGLES IN TYVEK AT HEAD AND LAP OVER BITHUTHENE AND THEN TAPE BOTH DIAGONAL CUTS
5th ATTACH 12" WIDE BITHUTHENE FLUSH WITH THE BOT. OF HDR EXTENDING 12" BEYOND EA. JAMB AND LAP OVER WINDOW FLANGE
1st INSTALL TYVEK LAPPING EACH ROLL A MIN 6" HORIZ AND CUT A INVERTED 'Y' AT THE OPENING FOLDING O/ THE SILL AND JAMB INTO THE HOUSE
3rd ATTACH 12" WIDE BITHUTHENE VERT. ON EA. SIDE OF JAMB EXTENDING 12" BEYOND THE SILL AND BOT. OF HDR.
4th APPLY AONT. BEAD OF SEALANT TO SET THE WINDOW FLANGE INTO AND INSTALL THE WINDOW
2nd ATTACH 12" WIDE BITHUTHENE FLUSH WITH SILL AND EXTEND 12" BEYOND JAMB

NOTE:
FOR TYVEK SEE MFG. SPECS. FOR ADDTIONAL INSTALLATION INFORMATION

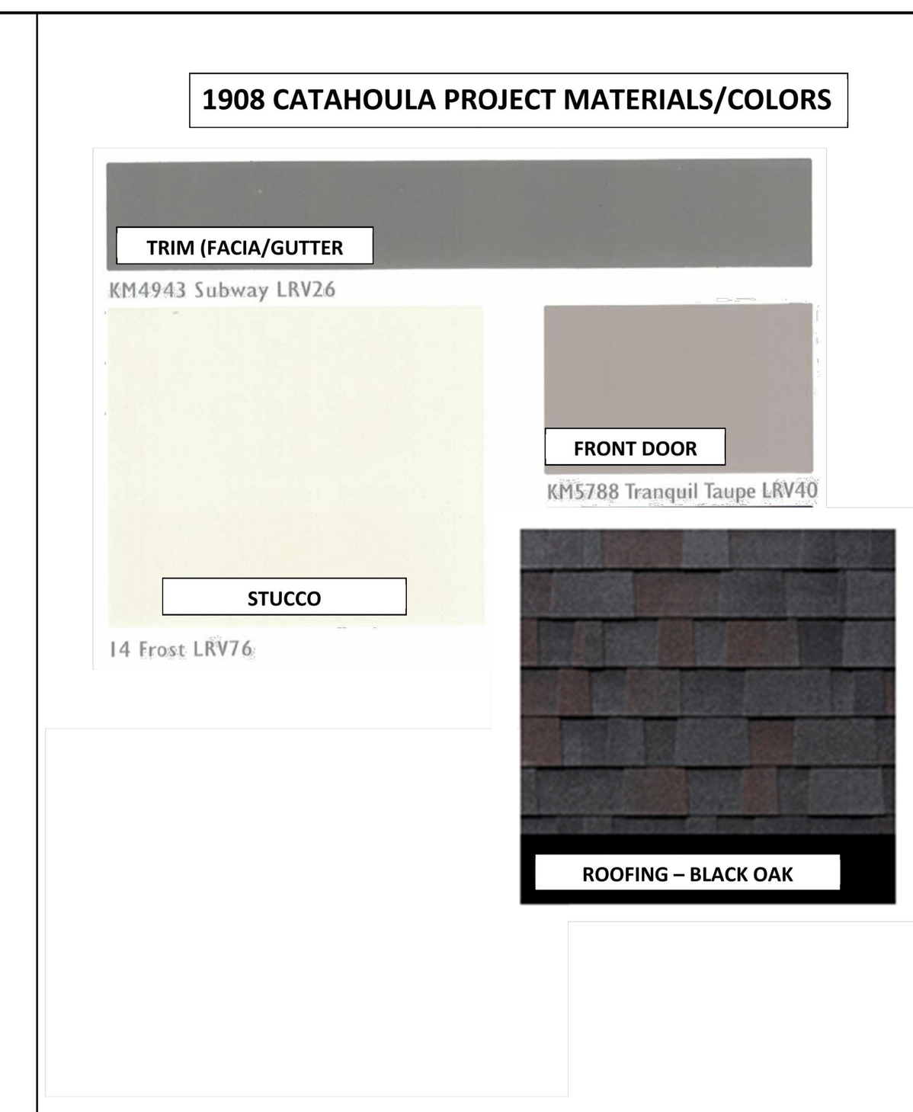
TYP. WINDOW FLASHING

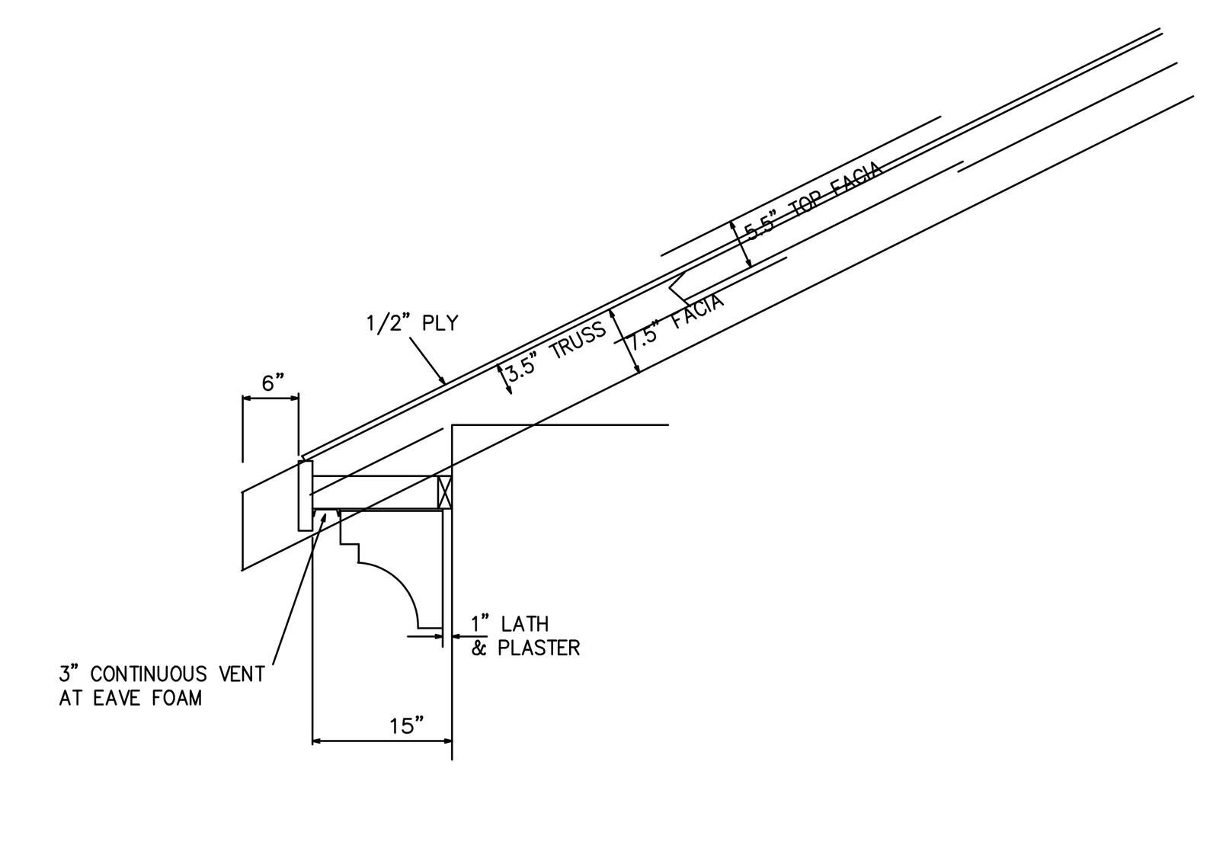
NTS



WINDOW SILL

NTS





EAVE & EAVE FOAM DETAIL

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PLAN PREPARED FOR:
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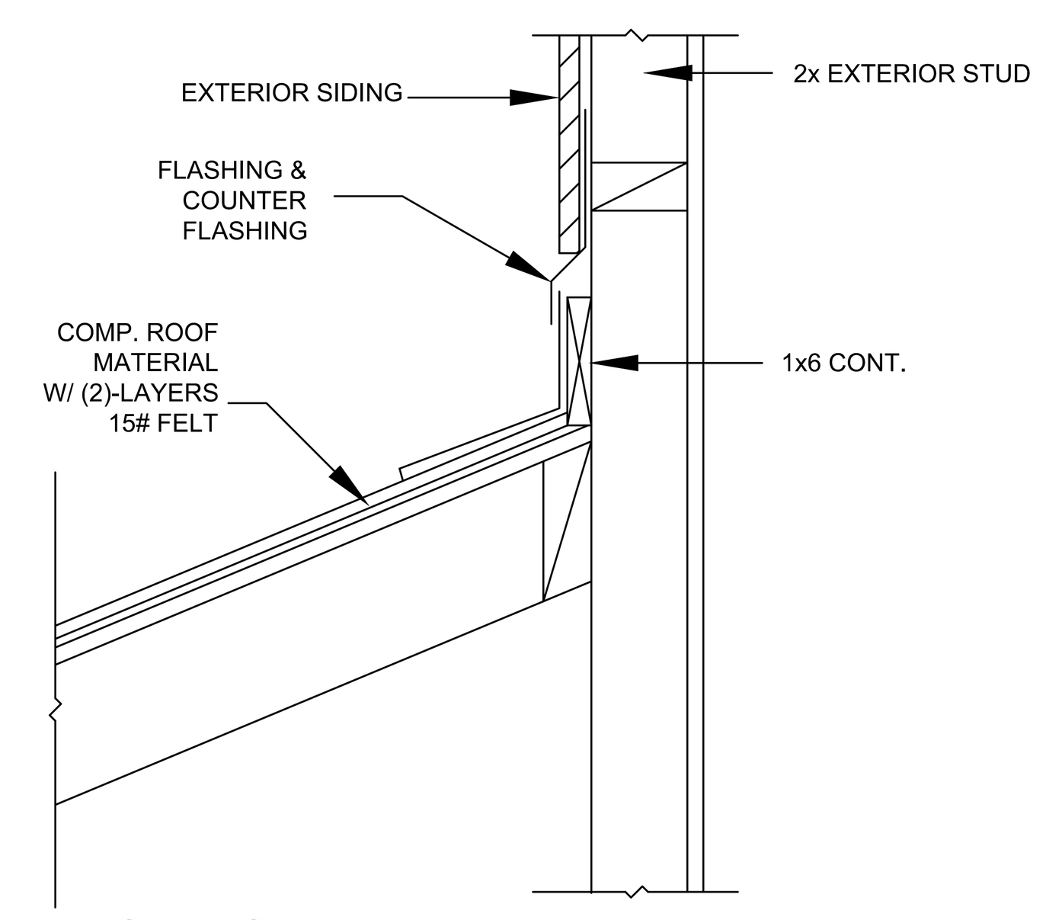
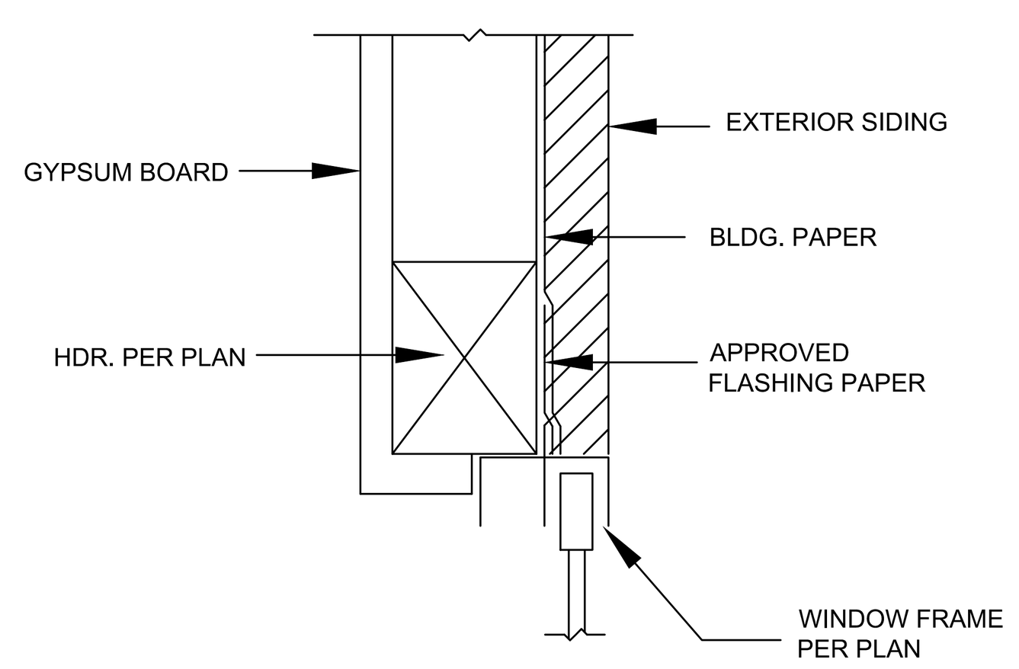
PASO ROBLES, CA 93446



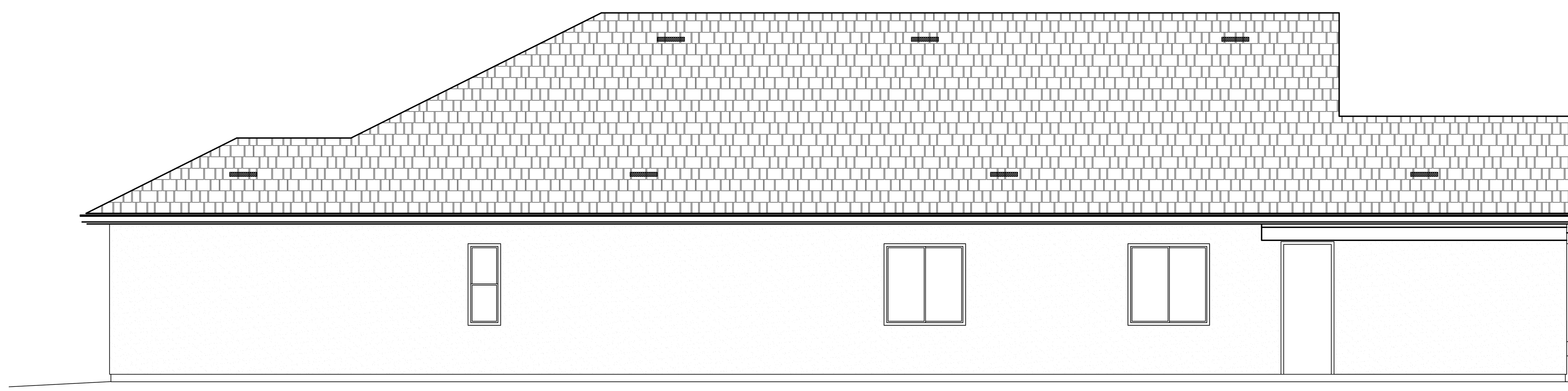
FLASHING

NTS



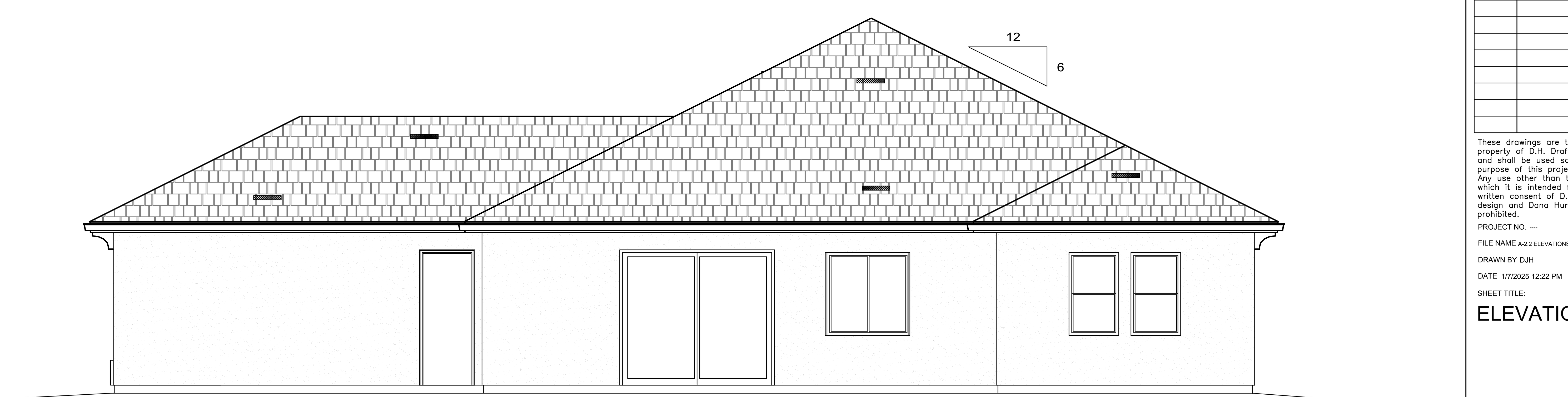
WINDOW/DOOR/OPENING HEADER

NTS



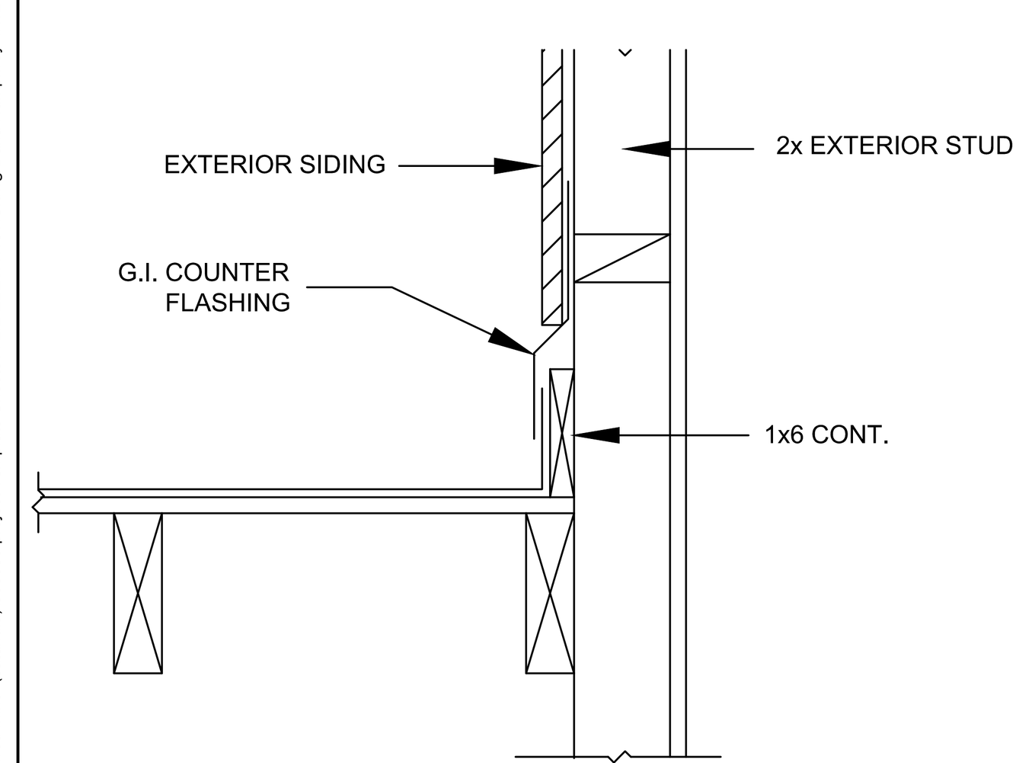
LEFT ELEVATION

1/4" = 1'



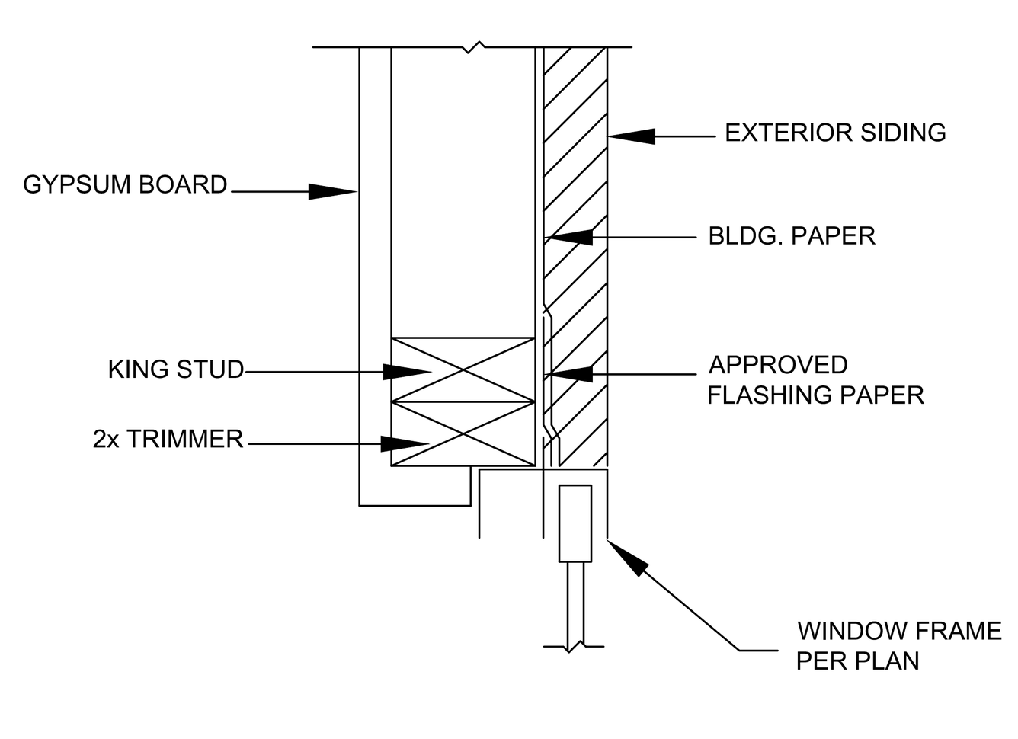
BACK ELEVATION

1/4" = 1'



FLASHING

NTS



WINDOW JAMB

NTS

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----

FILE NAME A-2.2 ELEVATIONS.DWG

DRAWN BY DJH

DATE 1/7/2025 12:22 PM

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

A-2.2

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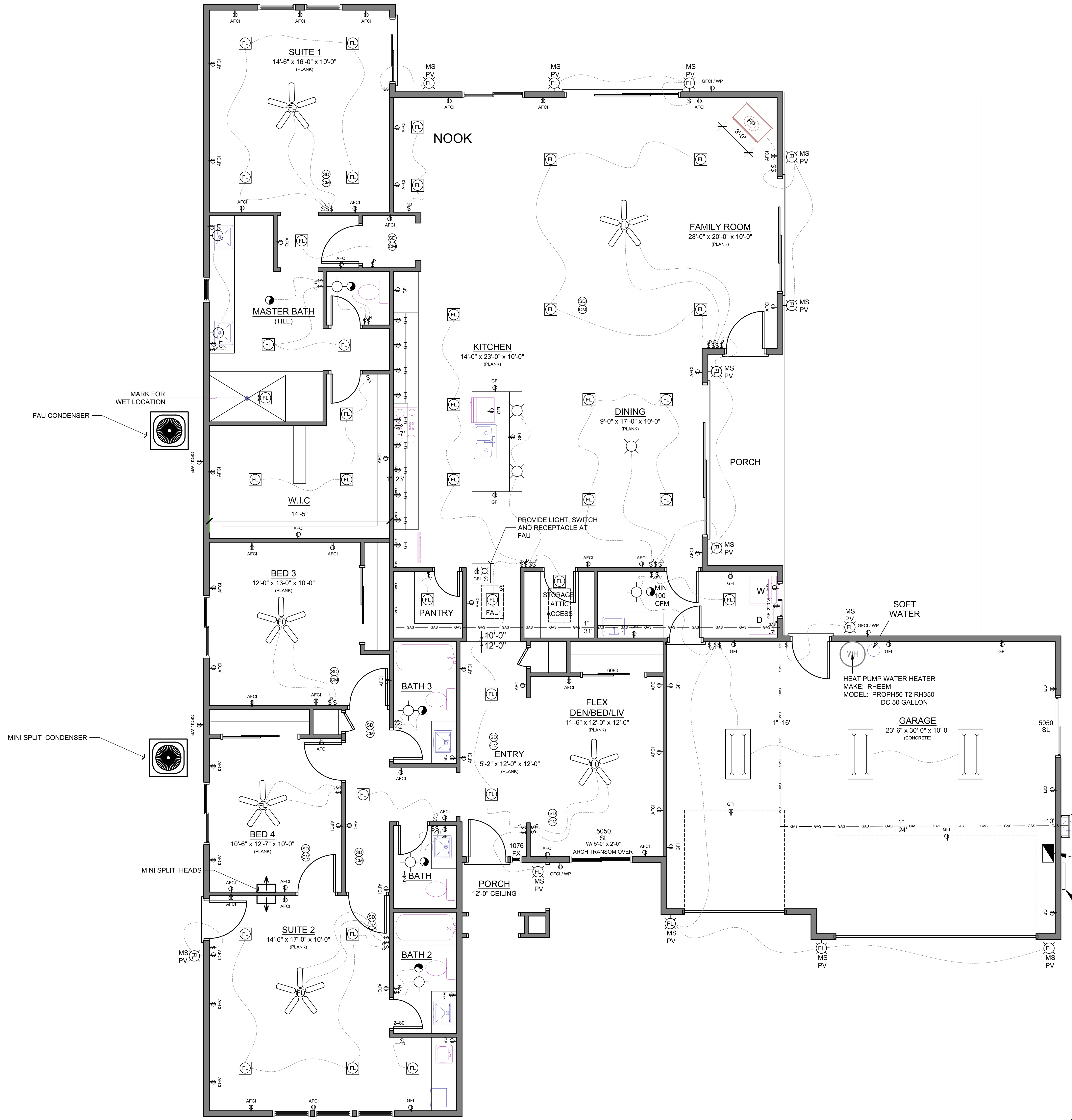


GAS METER

EV CHARGER

ELECTRIC METER LOCATION

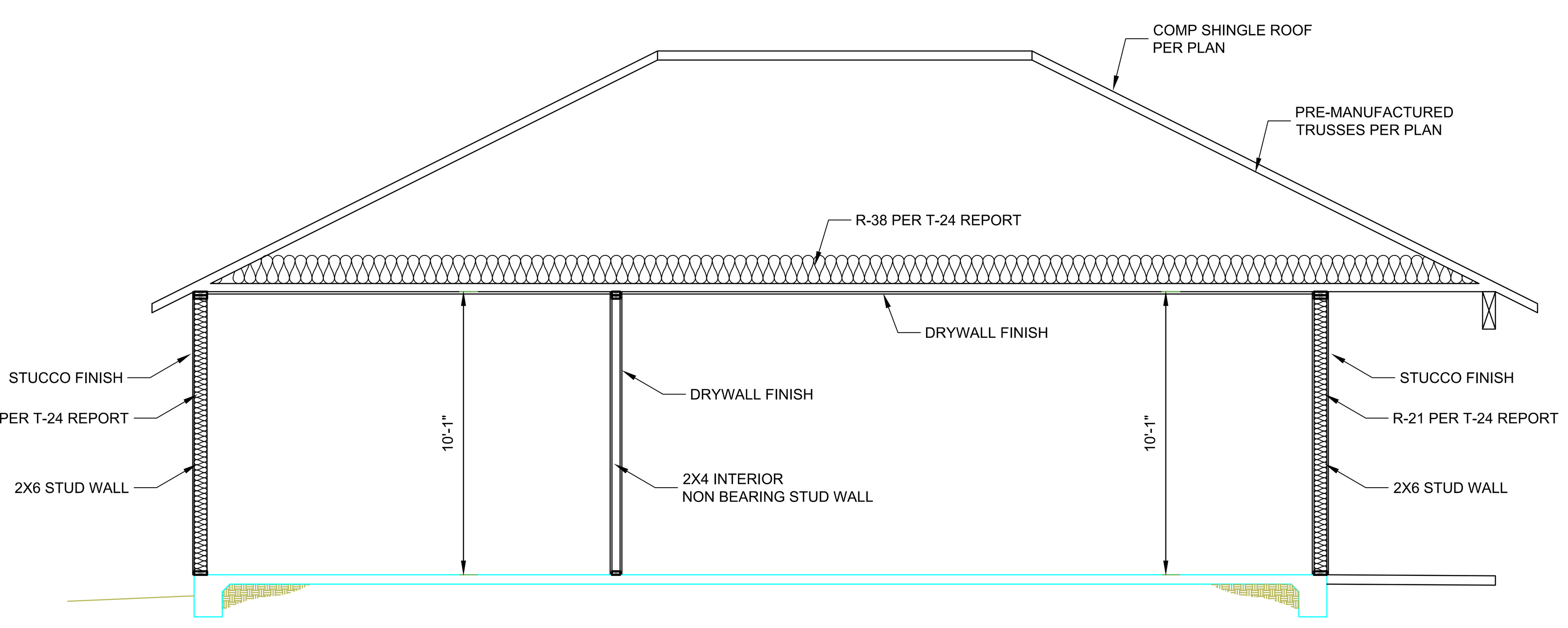
200 AMP SERVICE PER PGE

INSTALL TYPE 1 SPD
AT LOAD OR SERVICE SIDE OF MAIN PANEL

ESS READY, SEE SHEET T-24.2
MANDATORY MEASURES 150.0(S)

ELECTRIC PLAN

1/4"=1'



SECTION A

1/4"=1'

LEGEND (ELECTRIC)

- CEILING MOUNTED EXHAUST FAN TO EXTERIOR
- GFI — 115 V GFIC DUPLEX RECEPTACLE
- GFI 220 VLT — 220 V GFIC DUPLEX RECEPTACLE
- GFCI / WP — 115 V WATER PROOF GFIC OUTLET
- AFCI — 115 V ARCH FAULT CIRCUIT INTERRUPTER OUTLET
- $3 — 3-WAY SWITCH
- $D — SINGLE POLE SWITCH WITH DIMMER
- $V — SWITCH w/ VACANCY SENSOR
- $H — SWITCH W/ HUMIDISTAT CONTROL
- SD — SMOKE DETECTOR, HARD-WIRED TOGETHER
- GAS — GAS STUB (SIZE AS REQ'D)
- ELECTRIC SUB-PANEL
- FAN
- CM — CARBON MONOXIDE DETECTOR
- WP — WATERPROOF LIGHT FIXTURE
- FL — RECESSED CAN LIGHT FIXTURE, FLUORESCENT
- WALL MOUNTED LIGHT FIXTURE
- FL MS PV — WALL MOUNTED EXTERIOR FIXTURE, DOWNCAST MOTION CONTROL PHOTO VOLTAIC - HIGH EFFICACY 5'-6" FROM F.G. - LOCATION FRONT OF GARAGE AND EACH EXTERIOR EXIT
- CEILING MOUNTED LIGHT FIXTURE
- FL — CEILING MOUNTED FAN w/ LIGHT FIXTURE PROVIDE SEPARATE SWITCH FOR FAN & LIGHT
- 2' X 4' GARAGE LIGHT
- EV CHARGER
- MINI SPLIT HEAD

GAS LINE SIZES

GAS LINE SIZES FOR THIS PROJECT PER CPC 2022 CHAPTER 12 TABLE 1216.2(1) ARE AS FOLLOWS:

- OUTLET B- DRYER (35,000 BTU / 1000 = 35 CF/H)= 47' X 1"
- OUTLET C- OVEN (65,000 BTU / 1000 = 65 CF/H)= 53' X 1"
- SECTION 1 = (100,000 BTU / 1000 = 100 CF/H)= 100' X 1"

LIGHTING NOTES

LIGHTING CONTROLS AND COMPONENTS. ALL LIGHTING CONTROL DEVICES AND SYSTEMS, BALLASTS, AND LUMINAIRES MUST MEET THE APPLICABLE REQUIREMENTS OF § 110.9. *

LUMINAIRE EFFICACY. ALL INSTALLED LUMINAIRES MUST MEET THE REQUIREMENTS IN TABLE 150.0-A, EXCEPT LIGHTING INTEGRAL TO EXHAUST FANS, KITCHEN RANGE HOODS, BATH VANITY MIRRORS, AND GARAGE DOOR OPENERS; NAVIGATION LIGHTING LESS THAN 5 WATTS; AND LIGHTING INTERNAL TO DRAWERS, CABINETS, AND LINEN CLOSETS WITH AN EFFICACY OF AT LEAST 45 LUMENS PER WATT.

SCREW BASED LUMINAIRES. SCREW BASED LUMINAIRES MUST CONTAIN LAMPS THAT COMPLY WITH REFERENCE JOINT APPENDIX JA8. *

RECESSED DOWNLIGHT LUMINAIRES IN CEILINGS. LUMINAIRES RECESSED INTO CEILINGS MUST NOT CONTAIN SCREW BASED SOCKETS, MUST BE AIRTIGHT, AND MUST BE SEALED WITH A GASKET OR CAULK. CALIFORNIA ELECTRICAL CODE § 410.116 MUST ALSO BE MET.

LIGHT SOURCES IN ENCLOSED OR RECESSED LUMINAIRES. LAMPS AND OTHER SEPARABLE LIGHT SOURCES THAT ARE NOT COMPLIANT WITH THE JA8 ELEVATED TEMPERATURE REQUIREMENTS, INCLUDING MARKING REQUIREMENTS, MUST NOT BE INSTALLED IN ENCLOSED OR RECESSED LUMINAIRES.

BLANK ELECTRICAL BOXES. THE NUMBER OF ELECTRICAL BOXES THAT ARE MORE THAN FIVE FEET ABOVE THE FINISHED FLOOR AND DO NOT CONTAIN A LUMINAIRE OR OTHER DEVICE SHALL BE NO MORE THAN THE NUMBER OF BEDROOMS. THESE BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR CONTROL, LOW VOLTAGE WIRING, OR FAN SPEED CONTROL.

LIGHTING INTEGRAL TO EXHAUST FANS. LIGHTING INTEGRAL TO EXHAUST FANS (EXCEPT WHEN INSTALLED BY THE MANUFACTURER IN KITCHEN EXHAUST HOODS) MUST MEET THE APPLICABLE REQUIREMENTS OF § 150.0(K). *

SCREW BASED LUMINAIRES. SCREW BASED LUMINAIRES MUST CONTAIN LAMPS THAT COMPLY WITH REFERENCE JOINT APPENDIX JA8. *

LIGHT SOURCES IN ENCLOSED OR RECESSED LUMINAIRES. LAMPS AND OTHER SEPARABLE LIGHT SOURCES THAT ARE NOT COMPLIANT WITH THE JA8 ELEVATED TEMPERATURE REQUIREMENTS, INCLUDING MARKING REQUIREMENTS, MUST NOT BE INSTALLED IN ENCLOSED OR RECESSED LUMINAIRES.

LIGHT SOURCES IN DRAWERS, CABINETS, AND LINEN CLOSETS. LIGHT SOURCES INTERNAL TO DRAWERS, CABINETRY OR LINEN CLOSETS ARE NOT REQUIRED TO COMPLY WITH TABLE 150.0-A OR BE CONTROLLED BY VACANCY SENSORS PROVIDED THAT THEY ARE RATED TO CONSUME NO MORE THAN 5 WATTS OF POWER, EMIT NO MORE THAN 150 LUMENS, AND ARE EQUIPPED WITH CONTROLS THAT AUTOMATICALLY TURN THE LIGHTING OFF WHEN THE DRAWER, CABINET OR LINEN CLOSET IS CLOSED.

INTERIOR SWITCHES AND CONTROLS. ALL FORWARD PHASE CUT DIMMERS USED WITH LED LIGHT SOURCES MUST COMPLY WITH NEMA SSL 7A.

INTERIOR SWITCHES AND CONTROLS. EXHAUST FANS MUST BE CONTROLLED SEPARATELY FROM LIGHTING SYSTEMS. *

ACCESSIBLE CONTROLS. LIGHTING MUST HAVE READILY ACCESSIBLE WALL-MOUNTED CONTROLS THAT ALLOW THE LIGHTING TO BE MANUALLY TURNED ON AND OFF. *

MULTIPLE CONTROLS. CONTROL MUST NOT BYPASS A DIMMER, OCCUPANT SENSOR, OR VACANCY SENSOR FUNCTION IF THE DIMMER OR SENSOR IS INSTALLED TO COMPLY WITH § 150.0(K).

MANDATORY REQUIREMENTS. LIGHTING CONTROLS MUST COMPLY WITH THE APPLICABLE REQUIREMENTS OF § 110.9.

ENERGY MANAGEMENT CONTROL SYSTEMS. AN ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) MAY BE USED TO COMPLY WITH DIMMING, OCCUPANCY, AND CONTROL REQUIREMENTS IF IT PROVIDES THE FUNCTIONALITY OF THE SPECIFIED CONTROL PER § 110.9 AND THE PHYSICAL CONTROLS SPECIFIED IN § 150.0(K)2A.

AUTOMATIC SHUTOFF CONTROLS. IN BATHROOMS, GARAGES, LAUNDRY ROOMS, UTILITY ROOMS AND WALK-IN CLOSETS, AT LEAST ONE INSTALLED LUMINAIRE MUST BE CONTROLLED BY AN OCCUPANCY OR VACANCY SENSOR PROVIDING AUTOMATIC-OFF FUNCTIONALITY. LIGHTING INSIDE DRAWERS AND CABINETS WITH OPAQUE FRONTS OR DOORS MUST HAVE CONTROLS THAT TURN THE LIGHT OFF WHEN THE DRAWER OR DOOR IS CLOSED.

DIMMERS. LIGHTING IN HABITABLE SPACES (E.G., LIVING ROOMS, DINING ROOMS, KITCHENS, AND BEDROOMS) MUST HAVE READILY ACCESSIBLE WALL-MOUNTED DIMMING CONTROLS THAT ALLOW THE LIGHTING TO BE MANUALLY ADJUSTED UP AND DOWN. FORWARD PHASE CUT DIMMERS CONTROLLING LED LIGHT SOURCES IN THESE SPACES MUST COMPLY WITH NEMA SSL 7A.

INDEPENDENT CONTROLS. INTEGRATED LIGHTING OF EXHAUST FANS SHALL BE CONTROLLED INDEPENDENTLY FROM THE FANS. LIGHTING UNDER CABINETS OR SHELVES, LIGHTING IN DISPLAY CABINETS, AND SWITCHED OUTLETS MUST BE CONTROLLED SEPARATELY FROM CEILING-INSTALLED LIGHTING.

RESIDENTIAL OUTDOOR LIGHTING. FOR SINGLE-FAMILY RESIDENTIAL BUILDINGS, OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A RESIDENTIAL BUILDING, OR TO OTHER BUILDINGS ON THE SAME LOT, MUST HAVE A MANUAL ON/OFF SWITCH AND EITHER A PHOTOCELL AND MOTION SENSOR OR AUTOMATIC TIME SWITCH CONTROL) OR AN ASTRONOMICAL TIME CLOCK. AN ENERGY MANAGEMENT CONTROL SYSTEM THAT PROVIDES THE SPECIFIED CONTROL FUNCTIONALITY AND MEETS ALL APPLICABLE REQUIREMENTS MAY BE USED TO MEET THESE REQUIREMENTS.

INTERNALLY ILLUMINATED ADDRESS SIGNS. INTERNALLY ILLUMINATED ADDRESS SIGNS MUST EITHER COMPLY WITH § 140.8 OR CONSUME NO MORE THAN 5 WATTS OF POWER.

RESIDENTIAL GARAGES FOR EIGHT OR MORE VEHICLES. LIGHTING FOR RESIDENTIAL PARKING GARAGES FOR EIGHT OR MORE VEHICLES MUST COMPLY WITH THE APPLICABLE REQUIREMENTS FOR NONRESIDENTIAL GARAGES IN §§ 110.9, 130.0, 130.1, 130.4, 140.6, AND 141.0.

HIGH EFFICACY LUMINAIRES*	JA8 HIGH EFFICACY LIGHTING - LAMPS AND LIGHT SOURCES THAT MUST BE JA8-CERTIFIED	*RECESSED DOWNLIGHT LUMINAIRES IN CEILINGS
• PIN-BASED LINEAR FLUORESCENT • PIN-BASED COMPACT FLUORESCENT • PULSE-START METAL HALIDE • HIGH PRESSURE SODIUM • GU-24 OTHER THAN LEDS • INSEPARABLE SSL LUMINAIRES • INSTALLED OUTDOORS • INSEPARABLE SSL LUMINAIRES WITH COLORED LIGHT SOURCES FOR DECORATIVE LIGHTING PURPOSE	• LIGHT SOURCES IN CEILING RECESSED DOWNLIGHT LUMINAIRES.* • LED LUMINAIRES WITH INTEGRAL SOURCES • SCREW-BASED LED LAMPS (A-LAMPS, PAR LAMPS, ETC.) • PIN-BASED LED LAMPS (MR-16, AR-111, ETC.) • GU-24 BASED LED LIGHT SOURCE • ANY SOURCE OR LUMINAIRE NOT LISTED ELSEWHERE ON THIS TABLE	• SHALL NOT HAVE SCREW BASED SOCKETS • SHALL CONTAIN JA8-CERTIFIED LIGHT SOURCES • SHALL MEET ALL PERFORMANCE REQUIREMENTS IN §150.0(K)1C

ELECTRICAL NOTES

1. PROVIDE A 200 AMP MINIMUM ELECTRIC SUB-PANEL WITH #4 UPPER GROUND TO FOUNDATION
2. GFIC OUTLETS ON ALL ABOVE COUNTER OUTLETS IN GARAGE MOUNTED AT 44" ABOVE FINISH FLOOR (TYP)
3. CEILING MOUNTED OUTLET FOR GARAGE DOOR OPENER. PROVIDE AND INSTALL APPROVED GARAGE DOOR OPENER WITH REMOTE CONTROL
4. PROVIDE GAS, 220V OUTLET, AND 110V OUTLET TO WASHER AND DRYER
5. GFIC OUTLETS ON ALL ABOVE COUNTER OUTLETS IN KITCHEN MOUNTED AT +44"ABOVE FINISH FLOOR (TYP). OUTLETS SHALL BE LOCATED NO FARTHER THAN 24" AWAY FROM ANY POINT ALONG COUNTER AND ON ALL COUNTER AREAS WIDER THAN 12"
6. ON ANY PENINSULA, EATING BAR, OR ISLAND, GFIC OUTLETS SHALL BE LOCATED AT +27" ABOVE FINISH FLOOR AND SHALL BE LOCATED NO FARTHER THAN 24" AWAY FROM ANY POINT ALONG PENINSULA, EATING BAR OR ISLAND (TYP)
7. PROVIDE GAS, 220V OUTLET, AND 110V OUTLET TO STOVE, COOKTOP, AND/OR OVENS (TYP). ALSO PROVIDE ELECTRICAL FOR EXHAUST HOOD ABOVE COOKTOP (TYP)
8. PROVIDE OUTLET FOR DISHWATER
9. PROVIDE 110V OUTLET AT +42" ABOVE FINISHED FLOOR AND WATER FOR ICE MAKER AT REFRIGERATOR
10. PROVIDE OUTLET AND SWITCH FOR DISPOSAL
11. UNDER CABINET FLUORESCENT LIGHT FIXTURE WITH SWITCH AS INDICATED
12. GFIC OUTLETS ON ALL ABOVE COUNTER OUTLETS IN BATHROOMS MOUNTED AT 42" ABOVE FINISH FLOOR (TYP)
13. BATHROOM RECEPTACLES SHALL BE ON A SEPARATE 20AMP CIRCUIT WITH NO OTHER OUTLETS. BOTH OUTLETS MAY BE ON THE SAME CIRCUIT. 1996 NEC 210-52 (D)
14. PENDENT LIGHTS, CEILING FANS & TRACK LIGHTING ARE PROHIBITED IN THE AREA ABOVE BATHTUBS.
15. WATER-PROOF GFIC OUTLETS AT 18" ABOVE FINISH FLOOR IN FRONT AND REAR OF BUILDING (TYP).
16. PROVIDE BLOCKING AT CEILING FAN AND LIGHTS. PROVIDE SEPARATE SWITCH FOR LIGHTS & FAN. USE AN APPROVED ELECTRICAL BOX DESIGNED TO SUPPORT CEILING FAN. CEILING FANS WEIGHING IN EXCESS OF 35 POUNDS SHALL BE SUPPORTED AS REQUIRED BY SEC 370-23. 422-18.
17. APPROVED SMOKE DETECTOR INSTALLED AS REQUIRED AND AS INDICATED. SMOKE DETECTOR SHALL BE HARDWIRED WITH BATTERY BACK-UP.
18. ALL BEDROOM RECEPTACLES TO BE AFCI.
19. PROVIDE SCHEDULE 40 PVC CONDUIT FROM THE LOAD SIDE OF THE NEW ELECTRICAL PANEL DISCONNECT TO ATTIC AREA. CONDUIT SIZE SHALL BE AS FOLLOWS:
    100A 20 AMPS @ 120 VOLTS (1) ¾" CONDUIT
    120A 24 AMPS @ 120 VOLTS (1) ¾" CONDUIT
    150A 30 AMPS @ 120 VOLTS (1) ¾" CONDUIT
    200A 40 AMPS @ 120 VOLTS (1) 1" CONDUIT
    400A 80 AMPS @ 120 VOLTS (1) 1¼" CONDUIT

DJH
DRAFT & DESIGN
610 10TH ST. SUITE A
PASO ROBLES CA 93446
DJH1132@GMAIL.COM
805.975.3071

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----

FILE NAME A-3.1 ELECTRICAL PLAN.DWG

DRAWN BY DJH

DATE 1/7/2025 12:22 PM

SHEET TITLE:

ELECTRICAL PLAN

SHEET NUMBER:

A-3.1

Manual S Compliance Report
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

Project Information

For: Harrod Homes Inc
Lot 5 Catahoula Ct., Paso Robles, CA 93446

Cooling Equipment

Design Conditions

Outdoor design DB:	98.9°F	Sensible gain:	37297 Btuh	Entering coil DB:	77.8°F
Outdoor design WB:	66.0°F	Latent gain:	0 Btuh	Entering coil WB:	63.2°F
Indoor design DB:	75.0°F	Total gain:	37297 Btuh		
Indoor RH:	50%	Estimated airflow:	2000 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Fujitsu   Model: AOU60RLAVM4
Actual airflow: 2000 cfm
Sensible capacity: 42000 Btuh 113% of load
Latent capacity: 18000 Btuh 0% of load
Total capacity: 60000 Btuh 161% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB: 28.8°F   Heat loss: 35370 Btuh   Entering coil DB: 66.7°F
Indoor design DB: 68.0°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Fujitsu   Model: AOU60RLAVM4
Actual airflow: 2000 cfm
Output capacity: 66000 Btuh 187% of load   Capacity balance: 14 °F
Supplemental heat required: 0 Btuh   Economic balance: -99 °F

Meets all requirements of ACCA Manual S.

Load Short Form
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

Project Information

For: Harrod Homes Inc
Lot 5 Catahoula Ct., Paso Robles, CA 93446

Design Information

	Htg	Clg
Outside db (°F)	29	99
Inside db (°F)	68	75
Design TD (°F)	39	24
Daily range	-	H
Inside humidity (%)	50	50
Moisture difference (gr/lb)	34	-21

Infiltration

Method: Simplified
Construction quality: Semi-tight
Fireplaces: 1 (Semi-tight)

HEATING EQUIPMENT

Make: Fujitsu
Trade: FUJITSU
Model: AOU60RLAVM4
AHRI ref: 206347273
Efficiency: 9.4 HSPF2
Heating input
Heating output: 66000 Btuh @ 47°F
Temperature rise: 31 °F
Actual air flow: 2000 cfm
Air flow factor: 0.057 cfm/Btuh
Static pressure: 0.60 in H2O
Space thermostat
Capacity balance point = 14 °F

COOLING EQUIPMENT

Make: Fujitsu
Trade: FUJITSU
Cond: AOU60RLAVM4
Coil
AHRI ref: 206347273
Efficiency: 10.8 EER2,19.5 SEER2
Sensible cooling: 42000 Btuh
Latent cooling: 18000 Btuh
Total cooling: 60000 Btuh
Actual air flow: 2000 cfm
Air flow factor: 0.054 cfm/Btuh
Static pressure: 0.60 in H2O
Load sensible heat ratio: 1.00

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
SUITE ONE	253	8313	6233	470	334
MASTER BATH	219	4052	2200	229	118
WIC	167	0	0	0	0
BED 3	199	2610	2745	148	147
BATH 1	40	648	314	37	17
FLEX	197	2611	2053	148	110
ENTRY	97	0	0	0	0
BATH 3	53	659	391	37	21
PNTRY	33	0	0	0	0
CL	34	0	0	0	0
LAUNDRY	87	1484	2314	84	124
KITCHEN/DINING	1107	14992	21047	848	1129
HALL	71	0	0	0	0

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Entire House	d	2559	35370	37297	2000	2000
Other equip loads			0	0		
Equip. @ 1.04 RSM				38751		
Latent cooling				0		
TOTALS		2559	35370	38751	2000	2000

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Summary
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

Project Information

For: Harrod Homes Inc
Lot 5 Catahoula Ct., Paso Robles, CA 93446

Notes: DH DRaft & Design

Design Information

Weather: Paso Robles Muni, CA, US

Winter Design Conditions

Outside db 29 °F
Inside db 68 °F
Design TD 39 °F

Summer Design Conditions

Outside db 99 °F
Inside db 75 °F
Design TD 24 °F
Daily range H
Relative humidity 50 %
Moisture difference -21 gr/lb

Heating Summary

Structure 21398 Btuh
Ducts (R-6.0) 13972 Btuh
Central vent (0 cfm) 0 Btuh
(none)
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 35370 Btuh

Sensible Cooling Equipment Load Sizing

Structure 19585 Btuh
Ducts (R-6.0) 17711 Btuh
Central vent (0 cfm) 0 Btuh
(none)
Blower 0 Btuh

Use manufacturer's data n
Rate/swing multiplier 1.04
Equipment sensible load 38751 Btuh

Infiltration

Method Simplified
Construction quality Semi-tight
Fireplaces 1 (Semi-tight)

	Heating	Cooling
Area (ft²)	2559	2559
Volume (ft³)	25592	25592
Air changes/hour	0.25	0.11
Equiv. AVF (cfm)	107	47

Latent Cooling Equipment Load Sizing

Structure -38 Btuh
Ducts -639 Btuh
Central vent (0 cfm) 0 Btuh
(none)
Equipment latent load 0 Btuh

Equipment Total Load (Sen+Lat) 38751 Btuh
Req. total capacity at 0.70 SHR 4.6 ton

Heating Equipment Summary

Make Fujitsu
Trade FUJITSU
Model AOU60RLAVM4
AHRI ref 206347273

Efficiency 9.4 HSPF2
Heating input
Heating output 66000 Btuh @ 47°F
Temperature rise 31 °F
Actual air flow 2000 cfm
Air flow factor 0.057 cfm/Btuh
Static pressure 0.60 in H2O
Space thermostat
Capacity balance point = 14 °F

Cooling Equipment Summary

Make Fujitsu
Trade FUJITSU
Cond AOU60RLAVM4
Coil
AHRI ref 206347273
Efficiency 10.8 EER2,19.5 SEER2
Sensible cooling 42000 Btuh
Latent cooling 18000 Btuh
Total cooling 60000 Btuh
Actual air flow 2000 cfm
Air flow factor 0.054 cfm/Btuh
Static pressure 0.60 in H2O
Load sensible heat ratio 1.00

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		Entire House	SUITE ONE
1	Name of Room	Entire House	SUITE ONE
2	Running Feet of Exposed Wall	185.1 ft	39.0 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 6873.8 ft²	10.0 ft / 637.5 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	2559.2 ft²	15.2 x 16.7 ft / 253.4 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 2559.2 ft²	0 ° / 253.4 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	Entire House Area or Length	Heating	S-Clg	L-Clg	Suite One Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	221	371	145		0	0	0	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	28	323	313		0	0	0	
	Door	11D0	n	15.29	10.34	48	734	496		0	0	0	
11	Wall	12C-0sw	e	3.57	1.96	334	1155	633		167	595	326	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	10	118	272		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	227	514	201		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	25	294	680		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	152	435	238		152	435	238	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	30	353	439		30	353	439	
	Wall	12F-0sw	s	2.55	0.99	371	699	273		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	97	1141	1419		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	71	111	61		71	111	61	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	40	470	1087		40	470	1087	
	Wall	12F-0sw	w	2.55	0.99	474	750	293		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	180	2117	4893		0	0	0	
	Ceil	16B-30ad	-	1.25	1.60	473	593	757		253	318	406	
	Ceil	16CR-38ad	-	1.02	1.04	2086	2126	2170		0	0	0	
	Flor	21A-24v	-	0.98	0.00	2086	2045	0		0	0	0	
	Flor	22A-tpm	-	46.26	0.00	473	2576	0		253	1804	0	

Line	Item	Entire House Area/WAR	Heating	S-Clg	L-Clg	Suite One Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 1.00	4472			WAR 0.21	943		
	Sensible Load (Btuh); 0.11			1198				252	
	Latent Load (Btuh)				-638				
13	Internal – a Occupants at 230 and 200 Btuh	3		690	600	1		230	200
	b Scenario number			1500				0	
	c Default Adjustments								
	d Custom Appliances			350	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		21398	19585	-38		5029	3273	
15	Duct Loads – EHLF & ESGF 0.653 0.904		13972	17711			3284	2960	
	ELG				-639				-63
16	Ventilation Loads – Vent Cfm 0, E Cfm 0		0	0	0				
17	Winter Humidification Load – Gal/Day 0		0						
18	Piping Load		0						
19	Blower Heat			0					
20	AED Excursion & Latent Moisture Migration Load			1479				233	
21	Total Load – Sum lines 13 through 19		35370	37297	0		8313	6233	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		MASTER BATH	WIC
1	Name of Room	MASTER BATH	WIC
2	Running Feet of Exposed Wall	16.7 ft	9.6 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 637.5 ft²	10.0 ft / 573.8 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	1.0 x 219.5 ft / 219.5 ft²	1.0 x 167.4 ft / 167.4 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 219.5 ft²	0 ° / 167.4 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	Master Bath Area or Length	Heating	S-Clg	L-Clg	WIC Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	0	0	0		0	0	0	
	Door	11D0	n	15.29	10.34	0	0	0		0	0	0	
11	Wall	12C-0sw	e	3.57	1.96	167	560	307		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	10	118	272		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	0	0	0		96	244	95	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12F-0sw	s	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	w	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Ceil	16B-30ad	-	1.25	1.60	219	275	351		0	0	0	
	Ceil	16CR-38ad	-	1.02	1.04	0	0	0		167	171	174	
	Flor	21A-24v	-	0.98	0.00	0	0	0		167	164	0	
	Flor	22A-tpm	-	46.26	0.00	219	772	0		0	0	0	

Line	Item	Master Bath Area/WAR	Heating	S-Clg	L-Clg	WIC Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 0.09	403			WAR 0.05	231		
	Sensible Load (Btuh); 0.11			108				62	
	Latent Load (Btuh)								
13	Internal – a Occupants at 230 and 200 Btuh	0		0	0	0		0	0
	b Scenario number			0				0	
	c Default Adjustments								
	d Custom Appliances			0	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		2451	1155			0	0	
15	Duct Loads – EHLF & ESGF 0.653 0.904		1601	1045			0	0	
	ELG				-55				-42
16	Ventilation Loads – Vent Cfm 0, E Cfm 0								
17	Winter Humidification Load – Gal/Day 0								
18	Piping Load								
19	Blower Heat								
20	AED Excursion & Latent Moisture Migration Load			-11				-10	
21	Total Load – Sum lines 13 through 19		4052	2200			0	0	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		BED 3	BATH 1
1	Name of Room	BED 3	BATH 1
2	Running Feet of Exposed Wall	13.1 ft	3.8 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 566.3 ft²	10.0 ft / 255.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	15.2 x 13.1 ft / 199.3 ft²	5.8 x 6.9 ft / 40.3 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 199.3 ft²	0 ° / 40.3 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	Bed 3 Area or Length	Heating	S-Clg	L-Clg	Bath 1 Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	0	0	0		0	0	0	
	Door	11D0	n	15.29	10.34	0	0	0		0	0	0	
11	Wall	12C-0sw	e	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	131	271	106		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	25	294	680		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12F-0sw	s	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	w	2.55	0.99	0	0	0		38	96	37	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Ceil	16B-30ad	-	1.25	1.60	0	0	0		0	0	0	
	Ceil	16CR-38ad	-	1.02	1.04	199	203	207		40	41	42	
	Flor	21A-24v	-	0.98	0.00	199	195	0		40	40	0	
	Flor	22A-tpm	-	46.26	0.00	0	0	0		0	0	0	

Line	Item	Bed 3 Area/WAR	Heating	S-Clg	L-Clg	Bath 1 Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 0.07	317			WAR 0.02	91		
	Sensible Load (Btuh); 0.11			85				24	
	Latent Load (Btuh)								
13	Internal – a Occupants at 230 and 200 Btuh	1		230	200	0		0	0
	b Scenario number			0				0	
	c Default Adjustments								
	d Custom Appliances			0	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		1579	1441			392	165	
15	Duct Loads – EHLF & ESGF 0.653 0.904		1031	1303			256	149	
	ELG				-50				-10
16	Ventilation Loads – Vent Cfm 0, E Cfm 0								
17	Winter Humidification Load – Gal/Day 0								
18	Piping Load								
19	Blower Heat								
20	AED Excursion & Latent Moisture Migration Load			11				-3	
21	Total Load – Sum lines 13 through 19		2610	2745			648	314	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		FLEX	ENTRY
1	Name of Room	FLEX	ENTRY
2	Running Feet of Exposed Wall	10.9 ft	5.3 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 577.5 ft²	10.0 ft / 465.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	11.1 x 17.8 ft / 197.1 ft²	5.4 x 17.8 ft / 96.9 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 197.1 ft²	0 ° / 96.9 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	Flex Area or Length	Heating	S-Clg	L-Clg	Entry Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	109	207	81		53	73	28	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	28	323	313		0	0	0	
	Door	11D0	n	15.29	10.34	0	0	0		24	367	248	
11	Wall	12C-0sw	e	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12F-0sw	s	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	w	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Ceil	16B-30ad	-	1.25	1.60	0	0	0		0	0	0	
	Ceil	16CR-38ad	-	1.02	1.04	197	201	205		97	99	101	
	Flor	21A-24v	-	0.98	0.00	197	193	0		97	95	0	
	Flor	22A-tpm	-	46.26	0.00	0	0	0		0	0	0	

Line	Item	Flex Area/WAR	Heating	S-Clg	L-Clg	Entry Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 0.06	263			WAR 0.03	127		
	Sensible Load (Btuh); 0.11			70				34	
	Latent Load (Btuh)								
13	Internal – a Occupants at 230 and 200 Btuh	1		230	200	0		0	0
	b Scenario number			0				0	
	c Default Adjustments								
	d Custom Appliances			0	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		1579	1078			0	0	
15	Duct Loads – EHLF & ESGF 0.653 0.904		1031	975			0	0	
	ELG				-49				-24
16	Ventilation Loads – Vent Cfm 0, E Cfm 0								
17	Winter Humidification Load – Gal/Day 0								
18	Piping Load								
19	Blower Heat								
20	AED Excursion & Latent Moisture Migration Load			-27				-12	
21	Total Load – Sum lines 13 through 19		2611	2053			0	0	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		BATH 3	PNTRY
1	Name of Room	BATH 3	PNTRY
2	Running Feet of Exposed Wall	0 ft	0 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 307.5 ft²	10.0 ft / 228.8 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	5.3 x 10.1 ft / 53.2 ft²	5.6 x 5.8 ft / 32.7 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 53.2 ft²	0 ° / 32.7 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	Bath 3 Area or Length	Heating	S-Clg	L-Clg	Pntry Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	0	0	0		0	0	0	
	Door	11D0	n	15.29	10.34	0	0	0		0	0	0	
11	Wall	12C-0sw	e	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12F-0sw	s	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	w	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Ceil	16B-30ad	-	1.25	1.60	0	0	0		0	0	0	
	Ceil	16CR-38ad	-	1.02	1.04	53	54	55		33	33	34	
	Flor	21A-24v	-	0.98	0.00	53	52	0		33	32	0	
	Flor	22A-tpm	-	46.26	0.00	0	0	0		0	0	0	

Line	Item	Bath 3 Area/WAR	Heating	S-Clg	L-Clg	Pntry Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 0	0			WAR 0	0		
	Sensible Load (Btuh); 0.11			0				0	
	Latent Load (Btuh)								
13	Internal – a Occupants at 230 and 200 Btuh	0		0	0	0		0	0
	b Scenario number			0				0	
	c Default Adjustments								
	d Custom Appliances			0	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		399	206			0	0	
15	Duct Loads – EHLF & ESGF 0.653 0.904		260	186			0	0	
	ELG				-13				-8
16	Ventilation Loads – Vent Cfm 0, E Cfm 0								
17	Winter Humidification Load – Gal/Day 0								
18	Piping Load								
19	Blower Heat								
20	AED Excursion & Latent Moisture Migration Load			-2				-1	
21	Total Load – Sum lines 13 through 19		659	391			0	0	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		CL	LAUNDRY
1	Name of Room	CL	LAUNDRY
2	Running Feet of Exposed Wall	0 ft	12.0 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 232.5 ft²	10.0 ft / 416.3 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	5.8 x 5.8 ft / 33.8 ft²	15.0 x 5.8 ft / 87.2 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 33.8 ft²	0 ° / 87.2 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	CL Area or Length	Heating	S-Clg	L-Clg	Laundry Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	0	0	0		0	0	0	
	Door	11D0	n	15.29	10.34	0	0	0		0	0	0	
11	Wall	12C-0sw	e	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12F-0sw	s	2.55	0.99	0	0	0		62	158	62	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	w	2.55	0.99	0	0	0		58	118	46	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		12	141	326	
	Ceil	16B-30ad	-	1.25	1.60	0	0	0		0	0	0	
	Ceil	16CR-38ad	-	1.02	1.04	34	34	35		87	89	91	
	Flor	21A-24v	-	0.98	0.00	34	33	0		87	85	0	
	Flor	22A-tpm	-	46.26	0.00	0	0	0		0	0	0	

Line	Item	CL Area/WAR	Heating	S-Clg	L-Clg	Laundry Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 0	0			WAR 0.06	290		
	Sensible Load (Btuh); 0.11			0				78	
	Latent Load (Btuh)								
13	Internal – a Occupants at 230 and 200 Btuh	0		0	0	0		0	0
	b Scenario number			0				500	
	c Default Adjustments								
	d Custom Appliances			0	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		0	0			898	1215	
15	Duct Loads – EHLF & ESGF 0.653 0.904		0	0			586	1099	
	ELG				-8				-22
16	Ventilation Loads – Vent Cfm 0, E Cfm 0								
17	Winter Humidification Load – Gal/Day 0								
18	Piping Load								
19	Blower Heat								
20	AED Excursion & Latent Moisture Migration Load			-1				104	
21	Total Load – Sum lines 13 through 19		0	0			1484	2314	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Right-J8® Form J1
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

		KITCHEN/DINING	HALL
1	Name of Room	KITCHEN/DINING	HALL
2	Running Feet of Exposed Wall	74.8 ft	0 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	10.0 ft / 1545.0 ft²	10.0 ft / 431.3 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	1.0 x 1107.3 ft / 1107.3 ft²	1.0 x 71.2 ft / 71.2 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° / 1107.3 ft²	0 ° / 71.2 ft²

Line	Type of Exposure	Const. Number	Panel Faces	HTM Htg.	HTM Clg.	Kitchen/Dining Area or Length	Heating	S-Clg	L-Clg	Hall Area or Length	Heating	S-Clg	L-Clg
6	Wall	12F-0sw	n	2.55	0.99	60	92	36		0	0	0	
	Glaz	2 glazing, clr outr,	n	11.76	11.39	0	0	0		0	0	0	
	Door	11D0	n	15.29	10.34	24	367	248		0	0	0	
11	Wall	12C-0sw	e	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	e	2.55	0.99	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	e	11.76	27.18	0	0	0		0	0	0	
	Wall	12C-0sw	s	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	0	0	0		0	0	0	
	Wall	12F-0sw	s	2.55	0.99	309	541	211		0	0	0	
	Glaz	2 glazing, clr outr,	s	11.76	14.63	97	1141	1419		0	0	0	
	Wall	12C-0sw	w	3.57	1.96	0	0	0		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	0	0	0		0	0	0	
	Wall	12F-0sw	w	2.55	0.99	379	537	210		0	0	0	
	Glaz	2 glazing, clr outr,	w	11.76	27.18	168	1976	4566		0	0	0	
	Ceil	16B-30ad	-	1.25	1.60	0	0	0		0	0	0	
	Ceil	16CR-38ad	-	1.02	1.04	1107	1129	1152		71	73	74	
	Flor	21A-24v	-	0.98	0.00	1107	1085	0		71	70	0	
	Flor	22A-tpm	-	46.26	0.00	0	0	0		0	0	0	

Line	Item	Kitchen/Dining Area/WAR	Heating	S-Clg	L-Clg	Hall Area/WAR	Heating	S-Clg	L-Clg
12	Infiltration – Heating Load (Btuh); Effect ACH 0.25	WAR 0.40	1808			WAR 0	0		
	Sensible Load (Btuh); 0.11			484				0	
	Latent Load (Btuh)								
13	Internal – a Occupants at 230 and 200 Btuh	0		0	0	0		0	0
	b Scenario number			1000				0	
	c Default Adjustments								
	d Custom Appliances			350	0			0	0
	e Plants				0				0
14	Subtotals – Sum lines 6 through 12		9070	11052			0	0	
15	Duct Loads – EHLF & ESGF 0.653 0.904		5922	9995			0	0	
	ELG				-277				-18
16	Ventilation Loads – Vent Cfm 0, E Cfm 0								
17	Winter Humidification Load – Gal/Day 0								
18	Piping Load								
19	Blower Heat								
20	AED Excursion & Latent Moisture Migration Load			1199				-2	
21	Total Load – Sum lines 13 through 19		14992	21047			0	0	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Duct System Summary
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

Project Information

For: Harrod Homes Inc
Lot 5 Catahoula Ct., Paso Robles, CA 93446

	Heating	Cooling
External static pressure	0.60 in H2O	0.60 in H2O
Pressure losses	0.26 in H2O	0.26 in H2O
Available static pressure	0.34 in H2O	0.34 in H2O
Supply / return available pressure	0.170 / 0.170 in H2O	0.170 / 0.170 in H2O
Lowest friction rate	0.128 in/100ft	0.128 in/100ft
Actual air flow	2000 cfm	2000 cfm
Total effective length (TEL)	266 ft	

Supply Branch Detail Table

Name		Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH 1	h	648	37	17	0.247	6.0	0x0	VIFx	27.9	110.0	st10
BATH 3	h	659	37	21	0.287	6.0	0x0	VIFx	18.6	100.0	st10
BED 3	h	2610	148	147	0.260	7.0	0x0	VIFx	15.6	115.0	st6
FLEX	h	2611	148	110	0.356	7.0	0x0	VIFx	10.5	85.0	st1
KITCHEN/DINING	c	5262	212	282	0.128	10.0	0x0	VIFx	55.9	210.0	st9
KITCHEN/DINING-B	c	5262	212	282	0.230	10.0	0x0	VIFx	42.9	105.0	st4
KITCHEN/DINING-C	c	5262	212	282	0.225	10.0	0x0	VIFx	21.2	130.0	st4
KITCHEN/DINING-D	c	5262	212	282	0.140	10.0	0x0	VIFx	67.3	175.0	st9
LAUNDRY	c	2314	84	124	0.243	6.0	0x0	VIFx	10.1	130.0	st3
MASTER BATH	h	2026	115	59	0.178	7.0	0x0	VIFx	45.5	145.0	st8
MASTER BATH-A	h	2026	115	59	0.210	6.0	0x0	VIFx	32.2	130.0	st7
SUITE ONE	h	4156	235	167	0.143	9.0	0x0	VIFx	53.2	185.0	st8
SUITE ONE-A	h	4156	235	167	0.168	9.0	0x0	VIFx	42.6	160.0	st8

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st8	Peak AVF	1008	957	0.128	571	18.0	0 x 0	VinlFlx	st7
st4	Peak AVF	424	564	0.225	528	14.0	0 x 0	VinlFlx	st3
st9	Peak AVF	424	564	0.128	528	14.0	0 x 0	VinlFlx	st8
st2	Peak AVF	1345	1202	0.128	509	22.0	0 x 0	VinlFlx	
st10	Peak AVF	74	38	0.247	377	6.0	0 x 0	VinlFlx	st2
st6	Peak AVF	1271	1164	0.128	582	20.0	0 x 0	VinlFlx	st2
st3	Peak AVF	508	688	0.225	493	16.0	0 x 0	VinlFlx	st1
st1	Peak AVF	655	798	0.225	572	16.0	0 x 0	VinlFlx	
st7	Peak AVF	1123	1016	0.128	515	20.0	0 x 0	VinlFlx	st6

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x0	2000	2000	0	0	0	0	0x 0		VIFx	

Static Pressure and Friction Rate
Entire House
DH Draft & Design

Job: 050924-1
Date: May 09, 2024
By: WJJ

610 10th st, Suite A, Paso Robles, CA 93446

Project Information

For: Harrod Homes Inc
Lot 5 Catahoula Ct., Paso Robles, CA 93446

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.60	0.60
Pressure losses		
Coil	0.03	0.03
Heat exchanger	0.03	0.03
Supply diffusers	0.04	0.04
Return grilles	0.04	0.04
Filter	0.12	0.12
Humidifier	0	0
Balancing damper	0	0
Other device	0	0
Available static pressure	0.34	0.34

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	0	0
Measured length of trunk	56	0
Equivalent length of fittings	210	0
Total length	266	0
Total effective length		266

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.128	OK	0.128	OK
Return Ducts	0.128	OK	0.128	OK

Fitting Equivalent Length Details

Supply 4X=35, 2A0=35, 11S=15, 11S=15, 11S=15, 11S=15, 11S=15, 11S=15, 11S=15, 1A=35: TotalEL=210

Return TotalEL=0

DUCT DYNASTY
Title 24 | HERS Rating | Duct Plans & Testing
ID# CC2006321

PLAN PREPARED FOR:

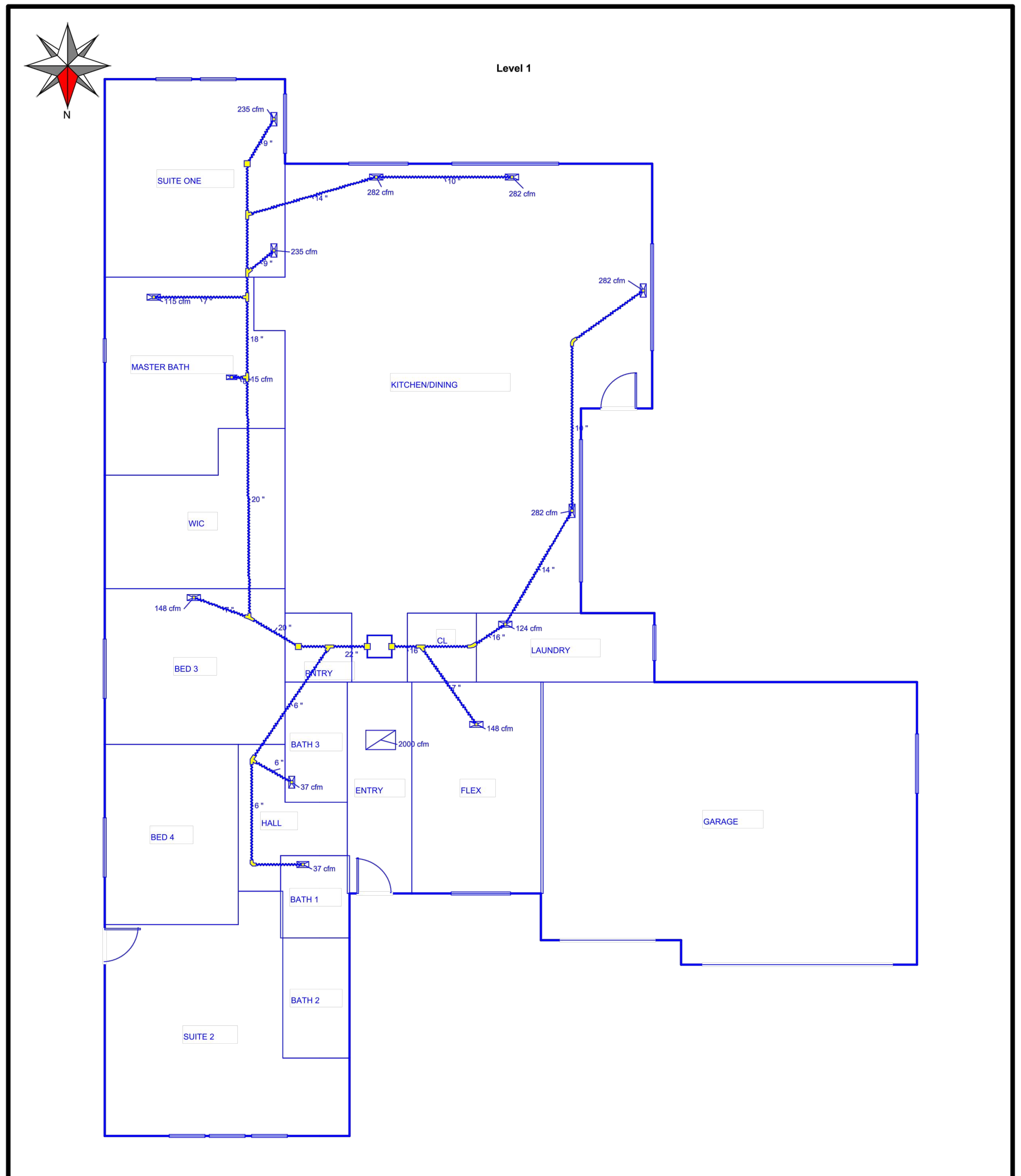
HARROD HOMES INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----
FILE NAME M- 1.1 MECHANICAL REPORT.DWG
DRAWN BY WJJ
DATE 5/13/2024 12:53 PM
SHEET TITLE:
MECHANICAL REPORT

SHEET NUMBER:
M- 1.1



Job #: 050924-1
Performed by WJJ for:
Harrod Homes Inc
Lot 5 Catahoula Ct.
Paso Robles, CA 93446

DH Draft & Design
610 10th st, Suite A
Paso Robles, CA 93446

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DUCT DYNASTY
Title 24 | HERS Rating | Duct Plans & Testing

PLAN PREPARED FOR:
HARROD HOMES INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ---
FILE NAME M- 1.2 MECHANICAL LAYOUT.DWG
DRAWN BY WJJ
DATE 5/13/2024 12:54 PM
SHEET TITLE:
MECHANICAL LAYOUT

SHEET NUMBER:
M- 1.2

ARCHITECTURAL NOTES AND SPECIFICATIONS

CODES AND STANDARDS

1. ALL WORK SHALL CONFORM WITH THE:

   2022 MBC 2022 MEC
   2022 MMC 2022 MPC
   2022 MFC
   2022 MENC

   LOCAL MUNICIPALITY STANDARDS AND ORDINANCES. WHERE A CONFLICT BETWEEN CODES AND ORDINANCES ARRISE, THE MOST STRINGENT REGULATION SHALL GOVERN. SPECIFICATIONS THAT REFERENCE CONDITIONS OUTSIDE THE SCOPE OF THIS PROJECT MAY BE OMITTED.

SECTION 120

1. 1403(D)(1) ALL SWINGING DOORS AND WINDOWS EXPOSED TO AMBIENT CONDITIONS OR TO UNCONDITIONED AREAS, SUCH AS GARAGES, SHALL BE FULLY WEATHER-STRIPPED, GASKETED OR OTHERWISE TREATED TO LIMIT INFILTRATION.
2. 1403(D)(1) ALL MANUFACTURED WINDOWS AND SLIDING GLASS DOORS SHALL MEET THE AIR INFILTRATION STANDARDS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE WHEN TESTED IN ACCORDANCE WITH ASTM E282-73 AND SHALL BE CERTIFIED AND LABELED.
3. 1403(D)(2) ALL FAN SYSTEMS EXHAUSTING AIR FROM THE BUILDING ENVELOPE TO THE OUTSIDE SHALL BE PROVIDED WITH BACK-DRAFT DAMPERS OR AUTOMATIC DAMPERS.
4. 1404(D)(1) ALL TRANSVERSE DUCT, PLENUM, AND FITTED JOINTS SHALL BE SEALED WITH PRESSURE SENSITIVE TAPE OR MASTIC TO PREVENT AIR LOSS.
5. 1401(D)(2) INSULATION OF ALL DUCTS SHALL CONFORM TO THE PROVISIONS OF SECTION 1005 OF THE UNIFORM MECHANICAL CODE, CURRENT EDITION.
6. 1406(A) INDICATE THE MAKE AND MODEL NUMBER OF THE HOT WATER HEATER ON THE PLANS. THE UNIT MUST BE CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION. (AMERICAN APPLIANCE G.V.F. 433-T).
7. 1406(D) RECIRCULATING HOT WATER PIPING IN ATTICS, GARAGES, CRAWL SPACES, OR UNHEATED SPACES OTHER THAN BETWEEN FLOORS OR IN INTERIOR WALLS SHALL BE INSULATED TO PROVIDE MAXIMUM LOSS OF NOT MORE THAN 50 BTU/HR. PER LINEAR FOOT FOR LARGER SIZES.
8. 1406(F) SHOWER HEADS, LAVATORY AND SINK FAUCETS MUST BE OF A MAKE AND MODEL NUMBER CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION.

CARPENTRY

1. WOOD FRAMING MEMBERS TO BE AS FOLLOWS OR EQUAL EXCEPT AS SHOWN ON DRAWINGS:

A. POSTS	NO. 2 DOUGLAS FIR
B. COLUMNS	NO. 2 DOUGLAS FIR
C. JOISTS, BEAMS, AND STRINGERS	NO. 2 DOUGLAS FIR
D. BLOCKING, BRIDGING, 2X4 STUDS	UTILITY GRADE DOUGLAS FIR
E. STUDS 2X6 AND LARGER	NO. 2 DOUGLAS FIR
F. SILLS, SLEEPERS, PLATES, AND NAILING BLOCKS ON OR EMBEDDED IN CONCRETE	PRESSURE TREATED DOUGLAS FIR
G. DECKING (NOT EXPOSED)	UTILITY GRADE DOUGLAS FIR
H. DECKING (EXPOSED)	NO. 2 DOUGLAS FIR
I. RAFTERS	NO. 2 DOUGLAS FIR
J. HEADERS (INTERIOR)	NO. 2 DOUGLAS FIR
K. HEADERS (EXTERIOR)	NO. 2 DOUGLAS FIR

3. OTHER SIZES AS NOTED ON PLANS
4. ALL WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
5. ALL MISCELLANEOUS STEEL TO BE A-36, FABRICATED IN ACCORDANCE WITH AISC.
6. STEEL BOLTS TO BE A-307 OR BETTER. USE A-36 THREADED ROD WHEN COUPLING BOLT TO HOLDOWN & WHEN EPOXY IS REQUIRED.
7. ALL WELDING TO BE WITH E60XX OR E70XX ELECTRODES IN ACCORDANCE WITH AWS. (CERTIFIED WELDER).
8. ALL JOISTS OR BEAMS FRAMING INTO (NOT BEARING ON) BEAMS, HEADERS OR GIRDERS SHALL BE SUPPORTED WITH "U" TYPE "SIMPSON" OR EQUAL JOIST BEAM HANGERS. ALL POST-BEAM AND POST-FOOTING CONNECTIONS TO BE MADE WITH "SIMPSON" POST CAP AND POST BASE, AS REQUIRED.
9. BLOCK SOLID BETWEEN JOISTS AND RAFTERS AT BEARING WALLS. CROSS BRIDGE OR SOLID BLOCKING AT 8'-0" ON CENTER MAXIMUM WHEN DEPTH THICKNESS RATIO IS SIX TO ONE.
10. ALL PLYWOOD TO BE STANDARD GRADE WITH EXTERIOR GLUE. MINIMUM ROOF NAILING TO BE 8D AT 6-6-12" ON CENTER. MINIMUM FLOOR NAILING TO BE 10D AT 6-6-10" ON CENTER. STAGGER JOINTS ½". PLYWOOD INDEX I.D. FOR FLOORS 40/20 & ROOFS 32/16.
11. DOUBLE FLOOR JOISTS UNDER BEARING PARTITIONS.
12. BUILDER SHALL PROVED A MINIMUM OF 22"X30" ACCESS READILY ACCESSIBLE TO ATTIC SPACES AND A MINIMUM OF 30"X30" ACCESS WITH ATTIC MOUNTED FURNACE. 30" HEAD SPACE IS REQUIRED. CBC 1208.2.
13. MINIMUM CEILING HEIGHT IN HABITABLE AREAS AND CORRIDORS TO BE 7'-0".
14. MINIMUM WIDTH FOR A CORRIDOR IS 36 INCHES FOR DWELLING UNITS OR OCCUPANT LOADS <50.
15. ALL EXTERIOR DOORS OR DOORS TO UNHEATED SPACES TO BE WEATHER-STRIPPED AND HAVE A SOLID CORE.
16. BUILDER TO PROVIDE VAPOR BARRIERS FOR FLOORS AND CEILINGS OF 15 LB. BUILDING PAPER OR KRAFT PAPER, FOIL BACK OR KRAFT BACK INSULATION AND 4 MIL POLYETHYLENE ON WARM SIDE OF INSULATION. REQUIRED TO 1 PERM.
17. SUPPORTING COLUMNS AND OTHER SUPPORTING ELEMENTS IN GARAGE(S) AND CARPORT(S) BENEATH ANOTHER STORY SHALL BE PROTECTED
18. INSTALL TRUSS TIE-DOWNS AT EACH RAFTER TAIL, "SIMPSON" H-1 CLIPS.
19. DECK AND BALCONY GUARDRAILS TO BE MINIMUM OF 42" HIGH AND OPEN GUARDRAILS AND STAIR RAILING SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL DESIGN SUCH THAT NO OBJECT 4" IN DIAMETER CAN PASS THROUGH.
20. STAIRWAY TO HAVE MAXIMUM RISE 7" AND MINIMUM RUN 11" CBC 10115.2. PROVIDE HANDRAIL FOR STAIRS WITH 4 OR MORE RISERS, GRIP PORTION OF HANDRAIL SHALL BE GREATER THAN 1-1/4" AND LESS THAN OR EQUAL TO 2" IN CROSS SECTIONAL DIMENSIONS CBC 1014. GUARDRAILS ARE REQUIRED FOR STAIRS AND PORCHES OVER 30" ABOVE GRADE CBC 1015. MINIMUM HEADROOM 80" CBC 1011.3. MINIMUM WIDTH PER
21. GUARDRAILS, STAIR HANDRAILS, OR BALCONY RAILING SHALL BE DESIGNED TO RESIST A HORIZONTAL FORCE OF 50 LBS. PER LINEAL FOOT APPLIED AT THE TOP OF THE RAILING CBC 1607.8
22. MAXIMUM FLOOR LEVEL CHANGE AT DOOR IS 0.75" (½" HANDICAPPED ACCESS REQUIRED) EXCEPT IF STAIRS OR WHEN EXTERIOR LANDINGS ARE USED AND DOOR DOES NOT SWING OVER TOP STEP.
23. SILLS OF NON-BEARING PARTITIONS OR NON-SHEAR PARTITIONS MAY BE ATTACHED TO CONCRETE SLAB WITH RAMSET PINS #3320 OR #3348 AT 2'-0" ON CENTER. CHARGE TO BE USED SHALL BE DETERMINED BY DENSITY OF SLAB.
24. PROVIDE BRACING FOR EXTERIOR AND MAIN CROSS-STUD PARTITIONS. (FOR CONVENTIONAL LIGHT FRAME CONSTRUCTION ONLY) CBC 2308.6
25. BEARING WALLS SHALL BE BRACED AT EACH END OF OR AS NEAR AS POSSIBLE, AT EVERY 25' LINEAL WALL. THIS 1X6 NOTCHED BRACING TO RUN DIAGONALLY IN A STRAIGHT LINE FROM TOP PLATE TO THE BOTTOM PLATE AT AN ANGLE AS NEAR AS POSSIBLE TO 45 DEGREES BUT ALWAYS AT SUFFICIENT ANGLES TO INCLUDE 4 STUD SPACES.
26. PROVIDE LATERAL CROSS-BRACE AT PLATE LINE OF GARAGE (FOR CONVENTIONAL LIGHT FRAME CONSTRUCTION ONLY).
27. MANUFACTURERS CERTIFICATION OF GLU-LAM BEAMS SHALL BE PROPERLY IDENTIFIED FOR THE LOCATION AND SPECIFIC JOB SITE AT THE TIME OF INSPECTIONS CBC 2303.1.3.
28. ALL PLUMBING WALLS TO BE OF 2X6 MATERIALS EXCEPT WHERE NECESSARY.
29. ALL LUMBER SHALL HAVE A GRADE MARKED WITH A STAMP OF THE ASSOCIATION COVERING THE SPECIES AND UNDER WHOSE GRADING RULES IT WAS PRODUCED PER CBC 2303.1.1, 2303.1.5 AND 2303.2.4
30. TRUSSES TO BE FABRICATED IN A SHOP OF AN I.C.C. APPROVED FABRICATOR
31. LAP ALL DOUBLE TOP PLATES PER FRAMING PLAN AT SPLICES.
32. SILLS TO BE DF PRESSURE-TREATED AT CONCRETE
33. FOUNDATION VENTS EQUAL TO ONE SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDERFLOOR AREA
34. WATER CLOSET COMPARTMENTS MUST HAVE 30" WIDTH AND 24" CLEAR IN FRONT OF THE WATER CLOSET.
35. RAFTERS SPANS SHALL COMPLY WITH AF&PA SPAN TABLES FOR JOISTS AND RAFTERS AND CBC TABLES 2308.7.2 (1-6)
36. PROVIDE DRAFT STOPS AT ALL DUCTS, VENTS, FIREPLACE FLUE, AND VERTICAL FRAMED SHAFTS
37. PROVIDE FIRE BLOCKING AT FLOOR, CEILING COVES AND SOFFITS AS PER CBC 708.4.2
38. PROVIDE WEATHER PROTECTION
39. PROVIDE FIRE PARTITIONS PER CBC 708 INCLUDING BUT NOT LIMITED TO CONCEALED SPACES OF STUD WALLS, INCLUDING FURRED AREAS WITH CONCEALED SPACES AT CEILING AND FLOOR LEVELS, AND AT 10' INTERVALS ALONG THE WALL LENGTH. ALSO PROVIDE FIRE STOPS AT ALL OPENINGS AROUND VENTS, PIPES DUCTS, CHIMNEYS, FIREPLACES, AND SIMILAR OPENINGS WHICH AFFORD PASSAGE OF FIRE BETWEEN FLOORS TO CEILINGS OR ATTICS
40. FIREPLACES: ALL FIREPLACES SHALL HAVE APPROVED CLOSEABLE METAL GLASS DOORS. OUTSIDE COMBUSTION AIR IS NOT REQUIRED ON INTERIOR FIREPLACES INSTALLED OVER A CONCRETE SLAB

ROOFING

1. IN ALL AREAS WHERE FIRE PROTECTION IS PROVIDED BY CALIFORNIA DEPARTMENT OF FORESTRY, THE ROOF COVERING SHALL BE MINIMUM CLASS "C" LISTED OR NON-COMBUSTIBLE TILE.
2. IN CALIFORNIA DEPARTMENT OF FORESTRY FIRE PROTECTION AREAS, THE INSTALLER OF THE ROOF COVERING SHALL PROVIDE CERTIFICATION TO THE BUILDING OWNER, AND TO THE INSPECTION AUTHORITY HAVING JURISDICTION.
3. ALL ROOFING SHALL BE APPLIED ACCORDING TO MANUFACTURERS RECOMMENDATIONS OVER A 15 LB ASPHALT FELT DRY SHEET. USE 30 LB. FELT AT CLAY OR CONCRETE TILE ROOFING. WOOD SHAKES TO BE INTERLACED WITH AN 18" WIDE STRIP OF 30 LB A.S.F.
4. ALL FLASHING TO BE CODE COMPLIANT
5. PROVIDE RAFTER TIES AT EXPOSED ROOF (PITCHED CEILING), EITHER MECHANICAL TIES AT RIDGE, 2 FT. O.C. OR EQUIVALENT MATERIAL
6. ROOF BRACING AND PURLINS SHALL BEAR TO PARTITIONS

7. SHEET METAL

1. PROVIDE AND INSTALL SHEET METAL DUCTS FROM ALL HOODS AND EXHAUST FANS TO OUTSIDE
2. ALL REQUIRED FLASHING TO BE 26 GA. GALVANIZED METAL, INCLUDING GUTTERS AND DOWNSPOUTS.
3. HEATING DUCTS TO BE INSTALLED WITHOUT IMPINGEMENT ON BUILDING SURFACE.
4. ALL METHODS OF FLASHING AND COUNTER FLASHING CHIMNEY, PARAPETS, BALCONIES, LANDING, EXTERIOR STAIRWAYS, ROOF TO WALL CONNECTIONS SHALL BE CODE COMPLIANT
5. PROVIDE AN APPROVED FLASHING FOR EXTERIOR OPENINGS AND PARAPET WALLS

6. PLUMBING

1. PROVIDE AND INSTALL PLUMBING AND FIXTURES AS INDICATED ON PLANS ACCORDING TO STATE AND LOCAL PLUMBING CODES
2. NO PLUMBING VENTS ARE TO BE LOCATED WITHIN 3 FEET FROM A PROPERTY LINE.
3. WATER CLOSETS TO BE WATER SAVER TYPES: AMERICAN STANDARD #2122.448 OR EQUAL.
4. PROVIDE INSECT AND RODENT PROOFING WHERE ALL PLUMBING, WIRING AND VENTS PASS THROUGH THE PLATE
5. PROVIDE A WATER HEATER WITH A PRESSURE RELIEF VALVE HAVING A FULL SIZED DRAIN OF GALVANIZED STEEL OR HARD DRAWN COPPER TO THE OUTSIDE OF THE BUILDING WITH THE END NOT MORE THAN 2 FEET OR LESS THAN 6" ABOVE GRADE, POINTING DOWNWARD, THE TERMINAL END BEING UNTHREADED.
6. WATER HEATERS CAPABLE OF IGNITING FLAMMABLE VAPORS SHALL BE INSTALLED ON AND 18" HIGH PLATFORM IF LOCATED IN A RESIDENTIAL GARAGE. ALL WATER HEATERS WITHIN A CABINET SHALL HAVE COMBUSTION AIR AS REQUIRED
7. TOILET TO HAVE A MAXIMUM GALLON PER FLUSH PER CGBSC OR LOCAL JURISDICTION, WHICHEVER IS MORE RESTRICTIVE
8. SHOWER HEAD FLOW SHALL BE PER LOCAL JURISDICTION, WHICHEVER IS MORE RESTRICTIVE
9. PROVIDE SEISMIC ANCHOR OR STRAP AND WRAP WATER HEATER
10. RESIDENTIAL LAVATORY / SINK FIXTURES FLOW SHALL BE PER CGBSC OR LOCAL JURISDICTION, WHICHEVER IS MORE RESTRICTIVE
11. NONRESIDENTIAL LAVATORY / SINK FIXTURES FLOW SHALL BE PER CGBSC OR LOCAL JURISDICTION, WHICHEVER IS MORE RESTRICTIVE
12. KITCHEN FAUCET FLOW SHALL BE PER LOCAL JURISDICTION, WHICHEVER IS MORE RESTRICTIVE
13. WATER HEATER EQUIPMENT CERTIFIED BY LOCAL JURISTICTION
14. NO GAS PIPING SHALL BE INSTALLED IN OR ON THE GROUND, UNDER ANY BUILDING OR STRUCTURE. ALL EXPOSED GAS PIPING SHALL BE KEPT AT LEAST 6" ABOVE GRADE OR STRUCTURE
15. SHOWER STALL MUST CONFORM TO THE REQUIREMENTS OF
16. MAIN PLUMBING DRAIN SIZE AND LOCATION SHALL CONFORM TO CODE (FOUR WATER CLOSETS REQUIRE A 4" DIAMETER DRAIN PIPING)
17. WATER PRESSURE NOT TO EXCEED 80 PSI. IF WATER PRESSURE EXCEEDS 80 PSI OR AS DETERMINED BY BUILDING OFFICIALS, A PRESSURE RELIEF VALVE (PRV) SHALL BE USED
18. ALL OVERHEAD POTABLE WATER PIPING, AND ANY BRANCH FEED PIPES LOCATED IN OUTSIDE WALLS SHALL BE CONSTRUCTED OF TYPE L COPPER OR PEX.
19. OVERHEAD POTABLE WATER PIPING LOCATED IN ATTIC SPACES, IN UNDER FLOOR AREAS, AND EXTERIOR WALLS SHALL BE COVERED WITH INSULATION PROVIDING A MINIMUM RESISTANCE FACTOR OF R-3 OR GREATER. THE R-3 PIPE INSULATION SHALL BE IN ADDITION TO WALL INSULATION REQUIRED BY CALIFORNIA ENERGY STANDARDS
20. WHERE CONDENSATE OR DEFROST LIQUIDS ARE GENERATED IN AN ATTIC OR FURRED SPACE AND DAMAGE MAY RESULT FROM OVERFLOW, A SECONDARY WATER-TIGHT PAN OF CORROSION RESISTANT METAL SHALL BE INSTALLED BENEATH THE COOLING COIL OR UNIT TOP TO CATCH THE OVERFLOW CONDENSATE. THE PAN SHALL BE PROVIDED WITH A MINIMUM 3/4" Ø DRAIN WHICH IS TRAPPED AND VENTED AND SHALL BE DISCHARGED AT A POINT WHICH CAN BE READILY OBSERVED
21. HOT WATER, COLD WATER AND GAS PIPING SHALL BE BONDED TO MAIN ELECTRICAL PANEL IN AN APPROVED MANNER

22. UTILITY

1. CLOTHES DRYER SHALL BE VENTED TO EXTERIOR OF BUILDING
2. L.P.G. APPLIANCES SHALL NOT BE IN A BELOW GROUND PIT, BASEMENT OR OTHER SIMILAR LOCATION
3. APPLIANCES INSTALLED IN ABOVE GRADE UNDER FLOOR SPACE OR BASEMENT SHALL BE PROVIDED WITH AN APPROVED MEANS FOR REMOVAL OF UNBURNED GAS
4. APPLIANCES GENERATING A GLOW, SPARK OR FLAME MUST BE AT LEAST 18 INCHES ABOVE FLOOR LEVEL IN A GARAGE
5. PROVIDE COMBUSTION AIR OPENINGS WITHIN 12" OF THE FLOOR AND CEILING FOR GAS BURNING EQUIPMENT
6. GAS COOKING APPLIANCES SHALL HAVE INTERMITTENT IGNITION DEVICES.

HEATING AND AIR CONDITIONING

1. DUE TO CLIMACTIC VARIATIONS IN LOCATION, BUILDER OR HEATING CONTRACTOR TO PROVIDE HEAT LOSS CALCULATIONS AND LAYOUT.
2. SPECIFY HEATING TYPE AND FUEL AS SELECTED BY OWNER. BUILDER TO MAKE NECESSARY CHANGES IN PLANS TO ACCOMMODATE CHIMNEYS, VENTS, ETC. TO BE LOCATED AND INSTALLED AS REQUIRED.
3. ALL DUCTS TO BE INSTALLED WITHOUT IMPINGEMENT ON BUILDING SURFACES.
4. PROVIDE FURNACE ACCESS AND CLEARANCE AS REQUIRED BY APPLICABLE CODES.
5. BUILDER TO PROVIDE ORIGINAL OCCUPANT WITH A LIST OF HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES.
6. HEATING SYSTEM TO PROVIDE 70° F @ 3'-0" ABOVE FLOOR IN EACH HABITABLE ROOM.
7. WARM AIR FURNACES ARE NOT PERMITTED IN A BEDROOM, BATHROOM, OR CLOSETS.
8. THERMOSTATICALLY CONTROLLED HEATING AND COOLING SYSTEMS (EXCEPT HEAT PUMPS) SHALL HAVE AN AUTOMATIC THERMOSTAT WITH A CLOCK MECHANISM IN WHICH THE OCCUPANT CAN MANUALLY PROGRAM TO AUTOMATICALLY SET BACK THE THERMOSTATS SET POINTS FOR AT LEAST 2 PERIODS WITHIN 24 HOURS.
9. FOR FURNACE AND WATER-HEATERS LOCATED IN ATTIC OR UNDER-FLOOR SPACES PROVIDE THE FOLLOWING :
   A. AN ACCESS OPENING AND PASSAGE WAY OF SUFFICIENT SIZE TO PERMIT REMOVAL OF THE LARGEST PIECE OF THE FURNACE OR WATER HEATER (30" X 30" MIN.) ACCESS OPENING TO BE WITHIN 20' OF UNIT.
   B. ATTIC PASSAGE WAY TO HAVE CONTINUOUS FLOORING, 24" WIDE MINIMUM.
   C. A LEVEL WORKING PLATFORM OF NOT LESS THAN 30" IN DEPTH IN FRONT OF FIREBOX OR FURNACE OR IF FURNACE TEMPERATURE LIMIT CONTROL, VENT COLLAR, AIR FILTER, FUEL CONTROL VALVE, OR AIR HANDLING UNIT IS NOT SERVICEABLE FROM FIREBOX SIDE A CONTINUOUS FLOOR NOT LESS THAN 24" IN WIDTH SHALL BE PROVIDED FROM THE PLATFORM, FIREBOX SIDE, TO AND IN FRONT OF THIS EQUIPMENT.
   D. UNDER FLOOR FURNACE IS SUPPORTED FROM THE GROUND SHALL REST ON A CONCRETE SLAB 3" MIN., ABOVE ADJOINING GROUND.
   E. SUSPENDED FURNACES MUST HAVE MIN. 6" CLEARANCE TO GROUND.
   F. FURNACE ROOM SHALL BE 12" WIDER THAN FURNACE. MIN. CLEAR WORKING SPACE TO BE 3" ON SIDES, BACK, AND TOP.
   G. A 30" DEEP WORKING SPACE SHALL BE PROVIDED ALONG ENTIRE FRONT OF FIRE BOX SIDE OF FURNACE WHEN DOOR IS OPEN.
   H. AN UNOBSTRUCTED ACCESS WORKING SPACE NOR LESS THAN 24" IN WIDTH AND 30" IN HEIGHT SHALL BE PROVIDED AT AIR FILTERS, FUEL CONTROL VALVES, VENT COLLARS, AIR HANDLING UNITS AND EXTERNALLY MOUNTED CONTROLS (15" IN THE LEAST DIMENSION IF EQUIPMENT CAN BE SERVICED FROM OPENING WITHOUT REMOVING PERMANENT CONSTRUCTION).
10. HEAT PUMPS: SHALL BE INSTALLED WITH A CONTROL TO PREVENT SUPPLEMENTARY HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE. SUPPLEMENTARY HEATER OPERATION IS PERMITTED DURING TRANSIENT PERIODS, AS START-UPS FOLLOWING ROOM THERMOSTATS SET-POINT ADVANCE, AND DURING DEFROST. SUPPLEMENTARY HEAT MAY BE DERIVED FROM ANY SOURCE OF ELECTRIC RESISTANCE HEATING OR COMBUSTION HEATING.
11. IN ALL BATHS AND UTILITY AREAS NOT HAVING OPENABLE WINDOWS, INSTALL EXHAUST FANS CAPABLE OF PROVIDING AT LEAST 5 AIR CHANGES PER HOUR PER ROOM.

LIGHTING

1. LIGHTING IN KITCHEN AND BATHROOMS SHALL BE SEPARATELY SWITCHED TO APPROVED FIXTURES WITH A MINIMUM EFFICIENCY OF AT LEAST 40 LUMENS PER WATT (FLUORESCENT FIXTURES).
2. ALL RECESSED LIGHT FIXTURES INSTALLED IN AREAS TO RECEIVE INSULATION SHALL BE IC RATED UNITS (INSULATION ZERO CLEARANCE TYPE) AND NO PENETRATION OR REMOVAL OF INSULATION SHALL BE ALLOWED.
3. FLUORESCENT LIGHTING SHALL BE USED FOR GENERAL LIGHTING IN A BATHROOM OR ADJACENT ROOM WITH BATHROOM PLUMBING SUCH AS A LAVATORY AREA.

ELECTRICAL

1. ALL ELECTRICAL WIRING AND INSTALLATIONS SHALL BE AS REQUIRED BY STATE AND LOCAL ELECTRICAL CODES.
2. EACH DWELLING SHALL BE PROVIDED WITH AN APPROVED SMOKE DETECTION UNIT LOCATED AS SHOWN ON PLANS. THE UNIT SHALL BE INSTALLED IN AN AREA THAT IS CENTRALLY LOCATED GIVING EGRESS TO ALL ROOMS THAT ARE USED AS SLEEPING AREAS. CARE SHOULD BE EXERCISED TO ENSURE THAT INSTALLATION DOES NOT INTERFERE WITH THE OPERATING CHARACTER OF THE DETECTOR. WHEN ACTIVATED THE DETECTOR SHALL PROVIDE AN AUDIBLE ALARM TO BE HEARD IN ALL SLEEPING AREAS CONNECT TO HOUSE CURRENT AND PROVIDE BATTERY BACK-UP . LOCATION OF SMOKE DETECTOR TO BE PER CODE
3. PROVIDE AN ATTIC LIGHT SWITCH TO ATTIC LIGHT AT 5'-0" ABOVE FINISH FLOOR.
4. ALL WIRING TO BE ROMEX.
5. PROVIDE A PERMANENT ELECTRICAL OUTLET AND LIGHTING FIXTURE AT OR NEAR THE FURNACE OR WATER HEATER CONTROLLED BY A SWITCH LOCATED AT THE REQUIRED ACCESS OPENING.
6. ALL RECEPTACLES IN BATHROOMS, KITCHEN (COUNTER AREA), GARAGES, ACCESSORY BUILDINGS AT OR BELOW GRADE LEVEL INTENDED FOR HABITATION OR STORAGE / WORK AREAS, CRAWL SPACES AT OR BELOW GRADE LEVEL, BASEMENTS AND LAUNDRY AREAS SHALL BE G.F.C.I. CIRCUIT PROTECTION
7. IN DINING AREA, A RECEPTACLE OUTLET SHALL BE INSTALLED AT EACH COUNTER SPACE WIDER THAN 12"
8. ELECTRICAL OUTLETS SHALL BE INSTALLED SO THAT AT NO POINT AROUND THE PERIMETER WALL OF ANY HABITABLE ROOM IS THERE NO MORE THAN 6' MEASURED HORIZONTALLY FROM SUCH AN OUTLET, INCLUDING ANY WALL 2' OR WIDER. (BATHROOM AND UTILITY ROOMS EXCEPTED).
9. AT LEAST ONE (1) WALL SWITCH CONTROLLED LIGHTING OUTLET SHALL BE INSTALLED IN EVERY HABITABLE ROOM, IN HALLWAYS, BATHROOMS STAIRWAYS, ATTACHED GARAGES, AND AT OUTDOOR ENTRANCES. AT LEAST ONE (1) LIGHTING OUTLET OUTLET SHALL BE INSTALLED IN AN ATTIC UNDER FLOOR SPACE, UTILITY ROOM, AND BASEMENT USED FOR STORAGE OR CONTAINING EQUIPMENT
10. COMPLETELY ENCLOSED CEILING MOUNTED LIGHT FIXTURES IN CLOTHES CLOSETS SHALL BE MIN 12" FROM EDGE OF SHELVES MEASURED HORIZONTALLY RECESSED AND FLUORESCENT FIXTURES MIN. 6". PENDANT LIGHTS ARE NOT PERMITTED.
11. 400 AMP ELECTRICAL METER WITH #4 UFER GROUND TO FOUNDATION FOR EACH DWELLING.
12. GFIC OUTLETS ON ALL ABOVE COUNTER OUTLETS IN KITCHEN MOUNTED +44" ABOVE FINISH FLOOR (TYP). OUTLETS SHALL BE LOCATED NO FARTHER THAN 24" AWAY FROM ANY POINT ALONG THE COUNTER AREA WIDER THAN 12". ON ANY PENINSULA / EATING BAR OUTLETS SHALL BE MOUNTED AT +27" ABOVE FINISH FLOOR AND SHALL BE LOCATED NO FARTHER THAN 24" AWAY FROM ANY POINT ALONG PENINSULA / EATING BAR. AT EATING BAR FACING KITCHEN SET GFIC AT +39", TURN OUTLET SIDEWAYS TO CLEAR COUNTER.
13. GFIC OUTLETS ON ALL ABOVE COUNTER OUTLETS IN BATHROOMS MOUNTED AT +42" ABOVE FINISH FLOOR (TYP).
14. GFIC OUTLETS ON ALL ABOVE COUNTER OUTLETS IN GARAGE MOUNTED AT +44" ABOVE FINISH FLOOR (TYP).
15. PROVIDE 110 V CEILING OUTLET FOR GARAGE DOOR OPENER.
16. PROVIDE WATERPROOF GFIC OUTLETS AT +18" ABOVE FINISH GRADE IN FRONT AND REAR OF BUILDING.
17. PROVIDE GFIC OUTLETS AT +27" ABOVE FINISH FLOOR ON ISLAND (SIDES OF ISLAND UNIT).
18. GFIC OUTLETS AT +44" ABOVE FINISH FLOOR IN LAUNDRY ROOM AT COUNTER.
19. PROVIDE GAS, 220V OUTLET, AND 110V OUTLET TO STOVE, COOK TOP, AND / OR OVENS (TYP). ALSO PROVIDE ELECTRICAL FOR EXHAUST HOOD ABOVE COOKTOP (TYP)
20. ALL NON-LOCKING OUTLETS WITHIN 5.5FT FROM FLOOR SHALL BE TAMPER RESISTANT
21. BRANCH CIRCUITS SERVING OUTLETS OF ANY DWELLING ROOMS, HALLWAYS, OR CLOSETS SHALL BE AFCI
22. PROVIDE CLEARANCES AROUND THE FAN AS REQUIRED BY APPLICABLE CODES.
23. TWO 20-AMP SMALL-APPLIANCE BRANCH CIRCUITS REQUIRED IN KITCHEN AND SHALL SERVE ALL WALL AND FLOOR RECEPTACLES, ALL COUNTERTOP OUTLETS, AND RECEPTACLE OUTLETS FOR REFRIGERATION EQUIPMENT
24. LIGHTING NOTES:
    24.1. LIGHTING IN KITCHEN AND BATHROOMS SHALL BE SEPARATELY SWITCHED TO APPROVED FIXTURES WITH A MINIMUM EFFICIENCY OF AT LEAST 40 LUMENS PER WATT (FLUORESCENT TYPE FIXTURES).
    24.2. ALL RECESSED LIGHT FIXTURES INSTALLED IN AREAS TO RECEIVE INSULATION SHALL BE "IC" RATED UNITS (INSULATION ZERO CLEARANCE TYPE) AND NO PENETRATION OR REMOVAL OF INSULATION SHALL BE ALLOWED.
    24.3. FLUORESCENT LIGHTING SHALL BE USED FOR GENERAL LIGHTING IN A BATHROOM OR ADJACENT ROOM WITH BATHROOM PLUMBING SUCH AS LAVATORY AREA.
25. ALL BRANCH CIRCUITS (INCLUDING THE KITCHEN), EXCEPT THOSE IN THE BATHROOMS AND GARAGE SHALL BE PROTECTED BY LISTED, COMBINATION AFCI DEVICES (THIS INCLUDES THE KITCHEN)
26. IN ALL AREAS SPECIFIED BY, ALL 125-VOLT, 15 AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT RECEPTACLES

WINDOWS

1. SAFETY GLAZING SHALL BE LOCATED IN BUT NOT LIMITED TO THE FOLLOWING AREAS, (A) ALL DOORS; (B) WITHIN 24" OF DOORS; (C) WITHIN 18" OF FLOORS; (D) WITHIN TUB / SHOWER ENCLOSURES; (E) WITHIN HOT TUBS, WHIRLPOOL, SAUNA, SAUNA AND STEAM ROOMS; (F) GLAZING IN PORTION OF BUILDING WALL ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60" ABOVE A STANDING DRAIN.
2. ALL GLASS TO BE DUAL GLAZED, EXCEPT IN GARAGE.
3. ALL SKYLIGHTS WITHIN DWELLING TO BE DUAL GLAZED. IF JOB BUILT, A 1/16" PLASTIC PANEL MAY BE ADDED TO INSIDE. ALL GLASS IN SKYLIGHTS SHALL BE WIRE GLASS OR TEMPERED GLASS, MINIMUM THICKNESS 7/32". APPROVED PLASTICS MAY ALSO BE USED.
4. GLAZING IN AREAS SUBJECT TO HUMAN IMPACT OR HAZARDOUS LOCATIONS SHALL BE OF SAFETY GLAZING MATERIALS, SUCH AS LAMINATED GLASS, TEMPERED GLASS, WIRE GLASS AND SAFETY PLASTIC CBC SEC. 2406.4, INCLUDING GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR IN A CLOSED POSITION AND WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN 24" ARC OF EITHER EDGE OF DOOR IN A CLOSED POSITION AND WHERE THE EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE.
5. SLIDING GLASS DOORS TO BE TEMPERED.
6. UNLESS AN EXTERIOR DOOR IS PROVIDED, ONE WINDOW IN EACH BEDROOM SHALL HAVE A FINISHED HEIGHT OF NOT MORE THAN 44" ABOVE FINISH FLOOR. SUCH WINDOWS SHALL HAVE A CLEAR OPENABLE AREA OF NOT LESS THAN 5.7 SQ. FT. WITH NO DIMENSION LESS THAN 20" IN WIDTH OR 24" IN HEIGHT
7. WINDOW AREA MUST BE AT LEAST 8% OF THE FLOOR AREA, 10 SQ. FT. MIN. IN HABITABLE ROOMS AND SHALL BE PROVIDED WITH NATURAL VENTILATION BY MEANS OF OPENABLE EXTERIOR OPENINGS WITH AREA OF NOT LESS THAN 4% OF THE FLOOR AREA OF SUCH WITH A MINIMUM OF 5 SQ. FT.
8. SHOWER DOORS AND BATH ENCLOSURES NOT TO BE LESS THAN 3/16" FULL TEMPERED SAFETY GLASS.
9. GLASS WINDOWS AND DOORS INCLUDING SHOWER ENCLOSURES SUBJECT TO HUMAN IMPACT MUST HAVE SAFETY GLAZING OR PROTECTIVE GRILL OR PUSH BAR CBC 2406.

INSULATION

1. ALL HEATING DUCTS LOCATED IN UNHEATED SPACES TO BE WRAPPED WITH 2" OF DUCT INSULATION. FLOOR INSULATION TO BE MINIMUM R-19.
2. CEILING INSULATION TO BE R-30 OR AS REQUIRED BY ENERGY CALCULATIONS.
3. ALL INSULATION TO BE CERTIFIED AND LABELED AS COMPLYING WITH THE MEC'S STANDARDS FOR INSULATING MATERIALS.
4. ALL EXTERIOR WALLS TO BE CAULKED BETWEEN SOLE PLATES AND FLOOR AND BETWEEN EXTERIOR WALL PANELS.
5. PROVIDE SOUND INSULATION IN PARTY WALLS EQUAL TO A SOUND TRANSMISSION CLASS 50 (STC 50) OR MORE.
6. THE INSULATION INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER AND THE BUILDER STATING THE INSULATION CONFORMS WITH REQUIREMENTS OF TITLE 24. PART 2 CHAPTER 2-53, & THE MATERIALS INSTALLED CONFORM WITH THE REQUIREMENTS OF TITLE 20, CHAPTER 7, SUB-CHAPTER 4, ARTICLE 3. THIS CERTIFICATE SHALL STATE THE MANUFACTURER'S NAME AND MATERIAL IDENTIFICATION, THE INSTALLED WEIGHT PER SQUARE FOOT CONSISTENT WITH THE MANUFACTURER'S LABELED DENSITY FOR THE DESIRED "R" VALUE.

DRYWALL / EXTERIOR FINISH

1. ALL UTILITY AREAS CONTAINING LAUNDRY FACILITIES SHALL BE FINISHED ON WALLS AND CEILING WITH WATERPROOF GYPSUM BOARD OR OTHER WATERPROOF MATERIAL.
2. ALL WALL SURFACES BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS ARE TO BE CONSTRUCTED OF MATERIAL NOT ADVERSELY AFFECTED BY WATER.
3. FIRE SEPARATION BETWEEN DWELLINGS AND ENCLOSED GARAGES TO BE APPROVED FIRE SEPARATION RATED MATERIAL. GARAGE DOOR TO BE 1 3/8" SELF-CLOSING SOLID CORE DOOR. SEPARATION TO EXTEND FROM ROOF SHEATHING TO CONCRETE FLOOR. CARPORT OPENING ON (2) SIDES REQUIRE NO FIRE SEPARATION. ANY WINDOWS OPENING TO CARPORT ARE TO BE FIXED AND DOORS
4. PROVIDE ONE-HOUR FIRE RESISTANT CONSTRUCTION THROUGHOUT FOR GROUP R, DIVISION 1 OCCUPANCIES TWO-STORIES OR MORE IN HEIGHT OR HAVING MORE THAN 3000 SQ. FT. OF FLOOR AREA ABOVE THE FIRST STORY
5. PROVIDE AN APPROVED WATERPROOF BUILDING PAPER UNDER WOOD SIDING.
6. VENEER INSTALLATION TO COMPLY WITH CODE
7. LATHING AND PLASTERING SHALL COMPLY WITH LOCAL REQUIREMENTS.
8. LOCATE A 26 GA. G.I. STUCCO WEEP SCREED AT BOTTOM OF ALL STUCCO WALLS

CABINETS AND MILLWORK

1. CABINET MAKER TO VERIFY ALL DIMENSIONS ON JOB BEFORE ASSEMBLY OF CABINETWORK AS SHOWN ON PLAN.
2. PROVIDE A 4" TOE SPACE AT ALL KITCHEN AND VANITY CABINETS.
3. HEIGHT TO COMBUSTIBLE MATERIAL ABOVE KITCHEN RANGES, 30" (UNPROTECTED), 24" (PROTECTED).

MISCELLANEOUS

1. ALL GARAGE DOORS TO BE EQUIPPED WITH APPROVED SAFETY SPRINGS.
2. EQUIPMENT WHICH REQUIRES PREVENTATIVE MAINTENANCE TO MAINTAIN EFFICIENT OPERATION SHALL BE FURNISHED WITH COMPLETE NECESSARY MAINTENANCE INFORMATION.
3. AN UNDER-FLOOR PLENUM SPACE MUST MEET THE REQUIREMENTS OF MMC.
4. PLANS AND SPECIFICATIONS SHOULD BE PROVIDED BY THE CLIENT TO SOILS ENGINEER PRIOR TO GRADING. PLANS SHOULD INCLUDE GRADING PLANS, FOUNDATION PLANS, FOUNDATION DETAILS AND STRUCTURAL CALCULATIONS. STRUCTURAL LOADS SHOULD BE SHOWN ON THE STRUCTURAL CALCULATIONS.
5. SAFETY GLAZING SHALL BE LOCATED IN BUT NOT LIMITED TO THE FOLLOWING AREAS: (A) ALL DOORS; (B) WITHIN 24" OF DOORS; (C) WITHIN 18" OF FLOORS; (D) WITHIN TUB/SHOWER ENCLOSURES; (E) WITHIN HOT TUBS, WHIRLPOOL, SAUNA AND STEAM ROOMS; (F) GLAZING IN A PORTION OF A BUILDING WALL ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EDGE OF GLAZING IS LESS THAN 60" ABOVE AN STANDING SURFACE AND DRAIN INLET.
6. FIRE STOPPING OR FIRE BLOCKS WHERE COMBUSTIBLE CONSTRUCTION OCCURS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS: A) 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; B) AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS; C) IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF RUN AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF STAIRS IF THE WALLS UNDER STAIRS ARE UNFINISHED; D) IN OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS, FIREPLACES AND SIMILAR OPENINGS WHICH AFFORD PASSAGE FOR FIRE AT CEILING AND FLOOR LEVELS, WITH NON COMBUSTIBLE MATERIALS; AND E) AT OPENINGS BETWEEN ATTIC SPACES AND CHIMNEY CHASES FOR FACTORY-BUILT CHIMNEYS. FIRE BLOCK CONSTRUCTION SHALL BE IN ACCORDANCE WITH CODE.
7. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE SPRINKLER SYSTEM (IF REQUIRED) WITH MECHANICAL, PLUMBING, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL SYSTEM TO AVOID CONFLICTS. IF ANY SUCH CONFLICTS DO OCCUR, THEY SHALL BE REPORTED IMMEDIATELY TO THE OWNER AND/OR AGENT OF THE OWNER. WORK SHALL NOT PROCEED IN THE AREA OF CONFLICTS UNTIL THEY HAVE BEEN RESOLVED WITH THE OWNER AND/OR AGENT OF THE OWNER.
8. APPROVED BUILDING ADDRESS NUMBERS SHALL BE PLACED UPON THE STRUCTURE AS REQUIRED BY CITY OR COUNTY ORDINANCE. THE INDIVIDUAL NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND AND HAVE A HEIGHT AND STROKE COMPATIBLE WITH THAT JURISDICTION
9. ROOF DRAINAGE SYSTEMS SHOULD BE DESIGNED SO WATER IS NOT DISCHARGED ONTO OR INJECTED INTO BEARING SOILS OR NEAR STRUCTURES

DJH
DRAFT & DESIGN
610 10TH ST. SUITE A
PASO ROBLES CA 93446
DJH1132@GMAIL.COM
805.975.3071

PLAN PREPARED FOR:

HARROD HOMES INC.
CATAHULA COURT, LOT 5
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. ----

FILE NAME ASP 20-02-19 RUSSELL.DWG

DRAWN BY DJH

DATE 1/7/2025 12:22 PM

SHEET TITLE:

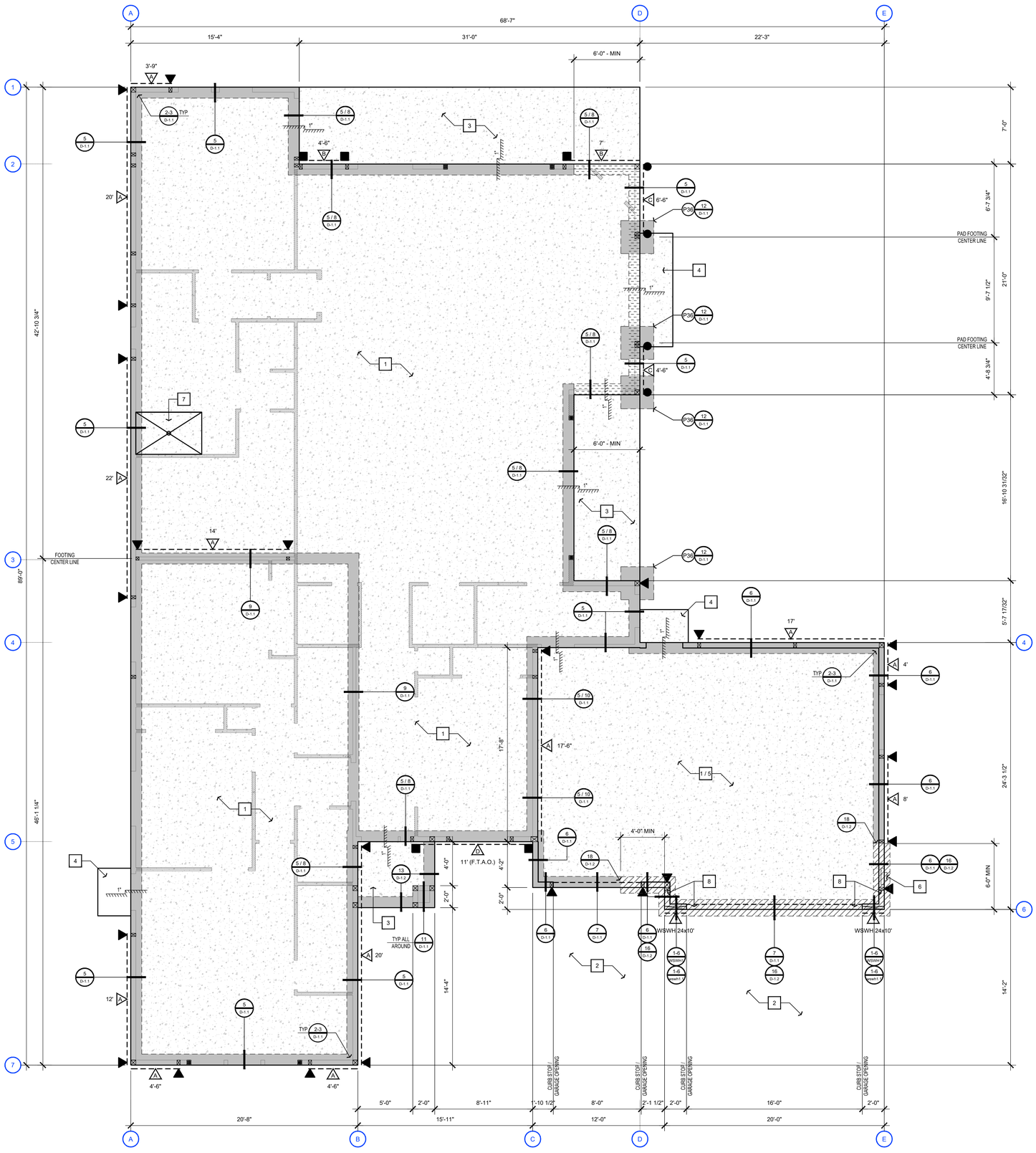
ARCHITECTURAL NOTES & SPECIFICATIONS

SHEET NUMBER:

ASP-1

FOUNDATION PLAN NOTES

FOR A COMPLETE LIST OF ALL NOTES, LEGENDS, SYMBOLS, CALLOUTS OR ANY OTHER SPECIFICATION / REQUIREMENT THAT PERTAINS TO THE FOUNDATION PLAN BUT COULD NOT BE SHOWN HERE FOR CLARITY, **SEE SHEET S-1.2**



FOUNDATION PLAN

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

KUDLA ENGINEERING
PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:

HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

FOUNDATION PLAN

SHEET NUMBER:
S-1.1

SITE DEVELOPMENT

GRADING - BUILDING PADS

A. DUE TO THE PRESENCE OF LOW DENSITY SOILS AND A CUT / FILL SITUATION AT THE PROPOSED BEARING DEPTHS, OVER-EXCAVATION AND RE-COMPACTION OF SILS IN THE BUILDING AREAS WILL BE NECESSARY TO DECREASE THE POTENTIAL FOR DIFFERENTIAL SETTLEMENT AND TO PROVIDE MORE UNIFORM BEARING CONDITIONS. SOILS SHOULD BE OVER-EXCAVATED TO A DEPTH OF TWO (2) FEET BELOW THE BOTTOM OF FOOTINGS, THREE (3) FEET BELOW EXISTING GRADE, OR 75% OF THE DEEPEST FILL THICKNESS, WHICHEVER IS GREATER. THE OVER-EXCAVATION SHOULD EXTEND TO A DISTANCE OF FIVE (5) FEET BEYOND THE BUILDING PERIMETER. THE RESULTING SURFACE SHOULD BE SCARIFIED TO A DEPTH OF ONE (1) FOOT, MOISTURE CONDITIONED AND RE-COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DRY DENSITY. THE INTENT OF THESE RECOMMENDATIONS IS TO PROVIDE A MINIMUM OF TWO (2) FEET OF COMPACTED SOILS BELOW THE BOTTOM OF ALL FOOTINGS.

B. AREA OUTSIDE THE BUILDING AREA TO RECEIVE FILL, EXTERIOR SLABS-ON-GRADE, SIDEWALKS AND PAVING SHOULD BE OVER-EXCAVATED TO A DEPTH OF ONE (1) FOOT. THE EXPOSED SURFACE SHOULD BE SCARIFIED, MOISTURE CONDITIONED RE-COMPACTED.

C. ON-SITE SOILS MAY BE USED FOR FILL ONCE THEY ARE CLEANED OF ALL ORGANIC MATERIAL, ROCK, DEBRIS AND IRREDUCIBLE MATERIAL LARGER THAN EIGHT (8) INCHES.

D. ALTHOUGH NOT ENCOUNTERED IN OUR BORINGS, SHOULD ANY TRASH, DEBRIS OR SUBSURFACE STRUCTURES BE ENCOUNTERED DURING GRADING, REMOVALS WILL BE NECESSARY TO ADEQUATE DEPTHS AND HORIZONTAL LIMITS AS RECOMMENDED BY MID-COAST GEOTECHNICAL AT THE TIME OF GRADING. ALL SURFACE AND SUBSURFACE DEBRIS REMAINING FROM THE DEMOLISHED RESIDENCE SHOULD BE REMOVED DURING GRADING OPERATIONS.

NOTE: FOR ALL OTHER RECOMMENDATIONS AND REQUIREMENTS NOT STATED HERE, THE CONTRACTOR SHALL REVIEW THE SOILS REPORT PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR HAS ANY QUESTIONS, PLEASE CONTACT MID-COAST GEOTECHNICAL.

STATEMENT OF SPECIAL INSPECTIONS

SPECIAL INSPECTIONS SHOULD BE PERFORMED IN ACCORDANCE WITH TABLE 1705.6 BELOW. **THE FOLLOWING SHALL BE INSPECTED BY MID-COAST GEOTECHNICAL, INC**.

INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
VERIFY MATERIAL BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	NO	YES
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	NO	YES
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILLED MATERIALS	NO	YES
VERIFY USE OF PROPER MATERIALS DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	YES	NO
PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	NO	YES

SPECIAL INSPECTORS FOR THIS PROJECT

SPECIAL INSPECTORS ARE HIRED BY THE OWNER / APPLICANT AND PAID FOR BY THE OWNER / APPLICANT. THE JURISDICTION AND OTHERS APPROVE OF THE SPECIAL INSPECTORS FOR THE PROJECT. BELOW ARE A LIST OF AGENCIES / SPECIAL INSPECTORS REQUIRED FOR THIS PROJECT ALONG WITH THE TASK THAT EACH NEED TO PERFORM:

RESPONSIBILITY	CONTACT INFORMATION
GEOTECHNICAL	MID-COAST GOTECHNICAL, INC. P.O. BOX 2220 ATASCADERO, CA 93422 805.674.2673

PASO ROBLES - INSPECTOR OBSERVATIONS

THE FOLLOWING SHALL BE OBSERVED BY CITY OF PASO ROBLES INSPECTOR DURING CONSTRUCTION

INSPECTION FOR WOOD CONSTRUCTION

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
VERIFY GRADE AND THICKNESS OF STRUCTURAL PANEL SHEATHING	NO	YES
VERIFY NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES. VERIFY NAIL DIAMETER AND LENGTH, NUMBER OF FASTENER LINES, AND SPACING BETWEEN FASTENERS IN EACH LINE AND AT EDGE MARGINS.	NO	YES
VERIFY THAT THE TEMPORARY INSTALLATION RESTRAINT BRACING AND THE PERMANENT INDIVIDUAL MEMBERS RESTRAINT BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKING.	NO	YES
WSWH WOOD SHEARWALL HOLDOWN ANCHOR TYPE / SPACING AND PLACEMENT (INCLUDING EMBEDMENT LENGTH, SPACING, AND EDGE DISTANCE)	NO	YES
LENGTH OF SHEARWALLS IN FIELD MATCH LENGTH SHOWN ON PLAN	NO	YES
VERIFY WINDOW SIZE & PLACEMENT IN F.T.A.O. SHEARWALLS MATCHES ARCHITECTURAL PLAN SPECIFICATIONS	NO	YES
SHEAR WALL NAILING ≤ 4" O/C	NO	YES

FOUNDATION CALLOUTS

1. **4" CONCRETE SLAB** -- SEE CONCRETE NOTE - SEE DETAIL **(4/D-1.1)**. GARAGE SLAB SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARDS THE MAIN VEHICLE ENTRY DOORWAY. (CRC R309.1)
2. **4" CONCRETE DRIVEWAY** -- SEE CONCRETE NOTE - SEE DETAIL **(4/D-1.1)**. SLOPE CONCRETE AWAY FROM BUILDING 2% MINIMUM. WHERE SLAB DOES NOT HAVE PERIMETER FOOTING, CONTRACTOR SHALL THICKEN PERIMETER (8-INCH WIDE X 8-INCH DEEP REQUIRED) AND USE CONTINUOUS #4 BAR AT THICKENED EDGE.
3. **4" CONCRETE SLAB AT COVERED PATIO** -- SEE CONCRETE NOTE - SEE DETAIL **(4/D-1.1)**. SLOPE CONCRETE AWAY FROM BUILDING 2% MINIMUM. WHERE SLAB DOES NOT HAVE PERIMETER FOOTING, CONTRACTOR SHALL THICKEN PERIMETER (8-INCH WIDE X 8-INCH DEEP REQUIRED) AND USE CONTINUOUS #4 BAR AT THICKENED EDGE. **NOTE:** AT EXTERIOR DOORWAYS, THE SLOPE AWAY FROM THE BUILDING SHALL BE 2% MAXIMUM. THIS 2% MAX AREA SHALL SHALL BE MINIMUM 3'-0" DEEP AND AS WIDE AS DOORWAY PLUS 6 INCHES ON EACH SIDE.
4. PROVIDE 4" CONCRETE PAD OUTSIDE EXTERIOR DOOR WITH #3 @ 18" O/C SET AT MIDSPAN OF SLAB OVER 4" CLEAN COMPACTED FILL SAND (THICKEN PERIMETER). SLOPE CONCRETE AWAY FROM BUILDING 2% MAXIMUM. PAD SHALL BE MINIMUM 3'-0" DEEP AND AS WIDE AS DOORWAY PLUS 6 INCHES ON EACH SIDE.
5. PROVIDE 1" HIGH (AT START AT BACK OF GARAGE WALL) X 6" WIDE CONCRETE CURB AROUND GARAGE PERIMETER (TYP)
6. #4 UFER AWG COPPER GROUNDING IS REQUIRED TO BE INSTALLED IN THE FOUNDATION FOOTING AT THE ELECTRICAL SERVICE LOCATION.
7. WALK-IN SHOWER PER ARCHITECTURAL PLANS. CONTRACTOR SHALL DEPRESS SLAB 3.5-INCHES PER DETAIL **(17/D-1.2)**.
8. #4 (GRADE - 60) CLOSED STIRRUPS @ 8" O/C PER DETAIL **(15/D-1.2)** REQUIRED FOR 4'-0" EACH WAY BEYOND EACH END OF WSWH SHEAR WALL. SEE DETAIL **(1/WSWH1.1)** FOR ADDITION CLOSED STIRRUP REQUIREMENTS AT WSWH SHEAR WALL ANCHOR BOLTS.

SETBACK CERTIFICATION REQUIRED

CERTIFICATION FROM A LICENSED LAND SURVEYOR OR CIVIL ENGINEER IS REQUIRED IF THE STRUCTURE IS LOCATED WITHIN (5) FEET OF THE MINIMUM REQUIRED SETBACK FROM THE PROPERTY LINE TO VERIFY THAT THE STRUCTURE MEETS THE SETBACK REQUIREMENTS.

FOUNDATION VERIFICATION LETTER REQ'D

PRIOR TO THE CONTRACTOR REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL ADVISE THE BUILDING OFFICIAL IN WRITING THAT:

1. THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOILS REPORT.
2. THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED.
3. THE FOUNDATION EXCAVATIONS COMPLY WITH THE INTENT OF THE SOILS REPORT.

CONTRACTOR WSWH WALL NOTE

THE CONTRACTOR SHALL NOTE THAT SIMPSON MAKES DIFFERENT TEMPLATE PLATES FOR EACH OF THEIR PRE-ENGINEERED SHEAR BRACE WALLS. USE CARE WHEN ORDERING ANCHORAGE / TEMPLATE KIT TO ORDER CORRECT KIT FOR WSWH WALL DENOTED ON PLANS.

CONCRETE SPECIFICATIONS

1. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI BUILDING CODE (ACI 318) AND THE LATEST EDITION OF THE ACI MANUALS OF CONCRETE PRACTICE.
2. CONCRETE STRENGTH: **2,500-PSI AT 28 DAYS.**
3. MINIMUM CEMENT CONTENT: 5.0 SACKS PER YARD
4. MAXIMUM WATER-CEMENT RATIO: 0.53 - MAX WATER TO CEMENT RATIO
   0.43 - IF POURING SLAB DIRECTLY ON VAPOR BARRIER
5. AGGREGATE SIZE: 1-INCH - PROVIDE THE MAXIMUM RATIO OF COARSE AGGREGATE TO FINE AGGREGATE CONSISTENT WITH PLACING REQUIREMENTS.
6. MAXIMUM SLUMP: 4-1/2" PER ASTM C143.
7. CEMENT: PORTLAND TYPE II, ASTM C150.
8. COARSE AGGREGATE: ASTM C33
9. FIND AGGREGATE: ASTM C33. REACTIVITY RATIO Sc/Rc SHALL NOT EXCEED (1) PER ASTM C289.
10. WATER: POTABLE
11. READY MIXED CONCRETE: ASTM C94
12. WATER REDUCING ADMIXTURE: AS REQUIRED, SUBMIT TO E.O.R. FOR REVIEW.
13. CONCRETE PLACEMENT:
    A. CONCRETE SHALL NOT FREE-FALL MORE THAN (3-5)-FEET.
    B. ALL CONCRETE SHALL BE VIBRATED USING APPROVED METHODS.
14. CONCRETE CURING: CONTRACTOR SHALL KEEP CONCRETE CONTINUOUSLY WET FOR (7) - DAYS MINIMUM BY USE OF "MEANS & METHODS" AND "INDUSTRY BEST PRACTICES" SUCH AS: PONDING (HIGHLY RECOMMENDED), SPRINKLING, OR WET COVERING ETC. CONTRACTOR MAY ALSO APPLY A CURING COMPOUND IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

REINFORCEMENT SPECIFICATIONS:

1. REINFORCING STEEL SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIAL LIKELY TO IMPAIR BOND.
2. ALL REINFORCEMENT STEEL SHALL BE CONTINUOUS AND LAPPED AT SPLICES (STAGGERED SPLICES AT ADJACENT BARS).
   #3 BAR LAP SPLICE = 18" MINIMUM
   #4 BAR LAP SPLICE = 24" MINIMUM
   #5 BAR LAP SPLICE = 42" MINIMUM
3. REINFORCING BARS ARE TO BE DEFORMED BARS CONFORMING TO ASTM A615:
   #3 - #4 BARS = GRADE 40 (U.O.N.)
   #5 BARS = GRADE 60
4. ALL REINFORCING STEEL, ANCHOR BOLTS, AND FOUNDATION HARDWARE SHALL BE LOCATED IN FORM WORK AND HELD FIRMLY IN PLACE PRIOR TO AND DURING CONCRETE PLACEMENT BY MEANS OF WIRE SUPPORTS.
5. CONCRETE CLEAR COVER IS REQUIRED AS FOLLOWS FOR REINFORCING:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3-INCHES
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 - #18 BARS: 2-INCHES
      #5 AND SMALLER BARS: 1-1/2 - INCHES
   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND (SLABS, WALLS, JOIST):
      #14 - #18 BARS: 1-1/2 - INCHES
      #11 AND SMALLER BARS: 3/4 - INCHES
6. REINFORCING STEEL SHALL NOT BE WELDED, UNLESS SPECIFICALLY NOTES ON THE STRUCTURAL DRAWINGS. IF ALLOWED, WELDING SHALL CONFORM TO CBC STANDARDS.

FOUNDATION PLAN LEGEND

- = **INTERIOR NON-BEARING WALLS:** ALL INTERIOR NON-BEARING WALLS TO BE ANCHORED TO CONCRETE SLAB W/ SIMPSON SHOT PINS (MODEL #: PDPAWL-287 - MECHANICALLY GALVANIZED) @ 16" O/C MAX SPACING. SHOT PINS SHALL BE CENTERED ON SILL PLATES. SEE DETAIL **(G/D-2.1)**
- = **4" CONCRETE SLAB** ---> SEE DETAIL **(4/D-1.1)**
- = 12" WIDE X 21" DEEP CONTINUOUS FOOTING WITH: (1)-#5 BAR TOP AND BOTTOM
- = 12" WIDE X 21" DEEP CONTINUOUS FOOTING WITH: (2)-#5 BARS TOP AND BOTTOM **(GRID LINE - D)**
- = 18" WIDE X 24" DEEP CONTINUOUS FOOTING WITH: (2)-#5 BARS TOP AND BOTTOM
  NOTE: #3 CLOSED STIRRUPS REQUIRED @ 8" O/C FOR 4'-0" MINIMUM BEYOND EACH END OF WSWH SHEAR WALL. SEE DETAIL (15/D-1.2) - OCCURS ALONG GRID LINE - 6

PAD FOOTING LEGEND

P36 = 36" SQUARE X 21" DEEP INTO COMPETENT MATERIAL WITH: (5)-#5 BARS EACH WAY ---> SEE DETAIL **(12/D-1.1)**

NOTES:
1. BARS SHALL BE A MINIMUM 3" CLEAR FROM BOTTOM AND SIDES OF FOOTING.
2. **RUN PERIMETER REINFORCEMENT CONTINUOUS THROUGH PAD FOOTING.**
3. PAD FOOTING TO BE PROVIDED CENTERED DIRECTLY BELOW SHEAR WALL END POST / BEARING POST PER PLAN. SEE PLAN FOR POST LOCATIONS.

DOWELING EPOXY NOTE

BASE MATERIAL TEMPERATURE MUST BE 50°F OR ABOVE AT TIME OF INSTALLATION. FOR BEST RESULTS, MATERIAL SHOULD BE BETWEEN 70°F AND 80°F AT TIME OF APPLICATION. TO WARM MATERIAL, STORE CARTRIDGES IN A WARM, UNIFORMLY HEATED AREA OR STORAGE CONTAINER. DO NOT IMMERSE CARTRIDGE IN WATER TO FACILITATE WARMING. MIXED MATERIAL IN NOZZLE CAN HARDEN IN 30 MINUTES AT TEMPERATURES OF 70°F AND ABOVE. USE ONLY APPROPRIATE SIMPSON STRONG-TIE MIXING NOZZLE IN ACCORDANCE WITH SIMPSON STRONG-TIE INSTRUCTIONS. MODIFICATION OR IMPROPER USE OF MIXING NOZZLE MAY IMPAIR EPOXY PERFORMANCE. **SIMPSON SET-3G EPOXY** HAS A 24-MONTH SHELF LIFE FROM DATE OF MANUFACTURE IN UNOPENED SIDE-BY-SIDE CARTRIDGE (ALWAYS CHECK EXPIRATION DATE ON PRODUCT LABEL - DO NOT USE EXPIRED PRODUCT).

HOLE PREPARATION INSTRUCTIONS:
1. DRILL 1/8" LARGER DIAMETER HOLE THAN SPECIFIED ALL THREAD INTO EXISTING FOOTING TO ACHIEVE **MINIMUM EMBEDMENT DEPTH AS REQUIRED IN REFERENCED DETAIL.**
2. BLOW - REMOVE DUST FROM HOLE WITH OIL-FREE COMPRESSED AIR FOR A MINIMUM 4 SECONDS. COMPRESSED AIR NOZZLE MUST REACH THE BOTTOM OF THE HOLE. COMPRESSED AIR PRESSURE MUST BE 80-PSI MINIMUM.
3. BRUSH - CLEAN WITH A NYLON BRUSH FOR A MINIMUM OF 4 CYCLES. BRUSH SHOULD PROVIDE RESISTANCE TO INSERTION. IF NO RESISTANCE IS FELT, THE BRUSH IS WORN AND MUST BE REPLACED.
4. BLOW - REMOVE DUST FROM HOLE WITH OIL-FREE COMPRESSED AIR FOR A MINIMUM OF 4 SECONDS. COMPRESSED AIR NOZZLE MUST REACH THE BOTTOM OF THE HOLE. COMPRESSED AIR PRESSURE MUST BE 80-PSI MINIMUM.

CARTRIDGE PREPARATION INSTRUCTIONS:
1. DISPENSE - DISPENSE ADHESIVE TO SIDE UNTIL PROPERLY MIXED (UNIFORM COLOR) DISPENSES FROM CARTRIDGE.

EPOXY INSTALLATION INSTRUCTIONS INTO VERTICAL DRY AND DAMP HOLES:
1. FILL HOLE 1/2 - 2/3 FULL, STARTING FROM BOTTOM OF HOLE TO PREVENT AIR POCKETS. WITHDRAW NOZZLE AS HOLE FILLS UP
2. INSERT CLEAN, OIL FREE ANCHOR, TURNING SLOWLY UNTIL THE ANCHOR CONTACTS THE BOTTOM OF THE HOLE.
3. DO NOT DISTURB ANCHOR UNTIL FULLY CURED.
   BASE MATERIAL TEMP = 50°F ---> CURE TIME = 72 HOURS
   60°F ---> CURE TIME = 48 HOURS
   +70°F ---> CURE TIME = 24 HOURS

SHEAR WALL SCHEDULE

	SHEAR (plf)	MATERIAL STRUCTURAL - 1	2 SIDES	NAILING (E.N. - F.N.)	SILL PLATE TRANSFER AT FLR	SILL PLATE SIZE AT FOUNDATION	ANCHOR BOLTS (4)
1	300	15/32" OSB (ID# 32/16)	NO	10d @ 6 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	48" o/c
1 (3)	450	15/32" OSB (ID# 32/16)	NO	10d @ 4 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	32" o/c
1 (3)	600	15/32" OSB (ID# 32/16)	NO	10d @ 3 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	16" o/c
1 (3)	800	15/32" OSB (ID# 32/16)	NO	10d @ 2 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	16" o/c
1 (3)	1200	15/32" OSB (ID# 32/16)	YES	10d @ 3 - 12	(2)-Rows SDWS0.22x6" SCREWS @ 6" O/C (5)	3X D.F. #2 P.T.	8" o/c
1 (3)	1600	15/32" OSB (ID# 32/16)	YES	10d @ 2 - 12	(2)-Rows SDWS0.22x6" SCREWS @ 6" O/C (5)	3X D.F. #2 P.T.	8" o/c

(FOOTNOTES):
1. **All sheathing shall be Structural - 1 panel grade. Shearwalls shall be fully blocked at all panel edges.**
2. **Panel edges shall be backed with 2-inch nominal or wider framing. Install panels either horizontally or vertically. Edge nailing shall be maximum 6-inches o/c (U.O.N.) per panel schedule denoted on plans. Field nailing shall be 12-inches o/c maximum.**
3. **All nails used for shearwalls shall be common nails (10d = 0.148" x 3"). Nail heads shall not penetrate structural sheathing. If penetration occurs, provide additional staggered nail. Galvanized nails shall be hot dipped or tumbled.**
4. **Anchor bolts shall be 5/8" Ø ASTM F1554 Grade-36. Anchor bolts shall be spaced per shearwall schedule for the length of the shearwall. See anchor bolt note on foundation plan for all other anchor bolt and washer requirements. Washers must be placed within 1/2" of sheathing. Anchor bolts shall be embedded into footing 7-inches minimum (first pour).**
5. **ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL BE (3)-INCH NOMINAL MINIMUM. All edge nailing shall be staggered. All edge nailing shall have minimum 1/2-inch edge distance from panel / framing edges and shall be staggered 1/2-inch minimum. NOTE: Where panels are applied on both faces of a shear wall, panel joints shall be offset to fall on different framing members.**
6. **Provide double 1.5" LSL Rimboard / Blocking at Panels E-F floor system. Stagger SDWS screws 3-inches at sill plate.**
7. **Special inspection required for panels where fastener spacing is 4-inches o/c or less.**

HOLDOWN KEY

- ▼ = HDU2 W/ SB5/8x24. USE 4X6 D.F. #2 POST W/ HOLDOWN (U.O.N.) SEE DETAIL **(14/D-1.2)**
- ■ = HDU4 W/ SB5/8x24. USE 4X6 D.F. #2 POST W/ HOLDOWN (U.O.N.) SEE DETAIL **(14/D-1.2)**
- ● = HDU5 W/ SB5/8x24. USE 4X6 D.F. #2 POST W/ HOLDOWN (U.O.N.) SEE DETAIL **(14/D-1.2)**

HOLDOWN NOTES:
1. HOLDOWN ANCHORS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION AND RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
2. HDU HOLDOWNS MAY BE INSTALLED 18" MAXIMUM ABOVE TOP OF CONCRETE.
3. USE 6X6 D.F. #1 SHEARWALL END POST AT CORNERS (TYP).
4. ALWAYS CHECK FRAMING DETAILS FOR SHEARWALL END POST SIZES. FRAMING DETAILS MAY DENOTE POST LARGER THAN 4X6 D.F. #2 POST.
5. SEE SIMPSON SPECIFICATONS FOR ANCHOR BOLT DIRECTION INSTALLMENT AT CORNER AND NON-CORNER APPLICATIONS.
6. ALL ANCHOR BOLTS SHALL BE HOT-DIPPED GALVANIZED.
7. **GRID LINE - 3:** 4X4 D.F. #2 SHEAR WALL END POST OK.

SOIL NOTE

SOILS EXPANSION INDEX: VERY LOW - MEDIUM
REPORT #: B-075435
BY: BUENA GEOTECHNICAL SERVICES
DATED: JUN 15, 2007

UPDATE LETTER:
BY: MID-COAST GEOTECHNICAL, INC.
DATED:

THE SOILS REPORT REFERENCED IS PART OF THESE PLANS AND ALL RECOMMENDATIONS THERE IN SHALL BE COMPLIED WITH.

CONCRETE NOTE

CONCRETE SLAB SHALL BE 4" THICK MINIMUM WITH #3 BARS @ 18" O/C EACH WAY (REINFORCEMENT SHALL BE SET A MID-DEPTH OF SLAB AND SHALL HAVE MINIMUM CLEAR COVER OF 1.5-INCHES) OVER 2" CLEAN COMPACTED FREE DRAINING SAND. 15-MIL STEGO WRAP VAPOR BARRIER SHALL BE PLACED AT BOTTOM OF SAND SUBGRADE. SAND SUBGRADE SHALL BE PLACED OVER 4" CLEAN FREE DRAINING MATERIAL. NOTE: WHERE LAPPING OF SLAB STEEL IS REQUIRED, LAPS IN ADJACENT BARS SHOULD BE STAGGERED A MINIMUM OF EVERY (5)-FEET. SEE DETAIL **(4/D-1.1)**

FOOTINGS SHALL BE 12 INCHES WIDE X 21 INCHES DEEP WITH (1)-#5 BAR TOP AND BOTTOM UNLESS OTHERWISE NOTED ON FOUNDATION PLAN.

PREMOISTENING CONTROL FOR SOILS UNDER FOOTINGS AND SLABS SHALL BE TO 130% OF OPTIMUM MOISTURE CONTENT TO A DEPTH OF 27" BELOW LOWEST GRADE. TESTING REQUIRED. AFTER PREMOISTENING, THE SPECIFIED MOISTURE CONTENT OF THE SOILS SHALL BE MAINTAINED UNTIL CONCRETE IS PLACED. REQUIRED MOISTURE CONTENT SHALL BE VERIFIED BY AN APPROVED TESTING LABORATORY NOT MORE THAN 24 HOURS PRIOR TO PLACEMENT OF CONCRETE.

ALWAYS CHECK FOUNDATION LEGEND FOR DIFFERENCES IN REBAR SIZES AND LOCATIONS. **NOTE THAT DEPTH OF FOOTING SHALL BEGIN AT BOTTOM OF SLAB SUBGRADE OR AT START OF COMPETENT MATERIAL WHICHEVER IS DEEPER.**

FOUNDATION EXCAVATIONS SHOULD BE OBSERVED AND APPROVED BY MID-COAST GEOTECHNICAL, INC. PRIOR TO THE PLACEMENT OF FORMWORK, REINFORCING STEEL AND / OR CONCRETE.

CONCRETE CONTROL JOINTS:
CONCRETE SLABS SHALL HAVE CONTROL JOINTS AT 10'-0" O/C. CONTROL JOINTS SHALL BE MADE USING A CONCRETE TROWEL GROOVER DURING CURING AFTER CONCRETE IS POURED.

CONCRETE CURING:
CONTRACTOR SHALL KEEP CONCRETE CONTINUOUSLY WET FOR (7) - DAYS MINIMUM BY USE OF "MEANS & METHODS" AND "INDUSTRY BEST PRACTICES" SUCH AS: PONDING (HIGHLY RECOMMENDED), SPRINKLING, OR WET COVERING ETC. CONTRACTOR MAY ALSO APPLY A CURING COMPOUND IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

ANCHOR BOLT NOTE

USE 2X D.F. #2 P.T. OR 3X D.F. #2 P.T. SILL PLATE AS INDICATED IN SHEARWALL SCHEDULE WITH **5/8" DIAMETER F1554 GR. 36 HOT-DIPPED GALVANIZED ANCHOR BOLTS.**

ANCHOR BOLTS SHALL BE EMBEDDED 7" MINIMUM INTO PERIMETER FOOTING (FIRST POUR). ASSUMING A 4-INCH SLAB CONTRACTOR SHALL USE 14-INCH LONG ANCHOR BOLTS MINIMUM (2.5 SILL PLATE + 4 INCH SLAB + 7 INCH EMBEDMENT = 13.5 INCHES MINIMUM REQUIRED). IF REQUIRED SLAB THICKNESS ON PARTICULAR JOB IS THICKER THAN 4 INCHES, CONTRACTOR SHALL ADJUST ANCHOR BOLT LENGTH ACCORDINGLY.

ANCHOR BOLTS SHALL BE SPACED AT 4 FEET MAX ON CENTER UNLESS NOTED OTHERWISE ON SHEAR WALL SCHEDULE. BOLTS SHALL BE A MAXIMUM OF 12" BUT NOT LESS THAN 4" FROM SILL ENDS AND SPLICES WITH A MINIMUM OF 2 BOLTS PER SPLICE. PROVIDE MINIMUM TWO ANCHOR BOLTS PER SHEARWALL LENGTH.

ANCHOR BOLTS SHALL BE INSTALLED INTO CENTER OF SILL PLATES.
2X4 SILL PLATES:
PROVIDE 0.229" THICK X 3" SQUARE PLATE WASHERS (SIMPSON BP 5/8-3).
2X6 SILL PLATES:
PROVIDE 0.229" THICK x 3" WIDE X 4.5" LONG PLATE WASHER W/ ANCHOR BOLTS (SIMPSON BPS 5/8-6). WASHER 4.5" DIMENSION SHALL BE INSTALLED PERPENDICULAR TO SILL PLATE TO ACHIEVE 1/2" MAX DISTANCE BETWEEN SHEATHING AND PLATE WASHER. STANDARD CUT WASHER IS REQUIRED WITH BPS SLOTTED BEARING PLATES. CUT WASHER NOT REQUIRED WHEN USED WITH TITEN-HD HEAVY-DUTY SCREW ANCHORS.

NOTE: WASHERS MUST BE WITHIN 1/2" OF STRUCTURAL SHEATHING.

FOUNDATION NOTES:

1. ALL HOLDOWNS AND BRACKETS IN CONCRETE SHALL BE SET IN PLACE PRIOR TO FOUNDATION INSPECTION.
2. A COPY OF THE SOILS REPORT SHALL BE ON SITE DURING FOUNDATION INSPECTION.
3. VERIFY ALL HOLDOWNS AND ANCHOR BOLTS LOCATIONS WITH FLOOR PLAN.
4. THE SOILS ENGINEER SHALL INSPECT AND APPROVE THE FOUNDATION EXCAVATIONS BEFORE REQUESTING A BUILDING DIVISION FOUNDATION INSPECTION.
5. PRIOR TO CALLING FOR BUILDING DIVISION FOUNDATION INSPECTION, PRELIMINARY GRADING AND COMPACTION REPORTS SHALL BE SUBMITTED TO AND APPROVED BY THE BUILDING DIVISION GRADING INSPECTOR.
6. PROVIDE FINAL SOILS REPORT PRIOR TO FOUNDATION INSPECTION. THIS REPORT SHALL CERTIFY THAT THE SOIL PREPARED IS TO THE PRELIMINARY SOIL REPORT AND THE SOIL CONDITION IS SUITABLE FOR THE PROPOSED STRUCTURE. THIS REPORT SHALL BE SIGNED AND WET STAMPED BY THE SOIL ENGINEER.
7. SOIL ENGINEER SHALL INSPECT ALL FOUNDATION EXCAVATIONS PRIOR TO CONCRETE POURING AND OBSERVE ALL REQUIRED MOISTURE CONDITIONS OF UNDER-SLAB AREAS.

PAD CERTIFICATION REQUIRED

THE GEOTECHNICAL ENGINEER OF RECORD FOR THIS PROJECT SHALL DETERMINE THAT THE GRADING PERFORMED IS IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS AND IS SUITABLE TO SUPPORT THE INTENDED STRUCTURE(S). THE GEOTECHNICAL ENGINEER SHALL PROVIDE A LETTER TO THE CITY / COUNTY BUILDING DEPARTMENT STATING THE ABOVE REQUIREMENT IS VALID.

KUDLA ENGINEERING
PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:
HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

REVISION LOG

REV.	DESCRIPTION	DATE

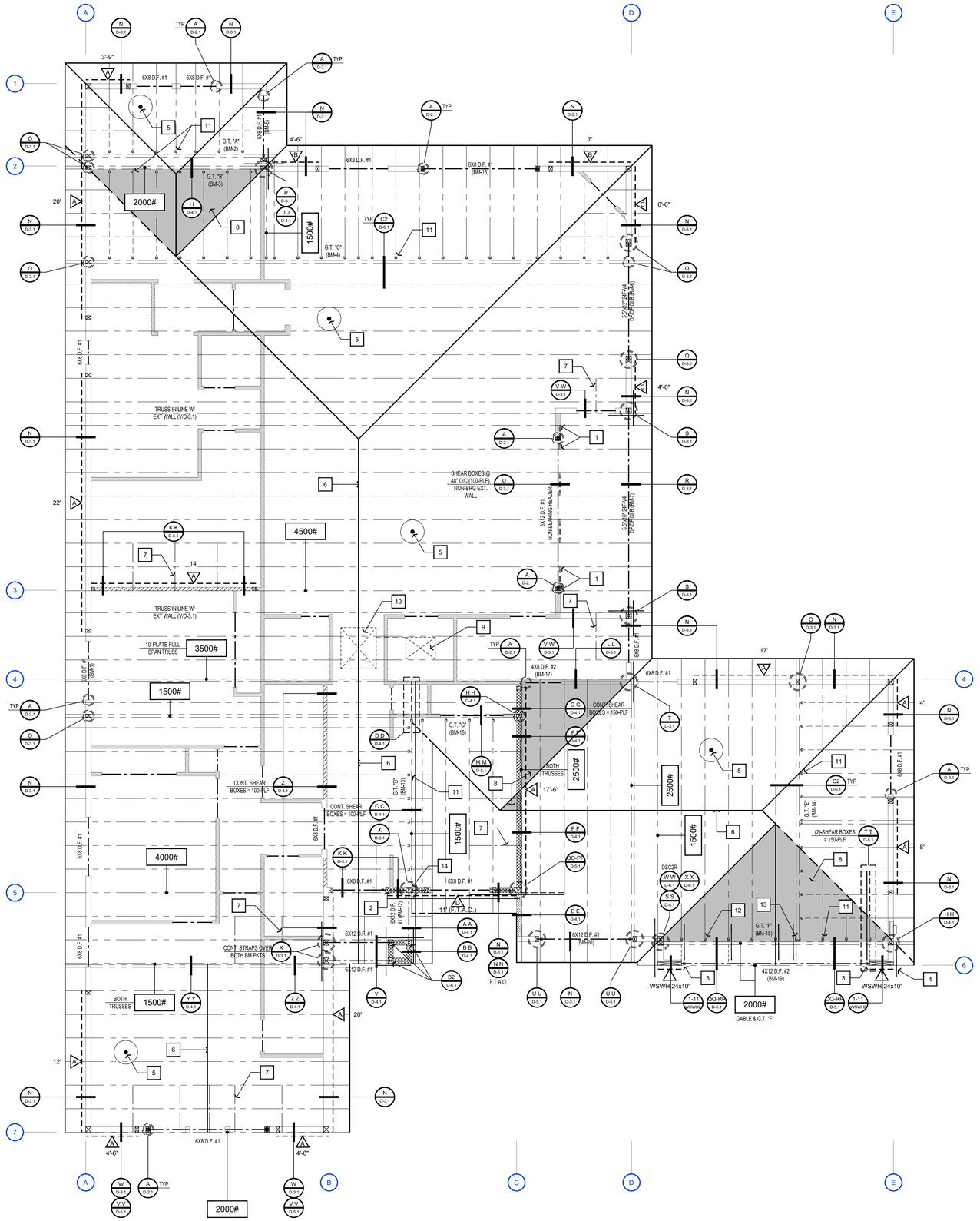
PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

FOUNDATION PLAN NOTES

SHEET NUMBER:
S-1.2

ROOF FRAMING PLAN NOTES

FOR A COMPLETE LIST OF ALL NOTES, LEGENDS, SYMBOLS, CALLOUTS OR ANY OTHER SPECIFICATION / REQUIREMENT THAT PERTAINS TO THE ROOF FRAMING PLAN BUT COULD NOT BE SHOWN HERE FOR CLARITY, **SEE SHEET S-2.2**.



ROOF FRAMING PLAN

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

KUDLA ENGINEERING
PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:

HARROD HOMES, INC.
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DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

ROOF FRAMING PLAN

SHEET NUMBER:
S-2.1

PROJECT DESIGN CRITERIA

GOVERNING BUILDING CODE
2022 CALIFORNIA RESIDENTIAL CODE
2022 CALIFORNIA BUILDING CODE

GENERAL PARAMETERS			
CONSTRUCTION TYPE	TYPE V-B		
NUMBER OF STORIES	1		
MAX HEIGHT (A.F.F.)	22'-0"		

GRAVITY & SEISMIC DESIGN WEIGHTS			
ROOF - (LIVING)	DL / LR	19 / 20	PSF
ROOF - (PORCH)	DL / LR	19 / 20	PSF
WALLS - STUCCO	DL	18	PSF
WALLS - INTERIOR	DL	8	PSF

TRUSS COMPANY DESIGN PARAMETERS			
LIVING TRUSSES			
TOP CHORD WEIGHT	DL / LR	10 / 18	PSF
BOTTOM CHORD WEIGHT	DL / LR	8 / 10	PSF
PORCH TRUSSES			
TOP CHORD WEIGHT	DL / LR	10 / 18	PSF
BOTTOM CHORD WEIGHT	DL / LR	10 / 10	PSF

NOTE: WEIGHTS SHOWN ABOVE ARE NOT INCREASED FOR ROOF PITCH

GEOTECHNICAL PARAMETERS		
BEARING PRESSURE	1800	PSF
WIND / SEISMIC BEARING PRESSURE	2400	PSF
EFP (REST / ACTIVE)	70 / 40	PCF
LATERAL PASSIVE PRESSURE	325	PCF
FRICTION COEFFICIENT	0.35	

WIND DESIGN PARAMETERS	
DESIGN PROCEDURE	SIMPLIFIED
BASIC WIND SPEED	95 MPH
EXPOSURE	C
RISK CATEGORY	II
INTERNAL PRESSURE COEFF.	N/A
DESIGN LATERAL WIND PRESSURE	13.20 PSF (AVG ZONE - A & C)
DESIGN VERTICAL WIND PRESSURE	9.00 PSF (ZONE - F)

WIND COMPONENTS & CLADDING - ASD	
HORIZONTAL	16.80 PSF
VERTICAL	17.40 PSF
OVERHANG	25.80 PSF

SEISMIC DESIGN PARAMETERS			
DESIGN PROCEDURE	EQUIV. FORCE		
SITE CLASS	D		
IMPORTANCE FACTOR	1.00		
OCCUPANCY CATEGORY	II		
MAPPED SPECTRAL RESPONSE	SS = 1.170	S1 = 0.4256	
SPECTRAL RESPONSE COEFFICIENT	SDS = 0.805	SD1 = 0.532	
SEISMIC DESIGN CATEGORY	SDC = D		
SEISMIC FORCE RESISTING SYSTEM	WOOD STRUCTURAL RATED PANEL		
RESPONSE MODIFICATION FACTOR	R = 6.5		
DESIGN BASE SHEAR	0.12W		
ANALYSIS PROCEDURE USED	ASD		

SHEAR PANEL NAILING NOTE:

THE CONTRACTOR SHALL NOTE THAT ALL SHEAR PANEL NAILING < 4" O/C REQUIRES SPECIAL INSPECTION. **FRAMING CONTRACTOR MUST BE ON-SITE DURING SHEAR PANEL NAILING INSPECTION.** KUDLA ENGINEERING WILL PERFORM SHEAR PANEL NAILING INSPECTIONS FOR THEIR PROJECTS UNLESS DELEGATED TO A THIRD PARTY ON THE "STATEMENT OF SPECIAL INSPECTIONS."
KUDLA ENGINEERING RECOMMENDS ALL SHEAR PANEL NAILING TO BE SPACED 1/2" LESS THAN LISTED ON SHEAR PANEL SCHEDULE. IN DOING SO, THE FIELD INSPECTION WILL BE QUICK AND EASY. ALL FIELD NAILING THAT DOES NOT MEET AT LEAST THE SPACING LISTED ON THE SHEARWALL SCHEDULE WILL RESULT IN LENGTHY SITE OBSERVATIONS, AS THE FRAMER WILL BE FORCED TO ADD ADDITIONAL NAILS WHILE KUDLA ENGINEERING WAITS ON SITE, OR REQUIRE ADDITIONAL SITE OBSERVATIONS WHICH WILL BE BILLED OUT AT AN HOURLY RATE.

SPECIAL INSPECTION REQUIRED

THE CONTRACTOR SHALL NOTE THAT SPECIAL INSPECTION IS REQUIRED FOR THIS PROJECT. FOR THE SPECIAL INSPECTIONS REQUIRED ON THIS PROJECT SEE THE SPECIAL INSPECTION NOTES ON **SHEET S-1.2.**

FRAMING NOTES:

1. SEE DETAIL **(L/D-2.1)** FOR STANDARD CONSTRUCTION OF SHEARWALL.
2. SEE DETAIL **(C/D-2.1)** FOR GENERAL SHEAR TRANSFER CONNECTION FROM ROOF / FLOOR DIAPHRAGM TO TOP PLATE CONNECTION.
3. **WINDOW / DOOR OPENING NOTE:** ALL WINDOW / DOOR OPENINGS SHALL BE CONNECTED PER DETAIL **(A/D-2.1)** U.O.N.
NON-BEARING WALL HEADERS SHALL CONSIST OF 6X8 D.F. #1 AT 2X6 WALLS & 4X8 D.F. #2 AT 2X4 WALLS.
4. ALL TOP PLATES TO HAVE 48" MIN. LAP AT SPLICES WITH **(16)-10d NAILS** STAGGERED PER LAP CONNECTION. NAILS SHALL BE INSTALLED VERTICALLY (PERPENDICULAR TO TOP PLATE). **(DO NOT INSTALL NAILS AT ANGLE)** SEE DETAIL **(M/D-3.1)**
5. **LINES - D, 4, 5 TOP PLAT SPLICE CONNECTION:** ALL TOP PLATES TO HAVE 60" MIN LAP AT SPLICES WITH **(26)-10d NAILS** STAGGERED PER LAP CONNECTION. NAILS SHALL BE INSTALLED VERTICALLY (PERPENDICULAR TO TOP PLATE). **(DO NOT INSTALL NAILS AT ANGLE)**. SEE DETAIL **(M/D-3.1)**
6. ALL LUMBER SHALL BE IDENTIFIED WITH THE GRADE MARK AND STAMP OF THE GRADING ASSOCIATION COVERING THE SPECIES AND UNDER WHOSE GRADING RULES THE LUMBER WAS PRODUCED.
7. THE MANUFACTURERS A.I.T.C. CERTIFICATION OF COMPLIANCE FOR GLU-LAM BEAMS OR MICRO-LAM BEAMS IS TO BE PROVIDED AT THE TIME OF FRAMING INSPECTION AND PROPERLY INDICATE THE FIBER BENDING AND GRADE SPECIFICATION.
8. PLACE SHEAR PANEL ON SHEAR WALLS PRIOR TO THE CONSTRUCTION OF INTERSECTING WALLS.
9. PROVIDE FIRE STOPS IN CONCEALED SPACES OF STUD WALLS INCLUDING SPACES AT CEILING AND FLOORS & IN OPENINGS AROUND DUCTS, PIPES, CHIMNEYS, AND SIMILAR OPENINGS WHICH ALLOW PASSAGE OF FIRE.
10. SHOWER COMPARTMENT AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS SHALL BE FINISHED WITH A NONABSORBENT SURFACE TO A HEIGHT NOT LESS THAN 72" ABOVE THE FLOOR PER CRC R307.2. FIBER-CEMENT, FIBER-MAT REINFORCED CONCRETE, GLASS MAT GYPSUM BACKERS, OR FIBER-REINFORCED GYPSUM BACKERS SHALL BE USED AS A BASE FOR CERAMIC WALL TILES IN TUB AND SHOWER AREAS AS WELL AS WALL PANELS IN SHOWER AREAS PER CRG R702.4.2.
11. ALL COIL STRAPS ARE TO BE EVENLY DISTRIBUTED ONTO BOTH MEMBERS BEING CONNECTED. (U.O.N.)
12. INTERIOR NON-BEARING WALLS - SLAB ON GRADE: ALL INTERIOR NON-BEARING WALLS TO BE ANCHORED TO CONCRETE SLAB W/ SIMPSON SHOT PINS (MODEL #: PDPAWL-287 - MECHANICALLY GALVANIZED) @ 16" O/C MAX SPACING. SHOT PINS SHALL BE CENTERED ON SILL PLATES. SEE DETAIL **(G/D-2.1)**.
13. ALL COIL STRAPS ARE TO BE **FULLY NAILED** UNLESS OTHERWISE NOTED ON SPECIFIED DETAIL.
14. **ALL NAILS THAT ARE USED FOR CONSTRUCTION OF THIS PROJECT (8d=0.131"x2.5" / 10d=0.148"x3" / 16d=0.162"x3.5") SHALL BE COMMON NAILS - NO EXCEPTION.**
15. WHERE PRESERVATIVE-TREATED WOOD IS SPECIFIED ON PLANS, ALL P.T. WOOD SHALL HAVE A CHEMICAL RETENTION < AWPA, UC4A.
16. ALL EXTERIOR CONNECTORS OR CONNECTORS THAT ATTACH TO PRESERVATIVE-TREATED WOOD SHALL CONSIST OF ZMAX OR HOT-DIP GALVANZIED COATING. ALL FASTENERS USED IN EXTERIOR APPLICATIONS OR ATTACH TO PRESERVATIVE-TREATED WOOD SHALL CONSIST OF HOT-DIP GALVANZIED (ASTM A153, CLASS D) COATING.
17. 1/8 - INCH GAP AT ALL PLYWOOD PANEL EDGES REQUIRED.
18. **SDWS SCREW NOTE:** ON DETAILS THAT SPECIFY THE USE OF SIMPSON SDWS SCREWS, THE CONTRACTOR SHALL INSTALL THE NUMBER OF SCREWS INDICATED IN DETAIL PER DETAIL **(K/D-2.1)**. THIS DETAIL SHOWS ALL EDGE DISTANCE, SPACING, AND STAGGERED SPACING REQUIREMENTS TO ACHIEVE FULL SCREW SHEAR VALUE SPECIFIED BY SIMPSON.
19. **A34 CLIP NOTE:** ALL A34 CLIPS DENOTED ON PLANS AND IN DETAILS SHALL BE INSTALLED USING SD#9x1.5" SCREWS ONLY - DO **NOT** USE NAILS.
20. **SIMPSON HARDWARE NOTE:** CONTRACTOR SHALL INSTALL ALL SIMPSON HARDWARE WITH PROPER FASTENERS SUCH AS NAIL OR SCREW DIAMETER AND LENGTH AS INDICATED IN SIMPSON CATALOG U.O.N. BY THE ENGINEER OF RECORD IN SPECIFIED DETAIL. FAILURE TO DO SO MAY RESULT IN REDUCED HARDWARE CAPACITY THAT COULD RESULT IN FAILURE.
21. **TOP / SILL PLATE TO STUD GENERAL CONNECTION:** CONTRACTOR SHALL CONNECT FIRST PLATE OF DOUBLE TOP PLATE TO STUD END GRAINS & SILL PLATE TO STUD END GRAINS W/ (3)-10d NAILS. WHERE BALLOON WALLS MUST BE STICK BUILT, CONTRACTOR MAY USE (3)-16d SINKER (0.148"x3.25") TOE NAILS AT STUDS TO SILL PLATE CONNECTION.
22. **TOE NAIL NOTE:** FOR CODE COMPLIANT TOE NAIL CONNECTION, CONTRACTOR SHALL REFER TO DETAIL **(H/D-2.1)**.

ENGINEERED ROOF TRUSS NOTES:

1. THE TRUSSES SHALL NOT BE INSTALLED UNTIL AN **APPROVED JOB COPY** OF THE TRUSS SUBMITTALS IS ISSUED BY THE APPROPRIATE CITY / COUNTY BUILDING DIVISION.
2. ALL TRUSS ENGINEERING, DRAWINGS, TRUSS TYPES, AND DETAILED SHOP DRAWINGS SHALL BE APPROVED BY THE PROJECT ENGINEER OR ARCHITECT PRIOR TO THE INSTALLATION OF THE TRUSSES.
3. TRUSS MEMBERS AND COMPONENTS SHALL **NOT** BE CUT, NOTCHED, DRILLED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN CONCURRENCE AND APPROVAL OF A REGISTERED DESIGN PROFESSIONAL.
4. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, WATER HEATER) SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.
5. TRUSS MANUFACTURER SHALL PROVIDE A TRUSS PLACEMENT DIAGRAM THAT IDENTIFIES THE PROPOSED LOCATION FOR EACH INDIVIDUALLY DESIGNATED TRUSS AND REFERENCE THE CORRESPONDING TRUSS DESIGN DRAWINGS (TO BE INCLUDED IN THE SUBMITTAL PACKAGE AND WITH THE SHIPMENT OF TRUSSES.)
6. ALL TRUSS DIMENSIONS SHALL BE VERIFIED IN FIELD PRIOR TO ORDERING AND MANUFACTURING OF TRUSSES. **EITHER THE CONTRACTOR OR TRUSS COMPANY IS RESPONSIBLE** TO GO TO THE FIELD AND MEASURING THE ACTUAL FRAMING DIMENSIONS PRIOR TO ORDERING TRUSSES.
7. TRUSS FABRICATOR SHALL BE APPROVED IN ACCORDANCE WITH CBC SECTION 1704.2. TRUSS FABRICATOR SHALL PROVIDE DOCUMENTATION TO JUSTIFY DURING SUBMITTAL: INCLUDING NAME AND PHONE NUMBER OF THE AGENCY INSPECTING THE SHOP OPERATIONS.
8. TRUSS MANUFACTURER SHALL PROVIDE REQUIRED TYPICAL OR INDUSTRY STANDARD NOTES AND DETAILS IN THE TRUSS PACKAGE REGARDING REQUIREMENTS FOR BRACING AND INSTALLATION OF TRUSSES.
9. TRUSS TO TRUSS CONNECTIONS SHALL BE SPECIFIED ON THE TRUSS DESIGN DRAWINGS.
10. EACH TRUSS SHALL BE LEGIBLY BRANDED, MARKED, OR OTHERWISE PERMANENTLY AFFIXED THERE TO THE FOLLOWING INFORMATION WITHIN TWO FEET OF THE CENTER OF THE BOTTOM CHORD: **IDENTITY OF THE COMPANY MANUFACTURING THE TRUSS, THE DESIGN LOAD (AXIAL LOAD), AND THE SPACING OF TRUSSES.**
11. PLANS, DETAILS, AND CALCULATIONS SHALL BE REVIEWED BY THE JOB ARCHITECT / ENGINEER PRIOR TO SUBMITTAL TO THE CITY / COUNTY FOR APPROVAL.
12. ALL TRUSS CALCULATIONS AND DETAILS ARE TO BE PREPARED AND SIGNED BY A REGISTERED ARCHITECT / ENGINEER.

AXIAL LOADED TRUSSES

TRUSSES:
AXIAL LOADED TRUSSES PER PLAN SHALL BE IN LINE WITH SHEARWALLS AS SHOWN ON PLANS. ROOF SHEATHING SHALL BE NAILED TO AXIAL LOADED TRUSSES W/ 8d @ 6" O/C ALONG ENTIRE LENGTH OF AXIAL LOADED TRUSS.
NOTE: IF AXIAL LOADED TRUSS IS (2)-PLY OR G.T. CONTRACTOR SHALL PROVIDE 8d @ 6" O/C STAGGERED ALONG BOTH TOP CHORDS OF (2)-PLY TRUSS.

SHEAR WALL SCHEDULE

	SHEAR (plf)	MATERIAL STRUCTURAL - 1	2 SIDES	NAILING (E.N. - F.N.)	SILL PLATE TRANSFER AT FLR	SILL PLATE SIZE AT FOUNDATION	ANCHOR BOLTS [4]
A [1]	300	15/32" OSB (ID# 32/16)	NO	10d @ 6 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	48" o/c
A1 [1]	450	15/32" OSB (ID# 32/16)	NO	10d @ 4 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	32" o/c
A2 [1]	600	15/32" OSB (ID# 32/16)	NO	10d @ 3 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	16" o/c
A3 [1]	800	15/32" OSB (ID# 32/16)	NO	10d @ 2 - 12	SDWS0.22x6" SCREWS @ 6" O/C	2X D.F. #2 P.T.	16" o/c
A4 [1]	1200	15/32" OSB (ID# 32/16)	YES	10d @ 3 - 12	(2)-Rows SDWS0.22x6" SCREWS @ 6" O/C [5]	3X D.F. #2 P.T.	8" o/c
A5 [1]	1600	15/32" OSB (ID# 32/16)	YES	10d @ 2 - 12	(2)-Rows SDWS0.22x6" SCREWS @ 6" O/C [5]	3X D.F. #2 P.T.	8" o/c

(FOOTNOTES):

1. **All sheathing shall be Structural - 1 panel grade. Shearwalls shall be fully blocked at all panel edges.**
2. **Panel edges shall be backed with 2-inch nominal or wider framing. Install panels either horizontally or vertically. Edge nailing shall be maximum 6-inches o/c (U.O.N.) per panel schedule denoted on plans. Field nailing shall be 12-inches o/c maximum.**
3. **All nails used for shearwalls shall be common nails (10d = 0.148" x 3"). Nail heads shall not penetrate structural sheathing. If penetration occurs, provide additional staggered nail. Galvanized nails shall be hot dipped or tumbled.**
4. **Anchor bolts shall be 5/8" Ø ASTM F1554 Grade-36. Anchor bolts shall be spaced per shearwall schedule for the length of the shearwall. See anchor bolt note on foundation plan for all other anchor bolt and washer requirements. Washers must be placed within 1/2" of sheathing. Anchor bolts shall be embedded into footing 7-inches minimum (first pour).**
5. **ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL BE (3)-INCH NOMINAL MINIMUM. All edge nailing shall be staggered. All edge nailing shall have minimum 1/2-inch edge distance from panel / framing edges and shall be staggered 1/2-inch minimum. NOTE: Where panels are applied on both faces of a shear wall, panel joints shall be offset to fall on different framing members.**
6. **Provide double 1.5" LSL Rimboard / Blocking at Panels E-F floor system. Stagger SDWS screws 3-inches at sill plate.**
7. **Special inspection required for panels where fastener spacing is 4-inches o/c or less.**

ROOF FRAMING PLAN CALLOUTS

1. AT TWO NEAREST TRUSSES TO DOUBLE KING STUD CONNECTION, PROVIDE (2)-HTC4 HEAVY TRUSS CLIPS AT TRUSS TO TOP PLATE CONNECTION (ONE EACH SIDE OF TRUSS). SEE DETAIL **(U/D-3.1)**.
2. 4X6 D.F. #2 POST / SHEARWALL END POST SHALL BE CONTINUOUS FROM SILL PLATE TO TOP PLATE. PROVIDE A34 AT POST TO TOP / SILL PLATE CONNECTION (NOT REQD AT SILL PLATE IF HDU HOLDOWN SHOWN). HANG HEADERS TO POST W/ HUC68 MAX HANGER (MAX = FILL ALL ROUND AND TRIANGLE HOLES).
3. HANG GARAGE HEADER TO SIDE OF WSWH SHEAR WALL W/ HUCQ412 HANGER. SEE DETAIL **(QQ/D-5.1)**.
4. CS16 STRAP 18" MIN ON TOP OF TOP PLATE. EXTEND STRAP OUT AND BEND STRAP DOWN AND STRAP 12" MIN ONTO FACE OF WSWH SHEAR WALL. SEE DETAIL **(SS/D-5.1)** FOR SIMILAR CONNECTION.
5. PROVIDE 5/8" APA RATED EXPOSURE-1 OSB RADIANT BARRIER ROOF SHEATHING (SPAN INDEX 40/20) WITH 8d @ 6" - 6" - 12", CASE 1 LAYOUT. THE RADIANT BARRIER USED SHALL HAVE AN EMITTANCE OF 0.05 OR LESS, TESTED IN ACCORDANCE WITH ASTM C1371 OR ASTM E408.
NOTE: RADIANT BARRIER NOT REQUIRED IF HIGH PERFORMANCE ATTIC IS SPECIFIED IN TITLE-24 REPORT.
6. PROVIDE 2X SOLID BLOCKING AT ALL RIDGES (TYP). PROVIDE 8d @ 6" O/C INTO 2X SOLID BLOCKING ON BOTH SIDES OF RIDGE / ROOF SHEATHING SPLICE.
7. 2X6 D.F. #2 OUT-OF-PLANE WALL BRACING @ 48" O/C. SEE DETAIL **(W/D-3.1)** & **(A2/D-6.1)**.
8. CALIFORNIA FRAMING. CONTINUE ROOF SHEATHING UNDER CALIFORNIA FRAMING AND SOLID BLOCK AT HIPS AND VALLEYS. PROVIDE 22" X 30" OPENING FOR ATTIC ACCESS AND ATTIC VENTILATION IN ROOF SHEATHING UNDER CALIFORNIA FRAMING. BLOCK OUT OPENING AND EDGE NAIL SHEATHING. SEE DETAIL **(J/D-2.1)**
9. 22" X 30" ATTIC ACCESS OPENING. AN 22" X 30" ACCESS OPENING CAN BE USED IF A LETTER FROM THE MANUFACTURER STATING THAT ALL COMPONENTS OF FAU UNIT CAN FIT THROUGH AN OPENING OF THAT SIZE. THE FURNACE SHALL BE LOCATED NOT GREATER THAN 20 FEET FROM THE ATTIC ACCESS. A MINIMUM 30" X 30" UNOBSTRUCTED LEVEL WORKING SPACE SHALL BE PROVIDED IN FRONT OF THE FAU. A CONTINUOUS SOLID WALKWAY AT LEAST 24 INCHES WIDE FROM ACCESS TO UNIT. A PERMANENT ELECTRIC OUTLET AND A LIGHTING FIXTURE CONTROLLED BY A SWITCH LOCATED AT THE ATTIC ACCESS SHOULD BE PROVIDED AT OR NEAR THE FURNACE.
10. PLATFORM FOR FAU. INSULATION SHALL BE IN PLACE BENEATH PLATFORM. FURNACE / AC SHALL BE PER TITLE-24 REPORT OR AN APPROVED EQUAL. FURNACE IS CERTIFIED TO BE INSTALLED IN ATTIC. PROVIDE MANUFACTURER'S INSTALLATION GUIDE FOR FIELD INSPECTION.
11. LUS24 HANGER AT JACK TRUSS TO G.T. CONNECTION. (TYP FOR 8'-0" SPAN JACK TRUSSES)
12. HUS26 HANGER AT TRUSS TO G.T. CONNECTION. SEE DETAIL **(QQ/D-5.1)**
13. HHUS26-2 HANGER AT G.T. TO G.T. CONNECTION. SEE DETAIL **(QQ/D-5.1)**
14. G.T. "D" SHALL BE ON STUD AT BEAM POCKET PER DETAIL (X/D-3.1). CONNECT G.T. TO TOP PLATE W/ HGA10 CLIP.

ROOF FRAMING PLAN LEGEND

——— =	EXT. / INT. BEARING WALLS: (PLATE HEIGHT = 10'-1")	2X6 D.F. #2 STUDS @ 16" O/C
////// =	INTERIOR BEARING WALLS: (PLATE HEIGHT = 10'-1")	2X4 D.F. #2 STUDS @ 16" O/C **SEE GRID LINES - B & 3**
XXXXX =	EXT. / INT. BALLOON WALLS: (PLATE HEIGHT = 12'-1")	2X6 D.F. #2 STUDS @ 16" O/C **SEE GRID LINES - C & 5 & TOWER**
////// =	EXTERIOR RAKE WALL: (PLATE HEIGHT VARIES)	2X6 D.F. #2 STUDS @ 16" O/C **SEE GRID LINE - C**
////// =	INTERIOR NON-BEARING WALLS: INTERIOR PLUMBING WALLS: (PLATE HEIGHT VARIES)	2X4 D.F. #2 STUDS @ 16" O/C 2X6 D.F. #2 STUDS @ 16" O/C SEE DETAILS **(D-G/D-2.1)**
=	CALIFORNIA FRAMING:	SEE DETAIL **(J/D-2.1)**

ROOF FRAMING NOTES:

1. USE H1A CLIPS AT EACH TRUSS TO TOP PLATE / BEAM CONNECTIONS.
2. WHERE H1A CLIP DOES NOT FIT FOR STANDARD SINGLE PLY TRUSS PROVIDE H2.5A AT TRUSS TO TOP PLATE W/ A34 AT NEXT ADJACENT EAVE BLOCK TO TOP PLATE CONNECTION.
ALTERNATE CONNECTION: PROVIDE HGA10 AT TRUSS TO TOP PLATE.
3. PROVIDE EAVE BLOCKS BETWEEN EACH TRUSS W/ 8d AT 6" O.C. AND PROVIDE VENT BLOCKS AT EVERY THIRD TRUSS IF APPLIES.
4. ROOF UNDER LAYMENT SHALL CONSIST OF 30# FELT MINIMUM (COMPOSITION SHINGLE ROOFING) AND 72# FELT MINIMUM (TILE AND METAL ROOFING).
5. FASCIA TO BE 2X8 HEM FIR.
6. PROVIDE FLASHING AND COUNTER FLASHING AT ROOF TO WALL CONNECTIONS.
7. PROVIDE DIAGONAL BRACING AT GABLE ENDS AS PER TRUSS MANUFACTURER SPECIFICATIONS.
8. ALL GABLE END TRUSSES SHALL HAVE RADIANT BARRIER APPLIED TO BACK OF TRUSS. CONTRACTOR SHALL STAPLE TO FACE OF TRUSS USING "BOSTITCH 1/4-INCH LEG STAPLES" MINIMUM OR APPROVED EQUAL. PROVIDE STAPLES AT 6"-6"-12" SPACING AND PROVIDE 2" MINIMUM OVERLAP AT LAPS WHERE OCCURS. A RADIANT BARRIER SHALL BE INSTALLED WITH AN EMITTANCE OF 0.05 OR LESS, TESTED IN ACCORDANCE WITH ASTM C1371 OR ASTM E408.
NOTE: RADIANT BARRIER NOT REQUIRED IF HIGH PERFORMANCE ATTIC IS SPECIFIED IN TITLE-24 REPORT.
9. CONNECT ALL HIP RAFTERS (TRUSSES: R1-R- PER TRUSS CALCS) TO TOP PLATE AT CORNER W/ HGA10 CLIP.
10. CONNECT ALL TRUSSES TO BEARING TOP PLATES / BEAMS WITH (3)-16d SINKER (0.148x3.25) TOE NAILS.
11. 1/8 - INCH GAP AT ALL PLYWOOD PANEL EDGES REQUIRED.
12. **CONTINUOUS SHEAR BOX NOTE:** WHERE SHEAR BOXES CANNOT BE INSTALLED DUE TO CLOSE TRUSS SPACING, CONTRACTOR SHALL PROVIDE 2X SOLID BLOCKING AT TRUSS TOP / BOTTOM CHORD. CS16 STRAP ON TOP OF ROOF SHEATHING / BLOCKING TO NEXT ADJACENT SHEAR BOXES IN BOTH DIRECTIONS W/ 8d @ 6" O/C STRAP NAILING.

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PLAN PREPARED FOR:
HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

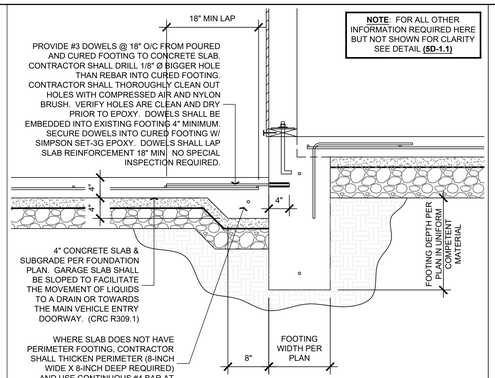
REVISION LOG

REV.	DESCRIPTION	DATE

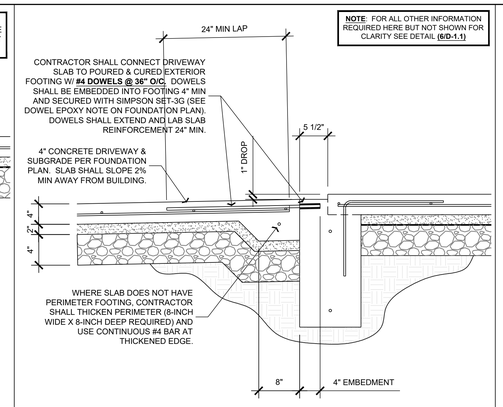
PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

ROOF FRAMING PLAN NOTES

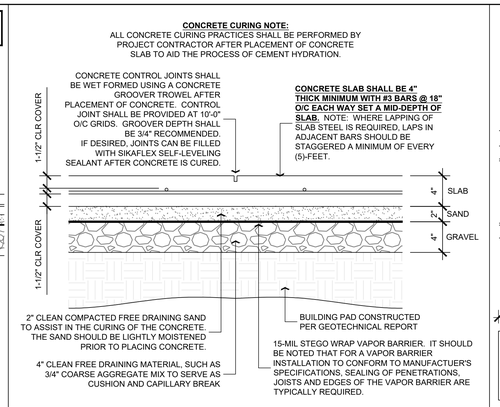
SHEET NUMBER:
S-2.2



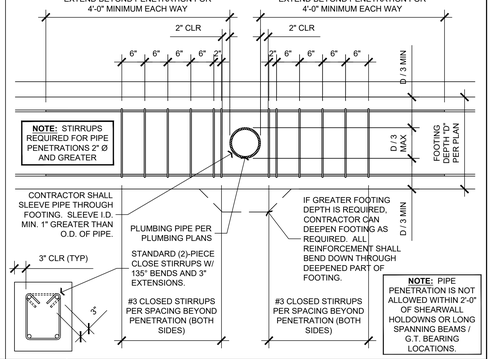
10 SLOPING GARAGE SLAB TO FOOTING TIE



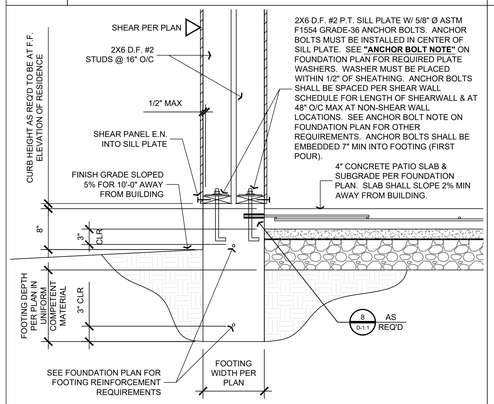
7 FOOTING AT GARAGE DOOR



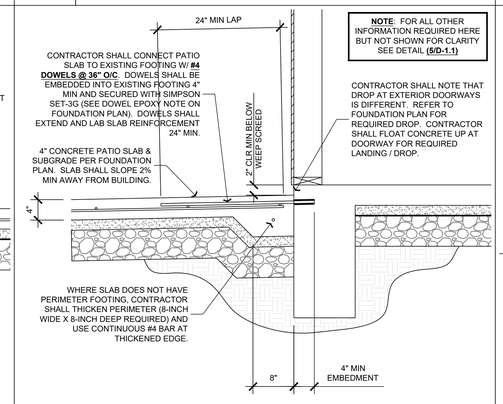
4 CONCRETE SLAB-ON-GRADE DETAIL



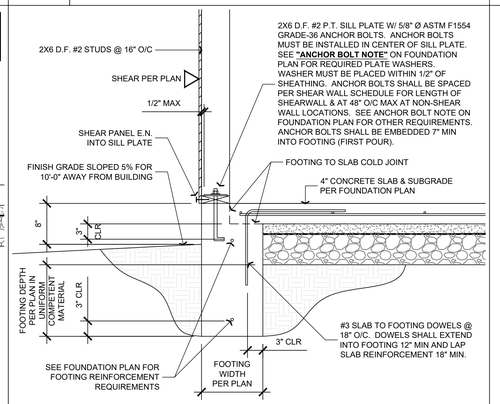
1 FOOTING WITH PIPE PENETRATION



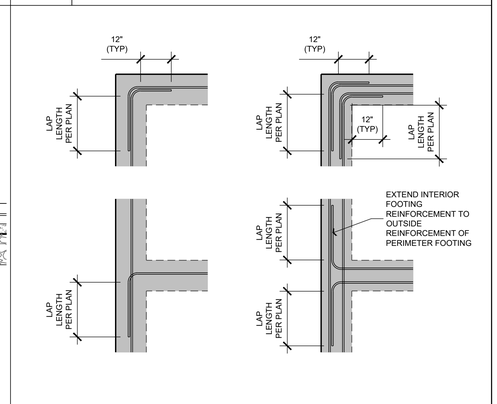
11 EXTERIOR FOOTING AT ARCH. COLUMN



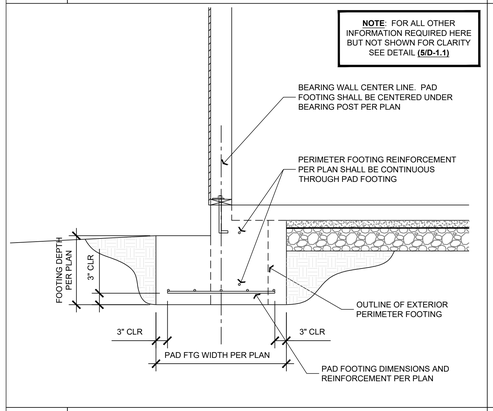
8 EXTERIOR FOOTING AT PATIO SLAB



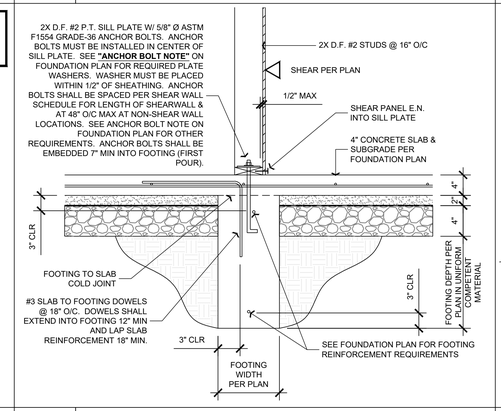
5 EXTERIOR FOOTING



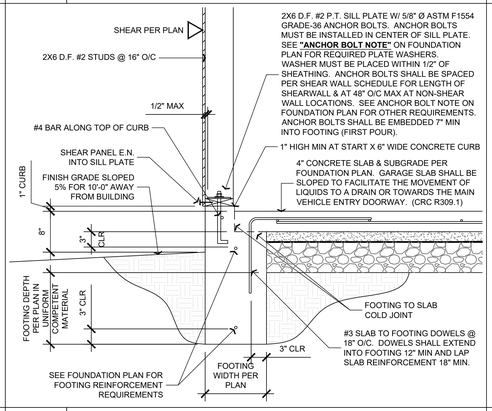
2 TYP CONCRETE FOOTING CORNER PLAN VIEW



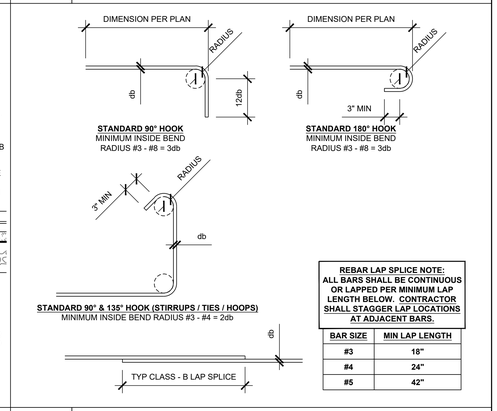
12 EXTERIOR PAD FOOTING DETAIL



9 INTERIOR FOOTING DETAIL



6 EXTERIOR FOOTING AT GARAGE



REBAR LAP SPLICE NOTE:
ALL BARS SHALL BE CONTINUOUS OR LAPPED PER MINIMUM LAP LENGTH BELOW. CONTRACTOR SHALL STAGGER LAP LOCATIONS AT ADJACENT BARS.

BAR SIZE	MIN LAP LENGTH
#3	18"
#4	24"
#5	42"

3 TYP REINFORCEMENT HOOKS / BENDS / LAPS

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PLAN PREPARED FOR:
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CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

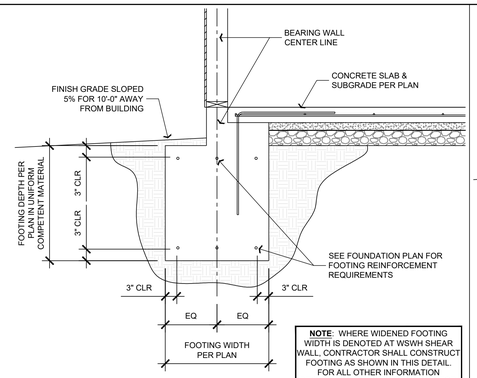
REVISION LOG

REV.	DESCRIPTION	DATE

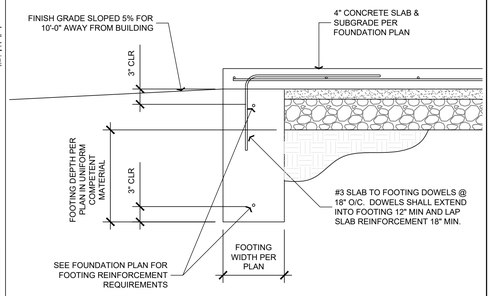
PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 01 - FOUNDATION DETAILS.DWG

STRUCTURAL DETAILS

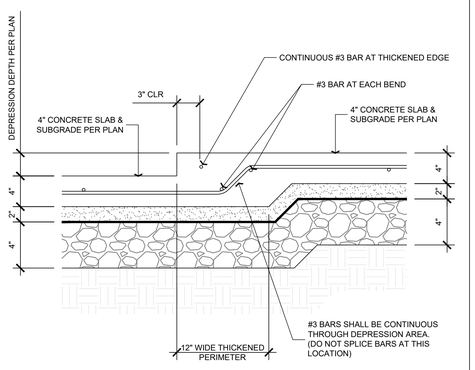
SHEET NUMBER:
D-1.1



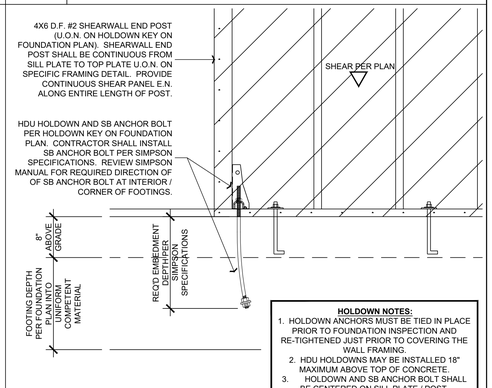
16 WIDENED FTG DETAIL - CENTER UNDER WALL



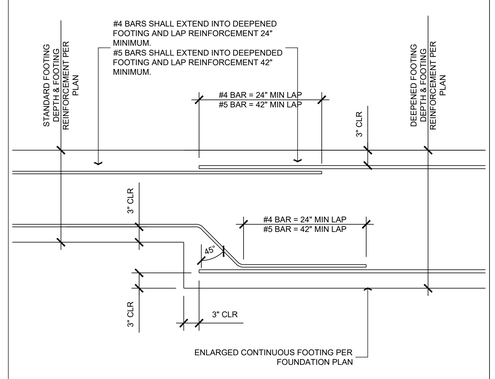
13 PERIMETER GRADE BEAM DETAIL



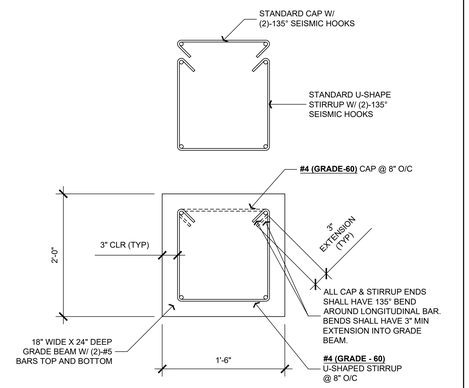
17 SLAB DEPRESSION DETAIL



14 HDU HOLDOWN & SB ANCHOR BOLT DETAIL



18 SMALLER FTG TO LARGER FTG LAP



15 GRADE BEAM STIRRUP & CAP DETAIL

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REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

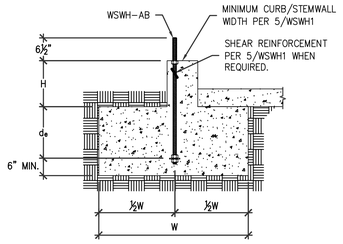
REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 01 - FOUNDATION DETAILS.DWG

STRUCTURAL DETAILS

SHEET NUMBER:
D-1.2

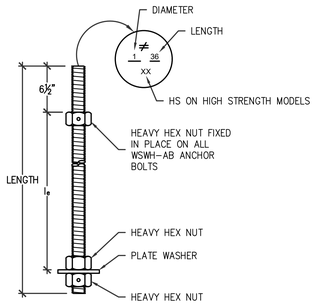


CURB OR STEMWALL FOUNDATION

NOTES :
1. SEE 2/WSWH1 FOR DIMENSIONS AND ADDITIONAL NOTES.
2. SEE 5/WSWH1 FOR SHEAR REINFORCEMENT WHEN REQUIRED.
3. MAXIMUM H = l_e–d_e. SEE 3/WSWH1 AND 4/WSWH1 FOR l_e.

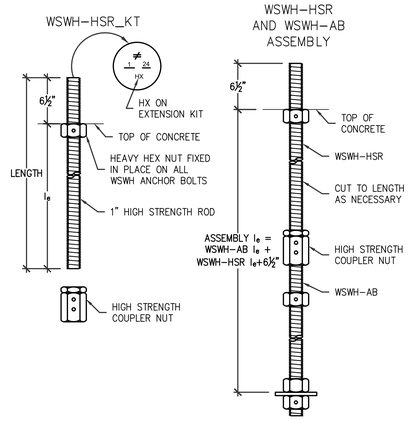
DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

STRONG–WALL® WSWH ANCHORAGE – TYPICAL SECTIONS | 1



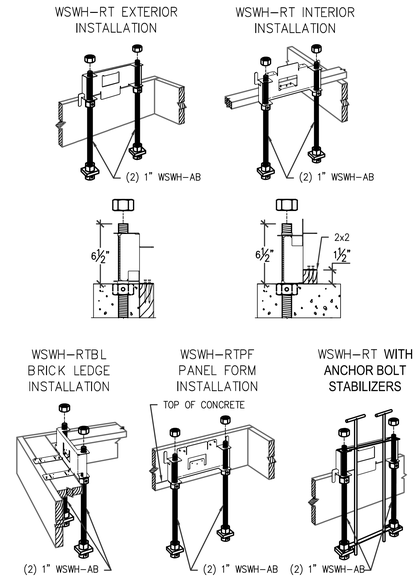
WSWH PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSWH12, WSWH18 AND WSWH24	WSWH–AB1x24	1"	24"	15½"
	WSWH–AB1x24HS	1"	24"	15½"
	WSWH–AB1x30	1"	30"	21½"
	WSWH–AB1x30HS	1"	30"	21½"
	WSWH–AB1x36	1"	36"	27½"
	WSWH–AB1x36HS	1"	36"	27½"

WSWH ANCHOR BOLTS | 3

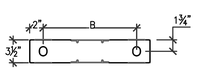


WSWH PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSWH12, WSWH18 AND WSWH24	WSWH–HSR1x24KT	1"	24"	17½"
	WSWH–HSR1x36KT	1"	36"	29½"

WSWH ANCHOR BOLT EXTENSION | 4



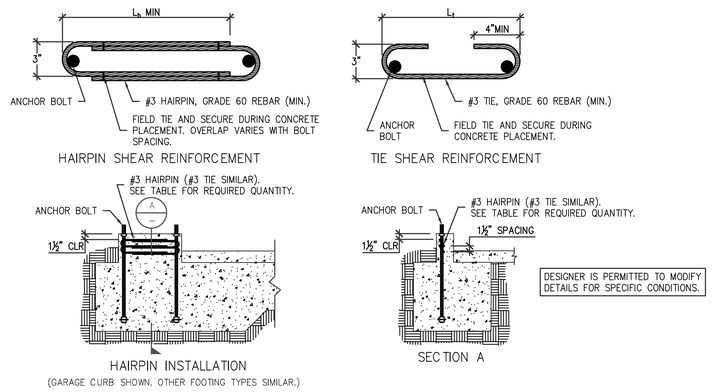
WSWH ANCHOR BOLT TEMPLATES | 6



WSWH PLAN VIEW
ANCHORAGE LAYOUT

ANCHOR BOLT LAYOUT	
STRONG–WALL® HIGH STRENGTH WOOD SHEARWALL MODEL NO.	DISTANCE FROM CENTER–TO–CENTER OF WSWH–AB, B (in)
WSWH12	8⅛
WSWH18	14
WSWH24	20

STRONG–WALL® HIGH STRENGTH WOOD SHEARWALL TENSION ANCHORAGE SCHEDULE 2,500, 3,000 AND 4,500 PSI | 2



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

STRONG–WALL® WSWH SHEAR ANCHORAGE SCHEDULE AND DETAILS | 5

STRONG–WALL® HIGH STRENGTH WOOD SHEARWALL SHEAR ANCHORAGE

MODEL	SEISMIC[3]			WIND[4]			
	L_A OR L_A (in.)	SHEAR REINFORCEMENT	MIN. CURB/ STEMWALL WIDTH (in.)	SHEAR REINFORCEMENT	MIN. CURB/ STEMWALL WIDTH (in.)	ASD ALLOWABLE SHEAR LOAD, V (lb.)	
						UNCRACKED	CRACKED
WSWH12	10⅛	(1) #3 TIE	6	SEE NOTE 7	6	1,080	770
WSWH18	15	(2) #3 HAIRPINS[5,6]	6	(1) #3 HAIRPIN	6	HAIRPIN REINF. ACHIEVES MAX. ALLOW SHEAR LOAD OF THE WSWH	
WSWH24	19	(2) #3 HAIRPINS[5]	6	(2) #3 HAIRPINS[5]	6		

NOTES :
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318–19, ACI 318–11 AND ACI 318–14 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC SHEAR REINFORCEMENT DESIGNS CONFORM TO ACI 318–19, SECTION 17.10.6.3, ACI 318–14, SECTION 17.2.3.5.3
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B.
5. ADDITIONAL TIES MAY BE REQUIRED AT GARAGE CURB OR STEMWALL INSTALLATIONS BELOW ANCHOR REINFORCEMENT PER DESIGNER.
6. USE (1) #3 HAIRPIN FOR WSWH18 WHEN STANDARD STRENGTH ANCHOR IS USED.
7. USE (1) #3 TIE FOR WSWH12 WHEN PANEL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
8. #4 GRADE 40 SHEAR REINFORCEMENT MAY BE SUBSTITUTED FOR WSWH SHEAR ANCHORAGE SOLUTIONS.
9. CONCRETE EDGE DISTANCE FOR ANCHORS MUST COMPLY WITH ACI 318–19 SECTION 17.9.2, ACI 318–14 SECTION 17.7.2 AND ACI 318–11 SECTION D.8.2.
10. THE DESIGNER MAY SPECIFY ALTERNATE SHEAR ANCHORAGE.

NO.	DATE	REVISIONS
0	02-26-2021	FIRST RELEASE - 2018 IBC
1	03-16-2021	2021 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
Pleasanton, CA 94588
• Tel: (800) 999–5099
• Website: www.strongtie.com

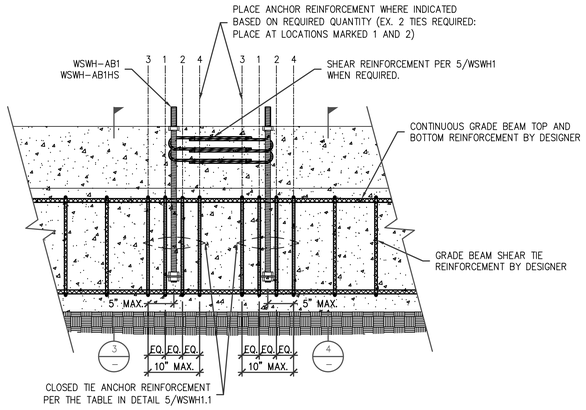
SIMPSON Strong-Tie THERE IS NO EQUAL

STRONG-WALL® WSWH
ANCHORAGE DETAILS
ENGINEERED DESIGNS

SIMPSON Strong-Tie THERE IS NO EQUAL

NAME	
DATE	03-26-2021
SCALE	N.T.S.
CHECKED	
SHEET	WSWH1
OF	SHEETS
JOB NO.	

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUONA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

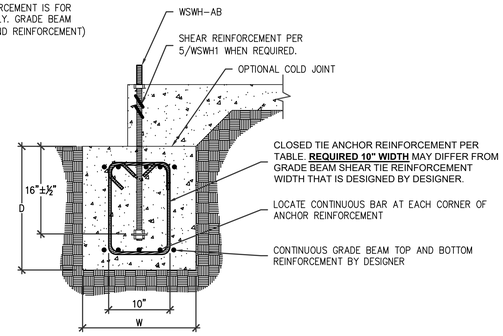


GRADE BEAM ELEVATION AT 18" AND 24" WALL MODELS | 1

DIMENSIONING NOTES :
D: DEPTH BY DESIGNER (24" MIN.)
W: WIDTH BY DESIGNER (18" MIN.)

GRADE BEAM ELEVATION AT 12" WALL MODEL | 2

NOTES :
ANCHOR REINFORCEMENT IS FOR ANCHORAGE ONLY. GRADE BEAM DESIGN (SIZE AND REINFORCEMENT) BY DESIGNER.

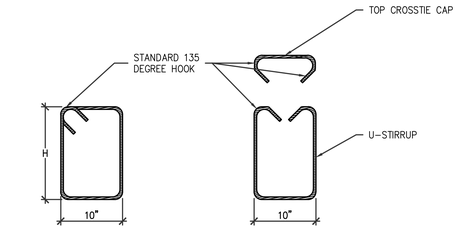


ANCHOR REIN. NOTE :
MINIMUM DISTANCES FROM THE ANCHOR BOLT PLATE WASHER TO TOP AND BOTTOM OF CLOSED TIE REINFORCEMENT ARE 13" AND 5" RESPECTIVELY.

DIMENSIONING NOTES :
D: DEPTH BY DESIGNER (24" MIN.)
W: WIDTH BY DESIGNER (18" MIN.)

GRADE BEAM SECTION AT ANCHOR REINFORCEMENT | 3

GRADE BEAM SECTION AWAY FROM ANCHOR REINFORCEMENT | 4



#4 SINGLE PIECE HOOP #4 TWO PIECE ASSEMBLY

DIMENSIONING NOTES :
H: HEIGHT OF ANCHOR REINFORCEMENT ASSEMBLY BY DESIGNER, SEE DETAIL 3/WSWH1.1 FOR MINIMUM REQUIREMENTS

CLOSED TIE ANCHOR REINFORCEMENT | 6

WSWH GRADE BEAM ANCHOR REINFORCEMENT

HIGH STRENGTH STRONG–WALL® WOOD SHEARWALL WIDTH (in.)	ANCHOR MODEL NO.	ANCHOR DIAMETER (in.)	ANCHOR REINFORCEMENT FOR WIND AND SEISMIC[3,8,9]		AMPLIFIED LRFD APPLIED DESIGN SEISMIC MOMENT (ft.–lbs.)[4,5,6,7]	
			STANDARD STRENGTH WSWH–AB1	HIGH STRENGTH (HS) WSWH–AB1HS	STANDARD STRENGTH WSWH–AB1	HIGH STRENGTH (HS) WSWH–AB1HS
12" MODEL	WSWH–AB1 WSWH–AB1HS	1	3–#4 CLOSED TIES PER 2/–	7–#4 CLOSED TIES PER 2/–	29,500	31,300
18" MODEL			2–#4 CLOSED TIES PER 1/–	4–#4 CLOSED TIES PER 1/–	48,000	72,900
24" MODEL					67,100	103,500

NOTE :
1. ANCHOR REINFORCEMENT CONFORMS TO ACI 318–19 SECTION 17.5.2.1, ACI 318–14 SECTION 17.4.2.9 AND ACI 318–11 SECTION D.5.2.9. FULL–SCALE TESTING WAS USED TO VALIDATE ANCHOR REINFORCEMENT CONFIGURATION AND PLACEMENT.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH, f'_c = 2500 psi.
3. CLOSED TIE ANCHOR REINFORCEMENT TO BE ASTM A615 GRADE 60 (MIN) #4 REBAR.
4. GRADE BEAM LONGITUDINAL AND TIE REINFORCEMENT SHALL BE SPECIFIED BY THE DESIGNER FOR FLEXURE AND SHEAR LOADING. DESIGN SHOULD CONSIDER PROJECT SPECIFIC DESIGN LOADS AND ALLOWABLE SOIL PRESSURE.
5. SIMPSON STRONG–TIE RECOMMENDS USING THE TABULATED MINIMUM AMPLIFIED LRFD APPLIED SEISMIC DESIGN MOMENT TO ENSURE GRADE BEAM DESIGN FLEXURE AND SHEAR STRENGTH IS ADEQUATE TO PREVENT PLASTIC HINGE FORMATION UNDER DEMANDS ASSOCIATED WITH ANCHORAGE FORCES CORRESPONDING TO ACI 318–19 SECTION 17.10.5.3, ACI 318–14 SECTION 17.2.3.4.3 AND ACI 318–11 SECTION D.3.3.4.3.
6. DESIGNER MAY USE REDUCED MOMENT DUE TO APPLIED WSWH LATERAL LOAD. MINIMUM MOMENT SHALL BE THE LESSER OF THE TABULATED MOMENT OR THE AMPLIFIED LRFD DESIGN MOMENT FOR SEISMIC: (ASD DESIGN DEMAND SHEAR/0.7) x Ω_0 x WSWH WALL HEIGHT FOR GRADE BEAM DESIGN.
7. MINIMUM GRADE BEAM DESIGN MOMENT FOR WIND AND SEISMIC IN SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C: (ASD DESIGN DEMAND SHEAR/0.6) x WSWH WALL HEIGHT.
8. CLOSED TIE MAY BE SINGLE PIECE HOOP OR TWO PIECE ASSEMBLY WITH A U–STIRRUP WITH STANDARD 135 DEGREE HOOKS AND A TOP CROSS TIE CAP. SEE DETAIL 6/WSWH1.1.
9. SEE DETAILS FOR GRADE BEAM ANCHOR REINFORCEMENT PLACEMENT, INSTALLATION AND SPACING REQUIREMENTS. CLOSED TIE ANCHOR REINFORCEMENT QUANTITY IS PER WALL FOR THE 12" WALL MODEL AND PER ANCHOR FOR THE 18" AND 24" MODELS.

WSWH–AB ANCHOR GRADE BEAM REINFORCEMENT AND DESIGN MOMENTS | 5

NO.	DATE	REVISIONS
0	10-12-2020	FIRST RELEASE - 2018 IBC
1	03-16-2021	2021 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
Pleasanton, CA 94588
• Tel: (800) 999–5099
• Website: www.strongtie.com
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STRONG-WALL® WSWH
ALTERNATE ANCHORAGE DETAILS
ENGINEERED DESIGNS

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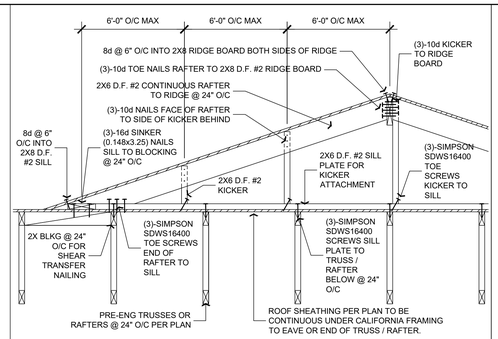
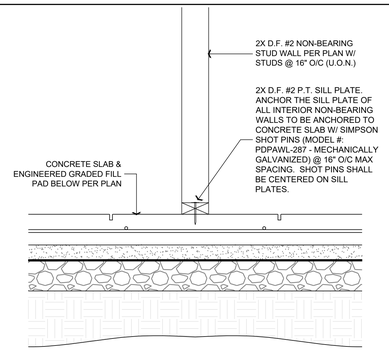
REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUOKA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

NAME	
DATE	03-16-2021
SCALE	N.T.S.
CHECKED	
SHEET	WSWH1.1
	OF SHEETS
JOB NO.	



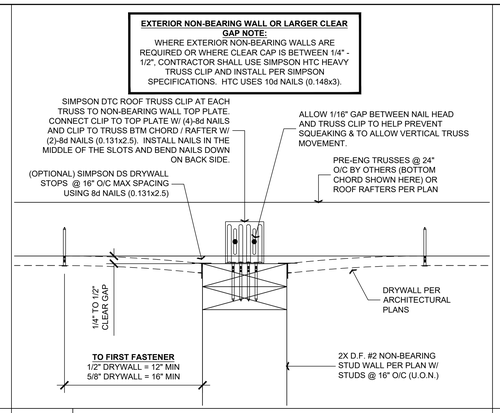
CAL. FRAMING ALTERNATIVE:
IF TRUSS COMPANY PROVIDES VALLEY TRUSSES, CONTRACTOR MAY OMIT CALIFORNIA FRAMING PER THIS DETAIL. CONTRACTOR SHALL CONNECT EACH VALLEY TRUSS TO ROOF SHEATHING / TRUSS BELOW W/ SIMPSON VTCR CLIPS @ 24" O/C USING SD#9x1.5" SCREWS INTO VALLEY TRUSS AND SD#9x2.5" SCREWS INTO TRUSS BELOW. BOUNDARY NAILING & SILL PLATE NAILING PER THIS DETAIL STILL APPLIES.

J | CALIFORNIA FRAMING



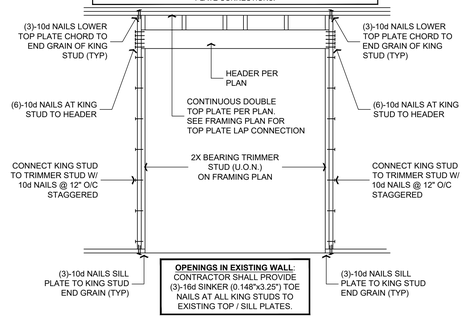
G | NON-BEARING WALLS TO SLAB-ON-GRADE

EXTERIOR NON-BEARING WALL OR LARGER CLEAR GAP NOTE:
WHERE EXTERIOR NON-BEARING WALLS ARE REQUIRED OR WHERE CLEAR CAP IS BETWEEN 1/4" - 1/2", CONTRACTOR SHALL USE SIMPSON HTC HEAVY TRUSS CLIP AND INSTALL PER SIMPSON SPECIFICATIONS. HTC USES 10d NAILS (0.148x3).



D | NON-BRG WALL TO ROOF: PERPENDICULAR

KING STUD NOTE (6'-0" DOOR / WINDOW OPENINGS & LARGER):
AT 6'-0" OR LARGER OPENINGS, CONTRACTOR SHALL PROVIDE DOUBLE 2X6 D.F. #2 KING STUD REQUIRED AT DOOR / WINDOW OPENING (U.O.N.). ATTACH HEADER / BEARING TRIMMER STUD TO FIRST KING STUD PER (A/0-2.1). ATTACH DOUBLE KING STUD TOGETHER PER (B/0-2.1). PROVIDE A34 CLIP USING SD#9x1.5" SCREWS AT DOUBLE KING STUD TOP / SILL PLATE CONNECTION. USE LSSI SKEWABLE ANGLE AT KING STUD TO RAKE WALL TOP PLATE CONNECTIONS.

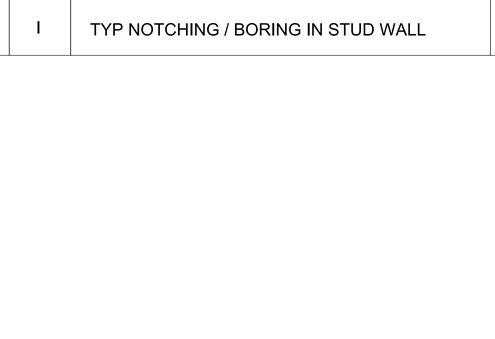


OPENINGS IN EXISTING WALL:
CONTRACTOR SHALL PROVIDE (3)-16d SINKER (0.148"x3.25") TOE NAILS AT ALL KING STUDS TO EXISTING TOP / SILL PLATES.

A | TYP FRM AT WINDOW / DOOR OPENING (U.O.N.)

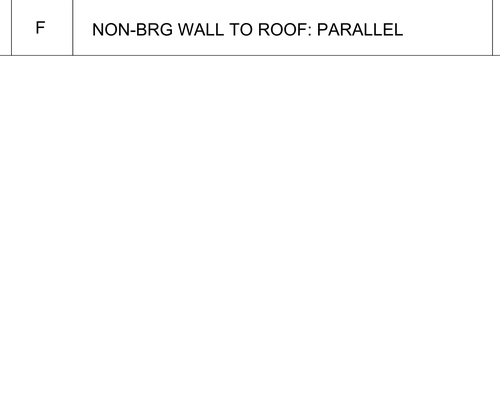
NOTE: SPACING REQUIREMENTS BELOW ARE MINIMUM SPACING FOR SCREWS TO ACHIEVE FULL VALUE. IF CONTRACTOR HAS PROBLEM WITH IN-FIELD SPACING REQUIREMENTS, THE CONTRACTOR SHALL CONTACT ENGINEER OF RECORD

K | SDWS SPACING REQUIREMENTS



H | CODE COMPLIANT TOE NAIL CONNECTION

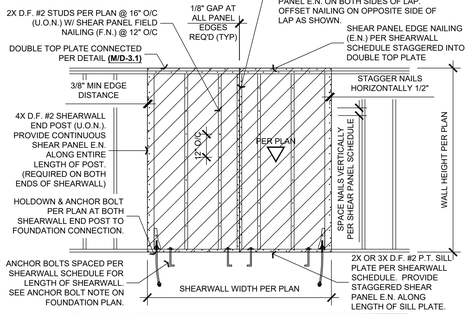
EXTERIOR NON-BEARING WALL OR LARGER CLEAR GAP NOTE:
WHERE EXTERIOR NON-BEARING WALLS ARE REQUIRED OR WHERE CLEAR CAP IS BETWEEN 1/4" - 1/2", CONTRACTOR SHALL USE SIMPSON HTC HEAVY TRUSS CLIP AND INSTALL PER SIMPSON SPECIFICATIONS. HTC USES 10d NAILS (0.148x3).



E | NON-BRG WALL TO ROOF: PARALLEL

B | BUILT UP DOUBLE STUD COLUMN

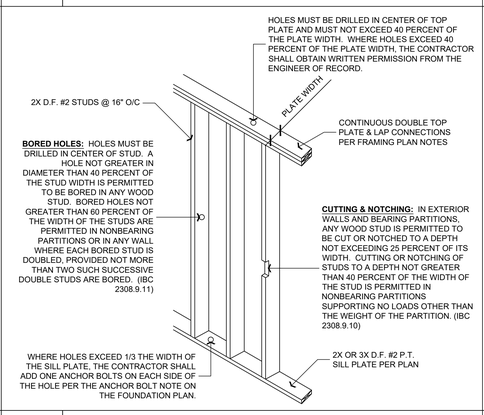
NOTE: CONTRACTOR SHALL USE GREAT CARE TO ENSURE NAIL HEADS DO NOT PENETRATE STRUCTURAL SHEATHING. REPLACE OR ADD REPLACEMENT NAILS IF THIS OCCURS.



2X OR 3X D.F. #2 STUD / POST REQUIRED PER SHEARWALL SCHEDULE AT SHEAR PANEL LAP. PROVIDE STAGGERED SHEAR PANEL E.N. ON BOTH SIDES OF LAP. OFFSET NAILING ON OPPOSITE SIDE OF LAP AS SHOWN.

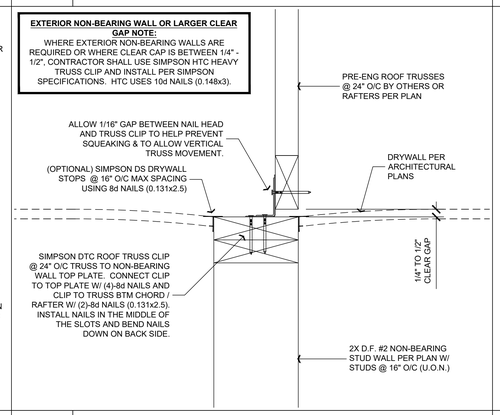
SPECIAL INSPECTION NOTE:
KUDLA ENGINEERING RECOMMENDS ALL SHEAR PANEL NAILING TO BE SPACED 1/2" LESS THAN LISTED ON SHEAR PANEL SCHEDULE TO MAKE SHEAR PANEL NAILNING INSPECTION QUICK AND EASY AND AVOID HAVING TO ADD MORE NAILS.

L | STANDARD SHEARWALL DETAIL

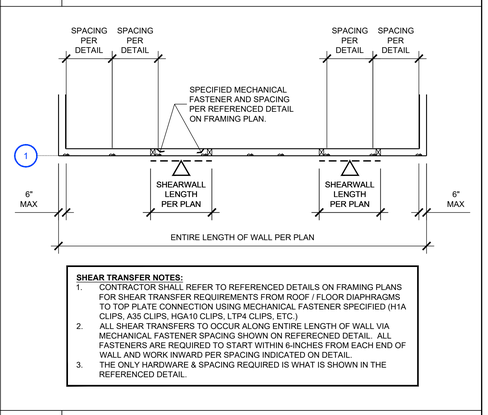


I | TYP NOTCHING / BORING IN STUD WALL

EXTERIOR NON-BEARING WALL OR LARGER CLEAR GAP NOTE:
WHERE EXTERIOR NON-BEARING WALLS ARE REQUIRED OR WHERE CLEAR CAP IS BETWEEN 1/4" - 1/2", CONTRACTOR SHALL USE SIMPSON HTC HEAVY TRUSS CLIP AND INSTALL PER SIMPSON SPECIFICATIONS. HTC USES 10d NAILS (0.148x3).



F | NON-BRG WALL TO ROOF: PARALLEL



SHEAR TRANSFER NOTES:
1. CONTRACTOR SHALL REFER TO REFERENCED DETAILS ON FRAMING PLANS FOR SHEAR TRANSFER REQUIREMENTS FROM ROOF / FLOOR DIAPHRAGMS TO TOP PLATE CONNECTION USING MECHANICAL FASTENER SPECIFIED (H1A CLIPS, A35 CLIPS, HGA10 CLIPS, LTP4 CLIPS, ETC.)
2. ALL SHEAR TRANSFERS TO OCCUR ALONG ENTIRE LENGTH OF WALL VIA MECHANICAL FASTENER SPACING SHOWN ON REFERECNED DETAIL. ALL FASTENERS ARE REQUIRED TO START WITHIN 6-INCHES FROM EACH END OF WALL AND WORK INWARD PER SPACING INDICATED ON DETAIL.
3. THE ONLY HARDWARE & SPACING REQUIRED IS WHAT IS SHOWN IN THE REFERENCED DETAIL.

C | SHEAR TRANSFER - ENTIRE LENGTH OF WALL

KUDLA ENGINEERING
PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:
HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

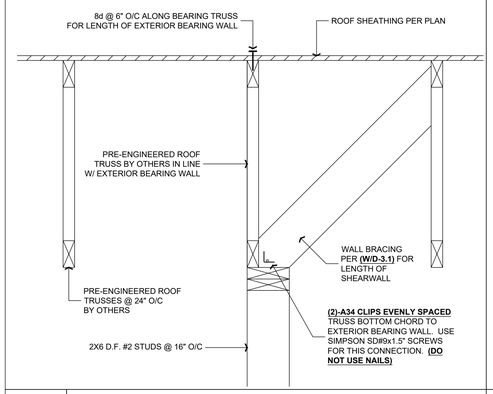
REVISION LOG

REV.	DESCRIPTION	DATE

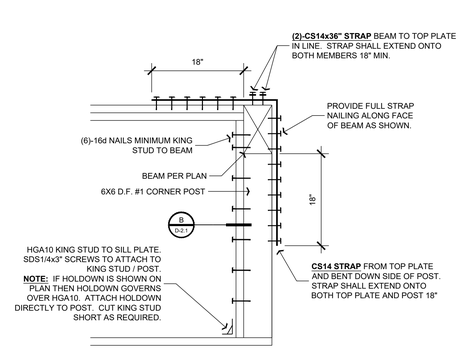
PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

STRUCTURAL DETAILS

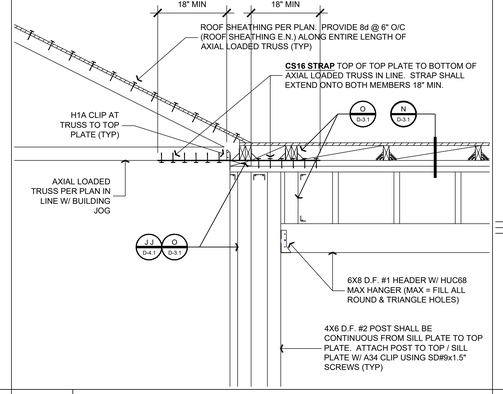
SHEET NUMBER:
D-2.1



V SHEAR TRANSFER - BRG WALL TO DIAPH. TIE



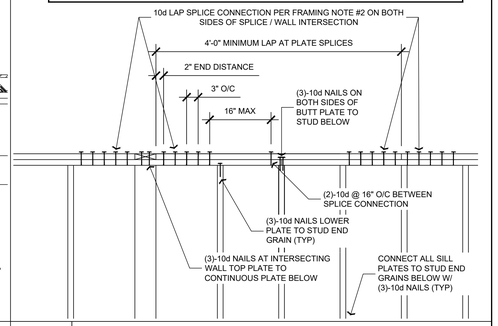
S CORNER BEAM POCKET CONNECTION



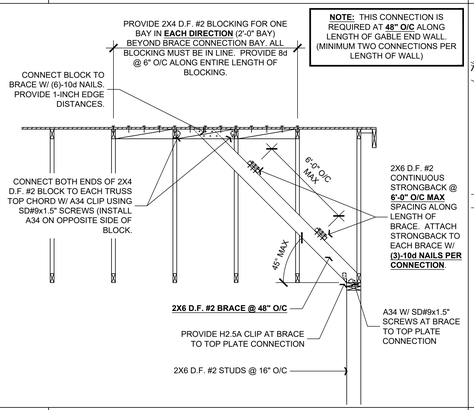
P DRAG CONNECTION

TOP PLATE SPLICE CONNECTION NOTES:

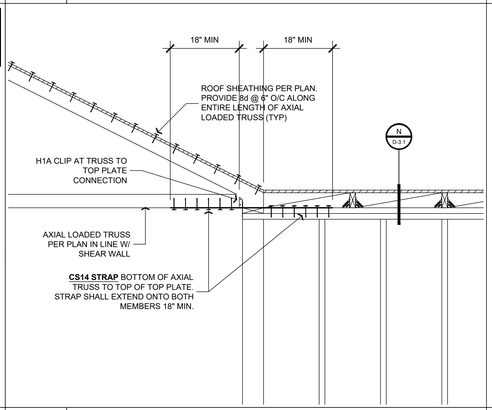
1. NAILS SHALL BE INSTALLED VERTICALLY (PERPENDICULAR TO TOP PLATE). **(DO NOT INSTALL NAILS AT ANGLE)**
2. PROVIDE 2-INCH END DISTANCE AND 1-INCH EDGE DISTANCE FROM ALL NAILING.
3. NAILS SHALL BE SPACED NOT CLOSER THAN 3-INCHES AND SHALL BE STAGGERED AT LAP CONNECTION.
4. CONTRACTOR SHALL REFER TO **FRAMING NOTE #4** ON PLAN FOR NUMBER OF 10d COMMON NAILS REQUIRED AT LAP CONNECTION.



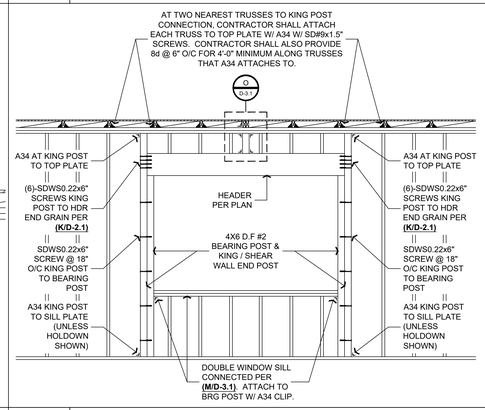
M TOP PLATE SPLICE CONNECTION



W OUT-OF-PLANE CONNECTION AT GABLE END

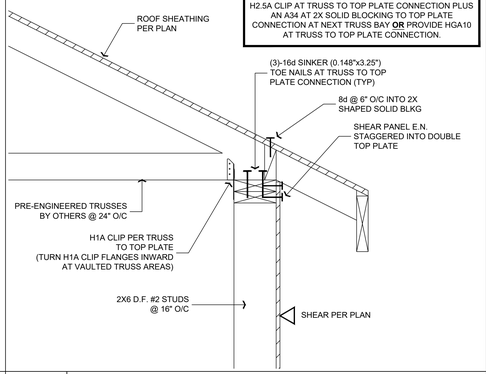


T DRAG CONNECTION

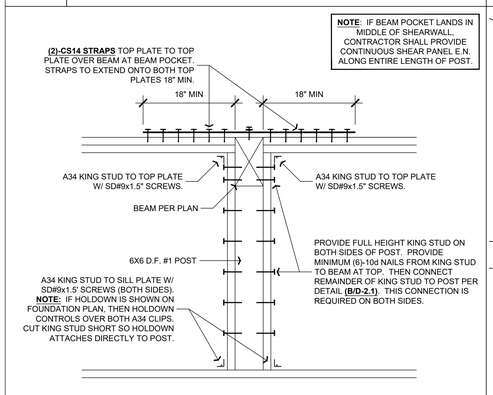


Q TYP G.T. OVER HEADER CONNECTION

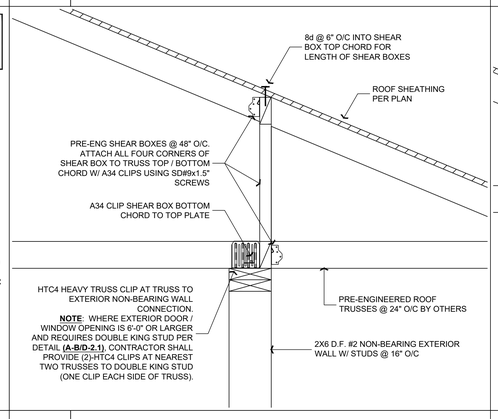
NOTE: WHERE H1A CANNOT BE INSTALLED DUE TO INTERIOR WALL, THE CONTRACTOR SHALL PROVIDE AN H2.5A CLIP AT TRUSS TO TOP PLATE CONNECTION PLUS AN A34 AT 2X SOLID BLOCKING TO TOP PLATE CONNECTION AT NEXT TRUSS BAY **OR** PROVIDE HGA10 AT TRUSS TO TOP PLATE CONNECTION.



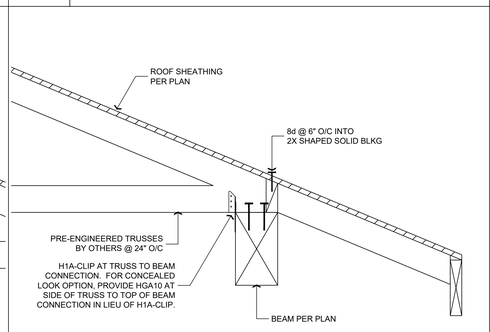
N SHEAR TRANSFER - TRUSS EAVE CONNECTION



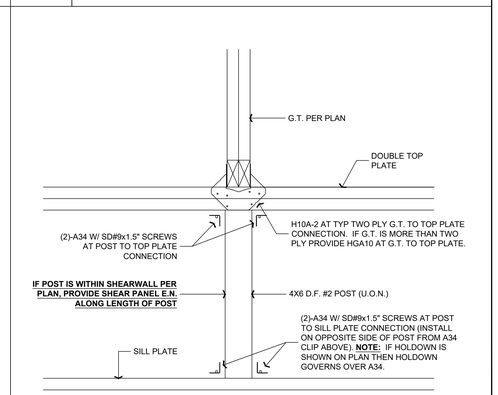
X BEAM POCKET CONNECTION



U EXTERIOR NON-BRG WALL TO DIAPHRAGM TIE



R SHEAR TRANSFER - TRUSS EAVE TO BEAM



O TYP GIRDER TRUSS CONNECTION

KUDLA ENGINEERING
PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:

HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

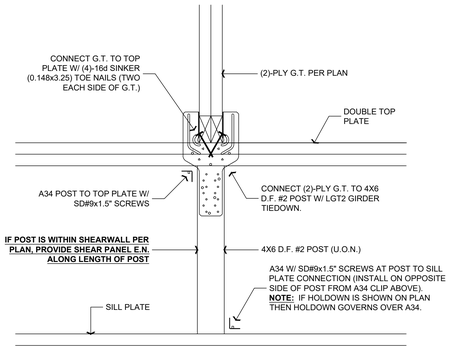
REVISION LOG

REV.	DESCRIPTION	DATE

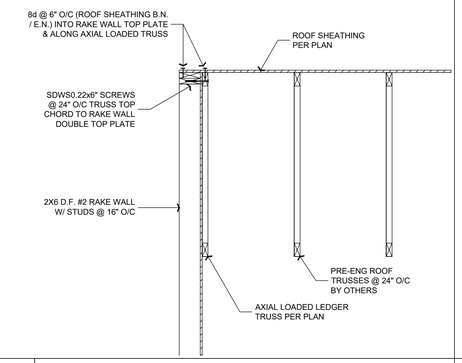
PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

STRUCTURAL DETAILS

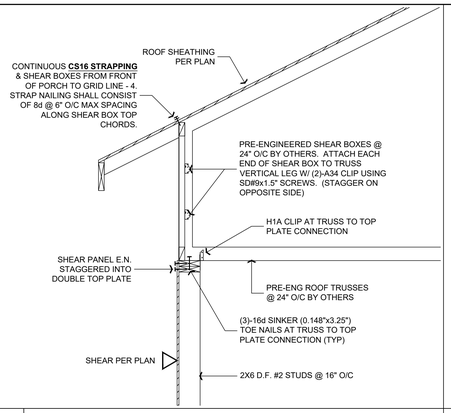
SHEET NUMBER:
D-3.1



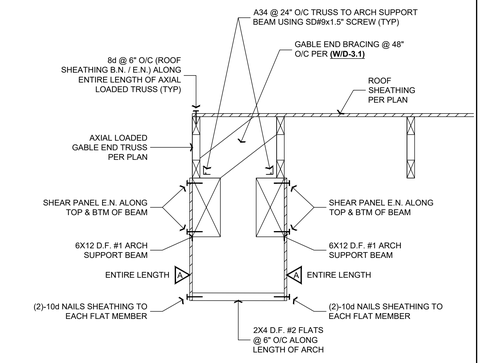
H H TYP GIRDER TRUSS CONNECTION



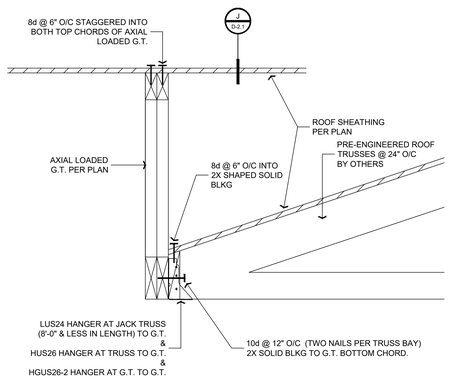
E E SHEAR TRANSFER



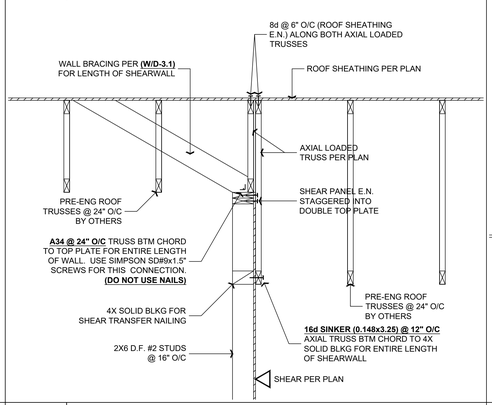
B B SHEAR TRANSFER



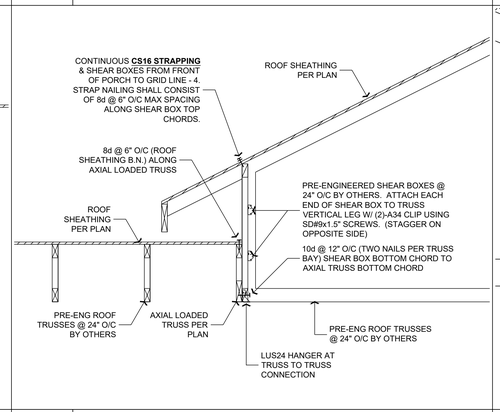
Y AXIAL TRUSS / PORCH ARCH DETAIL



I I SHEAR TRANSFER - TRUSS TO G.T.

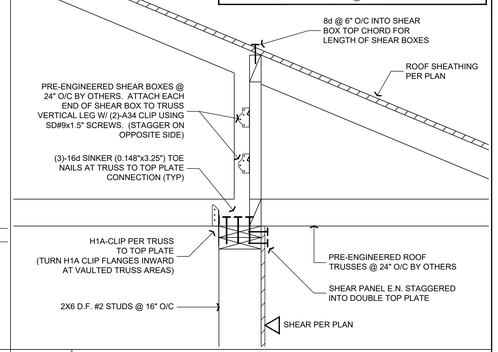


F F SHEAR TRANSFER

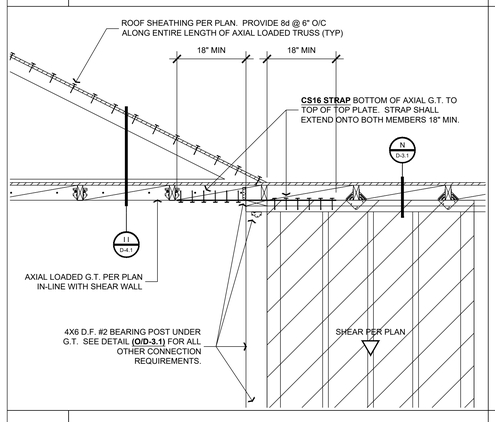


C C SHEAR TRANSFER

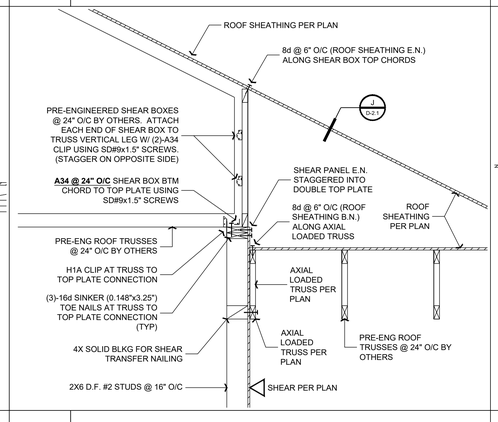
NOTE: WHERE SHEAR BOXES CANNOT BE INSTALLED DUE TO CLOSE TRUSS SPACING, CONTRACTOR SHALL PROVIDE 2X SOLID BLOCKING AT TRUSS TOP / BOTTOM CHORD. CS16 STRAP ON SHEATHING / BLOCKING TO NEXT ADJACENT SHEAR BOXES IN BOTH DIRECTIONS W/ 8d @ 6" O/C STRAP NAILING.



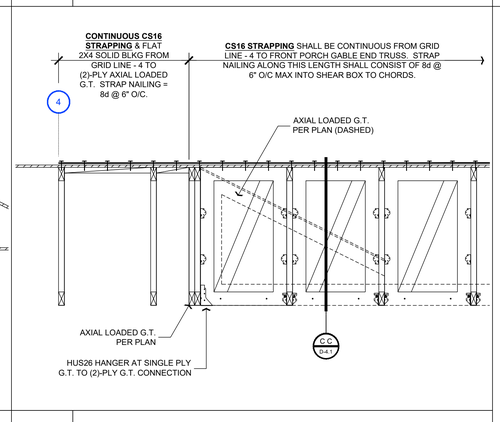
Z SHEAR TRANSFER



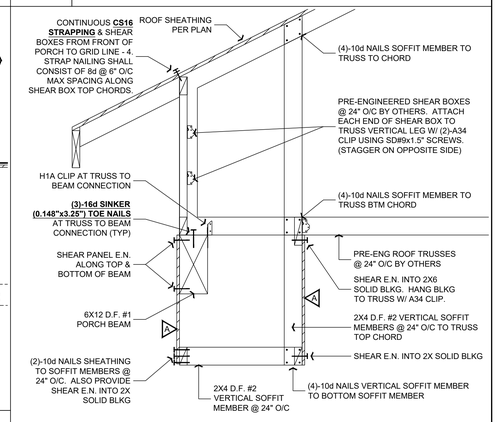
J J DRAG / CHORD FORCE CONNECTION



G G SHEAR TRANSFER



D D DRAG / CHORD FORCE CONNECTION



A A SHEAR TRANSFER

KUDLA ENGINEERING
PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:

HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
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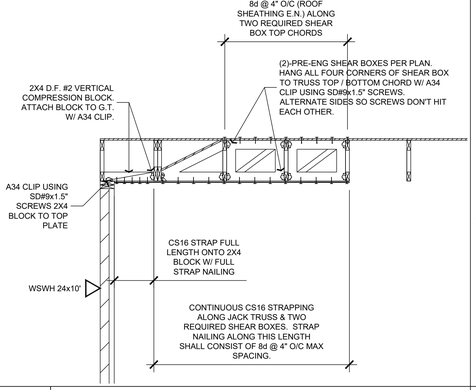
REVISION LOG

REV.	DESCRIPTION	DATE

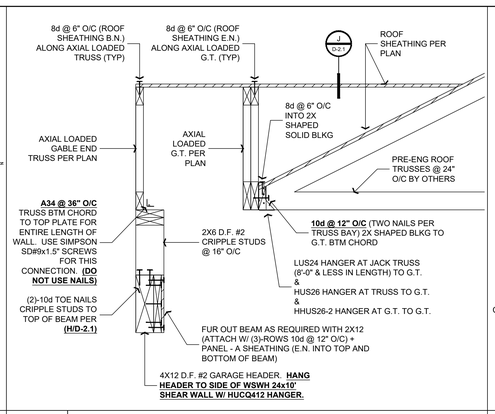
PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 00 - HARROD STRUCTURAL.DWG

STRUCTURAL DETAILS

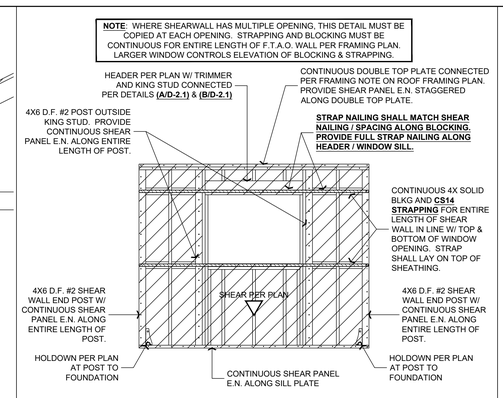
SHEET NUMBER:
D-4.1



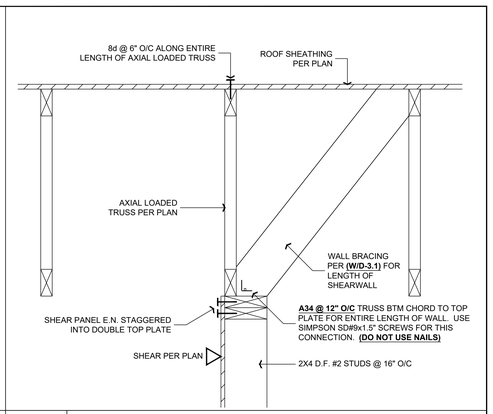
T T | OUT-OF-PLANE SHEAR TRANSFER



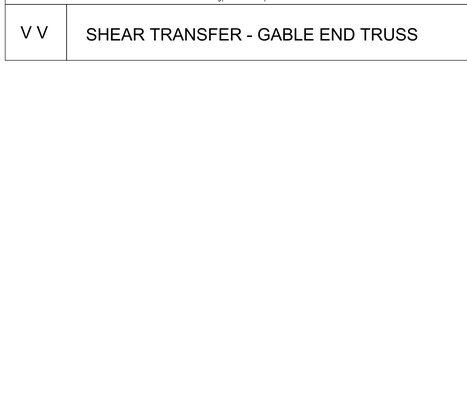
Q Q | SHEAR TRANSFER - GABLE END TRUSS



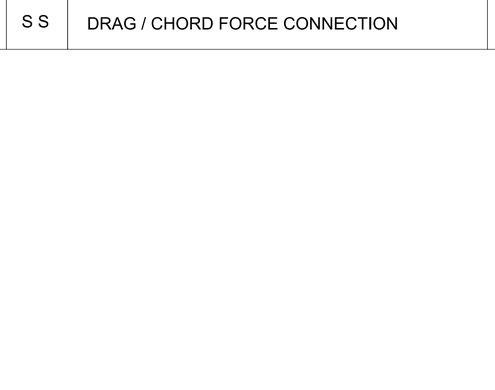
N N | FORCE TRANSFER AROUND OPENING (F.T.A.O.)



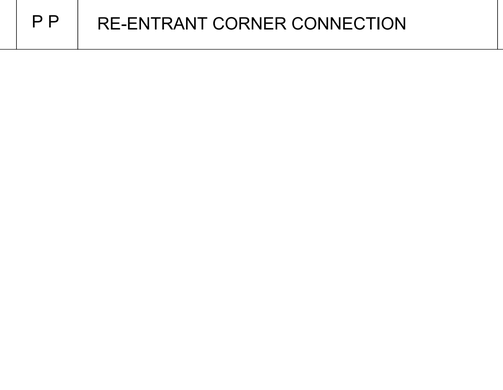
K K | SHEAR TRANSFER - INTERIOR AXIAL TRUSS



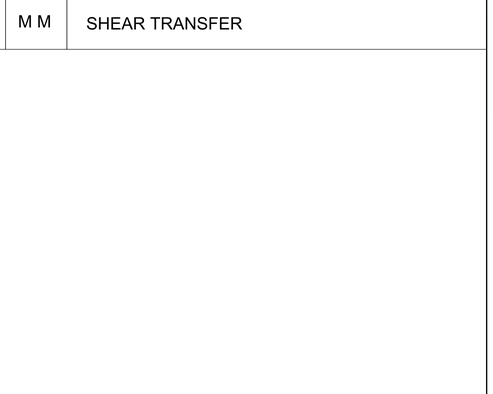
U U | GARAGE HEADER CONNECTION



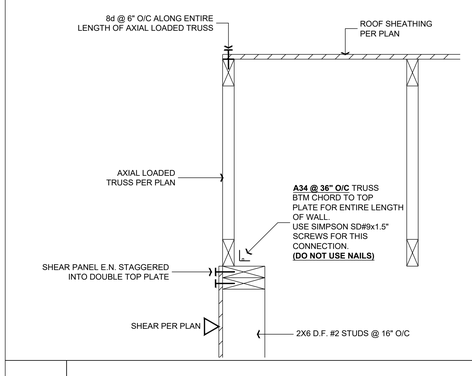
R R | OUT-OF-PLANE CONN @ 48" O/C



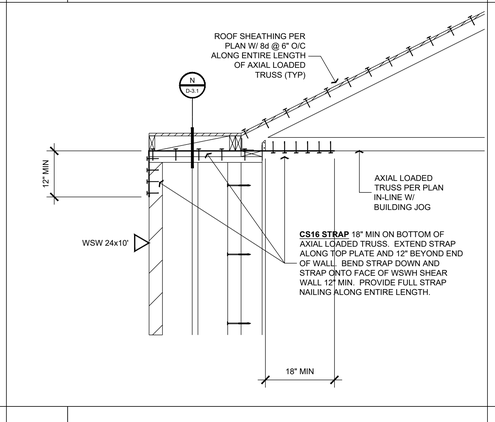
O O | DOUBLE S.W. AT COMMON CORNER POST



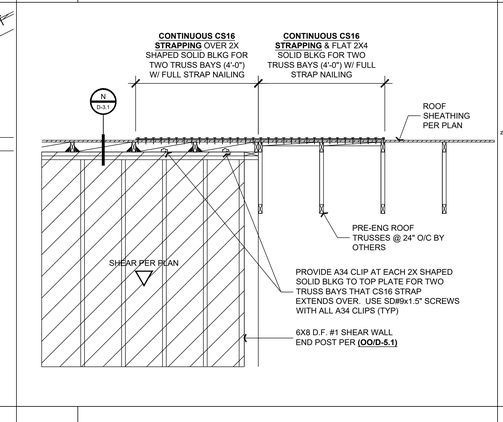
L L | SHEAR TRANSFER



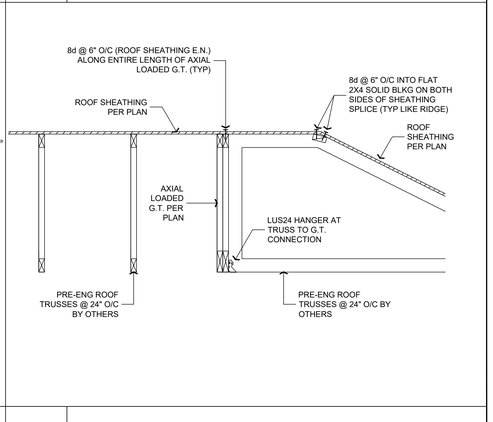
V V | SHEAR TRANSFER - GABLE END TRUSS



S S | DRAG / CHORD FORCE CONNECTION



P P | RE-ENTRANT CORNER CONNECTION



M M | SHEAR TRANSFER

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PROFESSIONAL STRUCTURAL DESIGN
610 10TH ST STE A, PASO ROBLES, CA 93446
(805) 423-4844

PLAN PREPARED FOR:

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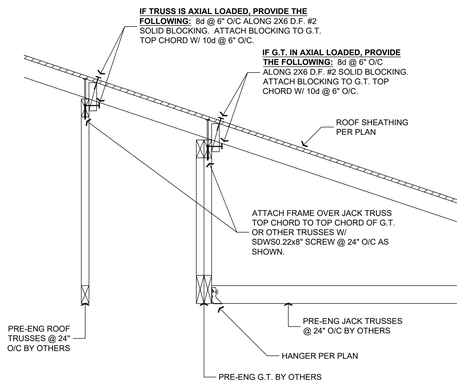
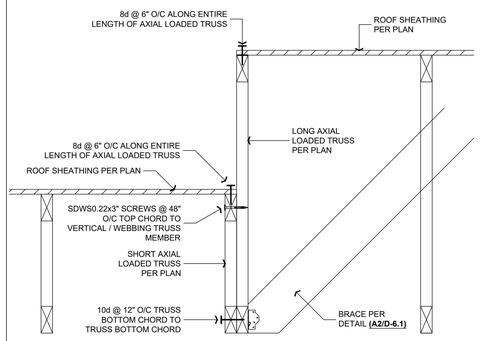
STRUCTURAL DETAILS

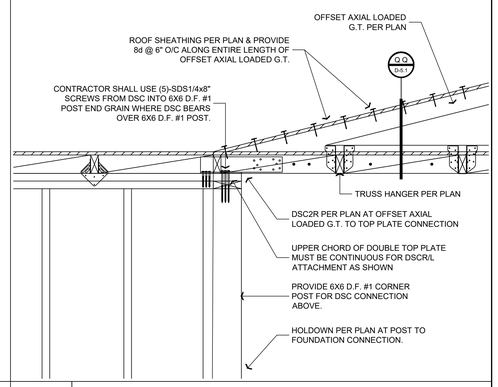
SHEET NUMBER:
D-5.1



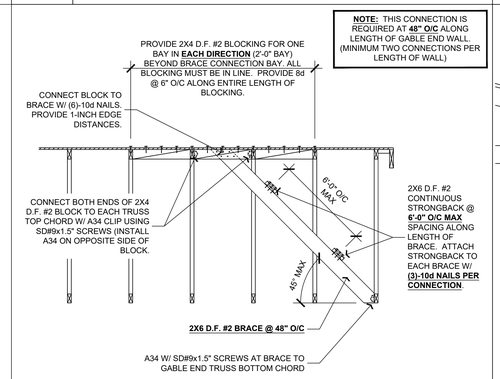
C2	SHEAR TRANSFER G.T. FRAME OVER (TYP)



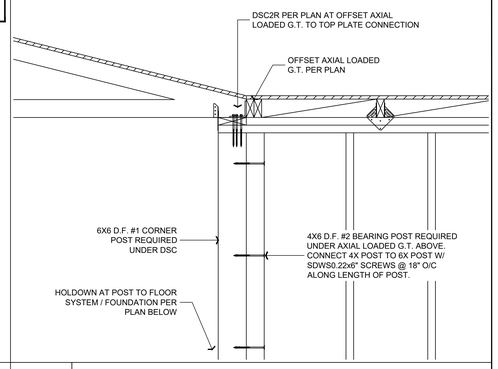
Z Z	SHEAR TRANSFER - ROOF TRANSITION



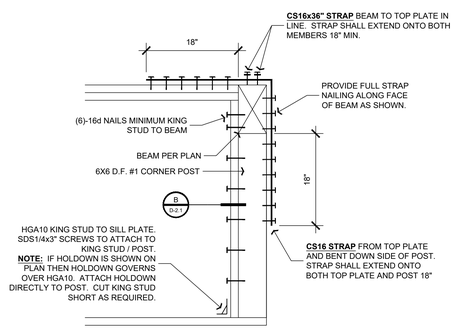
W W	DRAG CONNECTION: OFFSET G.T. TO TOP PL.



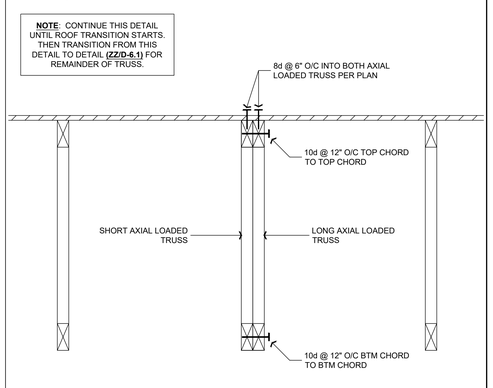
A2	OUT-OF-PLANE CONNECTION AT GABLE END



X X	DRAG CONNECTION: OFFSET G.T. TO TOP PL.



B2	CORNER BEAM POCKET CONNECTION



Y Y	SHEAR TRANSFER - TRUSS TO TRUSS

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D-6.1

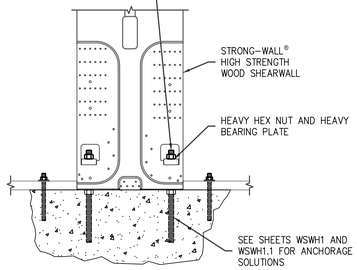
STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL MODELS

MODEL NO.	W (in.)	H (in.)	ANCHOR BOLTS		TOTAL WALL WEIGHT (lb.)
			QUANTITY	DIA. (in.)	
WSWH12x7	12	84	2	1	105
WSWH18x7	18	84	2	1	155
WSWH12x8	12	96	2	1	120
WSWH18x8	18	96	2	1	175
WSWH24x8	24	96	2	1	225
WSWH12x9	12	108	2	1	130
WSWH18x9	18	108	2	1	195
WSWH24x9	24	108	2	1	250
WSWH12x10	12	120	2	1	145
WSWH18x10	18	120	2	1	210
WSWH24x10	24	120	2	1	275
WSWH12x12	12	144	2	1	165
WSWH18x12	18	144	2	1	245
WSWH24x12	24	144	2	1	325
WSWH18x14	18	168	2	1	285
WSWH24x14	24	168	2	1	370
WSWH24x16	24	192	2	1	420
WSWH18x20	18	240	2	1	390
WSWH24x20	24	240	2	1	520

NOTES :
1. FOR HEIGHTS NOT LISTED, ORDER THE NEXT TALLEST PANEL AND TRIM TO FIT. MINIMUM TRIMMED HEIGHT FOR ALL PANELS IS 7 4½".
2. ALL PANELS COME WITH PRE-ATTACHED HOLDOWNS, TWO HEAVY HEX NUTS, TWO HEAVY BEARING PLATES, ONE WSWH-TP TOP CONNECTION PLATE WITH REQUIRED FASTENERS AND INSTALLATION INSTRUCTIONS.
3. ALL PANELS ARE 3½" THICK.

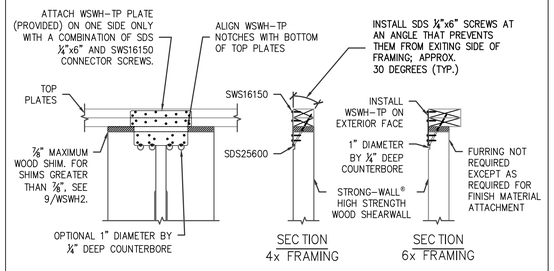
PLACE STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL OVER THE ANCHOR BOLTS AND SECURE WITH HEAVY BEARING PLATES AND HEAVY HEX NUTS (PROVIDED). DO NOT USE AN IMPACT WRENCH. USE 1⅜" WRENCH FOR 1" NUT. TIGHTEN ANCHOR NUTS FINGER TIGHT + ½" TURN.

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

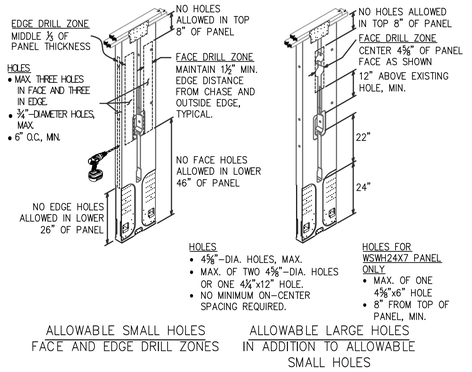


WSWH-TP CONNECTION		
MODEL NO.	FASTENER QUANTITY	
	SWS16150	SDS25600
WSWH-TP12	14	2
WSWH-TP18	26	4
WSWH-TP24	46	8

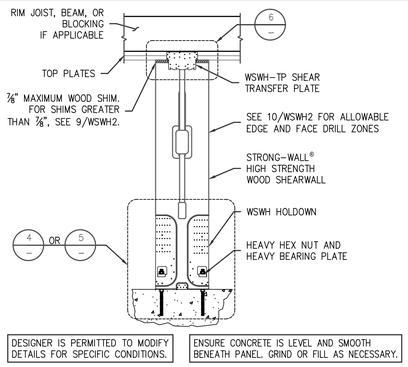
DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



1. STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY INC." HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (800) 999-5099, FAX: (925) 847-1597. "SIMPSON STRONG-TIE COMPANY INC." IS AN ISO 9001-2008 REGISTERED COMPANY.
2. USE OF THIS PRODUCT IS SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT.
3. THIS PRODUCT IS PART OF THE OVERALL LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE. DESIGN OF THE BUILDING'S LATERAL FORCE RESISTING SYSTEM, INCLUDING THE LOAD PATH TO TRANSFER LATERAL FORCES FROM THE STRUCTURE TO THE GROUND, IS THE RESPONSIBILITY OF THE DESIGNER.
4. ENGINEER OF RECORD IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ELEVATIONS, ETC. PRIOR TO INSTALLATION OF ANY COMPONENTS FOR THE STRONG-WALL SB SYSTEM. IF ANY DISCREPANCIES ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER FOR CLARIFICATION PRIOR TO CONSTRUCTION.
6. INSTALLATION OF PRODUCT SHALL BE DONE IN CONFORMANCE TO THESE DRAWINGS. THE PERFORMANCE OF MODIFIED PRODUCTS OR ALTERED INSTALLATION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE DESIGNER.
7. SIMPSON STRONG-TIE COMPANY INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS, AND MODELS WITHOUT NOTICE OR LIABILITY FOR SUCH CHANGES.
8. ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.
9. SEE ICC-ES ESR-2652 OR CITY OF LOS ANGELES RR25730 AS APPLICABLE FOR ADDITIONAL INFORMATION.



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

ENSURE CONCRETE IS LEVEL AND SMOOTH BENEATH PANEL. GRIND OR FILL AS NECESSARY.

NO.	DATE	REVISIONS
0	11-20-2020	FIRST RELEASE - 2018 IBC
1	03-16-2021	2021 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
Pleasanton, CA 94588
• Tel: (800) 999-5099
• Website: www.strongtie.com
THERE IS NO EQUAL

STRONG-WALL® WSWH
FRAMING DETAILS
ENGINEERED DESIGNS

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDERA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

NAME
DATE 03-16-2021
SCALE N.T.S.
CHECKED
SHEET WSWH2
OF SHEETS
JOB NO.

GENERAL NOTES

1. THE FOLLOWING NOTES, DETAILS, SCHEDULES & SPECIFICATIONS SHALL APPLY TO ALL PHASES OF THIS PROJECT UNLESSSS SPECIFICALLY OTHERWISE NOTED (UON). NOTES AND DETAILS ON THE STRUCTURAL PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK
2. ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY APPLICABLE CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER OR ENGINEER.
3. REFER TO THE ARCHITECTURAL PLANS FOR THE FOLLOWING:
   - 3.1. DIMENSIONS
   - 3.1. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR WALL LOCATIONS.
   - 3.2. SIZE AND LOCATION OF ALL FLOOR, ROOF AND WALL OPENINGS
   - 3.3. SIZE AND LOCATION OF ALL DRAINS, SLOPES, DEPRESSIONS, STEPS, ETC.
   - 3.4. SPECIFICATION OF ALL FINISHES & WATERPROOFING
   - 3.5. ALL OTHER NON-STRUCTURAL ELEMENTS
4. REFER TO THE MECHANICAL, ELECTRICAL AND PLUMBING PLANS FOR THE FOLLOWING:
   - 4.1. SIZE AND LOCATION OF ALL EQUIPMENT
   - 4.2. PIPE RUNS, SLEEVES, HANGERS AND TRENCHES
   - 4.3. ALL OTHER MECHANICAL, ELECTRICAL OR PLUMBING RELATED ELEMENTS
5. DO NOT SCALE STRUCTURAL PLANS. CONTRACTOR SHALL USE ALL WRITTEN DIMENSIONS ON ARCHITECTURAL PLANS.
6. CONSTRUCTION MATERIALS SHALL BE UNIFORMLY SPREAD OUT IF PLACED ON FLOOR OR ROOF SO AS TO NOT OVERLOAD THE FRAMING. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORING AND/OR BRACING AS REQUIRED.
7. SPECIFICATIONS AND DETAILING OF ALL WATERPROOFING AND DRAINAGE ITEMS, WHILE SOMETIMES SHOWN ON THE STRUCTURAL PLANS FOR GENERAL INFORMATION PURPOSES ONLY, ARE SOLELY THE DESIGN RESPONSIBILITY OF OTHERS.
8. THE ENGINEER WILL NOT BE RESPONSIBLE FOR AND WILL NOT HAVE CONTROL OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION DELINEATED BY THESE PLANS. IT SHOULD BE UNDERSTOOD THAT THE CONTRACTOR OR HIS/HER AGENT(S) SHALL SUPERVISE AND DIRECT ALL WORK AND SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES AND CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. PERIODIC OBSERVATIONS BY THE ENGINEER, HIS STAFF OR REPRESENTATIVES ARE NOT INTENDED TO INCLUDE VERIFICATION OF DIMENSIONS OR REVIEW THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES ON OR NEAR THE CONSTRUCTION SITE.
9. MODIFICATIONS OF THE PLANS, NOTES, DETAILS AND SPECIFICATIONS SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
10. ALL WORKMANSHIP SHALL CONFORM TO THE BEST PRACTICE PREVAILING IN THE VARIOUS TRADES PERFORMING THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ONLY APPROVED STRUCTURAL PLANS ARE USED DURING THE COURSE OF CONSTRUCTION. THE USE OF UNAPPROVED DOCUMENTS SHALL BE AT THE CONTRACTOR'S OWN RISK. CORRECTIONS OF ALL WORK BASED ON SUCH DOCUMENTS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
12. THESE PLANS AND SPECIFICATIONS REPRESENT THE STRUCTURAL DESIGN ONLY. NO INFORMATION NOR WARRANTY IS PROVIDED FOR THE WORK OF ANY OTHER CONSULTANT (ARCHITECT, MECHANICAL, ELECTRICAL, ETC.). THIS INCLUDES, BUT IS NOT LIMITED TO, WATERPROOFING, DRAINAGE, VENTILATION, ACCESSIBILITY, OR DIMENSIONS.

FOUNDATIONS

1. REFER TO STRUCTURAL DESIGN PARAMETERS SECTION ON SHEET TITLE SHEET OR STRUCTURAL TITLE SHEET FOR ALL SOIL DESIGN VALUES USED IN CALCULATIONS.
2. SOILS VALUES PER GEOLOGIC/GEOTECHNICAL REPORT REFERENCED ON FOUNDATION PLAN. THIS REPORT AND ALL RECOMMENDATIONS CONTAINED THEREIN ARE TO BE CONSIDERED A PART OF THESE PLANS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THE SOILS REPORT FROM THE OWNER. A COPY OF THE SOILS REPORT SHALL BE ON THE JOB SITE DURING THE COURSE OF CONSTRUCTION.
4. UNEXPECTED SOIL CONDITIONS: ALLOWABLE VALUES AND SUBSEQUENT FOUNDATION DESIGNS ARE BASED ON SOIL CONDITIONS WHICH ARE SHOWN BY TEST BORINGS. ACTUAL SOIL CONDITIONS WHICH DEVIATE APPRECIABLY FROM THAT SHOWN IN THE TEST BORINGS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
5. ALL COMPACTION, FILL, BACKFILLING AND SITE PREPARATION SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SOILS REPORT OR CBC APPENDIX CHAPTER J. ALL SUCH WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF THE PROJECT SOILS ENGINEER.
6. EXCAVATE TO REQUIRED DEPTHS AND DIMENSIONS (AS INDICATED IN THE DRAWINGS), CUT SQUARE AND SMOOTH WITH FIRM LEVEL BOTTOMS. CARE SHALL BE TAKEN NOT TO OVER-EXCAVATE FOUNDATION AT LOWER ELEVATION AND PREVENT DISTURBANCE OF SOILS AROUND HIGH ELEVATION.
7. FOUNDATIONS SHALL BE POURED IN NEAT EXCAVATIONS.
8. EXCAVATE ALL FOUNDATIONS TO REQUIRED DEPTHS INTO COMPACTED FILL (AS PER PLANS AND DETAILS) AND AS VERIFIED BY THE BUILDING OFFICIAL AND/OR SOILS ENGINEER.
9. ALL FOUNDATIONS SHALL BE INSPECTED AND APPROVED BY THE APPROPRIATE BUILDING OFFICIAL AND/OR A REPRESENTATIVE OF THE SOILS ENGINEER PRIOR TO FORMING AND PLACEMENT OF REINFORCING OR CONCRETE.
10. FOUNDATIONS SHALL NOT BE POURED UNTIL ALL REQUIRED REINFORCING STEEL, FRAMING HARDWARE, SLEEVES, INSERTS, CONDUITS, PIPES, ETC. AND FORMWORK IS PROPERLY PLACED AND INSPECTED BY THE APPROPRIATE BUILDING OFFICIAL/INSPECTOR(S).
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR IN CHARGE OF FRAMING TO PROPERLY POSITION ALL HOLDOWN BOLTS, ANCHOR BOLTS, COLUMN BASES, AND ALL OTHER CAST-IN-PLACE HARDWARE. REFER TO TYPICAL DETAILS. ALL HARDWARE TO BE SECURED PRIOR TO FOUNDATION INSPECTIONS.
12. THE SIDES AND BOTTOMS OF DRY EXCAVATIONS MUST BE MOISTENED JUST PRIOR TO PLACING CONCRETE; CONVERSELY, DE-WATER FOOTINGS AS REQUIRED TO REMOVE STANDING WATER AND TO MAINTAIN OPTIMUM WORKING CONDITIONS.
13. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND THE PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL SAFETY ORDINANCES. THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, BRACING AND SHORING REQUIRED.

CONCRETE

1. ALL CONCRETE SHALL HAVE:
   - 1.1. AN ULTIMATE COMPRESSIVE STRENGTH (F'C) OF 2500 PSI (RESIDENTIAL) OR 3000 PSI (COMMERCIAL) AT 28 DAYS (UON).
   - 1.2. A MAXIMUM SLUMP OF 5" AT POINT OF PLACEMENT FOR SLABS AND FOOTINGS. CAISSONS SHALL HAVE A 4" TO 6" SLUMP AT "DRY" HOLES AND A 6" - 8" SLUMP AT "WET" HOLES.
   - 1.3. A W/C RATIO OF 0.55 OR LESS FOR ALL SLABS, WALLS, AND COLUMNS, AND 0.60 OR LESS FOR ALL FOUNDATIONS.
   - 1.4. A NORMAL DRY-WEIGHT DENSITY (UON)
2. SPECIAL INSPECTION IS NOT REQUIRED, EXCEPT WHERE SPECIFIED HEREIN, ON THE STRUCTURAL PLANS, OR BY THE BUILDING DEPARTMENT. AS A MINIMUM, SPECIAL INSPECTION IS ALWAYS REQUIRED ON:
   - 2.1. STRUCTURAL SLABS, FLAT PLATES
   - 2.2. WALLS, COLUMNS, BEAMS
   - 2.3. PILES, CAISSONS
   - 2.4. WELDING OF REINFORCEMENT, INSTALLATION OF MECHANICAL BAR SPLICE DEVICES, EPOXY APPLICATIONS

   WHEN REQUIRED OR SPECIFIED, SPECIAL INSPECTION SERVICES SHALL CONFORM TO CBC CHAPTER 17 AND SHALL BE PROVIDED BY AN ICC CERTIFIED INSPECTOR OR BUILDING DEPARTMENT APPROVED ENGINEER.
3. TESTING OF MATERIALS USED IN CONCRETE CONSTRUCTION MUST BE PERFORMED AS NOTED ON STRUCTURAL PLANS OR AT THE REQUEST OF THE BUILDING DEPARTMENT TO DETERMINE IF MATERIALS ARE QUALITY SPECIFIED. TESTS OF MATERIALS AND OF CONCRETE SHALL BE MADE BY AN APPROVED AGENCY AND AT THE EXPENSE OF THE OWNER; SUCH TESTS SHALL BE MADE IN ACCORDANCE WITH THE STANDARDS LISTED IN CBC TABLE 1705.3.

   WHEN TESTING OF CONCRETE IS REQUIRED, FOUR (4) TEST CYLINDERS SHALL BE TAKEN FROM EACH 150 YARDS, OR FRACTION THEREOF, POURED IN ANY ONE DAY. ONE (1) CYLINDER SHALL BE TESTED AT SEVEN (7) DAYS; TWO (2) AT 28 DAYS; ONE (1) SHALL BE HELD IN RESERVE. IF CONTRACTOR ELECTS TO HAVE ADDITIONAL TESTS PERFORMED FOR "EARLY-BREAK" RESULTS, ADDITIONAL TEST CYLINDERS MUST BE TAKEN. AT NO TIME SHALL THE CONTRACTOR INSTRUCT THE TESTING AGENCY TO PERFORM TESTS ON A SCHEDULE DIFFERENT THAT ABOVE WITHOUT THE PRIOR AUTHORIZATION OF THE ENGINEER.

   CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH APPLICABLE TESTING REQUIREMENTS OF THE BUILDING DEPARTMENT. COPIES OF ALL TEST REPORTS SHALL BE PROVIDED TO ENGINEER AND BUILDING DEPARTMENT FOR REVIEW IN A TIMELY MANNER.
4. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY CONCRETE WHICH FAILS TO ATTAIN SPECIFIED 28 DAY COMPRESSIVE STRENGTH IF SO DIRECTED BY THE ENGINEER. ANY DEFECTS IN THE HARDENED CONCRETE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND/OR ARCHITECT OR THE HARDENED CONCRETE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ALL CONCRETE WORK SHALL CONFORM WITH CBC CHAPTER 19.
6. ALL CEMENT SHALL BE PORTLAND CEMENT TYPE I OR II AND SHALL CONFORM TO ASTM C 150.
7. ALL AGGREGATES SHALL CONFORM TO ASTM C33. MAXIMUM AGGREGATE SIZES:
   - 7.1. FOOTINGS: 1-1/2"
   - 7.2. ALL OTHER WORK: 1"
8. WHERE NOT SPECIFICALLY DETAILED, THE MINIMUM CONCRETE COVER ON REINFORCING STEEL SHALL BE:
   - 8.1. PERMANENTLY EXPOSED TO EARTH OR WEATHER
     - 8.1.1. CAST AGAINST EARTH: 3"
     - 8.1.2. CAST AGAINST FORMS: 2"
   - 8.2. NOT EXPOSED TO EARTH OR WEATHER
     - 8.2.1. SLABS, WALLS, JOISTS: 3/4"
     - 8.2.2. BEAMS, GIRDERS, COLUMNS: 1-1/2"
9. MINIMUM LAP SPLICE LENGTH FOR ALL REINFORCING STEEL SHALL BE 48 BAR DIAMETER (UON) ON THE STRUCTURAL PLANS AND/OR DETAILS. ALL LAP SPLICES TO BE STAGGERED.
10. ALL ANCHOR BOLTS USED IN CONCRETE CONSTRUCTION SHALL HAVE A MINIMUM TOTAL EMBEDMENT AS FOLLOWS (UON):
    - 10.1. 5/8" DIA.: 7"
    - 10.2. 3/4" DIA.: 8"
    - 10.3. 7/8" DIA.: 9"
    - 10.4. 1" DIA.: 10"

    OVERALL LENGTH OF ANCHOR BOLTS SHALL BE COORDINATED WITH SILL PLATE REQUIREMENTS AS INDICATED ELSEWHERE IN THESE SPECIFICATIONS. ALL ANCHOR BOLTS IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE HOT DIPPED ZINC GALVANIZED OR STAINLESS STEEL.
11. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, INSERTS, AND ANY OTHER HARDWARE TO BE CAST IN CONCRETE SHALL BE WELL SECURED IN POSITION PRIOR TO FOUNDATION INSPECTION. ALL HARDWARE TO BE INSTALLED IN ACCORDANCE WITH RESPECTIVE MANUFACTURER'S SPECIFICATIONS. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR LOCATIONS OF EMBEDDED ITEMS.
12. LOCATIONS OF ALL CONSTRUCTION JOINTS, OTHER THAN SPECIFIED ON THE STRUCTURAL PLANS, SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER PRIOR TO FORMING. CONSTRUCTION JOINTS SHALL BE THOROUGHLY AIR AND WATER CLEANED AND HEAVILY ROUGHENED SO AS TO EXPOSE COARSE AGGREGATES. ALL SURFACES TO RECEIVE FRESH CONCRETE SHALL BE MAINTAINED CONTINUOUSLY WET AT LEAST THREE (3) HOURS IN ADVANCE OF CONCRETE PLACEMENT.

    UNLESSSS SPECIFICALLY DETAILED OR OTHERWISE NOTED, CONSTRUCTION AND CONTROL JOINTS SHALL BE PROVIDED IN ALL CONCRETE SLABS-ON-GRADE. JOINTS SHALL BE LOCATED SUCH THAT THE AREA DOES NOT EXCEED 400 SQ. FEET.
13. THE ARCHITECT, ENGINEER AND APPROPRIATE INSPECTORS SHALL BE NOTIFIED IN A TIMELY MANNER FOR A REINFORCEMENT INSPECTION PRIOR TO THE PLACEMENT OF ANY CONCRETE.
14. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ARCHITECT AND THE ENGINEER PRIOR TO PLACING SLEEVES,PIPES, DUCTS, CHASES, CORING AND OPENING ON OR THROUGH STRUCTURAL CONCRETE BEAMS, WALLS, FLOORS, AND ROOF SLABS UNLESSSS SPECIFICALLY DETAILED OR NOTED ON THE PLANS. ALL PILES OR CONDUITS PASSING THROUGH CONCRETE MEMBERS SHALL BE SLEEVED WITH STANDARD STEEL PIPE SECTIONS.
15. THE CONTRACTOR IS RESPONSIBLE FOR DESIGN, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL FORMWORK. FORMS SHALL BE PROPERLY CONSTRUCTED, SUFFICIENTLY TIGHT TO PREVENT LEAKAGE, SUFFICIENTLY STRONG, AND BRACED TO MAINTAIN THEIR SHAPE AND ALIGNMENT UNTIL NO LONGER NEEDED FOR CONCRETE SUPPORT. JOINTS IN FORMWORK SHALL BE TIGHTLY FITTED AND BLOCKED, AND SHALL PRODUCE A FINISHED CONCRETE SURFACE THAT IS TRUE AND FREE FROM BLEMISHES. FORMS FOR EXPOSED CONCRETE SHALL BE PRE-APPROVED BY THE ARCHITECT TO ENSURE CONFORMANCE WITH DESIGN INTENT.
16. REMOVE FORM WORK IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
    - 16.1. FORMS AT SLAB EDGE: 1 DAY
    - 16.2. SIDE FORMS AT FOOTINGS: 2 DAYS
    - 16.3. ALL OTHER VERTICAL SURFACES: 7 DAYS
    - 16.4. BEAMS, COLUMNS, GIRDERS: 15 DAYS
    - 16.5. ELEVATED SLABS: 28 DAYS

    ENGINEER RESERVES THE RIGHT TO MODIFY REMOVAL SCHEDULE ABOVE BASED ON FIELD OBSERVATIONS, CONCRETE CONDITIONS, AND/OR CONCRETE TEST RESULTS.
17. ALL CONCRETE (EXCEPT SLABS-ON-GRADE 6" OR LESS) SHALL BE MECHANICALLY VIBRATED AS IT IS PLACED. VIBRATOR TO BE OPERATED BY EXPERIENCED PERSONNEL. THE VIBRATOR SHALL BE USED TO CONSOLIDATE THE CONCRETE. THE VIBRATOR SHALL NOT BE USED TO CONVEY CONCRETE, NOR SHALL IT BE PLACED ON REINFORCING AND/OR FORMS. CONCRETE IN CAISSONS SHALL BE PLACED AND CONSOLIDATED IN AN APPROVED MANNER.
18. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF FIVE (5) DAYS AFTER PLACEMENT.
19. CONCRETE SHALL NOT BE PERMITTED TO FREE FALL MORE THAN SIX (6) FEET. FOR HEIGHTS GREATER THAN SIX (6) FEET, USE TREMIE, PUMP OR OTHER METHOD CONSISTENT WITH APPLICABLE STANDARDS.
20. CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR ALL CONCRETE WITH ULTIMATE COMPRESSIVE STRENGTH GREATER THAN 2500 PSI TO ARCHITECT AND ENGINEER FOR APPROVAL SEVEN (7) DAYS PRIOR TO PLACEMENT. MIX DESIGNS SHALL BE PREPARED B AN APPROVED TESTING LABORATORY. SUFFICIENT DATA MUST BE PROVIDED FOR ALL ADMIXTURES.
21. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF ALL DIMENSIONS, SLAB DEPRESSIONS, SLOPES, DRAINS, CURBS, AND CONTROL JOINTS.

REINFORCEMENT

1. REINFORCING STEEL SHALL BE DEFORMED, CLEAN, FREE OF RUST, GREASE OR ANY OTHER MATERIAL LIKELY TO IMPAIR CONCRETE BOND.
2. ALL BARS SHALL CONFORM TO ASTM A615, GRADE 60 MINIMUM (UON ON STRUCTURAL PLANS), EXCEPT THAT #3 & #4 BARS MAY BE GRADE 40. ALL WELD WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185.
3. REINFORCING STEEL THAT IS TO BE WELDED SHALL CONFORM TO ASTM A706. ALL WELDING OF REINFORCEMENT SHALL BE SUBJECT TO SPECIAL INSPECTION.
4. 4. CONTRACTOR SHALL TAKE NECESSARY STEPS (STANDARD TIES, ANCHORAGE DEVICES, ETC.) TO SECURE ALL REINFORCING STEEL IN THEIR TRUE POSITION AND PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
5. FABRICATION, PLACEMENT AND INSTALLATION OF REINFORCING STEEL SHALL CONFORM TO:
   - 5.1. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE
6. SHOP DRAWINGS FOR FABRICATION OF REINFORCING STEEL SHALL BE APPROVED BY THE CONTRACTOR AND SUBMITTED TO THE ARCHITECT AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS ARE NOT REQUIRED FOR SLABS-ON-GRADE OR FOUNDATIONS UON ON THE STRUCTURAL PLANS.
7. HEATING OF REINFORCING STEEL TO AID IN BENDING AND SHAPING OF BARS IS NOT PERMITTED. ALL BENDS IN REINFORCING STEEL ARE TO BE MADE COLD. ALL BEND RADII SHALL CONFORM TO CRSI MANUAL OF STANDARD PRACTICE.
8. REFER TO CONCRETE AND MASONRY NOTES FOR SPECIFIC MINIMUM SPLICE LENGTH AND SPLICE STAGGERING REQUIREMENTS. LAP WELDED WIRE FABRIC (WWF) REINFORCEMENT TWO (2) MODULES MINIMUM (UON). ALL SPLICES ARE TO BE STAGGERED.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL AND CONNECTIONS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS, SEISMIC PROVISIONS SUPPLEMENTS NO. 1 AND 2, AND CODE OF STANDARD PRACTICE AS AMENDED TO DATE.
2. STEEL FABRICATION SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE ARCHITECT AND ENGINEER PRIOR TO FABRICATION.
3. MATERIALS:
   - 3.1. TUBE SECTIONS ("TS" OR "HSS") SHALL CONFORM TO ASTM A500 GR. B.
   - 3.2. PIPE SECTIONS SHALL BE WELDED SEAMLESS PIPE CONFORMING TO ASTM A53 GR. B OR ASTM A501.
     - 3.2.1. STD INDICATES STANDARD WALL
     - 3.2.2. EXT INDICATES EXTRA STRONG
     - 3.2.3. DBL INDICATES DOUBLE EXTRA STRONG
   - 3.3. ALL OTHER MATERIAL (PLATE, BARS, ETC.) SHALL CONFORM TO ASTM A36 (UON)
4. BOLTS:
   - 4.1. ALL BOLTS SHALL BE ASTM F1554 GRADE 36 (UON) ON THE STRUCTURAL PLANS.
   - 4.2. HIGH STRENGTH BOLTS COMPLYING WITH ASTM A325 AND A490, WHEN SPECIFIED, SHALL REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH CBC SECTION 1705.2.
   - 4.3. THREADED ROD, WHERE SPECIFIED, SHALL CONFORM WITH ASTM F1554 GRADE 36 (UON) ON THE STRUCTURAL PLANS.
5. BOLT HOLES SHALL BE DRILLED 1/32" TO 1/16" LARGER THAN THE SPECIFIED BOLT DIAMETER.
   - 5.1. WELDING:
   - 5.2. ALL WELDING SHALL BE PERFORMED USING SMAW, GMAW OR FCAW PROCESSES.
   - 5.3. ALL WELDED CONNECTIONS TO BE WELDED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS D1.1.
   - 5.4. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
   - 5.5. ALL WELDING SHALL BE PERFORMED WITH E70XX ELECTRODES WITH A MINIMUM CVN TOUGHNESS OF 20 FTLB AT -20OF.
   - 5.6. WELD LENGTHS SPECIFIED ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE THE MINIMUM SIZE WELDS AS SPECIFIED IN TABLE J2.4 OF THE AISC MANUAL OF STEEL CONSTRUCTION 15TH EDITION.
   - 5.7. NO FIELD WELDING SHALL BE PERMITTED UON ON THE PLANS OR DETAILS.
6. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. BURNING OR TORCHING OF HOLES IS NOT PERMITTED UNDER ANY CIRCUMSTANCES.
7. ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT AND TOUCHED-UP IN THE FIELD WITH READ LEAD (OR APPROVED ZINC CHROMATE PRIMER) AS NECESSARY.
8. ANY STEEL MEMBER INTERFACING WITH WOOD FRAMING SHALL HAVE 1/2" DIAMETER STUDS WELDED AT 24" O.C. FOR ATTACHMENT OF WOOD NAILERS. THRU-BOLTING OF NAILERS SHALL NOT BE PERMITTED UON ON THE PLANS OR DETAILS.
9. PROVIDE HOT DIP GALVANIZING OR 3" MINIMUM CONCRETE COVER AROUND ALL STRUCTURAL STEEL BELOW GRADE.

MASONRY

1. SPECIAL INSPECTION IS REQUIRED FOR MASONRY WALLS PER CBC 1705.4 [TMS 402/602]
2. MASONRY UNITS: SHALL CONFORM ARTICLE 2.3 OF TMS 602, GRADE SW OR MW, MEDIUM-WEIGHT. THE COMPRESSIVE STRENGTH OF THE MASONRY, F'M, SHALL BE 1500 PSI MINIMUM. REFER TO CBC 2103.
3. MORTAR: SHALL BE TYPE S, WITH A STRENGTH OF 1800 PSI MINIMUM @ 28 DAYS, PROPORTIONED IN CONFORMANCE WITH ASTM C270 TABLE 2. WHEN THE SPECIFIED MASONRY STRENGTH, F'M, IS GREATER THAN 2000 PSI, THEN THE MORTAR SHALL BE TYPE M. MORTAR STRENGTH SHALL BE EQUAL TO OR GREATER THAN THE MASONRY STRENGTH, F'M. NO MORTARS SHALL BE USED THAT HAVE STOOD FOR MORE THAN ONE-HOUR.
4. GROUT: STRENGTH SHALL BE NO LESS THAN 2000 PSI@ 28 DAYS. CEMENT CONTENT OF THE GROUT SHALL BE INCREASED, AS NECESSARY, TO ACHIEVE THE SPECIFIED MASONRY ASSEMBLY STRENGTH, F'M, AND ADEQUATE WORKABILITY. GROUT COMPRESSIVE STRENGTH, WHEN TESTED PER ASTM TEST METHOD C1019 SHALL EQUAL OR EXCEED THE CONCRETE MASONRY UNIT STRENGTH. ALL GROUT ADDITIVES SHALL RECEIVE THE PRIOR APPROVAL OF THE ENGINEER AND THE BUILDING OFFICIAL.
5. ADMIXTURES: SHALL NOT BE PERMITTED IN MORTAR OR GROUT UNLESS SUSTAINING DATA HAS BEEN SUBMITTED TO AND APPROVED BY THE ENGINEER. FIRE CLAY, DIRT AND OTHER DELETERIOUS MATERIALS ARE PROHIBITED.
6. AGGREGATES: SAND FOR MORTAR SHALL CONFORM TO ASTM C144 EXCEPT THAT NOT LESS THAN 3% OF THE SAND SHALL PASS THE NUMBER 100 SIEVE. SAND AND PEA GRAVEL FOR GROUT SHALL CONFORM TO ASTM C404, TABLE 1, COARSE AGGREGATE, EXCEPT WHEN OTHER GRADINGS ARE SPECIFICALLY APPROVED BY THE ENGINEER.
7. WATER USED FOR MORTAR AND GROUT SHALL BE CLEAN AND FREE FROM DELETERIOUS AMOUNTS OF ACIDS, SALTS, ALKALI, AND ORGANIC MATERIALS.
8. STEEL REINFORCING: SHALL CONFORM TO ASTM A615, GRADE 60, CLEAN AND FREE OF RUST, EXCEPT THAT #3 BARS MAY BE GRADE 40. REINFORCING STEEL THAT IS TO BE WELDED SHALL CONFORM TO ASTM A706, AND THE WELDING SHALL BE SPECIAL INSPECTED.
9. ANCHOR BOLTS: SEE THE "STRUCTURAL STEEL" SPECIFICATIONS SECTION HEREIN.
10. ALL CELLS SHALL BE SOLID GROUTED (OR "FULLY" GROUTED). MASONRY UNITS SHALL BE LAID IN RUNNING BOND. SURFACES TO BE CLEANED OF ALL LOOSE DEBRIS PRIOR TO SETTING BLOCK. CELLS TO BE IN VERTICAL ALIGNMENT SUCH THAT MINIMUM VERTICAL UNOBSTRUCTED CORE (EXCLUDING HORIZONTAL BARS) IS 2½"X 3" FOR GROUT POURS UP TO 4 FEET AND 3"X3" FOR GROUT POURS UP TO 6 FEET.
11. ALL BED JOINTS ARE TO BE FULL-BEDDED IN MORTAR. END WALLS AND CROSS WEBS FORMING CELLS TO BE FILLED SHALL BE FULL-BEDDED IN MORTAR TO PREVENT LEAKAGE OF GROUT. ALL HEAD JOINTS ARE TO BE SOLIDLY FILLED AT LEAST 1½" BELOW TOP OF MASONRY. HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1½" BELOW TOP OF MASONRY.
12. GROUT LIFTS SHALL NOT EXCEED 5 FEET 4 INCHES. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION IMMEDIATELY AFTER PLACING TO HELP ENSURE FILLING OF ALL VOIDS. RECONSOLIDATION BY VIBRATION MUST BE DONE AFTER THE INITIAL WATER LOSS AND BEFORE INITIAL SET. FOR GROUT POURS EXCEEDING 5 FEET 4 INCHES, CLEANOUT OPENINGS SHALL BE PROVIDED AT THE BOTTOM OF EACH CELL WITH A VERTICAL BAR FOR EACH POUR, CONFORMING TO MSJC 3.2 F. CLEANOUTS SHALL BE SEALED AFTER INSPECTION AND BEFORE GROUTING. WHERE CLEANOUTS ARE NOT PROVIDED, SPECIAL PROVISIONS MUST BE MADE TO KEEP THE BOTTOM AND SIDES OF THE GROUT SPACES, AS WELL AS THE MINIMUM TOTAL CLEAR AREA REQUIRED, CLEAN AND CLEAR PRIOR TO GROUTING. FOR GROUT POURS EXCEEDING 4 FEET, CONFORM TO CBC HIGH-LIFT GROUTING REQUIREMENTS.
13. REINFORCEMENT PLACEMENT:
    - 13.1. REINFORCING SHALL BE HELD SECURELY IN POSITION. VERTICAL BARS SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT MORE THAN 200 BAR DIAMETERS
    - 13.2. LAP SPLICES SHALL BE 40 BAR DIAMETERS MINIMUM (UON). ADJACENT BAR LAPS SHALL BE STAGGERED 3'-0" MINIMUM. HOOKS SHALL BE 16 BAR DIAMETERS (UON)
    - 13.3. REINFORCING BARS TO HAVE GROUT COVERAGE OF AT LEAST ONE BAR DIAMETER (½" MINIMUM) FROM INSIDE FACE OF SHELL, HOWEVER THE CLEAR DISTANCE FROM OUTSIDE FACE OF MASONRY TO THE REINFORCING SHALL NOT BE LESS THAN 2" WHEN MASONRY IS EXPOSED TO SOIL OR 1½" FOR OTHER CONDITIONS.
    - 13.4. THE CLEAR DISTANCE BETWEEN PARALLEL BARS IS 1" MINIMUM AND (AND SHALL NOT BE LESS THAN 1 BAR DIAMETER), EXCEPT THAT THE TWO BARS IN A CONTACT SPLICE SHALL BE IN CONTACT. THIS CLEAR DISTANCE REQUIREMENT ALSO APPLIES TO THE CLEAR DISTANCE BETWEEN A CONTACT SPLICE AND ADJACENT SPLICES OR BARS. [EXCEPTION: THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL BARS IN COLUMNS AND PILASTERS IS 2.5 BAR DIAMETERS.
14. REFER TO THE STRUCTURAL DETAILS FOR WALL REINFORCING. AT A MINIMUM, BLOCK WALL VERTICAL REINFORCING SHALL BE #4 @ 18" O.C. AND HORIZONTAL REINFORCING SHALL BE #4 @ 16" O.C. AT LEAST ONE CONTINUOUS HORIZONTAL #4 BAR OR LARGER SHALL BE PLACED IN BOTH THE BOTTOM AND THE TOP COURSE OF MASONRY WALL, (UON).
15. SEE STRUCTURAL SHEETS FOR TYPICAL WALL DETAILS. AT A MINIMUM, DOOR AND WINDOW JAMBS SHALL HAVE 2 - #5 BARS, AND HEADERS (OR "LINTELS") SHALL HAVE 2 - #5 BARS, UON ON THE PLANS. JAMB AND LINTEL BARS SHALL EXTEND A MINIMUM OF 40 BAR DIAMETERS PAST THE OPENING.
16. JAMB REINFORCING STEEL SHALL EXTEND INTO THE FOUNDATION (OR DECK) BELOW WITH LAP BARS OF THE SAME DIAMETER BENT WITH 90-DEGREE STANDARD HOOKS INTO THE FOOTING OR DECK. JAMB STEEL SHALL CONTINUE TO THE TOP OF THE WALL, UNLESS DETAILED OTHERWISE ON THE PLANS, BUT SHALL NOT EXTEND LESS THAN 40 BAR DIAMETERS PAST THE OPENING.
17. MASONRY COLUMNS & PILASTERS: REFER TO THE STRUCTURAL DETAILS FOR REINFORCEMENT REQUIREMENTS. PROVIDE AT LEAST 4 - #3 TIES IN THE TOP 5" OF THE COLUMN, AND ENGAGE AT LEAST FOUR VERTICAL BARS AND/OR ANCHOR BOLTS WITH THE TIES. THE UPPERMOST TIE SHALL BE WITHIN 2" OF THE TOP OF THE COLUMN. BARS SHALL BE PLACED NOT LESS THAN 1½" AND NOT MORE THAN 5" FROM THE SURFACE OF THE COLUMN.
18. ANCHOR BOLT INSTALLATION: SECURE IN PLACE PRIOR TO GROUTING. PROVIDE 1" MINIMUM GROUT COVERAGE.
19. CONDUIT SLEEVES SHALL NOT BE SPACED CLOSER THAN THREE SLEEVE DIAMETERS CENTER-TO-CENTER. CONDUIT AND OTHER OBSTRUCTIONS SHALL BE STRATEGICALLY LOCATED SO AS TO AVOID CONFLICT WITH WALL REINFORCING AND CELL GROUT SPACES AND THE REQUIRED CLEARANCES.
20. WATERPROOFING SHALL TO BE PROVIDED ON THE FACE OF ALL MASONRY WALLS EXPOSED TO EARTH, PER THE ARCHITECTURAL PLANS AND SPECIFICATIONS.
21. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES WHOSE WORK RELATES TO THE MASONRY INSTALLATION FOR PLACING OF ALL REQUIRED FRAMING. THIS INCLUDES, BUT IS NOT LIMITED TO, PLACING ANCHORS, BOLTS, PIPES, SLEEVES, NAILERS, BLOCKOUTS, REGLETS, FITTINGS, CONDUITS, ETC., PROVIDED BY OTHER TRADES WITHIN THE MASONRY CONSTRUCTION.
22. RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL GROUT HAS SET A MINIMUM OF 14 DAYS (28 DAYS PREFERRED). ALL WALLS ARE TO BE FULLY BACKFILLED PRIOR TO FRAMING BEING PLACED ON OR AGAINST THE WALL. PER THE SOILS REPORT, ALL BACKFILL IS TO BE INSPECTED BY THE SOILS/GEOTECHNICAL ENGINEER AT THE TIME OF PLACEMENT.
23. HOT WEATHER CONSTRUCTION: MASONRY CONSTRUCTION IS NOT PERMITTED WHEN THE AMBIENT AIR TEMPERATURE EXCEEDS 100°F, OR IF IT EXCEEDS 90°F WITH A WIND VELOCITY OF 8 MPH OR GREATER. (EXCEPTION: IF PRECISE AND PROPER HOT WEATHER CONSTRUCTION AND PROTECTION REQUIREMENTS OF THE APPROPRIATE PRACTICE ARE IMPLEMENTED WHEN TEMPERATURES ARE FORECASTED TO REACH OR DO REACH THE LIMITS FOR NORMAL CONSTRUCTION. IF SUCH CONSTRUCTION IS NECESSARY, CONTACT THE ENGINEER FOR REQUIREMENTS.) CHECK LOCAL WEATHER REPORTS BEFORE THE START OF EACH DAY AND PERIODICALLY MEASURE AIR TEMPERATURE AND WIND SPEED DURING THE DAY. FOG SPRAY ALL NEWLY CONSTRUCTED MASONRY UNTIL DAMP, AT LEAST THREE TIMES A DAY UNTIL THE MASONRY IS THREE DAYS OLD.
24. COLD WEATHER CONSTRUCTION: COMPLY WITH CBC SECTION 2104.1.

TIMBER / LUMBER

1. ALL STRUCTURAL LUMBER SHALL BE DOUGLAS FIR-LARCH, S4S AND SHALL CONFORM TO CBC SECTION 2303.1.
2. THE MINIMUM LUMBER GRADE OF EACH MEMBER SHALL BE AS FOLLOWS UON ON PLANS AND DETAILS:
   - 2.1. 2X STUDS, BLOCKING, PLATES
   - 2.2. 2X JOISTS #2 OR BETTER
   - 2.3. 4X4 BEAMS OR POSTS #2 OR BETTER
   - 2.4. 4X6 OR LARGER BEAMS OR POSTS #1 OR BETTER

   IT IS RECOMMENDED (BUT NOT REQUIRED) THAT ALL EXPOSED MEMBERS BE SELECT STRUCTURAL OR BETTER AND FREE OF HEART CENTER DUE TO VISUAL CHARACTERISTICS.
3. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY SHALL BE REDWOOD OR PRESSURE TREATED DOUGLAS FIR. CONTRACTOR SHALL COORDINATE WITH EOR IF PRESSURE TREATED MATERIAL UTILIZES A CORROSIVE TREATMENT GREATER THAN "DOT" PRIOR TO INSTALLATION. WHENEVER IT IS NECESSARY TO CUT, NOTCH, BORE OR SPLICE PRESSURE TREATED MATERIAL, ALL NEWLY CUT SURFACES SHALL BE THOROUGHLY PAINTED WITH THE SAME PRESERVATIVE.
4. MAXIMUM MOISTURE CONTENT FOR ALL STRUCTURAL MEMBERS SHALL NOT EXCEED 19%.

ALL PLYWOOD SHEATHING SHALL BE CDX GRADE (OR BETTER) DOUGLAS FIR WITH EXTERIOR GLUE. ALL SHEATHING SHALL CONFORM TO CBC STANDARD 23-2 AND GRADE-MARKED BY THE AMERICAN PLYWOOD ASSOCIATION (APA). PANEL INDEX TO BE 40/20 FOR FLOORS AND 24/0 FOR ROOFS (UON) ON THE PLANS AND DETAILS.

FASTENERS

1. NAILS:
   - 1.1. SHALL BE WITH "COMMON" NAILS (UON).
   - 1.2. SHALL NOT BE DRIVEN CLOSER THAN ½ THEIR LENGTH NOR CLOSER THAN ¼ OF THEIR LENGTH TO THE EDGE OR END OF A MEMBER, EXCEPT FOR SHEATHING.
   - 1.3. SHALL BE INSTALLED IN PRE-DRILLED LEAD HOLES IF NECESSARY TO AVOID SPLITTING.
   - 1.4. IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE HOT DIPPED ZINC GALVANIZED OR STAINLESS STEEL.
   - 1.5. ALL NAILING CONFORM TO 2016 CBC TABLE 2304.10.1.
2. LAG SCREWS:
   - 2.1. SHALL BE INSTALLED INTO PRE-DRILLED LEAD HOLES. LUBRICANT (OR SOAP) SHALL BE USED TO FACILITATE INSTALLATION AND PREVENT DAMAGE TO THE SCREWS.
   - 2.2. IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE HOT DIPPED ZINC GALVANIZED OR STAINLESS STEEL.
3. BOLTS:
   - 3.1. SHALL CONFORM TO ASTM F1554 GRADE 36 (UON) ON PLANS AND DETAILS.
   - 3.2. SHALL BE INSTALLED IN PRE-DRILLED HOLES A MAXIMUM OF 1/16" LARGER THAN THE SPECIFIED BOLT DIAMETER.
   - 3.3. WHEN INSTALLED AGAINST WOOD SURFACES, SHALL HAVE STANDARD WASHERS UNDER THE HEADS AND NUTS.
   - 3.4. IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE HOT DIPPED ZINC GALVANIZED OR STAINLESS STEEL.
4. ANCHOR BOLTS:
   - 4.1. SHALL BE 5/8" DIAMETER WITH 3X3X0.229" STEEL PLATE WASHERS AT SHEARWALLS.
   - 4.2. SHALL HAVE 7" MINIMUM EMBEDMENT. (CONTRACTOR TO COORDINATE LENGTH OF BOLTS WITH SILL PLATE THICKNESSES)
   - 4.3. SHALL CONFORM TO ASTM F1554 GRADE 36
   - 4.4. SHALL BE HOT DIPPED ZINC GALVANIZED OR STAINLESS STEEL
   - 4.5. SHALL NOT BE SPACED GREATER THAN 72" O.C. REFER TO SHEARWALL SCHEDULE FOR SPECIFIC ANCHOR BOLT SPACING REQUIREMENTS.
   - 4.6. SHALL BE PLACED A MAXIMUM OF 12" FROM WALL CORNERS, WALL ENDS, AND SILL PLATE SPLICES (BUT NOT LESS THAN 7 DIAMETERS), AND A MINIMUM OF TWO BOLTS PER PIECE OF SILL PLATE IS REQUIRED.
   - 4.7. SHALL BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION

CARPENTRY

1. REFER TO 2022 CBC TABLE 2304.10.1. FOR ALL MINIMUM NAILING REQUIREMENTS.
2. REFER TO INDIVIDUAL SECTIONS FOR APPLICABLE MATERIAL SPECIFICATIONS.
3. FABRICATE, SIZE, INSTALL, CONNECT, FASTEN, BORE, NOTCH, AND CUT WOOD AND PLYWOOD WITH JOINTS TRUE, TIGHT, AND WELL-NAILED, SCREWED OR BOLTED AS REQUIRED, ALL MEMBERS TO HAVE SOLID BEARING WITHOUT BEING SHIMMED (UON). SET HORIZONTAL MEMBERS SUBJECT TO BENDING WITH THE CROWN UP. INSTALL FRAMING PLUMB, SQUARE, TRUE AND CUT FOR FULL BEARING. SPLICES ARE NOT PERMITTED BETWEEN BEARINGS. USE FULL LENGTHS (UON)
4. METAL FRAMING ANGLES, ANCHOR, CLIPS, STRAPS, TIES, HOLDOWNS, ETC. SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE CO. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
5. ALL WALLS ARE TO HAVE CONTINUOUS DOUBLE 2X TOP PLATES SPLICED AS FOLLOWINGS (UON) ON THE PLANS AND DETAILS.
6. WALL STUDS:
   - 6.1. (UON) USE THE FOLLOWING GUIDELINES FOR WALL FRAMING:
   - 6.2. USE 2X4 STUDS AT 16" O.C. FOR WALLS LESS THAN 9'-0" TALL.
   - 6.3. WALLS 9'-0" TO 16'-0" TALL SHALL BE CONSTRUCTED OF 2X6 STUDS AT 16" O.C.
   - 6.4. REQUEST SPECIFICALLY ENGINEERED WALL DETAILS FOR WALLS GREATER THAT 16'-0" TALL.
7. BLOCKING:
   - 7.1. PROVIDE MIN. ONE ROW OF NOMINAL 2" THICK BLOCKING OF SAME WIDTH AS STUD, FITTED SNUGLY AND SPIKED INTO STUDS AT MID-HEIGHT OF PARTITIONS OR WALLS OVER EIGHT FEET HIGH.
   - 7.2. ALL CRIPPLE WALLS (OR "PONY WALLS") LESS THAN 14" IN HEIGHT SHALL BE SOLID BLOCKING.
   - 7.3. REFER TO SHEARWALL SECTION FOR ADDITIONAL BLOCKING REQUIREMENTS.
8. NOTCHING:
   - 8.1. IS NOT PERMITTED OF ANY STRUCTURAL MEMBER WITHOUT PRIOR APPROVAL
   - 8.2. IN EXTERIOR AND BEARING WALLS, NOTCHES SHALL NOT EXCEED 25% OF THE STUD DEPTH.
   - 8.3. NON-BEARING PARTITION WALLS, NOTCHES SHALL NOT EXCEED 40% OF THE STUD DEPTH.
   - 8.4. SUCCESSIVE NOTCHES IN THE SAME MEMBER SHALL BE SPACED A MINIMUM OF 18" APART.
9. BORING:
   - 9.1. IS NOT PERMITTED OF ANY STRUCTURAL MEMBER WITHOUT PRIOR APPROVAL
   - 9.2. IN EXTERIOR AND BEARING WALLS, HOLES SHALL NOT EXCEED 40% OF THE STUD DEPTH.
   - 9.3. NON-BEARING PARTITION WALLS, SHALL MAY BE DRILLED NOT GREATER THAN 60% OF THE STUD DEPTH.
   - 9.4. SUCCESSIVE HOLES IN THE SAME MEMBER SHALL BE SPACED A MINIMUM OF 18" APART.
10. BEARING:
    - 10.1. PROVIDE A MINIMUM OF 1½" OF BEARING FOR ALL 2X JOISTS AND ALL 4X10 / 6X8 HEADERS & SMALLER.
    - 10.2. PROVIDE A MINIMUM OF 3" OF BEARING FOR ALL BEAMS AND HEADERS 4X12 / 6X10 & LARGER (UON).
    - 10.3. MEMBERS BEARING ON PREFABRICATED HANGERS ARE TO HAVE FULL BEARING AND NAILING PER MANUFACTURER'S SPECIFICATIONS.
11. POSTS:
    - 11.1. POSTS INSIDE WALLS SHALL BEAR ON SILL PLATES AND SHALL BE CONTINUOUS BETWEEN TOP AND BOTTOM PLATES, (UON).
    - 11.2. PROVIDE POSTS UNDER ALL BEAMS, GIRDERS OR DOUBLE JOISTS EQUAL TO THE WIDTH OF THE SUPPORTED MEMBER.
    - 11.3. POSTS ON UPPER LEVELS ARE TO BE STACKED ON POSTS OF EQUAL SIZE AT LEVELS BELOW, UNLESS A LARGER POST IS SPECIFIED ON THE PLANS.
    - 11.4. VERTICAL BLOCKING ("SQUASH BLOCKS") SHALL BE USED TO FULLY TRANSFER THE POST AREA THROUGH FLOORS TO FOUNDATION. VERTICAL BLOCKING SHALL BE EQUAL TO FLOOR THICKNESS PLUS 1/16".
    - 11.5. HEADERS FRAMING INTO CONTINUOUS POSTS WITHOUT TRIMMER STUDS SHALL BE SUPPORTED IN SIMPSON HUC HANGERS (UON).
    - 11.6. POSTS WHEN ISOLATED, SHALL BE SEATED IN SIMPSON POST OR COLUMN BASES (UON)
12. FLOOR FRAMING:
    - 12.1. PROVIDE WOOD JOISTS, AS SPECIFIED, LAID WITH THE CROWN UP AND SPACED AS INDICATED.
    - 12.2. PROVIDE A MINIMUM OF 1½" END BEARING UNLESSSS OTHERWISE SHOWN.
    - 12.3. PROVIDE FULL DEPTH SOLID 2X BLOCKING OR CROSS-BRIDGING BETWEEN THE JOISTS AT 8'-0" O.C. MAX. FOR FLOORS FRAMED WITH I JOISTS, REFER TO THE MANUFACTURER'S SPECIFICATIONS FOR BLOCKING REQUIREMENTS.
    - 12.4. PROVIDE FULL DEPTH SOLID 2X BLOCKING BETWEEN THE JOISTS UNDER ALL WALLS AND PARTITIONS WHERE THE WALL OR PARTITION IS PERPENDICULAR TO THE FLOOR FRAMING (INCLUDING FLOORS FRAMED WITH I JOISTS)
    - 12.5. INSTALL 3/4" PLYWOOD SHEATHING WITH THE FACE GRAIN ACROSS SUPPORTS, END SUPPORTS STAGGERED AND THE EDGES OF SHEETS CENTERED OVER SUPPORTS. IF T&G PLYWOOD IS NOT USED, PROVIDE BLOCKING AT ALL PLYWOOD EDGES. GLUE TO JOISTS AND FULLY NAIL WITH COMMON NAILS PER THE PLANS.
13. ROOF FRAMING:
    - 13.1. PROVIDE WOOD JOISTS, AS SPECIFIED, LAID WITH THE CROWN UP AND SPACED AS INDICATED.
    - 13.2. PROVIDE A MINIMUM OF 1½" END BEARING (UON).
    - 13.3. PROVIDE FULL DEPTH SOLID 2X BLOCKING OR CROSS-BRIDGING BETWEEN THE JOISTS AT 8'-0" O.C. MAX.
    - 13.4. PROVIDE ALL CRICKET FRAMING REQUIRED TO ACHIEVE POSITIVE DRAINAGE PER ARCHITECTURAL DRAWINGS.
    - 13.5. INSTALL PLYWOOD PANELS WITH THE FACE GRAIN ACROSS THE FRAMING AND CLOSE JOINTS AND NAIL AT EACH SUPPORT. FULLY NAIL WITH COMMON NAILS PER THE PLANS.
    - 13.6. PROVIDE SIMPSON "PSCL" CLIPS AT ALL PLYWOOD JOINTS PERPENDICULAR TO FRAMING. PROVIDE CLIPS MIDWAY BETWEEN FRAMING MEMBERS AT THE UNSUPPORTED EDGES OF PLYWOOD WHEN MEMBERS ARE SPACED AT 24" O.C. OR GREATER. IF CLIPS ARE NOT USED, PROVIDE SOLID BLOCKING FOR JOINTS PERPENDICULAR TO FRAMING.
14. SHEARWALLS:
    - 1.1. REFER TO PLANS FOR ALL SHEARWALL LOCATIONS, LENGTH TYPE AND NAILING.
    - 1.2. REFER TO SHEARWALL SCHEDULE ON TITLE SHEET FOR ADDITIONAL INFORMATION.
    - 1.3. SHEARWALL LENGTHS SPECIFIED ON PLANS ARE MINIMUM REQUIRED.
    - 1.4. SHEARWALLS TO BE NAILED WITH COMMON NAILS. ALL NAILS TO HAVE MINIMUM 3/8" EDGE DISTANCE TO PANEL OR FRAMING MEMBER.
    - 1.5. IF 3X FRAMING IS REQUIRED, STAGGER EDGE NAILING. 3X FRAMING IS REQUIRED AT:
      - 1.5.1. ALL PANEL JOINTS
      - 1.5.2. ALL SILL PLATES ON CONCRETE OR MASONRY
      - 1.5.3. ALL SILL PLATES AT DOUBLE-SIDED SHEARWALLS
    - 1.6. OSB MAY BE USED IN LIEU OF PLYWOOD.

ENGINEERED LUMBER

1. GLU-LAMINATED BEAMS
   - 1.1. SHALL BE 24F-V4 FOR SIMPLE SPANS AND 24F-V8 FOR BEAMS WITH CANTILEVERS WITH THE FOLLOWING MINIMUM PROPERTIES:
     - 1.1.1. FB = 2400 PSI
     - 1.1.2. FV = 165 PSI
     - 1.1.3. FC = 450 PSI
     - 1.1.4. E = 1800 PSI
   - 1.2. SHALL NOT BE NOTCHED, CUT OR DRILLED WITHOUT PRIOR APPROVAL FROM THE ENGINEER
   - 1.3. SHALL HAVE EXTERIOR GLUE AND WEATHER-TREATMENT PRIOR TO INSTALLATION
   - 1.4. SHALL BE FABRICATED BY AN APPROVED MANUFACTURER. AN A.I.T.C. CERTIFICATE OF COMPLIANCE SHALL BE GIVEN TO THE BUILDING INSPECTOR PRIOR TO INSTALLATION
   - 1.5. SHALL HAVE FACTORY STANDARD CAMBER, EXCEPT WHERE NOTED OTHERWISE ON THE PLANS
2. LAMINATED VENEER LUMBER (LVL):
   - 2.1. SHALL BE 1-3/4" MINIMUM THICKNESS WITH THE FOLLOWING MINIMUM PROPERTIES:
   - 2.2. E = 1900 KSI
   - 2.3. FB = 2600 PSI
   - 2.4. FV = 285 PSI
   - 2.5. FC (PARALLEL) = 2500 PSI
   - 2.6. FC (PERP.) = 750 PSI
   - 2.7. FT (PARALLEL) = 1500 PSI
   - 2.8. SPECIFIC GRAVITY = 0.50
   - 2.9. SHALL BE FABRICATED BY AN APPROVED MANUFACTURER
   - 2.10. SHALL BEAR A MINIMUM OF 3-1/2" ON SPECIFIED SUPPORTS. PROVIDE FULL DEPTH SOLID BLOCKING AT ALL BEARING POINTS
   - 2.11. SHALL BE NAILED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. UNLESS OTHERWISE APPROVED, NAILING INTO THE TOP EDGE SHALL NOT BE SPACED ANY CLOSER THAN:
     - 2.11.1. 16D 6"
     - 2.11.2. 10D 4"
     - 2.11.3. 8D 3"
     - 2.11.4. WHEN NAILING MUST BE REDUCED, STAGGER ROWS A MINIMUM OF 1/2" APART WHILE MAINTAINING PROPER EDGE DISTANCES
   - 2.12. SHALL BE, WHEN COMPRISED OF MULTIPLE MEMBERS, CONNECTED WITH 16D NAIL, 1/2" BOLTS OR 1/4" LAG SCREWS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
   - 2.13. SHALL NOT BE CUT, NOTCHED OR DRILLED WITHOUT SPECIFIC WRITTEN APPROVAL OF THE ENGINEER.
3. PARALLEL STRAND LUMBER (PSL):
   - 3.1. SHALL BE 2-1/2" MINIMUM THICKNESS WITH THE FOLLOWING MINIMUM PROPERTIES:
     - 3.1.1. E = 2000 KSI
     - 3.1.2. FB = 2900 PSI
     - 3.1.3. FV = 290 PSI
     - 3.1.4. FC (PARALLEL) = 2900 PSI
     - 3.1.5. FC (PERP.) = 750 PSI
     - 3.1.6. FT (PARALLEL) = 2025 PSI
     - 3.1.7. SPECIFIC GRAVITY = 0.50
   - 3.2. SHALL BE FABRICATED BY AN APPROVED MANUFACTURER
   - 3.3. SHALL BEAR A MINIMUM OF 3-1/2" ON SPECIFIED SUPPORTS. PROVIDE FULL DEPTH SOLID BLOCKING AT ALL BEARING POINTS
   - 3.4. SHALL BE NAILED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. UNLESS OTHERWISE APPROVED, NAILING SHALL NOT BE SPACED ANY CLOSER THAN:
     - 3.4.1. NARROW FACE: 6" FOR 16D COMMON, 4" FOR 10D COMMON, AND 3" FOR 8D COMMON
     - 3.4.2. WIDE FACE: 8" FOR 16D COMMON, 6" FOR 10D & 8D COMMON
     - 3.4.3. WHEN NAILING MUST BE REDUCED, STAGGER ROWS A MINIMUM OF 1/2" APART WHILE MAINTAINING PROPER EDGE DISTANCES
   - 3.5. SHALL NOT BE CUT, NOTCHED OR DRILLED WITHOUT SPECIFIC WRITTEN APPROVAL OF THE ENGINEER.
4. PLYWOOD I JOISTS:
   - 4.1. TYPE AND MANUFACTURER SHALL BE CLEARLY NOTED ON THE PLANS. SUBSTITUTIONS SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
   - 4.2. SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODE APPROVALS AND MANUFACTURER'S SPECIFICATIONS.
   - 4.3. SHALL BEAR A MINIMUM OF 1-3/4" AT ALL END SUPPORTS, AND 3-1/2" AT INTERMEDIATE SUPPORTS. PROVIDE FULL DEPTH SOLID BLOCKING AT ALL BEARING POINTS.
   - 4.4. SHALL BE INSTALLED WITH INTERMEDIATE BLOCKING OR BRIDGING AS SPECIFIED BY THE MANUFACTURER. ONLY OMIT INTERMEDIATE BLOCKING WHEN SPECIFICALLY ALLOWED BY THE MANUFACTURER.
   - 4.5. SHALL NOT BE CUT, NOTCHED OR DRILLED WITHOUT SPECIFIC WRITTEN APPROVAL OF THE ENGINEER.

TRUSSES

1. REFER TO THE STRUCTURAL AND ARCHITECTURAL PLANS FOR ADDITIONAL DESIGN LOADS AND CONDITIONS. BOTTOM CHORDS SHALL BE DESIGNED TO RESIST A MINIMUM CEILING LIVE LOAD OF 10 PSF.
2. TRUSS CALCULATIONS AND DETAILS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER AND THE BUILDING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
3. ALL TRUSSES SHALL BE FABRICATED IN THE SHOP OF A LICENSED FABRICATOR APPROVED BY THE GOVERNING BUILDING DEPARTMENT.
4. EACH TRUSS SHALL BE LEGIBLY BRANDED, MARKED OR OTHERWISE HAVE PERMANENTLY AFFIXED THERETO THE FOLLOWING INFORMATION LOCATED WITHIN 2 FEET OF THE CENTER OF THE SPAN ON THE FACE OF THE BOTTOM CHORD:
   - 4.1. IDENTITY OF THE COMPANY MANUFACTURING THE TRUSS
   - 4.2. THE DESIGN LOAD, AND
   - 4.3. THE SPACING OF THE TRUSSES.
5. WALLS:
   - 5.1. TRUSSES SHALL BEAR ON EXTERIOR WALLS ONLY (UON).
   - 5.2. ALL INTERIOR WALLS SHALL BE NON-BEARING (UON).
   - 5.3. ALL APPROVED INTERIOR BEARING LOCATIONS SHALL BE SPECIFICALLY NOTED ON THE STRUCTURAL PLANS.
6. BEARING:
   - 6.1. SECURING OF BEARING WALLS (UON) TRUSSES SHALL BE SECURED AT ALL BEARING POINTS WITH SIMPSON SEISMIC ANCHORS (E.G. H1).
   - 6.2. INTERIOR NON-BEARING WALLS SHALL BE ISOLATED FROM THE TRUSSES WITH SIMPSON TRUSS CLIPS (E.G. STC, DTC, HTC4) OR APPROVED EQUAL.
   - 6.3. TRUSSES TO BE MANUFACTURED WITH NECESSARY CAMBER TO ACCOUNT FOR DEAD LOAD DEFLECTIONS AND ELIMINATE ACCIDENTAL BEARING ON INTERIOR NON-BEARING WALLS.
7. BLOCKING AND BRACING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. AS A MINIMUM, THE TRUSSES SHALL BE BLOCKED AT THE FOLLOWING LOCATIONS:
   - 7.1. ALL BEARING POINTS
   - 7.2. ALONG RIDGE
8. ERECT TRUSSES ACCORDING TO THE APPROVED SHOP DRAWINGS. LIFT MEMBERS ONLY AT DESIGNATED LIFT POINTS. PROVIDE ERECTION BRACING TO KEEP THE MEMBERS STRAIGHT AND PLUMB AS REQUIRED TO ASSURE ADEQUATE LATERAL SUPPORT FOR INDIVIDUAL MEMBERS AND THE ENTIRE SYSTEM UNTIL THE SHEATHING IS APPLIED.

INSPECTION / SPECIAL INSPECTION REQUIREMENTS

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND THE COORDINATION INVOLVED IN THE EXECUTION OF THE FOLLOWING INSPECTIONS. REQUESTS FOR INSPECTIONS SHALL BE MADE NO LATER THAN 48 HOURS PRIOR TO THEIR NECESSITY.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INSURE THAT THE FOLLOWING ELEMENTS ARE VISIBLE AND AVAILABLE FOR INSPECTION:
   - 2.1. FOOTING EXCAVATIONS
   - 2.2. REINFORCEMENT PLACEMENT
   - 2.3. DOCUMENTS OF REQUIRED DESIGN MIX OF CONCRETE
   - 2.4. EPOXY ANCHORS
   - 2.5. WELDING (REFER TO STRUCTURAL STEEL SECTION FOR SPECIFIC REQUIREMENTS)
   - 2.6. ALL BOLTED CONNECTIONS EXCEPT F1554 GRADE 36 BOLTS
3. A PRE-CONSTRUCTION MEETING INCLUDING THE SPECIAL INSPECTOR, ENGINEER OF RECORD (EOR), ARCHITECT RESPONSIBLE FOR THE STRUCTURAL OBSERVATIONS, THE CONTRACTOR, AND ALL APPROPRIATE SUBCONTRACTORS SHALL BE HELD TO REVIEW THE DETAILS OF THE STRUCTURAL SYSTEM TO BE STRUCTURALLY OBSERVED.
4. DURING THE COURSE OF CONSTRUCTION THE SPECIAL INSPECTOR SHALL VISUALLY REVIEW THE STRUCTURAL ELEMENTS FOR GENERAL CONFORMANCE WITH THE APPROVED PLANS. ANY OBSERVED DEFICIENCIES SHALL HE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, TO THE CONTRACTOR, AND TO THE BUILDING DEPARTMENT.
5. UPON COMPLETION OF THE APPLICABLE SHEARWALLS AND/OR ANCHORAGE SYSTEM AND PRIOR TO COVERING THE SHEARWALL/ANCHORAGE SYSTEM, THE SPECIAL INSPECTOR SHALL SUBMIT A LETTER TO THE EOR AND BLDG. DEPARTMENT WITH HIS/HER SIGNATURE ATTESTING TO (1) THE DATES ON WHICH VISUAL REVIEWS WERE CONDUCTED, (2) DEFICIENCIES OBSERVED, AND (3) CORRECTIONS TAKEN. THE LETTER SHALL CERTIFY THAT ALL REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE OBSERVER'S KNOWLEDGE, HAVE BEEN RESOLVED.
6. PRIOR TO COVERING THE WORK, THE SHEARWALLS AND/OR ANCHORAGE SYSTEM SHALL BE INSPECTED AND APPROVED BY THE DEPARTMENT INSPECTION STAFF ASSIGNED TO THE PROJECT. SUCH APPROVAL BY THE DEPARTMENT IS REQUIRED PRIOR TO COVERING. THE SPECIAL INSPECTOR IS NOT AUTHORIZED TO APPROVE THE COVERING OF THE SHEARWALLS OR ANCHORAGE SYSTEM. THE OBSERVATIONS OF THE SPECIAL INSPECTOR ARE ADVISORY ONLY AND THEY DO NOT IN ANY WAY BIND THE INSPECTOR OR CONSTITUTE A CERTIFICATION THAT THE SHEARWALLS WILL PASS DEPARTMENT INSPECTION.

KUDLA ENGINEERING
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PLAN PREPARED FOR:
HARROD HOMES, INC.
CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REVISION LOG

REV.	DESCRIPTION	DATE

PROJECT NO. 240036
DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 03 - STRUCTURAL SP.DWG

STRUCTURAL NOTES & SPECIFICATIONS

SHEET NUMBER:
SSP-1

WOOD STRUCTURAL PANELS (WSP), SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING[a]				
			Edges (inches)	Intermediate supports (inches)
31.	3/8" - 1/2"	6d common or deformed (2" x 0.113") (subfloor and wall)	6	12
		8d box or deformed (2-1/2" x 0.113") (roof)	6	12
		2 1/2" x 0.113" nail (subfloor and wall)	6	12
		1 1/2" 16 gage staple, 7/16" crown (subfloor and wall)	4	8
		2 1/2" x 0.113" nail (roof)	4	8
		1 1/2" 16 gage staple, 7/16" crown (roof)	3	6
32.	19/32" - 3/4"	8d common (2 1/2" x 0.131"); or 6d deformed (2" x 0.113")	6	12
		2 1/2" x 0.113" nail; or 2" 16 gage staple, 7/16" crown	4	8
33.	7/8" - 1 1/8"	10d common (3" x 0.148"); or 8d deformed (2 1/2" x 0.131")	6	12
OTHER EXTERIOR WALL SHEATHING				
34.	1/2" fiberboard sheathing[b]	1 1/2" galvanized roofing nail (7/16" head diameter); or 1 1/2" 16 gage staple with 7/16" or 1" crown	3	6
35.	25/32" fiberboard sheathing[b]	1 1/2" galvanized roofing nail (7/16" diameter head); or 1 1/2" 16 gage staple with 7/16" or 1" crown	3	6

WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING				
			Edges (inches)	Intermediate supports (inches)
36.	3/4" and less	8d common (2 1/2" x 0.131"); or 6d deformed (2" x 0.113")	6	12
37.	7/8" - 1"	8d common (2 1/2" x 0.131"); or 8d deformed (2 1/2" x 0.131")	6	12
38.	1 1/4" and less	8d common (2 1/2" x 0.131"); or 6d deformed (2" x 0.113")	6	12
PANEL SIDING TO FRAMING				
39.	1/2" or less	6d corrosion-resistant siding (1 1/2" x 0.106"); or 6d corrosion-resistant casing (2" x 0.099")	6	12
40.	5/8"	8d corrosion-resistant siding (2 1/2" x 0.128"); or 8d corrosion-resistant casing (2 1/2" x 0.113")	6	12
INTERIOR PANELING				
41.	1/4"	4d casing (1 1/2" x 0.080"); or 4d finish (1 1/2" x 0.072")	6	12
42.	3/8"	6d casing (2" x 0.099"); or 6d finish (Panel supports at 24 inches)	6	12

For SI: 1 inch = 25.4 mm.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.
b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).
c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

ROOF				
	DESCRIPTION OF BUILDING ELEMENTS		NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
1.	Blocking between ceiling joists, rafters or trusses to top plate or other framing below		3-8d common (2 1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each end, toenail
	Blocking between rafters or truss not at the wall top plate, to rafter or truss		2-8d common (2 1/2" x 0.131") 2-3" x 0.131" nails 2-3/14 gage staples	Each end, toenail
			2-16 d common (3 1/2" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	End nail
	Flat blocking to truss and web filler		16d common (3 1/2" x 0.162") @ 6" o.c. 3" x 0.131" nails @ 6" o.c. 3" x 14 gage staples @ 6" c	Face nail
2.	Ceiling joists to top plate		3-8d common (2 1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail
3.	Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.7.3.1, Table 2308.7.3.1)		3-16d common (3 1/2" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4.	Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)		Per Table 2308.7.3.1	Face nail
5.	Collar tie to rafter		3-10d common (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6.	Rafter or roof truss to top plate (See Section 2308.7.5, Table 2308.7.5)		3-10 common (3" x 0.148"); or 3-16d box (3" x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail [c]
7.	Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam		2-16d common (3 1/2" x 0.162"); or 3-10d box (3" x 0.128", or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown; or	End nail
			3-10d common (3 1/2" x 0.148"); or 3-16d box (3 1/2" x 0.135"); or 4-10d box (3" x 0.128"), or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail

WALL			
8.	Stud to stud (not at braced wall panels)	16d common (3 1/2" x 0.162")	24" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	16" o.c. face nail
9.	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2" x 0.162"); or	16" o.c. face nail
		16d box (3 1/2" x 0.135"); or	12" o.c. face nail
		3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	12" o.c. face nail
10.	Built-up header (2" to 2" header)	16d common (3 1/2" x 0.162"); or	16" o.c. each edge, face nail
		16d box (3 1/2" x 0.135")	16" o.c. each edge, face nail
11.	Continuous header to stud	4-8d common (2 1/2" x 0.131"); or 4-10d box (3" x 0.128")	Toenail
12.	Top plate to top plate	16d common (3 1/2" x 0.162"); or	16" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
13.	Top plate to top plate, at end joints	8-16d common (3 1/2" x 0.162"); or 12-10d box (3" x 0.128"); or 12-3"x 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14.	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 1/2" x 0.162"); or	16" o.c. face nail
		16d box (3 1/2" x 0.135"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15.	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3-2"x 0.162"); or 3-16d box (3 1/2" x 0.135"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16.	Stud to top or bottom plate	4-8d common (2 1/2" x 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown; or	Toenail
		2-16d common (3 1/2" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17.	Top or bottom plate to stud	2-16d common (3 1/2" x 0.162"); or 3-10d box (3" x 0.128"), or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End Nail
18.	Top plates, laps at corners and intersections	2-16d common (3 1/2" x 0.162"); or 3-10d box (3" x 0.128"), or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
19.	1" brace to each stud and plate	2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0.128"); or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail
20.	1" x 6" sheathing to each bearing	2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0.128")	Face nail
21.	1" x 8" and wider sheathing to each bearing	2-8d common (2 1/2" x 0.131"); or 3-10d box (3" x 0.128")	Face nail

FLOOR			
22.	Joist to sill, top plate, or girder	3-8d common (2 1/2" x 0.131"); or floor 3-10d box (3" x 0.128"), or 3-3" x 0.131" nails; or 3-3/14 gage staples, 7/16" crown	Toenail
23.	Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common (2 1/2" x 0.131"); or 10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	6" o.c., toenail
24.	1" x 6" subfloor or less to each joist	2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0.128")	Face nail
25.	2" subfloor to joist or girder	2-16d common (3-2" x 0.162")	Face nail
26.	2" planks (plank & beam – floor & roof)	2-16d common (3-2" x 0.162")	Each bearing, face nail
27.	Built-up girders and beams, 2" lumber layers	20d common (4" x 0.192"	32" o.c., face nail at top and bottom staggered on opposite sides
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottom staggered on opposite sides
		And 2-20d common (4" x 0.192"); or 3-10d box (3" x 0.128", or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Ends and at each splice, face nail
28.	Ledger strip supporting joists or rafters	3-16d common (3-2" x 0.162"); or 4-10d box (3" x 0.128"), or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Each joist or rafter, face nail
29.	Joist to band joist or rim joist	3-16d common (3-2" x 0.162"); or 4-10d box (3" x 0.128"), or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	End nail
30.	Bridging or blocking to joist, rafter or truss	2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0.128"), or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Each end, toenail

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PLAN PREPARED FOR:
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CATAHOULA COURT (LOT-5)
PASO ROBLES, CA 93446

REGISTERED PROFESSIONAL ENGINEER
DARRELL J. KUDLA
No. 84211
Exp. 9-30-25
CIVIL
STATE OF CALIFORNIA

REVISION LOG

REV.	DESCRIPTION	DATE

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DRAWN BY DARRELL KUDLA, P.E.
DATE: 05/10/2024
SHEET TITLE: 03 - STRUCTURAL SP.DWG

FASTENING SCHEDULE

SHEET NUMBER:
SSP-2