

1 EROSION CONTROL PLAN
SCALE: 1" = 10'

GRADING NOTES:

1. PER CAL-GREEN 4.106.2
 - a. DURING RAINY SEASON SITE PERIMETER OF WORK WILL BE SURROUNDED BY FIBER ROLLS
 - b. CONCRETE WASHOUT WILL BE USED.
2. ARROWS FOR DIRECTION AND MANAGEMENT OF SURFACE FLOWS ARE SHOWN ON GRADING PLAN
3. ROOF DRAINAGE TO DRAIN TO DRAIN PIPE AND TO STREET
4. GRADE OF IMPERVIOUS SURFACES TO DIRECT SURFACE WATER INTO DRAIN

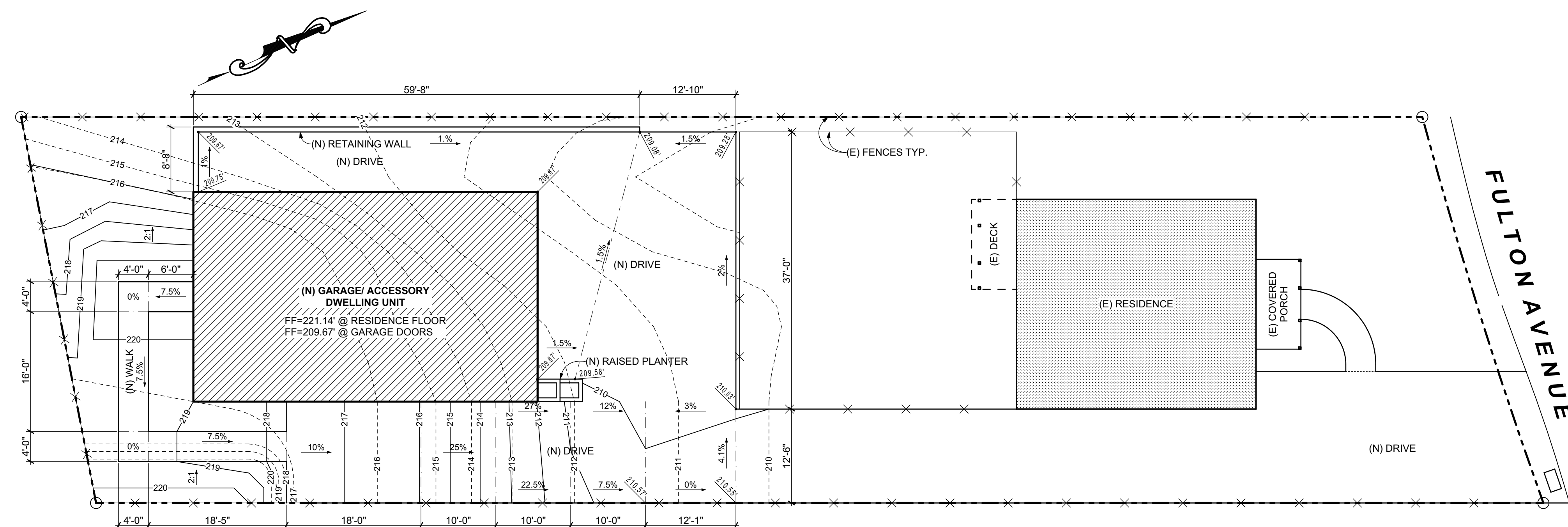
GRADING PLAN LEGEND

- PROPERTY LINE
- FENCE LINE
- (N) AND (E) HARDSCAPE AS LABELED
- (E) GRADE CONTUORS
- (N) GRADE CONTUORS
- DIRECTION OF ROOF SLOPE

SITE MATERIALS

ALL NEW WALKS, SIDEWALKS, AND DRIVEWAYS ARE CONCRETE

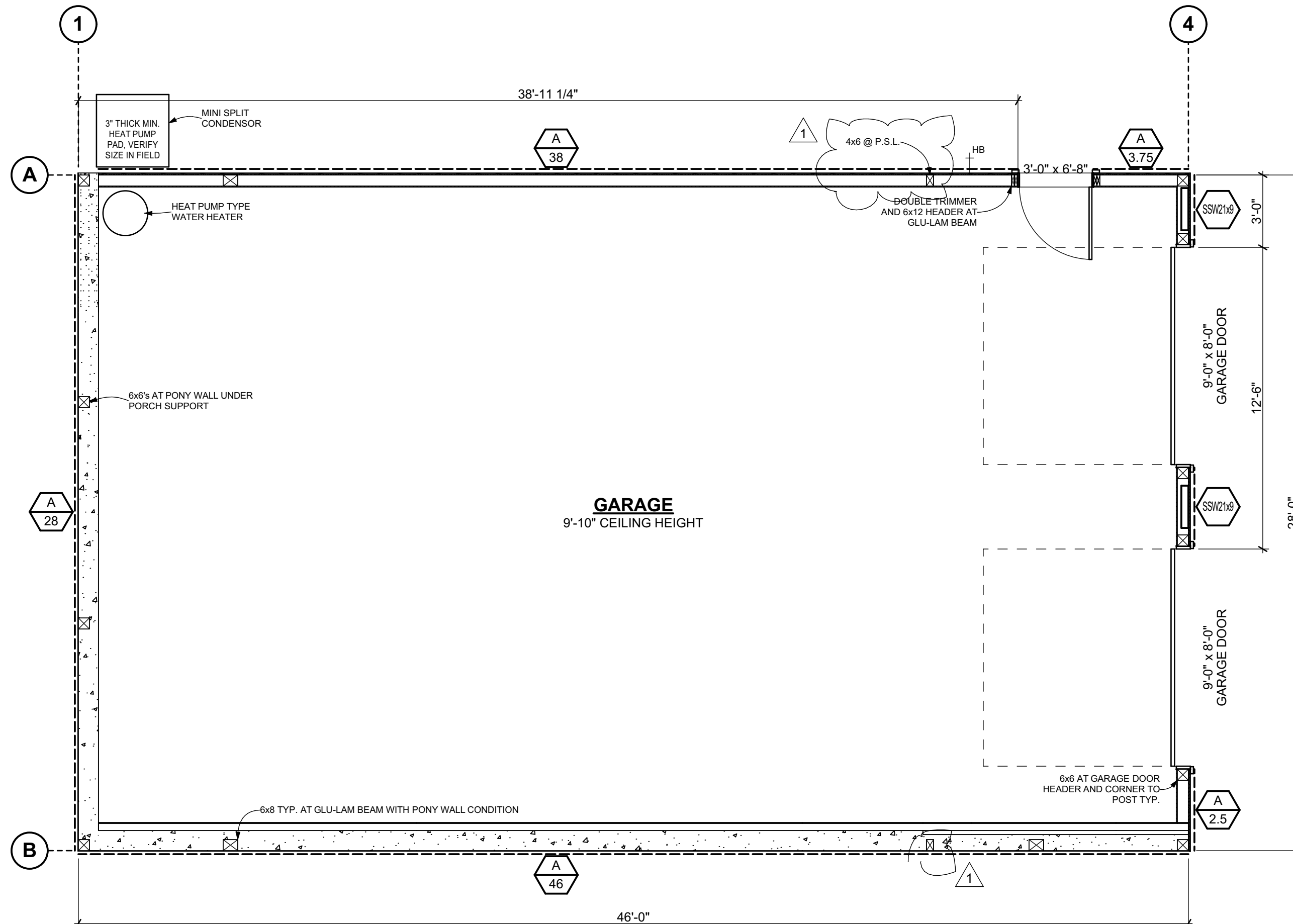
ALL FENCING IS EXISTING



2 GRADING PLAN
SCALE: 1" = 10'

SHEAR WALL SCHEDULE GARAGE:

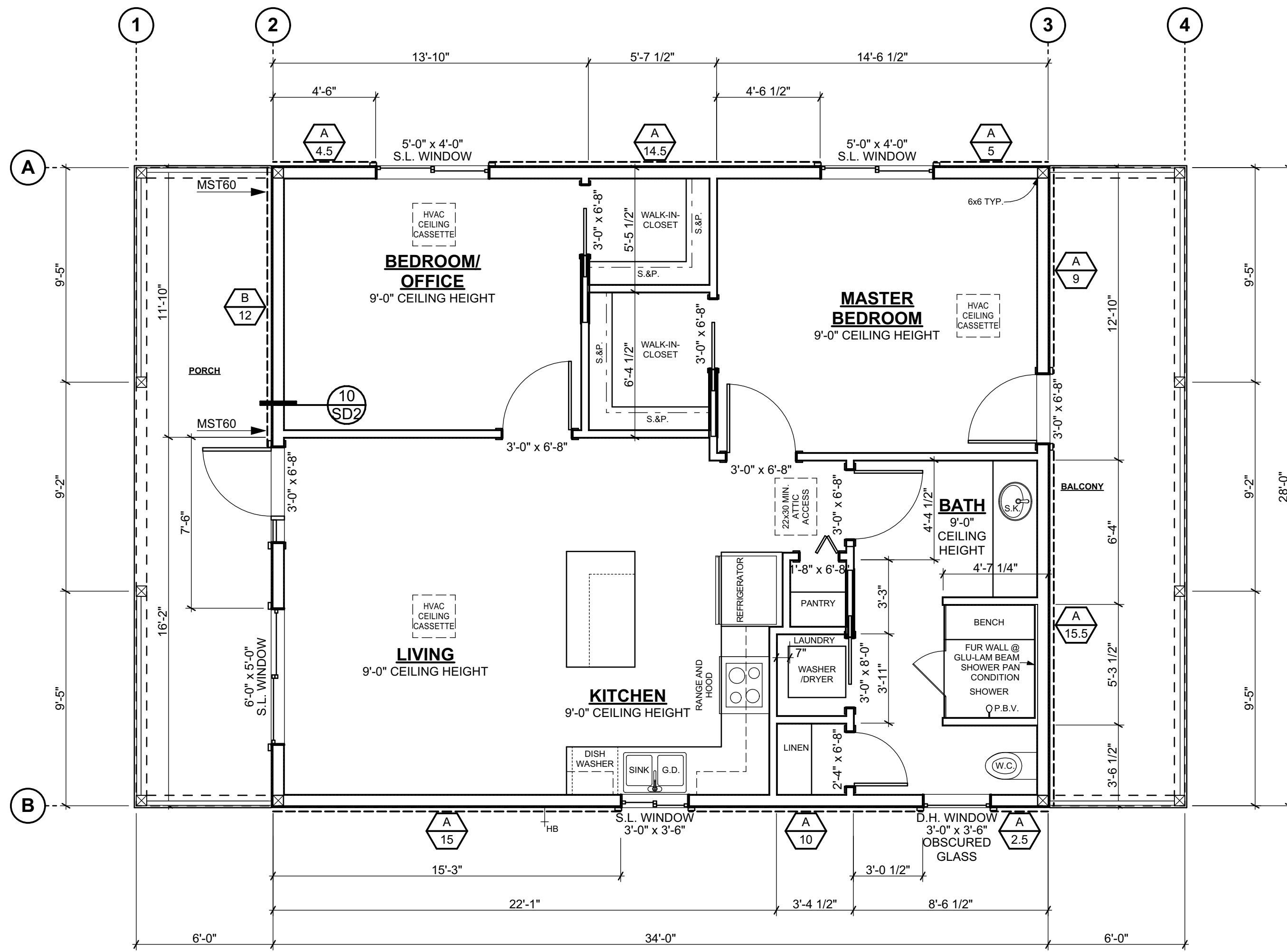
- A** 3/8" CDX PLYWOOD OR OSB
NAILING: 8d's SPACED 6" O.C. AT EDGES, 12" O.C. AT FIELD
5/8" DIAM. ANCHOR BOLTS @ 60" O.C. WITHIN SHEARWALL
3" X 3" X 1/4" PLATE WASHERS
UPPER STORY SILL NAILING: 16d's @ 4" O.C.
- B** 3/8" CDX PLYWOOD OR OSB
NAILING: 8d's SPACED 4" O.C. AT EDGES, 12" O.C. AT FIELD
5/8" DIAM. ANCHOR BOLTS @ 48" O.C. WITHIN SHEARWALL
3" X 3" X 1/4" PLATE WASHERS
3X STUDS AT ADJOINING PANEL EDGES, AND BLOCKING
UPPER STORY SILL NAILING: 16d's @ 4" O.C.
- C** 3/8" CDX PLYWOOD OR OSB
NAILING: 8d's SPACED 3" O.C. AT EDGES, 12" O.C. AT FIELD
5/8" DIAM. ANCHOR BOLTS @ 32" O.C. WITHIN SHEARWALL
3" X 3" X 1/4" PLATE WASHERS
3X STUDS AT ADJOINING PANEL EDGES, AND BLOCKING
UPPER STORY SILL NAILING: 16d's @ 4" O.C.
- SSW216** SIMPSON STEEL STRONG WALL SSW216
30" WIDE X 24" DEEP X 60" LONG FOOTING CENTERED UNDER
STRONG WALL



1 GARAGE FLOOR PLAN
SCALE: 1/4" = 1'-0"

SHEAR WALL SCHEDULE DWELLING:

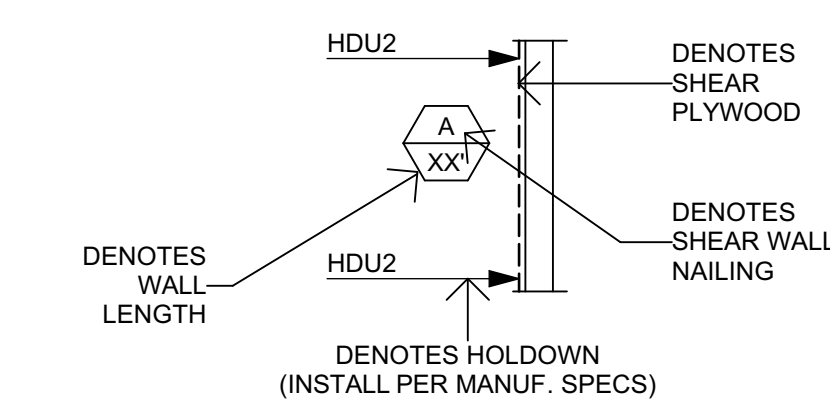
- A** 3/8" CDX PLYWOOD OR OSB
NAILING: 8d's SPACED 6" O.C. AT EDGES, 12" O.C. AT FIELD
5/8" DIAM. ANCHOR BOLTS @ 60" O.C. WITHIN SHEARWALL
3" X 3" X 1/4" PLATE WASHERS
- B** 3/8" CDX PLYWOOD OR OSB
NAILING: 8d's SPACED 4" O.C. AT EDGES, 12" O.C. AT FIELD
5/8" DIAM. ANCHOR BOLTS @ 48" O.C. WITHIN SHEARWALL
3" X 3" X 1/4" PLATE WASHERS
3X STUDS AT ADJOINING PANEL EDGES, AND BLOCKING



2 DWELLING FLOOR PLAN
SCALE: 1/4" = 1'-0"

FLOOR PLAN LEGEND	ABBREVIATIONS
	2x6 WALLS
	2x4 WALLS
	AT
	CASEMENT
	DOUBLE
	EXISTING
	GARBAGE DISPOSAL
	HOSE BIB
	MINIMUM
	ON CENTER
	ORIENTED STRAND BOARD
	OVERHANG
	NEW PRESSURE BALANCE VALVE
	ROUGH OPENING
	SHELF AND POLE (CLOSET)
	SINGLE HUNG
	SINK
	SLIDING WINDOW
	TYPICAL
	TANKLESS WATER HEATER
	UNLESS OTHERWISE NOTED
	WATER CLOSET
	WITH

SHEARWALL LEGEND



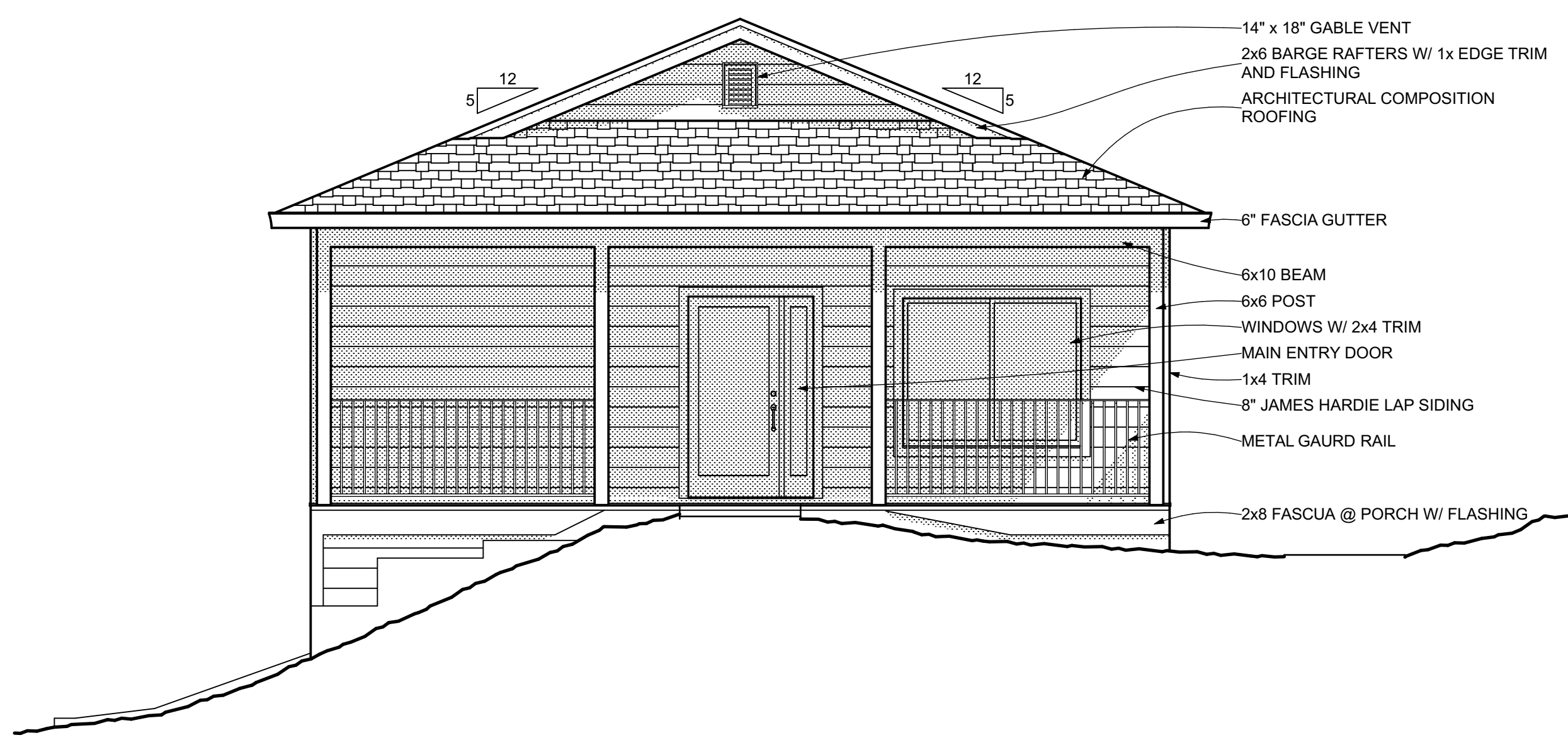
FLOOR PLAN NOTES

- ALL GLAZING SHALL MEET THE REQUIREMENTS OF C. R. C. 308. SAFETY GLAZING SHALL BE PROVIDED IN ALL OF THE FOLLOWING LOCATIONS:
 GLAZING IN DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION EXCEPT GLAZING PANELS THROUGH WITH A 3 INCH DIAMETER SPHERE IS UNABLE TO PASS AND DECORATIVE GLAZING.
 GLAZING IN WALLS, ENCLOSURES, OR FENCES FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.
 GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE FLOOR OR WALKING SURFACE AND WHERE THE GLAZING IS WITHIN 24 INCHES OF EITHER SIDE OF THE DOOR IN THE PLANE OF THE DOOR IN A CLOSED POSITION OR WHERE THE GLAZING IS ON A WALL PERPENDICULAR TO THE PLANE OF THE DOOR IN A CLOSED POSITION AND WITHIN 24 INCHES OF THE HINGE SIDE OF AN IN-SWINGING DOOR.
 GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 36 INCHES ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS AND RAMP SHALL BE CONSIDERED A HAZARDOUS LOCATION.

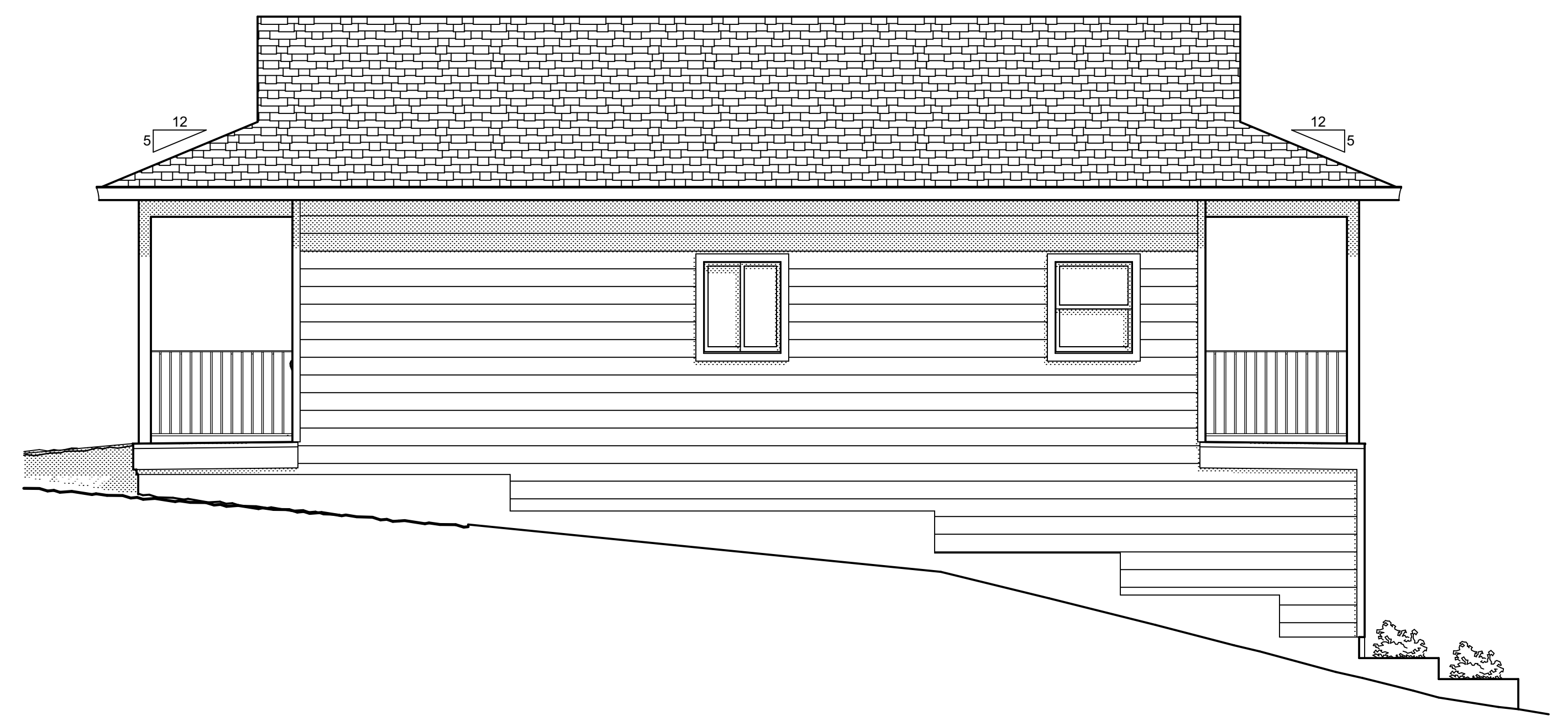
- CAULK ALL DOORS, WINDOWS, JOINTS AND AREAS REQUIRED TO PROVIDE A WEATHERPROOF SEAL.
- DRYWALL NAILING SHALL BE IN ACCORDANCE WITH C.B.C. REQUIREMENTS FOR THE TYPES AND THICKNESSES BEING USED UNLESS OTHERWISE NOTED.
- NO WATER CLOSET OR BIDET SHALL BE SET CLOSER THAN 15 INCHES FROM ITS CENTER TO A SIDE WALL OR OBSTRUCTION OR CLOSER THAN 30" CENTER TO CENTER TO A SIMILAR FIXTURE. THE CLEAR SPACE IN FRONT OF A WATER CLOSET, LAVATORY, OR BIDET SHALL BE NOT LESS THAN 24 INCHES. C.P.C. 402.5
- BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND IN SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR. C.P.C. 307.2
- WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH C.R.C. 312.2.1 - 312.2.2

PLUMBING NOTES

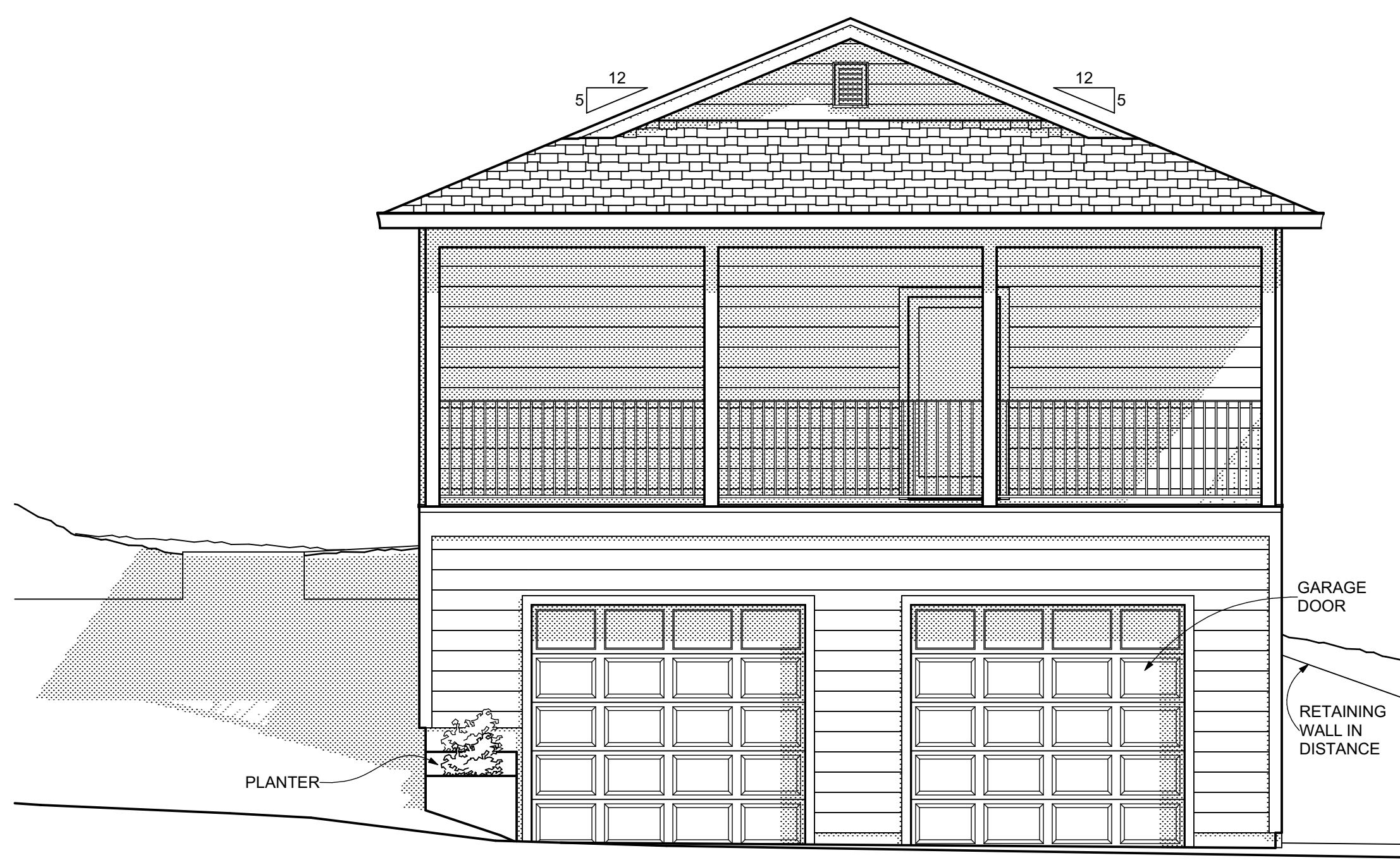
- ALL PLUMBING FOR THIS PROJECT IS NEW
- SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVE TYPE THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION FOR THE RATED FLOW RATE OF THE INSTALLED SHOWERHEAD. THESE VALVES SHALL BE INSTALLED AT THE POINT OF USE AND IN ACCORDANCE WITH ASSE 1016, OR ASME A112.10.1/CSA B125.15 OR ASME A112.18.1/CSA B125.1. HANDLE POSITION STOPS SHALL BE PROVIDED ON SUCH VALVES AND SHALL BE ADJUSTED PER THE MANUFACTURER'S INSTRUCTIONS TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120 F (49 C). C.P.C. 408.3
- CONTROL VALVES AND SHOWERHEADS SHALL BE LOCATED ON THE SIDEWALL OF SHOWER COMPARTMENTS OR OTHERWISE ARRANGED SO THAT THE SHOWERHEAD DOES NOT DISCHARGE DIRECTLY AT THE ENTRANCE TO THE COMPARTMENT SO THAT THE BATHER CAN ADJUST THE VALVES BEFORE STEPPING INTO THE SHOWER SPRAY. C.P.C. 408.9
- WATER HEATERS INSTALLED ON THIS PROJECT SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE-THIRD AND LOWER ONE-THIRD OF ITS VERTICAL DIMENSIONS. AT THE LOWER POINT, A MINIMUM DISTANCE OF 4 IN. SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAPPING. C.P.C. 507.2 THIS APPLIES TO ALL NEW AND EXISTING WATER HEATERS PER THE CALIFORNIA HEALTH AND SAFETY CODE SECTION 19211(a)
- WHERE A WATER HEATER IS INSTALLED PIPING SHALL BE INSULATED AS REQUIRED IN. C.E.C. 150(J) 2
- POTABLE WATER OUTLETS WITH HOSE ATTACHMENTS OTHER THAN WATER HEATER DRAINS, BOILER DRAINS, AND CLOTHES WASHER CONNECTIONS, SHALL BE PROTECTED BY A NON REMOVABLE HOSE-BIB-TYPE BACKFLOW PREVENTER, A NON REMOVABLE HOSE BIB TYPE VACUUM BREAKER, OR BY AN ATMOSPHERIC VACUUM BREAKER INSTALLED NOT LESS THAN 6 IN. ABOVE THE HIGHEST POINT OF USAGE LOCATED ON THE DISCHARGE SIDE OF THE LAST VALVE. C.P.C. 603.5.7
- EACH PLUMBING VENT SHALL TERMINATE NOT LESS THAN 10 FEET FROM, OR NOT LESS THAN 3 FEET ABOVE, AN OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, OR NOT LESS THAN 3 FEET FROM A LOT LINE, ALLEY AND STREET EXCEPTED. C.P.C. 906.2



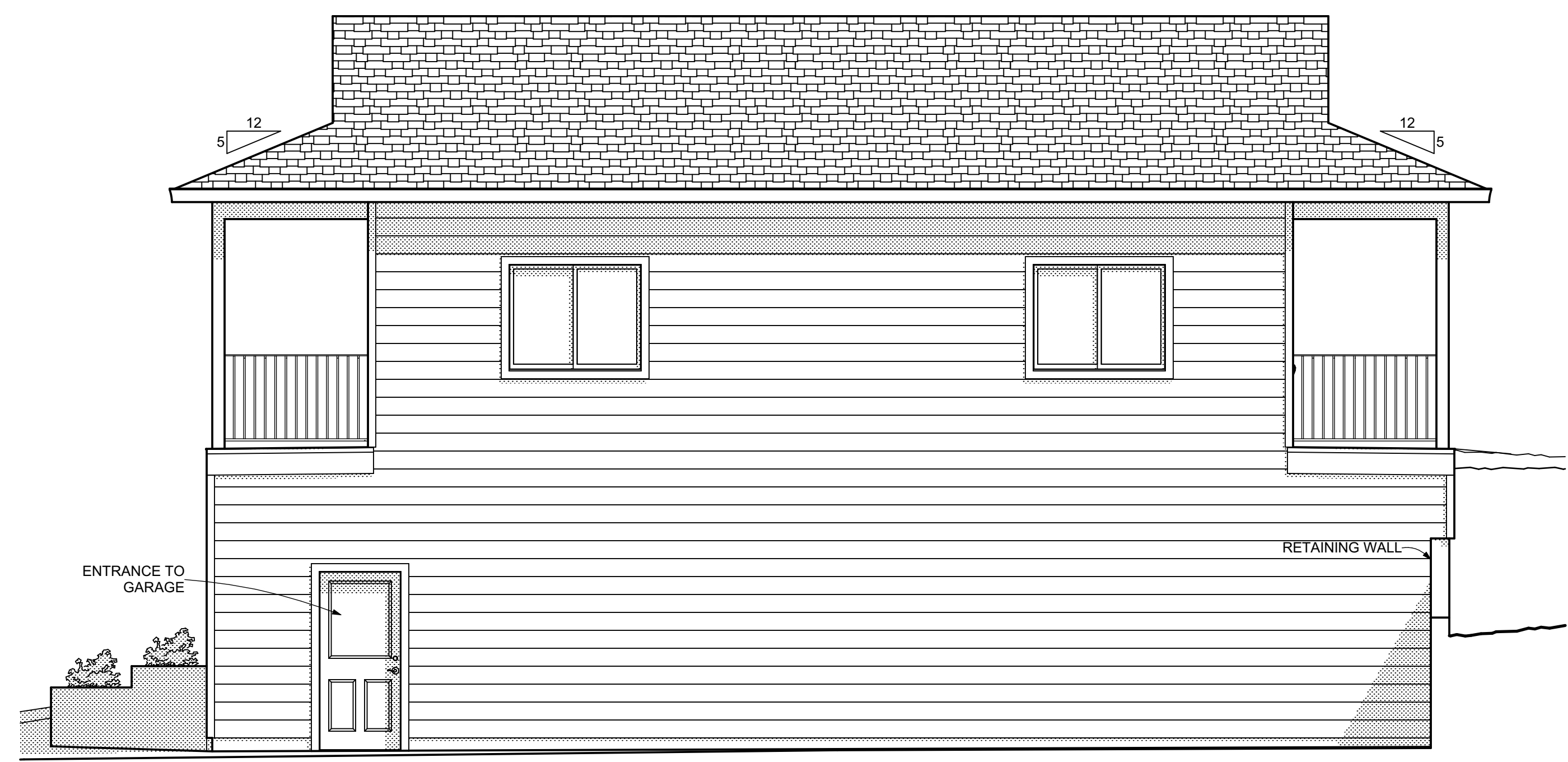
1 SOUTH/FRONT ELEVATION
SCALE: 1/4" = 1'-0"



2 EAST/RIGHT ELEVATION
SCALE: 1/4" = 1'-0"



3 NORTH/REAR ELEVATION
SCALE: 1/4" = 1'-0"



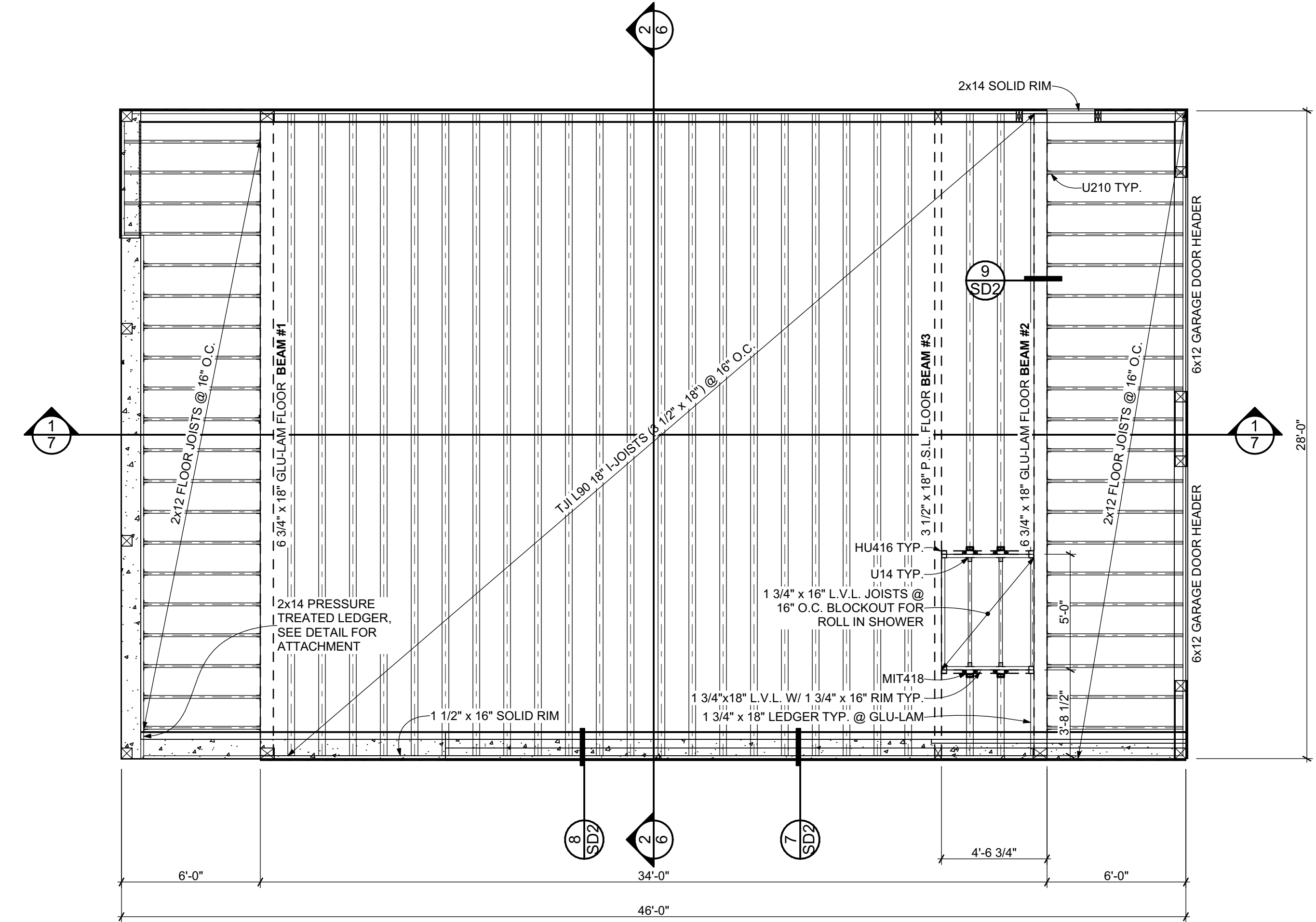
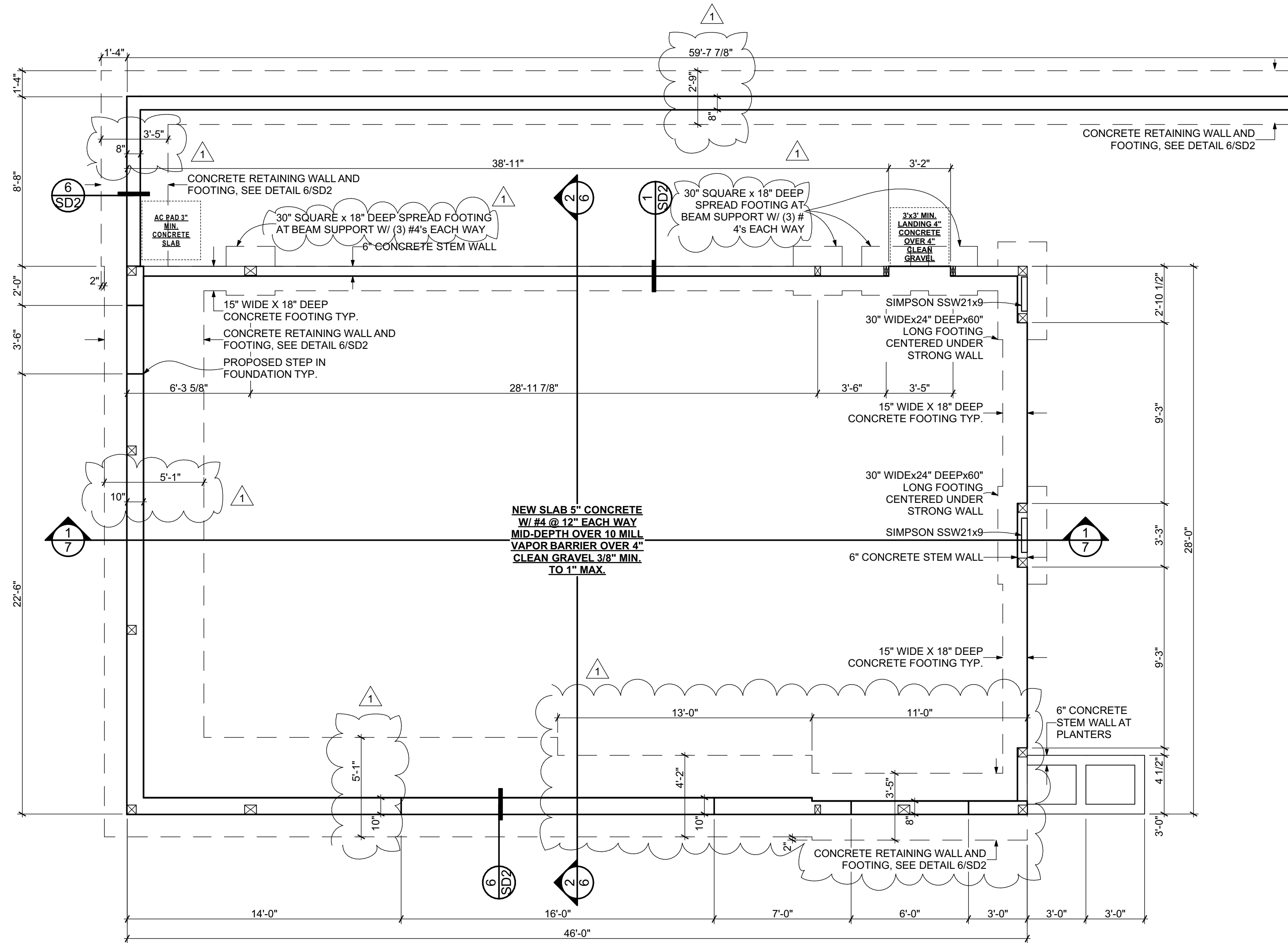
4 WEST/LEFT ELEVATION
SCALE: 1/4" = 1'-0"

FOUNDATION NOTES:

- 1. SEE FOUNDATION AND CONCRETE NOTES ON SHEET SD1
- 2. ANCHOR BOLTS PER SHEAR SCHEDULE SHEET 3

FLOOR FRAMING NOTES:

- 1. SEE WOOD NOTES ON SHEET SD1.
- 2. FLOOR SHEATHING SHALL BE 3/4" T&G PLY W/ 8d's @ 6" O.C. EDGE NAILING & 12" O.C. FIELD NAILING



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

2 FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"

ROOF NOTES:

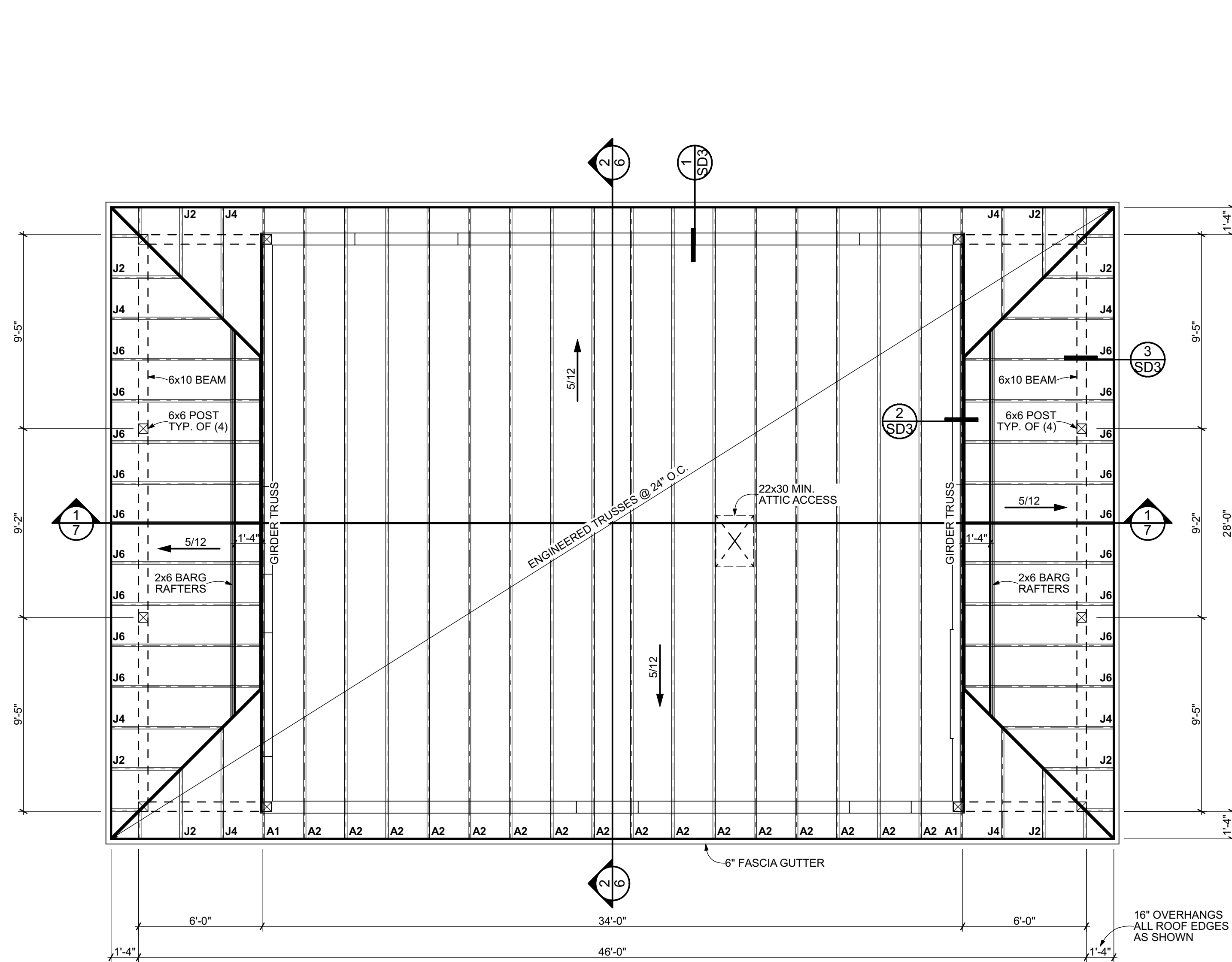
- NEW ROOF ATTIC AREA VENTILATION IS THE FOLLOWING: ATTIC AREA IS 1288 SQUARE FEET / 150 = 1237 SQUARE INCHES OF VENTILATION, OR 1288/300 = 619 SQUARE INCHES OF VENTILATION IF EVENLY DISTRIBUTED BETWEEN THE RIDGE AND THE EAVE. VENTING IN UPPER THIRD TO BE PROVIDED BY (2) 14"x18" GABLE VENTS = 220 SQUARE INCHES NET FREET AREA + AT LEAST 6 FEET OF RIDGE VENT 16.9x6 = 101.4 SQUARE INCHES NET FREET AREA AND IN THE LOWER THIRD HARDIE SOFFIT VENTED 5 SQUARE INCHES PER LINEAL FOOT 150x5 = 750 SQUARE INCHES NET FREET AREA.
- ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATION OPENINGS SHALL HAVE A LEAST DIMENSION OF 1/16 INCH MINIMUM AND 1/4 INCH MAXIMUM. VENTILATION OPENINGS HAVING A LEAST DIMENSION LARGER THAN 1/4 INCH SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH, PERFORATED VINYL, OR SIMILAR MATERIAL WITH OPENINGS HAVING A LEAST DIMENSION OF 1/16 INCH MINIMUM AND 1/4 INCH MAXIMUM. REQUIRED VENTILATION OPENINGS SHALL OPEN TO THE OUTSIDE AIR AND SHALL BE PROTECTED TO PREVENT THE ENTRY OF BIRDS, RODENTS, SNAKES, AND OTHER SIMILAR CREATURES **C.R.C. 806.1**
- THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/100 OF THE AREA OF THE VENTED SPACE. EXCEPT THAT THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/500 OF THE VENTED SPACE PROVIDED BOTH OF THE FOLLOWING CONDITIONS ARE MET:
 - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
 - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 60 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NOT MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY. THE BALANCE OF THE REQUIRED VENTILATION PROVIDED SHALL BE LOCATED IN THE BOTTOM ONE-THIRD OF THE ATTIC SPACE, WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED. **C.R.C. 806.2**

ROOF FRAMING NOTES:

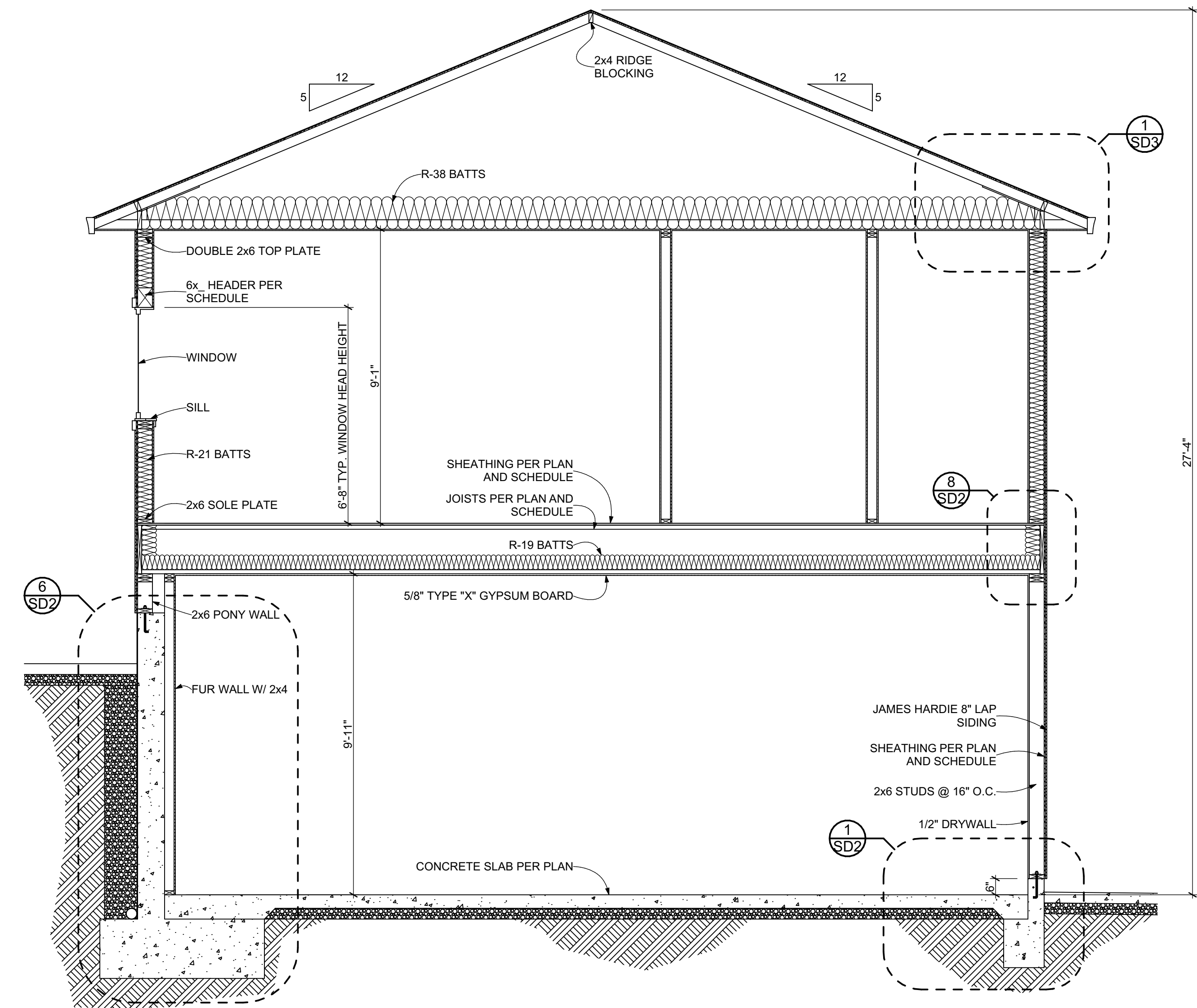
- ALL BEAM SUPPORTING POSTS ARE TO BE AT LEAST THE WIDTH OF THE BEAM BEING SUPPORTED.
- ROOF SHEATHING SHALL BE 1/2" CDX/OSB AND 8d's @ 6" O.C. EDGE NAILING & 12" O.C FIELD NAILING
- GIRDER TRUSS SUPPORT, ONE 2X FOR EACH PLY
- CONFIRM ALL DIMENSIONS IN THE FIELD BEFORE ORDERING TRUSSES.

HEADER SCHEDULE

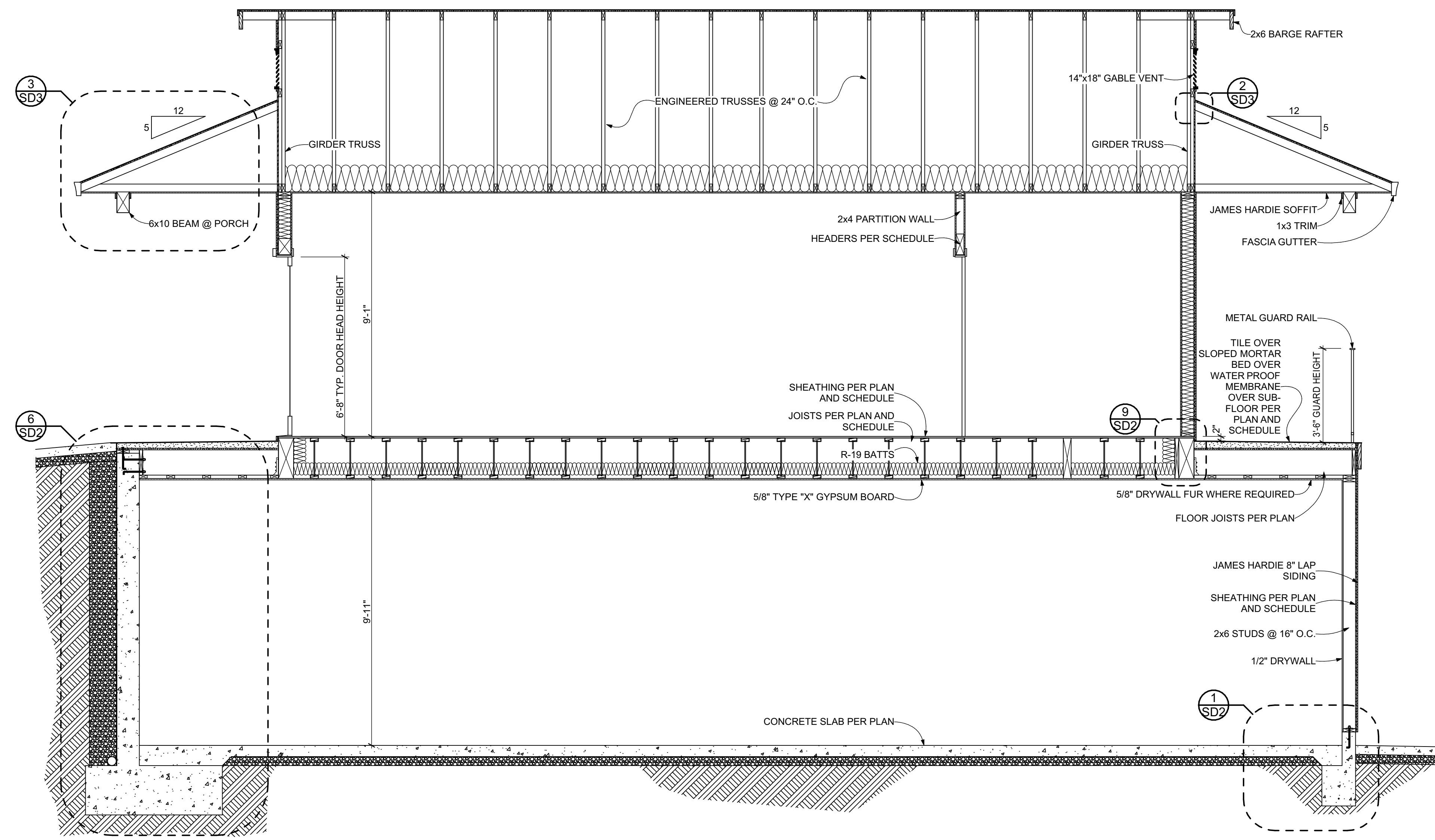
- 2'-0" 6X6 SINGLE TRIMMER
- 3'-0" 6X8 SINGLE TRIMMER
- 4'-0" 6X10 SINGLE TRIMMER
- 5'-0" 6X10 DOUBLE TRIMMER
- 6'-0" 6X10 DOUBLE TRIMMER
- 7'-0" AND LONGER - SEE PLAN DOUBLE TRIMMER



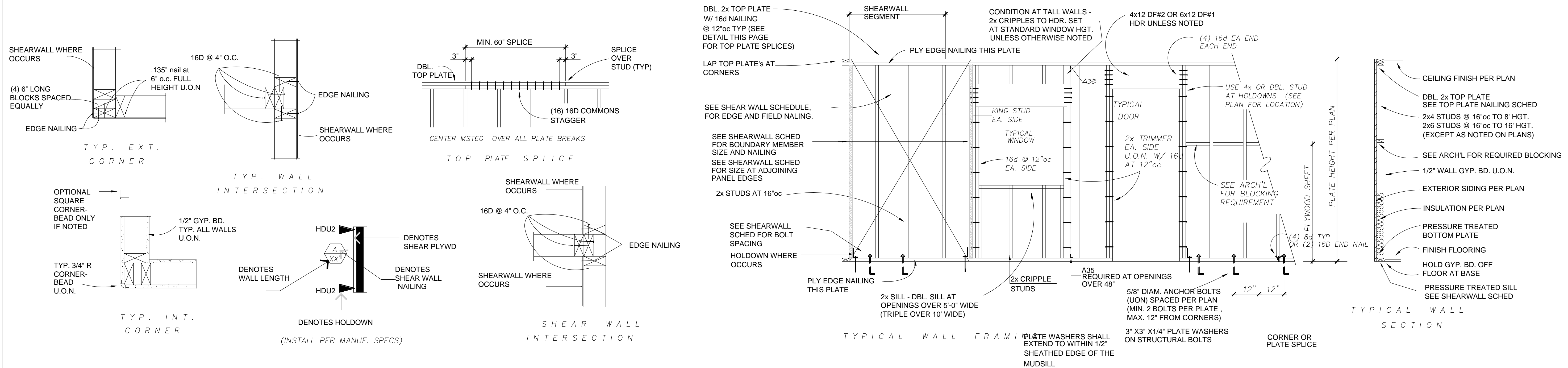
1 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



2 CROSS-SECTION
SCALE: 3/8" = 1'-0"



1 LONGITUDINAL-SECTION
 SCALE: 3/8" = 1'-0"



STRUCTURAL NOTES:

GENERAL NOTES:

- ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE, APPLICABLE STANDARDS, AND THE 2019 CBC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION AND SHALL PROVIDE ADEQUATE SHORING AND BRACING DURING CONSTRUCTION. CONTRACTOR SHALL COMPLY WITH APPLICABLE SAFETY REGULATIONS.
- DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO DETAILS FOR SIMILAR CONSTRUCTION SHOWN ON THESE DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- NO STRUCTURAL MEMBERS SHALL BE CUT, NOTCHED OR OTHERWISE PENETRATED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER IN ADVANCE OR SHOWN ON THESE DRAWINGS.
- TYPICAL DETAILS SHALL APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- WHERE THESE GENERAL NOTES AND TYPICAL DETAILS ARE IN CONFLICT WITH ANY SPECIFICATIONS, THESE NOTES SHALL GOVERN.
- PROVIDE OPENINGS, CURBS, FRAMING AND/OR SUPPORTS FOR ITEMS INDICATED ON ANY OF THESE DRAWINGS INCLUDED IN THE CONSTRUCTION DOCUMENTS.
- ALL ELEVATIONS ARE REFERENCED FROM TOP OF FINISH GROUND FLOOR ELEVATION +0'-0" UNLESS OTHERWISE NOTED.
- PROVIDE INSPECTIONS IN AS REQUIRED BY THE BUILDING DEPT. OR THESE DRAWINGS.
- CONTRACTOR OR OWNER IS RESPONSIBLE FOR THE INSTALLATION AND SHALL PROVIDE PROPER FUNCTION OF ALL COSMETIC TREATMENTS AND FINISHES - INCLUDING, BUT NOT LIMITED TO: TILE, STUCCO, GYPSUM BOARD, PAINT, ETC. WHERE STANDARD SPECIFICATIONS CALL FOR CONSTRUCTION MORE STRINGENT THAN SHOWN ON THESE PLANS, THE CONTRACTOR OR OWNER SHALL ADJUST THE CONSTRUCTION ACCORDINGLY.
- CONTRACTOR SHALL READ AND BE FAMILIAR WITH ALL FACETS OF THE PLANS AND SPECIFICATIONS AND SHALL REQUEST CLARIFICATION AS REQUIRED BEFORE COMMENCING CONSTRUCTION. IF THESE PLANS ARE NOT EXECUTED BY A CONTRACTOR LICENSED IN CALIFORNIA AND WHO IS INTIMATELY FAMILIAR WITH THIS TYPE OF CONSTRUCTION, THE PLANS SHALL BE CONSIDERED NULL AND VOID.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONSTRUCTION WHICH IS IN DEVIATION FROM THESE PLANS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL FIELD CONDITIONS AND SHALL OBTAIN APPROVAL BEFORE CONTINUING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT INSTALLATION OF ALL MANUFACTURED PRODUCTS, INCLUDING BUT NOT LIMITED TO OSB, T1-11 PARALLAMS AND MICRO-LAMS. ALL INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

FOUNDATION:

- FOUNDATION SOIL STRATA IS NATIVE SOIL OR ENGINEERED FILL AS PER THE PROJECT SOILS REPORT WHEN APPLICABLE. IF ANY DISCREPANCIES EXIST BETWEEN THE SOILS REPORT & THESE PLANS, THE SOILS REPORT SHALL GOVERN. SOILS REPORT: 2035 BY JIM GLOMB. WHEN NO SOILS REPORT IS AVAILABLE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR OWNER TO ENSURE THAT ALL SOIL CONDITIONS ARE APPROPRIATE FOR THE CONSTRUCTION OF THIS PROJECT AS DRAWN. FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED FOUNDATION SOIL STRATA.
- THE ELEVATIONS OF BOTTOMS OF FOOTINGS AS SHOWN ON THESE DRAWINGS INDICATE THE ESTIMATED MINIMUM FOUNDATION DEPTHS.
- FOUNDATIONS ARE DESIGNED FOR A MAXIMUM DEAD PLUS LIVE LOAD ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF.
- BOTTOMS OF FOOTINGS SHALL EXTEND A MINIMUM OF 12" BELOW LOWEST ADJACENT GRADE FOR ONE STORY SECTIONS, 18" FOR TWO STORIES (U.O.N.)
- THE BOTTOM OF ALL FOOTINGS SHALL BE LEVEL. CHANGES IN FOOTING ELEVATIONS SHALL BE MADE UTILIZING THE TYPICAL FOOTING STEP DETAIL ON THESE DRAWINGS.
- CENTER FOOTINGS UNDER WALLS OR COLUMNS UNLESS OTHERWISE INDICATED ON THESE DRAWINGS.
- BOLTS AND NAILS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT DIPPED ZINC COATED GALVANIZED OR EQ.

DESIGN CRITERIA:

RISK CATEGORY - II
 IMPORTANCE FACTOR: 1
 WIND SPEED: 110 MPH
 EXPOSURE CATEGORY: C
 INTERNAL PRESSURE COEFFICIENT: .18+/-
 DESIGN WIND PRESSURE: SEE CALCS
 MAPPED SPECTRAL RESPONSE COEFFICIENTS:
 SITE CLASS: D
 SPECTRAL RESPONSE COEFFICIENTS:
 SEISMIC DESIGN CATEGORY: D
 BASIC SEISMIC-FORCE-RESISTING SYSTEM: WOOD SHEARWALLS
 DESIGN BASE SHEAR: SEE CALCS
 SEISMIC RESPONSE COEFFICIENT: $C_s = 0.168$
 SEISMIC R=6.5
 ANALYSIS PROCEDURE: ELPF

CONCRETE:

- CONCRETE SHALL DEVELOP A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C39. ALL CONCRETE SHALL BE CONSOLIDATED BY MECHANICAL VIBRATORS.
- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE C.B.C. AND ACI STANDARD 318 LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE UNLESS SHOWN OR NOTED OTHERWISE ON THESE DRAWINGS.
- AGGREGATE SHALL CONFORM TO ASTM C-33.
- CEMENT SHALL BE ASTM C-150, TYPE I OR TYPE II.
- REINFORCING STEEL SHALL BE DEFORMED CONFORMING TO ASTM A615 GRADE 40 FOR #5 AND SMALLER AND GR 60 FOR LARGER UNLESS OTHERWISE NOTED.
- WELDED WIRE FABRIC REINFORCEMENT SHALL CONFORM TO ASTM A-185.
- WELDING OF REINFORCING STEEL SHALL BE PERFORMED ONLY WHERE INDICATED ON THE DRAWINGS AND SHALL BE IN COMPLIANCE WITH ALL REQUIREMENTS OF THE REINFORCING STEEL WELDING SOCIETY. PROVIDE WELDING PROCEDURE AND MILL TEST REPORTS FOR ALL REINFORCEMENT TO BE WELDED. ENGINEER SHALL APPROVE WELDING PROCEDURE AND MILL TEST REPORTS PRIOR TO EXECUTION OF WELDING.
- COVERAGE FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE C.B.C. AND ACI STANDARD 318 UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- LAP SPLICES FOR REINFORCING SHALL BE 50 BAR DIAMETERS OR 12" MINIMUM UNLESS SHOWN OTHERWISE ON THE DRAWINGS. WIRE BARS TOGETHER AT LAPS OR SPLICES. HOOKS SHALL BE 135 DEGREES WITH 4" MIN TAIL9.
- CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ASTM C94 AND ACI STANDARD 304.
- ALL EMBEDDED ITEMS SHALL BE PLACED ACCURATELY AND SECURELY PRIOR TO BEGINNING CONCRETE PLACEMENT.
- CONSTRUCTION JOINTS SHALL BE LOCATED SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE.
- MEETING COMPRESSIVE STRENGTH REQUIREMENTS ARE THE RESPONSIBILITY OF THE CONCRETE SUPPLIER.
- SUBMIT CONCRETE MIX DESIGNS TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF ANY CONCRETE.
- ALL GROUT SHALL BE NON-METALLIC NON-SHRINK GROUT.
- REINFORCING AND EMBEDMENT ITEMS SHALL BE FREE OF EXCESSIVE SCALE OR RUST, DIRT, GREASE, OIL OR ANY OTHER SUBSTANCE THAT WILL IMPAIR BOND WITH CONCRETE.
- NO SPECIAL INSPECTION IS REQUIRED.
- BOLTS AND NAILS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT DIPPED ZINC COATED GALVANIZED OR EQ.

PREMANUF. WOOD TRUSSES:

- TRUSS LOADINGS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
 AT FLOORS: DEAD LOAD- 17 PSF
 LIVE LOAD- 40 PSF
 AT ROOFS: ROOF T.C.D.L.: 10
 ROOF B.C.D.L.: 10
 ROOF LIVE LOAD: 20
 FLOOR LIVE LOAD: 40
 RAIN LOAD: 0
 FLOOD LOAD: 0
 SNOW LOAD: 0
- DESIGN AND FABRICATE USING THIS CRITERIA, THE LATEST CBC AND CBC STANDARDS, AND APPLICABLE RESEARCH REPORTS -
- TRUSS MANUFACTURER TO SUPPLY ALL HANGERS FOR TRUSSES AS REQD.
- MECHANICAL UNIT LOADS AND PARTITION LOADS SHALL BE CONSIDERED WHERE APPLICABLE.
- WHERE PREFABRICATED TRUSSES ARE INSTALLED AS BLOCKING OR RIM JOISTS IN BEARING WALLS, TRUSS SHALL BE DESIGNED TO TRANSMIT DIRECT AXIAL WALL LOADS.
- PROVIDE COMPLETE FRAMING PLANS WITH TRUSS IDENTIFICATION NUMBERS CLEARLY IDENTIFIED ON PLANS AND CALCULATIONS. DESIGN AND CLEARLY INDICATE ALL BRACING AND BRIDGING. SPECIFY TRUSS MANUFACTURER ON TRUSS DRAWINGS AND PLANS. PROVIDE SIGNATURE OF ENGINEER ON ALL TRUSS DRAWINGS.
- PROVIDE TRUSS DRAWINGS, CALCULATIONS AND COPIES OF RESEARCH REPORTS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. CALCULATIONS SHALL CONSIDER COMBINED AXIAL AND BENDING STRESSES AND BE SIGNED BY A CIVIL ENGINEER LICENSED IN THE STATE OF CALIFORNIA.
- INSTALL TRUSSES IN ACCORDANCE WITH THE REQUIREMENTS OF THE REFERENCED STANDARDS, THESE DRAWINGS, AND THE MANUFACTURER'S RECOMMENDATIONS AND DETAILS.
- TRUSS WEB MEMBERS SHALL BE CAPABLE OF CARRYING ALL DEAD PLUS LIVE PLUS MISCELLANEOUS LOADS IMPOSED BY ROOF AND FLOORS
- TOP CHORDS SHALL BE 2X DOUGLAS FIR - LARCH NO.2, MINIMUM.
- WEB MEMBERS SHALL BE 2X4 DOUGLAS FIR - LARCH STANDARD, MINIMUM.
- MAXIMUM TRUSS PANEL LENGTHS SHALL BE SET BY THE TRUSS ENGINEER
- MINIMUM METAL PLATE CONNECTION PER SIDE = 10" SQUARE.
- MINIMUM PLATE BITE FOR EACH MEMBER = 2".
- 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:
 a) IDENTITY OF THE COMPANY MANUFACTURING THE TRUSS.
 b) THE LOAD DESIGN.
 c) THE SPACING OF THE TRUSSES.
- TRUSS MANUFACTURER MAY SUBSTITUTE MATERIALS WITH PROPER DOCUMENTATION
- TRUSSES SHALL NOT BE MODIFIED IN ANY WAY EXCEPT BY THE TRUSS DESIGN ENGINEER

SHEAR WALL SCHEDULE:

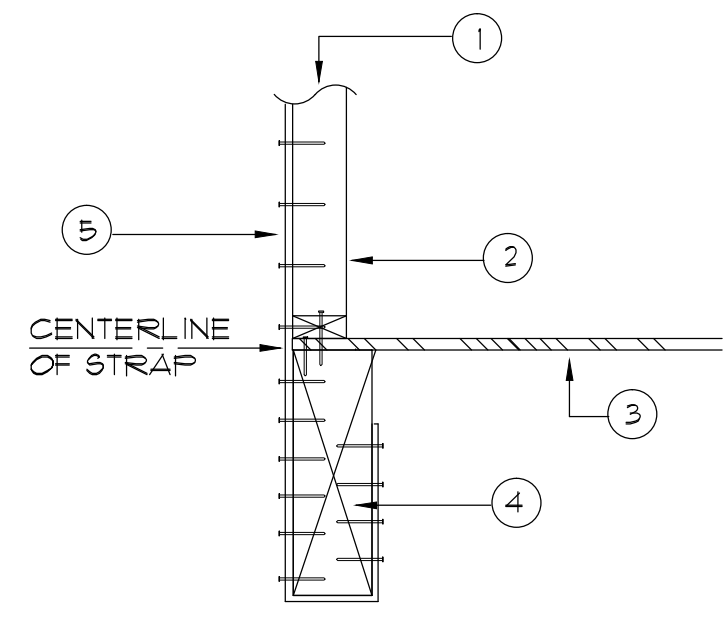
- A** 3/8" CDX PLYWOOD OR OSB
 NAILING: 8d's SPACED @ 12" O.C. AT EDGES, 12" O.C. AT FIELD
 5/8" diam. s.b. at 60" o.c. within shearwall
 3" x3" x1/4" PLATE WASHERS
- B** 3/8" CDX PLYWOOD OR OSB
 NAILING: 8d's SPACED 4" O.C. AT EDGES, 12" O.C. AT FIELD
 5/8" diam. s.b. at 48" o.c. within shearwall
 3" x3" x1/4" PLATE WASHERS
 3 X STUDS AT ADJOINING PANEL EDGES, AND BLOCKING

WOOD:

- STRUCTURAL FRAMING SHALL BE DOUGLAS FIR - LARCH GRADED IN ACCORDANCE WITH THE STANDARD GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION. GRADES SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 6X4 LARGER MEMBERS -NO. 1
 2X4 LARGER MEMBERS -NO. 2 (MINIMUM)
- ALL PLYWOOD SHOWN ON THESE DRAWINGS SHALL BE C-D WITH EXTERIOR GLUE IN ACCORDANCE WITH U.S. PRODUCT STANDARD PS 1-95. ALL PANELS SHALL BE MARKED WITH AN APA GRADE MARK WITH AN IDENTIFICATION INDEX. ROOF FLY SHALL BE PANEL INDEX 24/0 U.O.N. FLOOR FLY SHALL BE PANEL INDEX 48/24 U.O.N. EQUIVALENT OSB MAY REPLACE PLYWOOD SHEARWALLS OR DIAPHRAGMS
- SILL PLATES SHALL BE PRESSURE PRESERVATIVE TREATED DOUGLAS FIR
- PROVIDE BLOCKING FOR ALL FRAMING MEMBERS AT ALL SUPPORTS.
- BOLTS FOR TIMBER CONNECTIONS SHALL BE ASTM A307 MACHINE BOLTS UNLESS OTHERWISE NOTED. BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION BY THE NATIONAL FOREST PRODUCTS ASSOCIATION. BOLT HOLES SHALL BE 1/16 INCH LARGER THAN BOLT DIAMETER.
- HOLES FOR LAG SCREW SHANKS SHALL BE BORED THE SAME DEPTH AND DIAMETER AS THE SHANK. THE REMAINING DEPTH OF PENETRATION OF THE SCREW SHALL BE BORED TO 10% OF THE SHANK DIAMETER.
- PROVIDE MALLEABLE IRON WASHERS OR EQUIVALENT CUT FLATE WASHERS UNDER NUTS AND BOLT OR LAG SCREW HEADS WHICH BEAR ON WOOD.
- WOOD MEMBERS SHALL BE CUT OR NOTCHED ONLY AS SHOWN ON THESE DRAWINGS.
- WHEN REQUIRED NAILING TENDS TO SPLIT WOOD MEMBERS, NAIL HOLES SHALL BE PRE-BORED TO 3/4 OF THE NAIL DIAMETER.
- NAILING NOT SPECIFICALLY INDICATED SHALL COMPLY WITH TABLE 2304.10.1 IN THE 2019 IBC AND THE COMPLEMENTARY TABLE IN THE 2019 CBC
- STRUCTURAL LATERAL SHALL BE WITH COMMON NAILS U.O.N ON TABLE BELOW
- PROVIDE LATERAL SUPPORT FOR ALL FRAMING MEMBERS AT POINTS OF SUPPORT
- PROVIDE SHOP DRAWINGS FOR ALL PREFABRICATED JOIST MEMBERS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
- EXCEPT WHERE MORE STRINGENT CONSTRUCTION IS SHOWN ON THE DRAWINGS, WOOD CONSTRUCTION SHALL COMPLY WITH IBC SECTION 2308 - CONVENTIONAL LIGHT FRAMED CONSTRUCTION PROVISIONS, AND THE COMPLEMENTARY SECTION OF THE 2019 CBC, AS A MINIMUM.
- ALL PREFABRICATED CONNECTING HARDWARE SPECIFIED IS MANUFACTURED BY SIMPSON COMPANY, SAN LEANDRO, CALIFORNIA, UNLESS OTHERWISE NOTED. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR MAXIMUM RATED VALUES. HARDWARE EQUAL IN STRENGTH MAY BE SUBSTITUTED
- ALL GLU-LAM BEAMS SHALL BE 24F-V4 DF/DF, U.O.N.
 ALL GLU-LAMS SHALL BE MARKED "ANSI/AITC- STANDARD A 190.1"
 GLU-LAMS SHALL BE PROVIDED BY A CERTIFIED MANUFACTURER
 PROVIDE CERTIFICATION TO BUILDING INSPECTOR
 PROVIDE MINIMUM CAMBER UNLESS OTHERWISE NOTED
- ALL PARALLAMS AND MICRO-LAMS SHALL HAVE E = 2,000,000 PSI
- BLOCK UNSUPPORTED EDGES OF PLYWOOD OR GYP. BD SHEARWALLS.
- MAXIMUM MOISTURE CONTENT SHALL BE 19% U.O.N.
- ALL BEAMS INTENDED FOR EXTERIOR USE SHALL BE TREATED FOR EXPOSURE TO WATER
- ALL EXPOSED WOOD SHALL BE PROTECTED FROM DECAY PER 2019 CRC SECTION R403.1
- ALL FASTENERS CONNECTING SHEAR PANELS OR FRAMING MEMBERS TO PRESERVATIVE TREATED WOOD SHALL BE HOT DIPPED STEEL, ZINC COATED GALVANIZED STEEL, STAINLESS STEEL, SILICONE BRONZE OR COPPER

NAIL	L	D	H	PENETRATION	NOTES
8d box	2 1/2"	.113	.297	1 3/8"	1. LENGTH MAY BE ADJUSTED AS LONG AS REQUIRED PENETRATION IS MAINTAINED
10d box	3	.128	.312	1 1/2"	
16d box	3 1/2"	.136	.344	1 5/8"	2. SHEARWALLS USE GALVANIZED BOX OR COMMON
8d common	2 1/2"	.131	.281	1 1/2"	
10d common	3	.148	.312	1 3/4"	3. DIAPHRAGMS USE ONLY COMMONS
16d common	3 1/2"	.162	.344	2	4. SEE TBL. 23-1-0 FOR OTHER NAILING

SHEET
SD1
 OF

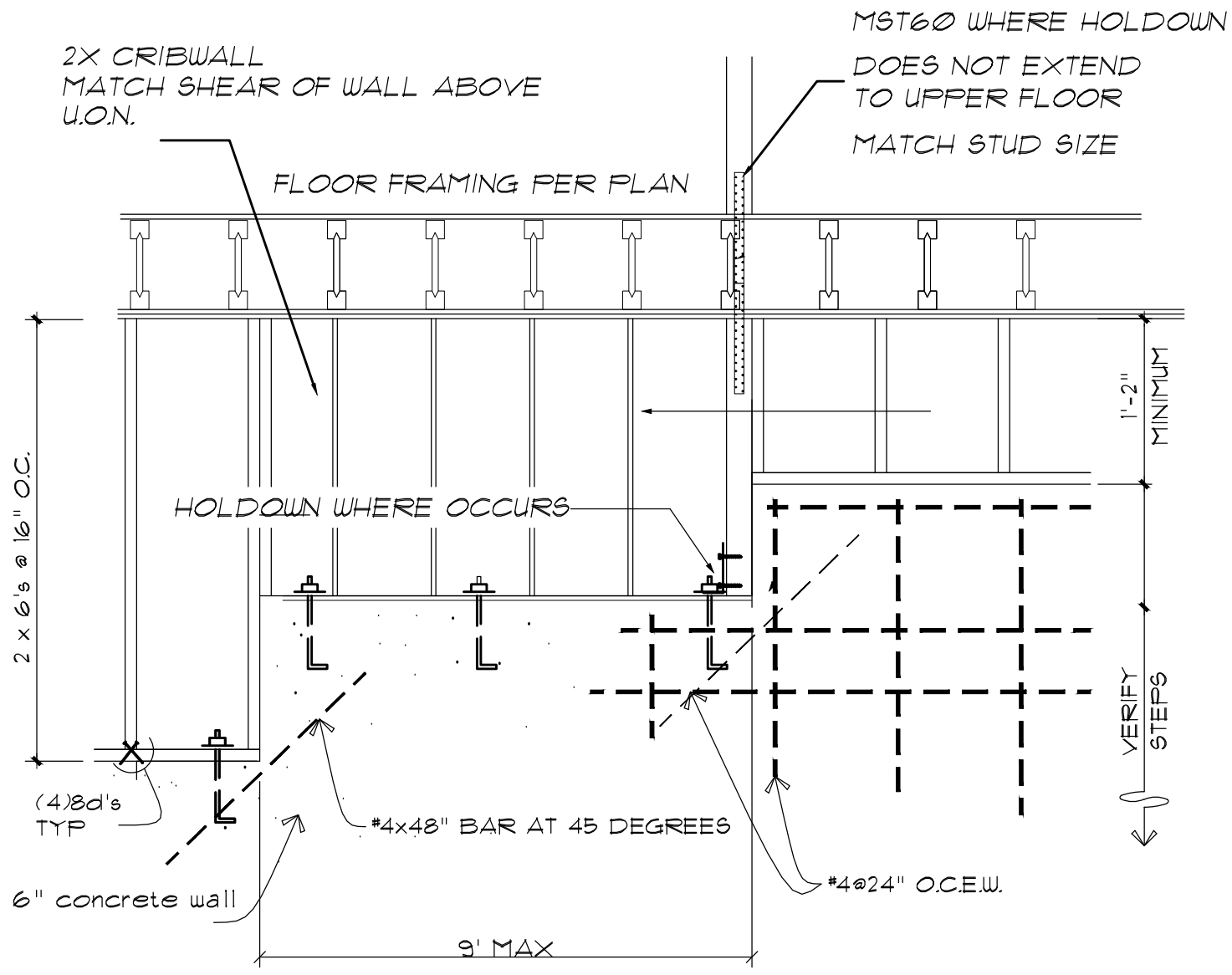


1. 4x AT MST60 OR (2) 2x @ C916 STRAP
2. SPLICE DBL STUDS WITH 16d's AT 6" OC
3. SHEATHING PER PLAN
4. HEADER PER PLAN (OR DEL. FLOOR JOIST)
5. STRAP PER PLAN
6. FILL ALL HOLES WITH 8d's AT C916'S. FILL ALL HOLES WITH 16d's AT OTHER STRAPS

NAILING:
 (14) 8d's @ C916 EACH SIDE OF STRAP &
 (23) 16d's @ MST60 EA. SIDE OF STRAP &

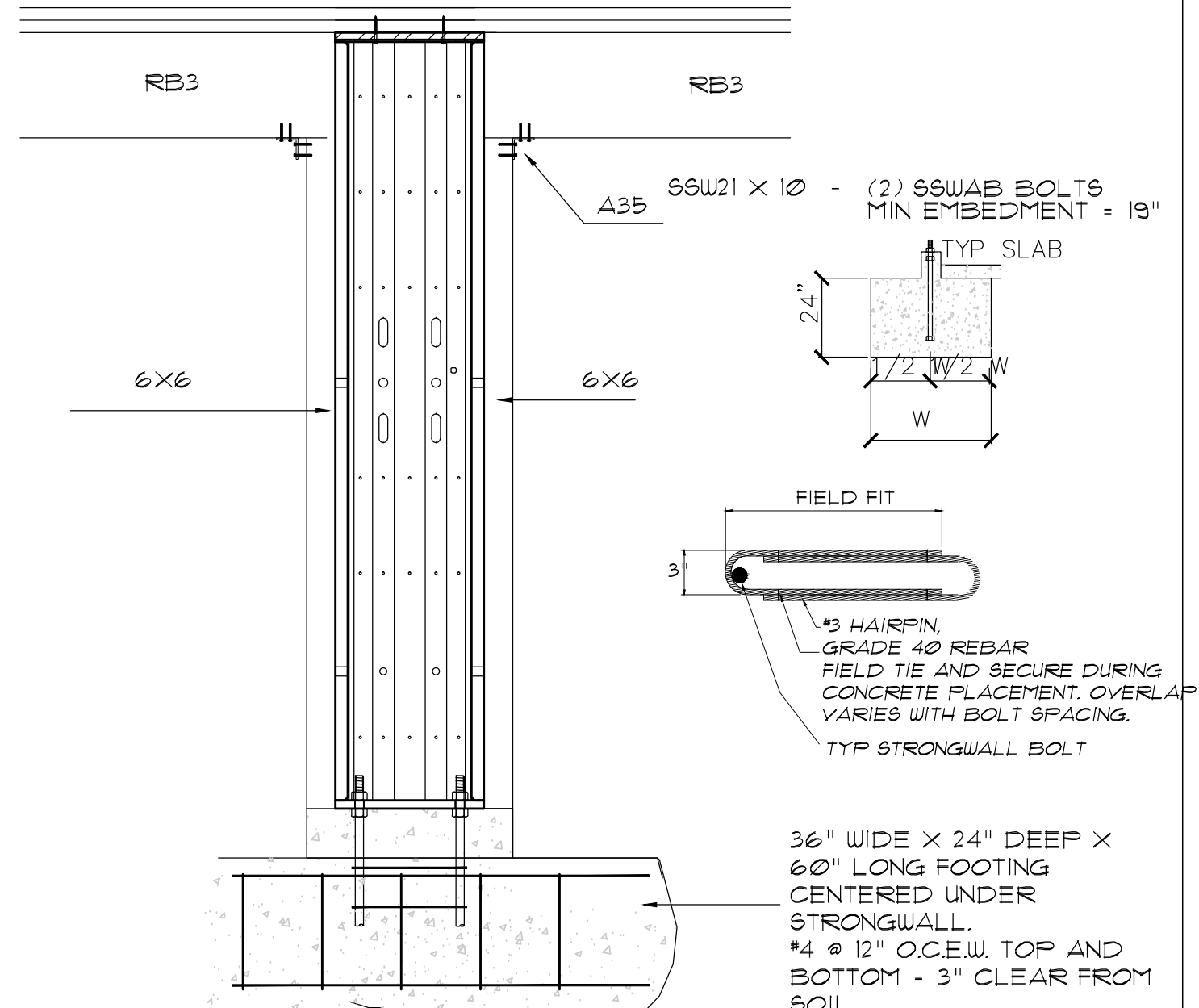
FRAMING DETAIL

10



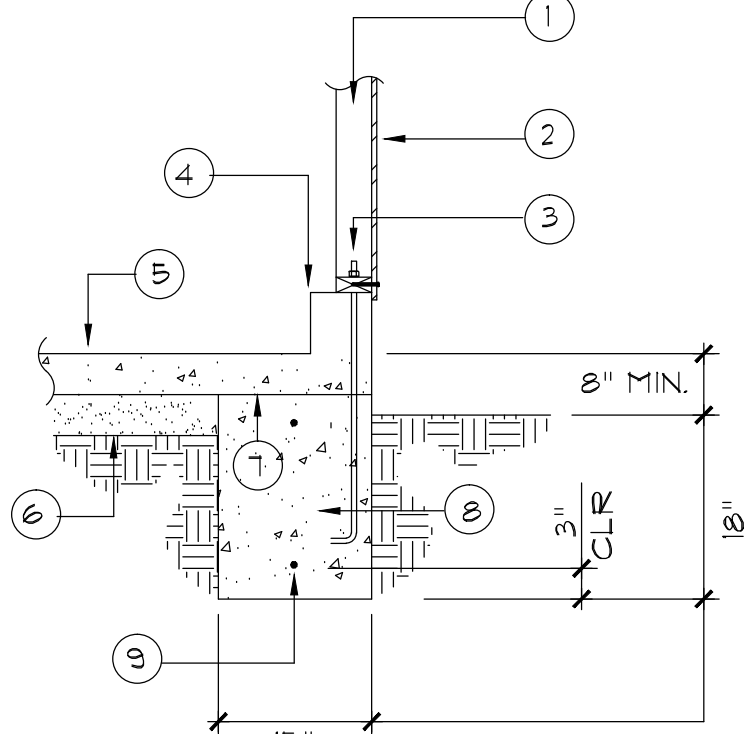
STEP WALL ELEVATION

7



GARAGE STRONGWALL

4

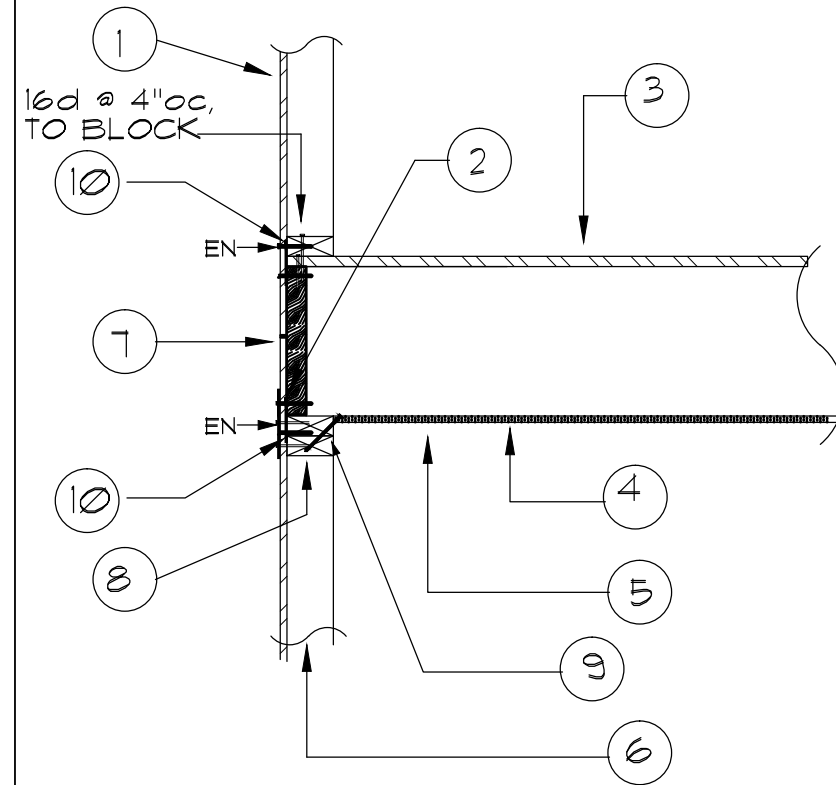


GARAGE PERIMETER

1

1. 2x STUDS @ 16" o.c. TYPICAL
 2. SEE PLAN FOR SHEATHING AND / OR SIDING
 3. P.T. PLATE WITH 5/8" DIAM. ANCHOR BOLT (MIN. 1" INTO 1ST FOUR. MAX. 12" FROM CORNERS. MIN. 2 BOLTS PER PLATE) SPACED AS NOTED IN LEGEND ON FOUNDATION PLAN
 4. 6x6 CONC. CURB
 5. 4" CONC SLAB SLOPE FOR DRAINAGE.
 6. COMPACTED OF UNDISTURBED GRADE ASTM D-1557 MIN COMPACTION
 7. OPTIONAL COLD JOINT
 8. OMIT NOTE
 9. #4 BAR CONT. TOP AND BOTTOM OF FOOTING
- 3" X 3" X 1/4" PLATE WASHERS ON STRUCTURAL BOLTS

0-DET10

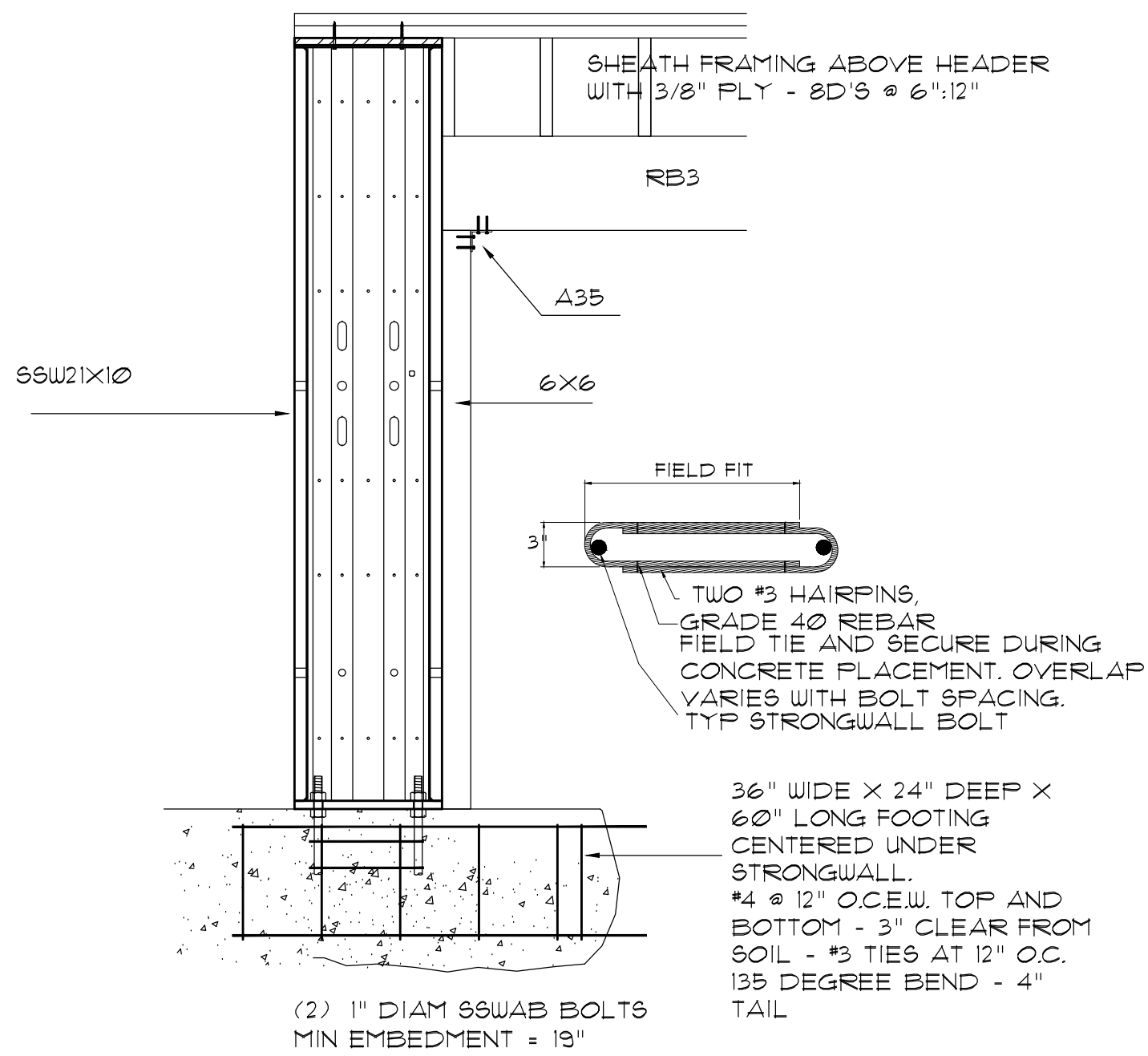


11

FRAMING DETAIL

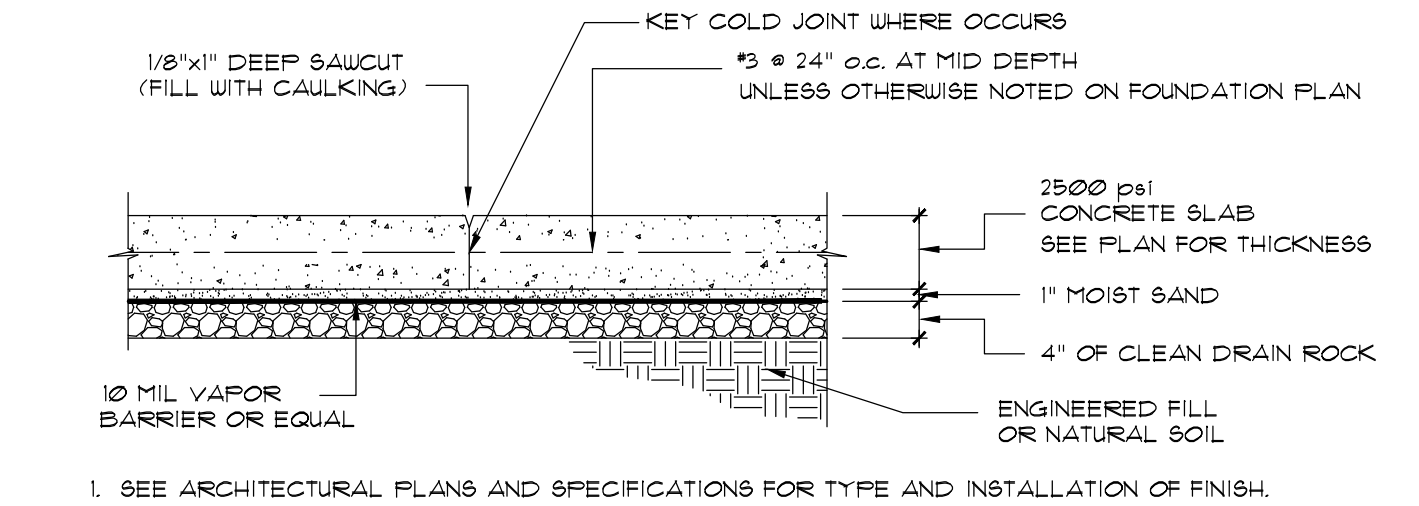
8

1. SEE PLANS FOR SHEATHING AND EXTERIOR SIDING
2. LTP4 @ 12" OC.
3. FLOOR SHEATHING PER PLAN
4. FLOOR JOISTS PER PLAN
5. GYP. BOARD CEILING PER PLAN
6. 2x STUDS @ 16" OC
7. SOLID 1 1/4" LSL RIM JOIST
8. (2) 2x CONT. PL. (SEE PLAN FOR TOP PLATE SPLICE INFO)
9. ((3) 16D TOENAILS JOIST TO PLATE
10. LTP4 @ 16" OC.



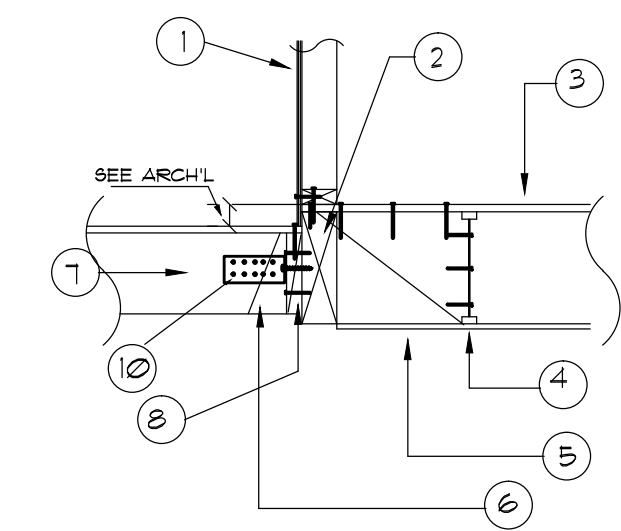
GARAGE STRONGWALL

5



EXPANSION JOINT / SLAB CROSS SECTION

2

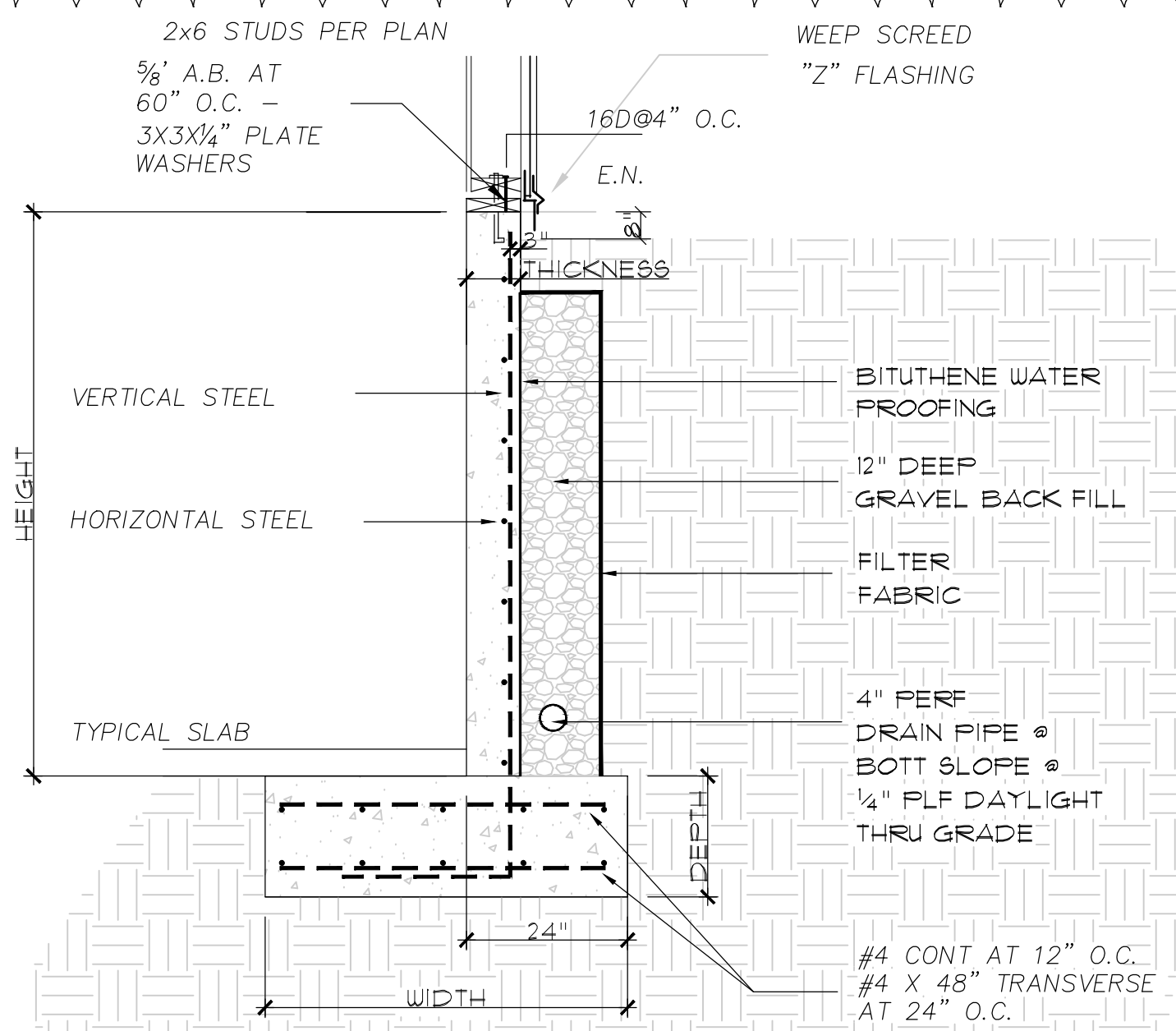


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FRAMING DETAIL

9

1. SEE PLANS FOR SHEATHING AND EXTERIOR SIDING
2. FLOOR BEAM PER PLAN
3. FLOOR SHEATHING PER PLAN
4. FLOOR JOISTS PER PLAN
5. GYP. BOARD CEILING PER PLAN
6. U SERIES HANGER DIRECTLY TO BEAM
7. DECK JOIST PER PLAN WITH 'U' SERIES HANGER
8. 2 X BLOCKING WITH (2) 16D'S AT 16" O.C.
9. SEE ARCH'L FOR SLOPE
10. DIT2Z WITH 1/2" DIAM GALVANIZED BOLT AT 48" O.C.



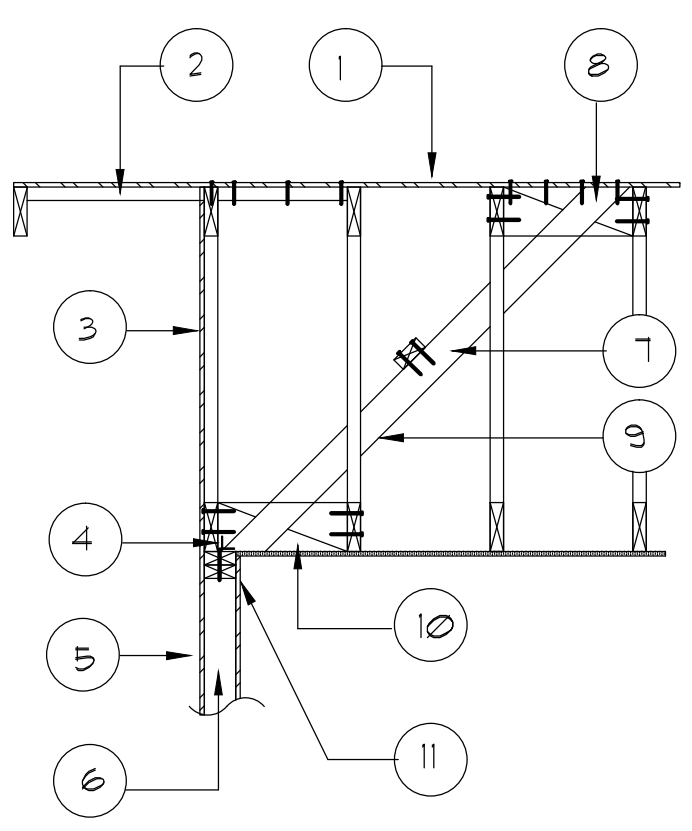
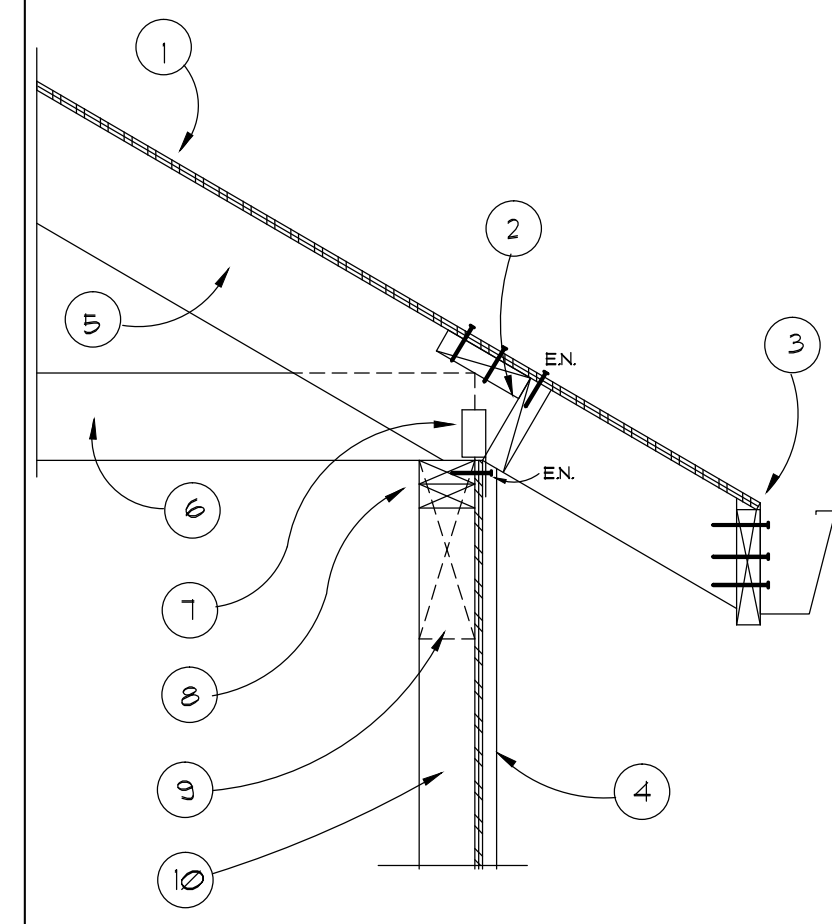
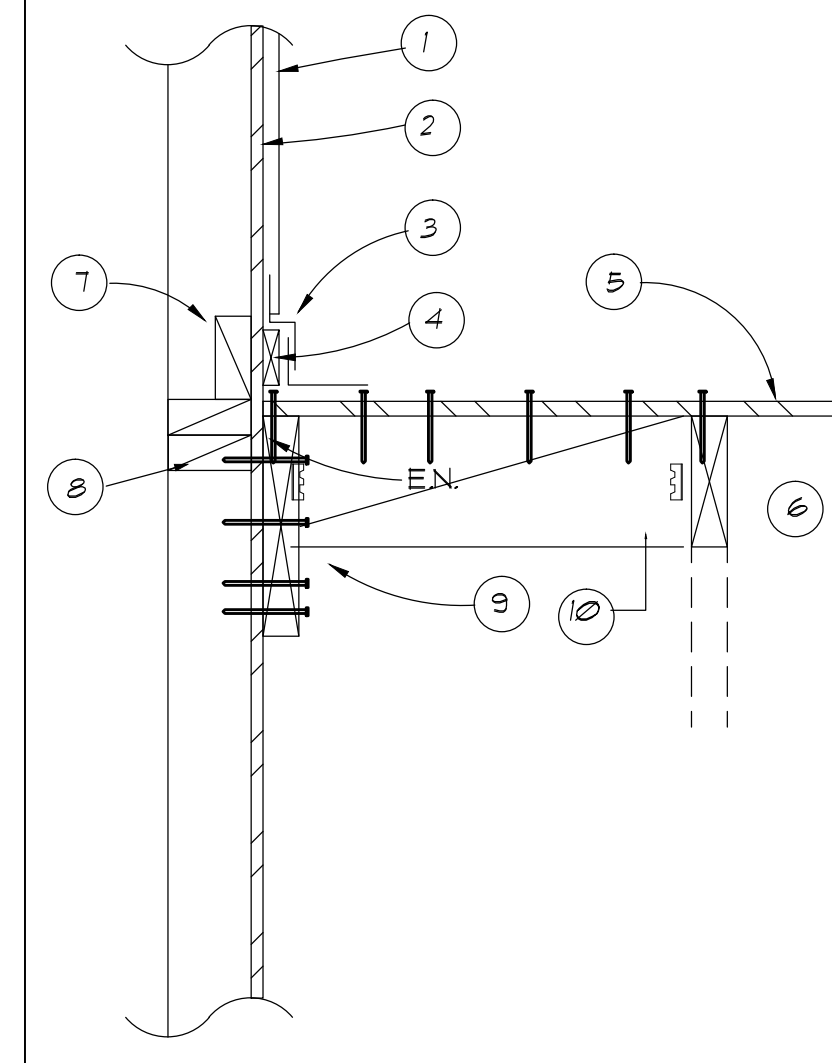
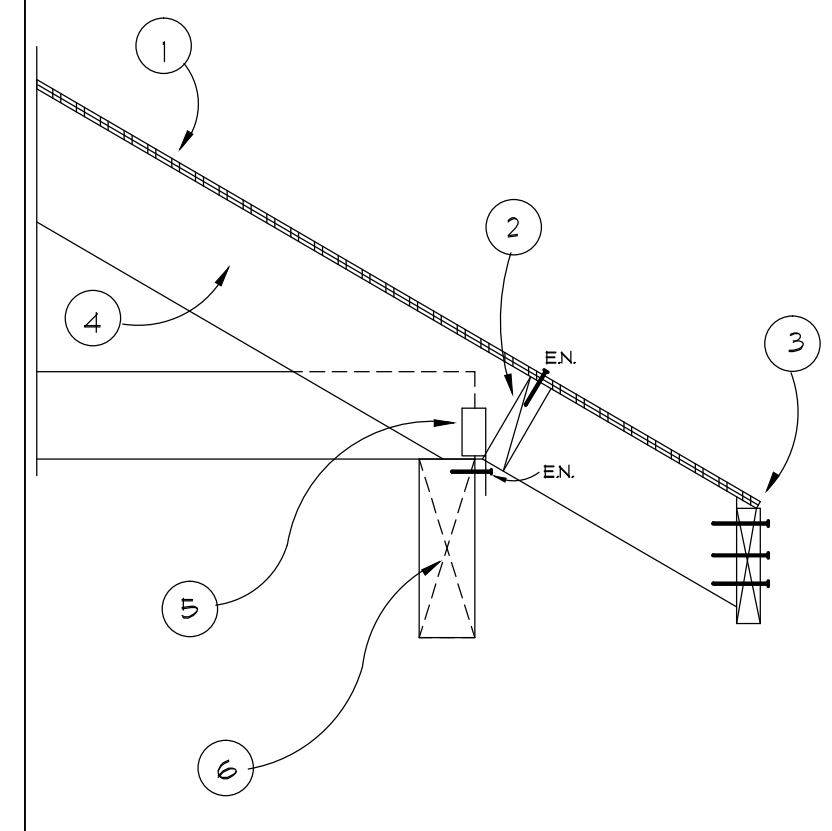
RETAINING WALL

6

SIZE & REINF. SCHEDULE					
HEIGHT	WIDTH	DEPTH	HORIZ BARS	VERT BARS	THICKNESS
0'-3'-11"	2'-9"	20"	#4 AT 24" O.C	#4 @ 24"	8"
4'-5'-11"	3'-5"	20"	#4 AT 24" O.C	#4 @ 12"	8"
6'-7'-11"	4'-2"	20"	#6 AT 24" O.C	#5 @ 12"	10"
8'-9'-11"	5'-1"	20"	#6 AT 24" O.C	#6 @ 12"	10"

RETAINING WALL

3

					<ol style="list-style-type: none"> 1. ROOF SHEATHING PER PLAN 2. 2x OUTRIGGER FLAT - LET-IN TO END TRUSS, NAIL W/ 8d'S AT 6"oc 3. GABLE END FRAMING WITH IN FILL STUDS AT 16" oc 4. A35 AT 24"oc 5. RUN TYPICAL SHEARWALL CONSTRUCTION TO BOTTOM OF ROOF PLYWD. 6. 2x STUDS PER PLAN (SEE PLAN FOR SHEATHING) 7. 2x4 PURLIN @ MID-SPAN OF BRACE IF OVER 66" WITH (2) 16d'S AT EACH BRACE 8. 2x BLKG WITH 8d'S AT 4"oc AND (3) 16d'S EACH END 9. 2x4 DIAG. BRACE @ 8' oc MAX. W/ (3) 16d'S EACH END - MAX UNSUPPORTED LENGTH = 66" 10. 2x BLKG EACH BRACE WITH (3) 16d'S EACH END, A35 FROM BLOCKING TO WALL 11. (2) 2x CONT. TOP PLATE - SEE PLAN FOR TOP PLATE SPLICE INFO 		<ol style="list-style-type: none"> 1. ROOF SHEATHING PER PLAN 2. 2x CONT. BLOCKING 2X6 FLAT BLOCK W/ (2) ROWS E.N ONLY AT VENT SCREEN 3. SEE ARCH FOR FASCIA 4. SEE ARCH FOR FINISH 5. SEE ROOF FRAMING PLAN 6. SEE ROOF FRAMING OR CEILING JOIST PLAN 7. H1 EACH TRUSS 8. (2) 2x CONT. PLATE - SEE PLAN FOR TOP PLATE SPLICE INFO 9. HEADER (WHERE OCCURS) 10. 2x STUDS PER PLAN
	10		7	SHEAR TRANSFER @ GABLE	4	TYPICAL EAVE	1
							<ol style="list-style-type: none"> 1. EXTERIOR SIDING PER PLAN 2. SEE PLAN FOR SHEATHING 3. FLASH & COUNTERFLASH 4. 1x SPACER FOR FLASHING 5. ROOF SHEATHING PER PLAN 6. RAFTER OR TRUSS PER PLAN 7. 2x BLOCKING FOR FLASHING 8. CONTINUOUS BLOCKING 9. SLOPING 2x8 LEDGER W/ (3) 16d'S TO EACH STUD 6" O.C. TO BLOCKING 10. 2X BLOCKING AT 32" O.C. - MATCH THE DEPTH OF THE TOP CHORD
	11		8		5	FRAMING DETAIL	2
							<ol style="list-style-type: none"> 1. ROOF SHEATHING PER PLAN 2. 2x CONT. BLOCKING (PROVIDE DRILLED HOLES FOR VENTILATION) 3. SEE ARCH FOR FASCIA 4. TYPICAL TRUSS 5. H1 AT EACH RAFTER 6. SEE FRAMING PLAN
	12		9		6	TYPICAL EAVE	3

0-DET10

ELECTRICAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT CODES, RULES, AND REGULATIONS AND COMPLY WITH THE REQUIREMENTS OF THE SERVING POWER AND TELEPHONE COMPANIES.
 - ALL ELECTRICAL SHOWN IS NEW.
- RECEPTACLES**
- ALL 120-VOLT SINGLE PHASE 15- AND 20- AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DEN, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY ANY OF THE MEANS DESCRIBED IN C.E.C. 210.12 (A) 1-6
 - IN DWELLING UNITS ALL 125 AMP, SINGLE PHASE, 15- AND 20-AMPERE RECEPTACLES INSTALLED IN THE FOLLOWING PLACES SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION: BATHROOMS, GARAGES (AT OR BELOW GRADE) AND SIMILAR SPACES, OUTDOORS, CRAWL SPACES (AT OR BELOW GRADE), UNFINISHED PORTIONS OR AREAS THE BASEMENTS NOT INTENDED AS HABITABLE ROOMS (AT OR BELOW GRADE) KITCHENS (WHERE RECEPTACLES ARE INSTALLED TO SERVE COUNTERTOP SURFACES), SINKS LOCATED IN AREAS OTHER THAN KITCHENS WHERE THE RECEPTACLES ARE INSTALLED WITHIN 6' OF THE TOP INSIDE EDGE OF THE BOWL OF THE SINK), BATHTUBS AND SHOWER STALLS (WHERE THE RECEPTACLES ARE INSTALLED WITHIN 6' OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL), AND LAUNDRY AREAS - C.E.C. 210.8(A)
 - IN ALL AREAS OF DWELLING UNITS SPECIFIED IN C.E.C. 210.52 AND 550.13, ALL NONLOCKING-TYPE 125 AND 50 VOLT, 15- AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT. C.E.C. 406.12
 - RECEPTACLE OUTLETS SHALL BE LOCATED ON OR ABOVE, BUT NOT MORE THAN 20 IN. ABOVE THE COUNTERTOP OR WORK SURFACE. RECEPTACLE OUTLET ASSEMBLIES LISTED FOR USE IN COUNTERTOPS OR WORK SURFACES SHALL BE PERMITTED TO BE INSTALLED IN COUNTERTOPS OR WORK SURFACES. RECEPTACLE OUTLETS RENDERED NOT READILY ACCESSIBLE BY APPLIANCES FASTENED IN PLACE, APPLIANCE GARAGES, SINKS, OR RANGE TOPS AS COVERED IN C.E.C. 210.52(C)(1), EXCEPTION, OR APPLIANCES OCCUPYING DEDICATED SPACE SHALL NOT BE CONSIDERED AS THESE REQUIRED OUTLETS. C.E.C. 210.52(C)(5)
 - AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED IN BATHROOMS WITHIN 3 FT OF THE OUTSIDE EDGE OF EACH BASIN. THE RECEPTACLE OUTLET SHALL BE LOCATED ON A WALL OR PARTITION THAT IS ADJACENT TO THE BASIN OR BASIN COUNTERTOP, OR INSTALLED ON THE SIDE OR FACE OF THE BASIN CABINET. IN NO CASE SHALL THE RECEPTACLE BE LOCATED MORE THAN 12 IN. BELOW THE TOP OF THE BASIN OR BASIN COUNTERTOP. RECEPTACLES LISTED FOR USE IN COUNTERTOPS SHALL BE PERMITTED TO BE INSTALLED IN THE COUNTERTOP. AT LEAST ONE 120 VOLT 20-AMPERE BRANCH CIRCUIT SHALL BE PROVIDED FOR THESE RECEPTACLES. C.E.C. 210.11(C)(3) AND 210.52(D)
 - BALCONIES, DECKS, AND PORCHES THAT ARE ATTACHED TO THE DWELLING UNIT AND ARE ACCESSIBLE FROM INSIDE THE DWELLING UNIT SHALL HAVE AT LEAST ONE RECEPTACLE OUTLET ACCESSIBLE FROM THE BALCONY, DECK, OR PORCH. THE RECEPTACLE OUTLET SHALL NOT BE LOCATED MORE THAN 6 1/2 FT. ABOVE THE BALCONY, DECK, OR PORCH WALKING SURFACE. C.E.C. 210.52 (E)(3)
 - RECEPTACLE OUTLETS INSTALLED IN DAMP OR WET CONDITIONS SHALL MEET THE REQUIREMENTS OF C.E.C. 406.9
 - A SWITCHED ELECTRICAL OUTLET INSTALLED 18" ABOVE THE FLOOR SHALL BE PROVIDED FOR THE GARBAGE DISPOSAL.
 - WIRING SHALL BE PROVIDED FOR RANGE, HOOD, LIGHT AND FAN AT 72" ABOVE FLOOR WHERE REQUIRED.
 - A 110-VOLT RECEPTACLE OUTLET SHALL BE PROVIDED FOR THE WATER HEATER AND ANY HEATING EQUIPMENT.
 - PROVIDE PANEL SPACE FOR FUTURE 40 AMP DEDICATED CIRCUIT AND 1" RACEWAY MINIMUM TO BOX FOR FUTURE EV CHARGING STATION.

LIGHTING

- ALL LUMINAIRES SHALL BE HIGH EFFICACY LIGHTING AS DEFINED PER TABLE 150.0-A
- IN ADDITION TO COMPLYING WITH 150.0(k)1A, LUMINAIRES RECESSED INTO CEILINGS SHALL MEET ALL OF THE FOLLOWING REQUIREMENTS: A. BE LISTED, AS DEFINED IN SECTION 100.1, FOR ZERO CLEARANCE INSULATION CONTACT (IC) BY UNDERWRITERS LABORATORIES OR OTHER NATIONALLY RECOGNIZED TESTING/RATING LABORATORIES; AND B. HAVE A LABEL THAT CERTIFIES THAT THE LUMINAIRE IS AIRTIGHT WITH AIR LEAKAGE LESS THAN 2.0 CFM AT 75 PASCALS WHEN TESTED IN ACCORDANCE WITH ASTM E283; AN EXHAUST FAN HOUSING SHALL NOT BE REQUIRED TO BE CERTIFIED AIRTIGHT; AND C. BE SEALED WITH A GASKET OR CAULK BETWEEN THE LUMINAIRE HOUSING AND CEILING, AND HAVE ALL AIR LEAK PATHS BETWEEN CONDITIONED AND UNCONDITIONED SPACES SEALED WITH A GASKET OR CAULK; AND D. FOR LUMINAIRES WITH HARDWIRED BALLASTS OR DRIVERS, ALLOW BALLAST MAINTENANCE AND REPLACEMENT TO BE READILY ACCESSIBLE TO BUILDING OCCUPANTS FROM BELOW THE CEILING WITHOUT REQUIRING THE CUTTING OF HOLES IN THE CEILING; AND E. SHALL NOT CONTAIN SCREW BASED SOCKETS. C.E.C. 150.0 (k) 1 C
- SCREW BASED LUMINAIRES SHALL CONTAIN LAMPS THAT COMPLY WITH REFERENCE JOINT APPENDIX JA8. C.E.C. 150.0 (k) 1 G
- EXHAUST FANS SHALL BE CONTROLLED SEPARATELY FROM THE LIGHTING SYSTEM, EXCEPT FOR AN EXHAUST FAN WITH AN INTEGRAL LIGHTING MAY BE ON THE SAME CONTROL AS THE FAN PROVIDED THE LIGHTING CAN BE TRUNED OFF IN ACCORDANCE WITH THE APPLICABLE PROVISIONS IN SECTION 150.0 (k)2 WHILE ALLOWING THE FAN TO CONTINUE TO OPERATE. C.E.C. 150 (k) 2 B
- IN BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS, AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES SHALL BE CONTROLLED BY AN OCCUPANT OR VACANCY SENSOR PROVIDING AUTOMATIC OFF FUNCTIONALITY. IF AN OCCUPANT SENSOR IS INSTALLED, IT SHALL BE INITIALLY CONFIGURED TO MAUL-ON OPERATION USING THE MANUAL CONTROL REQUIRED UNDER SECTION 10.0 (k)2C. C.E.C. 150 (k) 2 I
- DIMMERS OR VACANCY SENSORS SHALL CONTROL ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH REFERENCED JOINT APPENDIX JA8 EXCEPT LUMINAIRES IN CLOSETS LESS THAN 70 SQUARE FEET AND LIGHTS IN HALLWAYS. C.E.C. 150 (k) 2 J
- CLOSET LIGHTING SHALL BE OF A TYPE PERMITTED BY C.E.C. 410.16 AND SHALL BE LOCATED SO AS TO COMPLY WITH THE REQUIREMENTS OF THIS SECTION.
- LUMINAIRES INSTALLED NEAR COMBUSTIBLES SHALL MEET THE REQUIREMENTS OF C.E.C. 410.11
- LUMINAIRES INSTALLED IN WET OR DAMP LOCATIONS SHALL MEET THE REQUIREMENTS OF C.E.C. 410.10 (A)
- IN ADDITION TO MEETING THE REQUIREMENTS OF C.E.C. 150.0(k)1A, LUMINAIRES PROVIDING RESIDENTIAL OUTDOOR LIGHTING FOR THIS PROJECT SHALL MEET THE FOLLOWING REQUIREMENTS, AS APPLICABLE: FOR SINGLE-FAMILY RESIDENTIAL BUILDINGS, OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A RESIDENTIAL BUILDING OR TO OTHER BUILDINGS ON THE SAME LOT SHALL BE CONTROLLED BY A MANUAL ON/OFF SWITCH THAT DOES NOT OVERRIDE TO ON THE AUTOMATIC ACTIONS OF THE REQUIRED PHOTOCELL AND MOTION SENSOR UNLESS THE OVERRIDE AUTOMATICALLY REACTIVATES THE MOTION SENSOR WITHIN 6 HOURS. ALL EXTERIOR LIGHTS DESCRIBED ABOVE WILL BE CONTROLLED BY A PHOTOCELL AND MOTION SENSOR OR BY OTHER MEANS APPROVED IN C.E.C. 150 (k) 3
- LUMINAIRES AND LAMP HOLDERS SHALL BE SECURELY SUPPORTED. A LUMINAIRE THAT WEIGHS MORE THAN 6 LB OR EXCEEDS 16 IN. IN ANY DIMENSION SHALL NOT BE SUPPORTED BY THE SCREW SHELL OF A LAMP HOLDER. C.E.C. 410.30 (A)

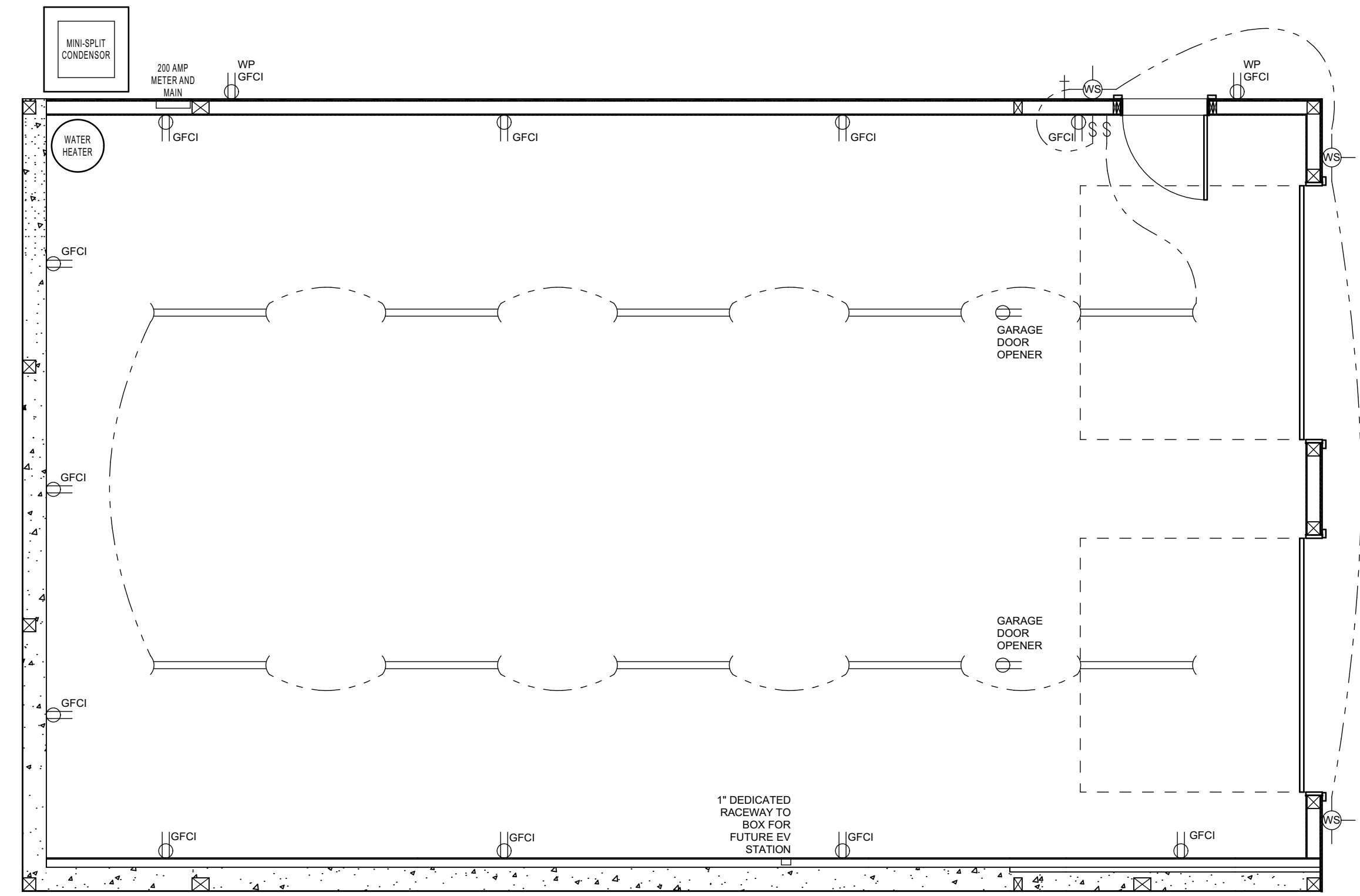
SMOKE ALARMS

- SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217. COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND UL 2034. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE C.E.C. AND NFPA 72. SYSTEMS AND COMPONENTS SHALL BE CALIFORNIA STATE FIRE MARSHAL LISTED AND APPROVED IN ACCORDANCE WITH CALIFORNIA CODE OF REGULATIONS, TITLE 19, DIVISION 1 FOR THE PURPOSE FOR WHICH THEY ARE INSTALLED. C.R.C. 314.1
- WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING OR SLEEPING UNIT, THE SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. THE ALARM SHALL BE CLEARLY AUDIBLE IN ALL BEDROOMS OVER BACKGROUND NOISE LEVELS WITH ALL INTERVENING DOORS CLOSED. INTERCONNECTION IS NOT REQUIRED IN AREAS WHERE REPAIRS OR ALTERATIONS ARE NOT REQUIRED TO BE INTERCONNECTED WHERE ALTERATIONS OR REPAIRS DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE, UNLESS THERE IS AN ATTIC, CRAWL SPACE OR BASEMENT AVAILABLE WHICH COULD PROVIDE ACCESS FOR INTERCONNECTION WITHOUT THE REMOVAL OF INTERIOR FINISHES. SMOKE ALARMS ARE NOT REQUIRED TO BE INTERCONNECTED WHERE REPAIRS OR ALTERATIONS ARE LIMITED TO THE EXTERIOR SURFACES OF DWELLINGS, SUCH AS THE REPLACEMENT OF ROOFING OR SIDING, OR THE ADDITION OR REPLACEMENT OF WINDOWS OR DOORS, OR THE ADDITION OF A PORCH OR DECK. SMOKE ALARMS ARE NOT REQUIRED TO BE INTERCONNECTED WHEN WORK IS LIMITED TO THE INSTALLATION, ALTERATION OR REPAIRS OF PLUMBING OR MECHANICAL SYSTEMS OR THE INSTALLATION, ALTERATION OR REPAIR OF ELECTRICAL SYSTEMS WHICH DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE. R. 314.6

- SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE ALARMS WITH INTEGRAL STROBES THAT ARE NOT EQUIPPED WITH BATTERY BACKUP SHALL BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM. SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION. SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED IN EXISTING BUILDINGS WHERE NO CONSTRUCTION IS TAKING PLACE. SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED IN BUILDINGS THAT ARE NOT SERVED FROM A COMMERCIAL POWER SOURCE. SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED IN EXISTING AREAS OF BUILDINGS UNDERGOING ALTERATIONS OR REPAIRS THAT DO NOT RESULT IN THE REMOVAL OF INTERIOR WALLS OR CEILING FINISHES EXPOSING THE STRUCTURE, UNLESS THERE IS AN ATTIC, CRAWL SPACE OR BASEMENT AVAILABLE WHICH COULD PROVIDE ACCESS FOR BUILDING WIRING WITHOUT THE REMOVAL OF INTERIOR FINISHES. SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED WHERE REPAIRS OR ALTERATIONS ARE LIMITED TO THE EXTERIOR SURFACES OF DWELLINGS, SUCH AS THE REPLACEMENT OF ROOFING OR SIDING, OR THE ADDITION OR REPLACEMENT OF WINDOWS OR DOORS, OR THE ADDITION OF A PORCH OR DECK. SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED WHEN WORK IS LIMITED TO THE INSTALLATION, ALTERATION OR REPAIRS OF PLUMBING OR MECHANICAL SYSTEMS OR THE INSTALLATION, ALTERATION OR REPAIR OF ELECTRICAL SYSTEMS WHICH DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE. R. 314.4

CARBON MONOXIDE ALARMS

- CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 2034. COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND UL 2034. CARBON MONOXIDE DETECTORS SHALL BE LISTED AS COMPLYING WITH THE REQUIREMENTS OF NFPA 720 AND UL 2075. COMBINATION SMOKE DETECTORS AND CARBON MONOXIDE DETECTORS SHALL COMPLY WITH UL 2075 AND UL 268. CARBON MONOXIDE ALARMS AND CARBON MONOXIDE DETECTORS AS WELL AS COMBINATION ALARMS OR DETECTORS MAY BE USED IN LIEU OF ONE ANOTHER. C.R.C. 315
- CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. CARBON MONOXIDE ALARMS SHALL BE PERMITTED TO BE BATTERY OPERATED WHERE INSTALLED IN BUILDINGS WITHOUT COMMERCIAL POWER. CARBON MONOXIDE ALARMS INSTALLED IN ACCORDANCE WITH SECTION R315.2.2 SHALL BE PERMITTED TO BE BATTERY POWERED. CARBON MONOXIDE ALARMS IN GROUP R OCCUPANCIES SHALL BE PERMITTED TO RECEIVE THEIR PRIMARY POWER FROM OTHER POWER SOURCES RECOGNIZED FOR USE BY NFPA 720. CARBON MONOXIDE ALARMS IN GROUP R OCCUPANCIES SHALL BE PERMITTED TO BE BATTERY-POWERED OR PLUG-IN WITH BATTERY BACKUP IN EXISTING BUILDINGS BUILT PRIOR TO JANUARY 1, 2011, UNDER ANY OF THE FOLLOWING CONDITIONS: NO CONSTRUCTION IS TAKING PLACE. REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL AND CEILING FINISHES EXPOSING THE STRUCTURE IN AREAS/SPACES WHERE CARBON MONOXIDE ALARMS ARE REQUIRED. REPAIRS OR ALTERATIONS ARE LIMITED TO THE EXTERIOR SURFACES OF DWELLINGS, SUCH AS THE REPLACEMENT OF ROOFING OR SIDING, OR THE ADDITION OR REPLACEMENT OF WINDOWS OR DOORS, OR THE ADDITION OF A PORCH OR DECK. WORK IS LIMITED TO THE INSTALLATION, ALTERATION OR REPAIR OF PLUMBING, MECHANICAL OR ELECTRICAL SYSTEMS, WHICH DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE IN AREAS/SPACES WHERE CARBON MONOXIDE ALARMS ARE REQUIRED. C.R.C. 315.5
- WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN A DWELLING UNIT OR WITHIN A SLEEPING UNIT IN GROUP R OCCUPANCIES, THE ALARMS SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. INTERCONNECTION IS NOT REQUIRED IN EXISTING BUILDINGS BUILT PRIOR TO JANUARY 1, 2011, UNDER ANY OF THE FOLLOWING CONDITIONS: PHYSICAL INTERCONNECTION IS NOT REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM. NO CONSTRUCTION IS TAKING PLACE. REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL AND CEILING FINISHES EXPOSING THE STRUCTURE IN AREAS/SPACES WHERE CARBON MONOXIDE ALARMS ARE REQUIRED. REPAIRS OR ALTERATIONS ARE LIMITED TO THE EXTERIOR SURFACES OF DWELLINGS, SUCH AS THE REPLACEMENT OF ROOFING OR SIDING, OR THE ADDITION OR REPLACEMENT OF WINDOWS OR DOORS, OR THE ADDITION OF A PORCH OR DECK. WORK IS LIMITED TO THE INSTALLATION, ALTERATION OR REPAIR OF PLUMBING, MECHANICAL, OR ELECTRICAL SYSTEMS, WHICH DO NOT RESULT IN THE REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE IN AREAS/SPACES WHERE CARBON MONOXIDE ALARMS ARE REQUIRED. C.R.C. 315.7



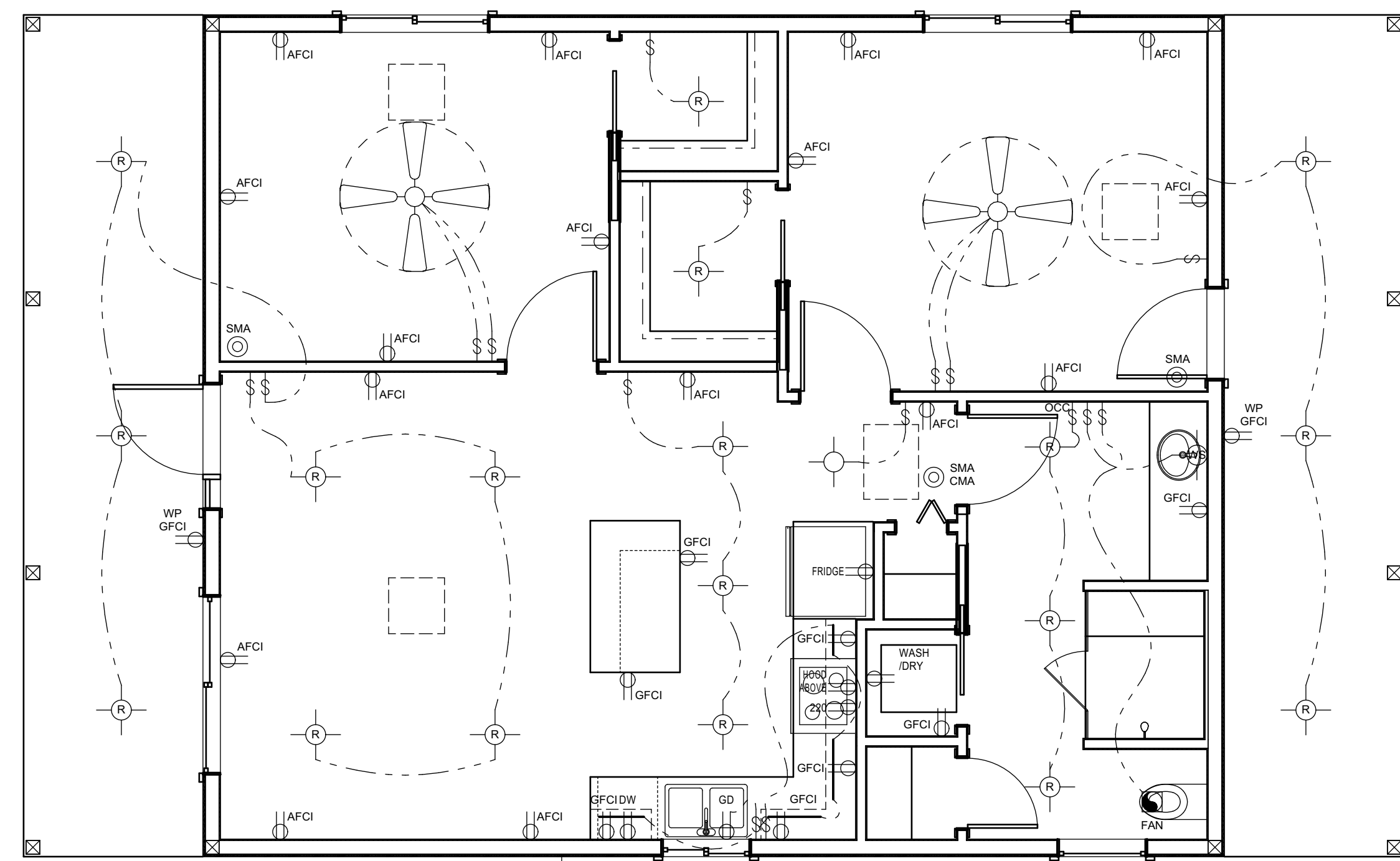
1 GARAGE ELECTRICAL PLAN

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

NOTE:
AN AUTOMATIC GARAGE DOOR OPENER THAT IS INSTALLED IN A RESIDENCE SHALL HAVE A BATTERY BACKUP FUNCTION THAT IS DESIGNED TO OPERATE WHEN ACTIVATED BECAUSE OF AN ELECTRICAL OUTAGE. SENATE BILL 969

ELECTRICAL LEGEND

SWITCH	↔
DIMMER	DM
MANUAL ON OCCUPANT SENSOR	occ
MANUAL ON/MOTION SENSOR/PHOTO SENSOR FOR OUTDOOR LIGHTING	PS
3 WAY SWITCH	3
TAMPER RESISTANT DUPLEX RECEPTACLE	⊖
ARC FAULT CIRCUIT INTERRUPTER	AFCI
GROUND FAULT CIRCUIT INTERRUPTER	GFCI
GROUND FAULT CIRCUIT INTERRUPTER WITH ALL WEATHER USE COVER PER C.E.C.406.8	WP GFCI
220 OUTLET FOR RANGE	220
OUTLET FOR RANGE HOOD EXHAUST FAN	HOOD
OUTLET FOR DISHWASHER	DW
SWITCHED OUTLET FOR GARBAGE DISPOSAL	GD
OUTLET FOR REFRIGERATOR	FRIDGE
OUTLET FOR STACKED OR ALL IN ONE WASHER/DRYER	WASHDRY
GENERAL LIGHTING	⊙
RECESSED LIGHTING	⊙
WALL SCONCE	WS
UNDERCABINET LIGHTING	—
LED SHOP LIGHT	⊖
SMOKE ALARM/CARBON MONOXIDE ALARM COMBINATION	⊙ SMA CMA
SMOKE ALARM ONLY	⊙ SMA
EXHAUST FAN	FAN
CEILING FAN AND LIGHT COMBINATION	⊙



2 DWELLING ELECTRICAL PLAN

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

CERTIFICATE OF COMPLIANCE

Project Name: Harper ADU Calculation Date/Time: 2022-05-21T15:11:20-07:00 CF1R-PRF-01E (Page 5 of 10)

Table with 14 columns (01-14) for Fenestration/Glazing. Headers include Name, Type, Surface, Orientation, Azimuth, Width, Height, Mult., Area, U-factor, SHGC, SHGC Source, and Exterior Shading.

Table with 4 columns (01-04) for Opaque Doors. Headers include Name, Side of Building, Area (ft²), and U-factor.

Table with 14 columns (01-14) for Overhangs and Fins. Headers include Window, Depth, Dist Up, Left Extent, Right Extent, Flap Ht., Depth, Top Up, Dist L, Bot Up, Depth, Top Up, Dist R, and Bot Up.

Registration Number: 222-P0101008044-000-000-0000000-0000 Registration Date/Time: 2022-05-21 15:22:32 HERS Provider: CaCERTS inc.

CERTIFICATE OF COMPLIANCE

Project Name: Harper ADU Calculation Date/Time: 2022-05-21T15:11:20-07:00 CF1R-PRF-01E (Page 6 of 10)

Table with 8 columns (01-08) for Slab Floors. Headers include Name, Zone, Area (ft²), Perimeter (ft), Edge Insul. R-value and Depth, Edge Insul. R-value and Depth, Carpeted Fraction, and Heated.

Table with 8 columns (01-08) for Opaque Surface Constructions. Headers include Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior/Exterior Continuous R-value, U-factor, and Assembly Layers.

Table with 8 columns (01-08) for Opaque Surface Constructions. Headers include Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior/Exterior Continuous R-value, U-factor, and Assembly Layers.

Registration Number: 222-P0101008044-000-000-0000000-0000 Registration Date/Time: 2022-05-21 15:22:32 HERS Provider: CaCERTS inc.

CERTIFICATE OF COMPLIANCE

Project Name: Harper ADU Calculation Date/Time: 2022-05-21T15:11:20-07:00 CF1R-PRF-01E (Page 7 of 10)

Table with 8 columns (01-08) for Opaque Surface Constructions. Headers include Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior/Exterior Continuous R-value, U-factor, and Assembly Layers.

Table with 4 columns (01-04) for Building Envelope - HERS Verification. Headers include Quality Insulation Installation (QII), High R-value Spray Foam Insulation, Building Envelope Air Leakage, and CFMS0.

Table with 7 columns (01-07) for Water Heating Systems. Headers include Name, System Type, Distribution Type, Water Heater Name (H), Solar Heating System, Compact Distribution, and HERS Verification.

Table with 12 columns (01-12) for Water Heaters. Headers include Name, Heating Element Type, Tank Type, # of Units, Tank Vol. (gal), Energy Factor or Efficiency, Input Rating or Pilot, Tank Insulation R-value (Int/Ext), Standby Loss or Recovery Eff, 1st Hr. Rating or Flow Rate, NEEA Heat Pump Brand or Model, and Tank Location or Ambient Condition.

Registration Number: 222-P0101008044-000-000-0000000-0000 Registration Date/Time: 2022-05-21 15:22:32 HERS Provider: CaCERTS inc.

CERTIFICATE OF COMPLIANCE

Project Name: Harper ADU Calculation Date/Time: 2022-05-21T15:11:20-07:00 CF1R-PRF-01E (Page 8 of 10)

Table with 8 columns (01-08) for Water Heating - HERS Verification. Headers include Name, Pipe Insulation, Parallel Piping, Compact Distribution, Compact Distribution Type, Recirculation Control, Central DHW Distribution, and Shower Drain Water Heat Recovery.

Table with 11 columns (01-11) for Space Conditioning Systems. Headers include Name, System Type, Heating Unit Name, Cooling Unit Name, Fan Name, Distribution Name, Required Thermostat Type, Status, Verified Existing Condition, Heating Equipment Count, and Cooling Equipment Count.

Table with 11 columns (01-11) for HVAC - Heat Pumps. Headers include Name, System Type, Number of Units, Heating HSPF/COP, Heating Cap 47, Cooling Cap 17, SEER, EER/CEER, Zonally Controlled, Compressor Type, and HERS Verification.

Table with 9 columns (01-09) for HVAC Heat Pumps - HERS Verification. Headers include Name, Verified Airflow, Airflow Target, Verified EER, Verified SEER, Verified Refrigerant Charge, Verified HSPF, Verified Heating Cap 47, and Verified Heating Cap 17.

Registration Number: 222-P0101008044-000-000-0000000-0000 Registration Date/Time: 2022-05-21 15:22:32 HERS Provider: CaCERTS inc.

CERTIFICATE OF COMPLIANCE

Project Name: Harper ADU Calculation Date/Time: 2022-05-21T15:11:20-07:00 CF1R-PRF-01E (Page 9 of 10)

Table with 10 columns (01-10) for Variable Capacity Heat Pump Compliance Option - HERS Verification. Headers include 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 SC3.3.4.1, Certified non-continuous Fan, and Indoor Fan not Running Continuously.

Table with 7 columns (01-07) for IAQ (Indoor Air Quality) Fans. Headers include Dwelling Unit, IAQ CFM, IAQ Watts/CFM, IAQ Fan Type, IAQ Recovery Effectiveness - SRE, IAQ Recovery Effectiveness - ASRE, and HERS Verification.

Registration Number: 222-P0101008044-000-000-0000000-0000 Registration Date/Time: 2022-05-21 15:22:32 HERS Provider: CaCERTS inc.

CERTIFICATE OF COMPLIANCE

Project Name: Harper ADU Calculation Date/Time: 2022-05-21T15:11:20-07:00 CF1R-PRF-01E (Page 10 of 10)

Documentation Author's Declaration Statement. I, I certify that this Certificate of Compliance documentation is accurate and complete.

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

Registration Number: 222-P0101008044-000-000-0000000-0000 Registration Date/Time: 2022-05-21 15:22:32 HERS Provider: CaCERTS inc.



SCOPE OF WORK

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 1219 FULTON AVE, SACRAMENTO, CA 95825, USA.
 THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT.
 THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES.

EQUIPMENT SUMMARY

9 Q CELLS Q.PEAK DUO BLK ML-G10+ (400W) MODULES
1 SOLAREEDGE SE3800H-US [240V] INVERTER
9 SOLAREEDGE POWER OPTIMIZER s440

GENERAL NOTES

- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
- ARCHITECT HAS NOT BEEN RETAINED TO SUPERVISE ANY CONSTRUCTION OR INSTALLATION OF ANY EQUIPMENT AT SITE.
- CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAINS ALL PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION.
- CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
- DAMAGE CAUSED TO THE EXISTING STRUCTURE, PIPES, DUCTS, WINDOWS, WALL, FLOORS, ETC. SHALL BE REPAIRED TO THE ORIGINAL CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
- NO CHANGES ARE TO BE MADE WITHOUT THE CONSULTATION AND APPROVAL OF THE ARCHITECT.
- CONTRACTOR SHALL OBTAIN BULDING PERMIT. NO WORK TO START UNLESS BUILDING PERMIT IS PROPERLY DISPLAYED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ALL PERTINENT AGENCIES.
- IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.
- ALL EXPOSED PLUMBING, HVAC, ELECTRICAL DUCTWORK, PIPING AND CONDUITS ARE TO BE PAINTED BY GENERAL CONTRACTOR.
- THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL LAWS, REGULATIONS AND THE NATIONAL ELECTRIC CODE.
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS, APPROVALS, AFFIDAVITS, CERTIFICATIONS, ETC. AND PAY ALL FEES AS REQUIRED BY THE LOCAL AUTHORITIES.
- CONTRACTORS SHALL OBTAIN FIRE CERTIF. UPON COMPLETION OF WORK.

ELECTRICAL NOTES

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURERS INSTRUCTION.
- MODULE SUPPORT RAIL SHALL BE BONDED TO THE MODULE

GOVERNING CODES

2019 CALIFORNIA ELECTRICAL CODE.
 2019 CALIFORNIA RESIDENTIAL CODE.
 2019 CALIFORNIA FIRE CODE.
 2019 CALIFORNIA BUILDING CODE.
 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE.
 2019 CALIFORNIA ENERGY CODE.
 2019 CALIFORNIA PLUMBING CODE.
 2019 CALIFORNIA MECHANICAL CODE.

AHJ NAME : SACRAMENTO COUNTY

WIRING AND CONDUIT NOTES

- ALL CONDUIT SIZES AND TYPES SHALL BE LISTED FOR ITS PURPOSE AND APPROVAL FOR THE SITE APPLICATIONS
- ALL PV CABLES AND HOMERUN WIRES BE #10AWG *USE-2, PV WIRE, OR PROPRIETARY SOLAR CABLING SPECIFIED BY MFR, OR EQUIVALENT; ROUTED TO SOURCE CIRCUIT COMBINER BOXES AS REQUIRED
- ALL PV DC CONDUCTORS IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED ACCORDING TO AS PER LATEST NEC CODE.
- EXPOSED ROOF PV DC CONDUCTORS SHALL BE USE-2, 90°C RATED, WET AND UV RESISTANT, AND UL LISTED RATED FOR 600V, UV RATED SPIRAL WRAP SHALL BE USED TO PROTECT WIRE FROM SHARP EDGES
- PHASE AND NEUTRAL CONDUCTORS SHALL BE DUAL RATED THHN/THWN-2 INSULATED, 90°C RATED, WET AND UV RESISTANT, RATED FOR 1000V PER NEC 2017
- 4-WIRE DELTA CONNECTED SYSTEMS HAVE THE PHASE WITH THE HIGHER VOLTAGE TO GROUND MARKED ORANGE OR IDENTIFIED BY OTHER EFFECTIVE MEANS
- ALL SOURCE CIRCUITS SHALL HAVE INDIVIDUAL SOURCE CIRCUIT PROTECTION
- VOLTAGE DROP LIMITED TO 2%
- AC CONDUCTORS >4AWG COLOR CODED OR MARKED: PHASE A OR L1- BLACK, PHASE B OR L2- RED, PHASE C OR L3- BLUE, NEUTRAL- WHITE/GRAY

SYSTEM RATING

3.60 kWDC
 3.80 kWAC

PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL 1703 STANDARD.

SHEET INDEX

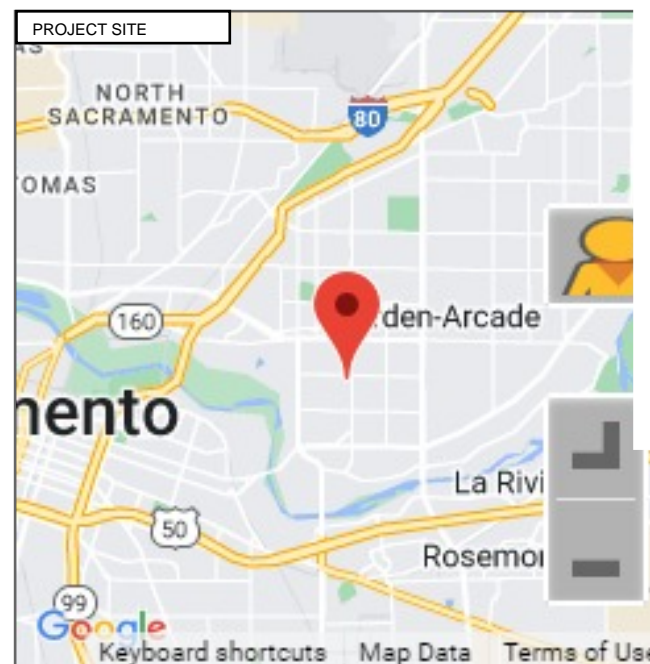
PV1	COVER PAGE
PV2	SITE PLAN
PV3	ROOF PLAN
PV4	STRING LAYOUT & BOM
PV5-PV6	ATTACHMENT DETAILS
PV7	ELECTRICAL LINE & CALCS.
PV8	SPECIFICATIONS & NOTES
PV9-PV10	SIGNAGE
PV11-PV15	EQUIPMENT SPECIFICATIONS

RME INNOVATIONS
 PH#: (916) 871-2992



HOUSE PHOTO

SCALE



VICINITY MAP

SCALE: NTS

SHEET NAME
COVER PAGE

SHEET SIZE
**ANSI B
 11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
 APPROVED
 BUILDING DIVISION

PV-1

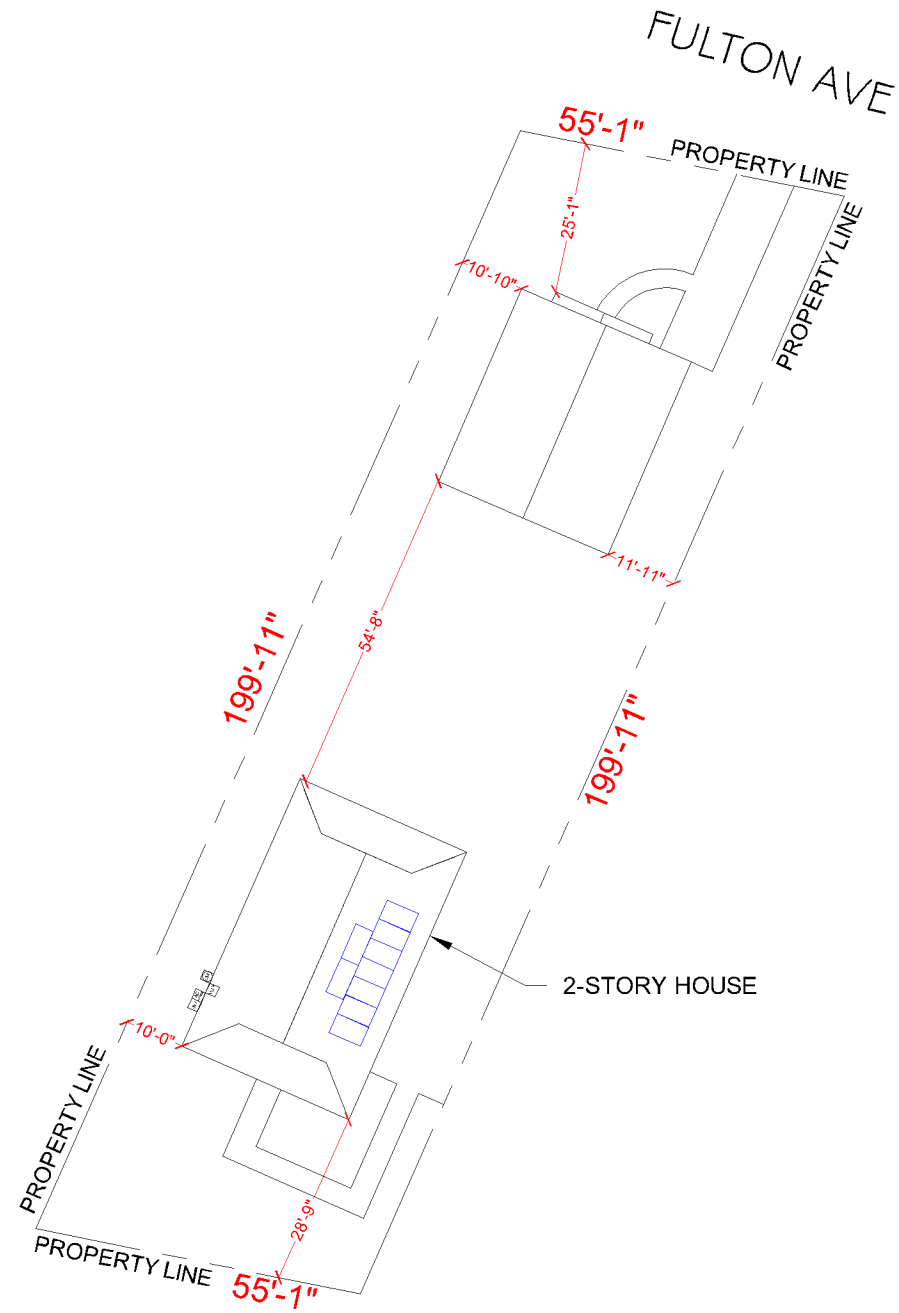
BY: John Millea DATE: 11-15-2022

SITE NOTES

- A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS AN UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
- THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION [NEC 110.26]

LEGEND

- JB (N) JUNCTION BOX
- UM (E) UTILITY METER
- MSP (E) MAIN SERVICE PANEL
- AC (N) NON FUSED AC DISCONNECT
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT
- INV SOLAREEDGE SE3800H-US [240V] INVERTER
- Q CELLS Q.PEAK DUO BLK ML-G10+ (400W) MODULES
- K2 CROSSRAIL 44-X
- TRENCH



SCALE: 1/32" = 1'-0"

SHEET NAME
SITE PLAN

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION **PV-2**

BY: John Millea DATE: 11-15-2022

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE7-16):	0 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE7-16):	93 MPH

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	9 MODULES
MODULE TYPE:	Q CELLS Q.PEAK DUO BLK ML-G10+ (400W)
MODULE WEIGHT:	48.5 LBS
MODULE DIMENSIONS:	74" X 41.1" = 21.12 SF
UNIT WEIGHT OF AREA:	2.3 PSF

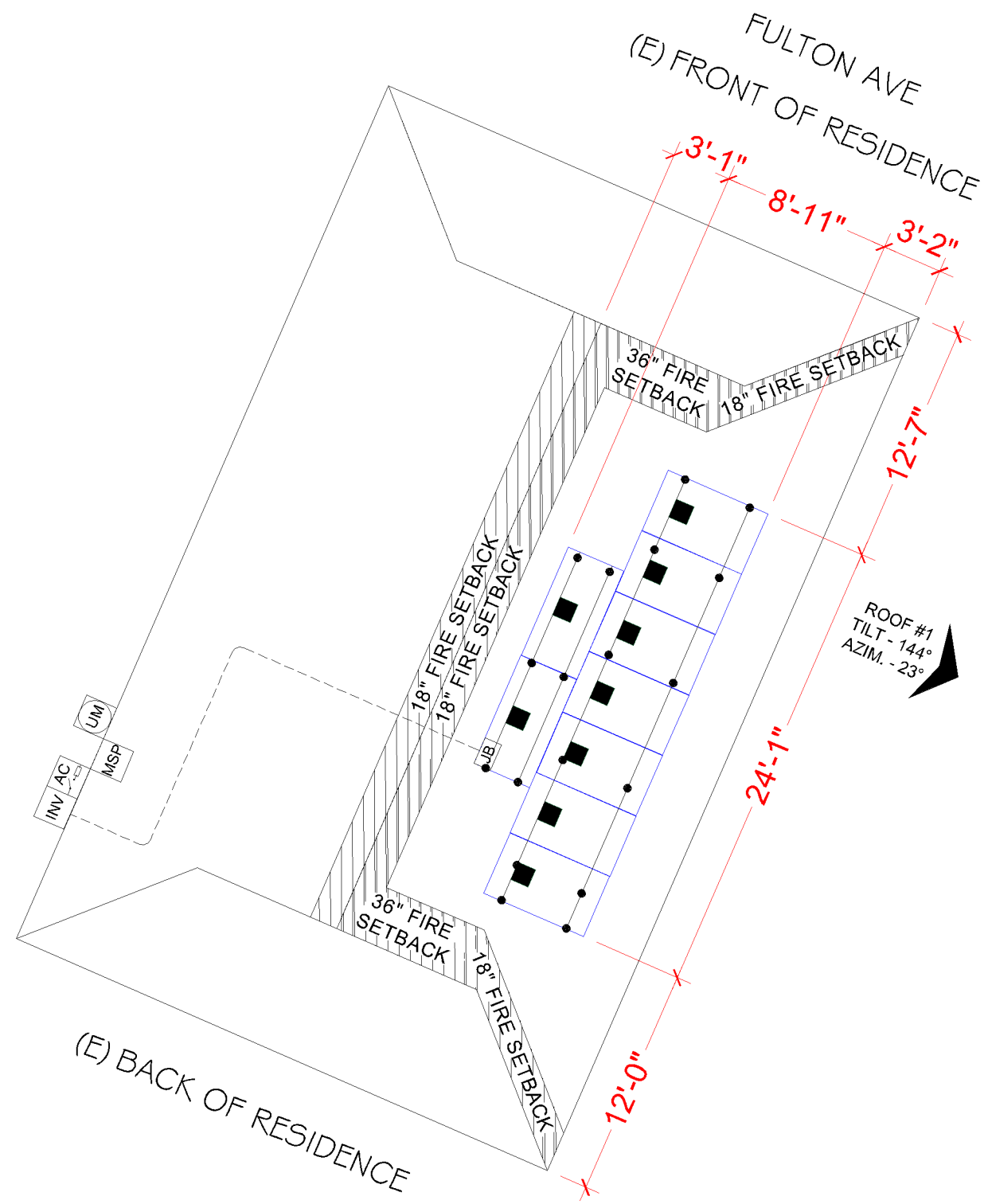
ROOF DESCRIPTION					
ROOF	ROOF TILT	AZIMUTH	RAFTER SIZE	RAFTER SPACING	ROOF MATERIAL
#1	33°	114°	2" x 6"	24" o.c.	COMP SHINGLE

ARRAY AREA & ROOF AREA CALC'S		
ROOF #	# OF MODULES	ARRAY AREA (Sq. Ft.)
#1	9	190.09
(TOTAL ARRAY AREA/TOTAL ROOF AREA) X 100%		
= (190.09/1361.08) X 100% = 13.97%		

LEGEND

- JB (N) JUNCTION BOX
- UM (E) UTILITY METER
- MSP (E) MAIN SERVICE PANEL
- AC (N) NON FUSED AC DISCONNECT
- VENT. ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT
- INV SOLAREEDGE SE3800H-US [240V] INVERTER
- Q CELLS Q.PEAK DUO BLK ML-G10+ (400W) MODULES
- K2 CROSSRAIL 44-X
- TRENCH

PANEL HEIGHT OFF ROOF	4"
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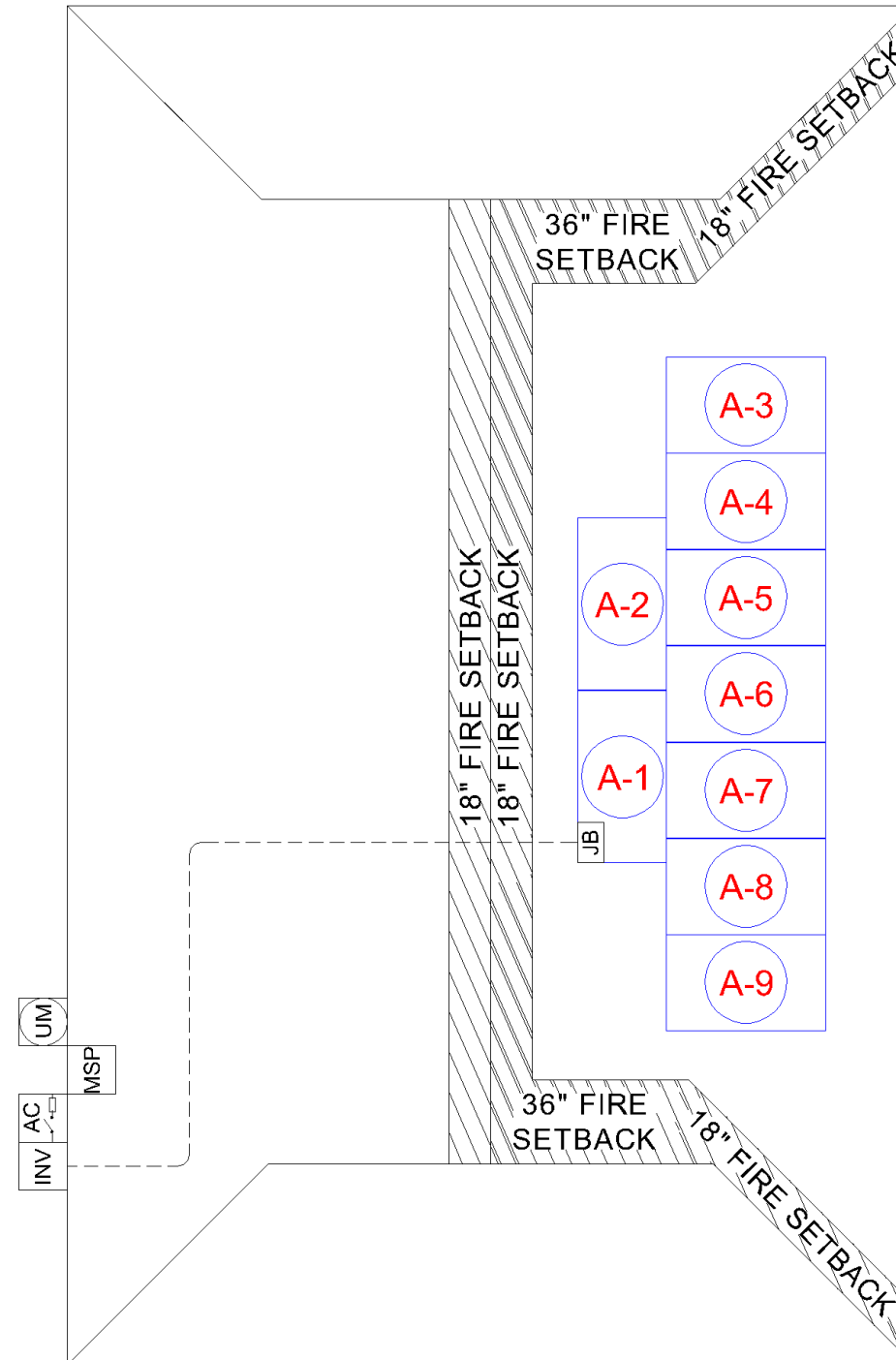


SCALE: 1/8" = 1'-0"

SHEET NAME ROOF PLAN
SHEET SIZE ANSI B 11" X 17"
SOLANO COUNTY RESOURCE MANAGEMENT APPROVED SHEET NUMBER PV-3
BY: <u>John Millea</u> DATE: <u>11-15-2022</u>

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	9	Q CELLS Q.PEAK DUO BLK ML-G10+ (400W)
INVERTER	1	SOLAREGE SE3800H-US [240V]
OPTIMIZER	9	SOLAREGE POWER OPTIMIZER S440
JUNCTION BOX	1	JUNCTION BOX, NEMA 3R, UL LISTED
NON FUSED AC DISCONNECT	1	30A NON FUSED AC DISCONNECT, 240V, NEMA 3R, UL LISTED (KNIFE SWITCH)
ATTACHMENT	18	SPLICE FOOT X
ATTACHMENT	18	K2 SOLAR SEAL BUTYL PAD
ATTACHMENT	36	M5 X 60 LAG SCREWS
ATTACHMENT	18	T BOLT & HEX NUT SET
RAILS	6	K2 CROSSRAIL 44-X
BONDED SPLICE	2	SPLICE KIT
CLAMPS	14	MID CLAMPS
CLAMP	8	END CLAMPS
GROUNDING LUG	2	GROUNDING LUG

FULTON AVE
(E) FRONT OF RESIDENCE



(E) BACK OF RESIDENCE



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

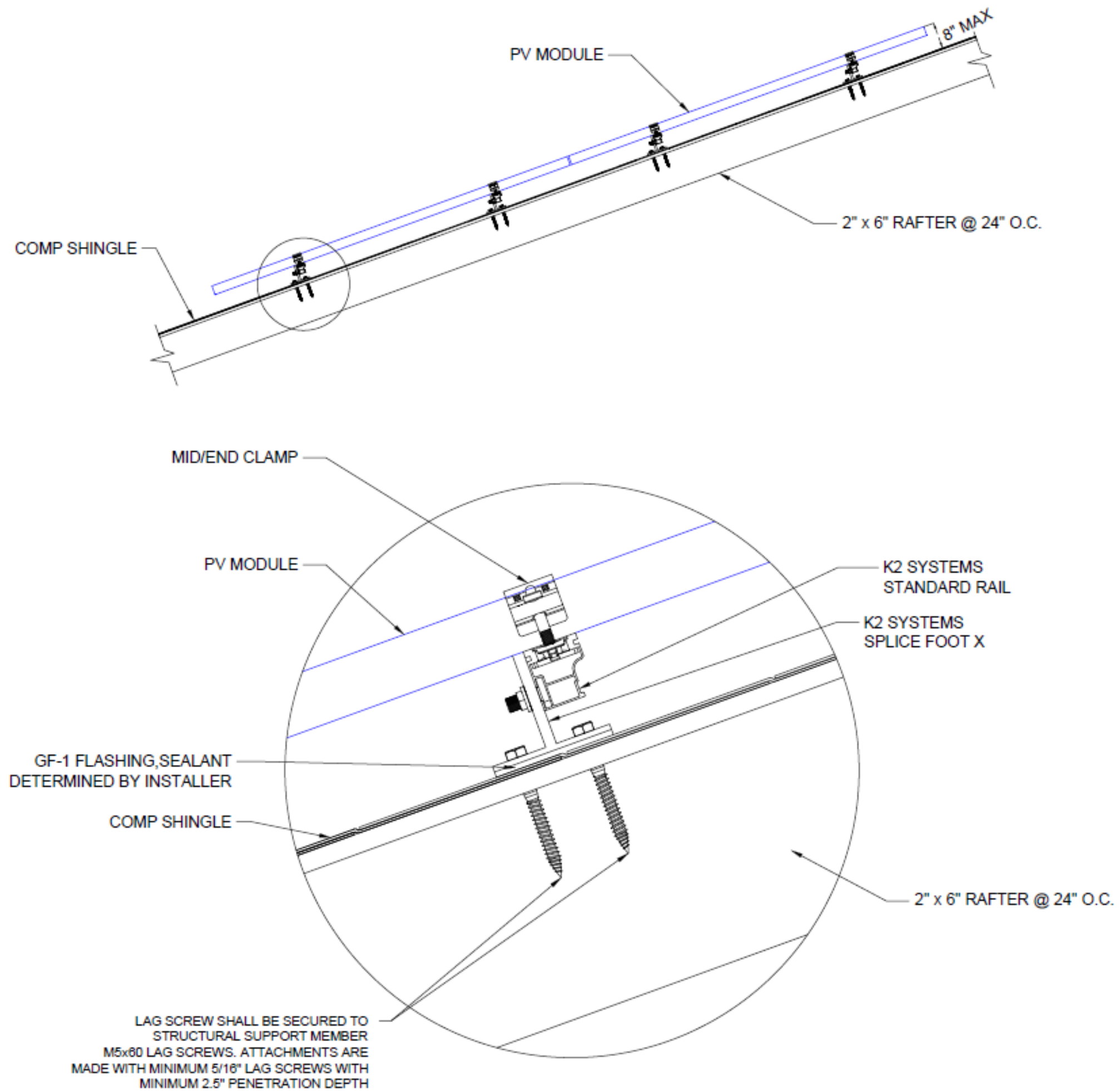
(A) - MODULE STRINGING

SHEET NAME
STRING LAYOUT & BOM

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION **PV-4**

BY: John Millea DATE: 11-15-2022



SHEET NAME
**ATTACHMENT
DETAILS**

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION **PV-5**

BY: John Millea DATE: 11-15-2022

NOTE:
PROPRIETARY GEOMETRIES
HAVE BEEN REMOVED.
GENERAL LENGTH, WIDTH,
AND HEIGHT GEOMETRIES
WERE NOT ALTERED.

CROSSRAIL

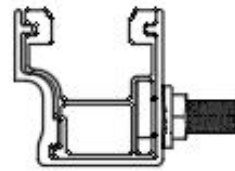
M10 BONDING T-BOLT

M10 HEX NUT

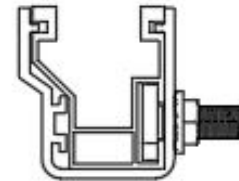
RAIL CONNECTOR

CR 80 RAIL
CONNECTOR
REQUIRES 4 T-BOLT:

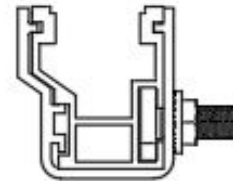
RAIL CONNECTOR ASSEMBLIES



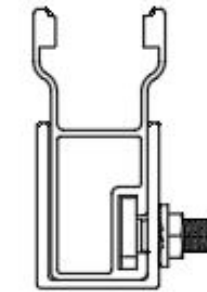
44-X



48-X



48-XL

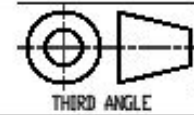


80

REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

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Everest Solar Systems, LLC.
a division of K2 Systems International
2835 La Mirada Dr Suite A
Vista, CA 92081
phone 760.301.5300



	Name	Date
Drawn	I. VIGGINS	07/27/2020
Checked	R. HAGEN	08/07/2020
Approved	I. VIGGINS	08/07/2020
Last Revision		

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CROSSRAIL RAIL
CONNECTOR ASSEMBLIES

Scale: 1:1	Revision: 00	Sheet 2 of 2
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SHEET NAME
ATTACHMENT
DETAILS

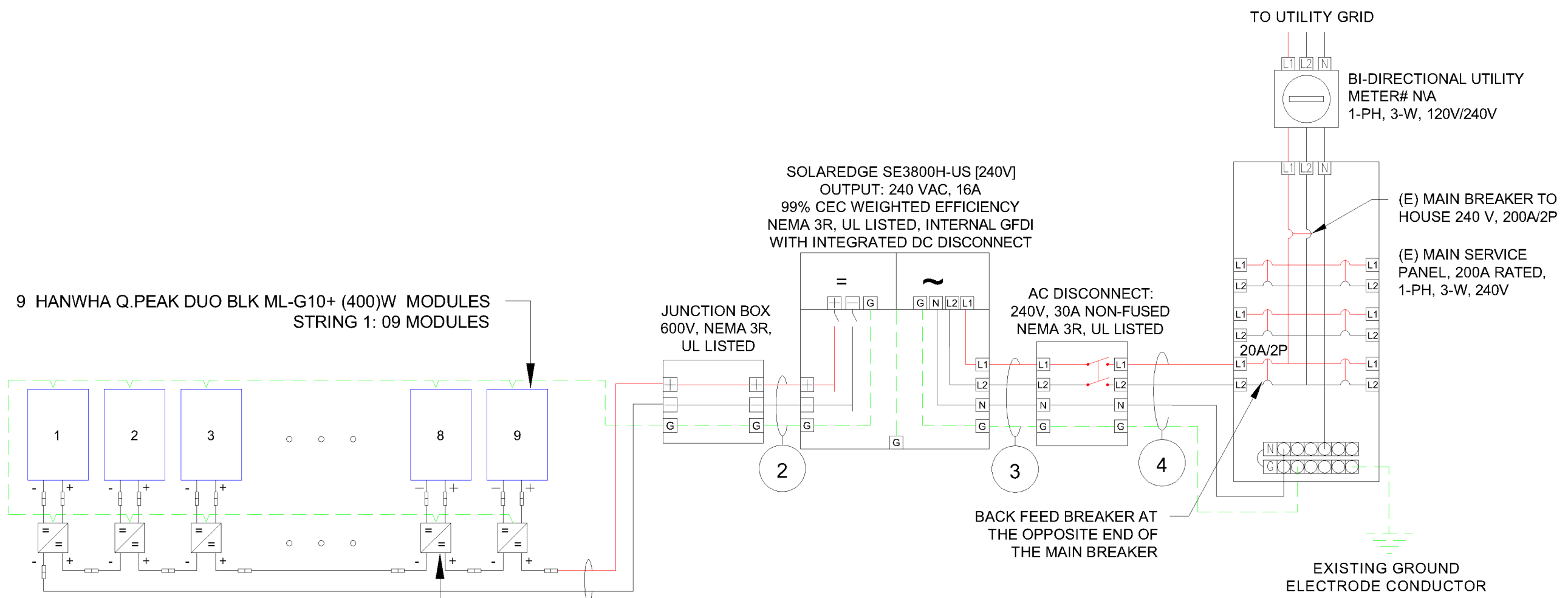
SHEET SIZE
ANSI B
11" X 17"

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER

BUILDING DIVISION PV-6

BY: John Millea DATE: 11-15-2022

ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CIRCUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOTAGE DROP
				8 AWG	BARE COPPER																		
1	1	ARRAY	JUNCTION BOX	10 AWG	PV WIRE	COPPER	OPEN AIR	1	2	N/A	N/A	8 AWG	BARE COPPER	0.71	(60°C)	N/A	15.00A	18.75A	40A	28.40A	90°C	36FT	0.28%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	2	14.26%	N/A	8 AWG	THWN-2 COPPER	0.91	(38°C)	1	15.00A	18.75A	40A	36.40A	90°C	50FT	0.39%
3	1	INVERTER	NON FUSED AC DISCONNECT	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	18.01%	N/A	8 AWG	THWN-2 COPPER	0.91	(38°C)	1	16.00A	20A	40A	36.40A	90°C	5FT	0.08%
4	1	NON FUSED AC DISCONNECT	MSP	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	18.01%	20A	8 AWG	THWN-2 COPPER	0.91	(38°C)	1	16.00A	20A	40A	36.40A	90°C	5FT	0.08%



SOLAREGE POWER OPTIMIZER S440 RATED
DC INPUT POWER - 440 WATTS
MAXIMUM INPUT VOLTAGE - 60 VDC
MPPT RANGE - 8 TO 60 VDC
MAXIMUM INPUT CURRENT - 14.5 ADC
MAXIMUM OUTPUT CURRENT - 15 ADC STRING
LIMITATIONS - 8 TO 25 OPTIMIZERS,
5700 WATTS STC PER STRING MAXIMUM

SYSTEM RATING	
3.60 kWDC	
3.80 kWAC	

INTERCONNECTION 120% RULE - NEC 705.12(B)(2)(3)(b)
UTILITY FEED + SOLAR BACKFEED 200A + 20A = 220A
BUSS RATING X 120% 200A x 120% = 240A

SERVICE INFO	
UTILITY PROVIDER:	PACIFIC GAS AND ELECTRIC
AHJ NAME:	SACRAMENTO COUNTY
MAIN SERVICE VOLTAGE:	240V
MAIN SERVICE PANEL:	200 A SOLANO COUNTY RESOURCE MANAGEMENT APPROVED
MAIN BREAKER RATING:	200 A
MAIN SERVICE LOCATION:	WEST
SERVICE FEED SOURCE:	OVERHEAD

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-7

DATE: 11-15-2022

BY: John Millea

SOLAR MODULE SPECIFICATIONS

MANUFACTURER / MODEL	Q CELLS Q.PEAK DUO BLK ML-G10+ (400W)
VMP	37.13 V
IMP	10.77 A
VOC	45.3 V
ISC	11.14 A
TEMP. COEFF. VOC	-0.27%/K
PTC RATING	376.55 W
MODULE DIMENSION	74"(L) x 41.1"(W)
PANEL WATTAGE	400 W

INVERTER SPECIFICATIONS

MANUFACTURER / MODEL	SOLAREEDGE SE3800H-US [240V]
NOMINAL AC POWER	3800 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	16 A

POWER OPTIMIZER (SOLAREEDGE s440)

MAXIMUM INPUT POWER	440 W
MAXIMUM INPUT VOLTAGE	60 VDC
MAXIMUM INPUT ISC	14.5 ADC
MAXIMUM OUTPUT CURRENT	15 ADC
WEIGHTED EFFICIENCY	98.6%

AMBIENT TEMPERATURE SPECS

RECORD LOW TEMP	-3°C
AMBIENT TEMP (HIGH TEMP 2%)	38°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	60°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.27%/K

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20

SHEET NAME
SPECIFICATIONS & NOTES

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION **PV-8**

BY: John Millea DATE: 11-15-2022

1

PHOTOVOLTAIC AC DISCONNECT
RATED AC OUTPUT CURRENT 16 AMPS
NOMINAL OPERATING AC VOLTAGE 240 VOLTS

LABEL LOCATION:
MAIN SERVICE PANEL/MAIN SERVICE DISCONNECT/AC DISCONNECT
PER CODE: CEC 690.13(B)

2

! WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION:
POINT OF INTERCONNECTION, MAIN SERVICE DISCONNECT, AC DISCONNECT, AC COMBINER, INVERTER
PER CODE: NEC 690.13(B)

3

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
EVERY 10' & ON CONDUIT BODIES WHEN EXPOSED
PER CODE: CEC 690.31(G)(D)(3)

4

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
INVERTER AT OR WITHIN 3' OF THE DC COMBINER SWITCH
PER CODE: CEC 690.56(C)(3)

5

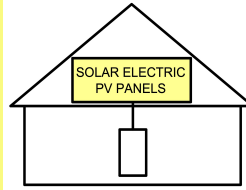
! CAUTION
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC

LABEL LOCATION:
MAIN SERVICE DISCONNECT/ AC DISCONNECT/ MAIN SERVICE PANEL/ REVENUE METER/ AC COMBINER
PER CODE: CEC 705.12(B)(3)

6

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE 'OFF' POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



LABEL LOCATION:
MAIN SERVICE DISCONNECT IF MSD IS OUTSIDE PLACE IT THERE / IF MSD IS INSIDE PLACE ON THE AC DISCONNECT
PER CODE: CEC 690.56(C)(1)(a)

7

MAXIMUM VOLTAGE: 480 VDC
MAXIMUM CIRCUIT CURRENT: 20.0 ADC
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC-CONVERTER(IF INSTALLED) 15 ADC

LABEL LOCATION:
INVERTER
PER CODE: CEC 690.53

8

PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH

LABEL LOCATION:
AC DISCONNECT
PER CODE: CEC 690.56(C)(3)

9

PV SOLAR BREAKER
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
POINT OF INTERCONNECTION OR MAIN SERVICE PANEL
PER CODE: CEC 705.12(B)(3)(2)

10

SERVICE DISCONNECT
SECTIONNEUR PRINCIPALE
SERVICIO DE DESCONEXION

LABEL LOCATION:
AC DISCONNECT
PER CODE: CEC 230.66

ADHESIVE FASTENED SIGNS

- THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED.
- WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNING AND MARKINGS SHOULD COMPLY WITH ANSI 2535.4 [NEC 690.21(B) COUNTY RESOURCE MANAGEMENT APPROVED SHEET NUMBER PV-9]
- ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [IFC 605.11.1.3]

SHEET NAME
SIGNAGE

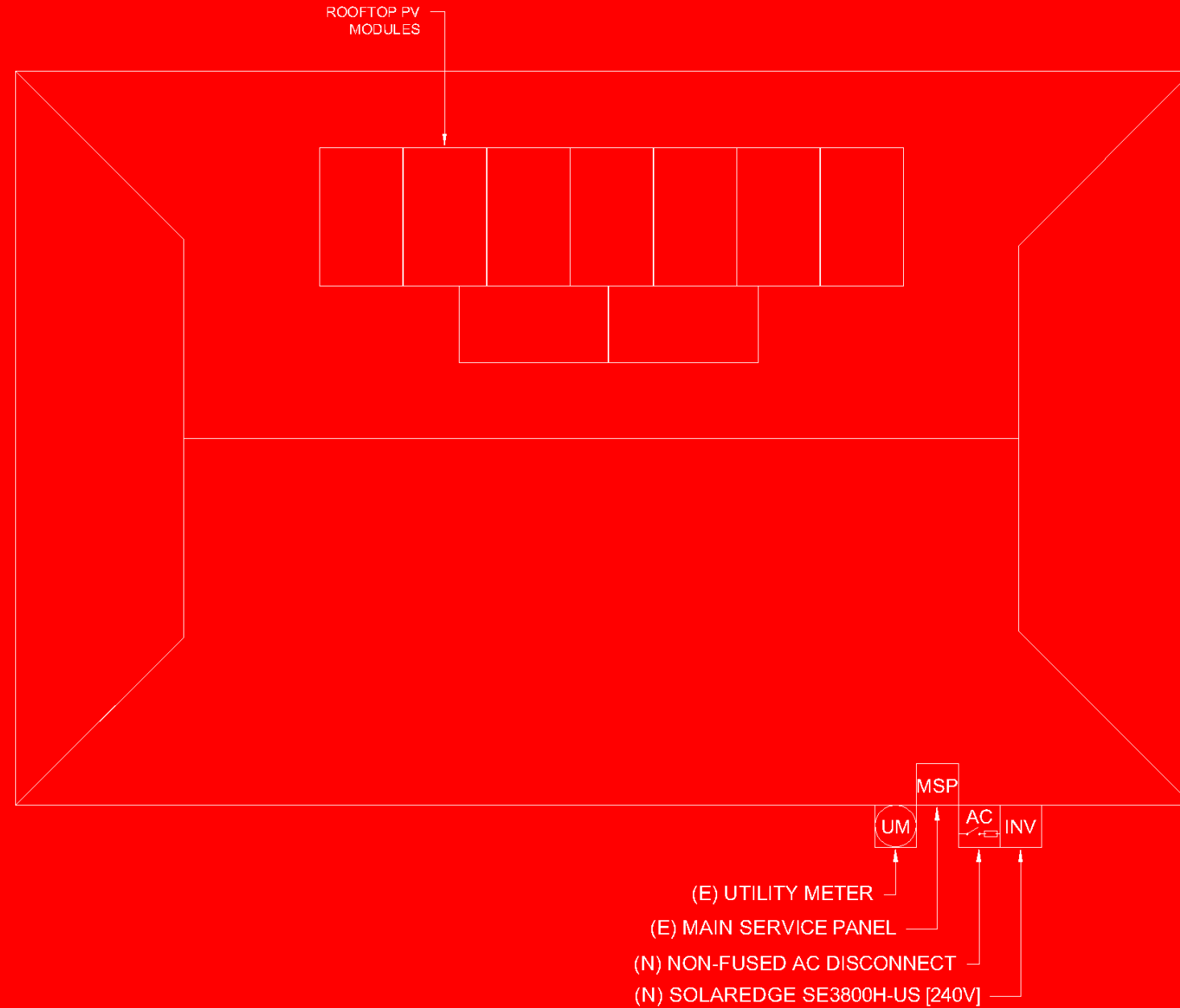
SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-9



CAUTION!

POWER TO THIS SERVICE IS ALSO SUPPLIED FROM THE FOLLOWING SOURCE WITH DISCONNECTS LOCATED AS SHOWN



LABEL LOCATION:
EACH SERVICE EQUIPMENT LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S)
FOR ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED
(PER CODE: NEC 705.10)

SHEET NAME
SIGNAGE

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION
PV-10

BY: John Millea DATE: 11-15-2022

powered by

Q.ANTUM DUO Z

Q.PEAK DUO BLK ML-G10+

385-405

ENDURING HIGH PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.



THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY

Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400Pa) and wind loads (4000Pa).

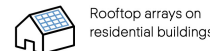


A RELIABLE INVESTMENT

Inclusive 25-year product warranty and 25-year linear performance warranty².

¹ APT test conditions according to IEC/TS 62804-1:2015, method A (~1500 V, 96h)
² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



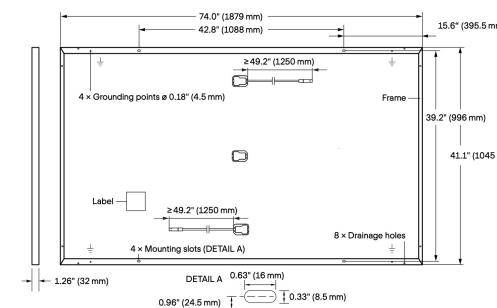
Rooftop arrays on residential buildings

Engineered in Germany



MECHANICAL SPECIFICATION

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68

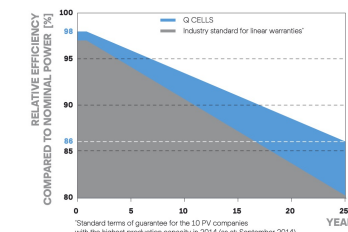


ELECTRICAL CHARACTERISTICS

POWER CLASS		385	390	395	400	405	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	385	390	395	400	405
	Short Circuit Current ¹	I _{SC} [A]	11.04	11.07	11.10	11.14	11.17
	Open Circuit Voltage ¹	V _{OC} [V]	45.19	45.23	45.27	45.30	45.34
	Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77	10.83
	Voltage at MPP	V _{MPP} [V]	36.36	36.62	36.88	37.13	37.39
	Efficiency ¹	η [%]	≥19.6	≥19.9	≥20.1	≥20.4	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	288.8	292.6	296.3	300.1	303.8
	Short Circuit Current	I _{SC} [A]	8.90	8.92	8.95	8.97	9.00
	Open Circuit Voltage	V _{OC} [V]	42.62	42.65	42.69	42.72	42.76
	Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51	8.57
	Voltage at MPP	V _{MPP} [V]	34.59	34.81	35.03	35.25	35.46

¹ Measurement tolerances P_{MPP} ± 3%; I_{SC}; V_{OC} ± 5% at STC: 1000 W/m², 25 ± 2°C, AM 1.5 according to IEC 60904-3 • *800 W/m², NMOT, spectrum AM 1.5

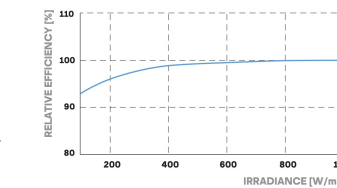
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000 W/m²)

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α [%/K]	+0.04	Temperature Coefficient of V _{OC}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	109 ± 5.4 (43 ± 3°C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys}	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull ³	[lbs/ft ²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40°C up to +85°C)
Max. Test Load, Push / Pull ³	[lbs/ft ²]	113 (5400 Pa) / 84 (4000 Pa)		

³ See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells), GCPV Certification ongoing.



PACKAGING INFORMATION

Horizontal packaging	76.4 in 1940 mm	43.3 in 1100 mm	48.0 in 1220 mm	1656 lbs 751 kg	24 pallets	24 pallets	32 modules
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Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION
PV-11

BY: John Millea DATE: 11-15-2022

/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / **SE3800H-US** / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 ⁽¹⁾							
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							
Nominal DC Input Voltage	380							
Maximum Input Current @240V ⁽²⁾	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V ⁽²⁾	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600ka Sensitivity							
Maximum Inverter Efficiency	99				99.2			%
CEC Weighted Efficiency			99				99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated

/ Single Phase Inverter with HD-Wave Technology for North America

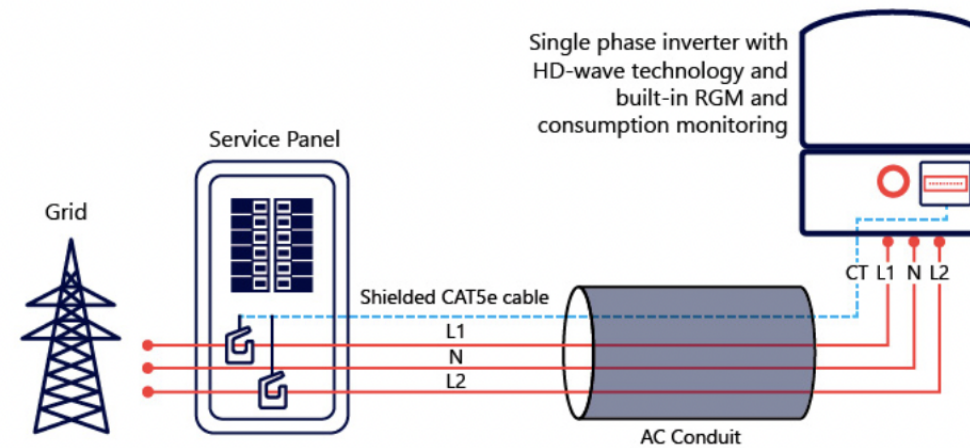
SE3000H-US / **SE3800H-US** / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional ⁽³⁾							
Consumption metering	Optional ⁽³⁾							
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection							
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (H)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG				1" Maximum /14-4 AWG			
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG				1" Maximum / 1-3 strings / 14-6 AWG			
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174				21.3 x 14.6 x 7.3 / 540 x 370 x 185			
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6	lb / kg			
Noise	< 25				<50			
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁴⁾							
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(3) Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BN14 . For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box
(4) Full power up to at least 50°C / 122°F; for power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



Power Optimizer

S440, S500



POWER OPTIMIZER

/ Power Optimizer S440, S500

	S440	S500	UNIT
INPUT			
Rated Input DC Power ⁽¹⁾	440	500	W
Absolute Maximum Input Voltage (Voc)		60	Vdc
MPPT Operating Range		8 - 60	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module		14.5	Adc
Maximum Efficiency		99.5	%
Weighted Efficiency		98.6	%
Oversoltage Category		II	
OUTPUT DURING OPERATION			
Maximum Output Current		15	Adc
Maximum Output Voltage		60	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)			
Safety Output Voltage per Power Optimizer		1	Vdc
STANDARD COMPLIANCE			
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011		
Safety	IEC62109-1 (class II safety), UL1741		
Material	UL94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage		1000	Vdc
Dimensions (W x L x H)		129 x 153 x 30	mm
Weight (including cables)		655 / 1.5	gr / lb
Input Connector		MC4 ⁽²⁾	
Input Wire Length		0.1	m
Output Connector		MC4	
Output Wire Length		(+) 2.3, (-) 0.10	m
Operating Temperature Range ⁽³⁾		-40 to +85	°C
Protection Rating		IP68 / NEMA6P	
Relative Humidity		0 - 100	%

(1) Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed
 (2) For other connector types please contact SolarEdge
 (3) For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

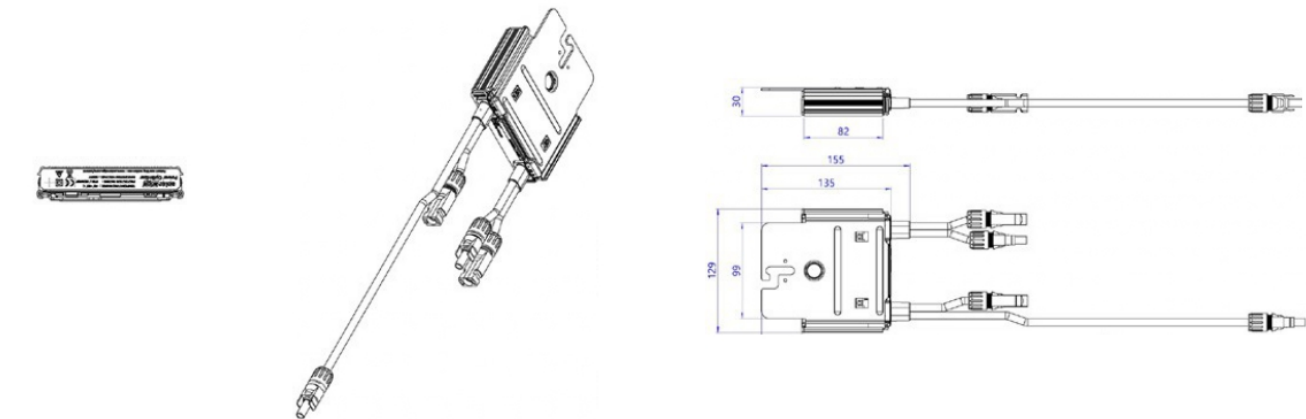
PV System Design Using a SolarEdge Inverter	Single Phase HD-Wave	Single Phase	Three Phase	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	S440, S500	8	16	18	
Maximum String Length (Power Optimizers)		25		50	
Maximum Nominal Power per String ⁽⁴⁾		5700	5250	11250 ⁽⁵⁾	12750 ⁽⁶⁾
Parallel Strings of Different Lengths or Orientations			Yes		W

(4) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power
 Refer to: <https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf>
 (5) For the 230/400V grid: it is allowed to install up to 13,500W per string when the maximum power difference between each string is 2,000W
 (6) For the 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W
 (7) It is not allowed to mix S-series and P-series power optimizers in new installations

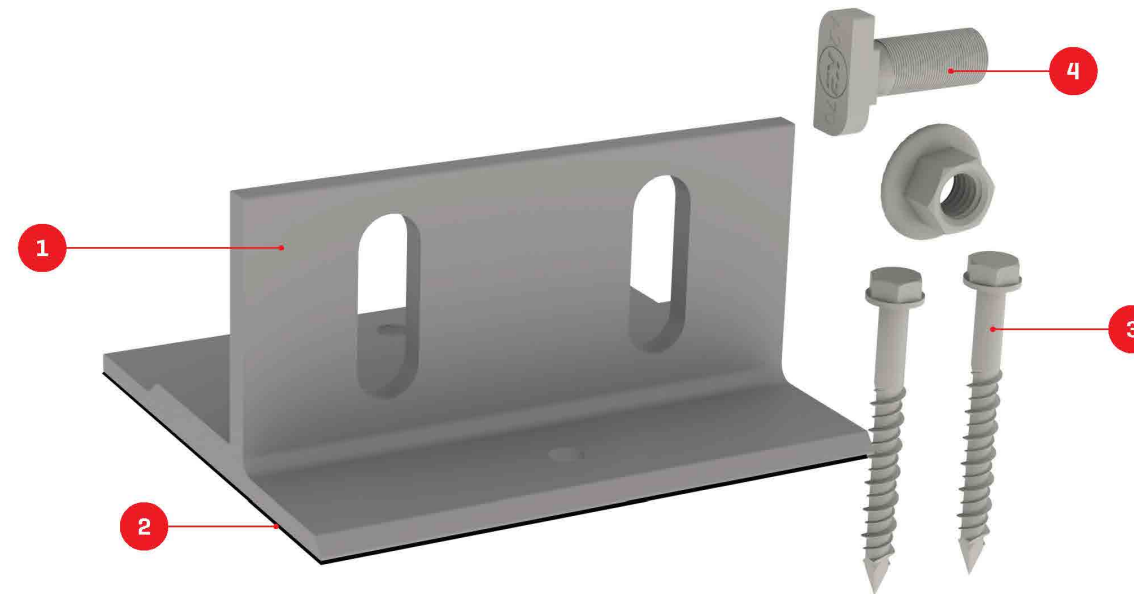
PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules

* Functionality subject to inverter model and firmware version



We support PV systems
Formerly Everest Solar Systems



Splice Foot X

TECHNICAL SHEET

Item Number	Description	Part Number
1	Splice Foot X	4000113 Splice Foot X Kit, Mill
2	K2 Solar Seal Butyl Pad	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

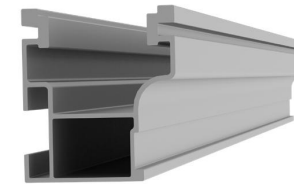
Technical Data

Splice Foot X	
Roof Type	Composition shingle
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	M5 x 60 lag screws
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80

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CROSSRAIL 44-X



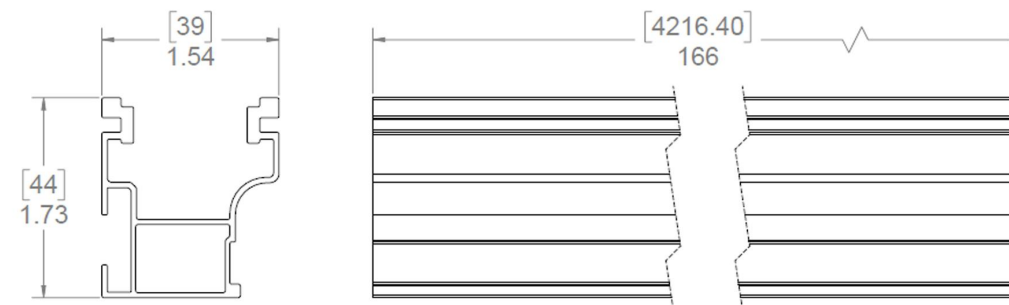
Mechanical Properties

CrossRail 44-X	
Material	6000 Series Aluminum
Ultimate Tensile Strength	37.7 ksi [260 MPa]
Yield Strength	34.8 ksi [240 MPa]
Weight	0.47 lbs/ft [0.699 kg/m]
Finish	Mill or Dark Anodized

Sectional Properties

CrossRail 44-X	
Sx	0.1490 in ³ [0.3785 cm ³]
Sy	0.1450 in ³ [0.3683 cm ³]
A [X-Section]	0.4050 in ² [1.0287 cm ²]

Units: [mm] in



Notes:

- ▶ Structural values and span charts determined in accordance with Aluminum Design Manual and ASCE 7-16
- ▶ UL2703 Listed System for Fire and Bonding

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
**ANSI B
11" X 17"**

SOLANO COUNTY RESOURCE MANAGEMENT
APPROVED SHEET NUMBER
BUILDING DIVISION
PV-15